Government Property Agency

AtkinsRéalis



MANCHESTER DIGITAL CAMPUS

Environmental Statement

Volume 4 - Appendix 12.2:

AtkinsRéalis (formerly Atkins Limited) Ground Investigation Report

NOVEMBER 2024

Appendix 12.2. AtkinsRéalis (formerly Atkins Limited) Ground Investigation Report

The report appended to this Environmental Statement has been prepared by AtkinsRéalis (formerly Atkins Limited) in October 2023 who have undertaken an intrusive ground investigation and ground conditions assessment of the Site.

ATKINS
Member of the SNC-Lavalin Group

Ancoats, Manchester

Ground Investigation Report

CONFIDENTIAL CLIENT

October 2023

Notice

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Executive Summary

Project Background	Atkins Limited (Atkins) has been appointed by a confidential client (The Client) to design and implement an intrusive ground investigation and undertake an assessment of current ground conditions at Ancoats, Manchester (the site) to identify potential geotechnical/contamination constraints. The site is currently proposed to be redeveloped to a commercial end use.
2023 Ground Investigation	Structural Soils Limited were commissioned by Atkins Limited to undertake the ground investigation works designed and specified by Atkins. The ground investigation comprised 12 cable percussive boreholes (with rotary core follow) to a maximum depth of 40.5m bgl, eight window sample holes (windowless sampler) to a maximum depth of 5.45m bgl, 13 machine excavated trial pits to a maximum depth of 5.0 m bgl, two hand dug pits to 1.20 m bgl maximum and 22 in-situ static cone penetration tests to a maximum depth of 16.00m bgl. Geotechnical and environmental soil samples and groundwater samples were collected for laboratory analysis, and six post site works gas/groundwater monitoring rounds have been undertaken.
Ground Conditions	Ground conditions generally comprise concrete, tarmacadam, or brick hardstanding over Made Ground to a maximum depth of 3.5m bgl. Made Ground overlies Glacial Till (predominantly cohesive, with a proportion of granular material encountered) recorded to a maximum depth of 29.5m bgl. Sandstone of the Chester Formation was encountered from 24.5m bgl (completely weathered) with intact rock first encountered from 24.7m bgl.
Human Health Risk Assessment	Human Health Risk Assessment identified the following: • No exceedances of the human health screening criteria for a commercial end use were identified. • Asbestos was not identified within any of the samples analysed by the laboratory. • The presence of buildings and hardstanding across the site in the proposed development is likely to limit exposure to the underlying soils and therefore soil underlying the site is unlikely to pose an unacceptable risk to human health.
Controlled Waters Risk Assessment	Controlled Waters Risk Assessment identified the following: • Exceedances of heavy metals, PAHs and TPH fractions were recorded in both soil-leachate and groundwater samples collected from across the site. However, these exceedances recorded within soil-leachate and/or groundwater samples are unlikely to pose an unacceptable risk to controlled waters receptors due to relatively low number and isolated nature of exceedances and the presence of impermeable clay underlying the site limiting migration. • If piles into bedrock are required then the potential for creating a new pathway should be considered further in the Contractor's piling risk assessment, which will need to be approved by the Environment Agency.
Preliminary Waste Classification	A preliminary waste assessment for the soils based on the 34 soil samples collected during the Structural Soils 2023 ground investigation has been undertaken using the HazWasteOnline waste classification tool. The results indicate that 32 out of the 34 samples analysed would be classified as non-hazardous for off-site disposal purposes. Samples collected from CPT14 at 0.40 m bgl and WS04 at 0.30 m bgl have been classified as hazardous due to elevated pH levels. Waste Acceptance Criteria (WAC) analysis was also undertaken on nine soil samples collected from across the site. Two samples exceed the WAC

	criteria for inert waste landfill. It is recommended that waste contractors are consulted prior to disposal to discuss these results and to confirm their requirements. Further sampling/analysis will be required prior/during construction by the contractor to enable them to classify the waste and ensure it is disposed of appropriately.
Foundations	The Made Ground is unlikely to be suitable for founding structures upon in its current condition due to the variable nature of the material. The Glacial Till is considered to be a suitable founding material for conventional shallow foundations, dependent upon loading and settlement tolerances. For multistorey and/or higher loaded structures, piled foundations are likely to be necessary. The bedrock is a suitable founding stratum for piled foundations. Sub-artesian groundwater should be accounted for during detailed pile design and construction. Due to the depth of excavation for the basement car park, there is a risk of damage to the basement slab associated with heave of the cohesive Glacial Till which will also need to be considered during detailed design. It is recommended that any Made Ground, soft, loose or compressible material be excavated and replaced with suitably compacted engineered fill where required. Formation inspections should be undertaken by a suitably qualified geotechnical engineer.
Excavations	Excavations within soft clay or loose granular deposits are likely to require positive support or battering back. The presence of shallow perched water may also require the use of ground support in conjunction with a suitably designed dewatering system, such as sump pumps. Deep excavations are subject to risk of heave due the effects of unloading. Excavations in front of the existing retaining wall could compromise the stability of the wall and must be carefully considered for both temporary and permanent works. Excavations adjacent to the Rochdale canal could result in instability of the existing structure, worsen any existing damage and potentially cause a canal breach due to structural failure and/or piping failure and must also be carefully considered for temporary and permanent conditions.
Groundwater	Shallow groundwater has been recorded during the ground investigation and subsequent monitoring rounds and was generally found within the Made Ground, on top of the natural clay, between the levels of ~0.5m to 3.5m below existing ground level. This creates potential for floatation of underground structures and should be assessed at design stage. Sub-artesian groundwater conditions are considered to be present on site with a potentiometric surface recorded at approximately 28m to 24mAOD (20m to 23m bgl).
Material Reuse	It is expected that the majority of concrete hardstanding encountered across the site could be crushed to provide Class 6F2 material for use as general fill. Granular Made Ground (existing engineered fill) is likely to be suitable for reuse as engineering fill (if chemically acceptable). Remaining Made Ground is unlikely to be suitable for use as engineering fill, however it may be suitable for landscaping if chemically suitable. The Glacial Till is likely to be suitable for reuse as general fill.
Land Contamination Constraints & Recommendations	The reader is directed to Table 12-1 in Section 12 for the constraints posed to the redevelopment of the site by land contamination and ground gas, and the recommended actions required before and/or during construction.

1. Introduction

1.1. Background

Atkins Limited (Atkins) was appointed by a confidential client (the Client) to design and implement an intrusive ground investigation (GI) within a site in Ancoats, Manchester (the site) and to prepare a geotechnical and geoenvironmental interpretative report (GIR). This GIR report is based upon the findings of the ground investigation undertaken by Structural Soils Ltd (SSL) during April and May 2023; and also includes relevant findings of a previous ground investigation undertaken at the site by e3p in 2017 [1]. SSL were employed by Atkins for the 2023 investigation and prepared the GI Factual Report.

1.2. Scope of Work

Atkins' scope of works comprised:

- Review of available information including the 2017 ground investigation data;
- Design of the ground investigation following consideration of the reviewed information;
- Provision of full-time site technical support during the intrusive ground investigation. The investigation included cable percussion boreholes with rotary follow on, trial pits, window sample holes, cone penetration testing (CPTs), hand pits, concrete coring, soil and groundwater sample collection for laboratory analysis and geotechnical testing and gas/groundwater monitoring;
- Summarise information from the e3p Phase I and Phase II Geo-Environmental Site Assessment report;
- Provide details of the recent ground investigation and describe ground conditions encountered;
- Production of a generic quantitative risk assessment (GQRA) to assess potential risks to human health and controlled waters for the proposed end use using the 2023 ground investigation data;
- Preparation of a ground gas risk assessment following completion of post-fieldwork monitoring;
- Revision of the conceptual site model presented in the Phase I and Phase II Geo-Environmental Site Assessment report;
- Preliminary waste characterisation; and
- Preparation of a geoenvironmental and geotechnical GIR detailing the ground investigation findings and assessment of the results.

1.3. Information Sources

Atkins has used the following sources of information for the production of this report:

- Structural Soils (September 2023), Factual Report on Ground Investigation [2],
- Atkins Technical Note (April 2021): Project B – Great Ancoats Street, Manchester (Geotechnical and Geo-Environmental Data Review) [3]
- e3p (July 2017), Phase I & II Geo-Environmental Assessment [1] including
- 6Alpha Associates, Detailed Unexploded Ordnance (UXO) Threat and Risk Assessment [4]
- Public Health England Radon Mapping [5]
- Zetica Unexploded Bomb Risk Mapping [6]

For a full list of all references contained within this report, please refer to the references list in Section 14.

1.4. Limitations

Atkins is responsible for selecting and summarising the data supplied by the client or other parties but cannot be held for any mistakes or inaccuracies or the completeness of third-party data on which it has relied. As with any point data, ground conditions can only be inferred between test locations and as such localised conditions on site may vary between point locations and groundwater/ ground gas conditions may differ from those encountered during monitoring periods. Therefore, this report cannot guarantee against unexpected ground conditions occurring between the sampling points.

This report presents the preliminary findings of geoenvironmental and geotechnical ground investigation and risk assessment to inform the client about potential contamination and geotechnical hazards & constraints

relating to the proposed development. Once details of the design (e.g. layout, levels loadings, etc) is known, further development-specific ground investigation and assessment may be required by the Client/Developer/Contractor to inform design. Constraints relating to ecology, heritage, flooding/drainage, utilities, air quality and noise are beyond the remit of this report.

Ground gas and groundwater conditions are based on observations made at the time of the Atkins designed 2023 ground investigation and monitoring programme, and may be subject to variation due to atmospheric, seasonal or other effects.

The Conceptual Model (CM) developed, and Generic Quantitative Risk Assessment (GQRA) carried out for human health, has been based on using screening criteria for a commercial land use scenario. Any changes to the proposed development may require revision of the CM and reassessment of the risk assessment findings if the final development differs substantially from these assumptions.

This report does not advise on measures to deal with asbestos. Detailed advice should be sought from a specialist contractor.

The environmental setting of the site has been largely based upon the information contained within the e3p 2017 Report [1]. The purchase of a new environmental database report was not included in the scope of these works, so there may be consents/licences pertaining to the site or its vicinity that have been permitted since 2017.

This report should be read considering the legislation, statutory requirements and/or industry good practice applicable at the time the report was written. Any subsequent changes in legislation or guidance may necessitate the findings to be reassessed in light of these circumstances.

2. Environmental Setting & Site Characterisation

A review of publicly available information and previous reports have been used to describe the environmental setting, including the following key information:

- e3p, Phase I & II Geo-Environmental Assessment [1];
- BGS GeoIndex [7];
- Defra Multi-Agency Geographical Information for the Countryside (MAGIC) Online Maps [8]
- Public Health England Radon Mapping [5]; and
- Zetica Unexploded Bomb Risk Mapping [6].

2.1. Location and Description

The site comprises approximately 2.0 hectares (Ha) of land located on Great Ancoats Street, Manchester, M4 6DJ, at National Grid Reference 385050, 398440 as shown in Figure 2-1.

The site comprises two distinct areas of hardstanding associated with the former land use as a retail park; concrete floor slabs associated with former retail buildings, and a brick-paved former carpark are present.

The site is bound by Great Ancoats Street to the southwest, the Rochdale Canal to the northwest, the eastern extent of the former retail park to the southeast, and New Islington Marina and Co-op Academy New Islington to the northeast. The site is 1.0 to 3.5 metres (m) lower than the land adjacent to the northeast, with a vertical concrete retaining wall present along the north-eastern boundary. The site noticeably slopes down from the northern-most corner to the southern-most corner, from approximately 49.7 m above ordnance datum (AOD) in the north to 44.8 m AOD in the south, with steps in the concrete hardstanding to accommodate the varying site levels. A culverted brook is understood to run north-south to the east of the current site boundary, within the eastern portion of the former retail park.



Figure 2-1 - Ancoats Site Location and Boundary

2.2. Key Historical Land uses

A summary of the historical development on-site is presented in Table 2-1. The information has been taken directly from the e3p geoenvironmental site assessment report [1].

Table 2-1 - Summary of site history

Date	On-Site Development
1851	The site is occupied predominantly by residential housing, with schools and churches also located within the site boundary. A Foundry and Mill are located in the north. An Oil Cloth Factory, Machine Works and an Iron Foundry are recorded in the west.
1893	The Oil Cloth works are now shown as a Saw Mill, present in the west of the site.
1908	The Saw Mill is no longer shown on mapping. A corporation yard is shown in the centre of the site.
1922	No significant changes.
1951	The former Saw Mill in the west is now a Timber Yard. A Timber Shed is shown in the centre of the site. Land in the northwest is recorded as a Saw Mill and Cardboard Box Mill.
1955	A Garage, Clothing Works and Engineering Works are present in the northwest of the site. A warehouse is present in the centre of the site. Many of the residential properties have been demolished.
1981	All of the residential properties have been cleared leaving much of the site as vacant land. Works, Timber Yards and a Depot are located in the west of the site.
1989	A Retail Park is present on site (it is likely the site levels were altered and retaining walls built at this time.) Electrical substation constructed in the northeast of the site.

The areas surrounding the site (within 100 m) have historically been occupied by numerous cotton mills, dye works, sawmills, timber yards, iron works, coal wharfs, engineering works, foundries, infilled canal, hydraulic power station and manufacturing works.

2.3. Geology

Geological mapping from the BGS GeoIndex [7] indicates that the superficial deposits beneath site comprise Glacial Till, see Figure 2-2. The previous e3p ground investigation recorded silty sandy gravelly clay to approximately 4.40m bgl. Whilst not mapped by the BGS, Made Ground deposits have been proven to overlie the Glacial Till across the site, associated with historical development, including the most recent use as a retail park. The previous e3p geo-environmental assessment identified the Made Ground to comprise concrete hardstanding or brickwork at the surface, with clayey sandy gravel and clayey gravelly sand underlying the hardstanding. Made Ground was recorded up to a maximum depth of ~2.0m during the e3p investigation.



Figure 2-2 - Superficial geology of the Ancoats, Manchester site (BGS GeoIndex)

The BGS GeoIndex [7] indicates that the bedrock geology beneath the site is formed entirely of the Chester Formation, consisting of well sorted, fine to coarse red sandstone. See Figure 2-3.

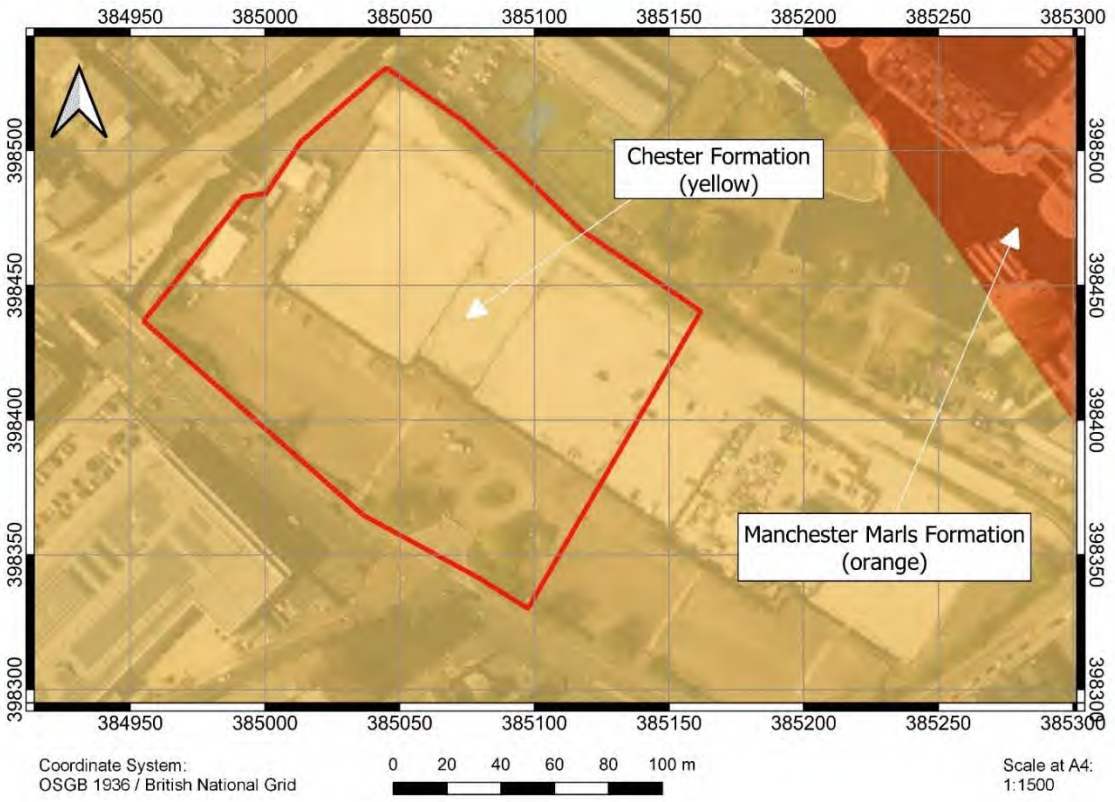


Figure 2-3 - Bedrock geology of the Ancoats, Manchester site (BGS GeoIndex)

A summary of the ground conditions recorded during the e3p ground investigation [1] are found in Table 2-2 below.

Table 2-2 - Ground model summary (e3p Geo-Environmental Assessment)

Strata	General Description	Expected Depths (m bgl)
Surface Cover – Hardstanding	Brick paving and concrete, plus limestone gravel sub-base.	0.00 - 0.70
Made Ground	Grey and brown, clayey, sandy gravel and gravelly sand. Gravel is fine to coarse subangular to subrounded; containing clinker, brick, ash, limestone, mudstone, slate, timber and rare porcelain.	0.15 – 2.00
Clay (Glacial Till Deposits)	Brown and grey silty, locally sandy and gravelly CLAY. Gravel is fine, subangular of coal and sandstone. Horizons of gravelly SAND were recorded in the deposits at depth within the deeper boreholes.	0.40 – 24.50
Sand (Glacial Till Deposits)	Brown, slightly gravelly clayey fine to medium SAND. Gravel is fine, subangular to subrounded of mudstone and coal.	14.00 – 27.00 (encountered as bands within the Glacial Till)
Sandstone (Chester Formation)	Red Sandstone. Upper horizons highly weathered and returned as SAND with lithorelics of SANDSTONE.	24.50 – *39.00** (*Full thickness of the unit is unproven).*

Groundwater monitoring wells were previously installed within the Made Ground, Glacial Till, and Chester Formation bedrock; two separate ground water levels were observed. A shallow groundwater level was identified within the Made Ground and Glacial Till deposits at depths between 0.48m bgl and 4.20 m bgl. A deeper groundwater level was identified with the Chester Formation between 20.9 m bgl in the east and 24.4 m bgl in the west.

There is no recorded faulting within the confinements of the site, however the wider area records a series of relatively linear northwest-southeast trending faults, with the nearest faults located approximately 320m northwest and 360m southwest of the site.

2.4. Hydrogeology

The Defra MAGIC online map viewer indicates that Aquifers underlying the site are classified as:

- Superficial: Glacial Till – Secondary Undifferentiated Aquifer
- Bedrock: Chester Formation – Principal Aquifer

The Environmental Agency (EA) defines Principal Aquifer as “layers of rock or drift deposits that have high intergranular and/or fracture permeability – (usually provide a high level of water storage). They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer.”

Secondary undifferentiated are aquifers where it is not possible to apply either a Secondary A or B definition because of the variable characteristics of the rock type.

No Source Protection Zones (SPZs) are present on site or within 1 km of the site [9]. The nearest groundwater abstraction is located approximately 720 m south of the site at Moseley Rubber Co. The permit start date is listed as 1966 [1].

The 2017 e3p report [1] indicates that it is likely that groundwater flow within the underlying sandstone bedrock is towards the southwest, following topographic gradient towards the River Irwell.

2.5. Hydrology

The nearest surface water features are:

- Rochdale Canal – adjacent to the northwestern site boundary;
- Islington Wharf Marina – 30 m north of the site boundary; and
- Ashton Canal (Islington Wharf Branch) – 160 m east of the site [1].

United Utilities Plans contained within the e3p Phase I and Phase II Geo-Environmental Assessment [1] indicate that a culvert is located 50 m east of the site (Newton Brook), orientated north to south. The culvert is thought to discharge into Islington Wharf Marina.

The site is not indicated to be within an area liable to flooding from either surface water courses or the sea [1].

2.6. Landfills

No current or historical landfill sites have been identified within a 250 m radius of the site boundary [1].

However, it should be noted that Made Ground deposits are anticipated across the site and an infilled canal is located within 100 m of the site.

2.7. Discharge consents

There are no discharge consents indicated relating to the site from the 2017 data within the e3p Report [1]. The purchase of a new environmental database report was not included in the scope of these works, so there may be discharge consents pertaining to the site or its vicinity that have been permitted since 2017.

2.8. Pollution incidents

Eight Category 3 Minor Pollution Incidents are identified within a 250m radius within the e3p Report [1]. The receptor for all of the incidents are the Ashton and Rochdale Canals, including two incidents immediately adjacent.
The purchase of a new environmental database report was not included in the scope of these works, so there may be recorded pollution incidents on or within the vicinity of the site that have occurred since 2017.

2.9. Pollution Controls

The e3p Report [1] indicates that a single authorised industrial process is located within 250 m of the site. Presbar Diecasting Ltd operate a PG2/1 and PG2/6 Part B Authorisation approximately 110m to the south.

2.10. Trade Directory Entries and Fuel Stations

There are no fuel station entries within 250 m of the site recorded within the e3p 2017 Report [1].

According to the e3p 2017 Report [1], the site is located within a predominantly commercial area though some smaller light industrial activities are identified within 250m of the site including an aluminium and scrap metal processing activity approximately 110m to the south. It is not known if significant changes have occurred to the surrounding area since 2017.

2.11. Sensitive Land Uses

Magic maps (Online) [9] and the e3p Report [1] indicate that the site is not located within 250 m of sensitive land uses including Sites of Special Scientific Interest (SSSI), Ramsar Sites and Local Nature Reserves.

2.12. Radon

Public Health England Radon Mapping [5] indicates that the majority of the site is located within an area of elevated radon potential (maximum radon potential is 5-10%).

Information contained within the 2017 e3p Report [1] indicates that the site is located within a radon area where less than 1% of properties are estimated to be at or above the action level.

2.13. UXO Risk

The regional unexploded bomb risk map from Zetica [6] indicates that the site is in an area at moderate risk from possible Unexploded Bombs (UXB) resulting from the Second World War. A Detailed Unexploded Ordnance (UXO) Threat and Risk Assessment was undertaken by 6Aplpha Associates in 2018 [4]. The

assessment concluded that the site is at a medium risk level, and whilst there is a residual UXO risk within this site, it is not believed that there is a significant risk pathway to warrant on-site pro-active UXO mitigation measures. Nine WWII consolidated bomb strikes have been recorded on site. The assessment identified that the most probable UXO threat items are German HE bombs, whilst IBs and British AAA projectiles pose a residual risk.

3. Previous Ground Investigations

The Client provided Atkins with a geoenvironmental site assessment report undertaken by e3p in 2017. The investigation and report are summarised below.

3.1. e3p Geo-Environmental Assessment, 2017

Environmental consultancy, e3p [1], were contracted by GVA on behalf of Henderson Global Investors to undertake a ground investigation at the Ancoats, Manchester site. At the time of the e3p report, the proposed outline masterplan comprised a residential development with buildings ranging from six to 10 storeys, with the potential to be up to 30 storeys high. It was also considered likely that ground floor space would be used for retail and/or commercial use with some areas of landscaping also proposed. The objectives of the investigation were to:

- Review historical plans, geology, hydrogeology, site sensitivity, flood-plain issues, mining records and any local authority information available in order to complete a Desk Study in line with Environment Agency (EA) document Model Procedures for the Management of Contaminated Land (Contaminated Land Report 11 (CLR11));
- Undertake a preliminary stage of sampling and analysis to provide, and overview of environmental issues identified;
- Assess the implications of any potential environmental risks, liabilities and development constraints associated with the site in relation to the future use of the site and in relation to off-site receptors;
- Assess the geotechnical information and provide preliminary recommendation in relation to foundations, pavement construction and floor slabs; and
- Provide recommendations regarding future works required.

The e3p ground investigation covers the full former retail park site area which contains adjacent site land to the east, outside of the current Atkins study area. The summary of exploratory holes relates to the full investigation, however the ground conditions described, relate to the reduced, recent area of study (western half of the former retail park).

A summary of the exploratory holes excavated during the e3p, 2017 ground investigation works are summarised in Table 3-1.

Table 3-1 - Summary of the Exploratory Holes

Exploratory Hole Type	Total Number	Exploratory Hole ID	Hole Depths (m bgl)
Cable Percussive with Rotary Follow On	6	BH101 – BH106 (BH104 had no rotary follow on)	17.00 – 39.00
Window Sample	22 (plus 3 abandoned due to services)	WS101 – WS125 (WS122 – WS124 abandoned)	0.70 – 5.45

Ground conditions encountered across the current area of study include:

- Surface cover (Made Ground – Hardstanding) consisting of brick and/or concrete from ground level to 0.7m bgl;
- Made Ground, generally comprising gravelly sand / sandy gravel, from 0.15m bgl to 2.00 bgl;
- Clay (Glacial Till), comprising silty sandy and gravelly clay, from 0.40m bgl to 24.50m bgl;
- Sand (Glacial Till), comprising gravelly clayey sand, from 14.0m bgl to 27.0m bgl (which includes residual sand of weathered bedrock).
- Sandstone bedrock was encountered from 24.50m bgl to 39.00m bgl (full strata thickness not proven).
- Groundwater strikes ranged from 1.90m bgl (WS101) to 5.10 m bgl (WS125), noted as slow ingress, possibly perched.

Note: Made Ground was recorded to a maximum of depth of 5.0m bgl in the eastern half of the site (east of the current site boundary) and was assumed to be associated with the deep culvert recorded within this area of the site.

3.1.1. Summary of geotechnical information

The geotechnical assessment produced by e3p concluded the following:

- The site is likely suitable for shallow foundations to support lighter/portal frame buildings;
- It is likely that piled foundations will be required for high rise/settlement sensitive structures;
- Bedrock has been recorded between 24.50 m bgl and 39.00 m bgl (full thickness not proven);
- Ground bearing floor slabs are considered viable but will require detailed design to account for the variable ground conditions which may lead to unacceptable or differential settlement of the slab;
- As the site is predominantly underlain by cohesive material, soakaways are unlikely to be a viable drainage solution at the site.

3.1.2. Summary of land contamination and ground gas information

The assessments undertaken by e3p concluded the following:

- Human health: No exceedances of the residential without plant uptake, human health screening criteria recorded within the current Atkins site boundary. e3p identified potential chronic risks to human health from Made Ground, however, they stated that these risks would be mitigated due to the proposed surface cover. In areas of landscaping, e3p also suggested that a cover system would likely be required;
- Controlled waters: No exceedances of the DWS recorded within the current site boundary;
- On the basis of the available information risks to controlled waters from soils and groundwater beneath the site were considered by e3p to be low;
- Ground gas: Based on the limited data available e3p derived a gas screening value (GSV) for the site in accordance with CIRIA Report 665. All locations would be classified as ‘Characteristic Situation 1’, where no gas protection measures would be required in new structures. e3p proposed a further 8 rounds of monitoring based on the proposed residential end use at the time of their assessment and that the gas risk assessment should be updated following completion of additional monitoring.

4. Preliminary Conceptual Model

4.1. Introduction

Primary guidance for assessing and managing risks posed by land contamination is presented in Land Contamination: Risk Management (LCRM) published by the Environment Agency on 5 June 2019 [10]. LCRM provides a technical framework (and signposts other key guidance) for identifying and remediating contamination through the application of a risk management process. The question of whether a risk is unacceptable in any particular case, involves not only scientific and technical assessments, but also appropriate criteria by which to judge the risk and conclude exactly what risk would be unacceptable.

A preliminary conceptual model (PCM) describes the relationship between potential sources of contamination (resulting from both on- and off-site historical and recent activities) and receptors to the potential contamination. As part of the PCM development, three elements are identified and assessed:

- Source of contamination and associated contaminants;
- Receptors – human beings, controlled waters (surface water/groundwater), ecological systems and property, to that contamination; and
- Pathways between the sources and receptors.

Where all three elements are present or are likely to be present, they are described as potential pollutant linkages (PPLs), which can then be subjected to the risk assessment and risk management process.

4.2. Preliminary Conceptual Model

The preliminary risk categorisations presented are based on an assessment of the potential consequence of each PPL occurring along with the likelihood that each PPL will occur in accordance with the framework provided in Appendix B. Potential contamination that might be present has been identified through knowledge of historical land uses on or adjoining the site.

Under current health and safety legislation, construction and maintenance staff are required to carry out their own appropriate risk assessments and mitigation to protect their staff, other human receptors, and the environment from potential contamination. Such risks must be adequately mitigated by law, specifically the Construction Design Management (CDM) Regulations [11], that require potential risks to human health and the environment from construction activities are appropriately identified and all necessary steps taken to eliminate/manage that risk. Therefore, construction/maintenance workers have been discounted as human receptors from the PCM.

The chemical attack to underground structures has not been assessed which will be covered in geotechnical assessment and mitigation measures implemented during design.

Table 4-1 - Preliminary Conceptual Model and Risk AssessmentSources	Pathway	Receptor	(Consequence/Probability) Classification of Risk
Potential contaminants in soil/groundwater on-site, originating from the following on-site sources: Made Ground across the site associated with the historical site use. Historical activities undertaken at the site including: foundry, various mills, factories, various works, corporation yards, timber yards, timber sheds, garage, depot and retail park. Residential housing, churches and schools were also located within the site boundary and have been demolished. Potential Contaminants include: Asbestos Heavy Metals Polycyclic Aromatic Hydrocarbons (PAHs) Fuels Organic Compounds Ground Gases	Inhalation, ingestion, and dermal contact with contaminants in soil and soil derived dust. Organic contaminants in soil migrating into water supply pipes.	Future site users (commercial properties). Adjacent site users.	(*Medium/Low Likelihood*) **Moderate/Low Risk** The site is likely to be covered in hardstanding with future commercial buildings with limited landscaped areas. It is also assumed that suitable capping thickness will be required as part of the design. Therefore, it is unlikely that future site users will be exposed to soils underlying the site.
	Inhalation of airborne asbestos fibres.		(*Severe/Low Likelihood*) **Moderate Risk** Due to the past historical uses of the site/the potential for Made Ground, there may be asbestos present on site. Asbestos was not identified during the e3p ground investigation within the current site boundary. However, as the site will be covered in hardstanding/buildings it is unlikely that asbestos would be exposed at surface. However, the risk to construction workers will require further assessment by a specialist asbestos contractor.
	Migration of gases/vapours into confined spaces/buildings and accumulation (explosion). Inhalation of vapours or ground gas (asphyxiation).	Future site users and property (commercial properties).	(*Medium/Low Likelihood*) **Moderate/Low Risk** Based on the 2017 ground investigation data, Made Ground is unlikely to be present at a significant thickness on site to pose an unacceptable risk in terms of the production of ground gas. However, due to the use of the site as a garage in the northwest of the site there is the potential for fuel/oil to have been stored on site and for spills to have occurred, therefore the possibility of hydrocarbon vapours cannot be ruled out. The presence of commercial buildings on site following redevelopment could result in the build-up of gases or vapours within enclosed spaces. However, the presence of a ventilated basement car park will help prevent the build up of hazardous gases.
	Leaching of contaminants to groundwater in superficial deposits and thereby bedrock. Lateral migration beneath the site to surface water receptors. Also, via preferential pathways (e.g. service trench backfill).	Secondary undifferentiated superficial aquifer and Principal Bedrock Aquifer underlying the site Surface Water Receptors (culverted watercourse, canals and marina).	(*Medium/Low Likelihood*) **Moderate/Low Risk** Glacial Till is anticipated across the site to approximately 27 m bgl based on previous ground investigation undertaken at the site. If the Glacial Till is predominantly comprised of clay with few sand layers, then it is likely to limit the lateral and vertical migration of potential contamination present within Made Ground or pore water. Sand layers were identified within the Glacial Till as part of the e3p ground investigation which may act as a migration pathway for contaminants within groundwater.
Potential contaminants in soil/groundwater on-site originating from the following off-site sources: Mills Works Timber yards Iron works Coal wharfs Foundries Infilled canal/wharf Potential Contaminants include: Asbestos Heavy Metals Polycyclic Aromatic Hydrocarbons (PAHs) Fuels Organic Compounds Ground Gases	Inhalation, ingestion and dermal contact with contaminants in soil and soil derived dust. Organic contaminants in soil migrating into water supply pipes.	Future site users (commercial properties).	(*Medium/Unlikely*) **Low Risk** The majority of the surrounding area is currently covered in either hardstanding (roads/buildings) or vegetation, which would limit exposure to underlying soils and thus dust generation. It is assumed that surrounding commercial units are currently following best practice in their operations.
	Inhalation of airborne asbestos fibres.		(*Severe/Unlikely*) **Moderate/Low Risk** Asbestos may have been present within historical buildings which surrounded the site, therefore demolition of these buildings may have resulted in asbestos being present within Made Ground across the surrounding area and on site (e.g. wind-blown deposition).
	Migration of gases/vapours into confined spaces/buildings and accumulation (explosion). Inhalation of vapours or ground gas (asphyxiation).	Future site users and property (commercial properties).	(*Medium/Unlikely*) **Low Risk** There is the potential for the off-site infilled canal/wharf to produce ground gas. However, due to the distance from the site and intervening Glacial Till, gas is unlikely to migrate at significant enough volumes to pose an unacceptable risk to future site users/property. The construction of commercial units on site may result in the build-up of vapours/gases within buildings.
	Leaching of contaminants to groundwater in superficial deposits and thereby bedrock. Lateral migration beneath the site to surface water receptors. Also, via preferential pathways.	Principal Bedrock Aquifer underlying the site Surface Water Receptors (Culverted watercourse, canals and Wharf).	(*Medium/Unlikely*) **Low Risk** Historical and current land uses in the immediate vicinity of the site include works, timber yards, mills, wharfs, foundries, infilled ground. Therefore, there is the potential for contamination to be present and potentially migrate onto site.

5. Ground Investigation

5.1. Introduction

Structural Soils Limited were commissioned by Atkins to undertake a ground investigation (GI) at the site. The GI was designed by Atkins and carried out by Structural Soils Ltd between 11th April and 10th May 2023 (20 site days total), with full time supervision by an Atkins ground engineer.

The aims of the investigation were to:

- Confirm the ground and groundwater conditions beneath the site;
- Collect soil and groundwater samples for laboratory analysis of potential contaminants of concern (identified from desk-based information);
- Collect soil samples for geotechnical laboratory testing to inform the geotechnical assessment and to assist with material classification for reuse;
- Undertake post field work ground gas and groundwater level monitoring; and
- Provide general GI coverage across the site to allow the subsequent design (under a separate commission/by others) of shallow and deep foundations, basements and ancillary structures.

Following consideration of service plans from utility providers, the proposed exploratory hole locations were cleared for buried services by RSK (parent company of Structural Soils Ltd) using ground penetrating radar (GPR), and Structural Soils Ltd using a cable avoidance tool (CAT) and hand-dug inspections pits.

5.2. Scope of Works

Exploratory holes were positioned across site at specific locations intended to provide both general site coverage, and to address the data gaps reported in Atkins technical note issued in 2021 [3]. The data gaps were identified following Atkins' review of the e3p ground investigation report [1].

The geoenvironmental chemical testing suite was designed based on contaminants of concern identified during a review of desk-based information, including the historical uses of the site and current adjacent site uses. Volatile head space testing using a photo-ionisation detector (PID) was undertaken by Structural Soils Ltd on environmental samples to assess the risk posed by volatile contaminants within soil.

The ground investigation was designed by Atkins and carried out in general accordance with i) Institute of Civil Engineers (ICE) guidance [12]; ii) British Standard (BS) 10175 [13]; iii) BS5930 [14]; iv) BS8576:2013 [15].

A summary of the works undertaken during the Structural Soils Ltd ground investigation is provided in Table 5-1 below and within the bullet points following the table. An Exploratory Hole location plan is provided in Appendix A and Appendix C.

Table 5-1 - Summary of Intrusive Locations

Exploratory Hole Type	Exploratory Hole Number	Termination Depth (m bgl)	Exploratory Hole Installation	Piezometer Response Zone (m bgl)	Strata Screened	Comment
Cable percussive boreholes with rotary core follow-on	BH01	38.50	50mm monitoring well	29.50 to 38.50	Sandstone	
	BH02	1.00	n/a	n/a	n/a	Terminated due to potential shallow services.
	BH02A	39.00	50mm monitoring well	2.00 to 4.00	Glacial Till	
	BH03	35.50	50mm monitoring well	26.50 to 35.50	Sandstone	Switched to rotary drilling at 7.00m bgl due to obstruction caused by a boulder.
	BH04	36.50	50mm monitoring well	2.00 to 5.00	Glacial Till	
	BH05	38.00	50mm monitoring well	0.50 to 2.50	Made Ground	
	BH06	39.10	50mm monitoring well	2.00 to 4.00	Made Ground & Glacial Till	
	BH07	39.50	50mm monitoring well	0.50 to 2.00	Made Ground & Glacial Till	
	BH08	1.65	n/a	n/a	n/a	Terminated due to potential shallow services and concrete slab obstruction.
	BH08A	40.00	50mm monitoring well	31.00 to 40.00	Sandstone	
	BH09	39.00	50mm monitoring well	0.50 to 1.50	Made Ground	
	BH10	38.00	50mm monitoring well	29.00 to 38.00	Sandstone	
	BH11	39.50	50mm monitoring well	30.50 to 39.50	Sandstone	
	BH12	40.50	50mm monitoring well	3.00 to 6.00	Glacial Till	
Window Sample Holes	WS01	5.45	50mm monitoring well	1.00 to 3.00	Glacial Till	
	WS02	5.45	50mm monitoring well	0.50 to 2.00	Made Ground	
	WS03	5.45	50mm monitoring well	0.50 to 2.00	Made Ground & Glacial Till	

	WS04	5.45	50mm monitoring well	2.00 to 5.00	Glacial Till	
	WS05	5.45	50mm monitoring well	2.00 to 5.00	Made Ground & Glacial Till	
	WS06	5.45	50mm monitoring well	2.00 to 5.00	Glacial Till	
	WS07	3.45	50mm monitoring well	1.00 to 1.50	Glacial Till	Terminated due to groundwater induced collapse of granular Made Ground deposits within the hole.
	WS08	5.45	50mm monitoring well	3.00 to 5.00:	Glacial Till	
Trial Pits (Machine Dug)	TP01 to TP12	Ranged between 1.00m and 5.0m bgl.	n/a	n/a	n/a	
Cone Penetration Testing (CPT)	CPT01 – CPT20 (inc. CPT05a & CPT010a)	Ranged between 0.15m and 16.00m bgl.	n/a	n/a	n/a	CPT05 & CPT10 terminated at shallow depth due to obstructions. The positions were relocated and denoted as CPT05a & CPT10a.
Hand-dug Pits*	HDP01	1.2m	n/a	n/a	n/a	
	HDP02, HDP04, HDP05	Removed from the scope.				Not required
	HDP03**	0.2m	n/a	n/a	n/a	Terminated due to concrete obstruction

*Originally marked as machine-dug pits; these locations were switched to hand-dug pits as a precaution due to concern of close-proximity to live services. The pits were to investigate the foundation details of the adjacent retaining wall.

** This pit began at reduced level due to the presence of an existing excavation. The total depth of the existing pit plus the additional hand-dug pit was ~1.2m bgl.

Further works undertaken by Structural Soils Ltd in addition to those in Table 5-1 are listed below:

- All exploratory hole locations were cleared for services by Ground-Penetrating Radar (GPR), a cable avoidance tool (CAT scanner) and hand-dug inspection pits;
- Photo-ionisation detector (PID) testing of samples on site;
- Installation of gas/groundwater monitoring standpipes within all borehole and window sample locations;
- Collection of both geoenvironmental and geotechnical samples, with associated testing; and
- A total of six rounds of post site works gas/groundwater monitoring was carried out for each hole.

5.3. Environmental Sampling

5.3.1. Soil Sampling

Environmental soil samples were collected during the ground investigation and transported to Envirolab for chemical analysis. Envirolab is a United Kingdom Accreditation Service (UKAS) and Monitoring Certification Scheme (MCERTS) accredited laboratory. Soil samples were collected by a Structural Soils engineer and stored within cool boxes with ice packs before being transported to the laboratory within 24 hours of collection under Structural Soils chain of custody delivery process.

5.3.2. PID Testing

All environmental soil samples were screened on-site by a Structural Soils engineer with a photo-ionisation detector (PID). This test provides an indication of the presence and concentration of Volatile Organic Compounds (VOCs) in soil vapour and informs the appropriate selection of laboratory analysis. In-situ testing results from each exploratory hole are presented on their respective logs [2].

5.3.3. Groundwater Sampling

One set of groundwater samples were collected from nine exploratory holes across the site. Wells were developed by a Structural Soils engineer following well installation during the site works, prior to sampling being undertaken on 20th/21st June 2023. The samples were sent to the laboratory for chemical analysis indicated in Section 5.6.3.

During groundwater sampling, in-situ testing of samples was undertaken to monitor certain parameters to ensure that samples of groundwater were representative of conditions within the ground. The parameters recorded included pH, temperature, electrical conductivity, redox potential and dissolved oxygen. Full results of this testing are presented within the Structural Soils Factual Report [2].

5.4. In-situ Geotechnical Testing

A total of 224 Standard Penetration Tests (SPTs) were performed at various depth intervals throughout the site. A summary of the SPT results for the various strata is given in Table 6-11 – Standard Penetration Test Data.

A plot presenting SPT N60 value against depth is provided in Appendix E.

5.5. Geotechnical Laboratory Testing

The geotechnical testing was scheduled by Atkins and undertaken by Structural Soils at a UKAS accredited testing laboratory. The number and types of test undertaken are listed in Table 5-2. These are detailed further in Section 5.

Table 5-2 - Laboratory Tests

Tests	No of Tests
Soils	
Water content	112
Liquid and plastic (Atterberg) limits	101
Compaction (2.5kg rammer) – 1 Litre mould	11
Compaction (2.5kg rammer) – CBR mould	2
Single stage unconsolidated undrained (QU) triaxial compression test	32

One-dimensional consolidation test	7
Bulk and dry density test	1
Moisture condition value/moisture content relationship	7
Particle size distribution by sieving method	11
Particle size distribution by sedimentation	8
Rock	
Uniaxial compressive strength test	38
Uniaxial compressive strength test with deformation	7
Point load test (1 No. = 1 x axial + 1 x diametral tests)	38
Geotechnical Chemistry	
BRE SD1 Suite C 2005	27
BRE SD1 Suite D 2005	14

5.6. Geo-environmental Laboratory Chemical Analysis

Chemical analysis of environmental samples was scheduled by Atkins and carried out by Envirolab under the UKAS and MCERTS accreditation schemes. Chemical analysis was based on contaminants of concern (CoC) identified in the PCM from consideration of historical and current land uses, previous ground investigations, in-situ PID testing and ground conditions encountered on site.

5.6.1. Soils

Selected soil samples were scheduled for soil analysis comprising the following determinands:

Table 5-3 - Soil testing suite

Determinand	Number of samples tested
pH	34
Ammonium/Ammoniacal Nitrogen as NH4	34
Sulphate & Sulphide	34
Cyanide (free & total)	34
Phenols (Total by HPLC)	34
Organic Matter	34
Metals (arsenic, boron, cadmium, chromium, chromium VI, copper, lead, mercury, nickel, selenium, vanadium, zinc)	34
Asbestos Identification	34
Polycyclic Aromatic Hydrocarbons (PAHs)	34
Total Petroleum Hydrocarbons Criteria Working Group (TPH CWG) (aliphatic/aromatic split with clean up)	34
Methyl Tertiary Butyl Ether, Benzene, Toluene, Ethylbenzene and Xylene	34
Semi-volatile organic compounds (SVOCs) without PAHs	8
Volatile Organic Compounds (VOCs)	8
Waste Acceptance Criteria (WAC) Analysis	9

5.6.2. Soil-leachate

Selected soil samples were scheduled for leachate analysis comprising the following determinands:

Table 5-4 - Soil-leachate testing suite

Determinand	Number of samples tested
pH	18
Ammoniacal Nitrogen as NH3	18
Sulphate	18
Cyanide (free & total)	18
Phenol (Total)	18
Dissolved metals (arsenic, boron, cadmium, chromium, chromium VI, copper, lead, mercury, nickel, selenium, vanadium, zinc)	18
PAHs	18
TPH CWG	18
Methyl Tertiary Butyl Ether, Benzene, Toluene, Ethylbenzene and Xylene (O and M&P)	18

5.6.3. Groundwater

Groundwater samples were scheduled for a range of determinands comprising the following:

Table 5-5 - Groundwater testing suite

Determinand	Number of samples tested
pH	9
Ammoniacal Nitrogen as NH3	9
Cyanide (free & total)	9
Dissolved metals (antinomy, arsenic, cadmium, chromium, chromium VI, copper, lead, mercury, nickel, selenium, zinc)	9
PAHs	9
TPH (aliphatic/aromatic split)	9
Methyl Tertiary Butyl Ether, Benzene, Toluene, Ethylbenzene and Xylene (O and M&P)	9

6. Ground Conditions

6.1. Summary of Ground Conditions

Ground conditions have been summarised below using data obtained from the 2023 ground investigation and selected data from the previous ground investigation. Olfactory and visual signs of contamination along with PID results are discussed in Section 5.3.

6.1.1. Made Ground

Made Ground was encountered across the whole of the site and varied in thickness and composition. The Made Ground generally comprised either concrete slab, tarmacadam or brick hardstanding, over granular sandstone fill or reworked clay. Evidence of ground improvement in the form of stone columns was also encountered. In some locations, multiple layers of concrete slab and granular fill were encountered; these locations required breaking out to depths of up to 1.65m bgl. Shallow pad foundations associated with the former retail park were encountered at multiple locations across the site.

The findings of the e3p investigation align closely with the findings of the recent investigation, with concrete slab or brick hardstanding encountered over granular sandstone fill or reworked clay. The e3p investigation recorded deeper Made Ground to the east of the site (within the western half of the former retail park), up to 5.0m bgl. This is considered to be associated with deep culvert recorded within that area of the wider site.

Atkins obtained planned construction records for the former retail park from the Manchester Central Library Archives Office. The records indicated that the retail park was to be built on pad foundations, facilitated by ground improvement using vibro-compaction and vibro-stone columns. The plans also show planned construction of various excavations for stanchion bases for hoist and lift pits. The plans were supplied direct to the Client and are not contained within this report.

Atkins targeted existing foundation locations during the site works and the findings corroborated well with the foundation plan drawings, including encountering secondary slabs at ~ 1.2 to 1.5m bgl (assumed stanchion bases for hoist and lift pits).

A drawing showing the thickness of Made Ground across the site is provided in Appendix A.

6.1.1.1. Hardstanding

Concrete hardstanding, tarmacadam and brickwork were encountered at the ground surface; and are associated with the former retail park. Concrete hardstanding included reinforced concrete and mass concrete. Table 5 shows the type, thickness and location of each hardstanding type encountered across site.

Table 5-1 – Description of Hardstanding

Type	Depth range (m bgl)	Thickness range	Locations
Reinforced concrete	GL to 0.45	0.07 – 0.25	BH01, BH02a, BH04, BH05, BH06, BH07, BH08, CPT05a, CPT10, CPT10a, TP03, TP04, TP05, TP06, TP12, TP13
Mass concrete	GL – 1.65	0.10 – 0.40	BH03, BH08, BH08A, BH09, CPT03, CPT07, CPT09, CPT11, TP11, WS01, WS02, WS03, WS04, WS05, WS07
Brick surfacing	GL – 0.08	0.05 – 0.08	BH07, BH09, BH10, BH11, BH12, CPT15, CPT16, CPT17, TP07, WS08
Brickwork structures*	0.45 – 1.60	0.2 – 0.9	TP05, TP08
Tarmacadam	GL – 0.35	0.06 – 0.35	CPT08, CPT17, TP05, WS06

* likely associated with historical terraced residential buildings

6.1.1.2. Granular

Granular Made Ground was encountered within all locations across site. It was recorded from 0.05m bgl in WS08, to a maximum depth of 1.8m bgl (maximum thickness of 1.74m). The granular Made Ground across site was mostly homogenous in composition and generally fell into the two main descriptions in Table 6-2.

Table 6-2 - Description of granular Made Ground

Made Ground Type	Description
1	Orangish brown, sandy, slightly clayey, sometimes silty very angular to rounded, fine to coarse GRAVEL of sandstone and concrete.
2	Yellowish/orangish brown gravelly, slightly clayey, fine to coarse SAND.

The majority of granular Made Ground on site was encountered directly beneath the existing concrete floor slabs. The material is considered to be fill that was placed across the former site when establishing site levels and subbase to the slabs.

6.1.1.3. Cohesive

Cohesive Made Ground was also encountered within all locations on site. The material was encountered from 0.2m bgl (in TP09), to a maximum depth of 3.5m bgl (maximum thickness of 2.8m). The cohesive Made Ground was broadly described as soft to stiff grey/black/brown slightly sandy, slightly gravelly CLAY.

The gravel within the cohesive Made Ground commonly contained all, or combination of: brick, tarmacadam, ash, cement, concrete, ceramic, coal, shale, mudstone, siltstone, sandstone, limestone.

A strong hydrocarbon odour was also noted within TP01 & TP08; situated on the western side of the site.

6.1.1.4. Notable observations

Obstructions and possible contamination were identified within particular locations during the recent investigation; these observations are presented in Table 6-3.

Table 6-3 - Notable observations within exploratory holes

Location	Depth of observation (m bgl)	Observation
BH03	6.90 – 7.26	Large boulder (~0.35m in diameter) of sandstone resulting in termination of cable percussive drilling and switching to rotary.
TP01	1.50 – 1.80	Hydrocarbon smell noted within black organic clay.
BH08 / TP11	1.65	Concrete obstruction encountered in BH08 where the hole terminated. TP11 excavated over footprint which found a narrow strip foundation
TP05	0.8 – 1.0	Hydrocarbon smell noted within black organic clay.
	1.4 – 1.60	Sub-horizontal red brick and grey flag structure in trial pit, hole terminated due to rising water.
TP08	1.80	Hydrocarbon smell noted within black organic clay.
TP10	0.45 – 1.35	Vertical red brick structure (wall) within the trial pit, likely part of the historical residential buildings.

6.1.2. Superficial Deposits

6.1.2.1. Glacial Till

Glacial Till was encountered directly beneath the Made Ground. The Glacial Till comprised both cohesive and granular constituents. This unit directly overlies the sandstone bedrock of the Chester Formation (Sherwood Sandstone Group). Cohesive Glacial Till was generally encountered directly below Made Ground, whereas granular Glacial Till was not encountered until 4.2m bgl.

6.1.2.1.1. Cohesive Glacial Till

Cohesive Glacial Till was the most abundant constituent within the Glacial Till across site and was generally described as a firm to very stiff dark brown slightly gravelly slightly sandy, slightly silty CLAY with occasional cobbles. Gravel and cobbles included mudstone, siltstone, sandstone, limestone, quartz with fragments of coal. This material directly underlies the Made Ground and was encountered between 0.3m bgl and 26.50m bgl

6.1.2.1.2. Granular Glacial Till

Granular Glacial Till was recorded in all boreholes and CPT locations (except for CPT06), and was absent in all of the window sample and trial pit holes. The material was encountered as bands of varying thicknesses between 4.4m bgl (CPT10a) and 29.5m bgl (BH11). A maximum thickness of 7.20m (BH02a) was recorded for this material. The granular Glacial Till was generally described as either sand or gravel as detailed in Table 6-4.

Table 6-4 - Description of granular Glacial Till

Granular Glacial Till	Description
1	Medium dense to very dense, orangish/dark brown, sandy slightly silty slightly clayey, very angular to well rounded, fine to coarse GRAVEL. Gravel is of mixed lithologies including sandstone, siltstone, mudstone and limestone.
2	Medium dense to very dense, orangish/dark brown, gravelly slightly silty slightly clayey fine to coarse SAND. Gravel is very angular to well rounded, fine to coarse, of mixed lithologies including sandstone, siltstone, mudstone and limestone.

6.1.3. Bedrock

6.1.3.1. Chester Formation (Sherwood Sandstone Group)

Sandstone bedrock of the Chester Formation was encountered within all boreholes during the recent investigation. The bedrock profile generally comprised 1-2m of completely weathered rock (recovered as fine to medium sand) above less weathered rock (recovered as intact sandstone). The intact rock beneath the weathered zone was generally described as extremely weak to weak reddish brown fine to medium sandstone (UCS testing on the bedrock samples represent a strength of very weak to weak).

The Chester Formation was encountered from a depth of between 24.4m to 29.5m bgl and was proven to a maximum depth of 40.5mbgl (10m thickness). The full thickness of the sandstone unit was not proven (BGS lexicon [16] suggests that this formation can exceed 200m thick).

A drawing showing the depth to bedrock across the site is provided in Appendix A.

6.1.4. Ground conditions summary

A summary of the ground conditions is presented in Table 6-5.

Table 6-5 - Ground conditions summary

Bedrock/ Superficial	Geological Unit	Depths		Elevations		Thickness proven (m)	Geological description
		Min depth from (m bgl)	*Max depth to (m bgl)*	*Max elevation from (m AOD)*	*Min elevation to (m AOD)*		
Superficial	Hardstanding	Ground level	1.65	49.55	45.84	0.05 – 0.40	As Table 5-1: Hardstanding comprised either; reinforced concrete, mass concrete, red brick surfacing or tarmacadam.
	Made Ground – Granular	Ground level	1.80	49.49	44.96	0.05 – 1.30	As Table 6-2: Orangish brown, sandy, slightly clayey, sometimes silty very angular to rounded, fine to coarse GRAVEL of SANDSTONE. Yellowish/orangish brown gravelly, slightly clayey, fine to coarse SAND.
	Made Ground - Cohesive	Ground level	3.50	48.91	45.72	0.15 – 2.80	Soft to stiff grey/black/brown slightly sandy, slightly gravelly CLAY.
	Glacial Till – Cohesive	0.30	26.50	48.58	21.09	0.40 – 20.30	Firm to very stiff dark brown slightly gravelly slightly sandy, slightly silty CLAY with occasional cobbles.
	Glacial Till – Granular	4.2	29.5	42.68	19.08	0.01 – 7.20	Medium dense to very dense dark brown (sometimes orangish / reddish) slightly clayey sandy GRAVEL / gravelly SAND.
Bedrock	Completely weathered sandstone: (Chester Formation)	24.50	29.20	24.63	17.99	4.00	Reddish brown fine to medium sand.
	Sandstone (Chester Formation)	24.70	40.50	23.26	7.58	10.00	Extremely weak to weak reddish brown fine to medium grained sandstone.

6.1.5. Groundwater recorded during the 2023 ground investigation.

Groundwater strikes encountered during the recent investigation is summarised in Table 6-6.

Table 6-6 - Summary of groundwater strikes during the 2023 ground investigation.

Exploratory hole	Depth of strike (m bgl)	Deposit	Water level after 20 min (m bgl) (Potentiometric surface)	Total rise in 20 mins (m)
Groundwater Strikes				
BH10	6.00	Glacial Till	6.70	-0.70
WS05	1.30	Made Ground	1.30	0.00
WS07	0.65	Made Ground	0.60	0.00
WS08	4.20	Glacial Till	4.20	0.00
TP05	1.80	Made Ground	1.20	0.60
TP06	0.80	Made Ground	0.80	0.00
TP12	0.55	Made Ground	0.50	0.00
CPT12	0.58	Made Ground	0.58	0.00
CPT13	0.90	Made Ground	0.90	0.00
CPT15	0.54	Made Ground	0.54	0.00
"Seepage" Strikes				
BH01	23.5	Glacial Till	n/a	n/a
BH05	0.50	Made Ground	n/a	n/a
BH09	0.65	Made Ground	n/a	n/a
TP02	2.60	Made Ground	n/a	n/a

6.1.6. Groundwater levels and flow direction

Groundwater levels have been monitored on a total of six occasions during the monitoring regime by a Structural Soils engineer. Although eight monitoring visits have been undertaken the maximum number of readings for a single borehole is six, not all boreholes were monitored on all monitoring visits. The groundwater levels recorded are summarised in Table 6-6.

Table 6-7 - Summary of groundwater levels during Structural Soils Ltd monitoring rounds

Exploratory hole	Well screen range (m bgl)	Screened Deposits	Water Depth																	
			19/05/2023		08/06/2023		20/06/2023		03/07/2023		19/07/2023		01/08/2023		11/08/2023		24/08/2023		11/09/2023	
			(m bgl)	(m AOD)	(m bgl)	(m AOD)	(m bgl)	(m AOD)	(m bgl)	(m AOD)	(m bgl)	(m AOD)	(m bgl)	(m AOD)	(m bgl)	(m AOD)	(m bgl)	(m AOD)	(m bgl)	(m AOD)
BH06	2.00 to 4.00	Made Ground	1.29	45.80	2.12	44.97	1.72	45.37	2.25	44.84	1.92	45.17	1.73	45.36	-		-		-	
BH09	0.50 to 1.50	Made Ground	0.19	49.03	0.55	48.67	0.28	48.94	0.49	48.73	0.25	48.97	1.52	47.70	-		-		-	
WS02	0.50 to 2.00	Made Ground	1.19	45.89	1.23	45.85	1.04	46.04	1.21	45.87	1.19	45.89	1.12	45.96	-		-		-	
BH05	0.50 to 2.50	Made Ground & Glacial Till	0.83	48.25	1.45	47.63	1.40	47.68	1.39	47.69	1.36	47.72	1.32	47.76	-	-	-			
BH07	0.50 to 2.00	Made Ground & Glacial Till	0.63	48.61	0.80	48.44		0.78	48.46	0.76	48.48	0.71	48.53	0.66	48.58	-		-		-
WS03	0.50 to 2.00	Made Ground & Glacial Till	0.51	47.55	-			0.40	47.66	0.51	47.55	0.66	47.40	0.71	47.35	-		-		-
WS05	1.00 to 3.00	Made Ground & Glacial Till	-		-			-		-		1.95	45.17	1.88	45.24	1.93	45.19	2.00	45.12	1.99	45.13
BH02a	2.00 to 4.00	Glacial Till	2.82	46.14	-			1.46	47.50	0.41	48.55	0.68	48.28	2.04	46.92	-		-		-
BH04	2.00 to 5.00	Glacial Till	2.71	44.38	1.14	45.95		0.97	46.12	0.85	46.24	0.94	46.15	1.01	46.08	-		-		-
BH12	3.00 to 6.00	Glacial Till	4.50	43.58	1.57	46.51	1.45	46.63		0.79	47.29	0.99	47.09	0.86	47.22	-		-		-
WS01	1.00 to 3.00	Glacial Till	2.55	46.54	2.34	46.75	1.64	47.45		2.48	46.61	2.15	46.94	2.00	47.09	-		-		-
WS04	2.00 to 5.00	Glacial Till	1.85	47.23	2.77	46.31	1.85	47.23		1.88	47.20	1.97	47.11	-	-	-				-
WS06	2.00 to 5.00	Glacial Till	-		-		1.54	46.38		1.67	46.25	1.54	46.38	1.51	46.41	1.54	46.38	1.55	46.37	1.55	46.37
WS07	1.00 to 1.50	Glacial Till	-		-			0.66	48.37	0.64	48.39	0.61	48.42	0.59	48.44	0.65	48.38	0.64	48.39	0.63	48.40
WS08	3.00 to 5.00	Glacial Till	-		-		1.36	47.97		1.41	47.92	1.37	47.96	1.34	47.99	1.28	48.05	1.41	47.92	1.38	47.95
BH01	29.50 to 38.50	Sandstone	20.65	28.48	23.29	25.84	23.20	25.93		23.12	26.01	23.36	25.77	23.04	26.09	-		-		-	
BH03	26.50 to 35.50	Sandstone	20.30	26.81	22.28	24.83	20.99	26.12		13.29	33.82	18.33	28.78	21.09	26.02	-		-		-	
BH08a	31.00 to 40.00	Sandstone	23.56	25.51	23.48	25.59		12.27	36.80	23.26	25.81	21.91	27.16	22.80	26.27	-		-		-	
BH10	29.00 to 38.00	Sandstone	-		21.15	25.49	21.08	25.56		21.08	25.56	21.09	25.55	20.95	25.69	-		-		-	
BH11	30.50 to 39.50	Sandstone	23.38	25.41	23.30	25.49	23.25	25.54		23.24	25.55	23.29	25.50	23.00	25.79	-		-		-	

- = not monitored

Based on water level data obtained during excavation/drilling and subsequent monitoring visits, the following hydrogeological regime is considered likely to be present:

- Shallow perched groundwater encountered at the base of the Made Ground and top of the superficial deposits;
- Groundwater within the superficial deposits (Glacial Till). Groundwater levels may indicate that a consistent groundwater body is present within the superficial deposits encountered at the site between 46 and 48 m AOD. However, this may be influenced by the proportions of cohesive and granular superficial material encountered;
- Groundwater within Bedrock. Groundwater was measured consistently above the response zone in the wells installed within bedrock, which may be indicative of sub-artesian conditions within the rock aquifer.
- Based on groundwater levels encountered, groundwater flow within the sandstone bedrock is indicated to be towards the southwest, towards the River Irwell.
- As stated in the e3p report “Canals in this area are known to contribute to shallow groundwater through leakage”.

6.2. Ground Gas Monitoring Results

A total of six rounds of ground gas monitoring have been undertaken by a Structural Soils Engineer from the installed monitoring wells. Methane, carbon dioxide, carbon monoxide, hydrogen sulphide, oxygen and gas flow rate were recorded along with groundwater levels. The atmospheric pressure at the site ranged from 995 to 1023 mb during the monitoring period. The monitoring dates and the atmospheric pressure trends in the days prior to the visits, together with the pressure measured during the visits are detailed in Table 5-8 below.

Table 6-8 - Atmospheric pressure conditions during ground gas monitoring regime

Monitoring Round	Date	Pressure (mb)	Trend*	Locations monitored
1	19/05/2023	1023	Fluctuating/falling	BH01, BH02a, BH03, BH04, BH05, BH06, BH07, BH09, BH10, BH11, BH12, WS01, WS02, WS03, WS04
2	08/06/2023	1017	Fluctuating/falling	BH01, BH02a, BH03, BH04, BH05, BH06, BH07, BH08a, BH09, BH10, BH11, BH12, WS01, WS02, WS03, WS04
3	20/06/2023	1004	Falling	BH01, BH02a, BH03, BH04, BH05, BH06, BH07, BH08a, BH09, BH10, BH11, BH12, WS01, WS02, WS03, WS04, WS06, WS07, WS08
4	03/07/2023	1003	Falling	BH01, BH02a, BH03, BH04, BH05, BH06, BH07, BH08a, BH09, BH10, BH11, BH12, WS01, WS02, WS03, WS04, WS06, WS07, WS08
5	19/07/2023	1009	Rising	BH01, BH02a, BH03, BH04, BH05, BH06, BH07, BH08a, BH09, BH10, BH11, BH12, WS01, WS02, WS03, WS04, WS05, WS06, WS07, WS08
6	01/08/2023	995	Falling	BH01, BH02a, BH03, BH04, BH05, BH06, BH07, BH08a, BH09, BH10, BH11, BH12, WS01, WS02, WS03, WS04, WS05, WS06, WS07, WS08
7	11/08/2023	1010	Fluctuating	WS05, WS06, WS07, WS08
8	24/08/2023	1015	Fluctuating	WS05, WS06, WS07, WS08
9	11/09/2023	1007	Falling	WS05, WS06, WS07, WS08

*Taken from various online sources

The monitoring results are summarised in Table 5-9, with maximum or minimum concentration values and steady flows taken from across the whole monitoring period presented. A ground gas risk assessment is presented within Section 7.3.

Table 6-9 - Summary of ground gas results from the Structural Soils monitoring

Exploratory Hole	Flow (l/hr)		Methane (% v/v)		Carbon Dioxide (% v/v)		Oxygen (% v/v)		Max hydrogen sulphide (ppm)	Max carbon monoxide (ppm)	Deposits Screened	Response Zone flooded? (no. visits)
	Max	Max steady	Max	Max steady	Max	Max steady	Min	Min steady				
BH06	0.40	0.40	<0.10*	<0.10*	0.60	0.60	15.0	15.30	0	8	Made Ground	Yes (4/6)
BH09	0.20	0.20	35.40	34.70	0.10	<0.10*	0.20	0.50	1	82	Made Ground	Yes (4/6)
WS02	0.10	0.10	<0.10*	<0.10*	4.00	4.00	14.30	14.30	0	5	Made Ground	No
BH05	0.80	0.80	<0.10*	<0.10*	4.40	4.40	0.20	0.20	0	3	Made Ground & Glacial Till	No
BH07	0.30	0.30	0.10	<0.10*	0.20	0.20	20.00	20.00	0	14	Made Ground & Glacial Till	No
WS03	0.90	0.90	<0.10*	<0.10*	0.50	0.30	5.00	5.00	0	10	Made Ground & Glacial Till	Yes (1/6)
WS05	0.30	0.30	<0.10*	<0.10*	7.30	7.30	3.10	3.10	1	1	Made Ground & Glacial Till	No
BH02a	0.60	0.60	<0.10*	<0.10*	0.50	0.50	19.00	19.00	1	19	Glacial Till	Yes (3/6)
BH04	0.70	0.70	<0.10*	<0.10*	3.20	3.20	1.50	1.50	1	6	Glacial Till	Yes (5/6)
BH12	0.20	0.20	0.10	<0.10*	1.90	1.90	18.70	18.70	0	79	Glacial Till	Yes (5/6)
WS01	0.10	0.10	2.70	<0.10*	0.90	0.80	19.50	19.50	1	2	Glacial Till	No
WS04	0.60	0.60	<0.10*	<0.10*	0.70	0.50	17.10	18.40	0	7	Glacial Till	Yes (4/6)
WS06	0.30	0.30	2.10	2.10	10.80	10.80	1.60	1.60	0	2	Glacial Till	Yes (7/7)
WS07	0.30	0.30	0.10	0.10	1.20	1.10	17.80	18.00	0	3	Glacial Till	Yes (7/7)
WS08	0.20	0.20	0.10	<0.10*	1.30	1.30	13.40	13.40	0	11	Glacial Till	Yes (7/7)
BH01	24.30	24.30	<0.10*	<0.10*	0.50	0.20	19.10	19.10	6	9	Sandstone	Yes (6/6)
BH03	3.20	3.20	<0.10*	<0.10*	0.40	0.10	19.70	19.90	0	11	Sandstone	Yes (6/6)
BH08a	0.40	0.40	<0.10*	<0.10*	2.20	2.20	13.90	13.90	1	57	Sandstone	Yes (6/6)
BH10	0.20	0.20	0.10	<0.10*	5.80	5.80	5.10	5.10	0	8	Sandstone	Yes (6/6)
BH11	0.90	0.90	0.40	<0.10*	0.10	0.10	18.90	18.90	1	440+ (reading off the scale of device measurement)	Sandstone	Yes (6/6)

6.3. Olfactory and Visual Records of Contamination

6.3.1. Soils

All exploratory holes across the site encountered Made Ground which included brick, asphalt, cement, concrete, clinker, tile, glass, plastics, coal, mudstone, siltstone, sandstone, limestone. A summary of the other records of contamination observed during ground investigation undertaken at the site are summarised in Table 5-10 below.

Table 6-10 – Summary of visual/olfactory records of contamination

Exploratory Holes	Depth	Strata	Record of contamination
TP01	1.50 – 1.80	Made Ground	Moderate hydrocarbon odour with ceramics and bones.
TP05	0.80 – 1.00	Made Ground	Slight hydrocarbon odour
TP08	1.80	Made Ground	Slight hydrocarbon odour

No other visual or olfactory signs of contamination were recorded during the ground investigation.

6.3.2. Soil Vapour Headspace Results for Soils

Photo-ionisation detector (PID) screening for volatile organic compounds (VOCs) was conducted on environmental soil samples during the ground investigation. The photo-ionisation (PID) tests conducted in the field did not record VOC levels of concern, with concentrations consistently measured below the limit of detection (<0.1 ppm). The highest reading, 0.80 ppm, was recorded within TP01 at 1.80 m bgl where a moderate hydrocarbon odour was also noted.

6.4. In-situ Geotechnical Testing

6.4.1. Standard Penetration Tests (SPT)

A total of 224 Standard Penetration Tests (SPTs) were performed at various depth intervals across the site. A summary of the SPT results for the various strata is given in Table 6-11. A plot of SPT 'N60' value against depth is provided in Appendix E.

Table 6-11 – Standard Penetration Test Data

Strata	**No of Tests[1]**	**SPT 'N60' Value[2]**			
		Minimum	**Maximum**	**Mean average**	**Characteristic**
Made Ground (Cohesive)	6	14	30	21	15
Made Ground (Granular)	3 (1) {1}	7	71	30	30
Glacial Till (Cohesive)[3]	141 (23) {15}	5	79	33	0-5m bgl: 15 5-15m bgl: 15 + 3z 15+m bgl: 45
Glacial Till (Granular)	49 (38) {24}	41	240	81	75
Completely Weathered Bedrock (Chester Formation) [4]	7 (6) {1}	30	>50	>50	*n/a*
Bedrock (Chester Formation)[4]	10 (9) {2}	>50	>50	>50	n/a

Notes:
[1]Number in cell reflects total number of tests including any refusals, total number of refused tests are found in (…), total number of refusals which could be extrapolated are found in {…}
[2]SPT N60 values include the extrapolated values (N60 > 50) where possible, from tests which refused. Results which did not have enough data to be extrapolated were recorded to have an N60 value = 50.
[3]Removed 3 extrapolated results (N60 = 94, 144 and 243) as anomalies.
[4]SPTs were carried out within the bedrock formation to provide indicative information on the weathering profile.

Z – Increase per metre depth

The general trend of the SPT plots show increasing SPT N value with depth.

6.4.2. Cone Penetration Testing (CPT)

A total of 22 individual cone penetration tests (CPT) were undertaken across the site at depths ranging between 0.15m and 16.00m bgl.

The testing was carried out by In Situ Testing Ltd in accordance with ISO 22476-1:2022. The results with a description of the testing methodology are included in their report, included in Appendix C. In-situ strength parameters are presented in Section 7.1.5 of this report.

6.5. Laboratory soil and rock testing

The following laboratory testing was undertaken in accordance with BS 1377: Part 2: 1990. Detailed information and the full results of each test can be found within the SSL ground investigation factual report [2]. The data below summarises the results.

6.5.1. Moisture content

A total of 112 moisture content tests have been conducted as part of the ground investigation. A summary of the results can be seen in Table 6-12. A plot of moisture content against depth is given in Appendix E.

Table 6-12 - Moisture content of strata from laboratory data

Strata	No of Tests	Moisture Content (%)		
		Minimum	Maximum	Mean average
Made Ground (Cohesive)	11	16.0	54.5	25.8
Glacial Till (Cohesive)	99	6.6	40.0	18.2
Glacial Till (Granular)	1	12.3		
Completely Weathered Bedrock (Chester Formation)	1	22.1		

6.5.2. Atterberg Limits

A total of 101 Atterberg limit tests have been conducted as part of the ground investigation. A summary of the results of these tests is presented in Table 6-13. A plot showing plasticity index against depth is presented in Appendix E.

Table 6-13 - Atterberg Limits

Stratum	No of Tests	Liquid Limit %			Plastic Limit %			Plasticity Index %		
		Min	Max	Mean Av	Min	Max	Mean Av	Min	Max	Mean Av
Made Ground (Cohesive)	8	34	55	43.3	13	25	19.3	18	33	24
Glacial Till (Cohesive)	93	19	59	37.7	11	29	17.4	6	39	20.3

6.5.3. Strength Tests

A total of 32 single stage unconsolidated, undrained (QU) triaxial tests were undertaken as part of the ground investigation. A summary of the results is provided in Table 6-14.

Table 6-14 - Undrained shear strength from triaxial tests

	No of Tests	Undrained Shear Strength (kPa)		
		Minimum	Maximum	Mean average
Glacial Till (Cohesive)	32	24	259	110

6.5.4. Compaction Tests

A total of 13 compaction tests have been conducted as part of ground investigation. A summary of the results is presented in Table 6-15.

Table 6-15 - Maximum Dry Density and Optimum Moisture Content

	No of Tests	Maximum Dry Density (Mg/m^3)			Optimum Moisture Content (%)		
		Min.	Max.	Mean Av.	Min.	Max.	Mean Av.
Glacial Till (Cohesive)	10	1.62	1.81	1.69	16	23	21.2
Made Ground (Granular)	2	1.62	1.63	1.62	11	21	16
Made Ground (Cohesive)	1	2.01			11		

6.5.5. Moisture Condition Value / Moisture Content Relationship

A total of 7 Moisture Condition Value / Moisture Content Relationship tests were carried out to supplement compaction testing and provide further information on the dry density / moisture content relationship.

6.5.6. Particle Size Distribution

A total of 11 particle size distribution (PSD) tests were undertaken. A summary of the PSD test plots is presented in Appendix E.

6.5.7. Rock strength testing

A total of 45 Uniaxial Compression Strength tests (of which 7 included deformation analysis) and 76 Point Load tests were carried out on samples of rock obtained from all boreholes across site. The results of the testing are presented in Table 6-16 and Table 6-17.

Discussion of Young's Modulus values is found in Section 7.1.2.2. The results of the deformation analysis broadly indicate a trend of low stiffness (E') at low axial stress, and an increase in stiffness as axial stress increases.

Table 6-16 - UCS test results

	No of Tests	UCS (MPa)		
		Min.	Max.	Mean av.
Bedrock (Chester Formation)	45	1.9	10.7	6.0

Table 6-17 - Point Load test results

	No of Tests	Point load strength index Is(50) (MPa)		
		Min.	Max.	Mean av.
Bedrock (Chester Formation)	76	0.01	4.32	0.60

Note: A suitable multiplication factor can usually be applied to the point load test results to calculate an equivalent UCS value. Given the low point load strength index values Is(50) returned for these samples, applying a recommended correlation factor from published literature would result in an unrealistically low equivalent UCS value and they are therefore not considered further in this report.

6.5.8. Rock coring information

The Total Core Recovery (TCR), Solid Core Recovery (SCR) and Rock Quality Designation (RQD) values are presented in Table 6-18. The RQD of the rock typically increases with depth.

Table 6-18 - TCR, SCR and RQD summary for bedrock

	Total Core Recovery (TCR)	Solid Core Recovery (SCR)	Rock Quality Designation (RQD)
Mean value (%)	96	88	75
Median value (%)	100	95.5	83

7. Material Properties

The following section provides a summary of geotechnical parameters and concrete design sulphate classification derived from laboratory and in-situ testing. The geotechnical testing data from the e3p ground investigation was not supplied to Atkins in AGS format, however Atkins have reviewed the results in the e3p report [1] and consider them to be in agreement with the results from the recent investigation. Where the results differ significantly, a comment has been in the relevant sub-section.

7.1. Geotechnical Properties

Characteristic geotechnical parameters for each stratum are summarised in Table 7-9 and Table 7-10. These have been derived from in-situ tests, laboratory tests, published literature and soil descriptions; the methodology used to derive these are outlined in the sub-sections below and supported by plots contained within Appendix E.

7.1.1. Unit Weight

Characteristic unit weight values were obtained from in-situ testing, laboratory testing, and suggested values within Figures 1 and 2 in BS8002 with additional information gathered from Table 2.14 in Barnes (2010) [17].

Table 7-1 – Bulk Unit Weight and Dry Unit Weight

Strata	Bulk Unit Weight γ (kN/m^3)I	Dry Unit Weight γ_d (kN/m^3)
Made Ground (Cohesive)	17-19	16-18
Made Ground (Granular)	17-19	16-18
Glacial Till (Cohesive)	18-20	17-19
Glacial Till (Granular)	19-21	18-20
Completely Weathered Bedrock	19-21	18-20
Bedrock	21-23	19-21

7.1.2. Stiffness

7.1.2.1. Superficial Material and Completely Weathered Bedrock (Geotechnical Soils)

Values for drained Young's modulus (E') have been derived from the SPT data using correlations such as those provided in CIRIA C143 [18] which for granular strata is calculated based on the following equation E'/N_{60} = 2, and for cohesive strata E' (MN/m^2) = 0.9 x N_{60} (based on Stroud, 1989) [19]. These multipliers can be increased by the designer during detailed design if appropriate.

Values of undrained Young's modulus (Eu) have been derived from SPT data using CIRIA C143 [18]. Assuming a Poisson's ratio of 0.5, a conservative relationship of E_u/N_{60} = 1.0 is established.

Stiffness values for the bedrock are discussed in section 7.1.2.2. The results are summarised in Table 7-2.

Table 7-2 - Summary of SPT N60' E' and Eu

Strata	Characteristic SPT N_{60}	Drained Young's modulus range, E' (MPa)	Undrained Young's modulus range, E_u (MPa)
Made Ground (Cohesive)	15	13.5	15
Made Ground (Granular)	30[1]	60	N/A
Glacial Till (Cohesive)	0-5m bgl: 15 5-15m bgl: 15+3z 15+m bgl: 45	0-5m bgl: 13.5 5-15m bgl: 13.5+2.7z 15+m bgl: 40.5	0-5m bgl: 15 5-15m bgl: 15+3z 15+m bgl: 45
Glacial Till (Granular)	50	100	N/A

[1]Based on limited SPT data.

Z – Increase per metre

7.1.2.2. Intact Bedrock

A total of 7 uniaxial compressive strength tests with deformation analysis were undertaken on the sandstone bedrock (Chester Formation) to directly measure the Youngs Modulus (E') and Poisson's Ratio.

The International Society of Rock Mechanics [20] suggests three standard methods for the determination of the elastic modulus (Youngs Modulus). They are as follows:

1. Tangent Young's modulus E_{tan} – at a fixed percentage of ultimate stress. This is defined as the slope of a line tangent to the stress-strain curve at a fixed percentage of the ultimate strength. [21]

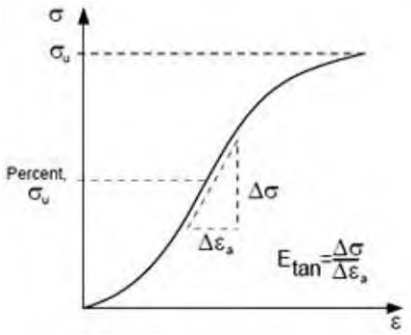


Figure 7-1 - Tangent Young's Modulus, *E_{tan}*.

2. Average Young's modulus E_{av} – of the straight-line part of a curve. The elastic modulus is defined as the slope of the straight-line part of the stress-strain curve for the given test. [21]

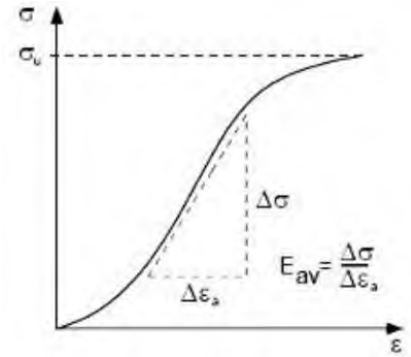


Figure 7-2 - Average Young's modulus *E_{av}*

3. Secant Young's modulus E_{sec} – at a fixed percentage of ultimate stress. It is defined as the slope of the line from the origin (usually point (0; 0)) to some fixed percentage of ultimate strength, usually 50%. [21]

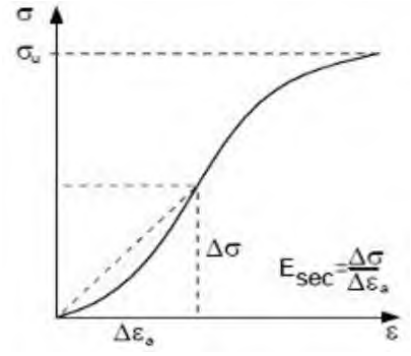


Figure 7-3 - Secant Young's modulus *E_{sec}*

The laboratory testing returned results for E_{sec} and E_{tan}. The results differ significantly, with values for E_{sec} commonly less than half that of $E_{tan.}$

The results indicate that at lower stresses (generally <2.0 MPa), the stress strain relationship was non-linear and the samples returned low stiffness values and high strain rates. As stress increased (generally between 2.0MPa to 10MPa), the stress-strain relationship became near linear and the stiffness of the rock was greater. As discussed by Małkowski [21], this behaviour may be a result of intergranular displacement of the weak rock at low stresses, which stabilises as stress is increased. This response to loading should be carefully considered by the designer and an appropriate Youngs Modulus value chosen depending on the anticipated stress conditions. The results are summarised in Table 7-3 - Summary of Bedrock Stiffness Parameters.

Table 7-3 - Summary of Bedrock Stiffness Parameters

Strata	**Drained Young's modulus range, E' (GPa)**		**Poisson's Ratio (Dimensionless)**
Sandstone bedrock (Chester Formation)	Tangent Modulus, E_{tan} at <2.0MPa	Tangent Modulus, E_{tan} *at >2.0MPa*	0.118 – 0.263
	0.5 – 1.5	*1.5 – 5.5*	

The stiffnesses presented above are generally lower than published literature values, as Tomlinson (2001) [22] presents an average Young's Modulus of intact sandstone rock of 6.4 – 7.6 GPa, however these values do not specifically reflect the Chester Formation. This may suggest that a higher stiffness value for the sandstone could be adopted, however any derived value should consider all available geotechnical laboratory testing data, discontinuity data and anticipated stress conditions.

7.1.3. Compressibility

A total of 7 oedometer tests were carried out within the cohesive Glacial Till. The coefficient of volume compressibility (m_v) derived from oedometer testing is presented in Appendix E in graphical format. Due to the complex nature of its variability with depth, a single design parameter or relationship with depth has not been determined.

7.1.4. Angle of shearing resistance

7.1.4.1. Granular Material

The peak angle of shearing resistance (Φ') for granular materials has been derived from a relationship with SPT $\boldsymbol{N_{60}}$ using the equation from Wolff, 1989 [23]:

$$\varphi' = 27.1 + 0.3 \times N_{60} - 0.00054\,[N_{60}]^2$$

These values have been compared with guidance in BS 8004:2015 [24] for the derivation of φ' and shown to have suitable correlation. A representative angle of shearing resistance for each stratum has been calculated and presented in Table 7-4.

Table 7-4 - Summary of Peak Angle of Shearing Resistance of Granular Superficial Material

Strata	**Characteristic peak angle of shearing resistance range (°)**
Made Ground (Granular)	29 – 30[2]
Glacial Till (Granular)	38 – 40
Completely Weathered Sandstone Bedrock (Chester Formation)	35 - 40[3]

[1]Due to limitations within the calculation from Wolff, the range provided assumes a maximum SPT N60 value of 50, as extrapolated values of >50 result in unrealistic values for angle of shearing resistance.

[2]Based on limited SPT data.

[3]Based on guidance in BS 8004:2015.

7.1.4.2. Cohesive Material

The critical angle of shearing resistance (Φ) for cohesive materials has been derived from a relationship with the plasticity index (I_p) of the stratum stated as equation 7 in BS8002:

$$\varphi' = 42 - 12.5 \times log_{10} I_p$$

The peak angle of shearing resistance can be calculated by accounting for the soil dilatancy (adding 0-4° depending on over-consolidation). A soil dilatancy of 2° has been assumed for Glacial Till. The critical and peak angles of shearing resistance calculated are listed in Table 7-3 below.

Table 7-5 - Angle of Shearing Resistance for Cohesive Material

Strata	Plasticity index range (%)	Critical angle of shearing resistance range (°)	Characteristic critical angle of shearing resistance (°)	Peak angle of shearing resistance range (°)	Characteristic peak angle of shearing resistance (°)
Made Ground (Cohesive)	18 – 33	23 - 26	24	23 - 26	24
Glacial Till (Cohesive)	6 - 39	22 - 32	26	24 – 34	28

Note: In calculating the peak angle of shearing resistance, a soil dilatancy of 2° has been assumed for the Glacial Till as it is an over-consolidated deposit.

7.1.5. Shear Strength

A total of 32 unconsolidated, undrained triaxial test were undertaken as part of the ground investigation. A summary of the tests is provided in Table 7-6.

Table 7-6 - Undrained Shear Strength from Triaxial Tests

Strata	Undrained Shear Strength *(kPa)*		
Glacial Till (Cohesive)	**Minimum**	**Maximum**	**Mean average**
	24	259	108

Additionally, an estimation of the undrained shear strength (c_u) of the cohesive material has been calculated using the Stroud and Stroud & Butler expression:

$$C_u = f_1 \times N_{60}$$

The value of f_1 in this equation is correlated from the plasticity index of the soil. The results obtained from the SPT tests are given in Table 7-7.

Table 7-7 - Undrained Shear Strength from SPTs

Strata	f_1	Characteristic SPT N_{60}	Undrained Shear Strength (kPa)
Made Ground (Cohesive)	4.5	15	67.5
Glacial Till (Cohesive)	4.5	0-5m bgl: 15 5-15m bgl: 15 + 3z 15+m bgl: 45	0-5m bgl: 67.5 5-15m bgl: 67.5 + 13.5z 15+m bgl: 202.5

Z – Increase per metre depth

A total of 22 cone penetration tests were undertaken as part of the ground investigation. A summary of the derived undrained shear strength (c_u) from tests is presented in Table 7-8.

Table 7-8 - Undrained shear strength from CPT tests

Strata	Min (kPa)*	Max (kPa)*	Characteristic value (kPa)
Glacial Till (Cohesive)	90	225	0-5m bgl: 100 5-15m bgl: 100 + 10z

Z – Increase per metre depth

7.1.6. Characteristic geotechnical properties

The characteristic geotechnical properties for the strata encountered are presented in Table 7-9 & Table 7-10.

Table 7-9 - Summary of Soil Characteristic Geotechnical Parameters

Parameter	Unit	Made Ground (Cohesive)	Made Ground (Granular)	Glacial Till (Cohesive)	Glacial Till (Granular)	Completely Weathered Sandstone
Unit Weight (γ_B)	kN/m^3	17-19	17-19	18-20	19-21	19-21
Peak angle of shearing resistance (φ)	° (degrees)	24	29	28	38	35
Undrained shear strength (C_u)	kPa	65[1]	n/a	0-5mbgl: 100 5-15mbgl: 100+10z 15-25m bgl: 200	n/a	*n/a*
Undrained elastic modulus (E_u)	MPa	15	n/a	0-5m bgl: 15 5-15m bgl: 15+3z 15+m bgl: 45	n/a	*n/a*
Drained elastic modulus (E')	MPa	13.5	60	0-5m bgl: 13.5 5-15m bgl: 13.5+2.7z 15+m bgl: 40.5	150	*n/a*

Z – Increase per metre depth

[1]Based on limited testing data

Table 7-10 - Summary of Bedrock Characteristic Geotechnical Parameters

Parameter	Unit	Sandstone (Chester Formation)
Unit Weight (γ_B)	kN/m^3	21-23
Uniaxial Compressive Strength (UCS)	MPa	4-6
Drained elastic modulus (E')	GPa	*See Section 7.1.2.2*
Poissons Ratio	n/a	0.2

7.2. Aggressive Chemical Environment for Concrete (ACEC)

A total of 41 soil samples were analysed for sulphates and pH Testing was conducted in accordance with BRE SD1 guidance [25]. The design sulphate and ACEC classifications have been determined in accordance with BRE SD1 for a brownfield site with mobile groundwater conditions.

Chemical analyses for pH and soluble sulphate content summarised below in Table 7-11 shows that the soils at the site generally meet Class DS-1, Aggressive Chemical Environment for Concrete Classification (ACEC) AC-1 in accordance with BRE Special Digest 1 (2005).

In the e3p ground investigation the soils at the site generally met Class DS-1, AC-1, however elevated sulphate concentrations meeting Class DS-2, AC-2 and DS2-AC3 were noted within the Made Ground deposits in WS125 and WS109 respectively.

Table 7-11 - Summary of the Geotechnical Chemistry Testing & BRE Classification

Strata	No. of tests	Water soluble sulphate, 2:1 water/soil extract (mg/l SO4)	Total potential sulphate (%)	pH	DS / AC Class
Made Ground (Cohesive)	7	11 - 151	0.02 – 0.05	8.78 – 9.22	DS-1 – AC-1
Made Ground (Granular)	3	13 - 90	0.02 – 0.06	8.65 – 12.20	DS-1 – AC-1*
Glacial Till (Cohesive)	30	14 - 207	0.01 – 0.02	8.05 – 9.32	DS-1 – AC-1
Glacial Till (Granular)	1	28	n/a	9.22	DS-1 – AC-1*

*based on a small sample size so may not be representative of the whole unit.

8. Generic Quantitative Risk Assessment

8.1. Human Health Risk Assessment

8.1.1. Introduction

A generic quantitative risk assessment (GQRA) has been carried out to assess the potential long-term risks to human health receptors in relation to the proposed development at the site and the identified key contaminants of concern. Given the potential pathways identified in the PCM, soils have been screened against generic assessment criteria based on future commercial end use. The GAC are derived following consideration of inhalation, ingestion and dermal contact with the soil/dust and inhalation of vapours originating from soils and groundwater.

8.1.2. Methodology

In order to identify potential contaminants of concern (CoCs), the soil analytical data has been screened against soil screening values (SSVs) or Category 4 Screening Levels (C4SLs) derived to be protective of chronic risks to human health.

Atkins has produced SSVs based on minimal toxicological risk [26] for a variety of standard land uses at 1% soil organic matter (SOM) (sand soil type) and 6% SOM (sandy loam soil type) using CLEA v1.071 in accordance with Environment Agency guidance [27].

Based on the ratio of genotoxic PAHs to benzo(a)pyrene, the surrogate marker approach for genotoxic PAHs as set out in the C4SL Project Methodology (Contaminated Land: Application in Real Environments, 2014) has been adopted.

During the ground investigation, soil samples (34 in total) were analysed for organic matter. The laboratory data of the soil collected from the site indicates a geometric mean SOM of 1.29 %. Therefore, it is considered that the GAC for 1% is appropriate for use at the site.

For compounds arsenic, benzene, benzo(a)pyrene, cadmium and lead, the C4SL (based on a low level of toxicological concern) for the commercial land use at 1% SOM has been selected as the assessment criterion.

For all other constituents, where available, the SSV for commercial land use has been selected due to the proposed end-use use of the site as a commercial development.

Due to the nature of acute risk from cyanide, the SSV for cyanide has been based on the potential for an adult to ingest a bolus of soil contaminated with free cyanide.

Due to the nature of risk from asbestos an SSV cannot be derived using CLEA. Therefore, for generic quantitative risk assessment the limit of detection at the laboratory has been selected as the assessment criterion.

At the time of writing this report the SGV for mercury has been withdrawn and therefore the S4UL has been adopted[1].

8.1.3. Comparison of Soil Concentration Data with Generic Assessment Criteria

Thirty-four soil samples retrieved as part of the 2023 ground investigation were tested for a range of contaminants as detailed in Section 5.6.1. A full set of analytical results are included in Appendix D. These results were compared against the GAC outlined above. No exceedances of the human health assessment criteria were recorded within the samples analysed during the 2023 ground investigation.

A number of VOCs/SVOCs were recorded above the LOD where no human health GAC is available. These have been outlined in Table 7-1 below.

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Table 8-1 - VOCs/SVOCs recorded above the MDL with no GAC.

Determinand	LOD (mg/kg)	Maximum Concentration (mg/kg)	Location
Dibenzofuran	0.10	1.15	TP05 at 0.80 m bgl TP02 at 1.20 m bgl
Carbazole	0.10	0.536	TP05 at 0.80 m bgl TP02 at 1.20 m bgl
2-Methylnaphthalene	0.10	0.376	TP05 at 0.80 m bgl TP02 at 1.20 m bgl
Perylene	0.10	1.74	TP05 at 0.80 m bgl TP02 at 1.20 m bgl TP01 at 1.80 m bgl

Asbestos identification was scheduled on all soil samples analysed during the 2023 investigation, no positive identifications were recorded.

8.1.4. Human Health Risk Assessment Conclusions

Thirty-four soil samples were scheduled for chemical analysis. No exceedances of the human health screening criteria for a commercial land use were recorded.

Several VOC/SVOCs were recorded above the LOD where no GAC was available. Highest concentrations were consistently recorded within TP02 and TP05 located in the north and west of the site respectively. A slight hydrocarbon odour was noted within TP05 between 0.80 and 1.00 m bgl which coincides with the elevated VOC/SVOCs recorded. Samples collected from TP02 and TP05 were taken from Made Ground which included coal, which may be a potential source of the elevated concentrations. No elevated PID readings were recorded associated with either samples and it is unlikely that VOC/SVOCs will pose an unacceptable risk to human health for the proposed development.

Asbestos was not identified within any of the soil samples analysed as part of the ground investigation. However, based on the historical land uses and as Made Ground has been encountered on site, the potential presence of asbestos cannot be completely dismissed.

The proposed commercial development is likely to comprise of buildings and/or hardstanding with limited potential for landscaping. This is likely to limit the exposure of future site users to the underlying Made Ground.

8.2. Controlled Waters Risk Assessment

8.2.1. Introduction

The controlled waters GQRA has been undertaken to assess the potential risks posed to the identified controlled waters receptors from the migration of contaminants from potential on site sources. To assess the potential risks to the identified receptors, a comparison of soil-leachate and groundwater concentrations against pertinent Water Quality Standards (WQS) has been undertaken.

8.2.2. Methodology

In order to select the most appropriate WQS, the findings of the ground investigations need to be considered in relation to the controlled waters receptors. The ground investigation identified that the site is underlain by Glacial Till (Secondary Undifferentiated Aquifer) to depths of up to 30.00 m bgl. Sandstone Bedrock (Principal Aquifer) is encountered at depth across the site (approximately 25.00 m bgl).

Branches of the Ashton and Rochdale Canals are located in close proximity of the subject site (adjacent to the west). The e3p report indicates that these watercourses are managed and considered unlikely to be in continuity with shallow groundwater due to the nature of the underlying drift and likely presence of engineered channel structures (likely to be clay lined). However, the e3p report also states that canals in this area are known to contribute shallow groundwater through leakage.

The WQS for the controlled waters assessment are dependent on the nature of the receptor (as identified above). Due to the close vicinity of the Canals and Wharf and the presence of an underlying Principal Aquifer,

soil leachate and groundwater results will be screened against the Environment Quality Standards (EQS) and Drinking Water Standards (DWS).

Soil derived leachate tests give an indication of the concentrations at which contaminants might leach from soil into soil pore-water and thereby migrate to groundwater and thence to surface water.

Groundwater samples provide an indication of the groundwater quality and the contaminants that could migrate and discharge into surface water.

8.2.3. Results

8.2.3.1. Soil-Leachate

Eighteen soil samples ranging in depth from 0.30 to 1.80 m bgl were scheduled for soil-leachate analysis during the 2023 ground investigation. Samples consisted of 15 Made Ground and three superficial deposits (two from clay and one from sand). All soil samples scheduled for leachate analysis were collected from the unsaturated zone.

A GQRA screening of sample results has identified contaminants above both the EQS and DWS within soil derived leachate as summarised in Table 7-2.

Table 8-2 - Summary of soil leachate controlled waters exceedances

WQS	Constituent	Unit	LOD	GAC (mg/l)	No. of Samples	Max. Value	No. of Exceedances	Locations of Exceedances (Location of maximum value in **BOLD**)
DWS	pH	pH	0.01	6.5-9.5	18	11.63	2	**CPT14, 0.4m**; TP04, 0.3m
	Ammoniacal nitrogen	mg/l	0.065	0.39	18	6.667	7	TP08, 1m; **BH05, 0.8m**; TP02, 1.2m; TP01, 1.8m; BH07, 0.45m; TP04, 0.3m; BH02a, 1.2m
	Sulphate	mg/l	1	250	18	1540	2	**TP10, 1.2m**; WS02, 0.5m
	Cyanide (total)	mg/l	0.005	0.05	18	0.228	1	**TP10, 1.2m**
	Arsenic	mg/l	0.001	0.01	18	0.019	3	**BH06, 1m;** TP01, 1.8m; BH02a, 1.2m
	Chromium	mg/l	0.001	0.05	18	0.06	2	**TP05, 0.8m**; BH06, 1m
	Lead	mg/l	0.001	0.01	18	0.027	2	**TP08, 1m;** TP05, 0.8m
	Benzo(a)pyrene	mg/l	0.00002	0.00001	18	0.00003	2	**TP05, 0.8m**; TP07, 0.4m
EQS	pH	pH	0.01	6-9	18	11.63	3	BH06, 1m; **CPT14, 0.4m**; TP04, 0.3m
	Ammoniacal nitrogen	mg/l	0.065	0.2	18	6.667	7	TP08, 1m; **BH05, 0.8m;** TP02, 1.2m; TP01, 1.8m; BH07, 0.45m; TP04, 0.3m; BH02a, 1.2m
	Sulphate	mg/l	1	400	18	1540	2	**TP10, 1.2m**; WS02, 0.5m
	Phenol	mg/l	0.01	0.0077	18	0.03	1	**BH08, 0.6m**
	Copper	mg/l	0.004	0.001	18	0.047	7	TP08, 1m; TP05, 0.8m; BH06, 1m; TP01, 1.8m; **TP10, 1.2m**; CPT12, 0.36m; BH02a, 1.2m
	Lead	mg/l	0.001	0.0012	18	0.027	7	**TP08, 1m;** BH01, 0.5m; TP05, 0.8m; BH06, 1m; TP01, 1.8m; WS02, 0.5m; BH02a, 1.2m
	Mercury	mg/l	0.0001	0.00007	18	0.0001	1	**CPT14, 0.4m**
	Nickel	mg/l	0.002	0.004	18	0.008	1	**TP08, 1m**
	Vanadium	mg/l	0.001	0.02	18	0.042	1	**TP08, 1m**
	Zinc	mg/l	0.002	0.0123	18	0.024	1	**TP08, 1m**
	Benzo(a)pyrene	mg/l	0.00002	0.00000017	18	0.00003	2	**TP05, 0.8m;** TP07, 0.4m
	Fluoranthene	mg/l	0.00002	0.0000063	18	0.00007	7	TP08, 1m; BH01, 0.5m; BH08, 0.6m; TP05, 0.8m; **BH06, 1m;** TP02, 1.2m; TP01, 1.8m
	Aromatic TPH C10-C12	mg/l	0.01	0.01	18	0.015	1	**BH08, 0.6m**
	Aromatic TPH C12-C16	mg/l	0.01	0.01	18	0.014	2	**BH08, 0.6m;** TP01, 1.8m
	Aromatic TPH C16-C21	mg/l	0.01	0.01	18	0.018	2	**BH08, 0.6m;** TP01, 1.8m

Heavy metal (arsenic, chromium and lead), ammoniacal nitrogen, sulphate, cyanide and benzo(a)pyrene exceedances of the DWS are considered to be marginal (within the same or one order of magnitude as the DWS). DWS exceedances were generally limited to two or three locations, with the exception of ammoniacal nitrogen which recorded exceedances in seven locations, indicating that any potential contamination is unlikely to be widespread across the site and wider surrounding area.

Exceedances of the EQS were recorded for copper, lead, nickel and zinc. It should be noted that the EQS for copper, lead, zinc, manganese and nickel relate to the bioavailability of these metals. However, the test results for these metals relate to the dissolved concentrations.

Exceedances for mercury and vanadium are considered to be marginal (within the same or one order of magnitude of the EQS).

Three fractions of TPH recorded exceedances of the EQS within two locations, BH08 and TP01. A moderate hydrocarbon odour noted within the log for TP01 log coincides with the sample depth. No obvious source of potential contamination is recorded within the log for BH08, although the sample is collected from within the Made Ground. TPH exceedances are considered to be marginal and are within the same order of magnitude as both the (limit of detection) LOD and EQS.

PAH EQS exceedances for benzo(a)pyrene and fluoranthene are recorded in eight locations across the site. Recorded concentrations are within the same order of magnitude as the LOD for both contaminants. It should be noted that the EQS for both contaminants are considerably lower than the LOD.

Superficial deposits have been recorded to depths of up to 30.00 m bgl with cohesive deposits recording thicknesses of up to 20.30 m. The presence of cohesive deposits are likely to inhibit the vertical and lateral migration of leachable contaminants allowing more time for natural processes such as adsorption and biodegradation to reduce concentrations. However, granular deposits have also been recorded across the site with thicknesses varying between 0.01 m and 7.20 m. The granular Glacial Till across site was noted to be variable in both position and depth, indicating that the strata may not be connected, reducing the likelihood for lateral migration.

Made Ground across the site is likely to be excavated and removed from site during construction of the basement car park (to 5.00 m bgl). This is likely to remove a large amount of the source of potential leachable contamination. Also, the presence of hardstanding across the majority of the site is likely to limit the extent of infiltration reducing leaching potential.

There is the potential if piled foundations are utilised that new migration pathways could be created. The potential risk to groundwater from piles should be considered by the piling Contractor as part of their piling risk assessment (if piled foundations were needed).

Based on the above, it is considered unlikely that the contaminants recorded within the shallow soils would pose an unacceptable risk to controlled waters.

8.2.3.2. Groundwater

Nine groundwater samples were collected from the site on 20/21 June by a Structural Soils Engineer and scheduled for chemical analysis by Atkins. Groundwater samples were collected from wells which screen Made Ground (two), superficial deposits (four) or bedrock (three).

GQRA screening of sample results has identified contaminants above the EQS and DWS within groundwater samples.

Table 8-3 - Summary of 2019 Groundwater Controlled Waters Exceedances

WQS	Constituent	Unit	LOD	GAC (mg/l)	No. of Samples	Max. Value	No. of Exceedances	Locations of Exceedances (Deposits Screened)
DWS	Ammoniacal nitrogen as N	mg/l	0.05	0.39	9	13.28	5	BH06 (Made Ground); WS02 (Made Ground); BH11 (Bedrock); WS01 (Glacial Till); **BH01 (Bedrock)**
	Selenium	mg/l	0.001	0.01	9	0.089	3	**BH06 (Made Ground);** WS02 (Made Ground); WS01 (Glacial Till);
	Aliphatic TPH >C12-C16	mg/l	0.005	0.3	9	2.98	2	BH11 (Bedrock); **BH01 (Bedrock)**
	Aromatic TPH >C10-C12	mg/l	0.005	0.09	9	0.125	2	BH11 (Bedrock); **WS08 (Glacial Till)**
	Aromatic TPH >C12-C16	mg/l	0.005	0.09	9	0.497	2	BH11 (Bedrock); **BH01** (Bedrock)
	Benzene	mg/l	0.001	0.001	9	0.002	1	**BH01 (Bedrock)**
EQS	Ammoniacal nitrogen as N	mg/l	0.05	0.2	9	13.28	5	BH06 (Made Ground); WS02 (Made Ground); BH11 (Bedrock); WS01 (Glacial Till); **BH01 (Bedrock)**
	Copper	mg/l	0.004	0.001	9	0.007	6	BH03 (Bedrock); BH06 (Made Ground); WS02 (Made Ground); BH11 (Bedrock); WS01 (Glacial Till); **BH01 (Bedrock)**
	Lead	mg/l	0.001	0.0012	9	0.002	1	**BH06 (Made Ground)**
	Nickel	mg/l	0.002	0.004	9	0.02	2	BH06 (Made Ground); **BH01 (Bedrock)**
	Fluoranthene	mg/l	0.00001	0.0000063	9	0.00005	1	**BH01 (Bedrock)**
	Aliphatic TPH >C10-C12	mg/l	0.005	0.01	9	0.021	1	**BH11 (Bedrock)**
	Aliphatic TPH >C12-C16	mg/l	0.005	0.01	9	2.98	3	BH11 (Bedrock); **BH01 (Bedrock);** WS04 (Glacial Till)
	Aliphatic TPH >C16-C21	mg/l	0.005	0.01	9	0.021	1	**BH11 (Bedrock)**
	Aliphatic TPH >C21-C35	mg/l	0.005	0.01	9	0.022	2	**BH11 (Bedrock);** WS06 (Glacial Till)
	Aromatic TPH >C8-C10	mg/l	0.005	0.01	9	0.061	2	**BH11 (Bedrock);** WS08 (Glacial Till)
	Aromatic TPH >C10-C12	mg/l	0.005	0.01	9	0.125	5	WS02 (Made Ground); BH11 (Bedrock); BH01 (Bedrock); WS04 (Glacial Till); **WS08 (Glacial Till)**
	Aromatic TPH >C12-C16	mg/l	0.005	0.01	9	0.497	7	BH06 (Made Ground); WS02 (Made Ground); BH11 (Bedrock); **BH01 (Bedrock**); WS04 (Glacial Till); WS08 (Glacial Till); WS06 (Glacial Till)
	Aromatic TPH >C16-C21	mg/l	0.005	0.01	9	0.033	5	WS02 (Made Ground); **BH11 (Bedrock);** WS04 (Glacial Till); WS08 (Glacial Till); WS06 (Glacial Till)
	Aromatic TPH >C21-C35	mg/l	0.01	0.01	9	0.017	4	WS02 (Made Ground); **BH11 (Bedrock);** WS04 (Glacial Till); WS08 (Glacial Till)

Exceedances of both the EQS and DWS were recorded within samples collected from all strata (Made Ground, superficial and bedrock). The potential contamination is not confined to one strata but is relatively localised.

The highest TPH fraction exceedances were recorded within BH01 and BH11. The maximum concentration of 2.98 mg/l was recorded within a sample collected from BH01 which screens the sandstone bedrock at depth within the north west corner of the site. BH01 also recorded the fluoranthene exceedance. BH11 consistently measured the highest TPH concentrations. BH11 is located in the south west of the site and also screens the sandstone bedrock at depth. TPH exceedances are recorded within groundwater samples collected from response zones which screen Made Ground, Glacial Till and Bedrock across the site.

Historical maps indicate that a garage was previously located in the north west of the site, within the vicinity of BH01 which may be a potential source of the hydrocarbon contamination. Hydrocarbon odours were noted within soils collected from TP01, TP05 and TP08. TP01 was undertaken within the vicinity of BH01 and TP08 nearby to BH11 in the south west of the site. Soil leachate TPH exceedances were recorded within TP01, while PAH exceedances were recorded within TP01 and TP08. TPH exceedance concentrations were higher in groundwater samples than those recorded within soil leachate samples. No TPH exceedances were recorded within the shallow groundwater sample collected from WS01 which is located 40 m south east of BH01 (closest sample). While TPH exceedances were recorded within shallow groundwater samples collected from WS06 and WS08 located 50 m east and 30 m north west from BH11 respectively. It should be noted that concentrations recorded within BH11 were consistently higher than those recorded within WS06 and WS08. The higher concentrations measured within samples collected from deeper bedrock may be indicative that the source of the elevated TPH is located off site and is migrating onto site at depth as no evidence of a significant TPH source has been identified.

Superficial deposits have been recorded to depths of up to 30.00 m bgl, cohesive deposits recorded thicknesses of up to 20.30 m. The presence of cohesive deposits are likely to inhibit the vertical and lateral migration of contaminants present within shallow groundwater, allowing more time for natural processes such as adsorption and biodegradation to reduce concentrations. However, granular deposits have also been recorded across the site with thicknesses varying between 0.01 m and 7.20 m. The granular Glacial Till across site was noted to be variable in both position and depth, indicating that the strata may not be connected, reducing the likelihood for lateral migration. Shallow groundwater is unlikely to be in a continuous body across the site.

Made Ground across the site is likely to be excavated and removed from site during construction of the basement car park (proposed to 5.00 m bgl). This is likely to remove the source of leachable contamination and any potential contamination located within shallow groundwater.

Also, the surface water features surrounding the site are manmade and are likely to be clay lined, reducing the potential for contaminants to migrate into surface water features.

Following consideration of the above, it is unlikely that contaminants recorded in groundwater will present an unacceptable risk to controlled waters.

8.3. Ground Gas Risk Assessment

The preliminary ground gas risk assessment has been undertaken in general accordance with BS 8485:2019 code of practice for design of protective measures for methane and carbon dioxide ground gases for buildings [28].

BS8485:2019 states that hazardous gas flow rates (Qhg) should be calculated for methane and carbon dioxide for every borehole for each visit and suggests the Qhgs be presented alongside the gas monitoring results in a database (which is included in Appendix D). Qhg is calculated using the maximum gas concentration recorded (unless lower values can be justified) and the steady state flow rate using the below formula:

Qhg (l/hr) = flow rate (l/hr) x [gas concentration (%) / 100]

The Gas Screening Value (GSV) is the flow rate of a specific hazardous gas considered to be representative of a site, following assessment of all borehole concentrations and gas flow rates, whilst taking account of other influencing factors. Such factors being, for example, whether a response zone was completely flooded (which can compromise gas data), the temporal/spatial nature of the data set and the acute one-off nature of the risk.

BS8485:2019 indicates that a decision must be made to determine whether the maximum Qhg in the dataset is appropriate to represent the site (and thereby be selected as the GSV), or whether maximum gas concentrations and maximum steady state flow rates should be combined from any borehole/visit to derive a “worst case GSV”.

The GSV considered representative for the site is then used to select a Characteristic Situation (CS), which is the ground gas regime assumed for design of gas protection measures for new buildings in accordance with BS8485:2019. The GSVs and CS are presented in Table 7-4 (which is based on Table 2 in BS8485:2019).

Adopting a GSV based on peak flow measurements (i.e. those measured initially after the gas tap is opened) might result in a disproportionately high gas hazard prediction and assignment of an over-precautionary GSV and Characteristic Situation (CS), leading to overly conservative gas protection measures being incorporated into the development.

Table 8-4 - Site Characteristic GSV and Associated Characteristic Situation

CS	Hazard Potential	Site Characteristic GSV (l/hr)	Additional Factors
1	Very Low Risk	<0.07	Typical methane <1 % and/or carbon dioxide <5 %. Otherwise consider increase to Characteristic Situation 2.
2	Low Risk	<0.7	Borehole air flow rate not to exceed 70 l/hr. Otherwise consider increase to Characteristic Situation 3.
3	Moderate Risk	<3.5	-
4	Moderate to High Risk	<15	Quantitative risk assessment required to evaluate scope of protective measure.
5	High Risk	<70	-
6	Very High Risk	>70	-

BS8485:2019 does not include an approach for assessing carbon monoxide or hydrogen sulphide. The relevant Workplace Exposure Limits (WELs) as outlined within the HSE EH40/2015 (2011) document (Health and Safety Executive, 2011) have been adopted for use in a preliminary assessment of carbon monoxide and hydrogen sulphide:

- Carbon monoxide: 30 parts per million (ppm) for long-term (eight hours) exposure limit and 200 ppm for short-term (15 minutes) exposure limit.
- Hydrogen sulphide: 5 ppm for the long-term exposure limit of and 10 ppm for the short-term exposure limit.

8.3.1. Risk Assessment

8.3.1.1. Hydrogen Sulphide and Carbon Monoxide

Hydrogen sulphide was consistently measured at or below the limit of detection (1 ppm). Hydrogen sulphide only exceeded the long-term exposure limit of 5 ppm on one occasion. A maximum reading of 6 ppm was recorded within BH01 during the second monitoring visit. The remaining four visits did not record elevated concentrations.

Maximum carbon monoxide concentrations ranged from 1 ppm (WS05) to 440ppm (BH11). The long term exposure limit of 30 ppm was exceeded on eight occasions at the following locations:

- BH08a (one visit out of five)
- BH09 (one visit out of six)
- BH11 (six out six visits)
- BH12 (one visit out of six)

Carbon monoxide was only consistently measured above the long-term exposure limit in BH11 where the response zone is located within the sandstone bedrock. No obvious evidence of contamination is recorded within the borehole log. It should be noted that the response zone is recorded to have been flooded during all five monitoring visits therefore, it is unlikely that the carbon monoxide concentrations are representative of true site conditions.

8.3.1.2. Methane and Carbon Dioxide

The Qhg of each monitoring well on each visit has been calculated and is presented within the database in Appendix D. A summary using the maximum concentrations and steady state flow rates for each well is presented in Table 8-5.

Table 8-5 - Preliminary Ground Gas Risk Assessment

Exploratory Hole	Maximum Peak Carbon Dioxide (% v/v)	Maximum Peak Methane (% v/v)	Maximum Steady State Flow Rate (l/hr)	Qhg Calculated for Each Well*	Deposit/Strata Screened
BH06	0.60	<0.10**	0.40	0.0024	Made Ground
BH09	0.10	35.40	0.20	0.0708	Made Ground
WS02	4.00	<0.10**	0.10	0.0040	Made Ground
BH05	4.40	<0.10**	0.80	0.0352	Made Ground & Glacial Till
BH07	0.30	0.10	0.30	0.0009	Made Ground & Glacial Till
WS03	0.50	<0.10**	0.90	0.0045	Made Ground & Glacial Till
WS05	7.30	<0.10**	0.30	0.0219	Made Ground & Glacial Till
BH02a	0.50	<0.10**	0.60	0.0030	Glacial Till
BH04	3.20	<0.10**	0.70	0.0224	Glacial Till
BH12	1.90	0.10	0.20	0.0038	Glacial Till
WS01	0.90	2.70	0.10	0.0027	Glacial Till
WS04	0.70	<0.10**	0.60	0.0042	Glacial Till
WS06	10.80	2.10	0.30	0.0324	Glacial Till
WS07	1.20	0.10	0.30	0.0036	Glacial Till
WS08	1.30	0.10	0.20	0.0026	Glacial Till
BH01	0.50	<0.10**	24.30	0.1215	Sandstone
BH03	0.40	<0.10**	3.20	0.0128	Sandstone
BH08a	2.20	<0.10**	0.40	0.0088	Sandstone
BH10	5.80	0.1	0.20	0.0116	Sandstone
BH11	0.10	0.40	0.90	0.0036	Sandstone

Notes: Shading indicates flooding of response zone during monitoring visits

*Maximum gas concentration combined with maximum steady state flow rate, recorded on any visit.

**These concentrations were recorded as not detected in the field, therefore the LOD of the GA2000 has been used in calculations.

No significant sources of ground gas were identified on site as part of the desk based review. Made Ground as a result of demolition of previous historical land uses may have posed a potential risk along with any potential leaks/discharges of hydrocarbons/fuels associated with previous land uses (garage). However, monitoring undertaken by e3p recorded the following readings, indicating a low risk posed by ground gas:

- Gas Flow rate: 0.0 l/hr to -3.41 l/hr (flow rates all recorded to be negative);
- Methane: <0.1 % v/v to 0.5 % v/v;
- Carbon Dioxide: <0.1 % v/v to 0.9 % v/v.

During all 2023 monitoring rounds a number of exploratory holes had flooded response zones on a few or all visits grey shading in Table 7-4 above). BS 8485:2019 indicates that when a response zone is completely flooded the data may not be representative of the gas regime and such data should be treated with caution (and potentially discarded from further assessment).

A number of flow rates recorded during the monitoring regime were recorded as having negative values, indicating that gas flow might be directed into the monitoring well. This may have been a result of the fluctuating atmospheric pressures recorded in comparison to the pressure within the monitoring well and/or falls in groundwater level. Negative gas flow rates may also be a result of external factors, such as wind affecting the flow pod on the gas monitor. However, as negative flow rates might be indicative of what positive rates could be under different conditions, where the “maximum” flow rate is a negative value it has been used within the gas risk assessment to calculate the Qhg.

Maximum steady state flow rates within unflooded wells ranged from 0.10 l/hr to 0.80 l/hr (BH05), while in flooded wells the flow rates ranged from 0.20 l/hr to 24.30 l/hr (BH01). Elevated flow rates are likely to be a result of fluctuations in the high groundwater table across the site. The high groundwater levels recorded within the monitoring wells are likely to have caused changes in pressure within the well, resulting in higher flow rates during monitoring.

The maximum carbon dioxide concentrations within an unflooded well was 7.30 % v/v (WS05) and within a flooded response zone was 10.80 % v/v (WS06). WS05 was installed within the Made Ground and Glacial Till while WS06 was installed solely within the Glacial Till.

The maximum methane concentration recorded was 35.40 % v/v (BH09). BH09 is installed within the shallow Made Ground which is recorded to include brick, sandstone and mudstone. No obvious sources of contamination were identified during drilling. Methane concentrations recorded within BH09 during the monitoring regime vary greatly, ranging from 0.20 % v/v to 35.40 % v/v. The maximum reading of 35.40 % v/v was recorded on one occasion, while the monitoring well was flooded. On the other five visits methane concentrations ranged from 0.20 to 19.90 % v/v, although the well was flooded on four out five visits. However, due to the large fluctuations in both groundwater level and methane concentrations, the lack of source and flow, the elevated methane concentrations have been discounted from this assessment as a reliable reading. The maximum methane concentration recorded within an unflooded well was 2.70 % v/v (WS01), with the remaining unflooded wells recording methane at less than the detection limit of the instrument utilised. The reading of 2.70 % v/v was recorded on a single occasion with the remaining five readings at <0.1 % v/v.

The maximum gas concentration from an unflooded well 7.30 % v/v (WS05) and the maximum steady state flow rate 0.80 l/hr (BH05) were selected from the database to calculate a GSV to be representative of the site conditions. The resultant hazardous gas value of 0.0584 l/hr would be recorded, which indicates a Characteristic Situation 1 or “very low risk” classification. As advised in BS8485, consideration of upgrading to CS2 should be given due to the presence of CO2 concentrations >5 % v/v.

A basement car park is proposed as part of the development to approximately 5.00 m bgl. This will likely involve the excavation and disposal of a large amount of the Made Ground recorded on site, therefore removing the only identified on-site potential ground gas source. No further sources of ground gas were identified during the ground investigation, and minimal flow rates were recorded during monitoring. It is also assumed that the basement car park will be designed with sufficient ventilation to mitigate the build up of car exhaust fumes. This level of ventilation would also reduce the risk of ground gas migration into the building and accumulation.

Therefore, it is considered that a Characteristic Situation 1 is suitable for the proposed development based on the gas concentrations and flow rates recorded.

9. Revised Conceptual Model

The findings of the recent ground investigation and GQRA have been used to update the PCM presented in Section 4.

As with the PCM, future construction and ground maintenance workers are excluded from the revised CM, as such risks should be addressed through their employers' health and safety risk assessments and work procedures. The revised CM has been developed assuming completion of the proposed development works with no mitigation measures having been applied. The preliminary risk categorisations presented are based on an assessment of the potential consequence of each PPL occurring along with the likelihood that each PPL will occur in accordance with the framework provided in Appendix B. The revised CSM is shown in Table 9-1, together with updated risk levels.

Chemical attack to buried structures as a pathway has not been included within the CSM as it will be considered as part of the geotechnical assessment.

Table 9-1 - Revised Conceptual Model and Updated Risk Assessment

Sources	Pathway	Receptor	(Consequence/Probability) Classification of Risk
Potential contaminants in soil/groundwater on-site, originating from the following sources: Made Ground across the site associated with the historic site use Historical activities undertaken at the site including: foundry, various mills, factories, various works, corporation yards, timber yards, timber sheds, garage, depot and retail park. Residential housing, churches and schools were also located within the site boundary and have been demolished. **Contaminants identified during the 2019 GQRA include:** **Human Health**: No exceedances of the Human Health GAC. No asbestos recorded within samples analysed. **Controlled Waters**: Exceedances of the EQS include: pH, ammoniacal nitrogen, sulphate, phenol, copper, lead, mercury, nickel, vanadium, zinc, PAHs, TPH fractions. Exceedances of the DWS include: pH, ammoniacal nitrogen, sulphate, cyanide (total), arsenic, chromium, lead, selenium, benzo(a)pyrene, TPH fractions, benzene. **Ground Gas:** Methane, carbon dioxide and carbon monoxide recorded. CS1 characterisation.	Inhalation, ingestion and dermal contact with contaminants in soil and soil derived dust. Organic contaminants in soil migrating into water supply pipes.	Future site users (commercial properties). Adjacent site users.	(*Mild/Unlikely*) Very **Low Risk** No exceedances of the human health commercial GAC were recorded within the 34 samples analysed. As the site is being redeveloped for a commercial land use, areas of soft landscaping are considered unlikely, therefore exposure to underlying soils is likely to be limited. Also, due to the construction of a car park basement, large volumes of Made Ground are likely to be excavated and disposed of off site, removing source material.
	Inhalation of airborne asbestos fibres.		(*Severe/Low Likelihood*) **Moderate Risk** Asbestos was not identified within soil samples analysed during the 2023 ground investigation and therefore it is likely that soils will pose a minimal risk to site users. Also, due to the construction of a car park basement, large volumes of Made Ground are likely to be excavated and disposed of off site, removing source material. As the site is likely to be covered in hardstanding/buildings, it is unlikely that asbestos would be exposed at surface, therefore reducing the likelihood of exposure. However, Made Ground has been recorded across the site and therefore the potential presence of asbestos at the site cannot be dismissed. Advice should be sought from a specialist asbestos contractor.
	Migration of gases/vapours into confined spaces/buildings and accumulation (explosion). Inhalation of vapours or ground gas (asphyxiation).	Future site users and property (commercial properties).	(*Severe/Unlikely*) **Moderate/Low Risk** Elevated concentrations of both methane and carbon dioxide have been recorded at the site during the monitoring regime undertaken. The site has been assigned a CS1 classification. A large amount of Made Ground will be excavated and disposed of off-site during construction of the basement, removing the main on-site source of ground gas. It is assumed that the basement car park will be well ventilated further reducing the likelihood of hazardous gases building up within the commercial buildings above. PID readings ranged from <0.1 ppm to 0.80 ppm, with limited evidence of volatile compounds identified within soils/groundwater. It is therefore unlikely that significant vapour build-up will occur on site.
	Leaching of contaminants to groundwater in superficial deposits and thereby bedrock. Lateral migration beneath the site to surface water receptors. Also, via preferential pathways (e.g. service trench backfill).	Secondary undifferentiated superficial aquifer and Principal Bedrock Aquifer underlying the site Surface Water Receptors (Culverted watercourse, canals and Wharf).	(*Medium/Unlikely*) **Low Risk** Soil-leachate and groundwater samples indicated exceedances of heavy metals, PAHs and TPH fractions. Cohesive superficial deposits were found underlying the majority of the site between the Made Ground and Sandstone bedrock up to 20 m in thickness. Minimal on-site sources of contamination were identified as part of the ground investigation. The clay underlying the site is likely to restrict the vertical and lateral migration of contaminants. The use of piled foundations has the potential to create migration pathways for contaminants to the underlying Principal Bedrock Aquifer. However, due to the thickness of the cohesive superficial deposits (recorded 20+ m), the bedrock is unlikely to be impacted by the proposed works as the intervening clay will restrict vertical migration.

10. Preliminary Waste Characterisation

10.1. HazWaste Assessment

Material that is surplus to requirements and where there is no clear strategy for reuse on-site is classified as waste and should be disposed of in accordance with the Duty of Care as specified in the Landfill Regulations. If the scheme does not require all excavated material to be retained on-site it is a waste.

A preliminary waste assessment for the soils based on the 34 soil samples collected during the Structural Soil 2023 ground investigation has been undertaken using the HazWasteOnline waste classification tool, in accordance with the Environment Agency's Guidance on the classification and assessment of waste (1st Edition v1.1) Technical Guidance WM3 [29]. HazWasteOnline has been designed to assess waste types including Chapter 17 of the European Waste List of Waste (LoW) "Construction and Demolition Waste (Including Excavated Soil from Contaminated Sites)".

Chemical data available at the time of this report were assessed to determine the potential hazardous properties of the tested soils using contaminants commonly encountered in similar materials. Where concentrations less that the limits of detection (LOD) were recorded, the value of the LOD was inputted into HazWasteOnline. Where applicable, appropriate metal species were selected based on worst-case hazard statements, site history, ground conditions and likely species present in soils from ground investigation information.

The results indicate that 32 out of the 34 samples analysed would be classified as non-hazardous for off-site disposal purposes.

Samples collected from CPT14 at 0.40 m bgl and WS04 at 0.30 m bgl have been classified as hazardous due to elevated pH levels.

It should be noted that this is a preliminary classification and is based on a limited number of samples. The actual material to be removed off-site for disposal must be appropriately analysed, classified and agreed with the chosen landfill operator. It is the responsibility of the waste producer to classify, treat, manage and dispose of waste appropriately and to ensure the chosen landfill is licensed to accept such material.

10.2. Waste Acceptance Criteria

As part of the 2023 ground investigation, a total of nine samples were scheduled for waste acceptance criteria (WAC) analysis. The WAC test provides an indication of which type of landfill (inert, stable non-reactive hazardous and hazardous) might be able to accept the waste. A summary of the WAC results is provided in Table 10-2 below.

Table 10-1 - Summary of WAC Testing

Exploratory Location	Depth	Deposit	WAC Result and Implication
TP08	0.30	Made Ground	Below WAC for an inert landfill. It is recommended that developer/contractor discuss these lab results with a variety of landfill operators. Further sampling and analysis will be required during construction to inform waste disposal options.
BH04	0.40	Made Ground	
BH06	1.00	Made Ground	
TP01	0.70	Made Ground	
TP03	0.50	Made Ground	
BH09	0.50	Made Ground	
BH11	0.60	Made Ground	
CPT14	0.40	Glacial Till - Sand	Exceeds the WAC criteria for inert waste landfill for Total Dissolved Solids. It is recommended that developer/contractor discuss lab results and soil descriptions with a variety of landfill operators/soil recycling operators to confirm options. Further

			sampling and analysis will be required during construction to inform waste disposal options.
WS08	0.60	Made Ground	Exceeds the WAC criteria for inert waste landfill for Fluoride. It is recommended that developer/contractor discuss lab results and soil descriptions with a variety of landfill operators/soil recycling operators to confirm options. Further sampling and analysis will be required during construction to inform waste disposal options.

11. Geotechnical Risk Register

Geotechnical risks and potential hazards for the project were identified and have been evaluated along with measures proposed to mitigate against the risk of these hazards occurring.

The risk assessment matrix shown in Table 11-1 has been used to assess the specific geotechnical hazards associated with the design of the scheme. Each hazard is assessed for the likelihood of occurring and then multiplied by the impact the hazard will have. A geotechnical risk register is provided for the site in Table 11-2.

Table 11-1 – Risk assessment matrix

Risk Level							**Risk Classification**	
Likelihood		Impact						
		1	2	3	4	5	E	Extreme Risk
		Insignificant	Minor	Moderate	Major	Catastrophic		
5	Highly Likely	M	H	H	E	E	H	High Risk
4	Likely	L	M	H	E	E	M	Medium Risk
3	Possible	L	M	M	H	H		
2	Unlikely	V	L	M	M	H	L	Low Risk
1	Highly Unlikely	V	V	L	L	M	V	Very Low Risk

Table 11-2 - Geotechnical risk register

Hazard/Risk	Comments	Initial Hazard Rating			Possible mitigation Measures	Hazard Rating after Mitigation Measures Implemented		
		Likelihood	Impact	Risk Rating		Likelihood	Impact	Risk Rating
Potential collapse of canal wall/canal breach during excavation.	Excavation near to the canal may cause instability in the existing structure, worsen any existing damage and potentially cause a canal breach due to structural failure and/or piping failure.	Possible (3)	Catastrophic (5)	High (15)	Liaise with the Canal and River Trust to determine the condition of the canal. Prior to excavation near to the canal, undertake appropriate slope stability, bearing capacity and seepage analyses for both temporary works and permanent conditions.	Unlikely (2)	Catastrophic (5)	High (10)
Potential collapse of existing retaining wall during excavation.	Excavation near to the existing retaining wall along the northern boundary of the site may lead to failure of the wall.	Possible (3)	Major (4)	High (12)	Establish existing wall construction and founding details. Prior to excavation near the retaining wall, undertake appropriate geotechnical analyses for both temporary works and permanent conditions.	Unlikely (2)	Major (4)	Medium (8)
Heave within the base of deep excavations.	Risk associated with heave of the cohesive Glacial Till due to excavation unloading. This may lead to damage to basement floor slabs.	Possible (3)	Major (4)	High (12)	Undertake appropriate geotechnical analyses and structural design.	Unlikely (2)	Major (4)	Medium (8)
Floatation of underground structures.	Floatation risk caused by the presence of shallow groundwater.	Possible (3)	Major (4)	High (12)	Undertake appropriate geotechnical and drainage analyses for underground structures.	Unlikely (2)	Major (4)	Medium (8)

Presence of boulders within the Glacial Till.	Boulders were encountered during GI. The contractor had to switch from cable percussive to rotary drilling to progress through the boulder. Driven piles and CFA piles are likely to be obstructed by boulders if encountered. Shallow foundations could also be obstructed.	Likely (4)	Moderate (3)	High (12)	Consider the presence of boulders when choosing foundation type. Allow for excavation of boulders and drilling through boulders during construction.	Possible (3)	Moderate (3)	Medium (9)
Unforeseen ground conditions not picked up in GI, leading to unacceptable settlement or differential settlements, causing damage to new and existing structures.	There may be areas of soft/loose/poorly compacted or voided ground that were not identified during the ground investigation.	Possible (3)	Major (4)	High (12)	Additional location specific ground investigation may be required should settlement sensitive structures be proposed at design stage. Ground conditions at formation level to be inspected by a suitably experienced geotechnical engineer or engineering geologist. Soft/loose spots/areas to be excavated and replaced by suitably placed and compacted engineering fill.	Unlikely (2)	Major (4)	Medium (8)
Presence of shallow groundwater within near surface granular deposits, leading to collapse of temporary excavations.	Shallow groundwater levels within the superficial deposits may lead to instability of excavations.	Likely (4)	Moderate (3)	High (12)	Shore excavations as necessary in accordance with current trenching and excavation practices. Contractor to minimise length of time excavations remain open and inspect at regular intervals. Consider dewatering measures for buried structures to lower groundwater table or drain areas of perched groundwater.	Unlikely (2)	Moderate (3)	Medium (6)
Sub-artesian groundwater encountered during pile construction.	Sub-artesian groundwater was identified during post-GI monitoring. Groundwater was recorded up to 18m above top of bedrock level. Sub-artesian ground water conditions could be problematic during piling depending on the technique and type used and could lead to inadequate pile capacity and programme delays.	Likely (4)	Moderate (3)	High (12)	Sub-artesian groundwater must be taken into consideration during design and construction of deep (piled) foundations.	Likely (4)	Minor (2)	Medium (8)

Obstructions including confirmed foundations and possible foundations from unrecorded previous structures.	Multiple below ground obstructions were identified during the ground investigation and there are likely to be more which were not identified elsewhere across site. If not removed could lead to delays in construction operations and adjustments to the permanent design.	Likely (4)	Moderate (3)	High (12)	Remove all existing obstructions during the enabling works contract.	Unlikely (2)	Moderate (3)	Medium (6)
A UXO study indicates that the site is located within a medium-risk area in respect to potential unexploded ordnance (UXO)	Presence of potentially Unexploded Ordnance or Unexploded Bombs	Possible (3)	Catastrophic (5)	High (15)	Follow the risk mitigation guidance provided within the UXO detailed Risk Assessment report [4]	Unlikely (2)	Catastrophic (5)	High (10)
Presence of potentially aggressive ground, leading to chemical attack on buried concrete and structural degradation/failure	Chemical analyses for pH and soluble sulphate at the site generally indicates that all superficial material meet Class DS-1, AC-1. In the e3p ground investigation the soils at the site generally met Class DS-1, AC-1, however elevated sulphate concentrations meeting Class DS-2, AC-2 and DS2-AC3 were also noted within the Made Ground deposits.	Possible (3)	Moderate (3)	Medium (9)	Use a suitable class of concrete, based on the sulphate and ACEC classifications for this site. Additional sulphate testing of the Made Ground deposits may be required if they are expected to come into contact with proposed concrete structures.	Unlikely (2)	Moderate (3)	Medium (6)
Unconfirmed position of culvert	Exact position of the mapped culvert has not been confirmed. It is anticipated to be located outside of the site boundary within the adjacent parcel of land. If located beneath or in close-proximity to the development area, it may result in subsidence or collapse of the proposed works. and/or obstruction.	Likely (4)	Moderate (3)	High (12)	Establish position of culvert before commencing construction works.	Possible (3)	Moderate (3)	Medium (9)

12. Engineering discussion

12.1. Preliminary Design Scope

At the time of writing, it is understood that the Ancoats site is to be redeveloped into a modern business park which include the following structures:

- Multistorey buildings
- Underground car park (anticipated to be constructed at approximately 5m below existing ground level)
- Ancillary structures including access roadways, footpaths, retaining walls, soft landscaping and water features.

Due to confidentiality of the project, specific details of the proposed development have not been disclosed.

12.2. Enabling works

As the site has been subjected to previous development, it is understood that a programme of enabling works will be undertaken prior to construction of the new development. It is assumed that the enabling works will include:

- Removal of existing foundations and unsuitable Made Ground;
- Cut and fill operation to level the site;
- Utility removal, diversion and possible installation of new services.

Where site levels are to be raised, any materials (either site won or imported) to be used as fill should be placed and compacted in accordance with an earthworks specification. The filling operation should be verified so that the formation can be relied upon for construction. If the site is filled in an uncontrolled manner, it is likely that the material will have to be excavated and recompacted to provide suitable engineering properties for construction.

Atkins recommend that the GI information is reviewed in detail by the enabling works contractor to ensure that unsuitable material is excavated to an appropriate depth, taking into consideration proposed depth of foundations. Multiple obstructions and buried structures were encountered during the investigation that would cause significant difficulties during construction if not removed during the enabling works. There may also be further obstructions not identified during the ground investigation which should be anticipated during this phase of the works.

12.3. Foundations

12.3.1. Made Ground

It is considered likely that the granular Made Ground beneath the existing concrete floor slabs may be suitable for re-use as general fill subject to appropriate geotechnical and chemical testing.

It is unlikely that the remaining Made Ground across site is suitable for founding upon due to the variable nature of the deposits.

It is recommended that any loose or compressible material encountered during construction is excavated and replaced with suitably compacted engineered fill. Formation inspections should be undertaken by a suitably qualified geotechnical engineer or engineering geologist.

12.3.2. Glacial Till

The Glacial Till is considered to be a suitable founding material for conventional shallow foundations depending upon loadings and settlement tolerances. For multistorey and/or higher loaded structures, piled foundations are likely to be necessary.

Boulders were encountered within the Glacial Till which may cause difficulty for excavation of shallow foundations and limit the use of driven and CFA piles.

During the recent ground investigation, a boulder (0.35m in diameter) was encountered at 6.9m bgl which could not be penetrated by the cable percussive drilling rig and required a switch to rotary drilling methods to

progress through it. Further natural obstructions should be anticipated within the Glacial Till during the enabling and construction phase of the works, and should be accounted for by the designer during detailed pile design.

Based upon published guidance within Tomlinson (2001) [22], presumed bearing values have been provided in Table 12-1 for indicative purposes. Design calculations considering the size, shape and depth of foundation as well as settlement criteria and loading conditions should be undertaken at detailed design stage.

Table 12-1 - Preliminary (Indicative) Bearing Values for the Glacial Till

Type of Glacial Till	Presumed bearing values (kN/m^2) for foundations of width		
	1m	2m	4m
Glacial Till (Cohesive)	200 – 400	150 – 250	75 - 125
Glacial Till (Granular)	500 – 800	400 – 600	300 - 500

Note: The presumed values for foundations on sands and gravels assume that the water table is not above the base of foundation [22].

12.3.3. Bedrock

The sandstone bedrock is a suitable stratum for piled foundations. The uppermost 1.0 to 2.0m of the bedrock unit was recovered as sand and/or gravel of sandstone. The intact rock returned an average UCS of 4 to 6 MPa. As discussed in section 7.1.2.2, the stiffness response to loading should be considered by the designer and a suitable stiffness value chosen depending upon the anticipated stress conditions.

Sub-artesian groundwater conditions are considered likely to be present on site with a potentiometric surface recorded at approximately 28m to 24mAOD (20m to 23m bgl). Sub-artesian groundwater should be accounted for during detailed pile design and construction.

12.3.3.1. Discussion of RIBA Stage 2 preliminary pile design

A RIBA Stage 2 preliminary design for a piled slab foundation was carried out by Atkins in February 2023. The design was carried out for a single proposed building using data provided in the e3p report [1].

Characteristic values for the vertical and lateral loads were used to provide typical pile capacities and lateral deflections for a range of pile diameters and lengths. The design was used to inform the pile layout for the building and to provide an approximate number of piles required.

The results of the preliminary pile assessment suggested that 900mm and 1200mm diameter piles with a rock socket would provide vertical capacity of approximately 4MN and 6MN respectively. It was assumed that the piles would be bored. A horizontal load of 300kN is expected to result in bending moments of up to 700kNm and pile deflections of up to 10mm and 20mm for a 1200mm and 900mm diameter pile respectively. Settlement analysis of the piles was not undertaken, and groundwater was assumed to be at ground level for the purpose of the assessment; it did not consider the effect of sub-artesian groundwater conditions.

12.4. Excavations

12.4.1. General

Excavations within soft clay or loose granular deposits are likely to require positive support or battering back. The presence of shallow groundwater may also require the use of ground support in conjunction with a suitably designed dewatering system, such as sump pumps.

No person entry into excavations should take place without support of the excavation sides and materials should not be stockpiled adjacent to open excavations.

12.4.2. Car park basement and underground structures

Deep excavations may result in a net unloading of superficial materials and result in heave of the cohesive Glacial Till. This may cause damage to basement floor slabs and should be considered during detailed design.

The presence of shallow groundwater poses a risk of floatation of underground structures which should also be considered by the designer.

12.4.3. Excavation next to existing canal

Excavations adjacent to the Rochdale Canal could result in instability in the existing structure, worsen any existing damage and potentially cause a canal breach due to structural failure and/or piping failure.

These risks should be carefully assessed and managed for both temporary and permanent works.

The source of the shallow groundwater on site has not been confirmed; it is a possibility that the canal may be leaking, and groundwater is migrating onto the site. This may be confirmed by comparing water samples taken from site with samples taken from the canal. Liaison with the Canal and River Trust is recommended to establish the current condition of the canal.

12.4.4. Excavation in front of existing retaining wall

Excavations near to the existing retaining wall along the northern boundary of the site could compromise the stability of the wall. Prior to excavation, appropriate geotechnical analyses should be undertaken for both the temporary and permanent condition.

It is understood that there are no ‘as-built’ drawings available for the wall, therefore the depth of foundations cannot be confirmed. The recent ground investigation attempted to determine the founding depth of the wall, however the excavation method was severely restricted by services so no definitive conclusion could be made.

12.5. Groundwater

See sections 12.3 and 12.4 for engineering discussion.

12.6. Material reuse

It is expected that most of the concrete hardstanding encountered across the site could be crushed to provide Class 6F2 material for use as general fill. Granular Made Ground (existing engineered fill) is likely to be suitable for reuse as engineering fill (if chemically acceptable). Remaining Made Ground is unlikely to be suitable for use as engineering fill, however it may be suitable for landscaping if chemically suitable. The Glacial Till is likely to be suitable for reuse as general fill.

12.7. Deep culvert

The deep culvert (anticipated to be located within the adjacent land to the east) remains a risk to the proposed development until location of the structure has been confirmed. If located beneath or in close-proximity to the development area, it may result in subsidence or collapse of the proposed works and/or obstruction.

13. Land Contamination Considerations

Section 13.1 and the revised conceptual model (RCM) presented in Section 9 comprise the decision record for this stage of risk assessment. The Land Contamination Risk Management (LCRM) guidance states that confirmed pollutant linkages become Relevant Pollutant Linkages (RPLs). For the purpose of this report, RPLs are considered those where the risk level in the RCM is higher than Moderate/Low and some form of mitigation before or during construction is considered likely to be required.

The following is a summary of the key findings and interpretation of the ground investigation data with respect to land contamination and ground gas. Table 13-1 includes the findings of the RCM/GQRA and contamination constraints relating to health/safety/environment risks and waste management during construction.

13.1. Land Contamination Constraints and Recommendations

Table 13-1 - Contamination Constraints and Recommended Actions Before/During Construction

Item	Findings of Initial Assessments	Implications to Redevelopment
Exposure of workforce to contaminants in soils/water/air	No asbestos identified in samples tested by the lab but due to the site history and presence of Made Ground, the presence of asbestos cannot be ruled out. Metals, polyaromatic hydrocarbons and TPHs recorded within soil and groundwater but not at concentrations considered likely to pose a risk to human health.	Due to the presence of Made Ground and potential presence of asbestos across the site, vigilance should be maintained during earthworks by appropriately experienced/trained staff. An asbestos specialist should be contacted if it is encountered during construction and advice sought on what mitigation measures are required to protect the workforce.
Re-use of site won arisings (current in-situ Made Ground and natural deposits) within the site boundary	Risk assessment indicated site won arisings could be re-used across the site as they are unlikely to pose an unacceptable risk to human health or the environment (with the exception of asbestos).	It is anticipated that arisings could be reused across the site, subject to re-use complying with requirements of a materials management plan or environmental permit. Verification that re-use complied with the MMP/permit would be required, accordingly materials should be tested and compared to re-use criteria. It is recommended this approach is agreed with the contaminated land officers at the Council and Environment Agency prior to submission of the MMP/permit.
Macadam (former road surfacing's).	N/A	There is the potential for coal tar to be present in the macadam surfacing. This is considered a hazardous waste and may require a specialist disposal route. It is recommended that samples are collected during the excavation of the macadam for analysis to confirm presence/absence of coal tar.
Piling/foundations – risks to groundwater.	Leachate and groundwater recorded heavy metal and/or PAH criteria exceedances in groundwater.	The potential risk to controlled waters will be dependent on the degree of disturbance to Made Ground during construction and type/depth of foundations. The risk to the bedrock aquifer should be considered during foundation design and a piling risk assessment undertaken.

Disposal of waste soils. WAC tests undertaken.	WAC criteria for inert waste is exceeded within two of the nine samples tested due to elevated total dissolved solids and fluoride.	It is recommended that developer/contractor discuss lab results and soil descriptions with a variety of landfill operators/soil recycling operators to confirm options.
Ground gas (methane and carbon dioxide)	Initial ground gas risk assessment indicates a characteristic situation 1 (CS1).	In accordance with BS8485:2019 (British Standards Institute, 2019) no specific gas protection measures are required for a CS1 scenario. This is based on the suitable design and construction for the proposed basement car park. If the proposed design specific to the basement car park changes then the gas risk assessment will need to be reviewed.
Unexpected Contamination	N/A	As with any development there is always the possibility of finding ground/gas/contamination conditions that vary from those recorded in the ground investigation. Construction team should be vigilant and if such is encountered, stop work in that area and seek advice from contamination specialists and inform the planning authority. Further sampling and assessment might be required to evaluate the risk.
Decommissioning monitoring wells	N/A	Prior to construction, all monitoring wells should be decommissioned in accordance with the Environment Agency's guidance "Good Practice for Decommissioning Redundant Boreholes and Wells" dated October 2012. This is to prevent the wells from becoming damaged during construction and inadvertently becoming pollution migration pathways.

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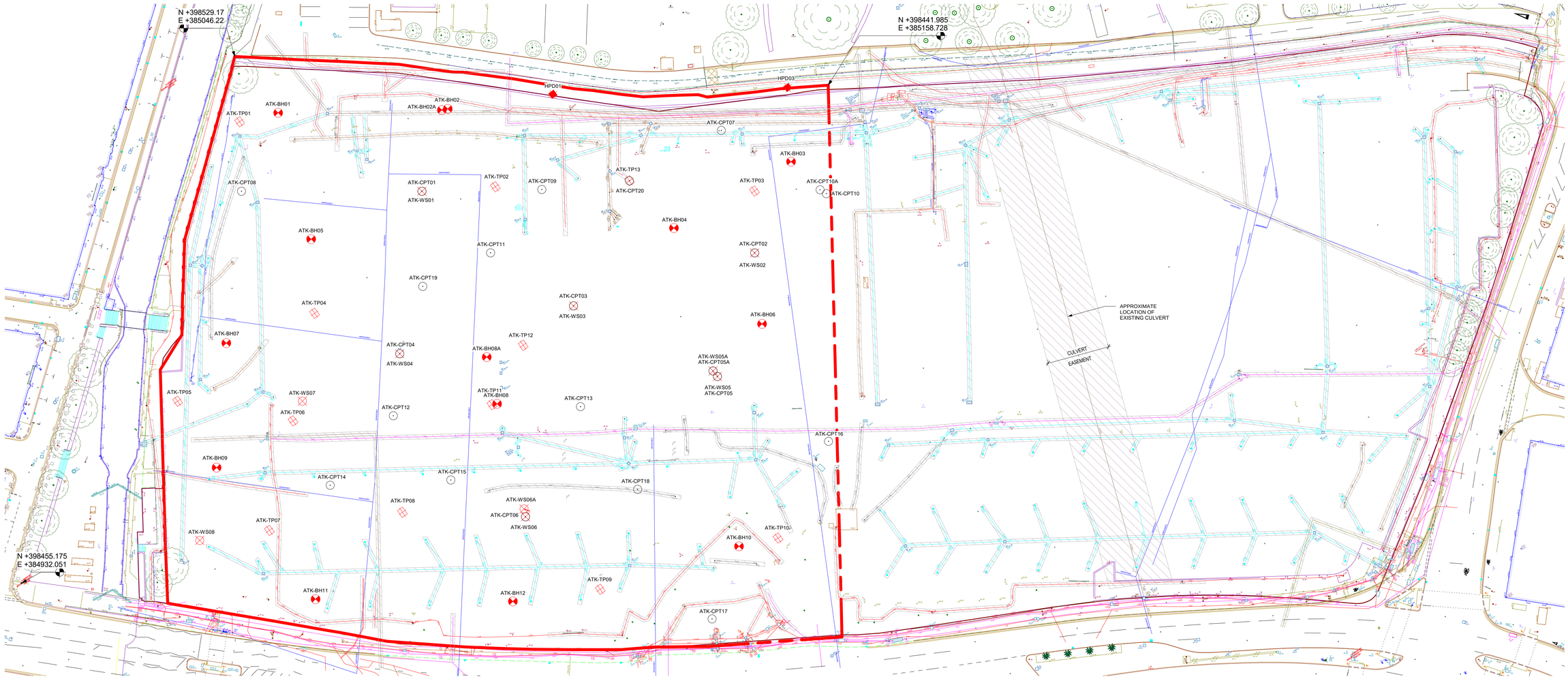
Appendices



Appendix A. Drawings

DO NOT SCALE

Millimetres 0 10 100



1 SK0001 SURVEY_00 - Exploratory Hole Location Plan

SCALE 1 : 500

Note: Drawing base including utility and topography data for Ancoats Site taken from Murphy Geospacial 'Underground Utility Survey(PAS128), Rev A', to ordnance data OSGB36(15). Refer to the survey report for a detailed legend of the utilities shown on this drawing.

KEY	
	HAND DUG PIT
	WINDOW SAMPLE
	TRIAL PIT
	BOREHOLE
	CONE PENETRATION TEST
	SITE BOUNDARY
	APPROXIMATE LOCATION OF DEEP CULVERT

References	
Rev.	Model Name

-35.00°

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

MAINTENANCE/CLEANING

DECOMMISSIONING/DEMOLITION

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

Rev.	Date	Description	By	Chk'd	App'd
P1	12/10/23	Exploratory holes updated to As Built locations			

Drawing Suitability: CONSTRUCTION RECORD

Status: A5

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Client: CONFIDENTIAL CLIENT

Project Title: CONFIDENTIAL PROJECT

Drawing Title: Ground Investigation Exploratory Hole Location Plan

Scale	Designed	Drawn	Checked	Authorised
As indicated	TB	GSG	CH	JH
Original Size	**Date**	**Date**	**Date**	**Date**
A1	13.10.23	13.10.23	13.10.23	13.10.23

Drawing Number: MN00-ATK-ZZ-XX-SK-AR-SK0001

Revision: P1

Atkins Project Number: 123456



Legend

Site Boundary

Exploratory Hole Positions

- BH - Boreholes
- TP - Trial Pits
- WS - Window Sample

Thickness of Made Ground (m)

- 0.10
- 1.00
- 2.00
- 3.00
- 3.50

ATKINS

Chadwick House
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Cheshire
WA3 6AE

Tel: 01925 23 8000

CLIENT

Confidential Client

PROJECT

Ancoats, Manchester

TITLE

Thickness of Made Ground Deposits

Google Earth, Accessed 14/09/2023

SCALE: NTS	DRAWN: TB DATE: 14/9/23	CHECK: CH DATE: 14/9/23	REV: JH DATE: 14/9/23



Legend

Site Boundary

Exploratory Hole Positions

BH - Boreholes

Top of Chester Formation (mAOD)

24.7
23.5
22.0
20.5
19.6

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Birchwood Park
Cheshire
WA3 6AE

Tel: 01925 23 8000

CLIENT

Confidential Client

PROJECT

Ancoats, Manchester

TITLE

Top of Chester Formation

Google Earth, Accessed 14/09/2023

SCALE: NTS	DRAWN: TB DATE: 14/9/23	CHECK: CH DATE: 14/9/23	REV: JH DATE: 14/9/23

Appendix B. Risk Assessment Methodology

Risk Evaluation

The contaminated land risk, a function of the probability and the consequence, has been defined using the risk matrix given in Table 1 which is taken from the NHBC and Environment Agency's guide National House-Building Council & Environment Agency, 2008, Guidance on the Safe Development of Housing on Land Affected by Contamination. London: NHBC and Environment Agency (R&D66).

Table 1 - Estimation of the Level of Risk by Comparison of Consequence and Probability

		Consequence			
		Severe	**Medium**	**Mild**	**Minor**
Probability	**High Likelihood**	Very High Risk	High Risk	Moderate Risk	Moderate/Low Risk
	Likely	High Risk	Moderate Risk	Moderate/Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate/Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate/Low Risk	Low Risk	Very Low Risk	Very Low Risk

The descriptions of the classified risks as given in R&D66 are as follows:

Very High Risk

There is a high probability that severe harm could arise to a designated receptor from an identified hazard at the site without remediation action OR there is evidence that severe harm to a designated receptor is already occurring. Realisation of that risk is likely to present a substantial liability to the site owner / or occupier. Investigation is required as a matter of urgency and remediation works likely to follow in the short-term.

High Risk

Harm is likely to arise to a designated receptor from an identified hazard at the site without remediation action. Realisation of the risk is likely to present a substantial liability to the site owner / occupier. Investigation is required as a matter of urgency and remediation works likely to follow in the short-term.

Moderate Risk

It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, and if any harm were to occur it is more likely that the harm would be relatively mild. Further investigative work is normally required to clarify the risk and to determine the potential liability to site owner/occupier. Some remediation works may be required in the longer term.

Low Risk

It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely at worst, that this harm if realised would normally be mild. It is unlikely that the site owner/or occupier would face substantial liabilities from such a risk. Further investigative work (which is likely to be limited) to clarify the risk may be required. Any subsequent remediation works are likely to be relatively limited.

Very Low Risk

It is a low possibility that harm could arise to a designated receptor, but it is likely at worst, that this harm if realised would normally be mild or minor.

Appendix C. Geotechnics Factual Report



Ancoats, Manchester

Factual Report on Ground Investigation

Report No: 765544-1 (02)

Client: Atkins Ltd

SEPTEMBER 2023

STRUCTURAL SOILS LTD

DOCUMENT ISSUE RECORD

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Report No.:	765544-1 (02)
Project Name:	Ancoats, Manchester
Document Title	Factual Report on Ground Investigation
Client:	Atkins Ltd
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00	16/06/2023	Draft Report	JM
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1 INTRODUCTION

Structural Soils Limited (SSL) have been appointed by Atkins Ltd (the Engineer and Client) to undertake a ground investigation at Ancoats, Manchester. The purpose of the work was to obtain geotechnical and geo-environmental information in relation to the proposed works which include the re development of the site.

The scope of the investigation comprised boreholes formed by cable percussion and rotary drilling, window sampling, hand and machine excavated trial pits, in-situ testing, including Cone Penetration Testing (CPT) and gas and groundwater monitoring, geotechnical and geo-environmental laboratory testing and the preparation of this report.

The ground investigation has been carried out in accordance with the contract specification, and the general requirements of BS 5930:2015+A1:2020, BS 10175:2011+A2:2017, BS EN 1997-2:2007, BS EN ISO 22475-1:2021 and other relevant standards as identified in this report.

This report presents the factual information obtained by the ground investigation including records of all field and laboratory work carried out. All information given in this report is based on the ground conditions encountered during the site work, and on the results of the field and laboratory work performed during the investigation.

Whilst every attempt is made to record full details of the strata encountered in the exploratory holes, techniques of hole formation and sampling will inevitably lead to disturbance, mixing or loss of material in some soils and rocks. There may be conditions at the site that have not been taken into account, such as unpredictable soil strata, contaminant concentrations, and water conditions between or below exploratory holes.

This report was prepared by SSL for the sole and exclusive use of Atkins Ltd in response to particular instructions. Any other parties using the information contained in this report do so at their own risk and any duty of care to those parties is excluded. No liability will be accepted after a period of 6 years from the date of the report.

2 SITE DESCRIPTION

2.1 Location and Topography

The site is located on the eastern side of Manchester City Centre, approximately 500 m northeast of Manchester Piccadilly railway station (see Site Location Map in Appendix A). The approximate British National Grid Reference (NGR) of the site is SJ850984.

The site is rectangular in shape approximately 125 m by 170 m with the long axis aligned North-West South-East (see Exploratory Hole Location Plan in Appendix A). The site was formerly the north western half site of the Central Retail Park, now demolished, and the surface of the site is in the main hard standing comprising either concrete or block paving. The site is bordered to the NW by the towpath to the Rochdale Canal, the SW by Great Ancoats Street (A665) to the NE by the Co-Op Academy-New Islington and landscaped land which borders on to a marina and the SE by a continuation of the former retail park site. The site elevation varies between 46 m and 50 m AOD.

2.2 Geology

Information on the geology of the site was obtained from the following sources published by the British Geological Survey (BGS):

- BGS map (Sheet Number 85, Manchester, Bedrock and Superficial Deposits scale 1:50,000, published 2011).
- The BGS GeoIndex (onshore) digital geology map, which utilises the most up to date names for geological units. (https://www.bgs.ac.uk/map-viewers/geoindex-onshore/)
- The BGS Lexicon of Named Rock Units, which provides typical descriptions for most geological units (https://webapps.bgs.ac.uk/lexicon/).

The site is shown to be underlain by the following descending sequence of strata:

TABLE 1 : SUMMARY OF EXPECTED SITE GEOLOGY	
Geological Unit	**Description**
ANTHROPOGENIC GROUND	
Artificial Ground	Artificial ground is not shown on the mapping at the site location. However, due to the previous historical use of the site made ground is to be anticipated.
SUPERFICIAL DEPOSITS	
Till	Devensian. Clay to sandy clay unsorted with common pebbles, some cobbles and some boulders (diamicton)
SOLID GEOLOGY	
Chester Formation (Sherwood Sandstone Group)	Sandstone, reddish brown moderately cemented

Note: Information obtained from BGS digital records © NERC.

3 FIELDWORK

3.1 General

The ground investigation was carried out by SSL between 6 April and 11 May 2023. The investigation was supervised by an engineer from SSL. The scope of works and positions were selected by Atkins Ltd, set out by SSL and adjusted where necessary to take account of buried or overhead services, or other restrictions. The exploratory hole and in-situ test locations are shown on the Exploratory Hole Location Plan presented in Appendix A.

3.2 Buried and Overhead Utility Clearance

Prior to the commencement of any exploratory hole or intrusive test, all positions were checked for buried services by a specialist utility surveyor using a cable avoidance tool (CAT), signal generator ('genny'), and ground penetrating radar (GPR).

Inspection pits were hand dug at exploratory locations where noted on the relevant exploratory hole logs or in-situ test results.

3.3 Exploratory Holes

The exploratory holes are listed in the following table.

TABLE 2 : SCOPE OF INTRUSIVE WORKS			
Quantity	**Exploratory Hole Type**	**Maximum depth (m)**	**Hole / Test Numbers**
12	Cable Percussion Boreholes extended by rotary coring.	40.50	ATK-BH01 to ATK-BH12
13	Machine Dug Trial Pits.	5.00	ATK-TP01 to ATK-TP13
2	Hand Dug Inspection Pit	1.20	HDP1 & HDP2
8	Window sample holes	5.45	ATK-WS01 to ATK-WS08
22	Cone Penetration Tests (CPT)	16.00	ATK-CPT1 to ATK-CPT20

The exploratory hole logs are presented in Appendix B and include inspections pits excavated for the CPT locations, but exclude the CPT results. A number of the CPT locations coincided with window sample hole locations; separate inspection pits were therefore not excavated.

The logs provide information including the equipment and methods used, samples taken, tests carried out, water observations and descriptions of the strata encountered. Explanation of the terms and abbreviations used on the logs is given in the Key to Exploratory Hole Records in Appendix B, together with other explanatory information.

The CPT testing was carried out by an external specialist company In-Situ Site Investigation Ltd (In-Situ). The results of the CPT testing are presented in a separate report prepared by In-Situ and presented in Appendix H of this report.

The holes were logged by an engineer in general accordance with the recommendations of BS 5930:2015+A1:2020 (which incorporates the requirements of BS EN ISO 14688-

1:2018, 14688-2:2018 and 14689:2018), and C570 *Engineering in Mercia Mudstone*. Detailed descriptions, together with relevant comments, are given on the logs.

On completion of the works, a survey of the exploratory hole locations was undertaken using specialist Global Positioning System (GPS) equipment. The coordinates of each exploratory hole were measured relative to British National Grid, and the level relative to Ordnance Datum. These are shown on the exploratory hole logs contained in Appendix B which have been printed with a reduced level column.

3.4 Cable Percussion Boreholes

Cable percussion drilling was carried out to a maximum depth of 29.50 m below ground level (bgl) using 200 mm diameter temporary steel casings and tools. The boreholes were formed in order to provide geotechnical information, to obtain samples for laboratory testing and to allow rotary follow on drilling to be carried out.

100 mm nominal diameter undisturbed samples were recovered from suitable strata in accordance with BS EN ISO 22475-1 using a thin walled UT100 sampler.

Standard Penetration Tests (SPT) were carried out at regular intervals as detailed Section 3.9 below.

Representative small and bulk disturbed soil samples were recovered from the boreholes at regular intervals and placed in sealed containers for geotechnical description and subsequent laboratory testing.

Where appropriate and required, environmental samples were obtained for geo-chemical testing.

3.5 Rotary Drilling

All boreholes were extended by rotary drilling techniques from the base of the cable percussion borehole to a maximum depth of 40.50 m bgl using tracked mounted rotary drilling rigs.

Rotary coring was carried out using a Geobore S core barrel and water flush with polymer to produce cores of 102 mm nominal diameter. A semi-rigid liner was incorporated within the inner barrel to maximise the quality of core recovery.

The cores recovered were transported to the logging facilities at the Structural Soils Castleford depot where they were photographed, described by an Engineering Geologist and sub-sampled. Details of the strata encountered are given on the borehole logs along with an assessment of Total Core Recovery (TCR), Solid Core Recovery (SCR), and Rock Quality Designation (RQD), each expressed as a percentage of the individual core runs. Where applicable a fracture spacing (If) has also been determined.

The borehole logs and photographic records of the core are presented in Appendix B.

3.6 Trial Pits

A total of thirteen machine dug trial pits were excavated to a maximum depth of 5.00 m bgl using a combination of a tracked 360° excavator and a wheeled backhoe excavator

The trial pits were logged by an Engineering Geologist who provided a detailed description of the ground conditions encountered in each pit and also obtained disturbed soil samples where required for geotechnical and geo-chemical analysis.

The strata encountered in the trial pits are described on the trial pit logs presented in Section B of this report. Photographs of the trial pits are presented alongside the logs.

3.7 Window Sampling

The window sample holes were drilled to a maximum depth of 5.45 m bgl using a tracked rig with chain driven drop weight to drive the sample tubes. Windowless steel sample tubes containing a plastic sample liner were used. The holes reduce in diameter with depth to reduce friction, as reported on the attached logs.

Small and bulk disturbed soil samples were subsampled from the window samples at regular intervals.

Hand vane tests were carried out at selected intervals on samples of intact cohesive soils, the results of which are included on the attached draft logs

Standard Penetration Tests (SPT) were carried out in the window sample holes, using the drop weight of the rig as detailed in Section 3.9 below.

3.8 Backfill and Instrumentation

On completion 50 mm diameter gas and groundwater monitoring wells were installed in all boreholes, and seven of the window sample holes, with the design of each determined by the Engineer. A flush fitting metal cover was concreted into place with a rubber bung with a gas valve fitted onto each installation to facilitate long term gas monitoring.

A schematic of each installation is shown on the relevant exploratory hole logs with full details presented on the Standpipe Summary table presented within Appendix B.

On completion the remaining window sample hole was backfilled with arisings. The trial pits were backfilled and brought up to ground level with arisings in reverse order, compacted in layers by the excavator bucket.

3.9 In-situ Testing

3.9.1 Standard Penetration Testing

Standard Penetration Tests (SPT) were carried out in the boreholes and window sample holes in accordance with BS EN ISO 22476-3:2005+A1:2011 using hammers which have been calibrated for efficiency. The calibration certificates are included in Appendix G. Seating drives have been recorded in increments of 75 mm in accordance with recommended UK practice.

The SPT N-values are reported on the exploratory hole logs, on which the calibration number used is recorded. The full results are presented in tabular format on the Summary of Standard Penetration Tests in Appendix C, on which the normalised N60 values are also reported, which are the equivalent N-value for a hammer delivering 60% of the theoretical drop energy. A Plot showing SPT N values versus depth is also included.

3.9.2 Hand Shear Vane Tests

In order to give an estimate of the undrained shear strength of the soil hand shear vane tests were carried out within suitable cohesive material in trial pits and window sample holes in accordance with EN ISO 22476-9. The vane tests comprised three separate readings, where possible, at the same level with both peak and residual readings taken.

Results of the tests undertaken are presented on the relevant exploratory hole logs in Appendix B.

3.9.3 PID testing

Photo-Ionisation Detector (PID) measurements were taken of volatile hydrocarbons on selected soil samples with the results included on the exploratory hole logs.

3.9.4 Cone Penetrations Tests

Cone penetration tests were carried out using a 20 tonne wheel mounted CPT rig in accordance with ISO 22476-1:2022(E).

The CPT tests were terminated on refusal or at a maximum load of 50 MPa.

The testing was carried out by In Situ Testing Ltd. The results with a description of the testing methodology are included in their report in Appendix E.

3.10 Monitoring and Post Fieldwork Environmental Sampling

A programme of post fieldwork gas and groundwater monitoring is currently being undertaken. Two visits have been completed to date.

A calibrated infrared gas meter was used to measure concentrations of carbon dioxide (CO_2), methane (CH_4) and oxygen (O_2) in percentage by volume, whilst hydrogen sulphide (H_2S) and carbon monoxide (CO) were recorded in parts per million. An integral flow meter was used to measure borehole flow rates in litres per hour (l/hr). In addition, the atmospheric pressure before and during monitoring was recorded.

It should be noted that groundwater levels, gas concentrations and gas flows usually vary due to seasonal, atmospheric and/or other effects and may at times differ to those measured during the investigation.

The results together with the temporal (weather) conditions are tabulated in Appendix F.

Samples of groundwater are to be taken from specified standpipes for potential geo-environmental testing.

4 LABORATORY TESTING

Samples for potential geotechnical testing were returned to one of the Company's UKAS accredited laboratories. Geotechnical soil testing was also undertaken by the laboratory of Soil Engineering Geoservices, a UKAS accredited laboratory No. 1625.

Samples for potential geo-environmental testing were sent to Envirolab Limited, a MCERTS and UKAS accredited testing laboratory. Laboratory tests were scheduled by the Engineer. Tests carried out in accordance with MCERTS/UKAS standards where noted on the results sheets.

4.1 Geotechnical Laboratory Testing

Geotechnical laboratory testing was generally carried out in accordance with the relevant parts of:

- BS EN ISO 17892:2014-2022 Parts 1-12, *Geotechnical investigation and testing – Laboratory testing of soil*,
- BS 1377:2016-2022 Parts 1-3, *Methods of test for soils for civil engineering purposes* (for test methods not covered in BS EN ISO 17892),
- BS 1377:1990 Parts 1-8, *Methods of test for soils for civil engineering purposes* (for tests carried out to older legacy methods),
- International Society for Rock Mechanics and Rock Engineering (ISRM) *Suggested Methods for Rock Characterization, Testing and Monitoring*, 1974-2006, 2007-2014 and 2015+
- BRE Special Digest 1:2005 (SD1) *Concrete in aggressive ground. Assessing the aggressive chemical environment*. Third edition.

The results are reported in tabular and/or graphical form and included as Appendix D of this report. The test methods used are detailed on the report sheets, and where non-standard procedures have been undertaken, this is recorded on the report sheet.

Tests carried out are as follows.

Soil Testing

- 110 No Water content.
- 99 No Liquid and plastic (Atterberg) limits.
- 11 No Particle size distribution by sieving.
- 8 No Particle size distribution by sedimentation.
- 11 No Dry Density / Moisture Content Relationship – 2.5 kg rammer 1 litre mould
- 2 No Dry Density / Moisture Content Relationship – 2.5 kg rammer CBR mould
- 8 No Moisture Condition Value.

- 7 No One- dimensional consolidation test.
- 32 No Single stage unconsolidated undrained (QU) triaxial compression tests without the measurement of pore pressure.
- 1 No Bulk and dry density

Rock Testing

- 38 No Uniaxial compressive strength tests.
- 7 No Uniaxial compressive strength tests with deformation
- 38 No Point Load Index (axial and diametral).

Chemical Testing

- 29 No Water soluble sulphate and pH value (Non Pyritic).
- 14 No Water soluble sulphate and pH (Brownfield Pyritic)

4.2 Geo-environmental Laboratory Testing

The geo-environmental testing carried out is summarised in the following table. The results are included as Appendix E of this report and include details of the test method.

Tests carried out are as follows

- 34 No Suite E
- 8 No Additional VOCs
- 18 No Leachate Suite G
- 1 No Water Sample Suite
- 9 No WAC Tests

5 REFERENCES

5.1 BS 5930:2015+A1:2020 *Code of practice for ground investigations*

5.2 BS 10175:2011+A2:2017 *Investigation of potentially contaminated sites: Code of practice*

5.3 BS EN 1997-2:2007 *Eurocode 7 — Geotechnical design. Part 2: Ground investigation and testing*

5.4 BS EN ISO 22475-1:2021 *Geotechnical investigation and testing - Sampling methods and groundwater measurements. Part 1: Technical principles for the sampling of soil, rock and groundwater*

5.5 British Geological Survey sheet 85, Manchester, Bedrock and Superficial Deposits, scale 1:50,000, published 2011

5.6 British Geological Survey, Geoindex (onshore) digital map viewer. Available online: https://www.bgs.ac.uk/map-viewers/geoindex-onshore/

5.7 British Geological Survey, Lexicon of Named Rock Units. Available online: https://webapps.bgs.ac.uk/lexicon/

5.8 BS EN ISO 14688-1:2018 *Geotechnical investigation and testing – Identification and classification of soil. Part 1: Identification and description*

5.9 BS EN ISO 14688-2:2018 *Geotechnical investigation and testing – Identification and classification of soil. Part 2: Principles for a classification*

5.10 BS EN ISO 14689:2018 *Geotechnical investigation and testing – Identification, description and classification of rock*

5.11 BS EN ISO 22476-3:2005+A1:2011 *Geotechnical investigation and testing – Field testing. Part 3: Standard penetration test*

5.12 BS EN ISO 17892:2014-2022 *Geotechnical investigation and testing – Laboratory testing of soil. Parts 1-12*

5.13 BS 1377:2016-2022 *Methods of test for soils for civil engineering purposes. Parts 1-3*. (for test methods not covered by BS EN ISO 17892 series of standards)

5.14 BS 1377:1990 *Methods of test for soils for civil engineering purposes. Parts 1-8*. (for tests carried out using legacy methods)

5.15 International Society for Rock Mechanics and Rock Engineering (ISRM, 1974-2006, 2007-2014, and 2015+), *The ISRM Suggested Methods for Rock Characterization, Testing and Monitoring*

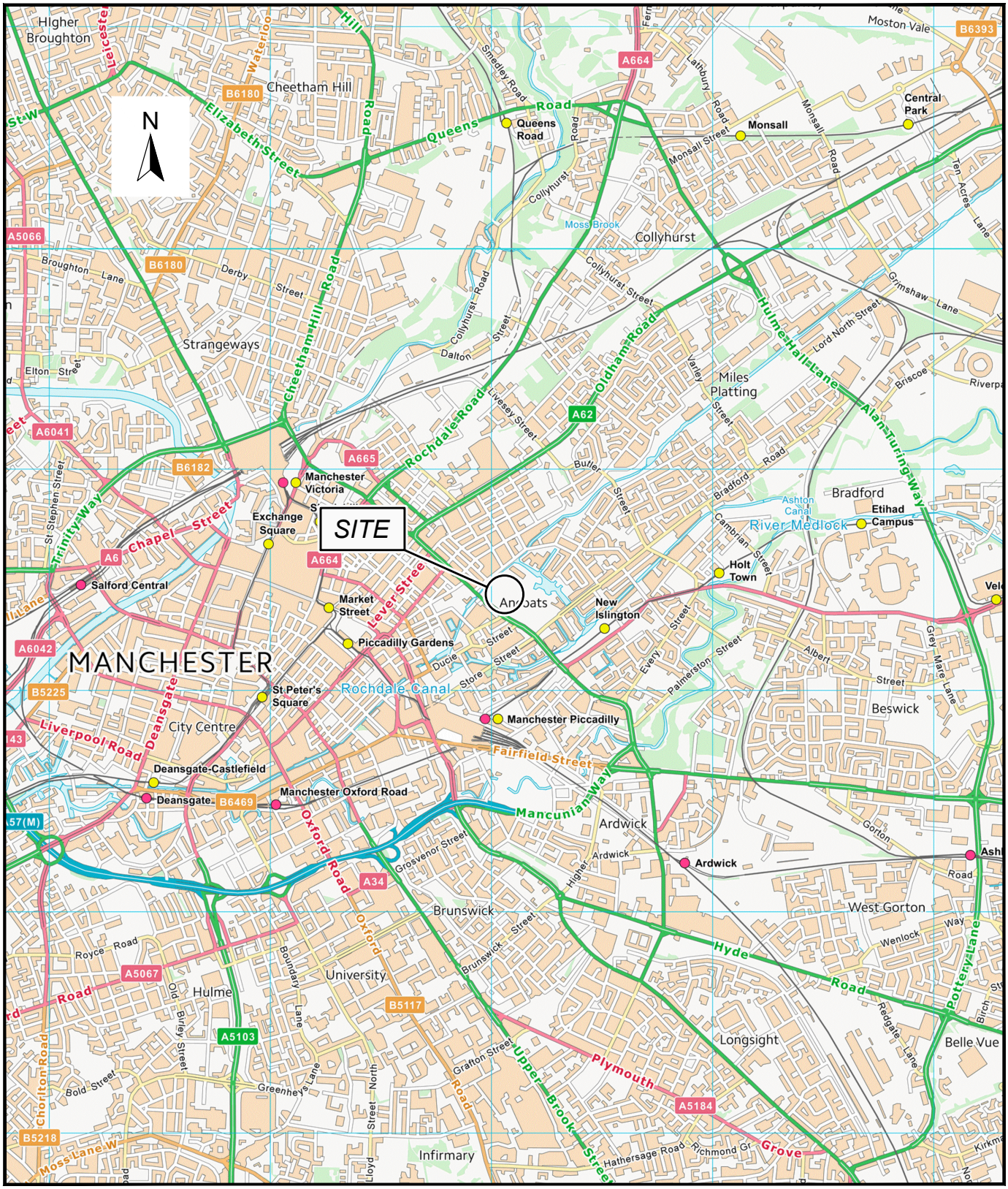
5.16 BRE Special Digest 1:2005 (SD1), *Concrete in aggressive ground. Assessing the aggressive chemical environment. Third Edition*

5.17 BS EN IS/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*

APPENDIX A -
PLANS AND DRAWINGS

(i) Site Location Plan

(ii) Exploratory Hole Location Plan



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CLIENT: ATKINS LTD.

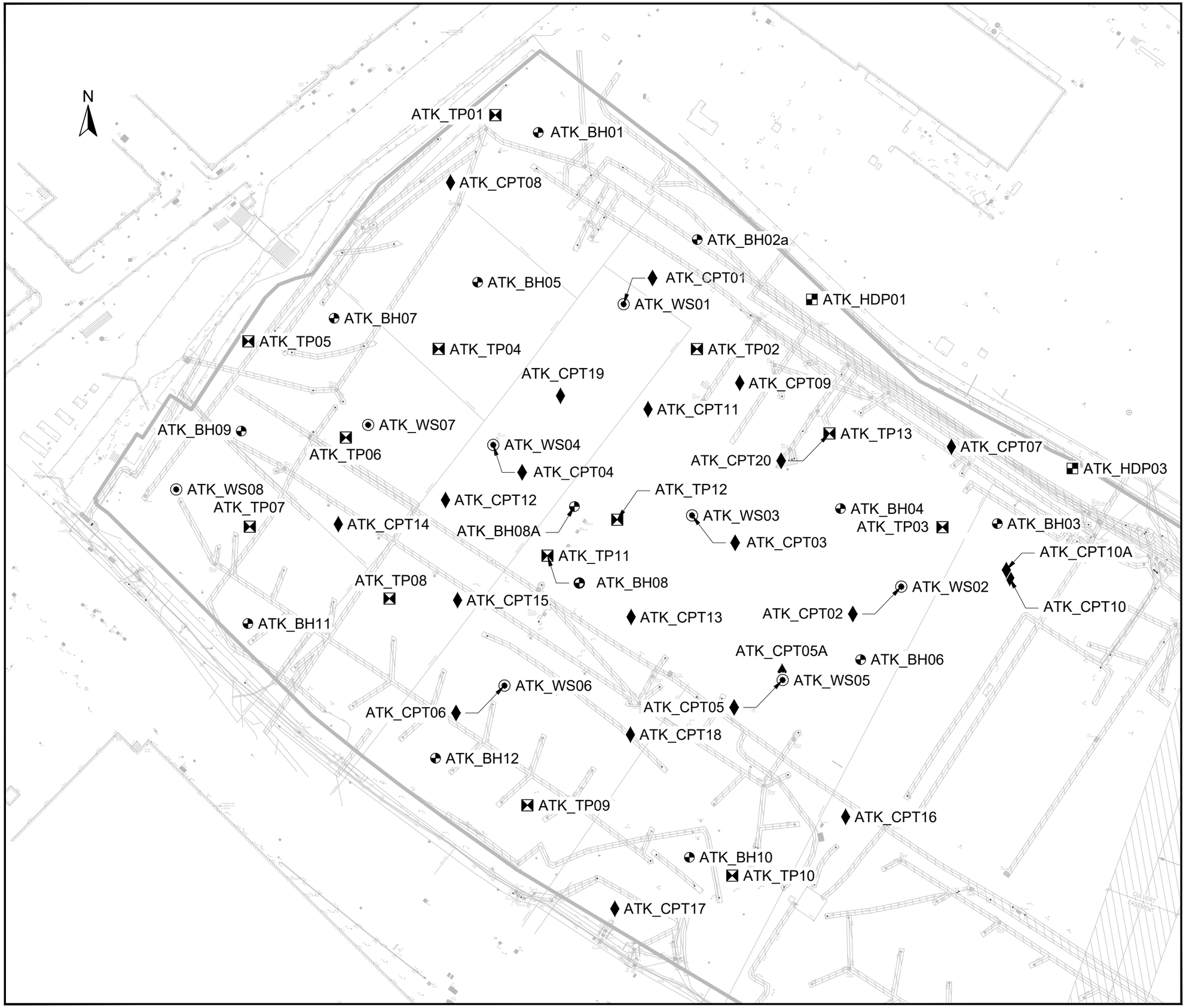
PROJECT: ANCOATS, MANCHESTER

TITLE: SITE LOCATION MAP

REV.	DATE	DESCRIPTION	BY	CHD.	APR.
00	31.05.2023	FIRST ISSUE	MB	JM	-

DIMENSION	SCALE	DRAWING STATUS
m	1:25,000	-

JOB NO	GRID REF	SCALE BAR	ORIGIN SIZE	FIGURE
765544	SJ 850 984	0 250 500 750 1,000m	A4	1



LEGEND

- BOREHOLE
- CONE PENETRATION TEST
- HAND DUG TRIAL PIT
- TRIAL PIT
- WINDOW SAMPLE

REV	DATE	DESCRIPTION	BY	CHD	APR
00	07.09.2023	FIRST ISSUE	MB	JM	-

DIMENSION	SCALE	ORIGIN SIZE
m	1:750	A3

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CLIENT

ATKINS LTD.

PROJECT

ANCOATS, MANCHESTER

TITLE

EXPLORATORY HOLE LOCATION PLAN

JOB NO	FIGURE
765544	2
DRAWING STATUS	REV
-	00

SCALE BAR

0 10 20 30 40m

APPENDIX B - EXPLORATORY HOLE RECORDS

(i) Key to Exploratory Hole Logs

(ii) Borehole Logs

(iii) Window Sample Logs

(iv) Trial Pit and Inspection Pit Logs

(v) Standpipe Summary Table

KEY TO EXPLORATORY HOLE LOGS - SUMMARY OF ABBREVIATIONS

SAMPLING

Sample type codes:

AMAL	=	Amalgamated sample.
B	=	Bulk disturbed sample.
C	=	Core sample.
D	=	Small disturbed sample.
DSPT	=	Small disturbed sample originating from SPT test.
ES	=	Soil sample for environmental testing.
LB	=	Large bulk disturbed sample.
U	=	Undisturbed driven tube sample - Number of blows indicated. % recovery reported.
UT	=	Undisturbed thin wall sample.

Undisturbed sample detail codes:

$U_{(100)}$	=	100mm diameter undisturbed sample.
$U_{(UT100)}$	=	Undisturbed sample UT100.

IN-SITU TESTING

$SPT_{(c)}$	=	Standard Penetration Test using a solid 60 degree cone.
SPT	=	Standard Penetration Test using split spoon sampler. ($_{(NR)}$ indicates 'No Sample Recovery').
	=	* denotes extrapolated N value. NP denotes 'No Penetration'.
V	=	Field Vane Test. Peak value (c_u) & Residual value (c_r), given as shear strength in kPa.
PID	=	Photo Ionisation Detector Results, in ppm.

ROTARY DRILLING INFORMATION

W	=	Water flush returns (%)
TCR	=	Total core recovery (%)
SCR	=	Solid core recovery (%)
RQD	=	Rock quality designations (%)
If	=	Fracture spacing (mm). Where variable the minimum - mode - maximum spacing may be quoted.

In fracture column (i) denotes discontinuity is infilled (refer to Fracture Table for details).
'NI' denotes non-intact core. 'NA' denotes not applicable.

- All lengths used to determine rock core mechanical properties taken along the centre line of the core.
- Obvious induced fractures have been ignored.
- The assessment of solid core is based on lengths that show a full diameter and not necessarily a full circumference.

AZCL = Assessed zone of core loss.

ADDITIONAL NOTES

1. All soil and rock descriptions and legends in general accordance with BS EN ISO 14688-1:2018, 14688-2:2018, 14689:2018, and BS5930:2015+A1:2020.
2. Material types divided by a broken line (- - -) indicates an unclear boundary.
3. Fracture spacings (If) quoted in the Description of Strata for specific strata or specific fracture sets are also quoted in mm, e.g. (25/80/230) referring to (Min/Avg/Max).
4. The data on any sheet within the report showing the AGS icon is available in the AGS format.

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Contract Reference: **765544**

KEY TO EXPLORATORY HOLE LOGS - SUMMARY OF GRAPHIC SYMBOLS

WATER COLUMN SYMBOLS



First water strike, second water strike etc.



Standing water level following first strike, standing water level following second strike etc.


Seepage.


Standing water level recorded at documented date.

MATERIAL GRAPHIC LEGENDS


BOULDERS


CLAY


CLAY with COBBLES


Clayey GRAVEL with COBBLES


Clayey gravelly SAND


Gravelly clayey SAND


Clayey gravelly SAND with COBBLES


Gravelly clayey SAND with COBBLES


Clayey SAND


Clayey SAND with COBBLES


GRAVEL


GRAVEL with COBBLES


Gravelly CLAY


Gravelly silty CLAY


Silty gravelly CLAY


Gravelly CLAY with COBBLES


Gravelly SAND


Gravelly SAND with COBBLES


MADE GROUND


Possible MADE GROUND

INSTRUMENTATION SYMBOLS


Backfill


Bentonite cement pellets


Bentonite seal


Concrete


Gravel filter


Plain pipe


Slotted pipe

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BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH01**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**11.04.23** End: **26.04.23**	**49.13**	**E:385047.0 N:398512.2**	**1** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										MADE GROUND: Light grey reinforced CONCRETE.	0.20	
0.20-0.30	1	B									0.35	
0.25	101	ES								MADE GROUND: Orangish brown very sandy subangular to subrounded, fine to coarse GRAVEL of sandstone. Sand is fine to coarse.	0.75	
0.30	2	D									0.90	
0.30		PID	0.0ppm							MADE GROUND: Orangish brown gravelly, slightly clayey, fine to coarse SAND with a low cobble content. Gravel is subangular to rounded fine to coarse of concrete, cement, sandstone and brick. Cobbles are subangular to subrounded of brick and cement up to 130mm.	1.20	
0.40-0.60	3	B										
0.50	102	ES										
0.50	4	D										
0.50		PID	0.0ppm									
0.75-0.90	5	B										
0.80		PID	0.0ppm									
0.90-1.20	6	B										
1.00	104	ES								MADE GROUND: Black, red and light brown mottled very gravelly, very clayey, fine to coarse SAND. Gravel is subangular, fine to coarse of brick sandstone and rare fabric.	(1.80)	
1.00		PID	0.0ppm									
1.20-1.65	7	SPT	N=12									
1.20-1.65	8	DSPT										
1.20-1.65	9	B										
2.00-2.45	10	$U_{(100)}$	17 blows 80% recovery							MADE GROUND: Stiff brown, mottled red, grey and black slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is very angular to subangular fine to medium of sandstone, brick, plastic and cement.	3.00	
2.00-2.00	105	ES	1xT+2xJ+2xV									
2.00-2.45	11	D										
2.00-2.45	12	D										
2.00		PID	0.0ppm							Firm brown mottled grey, slightly sandy, slightly gravelly, silty CLAY. Sand is fine to coarse Gravel is mainly fine subangular to subrounded of sandstone, quartz and other lithologies. (TILL)		
3.00-3.45	13	SPT	N=16									
3.00	106	ES	1xT+2xJ+2xV									
3.00-3.45	14	DSPT										
3.00-3.45	15	B								. . . 1.60m - 1.65m, coal band only seen in SPT.	(2.50)	
3.00-3.00	16	D										
3.00-3.45	17	$U_{(100)}$	120 blows 100% recovery							Firm to stiff brown slightly gravelly silty CLAY. Gravel is fine to coarse, subrounded to rounded of mixed lithologies (TILL)		
3.00-3.45	18	D										
3.00		PID	0.0ppm									
4.50-5.00	19	B									5.50	
5.00-5.45	20	$U_{(100)}$	118 blows 100% recovery							Stiff brown, slightly sandy, silty CLAY with occasional gravel and rare cobbles. Sand is fine to coarse. Gravel is fine, subrounded of mainly sandstone and other mixed lithologies. Cobbles are subrounded siltstone up to 100mm. (TILL)		
5.00-5.45	21	D										
6.00-6.45	22	SPT	N=20									
6.00-6.45	23	DSPT										
6.00-6.45	24	B										
6.00	25	D									(2.50)	
7.00-7.45	26	$UT_{(UT100)}$	124 blows 100% recovery									
7.45	27	D										
7.50	28	D										
											8.00	
8.00	29	D								Firm, dark brown, slightly sandy, slightly gravelly silty CLAY. Sand is fine. Gravel is subangular to subrounded, fine to coarse of siltstone and sandstone. (TILL)		
8.00-8.45	30	SPT	N=25									
8.00-8.45	30	DSPT										
8.00-8.45	31	B										

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
06/04/23			None	N/R	
06/04/23		1.20	None	N/R	
11/04/23		1.20	1.20	200	Dry
11/04/23		9.00	8.00	200	Dry
12/04/23		9.00	9.00	200	8.80
12/04/23		16.50	15.50	200	Dry
13/04/23		16.50	17.00	200	Dry
13/04/23		26.00	26.00	200	25.00

Chiselling / Slow Progress

From	To	Duration (hh:mm)
25.80	26.00	00:30

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Concrete cored to 0.20m followed by hand dug inspection pit to 1.20m.
3. Cable percussion drilling to 26.00m followed by rotary core drilling to completion.
4. Borehole terminated at 38.50m depth.
5. Backfilled with installation materials.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**M Foley + M Williams**	**JAlton + MJJones**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH01**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**11.04.23** End: **26.04.23**	**49.13**	**E:385047.0 N:398512.2**	**2** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00	32	D								Firm, dark brown, slightly sandy, slightly gravelly silty CLAY. Sand is fine. Gravel is subangular to subrounded, fine to coarse of siltstone and sandstone. (TILL) *(stratum copied from 8.00m from previous sheet)* . . . at 9.00m, becoming more silty.	(4.00)	
9.00-9.45	33	UT	125 blows 100% recovery									
9.50	34	D										
10.00	35	D										
10.50-10.95	36	SPT	N=35									
10.50-10.95	37	B										
11.00	38	D										
12.00	39	D									12.00	
12.00-12.45	40	UT	125 blows 90% recovery							Stiff, dark brown, slightly gravelly, sandy, silty CLAY with rare cobble content. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of siltstone and sandstone. Cobbles are subrounded of siltstone up to 50mm. (TILL)	(2.00)	
12.50	41	D										
13.00	42	D										
13.00-13.45	43	B										
14.00-14.23	44	SPT	8,17/50 for 75mm							Very dense orangish brown fine to coarse SAND. (TILL)	14.00 (1.00)	
14.00	45	D										
15.00	46	D								Stiff, dark brown, very sandy, very gravelly CLAY with a medium cobble content. Sand is fine to coarse. Gravel is fine, subangular to subrounded, fine to coarse of siltstone and sandstone. Cobbles are subangular to subrounded of siltstone and sandstone by 50mm. (TILL)	15.00 (1.00)	
15.00-15.50	47	B										
15.50-15.95	48	UT	125 blows 100% recovery									
15.50-15.95	49	B										
16.00	50	D								. . . at 15.50m, becoming more sandy. Sand bands present.	16.00 (1.00)	
16.50-17.00	51	B								Soft, dark brown, sandy, gravelly silty CLAY. Sand is fine to coarse. Gravel is fine to coarse of siltstone and sandstone. (TILL)	17.00	
17.00	52	D								*Description on next sheet*		
17.00-17.45	53	SPT	N=45									
17.00-17.45	54	B										

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
14/04/23		26.00	26.00	200	23.20
14/04/23		26.10	26.00	200	23.20
19/04/23		26.10	26.00	200	
19/04/23		30.50	30.50	146	
20/04/23		30.50	30.50	146	19.60
20/04/23		38.50	38.50	146	7.30

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

6. SPT hammer VC-AR1101-25/01/2023 (E_f = 72.00%) used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**M Foley + M Williams**	**JAlton + MJJones**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH01**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**11.04.23** End: **26.04.23**	**49.13**	**E:385047.0 N:398512.2**	**3** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)
18.00	55	D								Stiff, laminated dark brown mottled grey and orange, slightly gravelly, sandy, silty CLAY with a red, fine to coarse sand band. Sand is fine to coarse. Gravel is fine to coarse of siltstone and sandstone. (TILL) *(stratum copied from 17.00m from previous sheet)*	(3.00)
18.50-18.95	56	UT	120 blows 100% recovery								
19.00	57	D									
20.00	58	D								Stiff, laminated dark brown mottled grey, slightly gravelly, very sandy, silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of siltstone and sandstone. (TILL)	20.00
20.00-20.20	59	SPT	25/30,20 for 50mm								(1.00)
20.00-20.45	60	B									
20.80-21.25	61	B								. . . 20.10m - 20.30m, bed of orange fine to coarse SAND.	21.00
21.50	62	D								Dark brown, slightly silty, clayey, gravelly, fine to coarse SAND. Gravel is subrounded fine to coarse of siltstone and sandstone. (TILL)	(0.50) 21.50
21.50-21.61	63	SPT	25/50 for 50mm								21.80
21.50-21.95	64	B								Dark brown mottled light brownish orangish and grey, slightly clayey, gravelly, very silty, fine to coarse SAND. Gravel is subrounded, fine to coarse of siltstone and sandstone. (TILL)	22.00
22.00-22.50	65	B									(1.00)
22.50	66	D								Dark brown, slightly clayey, slightly silty, gravelly, fine to coarse SAND. Gravel is subangular to subrounded, fine to coarse of siltstone and sandstone. (TILL)	23.00
23.00	67	D									
23.00-23.27	68	SPT	15,10/22,28 for 70mm								
23.00-23.45	69	B								Dark brown, slightly silty, slightly clayey, sandy GRAVEL with a medium cobble content. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of siltstone and sandstone. Cobbles are subrounded of siltstone and sandstone by 60mm. (TILL)	(1.50)
24.00	70	D									24.50
24.50	71	D								. . . at 22.00m, becoming more gravelly.	
24.50-24.62	72	SPT	25/50 for 60mm							Dark brown mottled orange and grey, slightly silty, gravelly SAND. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of siltstone and sandstone. (TILL)	
24.50-24.95	73	B									
25.00	74	D									
26.00-26.07	75	SPT(c)	25/50 for 35mm							Dark brown mottled red, slightly clayey, slightly silty, slightly gravelly SAND. Gravel is subangular to subrounded, fine to coarse of sandstone. (WEATHERED SANDSTONE) (TILL)	(4.00)

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**M Foley + M Williams**	**JAlton + MJJones**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH01**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**11.04.23** End: **26.04.23**	**49.13**	**E:385047.0 N:398512.2**	**4** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
27.50-27.95	76	SPT	N=25							Dark brown mottled red, slightly clayey, slightly silty, slightly gravelly SAND. Gravel is subangular to subrounded, fine to coarse of sandstone. (WEATHERED SANDSTONE) (TILL) *(stratum copied from 24.50m from previous sheet)*	28.50	
28.50-29.00										Very weak, dark brownish red, partially unweathered, medium and coarse grained SANDSTONE with interbedded, dark brownish red, distinctly weathered, medium and coarse grained SANDSTONE. Fractures are closely to widely spaced, horizontal, undulating and rough. (CHESTER FORMATION)	(3.35)	
28.50-28.95	77	SPT	N=38	90	30	0						
29.00-30.50												
29.41-29.61	78	C		91	75	67	NI 119 260					
30.50-32.00										. . . 30.50m - 30.60m, intermittent bands and thick laminations of extremely weak residual siltstone.	31.85	
31.05-31.43	79	C		100	90	86						
32.00-33.50										Weak, dark brownish red, partially weathered, medium and coarse grained SANDSTONE. Fractures are closely to widely spaced, dipping 5-10° undulating, rough with some clay infill. (CHESTER FORMATION)	(6.65)	
32.36-32.80	80	C		100	97	76	NI 146 430					
33.50-35.00				100	99	63						
35.00-36.50												
35.00-35.23	81	C		100	100	93						

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**M Foley + M Williams**	**JAlton + MJJones**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH01**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **26.04.23**	**49.13**	**E:385047.0 N:398512.2**	**5** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
36.50-38.00				100	100	93				Weak, dark brownish red, partially weathered, medium and coarse grained SANDSTONE. Fractures are closely to widely spaced, dipping 5-10° undulating, rough with some clay infill. (CHESTER FORMATION) *(stratum copied from 31.85m from previous sheet)*		
36.58-36.97	82	C										
				100	100	88	NI 146 430			. . . 37.18m - 37.20m, soft, dark reddish brown slightly sandy clay lens (20mm x 101mm)		
38.00-38.50												
38.00-38.33	83	C		100	100	66					38.50	
										Borehole terminated at 38.50m depth.		

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**M Foley + M Williams**	**JAlton + MJJones**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH01**
Contract Ref:	Start: **11.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **26.04.23**	**49.13**	**E:385047.0 N:398512.2**	**6** of **9**





Method Used:	Concrete coring (300mm) + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	M Foley + M Williams	Logged By:	JAlton + MJJones	Checked By:	JMC

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH01**
Contract Ref:	Start: **11.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **26.04.23**	**49.13**	**E:385047.0 N:398512.2**	**7** of **9**





Method Used:	Concrete coring (300mm) + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	M Foley + M Williams	Logged By:	JAlton + MJJones	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH01**
Contract Ref:	Start: **11.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **26.04.23**	**49.13**	**E:385047.0 N:398512.2**	**8** of **9**





Method Used:	Concrete coring (300mm) + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	M Foley + M Williams	Logged By:	JAlton + MJJones	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH01**
Contract Ref:	Start: **11.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **26.04.23**	**49.13**	**E:385047.0 N:398512.2**	**9** of **9**



Method Used:	Concrete coring (300mm) + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	M Foley + M Williams	Logged By:	JAlton + MJJones	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH02a**

Contract Ref:	Start: **27.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **10.05.23**	**48.96**	**E:385079.5 N:398490.2**	**1** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										MADE GROUND: Light grey reinforced CONCRETE.	0.25	
0.30-0.40	1	B									0.40	
0.30	101	ES	1xT+2xJ+2xV							MADE GROUND: Light brownish grey, very sandy, angular to subrounded, fine to coarse GRAVEL of sandstone and concrete. Sand is fine to coarse.	0.65	
0.30	2	D										
0.30		PID	0.0ppm								1.00	
0.50	102	ES	1xT+2xJ+2xV							MADE GROUND: Brown mottled grey and cream, very sandy, slightly clayey, angular to subrounded, fine to coarse GRAVEL of sandstone, limestone, concrete and plastic with a low cobble content. Sand is fine to coarse. Cobbles are subangular of concrete and sandstone up to 110mm.	1.20	
0.50-0.60	3	B										
0.50	4	D									(0.80)	
0.50		PID	0.0ppm									
0.70-0.90	5	B										
0.80	103	ES									2.00	
0.80	6	D										
0.80		PID	0.0ppm							MADE GROUND: Orangish brown mottled orangish red and cream, sandy, clayey, subangular to subrounded, fine to coarse GRAVEL of sandstone, concrete, brick and plastic with a low cobble content. Sand is fine to coarse. Cobbles are subangular of brick, sandstone and concrete up to 140mm.		
1.10	7	D										
1.20	104	ES	1xT+2xJ+2xV									
1.20-1.65	8	$UT_{(UT100)}$	13 blows 100% recovery									
1.20		PID	0.2ppm									
1.70	9	D										
2.00-2.45	10	SPT	N=18							MADE GROUND: Black and brown mottled orangish red, sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of brick, sandstone, concrete and coal.		
2.00	105	ES	1xT+2xJ+2xV									
2.00-2.45	11	DSPT										
2.00-2.45	12	B										
2.00		PID	0.0ppm									
3.00-3.45	13	SPT	N=19							MADE GROUND: Soft black and brown mottled orangish red sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is very angular to subrounded fine to coarse of brick sandstone concrete and coal. . . . 1.70m - 1.80m, becomes more sandy and orange in colour.		
3.00	106	ES	1xT+2xJ+2xV									
3.00-3.45	14	DSPT										
3.00-3.45	15	B										
3.00		PID	0.0ppm									
4.00-4.45	16	$UT_{(UT100)}$	27 blows 100% recovery									
4.50	17	D										
5.00-5.45	18	SPT	N=16							Firm to stiff, thinly laminated, brown mottled bluish grey, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of sandstone, mudstone and coal. (TILL)		
5.00-5.45	19	DSPT										
5.00-5.45	20	B										
6.00-6.45	21	SPT	N=18								(10.00)	
6.00-6.45	22	DSPT										
6.00-6.45	23	B										
7.00-7.45	24	$UT_{(UT100)}$	32 blows 100% recovery									
7.50	25	D										
8.00-8.45	26	SPT	N=23									
8.00-8.45	27	DSPT										
8.00-8.45	28	B										

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
02/05/23			None	N/R	
02/05/23		14.50	3.00	200	
03/05/23		14.50	3.00	200	
03/05/23		19.50	19.50	200	
04/05/23		19.50	21.00	200	
04/05/23		27.00	26.20	200	23.00
05/05/23		27.00	26.20	200	
05/05/23		28.50	26.20	200	

Chiselling / Slow Progress

From	To	Duration (hh:mm)
25.50	26.50	01:00

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20m depth.
3. Cable percussion drilling to 27.00m followed by rotary core drilling to completion.
4. Backfilled with installation materials.
5. SPT hammer VC-VC1-25/01/2023 (E_r = 73.00%) used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + T Rendell**	**LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH02a**

Contract Ref:	Start: **27.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **10.05.23**	**48.96**	**E:385079.5 N:398490.2**	**2** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00-9.45	29	SPT	N=22							Firm to stiff, thinly laminated, brown mottled bluish grey, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of sandstone, mudstone and coal. (TILL) *(stratum copied from 2.00m from previous sheet)*		
9.00-9.45	30	DSPT										
9.00-9.45	31	B										
10.50-10.95	32	$UT_{(UT100)}$	30 blows 100% recovery									
11.00	33	D								. . . at 11.00m, no lamination.	12.00	
12.00-12.45	34	SPT	N=23							Firm, brown, sandy, slightly gravelly, silty CLAY. Sand is fine, rarely medium, and coarse. Gravel is angular to subrounded, fine to coarse of sandstone, siltstone and mudstone. (TILL)	(2.00)	
12.00-12.45	35	DSPT										
12.00-12.45	36	B										
13.50-13.95	37	SPT	N=26								14.00	
13.50-13.95	38	DSPT										
13.50-13.95	39	B										
14.50-14.95	40	B								Firm, brown, sandy, slightly gravelly, silty CLAY with thickly spaced interbeds of light reddish brown fine SAND 10-50mm thick. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of mudstone and sandstone. (TILL)	(1.00)	
15.00-15.45	41	SPT(c)	N=39								15.00	
15.00-15.45	42	D								Brown, slightly gravelly, clayey, fine and medium rarely coarse, SAND. Gravel is subrounded to rounded, fine of sandstone and siltstone. (TILL)	(0.70)	
15.00-15.45	43	B									15.70	
16.50-16.88	44	SPT	6,7/12,14,17,7 for 5mm							Stiff, brown, very sandy, slightly gravelly CLAY with thin interlamination of light brown fine sand. Sand is fine and medium, rarely coarse. Gravel is subrounded to well rounded, fine of sandstone, siltstone and mudstone. (TILL)	(1.10)	
16.50-16.95	45	DSPT									16.80	
16.50-16.95	46	B								Very stiff, thinly laminated, greyish brown CLAY. (TILL)	(1.70)	

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
09/05/23		28.50	26.20	200	
09/05/23		39.00	26.20	146	
10/05/23		39.00	None	146	

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + T Rendell**	**LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH02a**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**27.04.23** End: **10.05.23**	**48.96**	**E:385079.5 N:398490.2**	**3** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
18.00-18.14	48	SPT	25/50 for 60mm							Very stiff, thinly laminated, greyish brown CLAY. (TILL) *(stratum copied from 16.80m from previous sheet)*	18.50	
18.00-18.95	48	DSPT										
18.00-18.45	49	B										
19.50-19.95	50	SPT(c)	N=45							Brown mottled black and grey, sandy, slightly clayey, very angular to well rounded, fine to coarse GRAVEL of sandstone, siltstone and limestone with a low cobble content. Sand is fine to coarse. Cobbles are subrounded to subangular of various crystalline lithologies up to 140mm. (TILL)	(2.50)	
19.50-19.95	51	DSPT										
19.50-19.95	52	B									21.00	
21.00-21.16	53	SPT(c)	15,10/50 for 60mm							Brown, clayey, slightly gravelly, fine to medium SAND. Gravel is subangular to rounded, fine to coarse of siltstone, mudstone and sandstone. (TILL)		
21.00-21.45	54	DSPT										
21.00-21.45	55	B										
22.50-22.83	56	SPT(c)	15,10/22,22,6 for 30mm									
22.50-22.95	57	DSPT										
22.50-22.95	58	B									(4.70)	
24.00-24.45	59	SPT(c)	N=50									
24.00-24.45	60	DSPT										
24.00-24.45	61	B										
25.00-25.45	63	DSPT										
25.00-25.45	64	B										
25.50-25.89	62	SPT(c)	7,11/10,15,15,10 for 10mm								25.70	
26.50-26.57	65	SPT	25/50 for 10mm							Extremely weak, reddish brown SANDSTONE. Recovered as silty, fine to medium sand. (CHESTER FORMATION)	(1.30)	
26.50-26.95	66	DSPT									27.00	

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + T Rendell**	**LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH02a**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**27.04.23** End: **10.05.23**	**48.96**	**E:385079.5 N:398490.2**	**4** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
26.50-26.95	67	B								Extremely weak to very weak, thickly laminated to very thinly bedded, brownish red, fine to coarse grained SANDSTONE. Occasional inclusions of quartz and white sandstone up to 20mm x 10mm and thin lenses of brownish red clay up to 50mm x 10mm. Fractures set 1: fractures are very closely to medium spaced, dipping 0-15°, undulating, rough, tight and stepped rough, open, 5-20mm infilled with sand and clay. Fracture set 2: fractures are very widely spaced, dipping 30-50°, stepped, rough, tight and undulating rough tight. (CHESTER FORMATION)		
27.00-28.50												
27.00-27.14	74	C										
				100	60	42						
28.50-30.00												
29.15-29.35	75	C		100	86	65				. . . 27.23m - 27.54m, non-intact zone of clayey sand. . . . 27.60m - 27.69m, non-intact zone of sand and fragments of sandstone. . . . 27.79m - 27.86m, non-intact zone of sand and fragments of sandstone.		
30.00-31.50										. . . 28.42m - 28.50m, non-intact drilling disturbed. . . . 28.50m - 28.60m, non-intact drilling disturbed. . . . 29.90m - 30.00m, non-intact drilling disturbed.		
				100	93	90						
30.89-31.12	68	C										
31.50-33.00							NI 140 390			. . . 31.40m - 31.50m, non-intact drilling disturbed. . . . 31.76mm - 31.80m, non-intact drilling disturbed.	(10.30)	
				83	65	28				. . . 32.21m - 32.24m, non-intact zone of sand. . . . 32.33m - 32.43m, non-intact zone of sand and fragments of sandstone.		
32.71-33.00	69	C								. . . 32.67m - 32.71m, non-intact zone of sand and fragments of sandstone.		
33.00-34.50										. . . 33.24m - 33.26m, layer of brownish red laminated mudstone.		
				100	97	94						
34.10-34.34	70	C										
34.50-36.00												
34.76-34.96	71	C										
				100	100	100						

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + T Rendell**	**LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH02a**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**27.04.23** End: **10.05.23**	**48.96**	**E:385079.5 N:398490.2**	**5** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
36.00-37.50												
36.28-36.49	72	C		100	96	72	NI 140 390				37.30	
37.50-39.00										Very weak, thickly laminated brownish red, fine and medium grained SANDSTONE. Rare inclusions of grey siltstone up to 20mm x 20mm. Fracture set 1: fractures are very closely to closely spaced, dipping 0-15°, undulating, rough, open 1-3mm clean or infilled with sand. Fracture set 2: fractures are closely to medium spaced, dipping 20-30°, planar, rough, tight and planar rough open 1-3mm clean. (CHESTER FORMATION)	(1.70)	
38.32-38.56	73	C		100	100	65	45 130 230				39.00	
										Borehole terminated at 39.00m depth.		

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + T Rendell**	**LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH02a**
Contract Ref:	Start: **27.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **10.05.23**	**48.96**	**E:385079.5 N:398490.2**	**6** of **9**





Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + T Rendell	Logged By:	LCross	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH02a**
Contract Ref:	Start: **27.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **10.05.23**	**48.96**	**E:385079.5 N:398490.2**	**7** of **9**





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Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + T Rendell	Logged By:	LCross	Checked By:	JMC AGS

STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH02a**
Contract Ref:	Start: **27.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **10.05.23**	**48.96**	**E:385079.5 N:398490.2**	**8** of **9**





Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + T Rendell	Logged By:	LCross	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH02a**
Contract Ref:	Start: **27.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **10.05.23**	**48.96**	**E:385079.5 N:398490.2**	**9** of **9**



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Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + T Rendell	Logged By:	LCross	Checked By:	

STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH03**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**17.04.23** End: **27.04.23**	**47.11**	**E:385140.9 N:398432.1**	**1** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										MADE GROUND: CONCRETE slab.	0.30	
0.30	101	ES								MADE GROUND: Brown, silty, sandy, subangular, fine to coarse GRAVEL of brick and mixed lithologies with a medium cobble content. Sand is fine to coarse. Cobbles are subangular of brick and mixed lithologies by 120mm.	(0.50) 0.80	
0.80	102	ES									1.20	
1.20-1.45	3	UT	15 blows 180% recovery							MADE GROUND: Soft, brown mottled orangish and black, slightly sandy, silty, very gravelly CLAY with a medium cobble content. Sand is fine to coarse. Gravel is subangular, fine to coarse of brick and other lithologies. Cobbles are subangular of brick by 130mm.	(0.80) 2.00	
1.70	4	D										
2.00-2.45	5	SPT	N=11							Firm, brown mottled grey, slightly sandy CLAY. Sand is fine to coarse. (TILL)		
2.00	103	ES										
2.00-2.45	6	DSPT										
2.00-2.45	7	B										
2.00		PID	0.0ppm							Firm, thinly laminated, brown mottled grey, slightly sandy, slightly gravelly, silty CLAY. Sand is fine to coarse. Gravel is subangular to angular fine to medium of sandstone and siltstone. (TILL)	(3.00) 5.00	
3.00	104	ES										
3.00-3.45	8	UT	10 blows 100% recovery									
3.00-3.45	9	D										
3.00		PID	0.0ppm									
4.00-4.45	11	SPT	N=16									
4.00-4.45	11	DSPT										
4.00-4.45	12	B										
5.00-5.45	13	UT	24 blows 100% recovery							Firm to stiff, thinly laminated, brown, slightly silty, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to angular of various lithologies including sandstone and siltstone. (TILL)	(1.90) 6.90	
5.50	14	D										
6.00-6.45	15	DSPT										
6.00-6.45	16	SPT	N=13									
6.00-6.45	17	B										
6.90-8.40				24	24	24				BOULDER, of medium strong, bluish grey and grey, fine grained sandstone. (Cable Percussion borehole terminated on this obstruction) (TILL)	7.26	
										No Recovery-Presumed to be slightly sandy gravelly CLAY as below (TILL)	(1.24) 8.50	
8.50-10.00										*Description on next sheet*		
8.50-8.95	20	SPT	N=38	45								

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
17/04/23			None	N/R	
17/04/23		6.90	6.00	200	
19/04/23		6.90	6.00	200	
19/04/23		10.00	8.50	146	
20/04/23		10.00	8.50	146	
20/04/23		17.50	8.50	146	
21/04/23		17.50	10.00	146	0.50
21/04/23		20.60	11.50	146	0.00

Chiselling / Slow Progress

From	To	Duration (hh:mm)
6.90	6.90	01:00

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20m depth.
3. BH terminated on possible hard boulder at 7.00m.
4. Cable percussion drilling to 6.90m terminated on an obstruction, followed by rotary core drilling to completion.
5. Borehole terminated at 35.50m depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + T Rendell**	**JAlton + Matt Jones**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH03**

Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **27.04.23**	**47.11**	**E:385140.9 N:398432.1**	**2** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
				45						Firm to stiff, dark reddish brown, slightly sandy, gravelly CLAY. Sand is fine to coarse, subangular to subrounded of sandstone, mudstone, chalk quartzite and coal. Poor core recovery throughout, presumed disturbance to clay from drilling process,. (GLACIAL TILL) (TILL)		
10.00-11.50												
10.00-10.45	24	SPT	N=32									
				100								
10.91-11.21	56	C										
11.50-13.00												
11.50-11.88	27	SPT	3,6/7,13,30 for 75mm									
				25								
											(9.00)	
13.00-14.50												
13.00-13.38	29	SPT	10,12/12,30,8 for 75mm									
				69								
14.50-16.00												
14.50-14.95	32	SPT	N=50									
14.90-15.20	57	C										
				93								
16.00-17.50												
16.00-16.38	35	SPT	8,4/10,20,20 for 75mm									
				17								
											17.50	
17.50-19.00										*Description on next sheet*		
17.50-17.88	38	SPT	9,15/12,20,18 for 75mm	60								

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
24/04/23		20.60	20.60	200	5.70
24/04/23		29.50	29.50	146	0.00
25/04/23		29.50	29.50	146	7.60
25/04/23		35.50	35.50	146	0.00

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

6. Backfilled with installation materials.
7. SPT hammers VC-AR2812-25/02/23 (E_r = 66.00%) , VC-VC1-25/01/2023 (E_r = 73.00%) used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + T Rendell**	**JAlton + Matt Jones**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH03**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**17.04.23** End: **27.04.23**	**47.11**	**E:385140.9 N:398432.1**	**3** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
17.50-17.80	58	C		60						Below 17.50m driller records "SANDS, GRAVELS and large BOULDERS", poor core recovery Material recovered described as multicoloured, grey, red, brown, white, COBBLES with occasional boulders and much sandy GRAVEL. Gravel is angular to subrounded, of lithified mudstone, sandstone, siltstone and quartzite. Cobbles are subrounded to rounded of quartzite, lithified mudstone and rare sandstone up to 120 mm by 100 mm. (TILL) *(stratum copied from 17.50m from previous sheet)* . . . 18.00m -18.40m recovered as reddish brown, slightly clayey, gravelly fine to coarse SAND. Rare rounded cobbles. . . . 19.00m - 19.40m recovered as light reddish brown, slightly gravelly, sightly silty, fine to medium SAND with a low cobble content. . . . at 20.50m unable to progress Geobore S, open holing techniques used from 20.60m to 22.00m	(7.20)	
19.00-20.50 19.00-19.15	41	SPT	11,14/50 for 50mm	27								
20.50-22.00 20.50-20.50	43	SPT(c)	NP									
22.00-23.50										. . . at 22.00m hole continued with Geobore S driller records "heavy gravels and boulders"		
23.50-25.00 23.50-23.80	46	SPT(c)	9,11/21,29 for 75mm	27	0	0					24.70	
										Extremely weak, brownish red, fine and medium grained SANDSTONE. Recovered as sand. (CHESTER FORMATION)	(0.57)	
25.00-26.50 25.00-25.02	48	SPT(c)	25/50 for 10mm	100	71	49	NI 141 330				25.27	
										Very weak to weak, brownish red, fine and medium grained, partially weathered SANDSTONE. (CHESTER FORMATION)	(1.23)	
26.10-26.35	59	C									26.50	
26.50-28.00				100	60	41				Extremely weak, reddish brown fine and medium grained SANDSTONE. Recovered as clayey sand.	26.90	

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + T Rendell**	**JAlton + Matt Jones**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH03**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**17.04.23** End: **27.04.23**	**47.11**	**E:385140.9 N:398432.1**	**4** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
27.23-27.55	60	C		100	60	41				(CHESTER FORMATION) Weak, brownish red, fine and medium grained, partially weathered SANDSTONE. (CHESTER FORMATION) *(stratum copied from 26.90m from previous sheet)*	(1.10) 28.00	
28.00-29.50				100	100	93				Very weak to weak, brownish red, fine and medium grained, distinctly weathered SANDSTONE. Rare dark bluish grey siltstone inclusions up to 20 mm by 20 mm in size. Fracture set 1: fractures are medium to widely spaced, horizontal undulating, rough, tight or open <10 mm with thin clay film on fracture plane. Fracture set 2 : joints are medium to widely spaced 80° to 90° undulating, open up to 30 mm infilled with a combination of dark grey silt and yellow fine to coarse sand >600 mm long (CHESTER FORMATION)	(3.25) 31.25	
29.05-29.29	61	C										
29.50-31.00												
29.82-30.10	64	C		100	100	100	NI 211 510					
31.00-32.50												
31.31-31.53	67	C		100	87	87				Moderately weak, brownish red, fine and medium grained, partially weathered SANDSTONE. Fracture set 1: fractures are medium to widely spaced, horizontal undulating, rough, tight or open <10 mm with thin clay film on fracture plane. Fracture set 2 : joints are medium to widely spaced, 80° to 90° undulating, open up to 5mm infilled with a combination of dark grey silt and yellow fine to coarse sand >600 mm long. (CHESTER FORMATION)	(2.15) 33.40	
32.50-34.00												
32.53-32.80	62	C		93	85	83						
34.00-35.50							NI 136 430			Weak reddish brown fine and medium grained distinctly weathered SANDSTONE. (CHESTER FORMATION) . . . 33.50m - 33.52m, clay lens, 20 mm thick. Soft dark reddish brown slightly silty CLAY.	(0.70) 34.10	
34.86-35.11	63	C		97	87	58				Moderately weak, brownish red, fine and medium grained, partially weathered SANDSTONE. Fracture set 1: fractures are closely to widely spaced, horizontal, undulating, rough, tight or open <15 mm with soft red clay infill. (CHESTER FORMATION)	(1.40) 35.50	
										Borehole terminated at 35.50m depth.		

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + T Rendell**	**JAlton + Matt Jones**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH03**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **27.04.23**	**47.11**	**E:385140.9 N:398432.1**	**5** of **10**





Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + T Rendell	Logged By:	JAlton + Matt Jones	Checked By:	JWL

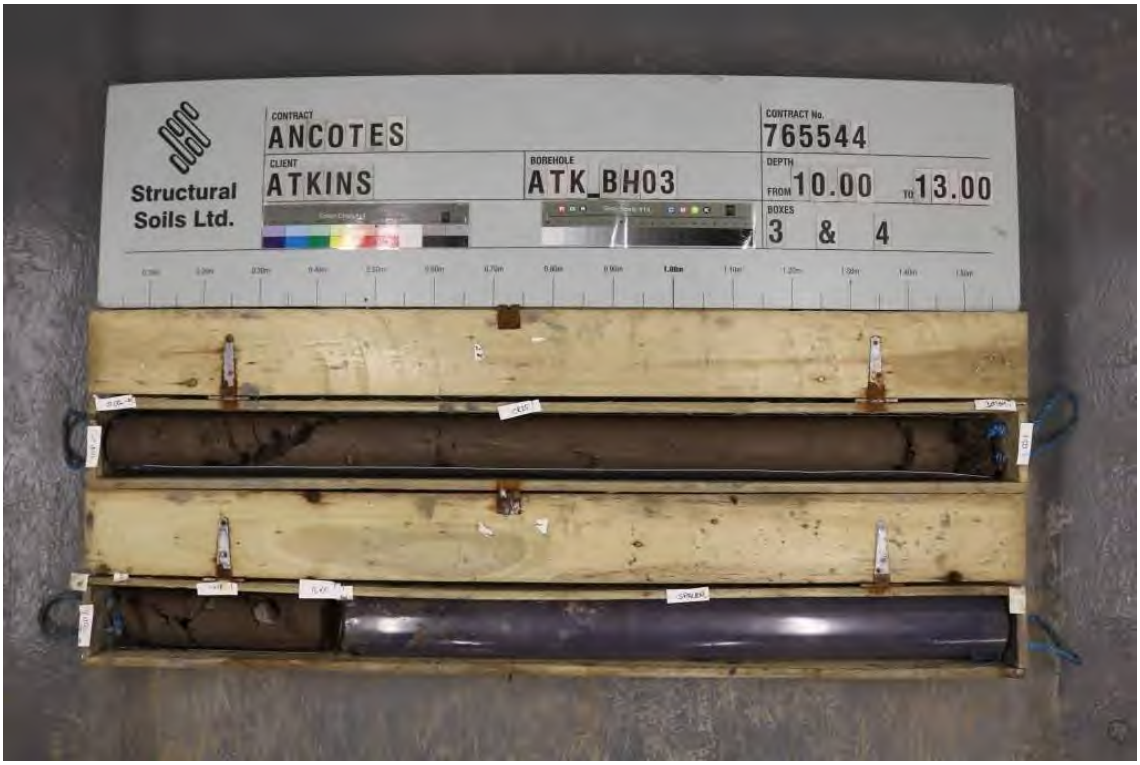
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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH03**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **27.04.23**	**47.11**	**E:385140.9 N:398432.1**	**6** of **10**





Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + T Rendell	Logged By:	JAlton + Matt Jones	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH03**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **27.04.23**	**47.11**	**E:385140.9 N:398432.1**	**7** of **10**





Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + T Rendell	Logged By:	JAlton + Matt Jones	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH03**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **27.04.23**	**47.11**	**E:385140.9 N:398432.1**	**8** of **10**





Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + T Rendell	Logged By:	JAlton + Matt Jones	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
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Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **27.04.23**	**47.11**	**E:385140.9 N:398432.1**	**9** of **10**





Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + T Rendell	Logged By:	JAlton + Matt Jones	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
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Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **27.04.23**	**47.11**	**E:385140.9 N:398432.1**	**10** of **10**



Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + T Rendell	Logged By:	JAlton + Matt Jones	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH04**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**12.04.23** End: **26.04.23**	**47.09**	**E:385108.8 N:398435.2**	**1** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										MADE GROUND: Light grey reinforced CONCRETE.	0.20	
0.20-0.25	1	B									0.27	
0.25	101	ES								MADE GROUND: Brown and orangish brown mottled, sandy, angular to subangular, fine to coarse GRAVEL of concrete and sandstone.	0.50	
0.25		PID	0.0ppm									
0.30-0.40	2	B									0.90	
0.35	3	D								MADE GROUND: Brown, grey and orangish brown mottled, sandy, slightly clayey, angular to subangular, fine to coarse GRAVEL of sandstone and mudstone with a low cobble content. Cobbles are subangular of sandstone up to 120mm.	(0.60)	
0.40	102	ES										
0.40		PID	0.0ppm									
0.50-0.80	4	B									1.50	
0.60	5	D								POSSIBLE MADE GROUND: Soft to firm, brown mottled grey, slightly sandy, slightly gravelly CLAY. Gravel is rounded fine and medium of mudstone and sandstone.		
0.70	103	ES										
0.70		PID	0.0ppm									
0.90-1.10	6	B										
1.10	7	D								Stiff brown mottled grey, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to rounded, fine to coarse of sandstone mudstone and rare coal. (TILL)	(2.50)	
1.20	104	ES										
1.20-1.65	8	UT	20 blows 90% recovery									
1.20		PID	0.0ppm									
1.70	9	D										
2.00-2.45	10	SPT	N=8									
2.00	105	ES								Soft, thinly laminated, brown mottled grey, silty CLAY. (TILL)		
2.00-2.45	11	DSPT										
2.00-2.45	12	B										
2.00		PID	0.0ppm									
3.00-3.45	13	UT	22 blows 100% recovery								4.00	
3.50	14	D								Firm to stiff, thinly laminated, brown, slightly sandy, slightly gravelly, silty CLAY. Sand is fine to coarse. Gravel is subrounded to rounded fine to coarse of mudstone and sandstone. (TILL)		
4.00-4.45	15	SPT	N=16									
4.00-4.45	16	DSPT										
4.00-4.45	17	B										
5.00-5.45	18	UT	26 blows 100% recovery									
5.50	19	D										
6.00-6.45	20	SPT	N=17									
6.00-6.45	21	DSPT										
6.00-6.45	22	B									(6.00)	
7.00-7.45	23	UT	33 blows 100% recovery									
7.50	24	D										
8.00-8.45	25	SPT	N=20									
8.00-8.45	26	DSPT										
8.00-8.45	27	B										

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
12/04/23			None	N/R	
12/04/23		13.00	1.50	200	Dry
13/04/23		13.00	1.50	200	Dry
13/04/23		25.20	25.00	200	24.00
26/04/23		25.20	25.20	200	24.10
26/04/23		36.50	36.50	146	Dry

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Concrete cored to 0.20m followed by hand dug inspection pit to 1.20m.
3. Cable percussion drilling to 25.20m followed by rotary core drilling to completion.
4. Borehole terminated at 36.50m depth.
5. Backfilled with installation materials.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + T Rendell**	**LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH04**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**12.04.23** End: **26.04.23**	**47.09**	**E:385108.8 N:398435.2**	**2** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00-9.45	28	UT	46 blows 100% recovery							Firm to stiff, thinly laminated, brown, slightly sandy, slightly gravelly, silty CLAY. Sand is fine to coarse. Gravel is subrounded to rounded fine to coarse of mudstone and sandstone. (TILL) *(stratum copied from 4.00m from previous sheet)*	10.00	
9.50	29	D										
10.00-10.45	30	SPT	N=24							Soft brown sandy, slightly gravelly, silty CLAY. Sand is fine to coarse. Gravel is subrounded to rounded, fine and medium of mudstone and sandstone. (TILL)	(2.00)	
10.00-10.45	31	DSPT										
10.00-10.45	32	B										
11.50-11.95	33	UT	46 blows 100% recovery								12.00	
12.00	34	D								Soft, brown, sandy, slightly gravelly, silty CLAY. Sand is fine to coarse. Gravel is subrounded to rounded, fine and medium of mudstone and sandstone. (TILL)	(1.00)	
13.00-13.45	35	SPT	N=26							Soft to firm, thinly laminated, reddish brown and brown mottled, sandy, slightly gravelly, silty CLAY with interbeds of slightly gravelly, fine to coarse SAND. Gravel is angular to well rounded, fine and medium of mudstone, sandstone and quartzite. Sand is fine to coarse. (TILL)	13.00	
13.00-13.45	36	DSPT										
13.00-13.45	37	B										
14.50-14.95	38	$UT_{(UT100)}$	56 blows 100% recovery								(4.00)	
15.00	39	D										
16.00-16.14	40	SPT	7,18/50 for 11mm									
16.00-16.45	40	DSPT										
16.00-16.45	41	DSPT										
16.00-16.45	42	B									17.00	
17.50-17.95	44	SPT	N=34							Dense reddish brown, slightly gravelly, slightly clayey, silty, fine and medium, rarely coarse, SAND. Gravel is angular to well rounded, fine to coarse of sandstone and mudstone. (TILL)	(1.00)	
17.50-17.95	44	DSPT										
17.50-17.95	45	B									18.00	

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

6. SPT hammer VC-VC1-25/01/2023 (E_r = 73.00%) used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + T Rendell**	**LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH04**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**12.04.23** End: **26.04.23**	**47.09**	**E:385108.8 N:398435.2**	**3** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										Firm, thinly laminated, reddish brown and brown mottled, sandy slightly, gravelly, silty CLAY with thin laminations of dark brown clay (1-2mm thick) and frequent lenses of sand (5-20mm thick). Sand is fine and medium, rarely coarse. Gravel is well rounded, fine to coarse of sandstone, mudstone and rare coal. (TILL)	(1.00) 19.00	
19.00-19.45	46	$UT_{(UT100)}$	47 blows 100% recovery							Firm to stiff, thinly laminated greyish brown, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is well rounded, fine of mudstone (TILL)	(1.50) 20.50	
19.50	47	D										
20.50-20.76	48	SPT	6,16/20,30 for 37mm							Dense, reddish brown, sandy, slightly clayey, slightly silty, angular to well rounded, fine to coarse GRAVEL of sandstone and mudstone. Sand is fine to coarse. (TILL)	(3.50) 24.00	
20.50-20.95	49	DSPT										
20.50-20.95	50	B										
22.00-22.45	51	SPT(c)	N=40									
22.00-22.45	51	B										
23.50-23.95	52	SPT(c)	N=39									
23.50-23.95	52	B										
										Reddish brown, slightly gravelly, slightly silty, fine to coarse SAND. Gravel is subangular to well rounded, fine of sandstone and mudstone. (TILL)	(0.90) 24.90	
25.00-25.09	53	SPT	25/50 for 10mm							Extremely weak, reddish brown, fine grained, highly weathered SANDSTONE. (TILL)	25.20	
25.00-25.45	54	DSPT									25.42	
25.20-26.00				70	6	0	NI NI NI			Brownish red, slightly sandy, silty CLAY. Sand is fine. (TILL)	25.50	
25.20	55	D										
26.00-27.50										Brownish red, fine and medium SAND. (TILL)		
26.08-26.47	56	C		100	99	85	NI 220 400			*Description on next sheet*		

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + T Rendell**	**LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH04**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**12.04.23** End: **26.04.23**	**47.09**	**E:385108.8 N:398435.2**	**4** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
27.50-29.00 27.62-27.74	57	C		100	99	85				Very weak, locally extremely weak, brownish red, fine and medium grained, slightly weathered SANDSTONE. Rare inclusions of quartz up to 10mm x 5mm and thin lenses of clay up to 2mm x 20mm in size. Fracture set 1: fractures are closely to medium spaced, dipping 0-5°, undulating, rough, tight with no infill and undulating, rough, open 2-10mm infilled with sand and clay. Fracture set 2: fractures are widely spaced, dipping 30-50°, planar, rough, open <1mm infilled with grey clay and planar, rough, open 1-3mm with no infill. (CHESTER FORMATION) *(stratum copied from 25.50m from previous sheet)* . . . 27.31m - 27.37m, steep set 2 fracture. . . . 27.50m - 27.54m, non intact zone of sand and fragments of sandstone.	(5.56)	
				100	99	83	NI 220 400					
29.00-30.50 29.04-29.29	58	C										
				100	86	41						
30.50-32.00							NI 111 220			. . . 30.41m - 30.50m, non intact zone of sand and fragments of sandstone.		
30.90-31.00	63	C									31.06	
				100	100	63				Weak, locally very weak, slightly weathered, fine and medium grained SANDSTONE. Rare inclusions of quartz and white sandstone up to 10mm x 10mm and thin lenses of clay up to 2mm x 20mm in size. Fracture set 1: fractures are very closely to closely spaced, dipping 0-5°, planar, rough, tight. Fracture set 2: fractures are closely spaced, dipping 5-10°, undulating, rough, open, infilled with sand. Fracture set 3: fractures are very widely spaced, dipping 60°, undulating, rough, open 1-2mm infilled with sand. (CHESTER FORMATION) . . . 31.36m - 31.39m, extremely weak fractured sandstone.		
31.40-31.59	59	C										
32.00-33.50												
				100	100	97	30 260 420					
32.81-33.21	60	C										
33.50-35.00											(5.44)	
				100	100	86						
34.61-34.81	61	C					25 99 300					
35.00-36.50												
				100	85	47						
35.52-35.78	62	C										

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + T Rendell**	**LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH04**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**12.04.23** End: **26.04.23**	**47.09**	**E:385108.8 N:398435.2**	**5** of **9**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
				100	85	47	25 99 300				36.50	
										Borehole terminated at 36.50m depth.		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + T Rendell**	**LCross**	

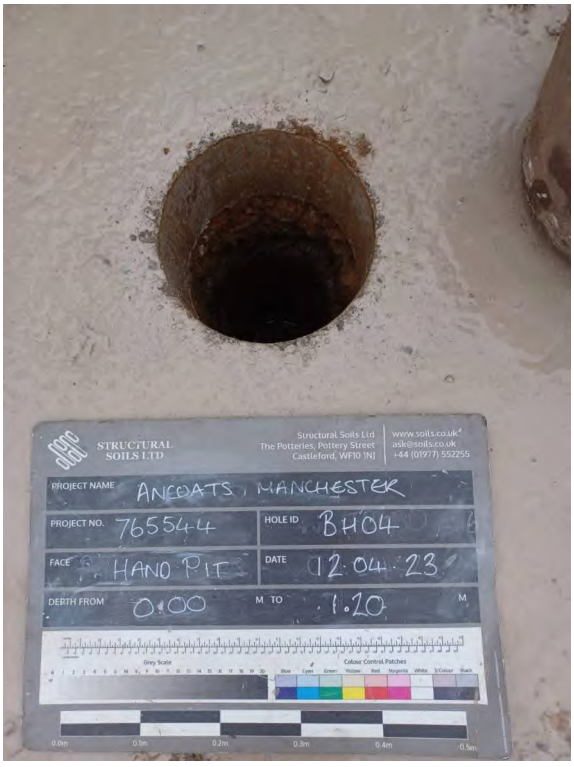
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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH04**
Contract Ref:	Start: **12.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **26.04.23**	**47.09**	**E:385108.8 N:398435.2**	**6** of **9**





Method Used:	Concrete coring (300mm) + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + T Rendell	Logged By:	LCross	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH04**
Contract Ref:	Start: **12.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **26.04.23**	**47.09**	**E:385108.8 N:398435.2**	**7** of **9**



Method Used:	Concrete coring (300mm) + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + T Rendell	Logged By:	LCross	Checked By:	JMC

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH04**
Contract Ref:	Start: **12.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **26.04.23**	**47.09**	**E:385108.8 N:398435.2**	**8** of **9**





Method Used:	Concrete coring (300mm) + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + T Rendell	Logged By:	LCross	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH04**
Contract Ref:	Start: **12.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **26.04.23**	**47.09**	**E:385108.8 N:398435.2**	**9** of **9**





Method Used:	Concrete coring (300mm) + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + T Rendell	Logged By:	LCross	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH05**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**06.04.23** End: **03.05.23**	**49.08**	**E:385034.6 N:398481.5**	**1** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										MADE GROUND: Light grey reinforced CONCRETE.	0.20	
0.20-0.35	1	B									0.35	
0.25	101	ES	1xT+2xJ+2xV							MADE GROUND: Light brown, very sandy, slightly clayey, very angular to rounded, fine to coarse GRAVEL of siltstone and sandstone with a low cobble content. Sand is fine to coarse. Cobbles are subangular of sandstone and siltstone up to 150mm.	0.50	
0.25		PID	0.0ppm									
0.35-0.50	2	B										
0.40	102	ES	1xT+2xJ+2xV									
0.40	3	D										
0.40		PID	0.0ppm									
0.70-0.90	4	B								MADE GROUND: Greyish brown, mottled orange, sandy slightly clayey, very angular to subangular, fine to coarse GRAVEL of siltstone, sandstone and mudstone with a low cobble content. Sand is fine to coarse. Cobbles are angular of siltstone.	(2.00)	
0.80	103	ES	1xT+2xJ+2xV									
0.80	5	D										
0.80		PID	0.0ppm									
0.90-1.20	6	B										
1.10	7	D										
1.20-1.65	9	SPT	N=23							Very stiff grey and brown mottled, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is very angular fine and medium, rarely coarse, of siltstone, mudstone and rare coal. (TILL)	2.50	
1.20-1.65	10	B										
1.20	104	ES	1xT+2xJ+2xV									
1.20-1.65	9	DSPT										
1.20		PID	0.0ppm									
1.60	105	ES	1xT+2xJ+2xV							. . . 1.00m - 1.20m, gravel is frequently coarse.		
1.60		PID	0.0ppm									
2.00-2.45	11	$UT_{(UT100)}$	36 blows 100% recovery							Firm to stiff, thinly laminated, brown, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is subrounded to rounded, fine to and medium of sandstone and mudstone. (TILL)		
2.00	63	D										
2.50	12	D										
3.00-3.45	13	SPT	N=18									
3.00-3.45	14	DSPT										
3.00-3.45	153	B										
4.00-4.45	16	$UT_{(UT100)}$	26 blows 100% recovery									
4.50	17	D										
5.00-5.45	17	SPT	N=26									
5.00-5.45	19	DSPT										
5.00-5.45	20	B										
6.00-6.45	21	$UT_{(UT100)}$	32 blows 100% recovery								(10.00)	
6.50	22	D										
7.00-7.45	24	SPT	N=25									
7.00-7.45	24	DSPT										
8.00-8.45	26	$UT_{(UT100)}$	39 blows 100% recovery									
8.50	27	D										

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
06/04/23			None	N/R	
06/04/23		20.71	13.50	200	Dry
13/04/23		20.71	21.00	200	Dry
13/04/23		27.20	27.20	200	27.00
14/04/23		27.20	28.00	200	25.00
14/04/23		28.00	28.00	200	25.00
21/04/23		28.00	28.00	200	26.20
21/04/23		35.00	35.00	146	19.70

Chiselling / Slow Progress

From	To	Duration (hh:mm)
27.00	27.20	00:45

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Concrete cored to 0.20m followed by hand dug inspection pit to 1.20m.
3. Slow seepage at 0.50m depth.
4. Cable percussion drilling to 28.00m followed by rotary core drilling to completion.
5. Borehole terminated at 38.00m depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**J Glynn + M Williams**	**JAlton + LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH05**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**06.04.23** End: **03.05.23**	**49.08**	**E:385034.6 N:398481.5**	**2** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00-9.45	29	SPT	N=24							Firm to stiff, thinly laminated, brown, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is subrounded to rounded, fine to and medium of sandstone and mudstone. (TILL) *(stratum copied from 2.50m from previous sheet)*		
9.00-9.45	29	DSPT										
9.00-9.45	30	B										
10.00-10.45	31	$UT_{(UT100)}$	40 blows 100% recovery									
11.50	33	D									12.50	
13.00-13.45	35	SPT	N=36							Soft brown, slightly sandy, slightly gravelly, silty CLAY. Sand is fine and medium. Gravel is subangular to rounded fine of mudstone and sandstone. (TILL)		
13.00-13.45	35	DSPT										
13.00-13.45	36	B									(2.00)	
14.50-14.95	37	$UT_{(UT100)}$	42 blows 100% recovery								14.50	
15.00	38	D								Firm brown, very sandy, clayey SILT. Sand is fine to coarse. Gravel is subrounded to rounded, fine of mudstone. (TILL)	(1.30)	
16.00-16.41	40	SPT	4,4/7,12,18,13 for 30mm								15.80	
16.00-16.45	40	DSPT								Firm brown, slightly sandy, slightly gravelly, silty CLAY. Sand is fine and medium. Gravel is subangular to rounded fine of mudstone and sandstone. (TILL)	(0.70)	
16.00-16.45	41	B									16.50	
16.50	42	D								Brown, slightly gravelly, very clayey, slightly silty, fine to coarse SAND. Gravel is rounded, fine of mudstone and sandstone. (TILL)	(0.70)	
17.20	43	D									17.20	
										Firm brown, very sandy, clayey SILT. Sand is fine to coarse. Gravel is subrounded to rounded, fine of mudstone. (TILL)	(0.80)	
											18.00	

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
24/04/23		35.00	35.00	146	28.00
24/04/23		38.00	38.00	146	3.00

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

6. Backfilled with installation materials.
7. SPT hammer VC-AR2499-25/01/23 (E_r = 70.00%) used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**J Glynn + M Williams**	**JAlton + LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH05**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**06.04.23** End: **03.05.23**	**49.08**	**E:385034.6 N:398481.5**	**3** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
18.00-18.29	45	SPT	7,14/38,12 for 60mm							Reddish brown, slightly gravelly, clayey, silty, fine SAND. Gravel is angular to subangular, fine and medium of siltstone. (TILL)	(1.10)	
18.00-18.45	45	DSPT										
18.00-18.45	46	B									19.10	
19.10	47	D								Reddish brown, mottled black and grey, slightly sandy, slightly silty, very angular to rounded, fine to coarse GRAVEL with a low cobble content. Sand is fine to coarse. Cobbles are rounded of sandstone up to 110mm. (TILL)	(0.30)	
19.40	48	D									19.40	
19.50-19.90	50	SPT	7,8/10,15,20,5 for 25mm								(1.30)	
19.50-19.95	50	DSPT										
19.50	51	B								Firm, dark red, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine of mudstone. (TILL)		
20.70	52	D									20.70	
										Stiff, thinly laminated, brownish grey CLAY. (TILL)	(0.30)	
21.00-21.44	54	SPT	10,10/12,12,32,6 for 60mm								21.00	
21.00-21.45	54	DSPT								Reddish brown, slightly gravelly, clayey, fine and medium SAND. Gravel is rounded, fine of sandstone. (TILL)	(0.50)	
21.00-21.45	55	B									21.50	
21.50	56	D										
21.60	56	D								Reddish brown mottled grey and black, slightly sandy, angular to well rounded, fine to coarse GRAVEL of mudstone and sandstone. Sand is medium to coarse. (TILL)	(2.00)	
22.50-22.82	58	SPT(c)	6,10/14,16,20 for 20mm									
22.50-22.95	58	DSPT										
22.50-22.95	59	B									23.50	
24.00-24.33	61	SPT(c)	7,7/15,15,20 for 30mm							Reddish brown, slightly gravelly, silty, very clayey, fine to coarse SAND with a low cobble content. Gravel is angular to well rounded, fine and medium of sandstone and mudstone. Cobbles are subrounded of sandstone up to 100mm. (TILL)	(1.50)	
24.00-24.45	61	DSPT										
24.00-24.45	62	B									25.00	
25.00	63	D								Firm brown, very sandy, slightly gravelly, silty CLAY. Sand is fine to coarse. Gravel is subrounded to well rounded, fine of quartz, mudstone and sandstone. (TILL)	(0.40)	
25.30	64	D									25.40	
25.50-25.77	66	SPT	5,10/15,35 for 40mm									
25.50-25.95	66	DSPT										
25.50-25.95	67	B								Brown, slightly silty, fine and medium, rarely coarse, SAND. (TILL)	(1.50)	
											26.90	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**J Glynn + M Williams**	**JAlton + LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH05**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**06.04.23** End: **03.05.23**	**49.08**	**E:385034.6 N:398481.5**	**4** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
26.90	68	D								Reddish brown, silty, slightly clayey, fine and medium SAND. (TILL)	27.00	
27.00-27.08	70	SPT	25/50 for 5mm								(1.00)	
27.00-27.45	70	DSPT								Extremely weak, reddish brown, fine grained, highly weathered SANDSTONE. (CHESTER FORMATION)	28.00	
27.20-28.00	72	D										
28.00-29.00										Very weak to weak, brownish red, fine and medium grained, partially weathered SANDSTONE with rare lenses (3mm to 1 mm thick) and inclusions (up to 20mm dia) of dark reddish brown clay. Fracture set 1: fractures are medium spaced, horizontal, undulating, rough, tight or open <4 mm with thin clay film or infill on fracture plane. . (CHESTER FORMATION)		
28.00-28.15	74	SPT(c)	25/50 for 75mm				90					
28.00-28.24	75	C		100	100	90	200					
28.40-28.45	74	D					250					
29.00-30.50				57	48	17				. . . 29.23m - 29.68m, extremely weak, destructured SANDSTONE with rare lenses (8 mm thick) of clay and rare gravel sized (up to 25mm) inclusions of mudstone and quartzite. . . . 29.68m - 29.90m, with rare lenses (up to 10 mm thick) of dark reddish brown sand and extremely weak light bluish grey siltstone beds up to 5 mm thick.	(2.50)	
30.50-32.00				100	47	13	NI 47 200			. . . 29.90m - 30.50m, AZCL core possibly extremely weak, dropped or scrubbed away, reason of core lose not recorded by driller. Very weak to weak, brownish red, fine and medium grained, partially weathered SANDSTONE interbedded with extremely weak, brownish red fine and medium grained, destructured to residual sandstone with rare lenses (100 mm by 40 mm) of dark reddish brown clay. Rare gravel sized inclusions of mudstone, siltstone, sandstone and igneous lithologies. Fracture set 1: fractures are closely to medium spaced, horizontal, undulating, rough, tight or open up to 2 mm with clay or sand infill. . (CHESTER FORMATION)	30.50	
31.80-32.00	76	C									(1.78)	
32.00-33.50				100	93	82				. . . 30.50m - 32.28m, interbedded with extremely weak, brownish red fine and medium grained, destructured sandstone with rare lenses (up to 40 mm) of dark reddish brown clay. Rare gravel sized inclusions of mudstone, siltstone, sandstone and igneous lithologies.	32.28	
33.26-33.50	77	C									(1.72)	
33.50-35.00				85	81	56				Weak, brownish red fine and medium grained partially weathered SANDSTONE. Fracture set 1: fractures are medium spaced, horizontal, undulating, rough, tight with clay infill or clean. (CHESTER FORMATION)	34.00	
33.72-34.00	78	C					NI 156 290				(1.00)	
35.00-36.50				100	100	91	NI 194 490			Moderately weak, red, medium and coarse grained partially weathered SANDSTONE with common gravel sized (up to 12 mm by 20 mm) inclusions of sandstone, siltstone and igneous lithologies. Fracture set 1: fractures are medium spaced, horizontal, undulating, rough and tight clean. (CHESTER FORMATION)	35.00	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**J Glynn + M Williams**	**JAlton + LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH05**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**06.04.23** End: **03.05.23**	**49.08**	**E:385034.6 N:398481.5**	**5** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
36.12-36.39	79	C		100	100	91				. . . 34.30m - 34.38m, cobble (80mm) medium strong light grey mottled dark grey meta sandstone. . . . 34.38m - 34.63m, gravel content increases. Sandstone becomes weak. Potential zone of core loss by scrubbing from 34.76m to 35.00m.	(3.00)	
36.50-38.00												
36.99-37.30	80	C		100	97	79	NI 194 490			. . . 35.49m -35.76m, very weak, fine to coarse grained, distinctly weathered with rare gravel sized inclusions of mudstone and siltstone. Weak, brownish red fine and medium grained partially weathered SANDSTONE. Fracture set 1: fractures are medium spaced, horizontal, undulating, rough, tight with clay infill or clean.	38.00	
										. (CHESTER FORMATION) *(stratum copied from 35.00m from previous sheet)* . . . 36.84m - 37.39m, extremely weak, fine grained, distinctly weathered. . . . 37.39m - 37.57m, very weak, distinctly weathered.		
										Borehole terminated at 38.00m depth.		

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**J Glynn + M Williams**	**JAlton + LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH05**
Contract Ref:	Start: **06.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **03.05.23**	**49.08**	**E:385034.6 N:398481.5**	**6** of **8**





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Method Used:	Concrete coring (300mm) + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	J Glynn + M Williams	Logged By:	JAlton + LCross	Checked By:	JMC

STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH05**
Contract Ref:	Start: **06.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **03.05.23**	**49.08**	**E:385034.6 N:398481.5**	**7** of **8**





Method Used:	Concrete coring (300mm) + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	J Glynn + M Williams	Logged By:	JAlton + LCross	Checked By:

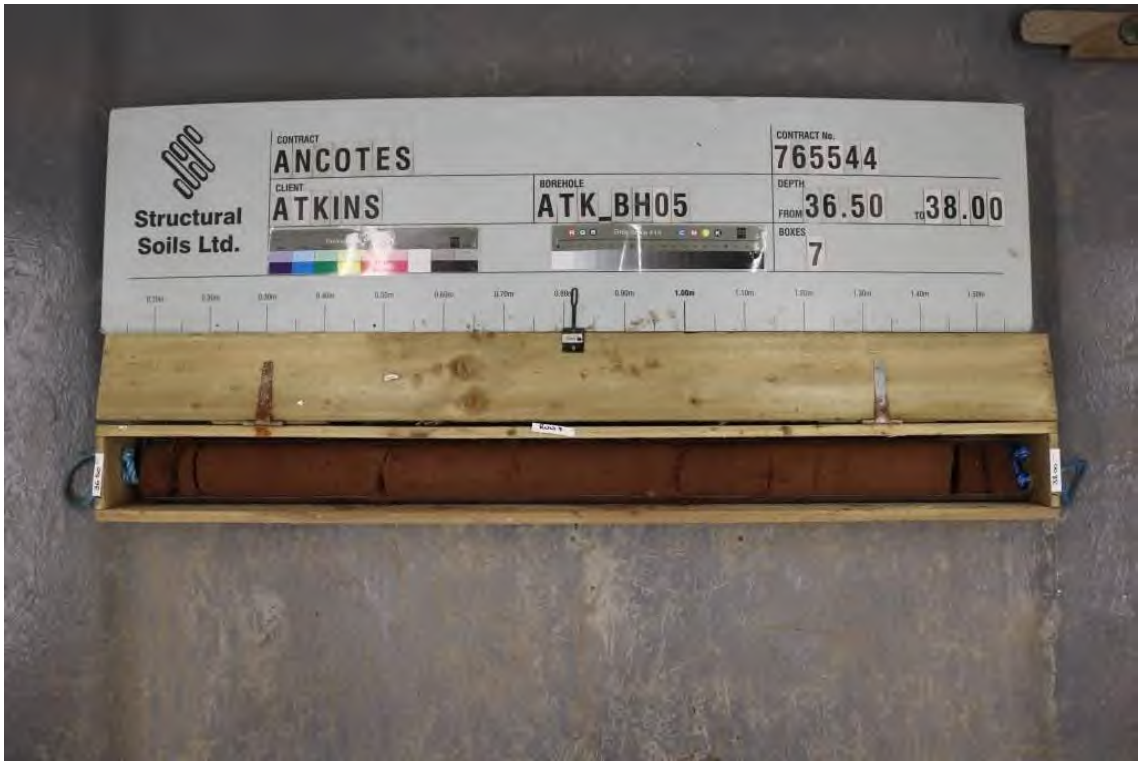
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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH05**
Contract Ref:	Start: **06.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **03.05.23**	**49.08**	**E:385034.6 N:398481.5**	**8** of **8**





Method Used:	Concrete coring (300mm) + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	J Glynn + M Williams	Logged By:	JAlton + LCross	Checked By:	JMC

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH06**

Contract Ref:	Start: **14.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **02.05.23**	**47.09**	**E:385113.0 N:398404.3**	**1** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										MADE GROUND: Light grey reinforced CONCRETE.	0.20	
0.20-0.80	1	B										
0.30-0.45	1	B								MADE GROUND: Light brown, very sandy, slightly clayey, angular to subangular, fine to coarse GRAVEL of sandstone, mudstone and concrete with a medium cobble content. Sand is fine to coarse. Cobbles are angular to subangular of sandstone up to 200mm in length.	(0.60)	
0.30	101	ES	1xT+2xJ+2xV								0.80	
0.45-0.70	2	B										
0.50	101	ES	1xT+2xJ+2xV								(0.50)	
0.50		PID	0.0ppm								1.30	
0.80-1.20	2	B										
0.80-1.20	3	B								MADE GROUND: Dark grey and reddish orange mottled, very sandy, slightly clayey, very angular to subangular, fine to coarse GRAVEL of sandstone, brick, cement, concrete, tile and glass with a high cobble content. Sand is fine to coarse. Cobbles are subangular of brick up to 250mm.	(0.70)	
1.00	103	ES	1xT+2xJ+2xV								2.00	
1.00		PID	0.0ppm									
1.60-2.00	4	B										
1.70	104	ES	1xT+2xJ+2xV									
1.70		PID	0.0ppm									
2.00	5	D										
2.00-2.45	7	SPT	N=13							MADE GROUND: Brown mottled reddish orange, sandy, gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of brick, sandstone, mudstone and cement.	(2.00)	
2.00-2.45	7	DSPT										
2.00-2.45	8	B										
2.30	104	ES										
2.30	105	ES	1xT+2xJ+2xV									
2.30		PID	0.0ppm									
3.00-3.45	11	SPT	N=23							POSSIBLE MADE GROUND: Stiff, thinly laminated brown mottled black and grey, slightly gravelly, slightly sandy CLAY. Gravel is subangular to well rounded, fine of mudstone, coal and brick.		
3.00-3.45	11	DSPT										
3.00-3.45	12	B										
3.30	106	ES	1xT+2xJ+2xV								4.00	
3.30		PID	0.0ppm									
4.00	13	D								Firm, brown, slightly sandy, slightly gravelly CLAY. Sand is medium and coarse. Gravel angular to well rounded, fine of mudstone. (TILL)		
4.00-4.45	14	$UT_{(UT100)}$	115 blows 100% recovery									
4.50	15	D										
5.00	16	D										
5.00-5.45	18	SPT	N=21									
5.00	107	ES	1xT+2xJ+2xV									
5.00-5.45	18	DSPT										
5.00-5.45	19	B										
6.00	20	D										
6.00-6.45	21	$UT_{(UT100)}$	125 blows 100% recovery								(5.10)	
6.50	22	D										
7.00	23	D										
7.00-7.45	25	SPT	N=20									
7.00-7.45	25	DSPT										
7.00-7.45	26	DSPT										
8.00	27	D										
8.00-8.45	28	$UT_{(UT100)}$	120 blows 100% recovery									
8.50	29	D										

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
14/04/23			None	N/R	
14/04/23		1.50	None	200	Dry
17/04/23		1.50	None	200	Dry
17/04/23		14.95	14.50	200	Dry
18/04/23		14.95	14.50	200	Dry
18/04/23		22.00	22.00	200	Dry
19/04/23		22.00	22.00	200	
19/04/23		23.20	23.20	200	

Chiselling / Slow Progress

From	To	Duration (hh:mm)
1.20	1.50	01:30
21.70	21.80	00:30
22.50	23.00	02:00
23.00	23.20	01:00
28.70	29.00	00:30

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Concrete cored to 0.20m depth then inspection pit hand dug to 1.20m depth.
3. Cable percussion drilling to 29.00m followed by rotary core drilling to completion.
4. Backfilled with installation materials.
5. SPT hammer VC-AR1101-25/01/2023 (E_r =

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**M Foley + T Rendell**	**LCross + Kay Adedotun**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH06**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**14.04.23** End: **02.05.23**	**47.09**	**E:385113.0 N:398404.3**	**2** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00	30	D										
9.00-9.45	32	SPT	N=25							Firm, thinly laminated brown, slightly gravelly, slightly sandy CLAY. Gravel is subangular to rounded, fine and medium of mudstone and sandstone. Sand is fine to coarse. (TILL)	9.10 (0.90) 10.00	
9.00-9.45	32	DSPT										
9.00-9.45	33	B										
10.00	34	D										
10.00-10.45	35	$UT_{(UT100)}$	125 blows 100% recovery							Firm to stiff, brown, slightly gravelly, slightly sandy CLAY. Gravel is subangular to rounded, fine and medium of mudstone and sandstone. (TILL)	(0.70) 10.70	
10.50	36	D								. . . 10.40m - 10.60m, occasional lenses of fine sand 1-2mm thick.		
11.50-11.95	39	SPT	N=25							Soft to firm, brown, slightly gravelly, slightly sandy, silty CLAY. Gravel is subrounded to well rounded, fine and medium of mudstone and sandstone. Sand is fine to coarse. (TILL)	(2.50) 13.20	
11.50-11.95	39	DSPT										
11.50-11.95	40	B										
12.00	41	D										
13.00	42	D										
13.00-13.45	43	$UT_{(UT100)}$	125 blows 100% recovery							Firm, reddish brown, sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subrounded to well rounded, fine and medium of mudstone. (TILL)	(0.80) 14.00	
13.50	44	D										
14.00	45	D								Firm, reddish brown, very sandy, slightly gravelly, silty CLAY. Sand is fine to coarse. Gravel is subrounded to well rounded, fine and medium of mudstone. (TILL)	(1.00) 15.00	
14.50-14.95	47	SPT	N=43							. . . 14.50m - 14.70m, becomes very sandy.		
14.50-14.95	47	DSPT								. . . 14.92-14.95m rounded clast of granite		
14.50-14.95	48	B										
15.00	49	D								Firm, thinly laminated brown, slightly sandy, slightly gravelly, silty CLAY with frequent lenses of fine sand 1-5mm in thickness. Sand is fine to coarse. Gravel is subangular to well rounded, fine and medium of mudstone and rare quartzite. (TILL)	(1.20) 16.20	
16.00	50	D								. . . at 15.00m, sand lens.		
16.00-16.45	51	$UT_{(UT100)}$	125 blows 85% recovery							Firm, brown, gravelly, sandy, silty CLAY. Gravel is rounded to well rounded, fine to coarse of mudstone and sandstone. Sand is fine to coarse. (TILL)	(0.80) 17.00	
16.50	52	D										
17.00	53	D								. . . 16.40m - 16.60m, increase in proportion of silt and sand.		
17.50-17.95	55	SPT	N=36							Firm, thinly laminated, brown, silty CLAY with rare lenses of fine sand 1-2mm thick. (TILL)		
17.50-17.95	55	DSPT								. . . 17.00m - 17.10m, becomes very gravelly with		
17.50-17.95	56	B										

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
20/04/23		23.20	23.50	200	21.60
20/04/23		29.00	29.00	200	28.50
27/04/23		29.00	29.00	200	26.00
27/04/23		36.60	36.60	146	0.00
28/04/23		36.60	36.60	146	
28/04/23		39.10	39.10	146	
02/05/23		39.10	39.10	146	

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

72.00%) used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**M Foley + T Rendell**	**LCross + Kay Adedotun**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH06**

Contract Ref:	Start: **14.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **02.05.23**	**47.09**	**E:385113.0 N:398404.3**	**3** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
18.00	57	D								frequently coarse gravel clasts. Firm, thinly laminated, brown, silty CLAY with rare lenses of fine sand 1-2mm thick. (TILL) . . . 17.00m - 17.10m, becomes very gravelly with frequently coarse gravel clasts.*(stratum copied from 17.00m from previous sheet)*	(3.00)	
19.00	58	D										
19.00-19.45	59	$UT_{(UT100)}$	120 blows 100% recovery									
19.50	60	D									20.00	
20.00	61	D								Brown, mottled grey and black, sandy, slightly clayey, very angular to well rounded, fine to coarse GRAVEL of sandstone and mudstone. Sand is fine to coarse. (TILL)	20.20	
20.00-20.50	62	B									(0.80)	
20.50-20.83	63	SPT(c)	10,15/18,20,12 for 40mm								21.00	
20.50-20.75	64	B								Brown mottled grey and black, gravelly, slightly silty, fine to coarse SAND. Gravel is very angular to rounded, fine to coarse of sandstone and mudstone. (TILL) . . . 20.50m - 21.00m, becomes less gravelly	(0.90)	
21.00	65	D									21.90	
21.80	66	D								Brown mottled grey and black, very gravelly, fine to coarse SAND. Gravel is very angular to subangular, fine to coarse of quartzite, sandstone and mudstone. (TILL) . . . 21.00m - 21.87m, becomes very gravelly. . . . at 21.70m, subrounded cobble of quartzite 130mm in length.	(0.80)	
22.00-22.13	66	SPT(c)	25/50 for 70mm								22.70	
22.00	67	D										
22.00-22.45	68	B										
22.50-22.95	69	B										
23.00	70	D								Firm, brown, very gravelly, slightly sandy, silty CLAY. Gravel is subrounded to well rounded, fine to coarse of sandstone and granite. Sand is fine to coarse. (TILL)	(2.80)	
23.50-23.62	71	SPT(c)	25/50 for 55mm									
23.50-23.95	72	B										
24.00	73	D								Brown, very sandy, slightly clayey, subangular to well rounded fine to coarse GRAVEL of sandstone, quartzite and granite with a low cobble content. Sand is fine to coarse. Cobbles are rounded of sandstone and quartzite up to 110mm. (TILL)		
25.00	74	D									25.50	
25.00-25.14	75	SPT(c)	25/50 for 65mm							Stiff, greyish brown, very gravelly, very sandy CLAY with a low cobble content. Gravel is subrounded to well rounded, fine to coarse of sandstone, siltstone and various crystalline lithologies. Sand is fine to coarse. Cobbles are rounded of sandstone and various crystalline lithologies up to 120mm. (TILL)	(0.50)	
25.00-25.45	76	B									26.00	
25.50-25.95	77	B									(1.00)	
26.00	78	D										
26.00-26.45	79	B										
26.50-26.85	80	SPT(c)	10,15/16,20,14 for 50mm									
26.50-26.95	80	B								*Description on next sheet*	27.00	

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**M Foley + T Rendell**	**LCross + Kay Adedotun**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH06**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**14.04.23** End: **02.05.23**	**47.09**	**E:385113.0 N:398404.3**	**4** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
27.00	81	D								Grey and brown mottled, gravelly, slightly silty, fine to coarse SAND with a low cobble content. Gravel is angular to well rounded, fine to coarse of sandstone and siltstone. Cobbles are rounded of sandstone up to 110mm. (TILL)		
28.00-28.09	82	SPT	25/50 for 40mm							Reddish brown, fine and medium SAND. (TILL)	(2.10)	
28.00	83	D										
29.00	84	D									29.10	
29.00-29.07	85	SPT	25/50 for 30mm							Extremely weak to very weak, thickly laminated to very thinly bedded, reddish brown, slightly gravelly, fine to medium grained SANDSTONE. Gravel is subrounded to rounded of quartzite. Discontinuities : Set 1 - 5-15°, closely spaced to medium spaced, undulating, tough and tight. (CHESTER FORMATION)		
29.10-30.60												
29.82-30.10	85	C		100	71	56				. . . 29.10m - 29.23m, non intact. Recovered as 0.03-40mm fragments of extremely weak sandstone.		
30.60-32.10										. . . 29.24m - 29.41m, 1 No. 85° fracture, undulating, rough.		
31.31-31.53	86	C		98	74	57	NI 230 270			. . . 29.53m - 29.62m, non intact. Recovered as 0.03-40mm fragments of extremely weak sandstone.	(4.28)	
32.10-33.60				99	99	73				. . . 30.06m - 30.87m, non intact. Recovered as 0.03-40mm fragments of extremely weak sandstone. . . . 30.95m - 31.01m, non intact. Recovered as 0.03-40mm fragments of extremely weak sandstone. . . . at 31.15m, 1 No. 45° fracture, undulating, rough.		
33.38-33.60	87	C									33.38	
33.60-35.10										Very weak, thickly laminated to very thinly bedded, reddish brown, slightly gravelly, fine to medium grained SANDSTONE. Gravel is subrounded to rounded, fine to medium of quartzite and siltstone. Discontinuities - 5-15°, closely spaced to medium spaced, undulating, rough and tight. (CHESTER FORMATION)		
33.60-34.00	91	C		100	100	88	90 220 320			. . . 31.51m - 34.60m, extremely weak, reddish brown mudstone.		
35.10-36.60				82	82	51				. . . 35.10m - 35.37m, AZCL.		
35.82-36.62	88	C										

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**M Foley + T Rendell**	**LCross + Kay Adedotun**	AGS

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH06**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**14.04.23** End: **02.05.23**	**47.09**	**E:385113.0 N:398404.3**	**5** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
36.60-38.10				82	82	51				Very weak, thickly laminated to very thinly bedded, reddish brown, slightly gravelly, fine to medium grained SANDSTONE. Gravel is subrounded to rounded, fine to medium of quartzite and siltstone. Discontinuities - 5-15°, closely spaced to medium spaced, undulating, rough and tight. (CHESTER FORMATION) *(stratum copied from 33.38m from previous sheet)* . . . 36.60m - 36.85m, AZCL	(5.72)	
37.48-37.72	89	C		83	83	78	90 220 320					
38.10-39.10												
38.42-38.67	90	C		100	100	73					39.10	
										Borehole terminated at 39.10m depth.		

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**M Foley + T Rendell**	**LCross + Kay Adedotun**	

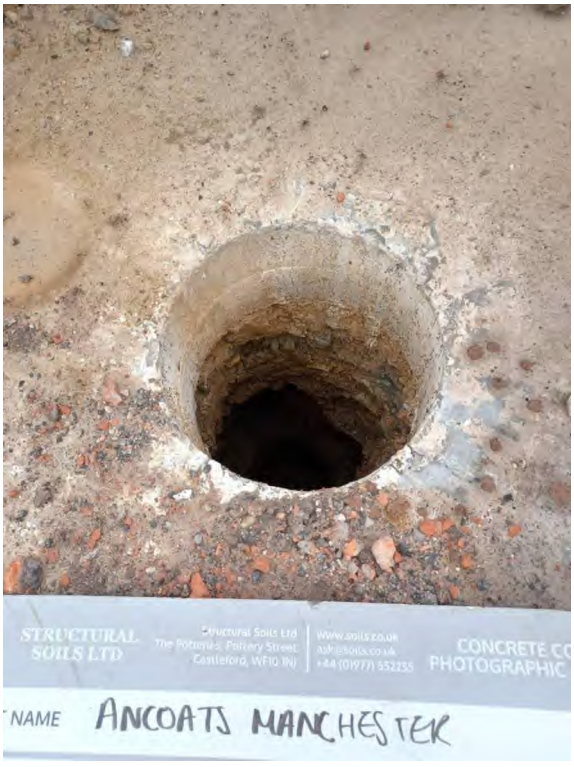
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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH06**
Contract Ref:	Start: **14.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **02.05.23**	**47.09**	**E:385113.0 N:398404.3**	**6** of **8**





Method Used:	Concrete coring (300mm) + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	M Foley + T Rendell	Logged By:	LCross + Kay Adedotun	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH06**
Contract Ref:	Start: **14.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **02.05.23**	**47.09**	**E:385113.0 N:398404.3**	**7** of **8**





Method Used:	Concrete coring (300mm) + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	M Foley + T Rendell	Logged By:	LCross + Kay Adedotun	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH06**
Contract Ref:	Start: **14.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **02.05.23**	**47.09**	**E:385113.0 N:398404.3**	**8** of **8**





Method Used:	Concrete coring (300mm) + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	M Foley + T Rendell	Logged By:	LCross + Kay Adedotun	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH07**

Contract Ref:	Start: **18.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **11.05.23**	**49.24**	**E:385005.2 N:398474.1**	**1** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
0.08-0.20	1	B								MADE GROUND: Pinkish brown BRICKS.	0.08	
0.10	101	ES	1xT+2xJ+2xV							MADE GROUND: Light brown, slightly clayey, very sandy, fine to mostly coarse, angular to subrounded GRAVEL of siltstone, sandstone and mudstone with rare cobbles. Sand is fine to mainly coarse. Cobbles are subangular to subrounded of sandstone up to 150mm.	0.20 0.45 (0.55) 1.00	
0.10		PID	0.0ppm									
0.20-0.45	2	B										
0.45	102	ES	1xT+2xJ+2xV									
0.45-1.00	3	B										
0.45		PID	0.0ppm									
0.70	103	ES	1xT+2xJ+2xV									
1.00-1.20	4	B										
1.00		PID	0.0ppm									
1.20-1.65	4	SPT	N=21									
1.20-1.45	5	DSPT										
1.20-1.45	6	B										
1.20		PID	0.0ppm									
2.00-2.45	7	SPT	N=18									
2.00-2.45	7	DSPT										
2.00-2.45	8	DSPT										
2.00-2.45	9	B										
3.00-3.45	10	$UT_{(UT100)}$	27 blows 100% recovery									
3.50	11	D										
4.00-4.45	12	SPT	N=14									
4.00-4.45	13	DSPT										
4.00-4.45	14	B										
5.00-5.45	15	$UT_{(UT100)}$	33 blows 100% recovery									
5.50	16	DSPT										
6.00-6.45	17	SPT	N=17									
6.00-6.45	18	DSPT										
6.00-6.45	19	B										
7.00-7.45	20	$UT_{(UT100)}$	30 blows 100% recovery									
7.50	21	D								Soft to firm, greyish brown mottled yellowish brown and bluish grey, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded of siltstone and sandstone with rare gravel sized coal fragments. (TILL)	(6.40) 7.50	
8.00-8.45	22	SPT	N=18							Firm to stiff, dark greyish brown, locally mottled bluish grey, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to medium subangular to subrounded of sandstone, siltstone, and coal. (GLACIAL TILL) (TILL)	(1.50) 9.00	
8.00-8.45	23	DSPT										
8.00-8.45	24	B										

MADE GROUND: Light grey, reinforced CONCRETE. Recovered as angular gravel. (1.10)

MADE GROUND: Firm greyish mottled brown, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded of siltstone and sandstone with rare coal fragments.

MADE GROUND: Reddish sandstone flooring. Recovered as angular gravel.

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
18/04/23			None	N/R	
18/04/23		3.50	3.00	200	
19/04/23		3.50	3.00	200	
19/04/23		15.00	15.00	200	
20/04/23		15.00	15.00	200	
20/04/23		21.00	21.00	200	
21/04/23		21.00	21.00	200	
21/04/23		27.00	27.00	200	

Chiselling / Slow Progress

From	To	Duration (hh:mm)
25.70	27.00	02:00
27.00	28.50	02:30

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20m depth.
3. Cable percussion drilling to 29.00m followed by rotary core drilling to completion.
4. Backfilled with installation materials.
5. SPT hammer VC-VC1-25/01/2023 (E_r = 73.00%) used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + M Williams**	**MJJones**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH07**

Contract Ref:	Start: **18.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **11.05.23**	**49.24**	**E:385005.2 N:398474.1**	**2** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00-9.45	25	SPT	N=23							Stiff, greyish brown, locally mottled bluish grey, slightly sandy, slightly gravelly CLAY with occasional lenses (10x20 mm - 20x65 mm) of yellowish orange sand. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded of sandstone, siltstone, and coal. (GLACIAL TILL) (TILL)		
9.00-9.45	25	B										
9.00-9.45	26	DSPT										
10.00	27	D										
10.00-10.45	28	$UT_{(UT100)}$	37 blows 100% recovery									
11.50-11.95	30	SPT	N=37								(6.00)	
11.50-11.95	31	DSPT										
11.50-11.95	32	B										
13.00-13.45	33	SPT	N=39									
13.00-13.45	33	DSPT										
13.00-13.45	35	B										
14.50-14.95	36	$UT_{(UT100)}$	44 blows 100% recovery								15.00	
15.00-15.45	37	D								Stiff, greyish brown, slightly sandy, slightly gravelly CLAY with occasional lenses (10x20mm - 20x65 mm) of yellowish orange sand. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded of sandstone, siltstone, and coal. (GLACIAL TILL) (TILL)		
16.50-16.95	38	SPT	N=38								(4.50)	
16.50-16.95	39	DSPT										
16.50-16.95	40	B										

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
24/04/23		27.00	27.00	200	20.00
24/04/23		29.00	28.50	200	Dry
26/04/23		29.00	29.00	146	20.50
26/04/23		31.50	31.50	146	7.60
27/04/23		31.50	31.50	146	28.30
27/04/23		39.00	39.00	146	
28/04/23		39.00	39.00	146	

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + M Williams**	**MJJones**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH07**

Contract Ref:	Start: **18.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **11.05.23**	**49.24**	**E:385005.2 N:398474.1**	**3** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
18.00-18.45	41	SPT	N=39							Stiff, greyish brown, slightly sandy, slightly gravelly CLAY with occasional lenses (10x20mm - 20x65 mm) of yellowish orange sand. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded of sandstone, siltstone, and coal. (GLACIAL TILL) (TILL) *(stratum copied from 15.00m from previous sheet)*	19.50	
18.00-18.45	42	DSPT										
18.00-18.95	43	B										
19.50-19.95	44	SPT	N=45							Stiff, reddish brown, slightly sandy, slightly gravelly CLAY with occasional lenses (5x15mm to 20x40mm) of yellowish orange sand. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded of sandstone, siltstone, quartzite, and coal. (GLACIAL TILL) (TILL)	(1.90)	
19.50-19.95	44	DSPT										
19.50-19.95	46	B										
21.00-21.14	47	SPT	25/50 for 75mm								21.40	
21.00-21.45	47	DSPT										
21.00-21.45	48	B								Dense, dark orangish brown, slightly gravelly, medium to coarse SAND. Gravel is fine to medium of sandstone, mudstone and siltstone. (TILL)		
22.50-22.95	50	SPT(c)	N=50								(3.00)	
22.50-22.95	51	DSPT										
22.50-22.95	52	B										
24.00-24.45	53	SPT	N=42								24.40	
24.00-24.45	54	DSPT										
24.00-24.45	55	B								Dense. dark orangish brown, slightly gravelly, medium to coarse SAND with bands of up to 100mm thick of firm, dark greyish brown, slightly sandy, slightly gravelly, CLAY. Gravel is fine to medium of sandstone, mudstone and siltstone. (TILL)	(1.30)	
25.50-25.82	56	SPT	3,7/13,21,16 for 20mm								25.70	
25.50-25.95	57	DSPT								Very dense, reddish brown, fine and medium SAND with numerous lenses of clay up to 50mm thick. (TILL)		
25.50-25.95	58	B									(1.80)	

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + M Williams**	**MJJones**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH07**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**18.04.23** End: **11.05.23**	**49.24**	**E:385005.2 N:398474.1**	**4** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
27.00-27.25	59	SPT	3,5/15,35 for 20mm									
27.00-27.45	60	DSPT									27.50	
27.00-27.45	61	B								Very dense, reddish brown, fine and medium SAND. (TILL)	(1.50)	
28.50-28.52	62	SPT	25/50 for 10mm									
28.50-28.95	63	DSPT									29.00	
28.50-28.95	64	B								Extremely weak thinly to thickly laminated brownish red fine and medium grained partially weathered SANDSTONE. Rare inclusions of quartz up to 10mm x 10mm. Fractures are very closely to closely spaced dipping 10-15° undulating smooth open 3-5mm and infilled with sand and clay . (CHESTER FORMATION)	(1.00)	
29.00-30.00											30.00	
29.26-29.40	72	C		110	84	69	NI 114 250					
30.00-31.50				100	100	93				. . . 29.19m-29.23m, 29.65m-29.67m, 29.77m-29.79m, open fracture infilled with sandy clay. . . . 29.80-30.00m predominantly fine grained. . . . 29.85-29.95m non intact zone of sandstone	(4.50)	
31.09-31.43	65	C								Very weak brownish red fine to coarse grained partially weathered SANDSTONE. Rare inclusions of quartz up to 15mm x 15mm in size and brownish red clay up to 70mm x 15mm in size. Fracture set 1: fractures are closely to widely spaced planar rough tight. Fracture set 2: fractures are incipient very closely to widely spaced planar rough open >1mm and infilled with brownish red clay. Fracture set 3: fractures are very widely spaced dipping 30-50° undulating smooth open 2-5mm and infilled with sand and brownish red clay. (CHESTER FORMATION)		
31.50-33.00							NI 197 450					
31.92-32.28	66	C		87	85	71						
33.00-34.50										. . . 32.80-33.00m AZCL - material likely washed out during drilling . . . 33.10-33.17m non-intact zone comprising brownish red clay. . . . 33.70-33.90m lens of light grey sandstone 50mm x 30mm.		
33.36-33.76	67	C		100	97	79					34.50	
34.50-36.00							NI 245 500			Extremely weak brownish red fine and medium partially weathered SANDSTONE. Rare inclusions of quartz up to 10mm x 10mm and lenses of brownish red clay up to 70mm x 15mm. Fracture set 1: fractures are closely to medium spaced dipping 5-10° planar rough open 1-3mm. Fracture set 2: fractures are incipient closely to widely spaced undulating rough open 1-2mm and infilled with brownish red clay .	(1.50)	
34.84-35.14	68	C		100	97	89					36.00	

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + M Williams**	**MJJones**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH07**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**18.04.23** End: **11.05.23**	**49.24**	**E:385005.2 N:398474.1**	**5** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
36.00-37.50										(CHESTER FORMATION) . . . 35.69m-35.71m, 35.77m-35.79m, set 3 fractures infilled with clay. . . . 35.90-35.93m non intact zone comprising fractured sandstone.		
36.58-36.92	69	C		100	100	97				Very weak brownish red and medium grained partially weathered SANDSTONE. Occasional inclusions of quartz and fine sandstone up to 30mm x 15mm and lenses of brownish red clay up to 90mm x 35mm. Fractures are medium to widely spaced dipping 15-20° undulating rough open 3-10mm and infilled with sand and clay .	(1.50) 37.50	
37.50-39.00							410 690 1100			(CHESTER FORMATION)		
37.78-38.10	70	C		100	98	98				Moderately weak brownish red fine to coarse weathered SANDSTONE. Rare inclusions of brownish red clay up to 10mm x 10mm and quartz up to 10mm x 5mm. Fractures are widely spaced undulating rough open 3-5mm infilled with sand and clay .	(2.00)	
39.00-39.50										(CHESTER FORMATION) . . . 37.74-37.78m fracture infilled with sand and clay	39.50	
39.17-39.39	71	C		100	100	100				Borehole terminated at 39.50m depth.		

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + M Williams**	**MJJones**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH07**
Contract Ref:	Start: **18.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **11.05.23**	**49.24**	**E:385005.2 N:398474.1**	**6** of **7**





Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + M Williams	Logged By:	MJJones	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH07**
Contract Ref:	Start: **18.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **11.05.23**	**49.24**	**E:385005.2 N:398474.1**	**7** of **7**





Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + M Williams	Logged By:	MJJones	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH08**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**11.04.23**	**49.08**	**E:385049.0 N:398425.4**	**1** of **3**
	End: **11.04.23**			

Depth (m)	Samples & Testing: No	Type	Results	Backfill	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
						MADE GROUND: Light grey reinforced CONCRETE.	0.25	
0.25-0.40	1	B				MADE GROUND: Light brown very gravelly fine to coarse SAND with a medium cobble content. Gravel is subangular to subrounded fine to coarse of sandstone and concrete. Cobbles are subangular of sandstone and concrete up to 200mm.	0.50	
0.30	101	ES	1xT+2xJ+2xV				(0.60)	
0.30	2	D						
0.30		PID	0.0ppm					
0.60	102	ES	1xT+2xJ+2xV			MADE GROUND: Reddish brown sandy gravelly COBBLES of concrete up to 380mm in length. Sand is fine to coarse. Gravel is subangular fine to coarse of concrete and sandstone.	1.10	
0.60-0.90	3	B						
0.70		PID	0.0ppm				1.40	
0.90	4	D				MADE GROUND: Brown mottled orangish brown very sandy clayey subangular to subrounded fine to coarse GRAVEL of sandstone. Sand is fine to coarse.		
1.20-1.59	5	SPT(c)	5,7/9,15,15,7 for 11mm				1.65	
1.20	103	ES	1xT+2xJ+2xV			MADE GROUND: Dark grey mottled black CONCRETE.		
1.20-1.65	5	B				Borehole terminated at 1.65m as hard concrete encountered.		
1.20		PID	0.0ppm					

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 0.92m depth. Hard ground encountered at 0.92m so hand pit terminated.
3. Borehole terminated as concrete encountered. Borehole relocated to position ATK-BH08a.
4. SPT hammer VC-VC1-25/01/2023 (E_t = 73.00%) used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion	**Unknown**	**J Glynn**	**LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH08**
Contract Ref:	Start: **11.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **11.04.23**	**49.08**	**E:385049.0 N:398425.4**	**2** of **3**





Method Used:	Concrete coring (300mm) + Cable Percussion	Plant Used:	Unknown	Drilled By:	J Glynn	Logged By:	LCross	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH08**
Contract Ref:	Start: **11.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **11.04.23**	**49.08**	**E:385049.0 N:398425.4**	**3** of **3**



Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion	**Unknown**	**J Glynn**	**LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH08A**

Contract Ref:	Start: **14.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **10.05.23**	**49.07**	**E:385054.4 N:398435.6**	**1** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
										MADE GROUND: Light grey CONCRETE.	0.20	
0.20-0.40	1	B								MADE GROUND: Light brown, slightly sandy, very angular to subangular, fine to coarse GRAVEL of sandstone, mudstone, concrete and cement. Sand is fine to coarse.	0.40	
0.25	101	ES	1xT+2xJ+2xV									
0.25		PID	0.0ppm									
0.40-0.80	2	B									0.80	
0.50	102	ES	1xT+2xJ+2xV							MADE GROUND: Grey mottled brown and black, slightly sandy, slightly clayey, very angular to subangular, fine to coarse GRAVEL of mudstone and concrete.	1.10	
0.50		PID	0.0ppm									
0.80-1.00	3	B										
0.90-1.20	5	B										
1.00	103	ES	1xT+2xJ+2xV							POSSIBLE MADE GROUND: Firm to stiff, grey and brown mottled, slightly gravelly, slightly sandy CLAY. Gravel is very angular to rounded, fine to coarse of mudstone. Sand is medium to coarse.		
1.00	4	D										
1.00		PID	0.0ppm									
1.20-1.65	6	B										
2.00-2.45	8	SPT	N=13									
2.00-2.45	9	B										
2.10	104	ES	1xT+2xJ+2xV							Stiff grey and brown mottled, slightly gravelly CLAY. Gravel is rounded, fine of mudstone, sandstone and rare coal. (TILL)	(3.00)	
3.00-3.45	10	$UT_{(UT100)}$	14 blows 100% recovery									
3.50	11	D										
4.00-4.45	12	SPT	N=14								4.10	
4.00-4.45	12	DSPT								Firm, thinly laminated brown mottled orangish brown and grey, slightly sandy, silty CLAY. Sand is fine to coarse. (TILL)		
4.00-4.45	13	B										
5.00-5.45	14	$UT_{(UT100)}$	21 blows 100% recovery									
5.50	15	D									(2.90)	
6.00-6.45	16	SPT	N=15									
6.00-6.45	16	DSPT										
6.00-6.45	17	B										
											7.00	
7.00-7.45	18	$UT_{(UT100)}$	19 blows 100% recovery							Firm, brown, slightly sandy, slightly gravelly, silty CLAY. Sand is fine to coarse. Gravel is subangular to well rounded, fine of mudstone and coal. (TILL)		
7.50	19	D										
8.00-8.45	20	SPT	N=5									
8.00-8.45	22	B										

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
17/04/23			None	N/R	
17/04/23		13.95	13.50	200	Dry
18/04/23		13.95	15.00	200	Dry
18/04/23		22.00	21.00	200	Dry
19/04/23		22.00	21.00	200	22.00
19/04/23		29.20	27.00	200	25.00
25/04/23		29.20	27.00	200	22.00
25/04/23		40.00	40.00	146	5.00

Chiselling / Slow Progress

From	To	Duration (hh:mm)
27.70	27.80	00:45
27.80	28.20	02:00

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Concrete cored to 0.20m then inspection pit hand dug to 1.20m depth.
3. Cable percussion drilling to 29.20m followed by rotary core drilling to completion.
4. Borehole terminated at 40.00m depth.
5. Backfilled with installation materials.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**J Glynn + M Williams**	**LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH08A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**14.04.23** End: **10.05.23**	**49.07**	**E:385054.4 N:398435.6**	**2** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00-9.45	23	$UT_{(UT100)}$	20 blows 100% recovery							Firm, brown, slightly sandy, slightly gravelly, silty CLAY. Sand is fine to coarse. Gravel is subangular to well rounded, fine of mudstone and coal. (TILL) *(stratum copied from 7.00m from previous sheet)*	(6.00)	
9.50	24	D										
10.50-10.95	25	SPT	N=25									
10.50-10.95	26	DSPT										
10.50-10.95	27	B										
12.00-12.45	28	$UT_{(UT100)}$	31 blows 100% recovery									
12.50	29	D									13.00	
13.45-13.95	32	B								Firm, thinly laminated brown, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine of mudstone. (TILL)		
13.50-13.95	30	SPT	N=28									
13.50-13.95	31	DSPT										
13.50-13.95	34	DSPT									(2.20)	
15.00-15.38	33	SPT	8,10/15,15,20 for 75mm								15.20	
15.00-15.45	34	DSPT								Firm, reddish brown, sandy, slightly gravelly, silty CLAY with occasional lenses of fine sand 1-4mm in thickness. Sand is fine to coarse. Gravel is subangular to well rounded, fine of mudstone and sandstone. (TILL)	15.40	
15.00-15.45	35	B										
15.40	36	D									(1.00)	
16.50-16.88	37	SPT(c)	7,9/14,17,19 for 75mm							Firm, reddish brown sandy, slightly gravelly, silty CLAY with occasional lenses of fine sand 1-4mm thick. Sand is fine to coarse. Gravel is subangular to well rounded, fine, of mudstone, siltstone and sandstone. (TILL)	16.40	
16.50-16.95	38	DSPT									(0.60)	
16.50-16.95	38	D									17.00	
16.50-16.95	39	B									(0.50)	
17.00	40	D								Soft, reddish brown, sandy, slightly gravelly, silty CLAY with a low cobble content. Sand is fine and medium rarely coarse. Gravel is subrounded to well rounded, fine to coarse of mudstone, siltstone and sandstone. Cobbles are rounded of mudstone	17.50	
17.50	41	D									(0.50)	
											18.00	

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

6. SPT hammer VC-AR2499-25/01/23 (E_r = 70.00%) used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**J Glynn + M Williams**	**LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH08A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**14.04.23** End: **10.05.23**	**49.07**	**E:385054.4 N:398435.6**	**3** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
18.00-18.45	42	$UT_{(UT100)}$	50 blows 100% recovery							and sandstone up to 110mm. (TILL)		
18.50	43	D								Brown, very sandy, slightly clayey, very angular to rounded, fine to coarse GRAVEL of sandstone, siltstone and mudstone. Sand is fine to coarse. (TILL)	(2.00)	
19.50-19.88	44	SPT	7,9/15,17,18 for 75mm							Firm, brown, slightly sandy, slightly gravelly, silty CLAY. Sand is fine to coarse. Gravel is very angular to rounded, fine and medium of mudstone and siltstone. (TILL)		
19.50-19.95	45	DSPT									20.00	
19.50-19.95	46	B								Firm to stiff, reddish brown mottled light grey, slightly sandy, slightly gravelly CLAY with numerous lenses of reddish brown and white fine sand 1-3mm thick. Sand is fine to coarse. Gravel is subangular to rounded, fine of mudstone siltstone and sandstone. (TILL)		
20.10	47	D									(2.00)	
21.00-21.45	48	$UT_{(UT100)}$	35 blows 100% recovery							Firm, thinly laminated, greyish brown CLAY. (TILL)		
21.50	49	D									22.00	
22.00	50	D								Brown, slightly sandy, slightly clayey, very angular to well rounded, fine to coarse GRAVEL of sandstone, siltstone and mudstone with a low cobble content. Sand is fine to coarse. Cobbles are rounded of sandstone up to 110mm. (TILL)		
22.50-22.95	51	SPT(c)	N=50								(3.00)	
22.50-22.95	52	D										
22.50-22.95	53	B										
24.00-24.38	54	SPT(c)	8,12/13,17,20 for 75mm									
24.00-24.45	55	D										
24.00-24.45	56	B									25.00	
25.00	57	D								Stiff, brown, slightly sandy, slightly gravelly, silty CLAY. Sand is fine to coarse. Gravel is subrounded to well rounded, fine to coarse of mudstone, siltstone and sandstone. (TILL)	25.40	
25.50-25.80	58	SPT(c)	7,12/17,33 for 75mm							Dark grey and reddish brown, slightly sandy, angular to rounded, fine to coarse GRAVEL of sandstone, siltstone and mudstone (TILL)	(1.60)	
25.50-25.95	59	D										
25.50-25.95	60	B								. . . 26.55m - 29.98m very weak thinly laminated	27.00	

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**J Glynn + M Williams**	**LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH08A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**14.04.23** End: **10.05.23**	**49.07**	**E:385054.4 N:398435.6**	**4** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
27.00-27.30	61	SPT(c)	10,14/19,31 for 75mm							Dark grey brown cream and reddish brown, sandy, rounded to well rounded, fine to coarse GRAVEL of sandstone, siltstone mudstone and various crystalline lithologies. Sand is fine to coarse. (TILL)	(1.00)	
27.00-27.45	62	D										
27.00-27.45	63	B										
27.80	64	D								. . . 27.80m - 28.00m, cobble of grey limestone.	28.00	
										Reddish brown, fine and medium SAND. (TILL)		
28.50-28.95	66	DSPT									(1.20)	
28.50-28.95	67	B										
											29.20	
29.20-29.50				100	100	60	NI 77			Extremely weak brownish red fine and medium grained partially weathered SANDSTONE. Fracture set 1: very closely to closely spaced horizontal undulating smooth tight. Fracture set 2: incipient very closely spaced dipping 5-10° planar tight . (CHESTER FORMATION)	(0.78)	
29.30-29.75	69	D										
29.33-29.53	65	C										
29.50-31.00				56	53	39	220				29.98	
										Extremely weak thickly laminated fine and medium grained partially weathered SANDSTONE. Occasional inclusions of quartz, siltstone and mudstone up to 10mm. Rare lenses of dark brown clay up to 32mm. Fractures are closely to medium spaced dipping 5-15° undulating smooth open 1-3mm. CHESTER FORMATION). (CHESTER FORMATION)		
31.00-32.50				100	90	88	NI 87 300			. . . 31.13-31.27m non-intact zone comprising destructured sandstone recovered as sand and gravel-sized clasts of extremely weak sandstone.	(2.62)	
32.08-32.38	66	C										
											32.60	
32.50-34.00				100	87	73	NI 92 180			Extremely weak brownish red fine to coarse grained partially to distinctly weathered SANDSTONE. Occasional lenses of brownish red clay up to 10mm and inclusions of quartz gravel up to 20mm. Fracture set 1: very closely to closely spaced dipping 15-20° undulating smooth open 20-30mm and infilled with brownish red and locally white clay. Fracture set 2: incipient very closely to closely spaced dipping 5-20° planar rough tight . (CHESTER FORMATION)	(1.10)	
											33.70	
34.00-35.50										. . . 32.70m well rounded inclusion of grey clay 70mm x 40mm.	(1.10)	
34.43-34.65	67	C										
				100	87	81	NI 284 480			Very weak thinly to thickly laminated brownish red fine and medium grained partially weathered SANDSTONE. Rare inclusions of brownish red clay up to 30mm and quartz gravel up to 10mm. Fractures are closely spaced dipping 5-10° planar rough open 1-3mm . (CHESTER FORMATION)	34.80	
35.50-37.00				100	87	77				. . . 34.00m - 34.19m non-intact zone destructured recovered as gravel of extremely weak sandstone.	(2.08)	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**J Glynn + M Williams**	**LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH08A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**14.04.23** End: **10.05.23**	**49.07**	**E:385054.4 N:398435.6**	**5** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
35.86-36.34	68	C		100	87	77				. . . 35.50m - 35.54m non-intact zone residual recovered as sand and gravel of extremely weak sandstone. . . . 35.67m - 35.88m non-intact zone recovered as sand and gravel-sized lumps of brownish red clay.	36.88	
37.00-38.50										Extremely weak brownish red fine and medium rarely coarse grained partially weathered SANDSTONE. Occasional lenses of brownish red clay up to 40mm. Rare inclusions of quartz and mudstone up to 5mm. Fractures are closely to widely spaced dipping 5° planar rough open 1-2mm . (CHESTER FORMATION)	(1.27)	
37.53-37.83	69	C		100	100	100	NI 601 800			*(stratum copied from 34.80m from previous sheet)* . . . 36.63m - 36.68m non-intact zone comprising residual recovered as sand and gravel of extremely weak sandstone.	38.15	
38.50-40.00				91	91	91				Very weak brownish red fine and medium grained weathered SANDSTONE. Rare inclusions of quartz and mudstone up to 20mm x 10mm in size. Rare lenses of brownish red clay up to 15mm x 5mm in size. Fractures are closely to medium spaced dipping 5-25° undulating smooth open 1-5mm . (CHESTER FORMATION) . . . 36.97m - 37.00m non-intact zone destructured recovered as sand, gravel-sized lumps of grey clay and clasts of extremely weak sandstone.	(1.85)	
39.72-40.00	70	C								Extremely weak brownish red fine to coarse grained distinctly weathered SANDSTONE. Numerous inclusions of quartz and mudstone up to 25mm x 20mm in size. Occasional lenses of brownish red clay up to 10mm x 5mm in size. (CHESTER FORMATION) . . . 38.15m - 38.22m non-intact zone residual recovered as brownish red mottled white sandy clay with rare clasts of extremely weak sandstone. . . . 38.60m - 40.00m very weak, occasional inclusions of quartz, mudstone and white sandstone up to 30mm.	40.00	
										Borehole terminated at 40.00m depth.		

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Concrete coring (300mm) + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**J Glynn + M Williams**	**LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH08A**
Contract Ref:	Start: **14.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **10.05.23**	**49.07**	**E:385054.4 N:398435.6**	**6** of **8**





Method Used:	Concrete coring (300mm) + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	J Glynn + M Williams	Logged By:	LCross	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH08A**
Contract Ref:	Start: **14.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **10.05.23**	**49.07**	**E:385054.4 N:398435.6**	**7** of **8**





Method Used:	Concrete coring (300mm) + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	J Glynn + M Williams	Logged By:	LCross	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH08A**
Contract Ref:	Start: **14.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **10.05.23**	**49.07**	**E:385054.4 N:398435.6**	**8** of **8**





Method Used:	Concrete coring (300mm) + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	J Glynn + M Williams	Logged By:	LCross	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH09**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**24.04.23** End: **03.05.23**	**49.22**	**E:384986.2 N:398451.0**	**1** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
0.10-0.20	1	B								MADE GROUND: Brown mottled black cream and red BRICKS.	0.06	
0.10	101	ES	1xT+2xJ+2xV								0.20	
0.10	2	D								MADE GROUND: Yellowish brown, slightly gravelly, fine to coarse SAND.	0.30	
0.10	3	D									0.70	
0.10		PID	0.0ppm							MADE GROUND: Light pinkish brown CONCRETE.		
0.40-0.60	2	B										
0.40-0.60	3	B								MADE GROUND: Orangish red mottled black and brown, cemented BRICKS.		
0.50	102	ES	1xT+2xJ+2xV							. . . at 0.65m, slow seepage in hand pit.		
0.50		PID	0.0ppm									
0.60	4	D								MADE GROUND: Soft to firm, thinly laminated brown mottled bluish grey, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular, fine of brick sandstone and mudstone.	(2.80)	
1.00	103	ES	1xT+2xJ+2xV									
1.00		PID	0.0ppm									
1.20-1.65	5	SPT	N=15									
1.20-1.65	6	DSPT										
1.20-1.65	7	B										
2.00-2.45	8	SPT	N=17									
2.00-2.45	10	B										
2.00	104	ES	1xT+2xJ+2xV									
2.00-2.45	9	DSPT										
2.00		PID	0.0ppm									
3.00	105	ES	1xT+2xJ+2xV								3.50	
3.00-3.45	11	$UT_{(UT100)}$	33 blows 100% recovery							Very soft light brown SILT. (TILL)	(0.50)	
3.00		PID	0.0ppm								4.00	
3.50	12	D								Firm, brown mottled bluish grey, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded, fine of sandstone, mudstone and coal. (TILL)		
4.00-4.45	13	SPT	N=18									
4.00-4.45	14	DSPT										
4.00-4.45	15	B										
5.00-5.45	16	SPT	N=17									
5.00-5.45	17	DSPT										
5.00-5.45	18	B									(3.00)	
6.00-6.45	19	$UT_{(UT100)}$	33 blows 90% recovery									
6.45	20	D									7.00	
7.00-7.45	21	SPT	N=20							Firm to stiff, friable, dark greyish brown, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded of siltstone, sandstone and coal. (TILL)		
7.00-7.45	22	DSPT										
7.00-7.45	23	B										
8.00-8.45	24	SPT	N=22									
8.00-8.45	25	DSPT										
8.00-8.45	26	B									(3.50)	

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
24/04/23			None	N/R	
24/04/23		1.20	None	200	
25/04/23		1.20	None	200	
25/04/23		13.50	13.00	200	
26/04/23		13.50	13.00	200	
26/04/23		26.50	25.50	200	
02/05/23		26.50	26.50	200	
02/05/23		31.50	31.50	146	

Chiselling / Slow Progress

From	To	Duration (hh:mm)
25.95	25.95	02:00

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.00m depth, water in pit seepage at 0.65m.
3. Cable percussion boring to 26.50m followed by rotary core drilling to completion.
4. Borehole terminated at 39.00m depth.
5. Backfilled with installation materials.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + M Williams**	**LCross + Kay Adedotun**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH09**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**24.04.23** End: **03.05.23**	**49.22**	**E:384986.2 N:398451.0**	**2** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00-9.45	27	$UT_{(UT100)}$	40 blows 100% recovery							Firm to stiff, friable, dark greyish brown, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded of siltstone, sandstone and coal. (TILL) *(stratum copied from 7.00m from previous sheet)*		
9.45	28	D										
10.00-10.45	29	SPT	N=23									
10.00-10.45	30	DSPT										
10.00-10.45	31	B									10.50	
11.50-11.95	32	SPT	N=23							Stiff, greyish brown locally mottled bluish grey, slightly gravelly, slightly sandy CLAY. Sand is fine to mainly coarse. Gravel is fine to rarely coarse, subangular to subrounded of sandstone and siltstone with rare quartz. (TILL)		
11.50-11.95	33	DSPT										
11.50-11.95	34	B									(4.00)	
13.00-13.45	35	$UT_{(UT100)}$	33 blows 100% recovery									
13.50	36	D									14.50	
14.50-14.95	37	SPT	N=24							Firm to stiff, greyish brown, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is subrounded to rounded of sandstone, siltstone and coal. (TILL)		
14.50-14.95	38	DSPT										
14.50-14.95	39	B									(1.50)	
16.00-16.45	40	SPT	N=57							Firm to stiff, greyish brown, slightly sandy, slightly gravelly CLAY with occasional lenses (10mm by 20mm) of coarse orange sand. Sand is fine to mostly coarse. Gravel is subangular to subrounded of sandstone and siltstone. (TILL)	16.00	
16.00-16.45	41	DSPT										
16.00-16.45	42	B										
17.50-17.95	43	$UT_{(UT100)}$	50 blows 67% recovery								(3.50)	

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
03/05/23		31.50	31.50	146	19.00
03/05/23		39.00	39.00	146	6.30

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

6. SPT hammers VC-AR3711-25/01/2023 (E_r = 68.00%) , VC-VC1-25/01/2023 (E_r = 73.00%) used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + M Williams**	**LCross + Kay Adedotun**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH09**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**24.04.23** End: **03.05.23**	**49.22**	**E:384986.2 N:398451.0**	**3** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
18.00	44	D								Firm to stiff, greyish brown, slightly sandy, slightly gravelly CLAY with occasional lenses (10mm by 20mm) of coarse orange sand. Sand is fine to mostly coarse. Gravel is subangular to subrounded of sandstone and siltstone. (TILL) *(stratum copied from 16.00m from previous sheet)*	19.50	
19.50-19.89	45	SPT	7,10/12,16,18,4 for 15mm							Firm to stiff, orangish brown, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, subrounded to subangular of sandstone and siltstone. (TILL)	(3.00)	
19.50-19.95	46	DSPT										
19.50-19.95	47	B										
21.00-21.14	48	SPT	25/50 for 60mm								22.50	
21.00-21.45	49	DSPT										
21.00-21.45	50	B										
22.50-22.95	51	SPT(c)	N=38							Dense, dark brown, very clayey SAND with a high cobble content. Sand is fine to coarse. Gravel is angular to subangular of siltstone, mudstone and sandstone. Cobbles are angular of siltstone, mudstone and sandstone by 50mm. (TILL)	(1.50)	
22.50-22.95	52	D										
22.50-22.95	53	B										
24.00-24.42	54	SPT(c)	6,6/10,10,15,15 for 40mm							Black and brown, sandy GRAVEL with bands of soft clay. Sand is fine. Gravel are subangular to subrounded of siltstone and mudstone. (TILL)	24.00 (1.95)	
24.00-24.45	55	D										
24.00-24.45	56	B										
25.50-25.95	57	SPT(c)	N=40								25.95	
25.50-25.95	58	D										
25.50-25.95	59	B										
25.50-25.95	60	B										
26.50-28.00				39	0	0				Cable percussion borehole terminated at 25.95m on an obstruction. Rotary driller records SAND and GRAVEL with cobbles to 27.60m. (TILL)	(1.65)	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + M Williams**	**LCross + Kay Adedotun**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH09**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**24.04.23** End: **03.05.23**	**49.22**	**E:384986.2 N:398451.0**	**4** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
27.00-27.45	61	D										
27.45	62	DSPT		39	0	0	NI NI NI				27.60	
27.45	63	B								Extremely weak reddish brown SANDSTONE. Recovered as non intact 3mm to 40mm fragments. (CHESTER FORMATION)	28.00	
28.00-29.00												
28.00-28.32	58	SPT(c)	10,14/14,21,15 for 20mm	82	72	72				Extremely weak to very weak, thinly to thickly laminated, reddish brown, fine to medium grained SANDSTONE. Discontinuities are 0-10°, closely to medium spaced, undulating, rough and tight. (CHESTER FORMATION)		
29.00-30.00										. . . 28.00m - 28.18m AZCL loss presumed due to extremely weak nature of sandstone.		
29.57-29.82	64	C		100	100	88				. . . 28.90m - 29.00m, non intact.		
30.00-31.50							NI 260 420			. . . 30.00m - 30.10m, non intact, drilling disturbed.	(4.60)	
31.05-31.30	65	C		97	92	83						
31.50-33.00										. . . 31.50m - 31.60m, non intact. Soft brown silt.		
32.60-32.82	66	C		100	94	94					32.60	
33.00-34.50										Very weak thinly to thickly laminated, reddish brown, slightly gravelly, fine to medium grained SANDSTONE. Gravel is subrounded to rounded, fine to medium of quartzite. Discontinuities are 10-20°, closely spaced to medium spaced, undulating, rough and tight. (CHESTER FORMATION)		
34.02-34.45	67	C		94	94	91						
34.50-36.00							95 280 1200					
35.45-35.84	68	C		100	100	100					(6.40)	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + M Williams**	**LCross + Kay Adedotun**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH09**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**24.04.23** End: **03.05.23**	**49.22**	**E:384986.2 N:398451.0**	**5** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
36.00-37.50										Very weak thinly to thickly laminated, reddish brown, slightly gravelly, fine to medium grained SANDSTONE. Gravel is subrounded to rounded, fine to medium of quartzite. Discontinuities are 10-20°, closely spaced to medium spaced, undulating, rough and tight. (CHESTER FORMATION) *(stratum copied from 32.60m from previous sheet)*		
36.68-36.93	69	C		100	100	94						
37.50-39.00							95 280 1200					
				98	90	90						
38.60-39.00	70	C									39.00	
										Borehole terminated at 39.00m depth.		

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**D Williams + M Williams**	**LCross + Kay Adedotun**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH09**
Contract Ref:	Start: **24.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **03.05.23**	**49.22**	**E:384986.2 N:398451.0**	**6** of **10**





Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + M Williams	Logged By:	LCross + Kay Adedotun	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH09**
Contract Ref:	Start: **24.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **03.05.23**	**49.22**	**E:384986.2 N:398451.0**	**7** of **10**





Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + M Williams	Logged By:	LCross + Kay Adedotun	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH09**
Contract Ref:	Start: **24.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **03.05.23**	**49.22**	**E:384986.2 N:398451.0**	**8** of **10**





Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + M Williams	Logged By:	LCross + Kay Adedotun	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH09**
Contract Ref:	Start: **24.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **03.05.23**	**49.22**	**E:384986.2 N:398451.0**	**9** of **10**





Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + M Williams	Logged By:	LCross + Kay Adedotun	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH09**
Contract Ref:	Start: **24.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **03.05.23**	**49.22**	**E:384986.2 N:398451.0**	**10** of **10**



Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	D Williams + M Williams	Logged By:	LCross + Kay Adedotun	Checked By:	JMC

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH10**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**21.04.23** End: **03.05.23**	**46.64**	**E:385077.9 N:398363.8**	**1** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
0.00-0.40	1	B								MADE GROUND: Pinkish brown BRICKS. (Car park).	0.06	
0.08-0.20	1	B									0.20	
0.10	101	ES								MADE GROUND: Light greyish brown, slightly clayey, slightly gravelly, fine to mostly coarse SAND.	0.50	
0.30	102	ES									0.80	
0.30	2	D								MADE GROUND: Dark yellowish brown, sandy, fine to coarse, subangular to subrounded GRAVEL of limestone and sandstone with occasional cobbles. Sand is coarse, with some medium and fine. Cobbles are surrounded to rounded of sandstone up to 130 mm.		
0.40-0.80	3	B										
0.60	4	D										
0.80-1.20	5	B										
0.90	103	ES										
1.00	6	D										
1.20-1.65	6	SPT	N=11									
1.20-1.65	7	DSPT										
1.20-1.65	8	B										
2.00-2.45	9	SPT	N=10							MADE GROUND: Reddish sandstone flooring. Recovered as angular gravel and cobbles.		
2.00-2.65	10	DSPT								Soft to firm, dark greyish brown mottled dark yellowish brown and dark bluish grey, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded of siltstone and sandstone with rare gravel sized coal fragments. (TILL)		
2.00-2.65	11	B										
3.00-3.45	12	UT	12 blows 100% recovery								(5.20)	
3.50	13	D										
4.00-4.45	14	SPT	N=11									
4.00-4.45	15	DSPT										
4.00-4.45	16	B										
5.00-5.45	17	SPT	N=15									
5.00-5.45	18	DSPT										
5.00-5.45	19	B										
									1		6.00	
6.00-6.45	20	$UT_{(UT100)}$	35 blows 50% recovery							Firm, dark greyish brown, slightly sandy, slightly gravelly CLAY with occasional lenses (5x15mm - 20x25 mm) of orangish yellow sand. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded of siltstone, sandstone, mudstone and coal. (GLACIAL TILL) (TILL)		
6.50	21	D							1			
7.00-7.45	22	SPT	N=20									
7.00-7.45	23	DSPT										
7.00-7.45	24	B								. . . 6.00-6.80m, becomes very sandy and gravelly.		
8.00-8.45	25	SPT	N=19									
8.00-8.45	26	DSPT										
8.00-8.45	27	B										

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
20/04/23			None	N/R	
20/04/23		3.50	3.00	200	Dry
21/04/23		3.50	3.00	200	Dry
21/04/23		12.50	12.50	200	Dry
24/04/23		12.50	12.50	200	Dry
24/04/23		22.50	21.00	200	Dry
25/04/23		22.50	21.00	200	
25/04/23		27.30	27.30	200	

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20m depth.
3. Cable percussion drilling to 27.30m followed by rotary core drilling to completion.
4. Borehole terminated at 38.00m depth.
5. Borehole backfilled with installation materials.
6. SPT hammer VC-AR2499-25/01/23 (E_r =

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**J Glynn + T Rendell**	**JAlton + LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH10**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**21.04.23** End: **03.05.23**	**46.64**	**E:385077.9 N:398363.8**	**2** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00-9.45	28	$UT_{(UT100)}$	31 blows 100% recovery							Firm, dark greyish brown, slightly sandy, slightly gravelly CLAY with occasional lenses (5x15mm - 20x25 mm) of orangish yellow sand. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded of siltstone, sandstone, mudstone and coal. (GLACIAL TILL) (TILL) . . . 6.00-6.80m, becomes very sandy and gravelly.*(stratum copied from 6.00m from previous* sheet)	(9.20)	
9.50	29	D										
10.00-10.45	30	SPT	N=28									
10.00-10.50	31	DSPT										
10.00-10.50	32	B										
12.00-12.45	33	SPT	N=27									
12.00-12.45	34	DSPT										
12.00-12.45	35	B										
13.50-13.95	36	SPT	N=50									
13.50-13.95	37	DSPT										
13.50-13.95	38	B										
15.00-15.38	39	SPT	8,10/12,18,20 for 75mm								15.20	
15.00-15.45	40	DSPT								Firm, thinly laminated, brown mottled dark orangish brown, slightly sandy, slightly gravelly CLAY with very close to closely spaced interbeds of fine and medium sand. Sand is fine to coarse. Gravel is subangular to well rounded, fine to coarse of mudstone, siltstone and sandstone. (TILL)	(1.80)	
15.00-15.45	41	B										
16.50-16.88	42	SPT	8,10/13,19,18 for 75mm								17.00	
16.50-16.95	43	DSPT										
16.50-16.95	44	B								Firm, thinly laminated greyish brown, slightly sandy CLAY. Sand is fine. (TILL)	(1.20)	
17.00	45	D										

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
02/05/23		27.30	27.30	200	0.00
02/05/23		29.50	29.50	146	
03/05/23		29.50	29.50	146	
03/05/23		38.00	38.00	146	

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

70.00%) used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**J Glynn + T Rendell**	**JAlton + LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH10**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**21.04.23** End: **03.05.23**	**46.64**	**E:385077.9 N:398363.8**	**3** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
18.00-18.45	46	$UT_{(UT100)}$	50 blows 100% recovery								18.20	
										Dark orangish brown, slightly gravelly, slightly clayey, fine and medium, rarely coarse, SAND. Gravel is subrounded, fine to coarse of sandstone and siltstone. (TILL)	(0.50)	
18.50	47	D									18.70	
18.70	48	D								Brown, sandy, clayey, subangular to well rounded, fine to coarse GRAVEL of sandstone, siltstone and various crystalline lithologies. Sand is fine to coarse. (TILL)	(1.90)	
19.50-19.89	49	SPT(c)	10,10/13,16,17,4 for 10mm									
19.50-19.95	50	D										
19.50-19.95	51	B									20.60	
20.60	52	D								Firm, brown, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to well rounded, fine and medium of sandstone, siltstone and mudstone. (TILL)	(1.40)	
21.00-21.45	53	SPT	N=37									
21.00-21.45	54	DSPT										
21.00-21.45	55	B									22.00	
22.50-22.55	56	SPT	25/50 for 15mm							Brown mottled black, cream and reddish brown, sandy slightly, clayey, subangular to well rounded, fine to coarse GRAVEL of sandstone, siltstone and various crystalline lithologies. Sand is fine to coarse. (TILL)	(2.00)	
22.50-22.95	57	DSPT										
22.50-22.95	58	B									24.00	
24.00-24.07	59	SPT	25/50 for 20mm							Orangish brown, gravelly, fine to coarse SAND. Gravel is subrounded to well rounded, fine to coarse of sandstone, siltstone and various crystalline lithologies. (TILL)	(1.00)	
24.00-24.45	60	D										
24.00-24.45	61	B									25.00	
25.50-25.58	62	SPT	25/50 for 30mm							Reddish brown mottled black and cream, slightly sandy, subrounded to well rounded, fine to coarse GRAVEL of sandstone, siltstone and various crystalline lithologies. Sand is fine to coarse. (TILL)	(1.50)	
25.50-25.95	63	D									26.50	
26.50-27.00	65	D								*Description on next sheet*	(0.80)	

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**J Glynn + T Rendell**	**JAlton + LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH10**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**21.04.23** End: **03.05.23**	**46.64**	**E:385077.9 N:398363.8**	**4** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
27.00-27.07	66	SPT	25/50 for 45mm							Extremely weak, reddish brown, fine and medium grained highly weathered SANDSTONE.	27.30	
27.00-27.45	68	B								(CHESTER FORMATION)		
27.30-28.00										*(stratum copied from 26.50m from previous sheet)*		
27.35-27.64	69	C		94	83	66				Very weak, thinly to thickly laminated, brownish red, fine and medium grained SANDSTONE. Rare inclusions of quartz and white sandstone up to 20mm x 20mm in size. Occasional lenses of brownish red clay up to 20mm x 60mm in size. Fracture set 1: fractures are very closely to medium spaced, dipping 0-15°, undulating, rough and tight. Fracture set 2: fractures are widely spaced, dipping 25-30°, undulating, rough, open 1-3mm infilled with clay and undulating, rough and tight. .		
28.00-29.50												
28.25-28.62	70	C		100	97	93						
29.50-31.00												
29.55-30.07	71	C		100	94	89	NI 310 610			(CHESTER FORMATION) . . . 27.62m - 27.67m, non-intact zone of sand and clay. . . . 29.50m - 29.54m, non-intact drilling disturbed.	(6.95)	
31.00-32.50												
31.00-31.25	72	C		100	100	100				. . . 30.91m - 31.00m, non intact, drilling disturbed.		
32.50-34.00												
33.24-33.55	73	C		100	94	92						
34.00-35.50										. . . 33.92m - 34.00m, non intact, drilling disturbed.	34.25	
34.80-35.02	74	C		100	94	85	NI 210 450			Extremely weak to very weak, thickly laminated brownish red fine to coarse SANDSTONE. Occasional inclusions of quartz and white sandstone up to 20mm x 20mm in size. Rare lenses of brownish red clay up to 20mm x 50mm in size. Fractures are closely to medium spaced, dipping 0-15°, undulating, rough, tight and undulating rough open 1-5mm infilled with sand and clay. (CHESTER FORMATION)		
35.50-37.00				100	95	91						

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**J Glynn + T Rendell**	**JAlton + LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH10**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**21.04.23** End: **03.05.23**	**46.64**	**E:385077.9 N:398363.8**	**5** of **7**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
35.90-36.20	75	C		100	95	91	NI 210 450			. . . 35.10m - 35.15m, layer of brownish red laminated mudstone. . . . 35.14m - 35.15m, non-intact, zone of sand. Extremely weak to very weak, thickly laminated brownish red fine to coarse SANDSTONE. Occasional inclusions of quartz and white sandstone up to 20mm x 20mm in size. Rare lenses of brownish red clay up to 20mm x 50mm in size. Fractures are closely to medium spaced, dipping 0-15°, undulating, rough, tight and undulating rough open 1-5mm infilled with sand and clay. (CHESTER FORMATION)	(3.75)	
37.00-38.00 37.10-37.37	76	C		100	100	100				*(stratum copied from 34.25m from previous sheet)* . . . 36.91m - 37.00m, non intact, drilling disturbed. . . . 37.02m - 37.05m, inclusion of grey sandstone 220mm x 239mm and inclusion of brownish red laminated mudstone 300mm x 700mm. Borehole terminated at 38.00m depth.	38.00	

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**J Glynn + T Rendell**	**JAlton + LCross**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH10**
Contract Ref:	Start: **21.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **03.05.23**	**46.64**	**E:385077.9 N:398363.8**	**6** of **7**





Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	J Glynn + T Rendell	Logged By:	JAlton + LCross	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH10**
Contract Ref:	Start: **21.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **03.05.23**	**46.64**	**E:385077.9 N:398363.8**	**7** of **7**





Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	J Glynn + T Rendell	Logged By:	JAlton + LCross	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH11**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**26.04.23** End: **05.05.23**	**48.79**	**E:384987.6 N:398411.7**	**1** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
0.10-0.40	1	B								MADE GROUND: Grey mottled black red and cream BRICKS.	0.08	
0.20	101	ES	1xT+2xJ+2xV							MADE GROUND: Light orangish brown, slightly gravelly, fine to coarse SAND. Gravel is very angular to subangular, fine to coarse of concrete, sandstone, asphalt and cement.	0.50	
0.20	2	D									(0.70)	
0.20		PID	0.0ppm									
0.60	102	ES	1xT+2xJ+2xV									
0.60-0.80	3	B										
0.60		PID	0.0ppm								1.20	
0.70	4	D								MADE GROUND: Brown mottled orangish red bluish grey and black, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of brick, cement, sandstone and concrete.		
0.90-1.20	5	B								. . . at 0.90m, becomes less gravelly and gravel becomes finer.		
1.00	102	ES	1xT+2xJ+2xV									
1.00		PID	0.0ppm									
1.20-1.65	5	SPT	N=10									
1.20-1.65	6	DSPT										
1.20-1.65	7	B										
2.00-2.45	8	SPT	N=12							Soft to firm, brown mottled bluish grey, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is very angular to subangular, fine of sandstone, mudstone and coal. (TILL)		
2.00-2.45	10	B										
2.00	104	ES	1xT+2xJ+2xV									
2.00-2.45	9	DSPT										
2.00		PID	0.0ppm								(3.80)	
3.00	105	ES	1xT+2xJ+2xV									
3.00-3.45	11	$UT_{(UT100)}$	13 blows 100% recovery									
3.50	12	D										
4.00-4.45	13	SPT	N=11									
4.00-4.45	14	DSPT										
4.00-4.45	15	B										
											5.00	
5.00-5.45	16	SPT	N=11							Soft, thinly laminated brown, slightly sandy, slightly gravelly, silty CLAY with occasional lenses of fine sand 1-5mm thick. Sand is fine and medium. Gravel is very angular to angular, fine of mudstone. (TILL)		
5.00-5.45	17	DSPT										
5.00-5.45	18	B										
6.00-6.45	19	$UT_{(UT100)}$	19 blows 100% recovery									
6.50	20	D									(3.00)	
7.00-7.45	21	SPT	N=14									
7.00-7.45	22	DSPT										
7.00-7.45	23	B										
											8.00	
8.00-8.45	24	SPT	N=15							Firm to stiff, dark greyish brown, slightly sandy, slightly gravelly, silty CLAY. Sand is fine. Gravel is subangular subrounded, fine of siltstone, sandstone and mudstone. (TILL)		
8.00-8.45	25	DSPT										
8.00-8.45	26	B									(1.00)	
											9.00	

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
26/04/23			None	N/R	
26/04/23		7.50	7.00	200	Dry
27/04/23		7.50	7.00	200	Dry
27/04/23		19.00	18.00	200	Dry
28/04/23		19.00	18.00	200	Dry
28/04/23		24.00	22.50	200	21.50
02/05/23		24.00	24.00	200	22.50
02/05/23		29.50	30.00	200	27.00

Chiselling / Slow Progress

From	To	Duration (hh:mm)
29.60	30.00	01:30

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Position relocated 0.50m west, as power signal detected at 0.50m depth in base of hand pit.
3. Inspection pit hand dug to 1.20m depth.
4. Cable percussion boring to 29.50m followed by rotary core drilling to completion.
5. Borehole terminated at 39.50m depth.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**J Glynn + T Rendell**	**LCross + Kay Adedotun**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH11**

Contract Ref:	Start: **26.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **05.05.23**	**48.79**	**E:384987.6 N:398411.7**	**2** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00-9.45	27	UT	15 blows 100% recovery							Firm to stiff, laminated, grey and brown, slightly sandy, slighty gravelly CLAY. Sand is fine to medium. Gravel is subangular to subrounded, fine of sandstone, siltstone and mudstone. (TILL)	(1.00)	
9.50	28	D									10.00	
10.30-10.95	30	DSPT								Stiff, dark brown, slightly sandy, slightly gravelly, silty CLAY. Sand is fine. Gravel is subangular to subrounded, fine to medium of sandstone, siltstone and mudstone. (TILL)	(4.00)	
10.50-10.95	29	SPT	N=23									
10.50-10.95	31	B										
12.00-12.45	32	SPT	N=24									
12.00-12.45	33	DSPT										
12.00-12.45	34	B										
13.50-13.95	35	UT	18 blows 100% recovery								14.00	
14.00	36	D								Firm, dark greyish brown, slightly gravelly, sandy, silty CLAY with sand lenses. Sand is fine to coarse. Gravel is subangular to subrounded, fine to medium of sandstone, siltstone and mudstone. (TILL)	(1.00)	
15.00-15.45	37	SPT	N=25							Firm, dark brown, slightly gravelly, very sandy, silty CLAY with rare cobble content. Sand is fine to coarse. Gravel is subangular to subrounded of siltstone, mudstone and sandstone. Cobbles are subangular of siltstone and mudstone by 60mm. (TILL)	15.00	
15.00-15.45	38	DSPT									(2.50)	
15.00-15.45	39	B										
16.50-16.95	40	SPT	N=38									
16.50-16.95	41	DSPT										
16.50-16.95	42	B										
17.50	43	D									17.50	
										Firm to stiff, reddish brown, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is subrounded of siltstone, sandstone, mudstone and	(0.50)	
											18.00	

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
04/05/23		29.50	30.00	200	27.70
04/05/23		39.50	39.50	146	5.00
05/05/23		39.50	39.50	146	

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

6. Backfilled with installation materials.
7. SPT hammer VC-AR2499-25/01/23 (E_r = 70.00%) used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**J Glynn + T Rendell**	**LCross + Kay Adedotun**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH11**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**26.04.23** End: **05.05.23**	**48.79**	**E:384987.6 N:398411.7**	**3** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
18.00-18.45	44	SPT	N=35							coal.		
18.00-18.45	45	DSPT								(TILL)		
18.00-18.45	46	B								Firm to stiff, reddish brown, slightly gravelly, very sandy, silty CLAY. Sand is fine to coarse. Gravel is subangular to subrounded of siltstone, sandstone and mudstone. (TILL)	(2.50)	
19.50-19.95	47	UT	50 blows 0% recovery									
20.00	48	D									20.50	
										Stiff, laminated dark greyish brown mottled red, slightly sandy CLAY. Sand is fine to coarse. (TILL)	(0.50)	
											21.00	
21.00-21.15	49	SPT	25/50 for 75mm							Very dense, reddish brown mottled black, slightly gravelly SAND. Sand is fine to coarse. Gravel is subangular to subrounded of siltstone, sandstone and mudstone.	(0.60)	
21.00-21.45	50	DSPT									21.60	
21.00-21.45	51	B								(TILL)		
										Stiff, slighty sandy, slightly gravelly CLAY. Sand is fine to medium. Gravel is subangular to subrounded of siltstone, sandstone and mudstone. (TILL)	22.00	
22.00	52	D									(1.00)	
22.50-22.62	53	SPT(c)	25/50 for 40mm							Very dense, slightly sandy, clayey GRAVEL with a high cobble content. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of sandstone, siltstone and mudstone. Cobbles are subangular of siltstone, sandstone and mudstone by 100mm. (TILL)	23.00	
22.50-22.95	54	DSPT										
22.50-22.95	55	B										
										Stiff dark brown, gravelly very sandy, silty CLAY. Sand is fine to medium. Gravel is subrounded of siltstone, mudstone and sandstone. (TILL)		
24.00-24.04	56	SPT(c)	25/50 for 5mm								(3.50)	
24.00-24.45	57	D										
24.00-24.45	58	B										
25.50-25.60	59	SPT(c)	25/50 for 40mm									
25.50-25.95	60	D									26.50	
25.50-25.95	61	B								Dense brown, gravelly, clayey, medium SAND with a low cobble content. Gravel is subangular to subrounded, fine to coarse of mudstone and	(0.50)	
											27.00	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**J Glynn + T Rendell**	**LCross + Kay Adedotun**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH11**

Contract Ref:	Start: **26.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **05.05.23**	**48.79**	**E:384987.6 N:398411.7**	**4** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
27.00-27.08	62	SPT(c)	25/50 for 30mm							limestone. Cobbles are subangular of mudstone up to 70mm x 50mm x 40mm. (TILL)		
27.00-27.45	63	D										
27.00-27.45	64	B								Brown black and grey mottled, slightly sandy, subrounded to well rounded GRAVEL of sandstone, siltstone and various crystalline lithologies with a medium cobble content. Sand is fine to coarse. Cobbles are rounded to well rounded of sandstone and various crystalline lithologies up to 130mm. (TILL)	(1.30)	
											28.30	
28.50-28.54	65	SPT	25/50 for 15mm								28.70	
28.50-28.95	66	DSPT								Light brown mottled black and grey, fine to coarse SAND. (TILL)	(0.80)	
28.50-28.95	67	B									29.50	
29.50-30.50										Brown black and grey mottled, very sandy, rounded to well rounded GRAVEL of sandstone, siltstone and various crystalline lithologies with a medium cobble content. Sand is fine to coarse. Cobbles are rounded to well rounded of sandstone, limestone and various crystalline lithologies up to 140mm. (TILL)	29.60	
30.00-30.03	68	SPT	25/50 for 10mm	98	98	79						
30.00-30.45	69	D										
30.11-30.39	70	C					20 280 320			Extremely weak to very weak, thinly to thickly laminated, reddish brown, fine to medium grained SANDSTONE. (CHESTER FORMATION)	(2.10)	
30.50-32.00				100	94	79						
										Extremely weak, reddish brown, fine and medium grained, highly weathered SANDSTONE with thin interbeds of very weak, reddish brown mudstone, 5-10mm thick. Discontinuities are 10-20°, medium spaced, undulating, rough. (CHESTER FORMATION)	31.70	
31.69-31.90	71	C										
32.00-33.50										Very weak, very thinly to thinly bedded, reddish brown, fine to medium grained SANDSTONE, with some subrounded to rounded, fine to medium gravel of quartzite. Discontinuities are 0-10°, medium spaced, undulating, rough. (CHESTER FORMATION)		
32.52-32.91	72	C		100	100	67						
33.50-35.00							20 520 660					
33.86-34.14	73	C		100	100	97						
35.00-36.50												
35.18-35.50	74	C		100	100	94					(7.80)	

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**J Glynn + T Rendell**	**LCross + Kay Adedotun**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH11**

Contract Ref:	Start: **26.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **05.05.23**	**48.79**	**E:384987.6 N:398411.7**	**5** of **10**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
36.50-38.00				100	100	94				Very weak, very thinly to thinly bedded, reddish brown, fine to medium grained SANDSTONE, with some subrounded to rounded, fine to medium gravel of quartzite. Discontinuities are 0-10°, medium spaced, undulating, rough. (CHESTER FORMATION) *(stratum copied from 31.70m from previous sheet)*		
36.50-36.93	75	C										
				99	99	99	20 520 660					
38.00-39.50												
				99	99	55						
39.27-39.50	76	C									39.50	
										Borehole terminated at 39.50m depth.		

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**J Glynn + T Rendell**	**LCross + Kay Adedotun**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH11**
Contract Ref:	Start: **26.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **05.05.23**	**48.79**	**E:384987.6 N:398411.7**	**6** of **10**





Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	J Glynn + T Rendell	Logged By:	LCross + Kay Adedotun	Checked By:

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH11**
Contract Ref:	Start: **26.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **05.05.23**	**48.79**	**E:384987.6 N:398411.7**	**7** of **10**





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Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	J Glynn + T Rendell	Logged By:	LCross + Kay Adedotun	Checked By:	JMC AGS

STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH11**
Contract Ref:	Start: **26.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **05.05.23**	**48.79**	**E:384987.6 N:398411.7**	**8** of **10**





Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	J Glynn + T Rendell	Logged By:	LCross + Kay Adedotun	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH11**
Contract Ref:	Start: **26.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **05.05.23**	**48.79**	**E:384987.6 N:398411.7**	**9** of **10**





Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	J Glynn + T Rendell	Logged By:	LCross + Kay Adedotun	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH11**
Contract Ref:	Start: **26.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **05.05.23**	**48.79**	**E:384987.6 N:398411.7**	**10** of **10**





Method Used:	Inspection pit + Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	J Glynn + T Rendell	Logged By:	LCross + Kay Adedotun	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH12**

Contract Ref:	Start: **21.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **04.05.23**	**48.08**	**E:385026.0 N:398384.1**	**1** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
0.05-0.30	1	B								MADE GROUND: Brick hardstanding.	0.05	
0.10	101	ES								MADE GROUND: Light brown, gravelly, medium to coarse SAND with a low cobble content. Gravel is angular to subangular, fine to coarse of limestone. Cobbles are subangular of limestone 110mm x 80mm x 70mm.	0.30	
0.10	2	D								Firm, brown mottled grey, slightly gravelly, slightly silty CLAY. Gravel is angular to subrounded, fine to coarse of sandstone, mudstone and coal. (TILL)		
0.10		PID	0.0ppm									
0.50	102	ES										
0.50	3	D										
0.50-0.60	4	B										
0.50		PID	0.0ppm									
1.00	5	D										
1.00-1.20	6	B										
1.20-1.65	7	UT	110 blows 80% recovery							. . . from 0.50m, becoming stiff.	(3.20)	
1.70	103	ES										
1.70		PID	0.0ppm							. . . from 2.00m, becoming firm.		
1.80	8	D										
2.00	9	D										
2.00-2.45	11	SPT	N=12							. . . from 2.50m, becoming stiff.		
3.00	12	D										
3.00-3.45	13	UT	100 blows 100% recovery								3.50	
3.50	14	D								Stiff, thinly laminated, brown, slightly gravelly, silty CLAY. Gravel is subangular to subrounded of natural lithologies including mudstone and coal. Thin interbedded sand bands. (TILL)		
4.00	15	D										
4.00-4.45	17	SPT	N=22								(2.00)	
4.00-4.45	18	B										
5.00	19	D										
5.00-5.45	20	$UT_{(UT100)}$	125 blows 88% recovery								5.50	
5.00	21	D								Firm, brown, slightly sandy, slightly gravelly, silty CLAY. Sand is fine to coarse. Gravel is angular to rounded, fine to coarse of mudstone, sandstone and coal. (TILL)		
5.50	21	D										
6.00	22	D										
6.00-6.45	24	SPT	N=21									
6.00-6.45	24	DSPT										
6.00-6.45	25	B										
7.00	26	D										
7.00-7.45	27	$UT_{(UT100)}$	120 blows 100% recovery								(3.50)	
7.50	28	D										
8.00	29	D										
8.00-8.45	31	SPT	N=20									
8.00-8.45	31	DSPT										
8.00-8.45	32	B										
											9.00	

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
21/04/23			None	N/R	
21/04/23		5.00	5.00	200	Dry
24/04/23		5.00	5.00	200	Dry
24/04/23		18.00	18.00	200	Dry
25/04/23		18.00	18.00	200	Dry
25/04/23		24.00	24.00	200	Dry
26/04/23		24.00	24.00	200	Dry
26/04/23		30.00	30.00	200	Dry

Chiselling / Slow Progress

From	To	Duration (hh:mm)
29.50	30.00	01:00

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20m depth.
3. Cable percussion boring to 30.00m followed by rotary core drilling to completion.
4. Borehole terminated at 40.50m depth.
5. Backfilled with installation materials.
6. SPT hammer VC-AR1101-25/01/2023 (E_r =

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**M Foley + T Rendell**	**LCross + Sam Diver**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH12**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**21.04.23** End: **04.05.23**	**48.08**	**E:385026.0 N:398384.1**	**2** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
9.00	33	D								Stiff, brown, slightly sandy, slightly gravelly CLAY with numerous lenses of fine and medium SAND 5-10mm thick. Sand is fine to coarse. Gravel is subangular to well rounded, fine to coarse of mudstone, siltstone, sandstone and rare coal. (TILL)		
9.00-9.45	34	$UT_{(UT100)}$	125 blows 100% recovery									
9.50	35	D										
10.00	36	D										
10.50-10.95	38	SPT	N=30									
10.50-10.95	38	DSPT										
10.50-10.95	39	B									(4.00)	
11.00	40	D										
12.00	41	D										
12.00-12.45	43	SPT	N=29									
12.00-12.45	43	DSPT										
12.00-12.45	44	B									13.00	
13.00	45	D								Firm, brown, sandy, slightly gravelly, silty CLAY with occasional lenses of fine sand 10-25mm thick. Sand is fine to coarse. Gravel is subangular to well rounded, fine and medium, rarely coarse, of sandstone, siltstone and mudstone. (TILL)	(1.00)	
13.50-13.95	46	$UT_{(UT100)}$	125 blows 100% recovery								14.00	
14.00	47	D								Firm, brown, slightly sandy, slightly gravelly, silty CLAY. Sand is fine to coarse. Gravel is subangular to well rounded, fine and medium of mudstone, siltstone and sandstone. (TILL)	(1.00)	
15.00	48	D									15.00	
15.00-15.45	50	SPT	N=46							Firm, thinly laminated brown mottled dark orangish brown, slightly sandy, slightly gravelly CLAY with very close to closely spaced interbeds of fine and medium sand. Sand is fine to coarse. Gravel is subangular to well rounded, fine to coarse of mudstone, siltstone and sandstone. (TILL)	(1.00)	
15.00-15.45	50	DSPT										
15.00-15.45	51	B									16.00	
16.00	52	D								Firm, dark orangish brown, very sandy, slightly gravelly CLAY. Sand is fine and medium, rarely coarse. Gravel is subrounded, fine of siltstone and mudstone. (TILL)	(1.00)	
16.50-16.95	54	SPT	N=45									
16.50-16.95	54	DSPT									17.00	
17.00-17.45	55	D								*Description on next sheet*		
17.00-17.45	56	B										

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth
04/05/23		30.00	30.00	200	Dry
04/05/23		40.50	39.00	146	Dry

Chiselling / Slow Progress

From	To	Duration (hh:mm)

General Remarks

72.00%) used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**M Foley + T Rendell**	**LCross + Sam Diver**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH12**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**21.04.23** End: **04.05.23**	**48.08**	**E:385026.0 N:398384.1**	**3** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
18.00	57	D								Stiff, reddish brown, very sandy, slightly gravelly, silty CLAY with a low cobble content. Sand is fine to coarse. Gravel is subrounded to well rounded, fine and medium of siltstone and sandstone. Cobbles are subrounded to well rounded of sandstone and various crystalline lithologies, up to 120mm in length. (TILL) *(stratum copied from 17.00m from previous sheet)*	(2.50)	
18.00-18.12	59	SPT	25/50 for 70mm									
18.00-18.45	60	B										
19.00	61	D									19.50	
19.50-19.84	63	SPT	11,10/11,23,16 for 40mm							Stiff, thinly laminated, greyish brown, slightly sandy CLAY. Sand is fine. (TILL)	19.70	
19.50-19.95	63	DSPT										
19.50-19.95	64	B										
20.00	65	D								Very dense, brown, slightly sandy, slightly clayey, subangular to well rounded, fine to coarse GRAVEL of sandstone and siltstone with a low cobble content. Sand is fine to coarse. Cobbles are subrounded to well rounded of sandstone, limestone and siltstone up to 120mm. (TILL)		
21.00-21.38	67	SPT	10,11/13,17,20 for 75mm								(3.30)	
21.00-21.45	67	D										
21.00	68	D										
21.00-21.45	69	D										
21.00-21.45	69	B										
22.00	70	D										
22.50-22.84	72	SPT(c)	10,15/16,24,10 for 40mm								23.00	
22.50-22.95	72	D								Very stiff brown, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is subrounded to well rounded, fine and medium of sandstone and siltstone. (TILL)		
22.50-22.95	73	B										
23.00	74	D										
24.00	75	D									(2.10)	
24.00-24.15	77	SPT	25/50 for 70mm									
24.00-24.45	77	DSPT										
24.00-24.45	77	B										
24.00-24.45	79	B										
25.00	80	D									25.10	
25.40	81	D								Brown black grey and cream mottled, very sandy, very angular to well rounded, fine to coarse GRAVEL of sandstone, limestone and various crystalline lithologies with a low cobble content. Sand is medium and coarse. Cobbles are rounded to well rounded of limestone and various crystalline lithologies up to 120mm. (TILL) . . . 25.50m - 26.00m, medium cobble content. *Description on next sheet*	(0.90)	
25.50-25.60	83	SPT(c)	25/50 for 45mm									
25.50-25.95	83	D									26.00	
25.50-25.95	84	B										
26.00	85	D										

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

Chiselling / Slow Progress		
From	To	Duration (hh:mm)

General Remarks

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**M Foley + T Rendell**	**LCross + Sam Diver**	AGS

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH12**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**21.04.23** End: **04.05.23**	**48.08**	**E:385026.0 N:398384.1**	**4** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
27.00-27.20	87	SPT(c)	25/30,20 for 50mm							Brown black grey and cream mottled, medium and coarse SAND and subangular to well rounded GRAVEL of sandstone and various crystalline lithologies with a low cobble content. Cobbles are well rounded of sandstone and various crystalline lithologies up to 130mm. (TILL) *(stratum copied from 26.00m from previous sheet)*	(3.00)	
27.00-27.45	87	D										
27.00	88	D										
27.00-27.45	89	B										
28.00	90	D										
28.50-28.61	92	SPT(c)	25/50 for 50mm									
28.50-28.95	92	D									29.00	
28.50-28.95	93	B								Extremely weak, reddish brown, highly weathered, fine and medium grained SANDSTONE. (CHESTER FORMATION)		
29.00	94	D									(1.00)	
29.50-29.59	96	SPT	25/50 for 25mm								30.00	
30.00-31.50										Extremely weak to very weak, brownish red, thinly to thickly laminated, fine and medium grained SANDSTONE. Rare inclusions of quartz and white sandstone up to 5mm x 10mm in size. Occasional lenses of brownish red clay up to 5mm x 30mm in size. Fracture set 1: fractures are very closely to widely spaced dipping 0-5°, undulating, rough, tight and open 1-3mm and infilled with sand and clay. Fracture set 2: fractures are widely spaced dipping 20-30°, planar, rough, open 1-2mm and infilled with clay. (CHESTER FORMATION)		
30.00	97	D										
30.07-30.24	98	C		97	79	48						
31.50-33.00							NI 250 440				(3.50)	
31.77-32.07	99	C		96	96	96				. . . 30.23m - 30.44m, non-intact zone of sand. . . . 30.75m - 30.79m, non-intact zone of sand.		
33.00-34.50										. . . 33.16m - 33.20m, non-intact zone of sand and fragments of sandstone.	33.50	
33.85-34.14	100	C		98	90	87				Very weak, brownish red, very thinly to thinly bedded fine and medium grained SANDSTONE. Rare inclusions of quartz and white sandstone up to 5mm x 10mm in size. Occasional lenses of brownish red clay up to 5mm x 30mm in size. Fracture set 1: fractures are very closely to medium spaced dipping 0-5°, undulating, rough, tight and undulating rough open 1-2mm clean or infilled with sand and clay. Fracture set 2: fractures are widely to very widely spaced dipping 20-25°, undulating, rough and tight. Fracture from 37.34-37.50m dipping 80° planar rough tight. (CHESTER FORMATION)		
34.50-36.00							NI 320 600					
34.79-35.13	101	C		100	93	89				. . . 34.50m - 34.55m, non-intact zone of sand and fragments of sandstone.		

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**M Foley + T Rendell**	**LCross + Sam Diver**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Ancoats Manchester	**Atkins Ltd**	**ATK_BH12**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**21.04.23** End: **04.05.23**	**48.08**	**E:385026.0 N:398384.1**	**5** of **8**

Depth (m)	Samples & Testing: No	Type	Results	Mechanical Log: TCR (%)	SCR (%)	RQD (%)	If (mm)	Backfill & Instrumentation	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
36.00-37.50										. . . 34.72m - 34.77m, non-intact zone of sand and fragments of sandstone. . . . 35.94m - 36.00m, non-intact zone of sand and fragments of sandstone. Very weak, brownish red, very thinly to thinly bedded fine and medium grained SANDSTONE. Rare inclusions of quartz and white sandstone up to 5mm x 10mm in size. Occasional lenses of brownish red clay up to 5mm x 30mm in size. Fracture set 1: fractures are very closely to medium spaced dipping 0-5°, undulating, rough, tight and undulating rough open 1-2mm clean or infilled with sand and clay. Fracture set 2: fractures are widely to very widely spaced dipping 20-25°, undulating, rough and tight. Fracture from 37.34-37.50m dipping 80° planar rough tight. (CHESTER FORMATION) *(stratum copied from 33.50m from previous sheet)*	(7.00)	
36.77-37.20	102	C		100	98	80						
37.50-39.00												
37.78-38.08	103	C		100	96	96	NI 320 600					
39.00-40.50												
39.87-40.15	104	C		100	100	91						
											40.50	
										Borehole terminated at 40.50m depth.		

Boring Progress and Water Observations						Chiselling / Slow Progress			General Remarks
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth	From	To	Duration (hh:mm)	

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Cable Percussion + Rotary Cored	**Cable tool rig + Teredo 2.8**	**M Foley + T Rendell**	**LCross + Sam Diver**	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH12**
Contract Ref:	Start: **21.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **04.05.23**	**48.08**	**E:385026.0 N:398384.1**	**6** of **8**





Method Used:	Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	M Foley + T Rendell	Logged By:	LCross + Sam Diver	Checked By:	JMC

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH12**
Contract Ref:	Start: **21.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **04.05.23**	**48.08**	**E:385026.0 N:398384.1**	**7** of **8**





Method Used:	Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	M Foley + T Rendell	Logged By:	LCross + Sam Diver	Checked By:	

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STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Ancoats Manchester		**Atkins Ltd**		**ATK_BH12**
Contract Ref:	Start: **21.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **04.05.23**	**48.08**	**E:385026.0 N:398384.1**	**8** of **8**



Method Used:	Cable Percussion + Rotary Cored	Plant Used:	Cable tool rig + Teredo 2.8	Drilled By:	M Foley + T Rendell	Logged By:	LCross + Sam Diver	Checked By:	JMC

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Ancoats Manchester	**Atkins Ltd**	**ATK_WS01**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**19.04.23** End: **19.04.23**	**49.09**	**E:385064.5 N:398477.0**	**1** of **7**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
							MADE GROUND: Concrete slab.	0.20	
	0.20-0.30	1	B				Orangish brown, very gravelly, fine to coarse SAND with medium cobble content. Gravel is angular to subangular, fine to coarse of sandstone, siltstone and other lithologies. Cobbles are subangular of sandstone, siltstone and other lithologies (up to 90mm. (TILL)	0.30	
	0.20	101	ES					0.52	
	0.30-0.50	2	B					(0.38)	
	0.40	102	ES				Brown, slightly clayey, very gravelly, fine to coarse SAND with a high cobble content. Gravel is angular to subangular, fine to coarse of sandstone, siltstone and other lithologies. Cobbles are subangular of sandstone, siltstone and other lithologies (up to 150mm). (TILL)	0.90	
	0.90-1.10	4	B					(0.30)	
	1.10	104	ES					1.20	
	1.20-1.65	1	SPT	N=17			Orangish brown, gravelly, fine to coarse SAND with a high cobble content. Gravel is subangular to subrounded, of sandstone, siltstone and other lithologies. Cobbles are subangular of sandstone, siltstone and other lithologies by 150mm. (TILL)		
	1.20	1	DSPT						
	1.20-2.00	5	B						
1.20 - 2.00 (87mm dia) 100% rec	1.40	105	ES						
							Firm, dark brown mottled grey and orange, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is subrounded of sandstone and siltstone. (TILL)		
	2.00-2.45	2	SPT	N=20			Stiff, dark brown mottled grey, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular of sandstone, siltstone and other lithologies. (TILL)		
	2.00	2	DSPT				. . . 2.00m - 3.00m, No recovery due to cobble being pushed into ground.		
2.00 - 3.00 (77mm dia) 0% rec								(3.00)	
	3.00-3.45	3	SPT	N=19					
	3.00	3	DSPT						
3.00 - 4.00 (77mm dia) 35% rec	3.60	106	ES						
	4.00-4.45	4	SPT	N=29					
	4.00	4	DSPT					4.20	
4.00 - 5.00 (67mm dia) 100% rec	4.00-5.00	6	B				*Description on next sheet*		

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20m depth.
3. Window sample hole terminated at 5.45m depth.
4. CPT test carried out from base of window sample hole. ATK_CPT01.
5. On completion, backfilled with arisings.
6. SPT hammer DSUK-110.7-2022 (E_r = 73.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Andrew Cookson**	**Kira Swinson**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Ancoats Manchester	**Atkins Ltd**	**ATK_WS01**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**19.04.23**	**49.09**	**E:385064.5 N:398477.0**	**2** of **7**
	End: **19.04.23**			

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
4.00 - 5.00 (67mm dia) 100% rec	4.50	107	ES				Stiff, dark brown mottled grey, slightly sandy, gravelly CLAY. Sand is fine to coarse. Gravel is subangular of sandstone, siltstone, carbonaceous mudstone and other lithologies. (TILL) *(stratum copied from 4.20m from previous sheet)*	(1.25)	
	5.00-5.45	5	SPT	N=27					
	5.00	5	DSPT					5.45	
							Window sample hole terminated at 5.45m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Andrew Cookson**	**Kira Swinson**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS01**
Contract Ref:	Start: **19.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **19.04.23**	**49.09**	**E:385064.5 N:398477.0**	**3** of **7**





Method Used:	Tracked window sampling	Plant Used:	Premier 110	Drilled By:	Andrew Cookson	Logged By:	Kira Swinson	Checked By:	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS01**
Contract Ref:	Start: **19.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **19.04.23**	**49.09**	**E:385064.5 N:398477.0**	**4** of **7**





Method Used:	**Tracked window sampling**	Plant Used:	**Premier 110**	Drilled By:	**Andrew Cookson**	Logged By:	**Kira Swinson**	Checked By:	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS01**
Contract Ref:	Start: **19.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **19.04.23**	**49.09**	**E:385064.5 N:398477.0**	**5** of **7**





Method Used:	**Tracked window sampling**	Plant Used:	**Premier 110**	Drilled By:	**Andrew Cookson**	Logged By:	**Kira Swinson**	Checked By:	

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WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS01**
Contract Ref:	Start: **19.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **19.04.23**	**49.09**	**E:385064.5 N:398477.0**	**6** of **7**





Method Used:	**Tracked window sampling**	Plant Used:	**Premier 110**	Drilled By:	**Andrew Cookson**	Logged By:	**Kira Swinson**	Checked By:	

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WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS01**
Contract Ref:	Start: **19.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **19.04.23**	**49.09**	**E:385064.5 N:398477.0**	**7** of **7**





Method Used:	**Tracked window sampling**	Plant Used:	**Premier 110**	Drilled By:	**Andrew Cookson**	Logged By:	**Kira Swinson**	Checked By:	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Ancoats Manchester	**Atkins Ltd**	**ATK_WS02**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**19.04.23** End: **19.04.23**	**47.08**	**E:385121.3 N:398419.2**	**1** of **6**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
							MADE GROUND: White concrete hardstanding.	0.17	
	0.17-0.45	1	B				MADE GROUND: Light to dark brown, slightly sandy GRAVEL of subangular to angular fine to coarse concrete, brick, coal and shale. Sand is fine to medium.	(0.28)	
	0.30	1	ES					0.45	
	0.45-0.60	2	B				MADE GROUND: Light to dark reddish brown, very sandy GRAVEL of angular, fine to medium brick, concrete, tarmacadam, shale and coal. Sand is fine to coarse.	(0.55)	
	0.50	2	ES						
	0.60-1.00	1	B						
	0.80	3	ES					1.00	
	1.00	1	DSPT				MADE GROUND: Dark brown and locally black, slightly clayey, sandy, angular, fine to coarse GRAVEL of ash, brick, concrete, tarmacadam with a low cobble content. Cobbles are angular of concrete (up to 65mm). Sand is fine to coarse.	1.20	
	1.20-1.65	1	SPT	N=25					
	1.20-2.00	4	B						
	1.20		V	c_u=>130/>130/>130					
1.20 - 2.00 (87mm dia) 100% rec	1.50	4	ES				MADE GROUND: Firm to stiff, dark brown, slightly gravelly CLAY. Gravel is angular, fine of brick, concrete and tarmacadam.	(0.80)	
								2.00	
	2.00-2.45	2	SPT	N=20			Very stiff dark brown slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is sub roundws to subangular of sandstone, siltstone and other lithologies. (TILL)		
	2.00	2	DSPT						
	2.00-3.00	5	B						
	2.00		V	c_u=>130/>130/>130					
2.00 - 3.00 (77mm dia) 100% rec	2.50	5	ES						
	3.00-3.45	3	SPT	N=23					
	3.00	3	DSPT						
	3.00-4.00	6	B						
3.00 - 4.00 (77mm dia) 100% rec	3.50	6	ES					(3.45)	
	4.00-4.45	4	SPT	N=26					
	4.00-5.00	7	B						
4.00 - 5.00 (67mm dia) 100% rec									

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20m depth.
3. Window sample hole terminated at 5.45m depth.
4. CPT test carried out from base of window sample hole. ATK_CPT02.
5. On completion, backfilled with arisings.
6. SPT hammer DSUK-110.7-2022 (E_r = 73.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Andrew Cookson**	**Kira Swinson**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Ancoats Manchester	**Atkins Ltd**	**ATK_WS02**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**19.04.23** End: **19.04.23**	**47.08**	**E:385121.3 N:398419.2**	**2** of **6**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
4.00 - 5.00 (67mm dia) 100% rec	4.50	7	ES				Very stiff dark brown slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is sub roundws to subangular of sandstone, siltstone and other lithologies. (TILL) *(stratum copied from 2.00m from previous sheet)*	5.45	
	5.00-5.45	5	SPT	N=27					
	5.00	5	DSPT						
							Window sample hole terminated at 5.45m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Andrew Cookson**	**Kira Swinson**	

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WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS02**
Contract Ref:	Start: **19.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **19.04.23**	**47.08**	**E:385121.3 N:398419.2**	**3** of **6**





Method Used:	Tracked window sampling	Plant Used:	Premier 110	Drilled By:	Andrew Cookson	Logged By:	Kira Swinson	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS02**
Contract Ref:	Start: **19.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **19.04.23**	**47.08**	**E:385121.3 N:398419.2**	**4** of **6**





Method Used:	**Tracked window sampling**	Plant Used:	**Premier 110**	Drilled By:	**Andrew Cookson**	Logged By:	**Kira Swinson**	Checked By:	

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WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS02**
Contract Ref:	Start: **19.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **19.04.23**	**47.08**	**E:385121.3 N:398419.2**	**5** of **6**





Method Used:	**Tracked window sampling**	Plant Used:	**Premier 110**	Drilled By:	**Andrew Cookson**	Logged By:	**Kira Swinson**	Checked By:	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS02**
Contract Ref:	Start: **19.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **19.04.23**	**47.08**	**E:385121.3 N:398419.2**	**6** of **6**



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Method Used:	Tracked window sampling	Plant Used:	Premier 110	Drilled By:	Andrew Cookson	Logged By:	Kira Swinson	Checked By:	

STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Ancoats Manchester	**Atkins Ltd**	**ATK_WS03**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**20.04.23** End: **20.04.23**	**48.06**	**E:385078.5 N:398433.8**	**1** of **4**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
							MADE GROUND: White concrete hardstanding.	0.20	
	0.20	1	ES				MADE GROUND: Light to dark brown, sandy, slightly clayey subangular, fine to coarse GRAVEL of concrete, brick and plastics. Sand is fine to medium.	(0.50)	
	0.20-0.50	1	B					0.70	
	0.70	2	ES				MADE GROUND: Light to dark brown, slightly gravelly CLAY. Gravel is subangular to angular, fine to coarse of mudstone, brick, concrete, tarmacadam, shale with a low cobble content. Cobbles are angular of concrete (up to 65mm).	(0.50)	
	0.70-0.90	3	B					1.20	
	0.70-0.90	4	D						
	1.20-1.65	1	SPT	N=21			Stiff, dark brown mottled light brown and grey, gravelly, very sandy CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of siltstone, sandstone, carbonaceous mudstone and other lithologies. (TILL)	(0.40)	
	1.20	1	DSPT					1.60	
	1.20-2.00	1	B						
1.20 - 2.00 (87mm dia) 100% rec	1.50	101	ES						
	2.00-2.45	2	SPT	N=12			Stiff, reddish brown, slightly gravelly, sandy, silty CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of siltstone, sandstone and carbonaceous mudstone. (TILL)	(0.90)	
	2.00	2	DSPT					2.50	
	2.00-3.00	2	B						
2.00 - 3.00 (77mm dia) 95% rec	2.50	102	ES				Stiff, laminated dark brown mottled red and grey, sandy, gravelly CLAY. Sand is fine to coarse. Gravel is subrounded of sandstone, siltstone and carbonaceous mudstone. (TILL)	(1.70)	
	3.00-3.45	3	SPT	N=19					
	3.00	3	DSPT						
	3.00-4.00	3	B						
3.00 - 4.00 (77mm dia) 100% rec	3.50	103	ES					4.20	
	4.00-4.45	4	SPT	N=25			*Description on next sheet*		
	4.00	4	DSPT						
	4.00-5.00	4	B				. . . at 4.40m, gravel becomes larger to 20mm.		
4.00 - 5.00 (67mm dia) 100% rec									

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20m depth.
3. Window sample hole terminated at 5.45m depth.
4. CPT test carried out from base of window sample hole. ATK_CPT03.
5. On completion, backfilled with arisings.
6. SPT hammer DSUK-110.7-2022 (E_r = 73.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Andrew Cookson**	**Kira Swinson**	

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WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Ancoats Manchester	**Atkins Ltd**	**ATK_WS03**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**20.04.23**	**48.06**	**E:385078.5 N:398433.8**	**2** of **4**
	End: **20.04.23**			

Progress	Samples / Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
4.00 - 5.00 (67mm dia) 100% rec	4.50	104	ES				Stiff, dark brown mottled red and black, gravelly, very sandy CLAY. Sand is fine to coarse. Gravel is subrounded of sandstone, fine to coarse of siltstone and carbonaceous mudstone. (TILL) *(stratum copied from 4.20m from previous sheet)*	(1.25)	
	5.00-5.45	5	SPT	N=21					
	5.00	5	DSPT					5.45	
							Window sample hole terminated at 5.45m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Andrew Cookson**	**Kira Swinson**	

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WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS03**
Contract Ref:	Start: **20.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **20.04.23**	**48.06**	**E:385078.5 N:398433.8**	**3** of **4**





Method Used:	Tracked window sampling	Plant Used:	Premier 110	Drilled By:	Andrew Cookson	Logged By:	Kira Swinson	Checked By:	

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WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS03**
Contract Ref:	Start: **20.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **20.04.23**	**48.06**	**E:385078.5 N:398433.8**	**4** of **4**





Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Andrew Cookson**	**Kira Swinson**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Ancoats Manchester	**Atkins Ltd**	**ATK_WS04**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**20.04.23** End: **20.04.23**	**49.08**	**E:385037.8 N:398448.2**	**1** of **6**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
							MADE GROUND: Concrete slab.	0.17	
	0.20-0.40	1	B				MADE GROUND: Orangish brown, slightly clayey, very gravelly, fine to coarse SAND with a medium cobble content. Gravel is angular to subangular of sandstone and other lithologies. Cobbles are subangular of sandstone and concrete by 40mm.	(0.28)	
	0.30	101	ES					0.45	
							MADE GROUND: Concrete slab.	(0.35)	
								0.80	
	1.20-1.65	1	SPT	N=16			Stiff dark brown mottled red yellow and black, slightly sandy gravelly, silty CLAY. Sand is fine to coarse. Gravel is subrounded to rounded, fine to coarse of limestone, mudstone and sandstone. (TILL)		
	1.20	1	DSPT						
	1.20-2.00	1	B						
1.20 - 2.00 (87mm dia) 100% rec	1.20	101	ES						
	2.00-2.45	2	SPT	N=31				(2.40)	
	2.00	2	DSPT						
	2.00-3.00	2	B						
2.00 - 3.00 (77mm dia) 100% rec									
	3.00-3.45	3	SPT	N=15				3.20	
	3.00	3	DSPT				Firm dark brown mottled red and black, slightly sandy, slighty gravelly, silty CLAY. Sand is fine to coarse. Gravel is subrounded to rounded, fine to coarse of limestone, sandstone and mudstone. (TILL)		
	3.00-4.00	3	B						
3.00 - 4.00 (77mm dia) 100% rec	3.50	104	ES					(0.60)	
								3.80	
	4.00-4.45	4	SPT	N=24			Stiff dark brown mottled orange and black, slightly silty, slightly sandy, gravelly CLAY. Sand is fine to coarse. Gravel is subrounded to rounded of limestone, sandstone and mudstone. (TILL)		
	4.00	4	DSPT						
4.00 - 5.00 (67mm dia) 95% rec									

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20m depth.
3. Window sample hole terminated at 5.45m depth.
4. CPT test carried out from base of window sample hole. ATK_CPT04.
5. On completion, borehole backfilled with arisings.
6. SPT hammer DSUK-110.7-2022 (E_r = 73.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Andrew Cookson**	**Kira Swinson**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Ancoats Manchester	**Atkins Ltd**	**ATK_WS04**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**20.04.23**	**49.08**	**E:385037.8 N:398448.2**	**2** of **6**
	End: **20.04.23**			

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
4.00 - 5.00 (67mm dia) 95% rec	4.50	103	ES				Stiff dark brown mottled orange and black, slightly silty, slightly sandy, gravelly CLAY. Sand is fine to coarse. Gravel is subrounded to rounded of limestone, sandstone and mudstone. (TILL) *(stratum copied from 3.80m from previous sheet)* . . . at 4.70m, occasional cobbles of sandstone, siltstone and mudstone.	(1.65)	
	5.00-5.45	5	SPT	N=28					
	5.00	5	DSPT					5.45	
							Window sample hole terminated at 5.45m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Andrew Cookson**	**Kira Swinson**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS04**
Contract Ref:	Start: **20.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **20.04.23**	**49.08**	**E:385037.8 N:398448.2**	**3** of **6**





Method Used:	Tracked window sampling	Plant Used:	Premier 110	Drilled By:	Andrew Cookson	Logged By:	Kira Swinson	Checked By:	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS04**
Contract Ref:	Start: **20.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **20.04.23**	**49.08**	**E:385037.8 N:398448.2**	**4** of **6**





Method Used:	**Tracked window sampling**	Plant Used:	**Premier 110**	Drilled By:	**Andrew Cookson**	Logged By:	**Kira Swinson**	Checked By:	

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WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS04**
Contract Ref:	Start: **20.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **20.04.23**	**49.08**	**E:385037.8 N:398448.2**	**5** of **6**





Method Used:	**Tracked window sampling**	Plant Used:	**Premier 110**	Drilled By:	**Andrew Cookson**	Logged By:	**Kira Swinson**	Checked By:	

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WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS04**
Contract Ref:	Start: **20.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **20.04.23**	**49.08**	**E:385037.8 N:398448.2**	**6** of **6**



Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Andrew Cookson**	**Kira Swinson**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Ancoats Manchester	**Atkins Ltd**	**ATK_WS05**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**20.04.23** End: **20.04.23**	**47.12**	**E:385097.0 N:398400.1**	**1** of **6**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
							MADE GROUND: Concrete slab.	0.20	
	0.20-0.40	1	B				MADE GROUND: Light brown, very sandy, angular, fine to coarse GRAVEL of sandstone, siltstone and concrete with a high cobble content. Sand is fine to coarse. Cobbles are subangular of sandstone, siltstone and concrete (up to 50mm).	0.40	
	0.30	101	ES					0.60	
	0.40-0.60	2	B				MADE GROUND: Orangish brown, very gravelly, fine to coarse SAND with a high cobble content. Gravel is angular to subangular, fine to coarse of sandstone and siltstone. Cobbles are subangular of sandstone and siltstone (up to 160mm).	0.80	
	0.50	102	ES					(0.40)	
	0.60-0.80	3	B				MADE GROUND: Greyish brown, very sandy, slightly clayey, subangular, fine to coarse GRAVEL with a high cobble content. Sand is fine to coarse. Cobbles are angular of siltstone and sandstone.	1.20	
	0.70	103	ES						
	1.00-1.20	4	B				MADE GROUND: Firm, dark brown mottled black red and grey, sandy, gravelly silty CLAY. Sand is fine to coarse with a low cobble content. Gravel is subangular to subrounded, fine to coarse of siltstone, sandstone and brick. Cobbles are subangular of brick.		
	1.10	104	ES						
	1.20-1.65	1	SPT	N=9	▼1				
	1.20	1	DSPT						
	1.20	105	ES						
	1.20-2.00	5	B						
1.20 - 2.00 (87mm dia)							Firm, orangish brown mottled grey and black, very sandy CLAY. Sand is find to medium. (TILL)		
	2.00-2.45	2	SPT	N=14			. . . at 1.60m, becoming stiff.		
	2.00	2	DSPT				. . . at 2.10m, becoming dark brown.	(2.00)	
	2.00-3.00	6	B						
2.00 - 3.00 (77mm dia)	2.50	106	ES						
	3.00-3.45	3	SPT	N=20				3.20	
	3.00	3	DSPT				Stiff, dark brown mottled orange and black, slightly gravelly, very sandy, silty CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of siltstone and sandstone. (TILL)		
	3.00-4.00	7	B						
3.00 - 4.00 (77mm dia)	3.50	107	ES						
	4.00-4.45	4	SPT	N=30					
	4.00	4	DSPT						
	4.00-5.00	7	B					(2.25)	
4.00 - 5.00 (67mm dia)									

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20m depth.
3. Window sample hole terminated at 5.45m depth.
4. On completion, backfilled with arisings.
5. SPT hammer DSUK-110.7-2022 (E_r = 73.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Andrew Cookson**	**Kira Swinson**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Ancoats Manchester	**Atkins Ltd**	**ATK_WS05**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**20.04.23**	**47.12**	**E:385097.0 N:398400.1**	**2** of **6**
	End: **20.04.23**			

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
4.00 - 5.00 (67mm dia)	4.50	108	ES				Stiff, dark brown mottled orange and black, slightly gravelly, very sandy, silty CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of siltstone and sandstone. (TILL) *(stratum copied from 3.20m from previous sheet)*		
	5.00-5.45	5	SPT	N=35					
	5.00	5	DSPT					5.45	
							Window sample hole terminated at 5.45m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Andrew Cookson**	**Kira Swinson**	

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WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS05**
Contract Ref:	Start: **20.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **20.04.23**	**47.12**	**E:385097.0 N:398400.1**	**3** of **6**





Method Used:	Tracked window sampling	Plant Used:	Premier 110	Drilled By:	Andrew Cookson	Logged By:	Kira Swinson	Checked By:	

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WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS05**
Contract Ref:	Start: **20.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **20.04.23**	**47.12**	**E:385097.0 N:398400.1**	**4** of **6**





Method Used:	**Tracked window sampling**	Plant Used:	**Premier 110**	Drilled By:	**Andrew Cookson**	Logged By:	**Kira Swinson**	Checked By:	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS05**
Contract Ref:	Start: **20.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **20.04.23**	**47.12**	**E:385097.0 N:398400.1**	**5** of **6**





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Method Used:	Tracked window sampling	Plant Used:	Premier 110	Drilled By:	Andrew Cookson	Logged By:	Kira Swinson	Checked By:	

STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS05**
Contract Ref:	Start: **20.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **20.04.23**	**47.12**	**E:385097.0 N:398400.1**	**6** of **6**





Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Andrew Cookson**	**Kira Swinson**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Ancoats Manchester	**Atkins Ltd**	**ATK_WS06**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**25.04.23** End: **25.04.23**	**47.92**	**E:385040.1 N:398399.0**	**1** of **4**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.50	1	B				MADE GROUND: Grey coarse TARMACADAM.	0.09	
	0.25-0.25	101	ES	1xT+1xJ+1xV			MADE GROUND: Light to yellow brown, slightly gravelly, fine to coarse SAND. Gravel is angular coarse of sandstone.	(0.41)	
	0.30-0.30	2	D					0.50	
	0.60-0.60	102	ES	1xT+1xJ+1xV			MADE GROUND: Light to dark brown, slightly sandy fine to coarse angular GRAVEL of brick, concrete, plastics, with low cobble content. Cobbles are angular brick (up to 65mm).		
	0.60-1.00	3	B						
	1.00-1.00	103	ES	1xT+1xJ+1xV					
	1.00-1.00	4	D					(1.30)	
	1.00-2.00	5	B						
	1.20-1.65	1	SPT	N=6					
1.20 - 2.00 (98mm dia) 80% rec	1.50-1.50	104	ES	1xT+1xJ+1xV					
	1.50-1.80	6	D					1.80	
	2.00-2.45	2	SPT	N=10			Firm light to dark brown, slightly sandy, gravelly CLAY. Gravel is fine to medium of coal, siltstone and mudstone. (TILL)		
	2.00-3.00	7	B						
2.00 - 3.00 (85mm dia) 100% rec	2.50-2.50	105	ES	1xT+1xJ+1xV				(2.20)	
	3.00-3.45	3	SPT	N=42					
	3.00-3.00	8	D						
	3.00-4.00	9	B						
3.00 - 4.00 (75mm dia) 100% rec	3.50-3.50	105	ES	1xT+1xJ+1xV					
								4.00	
	4.00-4.45	4	SPT	N=18			Very stiff, dark brown mottled blue, slightly gravelly CLAY. Gravel is angular, fine to coarse of mudstone. (TILL)		
	4.00-4.00	10	D						
4.00 - 5.00 (55mm dia) 100% rec	4.00-5.00	11	B						

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20m depth.
3. Window sample hole terminated at 5.45m depth.
4. CPT test carried out from base of window sample hole. ATK_CPT06.
5. On completion, backfilled with arisings.
6. SPT hammer DSUK-110.9-2022 (E_r = 77.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Unknown**	**Kristian Hardy**	**LCross**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Ancoats Manchester	**Atkins Ltd**	**ATK_WS06**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**25.04.23** End: **25.04.23**	**47.92**	**E:385040.1 N:398399.0**	**2** of **4**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
4.00 - 5.00 (55mm dia) 100% rec	4.50-4.50	106	ES	1xT+1xJ+1xV			Very stiff, dark brown mottled blue, slightly gravelly CLAY. Gravel is angular, fine to coarse of mudstone. (TILL) *(stratum copied from 4.00m from previous sheet)*	(1.45)	
	5.00-5.45 5.00-5.00	5 12	SPT D	N=24					
							Window sample hole terminated at 5.45m depth.	5.45	

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Inspection pit + Tracked window sampling	**Unknown**	**Kristian Hardy**	**LCross**	

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WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS06**
Contract Ref:	Start: **25.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **25.04.23**	**47.92**	**E:385040.1 N:398399.0**	**3** of **4**





Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Unknown**	Drilled By:	**Kristian Hardy**	Logged By:	**LCross**	Checked By:	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS06**
Contract Ref:	Start: **25.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **25.04.23**	**47.92**	**E:385040.1 N:398399.0**	**4** of **4**



Method Used:	**Inspection pit + Tracked window sampling**	Plant Used:	**Unknown**	Drilled By:	**Kristian Hardy**	Logged By:	**LCross**	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log WINDOW SAMPLE LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Ancoats Manchester	**Atkins Ltd**	**ATK_WS07**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**25.04.23** End: **25.04.23**	**49.03**	**E:385012.2 N:398452.3**	**1** of **3**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10-0.30	1	B				MADE GROUND: Concrete slab.	(0.40)	
	0.20	101	ES					0.40	
	0.20	2	D						
					1		Dark brown, slightly sandy, clayey fine to coarse angular GRAVEL of siltstone, sandstone and mudstone with a high cobble content. Sand is fine to coarse. Cobbles are angular of siltstone (up to 40mm). (TILL)	(1.10)	
	1.20-1.65	1	SPT	N=9					
	1.20	102	ES						
	1.20	3	D						
	1.20	5	DSPT					1.50	
1.20 - 2.00 (85mm dia)							Stiff, dark brown mottled red black and grey, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is subrounded, fine to coarse of mudstone, siltstone and sandstone. (TILL)	(0.80)	
	1.70	103	ES						
	1.70-1.90	2	B						
	1.70-1.90	6	B						
	2.00-2.45	2	SPT	N=16					
	2.00	8	DSPT					2.30	
2.00 - 3.00 (75mm dia)							Firm to stiff, dark brown mottled red black yellow, slightly sandy, gravelly silty CLAY. Sand is fine to coarse. Gravel is subangular to subrounded of siltstone, mudstone and sandstone. (TILL)	(0.60)	
	2.50	104	ES						
	2.50-2.90	3	B						
	2.50-2.70	9	B					2.90	
							Stiff mottled red yellow black, slightly sandy, slightly gravelly CLAY with a medium cobble content. Sand is fine to coarse. Gravel is subrounded of siltstone, sandstone and mudstone. Cobbles are angular of siltstone and sandstone. (TILL)	(0.55)	
	3.00-3.45	3	SPT	N=24					
	3.00	11	DSPT					3.45	
							Window sample hole terminated at 3.45m depth.		

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20m depth.
3. Terminated at 3.00m due to collapse.
4. On completion, backfilled with installation materials.
5. SPT hammer DSUK-110.9-2022 (E_r = 77.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Kristian Hardy**	**Kira Swinson**	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS07**
Contract Ref:	Start: **25.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **25.04.23**	**49.03**	**E:385012.2 N:398452.3**	**2** of **3**





Method Used:	**Tracked window sampling**	Plant Used:	**Premier 110**	Drilled By:	**Kristian Hardy**	Logged By:	**Kira Swinson**	Checked By:	

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STRUCTURAL SOILS

WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS07**
Contract Ref:	Start: **25.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **25.04.23**	**49.03**	**E:385012.2 N:398452.3**	**3** of **3**



Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Kristian Hardy**	**Kira Swinson**	

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WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Ancoats Manchester	**Atkins Ltd**	**ATK_WS08**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**20.04.23** End: **20.04.23**	**49.33**	**E:384972.9 N:398439.1**	**1** of **6**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
							MADE GROUND: Brick hardstanding layer.	0.05	
	0.20-0.40	1	D				MADE GROUND: Orangish brown, very gravelly, fine to coarse SAND with a medium cobble content. Gravel is angular to subangular, fine to coarse of sandstone. Cobbles are angular of sandstone (up to 80mm).	(0.45)	
	0.20-0.40	1	B						
	0.30	101	ES					0.50	
	0.50-0.70	2	D				MADE GROUND: Stiff black mottled red and grey, slightly sandy, very gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is angular to subangular of mudstone and sandstone. Cobbles are subangular of mudstone and siltstone.	0.70	
	0.50-0.70	2	B						
	0.60	102	ES						
	0.70-0.80	3	D						
	0.70-0.80	3	B						
	0.80	103	ES						
1.00 - 2.00 (85mm dia) 100% rec	1.00	1	DSPT				MADE GROUND: Stiff dark brown mottled red grey and black, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded of sandstone, mudstone and brick.	(0.90)	
	1.20-1.65	1	SPT	N=11					
	1.20-2.00	4	B					1.60	
2.00 - 3.00 (75mm dia) 100% rec	2.00-2.45	2	SPT	N=32			Stiff, dark brown mottled red black and grey, slightly sandy, slighty gravelly CLAY with medium cobble content. Sand is fine to coarse. Gravel is subangular to subrounded of sandstone, mudstone and siltstone. Cobbles are subangular to subrounded of mudstone siltstone and sandstone. (TILL)	(1.60)	
	2.00	2	DSPT						
	2.00-3.00	5	B						
3.00 - 4.00 (65mm dia) 100% rec	3.00-3.45	3	SPT	N=12					
	3.00	3	DSPT					3.20	
	3.00-4.00	6	B				Stiff, dark brown mottled grey and yellow, slightly gravelly, sandy CLAY with a low cobble content. Sand is fine to coarse. Gravel is subrounded, fine to coarse of siltstone, sandstone, mudstone and coal. Cobbles are subangular of sandstone, siltstone, mudstone and coal. (TILL)		
4.00 - 5.00 (65mm dia) 70% rec	4.00-4.45	4	SPT	N=12	1			(2.25)	
	4.00	4	DSPT						
	4.00-5.00	7	B						

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20m depth
3. Window sample hole terminated at 5.45m depth.
4. Backfilled with installation materials.
5. SPT hammer DSUK-110.9-2022 (E_r = 77.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Andrew Cookson**	**???**	

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WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Ancoats Manchester	**Atkins Ltd**	**ATK_WS08**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**20.04.23**	**49.33**	**E:384972.9 N:398439.1**	**2** of **6**
	End: **20.04.23**			

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
4.00 - 5.00 (65mm dia) 70% rec	5.00-5.45	5	SPT	N=25			Stiff, dark brown mottled grey and yellow, slightly gravelly, sandy CLAY with a low cobble content. Sand is fine to coarse. Gravel is subrounded, fine to coarse of siltstone, sandstone, mudstone and coal. Cobbles are subangular of sandstone, siltstone, mudstone and coal. (TILL) *(stratum copied from 3.20m from previous sheet)*	5.45	
	5.00	5	DSPT				Window sample hole terminated at 5.45m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Andrew Cookson**	**???**	

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WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS08**
Contract Ref:	Start: **20.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **20.04.23**	**49.33**	**E:384972.9 N:398439.1**	**3** of **6**





Method Used:	Tracked window sampling	Plant Used:	Premier 110	Drilled By:	Andrew Cookson	Logged By:	???	Checked By:	

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WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS08**
Contract Ref:	Start: **20.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **20.04.23**	**49.33**	**E:384972.9 N:398439.1**	**4** of **6**





Method Used:	**Tracked window sampling**	Plant Used:	**Premier 110**	Drilled By:	**Andrew Cookson**	Logged By:	**???**	Checked By:	

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WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS08**
Contract Ref:	Start: **20.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **20.04.23**	**49.33**	**E:384972.9 N:398439.1**	**5** of **6**





Method Used:	**Tracked window sampling**	Plant Used:	**Premier 110**	Drilled By:	**Andrew Cookson**	Logged By:	**???**	Checked By:	

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WINDOW SAMPLE LOG

Contract:		Client:		Window Sample:
Ancoats Manchester		**Atkins Ltd**		**ATK_WS08**
Contract Ref:	Start: **20.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **20.04.23**	**49.33**	**E:384972.9 N:398439.1**	**6** of **6**





Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier 110**	**Andrew Cookson**	**???**	

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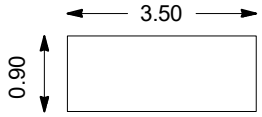
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP01**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**13.04.23** End: **13.04.23**	**49.31**	**E:385038.2 N:398515.7**	**1** of **6**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.07-0.10	1	B				MADE GROUND: Reddish brown block paving.	0.07	
0.07-0.10	2	D				MADE GROUND: Light to dark brown, slightly gravelly, fine to coarse SAND. Gravel is subangular, fine to coarse of concrete, tarmacadam, clinker and fine of coal.	0.12	
0.10	1	ES					(0.28)	
0.10		PID	0.0ppm				0.40	
0.30	2	ES				MADE GROUND: Light to dark brown, locally black, slightly sandy, subangular to angular, fine to coarse GRAVEL of brick, concrete, clinker, tarmacadam and coal with low a cobble content. Sand is fine to medium. Cobbles are up to 65 mm x 350mm. .		
0.30		PID	0.0ppm					
0.70	3	ES				MADE GROUND: Soft to firm, dark brown to black, slightly sandy, gravelly, CLAY. Gravel is angular, fine of brick, concrete and decomposed wood.	(0.90)	
0.70-1.10	3	B						
0.70-1.10	4	D						
0.70		PID	0.0ppm					
1.10-1.60	5	B						
1.10-1.60	6	D						
1.10		V	c_u=50/60/50				1.30	
1.10		V	c_r=30/40/20			MADE GROUND: Firm dark grey, locally black, slightly sandy, gravelly CLAY with a slight hydrocarbon odour. Gravel is subangular of ceramics, mudstone, siltstone and pulverized fly ash. Sand is fine to medium.		
1.50	4	ES						
1.50		PID	0.1ppm				(0.90)	
1.80	5	ES				. . . at 1.80m, moderate hydrocarbon odour with ceramics and bones.		
1.80		V	c_u=110/110/120					
1.80		V	c_r=20/20/10					
1.80		PID	0.8ppm				2.20	
2.50	6	ES				Stiff to very stiff, dark brown blue mottled, gravelly CLAY. Gravel is angular, fine to coarse of siltstone and mudstone. (TILL)		
2.50-3.00	7	B						
2.50-3.00	8	D						
2.50		V	c_u=130/120/130					
2.50		V	c_r=10/40/10					
2.50		PID	0.0ppm					
3.50		V	c_u=150/100/130				(2.80)	
3.50		V	c_r=10/30/10					
3.60-4.00	10	D						
3.60-4.00	9	B						
4.00		V	c_u=130/130/120					
4.00		V	c_r=20/20/10					
						. . . 4.20m - 4.60m, becoming slightly gravelly.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Hydrocarbon odours recorded between 1.50m and 1.80m depth. 0.8 ppm recorded at 1.80m depth.
3. Trial pit dry whilst excavting.
4. Trial pit terminated at 5.00m depth.
5. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**Harry Prew**	

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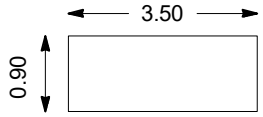
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP01**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**13.04.23**	**49.31**	**E:385038.2 N:398515.7**	**2** of **6**
	End: **13.04.23**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
4.60-5.00	11	B				Stiff to very stiff, dark brown blue mottled, gravelly CLAY. Gravel is angular, fine to coarse of siltstone and mudstone. (TILL) *(stratum copied from 2.20m from previous sheet)*	5.00	
4.60-5.00	12	D						
4.60		V	c_u=>130					
						Trial pit terminated at 5.00m depth.		

Plan (Not to Scale)



General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**Harry Prew**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP01**
Contract Ref:	Start: **13.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **13.04.23**	**49.31**	**E:385038.2 N:398515.7**	**3** of **6**





Method Used:	Machine dug	Plant Used:	13 Ton Tracked Excavator	Logged By:	Harry Prew	Checked By:	JWC

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP01**
Contract Ref:	Start: **13.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **13.04.23**	**49.31**	**E:385038.2 N:398515.7**	**4** of **6**





Method Used:	**Machine dug**	Plant Used:	**13 Ton Tracked Excavator**	Logged By:	**Harry Prew**	Checked By:	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP01**
Contract Ref:	Start: **13.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **13.04.23**	**49.31**	**E:385038.2 N:398515.7**	**5** of **6**





Method Used:	**Machine dug**	Plant Used:	**13 Ton Tracked Excavator**	Logged By:	**Harry Prew**	Checked By:	JWC

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TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP01**
Contract Ref:	Start: **13.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **13.04.23**	**49.31**	**E:385038.2 N:398515.7**	**6** of **6**





Method Used:	**Machine dug**	Plant Used:	**13 Ton Tracked Excavator**	Logged By:	**Harry Prew**	Checked By:	JWC

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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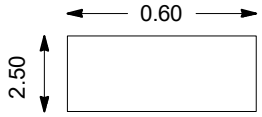
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP02**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**18.04.23** End: **18.04.23**	**49.07**	**E:385079.5 N:398467.8**	**1** of **6**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Grey reinforced concrete hardstanding.	0.21	
						. . . blue plastic membrane at base of concrete.		
0.30-0.50	1	LB				MADE GROUND: Light brown, sandy, angular to subangular, fine to coarse GRAVEL of limestone/sandstone with a medium cobble content. Sand is medium to coarse. Cobbles are angular to subangular of limestone up to 240mm x 100mm x 90mm. Frequent rootlets.	(0.69)	
0.40	1	D						
0.40	101	ES						
0.40		PID	0.0ppm					
							0.90	
1.00		PID	0.0ppm			MADE GROUND: Firm, black, sandy, gravelly CLAY with a low cobble content. Sand is medium to coarse. Gravel is angular to subangular, fine to coarse of brick, coal, sandstone and slate. Cobbles are angular of bricks up to 200mm x 80mm x 80mm. Organic odour detected.	(0.60)	
1.20	102	ES						
1.20-1.50	2	LB						
1.20	2	D						
1.40		V	c_u=55/50/40					
1.40		V	c_r=20/20/20				1.50	
						PROBABLE MADE GROUND: Firm, thinly laminated, brown mottled grey, CLAY. Occasional 1mm thick bands of sand.		
						. . . from 1.50m, becoming brown, grey, black some organic material.	(1.10)	
2.40-2.60	1	B		1		. . . at 2.30m, sandstone boulder encountered (520mm x 450mm x 260mm).		
2.40	103	ES						
2.40	3	D						
2.40		PID	0.0ppm				2.60	
						Very stiff, thinly laminated, brown mottled grey, CLAY. Occasional 1mm thick bands of sand (TILL)		
						. . . 2.60m, high cobble content. Cobbles are of brick.		
3.10-3.30	2	B						
3.20	104	ES						
3.20	4	D						
3.20		V	c_u=>130					
3.20		V	c_r=40					
3.20		PID	0.0ppm				(2.10)	
4.00	5	D						

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Trial pit remained stable during excavation.
3. Water seepage at 2.60m depth.
4. Terminated at 4.70m at maximum reach of excavator
5. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Sam Diver**	

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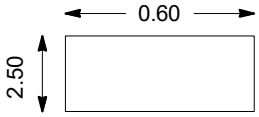
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP02**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**18.04.23**	**49.07**	**E:385079.5 N:398467.8**	**2** of **6**
	End: **18.04.23**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
4.50	6	D				. . . from 4.50m, becoming silty.	4.70	
						Terminated at 4.70m at maximum reach of excavator.		

Plan (Not to Scale)



General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Sam Diver**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP02**
Contract Ref:	Start: **18.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **18.04.23**	**49.07**	**E:385079.5 N:398467.8**	**3** of **6**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Sam Diver**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP02**
Contract Ref:	Start: **18.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **18.04.23**	**49.07**	**E:385079.5 N:398467.8**	**4** of **6**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Sam Diver**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP02**
Contract Ref:	Start: **18.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **18.04.23**	**49.07**	**E:385079.5 N:398467.8**	**5** of **6**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Sam Diver**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP02**
Contract Ref:	Start: **18.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **18.04.23**	**49.07**	**E:385079.5 N:398467.8**	**6** of **6**



Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Sam Diver**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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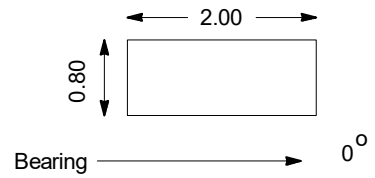
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP03**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**21.04.23** End: **21.04.23**	**47.06**	**E:385129.7 N:398431.4**	**1** of **6**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Light grey reinforced CONCRETE.	0.20	
0.20-0.40	1	B				MADE GROUND: Orangish brown, very sandy, subangular to subrounded, fine to coarse GRAVEL of sandstone and concrete with a low cobble content. Sand is fine to coarse. Cobbles are subangular of sandstone up to 110mm.	0.40	
0.25	101	ES	1xT+2xJ+2xV					
0.25		PID	0.0ppm					
0.30	2	D						
0.40-0.65	3	B				MADE GROUND: Brown mottled orangish red, sandy, angular to subangular fine to coarse GRAVEL with a medium cobble content. Sand is fine to coarse. Cobbles are subangular of brick and sandstone up to 200mm.	(0.50)	
0.50	102	ES	1xT+2xJ+2xV					
0.50		PID	0.0ppm					
0.60	4	D						
						. . . 0.65m - 0.70m, flat slabs of sandstone covering pit base.	0.90	
0.90-1.30	5	B				MADE GROUND: Very soft, brown mottled red and black, very gravelly, sandy CLAY with a low cobble content. Sand is fine to coarse. Gravel is very angular to subangular, fine to coarse of brick, black shale, concrete and sandstone. Cobbles are subangular of brick up to 250mm.	(0.40)	
1.00	103	ES	1xT+2xJ+2xV					
1.00		PID	0.0ppm					
1.10	6	D					1.30	
1.50	104	ES	1xT+2xJ+2xV			Stiff thinly laminated brown and bluish grey mottled slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is subangular to well rounded fine of sandstone and coal. (TILL)	(0.90)	
1.50-2.00	7	B						
1.80		V	c_u=90/114/80					
1.80		V	c_r=19/11/20					
2.00	8	D					2.20	
2.20-2.60	9	B				Firm to stiff, thinly laminated, brown mottled light brown and bluish grey, slightly sandy, silty CLAY with occasional rootlets. Sand is fine. (TILL)	(1.00)	
2.50	105	ES	1xT+2xJ+2xV					
2.50		V	c_u=90/78/69					
2.50		V	c_r=18/16/18					
2.50		PID	0.0ppm					
2.60	10	D					3.20	
3.00-3.00	11	B				Stiff, brown mottled bluish grey, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is subrounded to well rounded, fine and medium of sandstone, mudstone and coal. (TILL)	(1.50)	
3.50	106	ES	1xT+2xJ+2xV					
3.50	12	D						
3.50		V	c_u=94/82/120					
3.50		V	c_r=34/30					
3.50		PID	0.0ppm					

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Trial pit remained dry and stable during excavation.
3. Trial pit dug to 4.70m - could not excavate further due to stiff clay.
4. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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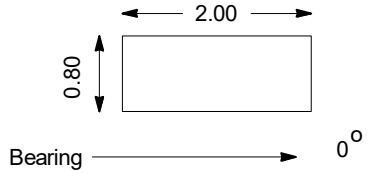
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP03**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**21.04.23**	**47.06**	**E:385129.7 N:398431.4**	**2** of **6**
	End: **21.04.23**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
4.50	107	ES	1xT+2xJ+2xV					
4.50	13	D						
4.50		PID	0.0ppm				4.70	
						Trial pit terminated at 4.70m depth due to stiff clay.		

Plan (Not to Scale)



General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP03**
Contract Ref:	Start: **21.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **21.04.23**	**47.06**	**E:385129.7 N:398431.4**	**3** of **6**

Additional Remarks

21/04/2023:





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP03**
Contract Ref:	Start: **21.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **21.04.23**	**47.06**	**E:385129.7 N:398431.4**	**4** of **6**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP03**
Contract Ref:	Start: **21.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **21.04.23**	**47.06**	**E:385129.7 N:398431.4**	**5** of **6**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP03**
Contract Ref:	Start: **21.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **21.04.23**	**47.06**	**E:385129.7 N:398431.4**	**6** of **6**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

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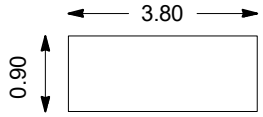
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP04**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**19.04.23** End: **19.04.23**	**49.03**	**E:385026.6 N:398467.9**	**1** of **6**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Light grey reinforced CONCRETE.	0.07	
0.10-0.40	1	B				MADE GROUND: Light to dark brown, slightly clayey, sandy, subangular to angular, fine to coarse GRAVEL of brick, concrete, plastics. Sand is fine to medium.	(0.53)	
0.10-0.40	2	D						
0.30	1	ES						
0.30		PID	0.0ppm					
0.50	3	B					0.60	
0.50-1.10	4	D				MADE GROUND: Firm, light to dark brown mottled blue, slightly sandy, gravelly CLAY with a low cobble content. Gravel is subangular to angular, fine to coarse of brick, concrete, plastics and rebar. Sand is fine to medium. Cobbles are angular of concrete and brick (up to 80mm).	(0.90)	
0.60		V	c_u=<130/<130					
0.80-0.80	2	ES						
0.80		PID	0.0ppm				1.50	
1.50-1.50	3	ES				Stiff to very stiff, dark brown blue mottled, slightly gravelly CLAY. Gravel is subangular to angular of siltstone and mudstone. (TILL)		
1.50-2.00	5	B						
1.50-2.00	6	D						
1.50		V	c_u=80/110/110					
1.50		V	c_r=10/10/10					
1.50		PID	0.0ppm					
2.50	4	ES						
2.50-3.00	7	B						
2.50-3.00	8	D						
2.50		V	c_u=130/105/110					
2.50		V	c_r=10/20					
2.50		PID	0.0ppm				(3.00)	
3.00-3.50	10	D						
3.00	5	ES						
3.00-3.50	9	B						
3.00		PID	0.0ppm					
3.50		V	c_u=120/140/<140					
3.50		V	c_r=30/10					
							4.50	

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Trial pit dry whilst excavting.
3. Trial terminated at 4.80m depth.
4. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**Harry Prew**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

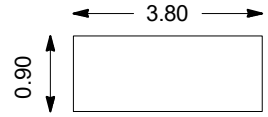
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP04**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**19.04.23** End: **19.04.23**	**49.03**	**E:385026.6 N:398467.9**	**2** of **6**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
4.50-4.80	11	B				Very stiff, dark brown mottled red, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is angular of mudstone with a low cobble content. Cobbles are of mudstone and natural lithologies (upto70mm). (TILL)	(0.30)	
4.50		V	c_u=120/130/120					
4.50		V	c_r=10/10/10					
4.80	6	ES					4.80	
4.80		PID	0.0ppm			. . . from 4.50m, becoming sandy.		
						Trial pit terminated at 4.80m depth.		

Plan (Not to Scale)



General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**Harry Prew**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP04**
Contract Ref:	Start: **19.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **19.04.23**	**49.03**	**E:385026.6 N:398467.9**	**3** of **6**





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Method Used:	**Machine dug**	Plant Used:	**13 Ton Tracked Excavator**	Logged By:	**Harry Prew**	Checked By:	JMC	AGS

STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP04**
Contract Ref:	Start: **19.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **19.04.23**	**49.03**	**E:385026.6 N:398467.9**	**4** of **6**





Method Used:	**Machine dug**	Plant Used:	**13 Ton Tracked Excavator**	Logged By:	**Harry Prew**	Checked By:	

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TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP04**
Contract Ref:	Start: **19.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **19.04.23**	**49.03**	**E:385026.6 N:398467.9**	**5** of **6**





Method Used:	**Machine dug**	Plant Used:	**13 Ton Tracked Excavator**	Logged By:	**Harry Prew**	Checked By:	JWC	AGS

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TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP04**
Contract Ref:	Start: **19.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **19.04.23**	**49.03**	**E:385026.6 N:398467.9**	**6** of **6**



Method Used:	**Machine dug**	Plant Used:	**13 Ton Tracked Excavator**	Logged By:	**Harry Prew**	Checked By:	JWC	AGS

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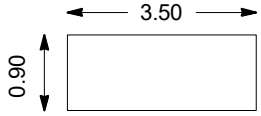
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP05**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**12.04.23**	**49.55**	**E:384987.7 N:398469.4**	**1** of **5**
	End: **12.04.23**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Reddish coarse TARMACADAM.	0.06	
0.30-0.70	1	B				MADE GROUND: Light to dark brown, slightly gravelly, fine to coarse SAND, with low cobble content. Gravel is angular fine to coarse of concrete and sandstone . Cobbles are angular concrete (up to 85mm).	(0.64)	
0.30	101	ES						
0.30-0.70	2	D					0.70	
0.80	102	ES				MADE GROUND: Light to dark brown, sandy, slightly clayey subangular fine to coarse GRAVEL of brick, plastics, concrete and coal with a slight hydrocarbon odour. Sand is fine to coarse. . . . 0.80m - 1.00m, fine dark black clay bands recorded, slight hydrocarbon odour noted.	(0.70)	
0.80		PID	0.2ppm					
0.90-1.20	3	B						
0.90-1.20	4	D		1			1.40	
						MADE GROUND: Reddish brown GRAVEL of brick (foundation) with boulder content. Boulder is angular stone (up to 400 mm x 200 mm x 100 mm).	1.60	
				1		MADE GROUND: Light to dark brown, sandy, slightly clayey subangular fine to coarse GRAVEL of brick, plastics, concrete with a high cobble content. Cobbles are stone and brick (up to 150mm).	1.80	
						Trial pit terminated at 1.80 m depth due to instability of pit.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Slight hydrocarbon odour recorded at between 0.80m and 1.00m depth.
3. Groundwater encountered at 1.80m depth, rising to 1.20m after 20 minutes.
5. Trial pit terminated at 1.80m depth due to instability of pit.
6. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Harry Prew**	

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TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP05**
Contract Ref:	Start: **12.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **12.04.23**	**49.55**	**E:384987.7 N:398469.4**	**2** of **5**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Harry Prew**	

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TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP05**
Contract Ref:	Start: **12.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **12.04.23**	**49.55**	**E:384987.7 N:398469.4**	**3** of **5**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Harry Prew**	

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TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP05**
Contract Ref:	Start: **12.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **12.04.23**	**49.55**	**E:384987.7 N:398469.4**	**4** of **5**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Harry Prew**	

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TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP05**
Contract Ref:	Start: **12.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **12.04.23**	**49.55**	**E:384987.7 N:398469.4**	**5** of **5**



Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Harry Prew**	JWC

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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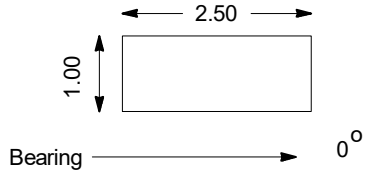
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP06**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**20.04.23**	**49.13**	**E:385007.6 N:398449.7**	**1** of **6**
	End: **20.04.23**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Light grey reinforced CONCRETE.	0.20	
0.25	101	ES	1xT+2xJ+2xV			MADE GROUND: Orangish brown and brown mottled, sandy, angular to subrounded, fine to coarse GRAVEL of sandstone, concrete and cement with a low cobble content. Sand is fine to coarse. Cobbles are subangular of sandstone and concrete up to 120mm in length.	(0.60)	
0.25		PID	0.0ppm					
0.40-0.70	1	B						
0.50	2	D				. . . 0.50m - 0.90m, pad foundation located in west corner of trial pit.		
0.50		PID	0.0ppm					
0.60	102	ES	1xT+2xJ+2xV	1			0.80	
0.80-1.00	3	B				MADE GROUND: Grey and brown mottled, slightly sandy, angular to subangular, fine to coarse GRAVEL of sandstone and mudstone with a low cobble content of sandstone up to 110mm in length. Sand is coarse.	1.00	
0.90	4	D						
0.90		PID	0.0ppm					
1.00	103	ES	1xT+2xJ+2xV			Trial pit terminated at 1.00m due to groundwater inflow.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Trial pit dug for geotechnical and geoenvironmental purpose, and to establish dimensions of suspected pad foundations.
3. Groundwater encountered at 0.80m depth.
4. Pad foundation encountered at 0.80m depth in western corner of pit.
5. Trial pit dug to 1.00m depth - terminated due to groundwater in pit.
6. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

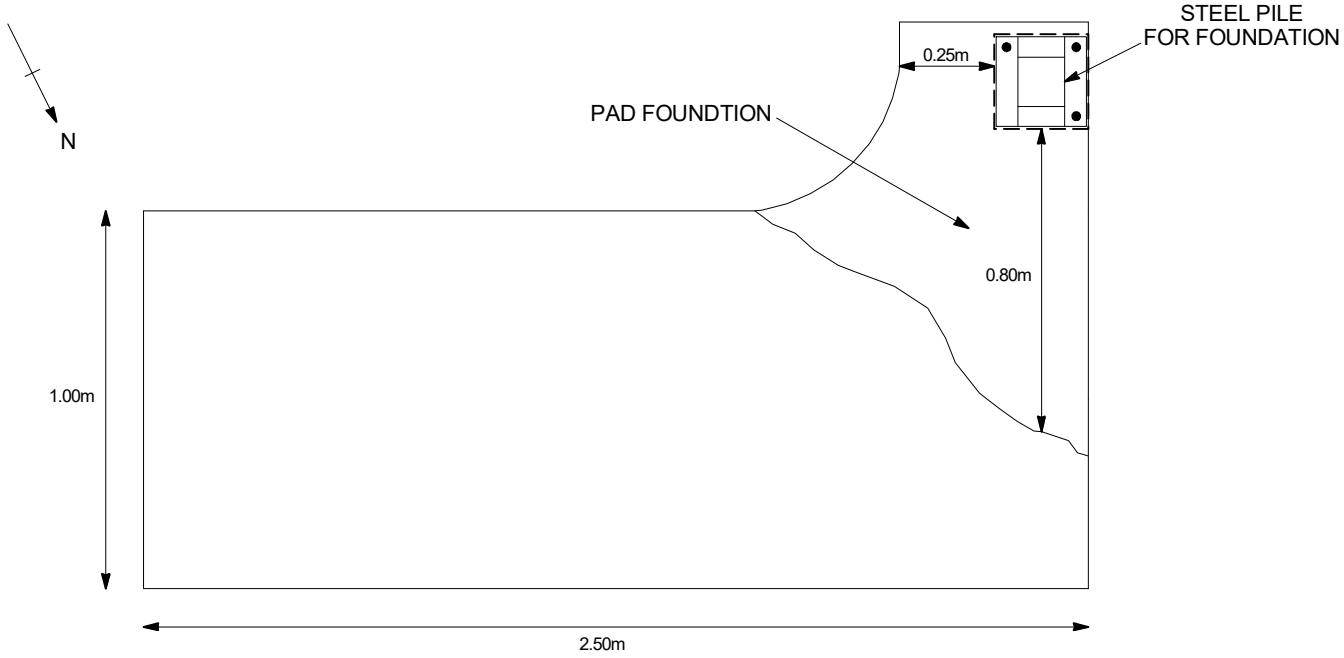
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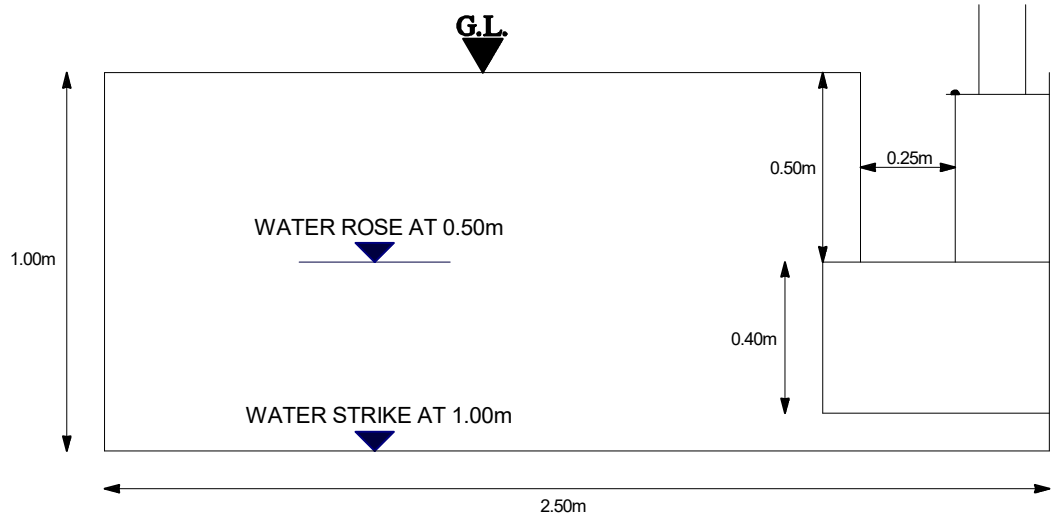
TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP06**
Contract Ref:	Start: **20.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **20.04.23**	**49.13**	**E:385007.6 N:398449.7**	**2** of **6**

PLAN VIEW - FACING GREAT ANCOATS ST.
(SCALE 1:20)



SECTION VIEW - FACING GREAT ANCOATS ST.
(SCALE 1:20)



Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

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TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP06**
Contract Ref:	Start: **20.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **20.04.23**	**49.13**	**E:385007.6 N:398449.7**	**3** of **6**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

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TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP06**
Contract Ref:	Start: **20.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **20.04.23**	**49.13**	**E:385007.6 N:398449.7**	**4** of **6**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP06**
Contract Ref:	Start: **20.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **20.04.23**	**49.13**	**E:385007.6 N:398449.7**	**5** of **6**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP06**
Contract Ref:	Start: **20.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **20.04.23**	**49.13**	**E:385007.6 N:398449.7**	**6** of **6**



Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

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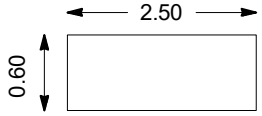
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP07**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**14.04.23** End: **14.04.23**	**48.73**	**E:384988.0 N:398431.5**	**1** of **6**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.05-0.20	1	D				MADE GROUND: Brick surfacing.	0.05	
0.05-0.20	101	LB				MADE GROUND: Light brown, gravelly, medium to coarse SAND with low cobble content. Gravel is subangular to subrounded, fine to coarse of limestone, brick and concrete. Cobbles are angular to subangular of brick, concrete up to 90mm x 80mm x 60mm.	(0.30)	
0.10	101	ES					0.35	
0.10		PID	0.0ppm					
0.35-0.50	102	LB						
0.35-0.50	2	D				Stiff brown mottled grey, slightly gravelly CLAY. Gravel is angular to rounded, fine to medium of coal and natural lithologies. Occasional partially decomposed rootlets. (TILL)		
0.40	102	ES						
0.40		PID	0.0ppm					
0.50		V	c_u=90/120/80					
1.20	103	ES						
1.20-1.30	3	D						
1.20		V	c_u=110/90/90					
1.20		PID	0.0ppm					
1.50-1.70	101	ES						
2.00	104	ES				. . . from 2.00m, very stiff and less gravelly.		
2.00	4	D					(3.55)	
2.00		PID	0.0ppm					
2.50-2.70	102	B						
2.50		V	c_u=>140					
3.00	5	D						
3.50-3.70	103	B						
							3.90	
4.00	6	D				Stiff laminated brown, slightly sandy CLAY. Sand is within 1mm bands. Laminations approx 5mm thick within the clay. (TILL)		
4.10		V	c_u=>130/120/110					
4.10		V	c_r=25/30/25				(0.70)	
4.40-4.50	104	B						

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Trial pit dry whilst excavating.
3. Trial pit sides remained stable during excavation.
4. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Sam Diver**	

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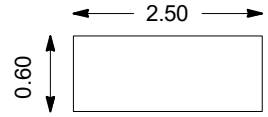
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP07**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**14.04.23** End: **14.04.23**	**48.73**	**E:384988.0 N:398431.5**	**2** of **6**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
							4.60	
						Trial pit terminated at 4.60m due to excavator achieving maximum reach.		

Plan (Not to Scale)



General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Sam Diver**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP07**
Contract Ref:	Start: **14.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **14.04.23**	**48.73**	**E:384988.0 N:398431.5**	**3** of **6**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Sam Diver**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP07**
Contract Ref:	Start: **14.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **14.04.23**	**48.73**	**E:384988.0 N:398431.5**	**4** of **6**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Sam Diver**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP07**
Contract Ref:	Start: **14.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **14.04.23**	**48.73**	**E:384988.0 N:398431.5**	**5** of **6**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Sam Diver**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP07**
Contract Ref:	Start: **14.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **14.04.23**	**48.73**	**E:384988.0 N:398431.5**	**6** of **6**



Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Sam Diver**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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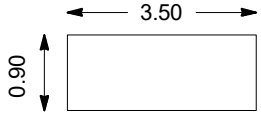
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP08**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**12.04.23** End: **12.04.23**	**48.69**	**E:385016.5 N:398416.8**	**1** of **5**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Reddish brown block paving	0.09	
0.10	101	ES				MADE GROUND: Dark brown, slightly sandy GRAVEL of angular coarse of bricks with a low cobble content. Cobbles are angular brick (up to 65 mm). Sand is fine to coarse.	0.20	
0.10		PID	0.0ppm					
0.30-0.50	1	B				MADE GROUND: Light to dark brown, slightly clayey, gravelly, fine to coarse SAND. Gravel is subangular to angular fine to coarse of sandstone, concrete and coal with a low cobble content. Cobbles are angular of concrete (up to 70 mm).	(0.60)	
0.30-0.50	2	D						
0.50	102	ES						
0.50		PID	0.0ppm					
							0.80	
0.80-0.80	3	B				MADE GROUND: Firm to stiff, blue mottled brown, locally black, slightly sandy, gravelly CLAY. Gravel is subangular fine of concrete, coal and brick. Slight hydrocarbon odour. Sand is medium.		
0.80-1.00	4	D						
0.80		V	c_u=120/130/100					
0.80		V	c_r=20/10/30					
0.80		PID	0.0ppm					
1.00	103	ES					(1.00)	
1.70		V	c_u=150/115/130					
1.70		V	c_r=20/10/20				1.80	
1.80	104	ES				Very stiff, brown mottled blue, slightly gravelly CLAY. Gravel is subangular, fine of mudstone and siltstone. (TILL). (TILL)		
1.80-2.00	5	B						
1.80-2.00	6	D						
1.80		PID	0.2ppm					
2.40-2.80	7	B					(3.20)	
2.40-2.80	8	D						
2.40		V	c_u=150/80					
2.40		V	c_r=30/50					
						. . . 4.00m - 5.00m, lenses of fine sand recorded		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Slight hydrocarbon recorded at 1.80m depth.
3. Trial pit dry whilst excavating.
4. Trial pit terminated at 5.00m depth.
5. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Harry Prew**	

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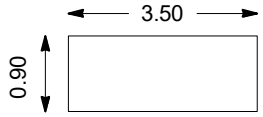
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP08**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**12.04.23**	**48.69**	**E:385016.5 N:398416.8**	**2** of **5**
	End: **12.04.23**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
4.50		V	c_u=130/120/140			Very stiff, brown mottled blue, slightly gravelly CLAY. Gravel is subangular, fine of mudstone and siltstone. (TILL). (TILL) *(stratum copied from 1.80m from previous sheet)*	5.00	
4.50		V	c_r=10/10/10					
4.80-5.00	10	D						
4.80-5.00	9	B						
						Trial pit terminated at 5.00m depth.		

Plan (Not to Scale)



General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Harry Prew**	JWC

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TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP08**
Contract Ref:	Start: **12.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **12.04.23**	**48.69**	**E:385016.5 N:398416.8**	**3** of **5**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Harry Prew**	

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TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP08**
Contract Ref:	Start: **12.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **12.04.23**	**48.69**	**E:385016.5 N:398416.8**	**4** of **5**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Harry Prew**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP08**
Contract Ref:	Start: **12.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **12.04.23**	**48.69**	**E:385016.5 N:398416.8**	**5** of **5**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Harry Prew**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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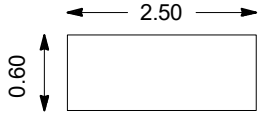
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP09**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**17.04.23** End: **17.04.23**	**47.50**	**E:385044.8 N:398374.5**	**1** of **5**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Reddish brown block paving	0.05	
0.10-0.20	1	LB				MADE GROUND: Light brown medium to coarse SAND.	0.10	
0.15	1	D				MADE GROUND: Greyish light brown, sandy, angular to subangular, medium to coarse GRAVEL of limestone. Sand is fine to medium.	0.20	
0.15	101	ES						
0.15		PID	0.0ppm					
0.30	102	ES				. . . at 0.20m, Beige fabric encountered at the base of the gravel strata.	(0.40)	
0.30-0.40	2	LB				MADE GROUND: Firm light brown, grey, black multicoloured gravelly CLAY with low cobble content. Gravel is angular to subrounded of brick, coal and natural lithologies. Cobbles are angular of brick. Slight organic odour observed.	0.60	
0.30	2	D						
0.30		PID	0.0ppm					
0.50		V	c_u=90/110/75					
0.50		V	c_r=40/50/25					
0.70		V	c_u=>130					
0.70		V	c_r=20					
						. . . from 0.40m, becoming firmer, less black, less gravelly.		
						Very stiff, brown mottled grey, CLAY with occasional rootlets mainly associated with the grey mottling.		
1.30-1.50	1	B						
1.30	103	ES						
1.30	3	D						
1.30		PID	0.0ppm					
2.30	4	D					(4.00)	
						. . . at 3.10m, clay is becoming thinly laminated. Occasional <1mm thin bands of sand.		
3.30	5	D						
3.30		V	c_u=>130					
3.30		V	c_r=10					
3.40-3.50	2	B						
3.40	6	D						
						. . . below 3.90m, sand bands becoming more frequent.		
4.30	7	D						
4.30		V	c_u=>130					

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Trial pit dry whilst excavating.
3. Trial pit sides stable during excavation.
4. Trial pit terminated at 5.00m depth
5. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**Harry Prew**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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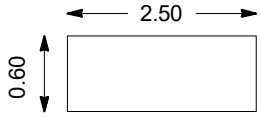
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP09**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**17.04.23** End: **17.04.23**	**47.50**	**E:385044.8 N:398374.5**	**2** of **5**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
4.30		V	c_r=20				4.60	
4.60-4.70	3	B				Very stiff brown, slightly gravelly CLAY with a low boulder content. Gravel is subangular to rounded, fine to medium of natural lithologies. Boulders are subangular of sandstone 330mm x 300mm x 60mm. (TILL)	(0.40)	
4.60	8	D				(TILL)	5.00	
						Trial pit terminated at 5.00m depth.		

Plan (Not to Scale)



General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**Harry Prew**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP09**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **17.04.23**	**47.50**	**E:385044.8 N:398374.5**	**3** of **5**





Method Used:	**Machine dug**	Plant Used:	**13 Ton Tracked Excavator**	Logged By:	**Harry Prew**	Checked By:	JWC	AGS

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP09**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **17.04.23**	**47.50**	**E:385044.8 N:398374.5**	**4** of **5**





Method Used:	**Machine dug**	Plant Used:	**13 Ton Tracked Excavator**	Logged By:	**Harry Prew**	Checked By:	JWC	AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP09**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **17.04.23**	**47.50**	**E:385044.8 N:398374.5**	**5** of **5**





Method Used:	**Machine dug**	Plant Used:	**13 Ton Tracked Excavator**	Logged By:	**Harry Prew**	Checked By:	JWC

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

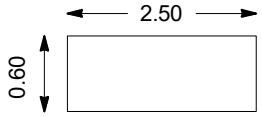
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP10**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**17.04.23** End: **17.04.23**	**46.31**	**E:385086.7 N:398360.1**	**1** of **5**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Reddish brown block paving	0.05	
0.10	101	ES				MADE GROUND: Dark brown, slightly gravelly, medium to coarse SAND. Gravel is angular to subangular, fine to coarse of brick and natural lithologies. Occasional rootlets.	0.10 (0.35)	
0.30-0.50	1	LB						
0.30	1	D				MADE GROUND: Light brown, gravelly, medium to coarse SAND. Gravel is angular to subangular, fine to coarse of limestone.	0.45	
						MADE GROUND: Blackish brown, gravelly, clayey, medium to coarse SAND with a high cobble content. Gravel is angular to subangular, fine to coarse of coal, brick, glass, concrete and siltstone. Cobbles are angular of intact brick and glass. Potential intact brick foundations, historic household waste within arisings, 1800s jam jar, plates etc.	(0.90)	
1.00-1.40	1	B						
1.20	102	ES						
1.20	2	D					1.35	
1.20		PID	0.0ppm			Very stiff, brown mottled grey, slightly gravelly, sandy CLAY. Sand is fine to medium. Gravel is subangular to subrounded, fine to coarse of natural lithologies. Occasional decomposed rootlets. (TILL)		
1.50	103	ES						
1.50-1.70	2	B						
1.50		PID	0.0ppm					
1.60	3	D				. . . below 1.80m, becoming less sandy.		
2.70-2.80	2	LB						
2.70	4	D						
2.80	104	ES						
2.80		V	c_u=130/>130/>130					
2.80		V	c_r=45					
2.80		PID	0.0ppm				(3.45)	
						. . . from 3.40m, becoming laminated, occasional fine sand bands.		
3.50	5	D						
3.50		V	c_u=>130					
						. . . from 3.80m, becoming more sandy.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Trial pit dry during excavation.
3. Trial pit terminated at 4.80m due to tough digging. Agreement from Client contact to terminate.
4. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Sam Diver**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

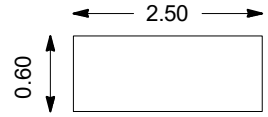
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP10**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**17.04.23** End: **17.04.23**	**46.31**	**E:385086.7 N:398360.1**	**2** of **5**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
4.60	6	D				. . . from 4.50m, becoming less sandy.	4.80	
						Trial pit terminated at 4.80m due to tough digging. Agreement from client contact to terminate.		

Plan (Not to Scale)



General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Sam Diver**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP10**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **17.04.23**	**46.31**	**E:385086.7 N:398360.1**	**3** of **5**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Sam Diver**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP10**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **17.04.23**	**46.31**	**E:385086.7 N:398360.1**	**4** of **5**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Sam Diver**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP10**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **17.04.23**	**46.31**	**E:385086.7 N:398360.1**	**5** of **5**



Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**Sam Diver**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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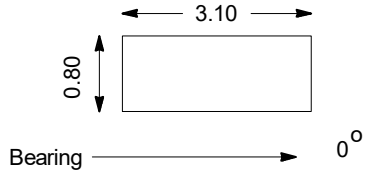
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP11**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**24.04.23** End: **24.04.23**	**49.02**	**E:385048.9 N:398425.6**	**1** of **5**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: White coarse concrete.	0.20	
						MADE GROUND: White foundation wall. . . . 0.20m - 0.40m, foundation wall observed 1.50m across the trial pit.	0.40	
0.40	1	ES				MADE GROUND: Light to dark brown, slightly sandy subangular fine to coarse GRAVEL of concrete, and brick; with angular blocks of concrete (up to 200mm). Sand is fine to medium. . . . at 0.60m, wall changed to brick. Half of trial pit west to east 1.20m across.	(0.70)	
0.40-1.10	1	B						
0.40-1.10	2	D						
0.40		PID	0.0ppm					
							1.10	
1.10-1.50	3	B				MADE GROUND: Light to dark brown, locally black, slightly clayey GRAVEL of angular brick, concrete, ash, glass, plastic, rebar with a low cobble content. Cobbles are angular of brick (up to 65mm). Sand is fine to medium. . . . at 1.30m, White coarse foundation across the trial pit to maximum depth 1.50m	(0.40)	
1.10-1.50	4	D						
1.20	2	ES						
1.20		PID	0.0ppm				1.50	
1.50-2.00	5	B				Stiff, dark brown mottled, slightly gravelly CLAY. Gravel is angular to subangular, fine to coarse of mudstone, siltstone and coal. (TILL)	(2.00)	
1.50-2.00	6	D						
1.50		V	c_u=130/130/150					
1.50		V	c_r=10/20/20					
1.80	3	ES						
1.80		PID	0.0ppm					
							3.50	
2.50-3.00	7	B						
2.50-3.00	8	D						
3.00	104	ES	1xT+2xJ+2xV					
3.50-4.00	10	D				Firm to stiff, thinly laminated dark brown mottled bluish grey, CLAY. (TILL)	(1.10)	
3.50-4.00	9	B						
3.80	105	ES	1xT+2xJ+2xV					
4.20-4.60	11	B						
4.20-4.60	12	D						

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Trial pit terminated at 4.60m depth.
3. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**LCross + Harry Prew**	

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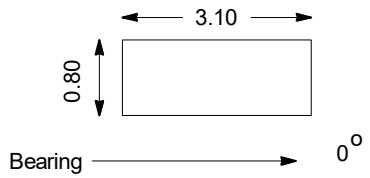
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP11**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**24.04.23**	**49.02**	**E:385048.9 N:398425.6**	**2** of **5**
	End: **24.04.23**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
							4.60	
4.60	106	ES	1xT+2xJ+2xV			Trial pit terminated at 4.60m depth.		

Plan (Not to Scale)



General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**13 Ton Tracked Excavator**	**LCross + Harry Prew**	JWC

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP11**
Contract Ref:	Start: **24.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **24.04.23**	**49.02**	**E:385048.9 N:398425.6**	**3** of **5**





Method Used:	**Machine dug**	Plant Used:	**13 Ton Tracked Excavator**	Logged By:	**LCross + Harry Prew**	Checked By:	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP11**
Contract Ref:	Start: **24.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **24.04.23**	**49.02**	**E:385048.9 N:398425.6**	**4** of **5**





Method Used:	**Machine dug**	Plant Used:	**13 Ton Tracked Excavator**	Logged By:	**LCross + Harry Prew**	Checked By:	

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TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP11**
Contract Ref:	Start: **24.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **24.04.23**	**49.02**	**E:385048.9 N:398425.6**	**5** of **5**



Method Used:	**Machine dug**	Plant Used:	**13 Ton Tracked Excavator**	Logged By:	**LCross + Harry Prew**	Checked By:	JWC	AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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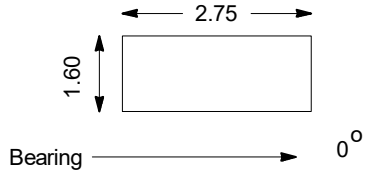
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP12**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**27.04.23** End: **27.04.23**	**48.08**	**E:385063.2 N:398432.9**	**1** of **7**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Light grey reinforced CONCRETE.	0.20	
0.30-0.50	1	B		1		MADE GROUND: Orangish brown, very sandy, subangular to subrounded, fine to coarse GRAVEL of concrete, sandstone and cement. Sand is fine to coarse.	(0.40)	
						. . . 0.55m - 1.55m, concrete pad foundation around steel beam.	0.60	
0.70-0.90	2	B				POSSIBLE MADE GROUND: Stiff brown and bluish grey mottled, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular, fine and medium of limestone, sandstone, coal and mudstone.	(0.90)	
0.80	3	D						
0.80		V	c_u=119/114/128					
0.80		V	c_r=20/20/14				1.50	
						Stiff, brown and bluish grey, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. (TILL)	1.70	
						Trial pit terminated at 1.70m depth		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Trial pit excavated for structural information regarding steel beam footing. No environmental samples required.
3. Trial pit terminated at 1.70m depth.
4. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

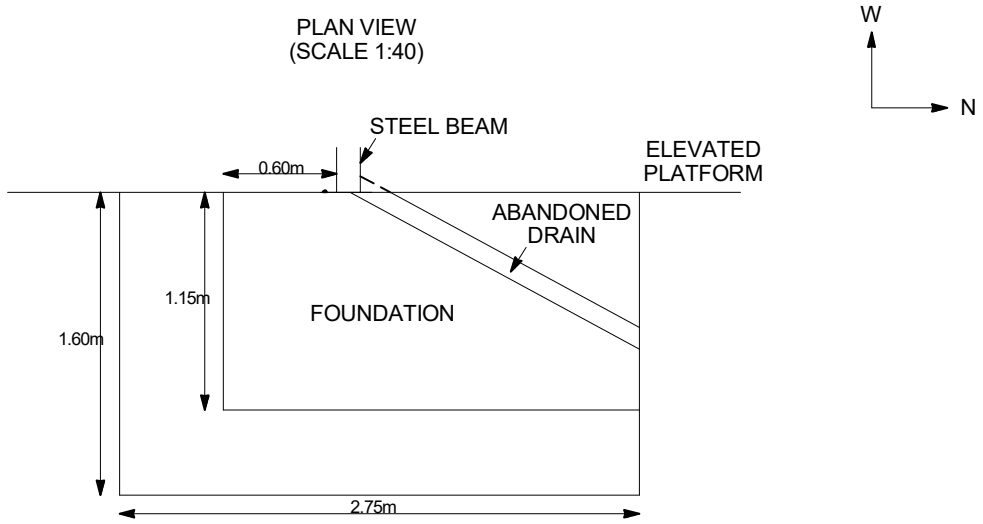
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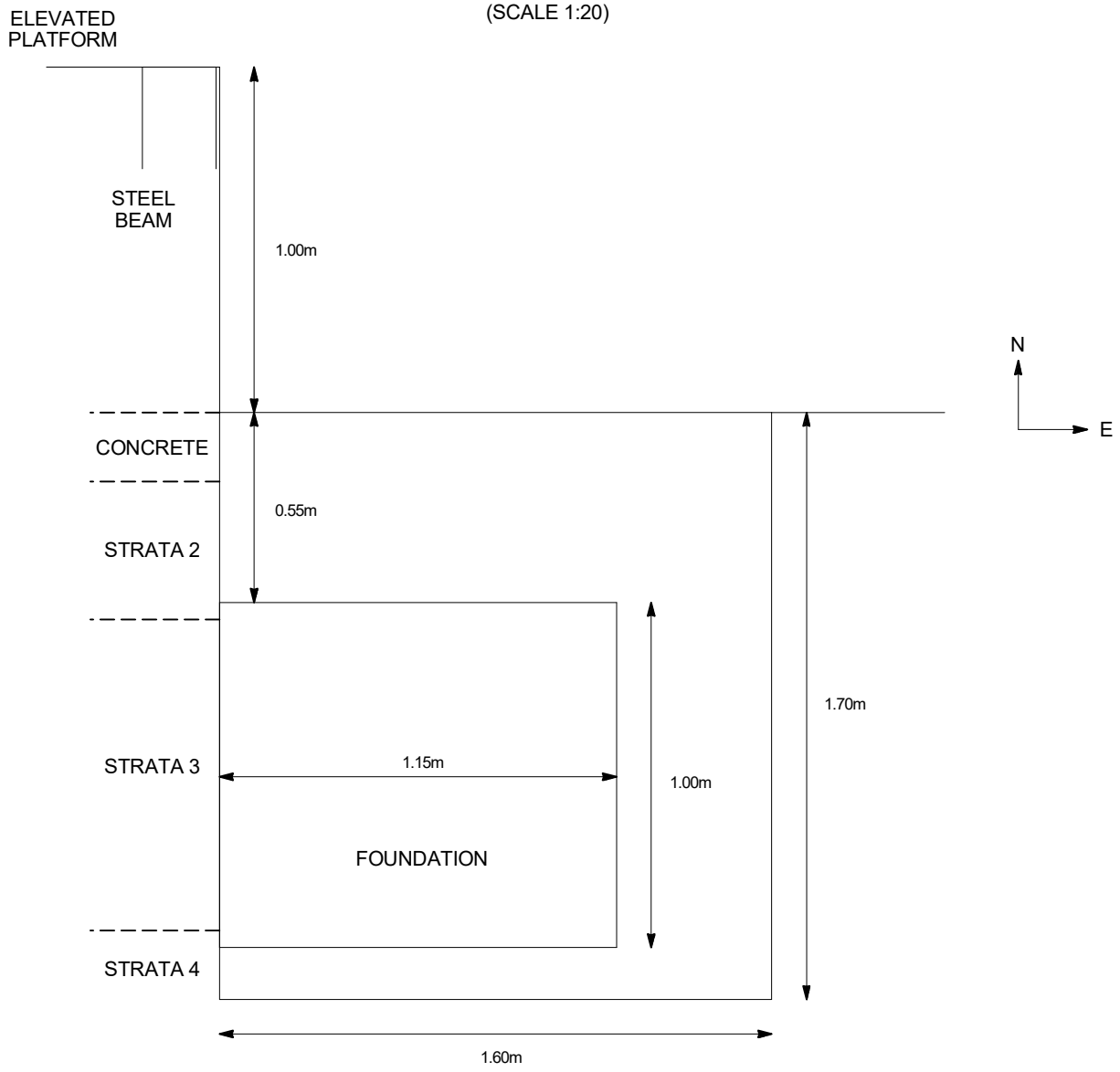
TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP12**
Contract Ref:	Start: **27.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **27.04.23**	**48.08**	**E:385063.2 N:398432.9**	**2** of **7**

PLAN VIEW
(SCALE 1:40)



SECTION VIEW
(SCALE 1:20)



Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP12**
Contract Ref:	Start: **27.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **27.04.23**	**48.08**	**E:385063.2 N:398432.9**	**3** of **7**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP12**
Contract Ref:	Start: **27.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **27.04.23**	**48.08**	**E:385063.2 N:398432.9**	**4** of **7**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP12**
Contract Ref:	Start: **27.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **27.04.23**	**48.08**	**E:385063.2 N:398432.9**	**5** of **7**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP12**
Contract Ref:	Start: **27.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **27.04.23**	**48.08**	**E:385063.2 N:398432.9**	**6** of **7**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP12**
Contract Ref:	Start: **27.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **27.04.23**	**48.08**	**E:385063.2 N:398432.9**	**7** of **7**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

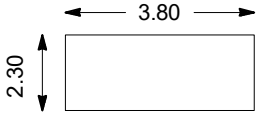
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_TP13**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**28.04.23** End: **28.04.23**	**47.06**	**E:385106.6 N:398450.6**	**1** of **8**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Light grey reinforced CONCRETE.	0.20	
0.20-0.40	1	B				MADE GROUND: Orangish brown, very sandy, angular to subrounded, fine to coarse GRAVEL of sandstone, concrete and cement with a low cobble content. Sand is fine to coarse. Cobbles are subangular of sandstone and concrete up to 120mm.	(0.40)	
						. . . 0.55m - 0.75m, concrete footing for steel beam.	0.60	
0.60-0.75	2	B				POSSIBLE MADE GROUND: Stiff, brown and bluish grey mottled, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine of sandstone, limestone, mudstone and coal.	0.75	
0.75		V	c_u=95/130/128			Trial pit terminated at 0.75m depth.		
0.75		V	c_r=32/22/32					

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Trial pit excavated for structural information about the steel beam foundation. No environmental samples required.
3. Trial pit terminated at 0.75m depth.
4. Trial pit backfilled with arisings in reverse order upon completion.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

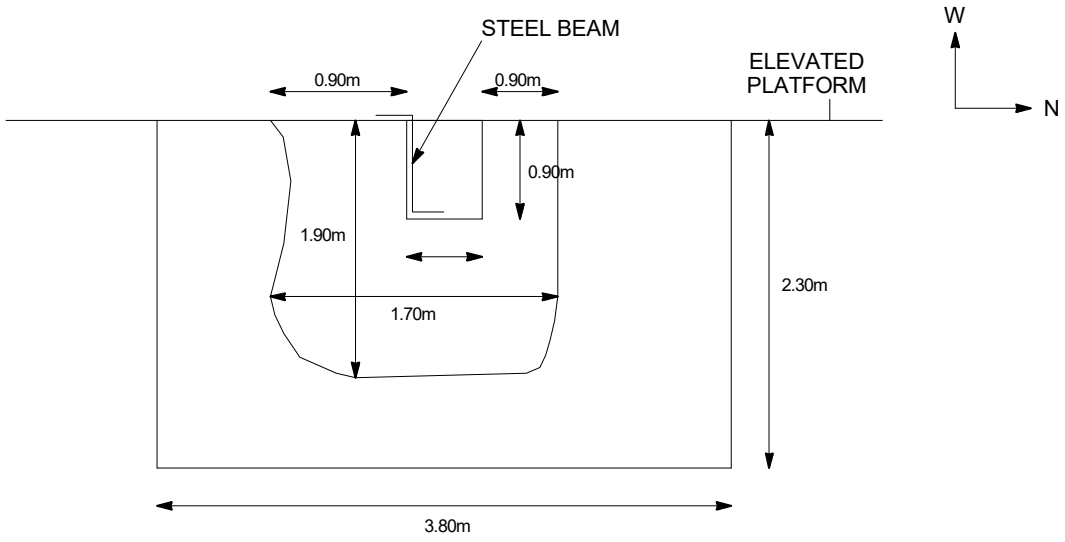
GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

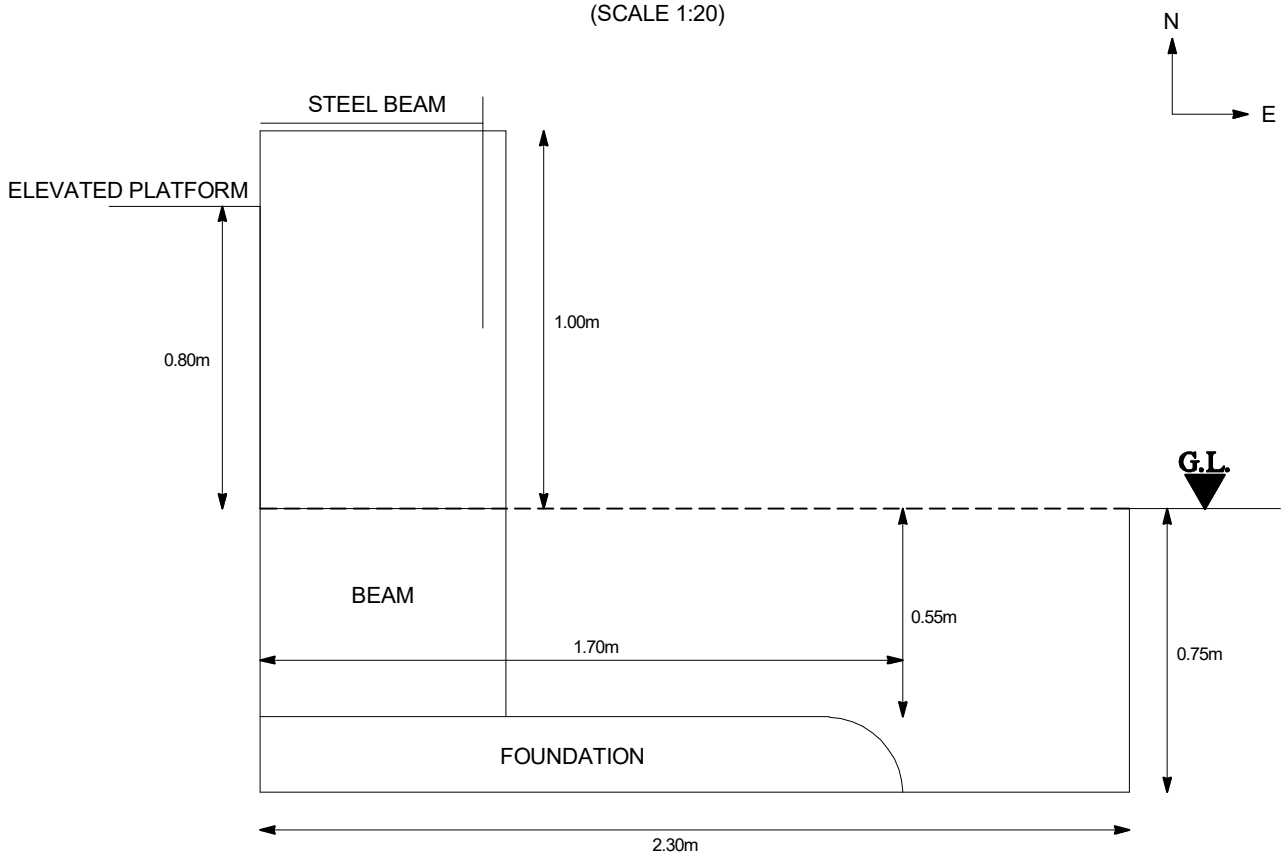
TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP13**
Contract Ref:	Start: **28.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **28.04.23**	**47.06**	**E:385106.6 N:398450.6**	**2** of **8**

PLAN VIEW
(SCALE 1:50)



SECTION VIEW
(SCALE 1:20)



Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP13**
Contract Ref:	Start: **28.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **28.04.23**	**47.06**	**E:385106.6 N:398450.6**	**3** of **8**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP13**
Contract Ref:	Start: **28.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **28.04.23**	**47.06**	**E:385106.6 N:398450.6**	**4** of **8**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP13**
Contract Ref:	Start: **28.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **28.04.23**	**47.06**	**E:385106.6 N:398450.6**	**5** of **8**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP13**
Contract Ref:	Start: **28.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **28.04.23**	**47.06**	**E:385106.6 N:398450.6**	**6** of **8**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP13**
Contract Ref:	Start: **28.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **28.04.23**	**47.06**	**E:385106.6 N:398450.6**	**7** of **8**





Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_TP13**
Contract Ref:	Start: **28.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **28.04.23**	**47.06**	**E:385106.6 N:398450.6**	**8** of **8**



Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**JCB-3CX**	**LCross**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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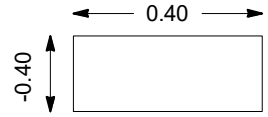
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_HDP01**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**03.05.23** End: **03.05.23**	**---**	**E:385103.0 N:398478.0**	**1** of **2**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.20	1	B				MADE GROUND: Dark brown, silty fine SAND with abundant rootlets. (TOPSOIL)	0.20	
0.30	2	D				MADE GROUND: Stiff, brown mottled grey CLAY.	(1.00)	
0.40	101	ES						
0.40-0.80	3	B					1.20	
						Trial pit terminated at 1.20m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Trial pit terminated at 1.20m depth.
3. On completion, backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Hand dug	**Hand tools**	**Kay Adedotun**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_HDP01**
Contract Ref:	Start: **03.05.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **03.05.23**	**---**	**E:385103.0 N:398478.0**	**2** of **2**





Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Kay Adedotun**	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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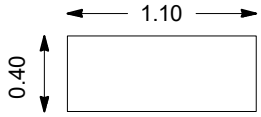
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_HDP03**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**03.05.23** End: **03.05.23**	**---**	**E:385156.3 N:398443.4**	**1** of **2**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Soft, dark brown, sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse. Gravel is angular to subangular, fine to coarse of concrete and brick.	0.20	
						Trial pit terminated at 0.20m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Trial pit terminated at 0.20m depth.
3. On completion, backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Hand dug	**Hand tools**	**Kay Adedotun**	

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STRUCTURAL SOILS

TRIAL PIT LOG

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_HDP03**
Contract Ref:	Start: **03.05.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **03.05.23**	**---**	**E:385156.3 N:398443.4**	**2** of **2**





Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Kay Adedotun**	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

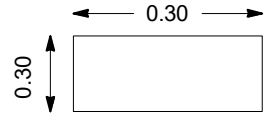
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_CPT05**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**18.04.23**	**47.12**	**E:385097.0 N:398400.1**	**1** of **1**
	End: **18.04.23**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					

Plan (Not to Scale)



General Remarks

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Hand dug	**Hand tools**	**Harry Prew**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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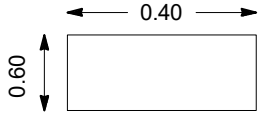
STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT05A**
Contract Ref:	Start: **03.05.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **03.05.23**	**47.09**	**E:385096.9 N:398401.8**	**1** of **3**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Light grey reinforced CONCRETE.	0.25	
0.30-0.60	1	B				MADE GROUND: Greyish brown, very sandy, angular to subangular, fine to coarse GRAVEL of concrete, sandstone, mudstone and brick.	(0.45)	
0.40	2	D					0.70	
0.70-0.90	3	B				MADE GROUND: Brown black and orangish red mottled, very sandy, slightly clayey, very angular to subangular, fine to coarse GRAVEL of brick, concrete, sandstone and mudstone. Sand is fine to coarse.	0.90	
0.80	4	D				MADE GROUND: Very soft, brown mottled orangish red and black, slightly sandy, slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of brick, mudstone, sandstone and coal.	(0.30) 1.20	
						Inspection pit terminated at 1.20m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20m depth.
3. Pit dug for a CPT test - CPT at CPT5 refused at 4.00m, so test being redone. No environmental samples required.
4. On completion, backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Hand dug	**Hand tools**	**LCross**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT05A**
Contract Ref:	Start: **03.05.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **03.05.23**	**47.09**	**E:385096.9 N:398401.8**	**2** of **3**





Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**LCross**	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT05A**
Contract Ref:	Start: **03.05.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **03.05.23**	**47.09**	**E:385096.9 N:398401.8**	**3** of **3**



Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**LCross**	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

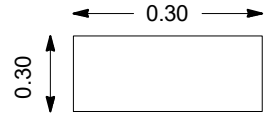
Inspection Pit

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_CPT07**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**02.05.23** End: **02.05.23**	**47.60**	**E:385131.5 N:398447.8**	**1** of **3**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Concrete hardstanding.	0.25	
0.30-0.60	1	B				MADE GROUND: Light brown, gravelly, medium to coarse SAND. Gravel is angular to subangular, fine to coarse of limestone.	0.50	
0.30	101	ES						
0.30-0.60	2	D						
0.50-0.80	3	B				Stiff, brown mottled grey, slightly gravelly CLAY. Occasional rootlets. Gravel is subangular to subrounded, fine to medium of natural lithologies.	(0.70)	
0.50-0.80	4	D						
0.60	102	ES					1.20	
						Inspection pit terminated at 1.20m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20m depth.
3. On completion, backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Hand dug	**Hand tools**	**Sam Diver**	

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Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT07**
Contract Ref:	Start: **02.05.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **02.05.23**	**47.60**	**E:385131.5 N:398447.8**	**2** of **3**





Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Sam Diver**	Checked By:	

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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT07**
Contract Ref:	Start: **02.05.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **02.05.23**	**47.60**	**E:385131.5 N:398447.8**	**3** of **3**



Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Sam Diver**	Checked By:	

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STRUCTURAL SOILS

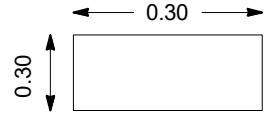
Inspection Pit

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_CPT08**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**25.04.23**	**49.18**	**E:385029.0 N:398501.9**	**1** of **2**
	End: **25.04.23**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Grey coarse TARMACADAM.	0.20	
0.20	1	ES				MADE GROUND: Light to dark brown, slightly sandy GRAVEL of angular fine to coarse brick, concrete, tarmacadam, plastics and rebar. Sand is fine to coarse.	0.40	
0.20-0.40	1	B						
0.20-0.40	2	D						
0.20		PID	0.0ppm			Inspection pit terminated at 0.40m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 0.40m depth. Could not progress further.
3. On completion, backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Hand dug	**Hand tools**	**Harry Prew**	JWC

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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT08**
Contract Ref:	Start: **25.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **25.04.23**	**49.18**	**E:385029.0 N:398501.9**	**2** of **2**





Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Harry Prew**	Checked By:	

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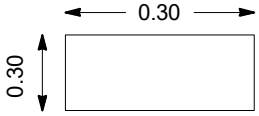
STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT09**
Contract Ref:	Start: **26.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **26.04.23**	**48.50**	**E:385088.2 N:398460.9**	**1** of **2**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: CONCRETE SLAB.	0.20	
0.60-0.80 0.60	1 101	B ES				MADE GROUND: Reddish brown, very gravelly SAND. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of concrete, brick, sandstone and siltstone. Cobbles are angular of concrete, sandstone and siltstone by 40mm.	(0.90)	
0.90-1.10 1.00	2 102	B ES					1.10	
						Inspection pit terminated at 1.10m due to refusal on hard ground.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.10m depth.
3. Terminated at 1.10m due to refusal on hard ground.
4. On completion, backfilled with bentonite pellets.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Hand dug	**Hand tools**	**Kira Swinson**	

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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT09**
Contract Ref:	Start: **26.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **26.04.23**	**48.50**	**E:385088.2 N:398460.9**	**2** of **2**





Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Kira Swinson**	Checked By:	

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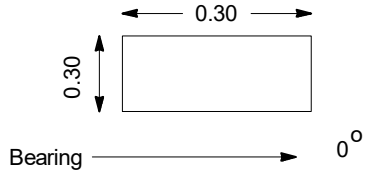
STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT10**
Contract Ref:	Start: **27.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **27.04.23**	**47.11**	**E:385143.5 N:398421.0**	**1** of **3**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Light grey reinforced CONCRETE.	0.20	
0.20-0.40	1	B				MADE GROUND: Orangish brown, very sandy, angular to subrounded, fine to coarse GRAVEL of sandstone, concrete and cement with a low cobble content. Sand is fine to coarse. Cobbles are angular to subangular of sandstone and concrete up to 130mm.	0.40	
0.25	101	ES	1xT+2xJ+2xV					
0.30	2	D						
0.30		PID	0.0ppm					
0.40-0.60	3	B				MADE GROUND: Black mottled dark brown and orangish red, very gravelly, fine to coarse SAND with a low cobble content. Gravel is very angular to subrounded fine to coarse of slate, phyllite, brick, concrete, cement and sandstone. Cobbles are subangular of brick and sandstone up to 130mm.	(0.50)	
0.50	102	ES	1xT+2xJ+2xV					
0.50	4	D						
0.50		PID	0.0ppm				0.90	
0.90-1.20	5	B				MADE GROUND: Soft brown mottled bluish grey black and orangish red, slightly sandy, slightly gravelly CLAY with a low cobble content. Sand is fine to coarse. Gravel is angular to subrounded, fine and medium of sandstone, concrete and brick. Cobbles are subangular of brick, sandstone and siltstone up to 110mm.	(0.40)	
1.00	103	ES	1xT+2xJ+2xV					
1.00	6	D						
1.00		PID	0.0ppm				1.30	
						Inspection pit terminated at 1.30m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.30m depth.
3. On completion, backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Hand dug	**Hand tools**	**LCross**	

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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT10**
Contract Ref:	Start: **27.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **27.04.23**	**47.11**	**E:385143.5 N:398421.0**	**2** of **3**





Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**LCross**	Checked By:	

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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT10**
Contract Ref:	Start: **27.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **27.04.23**	**47.11**	**E:385143.5 N:398421.0**	**3** of **3**



Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**LCross**	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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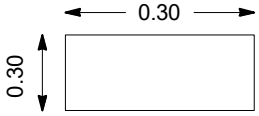
Inspection Pit

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_CPT10A**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**02.05.23** End: **02.05.23**	**47.08**	**E:385142.8 N:398422.6**	**1** of **3**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Reinforced CONCRETE.	0.20	
						MADE GROUND: Blue plastic MEMBRANE.	0.21	
						MADE GROUND: Light brown, gravelly, medium to coarse SAND. Gravel is angular to subangular, fine to coarse of limestone.	(0.29) 0.50	
						MADE GROUND: Black mottled brown, gravelly, medium to coarse SAND with medium cobble content. Gravel is angular to subangular, fine to coarse of brick, coal, sandstone and mudstone. Cobbles are subangular of sandstone and limestone up to 120mm x 110mm x 50mm.	(0.40) 0.90	
						Stiff, brown mottled grey, slightly gravelly CLAY. Gravel is angular to subrounded, fine to coarse of coal and natural lithologies. Occasional rootlets.	(0.30) 1.20	
						Inspection pit terminated at 1.20m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20m depth.
3. On completion, backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Hand dug	**Hand tools**	**Sam Diver**	

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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT10A**
Contract Ref:	Start: **02.05.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **02.05.23**	**47.08**	**E:385142.8 N:398422.6**	**2** of **3**





Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Sam Diver**	Checked By:	

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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT10A**
Contract Ref:	Start: **02.05.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **02.05.23**	**47.08**	**E:385142.8 N:398422.6**	**3** of **3**



Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Sam Diver**	Checked By:	JWC

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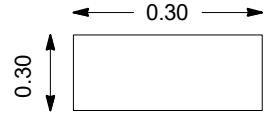
STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT11**
Contract Ref:	Start: **18.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **18.04.23**	**49.04**	**E:385069.5 N:398455.5**	**1** of **2**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: White coarse CONCRETE hardstanding.	0.20	
0.20-0.40	1	B				MADE GROUND: Light to dark brown, slightly sandy, clayey GRAVEL of subangular to angular, fine to coarse of tarmacadam, shale, brick with a low cobble content. Cobbles are angular stone (up to 65mm).	(0.65)	
0.20-0.40	2	D						
0.25	1	ES						
0.40-0.85	3	B						
0.40-0.85	4	D						
0.60	2	ES					0.85	
						Inspection pit terminated at 0.85 m depth. Could not progress further using hand digging tools.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 0.85 m depth. Could not progress further using hand digging tools.
3. On completion, backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Hand dug	**Hand tools**	**Harry Prew**	

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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT11**
Contract Ref:	Start: **18.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **18.04.23**	**49.04**	**E:385069.5 N:398455.5**	**2** of **2**





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Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Harry Prew**	Checked By:	JMC

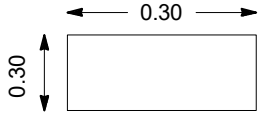
STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT12**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **17.04.23**	**49.08**	**E:385028.0 N:398436.9**	**1** of **3**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20-0.40	1	B				MADE GROUND: Dark brown mottled light brown, very gravelly, fine to coarse SAND with a high cobble content. Gravel is fine to coarse, angular to subangular of millstone grit, sandstone and concrete. Cobbles are angular to subangular of millstone grit, sandstone and concrete by 240mm.	(0.60)	
0.30	1	ES						
				1			0.60	
0.60-0.65	1	B				Soft, dark brown, slightly silty, sandy, very gravelly CLAY with a medium cobble content. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of millstone grit and sandstone. Cobbles are angular of millstone grit and sandstone.	(0.60)	
0.60	2	ES						
							1.20	
						Inspection pit for CPT terminated early due to water strike filling pit of water affecting visibility of the pit.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit for CPT terminated early due to water strike filling pit of water affecting visibility of the pit.
3. On completion, backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Hand dug	**Hand tools**	**Kira Swinson**	

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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT12**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **17.04.23**	**49.08**	**E:385028.0 N:398436.9**	**2** of **3**





Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Kira Swinson**	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT12**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **17.04.23**	**49.08**	**E:385028.0 N:398436.9**	**3** of **3**





Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Kira Swinson**	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/09/23 - 15:37 | JM2 |

STRUCTURAL SOILS

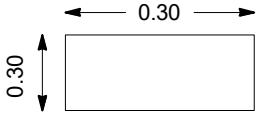
Inspection Pit

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_CPT13**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**26.04.23**	**48.01**	**E:385066.0 N:398413.0**	**1** of **3**
	End: **26.04.23**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.40	101	ES				MADE GROUND: Block paving over, brown, very gravelly SAND with a high cobble content. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of brick, sandstone and siltstone. Cobbles are angular of brick, sandstone and siltstone.	(0.70)	
0.40	23	D						
0.50-0.70	1	B					0.70	
				≈		MADE GROUND: Dark brown mottled black, clayey, sandy GRAVEL with a moderate cobble content. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of sandstone and siltstone. Cobbles are subangular of sandstone and siltstone by 60mm.	(0.40)	
1.00	102	ES				. . . 0.90m - 1.10m, Black band of tar material.	1.10	
1.00	3	D				Inspection pit terminated at 1.10m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.10mm depth.
3. On completion, backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Hand dug	**Hand tools**	**Kira Swinson**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT13**
Contract Ref:	Start: **26.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **26.04.23**	**48.01**	**E:385066.0 N:398413.0**	**2** of **3**





Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Kira Swinson**	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT13**
Contract Ref:	Start: **26.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **26.04.23**	**48.01**	**E:385066.0 N:398413.0**	**3** of **3**



Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Kira Swinson**	Checked By:	JWC	AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

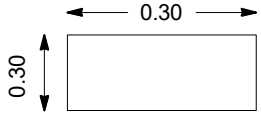
Inspection Pit

Contract:	Client:	Trial Pit:
Ancoats Manchester	**Atkins Ltd**	**ATK_CPT14**

Contract Ref:	Start:	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	**17.04.23** End: **17.04.23**	**48.49**	**E:385006.1 N:398432.0**	**1** of **3**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	101	ES				MADE GROUND: Yellow, slightly silty, gravelly, fine to coarse SAND with a medium cobble content. Gravel is subangular to subrounded, fine to coarse of concrete. Cobbles are subangular of brick and concrete by 130mm.	(0.28)	
							0.28	
0.30-0.50	2	B				Grey mottled orange, slightly silty, very gravelly, fine to coarse SAND with a medium cobble content. Gravel is subangular to subrounded, fine to coarse of sandstone and mixed lithologies. Cobbles are subangular of sandstone by 70mm.		
0.40	102	ES					0.50	
0.60-1.00	1	B				Stiff brown mottled black grey light brown, slightly sandy, gravelly CLAY. Sand is fine to coarse. Gravel is subrounded of mixed lithologies.		
0.80	103	ES					(0.70)	
							1.20	
						Inspection pit terminated at 1.20m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20m depth.
3. On completion, backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Hand dug	**Hand tools**	**Kira Swinson**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT14**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **17.04.23**	**48.49**	**E:385006.1 N:398432.0**	**2** of **3**





Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Kira Swinson**	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT14**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **17.04.23**	**48.49**	**E:385006.1 N:398432.0**	**3** of **3**



Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Kira Swinson**	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/09/23 - 15:38 | JM2 |

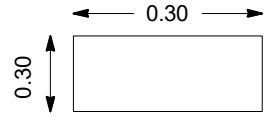
STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT15**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **17.04.23**	**48.34**	**E:385030.5 N:398416.4**	**1** of **3**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brick surface.	0.05	
						MADE GROUND: Light brown, slightly gravelly, fine to coarse SAND. Gravel is subrounded fine to medium of sandstone.	0.18	
0.20-0.40	1	D				Orange, very gravelly, fine to coarse SAND with a low cobble content. Gravel is subrounded, fine to coarse of sandstone. Cobbles are subangular of sandstone by 80mm.	0.45	
0.20	101	ES		1				
0.50	102	ES				Light brown mottled black, slightly silty, very sandy CLAY with a medium cobble content. Sand is fine to coarse. Gravel is subangular to subrounded, of brick, sandstone and siltstone. Cobbles are subangular of brick and siltstone by 90mm.	(0.28)	
							0.73	
						Inspection pit terminated early at 0.73m due to water strike at 0.54m affecting visibility of pit.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 0.73m depth due to water strike at 0.54m affecting visibility of pit.
3. On completion, backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Hand dug	**Hand tools**	**Kira Swinson**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT15**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **17.04.23**	**48.34**	**E:385030.5 N:398416.4**	**2** of **3**





Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Kira Swinson**	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT15**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **17.04.23**	**48.34**	**E:385030.5 N:398416.4**	**3** of **3**



Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Kira Swinson**	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 19/09/23 - 15:38 | JM2 |

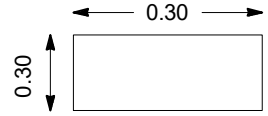
STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT16**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **17.04.23**	**46.60**	**E:385109.9 N:398372.1**	**1** of **3**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						MADE GROUND: Brick slab.	0.05	
0.10	101	ES				MADE GROUND: Orange, gravelly, fine to coarse SAND with a high cobble content. Gravel is subangular, fine to coarse of brick and sandstone. Cobbles are subangular of brick and sandstone by 140mm.	(0.37)	
0.20-0.40	1	B					0.42	
						Black, sandy, subangular to subrounded, fine to coarse GRAVEL of siltstone and mixed lithologies. Sand is fine to coarse.	(0.78)	
0.80-1.00	2	B						
1.00	102	ES					1.20	
						Inspection pit terminated at 1.20m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20mm depth.
3. On completion backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Hand dug	**Hand tools**	**Kira Swinson**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT16**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **17.04.23**	**46.60**	**E:385109.9 N:398372.1**	**2** of **3**





GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Kira Swinson**	Checked By:	

STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT16**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **17.04.23**	**46.60**	**E:385109.9 N:398372.1**	**3** of **3**



Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Kira Swinson**	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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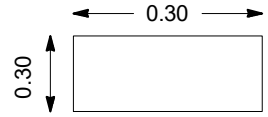
STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT17**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **17.04.23**	**46.87**	**E:385062.7 N:398353.3**	**1** of **3**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.27	1	B				MADE GROUND: Black mottled grey asphalt hardstanding.	(0.35)	
0.27-0.36	2	B					0.35	
0.36	101	ES				MADE GROUND: Grey, slightly silty, sandy, subangular, fine to coarse GRAVEL of limestone. Sand is fine to coarse.	0.50	
0.36-0.50	3	B						
0.50	102	ES				MADE GROUND: Reddish brown, gravelly, fine to coarse SAND. Gravel is fine angular to subangular, fine to coarse of brick and concrete.	0.70	
0.50-0.80	4	B						
0.70	103	ES				MADE GROUND: Stiff, friable, brown mottled red and grey, very gravelly, sandy CLAY with a high cobble content. Sand is fine to coarse. Gravel is angular, fine to coarse of sandstone, brick and other lithologies. Cobbles are angular of brick.	(0.50)	
0.70-1.20	5	B					1.20	
						Inspection pit terminated at 1.20m depth.		

Plan (Not to Scale)



General Remarks

1. Position checked with Ground Penetrating Radar, CAT and Genny prior to excavation.
2. Inspection pit hand dug to 1.20m depth.
3. On completion, backfilled with arisings.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Inspection pit + Hand dug	**Hand tools**	**Kira Swinson**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT17**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **17.04.23**	**46.87**	**E:385062.7 N:398353.3**	**2** of **3**





Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Kira Swinson**	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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STRUCTURAL SOILS

Inspection Pit

Contract:		Client:		Trial Pit:
Ancoats Manchester		**Atkins Ltd**		**ATK_CPT17**
Contract Ref:	Start: **17.04.23**	Ground Level (m AOD):	National Grid Co-ordinate:	Sheet:
765544	End: **17.04.23**	**46.87**	**E:385062.7 N:398353.3**	**3** of **3**





Method Used:	**Inspection pit + Hand dug**	Plant Used:	**Hand tools**	Logged By:	**Kira Swinson**	Checked By:	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Log TRIAL PIT LOG - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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SUMMARY OF INSTALLATION AND PIEZOMETER CHARACTERISTICS

Exploratory Position ID	Pipe Caption	Cover Level (m)	Pipe Top Level (m)	Ground Level (m AOD)	Length of Pipe (m)	Piezo meter Depth (m)	Response Zone Top (m)	Response Zone Base (m)	Slotted Pipe Top (m)	Slotted Pipe Base (m)	Pipe Internal Diameter (mm)	Targetted Ground	Remarks
ATK_BH01	---	---	---	49.13	38.50	---	29.50	38.50	29.50	38.50	50	---	
ATK_BH02a	---	---	---	48.96	4.00	---	2.00	4.00	2.00	4.00	50	---	
ATK_BH03	---	---	---	47.11	35.50	---	26.50	35.50	26.50	35.50	50	---	
ATK_BH04	---	---	---	47.09	5.00	---	2.00	5.00	2.00	5.00	50	---	
ATK_BH05	---	---	---	49.08	2.50	---	0.30	2.50	0.50	2.50	50	---	
ATK_BH06	---	---	---	47.09	4.00	---	2.00	4.00	2.00	4.00	50	---	
ATK_BH07	---	---	---	49.24	2.00	---	0.50	2.00	0.50	2.00	50	---	
ATK_BH08A	---	---	---	49.07	40.00	---	31.00	40.00	31.00	40.00	50	---	
ATK_BH09	---	---	---	49.22	1.50	---	0.50	1.50	0.50	1.50	50	---	

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SUMMARY OF INSTALLATION AND PIEZOMETER CHARACTERISTICS

Exploratory Position ID	Pipe Caption	Cover Level (m)	Pipe Top Level (m)	Ground Level (m AOD)	Length of Pipe (m)	Piezo meter Depth (m)	Response Zone Top (m)	Response Zone Base (m)	Slotted Pipe Top (m)	Slotted Pipe Base (m)	Pipe Internal Diameter (mm)	Targetted Ground	Remarks
ATK_BH10	---	---	---	46.64	38.00	---	29.00	38.00	29.00	38.00	50	---	
ATK_BH11	---	---	---	48.79	39.50	---	30.50	39.50	30.50	39.50	50	---	
ATK_BH12	---	---	---	48.08	6.00	---	3.00	6.00	3.00	6.00	50	---	
ATK_WS01	---	---	---	49.09	3.00	---	1.00	3.00	1.00	3.00	50	---	
ATK_WS02	---	---	---	47.08	2.00	---	0.50	2.00	0.50	2.00	50	---	
ATK_WS03	---	---	---	48.06	2.00	---	0.50	2.00	0.50	2.00	50	---	
ATK_WS04	---	---	---	49.08	5.00	---	2.00	5.00	2.00	5.00	50	---	
ATK_WS05	---	---	---	47.12	5.00	---	2.00	5.00	2.00	5.00	50	---	

SUMMARY OF INSTALLATION AND PIEZOMETER CHARACTERISTICS

Exploratory Position ID	Pipe Caption	Cover Level (m)	Pipe Top Level (m)	Ground Level (m AOD)	Length of Pipe (m)	Piezo meter Depth (m)	Response Zone Top (m)	Response Zone Base (m)	Slotted Pipe Top (m)	Slotted Pipe Base (m)	Pipe Internal Diameter (mm)	Targetted Ground	Remarks
ATK_WS06	---	---	---	47.92	5.00	---	2.00	5.00	2.00	5.00	50	---	
ATK_WS07	---	---	---	49.03	1.50	---	1.00	1.50	1.00	1.50	50	---	
ATK_WS08	---	---	---	49.33	5.00	---	3.00	5.00	1.00	5.00	50	---	

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APPENDIX C -
IN-SITU TESTING

(i) Standard Penetration Test (SPT) Summary Sheet

(ii) SPT N Value versus Depth Plots

(iii) Hand Shear Vane Summary Sheet

(iv) Hand Shear Vane Results versus Depth Plot

STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
ATK_BH01	1.20		1.20	Dry	2,2	150	2,3,3,4		N=12	VC-AR1101-25/01/2023	25/01/2023	72	14	
	3.00		3.00	Dry	3,3	150	3,4,4,5		N=16	VC-AR1101-25/01/2023	25/01/2023	72	19	
	6.00		6.00	Dry	4,3	150	4,4,6,6		N=20	VC-AR1101-25/01/2023	25/01/2023	72	24	
	8.00		8.00	Dry	4,4	150	5,6,6,8		N=25	VC-AR1101-25/01/2023	25/01/2023	72	30	
	10.50		10.50	Dry	3,6	150	8,8,9,10		N=35	VC-AR1101-25/01/2023	25/01/2023	72	42	
	14.00		14.00	Dry	8,17	150	50	75	8,17/50	VC-AR1101-25/01/2023	25/01/2023	72		
									for 75mm					
	17.00		17.00	Dry	7,8	150	9,10,12,14		N=45	VC-AR1101-25/01/2023	25/01/2023	72	54	
	20.00		20.00	Dry	25	75	30,20+	125	25/30,20	VC-AR1101-25/01/2023	25/01/2023	72		
									for 50mm					
	21.50		21.50		25	60	50+	50	25/50	VC-AR1101-25/01/2023	25/01/2023	72		
									for 50mm					
	23.00		23.00		15,10	125	22,28+	145	15,10/22,28	VC-AR1101-25/01/2023	25/01/2023	72		
									for 70mm					
	24.50		24.50		25	60	50+	60	25/50	VC-AR1101-25/01/2023	25/01/2023	72		
									for 60mm					
	26.00		26.00		25	35	50+	35	25/50	VC-AR1101-25/01/2023	25/01/2023	72		SPT(c)
									for 35mm					

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
ATK_BH01	27.50		26.00		10,14	150	5,7,6,7		N=25	VC-AR1101-25/01/2023	25/01/2023	72	30	
	28.50		26.00		9,10	150	10,9,8,11		N=38	VC-AR1101-25/01/2023	25/01/2023	72	46	
ATK_BH02a	2.00		2.00		3,3	150	4,4,5,5		N=18	VC-VC1-25/01/2023	25/01/2023	73	22	
	3.00		3.00		3,4	150	4,4,5,6		N=19	VC-VC1-25/01/2023	25/01/2023	73	23	
	5.00		3.00		2,3	150	3,3,4,6		N=16	VC-VC1-25/01/2023	25/01/2023	73	19	
	6.00		3.00		2,3	150	4,4,4,6		N=18	VC-VC1-25/01/2023	25/01/2023	73	22	
	8.00		3.00		3,4	150	5,6,6,6		N=23	VC-VC1-25/01/2023	25/01/2023	73	28	
	9.00		3.00		2,3	150	4,6,6,6		N=22	VC-VC1-25/01/2023	25/01/2023	73	27	
	12.00		3.00		2,3	150	4,7,6,6		N=23	VC-VC1-25/01/2023	25/01/2023	73	28	
	13.50		3.00		3,4	150	5,6,7,8		N=26	VC-VC1-25/01/2023	25/01/2023	73	32	
	15.00		15.00		7,8	150	12,10,10,7		N=39	VC-VC1-25/01/2023	25/01/2023	73	47	SPT(c)
	16.50		16.50		6,7	150	12,14,17,7+	230	6,7/12,14,17,7	VC-VC1-25/01/2023	25/01/2023	73		
									for 5mm					
	18.00		18.00		25	75	50+	60	25/50	VC-VC1-25/01/2023	25/01/2023	73		
									for 60mm					
	19.50		19.50		16,10	150	15,9,11,10		N=45	VC-VC1-25/01/2023	25/01/2023	73	55	SPT(c)
	21.00		21.00	20.50	15,10	95	50+	60	15,10/50	VC-VC1-25/01/2023	25/01/2023	73		SPT(c)

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
									for 60mm					
	22.50		22.50	20.50	15,10	150	22,22,6+	180	15,10/22,22,6	VC-VC1-25/01/2023	25/01/2023	73		SPT(c)
									for 30mm					
	24.00		24.00	20.50	10,10	150	15,14,10,11		N=50	VC-VC1-25/01/2023	25/01/2023	73	61	SPT(c)
	25.50		25.50	22.00	7,11	150	10,15,15,10+	235	7,11/10,15,15,10	VC-VC1-25/01/2023	25/01/2023	73		SPT(c)
									for 10mm					
	26.50		26.20	23.00	25	60	50+	10	25/50	VC-VC1-25/01/2023	25/01/2023	73		
									for 10mm					
ATK_BH03	2.00		2.00		1,2	150	2,2,3,4		N=11	VC-VC1-25/01/2023	25/01/2023	73	13	
	4.00		4.00		1,3	150	4,4,4,4		N=16	VC-VC1-25/01/2023	25/01/2023	73	19	
	6.00		6.00		2,1	150	2,3,3,5		N=13	VC-VC1-25/01/2023	25/01/2023	73	16	
	8.50		6.00		6,6	150	9,9,9,11		N=38	VC-AR2812-25/02/23	25/02/2023	66	42	
	10.00		6.00		3,6	150	7,8,9,8		N=32	VC-AR2812-25/02/23	25/02/2023	66	35	
	11.50		6.00		3,6	150	7,13,30	225	3,6/7,13,30	VC-AR2812-25/02/23	25/02/2023	66		
									for 75mm					
	13.00		6.00		10,12	150	12,30,8	225	10,12/12,30,8	VC-AR2812-25/02/23	25/02/2023	66		
									for 75mm					
	14.50		6.00		6,7	150	9,15,18,8		N=50	VC-AR2812-25/02/23	25/02/2023	66	55	

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
ATK_BH03	16.00		6.00		8,4	150	10,20,20	225	8,4/10,20,20	VC-AR2812-25/02/23	25/02/2023	66		
									for 75mm					
	17.50		6.00		9,15	150	12,20,18	225	9,15/12,20,18	VC-AR2812-25/02/23	25/02/2023	66		
									for 75mm					
	19.00				11,14	95	50+	50	11,14/50	VC-AR2812-25/02/23	25/02/2023	66		
									for 50mm					
	20.50				25	0	50+	0	NP	VC-AR2812-25/02/23	25/02/2023	66		SPT(c)
	23.50				9,11	150	21,29	150	9,11/21,29	VC-AR2812-25/02/23	25/02/2023	66		SPT(c)
									for 75mm					
	25.00				25	10	50+	10	25/50	VC-AR2812-25/02/23	25/02/2023	66		SPT(c)
									for 10mm					
ATK_BH04	2.00		1.50	Dry	1,1	150	1,2,2,3		N=8	VC-VC1-25/01/2023	25/01/2023	73	10	
	4.00		1.50	Dry	3,3	150	4,4,4,4		N=16	VC-VC1-25/01/2023	25/01/2023	73	19	
	6.00		1.50	Dry	3,3	150	3,4,5,5		N=17	VC-VC1-25/01/2023	25/01/2023	73	21	
	8.00		1.50	Dry	3,4	150	4,5,5,6		N=20	VC-VC1-25/01/2023	25/01/2023	73	24	
	10.00		1.50	Dry	4,5	150	6,6,6,6		N=24	VC-VC1-25/01/2023	25/01/2023	73	29	
	13.00		1.50	Dry	5,5	150	6,6,7,7		N=26	VC-VC1-25/01/2023	25/01/2023	73	32	
	16.00		1.50	Dry	7,18	125	50+	11	7,18/50	VC-VC1-25/01/2023	25/01/2023	73		

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
									for 11mm					
	17.50		17.50	Dry	6,6	150	8,8,9,9		N=34	VC-VC1-25/01/2023	25/01/2023	73	41	
	20.50		20.50	Dry	6,16	150	20,30+	112	6,16/20,30	VC-VC1-25/01/2023	25/01/2023	73		
									for 37mm					
	22.00		22.00	21.00	6,8	150	10,10,9,11		N=40	VC-VC1-25/01/2023	25/01/2023	73	49	SPT(c)
	23.50		23.50	23.00	7,10	150	8,9,13,9		N=39	VC-VC1-25/01/2023	25/01/2023	73	47	SPT(c)
	25.00		25.00	24.00	25	75	50+	10	25/50	VC-VC1-25/01/2023	25/01/2023	73		
									for 10mm					
ATK_BH05	1.20				4,4	150	5,6,6,6		N=23	VC-AR2499-25/01/23	25/01/2023	70	27	
	3.00		3.00	Dry	1,1	150	7,7,2,2		N=18	VC-AR2499-25/01/23	25/01/2023	70	21	
	5.00		4.50	Dry	4,4	150	5,6,7,8		N=26	VC-AR2499-25/01/23	25/01/2023	70	30	
	7.00		6.00	Dry	4,4	150	6,6,7,6		N=25	VC-AR2499-25/01/23	25/01/2023	70	29	
	9.00		9.00	Dry	4,4	150	5,5,7,7		N=24	VC-AR2499-25/01/23	25/01/2023	70	28	
	13.00		12.50	Dry	4,5	150	7,10,10,9		N=36	VC-AR2499-25/01/23	25/01/2023	70	42	
	16.00		15.00	Dry	4,4	150	7,12,18,13+	255	4,4/7,12,18,13	VC-AR2499-25/01/23	25/01/2023	70		
									for 30mm					
	18.00		18.00	Dry	7,14	150	38,12+	135	7,14/38,12	VC-AR2499-25/01/23	25/01/2023	70		
									for 60mm					

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
ATK_BH05	19.50		19.50	Dry	7,8	150	10,15,20,5+	250	7,8/10,15,20,5 for 25mm	VC-AR2499-25/01/23	25/01/2023	70		
	21.00		21.00	Dry	10,10	150	12,12,32,6+	285	10,10/12,12,32,6 for 60mm	VC-AR2499-25/01/23	25/01/2023	70		
	22.50		22.50	22.00	6,10	150	14,16,20+	170	6,10/14,16,20 for 20mm	VC-AR2499-25/01/23	25/01/2023	70		SPT(c)
	24.00		24.00	23.00	7,7	150	15,15,20+	180	7,7/15,15,20 for 30mm	VC-AR2499-25/01/23	25/01/2023	70		SPT(c)
	25.50		25.50	25.00	5,10	150	15,35+	115	5,10/15,35 for 40mm	VC-AR2499-25/01/23	25/01/2023	70		
	27.00		27.00	26.00	25	75	50+	5	25/50 for 5mm	VC-AR2499-25/01/23	25/01/2023	70		
	28.00		28.00	25.00	25	75	50	75	25/50 for 75mm	VC-AR2499-25/01/23	25/01/2023	70		SPT(c)
ATK_BH06	2.00		2.00		1,1	150	2,3,3,5		N=13	VC-AR1101-25/01/20	25/01/2023	72	16	
	3.00		3.00		3,3	150	4,5,7,7		N=23	VC-AR1101-25/01/20	25/01/2023	72	28	
	5.00		5.00		2,3	150	5,5,5,6		N=21	VC-AR1101-25/01/20	25/01/2023	72	25	
	7.00		7.00		2,3	150	4,5,5,6		N=20	VC-AR1101-25/01/20	25/01/2023	72	24	

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
ATK_BH06	9.00		9.00		2,3	150	4,5,6,10		N=25	VC-AR1101-25/01/2023	25/01/2023	72	30	
	11.50		11.50		3,3	150	5,5,6,9		N=25	VC-AR1101-25/01/2023	25/01/2023	72	30	
	14.50		14.50		5,5	150	9,10,11,13		N=43	VC-AR1101-25/01/2023	25/01/2023	72	52	
	17.50		17.50		5,5	150	7,8,10,11		N=36	VC-AR1101-25/01/2023	25/01/2023	72	43	
	20.50		20.50		10,15	135	18,20,12+	190	10,15/18,20/12	VC-AR1101-25/01/2023	25/01/2023	72		SPT(c)
									for 40mm					
	22.00		22.00		25	60	50+	70	25/50	VC-AR1101-25/01/2023	25/01/2023	72		SPT(c)
									for 70mm					
	23.50		23.50	21.60	25	60	50+	55	25/50	VC-AR1101-25/01/2023	25/01/2023	72		SPT(c)
									for 55mm					
	25.00		25.00		25	70	50+	65	25/50	VC-AR1101-25/01/2023	25/01/2023	72		SPT(c)
									for 65mm					
	26.50		26.50		10,15	145	16,20,14+	200	10,15/16,20/14	VC-AR1101-25/01/2023	25/01/2023	72		SPT(c)
									for 50mm					
	28.00		28.00		25	50	50+	40	25/50	VC-AR1101-25/01/2023	25/01/2023	72		
									for 40mm					
	29.00		29.00		25	40	50+	30	25/50	VC-AR1101-25/01/2023	25/01/2023	72		
									for 30mm					

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
ATK_BH07	1.20				2,3	150	4,4,5,8		N=21	VC-VC1-25/01/2023	25/01/2023	73	26	
	2.00		2.00		2,3	150	3,4,5,6		N=18	VC-VC1-25/01/2023	25/01/2023	73	22	
	4.00		4.00		3,3	150	4,3,1,6		N=14	VC-VC1-25/01/2023	25/01/2023	73	17	
	6.00		5.00		2,3	150	3,4,5,5		N=17	VC-VC1-25/01/2023	25/01/2023	73	21	
	8.00		8.00		4,3	150	4,4,5,5		N=18	VC-VC1-25/01/2023	25/01/2023	73	22	
	9.00		9.00		4,4	150	5,5,6,7		N=23	VC-VC1-25/01/2023	25/01/2023	73	28	
	11.50		11.50		5,6	150	6,10,10,11		N=37	VC-VC1-25/01/2023	25/01/2023	73	45	
	13.00		11.50		6,7	150	8,10,10,11		N=39	VC-VC1-25/01/2023	25/01/2023	73	47	
	16.50		16.50		12,9	150	7,9,11,11		N=38	VC-VC1-25/01/2023	25/01/2023	73	46	
	18.00		18.00		10,10	150	10,9,11,9		N=39	VC-VC1-25/01/2023	25/01/2023	73	47	
	19.50		19.50		10,10	150	12,9,10,14		N=45	VC-VC1-25/01/2023	25/01/2023	73	55	
	21.00		21.00		25	60	50	75	25/50	VC-VC1-25/01/2023	25/01/2023	73		
									for 75mm					
	22.50		22.50	Dry	15,10	150	10,14,14,12		N=50	VC-VC1-25/01/2023	25/01/2023	73	61	SPT(c)
	24.00		24.00	Dry	17,8	150	6,8,8,20		N=42	VC-VC1-25/01/2023	25/01/2023	73	51	
	25.50		25.50	Dry	3,7	150	13,21,16+	170	3,7/13,21,16	VC-VC1-25/01/2023	25/01/2023	73		
									for 20mm					
	27.00		27.00		3,5	150	15,35+	95	3,5/15,35	VC-VC1-25/01/2023	25/01/2023	73		

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
									for 20mm					
	28.50		28.10		25	10	50+	10	25/50	VC-VC1-25/01/2023	25/01/2023	73		
									for 10mm					
ATK_BH08	1.20				5,7	150	9,15,15,7+	236	5,7/9,15,15,7	VC-VC1-25/01/2023	25/01/2023	73		SPT(c)
									for 11mm					
ATK_BH08A	2.00		2.00	Dry	2,2	150	3,4,3,3		N=13	VC-AR2499-25/01/23	25/01/2023	70	15	
	4.00		4.00	Dry	2,2	150	3,3,4,4		N=14	VC-AR2499-25/01/23	25/01/2023	70	16	
	6.00		6.00	Dry	3,3	150	4,3,4,4		N=15	VC-AR2499-25/01/23	25/01/2023	70	18	
	8.00		8.00	Dry	1,1	150	1,1,2,1		N=5	VC-AR2499-25/01/23	25/01/2023	70	6	
	10.50		10.50	Dry	3,4	150	4,5,6,10		N=25	VC-AR2499-25/01/23	25/01/2023	70	29	
	13.50		13.50	Dry	3,5	150	6,6,7,9		N=28	VC-AR2499-25/01/23	25/01/2023	70	33	
	15.00		15.00	Dry	8,10	150	15,15,20	225	8,10/15,15,20	VC-AR2499-25/01/23	25/01/2023	70		
									for 75mm					
	16.50		16.50	16.00	7,9	150	14,17,19	225	7,9/14,17,19	VC-AR2499-25/01/23	25/01/2023	70		SPT(c)
									for 75mm					
	19.50		19.50	Dry	7,9	150	15,17,18	225	7,9/15,17,18	VC-AR2499-25/01/23	25/01/2023	70		
									for 75mm					
	22.50		22.50	22.00	7,10	150	10,13,17,10		N=50	VC-AR2499-25/01/23	25/01/2023	70	58	SPT(c)

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
ATK_BH08A	24.00		24.00	22.00	8,12	150	13,17,20	225	8,12/13,17,20	VC-AR2499-25/01/23	25/01/2023	70		SPT(c)
									for 75mm					
	25.50		25.50	23.50	7,12	150	17,33	150	7,12/17,33	VC-AR2499-25/01/23	25/01/2023	70		SPT(c)
									for 75mm					
	27.00		27.00	25.00	10,14	150	19,31	150	10,14/19,31	VC-AR2499-25/01/23	25/01/2023	70		SPT(c)
									for 75mm					
ATK_BH09	1.20		1.20	dry	2,3	150	3,3,3,6		N=15	VC-VC1-25/01/2023	25/01/2023	73	18	
	2.00		2.00	dry	3,3	150	3,4,4,6		N=17	VC-VC1-25/01/2023	25/01/2023	73	21	
	4.00		4.00	dry	2,3	150	3,4,5,6		N=18	VC-VC1-25/01/2023	25/01/2023	73	22	
	5.00		5.00	dry	3,3	150	3,4,4,6		N=17	VC-VC1-25/01/2023	25/01/2023	73	21	
	7.00		7.00	dry	3,4	150	4,4,6,6		N=20	VC-VC1-25/01/2023	25/01/2023	73	24	
	8.00		8.00	dry	3,3	150	4,4,7,7		N=22	VC-VC1-25/01/2023	25/01/2023	73	27	
	10.00		10.00	Dry	3,4	150	4,6,6,7		N=23	VC-VC1-25/01/2023	25/01/2023	73	28	
	11.50		11.00	Dry	3,4	150	5,5,6,7		N=23	VC-VC1-25/01/2023	25/01/2023	73	28	
	14.50		14.50	dry	3,4	150	5,6,6,7		N=24	VC-VC1-25/01/2023	25/01/2023	73	29	
	16.00		16.00	dry	7,6	150	6,7,16,28		N=57	VC-VC1-25/01/2023	25/01/2023	73	69	
	19.50		19.00	Dry	7,10	150	12,16,18,4+	240	7,10/12,16,18,4	VC-VC1-25/01/2023	25/01/2023	73		
									for 15mm					

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
ATK_BH09	21.00		21.00	Dry	25	75	50+	60	25/50	VC-VC1-25/01/2023	25/01/2023	73		
									for 60mm					
	22.50		22.50	22.30	5,8	150	8,10,10,10		N=38	VC-VC1-25/01/2023	25/01/2023	73	46	SPT(c)
	24.00		24.00	23.80	6,6	150	10,10,15,15+	265	6,6/10,10,15,15	VC-VC1-25/01/2023	25/01/2023	73		SPT(c)
									for 40mm					
	25.50		25.50	25.00	11,11	150	12,10,10,8		N=40	VC-VC1-25/01/2023	25/01/2023	73	49	SPT(c)
	28.00				10,14	150	14,21,15+	170	10,14/14,21/15	VC-AR3711-25/01/2023	25/01/2023	68		SPT(c)
									for 20mm					
ATK_BH10	1.20		1.20	Dry	1,2	150	2,2,3,4		N=11	VC-AR2499-25/01/23	25/01/2023	70	13	
	2.00		2.00	Dry	1,2	150	2,2,3,3		N=10	VC-AR2499-25/01/23	25/01/2023	70	12	
	4.00		4.00	Dry	1,1	150	2,2,3,4		N=11	VC-AR2499-25/01/23	25/01/2023	70	13	
	5.00		5.00	Dry	2,2	150	3,3,4,5		N=15	VC-AR2499-25/01/23	25/01/2023	70	18	
	7.00		7.00	Dry	3,3	150	4,4,6,6		N=20	VC-AR2499-25/01/23	25/01/2023	70	23	
	8.00		8.00	Dry	1,2	150	3,4,6,6		N=19	VC-AR2499-25/01/23	25/01/2023	70	22	
	10.00		10.50	Dry	3,4	150	6,7,7,8		N=28	VC-AR2499-25/01/23	25/01/2023	70	33	
	12.00		12.00	Dry	3,4	150	5,7,7,8		N=27	VC-AR2499-25/01/23	25/01/2023	70	32	
	13.50		13.50	Dry	5,8	150	8,13,14,15		N=50	VC-AR2499-25/01/23	25/01/2023	70	58	
	15.00		15.00	Dry	8,10	150	12,18,20	225	8,10/12,18,20	VC-AR2499-25/01/23	25/01/2023	70		

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
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STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
									for 75mm					
	16.50		16.50	Dry	8,10	150	13,19,18	225	8,10/13,19,18	VC-AR2499-25/01/2325/01/2023		70		
									for 75mm					
	19.50		19.50	19.00	10,10	150	13,16,17,4+	235	10,10/13,16,17,4	VC-AR2499-25/01/2325/01/2023		70		SPT(c)
									for 10mm					
	21.00		21.00	Dry	7,7	150	7,8,10,12		N=37	VC-AR2499-25/01/2325/01/2023		70	43	
	22.50		22.00	Dry	25	30	50+	15	25/50	VC-AR2499-25/01/2325/01/2023		70		
									for 15mm					
	24.00		24.00	22.56	25	50	50+	20	25/50	VC-AR2499-25/01/2325/01/2023		70		
									for 20mm					
	25.50		25.50	24.00	25	45	50+	30	25/50	VC-AR2499-25/01/2325/01/2023		70		
									for 30mm					
	27.00		27.00	25.00	25	20	50+	45	25/50	VC-AR2499-25/01/2325/01/2023		70		
									for 45mm					
ATK_BH11	1.20		1.20	Dry	2,3	150	3,2,2,3		N=10	VC-AR2499-25/01/2325/01/2023		70	12	
	2.00		2.00	Dry	2,2	150	3,3,3,3		N=12	VC-AR2499-25/01/2325/01/2023		70	14	
	4.00		4.00	Dry	2,2	150	2,3,3,3		N=11	VC-AR2499-25/01/2325/01/2023		70	13	
	5.00		5.00	Dry	2,2	150	2,3,3,3		N=11	VC-AR2499-25/01/2325/01/2023		70	13	

Notes:
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STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
ATK_BH11	7.00		7.00	Dry	2,2	150	3,3,4,4		N=14	VC-AR2499-25/01/2325/01/2023		70	16	
	8.00		8.00	Dry	3,3	150	3,4,4,4		N=15	VC-AR2499-25/01/2325/01/2023		70	18	
	10.50		10.50	Dry	3,3	150	4,5,7,7		N=23	VC-AR2499-25/01/2325/01/2023		70	27	
	12.00		12.00	Dry	3,3	150	4,6,7,7		N=24	VC-AR2499-25/01/2325/01/2023		70	28	
	15.00		15.00	Dry	6,7	150	6,6,6,7		N=25	VC-AR2499-25/01/2325/01/2023		70	29	
	16.50		16.50	Dry	8,8	150	8,9,10,11		N=38	VC-AR2499-25/01/2325/01/2023		70	44	
	18.00		18.00	Dry	7,7	150	8,8,9,10		N=35	VC-AR2499-25/01/2325/01/2023		70	41	
	21.00		21.00	Dry	25	75	50	75	25/50	VC-AR2499-25/01/2325/01/2023		70		
									for 75mm					
	22.50		22.50	Dry	25	75	50+	40	25/50	VC-AR2499-25/01/2325/01/2023		70		SPT(c)
									for 40mm					
	24.00		24.00	22.50	25	30	50+	5	25/50	VC-AR2499-25/01/2325/01/2023		70		SPT(c)
									for 5mm					
	25.50		25.50	23.00	25	60	50+	40	25/50	VC-AR2499-25/01/2325/01/2023		70		SPT(c)
									for 40mm					
	27.00		27.00	25.00	25	45	50+	30	25/50	VC-AR2499-25/01/2325/01/2023		70		SPT(c)
									for 30mm					
	28.50		28.50	27.00	25	20	50+	15	25/50	VC-AR2499-25/01/2325/01/2023		70		

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
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Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
									for 15mm					
	30.00		30.00	27.00	25	15	50+	10	25/50	VC-AR2499-25/01/23	25/01/2023	70		
									for 10mm					
ATK_BH12	2.00		2.00	Dry	2,2	150	2,3,3,4		N=12	VC-AR1101-25/01/2023	25/01/2023	72	14	
	4.00		4.00	Dry	3,3	150	5,5,6,6		N=22	VC-AR1101-25/01/2023	25/01/2023	72	26	
	6.00		6.00	Dry	2,3	150	4,5,5,7		N=21	VC-AR1101-25/01/2023	25/01/2023	72	25	
	8.00		8.00	Dry	3,3	150	4,4,5,7		N=20	VC-AR1101-25/01/2023	25/01/2023	72	24	
	10.50		10.50	Dry	4,5	150	6,7,8,9		N=30	VC-AR1101-25/01/2023	25/01/2023	72	36	
	12.00		12.00	Dry	4,4	150	5,6,9,9		N=29	VC-AR1101-25/01/2023	25/01/2023	72	35	
	15.00		15.00	Dry	9,9	150	11,12,11,12		N=46	VC-AR1101-25/01/2023	25/01/2023	72	55	
	16.50		16.50	Dry	10,10	150	11,11,12,11		N=45	VC-AR1101-25/01/2023	25/01/2023	72	54	
	18.00		18.00	Dry	25	50	50+	70	25/50	VC-AR1101-25/01/2023	25/01/2023	72		
									for 70mm					
	19.50		19.50	Dry	11,10	150	11,23,16+	190	11,10/11,23/16	VC-AR1101-25/01/2023	25/01/2023	72		
									for 40mm					
	21.00		21.00	Dry	10,11	150	13,17,20	225	10,11/13,17/20	VC-AR1101-25/01/2023	25/01/2023	72		
									for 75mm					
	22.50		22.50	Dry	10,15	150	16,24,10+	190	10,15/16,24/10	VC-AR1101-25/01/2023	25/01/2023	72		SPT(c)

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
									for 40mm					
	24.00		24.00	Dry	25	75	50+	70	25/50	VC-AR1101-25/01/2023	25/01/2023	72		
									for 70mm					
	25.50		25.50		25	50	50+	45	25/50	VC-AR1101-25/01/2023	25/01/2023	72		SPT(c)
									for 45mm					
	27.00		27.00		25	70	30,20+	125	25/30,20	VC-AR1101-25/01/2023	25/01/2023	72		SPT(c)
									for 50mm					
	28.50		28.50		25	60	50+	50	25/50	VC-AR1101-25/01/2023	25/01/2023	72		SPT(c)
									for 50mm					
	29.50		29.50	Dry	25	60	50+	25	25/50	VC-AR1101-25/01/2023	25/01/2023	72		
									for 25mm					
ATK_WS01	1.20				2,2	150	3,4,5,5		N=17	DSUK-110.7-2022	08/07/2021	73	21	
	2.00				3,2	150	4,4,5,7		N=20	DSUK-110.7-2022	08/07/2021	73	24	
	3.00				2,3	150	4,5,5,5		N=19	DSUK-110.7-2022	08/07/2021	73	23	
	4.00				4,4	150	6,7,7,9		N=29	DSUK-110.7-2022	08/07/2021	73	35	
	5.00				4,5	150	5,6,7,9		N=27	DSUK-110.7-2022	08/07/2021	73	33	
ATK_WS02	1.20				4,5	150	5,6,7,7		N=25	DSUK-110.7-2022	08/07/2021	73	30	

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
ATK_WS02	2.00				2,4	150	4,4,6,6		N=20	DSUK-110.7-2022	08/07/2021	73	24	
	3.00				3,4	150	5,5,6,7		N=23	DSUK-110.7-2022	08/07/2021	73	28	
	4.00				3,5	150	5,6,7,8		N=26	DSUK-110.7-2022	08/07/2021	73	32	
	5.00				4,5	150	5,6,8,8		N=27	DSUK-110.7-2022	08/07/2021	73	33	
ATK_WS03	1.20				3,3	150	4,6,4,7		N=21	DSUK-110.7-2022	08/07/2021	73	26	
	2.00				2,3	150	3,2,3,4		N=12	DSUK-110.7-2022	08/07/2021	73	15	
	3.00				3,3	150	4,4,5,6		N=19	DSUK-110.7-2022	08/07/2021	73	23	
	4.00				4,5	150	5,5,7,8		N=25	DSUK-110.7-2022	08/07/2021	73	30	
	5.00				5,4	150	4,5,5,7		N=21	DSUK-110.7-2022	08/07/2021	73	26	
ATK_WS04	1.20				2,2	150	3,3,4,6		N=16	DSUK-110.7-2022	08/07/2021	73	19	
	2.00				5,6	150	6,7,8,10		N=31	DSUK-110.7-2022	08/07/2021	73	38	
	3.00				3,4	150	5,3,4,3		N=15	DSUK-110.7-2022	08/07/2021	73	18	
	4.00				3,4	150	5,6,6,7		N=24	DSUK-110.7-2022	08/07/2021	73	29	
	5.00				4,5	150	6,6,8,8		N=28	DSUK-110.7-2022	08/07/2021	73	34	
ATK_WS05	1.20				2,2	150	2,2,2,3		N=9	DSUK-110.7-2022	08/07/2021	73	11	

Notes:
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3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

N_{60} = (Measured hammer energy ratio / 60) x N value

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STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
ATK_WS05	2.00				2,3	150	3,3,4,4		N=14	DSUK-110.7-2022	08/07/2021	73	17	
	3.00				3,3	150	4,4,6,6		N=20	DSUK-110.7-2022	08/07/2021	73	24	
	4.00				4,6	150	6,7,8,9		N=30	DSUK-110.7-2022	08/07/2021	73	36	
	5.00				5,6	150	7,8,9,11		N=35	DSUK-110.7-2022	08/07/2021	73	43	
ATK_WS06	1.20				1,1	150	1,1,1,3		N=6	DSUK-110.9-2022	09/07/2022	77	8	
	2.00				2,2	150	2,2,3,3		N=10	DSUK-110.9-2022	09/07/2022	77	13	
	3.00				3,3	150	5,7,15,15		N=42	DSUK-110.9-2022	09/07/2022	77	54	
	4.00				4,4	150	4,4,4,6		N=18	DSUK-110.9-2022	09/07/2022	77	23	
	5.00				5,6	150	6,6,6,6		N=24	DSUK-110.9-2022	09/07/2022	77	31	
ATK_WS07	1.20				2,2	150	2,2,2,3		N=9	DSUK-110.9-2022	09/07/2022	77	12	
	2.00				3,3	150	4,4,4,4		N=16	DSUK-110.9-2022	09/07/2022	77	21	
	3.00				4,6	150	6,6,6,6		N=24	DSUK-110.9-2022	09/07/2022	77	31	
ATK_WS08	1.20				2,2	150	2,2,3,4		N=11	DSUK-110.9-2022	09/07/2022	77	14	
	2.00				4,5	150	6,6,9,11		N=32	DSUK-110.9-2022	09/07/2022	77	41	
	3.00				3,3	150	3,3,3,3		N=12	DSUK-110.9-2022	09/07/2022	77	15	

Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
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STANDARD PENETRATION TEST SUMMARY TABLE

Exploratory Position ID	Depth (m)	Hole Dia (mm)	Casing Depth (m)	Water Depth (m)	Seating Drive		Test Drive			Hammer ID	Calibration Date	Energy Ratio (%)	N_{60}	Comments
					Blows	Pen (mm)	Blows	R (mm)	Result					
ATK_WS08	4.00				3,3	150	3,3,3,3		N=12	DSUK-110.9-2022	09/07/2022	77	15	
	5.00				4,4	150	4,7,7,7		N=25	DSUK-110.9-2022	09/07/2022	77	32	

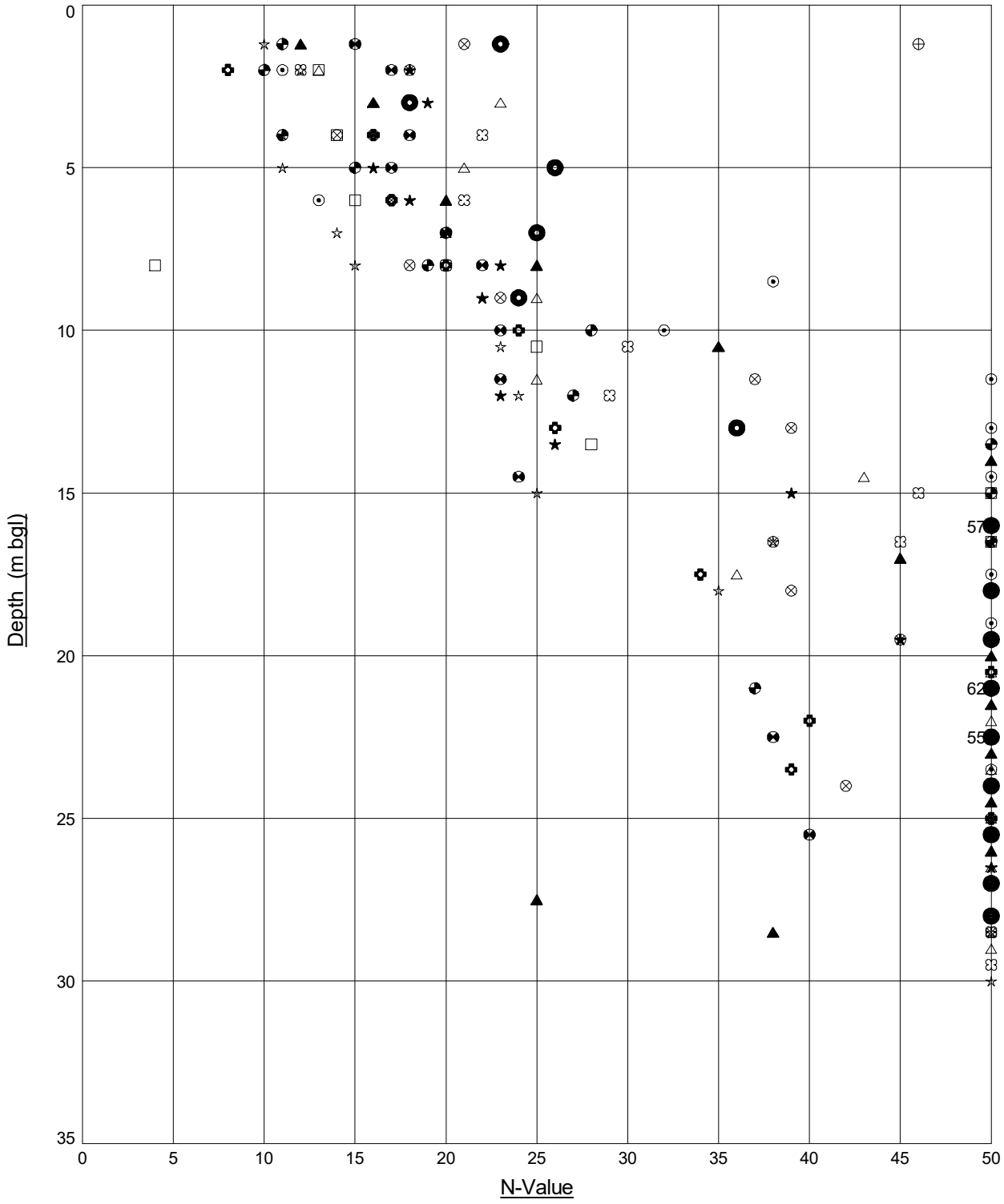
Notes:
1. Tests carried out in general accordance with BS EN ISO 22476-3:2005+A1:2011.
2. Reported blows are for 75mm penetration unless indicated "+".
3. Where full test drive was not achieved, actual penetration (R) and total test drive blows are reported.
4. Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
5. Entries in the water depth column reflects the measured water depth at time of test.

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STANDARD PENETRATION TEST (SPT N-Value) vs DEPTH



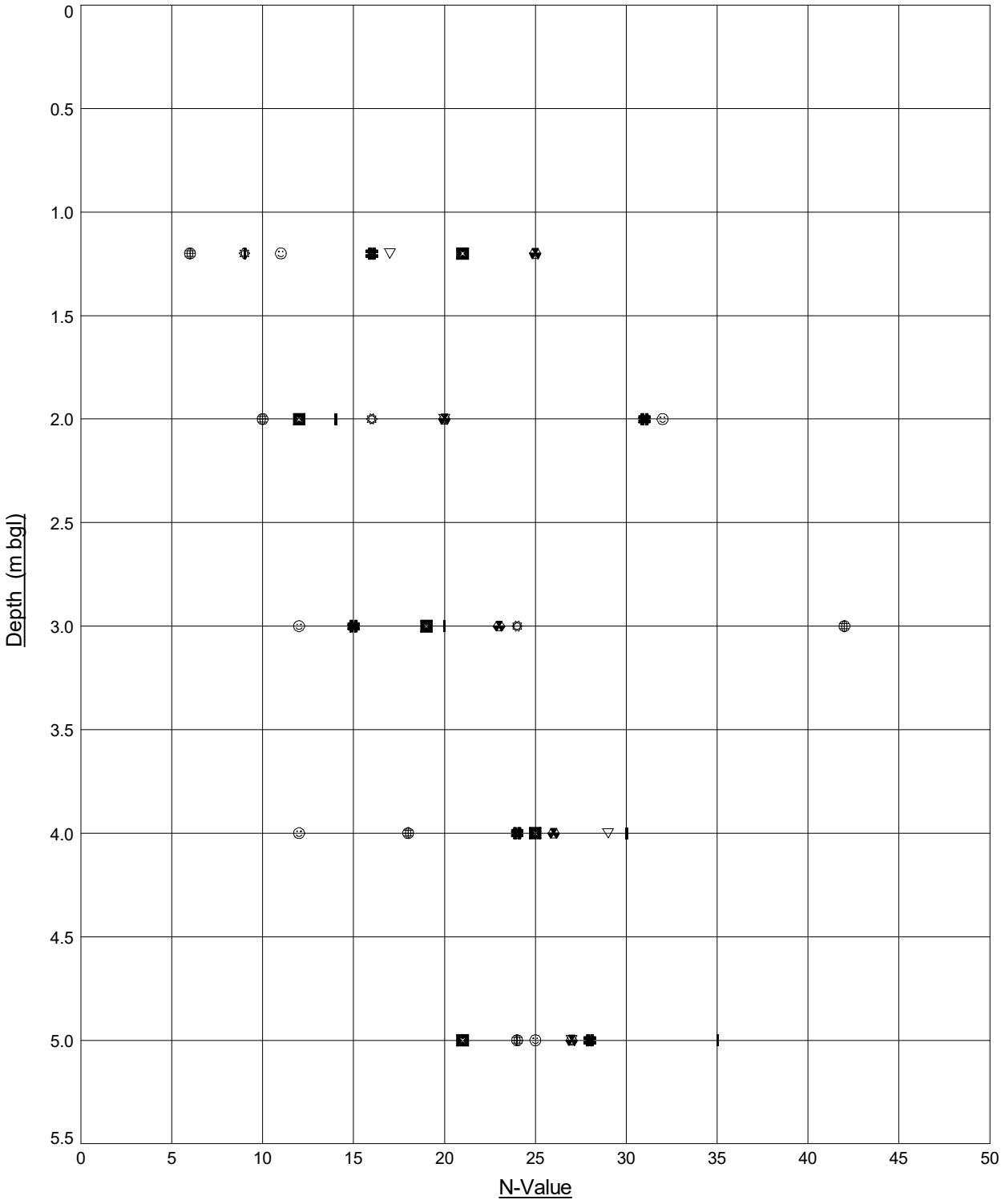
Key: ▲ = ATK_BH01, ★ = ATK_BH02a, ⊙ = ATK_BH03, ✿ = ATK_BH04, ◉ = ATK_BH05, △ = ATK_BH06, ⊗ = ATK_BH07, ⊕ = ATK_BH08, □ = ATK_BH08A, ⊠ = ATK_BH09, ◕ = ATK_BH10, ☆ = ATK_BH11, ⊡ = ATK_BH12
Notes: SPTs carried out in Bore Holes

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Contract	Date	Compiled By
Ancoats Manchester	**15.06.23**	JMC
Client: **Atkins Ltd**	Contract Ref: **765544**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - GENERAL - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01. | 15/06/23 - 17:31 | JM2 |

STANDARD PENETRATION TEST (SPT N-Value) vs DEPTH

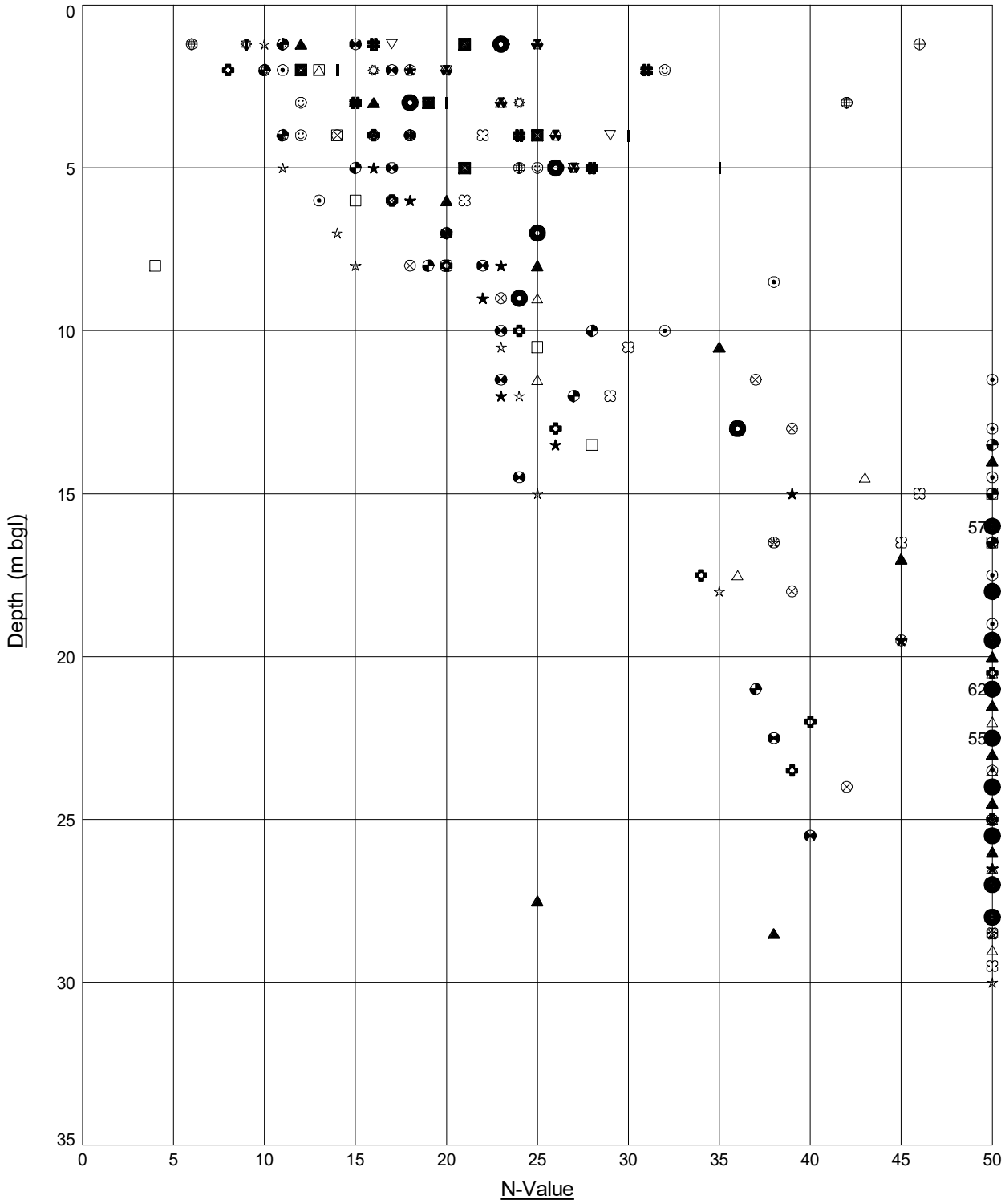


Key: ▽ = ATK_WS01, ◆ = ATK_WS02, ■ = ATK_WS03, ✱ = ATK_WS04, | = ATK_WS05, ◍ = ATK_WS06, ☼ = ATK_WS07, ☺ = ATK_WS08
Notes: SPTs carried out in Window Sample Holes

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	Client **Atkins Ltd**	Contract Ref: **765544**	AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - GENERAL - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01. | 15/06/23 - 17:30 | JM2 |

STANDARD PENETRATION TEST (SPT N-Value) vs DEPTH



Key: ▲ = ATK_BH01, ★ = ATK_BH02a, ⊙ = ATK_BH03, ✿ = ATK_BH04, ◉ = ATK_BH05, △ = ATK_BH06, ⊗ = ATK_BH07, ⊕ = ATK_BH08, □ = ATK_BH08A, ⊠ = ATK_BH09, ◕ = ATK_BH10, ☆ = ATK_BH11, ⊡ = ATK_BH12, ▽ = ATK_WS01, ⬟ = ATK_WS02, ⊠ = ATK_WS03, ✾ = ATK_WS04, ❙ = ATK_WS05, ⊕ = ATK_WS06, ☼ = ATK_WS07, ☺ = ATK_WS08

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Client	Contract Ref:	
Atkins Ltd	**765544**	AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - GENERAL - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01. | 15/06/23 - 17:28 | JM2 |

SUMMARY OF IN-SITU VANE TESTS

Exploratory Position ID	Top Depth (m)	Base Depth (m)	Test Ref	Hand Penetrometer Result (kPa)	Vane Result (Peak) (kPa)	Vane Result (Residual) (kPa)	Remarks
ATK_TP01	1.10	1.60	1	---	50	30	
ATK_TP01	1.10	1.60	2	---	60	40	
ATK_TP01	1.10	1.60	3	---	50	20	
ATK_TP01	1.80	2.00	1	---	110	20	
ATK_TP01	1.80	2.00	2	---	110	20	
ATK_TP01	1.80	2.00	3	---	120	10	
ATK_TP01	2.50	3.00	1	---	130	10	
ATK_TP01	2.50	3.00	2	---	120	40	
ATK_TP01	2.50	3.00	3	---	130	10	
ATK_TP01	3.50	4.00	1	---	150	10	
ATK_TP01	3.50	4.00	2	---	100	30	
ATK_TP01	3.50	4.00	3	---	130	10	
ATK_TP01	4.00	4.50	1	---	130	20	
ATK_TP01	4.00	4.50	2	---	130	20	
ATK_TP01	4.00	4.50	3	---	120	10	
ATK_TP01	4.60	5.00	1	---	130	---	
ATK_TP02	1.40	---	1	---	55	20	
ATK_TP02	1.40	---	2	---	50	20	

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SUMMARY OF IN-SITU VANE TESTS

Exploratory Position ID	Top Depth (m)	Base Depth (m)	Test Ref	Hand Penetrometer Result (kPa)	Vane Result (Peak) (kPa)	Vane Result (Residual) (kPa)	Remarks
ATK_TP02	1.40	---	3	---	40	20	
ATK_TP02	3.20	---	1	---	130	40	
ATK_TP03	1.80	---	1.1	---	90	19	Test data: 21/04/2023
ATK_TP03	1.80	---	1.2	---	114	11	Test data: 21/04/2023
ATK_TP03	1.80	---	1.3	---	80	20	Test data: 21/04/2023
ATK_TP03	1.80	---	1.1P	---	90	---	Test data: 21/04/2023
ATK_TP03	1.80	---	1.1R	---	---	19	Test data: 21/04/2023
ATK_TP03	1.80	---	1.2P	---	114	---	Test data: 21/04/2023
ATK_TP03	1.80	---	1.2R	---	---	11	Test data: 21/04/2023
ATK_TP03	1.80	---	1.3P	---	80	---	Test data: 21/04/2023
ATK_TP03	1.80	---	1.3R	---	---	20	Test data: 21/04/2023
ATK_TP03	2.50	---	2.1	---	90	18	Test data: 21/04/2023
ATK_TP03	2.50	---	2.2	---	78	16	Test data: 21/04/2023
ATK_TP03	2.50	---	2.3	---	69	18	Test data: 21/04/2023
ATK_TP03	2.50	---	2.1P	---	90	---	Test data: 21/04/2023
ATK_TP03	2.50	---	2.1R	---	---	18	Test data: 21/04/2023
ATK_TP03	2.50	---	2.2P	---	78	---	Test data: 21/04/2023
ATK_TP03	2.50	---	2.2R	---	---	16	Test data: 21/04/2023

SUMMARY OF IN-SITU VANE TESTS

Exploratory Position ID	Top Depth (m)	Base Depth (m)	Test Ref	Hand Penetrometer Result (kPa)	Vane Result (Peak) (kPa)	Vane Result (Residual) (kPa)	Remarks
ATK_TP03	2.50	---	2.3P	---	69	---	Test data: 21/04/2023
ATK_TP03	2.50	---	2.3R	---	---	18	Test data: 21/04/2023
ATK_TP03	3.50	---	3.1	---	94	34	Test data: 21/04/2023
ATK_TP03	3.50	---	3.2	---	82	---	Test data: 21/04/2023
ATK_TP03	3.50	---	3.3	---	120	30	Test data: 21/04/2023
ATK_TP03	3.50	---	3.1P	---	94	---	Test data: 21/04/2023
ATK_TP03	3.50	---	3.1R	---	---	34	Test data: 21/04/2023
ATK_TP03	3.50	---	3.2P	---	82	---	Test data: 21/04/2023
ATK_TP03	3.50	---	3.3P	---	120	---	Test data: 21/04/2023
ATK_TP03	3.50	---	3.3R	---	---	30	Test data: 21/04/2023
ATK_TP07	0.50	---	1	---	90	---	
ATK_TP07	0.50	---	2	---	120	---	
ATK_TP07	0.50	---	3	---	80	---	
ATK_TP07	1.20	---	1	---	110	---	
ATK_TP07	1.20	---	2	---	90	---	
ATK_TP07	1.20	---	3	---	90	---	
ATK_TP07	2.50	---	1	---	140	---	
ATK_TP07	4.10	---	1	---	130	25	

SUMMARY OF IN-SITU VANE TESTS

Exploratory Position ID	Top Depth (m)	Base Depth (m)	Test Ref	Hand Penetrometer Result (kPa)	Vane Result (Peak) (kPa)	Vane Result (Residual) (kPa)	Remarks
ATK_TP07	4.10	---	2	---	120	30	
ATK_TP07	4.10	---	3	---	110	25	
ATK_TP08	0.80	1.00	1	---	120	20	
ATK_TP08	0.80	1.00	2	---	130	10	
ATK_TP08	0.80	1.00	3	---	100	30	
ATK_TP08	1.70	1.90	1	---	150	20	
ATK_TP08	1.70	1.90	2	---	115	10	
ATK_TP08	1.70	1.90	3	---	130	20	
ATK_TP08	2.40	2.80	1	---	150	30	
ATK_TP08	2.40	2.80	2	---	80	50	
ATK_TP08	4.50	5.00	1	---	130	10	
ATK_TP08	4.50	5.00	2	---	120	10	
ATK_TP08	4.50	5.00	3	---	140	10	
ATK_TP09	0.50	---	1	---	90	40	
ATK_TP09	0.50	---	2	---	110	50	
ATK_TP09	0.50	---	3	---	75	25	

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SUMMARY OF IN-SITU VANE TESTS

Exploratory Position ID	Top Depth (m)	Base Depth (m)	Test Ref	Hand Penetrometer Result (kPa)	Vane Result (Peak) (kPa)	Vane Result (Residual) (kPa)	Remarks
ATK_TP09	0.70	---	1	---	130	20	
ATK_TP09	3.30	---	1	---	130	10	
ATK_TP09	4.30	---	1	---	130	20	
ATK_TP10	2.80	---	1	---	130	45	
ATK_TP10	2.80	---	2	---	130	---	
ATK_TP10	2.80	---	3	---	130	---	
ATK_TP10	3.50	---	1	---	130	---	
ATK_TP11	1.50	2.00	1	---	130	10	
ATK_TP11	1.50	2.00	2	---	130	20	
ATK_TP11	1.50	2.00	3	---	150	20	
ATK_TP12	0.80	---	1.1	---	119	20	Test data: 27/04/2023
ATK_TP12	0.80	---	1.2	---	114	20	Test data: 27/04/2023
ATK_TP12	0.80	---	1.3	---	128	14	Test data: 27/04/2023
ATK_TP13	0.75	---	1.1	---	95	32	Test data: 28/04/2023
ATK_TP13	0.75	---	1.2	---	130	22	Test data: 28/04/2023
ATK_TP13	0.75	---	1.3	---	128	32	Test data: 28/04/2023
ATK_WS02	1.20	2.00	1	---	130	---	

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date	Contract Ref:
JMcCarthy	JMCCARTHY	15.06.23	765544
Contract: Ancoats Manchester			Page: 5 of 6

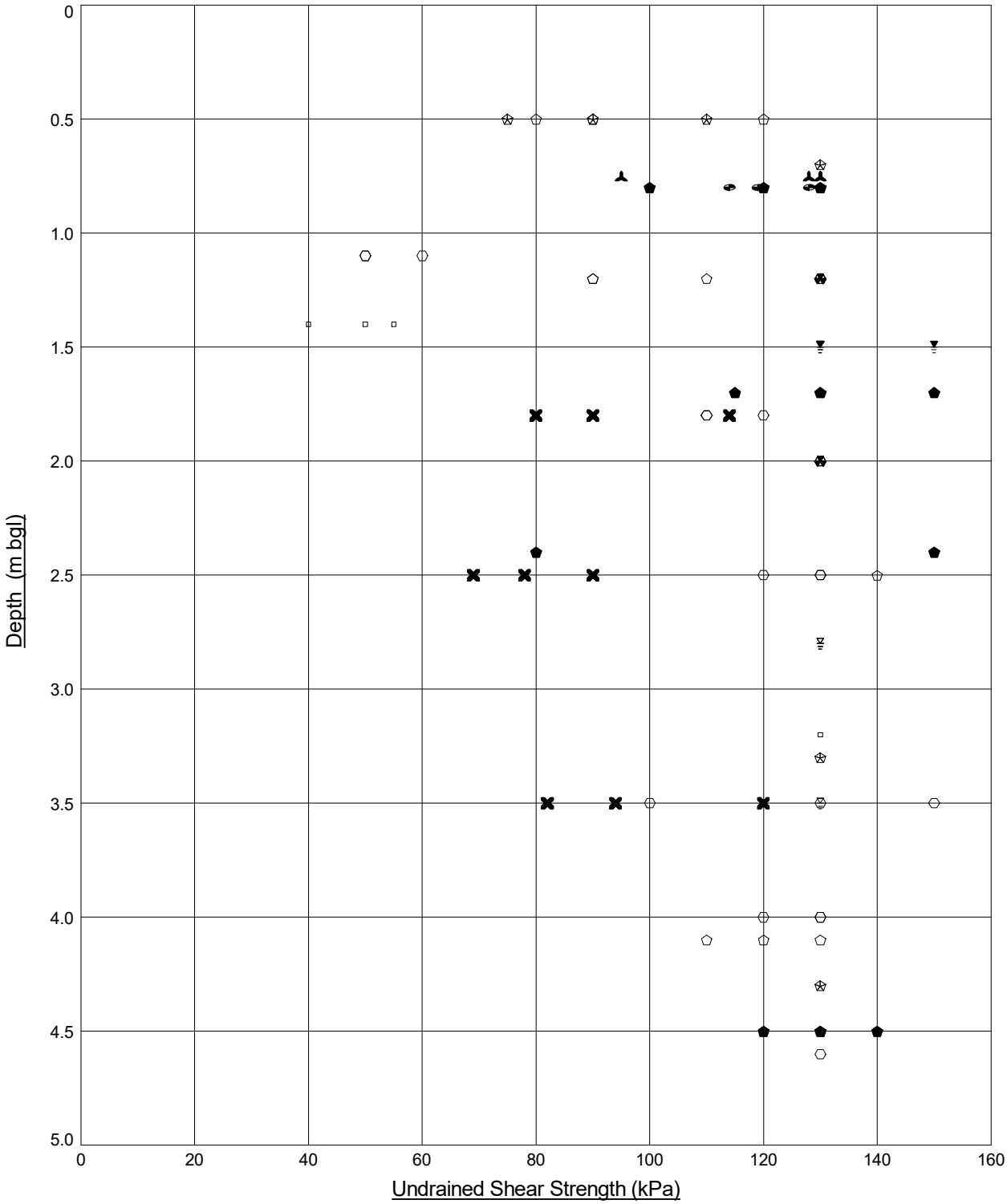
SUMMARY OF IN-SITU VANE TESTS

Exploratory Position ID	Top Depth (m)	Base Depth (m)	Test Ref	Hand Penetrometer Result (kPa)	Vane Result (Peak) (kPa)	Vane Result (Residual) (kPa)	Remarks
ATK_WS02	1.20	2.00	2	---	130	---	
ATK_WS02	1.20	2.00	3	---	130	---	
ATK_WS02	2.00	3.00	1	---	130	---	
ATK_WS02	2.00	3.00	2	---	130	---	
ATK_WS02	2.00	3.00	3	---	130	---	

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date	Contract Ref:
JMcCarthy	JMCCARTHY	15.06.23	765544
Contract: Ancoats Manchester			Page: 6 of 6

UNDRAINED SHEAR STRENGTH FROM IN-SITU HAND VANE (PEAK) TESTING vs DEPTH



Key: ⬠ = ATK_TP01, ▫ = ATK_TP02, ✖ = ATK_TP03, ⬠ = ATK_TP07, ⬟ = ATK_TP08, ✲ = ATK_TP09, ⧖ = ATK_TP10, ⧗ = ATK_TP11, ⬬ = ATK_TP12, ⅄ = ATK_TP13, ⬣ = ATK_WS02

STRUCTURAL SOILS The Potteries Pottery Street Castleford W. Yorkshire WF10 1NJ	Contract **Ancoats Manchester**	Date **15.06.23**	Compiled By JMC
	Client **Atkins Ltd**	Contract Ref: **765544**	AGS

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | Graph G - PLOTS - SITE - GENERAL - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01. | 15/06/23 - 17:33 | JM2 |

APPENDIX D - GEOTECHNICAL LABORATORY TESTING

(i) Laboratory Test Verification Sheet

(ii) Soil Test Results

(iii) Rock Test Results

(iv) Chemical Test Results

TESTING VERIFICATION CERTIFICATE

1774

The test results included in this report are certified as:-

ISSUE STATUS: **FINAL**

In accordance with the Structural Soils Ltd Laboratory Quality Management System, results sheets and summaries of results issued by the laboratory are checked by an approved signatory. The integrity of the test data and results are ensured by control of the computer system employed by the laboratory as part of the Software Verification Program as detailed in the Laboratory Quality Manual.

This testing verification certificate covers all testing compiled on or before the following datetime: **05/08/2023 07:04:28**.

Testing reported after this date is not covered by this Verification Certificate.



Approved Signatory
Luke Fisher (Laboratory Manager)

(Head Office)
Bristol Laboratory
Unit 1A, Princess Street
Bedminster
Bristol
BS3 4AG

Castleford Laboratory
The Potteries, Pottery Street
Castleford
West Yorkshire
WF10 1NJ

Hemel Laboratory
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Tonbridge Laboratory
Anerley Court, Half Moon Lane
Hildenborough
Tonbridge
TN11 9HU

STRUCTURAL SOILS LTD	Contract: **Ancoats Manchester**	Job No: **765544**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - LAB VERIFICATION REPORT - V02 - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 05/08/23 - 07:06 | LF1 |

SUMMARY OF WATER CONTENT TESTS

In accordance with BS EN ISO 17892-1:2014

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content (%)	Drying Temperature (degC)	Description	Lab location
ATK_BH11	4	D	0.70	25.2	105	Brown mottled grey sandy CLAY	C
ATK_BH11	17	DSPT	5.00	20.2	105	Brown slightly gravelly CLAY	C
ATK_TP01	6	D	1.10	26.3	105	Brown CLAY	C
ATK_TP09	2	LB	0.30	26.4	105	Brown slightly gravelly CLAY	C
ATK_WS02	3	DSPT	3.00	14.7	105	Brown silty CLAY	C
ATK_WS03	2	B	2.00	25.1	105	Dark brown slightly sandy slightly gravelly CLAY	C
ATK_WS03	4	B	4.00	26.7	105	Brown CLAY	C
ATK_WS04	1	DSPT	1.20	17.9	105	Brown CLAY	C
ATK_WS04	5	DSPT	5.00	13.6	105	Brown CLAY	C
ATK_WS05	7	B	3.00	14.4	105	Brown CLAY	C
ATK_WS06	8	D	3.00	26.0	105	Dark brown very sandy CLAY	C

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date	Contract Ref:
	LORNA WHITWORTH	20.09.23	765544
Contract: Ancoats Manchester			

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
ATK_BH01	11	D	2.00	18.7	42	19	23	97	Brown slightly gravelly CLAY
ATK_BH01	21	D	5.00	20.4	28	15	13	96	Brown sandy silty CLAY
ATK_BH01	32	D	9.00	21.7	35	16	19	94	Brown gravelly CLAY
ATK_BH01	55	D	18.00	23.4	46	22	24	99	Brown slightly gravelly silty CLAY
ATK_BH02a	12	B	2.00	40.0	45	21	24	90	Brown slightly gravelly CLAY
ATK_BH02a	20	B	5.00	16.8	32	15	17	94	Brown slightly gravelly slightly sandy CLAY
ATK_BH02a	25	D	7.50	15.5	36	16	20	94	Brown slightly gravelly CLAY
ATK_BH02a	39	B	13.50	16.5	24	12	12	83	Brown slightly sandy slightly gravelly CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: **Ancoats Manchester**	Contract Ref: **765544**

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
ATK_BH02a	49	B	18.00	26.3	44	19	25	98	Brown slightly sandy CLAY
ATK_BH03	4	D	1.70	22.2	56	22	34	99	Brown grey silty CLAY
ATK_BH03	14	D	5.50	15.9	35	15	20	94	Brown slightly gravelly CLAY
ATK_BH03	56	C	10.91	6.6	26	12	14	83	Dark brown slightly gravelly sandy CLAY
ATK_BH03	57	C	14.90	7.2	22	12	10	75	Dark brown slightly gravelly sandy CLAY
ATK_BH03	58	C	17.50	12.3	31	12	19	75	Dark brown slightly gravelly sandy CLAY
ATK_BH04	9	D	1.70	28.8	58	20	38	100	Brown grey CLAY
ATK_BH04	33	UT	11.50	11.6	26	11	15	85	Brown slightly gravelly slightly sandy CLAY

SYMBOLS: * denotes BS 1377

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
ATK_BH04	39	D	15.00	11.5	33	13	20	72	Brown slightly gravelly sandy CLAY
ATK_BH04	46	UT	19.00	20.3	45	21	24	100	Brown CLAY
ATK_BH05	10	B	1.20	19.5	42	19	23	97	Brown slightly gravelly CLAY
ATK_BH05	63	D	2.00	10.9	19	13	6	39	Brown gravelly clayey SAND
ATK_BH05	19	DSPT	5.00	26.2	36	16	20	93	Brown CLAY
ATK_BH05	38	D	15.00	8.8	29	15	14	58	Brown gravelly very sandy CLAY
ATK_BH05	43	D	17.20	9.8	28	13	15	82	Brown slightly gravelly sandy CLAY
ATK_BH06	12	B	3.00	22.5	34	16	18	91	Brown slightly gravelly CLAY

SYMBOLS: * denotes BS 1377

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
ATK_BH06	30	D	9.00	9.5	32	15	17	83	Brown CLAY
ATK_BH06	43	UT	13.00	11.6	30	13	17	90	Dark brown slightly gravelly slightly sandy CLAY
ATK_BH06	52	D	16.50	25.4	25	13	12	68	Brown clayey GRAVEL
ATK_BH06	57	D	18.00	23.5	51	21	30	93	Brown slightly gravelly CLAY
ATK_BH06	60	D	19.50	17.3	45	20	25	99	Brown CLAY
ATK_BH07	11	D	3.50	22.5	42	18	24	92	Brown CLAY
ATK_BH07	21	D	7.50	13.1	32	14	18	93	Brown slightly gravelly CLAY
ATK_BH07	24	B	8.00	18.0	35	18	17	92	Brown slightly gravelly CLAY

SYMBOLS: * denotes BS 1377

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
ATK_BH07	37	D	15.00	14.7	27	13	14	89	Brown slightly gravelly sandy CLAY
ATK_BH07	64	B	28.50	22.1	NP	NP	NP	53	Brown slightly silty SAND
ATK_BH08A	4	D	1.00	27.6	48	19	29	88	Brown slightly gravelly sandy CLAY
ATK_BH08A	9	B	2.00	18.5	38	17	21	96	Brown grey slightly gravelly CLAY
ATK_BH08A	15	D	5.50	20.0	43	22	21	94	Brown slightly sandy slightly gravelly CLAY
ATK_BH08A	19	D	7.50	14.7	31	17	14	87	Brown CLAY
ATK_BH09	10	B	2.00	18.1	38	17	21	87	Dark brown slightly gravelly slightly sandy CLAY
ATK_BH09	12	D	3.50	11.3	24	12	12	86	Brown slightly sandy slightly gravelly CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD

Contract:

Ancoats Manchester

Contract Ref:

765544

AGS

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
ATK_BH09	20	D	6.45	12.6	28	14	14	96	Brown silty CLAY
ATK_BH09	28	D	9.45	17.3	35	16	19	93	Brown CLAY
ATK_BH10	8	B	1.20	21.9	44	20	24	96	Brown slightly gravelly CLAY
ATK_BH10	13	D	3.50	23.2	48	22	26	100	Brown slightly gravelly sandy CLAY
ATK_BH10	21	D	6.50	20.3	49	20	29	100	Brown CLAY
ATK_BH10	41	B	15.00	21.7	45	20	25	89	Brown slightly gravelly slightly sandy silty CLAY
ATK_BH10	46	UT	18.00	11.6	21	11	10	74	Dark brown slightly sandy slightly gravelly silty CLAY
ATK_BH10	55	B	21.00	7.6	NP	NP	NP	12	Brown sandy silty GRAVEL

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD

Contract:

Ancoats Manchester

Contract Ref:

765544

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SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
ATK_BH11	7	B	1.20	20.9	43	23	20	89	Brown slightly gravelly CLAY
ATK_BH11	20	D	6.50	18.6	33	15	18	89	Brown slightly gravelly CLAY
ATK_BH11	28	D	9.50	28.0	40	18	22	95	Brown slightly gravelly sandy CLAY
ATK_BH11	36	D	14.00	15.1	24	12	12	82	Brown slightly gravelly sandy CLAY
ATK_BH11	42	B	16.50	16.2	25	15	10	86	Brown slightly sandy gravelly CLAY
ATK_BH11	48	D	20.00	23.0	25	12	13	85	Brown slightly gravelly sandy CLAY
ATK_BH12	3	D	0.50	19.2	44	20	24	97	Brown slightly sandy slightly gravelly CLAY
ATK_BH12	6	B	1.00	20.5	48	24	24	87	Brown grey slightly gravelly slightly sandy CLAY

SYMBOLS: * denotes BS 1377

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
ATK_BH12	14	D	3.50	16.2	48	19	29	95	Brown gravelly CLAY
ATK_BH12	28	D	7.50	16.0	35	15	20	91	Brown slightly gravelly sandy CLAY
ATK_BH12	35	D	9.50	15.5	36	19	17	85	Brown slightly gravelly CLAY
ATK_BH12	47	D	14.00	10.8	26	11	15	87	Brown slightly sandy slightly gravelly silty CLAY
ATK_BH12	60	B	18.00	10.2	23	13	10	80	Brown slightly sandy gravelly CLAY with medium cobble content
ATK_BH12	80	D	25.00	8.9	25	12	13	38	Brown slightly gravelly sandy CLAY
ATK_TP01	8	D	2.50	19.8	42	19	23	89	Brown slightly gravelly slightly sandy CLAY with organic material
ATK_TP01	12	D	4.60	24.0	43	18	25	95	Brown slightly sandy slightly gravelly CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD

Contract:

Ancoats Manchester

Contract Ref:

765544

AGS

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
ATK_TP02	3	D	2.40	54.5	49	25	24	71	Brownish greyish black sandy gravelly organic CLAY
ATK_TP03	9	B	2.20	27.6	58	23	35	91	Brown grey CLAY
ATK_TP03	12	D	3.50	15.4	37	16	21	92	Brown slightly gravelly slightly sandy CLAY
ATK_TP04	6	D	1.50	18.4	44	19	25	92	Brown slightly sandy slightly gravelly CLAY
ATK_TP04	8	D	2.50	19.9	44	22	22	85	Brown slightly gravelly silty CLAY
ATK_TP04	11	B	4.50	25.7	52	29	23	92	Brown slightly gravelly silty CLAY
ATK_TP07	3	D	1.20	16.6	42	24	18	97	Brown mottled grey slightly gravelly slightly sandy CLAY
ATK_TP07	102	B	2.50	18.9	43	20	23	95	Brown grey silty CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD

Contract:

Ancoats Manchester

Contract Ref:

765544

AGS

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
ATK_TP07	104	B	4.40	26.2	57	18	39	99	Dark brown slightly gravelly slightly silty CLAY
ATK_TP08	6	D	1.80	18.4	43	20	23	97	Brown mottled grey CLAY
ATK_TP09	3	D	1.30	19.0	44	19	25	96	Brown slightly sandy slightly gravelly CLAY
ATK_TP09	2	B	3.40	24.9	55	22	33	100	Dark brown CLAY
ATK_TP09	3	B	4.60	23.6	45	19	26	98	Dark brown slighlty sandy CLAY
ATK_TP10	3	D	1.60	19.1	34	16	18	95	Brown mottled grey slightly gravelly slightly sandy CLAY
ATK_TP10	5	D	3.50	9.7	47	19	28	95	Brown sandy CLAY
ATK_TP11	6	D	1.50	16.3	38	18	20	90	Brown slightly gravelly silty CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD

Contract:

Ancoats Manchester

Contract Ref:

765544

AGS

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
ATK_TP11	8	D	2.50	16.6	35	18	17	96	Dark brown slightly gravelly slightly sandy silty CLAY
ATK_TP11	10	D	3.50	20.0	50	22	28	99	Dark brown slightly gravelly slightly sandy silty CLAY
ATK_TP11	12	D	4.20	25.8	54	21	33	100	Brown slightly gravelly silty CLAY
ATK_TP12	3	D	0.80	16.0	36	13	23	96	Brownish grey slightly sandy slightly gravelly CLAY
ATK_TP13	2	B	0.60	22.9	42	23	19	86	Dark brown slightly gravelly silty CLAY
ATK_WS01	6	B	4.00	20.1	41	19	22	95	Brown slightly gravelly sandy CLAY
ATK_WS02	5	B	2.00	12.2	36	17	19	93	Brown slightly gravelly CLAY
ATK_WS02	7	B	4.00	15.5	36	17	19	91	Brown slightly silty slightly gravelly slightly sandy CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD

Contract:

Ancoats Manchester

Contract Ref:

765544

AGS

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
ATK_WS03	1	B	1.20	18.4	28	17	11	93	Brown grey silty CLAY
ATK_WS03	3	B	3.00	14.6	37	13	24	85	Brown CLAY
ATK_WS04	2	B	2.00	14.6	40	18	22	96	Brown slightly sandy slightly gravelly CLAY
ATK_WS04	3	B	3.00	22.4	30	18	12	98	Brown silty CLAY
ATK_WS05	5	B	1.20	22.8	28	18	10	70	Brown slightly sandy slightly gravelly CLAY
ATK_WS05	6	B	2.00	16.3	46	21	25	98	Brown grey silty CLAY
ATK_WS06	7	B	2.00	13.5	41	19	22	95	Brown slightly gravelly slightly sandy CLAY
ATK_WS06	11	B	4.00	23.9	59	24	35	99	Brown very gravelly silty CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD

Contract:

Ancoats Manchester

Contract Ref:

765544

AGS

SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with Part 1,Part 12 of BS EN ISO 17892

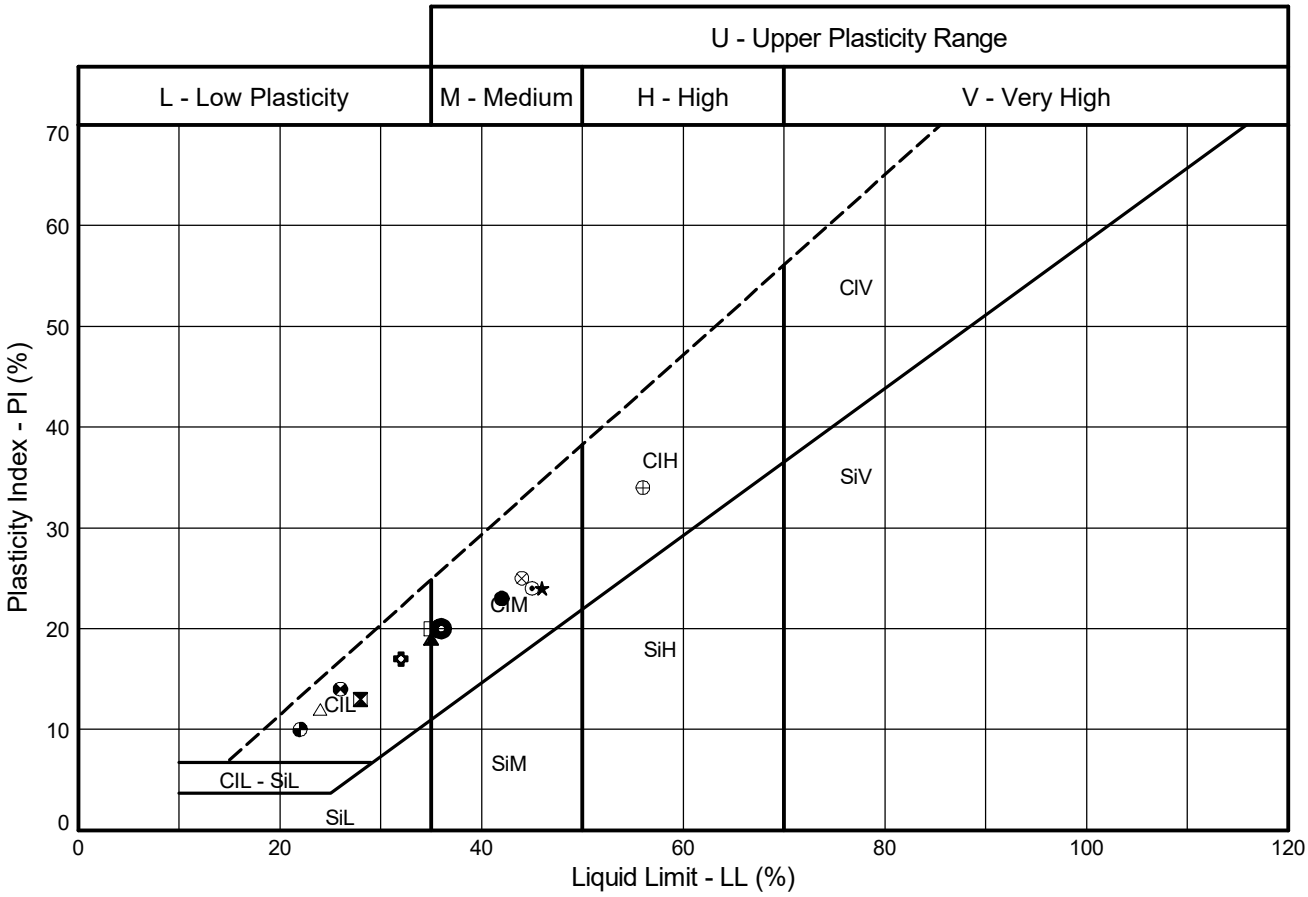
Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
ATK_WS07	2	B	1.70	17.6	45	23	22	81	Brown slightly gravelly slightly sandy CLAY
ATK_WS07	3	B	2.50	19.8	44	19	25	91	Brown slightly sandy slightly gravelly CLAY
ATK_WS08	2	DSPT	2.00	22.5	40	18	22	75	Brown sandy slightly gravelly CLAY
ATK_WS08	6	B	3.00	18.0	41	21	20	87	Brown grey slightly sandy silty CLAY
ATK_WS08	7	B	4.00	19.1	39	17	22	92	Brown sandy silty CLAY

SYMBOLS: * denotes BS 1377

STRUCTURAL SOILS LTD	Contract: **Ancoats Manchester**	Contract Ref: **765544**

PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A1:2021



Sample Identification				Test Method #	Preparation Method +	WC	LL	PL	PI	<425µm	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)			%	%	%	%	%		
●	ATK_BH01	11D	2.00	5.3/5.5/6.5	5.2.7	18.7	42	19	23	97	C	
⊠	ATK_BH01	21D	5.00	5.3/5.5/6.5	5.2.7	20.4	28	15	13	96	C	
▲	ATK_BH01	32D	9.00	5.3/5.5/6.5	5.2.7	21.7	35	16	19	94	C	
★	ATK_BH01	55D	18.00	5.3/5.5/6.5	5.2.7	23.4	46	22	24	99	C	I
⊙	ATK_BH02a	12B	2.00	5.3/5.5/6.5	5.2.7	40.0	45	21	24	90	C	
✿	ATK_BH02a	20B	5.00	5.3/5.5/6.5	5.2.7	16.8	32	15	17	94	C	
◉	ATK_BH02a	25D	7.50	5.3/5.5/6.5	5.2.7	15.5	36	16	20	94	C	
△	ATK_BH02a	39B	13.50	5.3/5.5/6.5	5.2.7	16.5	24	12	12	83	C	
⊗	ATK_BH02a	49B	18.00	5.3/5.5/6.5	5.2.7	26.3	44	19	25	98	C	
⊕	ATK_BH03	4D	1.70	5.3/5.5/6.5	5.2.7	22.2	56	22	34	99	C	
□	ATK_BH03	14D	5.50	5.3/5.5/6.5	5.2.7	15.9	35	15	20	94	C	
⊠	ATK_BH03	56C	10.91	5.3/5.5/6.5	5.2.7	6.6	26	12	14	83	C	
◓	ATK_BH03	57C	14.90	5.3/5.5/6.5	5.2.7	7.2	22	12	10	75	C	

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method; 5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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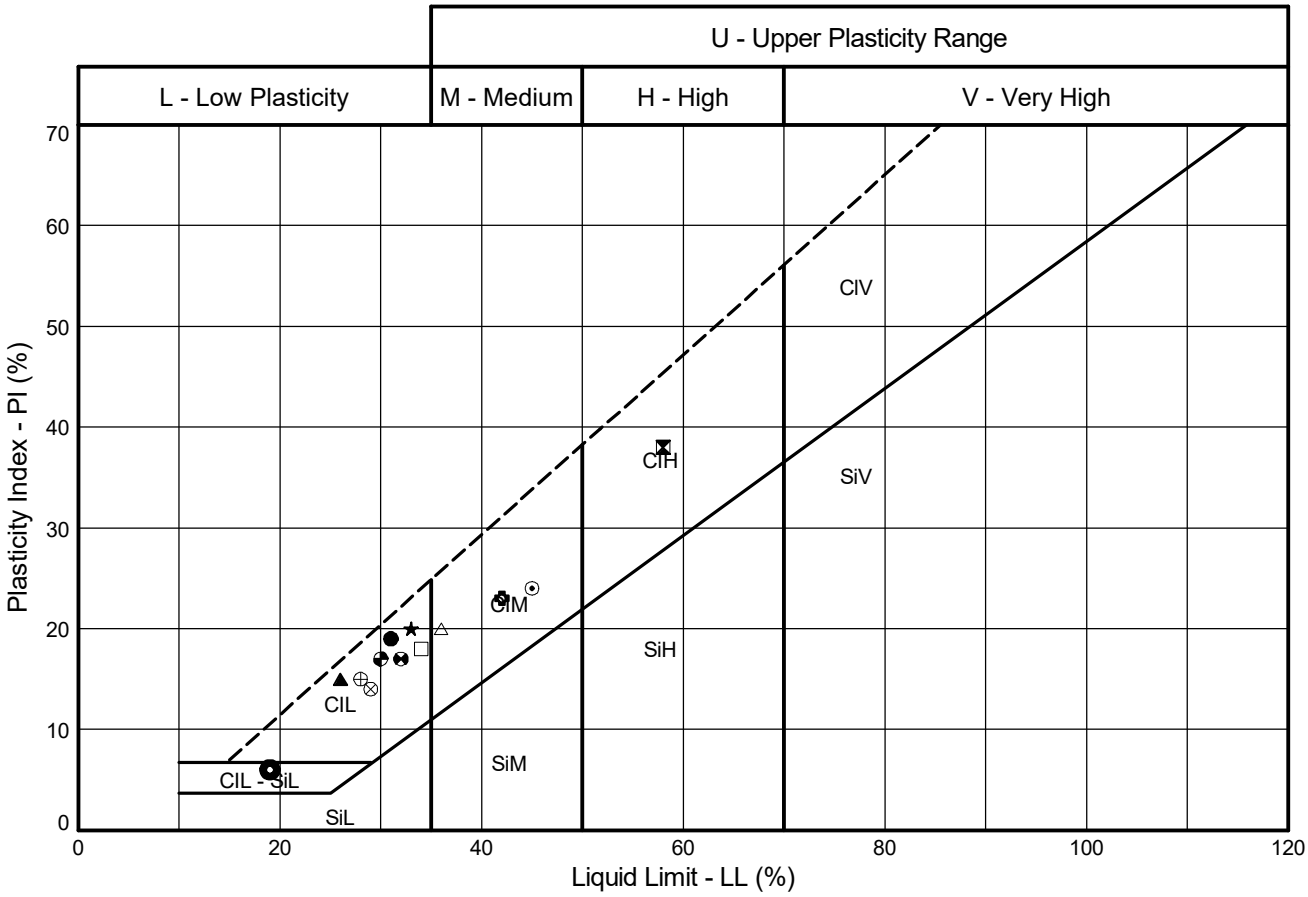
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Contract	Contract Ref:
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PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A1:2021



Sample Identification				Test Method #	Preparation Method +	WC	LL	PL	PI	<425µm	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)			%	%	%	%	%		
●	ATK_BH03	58C	17.50	5.3/5.5/6.5	5.2.7	12.3	31	12	19	75	C	
⊠	ATK_BH04	9D	1.70	5.3/5.5/6.5	5.2.7	28.8	58	20	38	100	C	
▲	ATK_BH04	33UT	11.50	5.3/5.5/6.5	5.2.7	11.6	26	11	15	85	C	
★	ATK_BH04	39D	15.00	5.3/5.5/6.5	5.2.7	11.5	33	13	20	72	C	I
⊙	ATK_BH04	46UT	19.00	5.3/5.5/6.5	5.2.1	20.3	45	21	24	100	C	
✿	ATK_BH05	10B	1.20	5.3/5.5/6.5	5.2.7	19.5	42	19	23	97	C	
◉	ATK_BH05	63D	2.00	5.3/5.5/6.5	5.2.7	10.9	19	13	6	39	C	
△	ATK_BH05	19DSPT	5.00	5.3/5.5/6.5	5.2.7	26.2	36	16	20	93	C	
⊗	ATK_BH05	38D	15.00	5.3/5.5/6.5	5.2.7	8.8	29	15	14	58	C	I
⊕	ATK_BH05	43D	17.20	5.3/5.5/6.5	5.2.7	9.8	28	13	15	82	C	
□	ATK_BH06	12B	3.00	5.3/5.5/6.5	5.2.7	22.5	34	16	18	91	C	
⊠	ATK_BH06	30D	9.00	5.3/5.5/6.5	5.2.7	9.5	32	15	17	83	C	
◓	ATK_BH06	43UT	13.00	5.3/5.5/6.5	5.2.7	11.6	30	13	17	90	C	

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method; 5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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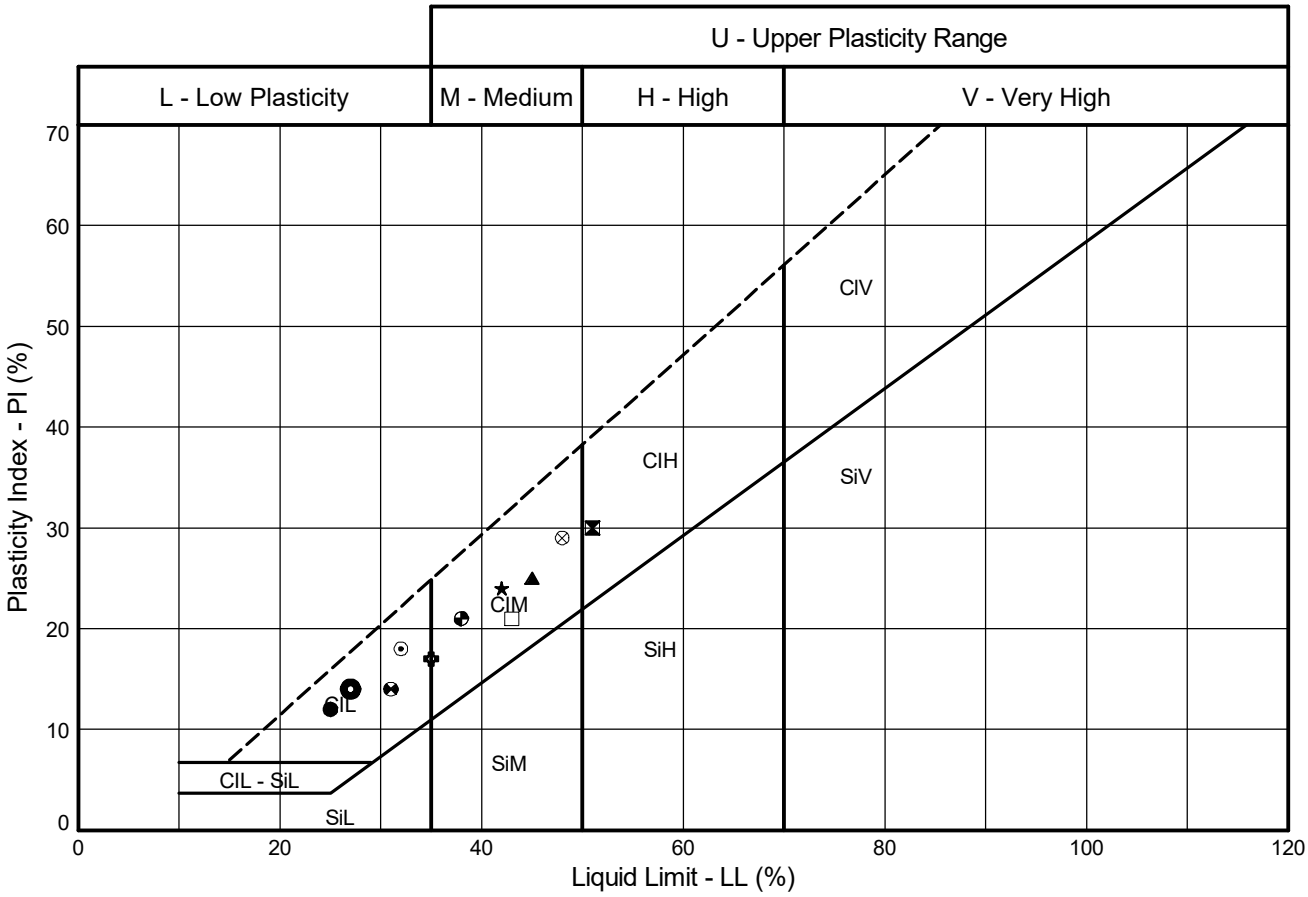
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Contract	Contract Ref:
Ancoats Manchester	**765544**

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PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A1:2021



Sample Identification				Test Method #	Preparation Method +	WC	LL	PL	PI	<425µm	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)			%	%	%	%	%		
●	ATK_BH06	52D	16.50	5.3/5.5/6.5	5.2.7	25.4	25	13	12	68	C	
⊠	ATK_BH06	57D	18.00	5.3/5.5/6.5	5.2.7	23.5	51	21	30	93	C	
▲	ATK_BH06	60D	19.50	5.3/5.5/6.5	5.2.7	17.3	45	20	25	99	C	
★	ATK_BH07	11D	3.50	5.3/5.5/6.5	5.2.7	22.5	42	18	24	92	C	
⊙	ATK_BH07	21D	7.50	5.3/5.5/6.5	5.2.7	13.1	32	14	18	93	C	
✿	ATK_BH07	24B	8.00	5.3/5.5/6.5	5.2.7	18.0	35	18	17	92	C	
◉	ATK_BH07	37D	15.00	5.3/5.5/6.5	5.2.7	14.7	27	13	14	89	C	I
	ATK_BH07	64B	28.50	5.3/5.5/6.5	5.2.7	22.1	NP	NP	NP	53	C	
⊗	ATK_BH08A	4D	1.00	5.3/5.5/6.5	5.2.7	27.6	48	19	29	88	C	
⊕	ATK_BH08A	9B	2.00	5.3/5.5/6.5	5.2.7	18.5	38	17	21	96	C	
□	ATK_BH08A	15D	5.50	5.3/5.5/6.5	5.2.7	20.0	43	22	21	94	C	
⊠	ATK_BH08A	19D	7.50	5.3/5.5/6.5	5.2.7	14.7	31	17	14	87	C	
◓	ATK_BH09	10B	2.00	5.3/5.5/6.5	5.2.7	18.1	38	17	21	87	C	

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method; 5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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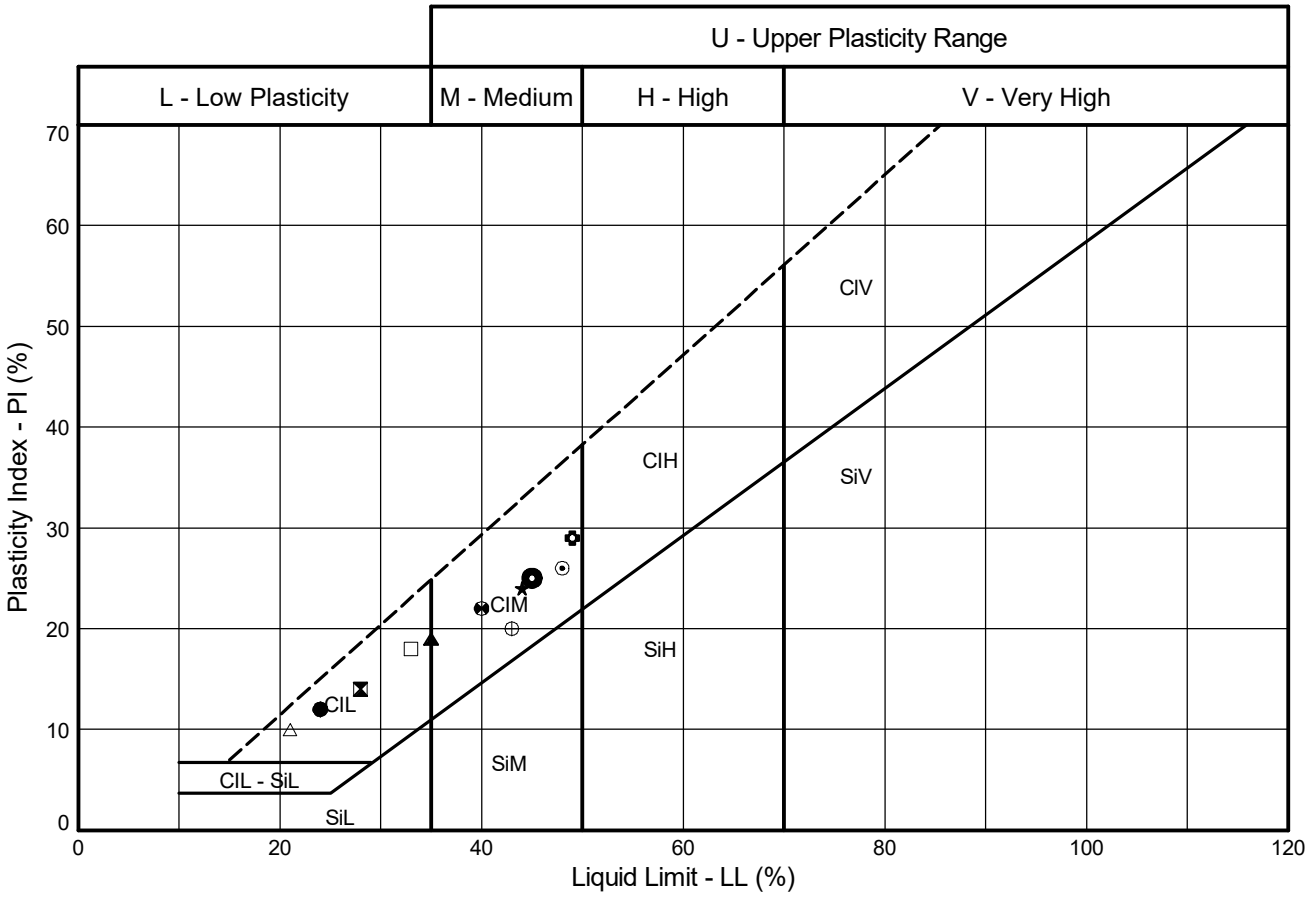
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PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A1:2021



Sample Identification				Test Method #	Preparation Method +	WC	LL	PL	PI	<425µm	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)			%	%	%	%	%		
●	ATK_BH09	12D	3.50	5.3.14/5.5/6.5	5.2.7	11.3	24	12	12	86	C	
⊠	ATK_BH09	20D	6.45	5.3/5.5/6.5	5.2.7	12.6	28	14	14	96	C	
▲	ATK_BH09	28D	9.45	5.3/5.5/6.5	5.2.7	17.3	35	16	19	93	C	
★	ATK_BH10	8B	1.20	5.3/5.5/6.5	5.2.7	21.9	44	20	24	96	C	
⊙	ATK_BH10	13D	3.50	5.3/5.5/6.5	5.2.7	23.2	48	22	26	100	C	
✿	ATK_BH10	21D	6.50	5.3/5.5/6.5	5.2.7	20.3	49	20	29	100	C	
◉	ATK_BH10	41B	15.00	5.3/5.5/6.5	5.2.7	21.7	45	20	25	89	C	
△	ATK_BH10	46UT	18.00	5.3/5.5/6.5	5.2.7	11.6	21	11	10	74	C	
	ATK_BH10	55B	21.00	5.3/5.5/6.5	5.2.7	7.6	NP	NP	NP	12	C	
⊕	ATK_BH11	7B	1.20	5.3/5.5/6.5	5.2.7	20.9	43	23	20	89	C	
□	ATK_BH11	20D	6.50	5.3/5.5/6.5	5.2.7	18.6	33	15	18	89	C	
⊗	ATK_BH11	28D	9.50	5.3/5.5/6.5	5.2.7	28.0	40	18	22	95	C	
◒	ATK_BH11	36D	14.00	5.3/5.5/6.5	5.2.7	15.1	24	12	12	82	C	

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method; 5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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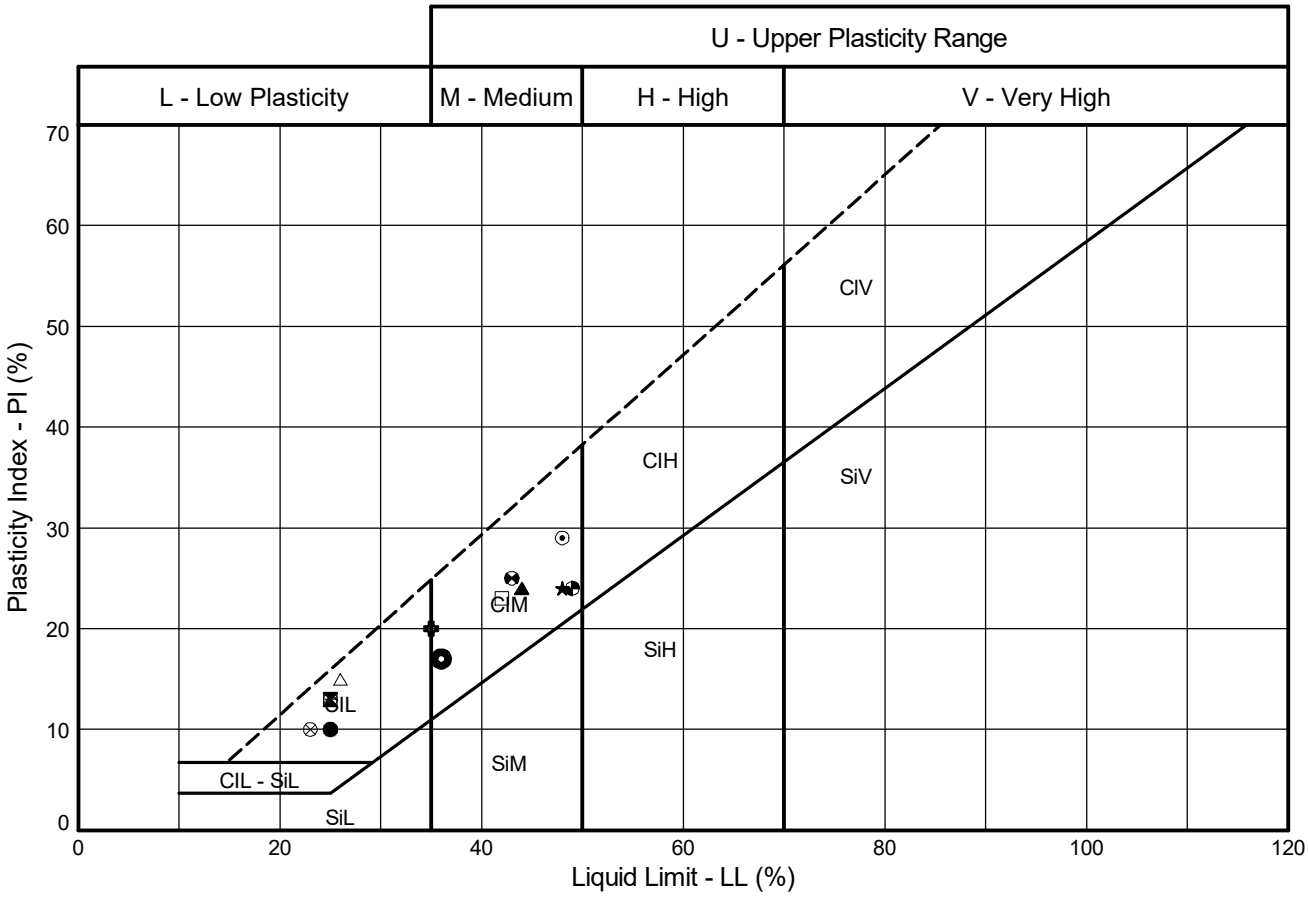
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PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A1:2021



Sample Identification				Test Method #	Preparation Method +	WC	LL	PL	PI	<425µm	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)			%	%	%	%	%		
●	ATK_BH11	42B	16.50	5.3/5.5/6.5	5.2.7	16.2	25	15	10	86	C	
⊠	ATK_BH11	48D	20.00	5.3/5.5/6.5	5.2.7	23.0	25	12	13	85	C	
▲	ATK_BH12	3D	0.50	5.3/5.5/6.5	5.2.7	19.2	44	20	24	97	C	
★	ATK_BH12	6B	1.00	5.3/5.5/6.5	5.2.7	20.5	48	24	24	87	C	
⊙	ATK_BH12	14D	3.50	5.3/5.5/6.5	5.2.7	16.2	48	19	29	95	C	
✿	ATK_BH12	28D	7.50	5.3/5.5/6.5	5.2.7	16.0	35	15	20	91	C	I
◉	ATK_BH12	35D	9.50	5.3/5.5/6.5	5.2.7	15.5	36	19	17	85	C	
△	ATK_BH12	47D	14.00	5.3/5.5/6.5	5.2.7	10.8	26	11	15	87	C	
⊗	ATK_BH12	60B	18.00	5.3/5.5/6.5	5.2.7	10.2	23	13	10	80	C	
⊕	ATK_BH12	80D	25.00	5.3/5.5/6.5	5.2.7	8.9	25	12	13	38	C	
□	ATK_TP01	8D	2.50	5.3/5.5/6.5	5.2.7	19.8	42	19	23	89	C	
⊠	ATK_TP01	12D	4.60	5.3/5.5/6.5	5.2.7	24.0	43	18	25	95	C	
◓	ATK_TP02	3D	2.40	5.3/5.5/6.5	5.2.7	54.5	49	25	24	71	C	

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method; 5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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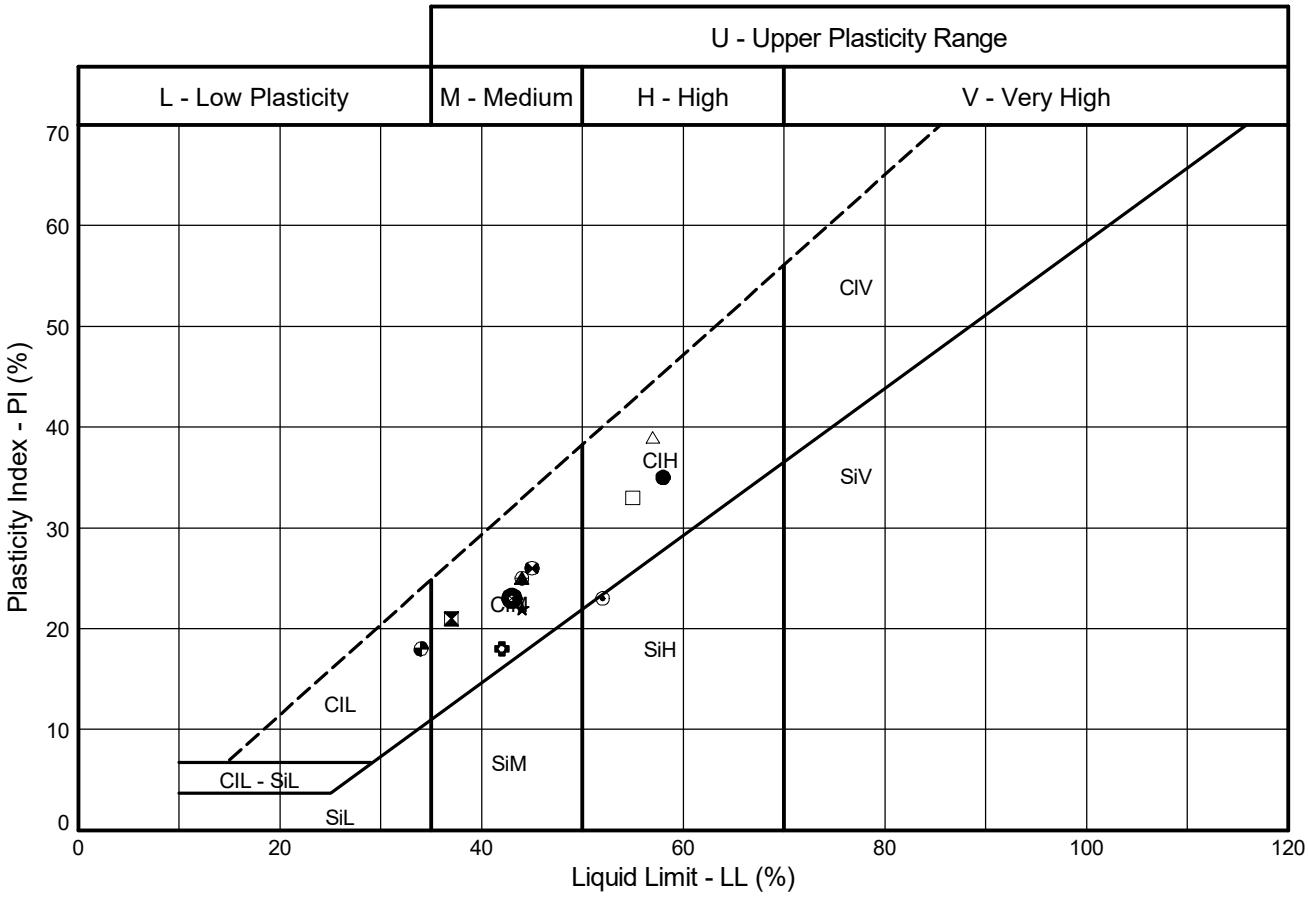
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PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A1:2021



Sample Identification				Test Method #	Preparation Method +	WC	LL	PL	PI	<425µm	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)			%	%	%	%	%		
●	ATK_TP03	9B	2.20	5.3/5.5/6.5	5.2.7	27.6	58	23	35	91	C	
⊠	ATK_TP03	12D	3.50	5.3/5.5/6.5	5.2.7	15.4	37	16	21	92	C	
▲	ATK_TP04	6D	1.50	5.3/5.5/6.5	5.2.7	18.4	44	19	25	92	C	
★	ATK_TP04	8D	2.50	5.3/5.5/6.5	5.2.7	19.9	44	22	22	85	C	
⊙	ATK_TP04	11B	4.50	5.3/5.5/6.5	5.2.7	25.7	52	29	23	92	C	
✿	ATK_TP07	3D	1.20	5.3/5.5/6.5	5.2.7	16.6	42	24	18	97	C	I
◉	ATK_TP07	102B	2.50	5.3/5.5/6.5	5.2.7	18.9	43	20	23	95	C	
△	ATK_TP07	104B	4.40	5.3/5.5/6.5	5.2.7	26.2	57	18	39	99	C	
⊗	ATK_TP08	6D	1.80	5.3/5.5/6.5	5.2.7	18.4	43	20	23	97	C	
⊕	ATK_TP09	3D	1.30	5.3/5.5/6.5	5.2.7	19.0	44	19	25	96	C	
□	ATK_TP09	2B	3.40	5.3/5.5/6.5	5.2.7	24.9	55	22	33	100	C	
⊠	ATK_TP09	3B	4.60	5.3/5.5/6.5	5.2.7	23.6	45	19	26	98	C	
◓	ATK_TP10	3D	1.60	5.3/5.5/6.5	5.2.7	19.1	34	16	18	95	C	I

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method; 5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

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5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

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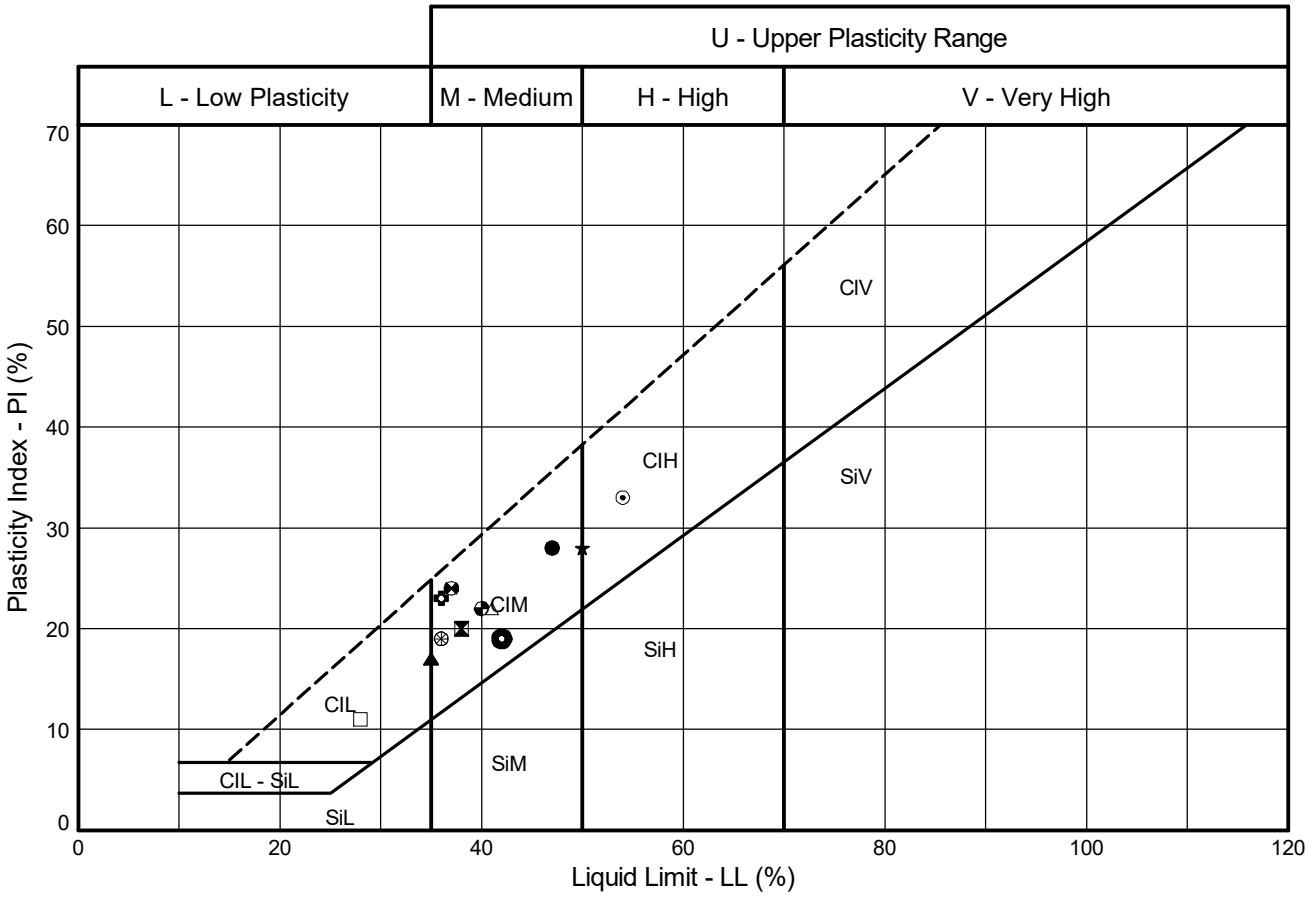
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PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A1:2021



Sample Identification				Test Method #	Preparation Method +	WC	LL	PL	PI	<425µm	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)			%	%	%	%	%		
●	ATK_TP10	5D	3.50	5.3/5.5/6.5	5.2.7	9.7	47	19	28	95	C	
⊠	ATK_TP11	6D	1.50	5.3/5.5/6.5	5.2.7	16.3	38	18	20	90	C	
▲	ATK_TP11	8D	2.50	5.3/5.5/6.5	5.2.7	16.6	35	18	17	96	C	
★	ATK_TP11	10D	3.50	5.3/5.5/6.5	5.2.7	20.0	50	22	28	99	C	
⊙	ATK_TP11	12D	4.20	5.3/5.5/6.5	5.2.7	25.8	54	21	33	100	C	
✿	ATK_TP12	3D	0.80	5.3/5.5/6.5	5.2.7	16.0	36	13	23	96	C	I
◉	ATK_TP13	2B	0.60	5.3/5.5/6.5	5.2.1	22.9	42	23	19	86	C	
△	ATK_WS01	6B	4.00	5.3/5.5/6.5	5.2.7	20.1	41	19	22	95	C	
⊗	ATK_WS02	5B	2.00	5.3/5.5/6.5	5.2.7	12.2	36	17	19	93	C	
⊕	ATK_WS02	7B	4.00	5.3.14/5.5/6.5	5.2.7	15.5	36	17	19	91	C	
□	ATK_WS03	1B	1.20	5.3/5.5/6.5	5.2.7	18.4	28	17	11	93	C	
⊠	ATK_WS03	3B	3.00	5.3/5.5/6.5	5.2.7	14.6	37	13	24	85	C	
◓	ATK_WS04	2B	2.00	5.3/5.5/6.5	5.2.7	14.6	40	18	22	96	C	

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method; 5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

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Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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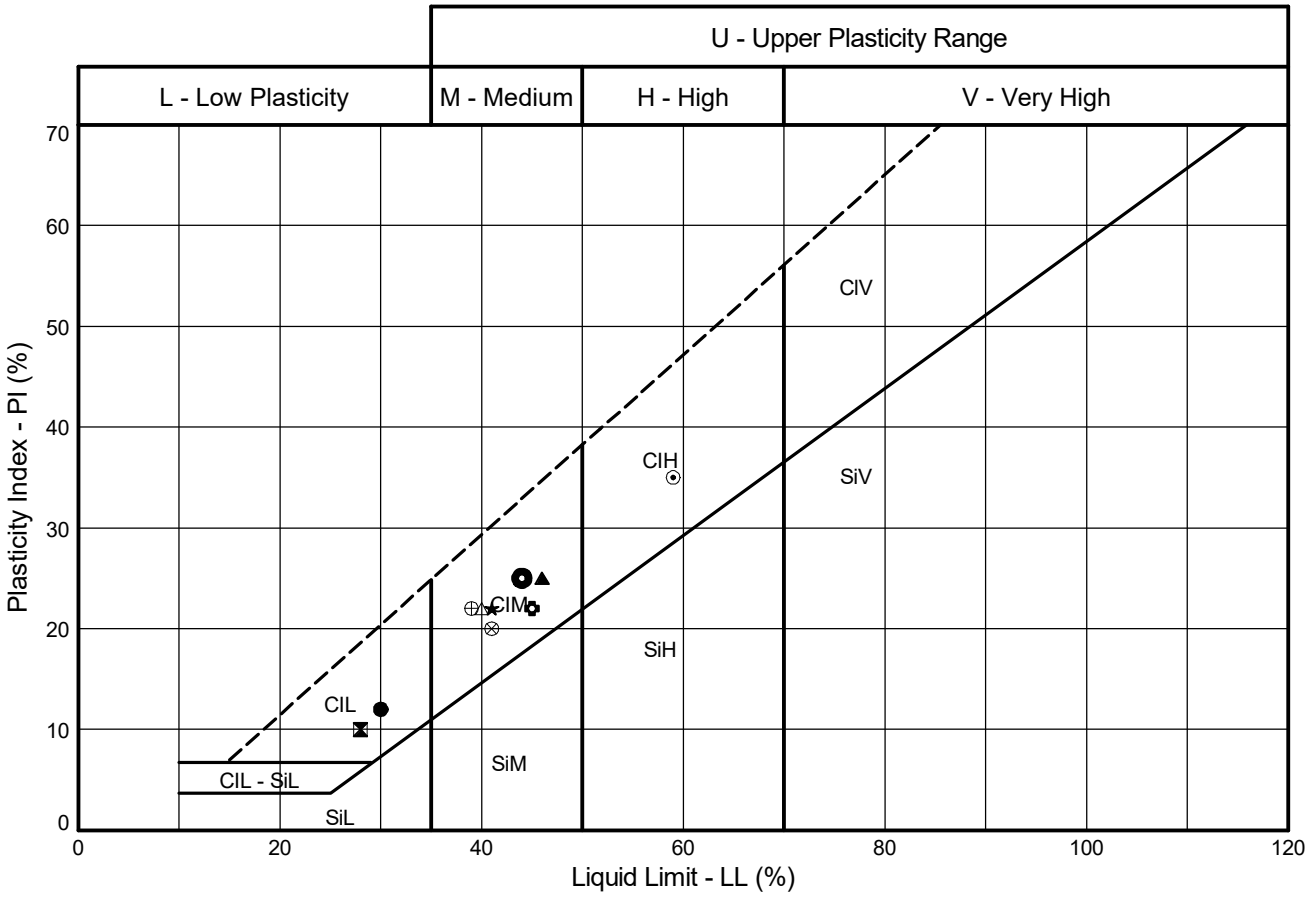
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PI vs LL CHART

According to BS EN 14688-2:2018
Testing in accordance with BS EN ISO 17892-12:2018+A1:2021



Sample Identification				Test Method #	Preparation Method +	WC	LL	PL	PI	<425µm	Lab location	Notes
	Exploratory Position ID	Sample	Depth (m)			%	%	%	%	%		
●	ATK_WS04	3B	3.00	5.3/5.5/6.5	5.2.7	22.4	30	18	12	98	C	
⊠	ATK_WS05	5B	1.20	5.3/5.5/6.5	5.2.7	22.8	28	18	10	70	C	
▲	ATK_WS05	6B	2.00	5.3/5.5/6.5	5.2.7	16.3	46	21	25	98	C	
★	ATK_WS06	7B	2.00	5.3/5.5/6.5	5.2.7	13.5	41	19	22	95	C	
⊙	ATK_WS06	11B	4.00	5.3/5.5/6.5	5.2.7	23.9	59	24	35	99	C	
✿	ATK_WS07	2B	1.70	5.3/5.5/6.5	5.2.7	17.6	45	23	22	81	C	
●	ATK_WS07	3B	2.50	5.3/5.5/6.5	5.2.7	19.8	44	19	25	91	C	
△	ATK_WS08	2DSPT	2.00	5.3/5.5/6.5	5.2.7	22.5	40	18	22	75	C	
⊗	ATK_WS08	6B	3.00	5.3/5.5/6.5	5.2.7	18.0	41	21	20	87	C	
⊕	ATK_WS08	7B	4.00	5.3/5.5/6.5	5.2.7	19.1	39	17	22	92	C	

Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.3 - Cone Penetrometer Method; 5.3.14 - One-Point Cone Penetrometer Method; 5.4 - Casagrande Method; 5.5 - Plastic Limit Method; 6.5 - Plasticity Index

Water Content (WC) tested in accordance with BS EN ISO 17892-1:2014

+ Tested in accordance with the following clauses of BS EN ISO 17892-12:2018+A1:2021
5.2.1 - Natural State and 5.2.7 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic, I = Increasing WC, D = Decreasing WC.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

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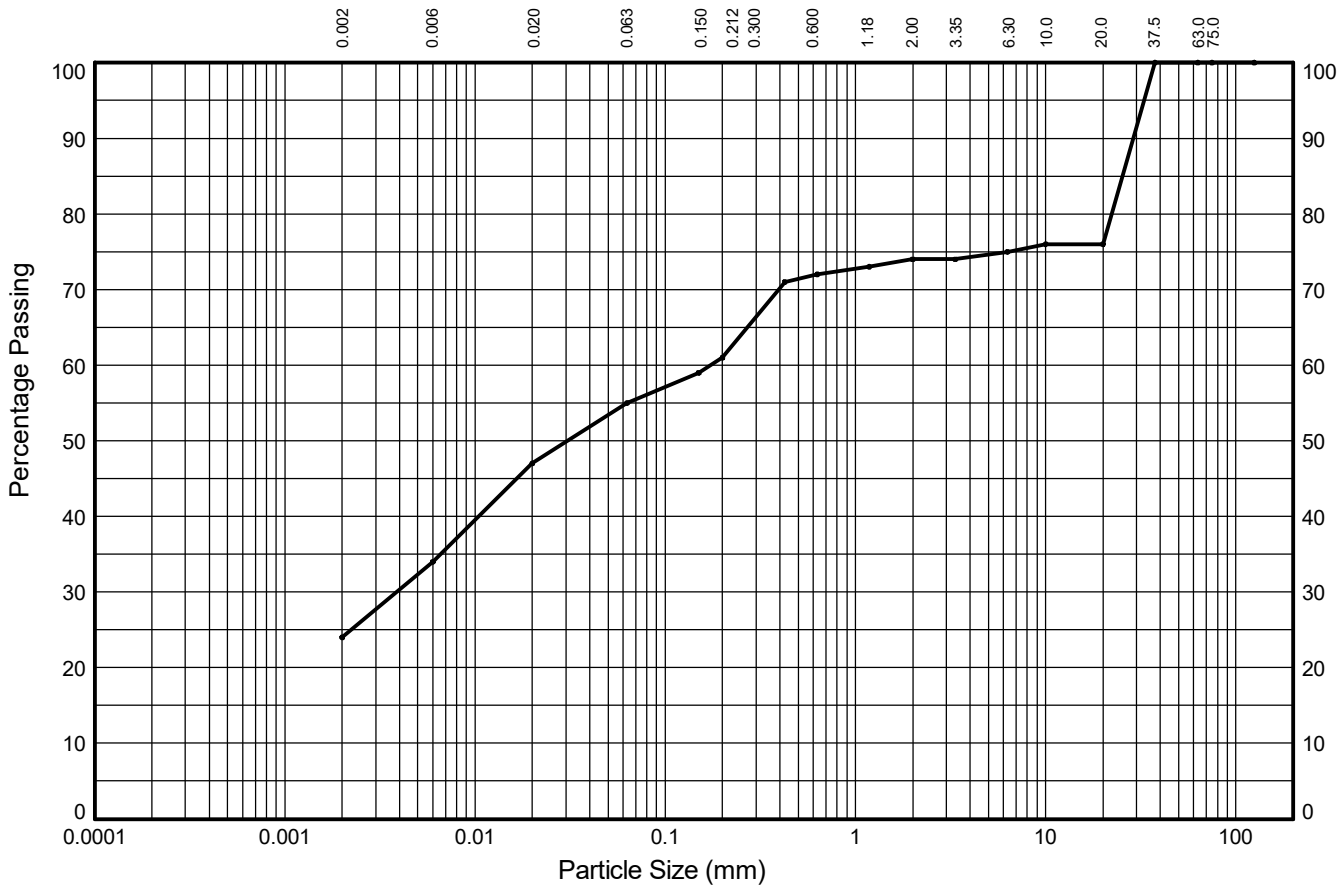
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PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Position ID: **ATK_BH02a** Sample Ref: **36** Sample Type: **B** Depth (m): **12.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	10%	13%	8%	6%	11%	2%	1%	1%	24%	
	SILT			SAND			GRAVEL			
24%	31%			19%			26%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**76**
10.0	**76**
6.30	**75**
3.35	**74**
2.00	**74**
1.18	**73**
0.630	**72**
0.425	**71**
0.200	**61**
0.150	**59**
0.063	**55**

Particle Diameter (mm)	Percent Passing (%)
0.02	**47**
0.006	**34**
0.002	**24**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.004**
D_{50} (mm)	**0.031**
D_{60} (mm)	**0.173**
D_{85} (mm)	**25.317**
D_{90} (mm)	**28.859**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly sandy slightly gravelly silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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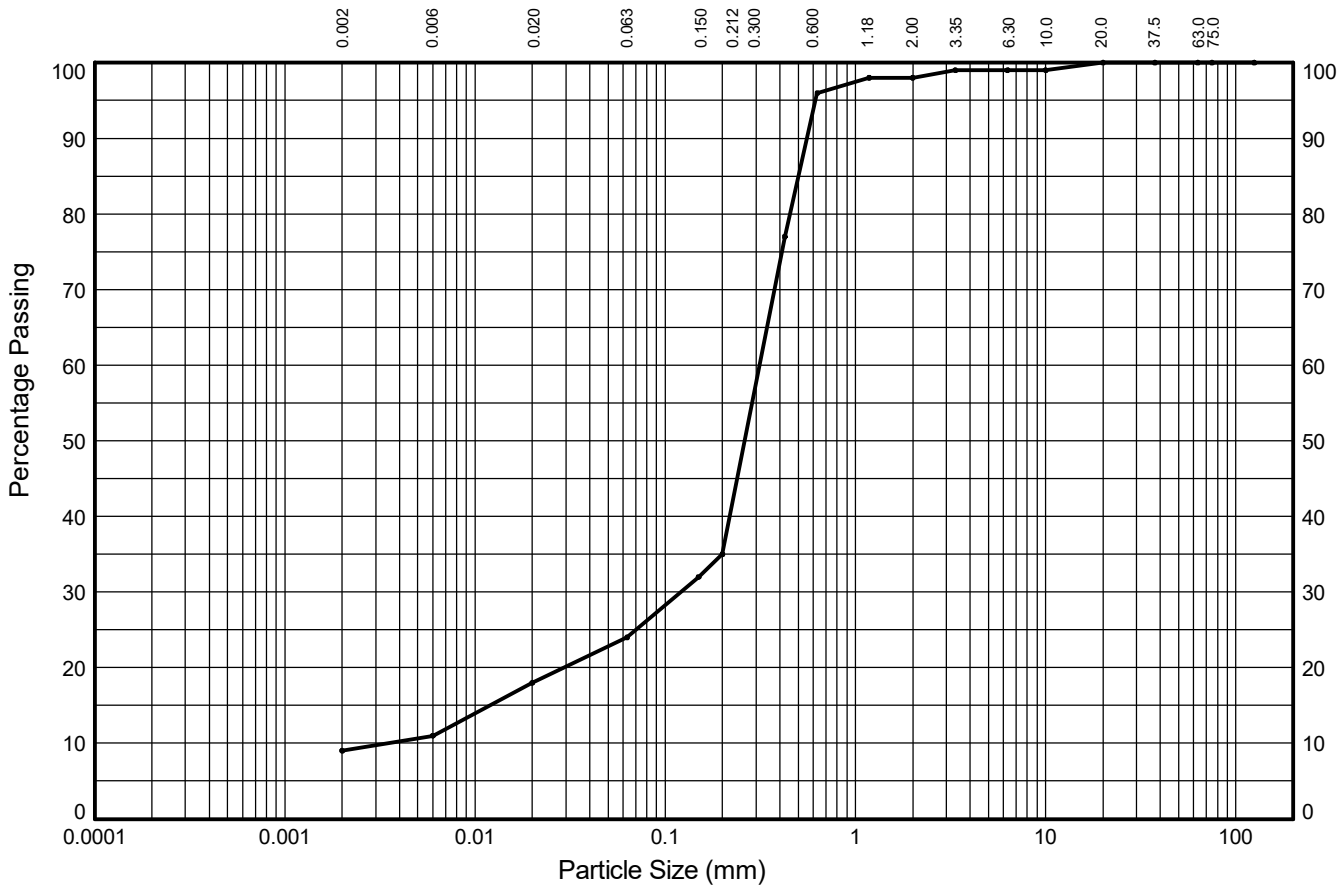
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PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **ATK_BH02a** Sample Ref: **42** Sample Type: **D** Depth (m): **15.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	7%	6%	11%	61%	2%	1%	1%	0%	
	SILT			SAND			GRAVEL			
9%	15%			74%			2%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**99**
6.30	**99**
3.35	**99**
2.00	**98**
1.18	**98**
0.630	**96**
0.425	**77**
0.200	**35**
0.150	**32**
0.063	**24**

Particle Diameter (mm)	Percent Passing (%)
0.02	**18**
0.006	**11**
0.002	**9**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.003**
D_{15} (mm)	**0.012**
D_{30} (mm)	**0.121**
D_{50} (mm)	**0.262**
D_{60} (mm)	**0.313**
D_{85} (mm)	**0.502**
D_{90} (mm)	**0.556**
C_U	**90**
C_C	**13**

Soil Description:

Brown slightly gravelly very clayey SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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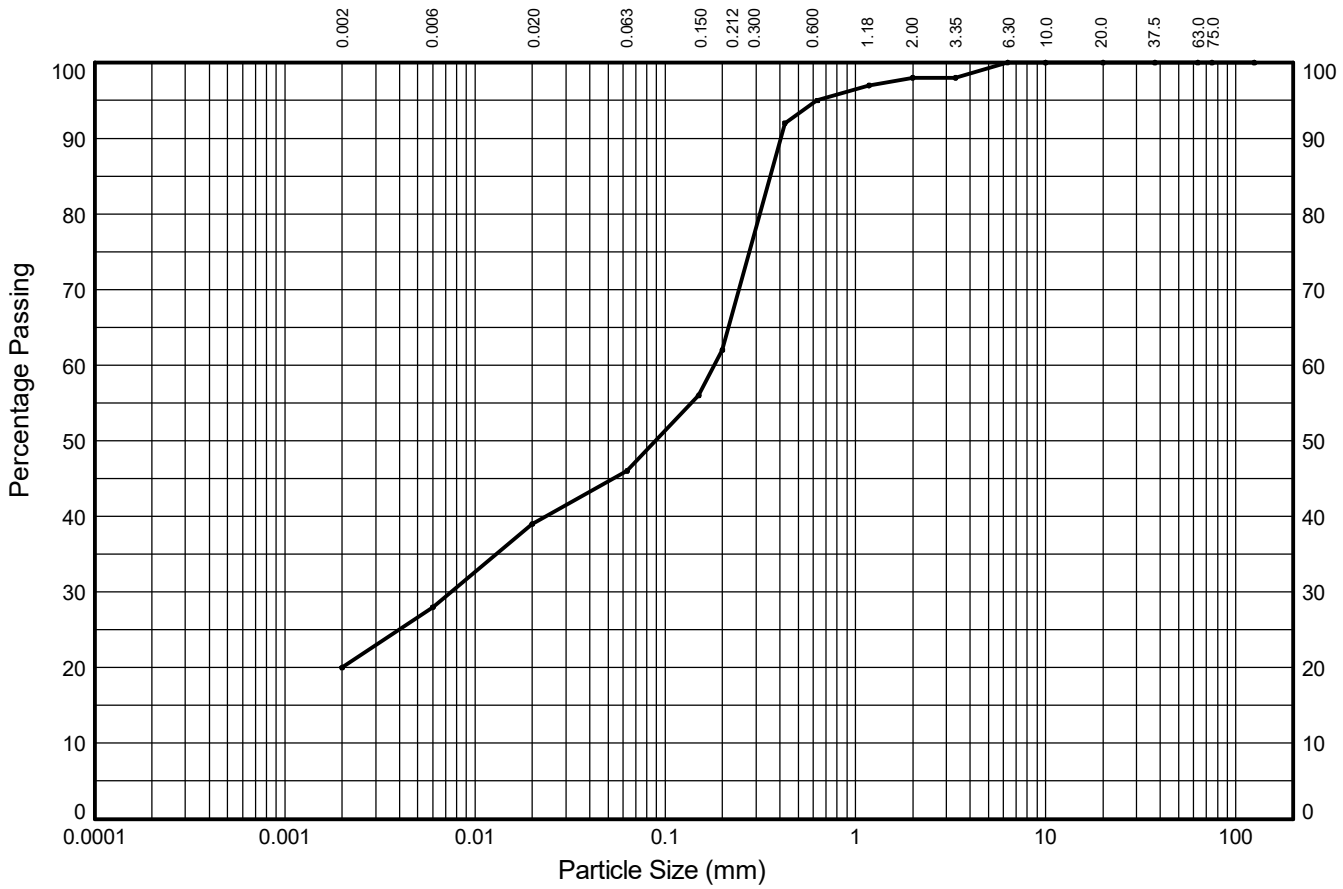
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PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **ATK_BH04** Sample Ref: **32** Sample Type: **B** Depth (m): **10.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	8%	11%	7%	16%	33%	3%	2%	0%	0%	
	SILT			SAND			GRAVEL			
20%	26%			52%			2%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**100**
3.35	**98**
2.00	**98**
1.18	**97**
0.630	**95**
0.425	**92**
0.200	**62**
0.150	**56**
0.063	**46**

Particle Diameter (mm)	Percent Passing (%)
0.02	**39**
0.006	**28**
0.002	**20**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.007**
D_{50} (mm)	**0.089**
D_{60} (mm)	**0.182**
D_{85} (mm)	**0.356**
D_{90} (mm)	**0.404**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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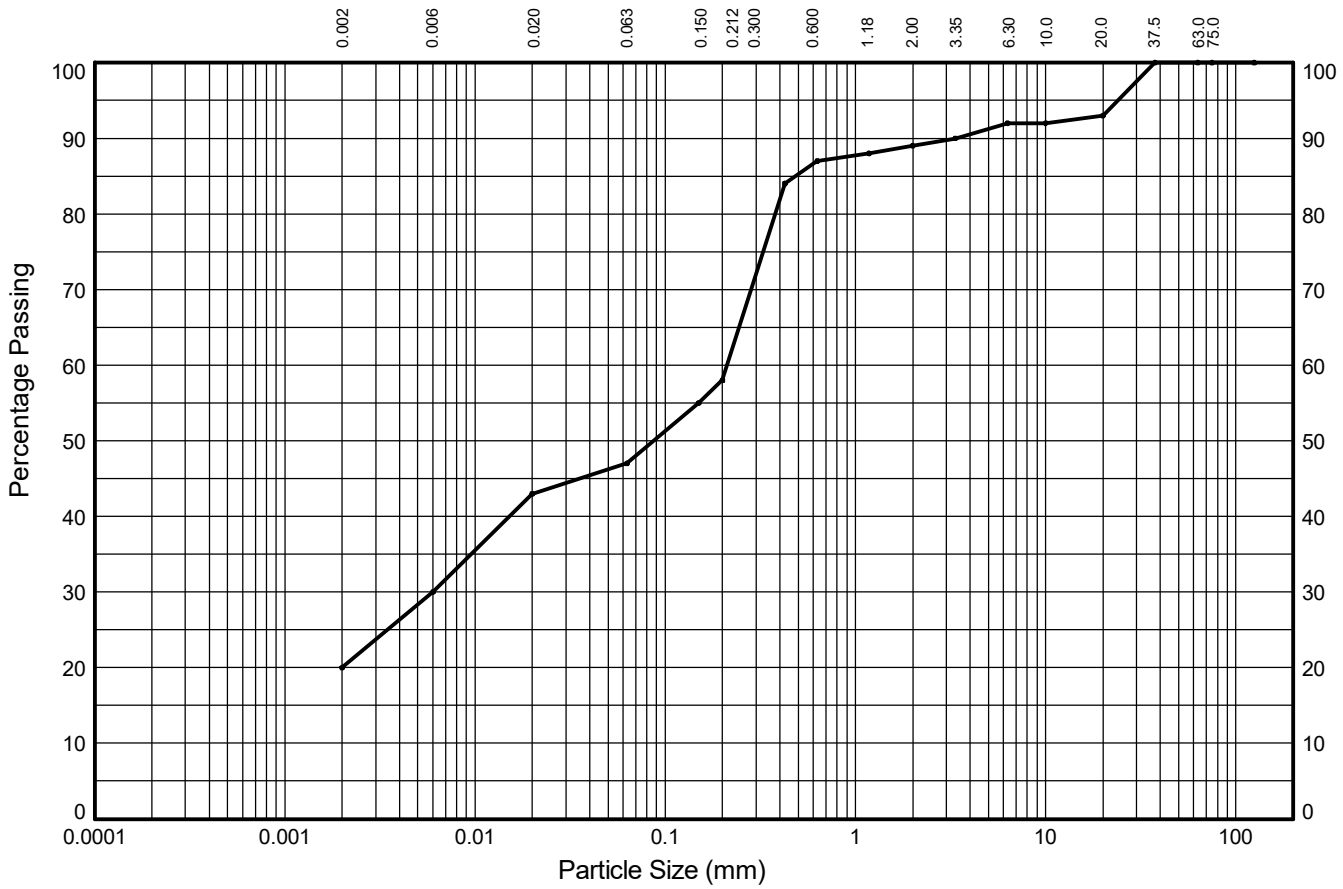
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PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **ATK_BH04** Sample Ref: **37** Sample Type: **B** Depth (m): **13.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	10%	13%	4%	11%	29%	2%	3%	1%	7%	
	SILT			SAND			GRAVEL			
20%	27%			42%			11%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**93**
10.0	**92**
6.30	**92**
3.35	**90**
2.00	**89**
1.18	**88**
0.630	**87**
0.425	**84**
0.200	**58**
0.150	**55**
0.063	**47**

Particle Diameter (mm)	Percent Passing (%)
0.02	**43**
0.006	**30**
0.002	**20**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**0.006**
D_{50} (mm)	**0.087**
D_{60} (mm)	**0.212**
D_{85} (mm)	**0.485**
D_{90} (mm)	**3.350**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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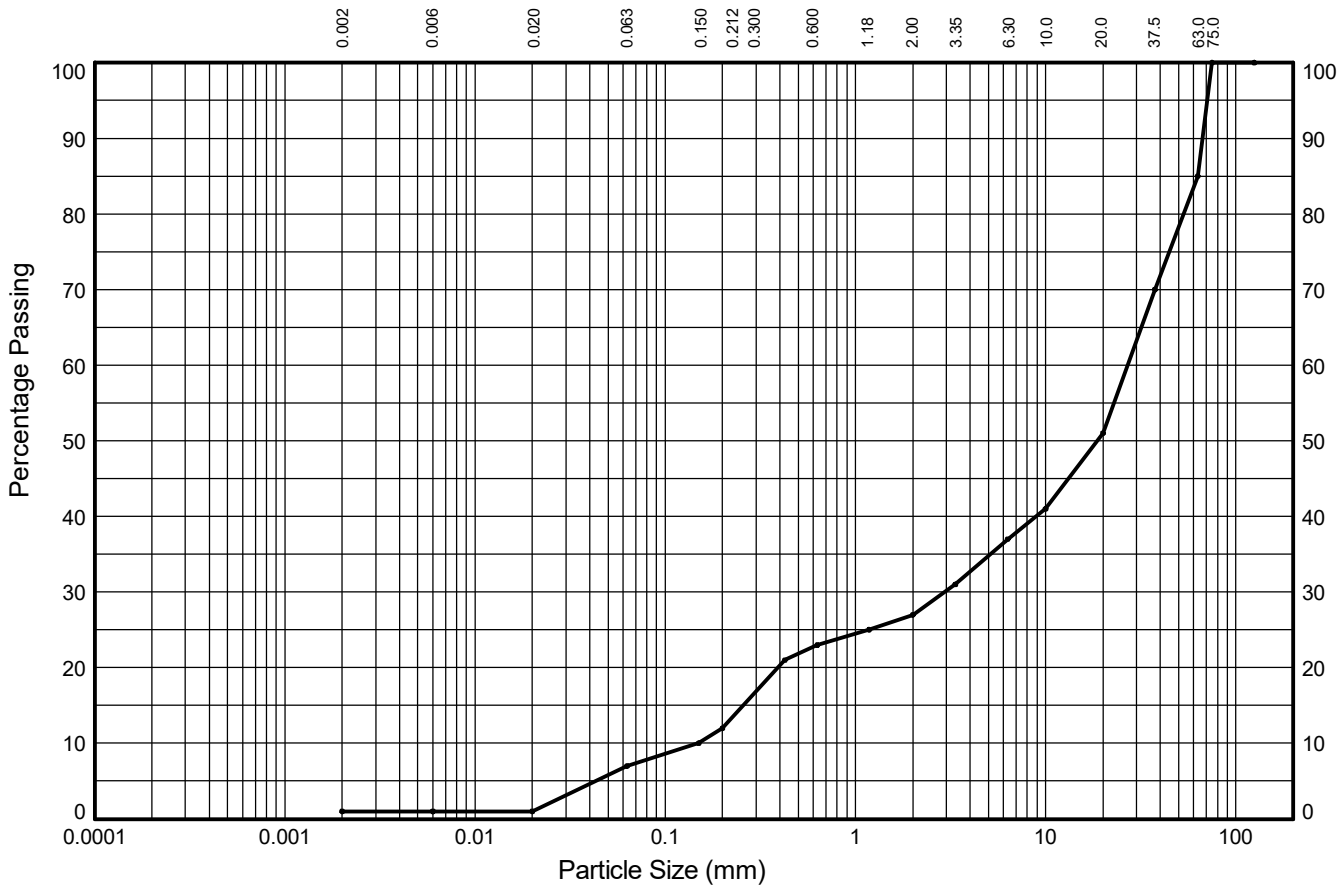
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PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

NON-STANDARD TEST

Position ID: **ATK_BH04** Sample Ref: **50** Sample Type: **B** Depth (m): **20.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	0%	0%	6%	5%	11%	4%	10%	14%	34%	
	SILT			SAND			GRAVEL			
1%	6%			20%			58%			15%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**85**
37.5	**70**
20.0	**51**
10.0	**41**
6.30	**37**
3.35	**31**
2.00	**27**
1.18	**25**
0.630	**23**
0.425	**21**
0.200	**12**
0.150	**10**
0.063	**7**

Particle Diameter (mm)	Percent Passing (%)
0.02	**1**
0.006	**1**
0.002	**1**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.150**
D_{15} (mm)	**0.257**
D_{30} (mm)	**2.945**
D_{50} (mm)	**18.661**
D_{60} (mm)	**26.937**
D_{85} (mm)	**63.000**
D_{90} (mm)	**66.770**
C_U	**180**
C_C	**2**

Soil Description:

Brown sandy silty GRAVEL with medium cobble content

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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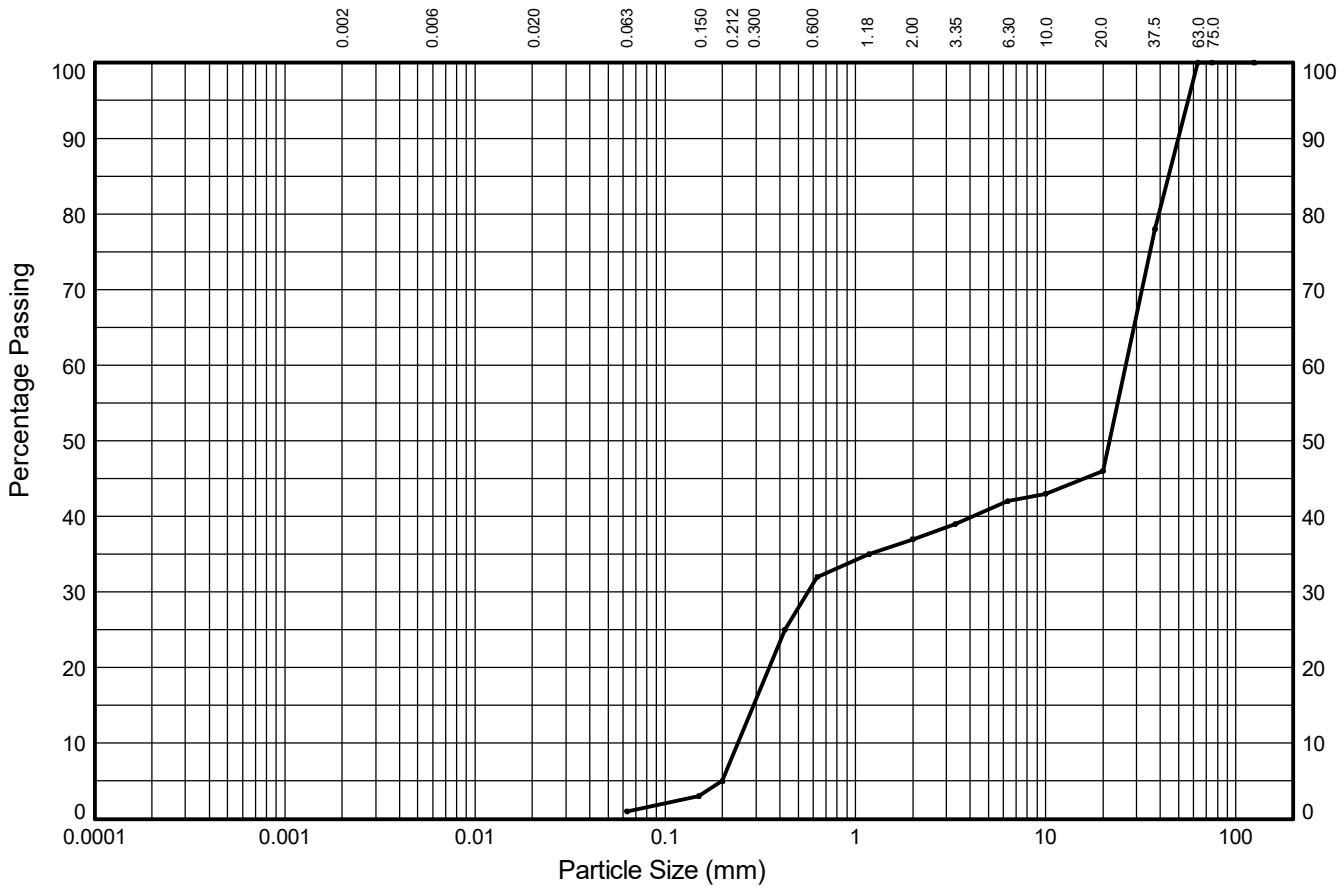
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PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Position ID: **ATK_BH04** Sample Ref: **52** Sample Type: **B** Depth (m): **23.50**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	4%	27%	5%	5%	4%	54%	
	SILT			SAND			GRAVEL			
1%				36%			63%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**78**
20.0	**46**
10.0	**43**
6.30	**42**
3.35	**39**
2.00	**37**
1.18	**35**
0.630	**32**
0.425	**25**
0.200	**5**
0.150	**3**
0.063	**1**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.241**
D_{15} (mm)	**0.292**
D_{30} (mm)	**0.563**
D_{50} (mm)	**21.635**
D_{60} (mm)	**26.331**
D_{85} (mm)	**44.230**
D_{90} (mm)	**49.765**
C_U	**109**
C_C	**0.05**

Soil Description:

Brown orange very sandy sligtly clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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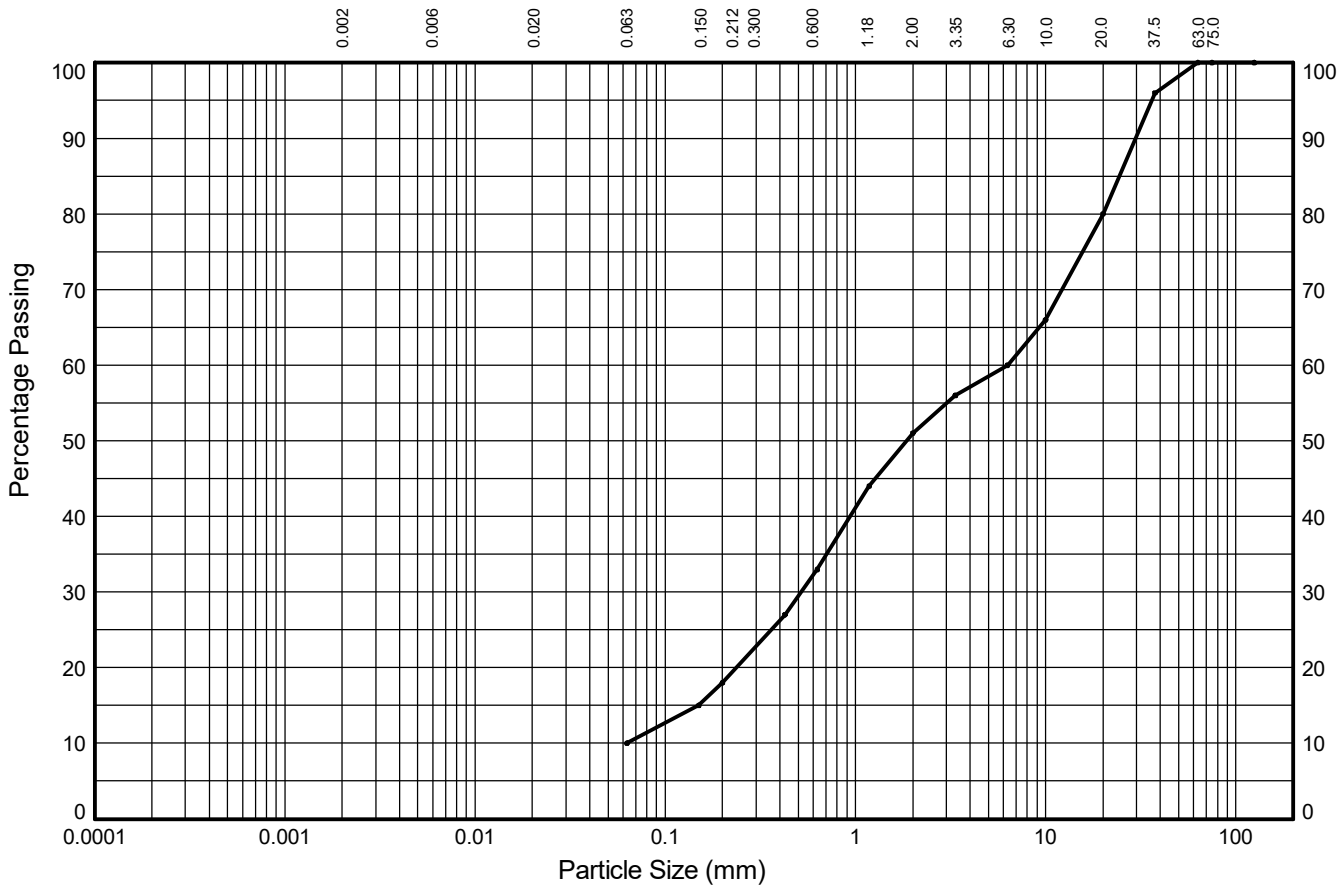
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PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Position ID: **ATK_BH05** Sample Ref: **46** Sample Type: **B** Depth (m): **18.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	8%	15%	18%	9%	20%	20%	
	SILT			SAND			GRAVEL			
10%				41%			49%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**96**
20.0	**80**
10.0	**66**
6.30	**60**
3.35	**56**
2.00	**51**
1.18	**44**
0.630	**33**
0.425	**27**
0.200	**18**
0.150	**15**
0.063	**10**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.063**
D_{15} (mm)	**0.150**
D_{30} (mm)	**0.517**
D_{50} (mm)	**1.855**
D_{60} (mm)	**6.300**
D_{85} (mm)	**24.341**
D_{90} (mm)	**29.625**
C_U	**100**
C_C	**0.67**

Soil Description:

Brown very sandy clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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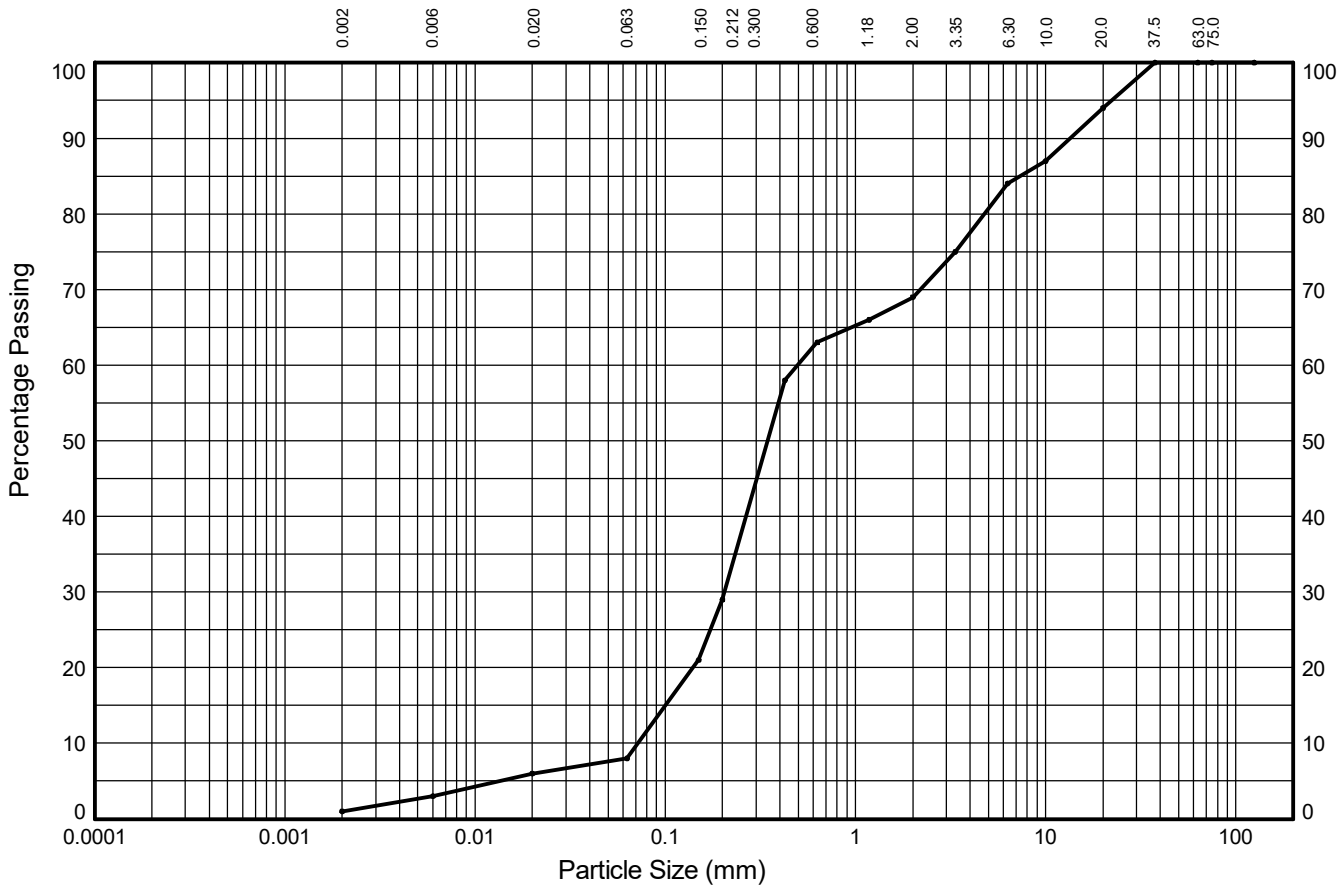
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PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **ATK_BH05** Sample Ref: **62** Sample Type: **B** Depth (m): **24.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	2%	3%	2%	21%	34%	6%	15%	10%	6%	
	SILT			SAND			GRAVEL			
1%	7%			61%			31%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**94**
10.0	**87**
6.30	**84**
3.35	**75**
2.00	**69**
1.18	**66**
0.630	**63**
0.425	**58**
0.200	**29**
0.150	**21**
0.063	**8**

Particle Diameter (mm)	Percent Passing (%)
0.02	**6**
0.006	**3**
0.002	**1**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.072**
D_{15} (mm)	**0.101**
D_{30} (mm)	**0.205**
D_{50} (mm)	**0.345**
D_{60} (mm)	**0.497**
D_{85} (mm)	**7.349**
D_{90} (mm)	**13.459**
C_U	**6.9**
C_C	**1.2**

Soil Description:

Brown grey very gravelly silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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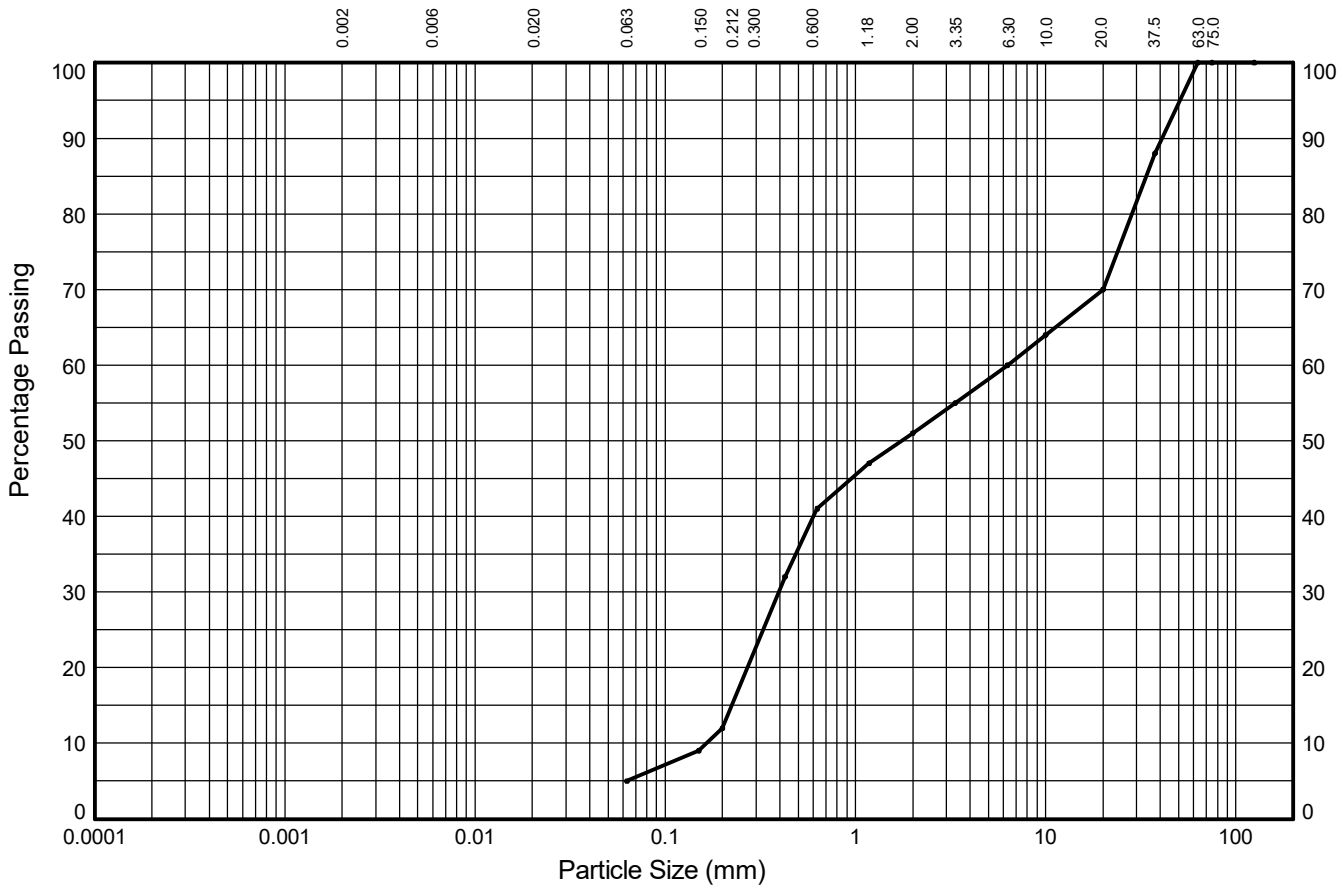
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PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2 of BS EN ISO 17892:Part 4:2016
NON-STANDARD TEST

Position ID: **ATK_BH06** Sample Ref: **79** Sample Type: **B** Depth (m): **26.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	-	-	-	7%	29%	10%	9%	10%	30%	
	SILT			SAND			GRAVEL			
5%				46%			49%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**88**
20.0	**70**
10.0	**64**
6.30	**60**
3.35	**55**
2.00	**51**
1.18	**47**
0.630	**41**
0.425	**32**
0.200	**12**
0.150	**9**
0.063	**5**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.165**
D_{15} (mm)	**0.224**
D_{30} (mm)	**0.394**
D_{50} (mm)	**1.753**
D_{60} (mm)	**6.300**
D_{85} (mm)	**33.770**
D_{90} (mm)	**40.887**
C_U	**38**
C_C	**0.15**

Soil Description:

Brown very sandy clayey GRAVEL

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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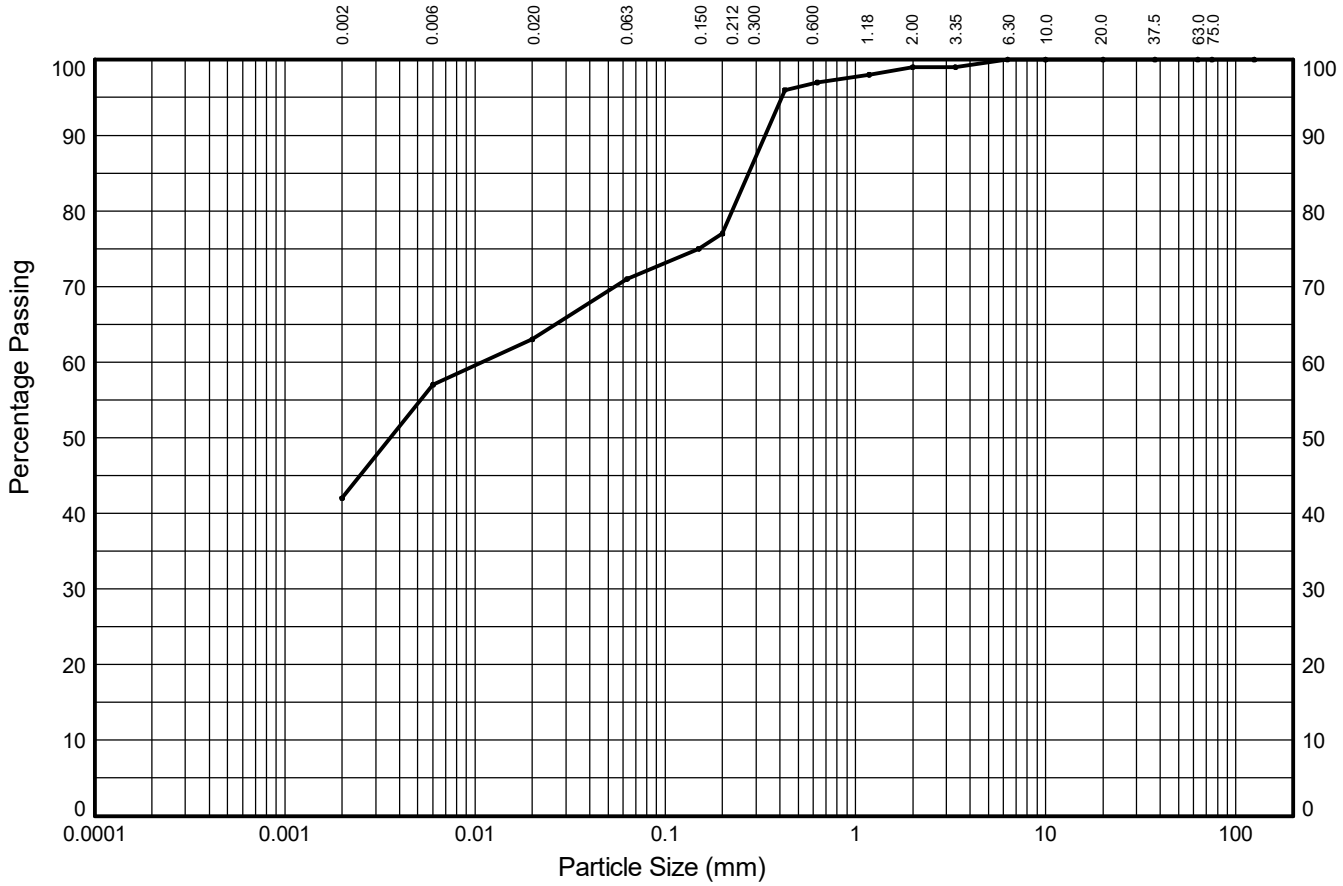
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PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **ATK_BH10** Sample Ref: **41** Sample Type: **B** Depth (m): **15.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	15%	6%	8%	6%	20%	2%	1%	0%	0%	
	SILT			SAND			GRAVEL			
42%	29%			28%			1%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**100**
6.30	**100**
3.35	**99**
2.00	**99**
1.18	**98**
0.630	**97**
0.425	**96**
0.200	**77**
0.150	**75**
0.063	**71**

Particle Diameter (mm)	Percent Passing (%)
0.02	**63**
0.006	**57**
0.002	**42**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**NA**
D_{15} (mm)	**NA**
D_{30} (mm)	**NA**
D_{50} (mm)	**0.004**
D_{60} (mm)	**0.011**
D_{85} (mm)	**0.275**
D_{90} (mm)	**0.335**
C_U	**NA**
C_C	**NA**

Soil Description:

Brown slightly gravelly slightly sandy silty CLAY

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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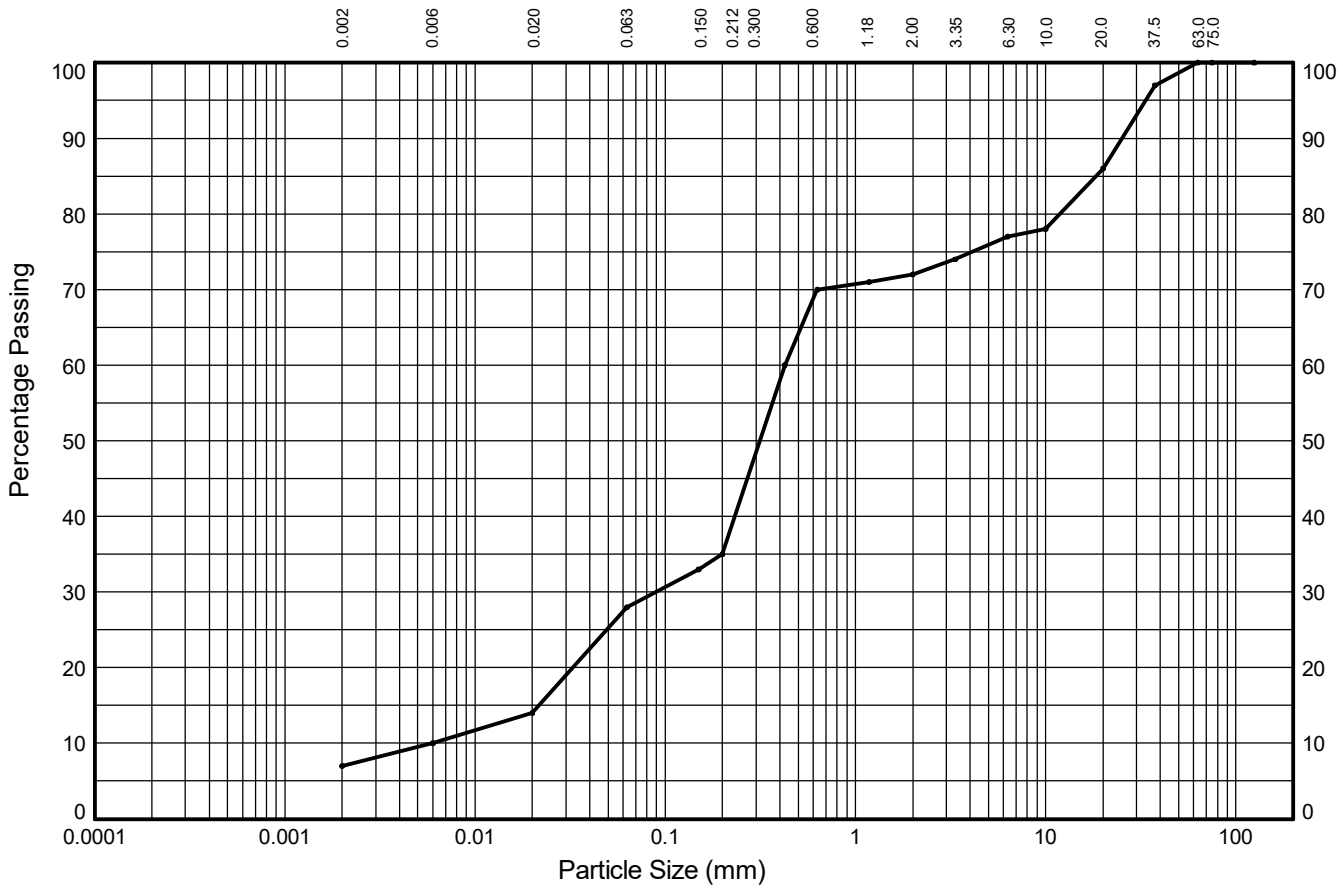
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PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 5.2, 5.4 of BS EN ISO 17892:Part 4:2016

Position ID: **ATK_BH12** Sample Ref: **79** Sample Type: **B** Depth (m): **24.00**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	3%	4%	14%	7%	35%	2%	5%	9%	14%	
	SILT			SAND			GRAVEL			
7%	21%			44%			28%			0%

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**97**
20.0	**86**
10.0	**78**
6.30	**77**
3.35	**74**
2.00	**72**
1.18	**71**
0.630	**70**
0.425	**60**
0.200	**35**
0.150	**33**
0.063	**28**

Particle Diameter (mm)	Percent Passing (%)
0.02	**14**
0.006	**10**
0.002	**7**

Sedimentation sample was not pre-treated

Coefficients	
D_{10} (mm)	**0.006**
D_{15} (mm)	**0.022**
D_{30} (mm)	**0.089**
D_{50} (mm)	**0.314**
D_{60} (mm)	**0.425**
D_{85} (mm)	**18.340**
D_{90} (mm)	**25.136**
C_U	**71**
C_C	**3**

Soil Description:

Brown very gravelly very silty SAND

Key: C_U = Uniformity coefficient. C_C = Coefficient of curvature as defined in BS EN ISO 14688-2:2018

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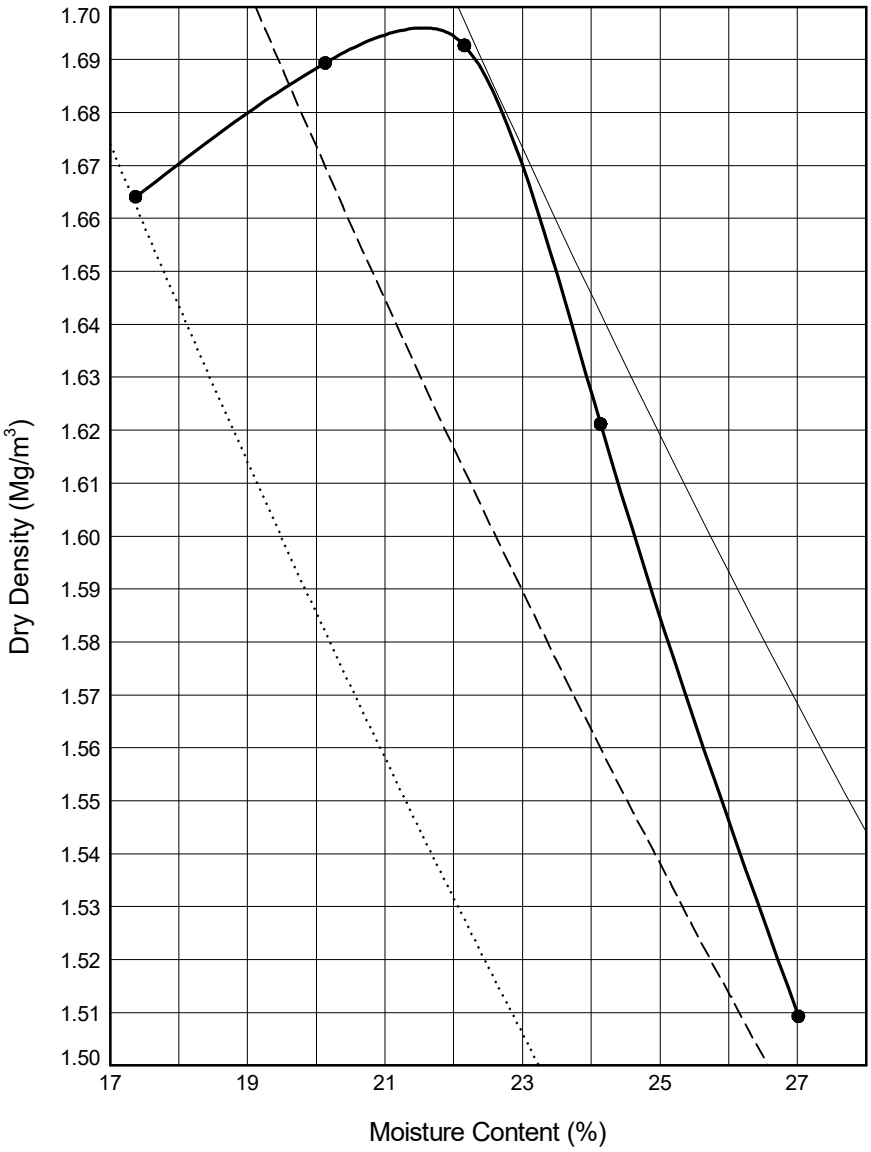
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Position ID: **ATK_TP01** Sample Ref: **7** Sample Type: **B** Depth (m): **2.50**



Initial Sample Conditions			Test Details		Test Results		
Initial Moisture Content (%)	:	**22**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	:	**1.70**
% Retained on 37.5mm BS Sieve	:	**0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	:	**22**
% Retained on 20.0mm BS Sieve	:	**0**	Type of Mould	: **1 LITRE**	Method Used: **Clause 3.3**		
Particle Density - assumed (Mg/m^3)	:	**2.72**			Remarks:		
Size of Soil Pieces	:	**<20mm**	Separate samples were used.				

Sample Description	Key to Air Voids Lines		
Brown slightly sandy slightly gravelly CLAY	——— 0%	– – – – 5%	····· 10%

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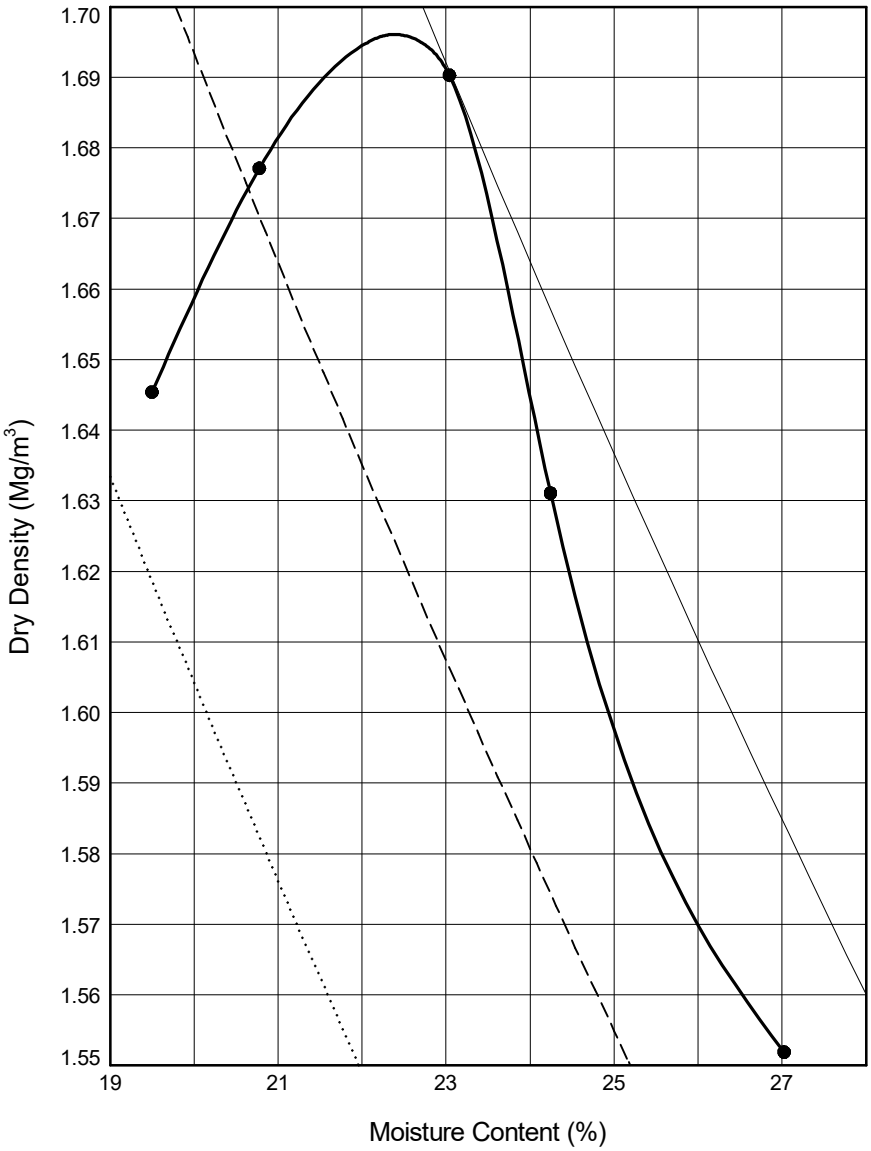
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Position ID: **ATK_TP01** Sample Ref: **11** Sample Type: **B** Depth (m): **4.60**



Initial Sample Conditions			Test Details		Test Results		
Initial Moisture Content (%)	:	**24**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	:	**1.70**
% Retained on 37.5mm BS Sieve	:	**0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	:	**22**
% Retained on 20.0mm BS Sieve	:	**1**	Type of Mould	: **1 LITRE**	Method Used: **Clause 3.3**		
Particle Density - assumed (Mg/m^3)	:	**2.77**			Remarks:		
Size of Soil Pieces	:	**<20mm**	Separate samples were used.				

Sample Description	Key to Air Voids Lines		
Brown slightly sandy slightly gravelly CLAY	——— 0%	– – – – 5%	····· 10%

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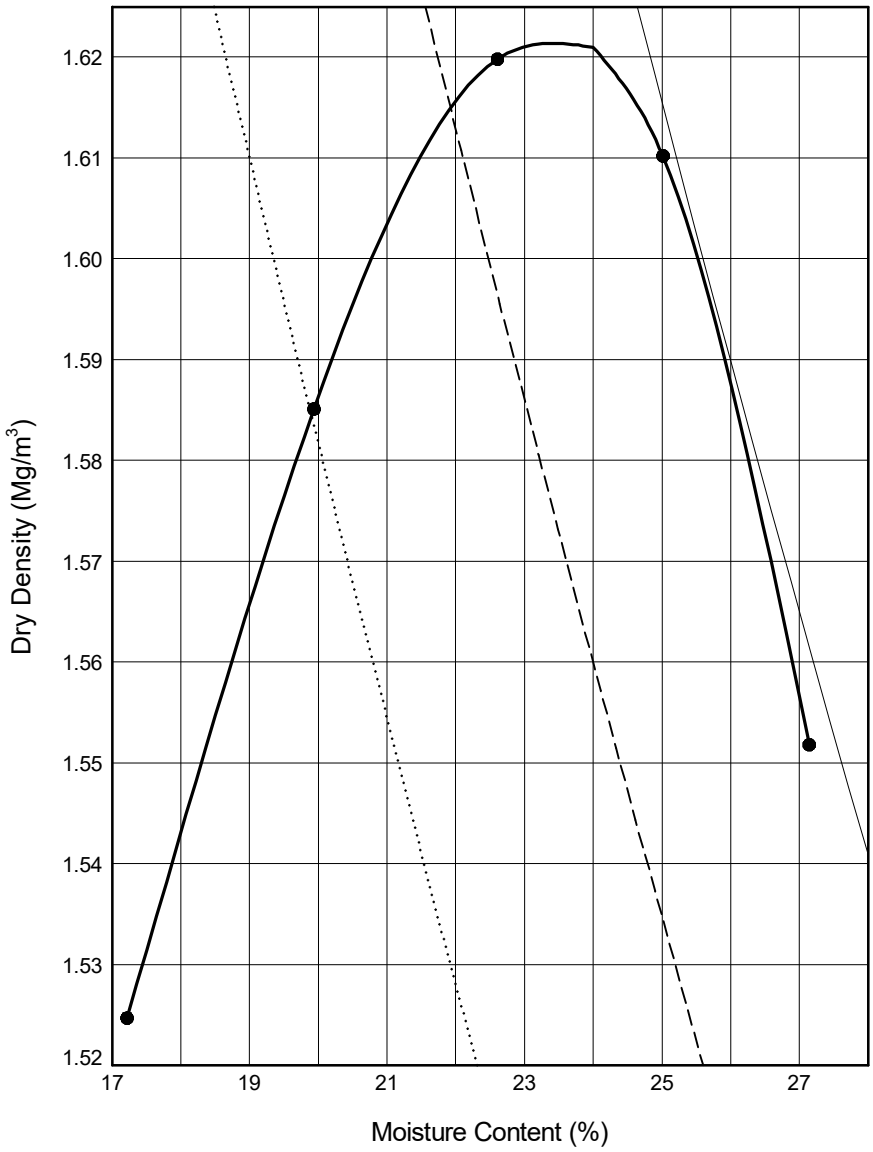
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Position ID: **ATK_TP02** Sample Ref: **2** Sample Type: **B** Depth (m): **3.10**



Initial Sample Conditions			Test Details		Test Results		
Initial Moisture Content (%)	:	**25**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	:	**1.62**
% Retained on 37.5mm BS Sieve	:	**1**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	:	**23**
% Retained on 20.0mm BS Sieve	:	**0**	Type of Mould	: **1 LITRE**	Method Used:		**Clause 3.3**
Particle Density - assumed (Mg/m^3)	:	**2.71**			Remarks:		
Size of Soil Pieces	:	**<20mm**	Separate samples were used.				

Sample Description	Key to Air Voids Lines		
Brown slightly sandy slightly gravelly CLAY	——— 0%	– – – – 5%	····· 10%

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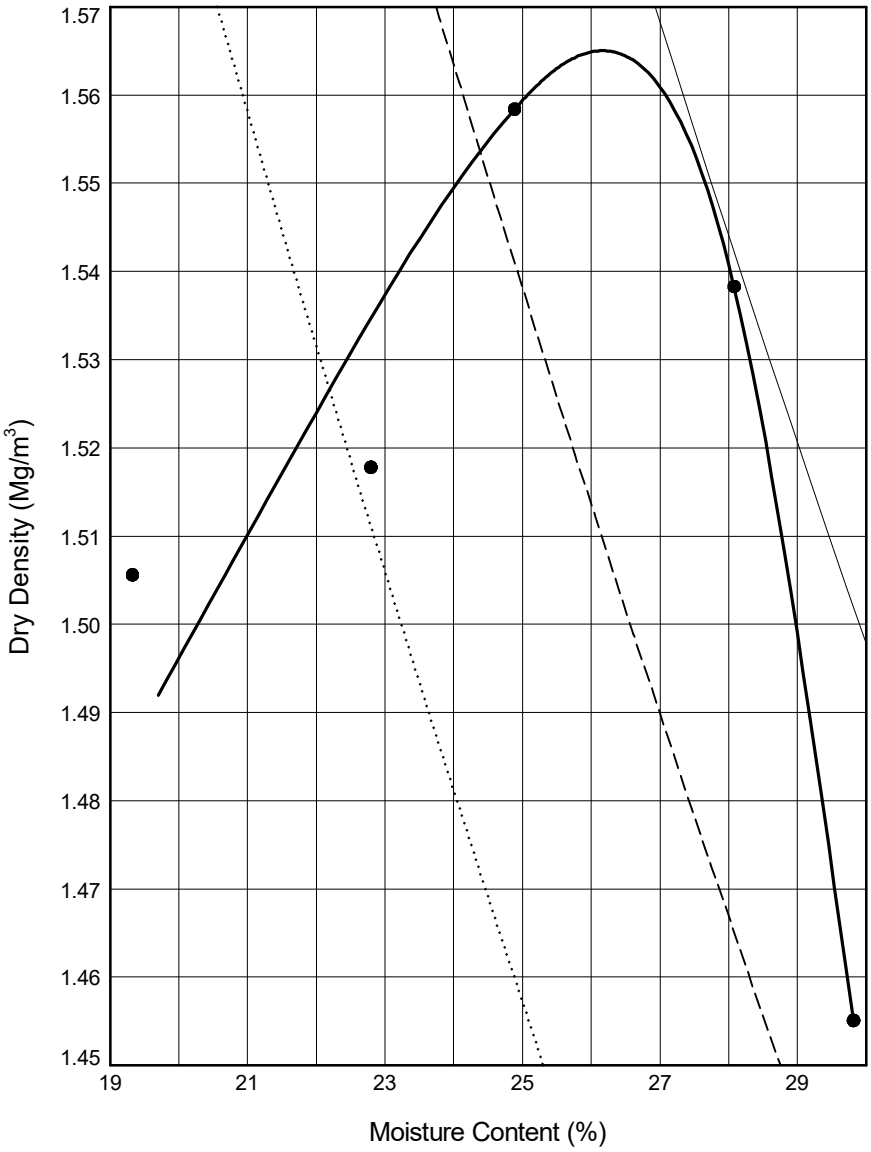
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Position ID: **ATK_TP03** Sample Ref: **7** Sample Type: **B** Depth (m): **1.50**



Initial Sample Conditions			Test Details		Test Results		
Initial Moisture Content (%)	:	**25**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	:	**1.57**
% Retained on 37.5mm BS Sieve	:	**0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	:	**26**
% Retained on 20.0mm BS Sieve	:	**0**	Type of Mould	: **1 LITRE**	Method Used: **Clause 3.3**		
Particle Density - assumed (Mg/m^3)	:	**2.72**			Remarks:		
Size of Soil Pieces	:	**<20mm**	Separate samples were used.				

Sample Description	Key to Air Voids Lines		
Brown slightly sandy slightly gravelly CLAY	——— 0%	– – – – 5%	····· 10%

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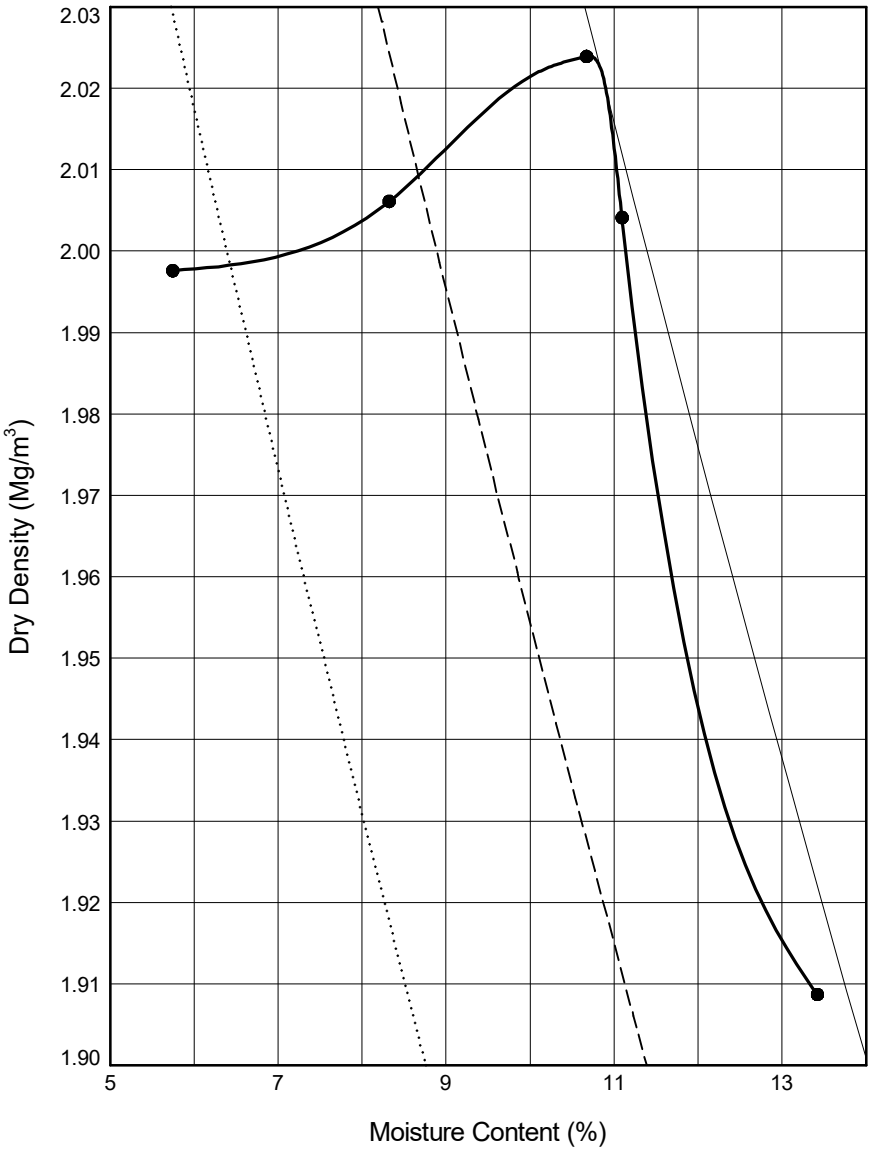
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Position ID: **ATK_TP07** Sample Ref: **101** Sample Type: **LB** Depth (m): **0.05**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: **11**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	: **2.02**
% Retained on 37.5mm BS Sieve	: **32**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	: **11**
% Retained on 20.0mm BS Sieve	: **23**	Type of Mould	: **CBR**	Method Used: **Clause 3.4**	
Particle Density - assumed (Mg/m^3)	: **2.59**			Remarks:	
Size of Soil Pieces	: **<20mm**	Single sample was used.			

Sample Description	Key to Air Voids Lines		
Brown slightly gravelly clayey SAND	——— 0%	– – – – 5%	····· 10%

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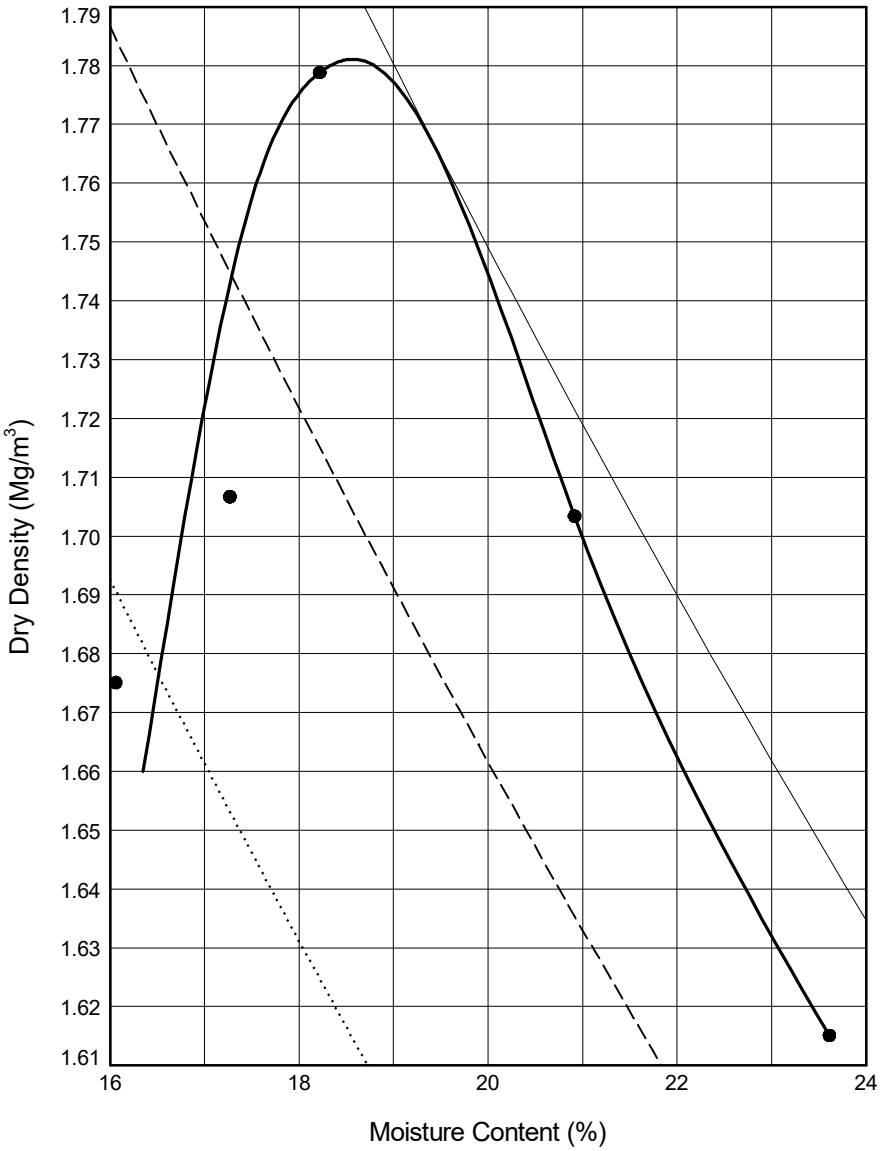
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Position ID: **ATK_TP07** Sample Ref: **102** Sample Type: **LB** Depth (m): **0.35**



Initial Sample Conditions			Test Details		Test Results		
Initial Moisture Content (%)	:	**18**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	:	**1.78**
% Retained on 37.5mm BS Sieve	:	**0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	:	**19**
% Retained on 20.0mm BS Sieve	:	**0**	Type of Mould	: **1 LITRE**	Method Used: **Clause 3.3**		
Particle Density - assumed (Mg/m³)	:	**2.69**			Remarks:		
Size of Soil Pieces	:	**<20mm**	Separate samples were used.				

Sample Description	Key to Air Voids Lines		
Brown slightly sandy slightly gravelly CLAY	——— 0%	– – – – 5%	····· 10%

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	LAURA SCHRAMM	**20/09/23**

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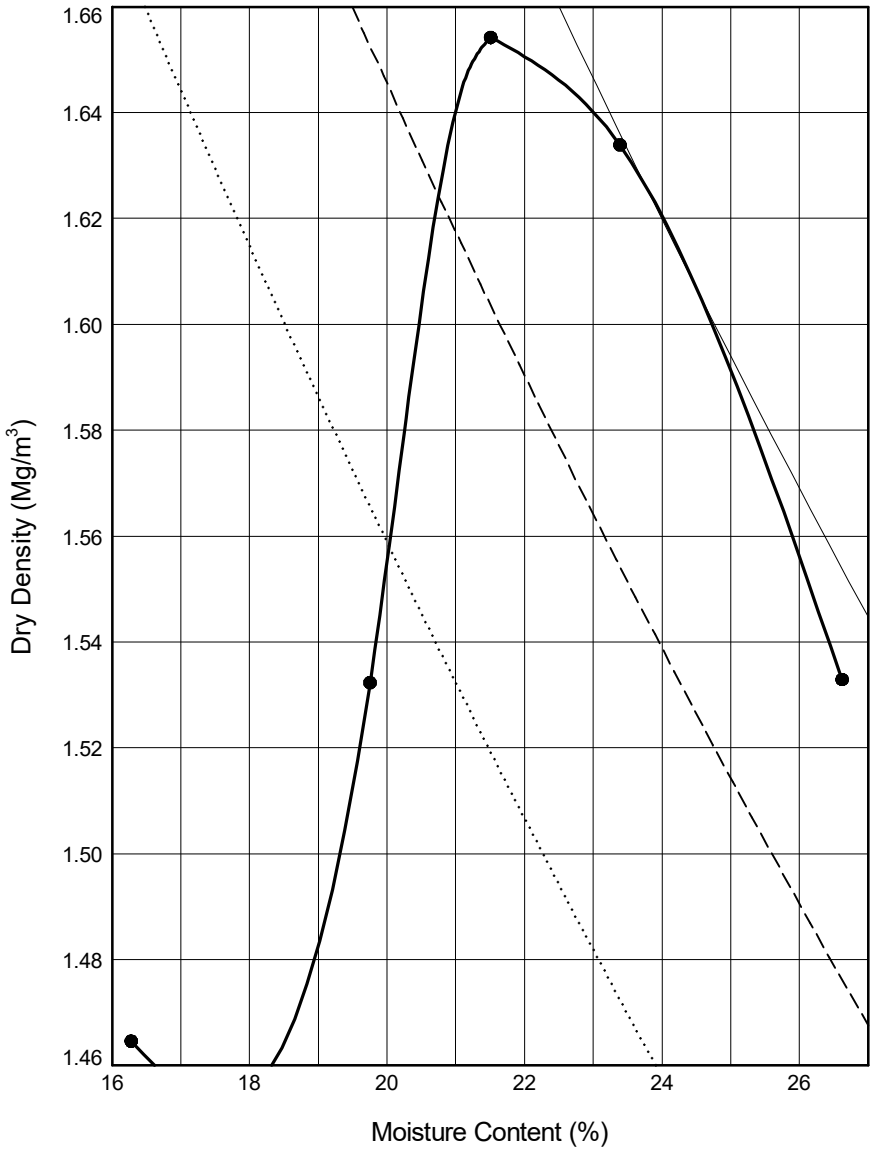
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Position ID: **ATK_TP08** Sample Ref: **9** Sample Type: **AMAL** Depth (m): **4.80**

Amalgamation comprises: ATK_TP08 Depth:4.80 Ref:9 Type:B + ATK_TP08 Depth:2.40 Ref:7 Type:B



Initial Sample Conditions			Test Details		Test Results		
Initial Moisture Content (%)	:	**22**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	:	**1.65**
% Retained on 37.5mm BS Sieve	:	**0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	:	**22**
% Retained on 20.0mm BS Sieve	:	**0**	Type of Mould	: **1 LITRE**	Method Used: **Clause 3.3**		
Particle Density - assumed (Mg/m^3)	:	**2.65**			Remarks:		
Size of Soil Pieces	:	**<20mm**	Single sample was used.				

Sample Description	Key to Air Voids Lines		
Brown slightly gravelly slightly sandy CLAY	——— 0%	– – – – 5%	····· 10%

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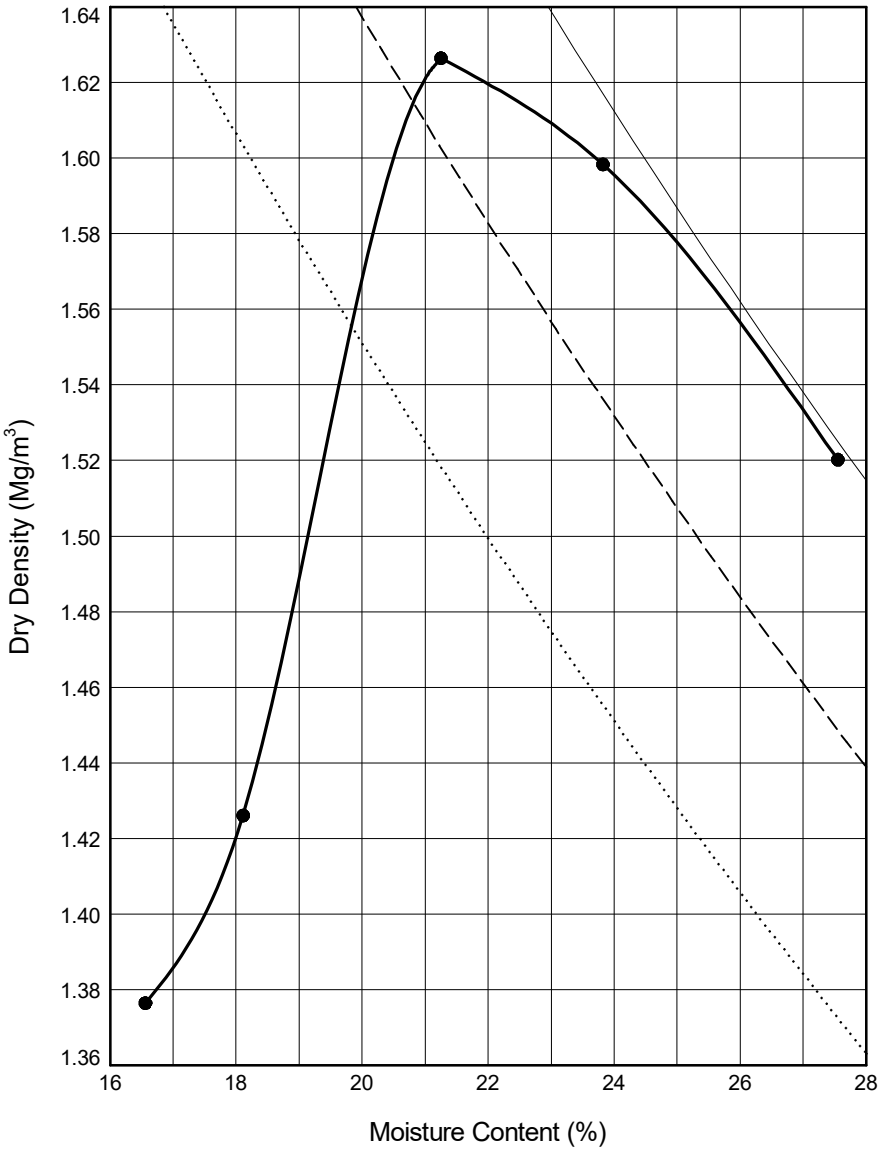
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Position ID: **ATK_TP09** Sample Ref: **1** Sample Type: **LB** Depth (m): **0.10**



Initial Sample Conditions			Test Details		Test Results		
Initial Moisture Content (%)	:	**28**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m^3)	:	**1.63**
% Retained on 37.5mm BS Sieve	:	**0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	:	**21**
% Retained on 20.0mm BS Sieve	:	**0**	Type of Mould	: **1 LITRE**	Method Used: **Clause 3.3**		
Particle Density - assumed (Mg/m^3)	:	**2.63**			Remarks:		
Size of Soil Pieces	:	**<20mm**	Separate samples were used.				

Sample Description	Key to Air Voids Lines		
Brown slightly gravelly slightly sandy CLAY	——— 0%	– – – – 5%	····· 10%

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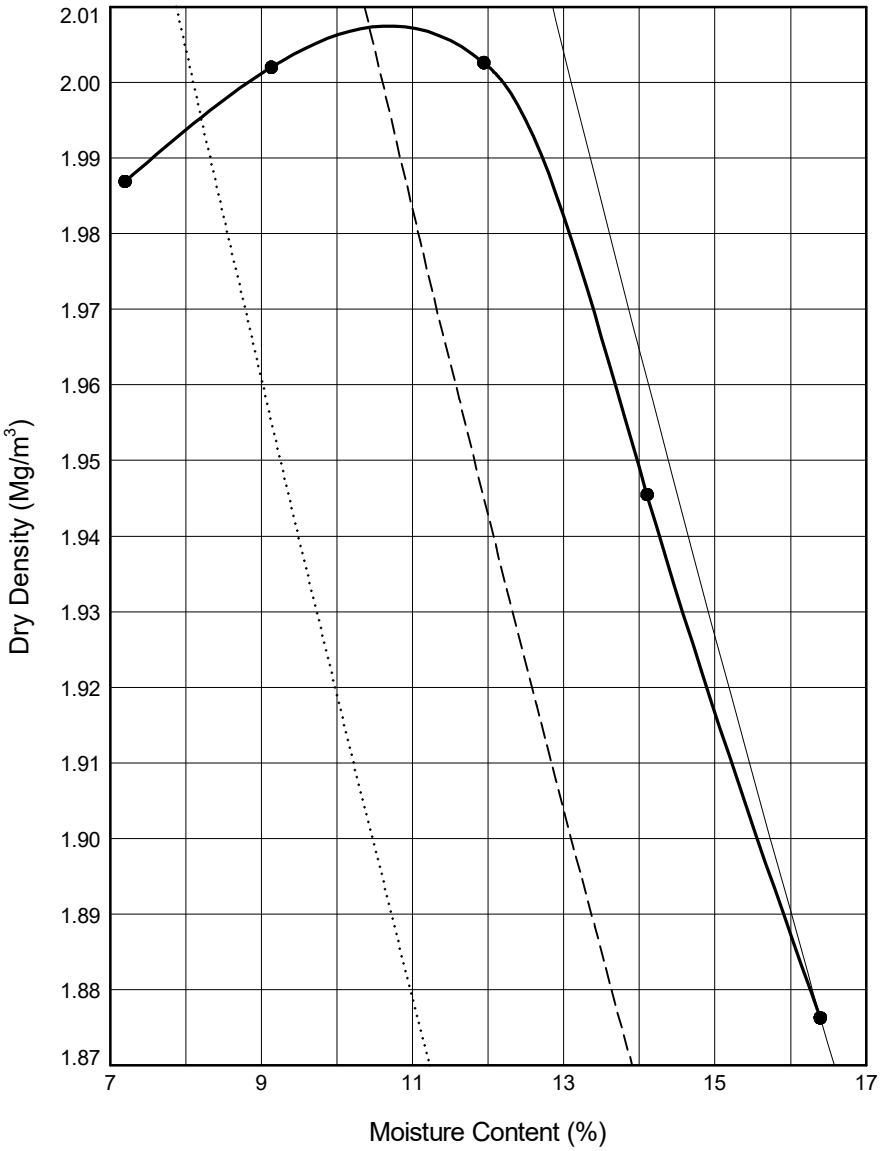
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Position ID: **ATK_TP09** Sample Ref: **1** Sample Type: **B** Depth (m): **1.30**



Initial Sample Conditions			Test Details			Test Results		
Initial Moisture Content (%)	:	**14**	Compaction Type	:	**Light**	Maximum Dry Density (Mg/m^3)	:	**2.01**
% Retained on 37.5mm BS Sieve	:	**0**	Mass of Rammer (kg):		**2.5**	Optimum Moisture Content (%)	:	**11**
% Retained on 20.0mm BS Sieve	:	**1**	Type of Mould	:	**1 LITRE**	Method Used:		**Clause 3.3**
Particle Density - assumed (Mg/m^3)	:	**2.71**				Remarks:		
Size of Soil Pieces	:	**<20MM**	Separate samples were used.					

Sample Description	Key to Air Voids Lines		
Brown slightly sandy slightly gravelly CLAY	——— 0%	– – – – 5%	····· 10%

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Contract	Contract Ref:
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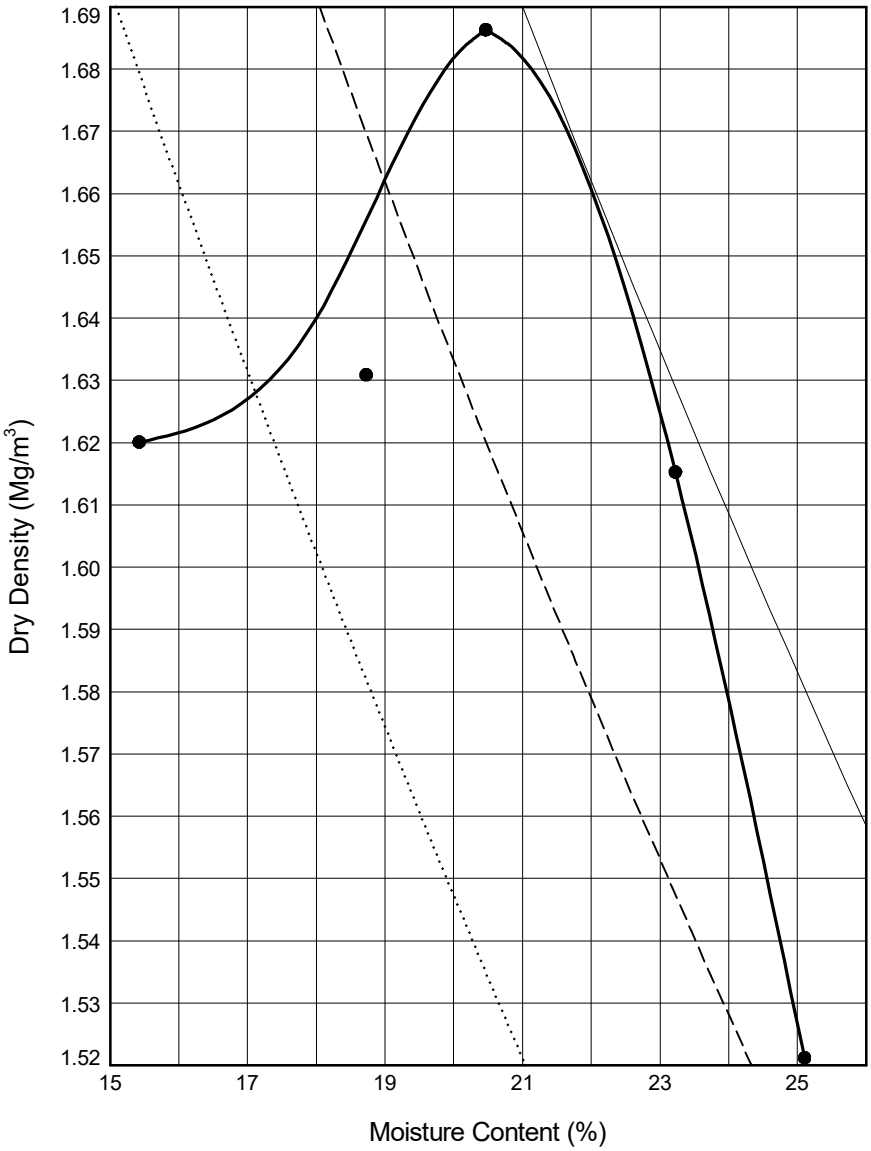
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990
NON-STANDARD TEST

Position ID: **ATK_TP10** Sample Ref: **2** Sample Type: **AMAL** Depth (m): **2.70**

Amalgamation comprises: ATK_TP10 Depth:2.70 Ref:2 Type:LB + ATK_TP10 Depth:1.50 Ref:2 Type:B



Initial Sample Conditions			Test Details			Test Results		
Initial Moisture Content (%)	:	**20**	Compaction Type	:	**Light**	Maximum Dry Density (Mg/m^3)	:	**1.69**
% Retained on 37.5mm BS Sieve	:	**1**	Mass of Rammer (kg):		**2.5**	Optimum Moisture Content (%)	:	**20**
% Retained on 20.0mm BS Sieve	:	**0**	Type of Mould	:	**CBR**	Method Used: **Clause 3.4**		
Particle Density - assumed (Mg/m^3)	:	**2.62**				Remarks:		
Size of Soil Pieces	:	**<20mm**	Separate samples were used.					

Sample Description	Key to Air Voids Lines		
Brown slightly gravelly slightly sandy CLAY	——— 0%	– – – – 5%	····· 10%

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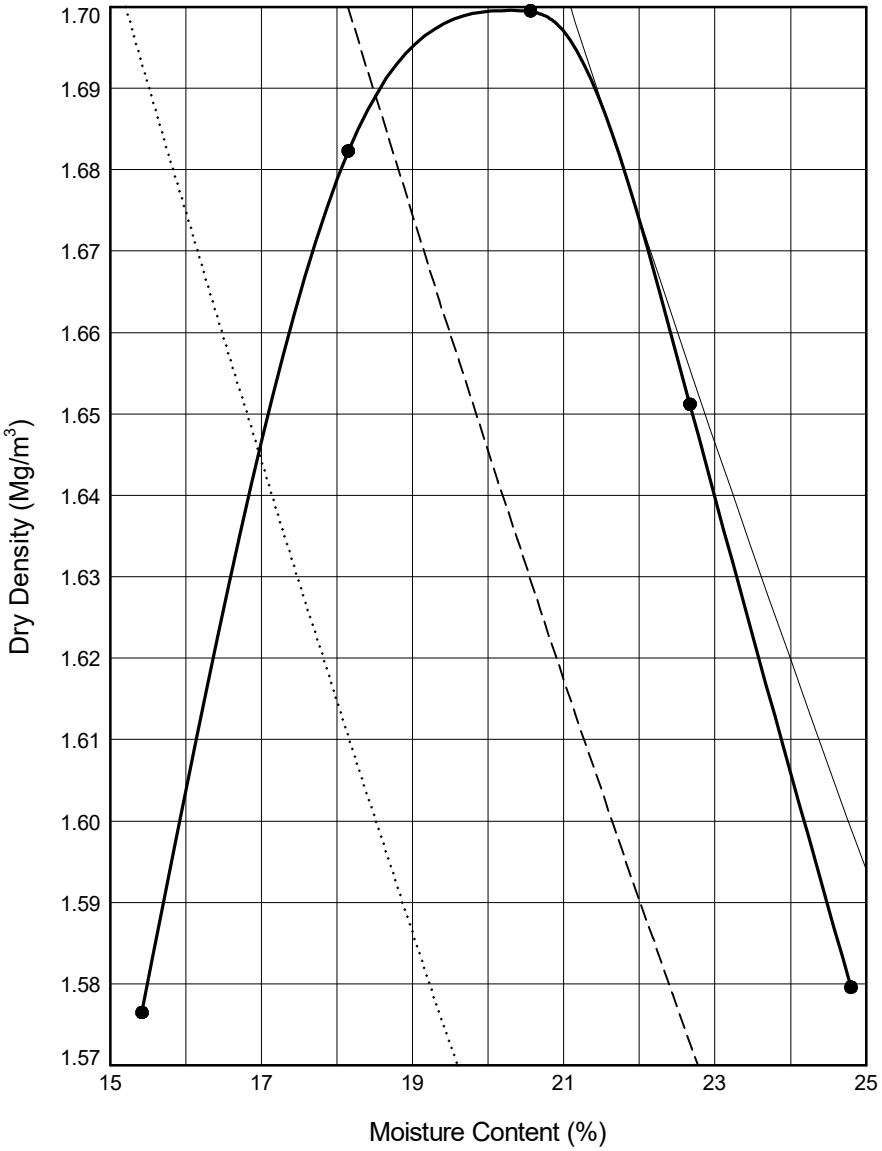
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 11.3,11.4,11.5,11.6,11.7 of BS1377:Part 2:2022
NON-STANDARD TEST

Position ID: **ATK_TP11** Sample Ref: **7** Sample Type: **B** Depth (m): **2.50**



Initial Sample Conditions			Test Details		Test Results		
Initial Moisture Content (%)	:	**21**	Compaction Type	: **Light**	Maximum Dry Density (Mg/m³)	:	**1.70**
% Retained on 37.5mm BS Sieve	:	**0**	Mass of Rammer (kg):	**2.5**	Optimum Moisture Content (%)	:	**20**
% Retained on 20.0mm BS Sieve	:	**2**	Type of Mould	: **1 LITRE**	Method Used:		**Clause 11.3**
Particle Density - assumed (Mg/m³)	:	**2.65**			Remarks:		
Size of Soil Pieces	:	**<20mm**	Separate samples were used.				

Sample Description	Key to Air Voids Lines		
Dark brown slightly gravelly slightly sandy silty CLAY	——— 0%	– – – – 5%	····· 10%

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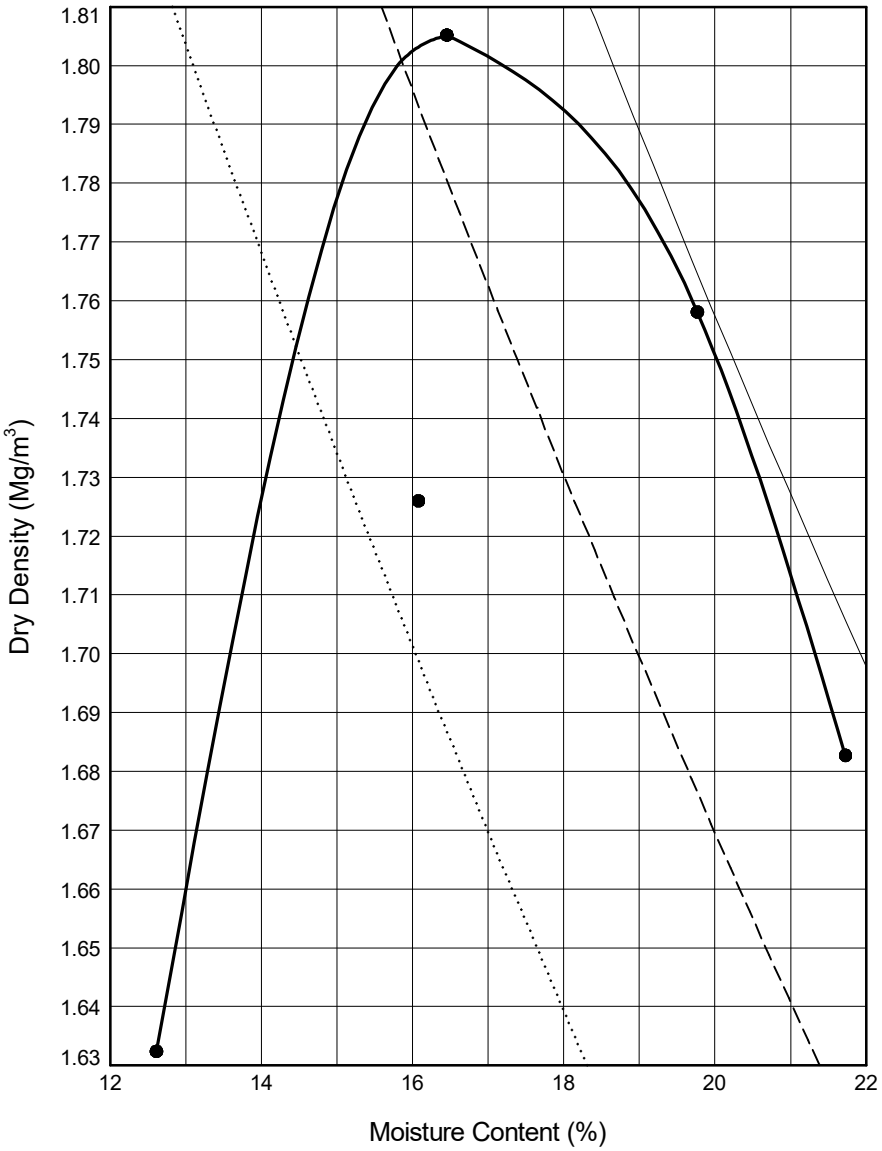
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DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 11.3,11.4,11.5,11.6,11.7 of BS1377:Part 2:2022
NON-STANDARD TEST

Position ID: **ATK_TP11** Sample Ref: **9** Sample Type: **B** Depth (m): **3.50**



Initial Sample Conditions			Test Details			Test Results		
Initial Moisture Content (%)	:	**20**	Compaction Type	:	**Light**	Maximum Dry Density (Mg/m³)	:	**1.81**
% Retained on 37.5mm BS Sieve	:	**0**	Mass of Rammer (kg):		**2.5**	Optimum Moisture Content (%)	:	**16**
% Retained on 20.0mm BS Sieve	:	**1**	Type of Mould	:	**1 LITRE**	Method Used:		**Clause 11.3**
Particle Density - assumed (Mg/m³)	:	**2.71**				Remarks:		
Size of Soil Pieces	:	**<20mm**	Separate samples were used.					

Sample Description	Key to Air Voids Lines		
Dark brown slightly gravelly slightly sandy silty CLAY	——— 0%	– – – – 5%	····· 10%

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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

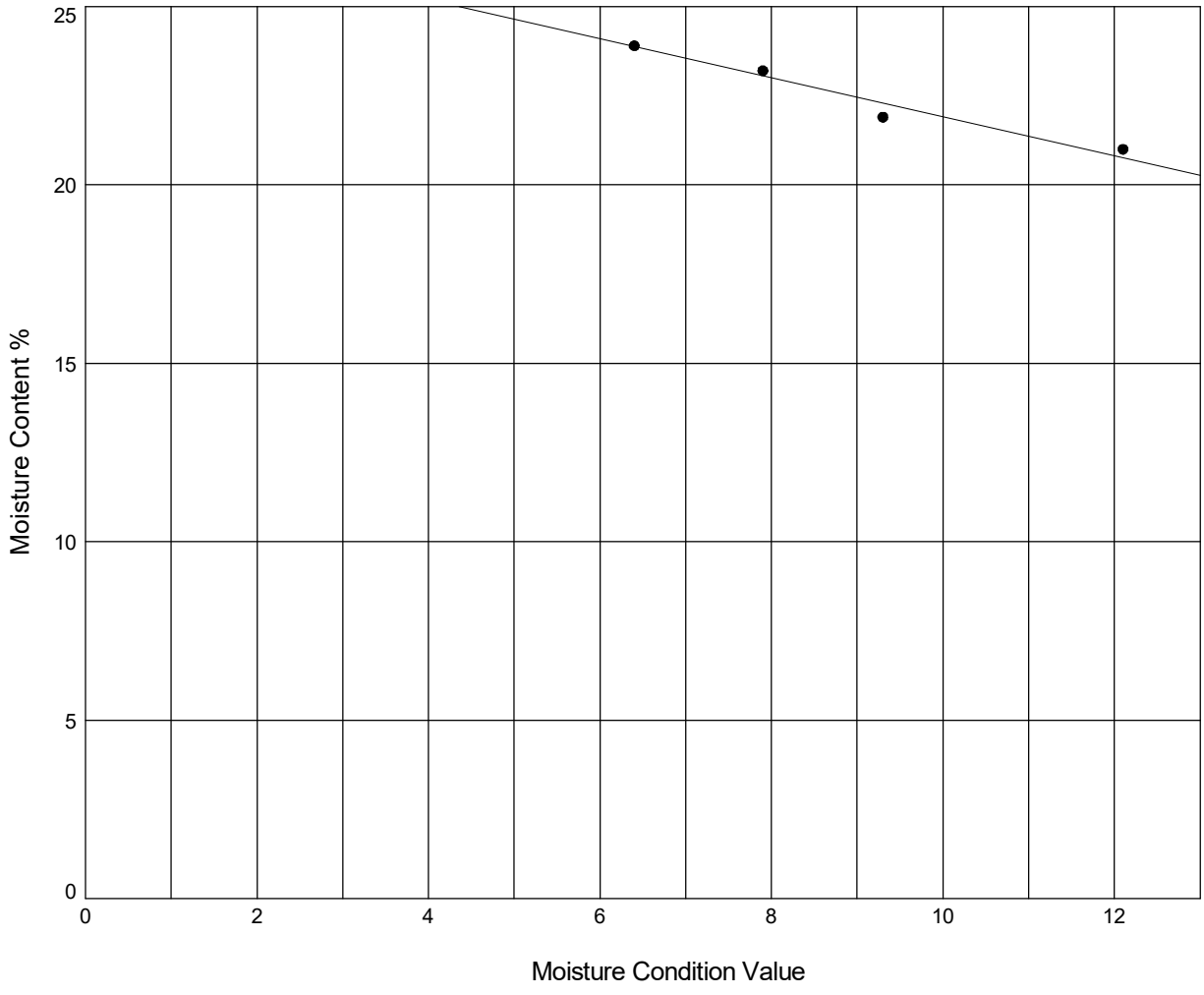
Position ID: **ATK_TP01** Sample Ref: **7** Sample Type: **B** Depth (m): **2.50**

Percentage retained on 20mm sieve : **0**

Description : **Brown slightly sandy slightly gravelly CLAY**

Single/Separate Sample Used : **Single**

Test Number	1	2	3	4	5
Moisture Content	23.9	23.2	21.9	21.0	-
MCV	6.4	7.9	9.3	12.1	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



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MOISTURE CONDITION VALUE CALIBRATION

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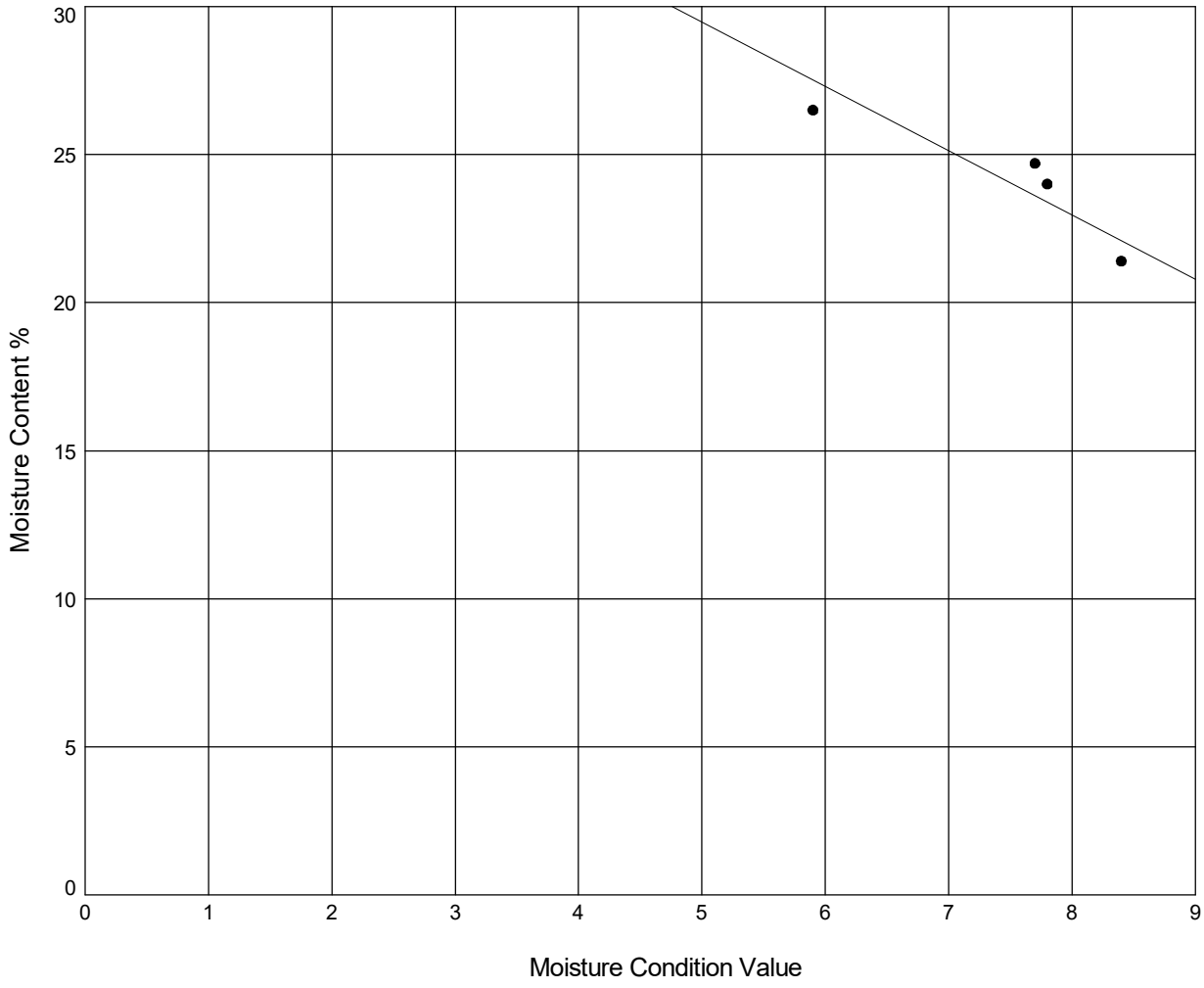
Position ID: **ATK_TP01** Sample Ref: **12** Sample Type: **D** Depth (m): **4.60**

Percentage retained on 20mm sieve : **0**

Description : **Brown slightly sandy slightly gravelly CLAY**

Single/Separate Sample Used : **Single**

Test Number	1	2	3	4	5
Moisture Content	26.5	24.7	24.0	21.4	-
MCV	5.9	7.7	7.8	8.4	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

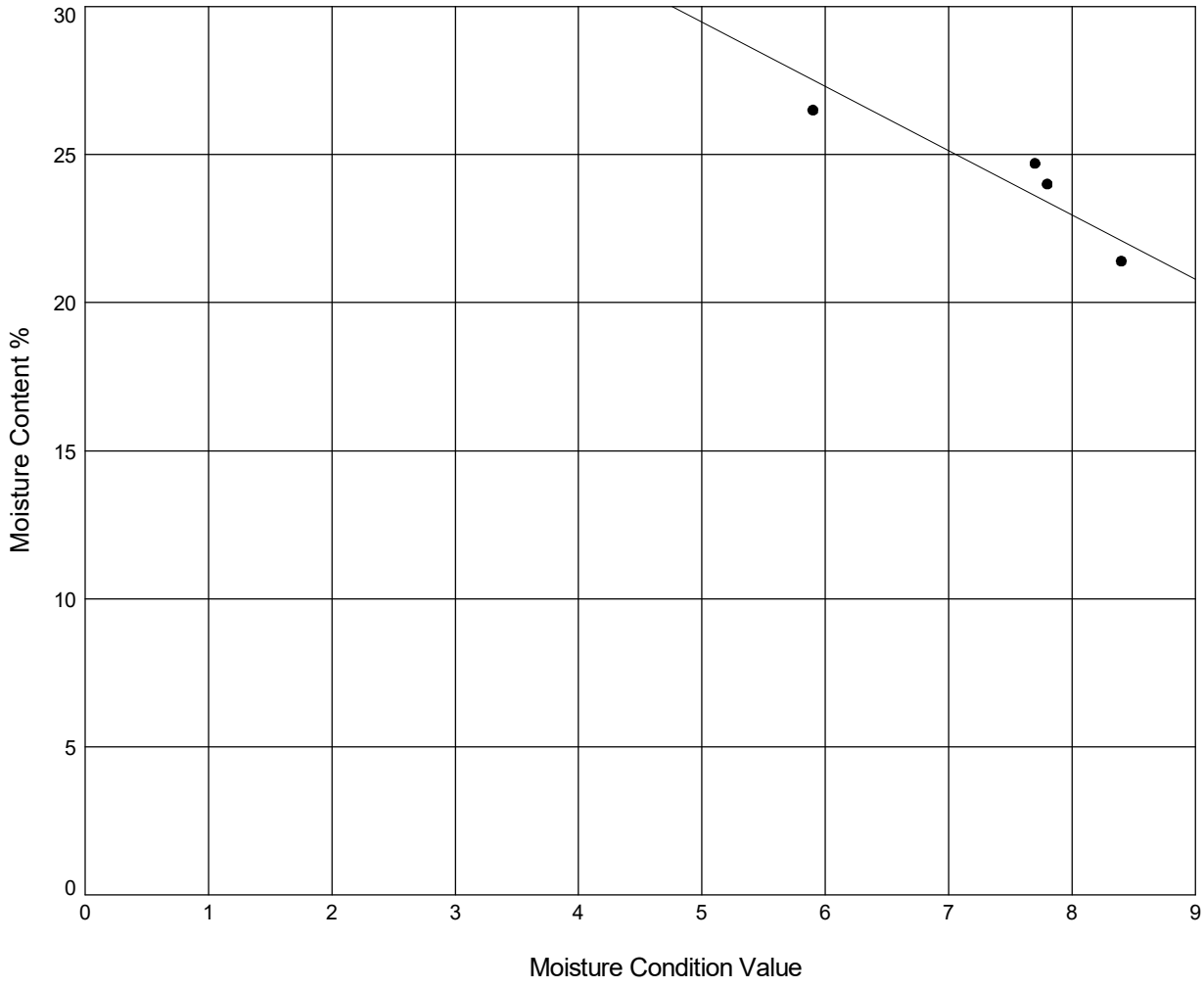
Position ID: **ATK_TP01** Sample Ref: **12** Sample Type: **D** Depth (m): **4.60**

Percentage retained on 20mm sieve : **0**

Description : **Brown slightly sandy slightly gravelly CLAY**

Single/Separate Sample Used : **Single**

Test Number	1	2	3	4	5
Moisture Content	26.5	24.7	24.0	21.4	-
MCV	5.9	7.7	7.8	8.4	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

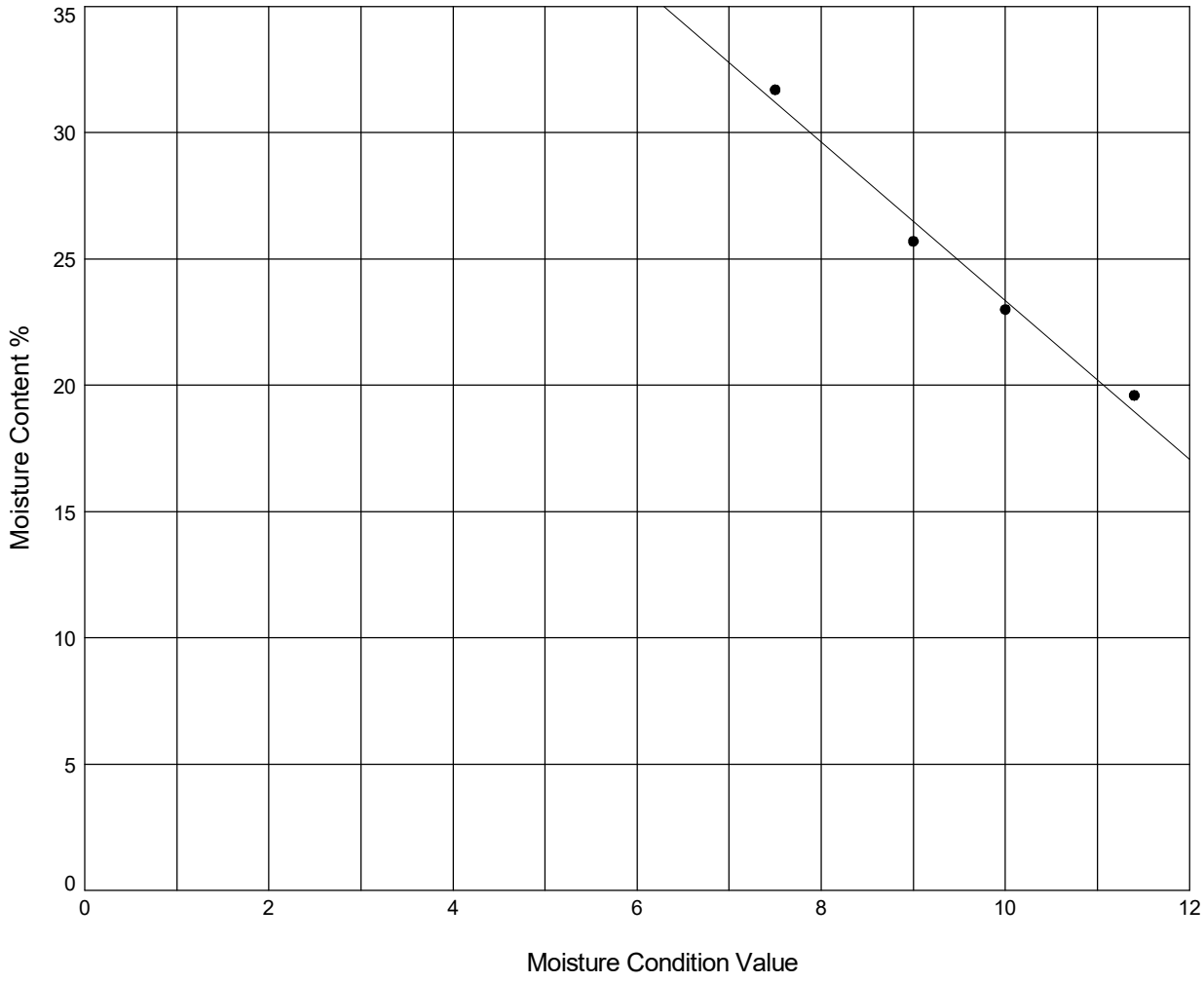
Position ID: **ATK_TP02** Sample Ref: **2** Sample Type: **B** Depth (m): **3.10**

Percentage retained on 20mm sieve : **1**

Description : **Brown slightly sandy slightly gravelly CLAY**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	31.7	25.7	23.0	19.6	-
MCV	7.5	9	10	11.4	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

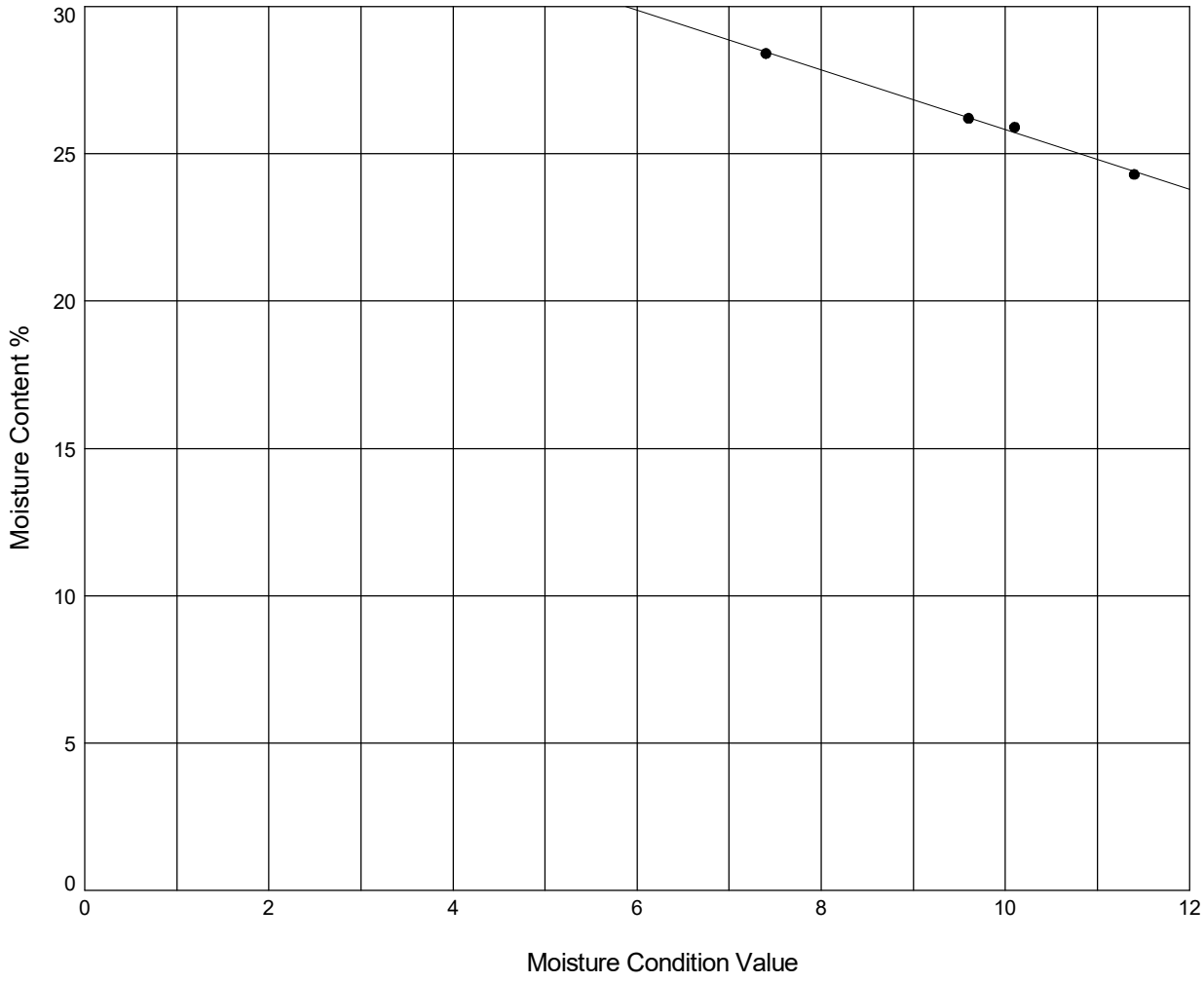
Position ID: **ATK_TP03** Sample Ref: **7** Sample Type: **B** Depth (m): **1.50**

Percentage retained on 20mm sieve : **0**

Description : **Brown slightly sandy slightly gravelly CLAY**

Single/Separate Sample Used : **Single**

Test Number	1	2	3	4	5
Moisture Content	28.4	26.2	25.9	24.3	-
MCV	7.4	9.6	10.1	11.4	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

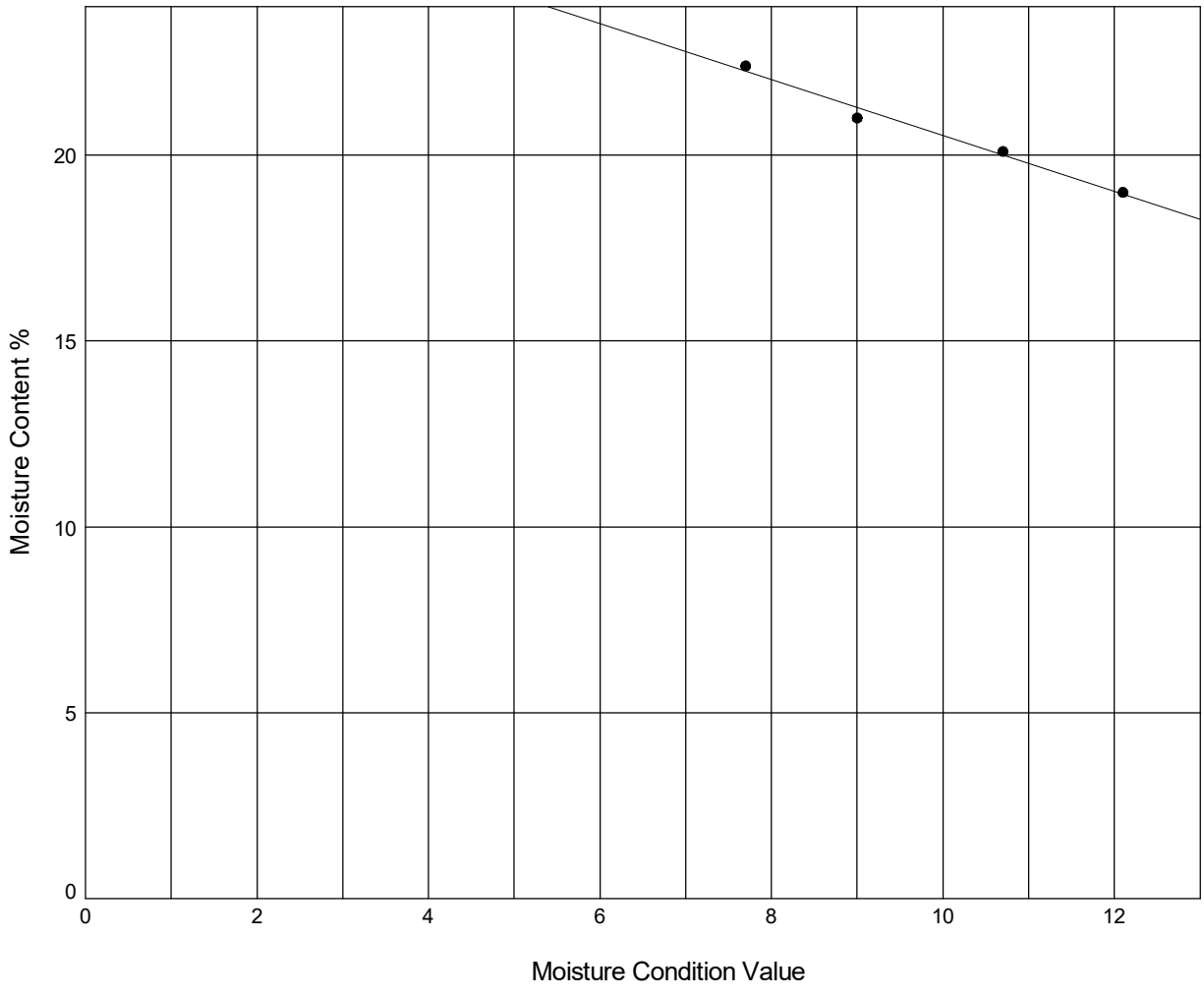
Position ID: **ATK_TP04** Sample Ref: **6** Sample Type: **D** Depth (m): **1.50**

Percentage retained on 20mm sieve : **0**

Description : **Brown slightly sandy slightly gravelly CLAY**

Single/Separate Sample Used : **Single**

Test Number	1	2	3	4	5
Moisture Content	22.4	21.0	20.1	19.0	-
MCV	7.7	9	10.7	12.1	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

Position ID: **ATK_TP08** Sample Ref: **9** Sample Type: **AMAL** Depth (m): **4.80**

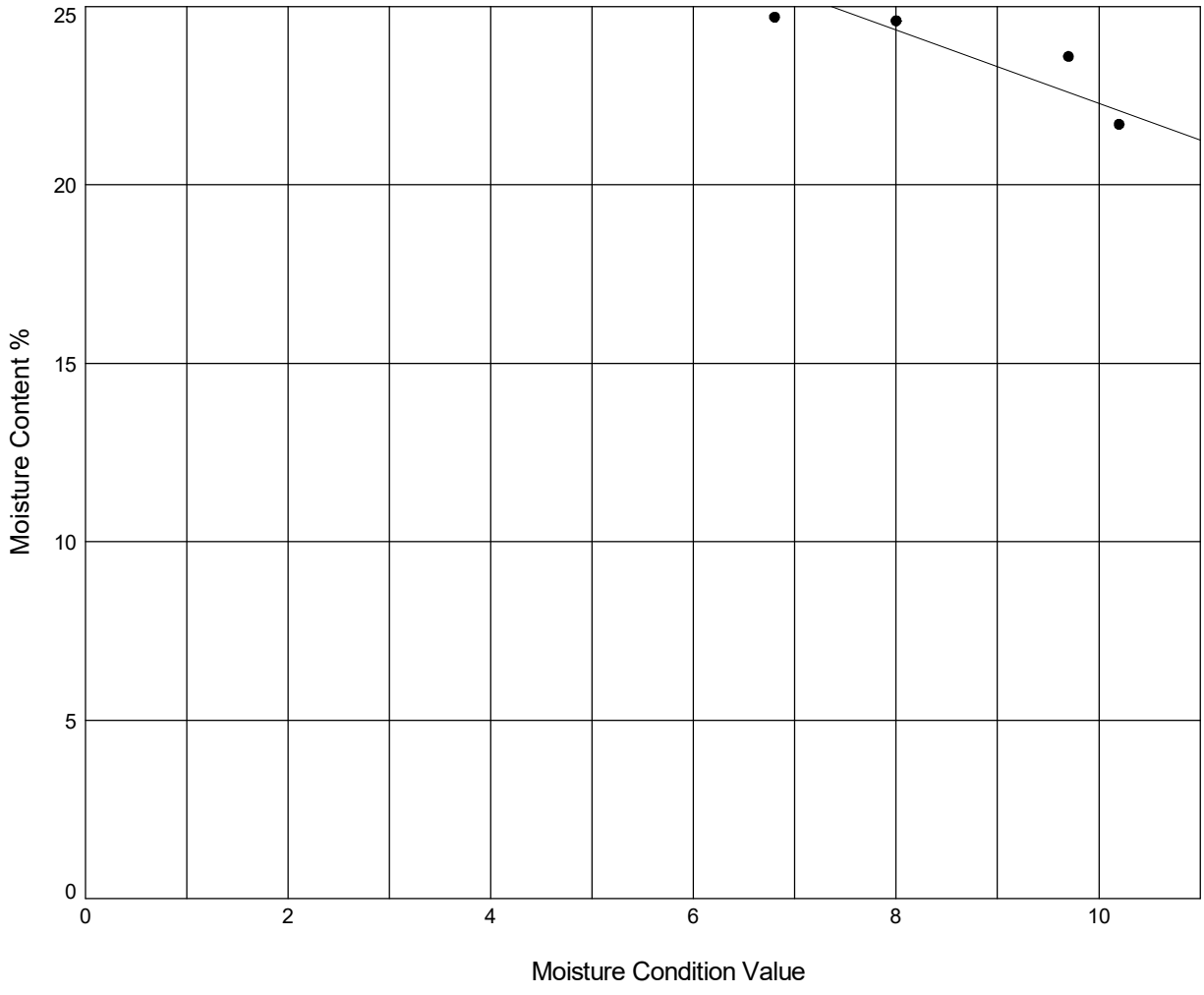
Amalgamation comprises: ATK_TP08 Depth:4.80 Ref:9 Type:B + ATK_TP08 Depth:2.40 Ref:7 Type:B

Percentage retained on 20mm sieve : **0**

Description : **Brown slightly gravelly slightly sandy CLAY**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	24.7	24.6	23.6	21.7	-
MCV	6.8	8	9.7	10.2	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



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MOISTURE CONDITION VALUE CALIBRATION

In accordance with clause 5.5 of BS1377:Part 4:1990

Position ID: **ATK_TP10** Sample Ref: **2** Sample Type: **AMAL** Depth (m): **2.70**

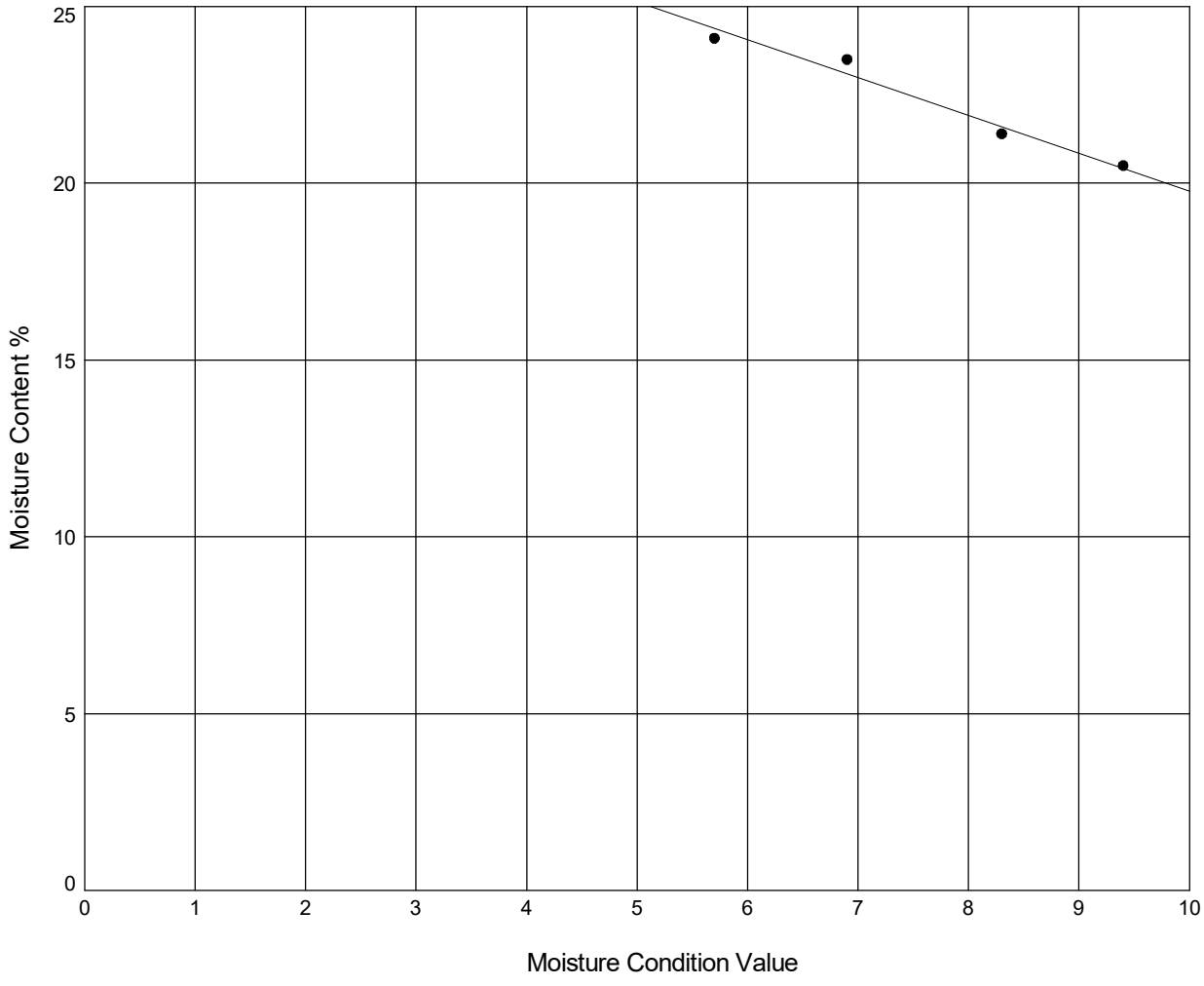
Amalgamation comprises: ATK_TP10 Depth:2.70 Ref:2 Type:LB + ATK_TP10 Depth:1.50 Ref:2 Type:B

Percentage retained on 20mm sieve : **1**

Description : **Brown slightly gravelly slightly sandy CLAY**

Single/Separate Sample Used : **Separate**

Test Number	1	2	3	4	5
Moisture Content	24.1	23.5	21.4	20.5	-
MCV	5.7	6.9	8.3	9.4	-
Interpretation Method	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	Steepest straight line - Fig 9	-



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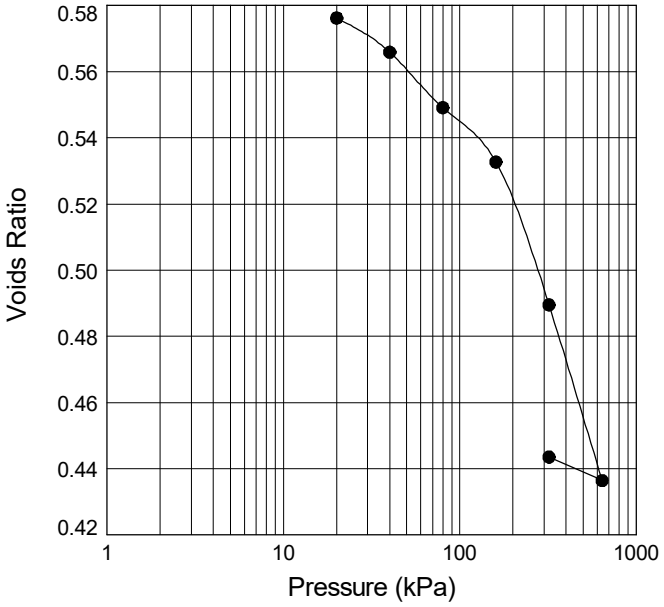
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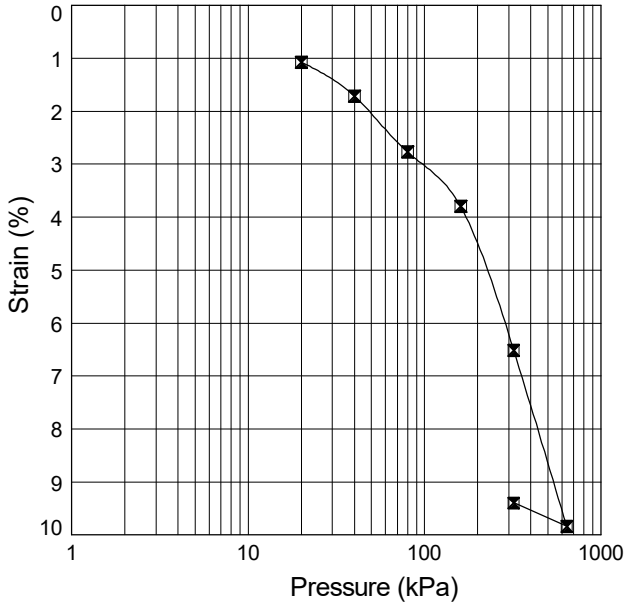
ONE-DIMENSIONAL CONSOLIDATION TEST

In accordance with BS EN ISO 17892 Part 5

Position ID: **ATK_BH01** Sample Ref: **10** Sample Type: **U** Depth (m): **2.00**

Description : Brown slightly gravelly CLAY





SPECIMEN DETAILS	INITIAL	FINAL
Diameter (mm) :	74.99	74.99
Height (mm) :	19.58	17.74
Assumed Particle Density (Mg/m^3) :	2.65	2.65
Water Content (%) :	23.4	19.9
Wet Density (Mg/m^3) :	2.05	2.20
Dry Density (Mg/m^3) :	1.66	1.84
Voids Ratio :	0.5932	0.4435

TEST DETAILS

Stage	Duration (days)	Pressure (kPa)	Strain (%)	Void Ratio	M_v (m^2/MN)	T_{90} (min)	C_v (m^2/yr)	Comments etc.
Loading		0 - 20	1.067	0.5762	0.53	12	3.4	
Loading		20 - 40	1.711	0.5659	0.33	139	0.30	
Loading		40 - 80	2.768	0.5491	0.27	59	0.69	
Loading		80 - 160	3.795	0.5327	0.13	35	1.1	
Loading		160 - 320	6.512	0.4895	0.18	129	0.30	
Loading		320 - 640	9.842	0.4364	0.11	287	0.12	
Unloading		640 - 320	9.397	0.4435	NA	NA	NA	

Notes: Method of time-setting used (min): **T_{90}.**

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	LORNA WHITWORTH	20/09/23

Contract	Contract Ref:
Ancoats Manchester	**765544**

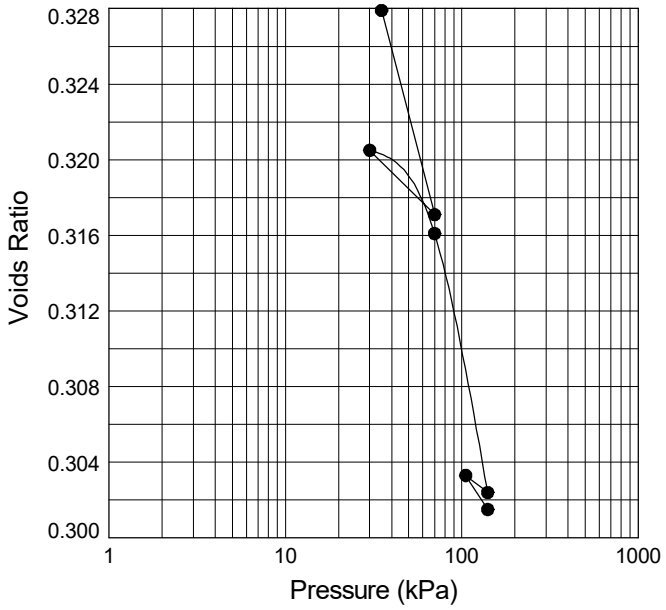
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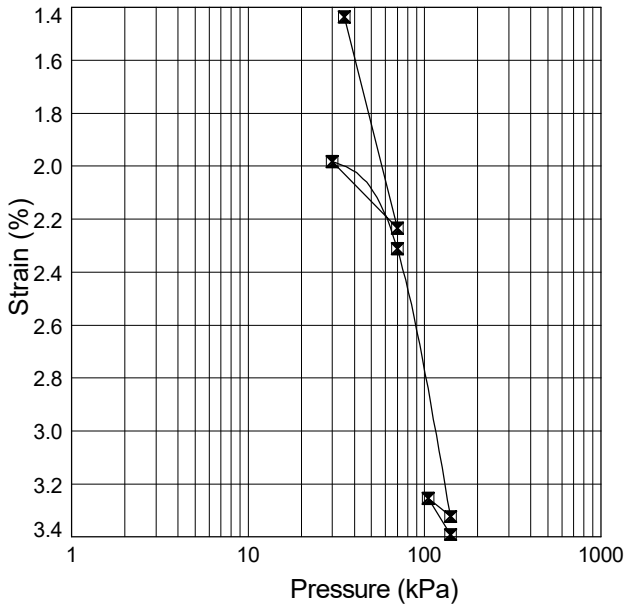
ONE-DIMENSIONAL CONSOLIDATION TEST

In accordance with BS EN ISO 17892 Part 5

Position ID: **ATK_BH01** Sample Ref: **26** Sample Type: **UT** Depth (m): **7.30**

Description : Brown sandy slightly gravelly CLAY





SPECIMEN DETAILS	INITIAL	FINAL
Diameter (mm) :	75.04	75.04
Height (mm) :	19.17	18.52
Assumed Particle Density (Mg/m^3) :	2.65	2.65
Water Content (%) :	15.6	14.9
Wet Density (Mg/m^3) :	2.27	2.34
Dry Density (Mg/m^3) :	1.97	2.04
Voids Ratio :	0.3472	0.3015

TEST DETAILS

Stage	Duration (days)	Pressure (kPa)	Strain (%)	Void Ratio	M_v (m^2/MN)	T_{90} (min)	C_v (m^2/yr)	Comments etc.
Loading		0 - 35	1.435	0.3279	0.41	27	1.5	
Loading		35 - 70	2.233	0.3171	0.23	240	0.16	
Unloading		70 - 30	1.982	0.3205	NA	NA	NA	
Loading		30 - 70	2.311	0.3161	0.084	1479	0.026	
Loading		70 - 140	3.323	0.3024	0.15	265	0.15	
Loading		140 - 105	3.255	0.3033	0.020	0.0	0.15	
Unloading		105 - 140	3.391	0.3015	NA	NA	NA	

Notes: Method of time-setting used (min): **T_{90}.**

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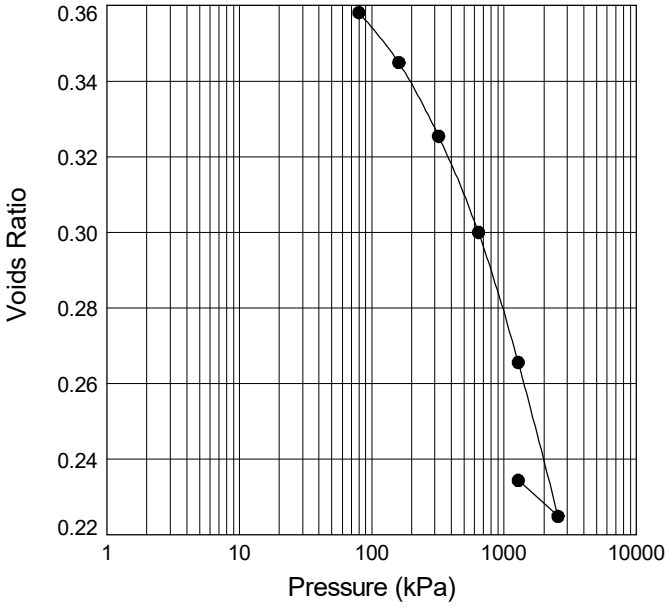
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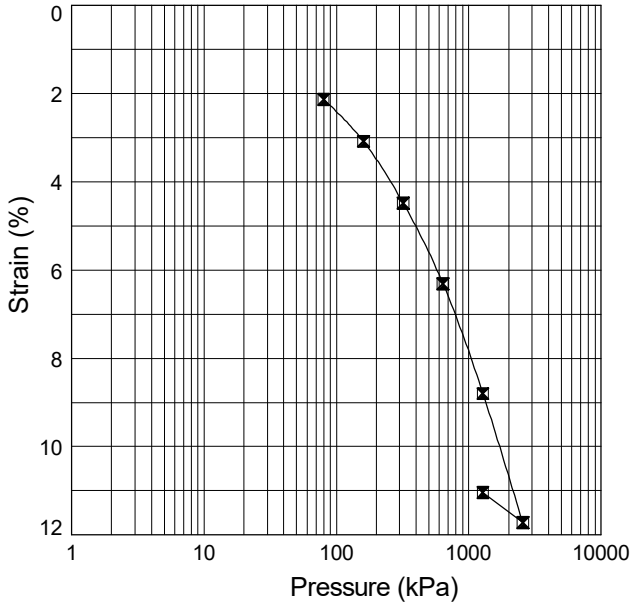
ONE-DIMENSIONAL CONSOLIDATION TEST

In accordance with BS EN ISO 17892 Part 5

Position ID: **ATK_BH03** Sample Ref: **13** Sample Type: **UT** Depth (m): **5.00**

Description : Brown slightly gravelly CLAY





SPECIMEN DETAILS	INITIAL	FINAL
Diameter (mm) :	75.03	75.03
Height (mm) :	19.08	16.97
Assumed Particle Density (Mg/m^3) :	2.65	2.65
Water Content (%) :	15.5	11.9
Wet Density (Mg/m^3) :	2.21	2.40
Dry Density (Mg/m^3) :	1.91	2.15
Voids Ratio :	0.3876	0.2344

TEST DETAILS

Stage	Duration (days)	Pressure (kPa)	Strain (%)	Void Ratio	M_v (m^2/MN)	T_{90} (min)	C_v (m^2/yr)	Comments etc.
Loading		0 - 80	2.123	0.3581	0.27	14	2.8	
Loading		80 - 160	3.077	0.3449	0.12	86	0.44	
Loading		160 - 320	4.481	0.3254	0.091	99	0.38	
Loading		320 - 640	6.310	0.3000	0.060	64	0.57	
Loading		640 - 1280	8.795	0.2656	0.041	360	0.096	
Loading		1280 - 2560	11.724	0.2249	0.025	482	0.068	
Unloading		2560 - 1280	11.038	0.2344	NA	NA	NA	

Notes: Method of time-setting used (min): **T_{90}.**

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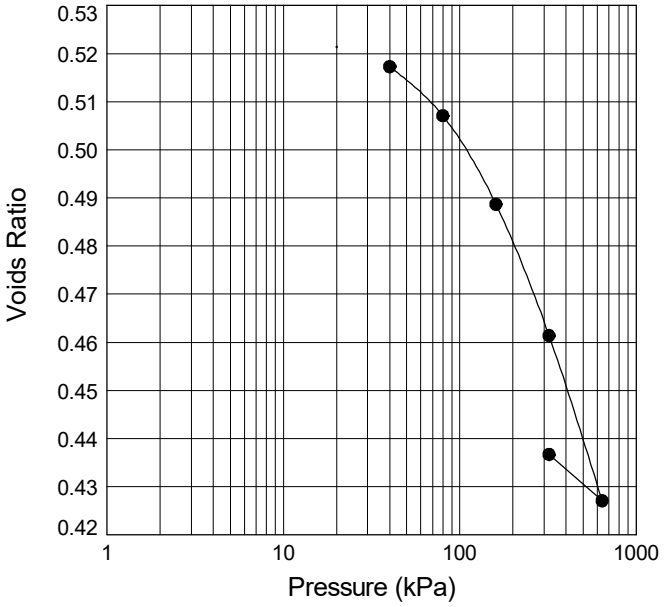
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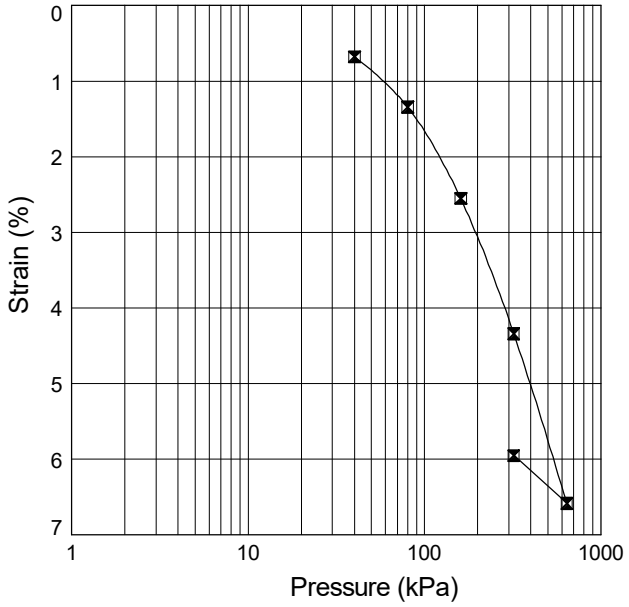
ONE-DIMENSIONAL CONSOLIDATION TEST

In accordance with BS EN ISO 17892 Part 5

Position ID: **ATK_BH05** Sample Ref: **11** Sample Type: **UT** Depth (m): **2.00**

Description : Brown slightly gravelly CLAY





SPECIMEN DETAILS	INITIAL	FINAL
Diameter (mm) :	75.02	75.02
Height (mm) :	19.07	17.94
Assumed Particle Density (Mg/m^3) :	2.65	2.65
Water Content (%) :	21.3	20.1
Wet Density (Mg/m^3) :	2.10	2.21
Dry Density (Mg/m^3) :	1.73	1.84
Voids Ratio :	0.5276	0.4367

TEST DETAILS

Stage	Duration (days)	Pressure (kPa)	Strain (%)	Void Ratio	M_v (m^2/MN)	T_{90} (min)	C_v (m^2/yr)	Comments etc.
Swelling		0 - 20	0.409	0.5214	NA	NA	NA	
Loading		20 - 40	0.677	0.5173	0.13	9	4.2	
Loading		40 - 80	1.342	0.5071	0.17	660	0.060	
Loading		80 - 160	2.549	0.4887	0.15	127	0.31	
Loading		160 - 320	4.337	0.4614	0.11	258	0.15	
Loading		320 - 640	6.581	0.4271	0.073	104	0.35	
Unloading		640 - 320	5.952	0.4367	NA	NA	NA	

Notes: Method of time-setting used (min): **T_{90}.**

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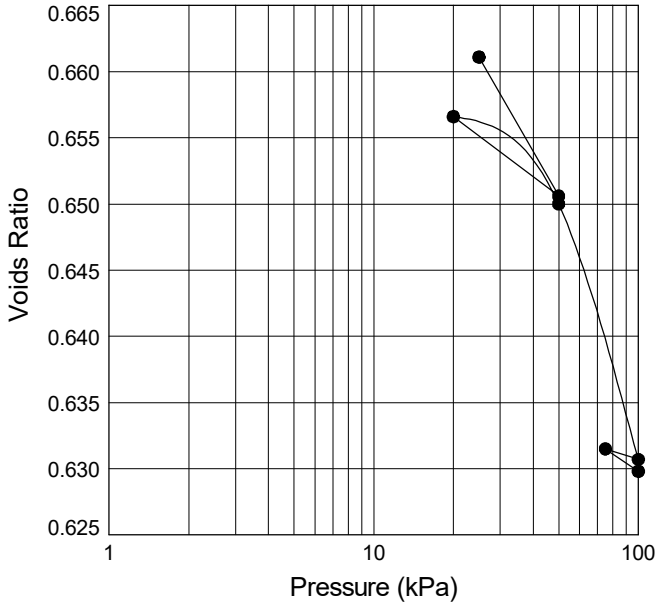
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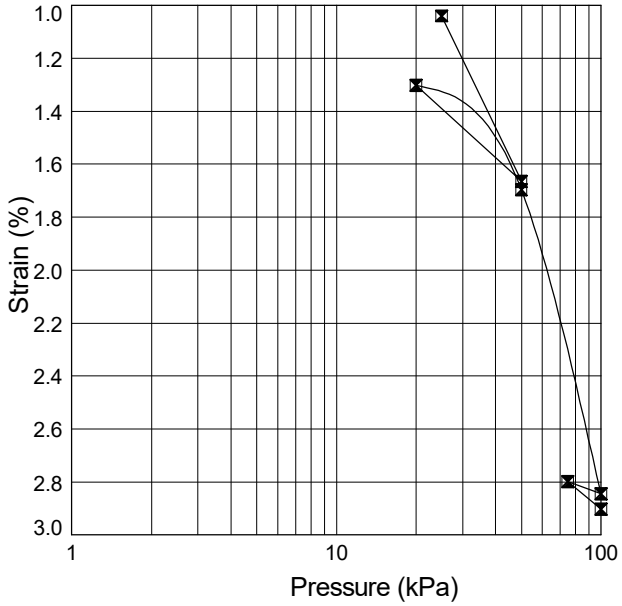
ONE-DIMENSIONAL CONSOLIDATION TEST

In accordance with BS EN ISO 17892 Part 5

Position ID: **ATK_BH08A** Sample Ref: **14** Sample Type: **UT** Depth (m): **5.00**

Description : Brown CLAY





SPECIMEN DETAILS	INITIAL	FINAL
Diameter (mm) :	75.09	75.09
Height (mm) :	19.05	18.50
Assumed Particle Density (Mg/m^3) :	2.65	2.65
Water Content (%) :	27.3	26.3
Wet Density (Mg/m^3) :	2.01	2.05
Dry Density (Mg/m^3) :	1.58	1.63
Voids Ratio :	0.6785	0.6298

TEST DETAILS

Stage	Duration (days)	Pressure (kPa)	Strain (%)	Void Ratio	M_v (m^2/MN)	T_{90} (min)	C_v (m^2/yr)	Comments etc.
Loading		0 - 25	1.039	0.6611	0.42	0.1	399	
Loading		25 - 50	1.664	0.6506	0.25	172	0.23	
Unloading		50 - 20	1.302	0.6566	NA	NA	NA	
Loading		20 - 50	1.696	0.6500	0.13	386	0.10	
Loading		50 - 100	2.845	0.6307	0.23	840	0.046	
Unloading		100 - 75	2.798	0.6315	NA	NA	NA	
Loading		75 - 100	2.903	0.6298	0.043	1549	0.025	

Notes: Method of time-setting used (min): **T_{90}.**

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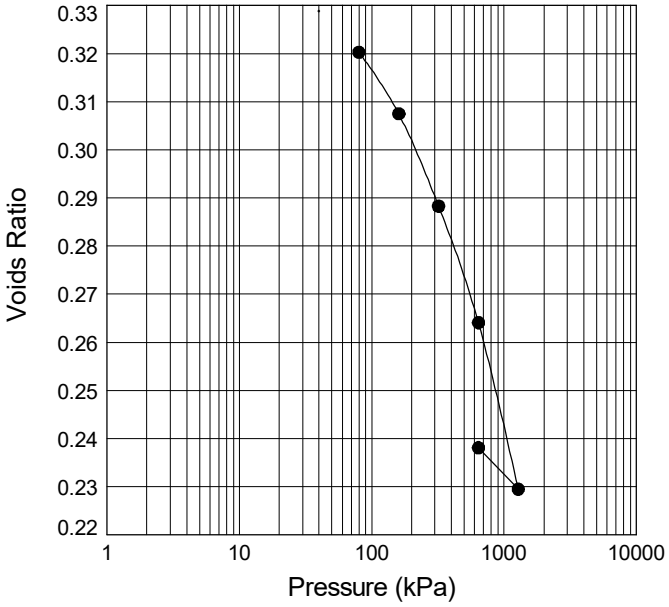
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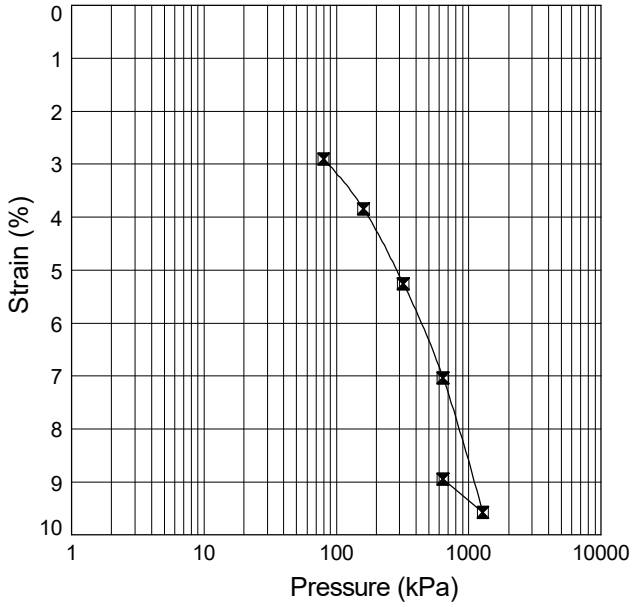
ONE-DIMENSIONAL CONSOLIDATION TEST

In accordance with BS EN ISO 17892 Part 5

Position ID: **ATK_BH12** Sample Ref: **13** Sample Type: **UT** Depth (m): **3.00**

Description : Brown slightly gravelly CLAY





SPECIMEN DETAILS	INITIAL	FINAL
Diameter (mm) :	75.02	75.02
Height (mm) :	19.08	17.37
Assumed Particle Density (Mg/m^3) :	2.65	2.65
Water Content (%) :	8.8	6.8
Wet Density (Mg/m^3) :	2.12	2.29
Dry Density (Mg/m^3) :	1.95	2.14
Voids Ratio :	0.3597	0.2381

TEST DETAILS

Stage	Duration (days)	Pressure (kPa)	Strain (%)	Void Ratio	M_v (m^2/MN)	T_{90} (min)	C_v (m^2/yr)	Comments etc.
Swelling		0 - 40	2.269	0.3288	NA	NA	NA	
Loading		40 - 80	2.898	0.3203	0.16	29	1.3	
Loading		80 - 160	3.837	0.3075	0.12	818	0.046	
Loading		160 - 320	5.252	0.2883	0.092	161	0.23	
Loading		320 - 640	7.034	0.2641	0.059	197	0.18	
Loading		640 - 1280	9.576	0.2295	0.043	120	0.28	
Unloading		1280 - 640	8.947	0.2381	NA	NA	NA	

Notes: Method of time-setting used (min): **T_{90}.**

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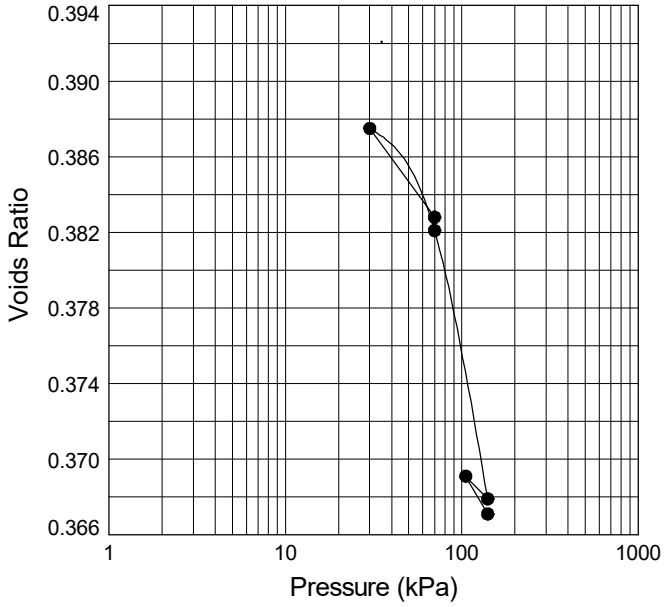
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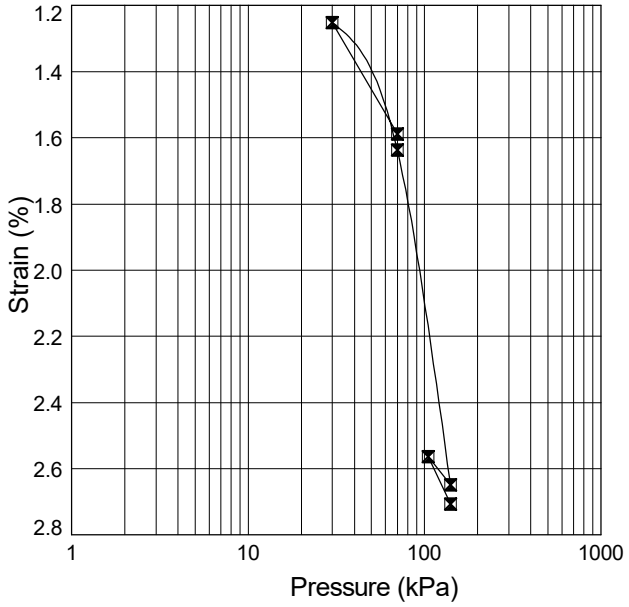
ONE-DIMENSIONAL CONSOLIDATION TEST

In accordance with BS EN ISO 17892 Part 5

Position ID: **ATK_BH12** Sample Ref: **27** Sample Type: **UT** Depth (m): **7.00**

Description : Brown slightly gravelly CLAY





SPECIMEN DETAILS	INITIAL	FINAL
Diameter (mm) :	75.01	75.01
Height (mm) :	18.77	18.26
Assumed Particle Density (Mg/m^3) :	2.65	2.65
Water Content (%) :	16.4	16.4
Wet Density (Mg/m^3) :	2.20	2.26
Dry Density (Mg/m^3) :	1.89	1.94
Voids Ratio :	0.4051	0.3671

TEST DETAILS

Stage	Duration (days)	Pressure (kPa)	Strain (%)	Void Ratio	M_v (m^2/MN)	T_{90} (min)	C_v (m^2/yr)	Comments etc.
Swelling		0 - 35	0.922	0.3921	NA	NA	NA	
Loading		35 - 70	1.588	0.3828	0.19	225	0.17	
Unloading		70 - 30	1.252	0.3875	NA	NA	NA	
Loading		30 - 70	1.636	0.3821	0.097	189	0.20	
Loading		70 - 140	2.648	0.3679	0.15	258	0.15	
Unloading		140 - 105	2.563	0.3691	NA	NA	NA	
Loading		105 - 140	2.706	0.3671	0.042	149	0.25	

Notes: Method of time-setting used (min): **T_{90}.**

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	LAURA SCHRAMM	**20/09/23**

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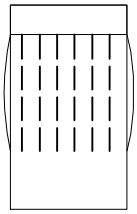
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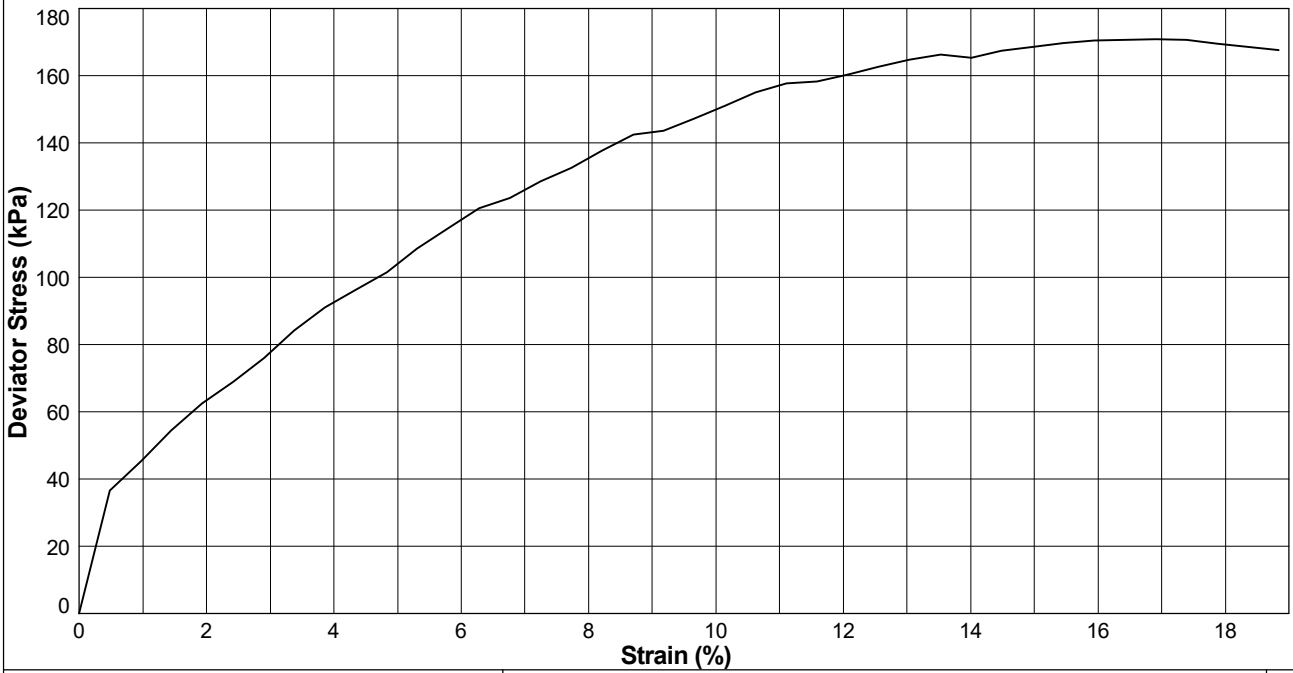
UNCONSOLIDATED UNDRAINED (QUICK) TRIAXIAL COMPRESSION TEST

In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH01** Sample Ref: **20** Sample Type: **U** Depth (m): **5.00**

Description : **Dark brown slightly gravelly slightly sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**102.00**		
	Height	(mm)	**207.00**		
	Water Content	(%)	**16.8**		
	Bulk Density	(Mg/m^3)	**2.22**		
	Dry Density	(Mg/m^3)	**1.90**		
	Void Ratio		**0.3946**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**100**		
	Membrane Correction	(kPa)	**1.50**		
	Corrected Deviator Stress	(kPa)	**169**		
	Undrained Shear Strength	(kPa)	**84**		
FAILURE DETAILS	Strain at Failure	(%)	**15.0**		
	Mode of Failure 1 : **Semi-plastic (axial splitting with bulging)**				



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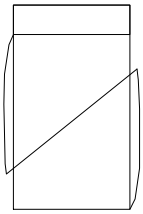
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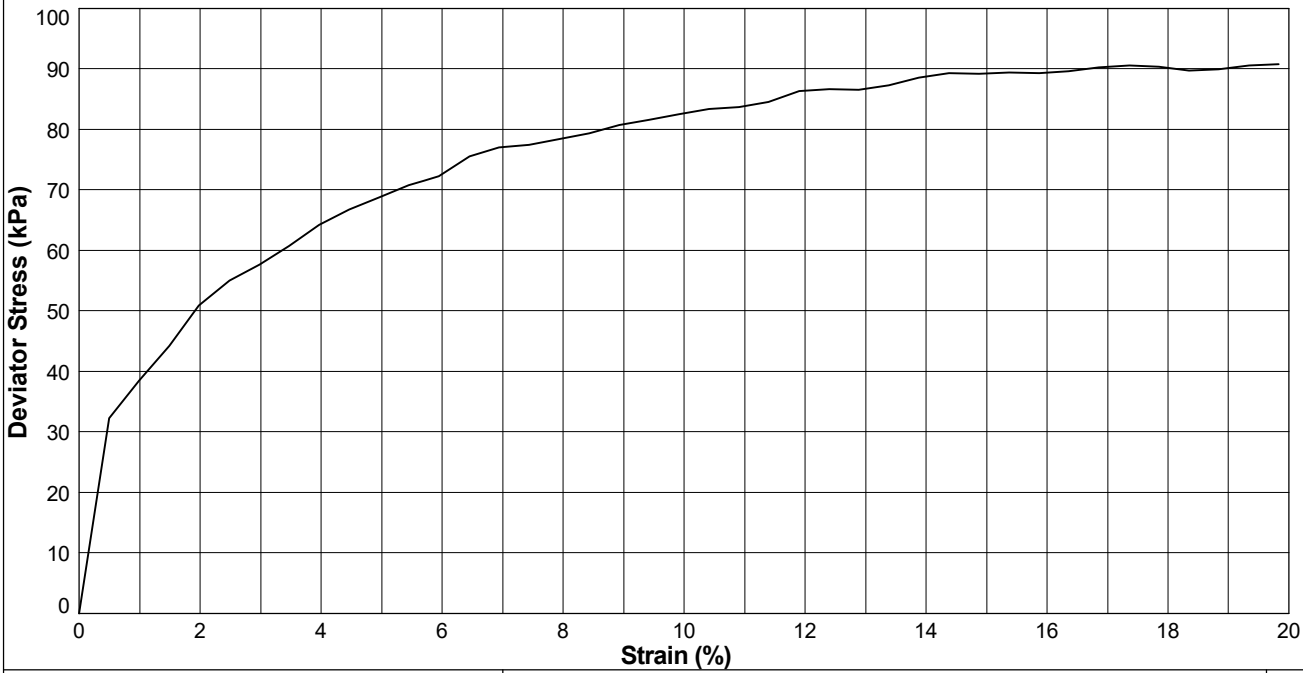
UNCONSOLIDATED UNDRAINED (QUICK) TRIAXIAL COMPRESSION TEST

In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH01** Sample Ref: **33** Sample Type: **UT** Depth (m): **9.00**

Description : **Brown slightly gravelly silty CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**101.67**		
	Height	(mm)	**201.67**		
	Water Content	(%)	**19.7**		
	Bulk Density	(Mg/m^3)	**2.22**		
	Dry Density	(Mg/m^3)	**1.86**		
	Void Ratio		**0.4284**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**180**		
	Membrane Correction	(kPa)	**1.51**		
	Corrected Deviator Stress	(kPa)	**89**		
	Undrained Shear Strength	(kPa)	**45**		
FAILURE DETAILS	Strain at Failure	(%)	**15.0**		
	Mode of Failure 1 : **Brittle (shear plane)**				



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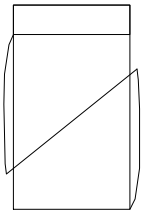
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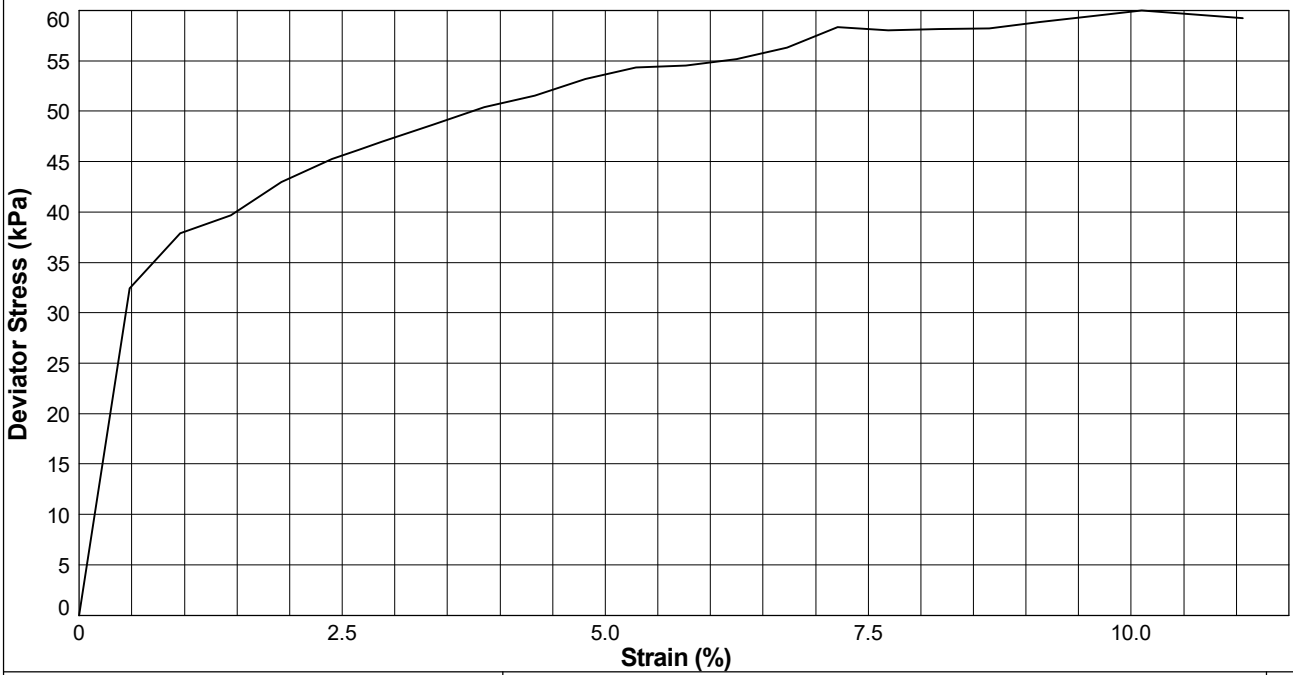
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH02a** Sample Ref: **16** Sample Type: **UT** Depth (m): **4.00**

Description : **Dark brown slightly gravelly silty CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**100.50**		
	Height	(mm)	**208.00**		
	Water Content	(%)	**18.0**		
	Bulk Density	(Mg/m^3)	**2.30**		
	Dry Density	(Mg/m^3)	**1.95**		
	Void Ratio		**0.3595**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**80**		
	Membrane Correction	(kPa)	**1.16**		
	Corrected Deviator Stress	(kPa)	**60**		
	Undrained Shear Strength	(kPa)	**30**		
FAILURE DETAILS	Strain at Failure	(%)	**10.1**		
	Mode of Failure 1 : **Brittle (shear plane)**				



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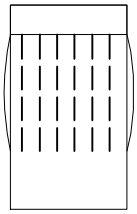
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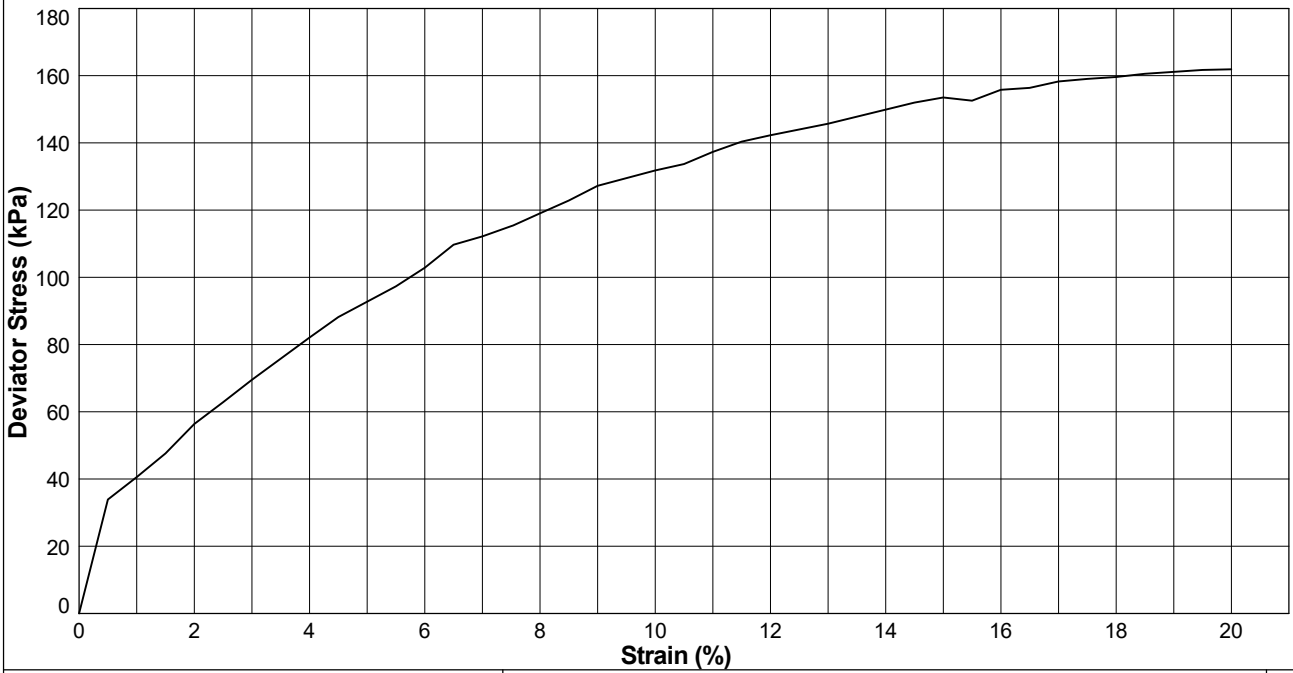
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Position ID: **ATK_BH02a** Sample Ref: **24** Sample Type: **UT** Depth (m): **7.00**

Description : **Brown slightly gravelly CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**103.00**		
	Height	(mm)	**200.00**		
	Water Content	(%)	**17.9**		
	Bulk Density	(Mg/m^3)	**2.19**		
	Dry Density	(Mg/m^3)	**1.86**		
	Void Ratio		**0.4250**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**140**		
	Membrane Correction	(kPa)	**1.49**		
	Corrected Deviator Stress	(kPa)	**153**		
	Undrained Shear Strength	(kPa)	**77**		
FAILURE DETAILS	Strain at Failure	(%)	**15.0**		
	Mode of Failure 1 : **Semi-plastic (axial splitting with bulging)**				



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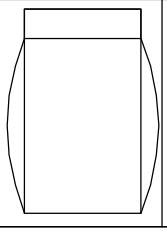
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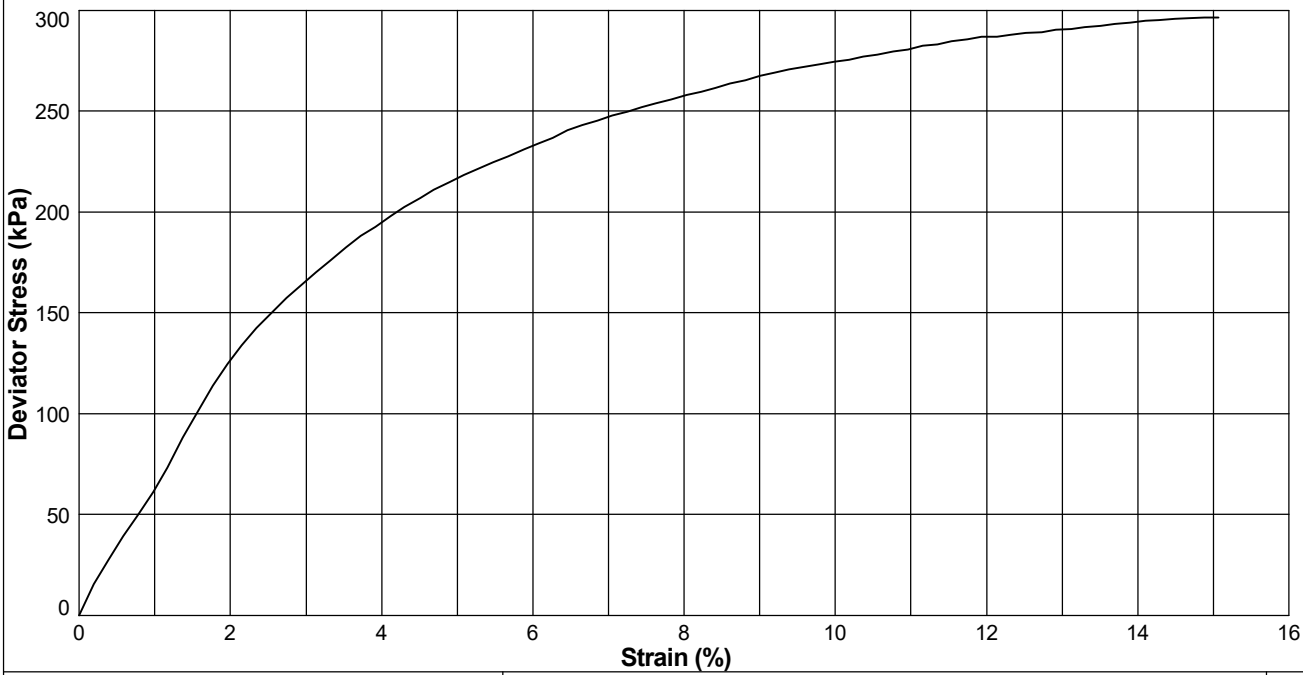
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Position ID: **ATK_BH03** Sample Ref: **56** Sample Type: **C** Depth (m): **10.91**

Description : **Dark reddish brown slightly gravelly slightly sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**102.49**		
	Height	(mm)	**199.57**		
	Water Content	(%)	**12.3**		
	Bulk Density	(Mg/m^3)	**2.31**		
	Dry Density	(Mg/m^3)	**2.06**		
	Void Ratio		**0.2865**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.62**		
	Rate of Axial Displacement	(%/min)	**1.00**		
	Cell Pressure	(kPa)	**220**		
	Membrane Correction	(kPa)	**1.85**		
	Corrected Deviator Stress	(kPa)	**296**		
	Undrained Shear Strength	(kPa)	**148**		
FAILURE DETAILS	Strain at Failure	(%)	**15.0**		
	Mode of Failure 1 : **Plastic (Barrelling)**				



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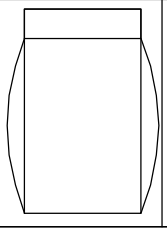
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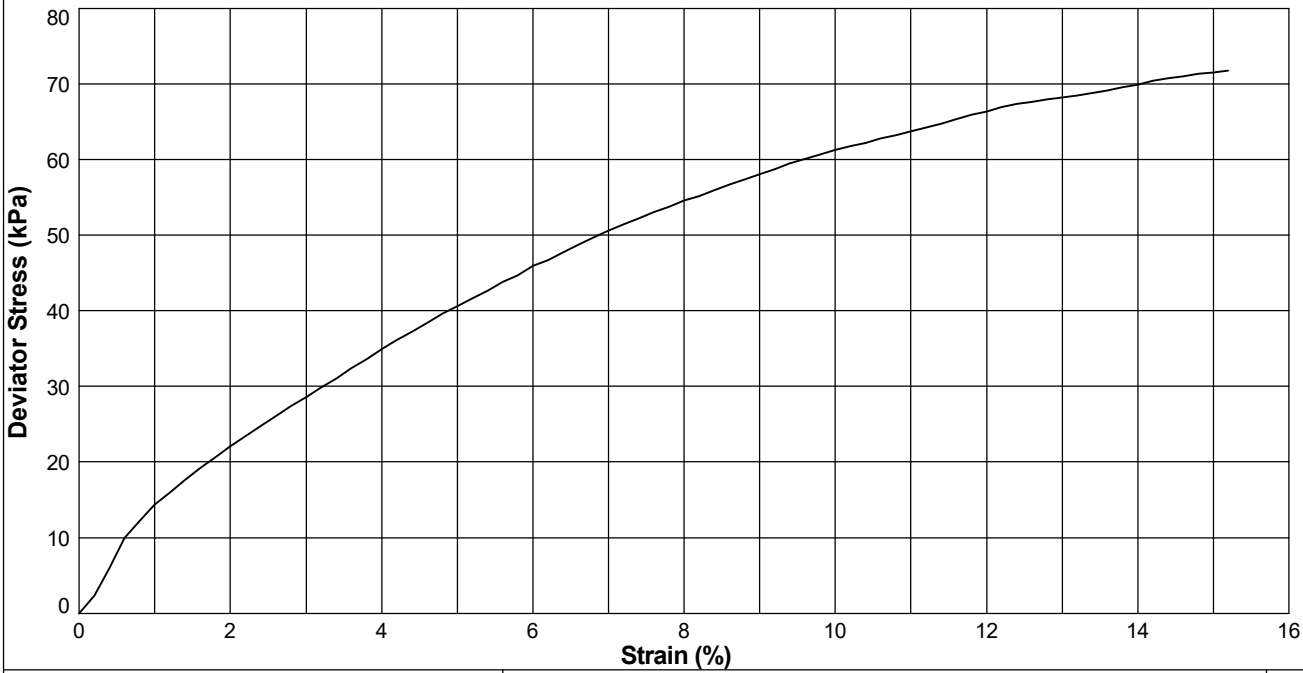
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Position ID: **ATK_BH03** Sample Ref: **58** Sample Type: **C** Depth (m): **17.57**

Description : **Dark reddish brown slightly sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**102.82**		
	Height	(mm)	**197.57**		
	Water Content	(%)	**24.1**		
	Bulk Density	(Mg/m^3)	**2.10**		
	Dry Density	(Mg/m^3)	**1.69**		
	Void Ratio		**0.5639**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.62**		
	Rate of Axial Displacement	(%/min)	**1.01**		
	Cell Pressure	(kPa)	**350**		
	Membrane Correction	(kPa)	**1.85**		
	Corrected Deviator Stress	(kPa)	**72**		
	Undrained Shear Strength	(kPa)	**36**		
FAILURE DETAILS	Strain at Failure	(%)	**15.0**		
	Mode of Failure 1 : **Plastic (Barrelling)**				



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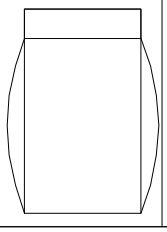
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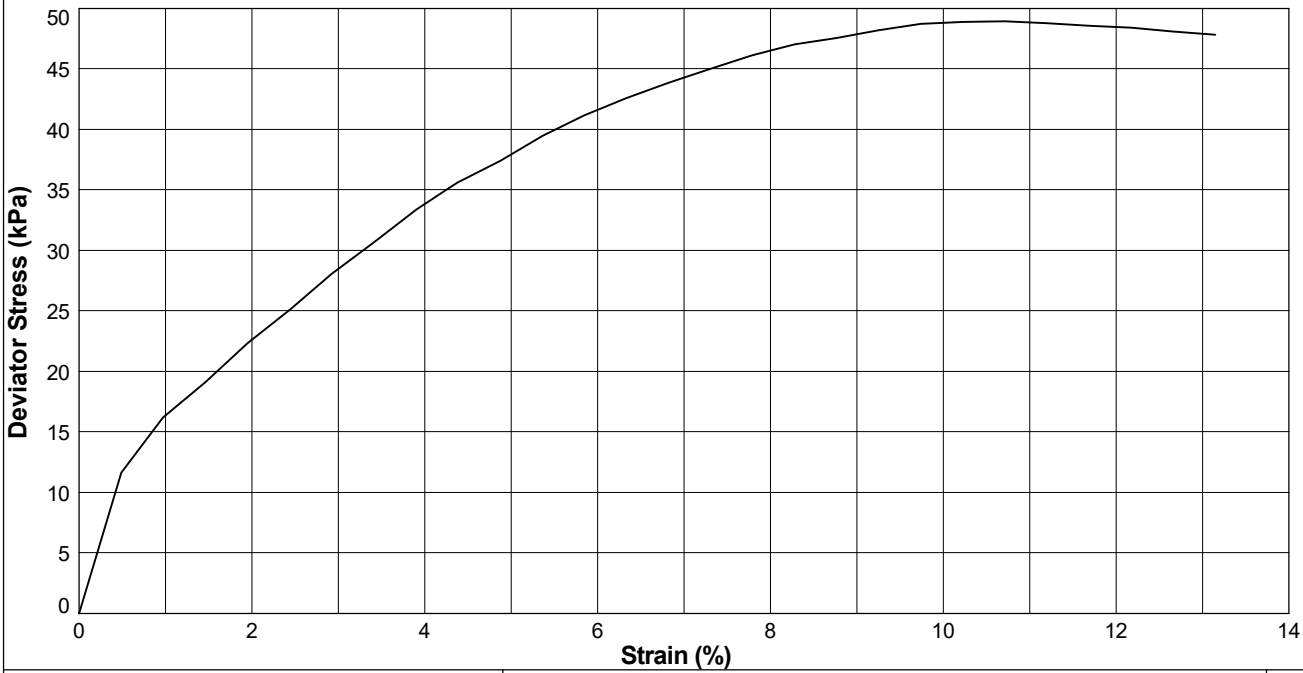
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH04** Sample Ref: **13** Sample Type: **UT** Depth (m): **3.00**

Description : **Brown slightly gravelly CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**103.67**		
	Height	(mm)	**205.33**		
	Water Content	(%)	**25.1**		
	Bulk Density	(Mg/m^3)	**2.04**		
	Dry Density	(Mg/m^3)	**1.63**		
	Void Ratio		**0.6273**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**60**		
	Membrane Correction	(kPa)	**0.59**		
	Corrected Deviator Stress	(kPa)	**49**		
	Undrained Shear Strength	(kPa)	**24**		
FAILURE DETAILS	Strain at Failure	(%)	**10.7**		
	Mode of Failure 1 : **Plastic (Barrelling)**				



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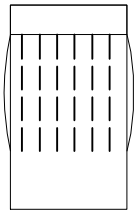
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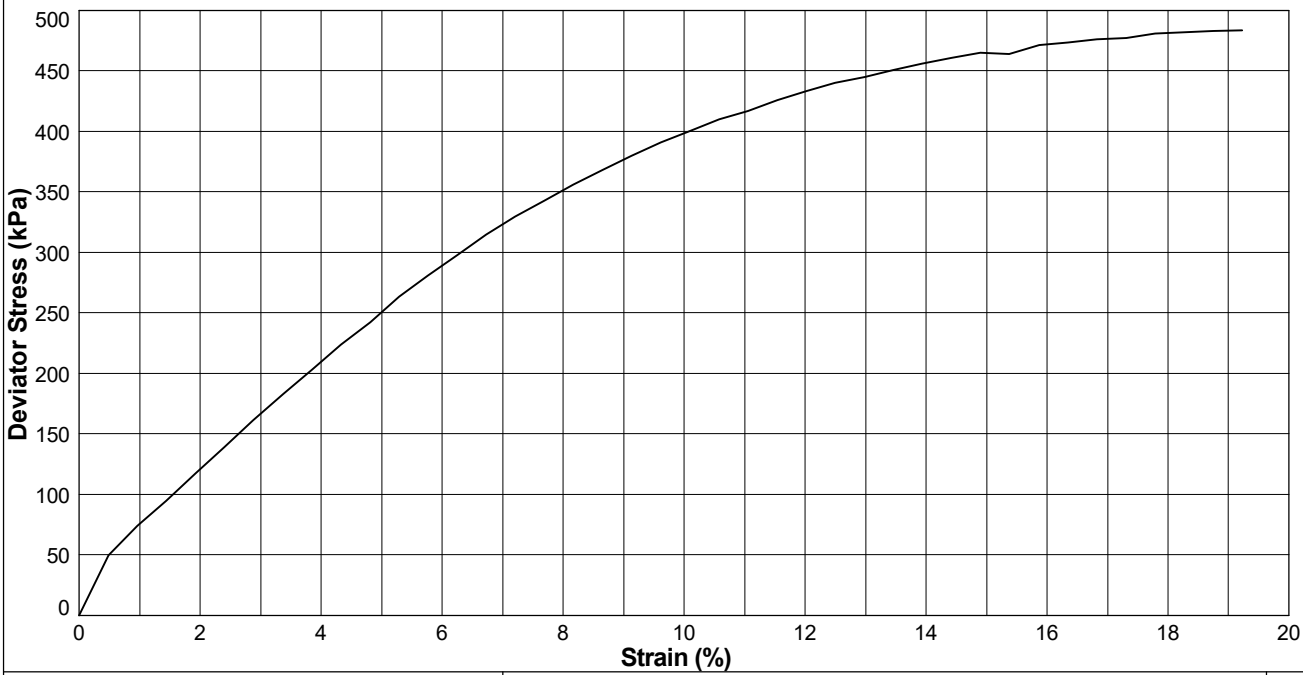
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH04** Sample Ref: **28** Sample Type: **UT** Depth (m): **9.00**

Description : **Brown slightly gravelly slightly sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**101.83**		
	Height	(mm)	**208.00**		
	Water Content	(%)	**13.8**		
	Bulk Density	(Mg/m^3)	**2.33**		
	Dry Density	(Mg/m^3)	**2.05**		
	Void Ratio		**0.2934**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**180**		
	Membrane Correction	(kPa)	**1.50**		
	Corrected Deviator Stress	(kPa)	**465**		
	Undrained Shear Strength	(kPa)	**232**		
FAILURE DETAILS	Strain at Failure	(%)	**15.0**		
	Mode of Failure 1 : **Semi-plastic (axial splitting with bulging)**				



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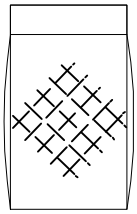
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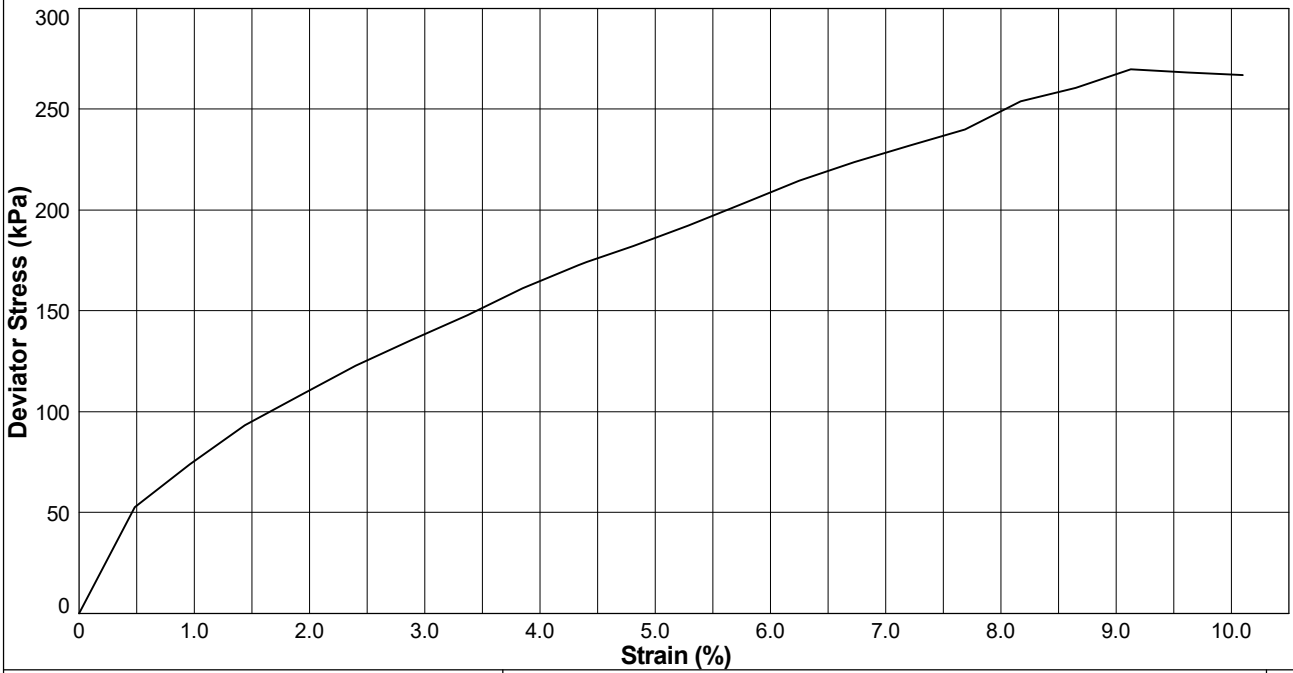
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Position ID: **ATK_BH04** Sample Ref: **33** Sample Type: **UT** Depth (m): **11.50**

Description : **Brown slightly gravelly slightly sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**99.50**		
	Height	(mm)	**208.00**		
	Water Content	(%)	**11.4**		
	Bulk Density	(Mg/m^3)	**2.53**		
	Dry Density	(Mg/m^3)	**2.27**		
	Void Ratio		**0.1688**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**230**		
	Membrane Correction	(kPa)	**1.08**		
	Corrected Deviator Stress	(kPa)	**270**		
	Undrained Shear Strength	(kPa)	**135**		
FAILURE DETAILS	Strain at Failure	(%)	**9.1**		
	Mode of Failure 1 : **Semi-plastic (intermediate)**				



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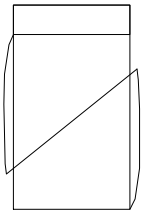
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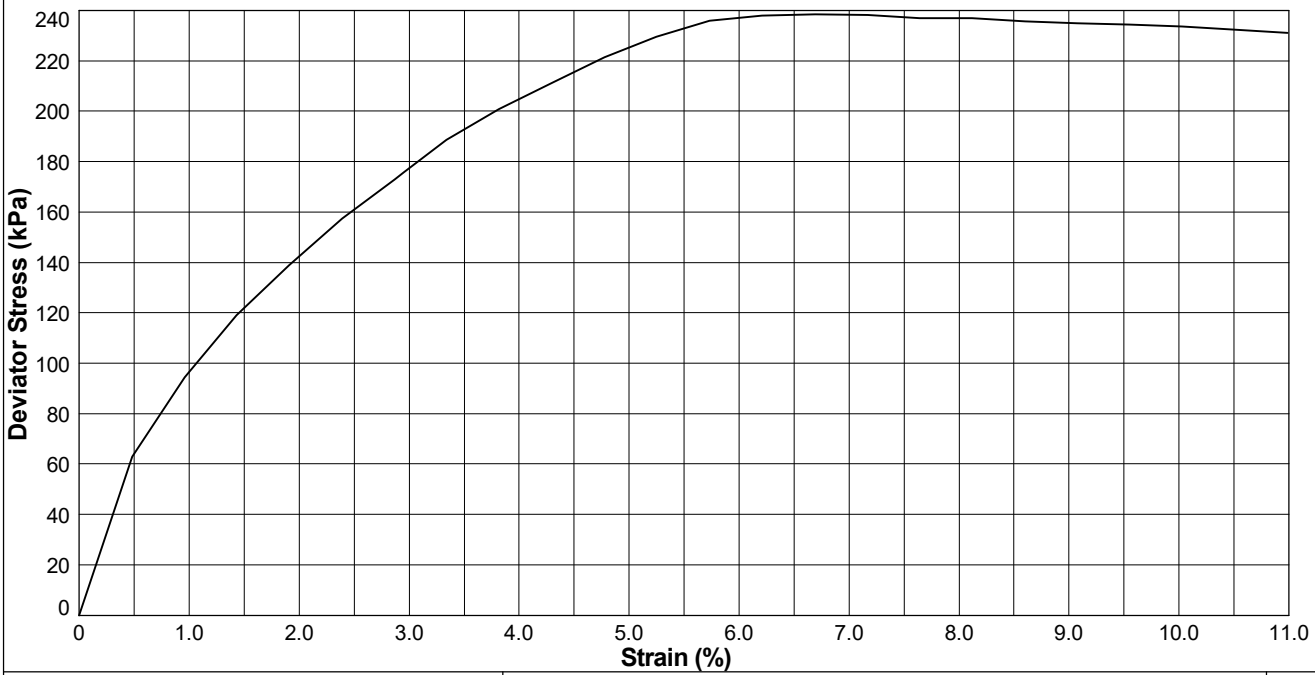
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Position ID: **ATK_BH04** Sample Ref: **46** Sample Type: **UT** Depth (m): **19.00**

Description : **Brown CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**103.00**		
	Height	(mm)	**209.33**		
	Water Content	(%)	**23.3**		
	Bulk Density	(Mg/m^3)	**2.08**		
	Dry Density	(Mg/m^3)	**1.69**		
	Void Ratio		**0.5679**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**380**		
	Membrane Correction	(kPa)	**0.81**		
	Corrected Deviator Stress	(kPa)	**238**		
	Undrained Shear Strength	(kPa)	**119**		
FAILURE DETAILS	Strain at Failure	(%)	**6.7**		
	Mode of Failure 1 : **Brittle (shear plane)**				



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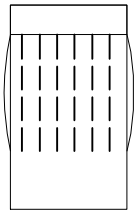
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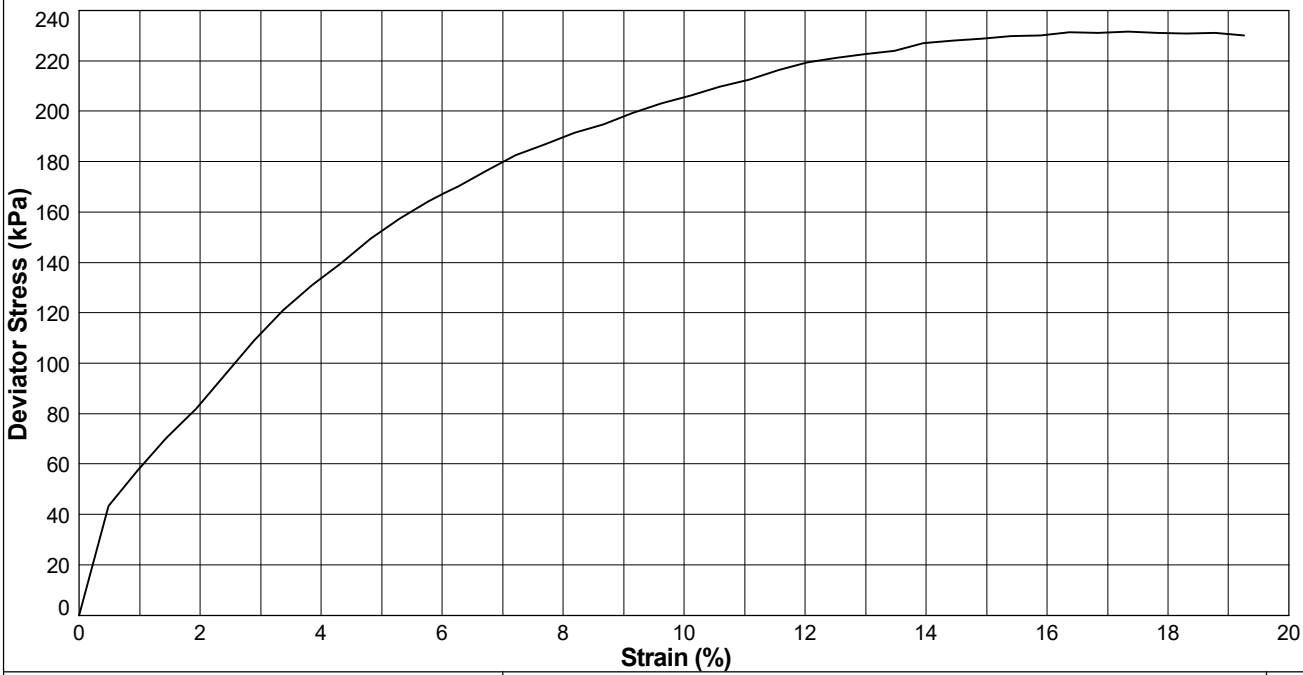
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH05** Sample Ref: **21** Sample Type: **UT** Depth (m): **6.00**

Description : **Brown slightly gravelly slightly sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**101.00**		
	Height	(mm)	**207.67**		
	Water Content	(%)	**17.0**		
	Bulk Density	(Mg/m^3)	**2.22**		
	Dry Density	(Mg/m^3)	**1.90**		
	Void Ratio		**0.3973**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**120**		
	Membrane Correction	(kPa)	**1.52**		
	Corrected Deviator Stress	(kPa)	**229**		
	Undrained Shear Strength	(kPa)	**114**		
FAILURE DETAILS	Strain at Failure	(%)	**15.0**		
	Mode of Failure 1 : **Semi-plastic (axial splitting with bulging)**				



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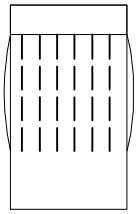
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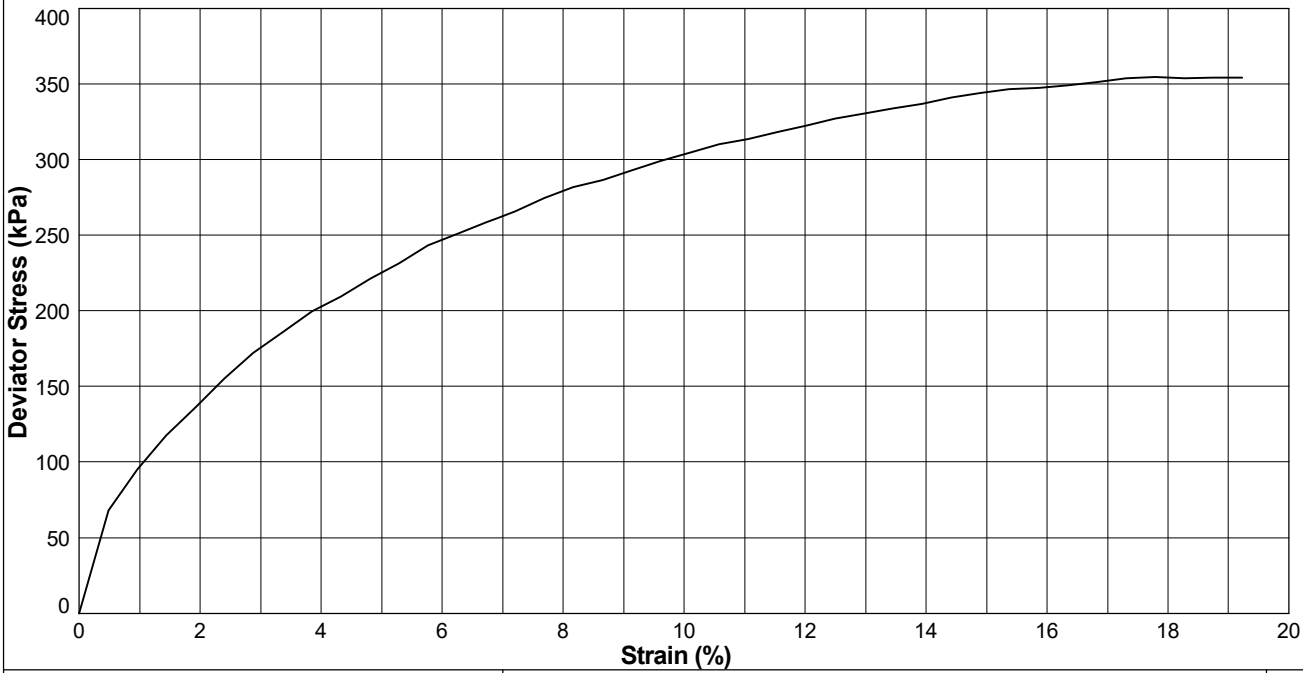
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH05** Sample Ref: **31** Sample Type: **UT** Depth (m): **10.00**

Description : **Dark brown slightly sandy gravelly CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**101.67**		
	Height	(mm)	**208.00**		
	Water Content	(%)	**15.3**		
	Bulk Density	(Mg/m^3)	**2.32**		
	Dry Density	(Mg/m^3)	**2.01**		
	Void Ratio		**0.3187**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**200**		
	Membrane Correction	(kPa)	**1.51**		
	Corrected Deviator Stress	(kPa)	**345**		
	Undrained Shear Strength	(kPa)	**172**		
FAILURE DETAILS	Strain at Failure	(%)	**15.0**		
	Mode of Failure 1 : **Semi-plastic (axial splitting with bulging)**				



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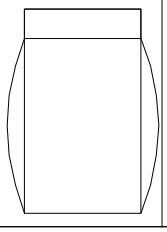
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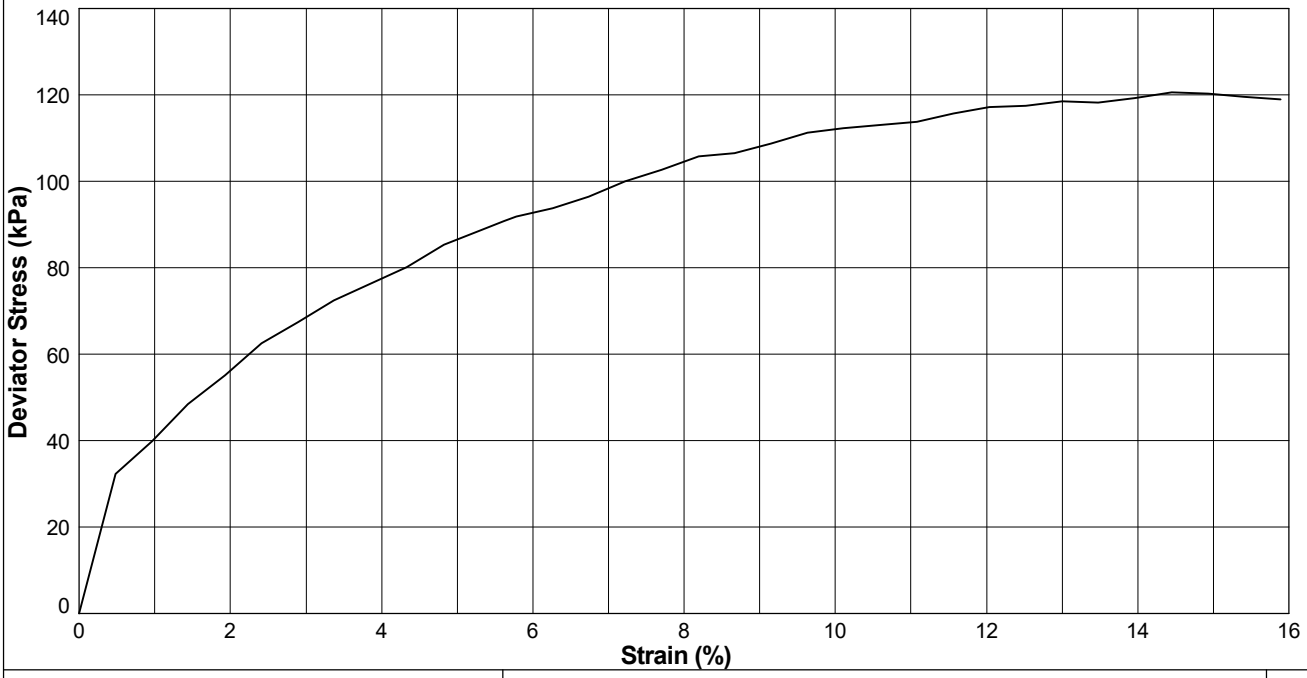
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH05** Sample Ref: **37** Sample Type: **UT** Depth (m): **14.50**

Description : **Dark brown slightly gravelly slightly sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**102.50**		
	Height	(mm)	**207.67**		
	Water Content	(%)	**13.9**		
	Bulk Density	(Mg/m^3)	**2.30**		
	Dry Density	(Mg/m^3)	**2.02**		
	Void Ratio		**0.3119**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**290**		
	Membrane Correction	(kPa)	**1.45**		
	Corrected Deviator Stress	(kPa)	**121**		
	Undrained Shear Strength	(kPa)	**60**		
FAILURE DETAILS	Strain at Failure	(%)	**14.4**		
	Mode of Failure 1 : **Plastic (Barrelling)**				



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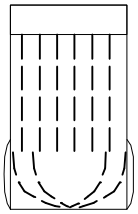
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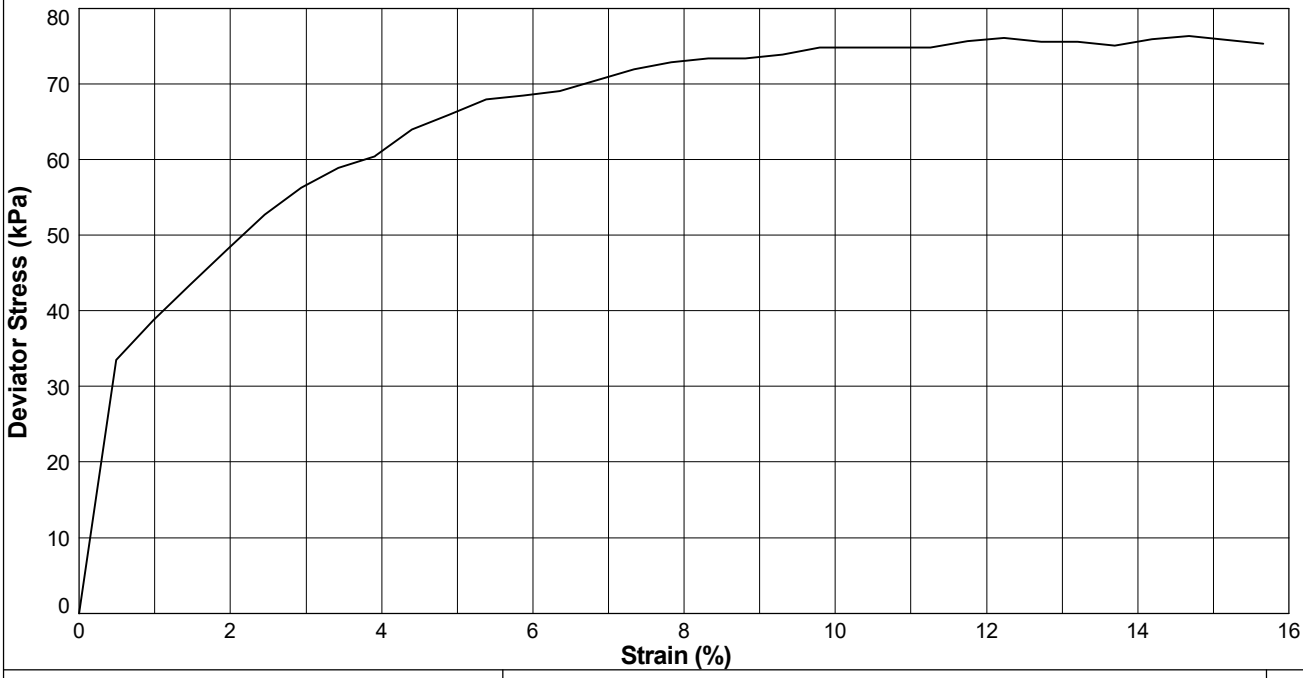
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH06** Sample Ref: **14** Sample Type: **UT** Depth (m): **4.00**

Description : **Brown slightly gravelly slightly silty CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**102.00**		
	Height	(mm)	**204.33**		
	Water Content	(%)	**19.9**		
	Bulk Density	(Mg/m^3)	**2.17**		
	Dry Density	(Mg/m^3)	**1.81**		
	Void Ratio		**0.4614**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**80**		
	Membrane Correction	(kPa)	**1.48**		
	Corrected Deviator Stress	(kPa)	**76**		
	Undrained Shear Strength	(kPa)	**38**		
FAILURE DETAILS	Strain at Failure	(%)	**14.7**		
	Mode of Failure 1 : **Semi-plastic (bulging, shear & axial splitting)**				



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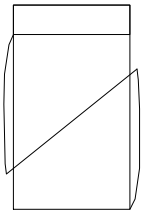
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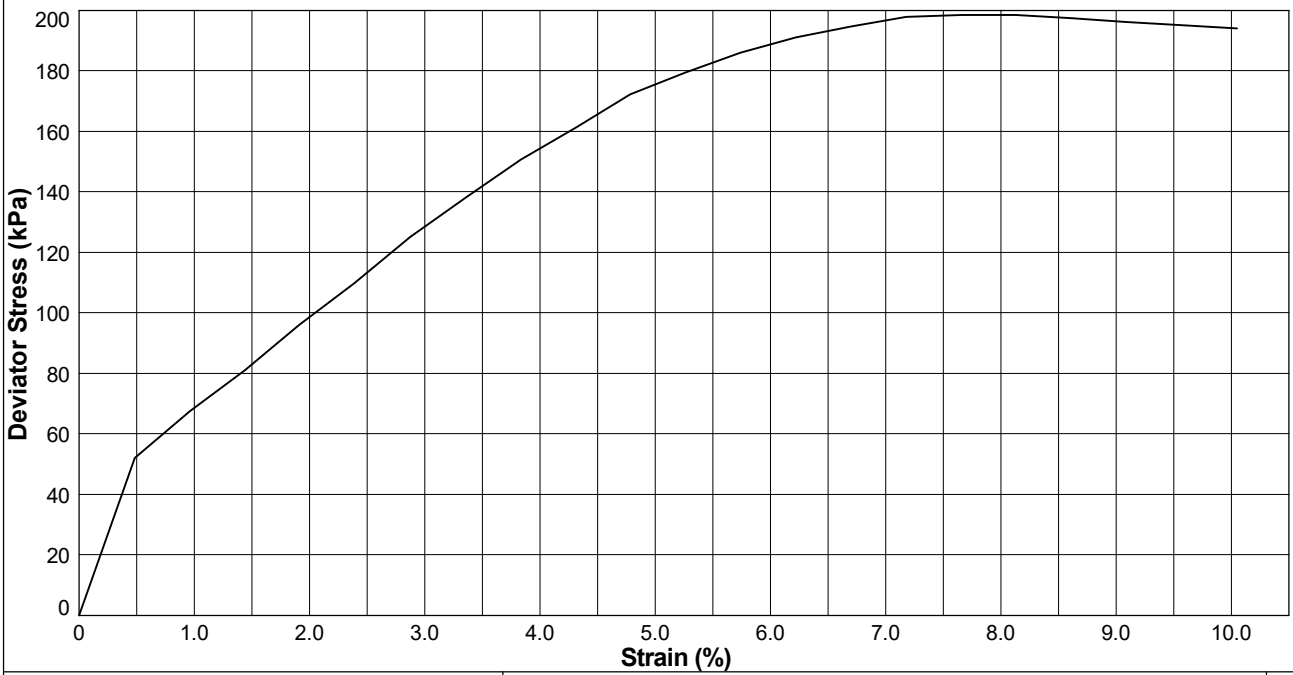
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH06** Sample Ref: **43** Sample Type: **UT** Depth (m): **13.00**

Description : **Dark brown slightly gravelly slightly sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**102.50**		
	Height	(mm)	**209.00**		
	Water Content	(%)	**25.9**		
	Bulk Density	(Mg/m^3)	**2.07**		
	Dry Density	(Mg/m^3)	**1.65**		
	Void Ratio		**0.6109**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**260**		
	Membrane Correction	(kPa)	**0.91**		
	Corrected Deviator Stress	(kPa)	**199**		
	Undrained Shear Strength	(kPa)	**99**		
FAILURE DETAILS	Strain at Failure	(%)	**7.7**		
	Mode of Failure 1 : **Brittle (shear plane)**				



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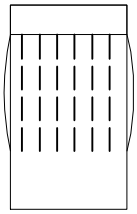
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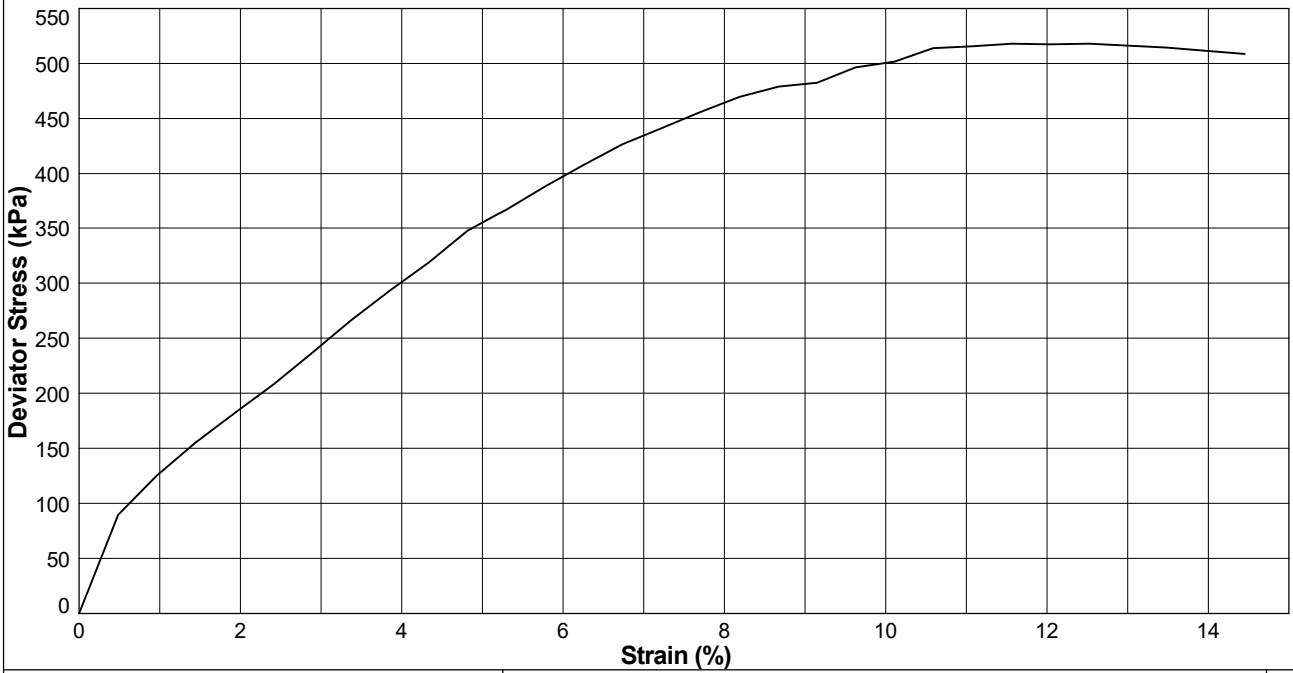
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH06** Sample Ref: **59** Sample Type: **UT** Depth (m): **19.00**

Description : **Dark brown CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**101.83**		
	Height	(mm)	**207.67**		
	Water Content	(%)	**21.8**		
	Bulk Density	(Mg/m^3)	**2.19**		
	Dry Density	(Mg/m^3)	**1.80**		
	Void Ratio		**0.4709**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**380**		
	Membrane Correction	(kPa)	**1.32**		
	Corrected Deviator Stress	(kPa)	**518**		
	Undrained Shear Strength	(kPa)	**259**		
FAILURE DETAILS	Strain at Failure	(%)	**12.5**		
	Mode of Failure 1 : **Semi-plastic (axial splitting with bulging)**				



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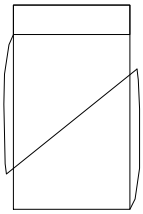
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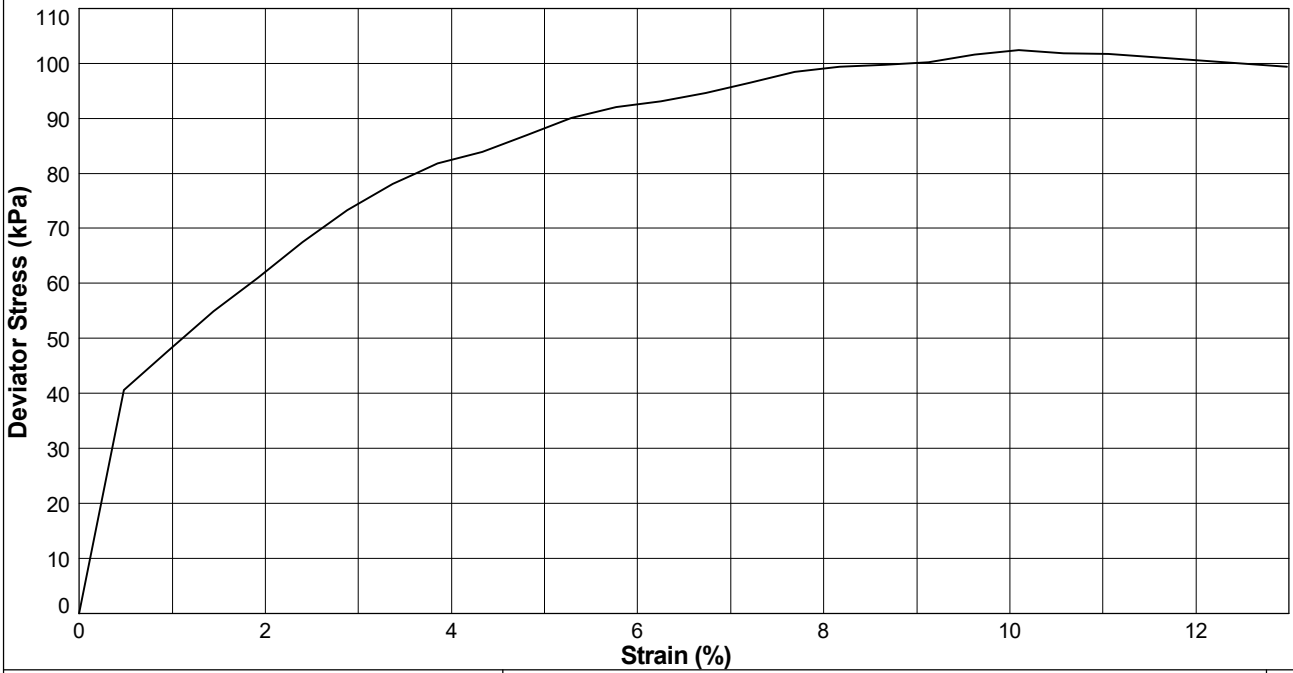
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH07** Sample Ref: **10** Sample Type: **UT** Depth (m): **3.00**

Description : **Brown slightly gravelly slightly silty CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**98.67**		
	Height	(mm)	**208.00**		
	Water Content	(%)	**24.0**		
	Bulk Density	(Mg/m^3)	**2.17**		
	Dry Density	(Mg/m^3)	**1.75**		
	Void Ratio		**0.5119**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**60**		
	Membrane Correction	(kPa)	**1.18**		
	Corrected Deviator Stress	(kPa)	**102**		
	Undrained Shear Strength	(kPa)	**51**		
FAILURE DETAILS	Strain at Failure	(%)	**10.1**		
	Mode of Failure 1 : **Brittle (shear plane)**				



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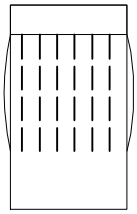
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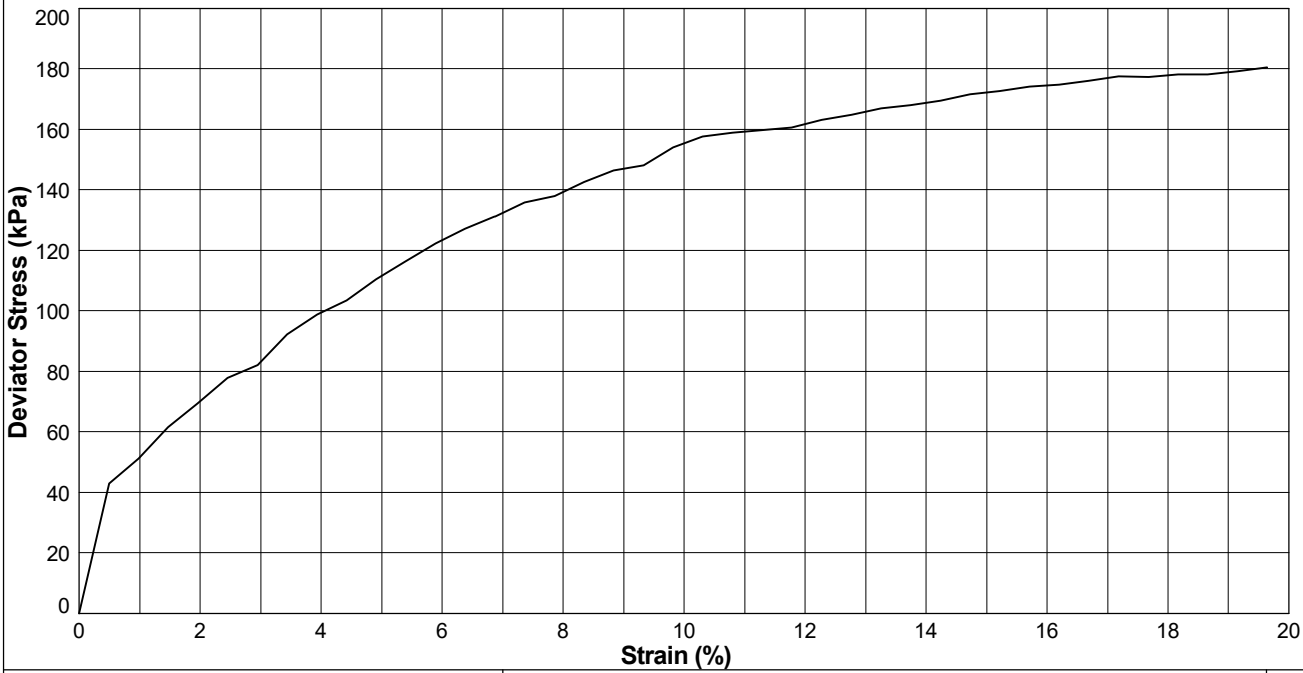
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH07** Sample Ref: **20** Sample Type: **UT** Depth (m): **7.00**

Description : **Dark brown slightly gravelly CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**102.67**		
	Height	(mm)	**203.67**		
	Water Content	(%)	**15.6**		
	Bulk Density	(Mg/m^3)	**2.25**		
	Dry Density	(Mg/m^3)	**1.95**		
	Void Ratio		**0.3590**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**140**		
	Membrane Correction	(kPa)	**1.49**		
	Corrected Deviator Stress	(kPa)	**172**		
	Undrained Shear Strength	(kPa)	**86**		
FAILURE DETAILS	Strain at Failure	(%)	**15.0**		
	Mode of Failure 1 : **Semi-plastic (axial splitting with bulging)**				



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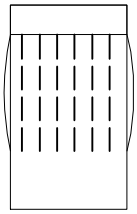
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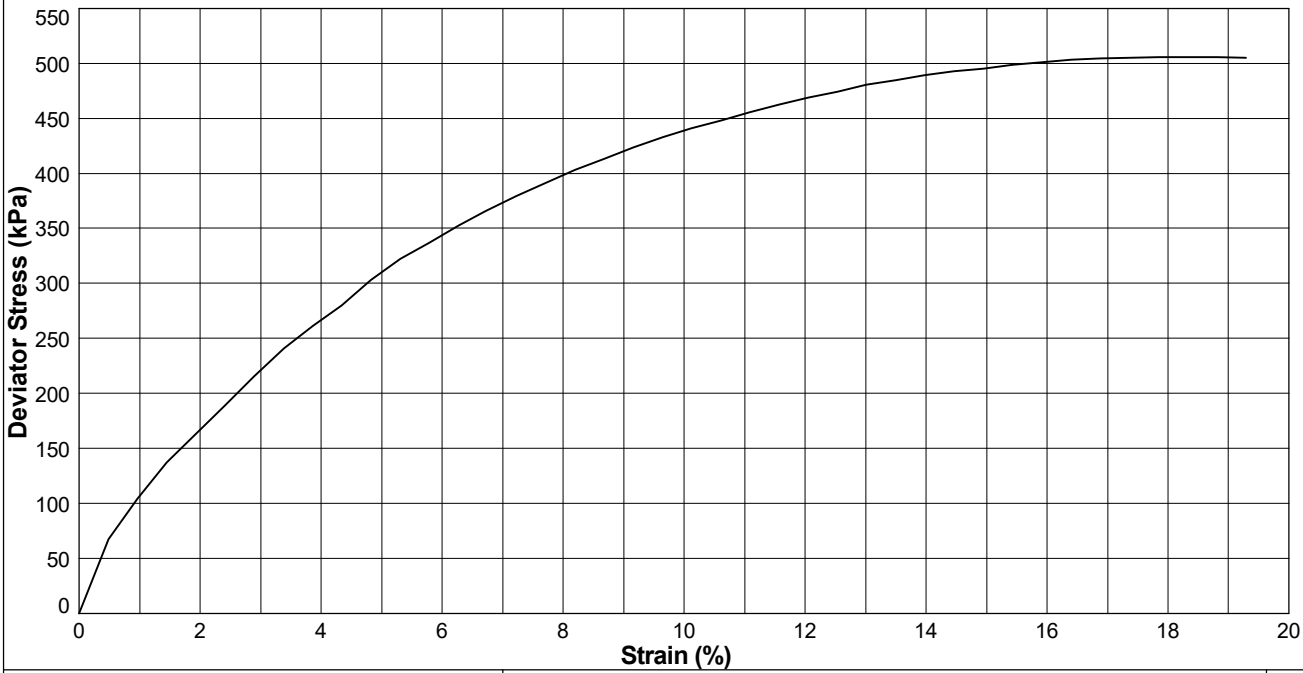
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH07** Sample Ref: **36** Sample Type: **UT** Depth (m): **14.50**

Description : **Brown slightly gravelly slightly sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**103.17**		
	Height	(mm)	**207.33**		
	Water Content	(%)	**11.5**		
	Bulk Density	(Mg/m^3)	**2.33**		
	Dry Density	(Mg/m^3)	**2.09**		
	Void Ratio		**0.2693**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**290**		
	Membrane Correction	(kPa)	**1.49**		
	Corrected Deviator Stress	(kPa)	**496**		
	Undrained Shear Strength	(kPa)	**248**		
FAILURE DETAILS	Strain at Failure	(%)	**15.0**		
	Mode of Failure 1 : **Semi-plastic (axial splitting with bulging)**				



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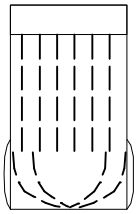
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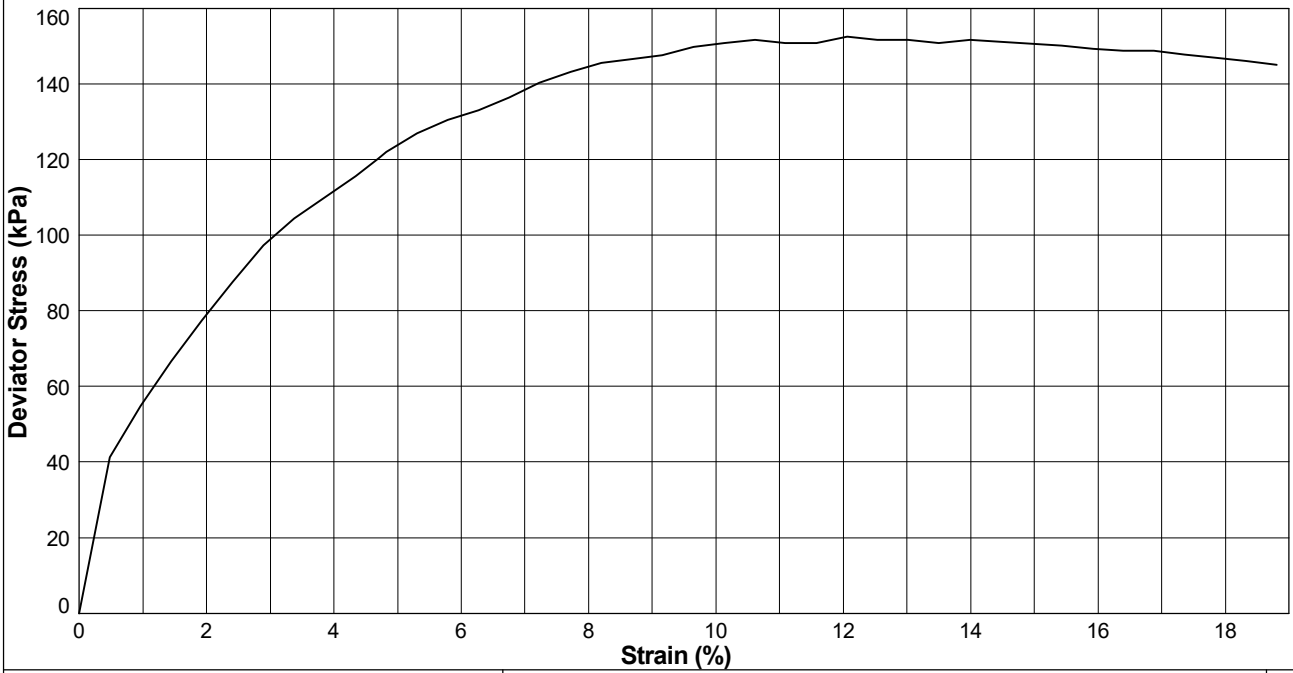
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH08A** Sample Ref: **18** Sample Type: **UT** Depth (m): **7.00**

Description : **Dark brown slightly gravelly slightly sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**102.83**		
	Height	(mm)	**207.33**		
	Water Content	(%)	**16.6**		
	Bulk Density	(Mg/m^3)	**2.19**		
	Dry Density	(Mg/m^3)	**1.88**		
	Void Ratio		**0.4094**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**140**		
	Membrane Correction	(kPa)	**1.28**		
	Corrected Deviator Stress	(kPa)	**153**		
	Undrained Shear Strength	(kPa)	**76**		
FAILURE DETAILS	Strain at Failure	(%)	**12.1**		
	Mode of Failure 1 : **Semi-plastic (bulging, shear & axial splitting)**				



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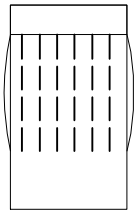
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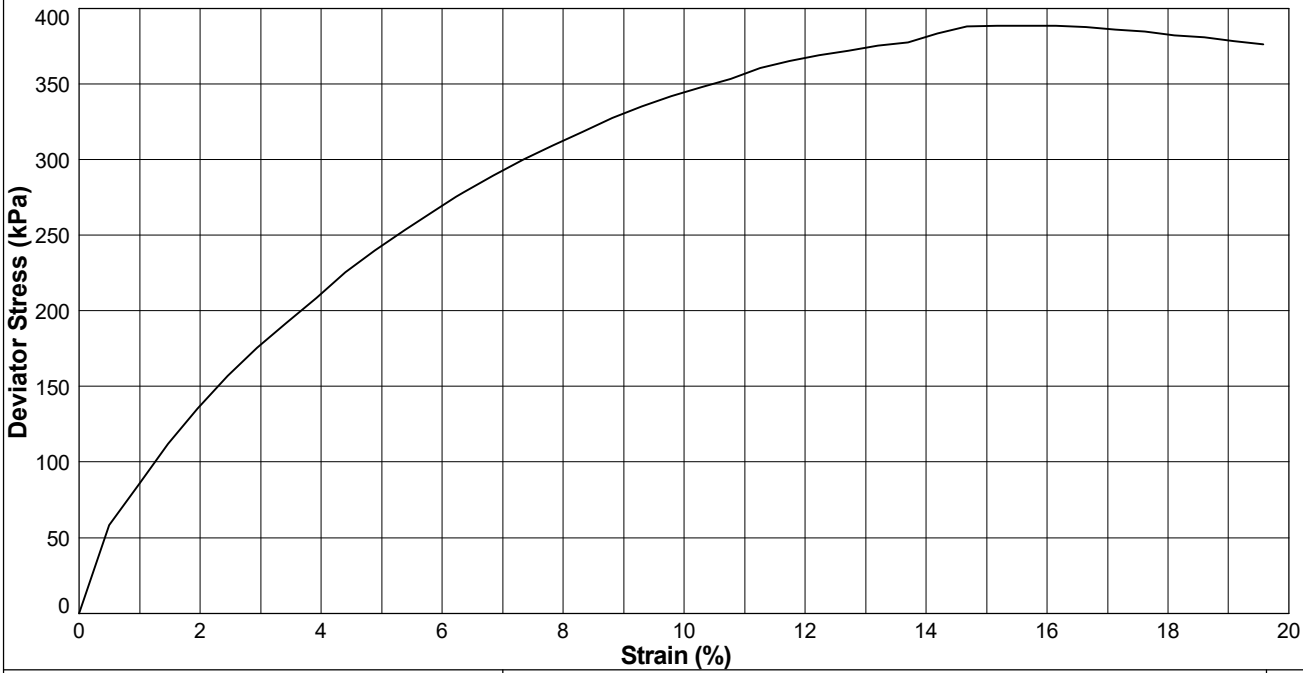
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH08A** Sample Ref: **28** Sample Type: **UT** Depth (m): **12.00**

Description : **Dark brown slightly gravelly slightly sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**102.83**		
	Height	(mm)	**204.33**		
	Water Content	(%)	**11.7**		
	Bulk Density	(Mg/m^3)	**2.34**		
	Dry Density	(Mg/m^3)	**2.09**		
	Void Ratio		**0.2651**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**240**		
	Membrane Correction	(kPa)	**1.49**		
	Corrected Deviator Stress	(kPa)	**388**		
	Undrained Shear Strength	(kPa)	**194**		
FAILURE DETAILS	Strain at Failure	(%)	**15.0**		
	Mode of Failure 1 : **Semi-plastic (axial splitting with bulging)**				



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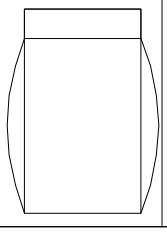
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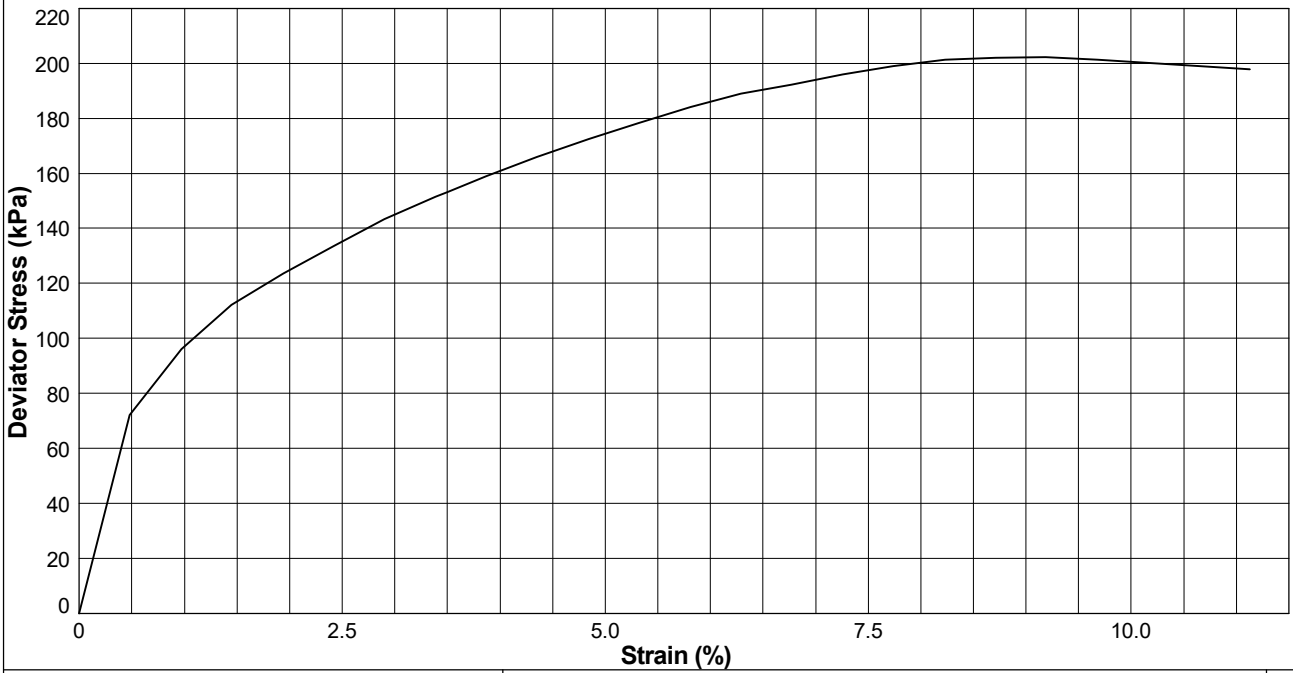
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH08A** Sample Ref: **48** Sample Type: **UT** Depth (m): **21.00**

Description : **Dark brown CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**101.00**		
	Height	(mm)	**206.67**		
	Water Content	(%)	**29.5**		
	Bulk Density	(Mg/m^3)	**2.08**		
	Dry Density	(Mg/m^3)	**1.61**		
	Void Ratio		**0.6464**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**420**		
	Membrane Correction	(kPa)	**1.06**		
	Corrected Deviator Stress	(kPa)	**202**		
	Undrained Shear Strength	(kPa)	**101**		
FAILURE DETAILS	Strain at Failure	(%)	**9.2**		
	Mode of Failure 1 : **Plastic (Barrelling)**				



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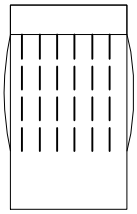
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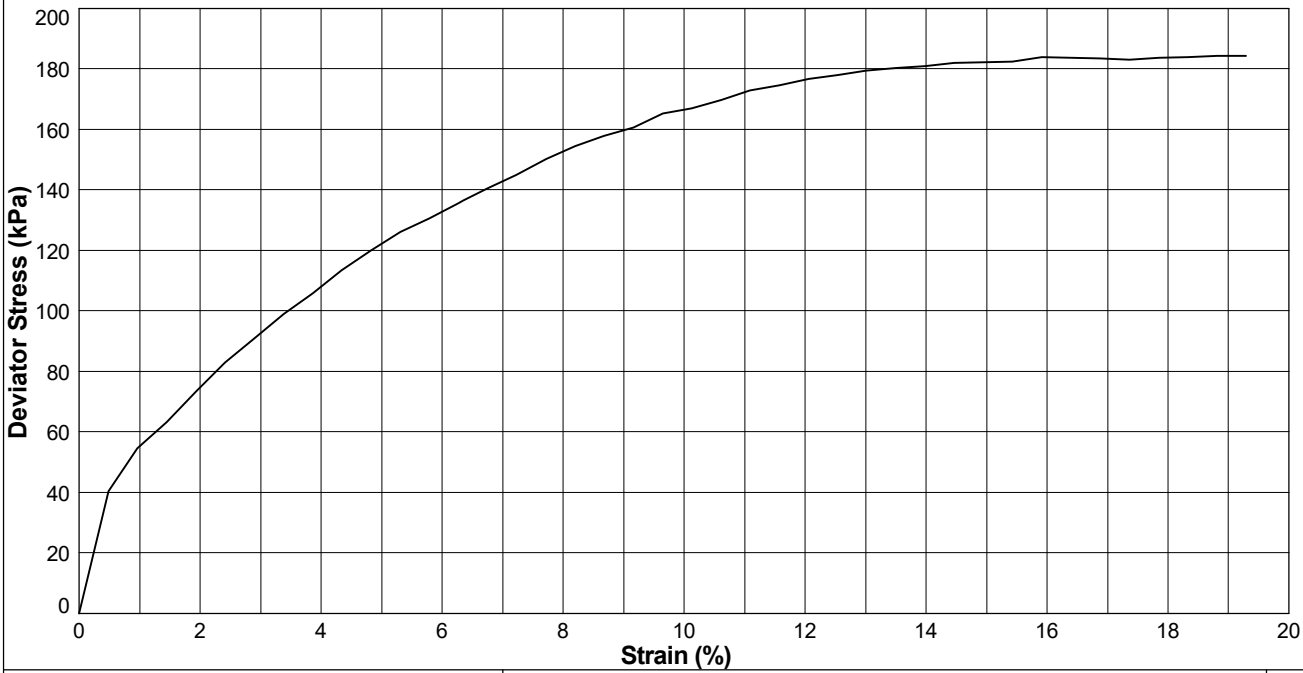
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH09** Sample Ref: **19** Sample Type: **UT** Depth (m): **6.00**

Description : **Brown slightly gravelly slightly sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**101.67**		
	Height	(mm)	**207.33**		
	Water Content	(%)	**17.0**		
	Bulk Density	(Mg/m^3)	**2.27**		
	Dry Density	(Mg/m^3)	**1.94**		
	Void Ratio		**0.3656**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**120**		
	Membrane Correction	(kPa)	**1.51**		
	Corrected Deviator Stress	(kPa)	**182**		
	Undrained Shear Strength	(kPa)	**91**		
FAILURE DETAILS	Strain at Failure	(%)	**15.0**		
	Mode of Failure 1 : **Semi-plastic (axial splitting with bulging)**				



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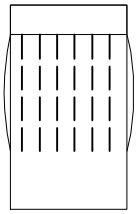
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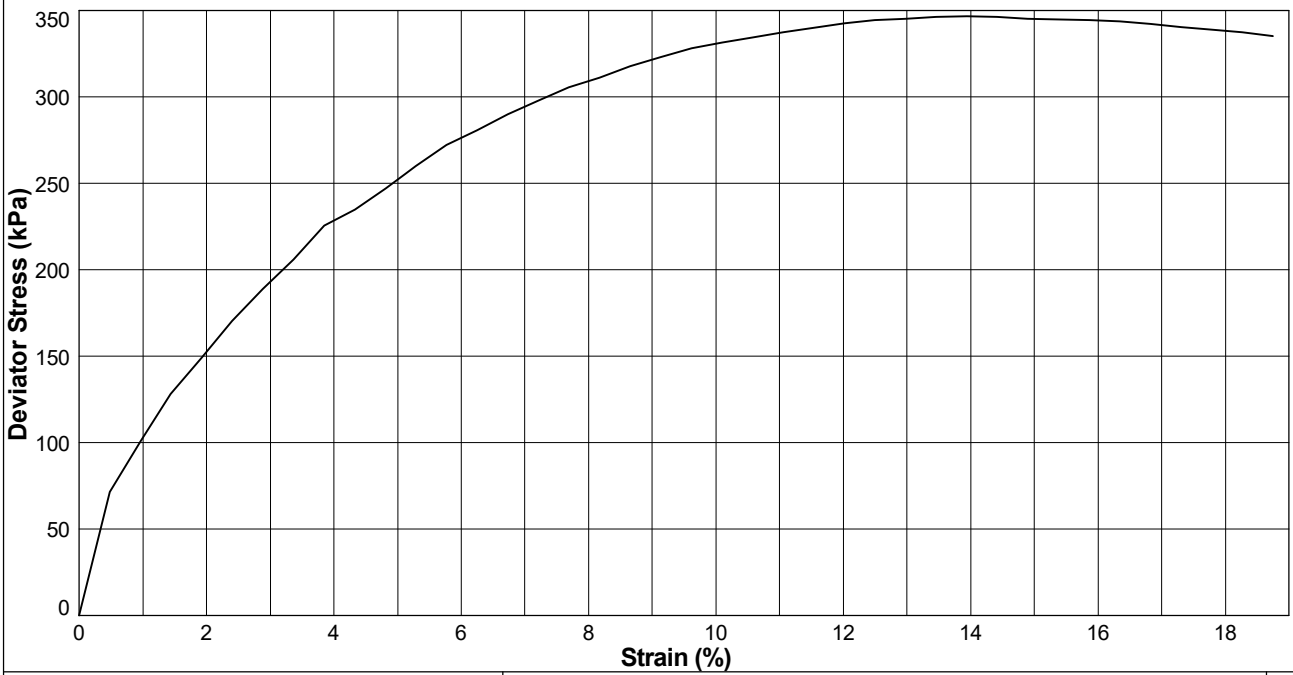
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH09** Sample Ref: **27** Sample Type: **UT** Depth (m): **9.00**

Description : **Brown slightly gravelly slightly sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**102.17**		
	Height	(mm)	**208.00**		
	Water Content	(%)	**15.5**		
	Bulk Density	(Mg/m^3)	**2.31**		
	Dry Density	(Mg/m^3)	**2.00**		
	Void Ratio		**0.3270**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**180**		
	Membrane Correction	(kPa)	**1.42**		
	Corrected Deviator Stress	(kPa)	**346**		
	Undrained Shear Strength	(kPa)	**173**		
FAILURE DETAILS	Strain at Failure	(%)	**13.9**		
	Mode of Failure 1 : **Semi-plastic (axial splitting with bulging)**				



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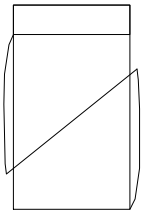
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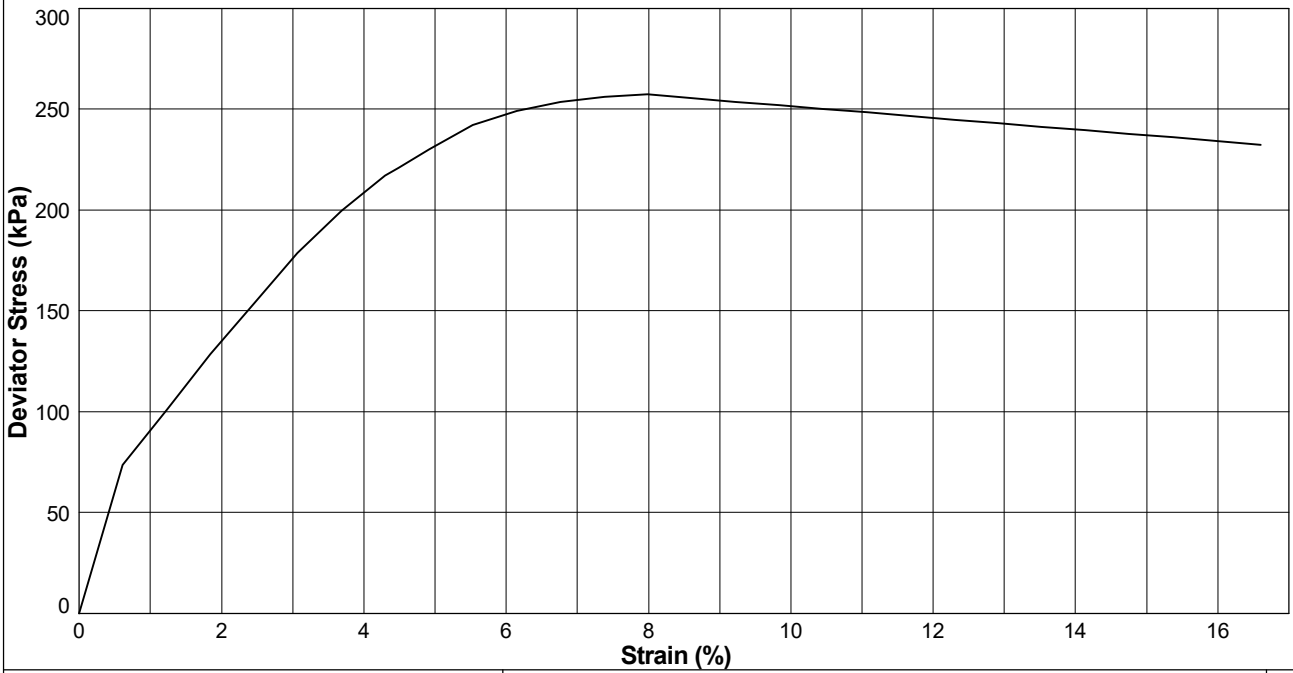
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH10** Sample Ref: **12** Sample Type: **UT** Depth (m): **3.00**

Description : **Brown CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**101.17**		
	Height	(mm)	**162.67**		
	Water Content	(%)	**23.1**		
	Bulk Density	(Mg/m^3)	**2.12**		
	Dry Density	(Mg/m^3)	**1.72**		
	Void Ratio		**0.5364**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**60**		
	Membrane Correction	(kPa)	**0.95**		
	Corrected Deviator Stress	(kPa)	**257**		
	Undrained Shear Strength	(kPa)	**129**		
FAILURE DETAILS	Strain at Failure	(%)	**8.0**		
	Mode of Failure 1 : **Brittle (shear plane)**				



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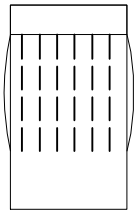
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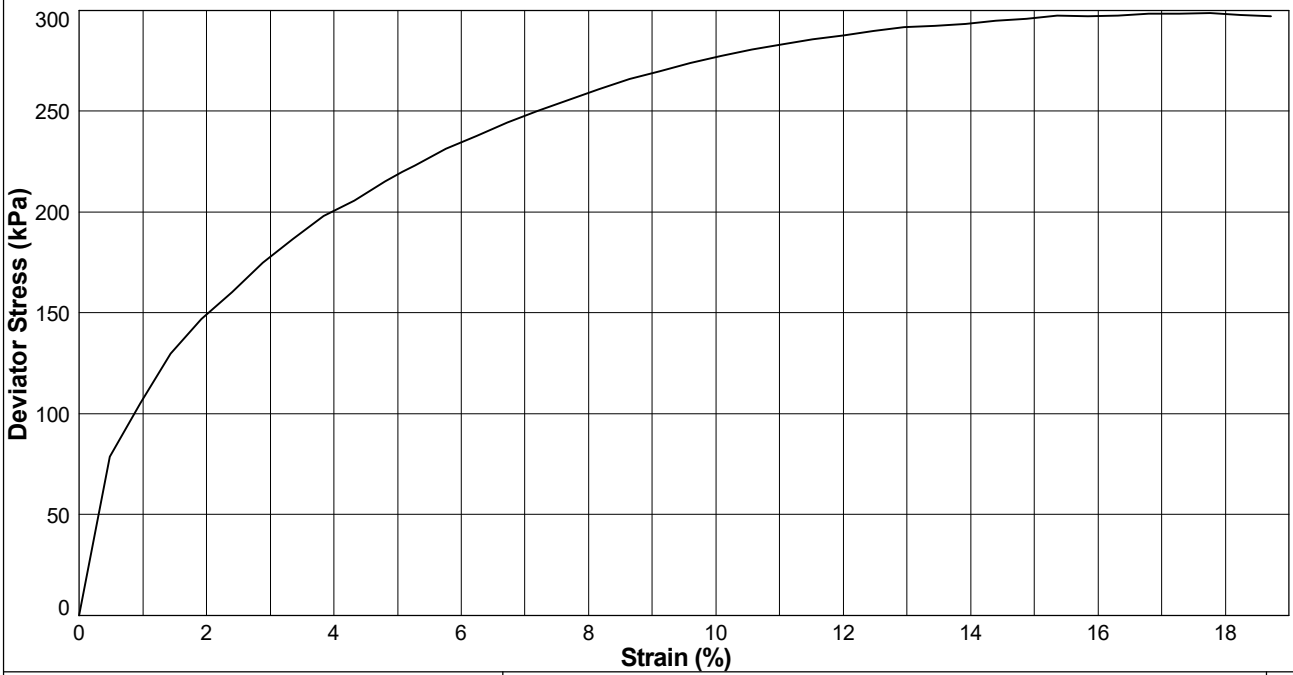
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH10** Sample Ref: **28** Sample Type: **UT** Depth (m): **9.00**

Description : **Dark brown slightly gravelly slightly sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**100.67**		
	Height	(mm)	**208.33**		
	Water Content	(%)	**16.2**		
	Bulk Density	(Mg/m^3)	**2.26**		
	Dry Density	(Mg/m^3)	**1.94**		
	Void Ratio		**0.3628**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**180**		
	Membrane Correction	(kPa)	**1.52**		
	Corrected Deviator Stress	(kPa)	**296**		
	Undrained Shear Strength	(kPa)	**148**		
FAILURE DETAILS	Strain at Failure	(%)	**15.0**		
	Mode of Failure 1 : **Semi-plastic (axial splitting with bulging)**				



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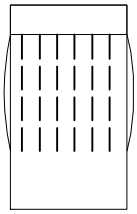
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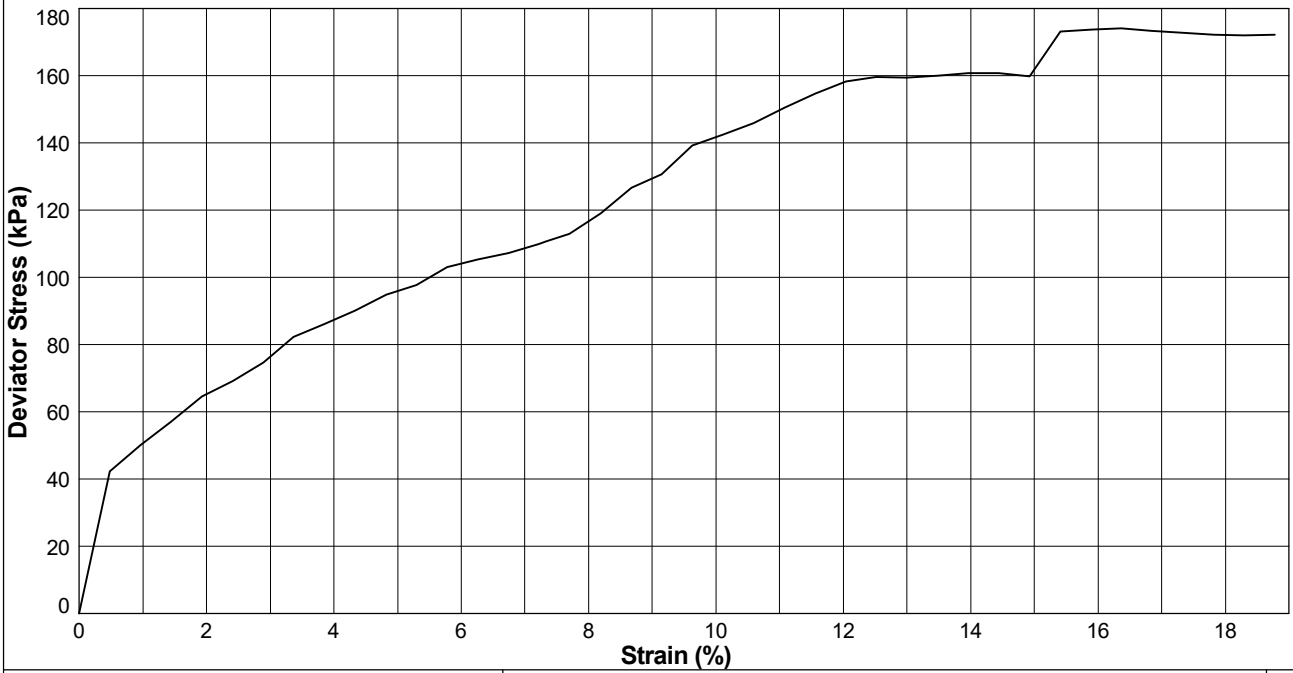
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH11** Sample Ref: **19** Sample Type: **UT** Depth (m): **6.00**

Description : **Brown slightly gravelly CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**101.17**		
	Height	(mm)	**207.67**		
	Water Content	(%)	**17.2**		
	Bulk Density	(Mg/m^3)	**2.33**		
	Dry Density	(Mg/m^3)	**1.99**		
	Void Ratio		**0.3308**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**120**		
	Membrane Correction	(kPa)	**1.51**		
	Corrected Deviator Stress	(kPa)	**162**		
	Undrained Shear Strength	(kPa)	**81**		
FAILURE DETAILS	Strain at Failure	(%)	**15.0**		
	Mode of Failure 1 : **Semi-plastic (axial splitting with bulging)**				



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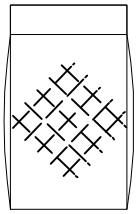
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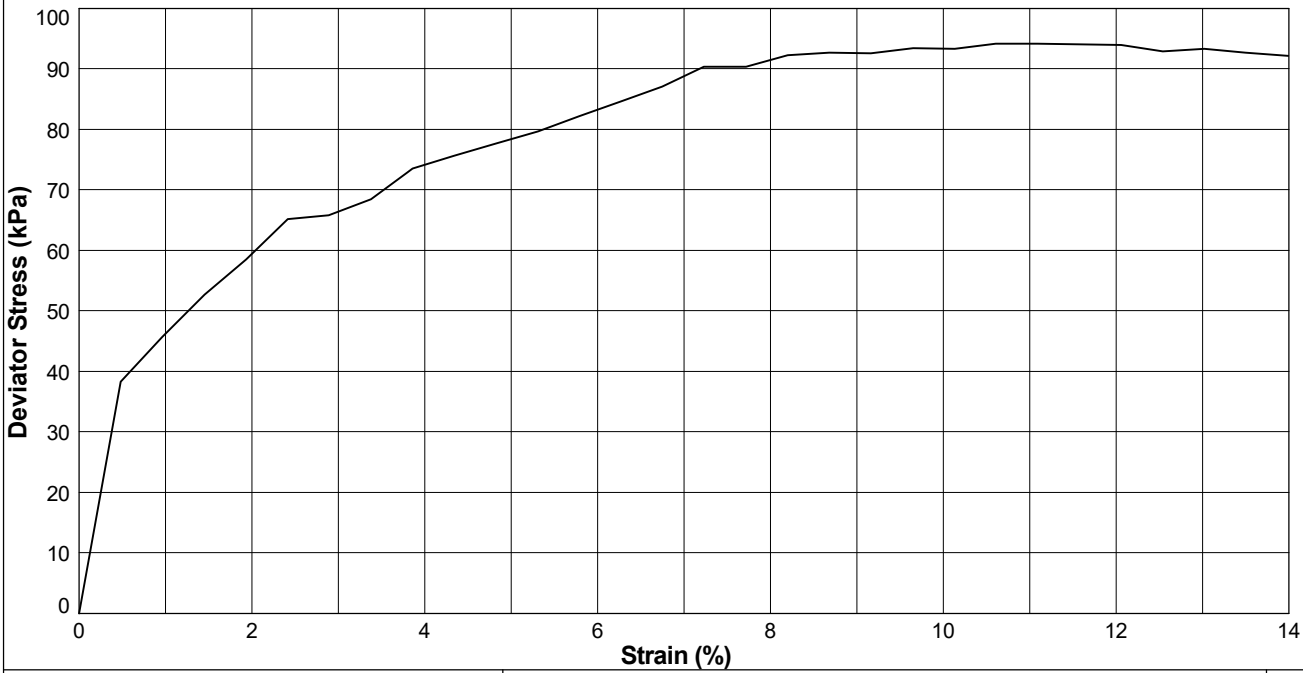
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In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH11** Sample Ref: **27** Sample Type: **UT** Depth (m): **9.00**

Description : **Brown slightly gravelly CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**100.33**		
	Height	(mm)	**207.33**		
	Water Content	(%)	**18.1**		
	Bulk Density	(Mg/m^3)	**2.29**		
	Dry Density	(Mg/m^3)	**1.94**		
	Void Ratio		**0.3675**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**180**		
	Membrane Correction	(kPa)	**1.20**		
	Corrected Deviator Stress	(kPa)	**94**		
	Undrained Shear Strength	(kPa)	**47**		
FAILURE DETAILS	Strain at Failure	(%)	**10.6**		
	Mode of Failure 1 : **Semi-plastic (intermediate)**				



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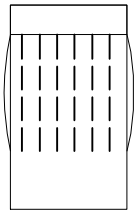
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Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 20/09/23 - 14:48 | LW5 |

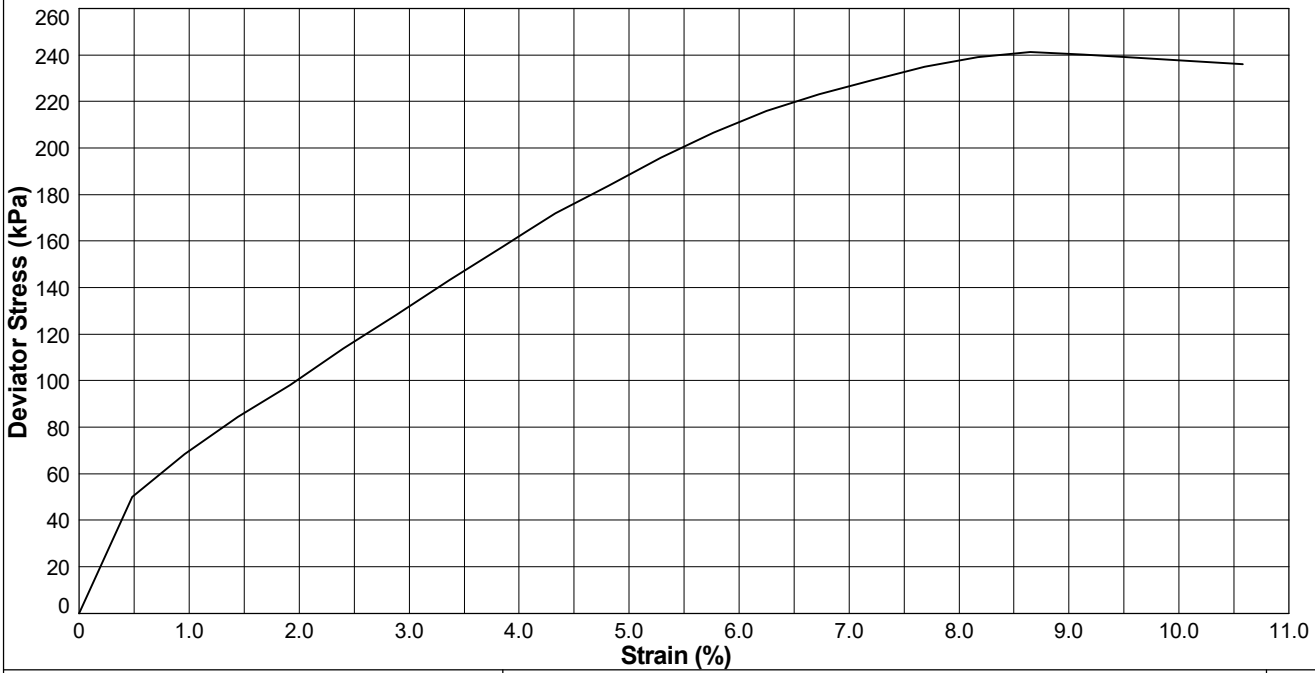
UNCONSOLIDATED UNDRAINED (QUICK) TRIAXIAL COMPRESSION TEST

In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH12** Sample Ref: **7** Sample Type: **UT** Depth (m): **1.20**

Description : **Dark brown slightly gravelly slightly sandy organic CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**103.00**		
	Height	(mm)	**208.00**		
	Water Content	(%)	**19.9**		
	Bulk Density	(Mg/m^3)	**2.16**		
	Dry Density	(Mg/m^3)	**1.81**		
	Void Ratio		**0.4681**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**25**		
	Membrane Correction	(kPa)	**0.99**		
	Corrected Deviator Stress	(kPa)	**241**		
	Undrained Shear Strength	(kPa)	**121**		
FAILURE DETAILS	Strain at Failure	(%)	**8.6**		
	Mode of Failure 1 : **Semi-plastic (axial splitting with bulging)**				



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Compiled By		Date
	LAURA SCHRAMM	**20/09/23**

Contract	Contract Ref:
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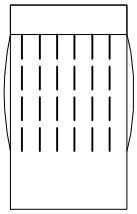
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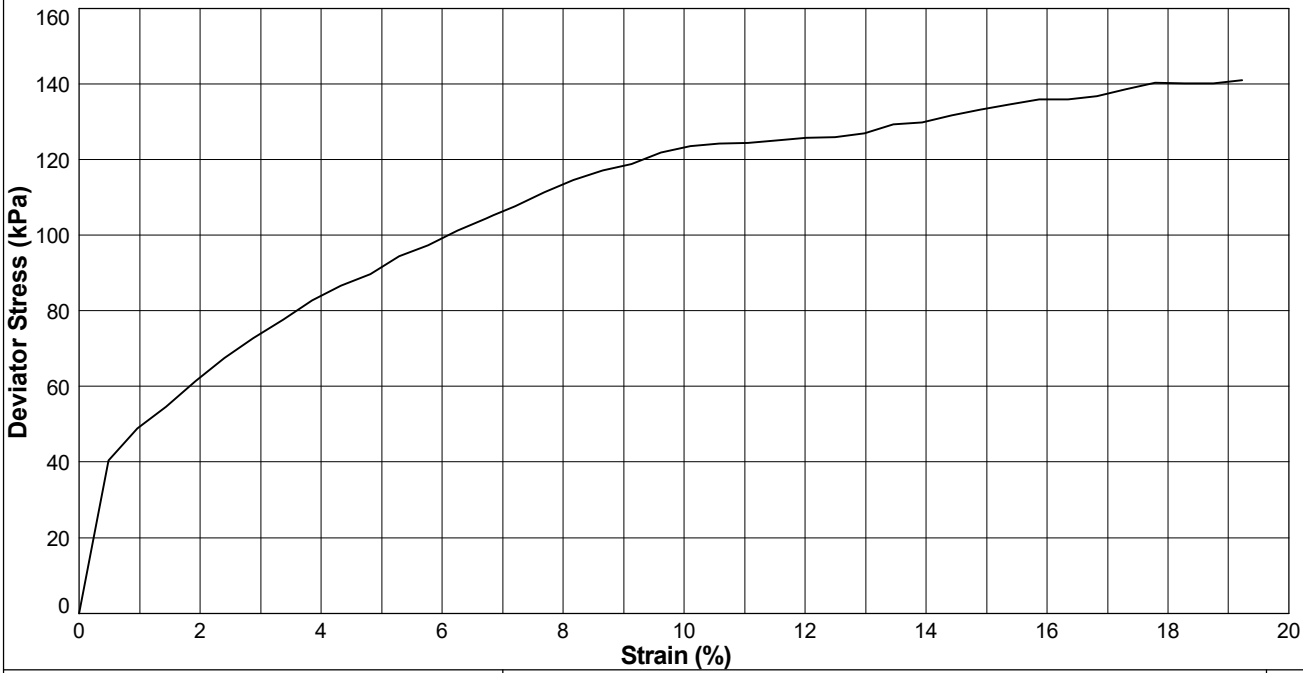
UNCONSOLIDATED UNDRAINED (QUICK) TRIAXIAL COMPRESSION TEST

In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH12** Sample Ref: **20** Sample Type: **UT** Depth (m): **5.00**

Description : **Dark brown CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**100.83**		
	Height	(mm)	**208.00**		
	Water Content	(%)	**19.0**		
	Bulk Density	(Mg/m^3)	**2.18**		
	Dry Density	(Mg/m^3)	**1.83**		
	Void Ratio		**0.4444**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**100**		
	Membrane Correction	(kPa)	**1.52**		
	Corrected Deviator Stress	(kPa)	**133**		
	Undrained Shear Strength	(kPa)	**67**		
FAILURE DETAILS	Strain at Failure	(%)	**15.0**		
	Mode of Failure 1 : **Semi-plastic (axial splitting with bulging)**				



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LORNA WHITWORTH	20/09/23

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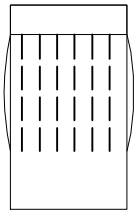
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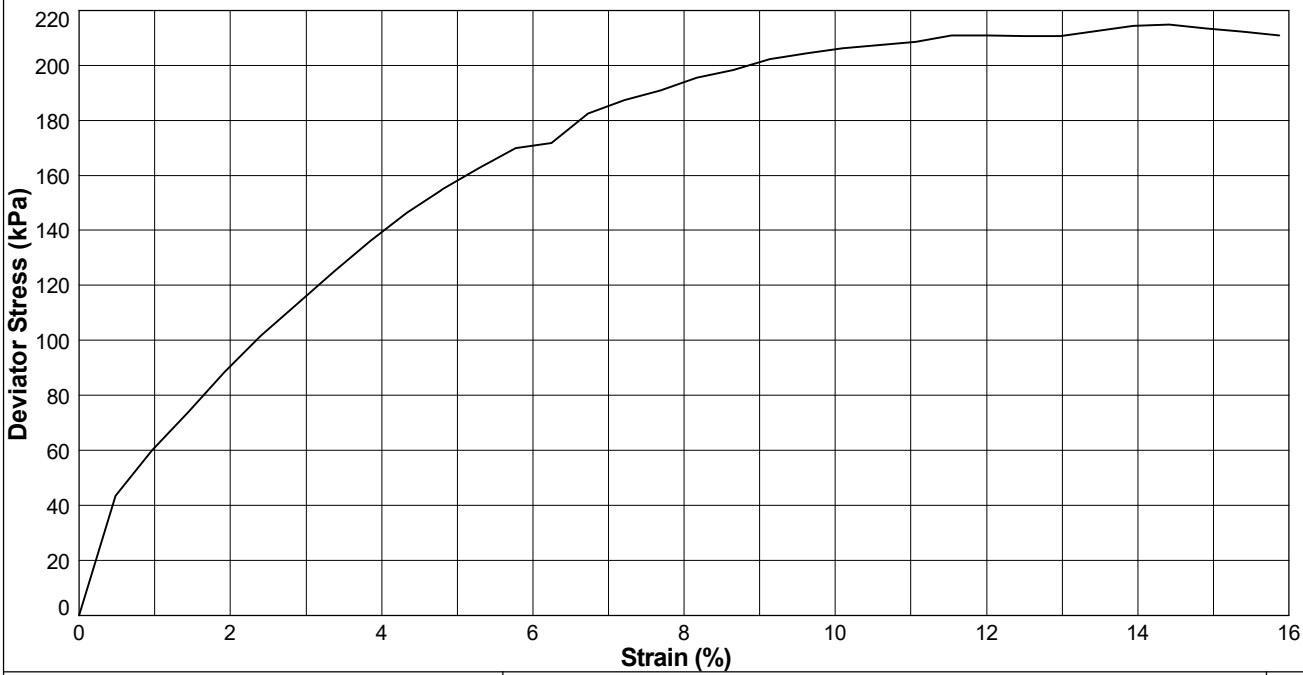
UNCONSOLIDATED UNDRAINED (QUICK) TRIAXIAL COMPRESSION TEST

In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH12** Sample Ref: **34** Sample Type: **UT** Depth (m): **9.00**

Description : **Dark brown slightly gravelly slightly sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**102.67**		
	Height	(mm)	**208.00**		
	Water Content	(%)	**17.8**		
	Bulk Density	(Mg/m^3)	**2.18**		
	Dry Density	(Mg/m^3)	**1.85**		
	Void Ratio		**0.4336**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**180**		
	Membrane Correction	(kPa)	**1.45**		
	Corrected Deviator Stress	(kPa)	**215**		
	Undrained Shear Strength	(kPa)	**107**		
FAILURE DETAILS	Strain at Failure	(%)	**14.4**		
	Mode of Failure 1 : **Semi-plastic (axial splitting with bulging)**				



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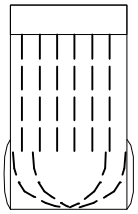
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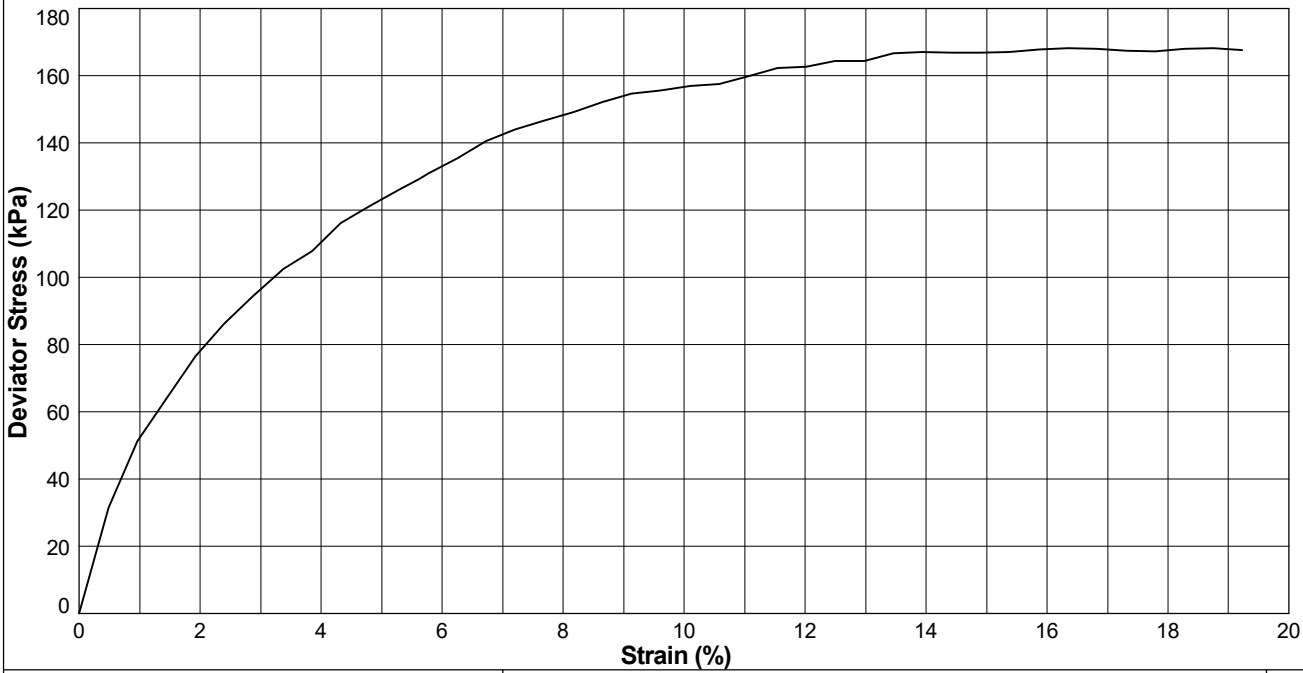
UNCONSOLIDATED UNDRAINED (QUICK) TRIAXIAL COMPRESSION TEST

In accordance with BS EN ISO 17892 Part 8

Position ID: **ATK_BH12** Sample Ref: **46** Sample Type: **UT** Depth (m): **13.50**

Description : **Dark brown slightly gravelly very sandy CLAY**

STAGE/SPECIMEN NUMBER			1	2	3
SPECIMEN DETAILS	Sample Condition		**Undisturbed**		
	Orientation of sample		**Vertical**		
	Diameter	(mm)	**100.50**		
	Height	(mm)	**208.00**		
	Water Content	(%)	**11.2**		
	Bulk Density	(Mg/m^3)	**2.16**		
	Dry Density	(Mg/m^3)	**1.94**		
	Void Ratio		**0.3642**		
TEST DETAILS	Membrane Type		**Rubber**		
	Membrane Thickness	(mm)	**0.50**		
	Rate of Axial Displacement	(%/min)	**2.00**		
	Cell Pressure	(kPa)	**270**		
	Membrane Correction	(kPa)	**1.52**		
	Corrected Deviator Stress	(kPa)	**167**		
	Undrained Shear Strength	(kPa)	**83**		
FAILURE DETAILS	Strain at Failure	(%)	**15.0**		
	Mode of Failure 1 : **Semi-plastic (bulging, shear & axial splitting)**				



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SUMMARY OF WATER CONTENT TESTS

RT08 Water Content of Rock (in accordance with ISRM 2007)

Exploratory Position ID	Sample Ref	Depth (m)	Sample Type	Water Content (%)	Lab	
ATK_BH03	**62**	**32.53**	**C**	**15.3**	**B**	

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Francesca Bennett	**FRANCESCA BENNETT**	**28/06/23**

Contract:	Contract Ref:
Ancoats Manchester	**765544**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcTbl L - SUMMARY OF ROCK STANDALONE WC - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Castleford: The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ. Tel: 01977-552255, Fax: 01977-552299, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 28/06/23 - 10:18 | AF3 |

SUMMARY OF DENSITY TESTS

In accordance with BS EN ISO 17892-2 : 2014 Clause 6.1.3 (Fluid Displacement Method)

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Water Content (%)	Bulk Density (Mg/m^3)	Dry Density (Mg/m^3)	Volume (if less than 50 cm^3)	Sample Description	Lab location
ATK_BH03	62	C	32.53	15.3	2.08	1.80	-	Reddish brown SANDSTONE	**B**

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date	Contract Ref:
Francesca Bennett	**FRANCESCA BENNETT**	**28.06.23**	**765544**
Contract: **Ancoats Manchester**			

SUMMARY OF POINT LOAD INDEX TEST RESULTS

RT03 Point Load Testing (in accordance with ISRM 2007)

Exploratory Position ID	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Moisture Content (%)	Rock Type
ATK_BH01	31.05	A	103	60	0.572	89	0.07	1.29	0.09	16	SANDSTONE
ATK_BH01	31.05	D	60	103	0.566	103	0.05	1.38	0.07	16	SANDSTONE
ATK_BH01	32.36	A	103	63	1.312	91	0.16	1.31	0.21	14	SANDSTONE
ATK_BH01	32.36	D	59	103	0.764	103	0.07	1.38	0.10	14	SANDSTONE
ATK_BH01	36.58	A	101	69	1.052	94	0.12	1.33	0.16	15	SANDSTONE
ATK_BH01	36.58	D	70	101	0.458	101	0.04	1.37	0.06	15	SANDSTONE
ATK_BH02a	27.00	A	102	76	0.742	99	0.08	1.36	0.10	10	SANDSTONE
ATK_BH02a	27.00	D	70	102	0.402	102	0.04	1.38	0.05	10	SANDSTONE

Key : A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel to planes of weakness, P = Perpendicular to planes of weakness. [NS] denotes Non Standard Test.

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Compiled By		Date	Contract Ref:
JMcCarthy	**JMCCARTHY**	**10.08.23**	**765544**
Contract: **Ancoats Manchester**			Page: **1** of **10**

SUMMARY OF POINT LOAD INDEX TEST RESULTS

RT03 Point Load Testing (in accordance with ISRM 2007)

Exploratory Position ID	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Moisture Content (%)	Rock Type
ATK_BH02a	29.15	A	101	68	0.576	94	0.07	1.33	0.09	9.5	SANDSTONE
ATK_BH02a	29.15	D	65	101	0.360	101	0.04	1.37	0.05	9.5	SANDSTONE
ATK_BH02a	32.71	A	101	83	1.538	103	0.14	1.39	0.20	15	SANDSTONE
ATK_BH02a	32.71	D	70	101	0.640	101	0.06	1.37	0.09	15	SANDSTONE
ATK_BH03	26.10	A	101	72	0.444	96	0.05	1.34	0.06	14	SANDSTONE
ATK_BH03	26.10	D	60	101	0.242	101	0.02	1.37	0.03	14	SANDSTONE
ATK_BH03	30.06	A	100	51	0.194	81	0.03	1.24	0.04	14	SANDSTONE
ATK_BH03	30.06	D	50	100	0.264	100	0.03	1.37	0.04	14	SANDSTONE

Key : A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel to planes of weakness, P = Perpendicular to planes of weakness. [NS] denotes Non Standard Test.

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Contract: **Ancoats Manchester**

SUMMARY OF POINT LOAD INDEX TEST RESULTS

RT03 Point Load Testing (in accordance with ISRM 2007)

Exploratory Position ID	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Moisture Content (%)	Rock Type
ATK_BH03	34.37	A	100	65	1.432	91	0.17	1.31	0.23	11	SANDSTONE
ATK_BH03	34.37	D	50	100	1.358	100	0.14	1.37	0.19	11	SANDSTONE
ATK_BH04	27.62	A	101	67	0.470	93	0.05	1.32	0.07	17	SANDSTONE
ATK_BH04	27.62	D	60	101	0.328	101	0.03	1.37	0.04	17	SANDSTONE
ATK_BH04	30.90	A	99	67	0.328	92	0.04	1.32	0.05	13	SANDSTONE
ATK_BH04	30.90	D	60	99	0.346	99	0.04	1.36	0.05	13	SANDSTONE
ATK_BH04	31.40	A	100	88	1.448	106	0.13	1.40	0.18	15	SANDSTONE
ATK_BH04	31.40	D	70	100	0.318	100	0.03	1.37	0.04	15	SANDSTONE

Key : A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel to planes of weakness, P = Perpendicular to planes of weakness. [NS] denotes Non Standard Test.

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JMcCarthy	**JMCCARTHY**	**10.08.23**	**765544**

Contract: **Ancoats Manchester**

AGS

SUMMARY OF POINT LOAD INDEX TEST RESULTS

RT03 Point Load Testing (in accordance with ISRM 2007)

Exploratory Position ID	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Moisture Content (%)	Rock Type
ATK_BH04	34.61	A	100	75	0.764	98	0.08	1.35	0.11	18	SANDSTONE
ATK_BH04	34.61	D	75	100	0.270	100	0.03	1.37	0.04	18	SANDSTONE
ATK_BH04	35.52	A	102	77	1.168	100	0.12	1.37	0.16	18	SANDSTONE
ATK_BH04	35.52	D	75	102	0.488	102	0.05	1.38	0.06	18	SANDSTONE
ATK_BH05	31.80	A	101	81	0.570	102	0.05	1.38	0.08	14	SANDSTONE
ATK_BH05	31.80	D	70	101	0.598	101	0.06	1.37	0.08	14	SANDSTONE
ATK_BH05	33.72	A	102	74	0.696	98	0.07	1.35	0.10	15	SANDSTONE
ATK_BH05	33.72	D	60	102	0.476	102	0.05	1.38	0.06	15	SANDSTONE

Key : A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel to planes of weakness, P = Perpendicular to planes of weakness. [NS] denotes Non Standard Test.

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JMcCarthy	**JMCCARTHY**	**10.08.23**	**765544**
Contract: **Ancoats Manchester**			Page: **4** of **10**

SUMMARY OF POINT LOAD INDEX TEST RESULTS

RT03 Point Load Testing (in accordance with ISRM 2007)

Exploratory Position ID	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Moisture Content (%)	Rock Type
ATK_BH06	31.31	A	101	88	0.806	106	0.07	1.40	0.10	14	SANDSTONE
ATK_BH06	31.31	D	70	101	0.442	101	0.04	1.37	0.06	14	SANDSTONE
ATK_BH06	35.82	I	47	28	0.142	41	0.08	0.91	0.08	19	SANDSTONE
ATK_BH06	35.82	I	80	52	0.096	73	0.02	1.18	0.02	19	SANDSTONE
ATK_BH06	37.48	A	101	82	0.716	103	0.07	1.38	0.09	16	SANDSTONE
ATK_BH06	37.48	D	70	101	0.166	101	0.02	1.37	0.02	16	SANDSTONE
ATK_BH06	38.42	A	101	58	0.308	86	0.04	1.28	0.05	16	SANDSTONE
ATK_BH06	38.42	D	70	101	0.434	101	0.04	1.37	0.06	16	SANDSTONE

Key : A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel to planes of weakness, P = Perpendicular to planes of weakness. [NS] denotes Non Standard Test.

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Compiled By		Date	Contract Ref:
JMcCarthy	**JMCCARTHY**	**10.08.23**	**765544**
Contract: **Ancoats Manchester**			Page: **5** of **10**

SUMMARY OF POINT LOAD INDEX TEST RESULTS

RT03 Point Load Testing (in accordance with ISRM 2007)

Exploratory Position ID	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Moisture Content (%)	Rock Type
ATK_BH07	29.26	A	102	69	0.592	95	0.07	1.33	0.09	4.3	SANDSTONE
ATK_BH07	29.26	D	70	102	0.416	102	0.04	1.38	0.06	4.3	SANDSTONE
ATK_BH07	33.36	A	103	49	0.804	80	0.13	1.24	0.15	13	SANDSTONE
ATK_BH07	33.36	D	60	103	0.632	103	0.06	1.38	0.08	13	SANDSTONE
ATK_BH07	36.58	A	100	51	0.056	81	0.01	1.24	0.01	16	SANDSTONE
ATK_BH07	36.58	D	55	100	0.010	100	0.001	1.37	0.001	16	SANDSTONE
ATK_BH08A	32.08	A	101	83	0.514	103	0.05	1.39	0.07	17	SANDSTONE
ATK_BH08A	32.08	D	70	101	0.512	101	0.05	1.37	0.07	17	SANDSTONE

Key : A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel to planes of weakness, P = Perpendicular to planes of weakness. [NS] denotes Non Standard Test.

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Compiled By		Date	Contract Ref:
JMcCarthy	JMCCARTHY	10.08.23	765544
Contract: Ancoats Manchester			Page: 6 of 10

SUMMARY OF POINT LOAD INDEX TEST RESULTS

RT03 Point Load Testing (in accordance with ISRM 2007)

Exploratory Position ID	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Moisture Content (%)	Rock Type
ATK_BH08A	34.43	A	101	71	0.726	96	0.08	1.34	0.11	17	SANDSTONE
ATK_BH08A	34.43	D	70	101	0.320	101	0.03	1.37	0.04	17	SANDSTONE
ATK_BH09	31.05	A	103	81	1.298	103	0.12	1.38	0.17	12	SANDSTONE
ATK_BH09	31.05	D	70	103	0.402	103	0.04	1.38	0.05	12	SANDSTONE
ATK_BH09	35.45	A	100	83	0.516	103	0.05	1.38	0.07	16	SANDSTONE
ATK_BH09	35.45	D	75	100	0.478	100	0.05	1.37	0.07	16	SANDSTONE
ATK_BH09	38.60	A	103	63	1.064	91	0.13	1.31	0.17	14	SANDSTONE
ATK_BH09	38.60	D	70	103	1.076	103	0.10	1.38	0.14	14	SANDSTONE

Key : A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel to planes of weakness, P = Perpendicular to planes of weakness. [NS] denotes Non Standard Test.

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date	Contract Ref:
JMcCarthy	JMCCARTHY	10.08.23	765544
Contract: Ancoats Manchester			Page: 7 of 10

SUMMARY OF POINT LOAD INDEX TEST RESULTS

RT03 Point Load Testing (in accordance with ISRM 2007)

Exploratory Position ID	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Moisture Content (%)	Rock Type
ATK_BH10	28.25	A	102	65	0.570	92	0.07	1.31	0.09	15	SANDSTONE
ATK_BH10	28.25	D	70	102	0.440	102	0.04	1.38	0.06	15	SANDSTONE
ATK_BH10	29.55	A	101	71	0.528	96	0.06	1.34	0.08	16	SANDSTONE
ATK_BH10	29.55	D	65	101	0.494	101	0.05	1.37	0.07	16	SANDSTONE
ATK_BH10	33.24	A	101	47	0.418	78	0.07	1.22	0.08	14	SANDSTONE
ATK_BH10	33.24	D	65	101	0.372	101	0.04	1.37	0.05	14	SANDSTONE
ATK_BH10	37.10	A	100	79	0.618	100	0.06	1.37	0.08	16	SANDSTONE
ATK_BH10	37.10	D	60	100	0.192	100	0.02	1.37	0.03	16	SANDSTONE

Key : A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel to planes of weakness, P = Perpendicular to planes of weakness. [NS] denotes Non Standard Test.

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Compiled By		Date	Contract Ref:
JMcCarthy	**JMCCARTHY**	**10.08.23**	**765544**

Contract: **Ancoats Manchester**

SUMMARY OF POINT LOAD INDEX TEST RESULTS

RT03 Point Load Testing (in accordance with ISRM 2007)

Exploratory Position ID	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Moisture Content (%)	Rock Type
ATK_BH11	32.52	A	102	78	1.194	101	0.12	1.37	0.16	13	SANDSTONE
ATK_BH11	32.52	D	70	102	0.368	102	0.04	1.38	0.05	13	SANDSTONE
ATK_BH11	35.18	A	102	56	0.482	85	0.07	1.27	0.08	15	SANDSTONE
ATK_BH11	35.18	D	56	102	0.450	102	0.04	1.38	0.06	15	SANDSTONE
ATK_BH11	36.50	A	102	75	0.382	99	0.04	1.36	0.05	14	SANDSTONE
ATK_BH11	36.50	D	70	102	0.376	102	0.04	1.38	0.05	14	SANDSTONE
ATK_BH12	30.07	A	101	78	1.592	100	0.16	1.37	0.22	13	SANDSTONE
ATK_BH12	30.07	D	70	101	0.386	101	0.04	1.37	0.05	13	SANDSTONE

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Compiled By		Date	Contract Ref:
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Contract: **Ancoats Manchester**

SUMMARY OF POINT LOAD INDEX TEST RESULTS

RT03 Point Load Testing (in accordance with ISRM 2007)

Exploratory Position ID	Depth (m)	Type of Test	Width or Length (W or L) (mm)	Platen Separation (D) (mm)	Failure Load (P) (kN)	Equivalent Diameter (D_e) (mm)	Point Load (I_s) (MN/m^2)	Size Factor (F)	Point Load Index ($I_{s(50)}$) (MN/m^2)	Moisture Content (%)	Rock Type
ATK_BH12	34.79	A	102	67	0.708	93	0.08	1.32	0.11	15	SANDSTONE
ATK_BH12	34.79	D	70	102	0.582	102	0.06	1.38	0.08	15	SANDSTONE
ATK_BH12	39.87	A	103	75	1.816	99	0.18	1.36	0.25	11	SANDSTONE
ATK_BH12	39.87	D	70	103	0.304	103	0.03	1.38	0.04	11	SANDSTONE

Key : A = Axial, D = Diametral, I = Irregular, B = Block, L = Parallel to planes of weakness, P = Perpendicular to planes of weakness. [NS] denotes Non Standard Test.

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Compiled By		Date	Contract Ref:
JMcCarthy	JMCCARTHY	10.08.23	765544
Contract: Ancoats Manchester			Page: 10 of 10

UNIAXIAL COMPRESSIVE STRENGTH

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

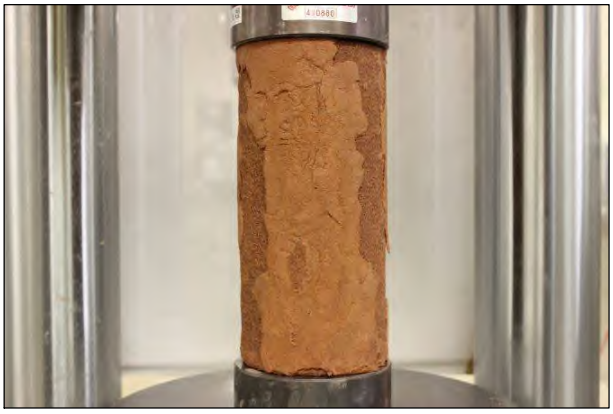
Borehole: **ATK_BH12** Sample Ref: **100** Sample Type: **C** Depth (m) : **33.85**

Bulk Density (Mg/m^3): **2.17** Dry Density (Mg/m^3): **1.91** Moisture Content (%): **14**
Length (mm): **215.28** Diameter (mm): **101.57** Length/Diameter Ratio: **2.12**
Test Duration (mins:secs): **09:14** Stress Rate (MPa/s): **0.0123** Load at Failure (kN): **56.9**
UCS (MPa): **7.0** Failure Type: **Vertical splitting**

Note: **Axis of loading parallel to core axis**
Description: **Reddish brown SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **FAIL**. Flatness: **FAIL**. Perpendicularity: **FAIL**.



Front view (pre-test)



Rear view (pre-test)



Front view (post-test)



Rear view (post-test)

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	DARIA IGNACZAK	28/06/23

Contract	Job No
Ancoats Manchester	**765544**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - UCS STRESS CONTROL - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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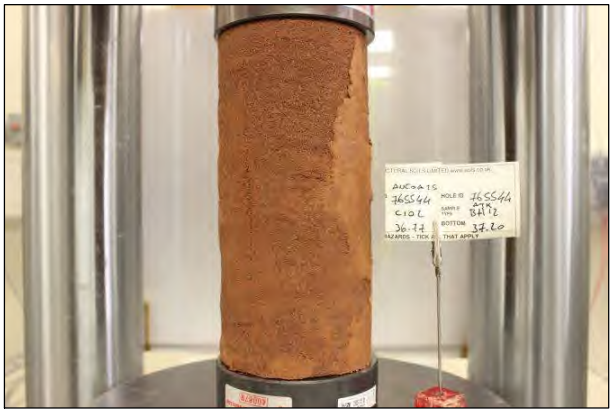
UNIAXIAL COMPRESSIVE STRENGTH

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **ATK_BH12** Sample Ref: **102** Sample Type: **C** Depth (m) : **36.77**

Bulk Density (Mg/m^3): **2.19** Dry Density (Mg/m^3): **1.92** Moisture Content (%): **14**
Length (mm): **215.56** Diameter (mm): **101.00** Length/Diameter Ratio: **2.13**
Test Duration (mins:secs): **10:33** Stress Rate (MPa/s): **0.0125** Load at Failure (kN): **64.8**
UCS (MPa): **8.1** Failure Type: **Vertical splitting**

Note: **Axis of loading parallel to core axis**
Description: **Reddish brown SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **FAIL**. Flatness: **FAIL**. Perpendicularity: **FAIL**.



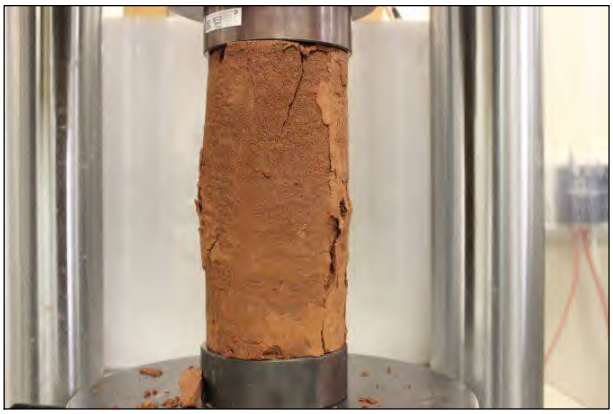
Front view (pre-test)



Rear view (pre-test)



Front view (post-test)



Rear view (post-test)

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

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Compiled By		Date
Daria Ignaczak	DARIA IGNACZAK	28/06/23
Contract: **Ancoats Manchester**	Job No: **765544**	

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UNIAXIAL COMPRESSIVE STRENGTH

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **ATK_BH12** Sample Ref: **103** Sample Type: **C** Depth (m) : **37.78**

Bulk Density (Mg/m^3): **2.15** Dry Density (Mg/m^3): **1.85** Moisture Content (%): **16**
Length (mm): **214.00** Diameter (mm): **101.51** Length/Diameter Ratio: **2.11**
Test Duration (mins:secs): **05:48** Stress Rate (MPa/s): **0.0124** Load at Failure (kN): **36.3**
UCS (MPa): **4.5** Failure Type: **Vertical splitting**

Note: **Axis of loading parallel to core axis**
Description: **Reddish brown SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **PASS**. Flatness: **FAIL**. Perpendicularity: **FAIL**.



Front view (pre-test)



Rear view (pre-test)



Front view (post-test)



Rear view (post-test)

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

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Compiled By		Date
Daria Ignaczak	DARIA IGNACZAK	28/06/23

Contract	Job No
Ancoats Manchester	**765544**

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DEFORMABILITY OF ROCK IN UNIAXIAL COMPRESSION

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **ATK_BH01** Sample Ref: **79** Sample Type: **C** Depth (m): **31.05**

Bulk Density (Mg/m^3): **2.09** Dry Density (Mg/m^3): **1.80** Moisture Content (%): **16**
Length (mm): **209.05** Diameter (mm): **102.64** Length/Diameter Ratio: **2.04**
Test Duration (mins:secs): **07:20** Stress Rate (MPa/s): **0.0121** Load at Failure (kN): **68.3**
UCS (MPa): **8.3** Failure Type: **Vertical splitting**

Note: **Axis of loading parallel to core axis**
Description: **Reddish brown SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **FAIL**. Flatness: **FAIL**. Perpendicularity: **FAIL**.



Front view (pre-test)



Rear view (pre-test)



Front view (post-test)



Rear view (post-test)

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

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1a Princess Street
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Compiled By		Date
Daria Ignaczak	DARIA IGNACZAK	28/06/23
Contract: **Ancoats Manchester**	Job No: **765544**	

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - UCS WITH DEFORMATION - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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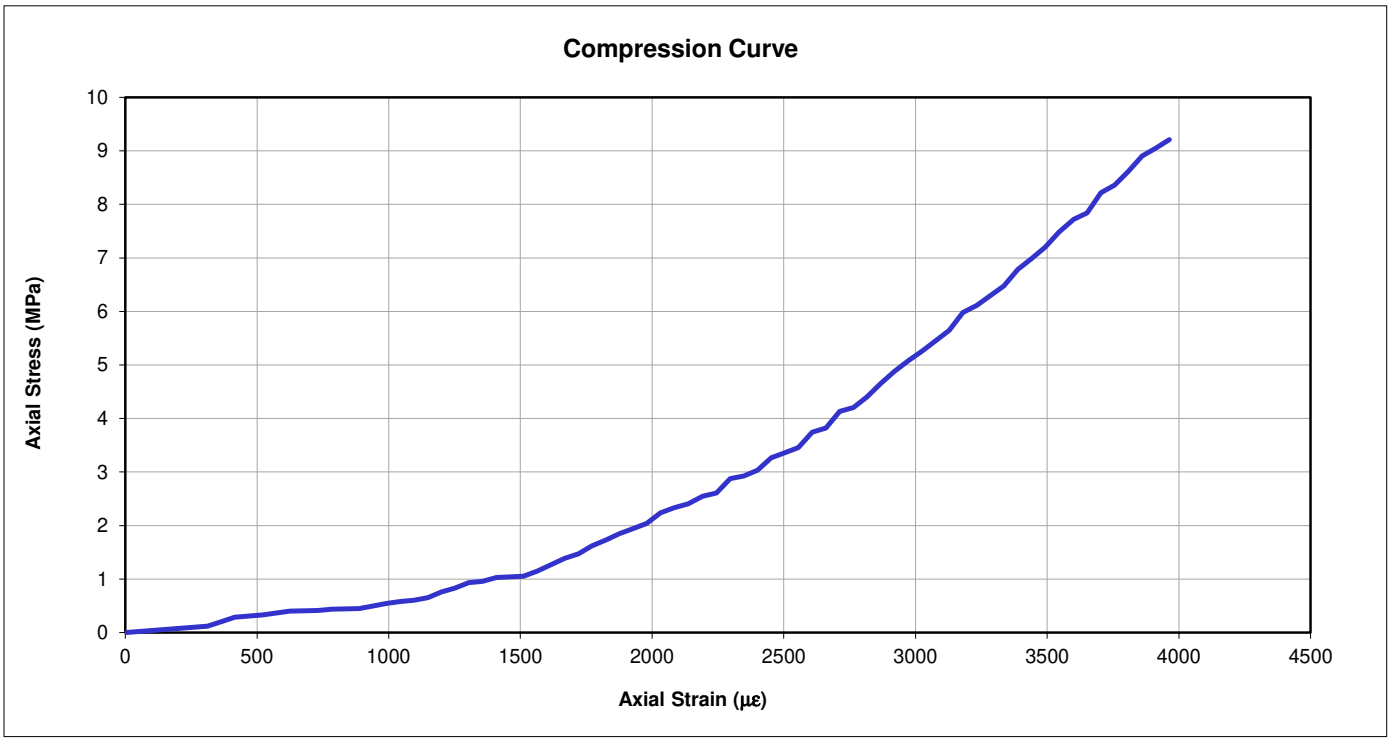
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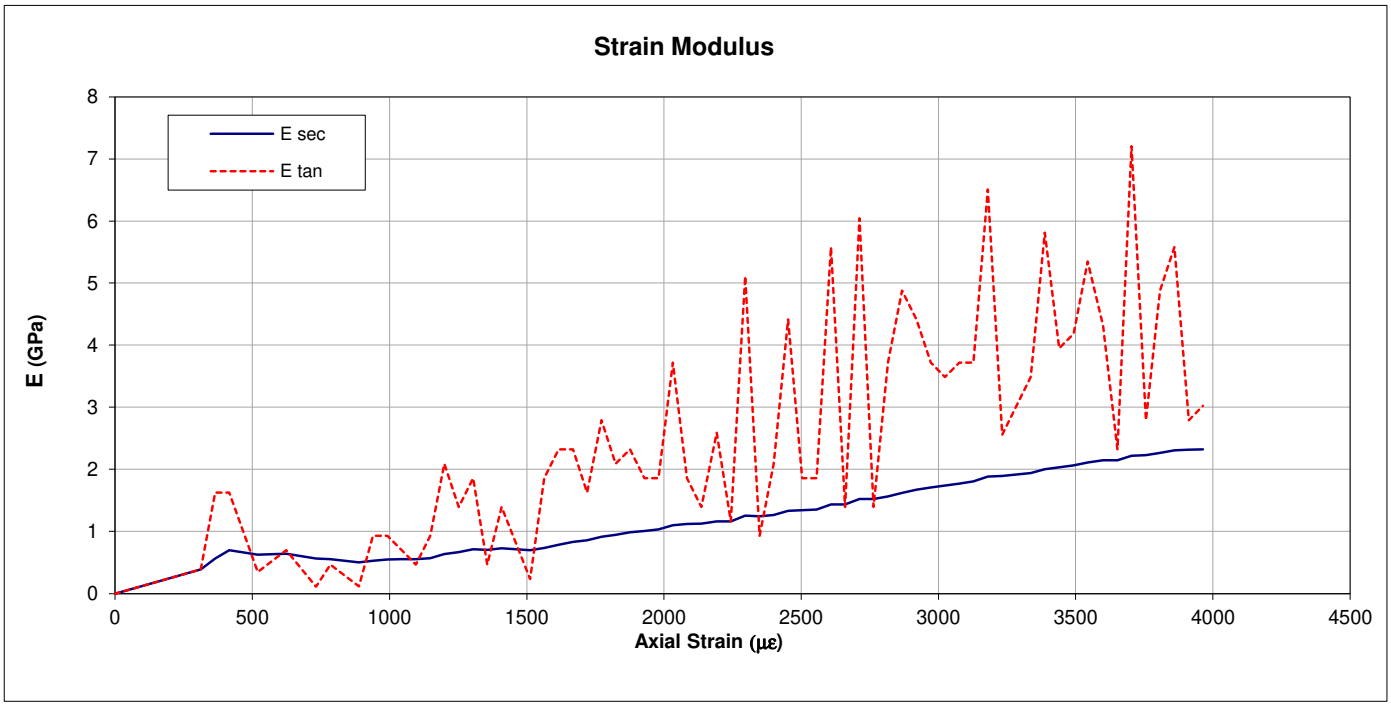
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006

Job No	765544	Cross section area	82.74 cm^2
Site	Ancoats Manchester	Height	209.05 mm
BH No	ATK-BH01	Max logged strength	9.21 MPa
Specimen Depth	31.05-31.43	E_{tan} (*)	3.72 GPa
Sample Type/No.	C79	E_{sec} (^)	1.56 GPa
(*) Calculated for axial σ =	4.60 MPa		
(^) Calculated for axial σ =	4.60 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





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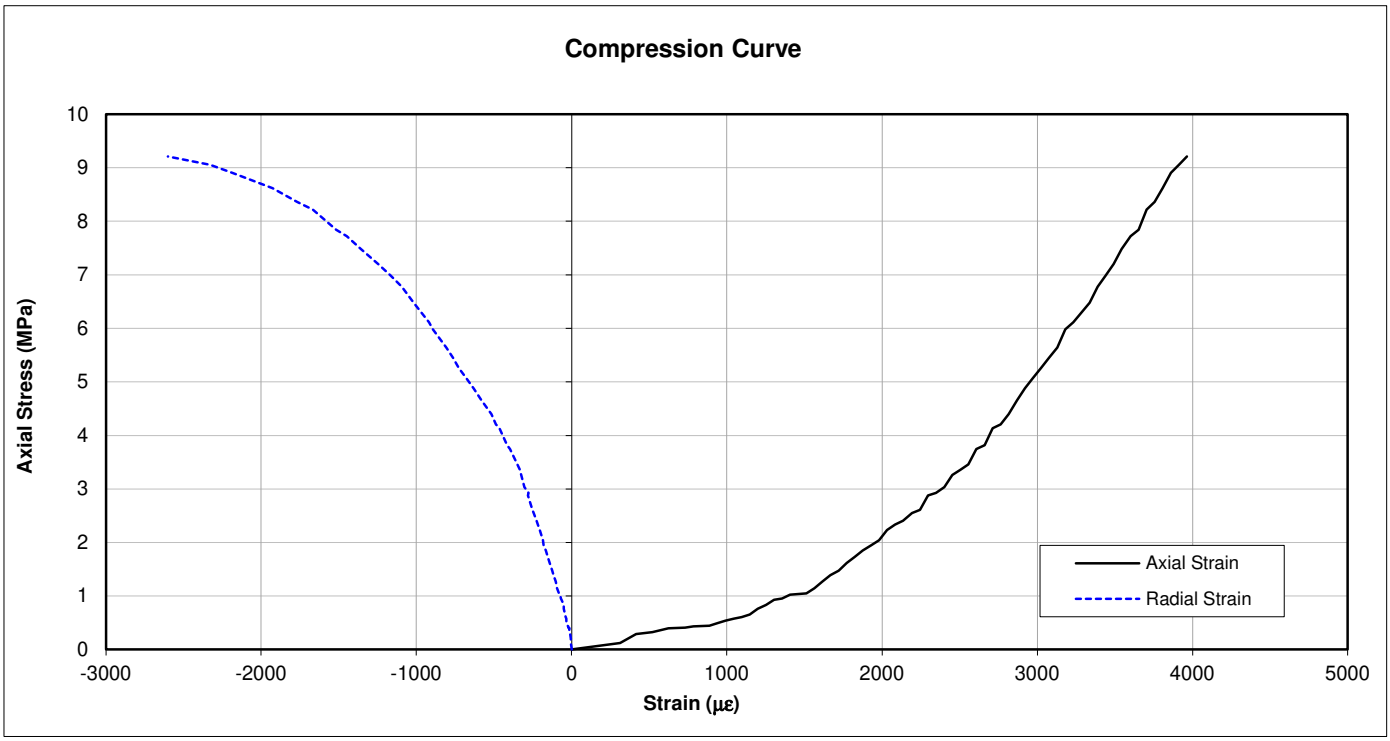
Test Date 19/06/2023

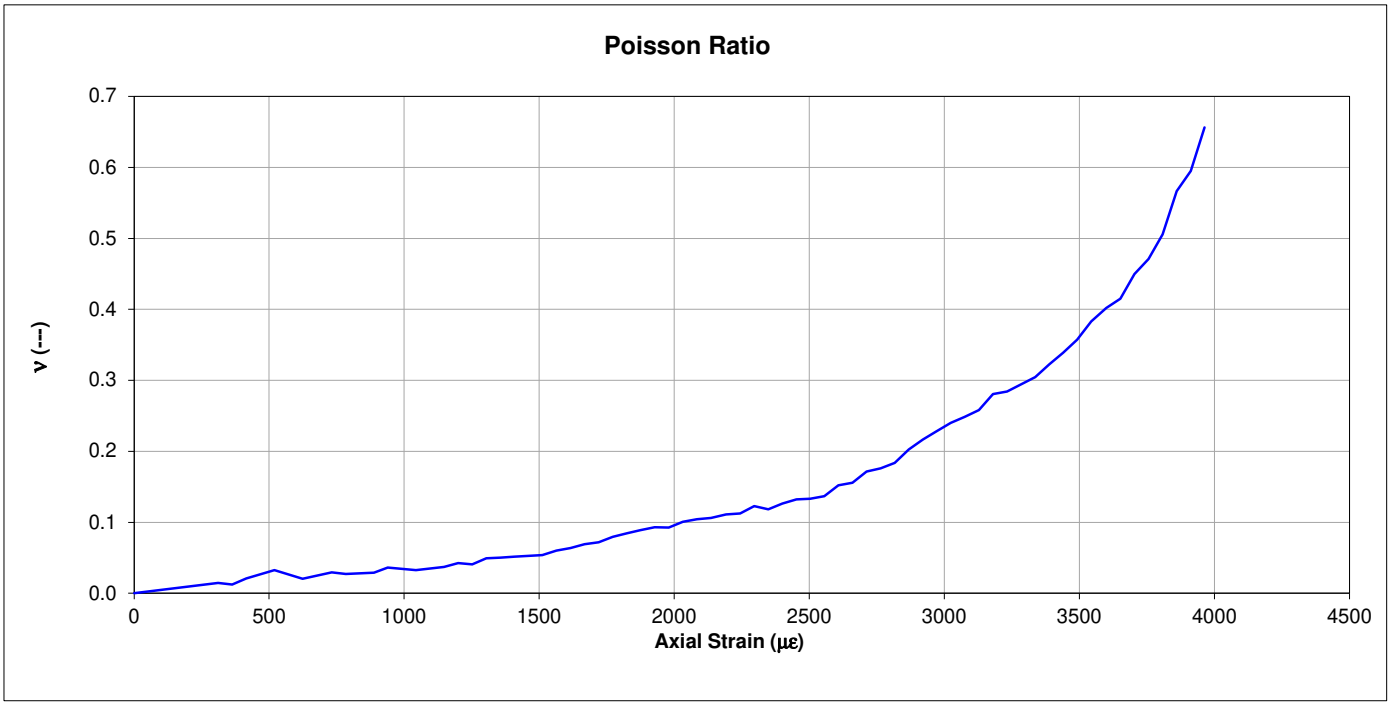
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006 and ASTM D4543-08

Job No	765544	Cross section area	82.74 cm^2
Site	Ancoats Manchester	Height	209.05 mm
BH No	ATK-BH01	Max logged strength	9.21 MPa
Specimen Depth	31.05-31.43	Poisson at failure	0.656
Sample Type/No.	C79	Poisson (*)	0.183
(*) Calculated for axial σ =	4.60 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





DEFORMABILITY OF ROCK IN UNIAXIAL COMPRESSION

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **ATK_BH03** Sample Ref: **63** Sample Type: **C** Depth (m): **34.86**

Bulk Density (Mg/m^3): **2.13** Dry Density (Mg/m^3): **1.85** Moisture Content (%): **15**
Length (mm): **211.02** Diameter (mm): **100.95** Length/Diameter Ratio: **2.09**
Test Duration (mins:secs): **06:48** Stress Rate (MPa/s): **0.0125** Load at Failure (kN): **52.8**
UCS (MPa): **6.6** Failure Type: **Vertical splitting**

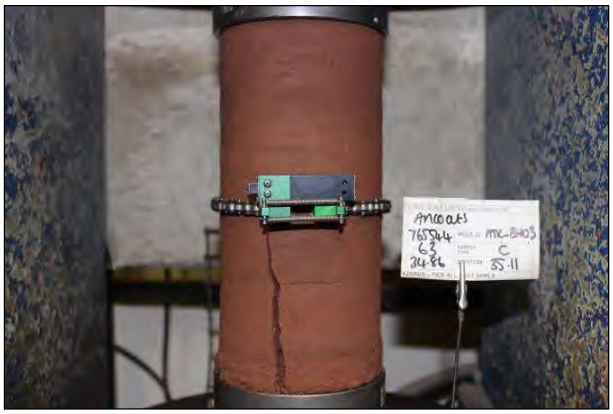
Note: **Axis of loading parallel to core axis**
Description: **Reddish brown SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **FAIL**. Flatness: **FAIL**. Perpendicularity: **FAIL**.



Front view (pre-test)



Rear view (pre-test)



Front view (post-test)



Rear view (post-test)

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**28/06/23**
Contract: **Ancoats Manchester**	Job No: **765544**	

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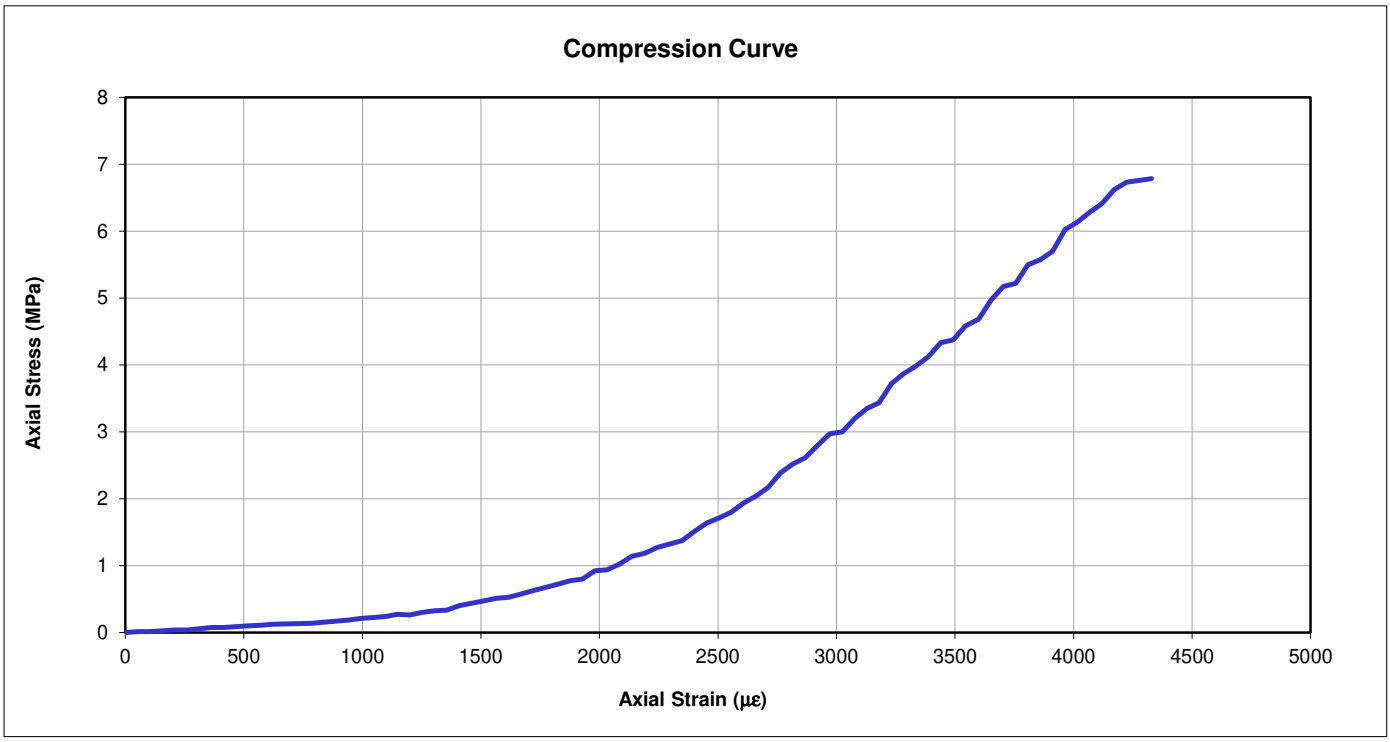
Test Date 20/06/2023

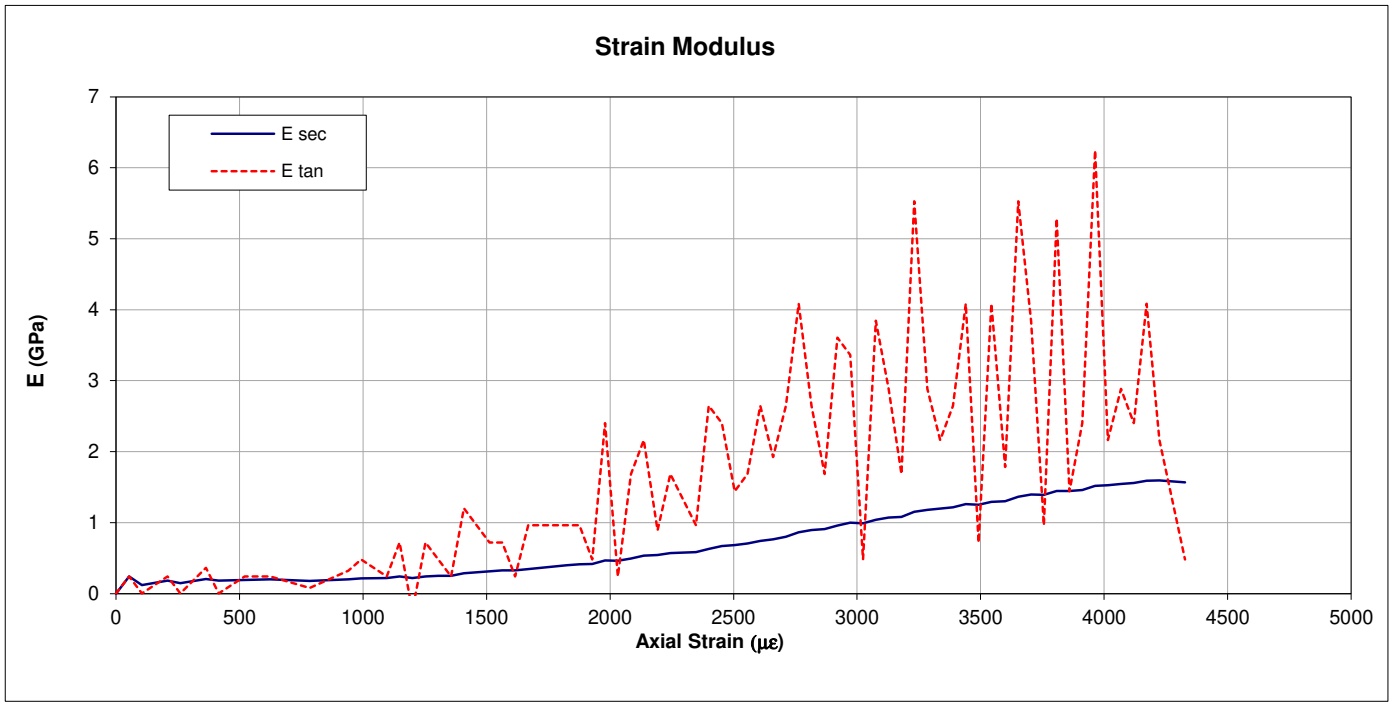
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006

Job No	765544	Cross section area	80.04 cm^2
Site	Ancoats Manchester	Height	211.02 mm
BH No	ATK-BH03	Max logged strength	6.78 MPa
Specimen Depth	34.86 - 35.11m	E_{tan} (*)	2.88 GPa
Sample Type/No.	C63	E_{sec} (^)	1.07 GPa
(*) Calculated for axial σ =	3.39 MPa		
(^) Calculated for axial σ =	3.39 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





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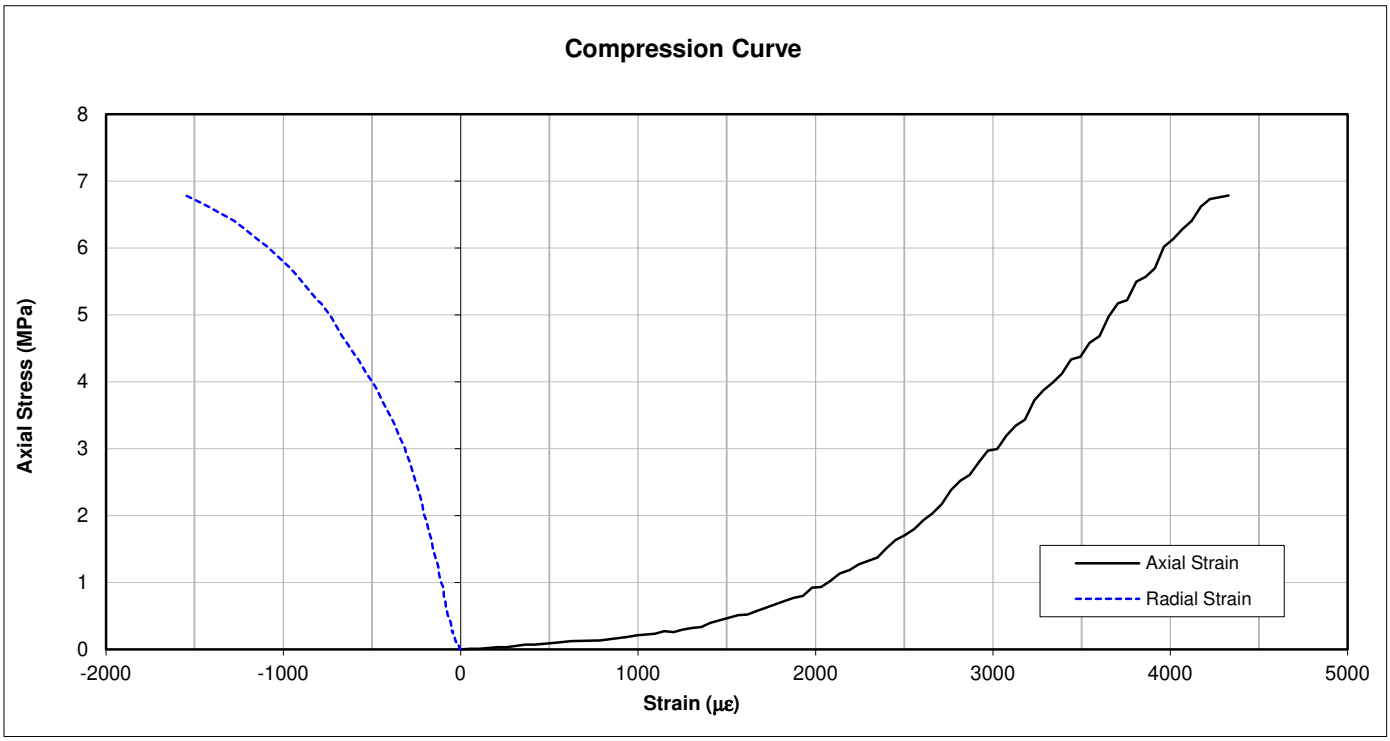
Test Date 20/06/2023

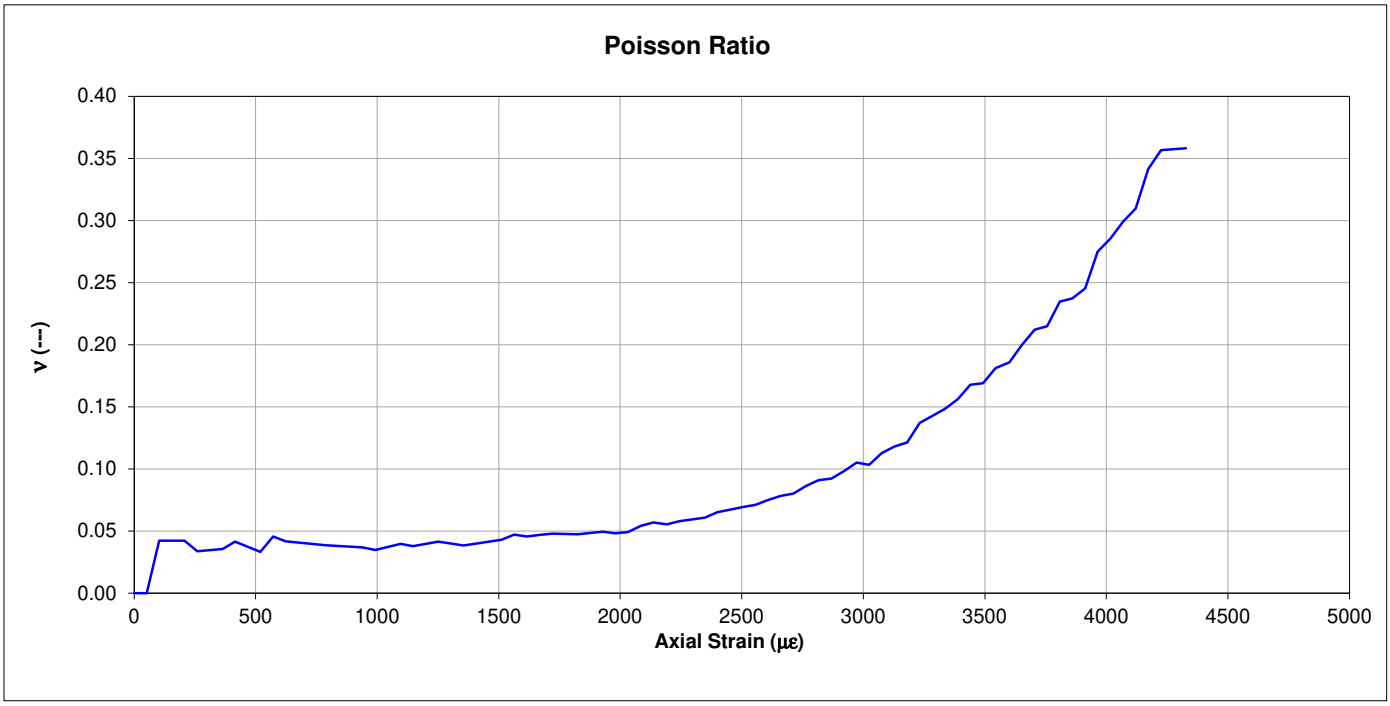
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006 and ASTM D4543-08

Job No	765544	Cross section area	80.04 cm^2
Site	Ancoats Manchester	Height	211.02 mm
BH No	ATK-BH03	Max logged strength	6.78 MPa
Specimen Depth	34.86 - 35.11m	Poisson at failure	0.358
Sample Type/No.	C63	Poisson (*)	0.118
(*) Calculated for axial σ =	3.39 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





DEFORMABILITY OF ROCK IN UNIAXIAL COMPRESSION

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **ATK_BH04** Sample Ref: **56** Sample Type: **C** Depth (m): **26.08**

Bulk Density (Mg/m^3): **2.07** Dry Density (Mg/m^3): **1.83** Moisture Content (%): **13**
Length (mm): **233.61** Diameter (mm): **101.56** Length/Diameter Ratio: **2.30**
Test Duration (mins:secs): **04:18** Stress Rate (MPa/s): **0.0123** Load at Failure (kN): **80.1**
UCS (MPa): **9.9** Failure Type: **Vertical splitting**

Note: **Axis of loading parallel to core axis**
Description: **Reddish brown SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **PASS**. Flatness: **FAIL**. Perpendicularity: **FAIL**.



Front view (pre-test)



Rear view (pre-test)



Front view (post-test)



Rear view (post-test)

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

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BS3 4AG

Compiled By		Date
Daria Ignaczak	DARIA IGNACZAK	28/06/23

Contract	Job No
Ancoats Manchester	**765544**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - UCS WITH DEFORMATION - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
Structural Soils Ltd, Branch Office - Bristol Lab: 1a Princess Street, Bedminster, Bristol, BS3 4AG. Tel: 0117-947-1000, Fax: 0117-947-1004, Web: www.soils.co.uk, Email: ask@soils.co.uk. | 28/06/23 - 10:40 | AF3 |

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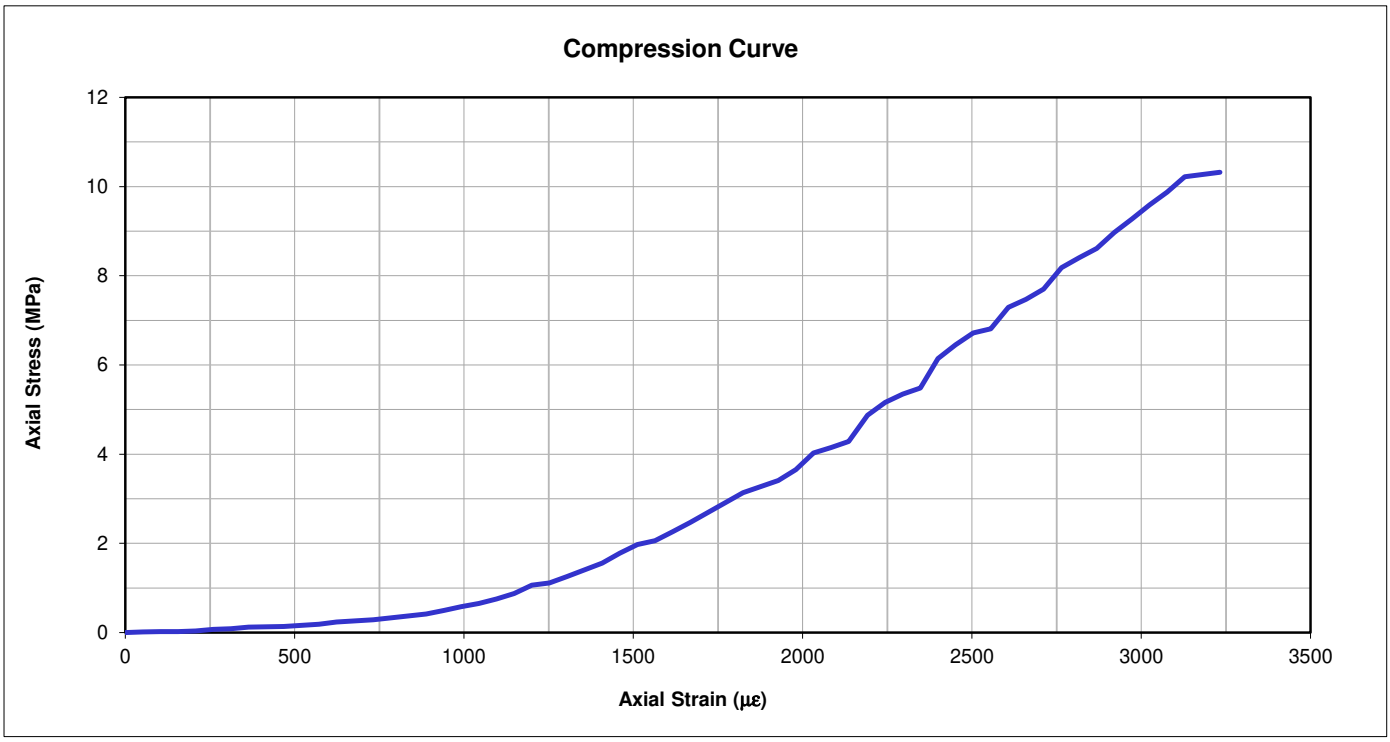
Test Date 13/06/2023

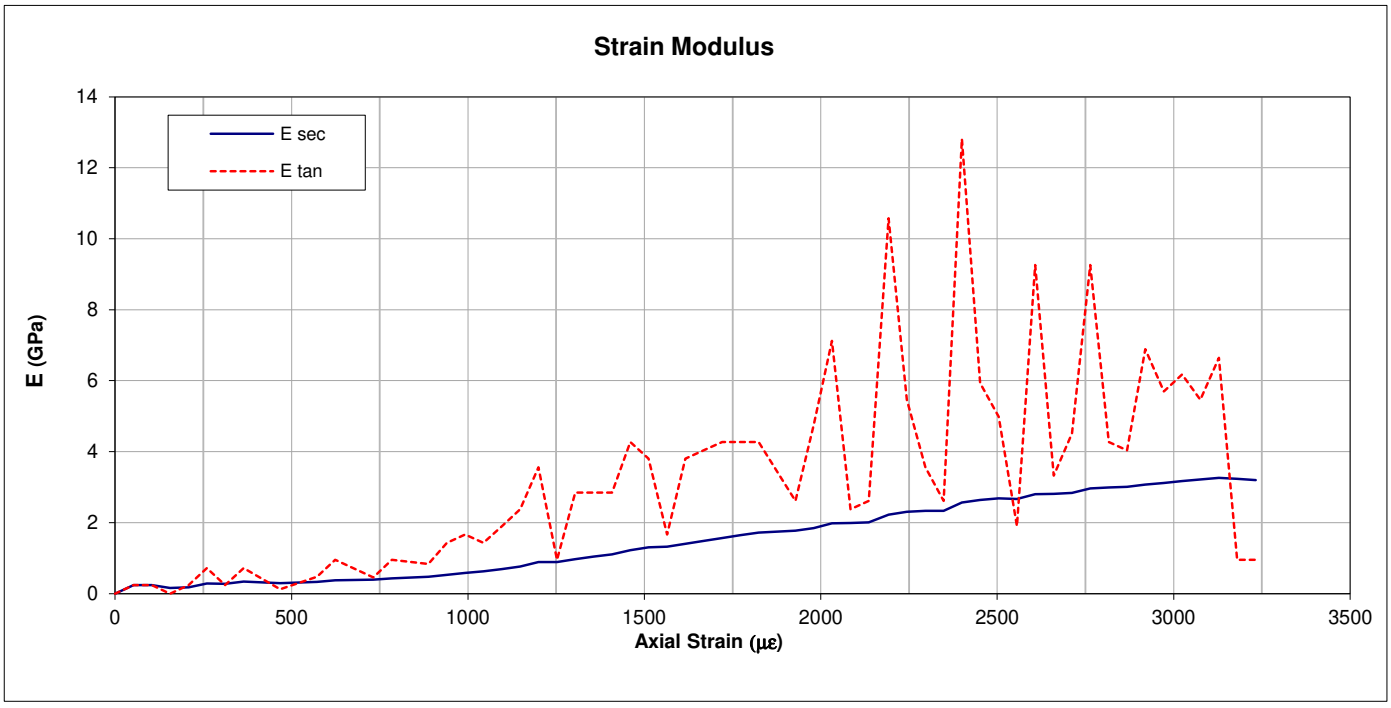
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006

Job No	765544	Cross section area	81.01 cm^2
Site	Ancoats Manchester	Height	233.61 mm
BH No	ATK-BH04	Max logged strength	10.32 MPa
Specimen Depth	26.08 - 26.47	E_{tan} (*)	5.46 GPa
Sample Type/No.	C56	E_{sec} (^)	2.30 GPa
(*) Calculated for axial σ =	5.16 MPa		
(^) Calculated for axial σ =	5.16 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





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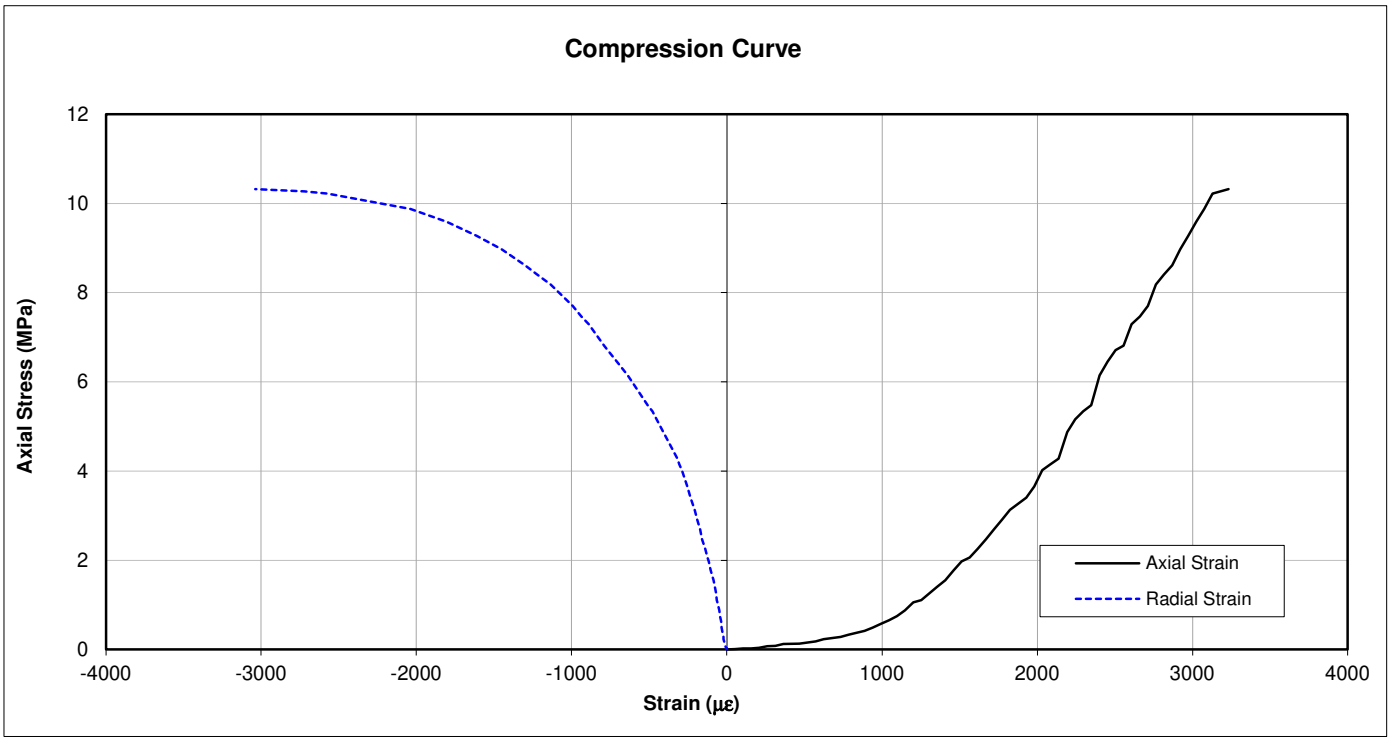
Test Date 13/06/2023

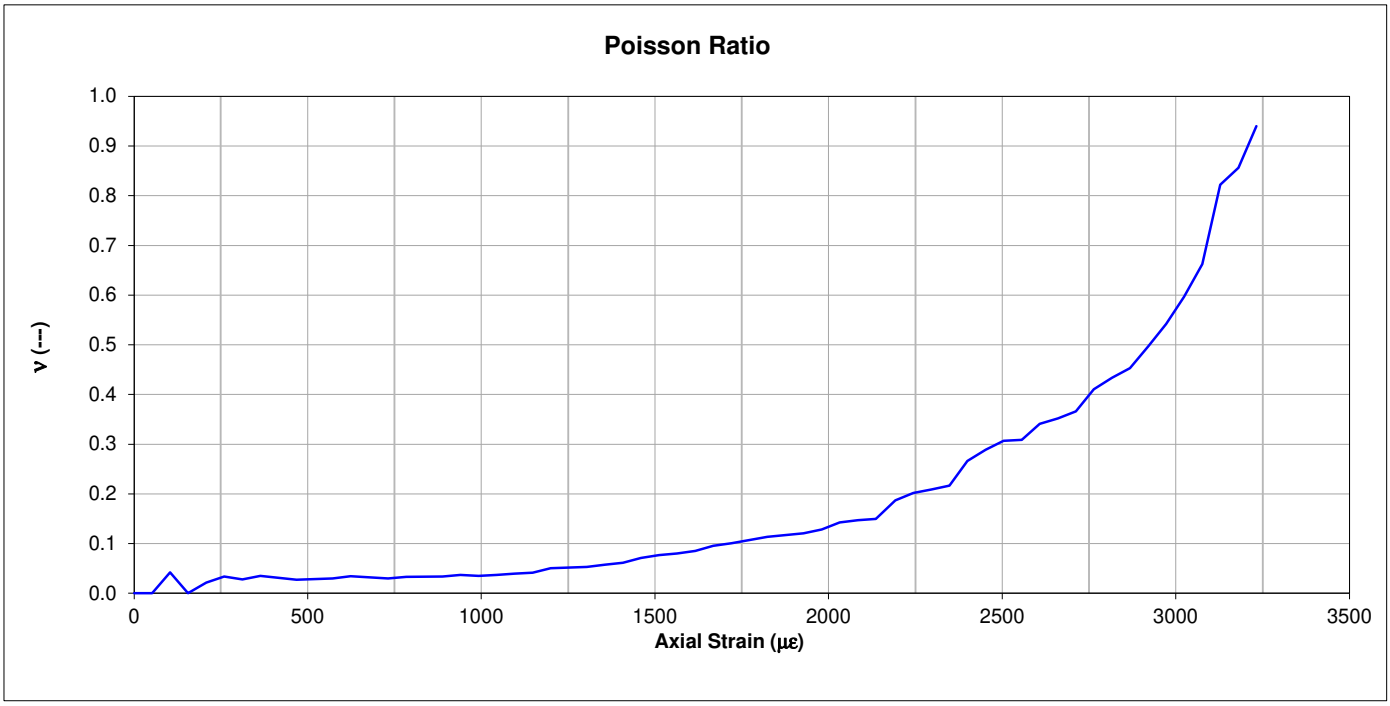
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006 and ASTM D4543-08

Job No	765544	Cross section area	81.01 cm^2
Site	Ancoats Manchester	Height	233.61 mm
BH No	ATK-BH04	Max logged strength	10.32 MPa
Specimen Depth	26.08 - 26.47	Poisson at failure	0.940
Sample Type/No.	C56	Poisson (*)	0.202
(*) Calculated for axial σ =	5.16 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





DEFORMABILITY OF ROCK IN UNIAXIAL COMPRESSION

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **ATK_BH06** Sample Ref: **87** Sample Type: **C** Depth (m): **33.38**

Bulk Density (Mg/m^3): **2.07** Dry Density (Mg/m^3): **1.80** Moisture Content (%): **15**
Length (mm): **205.26** Diameter (mm): **101.07** Length/Diameter Ratio: **2.03**
Test Duration (mins:secs): **06:38** Stress Rate (MPa/s): **0.0125** Load at Failure (kN): **44.8**
UCS (MPa): **5.6** Failure Type: **Vertical splitting**

Note: **Axis of loading parallel to core axis**
Description: **Reddish brown SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **PASS**. Flatness: **FAIL**. Perpendicularity: **FAIL**.



Front view (pre-test)



Rear view (pre-test)



Front view (post-test)



Rear view (post-test)

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	DARIA IGNACZAK	28/06/23
Contract: **Ancoats Manchester**	Job No: **765544**	

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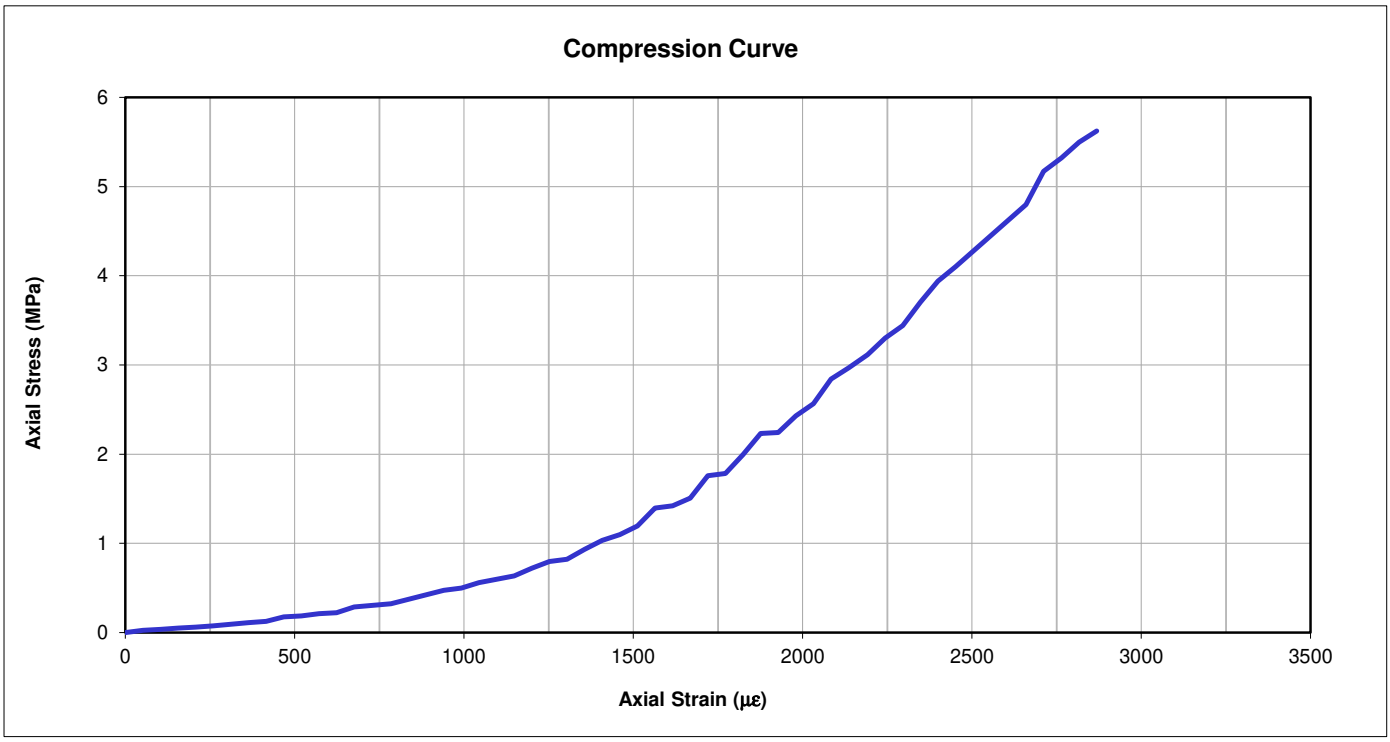
Test Date 20/06/2023

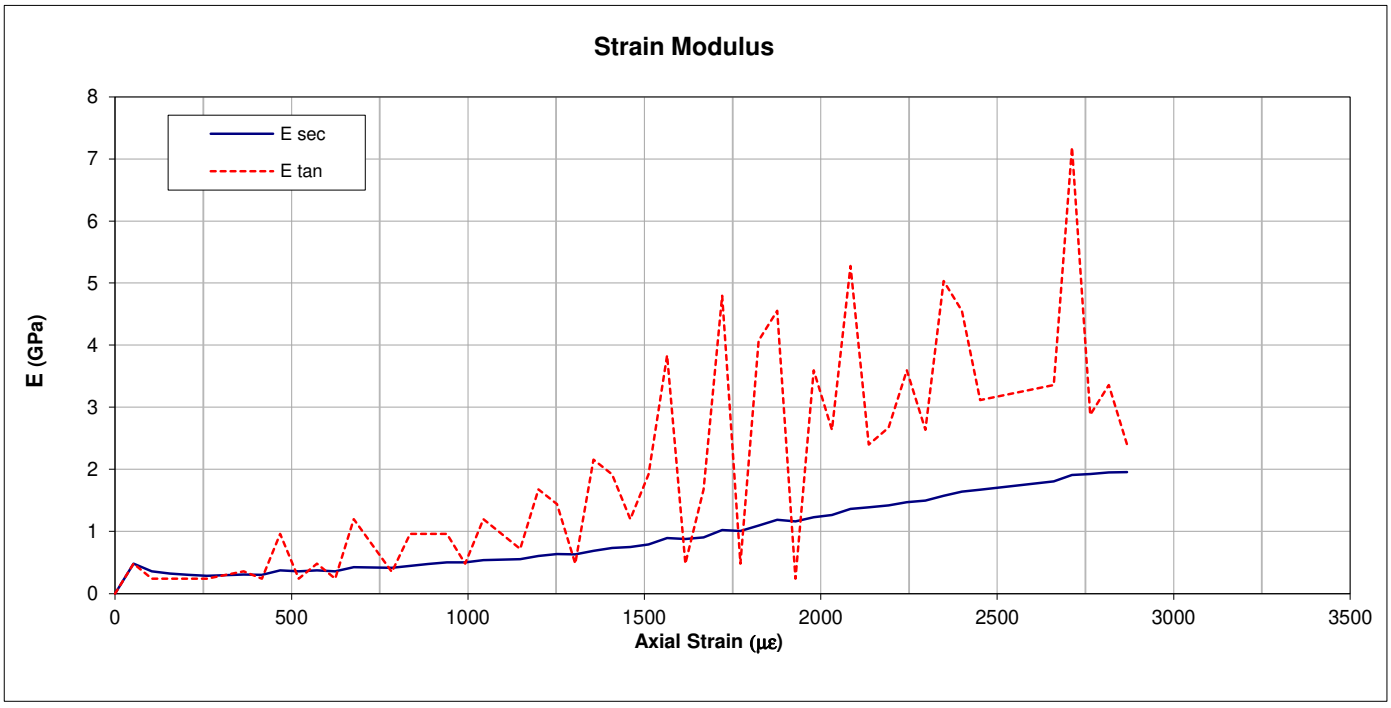
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006

Job No	765544	Cross section area	80.23 cm^2
Site	Ancoats Manchester	Height	205.26 mm
BH No	ATK-BH06	Max logged strength	5.62 MPa
Specimen Depth	33.38 - 33.60m	E_{tan} (*)	2.64 GPa
Sample Type/No.	C87	E_{sec} (^)	1.26 GPa
(*) Calculated for axial σ =	2.81 MPa		
(^) Calculated for axial σ =	2.81 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





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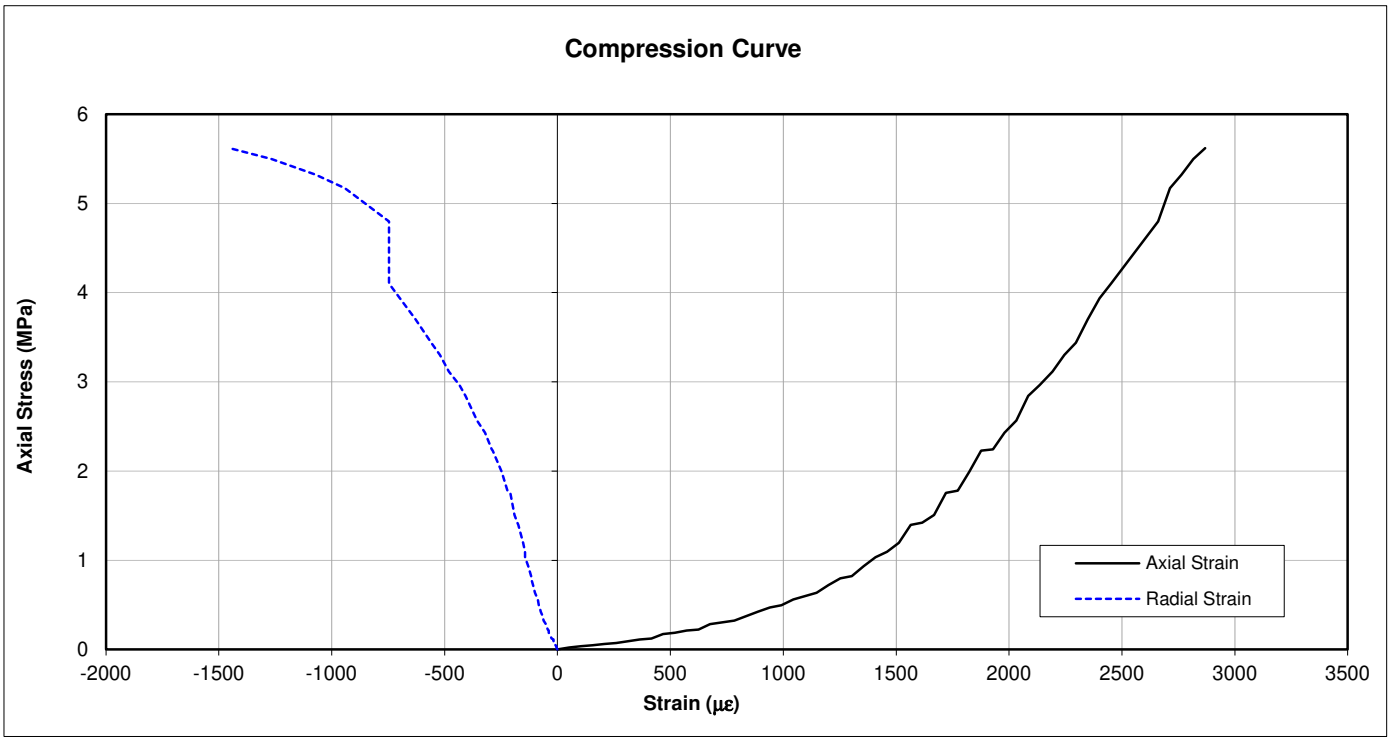
Test Date 20/06/2023

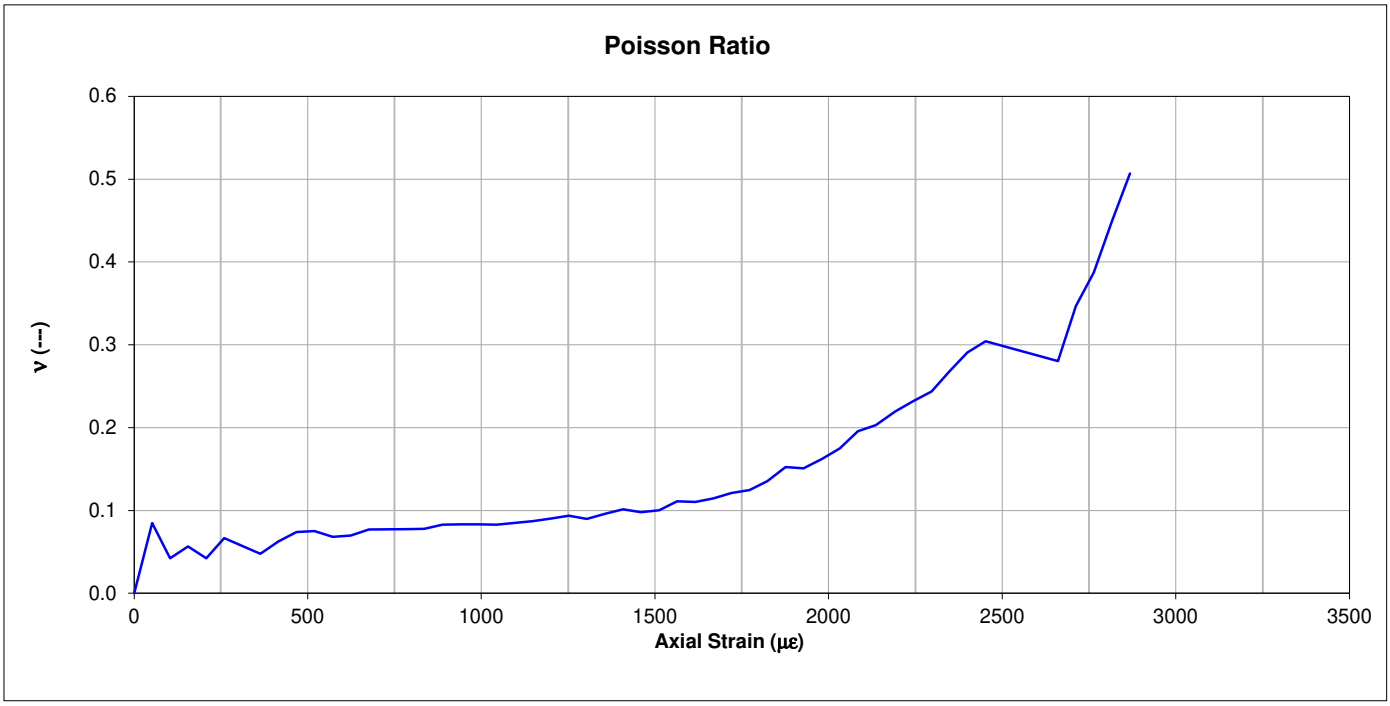
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006 and ASTM D4543-08

Job No	765544	Cross section area	80.23 cm^2
Site	Ancoats Manchester	Height	205.26 mm
BH No	ATK-BH06	Max logged strength	5.62 MPa
Specimen Depth	33.38 - 33.60m	Poisson at failure	0.507
Sample Type/No.	C87	Poisson (*)	0.175
(*) Calculated for axial σ =	2.81 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





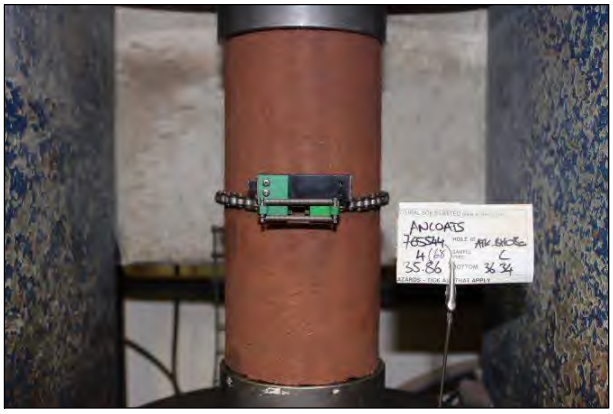
DEFORMABILITY OF ROCK IN UNIAXIAL COMPRESSION

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **ATK_BH08A** Sample Ref: **68** Sample Type: **C** Depth (m): **35.86**

Bulk Density (Mg/m^3): **2.12** Dry Density (Mg/m^3): **1.84** Moisture Content (%): **15**
Length (mm): **208.48** Diameter (mm): **101.69** Length/Diameter Ratio: **2.05**
Test Duration (mins:secs): **07:01** Stress Rate (MPa/s): **0.0123** Load at Failure (kN): **48.4**
UCS (MPa): **6.0** Failure Type: **Vertical splitting**

Note: **Axis of loading parallel to core axis**
Description: **Reddish brown SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **FAIL**. Flatness: **FAIL**. Perpendicularity: **FAIL**.



Front view (pre-test)



Rear view (pre-test)



Front view (post-test)



Rear view (post-test)

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	DARIA IGNACZAK	28/06/23

Contract	Job No
Ancoats Manchester	**765544**

GINT_LIBRARY_V10_01.GLB LibVersion: v8_07_001 PrjVersion: v8_07 | GrfcText L - UCS WITH DEFORMATION - A4P | 765544 ANCOATS MANCHESTER.GPJ - v10_01.
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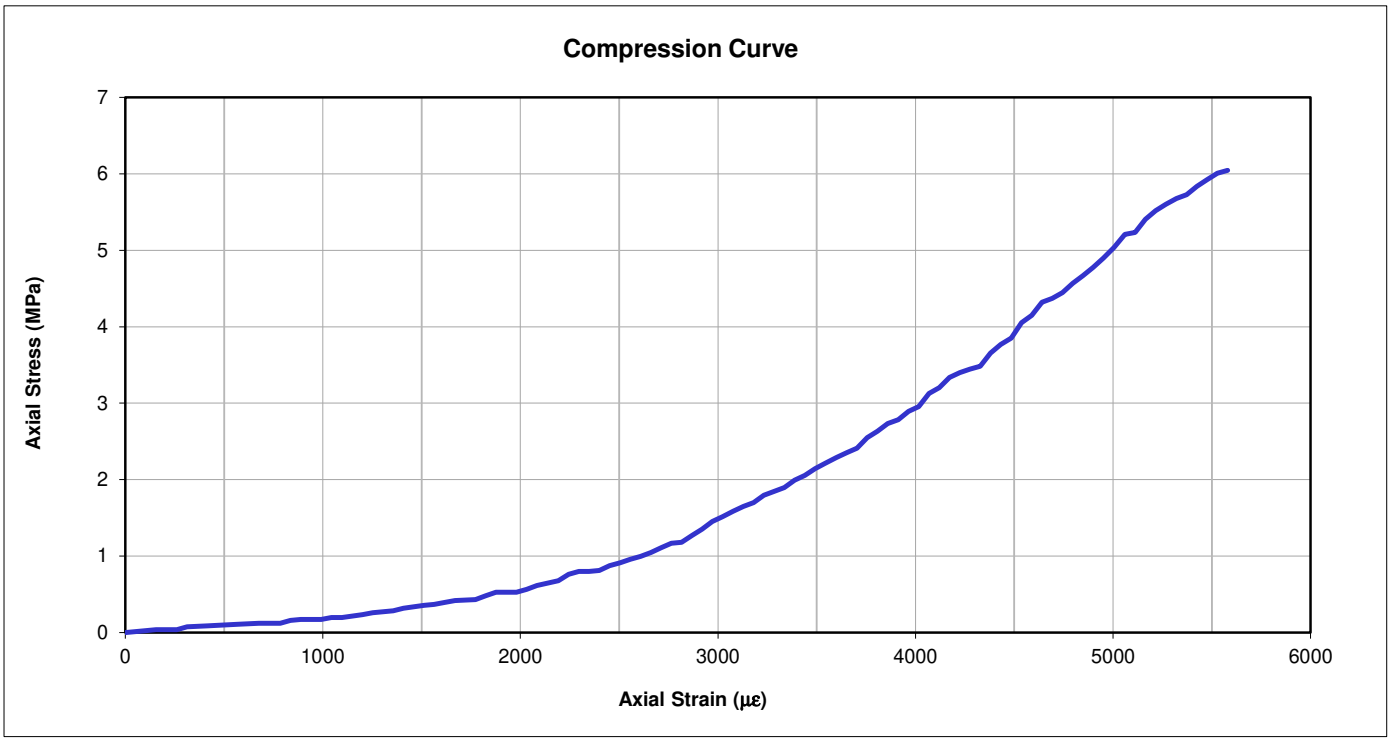
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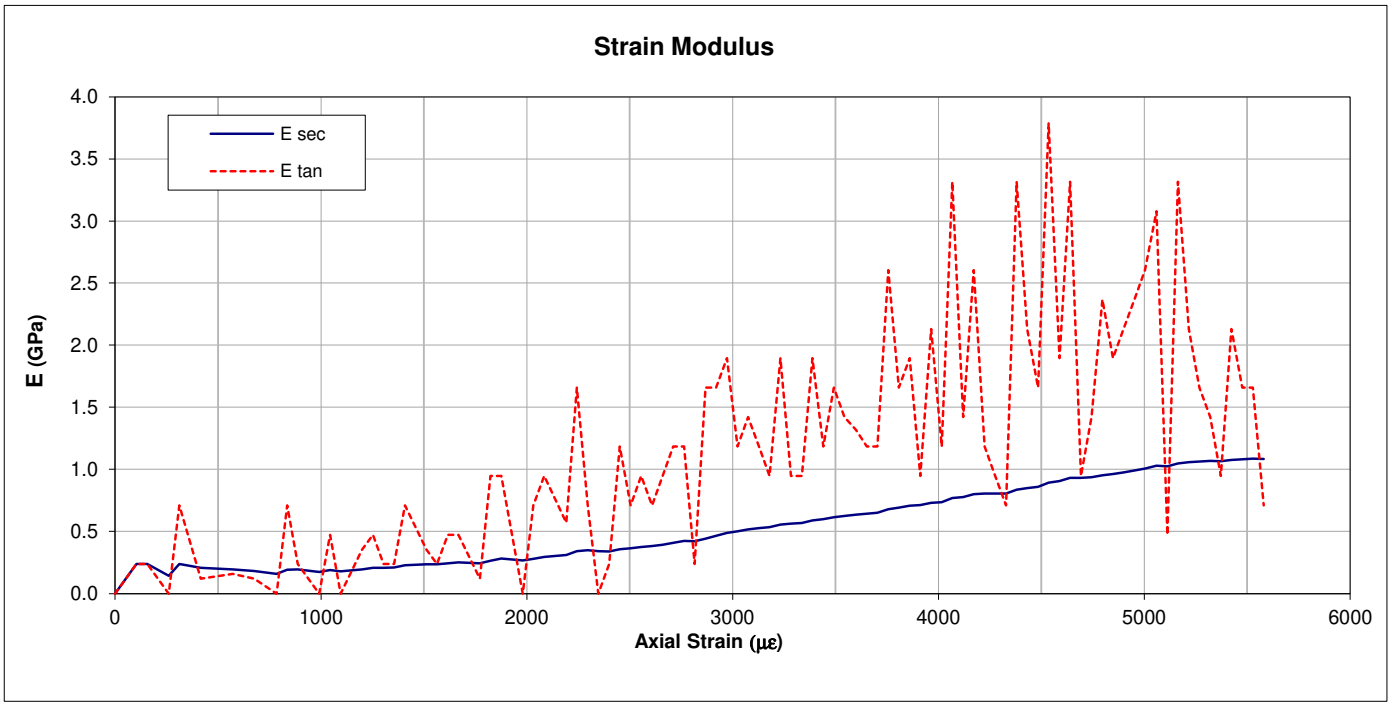
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006

Job No	765544	Cross section area	81.22 cm^2
Site	Ancoats Manchester	Height	208.48 mm
BH No	ATK-BH08A	Max logged strength	6.05 MPa
Specimen Depth	35.86 - 36.34m	E_{tan} (*)	1.18 GPa
Sample Type/No.	C68	E_{sec} (^)	0.74 GPa
(*) Calculated for axial σ =	3.02 MPa		
(^) Calculated for axial σ =	3.02 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





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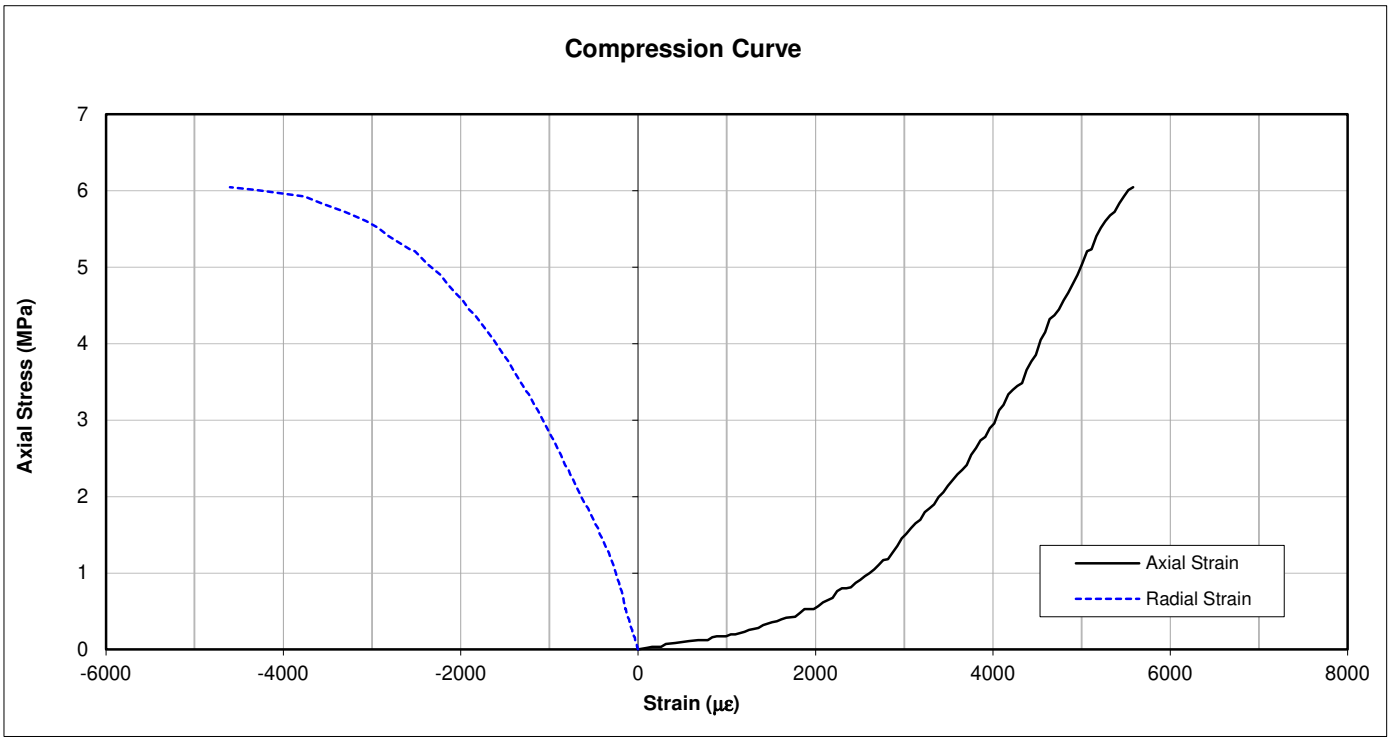
Test Date 20/06/2023

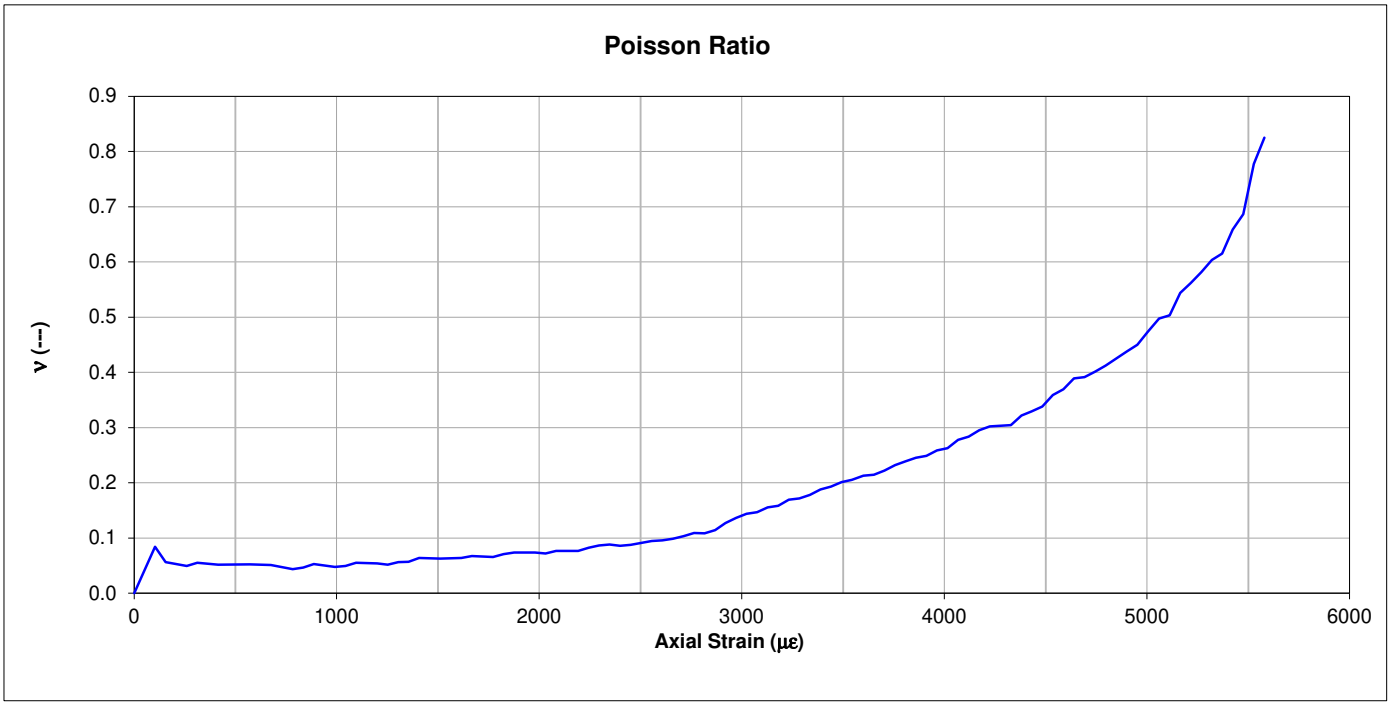
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006 and ASTM D4543-08

Job No	765544	Cross section area	81.22 cm^2
Site	Ancoats Manchester	Height	208.48 mm
BH No	ATK-BH08A	Max logged strength	6.05 MPa
Specimen Depth	35.86 - 36.34m	Poisson at failure	0.825
Sample Type/No.	C68	Poisson (*)	0.263
(*) Calculated for axial σ =	3.02 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





DEFORMABILITY OF ROCK IN UNIAXIAL COMPRESSION

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **ATK_BH09** Sample Ref: **64** Sample Type: **C** Depth (m): **29.57**

Bulk Density (Mg/m^3): **2.12** Dry Density (Mg/m^3): **1.83** Moisture Content (%): **16**
Length (mm): **211.25** Diameter (mm): **102.29** Length/Diameter Ratio: **2.07**
Test Duration (mins:secs): **03:14** Stress Rate (MPa/s): **0.0122** Load at Failure (kN): **16.7**
UCS (MPa): **2.0** Failure Type: **Vertical splitting**

Note: **Axis of loading parallel to core axis**
Description: **Reddish brown SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **FAIL**. Flatness: **FAIL**. Perpendicularity: **FAIL**.



Front view (pre-test)



Rear view (pre-test)



Front view (post-test)



Rear view (post-test)

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	DARIA IGNACZAK	28/06/23

Contract	Job No
Ancoats Manchester	**765544**

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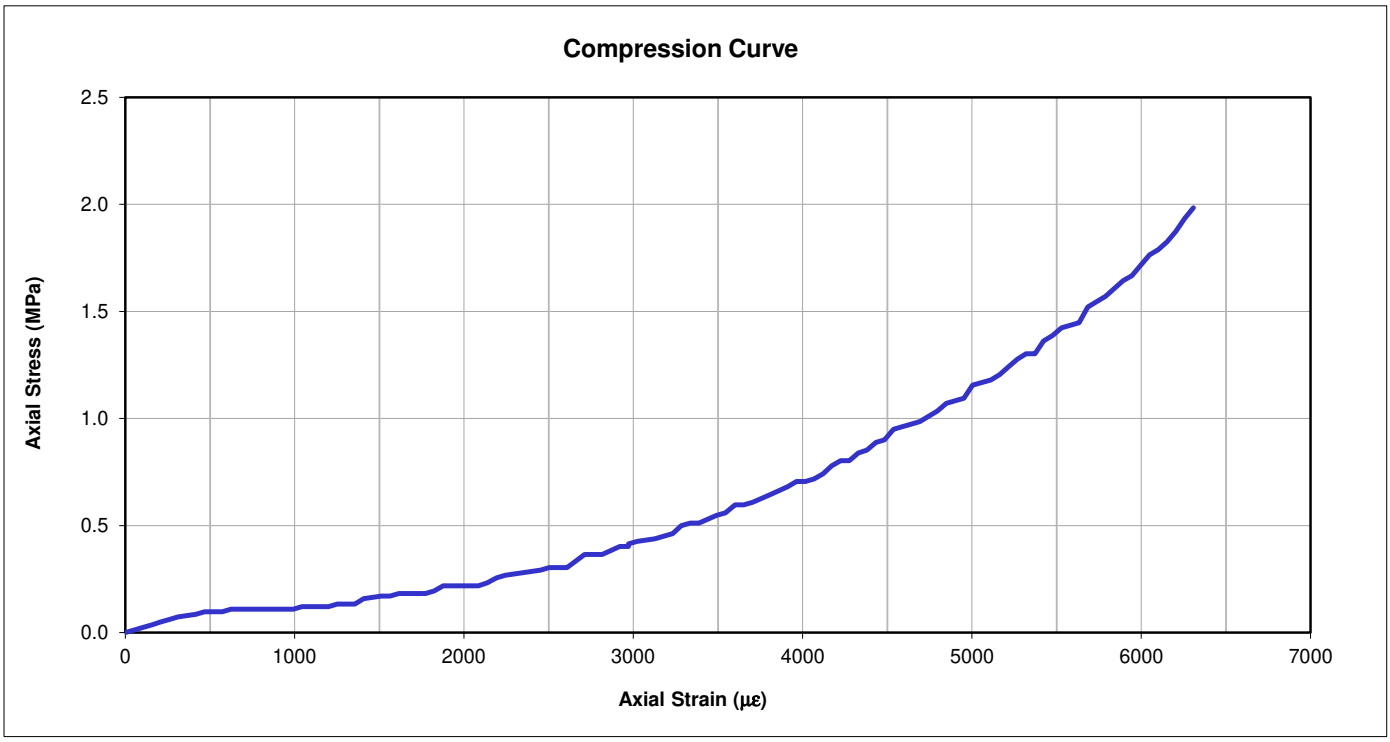
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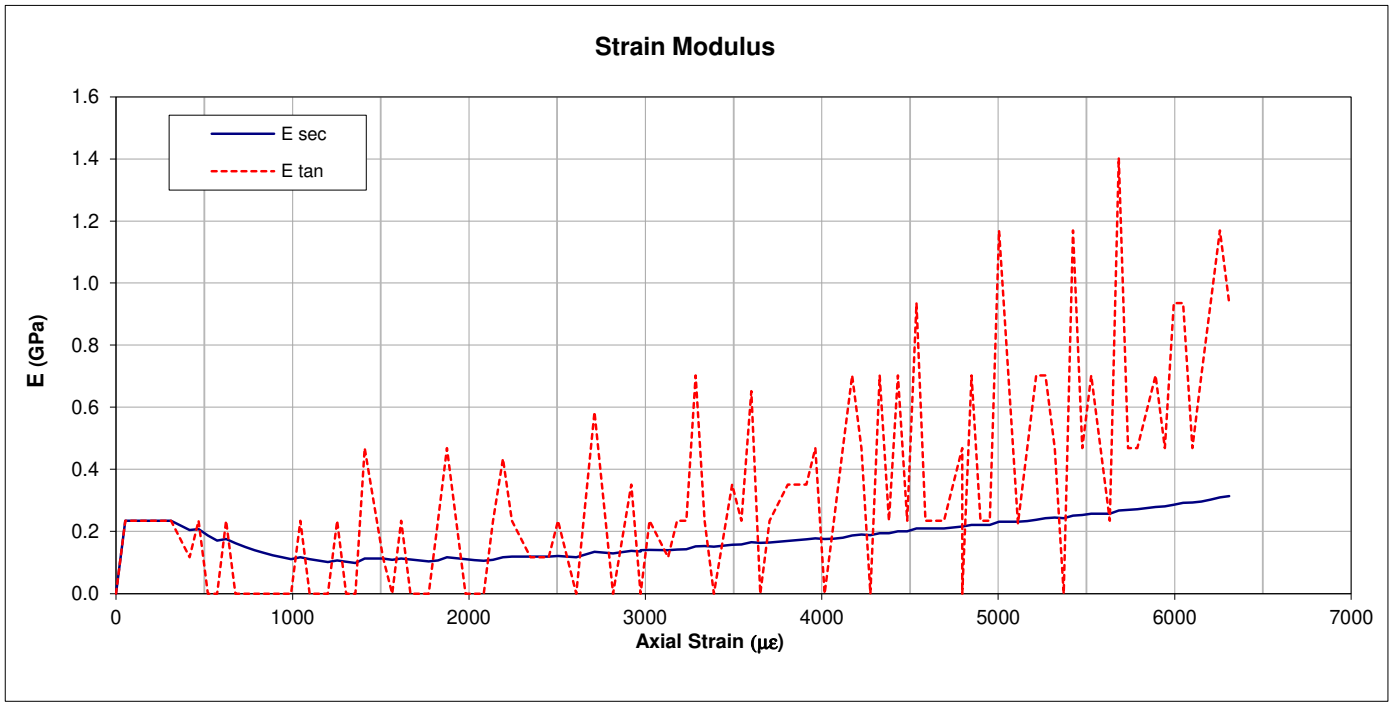
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006

Job No	765544	Cross section area	82.18 cm^2
Site	Ancoats Manchester	Height	211.25 mm
BH No	ATK-BH09	Max logged strength	1.98 MPa
Specimen Depth	29.57-29.82	E_{tan} (*)	0.23 GPa
Sample Type/No.	C64	E_{sec} (^)	0.21 GPa
(*) Calculated for axial σ =	0.99 MPa		
(^) Calculated for axial σ =	0.99 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





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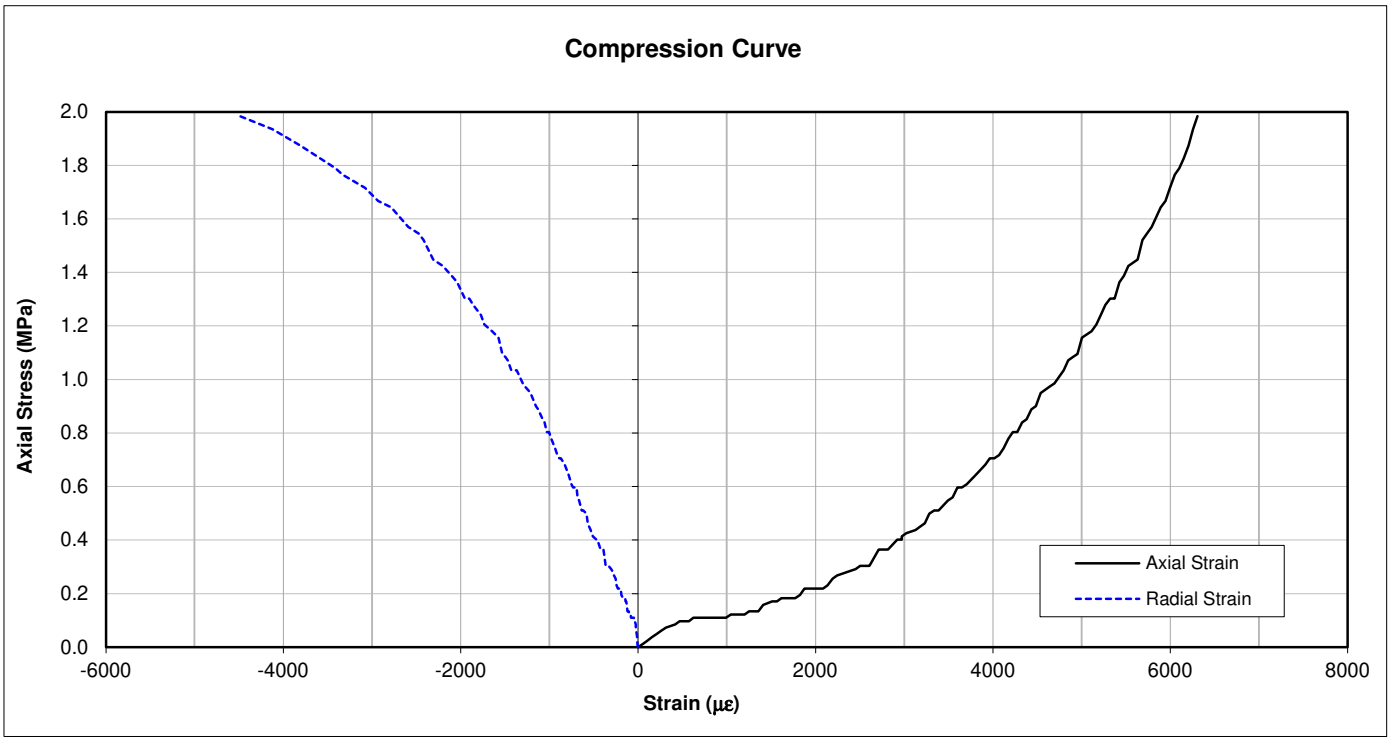
Test Date 13/06/2023

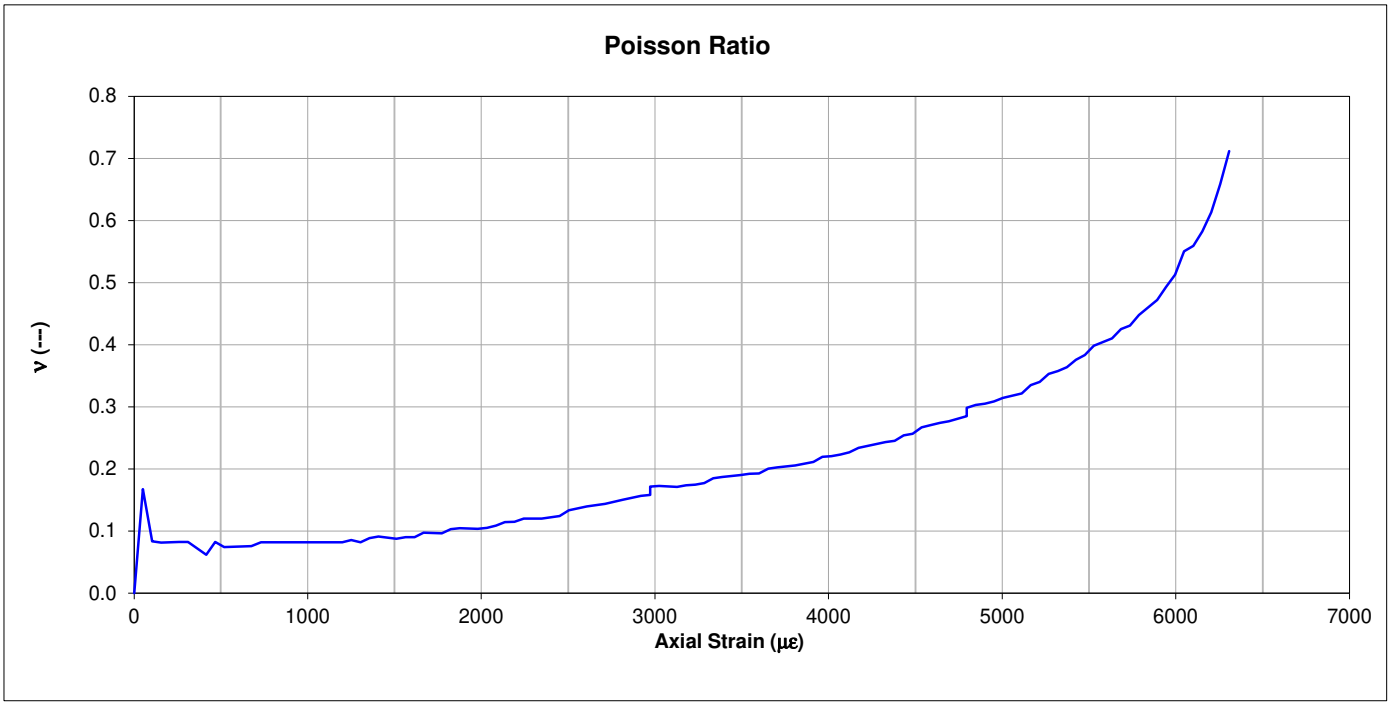
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006 and ASTM D4543-08

Job No	765544	Cross section area	82.18 cm^2
Site	Ancoats Manchester	Height	211.25 mm
BH No	ATK-BH09	Max logged strength	1.98 MPa
Specimen Depth	29.57-29.82	Poisson at failure	0.712
Sample Type/No.	C64	Poisson (*)	0.277
(*) Calculated for axial σ =	0.99 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





DEFORMABILITY OF ROCK IN UNIAXIAL COMPRESSION

Preparation in accordance with ASTM D4543-19
Testing in accordance with ISRM 1974-2006

Borehole: **ATK_BH10** Sample Ref: **69** Sample Type: **C** Depth (m): **27.35**

Bulk Density (Mg/m^3): **2.20** Dry Density (Mg/m^3): **1.93** Moisture Content (%): **14**
Length (mm): **222.34** Diameter (mm): **101.97** Length/Diameter Ratio: **2.18**
Test Duration (mins:secs): **08:04** Stress Rate (MPa/s): **0.0122** Load at Failure (kN): **45.9**
UCS (MPa): **5.6** Failure Type: **Vertical splitting**

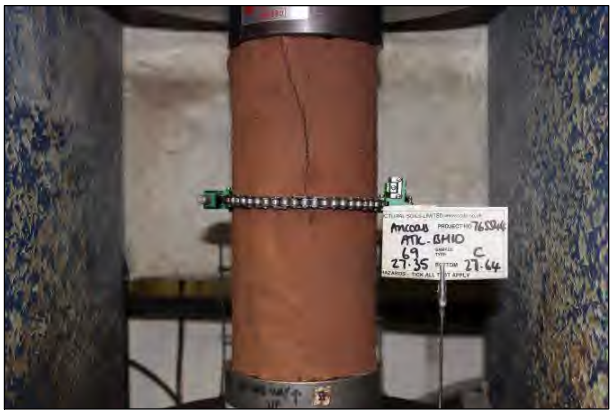
Note: **Axis of loading parallel to core axis**
Description: **Reddish brown SANDSTONE**
Specimen Preparation: **Specimen was not recored.**
Sample tolerance checks: Straightness: **FAIL**. Flatness: **FAIL**. Perpendicularity: **FAIL**.



Front view (pre-test)



Rear view (pre-test)



Front view (post-test)



Rear view (post-test)

Samples delivered from site to storage facility. Samples are stored in a frost free environment, at temperatures >4°C
Compression machine: Impact CT340 2000kN Auto Compression Machine Serial No. CT340-22. SSL No. 011076

STRUCTURAL SOILS
1a Princess Street
Bedminster
Bristol
BS3 4AG

Compiled By		Date
Daria Ignaczak	**DARIA IGNACZAK**	**28/06/23**
Contract: **Ancoats Manchester**	Job No: **765544**	

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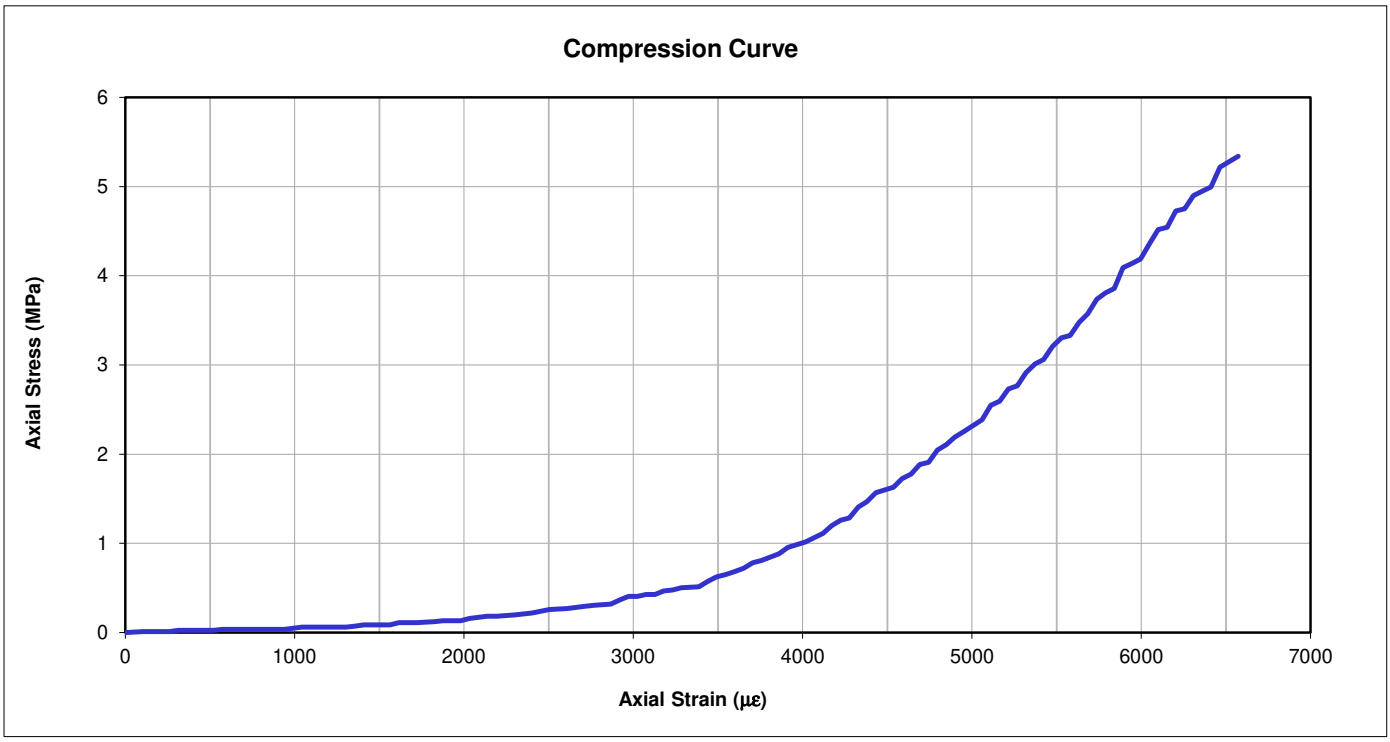
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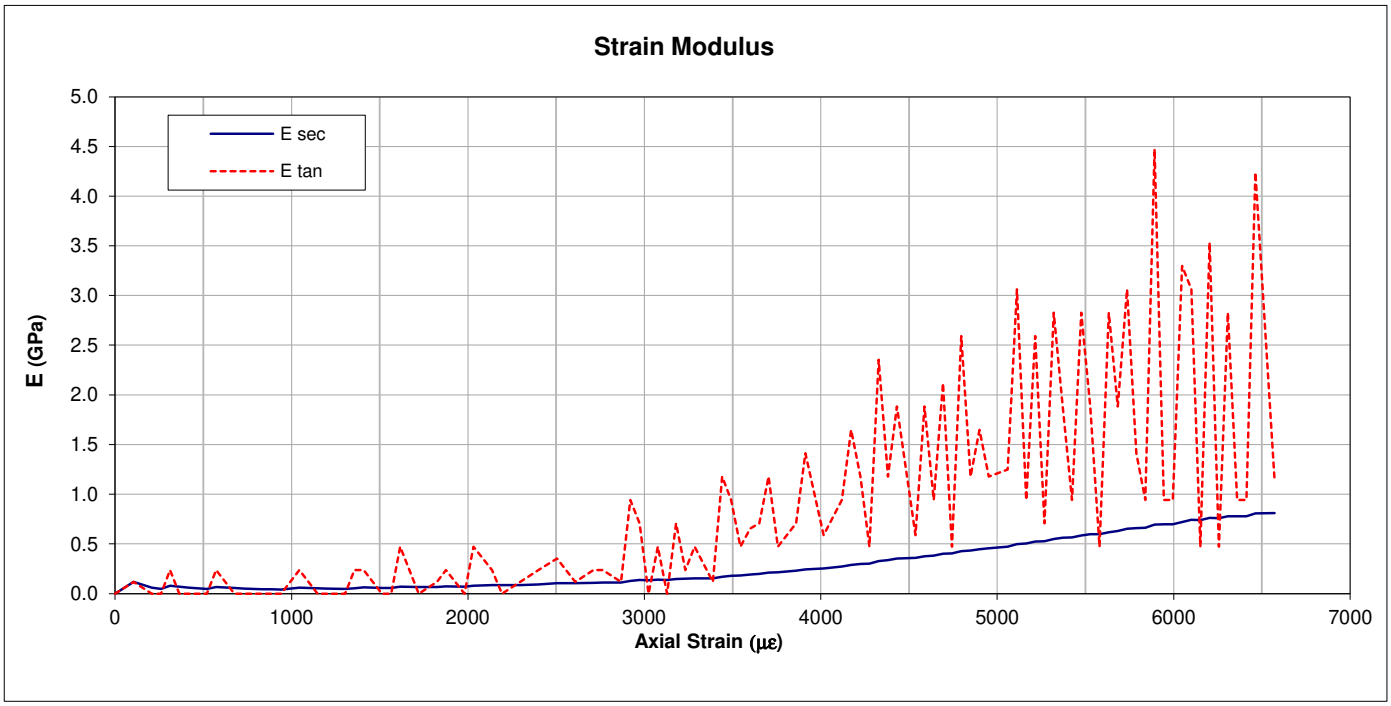
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006

Job No	765544	Cross section area	81.66 cm^2
Site	Ancoats Manchester	Height	222.34 mm
BH No	ATK-BH10	Max logged strength	5.34 MPa
Specimen Depth	27.35-27.64	E_{tan} (*)	0.94 GPa
Sample Type/No.	C69	E_{sec} (^)	0.50 GPa
(*) Calculated for axial σ =	2.67 MPa		
(^) Calculated for axial σ =	2.67 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





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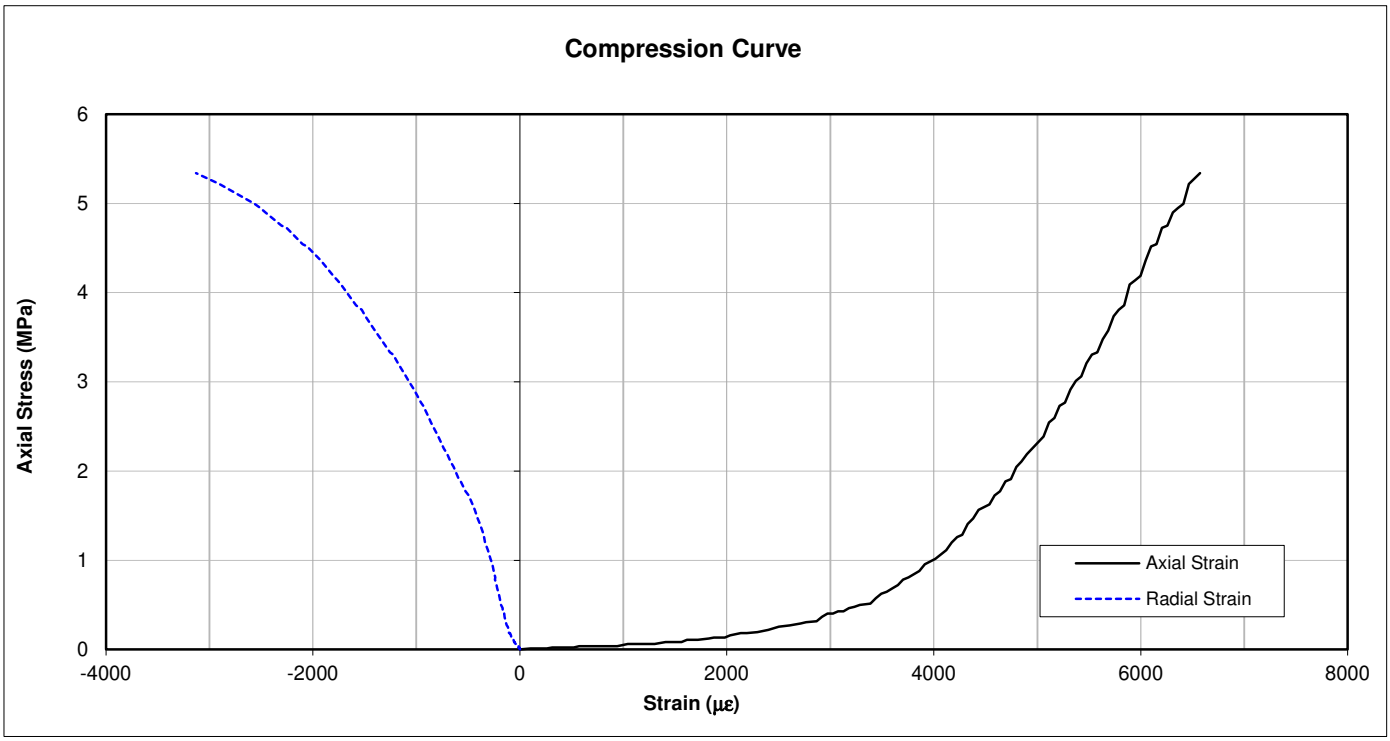
Test Date 13/06/2023

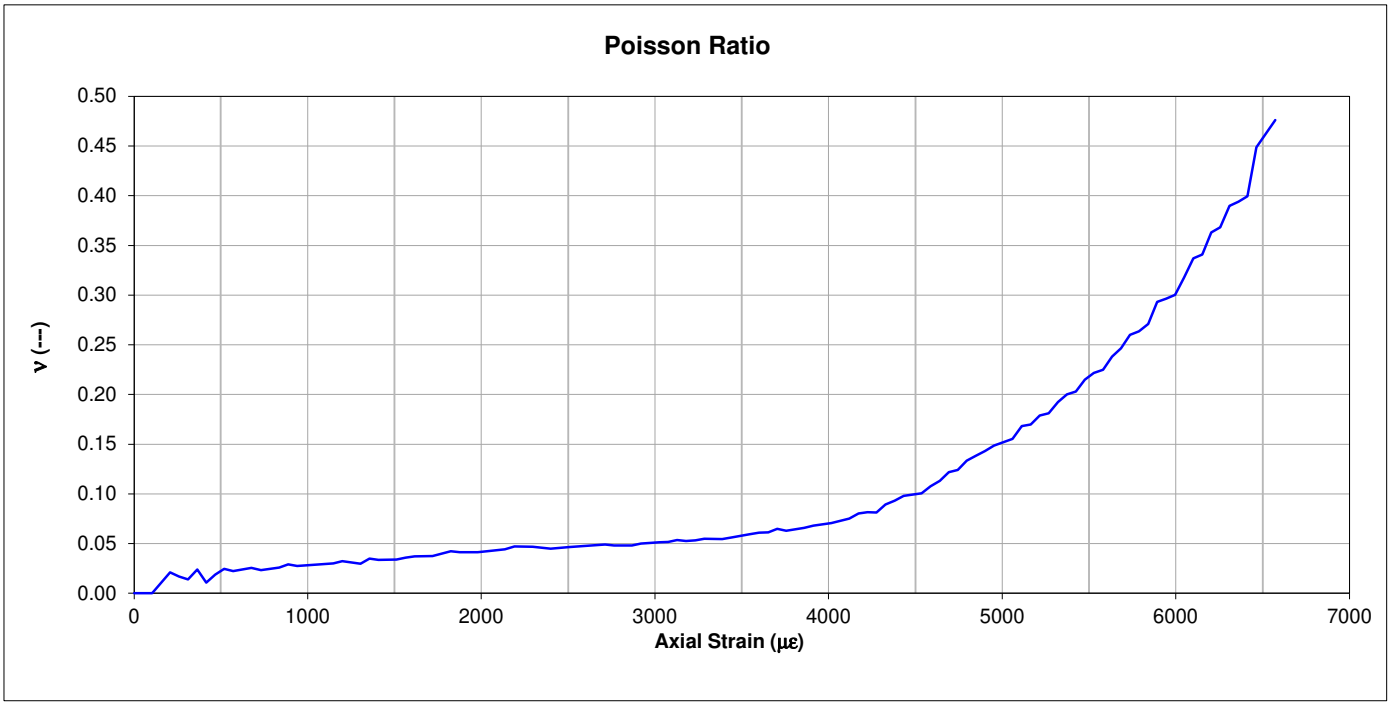
UNIAXIAL COMPRESSION TEST with DEFORMATION

In accordance with ISRM 1974-2006 and ASTM D4543-08

Job No	765544	Cross section area	81.66 cm^2
Site	Ancoats Manchester	Height	222.34 mm
BH No	ATK-BH10	Max logged strength	5.34 MPa
Specimen Depth	27.35-27.64	Poisson at failure	0.476
Sample Type/No.	C69	Poisson (*)	0.170
(*) Calculated for axial σ =	2.67 MPa		

NB 'Max logged strength' is the maximum value captured by the data logging process for the Youngs/Poissons measurement portion of the test. It is often less than the final strength of the specimen





envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/04808
Issue Number: 1 **Date:** 25 May, 2023

Client: Structural Soils Limited (Castleford Lab)
The Potteries
Pottery Street
Castleford
West Yorkshire
UK
WF10 1NJ

Project Manager: Castleford Lab/Jessica Robertson/Luke Fisher; Laur
Project Name: Ancoats, Manchester
Project Ref: 765544
Order No: N/A
Date Samples Received: 17/05/23
Date Instructions Received: 18/05/23
Date Analysis Completed: 25/05/23

Approved by:



Richard Wong
Client Manager

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME
UKAS TESTING 1247

Envirolab Job Number: 23/04808 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/04808/1	23/04808/2	23/04808/3	23/04808/4	23/04808/5	23/04808/6	23/04808/7	Units	Limit of Detection	Method ref
Client Sample No	9	19	34	2	9	12	38			
Client Sample ID	ATK_BH01	ATK_BH01	ATK_BH01	ATK_BH02a	ATK_BH03	ATK_BH05	ATK_BH05			
Depth to Top	1.20	4.50	9.50	0.30	3.00	2.50	15.00			
Depth To Bottom	1.65	5.00			3.45					
Date Sampled			12-Apr-23	27-Apr-23		11-Apr-23	12-Apr-23			
Sample Type	SOIL - B	SOIL - B	SOIL - D	SOLID	SOIL - D	SOIL - D	SOIL - D			
Sample Matrix Code	3	3	3	7	3	3	5A			
% Stones >10mm$_A$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	% w/w	0.1	A-T-044
pH BRE$_D$[M#]	9.11	8.90	8.91	12.20[U]	8.93	8.79	8.97	pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$[M#]	33	135	74	<10[U]	200	150	41	mg/l	10	A-T-026s
Sulphate BRE (acid sol)$_D$[M#]	0.02	-	-	0.12[U]	-	-	-	% w/w	0.02	A-T-028s
Sulphur BRE (total)$_D$	0.01	-	-	0.06	-	-	-	% w/w	0.01	A-T-024s

Envirolab Job Number: 23/04808 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/04808/8	23/04808/9	23/04808/10	23/04808/11	23/04808/12	23/04808/13	23/04808/14	Units	Limit of Detection	Method ref
Client Sample No	67	5	12	16	3	6	17			
Client Sample ID	ATK_BH05	ATK_BH06	ATK_BH06	ATK_BH06	ATK_BH08A	ATK_BH08A	ATK_BH08A			
Depth to Top	25.50	2.00	3.00	5.00	0.80	1.20	6.00			
Depth To Bottom	25.95		3.45		1.00	1.65	6.45			
Date Sampled		17-Apr-23		17-Apr-23						
Sample Type	SOIL - B	SOIL - D	SOIL - B	SOIL - D	SOIL - B	SOIL - B	SOIL - B			
Sample Matrix Code	1A	3	3	3	6A	6A	3			
% Stones >10mm$_A$	6.8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	% w/w	0.1	A-T-044
pH BRE$_D$[M#]	9.22	8.78	9.05	8.82	9.01	8.65	9.00	pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$[M#]	28	71	68	83	56	36	55	mg/l	10	A-T-026s
Sulphate BRE (acid sol)$_D$[M#]	-	0.03	0.04	-	0.03	-	-	% w/w	0.02	A-T-028s
Sulphur BRE (total)$_D$	-	0.02	0.03	-	0.05	-	-	% w/w	0.01	A-T-024s

Envirolab Job Number: 23/04808 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/04808/15	23/04808/16	23/04808/17	23/04808/18	23/04808/19	23/04808/20	23/04808/21	Units	Limit of Detection	Method ref
Client Sample No	7	15	3	55	4	12	4			
Client Sample ID	ATK_BH09	ATK_BH09	ATK_BH10	ATK_BH10	ATK_BH11	ATK_BH11	ATK_BH12			
Depth to Top	1.20	4.00	0.40	21.00	0.70	3.50	0.50			
Depth To Bottom	1.65	4.45	0.80	21.45			0.60			
Date Sampled										
Sample Type	SOIL - B	SOIL - B	SOIL - B	SOIL - B	SOIL - D	SOIL - D	SOIL - B			
Sample Matrix Code	3	3	1AB	5A	6A	3	5A			
% Stones >10mm$_A$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	8.92	8.78	9.36	8.97	8.89	8.65	8.16	pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	151	80	13	14	11	55	131	mg/l	10	A-T-026s
Sulphate BRE (acid sol)$_D$$^{M\#}$	0.06	-	<0.02	-	-	-	0.04	% w/w	0.02	A-T-028s
Sulphur BRE (total)$_D$	0.02	-	<0.01	-	-	-	0.02	% w/w	0.01	A-T-024s

Envirolab Job Number: 23/04808 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/04808/22	23/04808/23	23/04808/24	23/04808/25	23/04808/26	23/04808/27	23/04808/28	Units	Limit of Detection	Method ref
Client Sample No	15	10	4	8	4	2	4			
Client Sample ID	ATK_BH12	ATK_TP01	ATK_TP02	ATK_TP03	ATK_TP04	ATK_TP07	ATK_TP07			
Depth to Top	4.00	3.60	3.20	2.00	0.50	0.35	2.00			
Depth To Bottom		4.00			1.10	0.50				
Date Sampled		13-Apr-23	18-Apr-23	21-Apr-23		14-Apr-23	14-Apr-23			
Sample Type	SOIL - D	SOIL - D	SOIL - D	SOIL - D	SOIL - D	SOIL - D	SOIL - D			
Sample Matrix Code	3	3	3	3	6AB	6A	3			
% Stones >10mm$_A$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	12.1	% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	9.15	8.94	8.74	8.72	8.65	9.21	8.85	pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	206	69	53	90	90	14	18	mg/l	10	A-T-026s
Sulphate BRE (acid sol)$_D$$^{M\#}$	-	-	-	-	0.04	-	-	% w/w	0.02	A-T-028s
Sulphur BRE (total)$_D$	-	-	-	-	0.02	-	-	% w/w	0.01	A-T-024s

Envirolab Job Number: 23/04808 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/04808/29	23/04808/30	23/04808/31	23/04808/32	23/04808/33	23/04808/34	23/04808/35	Units	Limit of Detection	Method ref
Client Sample No	5	4	2	5	5	1	4			
Client Sample ID	ATK_TP08	ATK_TP10	ATK_TP13	ATK_WS01	ATK_WS02	ATK_WS03	ATK_WS03			
Depth to Top	1.80	2.70	0.60	1.20	2.00	1.20	4.00			
Depth To Bottom	2.00		0.75	2.00	3.00	2.00	5.00			
Date Sampled		17-Apr-23								
Sample Type	SOIL - B	SOIL - D	SOIL - B	SOIL - B	SOIL - B	SOIL - B	SOIL - B			
Sample Matrix Code	3	3	3	6AE	3	5	3			
% Stones >10mm$_A$	<0.1	<0.1	<0.1	3.6	<0.1	<0.1	<0.1	% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	8.05	9.11	9.22	8.81	8.80	9.17	9.17	pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	53	92	41	120	207	34	53	mg/l	10	A-T-026s
Sulphate BRE (acid sol)$_D$$^{M\#}$	-	-	<0.02	0.04	-	-	-	% w/w	0.02	A-T-028s
Sulphur BRE (total)$_D$	-	-	<0.01	0.02	-	-	-	% w/w	0.01	A-T-024s

Envirolab Job Number: 23/04808 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/04808/36	23/04808/37	23/04808/38	23/04808/39	23/04808/40	23/04808/41		Units	Limit of Detection	Method ref
Client Sample No	2	5	7	3	4	5				
Client Sample ID	ATK_WS04	ATK_WS05	ATK_WS06	ATK_WS07	ATK_WS08	ATK_WS08				
Depth to Top	2.00	1.20	2.00	2.50	1.20	2.00				
Depth To Bottom	3.00	2.00	3.00	2.90	2.00	3.00				
Date Sampled										
Sample Type	SOIL - B	SOIL - B	SOIL - B	SOIL - B	SOIL - B	SOIL - B				
Sample Matrix Code	3	3	3	3	3	3				
% Stones >10mm$_A$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	9.11	8.99	9.32	9.06	8.76	8.84		pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	36	80	61	56	51	58		mg/l	10	A-T-026s
Sulphate BRE (acid sol)$_D$$^{M\#}$	-	0.03	0.03	-	0.03	-		% w/w	0.02	A-T-028s
Sulphur BRE (total)$_D$	-	0.01	0.02	-	0.02	-		% w/w	0.01	A-T-024s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25ºC / 11550µS/cm @ 20ºC fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Castleford Lab), The Potteries, Pottery Street, Castleford, West Yorkshire, UK, WF10 1NJ

Project: Ancoats, Manchester

Clients Project No: 765544

Project No: 23/04808

Date Received: 18/05/2023 (am)

Cool Box Temperatures (°C): 12.4 - 17.0

Lab Sample ID	23/04808/1	23/04808/2	23/04808/3	23/04808/5	23/04808/6	23/04808/7	23/04808/8	23/04808/9	23/04808/10	23/04808/11	23/04808/12	23/04808/13
Client Sample No	9	19	34	9	12	38	67	5	12	16	3	6
Client Sample ID/Depth	ATK_BH01 1.20-1.65m	ATK_BH01 4.50-5.00m	ATK_BH01 9.50m	ATK_BH03 3.00-3.45m	ATK_BH05 2.50m	ATK_BH05 15.00m	ATK_BH05 25.50-25.95m	ATK_BH06 2.00m	ATK_BH06 3.00-3.45m	ATK_BH06 5.00m	ATK_BH08A 0.80-1.00m	ATK_BH08A 1.20-1.65m
Date Sampled			12/04/23		11/04/23	12/04/23		17/04/23		17/04/23		
Deviation Code												
E (no date)	✓	✓		✓			✓		✓		✓	✓
F			✓		✓	✓		✓		✓		

Lab Sample ID	23/04808/14	23/04808/15	23/04808/16	23/04808/17	23/04808/18	23/04808/19	23/04808/20	23/04808/21	23/04808/22	23/04808/23	23/04808/24	23/04808/25
Client Sample No	17	7	15	3	55	4	12	4	15	10	4	8
Client Sample ID/Depth	ATK_BH08A 6.00-6.45m	ATK_BH09 1.20-1.65m	ATK_BH09 4.00-4.45m	ATK_BH10 0.40-0.80m	ATK_BH10 21.00-21.45m	ATK_BH11 0.70m	ATK_BH11 3.50m	ATK_BH12 0.50-0.60m	ATK_BH12 4.00m	ATK_TP01 3.60-4.00m	ATK_TP02 3.20m	ATK_TP03 2.00m
Date Sampled										13/04/23	18/04/23	21/04/23
Deviation Code												
E (no date)	✓	✓	✓	✓	✓	✓	✓	✓	✓			
F										✓	✓	✓

Lab Sample ID	23/04808/26	23/04808/27	23/04808/28	23/04808/29	23/04808/30	23/04808/31	23/04808/32	23/04808/33	23/04808/34	23/04808/35	23/04808/36	23/04808/37
Client Sample No	4	2	4	5	4	2	5	5	1	4	2	5
Client Sample ID/Depth	ATK_TP04 0.50-1.10m	ATK_TP07 0.35-0.50m	ATK_TP07 2.00m	ATK_TP08 1.80-2.00m	ATK_TP10 2.70m	ATK_TP13 0.60-0.75m	ATK_WS01 1.20-2.00m	ATK_WS02 2.00-3.00m	ATK_WS03 1.20-2.00m	ATK_WS03 4.00-5.00m	ATK_WS04 2.00-3.00m	ATK_WS05 1.20-2.00m
Date Sampled		14/04/23	14/04/23		17/04/23							
Deviation Code												
E (no date)	✓			✓		✓	✓	✓	✓	✓	✓	✓
F		✓	✓		✓							

Lab Sample ID	23/04808/38	23/04808/39	23/04808/40	23/04808/41
Client Sample No	7	3	4	5

Client Sample ID/Depth	ATK_WS06 2.00-3.00m	ATK_WS07 2.50-2.90m	ATK_WS08 1.20-2.00m	ATK_WS08 2.00-3.00m
Date Sampled				
Deviation Code				
E (no date)	✓	✓	✓	✓
F				

Key
E (no date) *No sampling date provided (all results affected if not provided)*
F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/04808/3	23/04808/6	23/04808/7	23/04808/9	23/04808/11	23/04808/23	23/04808/24	23/04808/25	23/04808/27	23/04808/28	23/04808/30
Client Sample No	34	12	38	5	16	10	4	8	2	4	4
Client Sample ID/Depth	ATK_BH01 9.50m	ATK_BH05 2.50m	ATK_BH05 15.00m	ATK_BH06 2.00m	ATK_BH06 5.00m	ATK_TP01 3.60-4.00m	ATK_TP02 3.20m	ATK_TP03 2.00m	ATK_TP07 0.35-0.50m	ATK_TP07 2.00m	ATK_TP10 2.70m
Date Sampled	12/04/23	11/04/23	12/04/23	17/04/23	17/04/23	13/04/23	18/04/23	21/04/23	14/04/23	14/04/23	17/04/23
Sulphate BRE (water sol 2:1)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sulphate BRE (acid sol)				✓							

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/04808/1	23/04808/2	23/04808/3	23/04808/4	23/04808/5	23/04808/6	23/04808/7	23/04808/8	23/04808/9	23/04808/10	23/04808/11	23/04808/12
Client Sample No	9	19	34	2	9	12	38	67	5	12	16	3
Client Sample ID/Depth	ATK_BH01 1.20-1.65m	ATK_BH01 4.50-5.00m	ATK_BH01 9.50m	ATK_BH02a 0.30m	ATK_BH03 3.00-3.45m	ATK_BH05 2.50m	ATK_BH05 15.00m	ATK_BH05 25.50-25.95m	ATK_BH06 2.00m	ATK_BH06 3.00-3.45m	ATK_BH06 5.00m	ATK_BH08A 0.80-1.00m
Date Sampled			12/04/23	27/04/23		11/04/23	12/04/23		17/04/23		17/04/23	
A-T-024s	25/05/2023			25/05/2023					25/05/2023	25/05/2023		25/05/2023
A-T-026s	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023
A-T-028s	24/05/2023			24/05/2023					24/05/2023	24/05/2023		24/05/2023
A-T-031s	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023
A-T-044	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023

Lab Sample ID	23/04808/13	23/04808/14	23/04808/15	23/04808/16	23/04808/17	23/04808/18	23/04808/19	23/04808/20	23/04808/21	23/04808/22	23/04808/23	23/04808/24
Client Sample No	6	17	7	15	3	55	4	12	4	15	10	4
Client Sample ID/Depth	ATK_BH08A 1.20-1.65m	ATK_BH08A 6.00-6.45m	ATK_BH09 1.20-1.65m	ATK_BH09 4.00-4.45m	ATK_BH10 0.40-0.80m	ATK_BH10 21.00-21.45m	ATK_BH11 0.70m	ATK_BH11 3.50m	ATK_BH12 0.50-0.60m	ATK_BH12 4.00m	ATK_TP01 3.60-4.00m	ATK_TP02 3.20m
Date Sampled											13/04/23	18/04/23
A-T-024s			25/05/2023		25/05/2023				25/05/2023			
A-T-026s	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023
A-T-028s			24/05/2023		24/05/2023				24/05/2023			
A-T-031s	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023
A-T-044	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023

Lab Sample ID	23/04808/25	23/04808/26	23/04808/27	23/04808/28	23/04808/29	23/04808/30	23/04808/31	23/04808/32	23/04808/33	23/04808/34	23/04808/35	23/04808/36
Client Sample No	8	4	2	4	5	4	2	5	5	1	4	2
Client Sample ID/Depth	ATK_TP03 2.00m	ATK_TP04 0.50-1.10m	ATK_TP07 0.35-0.50m	ATK_TP07 2.00m	ATK_TP08 1.80-2.00m	ATK_TP10 2.70m	ATK_TP13 0.60-0.75m	ATK_WS01 1.20-2.00m	ATK_WS02 2.00-3.00m	ATK_WS03 1.20-2.00m	ATK_WS03 4.00-5.00m	ATK_WS04 2.00-3.00m
Date Sampled	21/04/23		14/04/23	14/04/23		17/04/23						
A-T-024s		25/05/2023					25/05/2023	25/05/2023				
A-T-026s	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023
A-T-028s		24/05/2023					24/05/2023	24/05/2023				
A-T-031s	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023
A-T-044	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023

Lab Sample ID	23/04808/37	23/04808/38	23/04808/39	23/04808/40	23/04808/41
Client Sample No	5	7	3	4	5
Client Sample ID/Depth	ATK_WS05 1.20-2.00m	ATK_WS06 2.00-3.00m	ATK_WS07 2.50-2.90m	ATK_WS08 1.20-2.00m	ATK_WS08 2.00-3.00m
Date Sampled					
A-T-024s	25/05/2023	25/05/2023		25/05/2023	
A-T-026s	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023
A-T-028s	24/05/2023	24/05/2023		24/05/2023	
A-T-031s	24/05/2023	24/05/2023	24/05/2023	24/05/2023	24/05/2023
A-T-044	23/05/2023	23/05/2023	23/05/2023	23/05/2023	23/05/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/06748
Issue Number: 1 **Date:** 13 July, 2023

Client:
Structural Soils Limited (Castleford Lab)
The Potteries
Pottery Street
Castleford
West Yorkshire
UK
WF10 1NJ

Project Manager: Luke Fisher; Laura Schramm
Project Name: Ancoats Manchester
Project Ref: 765544-2
Order No: N/A
Date Samples Received: 06/07/23
Date Instructions Received: 07/07/23
Date Analysis Completed: 13/07/23

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 23/06748

Client Project Name: Ancoats Manchester

Client Project Ref: 765544-2

Lab Sample ID	23/06748/1	23/06748/2						Units	Limit of Detection	Method ref
Client Sample No	2	3								
Client Sample ID	ATK_TP09	ATK_TP09								
Depth to Top	0.30	1.30								
Depth To Bottom	0.40									
Date Sampled										
Sample Type	SOIL - B	SOIL - D								
Sample Matrix Code	6AB	6A								
% Stones >10mm$_A$	5.6	<0.1						% w/w	0.1	A-T-044
pH BRE$_D$$^{M\#}$	8.10	8.41						pH	0.01	A-T-031s
Sulphate BRE (water sol 2:1)$_D$$^{M\#}$	80	54						mg/l	10	A-T-026s
Sulphate BRE (acid sol)$_D$$^{M\#}$	0.03	-						% w/w	0.02	A-T-028s
Sulphur BRE (total)$_D$	0.03	-						% w/w	0.01	A-T-024s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Castleford Lab), The Potteries, Pottery Street, Castleford, West Yorkshire, UK, WF10 1NJ

Project: Ancoats Manchester

Clients Project No: 765544-2

Project No: 23/06748

Date Received: 07/07/2023 (am)

Cool Box Temperatures (°C): 18.9

Lab Sample ID	23/06748/1	23/06748/2
Client Sample No	2	3
Client Sample ID/Depth	ATK_TP09 0.30-0.40m	ATK_TP09 1.30m
Date Sampled		
Deviation Code		
E (no date)	✓	✓

Key
E (no date) *No sampling date provided (all results affected if not provided)*

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/06748/1	23/06748/2
Client Sample No	2	3
Client Sample ID/Depth	ATK_TP09 0.30-0.40m	ATK_TP09 1.30m
Date Sampled		
A-T-024s	12/07/2023	
A-T-026s	12/07/2023	12/07/2023
A-T-028s	12/07/2023	
A-T-031s	12/07/2023	12/07/2023
A-T-044	13/07/2023	13/07/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Jessica Robertson
RSK Structural Soils
The Potteries,
Pottery Street
Castleford
WF10

Derwentside Environmental Testing Services Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 23-11500

Site Reference:	Ancoats ATK
Project / Job Ref:	765544-3
Order No:	P05105328
Sample Receipt Date:	12/09/2023
Sample Scheduled Date:	12/09/2023
Report Issue Number:	1
Reporting Date:	18/09/2023

Authorised by:

Dave Ashworth
Technical Manager

Dates of laboratory activities for each tested analyte are available upon request.

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Soil Analysis Certificate						
DETS Report No: 23-11500	**Date Sampled**	07/09/23	07/09/23			
RSK Structural Soils	**Time Sampled**	None Supplied	None Supplied			
Site Reference: Ancoats ATK	**TP / BH No**	ATK_TP11	ATK_TP11			
Project / Job Ref: 765544-3	**Additional Refs**	6	11			
Order No: P05105328	**Depth (m)**	1.50 - 2.00	4.20 - 4.60			
Reporting Date: 18/09/2023	**DETS Sample No**	674386	674387			

Determinand	Unit	RL	Accreditation					
pH	pH Units	N/a	MCERTS	8.3	8.6			
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	58	177			
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	0.06	0.18			

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 23-11500	
RSK Structural Soils	
Site Reference: Ancoats ATK	
Project / Job Ref: 765544-3	
Order No: P05105328	
Reporting Date: 18/09/2023	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
674386	ATK TP11	6	1.50 - 2.00	12.3	Brown sandy clay with stones
674387	ATK TP11	11	4.20 - 4.60	13.3	Light brown sandy clay

Moisture content is part of procedure E003 & is not an accredited test
Insufficient Sample I/S
Unsuitable Sample U/S

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 23-11500
RSK Structural Soils
Site Reference: Ancoats ATK
Project / Job Ref: 765544-3
Order No: P05105328
Reporting Date: 18/09/2023

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 – C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received

APPENDIX E - GEOENVIRONMENTAL TESTING

(i) Laboratory Test Results

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/03615, 23/03782, 23/03870, 23/03877, 23/04044, 23/04109, 23/04412 and 23/04698
Issue Number: 1 **Date:** 26 June, 2023

Client:
Structural Soils Limited (Castleford)
The Potteries
Pottery Street
Castleford
West Yorkshire
UK
WF10 1NJ

Project Manager: Lara Cross/Matthew Jones/Wilton Bennett
Project Name: Ancoats, Manchester
Project Ref: 765544
Order No: N/A
Date Samples Received: 11/04/23
Date Instructions Received: 17/04/23
Date Analysis Completed: 30/05/23

Approved by:



Hayder Naseer
Laboratory Supervisor

Envirolab Job Number: 23/03615, 23/03782, 23/03870, 23/03877, 23/04044, 23/04109, 23/04412 and 23/04698 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/03615/2	23/03615/3	23/03615/6	23/03615/10	23/03615/12	23/03615/16	23/03615/19	Units	Limit of Detection	Method ref
Client Sample No	2	3	102	102	104	103	101			
Client Sample ID	ATK TP08	ATK TP08	ATK BH01	ATK BH04	ATK BH04	ATK BH05	ATK BH08			
Depth to Top	0.30	1.00	0.50	0.40	1.20	0.80	0.30			
Depth To Bottom										
Date Sampled	12-Apr-23	12-Apr-23	06-Apr-23	12-Apr-23	12-Apr-23	06-Apr-23	06-Apr-23			
Sample Type	SOIL - ES	SOIL - ES	SOLID	SOLID	SOIL - ES	SOIL - ES	SOLID			
Sample Matrix Code	1A	6A	7	7	3	3	7			
% Stones >10mm$_A$	29.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	% w/w	0.1	A-T-044
pH$_D$[M#]	8.82	7.58	8.56[U]	8.23[U]	8.52	9.52	10.60[U]	pH	0.01	A-T-031s
Ammonium / Ammoniacal Nitrogen as NH4$_D$	1.38	23.2	1.91	<0.26	0.47	47.5	2.14	mg/kg	0.26	A-T-033s
Sulphate (acid soluble)$_D$[M#]	<200	<200	<200[U]	<200[U]	420	420	<200[U]	mg/kg	200	A-T-028s
Cyanide (free)$_A$[M#]	<1	<1	<1[U]	<1[U]	<1	<1	<1[U]	mg/kg	1	A-T-042sFCN
Cyanide (total)$_A$[M#]	<1	<1	<1[U]	<1[U]	<1	<1	<1[U]	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_A$	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Sulphide$_A$	<5	<5	<5	<5	<5	<5	<5	mg/kg	5	A-T-043-s
Organic Matter$_D$[M#]	<0.1	1.5	0.4[U]	0.3[U]	1.7	3.6	0.4[U]	% w/w	0.1	A-T-032s
Arsenic$_D$[M#]	<1	<1	<1[U]	<1[U]	2	4	1[U]	mg/kg	1	A-T-024s
Boron (water soluble)$_D$[M#]	<1.0	<1.0	<1.0[U]	<1.0[U]	<1.0	<1.0	<1.0[U]	mg/kg	1	A-T-027s
Cadmium$_D$[M#]	<0.5	<0.5	<0.5[U]	<0.5[U]	0.6	0.7	<0.5[U]	mg/kg	0.5	A-T-024s
Copper$_D$[M#]	3	10	5[U]	9[U]	25	22	6[U]	mg/kg	1	A-T-024s
Chromium$_D$[M#]	6	24	13[U]	12[U]	35	29	13[U]	mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-040s
Lead$_D$[M#]	4	11	13[U]	9[U]	10	9	26[U]	mg/kg	1	A-T-024s
Mercury$_D$	<0.17	<0.17	<0.17	<0.17	1.40	0.24	<0.17	mg/kg	0.17	A-T-024s
Nickel$_D$[M#]	11	15	12[U]	17[U]	39	35	18[U]	mg/kg	1	A-T-024s
Selenium$_D$[M#]	<1	<1	<1[U]	<1[U]	<1	<1	1[U]	mg/kg	1	A-T-024s
Vanadium$_D$[M#]	5	27	6[U]	8[U]	33	28	5[U]	mg/kg	1	A-T-024s
Zinc$_D$[M#]	13	31	59[U]	30[U]	63	56	25[U]	mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (2 no)$_A$	-	*	*	-	-	*	-			A-T-001
pH (leachable)$_A$[#]	-	7.27	7.34[U]	- [U]	-	7.91	- [U]	pH	0.01	A-T-031w
Ammonia / Ammoniacal Nitrogen as NH3 (leachable)$_A$	-	3.344	0.109	-	-	6.667	-	mg/l	0.065	A-T-033w
Sulphate (leachable)$_A$[#]	-	<1.00	6.28[U]	- [U]	-	94.45	- [U]	mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$[#]	-	<0.005	<0.005[U]	- [U]	-	<0.005	- [U]	mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$[#]	-	<0.005	<0.005[U]	- [U]	-	<0.005	- [U]	mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_A$	-	<0.01	<0.01	-	-	<0.01	-	mg/l	0.01	A-T-050w
Arsenic (leachable)$_A$	-	6	1	-	-	<1	-	µg/l	1	A-T-025w
Boron (leachable)$_A$	-	107	11	-	-	56	-	µg/l	10	A-T-025w
Cadmium (leachable)$_A$	-	<1	<1	-	-	<1	-	µg/l	1	A-T-025w
Copper (leachable)$_A$	-	39	<4	-	-	<4	-	µg/l	4	A-T-025w

Envirolab Job Number: 23/03615, 23/03782, 23/03870, 23/03877, 23/04044, 23/04109, 23/04412 and 23/04698 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/03615/2	23/03615/3	23/03615/6	23/03615/10	23/03615/12	23/03615/16	23/03615/19	Units	Limit of Detection	Method ref
Client Sample No	2	3	102	102	104	103	101			
Client Sample ID	ATK TP08	ATK TP08	ATK BH01	ATK BH04	ATK BH04	ATK BH05	ATK BH08			
Depth to Top	0.30	1.00	0.50	0.40	1.20	0.80	0.30			
Depth To Bottom										
Date Sampled	12-Apr-23	12-Apr-23	06-Apr-23	12-Apr-23	12-Apr-23	06-Apr-23	06-Apr-23			
Sample Type	SOIL - ES	SOIL - ES	SOLID	SOLID	SOIL - ES	SOIL - ES	SOLID			
Sample Matrix Code	1A	6A	7	7	3	3	7			
Chromium (leachable)$_A$	-	4	1	-	-	<1	-	µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	-	<0.05	<0.05	-	-	<0.05	-	mg/l	0.05	A-T-040w
Lead (leachable)$_A$	-	27	6	-	-	<1	-	µg/l	1	A-T-025w
Mercury (leachable)$_A$	-	<0.1	<0.1	-	-	<0.1	-	µg/l	0.1	A-T-025w
Nickel (leachable)$_A$	-	8	<2	-	-	<2	-	µg/l	2	A-T-025w
Selenium (leachable)$_A$	-	<1	<1	-	-	<1	-	µg/l	1	A-T-025w
Vanadium (leachable)$_A$	-	42	1	-	-	<1	-	µg/l	1	A-T-025w
Zinc (leachable)$_A$	-	24	4	-	-	<2	-	µg/l	2	A-T-025w

Envirolab Job Number: 23/03615, 23/03782, 23/03870, 23/03877, 23/04044, 23/04109, 23/04412 and 23/04698 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/03615/2	23/03615/3	23/03615/6	23/03615/10	23/03615/12	23/03615/16	23/03615/19	Units	Limit of Detection	Method ref
Client Sample No	2	3	102	102	104	103	101			
Client Sample ID	ATK TP08	ATK TP08	ATK BH01	ATK BH04	ATK BH04	ATK BH05	ATK BH08			
Depth to Top	0.30	1.00	0.50	0.40	1.20	0.80	0.30			
Depth To Bottom										
Date Sampled	12-Apr-23	12-Apr-23	06-Apr-23	12-Apr-23	12-Apr-23	06-Apr-23	06-Apr-23			
Sample Type	SOIL - ES	SOIL - ES	SOLID	SOLID	SOIL - ES	SOIL - ES	SOLID			
Sample Matrix Code	1A	6A	7	7	3	3	7			
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD^{U}	NAD^{U}	NAD	NAD	NAD^{U}			A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A	N/A	N/A	N/A	N/A			A-T-045

Lab Sample ID	23/03615/2	23/03615/3	23/03615/6	23/03615/10	23/03615/12	23/03615/16	23/03615/19	Units	Limit of Detection	Method ref
Client Sample No	2	3	102	102	104	103	101			
Client Sample ID	ATK TP08	ATK TP08	ATK BH01	ATK BH04	ATK BH04	ATK BH05	ATK BH08			
Depth to Top	0.30	1.00	0.50	0.40	1.20	0.80	0.30			
Depth To Bottom										
Date Sampled	12-Apr-23	12-Apr-23	06-Apr-23	12-Apr-23	12-Apr-23	06-Apr-23	06-Apr-23			
Sample Type	SOIL - ES	SOIL - ES	SOLID	SOLID	SOIL - ES	SOIL - ES	SOLID			
Sample Matrix Code	1A	6A	7	7	3	3	7			
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	<0.01	0.01^U	<0.01^U	<0.01	<0.01	<0.01^U	mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	<0.01	<0.01^U	<0.01^U	<0.01	<0.01	<0.01^U	mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	<0.02	0.04^U	<0.02^U	<0.02	<0.02	<0.02^U	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	<0.04	0.18^U	<0.04^U	<0.04	<0.04	<0.04^U	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	<0.04	0.16^U	<0.04^U	<0.04	<0.04	<0.04^U	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	<0.05	0.18^U	<0.05^U	<0.05	<0.05	<0.05^U	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	<0.05	0.07^U	<0.05^U	<0.05	<0.05	<0.05^U	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	<0.07	<0.07^U	<0.07^U	<0.07	<0.07	<0.07^U	mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06	<0.06	0.20^U	<0.06^U	<0.06	<0.06	<0.06^U	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04^U	<0.04^U	<0.04	<0.04	<0.04^U	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	<0.08	0.34^U	<0.08^U	<0.08	<0.08	<0.08^U	mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	<0.01	0.01^U	<0.01^U	<0.01	<0.01	<0.01^U	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	<0.03	0.09^U	<0.03^U	<0.03	<0.03	<0.03^U	mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	<0.03	<0.03^U	<0.03^U	<0.03	<0.03	<0.03^U	mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	<0.03	0.20^U	<0.03^U	<0.03	<0.03	<0.03^U	mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	<0.07	0.33^U	<0.07^U	<0.07	<0.07	<0.07^U	mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08	<0.08	1.81^U	<0.08^U	<0.08	<0.08	<0.08^U	mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03615, 23/03782, 23/03870, 23/03877, 23/04044, 23/04109, 23/04412 and 23/04698 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/03615/2	23/03615/3	23/03615/6	23/03615/10	23/03615/12	23/03615/16	23/03615/19	Units	Limit of Detection	Method ref
Client Sample No	2	3	102	102	104	103	101			
Client Sample ID	ATK TP08	ATK TP08	ATK BH01	ATK BH04	ATK BH04	ATK BH05	ATK BH08			
Depth to Top	0.30	1.00	0.50	0.40	1.20	0.80	0.30			
Depth To Bottom										
Date Sampled	12-Apr-23	12-Apr-23	06-Apr-23	12-Apr-23	12-Apr-23	06-Apr-23	06-Apr-23			
Sample Type	SOIL - ES	SOIL - ES	SOLID	SOLID	SOIL - ES	SOIL - ES	SOLID			
Sample Matrix Code	1A	6A	7	7	3	3	7			
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	-	<0.02	<0.02	-	-	<0.02	-	µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	-	<0.02	<0.02	-	-	<0.02	-	µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	-	<0.02	<0.02	-	-	<0.02	-	µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	-	<0.02	<0.02	-	-	<0.02	-	µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	-	<0.02	<0.02	-	-	<0.02	-	µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	-	<0.02	<0.02	-	-	<0.02	-	µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	-	<0.02	<0.02	-	-	<0.02	-	µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	-	<0.02	<0.02	-	-	<0.02	-	µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	-	<0.02	<0.02	-	-	<0.02	-	µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	-	<0.02	<0.02	-	-	<0.02	-	µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	-	0.02	0.05	-	-	<0.02	-	µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	-	<0.02	<0.02	-	-	<0.02	-	µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	-	<0.02	<0.02	-	-	<0.02	-	µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	-	<0.02	<0.02	-	-	<0.02	-	µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	-	0.04	<0.02	-	-	0.02	-	µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	-	<0.02	0.05	-	-	<0.02	-	µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	-	0.06	0.10	-	-	0.02	-	µg/l	0.02	A-T-019w

Envirolab Job Number: 23/03615, 23/03782, 23/03870, 23/03877, 23/04044, 23/04109, 23/04412 and 23/04698 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/03615/2	23/03615/3	23/03615/6	23/03615/10	23/03615/12	23/03615/16	23/03615/19	Units	Limit of Detection	Method ref
Client Sample No	2	3	102	102	104	103	101			
Client Sample ID	ATK TP08	ATK TP08	ATK BH01	ATK BH04	ATK BH04	ATK BH05	ATK BH08			
Depth to Top	0.30	1.00	0.50	0.40	1.20	0.80	0.30			
Depth To Bottom										
Date Sampled	12-Apr-23	12-Apr-23	06-Apr-23	12-Apr-23	12-Apr-23	06-Apr-23	06-Apr-23			
Sample Type	SOIL - ES	SOIL - ES	SOLID	SOLID	SOIL - ES	SOIL - ES	SOLID			
Sample Matrix Code	1A	6A	7	7	3	3	7			
TPH CWG (leachable) with Clean Up										
Ali >C5-C6 (leachable)$_A$	-	<2	<2	-	-	<2	-	µg/l	1	A-T-022w
Ali >C6-C8 (leachable)$_A$	-	<2	<2	-	-	<2	-	µg/l	1	A-T-022w
Ali >C8-C10 (leachable)$_A$	-	<10	<10	-	-	<10	-	µg/l	10	A-T-055w
Ali >C10-C12 (leachable)$_A$	-	<10	<10	-	-	<10	-	µg/l	10	A-T-055w
Ali >C12-C16 (leachable)$_A$	-	<10	<10	-	-	<10	-	µg/l	10	A-T-055w
Ali >C16-C21 (leachable)$_A$	-	<10	<10	-	-	<10	-	µg/l	10	A-T-055w
Ali >C21-C35 (leachable)$_A$	-	<20	<20	-	-	<20	-	µg/l	20	A-T-055w
Total Aliphatics (leachable)$_A$	-	<20	<20	-	-	<20	-	µg/l	10	Calc-As Recd
Aro >C5-C7 (leachable)$_A$	-	<1	<1	-	-	<1	-	µg/l	1	A-T-022w
Aro >C7-C8 (leachable)$_A$	-	<1	<1	-	-	<1	-	µg/l	1	A-T-022w
Aro >C8-C10 (leachable)$_A$	-	<10	<10	-	-	<10	-	µg/l	10	A-T-055w
Aro >C10-C12 (leachable)$_A$	-	<10	<10	-	-	<10	-	µg/l	10	A-T-055w
Aro >C12-C16 (leachable)$_A$	-	<10	<10	-	-	<10	-	µg/l	10	A-T-055w
Aro >C16-C21 (leachable)$_A$	-	<10	<10	-	-	<10	-	µg/l	10	A-T-055w
Total Aromatics (leachable)$_A$	-	<20	<20	-	-	<20	-	µg/l	20	Calc-As Recd
TPH (Ali & Aro >C5-C35) (leachable)$_A$	-	<20	<20	-	-	<20	-	µg/l	20	Calc-As Recd
BTEX - Benzene (leachable)$_A$	-	<1	<1	-	-	<1	-	µg/l	1	A-T-022w
BTEX - Toluene (leachable)$_A$	-	<1	<1	-	-	<1	-	µg/l	1	A-T-022w
BTEX - Ethyl Benzene (leachable)$_A$	-	<1	<1	-	-	<1	-	µg/l	1	A-T-022w
BTEX - o Xylene (leachable)$_A$	-	<1	<1	-	-	<1	-	µg/l	1	A-T-022w
BTEX - m & p Xylene (leachable)$_A$	-	<1	<1	-	-	<1	-	µg/l	1	A-T-022w
MTBE (leachable)$_A$	-	<1	<1	-	-	<1	-	µg/l	1	A-T-022w
Aro >C21-C35 (leachable)$_A$	-	<20	<20	-	-	<20	-	µg/l	20	A-T-055w

Envirolab Job Number: 23/03615, 23/03782, 23/03870, 23/03877, 23/04044, 23/04109, 23/04412 and 23/04698 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/03615/2	23/03615/3	23/03615/6	23/03615/10	23/03615/12	23/03615/16	23/03615/19	Units	Limit of Detection	Method ref
Client Sample No	2	3	102	102	104	103	101			
Client Sample ID	ATK TP08	ATK TP08	ATK BH01	ATK BH04	ATK BH04	ATK BH05	ATK BH08			
Depth to Top	0.30	1.00	0.50	0.40	1.20	0.80	0.30			
Depth To Bottom										
Date Sampled	12-Apr-23	12-Apr-23	06-Apr-23	12-Apr-23	12-Apr-23	06-Apr-23	06-Apr-23			
Sample Type	SOIL - ES	SOIL - ES	SOLID	SOLID	SOIL - ES	SOIL - ES	SOLID			
Sample Matrix Code	1A	6A	7	7	3	3	7			
TPH UKCWG with Clean Up										
Ali >C5-C6$_A^{\#}$	<0.01	<0.01	<0.01^U	<0.01^U	<0.01	<0.01	<0.01^U	mg/kg	0.01	A-T-022s
Ali >C6-C8$_A^{\#}$	<0.01	<0.01	<0.01^U	<0.01^U	<0.01	<0.01	<0.01^U	mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<1	<1	<1^U	<1^U	<1	<1	<1^U	mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	<1	<1	<1^U	<1^U	<1	<1	<1^U	mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	2	<1	<1^U	<1^U	<1	<1	<1^U	mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	14	<1	6^U	3^U	1	<1	7^U	mg/kg	1	A-T-055s
Ali >C35-C44$_A$	2	<1	2	<1	<1	<1	<1	mg/kg	1	A-T-055s
Total Aliphatics$_A$	18	<1	9	3	1	<1	7	mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	<0.01	<0.01	<0.01^U	<0.01^U	<0.01	<0.01	<0.01^U	mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01	<0.01	<0.01^U	<0.01^U	<0.01	<0.01	<0.01^U	mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C12-C16$_A$	<1	<1	1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	<1	<1	4^U	<1^U	<1	<1	<1^U	mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	<1	<1	12^U	1^U	<1	<1	<1^U	mg/kg	1	A-T-055s
Aro >C35-C44$_A$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Total Aromatics$_A$	<1	<1	17	1	<1	<1	<1	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C44)$_A$	19	<1	26	5	1	<1	7	mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$	<0.01	<0.01	<0.01^U	<0.01^U	<0.01	<0.01	<0.01^U	mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01	<0.01	<0.01^U	<0.01^U	<0.01	<0.01	<0.01^U	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01	<0.01	<0.01^U	<0.01^U	<0.01	<0.01	<0.01^U	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01	<0.01	<0.01^U	<0.01^U	<0.01	<0.01	<0.01^U	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01	<0.01	<0.01^U	<0.01^U	<0.01	<0.01	<0.01^U	mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	<0.01	<0.01	<0.01^U	<0.01^U	<0.01	<0.01	<0.01^U	mg/kg	0.01	A-T-022s

Lab Sample ID	23/03615/20	23/03615/22	23/03782/2	23/03782/8	23/03782/10	23/03870/2	23/03877/2	Units	Limit of Detection	Method ref
Client Sample No	102	2	102	102	102	102	102			
Client Sample ID	ATK BH08	ATK TP05	ATK-TP07	ATK-BH03	ATK-BH06	ATK_TP02	ATK_CPT15			
Depth to Top	0.60	0.80	0.40	0.80	1.00	1.20	0.50			
Depth To Bottom										
Date Sampled	06-Apr-23	12-Apr-23	14-Apr-23	14-Apr-23	14-Apr-23	18-Apr-23	17-Apr-23			
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	7	1AB	6A	6B	4AB	6A	5A			
% Stones >10mm$_A$	<0.1	10.4	<0.1	<0.1	37.4	9.8	<0.1	% w/w	0.1	A-T-044
pH$_D$[M#]	- [U]	9.03	8.69	8.04	9.31	8.37	8.14	pH	0.01	A-T-031s
Ammonium / Ammoniacal Nitrogen as NH4$_D$	-	4.07	1.61	11.7	1.12	15.7	5.38	mg/kg	0.26	A-T-033s
Sulphate (acid soluble)$_D$[M#]	- [U]	1200	<200	2500	880	320	<200	mg/kg	200	A-T-028s
Cyanide (free)$_A$[M#]	- [U]	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-042sFCN
Cyanide (total)$_A$[M#]	- [U]	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_A$	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Sulphide$_A$	-	<5	<5	<5	<5	250	<5	mg/kg	5	A-T-043-s
Organic Matter$_D$[M#]	- [U]	13.3	1.1	2.7	3.8	2.7	0.6	% w/w	0.1	A-T-032s
Arsenic$_D$[M#]	- [U]	43	7	2	6	4	<1	mg/kg	1	A-T-024s
Boron (water soluble)$_D$[M#]	- [U]	<1.0	<1.0	1.6	<1.0	1.1	1.1	mg/kg	1	A-T-027s
Cadmium$_D$[M#]	- [U]	1.6	0.8	0.7	0.6	0.5	<0.5	mg/kg	0.5	A-T-024s
Copper$_D$[M#]	- [U]	244	19	29	38	47	12	mg/kg	1	A-T-024s
Chromium$_D$[M#]	- [U]	55	30	33	9	27	22	mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	-	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-040s
Lead$_D$[M#]	- [U]	506	10	47	203	51	16	mg/kg	1	A-T-024s
Mercury$_D$	-	3.70	<0.17	<0.17	1.46	<0.17	<0.17	mg/kg	0.17	A-T-024s
Nickel$_D$[M#]	- [U]	38	31	29	10	32	18	mg/kg	1	A-T-024s
Selenium$_D$[M#]	- [U]	3	<1	<1	<1	<1	<1	mg/kg	1	A-T-024s
Vanadium$_D$[M#]	- [U]	36	31	36	13	27	30	mg/kg	1	A-T-024s
Zinc$_D$[M#]	- [U]	315	49	47	133	57	29	mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (2 no)$_A$	*	*	*	-	*	*	-			A-T-001
pH (leachable)$_A$[#]	7.80[U]	7.84	8.10	-	9.04	7.67	-	pH	0.01	A-T-031w
Ammonia / Ammoniacal Nitrogen as NH3 (leachable)$_A$	0.098	<0.065	<0.065	-	<0.065	1.776	-	mg/l	0.065	A-T-033w
Sulphate (leachable)$_A$[#]	6.45[U]	4.61	30.24	-	79.68	111.67	-	mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$[#]	<0.005[U]	<0.005	<0.005	-	<0.005	<0.005	-	mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$[#]	<0.005[U]	0.018	<0.005	-	0.030	0.006	-	mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_A$	0.03	<0.01	<0.01	-	<0.01	<0.01	-	mg/l	0.01	A-T-050w
Arsenic (leachable)$_A$	<1	8	<1	-	19	5	-	µg/l	1	A-T-025w
Boron (leachable)$_A$	14	14	<10	-	52	302	-	µg/l	10	A-T-025w
Cadmium (leachable)$_A$	<1	<1	<1	-	<1	<1	-	µg/l	1	A-T-025w
Copper (leachable)$_A$	<4	14	<4	-	6	<4	-	µg/l	4	A-T-025w

Lab Sample ID	23/03615/20	23/03615/22	23/03782/2	23/03782/8	23/03782/10	23/03870/2	23/03877/2	Units	Limit of Detection	Method ref
Client Sample No	102	2	102	102	102	102	102			
Client Sample ID	ATK BH08	ATK TP05	ATK-TP07	ATK-BH03	ATK-BH06	ATK_TP02	ATK_CPT15			
Depth to Top	0.60	0.80	0.40	0.80	1.00	1.20	0.50			
Depth To Bottom										
Date Sampled	06-Apr-23	12-Apr-23	14-Apr-23	14-Apr-23	14-Apr-23	18-Apr-23	17-Apr-23			
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	7	1AB	6A	6B	4AB	6A	5A			
Chromium (leachable)$_A$	3	60	<1	-	57	<1	-	µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	mg/l	0.05	A-T-040w
Lead (leachable)$_A$	<1	18	<1	-	7	<1	-	µg/l	1	A-T-025w
Mercury (leachable)$_A$	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	µg/l	0.1	A-T-025w
Nickel (leachable)$_A$	<2	<2	<2	-	<2	<2	-	µg/l	2	A-T-025w
Selenium (leachable)$_A$	<1	<1	<1	-	2	<1	-	µg/l	1	A-T-025w
Vanadium (leachable)$_A$	<1	2	<1	-	19	<1	-	µg/l	1	A-T-025w
Zinc (leachable)$_A$	<2	9	<2	-	3	2	-	µg/l	2	A-T-025w

Lab Sample ID	23/03615/20	23/03615/22	23/03782/2	23/03782/8	23/03782/10	23/03870/2	23/03877/2	Units	Limit of Detection	Method ref
Client Sample No	102	2	102	102	102	102	102			
Client Sample ID	ATK BH08	ATK TP05	ATK-TP07	ATK-BH03	ATK-BH06	ATK_TP02	ATK_CPT15			
Depth to Top	0.60	0.80	0.40	0.80	1.00	1.20	0.50			
Depth To Bottom										
Date Sampled	06-Apr-23	12-Apr-23	14-Apr-23	14-Apr-23	14-Apr-23	18-Apr-23	17-Apr-23			
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	7	1AB	6A	6B	4AB	6A	5A			
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_D^{\#}$	- [U]	NAD	NAD	NAD	NAD	NAD	NAD			A-T-045
Asbestos Matrix (visual)$_D$	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope)$_D$	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	-	N/A	N/A	N/A	N/A	N/A	N/A			A-T-045

Envirolab Job Number: 23/03615, 23/03782, 23/03870, 23/03877, 23/04044, 23/04109, 23/04412 and 23/04698 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/03615/20	23/03615/22	23/03782/2	23/03782/8	23/03782/10	23/03870/2	23/03877/2	Units	Limit of Detection	Method ref
Client Sample No	102	2	102	102	102	102	102			
Client Sample ID	ATK BH08	ATK TP05	ATK-TP07	ATK-BH03	ATK-BH06	ATK_TP02	ATK_CPT15			
Depth to Top	0.60	0.80	0.40	0.80	1.00	1.20	0.50			
Depth To Bottom										
Date Sampled	06-Apr-23	12-Apr-23	14-Apr-23	14-Apr-23	14-Apr-23	18-Apr-23	17-Apr-23			
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	7	1AB	6A	6B	4AB	6A	5A			
PAH-16MS										
Acenaphthene$_A^{M\#}$	- ^{U}	0.93	<0.01	<0.01	0.92	0.38	<0.01	mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	- ^{U}	0.23	<0.01	<0.01	0.02	0.03	<0.01	mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	- ^{U}	1.61	<0.02	<0.02	1.11	0.45	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	- ^{U}	4.92	<0.04	<0.04	1.86	0.91	<0.04	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	- ^{U}	3.80	<0.04	<0.04	1.26	0.88	<0.04	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	- ^{U}	4.35	<0.05	<0.05	1.67	0.93	<0.05	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	- ^{U}	1.23	<0.05	<0.05	0.48	0.36	<0.05	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	- ^{U}	1.44	<0.07	<0.07	0.51	0.32	<0.07	mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	- ^{U}	5.60	<0.06	<0.06	1.74	0.85	<0.06	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	- ^{U}	0.35	<0.04	<0.04	0.12	0.08	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	- ^{U}	12.9	<0.08	<0.08	5.88	2.26	<0.08	mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	- ^{U}	0.75	<0.01	<0.01	0.57	0.25	<0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	- ^{U}	1.42	<0.03	<0.03	0.58	0.44	<0.03	mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	- ^{U}	0.09	<0.03	<0.03	0.65	0.15	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	- ^{U}	9.22	<0.03	<0.03	5.87	1.54	<0.03	mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	- ^{U}	13	<0.07	<0.07	4.56	2.05	<0.07	mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	- ^{U}	61.8	<0.08	<0.08	27.8	11.9	<0.08	mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03615, 23/03782, 23/03870, 23/03877, 23/04044, 23/04109, 23/04412 and 23/04698 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/03615/20	23/03615/22	23/03782/2	23/03782/8	23/03782/10	23/03870/2	23/03877/2	Units	Limit of Detection	Method ref
Client Sample No	102	2	102	102	102	102	102			
Client Sample ID	ATK BH08	ATK TP05	ATK-TP07	ATK-BH03	ATK-BH06	ATK_TP02	ATK_CPT15			
Depth to Top	0.60	0.80	0.40	0.80	1.00	1.20	0.50			
Depth To Bottom										
Date Sampled	06-Apr-23	12-Apr-23	14-Apr-23	14-Apr-23	14-Apr-23	18-Apr-23	17-Apr-23			
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	7	1AB	6A	6B	4AB	6A	5A			
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	0.08	<0.02	<0.02	-	0.03	0.52	-	µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	<0.02	<0.02	<0.02	-	<0.02	<0.02	-	µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	<0.02	<0.02	<0.02	-	<0.02	<0.02	-	µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	<0.02	0.03	<0.02	-	0.03	<0.02	-	µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	<0.02	0.03	0.02	-	<0.02	<0.02	-	µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	<0.02	0.05	<0.02	-	<0.02	<0.02	-	µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	<0.02	0.02	0.04	-	<0.02	<0.02	-	µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	<0.02	<0.02	<0.02	-	<0.02	<0.02	-	µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	<0.02	0.04	<0.02	-	0.04	0.02	-	µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	<0.02	<0.02	0.04	-	<0.02	<0.02	-	µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	0.03	0.06	<0.02	-	0.07	0.05	-	µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	0.02	<0.02	<0.02	-	<0.02	<0.02	-	µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	<0.02	0.02	0.04	-	<0.02	<0.02	-	µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	1.74	<0.02	<0.02	-	<0.02	0.05	-	µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	0.07	0.04	<0.02	-	0.02	<0.02	-	µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	0.03	0.06	<0.02	-	0.09	0.04	-	µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	1.97	0.35	0.14	-	0.28	0.68	-	µg/l	0.02	A-T-019w

Lab Sample ID	23/03615/20	23/03615/22	23/03782/2	23/03782/8	23/03782/10	23/03870/2	23/03877/2	Units	Limit of Detection	Method ref
Client Sample No	102	2	102	102	102	102	102			
Client Sample ID	ATK BH08	ATK TP05	ATK-TP07	ATK-BH03	ATK-BH06	ATK_TP02	ATK_CPT15			
Depth to Top	0.60	0.80	0.40	0.80	1.00	1.20	0.50			
Depth To Bottom										
Date Sampled	06-Apr-23	12-Apr-23	14-Apr-23	14-Apr-23	14-Apr-23	18-Apr-23	17-Apr-23			
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	7	1AB	6A	6B	4AB	6A	5A			
SVOC excluding PAH-16										
4-Bromophenyl phenyl ether$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Hexachlorobenzene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Diethyl phthalate$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Dimethyl phthalate$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Dibenzofuran$_A$	-	233	-	-	-	1150	-	µg/kg	100	A-T-052s
Carbazole$_A$	-	411	-	-	-	536	-	µg/kg	100	A-T-052s
Butylbenzyl phthalate$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate$_A$	-	<500	-	-	-	<500	-	µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
4-Nitrophenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
3+4-Methylphenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
4-Chloro-3-methylphenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Nitrophenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Methylphenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
1,2,4-Trichlorobenzene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Chlorophenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2,6-Dinitrotoluene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4-Dinitrotoluene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4-Dimethylphenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4-Dichlorophenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4,6-Trichlorophenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2,4,5-Trichlorophenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
1,4-Dichlorobenzene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
1,3-Dichlorobenzene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
1,2-Dichlorobenzene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Chloronaphthalene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
2-Methylnaphthalene$_A$	-	134	-	-	-	376	-	µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Phenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Pentachlorophenol$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s

Lab Sample ID	23/03615/20	23/03615/22	23/03782/2	23/03782/8	23/03782/10	23/03870/2	23/03877/2	Units	Limit of Detection	Method ref
Client Sample No	102	2	102	102	102	102	102			
Client Sample ID	ATK BH08	ATK TP05	ATK-TP07	ATK-BH03	ATK-BH06	ATK_TP02	ATK_CPT15			
Depth to Top	0.60	0.80	0.40	0.80	1.00	1.20	0.50			
Depth To Bottom										
Date Sampled	06-Apr-23	12-Apr-23	14-Apr-23	14-Apr-23	14-Apr-23	18-Apr-23	17-Apr-23			
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	7	1AB	6A	6B	4AB	6A	5A			
n-Dioctylphthalate$_A$	-	<500	-	-	-	<500	-	µg/kg	500	A-T-052s
n-Dibutylphthalate$_A$	-	<200	-	-	-	<100	-	µg/kg	100	A-T-052s
Nitrobenzene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Isophorone$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Hexachloroethane$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Hexachlorocyclopentadiene$_A$	-	<100	-	-	-	-	-	µg/kg	100	A-T-052s
Hexachlorobutadiene$_A$	-	<100	-	-	-	<100	-	µg/kg	100	A-T-052s
Perylene$_A$	-	1740	-	-	-	1250	-	µg/kg	100	A-T-052s

Lab Sample ID	23/03615/20	23/03615/22	23/03782/2	23/03782/8	23/03782/10	23/03870/2	23/03877/2	Units	Limit of Detection	Method ref
Client Sample No	102	2	102	102	102	102	102			
Client Sample ID	ATK BH08	ATK TP05	ATK-TP07	ATK-BH03	ATK-BH06	ATK_TP02	ATK_CPT15			
Depth to Top	0.60	0.80	0.40	0.80	1.00	1.20	0.50			
Depth To Bottom										
Date Sampled	06-Apr-23	12-Apr-23	14-Apr-23	14-Apr-23	14-Apr-23	18-Apr-23	17-Apr-23			
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	7	1AB	6A	6B	4AB	6A	5A			
VOC										
Dichlorodifluoromethane$_A$	-	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
Chloromethane$_A$	-	<10	-	-	-	<10	-	µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene)$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
Bromomethane$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
Chloroethane$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
Trichlorofluoromethane$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
1,1-Dichloroethene$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
Carbon Disulphide$_A^{\#}$	- ^{U}	<1	-	-	-	1	-	µg/kg	1	A-T-006s
Dichloromethane$_A$	-	<5	-	-	-	<5	-	µg/kg	5	A-T-006s
trans 1,2-Dichloroethene$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
1,1-Dichloroethane$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
cis 1,2-Dichloroethene$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
2,2-Dichloropropane$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
Bromochloromethane$_A^{\#}$	- ^{U}	<5	-	-	-	<5	-	µg/kg	5	A-T-006s
Chloroform$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
1,1,1-Trichloroethane$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
1,1-Dichloropropene$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
Carbon Tetrachloride$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
1,2-Dichloroethane$_A^{\#}$	- ^{U}	<2	-	-	-	<2	-	µg/kg	2	A-T-006s
Benzene$_A^{\#}$	- ^{U}	<1	-	-	-	1	-	µg/kg	1	A-T-006s
Trichloroethene$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
1,2-Dichloropropane$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
Dibromomethane$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
Bromodichloromethane$_A^{\#}$	- ^{U}	<10	-	-	-	<10	-	µg/kg	10	A-T-006s
cis 1,3-Dichloropropene$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
Toluene$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
trans 1,3-Dichloropropene$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
1,1,2-Trichloroethane$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
1,3-Dichloropropane$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
Tetrachloroethene$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
Dibromochloromethane$_A^{\#}$	- ^{U}	<3	-	-	-	<3	-	µg/kg	3	A-T-006s
1,2-Dibromoethane$_A^{\#}$	- ^{U}	<1	-	-	-	<1	-	µg/kg	1	A-T-006s

Lab Sample ID	23/03615/20	23/03615/22	23/03782/2	23/03782/8	23/03782/10	23/03870/2	23/03877/2	Units	Limit of Detection	Method ref
Client Sample No	102	2	102	102	102	102	102			
Client Sample ID	ATK BH08	ATK TP05	ATK-TP07	ATK-BH03	ATK-BH06	ATK_TP02	ATK_CPT15			
Depth to Top	0.60	0.80	0.40	0.80	1.00	1.20	0.50			
Depth To Bottom										
Date Sampled	06-Apr-23	12-Apr-23	14-Apr-23	14-Apr-23	14-Apr-23	18-Apr-23	17-Apr-23			
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	7	1AB	6A	6B	4AB	6A	5A			
Chlorobenzene$_A^\#$	- U	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
1,1,1,2-Tetrachloroethane$_A$	-	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
Ethylbenzene$_A^\#$	- U	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
m & p Xylene$_A^\#$	- U	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
o-Xylene$_A^\#$	- U	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
Styrene$_A^\#$	- U	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
Bromoform$_A^\#$	- U	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
Isopropylbenzene$_A^\#$	- U	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane$_A$	-	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
1,2,3-Trichloropropane$_A^\#$	- U	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
Bromobenzene$_A^\#$	- U	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
n-Propylbenzene$_A^\#$	- U	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
2-Chlorotoluene$_A^\#$	- U	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^\#$	- U	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
4-Chlorotoluene$_A^\#$	- U	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
tert-Butylbenzene$_A^\#$	- U	<2	-	-	-	<2	-	µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene$_A^\#$	- U	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
sec-Butylbenzene$_A^\#$	- U	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^\#$	- U	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
1,3-Dichlorobenzene$_A$	-	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
1,4-Dichlorobenzene$_A^\#$	- U	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
n-Butylbenzene$_A^\#$	- U	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
1,2-Dichlorobenzene$_A^\#$	- U	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP)$_A$	-	<2	-	-	-	<2	-	µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene$_A$	-	<3	-	-	-	<3	-	µg/kg	3	A-T-006s
Hexachlorobutadiene$_A^\#$	- U	<1	-	-	-	<1	-	µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene$_A$	-	<3	-	-	-	<3	-	µg/kg	3	A-T-006s

Lab Sample ID	23/03615/20	23/03615/22	23/03782/2	23/03782/8	23/03782/10	23/03870/2	23/03877/2	Units	Limit of Detection	Method ref
Client Sample No	102	2	102	102	102	102	102			
Client Sample ID	ATK BH08	ATK TP05	ATK-TP07	ATK-BH03	ATK-BH06	ATK_TP02	ATK_CPT15			
Depth to Top	0.60	0.80	0.40	0.80	1.00	1.20	0.50			
Depth To Bottom										
Date Sampled	06-Apr-23	12-Apr-23	14-Apr-23	14-Apr-23	14-Apr-23	18-Apr-23	17-Apr-23			
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	7	1AB	6A	6B	4AB	6A	5A			
TPH CWG (leachable) with Clean Up										
Ali >C5-C6 (leachable)$_A$	<2	<2	<3	-	<3	<1	-	µg/l	1	A-T-022w
Ali >C6-C8 (leachable)$_A$	<2	<2	<2	-	<2	<1	-	µg/l	1	A-T-022w
Ali >C8-C10 (leachable)$_A$	<10	<10	<10	-	<10	<10	-	µg/l	10	A-T-055w
Ali >C10-C12 (leachable)$_A$	<10	<10	<10	-	<10	<10	-	µg/l	10	A-T-055w
Ali >C12-C16 (leachable)$_A$	<10	<10	<10	-	<10	<10	-	µg/l	10	A-T-055w
Ali >C16-C21 (leachable)$_A$	<10	<10	<10	-	<10	<10	-	µg/l	10	A-T-055w
Ali >C21-C35 (leachable)$_A$	<20	<20	<20	-	<20	<20	-	µg/l	20	A-T-055w
Total Aliphatics (leachable)$_A$	<20	<20	<20	-	<20	<20	-	µg/l	10	Calc-As Recd
Aro >C5-C7 (leachable)$_A$	<1	<1	<1	-	<1	<1	-	µg/l	1	A-T-022w
Aro >C7-C8 (leachable)$_A$	<1	<1	<1	-	<1	<1	-	µg/l	1	A-T-022w
Aro >C8-C10 (leachable)$_A$	<10	<10	<10	-	<10	<10	-	µg/l	10	A-T-055w
Aro >C10-C12 (leachable)$_A$	15	<10	<10	-	<10	<10	-	µg/l	10	A-T-055w
Aro >C12-C16 (leachable)$_A$	14	<10	<10	-	<10	<10	-	µg/l	10	A-T-055w
Aro >C16-C21 (leachable)$_A$	18	<10	<10	-	<10	<10	-	µg/l	10	A-T-055w
Total Aromatics (leachable)$_A$	52	<20	<20	-	<20	<20	-	µg/l	20	Calc-As Recd
TPH (Ali & Aro >C5-C35) (leachable)$_A$	52	<20	<20	-	<20	<20	-	µg/l	20	Calc-As Recd
BTEX - Benzene (leachable)$_A$	<1	<1	<1	-	<1	<1	-	µg/l	1	A-T-022w
BTEX - Toluene (leachable)$_A$	<1	<1	<1	-	<1	<1	-	µg/l	1	A-T-022w
BTEX - Ethyl Benzene (leachable)$_A$	<1	<1	<1	-	<1	<1	-	µg/l	1	A-T-022w
BTEX - o Xylene (leachable)$_A$	<1	<1	<1	-	<1	<1	-	µg/l	1	A-T-022w
BTEX - m & p Xylene (leachable)$_A$	<1	<1	<1	-	<1	<1	-	µg/l	1	A-T-022w
MTBE (leachable)$_A$	<1	<1	<2	-	<2	<1	-	µg/l	1	A-T-022w
Aro >C21-C35 (leachable)$_A$	<20	<20	<20	-	<20	<20	-	µg/l	20	A-T-055w

Lab Sample ID	23/03615/20	23/03615/22	23/03782/2	23/03782/8	23/03782/10	23/03870/2	23/03877/2	Units	Limit of Detection	Method ref
Client Sample No	102	2	102	102	102	102	102			
Client Sample ID	ATK BH08	ATK TP05	ATK-TP07	ATK-BH03	ATK-BH06	ATK_TP02	ATK_CPT15			
Depth to Top	0.60	0.80	0.40	0.80	1.00	1.20	0.50			
Depth To Bottom										
Date Sampled	06-Apr-23	12-Apr-23	14-Apr-23	14-Apr-23	14-Apr-23	18-Apr-23	17-Apr-23			
Sample Type	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	7	1AB	6A	6B	4AB	6A	5A			
TPH UKCWG with Clean Up										
Ali >C5-C6$_A^{\#}$	- ^{U}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8$_A^{\#}$	- ^{U}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	-	1	<1	<1	<1	1	<1	mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	- ^{U}	1	<1	<1	<1	2	<1	mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	- ^{U}	3	<1	<1	1	4	<1	mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	- ^{U}	4	<1	<1	2	4	<1	mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	- ^{U}	13	<1	1	29	9	<1	mg/kg	1	A-T-055s
Ali >C35-C44$_A$	-	23	<1	<1	10	10	<1	mg/kg	1	A-T-055s
Total Aliphatics$_A$	-	46	<1	1	44	30	<1	mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	- ^{U}	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	- ^{U}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	-	<1	<1	<1	1	2	<1	mg/kg	1	A-T-055s
Aro >C10-C12$_A$	-	2	<1	<1	4	6	<1	mg/kg	1	A-T-055s
Aro >C12-C16$_A$	-	23	<1	<1	13	34	<1	mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	- ^{U}	147	<1	<1	53	95	<1	mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	- ^{U}	477	<1	3	147	198	<1	mg/kg	1	A-T-055s
Aro >C35-C44$_A$	-	2	<1	<1	1	<1	<1	mg/kg	1	A-T-055s
Total Aromatics$_A$	-	651	<1	3	220	335	<1	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C44)$_A$	-	697	<1	4	264	366	<1	mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$	- ^{U}	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	- ^{U}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	- ^{U}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	- ^{U}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	- ^{U}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	- ^{U}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s

Lab Sample ID	23/03877/3	23/03877/5	23/03877/7	23/03877/8	23/03877/10	23/03877/14	23/03877/16	Units	Limit of Detection	Method ref
Client Sample No	101	103	102	103	105	3	102			
Client Sample ID	ATK_CPT16	ATK_CPT17	ATK_TP01	ATK_TP01	ATK_TP01	ATK_TP09	ATK_TP10			
Depth to Top	0.10	0.70	0.30	0.70	1.80	1.30	1.20			
Depth To Bottom										
Date Sampled	17-Apr-23	17-Apr-23	13-Apr-23	13-Apr-23	13-Apr-23	17-Apr-23	17-Apr-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	1A	6A	1A	1A	6A	3	4AB			
% Stones >10mm$_A$	<0.1	<0.1	13.7	<0.1	6.3	<0.1	16.6	% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	8.94	8.98	8.67	-	7.92	8.30	7.75	pH	0.01	A-T-031s
Ammonium / Ammoniacal Nitrogen as NH4$_D$	0.83	0.77	0.68	-	53.4	9.77	1.93	mg/kg	0.26	A-T-033s
Sulphate (acid soluble)$_D$$^{M\#}$	<200	710	<200	-	860	270	7800	mg/kg	200	A-T-028s
Cyanide (free)$_A$$^{M\#}$	<1	<1	<1	-	<1	<1	<1	mg/kg	1	A-T-042sFCN
Cyanide (total)$_A$$^{M\#}$	<1	<1	<1	-	<1	<1	4	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_A$	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Sulphide$_A$	<5	<5	<5	-	<5	<5	<5	mg/kg	5	A-T-043-s
Organic Matter$_D$$^{M\#}$	<0.1	1.3	0.5	-	5.4	1.5	11.6	% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	<1	<1	<1	-	8	<1	18	mg/kg	1	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	<1.0	<1.0	<1.0	-	<1.0	1.0	<1.0	mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	<0.5	0.7	<0.5	-	0.6	0.7	0.6	mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	2	27	6	-	45	25	70	mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	8	45	9	-	34	37	17	mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1	<1	-	<1	<1	<1	mg/kg	1	A-T-040s
Lead$_D$$^{M\#}$	2	18	9	-	61	23	771	mg/kg	1	A-T-024s
Mercury$_D$	<0.17	<0.17	<0.17	-	0.37	0.36	2.13	mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	8	40	9	-	32	36	19	mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	<1	4	-	2	<1	<1	mg/kg	1	A-T-024s
Vanadium$_D$$^{M\#}$	3	41	6	-	41	39	24	mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	11	97	16	-	63	59	135	mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (2 no)$_A$	-	*	-	-	*	-	*			A-T-001
pH (leachable)$_A$$^{\#}$	-	8.67	-	-	7.48	-	7.42	pH	0.01	A-T-031w
Ammonia / Ammoniacal Nitrogen as NH3 (leachable)$_A$	-	<0.065	-	-	3.768	-	<0.065	mg/l	0.065	A-T-033w
Sulphate (leachable)$_A$$^{\#}$	-	85.70	-	-	46.39	-	1540	mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$$^{\#}$	-	<0.005	-	-	<0.005	-	<0.005	mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$$^{\#}$	-	<0.005	-	-	<0.005	-	0.228	mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_A$	-	<0.01	-	-	<0.01	-	<0.01	mg/l	0.01	A-T-050w
Arsenic (leachable)$_A$	-	2	-	-	16	-	5	µg/l	1	A-T-025w
Boron (leachable)$_A$	-	41	-	-	106	-	91	µg/l	10	A-T-025w
Cadmium (leachable)$_A$	-	<1	-	-	<1	-	<2	µg/l	1	A-T-025w
Copper (leachable)$_A$	-	<4	-	-	6	-	47	µg/l	4	A-T-025w

Lab Sample ID	23/03877/3	23/03877/5	23/03877/7	23/03877/8	23/03877/10	23/03877/14	23/03877/16	Units	Limit of Detection	Method ref
Client Sample No	101	103	102	103	105	3	102			
Client Sample ID	ATK_CPT16	ATK_CPT17	ATK_TP01	ATK_TP01	ATK_TP01	ATK_TP09	ATK_TP10			
Depth to Top	0.10	0.70	0.30	0.70	1.80	1.30	1.20			
Depth To Bottom										
Date Sampled	17-Apr-23	17-Apr-23	13-Apr-23	13-Apr-23	13-Apr-23	17-Apr-23	17-Apr-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	1A	6A	1A	1A	6A	3	4AB			
Chromium (leachable)$_A$	-	11	-	-	<1	-	41	µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	-	<0.05	-	-	<0.05	-	<0.10	mg/l	0.05	A-T-040w
Lead (leachable)$_A$	-	<1	-	-	7	-	<2	µg/l	1	A-T-025w
Mercury (leachable)$_A$	-	<0.1	-	-	<0.1	-	<0.2	µg/l	0.1	A-T-025w
Nickel (leachable)$_A$	-	<2	-	-	3	-	<4	µg/l	2	A-T-025w
Selenium (leachable)$_A$	-	2	-	-	<1	-	<2	µg/l	1	A-T-025w
Vanadium (leachable)$_A$	-	3	-	-	2	-	3	µg/l	1	A-T-025w
Zinc (leachable)$_A$	-	<2	-	-	5	-	7	µg/l	2	A-T-025w

Envirolab Job Number: 23/03615, 23/03782, 23/03870, 23/03877, 23/04044, 23/04109, 23/04412 and 23/04698 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/03877/3	23/03877/5	23/03877/7	23/03877/8	23/03877/10	23/03877/14	23/03877/16	Units	Limit of Detection	Method ref
Client Sample No	101	103	102	103	105	3	102			
Client Sample ID	ATK_CPT16	ATK_CPT17	ATK_TP01	ATK_TP01	ATK_TP01	ATK_TP09	ATK_TP10			
Depth to Top	0.10	0.70	0.30	0.70	1.80	1.30	1.20			
Depth To Bottom										
Date Sampled	17-Apr-23	17-Apr-23	13-Apr-23	13-Apr-23	13-Apr-23	17-Apr-23	17-Apr-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	1A	6A	1A	1A	6A	3	4AB			
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD	-	NAD	NAD	NAD			A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A	-	N/A	N/A	N/A			A-T-045

Lab Sample ID	23/03877/3	23/03877/5	23/03877/7	23/03877/8	23/03877/10	23/03877/14	23/03877/16	Units	Limit of Detection	Method ref
Client Sample No	101	103	102	103	105	3	102			
Client Sample ID	ATK_CPT16	ATK_CPT17	ATK_TP01	ATK_TP01	ATK_TP01	ATK_TP09	ATK_TP10			
Depth to Top	0.10	0.70	0.30	0.70	1.80	1.30	1.20			
Depth To Bottom										
Date Sampled	17-Apr-23	17-Apr-23	13-Apr-23	13-Apr-23	13-Apr-23	17-Apr-23	17-Apr-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	1A	6A	1A	1A	6A	3	4AB			
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	0.02	mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	<0.02	<0.02	-	<0.02	<0.02	0.03	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04	-	<0.04	<0.04	0.08	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	<0.04	<0.04	-	<0.04	<0.04	0.06	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	<0.05	<0.05	-	<0.05	<0.05	0.08	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	<0.07	<0.07	-	<0.07	<0.07	<0.07	mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06	<0.06	<0.06	-	<0.06	<0.06	0.10	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04	-	<0.04	<0.04	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	<0.08	<0.08	-	<0.08	<0.08	0.18	mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	<0.03	<0.03	-	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	<0.03	<0.03	-	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	0.05	<0.03	-	<0.03	<0.03	0.17	mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	0.09	<0.07	-	<0.07	<0.07	0.20	mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08	0.14	<0.08	-	<0.08	<0.08	0.93	mg/kg	0.01	A-T-019s

Lab Sample ID	23/03877/3	23/03877/5	23/03877/7	23/03877/8	23/03877/10	23/03877/14	23/03877/16	Units	Limit of Detection	Method ref
Client Sample No	101	103	102	103	105	3	102			
Client Sample ID	ATK_CPT16	ATK_CPT17	ATK_TP01	ATK_TP01	ATK_TP01	ATK_TP09	ATK_TP10			
Depth to Top	0.10	0.70	0.30	0.70	1.80	1.30	1.20			
Depth To Bottom										
Date Sampled	17-Apr-23	17-Apr-23	13-Apr-23	13-Apr-23	13-Apr-23	17-Apr-23	17-Apr-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	1A	6A	1A	1A	6A	3	4AB			
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	-	<0.02	-	-	<0.02	-	<0.02	µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	-	<0.02	-	-	<0.02	-	<0.02	µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	-	<0.02	-	-	<0.02	-	<0.02	µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	-	<0.02	-	-	<0.02	-	<0.02	µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	-	<0.02	-	-	<0.02	-	<0.02	µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	-	<0.02	-	-	<0.02	-	<0.02	µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	-	<0.02	-	-	<0.02	-	<0.02	µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	-	<0.02	-	-	<0.02	-	<0.02	µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	-	<0.02	-	-	<0.02	-	<0.02	µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	-	<0.02	-	-	<0.02	-	<0.02	µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	-	<0.02	-	-	0.04	-	<0.02	µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	-	<0.02	-	-	<0.02	-	<0.02	µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	-	<0.02	-	-	<0.02	-	<0.02	µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	-	<0.02	-	-	<0.02	-	<0.02	µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	-	<0.02	-	-	0.03	-	<0.02	µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	-	<0.02	-	-	0.04	-	<0.02	µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	-	<0.02	-	-	0.11	-	<0.02	µg/l	0.02	A-T-019w

Lab Sample ID	23/03877/3	23/03877/5	23/03877/7	23/03877/8	23/03877/10	23/03877/14	23/03877/16	Units	Limit of Detection	Method ref
Client Sample No	101	103	102	103	105	3	102			
Client Sample ID	ATK_CPT16	ATK_CPT17	ATK_TP01	ATK_TP01	ATK_TP01	ATK_TP09	ATK_TP10			
Depth to Top	0.10	0.70	0.30	0.70	1.80	1.30	1.20			
Depth To Bottom										
Date Sampled	17-Apr-23	17-Apr-23	13-Apr-23	13-Apr-23	13-Apr-23	17-Apr-23	17-Apr-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	1A	6A	1A	1A	6A	3	4AB			
SVOC excluding PAH-16										
4-Bromophenyl phenyl ether$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
Hexachlorobenzene$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
Diethyl phthalate$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
Dimethyl phthalate$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
Dibenzofuran$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
Carbazole$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
Butylbenzyl phthalate$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate$_A$	-	-	-	-	<500	<500	<500	µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
4-Nitrophenol$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
3+4-Methylphenol$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
4-Chloro-3-methylphenol$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
2-Nitrophenol$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
2-Methylphenol$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
1,2,4-Trichlorobenzene$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
2-Chlorophenol$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
2,6-Dinitrotoluene$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
2,4-Dinitrotoluene$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
2,4-Dimethylphenol$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
2,4-Dichlorophenol$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
2,4,6-Trichlorophenol$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
2,4,5-Trichlorophenol$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
1,4-Dichlorobenzene$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
1,3-Dichlorobenzene$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
1,2-Dichlorobenzene$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
2-Chloronaphthalene$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
2-Methylnaphthalene$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
Phenol$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
Pentachlorophenol$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s

Lab Sample ID	23/03877/3	23/03877/5	23/03877/7	23/03877/8	23/03877/10	23/03877/14	23/03877/16	Units	Limit of Detection	Method ref
Client Sample No	101	103	102	103	105	3	102			
Client Sample ID	ATK_CPT16	ATK_CPT17	ATK_TP01	ATK_TP01	ATK_TP01	ATK_TP09	ATK_TP10			
Depth to Top	0.10	0.70	0.30	0.70	1.80	1.30	1.20			
Depth To Bottom										
Date Sampled	17-Apr-23	17-Apr-23	13-Apr-23	13-Apr-23	13-Apr-23	17-Apr-23	17-Apr-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	1A	6A	1A	1A	6A	3	4AB			
n-Dioctylphthalate$_A$	-	-	-	-	<500	<500	<500	µg/kg	500	A-T-052s
n-Dibutylphthalate$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
Nitrobenzene$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
Isophorone$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
Hexachloroethane$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
Hexachlorobutadiene$_A$	-	-	-	-	<100	<100	<100	µg/kg	100	A-T-052s
Perylene$_A$	-	-	-	-	293	<100	<100	µg/kg	100	A-T-052s

Lab Sample ID	23/03877/3	23/03877/5	23/03877/7	23/03877/8	23/03877/10	23/03877/14	23/03877/16	Units	Limit of Detection	Method ref
Client Sample No	101	103	102	103	105	3	102			
Client Sample ID	ATK_CPT16	ATK_CPT17	ATK_TP01	ATK_TP01	ATK_TP01	ATK_TP09	ATK_TP10			
Depth to Top	0.10	0.70	0.30	0.70	1.80	1.30	1.20			
Depth To Bottom										
Date Sampled	17-Apr-23	17-Apr-23	13-Apr-23	13-Apr-23	13-Apr-23	17-Apr-23	17-Apr-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	1A	6A	1A	1A	6A	3	4AB			
VOC										
Dichlorodifluoromethane$_A$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
Chloromethane$_A$	-	-	-	-	<250	<250	<250	µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene)$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
Bromomethane$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
Chloroethane$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
Trichlorofluoromethane$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
1,1-Dichloroethene$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
Carbon Disulphide$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
Dichloromethane$_A$	-	-	-	-	<125	<125	<125	µg/kg	5	A-T-006s
trans 1,2-Dichloroethene$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
1,1-Dichloroethane$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
cis 1,2-Dichloroethene$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
2,2-Dichloropropane$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
Bromochloromethane$_A^\#$	-	-	-	-	<125	<125	<125	µg/kg	5	A-T-006s
Chloroform$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
1,1,1-Trichloroethane$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
1,1-Dichloropropene$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
Carbon Tetrachloride$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
1,2-Dichloroethane$_A^\#$	-	-	-	-	<50	<50	<50	µg/kg	2	A-T-006s
Benzene$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
Trichloroethene$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
1,2-Dichloropropane$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
Dibromomethane$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
Bromodichloromethane$_A^\#$	-	-	-	-	<250	<250	<250	µg/kg	10	A-T-006s
cis 1,3-Dichloropropene$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
Toluene$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
trans 1,3-Dichloropropene$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
1,1,2-Trichloroethane$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
1,3-Dichloropropane$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
Tetrachloroethene$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
Dibromochloromethane$_A^\#$	-	-	-	-	<75	<75	<75	µg/kg	3	A-T-006s
1,2-Dibromoethane$_A^\#$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s

Lab Sample ID	23/03877/3	23/03877/5	23/03877/7	23/03877/8	23/03877/10	23/03877/14	23/03877/16	Units	Limit of Detection	Method ref
Client Sample No	101	103	102	103	105	3	102			
Client Sample ID	ATK_CPT16	ATK_CPT17	ATK_TP01	ATK_TP01	ATK_TP01	ATK_TP09	ATK_TP10			
Depth to Top	0.10	0.70	0.30	0.70	1.80	1.30	1.20			
Depth To Bottom										
Date Sampled	17-Apr-23	17-Apr-23	13-Apr-23	13-Apr-23	13-Apr-23	17-Apr-23	17-Apr-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	1A	6A	1A	1A	6A	3	4AB			
Chlorobenzene$_{A}^{\#}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
1,1,1,2-Tetrachloroethane$_{A}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
Ethylbenzene$_{A}^{\#}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
m & p Xylene$_{A}^{\#}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
o-Xylene$_{A}^{\#}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
Styrene$_{A}^{\#}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
Bromoform$_{A}^{\#}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
Isopropylbenzene$_{A}^{\#}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane$_{A}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
1,2,3-Trichloropropane$_{A}^{\#}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
Bromobenzene$_{A}^{\#}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
n-Propylbenzene$_{A}^{\#}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
2-Chlorotoluene$_{A}^{\#}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_{A}^{\#}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
4-Chlorotoluene$_{A}^{\#}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
tert-Butylbenzene$_{A}^{\#}$	-	-	-	-	<50	<50	<50	µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene$_{A}^{\#}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
sec-Butylbenzene$_{A}^{\#}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
4-Isopropyltoluene$_{A}^{\#}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
1,3-Dichlorobenzene$_{A}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
1,4-Dichlorobenzene$_{A}^{\#}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
n-Butylbenzene$_{A}^{\#}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
1,2-Dichlorobenzene$_{A}^{\#}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP)$_{A}$	-	-	-	-	<50	<50	<50	µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene$_{A}$	-	-	-	-	<75	<75	<75	µg/kg	3	A-T-006s
Hexachlorobutadiene$_{A}^{\#}$	-	-	-	-	<25	<25	<25	µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene$_{A}$	-	-	-	-	<75	<75	<75	µg/kg	3	A-T-006s

Lab Sample ID	23/03877/3	23/03877/5	23/03877/7	23/03877/8	23/03877/10	23/03877/14	23/03877/16	Units	Limit of Detection	Method ref
Client Sample No	101	103	102	103	105	3	102			
Client Sample ID	ATK_CPT16	ATK_CPT17	ATK_TP01	ATK_TP01	ATK_TP01	ATK_TP09	ATK_TP10			
Depth to Top	0.10	0.70	0.30	0.70	1.80	1.30	1.20			
Depth To Bottom										
Date Sampled	17-Apr-23	17-Apr-23	13-Apr-23	13-Apr-23	13-Apr-23	17-Apr-23	17-Apr-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	1A	6A	1A	1A	6A	3	4AB			
TPH CWG (leachable) with Clean Up										
Ali >C5-C6 (leachable)$_A$	-	<4	-	-	<4	-	<4	µg/l	1	A-T-022w
Ali >C6-C8 (leachable)$_A$	-	<6	-	-	<6	-	<6	µg/l	1	A-T-022w
Ali >C8-C10 (leachable)$_A$	-	<10	-	-	<10	-	<10	µg/l	10	A-T-055w
Ali >C10-C12 (leachable)$_A$	-	<10	-	-	<10	-	<10	µg/l	10	A-T-055w
Ali >C12-C16 (leachable)$_A$	-	<10	-	-	<10	-	<10	µg/l	10	A-T-055w
Ali >C16-C21 (leachable)$_A$	-	<10	-	-	<10	-	<10	µg/l	10	A-T-055w
Ali >C21-C35 (leachable)$_A$	-	<20	-	-	<20	-	<20	µg/l	20	A-T-055w
Total Aliphatics (leachable)$_A$	-	<20	-	-	<20	-	<20	µg/l	10	Calc-As Recd
Aro >C5-C7 (leachable)$_A$	-	<1	-	-	<1	-	<1	µg/l	1	A-T-022w
Aro >C7-C8 (leachable)$_A$	-	<1	-	-	<1	-	<1	µg/l	1	A-T-022w
Aro >C8-C10 (leachable)$_A$	-	<10	-	-	<10	-	<10	µg/l	10	A-T-055w
Aro >C10-C12 (leachable)$_A$	-	<10	-	-	<10	-	<10	µg/l	10	A-T-055w
Aro >C12-C16 (leachable)$_A$	-	<10	-	-	11	-	<10	µg/l	10	A-T-055w
Aro >C16-C21 (leachable)$_A$	-	<10	-	-	11	-	<10	µg/l	10	A-T-055w
Total Aromatics (leachable)$_A$	-	<20	-	-	29	-	<20	µg/l	20	Calc-As Recd
TPH (Ali & Aro >C5-C35) (leachable)$_A$	-	<20	-	-	29	-	<20	µg/l	20	Calc-As Recd
BTEX - Benzene (leachable)$_A$	-	<1	-	-	<1	-	<1	µg/l	1	A-T-022w
BTEX - Toluene (leachable)$_A$	-	<1	-	-	<1	-	<1	µg/l	1	A-T-022w
BTEX - Ethyl Benzene (leachable)$_A$	-	<1	-	-	<1	-	<1	µg/l	1	A-T-022w
BTEX - o Xylene (leachable)$_A$	-	<1	-	-	<1	-	<1	µg/l	1	A-T-022w
BTEX - m & p Xylene (leachable)$_A$	-	<1	-	-	<1	-	<1	µg/l	1	A-T-022w
MTBE (leachable)$_A$	-	<3	-	-	<3	-	<3	µg/l	1	A-T-022w
Aro >C21-C35 (leachable)$_A$	-	<20	-	-	<20	-	<20	µg/l	20	A-T-055w

Lab Sample ID	23/03877/3	23/03877/5	23/03877/7	23/03877/8	23/03877/10	23/03877/14	23/03877/16	Units	Limit of Detection	Method ref
Client Sample No	101	103	102	103	105	3	102			
Client Sample ID	ATK_CPT16	ATK_CPT17	ATK_TP01	ATK_TP01	ATK_TP01	ATK_TP09	ATK_TP10			
Depth to Top	0.10	0.70	0.30	0.70	1.80	1.30	1.20			
Depth To Bottom										
Date Sampled	17-Apr-23	17-Apr-23	13-Apr-23	13-Apr-23	13-Apr-23	17-Apr-23	17-Apr-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	1A	6A	1A	1A	6A	3	4AB			
TPH UKCWG with Clean Up										
Ali >C5-C6$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1	<1	<1	-	<1	<1	2	mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<1	<1	<1	-	<1	<1	2	mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	<1	2	<1	-	<1	<1	3	mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	<1	6	2	-	3	<1	4	mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	3	91	82	-	12	2	8	mg/kg	1	A-T-055s
Ali >C35-C44$_A$	<1	95	36	-	4	<1	3	mg/kg	1	A-T-055s
Total Aliphatics$_A$	3	194	120	-	18	2	23	mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	<1	2	<1	-	<1	<1	1	mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1	<1	<1	-	<1	<1	2	mg/kg	1	A-T-055s
Aro >C12-C16$_A$	<1	2	2	-	4	<1	8	mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	<1	7	5	-	13	1	18	mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	1	32	24	-	28	4	44	mg/kg	1	A-T-055s
Aro >C35-C44$_A$	<1	9	3	-	<1	<1	<1	mg/kg	1	A-T-055s
Total Aromatics$_A$	1	53	33	-	45	5	73	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C44)$_A$	4	247	153	-	63	7	96	mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s

Lab Sample ID	23/03877/25	23/03877/26	23/03877/29	23/03877/35	23/03877/40	23/03877/43	23/03877/45	Units	Limit of Detection	Method ref
Client Sample No	103	1	102	102	2	101	101			
Client Sample ID	ATK BH08A	ATK_CPT12	ATK_CPT14	ATK_BH07	ATK_WS02	ATK_WS04	ATK_WS01			
Depth to Top	1.00	0.36	0.40	0.45	0.50	0.30	0.20			
Depth To Bottom										
Date Sampled	14-Apr-23	17-Apr-23	14-Apr-23	18-Apr-23	19-Apr-23	19-Apr-23	19-Apr-23			
Sample Type	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	3	7	1AB	6A	1AB	1A	1A			
% Stones >10mm$_A$	<0.1	<0.1	17.7	2.3	10.0	19.2	13.6	% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	8.33	8.68^U	11.89	8.68	8.16	12.24	9.79	pH	0.01	A-T-031s
Ammonium / Ammoniacal Nitrogen as NH4$_D$	1.74	0.34	1.30	<0.26	1.08	<0.26	<0.26	mg/kg	0.26	A-T-033s
Sulphate (acid soluble)$_D$$^{M\#}$	430	<200^U	2200	270	880	1500	<200	mg/kg	200	A-T-028s
Cyanide (free)$_A$$^{M\#}$	<1	<1^U	<1	<1	<1	<1	<1	mg/kg	1	A-T-042sFCN
Cyanide (total)$_A$$^{M\#}$	<1	<1^U	<1	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_A$	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Sulphide$_A$	<5	<5	<5	<5	45	83	78	mg/kg	5	A-T-043-s
Organic Matter$_D$$^{M\#}$	1.3	<0.1^U	0.2	1.0	0.6	0.5	0.2	% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	3	<1^U	<1	3	2	<1	<1	mg/kg	1	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	<1.0	<1.0^U	<1.0	<1.0	<1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	0.7	<0.5^U	<0.5	0.8	<0.5	<0.5	<0.5	mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	27	5^U	7	21	6	8	4	mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	35	11^U	16	31	5	9	6	mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-040s
Lead$_D$$^{M\#}$	21	5^U	10	14	18	10	3	mg/kg	1	A-T-024s
Mercury$_D$	<0.17	0.29	1.84	<0.17	<0.17	1.06	<0.17	mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	36	13^U	11	35	8	9	8	mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	<1^U	<1	<1	<1	<1	<1	mg/kg	1	A-T-024s
Vanadium$_D$$^{M\#}$	37	5^U	10	30	6	6	4	mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	62	18^U	22	50	28	26	15	mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (2 no)$_A$	-	*	*	*	*	-	-			A-T-001
pH (leachable)$_A$$^{\#}$	-	8.25^U	11.63	8.87	7.58	-	-	pH	0.01	A-T-031w
Ammonia / Ammoniacal Nitrogen as NH3 (leachable)$_A$	-	<0.065	<0.065	1.504	<0.065	-	-	mg/l	0.065	A-T-033w
Sulphate (leachable)$_A$$^{\#}$	-	17.20^U	1.68	67.64	428.62	-	-	mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$$^{\#}$	-	<0.005^U	<0.005	<0.005	<0.005	-	-	mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$$^{\#}$	-	<0.005^U	<0.005	<0.005	<0.005	-	-	mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_A$	-	<0.01	<0.01	<0.01	<0.01	-	-	mg/l	0.01	A-T-050w
Arsenic (leachable)$_A$	-	<1	<1	<1	<1	-	-	µg/l	1	A-T-025w
Boron (leachable)$_A$	-	13	<10	33	26	-	-	µg/l	10	A-T-025w
Cadmium (leachable)$_A$	-	<1	<1	<1	<1	-	-	µg/l	1	A-T-025w
Copper (leachable)$_A$	-	4	<4	<4	<4	-	-	µg/l	4	A-T-025w

Lab Sample ID	23/03877/25	23/03877/26	23/03877/29	23/03877/35	23/03877/40	23/03877/43	23/03877/45	Units	Limit of Detection	Method ref
Client Sample No	103	1	102	102	2	101	101			
Client Sample ID	ATK BH08A	ATK_CPT12	ATK_CPT14	ATK_BH07	ATK_WS02	ATK_WS04	ATK_WS01			
Depth to Top	1.00	0.36	0.40	0.45	0.50	0.30	0.20			
Depth To Bottom										
Date Sampled	14-Apr-23	17-Apr-23	14-Apr-23	18-Apr-23	19-Apr-23	19-Apr-23	19-Apr-23			
Sample Type	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	3	7	1AB	6A	1AB	1A	1A			
Chromium (leachable)$_A$	-	2	9	13	1	-	-	µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	-	<0.05	<0.05	<0.05	<0.05	-	-	mg/l	0.05	A-T-040w
Lead (leachable)$_A$	-	<1	<1	<1	2	-	-	µg/l	1	A-T-025w
Mercury (leachable)$_A$	-	<0.1	0.1	<0.1	<0.1	-	-	µg/l	0.1	A-T-025w
Nickel (leachable)$_A$	-	<2	<2	<2	<2	-	-	µg/l	2	A-T-025w
Selenium (leachable)$_A$	-	<1	<1	2	<1	-	-	µg/l	1	A-T-025w
Vanadium (leachable)$_A$	-	1	<1	<1	<1	-	-	µg/l	1	A-T-025w
Zinc (leachable)$_A$	-	7	<2	<2	3	-	-	µg/l	2	A-T-025w

Lab Sample ID	23/03877/25	23/03877/26	23/03877/29	23/03877/35	23/03877/40	23/03877/43	23/03877/45	Units	Limit of Detection	Method ref
Client Sample No	103	1	102	102	2	101	101			
Client Sample ID	ATK BH08A	ATK_CPT12	ATK_CPT14	ATK_BH07	ATK_WS02	ATK_WS04	ATK_WS01			
Depth to Top	1.00	0.36	0.40	0.45	0.50	0.30	0.20			
Depth To Bottom										
Date Sampled	14-Apr-23	17-Apr-23	14-Apr-23	18-Apr-23	19-Apr-23	19-Apr-23	19-Apr-23			
Sample Type	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	3	7	1AB	6A	1AB	1A	1A			
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	NAD^{U}	NAD	NAD	NAD	NAD	NAD			A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A	N/A	N/A	N/A	N/A			A-T-045

Lab Sample ID	23/03877/25	23/03877/26	23/03877/29	23/03877/35	23/03877/40	23/03877/43	23/03877/45	Units	Limit of Detection	Method ref
Client Sample No	103	1	102	102	2	101	101			
Client Sample ID	ATK BH08A	ATK_CPT12	ATK_CPT14	ATK_BH07	ATK_WS02	ATK_WS04	ATK_WS01			
Depth to Top	1.00	0.36	0.40	0.45	0.50	0.30	0.20			
Depth To Bottom										
Date Sampled	14-Apr-23	17-Apr-23	14-Apr-23	18-Apr-23	19-Apr-23	19-Apr-23	19-Apr-23			
Sample Type	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	3	7	1AB	6A	1AB	1A	1A			
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	<0.01^U	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	<0.01^U	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	<0.02^U	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	<0.04^U	<0.04	<0.04	0.05	0.04	<0.04	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	<0.04^U	<0.04	<0.04	0.05	0.04	<0.04	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	<0.05^U	<0.05	<0.05	0.06	0.05	<0.05	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	<0.05^U	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	<0.07^U	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06	<0.06^U	<0.06	<0.06	<0.06	0.06	<0.06	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	<0.04^U	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	<0.08^U	<0.08	<0.08	<0.08	<0.08	<0.08	mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	<0.01^U	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	<0.03^U	<0.03	<0.03	<0.03	0.03	<0.03	mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	<0.03^U	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	<0.03^U	<0.03	<0.03	0.06	0.06	0.04	mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	<0.07^U	<0.07	<0.07	0.09	0.09	<0.07	mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08	<0.08^U	<0.08	<0.08	0.31	0.37	<0.08	mg/kg	0.01	A-T-019s

Lab Sample ID	23/03877/25	23/03877/26	23/03877/29	23/03877/35	23/03877/40	23/03877/43	23/03877/45	Units	Limit of Detection	Method ref
Client Sample No	103	1	102	102	2	101	101			
Client Sample ID	ATK BH08A	ATK_CPT12	ATK_CPT14	ATK_BH07	ATK_WS02	ATK_WS04	ATK_WS01			
Depth to Top	1.00	0.36	0.40	0.45	0.50	0.30	0.20			
Depth To Bottom										
Date Sampled	14-Apr-23	17-Apr-23	14-Apr-23	18-Apr-23	19-Apr-23	19-Apr-23	19-Apr-23			
Sample Type	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	3	7	1AB	6A	1AB	1A	1A			
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	-	<0.02	<0.02	<0.02	<0.02	-	-	µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	-	<0.02	<0.02	<0.02	0.02	-	-	µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	-	<0.02	<0.02	<0.02	<0.02	-	-	µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	-	<0.02	<0.02	<0.02	<0.02	-	-	µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	-	<0.02	<0.02	<0.02	<0.02	-	-	µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	-	<0.02	<0.02	<0.02	<0.02	-	-	µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	-	<0.02	<0.02	<0.02	<0.02	-	-	µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	-	<0.02	<0.02	<0.02	<0.02	-	-	µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	-	<0.02	<0.02	<0.02	<0.02	-	-	µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	-	<0.02	<0.02	<0.02	<0.02	-	-	µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	-	<0.02	<0.02	<0.02	<0.02	-	-	µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	-	<0.02	<0.02	<0.02	<0.02	-	-	µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	-	<0.02	<0.02	<0.02	<0.02	-	-	µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	-	<0.02	<0.02	0.05	<0.02	-	-	µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	-	<0.02	<0.02	<0.02	0.02	-	-	µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	-	<0.02	<0.02	<0.02	<0.02	-	-	µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	-	<0.02	<0.02	0.05	0.04	-	-	µg/l	0.02	A-T-019w

Lab Sample ID	23/03877/25	23/03877/26	23/03877/29	23/03877/35	23/03877/40	23/03877/43	23/03877/45	Units	Limit of Detection	Method ref
Client Sample No	103	1	102	102	2	101	101			
Client Sample ID	ATK BH08A	ATK_CPT12	ATK_CPT14	ATK_BH07	ATK_WS02	ATK_WS04	ATK_WS01			
Depth to Top	1.00	0.36	0.40	0.45	0.50	0.30	0.20			
Depth To Bottom										
Date Sampled	14-Apr-23	17-Apr-23	14-Apr-23	18-Apr-23	19-Apr-23	19-Apr-23	19-Apr-23			
Sample Type	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	3	7	1AB	6A	1AB	1A	1A			
SVOC excluding PAH-16										
4-Bromophenyl phenyl ether$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
Hexachlorobenzene$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
Diethyl phthalate$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
Dimethyl phthalate$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
Dibenzofuran$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
Carbazole$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
Butylbenzyl phthalate$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate$_A$	-	-	-	-	<500	-	-	µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
4-Nitrophenol$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
3+4-Methylphenol$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
4-Chloro-3-methylphenol$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
2-Nitrophenol$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
2-Methylphenol$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
1,2,4-Trichlorobenzene$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
2-Chlorophenol$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
2,6-Dinitrotoluene$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
2,4-Dinitrotoluene$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
2,4-Dimethylphenol$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
2,4-Dichlorophenol$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
2,4,6-Trichlorophenol$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
2,4,5-Trichlorophenol$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
1,4-Dichlorobenzene$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
1,3-Dichlorobenzene$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
1,2-Dichlorobenzene$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
2-Chloronaphthalene$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
2-Methylnaphthalene$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
Phenol$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
Pentachlorophenol$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s

Lab Sample ID	23/03877/25	23/03877/26	23/03877/29	23/03877/35	23/03877/40	23/03877/43	23/03877/45	Units	Limit of Detection	Method ref
Client Sample No	103	1	102	102	2	101	101			
Client Sample ID	ATK BH08A	ATK_CPT12	ATK_CPT14	ATK_BH07	ATK_WS02	ATK_WS04	ATK_WS01			
Depth to Top	1.00	0.36	0.40	0.45	0.50	0.30	0.20			
Depth To Bottom										
Date Sampled	14-Apr-23	17-Apr-23	14-Apr-23	18-Apr-23	19-Apr-23	19-Apr-23	19-Apr-23			
Sample Type	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	3	7	1AB	6A	1AB	1A	1A			
n-Dioctylphthalate$_A$	-	-	-	-	<500	-	-	µg/kg	500	A-T-052s
n-Dibutylphthalate$_A$	-	-	-	-	<200	-	-	µg/kg	100	A-T-052s
Nitrobenzene$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
Isophorone$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
Hexachloroethane$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
Hexachlorobutadiene$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s
Perylene$_A$	-	-	-	-	<100	-	-	µg/kg	100	A-T-052s

Lab Sample ID	23/03877/25	23/03877/26	23/03877/29	23/03877/35	23/03877/40	23/03877/43	23/03877/45	Units	Limit of Detection	Method ref
Client Sample No	103	1	102	102	2	101	101			
Client Sample ID	ATK BH08A	ATK_CPT12	ATK_CPT14	ATK_BH07	ATK_WS02	ATK_WS04	ATK_WS01			
Depth to Top	1.00	0.36	0.40	0.45	0.50	0.30	0.20			
Depth To Bottom										
Date Sampled	14-Apr-23	17-Apr-23	14-Apr-23	18-Apr-23	19-Apr-23	19-Apr-23	19-Apr-23			
Sample Type	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	3	7	1AB	6A	1AB	1A	1A			
VOC										
Dichlorodifluoromethane$_A$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Chloromethane$_A$	-	-	-	-	<10	-	-	µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene)$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
Bromomethane$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
Chloroethane$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
Trichlorofluoromethane$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
1,1-Dichloroethene$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
Carbon Disulphide$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
Dichloromethane$_A$	-	-	-	-	8	-	-	µg/kg	5	A-T-006s
trans 1,2-Dichloroethene$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
1,1-Dichloroethane$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
cis 1,2-Dichloroethene$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
2,2-Dichloropropane$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
Bromochloromethane$_A^{\#}$	-	- ^{U}	-	-	<5	-	-	µg/kg	5	A-T-006s
Chloroform$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
1,1,1-Trichloroethane$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
1,1-Dichloropropene$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
Carbon Tetrachloride$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
1,2-Dichloroethane$_A^{\#}$	-	- ^{U}	-	-	<2	-	-	µg/kg	2	A-T-006s
Benzene$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
Trichloroethene$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
1,2-Dichloropropane$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
Dibromomethane$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
Bromodichloromethane$_A^{\#}$	-	- ^{U}	-	-	<10	-	-	µg/kg	10	A-T-006s
cis 1,3-Dichloropropene$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
Toluene$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
trans 1,3-Dichloropropene$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
1,1,2-Trichloroethane$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
1,3-Dichloropropane$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
Tetrachloroethene$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
Dibromochloromethane$_A^{\#}$	-	- ^{U}	-	-	<3	-	-	µg/kg	3	A-T-006s
1,2-Dibromoethane$_A^{\#}$	-	- ^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s

Lab Sample ID	23/03877/25	23/03877/26	23/03877/29	23/03877/35	23/03877/40	23/03877/43	23/03877/45	Units	Limit of Detection	Method ref
Client Sample No	103	1	102	102	2	101	101			
Client Sample ID	ATK BH08A	ATK_CPT12	ATK_CPT14	ATK_BH07	ATK_WS02	ATK_WS04	ATK_WS01			
Depth to Top	1.00	0.36	0.40	0.45	0.50	0.30	0.20			
Depth To Bottom										
Date Sampled	14-Apr-23	17-Apr-23	14-Apr-23	18-Apr-23	19-Apr-23	19-Apr-23	19-Apr-23			
Sample Type	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	3	7	1AB	6A	1AB	1A	1A			
Chlorobenzene$_A^\#$	-	-^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
1,1,1,2-Tetrachloroethane$_A$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
Ethylbenzene$_A^\#$	-	-^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
m & p Xylene$_A^\#$	-	-^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
o-Xylene$_A^\#$	-	-^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
Styrene$_A^\#$	-	-^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
Bromoform$_A^\#$	-	-^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
Isopropylbenzene$_A^\#$	-	-^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane$_A$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
1,2,3-Trichloropropane$_A^\#$	-	-^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
Bromobenzene$_A^\#$	-	-^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
n-Propylbenzene$_A^\#$	-	-^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
2-Chlorotoluene$_A^\#$	-	-^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^\#$	-	-^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
4-Chlorotoluene$_A^\#$	-	-^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
tert-Butylbenzene$_A^\#$	-	-^{U}	-	-	<2	-	-	µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene$_A^\#$	-	-^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
sec-Butylbenzene$_A^\#$	-	-^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^\#$	-	-^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
1,3-Dichlorobenzene$_A$	-	-	-	-	<1	-	-	µg/kg	1	A-T-006s
1,4-Dichlorobenzene$_A^\#$	-	-^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
n-Butylbenzene$_A^\#$	-	-^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
1,2-Dichlorobenzene$_A^\#$	-	-^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP)$_A$	-	-	-	-	<2	-	-	µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene$_A$	-	-	-	-	<3	-	-	µg/kg	3	A-T-006s
Hexachlorobutadiene$_A^\#$	-	-^{U}	-	-	<1	-	-	µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene$_A$	-	-	-	-	<3	-	-	µg/kg	3	A-T-006s

Lab Sample ID	23/03877/25	23/03877/26	23/03877/29	23/03877/35	23/03877/40	23/03877/43	23/03877/45	Units	Limit of Detection	Method ref
Client Sample No	103	1	102	102	2	101	101			
Client Sample ID	ATK BH08A	ATK_CPT12	ATK_CPT14	ATK_BH07	ATK_WS02	ATK_WS04	ATK_WS01			
Depth to Top	1.00	0.36	0.40	0.45	0.50	0.30	0.20			
Depth To Bottom										
Date Sampled	14-Apr-23	17-Apr-23	14-Apr-23	18-Apr-23	19-Apr-23	19-Apr-23	19-Apr-23			
Sample Type	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	3	7	1AB	6A	1AB	1A	1A			
TPH CWG (leachable) with Clean Up										
Ali >C5-C6 (leachable)$_A$	-	<4	<4	<2	<2	-	-	µg/l	1	A-T-022w
Ali >C6-C8 (leachable)$_A$	-	<6	<6	<2	<3	-	-	µg/l	1	A-T-022w
Ali >C8-C10 (leachable)$_A$	-	<10	<10	<10	<10	-	-	µg/l	10	A-T-055w
Ali >C10-C12 (leachable)$_A$	-	<10	<10	<10	<10	-	-	µg/l	10	A-T-055w
Ali >C12-C16 (leachable)$_A$	-	<10	<10	<10	<10	-	-	µg/l	10	A-T-055w
Ali >C16-C21 (leachable)$_A$	-	<10	<10	<10	<10	-	-	µg/l	10	A-T-055w
Ali >C21-C35 (leachable)$_A$	-	<20	<20	<20	<20	-	-	µg/l	20	A-T-055w
Total Aliphatics (leachable)$_A$	-	<20	<20	<20	<20	-	-	µg/l	10	Calc-As Recd
Aro >C5-C7 (leachable)$_A$	-	<1	<1	<1	<1	-	-	µg/l	1	A-T-022w
Aro >C7-C8 (leachable)$_A$	-	<1	<1	<1	<1	-	-	µg/l	1	A-T-022w
Aro >C8-C10 (leachable)$_A$	-	<10	<10	<10	<10	-	-	µg/l	10	A-T-055w
Aro >C10-C12 (leachable)$_A$	-	<10	<10	<10	<10	-	-	µg/l	10	A-T-055w
Aro >C12-C16 (leachable)$_A$	-	<10	<10	<10	<10	-	-	µg/l	10	A-T-055w
Aro >C16-C21 (leachable)$_A$	-	<10	<10	<10	<10	-	-	µg/l	10	A-T-055w
Total Aromatics (leachable)$_A$	-	<20	<20	<20	<20	-	-	µg/l	20	Calc-As Recd
TPH (Ali & Aro >C5-C35) (leachable)$_A$	-	<20	<20	<20	<20	-	-	µg/l	20	Calc-As Recd
BTEX - Benzene (leachable)$_A$	-	<1	<1	<1	<1	-	-	µg/l	1	A-T-022w
BTEX - Toluene (leachable)$_A$	-	<1	<1	<1	<1	-	-	µg/l	1	A-T-022w
BTEX - Ethyl Benzene (leachable)$_A$	-	<1	<1	<1	<1	-	-	µg/l	1	A-T-022w
BTEX - o Xylene (leachable)$_A$	-	<1	<1	<1	<1	-	-	µg/l	1	A-T-022w
BTEX - m & p Xylene (leachable)$_A$	-	<1	<1	<1	<1	-	-	µg/l	1	A-T-022w
MTBE (leachable)$_A$	-	<3	<3	<1	<1	-	-	µg/l	1	A-T-022w
Aro >C21-C35 (leachable)$_A$	-	<20	<20	<20	<20	-	-	µg/l	20	A-T-055w

Lab Sample ID	23/03877/25	23/03877/26	23/03877/29	23/03877/35	23/03877/40	23/03877/43	23/03877/45	Units	Limit of Detection	Method ref
Client Sample No	103	1	102	102	2	101	101			
Client Sample ID	ATK BH08A	ATK_CPT12	ATK_CPT14	ATK_BH07	ATK_WS02	ATK_WS04	ATK_WS01			
Depth to Top	1.00	0.36	0.40	0.45	0.50	0.30	0.20			
Depth To Bottom										
Date Sampled	14-Apr-23	17-Apr-23	14-Apr-23	18-Apr-23	19-Apr-23	19-Apr-23	19-Apr-23			
Sample Type	SOIL - ES	SOLID	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	3	7	1AB	6A	1AB	1A	1A			
TPH UKCWG with Clean Up										
Ali >C5-C6$_A^{\#}$	<0.01	<0.01^U	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8$_A^{\#}$	<0.01	<0.01^U	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<1	<1^U	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	<1	<1^U	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	<1	<1^U	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	2	<1^U	6	<1	2	4	3	mg/kg	1	A-T-055s
Ali >C35-C44$_A$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Total Aliphatics$_A$	2	<1	8	<1	2	4	3	mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	<0.01	<0.01^U	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01	<0.01^U	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	<1	<1	20	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C12-C16$_A$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	1	<1^U	<1	<1	<1	2	<1	mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	4	<1^U	<1	<1	5	5	<1	mg/kg	1	A-T-055s
Aro >C35-C44$_A$	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Total Aromatics$_A$	5	<1	21	<1	6	8	<1	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C44)$_A$	7	<1	29	<1	8	12	4	mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$	<0.01	<0.01^U	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01	<0.01^U	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01	<0.01^U	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01	<0.01^U	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01	<0.01^U	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	<0.01	<0.01^U	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s

Envirolab Job Number: 23/03615, 23/03782, 23/03870, 23/03877, 23/04044, 23/04109, 23/04412 and 23/04698 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/03877/50	23/03877/55	23/04044/2	23/04044/7	23/04044/8	23/04109/1	23/04412/1	Units	Limit of Detection	Method ref
Client Sample No	102	1		102	103	101				
Client Sample ID	ATK_CPT03	ATK_TP04	ATK_BH12	ATK-TP03	ATK-TP03	ATK_TP06	BH5359			
Depth to Top	0.70	0.30	0.50	0.50	1.00	0.25	6.00			
Depth To Bottom										
Date Sampled	18-Apr-23	19-Apr-23	21-Apr-23	21-Apr-23	21-Apr-23	20-Apr-23	09-May-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOLID	WATER - GW			
Sample Matrix Code	6A	4AB	6A	4AB	5AB	7	N/A			
% Stones >10mm$_A$	17.3	34.3	<0.1	12.6	14.4	<0.1	-	% w/w	0.1	A-T-044
pH$_D^{M\#}$	9.08	10.69	7.25	-	7.87	9.58^U	-	pH	0.01	A-T-031s
Ammonium / Ammoniacal Nitrogen as NH4$_D$	2.07	<0.26	0.53	-	0.74	1.38	-	mg/kg	0.26	A-T-033s
Sulphate (acid soluble)$_D^{M\#}$	230	460	500	-	450	<200^U	-	mg/kg	200	A-T-028s
Cyanide (free)$_A^{M\#}$	<1	<1	<1	-	<1	<1^U	-	mg/kg	1	A-T-042sFCN
Cyanide (total)$_A^{M\#}$	<1	<1	<1	-	<1	<1^U	-	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_A$	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	mg/kg	0.2	A-T-050s
Sulphide$_A$	<5	<5	<5	-	<5	<5	-	mg/kg	5	A-T-043-s
Organic Matter$_D^{M\#}$	0.9	0.6	1.1	-	7.4	0.7^U	-	% w/w	0.1	A-T-032s
Arsenic$_D^{M\#}$	4	3	6	-	9	<1^U	-	mg/kg	1	A-T-024s
Boron (water soluble)$_D^{M\#}$	<1.0	<1.0	<1.0	-	<1.0	<1.0^U	-	mg/kg	1	A-T-027s
Cadmium$_D^{M\#}$	0.6	0.5	1.0	-	0.7	0.7^U	-	mg/kg	0.5	A-T-024s
Copper$_D^{M\#}$	22	16	28	-	75	15^U	-	mg/kg	1	A-T-024s
Chromium$_D^{M\#}$	26	18	36	-	20	30^U	-	mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1	<1	-	<1	<1	-	mg/kg	1	A-T-040s
Lead$_D^{M\#}$	23	12	19	-	78	10^U	-	mg/kg	1	A-T-024s
Mercury$_D$	0.22	0.37	<0.17	-	0.54	<0.17	-	mg/kg	0.17	A-T-024s
Nickel$_D^{M\#}$	26	21	40	-	27	30^U	-	mg/kg	1	A-T-024s
Selenium$_D^{M\#}$	<1	<1	<1	-	<1	<1^U	-	mg/kg	1	A-T-024s
Vanadium$_D^{M\#}$	24	14	38	-	24	22^U	-	mg/kg	1	A-T-024s
Zinc$_D^{M\#}$	42	39	61	-	74	56^U	-	mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (2 no)$_A$	-	*	-	-	*	-	-			A-T-001
pH (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	7.72	pH	0.01	A-T-031w
pH (leachable)$_A^{\#}$	-	11.54	-	-	7.71	- ^{U}	-	pH	0.01	A-T-031w
Hardness Total$_A^{\#}$	-	-	-	-	-	- ^{U}	403	mg/l Ca CO3	2	A-T-049w
Ammoniacal nitrogen as N (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.05	mg/l	0.05	A-T-033w
Ammonia / Ammoniacal Nitrogen as NH3 (leachable)$_A$	-	1.563	-	-	0.068	-	-	mg/l	0.065	A-T-033w
Chloride (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	82	mg/l	1	A-T-026w
Sulphate (leachable)$_A^{\#}$	-	13.02	-	-	78.06	- ^{U}	-	mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A^{\#}$	-	<0.005	-	-	<0.005	- ^{U}	-	mg/l	0.005	A-T-042wFCN
Cyanide (free) (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.005	mg/l	0.005	A-T-042wFCN

Lab Sample ID	23/03877/50	23/03877/55	23/04044/2	23/04044/7	23/04044/8	23/04109/1	23/04412/1	Units	Limit of Detection	Method ref
Client Sample No	102	1		102	103	101				
Client Sample ID	ATK_CPT03	ATK_TP04	ATK_BH12	ATK-TP03	ATK-TP03	ATK_TP06	BH5359			
Depth to Top	0.70	0.30	0.50	0.50	1.00	0.25	6.00			
Depth To Bottom										
Date Sampled	18-Apr-23	19-Apr-23	21-Apr-23	21-Apr-23	21-Apr-23	20-Apr-23	09-May-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOLID	WATER - GW			
Sample Matrix Code	6A	4AB	6A	4AB	5AB	7	N/A			
Cyanide (total) (leachable)$_A^{\#}$	-	<0.005	-	-	0.005	- ^{U}	-	mg/l	0.005	A-T-042wTCN
Cyanide (total) (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.005	mg/l	0.005	A-T-042wTCN
Cyanide (complex)$^{\#}$	-	-	-	-	-	- ^{U}	<0.005	mg/l	0.005	Calc
Thiocyanate (w)$_A$	-	-	-	-	-	-	0.3	mg/l	0.1	A-T-041w
Phenols - Total by HPLC (w)$_A$	-	-	-	-	-	-	<0.01	mg/l	0.01	A-T-050w
Phenols (total by HPLC) (leachable)$_A$	-	<0.01	-	-	<0.01	-	-	mg/l	0.01	A-T-050w
DOC - Dissolved Organic Carbon (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<2.0	mg/l	2	A-T-032w
Antimony (dissolved)$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-025w
Arsenic (dissolved)$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-025w
Arsenic (leachable)$_A$	-	2	-	-	10	-	-	µg/l	1	A-T-025w
Boron (leachable)$_A$	-	11	-	-	97	-	-	µg/l	10	A-T-025w
Beryllium (dissolved)$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-025w
Cadmium (dissolved)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.2	µg/l	0.2	A-T-025w
Cadmium (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-025w
Calcium (dissolved)$_A^{\#}$	-	-	-	-	-	- ^{U}	87	mg/l	1	A-T-049w
Copper (dissolved)$_A$	-	-	-	-	-	-	<4	µg/l	4	A-T-025w
Copper (leachable)$_A$	-	<4	-	-	<4	-	-	µg/l	4	A-T-025w
Chromium (dissolved)$_A^{\#}$	-	-	-	-	-	- ^{U}	8	µg/l	1	A-T-025w
Chromium (leachable)$_A$	-	39	-	-	10	-	-	µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	-	<0.05	-	-	<0.05	-	-	mg/l	0.05	A-T-040w
Lead (dissolved)$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-025w
Lead (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-025w
Manganese (dissolved)$_A^{\#}$	-	-	-	-	-	- ^{U}	622	µg/l	1	A-T-025w
Mercury (dissolved)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.1	µg/l	0.1	A-T-025w
Mercury (leachable)$_A$	-	<0.1	-	-	<0.1	-	-	µg/l	0.1	A-T-025w
Nickel (dissolved)$_A^{\#}$	-	-	-	-	-	- ^{U}	2	µg/l	2	A-T-025w
Nickel (leachable)$_A$	-	<2	-	-	<2	-	-	µg/l	2	A-T-025w
Selenium (dissolved)$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-025w
Selenium (leachable)$_A$	-	1	-	-	1	-	-	µg/l	1	A-T-025w
Vanadium (leachable)$_A$	-	3	-	-	5	-	-	µg/l	1	A-T-025w
Vanadium (dissolved)$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-025w
Zinc (dissolved)$_A^{\#}$	-	-	-	-	-	- ^{U}	5	µg/l	2	A-T-025w
Zinc (leachable)$_A$	-	<2	-	-	<2	-	-	µg/l	2	A-T-025w

Envirolab Job Number: 23/03615, 23/03782, 23/03870, 23/03877, 23/04044, 23/04109, 23/04412 and 23/04698 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/03877/50	23/03877/55	23/04044/2	23/04044/7	23/04044/8	23/04109/1	23/04412/1	Units	Limit of Detection	Method ref
Client Sample No	102	1		102	103	101				
Client Sample ID	ATK_CPT03	ATK_TP04	ATK_BH12	ATK-TP03	ATK-TP03	ATK_TP06	BH5359			
Depth to Top	0.70	0.30	0.50	0.50	1.00	0.25	6.00			
Depth To Bottom										
Date Sampled	18-Apr-23	19-Apr-23	21-Apr-23	21-Apr-23	21-Apr-23	20-Apr-23	09-May-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOLID	WATER - GW			
Sample Matrix Code	6A	4AB	6A	4AB	5AB	7	N/A			
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD	-	NAD	NAD^{U}	-			A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A	-	N/A	N/A	-			A-T-045

Lab Sample ID	23/03877/50	23/03877/55	23/04044/2	23/04044/7	23/04044/8	23/04109/1	23/04412/1	Units	Limit of Detection	Method ref
Client Sample No	102	1		102	103	101				
Client Sample ID	ATK_CPT03	ATK_TP04	ATK_BH12	ATK-TP03	ATK-TP03	ATK_TP06	BH5359			
Depth to Top	0.70	0.30	0.50	0.50	1.00	0.25	6.00			
Depth To Bottom										
Date Sampled	18-Apr-23	19-Apr-23	21-Apr-23	21-Apr-23	21-Apr-23	20-Apr-23	09-May-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOLID	WATER - GW			
Sample Matrix Code	6A	4AB	6A	4AB	5AB	7	N/A			
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	0.01	<0.01	-	<0.01	<0.01^U	-	mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01^U	-	mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	0.03	<0.02	-	<0.02	<0.02^U	-	mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	0.08	<0.04	-	<0.04	<0.04^U	-	mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	0.08	<0.04	-	<0.04	<0.04^U	-	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	0.11	<0.05	-	<0.05	<0.05^U	-	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	<0.05	<0.05	-	<0.05	<0.05^U	-	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	<0.07	<0.07	-	<0.07	<0.07^U	-	mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06	0.10	<0.06	-	<0.06	<0.06^U	-	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04	-	<0.04	<0.04^U	-	mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	0.17	<0.08	-	<0.08	<0.08^U	-	mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	0.01	<0.01	-	<0.01	<0.01^U	-	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	0.05	<0.03	-	<0.03	<0.03^U	-	mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	<0.03	<0.03	-	<0.03	<0.03^U	-	mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	0.13	<0.03	-	<0.03	0.04^U	-	mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	0.15	<0.07	-	<0.07	<0.07^U	-	mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08	0.92	<0.08	-	<0.08	<0.08^U	-	mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/03615, 23/03782, 23/03870, 23/03877, 23/04044, 23/04109, 23/04412 and 23/04698 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/03877/50	23/03877/55	23/04044/2	23/04044/7	23/04044/8	23/04109/1	23/04412/1	Units	Limit of Detection	Method ref
Client Sample No	102	1		102	103	101				
Client Sample ID	ATK_CPT03	ATK_TP04	ATK_BH12	ATK-TP03	ATK-TP03	ATK_TP06	BH5359			
Depth to Top	0.70	0.30	0.50	0.50	1.00	0.25	6.00			
Depth To Bottom										
Date Sampled	18-Apr-23	19-Apr-23	21-Apr-23	21-Apr-23	21-Apr-23	20-Apr-23	09-May-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOLID	WATER - GW			
Sample Matrix Code	6A	4AB	6A	4AB	5AB	7	N/A			
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	-	0.05	-	-	0.06	-	-	µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	-	<0.02	-	-	<0.02	-	-	µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	-	0.05	-	-	0.06	-	-	µg/l	0.02	A-T-019w

Envirolab Job Number: 23/03615, 23/03782, 23/03870, 23/03877, 23/04044, 23/04109, 23/04412 and 23/04698 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/03877/50	23/03877/55	23/04044/2	23/04044/7	23/04044/8	23/04109/1	23/04412/1	Units	Limit of Detection	Method ref
Client Sample No	102	1		102	103	101				
Client Sample ID	ATK_CPT03	ATK_TP04	ATK_BH12	ATK-TP03	ATK-TP03	ATK_TP06	BH5359			
Depth to Top	0.70	0.30	0.50	0.50	1.00	0.25	6.00			
Depth To Bottom										
Date Sampled	18-Apr-23	19-Apr-23	21-Apr-23	21-Apr-23	21-Apr-23	20-Apr-23	09-May-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOLID	WATER - GW			
Sample Matrix Code	6A	4AB	6A	4AB	5AB	7	N/A			
PAH 16MS (w)										
Acenaphthene (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.01	µg/l	0.01	A-T-019w
Acenaphthylene (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.01	µg/l	0.01	A-T-019w
Anthracene (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.01	µg/l	0.01	A-T-019w
Benzo(a)anthracene (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.01	µg/l	0.01	A-T-019w
Benzo(a)pyrene (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.01	µg/l	0.01	A-T-019w
Benzo(b)fluoranthene (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.01	µg/l	0.01	A-T-019w
Benzo(ghi)perylene (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.01	µg/l	0.01	A-T-019w
Benzo(k)fluoranthene (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.01	µg/l	0.01	A-T-019w
Chrysene (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.01	µg/l	0.01	A-T-019w
Dibenzo(ah)anthracene (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.01	µg/l	0.01	A-T-019w
Fluoranthene (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.01	µg/l	0.01	A-T-019w
Fluorene (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.01	µg/l	0.01	A-T-019w
Indeno(123-cd)pyrene (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.01	µg/l	0.01	A-T-019w
Naphthalene (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.01	µg/l	0.01	A-T-019w
Phenanthrene (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.01	µg/l	0.01	A-T-019w
Pyrene (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.01	µg/l	0.01	A-T-019w
Total PAH 16MS (w)$_A^{\#}$	-	-	-	-	-	- ^{U}	<0.01	µg/l	0.01	A-T-019w

Lab Sample ID	23/03877/50	23/03877/55	23/04044/2	23/04044/7	23/04044/8	23/04109/1	23/04412/1	Units	Limit of Detection	Method ref
Client Sample No	102	1		102	103	101				
Client Sample ID	ATK_CPT03	ATK_TP04	ATK_BH12	ATK-TP03	ATK-TP03	ATK_TP06	BH5359			
Depth to Top	0.70	0.30	0.50	0.50	1.00	0.25	6.00			
Depth To Bottom										
Date Sampled	18-Apr-23	19-Apr-23	21-Apr-23	21-Apr-23	21-Apr-23	20-Apr-23	09-May-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOLID	WATER - GW			
Sample Matrix Code	6A	4AB	6A	4AB	5AB	7	N/A			
SVOC excluding PAH-16										
4-Bromophenyl phenyl ether$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
Hexachlorobenzene$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
Diethyl phthalate$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
Dimethyl phthalate$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
Dibenzofuran$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
Carbazole$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
Butylbenzyl phthalate$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate$_A$	-	<500	-	-	<500	-	-	µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
4-Nitrophenol$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
3+4-Methylphenol$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
4-Chloro-3-methylphenol$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
2-Nitrophenol$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
2-Methylphenol$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
1,2,4-Trichlorobenzene$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
2-Chlorophenol$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
2,6-Dinitrotoluene$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
2,4-Dinitrotoluene$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
2,4-Dimethylphenol$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
2,4-Dichlorophenol$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
2,4,6-Trichlorophenol$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
2,4,5-Trichlorophenol$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
1,4-Dichlorobenzene$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
1,3-Dichlorobenzene$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
1,2-Dichlorobenzene$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
2-Chloronaphthalene$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
2-Methylnaphthalene$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
Phenol$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
Pentachlorophenol$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s

Lab Sample ID	23/03877/50	23/03877/55	23/04044/2	23/04044/7	23/04044/8	23/04109/1	23/04412/1	Units	Limit of Detection	Method ref
Client Sample No	102	1		102	103	101				
Client Sample ID	ATK_CPT03	ATK_TP04	ATK_BH12	ATK-TP03	ATK-TP03	ATK_TP06	BH5359			
Depth to Top	0.70	0.30	0.50	0.50	1.00	0.25	6.00			
Depth To Bottom										
Date Sampled	18-Apr-23	19-Apr-23	21-Apr-23	21-Apr-23	21-Apr-23	20-Apr-23	09-May-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOLID	WATER - GW			
Sample Matrix Code	6A	4AB	6A	4AB	5AB	7	N/A			
n-Dioctylphthalate$_A$	-	<500	-	-	<500	-	-	µg/kg	500	A-T-052s
n-Dibutylphthalate$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
Nitrobenzene$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
Isophorone$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
Hexachloroethane$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
Hexachlorobutadiene$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s
Perylene$_A$	-	<100	-	-	<100	-	-	µg/kg	100	A-T-052s

Lab Sample ID	23/03877/50	23/03877/55	23/04044/2	23/04044/7	23/04044/8	23/04109/1	23/04412/1	Units	Limit of Detection	Method ref
Client Sample No	102	1		102	103	101				
Client Sample ID	ATK_CPT03	ATK_TP04	ATK_BH12	ATK-TP03	ATK-TP03	ATK_TP06	BH5359			
Depth to Top	0.70	0.30	0.50	0.50	1.00	0.25	6.00			
Depth To Bottom										
Date Sampled	18-Apr-23	19-Apr-23	21-Apr-23	21-Apr-23	21-Apr-23	20-Apr-23	09-May-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOLID	WATER - GW			
Sample Matrix Code	6A	4AB	6A	4AB	5AB	7	N/A			
VOC										
Dichlorodifluoromethane$_A$	-	<1	-	-	<1	-	-	µg/kg	1	A-T-006s
Chloromethane$_A$	-	<10	-	-	<10	-	-	µg/kg	10	A-T-006s
Vinyl Chloride (Chloroethene)$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
Bromomethane$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
Chloroethane$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
Trichlorofluoromethane$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
1,1-Dichloroethene$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
Carbon Disulphide$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
Dichloromethane$_A$	-	<5	-	-	<5	-	-	µg/kg	5	A-T-006s
trans 1,2-Dichloroethene$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
1,1-Dichloroethane$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
cis 1,2-Dichloroethene$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
2,2-Dichloropropane$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
Bromochloromethane$_A^\#$	-	<5	-	-	<5	- [U]	-	µg/kg	5	A-T-006s
Chloroform$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
1,1,1-Trichloroethane$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
1,1-Dichloropropene$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
Carbon Tetrachloride$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
1,2-Dichloroethane$_A^\#$	-	<2	-	-	<2	- [U]	-	µg/kg	2	A-T-006s
Benzene$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
Trichloroethene$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
1,2-Dichloropropane$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
Dibromomethane$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
Bromodichloromethane$_A^\#$	-	<10	-	-	<10	- [U]	-	µg/kg	10	A-T-006s
cis 1,3-Dichloropropene$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
Toluene$_A^\#$	-	<1	-	-	1	- [U]	-	µg/kg	1	A-T-006s
trans 1,3-Dichloropropene$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
1,1,2-Trichloroethane$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
1,3-Dichloropropane$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
Tetrachloroethene$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s
Dibromochloromethane$_A^\#$	-	<3	-	-	<3	- [U]	-	µg/kg	3	A-T-006s
1,2-Dibromoethane$_A^\#$	-	<1	-	-	<1	- [U]	-	µg/kg	1	A-T-006s

Lab Sample ID	23/03877/50	23/03877/55	23/04044/2	23/04044/7	23/04044/8	23/04109/1	23/04412/1	Units	Limit of Detection	Method ref
Client Sample No	102	1		102	103	101				
Client Sample ID	ATK_CPT03	ATK_TP04	ATK_BH12	ATK-TP03	ATK-TP03	ATK_TP06	BH5359			
Depth to Top	0.70	0.30	0.50	0.50	1.00	0.25	6.00			
Depth To Bottom										
Date Sampled	18-Apr-23	19-Apr-23	21-Apr-23	21-Apr-23	21-Apr-23	20-Apr-23	09-May-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOLID	WATER - GW			
Sample Matrix Code	6A	4AB	6A	4AB	5AB	7	N/A			
Chlorobenzene$_A^\#$	-	<1	-	-	<1	- ^{U}	-	µg/kg	1	A-T-006s
1,1,1,2-Tetrachloroethane$_A$	-	<1	-	-	<1	-	-	µg/kg	1	A-T-006s
Ethylbenzene$_A^\#$	-	<1	-	-	<1	- ^{U}	-	µg/kg	1	A-T-006s
m & p Xylene$_A^\#$	-	<1	-	-	<1	- ^{U}	-	µg/kg	1	A-T-006s
o-Xylene$_A^\#$	-	<1	-	-	<1	- ^{U}	-	µg/kg	1	A-T-006s
Styrene$_A^\#$	-	<1	-	-	<1	- ^{U}	-	µg/kg	1	A-T-006s
Bromoform$_A^\#$	-	<1	-	-	<1	- ^{U}	-	µg/kg	1	A-T-006s
Isopropylbenzene$_A^\#$	-	<1	-	-	<1	- ^{U}	-	µg/kg	1	A-T-006s
1,1,2,2-Tetrachloroethane$_A$	-	<1	-	-	<1	-	-	µg/kg	1	A-T-006s
1,2,3-Trichloropropane$_A^\#$	-	<1	-	-	<1	- ^{U}	-	µg/kg	1	A-T-006s
Bromobenzene$_A^\#$	-	<1	-	-	<1	- ^{U}	-	µg/kg	1	A-T-006s
n-Propylbenzene$_A^\#$	-	<1	-	-	<1	- ^{U}	-	µg/kg	1	A-T-006s
2-Chlorotoluene$_A^\#$	-	<1	-	-	<1	- ^{U}	-	µg/kg	1	A-T-006s
1,3,5-Trimethylbenzene$_A^\#$	-	<1	-	-	<1	- ^{U}	-	µg/kg	1	A-T-006s
4-Chlorotoluene$_A^\#$	-	<1	-	-	<1	- ^{U}	-	µg/kg	1	A-T-006s
tert-Butylbenzene$_A^\#$	-	<2	-	-	<2	- ^{U}	-	µg/kg	2	A-T-006s
1,2,4-Trimethylbenzene$_A^\#$	-	<1	-	-	<1	- ^{U}	-	µg/kg	1	A-T-006s
sec-Butylbenzene$_A^\#$	-	<1	-	-	<1	- ^{U}	-	µg/kg	1	A-T-006s
4-Isopropyltoluene$_A^\#$	-	<1	-	-	<1	- ^{U}	-	µg/kg	1	A-T-006s
1,3-Dichlorobenzene$_A$	-	<1	-	-	<1	-	-	µg/kg	1	A-T-006s
1,4-Dichlorobenzene$_A^\#$	-	<1	-	-	<1	- ^{U}	-	µg/kg	1	A-T-006s
n-Butylbenzene$_A^\#$	-	<1	-	-	<1	- ^{U}	-	µg/kg	1	A-T-006s
1,2-Dichlorobenzene$_A^\#$	-	<1	-	-	<1	- ^{U}	-	µg/kg	1	A-T-006s
1,2-Dibromo-3-chloropropane (DCBP)$_A$	-	<2	-	-	<2	-	-	µg/kg	2	A-T-006s
1,2,4-Trichlorobenzene$_A$	-	<3	-	-	<3	-	-	µg/kg	3	A-T-006s
Hexachlorobutadiene$_A^\#$	-	<1	-	-	<1	- ^{U}	-	µg/kg	1	A-T-006s
1,2,3-Trichlorobenzene$_A$	-	<3	-	-	<3	-	-	µg/kg	3	A-T-006s

Lab Sample ID	23/03877/50	23/03877/55	23/04044/2	23/04044/7	23/04044/8	23/04109/1	23/04412/1	Units	Limit of Detection	Method ref
Client Sample No	102	1		102	103	101				
Client Sample ID	ATK_CPT03	ATK_TP04	ATK_BH12	ATK-TP03	ATK-TP03	ATK_TP06	BH5359			
Depth to Top	0.70	0.30	0.50	0.50	1.00	0.25	6.00			
Depth To Bottom										
Date Sampled	18-Apr-23	19-Apr-23	21-Apr-23	21-Apr-23	21-Apr-23	20-Apr-23	09-May-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOLID	WATER - GW			
Sample Matrix Code	6A	4AB	6A	4AB	5AB	7	N/A			
SVOC (excluding PAH-16) (w)										
2,4,5-Trichlorophenol$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
2,4,6-Trichlorophenol$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
2,4-Dichlorophenol$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
2,4-Dimethylphenol$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
2,4-Dinitrotoluene$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
2,6-Dinitrotoluene$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
2-Chloronaphthalene$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
2-Chlorophenol$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
2-Methylnaphthalene$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
2-Methylphenol$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
2-Nitrophenol$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
4-Bromophenyl phenyl ether$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
4-Chloro-3-methylphenol$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
Bis(2-chloroisopropyl)ether$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
3+4-Methylphenol$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
4-Nitrophenol$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
Bis(2-chloroethyl)ether$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
Bis(2-chloroethoxy)methane$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
Bis(2-ethylhexyl)phthalate$_A$	-	-	-	-	-	-	<10	µg/l	10	A-T-052w
Butylbenzyl phthalate$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
Carbazole$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
Dibenzofuran$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
n-Dibutylphthalate$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
n-Dioctylphthalate$_A$	-	-	-	-	-	-	<10	µg/l	10	A-T-052w
n-Nitroso-n-dipropylamine$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
Diethyl phthalate$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
Dimethyl phthalate$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
Hexachlorobenzene SVOC$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
Pentachlorophenol SVOC$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
Phenol$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
Hexachloroethane$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
Nitrobenzene$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w

Lab Sample ID	23/03877/50	23/03877/55	23/04044/2	23/04044/7	23/04044/8	23/04109/1	23/04412/1	Units	Limit of Detection	Method ref
Client Sample No	102	1		102	103	101				
Client Sample ID	ATK_CPT03	ATK_TP04	ATK_BH12	ATK-TP03	ATK-TP03	ATK_TP06	BH5359			
Depth to Top	0.70	0.30	0.50	0.50	1.00	0.25	6.00			
Depth To Bottom										
Date Sampled	18-Apr-23	19-Apr-23	21-Apr-23	21-Apr-23	21-Apr-23	20-Apr-23	09-May-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOLID	WATER - GW			
Sample Matrix Code	6A	4AB	6A	4AB	5AB	7	N/A			
Isophorone$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w
Perylene$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-052w

Lab Sample ID	23/03877/50	23/03877/55	23/04044/2	23/04044/7	23/04044/8	23/04109/1	23/04412/1	Units	Limit of Detection	Method ref
Client Sample No	102	1		102	103	101				
Client Sample ID	ATK_CPT03	ATK_TP04	ATK_BH12	ATK-TP03	ATK-TP03	ATK_TP06	BH5359			
Depth to Top	0.70	0.30	0.50	0.50	1.00	0.25	6.00			
Depth To Bottom										
Date Sampled	18-Apr-23	19-Apr-23	21-Apr-23	21-Apr-23	21-Apr-23	20-Apr-23	09-May-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOLID	WATER - GW			
Sample Matrix Code	6A	4AB	6A	4AB	5AB	7	N/A			
VOC (w)										
Dichlorodifluoromethane$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-006w
Chloromethane$_A$	-	-	-	-	-	-	<10	µg/l	10	A-T-006w
Vinyl Chloride$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
Bromomethane$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
Chloroethane$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
Trichlorofluoromethane$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
trans 1,2-Dichloroethene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
Dichloromethane$_A$	-	-	-	-	-	-	<5	µg/l	5	A-T-006w
Carbon Disulphide$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
1,1-Dichloroethene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
1,1-Dichloroethane$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
cis 1,2-Dichloroethene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
Bromochloromethane$_A^{\#}$	-	-	-	-	-	- ^{U}	<5	µg/l	5	A-T-006w
Chloroform$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
2,2-Dichloropropane$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
1,2-Dichloroethane$_A^{\#}$	-	-	-	-	-	- ^{U}	<2	µg/l	2	A-T-006w
1,1,1-Trichloroethane$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
1,1-Dichloropropene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
Benzene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
Carbon Tetrachloride$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
Dibromomethane$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
1,2-Dichloropropane$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
Bromodichloromethane$_A^{\#}$	-	-	-	-	-	- ^{U}	<10	µg/l	10	A-T-006w
Trichloroethene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
cis 1,3-Dichloropropene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
trans 1,3-Dichloropropene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
1,1,2-Trichloroethane$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
Toluene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
1,3-Dichloropropane$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
Dibromochloromethane$_A^{\#}$	-	-	-	-	-	- ^{U}	<3	µg/l	3	A-T-006w
1,2-Dibromoethane$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
Tetrachloroethene$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-006w

Lab Sample ID	23/03877/50	23/03877/55	23/04044/2	23/04044/7	23/04044/8	23/04109/1	23/04412/1	Units	Limit of Detection	Method ref
Client Sample No	102	1		102	103	101				
Client Sample ID	ATK_CPT03	ATK_TP04	ATK_BH12	ATK-TP03	ATK-TP03	ATK_TP06	BH5359			
Depth to Top	0.70	0.30	0.50	0.50	1.00	0.25	6.00			
Depth To Bottom										
Date Sampled	18-Apr-23	19-Apr-23	21-Apr-23	21-Apr-23	21-Apr-23	20-Apr-23	09-May-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOLID	WATER - GW			
Sample Matrix Code	6A	4AB	6A	4AB	5AB	7	N/A			
1,1,1,2-Tetrachloroethane$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-006w
Chlorobenzene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
Ethylbenzene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
m & p Xylene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
Bromoform$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
Styrene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
1,1,2,2-Tetrachloroethane$_A$	-	-	-	-	-	-	<1	µg/l	1	A-T-006w
o-Xylene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
1,2,3-Trichloropropane$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
Isopropylbenzene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
Bromobenzene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
2-Chlorotoluene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
n-propylbenzene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
4-Chlorotoluene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
1,2,4-Trimethylbenzene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
4-Isopropyltoluene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
1,3,5-Trimethylbenzene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
1,2-Dichlorobenzene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
1,4-Dichlorobenzene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
sec-Butylbenzene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
tert-Butylbenzene$_A^{\#}$	-	-	-	-	-	- ^{U}	<2	µg/l	2	A-T-006w
1,3-Dichlorobenzene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
n-butylbenzene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w
1,2-Dibromo-3-chloropropane$_A^{\#}$	-	-	-	-	-	- ^{U}	<2	µg/l	2	A-T-006w
1,2,4-Trichlorobenzene$_A^{\#}$	-	-	-	-	-	- ^{U}	<3	µg/l	3	A-T-006w
1,2,3-Trichlorobenzene$_A^{\#}$	-	-	-	-	-	- ^{U}	<3	µg/l	3	A-T-006w
Hexachlorobutadiene$_A^{\#}$	-	-	-	-	-	- ^{U}	<1	µg/l	1	A-T-006w

Lab Sample ID	23/03877/50	23/03877/55	23/04044/2	23/04044/7	23/04044/8	23/04109/1	23/04412/1	Units	Limit of Detection	Method ref
Client Sample No	102	1		102	103	101				
Client Sample ID	ATK_CPT03	ATK_TP04	ATK_BH12	ATK-TP03	ATK-TP03	ATK_TP06	BH5359			
Depth to Top	0.70	0.30	0.50	0.50	1.00	0.25	6.00			
Depth To Bottom										
Date Sampled	18-Apr-23	19-Apr-23	21-Apr-23	21-Apr-23	21-Apr-23	20-Apr-23	09-May-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOLID	WATER - GW			
Sample Matrix Code	6A	4AB	6A	4AB	5AB	7	N/A			
TPH CWG (leachable) with Clean Up										
Ali >C5-C6 (leachable)$_A$	-	<2	-	-	<2	-	-	µg/l	1	A-T-022w
Ali >C6-C8 (leachable)$_A$	-	<2	-	-	<1	-	-	µg/l	1	A-T-022w
Ali >C8-C10 (leachable)$_A$	-	<10	-	-	<10	-	-	µg/l	10	A-T-055w
Ali >C10-C12 (leachable)$_A$	-	<10	-	-	<10	-	-	µg/l	10	A-T-055w
Ali >C12-C16 (leachable)$_A$	-	<10	-	-	<10	-	-	µg/l	10	A-T-055w
Ali >C16-C21 (leachable)$_A$	-	<10	-	-	<10	-	-	µg/l	10	A-T-055w
Ali >C21-C35 (leachable)$_A$	-	<20	-	-	<20	-	-	µg/l	20	A-T-055w
Total Aliphatics (leachable)$_A$	-	<20	-	-	<20	-	-	µg/l	10	Calc-As Recd
Aro >C5-C7 (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-022w
Aro >C7-C8 (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-022w
Aro >C8-C10 (leachable)$_A$	-	<10	-	-	<10	-	-	µg/l	10	A-T-055w
Aro >C10-C12 (leachable)$_A$	-	<10	-	-	<10	-	-	µg/l	10	A-T-055w
Aro >C12-C16 (leachable)$_A$	-	<10	-	-	<10	-	-	µg/l	10	A-T-055w
Aro >C16-C21 (leachable)$_A$	-	<10	-	-	<10	-	-	µg/l	10	A-T-055w
Total Aromatics (leachable)$_A$	-	<20	-	-	<20	-	-	µg/l	20	Calc-As Recd
TPH (Ali & Aro >C5-C35) (leachable)$_A$	-	<20	-	-	<20	-	-	µg/l	20	Calc-As Recd
BTEX - Benzene (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-022w
BTEX - Toluene (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-022w
BTEX - Ethyl Benzene (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-022w
BTEX - o Xylene (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-022w
BTEX - m & p Xylene (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-022w
MTBE (leachable)$_A$	-	<1	-	-	<1	-	-	µg/l	1	A-T-022w
Aro >C21-C35 (leachable)$_A$	-	<20	-	-	<20	-	-	µg/l	20	A-T-055w

Envirolab Job Number: 23/03615, 23/03782, 23/03870, 23/03877, 23/04044, 23/04109, 23/04412 and 23/04698 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/03877/50	23/03877/55	23/04044/2	23/04044/7	23/04044/8	23/04109/1	23/04412/1	Units	Limit of Detection	Method ref
Client Sample No	102	1		102	103	101				
Client Sample ID	ATK_CPT03	ATK_TP04	ATK_BH12	ATK-TP03	ATK-TP03	ATK_TP06	BH5359			
Depth to Top	0.70	0.30	0.50	0.50	1.00	0.25	6.00			
Depth To Bottom										
Date Sampled	18-Apr-23	19-Apr-23	21-Apr-23	21-Apr-23	21-Apr-23	20-Apr-23	09-May-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOLID	WATER - GW			
Sample Matrix Code	6A	4AB	6A	4AB	5AB	7	N/A			
TPH UKCWG (w) with Clean Up										
Ali >C5-C6 $(w)_A^{\#}$	-	-	-	-	-	- U	<1	µg/l	1	A-T-022w
Ali >C6-C8 $(w)_A^{\#}$	-	-	-	-	-	- U	<1	µg/l	1	A-T-022w
Ali >C8-C10 $(w)_A^{\#}$	-	-	-	-	-	- U	<5	µg/l	5	A-T-055w
Ali >C10-C12 $(w)_A^{\#}$	-	-	-	-	-	- U	<5	µg/l	5	A-T-055w
Ali >C12-C16 $(w)_A^{\#}$	-	-	-	-	-	- U	<5	µg/l	5	A-T-055w
Ali >C16-C21 $(w)_A^{\#}$	-	-	-	-	-	- U	<5	µg/l	5	A-T-055w
Ali >C21-C35 $(w)_A^{\#}$	-	-	-	-	-	- U	<5	µg/l	5	A-T-055w
Ali >C35-C44 $(w)_A$	-	-	-	-	-	-	<5	µg/l	5	A-T-055w
Total Aliphatics $(w)_A$	-	-	-	-	-	-	<5	µg/l	5	Calc-As Recd
Aro >C5-C7 $(w)_A^{\#}$	-	-	-	-	-	- U	<1	µg/l	1	A-T-022w
Aro >C7-C8 $(w)_A^{\#}$	-	-	-	-	-	- U	<1	µg/l	1	A-T-022w
Aro >C8-C10 $(w)_A$	-	-	-	-	-	-	<5	µg/l	5	A-T-055w
Aro >C10-C12 $(w)_A^{\#}$	-	-	-	-	-	- U	<5	µg/l	5	A-T-055w
Aro >C12-C16 $(w)_A^{\#}$	-	-	-	-	-	- U	<5	µg/l	5	A-T-055w
Aro >C16-C21 $(w)_A^{\#}$	-	-	-	-	-	- U	<5	µg/l	5	A-T-055w
Aro >C21-C35 $(w)_A$	-	-	-	-	-	-	<10	µg/l	10	A-T-055w
Aro >C35-C44 $(w)_A$	-	-	-	-	-	-	<5	µg/l	5	A-T-055w
Total Aromatics $(w)_A$	-	-	-	-	-	-	<10	µg/l	10	Calc-As Recd
TPH (Ali & Aro >C5-C44) $(w)_A$	-	-	-	-	-	-	<10	µg/l	10	Calc-As Recd
BTEX - Benzene $(w)_A^{\#}$	-	-	-	-	-	- U	<1	µg/l	1	A-T-022w
BTEX - Toluene $(w)_A^{\#}$	-	-	-	-	-	- U	<1	µg/l	1	A-T-022w
BTEX - Ethyl Benzene $(w)_A^{\#}$	-	-	-	-	-	- U	<1	µg/l	1	A-T-022w
BTEX - m & p Xylene $(w)_A^{\#}$	-	-	-	-	-	- U	<1	µg/l	1	A-T-022w
BTEX - o Xylene $(w)_A^{\#}$	-	-	-	-	-	- U	<1	µg/l	1	A-T-022w
MTBE $(w)_A^{\#}$	-	-	-	-	-	- U	<1	µg/l	1	A-T-022w

Lab Sample ID	23/03877/50	23/03877/55	23/04044/2	23/04044/7	23/04044/8	23/04109/1	23/04412/1	Units	Limit of Detection	Method ref
Client Sample No	102	1		102	103	101				
Client Sample ID	ATK_CPT03	ATK_TP04	ATK_BH12	ATK-TP03	ATK-TP03	ATK_TP06	BH5359			
Depth to Top	0.70	0.30	0.50	0.50	1.00	0.25	6.00			
Depth To Bottom										
Date Sampled	18-Apr-23	19-Apr-23	21-Apr-23	21-Apr-23	21-Apr-23	20-Apr-23	09-May-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOLID	WATER - GW			
Sample Matrix Code	6A	4AB	6A	4AB	5AB	7	N/A			
TPH UKCWG with Clean Up										
Ali >C5-C6$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01^U	-	mg/kg	0.01	A-T-022s
Ali >C6-C8$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01^U	-	mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1	2	<1	-	<1	<1	-	mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<1	<1	<1	-	<1	<1^U	-	mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	<1	1	<1	-	<1	<1^U	-	mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	<1	2	<1	-	<1	<1^U	-	mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	2	4	<1	-	2	6^U	-	mg/kg	1	A-T-055s
Ali >C35-C44$_A$	<1	<1	<1	-	<1	<1	-	mg/kg	1	A-T-055s
Total Aliphatics$_A$	3	10	<1	-	2	6	-	mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01^U	-	mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01^U	-	mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	<1	46	<1	-	<1	3	-	mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1	<1	<1	-	<1	<1	-	mg/kg	1	A-T-055s
Aro >C12-C16$_A$	2	2	<1	-	2	4	-	mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	2	4	<1	-	2	4^U	-	mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	4	5	<1	-	7	3^U	-	mg/kg	1	A-T-055s
Aro >C35-C44$_A$	<1	<1	<1	-	<1	<1	-	mg/kg	1	A-T-055s
Total Aromatics$_A$	7	57	<1	-	11	15	-	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C44)$_A$	10	67	<1	-	13	21	-	mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01^U	-	mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01^U	-	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01^U	-	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01^U	-	mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01^U	-	mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	<0.01	<0.01	<0.01	-	<0.01	<0.01^U	-	mg/kg	0.01	A-T-022s

Lab Sample ID	23/04698/1	23/04698/5	23/04698/6					Units	Limit of Detection	Method ref
Client Sample No	104	102	101							
Client Sample ID	ATK BH02a	ATK_CPT07	ATK_HDP01							
Depth to Top	1.20	0.60	0.40							
Depth To Bottom										
Date Sampled	02-May-23	02-May-23	28-Apr-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	6A	6A	6AE							
% Stones >10mm$_A$	<0.1	<0.1	3.3					% w/w	0.1	A-T-044
pH$_D$$^{M\#}$	8.56	8.24	8.10					pH	0.01	A-T-031s
Ammonium / Ammoniacal Nitrogen as NH4$_D$	35.1	<0.26	1.61					mg/kg	0.26	A-T-033s
Sulphate (acid soluble)$_D$$^{M\#}$	490	690	<200					mg/kg	200	A-T-028s
Cyanide (free)$_A$$^{M\#}$	<1	<1	<1					mg/kg	1	A-T-042sFCN
Cyanide (total)$_A$$^{M\#}$	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC$_A$	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Sulphide$_A$	<5	<5	<5					mg/kg	5	A-T-043-s
Organic Matter$_D$$^{M\#}$	3.0	1.5	2.0					% w/w	0.1	A-T-032s
Arsenic$_D$$^{M\#}$	6	3	4					mg/kg	1	A-T-024s
Boron (water soluble)$_D$$^{M\#}$	1.6	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium$_D$$^{M\#}$	0.5	0.7	0.7					mg/kg	0.5	A-T-024s
Copper$_D$$^{M\#}$	44	22	19					mg/kg	1	A-T-024s
Chromium$_D$$^{M\#}$	23	29	29					mg/kg	1	A-T-024s
Chromium (hexavalent)$_D$	<1	<1	<1					mg/kg	1	A-T-040s
Lead$_D$$^{M\#}$	39	10	13					mg/kg	1	A-T-024s
Mercury$_D$	<0.17	0.49	<0.17					mg/kg	0.17	A-T-024s
Nickel$_D$$^{M\#}$	23	34	41					mg/kg	1	A-T-024s
Selenium$_D$$^{M\#}$	<1	<1	<1					mg/kg	1	A-T-024s
Vanadium$_D$$^{M\#}$	27	30	28					mg/kg	1	A-T-024s
Zinc$_D$$^{M\#}$	45	56	51					mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-1 (2:1) (2 no)$_A$	*	-	-							A-T-001
pH (leachable)$_A$$^{\#}$	7.90	-	-					pH	0.01	A-T-031w
Ammonia / Ammoniacal Nitrogen as NH3 (leachable)$_A$	5.203	-	-					mg/l	0.065	A-T-033w
Sulphate (leachable)$_A$$^{\#}$	57.56	-	-					mg/l	1	A-T-026w
Cyanide (free) (leachable)$_A$$^{\#}$	<0.005	-	-					mg/l	0.005	A-T-042wFCN
Cyanide (total) (leachable)$_A$$^{\#}$	<0.005	-	-					mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable)$_A$	<0.01	-	-					mg/l	0.01	A-T-050w
Arsenic (leachable)$_A$	11	-	-					µg/l	1	A-T-025w
Boron (leachable)$_A$	302	-	-					µg/l	10	A-T-025w
Cadmium (leachable)$_A$	<1	-	-					µg/l	1	A-T-025w
Copper (leachable)$_A$	5	-	-					µg/l	4	A-T-025w

Lab Sample ID	23/04698/1	23/04698/5	23/04698/6					Units	Limit of Detection	Method ref
Client Sample No	104	102	101							
Client Sample ID	ATK BH02a	ATK_CPT07	ATK_HDP01							
Depth to Top	1.20	0.60	0.40							
Depth To Bottom										
Date Sampled	02-May-23	02-May-23	28-Apr-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	6A	6A	6AE							
Chromium (leachable)$_A$	<1	-	-					µg/l	1	A-T-025w
Chromium (hexavalent) (leachable)$_A$	<0.05	-	-					mg/l	0.05	A-T-040w
Lead (leachable)$_A$	5	-	-					µg/l	1	A-T-025w
Mercury (leachable)$_A$	<0.1	-	-					µg/l	0.1	A-T-025w
Nickel (leachable)$_A$	<2	-	-					µg/l	2	A-T-025w
Selenium (leachable)$_A$	<1	-	-					µg/l	1	A-T-025w
Vanadium (leachable)$_A$	4	-	-					µg/l	1	A-T-025w
Zinc (leachable)$_A$	4	-	-					µg/l	2	A-T-025w

Envirolab Job Number: 23/03615, 23/03782, 23/03870, 23/03877, 23/04044, 23/04109, 23/04412 and 23/04698 **Client Project Name: Ancoats, Manchester**

Client Project Ref: 765544

Lab Sample ID	23/04698/1	23/04698/5	23/04698/6					Units	Limit of Detection	Method ref
Client Sample No	104	102	101							
Client Sample ID	ATK BH02a	ATK_CPT07	ATK_HDP01							
Depth to Top	1.20	0.60	0.40							
Depth To Bottom										
Date Sampled	02-May-23	02-May-23	28-Apr-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	6A	6A	6AE							
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_{D}^{\#}$	NAD	NAD	NAD							A-T-045
Asbestos Matrix (visual)$_{D}$	-	-	-							A-T-045
Asbestos Matrix (microscope)$_{D}$	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_{D}$	N/A	N/A	N/A							A-T-045

Lab Sample ID	23/04698/1	23/04698/5	23/04698/6					Units	Limit of Detection	Method ref
Client Sample No	104	102	101							
Client Sample ID	ATK BH02a	ATK_CPT07	ATK_HDP01							
Depth to Top	1.20	0.60	0.40							
Depth To Bottom										
Date Sampled	02-May-23	02-May-23	28-Apr-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	6A	6A	6AE							
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene$_A^{M\#}$	<0.02	<0.02	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	<0.05	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Chrysene$_A^{M\#}$	<0.06	<0.06	<0.06					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	<0.08	<0.08					mg/kg	0.08	A-T-019s
Fluorene$_A^{M\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Naphthalene $_A^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	<0.03	<0.03					mg/kg	0.03	A-T-019s
Pyrene$_A^{M\#}$	<0.07	<0.07	<0.07					mg/kg	0.07	A-T-019s
Total PAH-16MS$_A^{M\#}$	<0.08	<0.08	<0.08					mg/kg	0.01	A-T-019s

Lab Sample ID	23/04698/1	23/04698/5	23/04698/6					Units	Limit of Detection	Method ref
Client Sample No	104	102	101							
Client Sample ID	ATK BH02a	ATK_CPT07	ATK_HDP01							
Depth to Top	1.20	0.60	0.40							
Depth To Bottom										
Date Sampled	02-May-23	02-May-23	28-Apr-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	6A	6A	6AE							
PAH 16MS (leachable)										
Acenaphthene (leachable)$_A$	<0.02	-	-					µg/l	0.02	A-T-019w
Acenaphthylene (leachable)$_A$	<0.02	-	-					µg/l	0.02	A-T-019w
Anthracene (leachable)$_A$	<0.02	-	-					µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable)$_A$	<0.02	-	-					µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) $_A$	<0.02	-	-					µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable)$_A$	<0.02	-	-					µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable)$_A$	<0.02	-	-					µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable)$_A$	<0.02	-	-					µg/l	0.02	A-T-019w
Chrysene (leachable)$_A$	<0.02	-	-					µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable)$_A$	<0.02	-	-					µg/l	0.02	A-T-019w
Fluoranthene (leachable)$_A$	<0.02	-	-					µg/l	0.02	A-T-019w
Fluorene (leachable)$_A$	<0.02	-	-					µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable)$_A$	<0.02	-	-					µg/l	0.02	A-T-019w
Naphthalene (leachable) $_A$	<0.02	-	-					µg/l	0.02	A-T-019w
Phenanthrene (leachable)$_A$	<0.02	-	-					µg/l	0.02	A-T-019w
Pyrene (leachable)$_A$	<0.02	-	-					µg/l	0.02	A-T-019w
Total PAH 16MS (leachable)$_A$	<0.02	-	-					µg/l	0.02	A-T-019w

Lab Sample ID	23/04698/1	23/04698/5	23/04698/6					Units	Limit of Detection	Method ref
Client Sample No	104	102	101							
Client Sample ID	ATK BH02a	ATK_CPT07	ATK_HDP01							
Depth to Top	1.20	0.60	0.40							
Depth To Bottom										
Date Sampled	02-May-23	02-May-23	28-Apr-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	6A	6A	6AE							
TPH CWG (leachable) with Clean Up										
Ali >C5-C6 (leachable)$_A$	<2	-	-					µg/l	1	A-T-022w
Ali >C6-C8 (leachable)$_A$	<1	-	-					µg/l	1	A-T-022w
Ali >C8-C10 (leachable)$_A$	<10	-	-					µg/l	10	A-T-055w
Ali >C10-C12 (leachable)$_A$	<10	-	-					µg/l	10	A-T-055w
Ali >C12-C16 (leachable)$_A$	<10	-	-					µg/l	10	A-T-055w
Ali >C16-C21 (leachable)$_A$	<10	-	-					µg/l	10	A-T-055w
Ali >C21-C35 (leachable)$_A$	<20	-	-					µg/l	20	A-T-055w
Total Aliphatics (leachable)$_A$	<20	-	-					µg/l	10	Calc-As Recd
Aro >C5-C7 (leachable)$_A$	<1	-	-					µg/l	1	A-T-022w
Aro >C7-C8 (leachable)$_A$	<1	-	-					µg/l	1	A-T-022w
Aro >C8-C10 (leachable)$_A$	<10	-	-					µg/l	10	A-T-055w
Aro >C10-C12 (leachable)$_A$	<10	-	-					µg/l	10	A-T-055w
Aro >C12-C16 (leachable)$_A$	<10	-	-					µg/l	10	A-T-055w
Aro >C16-C21 (leachable)$_A$	<10	-	-					µg/l	10	A-T-055w
Total Aromatics (leachable)$_A$	<20	-	-					µg/l	20	Calc-As Recd
TPH (Ali & Aro >C5-C35) (leachable)$_A$	<20	-	-					µg/l	20	Calc-As Recd
BTEX - Benzene (leachable)$_A$	<1	-	-					µg/l	1	A-T-022w
BTEX - Toluene (leachable)$_A$	<1	-	-					µg/l	1	A-T-022w
BTEX - Ethyl Benzene (leachable)$_A$	<1	-	-					µg/l	1	A-T-022w
BTEX - o Xylene (leachable)$_A$	<1	-	-					µg/l	1	A-T-022w
BTEX - m & p Xylene (leachable)$_A$	<1	-	-					µg/l	1	A-T-022w
MTBE (leachable)$_A$	<1	-	-					µg/l	1	A-T-022w
Aro >C21-C35 (leachable)$_A$	<20	-	-					µg/l	20	A-T-055w

Lab Sample ID	23/04698/1	23/04698/5	23/04698/6					Units	Limit of Detection	Method ref
Client Sample No	104	102	101							
Client Sample ID	ATK BH02a	ATK_CPT07	ATK_HDP01							
Depth to Top	1.20	0.60	0.40							
Depth To Bottom										
Date Sampled	02-May-23	02-May-23	28-Apr-23							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	6A	6A	6AE							
TPH UKCWG with Clean Up										
Ali >C5-C6$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10$_A$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12$_A^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16$_A^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21$_A^{M\#}$	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C21-C35$_A^{M\#}$	3	1	1					mg/kg	1	A-T-055s
Ali >C35-C44$_A$	<1	<1	<1					mg/kg	1	A-T-055s
Total Aliphatics$_A$	3	1	1					mg/kg	1	Calc-As Recd
Aro >C5-C7$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10$_A$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C10-C12$_A$	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16$_A$	1	<1	<1					mg/kg	1	A-T-055s
Aro >C16-C21$_A^{M\#}$	3	<1	<1					mg/kg	1	A-T-055s
Aro >C21-C35$_A^{M\#}$	4	1	<1					mg/kg	1	A-T-055s
Aro >C35-C44$_A$	<1	<1	<1					mg/kg	1	A-T-055s
Total Aromatics$_A$	8	1	<1					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C44)$_A$	10	2	1					mg/kg	1	Calc-As Recd
BTEX - Benzene$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE$_A^{\#}$	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

Report Notes

General
This report shall not be reproduced, except in full, without written approval from Envirolab.
The results reported herein relate only to the material supplied to the laboratory.
The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and Interpretations expressed are outside our scope of accreditation.
The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

Soil Chemical Analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25ºC / 11550µS/cm @ 20ºC fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Structural Soils Limited (Castleford), The Potteries, Pottery Street, Castleford, West Yorkshire, UK, WF10 1NJ

Project: Ancoats, Manchester

Clients Project No: 765544

Project No: 23/03615

Date Received: 17/04/2023 (am)

Cool Box Temperatures (°C): 6.6, 7.0, 6.7

Lab Sample ID	23/03615/2	23/03615/3	23/03615/6	23/03615/12	23/03615/16	23/03615/19	23/03615/22
Client Sample No	2	3	102	104	103	101	2
Client Sample ID/Depth	ATK TP08 0.30m	ATK TP08 1.00m	ATK BH01 0.50m	ATK BH04 1.20m	ATK BH05 0.80m	ATK BH08 0.30m	ATK TP05 0.80m
Date Sampled	12/04/23	12/04/23	06/04/23	12/04/23	06/04/23	06/04/23	12/04/23
Deviation Code							
F	✓	✓	✓	✓	✓	✓	✓

Key

F *Maximum holding time exceeded between sampling date and analysis for analytes listed below*

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/03615/2	23/03615/3	23/03615/6	23/03615/12	23/03615/16	23/03615/19	23/03615/22
Client Sample No	2	3	102	104	103	101	2
Client Sample ID/Depth	ATK TP08 0.30m	ATK TP08 1.00m	ATK BH01 0.50m	ATK BH04 1.20m	ATK BH05 0.80m	ATK BH08 0.30m	ATK TP05 0.80m
Date Sampled	12/04/23	12/04/23	06/04/23	12/04/23	06/04/23	06/04/23	12/04/23
PAH-16MS	✓	✓		✓	✓		✓
PAH (total 17)	✓						
Sulphide			✓		✓	✓	

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples 5 ± 3°C), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/03615/2	23/03615/3	23/03615/6	23/03615/10	23/03615/12	23/03615/16	23/03615/19	23/03615/20	23/03615/22
Client Sample No	2	3	102	102	104	103	101	102	2
Client Sample ID/Depth	ATK TP08 0.30m	ATK TP08 1.00m	ATK BH01 0.50m	ATK BH04 0.40m	ATK BH04 1.20m	ATK BH05 0.80m	ATK BH08 0.30m	ATK BH08 0.60m	ATK TP05 0.80m
Date Sampled	12/04/23	12/04/23	06/04/23	12/04/23	12/04/23	06/04/23	06/04/23	06/04/23	12/04/23
A-T-004s	24/04/2023			24/04/2023					
A-T-006s									20/04/2023
A-T-007s	21/04/2023			21/04/2023					
A-T-019s	02/05/2023	02/05/2023	02/05/2023	02/05/2023	02/05/2023	02/05/2023	02/05/2023		02/05/2023
A-T-019w		27/04/2023	27/04/2023			27/04/2023		27/04/2023	27/04/2023
A-T-022s	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023		21/04/2023
A-T-022w		27/04/2023	27/04/2023			27/04/2023		27/04/2023	27/04/2023
A-T-024s	28/04/2023	28/04/2023	28/04/2023	28/04/2023	28/04/2023	28/04/2023	28/04/2023		28/04/2023
A-T-025w	02/05/2023	29/04/2023	29/04/2023	02/05/2023		29/04/2023		29/04/2023	29/04/2023
A-T-026w	02/05/2023	02/05/2023	02/05/2023	02/05/2023		02/05/2023		02/05/2023	02/05/2023
A-T-026w (F)	02/05/2023			02/05/2023					
A-T-027s	27/04/2023	27/04/2023	27/04/2023	27/04/2023	27/04/2023	27/04/2023	27/04/2023		27/04/2023
A-T-028s	27/04/2023	27/04/2023	27/04/2023	27/04/2023	27/04/2023	27/04/2023	27/04/2023		27/04/2023
A-T-031s	27/04/2023	27/04/2023	27/04/2023	27/04/2023	27/04/2023	27/04/2023	27/04/2023		27/04/2023
A-T-031w	02/05/2023	26/04/2023	26/04/2023	02/05/2023		26/04/2023		26/04/2023	26/04/2023
A-T-032s	26/04/2023	26/04/2023	26/04/2023	26/04/2023	26/04/2023	26/04/2023	26/04/2023		26/04/2023
A-T-032w	02/05/2023			02/05/2023					
A-T-033s	28/04/2023	28/04/2023	28/04/2023	28/04/2023	28/04/2023	28/04/2023	28/04/2023		28/04/2023
A-T-033w		01/05/2023	01/05/2023			01/05/2023		01/05/2023	01/05/2023
A-T-037w	02/05/2023			02/05/2023					
A-T-040s	28/04/2023	28/04/2023	28/04/2023	28/04/2023	28/04/2023	28/04/2023	28/04/2023		28/04/2023
A-T-040w		02/05/2023	02/05/2023			02/05/2023		02/05/2023	02/05/2023
A-T-042sFCN	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023		20/04/2023
A-T-042sTCN	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023		20/04/2023
A-T-042wFCN		26/04/2023	26/04/2023			26/04/2023		26/04/2023	27/04/2023
A-T-042wTCN		26/04/2023	26/04/2023			26/04/2023		26/04/2023	26/04/2023
A-T-043-s	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023		21/04/2023
A-T-044	28/04/2023	28/04/2023	28/04/2023	28/04/2023	28/04/2023	28/04/2023	28/04/2023	28/04/2023	28/04/2023
A-T-045	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023		19/04/2023
A-T-050s	26/04/2023	26/04/2023	26/04/2023	26/04/2023	26/04/2023	26/04/2023	26/04/2023		26/04/2023
A-T-050w	02/05/2023	27/04/2023	27/04/2023	02/05/2023		27/04/2023		27/04/2023	26/04/2023
A-T-052s									20/04/2023

Lab Sample ID	23/03615/2	23/03615/3	23/03615/6	23/03615/10	23/03615/12	23/03615/16	23/03615/19	23/03615/20	23/03615/22
Client Sample No	2	3	102	102	104	103	101	102	2
Client Sample ID/Depth	ATK TP08 0.30m	ATK TP08 1.00m	ATK BH01 0.50m	ATK BH04 0.40m	ATK BH04 1.20m	ATK BH05 0.80m	ATK BH08 0.30m	ATK BH08 0.60m	ATK TP05 0.80m
Date Sampled	12/04/23	12/04/23	06/04/23	12/04/23	12/04/23	06/04/23	06/04/23	06/04/23	12/04/23
A-T-055s	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023	21/04/2023		21/04/2023
A-T-055w		27/04/2023	28/04/2023			28/04/2023		28/04/2023	28/04/2023
Calc	24/04/2023			24/04/2023					
Calc-As Recd	21/04/2023	27/04/2023	28/04/2023	21/04/2023	21/04/2023	28/04/2023	21/04/2023	28/04/2023	28/04/2023
Calc-no stones	02/05/2023			02/05/2023					
Probe (w)	02/05/2023			02/05/2023					

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

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Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

Final Test Report

Envirolab Job Number:	23/03615
Issue Number:	1
Date:	2-May-23
Client:	Structural Soils Limited (Castleford) The Potteries Pottery Street Castleford West Yorkshire UK, WF10 1NJ
Project Manager:	Lara Cross/Matthew Jones/Wilton Bennett
Project Name:	Ancoats, Manchester
Project Ref:	765544
Order No:	N/A
Date Samples Received:	11-Apr-23
Date Instructions Received:	17-Apr-23
Date Analysis Completed:	2-May-23

Notes - Soil analysis

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General

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

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

Predominant Matrix Codes: 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

Secondary Matrix Codes: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

HWOL TPH Code: EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:



Gemma Berrisford
Client Manager

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Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Sample Details								Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	23/03615/2						
Client Sample Number				2				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample ID				ATK TP08						
Depth to Top				0.3						
Depth to Bottom										
Date Sampled				12/04/2023						
Sample Type				Soil - ES						
Sample Matrix Code				1A						
Solid Waste Analysis										
pH (pH Units)$_D$	A-T-031	N	N	**8.82**				-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N					-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N					-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	N	N					-	-	10
Total Organic Carbon (%)$_D$	A-T-032	N	N	**0.06**				3	5	6
PAH Sum of 17 (mg/kg)$_A$	A-T-019	N	N	**<0.08**				100	-	-
Mineral Oil (mg/kg)$_{A\ EH_CU_1D_AL}$	A-T-007	N	N	**26**				500	-	-
Sum of 7 PCBs (mg/kg)$_A$	A-T-004	N	N	**<0.007**				1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N	**<0.01**				6	-	-
Eluate Analysis				**2:1**	**8:1**	**2:1**	**Cumulative 10:1**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)**		
				mg/l		**mg/kg**				
Arsenic	A-T-025	N	N	0.002	<0.001	0.004	**<0.01**	0.5	2	25
Barium	A-T-025	N	N	0.113	0.017	0.234	**0.280**	20	100	300
Cadmium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.04	1	5
Chromium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.5	10	70
Copper	A-T-025	N	N	0.012	<0.004	0.025	**<0.04**	2	50	100
Mercury	A-T-025	N	N	<0.0005	<0.0005	<0.001	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	N	N	0.001	<0.001	0.002	**<0.01**	0.5	10	30
Nickel	A-T-025	N	N	0.006	<0.002	0.012	**<0.02**	0.4	10	40
Lead	A-T-025	N	N	0.016	0.002	0.033	**0.040**	0.5	10	50
Antimony	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.06	0.7	5
Selenium	A-T-025	N	N	0.002	<0.001	0.004	**<0.01**	0.1	0.5	7
Zinc	A-T-025	N	N	0.020	0.003	0.041	**0.050**	4	50	200
Chloride	A-T-026	N	N	36	3	74	**68**	800	15000	25000
Fluoride	A-T-026	N	N	0.8	0.2	1.6	**2.0**	10	150	500
Sulphate as SO_4	A-T-026	N	N	36	3	74	**66**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	85	<20	176	**<200**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	<0.01	<0.02	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<20.0	<20.0	<40	**<200**	500	800	1000
Leach Test Information										
pH (pH Units)	A-T-031	N	N	7.7	8.0					
Conductivity (µS/cm)	A-T-037	N	N	170	33					
Mass Sample (kg)				0.187						
Dry Matter (%)	A-T-044	N	N	93.7						
Stage 1										
Volume Leachant, L_2 (l)	A-T-046			0.350						
Filtered Eluate Volume, VE_1 (l)	A-T-046			0.200						
Stage 2										
Volume Leachant, L_8 (l)	A-T-046			1.400						

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Sample Details								Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	23/03615/10						
Client Sample Number				102				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample ID				ATK BH04						
Depth to Top				0.4						
Depth to Bottom										
Date Sampled				12/04/2023						
Sample Type				Solid						
Sample Matrix Code				7						
Solid Waste Analysis										
pH (pH Units)$_D$	A-T-031	N	N	**8.23**				-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N					-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N					-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	N	N					-	-	10
Total Organic Carbon (%)$_D$	A-T-032	N	N	**0.19**				3	5	6
PAH Sum of 17 (mg/kg)$_A$	A-T-019	N	N	**<0.08**				100	-	-
Mineral Oil (mg/kg)$_{A\ EH_CU_1D_AL}$	A-T-007	N	N	**<10**				500	-	-
Sum of 7 PCBs (mg/kg)$_A$	A-T-004	N	N	**<0.007**				1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N	**<0.01**				6	-	-
Eluate Analysis				**2:1**	**8:1**	**2:1**	**Cumulative 10:1**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)**		
				mg/l		**mg/kg**				
Arsenic	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.5	2	25
Barium	A-T-025	N	N	0.043	0.017	0.092	**0.200**	20	100	300
Cadmium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.04	1	5
Chromium	A-T-025	N	N	0.001	<0.001	0.002	**<0.01**	0.5	10	70
Copper	A-T-025	N	N	<0.004	<0.004	<0.008	**<0.04**	2	50	100
Mercury	A-T-025	N	N	<0.0005	<0.0005	<0.001	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	N	N	0.004	<0.001	0.009	**<0.01**	0.5	10	30
Nickel	A-T-025	N	N	<0.002	<0.002	<0.004	**<0.02**	0.4	10	40
Lead	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.5	10	50
Antimony	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.06	0.7	5
Selenium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.1	0.5	7
Zinc	A-T-025	N	N	<0.002	0.003	<0.004	**<0.02**	4	50	200
Chloride	A-T-026	N	N	1	<1.00	3	**<10**	800	15000	25000
Fluoride	A-T-026	N	N	0.8	0.2	1.6	**2.0**	10	150	500
Sulphate as SO_4	A-T-026	N	N	20	<1.00	43	**23**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	82	28	175	**345**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	<0.01	<0.02	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<20.0	<20.0	<40	**<200**	500	800	1000
Leach Test Information										
pH (pH Units)	A-T-031	N	N	7.4	7.8					
Conductivity (µS/cm)	A-T-037	N	N	164	56					
Mass Sample (kg)				0.198						
Dry Matter (%)	A-T-044	N	N	88.4						
Stage 1										
Volume Leachant, L_2 (l)	A-T-046			0.350						
Filtered Eluate Volume, VE_1 (l)	A-T-046			0.200						
Stage 2										
Volume Leachant, L_8 (l)	A-T-046			1.400						

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

Final Test Report

Envirolab Job Number:	23/03782
Issue Number:	1
Date:	10-May-23
Client:	Structural Soils Limited (Castleford) The Potteries Pottery Street Castleford West Yorkshire UK, WF10 1NJ
Project Manager:	Matthew Jones/Sarah Mundy/Wilton Bennett
Project Name:	Ancoats, Manchester
Project Ref:	765544
Order No:	P05102491
Date Samples Received:	14-Apr-23
Date Instructions Received:	21-Apr-23
Date Analysis Completed:	10-May-23

Notes - Soil analysis

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General

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Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

Predominant Matrix Codes: 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

Secondary Matrix Codes: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

HWOL TPH Code: EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:



Richard Wong
Client Manager

envirolab

Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Sample Details								Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	23/03782/10						
Client Sample Number				102				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample ID				ATK-BH06						
Depth to Top				1						
Depth to Bottom										
Date Sampled				14/04/2023						
Sample Type				Soil - ES						
Sample Matrix Code				4AB						
Solid Waste Analysis										
pH (pH Units)$_D$	A-T-031	N	N					-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N					-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N					-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	N	N					-	-	10
Total Organic Carbon (%)$_D$	A-T-032	N	N	**2.22**				3	5	6
PAH Sum of 17 (mg/kg) $_A$	A-T-019	N	N	**27.9**				100	-	-
Mineral Oil (mg/kg)$_{A\ EH_CU_1D_AL}$	A-T-007	N	N	**25**				500	-	-
Sum of 7 PCBs (mg/kg)$_A$	A-T-004	N	N	**<0.007**				1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N	**<0.01**				6	-	-
Eluate Analysis				**2:1**	**8:1**	**2:1**	**Cumulative 10:1**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)**		
				mg/l		**mg/kg**				
Arsenic	A-T-025	N	N	0.012	0.014	0.027	**0.140**	0.5	2	25
Barium	A-T-025	N	N	0.026	0.031	0.058	**0.310**	20	100	300
Cadmium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.04	1	5
Chromium	A-T-025	N	N	0.038	0.024	0.084	**0.260**	0.5	10	70
Copper	A-T-025	N	N	0.006	0.007	0.013	**0.070**	2	50	100
Mercury	A-T-025	N	N	<0.0005	<0.0005	<0.001	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	N	N	0.011	0.004	0.024	**0.050**	0.5	10	30
Nickel	A-T-025	N	N	<0.002	<0.002	<0.004	**<0.02**	0.4	10	40
Lead	A-T-025	N	N	0.019	0.034	0.042	**0.330**	0.5	10	50
Antimony	A-T-025	N	N	0.006	0.004	0.013	**0.040**	0.06	0.7	5
Selenium	A-T-025	N	N	0.001	<0.001	0.002	**<0.01**	0.1	0.5	7
Zinc	A-T-025	N	N	0.009	0.013	0.020	**0.130**	4	50	200
Chloride	A-T-026	N	N	1	<1.00	3	**<10**	800	15000	25000
Fluoride	A-T-026	N	N	0.5	0.2	1.0	**2.0**	10	150	500
Sulphate as SO_4	A-T-026	N	N	44	10	97	**142**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	84	48	186	**531**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	<0.01	<0.02	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<20.0	<20.0	<40	**<200**	500	800	1000
Leach Test Information										
pH (pH Units)	A-T-031	N	N	8.3	9.4					
Conductivity (µS/cm)	A-T-037	N	N	167	95					
Mass Sample (kg)				0.213						
Dry Matter (%)	A-T-044	N	N	82.3						
Stage 1										
Volume Leachant, L_2 (l)	A-T-046			0.350						
Filtered Eluate Volume, VE_1 (l)	A-T-046			0.200						
Stage 2										
Volume Leachant, L_8 (l)	A-T-046			1.400						

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

Final Test Report

Envirolab Job Number:	23/03877
Issue Number:	1
Date:	11-May-23
Client:	Structural Soils Limited (Castleford) The Potteries Pottery Street Castleford West Yorkshire UK, WF10 1NJ
Project Manager:	Matthew.J.Jones/Sarah Mundy/Wilton Bennett
Project Name:	Ancoats, Manchester
Project Ref:	765544
Order No:	N/A
Date Samples Received:	17-Apr-23
Date Instructions Received:	25-Apr-23
Date Analysis Completed:	11-May-23

Notes - Soil analysis

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General

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Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

Predominant Matrix Codes: 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

Secondary Matrix Codes: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

HWOL TPH Code: EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:



Gemma Berrisford
Client Manager

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Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Sample Details								Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	23/03877/8						
Client Sample Number				103				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample ID				ATK_TP01						
Depth to Top				0.7						
Depth to Bottom										
Date Sampled				13/04/2023						
Sample Type				Soil - ES						
Sample Matrix Code				1A						
Solid Waste Analysis										
pH (pH Units)$_D$	A-T-031	N	N					-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N					-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N					-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	N	N					-	-	10
Total Organic Carbon (%)$_D$	A-T-032	N	N	**0.09**				3	5	6
PAH Sum of 17 (mg/kg) $_A$	A-T-019	N	N	**1.24**				100	-	-
Mineral Oil (mg/kg)$_{A\ EH_CU_1D_AL}$	A-T-007	N	N	**<10**				500	-	-
Sum of 7 PCBs (mg/kg)$_A$	A-T-004	N	N	**<0.007**				1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N	**<0.01**				6	-	-
Eluate Analysis				**2:1**	**8:1**	**2:1**	**Cumulative 10:1**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)**		
				mg/l		**mg/kg**				
Arsenic	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.5	2	25
Barium	A-T-025	N	N	0.015	0.008	0.032	**0.090**	20	100	300
Cadmium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.04	1	5
Chromium	A-T-025	N	N	0.002	<0.001	0.004	**<0.01**	0.5	10	70
Copper	A-T-025	N	N	<0.004	<0.004	<0.008	**<0.04**	2	50	100
Mercury	A-T-025	N	N	<0.0005	<0.0005	<0.001	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	N	N	0.002	<0.001	0.004	**<0.01**	0.5	10	30
Nickel	A-T-025	N	N	<0.002	<0.002	<0.004	**<0.02**	0.4	10	40
Lead	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.5	10	50
Antimony	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.06	0.7	5
Selenium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.1	0.5	7
Zinc	A-T-025	N	N	0.003	<0.002	0.006	**<0.02**	4	50	200
Chloride	A-T-026	N	N	2	<1.00	4	**<10**	800	15000	25000
Fluoride	A-T-026	N	N	0.4	<0.10	0.8	**<1**	10	150	500
Sulphate as SO_4	A-T-026	N	N	<1.00	<1.00	<2	**<10**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	50	<20	107	**<200**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	<0.01	<0.02	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<20.0	<20.0	<40	**<200**	500	800	1000
Leach Test Information										
pH (pH Units)	A-T-031	N	N	6.6	7.9					
Conductivity (µS/cm)	A-T-037	N	N	99	38					
Mass Sample (kg)				0.199						
Dry Matter (%)	A-T-044	N	N	88						
Stage 1										
Volume Leachant, L_2 (l)	A-T-046			0.350						
Filtered Eluate Volume, VE_1 (l)	A-T-046			0.200						
Stage 2										
Volume Leachant, L_8 (l)	A-T-046			1.400						

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Sample Details								Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	23/03877/29						
Client Sample Number				102				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample ID				ATK_CPT14						
Depth to Top				0.4						
Depth to Bottom										
Date Sampled				14/04/2023						
Sample Type				Soil - ES						
Sample Matrix Code				1AB						
Solid Waste Analysis										
pH (pH Units)$_D$	A-T-031	N	N	**11.89**				-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N					-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N					-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	N	N					-	-	10
Total Organic Carbon (%)$_D$	A-T-032	N	N	**0.07**				3	5	6
PAH Sum of 17 (mg/kg)$_A$	A-T-019	N	N	**<0.08**				100	-	-
Mineral Oil (mg/kg)$_{A\ EH_CU_1D_AL}$	A-T-007	N	N	**15**				500	-	-
Sum of 7 PCBs (mg/kg)$_A$	A-T-004	N	N	**<0.007**				1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N	**<0.01**				6	-	-
Eluate Analysis				**2:1**	**8:1**	**2:1**	**Cumulative 10:1**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)**		
				mg/l		**mg/kg**				
Arsenic	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.5	2	25
Barium	A-T-025	N	N	0.063	0.036	0.130	**0.390**	20	100	300
Cadmium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.04	1	5
Chromium	A-T-025	N	N	0.009	0.005	0.019	**0.050**	0.5	10	70
Copper	A-T-025	N	N	<0.004	<0.004	<0.008	**<0.04**	2	50	100
Mercury	A-T-025	N	N	<0.0005	<0.0005	<0.001	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	N	N	0.003	0.001	0.006	**0.010**	0.5	10	30
Nickel	A-T-025	N	N	<0.002	<0.002	<0.004	**<0.02**	0.4	10	40
Lead	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.5	10	50
Antimony	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.06	0.7	5
Selenium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.1	0.5	7
Zinc	A-T-025	N	N	0.003	<0.002	0.006	**<0.02**	4	50	200
Chloride	A-T-026	N	N	59	14	122	**190**	800	15000	25000
Fluoride	A-T-026	N	N	<0.10	<0.10	<0.2	**<1**	10	150	500
Sulphate as SO_4	A-T-026	N	N	4	7	9	**70**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	1276	637	2637	**7143**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	<0.01	<0.02	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<20.0	<20.0	<40	**<200**	500	800	1000
Leach Test Information										
pH (pH Units)	A-T-031	N	N	11.4	11.2					
Conductivity (µS/cm)	A-T-037	N	N	2551	1273					
Mass Sample (kg)				0.187						
Dry Matter (%)	A-T-044	N	N	93.7						
Stage 1										
Volume Leachant, L_2 (l)	A-T-046			0.350						
Filtered Eluate Volume, VE_1 (l)	A-T-046			0.200						
Stage 2										
Volume Leachant, L_8 (l)	A-T-046			1.400						

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Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

Final Test Report

Envirolab Job Number:	23/04044
Issue Number:	1
Date:	17-May-23
Client:	Structural Soils Limited (Castleford) The Potteries Pottery Street Castleford West Yorkshire UK, WF10 1NJ
Project Manager:	Wilton Bennett
Project Name:	Ancoats, Manchester
Project Ref:	765544
Order No:	N/A
Date Samples Received:	24-Apr-23
Date Instructions Received:	27-Apr-23
Date Analysis Completed:	17-May-23

Notes - Soil analysis

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General

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All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

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Predominant Matrix Codes: 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

Secondary Matrix Codes: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

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Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

HWOL TPH Code: EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:



Richard Wong
Client Manager

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Sample Details								Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	23/04044/7						
Client Sample Number				102				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample ID				ATK-TP03						
Depth to Top				0.5						
Depth to Bottom										
Date Sampled				21/04/2023						
Sample Type				Soil - ES						
Sample Matrix Code				4AB						
Solid Waste Analysis										
pH (pH Units)$_D$	A-T-031	N	N					-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N					-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N					-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	N	N					-	-	10
Total Organic Carbon (%)$_D$	A-T-032	N	N	**2.1**				3	5	6
PAH Sum of 17 (mg/kg)$_A$	A-T-019	N	N	**0.23**				100	-	-
Mineral Oil (mg/kg)$_{A\ EH_CU_1D_AL}$	A-T-007	N	N	**10**				500	-	-
Sum of 7 PCBs (mg/kg)$_A$	A-T-004	N	N	**<0.007**				1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N	**<0.01**				6	-	-
Eluate Analysis				**2:1**	**8:1**	**2:1**	**Cumulative 10:1**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)**		
				mg/l		**mg/kg**				
Arsenic	A-T-025	N	N	0.012	0.010	0.026	**0.100**	0.5	2	25
Barium	A-T-025	N	N	0.016	0.009	0.034	**0.100**	20	100	300
Cadmium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.04	1	5
Chromium	A-T-025	N	N	0.010	0.002	0.022	**0.030**	0.5	10	70
Copper	A-T-025	N	N	0.006	<0.004	0.013	**<0.04**	2	50	100
Mercury	A-T-025	N	N	<0.0005	<0.0005	<0.001	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	N	N	0.011	0.003	0.024	**0.040**	0.5	10	30
Nickel	A-T-025	N	N	<0.002	<0.002	<0.004	**<0.02**	0.4	10	40
Lead	A-T-025	N	N	0.004	0.002	0.009	**0.020**	0.5	10	50
Antimony	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.06	0.7	5
Selenium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.1	0.5	7
Zinc	A-T-025	N	N	0.009	<0.002	0.019	**<0.02**	4	50	200
Chloride	A-T-026	N	N	3	<1.00	7	**<10**	800	15000	25000
Fluoride	A-T-026	N	N	1.4	0.4	3.0	**5.0**	10	150	500
Sulphate as SO_4	A-T-026	N	N	36	6	77	**97**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	76	37	164	**420**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	<0.01	<0.02	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<20.0	<20.0	<40	**<200**	500	800	1000
Leach Test Information										
pH (pH Units)	A-T-031	N	N	8.4	9.2					
Conductivity (µS/cm)	A-T-037	N	N	152	74					
Mass Sample (kg)				0.202						
Dry Matter (%)	A-T-044	N	N	86.7						
Stage 1										
Volume Leachant, L_2 (l)	A-T-046			0.350						
Filtered Eluate Volume, VE_1 (l)	A-T-046			0.200						
Stage 2										
Volume Leachant, L_8 (l)	A-T-046			1.400						

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Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

Final Test Report

Envirolab Job Number:	23/04228
Issue Number:	1
Date:	17-May-23
Client:	Structural Soils Limited (Castleford) The Potteries Pottery Street Castleford West Yorkshire UK, WF10 1NJ
Project Manager:	Alex Jones/Sarah Mundy/Wilton Bennett
Project Name:	Ancoats, Manchester
Project Ref:	765544
Order No:	N/A
Date Samples Received:	24-Apr-23
Date Instructions Received:	3-May-23
Date Analysis Completed:	17-May-23

Notes - Soil analysis

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General

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All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

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Predominant Matrix Codes: 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

Secondary Matrix Codes: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

HWOL TPH Code: EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:



Richard Wong
Client Manager

envirolab

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Sample Details								Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	23/04228/2						
Client Sample Number				102				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample ID				ATK_BH09						
Depth to Top				0.5						
Depth to Bottom										
Date Sampled				24/04/2023						
Sample Type				Soil - ES						
Sample Matrix Code				1AB						
Solid Waste Analysis										
pH (pH Units)$_D$	A-T-031	N	N	**10.66**				-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N	**0.56**				-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N	**0.1**				-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	N	N					-	-	10
Total Organic Carbon (%)$_D$	A-T-032	N	N	**0.64**				3	5	6
PAH Sum of 17 (mg/kg) $_A$	A-T-019	N	N					100	-	-
Mineral Oil (mg/kg)$_{A\ EH_CU_1D_AL}$	A-T-007	N	N					500	-	-
Sum of 7 PCBs (mg/kg)$_A$	A-T-004	N	N					1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N					6	-	-
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 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic	A-T-025	N	N	0.002	0.002	0.004	**0.020**	0.5	2	25
Barium	A-T-025	N	N	0.012	0.007	0.025	**0.080**	20	100	300
Cadmium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.04	1	5
Chromium	A-T-025	N	N	0.018	0.004	0.038	**0.060**	0.5	10	70
Copper	A-T-025	N	N	0.006	<0.004	0.013	**<0.04**	2	50	100
Mercury	A-T-025	N	N	<0.0005	<0.0005	<0.001	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	N	N	0.001	<0.001	0.002	**<0.01**	0.5	10	30
Nickel	A-T-025	N	N	<0.002	<0.002	<0.004	**<0.02**	0.4	10	40
Lead	A-T-025	N	N	0.002	<0.001	0.004	**<0.01**	0.5	10	50
Antimony	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.06	0.7	5
Selenium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.1	0.5	7
Zinc	A-T-025	N	N	0.010	0.002	0.021	**0.030**	4	50	200
Chloride	A-T-026	N	N	4	<1.00	9	**<10**	800	15000	25000
Fluoride	A-T-026	N	N	0.3	0.4	0.7	**4.0**	10	150	500
Sulphate as SO_4	A-T-026	N	N	19	12	41	**130**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	158	91	333	**996**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	<0.01	<0.02	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<20.0	<20.0	<40	**<200**	500	800	1000
Leach Test Information										
pH (pH Units)	A-T-031	N	N	10.3	10.3					
Conductivity (µS/cm)	A-T-037	N	N	315	183					
Mass Sample (kg)				0.194						
Dry Matter (%)	A-T-044	N	N	90.2						
Stage 1										
Volume Leachant, L_2 (l)	A-T-046			0.350						
Filtered Eluate Volume, VE_1 (l)	A-T-046			0.200						
Stage 2										
Volume Leachant, L_8 (l)	A-T-046			1.400						

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

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Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Sample Details								Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	23/04228/6						
Client Sample Number				102				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample ID				ATK_WS08						
Depth to Top				0.6						
Depth to Bottom										
Date Sampled				26/04/2023						
Sample Type				Soil - ES						
Sample Matrix Code				5A						
Solid Waste Analysis										
pH (pH Units)$_D$	A-T-031	N	N	**8.62**				-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N					-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N					-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	N	N					-	-	10
Total Organic Carbon (%)$_D$	A-T-032	N	N	**2.09**				3	5	6
PAH Sum of 17 (mg/kg)$_A$	A-T-019	N	N	**<0.08**				100	-	-
Mineral Oil (mg/kg)$_{A\ EH_CU_1D_AL}$	A-T-007	N	N	**15**				500	-	-
Sum of 7 PCBs (mg/kg)$_A$	A-T-004	N	N	**<0.007**				1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N	**<0.01**				6	-	-
Eluate Analysis				**2:1**	**8:1**	**2:1**	**Cumulative 10:1**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)**		
				mg/l		**mg/kg**				
Arsenic	A-T-025	N	N	0.002	0.002	0.004	**0.020**	0.5	2	25
Barium	A-T-025	N	N	0.052	0.038	0.114	**0.400**	20	100	300
Cadmium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.04	1	5
Chromium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.5	10	70
Copper	A-T-025	N	N	0.011	0.006	0.024	**0.070**	2	50	100
Mercury	A-T-025	N	N	<0.0005	<0.0005	<0.001	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	N	N	0.037	0.013	0.081	**0.160**	0.5	10	30
Nickel	A-T-025	N	N	<0.002	<0.002	<0.004	**<0.02**	0.4	10	40
Lead	A-T-025	N	N	0.031	0.027	0.068	**0.280**	0.5	10	50
Antimony	A-T-025	N	N	0.002	<0.001	0.004	**<0.01**	0.06	0.7	5
Selenium	A-T-025	N	N	0.002	<0.001	0.004	**<0.01**	0.1	0.5	7
Zinc	A-T-025	N	N	0.020	0.006	0.044	**0.080**	4	50	200
Chloride	A-T-026	N	N	27	4	60	**67**	800	15000	25000
Fluoride	A-T-026	N	N	1.3	1.2	2.9	**12.0**	10	150	500
Sulphate as SO_4	A-T-026	N	N	41	20	90	**227**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	174	61	382	**751**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	<0.01	<0.02	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<20.0	<20.0	<40	**<200**	500	800	1000
Leach Test Information										
pH (pH Units)	A-T-031	N	N	7.8	7.9					
Conductivity (µS/cm)	A-T-037	N	N	347	122					
Mass Sample (kg)				0.209						
Dry Matter (%)	A-T-044	N	N	83.6						
Stage 1										
Volume Leachant, L_2 (l)	A-T-046			0.350						
Filtered Eluate Volume, VE_1 (l)	A-T-046			0.200						
Stage 2										
Volume Leachant, L_8 (l)	A-T-046			1.400						

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Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Sample Details								Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	23/04228/12						
Client Sample Number				102				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample ID				ATK_BH11						
Depth to Top				0.6						
Depth to Bottom										
Date Sampled				26/04/2023						
Sample Type				Soil - ES						
Sample Matrix Code				5A						
Solid Waste Analysis										
pH (pH Units)$_D$	A-T-031	N	N	**8.97**				-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N	**0.09**				-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N	**0.02**				-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	N	N					-	-	10
Total Organic Carbon (%)$_D$	A-T-032	N	N	**0.4**				3	5	6
PAH Sum of 17 (mg/kg)$_A$	A-T-019	N	N					100	-	-
Mineral Oil (mg/kg)$_{A\ EH_CU_1D_AL}$	A-T-007	N	N					500	-	-
Sum of 7 PCBs (mg/kg)$_A$	A-T-004	N	N					1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N					6	-	-
Eluate Analysis				**2:1**	**8:1**	**2:1**	**Cumulative 10:1**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)**		
				mg/l		**mg/kg**				
Arsenic	A-T-025	N	N	0.004	0.002	0.009	**0.020**	0.5	2	25
Barium	A-T-025	N	N	0.220	0.079	0.479	**0.970**	20	100	300
Cadmium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.04	1	5
Chromium	A-T-025	N	N	0.003	<0.001	0.007	**<0.01**	0.5	10	70
Copper	A-T-025	N	N	0.010	<0.004	0.022	**<0.04**	2	50	100
Mercury	A-T-025	N	N	<0.0005	<0.0005	<0.001	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	N	N	0.006	0.004	0.013	**0.040**	0.5	10	30
Nickel	A-T-025	N	N	<0.002	<0.002	<0.004	**<0.02**	0.4	10	40
Lead	A-T-025	N	N	0.121	0.037	0.263	**0.470**	0.5	10	50
Antimony	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.06	0.7	5
Selenium	A-T-025	N	N	<0.001	<0.001	<0.002	**<0.01**	0.1	0.5	7
Zinc	A-T-025	N	N	0.021	0.004	0.046	**0.060**	4	50	200
Chloride	A-T-026	N	N	17	5	36	**66**	800	15000	25000
Fluoride	A-T-026	N	N	1.0	0.6	2.1	**6.0**	10	150	500
Sulphate as SO_4	A-T-026	N	N	86	34	188	**405**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	117	54	255	**622**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	<0.01	<0.02	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<20.0	<20.0	<40	**<200**	500	800	1000
Leach Test Information										
pH (pH Units)	A-T-031	N	N	7.8	7.9					
Conductivity (µS/cm)	A-T-037	N	N	234	108					
Mass Sample (kg)				0.206						
Dry Matter (%)	A-T-044	N	N	84.9						
Stage 1										
Volume Leachant, L_2 (l)	A-T-046			0.350						
Filtered Eluate Volume, VE_1 (l)	A-T-046			0.200						
Stage 2										
Volume Leachant, L_8 (l)	A-T-046			1.400						

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APPENDIX F - MONITORING RECORDS

(i) Gas/Groundwater Monitoring Results

IN-SITU MONITORING ROUNDS SUMMARY

Monitoring Round Reference	Round Description	Start Date	End Date	Atmospheric Pressure Prior to Monitoring (mb)	Atmospheric Pressure During Monitoring (mb)	Atmospheric Pressure at Start of Round (mb)	Atmospheric Pressure at End of Round (mb)	Equipment Used	Weather Conditions	Ground Conditions	Wind Conditions	Air Temp (°C)
1	Gas	19/05/2023	19/05/2023	---	---	1023	1023	GA5000	Overcast	Wet	Light	10
2	Gas	08/06/2023	09/06/2023	---	---	1017	1014	GA5000	Overcast	Dry	Light	14
3	Gas	19/06/2023	20/06/2023	---	---	1004	1002	GA5000	Overcast	Wet	Light	18
4	Gas	03/07/2023	03/07/2023	---	---	1003	1003	GA5000	Overcast	Wet	Light	12
5	Gas	19/07/2023	20/07/2023	---	---	1009	1011	GA5000	Overcast	Wet	Light	17
6	Gas	01/08/2023	01/08/2023	---	---	995	1013	GA5000	Overcast	Wet	Light	14
7	Gas	11/08/2023	11/08/2023	---	---	1010	1010	GA5000	Overcast	Dry	Light	17
8	Gas	24/08/2023	24/08/2023	---	---	1015	1015	GA5000	Overcast	Dry	Light	17
9	Gas	11/09/2023	11/09/2023	---	---	1006	1007	GA5000	Overcast	Dry	Light	22

Key: Dates in parenthesis after the equipment name refer to the calibration date

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Checked By		Date	Contract Ref:
			765544

Contract: **Ancoats Manchester**

Page **1** of **1**

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH01	1	50	1	38.50	---	29.50 to 38.50	19/05/2023 07:40:00	915	1022	$-10.7_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH01	1	50	1	---	---	29.50 to 38.50	60 secs	915	1022	$-24.3_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH01	1	50	1/2	38.50	---	29.50 to 38.50	19/05/2023 07:42:00	-	-	-	-	0.1	0.0	21.7	-	-	0	-	0	-	-
ATK_BH01	1	50	1/2	---	---	29.50 to 38.50	30 secs	-	-	-	-	0.0	0.0	21.7	-	-	0	-	0	-	-
ATK_BH01	1	50	1/2	---	---	29.50 to 38.50	60 secs	-	-	-	-	0.0	0.0	21.7	-	-	0	-	0	-	-
ATK_BH01	1	50	1/2	---	---	29.50 to 38.50	90 secs	-	-	-	-	0.0	0.0	21.6	-	-	0	-	0	-	-
ATK_BH01	1	50	1/2	---	---	29.50 to 38.50	120 secs	-	-	-	-	0.0	0.0	21.6	-	-	0	-	0	-	-
ATK_BH01	1	50	1/2	---	---	29.50 to 38.50	180 secs	-	-	-	-	0.0	0.0	21.5	-	-	0	-	0	-	-
ATK_BH01	1	50	1/2	---	---	29.50 to 38.50	240 secs	-	-	-	-	0.0	0.0	21.5	-	-	0	-	0	-	-
ATK_BH01	1	50	1/2	---	---	29.50 to 38.50	300 secs	-	-	-	-	0.0	0.0	21.4	-	-	0	-	0	-	-
ATK_BH01	1	50	1/2	---	---	29.50 to 38.50	360 secs	-	-	-	-	0.0	0.0	21.4	-	-	0	-	0	-	-
ATK_BH01	1	50	1/3	38.50	37.98	29.50 to 38.50	19/05/2023 07:49:00	-	-	-	20.65	-	-	-	-	-	-	-	-	-	-
ATK_BH01	1	50	2	38.50	---	29.50 to 38.50	08/06/2023 12:11:00	1018	1017	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH01	1	50	2	---	---	29.50 to 38.50	60 secs	1018	1017	$0.2_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH01	1	50	2/2	38.50	---	29.50 to 38.50	08/06/2023 12:13:00	-	-	-	-	0.0	0.0	20.8	-	-	0	-	1	-	-
ATK_BH01	1	50	2/2	---	---	29.50 to 38.50	30 secs	-	-	-	-	0.0	0.0	20.0	-	-	0	-	6	-	-
ATK_BH01	1	50	2/2	---	---	29.50 to 38.50	60 secs	-	-	-	-	0.0	0.0	20.0	-	-	0	-	6	-	-
ATK_BH01	1	50	2/2	---	---	29.50 to 38.50	90 secs	-	-	-	-	0.0	0.0	20.0	-	-	0	-	6	-	-
ATK_BH01	1	50	2/2	---	---	29.50 to 38.50	120 secs	-	-	-	-	0.0	0.0	19.9	-	-	0	-	6	-	-
ATK_BH01	1	50	2/2	---	---	29.50 to 38.50	180 secs	-	-	-	-	0.0	0.0	19.9	-	-	0	-	6	-	-
ATK_BH01	1	50	2/2	---	---	29.50 to 38.50	240 secs	-	-	-	-	0.0	0.0	19.8	-	-	0	-	6	-	-
ATK_BH01	1	50	2/2	---	---	29.50 to 38.50	300 secs	-	-	-	-	0.0	0.0	19.8	-	-	0	-	6	-	-
ATK_BH01	1	50	2/2	---	---	29.50 to 38.50	360 secs	-	-	-	-	0.0	0.0	19.7	-	-	0	-	6	-	-
ATK_BH01	1	50	2/3	38.50	37.98	29.50 to 38.50	08/06/2023 12:20:00	-	-	-	23.29	-	-	-	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

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Pottery Street
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Checked By		Date	Contract Ref:
			765544

Contract: **Ancoats Manchester**

AGS

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH01	1	50	3	38.50	---	29.50 to 38.50	19/06/2023 16:28:00	1004	1004	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH01	1	50	3	---	---	29.50 to 38.50	60 secs	1004	1004	$-1.4_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH01	1	50	3/2	38.50	---	29.50 to 38.50	19/06/2023 16:30:00	-	-	-	-	0.0	0.0	20.2	-	-	0	-	0	-	-
ATK_BH01	1	50	3/2	---	---	29.50 to 38.50	30 secs	-	-	-	-	0.0	0.0	20.1	-	-	3	-	0	-	-
ATK_BH01	1	50	3/2	---	---	29.50 to 38.50	60 secs	-	-	-	-	0.0	0.0	20.0	-	-	2	-	0	-	-
ATK_BH01	1	50	3/2	---	---	29.50 to 38.50	90 secs	-	-	-	-	0.0	0.0	19.9	-	-	3	-	0	-	-
ATK_BH01	1	50	3/2	---	---	29.50 to 38.50	120 secs	-	-	-	-	0.0	0.0	19.8	-	-	4	-	1	-	-
ATK_BH01	1	50	3/2	---	---	29.50 to 38.50	180 secs	-	-	-	-	0.0	0.0	19.7	-	-	5	-	1	-	-
ATK_BH01	1	50	3/2	---	---	29.50 to 38.50	240 secs	-	-	-	-	0.0	0.0	19.4	-	-	7	-	1	-	-
ATK_BH01	1	50	3/2	---	---	29.50 to 38.50	300 secs	-	-	-	-	0.0	0.0	19.2	-	-	9	-	1	-	-
ATK_BH01	1	50	3/2	---	---	29.50 to 38.50	360 secs	-	-	-	-	0.0	0.0	19.1	-	-	9	-	1	-	-
ATK_BH01	1	50	3/3	38.50	37.98	29.50 to 38.50	19/06/2023 16:37:00	-	-	-	23.20	-	-	-	-	-	-	-	-	-	-
ATK_BH01	1	50	4	38.50	---	29.50 to 38.50	03/07/2023 14:28:00	995	994	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH01	1	50	4	---	---	29.50 to 38.50	60 secs	995	994	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH01	1	50	4/2	38.50	---	29.50 to 38.50	03/07/2023 14:30:00	-	-	-	-	0.5	0.0	19.7	-	-	0	-	0	-	-
ATK_BH01	1	50	4/2	---	---	29.50 to 38.50	30 secs	-	-	-	-	0.1	0.0	20.1	-	-	2	-	0	-	-
ATK_BH01	1	50	4/2	---	---	29.50 to 38.50	60 secs	-	-	-	-	0.1	0.0	20.0	-	-	2	-	0	-	-
ATK_BH01	1	50	4/2	---	---	29.50 to 38.50	90 secs	-	-	-	-	0.1	0.0	20.1	-	-	2	-	0	-	-
ATK_BH01	1	50	4/2	---	---	29.50 to 38.50	120 secs	-	-	-	-	0.1	0.0	20.1	-	-	2	-	0	-	-
ATK_BH01	1	50	4/2	---	---	29.50 to 38.50	180 secs	-	-	-	-	0.0	0.0	20.1	-	-	2	-	0	-	-
ATK_BH01	1	50	4/2	---	---	29.50 to 38.50	240 secs	-	-	-	-	0.0	0.0	20.2	-	-	2	-	0	-	-
ATK_BH01	1	50	4/2	---	---	29.50 to 38.50	300 secs	-	-	-	-	0.0	0.0	20.2	-	-	2	-	0	-	-
ATK_BH01	1	50	4/2	---	---	29.50 to 38.50	360 secs	-	-	-	-	0.0	0.0	20.2	-	-	2	-	0	-	-
ATK_BH01	1	50	4/3	38.50	37.98	29.50 to 38.50	03/07/2023 14:37:00	-	-	-	23.12	-	-	-	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH01	1	50	5	38.50	---	29.50 to 38.50	19/07/2023 12:02:00	1010	1009	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH01	1	50	5	---	---	29.50 to 38.50	60 secs	1010	1009	$-0.7_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH01	1	50	5/2	38.50	---	29.50 to 38.50	19/07/2023 12:04:00	-	-	-	-	0.2	0.0	19.9	-	-	0	-	0	-	-
ATK_BH01	1	50	5/2	---	---	29.50 to 38.50	30 secs	-	-	-	-	0.0	0.0	20.5	-	-	0	-	0	-	-
ATK_BH01	1	50	5/2	---	---	29.50 to 38.50	60 secs	-	-	-	-	0.0	0.0	20.3	-	-	1	-	0	-	-
ATK_BH01	1	50	5/2	---	---	29.50 to 38.50	90 secs	-	-	-	-	0.0	0.0	20.3	-	-	1	-	0	-	-
ATK_BH01	1	50	5/2	---	---	29.50 to 38.50	120 secs	-	-	-	-	0.0	0.0	20.2	-	-	1	-	0	-	-
ATK_BH01	1	50	5/2	---	---	29.50 to 38.50	180 secs	-	-	-	-	0.0	0.0	20.2	-	-	1	-	0	-	-
ATK_BH01	1	50	5/2	---	---	29.50 to 38.50	240 secs	-	-	-	-	0.0	0.0	20.2	-	-	1	-	0	-	-
ATK_BH01	1	50	5/2	---	---	29.50 to 38.50	300 secs	-	-	-	-	0.0	0.0	20.2	-	-	2	-	0	-	-
ATK_BH01	1	50	5/2	---	---	29.50 to 38.50	360 secs	-	-	-	-	0.0	0.0	20.2	-	-	1	-	0	-	-
ATK_BH01	1	50	5/3	38.50	37.98	29.50 to 38.50	19/07/2023 12:11:00	-	-	-	23.36	-	-	-	-	-	-	-	-	-	-
ATK_BH01	1	50	6	38.50	---	29.50 to 38.50	01/08/2023 09:11:00	995	995	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH01	1	50	6	---	---	29.50 to 38.50	60 secs	995	995	$-0.5_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH01	1	50	6/2	38.50	---	29.50 to 38.50	01/08/2023 09:13:00	-	-	-	-	0.3	0.0	19.9	-	-	0	-	0	-	-
ATK_BH01	1	50	6/2	---	---	29.50 to 38.50	30 secs	-	-	-	-	0.2	0.0	20.2	-	-	0	-	0	-	-
ATK_BH01	1	50	6/2	---	---	29.50 to 38.50	60 secs	-	-	-	-	0.2	0.0	20.0	-	-	0	-	0	-	-
ATK_BH01	1	50	6/2	---	---	29.50 to 38.50	90 secs	-	-	-	-	0.2	0.0	19.9	-	-	0	-	0	-	-
ATK_BH01	1	50	6/2	---	---	29.50 to 38.50	120 secs	-	-	-	-	0.2	0.0	19.8	-	-	0	-	0	-	-
ATK_BH01	1	50	6/2	---	---	29.50 to 38.50	180 secs	-	-	-	-	0.2	0.0	19.7	-	-	0	-	0	-	-
ATK_BH01	1	50	6/2	---	---	29.50 to 38.50	240 secs	-	-	-	-	0.2	0.0	19.6	-	-	0	-	0	-	-
ATK_BH01	1	50	6/2	---	---	29.50 to 38.50	300 secs	-	-	-	-	0.2	0.0	19.6	-	-	0	-	0	-	-
ATK_BH01	1	50	6/2	---	---	29.50 to 38.50	360 secs	-	-	-	-	0.2	0.0	19.5	-	-	0	-	0	-	-
ATK_BH01	1	50	6/3	38.50	37.98	29.50 to 38.50	01/08/2023 09:20:00	-	-	-	23.04	-	-	-	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH02a	1	50	1	4.00	---	2.00 to 4.00	19/05/2023 06:52:00	1023	1023	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH02a	1	50	1	---	---	2.00 to 4.00	60 secs	1023	1023	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH02a	1	50	1/2	4.00	---	2.00 to 4.00	19/05/2023 06:54:00	-	-	-	-	0.1	0.0	21.0	-	-	1	-	0	-	-
ATK_BH02a	1	50	1/2	---	---	2.00 to 4.00	30 secs	-	-	-	-	0.4	0.0	19.8	-	-	1	-	0	-	-
ATK_BH02a	1	50	1/2	---	---	2.00 to 4.00	60 secs	-	-	-	-	0.4	0.0	19.1	-	-	1	-	0	-	-
ATK_BH02a	1	50	1/2	---	---	2.00 to 4.00	90 secs	-	-	-	-	0.4	0.0	19.0	-	-	1	-	0	-	-
ATK_BH02a	1	50	1/2	---	---	2.00 to 4.00	120 secs	-	-	-	-	0.4	0.0	19.0	-	-	1	-	0	-	-
ATK_BH02a	1	50	1/2	---	---	2.00 to 4.00	180 secs	-	-	-	-	0.4	0.0	19.0	-	-	1	-	0	-	-
ATK_BH02a	1	50	1/2	---	---	2.00 to 4.00	240 secs	-	-	-	-	0.4	0.0	19.0	-	-	1	-	0	-	-
ATK_BH02a	1	50	1/2	---	---	2.00 to 4.00	300 secs	-	-	-	-	0.5	0.0	19.0	-	-	1	-	0	-	-
ATK_BH02a	1	50	1/2	---	---	2.00 to 4.00	360 secs	-	-	-	-	0.5	0.0	19.0	-	-	1	-	0	-	-
ATK_BH02a	1	50	1/3	4.00	4.02	2.00 to 4.00	19/05/2023 07:01:00	-	-	-	2.82	-	-	-	-	-	-	-	-	-	-
ATK_BH02a	1	50	2	4.00	---	2.00 to 4.00	08/06/2023 11:23:00	1017	1017	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH02a	1	50	2	---	---	2.00 to 4.00	60 secs	1017	1017	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH02a	1	50	2/2	4.00	---	2.00 to 4.00	08/06/2023 11:25:00	-	-	-	-	0.0	0.0	20.9	-	-	1	-	0	-	-
ATK_BH02a	1	50	2/2	---	---	2.00 to 4.00	30 secs	-	-	-	-	0.0	0.0	19.9	-	-	9	-	0	-	-
ATK_BH02a	1	50	2/2	---	---	2.00 to 4.00	60 secs	-	-	-	-	0.0	0.0	19.9	-	-	9	-	0	-	-
ATK_BH02a	1	50	2/2	---	---	2.00 to 4.00	90 secs	-	-	-	-	0.0	0.0	19.9	-	-	8	-	0	-	-
ATK_BH02a	1	50	2/2	---	---	2.00 to 4.00	120 secs	-	-	-	-	0.0	0.0	20.0	-	-	8	-	0	-	-
ATK_BH02a	1	50	2/2	---	---	2.00 to 4.00	180 secs	-	-	-	-	0.0	0.0	20.1	-	-	7	-	0	-	-
ATK_BH02a	1	50	2/2	---	---	2.00 to 4.00	240 secs	-	-	-	-	0.0	0.0	20.1	-	-	6	-	0	-	-
ATK_BH02a	1	50	2/2	---	---	2.00 to 4.00	300 secs	-	-	-	-	0.0	0.0	20.0	-	-	5	-	0	-	-
ATK_BH02a	1	50	2/2	---	---	2.00 to 4.00	360 secs	-	-	-	-	0.0	0.0	20.0	-	-	4	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH02a	1	50	3	4.00	---	2.00 to 4.00	20/06/2023 09:39:00	1003	1003	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH02a	1	50	3	---	---	2.00 to 4.00	60 secs	1003	1003	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH02a	1	50	3/2	4.00	---	2.00 to 4.00	20/06/2023 09:41:00	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH02a	1	50	3/2	---	---	2.00 to 4.00	30 secs	-	-	-	-	0.1	0.0	19.8	-	-	19	-	0	-	-
ATK_BH02a	1	50	3/2	---	---	2.00 to 4.00	60 secs	-	-	-	-	0.1	0.0	19.6	-	-	19	-	0	-	-
ATK_BH02a	1	50	3/2	---	---	2.00 to 4.00	90 secs	-	-	-	-	0.1	0.0	19.6	-	-	18	-	0	-	-
ATK_BH02a	1	50	3/2	---	---	2.00 to 4.00	120 secs	-	-	-	-	0.1	0.0	19.5	-	-	18	-	0	-	-
ATK_BH02a	1	50	3/2	---	---	2.00 to 4.00	180 secs	-	-	-	-	0.1	0.0	19.5	-	-	16	-	0	-	-
ATK_BH02a	1	50	3/2	---	---	2.00 to 4.00	240 secs	-	-	-	-	0.1	0.0	19.5	-	-	13	-	0	-	-
ATK_BH02a	1	50	3/2	---	---	2.00 to 4.00	300 secs	-	-	-	-	0.1	0.0	19.5	-	-	10	-	0	-	-
ATK_BH02a	1	50	3/2	---	---	2.00 to 4.00	360 secs	-	-	-	-	0.1	0.0	19.5	-	-	9	-	0	-	-
ATK_BH02a	1	50	3/3	4.00	4.04	2.00 to 4.00	20/06/2023 09:48:00	-	-	-	1.46	-	-	-	-	-	-	-	-	-	-
ATK_BH02a	1	50	4	4.00	---	2.00 to 4.00	03/07/2023 11:54:00	1002	1002	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH02a	1	50	4	---	---	2.00 to 4.00	60 secs	1002	1002	$-0.6_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH02a	1	50	4/2	4.00	---	2.00 to 4.00	03/07/2023 11:56:00	-	-	-	-	0.1	0.0	20.2	-	-	1	-	0	-	-
ATK_BH02a	1	50	4/2	---	---	2.00 to 4.00	30 secs	-	-	-	-	0.1	0.0	20.2	-	-	10	-	0	-	-
ATK_BH02a	1	50	4/2	---	---	2.00 to 4.00	60 secs	-	-	-	-	0.1	0.0	20.0	-	-	12	-	0	-	-
ATK_BH02a	1	50	4/2	---	---	2.00 to 4.00	90 secs	-	-	-	-	0.1	0.0	19.9	-	-	12	-	1	-	-
ATK_BH02a	1	50	4/2	---	---	2.00 to 4.00	120 secs	-	-	-	-	0.1	0.0	20.0	-	-	12	-	1	-	-
ATK_BH02a	1	50	4/2	---	---	2.00 to 4.00	180 secs	-	-	-	-	0.1	0.0	20.0	-	-	12	-	1	-	-
ATK_BH02a	1	50	4/2	---	---	2.00 to 4.00	240 secs	-	-	-	-	0.1	0.0	20.0	-	-	12	-	1	-	-
ATK_BH02a	1	50	4/2	---	---	2.00 to 4.00	300 secs	-	-	-	-	0.1	0.0	20.0	-	-	12	-	1	-	-
ATK_BH02a	1	50	4/2	---	---	2.00 to 4.00	360 secs	-	-	-	-	0.1	0.0	20.0	-	-	12	-	1	-	-
ATK_BH02a	1	50	4/3	4.00	4.04	2.00 to 4.00	03/07/2023 12:03:00	-	-	-	0.41	-	-	-	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH02a	1	50	5	4.00	---	2.00 to 4.00	19/07/2023 12:15:00	1011	1011	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH02a	1	50	5	---	---	2.00 to 4.00	60 secs	1011	1011	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH02a	1	50	5/2	4.00	---	2.00 to 4.00	19/07/2023 12:17:00	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH02a	1	50	5/2	---	---	2.00 to 4.00	30 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH02a	1	50	5/2	---	---	2.00 to 4.00	60 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH02a	1	50	5/2	---	---	2.00 to 4.00	90 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH02a	1	50	5/2	---	---	2.00 to 4.00	120 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH02a	1	50	5/2	---	---	2.00 to 4.00	180 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH02a	1	50	5/2	---	---	2.00 to 4.00	240 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH02a	1	50	5/2	---	---	2.00 to 4.00	300 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH02a	1	50	5/2	---	---	2.00 to 4.00	360 secs	-	-	-	-	0.0	0.0	20.7	-	-	0	-	0	-	-
ATK_BH02a	1	50	5/3	4.00	4.04	2.00 to 4.00	19/07/2023 12:24:00	-	-	-	0.68	-	-	-	-	-	-	-	-	-	-
ATK_BH02a	1	50	6	4.00	---	2.00 to 4.00	01/08/2023 09:54:00	996	995	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH02a	1	50	6	---	---	2.00 to 4.00	60 secs	996	995	$0.4_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH02a	1	50	6/2	4.00	---	2.00 to 4.00	01/08/2023 09:56:00	-	-	-	-	0.1	0.0	20.8	-	-	5	-	0	-	-
ATK_BH02a	1	50	6/2	---	---	2.00 to 4.00	30 secs	-	-	-	-	0.1	0.0	20.9	-	-	1	-	0	-	-
ATK_BH02a	1	50	6/2	---	---	2.00 to 4.00	60 secs	-	-	-	-	0.0	0.0	20.9	-	-	0	-	0	-	-
ATK_BH02a	1	50	6/2	---	---	2.00 to 4.00	90 secs	-	-	-	-	0.0	0.0	20.9	-	-	0	-	0	-	-
ATK_BH02a	1	50	6/2	---	---	2.00 to 4.00	120 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH02a	1	50	6/2	---	---	2.00 to 4.00	180 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH02a	1	50	6/2	---	---	2.00 to 4.00	240 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH02a	1	50	6/2	---	---	2.00 to 4.00	300 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH02a	1	50	6/2	---	---	2.00 to 4.00	360 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH02a	1	50	6/3	4.00	4.04	2.00 to 4.00	01/08/2023 10:03:00	-	-	-	2.04	-	-	-	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH03	1	50	1	35.50	---	26.50 to 35.50	19/05/2023 08:35:00	1018	1023	$-3.2_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH03	1	50	1	---	---	26.50 to 35.50	60 secs	1018	1023	$-3.2_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH03	1	50	1/2	35.50	---	26.50 to 35.50	19/05/2023 08:37:00	-	-	-	-	0.2	0.0	21.0	-	-	0	-	0	-	-
ATK_BH03	1	50	1/2	---	---	26.50 to 35.50	30 secs	-	-	-	-	0.1	0.0	21.3	-	-	0	-	0	-	-
ATK_BH03	1	50	1/2	---	---	26.50 to 35.50	60 secs	-	-	-	-	0.1	0.0	21.5	-	-	0	-	0	-	-
ATK_BH03	1	50	1/2	---	---	26.50 to 35.50	90 secs	-	-	-	-	0.1	0.0	21.5	-	-	0	-	0	-	-
ATK_BH03	1	50	1/2	---	---	26.50 to 35.50	120 secs	-	-	-	-	0.0	0.0	21.5	-	-	0	-	0	-	-
ATK_BH03	1	50	1/2	---	---	26.50 to 35.50	180 secs	-	-	-	-	0.0	0.0	21.5	-	-	0	-	0	-	-
ATK_BH03	1	50	1/2	---	---	26.50 to 35.50	240 secs	-	-	-	-	0.0	0.0	21.5	-	-	0	-	0	-	-
ATK_BH03	1	50	1/2	---	---	26.50 to 35.50	300 secs	-	-	-	-	0.0	0.0	21.5	-	-	0	-	0	-	-
ATK_BH03	1	50	1/2	---	---	26.50 to 35.50	360 secs	-	-	-	-	0.0	0.0	21.5	-	-	0	-	0	-	-
ATK_BH03	1	50	1/3	35.50	34.48	26.50 to 35.50	19/05/2023 08:44:00	-	-	-	20.30	-	-	-	-	-	-	-	-	-	-
ATK_BH03	1	50	2	35.50	---	26.50 to 35.50	08/06/2023 11:11:00	1018	1017	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH03	1	50	2	---	---	26.50 to 35.50	60 secs	1018	1017	$0.3_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH03	1	50	2/2	35.50	---	26.50 to 35.50	08/06/2023 11:13:00	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH03	1	50	2/2	---	---	26.50 to 35.50	30 secs	-	-	-	-	0.0	0.0	20.2	-	-	8	-	0	-	-
ATK_BH03	1	50	2/2	---	---	26.50 to 35.50	60 secs	-	-	-	-	0.0	0.0	20.1	-	-	10	-	0	-	-
ATK_BH03	1	50	2/2	---	---	26.50 to 35.50	90 secs	-	-	-	-	0.0	0.0	20.1	-	-	10	-	0	-	-
ATK_BH03	1	50	2/2	---	---	26.50 to 35.50	120 secs	-	-	-	-	0.0	0.0	20.1	-	-	10	-	0	-	-
ATK_BH03	1	50	2/2	---	---	26.50 to 35.50	180 secs	-	-	-	-	0.0	0.0	20.1	-	-	10	-	0	-	-
ATK_BH03	1	50	2/2	---	---	26.50 to 35.50	240 secs	-	-	-	-	0.0	0.0	20.1	-	-	10	-	0	-	-
ATK_BH03	1	50	2/2	---	---	26.50 to 35.50	300 secs	-	-	-	-	0.0	0.0	20.1	-	-	10	-	0	-	-
ATK_BH03	1	50	2/2	---	---	26.50 to 35.50	360 secs	-	-	-	-	0.0	0.0	20.1	-	-	11	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH03	1	50	2/3	35.50	34.42	26.50 to 35.50	08/06/2023 11:20:00	-	-	-	22.28	-	-	-	-	-	-	-	-	-	-
ATK_BH03	1	50	3	35.50	---	26.50 to 35.50	19/06/2023 17:16:00	1005	1005	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH03	1	50	3	---	---	26.50 to 35.50	60 secs	1005	1005	$-1.4_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH03	1	50	3/2	35.50	---	26.50 to 35.50	19/06/2023 17:18:00	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH03	1	50	3/2	---	---	26.50 to 35.50	30 secs	-	-	-	-	0.0	0.0	20.8	-	-	2	-	0	-	-
ATK_BH03	1	50	3/2	---	---	26.50 to 35.50	60 secs	-	-	-	-	0.0	0.0	20.7	-	-	2	-	0	-	-
ATK_BH03	1	50	3/2	---	---	26.50 to 35.50	90 secs	-	-	-	-	0.0	0.0	20.6	-	-	3	-	0	-	-
ATK_BH03	1	50	3/2	---	---	26.50 to 35.50	120 secs	-	-	-	-	0.0	0.0	20.5	-	-	4	-	0	-	-
ATK_BH03	1	50	3/2	---	---	26.50 to 35.50	180 secs	-	-	-	-	0.0	0.0	20.4	-	-	5	-	0	-	-
ATK_BH03	1	50	3/2	---	---	26.50 to 35.50	240 secs	-	-	-	-	0.0	0.0	20.1	-	-	7	-	0	-	-
ATK_BH03	1	50	3/2	---	---	26.50 to 35.50	300 secs	-	-	-	-	0.0	0.0	20.0	-	-	9	-	0	-	-
ATK_BH03	1	50	3/2	---	---	26.50 to 35.50	360 secs	-	-	-	-	0.0	0.0	19.9	-	-	9	-	0	-	-
ATK_BH03	1	50	3/3	35.50	34.38	26.50 to 35.50	19/06/2023 17:25:00	-	-	-	20.99	-	-	-	-	-	-	-	-	-	-
ATK_BH03	1	50	4	35.50	---	26.50 to 35.50	03/07/2023 11:20:00	998	998	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH03	1	50	4	---	---	26.50 to 35.50	60 secs	998	998	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH03	1	50	4/2	35.50	---	26.50 to 35.50	03/07/2023 11:22:00	-	-	-	-	0.3	0.0	19.7	-	-	0	-	0	-	-
ATK_BH03	1	50	4/2	---	---	26.50 to 35.50	30 secs	-	-	-	-	0.1	0.0	20.4	-	-	0	-	0	-	-
ATK_BH03	1	50	4/2	---	---	26.50 to 35.50	60 secs	-	-	-	-	0.1	0.0	20.7	-	-	0	-	0	-	-
ATK_BH03	1	50	4/2	---	---	26.50 to 35.50	90 secs	-	-	-	-	0.1	0.0	20.8	-	-	0	-	0	-	-
ATK_BH03	1	50	4/2	---	---	26.50 to 35.50	120 secs	-	-	-	-	0.1	0.0	20.8	-	-	0	-	0	-	-
ATK_BH03	1	50	4/2	---	---	26.50 to 35.50	180 secs	-	-	-	-	0.1	0.0	20.8	-	-	0	-	0	-	-
ATK_BH03	1	50	4/2	---	---	26.50 to 35.50	240 secs	-	-	-	-	0.1	0.0	20.8	-	-	0	-	0	-	-
ATK_BH03	1	50	4/2	---	---	26.50 to 35.50	300 secs	-	-	-	-	0.1	0.0	20.8	-	-	0	-	0	-	-
ATK_BH03	1	50	4/2	---	---	26.50 to 35.50	360 secs	-	-	-	-	0.1	0.0	20.8	-	-	0	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH03	1	50	4/3	35.50	34.38	26.50 to 35.50	03/07/2023 11:29:00	-	-	-	13.29	-	-	-	-	-	-	-	-	-	-
ATK_BH03	1	50	5	35.50	---	26.50 to 35.50	19/07/2023 10:40:00	1009	1008	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH03	1	50	5	---	---	26.50 to 35.50	60 secs	1009	1008	$-0.8_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH03	1	50	5/2	35.50	---	26.50 to 35.50	19/07/2023 10:42:00	-	-	-	-	0.0	0.0	20.9	-	-	0	-	0	-	-
ATK_BH03	1	50	5/2	---	---	26.50 to 35.50	30 secs	-	-	-	-	0.0	0.0	21.0	-	-	0	-	0	-	-
ATK_BH03	1	50	5/2	---	---	26.50 to 35.50	60 secs	-	-	-	-	0.0	0.0	21.1	-	-	0	-	0	-	-
ATK_BH03	1	50	5/2	---	---	26.50 to 35.50	90 secs	-	-	-	-	0.0	0.0	21.1	-	-	1	-	0	-	-
ATK_BH03	1	50	5/2	---	---	26.50 to 35.50	120 secs	-	-	-	-	0.0	0.0	21.1	-	-	0	-	0	-	-
ATK_BH03	1	50	5/2	---	---	26.50 to 35.50	180 secs	-	-	-	-	0.0	0.0	21.1	-	-	0	-	0	-	-
ATK_BH03	1	50	5/2	---	---	26.50 to 35.50	240 secs	-	-	-	-	0.0	0.0	21.1	-	-	1	-	0	-	-
ATK_BH03	1	50	5/2	---	---	26.50 to 35.50	300 secs	-	-	-	-	0.0	0.0	21.0	-	-	1	-	0	-	-
ATK_BH03	1	50	5/2	---	---	26.50 to 35.50	360 secs	-	-	-	-	0.0	0.0	21.0	-	-	1	-	0	-	-
ATK_BH03	1	50	5/3	35.50	34.38	26.50 to 35.50	19/07/2023 10:49:00	-	-	-	18.33	-	-	-	-	-	-	-	-	-	-
ATK_BH03	1	50	6	35.50	---	26.50 to 35.50	01/08/2023 08:43:00	995	995	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH03	1	50	6	---	---	26.50 to 35.50	60 secs	995	995	$-0.3_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH03	1	50	6/2	35.50	---	26.50 to 35.50	01/08/2023 08:45:00	-	-	-	-	0.4	0.0	21.1	-	-	0	-	0	-	-
ATK_BH03	1	50	6/2	---	---	26.50 to 35.50	30 secs	-	-	-	-	0.2	0.0	21.2	-	-	0	-	0	-	-
ATK_BH03	1	50	6/2	---	---	26.50 to 35.50	60 secs	-	-	-	-	0.1	0.0	21.2	-	-	0	-	0	-	-
ATK_BH03	1	50	6/2	---	---	26.50 to 35.50	90 secs	-	-	-	-	0.1	0.0	21.2	-	-	0	-	0	-	-
ATK_BH03	1	50	6/2	---	---	26.50 to 35.50	120 secs	-	-	-	-	0.1	0.0	21.2	-	-	0	-	0	-	-
ATK_BH03	1	50	6/2	---	---	26.50 to 35.50	180 secs	-	-	-	-	0.1	0.0	21.2	-	-	0	-	0	-	-
ATK_BH03	1	50	6/2	---	---	26.50 to 35.50	240 secs	-	-	-	-	0.1	0.0	21.1	-	-	0	-	0	-	-
ATK_BH03	1	50	6/2	---	---	26.50 to 35.50	300 secs	-	-	-	-	0.1	0.0	21.0	-	-	0	-	0	-	-
ATK_BH03	1	50	6/2	---	---	26.50 to 35.50	360 secs	-	-	-	-	0.1	0.0	20.9	-	-	0	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH03	1	50	6/3	35.50	34.36	26.50 to 35.50	01/08/2023 08:52:00	-	-	-	21.09	-	-	-	-	-	-	-	-	-	-
ATK_BH04	1	50	1	5.00	---	2.00 to 5.00	19/05/2023 08:22:00	1023	1023	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH04	1	50	1	---	---	2.00 to 5.00	60 secs	1023	1023	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH04	1	50	1/2	5.00	---	2.00 to 5.00	19/05/2023 08:24:00	-	-	-	-	0.1	0.0	21.6	-	-	0	-	0	-	-
ATK_BH04	1	50	1/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	1.9	0.0	13.7	-	-	1	-	0	-	-
ATK_BH04	1	50	1/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	1.9	0.0	8.2	-	-	1	-	0	-	-
ATK_BH04	1	50	1/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	2.0	0.0	7.5	-	-	2	-	0	-	-
ATK_BH04	1	50	1/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	2.1	0.0	6.9	-	-	1	-	0	-	-
ATK_BH04	1	50	1/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	2.1	0.0	6.5	-	-	1	-	0	-	-
ATK_BH04	1	50	1/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	2.1	0.0	6.4	-	-	1	-	0	-	-
ATK_BH04	1	50	1/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	2.1	0.0	6.2	-	-	1	-	0	-	-
ATK_BH04	1	50	1/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	2.1	0.0	6.2	-	-	1	-	0	-	-
ATK_BH04	1	50	1/3	5.00	4.84	2.00 to 5.00	19/05/2023 08:31:00	-	-	-	2.71	-	-	-	-	-	-	-	-	-	-
ATK_BH04	1	50	2	5.00	---	2.00 to 5.00	08/06/2023 11:01:00	1017	1017	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH04	1	50	2	---	---	2.00 to 5.00	60 secs	1017	1017	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH04	1	50	2/2	5.00	---	2.00 to 5.00	08/06/2023 11:03:00	-	-	-	-	0.0	0.0	21.0	-	-	0	-	0	-	-
ATK_BH04	1	50	2/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	2.1	0.0	9.6	-	-	2	-	0	-	-
ATK_BH04	1	50	2/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	2.1	0.0	8.3	-	-	3	-	0	-	-
ATK_BH04	1	50	2/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	2.0	0.0	8.6	-	-	3	-	0	-	-
ATK_BH04	1	50	2/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	2.0	0.0	8.9	-	-	3	-	0	-	-
ATK_BH04	1	50	2/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	1.9	0.0	9.2	-	-	3	-	0	-	-
ATK_BH04	1	50	2/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	1.9	0.0	9.3	-	-	2	-	0	-	-
ATK_BH04	1	50	2/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	1.9	0.0	9.2	-	-	2	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH04	1	50	2/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	1.8	0.0	9.4	-	-	1	-	0	-	-
ATK_BH04	1	50	2/3	5.00	4.82	2.00 to 5.00	08/06/2023 11:10:00	-	-	-	1.14	-	-	-	-	-	-	-	-	-	-
ATK_BH04	1	50	3	5.00	---	2.00 to 5.00	20/06/2023 12:10:00	1003	1002	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH04	1	50	3	---	---	2.00 to 5.00	60 secs	1003	1002	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH04	1	50	3/2	5.00	---	2.00 to 5.00	20/06/2023 12:12:00	-	-	-	-	0.0	0.0	20.6	-	-	1	-	0	-	-
ATK_BH04	1	50	3/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	2.7	0.0	9.7	-	-	3	-	0	-	-
ATK_BH04	1	50	3/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	2.7	0.0	6.0	-	-	4	-	0	-	-
ATK_BH04	1	50	3/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	2.8	0.0	5.6	-	-	4	-	0	-	-
ATK_BH04	1	50	3/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	2.8	0.0	5.1	-	-	4	-	0	-	-
ATK_BH04	1	50	3/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	2.9	0.0	4.3	-	-	3	-	0	-	-
ATK_BH04	1	50	3/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	3.0	0.0	3.0	-	-	2	-	0	-	-
ATK_BH04	1	50	3/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	3.2	0.0	1.9	-	-	1	-	0	-	-
ATK_BH04	1	50	3/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	3.2	0.0	1.5	-	-	1	-	0	-	-
ATK_BH04	1	50	3/3	5.00	4.82	2.00 to 5.00	20/06/2023 12:19:00	-	-	-	0.97	-	-	-	-	-	-	-	-	-	-
ATK_BH04	1	50	4	5.00	---	2.00 to 5.00	03/07/2023 11:01:00	1003	1003	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH04	1	50	4	---	---	2.00 to 5.00	60 secs	1003	1003	$0.7_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH04	1	50	4/2	5.00	---	2.00 to 5.00	03/07/2023 11:03:00	-	-	-	-	0.2	0.0	19.9	-	-	4	-	0	-	-
ATK_BH04	1	50	4/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	1.7	0.0	12.2	-	-	4	-	0	-	-
ATK_BH04	1	50	4/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	1.6	0.0	9.6	-	-	4	-	0	-	-
ATK_BH04	1	50	4/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	1.6	0.0	9.6	-	-	4	-	0	-	-
ATK_BH04	1	50	4/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	1.6	0.0	9.7	-	-	4	-	0	-	-
ATK_BH04	1	50	4/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	1.6	0.0	9.9	-	-	4	-	0	-	-
ATK_BH04	1	50	4/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	1.5	0.0	10.1	-	-	4	-	0	-	-
ATK_BH04	1	50	4/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	1.5	0.0	10.4	-	-	4	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH04	1	50	4/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	1.5	0.0	10.7	-	-	4	-	0	-	-
ATK_BH04	1	50	4/3	5.00	4.82	2.00 to 5.00	03/07/2023 11:10:00	-	-	-	0.85	-	-	-	-	-	-	-	-	-	-
ATK_BH04	1	50	5	5.00	---	2.00 to 5.00	19/07/2023 11:07:00	1013	1013	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH04	1	50	5	---	---	2.00 to 5.00	60 secs	1013	1013	$0.4_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH04	1	50	5/2	5.00	---	2.00 to 5.00	19/07/2023 11:09:00	-	-	-	-	0.0	0.0	19.6	-	-	6	-	0	-	-
ATK_BH04	1	50	5/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	1.9	0.0	7.1	-	-	5	-	0	-	-
ATK_BH04	1	50	5/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	1.9	0.0	6.3	-	-	5	-	0	-	-
ATK_BH04	1	50	5/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	1.9	0.0	6.3	-	-	5	-	0	-	-
ATK_BH04	1	50	5/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	1.9	0.0	6.4	-	-	5	-	1	-	-
ATK_BH04	1	50	5/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	1.9	0.0	6.5	-	-	5	-	0	-	-
ATK_BH04	1	50	5/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	1.8	0.0	6.6	-	-	5	-	1	-	-
ATK_BH04	1	50	5/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	1.8	0.0	6.8	-	-	5	-	1	-	-
ATK_BH04	1	50	5/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	1.8	0.0	7.0	-	-	5	-	1	-	-
ATK_BH04	1	50	5/3	5.00	4.82	2.00 to 5.00	19/07/2023 11:16:00	-	-	-	0.94	-	-	-	-	-	-	-	-	-	-
ATK_BH04	1	50	6	5.00	---	2.00 to 5.00	01/08/2023 08:58:00	995	995	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH04	1	50	6	---	---	2.00 to 5.00	60 secs	995	995	$0.4_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH04	1	50	6/2	5.00	---	2.00 to 5.00	01/08/2023 09:00:00	-	-	-	-	0.1	0.0	21.1	-	-	0	-	0	-	-
ATK_BH04	1	50	6/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	1.8	0.0	8.2	-	-	0	-	0	-	-
ATK_BH04	1	50	6/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	1.8	0.0	4.8	-	-	0	-	0	-	-
ATK_BH04	1	50	6/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	1.8	0.0	4.4	-	-	0	-	0	-	-
ATK_BH04	1	50	6/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	1.8	0.0	3.7	-	-	0	-	0	-	-
ATK_BH04	1	50	6/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	1.9	0.0	3.2	-	-	0	-	0	-	-
ATK_BH04	1	50	6/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	1.9	0.0	2.4	-	-	0	-	0	-	-
ATK_BH04	1	50	6/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	2.0	0.0	1.9	-	-	0	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH04	1	50	6/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	2.0	0.0	1.6	-	-	0	-	1	-	-
ATK_BH04	1	50	6/3	5.00	4.82	2.00 to 5.00	01/08/2023 09:07:00	-	-	-	1.01	-	-	-	-	-	-	-	-	-	-
ATK_BH05	1	50	1	2.50	---	0.30 to 2.50	19/05/2023 07:06:00	1023	1023	$-0.1_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH05	1	50	1	---	---	0.30 to 2.50	60 secs	1023	1023	$-0.3_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH05	1	50	1/2	2.50	---	0.30 to 2.50	19/05/2023 07:08:00	-	-	-	-	0.1	0.0	21.2	-	-	0	-	0	-	-
ATK_BH05	1	50	1/2	---	---	0.30 to 2.50	30 secs	-	-	-	-	0.7	0.0	15.5	-	-	1	-	0	-	-
ATK_BH05	1	50	1/2	---	---	0.30 to 2.50	60 secs	-	-	-	-	0.7	0.0	12.4	-	-	2	-	0	-	-
ATK_BH05	1	50	1/2	---	---	0.30 to 2.50	90 secs	-	-	-	-	0.8	0.0	11.5	-	-	2	-	0	-	-
ATK_BH05	1	50	1/2	---	---	0.30 to 2.50	120 secs	-	-	-	-	0.8	0.0	11.0	-	-	2	-	0	-	-
ATK_BH05	1	50	1/2	---	---	0.30 to 2.50	180 secs	-	-	-	-	0.8	0.0	10.8	-	-	2	-	0	-	-
ATK_BH05	1	50	1/2	---	---	0.30 to 2.50	240 secs	-	-	-	-	0.8	0.0	10.4	-	-	2	-	0	-	-
ATK_BH05	1	50	1/2	---	---	0.30 to 2.50	300 secs	-	-	-	-	0.9	0.0	10.0	-	-	2	-	0	-	-
ATK_BH05	1	50	1/2	---	---	0.30 to 2.50	360 secs	-	-	-	-	0.9	0.0	9.6	-	-	2	-	0	-	-
ATK_BH05	1	50	1/3	2.50	2.64	0.30 to 2.50	19/05/2023 07:15:00	-	-	-	0.83	-	-	-	-	-	-	-	-	-	-
ATK_BH05	1	50	2	2.50	---	0.30 to 2.50	08/06/2023 12:35:00	1018	1017	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH05	1	50	2	---	---	0.30 to 2.50	60 secs	1018	1017	$0.4_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH05	1	50	2/2	2.50	---	0.30 to 2.50	08/06/2023 12:37:00	-	-	-	-	0.0	0.0	20.9	-	-	3	-	0	-	-
ATK_BH05	1	50	2/2	---	---	0.30 to 2.50	30 secs	-	-	-	-	3.0	0.0	8.9	-	-	1	-	0	-	-
ATK_BH05	1	50	2/2	---	---	0.30 to 2.50	60 secs	-	-	-	-	3.2	0.0	7.8	-	-	1	-	0	-	-
ATK_BH05	1	50	2/2	---	---	0.30 to 2.50	90 secs	-	-	-	-	3.3	0.0	7.4	-	-	1	-	0	-	-
ATK_BH05	1	50	2/2	---	---	0.30 to 2.50	120 secs	-	-	-	-	3.3	0.0	7.3	-	-	1	-	0	-	-
ATK_BH05	1	50	2/2	---	---	0.30 to 2.50	180 secs	-	-	-	-	3.3	0.0	7.4	-	-	1	-	0	-	-
ATK_BH05	1	50	2/2	---	---	0.30 to 2.50	240 secs	-	-	-	-	3.3	0.0	7.7	-	-	1	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH05	1	50	2/2	---	---	0.30 to 2.50	300 secs	-	-	-	-	3.2	0.0	8.2	-	-	1	-	0	-	-
ATK_BH05	1	50	2/2	---	---	0.30 to 2.50	360 secs	-	-	-	-	3.1	0.0	8.7	-	-	0	-	0	-	-
ATK_BH05	1	50	2/3	2.50	2.63	0.30 to 2.50	08/06/2023 12:44:00	-	-	-	1.45	-	-	-	-	-	-	-	-	-	-
ATK_BH05	1	50	3	2.50	---	0.30 to 2.50	20/06/2023 07:58:00	1004	1004	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH05	1	50	3	---	---	0.30 to 2.50	60 secs	1004	1004	$0.2_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH05	1	50	3/2	2.50	---	0.30 to 2.50	20/06/2023 08:00:00	-	-	-	-	0.0	0.0	20.9	-	-	1	-	0	-	-
ATK_BH05	1	50	3/2	---	---	0.30 to 2.50	30 secs	-	-	-	-	4.1	0.0	6.0	-	-	1	-	0	-	-
ATK_BH05	1	50	3/2	---	---	0.30 to 2.50	60 secs	-	-	-	-	4.1	0.0	4.0	-	-	1	-	0	-	-
ATK_BH05	1	50	3/2	---	---	0.30 to 2.50	90 secs	-	-	-	-	4.1	0.0	3.5	-	-	1	-	0	-	-
ATK_BH05	1	50	3/2	---	---	0.30 to 2.50	120 secs	-	-	-	-	4.2	0.0	2.7	-	-	1	-	0	-	-
ATK_BH05	1	50	3/2	---	---	0.30 to 2.50	180 secs	-	-	-	-	4.3	0.0	2.3	-	-	1	-	0	-	-
ATK_BH05	1	50	3/2	---	---	0.30 to 2.50	240 secs	-	-	-	-	4.4	0.0	1.9	-	-	1	-	0	-	-
ATK_BH05	1	50	3/2	---	---	0.30 to 2.50	300 secs	-	-	-	-	4.4	0.0	1.7	-	-	1	-	0	-	-
ATK_BH05	1	50	3/2	---	---	0.30 to 2.50	360 secs	-	-	-	-	4.4	0.0	1.8	-	-	1	-	0	-	-
ATK_BH05	1	50	3/3	2.50	2.63	0.30 to 2.50	20/06/2023 08:07:00	-	-	-	1.40	-	-	-	-	-	-	-	-	-	-
ATK_BH05	1	50	4	2.50	---	0.30 to 2.50	03/07/2023 14:16:00	1004	1004	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH05	1	50	4	---	---	0.30 to 2.50	60 secs	1004	1004	$0.8_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH05	1	50	4/2	2.50	---	0.30 to 2.50	03/07/2023 14:18:00	-	-	-	-	0.0	0.0	20.8	-	-	1	-	0	-	-
ATK_BH05	1	50	4/2	---	---	0.30 to 2.50	30 secs	-	-	-	-	4.3	0.0	4.9	-	-	1	-	0	-	-
ATK_BH05	1	50	4/2	---	---	0.30 to 2.50	60 secs	-	-	-	-	4.3	0.0	1.9	-	-	1	-	0	-	-
ATK_BH05	1	50	4/2	---	---	0.30 to 2.50	90 secs	-	-	-	-	4.3	0.0	1.8	-	-	1	-	0	-	-
ATK_BH05	1	50	4/2	---	---	0.30 to 2.50	120 secs	-	-	-	-	4.3	0.0	1.8	-	-	1	-	0	-	-
ATK_BH05	1	50	4/2	---	---	0.30 to 2.50	180 secs	-	-	-	-	4.3	0.0	1.9	-	-	1	-	0	-	-
ATK_BH05	1	50	4/2	---	---	0.30 to 2.50	240 secs	-	-	-	-	4.3	0.0	1.9	-	-	1	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH05	1	50	4/2	---	---	0.30 to 2.50	300 secs	-	-	-	-	4.2	0.0	2.1	-	-	1	-	0	-	-
ATK_BH05	1	50	4/2	---	---	0.30 to 2.50	360 secs	-	-	-	-	4.2	0.0	2.3	-	-	1	-	0	-	-
ATK_BH05	1	50	4/3	2.50	2.63	0.30 to 2.50	03/07/2023 14:25:00	-	-	-	1.39	-	-	-	-	-	-	-	-	-	-
ATK_BH05	1	50	5	2.50	---	0.30 to 2.50	19/07/2023 11:52:00	1013	1013	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH05	1	50	5	---	---	0.30 to 2.50	60 secs	1013	1013	$0.4_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH05	1	50	5/2	2.50	---	0.30 to 2.50	19/07/2023 11:54:00	-	-	-	-	0.0	0.0	21.0	-	-	1	-	0	-	-
ATK_BH05	1	50	5/2	---	---	0.30 to 2.50	30 secs	-	-	-	-	3.8	0.0	3.4	-	-	1	-	0	-	-
ATK_BH05	1	50	5/2	---	---	0.30 to 2.50	60 secs	-	-	-	-	3.8	0.0	2.6	-	-	2	-	0	-	-
ATK_BH05	1	50	5/2	---	---	0.30 to 2.50	90 secs	-	-	-	-	3.8	0.0	2.6	-	-	2	-	0	-	-
ATK_BH05	1	50	5/2	---	---	0.30 to 2.50	120 secs	-	-	-	-	3.8	0.0	2.7	-	-	2	-	0	-	-
ATK_BH05	1	50	5/2	---	---	0.30 to 2.50	180 secs	-	-	-	-	3.8	0.0	2.8	-	-	2	-	0	-	-
ATK_BH05	1	50	5/2	---	---	0.30 to 2.50	240 secs	-	-	-	-	3.7	0.0	3.1	-	-	2	-	0	-	-
ATK_BH05	1	50	5/2	---	---	0.30 to 2.50	300 secs	-	-	-	-	3.7	0.0	3.4	-	-	1	-	0	-	-
ATK_BH05	1	50	5/2	---	---	0.30 to 2.50	360 secs	-	-	-	-	3.6	0.0	3.6	-	-	1	-	0	-	-
ATK_BH05	1	50	5/3	2.50	2.63	0.30 to 2.50	19/07/2023 12:01:00	-	-	-	1.36	-	-	-	-	-	-	-	-	-	-
ATK_BH05	1	50	6	2.50	---	0.30 to 2.50	01/08/2023 10:04:00	996	996	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH05	1	50	6	---	---	0.30 to 2.50	60 secs	996	996	$0.3_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH05	1	50	6/2	2.50	---	0.30 to 2.50	01/08/2023 10:06:00	-	-	-	-	0.1	0.0	20.8	-	-	1	-	0	-	-
ATK_BH05	1	50	6/2	---	---	0.30 to 2.50	30 secs	-	-	-	-	4.0	0.0	7.1	-	-	0	-	0	-	-
ATK_BH05	1	50	6/2	---	---	0.30 to 2.50	60 secs	-	-	-	-	4.1	0.0	1.5	-	-	0	-	0	-	-
ATK_BH05	1	50	6/2	---	---	0.30 to 2.50	90 secs	-	-	-	-	4.1	0.0	1.2	-	-	0	-	0	-	-
ATK_BH05	1	50	6/2	---	---	0.30 to 2.50	120 secs	-	-	-	-	4.1	0.0	1.1	-	-	0	-	0	-	-
ATK_BH05	1	50	6/2	---	---	0.30 to 2.50	180 secs	-	-	-	-	4.1	0.0	1.0	-	-	0	-	0	-	-
ATK_BH05	1	50	6/2	---	---	0.30 to 2.50	240 secs	-	-	-	-	4.2	0.0	0.7	-	-	0	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH05	1	50	6/2	---	---	0.30 to 2.50	300 secs	-	-	-	-	4.3	0.0	0.4	-	-	0	-	0	-	-
ATK_BH05	1	50	6/2	---	---	0.30 to 2.50	360 secs	-	-	-	-	4.3	0.0	0.2	-	-	0	-	0	-	-
ATK_BH05	1	50	6/3	2.50	2.63	0.30 to 2.50	01/08/2023 10:13:00	-	-	-	1.32	-	-	-	-	-	-	-	-	-	-
ATK_BH06	1	50	1	4.00	---	2.00 to 4.00	19/05/2023 08:10:00	1023	1023	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH06	1	50	1	---	---	2.00 to 4.00	60 secs	1023	1023	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH06	1	50	1/2	4.00	---	2.00 to 4.00	19/05/2023 08:12:00	-	-	-	-	0.1	0.0	21.7	-	-	1	-	0	-	-
ATK_BH06	1	50	1/2	---	---	2.00 to 4.00	30 secs	-	-	-	-	0.2	0.0	21.1	-	-	2	-	0	-	-
ATK_BH06	1	50	1/2	---	---	2.00 to 4.00	60 secs	-	-	-	-	0.2	0.0	20.7	-	-	1	-	0	-	-
ATK_BH06	1	50	1/2	---	---	2.00 to 4.00	90 secs	-	-	-	-	0.2	0.0	20.6	-	-	1	-	0	-	-
ATK_BH06	1	50	1/2	---	---	2.00 to 4.00	120 secs	-	-	-	-	0.3	0.0	20.6	-	-	1	-	0	-	-
ATK_BH06	1	50	1/2	---	---	2.00 to 4.00	180 secs	-	-	-	-	0.3	0.0	20.6	-	-	1	-	0	-	-
ATK_BH06	1	50	1/2	---	---	2.00 to 4.00	240 secs	-	-	-	-	0.3	0.0	20.3	-	-	1	-	0	-	-
ATK_BH06	1	50	1/2	---	---	2.00 to 4.00	300 secs	-	-	-	-	0.3	0.0	20.1	-	-	0	-	0	-	-
ATK_BH06	1	50	1/2	---	---	2.00 to 4.00	360 secs	-	-	-	-	0.3	0.0	19.9	-	-	0	-	0	-	-
ATK_BH06	1	50	1/3	4.00	3.96	2.00 to 4.00	19/05/2023 08:19:00	-	-	-	1.29	-	-	-	-	-	-	-	-	-	-
ATK_BH06	1	50	2	4.00	---	2.00 to 4.00	08/06/2023 10:34:00	1017	1017	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH06	1	50	2	---	---	2.00 to 4.00	60 secs	1017	1017	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH06	1	50	2/2	4.00	---	2.00 to 4.00	08/06/2023 10:36:00	-	-	-	-	0.0	0.0	20.6	-	-	0	-	0	-	-
ATK_BH06	1	50	2/2	---	---	2.00 to 4.00	30 secs	-	-	-	-	0.3	0.0	17.6	-	-	1	-	0	-	-
ATK_BH06	1	50	2/2	---	---	2.00 to 4.00	60 secs	-	-	-	-	0.3	0.0	17.1	-	-	1	-	0	-	-
ATK_BH06	1	50	2/2	---	---	2.00 to 4.00	90 secs	-	-	-	-	0.3	0.0	17.0	-	-	1	-	0	-	-
ATK_BH06	1	50	2/2	---	---	2.00 to 4.00	120 secs	-	-	-	-	0.3	0.0	17.0	-	-	1	-	0	-	-
ATK_BH06	1	50	2/2	---	---	2.00 to 4.00	180 secs	-	-	-	-	0.3	0.0	17.0	-	-	1	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH06	1	50	2/2	---	---	2.00 to 4.00	240 secs	-	-	-	-	0.3	0.0	17.2	-	-	1	-	0	-	-
ATK_BH06	1	50	2/2	---	---	2.00 to 4.00	300 secs	-	-	-	-	0.2	0.0	18.8	-	-	0	-	0	-	-
ATK_BH06	1	50	2/2	---	---	2.00 to 4.00	360 secs	-	-	-	-	0.1	0.0	19.7	-	-	0	-	0	-	-
ATK_BH06	1	50	2/3	4.00	3.94	2.00 to 4.00	08/06/2023 10:43:00	-	-	-	2.12	-	-	-	-	-	-	-	-	-	-
ATK_BH06	1	50	3	4.00	---	2.00 to 4.00	19/06/2023 17:04:00	1004	1004	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH06	1	50	3	---	---	2.00 to 4.00	60 secs	1004	1004	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH06	1	50	3/2	4.00	---	2.00 to 4.00	19/06/2023 17:06:00	-	-	-	-	0.0	0.0	20.9	-	-	0	-	0	-	-
ATK_BH06	1	50	3/2	---	---	2.00 to 4.00	30 secs	-	-	-	-	0.0	0.0	19.3	-	-	5	-	0	-	-
ATK_BH06	1	50	3/2	---	---	2.00 to 4.00	60 secs	-	-	-	-	0.0	0.0	19.1	-	-	7	-	0	-	-
ATK_BH06	1	50	3/2	---	---	2.00 to 4.00	90 secs	-	-	-	-	0.1	0.0	19.1	-	-	8	-	0	-	-
ATK_BH06	1	50	3/2	---	---	2.00 to 4.00	120 secs	-	-	-	-	0.1	0.0	19.0	-	-	8	-	0	-	-
ATK_BH06	1	50	3/2	---	---	2.00 to 4.00	180 secs	-	-	-	-	0.1	0.0	18.9	-	-	8	-	0	-	-
ATK_BH06	1	50	3/2	---	---	2.00 to 4.00	240 secs	-	-	-	-	0.1	0.0	18.8	-	-	8	-	0	-	-
ATK_BH06	1	50	3/2	---	---	2.00 to 4.00	300 secs	-	-	-	-	0.1	0.0	18.8	-	-	7	-	0	-	-
ATK_BH06	1	50	3/2	---	---	2.00 to 4.00	360 secs	-	-	-	-	0.1	0.0	18.9	-	-	6	-	0	-	-
ATK_BH06	1	50	3/3	4.00	3.94	2.00 to 4.00	19/06/2023 17:13:00	-	-	-	1.72	-	-	-	-	-	-	-	-	-	-
ATK_BH06	1	50	4	4.00	---	2.00 to 4.00	03/07/2023 10:21:00	1003	1003	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH06	1	50	4	---	---	2.00 to 4.00	60 secs	1003	1003	$0.4_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH06	1	50	4/2	4.00	---	2.00 to 4.00	03/07/2023 10:23:00	-	-	-	-	0.4	0.0	20.7	-	-	0	-	0	-	-
ATK_BH06	1	50	4/2	---	---	2.00 to 4.00	30 secs	-	-	-	-	0.5	0.0	17.8	-	-	1	-	0	-	-
ATK_BH06	1	50	4/2	---	---	2.00 to 4.00	60 secs	-	-	-	-	0.6	0.0	16.6	-	-	0	-	0	-	-
ATK_BH06	1	50	4/2	---	---	2.00 to 4.00	90 secs	-	-	-	-	0.6	0.0	16.5	-	-	0	-	0	-	-
ATK_BH06	1	50	4/2	---	---	2.00 to 4.00	120 secs	-	-	-	-	0.6	0.0	16.6	-	-	0	-	0	-	-
ATK_BH06	1	50	4/2	---	---	2.00 to 4.00	180 secs	-	-	-	-	0.6	0.0	16.7	-	-	0	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH06	1	50	4/2	---	---	2.00 to 4.00	240 secs	-	-	-	-	0.6	0.0	16.8	-	-	0	-	0	-	-
ATK_BH06	1	50	4/2	---	---	2.00 to 4.00	300 secs	-	-	-	-	0.6	0.0	17.0	-	-	0	-	0	-	-
ATK_BH06	1	50	4/2	---	---	2.00 to 4.00	360 secs	-	-	-	-	0.5	0.0	17.1	-	-	0	-	0	-	-
ATK_BH06	1	50	4/3	4.00	3.94	2.00 to 4.00	03/07/2023 10:30:00	-	-	-	2.25	-	-	-	-	-	-	-	-	-	-
ATK_BH06	1	50	5	4.00	---	2.00 to 4.00	19/07/2023 10:30:00	1012	1012	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH06	1	50	5	---	---	2.00 to 4.00	60 secs	1012	1012	$0.4_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH06	1	50	5/2	4.00	---	2.00 to 4.00	19/07/2023 10:32:00	-	-	-	-	0.1	0.0	20.9	-	-	0	-	0	-	-
ATK_BH06	1	50	5/2	---	---	2.00 to 4.00	30 secs	-	-	-	-	0.6	0.0	15.7	-	-	1	-	0	-	-
ATK_BH06	1	50	5/2	---	---	2.00 to 4.00	60 secs	-	-	-	-	0.6	0.0	15.0	-	-	2	-	0	-	-
ATK_BH06	1	50	5/2	---	---	2.00 to 4.00	90 secs	-	-	-	-	0.6	0.0	15.0	-	-	2	-	0	-	-
ATK_BH06	1	50	5/2	---	---	2.00 to 4.00	120 secs	-	-	-	-	0.6	0.0	15.0	-	-	2	-	0	-	-
ATK_BH06	1	50	5/2	---	---	2.00 to 4.00	180 secs	-	-	-	-	0.6	0.0	15.0	-	-	2	-	0	-	-
ATK_BH06	1	50	5/2	---	---	2.00 to 4.00	240 secs	-	-	-	-	0.6	0.0	15.1	-	-	2	-	0	-	-
ATK_BH06	1	50	5/2	---	---	2.00 to 4.00	300 secs	-	-	-	-	0.6	0.0	15.2	-	-	2	-	0	-	-
ATK_BH06	1	50	5/2	---	---	2.00 to 4.00	360 secs	-	-	-	-	0.6	0.0	15.3	-	-	2	-	0	-	-
ATK_BH06	1	50	5/3	4.00	3.94	2.00 to 4.00	19/07/2023 10:39:00	-	-	-	1.92	-	-	-	-	-	-	-	-	-	-
ATK_BH06	1	50	6	4.00	---	2.00 to 4.00	01/08/2023 08:22:00	995	995	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH06	1	50	6	---	---	2.00 to 4.00	60 secs	995	995	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH06	1	50	6/2	4.00	---	2.00 to 4.00	01/08/2023 08:24:00	-	-	-	-	0.1	0.0	20.8	-	-	0	-	0	-	-
ATK_BH06	1	50	6/2	---	---	2.00 to 4.00	30 secs	-	-	-	-	0.6	0.0	16.5	-	-	0	-	0	-	-
ATK_BH06	1	50	6/2	---	---	2.00 to 4.00	60 secs	-	-	-	-	0.6	0.0	15.4	-	-	0	-	0	-	-
ATK_BH06	1	50	6/2	---	---	2.00 to 4.00	90 secs	-	-	-	-	0.6	0.0	15.3	-	-	0	-	0	-	-
ATK_BH06	1	50	6/2	---	---	2.00 to 4.00	120 secs	-	-	-	-	0.6	0.0	15.3	-	-	0	-	0	-	-
ATK_BH06	1	50	6/2	---	---	2.00 to 4.00	180 secs	-	-	-	-	0.6	0.0	15.3	-	-	0	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH06	1	50	6/2	---	---	2.00 to 4.00	240 secs	-	-	-	-	0.6	0.0	15.3	-	-	0	-	0	-	-
ATK_BH06	1	50	6/2	---	---	2.00 to 4.00	300 secs	-	-	-	-	0.6	0.0	15.3	-	-	0	-	0	-	-
ATK_BH06	1	50	6/2	---	---	2.00 to 4.00	360 secs	-	-	-	-	0.6	0.0	15.3	-	-	0	-	0	-	-
ATK_BH06	1	50	6/3	4.00	3.94	2.00 to 4.00	01/08/2023 08:31:00	-	-	-	1.73	-	-	-	-	-	-	-	-	-	-
ATK_BH07	1	50	1	2.00	---	0.50 to 2.00	19/05/2023 07:17:00	1023	1023	$0.1_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH07	1	50	1	---	---	0.50 to 2.00	60 secs	1023	1023	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH07	1	50	1/2	2.00	---	0.50 to 2.00	19/05/2023 07:19:00	-	-	-	-	0.1	0.0	21.3	-	-	0	-	0	-	-
ATK_BH07	1	50	1/2	---	---	0.50 to 2.00	30 secs	-	-	-	-	0.0	0.0	20.9	-	-	0	-	0	-	-
ATK_BH07	1	50	1/2	---	---	0.50 to 2.00	60 secs	-	-	-	-	0.0	0.0	21.0	-	-	0	-	0	-	-
ATK_BH07	1	50	1/2	---	---	0.50 to 2.00	90 secs	-	-	-	-	0.0	0.0	21.2	-	-	0	-	0	-	-
ATK_BH07	1	50	1/2	---	---	0.50 to 2.00	120 secs	-	-	-	-	0.0	0.0	21.3	-	-	0	-	0	-	-
ATK_BH07	1	50	1/2	---	---	0.50 to 2.00	180 secs	-	-	-	-	0.0	0.0	21.4	-	-	0	-	0	-	-
ATK_BH07	1	50	1/2	---	---	0.50 to 2.00	240 secs	-	-	-	-	0.0	0.0	21.5	-	-	0	-	0	-	-
ATK_BH07	1	50	1/2	---	---	0.50 to 2.00	300 secs	-	-	-	-	0.0	0.0	21.6	-	-	0	-	0	-	-
ATK_BH07	1	50	1/2	---	---	0.50 to 2.00	360 secs	-	-	-	-	0.0	0.0	21.7	-	-	0	-	0	-	-
ATK_BH07	1	50	1/3	2.00	1.35	0.50 to 2.00	19/05/2023 07:26:00	-	-	-	0.63	-	-	-	-	-	-	-	-	-	-
ATK_BH07	1	50	2	2.00	---	0.50 to 2.00	08/06/2023 12:23:00	1016	1016	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH07	1	50	2	---	---	0.50 to 2.00	60 secs	1016	1016	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH07	1	50	2/2	2.00	---	0.50 to 2.00	08/06/2023 12:25:00	-	-	-	-	0.0	0.0	20.6	-	-	0	-	0	-	-
ATK_BH07	1	50	2/2	---	---	0.50 to 2.00	30 secs	-	-	-	-	0.0	0.0	20.4	-	-	3	-	0	-	-
ATK_BH07	1	50	2/2	---	---	0.50 to 2.00	60 secs	-	-	-	-	0.0	0.0	20.3	-	-	2	-	0	-	-
ATK_BH07	1	50	2/2	---	---	0.50 to 2.00	90 secs	-	-	-	-	0.0	0.0	20.3	-	-	2	-	0	-	-
ATK_BH07	1	50	2/2	---	---	0.50 to 2.00	120 secs	-	-	-	-	0.0	0.0	20.3	-	-	2	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH07	1	50	2/2	---	---	0.50 to 2.00	180 secs	-	-	-	-	0.0	0.0	20.3	-	-	1	-	0	-	-
ATK_BH07	1	50	2/2	---	---	0.50 to 2.00	240 secs	-	-	-	-	0.0	0.0	20.3	-	-	0	-	0	-	-
ATK_BH07	1	50	2/2	---	---	0.50 to 2.00	300 secs	-	-	-	-	0.0	0.0	20.3	-	-	0	-	0	-	-
ATK_BH07	1	50	2/2	---	---	0.50 to 2.00	360 secs	-	-	-	-	0.0	0.0	20.3	-	-	0	-	0	-	-
ATK_BH07	1	50	2/3	2.00	2.11	0.50 to 2.00	08/06/2023 12:32:00	-	-	-	0.80	-	-	-	-	-	-	-	-	-	-
ATK_BH07	1	50	3	2.00	---	0.50 to 2.00	20/06/2023 07:42:00	1004	1004	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH07	1	50	3	---	---	0.50 to 2.00	60 secs	1004	1004	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH07	1	50	3/2	2.00	---	0.50 to 2.00	20/06/2023 07:44:00	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH07	1	50	3/2	---	---	0.50 to 2.00	30 secs	-	-	-	-	0.0	0.0	20.2	-	-	3	-	0	-	-
ATK_BH07	1	50	3/2	---	---	0.50 to 2.00	60 secs	-	-	-	-	0.0	0.0	20.0	-	-	4	-	0	-	-
ATK_BH07	1	50	3/2	---	---	0.50 to 2.00	90 secs	-	-	-	-	0.0	0.0	20.0	-	-	4	-	0	-	-
ATK_BH07	1	50	3/2	---	---	0.50 to 2.00	120 secs	-	-	-	-	0.0	0.0	20.0	-	-	4	-	0	-	-
ATK_BH07	1	50	3/2	---	---	0.50 to 2.00	180 secs	-	-	-	-	0.0	0.0	20.0	-	-	3	-	0	-	-
ATK_BH07	1	50	3/2	---	---	0.50 to 2.00	240 secs	-	-	-	-	0.0	0.0	20.0	-	-	1	-	0	-	-
ATK_BH07	1	50	3/2	---	---	0.50 to 2.00	300 secs	-	-	-	-	0.0	0.0	20.0	-	-	0	-	0	-	-
ATK_BH07	1	50	3/2	---	---	0.50 to 2.00	360 secs	-	-	-	-	0.0	0.0	20.0	-	-	0	-	0	-	-
ATK_BH07	1	50	3/3	2.00	2.11	0.50 to 2.00	20/06/2023 07:51:00	-	-	-	0.78	-	-	-	-	-	-	-	-	-	-
ATK_BH07	1	50	4	2.00	---	0.50 to 2.00	03/07/2023 14:41:00	1002	1002	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH07	1	50	4	---	---	0.50 to 2.00	60 secs	1002	1002	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH07	1	50	4/2	2.00	---	0.50 to 2.00	03/07/2023 14:43:00	-	-	-	-	0.0	0.0	20.6	-	-	1	-	0	-	-
ATK_BH07	1	50	4/2	---	---	0.50 to 2.00	30 secs	-	-	-	-	0.0	0.0	20.5	-	-	3	-	0	-	-
ATK_BH07	1	50	4/2	---	---	0.50 to 2.00	60 secs	-	-	-	-	0.0	0.0	20.4	-	-	4	-	0	-	-
ATK_BH07	1	50	4/2	---	---	0.50 to 2.00	90 secs	-	-	-	-	0.0	0.0	20.4	-	-	4	-	0	-	-
ATK_BH07	1	50	4/2	---	---	0.50 to 2.00	120 secs	-	-	-	-	0.0	0.0	20.4	-	-	4	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH07	1	50	4/2	---	---	0.50 to 2.00	180 secs	-	-	-	-	0.0	0.0	20.4	-	-	4	-	0	-	-
ATK_BH07	1	50	4/2	---	---	0.50 to 2.00	240 secs	-	-	-	-	0.0	0.0	20.5	-	-	4	-	0	-	-
ATK_BH07	1	50	4/2	---	---	0.50 to 2.00	300 secs	-	-	-	-	0.0	0.0	20.5	-	-	4	-	0	-	-
ATK_BH07	1	50	4/2	---	---	0.50 to 2.00	360 secs	-	-	-	-	0.0	0.0	20.5	-	-	4	-	0	-	-
ATK_BH07	1	50	4/3	2.00	2.11	0.50 to 2.00	03/07/2023 14:50:00	-	-	-	0.76	-	-	-	-	-	-	-	-	-	-
ATK_BH07	1	50	5	2.00	---	0.50 to 2.00	19/07/2023 12:25:00	1013	1012	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH07	1	50	5	---	---	0.50 to 2.00	60 secs	1013	1012	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH07	1	50	5/2	2.00	---	0.50 to 2.00	19/07/2023 12:27:00	-	-	-	-	0.0	0.0	21.0	-	-	1	-	0	-	-
ATK_BH07	1	50	5/2	---	---	0.50 to 2.00	30 secs	-	-	-	-	0.0	0.0	20.8	-	-	10	-	0	-	-
ATK_BH07	1	50	5/2	---	---	0.50 to 2.00	60 secs	-	-	-	-	0.0	0.0	20.8	-	-	14	-	0	-	-
ATK_BH07	1	50	5/2	---	---	0.50 to 2.00	90 secs	-	-	-	-	0.0	0.0	20.9	-	-	14	-	0	-	-
ATK_BH07	1	50	5/2	---	---	0.50 to 2.00	120 secs	-	-	-	-	0.0	0.0	21.0	-	-	14	-	0	-	-
ATK_BH07	1	50	5/2	---	---	0.50 to 2.00	180 secs	-	-	-	-	0.0	0.0	21.1	-	-	14	-	0	-	-
ATK_BH07	1	50	5/2	---	---	0.50 to 2.00	240 secs	-	-	-	-	0.0	0.0	21.1	-	-	14	-	0	-	-
ATK_BH07	1	50	5/2	---	---	0.50 to 2.00	300 secs	-	-	-	-	0.0	0.0	21.2	-	-	14	-	0	-	-
ATK_BH07	1	50	5/2	---	---	0.50 to 2.00	360 secs	-	-	-	-	0.0	0.1	21.2	-	-	14	-	0	-	-
ATK_BH07	1	50	5/3	2.00	2.11	0.50 to 2.00	19/07/2023 12:34:00	-	-	-	0.71	-	-	-	-	-	-	-	-	-	-
ATK_BH07	1	50	6	2.00	---	0.50 to 2.00	01/08/2023 10:15:00	995	995	$0.1_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH07	1	50	6	---	---	0.50 to 2.00	60 secs	995	995	$0.3_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH07	1	50	6/2	2.00	---	0.50 to 2.00	01/08/2023 10:17:00	-	-	-	-	0.1	0.0	20.8	-	-	0	-	0	-	-
ATK_BH07	1	50	6/2	---	---	0.50 to 2.00	30 secs	-	-	-	-	0.1	0.0	20.6	-	-	4	-	0	-	-
ATK_BH07	1	50	6/2	---	---	0.50 to 2.00	60 secs	-	-	-	-	0.1	0.0	20.5	-	-	6	-	0	-	-
ATK_BH07	1	50	6/2	---	---	0.50 to 2.00	90 secs	-	-	-	-	0.1	0.0	20.4	-	-	6	-	0	-	-
ATK_BH07	1	50	6/2	---	---	0.50 to 2.00	120 secs	-	-	-	-	0.1	0.0	20.4	-	-	6	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH07	1	50	6/2	---	---	0.50 to 2.00	180 secs	-	-	-	-	0.1	0.0	20.4	-	-	6	-	0	-	-
ATK_BH07	1	50	6/2	---	---	0.50 to 2.00	240 secs	-	-	-	-	0.1	0.0	20.4	-	-	5	-	0	-	-
ATK_BH07	1	50	6/2	---	---	0.50 to 2.00	300 secs	-	-	-	-	0.1	0.0	20.4	-	-	4	-	0	-	-
ATK_BH07	1	50	6/2	---	---	0.50 to 2.00	360 secs	-	-	-	-	0.2	0.0	20.3	-	-	4	-	0	-	-
ATK_BH07	1	50	6/3	2.00	2.11	0.50 to 2.00	01/08/2023 10:24:00	-	-	-	0.66	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	1	40.00	---	31.00 to 40.00	19/05/2023 07:55:00	1023	1023	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	1	---	---	31.00 to 40.00	60 secs	1023	1023	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	1/2	40.00	---	31.00 to 40.00	19/05/2023 07:57:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	1/2	---	---	31.00 to 40.00	30 secs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	1/2	---	---	31.00 to 40.00	60 secs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	1/2	---	---	31.00 to 40.00	90 secs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	1/2	---	---	31.00 to 40.00	120 secs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	1/2	---	---	31.00 to 40.00	180 secs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	1/2	---	---	31.00 to 40.00	240 secs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	1/2	---	---	31.00 to 40.00	300 secs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	1/2	---	---	31.00 to 40.00	360 secs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	1/3	40.00	39.12	31.00 to 40.00	19/05/2023 08:04:00	-	-	-	23.56	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	2	40.00	---	31.00 to 40.00	08/06/2023 11:58:00	1018	1018	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	2	---	---	31.00 to 40.00	60 secs	1018	1018	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	2/2	40.00	---	31.00 to 40.00	08/06/2023 12:00:00	-	-	-	-	0.0	0.0	20.9	-	-	0	-	0	-	-
ATK_BH08A	1	50	2/2	---	---	31.00 to 40.00	30 secs	-	-	-	-	1.2	0.0	18.9	-	-	44	-	0	-	-
ATK_BH08A	1	50	2/2	---	---	31.00 to 40.00	60 secs	-	-	-	-	1.2	0.0	18.8	-	-	57	-	0	-	-
ATK_BH08A	1	50	2/2	---	---	31.00 to 40.00	90 secs	-	-	-	-	1.5	0.0	18.6	-	-	45	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH08A	1	50	2/2	---	---	31.00 to 40.00	120 secs	-	-	-	-	1.9	0.0	18.4	-	-	28	-	0	-	-
ATK_BH08A	1	50	2/2	---	---	31.00 to 40.00	180 secs	-	-	-	-	2.0	0.0	18.3	-	-	20	-	0	-	-
ATK_BH08A	1	50	2/2	---	---	31.00 to 40.00	240 secs	-	-	-	-	2.1	0.0	18.3	-	-	13	-	0	-	-
ATK_BH08A	1	50	2/2	---	---	31.00 to 40.00	300 secs	-	-	-	-	2.1	0.0	18.4	-	-	10	-	0	-	-
ATK_BH08A	1	50	2/2	---	---	31.00 to 40.00	360 secs	-	-	-	-	2.0	0.0	18.5	-	-	8	-	0	-	-
ATK_BH08A	1	50	2/3	40.00	39.13	31.00 to 40.00	08/06/2023 12:07:00	-	-	-	23.48	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	3	40.00	---	31.00 to 40.00	20/06/2023 10:04:00	1003	1003	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	3	---	---	31.00 to 40.00	60 secs	1003	1003	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	3/2	40.00	---	31.00 to 40.00	20/06/2023 10:06:00	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH08A	1	50	3/2	---	---	31.00 to 40.00	30 secs	-	-	-	-	0.5	0.0	18.7	-	-	3	-	0	-	-
ATK_BH08A	1	50	3/2	---	---	31.00 to 40.00	60 secs	-	-	-	-	0.5	0.0	18.1	-	-	3	-	0	-	-
ATK_BH08A	1	50	3/2	---	---	31.00 to 40.00	90 secs	-	-	-	-	0.4	0.0	18.4	-	-	2	-	0	-	-
ATK_BH08A	1	50	3/2	---	---	31.00 to 40.00	120 secs	-	-	-	-	0.3	0.0	18.9	-	-	2	-	0	-	-
ATK_BH08A	1	50	3/2	---	---	31.00 to 40.00	180 secs	-	-	-	-	0.2	0.0	19.3	-	-	2	-	0	-	-
ATK_BH08A	1	50	3/2	---	---	31.00 to 40.00	240 secs	-	-	-	-	0.2	0.0	19.7	-	-	1	-	0	-	-
ATK_BH08A	1	50	3/2	---	---	31.00 to 40.00	300 secs	-	-	-	-	0.1	0.0	20.0	-	-	1	-	0	-	-
ATK_BH08A	1	50	3/2	---	---	31.00 to 40.00	360 secs	-	-	-	-	0.1	0.0	20.1	-	-	1	-	0	-	-
ATK_BH08A	1	50	3/3	40.00	39.13	31.00 to 40.00	20/06/2023 10:13:00	-	-	-	12.27	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	4	40.00	---	31.00 to 40.00	03/07/2023 12:15:00	1002	1002	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	4	---	---	31.00 to 40.00	60 secs	1002	1002	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	4/2	40.00	---	31.00 to 40.00	03/07/2023 12:17:00	-	-	-	-	0.1	0.0	20.7	-	-	0	-	0	-	-
ATK_BH08A	1	50	4/2	---	---	31.00 to 40.00	30 secs	-	-	-	-	1.2	0.0	19.9	-	-	3	-	1	-	-
ATK_BH08A	1	50	4/2	---	---	31.00 to 40.00	60 secs	-	-	-	-	1.1	0.0	17.6	-	-	5	-	1	-	-
ATK_BH08A	1	50	4/2	---	---	31.00 to 40.00	90 secs	-	-	-	-	1.1	0.0	17.3	-	-	5	-	1	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH08A	1	50	4/2	---	---	31.00 to 40.00	120 secs	-	-	-	-	1.1	0.0	17.3	-	-	5	-	1	-	-
ATK_BH08A	1	50	4/2	---	---	31.00 to 40.00	180 secs	-	-	-	-	1.1	0.0	17.3	-	-	5	-	1	-	-
ATK_BH08A	1	50	4/2	---	---	31.00 to 40.00	240 secs	-	-	-	-	1.2	0.0	17.2	-	-	5	-	1	-	-
ATK_BH08A	1	50	4/2	---	---	31.00 to 40.00	300 secs	-	-	-	-	1.2	0.0	17.2	-	-	4	-	1	-	-
ATK_BH08A	1	50	4/2	---	---	31.00 to 40.00	360 secs	-	-	-	-	1.1	0.0	17.2	-	-	2	-	1	-	-
ATK_BH08A	1	50	4/3	40.00	39.13	31.00 to 40.00	03/07/2023 12:24:00	-	-	-	23.26	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	5	40.00	---	31.00 to 40.00	19/07/2023 11:32:00	1010	1010	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	5	---	---	31.00 to 40.00	60 secs	1010	1010	$-0.4_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	5/2	40.00	---	31.00 to 40.00	19/07/2023 11:34:00	-	-	-	-	0.0	0.0	20.9	-	-	0	-	0	-	-
ATK_BH08A	1	50	5/2	---	---	31.00 to 40.00	30 secs	-	-	-	-	0.1	0.0	20.1	-	-	1	-	0	-	-
ATK_BH08A	1	50	5/2	---	---	31.00 to 40.00	60 secs	-	-	-	-	0.2	0.0	19.7	-	-	1	-	0	-	-
ATK_BH08A	1	50	5/2	---	---	31.00 to 40.00	90 secs	-	-	-	-	0.3	0.0	19.5	-	-	1	-	0	-	-
ATK_BH08A	1	50	5/2	---	---	31.00 to 40.00	120 secs	-	-	-	-	0.3	0.0	19.5	-	-	2	-	0	-	-
ATK_BH08A	1	50	5/2	---	---	31.00 to 40.00	180 secs	-	-	-	-	0.3	0.0	19.5	-	-	2	-	0	-	-
ATK_BH08A	1	50	5/2	---	---	31.00 to 40.00	240 secs	-	-	-	-	0.3	0.0	19.6	-	-	2	-	0	-	-
ATK_BH08A	1	50	5/2	---	---	31.00 to 40.00	300 secs	-	-	-	-	0.3	0.0	19.6	-	-	2	-	0	-	-
ATK_BH08A	1	50	5/2	---	---	31.00 to 40.00	360 secs	-	-	-	-	0.3	0.0	19.6	-	-	2	-	0	-	-
ATK_BH08A	1	50	5/3	40.00	39.13	31.00 to 40.00	19/07/2023 11:41:00	-	-	-	21.91	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	6	40.00	---	31.00 to 40.00	01/08/2023 09:34:00	995	995	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	6	---	---	31.00 to 40.00	60 secs	995	995	$-0.3_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH08A	1	50	6/2	40.00	---	31.00 to 40.00	01/08/2023 09:36:00	-	-	-	-	0.1	0.0	20.9	-	-	0	-	0	-	-
ATK_BH08A	1	50	6/2	---	---	31.00 to 40.00	30 secs	-	-	-	-	1.8	0.0	17.0	-	-	3	-	0	-	-
ATK_BH08A	1	50	6/2	---	---	31.00 to 40.00	60 secs	-	-	-	-	1.9	0.0	15.2	-	-	5	-	0	-	-
ATK_BH08A	1	50	6/2	---	---	31.00 to 40.00	90 secs	-	-	-	-	2.0	0.0	14.7	-	-	5	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH08A	1	50	6/2	---	---	31.00 to 40.00	120 secs	-	-	-	-	2.1	0.0	14.5	-	-	5	-	0	-	-
ATK_BH08A	1	50	6/2	---	---	31.00 to 40.00	180 secs	-	-	-	-	2.1	0.0	14.3	-	-	5	-	0	-	-
ATK_BH08A	1	50	6/2	---	---	31.00 to 40.00	240 secs	-	-	-	-	2.2	0.0	14.1	-	-	5	-	0	-	-
ATK_BH08A	1	50	6/2	---	---	31.00 to 40.00	300 secs	-	-	-	-	2.2	0.0	14.0	-	-	5	-	0	-	-
ATK_BH08A	1	50	6/2	---	---	31.00 to 40.00	360 secs	-	-	-	-	2.2	0.0	13.9	-	-	5	-	0	-	-
ATK_BH08A	1	50	6/3	40.00	39.13	31.00 to 40.00	01/08/2023 09:43:00	-	-	-	22.80	-	-	-	-	-	-	-	-	-	-
ATK_BH09	1	50	1	1.50	---	0.50 to 1.50	19/05/2023 10:34:00	1022	1023	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH09	1	50	1	---	---	0.50 to 1.50	60 secs	1022	1023	$-0.2_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH09	1	50	1/2	1.50	---	0.50 to 1.50	19/05/2023 10:36:00	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH09	1	50	1/2	---	---	0.50 to 1.50	30 secs	-	-	-	-	0.0	0.0	20.6	-	-	61	-	0	-	-
ATK_BH09	1	50	1/2	---	---	0.50 to 1.50	60 secs	-	-	-	-	0.0	0.0	20.4	-	-	82	-	0	-	-
ATK_BH09	1	50	1/2	---	---	0.50 to 1.50	90 secs	-	-	-	-	0.0	1.3	16.9	-	-	75	-	1	-	-
ATK_BH09	1	50	1/2	---	---	0.50 to 1.50	120 secs	-	-	-	-	0.0	1.7	7.6	-	-	54	-	0	-	-
ATK_BH09	1	50	1/2	---	---	0.50 to 1.50	180 secs	-	-	-	-	0.0	2.3	2.3	-	-	38	-	0	-	-
ATK_BH09	1	50	1/2	---	---	0.50 to 1.50	240 secs	-	-	-	-	0.0	2.8	1.9	-	-	28	-	0	-	-
ATK_BH09	1	50	1/2	---	---	0.50 to 1.50	300 secs	-	-	-	-	0.0	2.7	2.0	-	-	24	-	0	-	-
ATK_BH09	1	50	1/2	---	---	0.50 to 1.50	360 secs	-	-	-	-	0.0	2.6	2.1	-	-	22	-	0	-	-
ATK_BH09	1	50	1/3	1.50	1.64	0.50 to 1.50	19/05/2023 10:43:00	-	-	-	0.19	-	-	-	-	-	-	-	-	-	-
ATK_BH09	1	50	2	1.50	---	0.50 to 1.50	09/06/2023 07:55:00	1013	1013	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH09	1	50	2	---	---	0.50 to 1.50	60 secs	1013	1013	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH09	1	50	2/2	1.50	---	0.50 to 1.50	09/06/2023 07:57:00	-	-	-	-	0.0	0.0	20.8	-	-	10	-	0	-	-
ATK_BH09	1	50	2/2	---	---	0.50 to 1.50	30 secs	-	-	-	-	0.1	0.1	18.1	-	-	9	-	0	-	-
ATK_BH09	1	50	2/2	---	---	0.50 to 1.50	60 secs	-	-	-	-	0.1	0.1	17.5	-	-	9	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH09	1	50	2/2	---	---	0.50 to 1.50	90 secs	-	-	-	-	0.1	0.1	17.5	-	-	9	-	0	-	-
ATK_BH09	1	50	2/2	---	---	0.50 to 1.50	120 secs	-	-	-	-	0.1	0.5	14.2	-	-	8	-	0	-	-
ATK_BH09	1	50	2/2	---	---	0.50 to 1.50	180 secs	-	-	-	-	0.0	2.3	10.3	-	-	7	-	0	-	-
ATK_BH09	1	50	2/2	---	---	0.50 to 1.50	240 secs	-	-	-	-	0.0	9.2	4.8	-	-	5	-	0	-	-
ATK_BH09	1	50	2/2	---	---	0.50 to 1.50	300 secs	-	-	-	-	0.0	16.1	2.2	-	-	4	-	0	-	-
ATK_BH09	1	50	2/2	---	---	0.50 to 1.50	360 secs	-	-	-	-	0.0	19.9	1.4	-	-	4	-	0	-	-
ATK_BH09	1	50	2/3	1.50	1.62	0.50 to 1.50	09/06/2023 08:04:00	-	-	-	0.55	-	-	-	-	-	-	-	-	-	-
ATK_BH09	1	50	3	1.50	---	0.50 to 1.50	19/06/2023 15:50:00	1014	1014	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH09	1	50	3	---	---	0.50 to 1.50	60 secs	1014	1014	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH09	1	50	3/2	1.50	---	0.50 to 1.50	19/06/2023 15:52:00	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH09	1	50	3/2	---	---	0.50 to 1.50	30 secs	-	-	-	-	0.0	0.2	20.2	-	-	7	-	0	-	-
ATK_BH09	1	50	3/2	---	---	0.50 to 1.50	60 secs	-	-	-	-	0.0	0.3	20.1	-	-	10	-	0	-	-
ATK_BH09	1	50	3/2	---	---	0.50 to 1.50	90 secs	-	-	-	-	0.0	0.3	20.0	-	-	11	-	0	-	-
ATK_BH09	1	50	3/2	---	---	0.50 to 1.50	120 secs	-	-	-	-	0.0	11.4	8.1	-	-	6	-	0	-	-
ATK_BH09	1	50	3/2	---	---	0.50 to 1.50	180 secs	-	-	-	-	0.0	22.5	1.5	-	-	4	-	0	-	-
ATK_BH09	1	50	3/2	---	---	0.50 to 1.50	240 secs	-	-	-	-	0.0	32.3	0.2	-	-	3	-	0	-	-
ATK_BH09	1	50	3/2	---	---	0.50 to 1.50	300 secs	-	-	-	-	0.0	35.4	0.3	-	-	3	-	0	-	-
ATK_BH09	1	50	3/2	---	---	0.50 to 1.50	360 secs	-	-	-	-	0.0	34.7	0.5	-	-	3	-	0	-	-
ATK_BH09	1	50	3/3	1.50	1.62	0.50 to 1.50	19/06/2023 15:59:00	-	-	-	0.28	-	-	-	-	-	-	-	-	-	-
ATK_BH09	1	50	4	1.50	---	0.50 to 1.50	03/07/2023 15:02:00	1003	1003	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH09	1	50	4	---	---	0.50 to 1.50	60 secs	1003	1003	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH09	1	50	4/2	1.50	---	0.50 to 1.50	03/07/2023 15:04:00	-	-	-	-	0.0	0.0	20.7	-	-	1	-	0	-	-
ATK_BH09	1	50	4/2	---	---	0.50 to 1.50	30 secs	-	-	-	-	0.0	2.9	7.5	-	-	4	-	0	-	-
ATK_BH09	1	50	4/2	---	---	0.50 to 1.50	60 secs	-	-	-	-	0.0	4.8	6.3	-	-	5	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH09	1	50	4/2	---	---	0.50 to 1.50	90 secs	-	-	-	-	0.1	5.1	6.6	-	-	5	-	0	-	-
ATK_BH09	1	50	4/2	---	---	0.50 to 1.50	120 secs	-	-	-	-	0.0	5.0	6.9	-	-	5	-	0	-	-
ATK_BH09	1	50	4/2	---	---	0.50 to 1.50	180 secs	-	-	-	-	0.0	4.9	7.1	-	-	5	-	0	-	-
ATK_BH09	1	50	4/2	---	---	0.50 to 1.50	240 secs	-	-	-	-	0.0	4.7	7.6	-	-	5	-	0	-	-
ATK_BH09	1	50	4/2	---	---	0.50 to 1.50	300 secs	-	-	-	-	0.0	4.5	8.1	-	-	5	-	0	-	-
ATK_BH09	1	50	4/2	---	---	0.50 to 1.50	360 secs	-	-	-	-	0.0	4.3	8.6	-	-	5	-	0	-	-
ATK_BH09	1	50	4/3	1.50	1.62	0.50 to 1.50	03/07/2023 15:11:00	-	-	-	0.49	-	-	-	-	-	-	-	-	-	-
ATK_BH09	1	50	5	1.50	---	0.50 to 1.50	19/07/2023 12:48:00	1012	1012	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH09	1	50	5	---	---	0.50 to 1.50	60 secs	1012	1012	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH09	1	50	5/2	1.50	---	0.50 to 1.50	19/07/2023 12:50:00	-	-	-	-	0.0	0.0	20.9	-	-	1	-	0	-	-
ATK_BH09	1	50	5/2	---	---	0.50 to 1.50	30 secs	-	-	-	-	0.0	0.2	19.2	-	-	3	-	0	-	-
ATK_BH09	1	50	5/2	---	---	0.50 to 1.50	60 secs	-	-	-	-	0.0	0.2	19.4	-	-	3	-	0	-	-
ATK_BH09	1	50	5/2	---	---	0.50 to 1.50	90 secs	-	-	-	-	0.0	0.2	19.4	-	-	3	-	0	-	-
ATK_BH09	1	50	5/2	---	---	0.50 to 1.50	120 secs	-	-	-	-	0.0	0.2	19.5	-	-	3	-	0	-	-
ATK_BH09	1	50	5/2	---	---	0.50 to 1.50	180 secs	-	-	-	-	0.0	0.2	19.6	-	-	3	-	0	-	-
ATK_BH09	1	50	5/2	---	---	0.50 to 1.50	240 secs	-	-	-	-	0.0	0.2	19.8	-	-	3	-	0	-	-
ATK_BH09	1	50	5/2	---	---	0.50 to 1.50	300 secs	-	-	-	-	0.0	0.2	19.9	-	-	2	-	0	-	-
ATK_BH09	1	50	5/2	---	---	0.50 to 1.50	360 secs	-	-	-	-	0.0	0.1	20.1	-	-	2	-	0	-	-
ATK_BH09	1	50	5/3	1.50	1.62	0.50 to 1.50	19/07/2023 12:57:00	-	-	-	0.25	-	-	-	-	-	-	-	-	-	-
ATK_BH09	1	50	6	1.50	---	0.50 to 1.50	01/08/2023 11:14:00	1014	1014	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH09	1	50	6	---	---	0.50 to 1.50	60 secs	1014	1014	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH09	1	50	6/2	1.50	---	0.50 to 1.50	01/08/2023 11:16:00	-	-	-	-	0.0	0.0	20.8	-	-	10	-	0	-	-
ATK_BH09	1	50	6/2	---	---	0.50 to 1.50	30 secs	-	-	-	-	0.1	0.1	18.1	-	-	9	-	0	-	-
ATK_BH09	1	50	6/2	---	---	0.50 to 1.50	60 secs	-	-	-	-	0.1	0.1	17.5	-	-	9	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH09	1	50	6/2	---	---	0.50 to 1.50	90 secs	-	-	-	-	0.1	0.1	17.5	-	-	9	-	0	-	-
ATK_BH09	1	50	6/2	---	---	0.50 to 1.50	120 secs	-	-	-	-	0.1	0.5	14.2	-	-	8	-	0	-	-
ATK_BH09	1	50	6/2	---	---	0.50 to 1.50	180 secs	-	-	-	-	0.0	2.3	10.3	-	-	7	-	0	-	-
ATK_BH09	1	50	6/2	---	---	0.50 to 1.50	240 secs	-	-	-	-	0.0	9.2	4.8	-	-	5	-	0	-	-
ATK_BH09	1	50	6/2	---	---	0.50 to 1.50	300 secs	-	-	-	-	0.0	16.1	2.2	-	-	4	-	0	-	-
ATK_BH09	1	50	6/2	---	---	0.50 to 1.50	360 secs	-	-	-	-	0.0	19.9	1.4	-	-	4	-	0	-	-
ATK_BH09	1	50	6/3	1.50	1.62	0.50 to 1.50	01/08/2023 11:23:00	-	-	-	1.52	-	-	-	-	-	-	-	-	-	-
ATK_BH10	1	50	1	38.00	---	29.00 to 38.00	19/05/2023 11:12:00	1023	1023	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH10	1	50	1	---	---	29.00 to 38.00	60 secs	1023	1023	$-0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH10	1	50	1/2	38.00	---	29.00 to 38.00	19/05/2023 11:13:30	-	-	-	-	0.0	0.0	20.5	-	-	1	-	0	-	-
ATK_BH10	1	50	1/2	---	---	29.00 to 38.00	60 secs	-	-	-	-	0.1	0.0	15.7	-	-	6	-	0	-	-
ATK_BH10	1	50	1/2	---	---	29.00 to 38.00	90 secs	-	-	-	-	0.2	0.0	13.5	-	-	8	-	0	-	-
ATK_BH10	1	50	1/2	---	---	29.00 to 38.00	120 secs	-	-	-	-	0.2	0.0	13.3	-	-	8	-	0	-	-
ATK_BH10	1	50	1/2	---	---	29.00 to 38.00	180 secs	-	-	-	-	0.2	0.0	13.1	-	-	8	-	0	-	-
ATK_BH10	1	50	1/2	---	---	29.00 to 38.00	240 secs	-	-	-	-	0.2	0.0	13.0	-	-	8	-	0	-	-
ATK_BH10	1	50	1/2	---	---	29.00 to 38.00	300 secs	-	-	-	-	0.2	0.0	12.9	-	-	8	-	0	-	-
ATK_BH10	1	50	1/2	---	---	29.00 to 38.00	360 secs	-	-	-	-	0.2	0.0	12.8	-	-	8	-	0	-	-
ATK_BH10	1	50	1/2	---	---	29.00 to 38.00	420 secs	-	-	-	-	0.2	0.0	12.8	-	-	8	-	0	-	-
ATK_BH10	1	50	1/3	38.00	37.07	29.00 to 38.00	19/05/2023 11:21:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ATK_BH10	1	50	2	38.00	---	29.00 to 38.00	08/06/2023 09:44:00	1018	1017	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH10	1	50	2	---	---	29.00 to 38.00	60 secs	1018	1017	$0.2_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH10	1	50	2/2	38.00	---	29.00 to 38.00	08/06/2023 09:46:00	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_BH10	1	50	2/2	---	---	29.00 to 38.00	30 secs	-	-	-	-	2.0	0.0	9.4	-	-	4	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH10	1	50	2/2	---	---	29.00 to 38.00	60 secs	-	-	-	-	2.0	0.0	6.0	-	-	4	-	0	-	-
ATK_BH10	1	50	2/2	---	---	29.00 to 38.00	90 secs	-	-	-	-	2.0	0.0	5.8	-	-	4	-	0	-	-
ATK_BH10	1	50	2/2	---	---	29.00 to 38.00	120 secs	-	-	-	-	2.0	0.0	5.8	-	-	4	-	0	-	-
ATK_BH10	1	50	2/2	---	---	29.00 to 38.00	180 secs	-	-	-	-	2.0	0.0	5.7	-	-	4	-	0	-	-
ATK_BH10	1	50	2/2	---	---	29.00 to 38.00	240 secs	-	-	-	-	2.0	0.0	5.6	-	-	4	-	0	-	-
ATK_BH10	1	50	2/2	---	---	29.00 to 38.00	300 secs	-	-	-	-	2.1	0.0	5.6	-	-	4	-	0	-	-
ATK_BH10	1	50	2/2	---	---	29.00 to 38.00	360 secs	-	-	-	-	2.1	0.0	5.5	-	-	4	-	0	-	-
ATK_BH10	1	50	2/3	38.00	37.08	29.00 to 38.00	08/06/2023 09:53:00	-	-	-	21.15	-	-	-	-	-	-	-	-	-	-
ATK_BH10	1	50	3	38.00	---	29.00 to 38.00	19/06/2023 14:40:00	1004	1003	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH10	1	50	3	---	---	29.00 to 38.00	60 secs	1004	1003	$0.2_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH10	1	50	3/2	38.00	---	29.00 to 38.00	19/06/2023 14:42:00	-	-	-	-	0.0	0.0	20.8	-	-	1	-	0	-	-
ATK_BH10	1	50	3/2	---	---	29.00 to 38.00	30 secs	-	-	-	-	3.6	0.0	6.4	-	-	2	-	0	-	-
ATK_BH10	1	50	3/2	---	---	29.00 to 38.00	60 secs	-	-	-	-	3.7	0.0	2.5	-	-	3	-	0	-	-
ATK_BH10	1	50	3/2	---	---	29.00 to 38.00	90 secs	-	-	-	-	3.7	0.0	2.0	-	-	4	-	0	-	-
ATK_BH10	1	50	3/2	---	---	29.00 to 38.00	120 secs	-	-	-	-	3.7	0.0	1.8	-	-	3	-	0	-	-
ATK_BH10	1	50	3/2	---	---	29.00 to 38.00	180 secs	-	-	-	-	3.7	0.0	1.8	-	-	4	-	1	-	-
ATK_BH10	1	50	3/2	---	---	29.00 to 38.00	240 secs	-	-	-	-	3.7	0.0	1.7	-	-	3	-	1	-	-
ATK_BH10	1	50	3/2	---	---	29.00 to 38.00	300 secs	-	-	-	-	3.7	-	1.6	-	-	3	-	1	-	-
ATK_BH10	1	50	3/2	---	---	29.00 to 38.00	360 secs	-	-	-	-	3.7	-	1.6	-	-	3	-	1	-	-
ATK_BH10	1	50	3/3	38.00	37.08	29.00 to 38.00	19/06/2023 14:49:00	-	-	-	21.08	-	-	-	-	-	-	-	-	-	-
ATK_BH10	1	50	4	38.00	---	29.00 to 38.00	03/07/2023 10:08:00	1003	1003	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH10	1	50	4	---	---	29.00 to 38.00	60 secs	1003	1003	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH10	1	50	4/2	38.00	---	29.00 to 38.00	03/07/2023 10:10:00	-	-	-	-	0.1	0.0	20.9	-	-	0	-	0	-	-
ATK_BH10	1	50	4/2	---	---	29.00 to 38.00	30 secs	-	-	-	-	3.3	0.0	14.0	-	-	4	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH10	1	50	4/2	---	---	29.00 to 38.00	60 secs	-	-	-	-	3.5	0.0	9.3	-	-	3	-	0	-	-
ATK_BH10	1	50	4/2	---	---	29.00 to 38.00	90 secs	-	-	-	-	3.5	0.0	9.1	-	-	3	-	0	-	-
ATK_BH10	1	50	4/2	---	---	29.00 to 38.00	120 secs	-	-	-	-	3.4	0.0	9.3	-	-	3	-	0	-	-
ATK_BH10	1	50	4/2	---	---	29.00 to 38.00	180 secs	-	-	-	-	3.4	0.0	9.5	-	-	3	-	0	-	-
ATK_BH10	1	50	4/2	---	---	29.00 to 38.00	240 secs	-	-	-	-	3.2	0.0	10.0	-	-	3	-	0	-	-
ATK_BH10	1	50	4/2	---	---	29.00 to 38.00	300 secs	-	-	-	-	3.1	0.0	10.4	-	-	3	-	0	-	-
ATK_BH10	1	50	4/2	---	---	29.00 to 38.00	360 secs	-	-	-	-	3.0	0.0	10.8	-	-	2	-	0	-	-
ATK_BH10	1	50	4/3	38.00	37.08	29.00 to 38.00	03/07/2023 10:17:00	-	-	-	21.08	-	-	-	-	-	-	-	-	-	-
ATK_BH10	1	50	5	38.00	---	29.00 to 38.00	19/07/2023 10:08:00	1009	1009	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH10	1	50	5	---	---	29.00 to 38.00	60 secs	1009	1009	$-0.2_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH10	1	50	5/2	38.00	---	29.00 to 38.00	19/07/2023 10:10:00	-	-	-	-	0.0	0.0	20.9	-	-	0	-	0	-	-
ATK_BH10	1	50	5/2	---	---	29.00 to 38.00	30 secs	-	-	-	-	3.3	0.0	14.6	-	-	2	-	0	-	-
ATK_BH10	1	50	5/2	---	---	29.00 to 38.00	60 secs	-	-	-	-	3.8	0.0	11.1	-	-	3	-	0	-	-
ATK_BH10	1	50	5/2	---	---	29.00 to 38.00	90 secs	-	-	-	-	4.1	0.0	10.3	-	-	3	-	0	-	-
ATK_BH10	1	50	5/2	---	---	29.00 to 38.00	120 secs	-	-	-	-	4.1	0.0	10.3	-	-	3	-	0	-	-
ATK_BH10	1	50	5/2	---	---	29.00 to 38.00	180 secs	-	-	-	-	4.1	0.0	10.4	-	-	3	-	0	-	-
ATK_BH10	1	50	5/2	---	---	29.00 to 38.00	240 secs	-	-	-	-	4.0	0.0	10.6	-	-	3	-	0	-	-
ATK_BH10	1	50	5/2	---	---	29.00 to 38.00	300 secs	-	-	-	-	4.0	0.0	10.8	-	-	3	-	0	-	-
ATK_BH10	1	50	5/2	---	---	29.00 to 38.00	360 secs	-	-	-	-	3.9	0.0	11.0	-	-	3	-	0	-	-
ATK_BH10	1	50	5/3	38.00	37.08	29.00 to 38.00	19/07/2023 10:17:00	-	-	-	21.09	-	-	-	-	-	-	-	-	-	-
ATK_BH10	1	50	6	38.00	---	29.00 to 38.00	01/08/2023 07:48:00	994	995	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH10	1	50	6	---	---	29.00 to 38.00	60 secs	994	995	$-0.2_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH10	1	50	6/2	38.00	---	29.00 to 38.00	01/08/2023 07:50:00	-	-	-	-	0.2	0.1	20.7	-	-	0	-	0	-	-
ATK_BH10	1	50	6/2	---	---	29.00 to 38.00	30 secs	-	-	-	-	4.3	0.0	12.7	-	-	0	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH10	1	50	6/2	---	---	29.00 to 38.00	60 secs	-	-	-	-	4.5	0.0	8.8	-	-	0	-	0	-	-
ATK_BH10	1	50	6/2	---	---	29.00 to 38.00	90 secs	-	-	-	-	5.1	0.0	6.8	-	-	0	-	0	-	-
ATK_BH10	1	50	6/2	---	---	29.00 to 38.00	120 secs	-	-	-	-	5.5	0.0	5.7	-	-	0	-	0	-	-
ATK_BH10	1	50	6/2	---	---	29.00 to 38.00	180 secs	-	-	-	-	5.6	0.0	5.4	-	-	0	-	0	-	-
ATK_BH10	1	50	6/2	---	---	29.00 to 38.00	240 secs	-	-	-	-	5.7	0.0	5.2	-	-	0	-	0	-	-
ATK_BH10	1	50	6/2	---	---	29.00 to 38.00	300 secs	-	-	-	-	5.7	0.0	5.2	-	-	0	-	0	-	-
ATK_BH10	1	50	6/2	---	---	29.00 to 38.00	360 secs	-	-	-	-	5.8	0.0	5.1	-	-	0	-	0	-	-
ATK_BH10	1	50	6/3	38.00	37.08	29.00 to 38.00	01/08/2023 07:57:00	-	-	-	20.95	-	-	-	-	-	-	-	-	-	-
ATK_BH11	1	50	1	39.50	---	30.50 to 39.50	19/05/2023 10:47:00	1023	1023	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH11	1	50	1	---	---	30.50 to 39.50	60 secs	1023	1023	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH11	1	50	1/2	39.50	---	30.50 to 39.50	19/05/2023 10:49:00	-	-	-	-	0.0	0.2	20.0	-	-	2	-	0	-	-
ATK_BH11	1	50	1/2	---	---	30.50 to 39.50	30 secs	-	-	-	-	0.0	0.0	19.9	-	-	243	-	0	-	-
ATK_BH11	1	50	1/2	---	---	30.50 to 39.50	60 secs	-	-	-	-	0.0	0.0	19.7	-	-	321	-	1	-	-
ATK_BH11	1	50	1/2	---	---	30.50 to 39.50	90 secs	-	-	-	-	0.0	0.0	19.8	-	-	156	-	0	-	-
ATK_BH11	1	50	1/2	---	---	30.50 to 39.50	120 secs	-	-	-	-	0.0	0.0	19.9	-	-	73	-	0	-	-
ATK_BH11	1	50	1/2	---	---	30.50 to 39.50	180 secs	-	-	-	-	0.0	0.0	20.0	-	-	48	-	0	-	-
ATK_BH11	1	50	1/2	---	---	30.50 to 39.50	240 secs	-	-	-	-	0.0	0.0	20.1	-	-	35	-	0	-	-
ATK_BH11	1	50	1/2	---	---	30.50 to 39.50	300 secs	-	-	-	-	0.0	0.0	20.2	-	-	30	-	0	-	-
ATK_BH11	1	50	1/2	---	---	30.50 to 39.50	360 secs	-	-	-	-	0.0	0.0	20.2	-	-	27	-	0	-	-
ATK_BH11	1	50	1/3	39.50	39.48	30.50 to 39.50	19/05/2023 10:56:00	-	-	-	23.38	-	-	-	-	-	-	-	-	-	-
ATK_BH11	1	50	2	39.50	---	30.50 to 39.50	09/06/2023 08:07:00	1013	1013	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH11	1	50	2	---	---	30.50 to 39.50	60 secs	1013	1013	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH11	1	50	2/2	39.50	---	30.50 to 39.50	09/06/2023 08:09:00	-	-	-	-	0.0	0.4	20.7	-	-	0	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH11	1	50	2/2	---	---	30.50 to 39.50	30 secs	-	-	-	-	0.0	0.2	19.7	-	<<Format(>0)>>-)>>			1	-	-
ATK_BH11	1	50	2/2	---	---	30.50 to 39.50	60 secs	-	-	-	-	0.0	0.0	20.1	-	<<Format(>0)>>-)>>			1	-	-
ATK_BH11	1	50	2/2	---	---	30.50 to 39.50	90 secs	-	-	-	-	0.0	0.0	20.4	-	-	426	-	1	-	-
ATK_BH11	1	50	2/2	---	---	30.50 to 39.50	120 secs	-	-	-	-	0.0	0.0	20.5	-	-	240	-	1	-	-
ATK_BH11	1	50	2/2	---	---	30.50 to 39.50	180 secs	-	-	-	-	0.0	0.0	20.5	-	-	166	-	0	-	-
ATK_BH11	1	50	2/2	---	---	30.50 to 39.50	240 secs	-	-	-	-	0.0	0.0	20.6	-	-	109	-	0	-	-
ATK_BH11	1	50	2/2	---	---	30.50 to 39.50	300 secs	-	-	-	-	0.0	0.0	20.6	-	-	84	-	0	-	-
ATK_BH11	1	50	2/2	---	---	30.50 to 39.50	360 secs	-	-	-	-	0.0	0.0	20.6	-	-	72	-	0	-	-
ATK_BH11	1	50	2/3	39.50	39.49	30.50 to 39.50	09/06/2023 08:16:00	-	-	-	23.30	-	-	-	-	-	-	-	-	-	-
ATK_BH11	1	50	3	39.50	---	30.50 to 39.50	19/06/2023 15:19:00	1003	1003	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH11	1	50	3	---	---	30.50 to 39.50	60 secs	1003	1003	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH11	1	50	3/2	39.50	---	30.50 to 39.50	19/06/2023 15:21:00	-	-	-	-	0.0	0.0	20.9	-	-	0	-	0	-	-
ATK_BH11	1	50	3/2	---	---	30.50 to 39.50	30 secs	-	-	-	-	0.0	0.0	20.2	-	-	-	-	1	-	-
ATK_BH11	1	50	3/2	---	---	30.50 to 39.50	60 secs	-	-	-	-	0.0	0.0	20.2	-	-	-	-	1	-	-
ATK_BH11	1	50	3/2	---	---	30.50 to 39.50	90 secs	-	-	-	-	0.0	0.0	20.3	-	-	440	-	1	-	-
ATK_BH11	1	50	3/2	---	---	30.50 to 39.50	120 secs	-	-	-	-	0.0	0.0	20.5	-	-	241	-	1	-	-
ATK_BH11	1	50	3/2	---	---	30.50 to 39.50	180 secs	-	-	-	-	0.0	0.0	20.6	-	-	177	-	0	-	-
ATK_BH11	1	50	3/2	---	---	30.50 to 39.50	240 secs	-	-	-	-	0.0	0.0	20.8	-	-	126	-	0	-	-
ATK_BH11	1	50	3/2	---	---	30.50 to 39.50	300 secs	-	-	-	-	0.0	0.0	20.9	-	-	102	-	0	-	-
ATK_BH11	1	50	3/2	---	---	30.50 to 39.50	360 secs	-	-	-	-	0.0	0.0	21.0	-	-	87	-	0	-	-
ATK_BH11	1	50	3/3	39.50	39.50	30.50 to 39.50	19/06/2023 15:28:00	-	-	-	23.25	-	-	-	-	-	-	-	-	-	-
ATK_BH11	1	50	4	39.50	---	30.50 to 39.50	03/07/2023 15:23:00	1003	1003	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH11	1	50	4	---	---	30.50 to 39.50	60 secs	1003	1003	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH11	1	50	4/2	39.50	---	30.50 to 39.50	03/07/2023 15:25:00	-	-	-	-	0.0	0.0	20.9	-	-	0	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH11	1	50	4/2	---	---	30.50 to 39.50	30 secs	-	-	-	-	0.0	0.0	19.7	-	-	176	-	0	-	-
ATK_BH11	1	50	4/2	---	---	30.50 to 39.50	60 secs	-	-	-	-	0.0	0.0	19.5	-	-	243	-	0	-	-
ATK_BH11	1	50	4/2	---	---	30.50 to 39.50	90 secs	-	-	-	-	0.0	0.0	19.5	-	-	248	-	0	-	-
ATK_BH11	1	50	4/2	---	---	30.50 to 39.50	120 secs	-	-	-	-	0.0	0.0	19.5	-	-	246	-	0	-	-
ATK_BH11	1	50	4/2	---	---	30.50 to 39.50	180 secs	-	-	-	-	0.0	0.0	19.5	-	-	246	-	0	-	-
ATK_BH11	1	50	4/2	---	---	30.50 to 39.50	240 secs	-	-	-	-	0.0	0.0	19.6	-	-	250	-	0	-	-
ATK_BH11	1	50	4/2	---	---	30.50 to 39.50	300 secs	-	-	-	-	0.0	0.0	19.6	-	-	253	-	0	-	-
ATK_BH11	1	50	4/2	---	---	30.50 to 39.50	360 secs	-	-	-	-	0.0	0.0	19.7	-	-	256	-	0	-	-
ATK_BH11	1	50	4/3	39.50	39.49	30.50 to 39.50	03/07/2023 15:32:00	-	-	-	23.24	-	-	-	-	-	-	-	-	-	-
ATK_BH11	1	50	5	39.50	---	30.50 to 39.50	19/07/2023 15:06:00	1011	1011	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH11	1	50	5	---	---	30.50 to 39.50	60 secs	1011	1011	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH11	1	50	5/2	39.50	---	30.50 to 39.50	19/07/2023 15:08:00	-	-	-	-	0.0	0.0	20.9	-	-	1	-	0	-	-
ATK_BH11	1	50	5/2	---	---	30.50 to 39.50	30 secs	-	-	-	-	0.0	0.0	19.9	-	-	143	-	0	-	-
ATK_BH11	1	50	5/2	---	---	30.50 to 39.50	60 secs	-	-	-	-	0.0	0.0	19.8	-	-	198	-	0	-	-
ATK_BH11	1	50	5/2	---	---	30.50 to 39.50	90 secs	-	-	-	-	0.0	0.0	19.8	-	-	211	-	0	-	-
ATK_BH11	1	50	5/2	---	---	30.50 to 39.50	120 secs	-	-	-	-	0.0	0.0	19.8	-	-	210	-	0	-	-
ATK_BH11	1	50	5/2	---	---	30.50 to 39.50	180 secs	-	-	-	-	0.0	0.0	19.8	-	-	208	-	0	-	-
ATK_BH11	1	50	5/2	---	---	30.50 to 39.50	240 secs	-	-	-	-	0.0	0.0	19.8	-	-	206	-	0	-	-
ATK_BH11	1	50	5/2	---	---	30.50 to 39.50	300 secs	-	-	-	-	0.0	0.0	19.8	-	-	203	-	0	-	-
ATK_BH11	1	50	5/2	---	---	30.50 to 39.50	360 secs	-	-	-	-	0.0	0.0	19.8	-	-	201	-	0	-	-
ATK_BH11	1	50	5/3	39.50	39.49	30.50 to 39.50	19/07/2023 15:15:00	-	-	-	23.29	-	-	-	-	-	-	-	-	-	-
ATK_BH11	1	50	6	39.50	---	30.50 to 39.50	01/08/2023 10:44:00	996	996	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH11	1	50	6	---	---	30.50 to 39.50	60 secs	996	996	$0.9_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH11	1	50	6/2	39.50	---	30.50 to 39.50	01/08/2023 10:46:00	-	-	-	-	0.1	0.0	20.6	-	-	176	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH11	1	50	6/2	---	---	30.50 to 39.50	30 secs	-	-	-	-	0.1	0.0	19.3	-	-	190	-	0	-	-
ATK_BH11	1	50	6/2	---	---	30.50 to 39.50	60 secs	-	-	-	-	0.1	0.0	19.0	-	-	226	-	1	-	-
ATK_BH11	1	50	6/2	---	---	30.50 to 39.50	90 secs	-	-	-	-	0.1	0.0	19.0	-	-	233	-	1	-	-
ATK_BH11	1	50	6/2	---	---	30.50 to 39.50	120 secs	-	-	-	-	0.1	0.0	19.0	-	-	238	-	1	-	-
ATK_BH11	1	50	6/2	---	---	30.50 to 39.50	180 secs	-	-	-	-	0.1	0.0	19.0	-	-	245	-	1	-	-
ATK_BH11	1	50	6/2	---	---	30.50 to 39.50	240 secs	-	-	-	-	0.1	0.0	19.0	-	-	261	-	1	-	-
ATK_BH11	1	50	6/2	---	---	30.50 to 39.50	300 secs	-	-	-	-	0.1	0.0	19.0	-	-	279	-	1	-	-
ATK_BH11	1	50	6/2	---	---	30.50 to 39.50	360 secs	-	-	-	-	0.1	0.0	18.9	-	-	297	-	1	-	-
ATK_BH11	1	50	6/3	39.50	39.49	30.50 to 39.50	01/08/2023 10:53:00	-	-	-	23.00	-	-	-	-	-	-	-	-	-	-
ATK_BH12	1	50	1	6.00	---	3.00 to 6.00	19/05/2023 10:59:00	1023	1023	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH12	1	50	1	---	---	3.00 to 6.00	60 secs	1023	1023	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH12	1	50	1/2	6.00	---	3.00 to 6.00	19/05/2023 11:01:00	-	-	-	-	0.0	0.0	20.5	-	-	4	-	0	-	-
ATK_BH12	1	50	1/2	---	---	3.00 to 6.00	30 secs	-	-	-	-	0.4	0.0	19.8	-	-	1	-	0	-	-
ATK_BH12	1	50	1/2	---	---	3.00 to 6.00	60 secs	-	-	-	-	0.4	0.0	19.5	-	-	0	-	0	-	-
ATK_BH12	1	50	1/2	---	---	3.00 to 6.00	90 secs	-	-	-	-	0.3	0.0	19.7	-	-	0	-	0	-	-
ATK_BH12	1	50	1/2	---	---	3.00 to 6.00	120 secs	-	-	-	-	0.2	0.0	19.9	-	-	0	-	0	-	-
ATK_BH12	1	50	1/2	---	---	3.00 to 6.00	180 secs	-	-	-	-	0.2	0.0	20.1	-	-	0	-	0	-	-
ATK_BH12	1	50	1/2	---	---	3.00 to 6.00	240 secs	-	-	-	-	0.1	0.0	20.3	-	-	0	-	0	-	-
ATK_BH12	1	50	1/2	---	---	3.00 to 6.00	300 secs	-	-	-	-	0.1	0.0	20.4	-	-	0	-	0	-	-
ATK_BH12	1	50	1/2	---	---	3.00 to 6.00	360 secs	-	-	-	-	0.1	0.0	20.4	-	-	1	-	0	-	-
ATK_BH12	1	50	1/3	6.00	5.87	3.00 to 6.00	19/05/2023 11:08:00	-	-	-	4.50	-	-	-	-	-	-	-	-	-	-
ATK_BH12	1	50	2	6.00	---	3.00 to 6.00	09/06/2023 08:21:00	1014	1014	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH12	1	50	2	---	---	3.00 to 6.00	60 secs	1014	1014	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH12	1	50	2/2	6.00	---	3.00 to 6.00	09/06/2023 08:23:00	-	-	-	-	0.0	0.0	20.7	-	-	4	-	0	-	-
ATK_BH12	1	50	2/2	---	---	3.00 to 6.00	30 secs	-	-	-	-	0.0	0.0	20.7	-	-	6	-	0	-	-
ATK_BH12	1	50	2/2	---	---	3.00 to 6.00	60 secs	-	-	-	-	0.0	0.0	20.7	-	-	1	-	0	-	-
ATK_BH12	1	50	2/2	---	---	3.00 to 6.00	90 secs	-	-	-	-	0.0	0.0	20.7	-	-	0	-	0	-	-
ATK_BH12	1	50	2/2	---	---	3.00 to 6.00	120 secs	-	-	-	-	0.0	0.0	20.7	-	-	0	-	0	-	-
ATK_BH12	1	50	2/2	---	---	3.00 to 6.00	180 secs	-	-	-	-	0.0	0.0	20.6	-	-	0	-	0	-	-
ATK_BH12	1	50	2/2	---	---	3.00 to 6.00	240 secs	-	-	-	-	0.1	0.0	20.6	-	-	0	-	0	-	-
ATK_BH12	1	50	2/2	---	---	3.00 to 6.00	300 secs	-	-	-	-	0.3	0.0	20.4	-	-	0	-	0	-	-
ATK_BH12	1	50	2/2	---	---	3.00 to 6.00	360 secs	-	-	-	-	0.5	0.0	20.3	-	-	0	-	0	-	-
ATK_BH12	1	50	2/3	6.00	2.70	3.00 to 6.00	09/06/2023 08:30:00	-	-	-	1.57	-	-	-	-	-	-	-	-	-	-
ATK_BH12	1	50	3	6.00	---	3.00 to 6.00	19/06/2023 14:54:00	1003	1003	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH12	1	50	3	---	---	3.00 to 6.00	60 secs	1003	1003	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH12	1	50	3/2	6.00	---	3.00 to 6.00	19/06/2023 14:56:00	-	-	-	-	0.1	0.0	20.3	-	-	0	-	0	-	-
ATK_BH12	1	50	3/2	---	---	3.00 to 6.00	30 secs	-	-	-	-	1.6	0.0	19.3	-	-	8	-	0	-	-
ATK_BH12	1	50	3/2	---	---	3.00 to 6.00	60 secs	-	-	-	-	1.7	0.0	19.0	-	-	10	-	0	-	-
ATK_BH12	1	50	3/2	---	---	3.00 to 6.00	90 secs	-	-	-	-	1.9	0.0	18.8	-	-	11	-	0	-	-
ATK_BH12	1	50	3/2	---	---	3.00 to 6.00	120 secs	-	-	-	-	1.9	0.0	18.8	-	-	11	-	0	-	-
ATK_BH12	1	50	3/2	---	---	3.00 to 6.00	180 secs	-	-	-	-	1.9	0.0	18.7	-	-	12	-	0	-	-
ATK_BH12	1	50	3/3	6.00	5.87	3.00 to 6.00	19/06/2023 15:00:00	-	-	-	1.45	-	-	-	-	-	-	-	-	-	-
ATK_BH12	1	50	4	6.00	---	3.00 to 6.00	03/07/2023 15:34:00	1003	1003	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH12	1	50	4	---	---	3.00 to 6.00	60 secs	1003	1003	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH12	1	50	4/2	6.00	---	3.00 to 6.00	03/07/2023 15:36:00	-	-	-	-	0.0	0.0	21.1	-	-	20	-	0	-	-
ATK_BH12	1	50	4/2	---	---	3.00 to 6.00	30 secs	-	-	-	-	0.5	0.0	19.7	-	-	15	-	0	-	-
ATK_BH12	1	50	4/2	---	---	3.00 to 6.00	60 secs	-	-	-	-	0.5	0.0	19.6	-	-	14	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH12	1	50	4/2	---	---	3.00 to 6.00	90 secs	-	-	-	-	0.5	0.0	19.7	-	-	14	-	0	-	-
ATK_BH12	1	50	4/2	---	---	3.00 to 6.00	120 secs	-	-	-	-	0.5	0.0	19.7	-	-	14	-	0	-	-
ATK_BH12	1	50	4/2	---	---	3.00 to 6.00	180 secs	-	-	-	-	0.4	0.0	19.7	-	-	14	-	0	-	-
ATK_BH12	1	50	4/2	---	---	3.00 to 6.00	240 secs	-	-	-	-	0.4	0.0	19.8	-	-	13	-	0	-	-
ATK_BH12	1	50	4/2	---	---	3.00 to 6.00	300 secs	-	-	-	-	0.4	0.0	19.9	-	-	13	-	0	-	-
ATK_BH12	1	50	4/2	---	---	3.00 to 6.00	360 secs	-	-	-	-	0.4	0.0	19.9	-	-	12	-	0	-	-
ATK_BH12	1	50	4/3	6.00	5.87	3.00 to 6.00	03/07/2023 15:43:00	-	-	-	0.79	-	-	-	-	-	-	-	-	-	-
ATK_BH12	1	50	5	6.00	---	3.00 to 6.00	19/07/2023 15:16:00	1012	1012	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH12	1	50	5	---	---	3.00 to 6.00	60 secs	1012	1012	$0.2_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH12	1	50	5/2	6.00	---	3.00 to 6.00	19/07/2023 15:18:00	-	-	-	-	0.0	0.0	20.6	-	-	15	-	0	-	-
ATK_BH12	1	50	5/2	---	---	3.00 to 6.00	30 secs	-	-	-	-	0.2	0.0	19.5	-	-	10	-	0	-	-
ATK_BH12	1	50	5/2	---	---	3.00 to 6.00	60 secs	-	-	-	-	0.3	0.0	19.3	-	-	9	-	0	-	-
ATK_BH12	1	50	5/2	---	---	3.00 to 6.00	90 secs	-	-	-	-	0.3	0.0	19.2	-	-	9	-	0	-	-
ATK_BH12	1	50	5/2	---	---	3.00 to 6.00	120 secs	-	-	-	-	0.3	0.0	19.3	-	-	9	-	0	-	-
ATK_BH12	1	50	5/2	---	---	3.00 to 6.00	180 secs	-	-	-	-	0.3	0.0	19.3	-	-	8	-	0	-	-
ATK_BH12	1	50	5/2	---	---	3.00 to 6.00	240 secs	-	-	-	-	0.2	0.0	19.3	-	-	8	-	0	-	-
ATK_BH12	1	50	5/2	---	---	3.00 to 6.00	300 secs	-	-	-	-	0.2	0.0	19.3	-	-	8	-	0	-	-
ATK_BH12	1	50	5/2	---	---	3.00 to 6.00	360 secs	-	-	-	-	0.2	0.0	19.4	-	-	7	-	0	-	-
ATK_BH12	1	50	5/3	6.00	5.87	3.00 to 6.00	19/07/2023 15:25:00	-	-	-	0.99	-	-	-	-	-	-	-	-	-	-
ATK_BH12	1	50	6	6.00	---	3.00 to 6.00	01/08/2023 10:55:00	996	996	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH12	1	50	6	---	---	3.00 to 6.00	60 secs	996	996	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_BH12	1	50	6/2	6.00	---	3.00 to 6.00	01/08/2023 10:57:00	-	-	-	-	0.0	0.0	20.8	-	-	79	-	0	-	-
ATK_BH12	1	50	6/2	---	---	3.00 to 6.00	30 secs	-	-	-	-	0.4	0.1	19.9	-	-	21	-	0	-	-
ATK_BH12	1	50	6/2	---	---	3.00 to 6.00	60 secs	-	-	-	-	0.4	0.1	19.6	-	-	10	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_BH12	1	50	6/2	---	---	3.00 to 6.00	90 secs	-	-	-	-	0.4	0.1	19.5	-	-	8	-	0	-	-
ATK_BH12	1	50	6/2	---	---	3.00 to 6.00	120 secs	-	-	-	-	0.3	0.1	20.0	-	-	6	-	0	-	-
ATK_BH12	1	50	6/2	---	---	3.00 to 6.00	180 secs	-	-	-	-	0.2	0.0	20.3	-	-	5	-	0	-	-
ATK_BH12	1	50	6/2	---	---	3.00 to 6.00	240 secs	-	-	-	-	0.2	0.0	20.4	-	-	3	-	0	-	-
ATK_BH12	1	50	6/2	---	---	3.00 to 6.00	300 secs	-	-	-	-	0.1	0.0	20.6	-	-	3	-	0	-	-
ATK_BH12	1	50	6/2	---	---	3.00 to 6.00	360 secs	-	-	-	-	0.1	0.0	20.6	-	-	2	-	0	-	-
ATK_BH12	1	50	6/3	6.00	5.87	3.00 to 6.00	01/08/2023 11:04:00	-	-	-	0.86	-	-	-	-	-	-	-	-	-	-
ATK_WS01	1	50	1	3.00	---	1.00 to 3.00	19/05/2023 10:21:00	1022	1022	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS01	1	50	1	---	---	1.00 to 3.00	60 secs	1022	1022	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS01	1	50	1/2	3.00	---	1.00 to 3.00	19/05/2023 10:23:00	-	-	-	-	0.0	0.0	20.9	-	-	0	-	0	-	-
ATK_WS01	1	50	1/2	---	---	1.00 to 3.00	30 secs	-	-	-	-	0.0	0.0	20.9	-	-	0	-	0	-	-
ATK_WS01	1	50	1/2	---	---	1.00 to 3.00	60 secs	-	-	-	-	0.0	0.0	20.9	-	-	0	-	0	-	-
ATK_WS01	1	50	1/2	---	---	1.00 to 3.00	90 secs	-	-	-	-	0.0	0.0	20.9	-	-	0	-	0	-	-
ATK_WS01	1	50	1/2	---	---	1.00 to 3.00	120 secs	-	-	-	-	0.0	0.0	20.9	-	-	0	-	0	-	-
ATK_WS01	1	50	1/2	---	---	1.00 to 3.00	180 secs	-	-	-	-	0.0	0.0	20.9	-	-	0	-	0	-	-
ATK_WS01	1	50	1/2	---	---	1.00 to 3.00	240 secs	-	-	-	-	0.0	0.0	20.9	-	-	0	-	0	-	-
ATK_WS01	1	50	1/2	---	---	1.00 to 3.00	300 secs	-	-	-	-	0.1	0.0	20.9	-	-	0	-	0	-	-
ATK_WS01	1	50	1/2	---	---	1.00 to 3.00	360 secs	-	-	-	-	0.2	0.0	20.8	-	-	0	-	0	-	-
ATK_WS01	1	50	1/3	3.00	3.00	1.00 to 3.00	19/05/2023 10:30:00	-	-	-	2.55	-	-	-	-	-	-	-	-	-	-
ATK_WS01	1	50	2	3.00	---	1.00 to 3.00	08/06/2023 11:32:00	1017	1017	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS01	1	50	2	---	---	1.00 to 3.00	60 secs	1017	1017	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS01	1	50	2/2	3.00	---	1.00 to 3.00	08/06/2023 11:34:00	-	-	-	-	0.0	0.0	20.6	-	-	1	-	0	-	-
ATK_WS01	1	50	2/2	---	---	1.00 to 3.00	30 secs	-	-	-	-	0.3	0.0	20.2	-	-	2	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS01	1	50	2/2	---	---	1.00 to 3.00	60 secs	-	-	-	-	0.3	0.0	20.1	-	-	1	-	0	-	-
ATK_WS01	1	50	2/2	---	---	1.00 to 3.00	90 secs	-	-	-	-	0.3	0.0	20.1	-	-	1	-	0	-	-
ATK_WS01	1	50	2/2	---	---	1.00 to 3.00	120 secs	-	-	-	-	0.3	0.0	20.1	-	-	1	-	0	-	-
ATK_WS01	1	50	2/2	---	---	1.00 to 3.00	180 secs	-	-	-	-	0.3	0.0	20.0	-	-	1	-	0	-	-
ATK_WS01	1	50	2/2	---	---	1.00 to 3.00	240 secs	-	-	-	-	0.4	0.0	20.0	-	-	1	-	0	-	-
ATK_WS01	1	50	2/2	---	---	1.00 to 3.00	300 secs	-	-	-	-	0.4	0.0	20.0	-	-	1	-	0	-	-
ATK_WS01	1	50	2/2	---	---	1.00 to 3.00	360 secs	-	-	-	-	0.4	0.0	20.0	-	-	1	-	0	-	-
ATK_WS01	1	50	2/3	3.00	2.99	1.00 to 3.00	08/06/2023 11:41:00	-	-	-	2.34	-	-	-	-	-	-	-	-	-	-
ATK_WS01	1	50	3	3.00	---	1.00 to 3.00	19/06/2023 16:05:00	1004	1004	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS01	1	50	3	---	---	1.00 to 3.00	60 secs	1004	1004	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS01	1	50	3/2	3.00	---	1.00 to 3.00	19/06/2023 16:07:00	-	-	-	-	0.0	2.7	20.2	-	-	0	-	0	-	-
ATK_WS01	1	50	3/2	---	---	1.00 to 3.00	30 secs	-	-	-	-	0.5	0.0	20.2	-	-	1	-	0	-	-
ATK_WS01	1	50	3/2	---	---	1.00 to 3.00	60 secs	-	-	-	-	0.5	0.0	20.1	-	-	0	-	0	-	-
ATK_WS01	1	50	3/2	---	---	1.00 to 3.00	90 secs	-	-	-	-	0.5	0.0	20.1	-	-	0	-	0	-	-
ATK_WS01	1	50	3/2	---	---	1.00 to 3.00	120 secs	-	-	-	-	0.5	0.0	20.0	-	-	0	-	0	-	-
ATK_WS01	1	50	3/2	---	---	1.00 to 3.00	180 secs	-	-	-	-	0.5	0.0	20.0	-	-	0	-	0	-	-
ATK_WS01	1	50	3/2	---	---	1.00 to 3.00	240 secs	-	-	-	-	0.5	0.0	20.0	-	-	0	-	0	-	-
ATK_WS01	1	50	3/2	---	---	1.00 to 3.00	300 secs	-	-	-	-	0.5	0.0	20.0	-	-	0	-	0	-	-
ATK_WS01	1	50	3/2	---	---	1.00 to 3.00	360 secs	-	-	-	-	0.5	0.0	20.0	-	-	0	-	0	-	-
ATK_WS01	1	50	3/3	3.00	2.99	1.00 to 3.00	19/06/2023 16:14:00	-	-	-	1.64	-	-	-	-	-	-	-	-	-	-
ATK_WS01	1	50	4	3.00	---	1.00 to 3.00	03/07/2023 12:04:00	1002	1002	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS01	1	50	4	---	---	1.00 to 3.00	60 secs	1002	1002	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS01	1	50	4/2	3.00	---	1.00 to 3.00	03/07/2023 12:06:00	-	-	-	-	0.1	0.0	20.7	-	-	1	-	1	-	-
ATK_WS01	1	50	4/2	---	---	1.00 to 3.00	30 secs	-	-	-	-	0.8	0.0	20.4	-	-	1	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS01	1	50	4/2	---	---	1.00 to 3.00	60 secs	-	-	-	-	0.8	0.0	19.7	-	-	0	-	1	-	-
ATK_WS01	1	50	4/2	---	---	1.00 to 3.00	90 secs	-	-	-	-	0.8	0.0	19.6	-	-	0	-	1	-	-
ATK_WS01	1	50	4/2	---	---	1.00 to 3.00	120 secs	-	-	-	-	0.8	0.0	19.6	-	-	0	-	1	-	-
ATK_WS01	1	50	4/2	---	---	1.00 to 3.00	180 secs	-	-	-	-	0.8	0.0	19.6	-	-	0	-	1	-	-
ATK_WS01	1	50	4/2	---	---	1.00 to 3.00	240 secs	-	-	-	-	0.8	0.0	19.6	-	-	0	-	1	-	-
ATK_WS01	1	50	4/2	---	---	1.00 to 3.00	300 secs	-	-	-	-	0.8	0.0	19.5	-	-	0	-	1	-	-
ATK_WS01	1	50	4/2	---	---	1.00 to 3.00	360 secs	-	-	-	-	0.8	0.0	19.5	-	-	0	-	1	-	-
ATK_WS01	1	50	4/3	3.00	2.99	1.00 to 3.00	03/07/2023 12:13:00	-	-	-	2.48	-	-	-	-	-	-	-	-	-	-
ATK_WS01	1	50	5	3.00	---	1.00 to 3.00	19/07/2023 11:22:00	1012	1012	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS01	1	50	5	---	---	1.00 to 3.00	60 secs	1012	1012	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS01	1	50	5/2	3.00	---	1.00 to 3.00	19/07/2023 11:24:00	-	-	-	-	0.0	0.0	20.9	-	-	1	-	0	-	-
ATK_WS01	1	50	5/2	---	---	1.00 to 3.00	30 secs	-	-	-	-	0.5	0.0	20.4	-	-	1	-	0	-	-
ATK_WS01	1	50	5/2	---	---	1.00 to 3.00	60 secs	-	-	-	-	0.6	0.0	20.3	-	-	0	-	0	-	-
ATK_WS01	1	50	5/2	---	---	1.00 to 3.00	90 secs	-	-	-	-	0.6	0.0	20.2	-	-	1	-	0	-	-
ATK_WS01	1	50	5/2	---	---	1.00 to 3.00	120 secs	-	-	-	-	0.6	0.0	20.3	-	-	0	-	0	-	-
ATK_WS01	1	50	5/2	---	---	1.00 to 3.00	180 secs	-	-	-	-	0.6	0.0	20.3	-	-	1	-	0	-	-
ATK_WS01	1	50	5/2	---	---	1.00 to 3.00	240 secs	-	-	-	-	0.6	0.0	20.3	-	-	1	-	0	-	-
ATK_WS01	1	50	5/2	---	---	1.00 to 3.00	300 secs	-	-	-	-	0.6	0.0	20.4	-	-	1	-	0	-	-
ATK_WS01	1	50	5/2	---	---	1.00 to 3.00	360 secs	-	-	-	-	0.6	0.0	20.4	-	-	1	-	0	-	-
ATK_WS01	1	50	5/3	3.00	2.99	1.00 to 3.00	19/07/2023 11:31:00	-	-	-	2.15	-	-	-	-	-	-	-	-	-	-
ATK_WS01	1	50	6	3.00	---	1.00 to 3.00	01/08/2023 09:25:00	995	995	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS01	1	50	6	---	---	1.00 to 3.00	60 secs	995	995	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS01	1	50	6/2	3.00	---	1.00 to 3.00	01/08/2023 09:27:00	-	-	-	-	0.1	0.0	20.9	-	-	0	-	0	-	-
ATK_WS01	1	50	6/2	---	---	1.00 to 3.00	30 secs	-	-	-	-	0.9	0.0	20.0	-	-	1	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS01	1	50	6/2	---	---	1.00 to 3.00	60 secs	-	-	-	-	0.8	0.0	20.0	-	-	0	-	0	-	-
ATK_WS01	1	50	6/2	---	---	1.00 to 3.00	90 secs	-	-	-	-	0.7	0.0	20.1	-	-	0	-	0	-	-
ATK_WS01	1	50	6/2	---	---	1.00 to 3.00	120 secs	-	-	-	-	0.7	0.0	20.1	-	-	0	-	0	-	-
ATK_WS01	1	50	6/2	---	---	1.00 to 3.00	180 secs	-	-	-	-	0.7	0.0	20.1	-	-	0	-	0	-	-
ATK_WS01	1	50	6/2	---	---	1.00 to 3.00	240 secs	-	-	-	-	0.7	0.0	20.1	-	-	0	-	0	-	-
ATK_WS01	1	50	6/2	---	---	1.00 to 3.00	300 secs	-	-	-	-	0.7	0.0	20.1	-	-	0	-	0	-	-
ATK_WS01	1	50	6/2	---	---	1.00 to 3.00	360 secs	-	-	-	-	0.8	0.0	20.0	-	-	0	-	0	-	-
ATK_WS01	1	50	6/3	3.00	2.99	1.00 to 3.00	01/08/2023 09:34:00	-	-	-	2.00	-	-	-	-	-	-	-	-	-	-
ATK_WS02	1	50	1	2.00	---	0.50 to 2.00	19/05/2023 08:50:00	1023	1023	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS02	1	50	1	---	---	0.50 to 2.00	60 secs	1023	1023	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS02	1	50	1/2	2.00	---	0.50 to 2.00	19/05/2023 08:52:00	-	-	-	-	0.1	0.0	21.5	-	-	0	-	0	-	-
ATK_WS02	1	50	1/2	---	---	0.50 to 2.00	30 secs	-	-	-	-	1.3	0.0	20.2	-	-	0	-	0	-	-
ATK_WS02	1	50	1/2	---	---	0.50 to 2.00	60 secs	-	-	-	-	1.3	0.0	19.4	-	-	0	-	0	-	-
ATK_WS02	1	50	1/2	---	---	0.50 to 2.00	90 secs	-	-	-	-	1.4	0.0	19.3	-	-	0	-	0	-	-
ATK_WS02	1	50	1/2	---	---	0.50 to 2.00	120 secs	-	-	-	-	1.5	0.0	19.2	-	-	0	-	0	-	-
ATK_WS02	1	50	1/2	---	---	0.50 to 2.00	180 secs	-	-	-	-	1.6	0.0	19.0	-	-	0	-	0	-	-
ATK_WS02	1	50	1/2	---	---	0.50 to 2.00	240 secs	-	-	-	-	1.7	0.0	18.9	-	-	0	-	0	-	-
ATK_WS02	1	50	1/2	---	---	0.50 to 2.00	300 secs	-	-	-	-	1.7	0.0	18.9	-	-	0	-	0	-	-
ATK_WS02	1	50	1/2	---	---	0.50 to 2.00	360 secs	-	-	-	-	1.7	0.0	18.9	-	-	0	-	0	-	-
ATK_WS02	1	50	1/3	2.00	1.97	0.50 to 2.00	19/05/2023 08:59:00	-	-	-	1.19	-	-	-	-	-	-	-	-	-	-
ATK_WS02	1	50	2	2.00	---	0.50 to 2.00	08/06/2023 10:49:00	1017	1017	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS02	1	50	2	---	---	0.50 to 2.00	60 secs	1017	1017	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS02	1	50	2/2	2.00	---	0.50 to 2.00	08/06/2023 10:51:00	-	-	-	-	0.0	0.0	20.7	-	-	0	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS02	1	50	2/2	---	---	0.50 to 2.00	30 secs	-	-	-	-	3.5	0.0	17.0	-	-	5	-	0	-	-
ATK_WS02	1	50	2/2	---	---	0.50 to 2.00	60 secs	-	-	-	-	3.6	0.0	16.5	-	-	1	-	0	-	-
ATK_WS02	1	50	2/2	---	---	0.50 to 2.00	90 secs	-	-	-	-	3.6	0.0	16.5	-	-	0	-	0	-	-
ATK_WS02	1	50	2/2	---	---	0.50 to 2.00	120 secs	-	-	-	-	3.6	0.0	16.5	-	-	0	-	0	-	-
ATK_WS02	1	50	2/2	---	---	0.50 to 2.00	180 secs	-	-	-	-	3.6	0.0	16.5	-	-	0	-	0	-	-
ATK_WS02	1	50	2/2	---	---	0.50 to 2.00	240 secs	-	-	-	-	3.6	0.0	16.4	-	-	0	-	0	-	-
ATK_WS02	1	50	2/2	---	---	0.50 to 2.00	300 secs	-	-	-	-	3.6	0.0	16.5	-	-	0	-	0	-	-
ATK_WS02	1	50	2/2	---	---	0.50 to 2.00	360 secs	-	-	-	-	3.5	0.0	16.7	-	-	0	-	0	-	-
ATK_WS02	1	50	2/3	2.00	1.95	0.50 to 2.00	08/06/2023 10:58:00	-	-	-	1.23	-	-	-	-	-	-	-	-	-	-
ATK_WS02	1	50	3	2.00	---	0.50 to 2.00	19/06/2023 16:53:00	1005	1005	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS02	1	50	3	---	---	0.50 to 2.00	60 secs	1005	1005	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS02	1	50	3/2	2.00	---	0.50 to 2.00	19/06/2023 16:55:00	-	-	-	-	0.0	0.0	21.1	-	-	0	-	0	-	-
ATK_WS02	1	50	3/2	---	---	0.50 to 2.00	30 secs	-	-	-	-	3.9	0.0	15.0	-	-	2	-	0	-	-
ATK_WS02	1	50	3/2	---	---	0.50 to 2.00	60 secs	-	-	-	-	4.0	0.0	14.6	-	-	1	-	0	-	-
ATK_WS02	1	50	3/2	---	---	0.50 to 2.00	90 secs	-	-	-	-	4.0	0.0	14.6	-	-	0	-	0	-	-
ATK_WS02	1	50	3/2	---	---	0.50 to 2.00	120 secs	-	-	-	-	4.0	0.0	14.5	-	-	0	-	0	-	-
ATK_WS02	1	50	3/2	---	---	0.50 to 2.00	180 secs	-	-	-	-	4.0	0.0	14.5	-	-	0	-	0	-	-
ATK_WS02	1	50	3/2	---	---	0.50 to 2.00	240 secs	-	-	-	-	4.0	0.0	14.6	-	-	0	-	0	-	-
ATK_WS02	1	50	3/2	---	---	0.50 to 2.00	300 secs	-	-	-	-	4.0	0.0	14.6	-	-	0	-	0	-	-
ATK_WS02	1	50	3/2	---	---	0.50 to 2.00	360 secs	-	-	-	-	4.0	0.0	14.7	-	-	0	-	0	-	-
ATK_WS02	1	50	3/3	2.00	1.95	0.50 to 2.00	19/06/2023 17:02:00	-	-	-	1.04	-	-	-	-	-	-	-	-	-	-
ATK_WS02	1	50	4	2.00	---	0.50 to 2.00	03/07/2023 10:33:00	1002	1002	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS02	1	50	4	---	---	0.50 to 2.00	60 secs	1002	1002	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS02	1	50	4/2	2.00	---	0.50 to 2.00	03/07/2023 10:35:00	-	-	-	-	0.1	0.0	20.9	-	-	0	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS02	1	50	4/2	---	---	0.50 to 2.00	30 secs	-	-	-	-	3.3	0.0	18.1	-	-	0	-	0	-	-
ATK_WS02	1	50	4/2	---	---	0.50 to 2.00	60 secs	-	-	-	-	3.3	0.0	16.5	-	-	0	-	0	-	-
ATK_WS02	1	50	4/2	---	---	0.50 to 2.00	90 secs	-	-	-	-	3.3	0.0	16.4	-	-	0	-	0	-	-
ATK_WS02	1	50	4/2	---	---	0.50 to 2.00	120 secs	-	-	-	-	3.3	0.0	16.5	-	-	0	-	0	-	-
ATK_WS02	1	50	4/2	---	---	0.50 to 2.00	180 secs	-	-	-	-	3.3	0.0	16.5	-	-	0	-	0	-	-
ATK_WS02	1	50	4/2	---	---	0.50 to 2.00	240 secs	-	-	-	-	3.2	0.0	16.6	-	-	0	-	0	-	-
ATK_WS02	1	50	4/2	---	---	0.50 to 2.00	300 secs	-	-	-	-	3.2	0.0	16.7	-	-	0	-	0	-	-
ATK_WS02	1	50	4/2	---	---	0.50 to 2.00	360 secs	-	-	-	-	3.1	0.0	16.8	-	-	0	-	0	-	-
ATK_WS02	1	50	4/3	2.00	1.95	0.50 to 2.00	03/07/2023 10:42:00	-	-	-	1.21	-	-	-	-	-	-	-	-	-	-
ATK_WS02	1	50	5	2.00	---	0.50 to 2.00	20/07/2023 09:32:00	1011	1011	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS02	1	50	5	---	---	0.50 to 2.00	60 secs	1011	1011	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS02	1	50	5/2	2.00	---	0.50 to 2.00	20/07/2023 09:34:00	-	-	-	-	0.0	0.0	20.7	-	-	0	-	0	-	-
ATK_WS02	1	50	5/2	---	---	0.50 to 2.00	30 secs	-	-	-	-	3.9	0.0	17.6	-	-	0	-	0	-	-
ATK_WS02	1	50	5/2	---	---	0.50 to 2.00	60 secs	-	-	-	-	3.9	0.0	16.6	-	-	0	-	0	-	-
ATK_WS02	1	50	5/2	---	---	0.50 to 2.00	90 secs	-	-	-	-	3.9	0.0	16.5	-	-	0	-	0	-	-
ATK_WS02	1	50	5/2	---	---	0.50 to 2.00	120 secs	-	-	-	-	3.9	0.0	16.5	-	-	0	-	0	-	-
ATK_WS02	1	50	5/2	---	---	0.50 to 2.00	180 secs	-	-	-	-	3.9	0.0	16.4	-	-	0	-	0	-	-
ATK_WS02	1	50	5/2	---	---	0.50 to 2.00	240 secs	-	-	-	-	3.9	0.0	16.4	-	-	0	-	0	-	-
ATK_WS02	1	50	5/2	---	---	0.50 to 2.00	300 secs	-	-	-	-	3.9	0.0	16.4	-	-	0	-	0	-	-
ATK_WS02	1	50	5/2	---	---	0.50 to 2.00	360 secs	-	-	-	-	3.8	0.0	16.5	-	-	0	-	0	-	-
ATK_WS02	1	50	5/3	2.00	1.95	0.50 to 2.00	20/07/2023 09:41:00	-	-	-	1.19	-	-	-	-	-	-	-	-	-	-
ATK_WS02	1	50	6	2.00	---	0.50 to 2.00	01/08/2023 08:32:00	995	995	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS02	1	50	6	---	---	0.50 to 2.00	60 secs	995	995	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS02	1	50	6/2	2.00	---	0.50 to 2.00	01/08/2023 08:34:00	-	-	-	-	0.1	0.0	21.2	-	-	0	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS02	1	50	6/2	---	---	0.50 to 2.00	30 secs	-	-	-	-	3.9	0.0	15.8	-	-	0	-	0	-	-
ATK_WS02	1	50	6/2	---	---	0.50 to 2.00	60 secs	-	-	-	-	4.0	0.0	14.5	-	-	0	-	0	-	-
ATK_WS02	1	50	6/2	---	---	0.50 to 2.00	90 secs	-	-	-	-	4.0	0.0	14.4	-	-	0	-	0	-	-
ATK_WS02	1	50	6/2	---	---	0.50 to 2.00	120 secs	-	-	-	-	4.0	0.0	14.3	-	-	0	-	0	-	-
ATK_WS02	1	50	6/2	---	---	0.50 to 2.00	180 secs	-	-	-	-	4.0	0.0	14.3	-	-	0	-	0	-	-
ATK_WS02	1	50	6/2	---	---	0.50 to 2.00	240 secs	-	-	-	-	4.0	0.0	14.3	-	-	0	-	0	-	-
ATK_WS02	1	50	6/2	---	---	0.50 to 2.00	300 secs	-	-	-	-	4.0	0.0	14.3	-	-	0	-	0	-	-
ATK_WS02	1	50	6/2	---	---	0.50 to 2.00	360 secs	-	-	-	-	4.0	0.0	14.3	-	-	0	-	0	-	-
ATK_WS02	1	50	6/3	2.00	1.95	0.50 to 2.00	01/08/2023 08:41:00	-	-	-	1.12	-	-	-	-	-	-	-	-	-	-
ATK_WS03	1	50	1	2.00	---	0.50 to 2.00	19/05/2023 09:11:00	1023	1023	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS03	1	50	1	---	---	0.50 to 2.00	60 secs	1023	1023	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS03	1	50	1/2	2.00	---	0.50 to 2.00	19/05/2023 09:13:00	-	-	-	-	0.3	0.0	21.3	-	-	1	-	0	-	-
ATK_WS03	1	50	1/2	---	---	0.50 to 2.00	30 secs	-	-	-	-	0.2	0.0	21.0	-	-	1	-	0	-	-
ATK_WS03	1	50	1/2	---	---	0.50 to 2.00	60 secs	-	-	-	-	0.1	0.0	20.8	-	-	0	-	0	-	-
ATK_WS03	1	50	1/2	---	---	0.50 to 2.00	90 secs	-	-	-	-	0.1	0.0	20.7	-	-	0	-	0	-	-
ATK_WS03	1	50	1/2	---	---	0.50 to 2.00	120 secs	-	-	-	-	0.1	0.0	20.7	-	-	0	-	0	-	-
ATK_WS03	1	50	1/2	---	---	0.50 to 2.00	180 secs	-	-	-	-	0.1	0.0	20.8	-	-	0	-	0	-	-
ATK_WS03	1	50	1/2	---	---	0.50 to 2.00	240 secs	-	-	-	-	0.1	0.0	20.8	-	-	0	-	0	-	-
ATK_WS03	1	50	1/2	---	---	0.50 to 2.00	300 secs	-	-	-	-	0.2	0.0	20.8	-	-	0	-	0	-	-
ATK_WS03	1	50	1/2	---	---	0.50 to 2.00	360 secs	-	-	-	-	0.2	0.0	20.8	-	-	0	-	0	-	-
ATK_WS03	1	50	1/3	2.00	2.05	0.50 to 2.00	19/05/2023 19:20:00	-	-	-	0.51	-	-	-	-	-	-	-	-	-	-
ATK_WS03	1	50	2	2.00	---	0.50 to 2.00	08/06/2023 10:06:00	1012	1017	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS03	1	50	2	---	---	0.50 to 2.00	60 secs	1012	1017	$-0.7_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS03	1	50	2/2	2.00	---	0.50 to 2.00	08/06/2023 10:08:00	-	-	-	-	0.2	0.0	20.5	-	-	0	-	0	-	-
ATK_WS03	1	50	2/2	---	---	0.50 to 2.00	30 secs	-	-	-	-	0.0	0.0	20.2	-	-	1	-	0	-	-
ATK_WS03	1	50	2/2	---	---	0.50 to 2.00	60 secs	-	-	-	-	0.0	0.0	20.1	-	-	1	-	0	-	-
ATK_WS03	1	50	2/2	---	---	0.50 to 2.00	90 secs	-	-	-	-	0.0	0.0	20.2	-	-	1	-	0	-	-
ATK_WS03	1	50	2/2	---	---	0.50 to 2.00	120 secs	-	-	-	-	0.0	0.0	20.2	-	-	1	-	0	-	-
ATK_WS03	1	50	2/3	2.00	---	0.50 to 2.00	08/06/2023 10:11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ATK_WS03	1	50	3	2.00	---	0.50 to 2.00	20/06/2023 12:22:00	1001	1002	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS03	1	50	3	---	---	0.50 to 2.00	60 secs	1001	1002	$-0.2_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS03	1	50	3/2	2.00	---	0.50 to 2.00	20/06/2023 12:24:00	-	-	-	-	0.0	0.0	20.7	-	-	0	-	0	-	-
ATK_WS03	1	50	3/2	---	---	0.50 to 2.00	30 secs	-	-	-	-	0.1	0.0	17.9	-	-	7	-	0	-	-
ATK_WS03	1	50	3/2	---	---	0.50 to 2.00	60 secs	-	-	-	-	0.2	0.0	16.9	-	-	10	-	0	-	-
ATK_WS03	1	50	3/2	---	---	0.50 to 2.00	90 secs	-	-	-	-	0.2	0.0	16.9	-	-	10	-	0	-	-
ATK_WS03	1	50	3/2	---	---	0.50 to 2.00	120 secs	-	-	-	-	0.2	0.0	16.9	-	-	9	-	0	-	-
ATK_WS03	1	50	3/2	---	---	0.50 to 2.00	180 secs	-	-	-	-	0.2	0.0	16.9	-	-	8	-	0	-	-
ATK_WS03	1	50	3/2	---	---	0.50 to 2.00	240 secs	-	-	-	-	0.2	0.0	16.9	-	-	7	-	0	-	-
ATK_WS03	1	50	3/2	---	---	0.50 to 2.00	300 secs	-	-	-	-	0.2	0.0	16.9	-	-	6	-	0	-	-
ATK_WS03	1	50	3/2	---	---	0.50 to 2.00	360 secs	-	-	-	-	0.3	0.0	16.9	-	-	5	-	0	-	-
ATK_WS03	1	50	3/3	2.00	2.87	0.50 to 2.00	20/06/2023 12:31:00	-	-	-	0.40	-	-	-	-	-	-	-	-	-	-
ATK_WS03	1	50	4	2.00	---	0.50 to 2.00	03/07/2023 10:44:00	998	1002	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS03	1	50	4	---	---	0.50 to 2.00	60 secs	998	1002	$-0.9_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS03	1	50	4/2	2.00	---	0.50 to 2.00	03/07/2023 10:46:00	-	-	-	-	0.4	0.0	20.9	-	-	0	-	0	-	-
ATK_WS03	1	50	4/2	---	---	0.50 to 2.00	30 secs	-	-	-	-	0.3	0.0	20.3	-	-	4	-	0	-	-
ATK_WS03	1	50	4/2	---	---	0.50 to 2.00	60 secs	-	-	-	-	0.3	0.0	19.7	-	-	5	-	0	-	-
ATK_WS03	1	50	4/2	---	---	0.50 to 2.00	90 secs	-	-	-	-	0.2	0.0	19.8	-	-	5	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS03	1	50	4/2	---	---	0.50 to 2.00	120 secs	-	-	-	-	0.2	0.0	19.9	-	-	4	-	0	-	-
ATK_WS03	1	50	4/2	---	---	0.50 to 2.00	180 secs	-	-	-	-	0.2	0.0	19.9	-	-	4	-	0	-	-
ATK_WS03	1	50	4/2	---	---	0.50 to 2.00	240 secs	-	-	-	-	0.3	0.0	19.9	-	-	3	-	0	-	-
ATK_WS03	1	50	4/2	---	---	0.50 to 2.00	300 secs	-	-	-	-	0.3	0.0	20.0	-	-	3	-	0	-	-
ATK_WS03	1	50	4/2	---	---	0.50 to 2.00	360 secs	-	-	-	-	0.3	0.0	20.0	-	-	2	-	0	-	-
ATK_WS03	1	50	4/3	2.00	2.87	0.50 to 2.00	03/07/2023 10:53:00	-	-	-	0.51	-	-	-	-	-	-	-	-	-	-
ATK_WS03	1	50	5	2.00	---	0.50 to 2.00	19/07/2023 10:52:00	1011	1011	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS03	1	50	5	---	---	0.50 to 2.00	60 secs	1011	1011	$-0.2_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS03	1	50	5/2	2.00	---	0.50 to 2.00	19/07/2023 10:54:00	-	-	-	-	0.0	0.0	20.8	-	-	1	-	0	-	-
ATK_WS03	1	50	5/2	---	---	0.50 to 2.00	30 secs	-	-	-	-	0.0	0.0	19.5	-	-	4	-	0	-	-
ATK_WS03	1	50	5/2	---	---	0.50 to 2.00	60 secs	-	-	-	-	0.1	0.0	19.3	-	-	5	-	0	-	-
ATK_WS03	1	50	5/2	---	---	0.50 to 2.00	90 secs	-	-	-	-	0.1	0.0	19.3	-	-	5	-	0	-	-
ATK_WS03	1	50	5/2	---	---	0.50 to 2.00	120 secs	-	-	-	-	0.1	0.0	19.3	-	-	6	-	0	-	-
ATK_WS03	1	50	5/2	---	---	0.50 to 2.00	180 secs	-	-	-	-	0.0	0.0	19.3	-	-	6	-	0	-	-
ATK_WS03	1	50	5/2	---	---	0.50 to 2.00	240 secs	-	-	-	-	0.0	0.0	19.4	-	-	5	-	0	-	-
ATK_WS03	1	50	5/2	---	---	0.50 to 2.00	300 secs	-	-	-	-	0.0	0.0	19.4	-	-	5	-	0	-	-
ATK_WS03	1	50	5/2	---	---	0.50 to 2.00	360 secs	-	-	-	-	0.0	0.0	19.5	-	-	5	-	0	-	-
ATK_WS03	1	50	5/3	2.00	2.87	0.50 to 2.00	19/07/2023 11:01:00	-	-	-	0.66	-	-	-	-	-	-	-	-	-	-
ATK_WS03	1	50	6	2.00	---	0.50 to 2.00	01/08/2023 08:13:00	995	995	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS03	1	50	6	---	---	0.50 to 2.00	60 secs	995	995	$-0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS03	1	50	6/2	2.00	---	0.50 to 2.00	01/08/2023 08:15:00	-	-	-	-	0.5	0.0	20.4	-	-	0	-	0	-	-
ATK_WS03	1	50	6/2	---	---	0.50 to 2.00	30 secs	-	-	-	-	0.4	0.0	19.4	-	-	0	-	0	-	-
ATK_WS03	1	50	6/2	---	---	0.50 to 2.00	60 secs	-	-	-	-	0.4	0.0	18.9	-	-	0	-	0	-	-
ATK_WS03	1	50	6/2	---	---	0.50 to 2.00	90 secs	-	-	-	-	0.4	0.0	18.4	-	-	0	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS03	1	50	6/2	---	---	0.50 to 2.00	120 secs	-	-	-	-	0.3	0.0	16.8	-	-	0	-	0	-	-
ATK_WS03	1	50	6/2	---	---	0.50 to 2.00	180 secs	-	-	-	-	0.3	0.0	14.1	-	-	0	-	0	-	-
ATK_WS03	1	50	6/2	---	---	0.50 to 2.00	240 secs	-	-	-	-	0.3	0.0	10.3	-	-	0	-	0	-	-
ATK_WS03	1	50	6/2	---	---	0.50 to 2.00	300 secs	-	-	-	-	0.3	0.0	7.4	-	-	0	-	0	-	-
ATK_WS03	1	50	6/2	---	---	0.50 to 2.00	360 secs	-	-	-	-	0.2	0.0	5.0	-	-	0	-	0	-	-
ATK_WS03	1	50	6/3	2.00	2.87	0.50 to 2.00	01/08/2023 08:22:00	-	-	-	0.71	-	-	-	-	-	-	-	-	-	-
ATK_WS04	1	50	1	5.00	---	2.00 to 5.00	19/05/2023 10:10:00	1022	1022	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS04	1	50	1	---	---	2.00 to 5.00	60 secs	1022	1022	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS04	1	50	1/2	5.00	---	2.00 to 5.00	19/05/2023 10:12:00	-	-	-	-	0.0	0.0	21.2	-	-	1	-	0	-	-
ATK_WS04	1	50	1/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	0.1	0.0	21.2	-	-	3	-	0	-	-
ATK_WS04	1	50	1/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	0.0	0.0	21.1	-	-	3	-	0	-	-
ATK_WS04	1	50	1/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	0.0	0.0	21.1	-	-	3	-	0	-	-
ATK_WS04	1	50	1/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	0.0	0.0	21.1	-	-	3	-	0	-	-
ATK_WS04	1	50	1/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	0.0	0.0	21.1	-	-	3	-	0	-	-
ATK_WS04	1	50	1/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	0.0	0.0	21.0	-	-	3	-	0	-	-
ATK_WS04	1	50	1/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	0.0	0.0	21.0	-	-	3	-	0	-	-
ATK_WS04	1	50	1/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	0.0	0.0	21.0	-	-	3	-	0	-	-
ATK_WS04	1	50	1/3	5.00	4.76	2.00 to 5.00	19/05/2023 10:19:00	-	-	-	1.85	-	-	-	-	-	-	-	-	-	-
ATK_WS04	1	50	2	5.00	---	2.00 to 5.00	08/06/2023 11:46:00	-	-	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS04	1	50	2	---	---	2.00 to 5.00	60 secs	-	-	$0.6_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS04	1	50	2/2	5.00	---	2.00 to 5.00	08/06/2023 11:48:00	-	-	-	-	0.0	0.0	20.6	-	-	6	-	0	-	-
ATK_WS04	1	50	2/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	0.7	0.0	17.1	-	-	5	-	0	-	-
ATK_WS04	1	50	2/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	0.7	0.0	17.1	-	-	5	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS04	1	50	2/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	0.6	0.0	17.3	-	-	5	-	0	-	-
ATK_WS04	1	50	2/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	0.6	0.0	17.5	-	-	5	-	0	-	-
ATK_WS04	1	50	2/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	0.6	0.0	17.6	-	-	5	-	0	-	-
ATK_WS04	1	50	2/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	0.5	0.0	17.9	-	-	4	-	0	-	-
ATK_WS04	1	50	2/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	0.5	0.0	18.1	-	-	4	-	0	-	-
ATK_WS04	1	50	2/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	0.4	0.0	18.4	-	-	4	-	0	-	-
ATK_WS04	1	50	2/3	5.00	4.96	2.00 to 5.00	08/06/2023 11:55:00	-	-	-	2.77	-	-	-	-	-	-	-	-	-	-
ATK_WS04	1	50	3	5.00	---	2.00 to 5.00	19/06/2023 16:40:00	1005	1005	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS04	1	50	3	---	---	2.00 to 5.00	60 secs	1005	1005	$-0.2_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS04	1	50	3/2	5.00	---	2.00 to 5.00	19/06/2023 16:42:00	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_WS04	1	50	3/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	0.2	0.0	18.4	-	-	5	-	0	-	-
ATK_WS04	1	50	3/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	0.2	0.0	18.2	-	-	6	-	0	-	-
ATK_WS04	1	50	3/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	0.3	0.0	18.1	-	-	6	-	0	-	-
ATK_WS04	1	50	3/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	0.2	0.0	18.1	-	-	6	-	0	-	-
ATK_WS04	1	50	3/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	0.2	0.0	18.2	-	-	6	-	0	-	-
ATK_WS04	1	50	3/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	0.2	0.0	18.2	-	-	5	-	0	-	-
ATK_WS04	1	50	3/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	0.2	0.0	18.3	-	-	4	-	0	-	-
ATK_WS04	1	50	3/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	0.2	0.0	18.4	-	-	3	-	0	-	-
ATK_WS04	1	50	3/3	5.00	4.96	2.00 to 5.00	19/06/2023 16:49:00	-	-	-	1.85	-	-	-	-	-	-	-	-	-	-
ATK_WS04	1	50	4	5.00	---	2.00 to 5.00	03/07/2023 14:05:00	1002	1002	$0.1_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS04	1	50	4	---	---	2.00 to 5.00	60 secs	1002	1002	$0.3_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS04	1	50	4/2	5.00	---	2.00 to 5.00	03/07/2023 14:07:00	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_WS04	1	50	4/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	0.6	0.0	20.0	-	-	4	-	0	-	-
ATK_WS04	1	50	4/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	0.6	0.0	19.7	-	-	5	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS04	1	50	4/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	0.6	0.0	19.7	-	-	5	-	0	-	-
ATK_WS04	1	50	4/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	0.6	0.0	19.7	-	-	5	-	0	-	-
ATK_WS04	1	50	4/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	0.6	0.0	19.7	-	-	5	-	0	-	-
ATK_WS04	1	50	4/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	0.6	0.0	19.7	-	-	5	-	0	-	-
ATK_WS04	1	50	4/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	0.6	0.0	19.7	-	-	5	-	0	-	-
ATK_WS04	1	50	4/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	0.5	0.0	19.7	-	-	5	-	0	-	-
ATK_WS04	1	50	4/3	5.00	4.96	2.00 to 5.00	03/07/2023 14:14:00	-	-	-	1.88	-	-	-	-	-	-	-	-	-	-
ATK_WS04	1	50	5	5.00	---	2.00 to 5.00	19/07/2023 11:43:00	1012	1012	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS04	1	50	5	---	---	2.00 to 5.00	60 secs	1012	1012	$0.4_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS04	1	50	5/2	5.00	---	2.00 to 5.00	19/07/2023 11:45:00	-	-	-	-	0.0	0.0	21.0	-	-	0	-	0	-	-
ATK_WS04	1	50	5/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	0.1	0.0	20.3	-	-	5	-	0	-	-
ATK_WS04	1	50	5/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	0.1	0.0	20.1	-	-	7	-	0	-	-
ATK_WS04	1	50	5/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	0.1	0.0	20.1	-	-	7	-	0	-	-
ATK_WS04	1	50	5/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	0.1	0.0	20.1	-	-	7	-	0	-	-
ATK_WS04	1	50	5/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	0.1	0.0	20.1	-	-	7	-	0	-	-
ATK_WS04	1	50	5/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	0.1	0.0	20.1	-	-	7	-	0	-	-
ATK_WS04	1	50	5/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	0.1	0.0	20.1	-	-	7	-	0	-	-
ATK_WS04	1	50	5/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	0.1	0.0	20.2	-	-	7	-	0	-	-
ATK_WS04	1	50	5/3	5.00	4.96	2.00 to 5.00	19/07/2023 11:52:00	-	-	-	1.97	-	-	-	-	-	-	-	-	-	-
ATK_WS04	1	50	6	5.00	---	2.00 to 5.00	01/08/2023 09:44:00	995	995	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS04	1	50	6	---	---	2.00 to 5.00	60 secs	995	995	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS04	1	50	6/2	5.00	---	2.00 to 5.00	01/08/2023 09:46:00	-	-	-	-	0.1	0.0	20.7	-	-	0	-	0	-	-
ATK_WS04	1	50	6/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	0.2	0.0	20.3	-	-	6	-	0	-	-
ATK_WS04	1	50	6/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	0.2	0.0	20.2	-	-	7	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS04	1	50	6/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	0.3	0.0	20.2	-	-	7	-	0	-	-
ATK_WS04	1	50	6/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	0.3	0.0	20.1	-	-	7	-	0	-	-
ATK_WS04	1	50	6/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	0.2	0.0	20.1	-	-	7	-	0	-	-
ATK_WS04	1	50	6/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	0.2	0.0	20.1	-	-	7	-	0	-	-
ATK_WS04	1	50	6/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	0.2	0.0	20.1	-	-	7	-	0	-	-
ATK_WS04	1	50	6/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	0.2	0.0	20.3	-	-	5	-	0	-	-
ATK_WS04	1	50	6/3	5.00	4.96	2.00 to 5.00	01/08/2023 09:53:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ATK_WS05	1	50	5	5.00	---	2.00 to 5.00	19/07/2023 10:19:00	1011	1011	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS05	1	50	5	---	---	2.00 to 5.00	60 secs	1011	1011	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS05	1	50	5/2	5.00	---	2.00 to 5.00	19/07/2023 10:21:00	-	-	-	-	0.2	0.0	20.7	-	-	0	-	0	-	-
ATK_WS05	1	50	5/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	4.6	0.0	11.7	-	-	0	-	0	-	-
ATK_WS05	1	50	5/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	4.9	0.0	8.2	-	-	0	-	0	-	-
ATK_WS05	1	50	5/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	4.9	0.0	8.1	-	-	0	-	0	-	-
ATK_WS05	1	50	5/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	4.9	0.0	8.2	-	-	0	-	0	-	-
ATK_WS05	1	50	5/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	4.8	0.0	8.4	-	-	0	-	0	-	-
ATK_WS05	1	50	5/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	4.7	0.0	8.8	-	-	0	-	0	-	-
ATK_WS05	1	50	5/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	4.6	0.0	9.2	-	-	0	-	0	-	-
ATK_WS05	1	50	5/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	4.5	0.0	9.6	-	-	0	-	0	-	-
ATK_WS05	1	50	5/3	5.00	4.59	2.00 to 5.00	19/07/2023 10:28:00	-	-	-	1.95	-	-	-	-	-	-	-	-	-	-
ATK_WS05	1	50	6	5.00	---	2.00 to 5.00	01/08/2023 08:01:00	995	995	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS05	1	50	6	---	---	2.00 to 5.00	60 secs	995	995	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS05	1	50	6/2	5.00	---	2.00 to 5.00	01/08/2023 08:03:00	-	-	-	-	0.6	0.0	20.1	-	-	0	-	0	-	-
ATK_WS05	1	50	6/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	0.9	0.0	18.9	-	-	0	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS05	1	50	6/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	1.7	0.0	16.6	-	-	0	-	0	-	-
ATK_WS05	1	50	6/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	4.8	0.0	8.2	-	-	0	-	0	-	-
ATK_WS05	1	50	6/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	5.8	0.0	6.1	-	-	0	-	0	-	-
ATK_WS05	1	50	6/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	6.0	0.0	5.5	-	-	0	-	0	-	-
ATK_WS05	1	50	6/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	6.3	0.0	4.9	-	-	0	-	0	-	-
ATK_WS05	1	50	6/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	6.4	0.0	4.4	-	-	0	-	0	-	-
ATK_WS05	1	50	6/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	6.5	0.0	4.2	-	-	0	-	0	-	-
ATK_WS05	1	50	6/2	---	4.57	2.00 to 5.00	420 secs	-	-	-	1.88	-	-	-	-	-	-	-	-	-	-
ATK_WS05	1	50	7	5.00	---	2.00 to 5.00	11/08/2023 11:20:00	1010	1010	$0.1_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS05	1	50	7	---	---	2.00 to 5.00	60 secs	1010	1010	$0.2_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS05	1	50	7/2	5.00	---	2.00 to 5.00	11/08/2023 11:22:00	-	-	-	-	0.1	0.0	20.5	-	-	0	-	0	-	-
ATK_WS05	1	50	7/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	6.0	0.0	12.4	-	-	0	-	0	-	-
ATK_WS05	1	50	7/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	6.1	0.0	5.4	-	-	0	-	0	-	-
ATK_WS05	1	50	7/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	6.2	0.0	4.5	-	-	0	-	1	-	-
ATK_WS05	1	50	7/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	6.2	0.0	4.3	-	-	0	-	1	-	-
ATK_WS05	1	50	7/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	6.1	0.0	4.2	-	-	0	-	1	-	-
ATK_WS05	1	50	7/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	6.0	0.0	4.1	-	-	0	-	1	-	-
ATK_WS05	1	50	7/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	5.9	0.0	3.5	-	-	0	-	1	-	-
ATK_WS05	1	50	7/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	5.7	0.0	3.2	-	-	0	-	1	-	-
ATK_WS05	1	50	7/3	5.00	4.57	2.00 to 5.00	11/08/2023 11:29:00	-	-	-	1.93	-	-	-	-	-	-	-	-	-	-
ATK_WS05	1	50	8	5.00	---	2.00 to 5.00	24/08/2023 10:03:00	1015	1015	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS05	1	50	8	---	---	2.00 to 5.00	60 secs	1015	1015	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS05	1	50	8/2	5.00	---	2.00 to 5.00	24/08/2023 10:05:00	-	-	-	-	0.0	0.0	20.8	-	-	1	-	0	-	-
ATK_WS05	1	50	8/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	5.8	0.0	8.4	-	-	0	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS05	1	50	8/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	5.8	0.0	5.2	-	-	0	-	0	-	-
ATK_WS05	1	50	8/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	5.8	0.0	5.1	-	-	0	-	0	-	-
ATK_WS05	1	50	8/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	5.8	0.0	5.0	-	-	0	-	0	-	-
ATK_WS05	1	50	8/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	5.8	0.0	5.0	-	-	0	-	0	-	-
ATK_WS05	1	50	8/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	5.8	0.0	4.9	-	-	0	-	0	-	-
ATK_WS05	1	50	8/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	5.9	0.0	4.9	-	-	0	-	0	-	-
ATK_WS05	1	50	8/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	5.9	0.0	5.1	-	-	0	-	0	-	-
ATK_WS05	1	50	8/3	5.00	4.57	2.00 to 5.00	24/08/2023 10:12:00	-	-	-	2.00	-	-	-	-	-	-	-	-	-	-
ATK_WS05	1	50	9	5.00	---	2.00 to 5.00	11/09/2023 10:44:00	1007	1007	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS05	1	50	9	---	---	2.00 to 5.00	60 secs	1007	1007	$0.3_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS05	1	50	9/2	5.00	---	2.00 to 5.00	11/09/2023 10:46:00	-	-	-	-	0.2	0.0	20.8	-	-	0	-	0	-	-
ATK_WS05	1	50	9/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	6.5	0.0	10.2	-	-	0	-	0	-	-
ATK_WS05	1	50	9/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	6.6	0.0	4.5	-	-	0	-	0	-	-
ATK_WS05	1	50	9/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	6.7	0.0	4.0	-	-	0	-	0	-	-
ATK_WS05	1	50	9/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	6.8	0.0	3.8	-	-	0	-	0	-	-
ATK_WS05	1	50	9/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	6.8	0.0	3.8	-	-	0	-	0	-	-
ATK_WS05	1	50	9/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	6.8	0.0	3.7	-	-	0	-	0	-	-
ATK_WS05	1	50	9/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	7.1	0.0	3.3	-	-	0	-	0	-	-
ATK_WS05	1	50	9/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	7.3	0.0	3.1	-	-	0	-	0	-	-
ATK_WS05	1	50	9/3	5.00	4.57	2.00 to 5.00	11/09/2023 10:53:00	-	-	-	1.99	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	3	5.00	---	2.00 to 5.00	19/06/2023 15:04:00	1003	1003	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	3	---	---	2.00 to 5.00	60 secs	1003	1003	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	3/2	5.00	---	2.00 to 5.00	19/06/2023 15:05:30	-	-	-	-	0.0	1.1	20.8	-	-	0	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS06	1	50	3/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	0.6	1.1	20.2	-	-	0	-	0	-	-
ATK_WS06	1	50	3/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	1.3	1.1	19.3	-	-	0	-	0	-	-
ATK_WS06	1	50	3/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	2.3	1.1	18.3	-	-	0	-	0	-	-
ATK_WS06	1	50	3/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	3.6	1.1	16.5	-	-	0	-	0	-	-
ATK_WS06	1	50	3/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	4.2	1.1	15.3	-	-	0	-	0	-	-
ATK_WS06	1	50	3/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	5.1	1.1	14.1	-	-	0	-	0	-	-
ATK_WS06	1	50	3/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	5.5	1.1	13.4	-	-	0	-	0	-	-
ATK_WS06	1	50	3/2	---	---	2.00 to 5.00	420 secs	-	-	-	-	5.4	1.1	13.4	-	-	0	-	0	-	-
ATK_WS06	1	50	3/3	5.00	2.70	2.00 to 5.00	19/06/2023 15:13:00	-	-	-	1.54	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	4	5.00	---	2.00 to 5.00	03/07/2023 15:45:00	1003	1003	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	4	---	---	2.00 to 5.00	60 secs	1003	1003	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	4/2	5.00	---	2.00 to 5.00	03/07/2023 15:47:00	-	-	-	-	0.0	0.0	20.9	-	-	0	-	0	-	-
ATK_WS06	1	50	4/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	4.6	0.0	12.9	-	-	0	-	0	-	-
ATK_WS06	1	50	4/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	5.1	0.0	10.8	-	-	0	-	0	-	-
ATK_WS06	1	50	4/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	5.3	0.0	10.5	-	-	0	-	0	-	-
ATK_WS06	1	50	4/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	5.3	0.0	10.6	-	-	0	-	0	-	-
ATK_WS06	1	50	4/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	5.1	0.0	11.0	-	-	0	-	0	-	-
ATK_WS06	1	50	4/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	5.1	0.0	11.0	-	-	0	-	0	-	-
ATK_WS06	1	50	4/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	5.0	0.0	11.2	-	-	0	-	0	-	-
ATK_WS06	1	50	4/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	4.9	0.0	11.6	-	-	0	-	0	-	-
ATK_WS06	1	50	4/3	5.00	2.80	2.00 to 5.00	03/07/2023 15:54:00	-	-	-	1.67	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	5	5.00	---	2.00 to 5.00	19/07/2023 15:25:00	1013	1013	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	5	---	---	2.00 to 5.00	60 secs	1013	1013	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	5/2	5.00	---	2.00 to 5.00	19/07/2023 15:27:00	-	-	-	-	0.0	0.0	20.6	-	-	1	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS06	1	50	5/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	2.0	0.0	17.3	-	-	1	-	0	-	-
ATK_WS06	1	50	5/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	3.3	0.0	13.3	-	-	1	-	0	-	-
ATK_WS06	1	50	5/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	3.8	0.0	12.6	-	-	1	-	0	-	-
ATK_WS06	1	50	5/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	3.9	0.0	12.7	-	-	1	-	0	-	-
ATK_WS06	1	50	5/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	3.8	0.0	12.8	-	-	1	-	0	-	-
ATK_WS06	1	50	5/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	3.7	0.0	13.0	-	-	1	-	0	-	-
ATK_WS06	1	50	5/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	3.4	0.0	13.9	-	-	1	-	0	-	-
ATK_WS06	1	50	5/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	3.4	0.0	13.8	-	-	1	-	0	-	-
ATK_WS06	1	50	5/3	5.00	2.70	2.00 to 5.00	19/07/2023 15:34:00	-	-	-	1.54	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	6	5.00	---	2.00 to 5.00	01/08/2023 11:04:00	996	996	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	6	---	---	2.00 to 5.00	60 secs	996	996	$0.2_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	6/2	5.00	---	2.00 to 5.00	01/08/2023 11:06:00	-	-	-	-	0.0	0.0	21.0	-	-	1	-	0	-	-
ATK_WS06	1	50	6/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	9.0	0.0	6.1	-	-	2	-	0	-	-
ATK_WS06	1	50	6/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	9.1	0.0	2.7	-	-	2	-	0	-	-
ATK_WS06	1	50	6/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	9.2	0.0	2.5	-	-	2	-	0	-	-
ATK_WS06	1	50	6/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	9.2	0.0	2.4	-	-	2	-	0	-	-
ATK_WS06	1	50	6/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	9.2	0.0	2.4	-	-	2	-	0	-	-
ATK_WS06	1	50	6/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	9.2	0.0	2.4	-	-	1	-	0	-	-
ATK_WS06	1	50	6/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	9.2	0.0	2.3	-	-	1	-	0	-	-
ATK_WS06	1	50	6/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	9.3	0.0	2.3	-	-	1	-	0	-	-
ATK_WS06	1	50	6/3	5.00	2.70	2.00 to 5.00	01/08/2023 11:13:00	-	-	-	1.51	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	7	5.00	---	2.00 to 5.00	11/08/2023 11:32:00	1010	1010	$0.1_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	7	---	---	2.00 to 5.00	60 secs	1010	1010	$0.2_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	7/2	5.00	---	2.00 to 5.00	11/08/2023 11:34:00	-	-	-	-	0.1	0.0	20.7	-	-	0	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS06	1	50	7/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	1.7	0.1	18.4	-	-	0	-	0	-	-
ATK_WS06	1	50	7/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	2.3	0.1	15.9	-	-	0	-	0	-	-
ATK_WS06	1	50	7/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	3.7	0.4	12.9	-	-	0	-	0	-	-
ATK_WS06	1	50	7/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	5.3	0.8	9.8	-	-	0	-	0	-	-
ATK_WS06	1	50	7/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	6.7	1.3	7.4	-	-	0	-	0	-	-
ATK_WS06	1	50	7/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	8.7	2.1	3.7	-	-	0	-	0	-	-
ATK_WS06	1	50	7/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	9.3	2.1	2.8	-	-	0	-	0	-	-
ATK_WS06	1	50	7/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	9.2	2.1	2.9	-	-	0	-	0	-	-
ATK_WS06	1	50	7/3	5.00	2.70	2.00 to 5.00	11/08/2023 11:41:00	-	-	-	1.54	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	8	5.00	---	2.00 to 5.00	24/08/2023 10:14:00	1015	1015	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	8	---	---	2.00 to 5.00	60 secs	1015	1015	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	8/2	5.00	---	2.00 to 5.00	24/08/2023 10:16:00	-	-	-	-	0.1	0.0	20.8	-	-	0	-	0	-	-
ATK_WS06	1	50	8/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	7.8	0.0	7.8	-	-	1	-	0	-	-
ATK_WS06	1	50	8/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	8.0	0.0	4.4	-	-	1	-	0	-	-
ATK_WS06	1	50	8/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	8.0	0.0	4.2	-	-	1	-	0	-	-
ATK_WS06	1	50	8/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	8.1	0.0	4.1	-	-	1	-	0	-	-
ATK_WS06	1	50	8/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	8.1	0.0	4.0	-	-	1	-	0	-	-
ATK_WS06	1	50	8/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	8.3	0.0	3.6	-	-	0	-	0	-	-
ATK_WS06	1	50	8/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	8.3	0.0	3.5	-	-	1	-	0	-	-
ATK_WS06	1	50	8/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	8.4	0.0	3.4	-	-	0	-	0	-	-
ATK_WS06	1	50	8/3	5.00	2.70	2.00 to 5.00	24/08/2023 10:23:00	-	-	-	1.55	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	9	5.00	---	2.00 to 5.00	11/09/2023 10:33:00	1006	1006	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	9	---	---	2.00 to 5.00	60 secs	1006	1006	$0.3_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS06	1	50	9/2	5.00	---	2.00 to 5.00	11/09/2023 10:35:00	-	-	-	-	0.1	0.0	20.9	-	-	0	-	0	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS06	1	50	9/2	---	---	2.00 to 5.00	30 secs	-	-	-	-	9.6	0.0	9.0	-	-	0	-	0	-	-
ATK_WS06	1	50	9/2	---	---	2.00 to 5.00	60 secs	-	-	-	-	10.3	0.0	2.7	-	-	0	-	0	-	-
ATK_WS06	1	50	9/2	---	---	2.00 to 5.00	90 secs	-	-	-	-	10.7	0.0	1.8	-	-	0	-	0	-	-
ATK_WS06	1	50	9/2	---	---	2.00 to 5.00	120 secs	-	-	-	-	10.7	0.0	1.7	-	-	0	-	0	-	-
ATK_WS06	1	50	9/2	---	---	2.00 to 5.00	180 secs	-	-	-	-	10.8	0.0	1.6	-	-	0	-	0	-	-
ATK_WS06	1	50	9/2	---	---	2.00 to 5.00	240 secs	-	-	-	-	10.8	0.0	1.6	-	-	0	-	0	-	-
ATK_WS06	1	50	9/2	---	---	2.00 to 5.00	300 secs	-	-	-	-	10.8	0.0	1.6	-	-	0	-	0	-	-
ATK_WS06	1	50	9/2	---	---	2.00 to 5.00	360 secs	-	-	-	-	10.8	0.0	1.6	-	-	0	-	0	-	-
ATK_WS06	1	50	9/3	5.00	2.70	2.00 to 5.00	11/09/2023 10:42:00	-	-	-	1.55	-	-	-	-	-	-	-	-	-	-
ATK_WS07	1	50	3	1.50	---	1.00 to 1.50	20/06/2023 07:27:00	1004	1004	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS07	1	50	3	---	---	1.00 to 1.50	60 secs	1004	1004	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS07	1	50	3/2	1.50	---	1.00 to 1.50	20/06/2023 07:29:00	-	-	-	-	0.0	0.0	20.9	-	-	0	-	0	-	-
ATK_WS07	1	50	3/2	---	---	1.00 to 1.50	30 secs	-	-	-	-	0.4	0.0	19.7	-	-	0	-	0	-	-
ATK_WS07	1	50	3/2	---	---	1.00 to 1.50	60 secs	-	-	-	-	0.3	0.0	19.8	-	-	0	-	0	-	-
ATK_WS07	1	50	3/2	---	---	1.00 to 1.50	90 secs	-	-	-	-	0.1	0.0	20.1	-	-	0	-	0	-	-
ATK_WS07	1	50	3/2	---	---	1.00 to 1.50	120 secs	-	-	-	-	0.1	0.0	20.3	-	-	0	-	0	-	-
ATK_WS07	1	50	3/2	---	---	1.00 to 1.50	180 secs	-	-	-	-	0.0	0.0	20.4	-	-	0	-	0	-	-
ATK_WS07	1	50	3/2	---	---	1.00 to 1.50	240 secs	-	-	-	-	0.0	0.0	20.6	-	-	0	-	0	-	-
ATK_WS07	1	50	3/2	---	---	1.00 to 1.50	300 secs	-	-	-	-	0.0	0.0	20.7	-	-	0	-	0	-	-
ATK_WS07	1	50	3/2	---	---	1.00 to 1.50	360 secs	-	-	-	-	0.0	0.0	20.7	-	-	0	-	0	-	-
ATK_WS07	1	50	3/3	1.50	2.33	1.00 to 1.50	20/06/2023 07:36:00	-	-	-	0.66	-	-	-	-	-	-	-	-	-	-
ATK_WS07	1	50	4	1.50	---	1.00 to 1.50	03/07/2023 14:50:00	1003	1003	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS07	1	50	4	---	---	1.00 to 1.50	60 secs	1003	1003	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS07	1	50	4/2	1.50	---	1.00 to 1.50	03/07/2023 14:52:00	-	-	-	-	0.0	0.0	20.8	-	-	1	-	0	-	-
ATK_WS07	1	50	4/2	---	---	1.00 to 1.50	30 secs	-	-	-	-	0.6	0.0	20.1	-	-	0	-	0	-	-
ATK_WS07	1	50	4/2	---	---	1.00 to 1.50	60 secs	-	-	-	-	0.6	0.0	19.9	-	-	0	-	0	-	-
ATK_WS07	1	50	4/2	---	---	1.00 to 1.50	90 secs	-	-	-	-	0.6	0.0	19.9	-	-	0	-	0	-	-
ATK_WS07	1	50	4/2	---	---	1.00 to 1.50	120 secs	-	-	-	-	0.6	0.0	20.0	-	-	0	-	0	-	-
ATK_WS07	1	50	4/2	---	---	1.00 to 1.50	180 secs	-	-	-	-	0.5	0.0	20.0	-	-	0	-	0	-	-
ATK_WS07	1	50	4/2	---	---	1.00 to 1.50	240 secs	-	-	-	-	0.5	0.0	20.0	-	-	0	-	0	-	-
ATK_WS07	1	50	4/2	---	---	1.00 to 1.50	300 secs	-	-	-	-	0.5	0.0	20.0	-	-	0	-	0	-	-
ATK_WS07	1	50	4/2	---	---	1.00 to 1.50	360 secs	-	-	-	-	0.5	0.0	20.0	-	-	0	-	0	-	-
ATK_WS07	1	50	4/3	1.50	2.33	1.00 to 1.50	03/07/2023 14:59:00	-	-	-	0.64	-	-	-	-	-	-	-	-	-	-
ATK_WS07	1	50	5	1.50	---	1.00 to 1.50	19/07/2023 12:36:00	1012	1012	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS07	1	50	5	---	---	1.00 to 1.50	60 secs	1012	1012	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS07	1	50	5/2	1.50	---	1.00 to 1.50	19/07/2023 12:38:00	-	-	-	-	0.0	0.0	21.0	-	-	0	-	0	-	-
ATK_WS07	1	50	5/2	---	---	1.00 to 1.50	30 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_WS07	1	50	5/2	---	---	1.00 to 1.50	60 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_WS07	1	50	5/2	---	---	1.00 to 1.50	90 secs	-	-	-	-	0.0	0.0	20.9	-	-	0	-	0	-	-
ATK_WS07	1	50	5/2	---	---	1.00 to 1.50	120 secs	-	-	-	-	0.0	0.0	21.0	-	-	0	-	0	-	-
ATK_WS07	1	50	5/2	---	---	1.00 to 1.50	180 secs	-	-	-	-	0.0	0.0	21.1	-	-	0	-	0	-	-
ATK_WS07	1	50	5/2	---	---	1.00 to 1.50	240 secs	-	-	-	-	0.0	0.0	21.1	-	-	0	-	0	-	-
ATK_WS07	1	50	5/2	---	---	1.00 to 1.50	300 secs	-	-	-	-	0.0	0.0	21.2	-	-	0	-	0	-	-
ATK_WS07	1	50	5/2	---	---	1.00 to 1.50	360 secs	-	-	-	-	0.0	0.1	21.2	-	-	0	-	0	-	-
ATK_WS07	1	50	5/3	1.50	2.33	1.00 to 1.50	19/07/2023 12:45:00	-	-	-	0.61	-	-	-	-	-	-	-	-	-	-
ATK_WS07	1	50	6	1.50	---	1.00 to 1.50	01/08/2023 10:24:00	996	996	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS07	1	50	6	---	---	1.00 to 1.50	60 secs	996	996	$0.3_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS07	1	50	6/2	1.50	---	1.00 to 1.50	01/08/2023 10:26:00	-	-	-	-	0.1	0.0	20.8	-	-	3	-	0	-	-
ATK_WS07	1	50	6/2	---	---	1.00 to 1.50	30 secs	-	-	-	-	1.2	0.0	18.4	-	-	1	-	0	-	-
ATK_WS07	1	50	6/2	---	---	1.00 to 1.50	60 secs	-	-	-	-	1.2	0.0	17.8	-	-	0	-	0	-	-
ATK_WS07	1	50	6/2	---	---	1.00 to 1.50	90 secs	-	-	-	-	1.2	0.0	17.9	-	-	0	-	0	-	-
ATK_WS07	1	50	6/2	---	---	1.00 to 1.50	120 secs	-	-	-	-	1.1	0.0	17.9	-	-	0	-	0	-	-
ATK_WS07	1	50	6/2	---	---	1.00 to 1.50	180 secs	-	-	-	-	1.1	0.0	17.9	-	-	0	-	0	-	-
ATK_WS07	1	50	6/2	---	---	1.00 to 1.50	240 secs	-	-	-	-	1.1	0.0	17.9	-	-	0	-	0	-	-
ATK_WS07	1	50	6/2	---	---	1.00 to 1.50	300 secs	-	-	-	-	1.1	0.0	18.0	-	-	0	-	0	-	-
ATK_WS07	1	50	6/2	---	---	1.00 to 1.50	360 secs	-	-	-	-	1.1	0.0	18.0	-	-	0	-	0	-	-
ATK_WS07	1	50	6/3	1.50	2.33	1.00 to 1.50	01/08/2023 10:33:00	-	-	-	0.59	-	-	-	-	-	-	-	-	-	-
ATK_WS07	1	50	7	1.50	---	1.00 to 1.50	11/08/2023 11:46:00	1011	1010	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS07	1	50	7	---	---	1.00 to 1.50	60 secs	1011	1010	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS07	1	50	7/2	1.50	---	1.00 to 1.50	11/08/2023 11:48:00	-	-	-	-	0.3	0.0	20.7	-	-	0	-	0	-	-
ATK_WS07	1	50	7/2	---	---	1.00 to 1.50	30 secs	-	-	-	-	0.2	0.0	20.8	-	-	0	-	0	-	-
ATK_WS07	1	50	7/2	---	---	1.00 to 1.50	60 secs	-	-	-	-	0.2	0.0	20.8	-	-	0	-	0	-	-
ATK_WS07	1	50	7/2	---	---	1.00 to 1.50	90 secs	-	-	-	-	0.2	0.0	20.8	-	-	0	-	0	-	-
ATK_WS07	1	50	7/2	---	---	1.00 to 1.50	120 secs	-	-	-	-	0.1	0.0	20.9	-	-	0	-	0	-	-
ATK_WS07	1	50	7/2	---	---	1.00 to 1.50	180 secs	-	-	-	-	0.1	0.0	20.9	-	-	0	-	0	-	-
ATK_WS07	1	50	7/2	---	---	1.00 to 1.50	240 secs	-	-	-	-	0.1	0.0	21.0	-	-	0	-	0	-	-
ATK_WS07	1	50	7/2	---	---	1.00 to 1.50	300 secs	-	-	-	-	0.1	0.0	21.0	-	-	0	-	0	-	-
ATK_WS07	1	50	7/2	---	---	1.00 to 1.50	360 secs	-	-	-	-	0.0	0.0	21.0	-	-	0	-	0	-	-
ATK_WS07	1	50	7/3	1.50	2.33	1.00 to 1.50	11/08/2023 11:55:00	-	-	-	0.65	-	-	-	-	-	-	-	-	-	-
ATK_WS07	1	50	8	1.50	---	1.00 to 1.50	24/08/2023 10:24:00	1015	1015	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS07	1	50	8	---	---	1.00 to 1.50	60 secs	1015	1015	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS07	1	50	8/2	1.50	---	1.00 to 1.50	24/08/2023 10:26:00	-	-	-	-	0.8	0.0	20.2	-	-	0	-	0	-	-
ATK_WS07	1	50	8/2	---	---	1.00 to 1.50	30 secs	-	-	-	-	0.0	0.0	20.6	-	-	0	-	0	-	-
ATK_WS07	1	50	8/2	---	---	1.00 to 1.50	60 secs	-	-	-	-	0.0	0.0	20.7	-	-	0	-	0	-	-
ATK_WS07	1	50	8/2	---	---	1.00 to 1.50	90 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_WS07	1	50	8/2	---	---	1.00 to 1.50	120 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_WS07	1	50	8/2	---	---	1.00 to 1.50	180 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_WS07	1	50	8/2	---	---	1.00 to 1.50	240 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_WS07	1	50	8/2	---	---	1.00 to 1.50	300 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_WS07	1	50	8/2	---	---	1.00 to 1.50	360 secs	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_WS07	1	50	8/3	1.50	2.33	1.00 to 1.50	24/08/2023 10:33:00	-	-	-	0.64	-	-	-	-	-	-	-	-	-	-
ATK_WS07	1	50	9	1.50	---	1.00 to 1.50	11/09/2023 10:20:00	1006	1006	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS07	1	50	9	---	---	1.00 to 1.50	60 secs	1006	1006	$0.3_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS07	1	50	9/2	1.50	---	1.00 to 1.50	11/09/2023 10:22:00	-	-	-	-	0.1	0.0	20.8	-	-	0	-	0	-	-
ATK_WS07	1	50	9/2	---	---	1.00 to 1.50	30 secs	-	-	-	-	0.1	0.0	20.8	-	-	0	-	0	-	-
ATK_WS07	1	50	9/2	---	---	1.00 to 1.50	60 secs	-	-	-	-	0.1	0.0	20.8	-	-	0	-	0	-	-
ATK_WS07	1	50	9/2	---	---	1.00 to 1.50	90 secs	-	-	-	-	0.1	0.0	20.7	-	-	0	-	0	-	-
ATK_WS07	1	50	9/2	---	---	1.00 to 1.50	120 secs	-	-	-	-	0.1	0.0	20.7	-	-	0	-	0	-	-
ATK_WS07	1	50	9/2	---	---	1.00 to 1.50	180 secs	-	-	-	-	0.1	0.0	20.7	-	-	0	-	0	-	-
ATK_WS07	1	50	9/2	---	---	1.00 to 1.50	240 secs	-	-	-	-	0.1	0.0	20.7	-	-	0	-	0	-	-
ATK_WS07	1	50	9/2	---	---	1.00 to 1.50	300 secs	-	-	-	-	0.1	0.0	20.7	-	-	0	-	0	-	-
ATK_WS07	1	50	9/2	---	---	1.00 to 1.50	360 secs	-	-	-	-	0.1	0.0	20.7	-	-	0	-	0	-	-
ATK_WS07	1	50	9/3	1.50	2.33	1.00 to 1.50	11/09/2023 10:29:00	-	-	-	0.63	-	-	-	-	-	-	-	-	-	-
ATK_WS08	1	50	3	5.00	---	3.00 to 5.00	19/06/2023 15:37:00	1004	1004	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS08	1	50	3	---	---	3.00 to 5.00	60 secs	1004	1004	$0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS08	1	50	3/2	5.00	---	3.00 to 5.00	19/06/2023 15:39:00	-	-	-	-	0.0	0.0	20.8	-	-	1	-	0	-	-
ATK_WS08	1	50	3/2	---	---	3.00 to 5.00	30 secs	-	-	-	-	0.1	0.0	20.2	-	-	11	-	0	-	-
ATK_WS08	1	50	3/2	---	---	3.00 to 5.00	60 secs	-	-	-	-	0.1	0.0	20.1	-	-	11	-	0	-	-
ATK_WS08	1	50	3/2	---	---	3.00 to 5.00	90 secs	-	-	-	-	0.1	0.0	20.1	-	-	11	-	0	-	-
ATK_WS08	1	50	3/2	---	---	3.00 to 5.00	120 secs	-	-	-	-	0.1	0.0	20.1	-	-	11	-	0	-	-
ATK_WS08	1	50	3/2	---	---	3.00 to 5.00	180 secs	-	-	-	-	0.1	0.0	20.1	-	-	11	-	0	-	-
ATK_WS08	1	50	3/2	---	---	3.00 to 5.00	240 secs	-	-	-	-	0.1	0.0	20.1	-	-	11	-	0	-	-
ATK_WS08	1	50	3/2	---	---	3.00 to 5.00	300 secs	-	-	-	-	0.2	0.0	19.7	-	-	4	-	0	-	-
ATK_WS08	1	50	3/2	---	---	3.00 to 5.00	360 secs	-	-	-	-	0.3	0.0	19.5	-	-	1	-	0	-	-
ATK_WS08	1	50	3/3	5.00	4.68	3.00 to 5.00	19/06/2023 15:46:00	-	-	-	1.36	-	-	-	-	-	-	-	-	-	-
ATK_WS08	1	50	4	5.00	---	3.00 to 5.00	03/07/2023 15:13:00	1002	1002	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS08	1	50	4	---	---	3.00 to 5.00	60 secs	1002	1002	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS08	1	50	4/2	5.00	---	3.00 to 5.00	03/07/2023 15:15:00	-	-	-	-	0.0	0.1	20.8	-	-	0	-	0	-	-
ATK_WS08	1	50	4/2	---	---	3.00 to 5.00	30 secs	-	-	-	-	0.0	0.0	20.5	-	-	4	-	0	-	-
ATK_WS08	1	50	4/2	---	---	3.00 to 5.00	60 secs	-	-	-	-	0.1	0.0	20.4	-	-	6	-	0	-	-
ATK_WS08	1	50	4/2	---	---	3.00 to 5.00	90 secs	-	-	-	-	0.1	0.0	20.4	-	-	6	-	0	-	-
ATK_WS08	1	50	4/2	---	---	3.00 to 5.00	120 secs	-	-	-	-	0.1	0.0	20.4	-	-	6	-	0	-	-
ATK_WS08	1	50	4/2	---	---	3.00 to 5.00	180 secs	-	-	-	-	0.1	0.0	20.4	-	-	6	-	0	-	-
ATK_WS08	1	50	4/2	---	---	3.00 to 5.00	240 secs	-	-	-	-	0.1	0.0	20.4	-	-	6	-	0	-	-
ATK_WS08	1	50	4/2	---	---	3.00 to 5.00	300 secs	-	-	-	-	0.0	0.0	20.5	-	-	6	-	0	-	-
ATK_WS08	1	50	4/2	---	---	3.00 to 5.00	360 secs	-	-	-	-	0.0	0.0	20.5	-	-	5	-	0	-	-
ATK_WS08	1	50	4/3	5.00	4.68	3.00 to 5.00	03/07/2023 15:22:00	-	-	-	1.41	-	-	-	-	-	-	-	-	-	-
ATK_WS08	1	50	5	5.00	---	3.00 to 5.00	19/07/2023 12:57:00	1012	1012	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS08	1	50	5	---	---	3.00 to 5.00	60 secs	1012	1012	$-0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS08	1	50	5/2	5.00	---	3.00 to 5.00	19/07/2023 12:59:00	-	-	-	-	0.0	0.0	21.1	-	-	0	-	0	-	-
ATK_WS08	1	50	5/2	---	---	3.00 to 5.00	30 secs	-	-	-	-	0.0	0.0	19.7	-	-	7	-	0	-	-
ATK_WS08	1	50	5/2	---	---	3.00 to 5.00	60 secs	-	-	-	-	0.0	0.0	19.7	-	-	8	-	0	-	-
ATK_WS08	1	50	5/2	---	---	3.00 to 5.00	90 secs	-	-	-	-	0.0	0.0	19.7	-	-	7	-	0	-	-
ATK_WS08	1	50	5/2	---	---	3.00 to 5.00	120 secs	-	-	-	-	0.0	0.0	19.8	-	-	6	-	0	-	-
ATK_WS08	1	50	5/2	---	---	3.00 to 5.00	180 secs	-	-	-	-	0.0	0.0	19.9	-	-	6	-	0	-	-
ATK_WS08	1	50	5/2	---	---	3.00 to 5.00	240 secs	-	-	-	-	0.0	0.0	20.1	-	-	5	-	0	-	-
ATK_WS08	1	50	5/2	---	---	3.00 to 5.00	300 secs	-	-	-	-	0.0	0.0	20.1	-	-	5	-	0	-	-
ATK_WS08	1	50	5/2	---	---	3.00 to 5.00	360 secs	-	-	-	-	0.0	0.0	19.8	-	-	4	-	0	-	-
ATK_WS08	1	50	5/3	5.00	4.68	3.00 to 5.00	19/07/2023 13:06:00	-	-	-	1.37	-	-	-	-	-	-	-	-	-	-
ATK_WS08	1	50	6	5.00	---	3.00 to 5.00	01/08/2023 10:34:00	996	996	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS08	1	50	6	---	---	3.00 to 5.00	60 secs	996	996	$0.2_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS08	1	50	6/2	5.00	---	3.00 to 5.00	01/08/2023 10:36:00	-	-	-	-	0.1	0.0	20.8	-	-	1	-	0	-	-
ATK_WS08	1	50	6/2	---	---	3.00 to 5.00	30 secs	-	-	-	-	0.6	0.0	16.7	-	-	4	-	0	-	-
ATK_WS08	1	50	6/2	---	---	3.00 to 5.00	60 secs	-	-	-	-	0.6	0.0	15.7	-	-	5	-	0	-	-
ATK_WS08	1	50	6/2	---	---	3.00 to 5.00	90 secs	-	-	-	-	0.6	0.0	15.6	-	-	5	-	0	-	-
ATK_WS08	1	50	6/2	---	---	3.00 to 5.00	120 secs	-	-	-	-	0.6	0.0	15.6	-	-	5	-	0	-	-
ATK_WS08	1	50	6/2	---	---	3.00 to 5.00	180 secs	-	-	-	-	0.6	0.0	15.6	-	-	5	-	0	-	-
ATK_WS08	1	50	6/2	---	---	3.00 to 5.00	240 secs	-	-	-	-	0.6	0.0	15.6	-	-	5	-	0	-	-
ATK_WS08	1	50	6/2	---	---	3.00 to 5.00	300 secs	-	-	-	-	0.6	0.0	15.4	-	-	5	-	0	-	-
ATK_WS08	1	50	6/2	---	---	3.00 to 5.00	360 secs	-	-	-	-	0.7	0.0	14.8	-	-	3	-	0	-	-
ATK_WS08	1	50	6/3	5.00	4.68	3.00 to 5.00	01/08/2023 10:43:00	-	-	-	1.34	-	-	-	-	-	-	-	-	-	-
ATK_WS08	1	50	7	5.00	---	3.00 to 5.00	11/08/2023 11:58:00	1010	1010	$0.1_{(I)}$	-	-	-	-	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS08	1	50	7	---	---	3.00 to 5.00	60 secs	1010	1010	$-0.1_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS08	1	50	7/2	5.00	---	3.00 to 5.00	11/08/2023 12:00:00	-	-	-	-	0.1	0.0	20.8	-	-	0	-	0	-	-
ATK_WS08	1	50	7/2	---	---	3.00 to 5.00	30 secs	-	-	-	-	0.2	0.0	19.3	-	-	2	-	0	-	-
ATK_WS08	1	50	7/2	---	---	3.00 to 5.00	60 secs	-	-	-	-	0.3	0.0	18.4	-	-	3	-	0	-	-
ATK_WS08	1	50	7/2	---	---	3.00 to 5.00	90 secs	-	-	-	-	0.4	0.0	17.5	-	-	4	-	0	-	-
ATK_WS08	1	50	7/2	---	---	3.00 to 5.00	120 secs	-	-	-	-	0.5	0.0	16.7	-	-	4	-	0	-	-
ATK_WS08	1	50	7/2	---	---	3.00 to 5.00	180 secs	-	-	-	-	0.5	0.0	16.3	-	-	5	-	0	-	-
ATK_WS08	1	50	7/2	---	---	3.00 to 5.00	240 secs	-	-	-	-	0.5	0.0	16.1	-	-	5	-	0	-	-
ATK_WS08	1	50	7/2	---	---	3.00 to 5.00	300 secs	-	-	-	-	0.6	0.0	15.8	-	-	4	-	0	-	-
ATK_WS08	1	50	7/2	---	---	3.00 to 5.00	360 secs	-	-	-	-	0.6	0.0	15.5	-	-	3	-	0	-	-
ATK_WS08	1	50	7/3	5.00	4.68	3.00 to 5.00	11/08/2023 12:07:00	-	-	-	1.28	-	-	-	-	-	-	-	-	-	-
ATK_WS08	1	50	8	5.00	---	3.00 to 5.00	24/08/2023 10:34:00	1015	1015	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS08	1	50	8	---	---	3.00 to 5.00	60 secs	1015	1015	$0.0_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS08	1	50	8/2	5.00	---	3.00 to 5.00	24/08/2023 10:36:00	-	-	-	-	0.0	0.0	20.8	-	-	0	-	0	-	-
ATK_WS08	1	50	8/2	---	---	3.00 to 5.00	30 secs	-	-	-	-	0.3	0.0	18.5	-	-	6	-	0	-	-
ATK_WS08	1	50	8/2	---	---	3.00 to 5.00	60 secs	-	-	-	-	0.3	0.0	18.2	-	-	4	-	0	-	-
ATK_WS08	1	50	8/2	---	---	3.00 to 5.00	90 secs	-	-	-	-	0.3	0.0	18.4	-	-	4	-	0	-	-
ATK_WS08	1	50	8/2	---	---	3.00 to 5.00	120 secs	-	-	-	-	0.2	0.0	18.5	-	-	4	-	0	-	-
ATK_WS08	1	50	8/2	---	---	3.00 to 5.00	180 secs	-	-	-	-	0.2	0.0	18.6	-	-	4	-	0	-	-
ATK_WS08	1	50	8/2	---	---	3.00 to 5.00	240 secs	-	-	-	-	0.2	0.0	18.8	-	-	3	-	0	-	-
ATK_WS08	1	50	8/2	---	---	3.00 to 5.00	300 secs	-	-	-	-	0.2	0.0	18.9	-	-	3	-	0	-	-
ATK_WS08	1	50	8/2	---	---	3.00 to 5.00	360 secs	-	-	-	-	0.2	0.0	18.8	-	-	3	-	0	-	-
ATK_WS08	1	50	8/3	5.00	4.68	3.00 to 5.00	24/08/2023 10:43:00	-	-	-	1.41	-	-	-	-	-	-	-	-	-	-
ATK_WS08	1	50	9	5.00	---	3.00 to 5.00	11/09/2023 10:08:00	1006	1006	$0.0_{(I)}$	-	-	-	-	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe Diameter (mm)	Monitoring Round / Test Number	Reported Installation Depth (mbgl)	Measured Installation Depth (mbgl)	Response Zone (m)	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	CO_2 (% / vol)	CH_4 (% / vol)	O_2 (% / vol)	LEL (%)	PID (ppm)	CO (ppm)	H_2 (% / vol)	H_2S (ppm)	NH_3 (ppm)	N_2 (% / vol)
ATK_WS08	1	50	9	---	---	3.00 to 5.00	60 secs	1006	1006	$0.2_{(SS)}$	-	-	-	-	-	-	-	-	-	-	-
ATK_WS08	1	50	9/2	5.00	---	3.00 to 5.00	11/09/2023 10:10:00	-	-	-	-	0.1	0.1	20.8	-	-	0	-	0	-	-
ATK_WS08	1	50	9/2	---	---	3.00 to 5.00	30 secs	-	-	-	-	0.8	0.0	18.8	-	-	2	-	0	-	-
ATK_WS08	1	50	9/2	---	---	3.00 to 5.00	60 secs	-	-	-	-	0.8	0.0	16.3	-	-	3	-	0	-	-
ATK_WS08	1	50	9/2	---	---	3.00 to 5.00	90 secs	-	-	-	-	0.8	0.0	15.9	-	-	3	-	0	-	-
ATK_WS08	1	50	9/2	---	---	3.00 to 5.00	120 secs	-	-	-	-	0.9	0.0	15.4	-	-	3	-	0	-	-
ATK_WS08	1	50	9/2	---	---	3.00 to 5.00	180 secs	-	-	-	-	1.0	0.0	14.8	-	-	3	-	0	-	-
ATK_WS08	1	50	9/2	---	---	3.00 to 5.00	240 secs	-	-	-	-	1.1	0.0	14.0	-	-	3	-	0	-	-
ATK_WS08	1	50	9/2	---	---	3.00 to 5.00	300 secs	-	-	-	-	1.3	0.0	13.5	-	-	2	-	0	-	-
ATK_WS08	1	50	9/2	---	---	3.00 to 5.00	360 secs	-	-	-	-	1.3	0.0	13.4	-	-	2	-	0	-	-
ATK_WS08	1	50	9/3	5.00	4.68	3.00 to 5.00	11/09/2023 10:17:00	-	-	-	1.38	-	-	-	-	-	-	-	-	-	-

Key: I = Initial, Min = Minimum, P = Peak, SS = Steady State. >>> = exceeds range.
Abbreviations: CO_2 = Carbon Dioxide, CH_4 = Methane, O_2 = Oxygen, LEL = Lower Explosive Limit, PID = Photo Ionisation Detector Reading, CO = Carbon Monoxide, H_2 = Hydrogen, H_2S = Hydrogen Sulphide, NH_3 = Ammonia, N_2 = Nitrogen.
Note: Lower Explosive Limit (LEL) = 5% v/v of Methane.

APPENDIX G - CALIBRATION CERTIFICATES

(i) SPT Calibration Records

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING UK LTD
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX5 9JP

SPT Hammer Ref:	AR1101
Test Date:	25/01/2023
Report Date:	25/01/2023
File Name:	AR1101.spt
Test Operator:	CM

Instrumented Rod Data

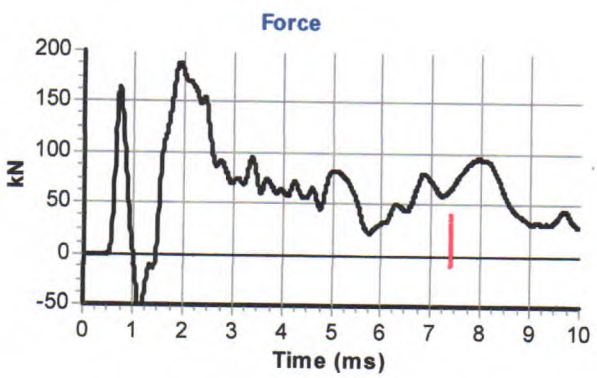
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.0
Assumed Modulus E_a (GPa):	200
Accelerometer No.1:	
Accelerometer No.2:	

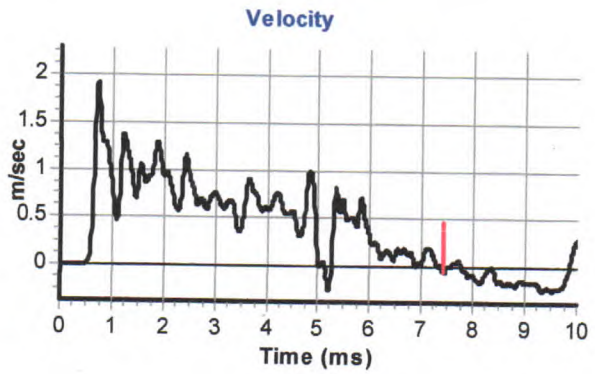
SPT Hammer Information

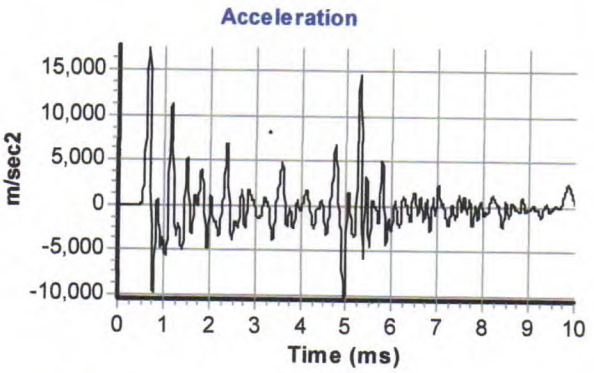
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	10.0

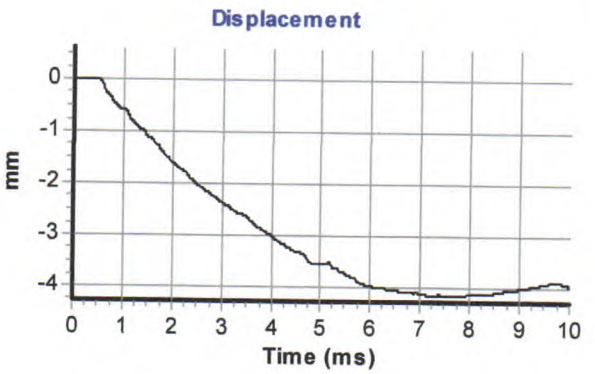
Comments / Location

VC DRILLING LTD - 83450









Calculations

Area of Rod A (mm2):	905
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	339

Energy Ratio E_r (%): **72**

Signed: J.LOCK

Title: FITTER

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SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING UK LTD
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX5 9JP

SPT Hammer Ref:	AR2812
Test Date:	25/01/2023
Report Date:	25/01/2023
File Name:	AR2812.spt
Test Operator:	CM

Instrumented Rod Data

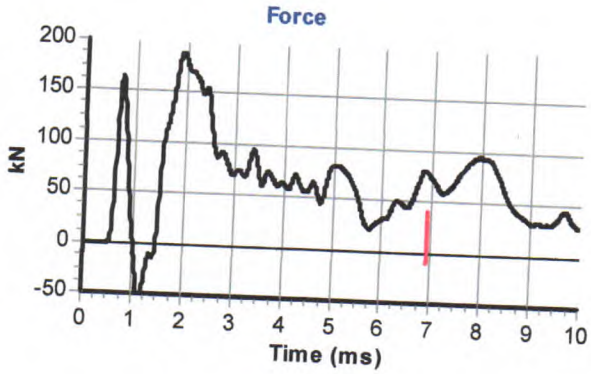
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.0
Assumed Modulus E_a (GPa):	200
Accelerometer No.1:	
Accelerometer No.2:	

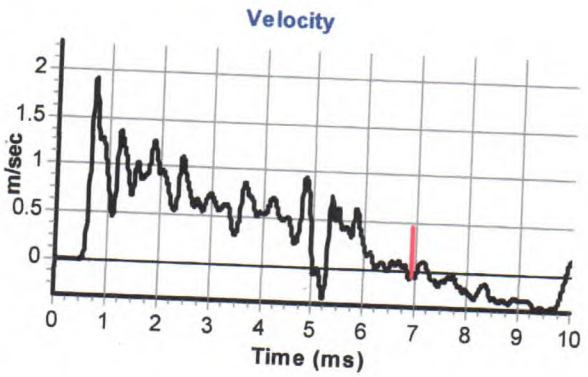
SPT Hammer Information

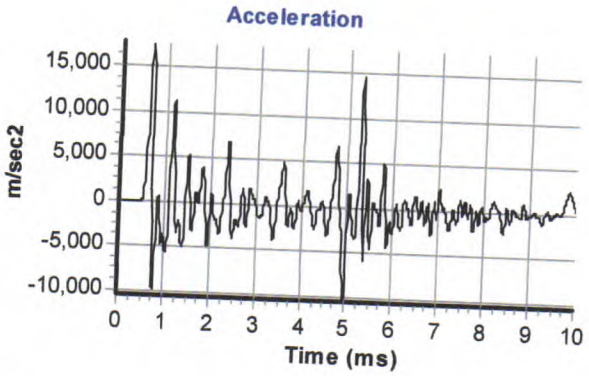
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	10.0

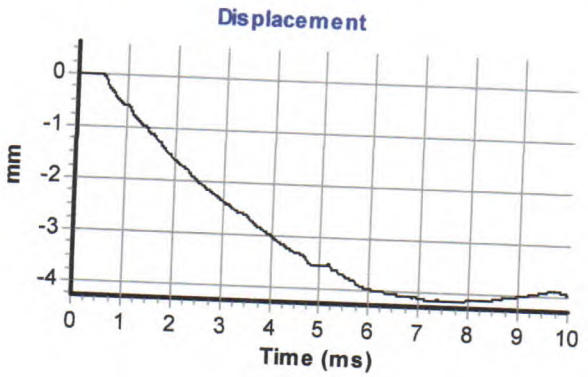
Comments / Location

VC DRILLING LTD - 83450









Calculations

Area of Rod A (mm2):	905
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	312

Energy Ratio E_r (%): **66**

Signed: J.LOCK

Title: FITTER

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SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING UK LTD
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX5 9JP

SPT Hammer Ref:	AR2499
Test Date:	25/01/2023
Report Date:	25/01/2023
File Name:	AR2499 (2).spt
Test Operator:	CM

Instrumented Rod Data

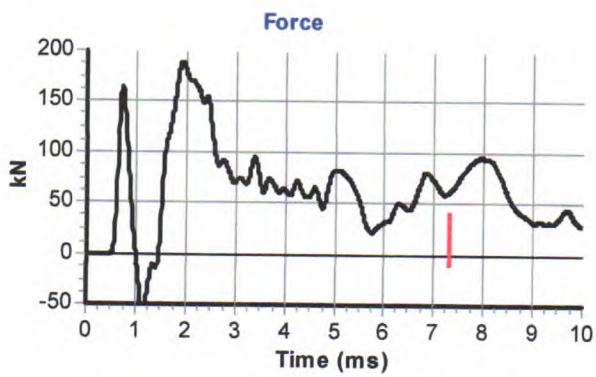
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.0
Assumed Modulus E_a (GPa):	200
Accelerometer No.1:	
Accelerometer No.2:	

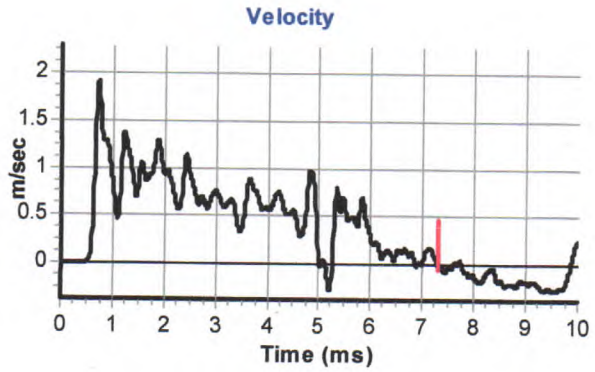
SPT Hammer Information

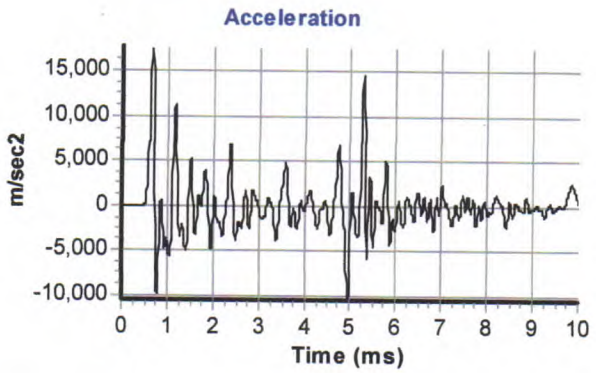
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	10.0

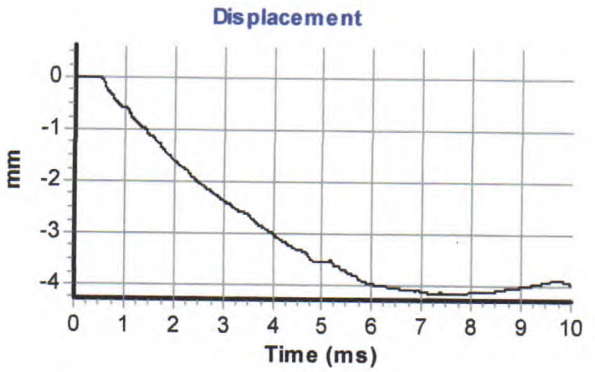
Comments / Location

VC DRILLING LTD - 83450









Calculations

Area of Rod A (mm2):	905
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	332

Energy Ratio E_r (%): **70**

Signed: J.LOCK

Title: FITTER

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SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING UK LTD
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX5 9JP

SPT Hammer Ref:	AR3711
Test Date:	25/01/2023
Report Date:	25/01/2023
File Name:	AR3711 (3).spt
Test Operator:	CM

Instrumented Rod Data

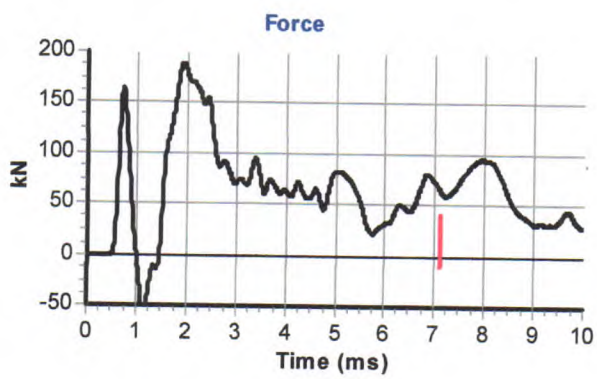
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.0
Assumed Modulus E_a (GPa):	200
Accelerometer No.1:	
Accelerometer No.2:	

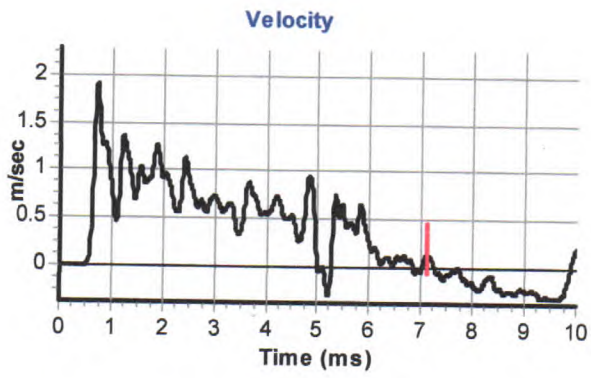
SPT Hammer Information

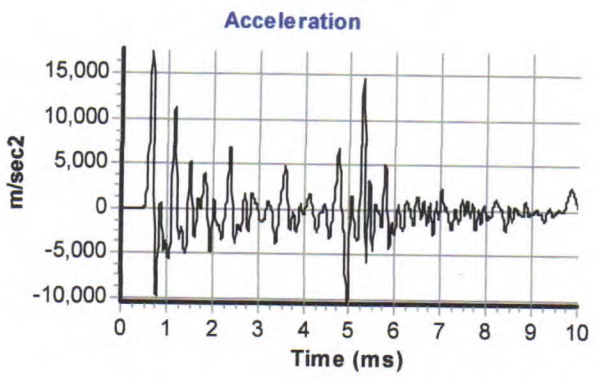
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	10.0

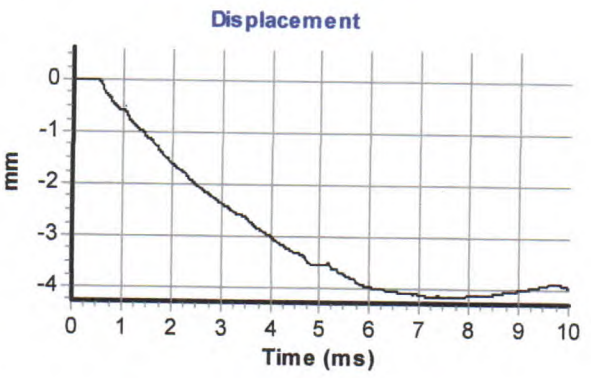
Comments / Location

VC DRILLING LTD - 83450









Calculations

Area of Rod A (mm2):	905
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	323

Energy Ratio E_r (%): **68**

Signed: J.LOCK

Title: FITTER

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Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Dynamic Sampling Uk Ltd
Unit 8 Victory Park
Victory Road
Derby
DE24 8ZF

Hammer Ref:	110.71
Test Date:	08/07/2022
Report Date:	08/07/2022
File Name:	110.71.spt
Test Operator:	B.HUNTER

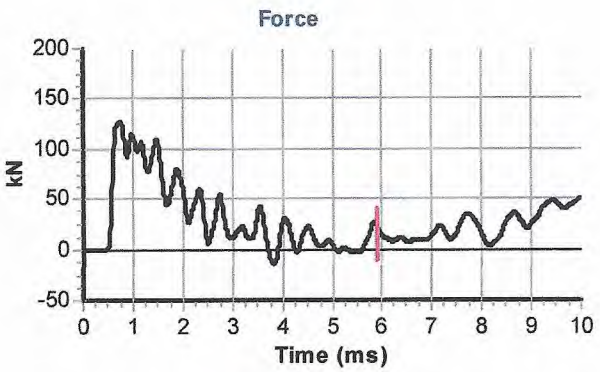
Instrumented Rod Data

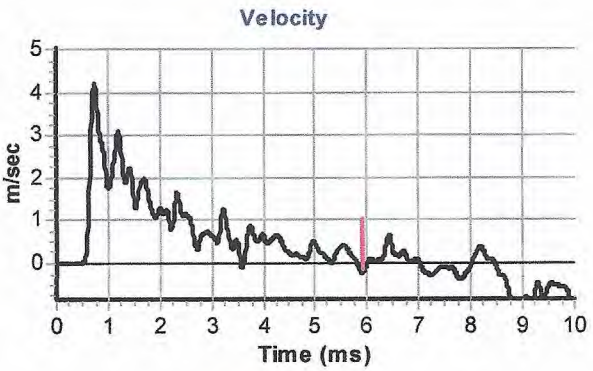
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.5
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	62901
Accelerometer No.2:	62902

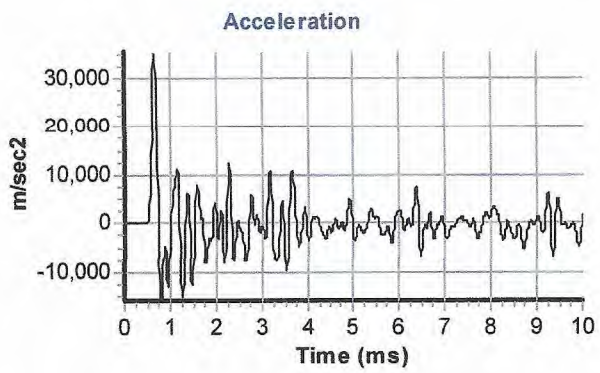
Hammer Information

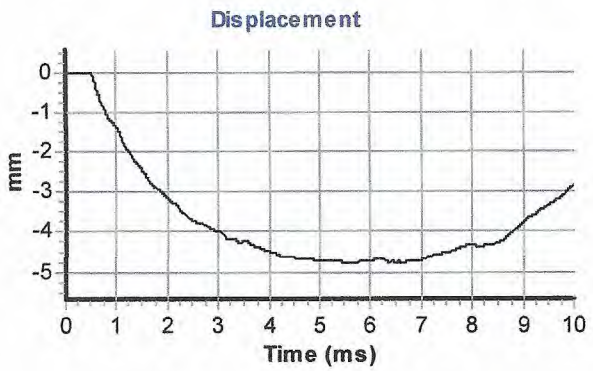
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
String Length L (m):	10.0

Comments / Location









Calculations

Area of Rod A (mm2):	970
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	344

Energy Ratio E_r (%): **73**

The recommended calibration interval is 12 months

Signed: B.Hunter

Title: Operations Manager

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Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Dynamic Sampling Uk Ltd
Unit 8 Victory Park
Victory Road
Derby
DE24 8ZF

Hammer Ref:	110.90
Test Date:	09/09/2022
Report Date:	12/09/2022
File Name:	110.90.spt
Test Operator:	B.HUNTER

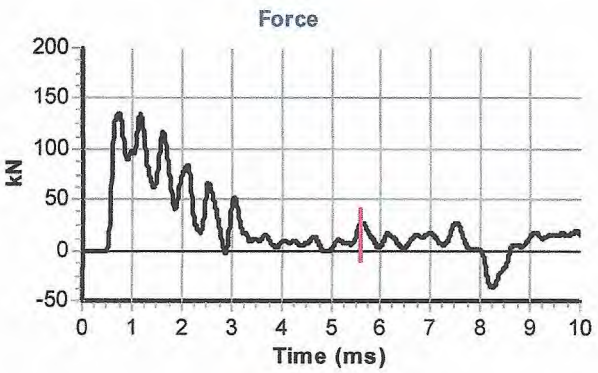
Instrumented Rod Data

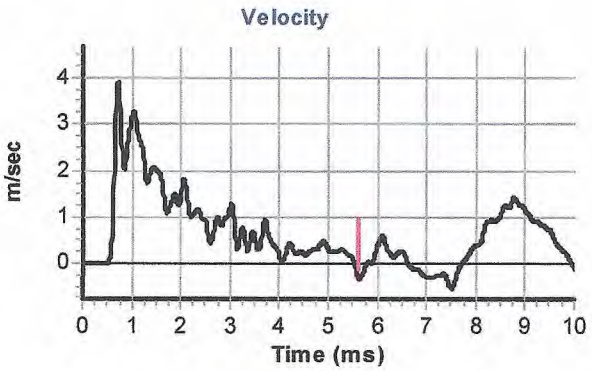
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.5
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	62901
Accelerometer No.2:	62902

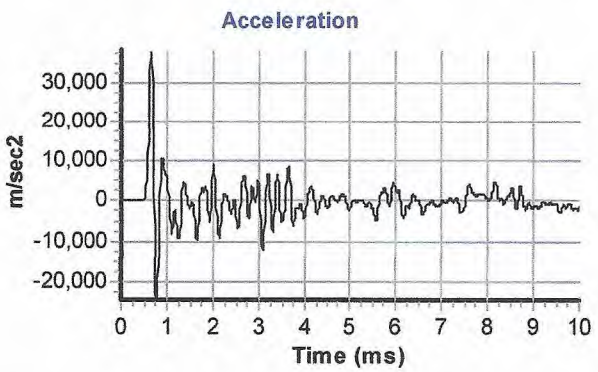
Hammer Information

Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
String Length L (m):	10.0

Comments / Location









Calculations

Area of Rod A (mm2):	970
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	365

Energy Ratio E_r (%): **77**

Signed: B.Hunter
Title: Operations Manager

The recommended calibration interval is 12 months

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SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING UK LTD
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX5 9JP

SPT Hammer Ref:	VC 1
Test Date:	25/01/2023
Report Date:	25/01/2023
File Name:	VC 1.spt
Test Operator:	CM

Instrumented Rod Data

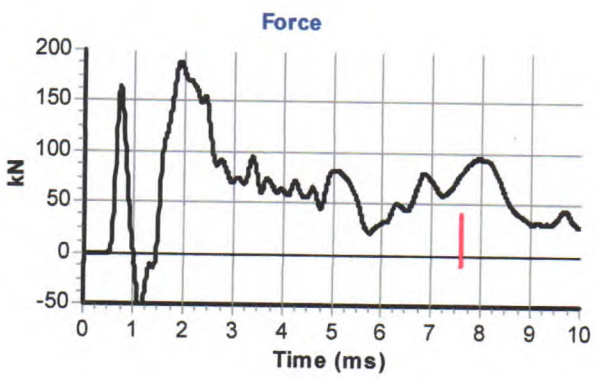
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.0
Assumed Modulus E_a (GPa):	200
Accelerometer No.1:	
Accelerometer No.2:	

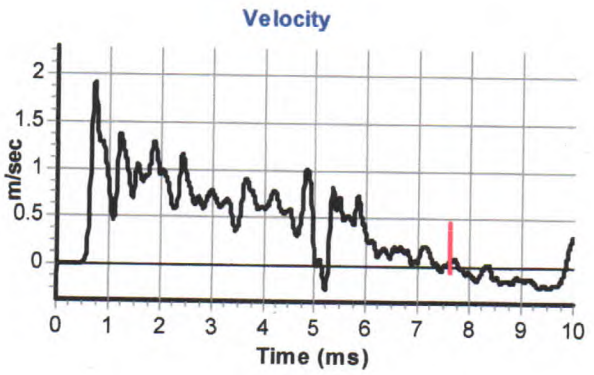
SPT Hammer Information

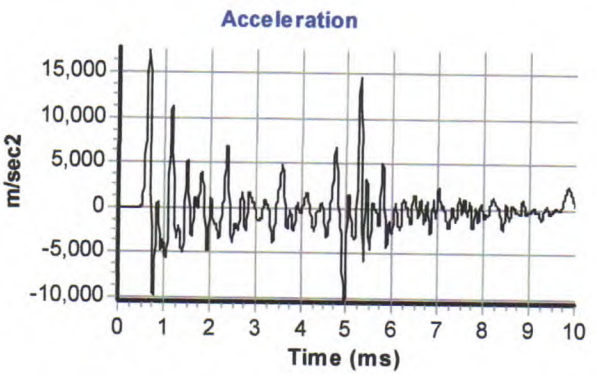
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	10.0

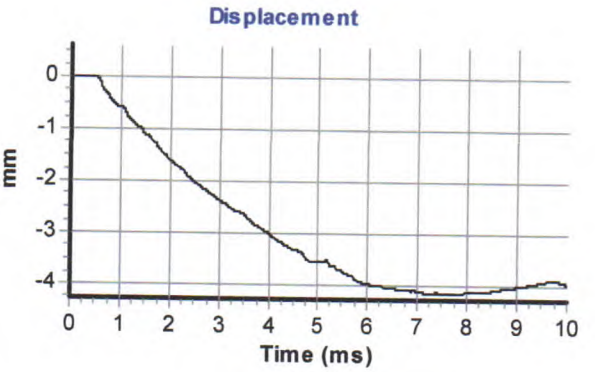
Comments / Location

VC DRILLING LTD - 83450









Calculations

Area of Rod A (mm2):	905
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	347

Energy Ratio E_r (%): **73**

Signed: J.LOCK

Title: FITTER

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APPENDIX H -
EXTERNAL REPORT – CPT TESTING

(i) In Situ Report - Ref 1230236R2

IN SITU
SITE INVESTIGATION



STATIC CONE PENETRATION TEST

FACTUAL REPORT

CLIENT: Structural Soils Limited

PROJECT: Ancoats, Manchester

Project	**Ancoats, Manchester**
Project No.	**1230236**
Client	**Structural Soils Limited**
Address	**The Potteries, Pottery Street, Castleford, West Yorkshire, WF10 1NJ**

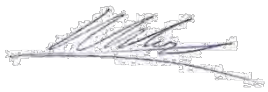
Attention: Mr Wilton Bennett

Dear Mr Bennett,

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

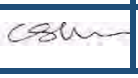
Issue	Date	Prepared	Sign	Checked	Sign	Approved	Sign
02	23/05/2023	Chloe Donovan		Darren Ward		Darren Ward	

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1.0 INTRODUCTION

In Situ Site Investigation Limited (In Situ) was engaged in a geotechnical site investigation at Ancoats, Manchester at the request of Structural Soils. The site investigation consisted of completing 22 Static Piezocone Penetration Tests (CPTU), and 20 Dissipation Tests to provide information on the soil conditions and derived geotechnical parameters at:

Central Retail Park,
Great Ancoats Street,
Manchester,
M4 6DJ

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 26th April 2023 to 4th May 2023 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
Date Started	26th April 2023
Date Finished	4th May 2023
In Situ S.I. Project Manager	Darren Ward
Main Contractor's Site Manager	Tim Clifford

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.2177	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
22 CPTU to a maximum depth of 16.00m. 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. 20 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. All tests coordinates are included in the summary sheet in Appendix A.1.

2.3 DISSIPATION TESTS

As per the client's request 20 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*).

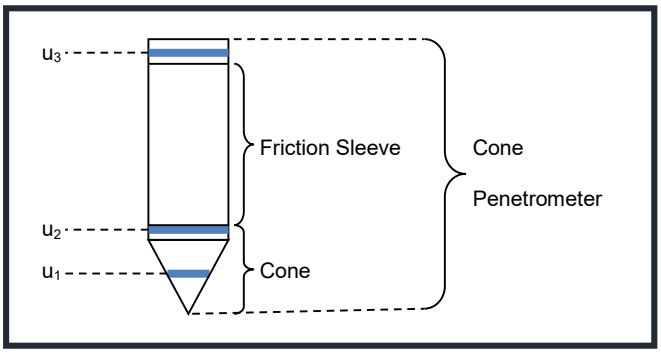


Figure 3.1: *Diagram showing pore pressure filter locations (after Lunne et al., 1997)*

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*.

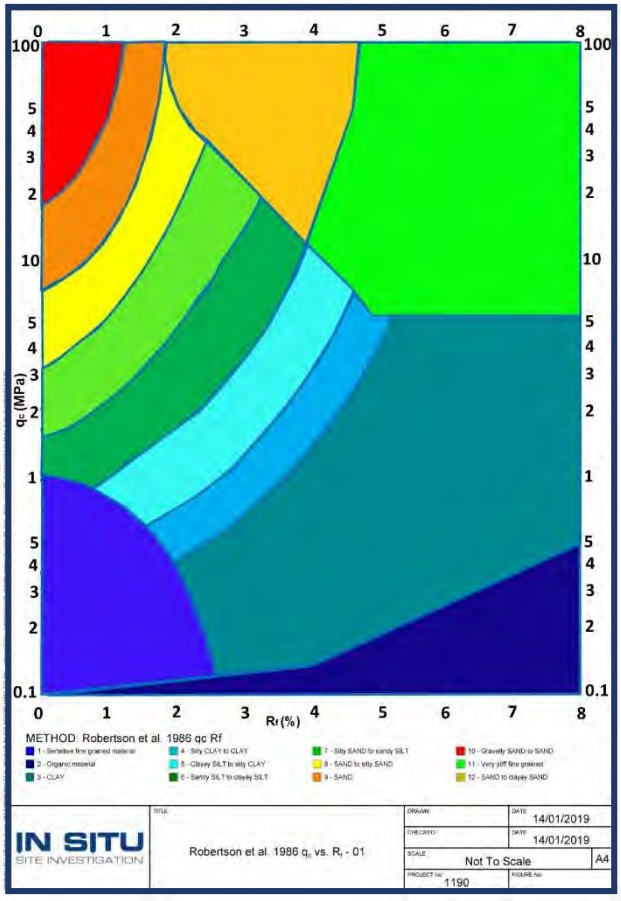


Figure 3.2: *Robertson et al., 1986 soil behaviour type chart.*

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)*.

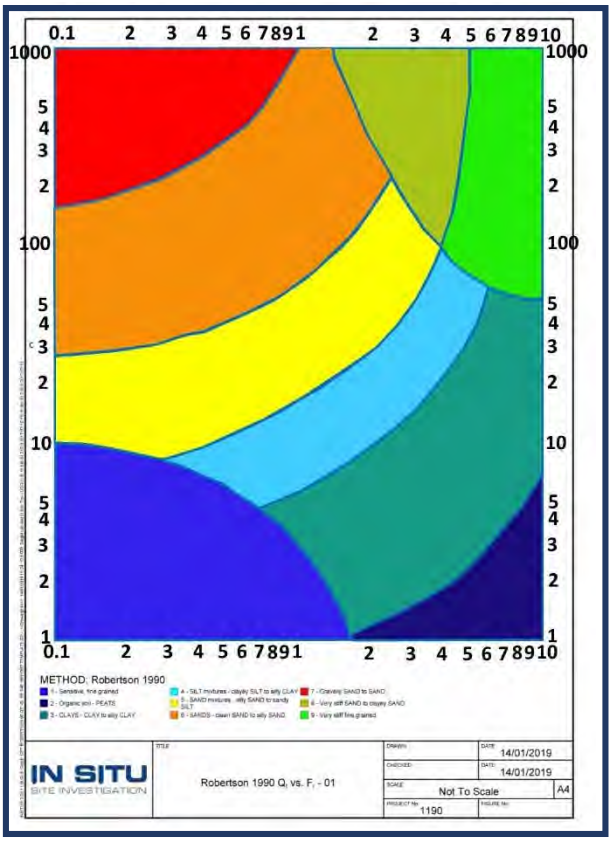


Figure 4.1: *Robertson 1990 soil behaviour type chart.*

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)

$$\varphi' = 29.5^0 \cdot B_q^{0.121} \cdot \left[0.256 + 0.336 \cdot B_q + logQ_t\right]$$

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)

$$K_0 = (1 - sin\varphi')OCR^{sin\varphi'}$$

$$Max\ K_0 = K_p = \frac{(1 + sin\varphi')}{(1 - sin\varphi')}$$

$$K_0 = 0.192(\frac{q_t}{\sigma_{atm}})^{0.22}(\frac{\sigma_{atm}}{\sigma_{v0}})^{0.22}OCR^{0.27}$$

where

OCR is the overconsolidation ratio, calculated as presented in session *4.12*

2) Kulhawy and Mayne (1990)

$$K_0 = 0.1(\frac{q_t - \sigma_{v0}}{\sigma_{v0}'})$$

These approaches are generally limited to mechanically overconsolidated, fine grained soils. As considerable scatter exits 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*

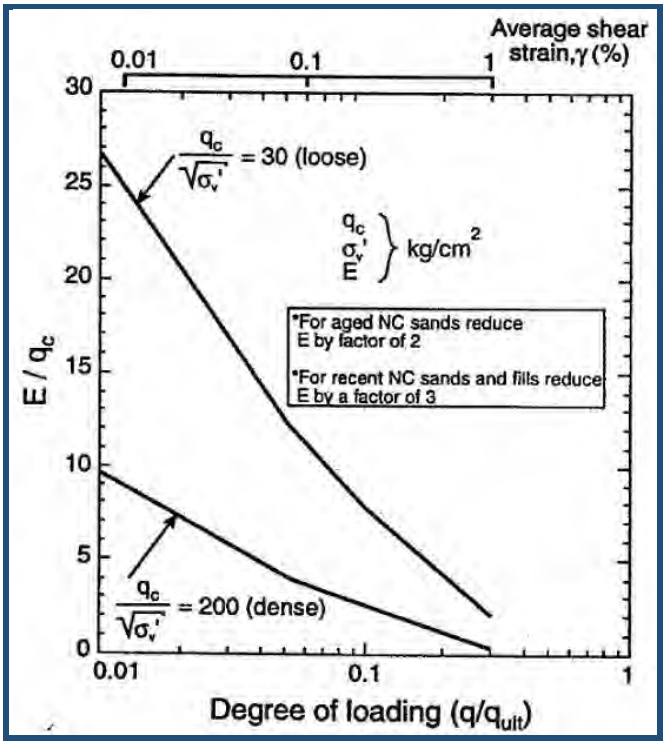


Figure 4.2: *Estimation of equivalent Young's modulus for sand based on degree of loading (Robertson, 1990)*

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)*:

$$I_R = \exp[\left(\frac{1.5}{M} + 2.925\right)\left(\frac{q_t - \sigma_{v0}}{q_t - u_2}\right) - 2.925$$

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:

$$I_R = \frac{\exp(0.0435(137 - PI)}{[1 + \ln\{1 + 0.385(OCR - 1)^{3.2}\}]^{0.8}}$$

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*.

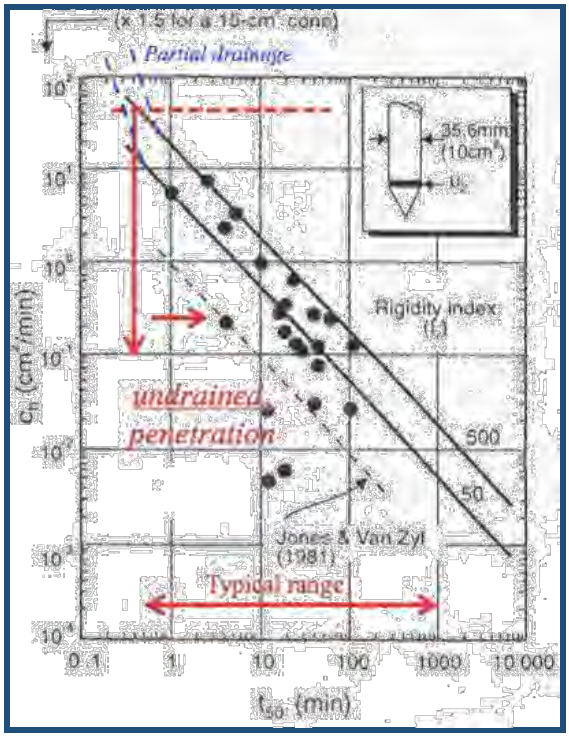


Figure 4.3: *Average laboratory c_h values and CPTU results (after Robertson et al. 1992, Teh and Houlsby theory shown as solid lines for I_R = 50 and I_R = 500).*

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*.

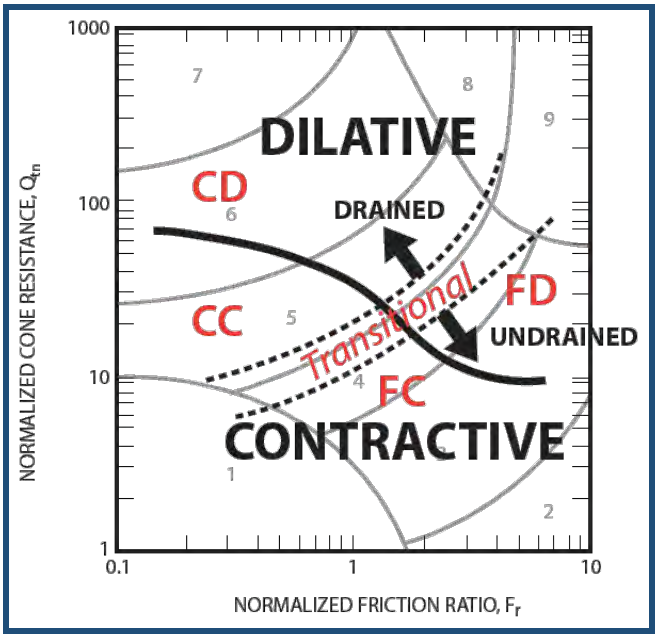


Figure 5.1: Normalized CPTU Soil Behaviour Type (SBT_n) chart, Q_{tn}-F_R using general large strain soil behaviour description (Robertson, 2012).

*

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
ATK_CPT01	12.00	02/05/2023	S15-CFIP.2177	Test refused on total pressure.
ATK_CPT02	13.43	28/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT03	12.53	26/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT04	15.13	02/05/2023	S15-CFIP.2177	Test refused on total pressure.
ATK_CPT05	0.15	02/05/2023	S15-CFIP.2177	Test refused on total pressure.
ATK_CPT05A	14.24	04/05/2023	S15-CFIP.2177	Test refused on total pressure.
ATK_CPT06	13.70	26/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT07	6.98	03/05/2023	S15-CFIP.2177	Test refused on total pressure.
ATK_CPT08	14.33	27/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT09	14.10	26/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT10	4.78	02/05/2023	S15-CFIP.2177	Test refused on total pressure.
ATK_CPT10A	11.97	03/05/2023	S15-CFIP.2177	Test refused on total pressure.
ATK_CPT11	12.73	26/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT12	15.41	03/05/2023	S15-CFIP.2177	Test refused on total pressure.
ATK_CPT13	10.41	27/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT14	11.41	27/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT15	14.18	27/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT16	12.60	28/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT17	13.14	28/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT18	16.00	28/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT19	15.35	02/05/2023	S15-CFIP.2177	Test refused on total pressure.
ATK_CPT20	13.04	03/05/2023	S15-CFIP.2177	Test refused on total pressure.
ATK_CPT01	12.00	02/05/2023	S15-CFIP.2177	Test refused on total pressure.
ATK_CPT02	13.43	28/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT03	12.53	26/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT04	15.13	02/05/2023	S15-CFIP.2177	Test refused on total pressure.
ATK_CPT05	0.15	02/05/2023	S15-CFIP.2177	Test refused on total pressure.
ATK_CPT05A	14.24	04/05/2023	S15-CFIP.2177	Test refused on total pressure.

ATK_CPT06	13.70	26/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT07	6.98	03/05/2023	S15-CFIP.2177	Test refused on total pressure.
ATK_CPT08	14.33	27/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT09	14.10	26/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT10	4.78	02/05/2023	S15-CFIP.2177	Test refused on total pressure.
ATK_CPT10A	11.97	03/05/2023	S15-CFIP.2177	Test refused on total pressure.
ATK_CPT11	12.73	26/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT12	15.41	03/05/2023	S15-CFIP.2177	Test refused on total pressure.
ATK_CPT13	10.41	27/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT14	11.41	27/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT15	14.18	27/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT16	12.60	28/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT17	13.14	28/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT18	16.00	28/04/2023	S15-CFIP.2177	Test stopped due to buckling rods.
ATK_CPT19	15.35	02/05/2023	S15-CFIP.2177	Test refused on total pressure.
ATK_CPT20	13.04	03/05/2023	S15-CFIP.2177	Test refused on total pressure.

Dissipation Tests Summary Sheet

HOLE ID	Dissipation Depth (m)	Date of Test	Cone Used	Test Remarks	Total Time (Minutes)
ATK_CPT01	11.90	02/05/2023	S15-CFIP.2177	T50 reached. Test OK.	20
ATK_CPT02	6.00	28/04/2023	S15-CFIP.2177	T50 reached. Test OK.	33
ATK_CPT03	9.00	26/04/2023	S15-CFIP.2177	T50 reached. Test OK.	96
ATK_CPT04	13.00	02/05/2023	S15-CFIP.2177	T50 reached. Test OK.	70
ATK_CPT05A	2.38	02/05/2023	S15-CFIP.2177	T50 reached. Test OK.	15
ATK_CPT05A	8.51	04/05/2023	S15-CFIP.2177	T50 reached. Test OK.	51
ATK_CPT06	11.00	04/05/2023	S15-CFIP.2177	T20 reached. Test OK.	60
ATK_CPT08	10.50	27/04/2023	S15-CFIP.2177	T50 reached. Test OK.	98
ATK_CPT10	3.00	02/05/2023	S15-CFIP.2177	T50 reached. Test OK.	25
ATK_CPT10A	11.50	03/05/2023	S15-CFIP.2177	T50 reached. Test OK.	60
ATK_CPT11	4.00	26/04/2023	S15-CFIP.2177	T50 reached. Test OK.	16

ATK_CPT12	10.00	03/05/2023	S15-CFIP.2177	T50 reached. Test OK.	83
ATK_CPT13	5.00	27/04/2023	S15-CFIP.2177	T50 reached. Test OK.	65
ATK_CPT15	7.00	27/04/2023	S15-CFIP.2177	T50 reached. Test OK.	68
ATK_CPT16	6.50	28/04/2023	S15-CFIP.2177	T50 reached. Test OK.	55
ATK_CPT17	7.51	28/04/2023	S15-CFIP.2177	T50 reached. Test OK.	120
ATK_CPT18	8.00	28/04/2023	S15-CFIP.2177	T20 reached. Test OK.	60
ATK_CPT19	15.20	02/05/2023	S15-CFIP.2177	T50 reached. Test OK.	71
ATK_CPT19	4.50	02/05/2023	S15-CFIP.2177	T50 reached. Test OK.	30
ATK_CPT20	7.00	03/05/2023	S15-CFIP.2177	T50 reached. Test OK.	120

Piezocone Test Coordinates

HOLE ID	Eastings	Northings	Elevation
ATK_CPT01	385064.460	398477.010	49.09
ATK_CPT02	385121.280	398419.220	47.08
ATK_CPT03	385078.470	398433.790	48.06
ATK_CPT04	385037.790	398448.210	49.08
ATK_CPT05	385097.000	398400.110	47.12
ATK_CPT05A	385096.900	398401.790	47.09
ATK_CPT06	385040.080	398398.970	47.92
ATK_CPT07	385131.550	398447.820	47.60
ATK_CPT08	385029.030	398501.900	49.18
ATK_CPT09	385088.220	398460.900	48.50
ATK_CPT10	385143.480	398420.990	47.11
ATK_CPT10A	385142.780	398422.610	47.08
ATK_CPT11	385069.460	398455.510	49.04
ATK_CPT12	385028.010	398436.940	49.08
ATK_CPT13	385065.990	398413.000	48.01
ATK_CPT14	385006.070	398431.980	48.49
ATK_CPT15	385030.480	398416.440	48.34
ATK_CPT16	385109.900	398372.120	46.60

ATK_CPT17	385062.670	398353.310	46.87
ATK_CPT18	385065.850	398388.930	47.32
ATK_CPT19	385051.540	398458.260	49.07
ATK_CPT20	385106.610	398450.570	47.06
ATK_CPT01	385064.460	398477.010	49.09
ATK_CPT02	385121.280	398419.220	47.08
ATK_CPT03	385078.470	398433.790	48.06
ATK_CPT04	385037.790	398448.210	49.08
ATK_CPT05	385097.000	398400.110	47.12
ATK_CPT05A	385096.900	398401.790	47.09
ATK_CPT06	385040.080	398398.970	47.92
ATK_CPT07	385131.550	398447.820	47.60
ATK_CPT08	385029.030	398501.900	49.18
ATK_CPT09	385088.220	398460.900	48.50
ATK_CPT10	385143.480	398420.990	47.11
ATK_CPT10A	385142.780	398422.610	47.08
ATK_CPT11	385069.460	398455.510	49.04
ATK_CPT12	385028.010	398436.940	49.08
ATK_CPT13	385065.990	398413.000	48.01
ATK_CPT14	385006.070	398431.980	48.49
ATK_CPT15	385030.480	398416.440	48.34
ATK_CPT16	385109.900	398372.120	46.60
ATK_CPT17	385062.670	398353.310	46.87
ATK_CPT18	385065.850	398388.930	47.32
ATK_CPT19	385051.540	398458.260	49.07
ATK_CPT20	385106.610	398450.570	47.06

APPENDIX A2 – CPT Rig Datasheet

RIGS

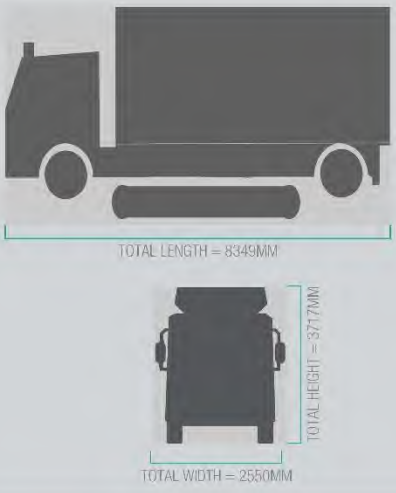
20 TONNE CPT TRACK TRUCK (CPT 025)

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





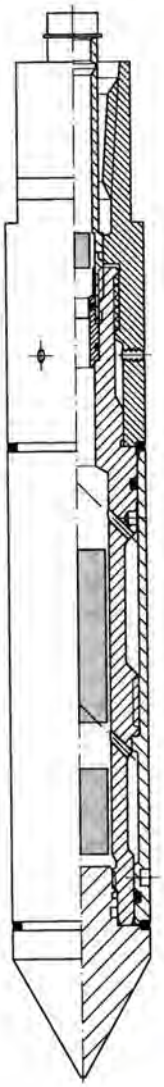




IN SITU SITE INVESTIGATION Part of the CTS Group INSITUSI.COM

APPENDIX A3 – Cone Datasheet

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2171 AL Sassenheim
Tel. +31 71 301 92 51
Fax +31 71 301 92 52
E-mail info@geopoint.nl
ING bank 60 23 01 396
Postbank 5226756
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

Rijkstraatweg 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-2177-001**
Instrument Type:	Electric Subtraction Cone
Model:	S15-CFIIP
Serial number:	2177
Calibration date:	05-12-2022
Client:	In Situ
Calibrated by:	W.Volgering
Calibration instruments	
Manufacturer:	Hottinger Baldwin Messtechnik GmbH
NMi certificate	2461165.00501
Calibration conditions	
Ambient temperature:	23.6 °C
Atmospheric pressure:	1022 mBar
Cone specifications	
Cone base area:	1500 mm2
Load tip resistance (nom.):	100 kN
Friction sleeve area:	22500 mm2
Load tip + local friction (nom.):	100 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):	100 %
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:		0238		0223		0264			
	0	0	0	0	0	0	0	2433	2484
	5	0288	5	0298	0.4	1476	-20	0521	0582
	10	0577	10	0598	0.8	2948	20	4334	4388
	15	0865	15	0896	1.2	4410			
	20	1156	20	1195	1.6	5871			
	25	1446	25	1495	2	7314			
	30	1734	30	1793					
	35	2024	35	2092					
	40	2312	40	2390					
	45	2600	45	2689					
	50	2889	50	2988					
	75	4334	75	4481					
	100	5775	100	5970					

Max. eror, abs. qc:	35 kPa
Max. error, abs. fs:	2 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: B. Kop
Date: 05-12-2022

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 A9 – Site Map



APPENDIX B

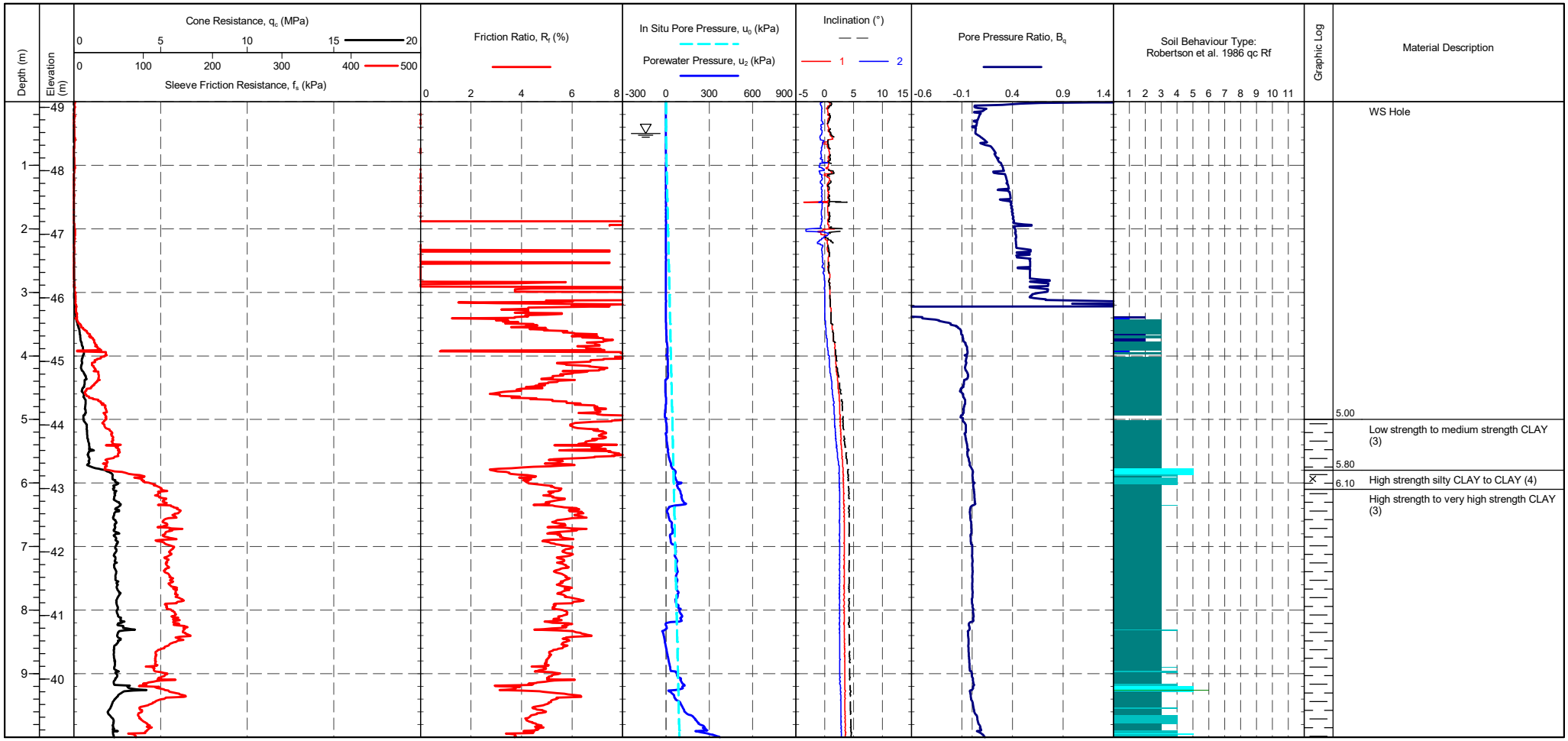
Cone Penetration Measured Parameters and Geotechnical Derived Parameters

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT01**

CLIENT : Structural Soils	EASTING : 385064.462 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398477.009 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.086 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2			
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2			
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni			
CONE AREA	: 15cm^2	OPERATOR	: RS			
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None			
FILTER POSITION	: u2	WEATHER	: Overcast & Mild			
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes			

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	249 mV	250 mV	0.012 MPa
Sleeve	247 mV	247 mV	0 kPa
Pore Pressure 2	391 mV	384 mV	-0.002 kPa
X-Y Inclinometer	2488 mV	2477 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: STRUCTURAL SOILS LTD

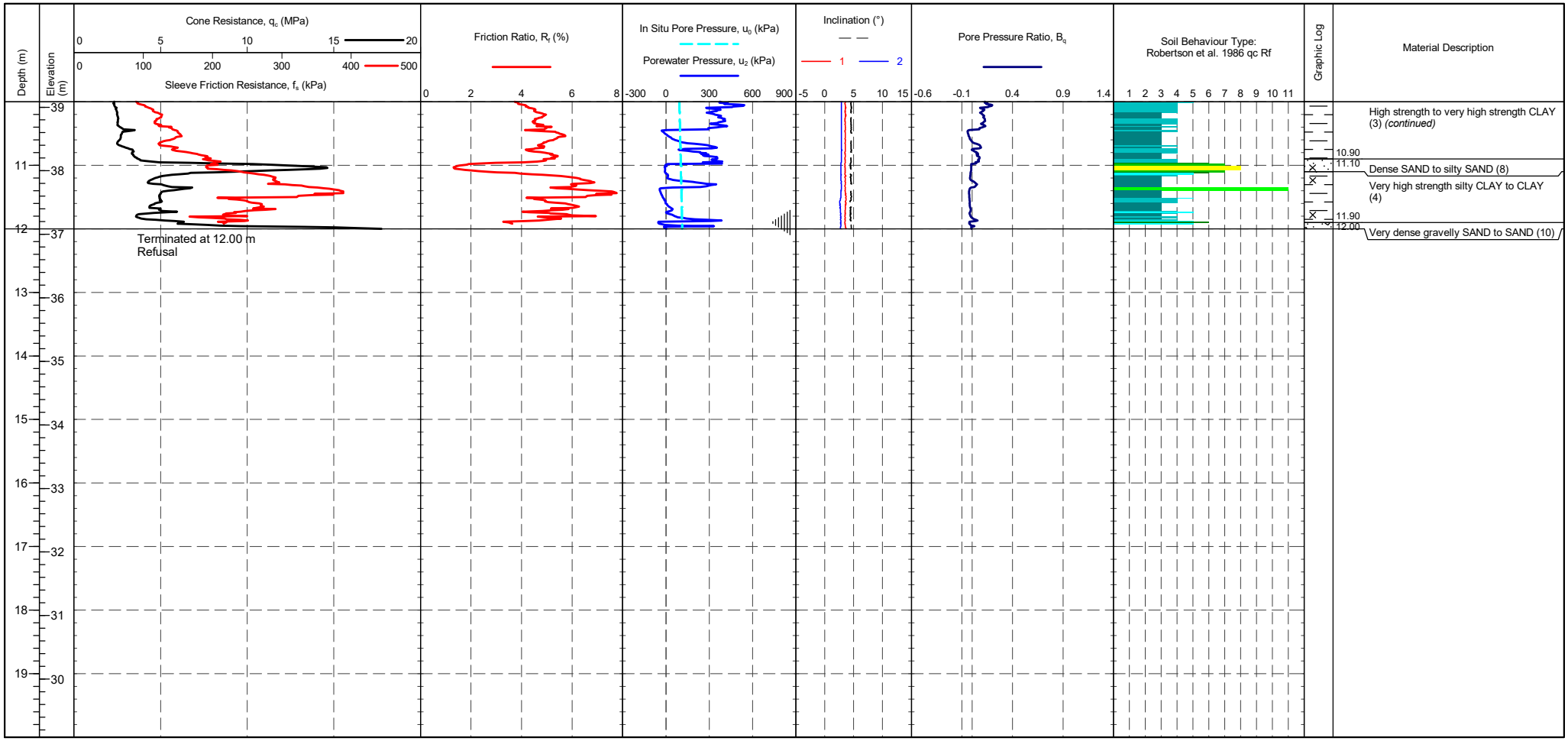
PointID: **ATK_CPT01**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385064.462 m
NORTHING : 398477.009 m
ELEVATION : 49.086 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 02/05/2023
PLOT DATE : 23/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm^2	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	249 mV	250 mV	0.012 MPa
Sleeve	247 mV	247 mV	0 kPa
Pore Pressure 2	391 mV	384 mV	-0.002 kPa
X-Y Inclinometer	2488 mV	2477 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

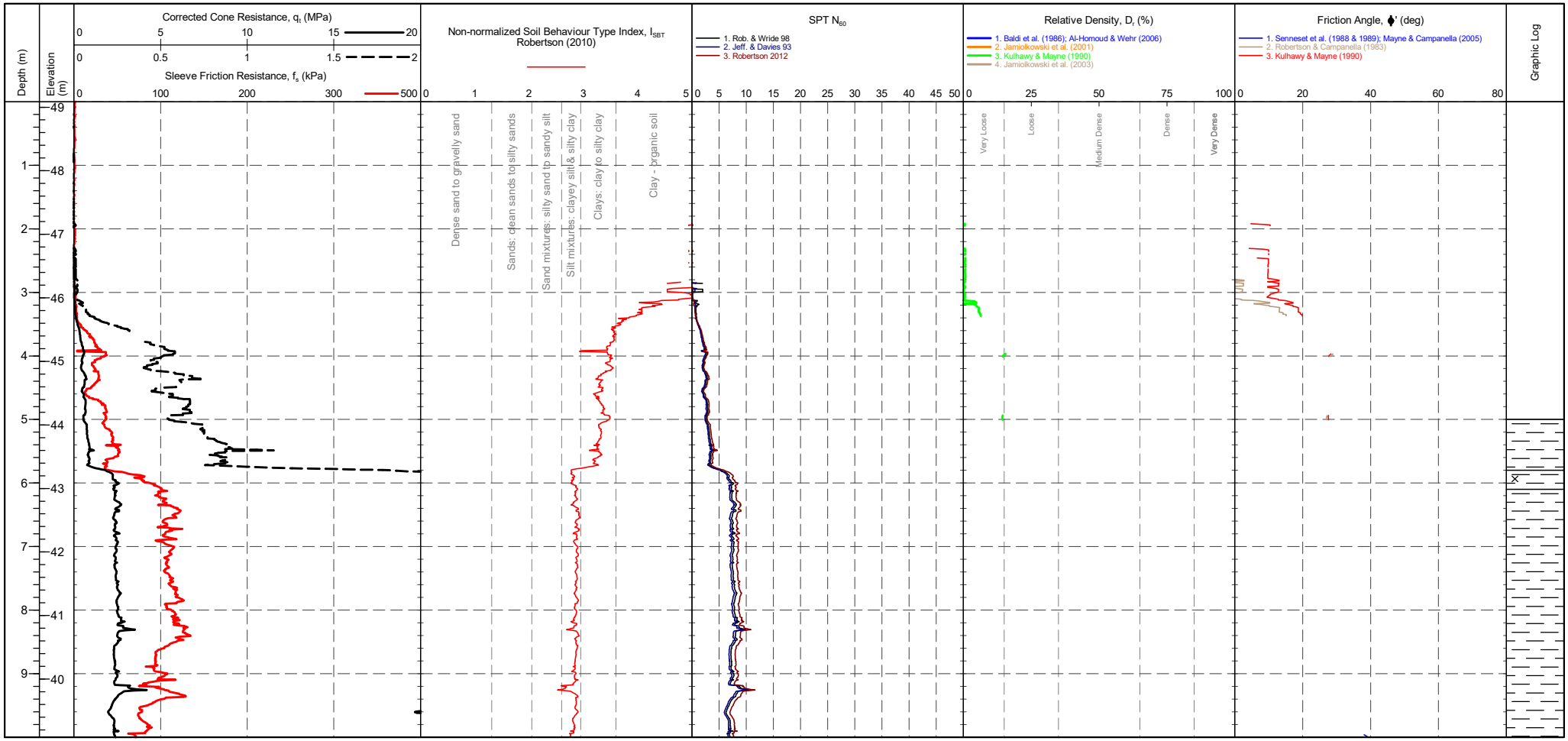
Dissipation Test

CPT LOG 02

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT01**

CLIENT : Structural Soils	EASTING : 385064.462 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398477.009 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.086 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post / Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	249 mV	250 mV / 0.012 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	247 mV	247 mV / 0 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	391 mV	384 mV / -0.002 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2488 mV	2477 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

Working with: STRUCTURAL SOILS LTD

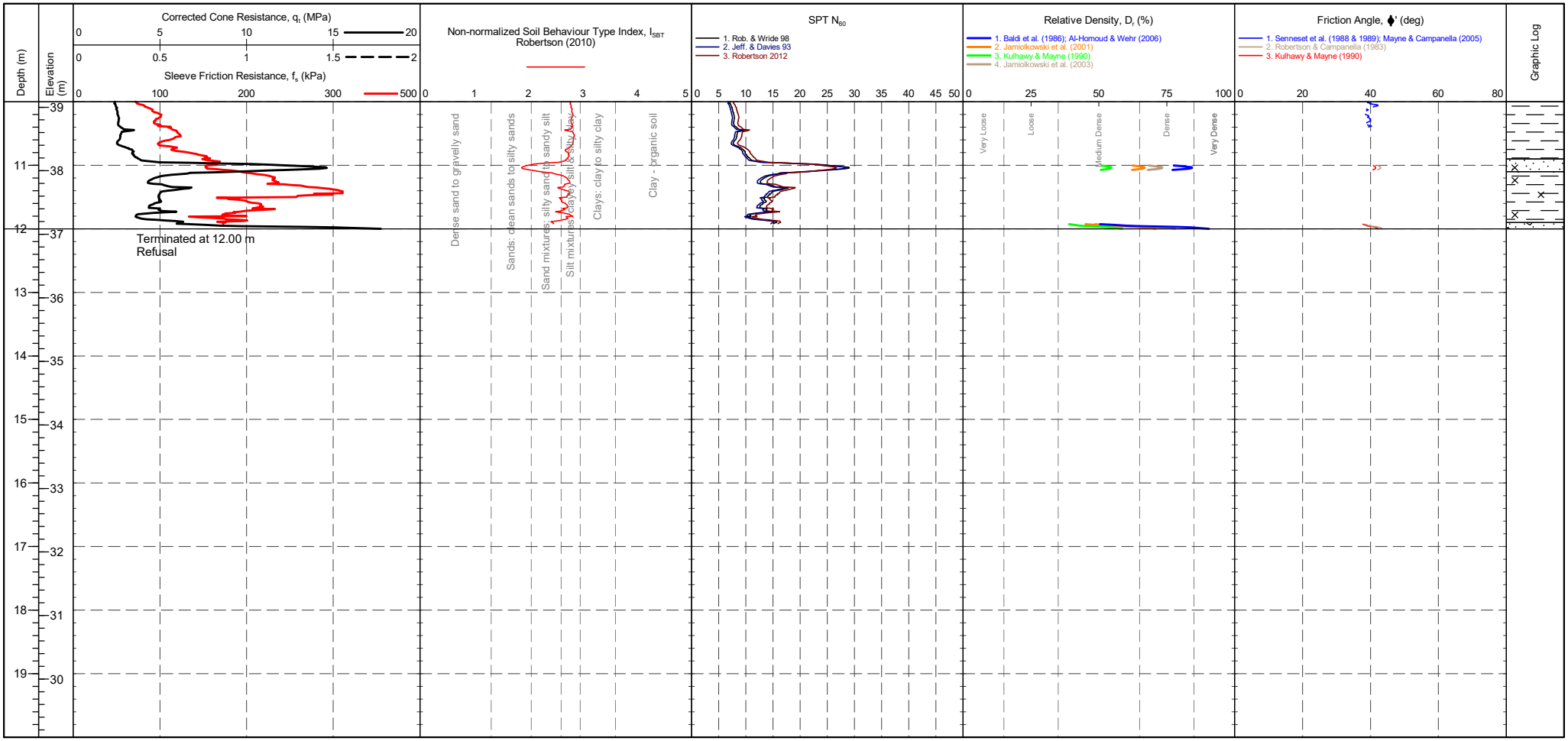
PointID: **ATK_CPT01**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385064.462 m
NORTHING : 398477.009 m
ELEVATION : 49.086 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 02/05/2023
PLOT DATE : 23/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	249 mV	250 mV	0.012 MPa
Sleeve	247 mV	247 mV	0 kPa
Pore Pressure 2	391 mV	384 mV	-0.002 kPa
X-Y Inclinometer	2488 mV	2477 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

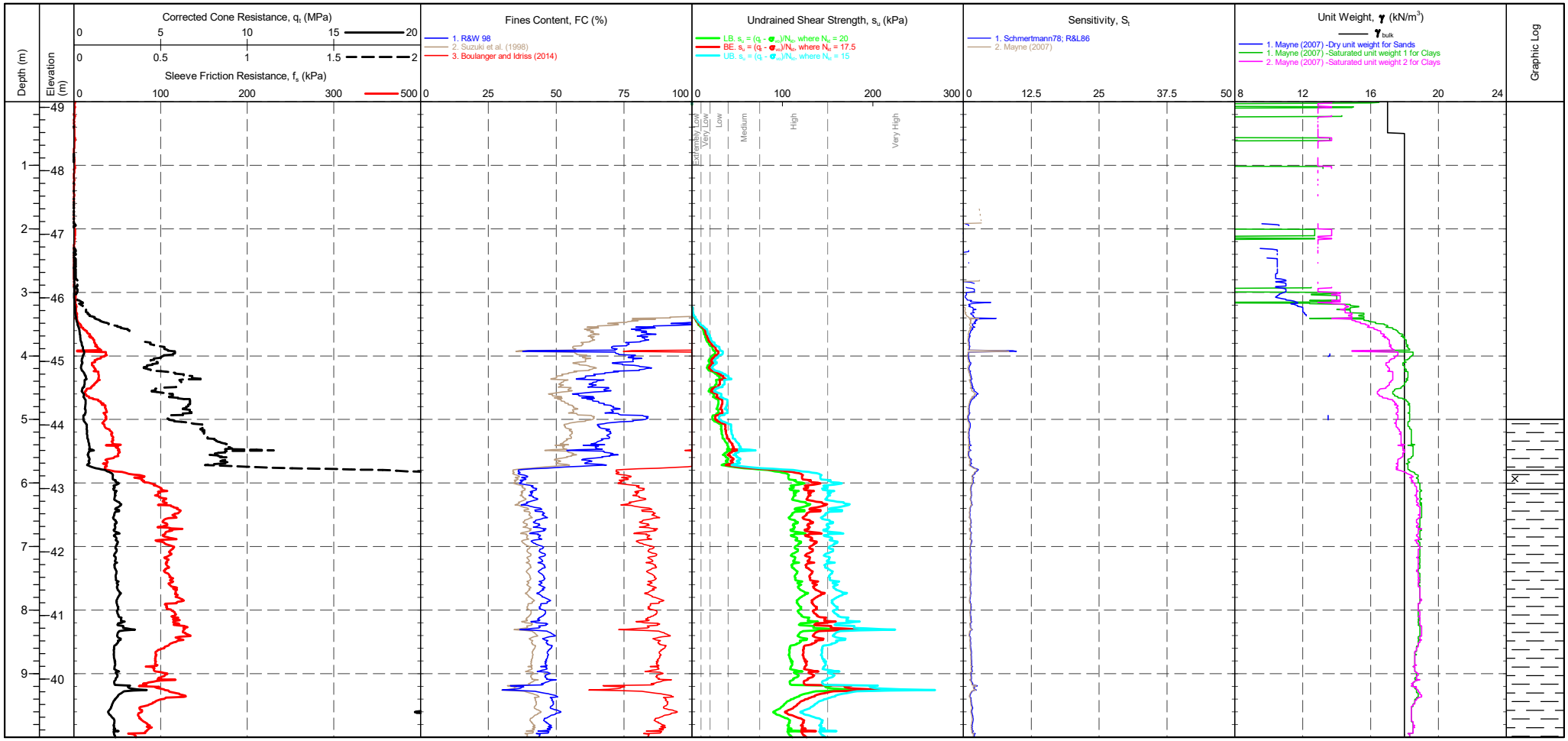
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT01**

CLIENT : Structural Soils	EASTING : 385064.462 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398477.009 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.086 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	250 mV	0.012 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	247 mV	247 mV	0 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	391 mV	384 mV	-0.002 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2488 mV	2477 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

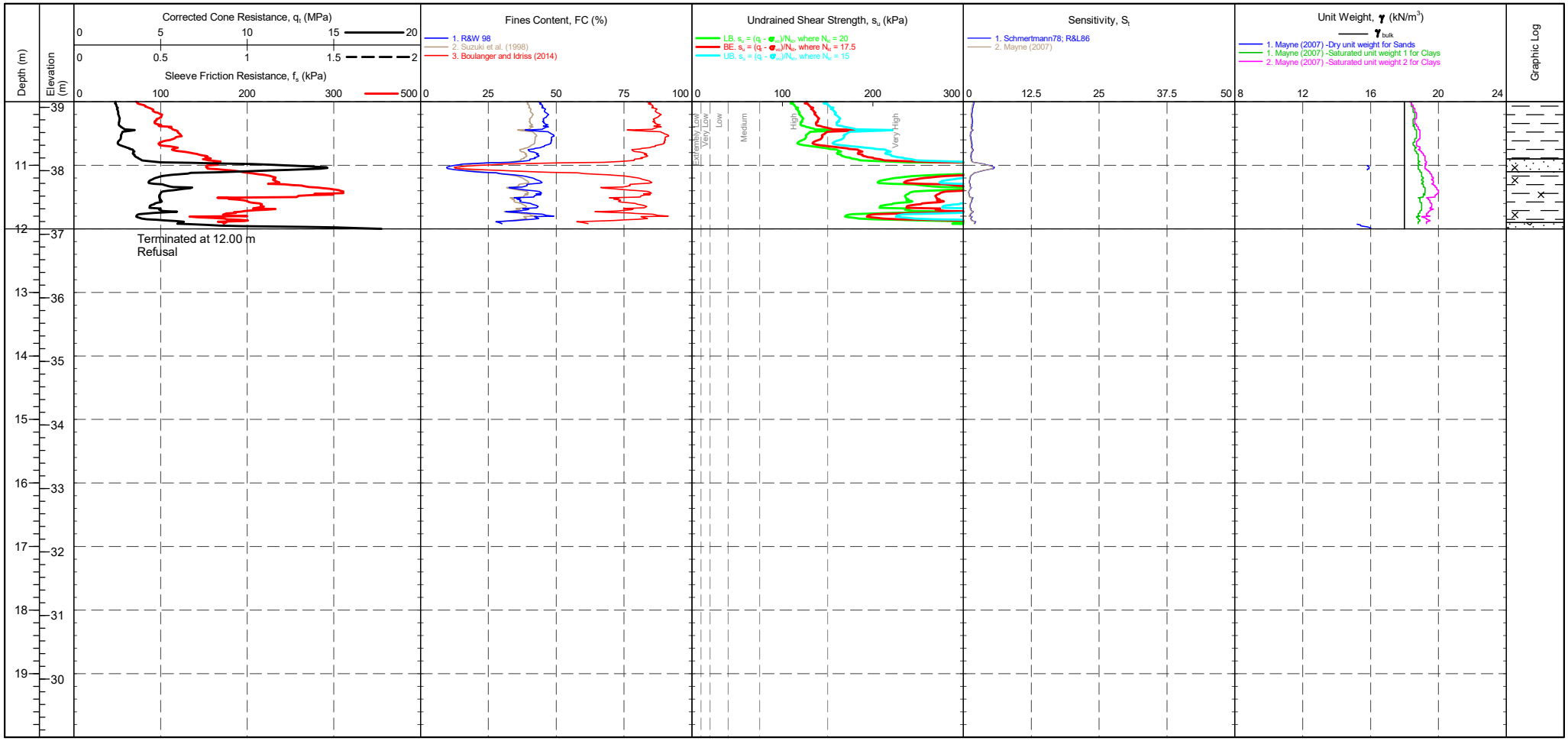
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT01**

CLIENT : Structural Soils	EASTING : 385064.462 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398477.009 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.086 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2				
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2				
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni				
CONE AREA RATIO	: 0.79	OPERATOR	: RS				
FILTER POSITION	: u2	FRICTION REDUCER	: None				
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild				

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	249 mV	250 mV	0.012 MPa
Sleeve	247 mV	247 mV	0 kPa
Pore Pressure 2	391 mV	384 mV	-0.002 kPa
X-Y Inclinometer	2488 mV	2477 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

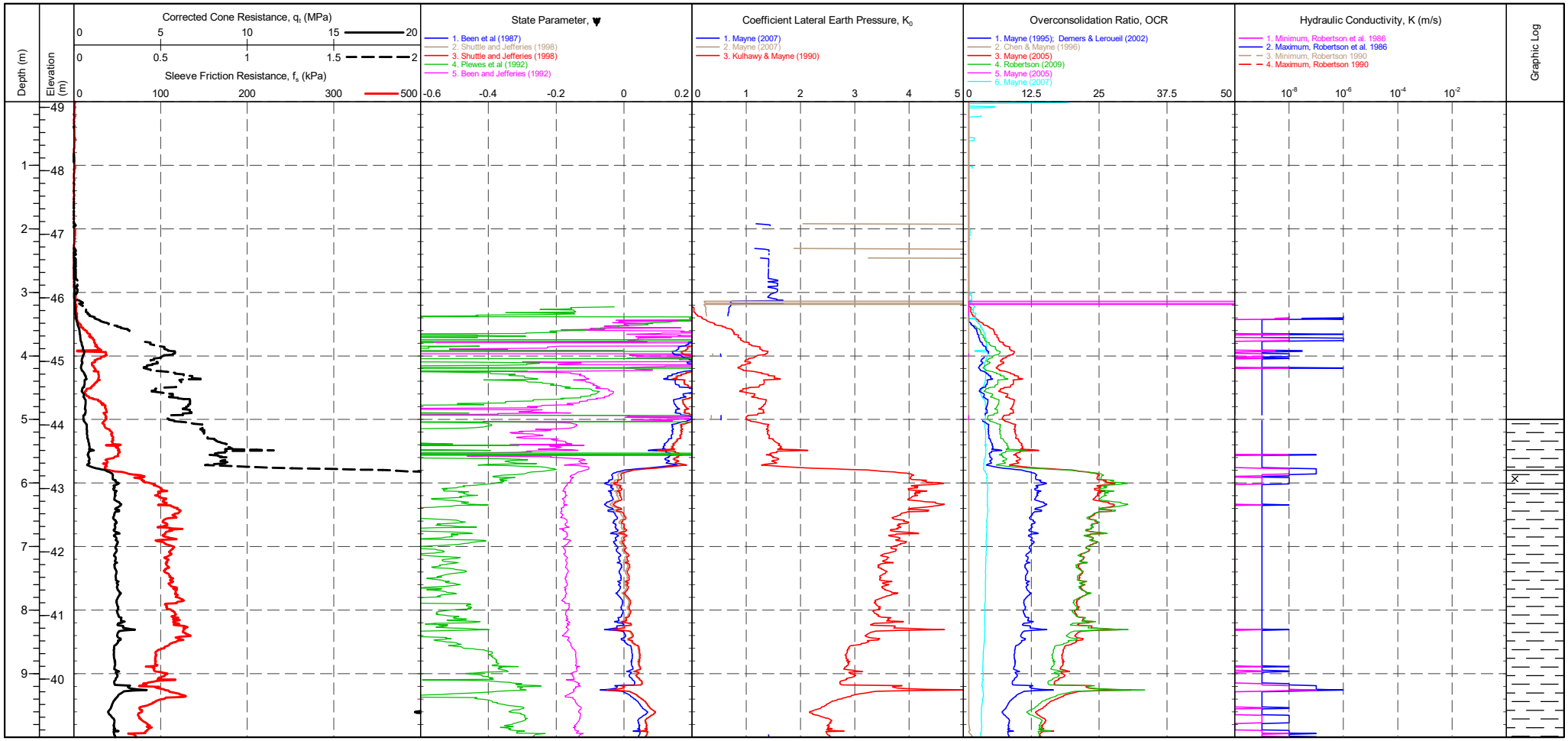
Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT01**

CLIENT : Structural Soils	EASTING : 385064.462 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398477.009 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.086 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	249 mV	250 mV	0.012 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	247 mV	247 mV	0 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	391 mV	384 mV	-0.002 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2488 mV	2477 mV	

Groundwater Level

Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

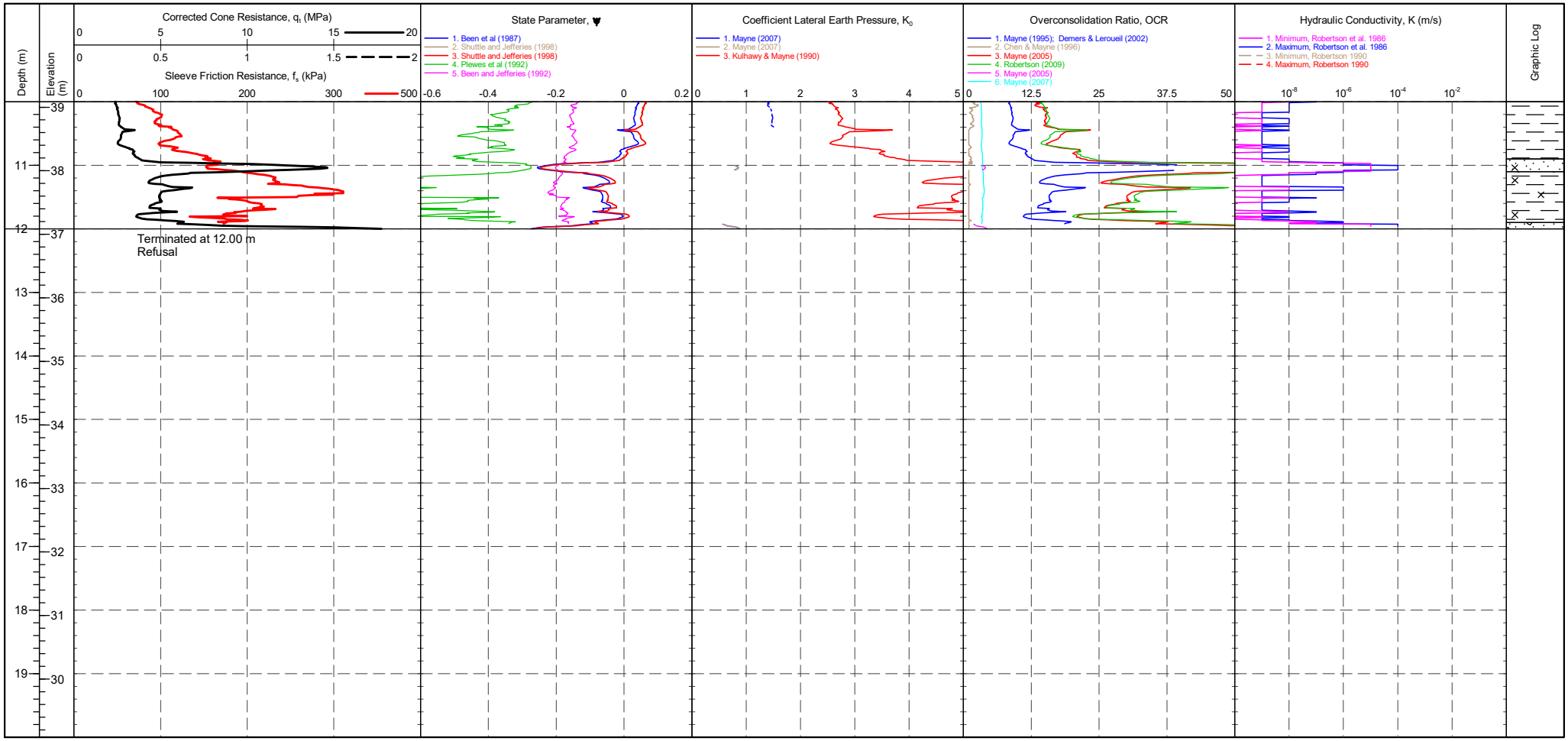
PointID: **ATK_CPT01**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385064.462 m
NORTHING : 398477.009 m
ELEVATION : 49.086 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 02/05/2023
PLOT DATE : 23/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

Transducer	Pre	Post	Difference
Tip	249 mV	250 mV	0.012 MPa
Sleeve	247 mV	247 mV	0 kPa
Pore Pressure 2	391 mV	384 mV	-0.002 kPa
X-Y Inclinometer	2488 mV	2477 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

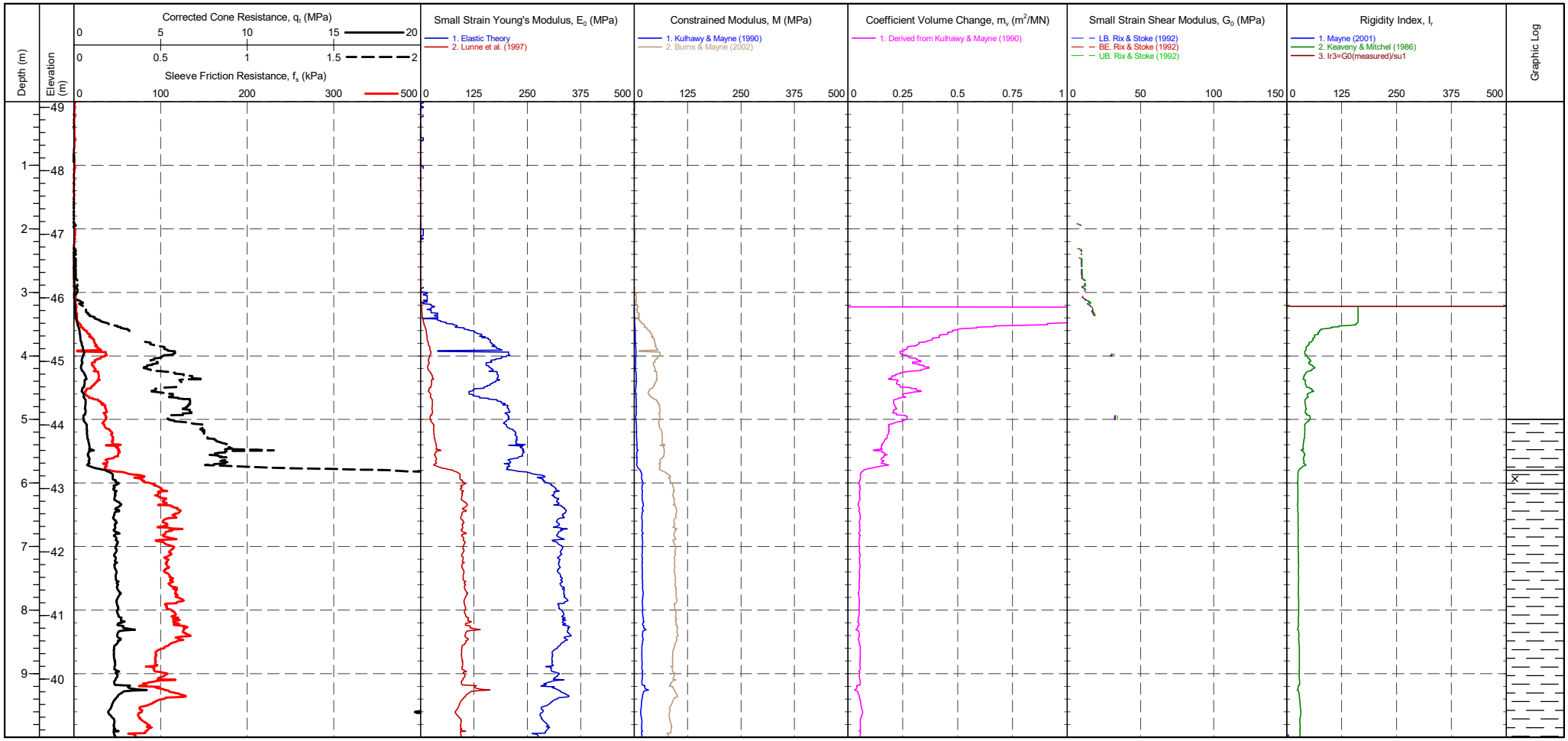
PointID: **ATK_CPT01**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385064.462 m
NORTHING : 398477.009 m
ELEVATION : 49.086 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 02/05/2023
PLOT DATE : 23/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

Transducer	Pre	Post	Difference
Tip	249 mV	250 mV	0.012 MPa
Sleeve	247 mV	247 mV	0 kPa
Pore Pressure 2	391 mV	384 mV	-0.002 kPa
X-Y Inclinometer	2488 mV	2477 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

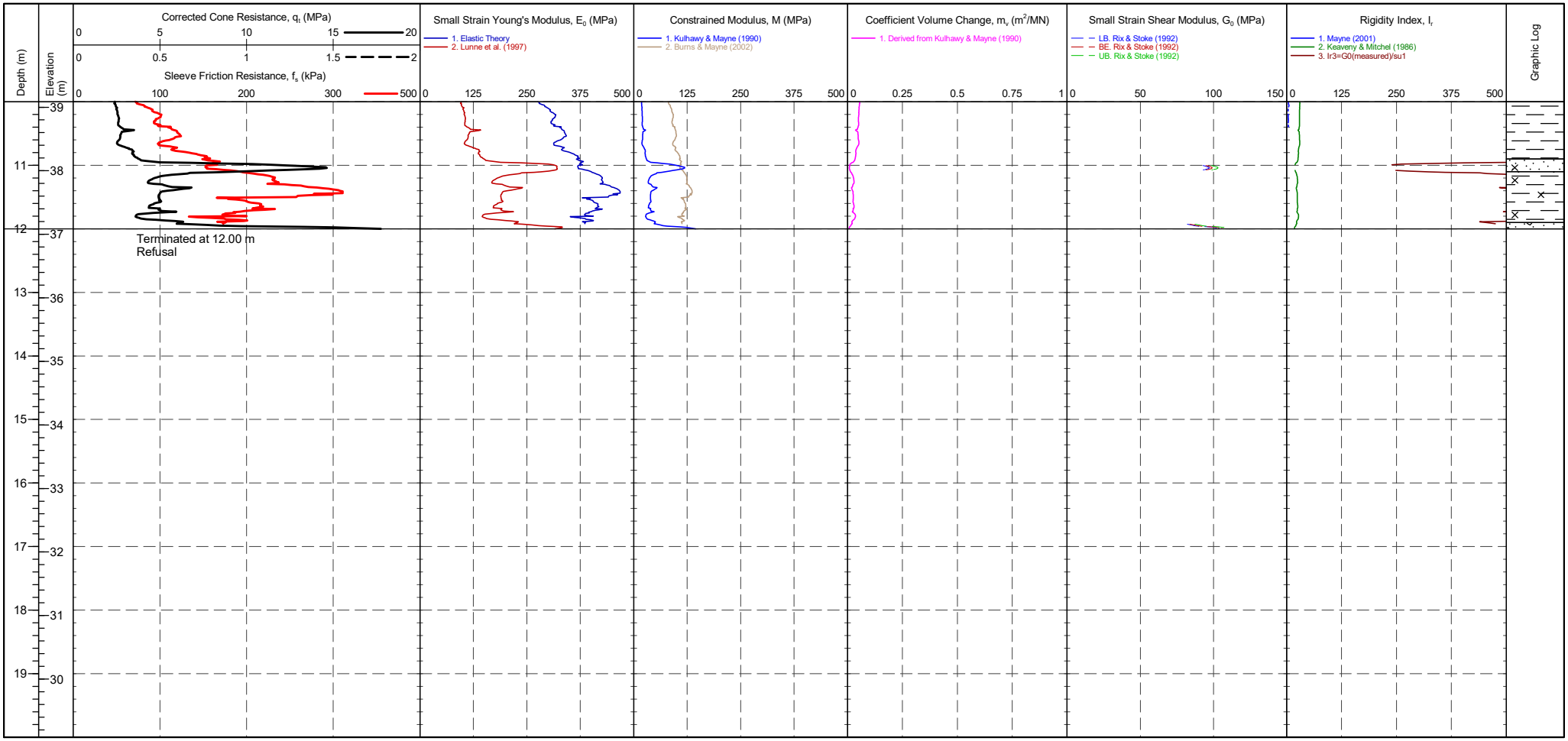
PointID: **ATK_CPT01**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385064.462 m
NORTHING : 398477.009 m
ELEVATION : 49.086 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

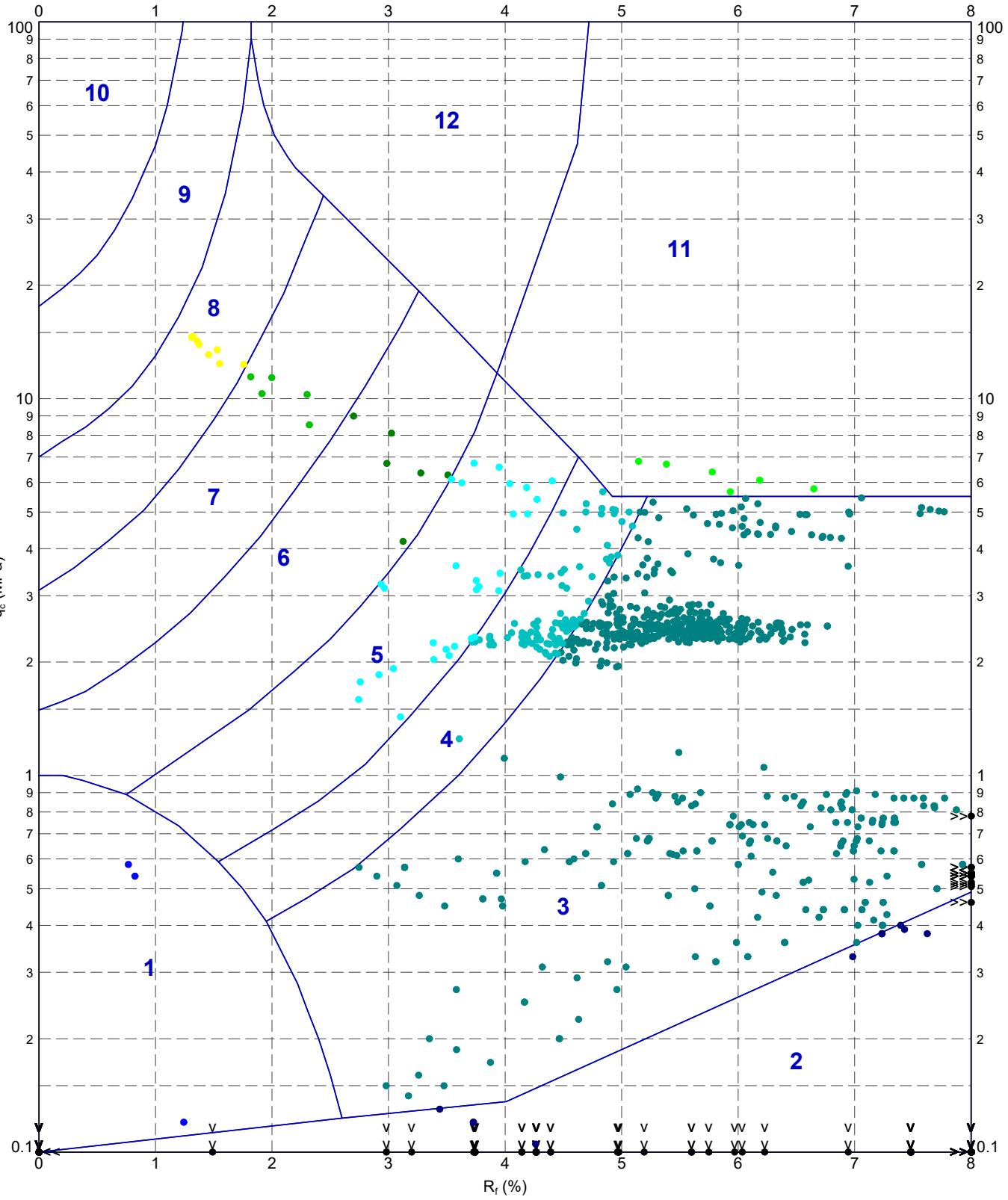
SHEET : 2 OF 2
STATUS : Final
TEST DATE : 02/05/2023
PLOT DATE : 23/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	250 mV	0.012 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	247 mV	247 mV	0 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	391 mV	384 mV	-0.002 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2488 mV	2477 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

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Robertson et al. 1986 q_c vs. R_f - ATK_CPT01

DRAWN	DATE 23/05/2023
CHECKED	DATE 23/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - ZOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 23/05/2023 17:11 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

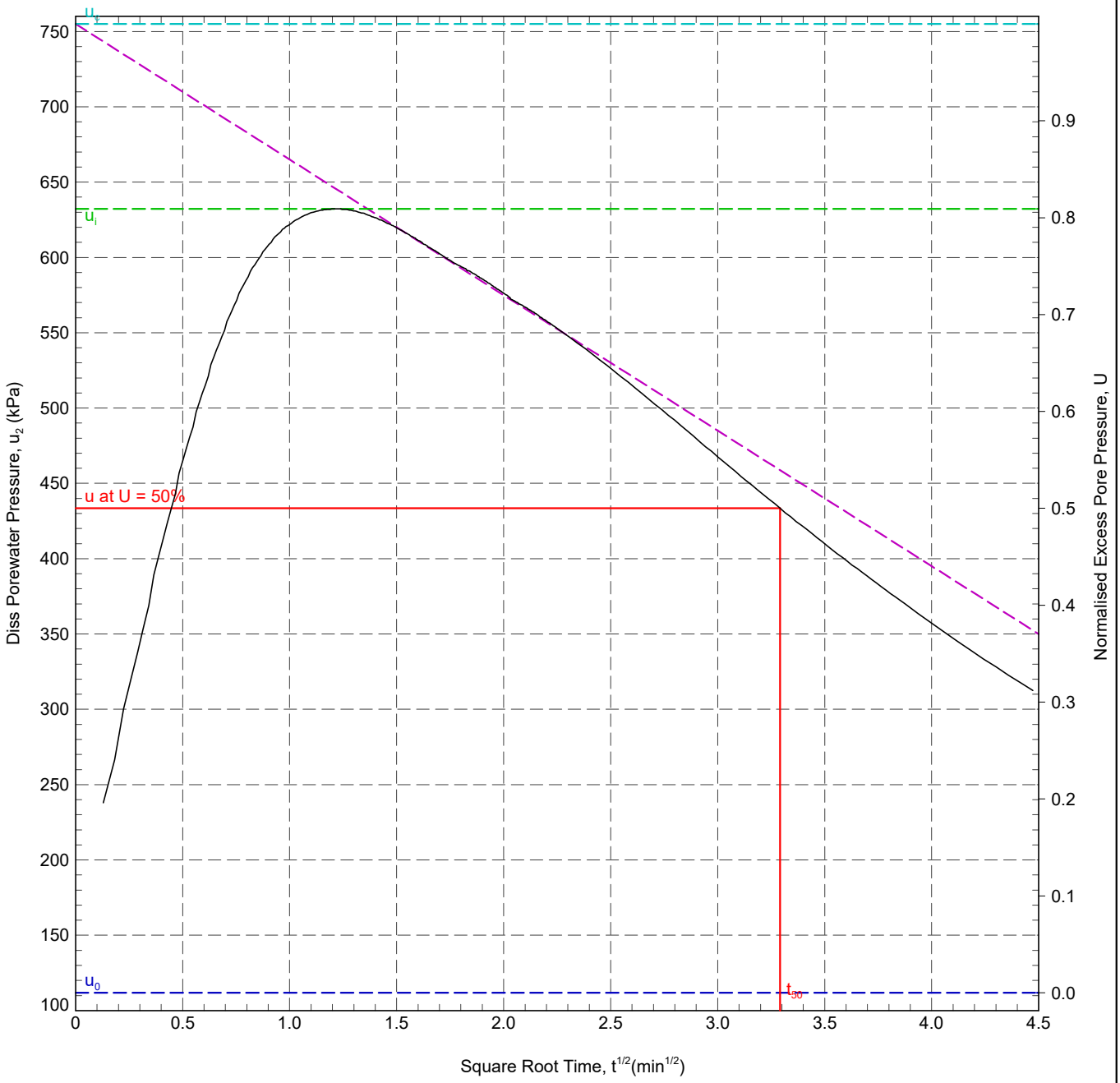
IN SITU SITE INVESTIGATION

Working with: STRUCTURAL SOILS LTD

Test ID

ATK_CPT01 - 11.90 m

CLIENT	: Structural Soils	AREA	: Ancoats Manchester	SHEET	: 1 OF 1
ENGINEER	: Tim Clifford	EASTING	: 385064.5 m	STATUS	: Final
PROJECT	: 765544 - Ancoats	NORTHING	: 398477.0 m	DATE	: 02/05/23
LOCATION	: Manchester	COORD. SYS.:			
PROJECT No.	: 1230236	ELEVATION	: 49.09 m		



In Situ Pore Pressure, u_0:	111.8 kPa	Rigidity Index, I_r:	22.6
Initial Pore Pressure, u_i:	632.2 kPa	Horizontal Coefficient of Consolidation, c_h:	2.99x10^1 m^2/yr
Final Pore Pressure:	312.6 kPa	Ratio c_h/c_v:	1.25
Back Extrapolated Pore Pressure, u_c:	755 kPa	Vertical Coefficient of Consolidation, c_v:	2.39x10^1 m^2/yr
Degree of Dissipation:	50%		
Dissipation Pressure:	433.4 kPa		
Time for 50% Dissipation, t_{50}:	10.83 min		

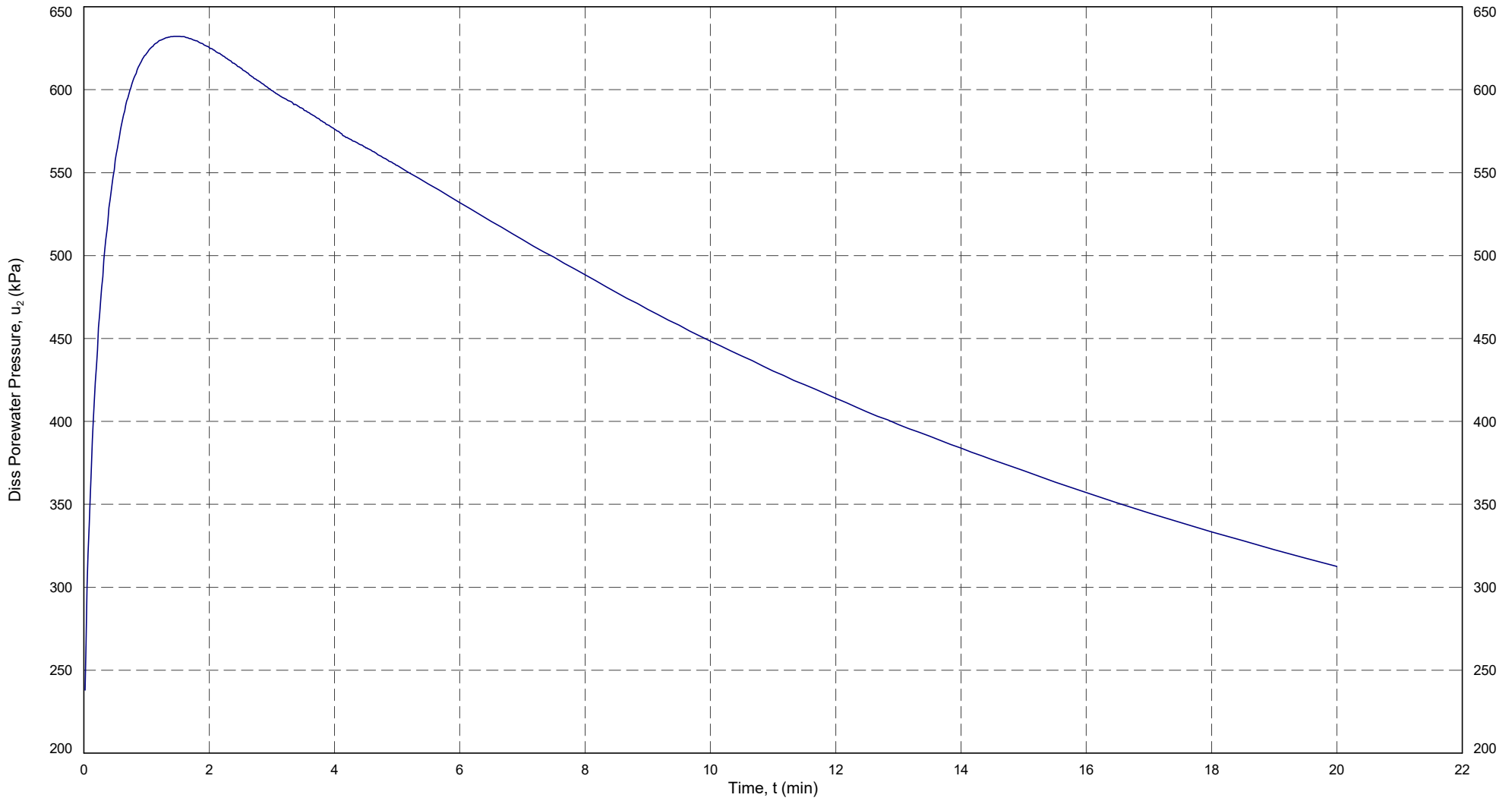
RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	15/05/2023
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	15/05/2023
CONE ID	: S15-CFIP.2177	APPROVED BY	: DW	DATE:	15/05/2023
OPERATOR	: RS				

REMARK

T50 reached. Test OK.

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - ZOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 23/05/2023 17:11 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

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - ZOE.GLB Graph PPDT PORE PRESSURE VS. LIN T A4L 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 23/05/2023 17:11 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



IN SITU SITE INVESTIGATION

TITLE

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Dissipation Test - ATK_CPT01

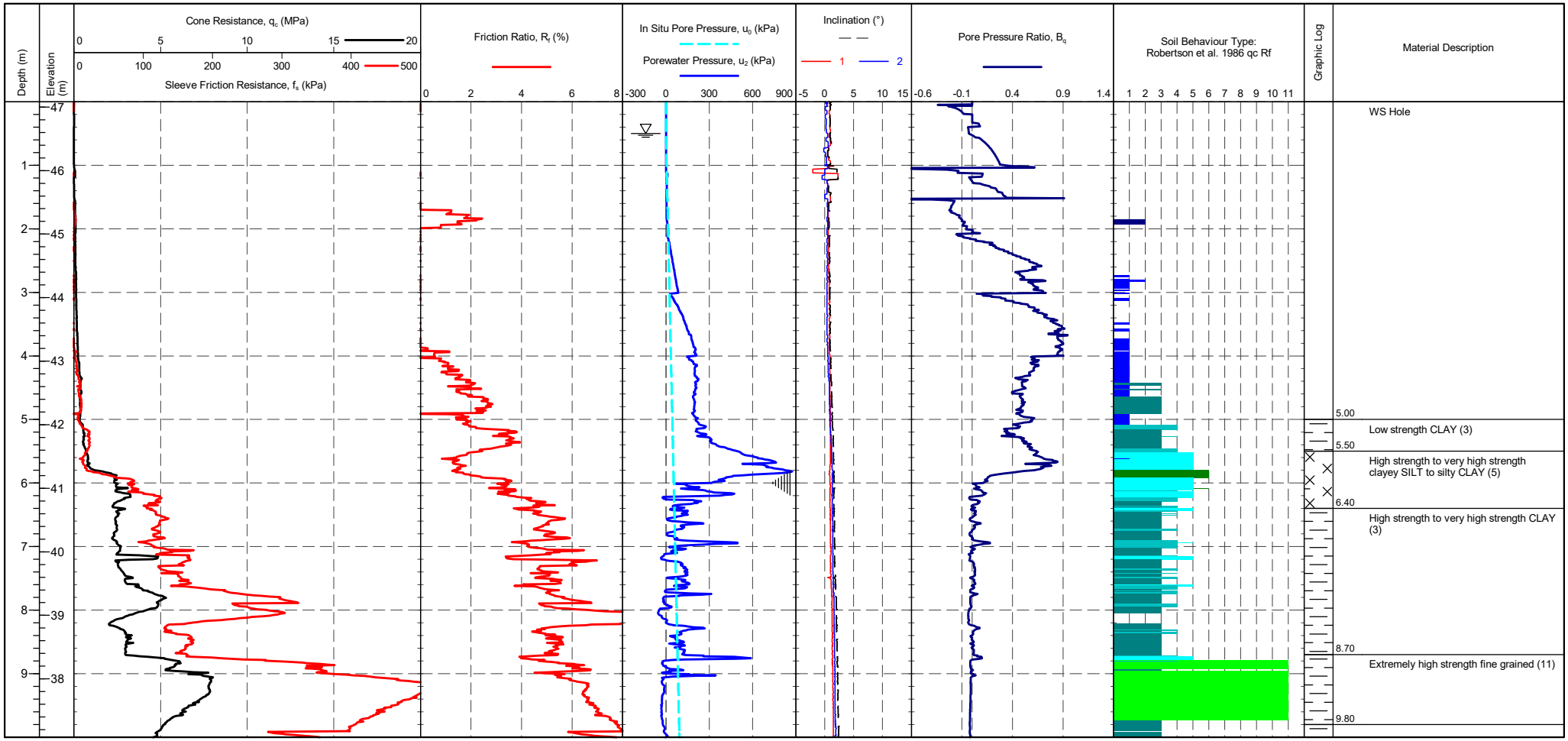
DRAWN	DATE 23/05/2023
CHECKED	DATE 23/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

CPT LOG 01

Working with: Structural Soils Ltd

PointID: **ATK_CPT02**

CLIENT : Structural Soils	EASTING : 385121.284 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398419.218 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.083 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm^2	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	249 mV	246 mV	-0.035 MPa
Sleeve	248 mV	244 mV	-0.003 kPa
Pore Pressure 2	380 mV	371 mV	-0.002 kPa
X-Y Inclinometer	2518 mV	2501 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: STRUCTURAL SOILS LTD

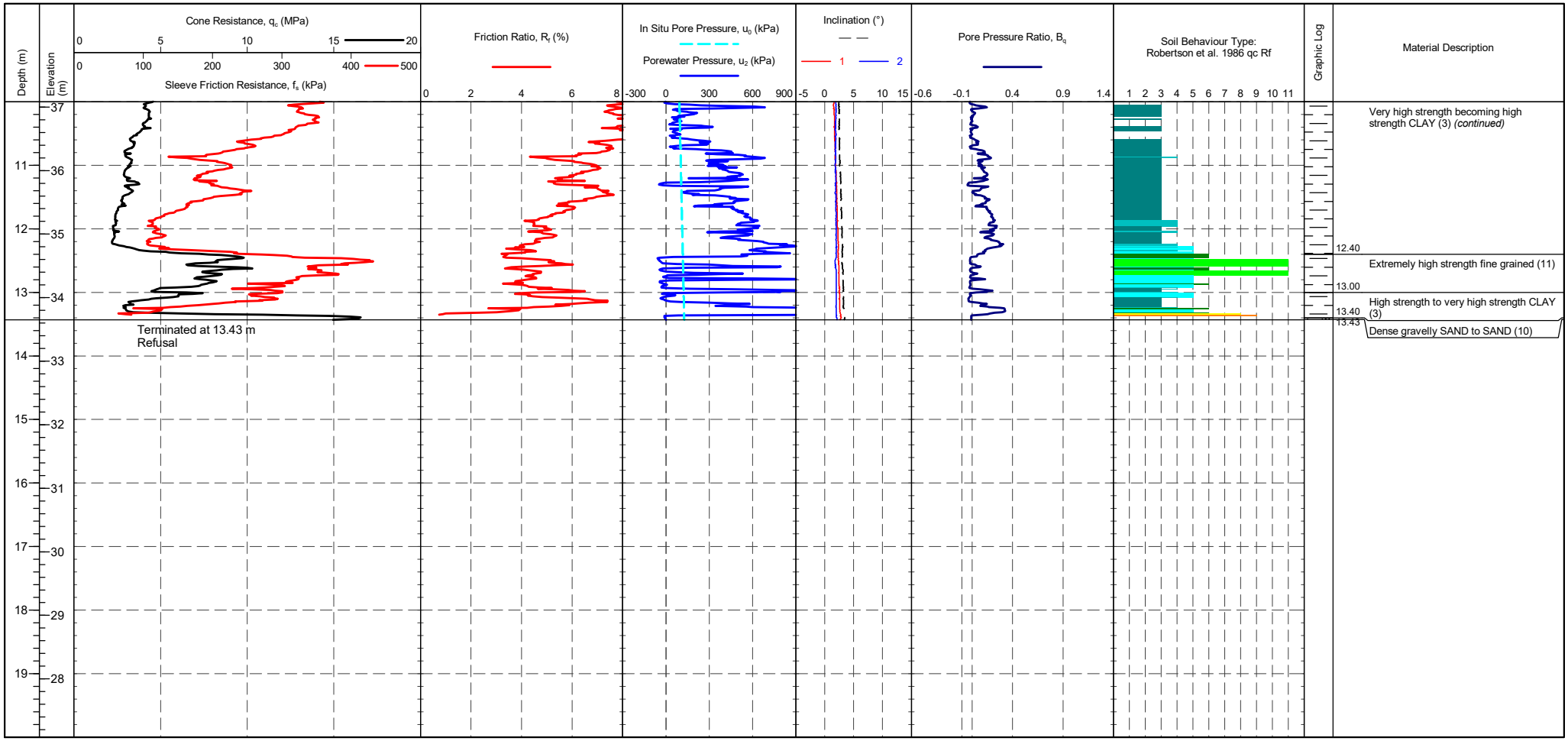
PointID: **ATK_CPT02**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385121.284 m
NORTHING : 398419.218 m
ELEVATION : 47.083 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 28/04/2023
PLOT DATE : 23/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	249 mV	246 mV	-0.035 MPa
Sleeve	248 mV	244 mV	-0.003 kPa
Pore Pressure 2	380 mV	371 mV	-0.002 kPa
X-Y Inclinometer	2518 mV	2501 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: STRUCTURAL SOILS LTD

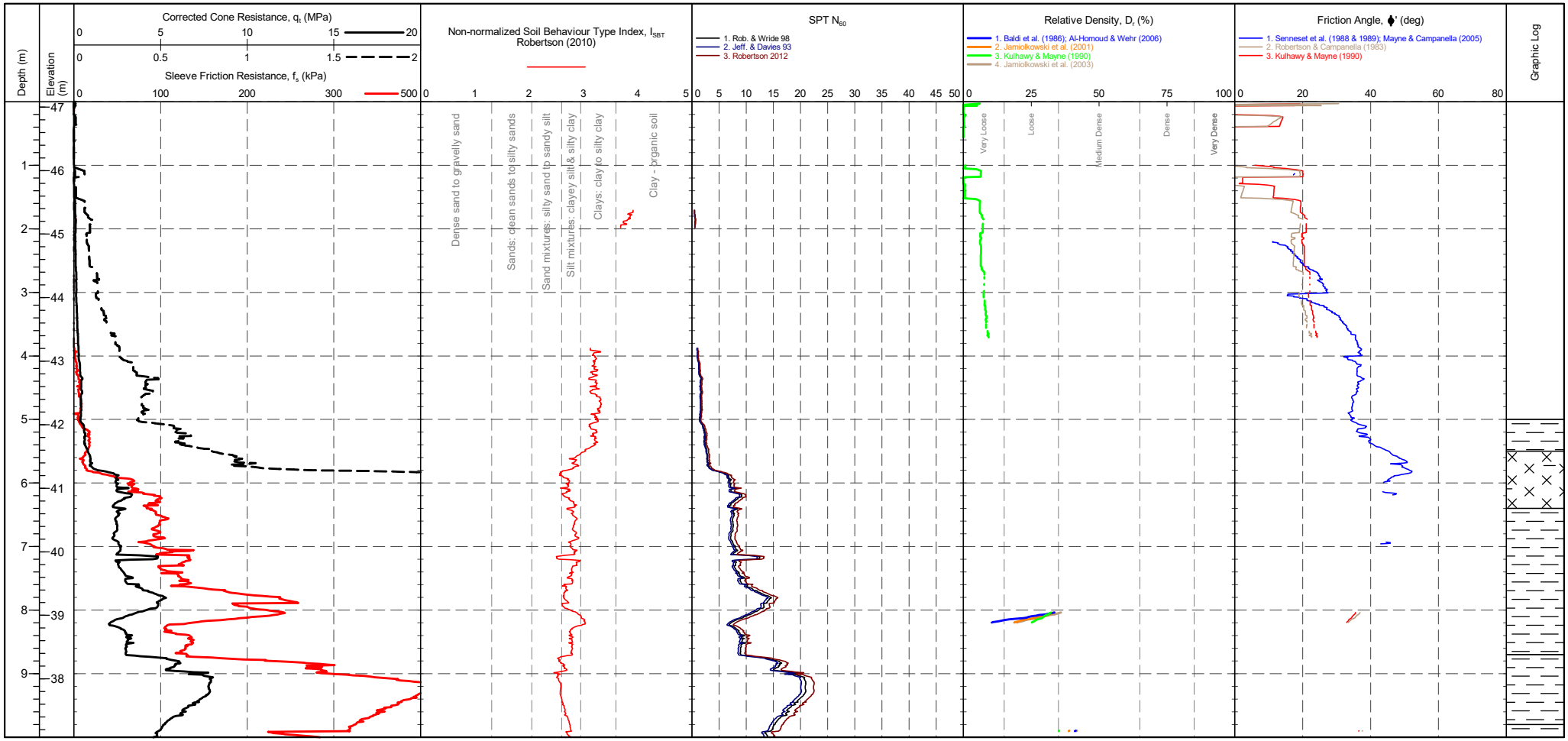
PointID: **ATK_CPT02**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385121.284 m
NORTHING : 398419.218 m
ELEVATION : 47.083 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 28/04/2023
PLOT DATE : 23/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	249 mV	246 mV	-0.035 MPa
Sleeve	248 mV	244 mV	-0.003 kPa
Pore Pressure 2	380 mV	371 mV	-0.002 kPa
X-Y Inclinometer	2518 mV	2501 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

Working with: STRUCTURAL SOILS LTD

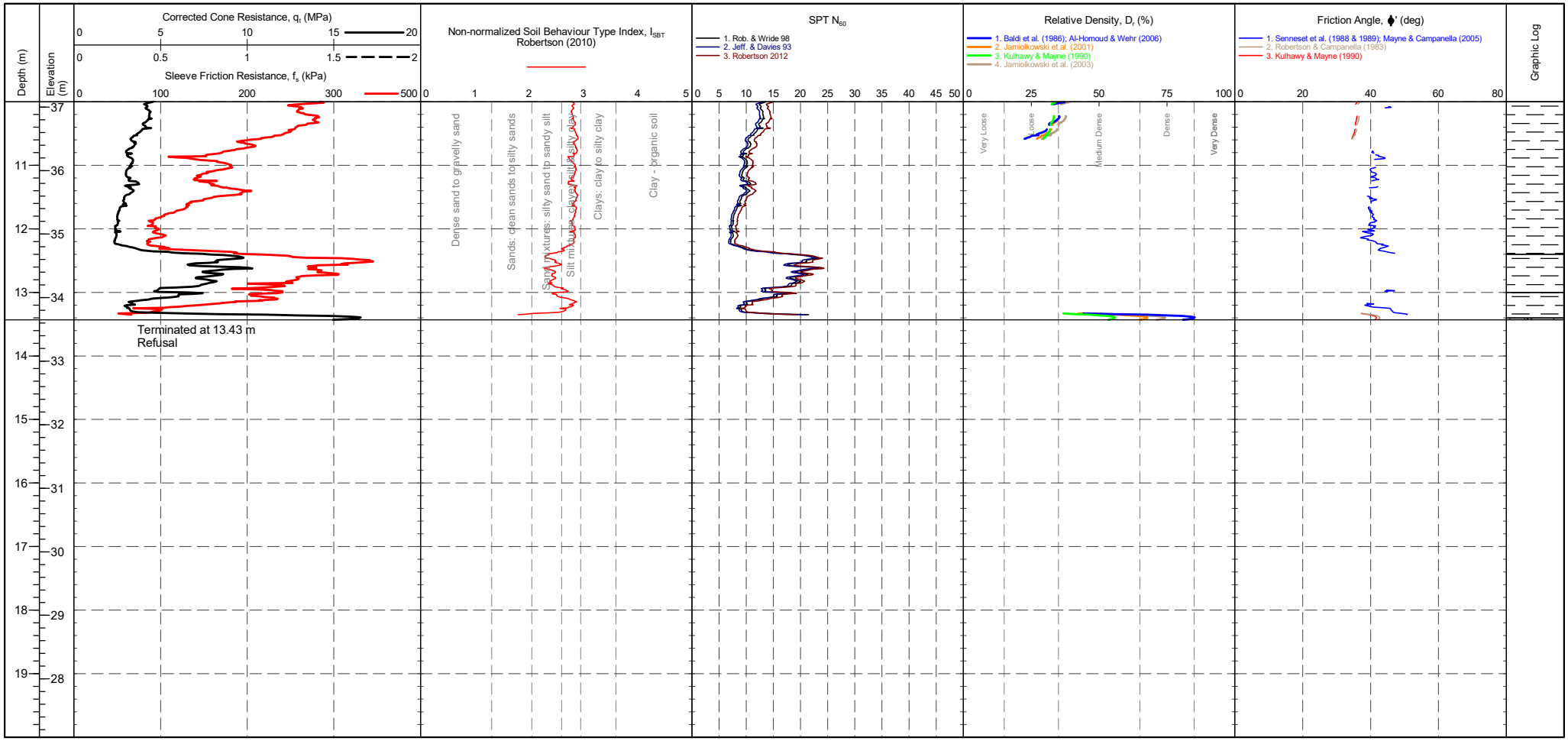
PointID: **ATK_CPT02**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385121.284 m
NORTHING : 398419.218 m
ELEVATION : 47.083 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 28/04/2023
PLOT DATE : 23/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni
CONE AREA RATIO	: 0.79	OPERATOR	: RS
FILTER POSITION	: u2	FRICTION REDUCER	: None
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	249 mV	246 mV	-0.035 MPa
Sleeve	248 mV	244 mV	-0.003 kPa
Pore Pressure 2	380 mV	371 mV	-0.002 kPa
X-Y Inclinometer	2518 mV	2501 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

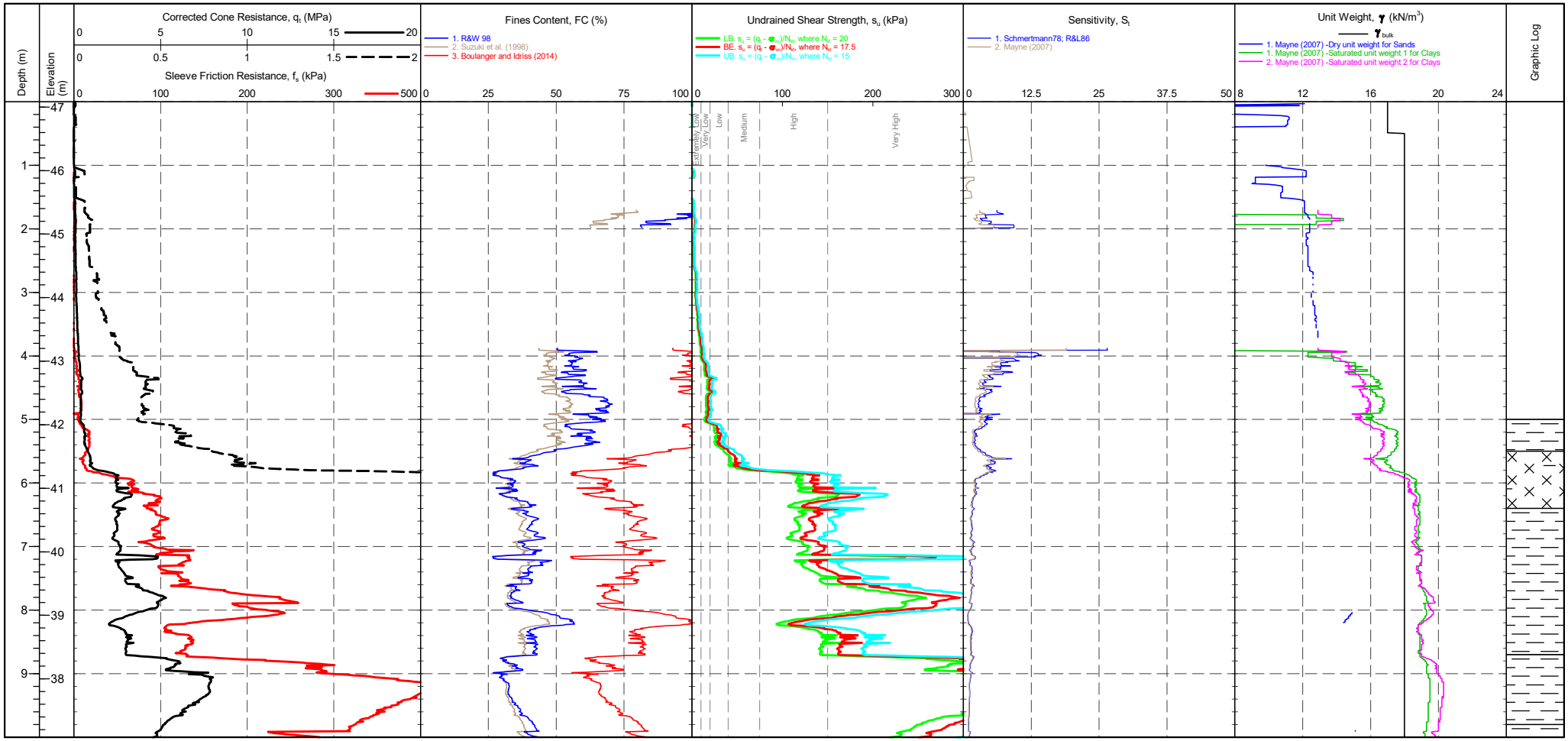
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT02**

CLIENT : Structural Soils	EASTING : 385121.284 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398419.218 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.083 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	246 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	248 mV	244 mV	-0.003 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	380 mV	371 mV	-0.002 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2518 mV	2501 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

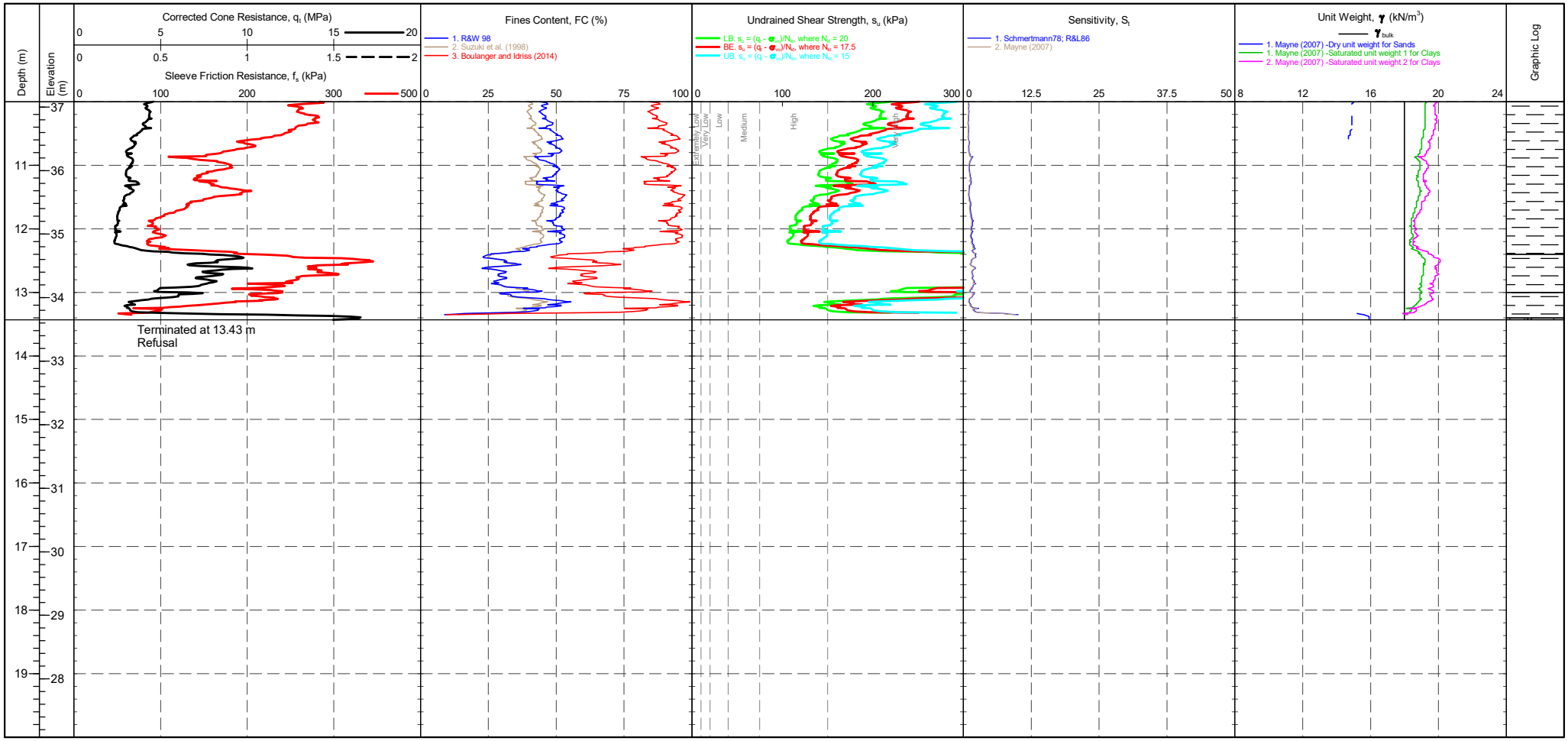
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT02**

CLIENT : Structural Soils	EASTING : 385121.284 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398419.218 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.083 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	246 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	248 mV	244 mV	-0.003 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	380 mV	371 mV	-0.002 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2518 mV	2501 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

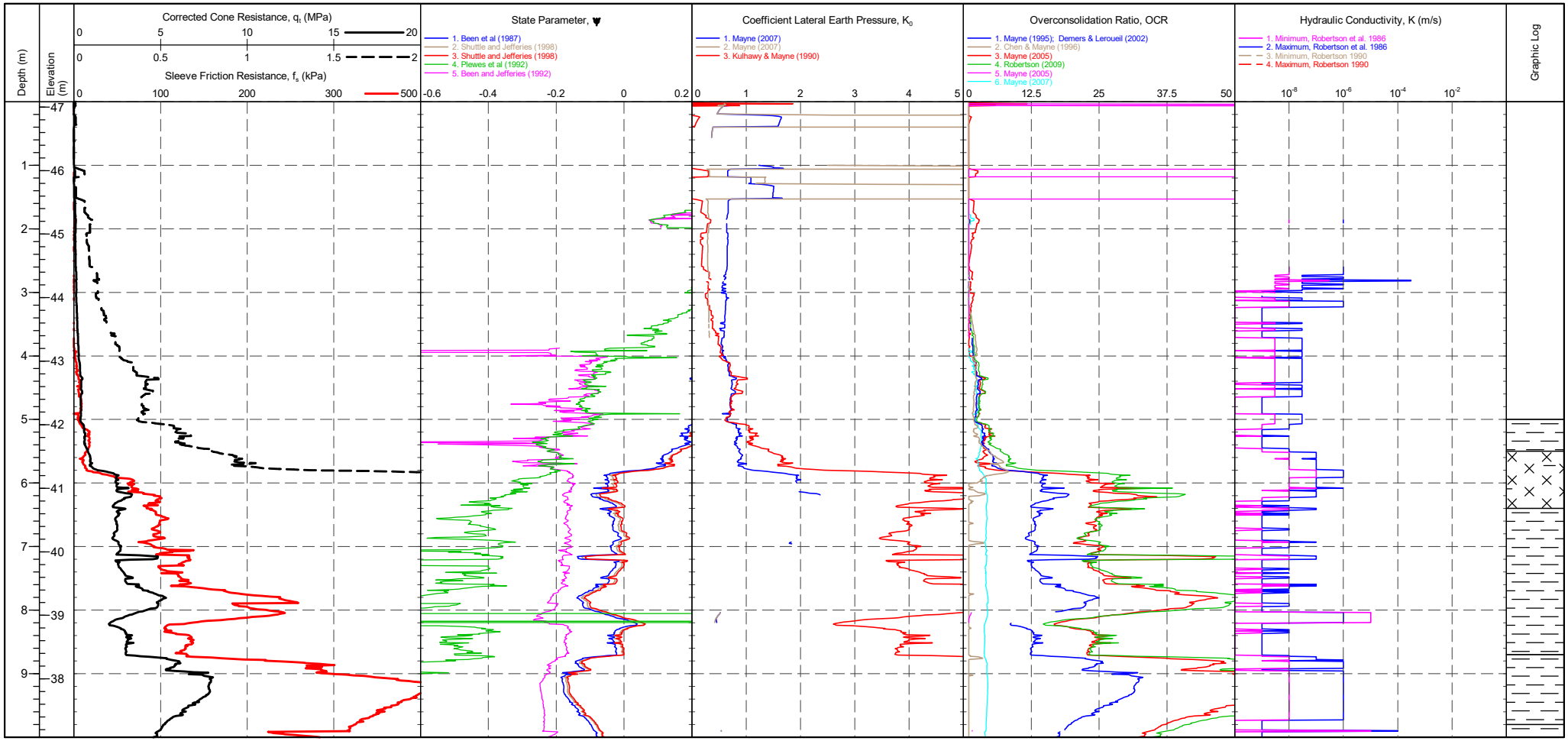
Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT02**

CLIENT : Structural Soils	EASTING : 385121.284 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398419.218 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.083 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	249 mV	246 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	248 mV	244 mV	-0.003 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	380 mV	371 mV	-0.002 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2518 mV	2501 mV	

Groundwater Level

Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

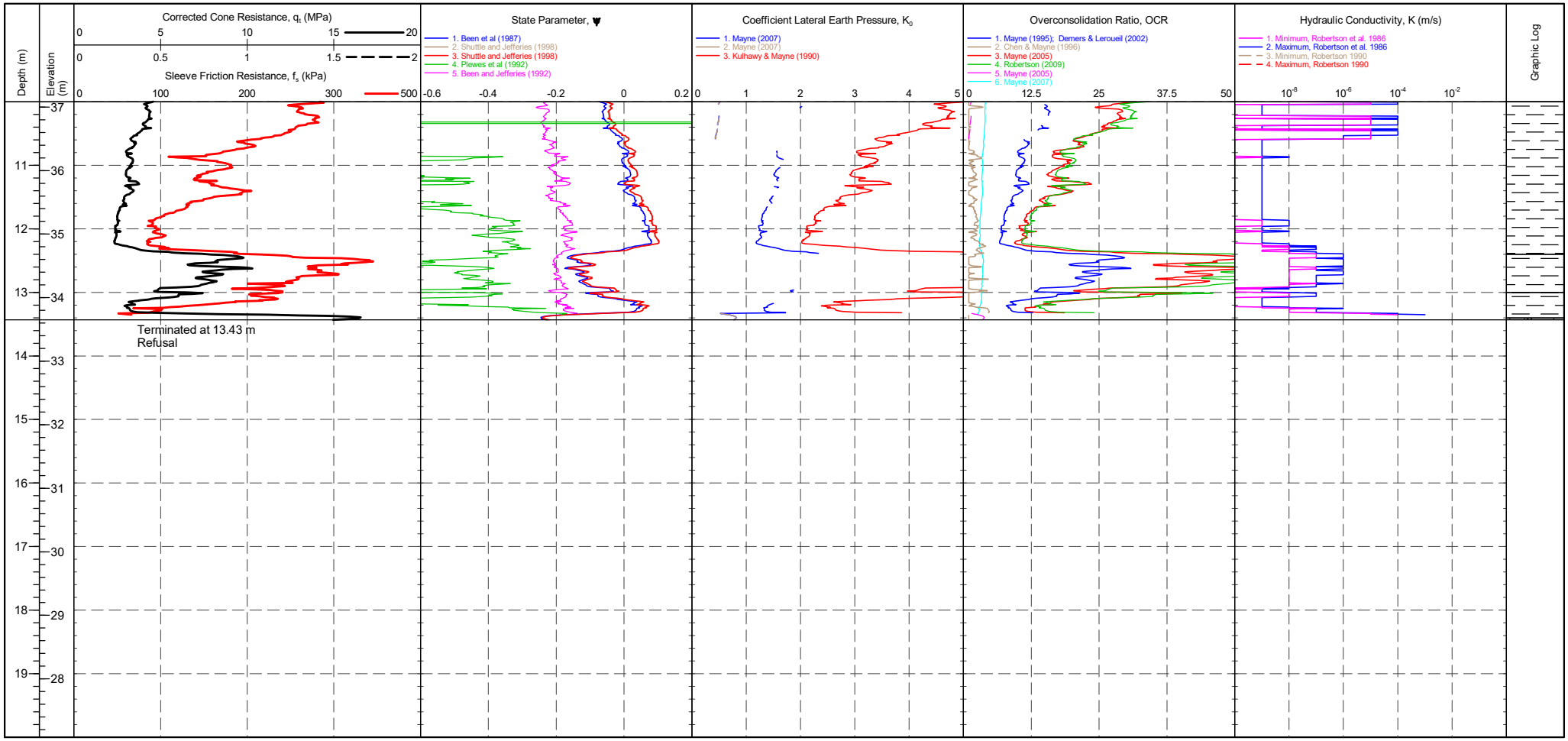
PointID: **ATK_CPT02**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385121.284 m
NORTHING : 398419.218 m
ELEVATION : 47.083 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 28/04/2023
PLOT DATE : 23/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	246 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	248 mV	244 mV	-0.003 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	380 mV	371 mV	-0.002 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2518 mV	2501 mV	

Groundwater Level

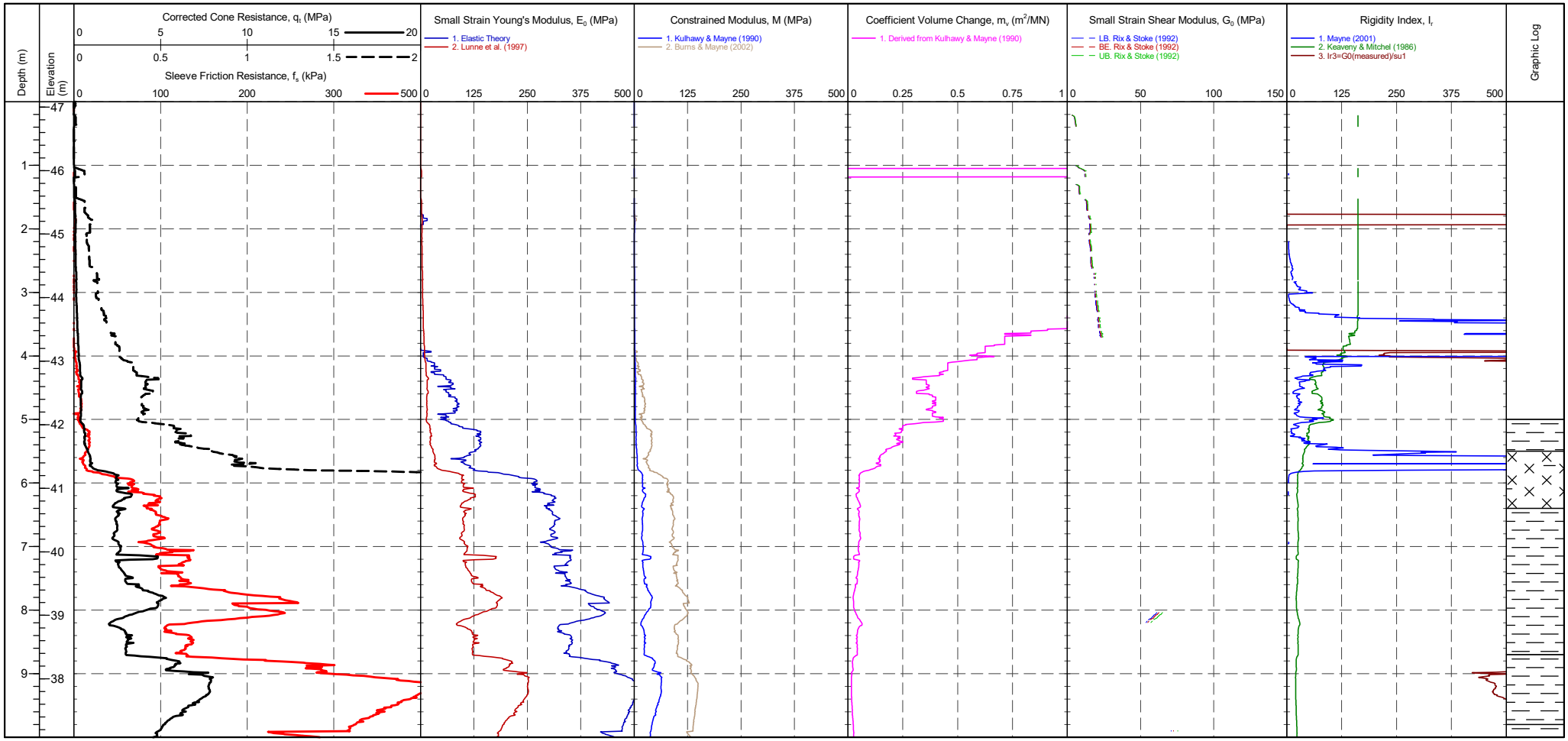
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT02**

CLIENT : Structural Soils PROJECT : 765544 - Ancoats LOCATION : Manchester PROJECT No. : 1230236	EASTING : 385121.284 m NORTHING : 398419.218 m ELEVATION : 47.083 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 1 OF 2 STATUS : Final TEST DATE : 28/04/2023 PLOT DATE : 23/05/2023 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	246 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	248 mV	244 mV	-0.003 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	380 mV	371 mV	-0.002 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2518 mV	2501 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

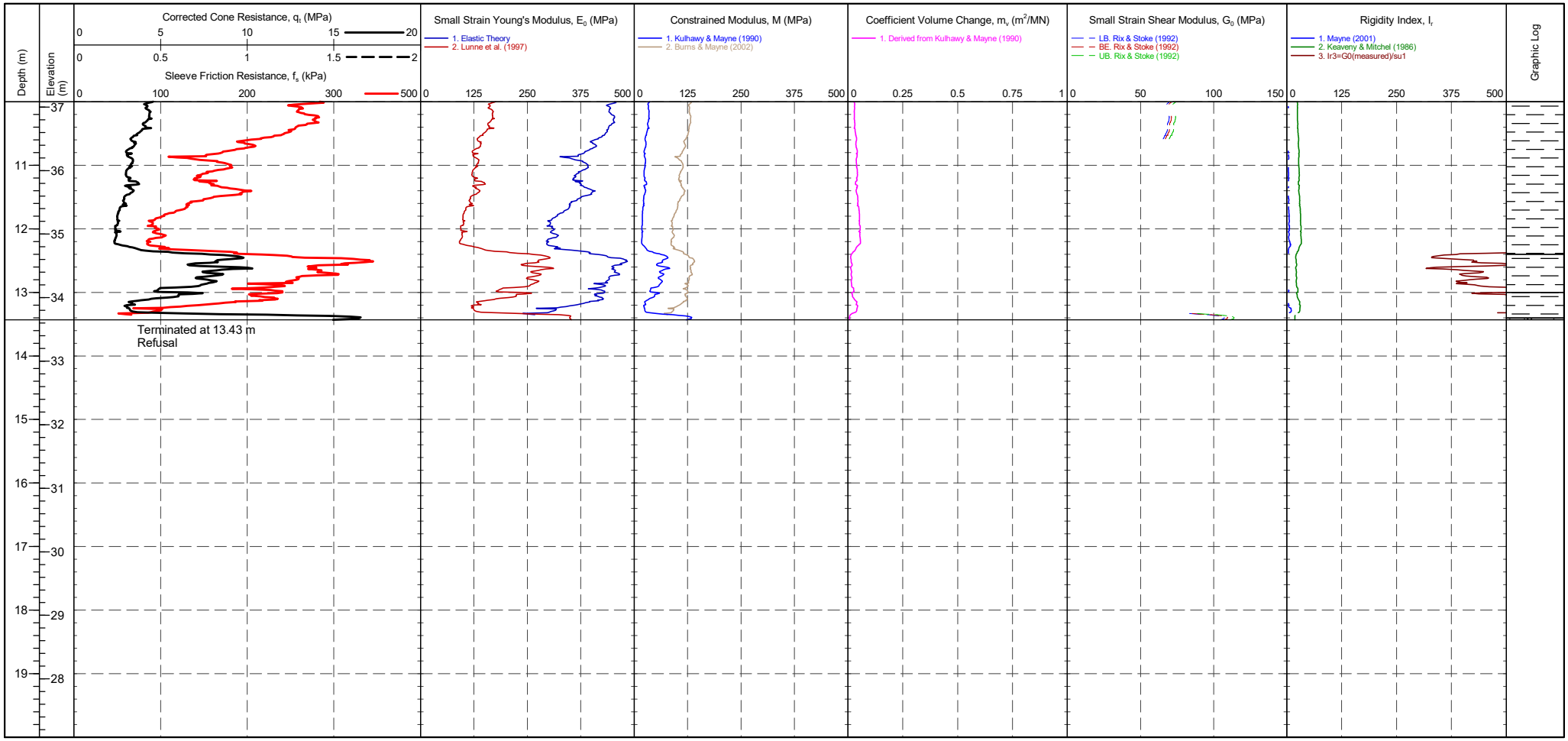
PointID: **ATK_CPT02**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385121.284 m
NORTHING : 398419.218 m
ELEVATION : 47.083 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 28/04/2023
PLOT DATE : 23/05/2023
METHOD : ISO 22476-1:2022

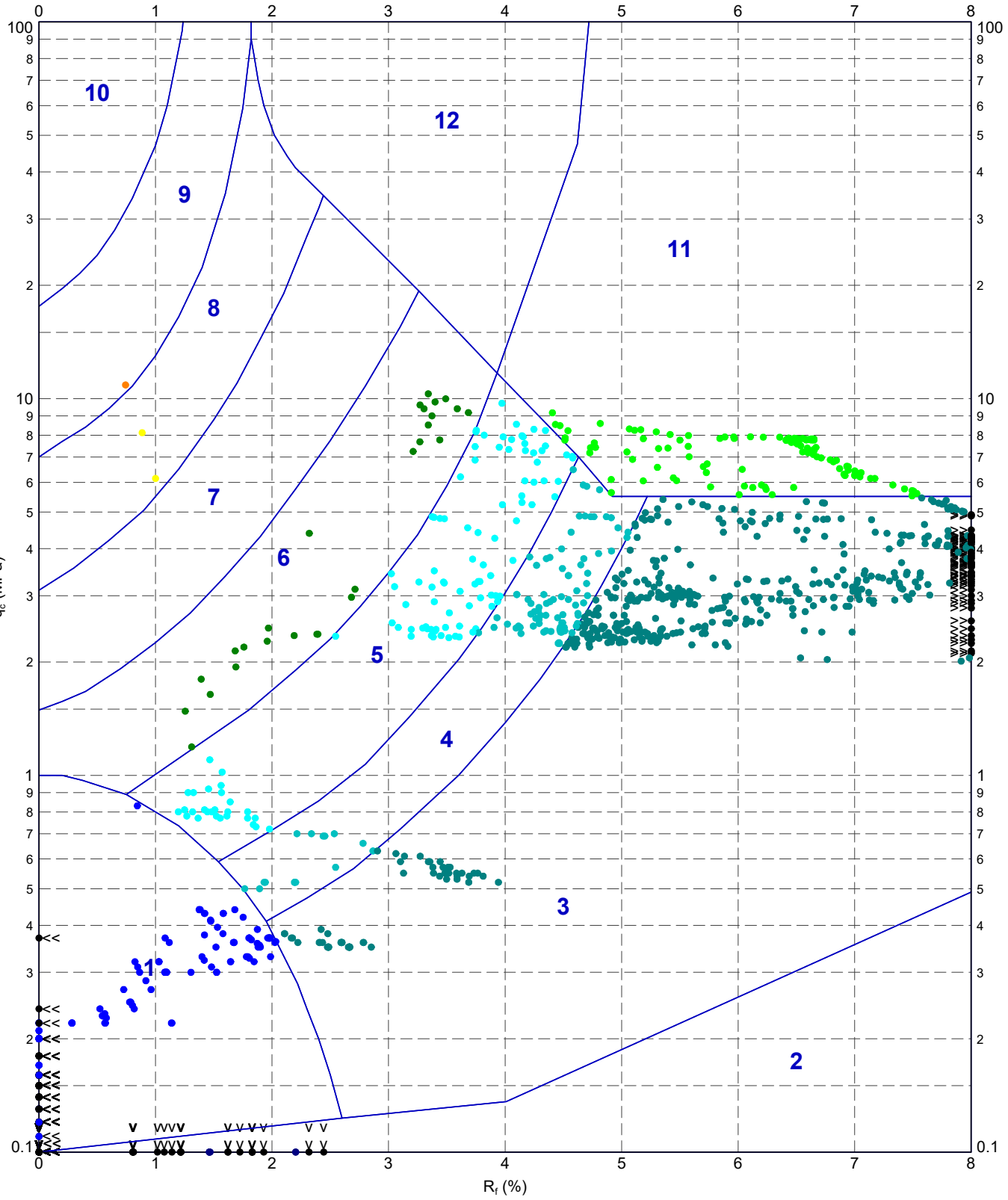


CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES	
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

Transducer	Pre	Post	Difference
Tip	249 mV	246 mV	-0.035 MPa
Sleeve	248 mV	244 mV	-0.003 kPa
Pore Pressure 2	380 mV	371 mV	-0.002 kPa
X-Y Inclinometer	2518 mV	2501 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

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Robertson et al. 1986 q_c vs. R_f - ATK_CPT02

DRAWN	DATE 23/05/2023	
CHECKED	DATE 23/05/2023	
SCALE Not To Scale		A4
PROJECT No 1230236	FIGURE No	

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - ZOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 23/05/2023 17:13 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

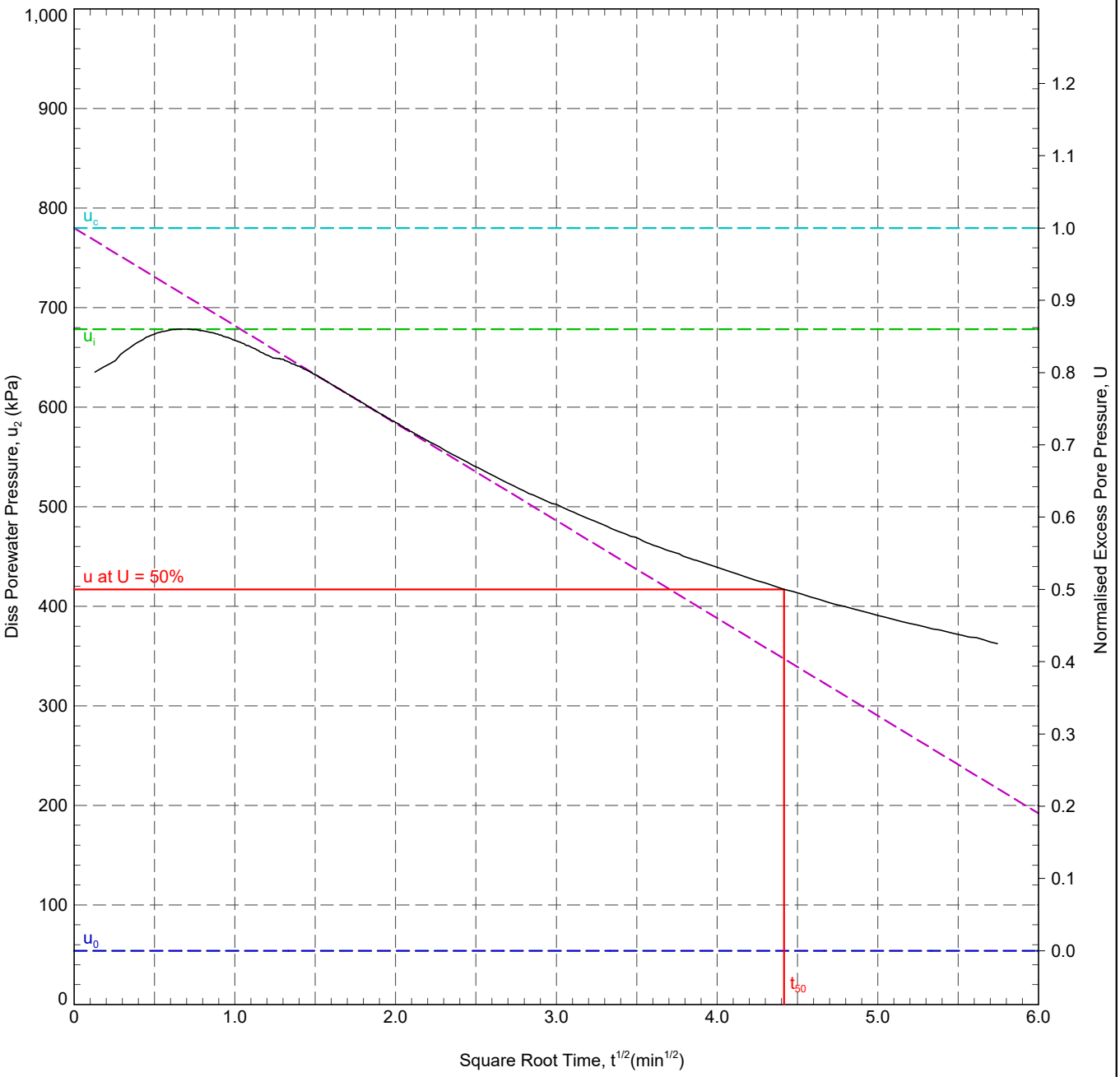
IN SITU SITE INVESTIGATION

Working with: STRUCTURAL SOILS LTD

Test ID

ATK_CPT02 - 6.00 m

CLIENT	: Structural Soils	AREA	: Ancoats Manchester	SHEET	: 1 OF 1
ENGINEER	: Tim Clifford	EASTING	: 385121.3 m	STATUS	: Final
PROJECT	: 765544 - Ancoats	NORTHING	: 398419.2 m	DATE	: 28/04/23
LOCATION	: Manchester	COORD. SYS.:			
PROJECT No.	: 1230236	ELEVATION	: 47.08 m		



In Situ Pore Pressure, u_0:	54.0 kPa	Rigidity Index, I_r:	3.3
Initial Pore Pressure, u_i:	678.4 kPa	Horizontal Coefficient of Consolidation, c_h:	6.35×10^0 m²/yr
Final Pore Pressure:	362.3 kPa	Ratio c_h/c_v:	1.25
Back Extrapolated Pore Pressure, u_c:	780 kPa	Vertical Coefficient of Consolidation, c_v:	5.08×10^0 m²/yr
Degree of Dissipation:	50%		
Dissipation Pressure:	417.0 kPa		
Time for 50% Dissipation, t_{50}:	19.50 min		

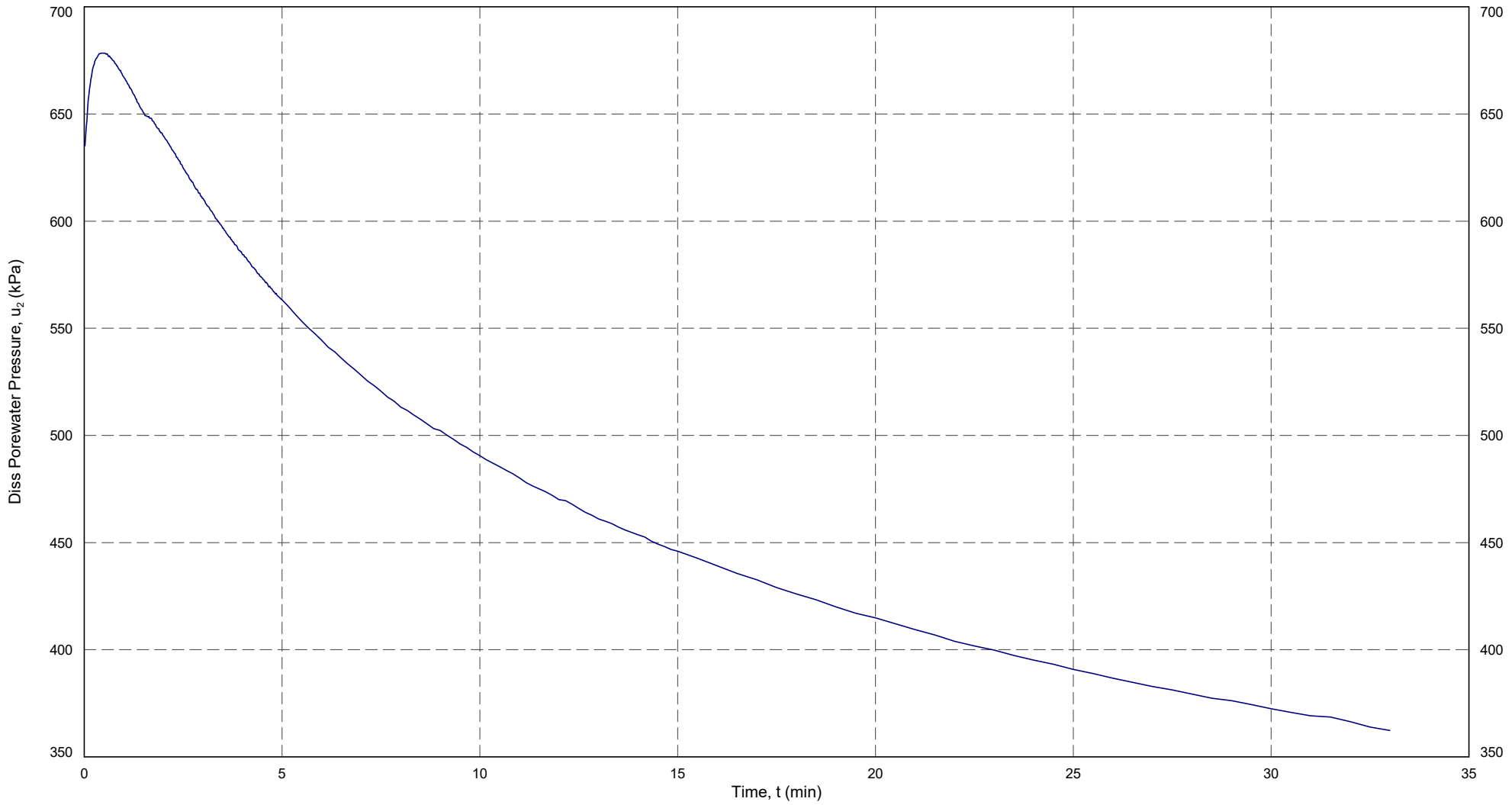
RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	15/05/2023
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	15/05/2023
CONE ID	: S15-CFIP.2177	APPROVED BY	: DW	DATE:	15/05/2023
OPERATOR	: RS				

REMARK

T50 reached. Test OK.

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - ZOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 23/05/2023 17:13 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

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - ZOE.GLB Graph PPDT PORE PRESSURE VS. LIN T A4L 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 23/05/2023 17:13 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



IN SITU SITE INVESTIGATION

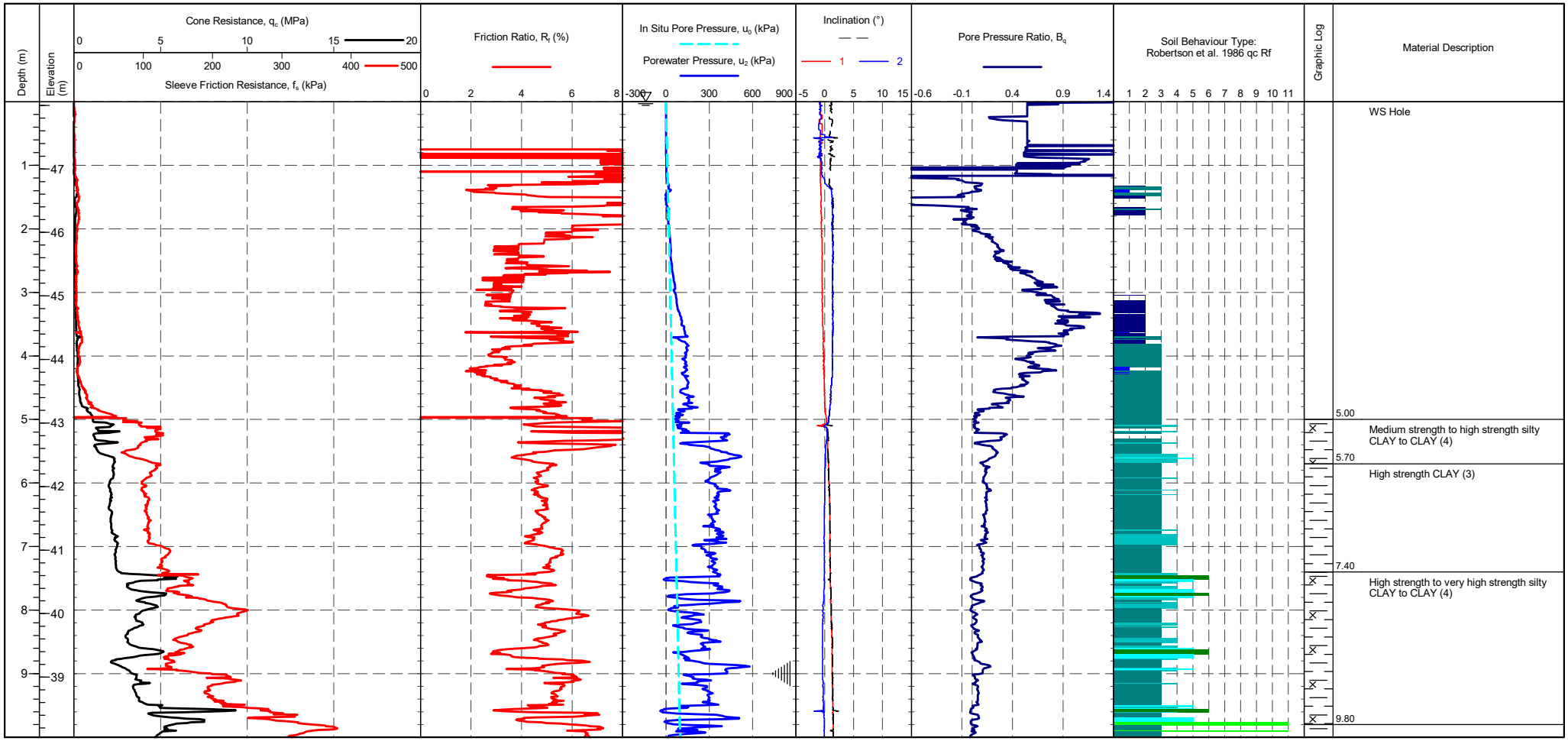
TITLE	Structural Soils Tim Clifford Manchester 765544 - Ancoats Dissipation Test - ATK_CPT02	DRAWN	DATE 23/05/2023
		CHECKED	DATE 23/05/2023
		SCALE Not To Scale	A4
		PROJECT No 1230236	FIGURE No

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT03**

CLIENT : Structural Soils	EASTING : 385078.467 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398433.788 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.056 m OD		TEST DATE : 26/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: 0

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	243 mV	240 mV	-0.035 MPa
Sleeve	244 mV	242 mV	-0.001 kPa
Pore Pressure 2	317 mV	295 mV	-0.006 kPa
X-Y Inclinometer	2358 mV	2371 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

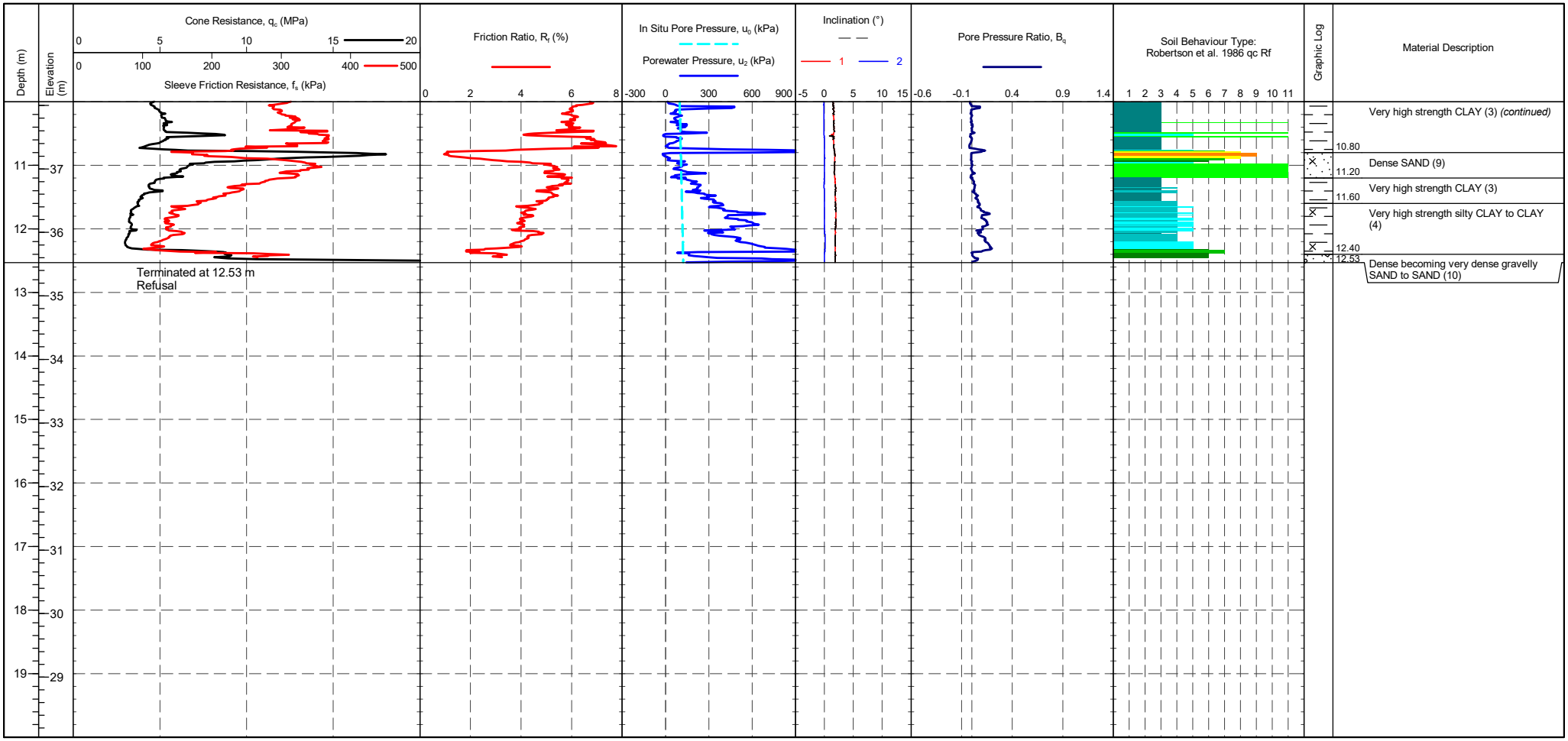
Dissipation Test

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT03**

CLIENT : Structural Soils	EASTING : 385078.467 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398433.788 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.056 m OD		TEST DATE : 26/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: 0

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	243 mV	240 mV	-0.035 MPa
Sleeve	244 mV	242 mV	-0.001 kPa
Pore Pressure 2	317 mV	295 mV	-0.006 kPa
X-Y Inclinometer	2358 mV	2371 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

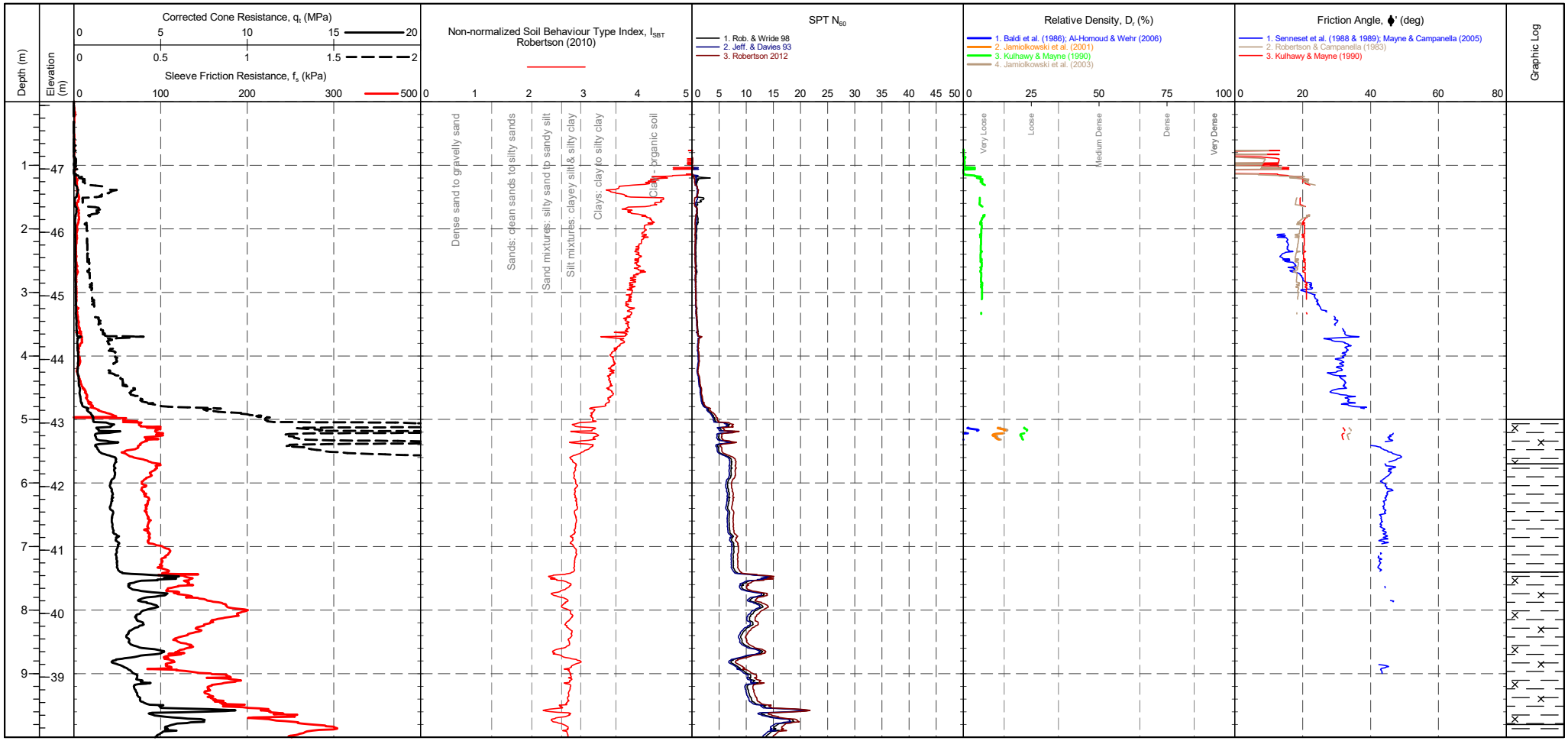
Dissipation Test

CPT LOG 02

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT03**

CLIENT : Structural Soils	EASTING : 385078.467 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398433.788 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.056 m OD		TEST DATE : 26/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2			
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni			
CONE AREA RATIO	: 0.79	OPERATOR	: RS			
FILTER POSITION	: u2	FRICTION REDUCER	: None			
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild			

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	243 mV	240 mV	-0.035 MPa
Sleeve	244 mV	242 mV	-0.001 kPa
Pore Pressure 2	317 mV	295 mV	-0.006 kPa
X-Y Inclinometer	2358 mV	2371 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

Working with: STRUCTURAL SOILS LTD

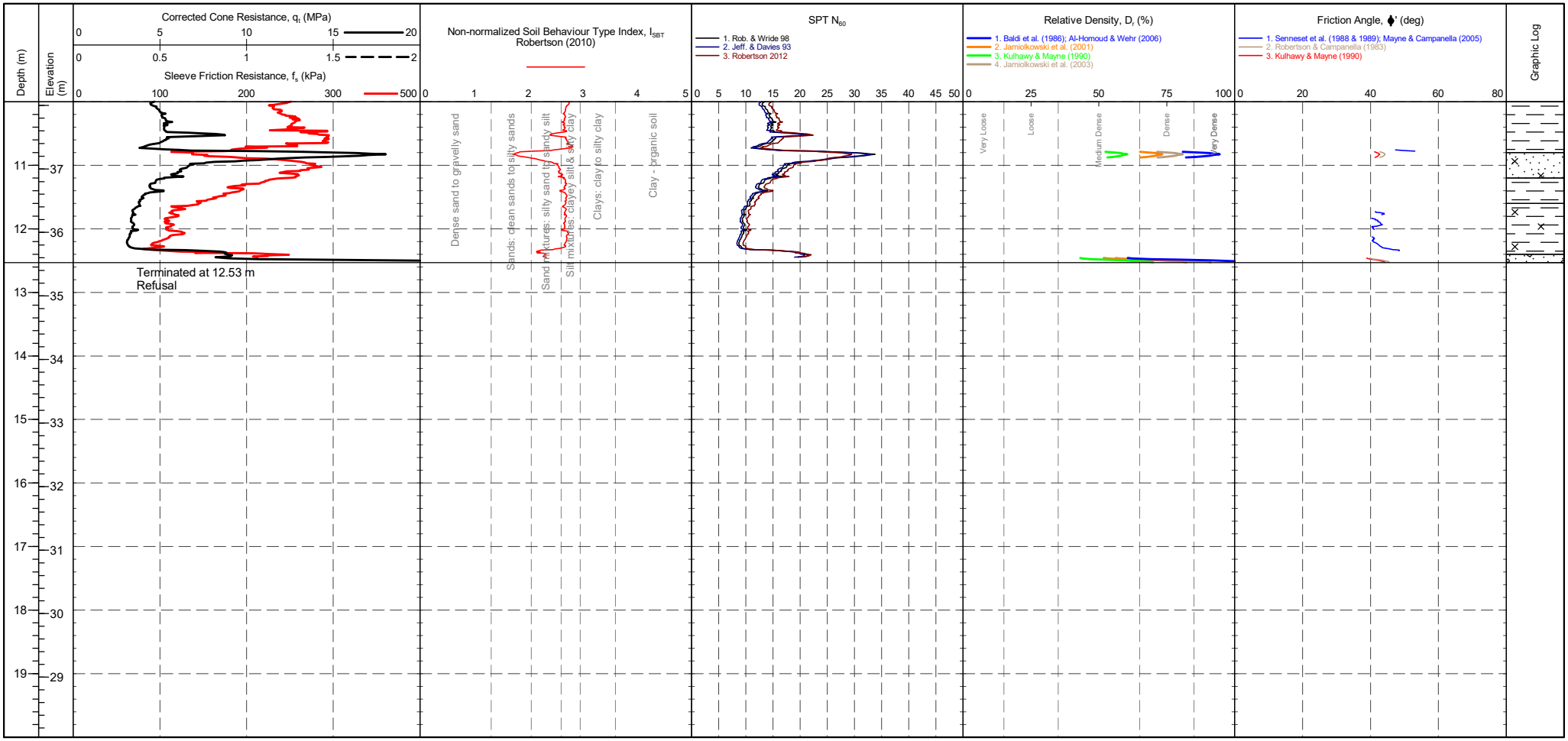
PointID: **ATK_CPT03**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385078.467 m
NORTHING : 398433.788 m
ELEVATION : 48.056 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 26/04/2023
PLOT DATE : 23/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni
CONE AREA RATIO	: 0.79	OPERATOR	: RS
FILTER POSITION	: u2	FRICTION REDUCER	: None
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	243 mV	240 mV	-0.035 MPa
Sleeve	244 mV	242 mV	-0.001 kPa
Pore Pressure 2	317 mV	295 mV	-0.006 kPa
X-Y Inclinometer	2358 mV	2371 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: STRUCTURAL SOILS LTD

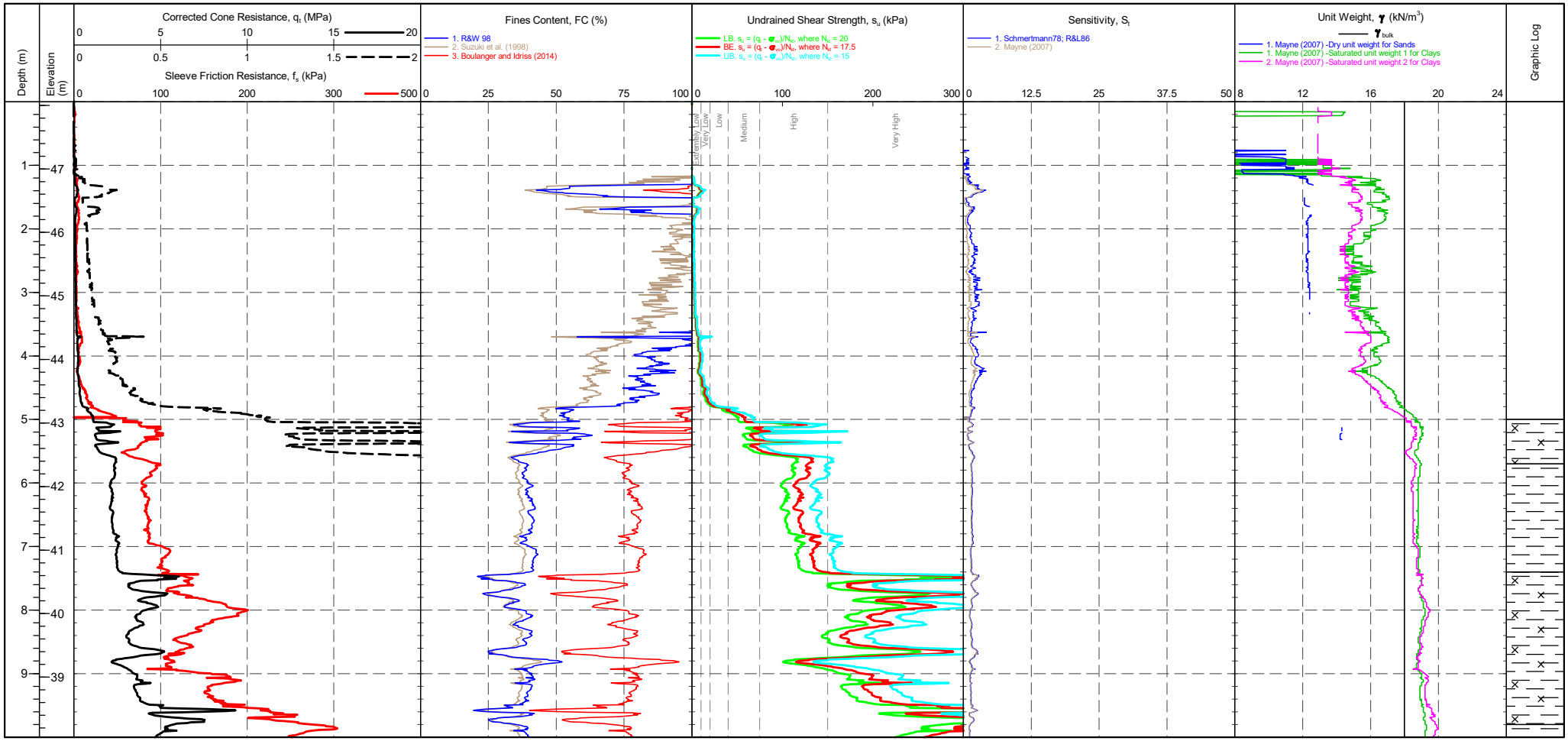
PointID: **ATK_CPT03**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385078.467 m
NORTHING : 398433.788 m
ELEVATION : 48.056 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 26/04/2023
PLOT DATE : 23/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	243 mV	240 mV	-0.035 MPa
Sleeve	244 mV	242 mV	-0.001 kPa
Pore Pressure 2	317 mV	295 mV	-0.006 kPa
X-Y Inclinometer	2358 mV	2371 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

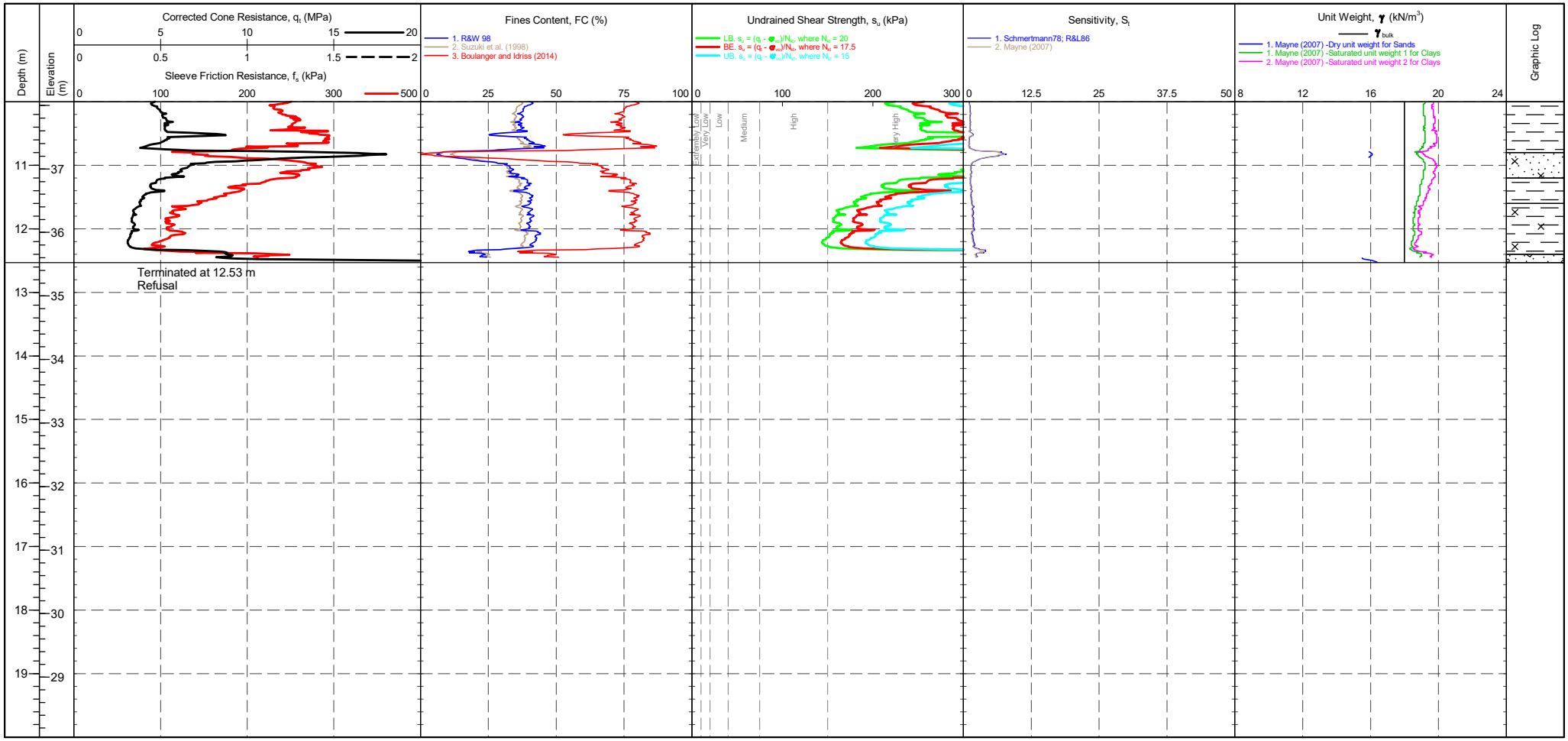
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT03**

CLIENT : Structural Soils	EASTING : 385078.467 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398433.788 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.056 m OD		TEST DATE : 26/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	243 mV	240 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	244 mV	242 mV	-0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	317 mV	295 mV	-0.006 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2358 mV	2371 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

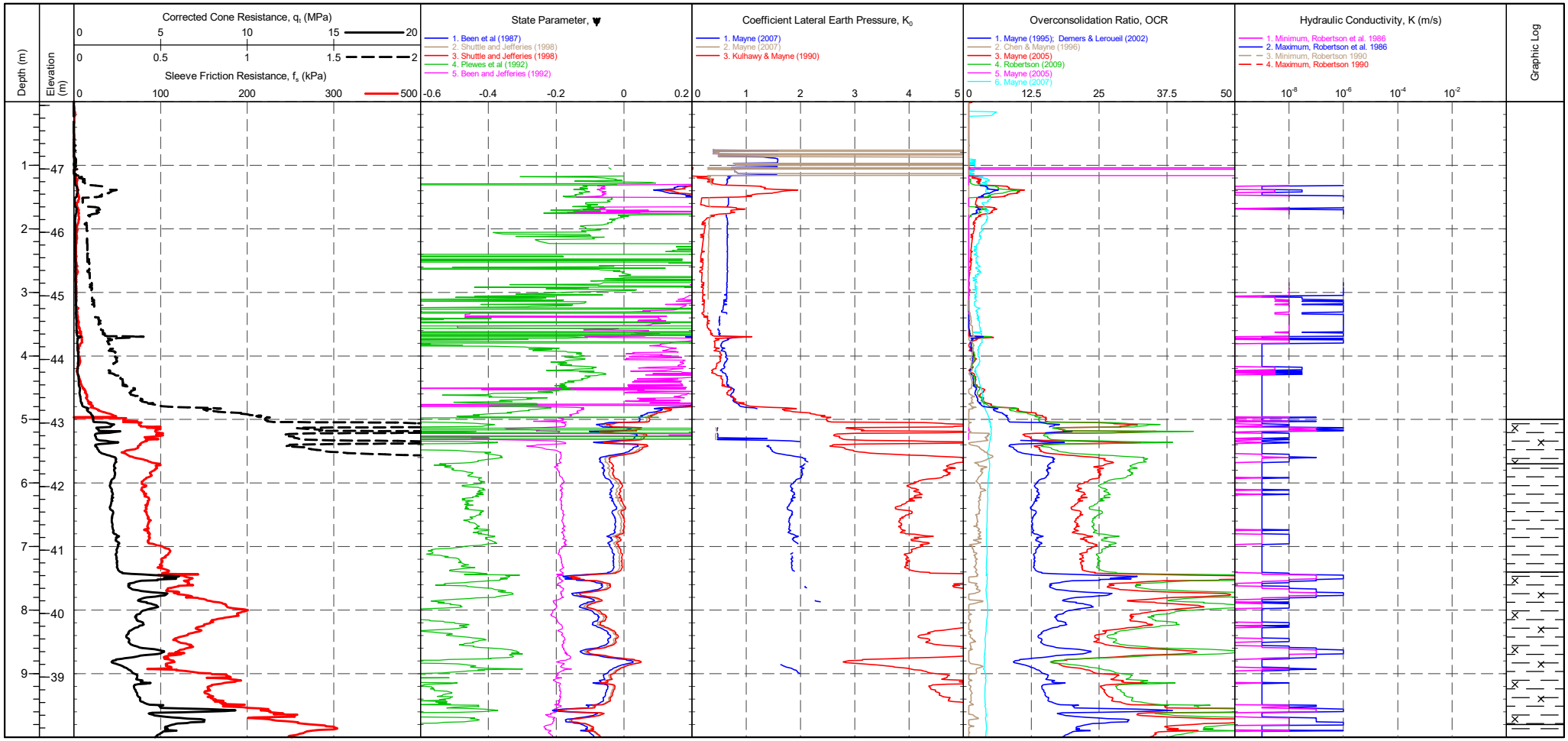
Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT03**

CLIENT : Structural Soils	EASTING : 385078.467 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398433.788 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.056 m OD		TEST DATE : 26/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



				CPTU ZERO VALUES			
CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	Transducer	Pre	Post	Difference
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Tip	243 mV	240 mV	-0.035 MPa
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Sleeve	244 mV	242 mV	-0.001 kPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Pore Pressure 2	317 mV	295 mV	-0.006 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	X-Y Inclinometer	2358 mV	2371 mV	
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild				

Groundwater Level

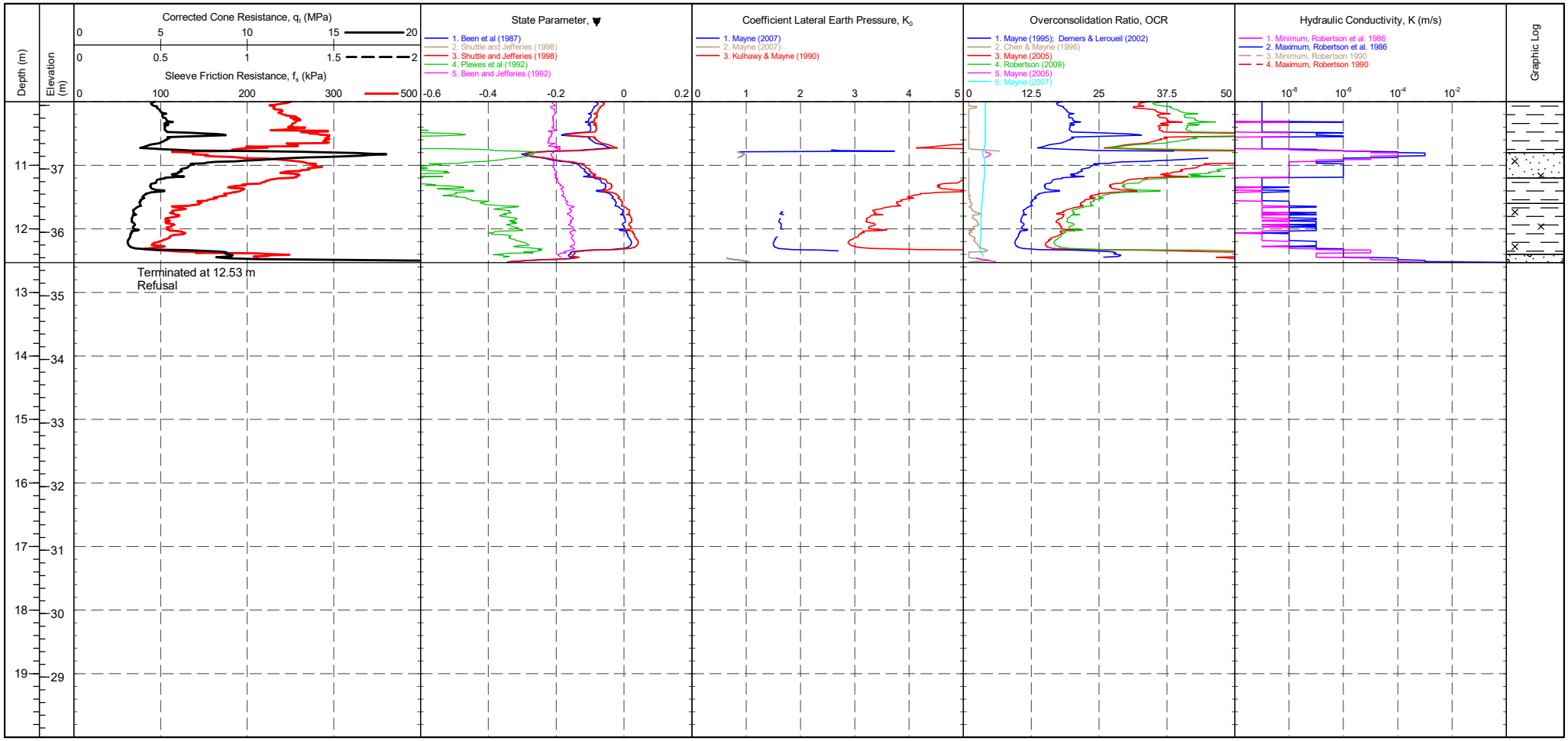
Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT03**

CLIENT : Structural Soils PROJECT : 765544 - Ancoats LOCATION : Manchester PROJECT No. : 1230236	EASTING : 385078.467 m NORTHING : 398433.788 m ELEVATION : 48.056 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 2 OF 2 STATUS : Final TEST DATE : 26/04/2023 PLOT DATE : 23/05/2023 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	243 mV	240 mV
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	244 mV	242 mV
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	317 mV	295 mV
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2358 mV	2371 mV

Difference
-0.035 MPa
-0.001 kPa
-0.006 kPa

Groundwater Level

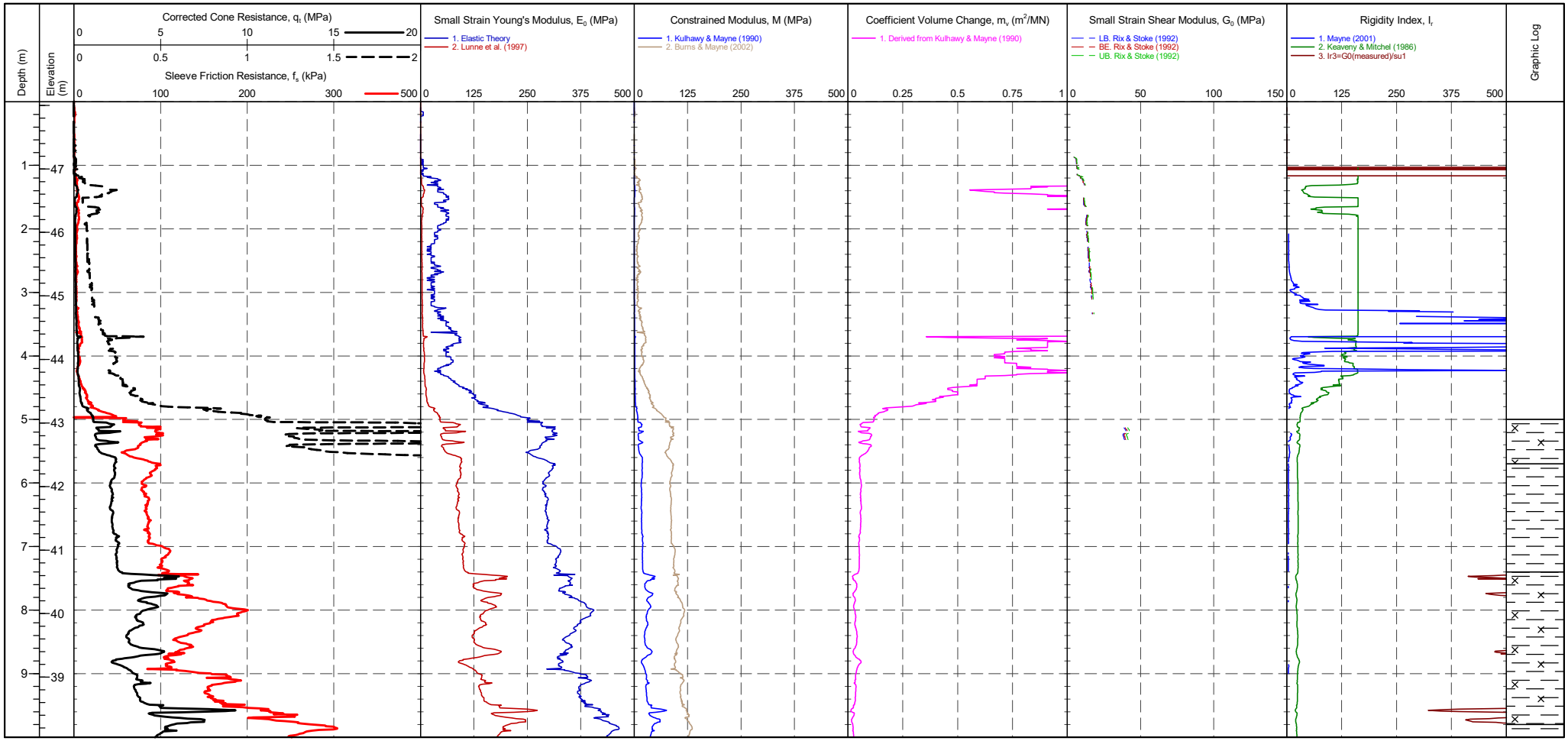
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT03**

CLIENT : Structural Soils	EASTING : 385078.467 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398433.788 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.056 m OD		TEST DATE : 26/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



				CPTU ZERO VALUES			
CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	Transducer	Pre	Post	Difference
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Tip	243 mV	240 mV	-0.035 MPa
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Sleeve	244 mV	242 mV	-0.001 kPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Pore Pressure 2	317 mV	295 mV	-0.006 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	X-Y Inclinometer	2358 mV	2371 mV	
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild				

Groundwater Level

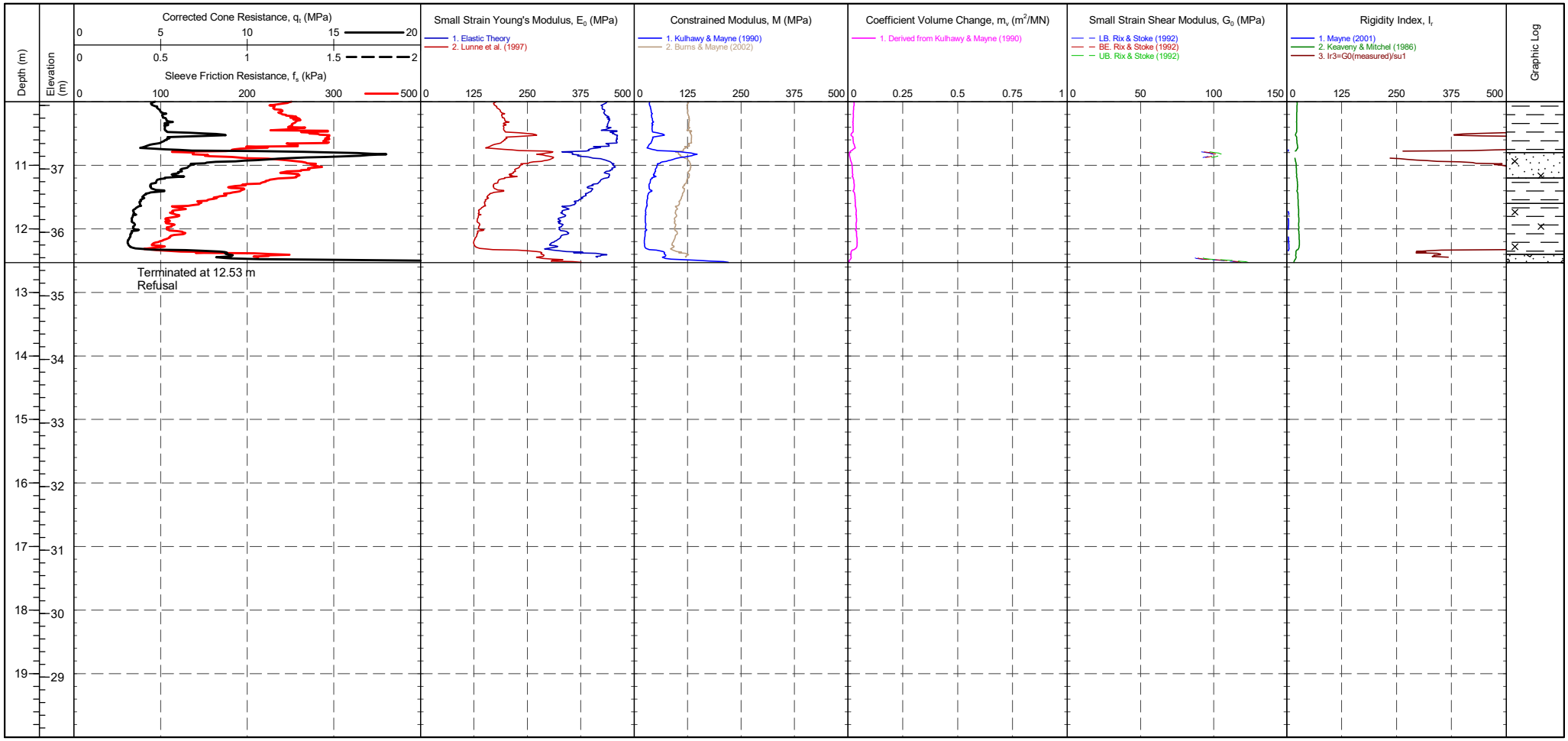
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT03**

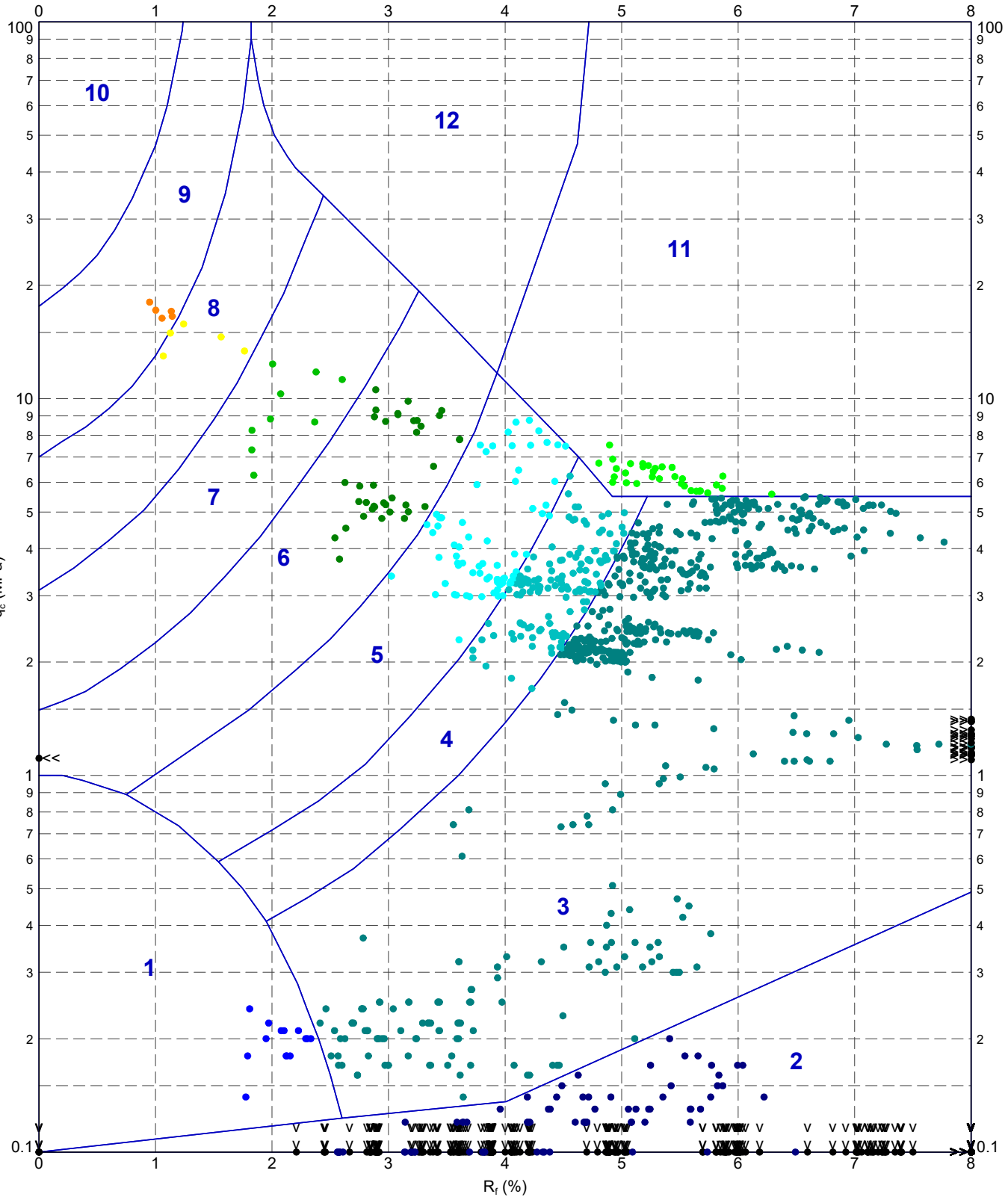
CLIENT : Structural Soils	EASTING : 385078.467 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398433.788 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.056 m OD		TEST DATE : 26/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	243 mV	240 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	244 mV	242 mV	-0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	317 mV	295 mV	-0.006 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2358 mV	2371 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

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Robertson et al. 1986 q_c vs. R_f - ATK_CPT03

DRAWN	DATE 23/05/2023
CHECKED	DATE 23/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - ZOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 23/05/2023 17:15 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

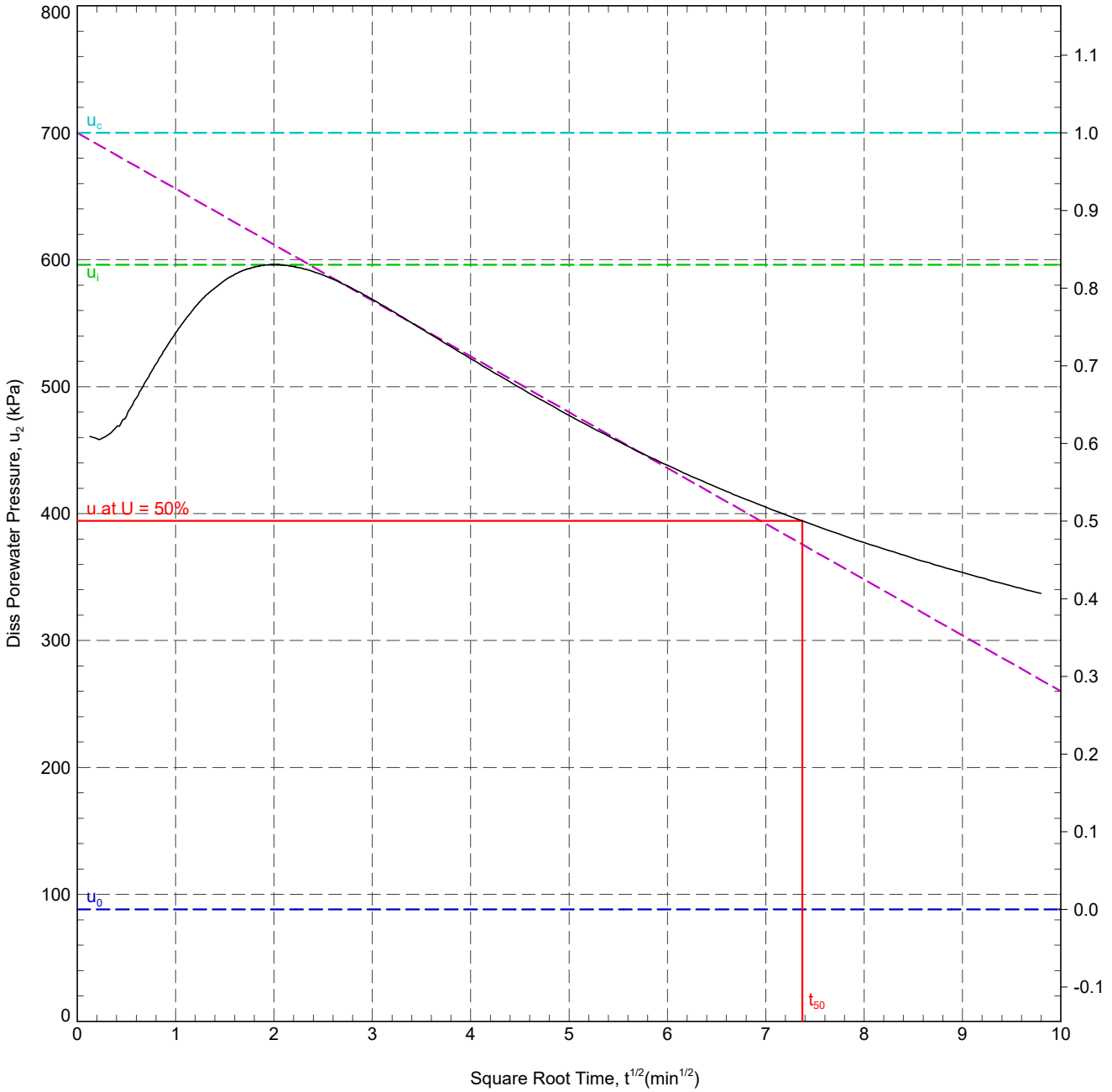
IN SITU SITE INVESTIGATION

Working with: STRUCTURAL SOILS LTD

Test ID

ATK_CPT03 - 9.00 m

CLIENT	: Structural Soils	AREA	: Ancoats, Manchester	SHEET	: 1 OF 1
ENGINEER	: Tim Clifford	EASTING	: 385078.5 m	STATUS	: Final
PROJECT	: 765544 - Ancoats	NORTHING	: 398433.8 m	DATE	: 26/04/23
LOCATION	: Manchester	COORD. SYS.:			
PROJECT No.	: 1230236	ELEVATION	: 48.06 m		



In Situ Pore Pressure, u_0:	88.3 kPa	Rigidity Index, I_r:	3.2
Initial Pore Pressure, u_i:	596.1 kPa	Horizontal Coefficient of Consolidation, c_h:	2.24x10^0 m^2/yr
Final Pore Pressure:	337.2 kPa	Ratio c_h/c_v:	1.25
Back Extrapolated Pore Pressure, u_c:	700 kPa	Vertical Coefficient of Consolidation, c_v:	1.79x10^0 m^2/yr
Degree of Dissipation:	50%		
Dissipation Pressure:	394.2 kPa		
Time for 50% Dissipation, t_{50}:	54.33 min		

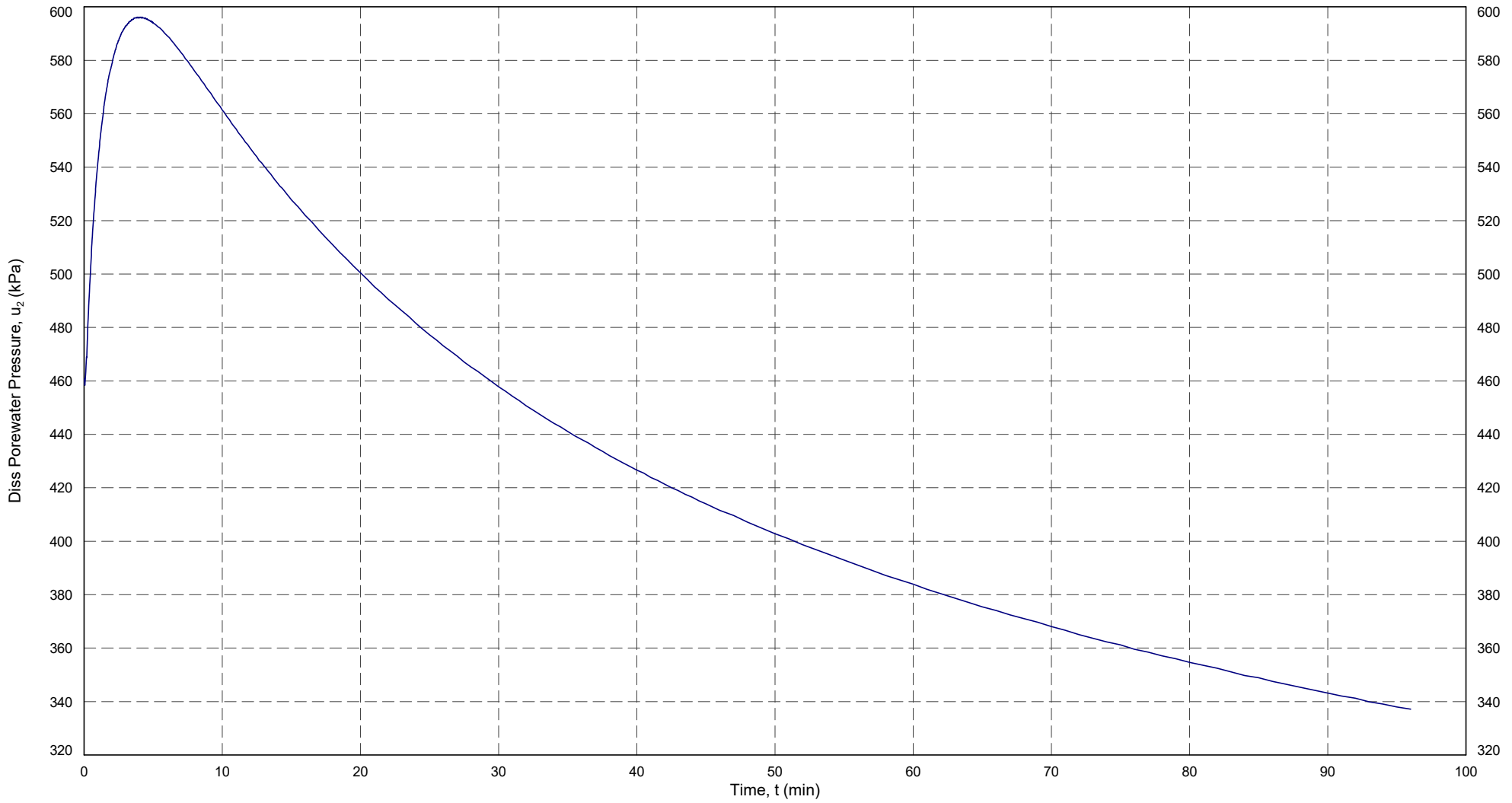
RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	15/05/2023
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	15/05/2023
CONE ID	: S15-CFIP.2177	APPROVED BY	: DW	DATE:	15/05/2023
OPERATOR	: RS				

REMARK

T50 reached. Test OK.

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - ZOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 23/05/2023 17:15 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

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - ZOE.GLB Graph PPDT PORE PRESSURE VS. LIN T A4L 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 23/05/2023 17:15 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



9.00 m

IN SITU SITE INVESTIGATION

TITLE

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Dissipation Test - ATK_CPT03

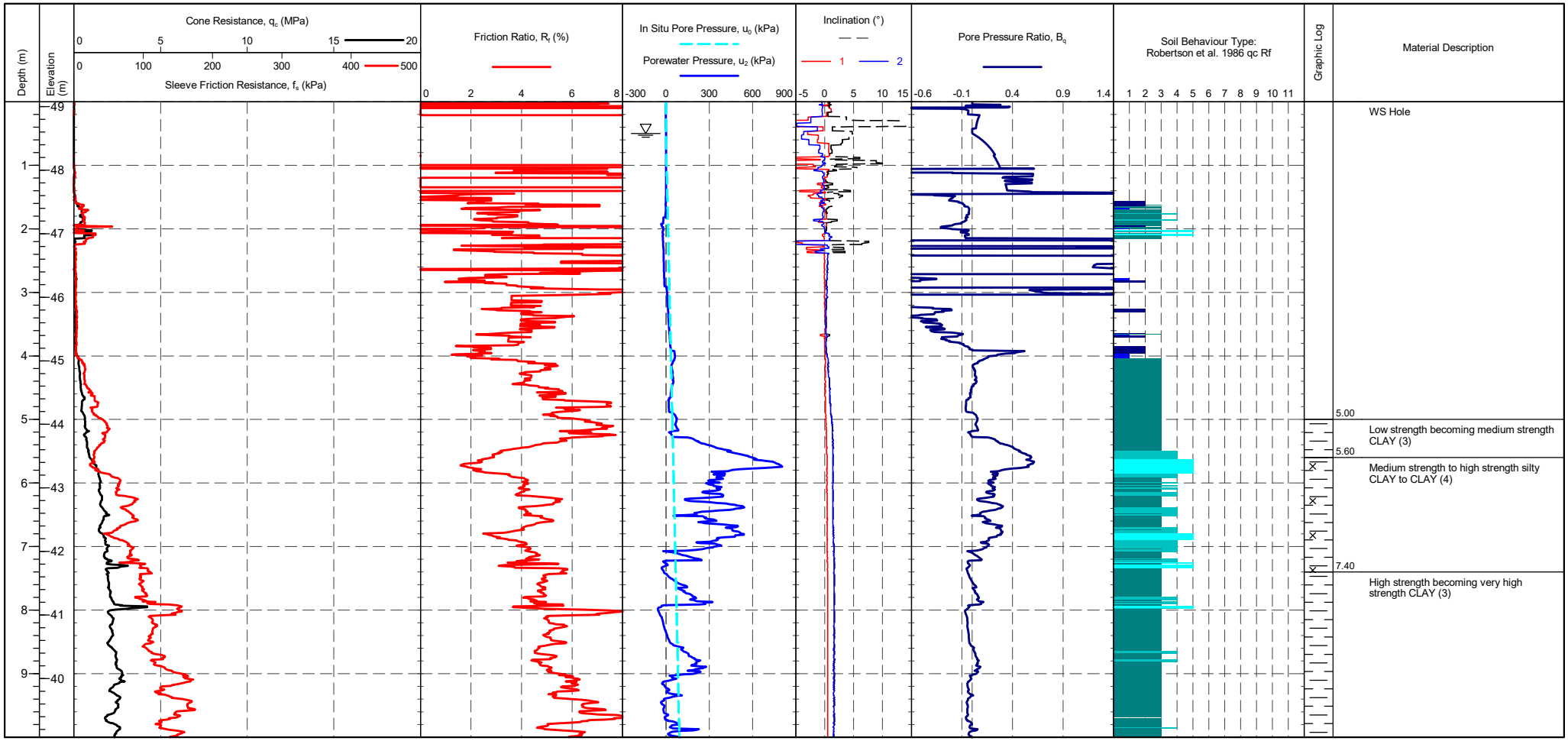
DRAWN	DATE 23/05/2023
CHECKED	DATE 23/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT04**

CLIENT : Structural Soils	EASTING : 385037.786 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398448.213 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.077 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm^2	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	248 mV	245 mV	-0.035 MPa
Sleeve	246 mV	244 mV	-0.001 kPa
Pore Pressure 2	378 mV	367 mV	-0.003 kPa
X-Y Inclinometer	2506 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 01

Working with: STRUCTURAL SOILS LTD

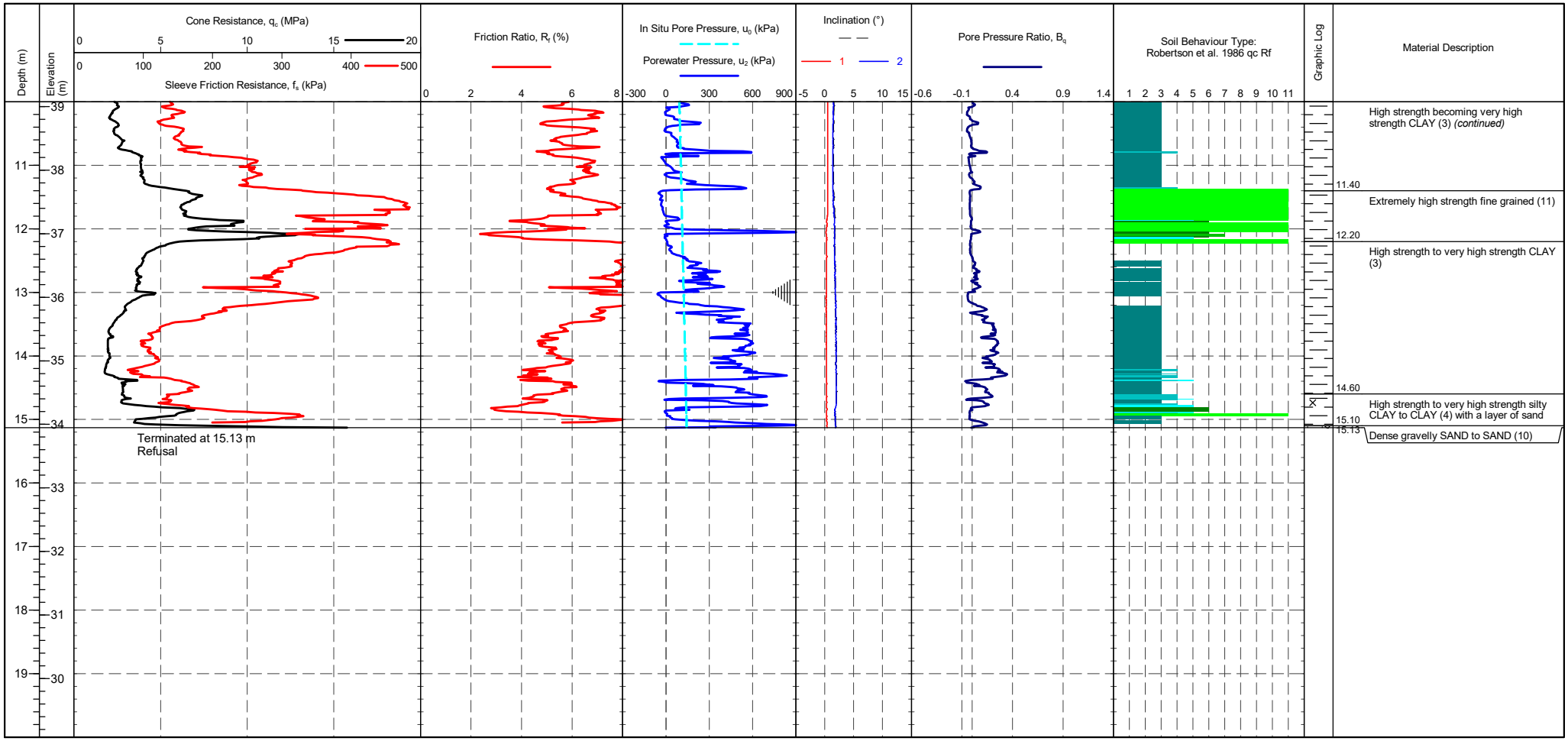
PointID: **ATK_CPT04**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385037.786 m
NORTHING : 398448.213 m
ELEVATION : 49.077 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 02/05/2023
PLOT DATE : 23/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	248 mV	245 mV	-0.035 MPa
Sleeve	246 mV	244 mV	-0.001 kPa
Pore Pressure 2	378 mV	367 mV	-0.003 kPa
X-Y Inclinometer	2506 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: STRUCTURAL SOILS LTD

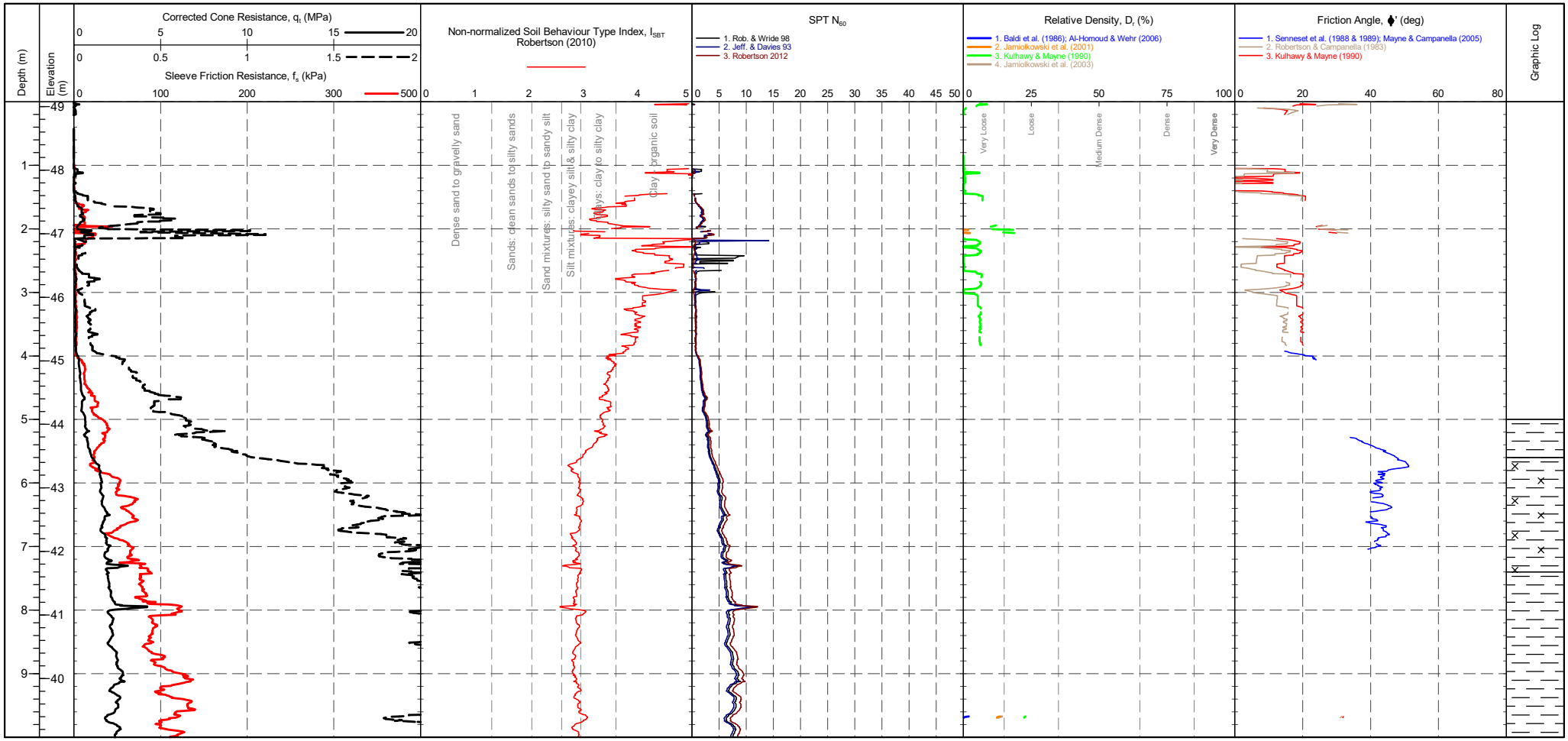
PointID: **ATK_CPT04**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385037.786 m
NORTHING : 398448.213 m
ELEVATION : 49.077 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 02/05/2023
PLOT DATE : 23/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	248 mV	245 mV	-0.035 MPa
Sleeve	246 mV	244 mV	-0.001 kPa
Pore Pressure 2	378 mV	367 mV	-0.003 kPa
X-Y Inclinometer	2506 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 02

Working with: STRUCTURAL SOILS LTD

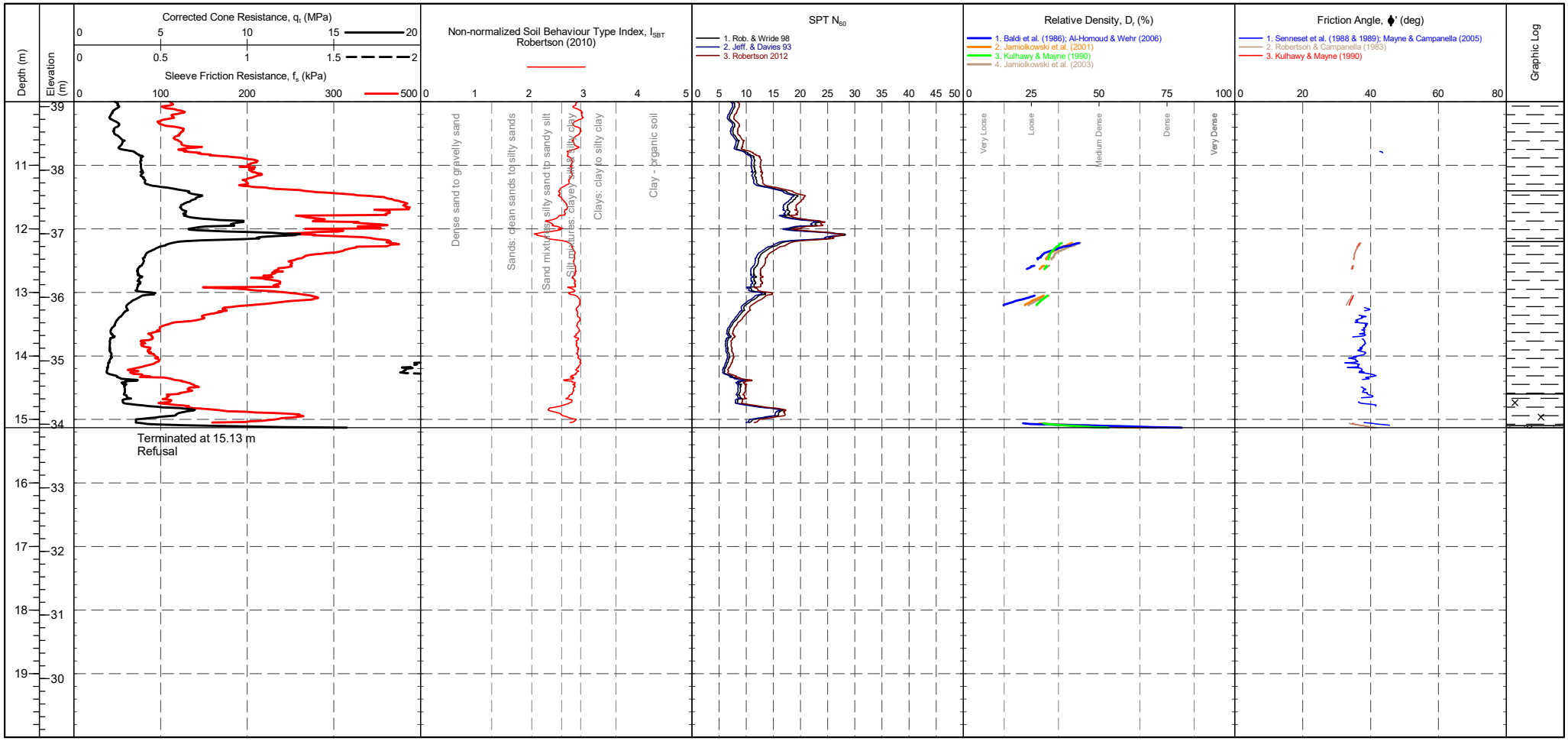
PointID: **ATK_CPT04**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385037.786 m
NORTHING : 398448.213 m
ELEVATION : 49.077 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 02/05/2023
PLOT DATE : 23/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	248 mV	245 mV	-0.035 MPa
Sleeve	246 mV	244 mV	-0.001 kPa
Pore Pressure 2	378 mV	367 mV	-0.003 kPa
X-Y Inclinometer	2506 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

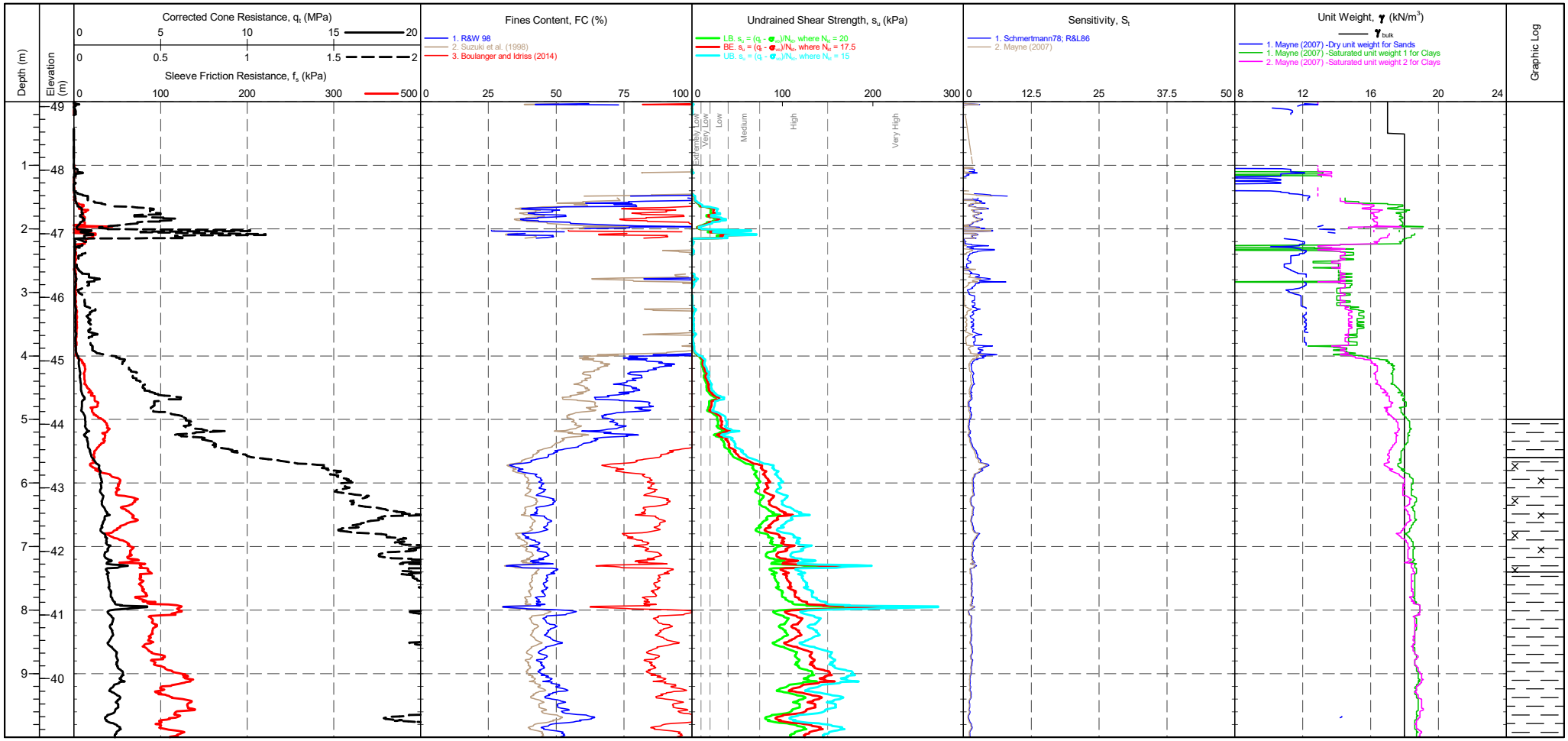
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT04**

CLIENT : Structural Soils	EASTING : 385037.786 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398448.213 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.077 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	248 mV	245 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	246 mV	244 mV	-0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	378 mV	367 mV	-0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2506 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

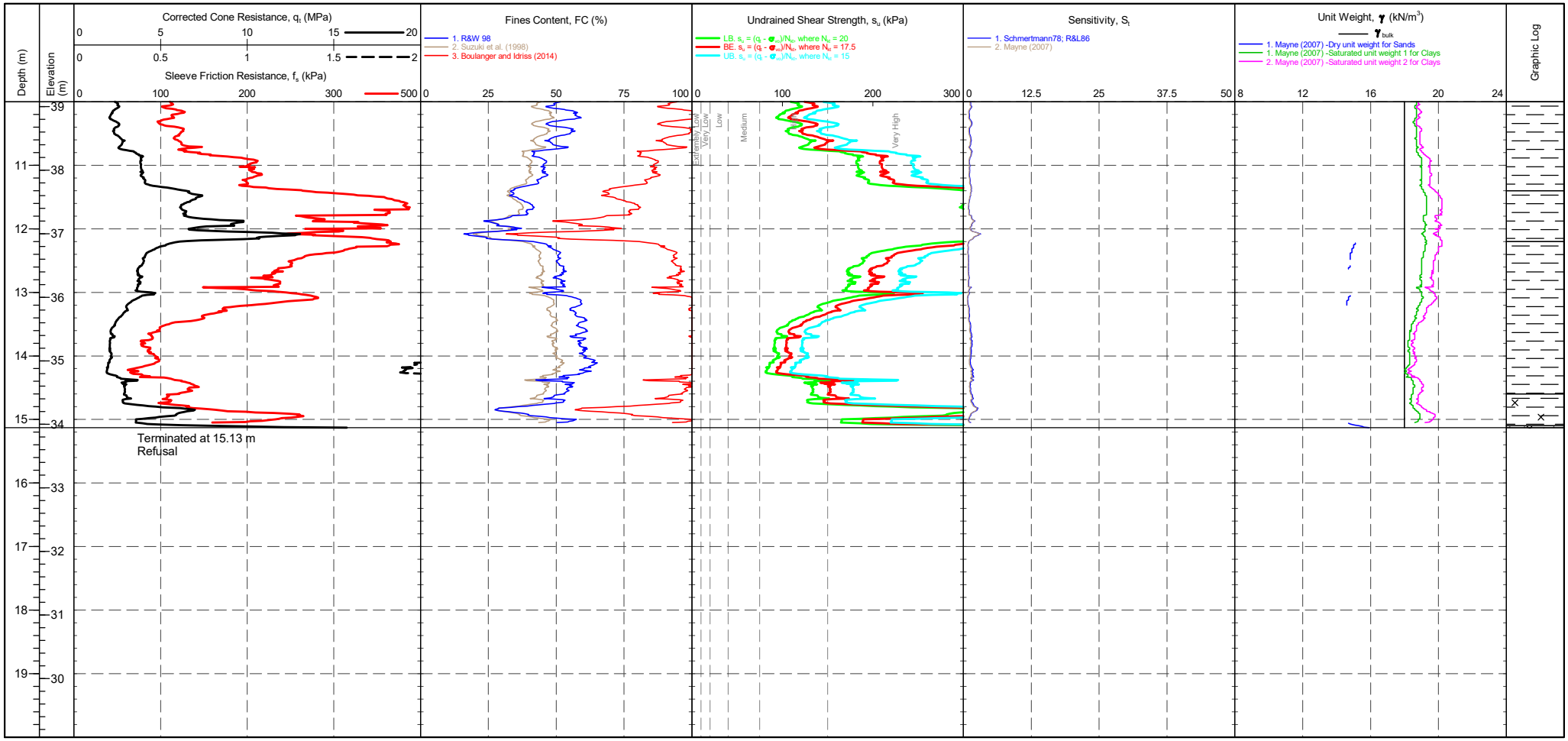
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT04**

CLIENT : Structural Soils	EASTING : 385037.786 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398448.213 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.077 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	248 mV	245 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	246 mV	244 mV	-0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	378 mV	367 mV	-0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2506 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

Working with: STRUCTURAL SOILS LTD

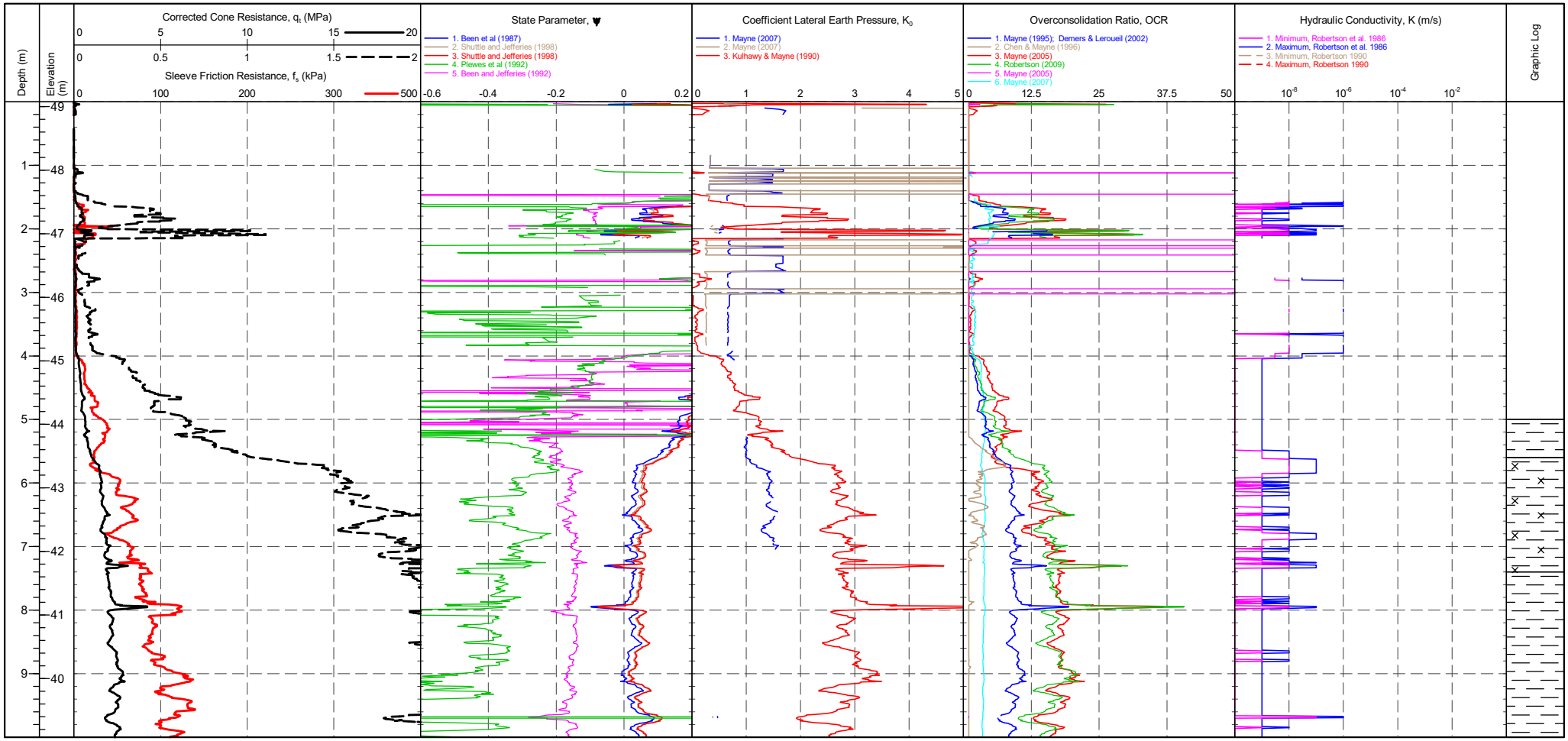
PointID: **ATK_CPT04**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385037.786 m
NORTHING : 398448.213 m
ELEVATION : 49.077 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 02/05/2023
PLOT DATE : 23/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	248 mV	245 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	246 mV	244 mV	-0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	378 mV	367 mV	-0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2506 mV	2480 mV	

Groundwater Level

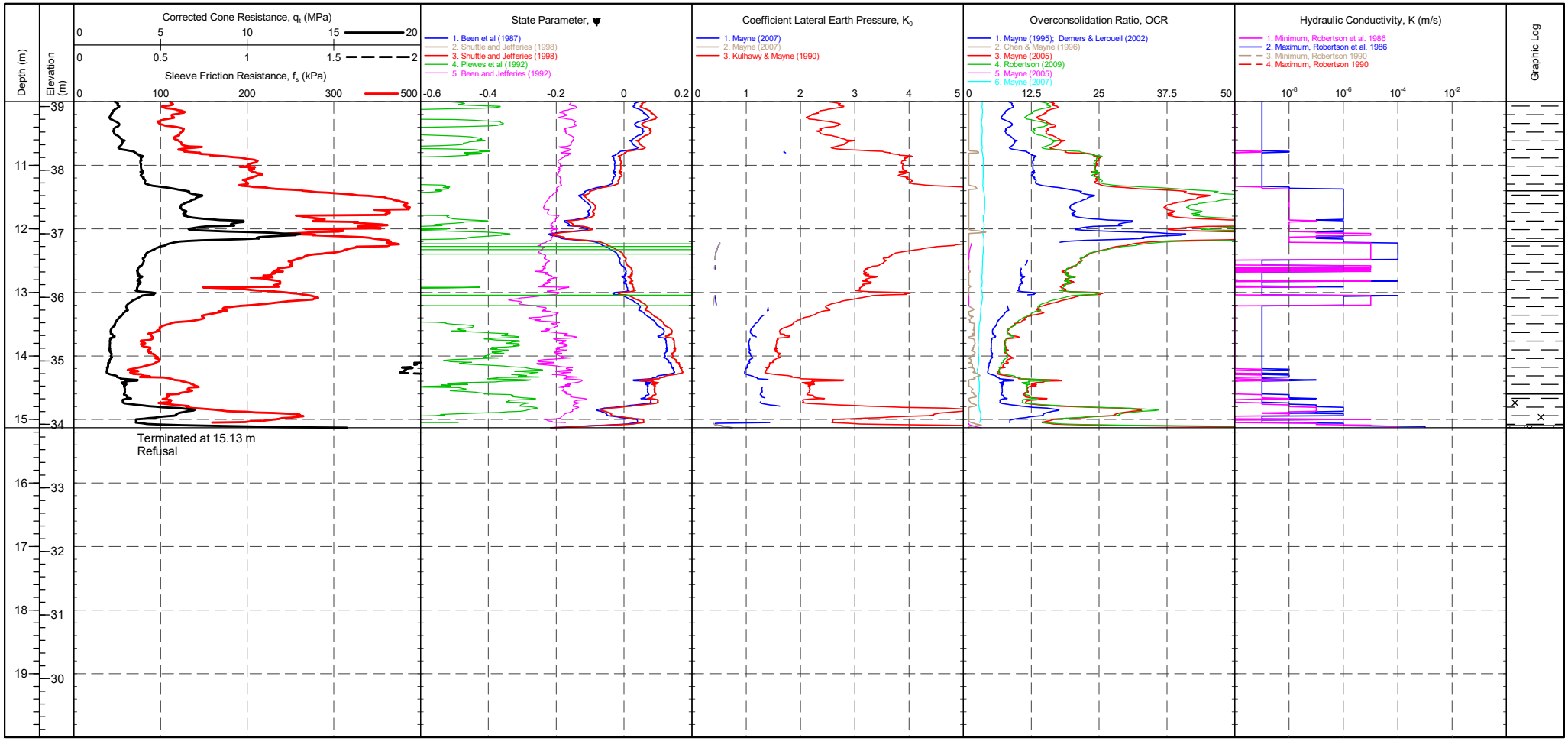
Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT04**

CLIENT : Structural Soils	EASTING : 385037.786 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398448.213 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.077 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	248 mV	245 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	246 mV	244 mV	-0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	378 mV	367 mV	-0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2506 mV	2480 mV	

Groundwater Level

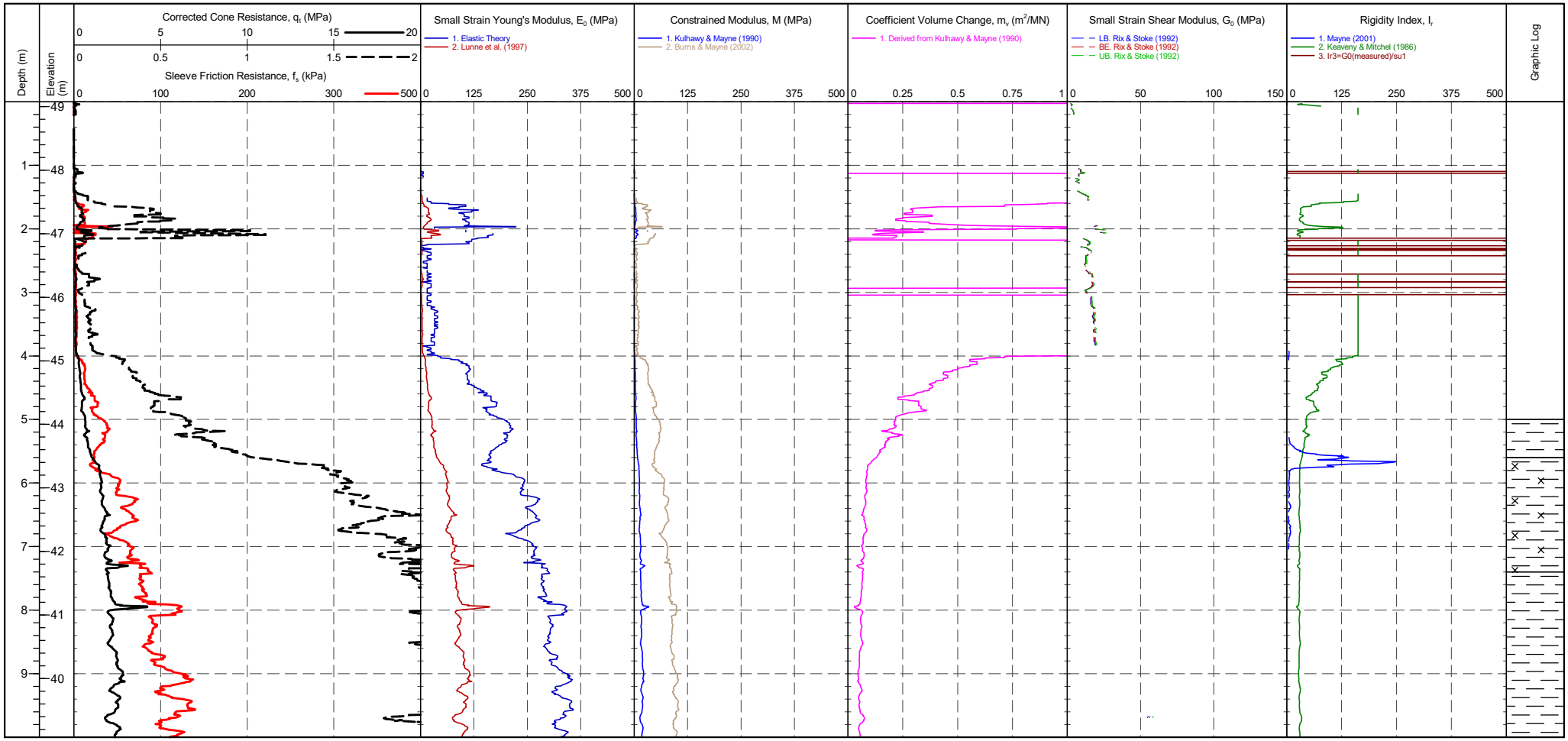
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT04**

CLIENT : Structural Soils	EASTING : 385037.786 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398448.213 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.077 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	248 mV	245 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	246 mV	244 mV	-0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	378 mV	367 mV	-0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2506 mV	2480 mV	

Groundwater Level

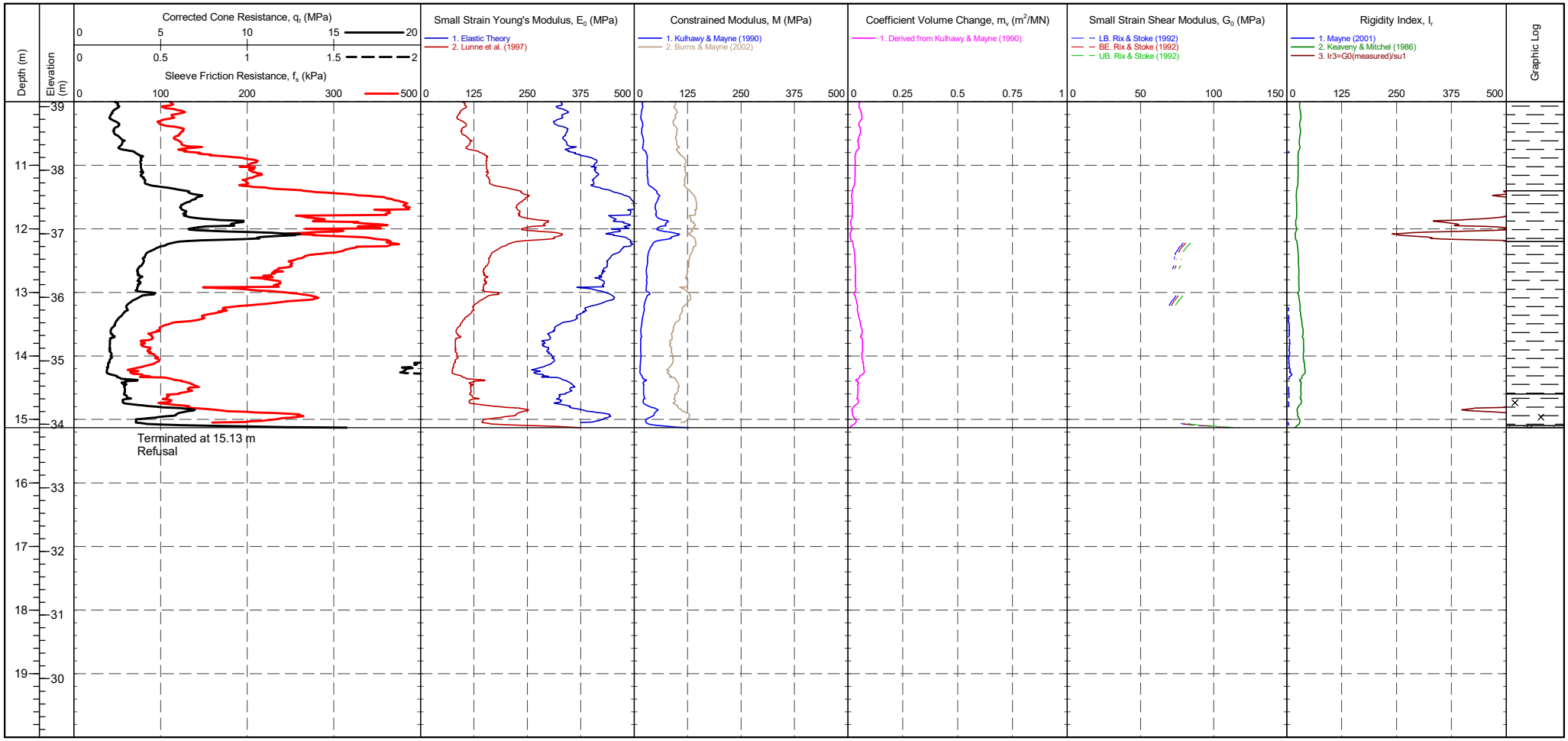
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT04**

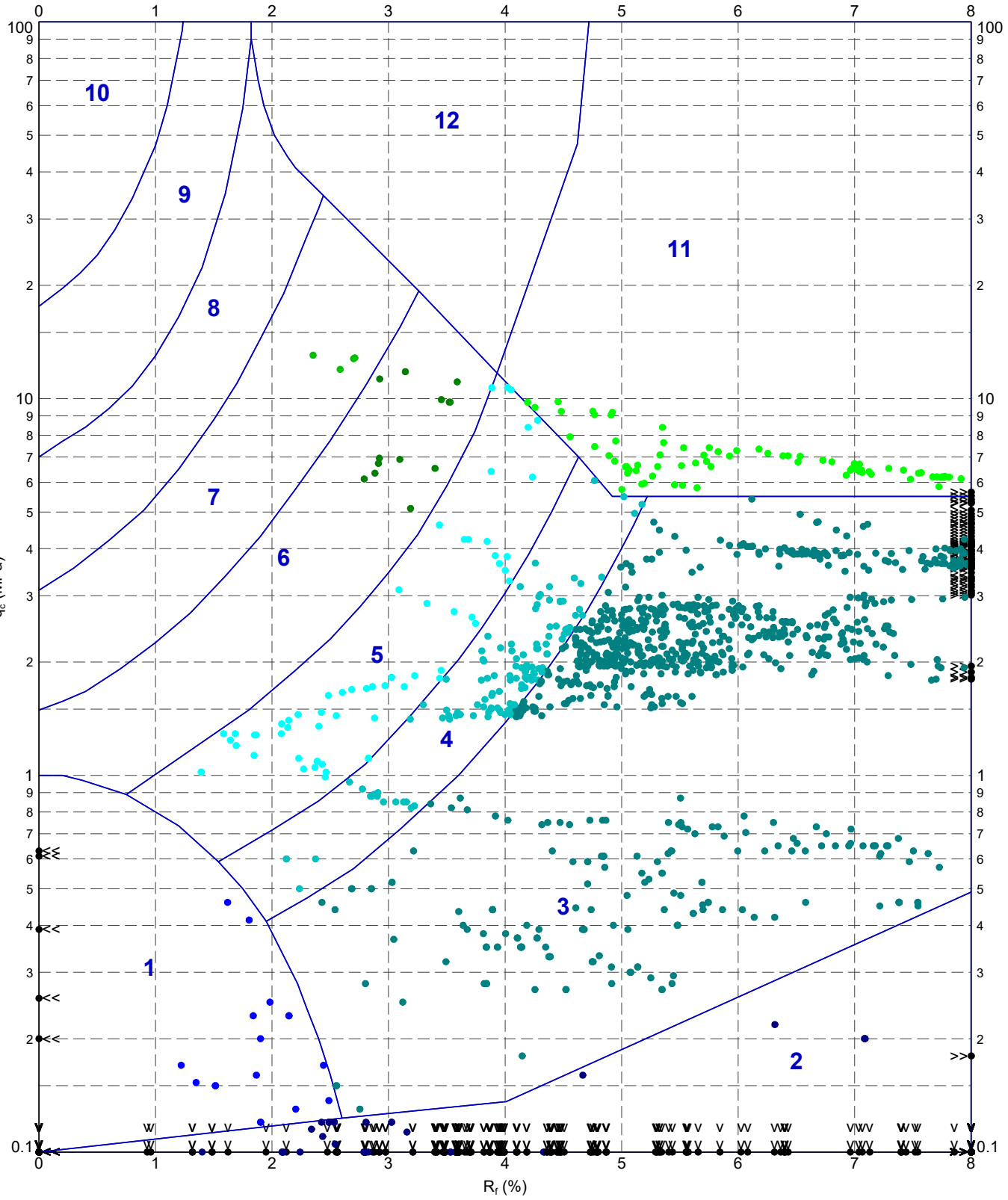
CLIENT : Structural Soils	EASTING : 385037.786 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398448.213 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.077 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 23/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



				CPTU ZERO VALUES			
CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	Transducer	Pre	Post	Difference
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Tip	248 mV	245 mV	-0.035 MPa
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Sleeve	246 mV	244 mV	-0.001 kPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Pore Pressure 2	378 mV	367 mV	-0.003 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	X-Y Inclinometer	2506 mV	2480 mV	
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild				

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

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Robertson et al. 1986 q_c vs. R_f - ATK_CPT04

DRAWN	DATE 23/05/2023	
CHECKED	DATE 23/05/2023	
SCALE Not To Scale		A4
PROJECT No 1230236	FIGURE No	

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - ZOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 23/05/2023 17:17 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

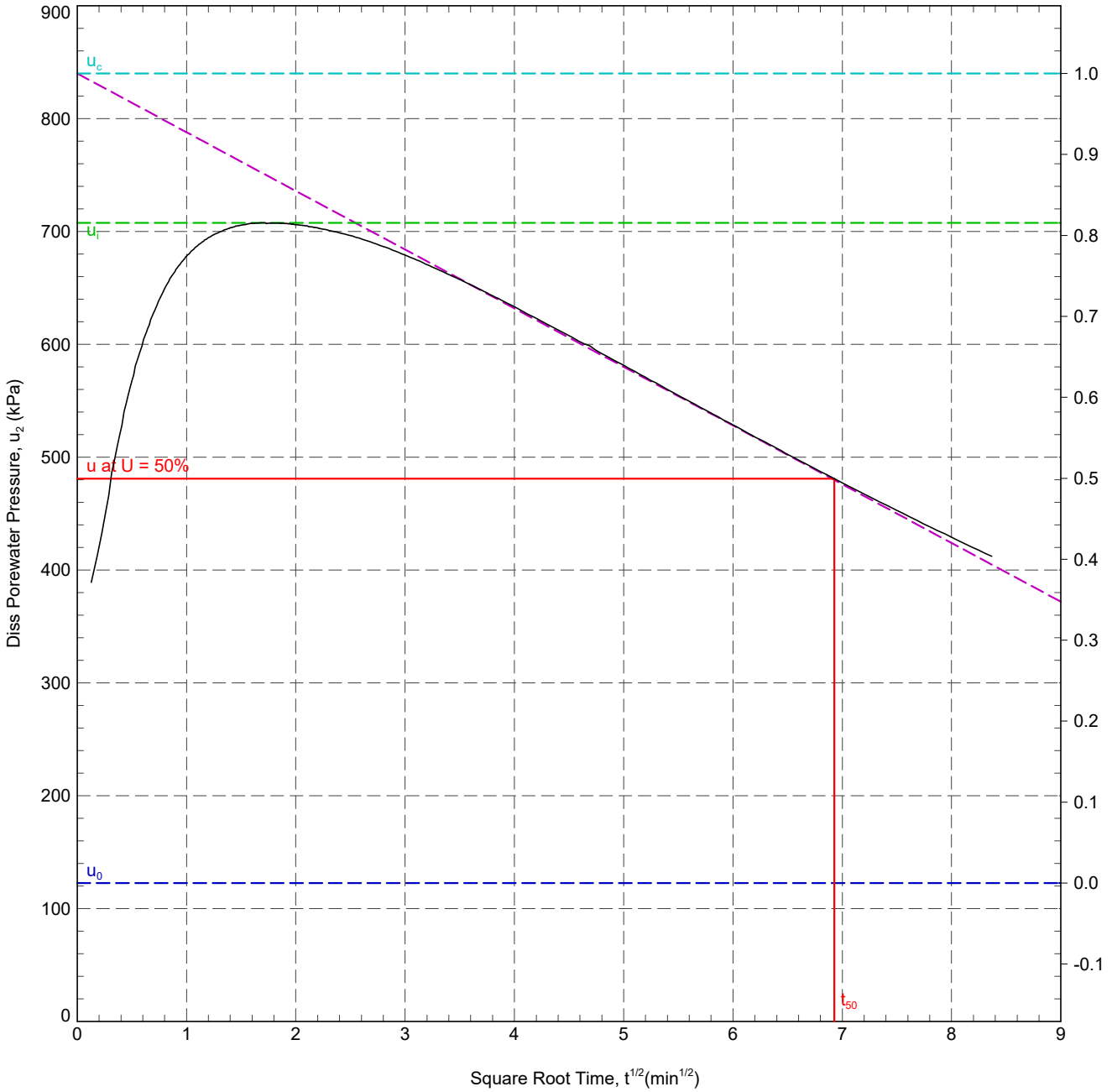
IN SITU SITE INVESTIGATION

Working with: STRUCTURAL SOILS LTD

Test ID

ATK_CPT04 - 13.00 m

CLIENT	: Structural Soils	AREA	: Ancoats Manchester	SHEET	: 1 OF 1
ENGINEER	: Tim Clifford	EASTING	: 385037.8 m	STATUS	: Final
PROJECT	: 765544 - Ancoats	NORTHING	: 398448.2 m	DATE	: 02/05/23
LOCATION	: Manchester	COORD. SYS.:			
PROJECT No.	: 1230236	ELEVATION	: 49.08 m		



In Situ Pore Pressure, u_0:	122.6 kPa	Rigidity Index, I_r:	25.6
Initial Pore Pressure, u_i:	707.7 kPa	Horizontal Coefficient of Consolidation, c_h:	7.18×10^0 m²/yr
Final Pore Pressure:	412.1 kPa	Ratio c_h/c_v:	1.25
Back Extrapolated Pore Pressure, u_c:	840 kPa	Vertical Coefficient of Consolidation, c_v:	5.74×10^0 m²/yr
Degree of Dissipation:	50%		
Dissipation Pressure:	481.0 kPa		
Time for 50% Dissipation, t_{50}:	48.00 min		

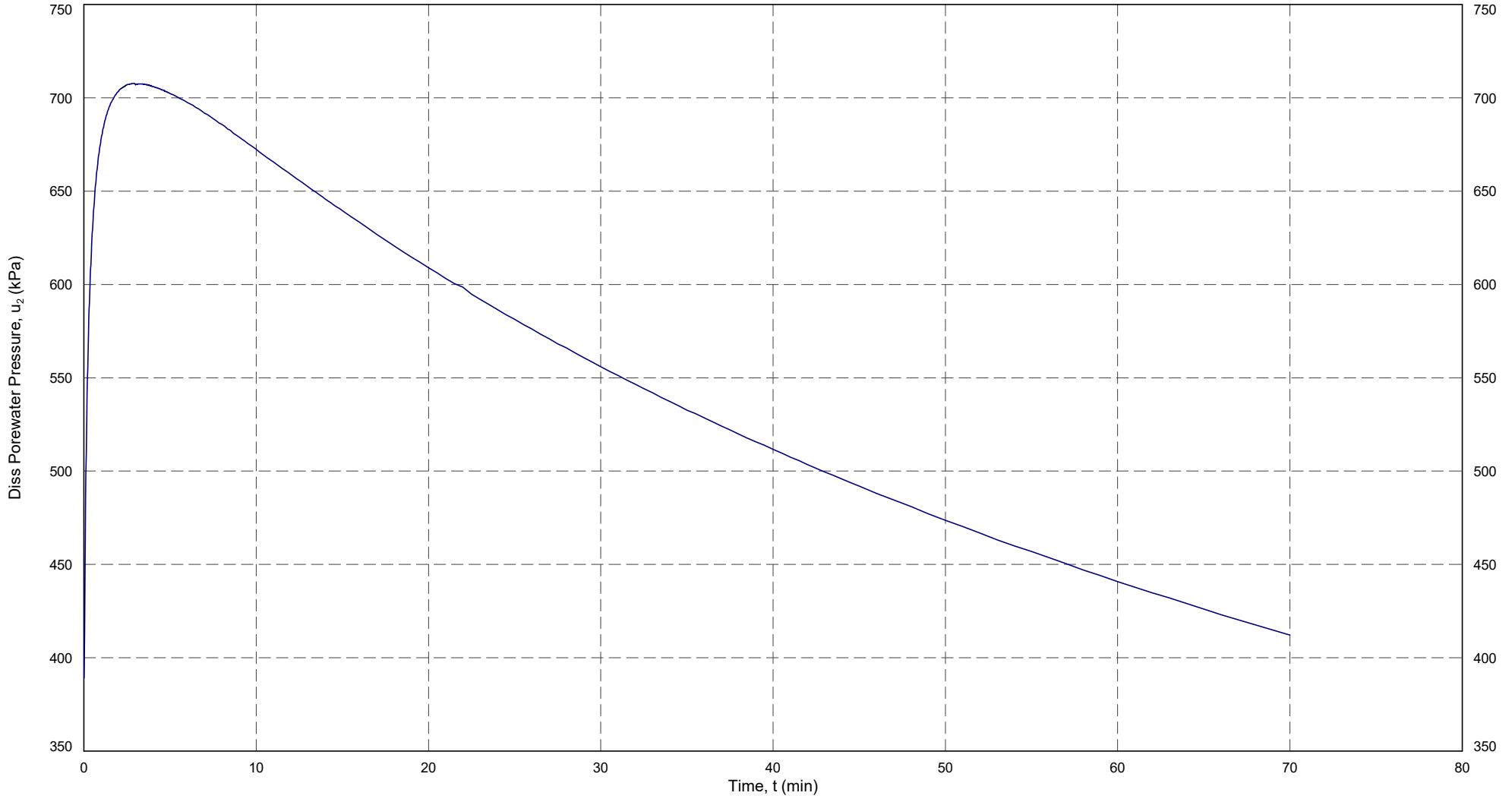
RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	15/05/2023
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	15/05/2023
CONE ID	: S15-CFIP.2177	APPROVED BY	: DW	DATE:	15/05/2023
OPERATOR	: RS				

REMARK

T50 reached. Test OK.

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - ZOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 23/05/2023 17:17 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

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - ZOE.GLB Graph PPDT PORE PRESSURE VS. LIN T A4L 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 23/05/2023 17:17 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



IN SITU SITE INVESTIGATION

TITLE

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Dissipation Test - ATK_CPT04

DRAWN	DATE 23/05/2023
CHECKED	DATE 23/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

CPT LOG 02

Working with: STRUCTURAL SOILS LTD

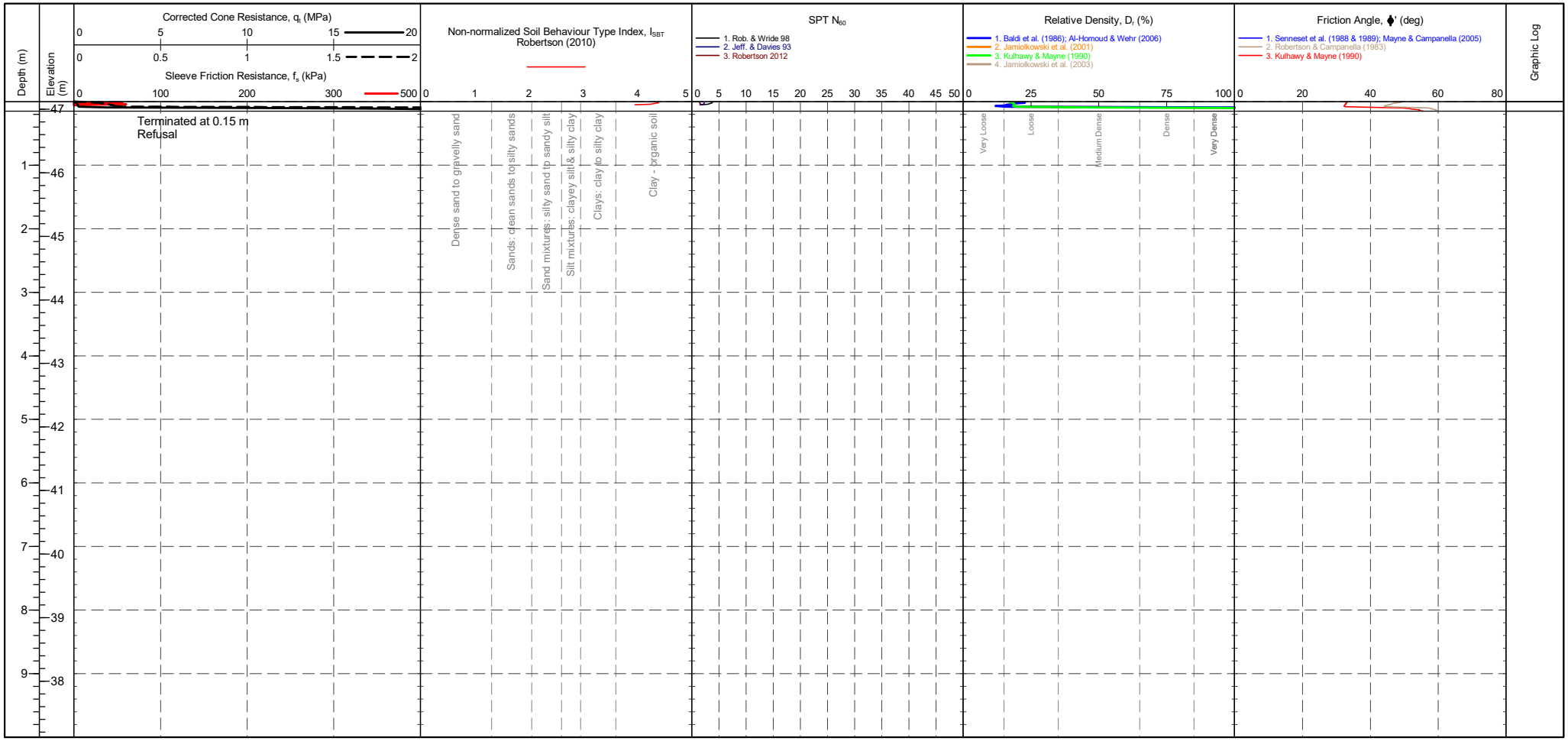
PointID: **ATK_CPT05**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385097.002 m
NORTHING : 398400.106 m
ELEVATION : 47.119 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 02/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	250 mV	252 mV	0.023 MPa
Sleeve	247 mV	249 mV	0.001 kPa
Pore Pressure 2	388 mV	387 mV	0 kPa
X-Y Inclinometer	2485 mV	2491 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: STRUCTURAL SOILS LTD

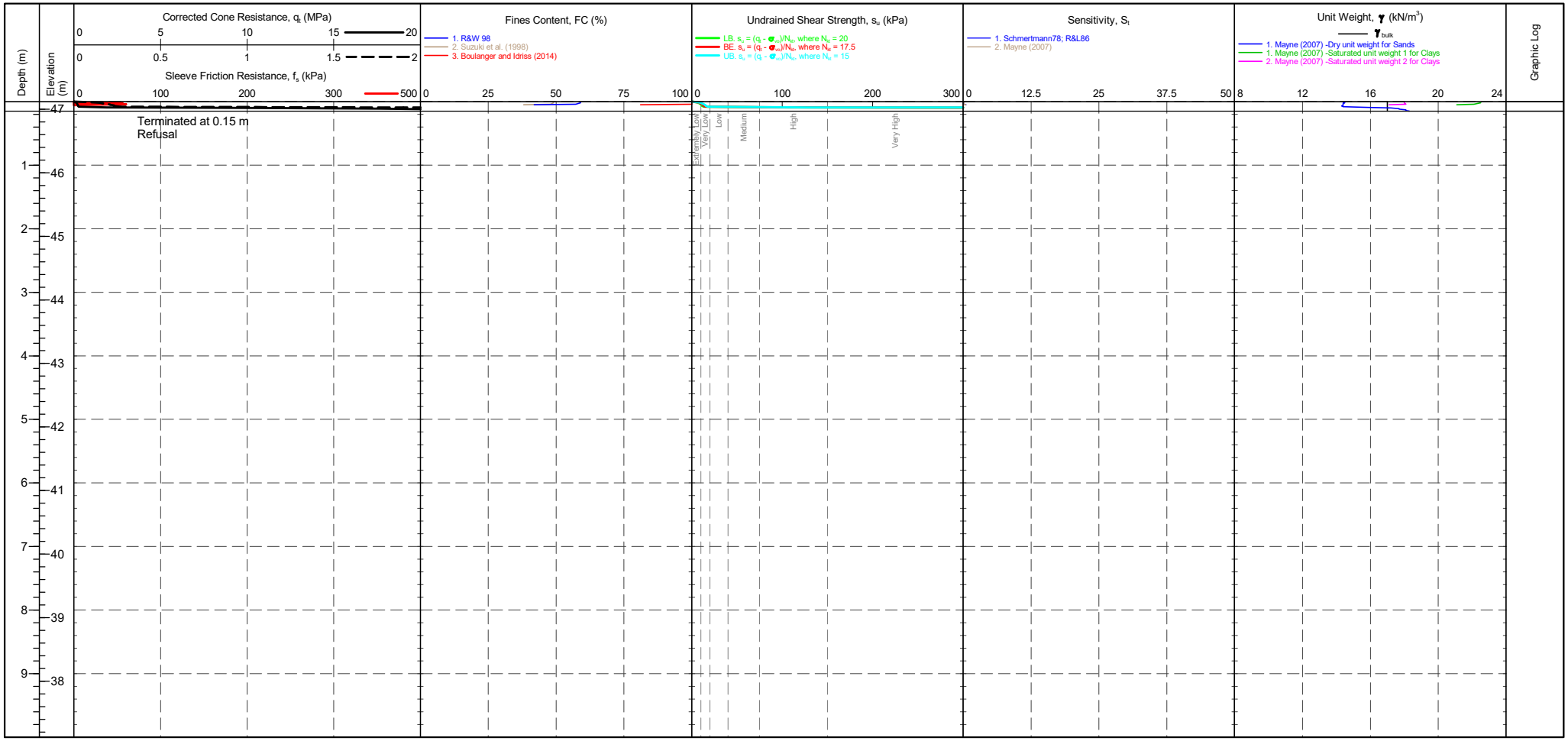
PointID: **ATK_CPT05**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385097.002 m
NORTHING : 398400.106 m
ELEVATION : 47.119 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 02/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	250 mV	252 mV	0.023 MPa
Sleeve	247 mV	249 mV	0.001 kPa
Pore Pressure 2	388 mV	387 mV	0 kPa
X-Y Inclinometer	2485 mV	2491 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: STRUCTURAL SOILS LTD

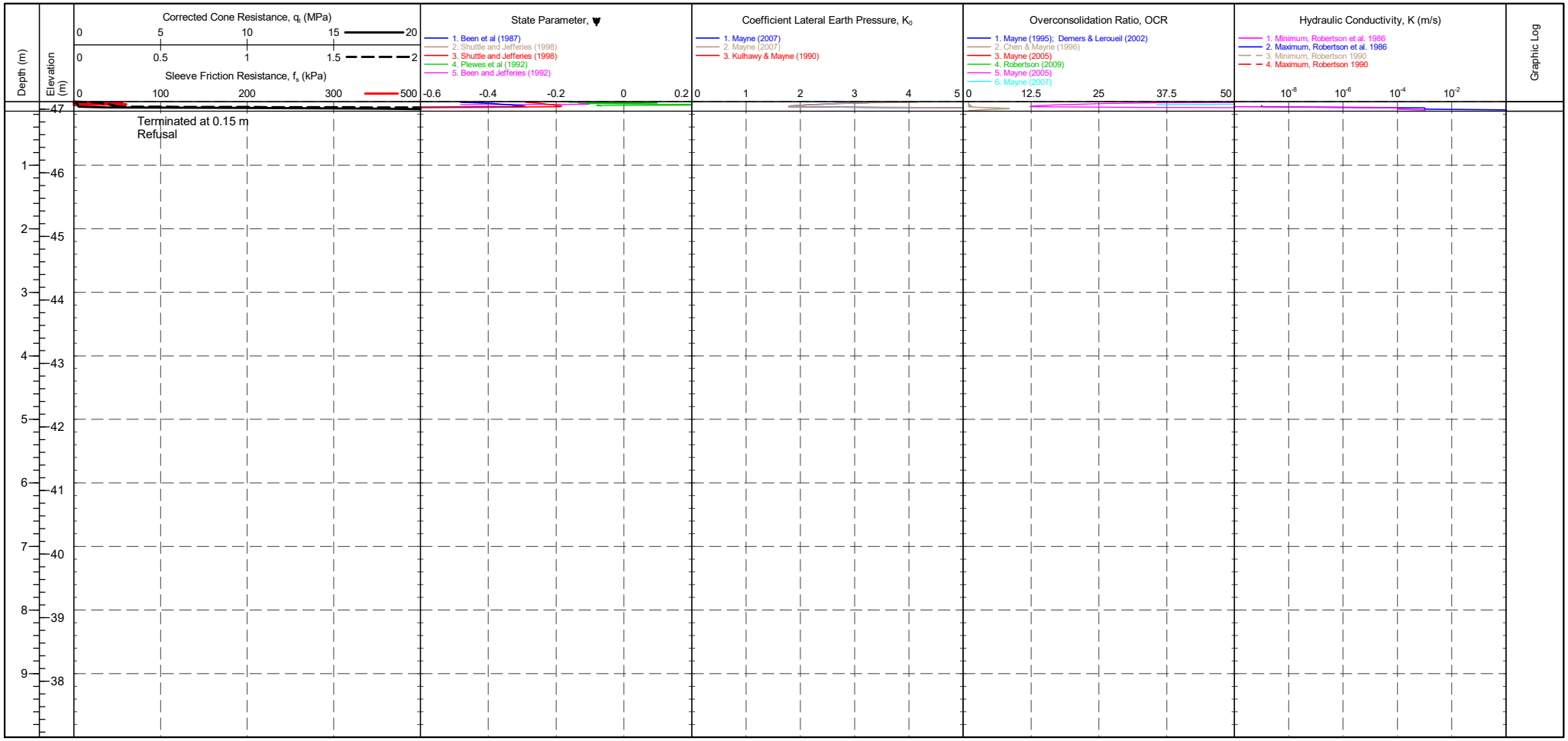
PointID: **ATK_CPT05**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385097.002 m
NORTHING : 398400.106 m
ELEVATION : 47.119 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 02/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	250 mV	252 mV	0.023 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	247 mV	249 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	388 mV	387 mV	0 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2485 mV	2491 mV	

Groundwater Level

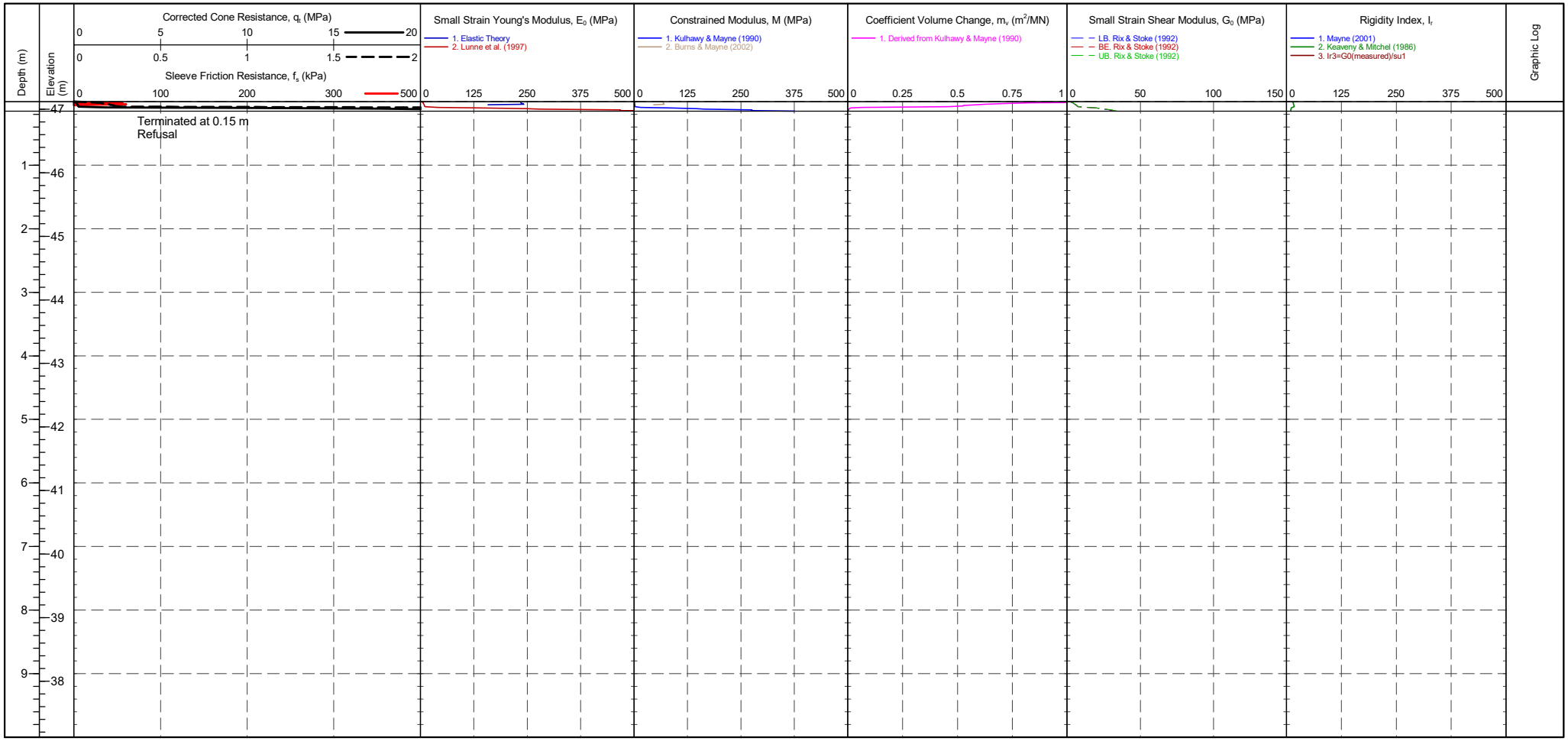
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT05**

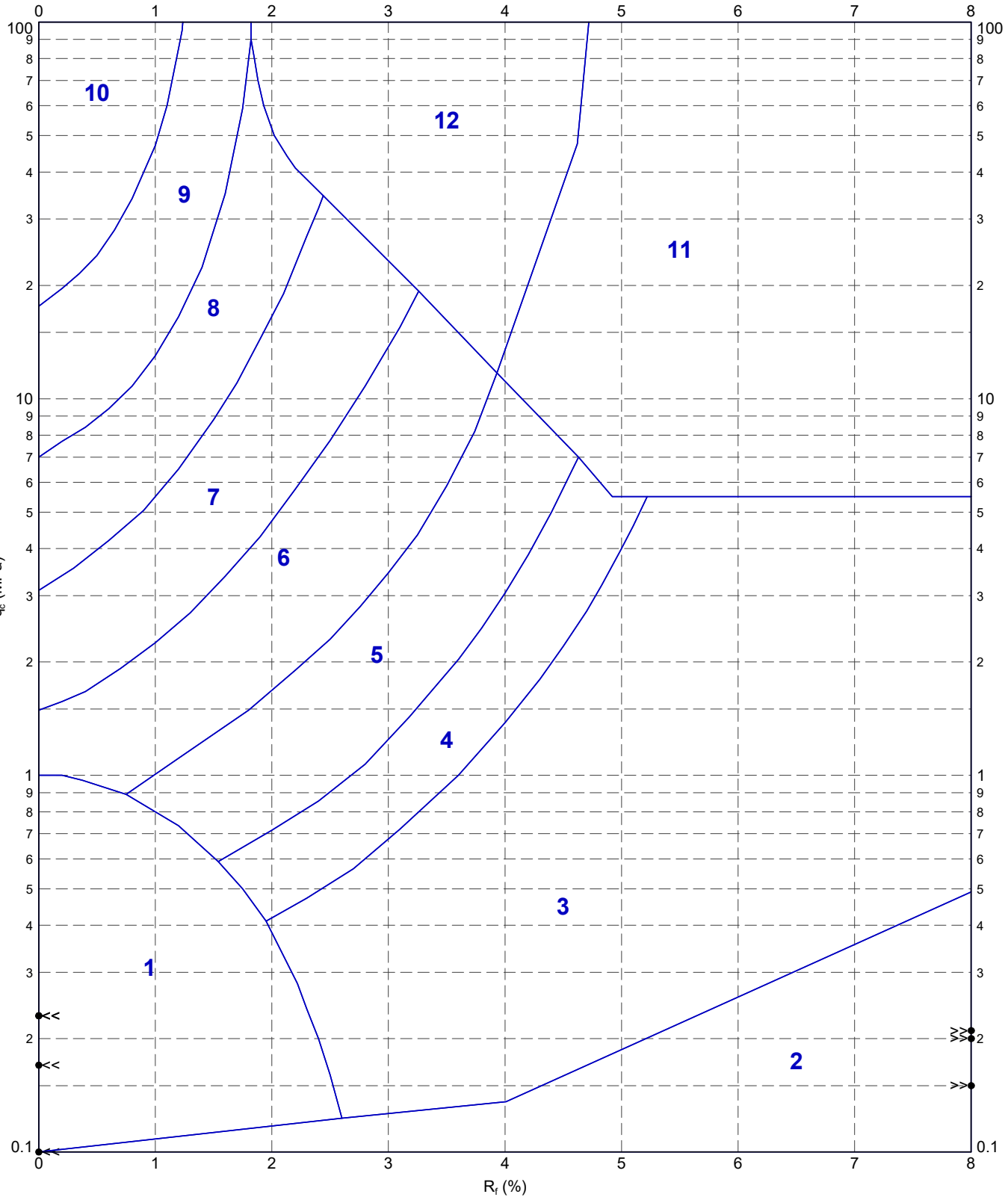
CLIENT : Structural Soils PROJECT : 765544 - Ancoats LOCATION : Manchester PROJECT No. : 1230236	EASTING : 385097.002 m NORTHING : 398400.106 m ELEVATION : 47.119 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test refused on total pressure.	SHEET : 1 OF 1 STATUS : Final TEST DATE : 02/05/2023 PLOT DATE : 24/05/2023 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	250 mV	252 mV	0.023 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	247 mV	249 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	388 mV	387 mV	0 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2485 mV	2491 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

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Robertson et al. 1986 q_c vs. R_f - ATK_CPT05

DRAWN	DATE 24/05/2023	
CHECKED	DATE 24/05/2023	
SCALE Not To Scale		A4
PROJECT No 1230236	FIGURE No	

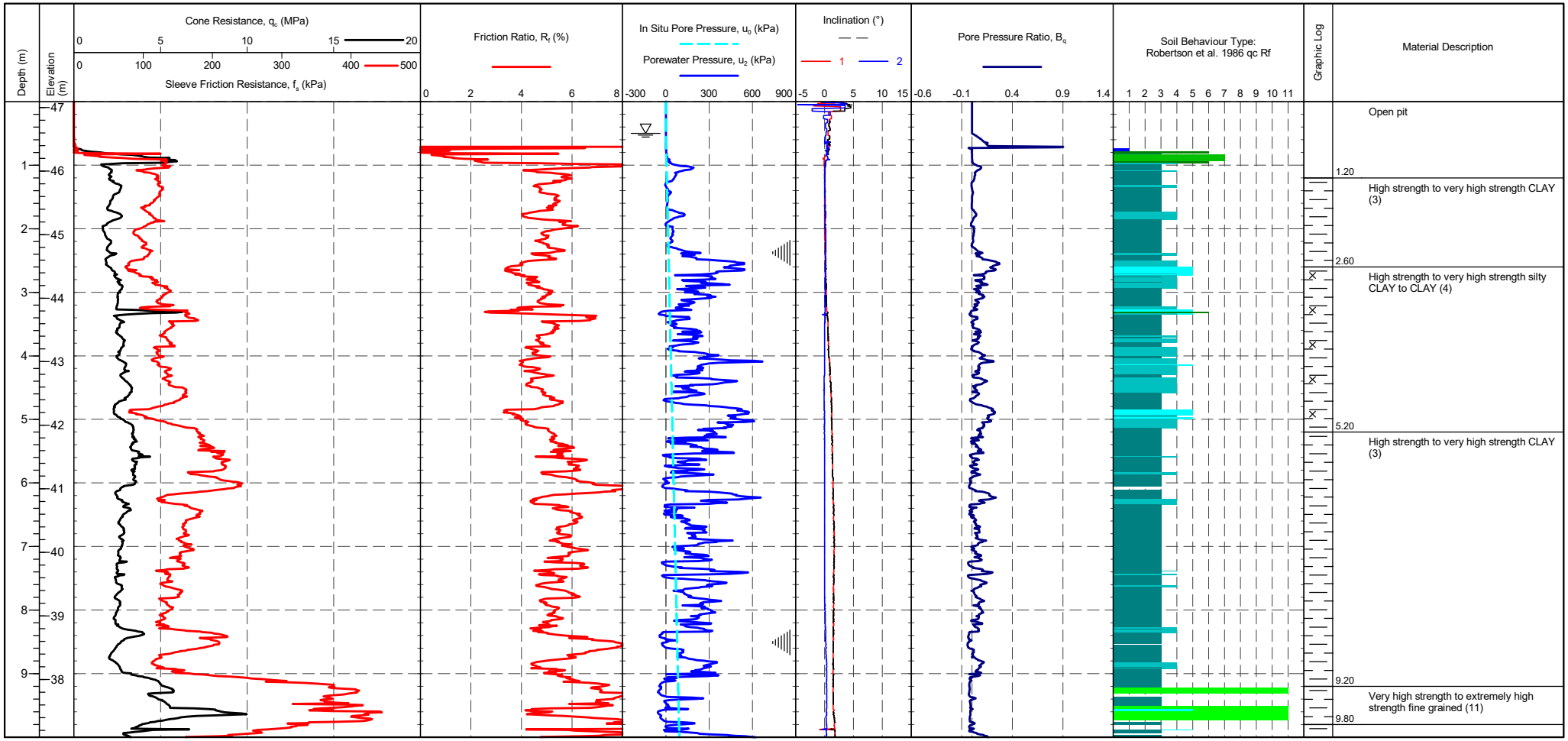
220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:09 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prj: In Situ SI 2.02.0 2017-07-10

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT05A**

CLIENT : Structural Soils	EASTING : 385096.896 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398401.791 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.092 m OD		TEST DATE : 04/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes.

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	249 mV	246 mV	-0.035 MPa
Sleeve	246 mV	242 mV	-0.003 kPa
Pore Pressure 2	382 mV	364 mV	-0.005 kPa
X-Y Inclinometer	2552 mV	2488 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

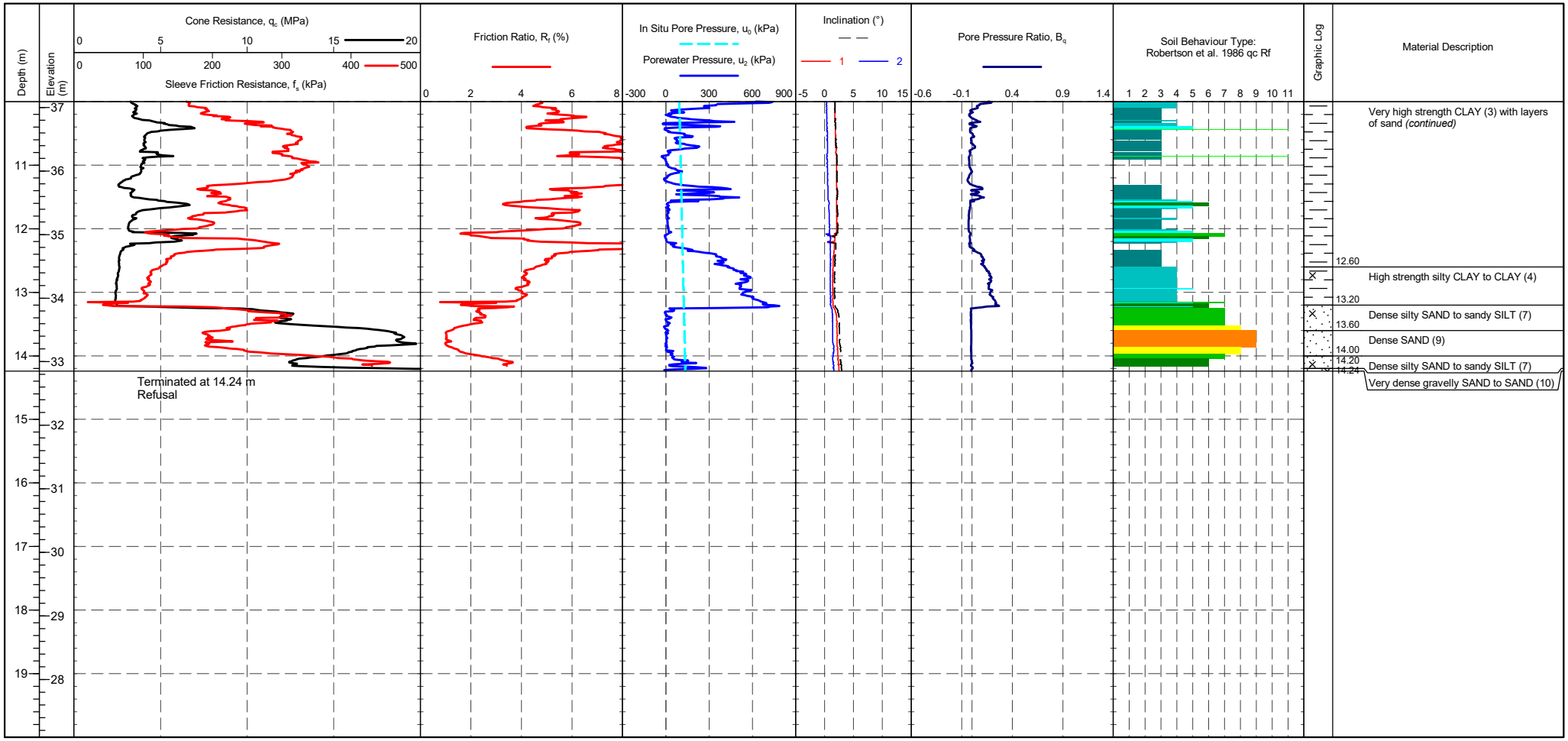
Dissipation Test

CPT LOG 01

Working with: Structural Soils Ltd

PointID: **ATK_CPT05A**

CLIENT : Structural Soils	EASTING : 385096.896 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398401.791 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.092 m OD		TEST DATE : 04/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	249 mV	246 mV	-0.035 MPa
Sleeve	246 mV	242 mV	-0.003 kPa
Pore Pressure 2	382 mV	364 mV	-0.005 kPa
X-Y Inclinometer	2552 mV	2488 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

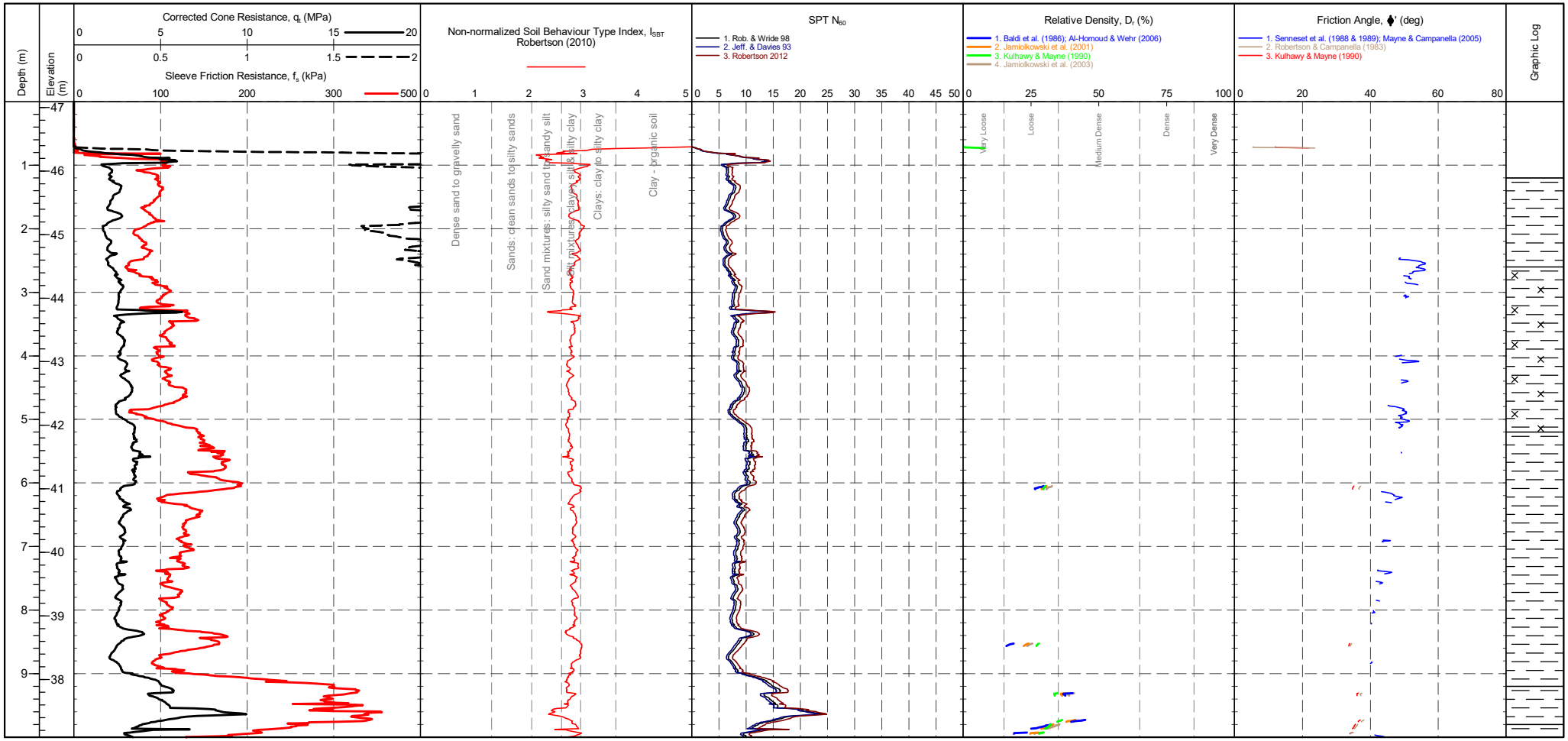
Dissipation Test

CPT LOG 02

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT05A**

CLIENT : Structural Soils	EASTING : 385096.896 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398401.791 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.092 m OD		TEST DATE : 04/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	249 mV	246 mV
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	246 mV	242 mV
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	382 mV	364 mV
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2552 mV	2488 mV

Transducer	Difference
Tip	-0.035 MPa
Sleeve	-0.003 kPa
Pore Pressure 2	-0.005 kPa

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

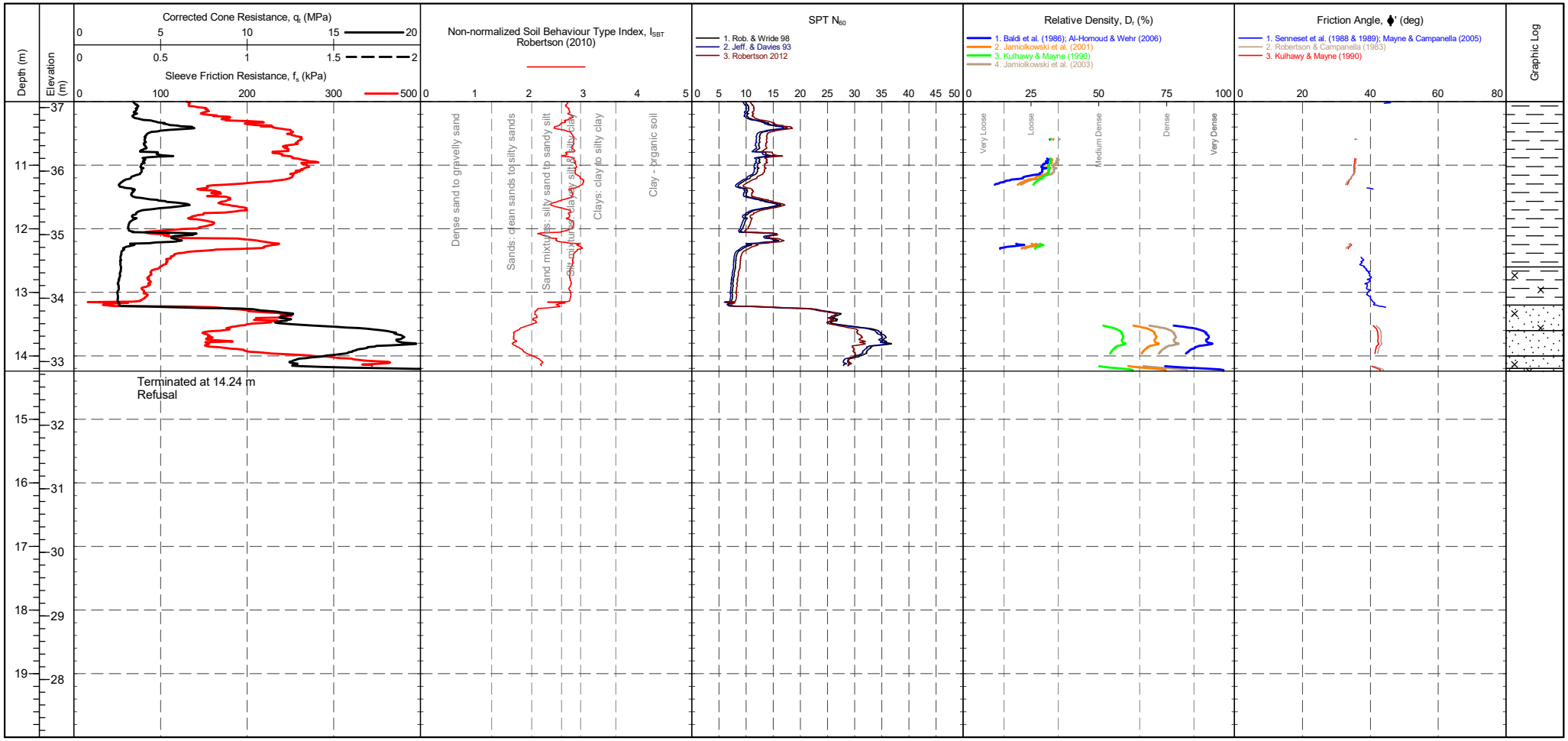
Dissipation Test

CPT LOG 02

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT05A**

CLIENT : Structural Soils	EASTING : 385096.896 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398401.791 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.092 m OD		TEST DATE : 04/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	249 mV	246 mV
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	246 mV	242 mV
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	382 mV	364 mV
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2552 mV	2488 mV

Transducer	Difference
Tip	-0.035 MPa
Sleeve	-0.003 kPa
Pore Pressure 2	-0.005 kPa

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

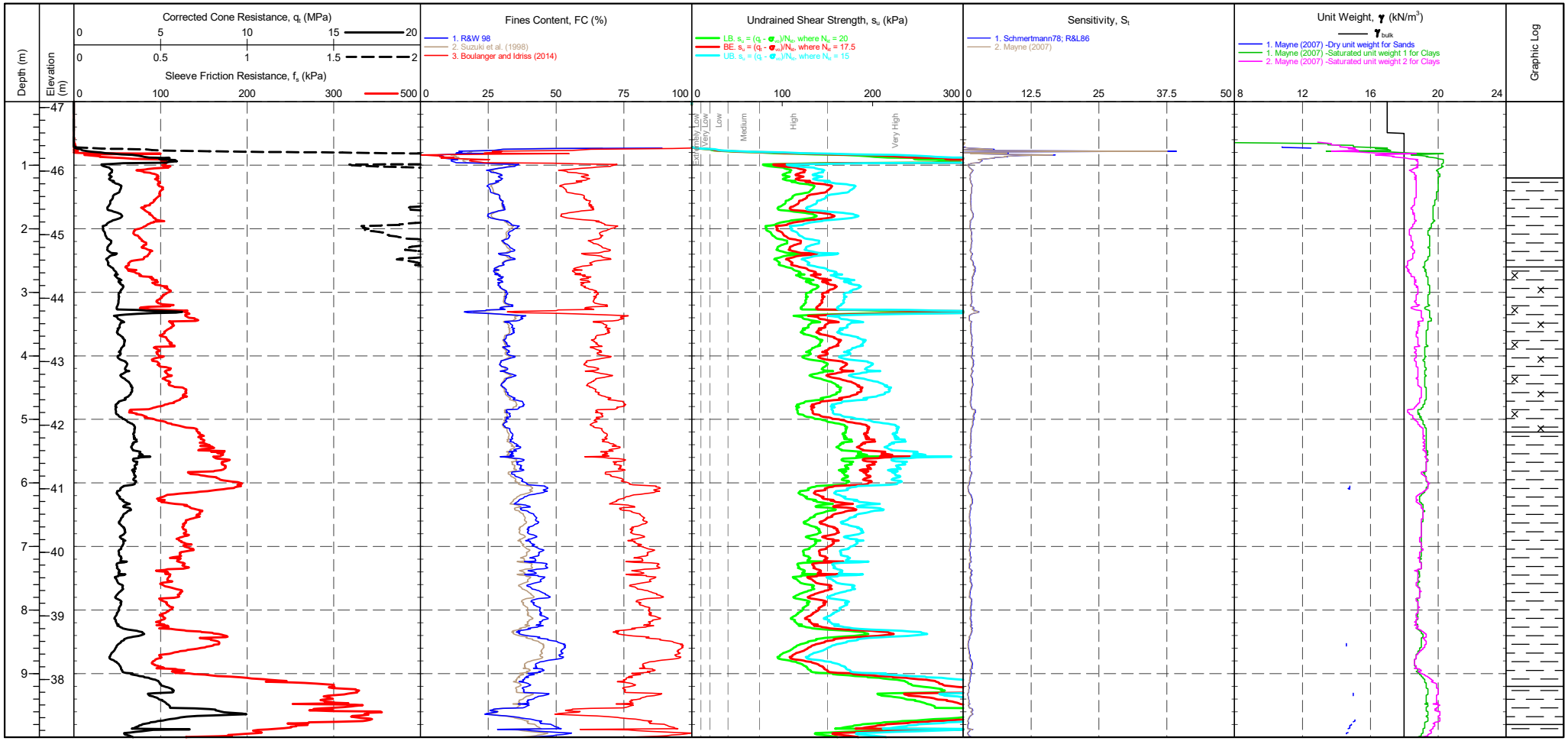
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT05A**

CLIENT : Structural Soils	EASTING : 385096.896 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398401.791 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.092 m OD		TEST DATE : 04/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2177	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	249 mV	246 mV	-0.035 MPa
CONE AREA RATIO : 0.79	OPERATOR : RS	Sleeve	246 mV	242 mV	-0.003 kPa
FILTER POSITION : u2	FRICTION REDUCER : None	Pore Pressure 2	382 mV	364 mV	-0.005 kPa
FILTER TYPE : HDPE	WEATHER : Overcast & Mild	X-Y Inclinometer	2552 mV	2488 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 03

Working with: STRUCTURAL SOILS LTD

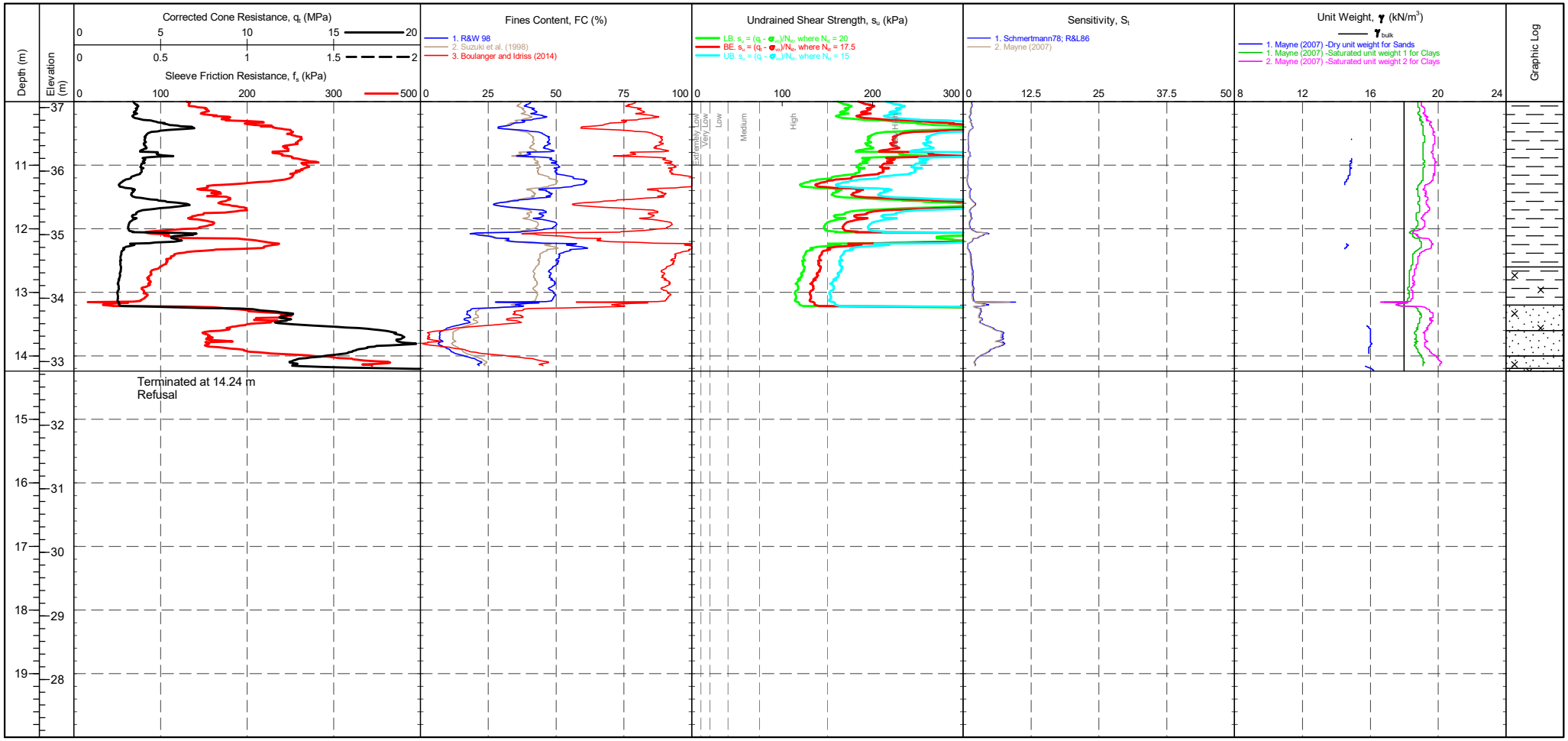
PointID: **ATK_CPT05A**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385096.896 m
NORTHING : 398401.791 m
ELEVATION : 47.092 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 04/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	246 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	246 mV	242 mV	-0.003 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	382 mV	364 mV	-0.005 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2552 mV	2488 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: STRUCTURAL SOILS LTD

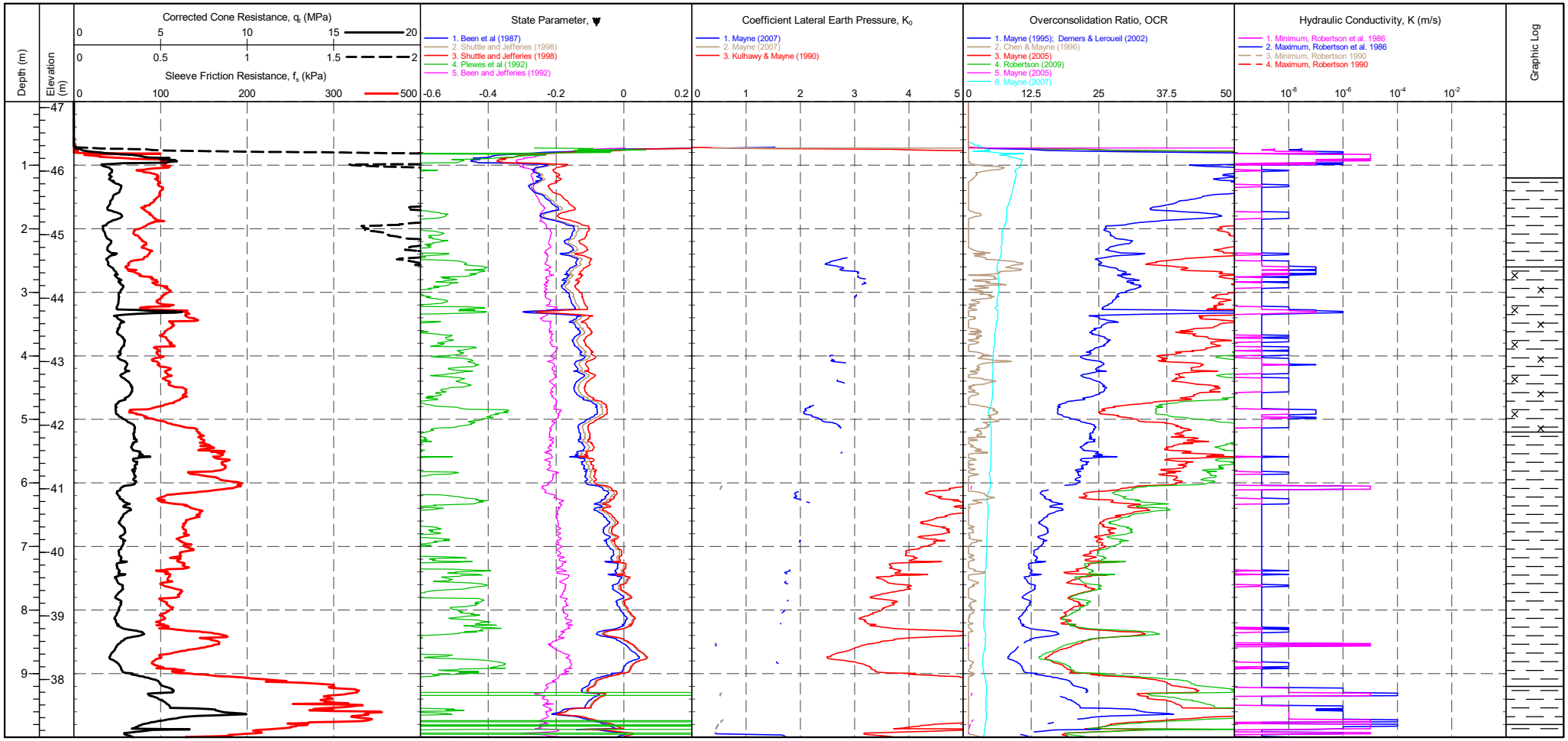
PointID: **ATK_CPT05A**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385096.896 m
NORTHING : 398401.791 m
ELEVATION : 47.092 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 04/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	249 mV	246 mV	-0.035 MPa
Sleeve	246 mV	242 mV	-0.003 kPa
Pore Pressure 2	382 mV	364 mV	-0.005 kPa
X-Y Inclinometer	2552 mV	2488 mV	

Groundwater Level

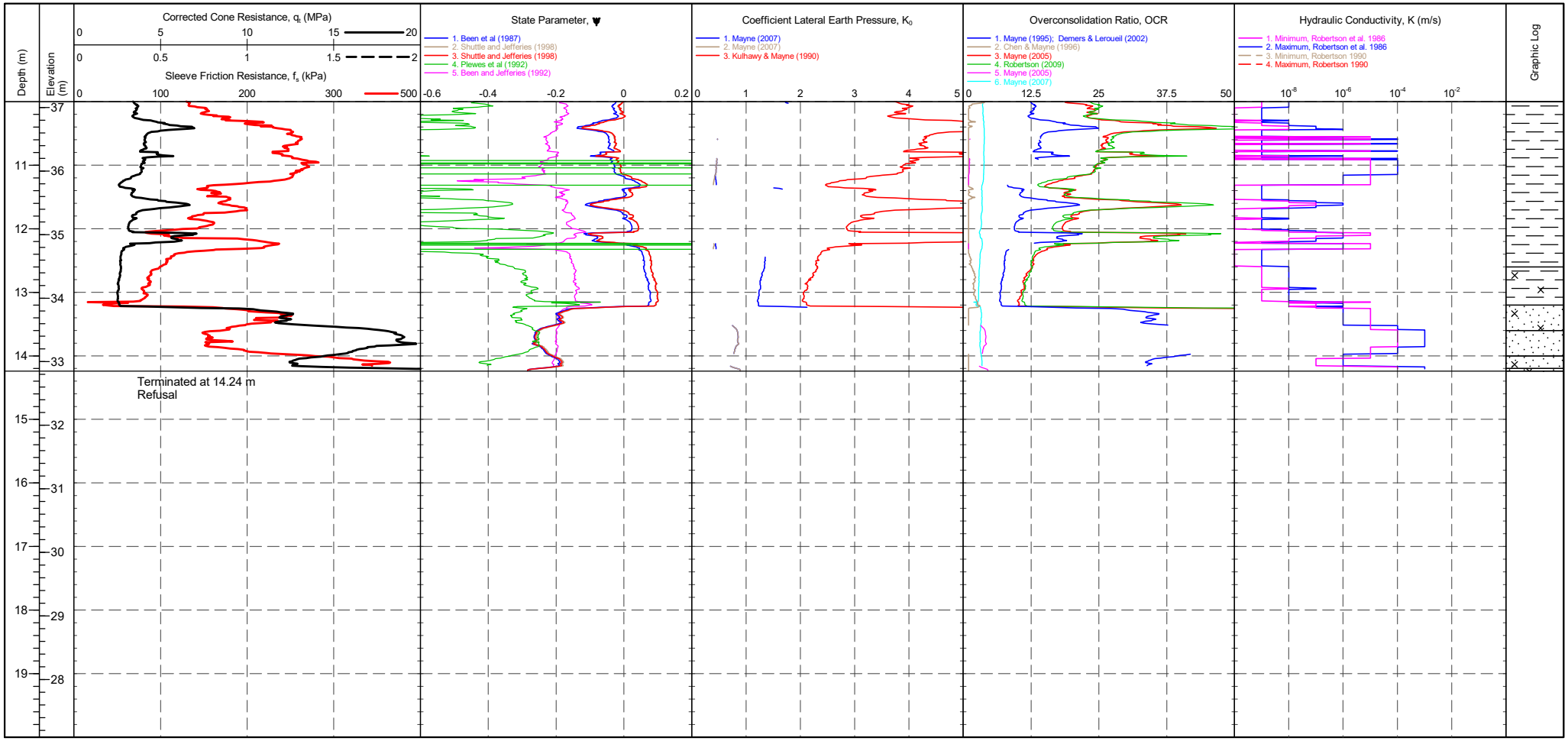
Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT05A**

CLIENT : Structural Soils	EASTING : 385096.896 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398401.791 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.092 m OD		TEST DATE : 04/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



				CPTU ZERO VALUES			
CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	Transducer	Pre	Post	Difference
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Tip	249 mV	246 mV	-0.035 MPa
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Sleeve	246 mV	242 mV	-0.003 kPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Pore Pressure 2	382 mV	364 mV	-0.005 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	X-Y Inclinometer	2552 mV	2488 mV	
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild				

Groundwater Level

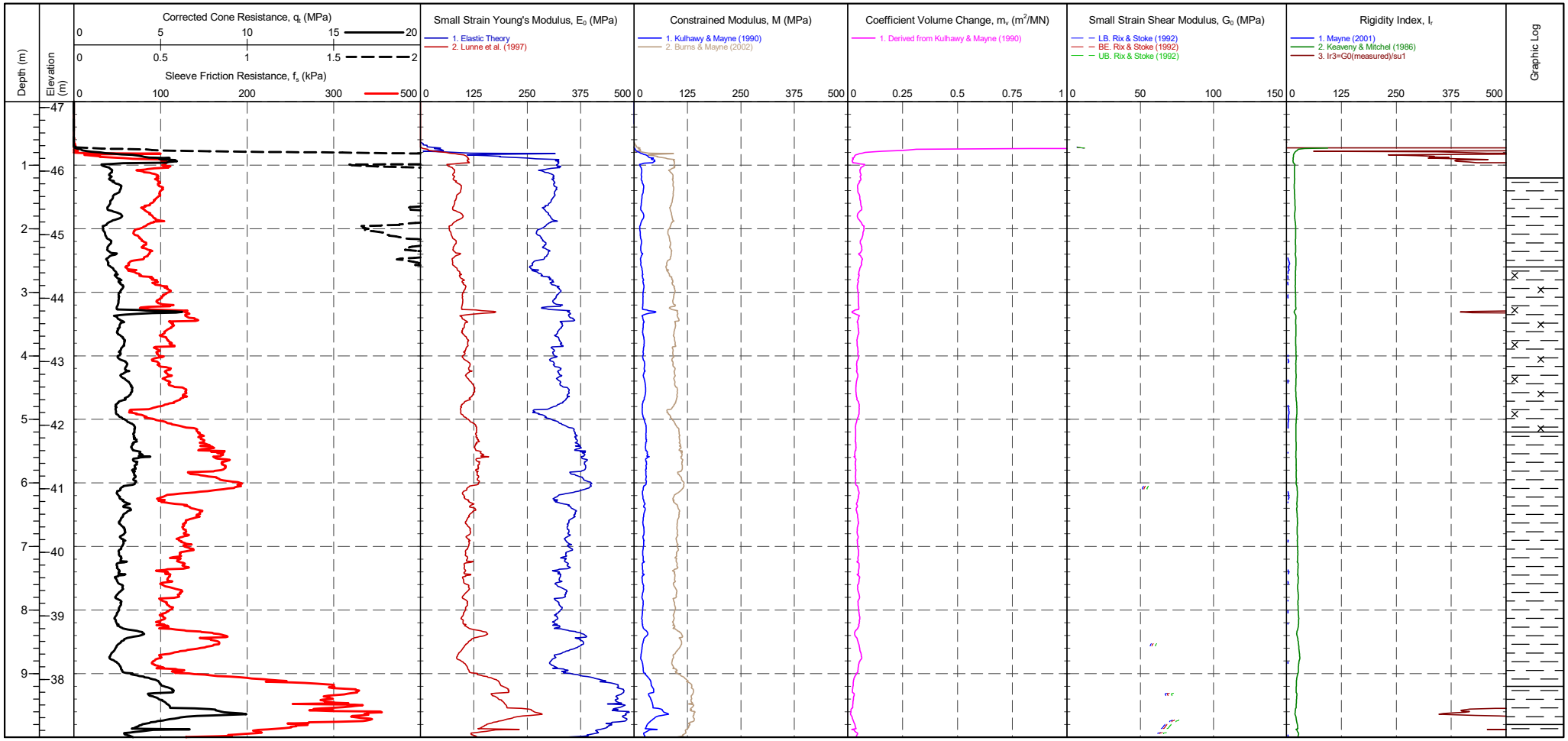
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT05A**

CLIENT : Structural Soils	EASTING : 385096.896 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398401.791 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.092 m OD		TEST DATE : 04/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



				CPTU ZERO VALUES			
CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	Transducer	Pre	Post	Difference
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Tip	249 mV	246 mV	-0.035 MPa
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Sleeve	246 mV	242 mV	-0.003 kPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Pore Pressure 2	382 mV	364 mV	-0.005 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	X-Y Inclinometer	2552 mV	2488 mV	
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild				

Groundwater Level

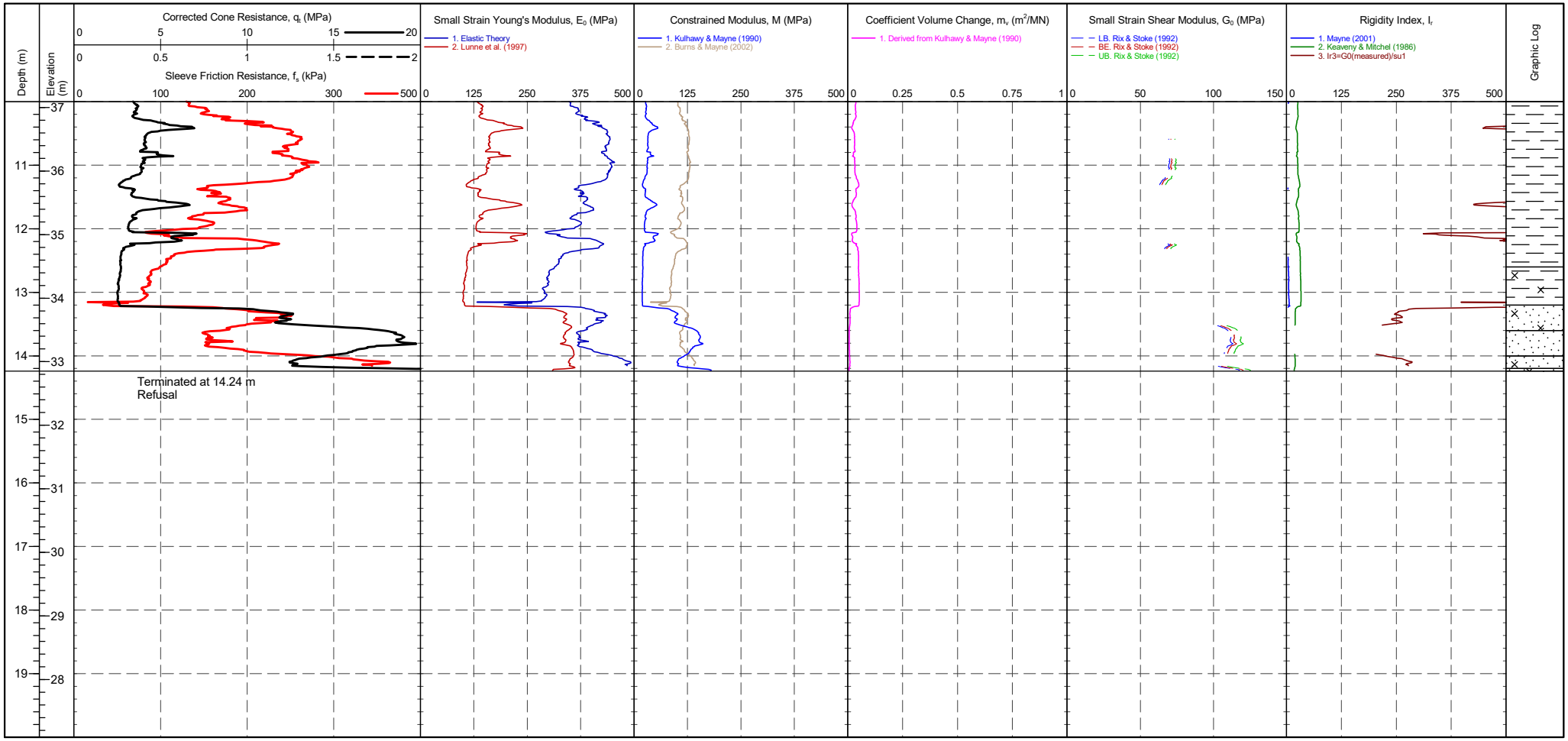
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT05A**

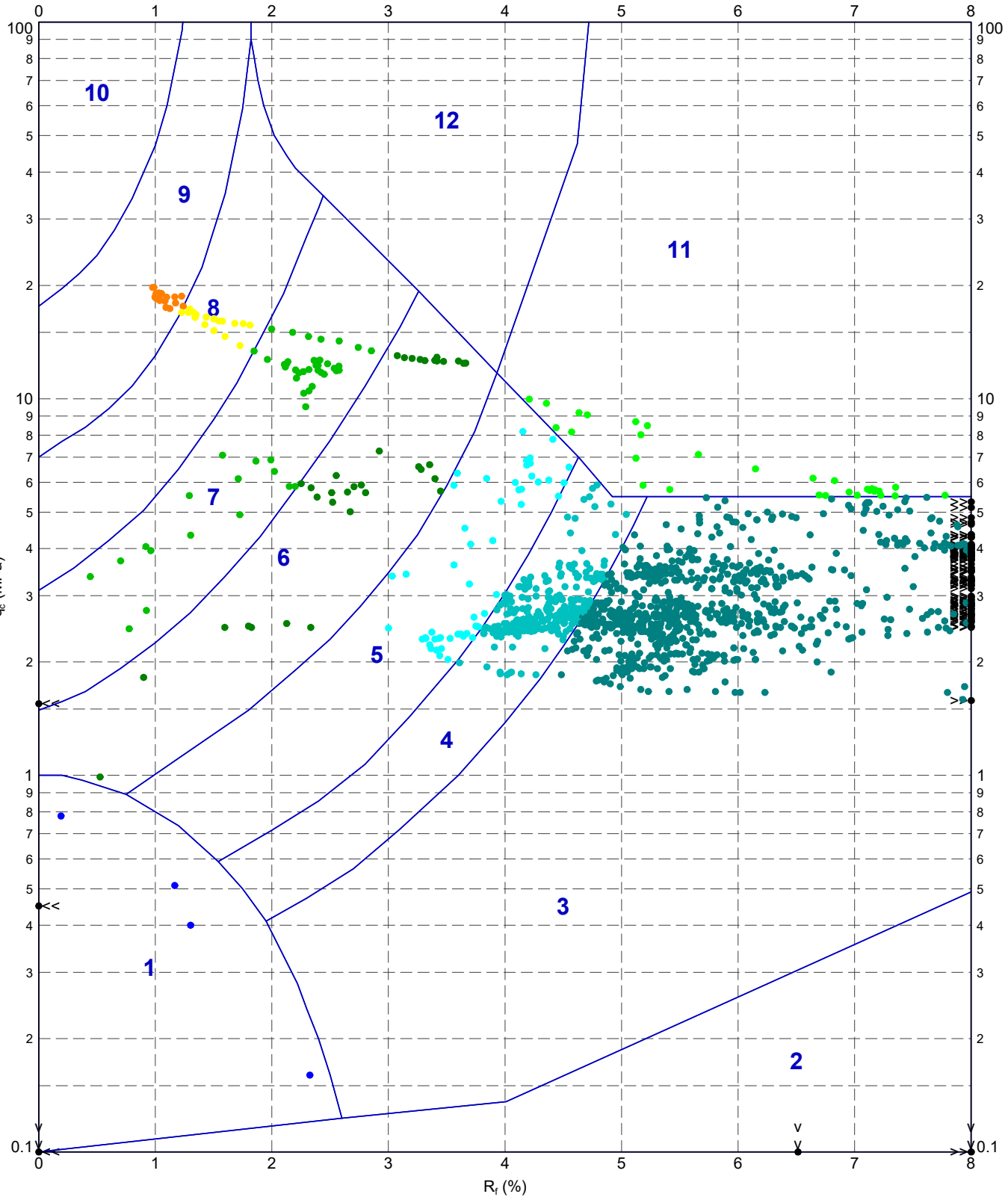
CLIENT : Structural Soils	EASTING : 385096.896 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398401.791 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.092 m OD		TEST DATE : 04/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	246 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	246 mV	242 mV	-0.003 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	382 mV	364 mV	-0.005 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2552 mV	2488 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: Structural Soils Tim Clifford Manchester 765544 - Ancoats Robertson et al. 1986 q_c vs. R_f - ATK_CPT05A	DRAWN	DATE 24/05/2023	
	CHECKED	DATE 24/05/2023	
	SCALE Not To Scale		A4
	PROJECT No 1230236	FIGURE No	

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:11 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

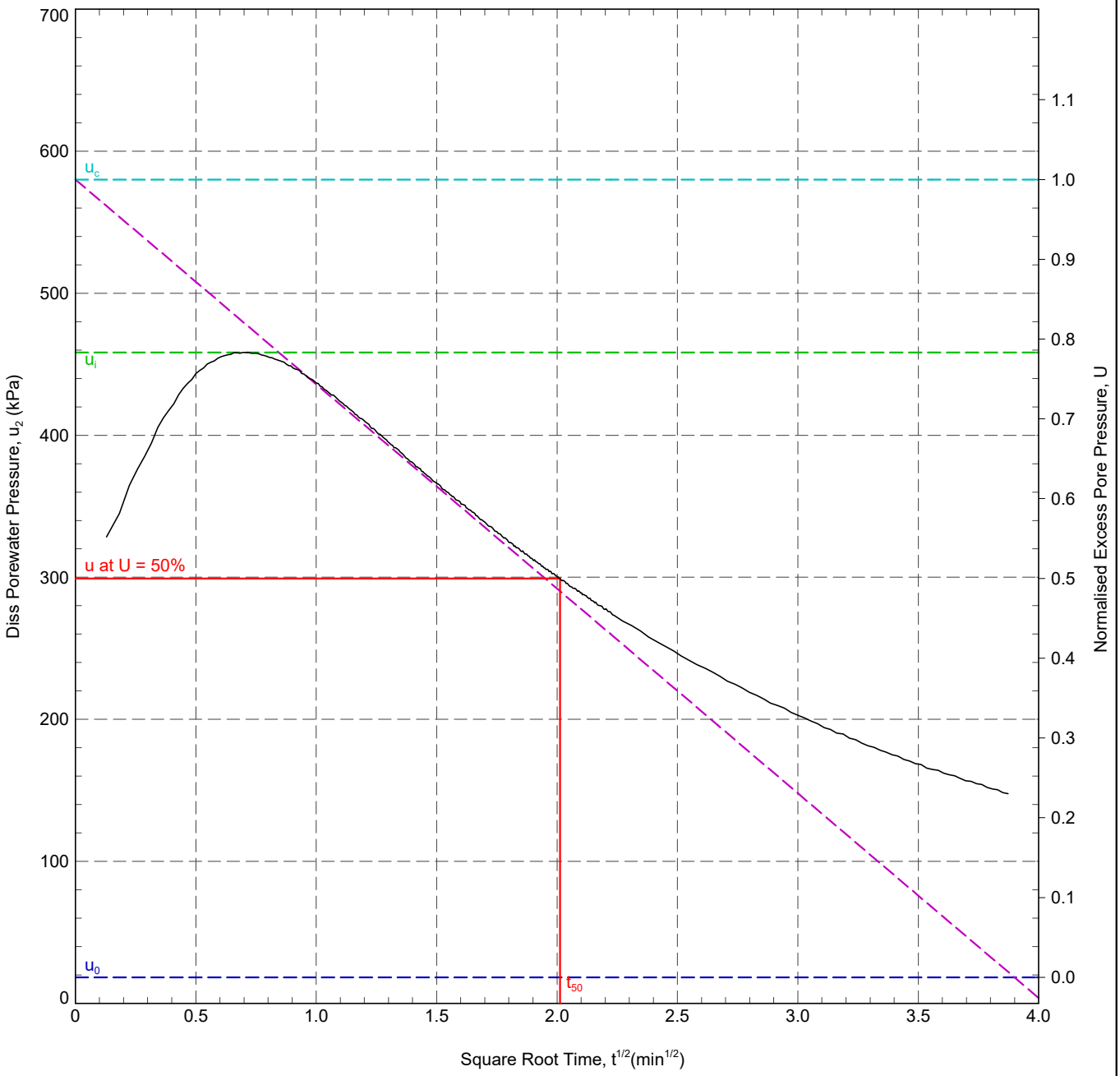
IN SITU SITE INVESTIGATION

Working with: STRUCTURAL SOILS LTD

Test ID

ATK_CPT05A - 2.38 m

CLIENT	: Structural Soils	AREA	: Ancoats Manchester	SHEET	: 1 OF 1
ENGINEER	: Tim Clifford	EASTING	: 385096.9 m	STATUS	: Final
PROJECT	: 765544 - Ancoats	NORTHING	: 398401.8 m	DATE	: 02/05/23
LOCATION	: Manchester	COORD. SYS.	:		
PROJECT No.	: 1230236	ELEVATION	: 47.09 m		



In Situ Pore Pressure, u_0:	18.4 kPa	Rigidity Index, I_r:	3
Initial Pore Pressure, u_i:	458.3 kPa	Horizontal Coefficient of Consolidation, c_h:	2.91×10^{1} m²/yr
Final Pore Pressure:	147.7 kPa	Ratio c_h/c_v:	1.25
Back Extrapolated Pore Pressure, u_c:	580 kPa	Vertical Coefficient of Consolidation, c_v:	2.33×10^{1} m²/yr
Degree of Dissipation:	50%		
Dissipation Pressure:	299.2 kPa		
Time for 50% Dissipation, t_{50}:	4.05 min		

RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	15/05/2023
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	15/05/2023
CONE ID	: S15-CFIP.2177	APPROVED BY	: DW	DATE:	15/05/2023
OPERATOR	: RS				

REMARK

T50 reached. Test OK.

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:11 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

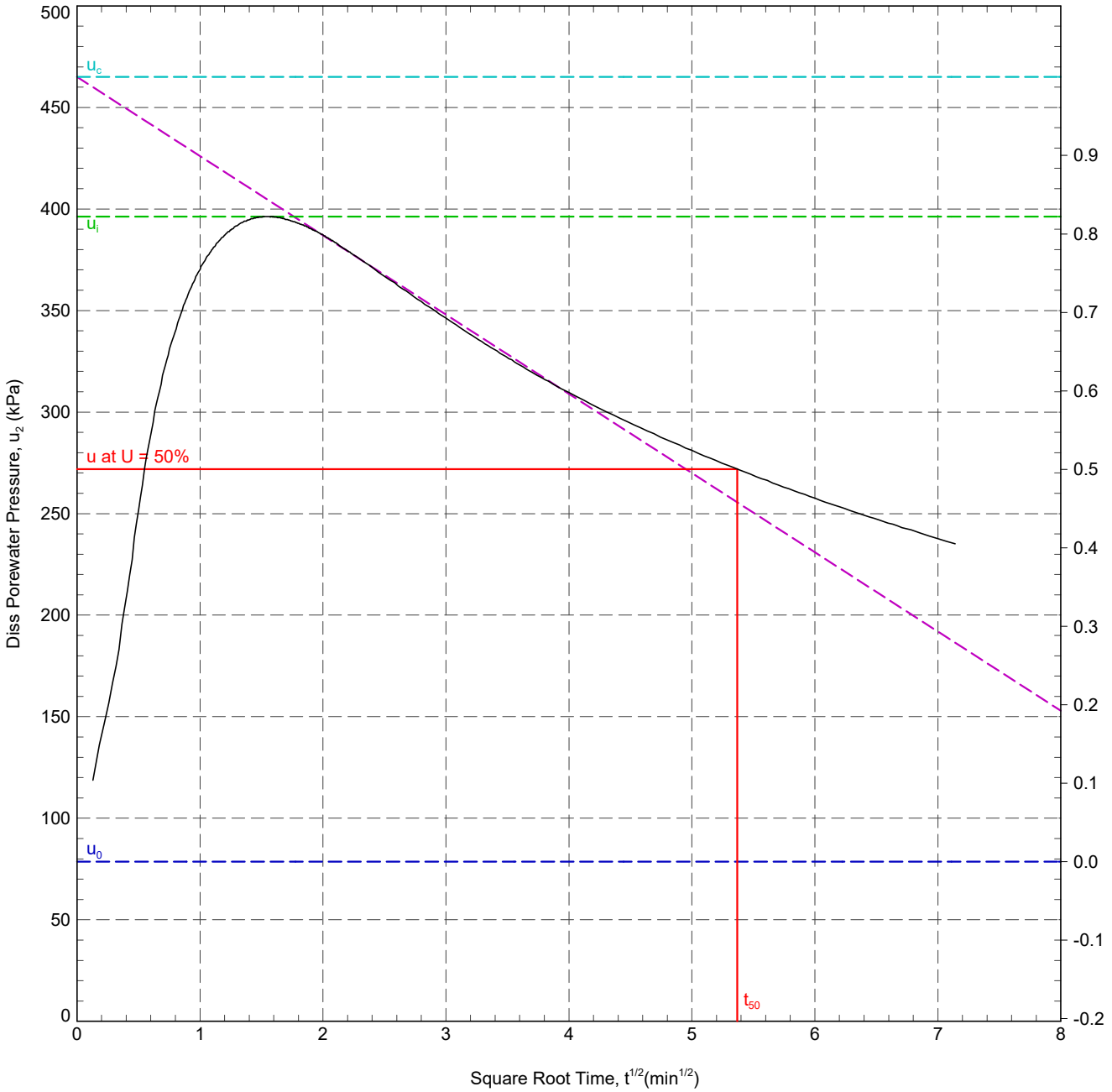
IN SITU SITE INVESTIGATION

Working with: STRUCTURAL SOILS LTD

Test ID

ATK_CPT05A - 8.51 m

CLIENT	: Structural Soils	AREA	: Ancoats Manchester	SHEET	: 1 OF 1
ENGINEER	: Tim Clifford	EASTING	: 385096.9 m	STATUS	: Final
PROJECT	: 765544 - Ancoats	NORTHING	: 398401.8 m	DATE	: 04/05/23
LOCATION	: Manchester	COORD. SYS.	:		
PROJECT No.	: 1230236	ELEVATION	: 47.09 m		



In Situ Pore Pressure, u_0:	78.6 kPa	Rigidity Index, I_r:	26.7
Initial Pore Pressure, u_i:	396.2 kPa	Horizontal Coefficient of Consolidation, c_h:	1.22×10^1 m²/yr
Final Pore Pressure:	235.2 kPa	Ratio c_h/c_v:	1.25
Back Extrapolated Pore Pressure, u_c:	465 kPa	Vertical Coefficient of Consolidation, c_v:	9.77×10^0 m²/yr
Degree of Dissipation:	50%		
Dissipation Pressure:	271.9 kPa		
Time for 50% Dissipation, t_{50}:	28.83 min		

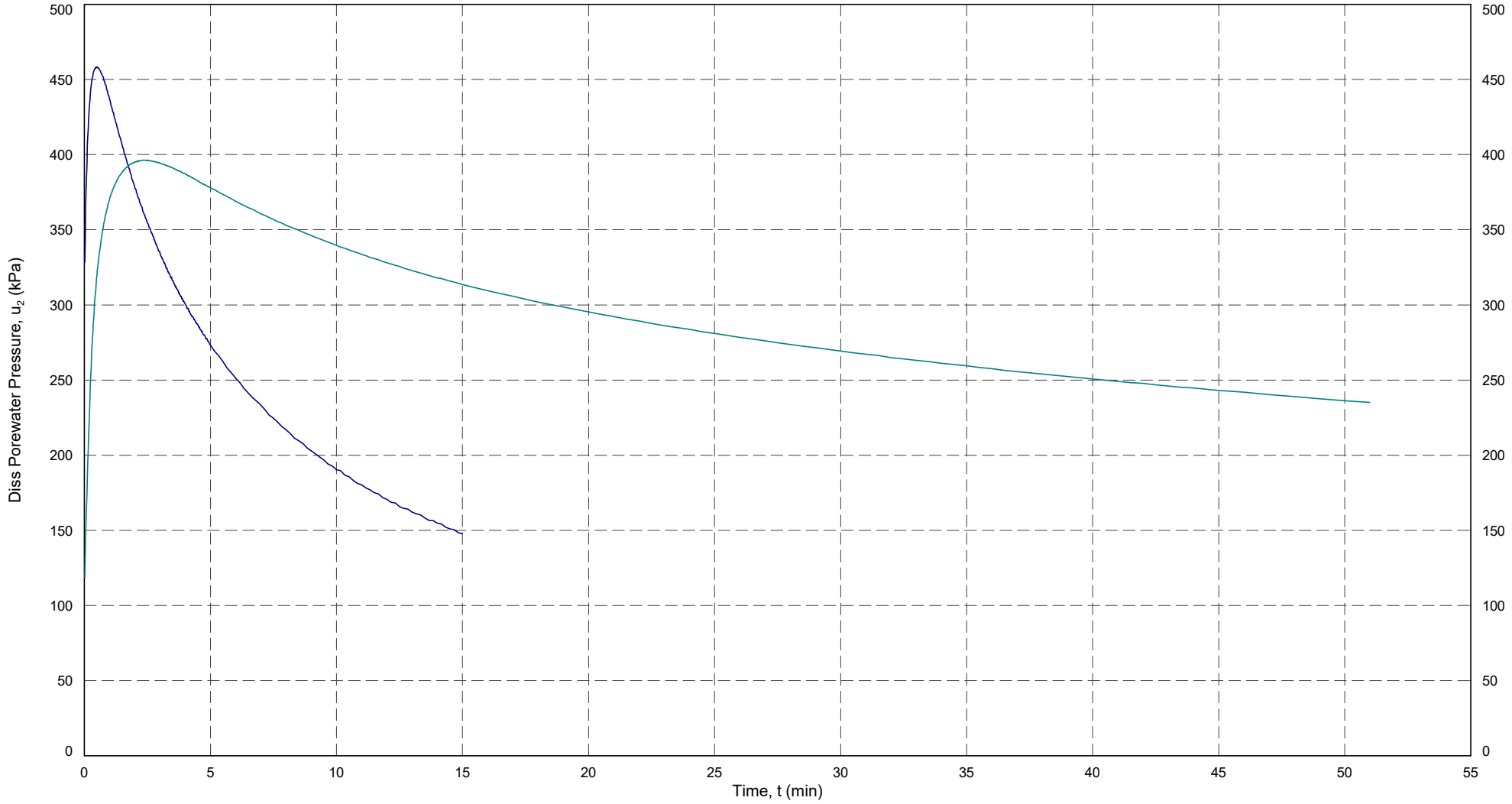
RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	15/05/2023
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	15/05/2023
CONE ID	: S15-CFIP.2177	APPROVED BY	: DW	DATE:	15/05/2023
OPERATOR	: RS				

REMARK

T50 reached. Test OK.

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:11 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

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - CHLOE.GLB Graph PPDT PORE PRESSURE VS. LIN T A4L 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:12 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



IN SITU SITE INVESTIGATION

TITLE

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Dissipation Test - ATK_CPT05A

DRAWN	DATE 24/05/2023	
CHECKED	DATE 24/05/2023	
SCALE Not To Scale		A4
PROJECT No 1230236	FIGURE No	

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

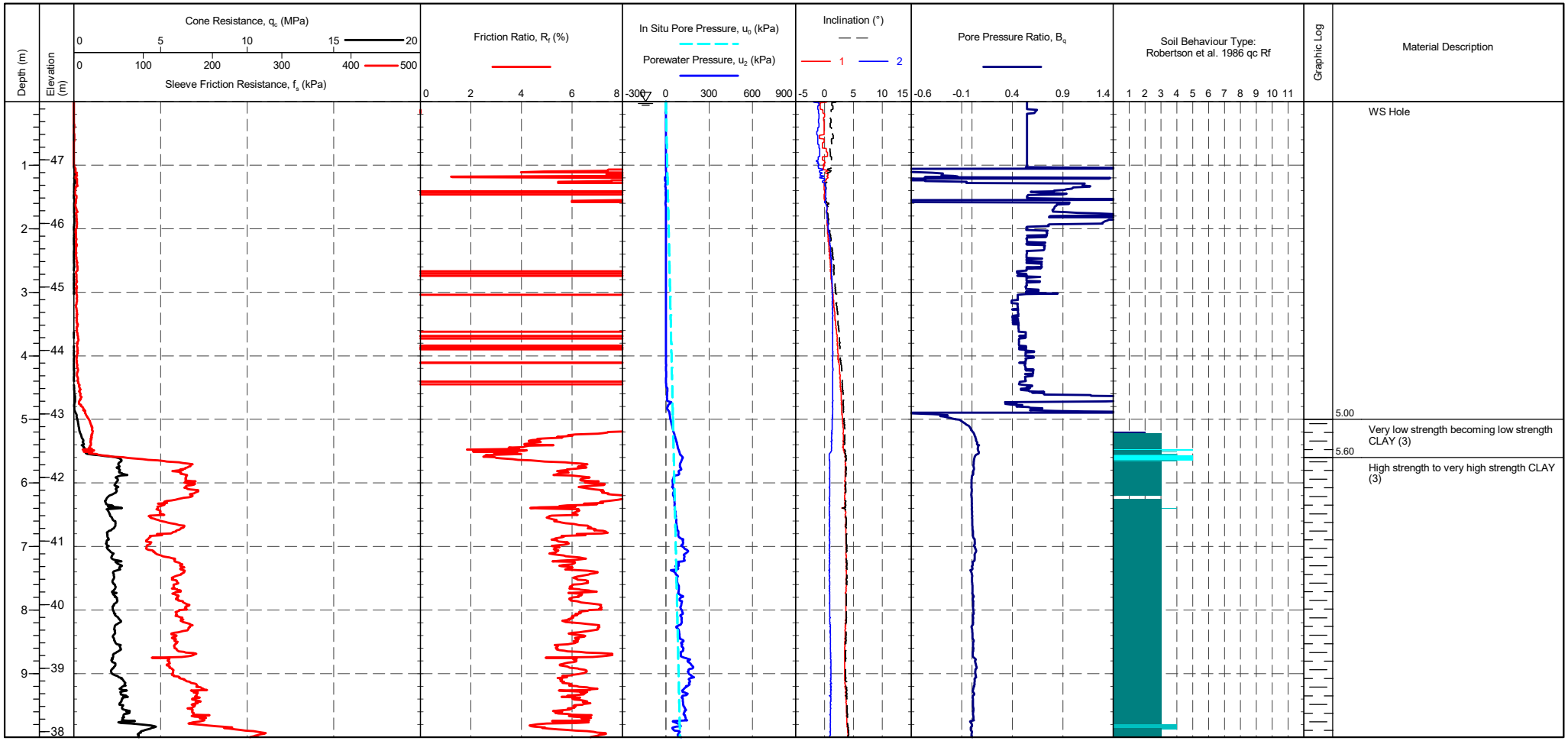
PointID: **ATK_CPT06**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385040.080 m
NORTHING : 398398.965 m
ELEVATION : 47.915 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 26/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: 0

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	245 mV	242 mV	-0.035 MPa
Sleeve	243 mV	246 mV	0.002 kPa
Pore Pressure 2	303 mV	337 mV	0.009 kPa
X-Y Inclinometer	2380 mV	2436 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: STRUCTURAL SOILS LTD

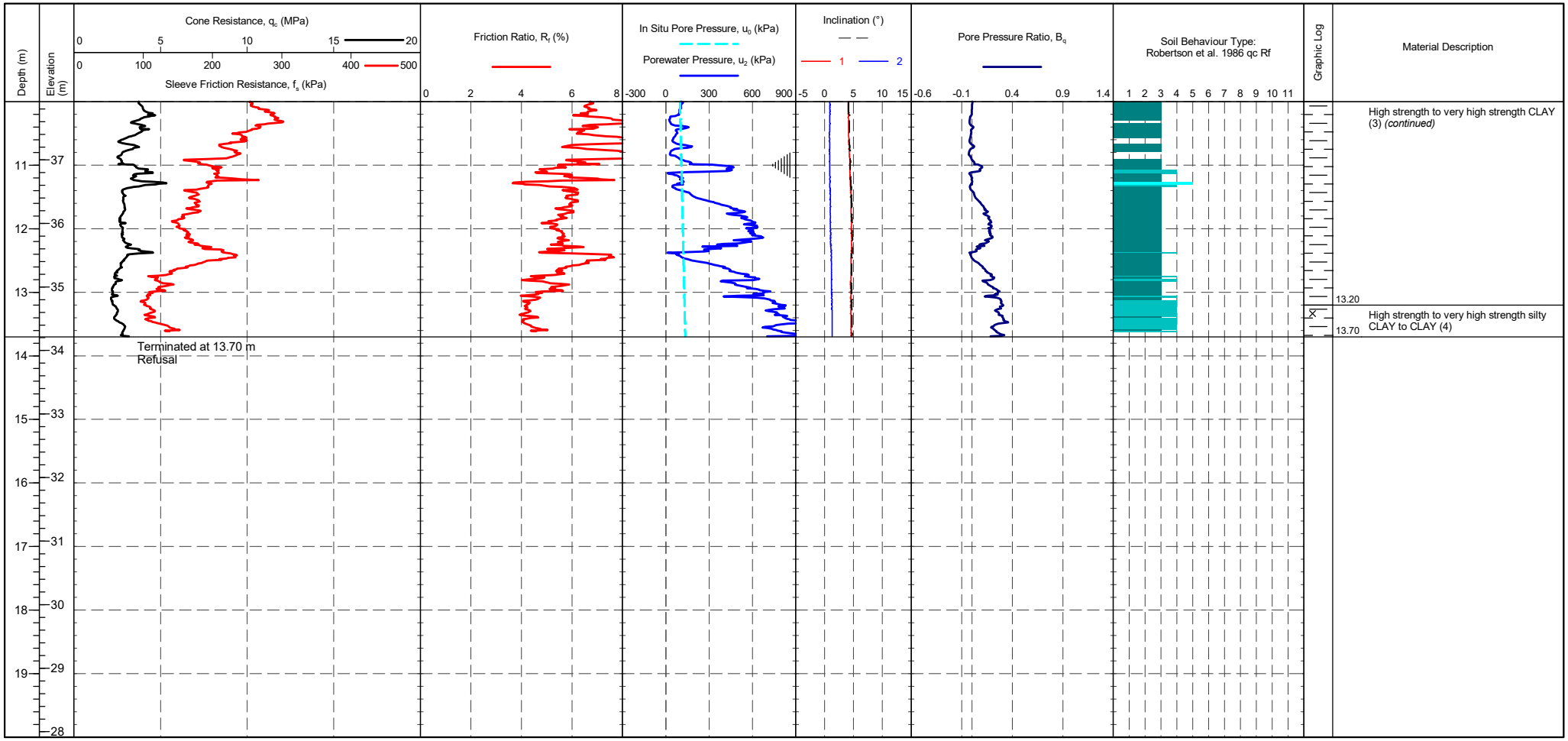
PointID: **ATK_CPT06**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385040.080 m
NORTHING : 398398.965 m
ELEVATION : 47.915 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 26/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: 0

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	245 mV	242 mV	-0.035 MPa
Sleeve	243 mV	246 mV	0.002 kPa
Pore Pressure 2	303 mV	337 mV	0.009 kPa
X-Y Inclinometer	2380 mV	2436 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

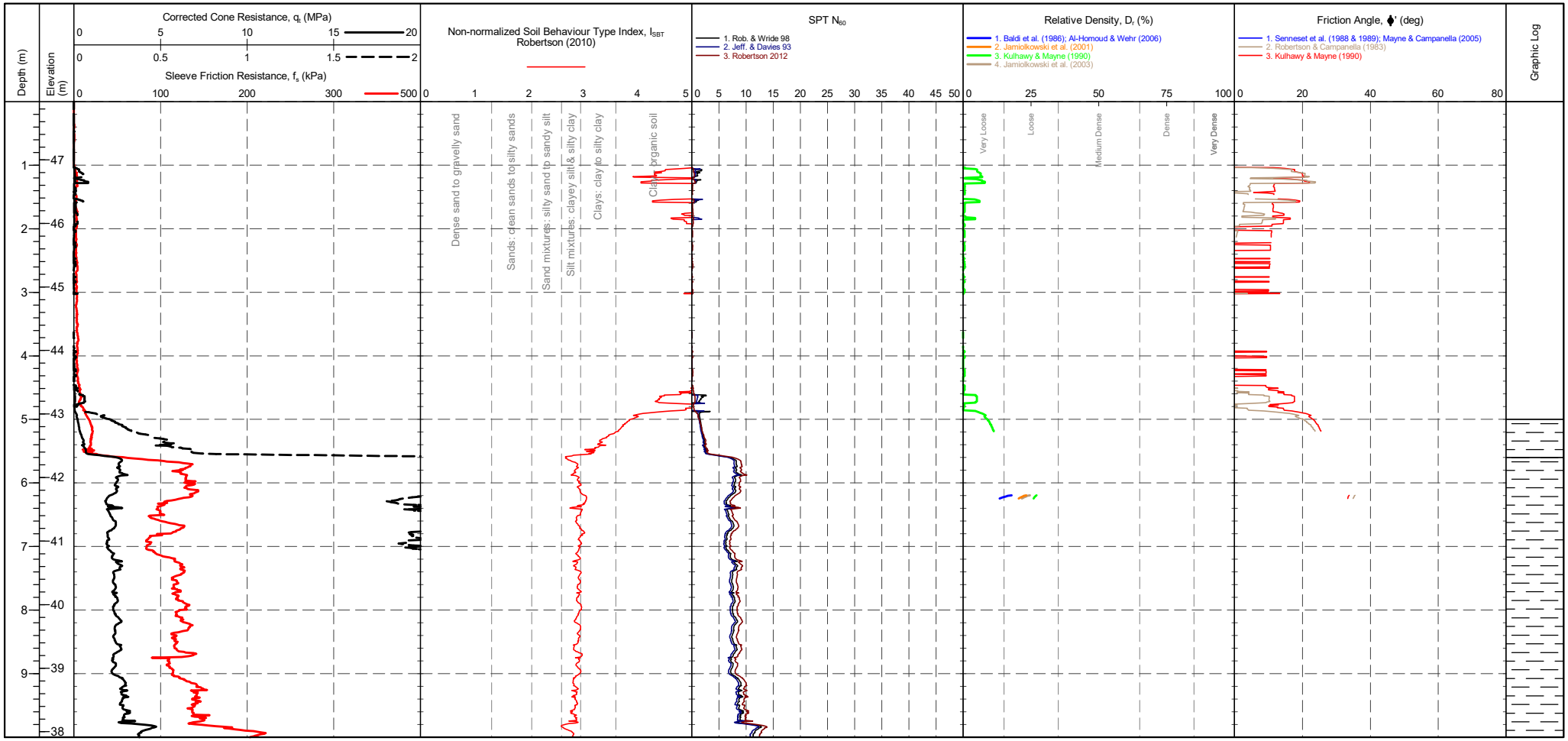
Groundwater Level
Dissipation Test

CPT LOG 02

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT06**

CLIENT : Structural Soils	EASTING : 385040.080 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398398.965 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.915 m OD		TEST DATE : 26/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	245 mV	242 mV	-0.035 MPa
Sleeve	243 mV	246 mV	0.002 kPa
Pore Pressure 2	303 mV	337 mV	0.009 kPa
X-Y Inclinometer	2380 mV	2436 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

Working with: STRUCTURAL SOILS LTD

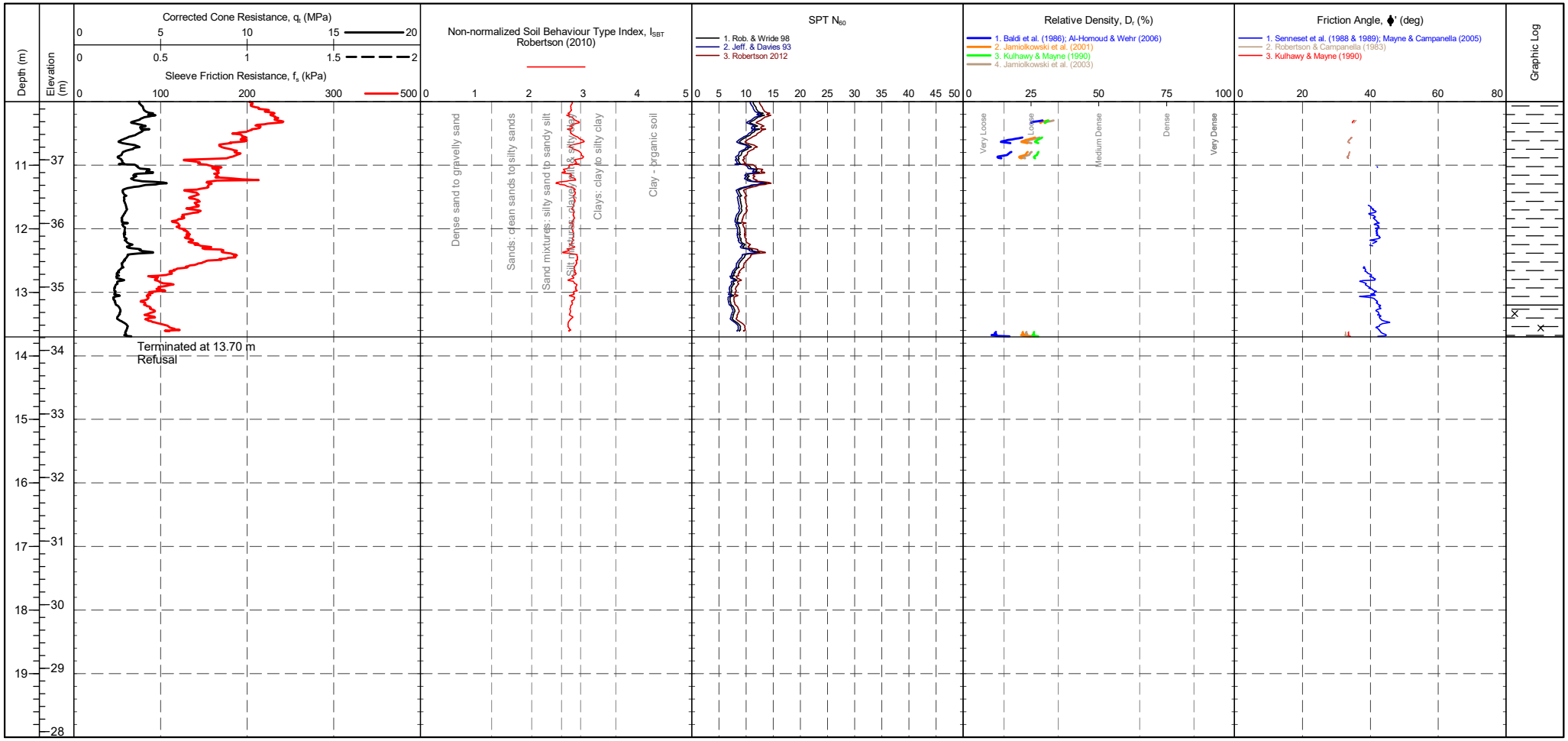
PointID: **ATK_CPT06**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385040.080 m
NORTHING : 398398.965 m
ELEVATION : 47.915 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 26/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	245 mV	242 mV	-0.035 MPa
Sleeve	243 mV	246 mV	0.002 kPa
Pore Pressure 2	303 mV	337 mV	0.009 kPa
X-Y Inclinometer	2380 mV	2436 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

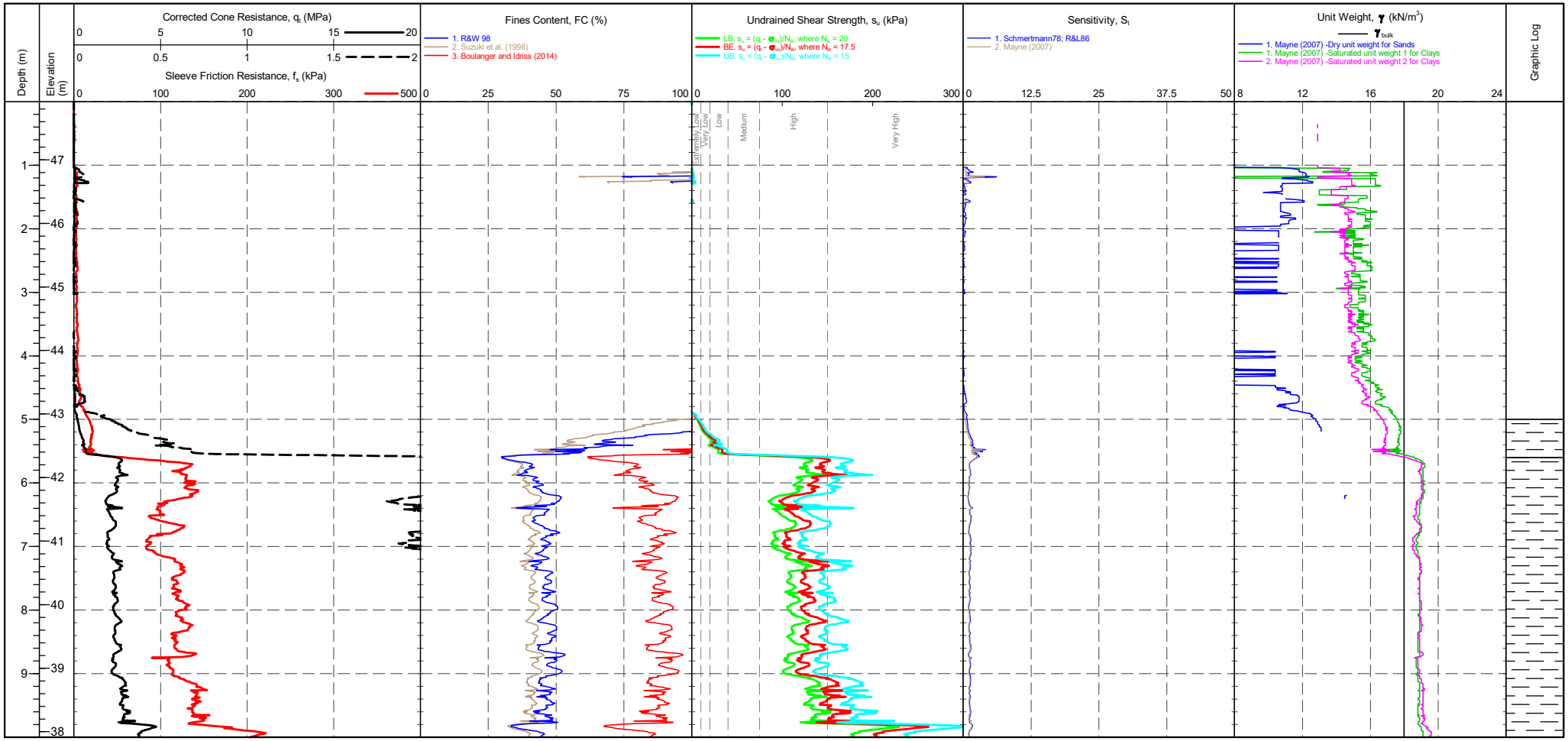
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT06**

CLIENT : Structural Soils	EASTING : 385040.080 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398398.965 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.915 m OD		TEST DATE : 26/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	245 mV	242 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	243 mV	246 mV	0.002 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	303 mV	337 mV	0.009 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2380 mV	2436 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

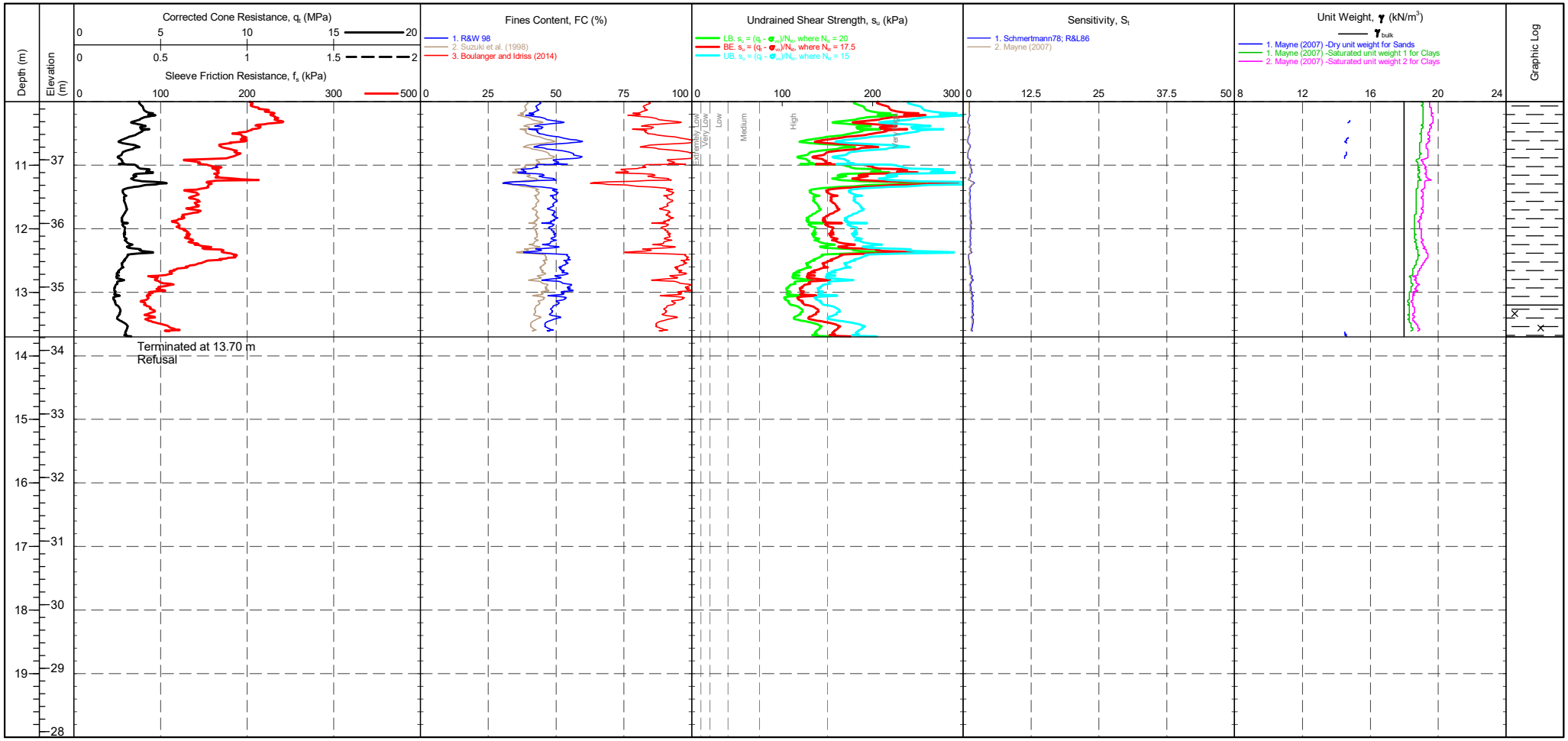
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT06**

CLIENT : Structural Soils	EASTING : 385040.080 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398398.965 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.915 m OD		TEST DATE : 26/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	245 mV	242 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	243 mV	246 mV	0.002 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	303 mV	337 mV	0.009 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2380 mV	2436 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

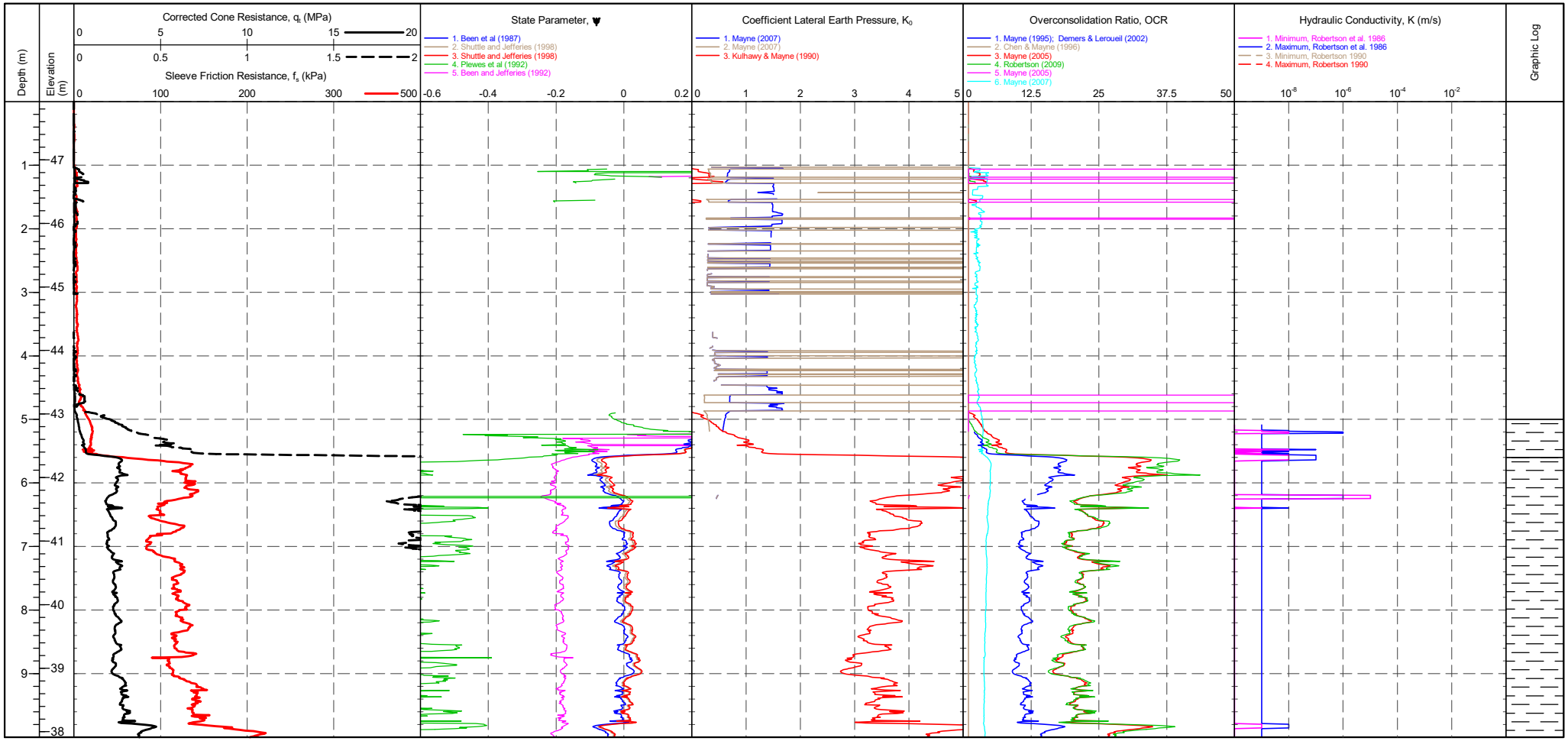
Dissipation Test

Working with: STRUCTURAL SOILS LTD

CPT LOG 04

PointID: **ATK_CPT06**

CLIENT : Structural Soils PROJECT : 765544 - Ancoats LOCATION : Manchester PROJECT No. : 1230236	EASTING : 385040.080 m NORTHING : 398398.965 m ELEVATION : 47.915 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 1 OF 2 STATUS : Final TEST DATE : 26/04/2023 PLOT DATE : 24/05/2023 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	245 mV	242 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	243 mV	246 mV	0.002 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	303 mV	337 mV	0.009 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2380 mV	2436 mV	

Groundwater Level

Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

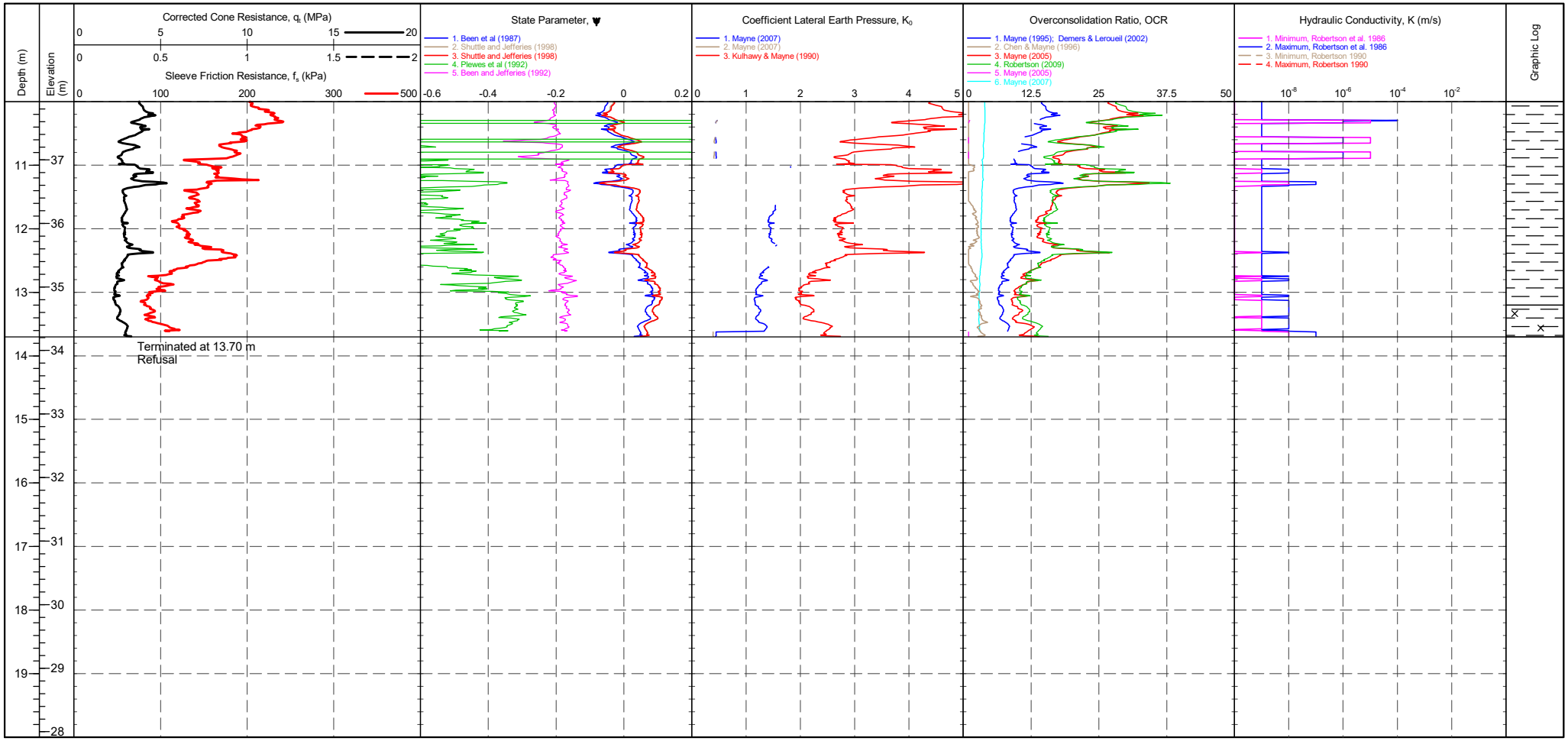
PointID: **ATK_CPT06**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385040.080 m
NORTHING : 398398.965 m
ELEVATION : 47.915 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 26/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	245 mV	242 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	243 mV	246 mV	0.002 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	303 mV	337 mV	0.009 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2380 mV	2436 mV	

Groundwater Level

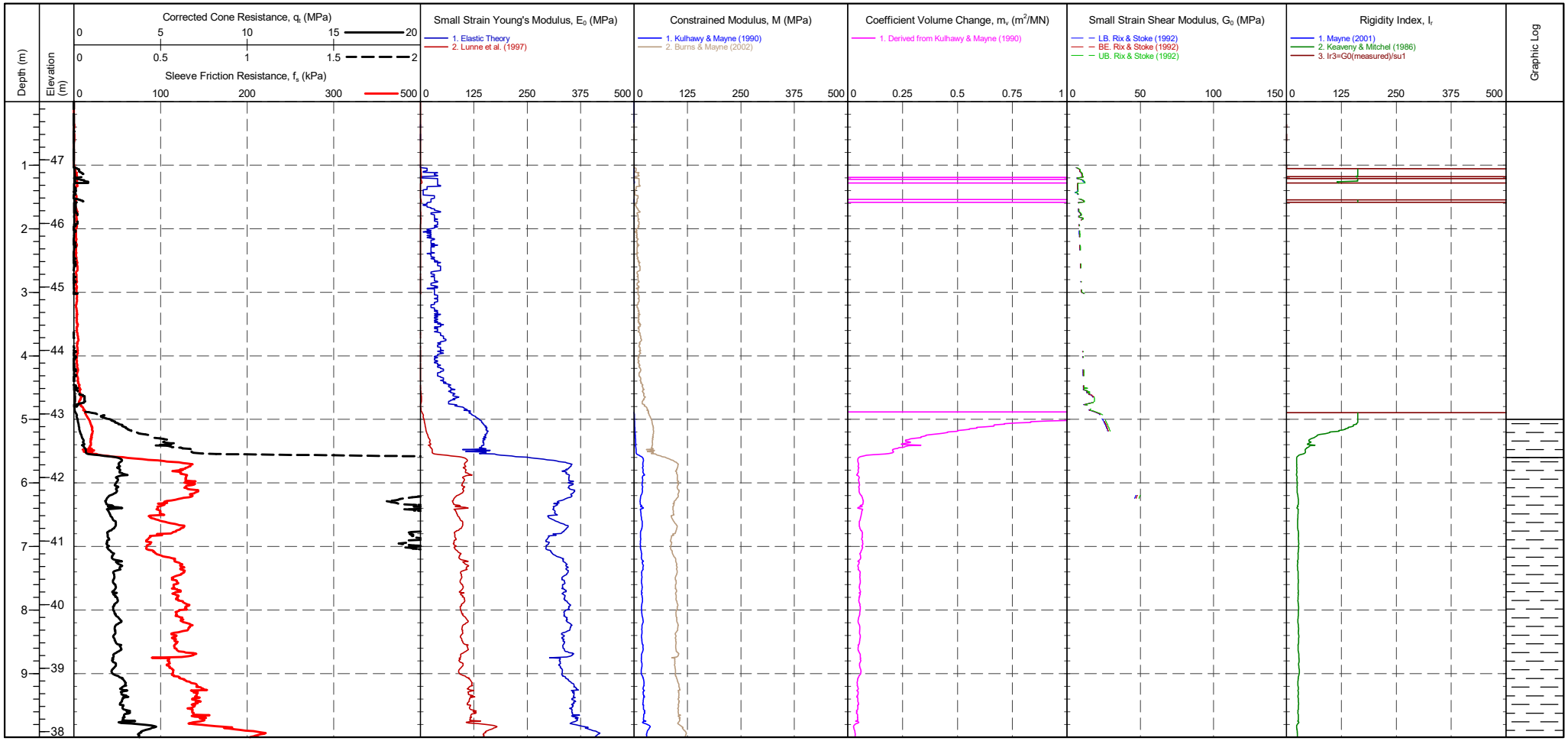
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT06**

CLIENT : Structural Soils	EASTING : 385040.080 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398398.965 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.915 m OD		TEST DATE : 26/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	245 mV	242 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	243 mV	246 mV	0.002 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	303 mV	337 mV	0.009 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2380 mV	2436 mV	

Groundwater Level

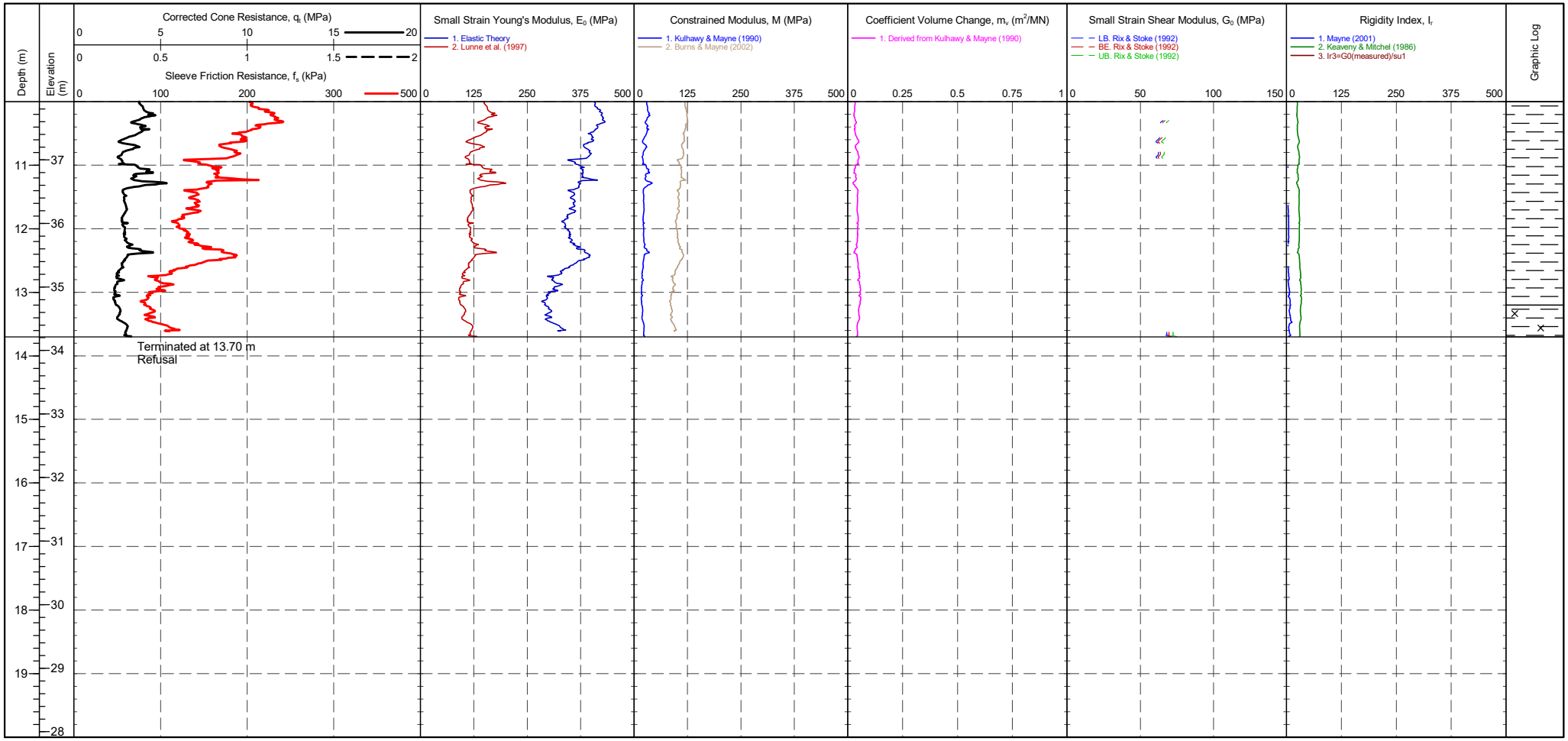
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT06**

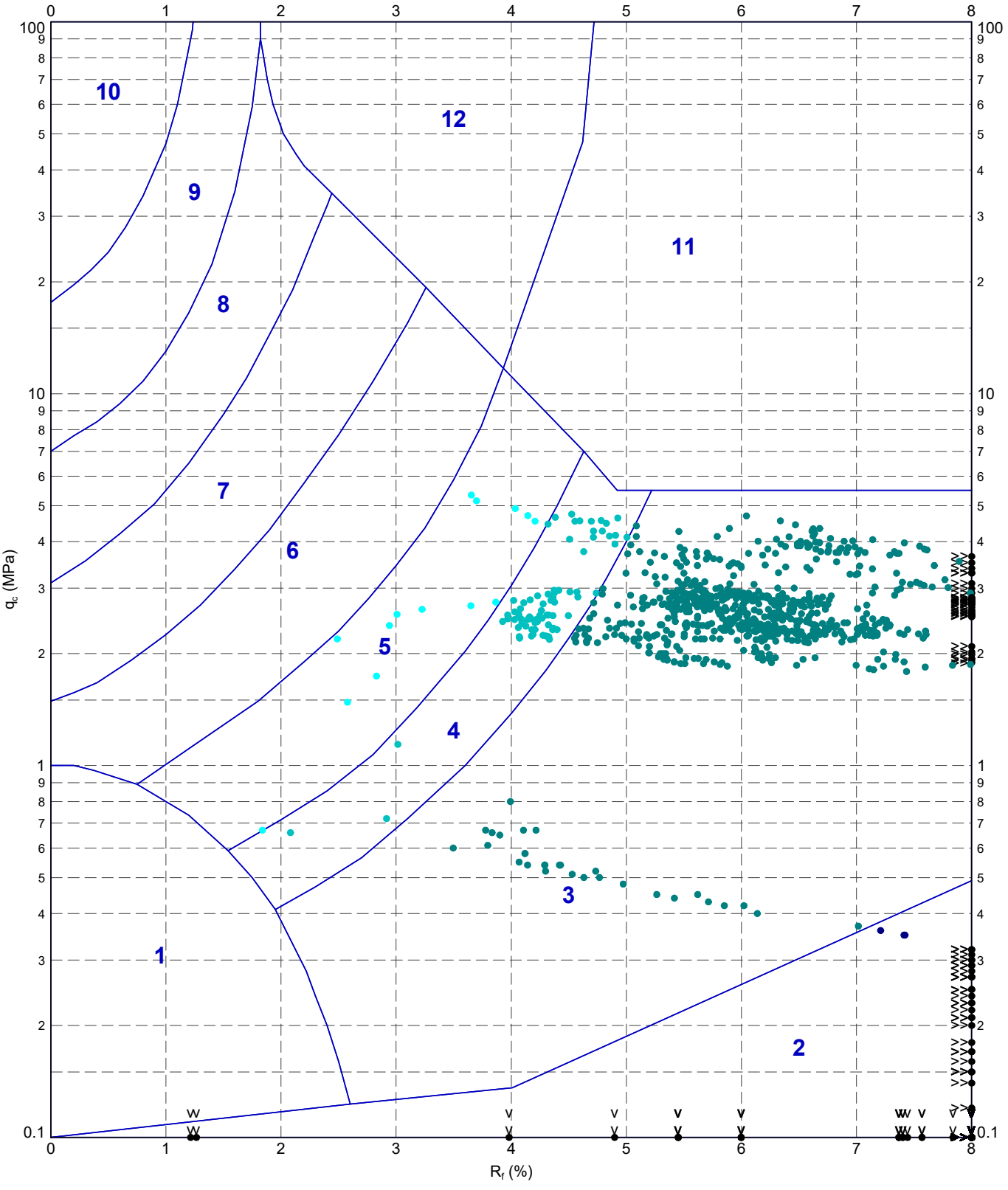
CLIENT : Structural Soils	EASTING : 385040.080 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398398.965 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.915 m OD		TEST DATE : 26/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	245 mV	242 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	243 mV	246 mV	0.002 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	303 mV	337 mV	0.009 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2380 mV	2436 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: Structural Soils Tim Clifford Manchester 765544 - Ancoats Robertson et al. 1986 q_c vs. R_f - ATK_CPT06	DRAWN	DATE 24/05/2023	
	CHECKED	DATE 24/05/2023	
	SCALE Not To Scale		A4
	PROJECT No 1230236	FIGURE No	

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:13 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

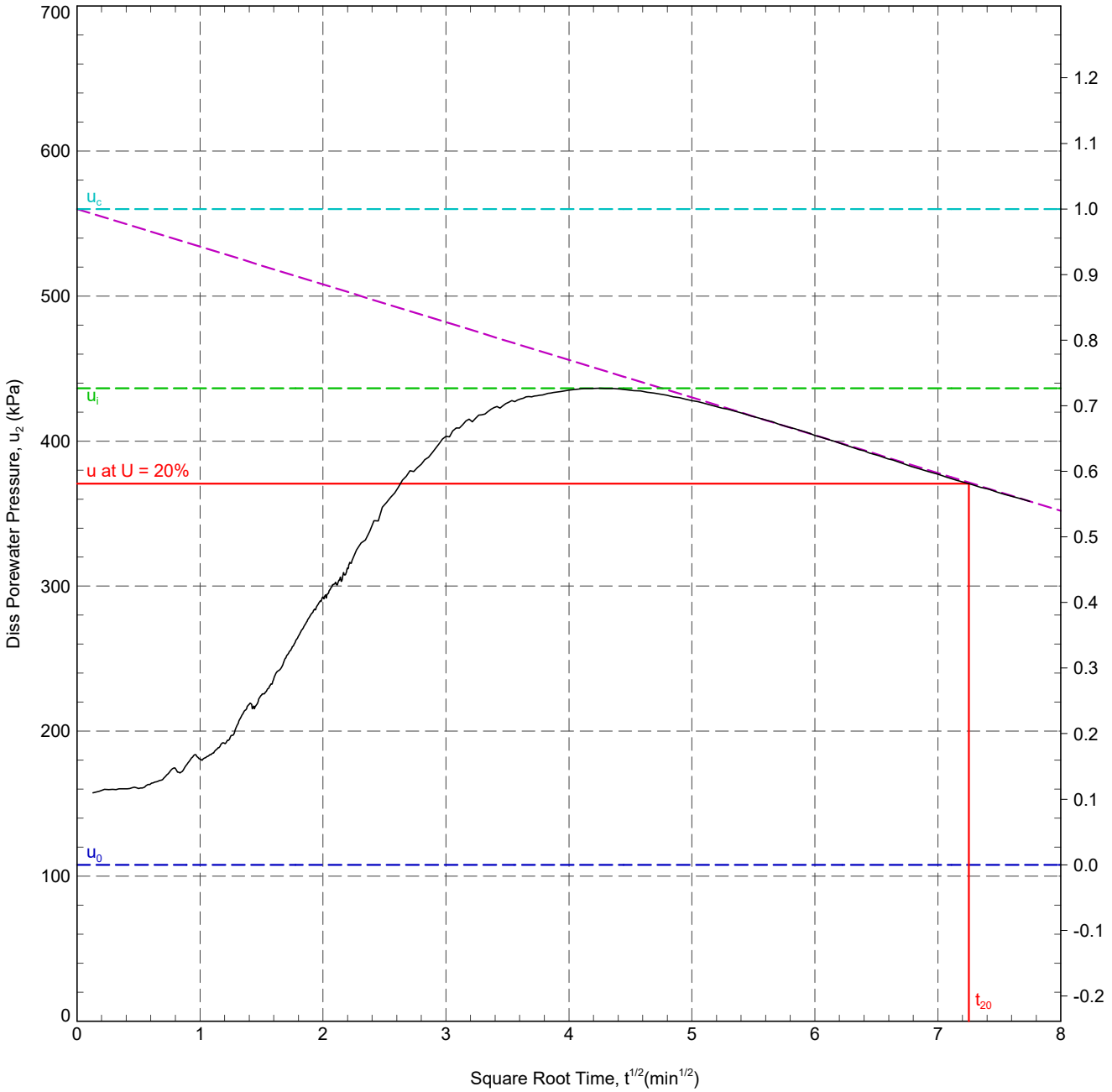
IN SITU SITE INVESTIGATION

Working with: STRUCTURAL SOILS LTD

Test ID

ATK_CPT06 - 11.00 m

CLIENT	: Structural Soils	AREA	: Ancoats, Manchester	SHEET	: 1 OF 1
ENGINEER	: Tim Clifford	EASTING	: 385040.1 m	STATUS	: Final
PROJECT	: 765544 - Ancoats	NORTHING	: 398399.0 m	DATE	: 04/05/23
LOCATION	: Manchester	COORD. SYS.	:		
PROJECT No.	: 1230236	ELEVATION	: 47.92 m		



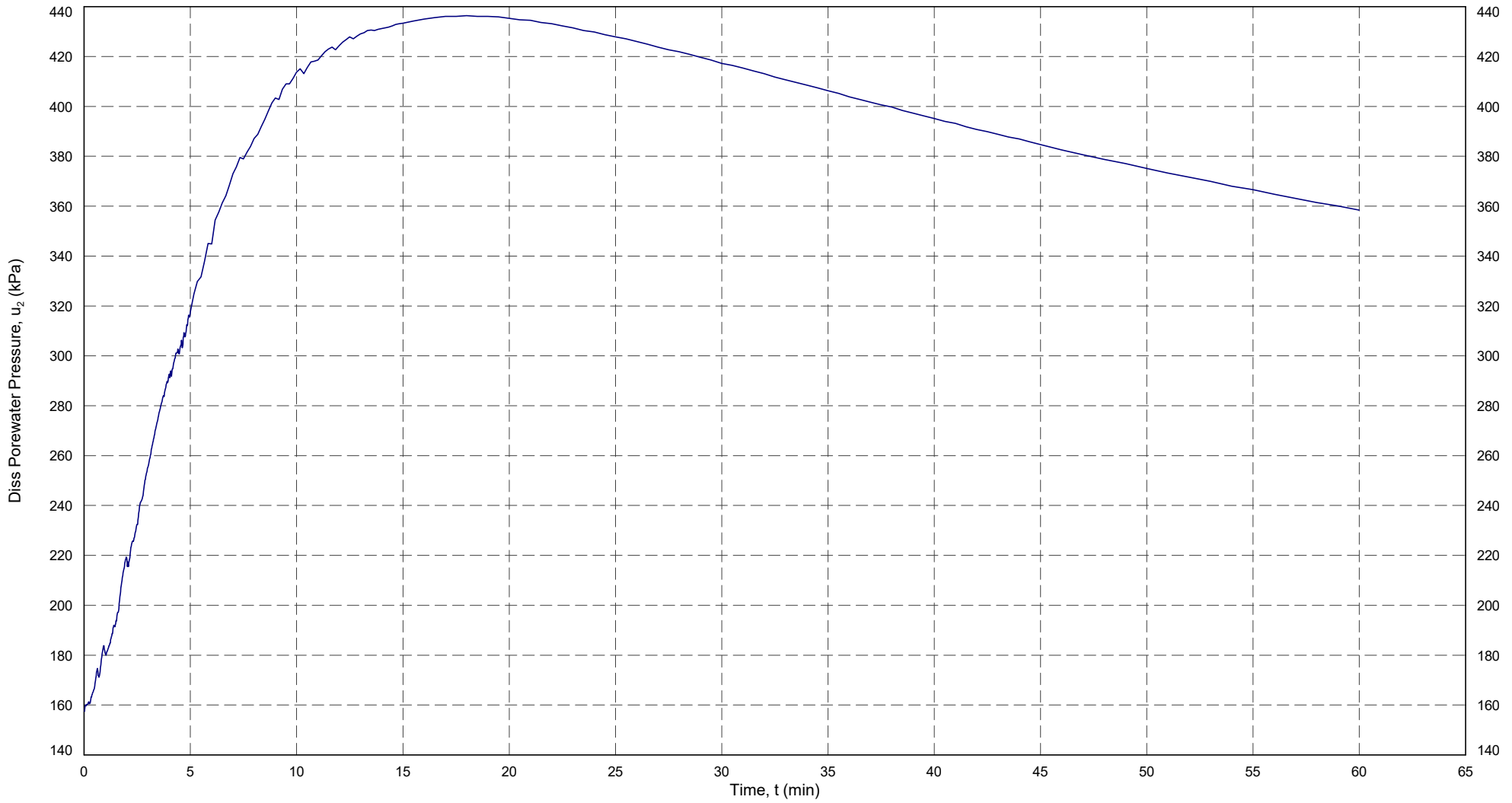
In Situ Pore Pressure, u_0:	107.9 kPa	Rigidity Index, I_r:	25.8
Initial Pore Pressure, u_i:	436.4 kPa	Ratio c_h/c_v:	1.25
Final Pore Pressure:	358.5 kPa		
Back Extrapolated Pore Pressure, u_c:	560 kPa		
Degree of Dissipation:	20%		
Dissipation Pressure:	370.6 kPa		
Time for 20% Dissipation, t_{20}:	52.60 min		

RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	15/05/2023
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	15/05/2023
CONE ID	: S15-CFIP.2177	APPROVED BY	: DW	DATE:	15/05/2023
OPERATOR	: RS				

REMARK
T20 reached. Test OK.

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:14 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

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - CHLOE.GLB Graph PPDT PORE PRESSURE VS. LIN T A4L 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:14 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



IN SITU SITE INVESTIGATION

TITLE

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Dissipation Test - ATK_CPT06

DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

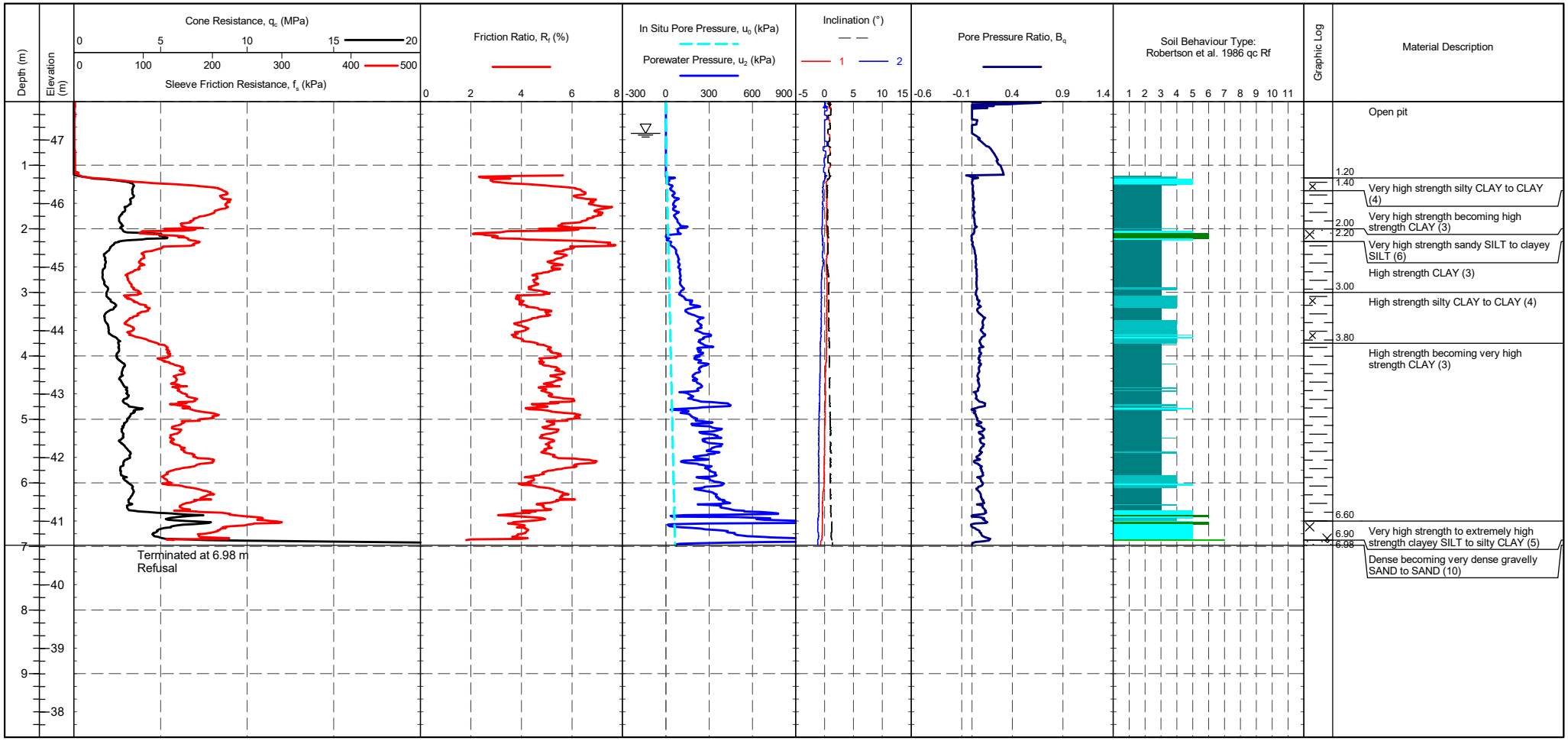
PointID: **ATK_CPT07**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385131.545 m
NORTHING : 398447.822 m
ELEVATION : 47.604 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 03/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	247 mV	253 mV	0.069 MPa
Sleeve	247 mV	253 mV	0.004 kPa
Pore Pressure 2	390 mV	376 mV	-0.004 kPa
X-Y Inclinometer	2498 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

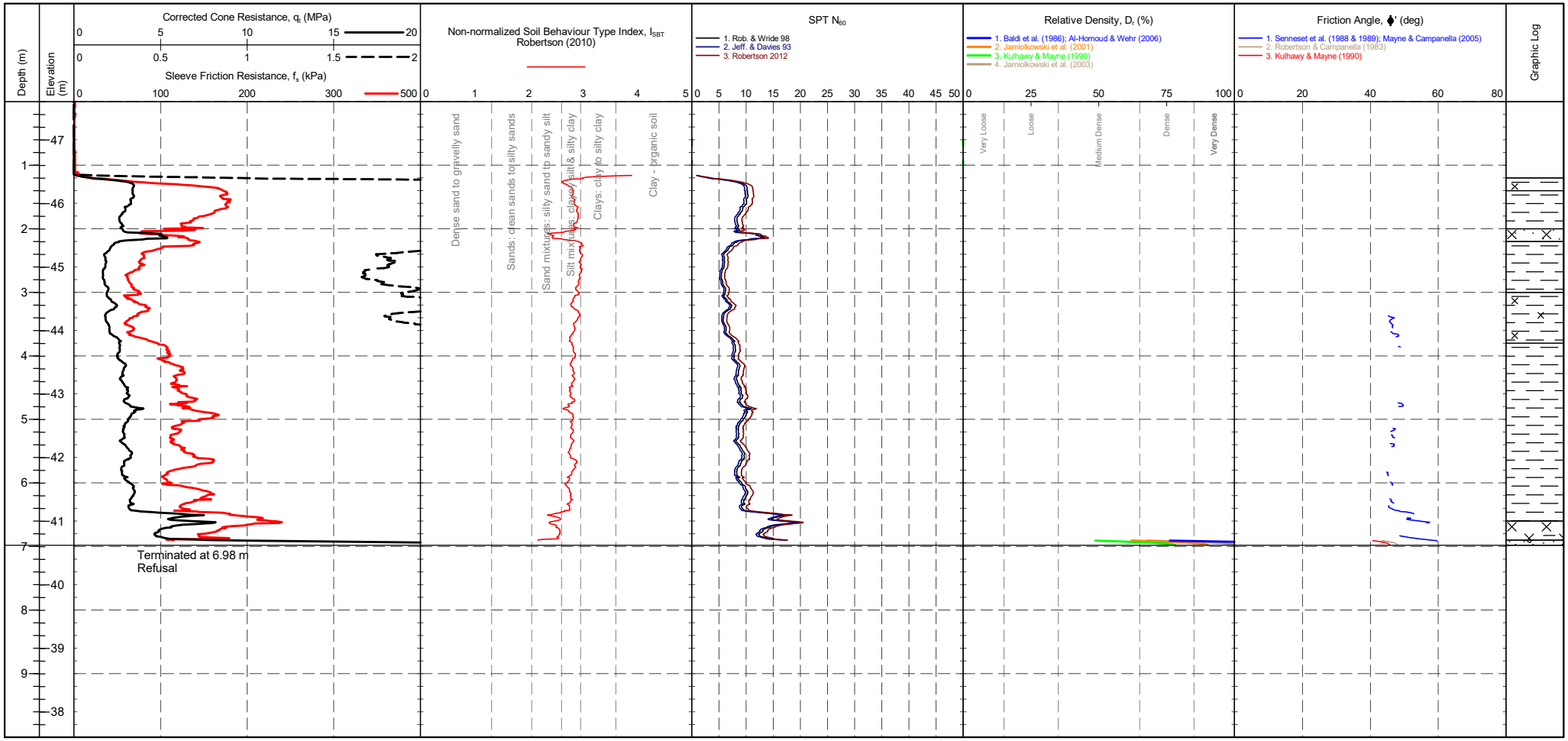
Groundwater Level
Dissipation Test

CPT LOG 02

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT07**

CLIENT : Structural Soils	EASTING : 385131.545 m	Remark:	SHEET : 1 OF 1
PROJECT : 765544 - Ancoats	NORTHING : 398447.822 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.604 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	247 mV	253 mV
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	247 mV	253 mV
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	390 mV	376 mV
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2498 mV	2484 mV

Transducer	Difference
Tip	0.069 MPa
Sleeve	0.004 kPa
Pore Pressure 2	-0.004 kPa

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

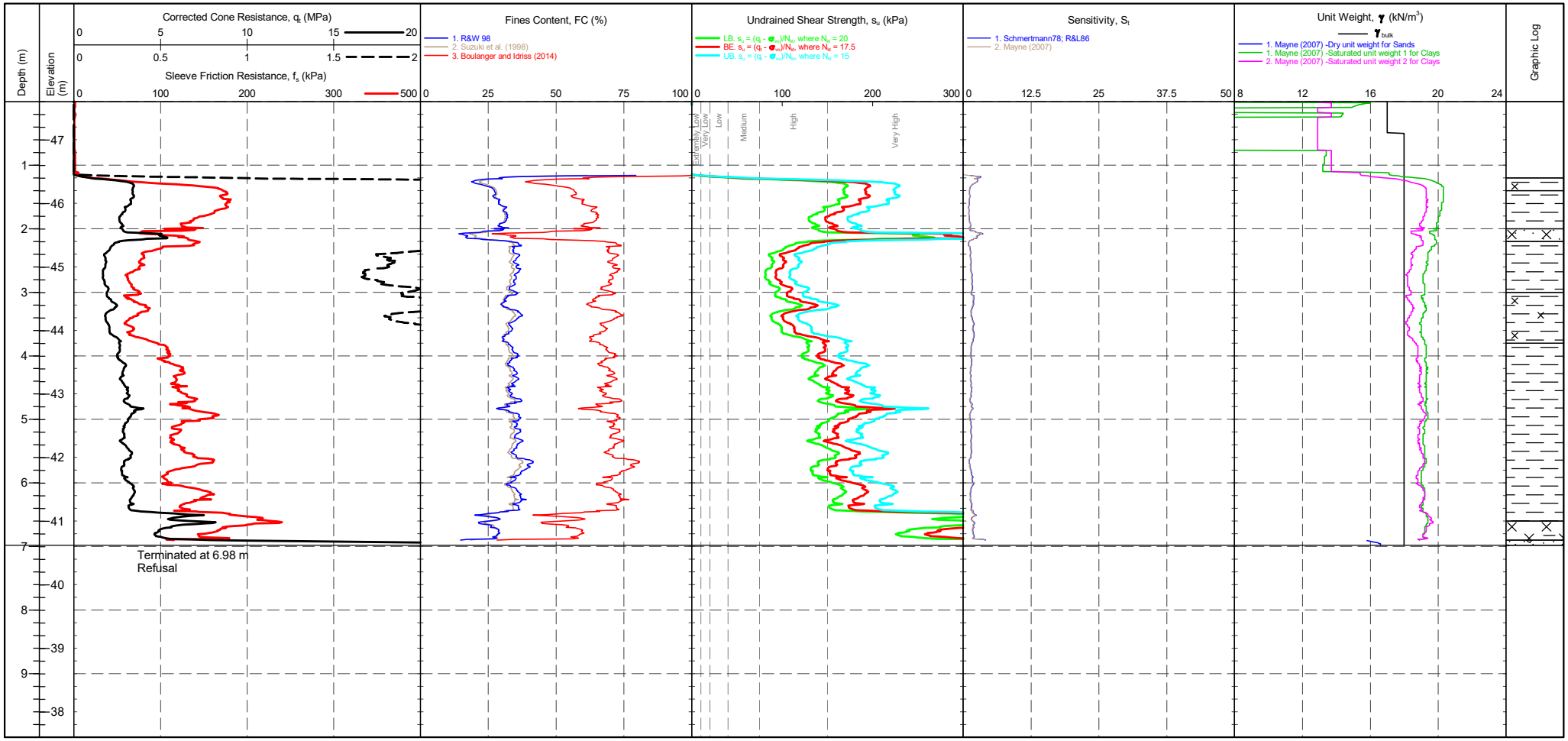
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT07**

CLIENT : Structural Soils	EASTING : 385131.545 m	Remark:	SHEET : 1 OF 1
PROJECT : 765544 - Ancoats	NORTHING : 398447.822 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.604 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	247 mV	253 mV	0.069 MPa
Sleeve	247 mV	253 mV	0.004 kPa
Pore Pressure 2	390 mV	376 mV	-0.004 kPa
X-Y Inclinometer	2498 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

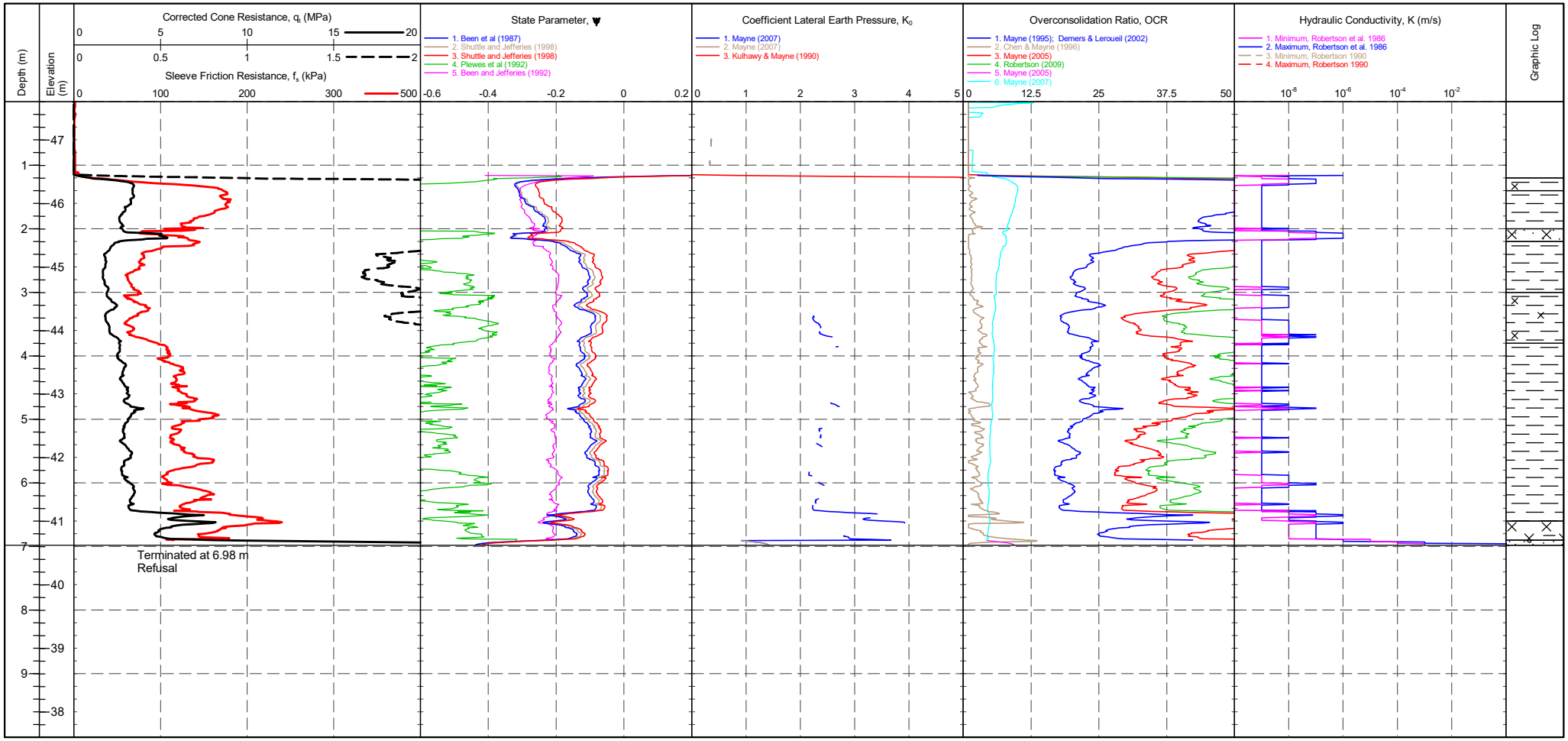
Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT07**

CLIENT : Structural Soils	EASTING : 385131.545 m	Remark:	SHEET : 1 OF 1
PROJECT : 765544 - Ancoats	NORTHING : 398447.822 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.604 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	247 mV	253 mV	0.069 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	247 mV	253 mV	0.004 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	390 mV	376 mV	-0.004 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2498 mV	2484 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

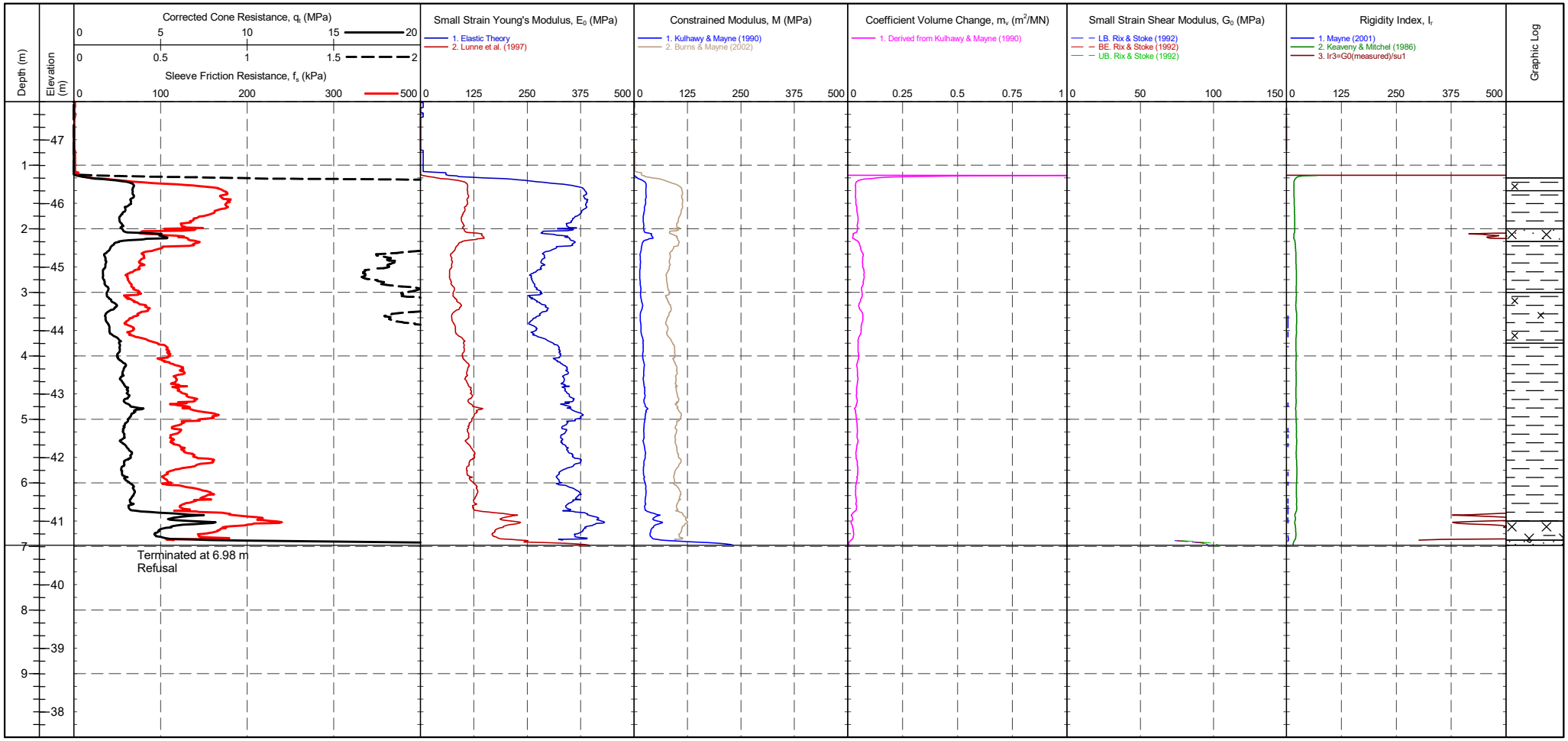
PointID: **ATK_CPT07**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385131.545 m
NORTHING : 398447.822 m
ELEVATION : 47.604 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 03/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022

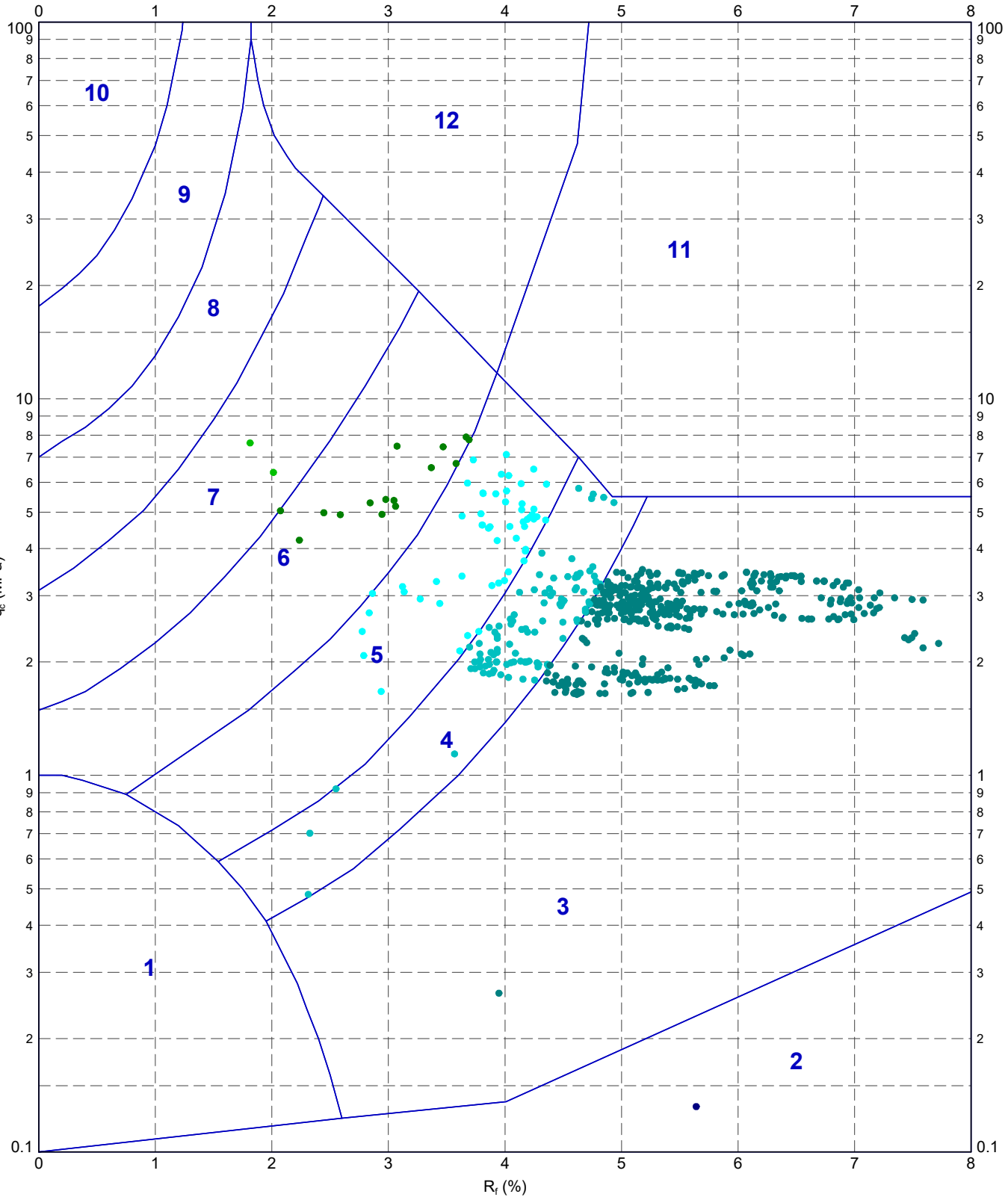


CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES	
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

Transducer	Pre	Post	Difference
Tip	247 mV	253 mV	0.069 MPa
Sleeve	247 mV	253 mV	0.004 kPa
Pore Pressure 2	390 mV	376 mV	-0.004 kPa
X-Y Inclinometer	2498 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

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Robertson et al. 1986 q_c vs. R_f - ATK_CPT07

DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:15 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

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

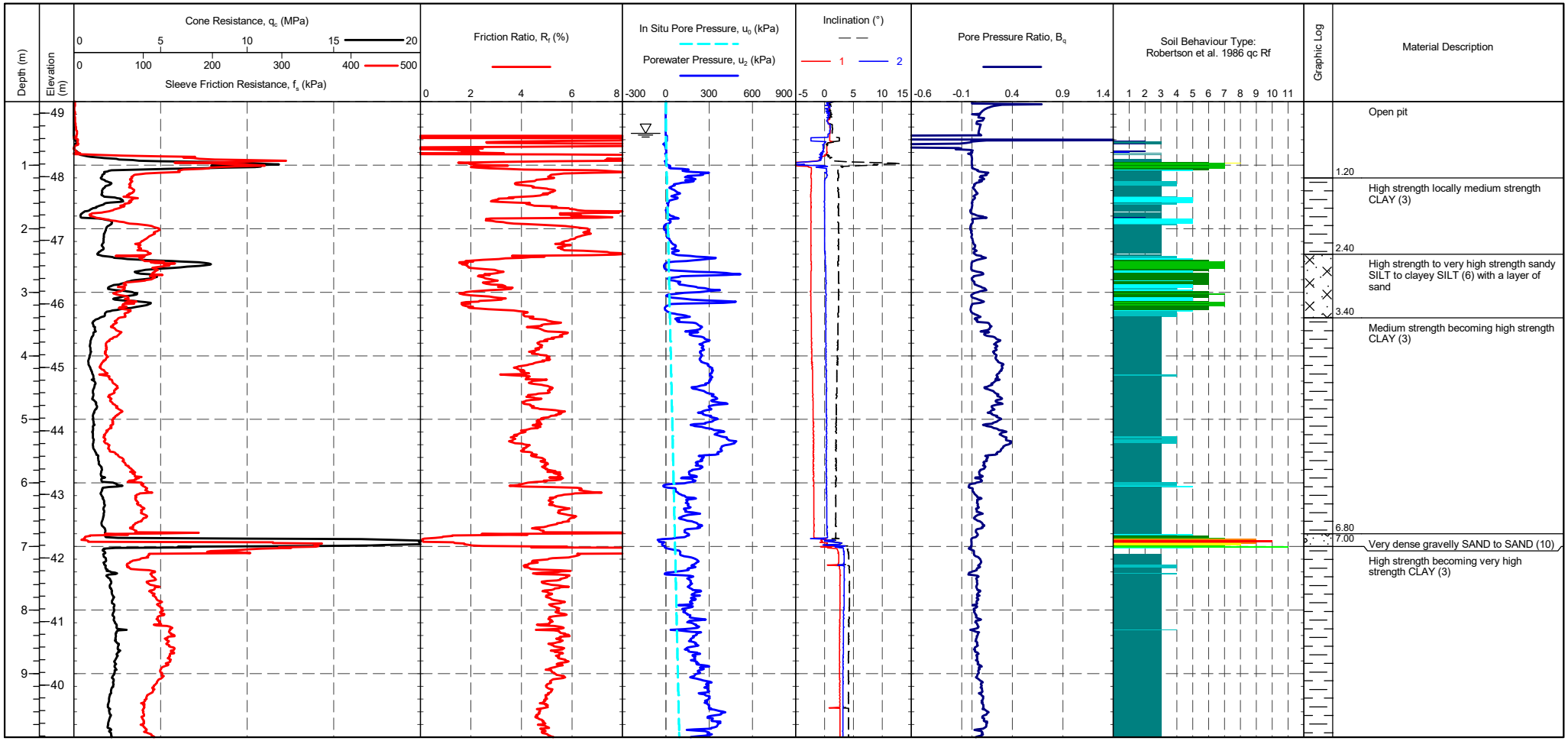
PointID: **ATK_CPT08**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385029.030 m
NORTHING : 398501.904 m
ELEVATION : 49.181 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	246 mV	246 mV	0 MPa
Sleeve	245 mV	243 mV	-0.001 kPa
Pore Pressure 2	324 mV	314 mV	-0.003 kPa
X-Y Inclinometer	2504 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 01

Working with: STRUCTURAL SOILS LTD

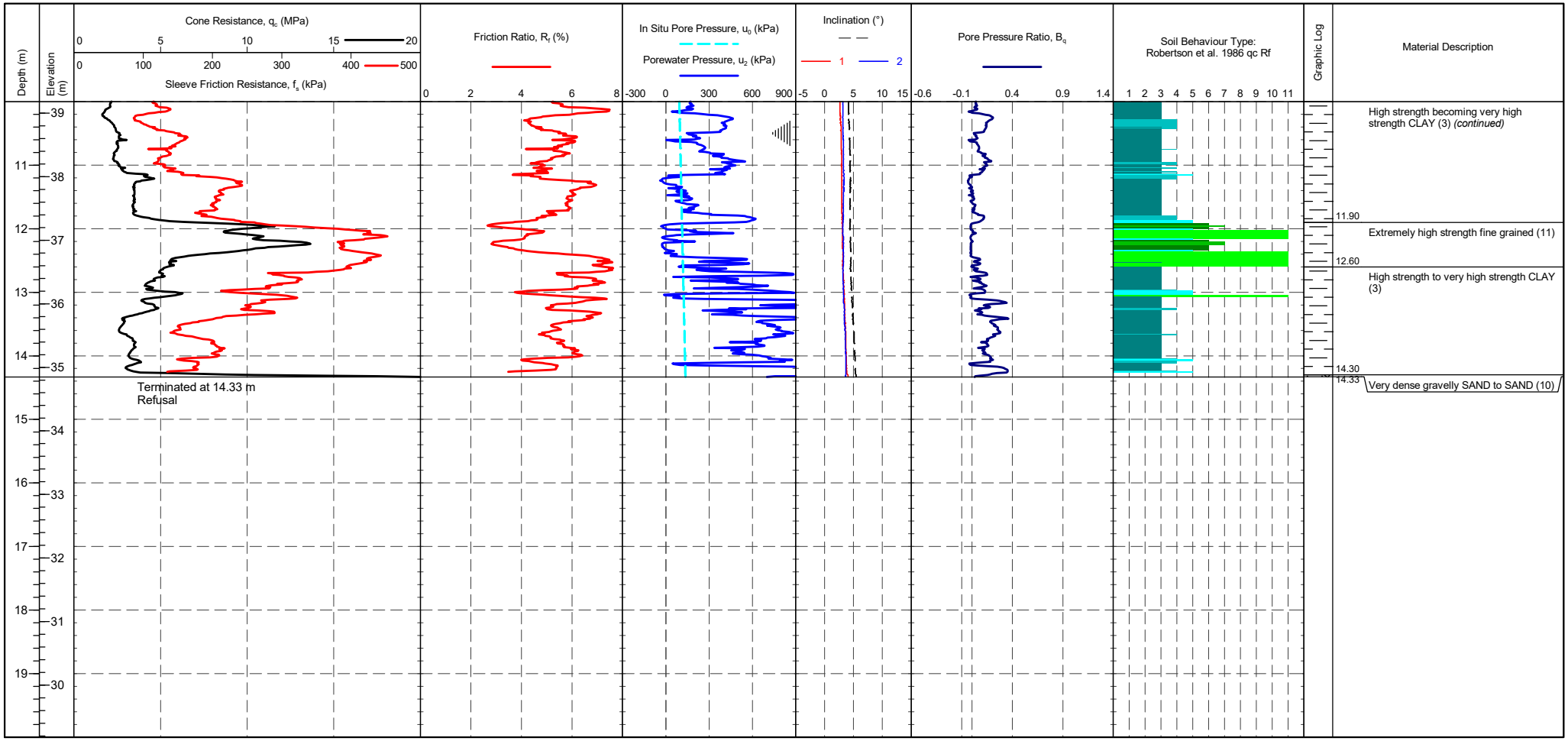
PointID: **ATK_CPT08**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385029.030 m
NORTHING : 398501.904 m
ELEVATION : 49.181 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	246 mV	246 mV	0 MPa
Sleeve	245 mV	243 mV	-0.001 kPa
Pore Pressure 2	324 mV	314 mV	-0.003 kPa
X-Y Inclinometer	2504 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

Working with: STRUCTURAL SOILS LTD

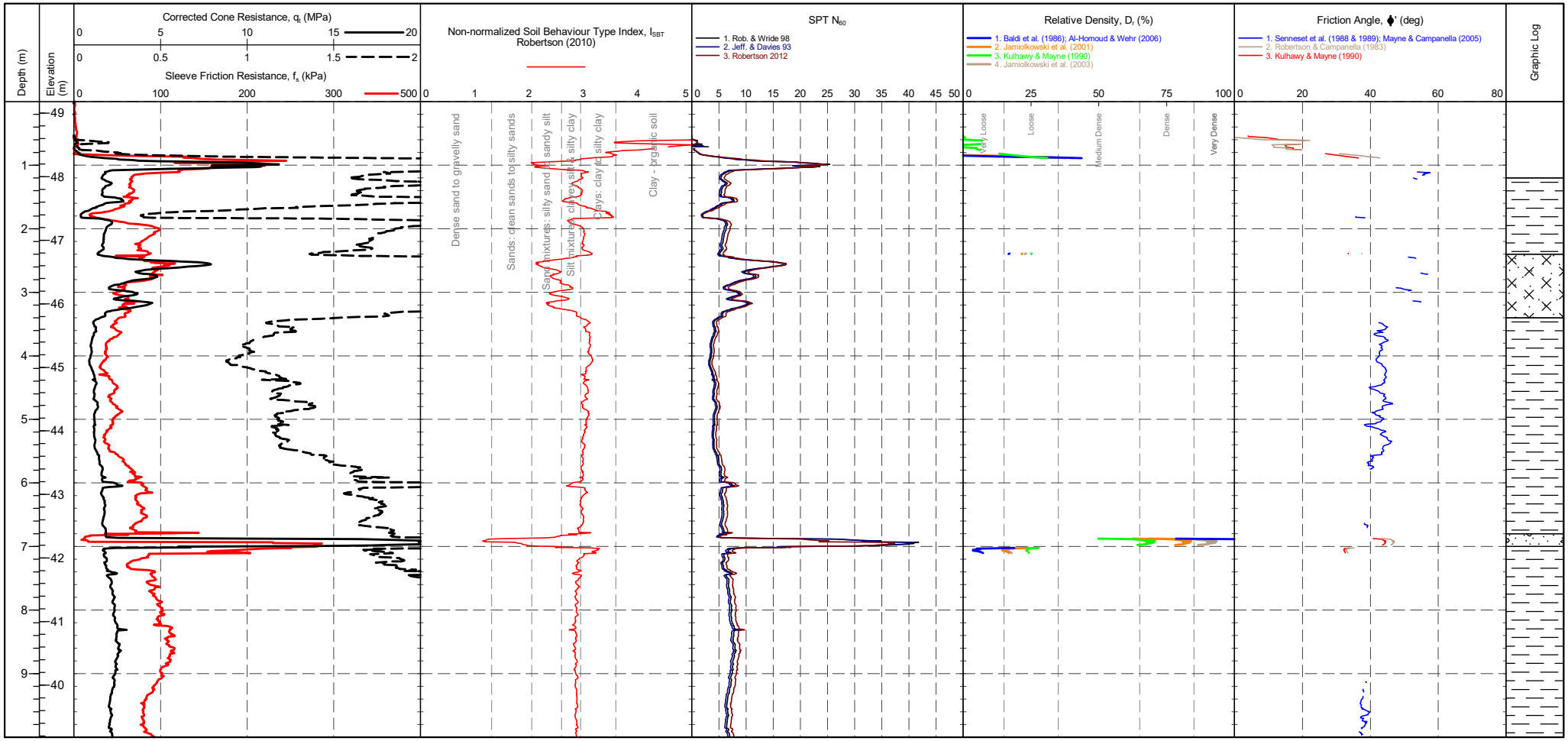
PointID: **ATK_CPT08**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385029.030 m
NORTHING : 398501.904 m
ELEVATION : 49.181 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	246 mV	246 mV	0 MPa
Sleeve	245 mV	243 mV	-0.001 kPa
Pore Pressure 2	324 mV	314 mV	-0.003 kPa
X-Y Inclinometer	2504 mV	2496 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

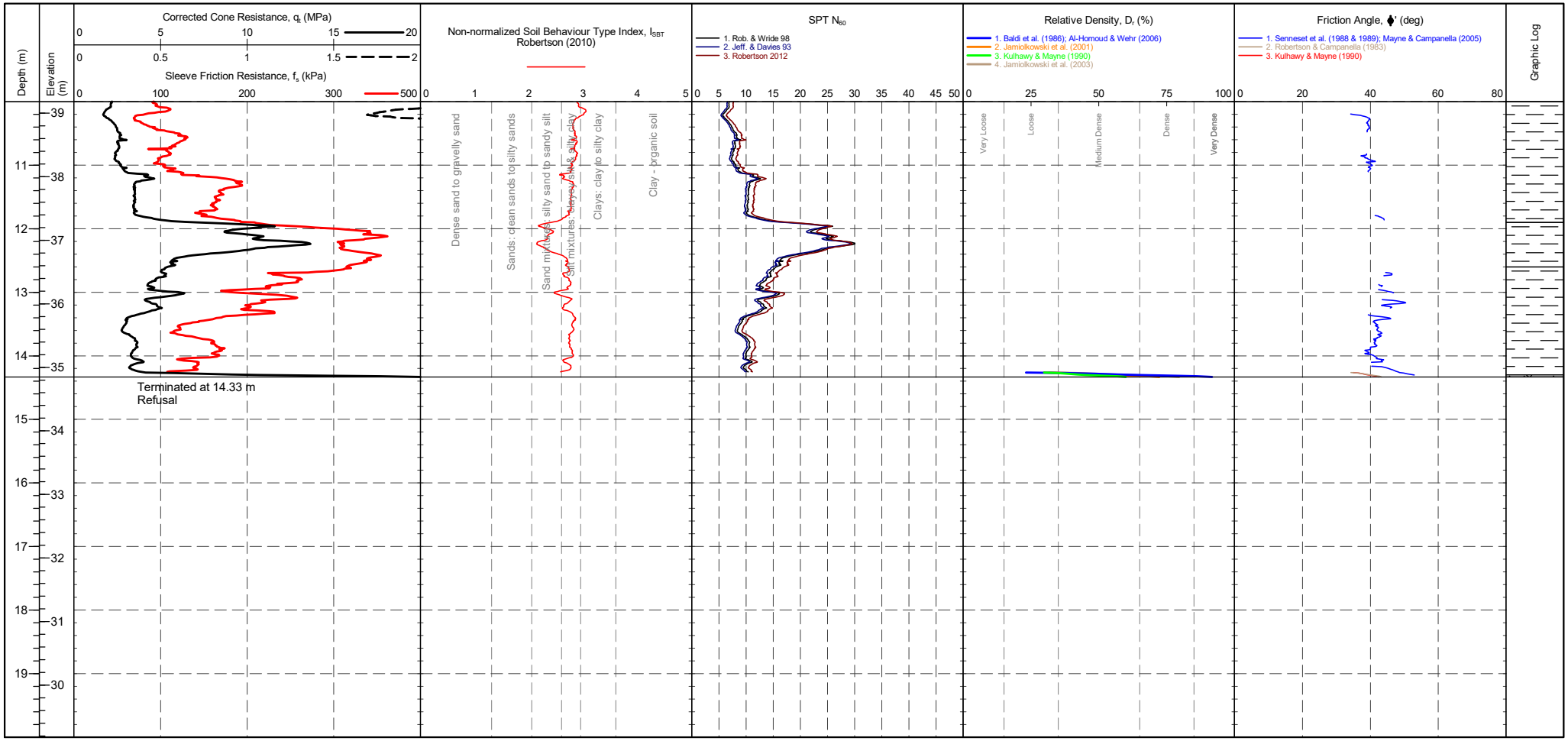
Dissipation Test

CPT LOG 02

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT08**

CLIENT : Structural Soils	EASTING : 385029.030 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398501.904 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.181 m OD		TEST DATE : 27/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	246 mV	246 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	245 mV	243 mV	-0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	324 mV	314 mV	-0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2504 mV	2496 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

Working with: STRUCTURAL SOILS LTD

CPT LOG 03

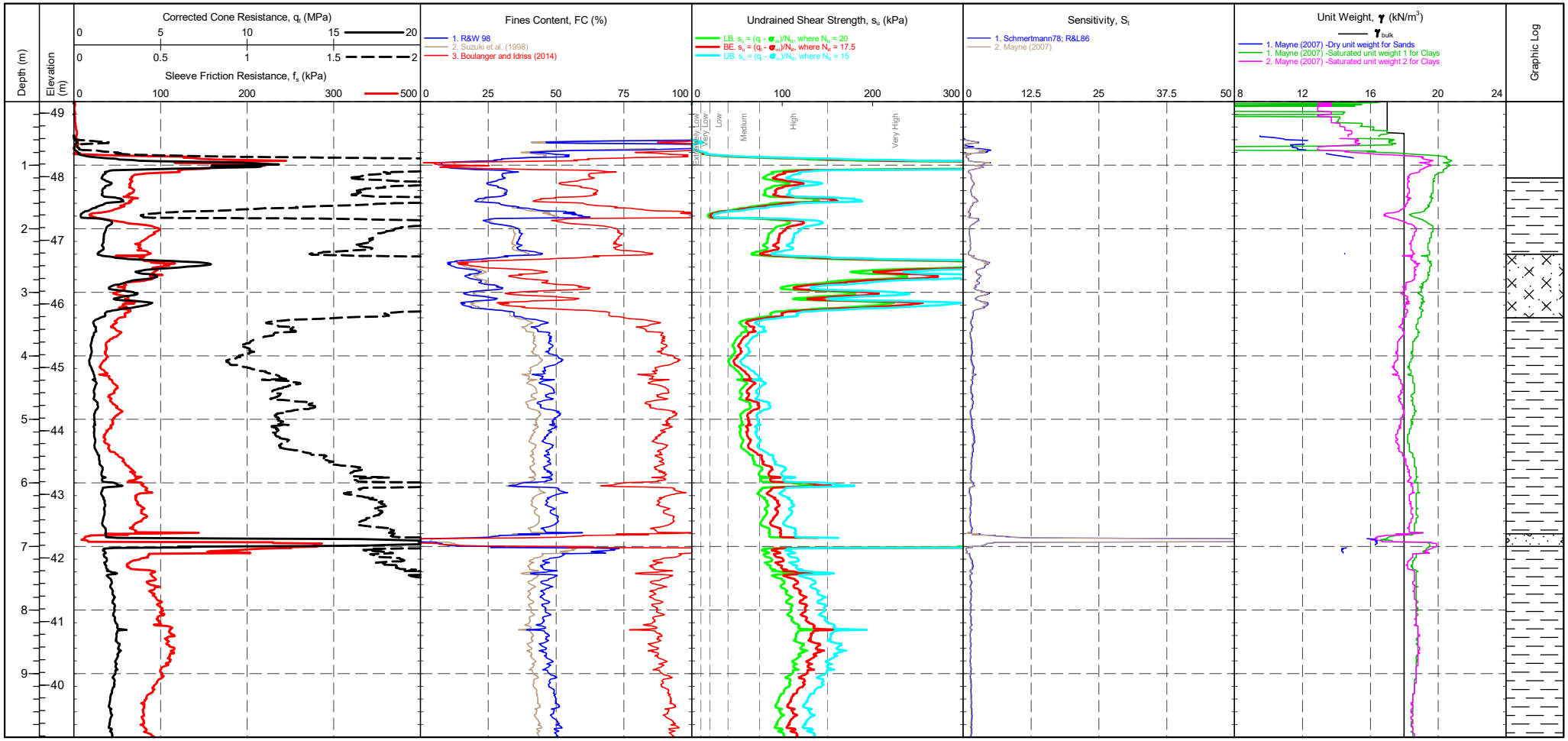
PointID: **ATK_CPT08**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385029.030 m
NORTHING : 398501.904 m
ELEVATION : 49.181 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	246 mV	246 mV	0 MPa
Sleeve	245 mV	243 mV	-0.001 kPa
Pore Pressure 2	324 mV	314 mV	-0.003 kPa
X-Y Inclinometer	2504 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
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

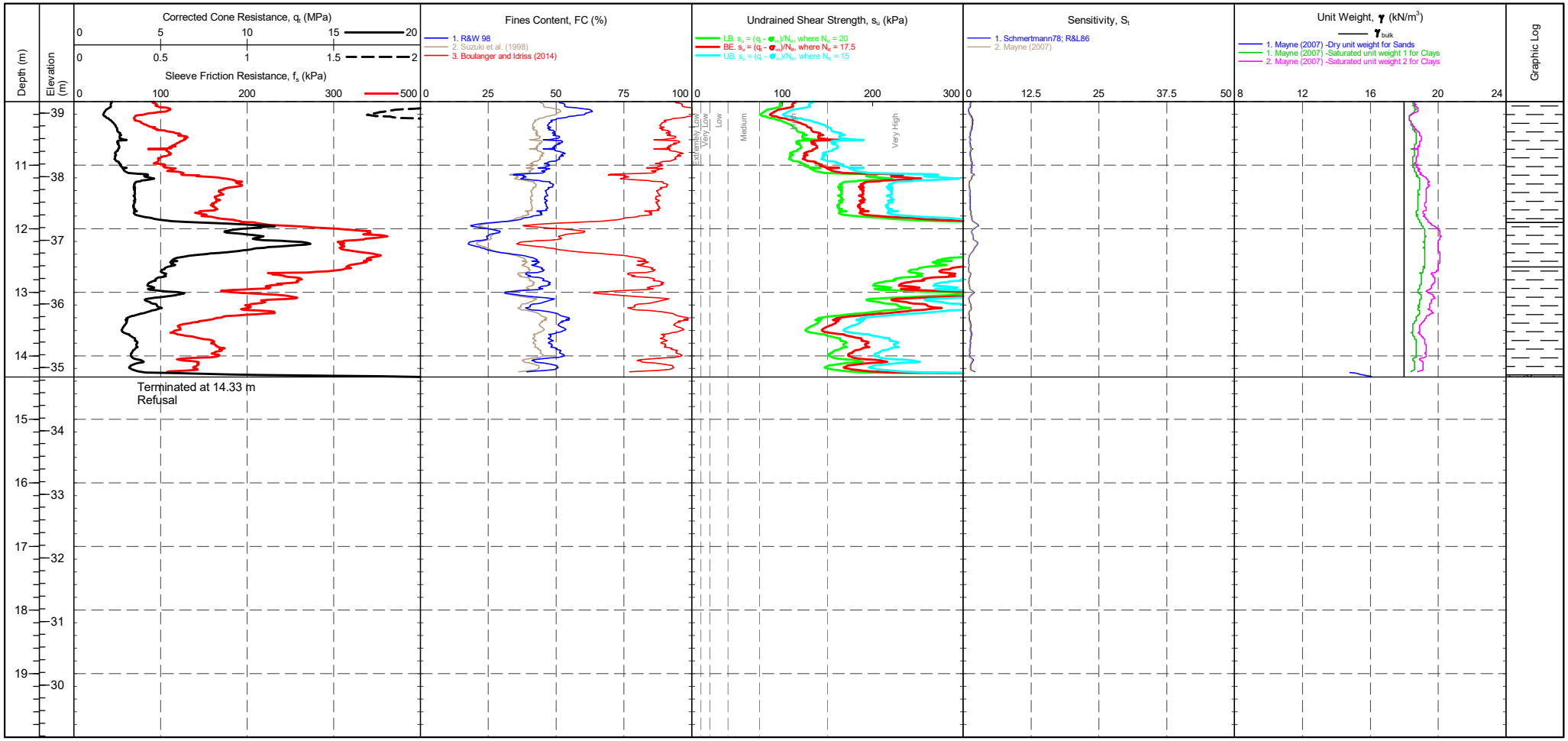
PointID: **ATK_CPT08**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385029.030 m
NORTHING : 398501.904 m
ELEVATION : 49.181 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	246 mV	246 mV	0 MPa
Sleeve	245 mV	243 mV	-0.001 kPa
Pore Pressure 2	324 mV	314 mV	-0.003 kPa
X-Y Inclinometer	2504 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
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

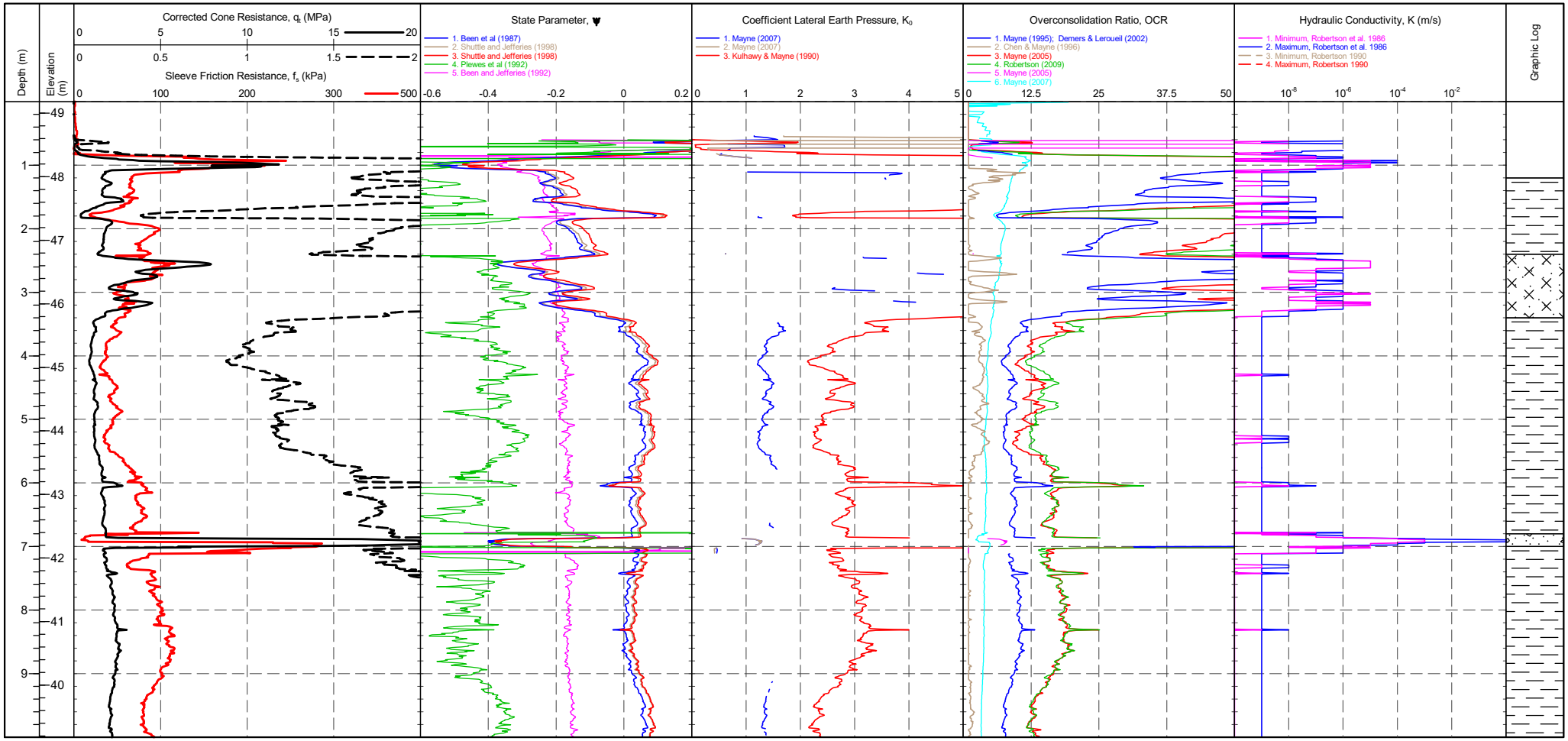
Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT08**

CLIENT : Structural Soils PROJECT : 765544 - Ancoats LOCATION : Manchester PROJECT No. : 1230236	EASTING : 385029.030 m NORTHING : 398501.904 m ELEVATION : 49.181 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 1 OF 2 STATUS : Final TEST DATE : 27/04/2023 PLOT DATE : 24/05/2023 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	246 mV	246 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	245 mV	243 mV	-0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	324 mV	314 mV	-0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2504 mV	2496 mV	

Groundwater Level

Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

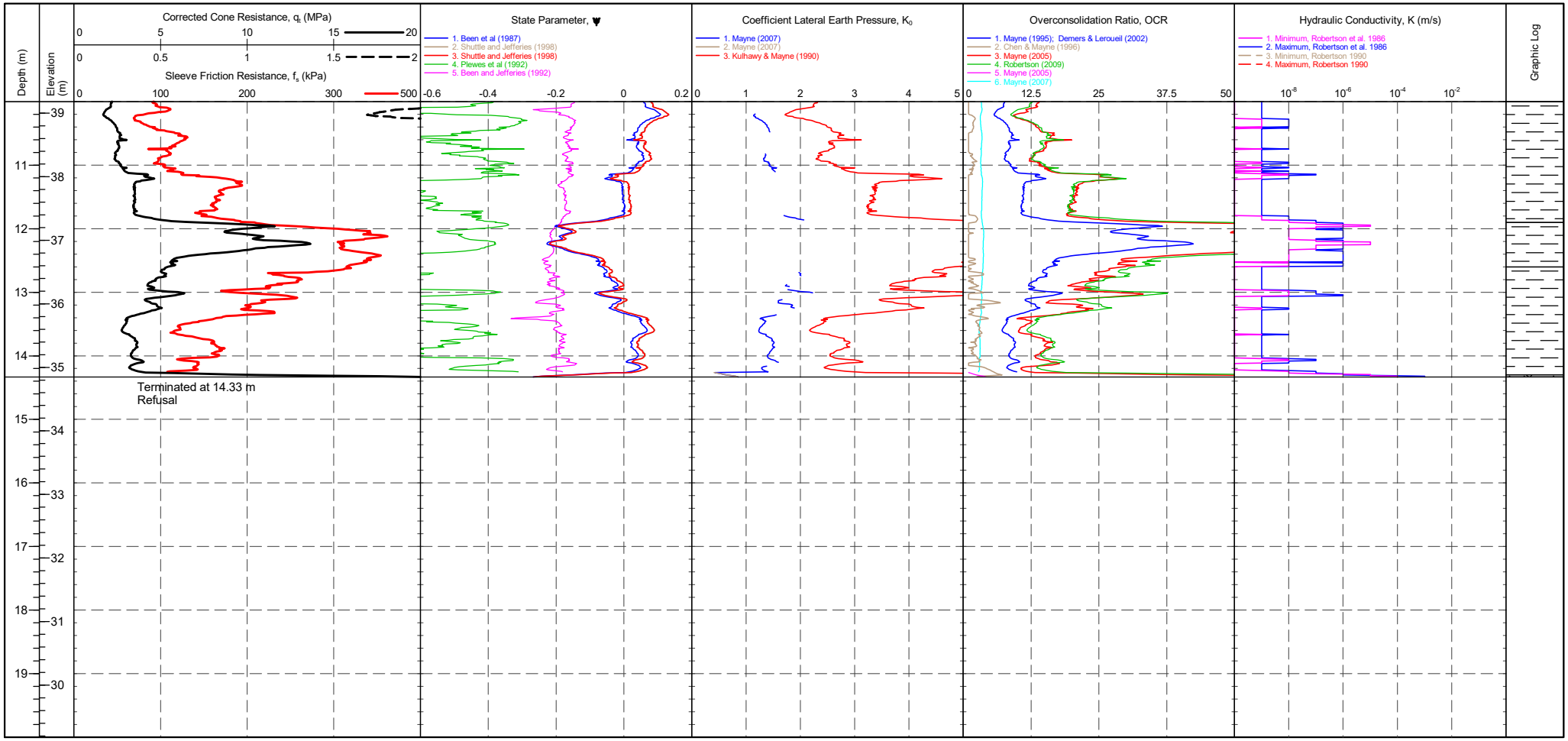
PointID: **ATK_CPT08**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385029.030 m
NORTHING : 398501.904 m
ELEVATION : 49.181 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	246 mV	246 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	245 mV	243 mV	-0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	324 mV	314 mV	-0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2504 mV	2496 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

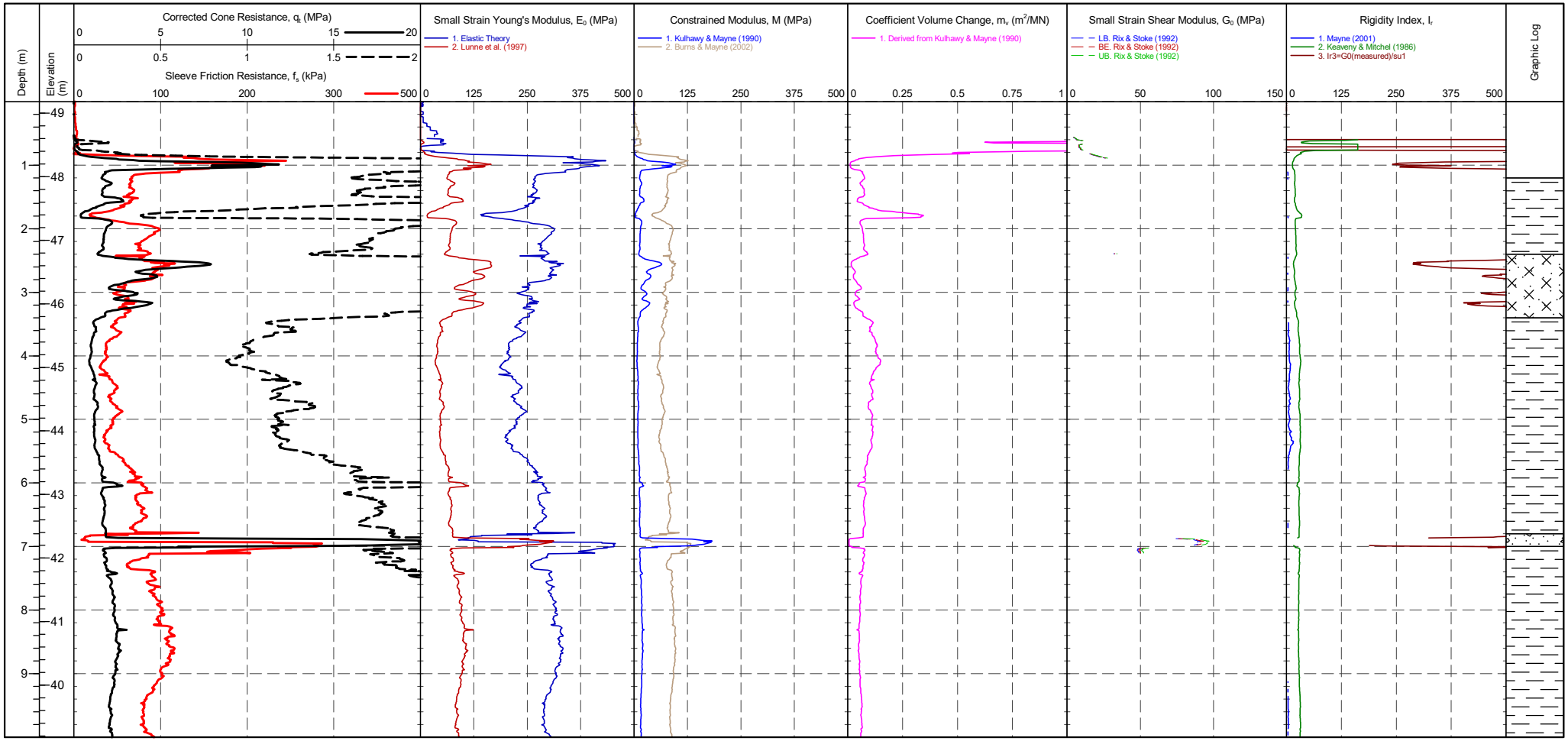
PointID: **ATK_CPT08**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385029.030 m
NORTHING : 398501.904 m
ELEVATION : 49.181 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

Transducer	Pre	Post	Difference
Tip	246 mV	246 mV	0 MPa
Sleeve	245 mV	243 mV	-0.001 kPa
Pore Pressure 2	324 mV	314 mV	-0.003 kPa
X-Y Inclinometer	2504 mV	2496 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

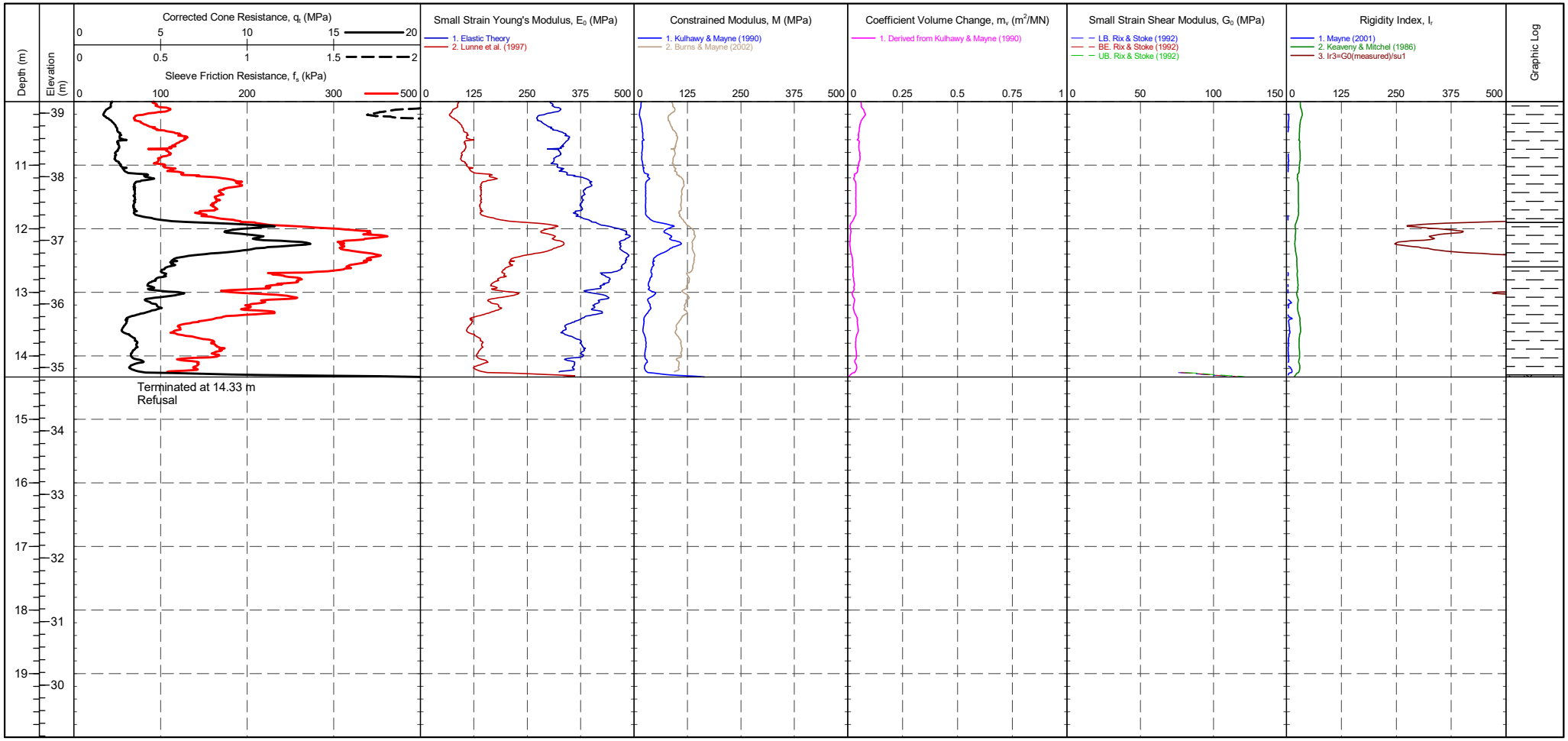
PointID: **ATK_CPT08**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385029.030 m
NORTHING : 398501.904 m
ELEVATION : 49.181 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022

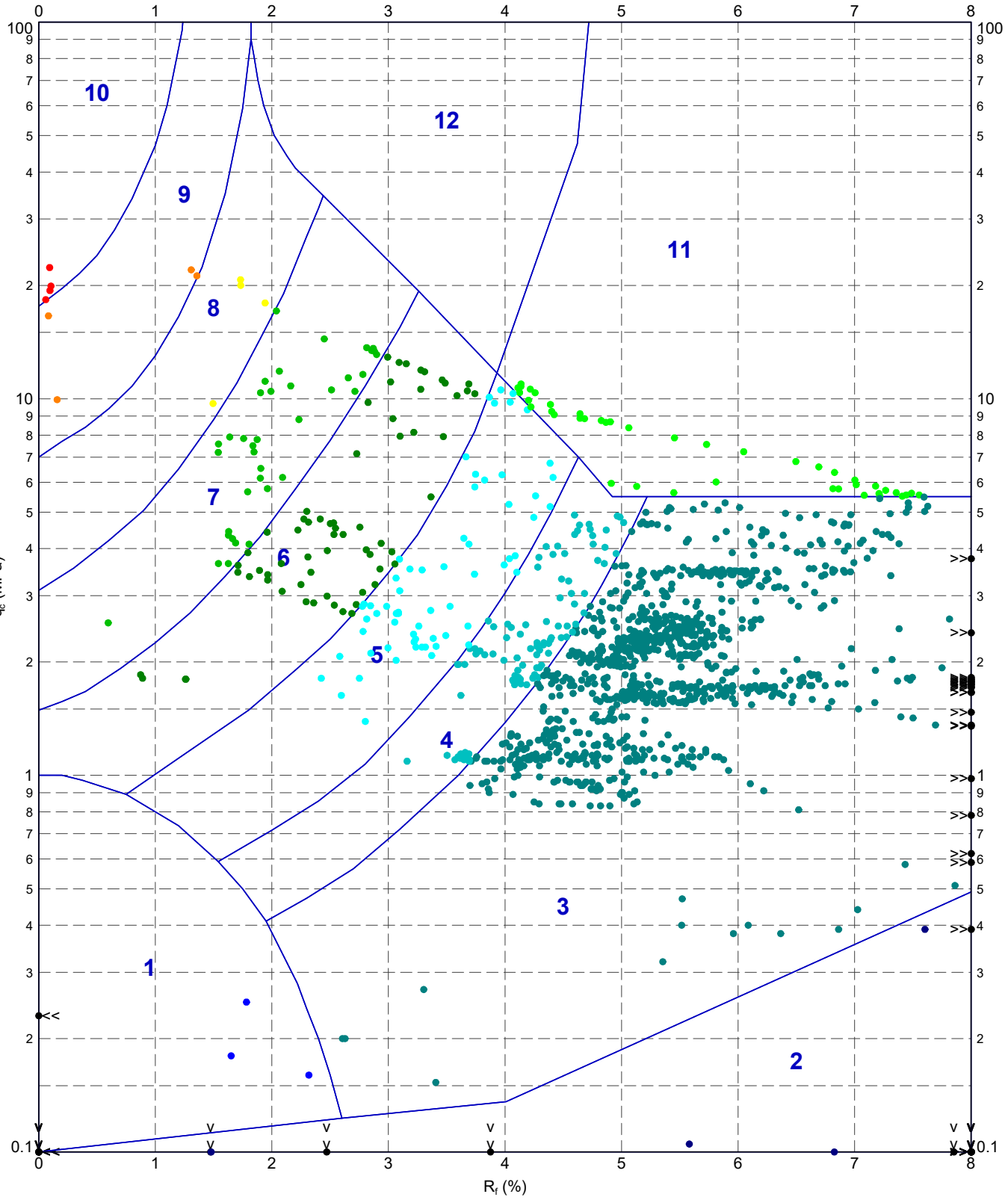


CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES	
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

Transducer	Pre	Post	Difference
Tip	246 mV	246 mV	0 MPa
Sleeve	245 mV	243 mV	-0.001 kPa
Pore Pressure 2	324 mV	314 mV	-0.003 kPa
X-Y Inclinometer	2504 mV	2496 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

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Robertson et al. 1986 q_c vs. R_f - ATK_CPT08

DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:17 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

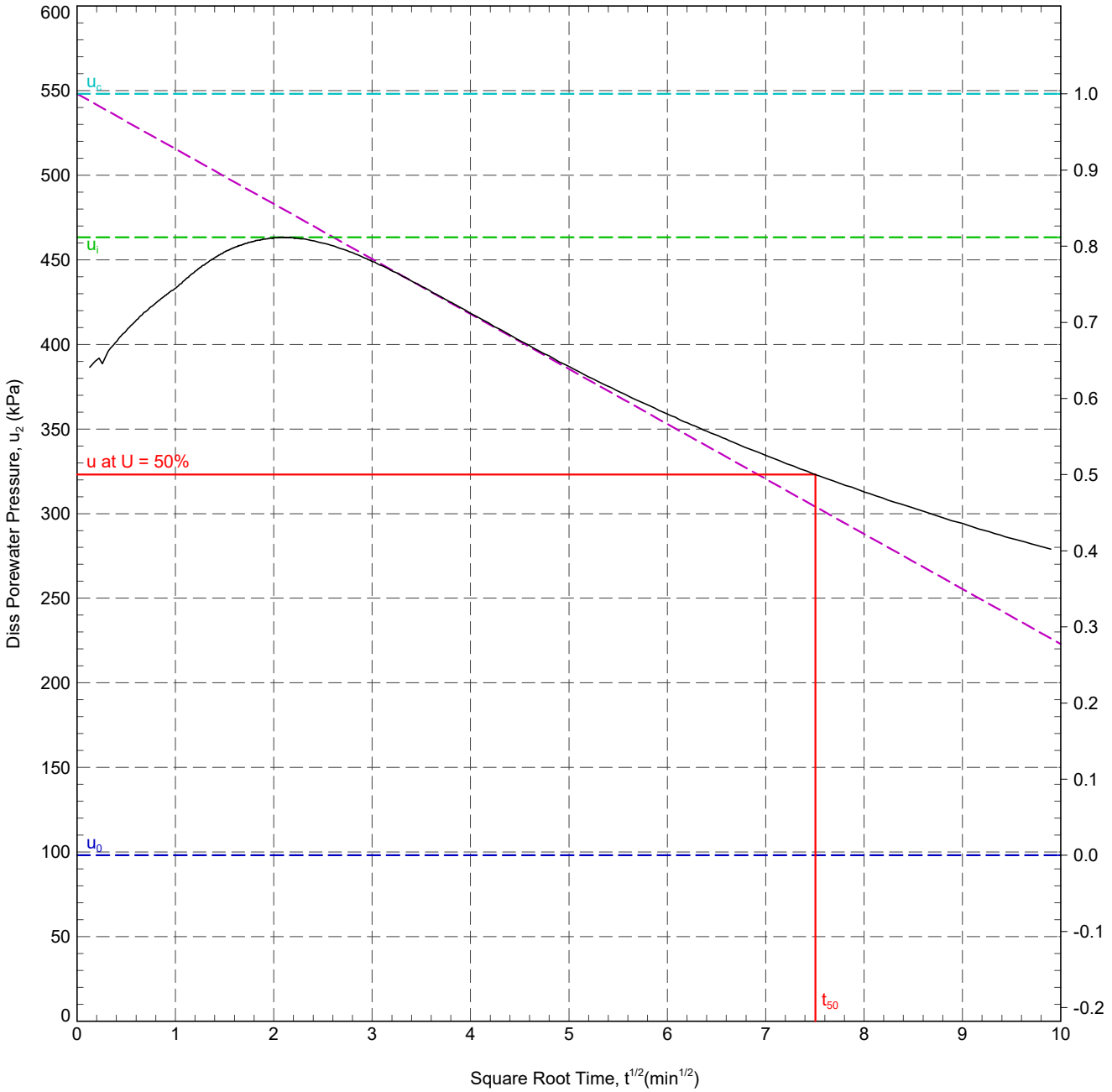
IN SITU SITE INVESTIGATION

Working with: STRUCTURAL SOILS LTD

Test ID

ATK_CPT08 - 10.50 m

CLIENT	: Structural Soils	AREA	: Ancoats Manchester	SHEET	: 1 OF 1
ENGINEER	: Tim Clifford	EASTING	: 385029.0 m	STATUS	: Final
PROJECT	: 765544 - Ancoats	NORTHING	: 398501.9 m	DATE	: 27/04/23
LOCATION	: Manchester	COORD. SYS.	:		
PROJECT No.	: 1230236	ELEVATION	: 49.18 m		



In Situ Pore Pressure, u_0:	98.1 kPa	Rigidity Index, I_r:	29
Initial Pore Pressure, u_i:	463.2 kPa	Horizontal Coefficient of Consolidation, c_h:	6.51x10^0 m^2/yr
Final Pore Pressure:	278.9 kPa	Ratio c_h/c_v:	1.25
Back Extrapolated Pore Pressure, u_c:	548 kPa	Vertical Coefficient of Consolidation, c_v:	5.21x10^0 m^2/yr
Degree of Dissipation:	50%		
Dissipation Pressure:	323.0 kPa		
Time for 50% Dissipation, t_{50}:	56.33 min		

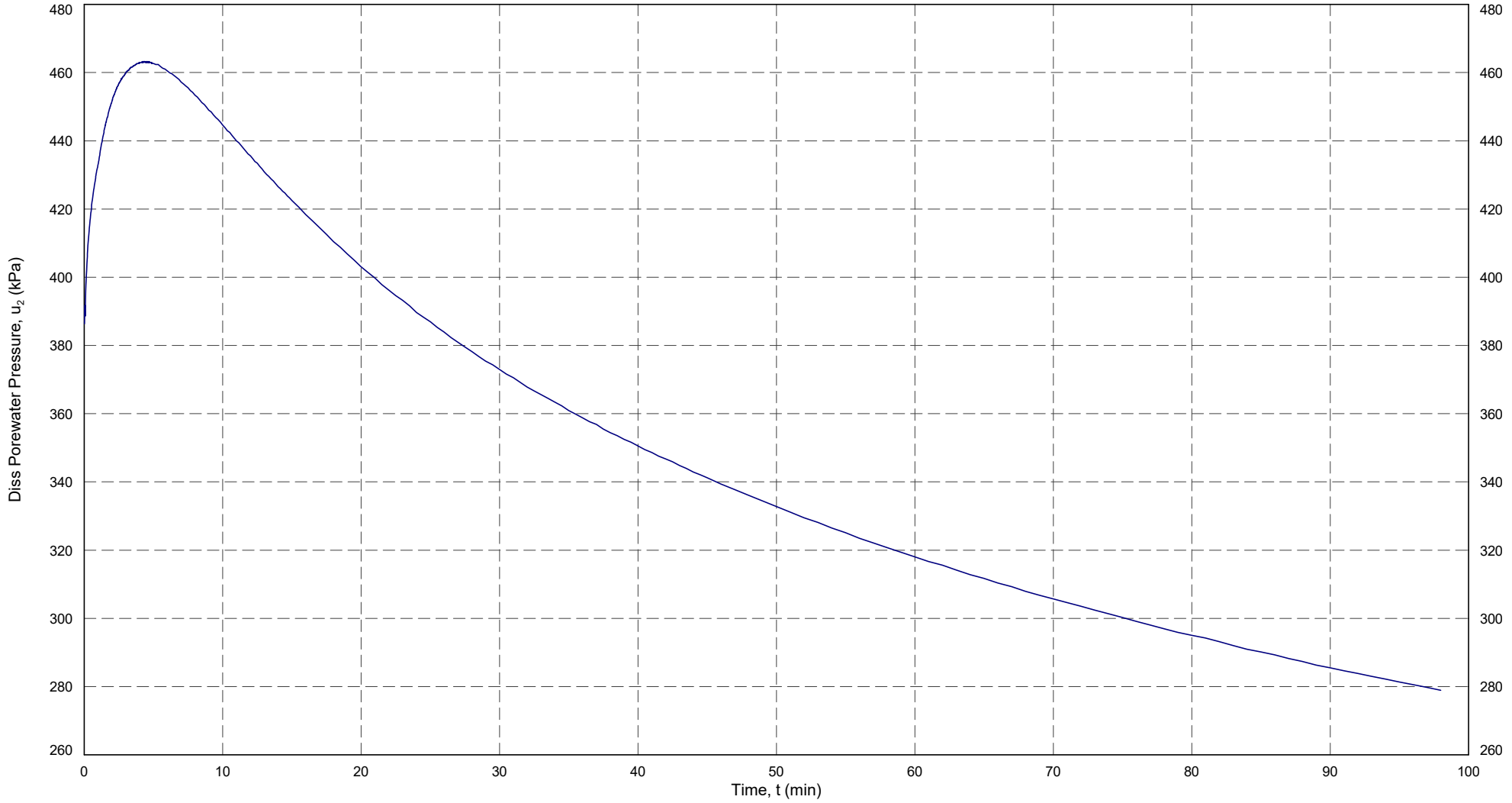
RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	15/05/2023
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	15/05/2023
CONE ID	: S15-CFIP.2177	APPROVED BY	: DW	DATE:	15/05/2023
OPERATOR	: RS				

REMARK

T50 reached. Test OK.

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:17 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

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - CHLOE.GLB Graph PPDT PORE PRESSURE VS. LIN T A4L 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:17 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



IN SITU SITE INVESTIGATION

TITLE

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Dissipation Test - ATK_CPT08

DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

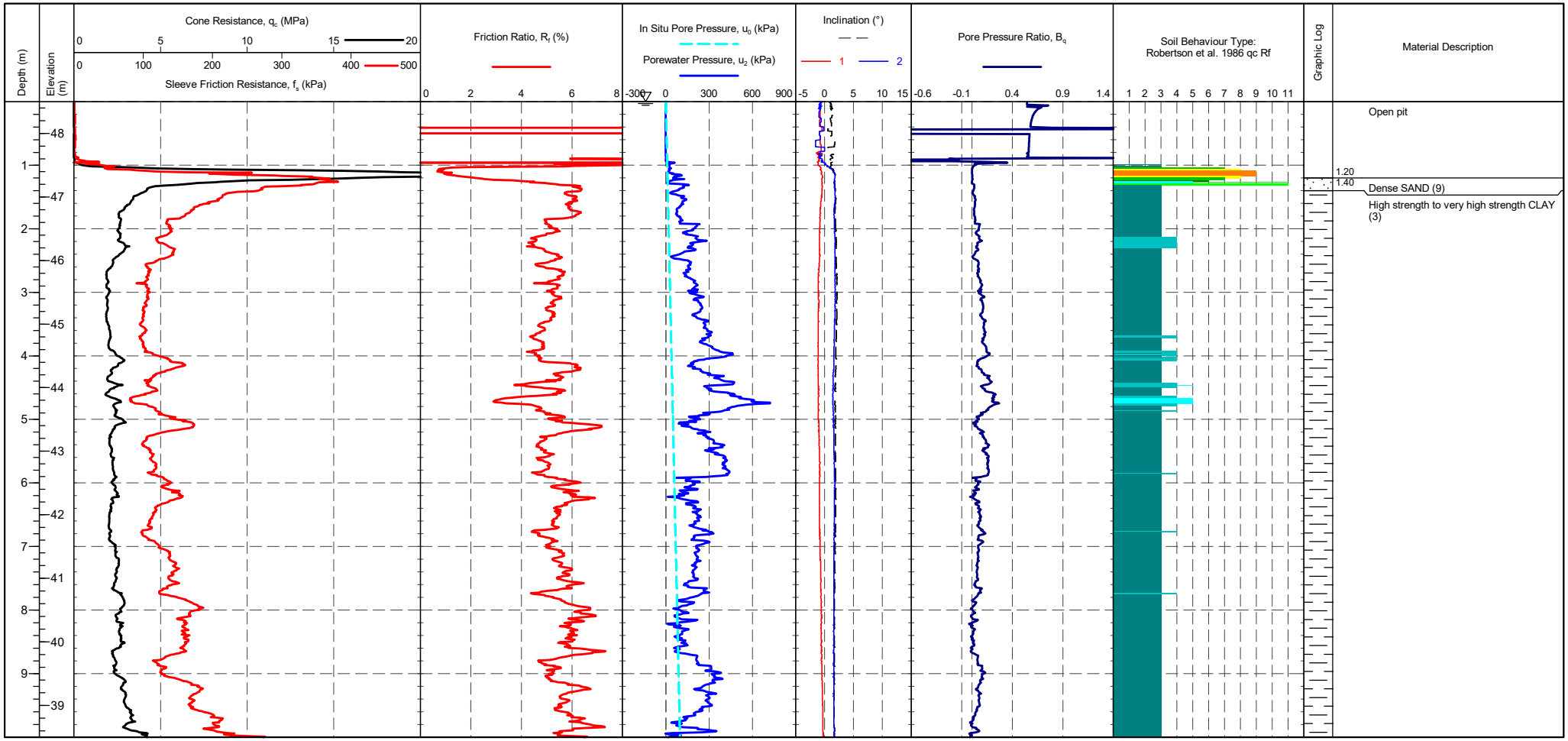
PointID: **ATK_CPT09**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385088.220 m
NORTHING : 398460.898 m
ELEVATION : 48.500 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 26/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: 0

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	244 mV	243 mV	-0.012 MPa
Sleeve	246 mV	246 mV	0 kPa
Pore Pressure 2	316 mV	307 mV	-0.002 kPa
X-Y Inclinometer	2363 mV	2410 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: STRUCTURAL SOILS LTD

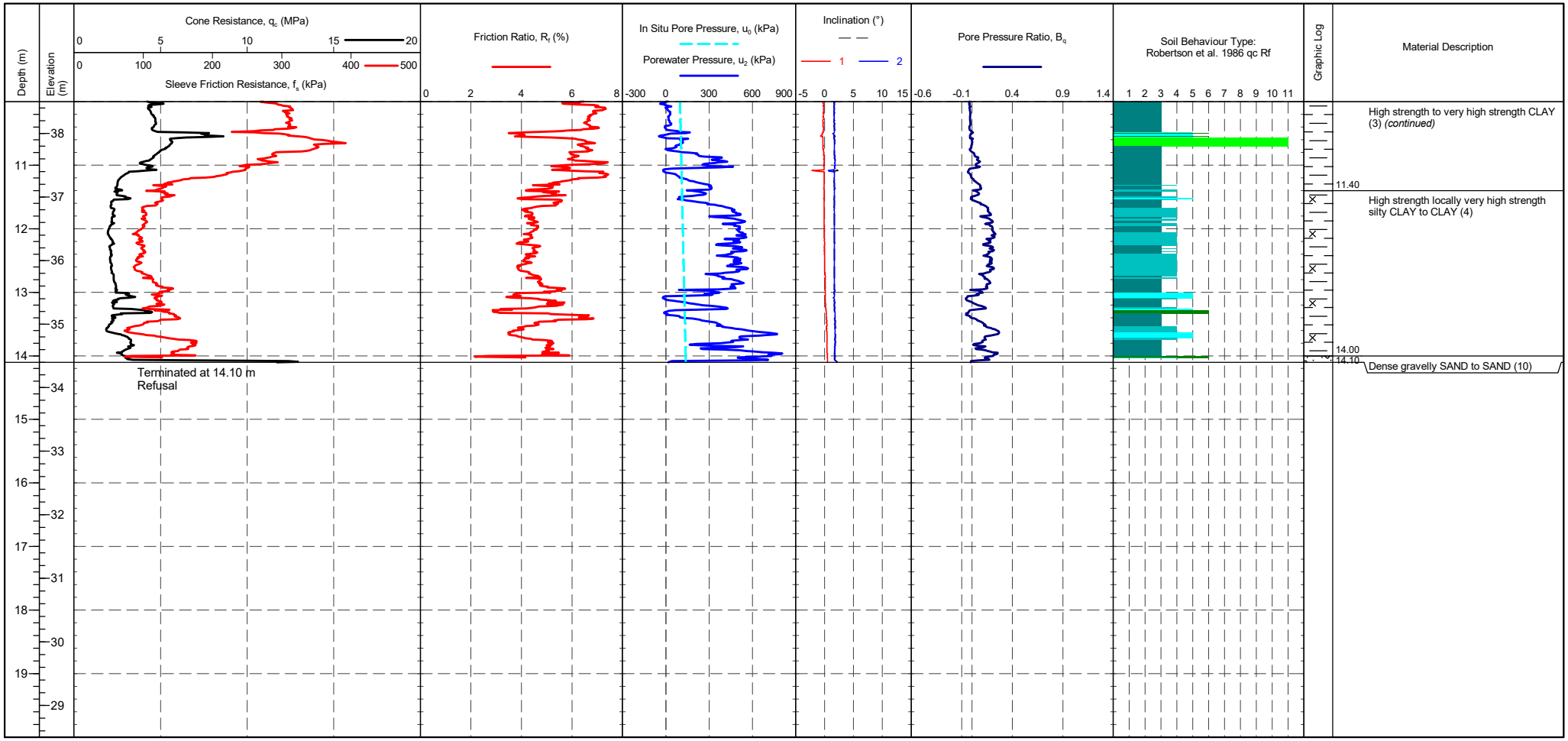
PointID: **ATK_CPT09**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385088.220 m
NORTHING : 398460.898 m
ELEVATION : 48.500 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 26/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: 0

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	244 mV	243 mV	-0.012 MPa
Sleeve	246 mV	246 mV	0 kPa
Pore Pressure 2	316 mV	307 mV	-0.002 kPa
X-Y Inclinometer	2363 mV	2410 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: STRUCTURAL SOILS LTD

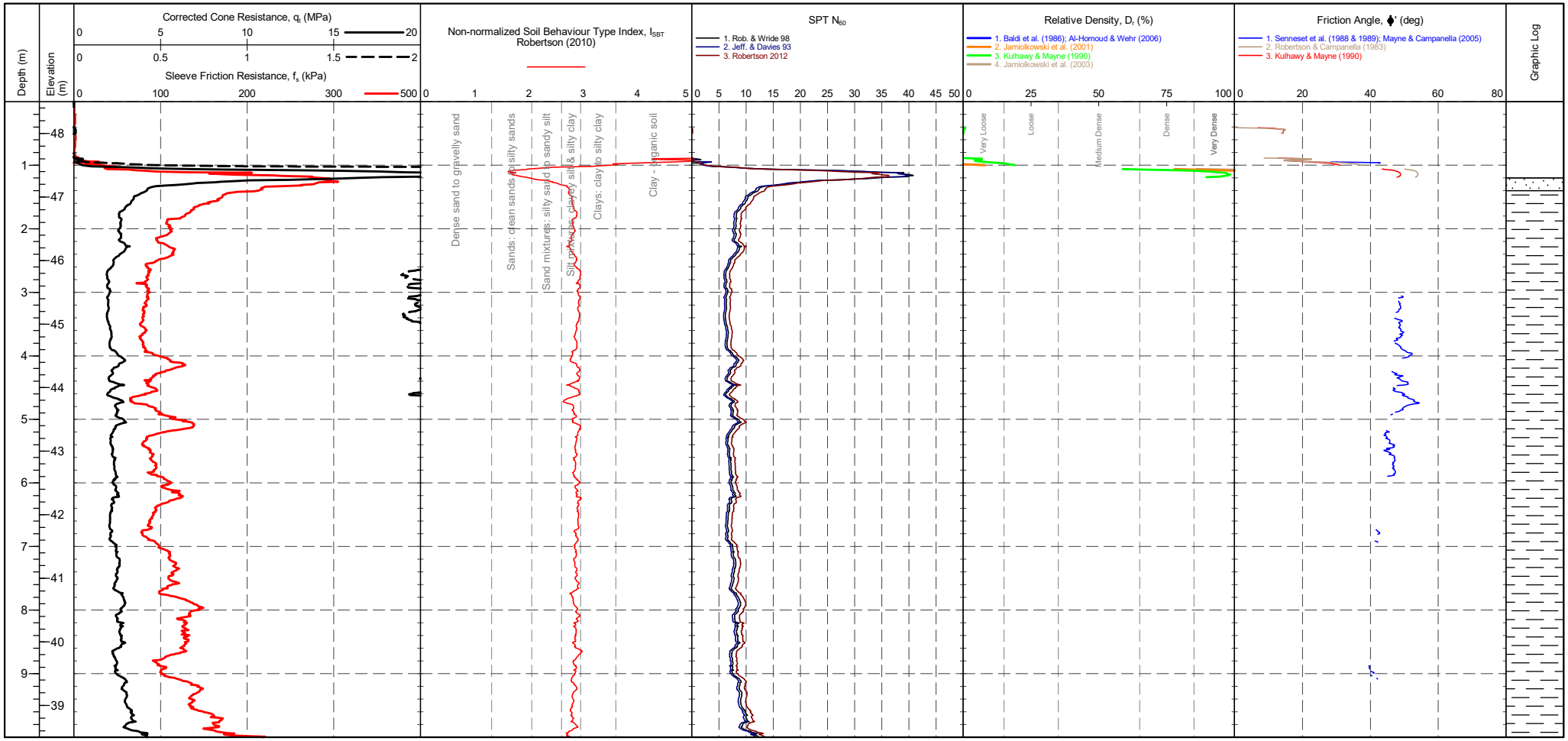
PointID: **ATK_CPT09**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385088.220 m
NORTHING : 398460.898 m
ELEVATION : 48.500 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 26/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	244 mV	243 mV	-0.012 MPa
Sleeve	246 mV	246 mV	0 kPa
Pore Pressure 2	316 mV	307 mV	-0.002 kPa
X-Y Inclinometer	2363 mV	2410 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

Working with: Structural Soils Ltd

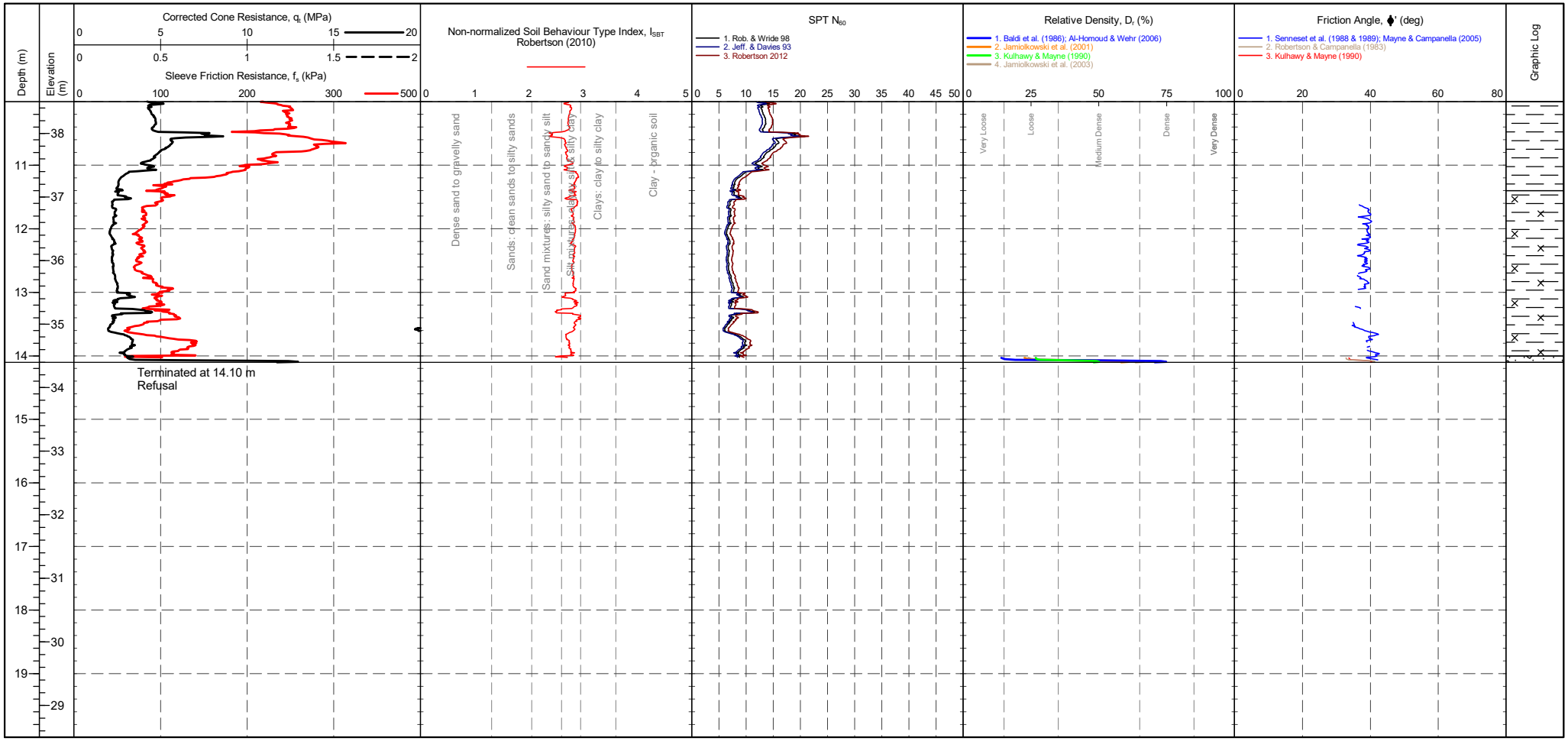
PointID: **ATK_CPT09**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385088.220 m
NORTHING : 398460.898 m
ELEVATION : 48.500 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 26/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	244 mV	243 mV	-0.012 MPa
Sleeve	246 mV	246 mV	0 kPa
Pore Pressure 2	316 mV	307 mV	-0.002 kPa
X-Y Inclinometer	2363 mV	2410 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

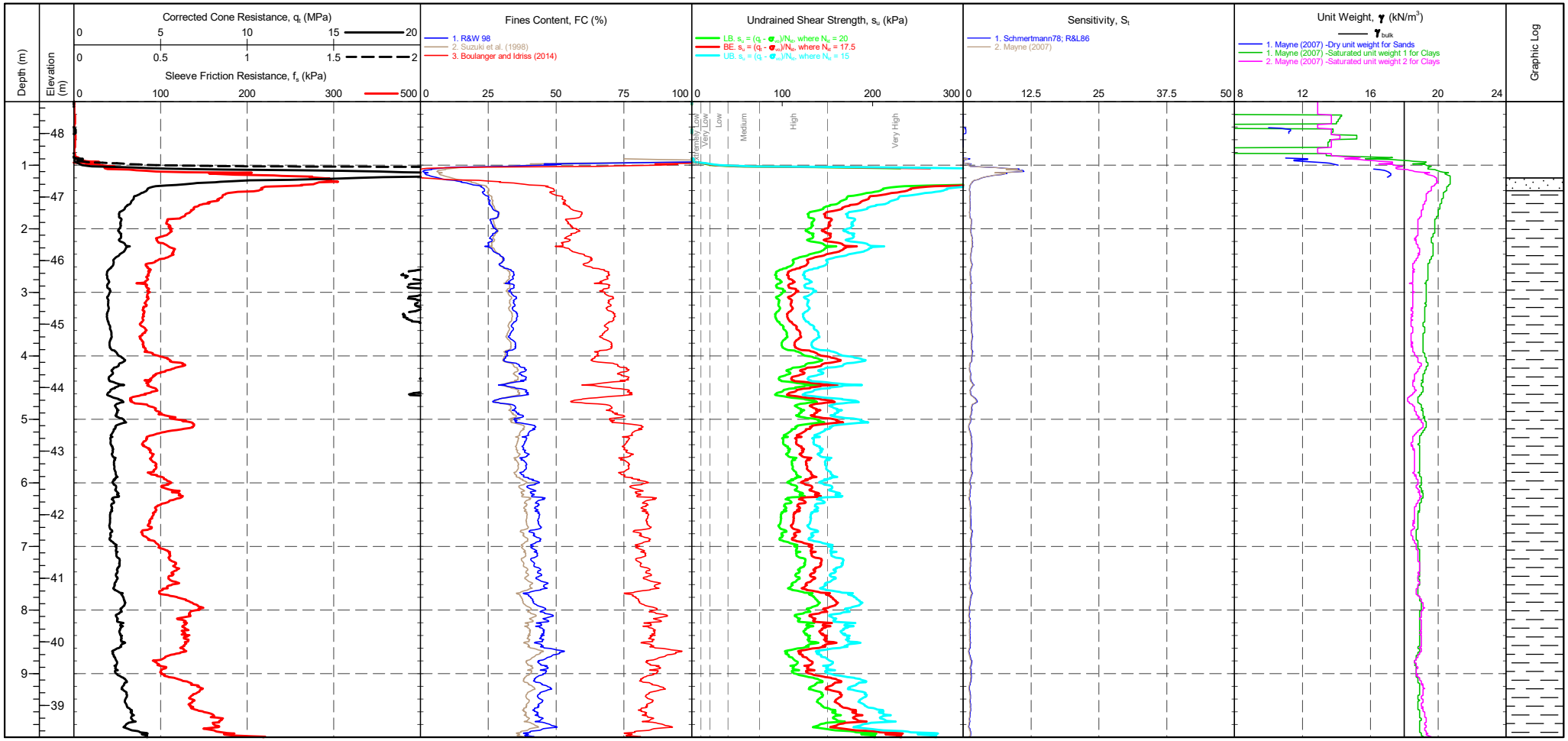
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT09**

CLIENT : Structural Soils	EASTING : 385088.220 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398460.898 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.500 m OD		TEST DATE : 26/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	244 mV	243 mV	-0.012 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	246 mV	246 mV	0 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	316 mV	307 mV	-0.002 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2363 mV	2410 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

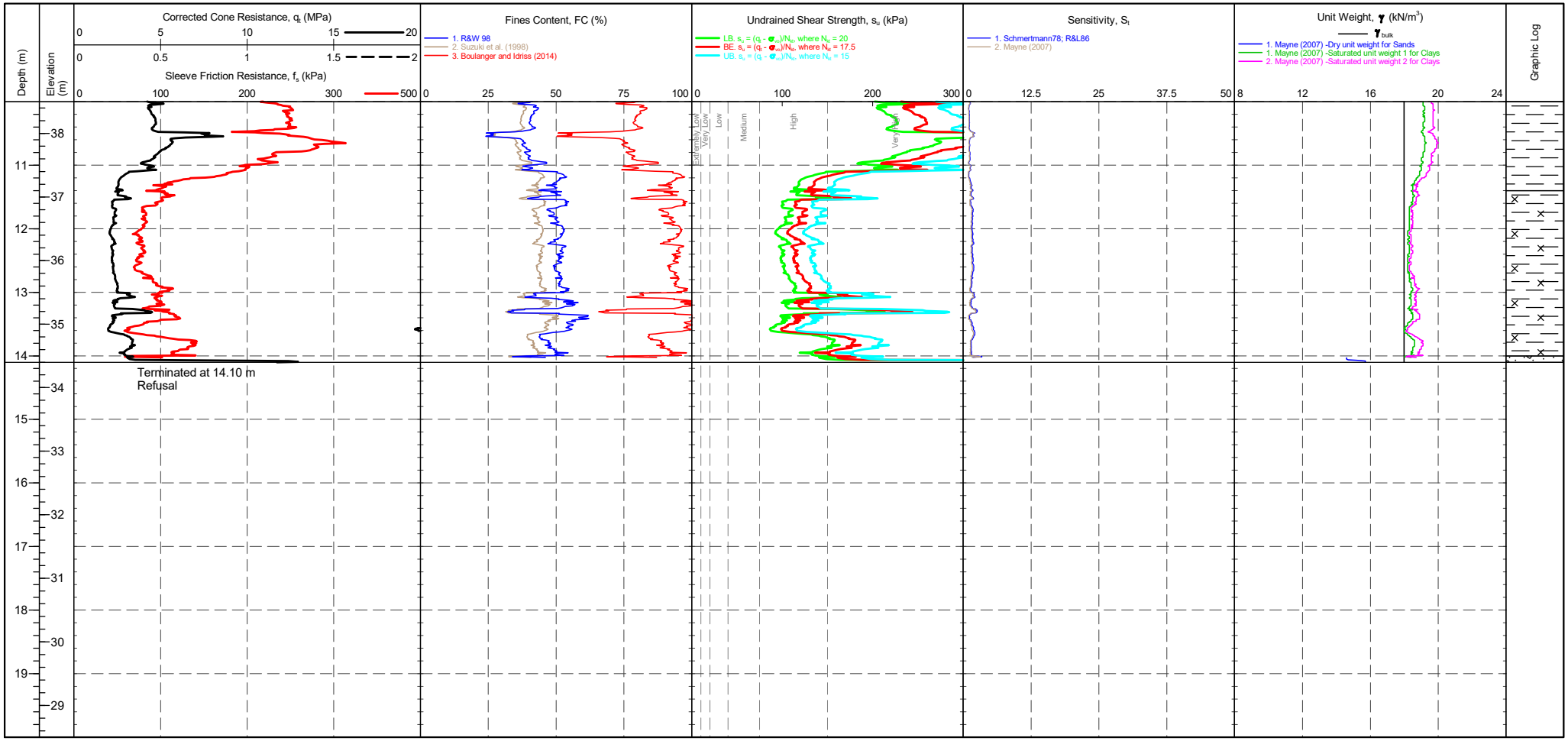
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT09**

CLIENT : Structural Soils	EASTING : 385088.220 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398460.898 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.500 m OD		TEST DATE : 26/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	244 mV	243 mV	-0.012 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	246 mV	246 mV	0 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	316 mV	307 mV	-0.002 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2363 mV	2410 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: STRUCTURAL SOILS LTD

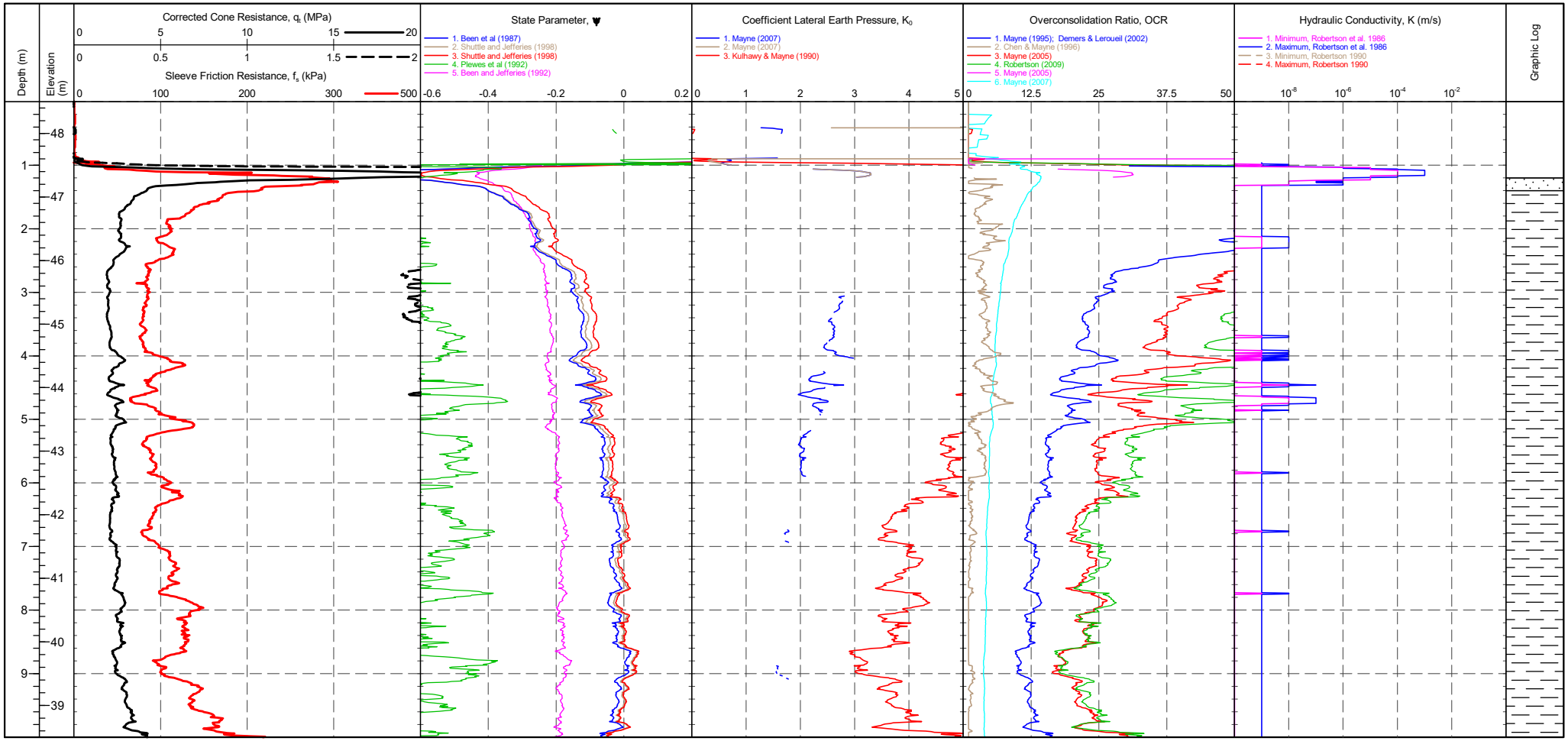
PointID: **ATK_CPT09**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385088.220 m
NORTHING : 398460.898 m
ELEVATION : 48.500 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 26/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

Transducer	Pre	Post	Difference
Tip	244 mV	243 mV	-0.012 MPa
Sleeve	246 mV	246 mV	0 kPa
Pore Pressure 2	316 mV	307 mV	-0.002 kPa
X-Y Inclinometer	2363 mV	2410 mV	

Groundwater Level

Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

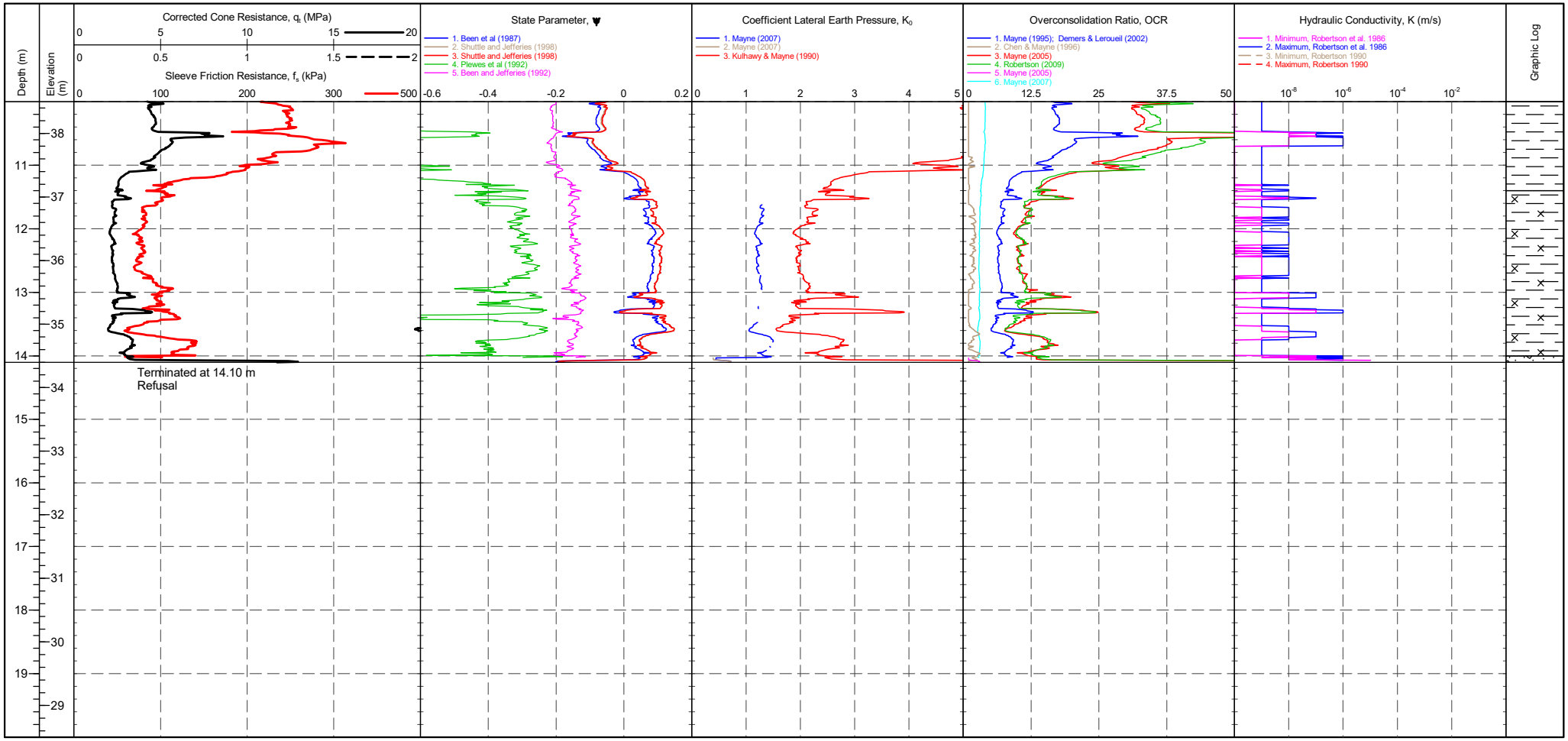
PointID: **ATK_CPT09**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385088.220 m
NORTHING : 398460.898 m
ELEVATION : 48.500 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 26/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	244 mV	243 mV	-0.012 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	246 mV	246 mV	0 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	316 mV	307 mV	-0.002 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2363 mV	2410 mV	

Groundwater Level

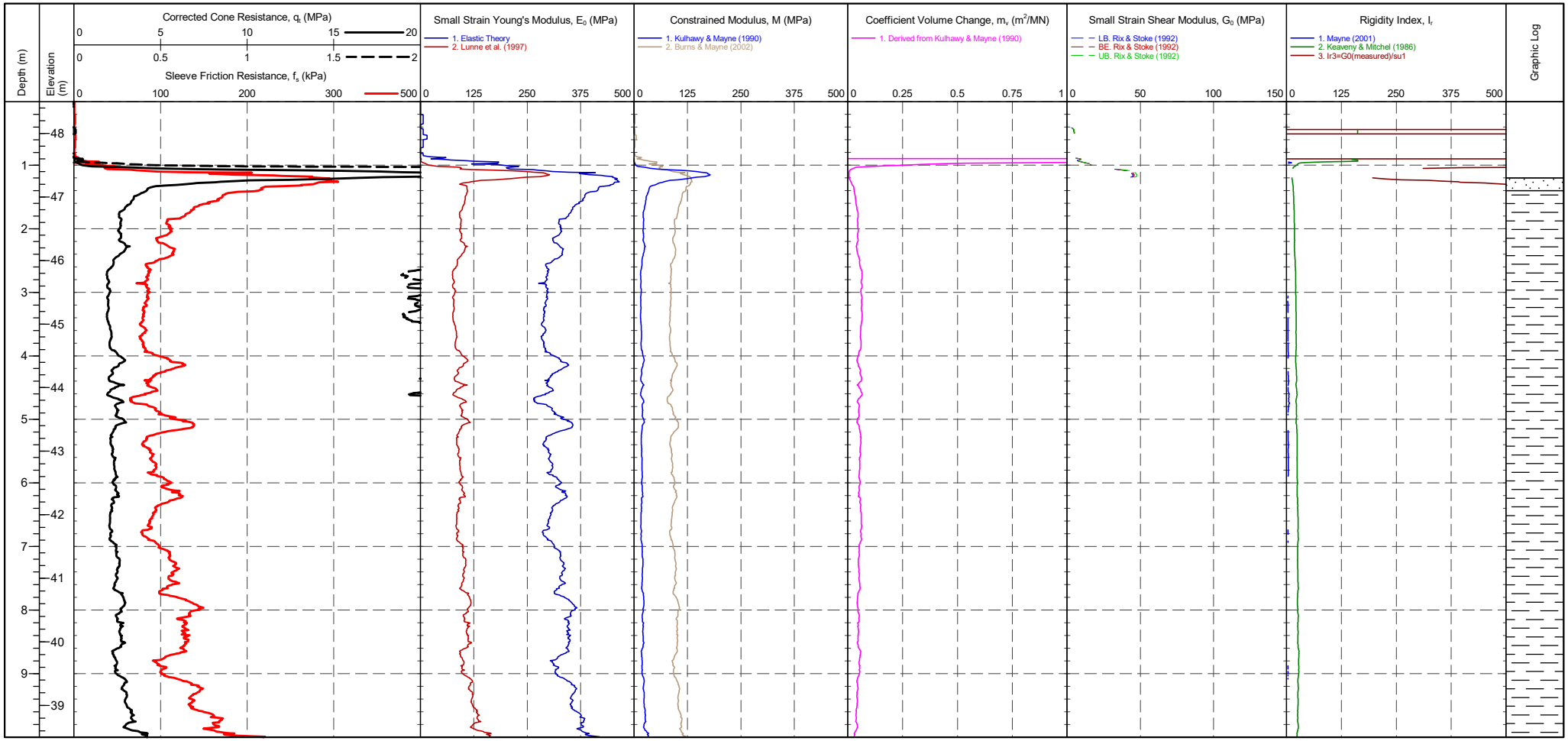
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT09**

CLIENT : Structural Soils	EASTING : 385088.220 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398460.898 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.500 m OD		TEST DATE : 26/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post / Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	244 mV	243 mV / -0.012 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	246 mV	246 mV / 0 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	316 mV	307 mV / -0.002 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2363 mV	2410 mV

Groundwater Level

Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

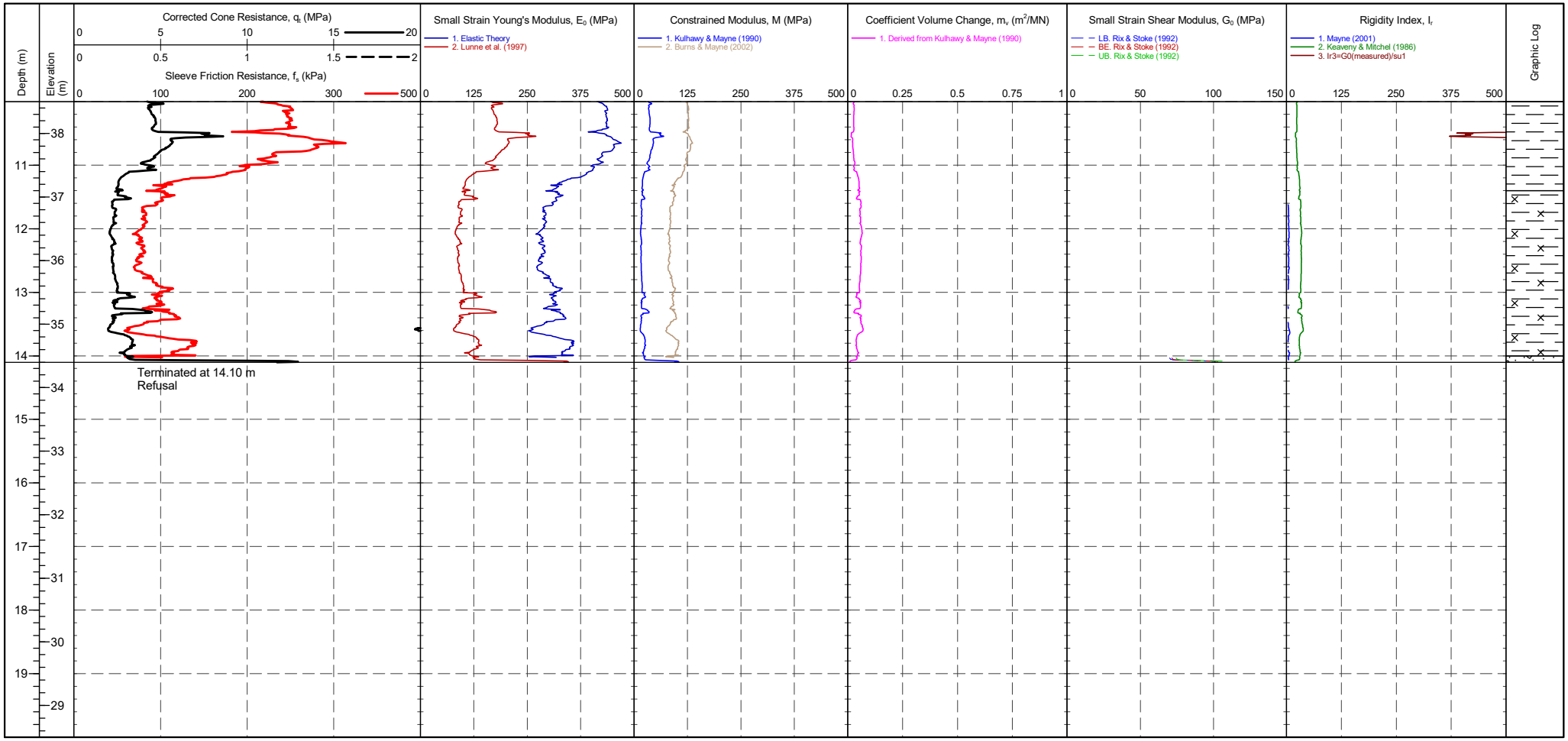
PointID: **ATK_CPT09**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385088.220 m
NORTHING : 398460.898 m
ELEVATION : 48.500 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

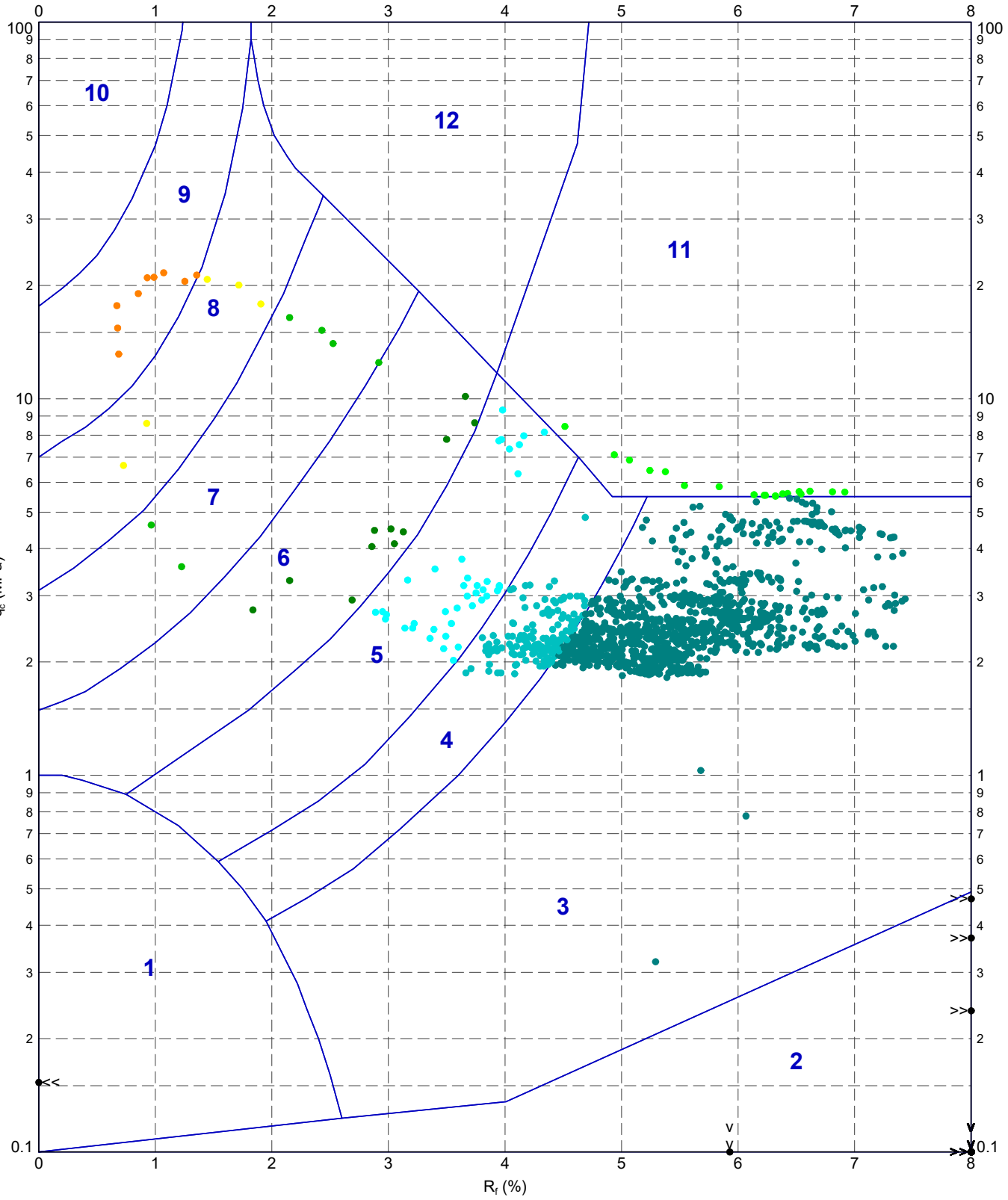
SHEET : 2 OF 2
STATUS : Final
TEST DATE : 26/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	244 mV	243 mV	-0.012 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	246 mV	246 mV	0 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	316 mV	307 mV	-0.002 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2363 mV	2410 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

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Robertson et al. 1986 q_c vs. R_f - ATK_CPT09

DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:19 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

Working with: STRUCTURAL SOILS LTD

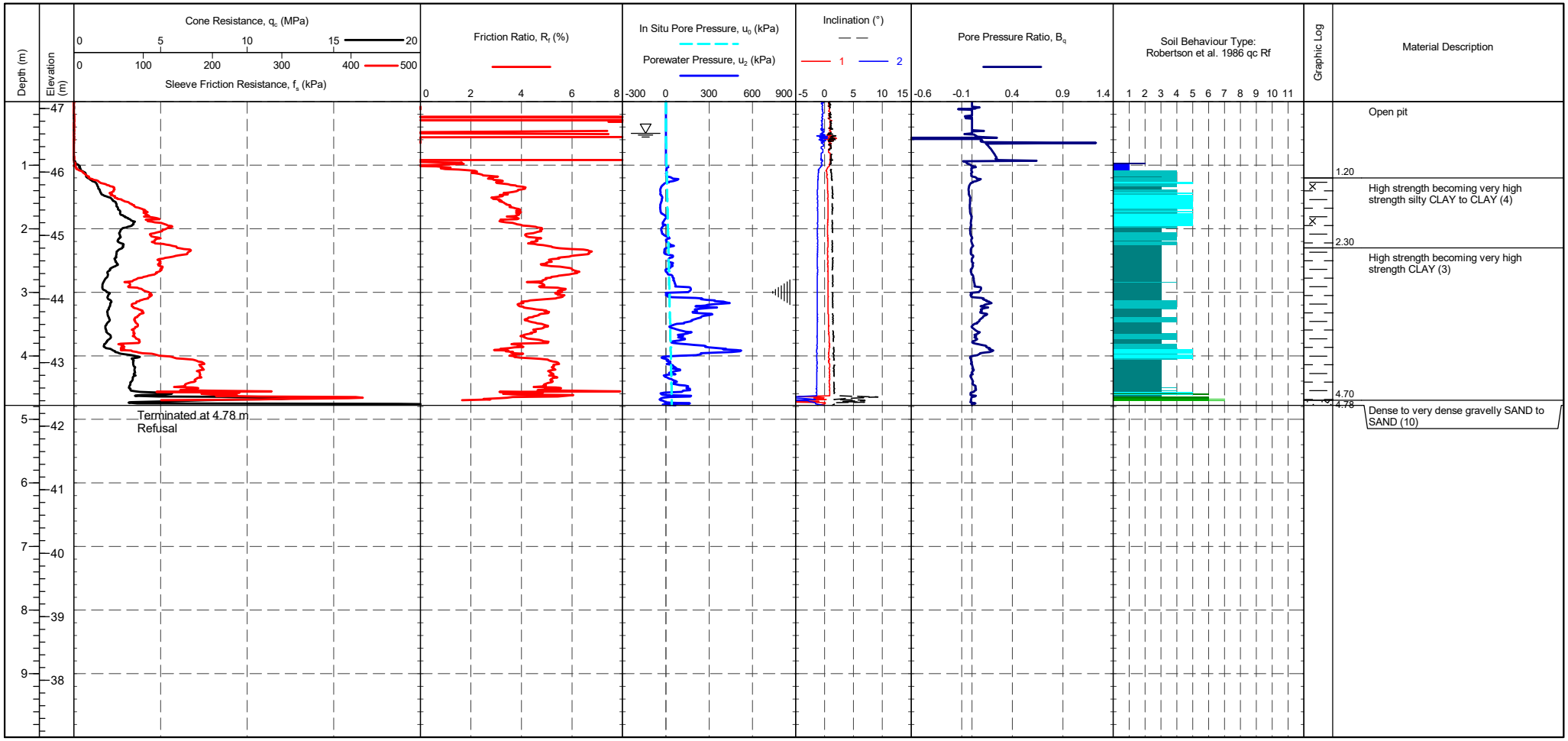
PointID: **ATK_CPT10**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385143.484 m
NORTHING : 398420.986 m
ELEVATION : 47.106 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 02/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	251 mV	252 mV	0.012 MPa
Sleeve	250 mV	253 mV	0.002 kPa
Pore Pressure 2	388 mV	364 mV	-0.007 kPa
X-Y Inclinometer	2499 mV	2495 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

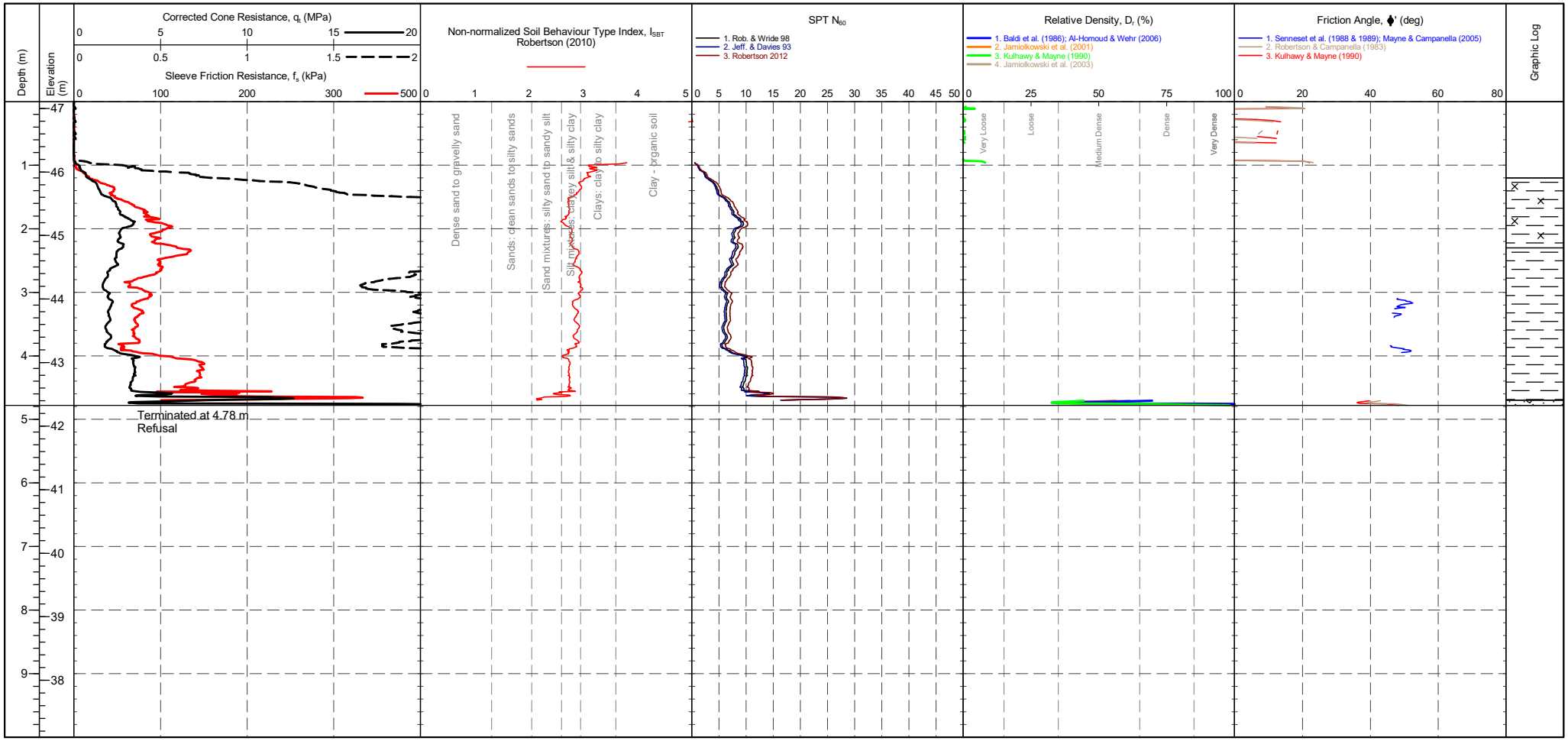
Groundwater Level
Dissipation Test

CPT LOG 02

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT10**

CLIENT : Structural Soils	EASTING : 385143.484 m	Remark:	SHEET : 1 OF 1
PROJECT : 765544 - Ancoats	NORTHING : 398420.986 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.106 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	251 mV	252 mV
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	250 mV	253 mV
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	388 mV	364 mV
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2499 mV	2495 mV

Transducer	Difference
Tip	0.012 MPa
Sleeve	0.002 kPa
Pore Pressure 2	-0.007 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

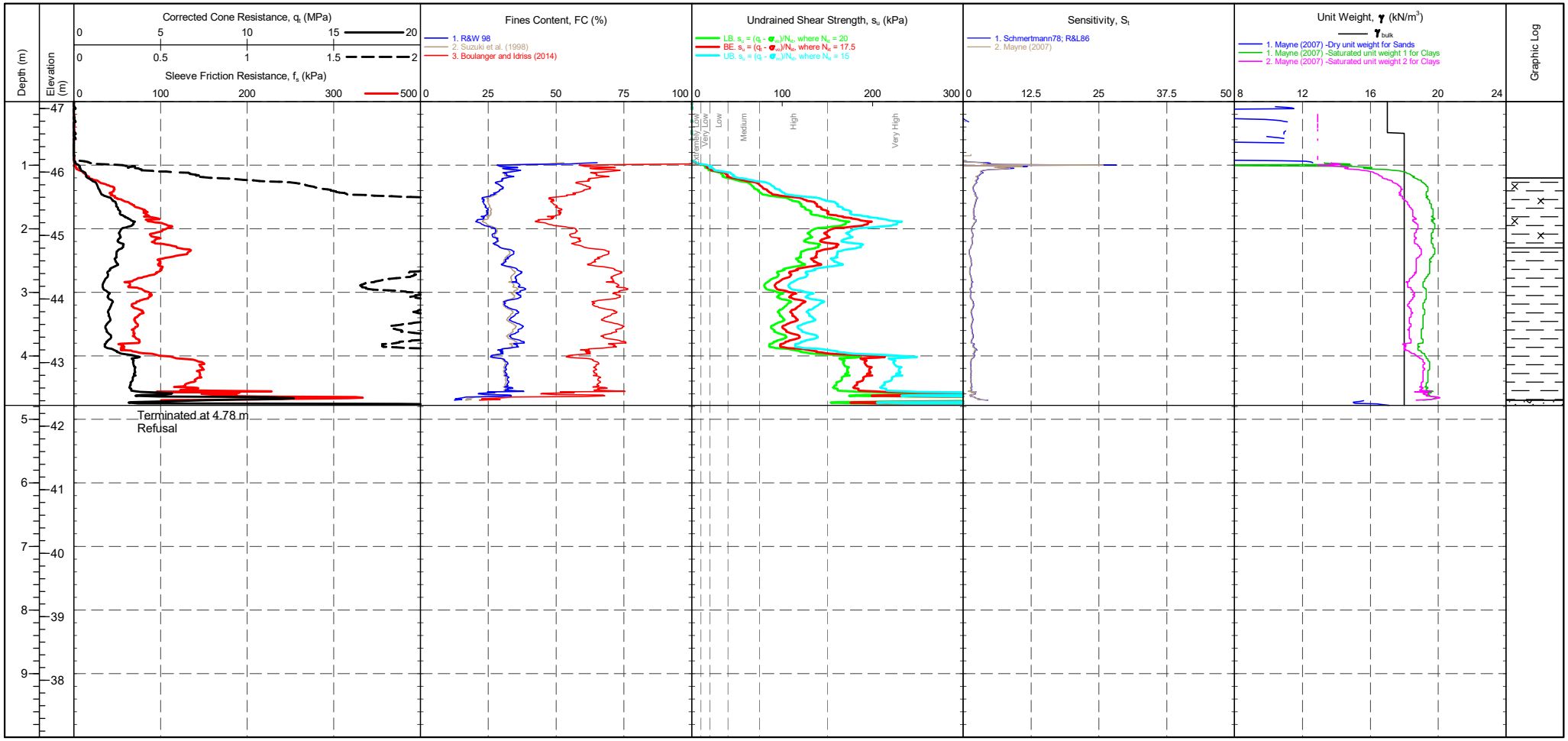
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT10**

CLIENT : Structural Soils	EASTING : 385143.484 m	Remark:	SHEET : 1 OF 1
PROJECT : 765544 - Ancoats	NORTHING : 398420.986 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.106 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	251 mV	252 mV	0.012 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	250 mV	253 mV	0.002 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	388 mV	364 mV	-0.007 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2499 mV	2495 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

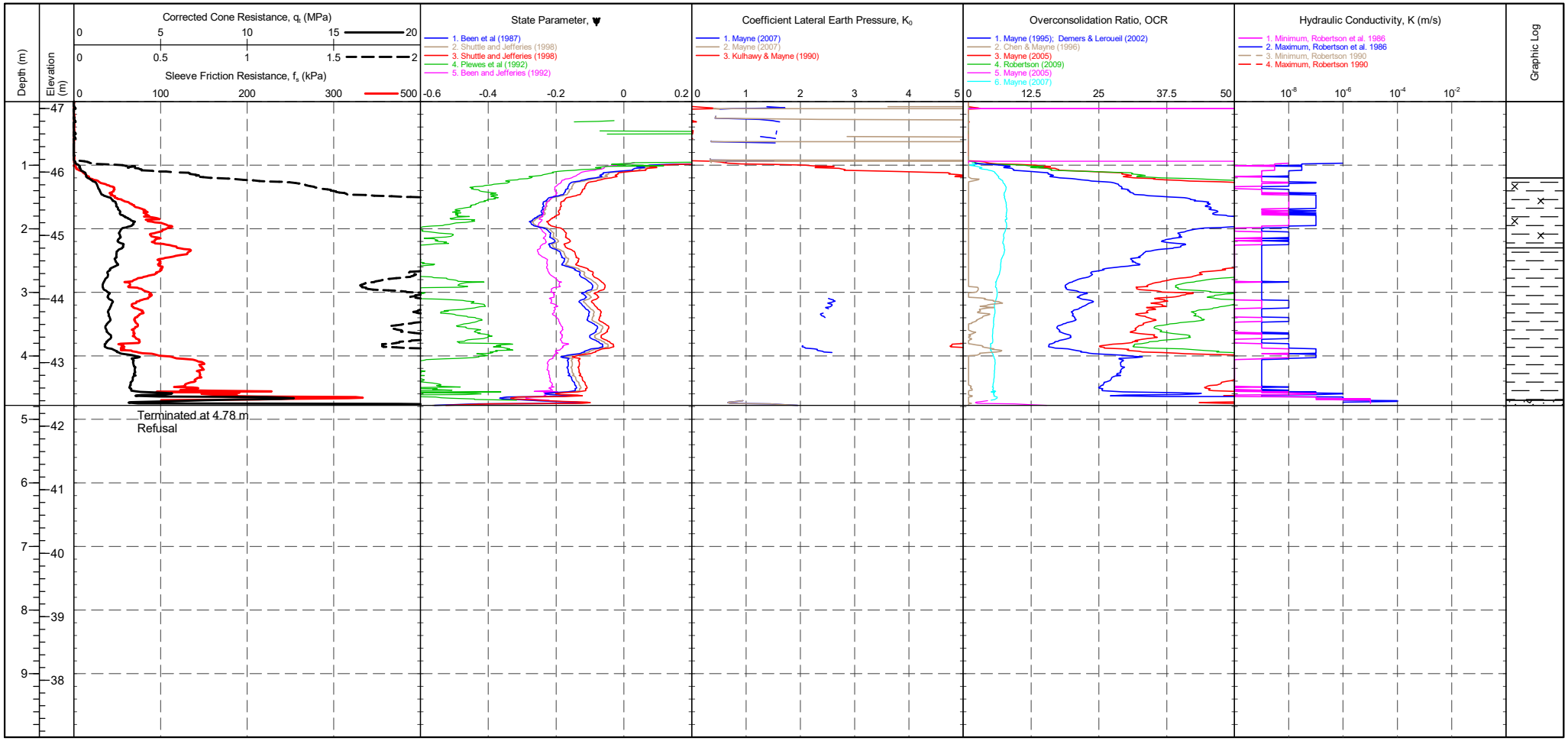
Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT10**

CLIENT : Structural Soils	EASTING : 385143.484 m	Remark:	SHEET : 1 OF 1
PROJECT : 765544 - Ancoats	NORTHING : 398420.986 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.106 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	251 mV	252 mV	0.012 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	250 mV	253 mV	0.002 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	388 mV	364 mV	-0.007 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2499 mV	2495 mV	

Groundwater Level

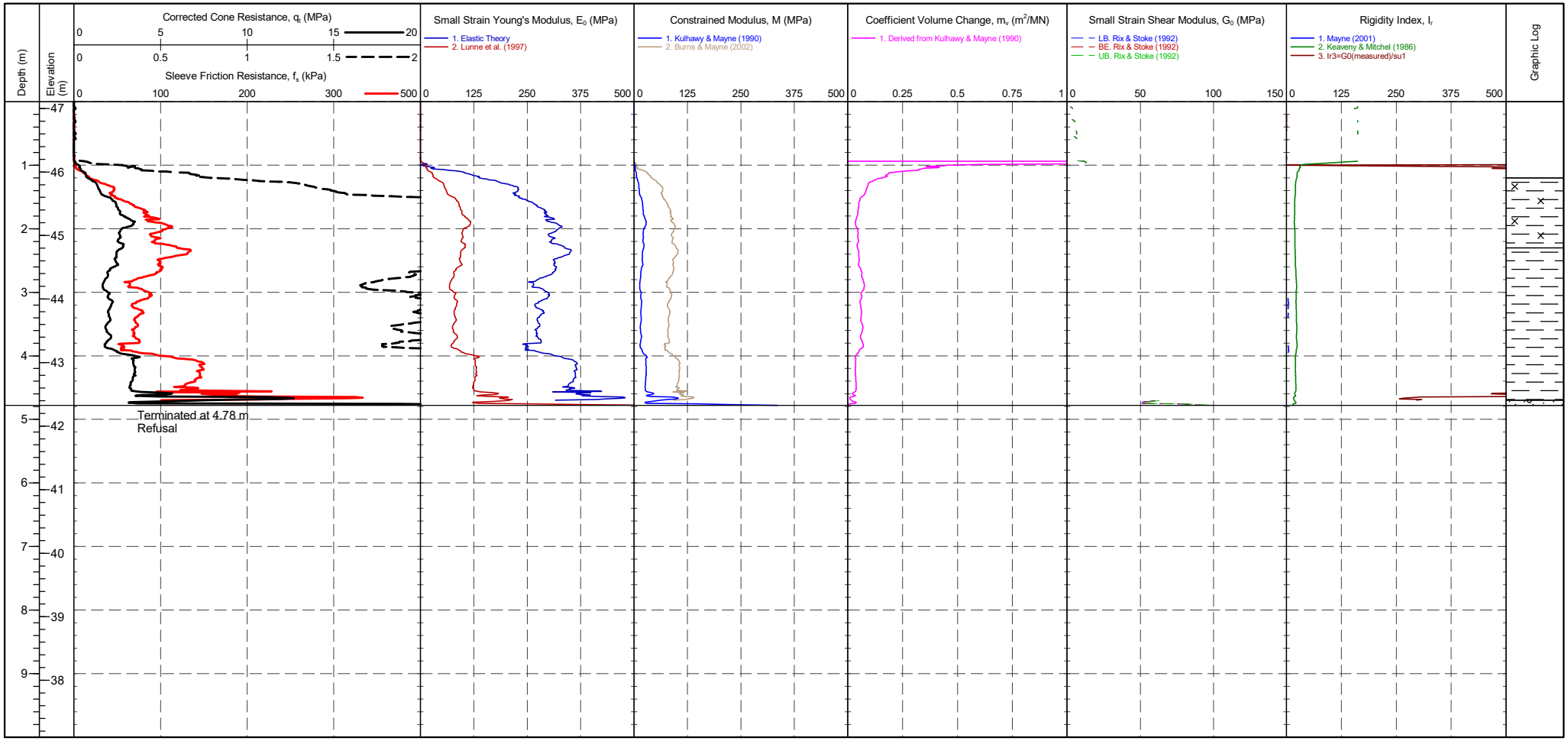
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT10**

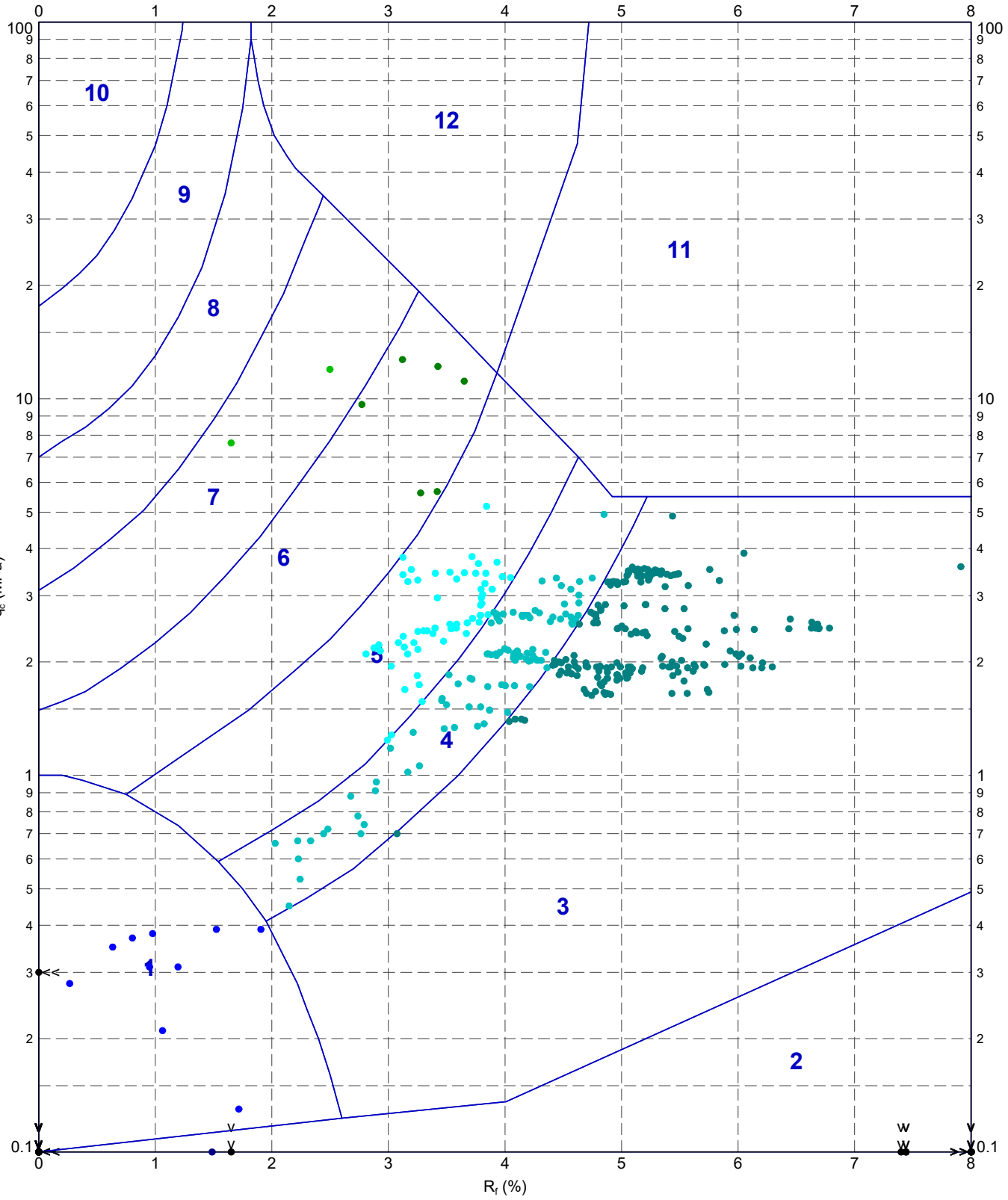
CLIENT : Structural Soils	EASTING : 385143.484 m	Remark:	SHEET : 1 OF 1
PROJECT : 765544 - Ancoats	NORTHING : 398420.986 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.106 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	251 mV	252 mV	0.012 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	250 mV	253 mV	0.002 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	388 mV	364 mV	-0.007 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2499 mV	2495 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

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Robertson et al. 1986 q_c vs. R_f - ATK_CPT10

DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:20 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

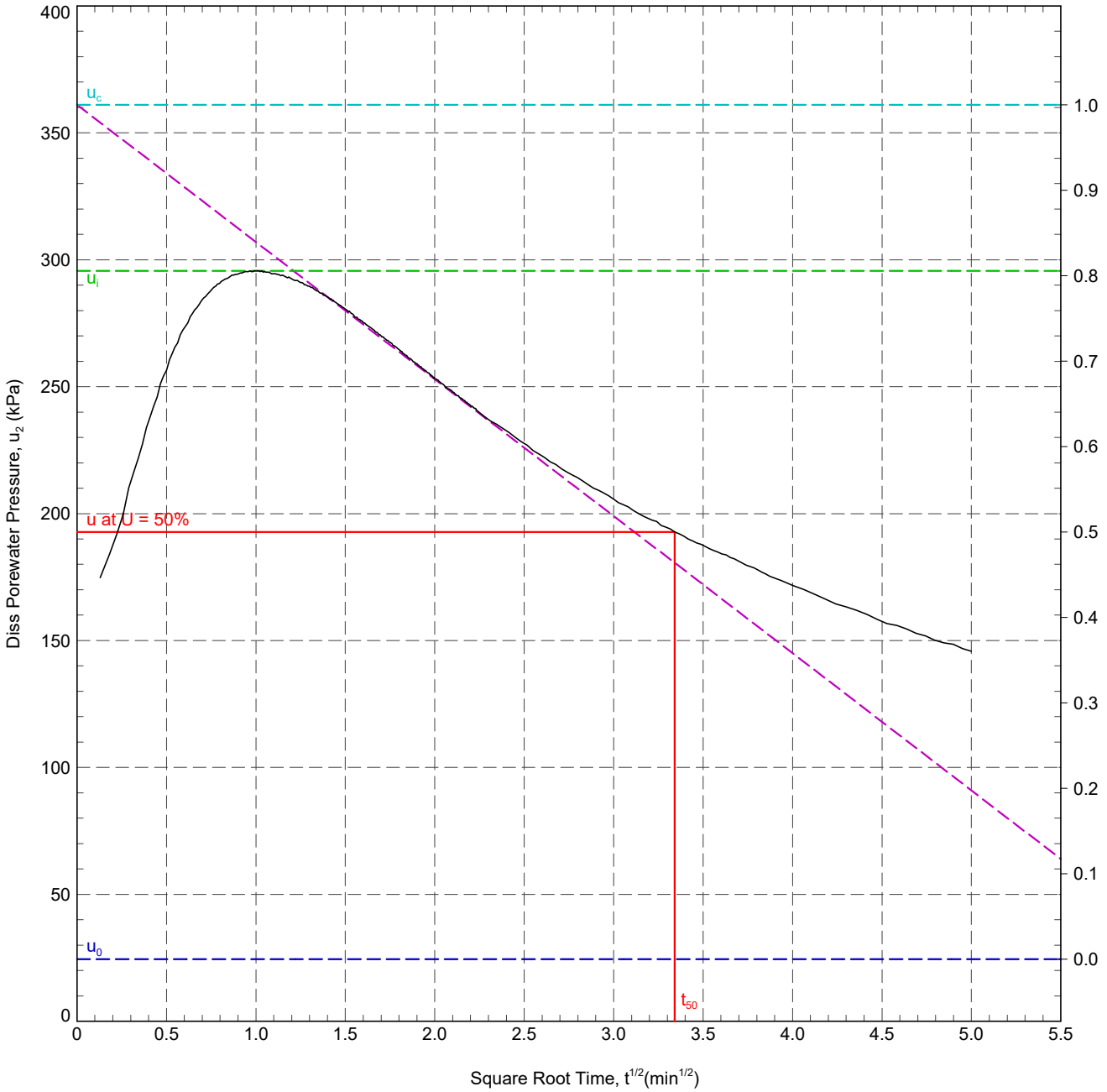
IN SITU SITE INVESTIGATION

Working with: STRUCTURAL SOILS LTD

Test ID

ATK_CPT10 - 3.00 m

CLIENT	: Structural Soils	AREA	: Ancoats Manchester	SHEET	: 1 OF 1
ENGINEER	: Tim Clifford	EASTING	: 385143.5 m	STATUS	: Final
PROJECT	: 765544 - Ancoats	NORTHING	: 398421.0 m	DATE	: 02/05/23
LOCATION	: Manchester	COORD. SYS.	:		
PROJECT No.	: 1230236	ELEVATION	: 47.11 m		



In Situ Pore Pressure, u_0:	24.5 kPa	Rigidity Index, I_r:	21.6
Initial Pore Pressure, u_i:	295.6 kPa	Horizontal Coefficient of Consolidation, c_h:	2.84x10^1 m^2/yr
Final Pore Pressure:	145.8 kPa	Ratio c_h/c_v:	1.25
Back Extrapolated Pore Pressure, u_c:	361 kPa	Vertical Coefficient of Consolidation, c_v:	2.27x10^1 m^2/yr
Degree of Dissipation:	50%		
Dissipation Pressure:	192.8 kPa		
Time for 50% Dissipation, t_{50}:	11.17 min		

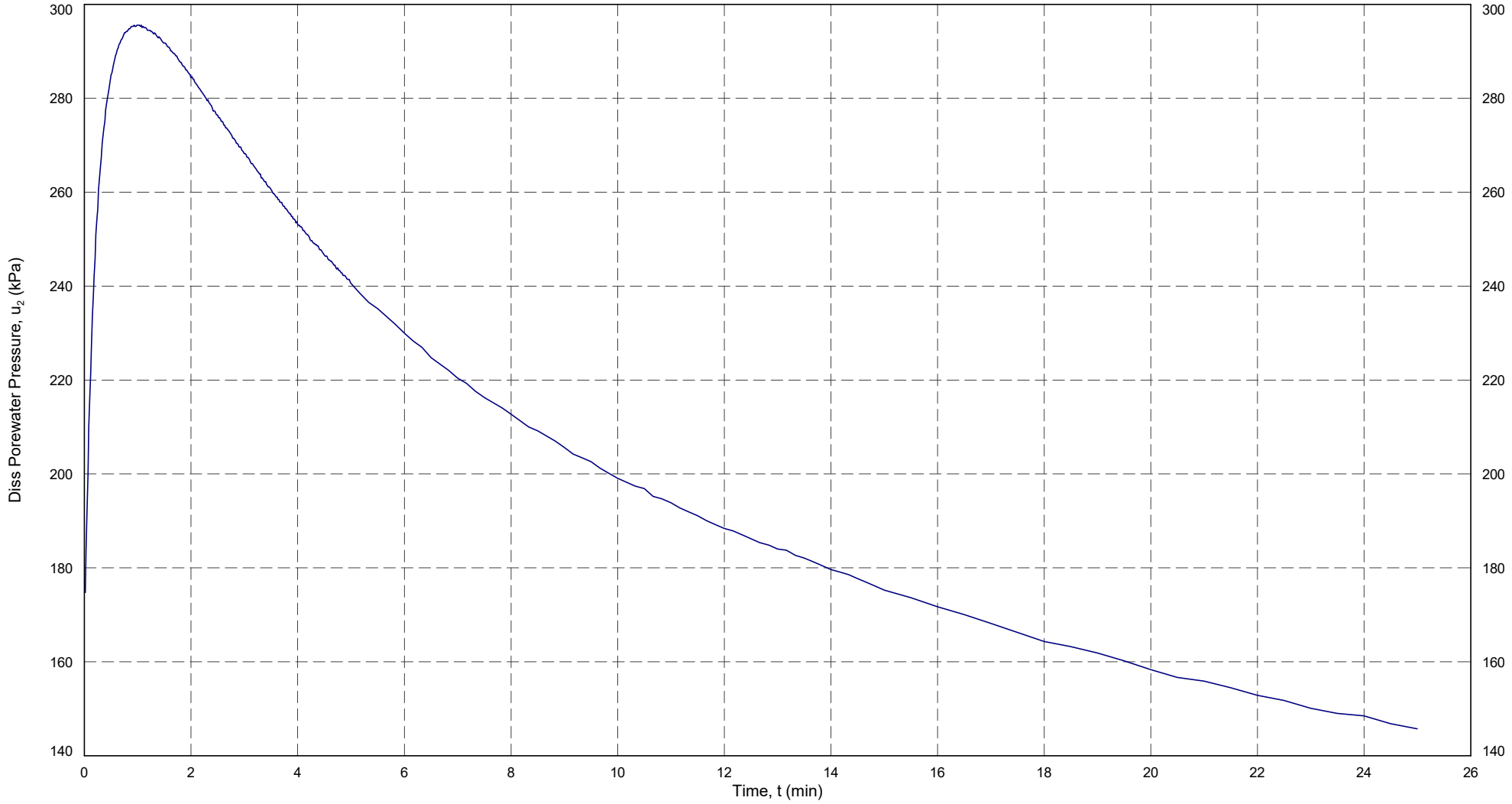
RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	15/05/2023
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	15/05/2023
CONE ID	: S15-CFIP.2177	APPROVED BY	: DW	DATE:	15/05/2023
OPERATOR	: RS				

REMARK

T50 reached. Test OK.

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:20 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

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - CHLOE.GLB Graph PPDT PORE PRESSURE VS. LIN T A4L 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:20 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



IN SITU SITE INVESTIGATION

TITLE

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Dissipation Test - ATK_CPT10

DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

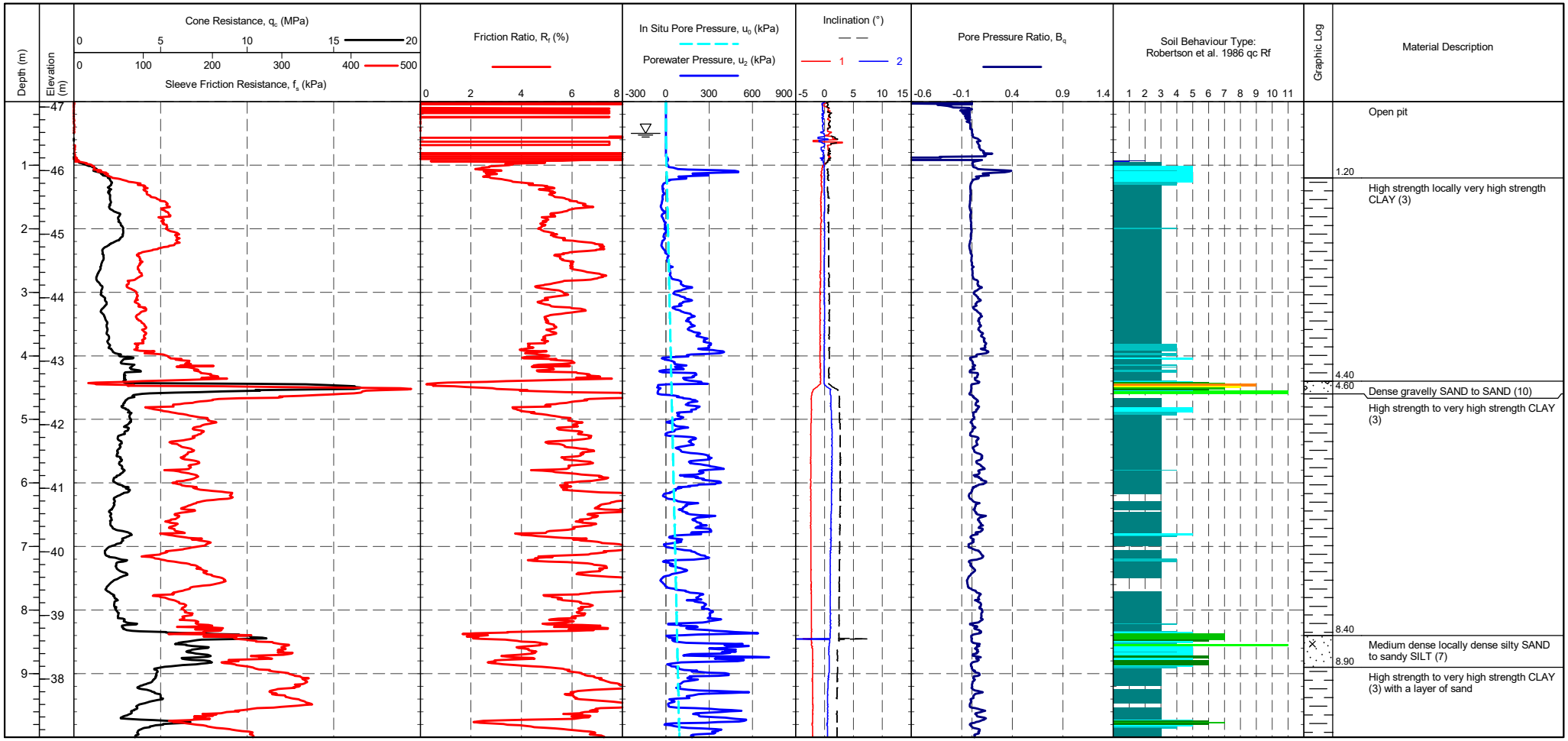
PointID: **ATK_CPT10A**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385142.783 m
NORTHING : 398422.606 m
ELEVATION : 47.084 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 03/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	249 mV	243 mV	-0.069 MPa
Sleeve	250 mV	258 mV	0.006 kPa
Pore Pressure 2	379 mV	411 mV	0.009 kPa
X-Y Inclinometer	2598 mV	2475 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

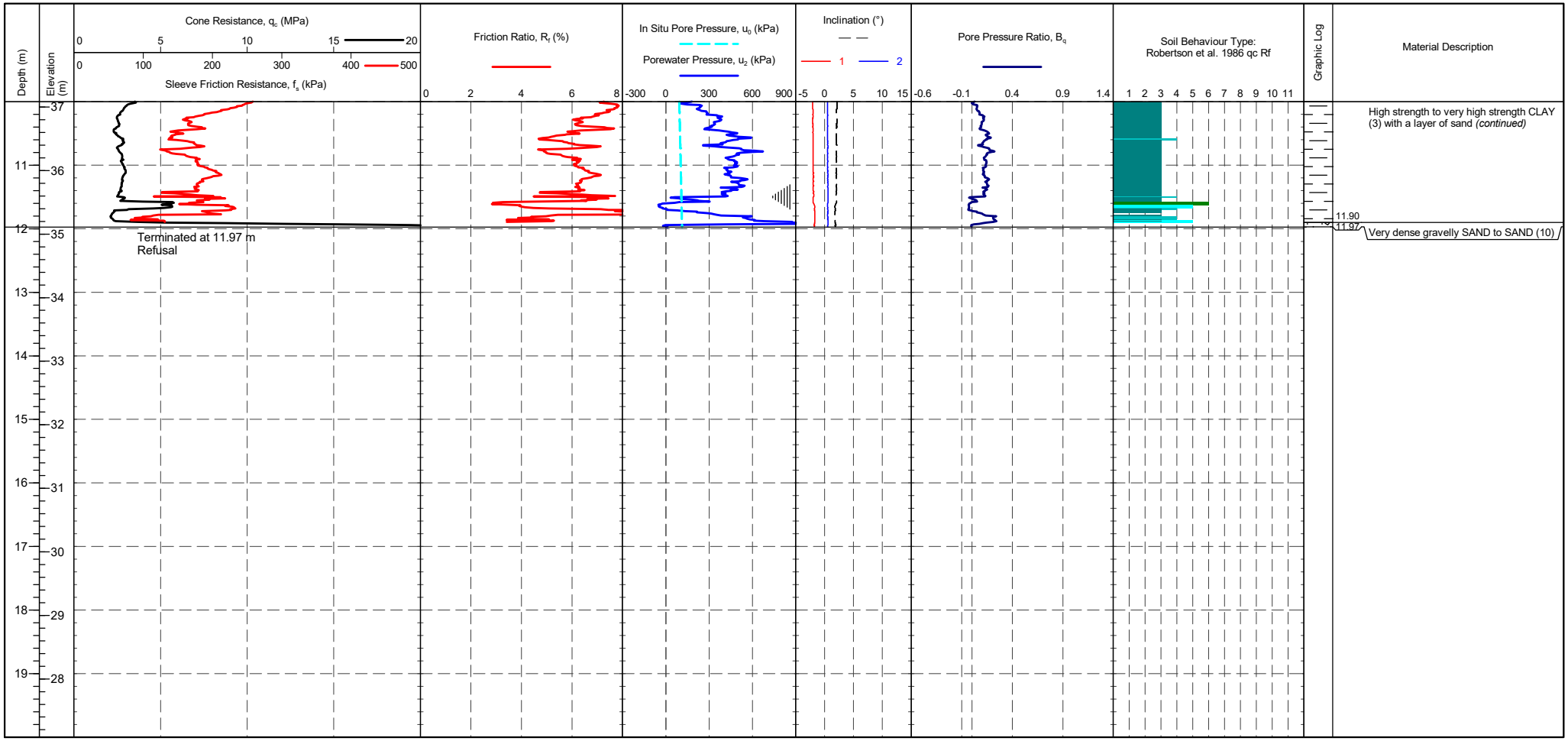
Groundwater Level
Dissipation Test

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT10A**

CLIENT : Structural Soils	EASTING : 385142.783 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398422.606 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.084 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES			
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni	Tip	249 mV	243 mV	-0.069 MPa
CONE AREA	: 15cm^2	OPERATOR	: RS	Sleeve	250 mV	258 mV	0.006 kPa
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None	Pore Pressure 2	379 mV	411 mV	0.009 kPa
FILTER POSITION	: u2	WEATHER	: Overcast & Mild	X-Y Inclinometer	2598 mV	2475 mV	
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes.				

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

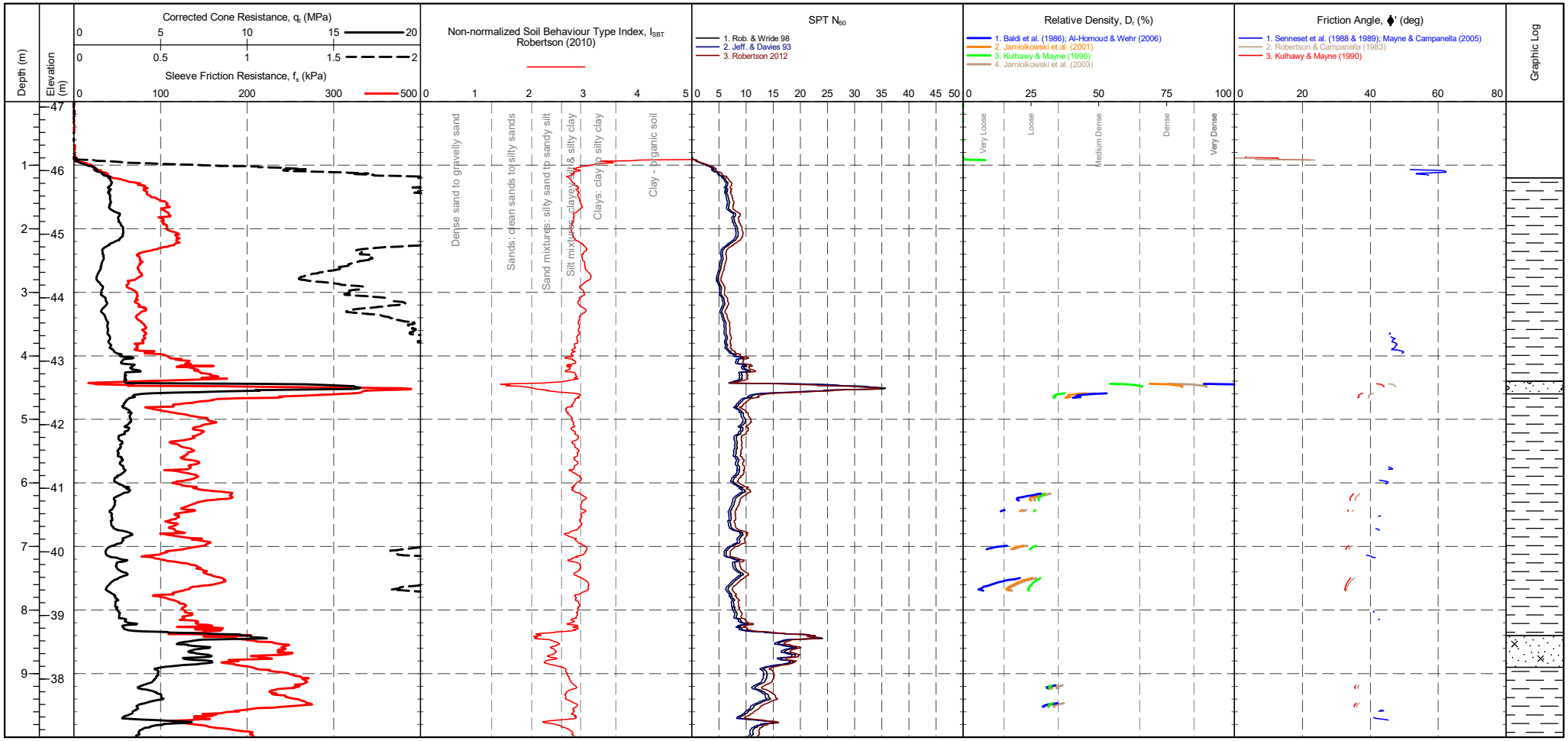
Dissipation Test

CPT LOG 02

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT10A**

CLIENT : Structural Soils	EASTING : 385142.783 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398422.606 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.084 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	249 mV	243 mV	-0.069 MPa
Sleeve	250 mV	258 mV	0.006 kPa
Pore Pressure 2	379 mV	411 mV	0.009 kPa
X-Y Inclinometer	2598 mV	2475 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

Working with: Structural Soils Ltd

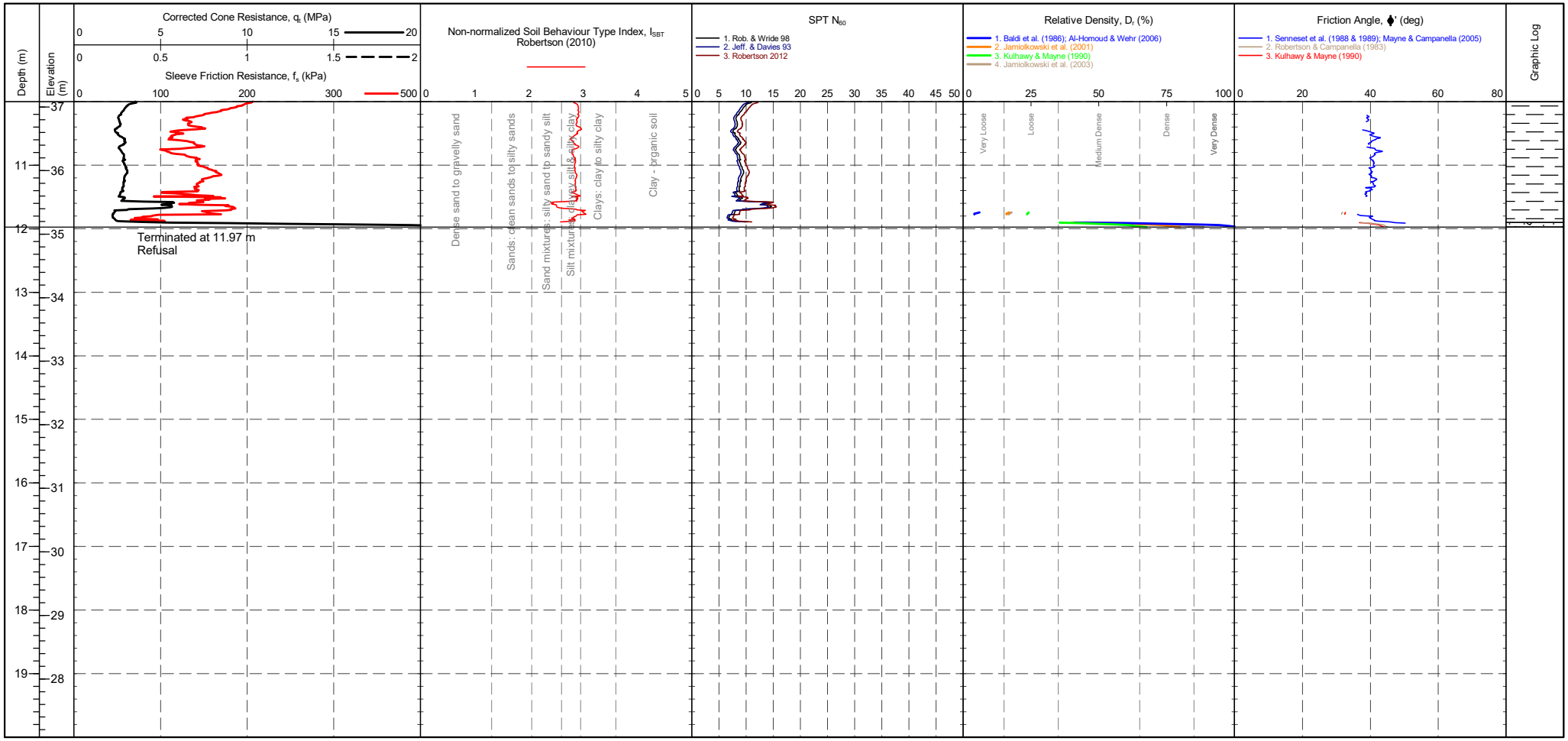
PointID: **ATK_CPT10A**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385142.783 m
NORTHING : 398422.606 m
ELEVATION : 47.084 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 03/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177
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	: RS
FRICTION REDUCER	: None
WEATHER	: Overcast & Mild

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	249 mV	243 mV	-0.069 MPa
Sleeve	250 mV	258 mV	0.006 kPa
Pore Pressure 2	379 mV	411 mV	0.009 kPa
X-Y Inclinometer	2598 mV	2475 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

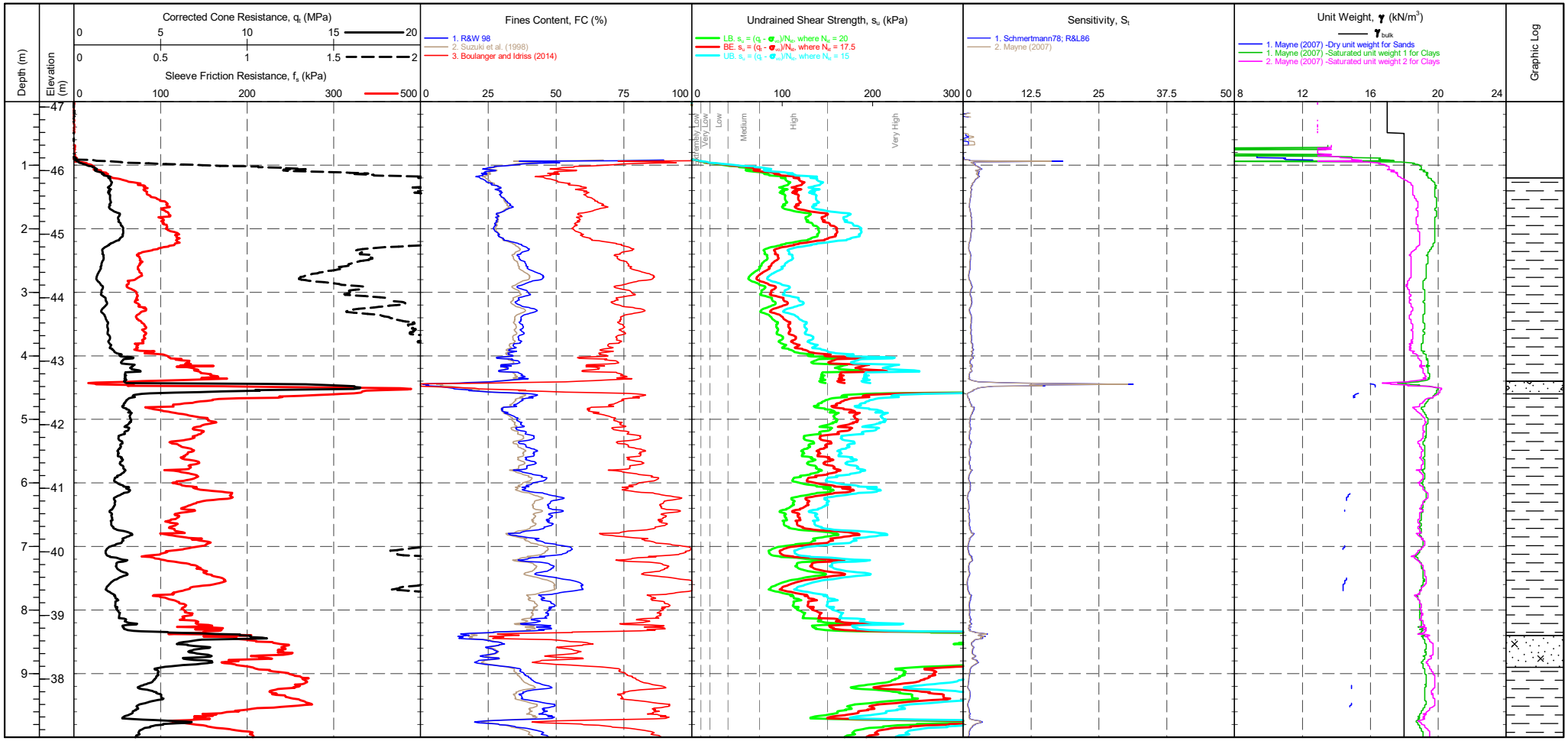
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT10A**

CLIENT : Structural Soils	EASTING : 385142.783 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398422.606 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.084 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	243 mV	-0.069 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	250 mV	258 mV	0.006 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	379 mV	411 mV	0.009 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2598 mV	2475 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

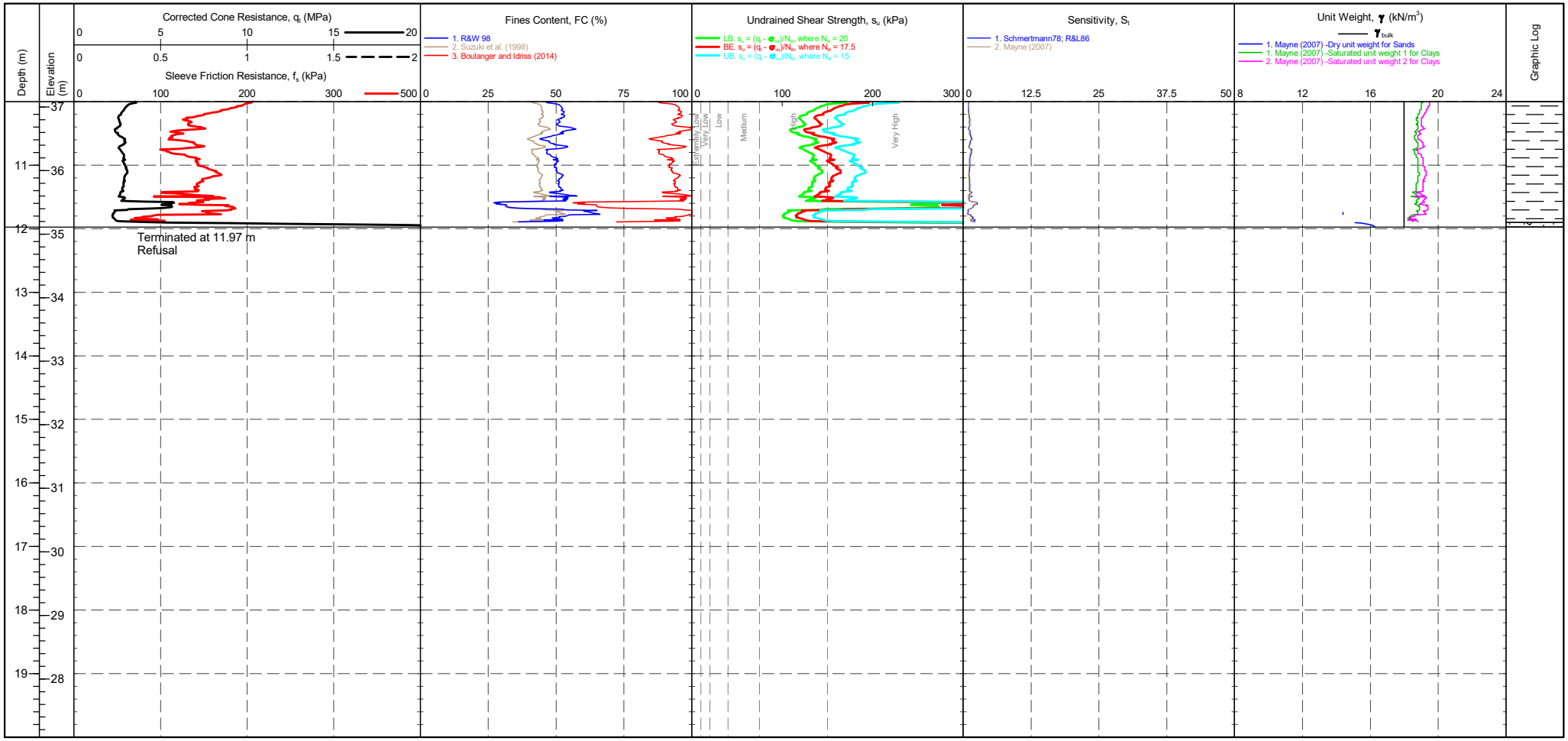
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT10A**

CLIENT : Structural Soils	EASTING : 385142.783 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398422.606 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.084 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	243 mV	-0.069 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	250 mV	258 mV	0.006 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	379 mV	411 mV	0.009 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2598 mV	2475 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

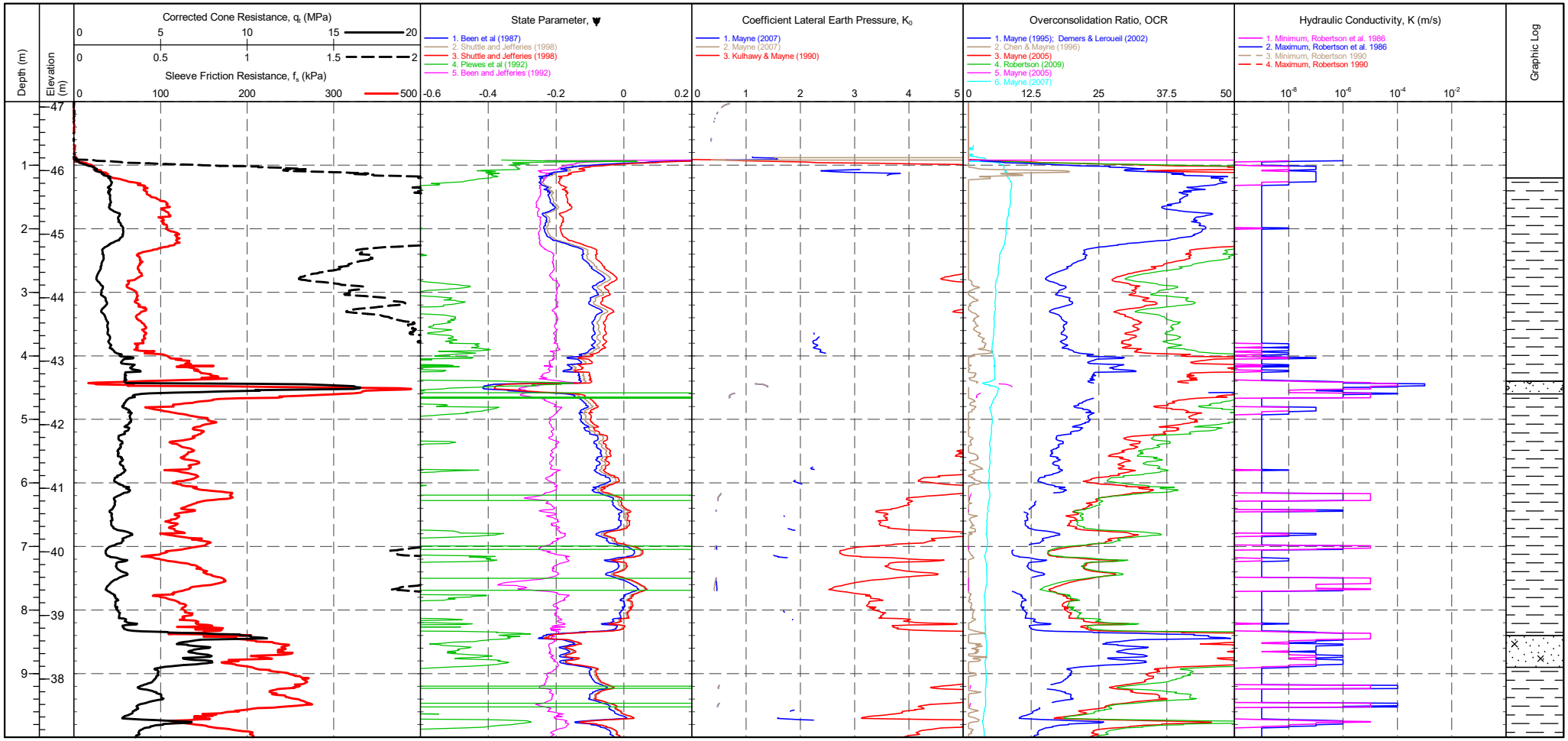
Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT10A**

CLIENT : Structural Soils	EASTING : 385142.783 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398422.606 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.084 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



				CPTU ZERO VALUES			
CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	Transducer	Pre	Post	Difference
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Tip	249 mV	243 mV	-0.069 MPa
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Sleeve	250 mV	258 mV	0.006 kPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Pore Pressure 2	379 mV	411 mV	0.009 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	X-Y Inclinometer	2598 mV	2475 mV	
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild				

Groundwater Level

Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

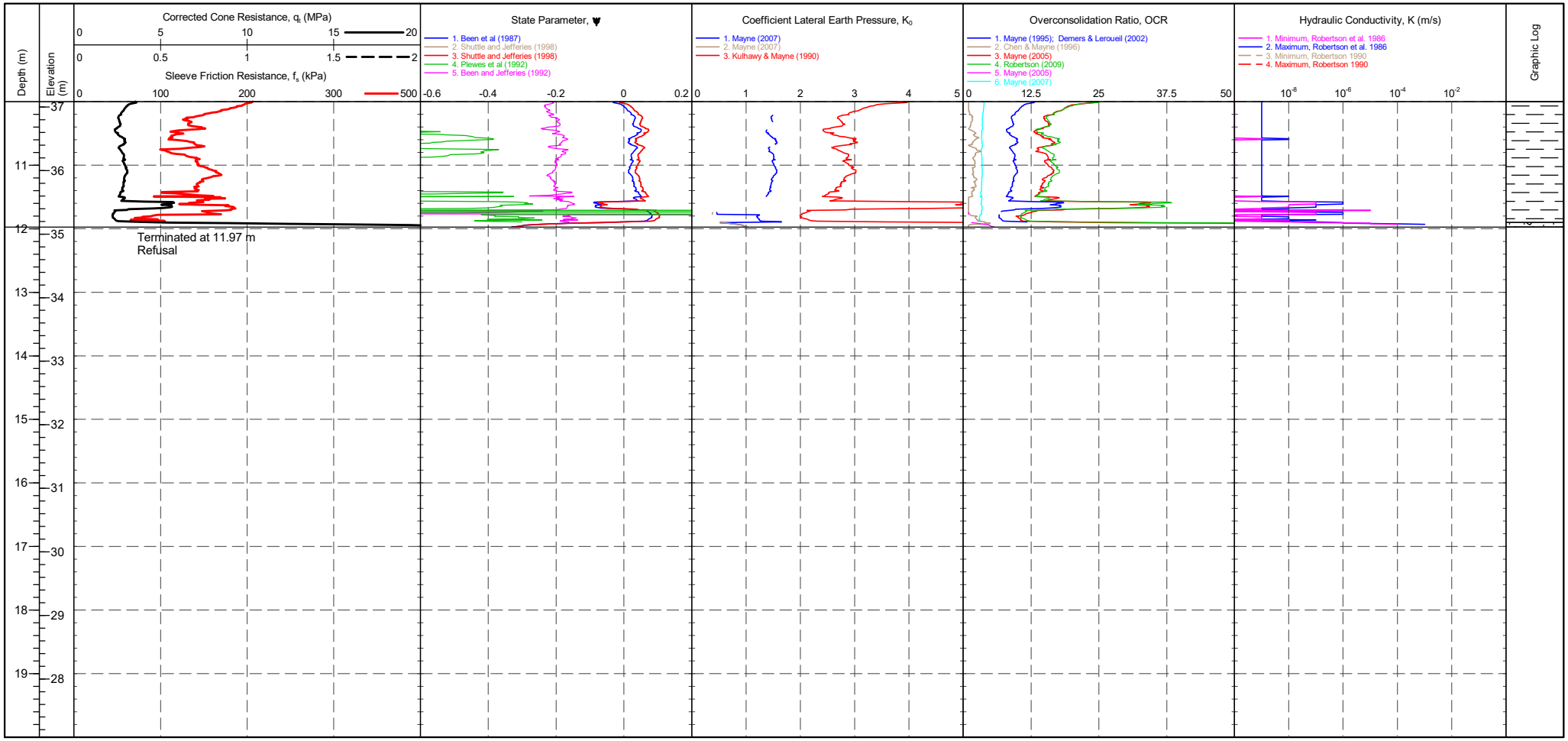
PointID: **ATK_CPT10A**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385142.783 m
NORTHING : 398422.606 m
ELEVATION : 47.084 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 03/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	243 mV	-0.069 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	250 mV	258 mV	0.006 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	379 mV	411 mV	0.009 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2598 mV	2475 mV	

Groundwater Level

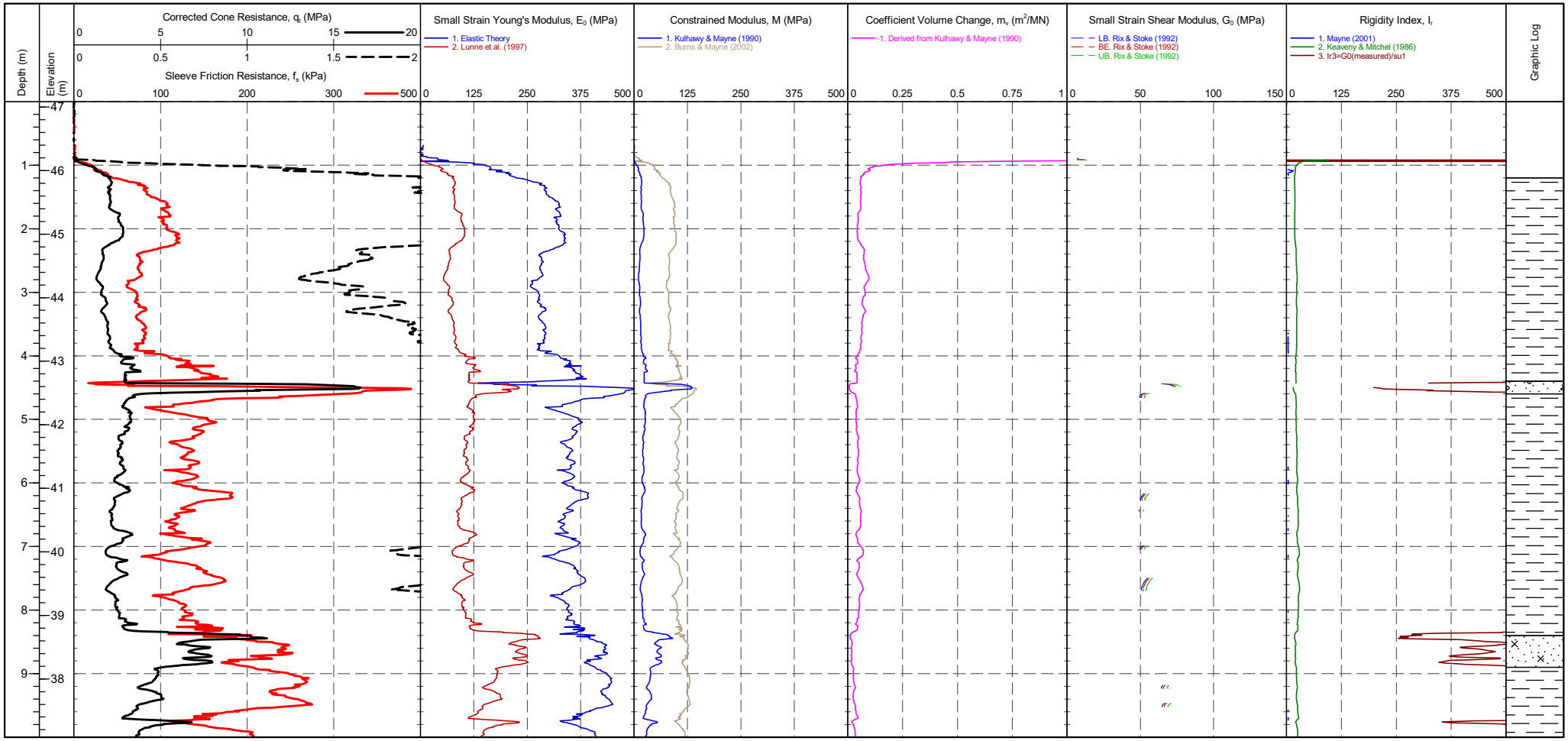
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT10A**

CLIENT : Structural Soils	EASTING : 385142.783 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398422.606 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.084 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



				CPTU ZERO VALUES			
CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	Transducer	Pre	Post	Difference
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Tip	249 mV	243 mV	-0.069 MPa
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Sleeve	250 mV	258 mV	0.006 kPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Pore Pressure 2	379 mV	411 mV	0.009 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	X-Y Inclinometer	2598 mV	2475 mV	
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild				

Groundwater Level

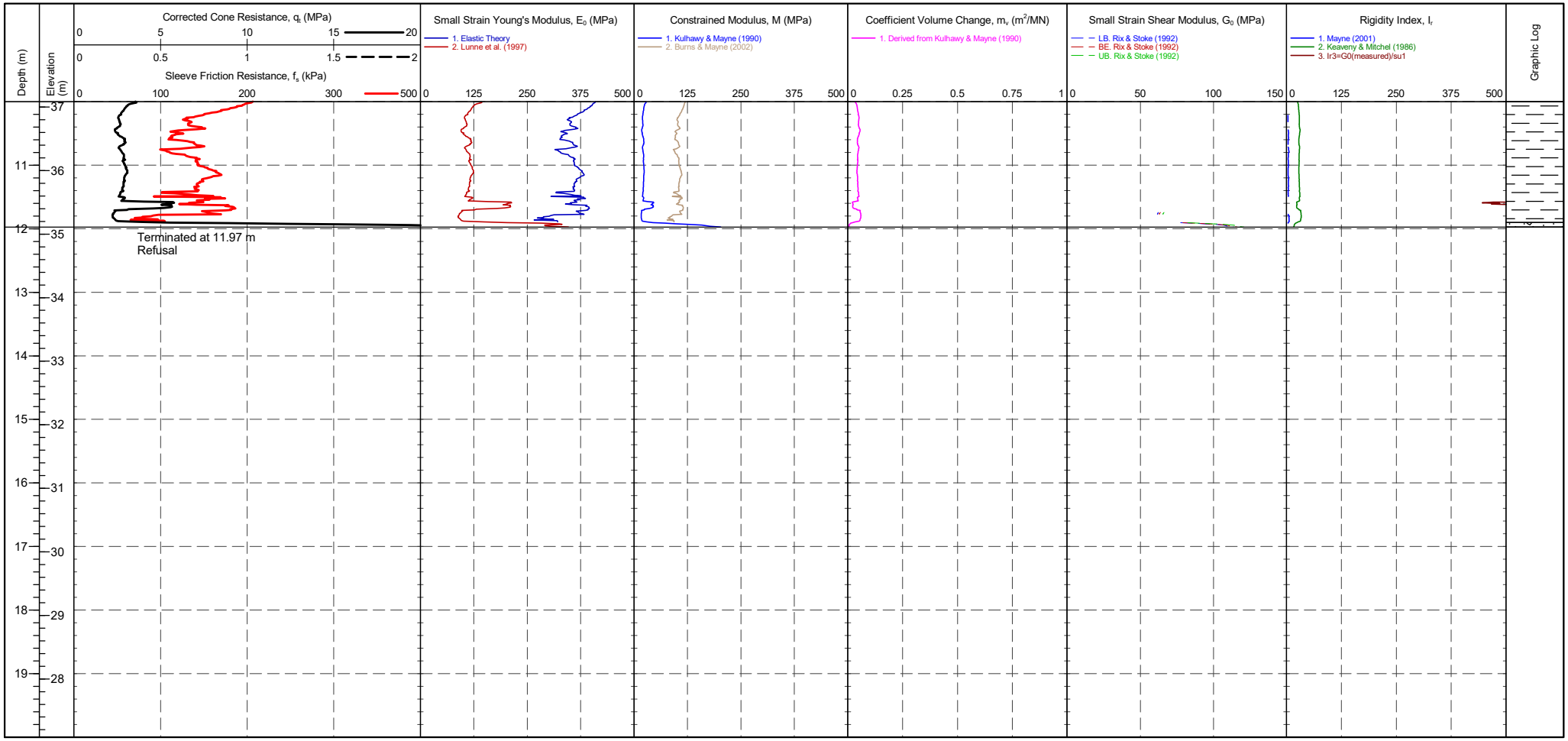
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT10A**

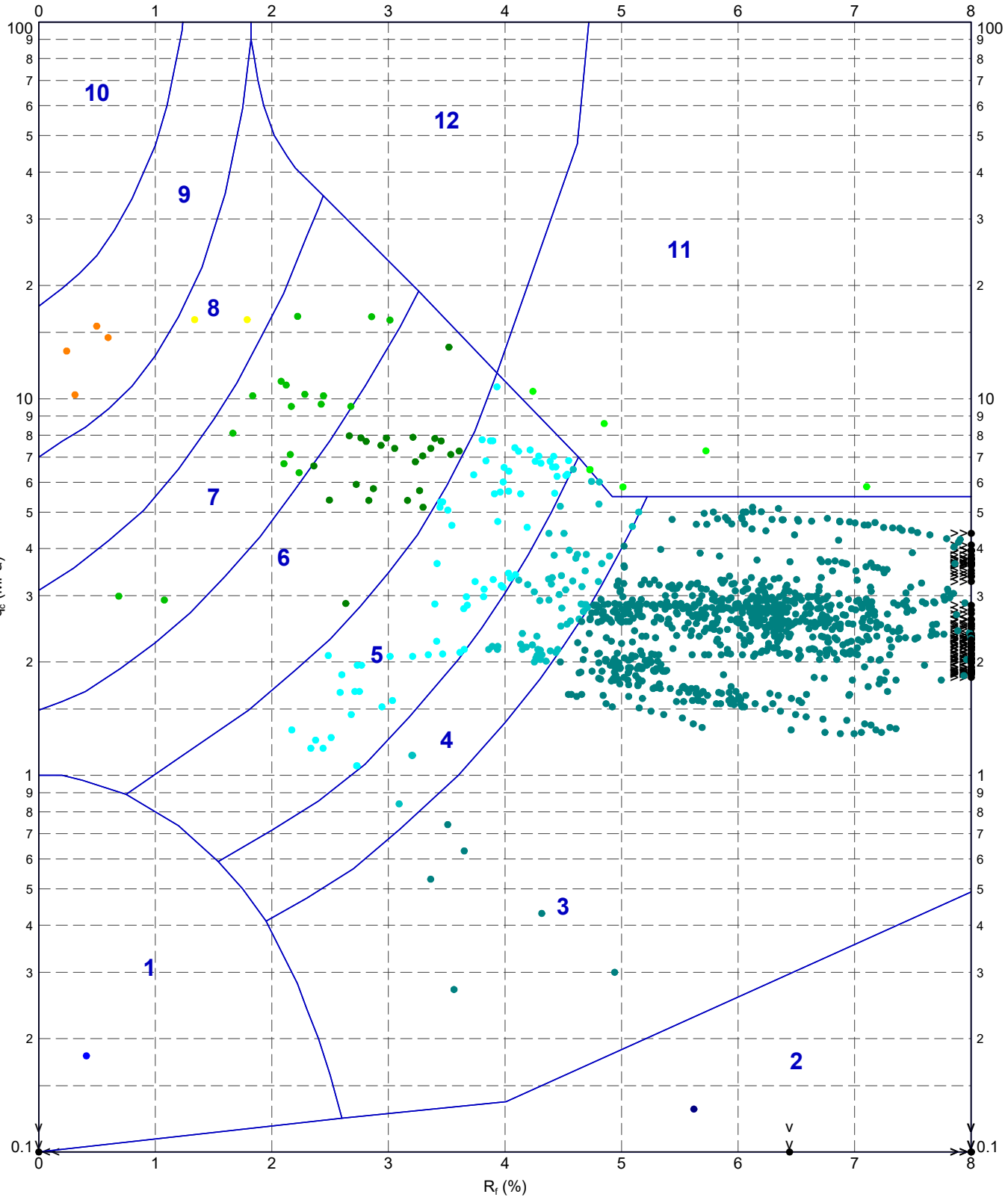
CLIENT : Structural Soils	EASTING : 385142.783 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398422.606 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.084 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	243 mV	-0.069 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	250 mV	258 mV	0.006 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	379 mV	411 mV	0.009 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2598 mV	2475 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

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Robertson et al. 1986 q_c vs. R_f - ATK_CPT10A

DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:22 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

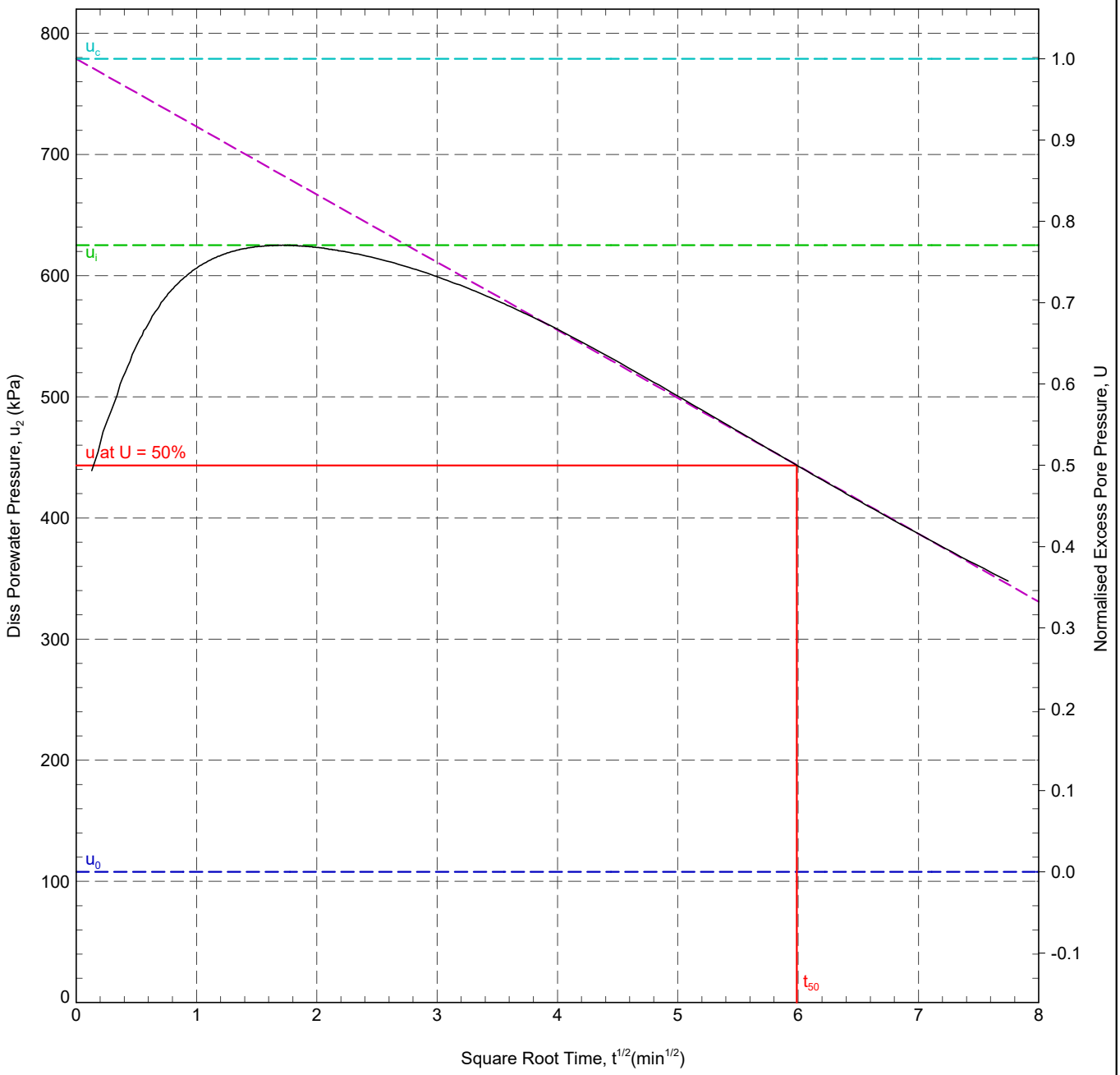
IN SITU SITE INVESTIGATION

Working with: STRUCTURAL SOILS LTD

Test ID

ATK_CPT10A - 11.50 m

CLIENT	: Structural Soils	AREA	: Ancoats, Manchester	SHEET	: 1 OF 1
ENGINEER	: Tim Clifford	EASTING	: 385142.8 m	STATUS	: Final
PROJECT	: 765544 - Ancoats	NORTHING	: 398422.6 m	DATE	: 03/05/23
LOCATION	: Manchester	COORD. SYS.	:		
PROJECT No.	: 1230236	ELEVATION	: 47.08 m		



In Situ Pore Pressure, u_0:	107.9 kPa	Rigidity Index, I_r:	3.7
Initial Pore Pressure, u_i:	625.1 kPa	Horizontal Coefficient of Consolidation, c_h:	3.65x10^0 m^2/yr
Final Pore Pressure:	347.8 kPa	Ratio c_h/c_v:	1.25
Back Extrapolated Pore Pressure, u_c:	779 kPa	Vertical Coefficient of Consolidation, c_v:	2.92x10^0 m^2/yr
Degree of Dissipation:	50%		
Dissipation Pressure:	443.3 kPa		
Time for 50% Dissipation, t_{50}:	35.88 min		

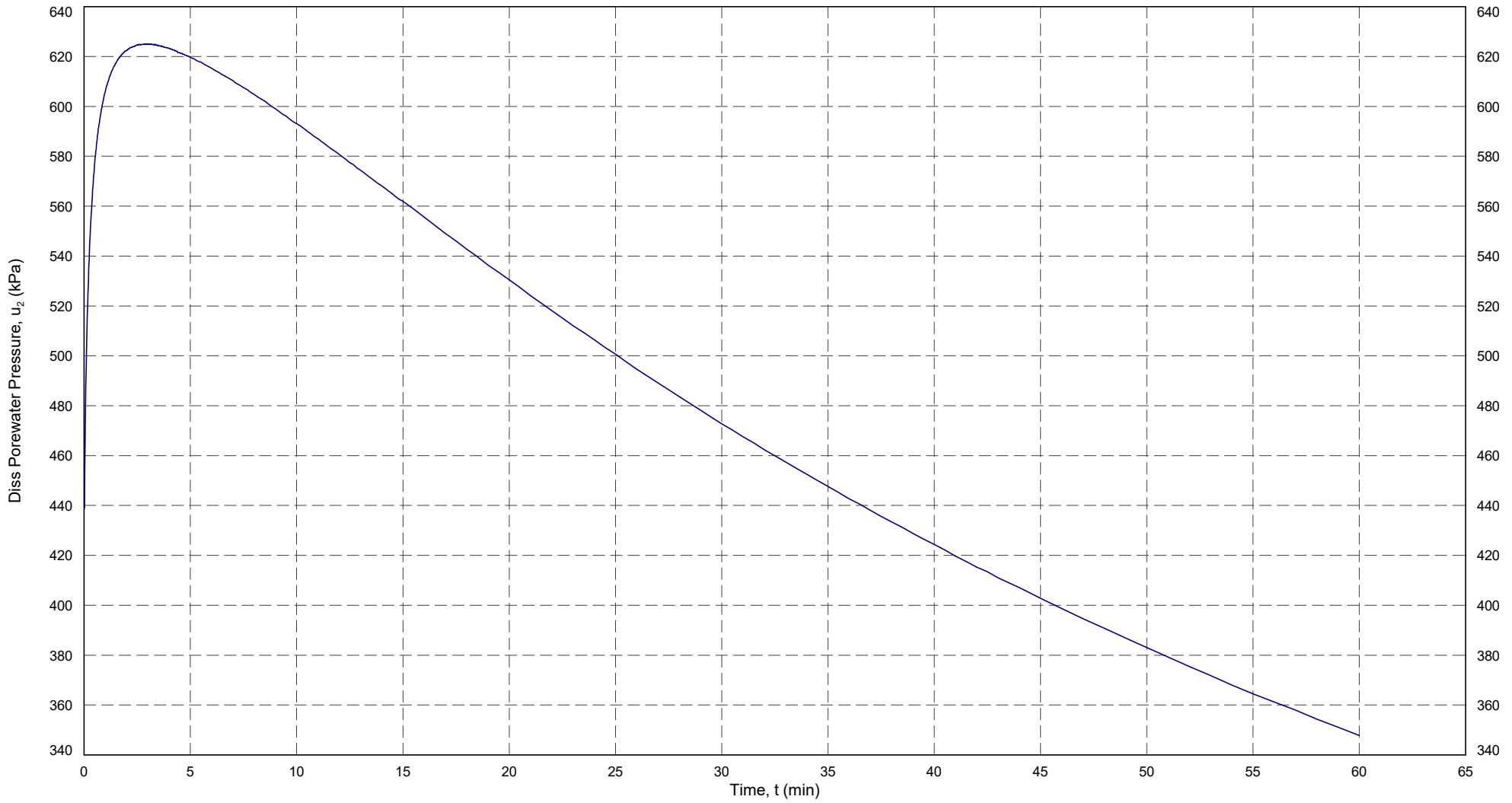
RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	15/05/2023
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	15/05/2023
CONE ID	: S15-CFIP.2177	APPROVED BY	: DW	DATE:	15/05/2023
OPERATOR	: RS				

REMARK

T50 reached. Test OK.

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:22 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

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - CHLOE.GLB Graph PPDT PORE PRESSURE VS. LIN T A4L 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:22 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



IN SITU SITE INVESTIGATION

TITLE

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Dissipation Test - ATK_CPT10A

DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

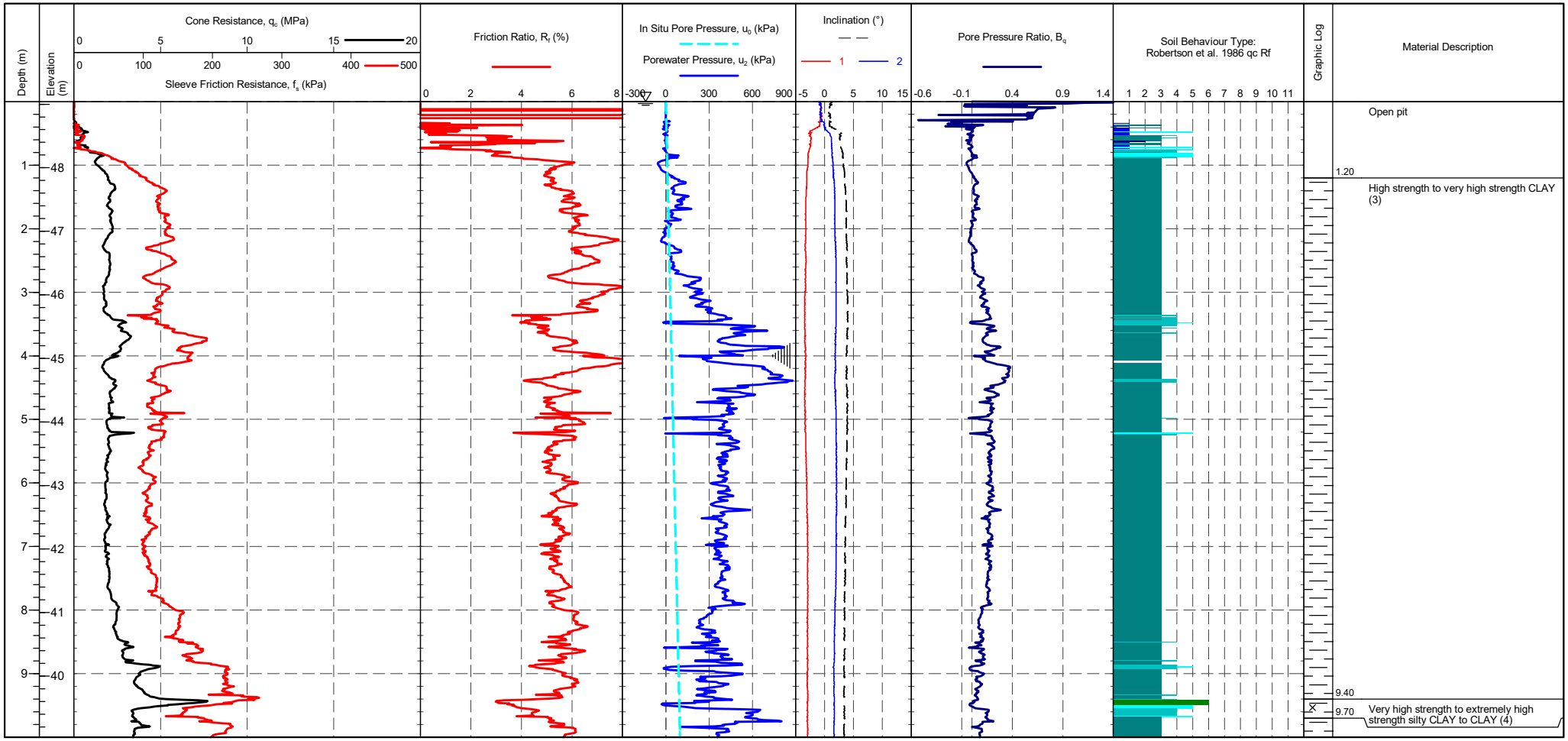
PointID: **ATK_CPT11**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385069.460 m
NORTHING : 398455.514 m
ELEVATION : 49.040 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 26/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: 0

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	250 mV	242 mV	-0.092 MPa
Sleeve	249 mV	243 mV	-0.004 kPa
Pore Pressure 2	323 mV	303 mV	-0.005 kPa
X-Y Inclinometer	2360 mV	2363 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

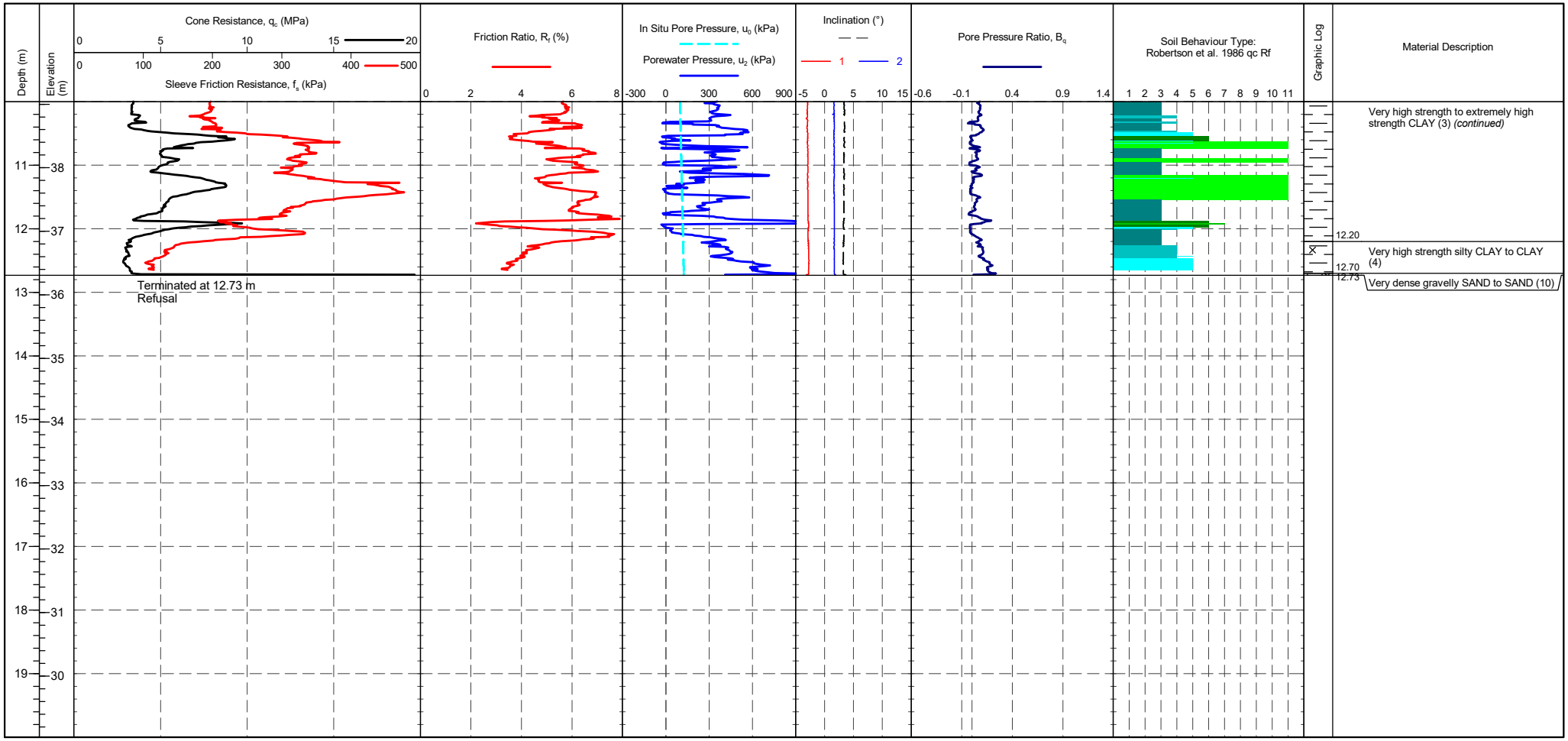
Groundwater Level
Dissipation Test

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT11**

CLIENT : Structural Soils PROJECT : 765544 - Ancoats LOCATION : Manchester PROJECT No. : 1230236	EASTING : 385069.460 m NORTHING : 398455.514 m ELEVATION : 49.040 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 2 OF 2 STATUS : Final TEST DATE : 26/04/2023 PLOT DATE : 24/05/2023 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm^2	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: 0

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	250 mV	242 mV	-0.092 MPa
Sleeve	249 mV	243 mV	-0.004 kPa
Pore Pressure 2	323 mV	303 mV	-0.005 kPa
X-Y Inclinometer	2360 mV	2363 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

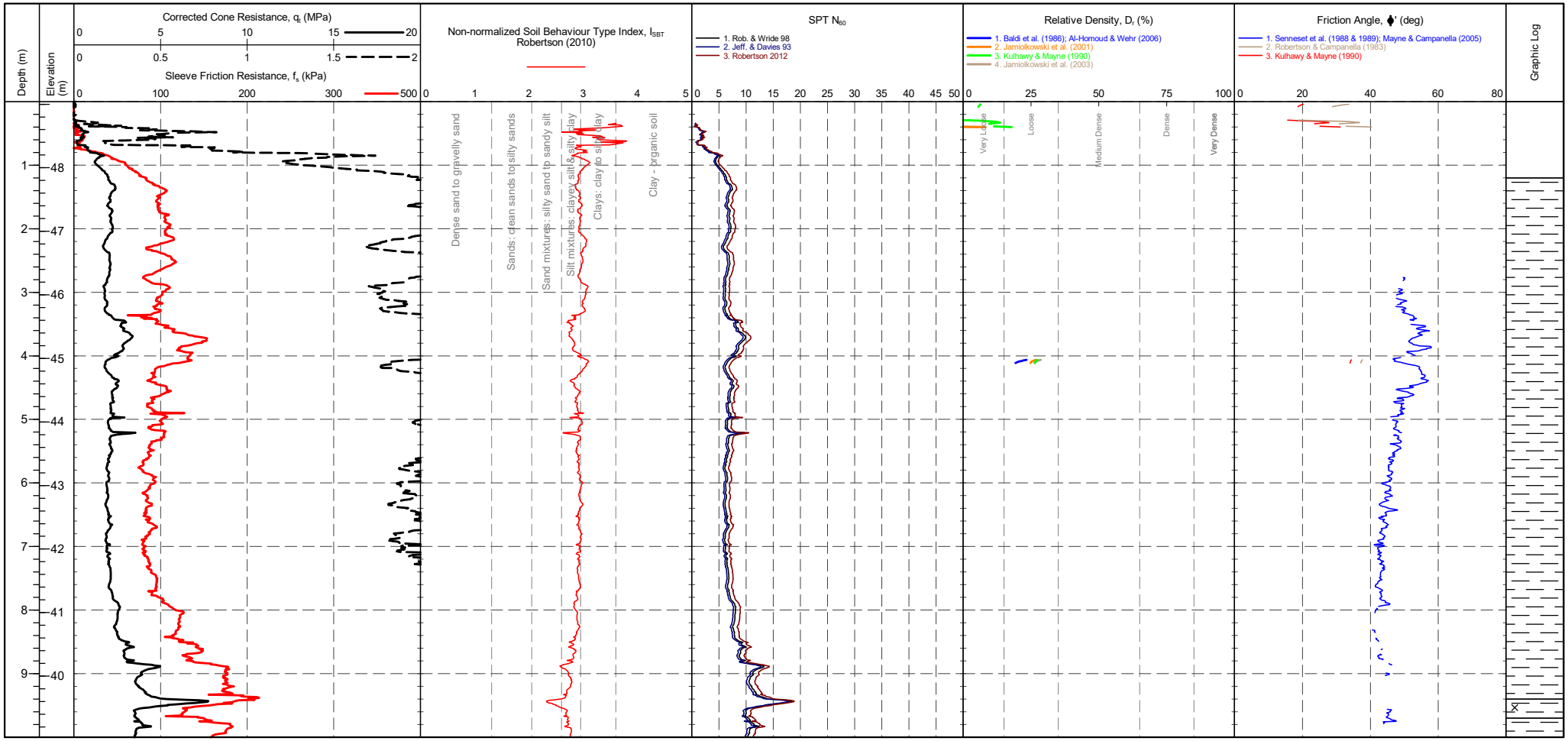
Dissipation Test

CPT LOG 02

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT11**

CLIENT : Structural Soils	EASTING : 385069.460 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398455.514 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.040 m OD		TEST DATE : 26/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2			
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni			
CONE AREA RATIO	: 0.79	OPERATOR	: RS			
FILTER POSITION	: u2	FRICTION REDUCER	: None			
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild			

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	250 mV	242 mV	-0.092 MPa
Sleeve	249 mV	243 mV	-0.004 kPa
Pore Pressure 2	323 mV	303 mV	-0.005 kPa
X-Y Inclinometer	2360 mV	2363 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

Working with: STRUCTURAL SOILS LTD

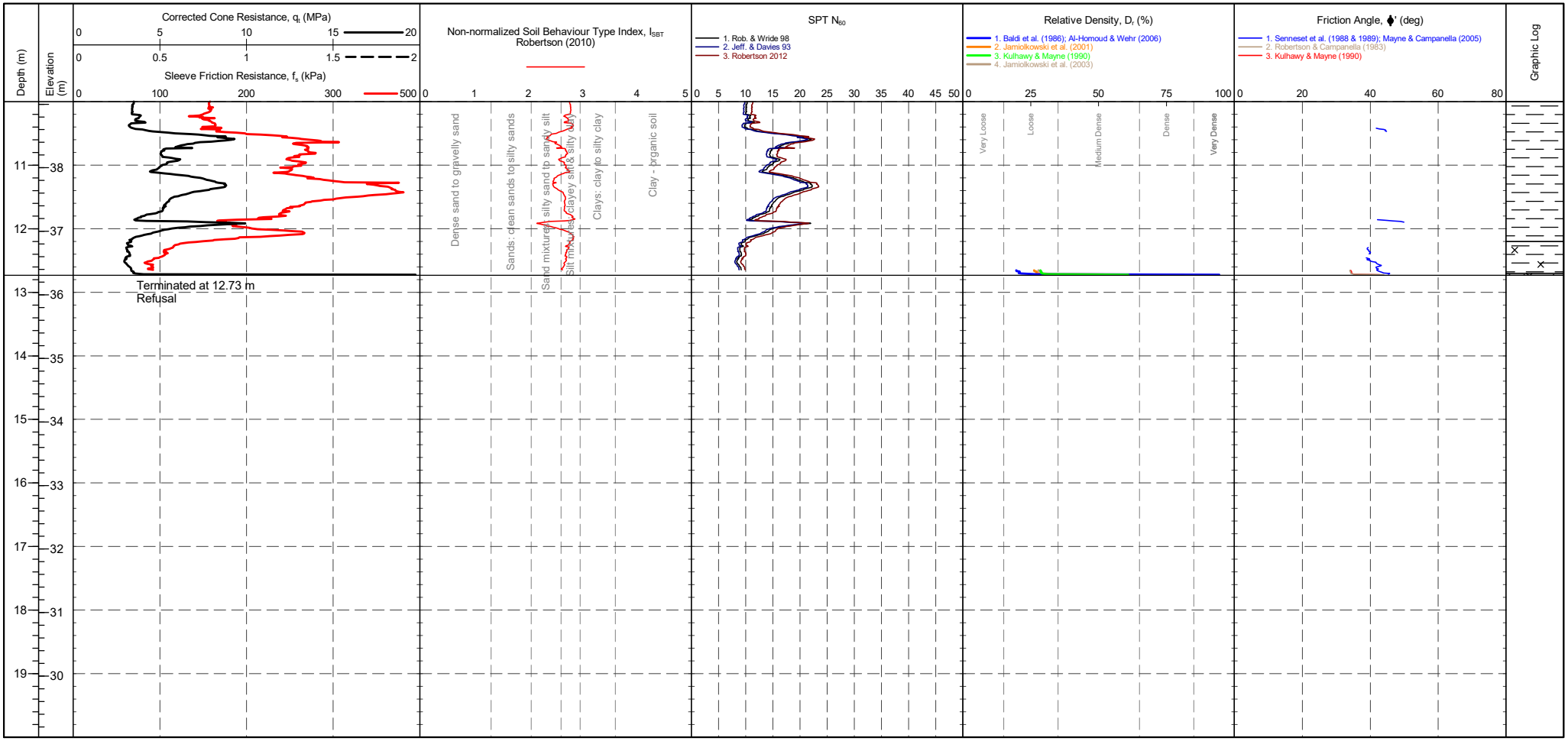
PointID: **ATK_CPT11**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385069.460 m
NORTHING : 398455.514 m
ELEVATION : 49.040 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 26/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	250 mV	242 mV	-0.092 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	249 mV	243 mV	-0.004 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	323 mV	303 mV	-0.005 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2360 mV	2363 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

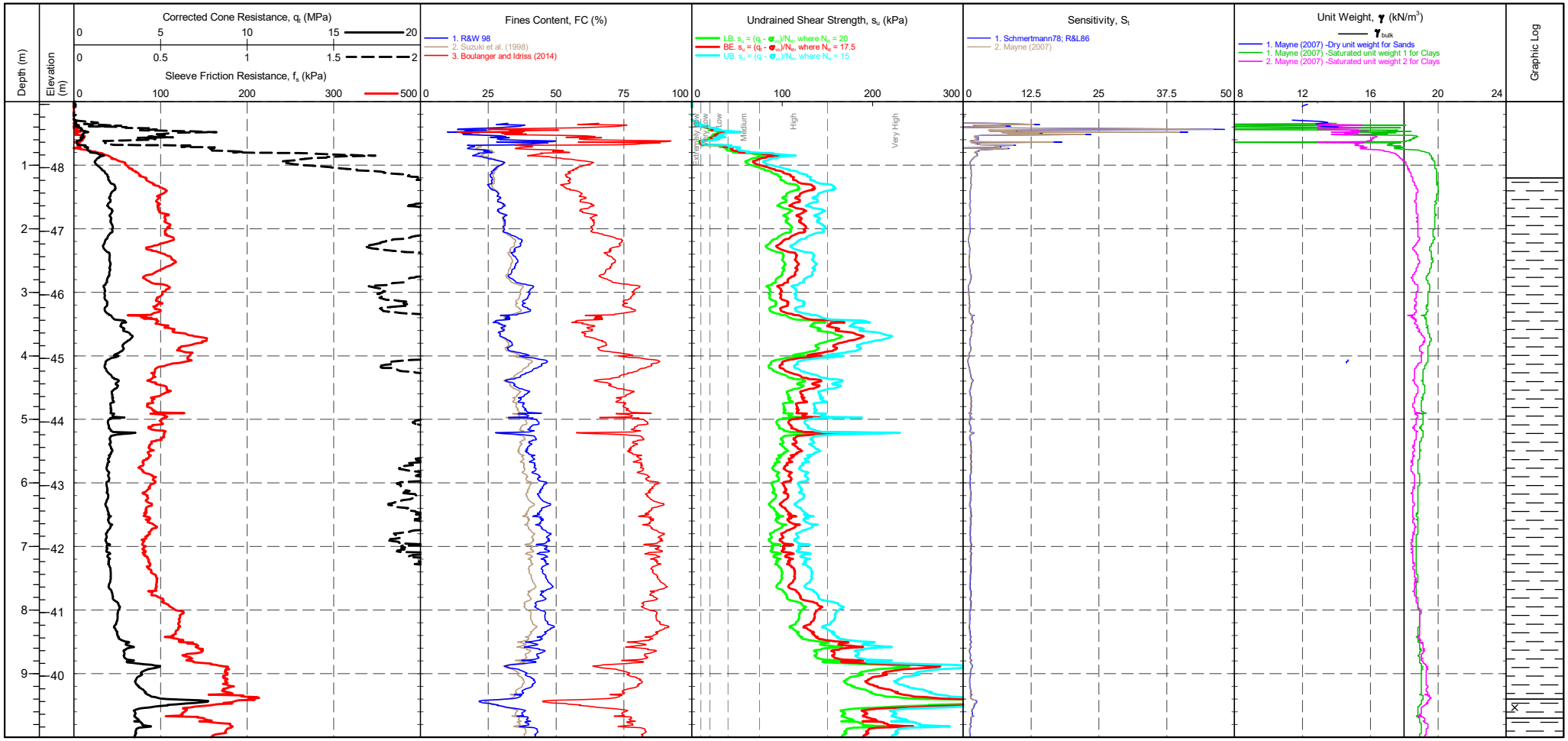
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT11**

CLIENT : Structural Soils	EASTING : 385069.460 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398455.514 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.040 m OD		TEST DATE : 26/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	250 mV	242 mV	-0.092 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	249 mV	243 mV	-0.004 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	323 mV	303 mV	-0.005 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2360 mV	2363 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 03

Working with: STRUCTURAL SOILS LTD

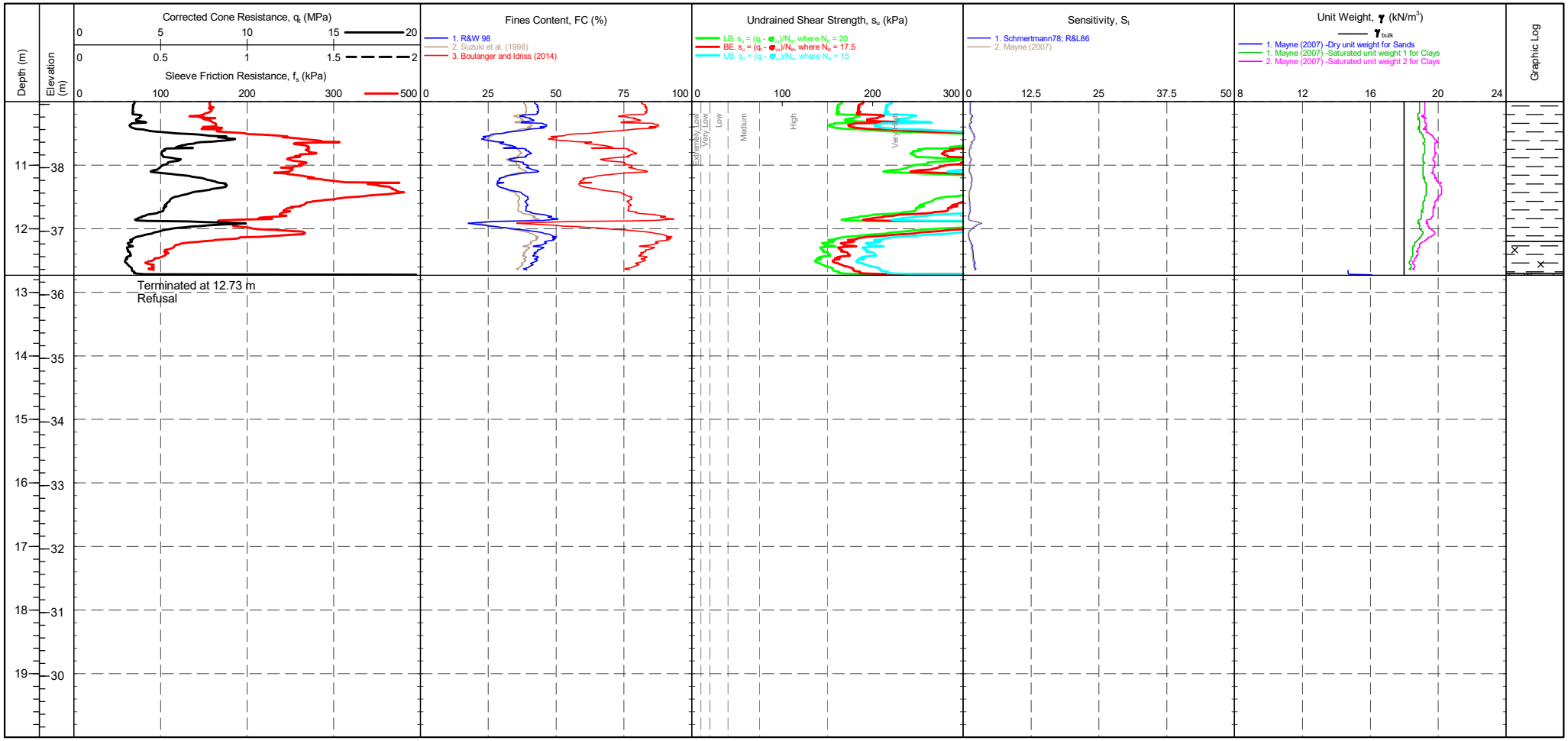
PointID: **ATK_CPT11**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385069.460 m
NORTHING : 398455.514 m
ELEVATION : 49.040 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 26/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	250 mV	242 mV	-0.092 MPa
Sleeve	249 mV	243 mV	-0.004 kPa
Pore Pressure 2	323 mV	303 mV	-0.005 kPa
X-Y Inclinometer	2360 mV	2363 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

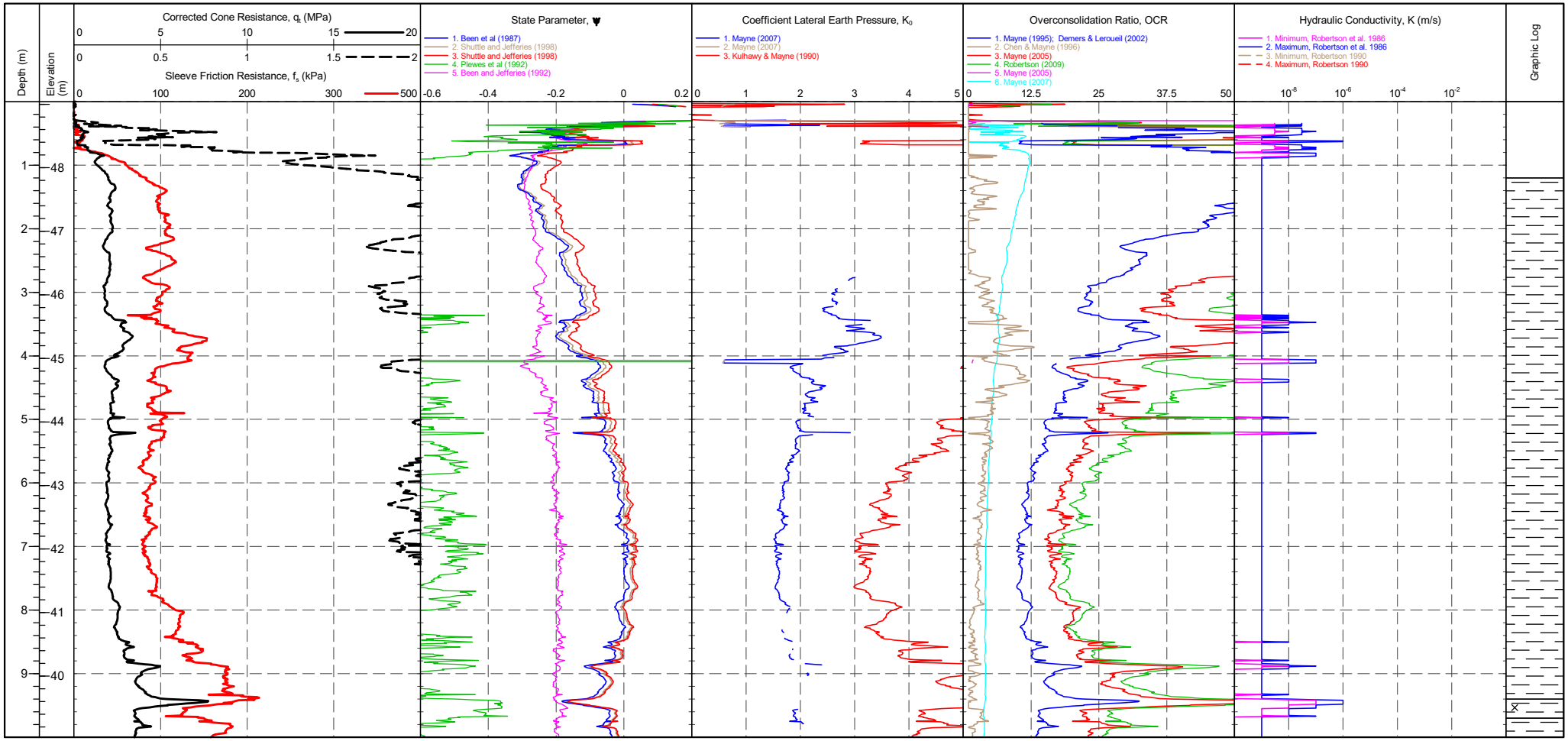
Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT11**

CLIENT : Structural Soils	EASTING : 385069.460 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398455.514 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.040 m OD		TEST DATE : 26/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	250 mV	242 mV	-0.092 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	249 mV	243 mV	-0.004 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	323 mV	303 mV	-0.005 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2360 mV	2363 mV	

Groundwater Level

Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

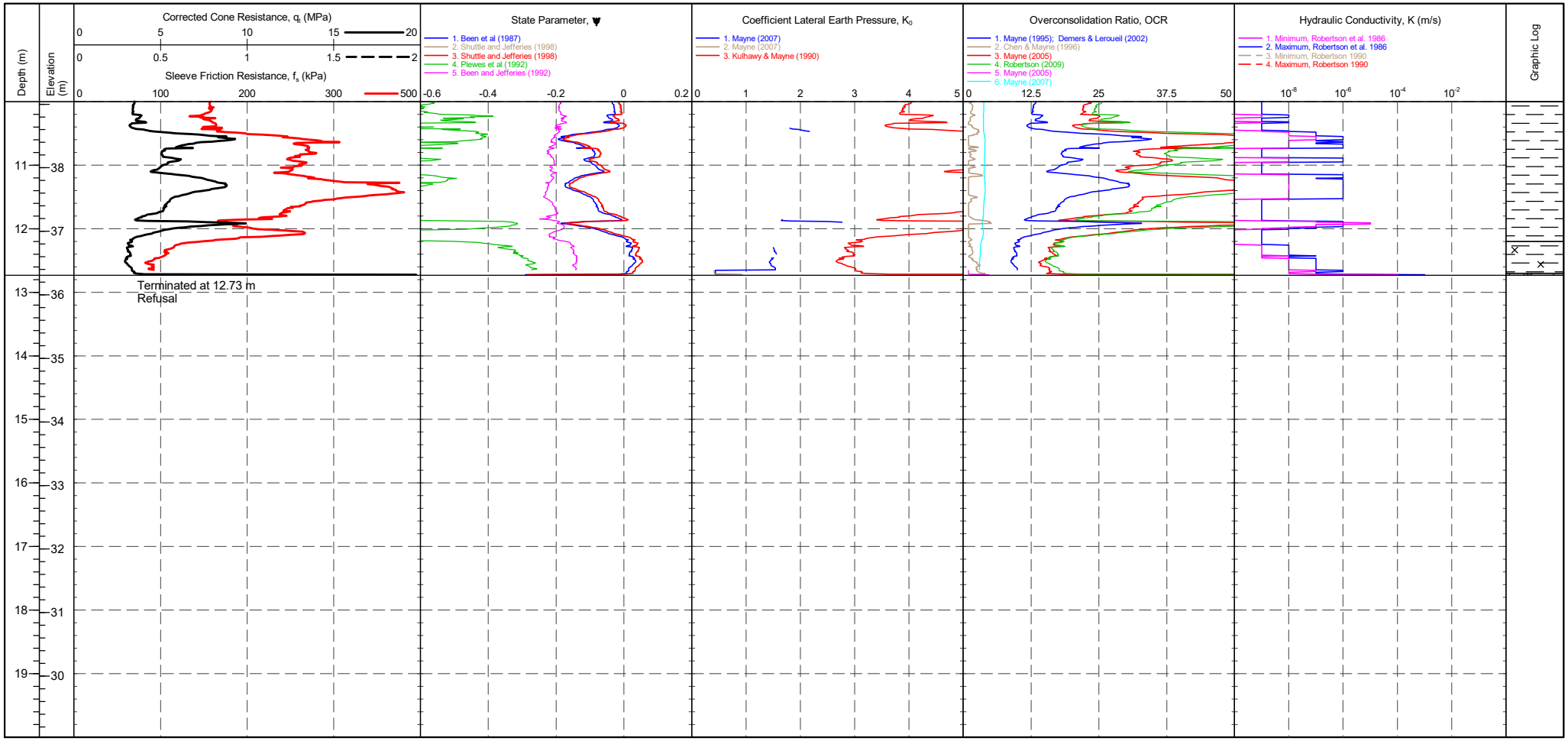
PointID: **ATK_CPT11**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385069.460 m
NORTHING : 398455.514 m
ELEVATION : 49.040 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 26/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	250 mV	242 mV	-0.092 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	249 mV	243 mV	-0.004 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	323 mV	303 mV	-0.005 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2360 mV	2363 mV	

Groundwater Level

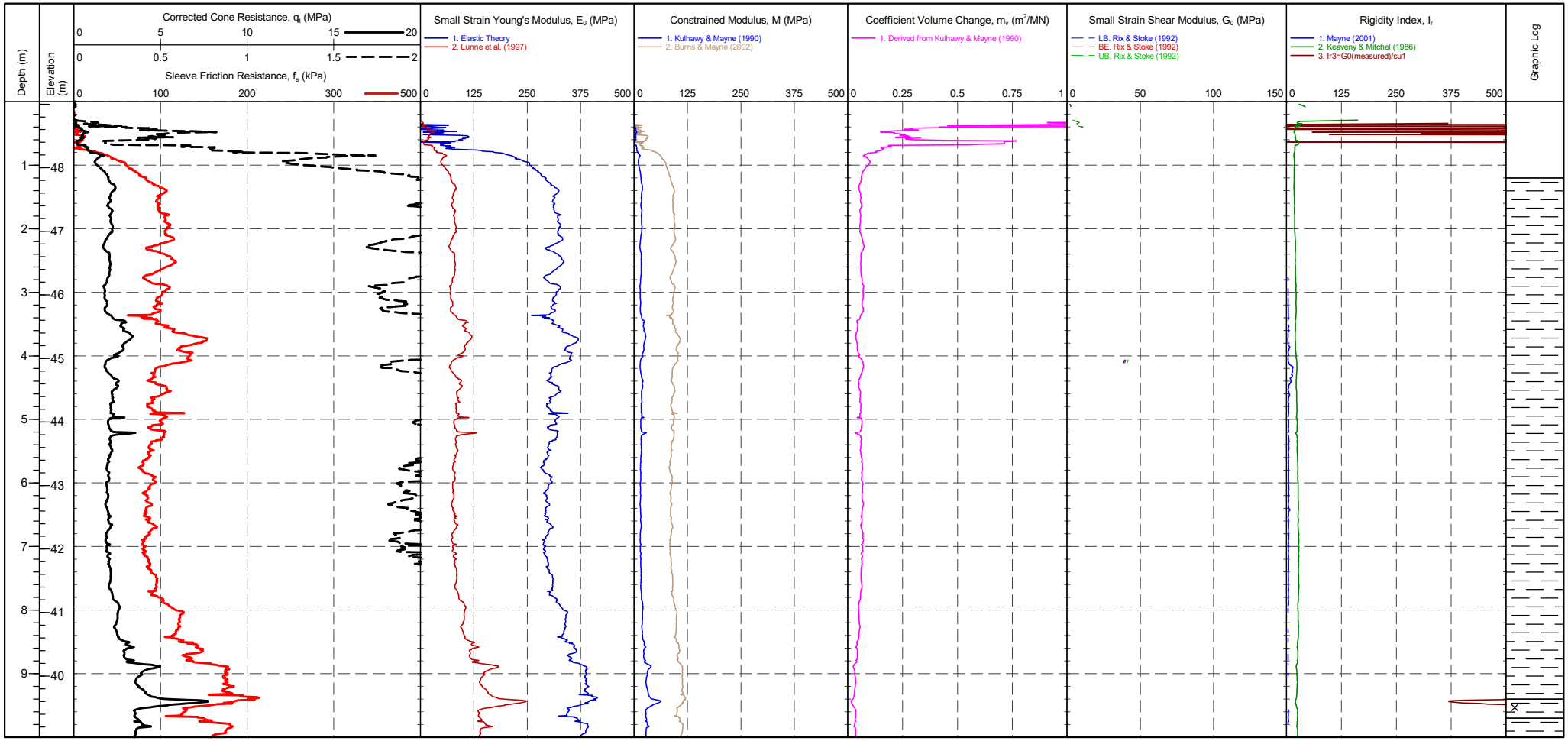
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT11**

CLIENT : Structural Soils	EASTING : 385069.460 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398455.514 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.040 m OD		TEST DATE : 26/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



				CPTU ZERO VALUES			
CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	Transducer	Pre	Post	Difference
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Tip	250 mV	242 mV	-0.092 MPa
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Sleeve	249 mV	243 mV	-0.004 kPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Pore Pressure 2	323 mV	303 mV	-0.005 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	X-Y Inclinometer	2360 mV	2363 mV	
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild				

Groundwater Level

Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

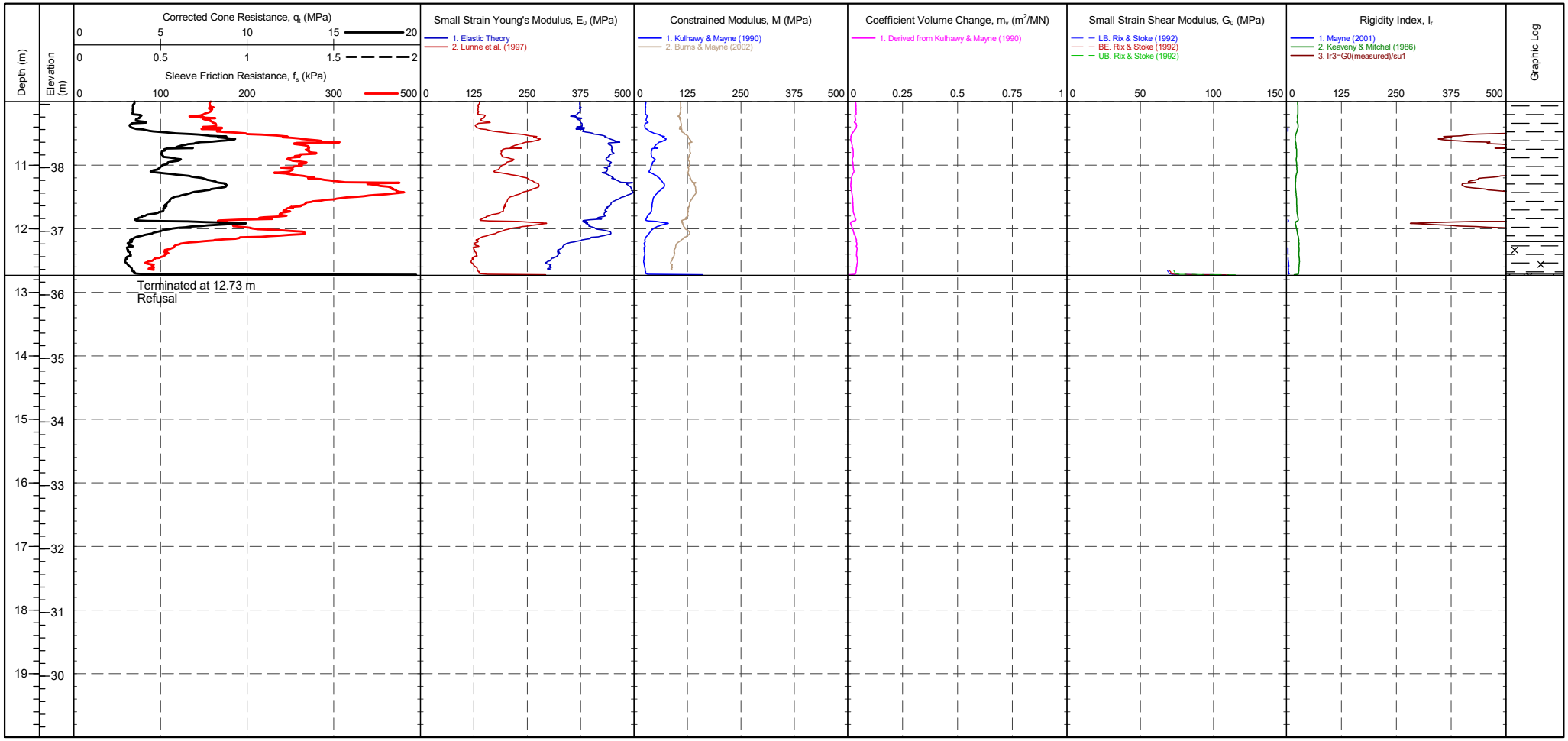
PointID: **ATK_CPT11**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385069.460 m
NORTHING : 398455.514 m
ELEVATION : 49.040 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

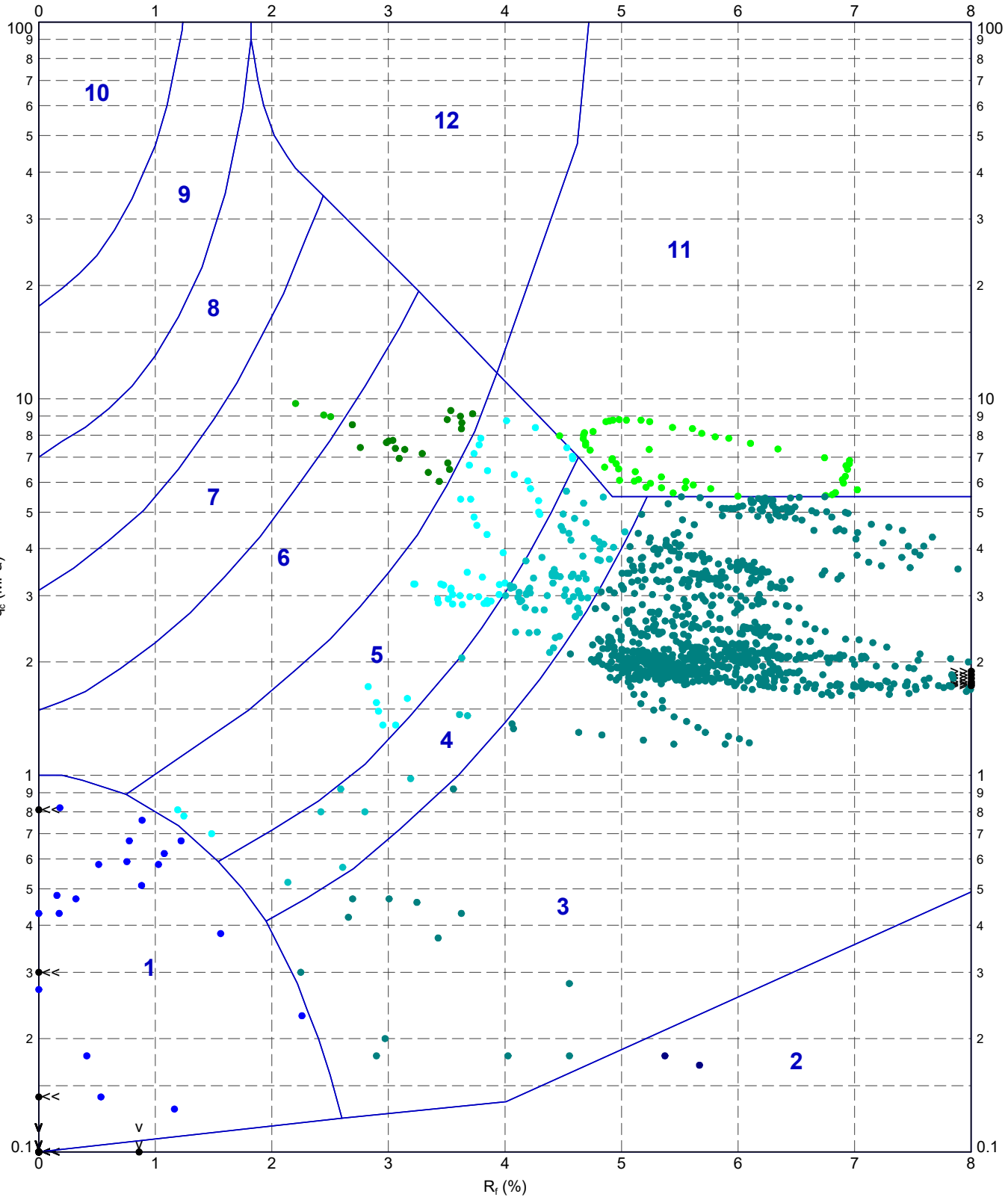
SHEET : 2 OF 2
STATUS : Final
TEST DATE : 26/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	250 mV	242 mV	-0.092 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	249 mV	243 mV	-0.004 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	323 mV	303 mV	-0.005 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2360 mV	2363 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

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Robertson et al. 1986 q_c vs. R_f - ATK_CPT11

DRAWN	DATE 24/05/2023	
CHECKED	DATE 24/05/2023	
SCALE Not To Scale		A4
PROJECT No 1230236	FIGURE No	

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:24 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

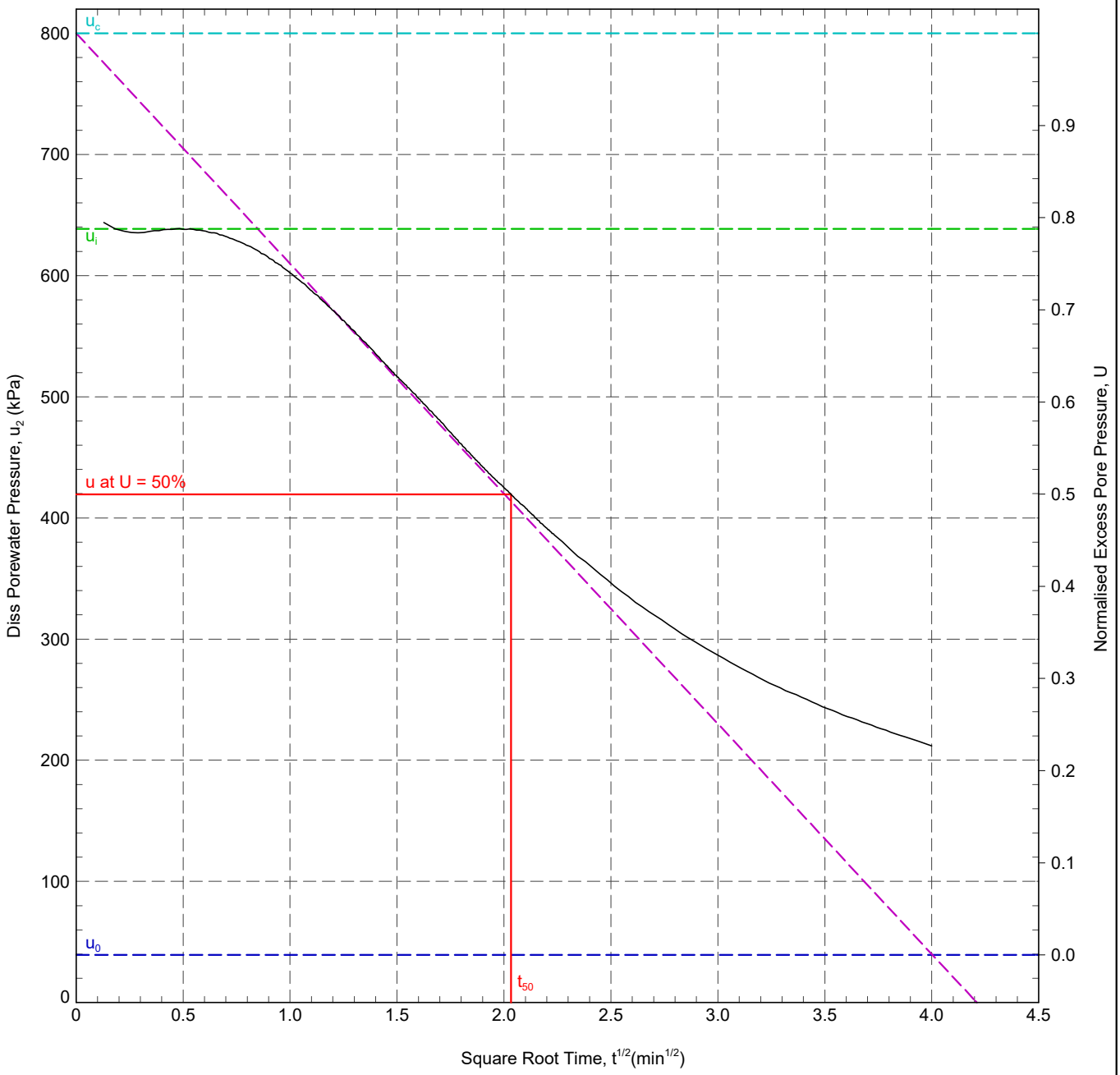
IN SITU SITE INVESTIGATION

Working with: STRUCTURAL SOILS LTD

Test ID

ATK_CPT11 - 4.00 m

CLIENT	: Structural Soils	AREA	: Ancoats, Manchester	SHEET	: 1 OF 1
ENGINEER	: Tim Clifford	EASTING	: 385069.5 m	STATUS	: Final
PROJECT	: 765544 - Ancoats	NORTHING	: 398455.5 m	DATE	: 26/04/23
LOCATION	: Manchester	COORD. SYS.	:		
PROJECT No.	: 1230236	ELEVATION	: 49.04 m		



In Situ Pore Pressure, u_0:	39.2 kPa	Rigidity Index, I_r:	5.1
Initial Pore Pressure, u_i:	638.5 kPa	Horizontal Coefficient of Consolidation, c_h:	3.72×10^1 m²/yr
Final Pore Pressure:	211.9 kPa	Ratio c_h/c_v:	1.25
Back Extrapolated Pore Pressure, u_c:	800 kPa	Vertical Coefficient of Consolidation, c_v:	2.98×10^1 m²/yr
Degree of Dissipation:	50%		
Dissipation Pressure:	419.5 kPa		
Time for 50% Dissipation, t_{50}:	4.13 min		

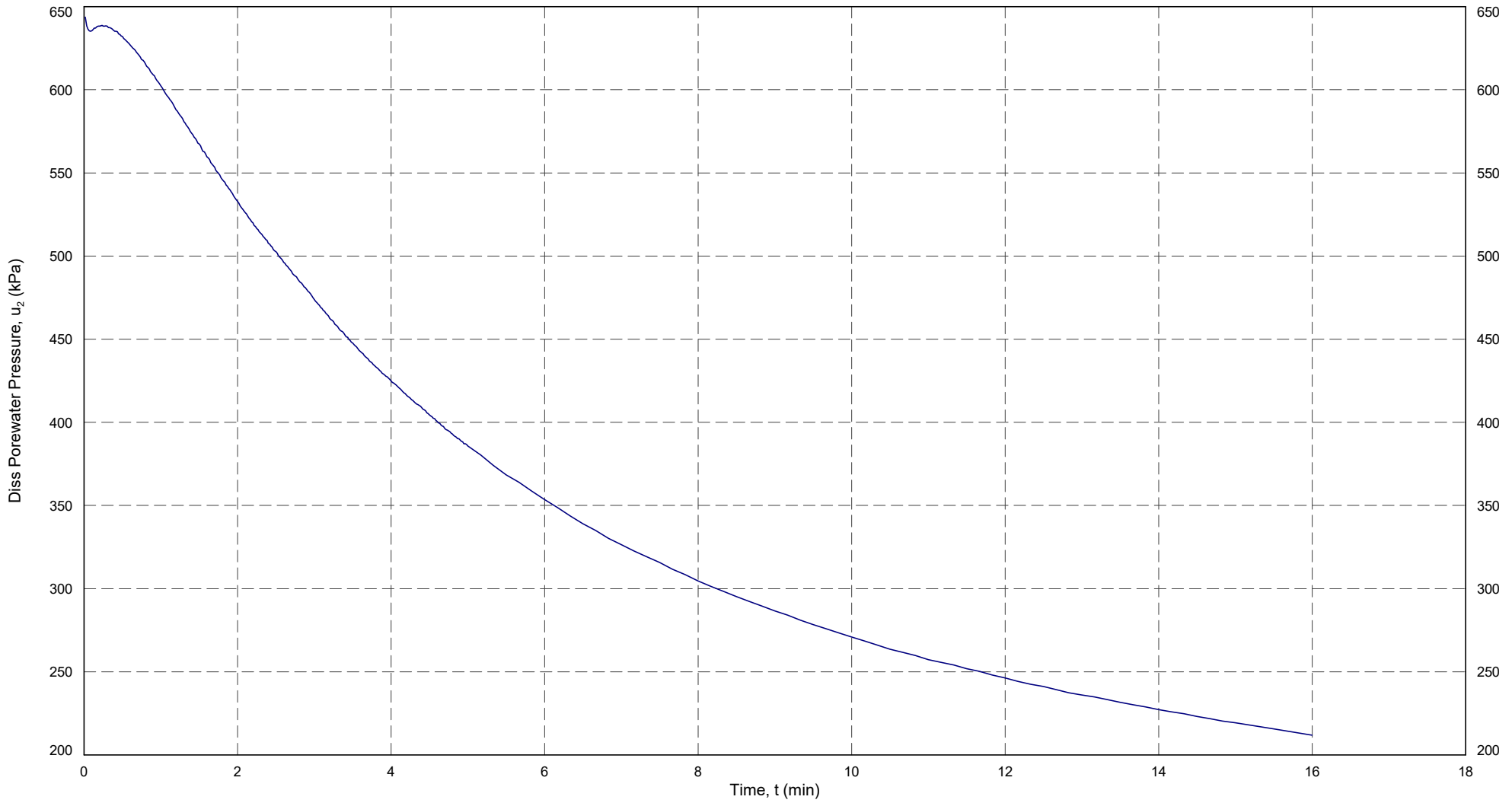
RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	15/05/2023
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	15/05/2023
CONE ID	: S15-CFIP.2177	APPROVED BY	: DW	DATE:	15/05/2023
OPERATOR	: RS				

REMARK

T50 reached. Test OK.

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:24 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

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - CHLOE.GLB Graph PPDT PORE PRESSURE VS. LIN T A4L 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:24 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



IN SITU SITE INVESTIGATION

TITLE

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Dissipation Test - ATK_CPT11

DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

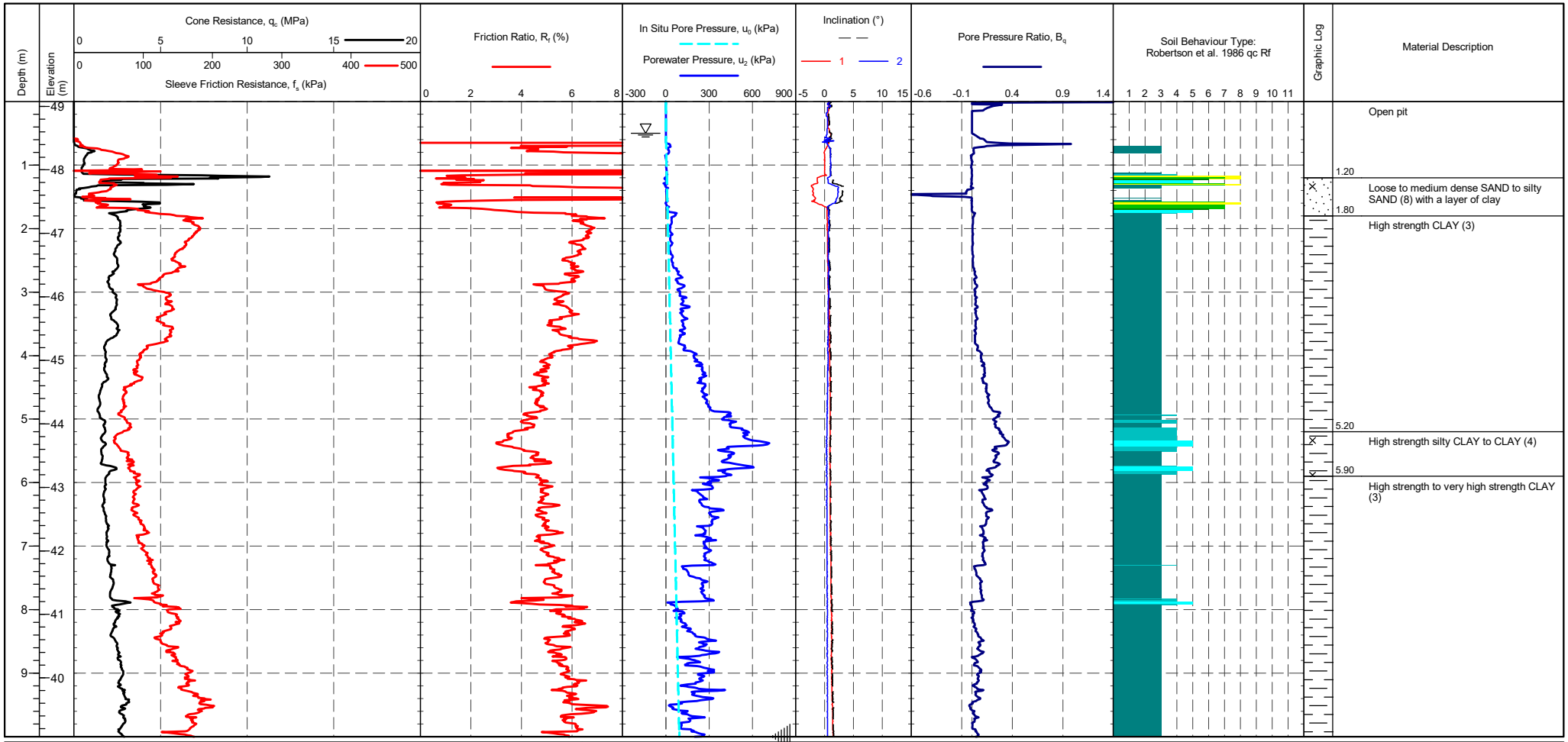
PointID: **ATK_CPT12**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385028.008 m
NORTHING : 398436.937 m
ELEVATION : 49.075 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 03/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	248 mV	245 mV	-0.035 MPa
Sleeve	248 mV	244 mV	-0.003 kPa
Pore Pressure 2	372 mV	398 mV	0.007 kPa
X-Y Inclinometer	2492 mV	2483 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: STRUCTURAL SOILS LTD

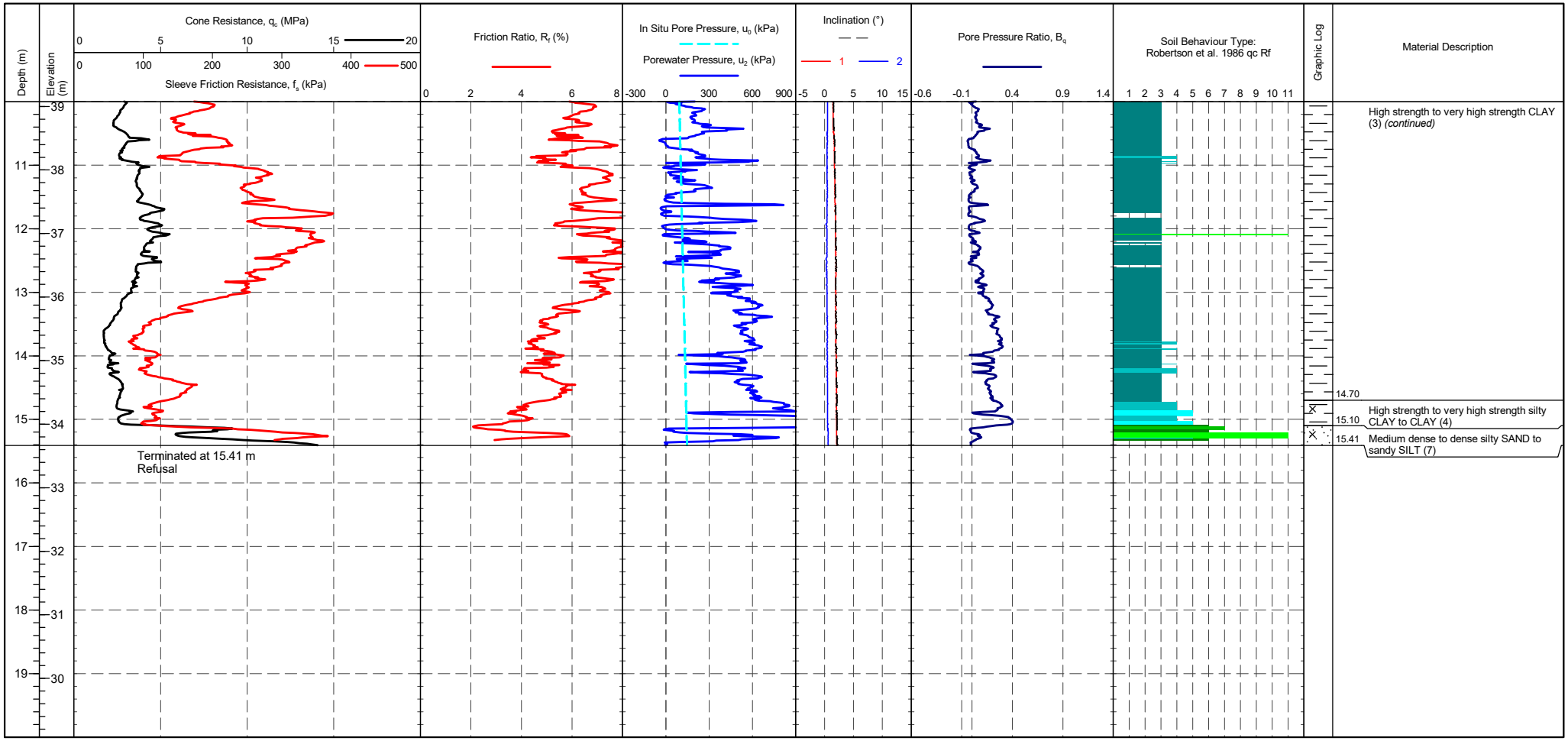
PointID: **ATK_CPT12**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385028.008 m
NORTHING : 398436.937 m
ELEVATION : 49.075 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 03/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	248 mV	245 mV	-0.035 MPa
Sleeve	248 mV	244 mV	-0.003 kPa
Pore Pressure 2	372 mV	398 mV	0.007 kPa
X-Y Inclinometer	2492 mV	2483 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: Structural Soils Ltd

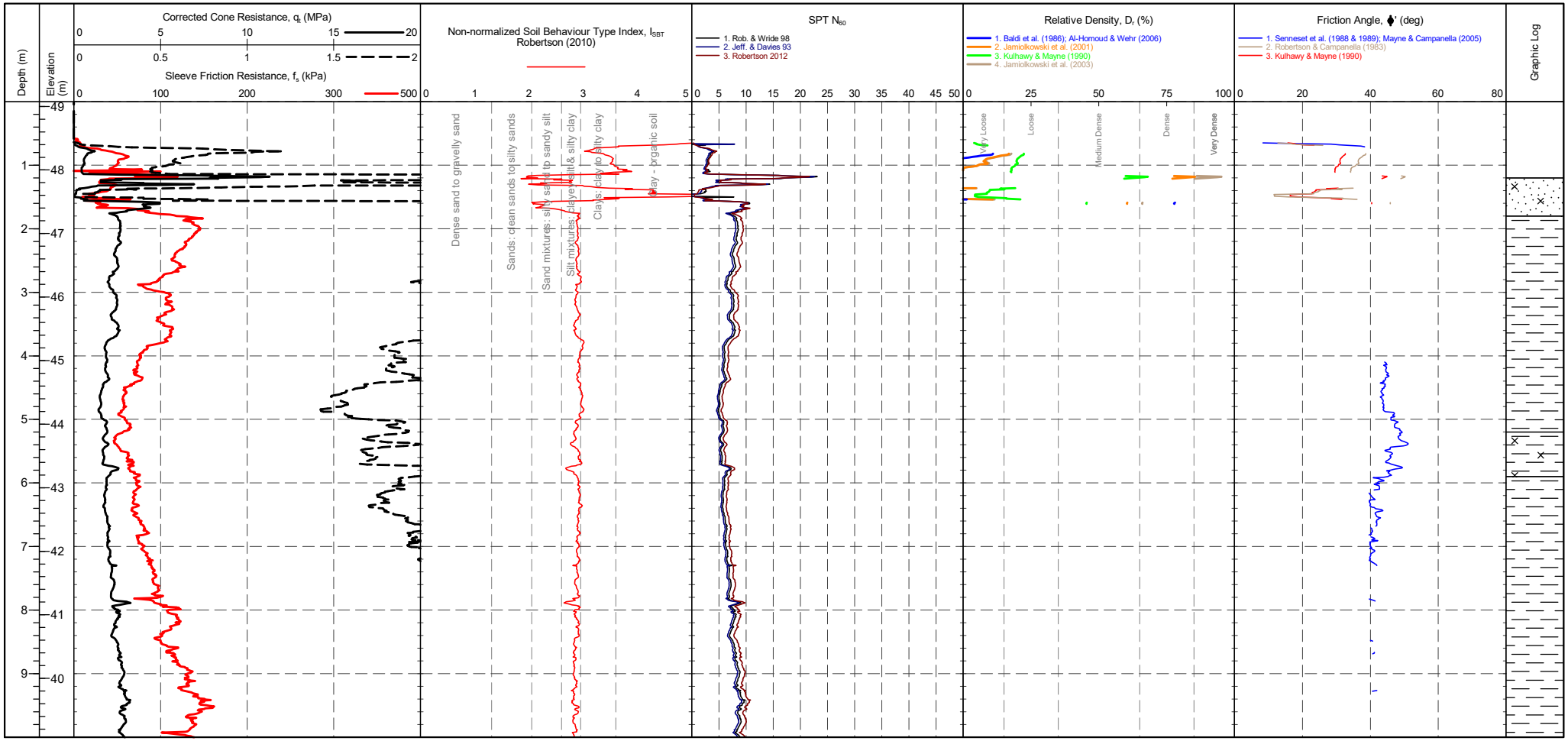
PointID: **ATK_CPT12**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385028.008 m
NORTHING : 398436.937 m
ELEVATION : 49.075 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 03/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	248 mV	245 mV	-0.035 MPa
Sleeve	248 mV	244 mV	-0.003 kPa
Pore Pressure 2	372 mV	398 mV	0.007 kPa
X-Y Inclinometer	2492 mV	2483 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

Working with: STRUCTURAL SOILS LTD

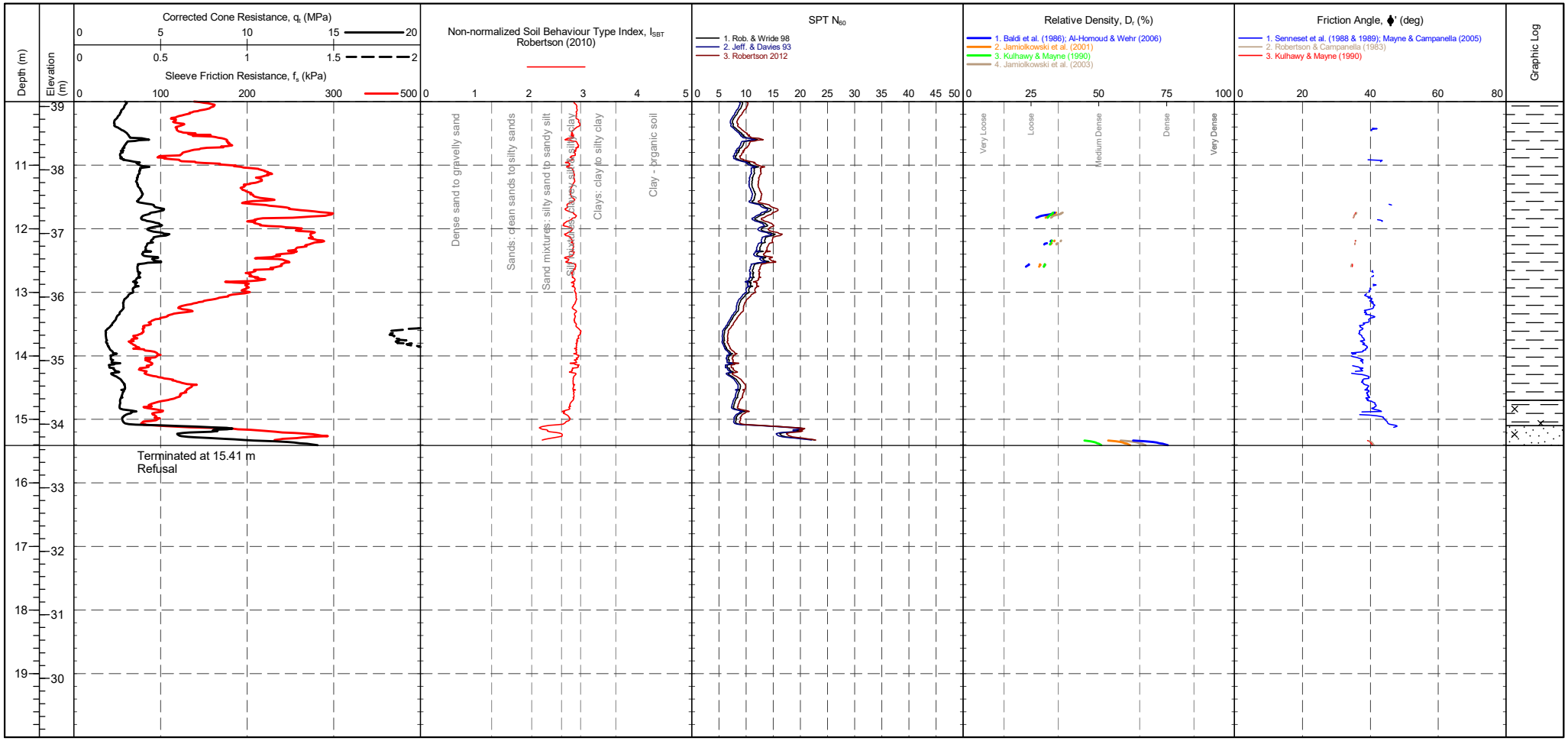
PointID: **ATK_CPT12**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385028.008 m
NORTHING : 398436.937 m
ELEVATION : 49.075 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 03/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	248 mV	245 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	248 mV	244 mV	-0.003 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	372 mV	398 mV	0.007 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2492 mV	2483 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

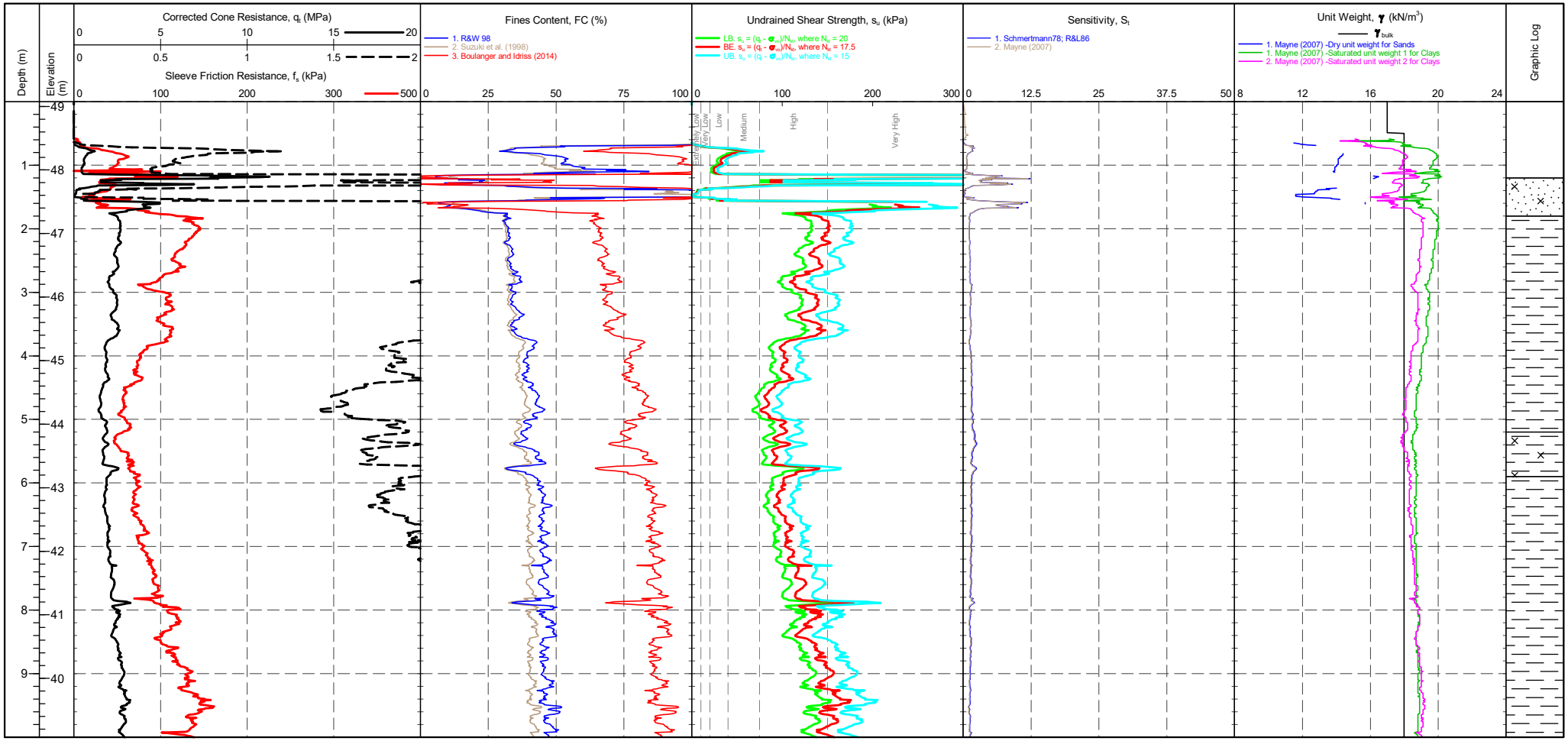
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT12**

CLIENT : Structural Soils	EASTING : 385028.008 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398436.937 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.075 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	248 mV	245 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	248 mV	244 mV	-0.003 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	372 mV	398 mV	0.007 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2492 mV	2483 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

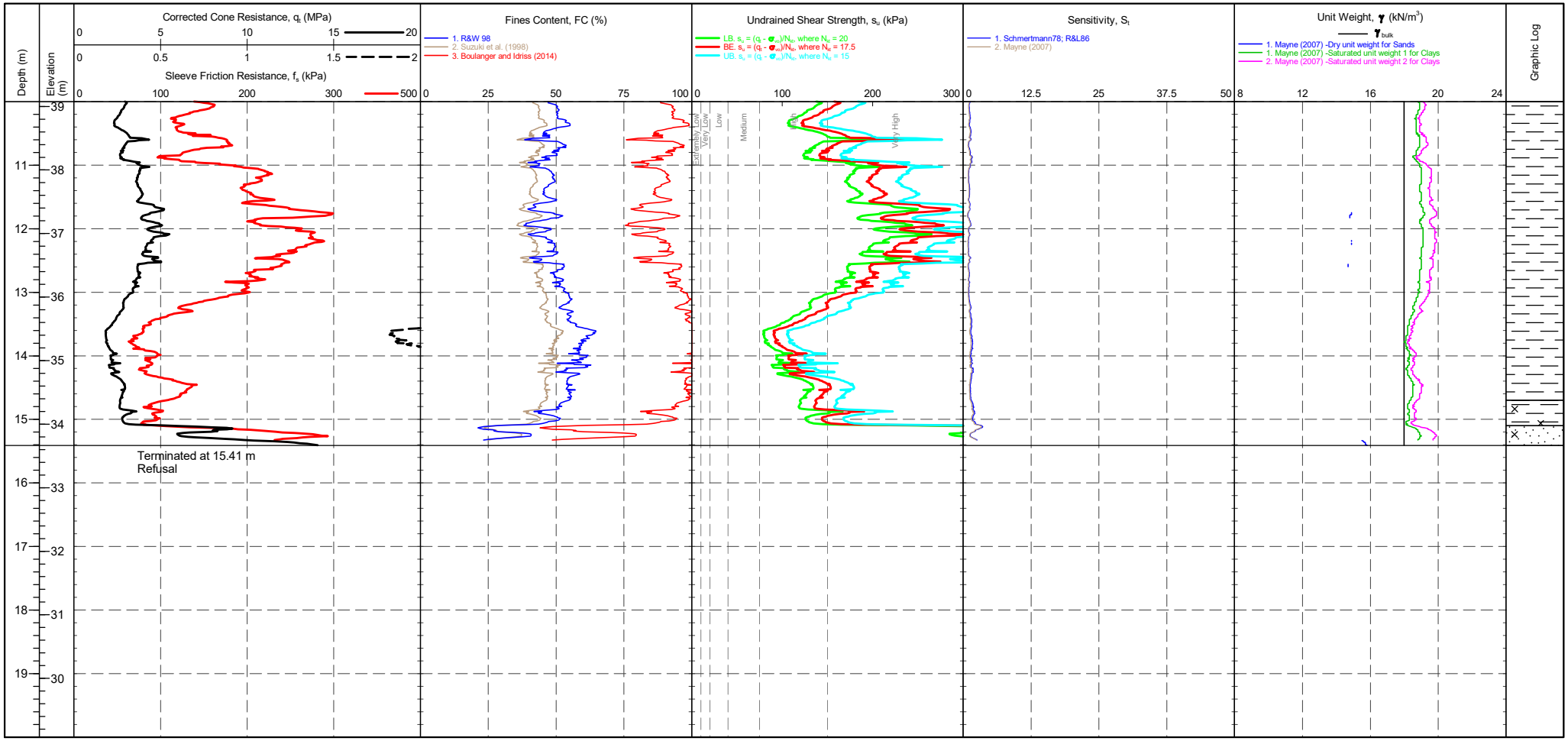
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT12**

CLIENT : Structural Soils	EASTING : 385028.008 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398436.937 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.075 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	248 mV	245 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	248 mV	244 mV	-0.003 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	372 mV	398 mV	0.007 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2492 mV	2483 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: STRUCTURAL SOILS LTD

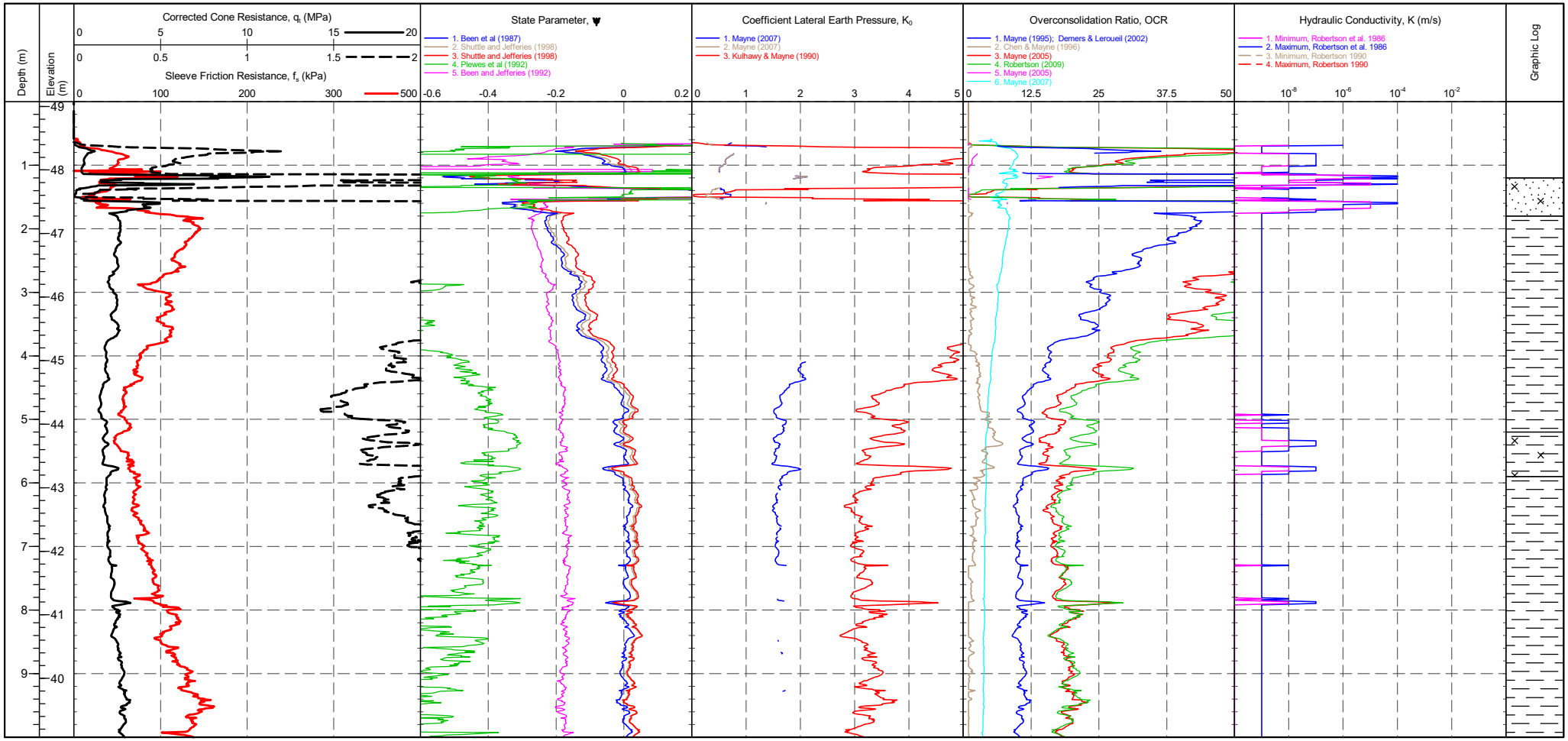
PointID: **ATK_CPT12**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385028.008 m
NORTHING : 398436.937 m
ELEVATION : 49.075 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 03/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	248 mV	245 mV	-0.035 MPa
Sleeve	248 mV	244 mV	-0.003 kPa
Pore Pressure 2	372 mV	398 mV	0.007 kPa
X-Y Inclinometer	2492 mV	2483 mV	

Groundwater Level

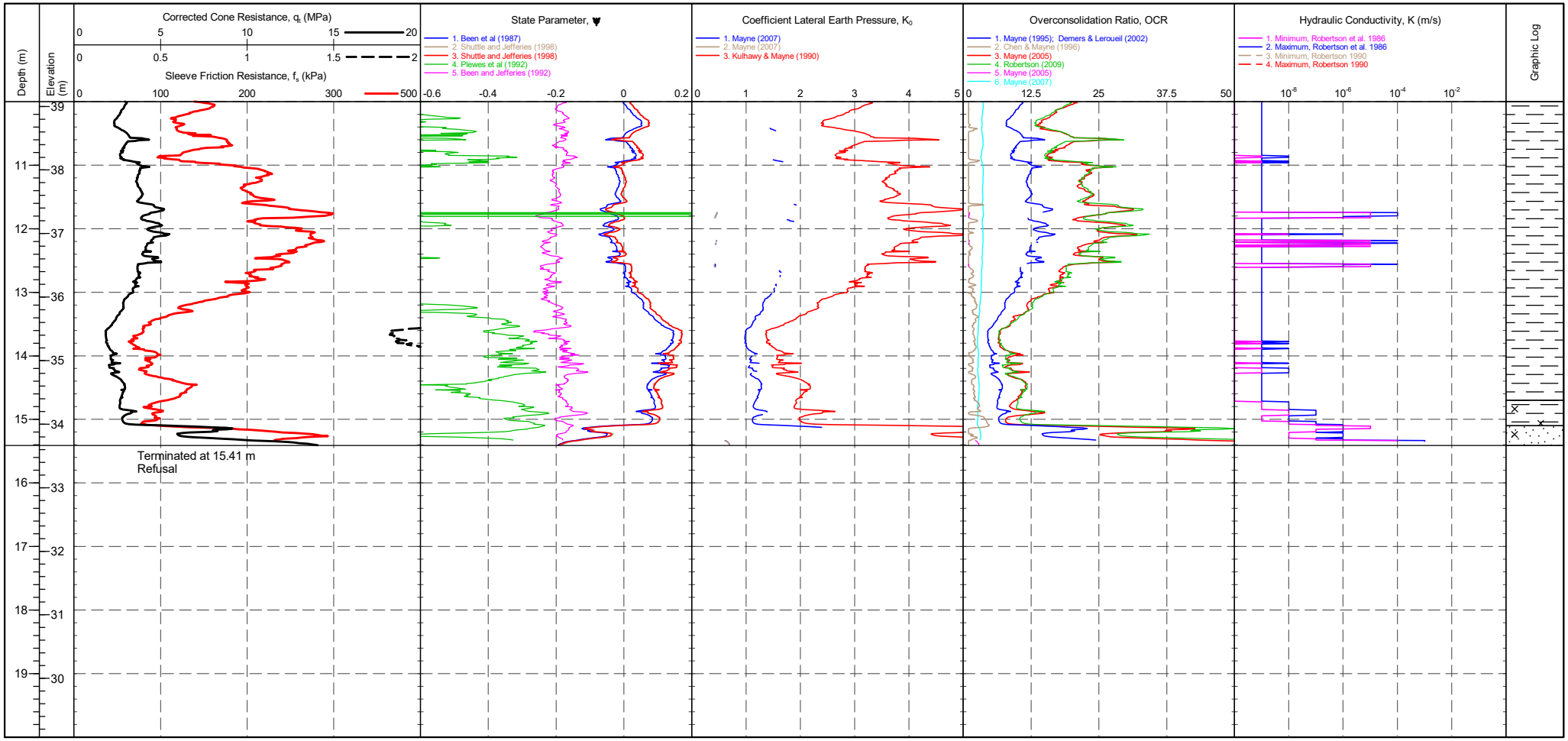
Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT12**

CLIENT : Structural Soils	EASTING : 385028.008 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398436.937 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.075 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	248 mV	245 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	248 mV	244 mV	-0.003 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	372 mV	398 mV	0.007 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2492 mV	2483 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

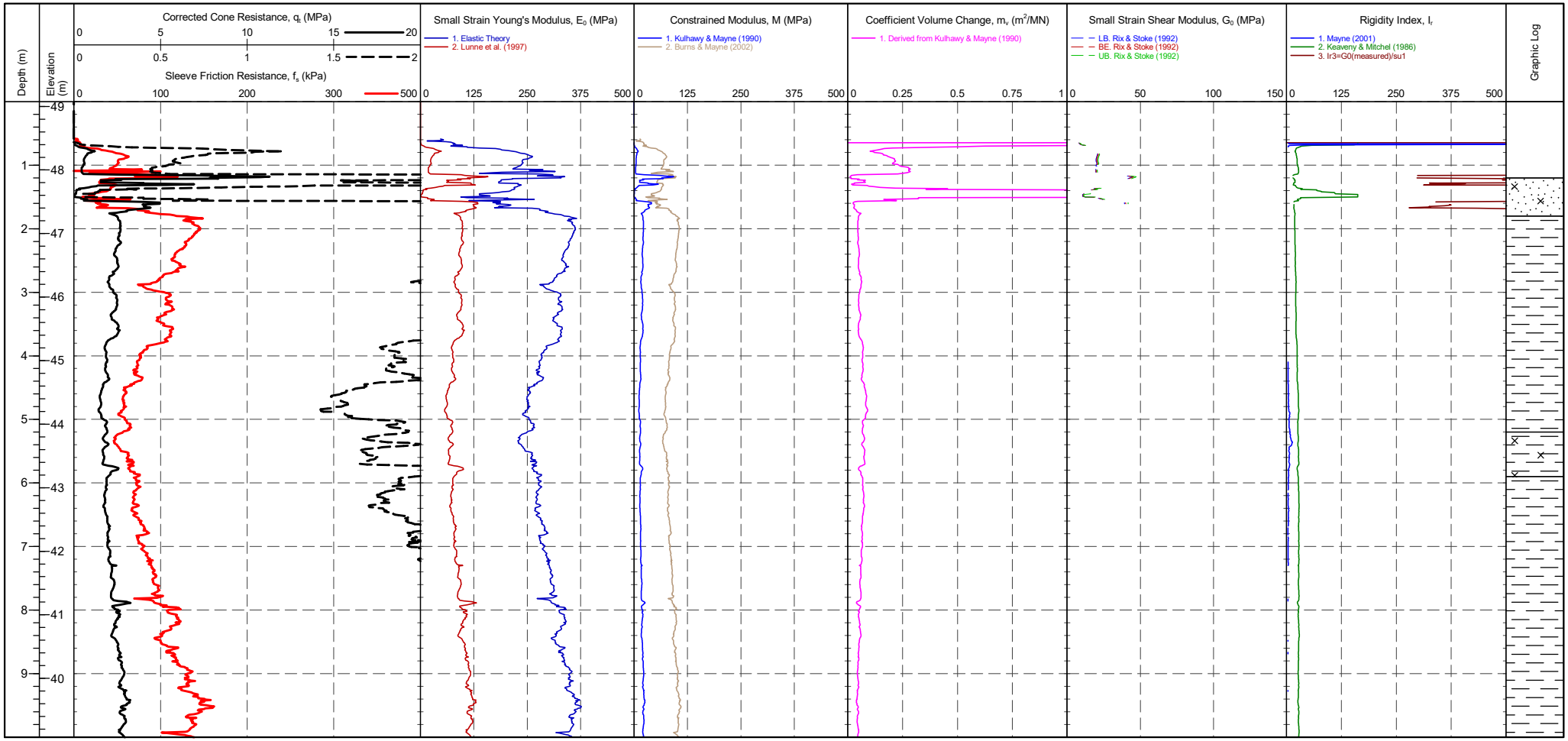
PointID: **ATK_CPT12**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385028.008 m
NORTHING : 398436.937 m
ELEVATION : 49.075 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 03/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	248 mV / 245 mV / -0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	248 mV / 244 mV / -0.003 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	372 mV / 398 mV / 0.007 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2492 mV / 2483 mV

Groundwater Level

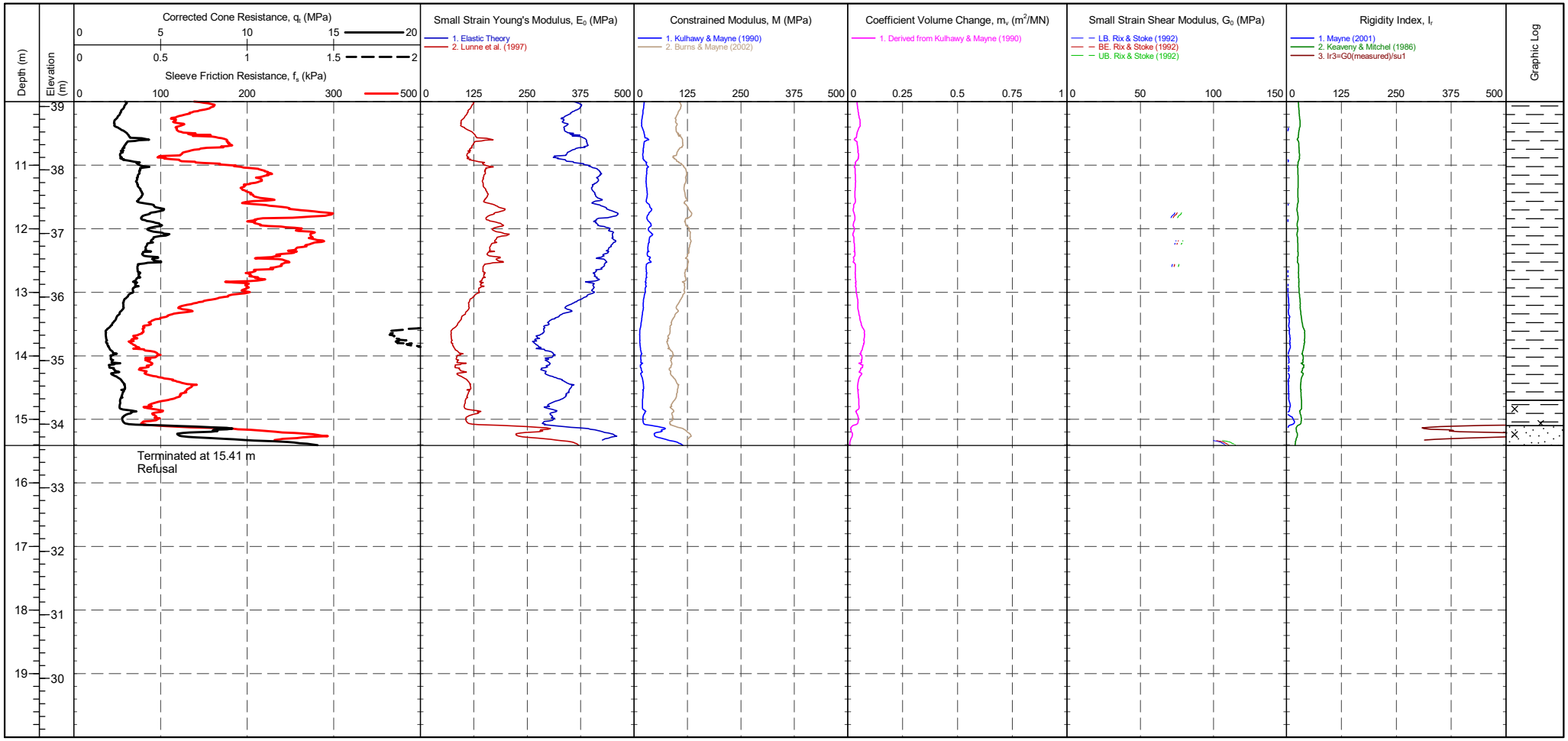
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT12**

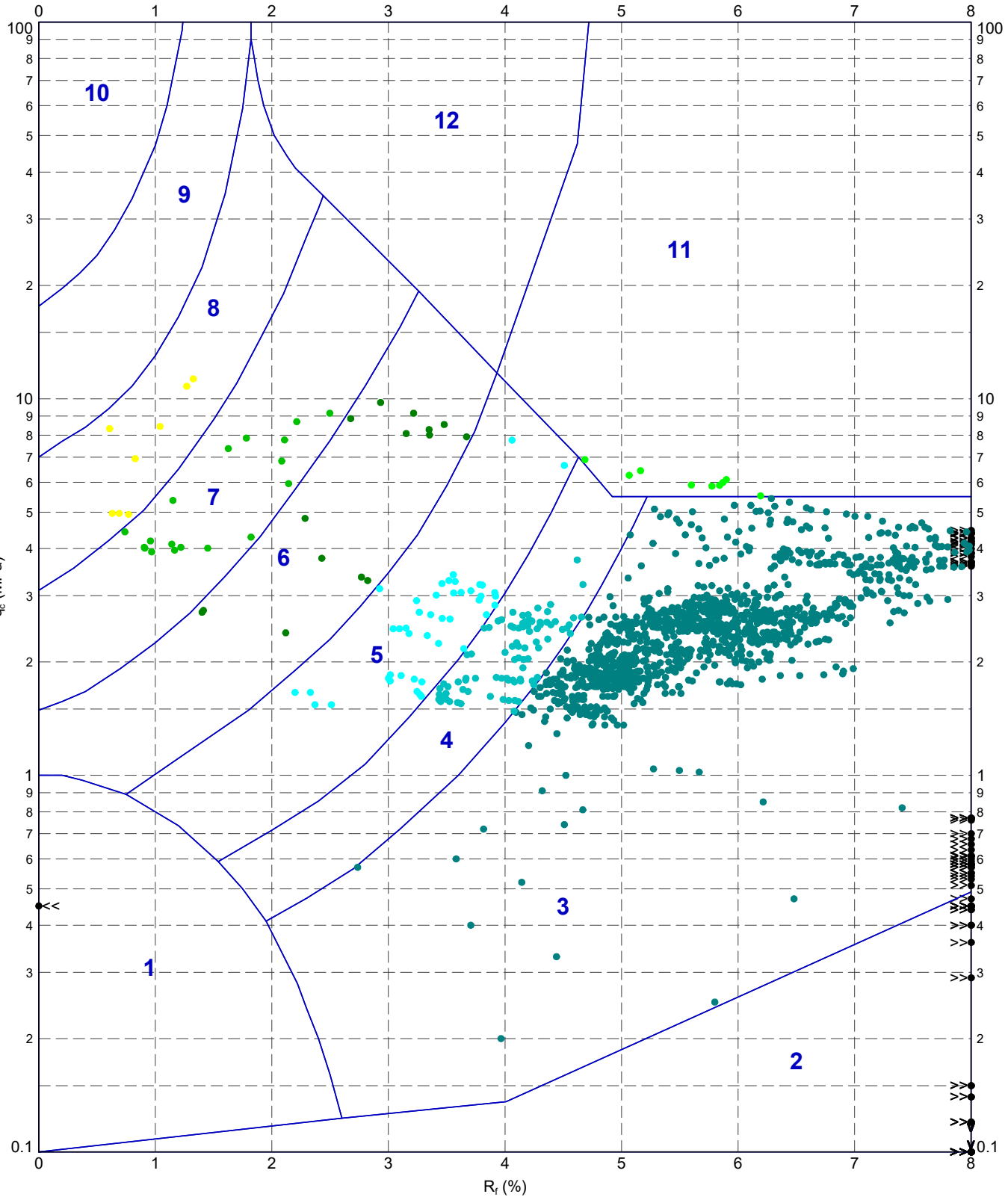
CLIENT : Structural Soils	EASTING : 385028.008 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398436.937 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.075 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	248 mV	245 mV	-0.035 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	248 mV	244 mV	-0.003 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	372 mV	398 mV	0.007 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2492 mV	2483 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

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Robertson et al. 1986 q_c vs. R_f - ATK_CPT12

DRAWN	DATE 24/05/2023	
CHECKED	DATE 24/05/2023	
SCALE Not To Scale		A4
PROJECT No 1230236	FIGURE No	

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:27 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

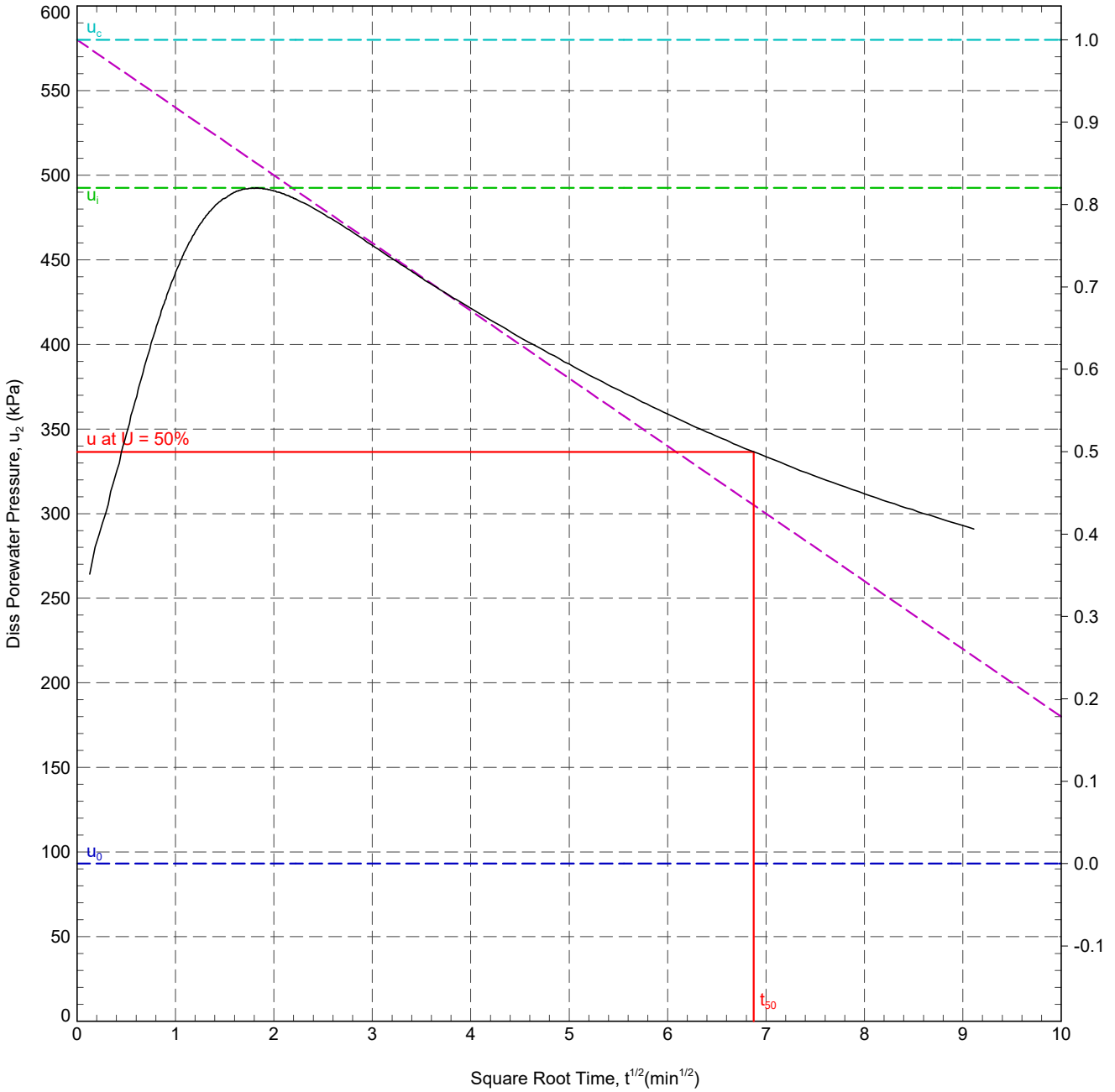
IN SITU SITE INVESTIGATION

Working with: STRUCTURAL SOILS LTD

Test ID

ATK_CPT12 - 10.00 m

CLIENT	: Structural Soils	AREA	: Ancoats, Manchester	SHEET	: 1 OF 1
ENGINEER	: Tim Clifford	EASTING	: 385028.0 m	STATUS	: Final
PROJECT	: 765544 - Ancoats	NORTHING	: 398436.9 m	DATE	: 03/05/23
LOCATION	: Manchester	COORD. SYS.	:		
PROJECT No.	: 1230236	ELEVATION	: 49.08 m		



In Situ Pore Pressure, u_0:	93.2 kPa	Rigidity Index, I_r:	27.1
Initial Pore Pressure, u_i:	492.5 kPa	Horizontal Coefficient of Consolidation, c_h:	7.51x10^0 m^2/yr
Final Pore Pressure:	291.0 kPa	Ratio c_h/c_v:	1.25
Back Extrapolated Pore Pressure, u_c:	580 kPa	Vertical Coefficient of Consolidation, c_v:	6.00x10^0 m^2/yr
Degree of Dissipation:	50%		
Dissipation Pressure:	336.5 kPa		
Time for 50% Dissipation, t_{50}:	47.25 min		

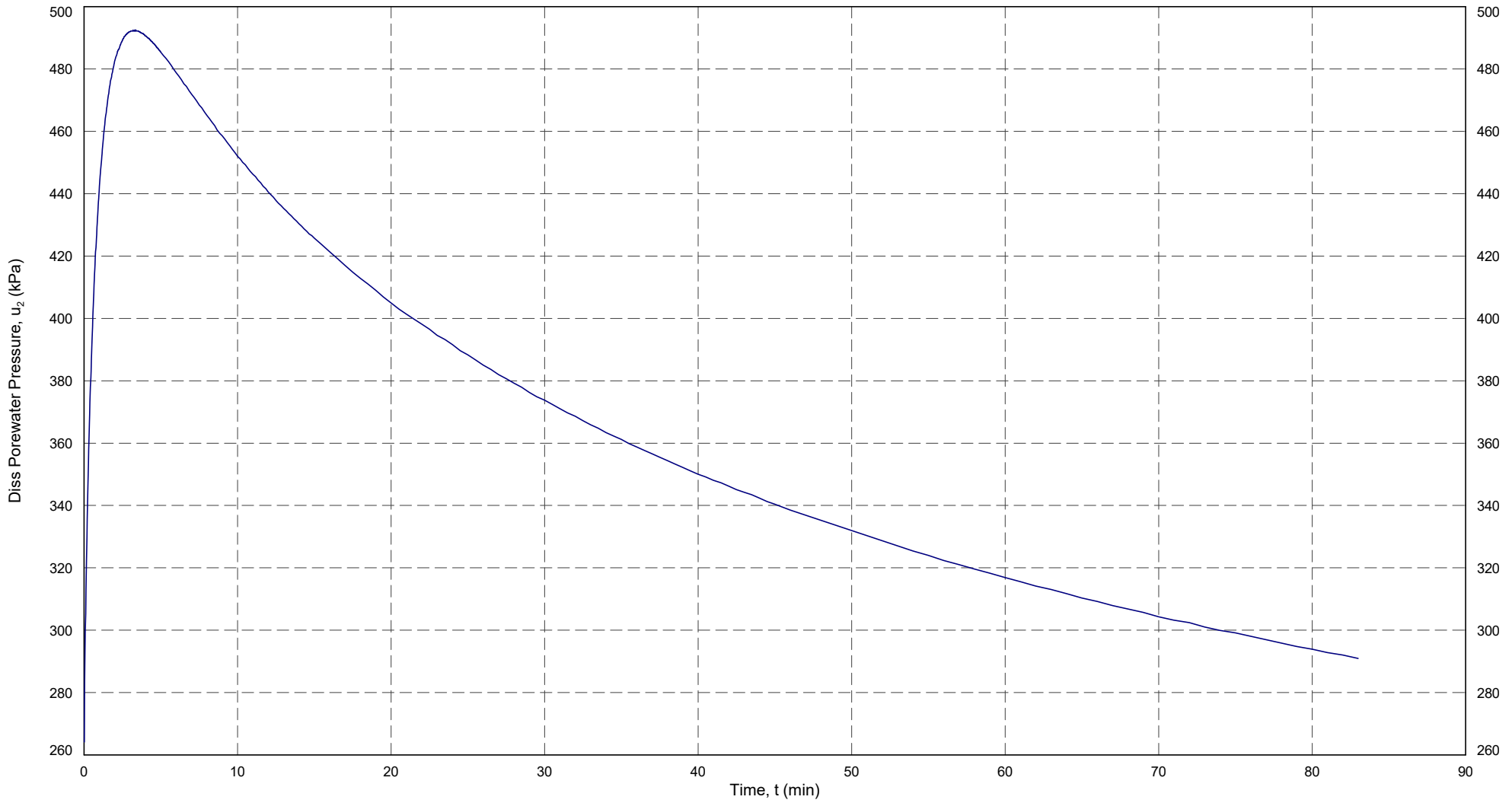
RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	15/05/2023
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	15/05/2023
CONE ID	: S15-CFIP.2177	APPROVED BY	: DW	DATE:	15/05/2023
OPERATOR	: RS				

REMARK

T50 reached. Test OK.

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:27 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

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - CHLOE.GLB Graph PPDT PORE PRESSURE VS. LIN T A4L 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:27 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



IN SITU SITE INVESTIGATION

TITLE

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Dissipation Test - ATK_CPT12

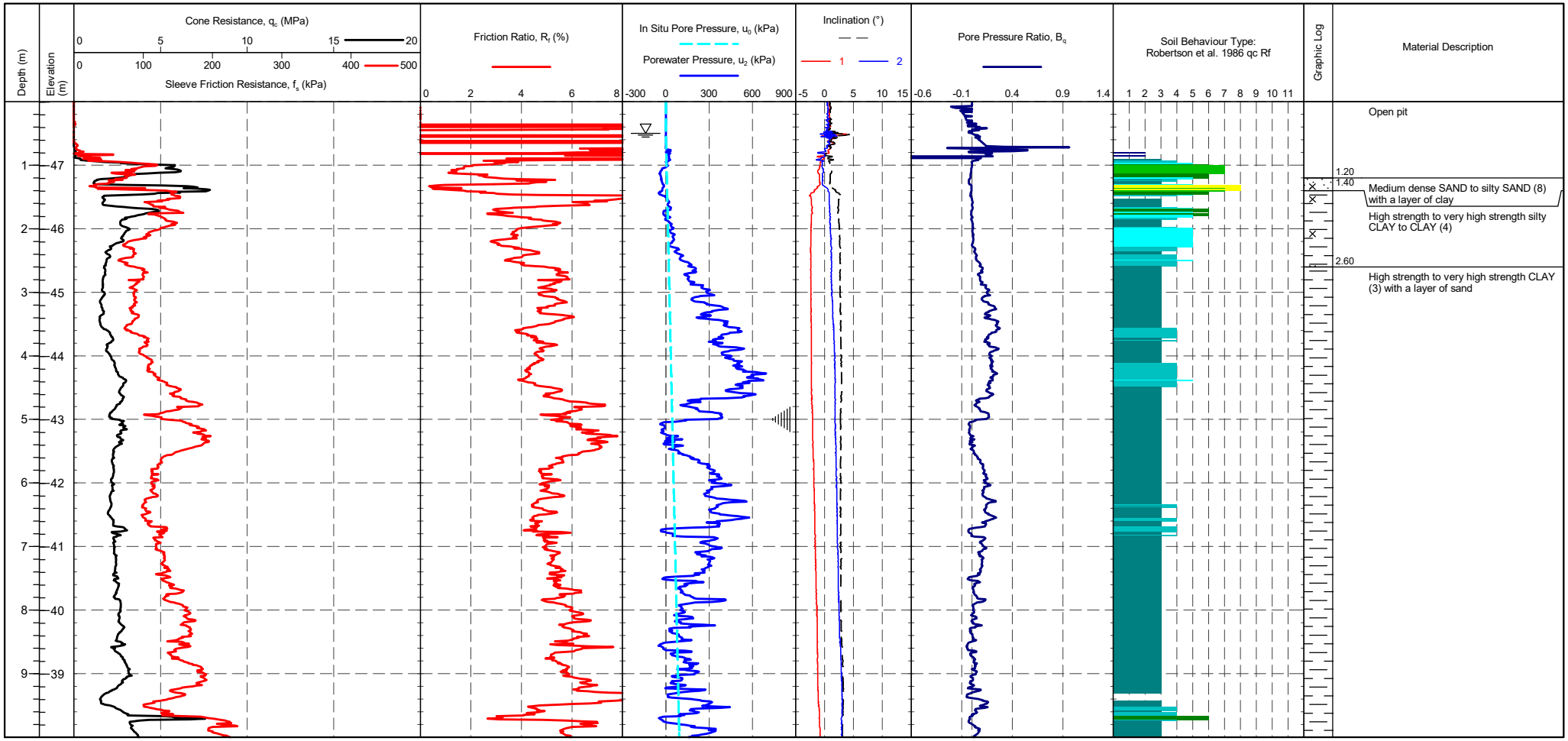
DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT13**

CLIENT : Structural Soils	EASTING : 385065.993 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398413.003 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.008 m OD		TEST DATE : 27/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2		
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni		
CONE AREA	: 15cm²	OPERATOR	: RS		
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None		
FILTER POSITION	: u2	WEATHER	: Overcast & Mild		
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes.		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	245 mV	243 mV	-0.023 MPa
Sleeve	243 mV	240 mV	-0.002 kPa
Pore Pressure 2	323 mV	288 mV	-0.01 kPa
X-Y Inclinometer	2512 mV	2529 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

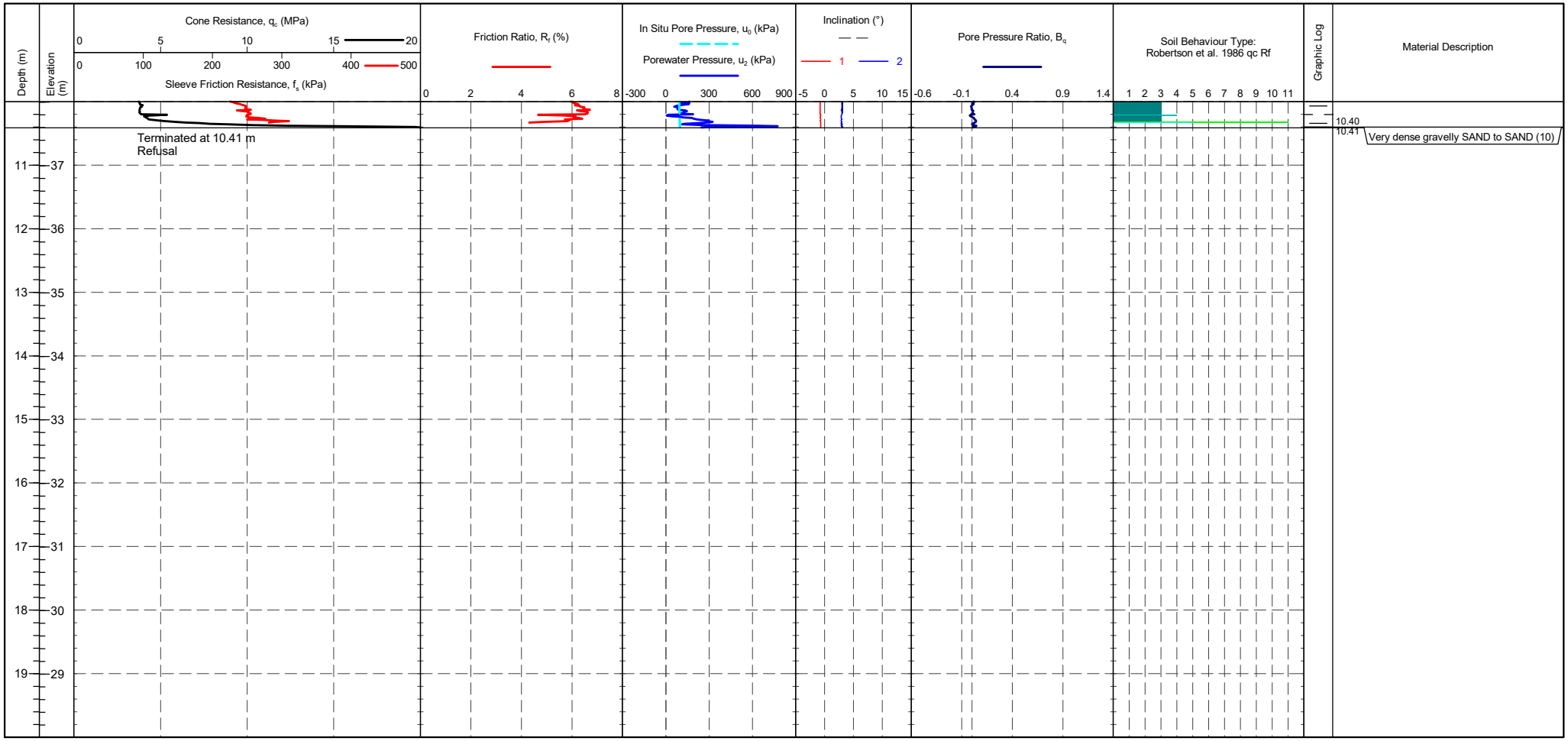
Dissipation Test

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT13**

CLIENT : Structural Soils	EASTING : 385065.993 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398413.003 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.008 m OD		TEST DATE : 27/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm^2	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	245 mV	243 mV	-0.023 MPa
Sleeve	243 mV	240 mV	-0.002 kPa
Pore Pressure 2	323 mV	288 mV	-0.01 kPa
X-Y Inclinometer	2512 mV	2529 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

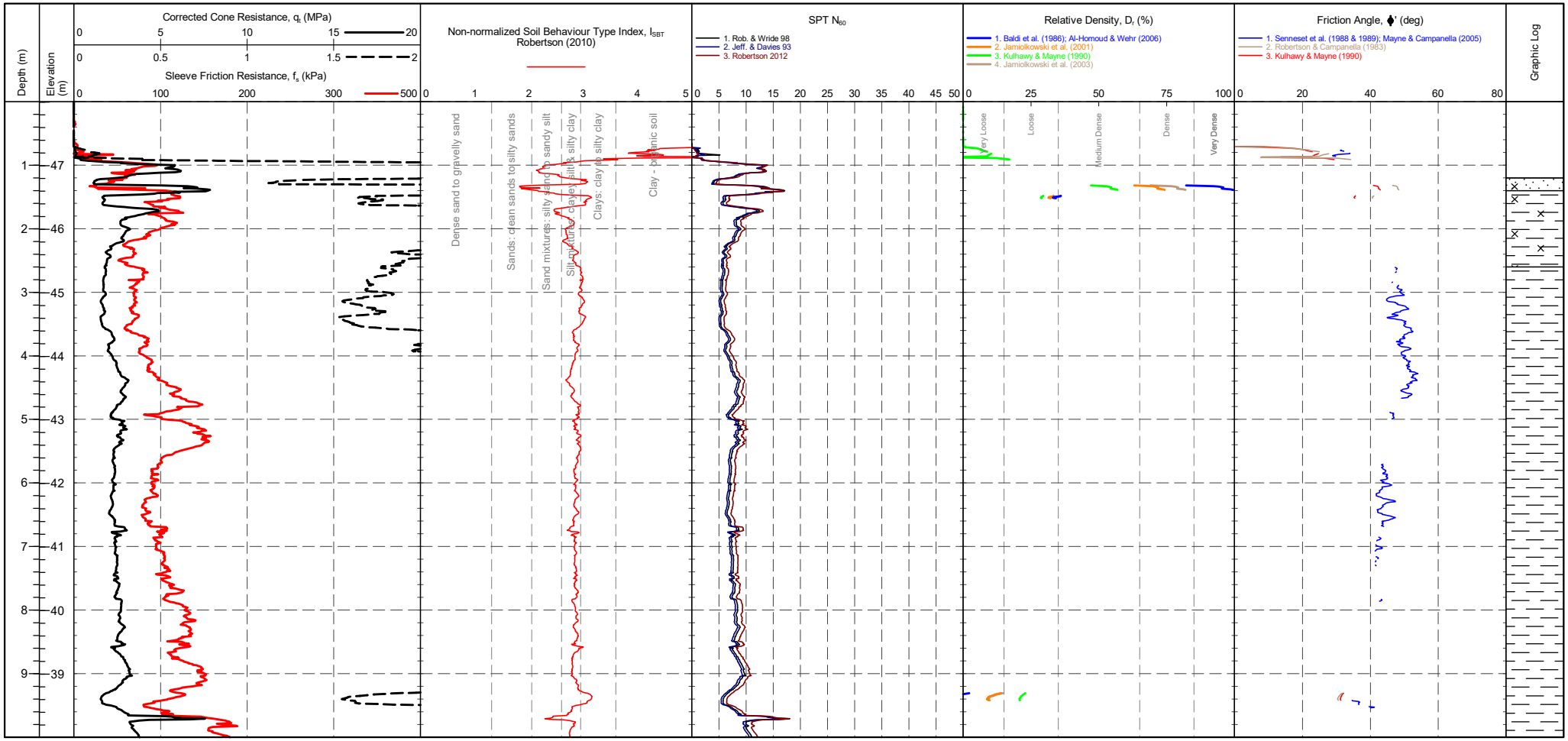
Dissipation Test

CPT LOG 02

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT13**

CLIENT : Structural Soils	EASTING : 385065.993 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398413.003 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.008 m OD		TEST DATE : 27/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	245 mV	243 mV	-0.023 MPa
Sleeve	243 mV	240 mV	-0.002 kPa
Pore Pressure 2	323 mV	288 mV	-0.01 kPa
X-Y Inclinometer	2512 mV	2529 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

Working with: STRUCTURAL SOILS LTD

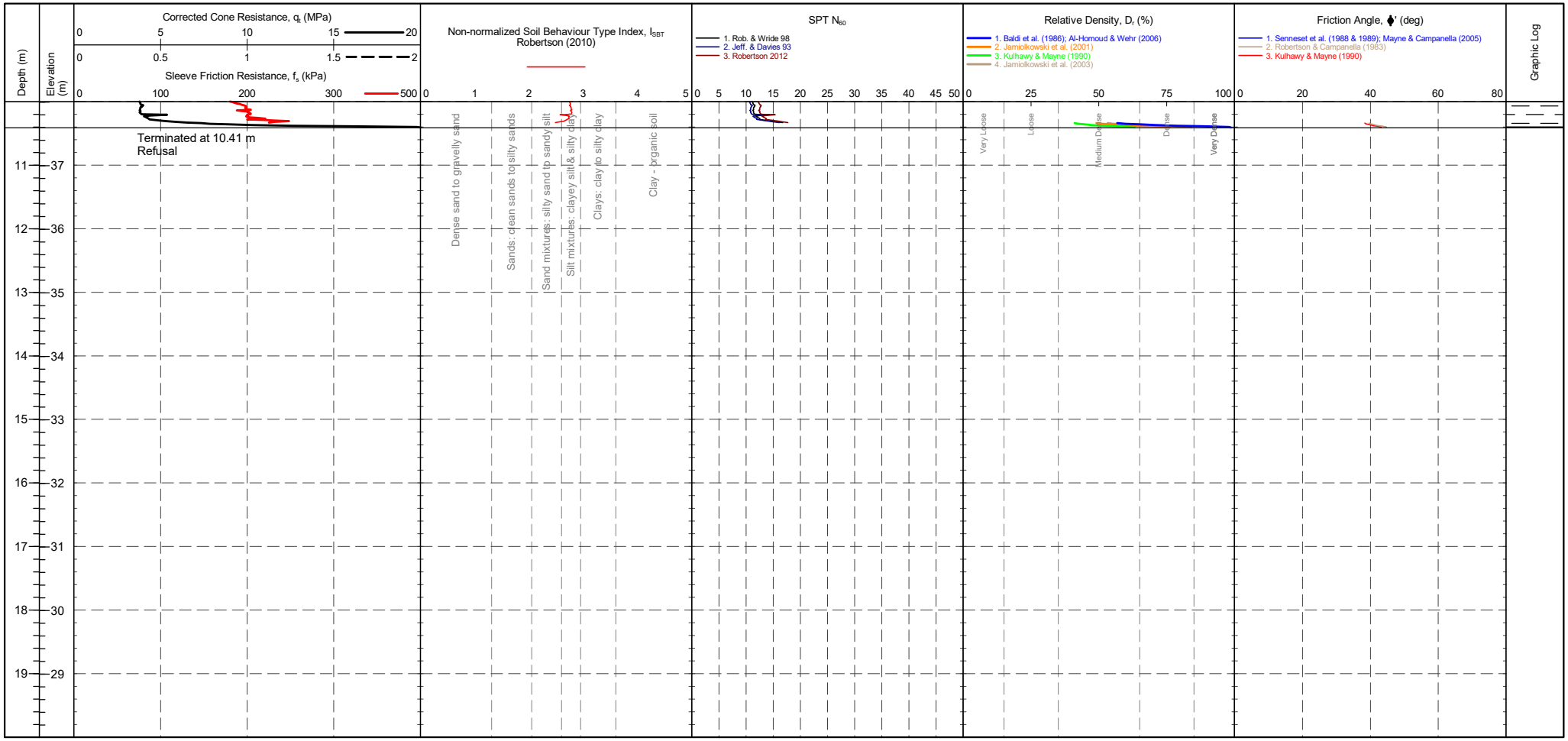
PointID: **ATK_CPT13**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385065.993 m
NORTHING : 398413.003 m
ELEVATION : 48.008 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177
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	: RS
FRICTION REDUCER	: None
WEATHER	: Overcast & Mild

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	245 mV	243 mV	-0.023 MPa
Sleeve	243 mV	240 mV	-0.002 kPa
Pore Pressure 2	323 mV	288 mV	-0.01 kPa
X-Y Inclinometer	2512 mV	2529 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

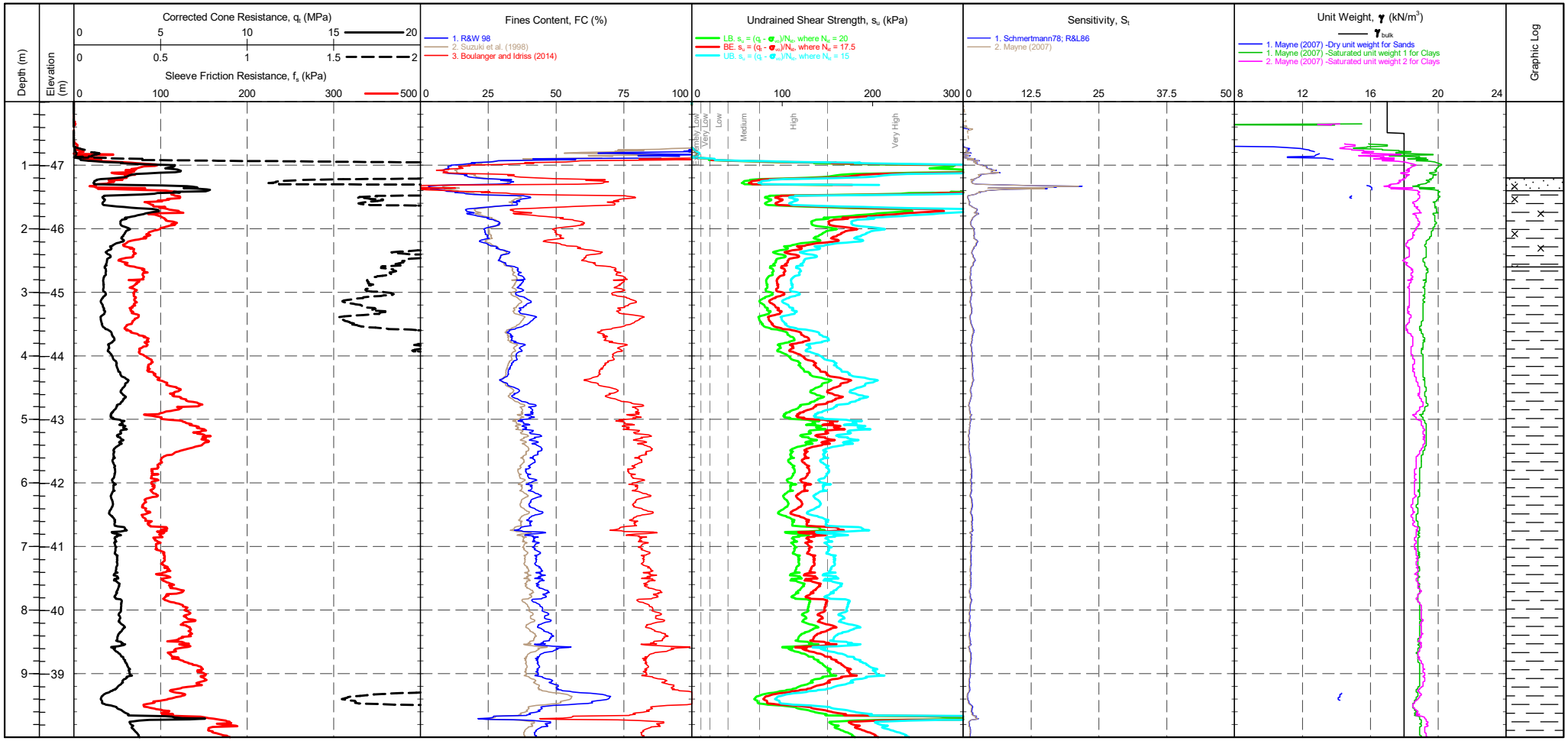
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT13**

CLIENT : Structural Soils	EASTING : 385065.993 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398413.003 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.008 m OD		TEST DATE : 27/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	245 mV	243 mV	-0.023 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	243 mV	240 mV	-0.002 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	323 mV	288 mV	-0.01 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2512 mV	2529 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

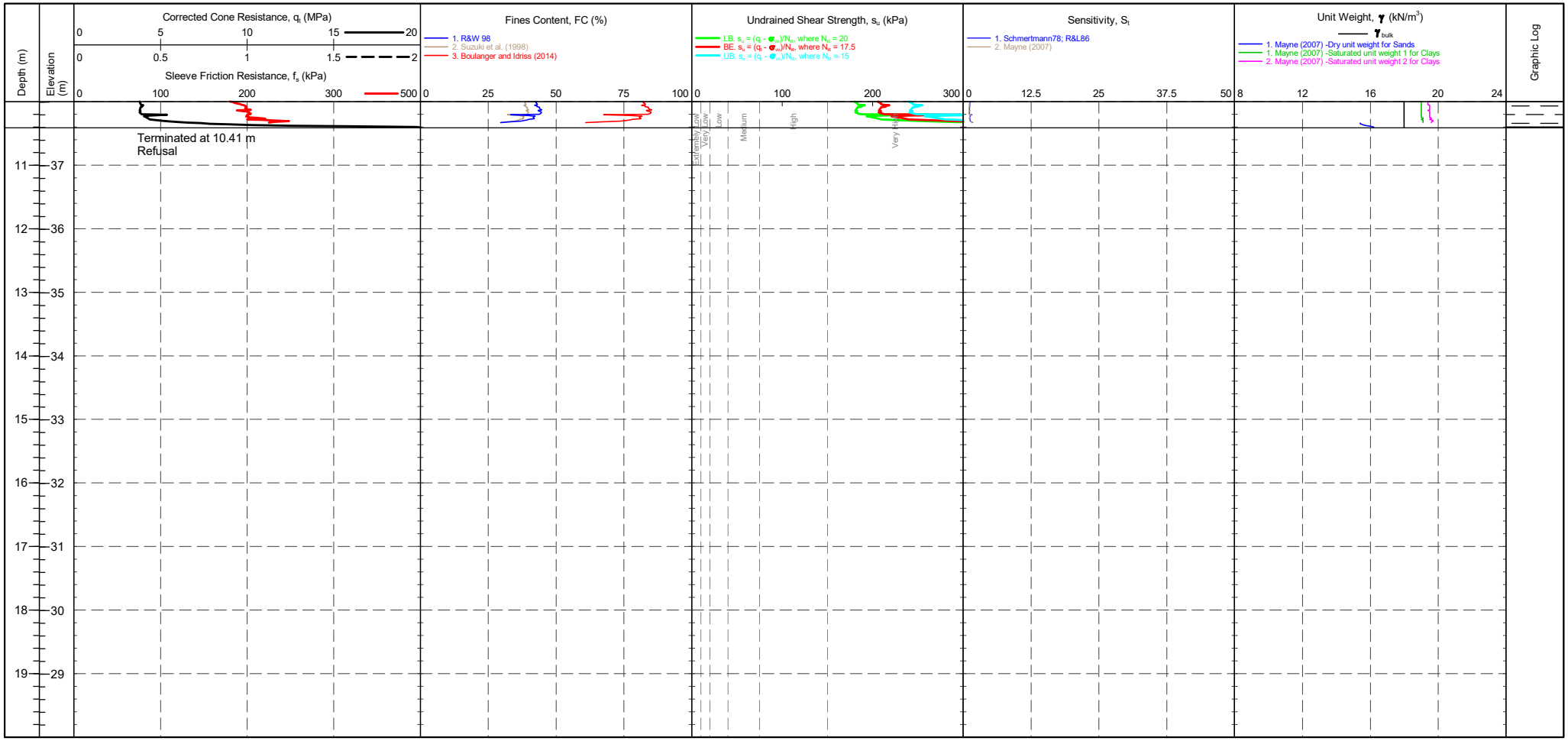
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT13**

CLIENT : Structural Soils	EASTING : 385065.993 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398413.003 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.008 m OD		TEST DATE : 27/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	245 mV	243 mV	-0.023 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	243 mV	240 mV	-0.002 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	323 mV	288 mV	-0.01 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2512 mV	2529 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

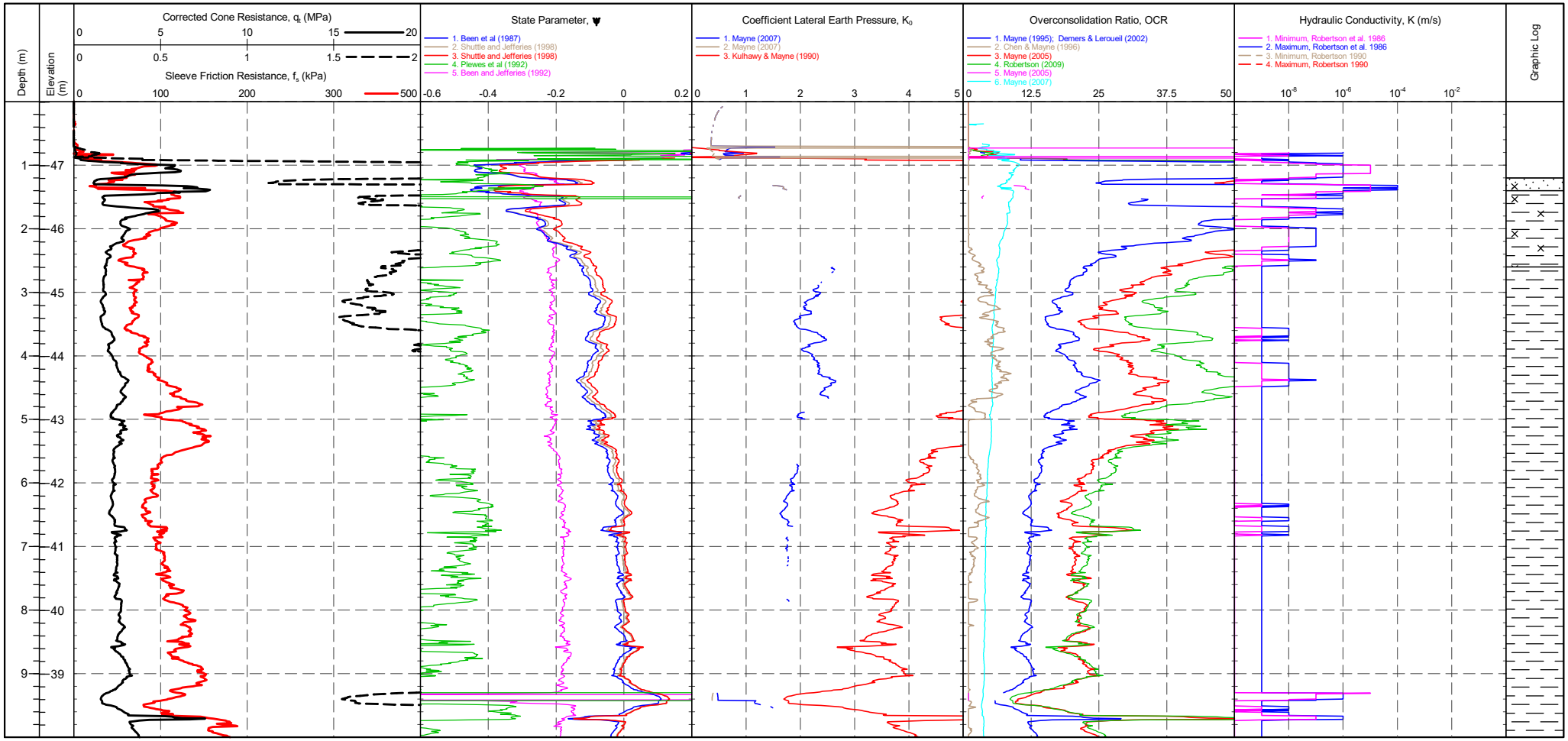
Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT13**

CLIENT : Structural Soils PROJECT : 765544 - Ancoats LOCATION : Manchester PROJECT No. : 1230236	EASTING : 385065.993 m NORTHING : 398413.003 m ELEVATION : 48.008 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 1 OF 2 STATUS : Final TEST DATE : 27/04/2023 PLOT DATE : 24/05/2023 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	245 mV	243 mV	-0.023 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	243 mV	240 mV	-0.002 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	323 mV	288 mV	-0.01 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2512 mV	2529 mV	

Groundwater Level

Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

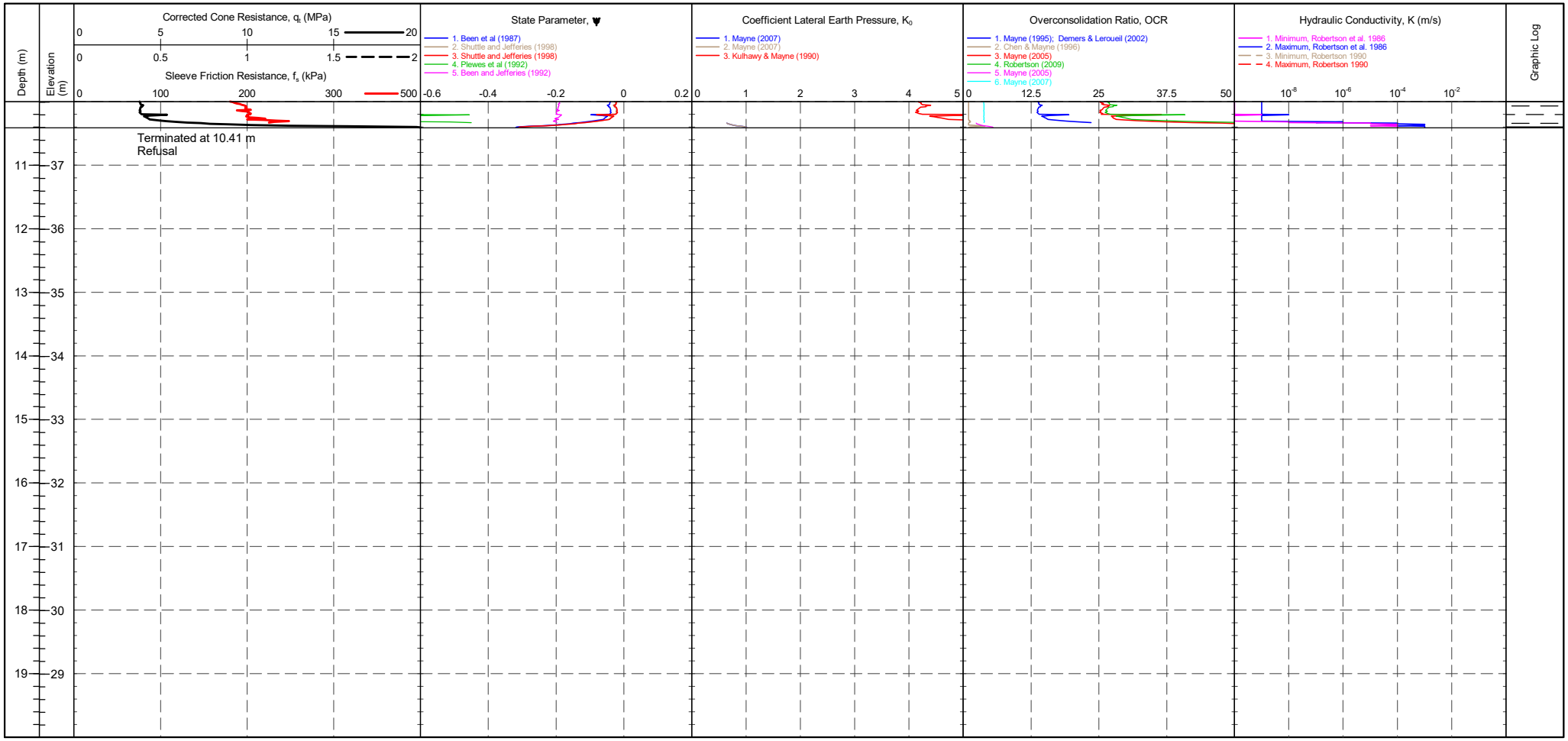
PointID: **ATK_CPT13**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385065.993 m
NORTHING : 398413.003 m
ELEVATION : 48.008 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	245 mV	243 mV	-0.023 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	243 mV	240 mV	-0.002 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	323 mV	288 mV	-0.01 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2512 mV	2529 mV	

Groundwater Level

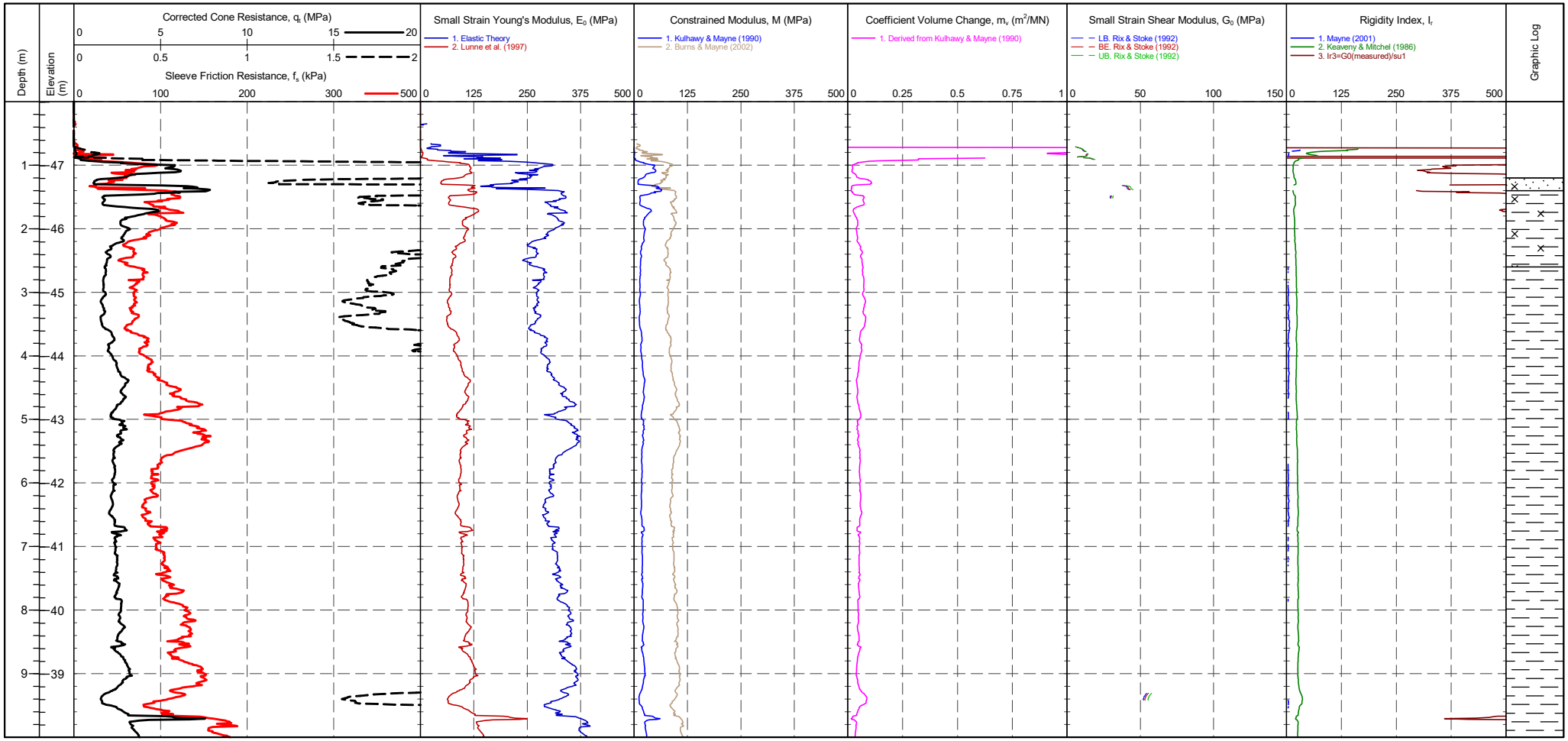
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT13**

CLIENT : Structural Soils	EASTING : 385065.993 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398413.003 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.008 m OD		TEST DATE : 27/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



				CPTU ZERO VALUES			
CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	Transducer	Pre	Post	Difference
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Tip	245 mV	243 mV	-0.023 MPa
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Sleeve	243 mV	240 mV	-0.002 kPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Pore Pressure 2	323 mV	288 mV	-0.01 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	X-Y Inclinometer	2512 mV	2529 mV	
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild				

Groundwater Level

Dissipation Test

Working with: STRUCTURAL SOILS LTD

CPT LOG 05

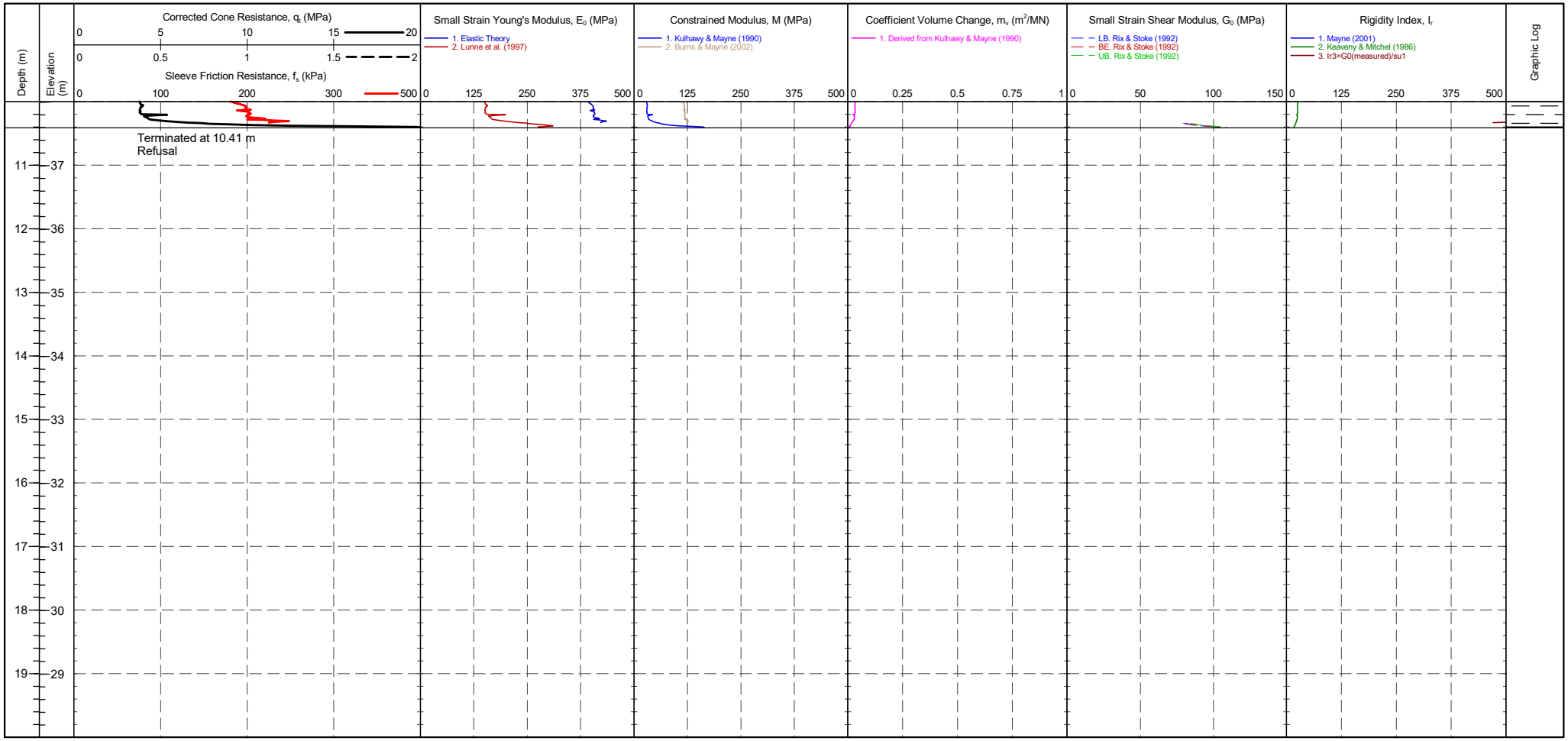
PointID: **ATK_CPT13**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385065.993 m
NORTHING : 398413.003 m
ELEVATION : 48.008 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

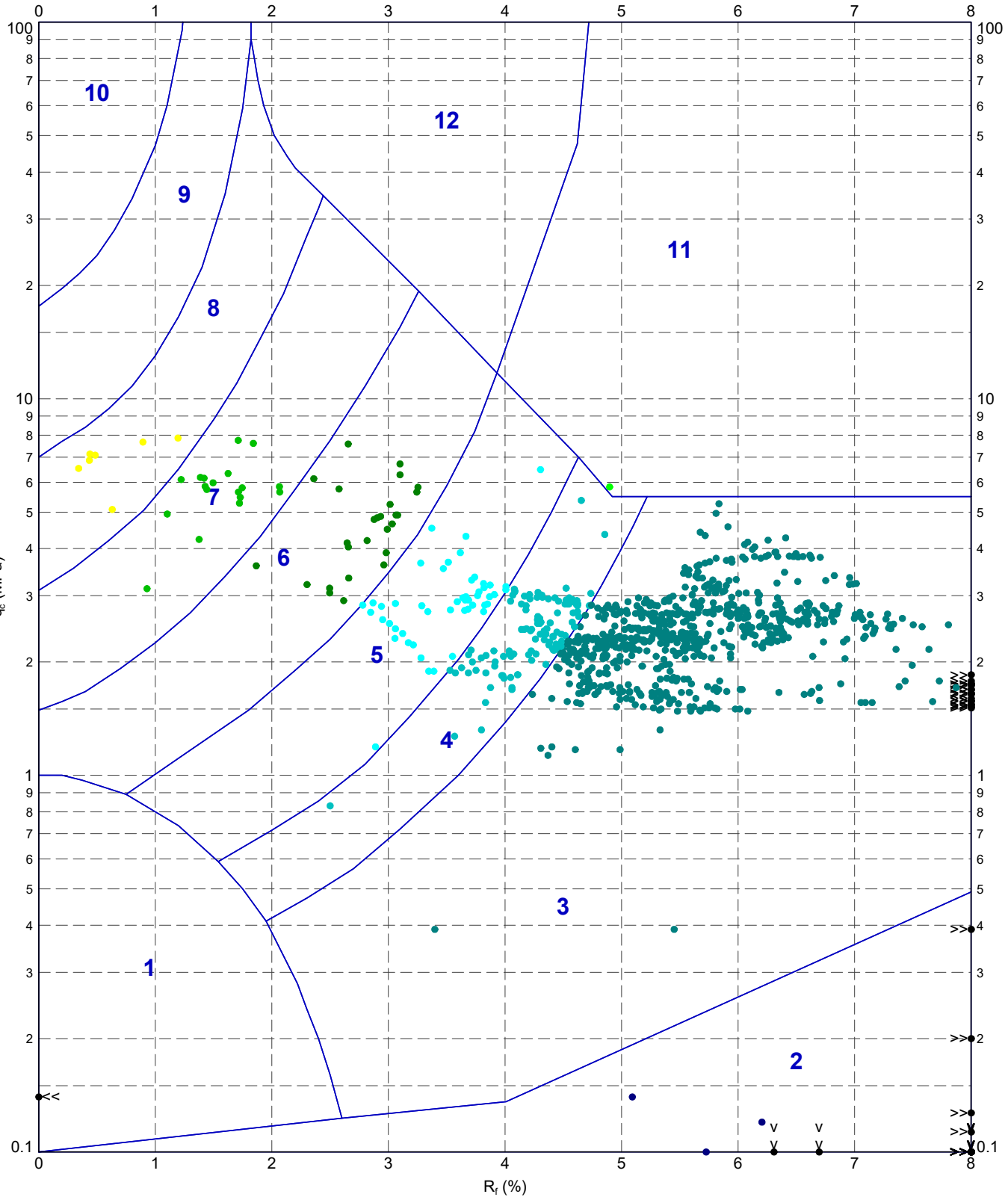
SHEET : 2 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	245 mV	243 mV	-0.023 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	243 mV	240 mV	-0.002 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	323 mV	288 mV	-0.01 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2512 mV	2529 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

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Robertson et al. 1986 q_c vs. R_f - ATK_CPT13

DRAWN	DATE 24/05/2023	
CHECKED	DATE 24/05/2023	
SCALE Not To Scale		A4
PROJECT No 1230236	FIGURE No	

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:29 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

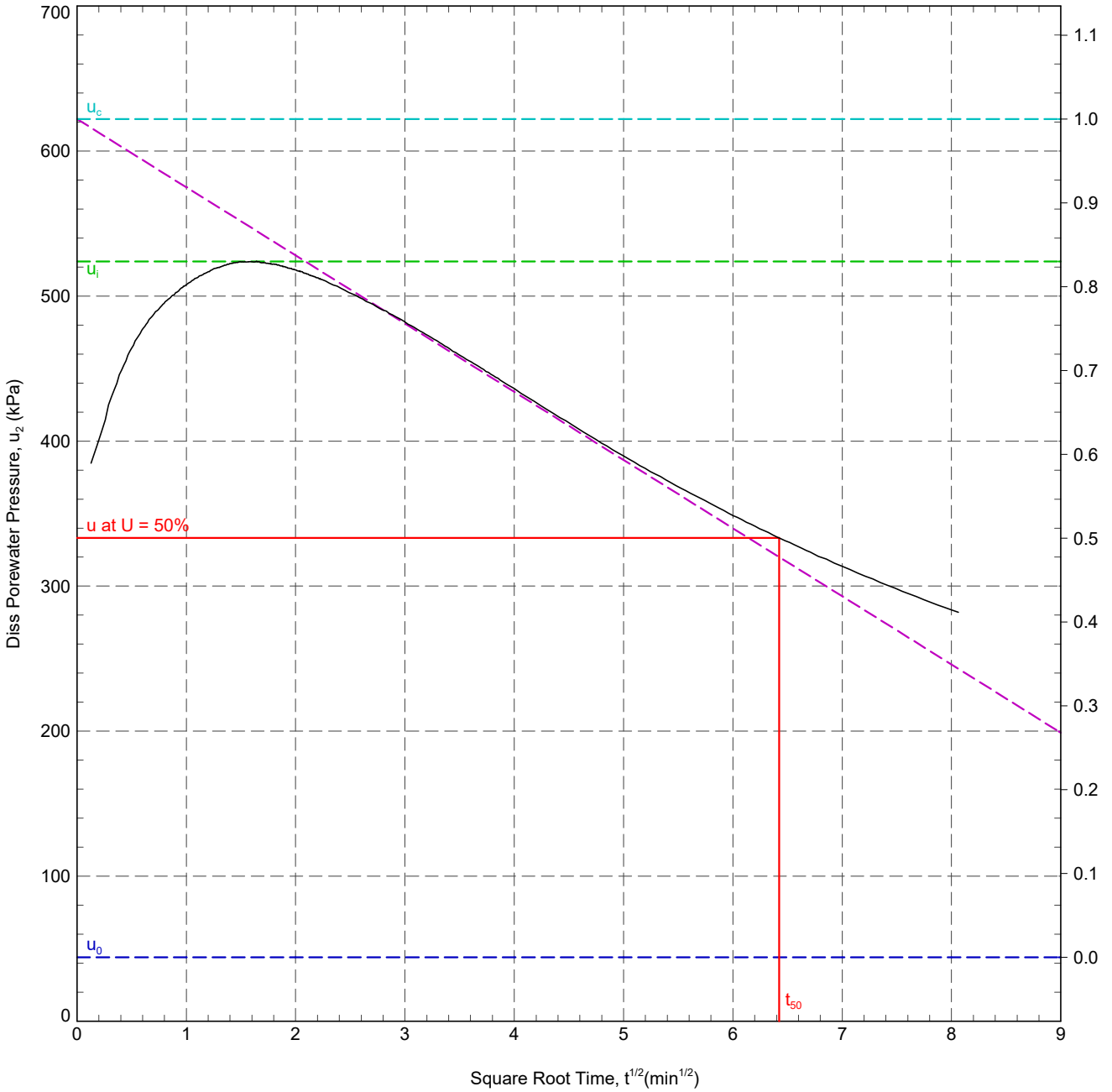
IN SITU SITE INVESTIGATION

Working with: STRUCTURAL SOILS LTD

Test ID

ATK_CPT13 - 5.00 m

CLIENT	: Structural Soils	AREA	: Ancoats Manchester	SHEET	: 1 OF 1
ENGINEER	: Tim Clifford	EASTING	: 385066.0 m	STATUS	: Final
PROJECT	: 765544 - Ancoats	NORTHING	: 398413.0 m	DATE	: 27/04/23
LOCATION	: Manchester	COORD. SYS.	:		
PROJECT No.	: 1230236	ELEVATION	: 48.01 m		



In Situ Pore Pressure, u_0:	44.2 kPa	Rigidity Index, I_r:	3.6
Initial Pore Pressure, u_i:	523.9 kPa	Horizontal Coefficient of Consolidation, c_h:	3.13×10^0 m²/yr
Final Pore Pressure:	281.9 kPa	Ratio c_h/c_v:	1.25
Back Extrapolated Pore Pressure, u_c:	622 kPa	Vertical Coefficient of Consolidation, c_v:	2.51×10^0 m²/yr
Degree of Dissipation:	50%		
Dissipation Pressure:	333.2 kPa		
Time for 50% Dissipation, t_{50}:	41.25 min		

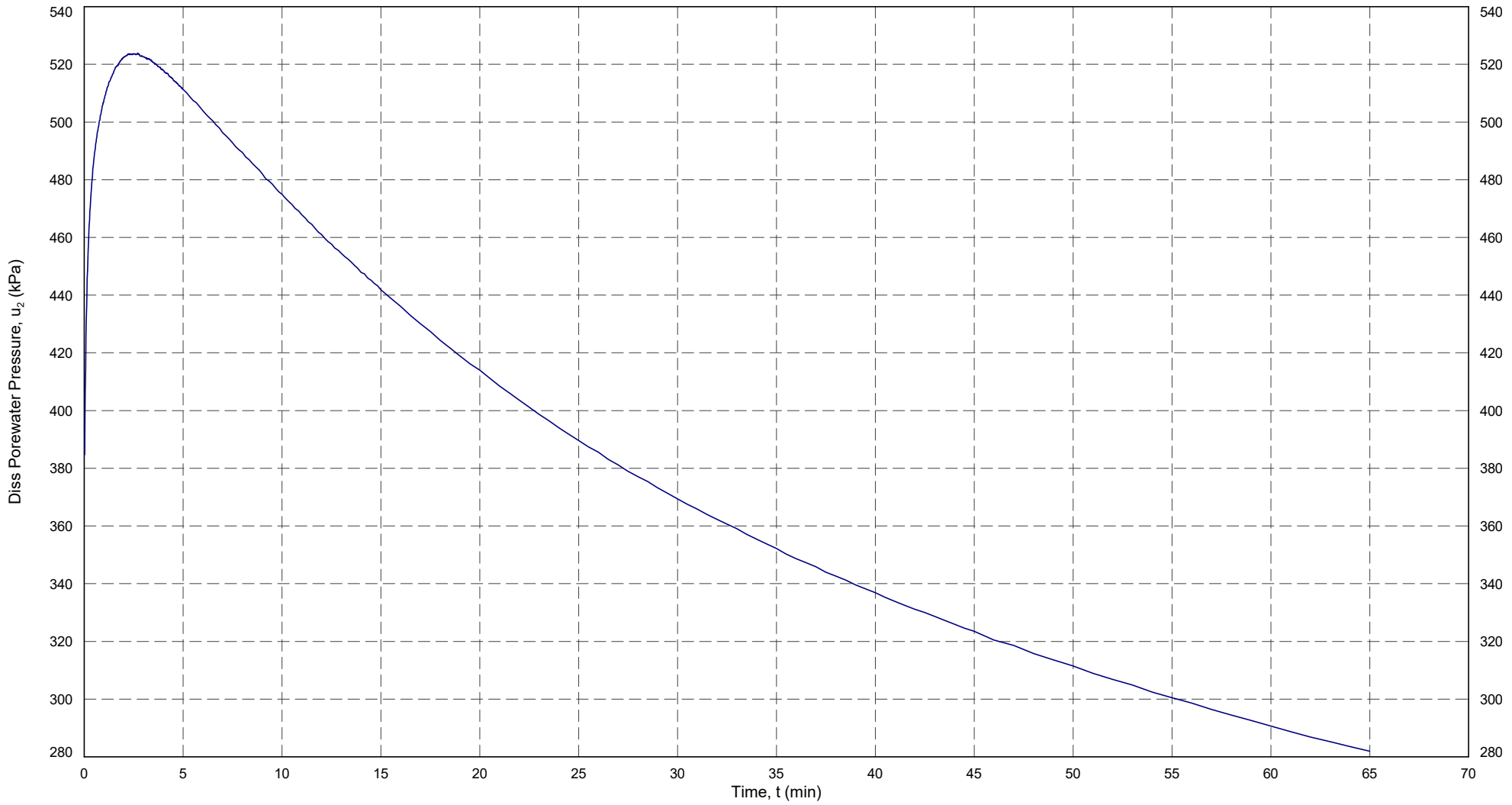
RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	15/05/2023
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	15/05/2023
CONE ID	: S15-CFIP.2177	APPROVED BY	: DW	DATE:	15/05/2023
OPERATOR	: RS				

REMARK

T50 reached. Test OK.

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - CHLOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:29 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

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - CHLOE.GLB Graph PPDT PORE PRESSURE VS. LIN T A4L 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:29 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



5.00 m

IN SITU SITE INVESTIGATION

TITLE

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Dissipation Test - ATK_CPT13

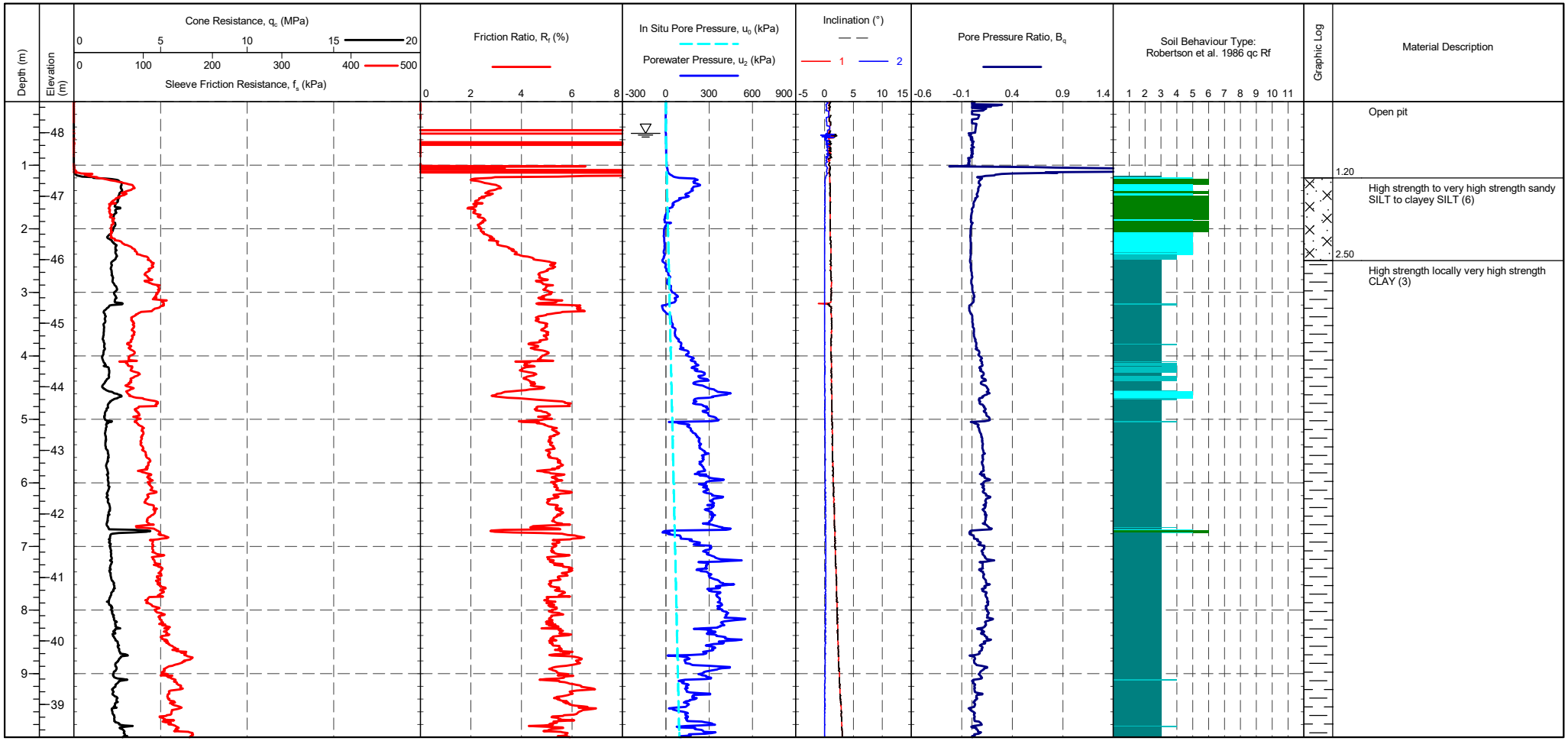
DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT14**

CLIENT : Structural Soils	EASTING : 385006.074 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398431.984 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.487 m OD		TEST DATE : 27/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2177	TEST TYPE : TE2		
CALIBRATION DATE : 05/12/2022	APPLICATION CLASS : 2		
CONE MODEL : Subtraction	RIG : CPT 025 - Toni		
CONE AREA : 15cm²	OPERATOR : RS		
CONE AREA RATIO : 0.79	FRICTION REDUCER : None		
FILTER POSITION : u2	WEATHER : Overcast & Mild		
FILTER TYPE : HDPE	GROUNDWATER DEPTH : Assumed for calculation purposes.		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	249 mV	245 mV	-0.046 MPa
Sleeve	248 mV	243 mV	-0.004 kPa
Pore Pressure 2	318 mV	328 mV	0.003 kPa
X-Y Inclinometer	2520 mV	2489 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: STRUCTURAL SOILS LTD

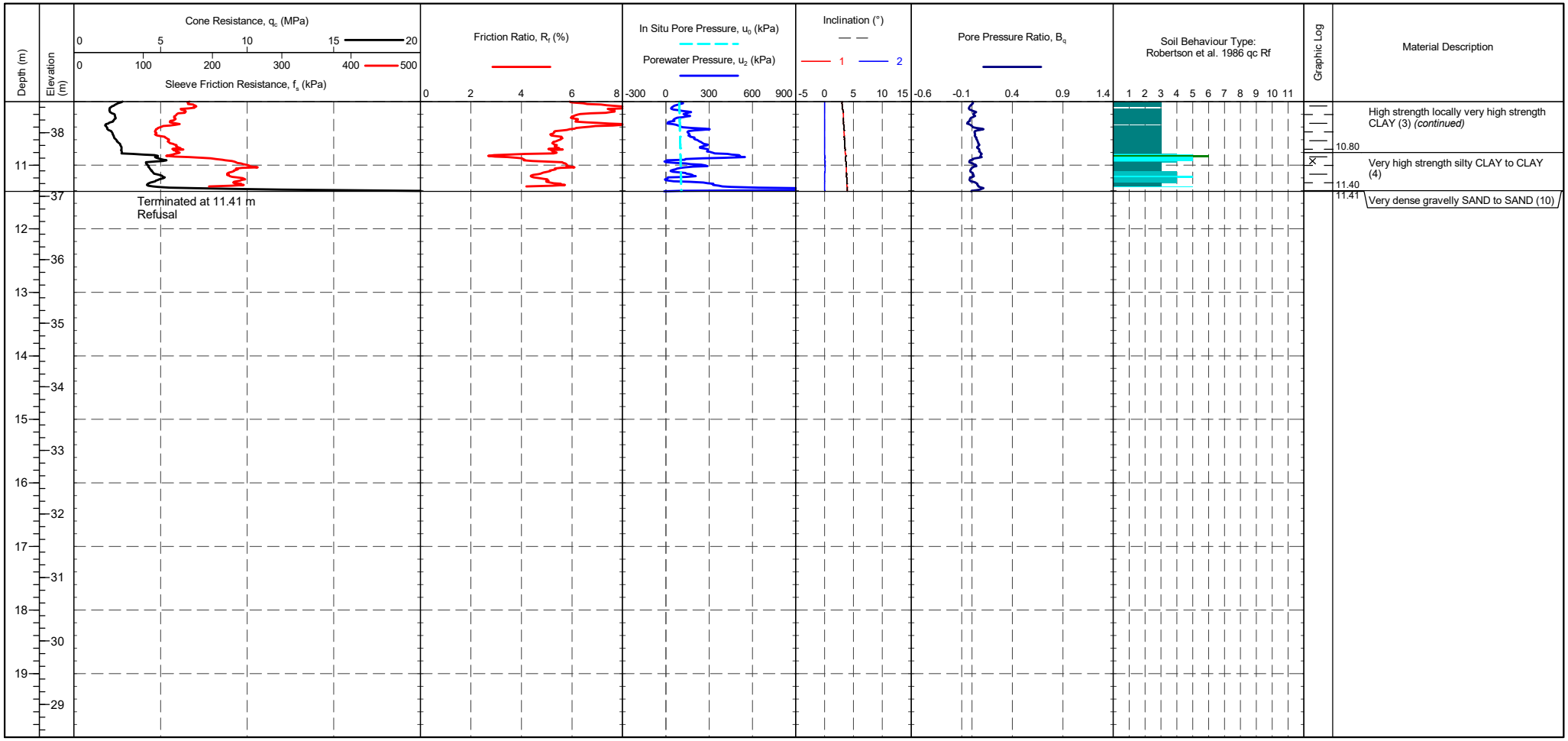
PointID: **ATK_CPT14**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385006.074 m
NORTHING : 398431.984 m
ELEVATION : 48.487 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm^2	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	249 mV	245 mV	-0.046 MPa
Sleeve	248 mV	243 mV	-0.004 kPa
Pore Pressure 2	318 mV	328 mV	0.003 kPa
X-Y Inclinometer	2520 mV	2489 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: STRUCTURAL SOILS LTD

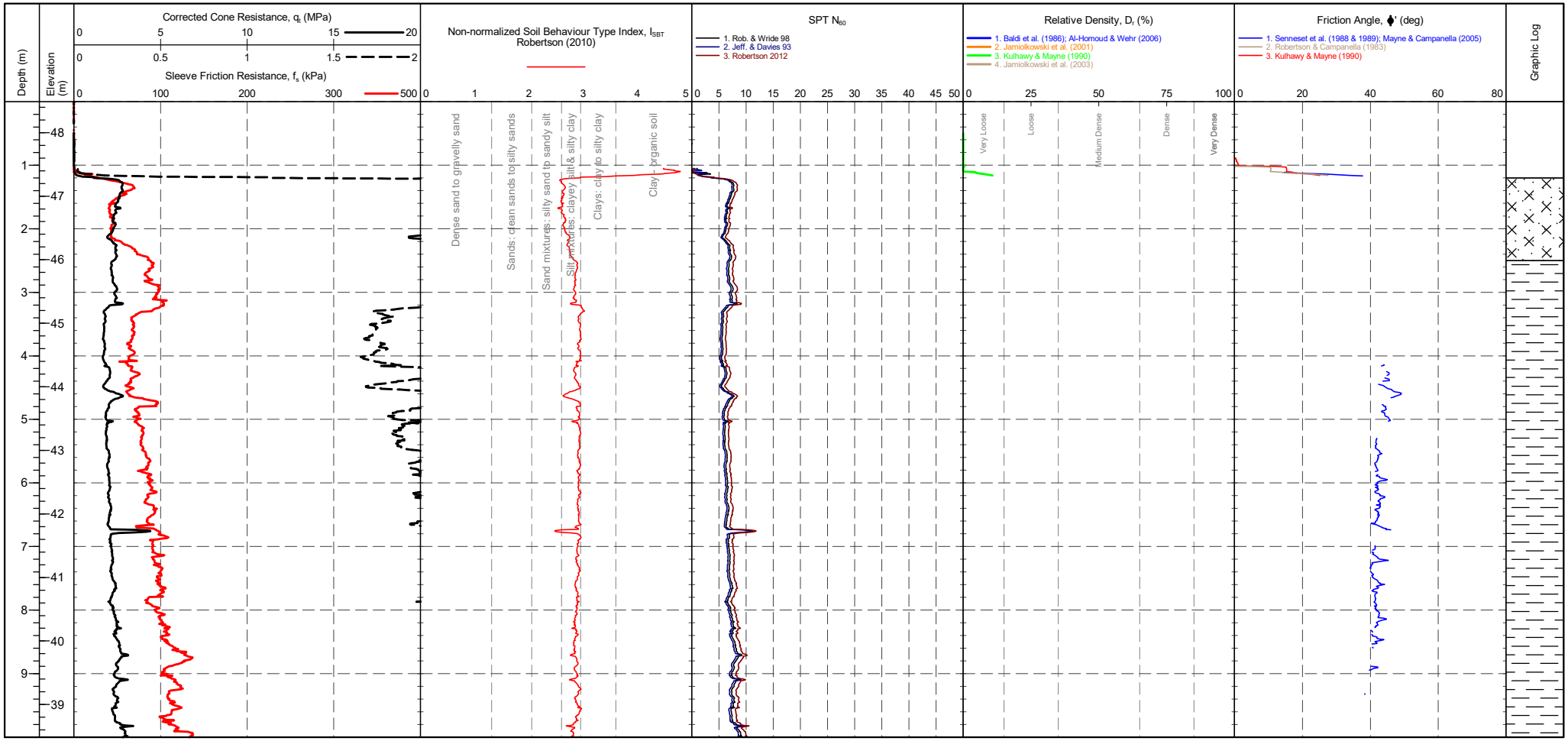
PointID: **ATK_CPT14**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385006.074 m
NORTHING : 398431.984 m
ELEVATION : 48.487 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177
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	: RS
FRICTION REDUCER	: None
WEATHER	: Overcast & Mild

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	249 mV	245 mV	-0.046 MPa
Sleeve	248 mV	243 mV	-0.004 kPa
Pore Pressure 2	318 mV	328 mV	0.003 kPa
X-Y Inclinometer	2520 mV	2489 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: STRUCTURAL SOILS LTD

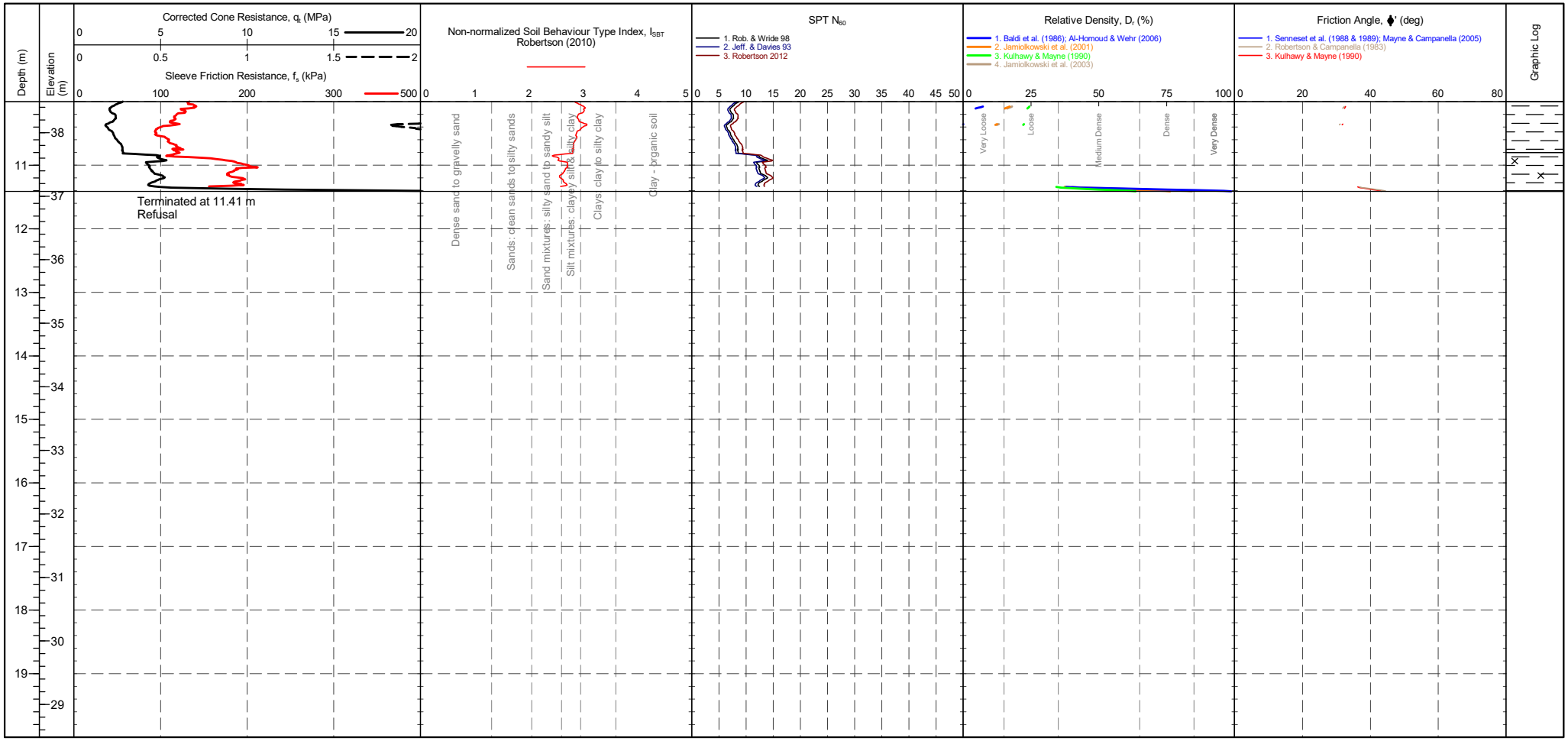
PointID: **ATK_CPT14**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385006.074 m
NORTHING : 398431.984 m
ELEVATION : 48.487 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177
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	: RS
FRICTION REDUCER	: None
WEATHER	: Overcast & Mild

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	249 mV	245 mV	-0.046 MPa
Sleeve	248 mV	243 mV	-0.004 kPa
Pore Pressure 2	318 mV	328 mV	0.003 kPa
X-Y Inclinometer	2520 mV	2489 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

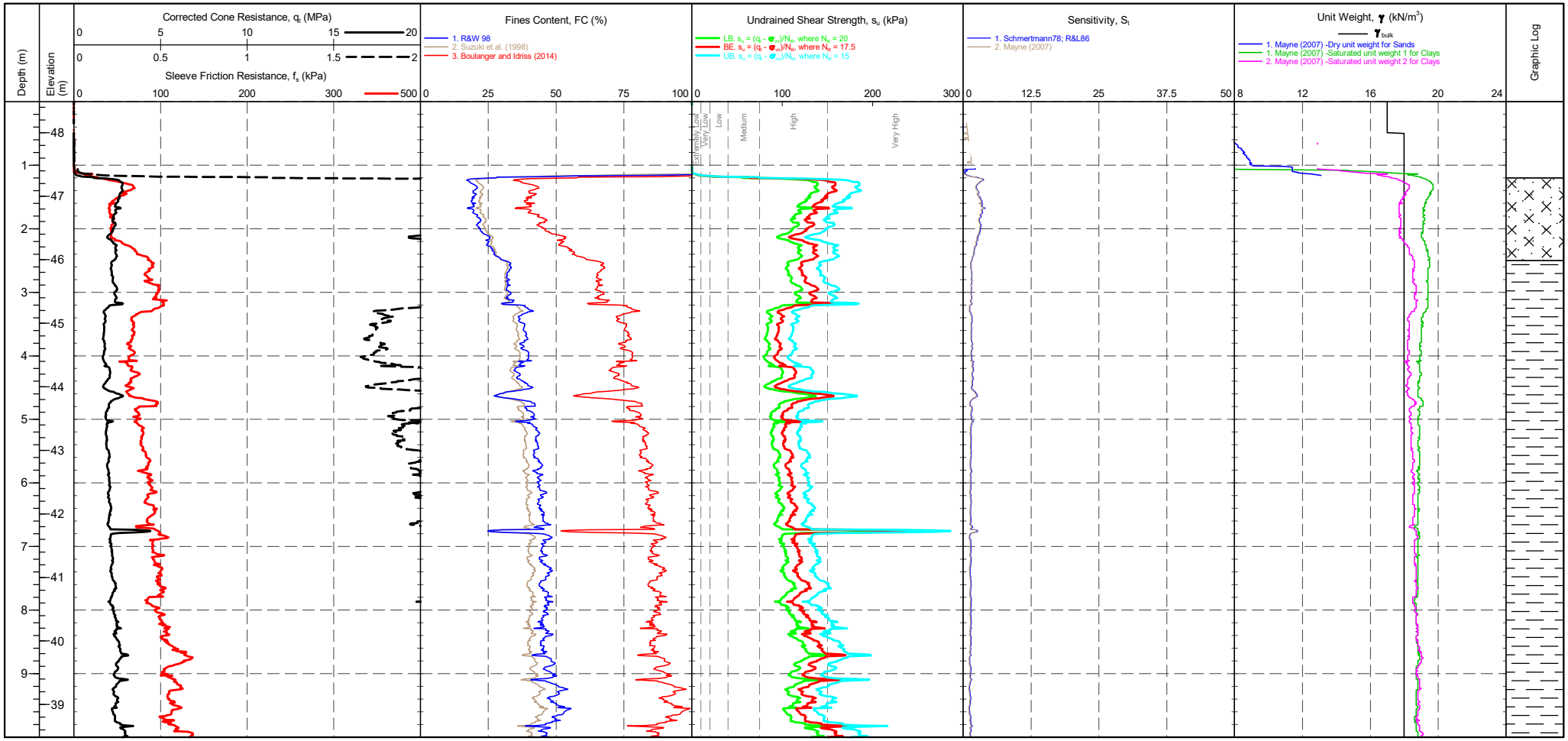
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT14**

CLIENT : Structural Soils	EASTING : 385006.074 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398431.984 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.487 m OD		TEST DATE : 27/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	245 mV	-0.046 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	248 mV	243 mV	-0.004 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	318 mV	328 mV	0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2520 mV	2489 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

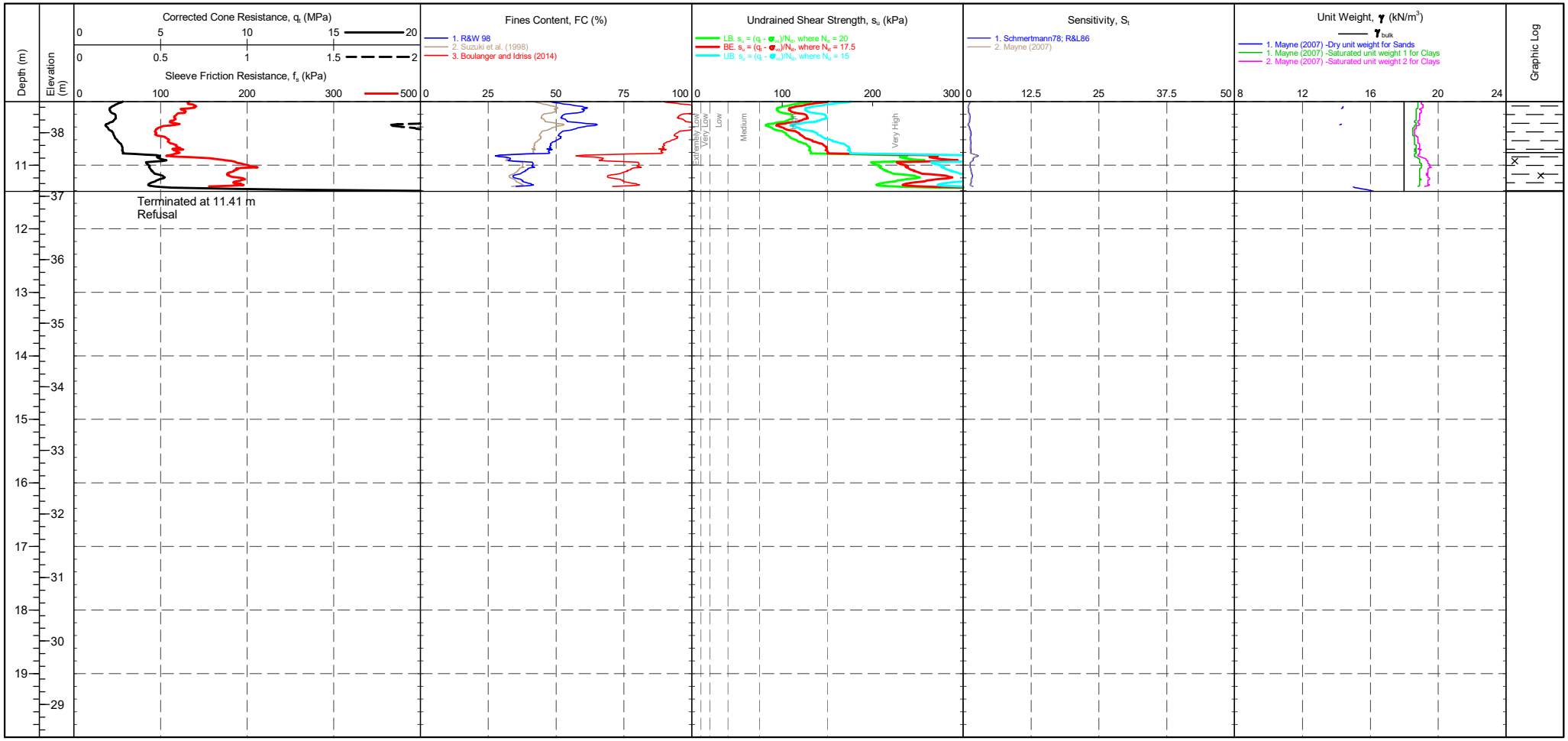
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT14**

CLIENT : Structural Soils	EASTING : 385006.074 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398431.984 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.487 m OD		TEST DATE : 27/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES				COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference	Term based on measurement	su (kPa)	Term based on measurement	su (kPa)
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	249 mV	245 mV	-0.046 MPa	Extremely low strength	<10	Medium strength	40-75
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	248 mV	243 mV	-0.004 kPa	Very low strength	10-20	High strength	75-150
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	318 mV	328 mV	0.003 kPa	Low strength	20-40	Very high strength	150-300
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2520 mV	2489 mV				Extremely high strength	>300

Groundwater Level

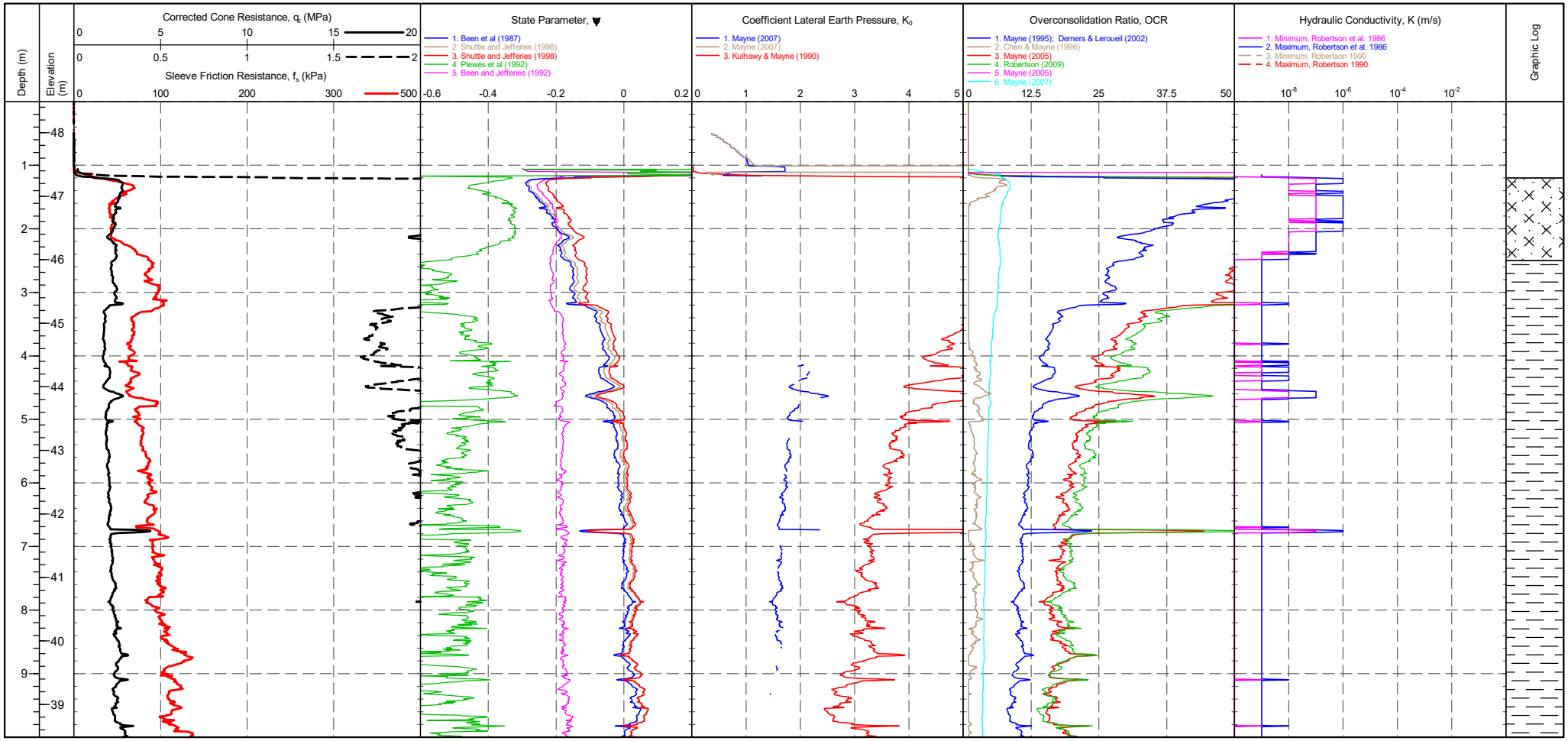
Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT14**

CLIENT : Structural Soils	EASTING : 385006.074 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398431.984 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.487 m OD		TEST DATE : 27/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	245 mV	-0.046 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	248 mV	243 mV	-0.004 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	318 mV	328 mV	0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2520 mV	2489 mV	

Groundwater Level

Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

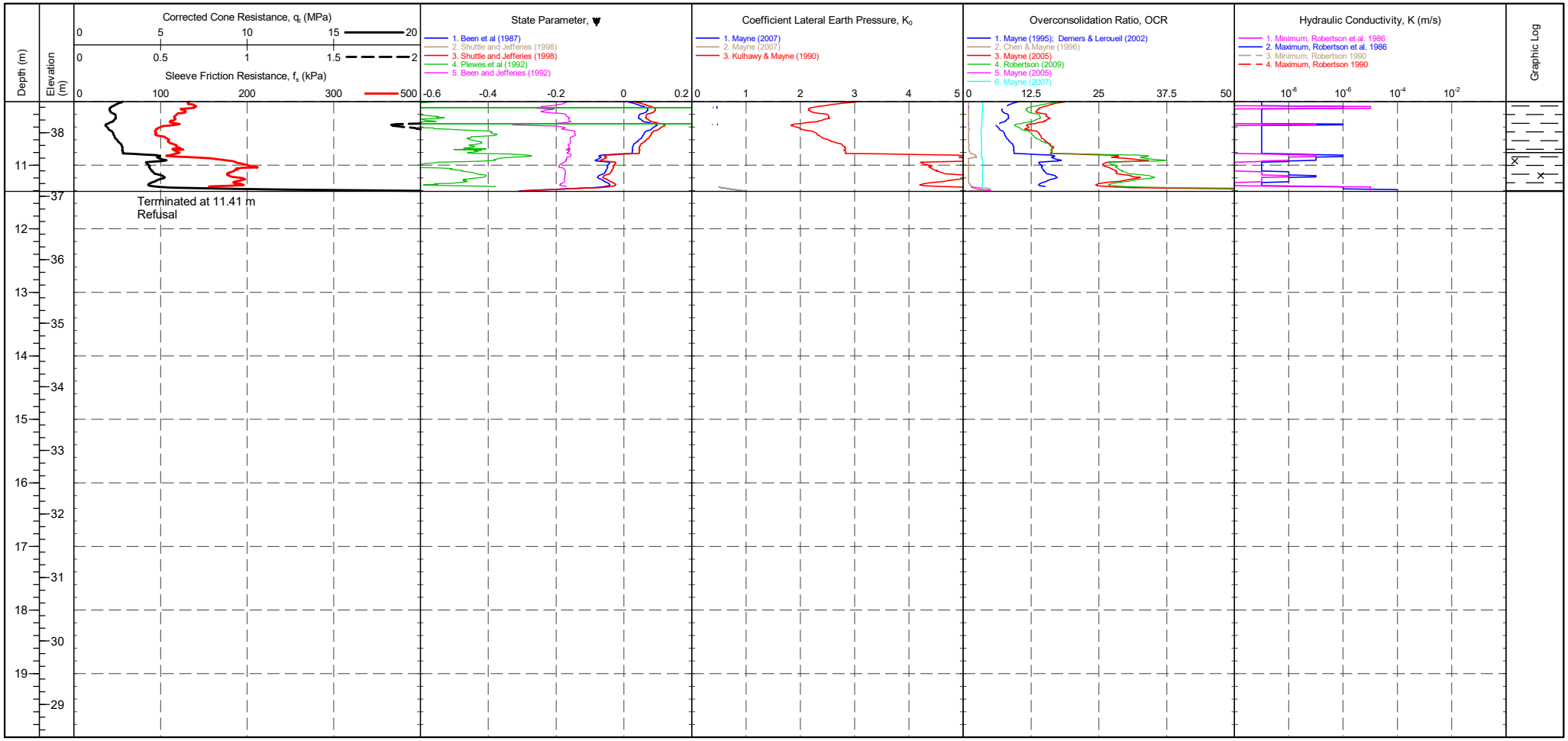
PointID: **ATK_CPT14**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385006.074 m
NORTHING : 398431.984 m
ELEVATION : 48.487 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	249 mV	245 mV	-0.046 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	248 mV	243 mV	-0.004 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	318 mV	328 mV	0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2520 mV	2489 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

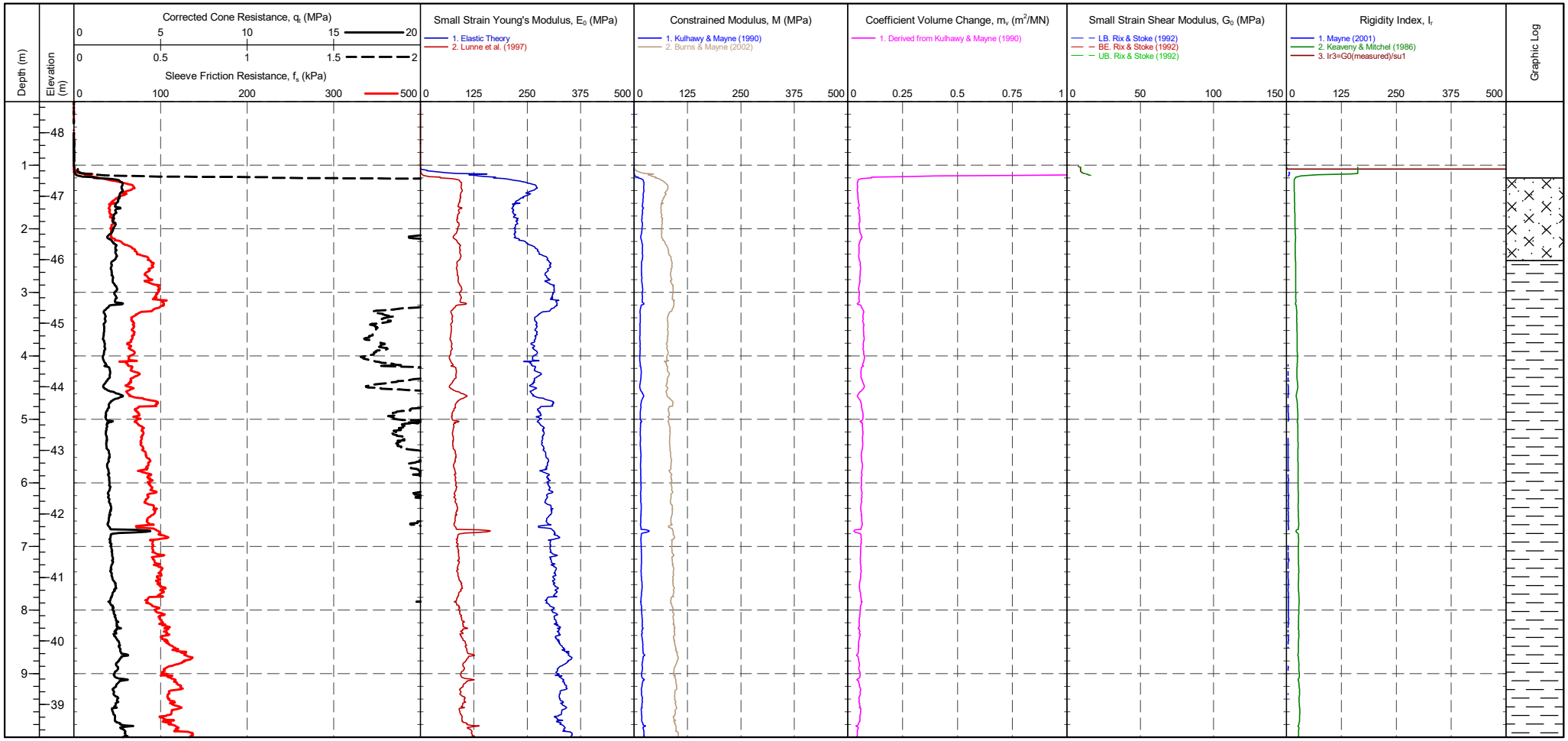
PointID: **ATK_CPT14**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385006.074 m
NORTHING : 398431.984 m
ELEVATION : 48.487 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV / 245 mV / -0.046 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	248 mV / 243 mV / -0.004 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	318 mV / 328 mV / 0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2520 mV / 2489 mV

Groundwater Level

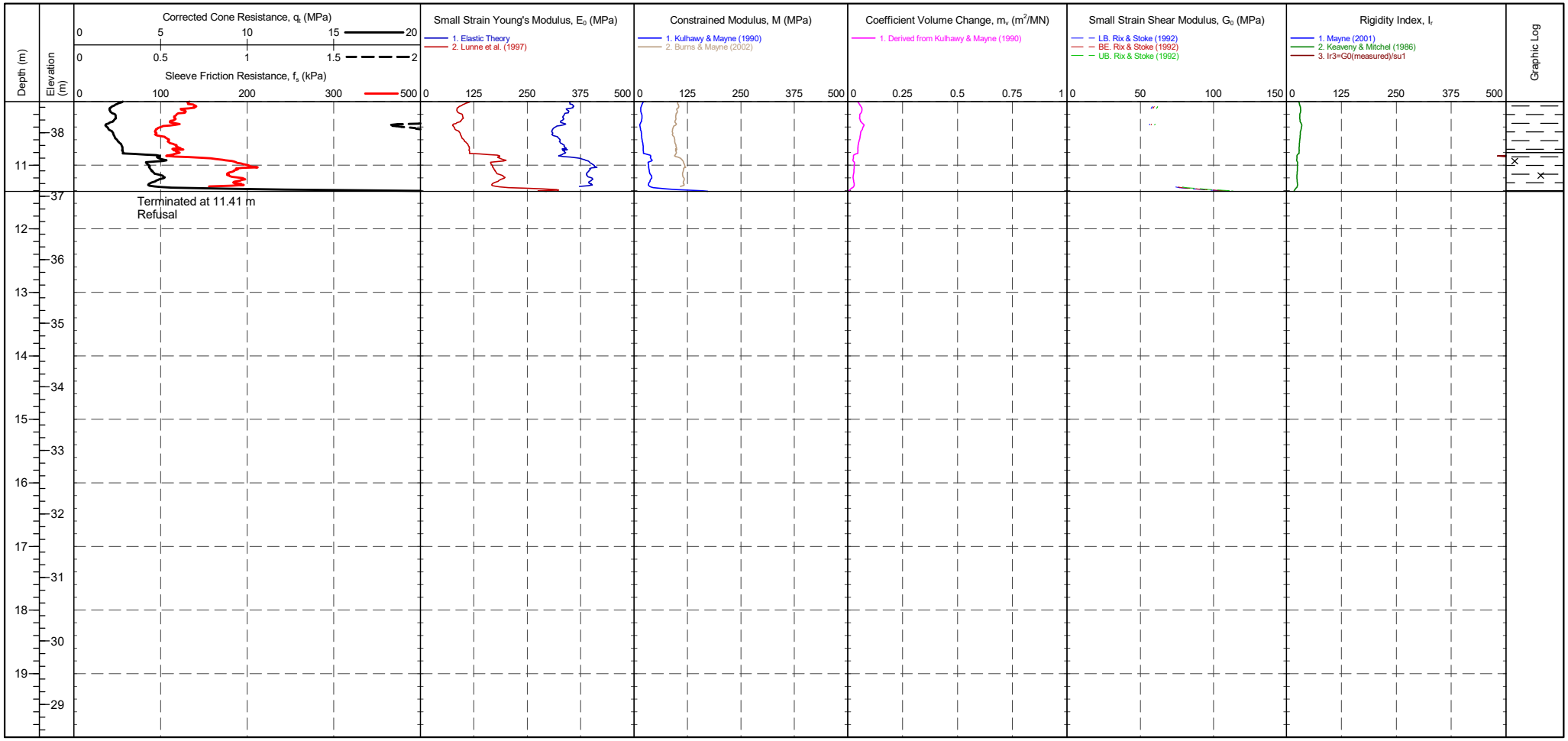
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT14**

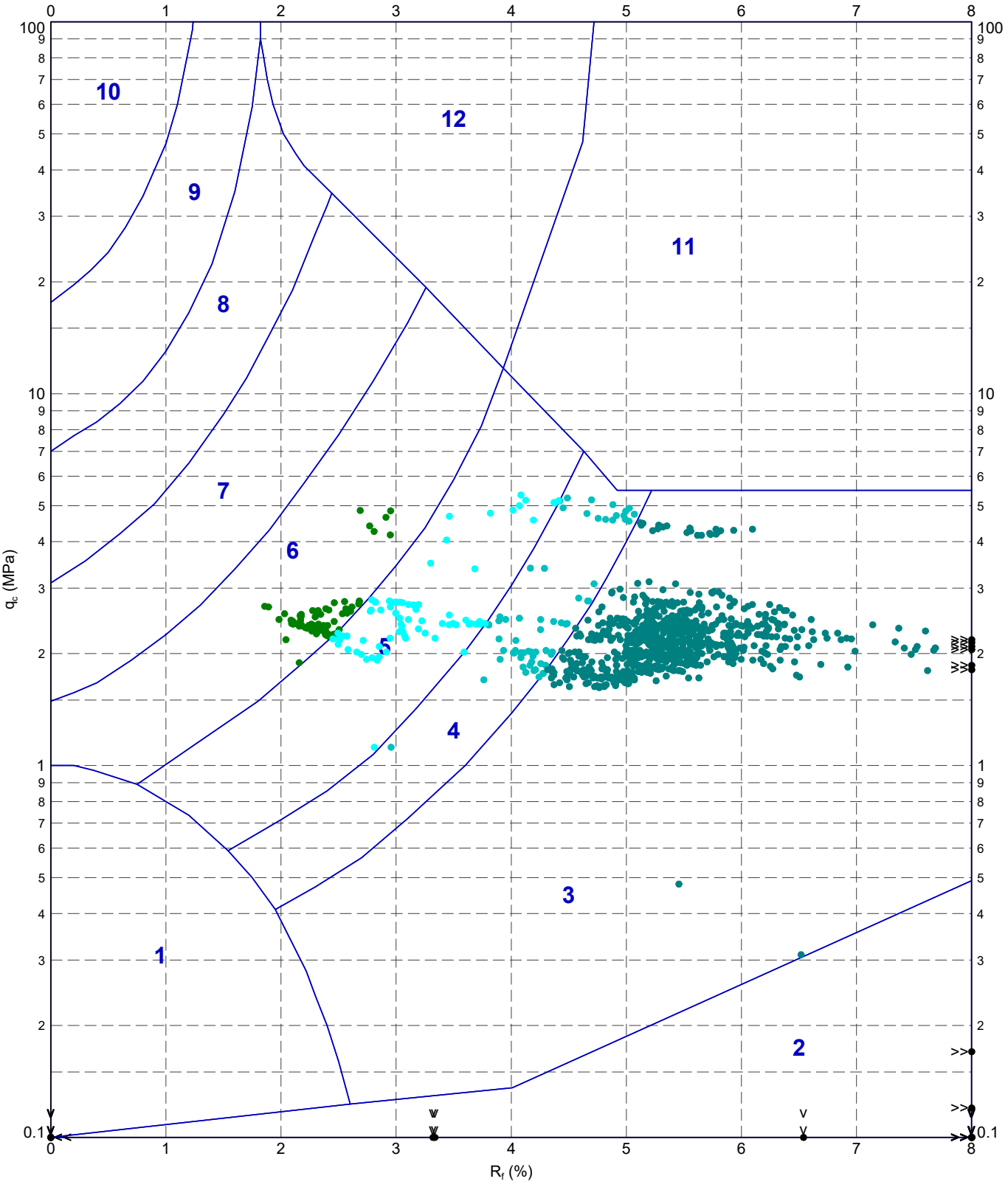
CLIENT : Structural Soils	EASTING : 385006.074 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398431.984 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.487 m OD		TEST DATE : 27/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	245 mV	-0.046 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	248 mV	243 mV	-0.004 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	318 mV	328 mV	0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2520 mV	2489 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

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Robertson et al. 1986 q_c vs. R_f - ATK_CPT14

DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:31 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

Working with: STRUCTURAL SOILS LTD

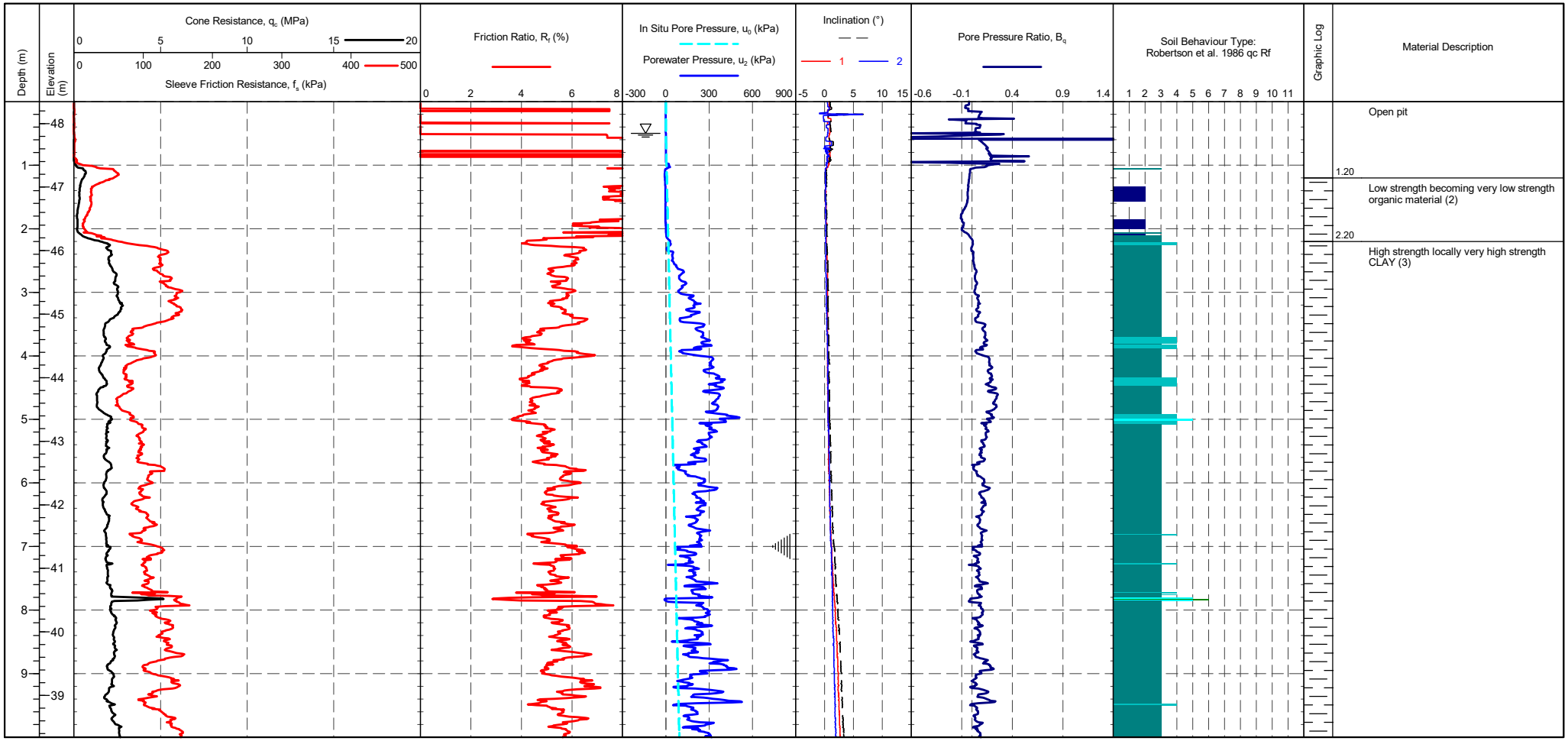
PointID: **ATK_CPT15**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385030.476 m
NORTHING : 398416.438 m
ELEVATION : 48.344 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm^2	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	244 mV	244 mV	0 MPa
Sleeve	241 mV	242 mV	0.001 kPa
Pore Pressure 2	302 mV	347 mV	0.012 kPa
X-Y Inclinometer	2517 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 01

Working with: STRUCTURAL SOILS LTD

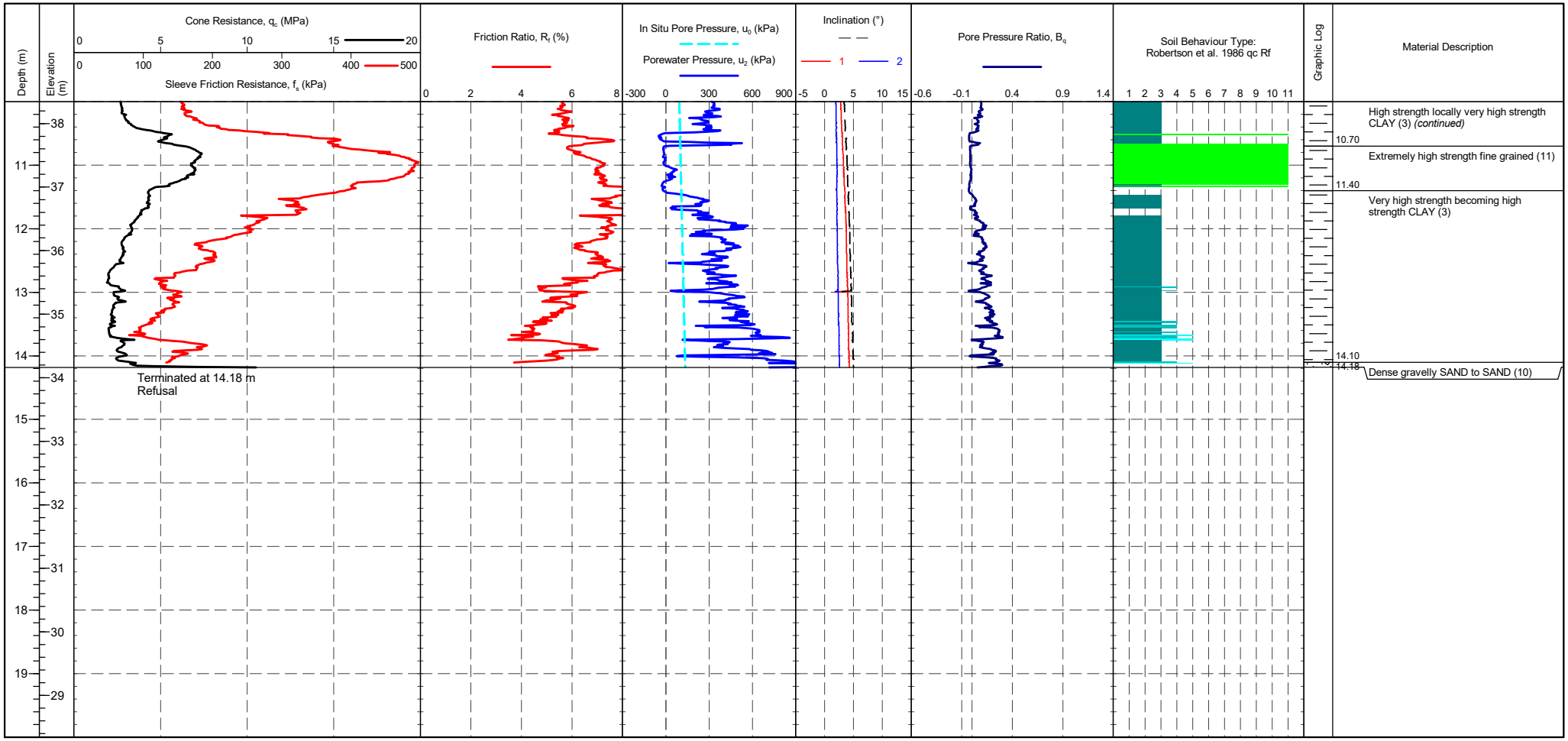
PointID: **ATK_CPT15**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385030.476 m
NORTHING : 398416.438 m
ELEVATION : 48.344 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm^2	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	244 mV	244 mV	0 MPa
Sleeve	241 mV	242 mV	0.001 kPa
Pore Pressure 2	302 mV	347 mV	0.012 kPa
X-Y Inclinometer	2517 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: STRUCTURAL SOILS LTD

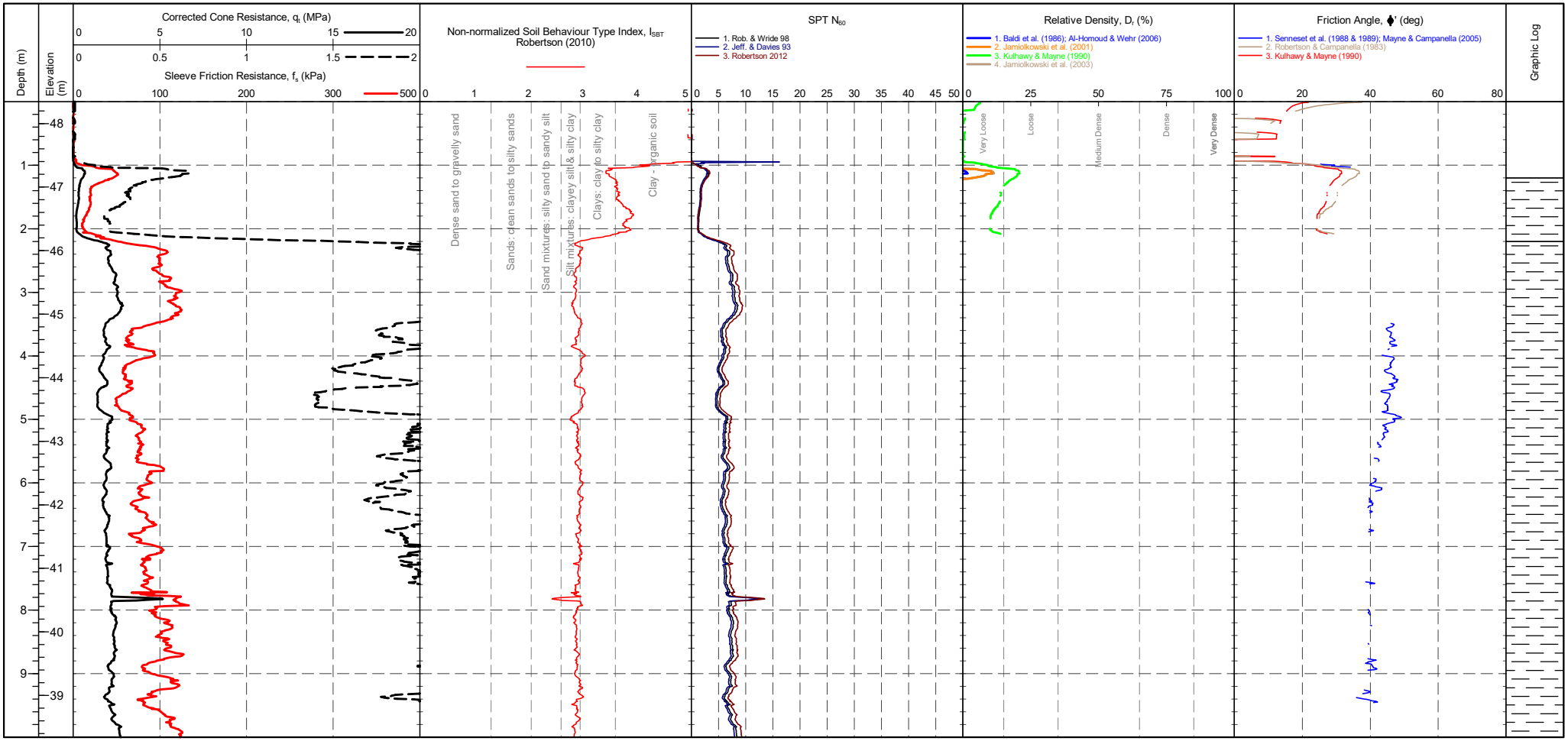
PointID: **ATK_CPT15**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385030.476 m
NORTHING : 398416.438 m
ELEVATION : 48.344 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	244 mV	244 mV	0 MPa
Sleeve	241 mV	242 mV	0.001 kPa
Pore Pressure 2	302 mV	347 mV	0.012 kPa
X-Y Inclinometer	2517 mV	2494 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

Working with: STRUCTURAL SOILS LTD

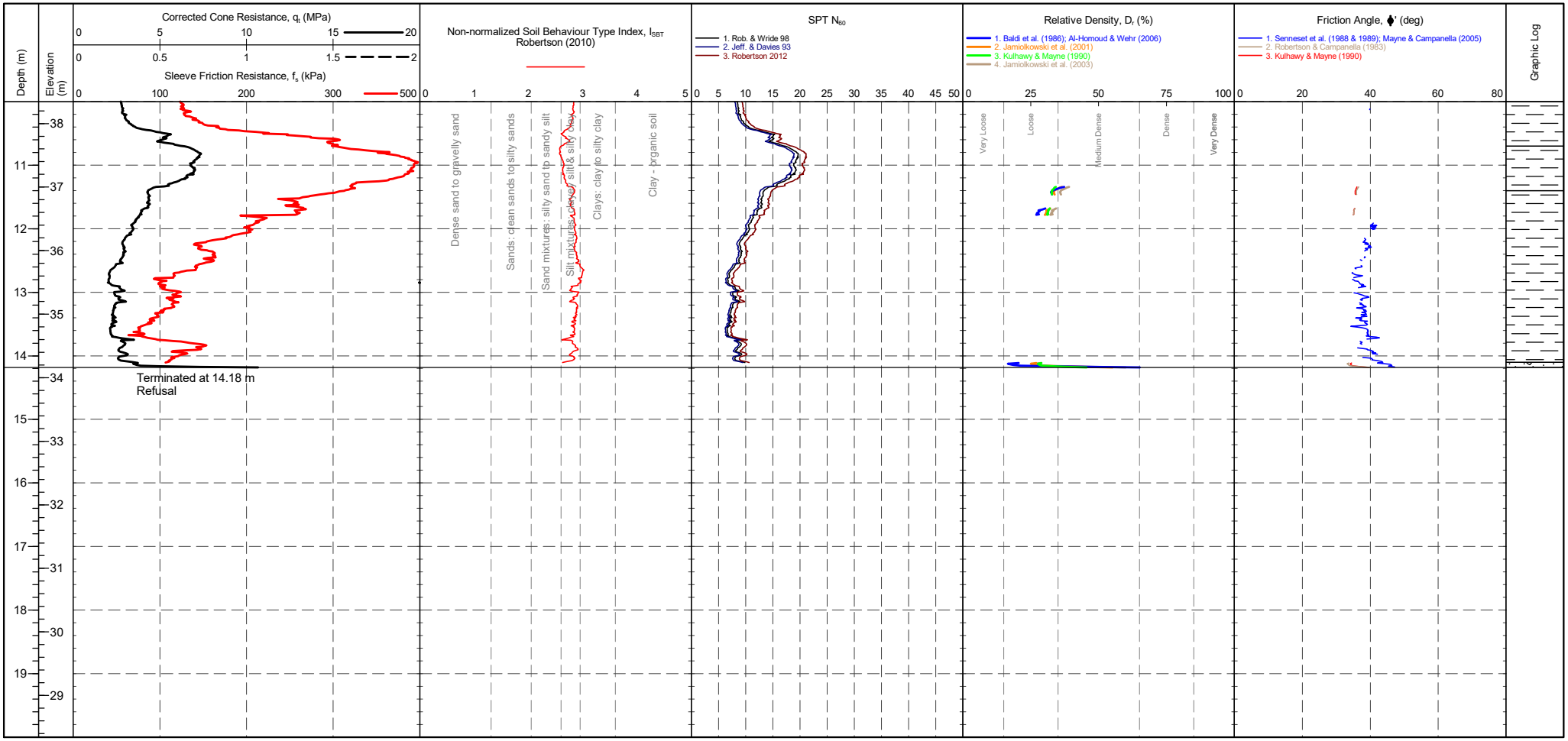
PointID: **ATK_CPT15**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385030.476 m
NORTHING : 398416.438 m
ELEVATION : 48.344 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni
CONE AREA RATIO	: 0.79	OPERATOR	: RS
FILTER POSITION	: u2	FRICTION REDUCER	: None
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	244 mV	244 mV	0 MPa
Sleeve	241 mV	242 mV	0.001 kPa
Pore Pressure 2	302 mV	347 mV	0.012 kPa
X-Y Inclinometer	2517 mV	2494 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

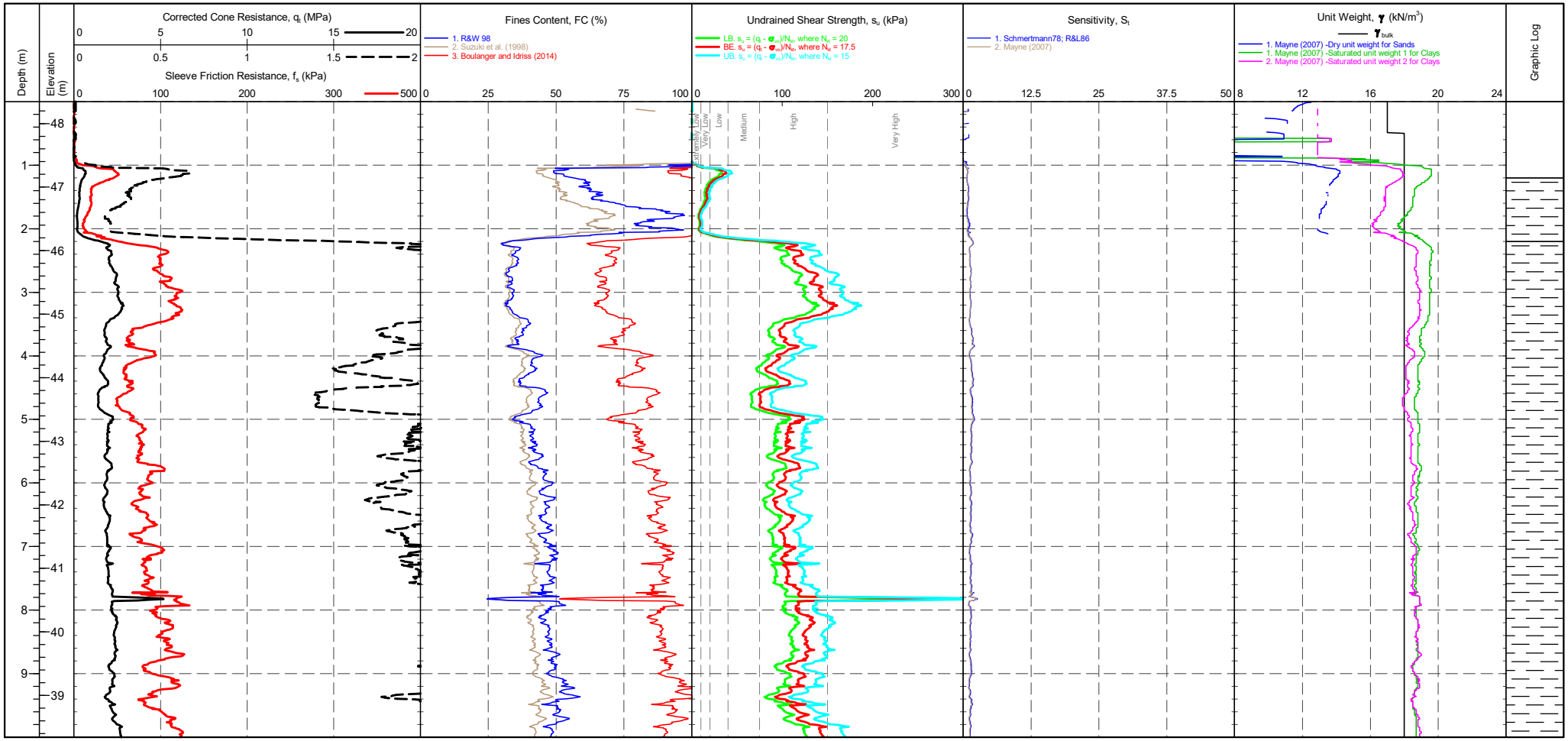
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT15**

CLIENT : Structural Soils	EASTING : 385030.476 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398416.438 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.344 m OD		TEST DATE : 27/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	244 mV	244 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	241 mV	242 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	302 mV	347 mV	0.012 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2517 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

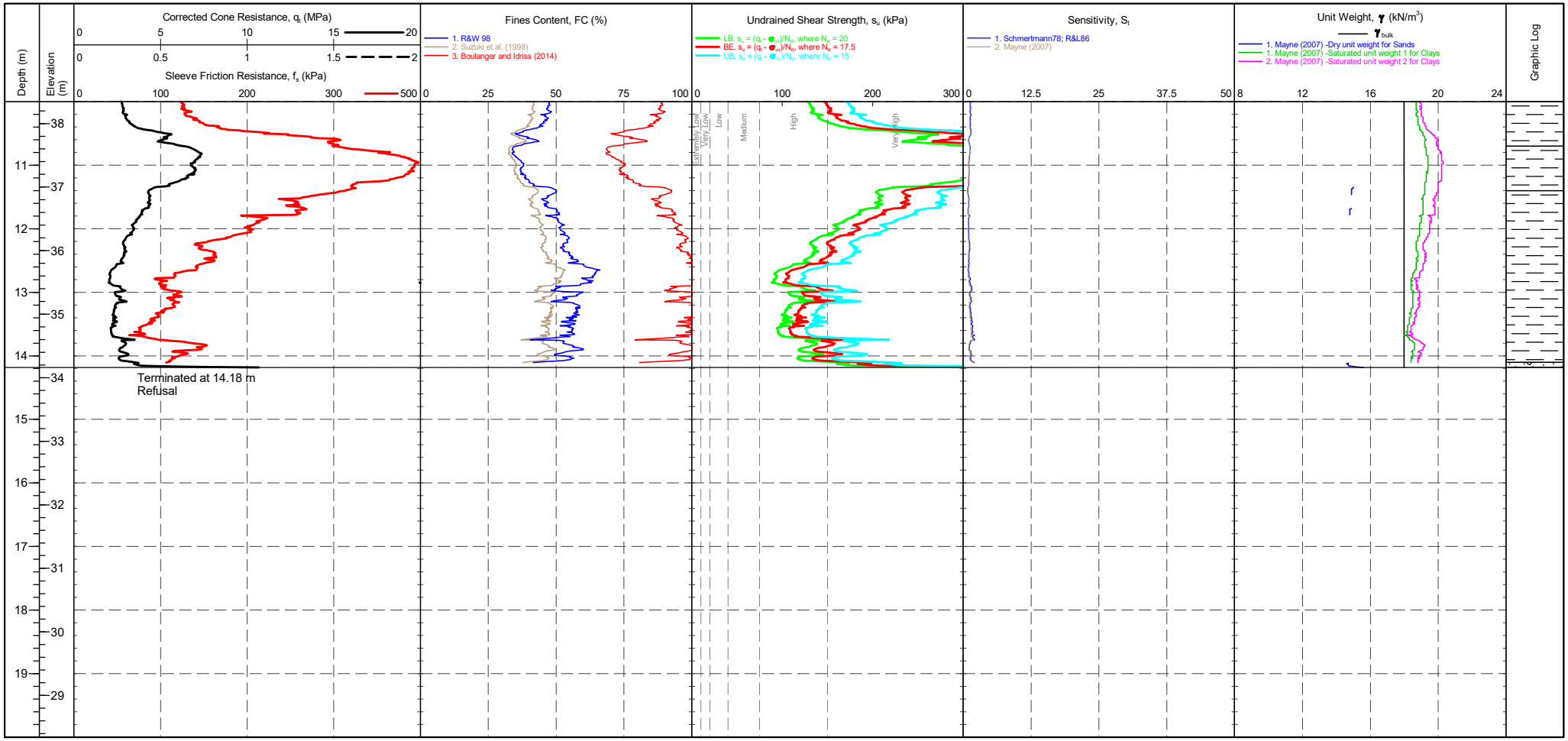
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT15**

CLIENT : Structural Soils	EASTING : 385030.476 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398416.438 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.344 m OD		TEST DATE : 27/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	244 mV	244 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	241 mV	242 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	302 mV	347 mV	0.012 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2517 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

Working with: STRUCTURAL SOILS LTD

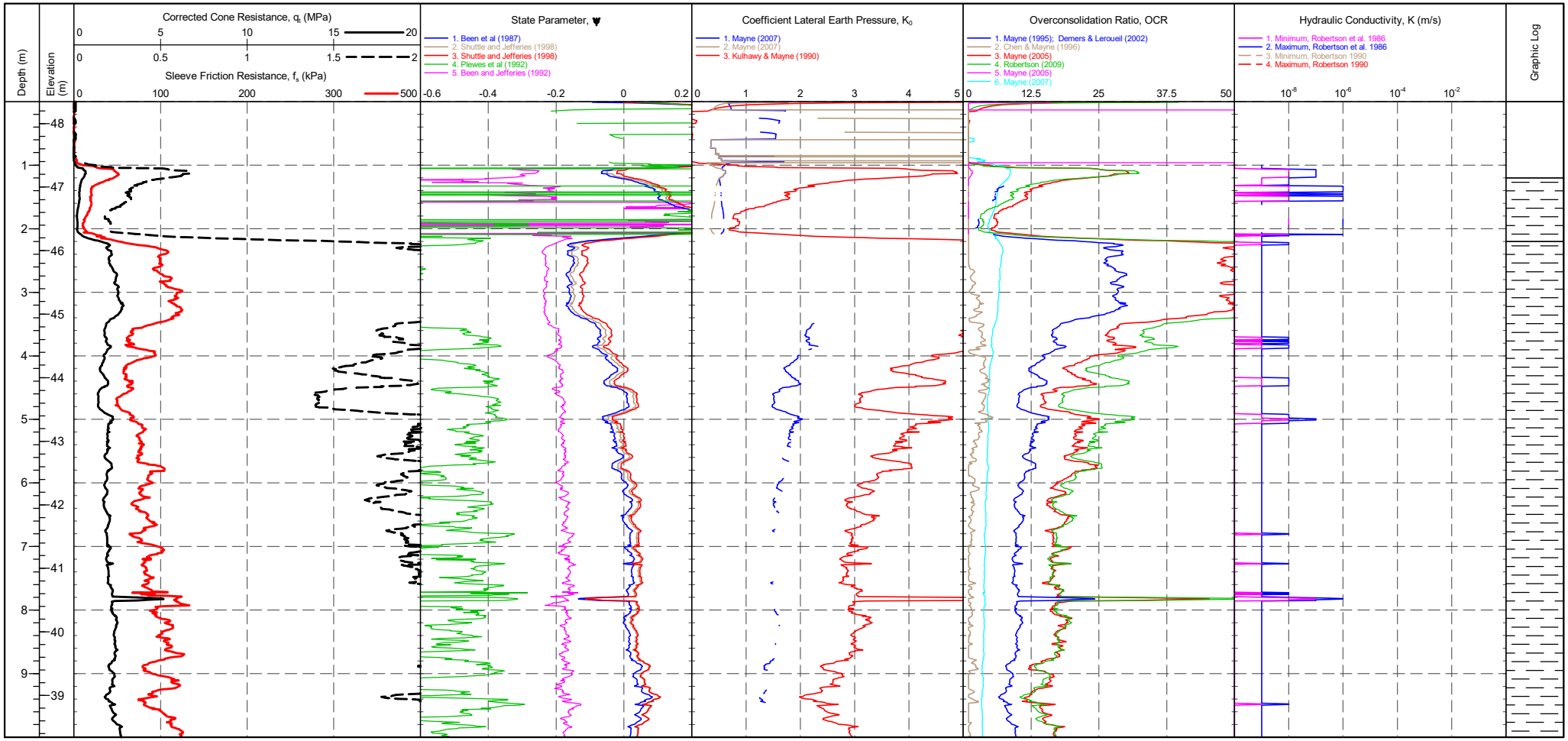
PointID: **ATK_CPT15**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385030.476 m
NORTHING : 398416.438 m
ELEVATION : 48.344 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	244 mV	244 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	241 mV	242 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	302 mV	347 mV	0.012 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2517 mV	2494 mV	

Groundwater Level

Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

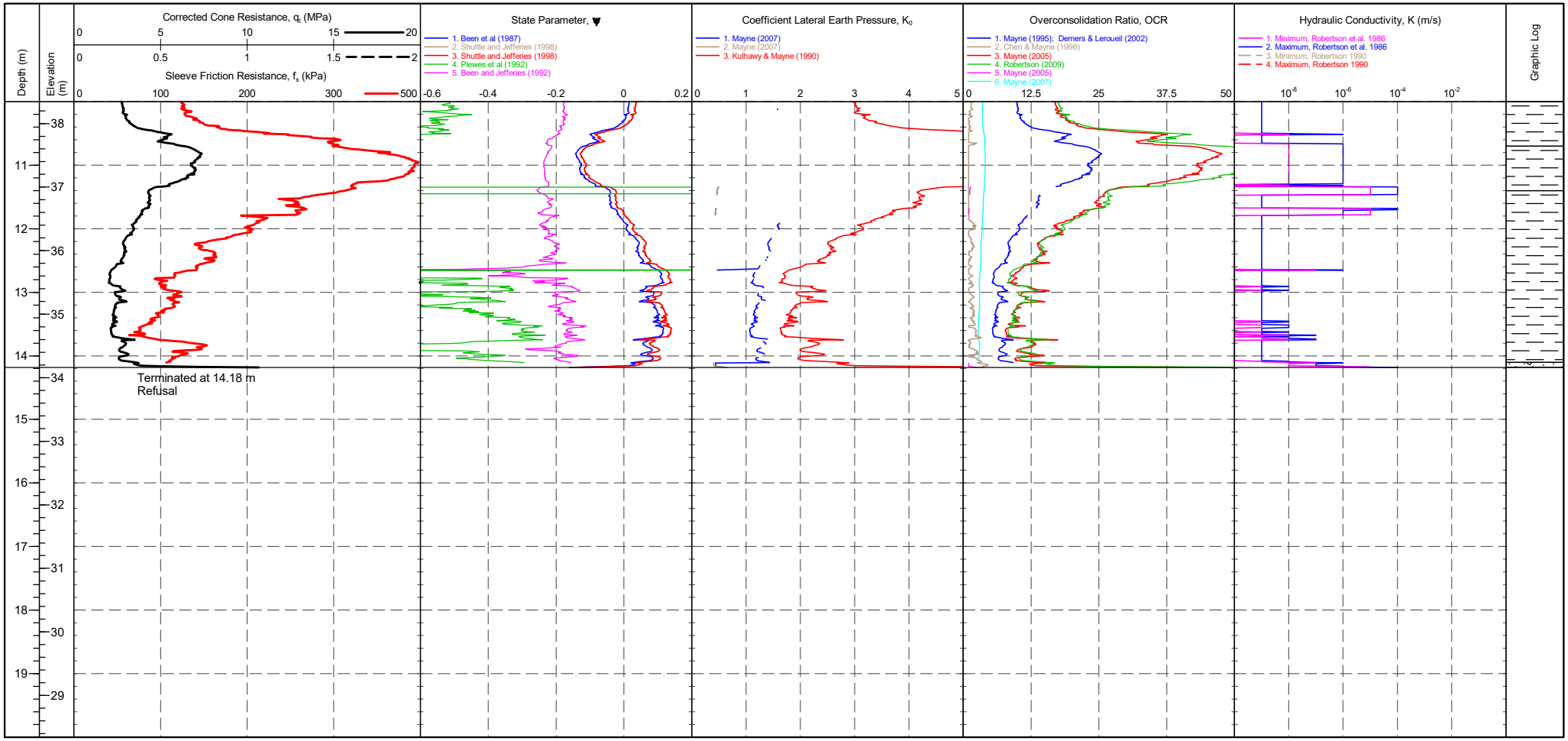
PointID: **ATK_CPT15**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385030.476 m
NORTHING : 398416.438 m
ELEVATION : 48.344 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 27/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	244 mV	244 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	241 mV	242 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	302 mV	347 mV	0.012 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2517 mV	2494 mV	

Groundwater Level

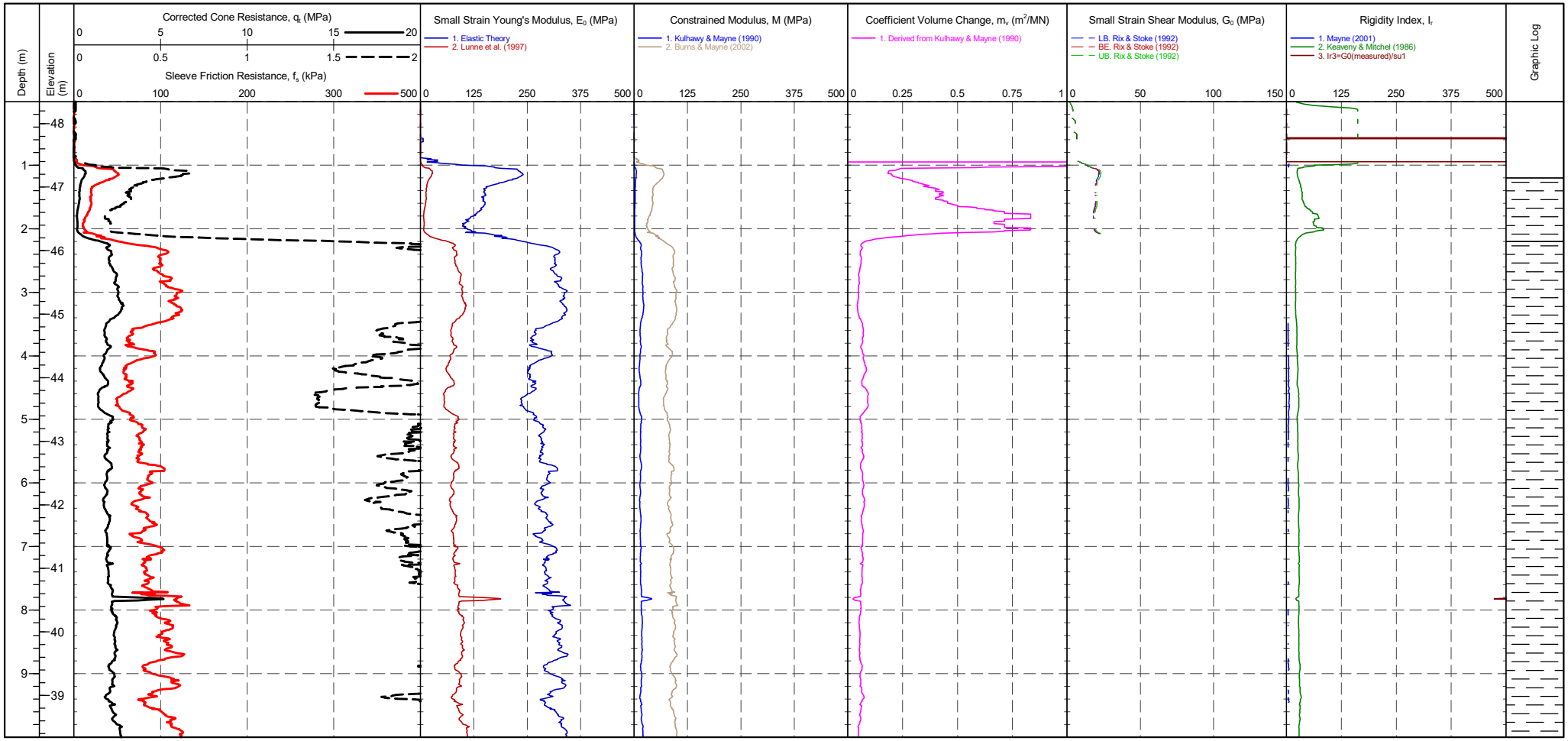
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT15**

CLIENT : Structural Soils	EASTING : 385030.476 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398416.438 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.344 m OD		TEST DATE : 27/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



				CPTU ZERO VALUES			
CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	Transducer	Pre	Post	Difference
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Tip	244 mV	244 mV	0 MPa
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Sleeve	241 mV	242 mV	0.001 kPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Pore Pressure 2	302 mV	347 mV	0.012 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	X-Y Inclinometer	2517 mV	2494 mV	
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild				

Groundwater Level

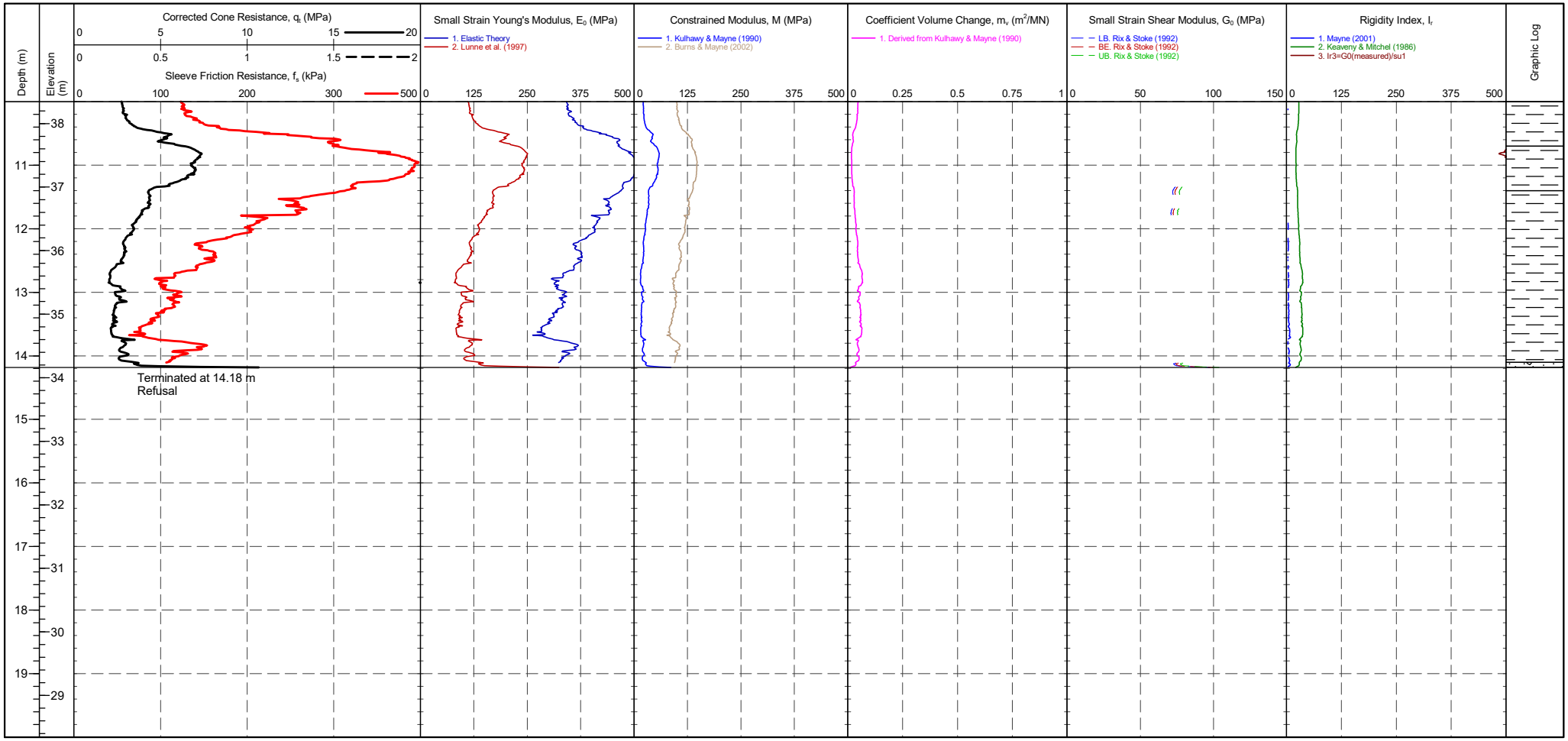
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT15**

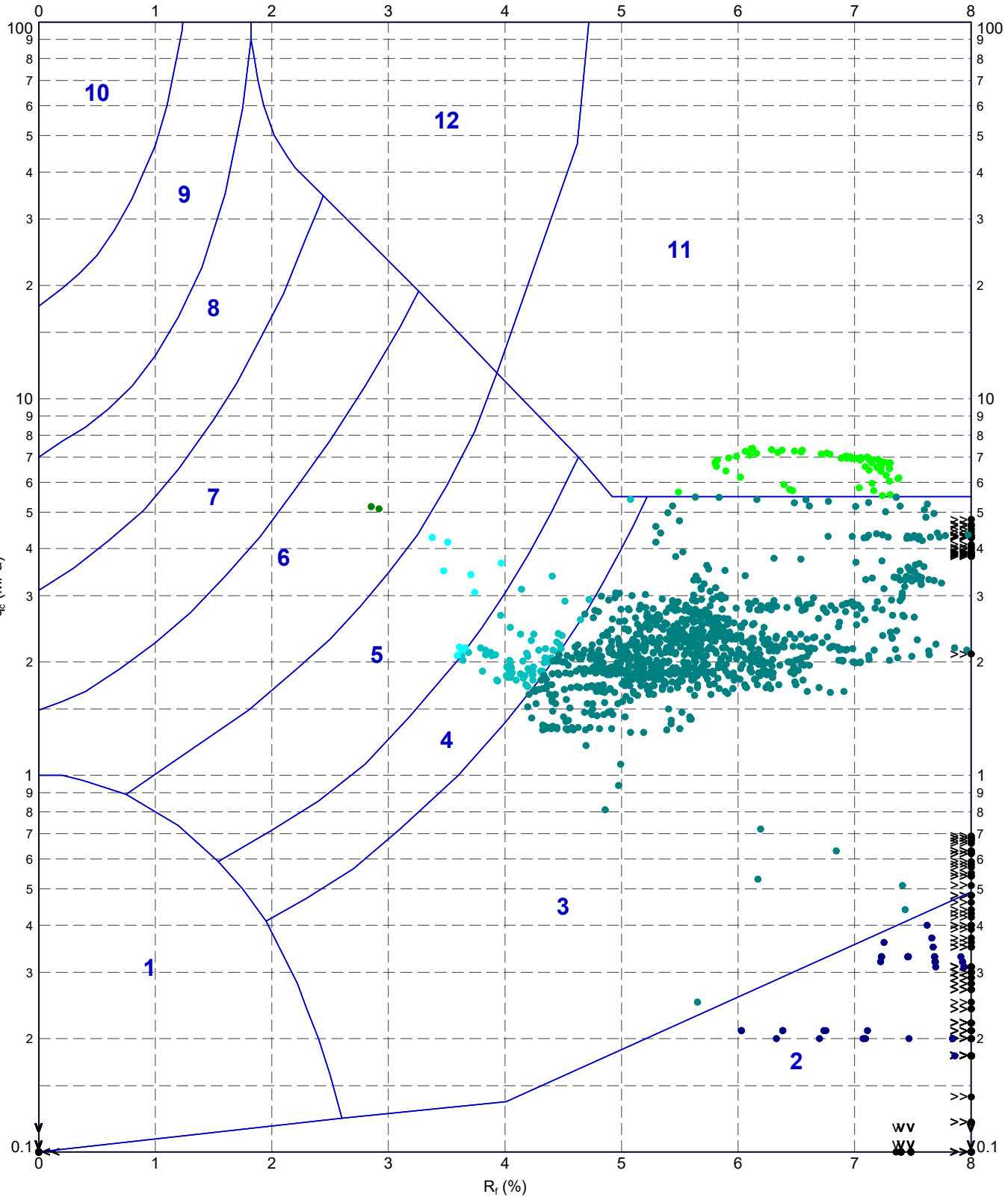
CLIENT : Structural Soils	EASTING : 385030.476 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398416.438 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 48.344 m OD		TEST DATE : 27/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	244 mV	244 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	241 mV	242 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	302 mV	347 mV	0.012 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2517 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

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Robertson et al. 1986 q_c vs. R_f - ATK_CPT15

DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:33 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

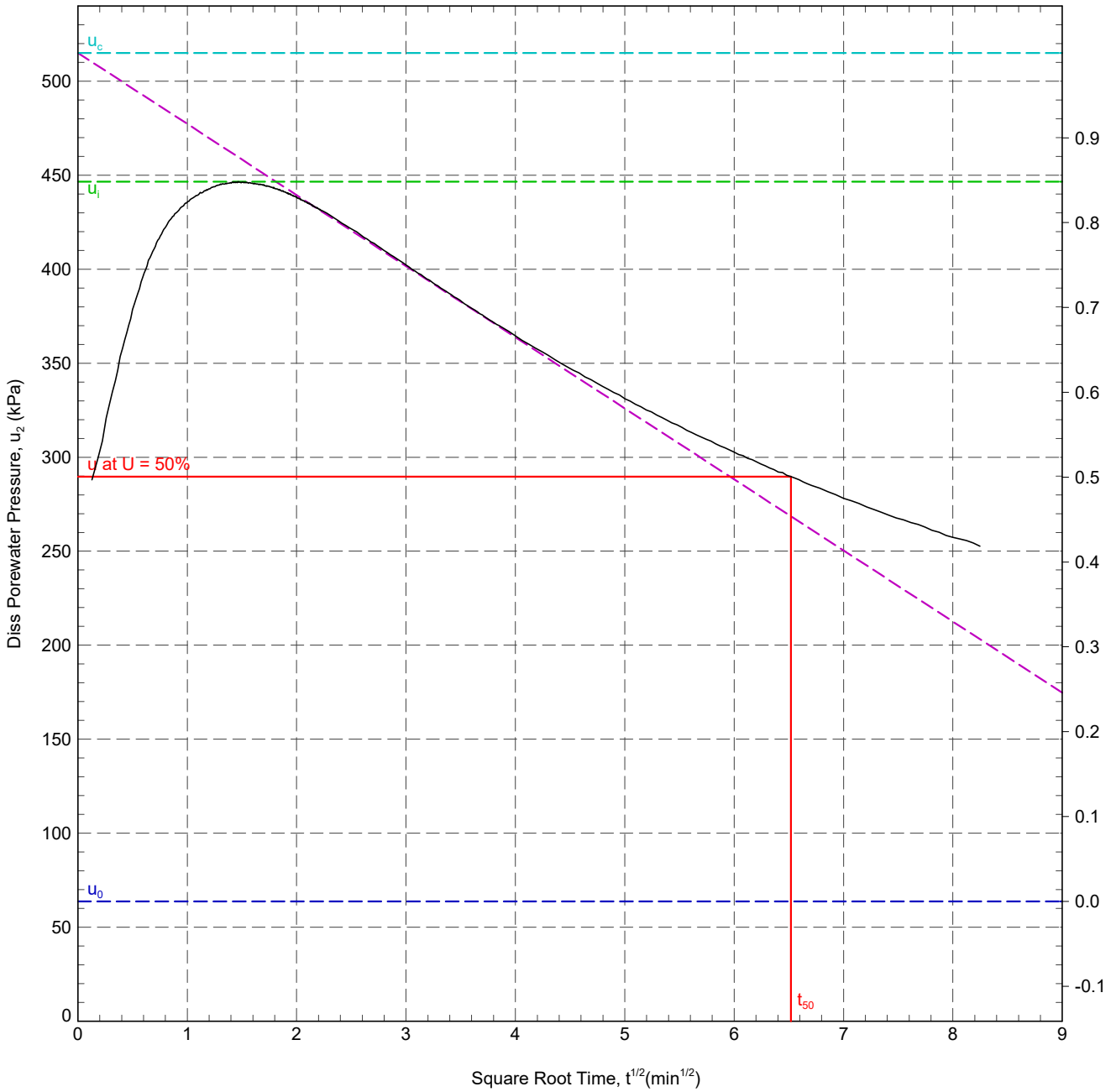
IN SITU SITE INVESTIGATION

Working with: STRUCTURAL SOILS LTD

Test ID

ATK_CPT15 - 7.00 m

CLIENT	: Structural Soils	AREA	: Ancoats Manchester	SHEET	: 1 OF 1
ENGINEER	: Tim Clifford	EASTING	: 385030.5 m	STATUS	: Final
PROJECT	: 765544 - Ancoats	NORTHING	: 398416.4 m	DATE	: 27/04/23
LOCATION	: Manchester	COORD. SYS.	:		
PROJECT No.	: 1230236	ELEVATION	: 48.34 m		



In Situ Pore Pressure, u_0:	63.8 kPa	Rigidity Index, I_r:	3.4
Initial Pore Pressure, u_i:	446.5 kPa	Horizontal Coefficient of Consolidation, c_h:	2.96x10^0 m^2/yr
Final Pore Pressure:	252.7 kPa	Ratio c_h/c_v:	1.25
Back Extrapolated Pore Pressure, u_c:	515 kPa	Vertical Coefficient of Consolidation, c_v:	2.36x10^0 m^2/yr
Degree of Dissipation:	50%		
Dissipation Pressure:	289.6 kPa		
Time for 50% Dissipation, t_{50}:	42.50 min		

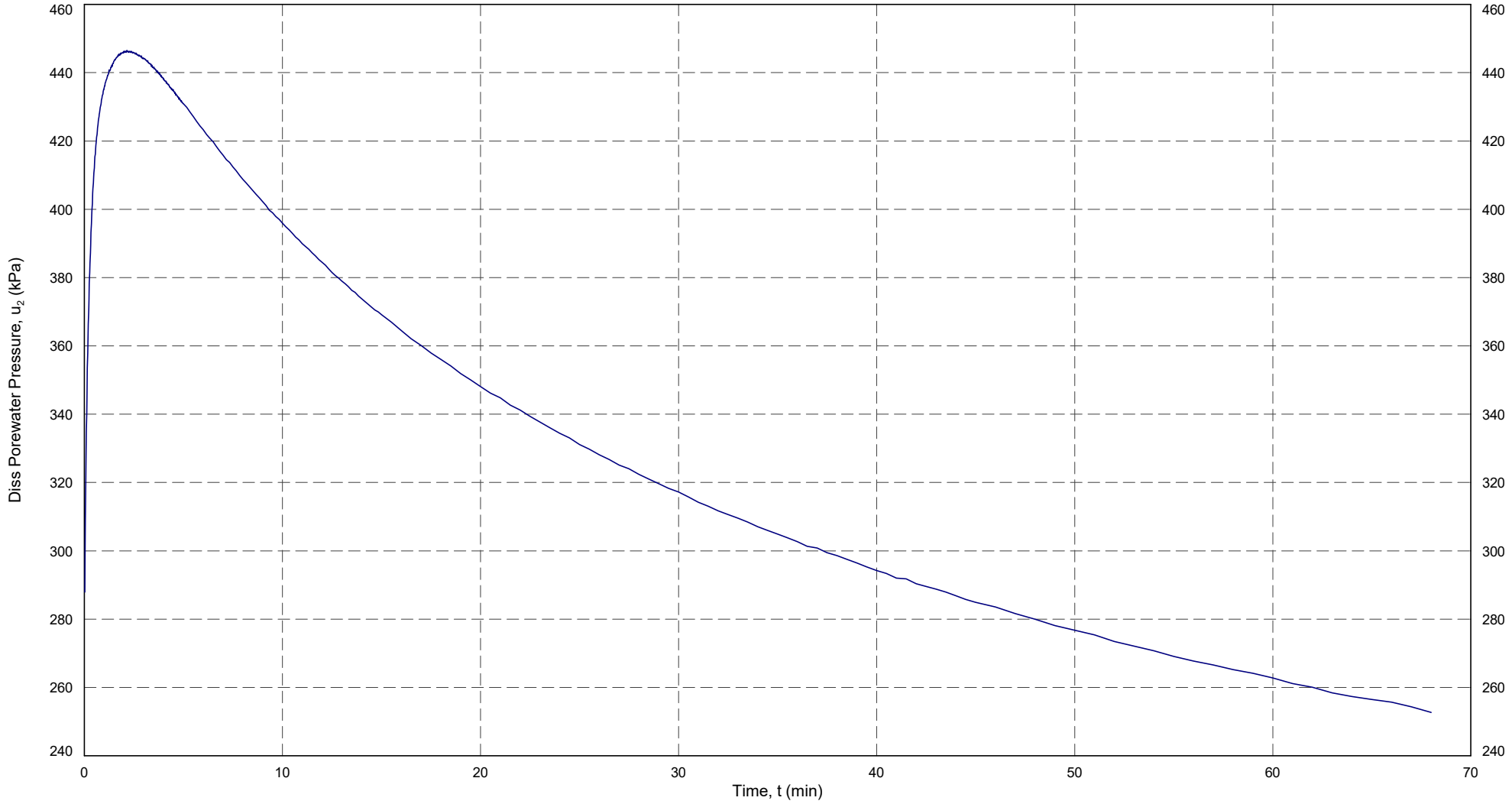
RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	15/05/2023
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	15/05/2023
CONE ID	: S15-CFIP.2177	APPROVED BY	: DW	DATE:	15/05/2023
OPERATOR	: RS				

REMARK

T50 reached. Test OK.

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:33 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

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - CHLOE.GLB Graph PPDT PORE PRESSURE VS. LIN T A4L 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:33 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



IN SITU SITE INVESTIGATION

TITLE

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Dissipation Test - ATK_CPT15

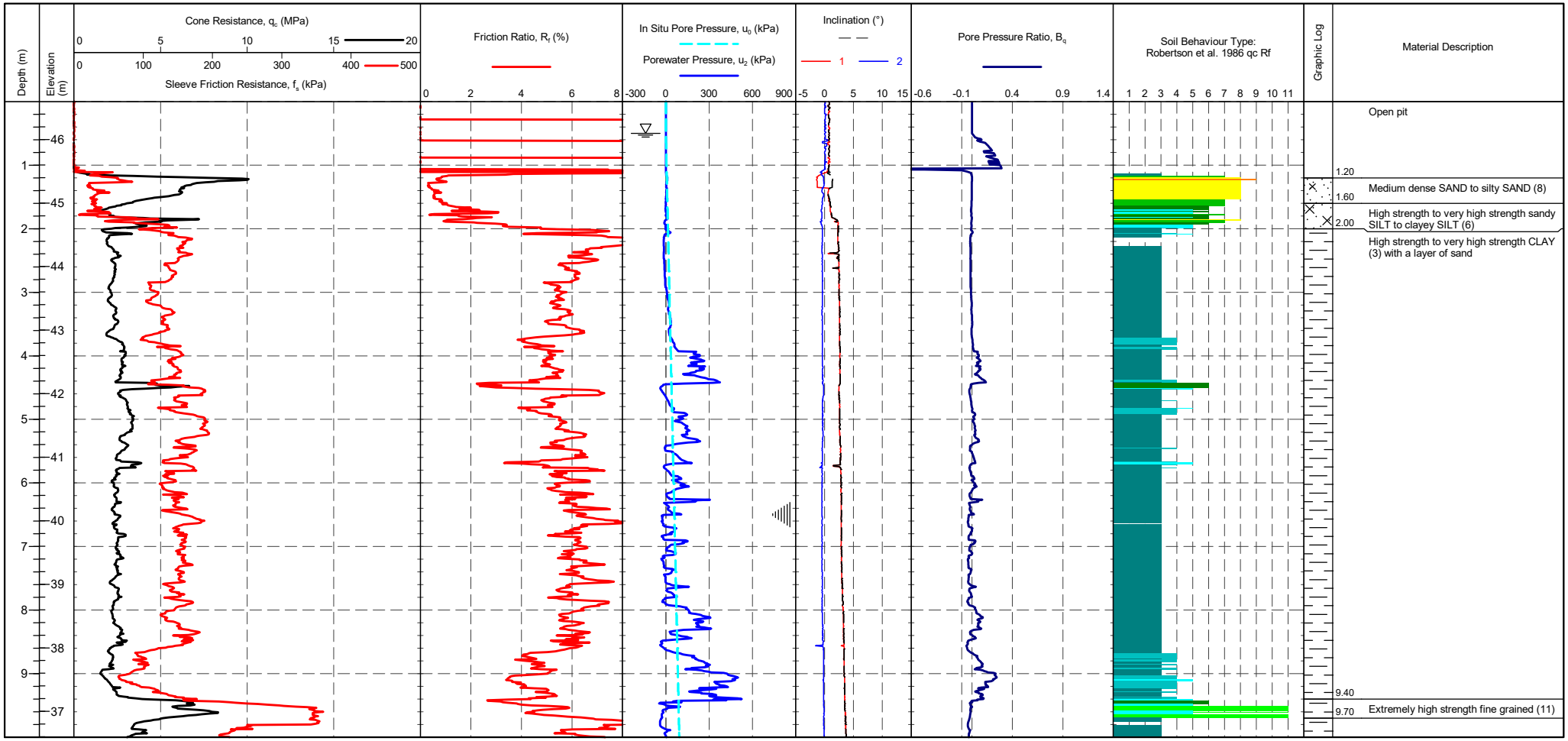
DRAWN	DATE 24/05/2023	
CHECKED	DATE 24/05/2023	
SCALE Not To Scale		A4
PROJECT No 1230236	FIGURE No	

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT16**

CLIENT : Structural Soils	EASTING : 385109.896 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398372.123 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 46.595 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm^2	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	248 mV	248 mV	0 MPa
Sleeve	242 mV	243 mV	0.001 kPa
Pore Pressure 2	391 mV	435 mV	0.012 kPa
X-Y Inclinometer	2505 mV	2525 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

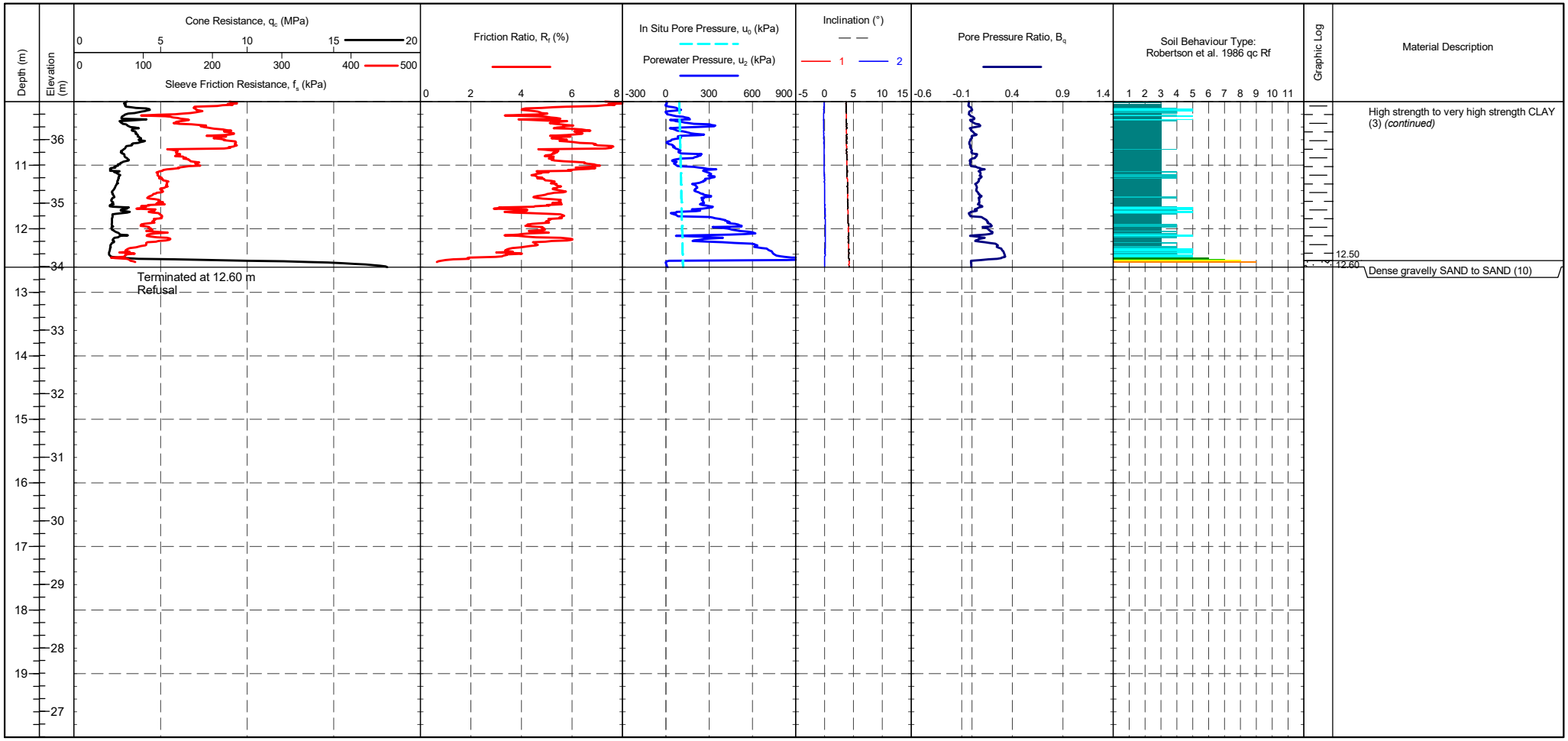
Dissipation Test

CPT LOG 01

Working with: Structural Soils Ltd

PointID: **ATK_CPT16**

CLIENT : Structural Soils	EASTING : 385109.896 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398372.123 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 46.595 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES			
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni	Tip	248 mV	248 mV	0 MPa
CONE AREA	: 15cm^2	OPERATOR	: RS	Sleeve	242 mV	243 mV	0.001 kPa
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None	Pore Pressure 2	391 mV	435 mV	0.012 kPa
FILTER POSITION	: u2	WEATHER	: Overcast & Mild	X-Y Inclinometer	2505 mV	2525 mV	
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes				

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

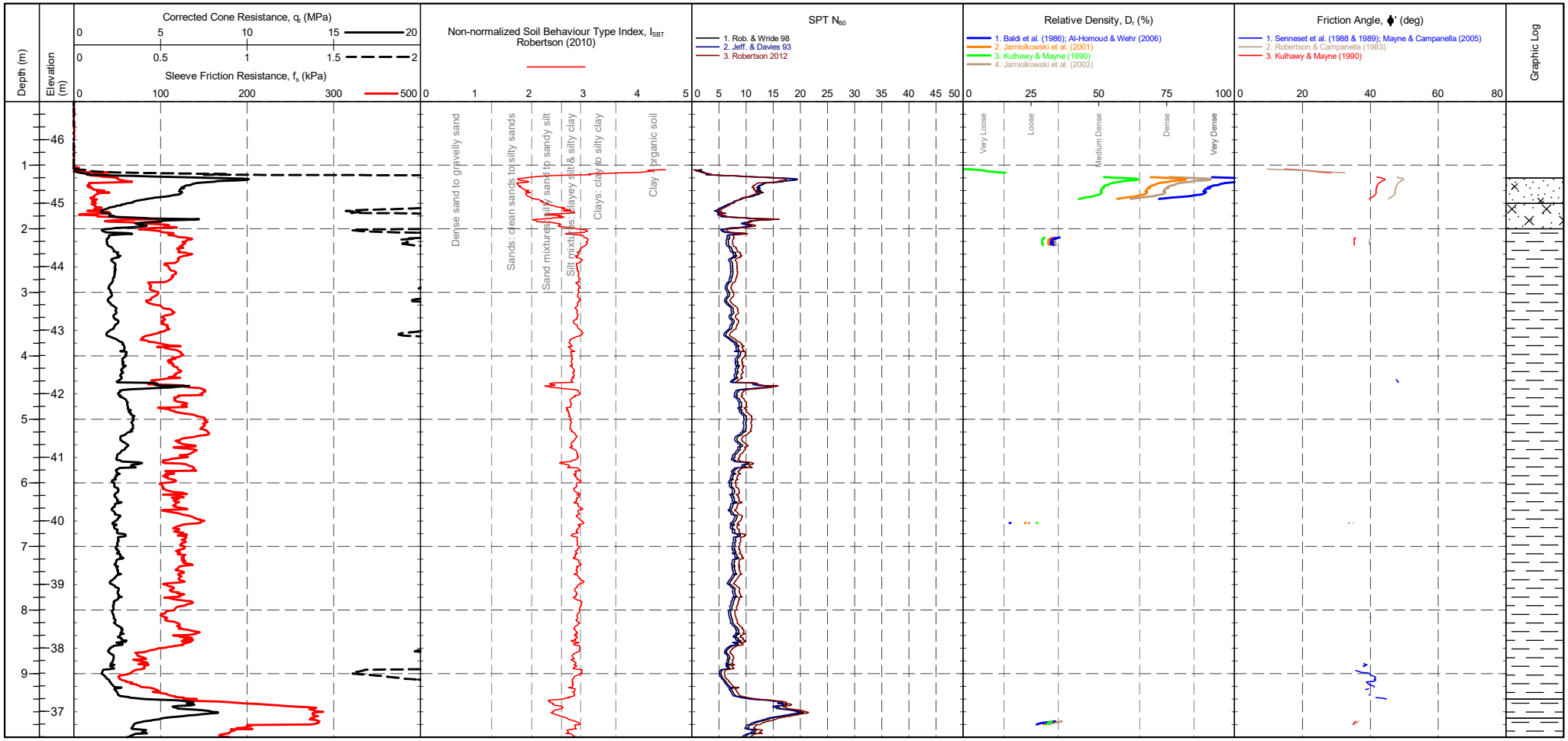
Dissipation Test

CPT LOG 02

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT16**

CLIENT : Structural Soils	EASTING : 385109.896 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398372.123 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 46.595 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	248 mV	248 mV	0 MPa
Sleeve	242 mV	243 mV	0.001 kPa
Pore Pressure 2	391 mV	435 mV	0.012 kPa
X-Y Inclinometer	2505 mV	2525 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

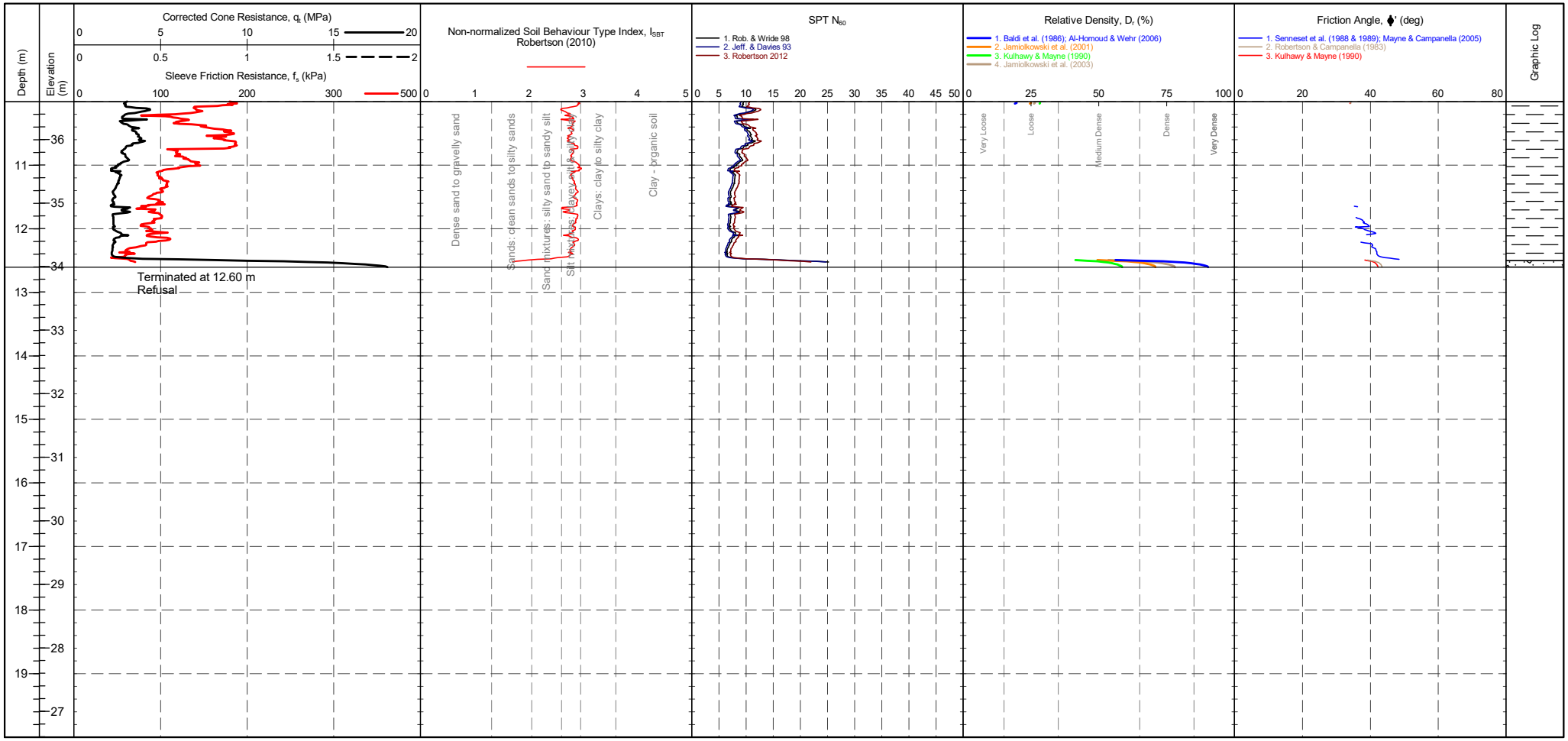
Dissipation Test

CPT LOG 02

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT16**

CLIENT : Structural Soils	EASTING : 385109.896 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398372.123 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 46.595 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	248 mV	248 mV
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	242 mV	243 mV
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	391 mV	435 mV
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2505 mV	2525 mV

Transducer	Difference
Tip	0 MPa
Sleeve	0.001 kPa
Pore Pressure 2	0.012 kPa

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

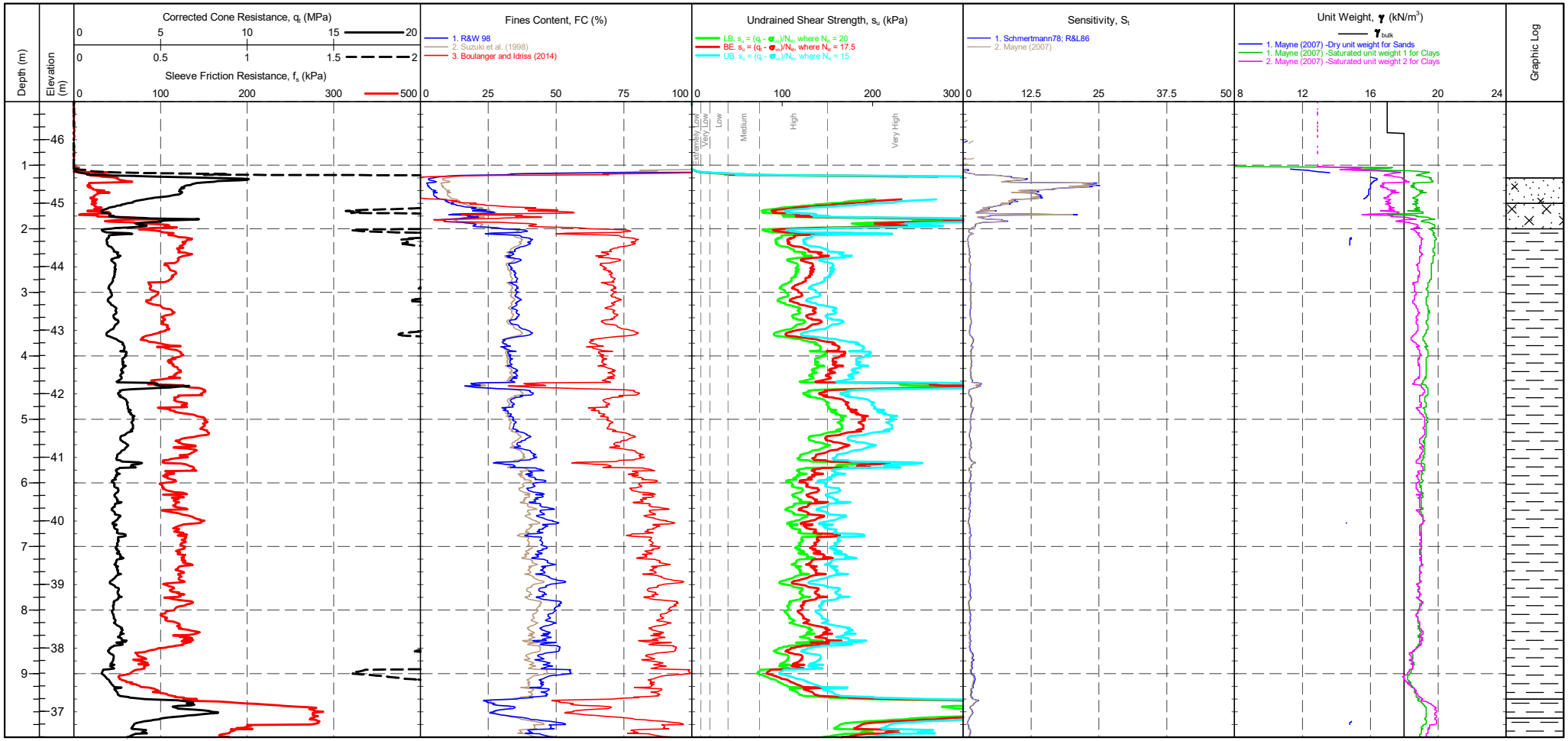
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT16**

CLIENT : Structural Soils	EASTING : 385109.896 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398372.123 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 46.595 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	248 mV	248 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	242 mV	243 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	391 mV	435 mV	0.012 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2505 mV	2525 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

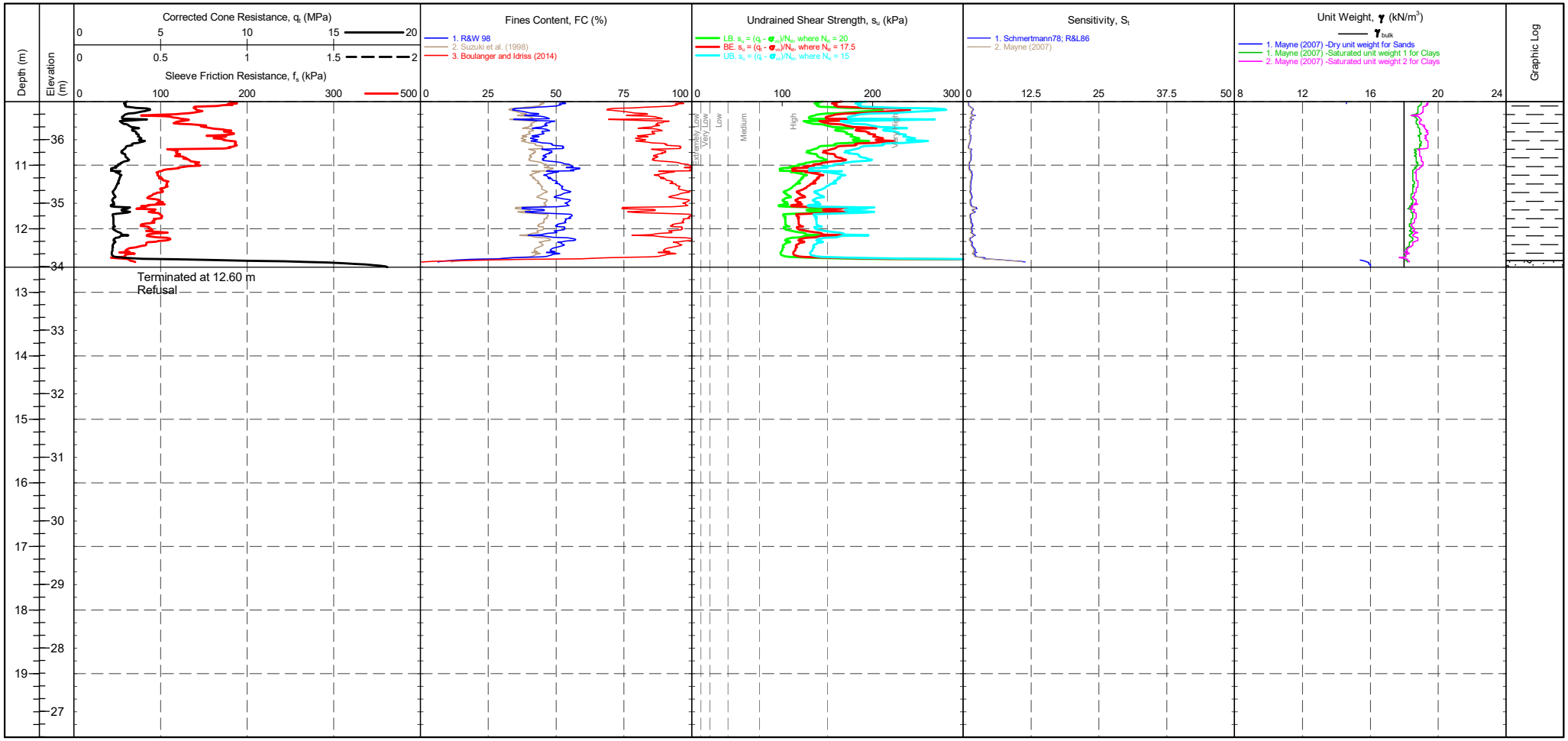
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT16**

CLIENT : Structural Soils	EASTING : 385109.896 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398372.123 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 46.595 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	248 mV	248 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	242 mV	243 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	391 mV	435 mV	0.012 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2505 mV	2525 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

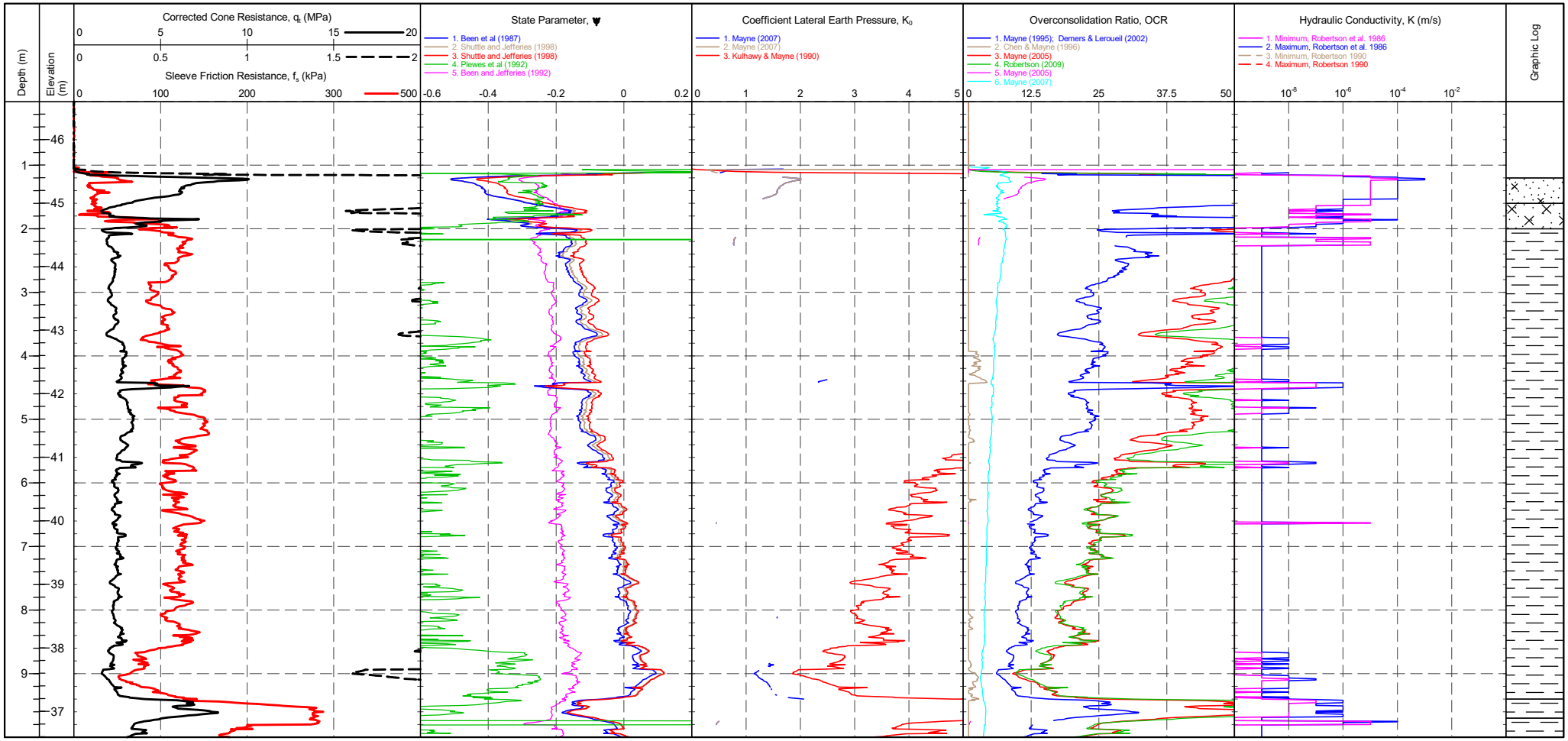
Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT16**

CLIENT : Structural Soils PROJECT : 765544 - Ancoats LOCATION : Manchester PROJECT No. : 1230236	EASTING : 385109.896 m NORTHING : 398372.123 m ELEVATION : 46.595 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 1 OF 2 STATUS : Final TEST DATE : 28/04/2023 PLOT DATE : 24/05/2023 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	248 mV	248 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	242 mV	243 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	391 mV	435 mV	0.012 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2505 mV	2525 mV	

Groundwater Level

Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

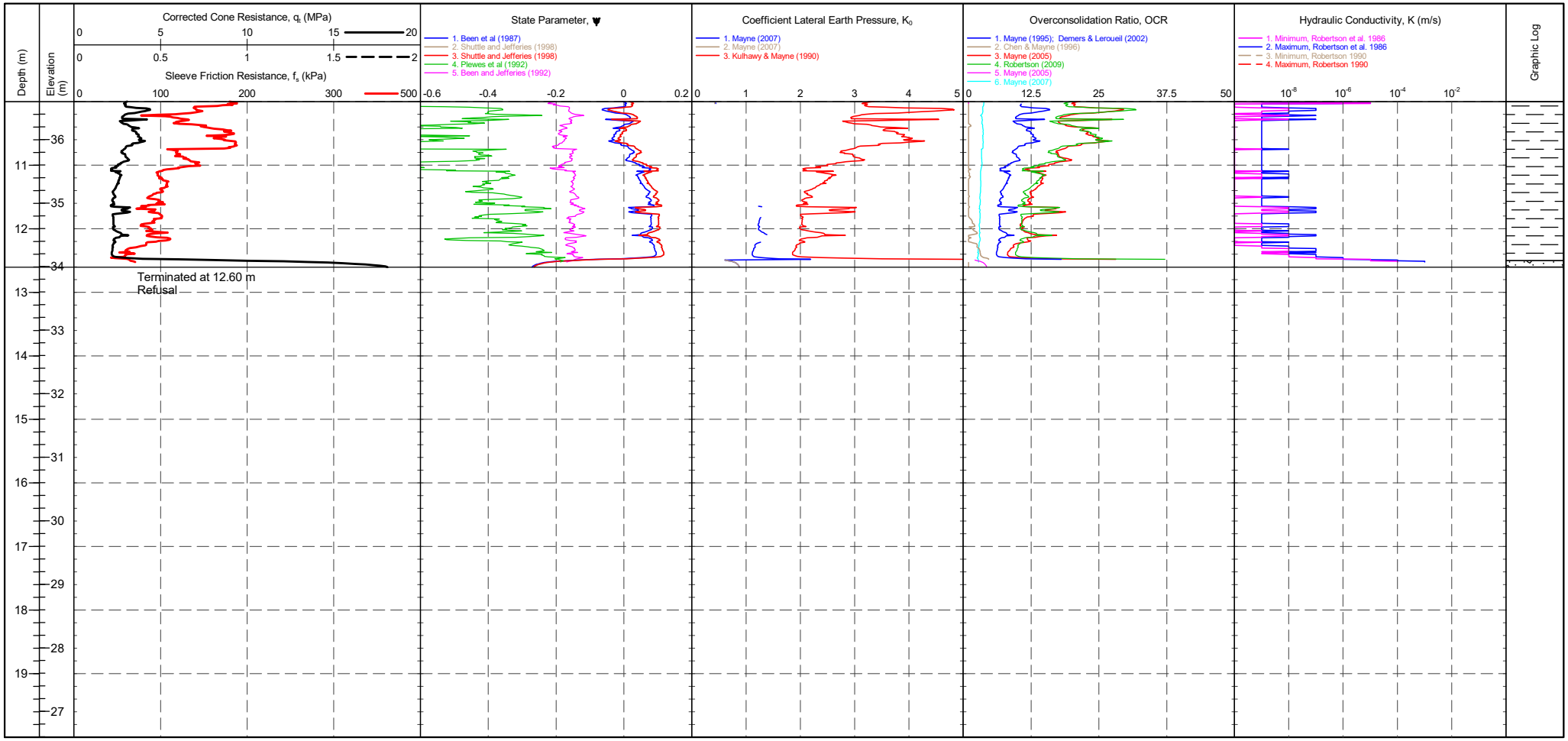
PointID: **ATK_CPT16**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385109.896 m
NORTHING : 398372.123 m
ELEVATION : 46.595 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 28/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	248 mV	248 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	242 mV	243 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	391 mV	435 mV	0.012 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2505 mV	2525 mV	

Groundwater Level

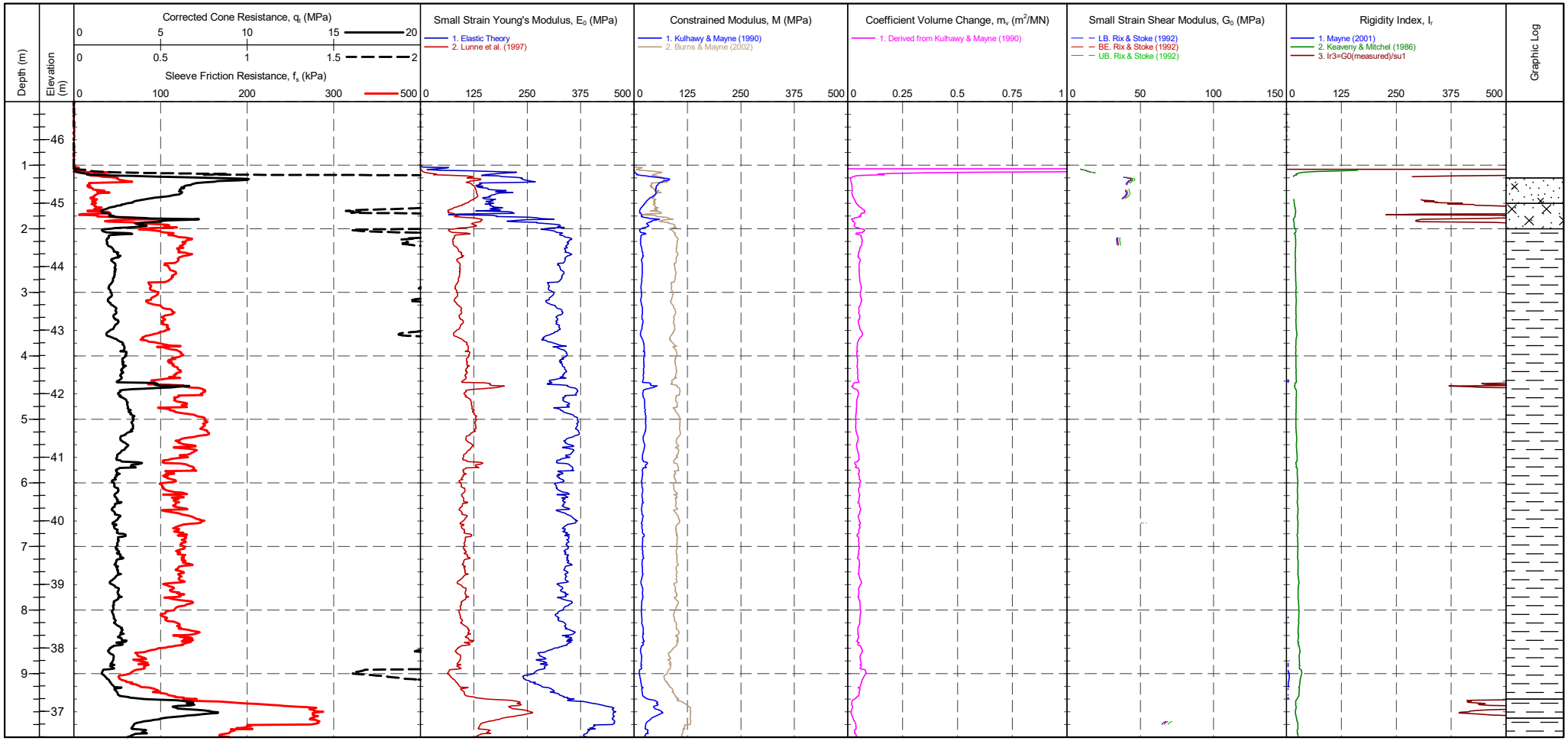
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT16**

CLIENT : Structural Soils	EASTING : 385109.896 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398372.123 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 46.595 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	248 mV	248 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	242 mV	243 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	391 mV	435 mV	0.012 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2505 mV	2525 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

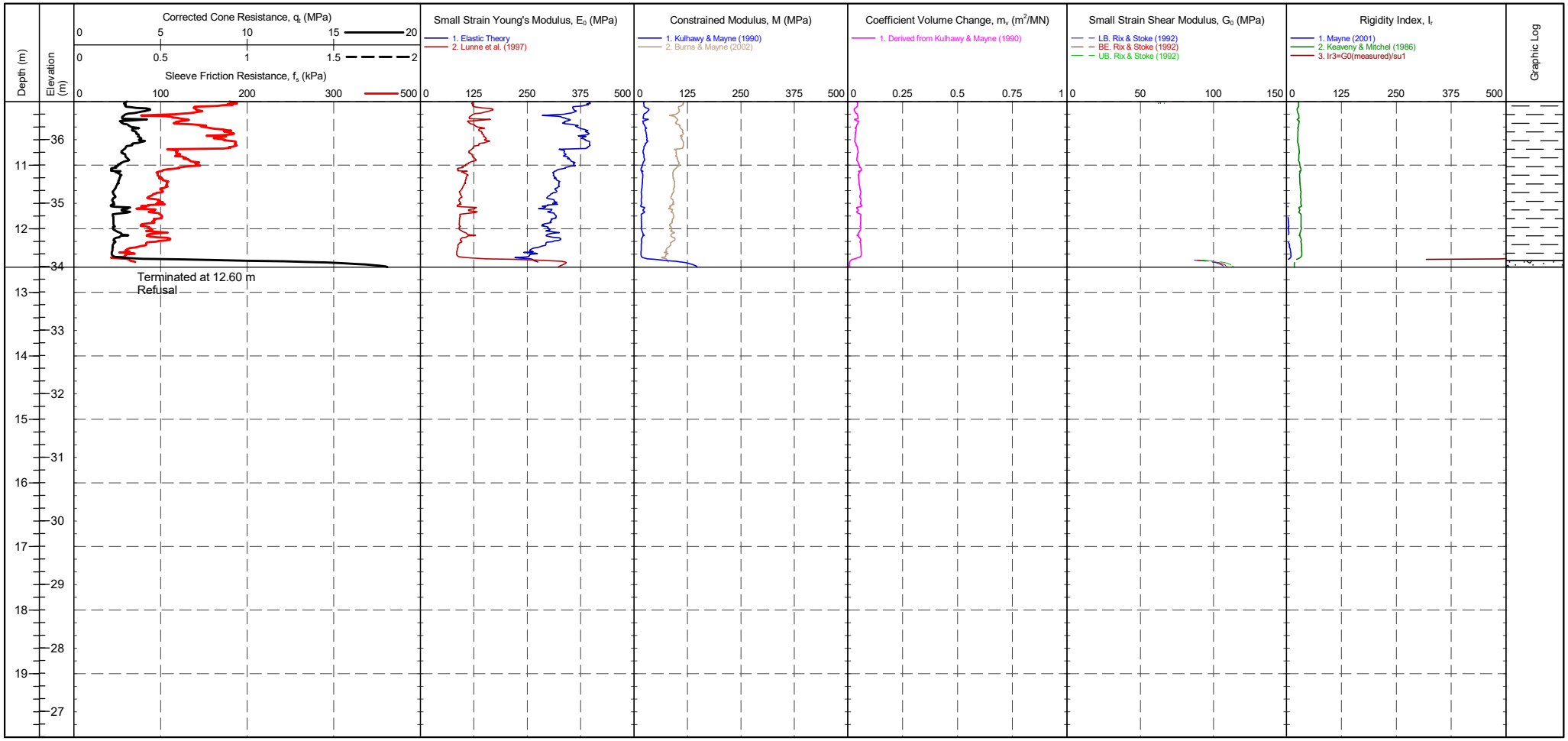
PointID: **ATK_CPT16**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385109.896 m
NORTHING : 398372.123 m
ELEVATION : 46.595 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 28/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



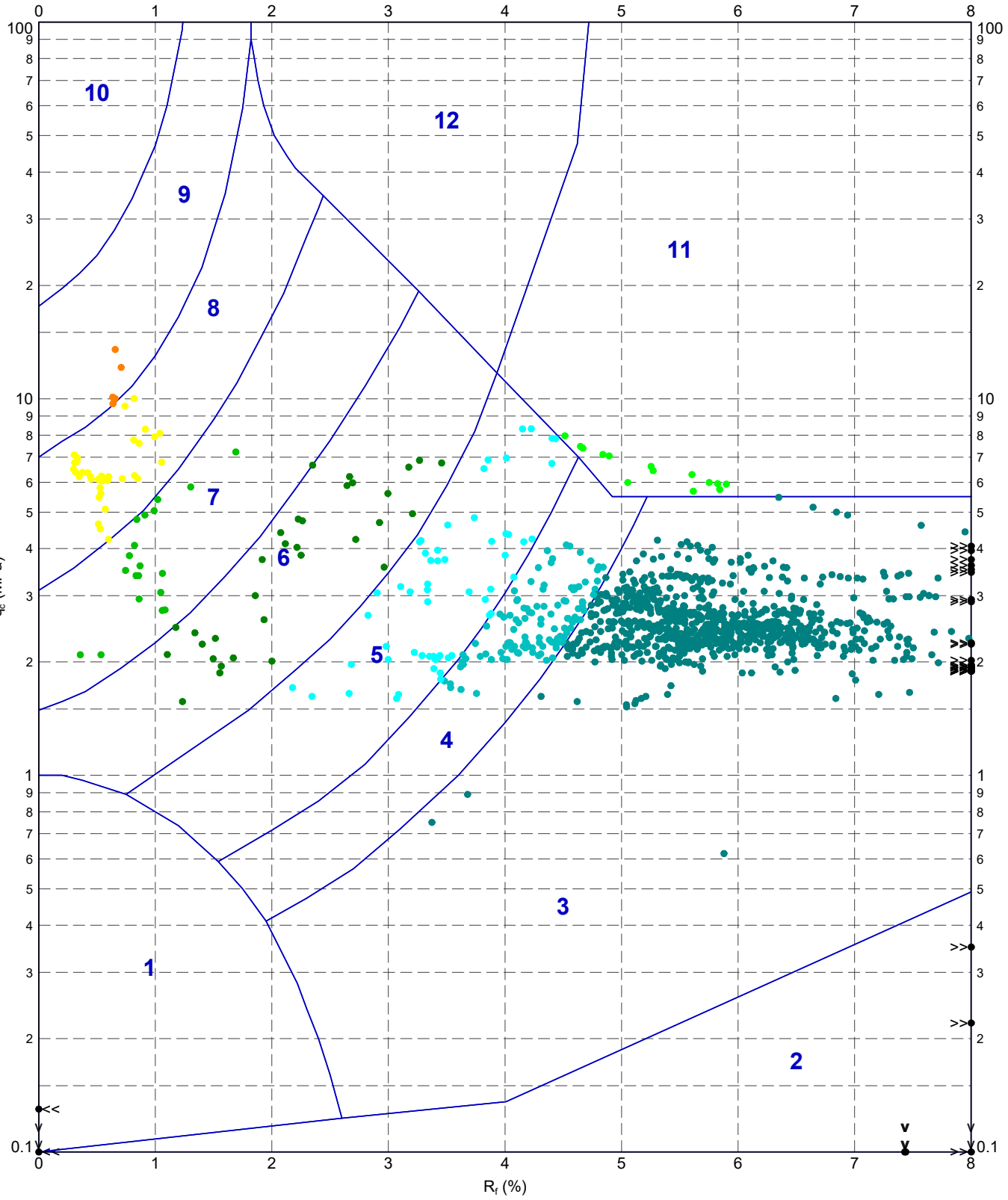
CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	248 mV	248 mV	0 MPa
Sleeve	242 mV	243 mV	0.001 kPa
Pore Pressure 2	391 mV	435 mV	0.012 kPa
X-Y Inclinometer	2505 mV	2525 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

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Robertson et al. 1986 q_c vs. R_f - ATK_CPT16

DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:35 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

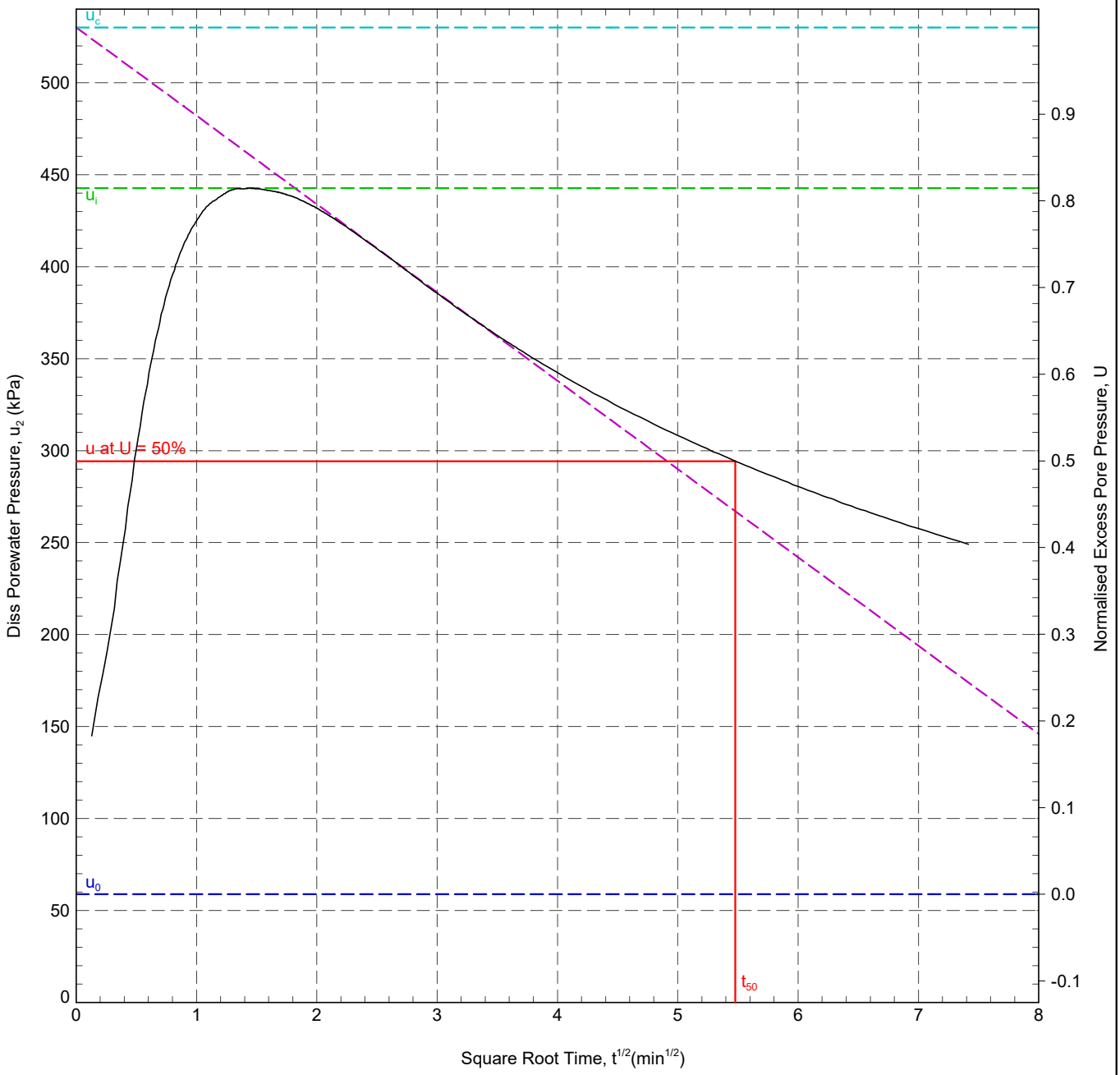
IN SITU SITE INVESTIGATION

Working with: STRUCTURAL SOILS LTD

Test ID

ATK_CPT16 - 6.50 m

CLIENT	: Structural Soils	AREA	: Ancoats Manchester	SHEET	: 1 OF 1
ENGINEER	: Tim Clifford	EASTING	: 385109.9 m	STATUS	: Final
PROJECT	: 765544 - Ancoats	NORTHING	: 398372.1 m	DATE	: 28/04/23
LOCATION	: Manchester	COORD. SYS.	:		
PROJECT No.	: 1230236	ELEVATION	: 46.60 m		



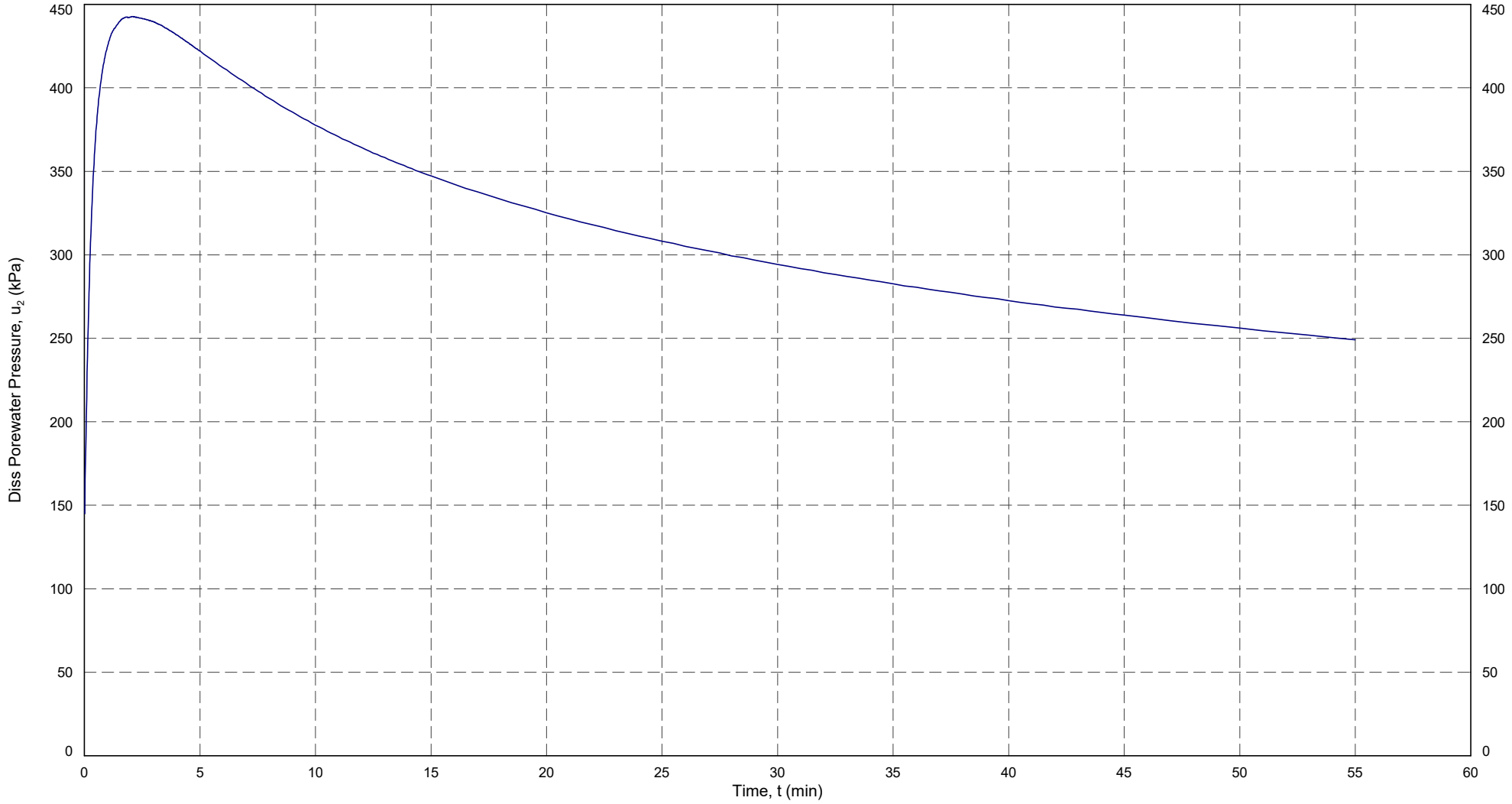
In Situ Pore Pressure, u_0:	58.9 kPa	Rigidity Index, I_r:	24.9
Initial Pore Pressure, u_i:	442.7 kPa	Horizontal Coefficient of Consolidation, c_h:	1.13×10^{1} m²/yr
Final Pore Pressure:	249.1 kPa	Ratio c_h/c_v:	1.25
Back Extrapolated Pore Pressure, u_c:	530 kPa	Vertical Coefficient of Consolidation, c_v:	9.06×10^{0} m²/yr
Degree of Dissipation:	50%		
Dissipation Pressure:	294.2 kPa		
Time for 50% Dissipation, t_{50}:	30.00 min		

RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	15/05/2023
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	15/05/2023
CONE ID	: S15-CFIP.2177	APPROVED BY	: DW	DATE:	15/05/2023
OPERATOR	: RS				

REMARK
T50 reached. Test OK.

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:35 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

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - CHLOE.GLB Graph PPDT PORE PRESSURE VS. LIN T A4L 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:35 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



6.50 m

IN SITU SITE INVESTIGATION

TITLE

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Dissipation Test - ATK_CPT16

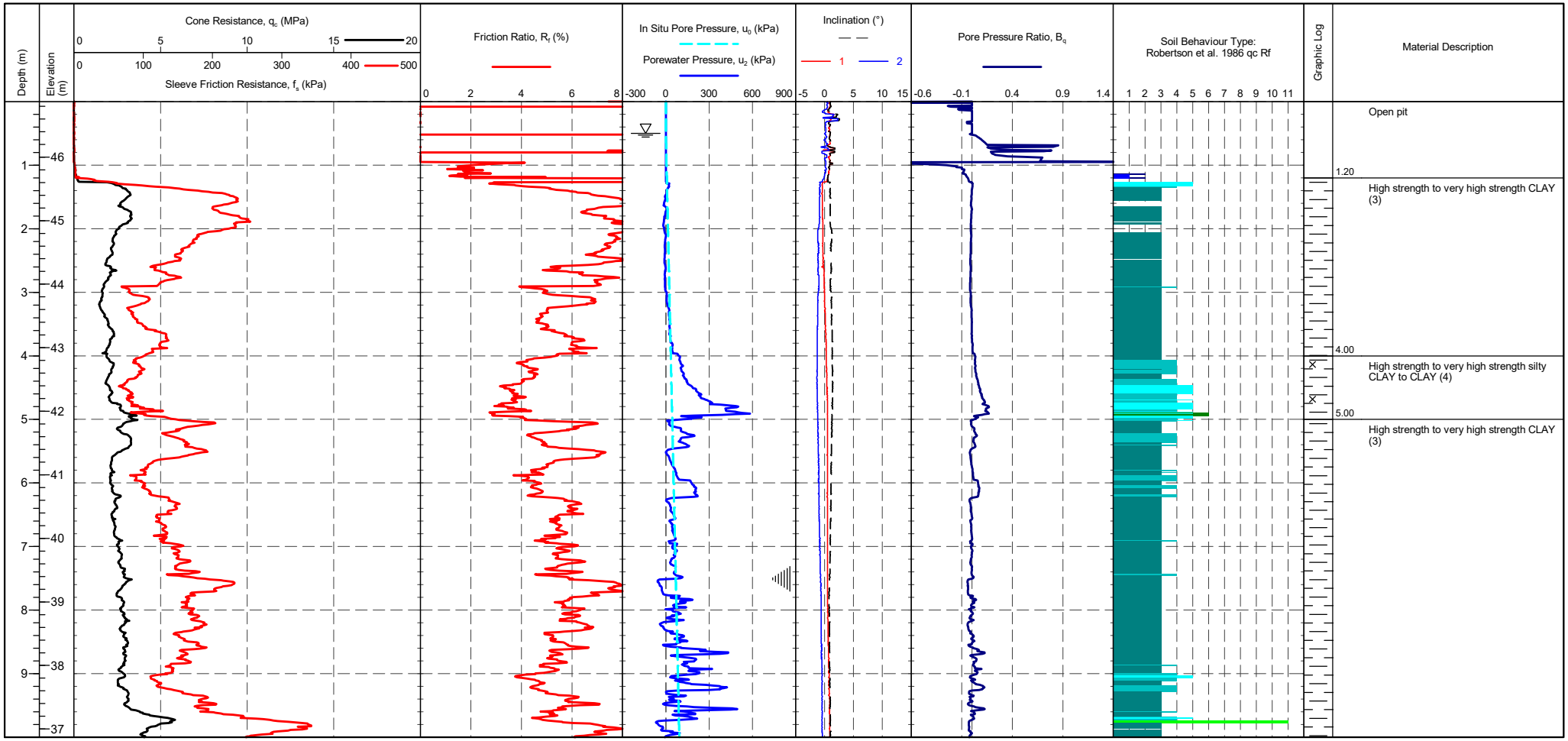
DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

CPT LOG 01

Working with: Structural Soils Ltd

PointID: **ATK_CPT17**

CLIENT : Structural Soils	EASTING : 385062.666 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398353.305 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 46.872 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	248 mV	249 mV	0.012 MPa
Sleeve	244 mV	242 mV	-0.001 kPa
Pore Pressure 2	388 mV	419 mV	0.008 kPa
X-Y Inclinometer	2520 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

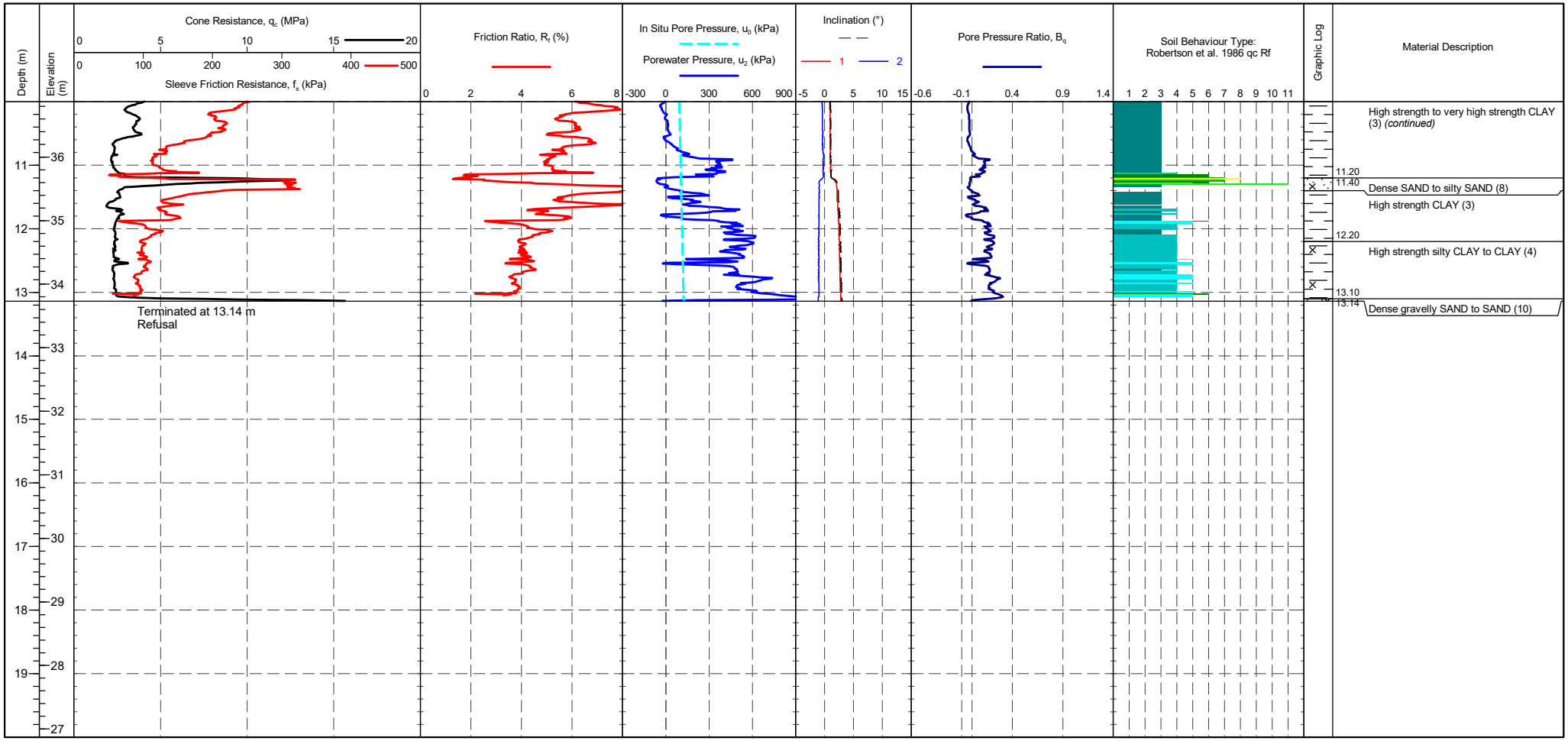
Dissipation Test

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT17**

CLIENT : Structural Soils	EASTING : 385062.666 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398353.305 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 46.872 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2		
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni		
CONE AREA	: 15cm^2	OPERATOR	: RS		
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None		
FILTER POSITION	: u2	WEATHER	: Overcast & Mild		
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes.		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	248 mV	249 mV	0.012 MPa
Sleeve	244 mV	242 mV	-0.001 kPa
Pore Pressure 2	388 mV	419 mV	0.008 kPa
X-Y Inclinometer	2520 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

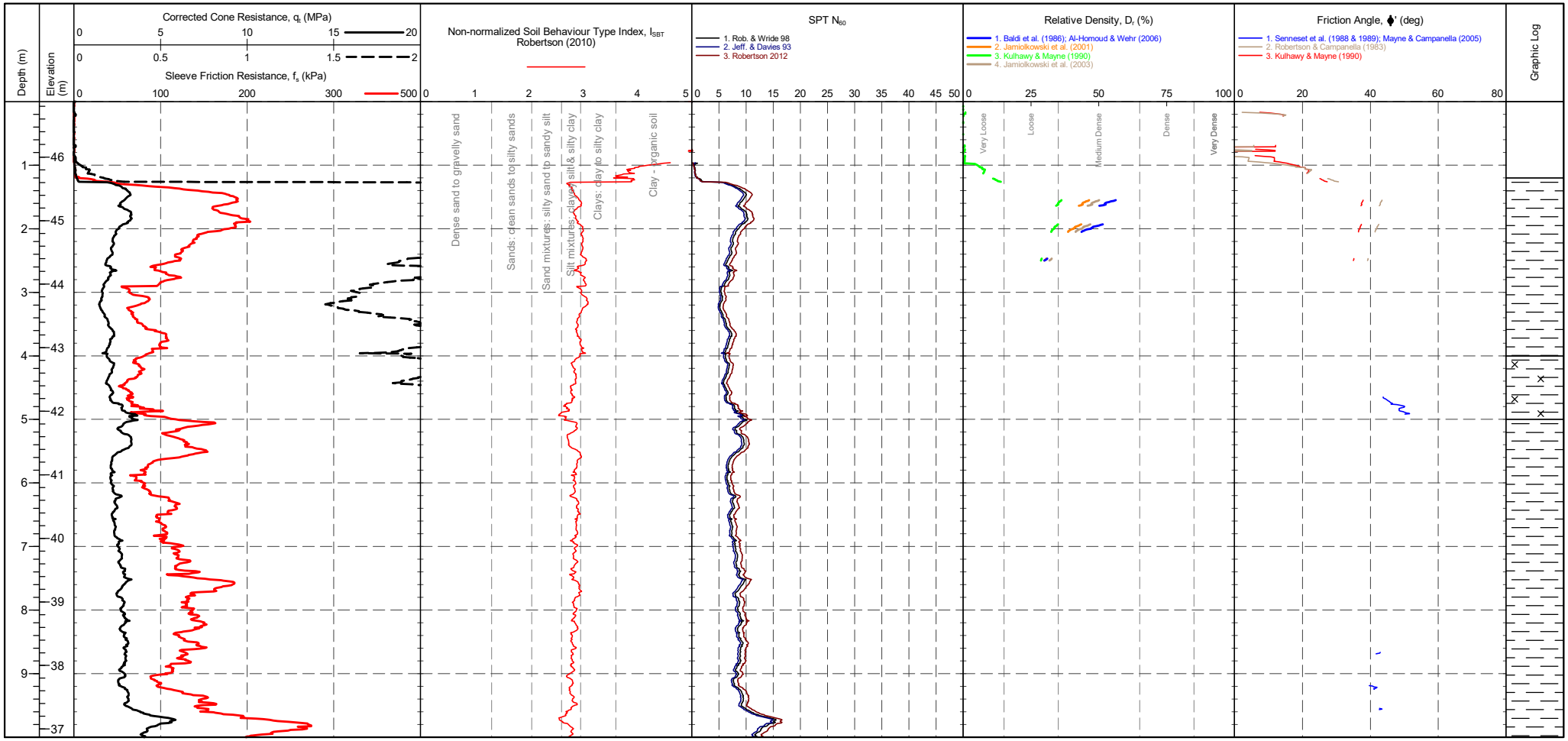
Dissipation Test

CPT LOG 02

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT17**

CLIENT : Structural Soils	EASTING : 385062.666 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398353.305 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 46.872 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	248 mV	249 mV
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	244 mV	242 mV
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	388 mV	419 mV
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2520 mV	2494 mV

Transducer	Difference
Tip	0.012 MPa
Sleeve	-0.001 kPa
Pore Pressure 2	0.008 kPa

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

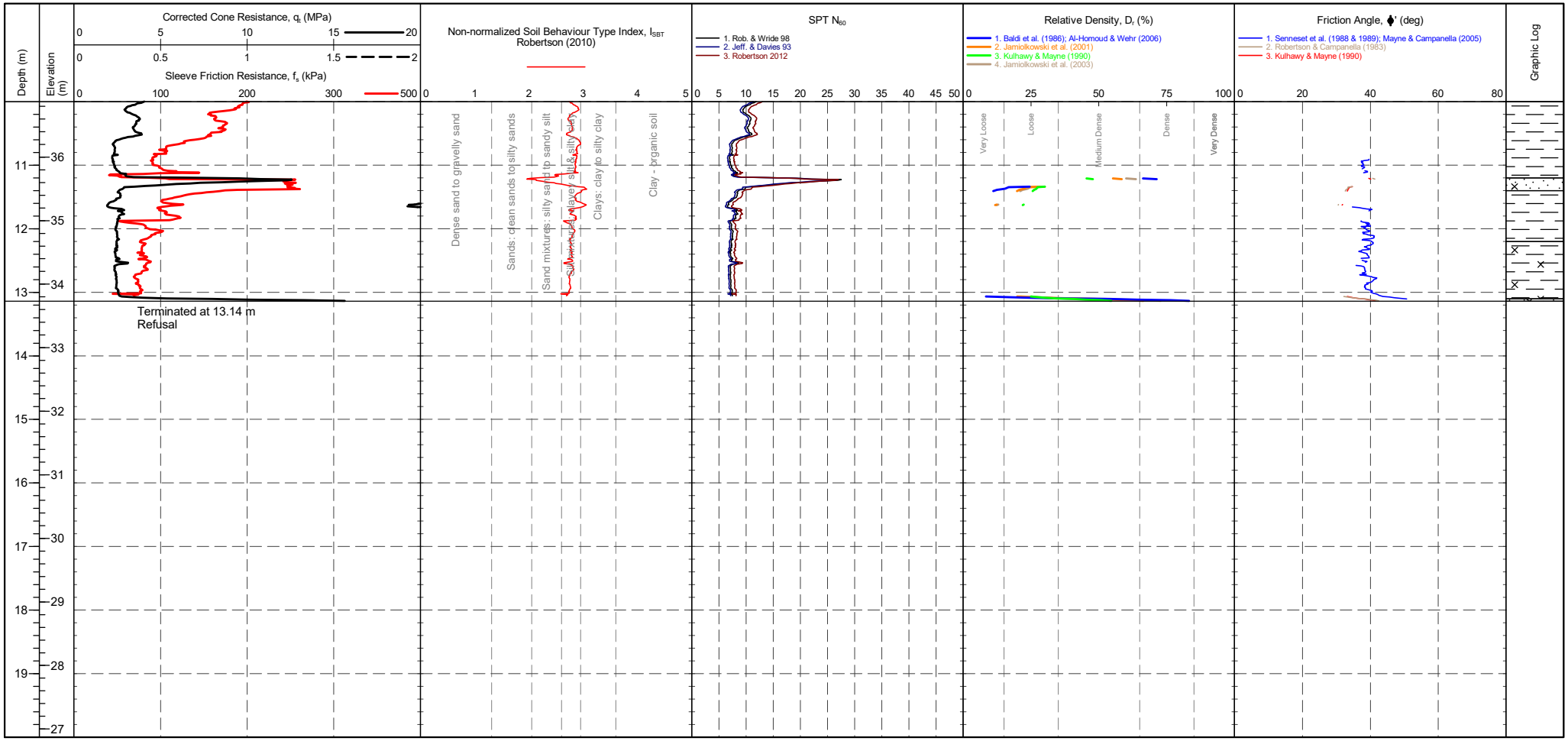
Dissipation Test

CPT LOG 02

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT17**

CLIENT : Structural Soils	EASTING : 385062.666 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398353.305 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 46.872 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	248 mV	249 mV
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	244 mV	242 mV
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	388 mV	419 mV
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2520 mV	2494 mV

Transducer	Difference
Tip	0.012 MPa
Sleeve	-0.001 kPa
Pore Pressure 2	0.008 kPa

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

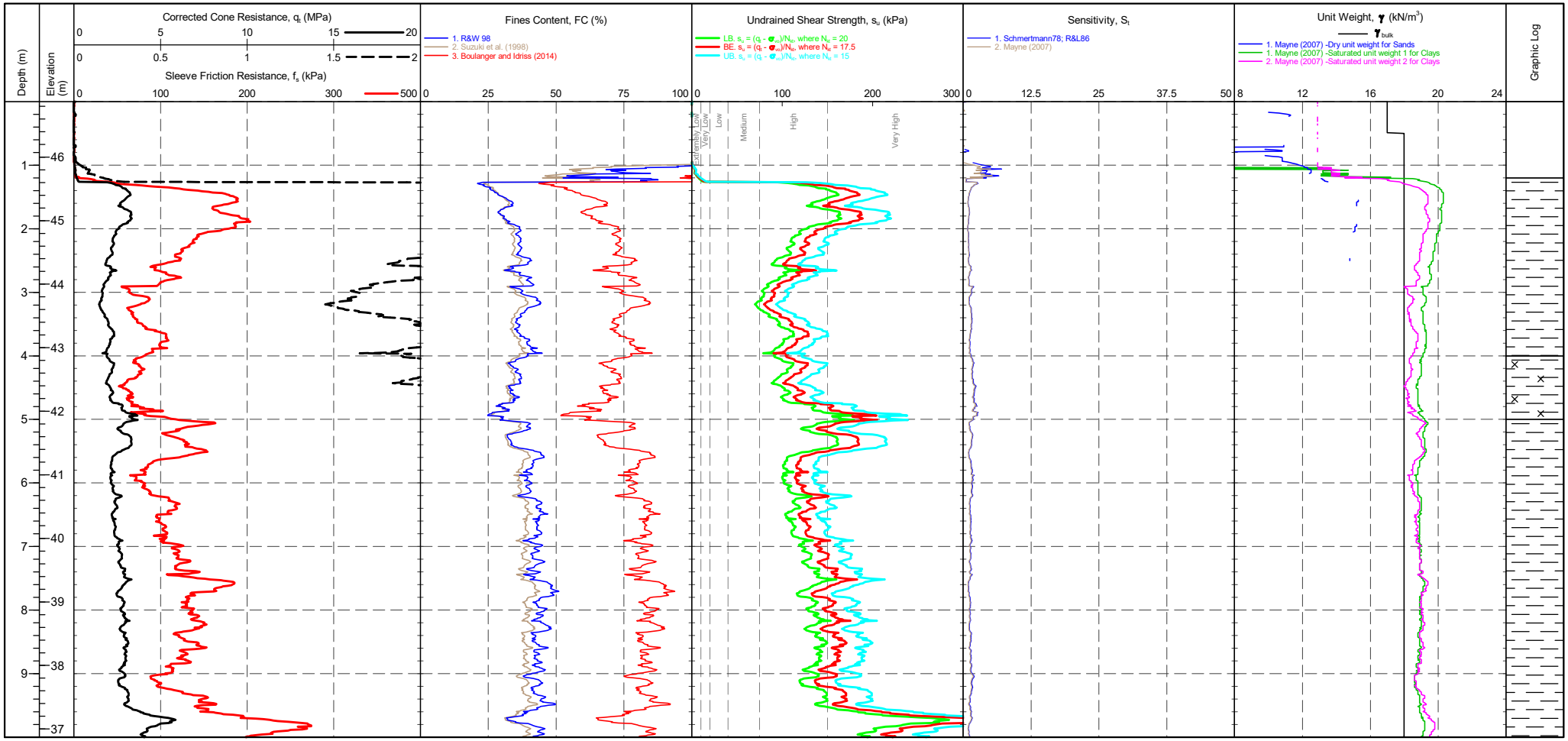
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT17**

CLIENT : Structural Soils	EASTING : 385062.666 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398353.305 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 46.872 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	248 mV	249 mV	0.012 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	244 mV	242 mV	-0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	388 mV	419 mV	0.008 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2520 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

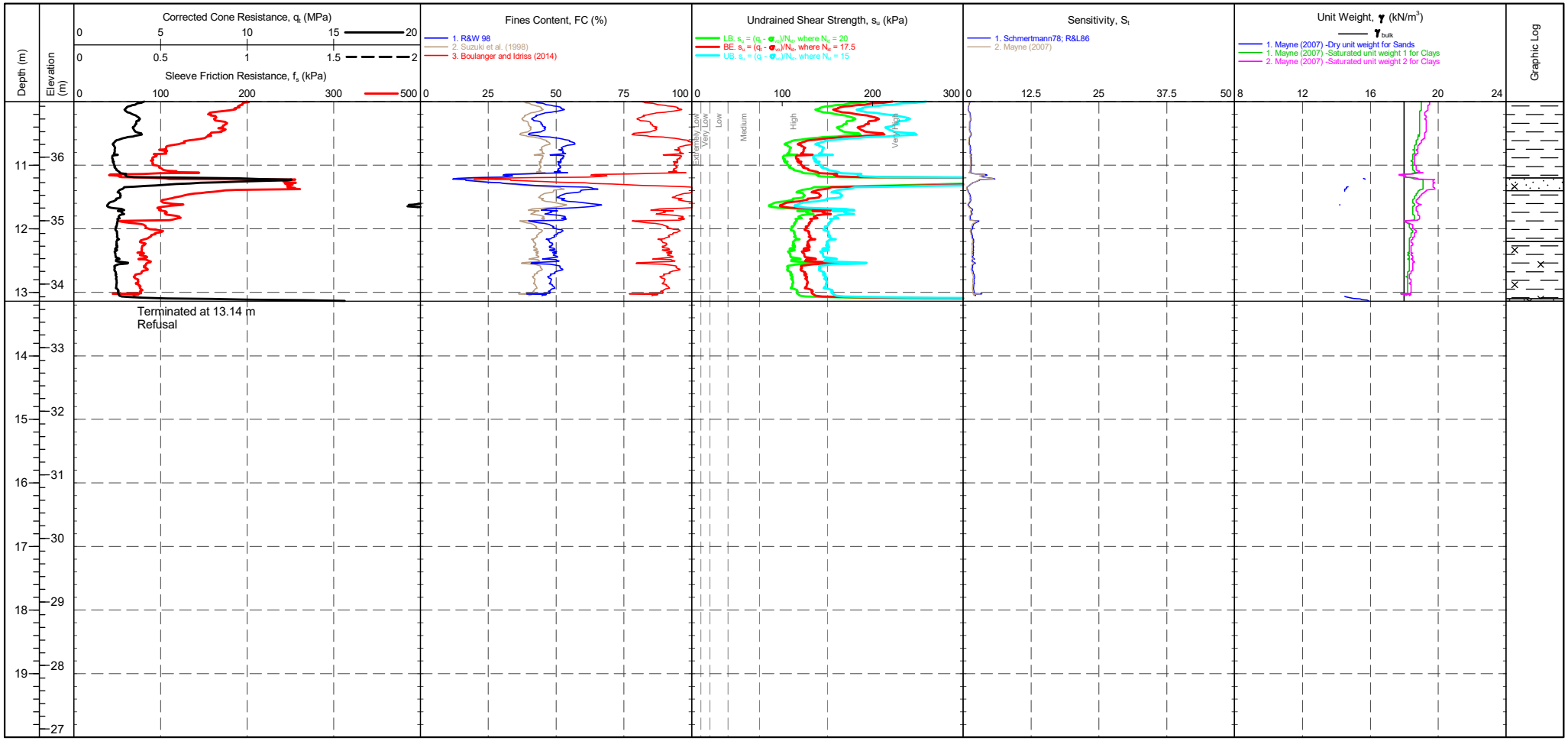
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT17**

CLIENT : Structural Soils	EASTING : 385062.666 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398353.305 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 46.872 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	248 mV	249 mV	0.012 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	244 mV	242 mV	-0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	388 mV	419 mV	0.008 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2520 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

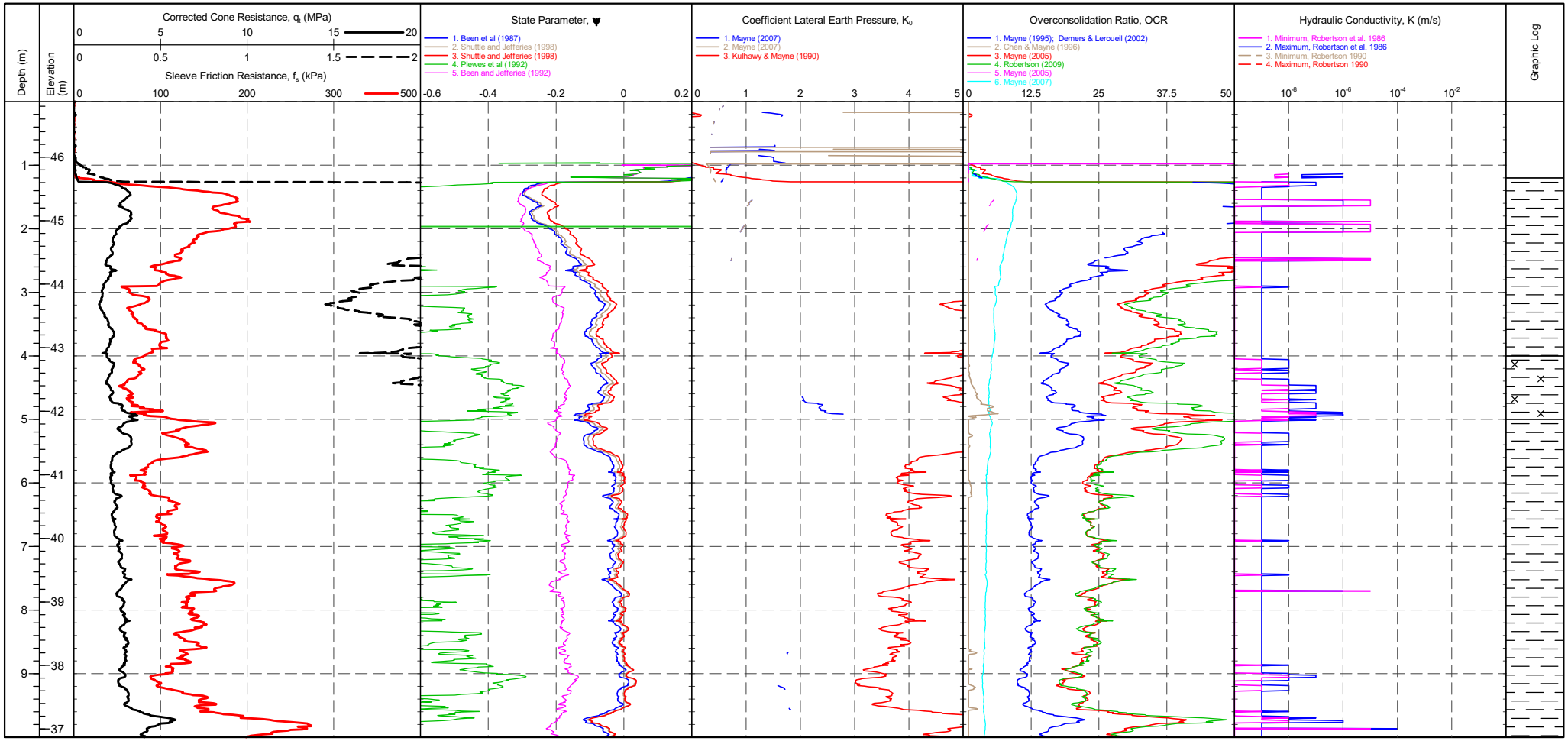
Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT17**

CLIENT : Structural Soils	EASTING : 385062.666 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398353.305 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 46.872 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	248 mV	249 mV	0.012 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	244 mV	242 mV	-0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	388 mV	419 mV	0.008 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2520 mV	2494 mV	

Groundwater Level

Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

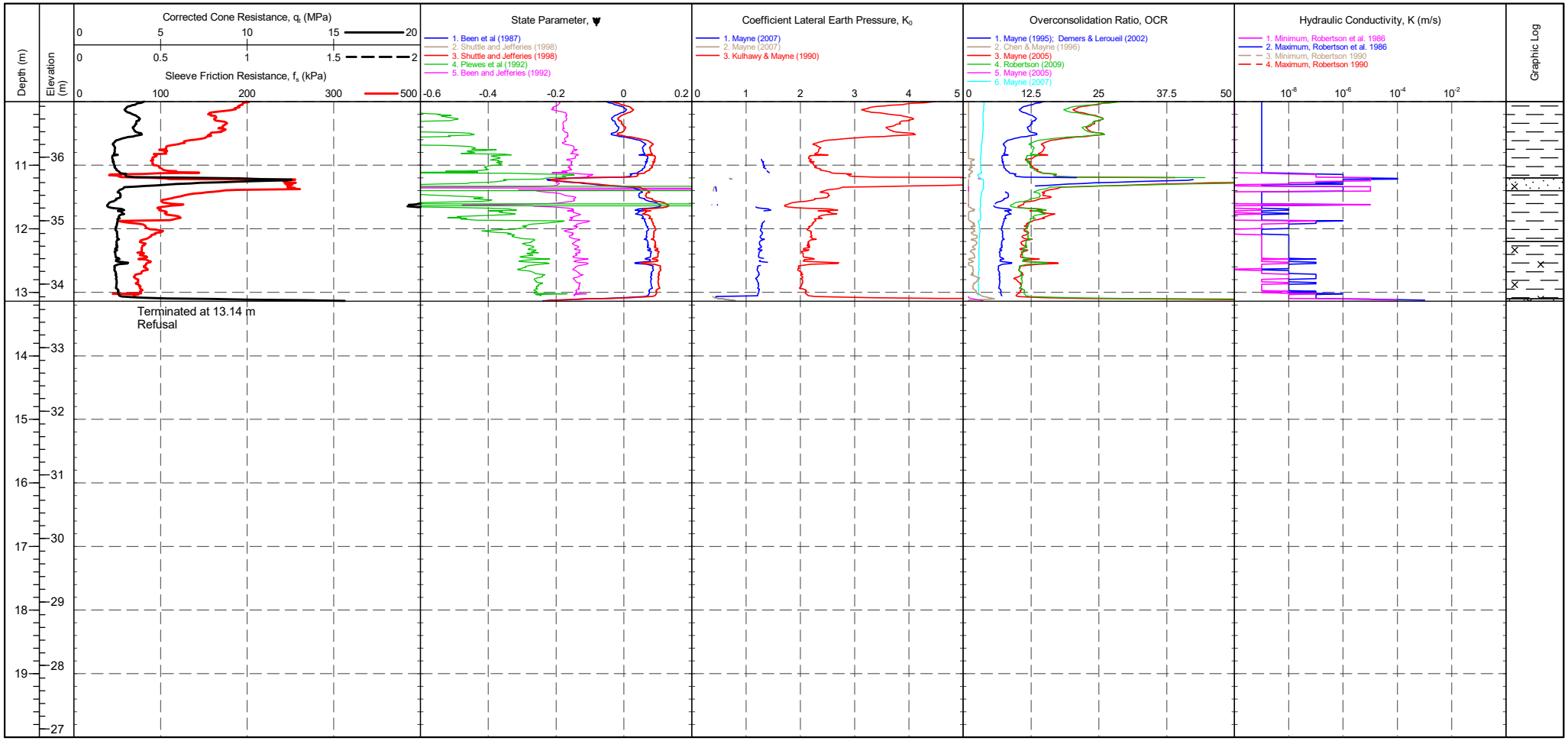
PointID: **ATK_CPT17**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385062.666 m
NORTHING : 398353.305 m
ELEVATION : 46.872 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 28/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	248 mV	249 mV	0.012 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	244 mV	242 mV	-0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	388 mV	419 mV	0.008 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2520 mV	2494 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

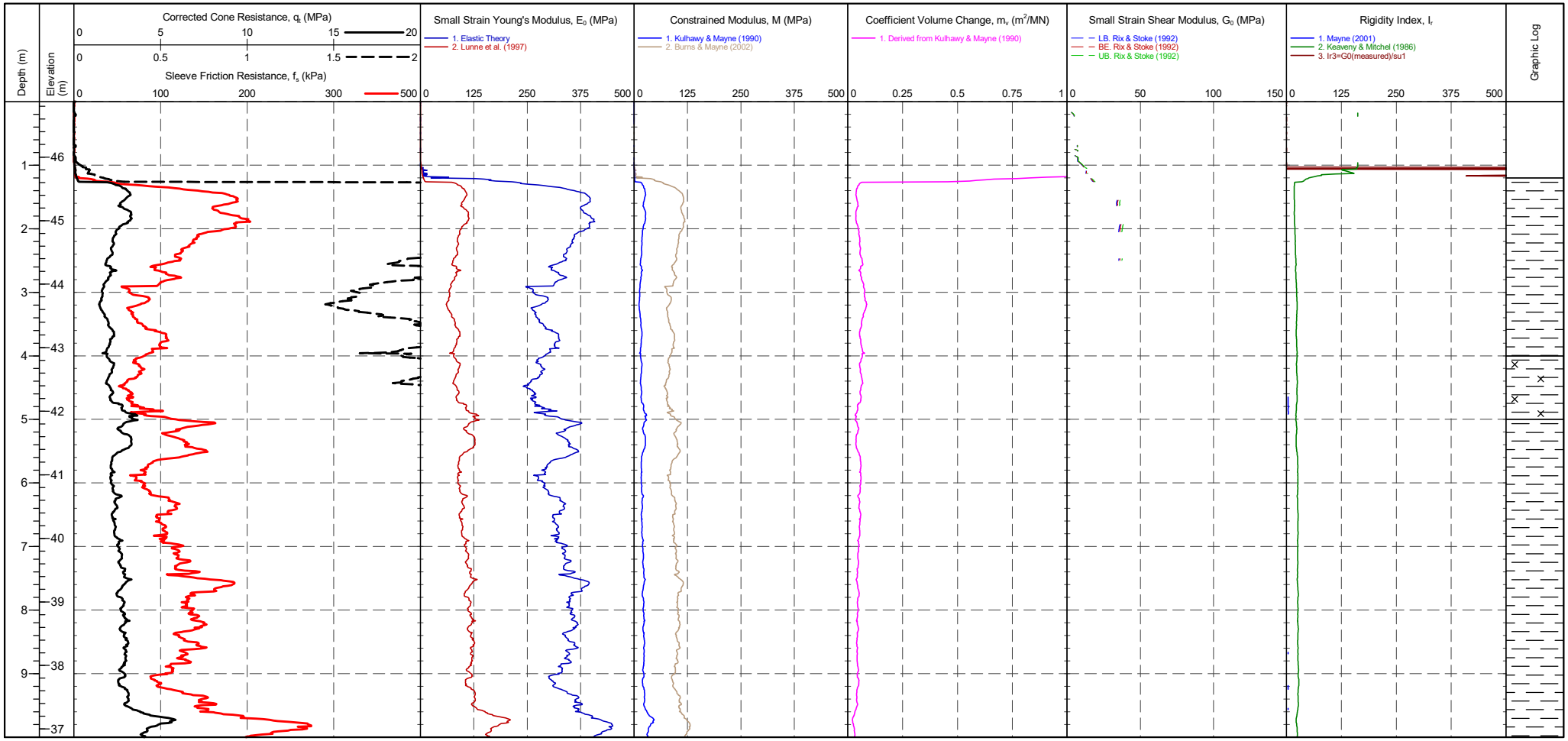
PointID: **ATK_CPT17**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385062.666 m
NORTHING : 398353.305 m
ELEVATION : 46.872 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 28/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	248 mV	249 mV	0.012 MPa
Sleeve	244 mV	242 mV	-0.001 kPa
Pore Pressure 2	388 mV	419 mV	0.008 kPa
X-Y Inclinometer	2520 mV	2494 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

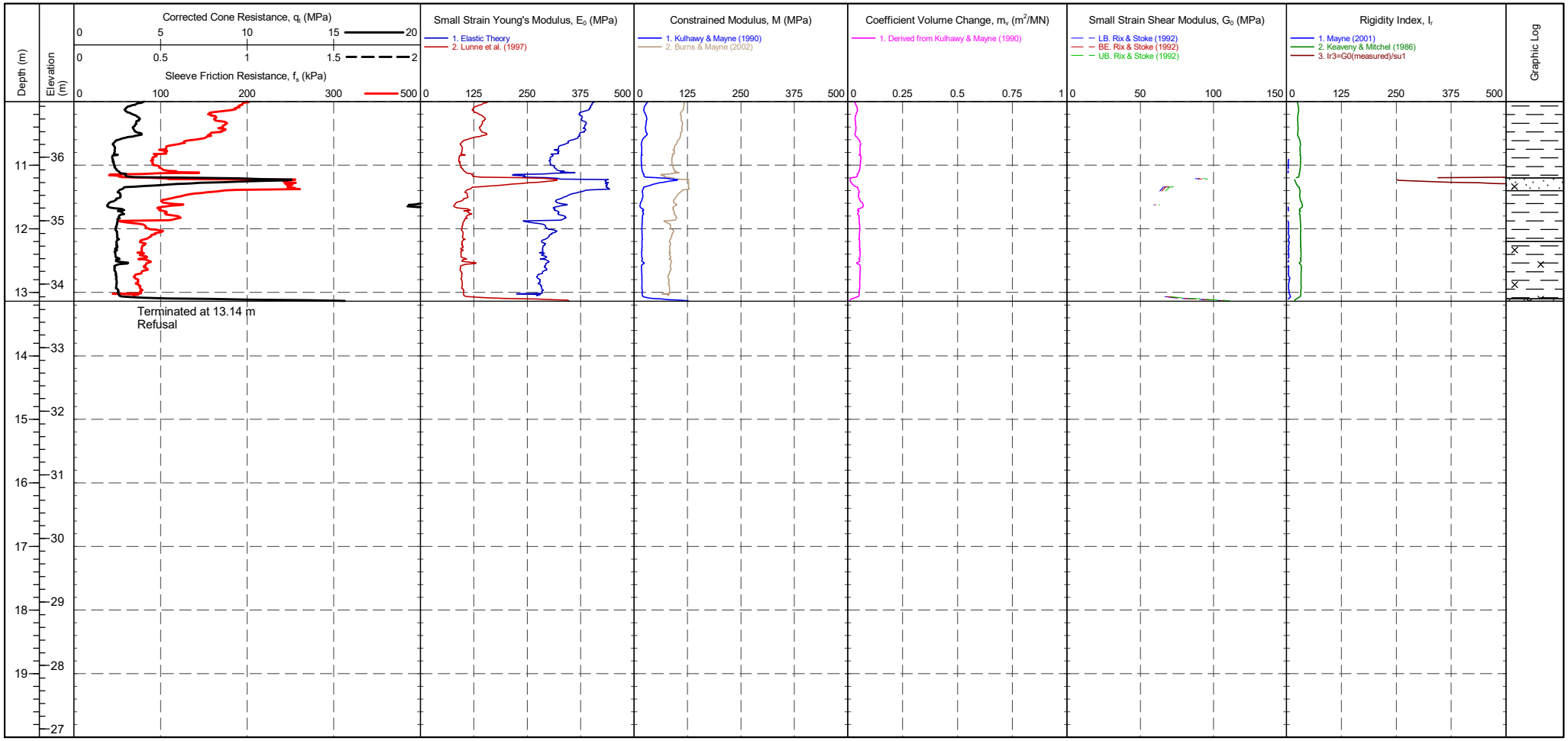
PointID: **ATK_CPT17**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385062.666 m
NORTHING : 398353.305 m
ELEVATION : 46.872 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 28/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022

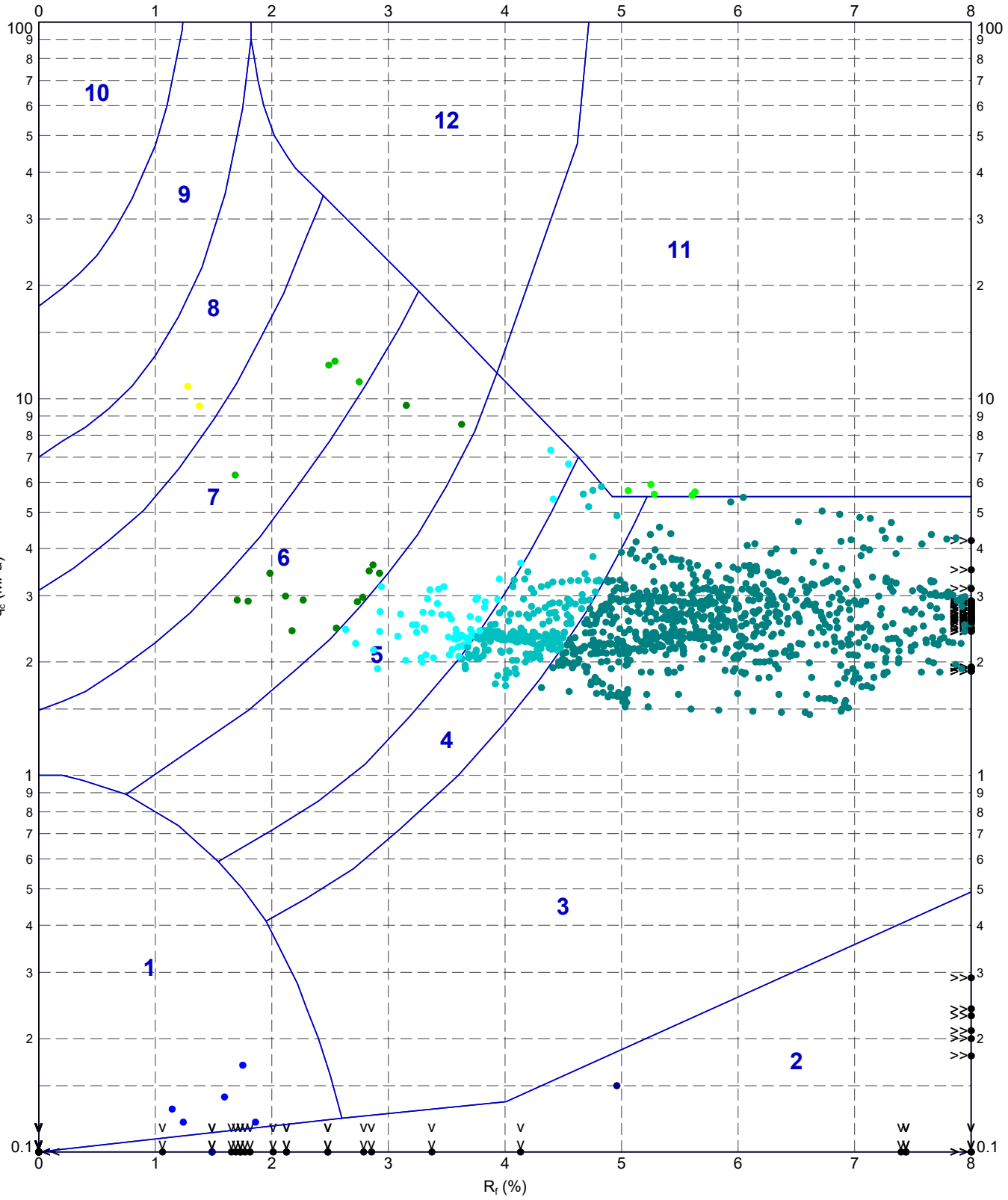


CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES	
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

Transducer	Pre	Post	Difference
Tip	248 mV	249 mV	0.012 MPa
Sleeve	244 mV	242 mV	-0.001 kPa
Pore Pressure 2	388 mV	419 mV	0.008 kPa
X-Y Inclinometer	2520 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	Structural Soils Tim Clifford Manchester 765544 - Ancoats Robertson et al. 1986 q_c vs. R_f - ATK_CPT17	DRAWN	DATE 24/05/2023
		CHECKED	DATE 24/05/2023
		SCALE Not To Scale	A4
		PROJECT No 1230236	FIGURE No

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:37 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

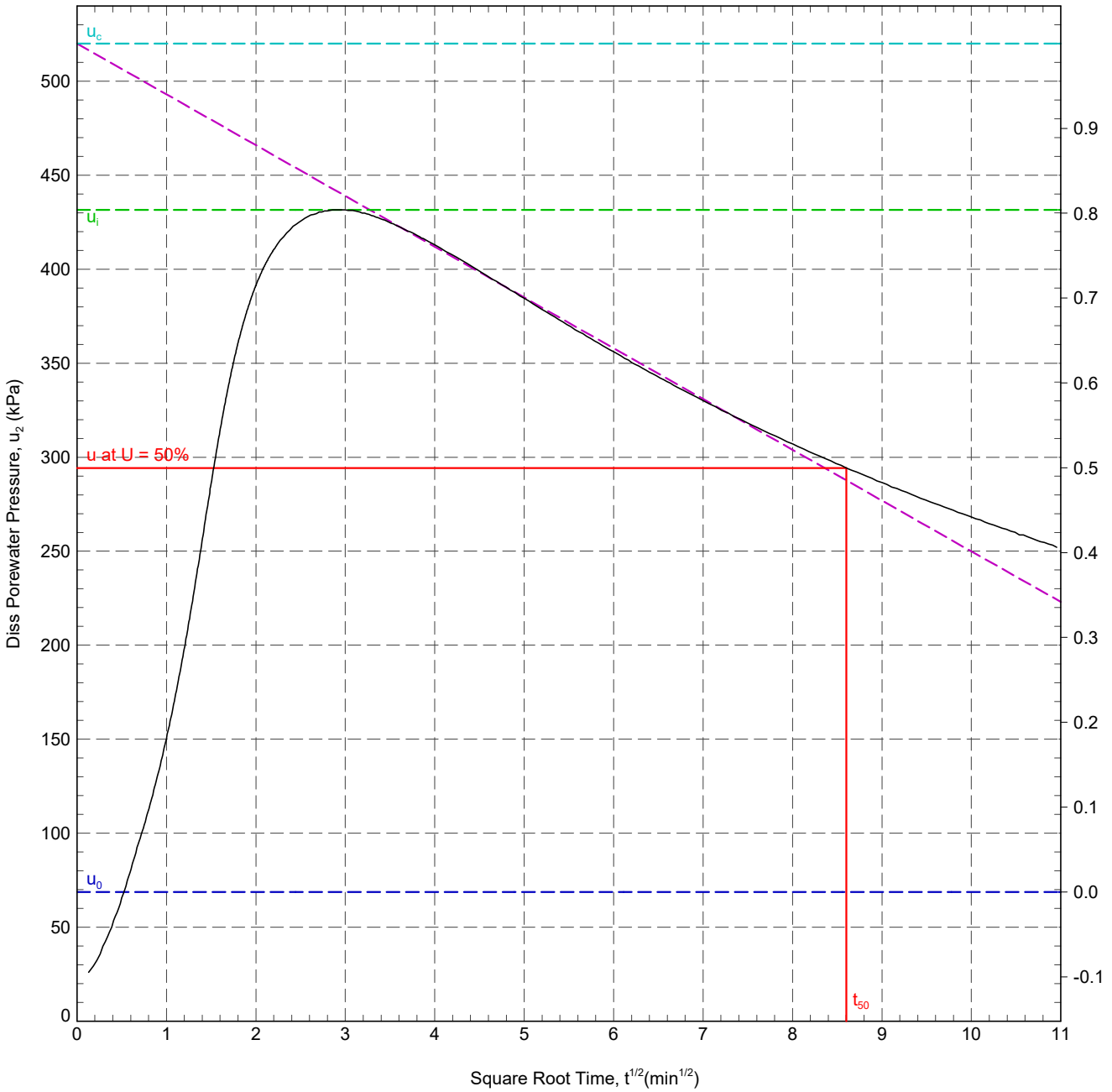
IN SITU SITE INVESTIGATION

Working with: STRUCTURAL SOILS LTD

Test ID

ATK_CPT17 - 7.51 m

CLIENT	: Structural Soils	AREA	: Ancoats Manchester	SHEET	: 1 OF 1
ENGINEER	: Tim Clifford	EASTING	: 385062.7 m	STATUS	: Final
PROJECT	: 765544 - Ancoats	NORTHING	: 398353.3 m	DATE	: 28/04/23
LOCATION	: Manchester	COORD. SYS.	:		
PROJECT No.	: 1230236	ELEVATION	: 46.87 m		



In Situ Pore Pressure, u_0:	68.8 kPa	Rigidity Index, I_r:	23.8
Initial Pore Pressure, u_i:	431.5 kPa	Horizontal Coefficient of Consolidation, c_h:	4.49x10^0 m^2/yr
Final Pore Pressure:	252.1 kPa	Ratio c_h/c_v:	1.25
Back Extrapolated Pore Pressure, u_c:	520 kPa	Vertical Coefficient of Consolidation, c_v:	3.59x10^0 m^2/yr
Degree of Dissipation:	50%		
Dissipation Pressure:	294.2 kPa		
Time for 50% Dissipation, t_{50}:	74.00 min		

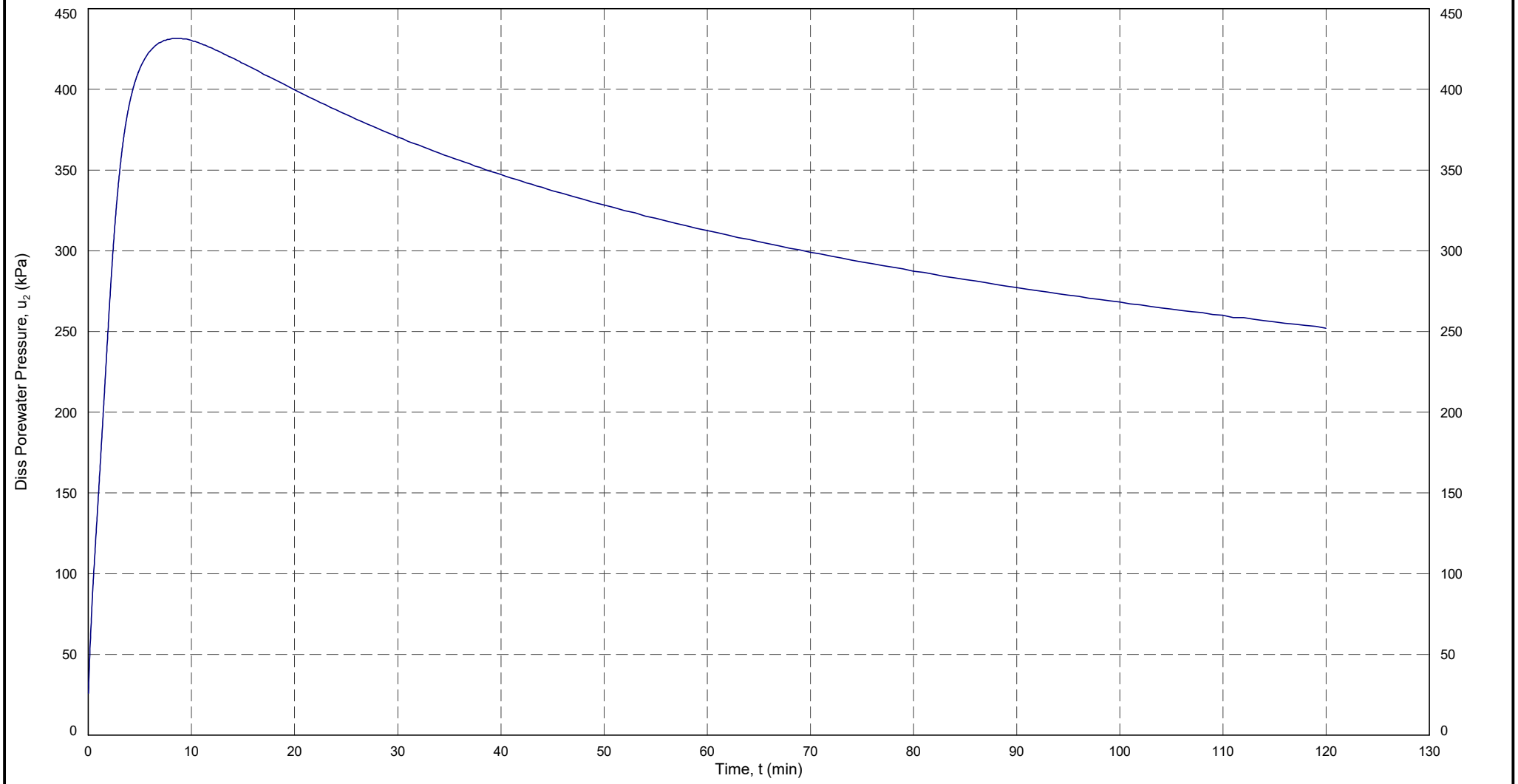
RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	15/05/2023
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	15/05/2023
CONE ID	: S15-CFIP.2177	APPROVED BY	: DW	DATE:	15/05/2023
OPERATOR	: RS				

REMARK

T50 reached. Test OK.

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:37 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

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - CHLOE.GLB Graph PPDT PORE PRESSURE VS. LIN T A4L 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:37 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



IN SITU SITE INVESTIGATION

TITLE

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Dissipation Test - ATK_CPT17

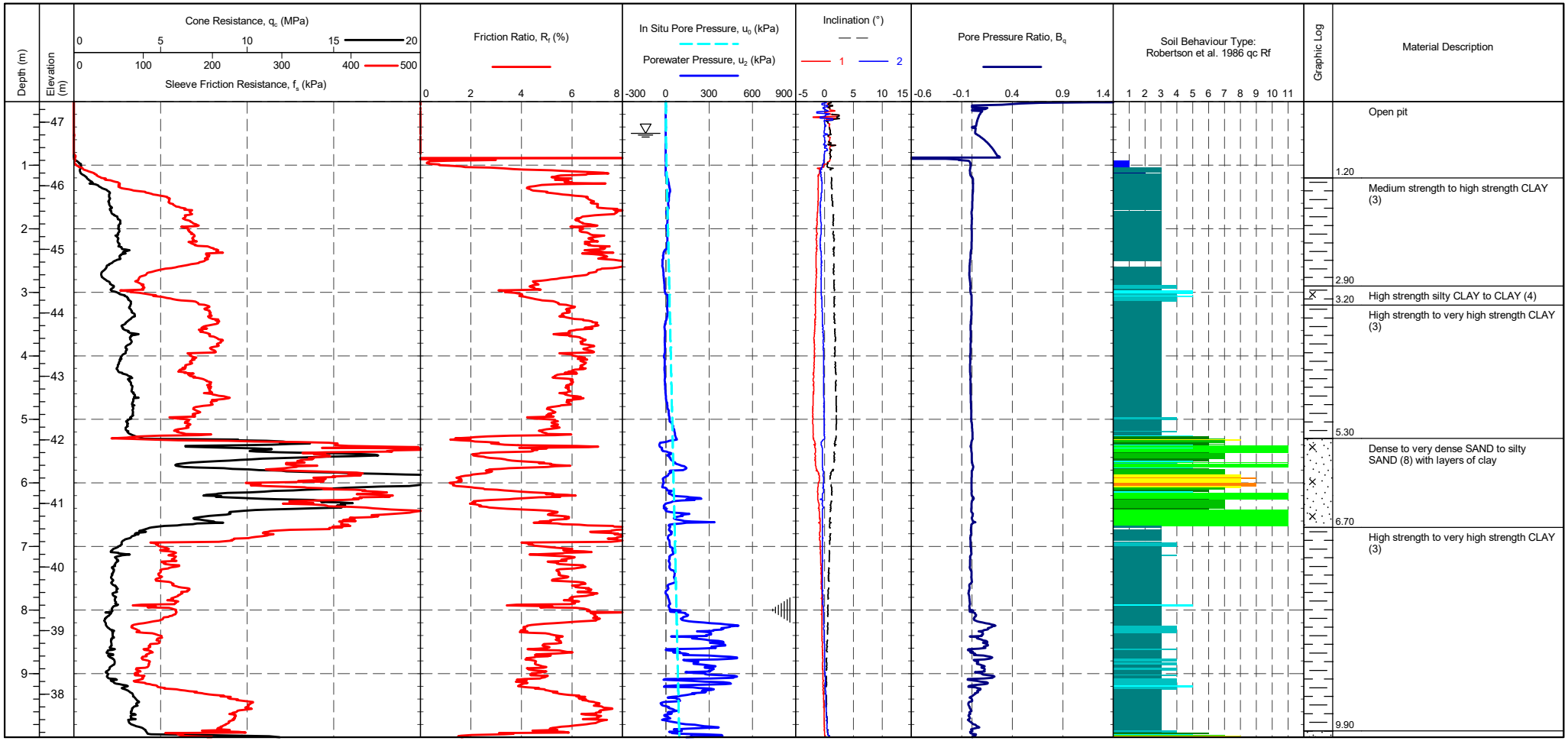
DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT18**

CLIENT : Structural Soils	EASTING : 385065.847 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398388.930 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.323 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	249 mV	245 mV	-0.046 MPa
Sleeve	244 mV	241 mV	-0.002 kPa
Pore Pressure 2	388 mV	406 mV	0.005 kPa
X-Y Inclinometer	2533 mV	2553 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: STRUCTURAL SOILS LTD

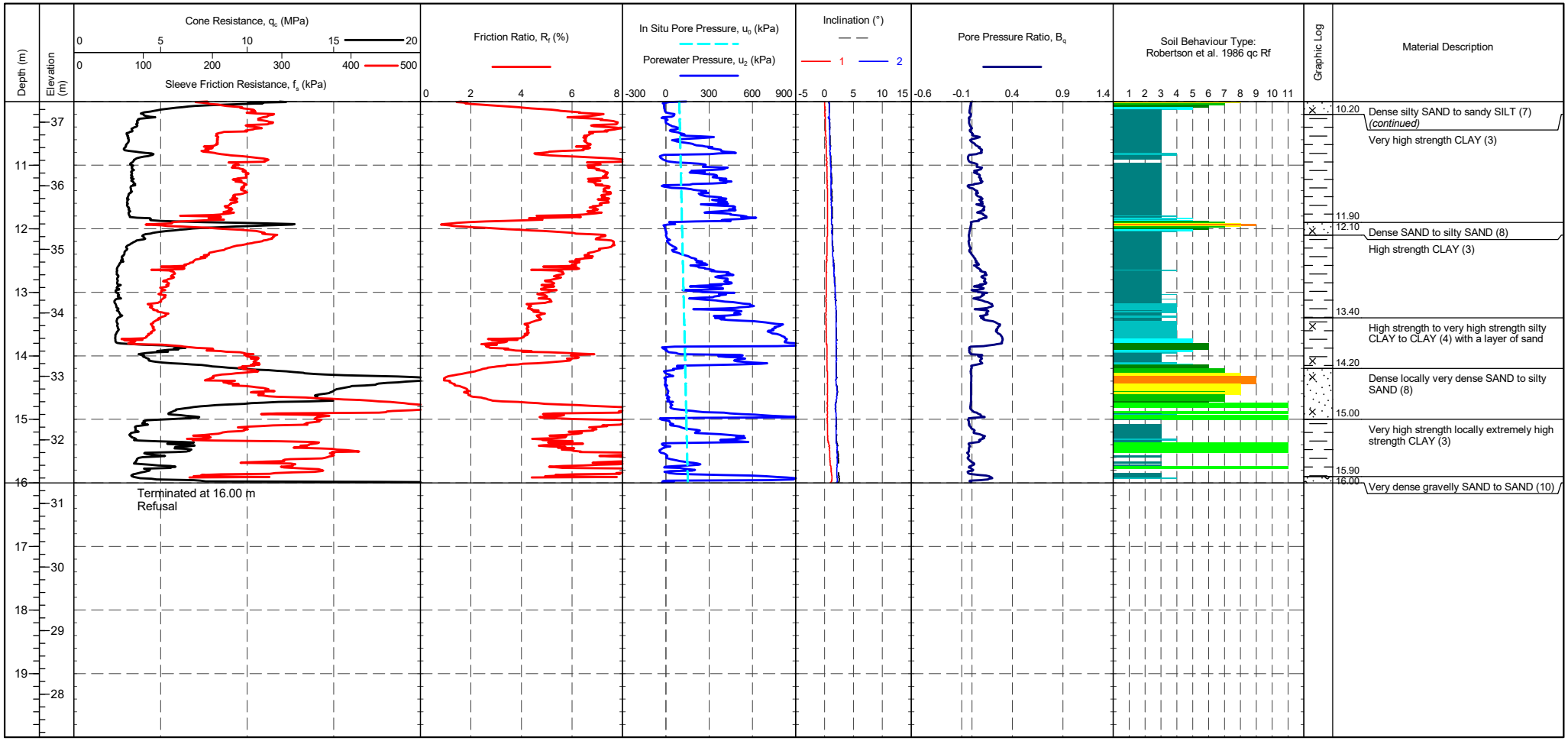
PointID: **ATK_CPT18**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385065.847 m
NORTHING : 398388.930 m
ELEVATION : 47.323 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 28/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	249 mV	245 mV	-0.046 MPa
Sleeve	244 mV	241 mV	-0.002 kPa
Pore Pressure 2	388 mV	406 mV	0.005 kPa
X-Y Inclinometer	2533 mV	2553 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: STRUCTURAL SOILS LTD

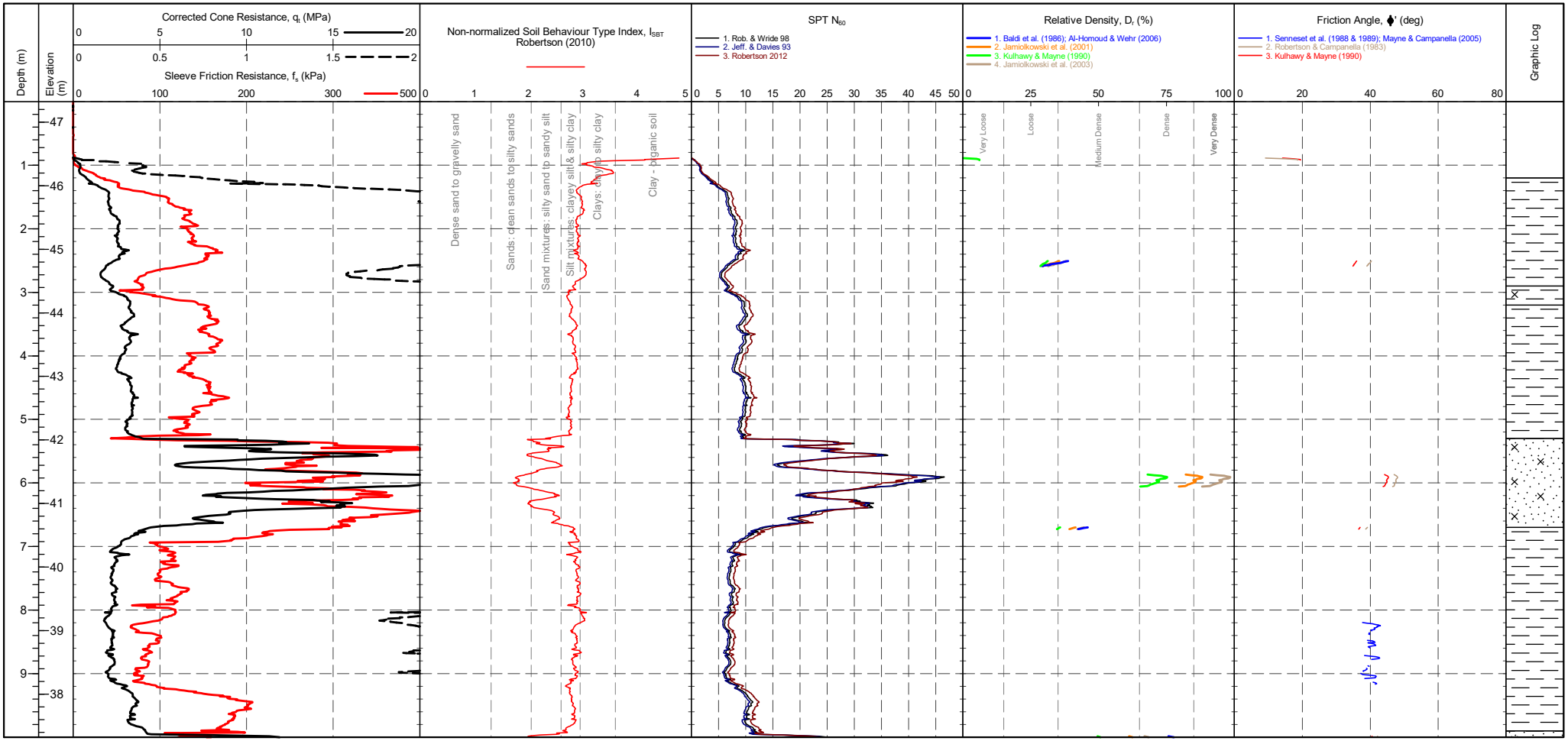
PointID: **ATK_CPT18**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385065.847 m
NORTHING : 398388.930 m
ELEVATION : 47.323 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 28/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	249 mV	245 mV	-0.046 MPa
Sleeve	244 mV	241 mV	-0.002 kPa
Pore Pressure 2	388 mV	406 mV	0.005 kPa
X-Y Inclinometer	2533 mV	2553 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

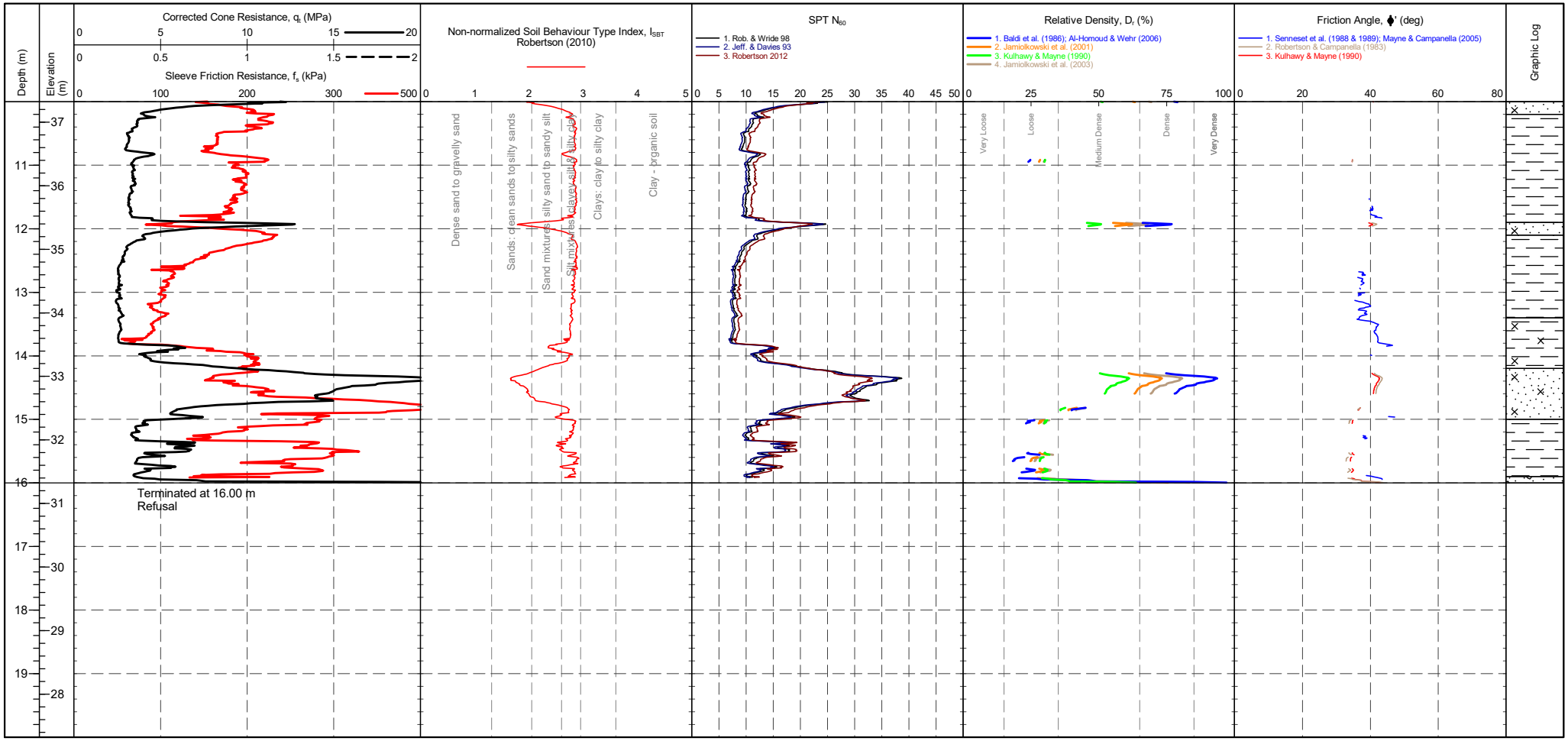
Dissipation Test

CPT LOG 02

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT18**

CLIENT : Structural Soils	EASTING : 385065.847 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398388.930 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.323 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	249 mV	245 mV
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	244 mV	241 mV
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	388 mV	406 mV
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2533 mV	2553 mV

Transducer	Difference
Tip	-0.046 MPa
Sleeve	-0.002 kPa
Pore Pressure 2	0.005 kPa

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

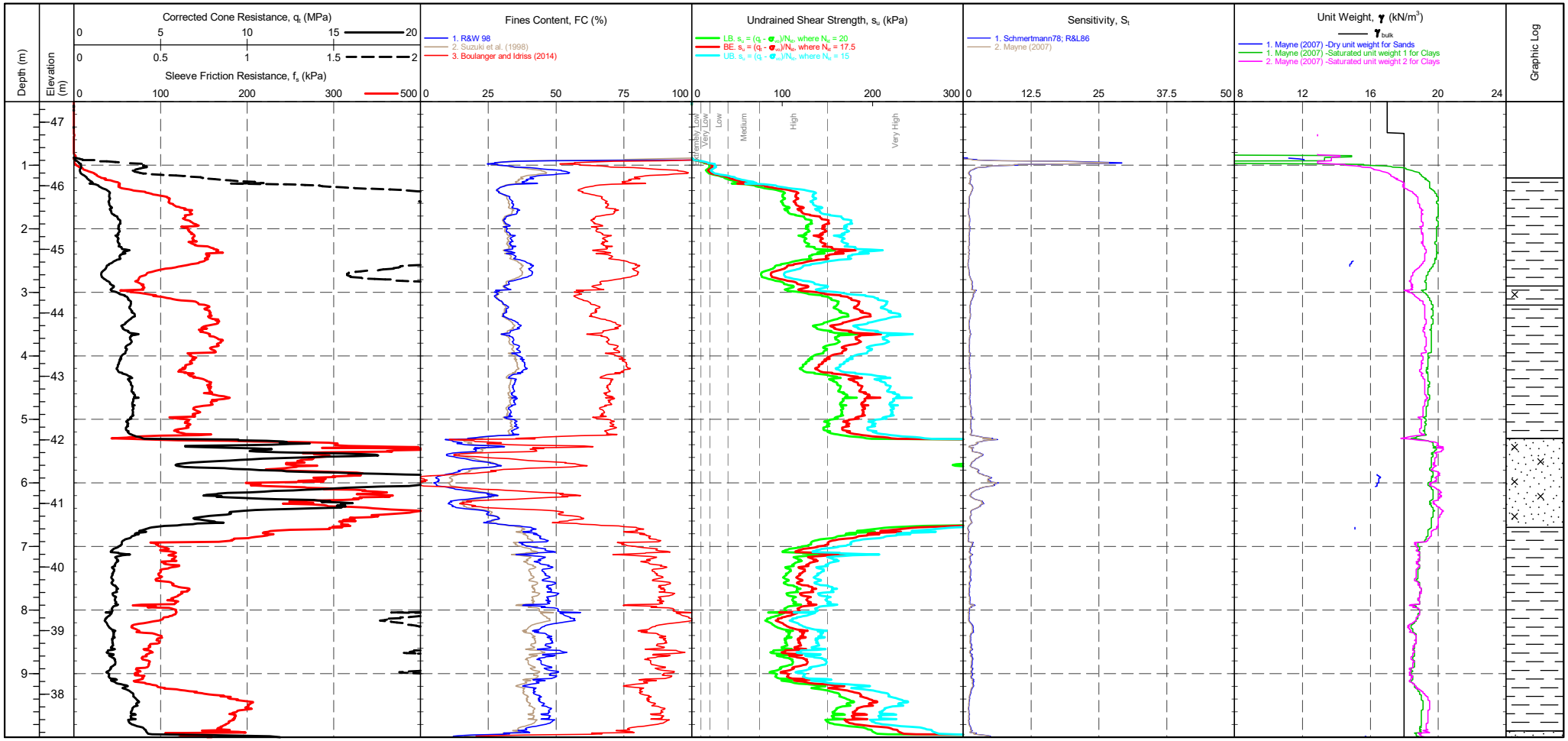
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT18**

CLIENT : Structural Soils	EASTING : 385065.847 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398388.930 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.323 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	245 mV	-0.046 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	244 mV	241 mV	-0.002 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	388 mV	406 mV	0.005 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2533 mV	2553 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

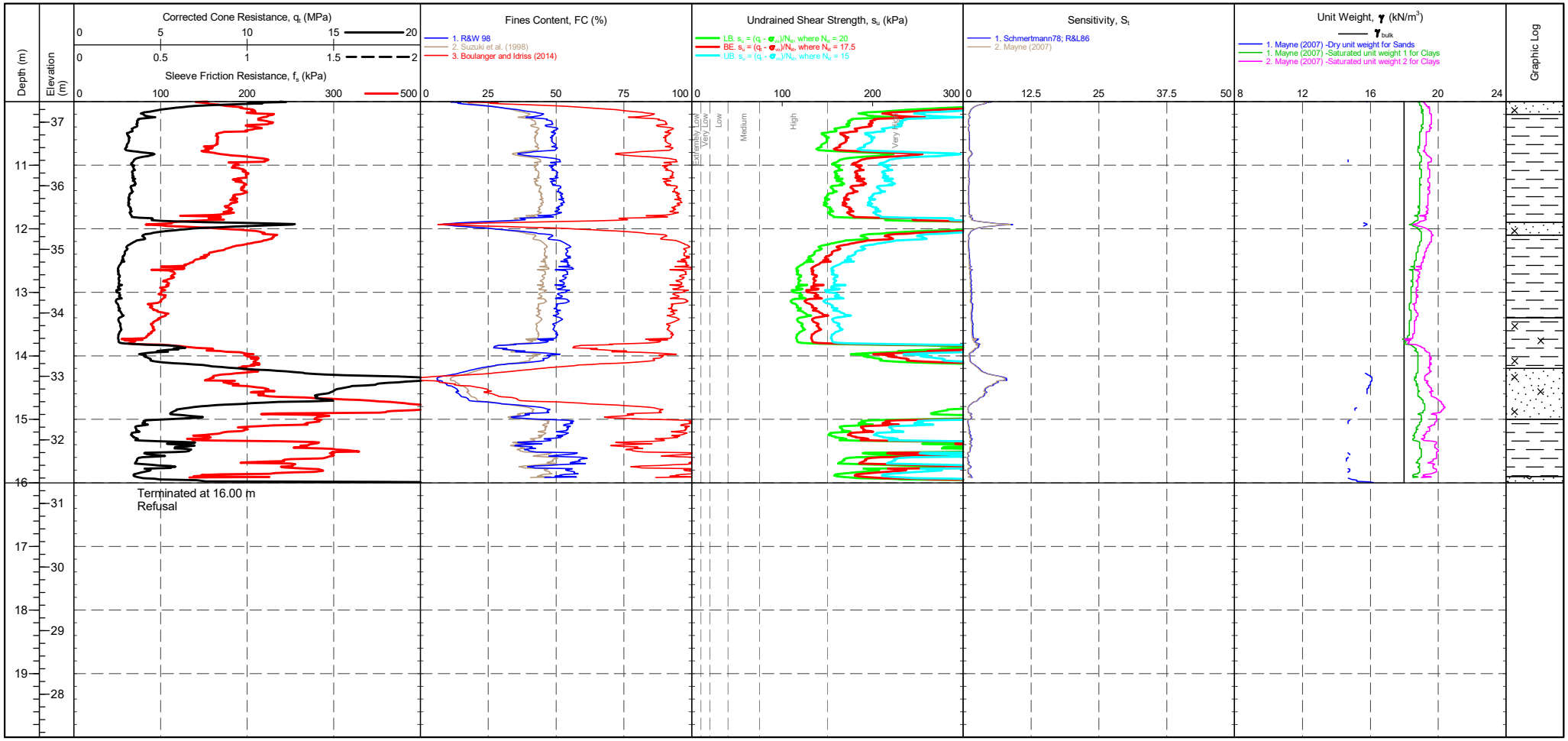
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT18**

CLIENT : Structural Soils	EASTING : 385065.847 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398388.930 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.323 m OD		TEST DATE : 28/04/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	245 mV	-0.046 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	244 mV	241 mV	-0.002 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	388 mV	406 mV	0.005 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2533 mV	2553 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

Working with: STRUCTURAL SOILS LTD

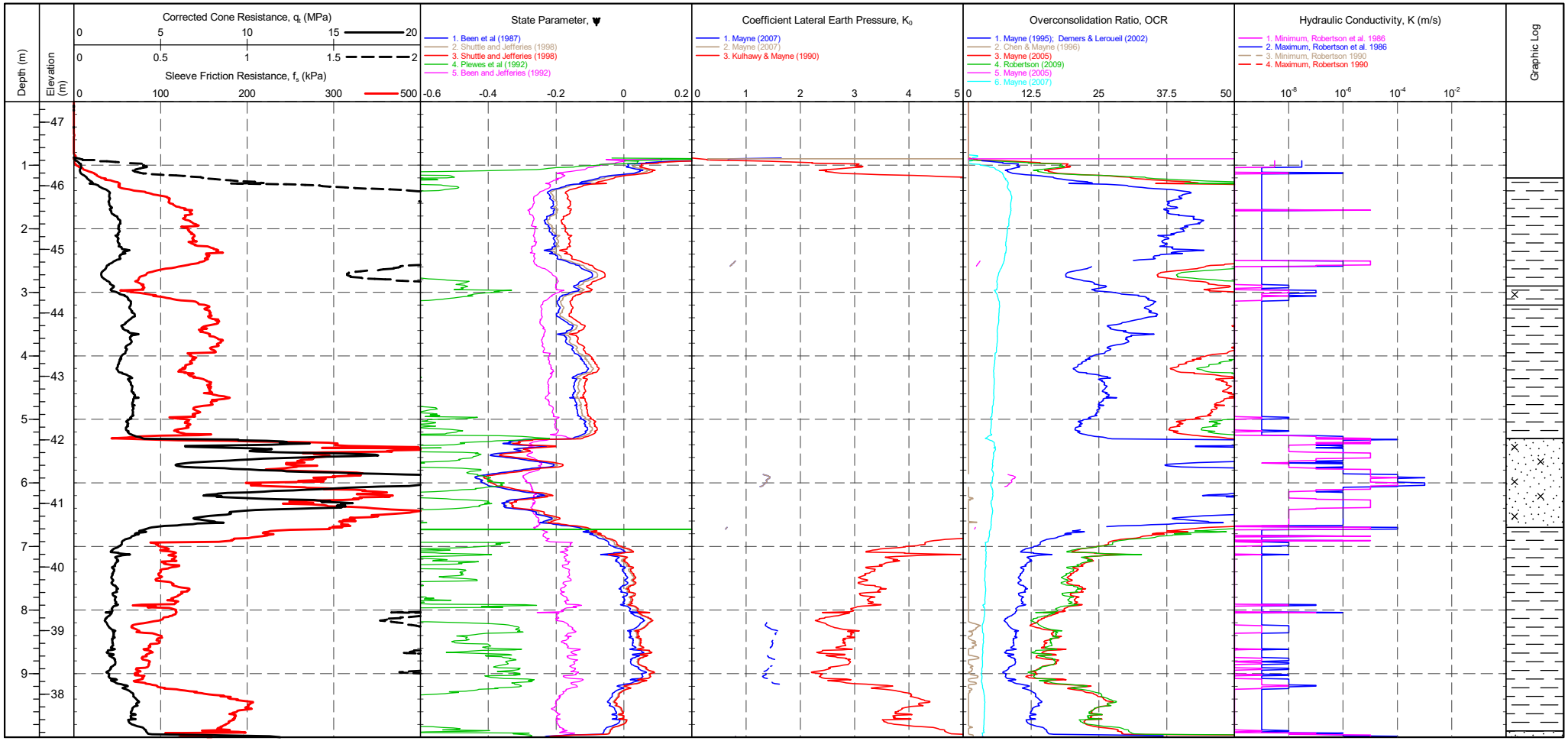
PointID: **ATK_CPT18**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385065.847 m
NORTHING : 398388.930 m
ELEVATION : 47.323 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 28/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

Transducer	Pre	Post	Difference
Tip	249 mV	245 mV	-0.046 MPa
Sleeve	244 mV	241 mV	-0.002 kPa
Pore Pressure 2	388 mV	406 mV	0.005 kPa
X-Y Inclinometer	2533 mV	2553 mV	

Groundwater Level

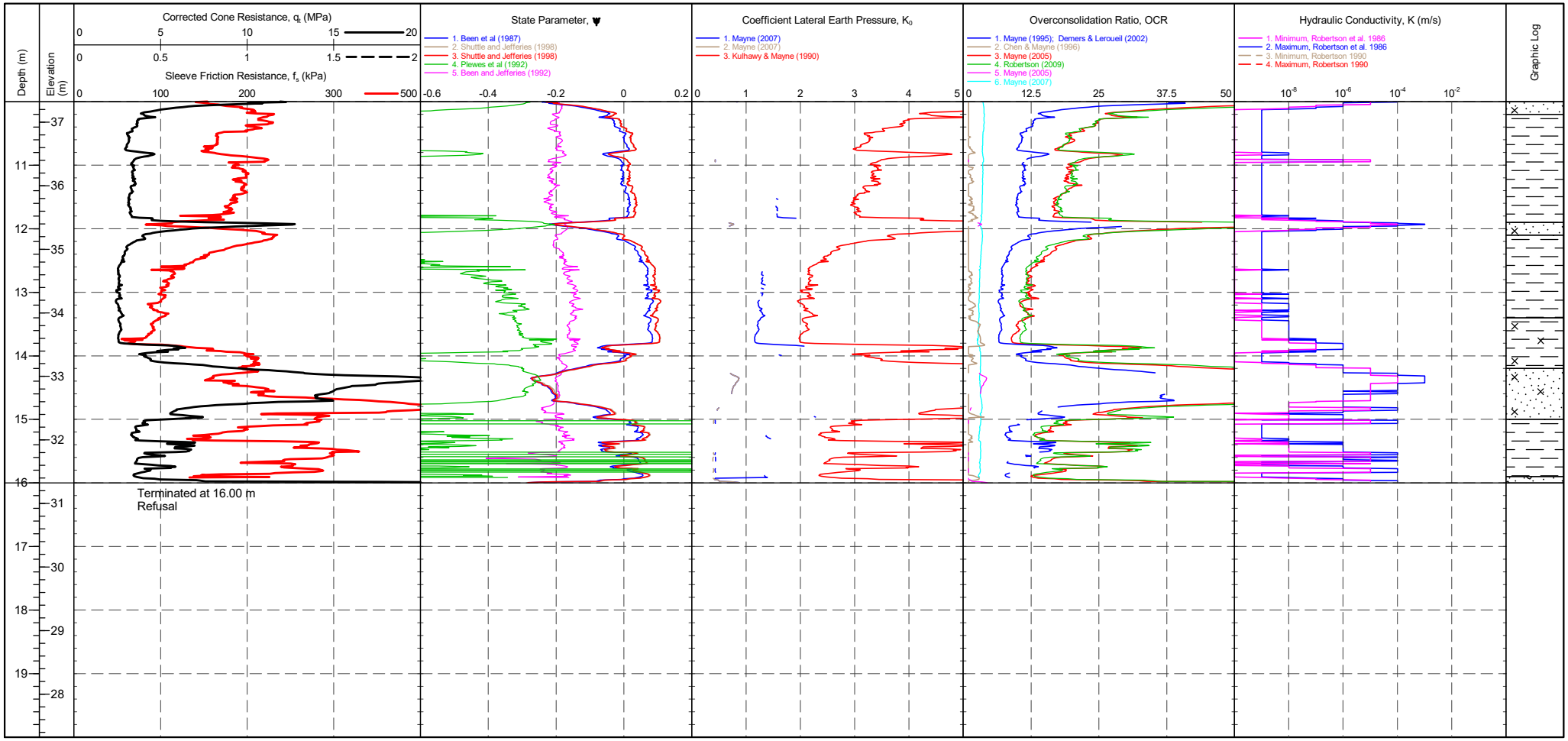
Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT18**

CLIENT : Structural Soils PROJECT : 765544 - Ancoats LOCATION : Manchester PROJECT No. : 1230236	EASTING : 385065.847 m NORTHING : 398388.930 m ELEVATION : 47.323 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 2 OF 2 STATUS : Final TEST DATE : 28/04/2023 PLOT DATE : 24/05/2023 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	245 mV	-0.046 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	244 mV	241 mV	-0.002 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	388 mV	406 mV	0.005 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2533 mV	2553 mV	

Groundwater Level

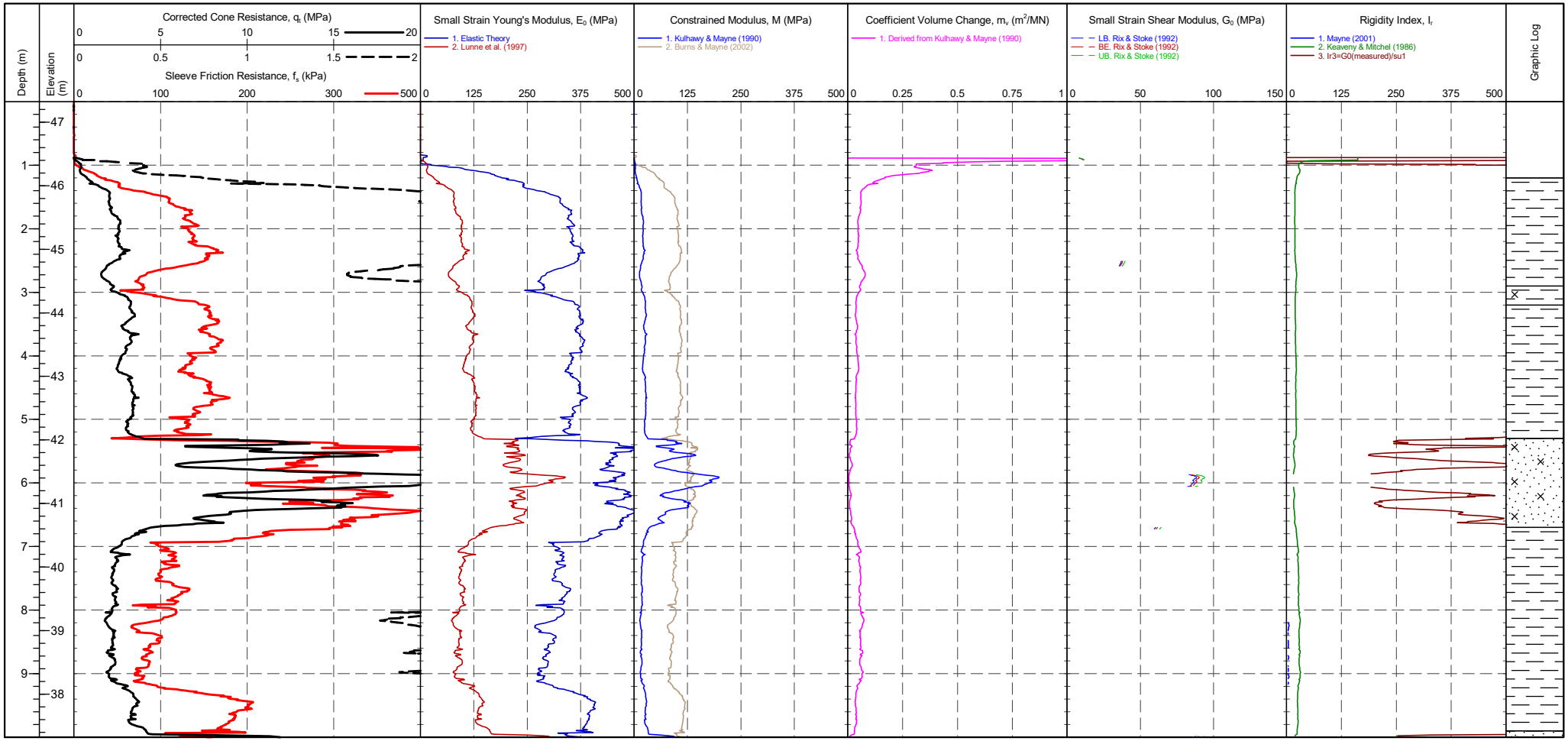
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT18**

CLIENT : Structural Soils PROJECT : 765544 - Ancoats LOCATION : Manchester PROJECT No. : 1230236	EASTING : 385065.847 m NORTHING : 398388.930 m ELEVATION : 47.323 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 1 OF 2 STATUS : Final TEST DATE : 28/04/2023 PLOT DATE : 24/05/2023 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	245 mV	-0.046 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	244 mV	241 mV	-0.002 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	388 mV	406 mV	0.005 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2533 mV	2553 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

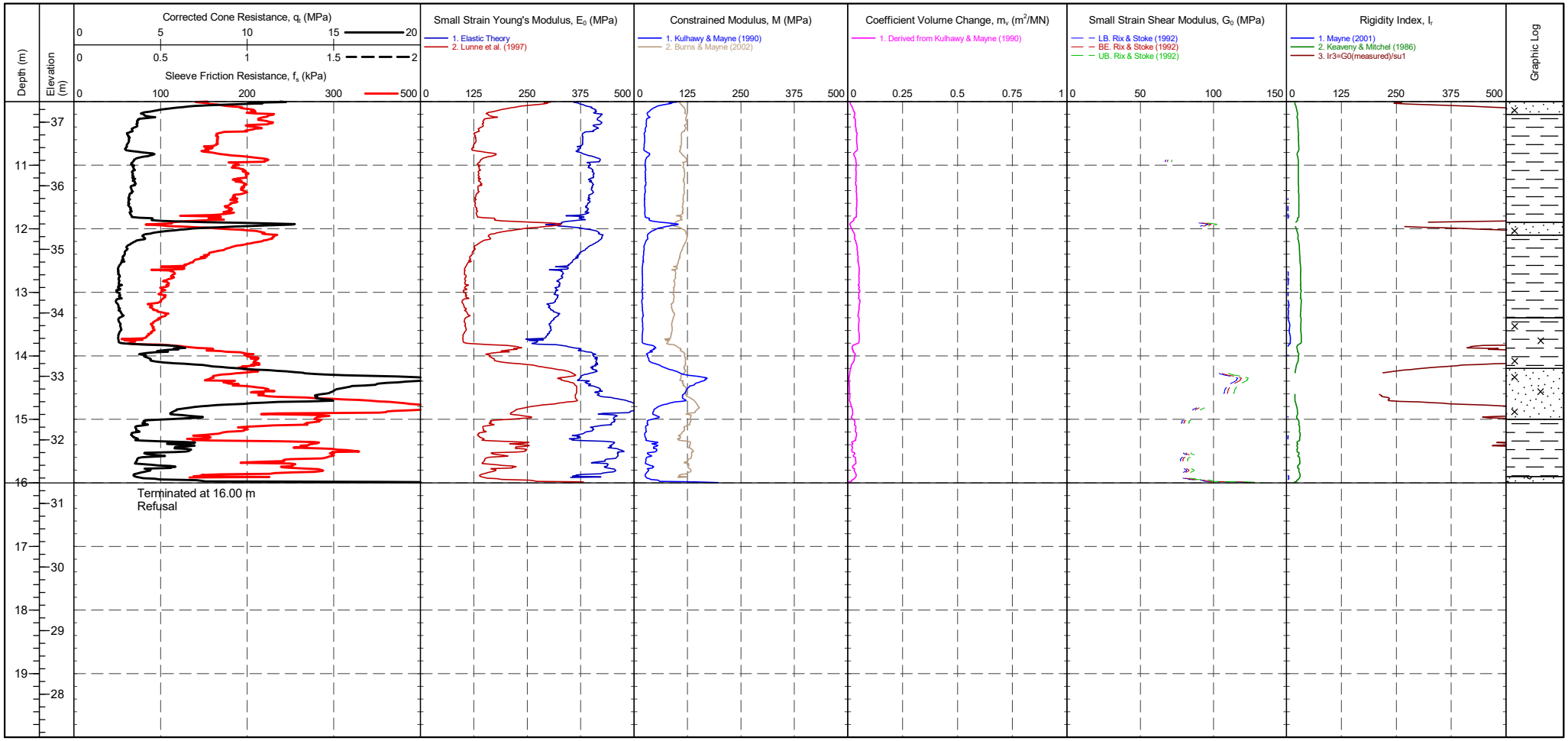
PointID: **ATK_CPT18**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385065.847 m
NORTHING : 398388.930 m
ELEVATION : 47.323 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 28/04/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022

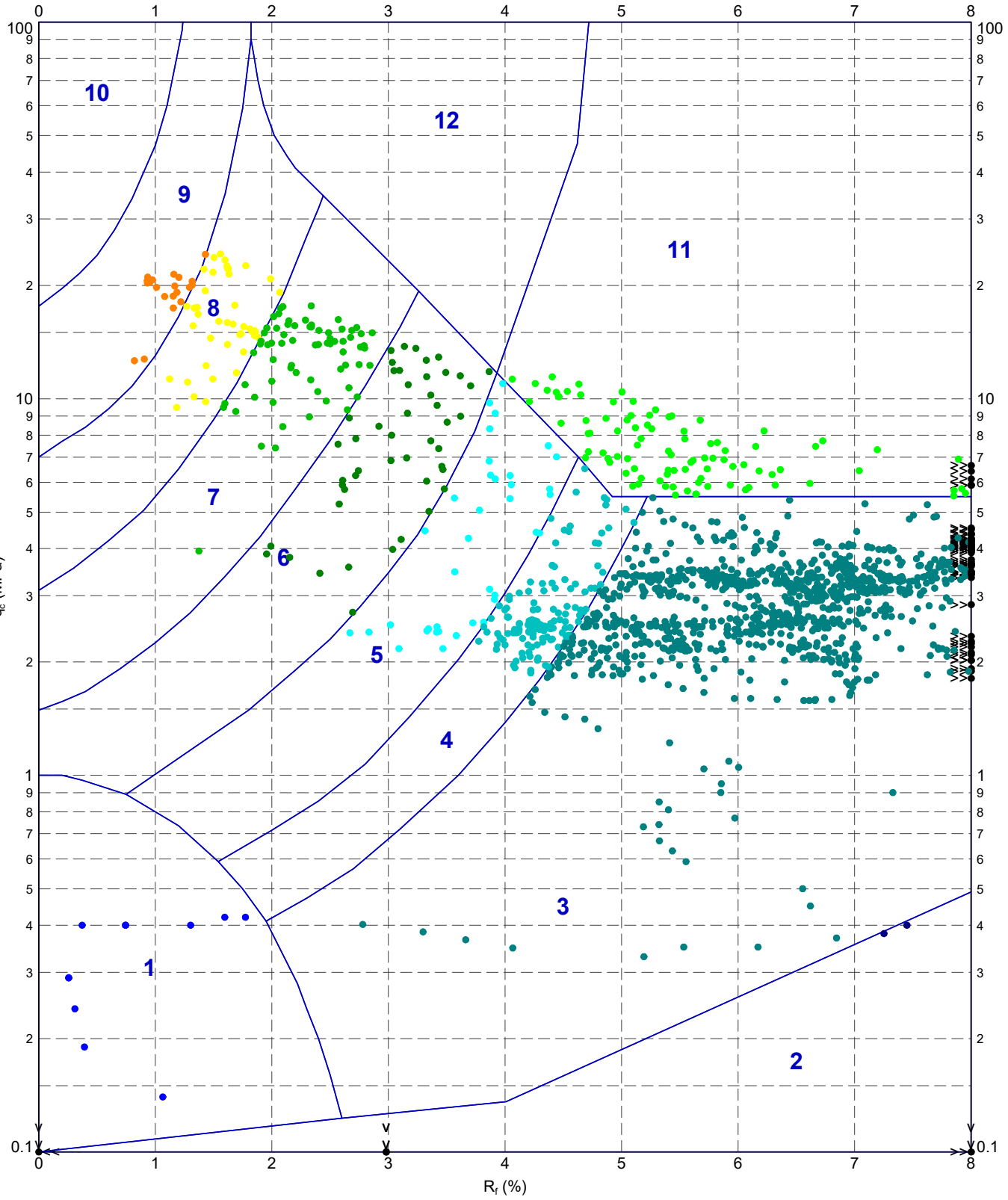


CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES	
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

Transducer	Pre	Post	Difference
Tip	249 mV	245 mV	-0.046 MPa
Sleeve	244 mV	241 mV	-0.002 kPa
Pore Pressure 2	388 mV	406 mV	0.005 kPa
X-Y Inclinometer	2533 mV	2553 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	Structural Soils Tim Clifford Manchester 765544 - Ancoats Robertson et al. 1986 q_c vs. R_f - ATK_CPT18	DRAWN	DATE 24/05/2023
		CHECKED	DATE 24/05/2023
		SCALE Not To Scale	A4
		PROJECT No 1230236	FIGURE No

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:39 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

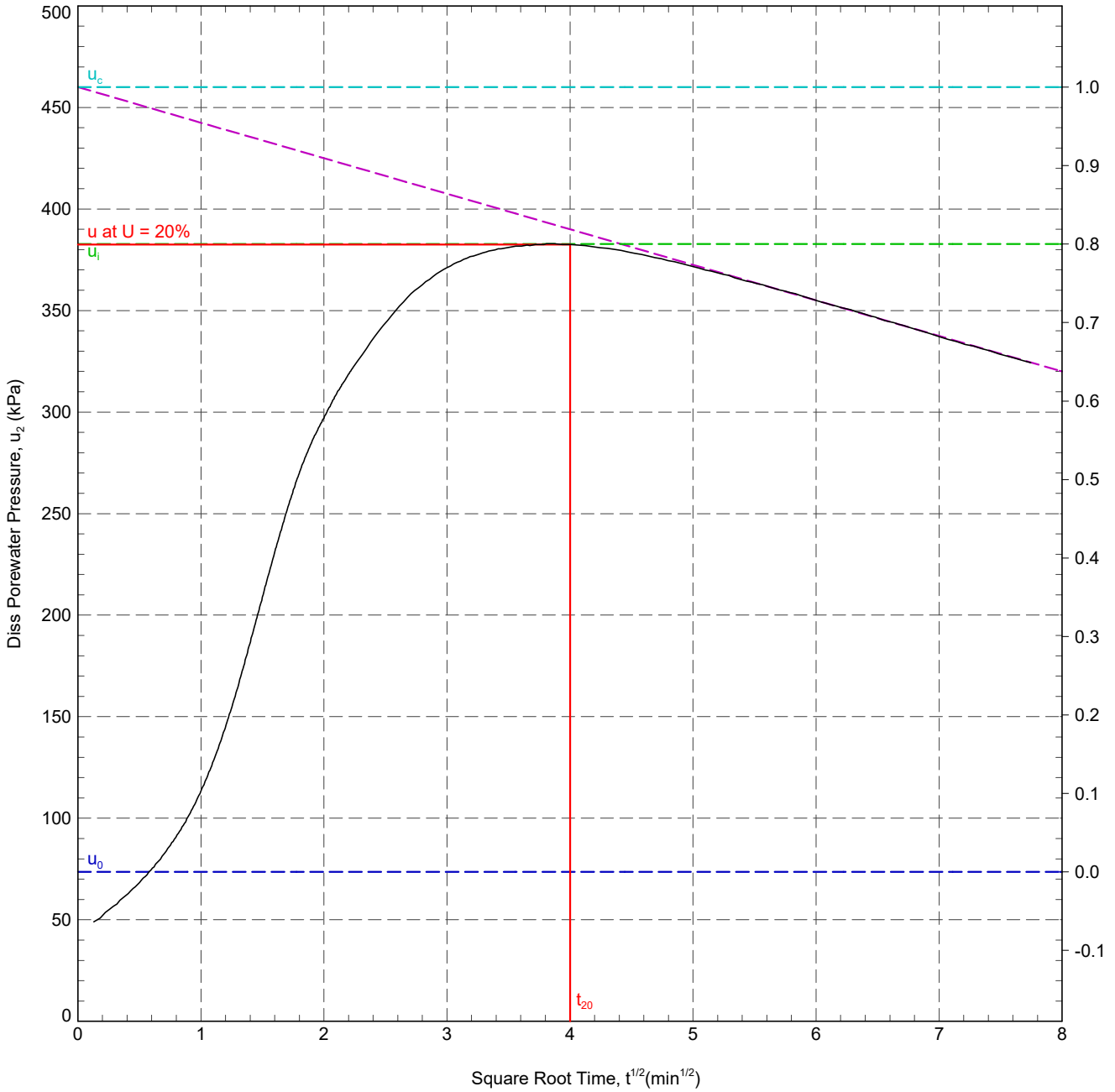
IN SITU SITE INVESTIGATION

Working with: STRUCTURAL SOILS LTD

Test ID

ATK_CPT18 - 8.00 m

CLIENT	: Structural Soils	AREA	: Ancoats Manchester	SHEET	: 1 OF 1
ENGINEER	: Tim Clifford	EASTING	: 385065.8 m	STATUS	: Final
PROJECT	: 765544 - Ancoats	NORTHING	: 398388.9 m	DATE	: 28/04/23
LOCATION	: Manchester	COORD. SYS.	:		
PROJECT No.	: 1230236	ELEVATION	: 47.32 m		



In Situ Pore Pressure, u_0:	73.6 kPa	Rigidity Index, I_r:	28
Initial Pore Pressure, u_i:	382.8 kPa	Horizontal Coefficient of Consolidation, c_h:	3.49x10^0 m^2/yr
Final Pore Pressure:	324.3 kPa	Ratio c_h/c_v:	1.25
Back Extrapolated Pore Pressure, u_c:	460 kPa	Vertical Coefficient of Consolidation, c_v:	2.80x10^0 m^2/yr
Degree of Dissipation:	20%		
Dissipation Pressure:	382.6 kPa		
Time for 20% Dissipation, t_{20}:	16.00 min		

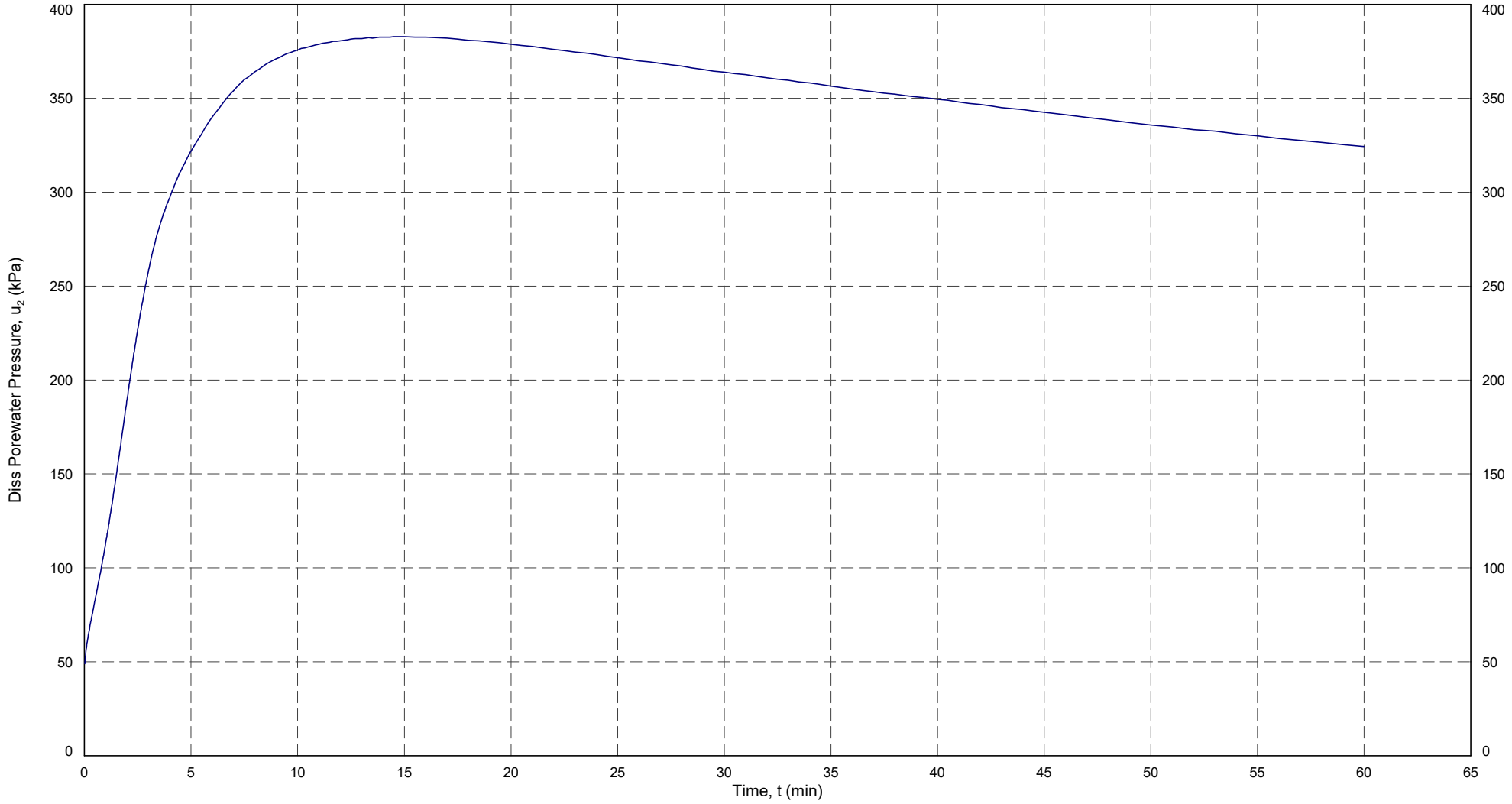
RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	15/05/2023
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	15/05/2023
CONE ID	: S15-CFIP.2177	APPROVED BY	: DW	DATE:	15/05/2023
OPERATOR	: RS				

REMARK

T20 reached. Test OK.

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:39 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

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - CHLOE.GLB Graph PPDT PORE PRESSURE VS. LIN T A4L 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:39 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



IN SITU SITE INVESTIGATION

TITLE

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Dissipation Test - ATK_CPT18

DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

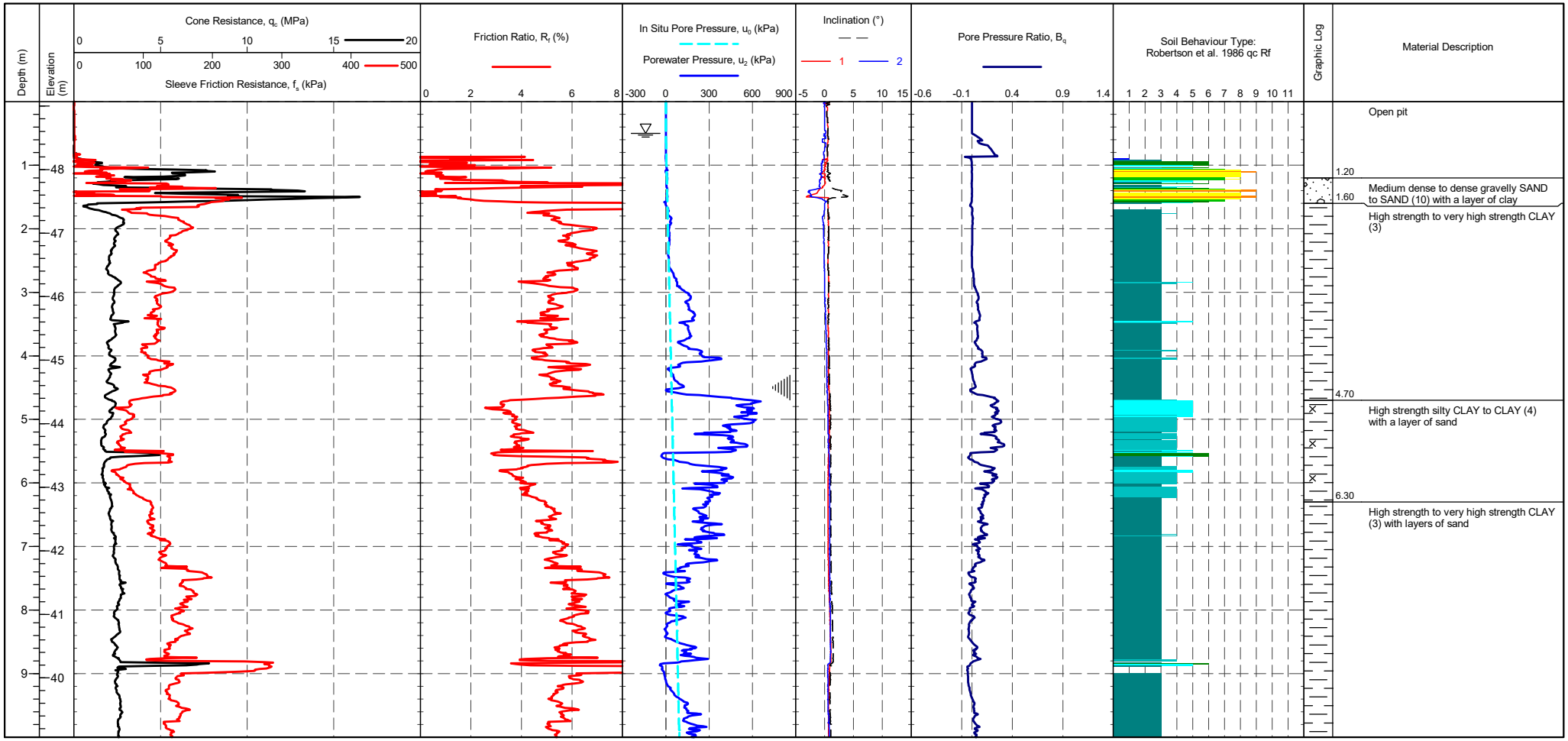
PointID: **ATK_CPT19**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385051.543 m
NORTHING : 398458.258 m
ELEVATION : 49.068 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 02/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	249 mV	249 mV	0 MPa
Sleeve	245 mV	247 mV	0.001 kPa
Pore Pressure 2	378 mV	418 mV	0.011 kPa
X-Y Inclinometer	2501 mV	2463 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: STRUCTURAL SOILS LTD

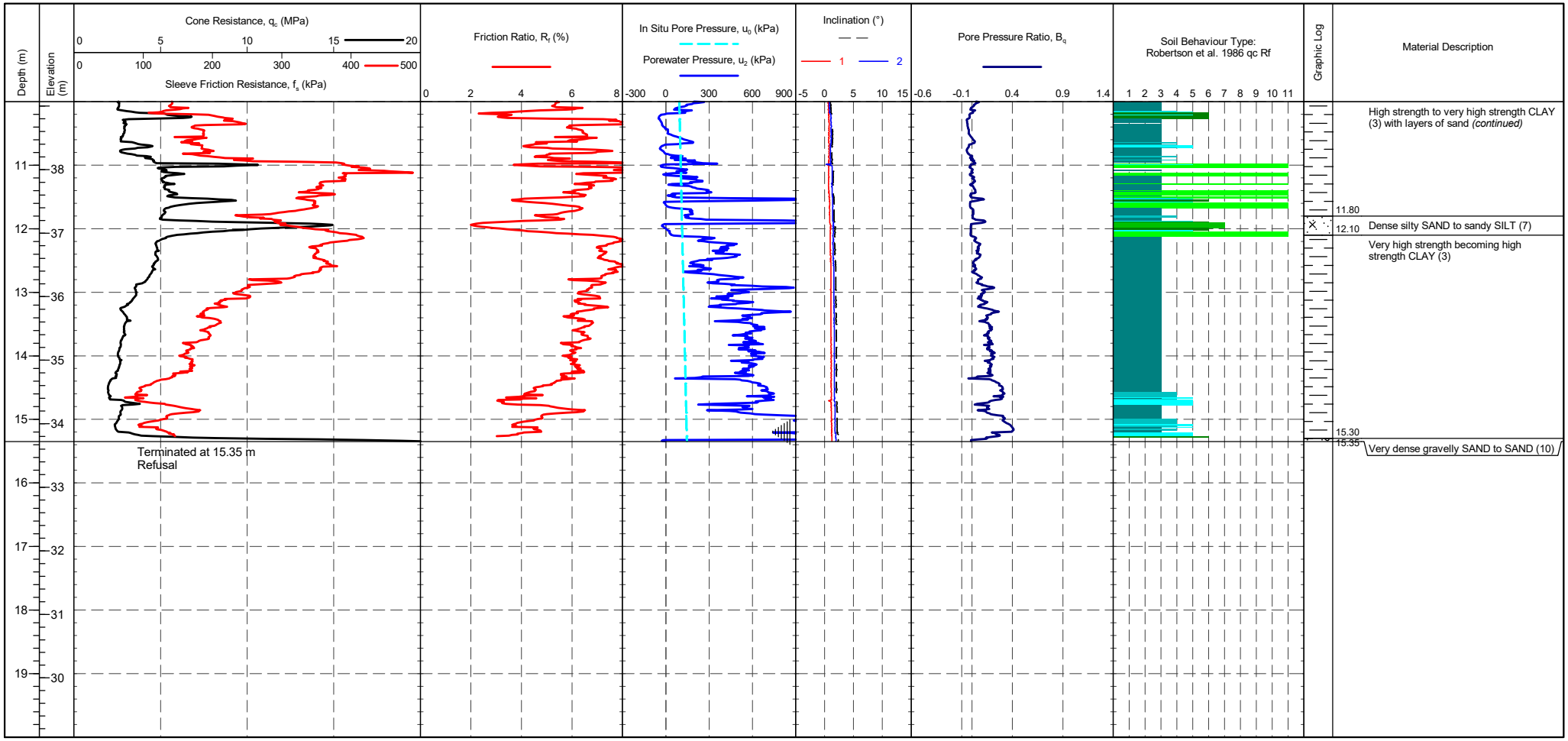
PointID: **ATK_CPT19**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385051.543 m
NORTHING : 398458.258 m
ELEVATION : 49.068 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 02/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	249 mV	249 mV	0 MPa
Sleeve	245 mV	247 mV	0.001 kPa
Pore Pressure 2	378 mV	418 mV	0.011 kPa
X-Y Inclinometer	2501 mV	2463 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

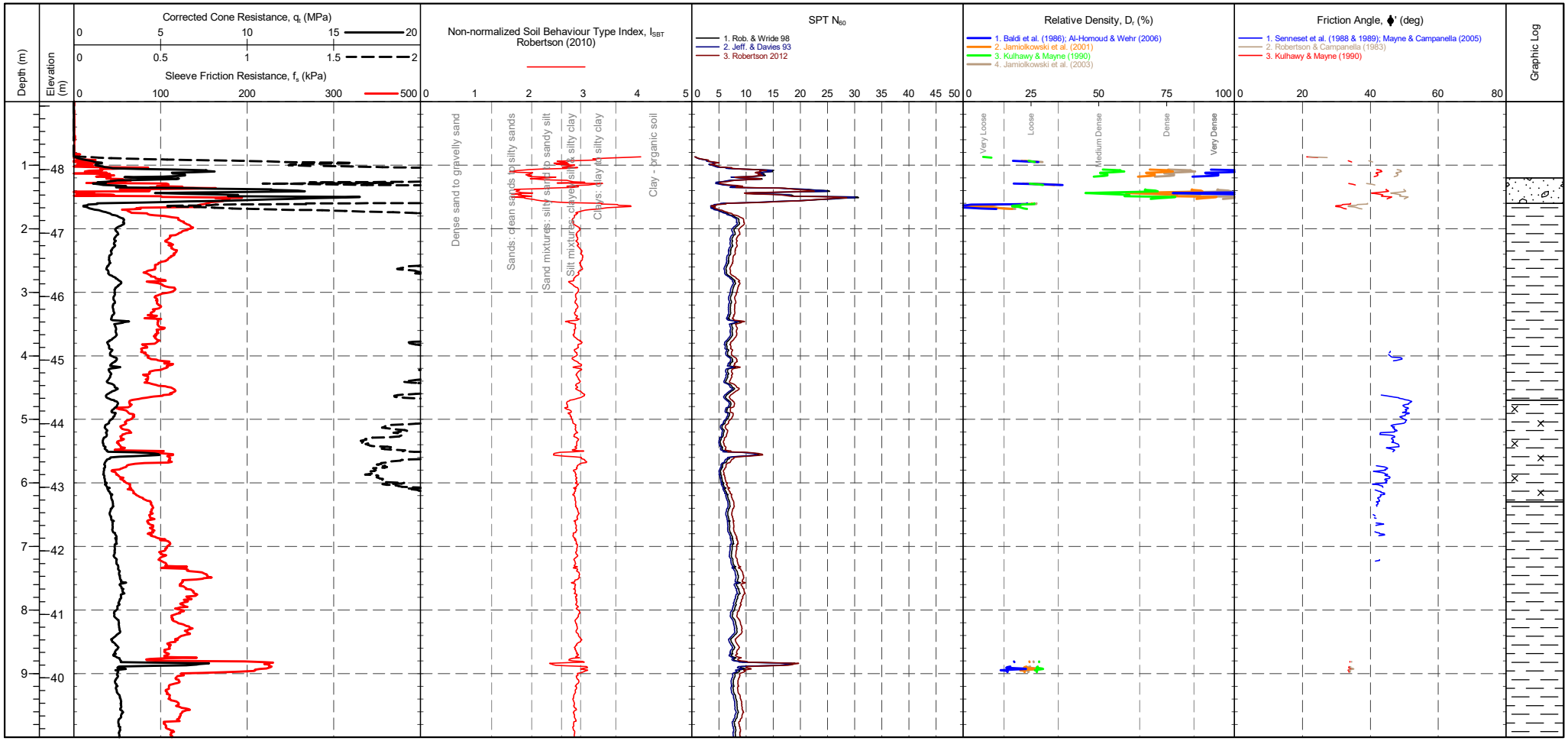
Groundwater Level
Dissipation Test

CPT LOG 02

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT19**

CLIENT : Structural Soils	EASTING : 385051.543 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398458.258 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.068 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	249 mV	249 mV
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	245 mV	247 mV
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	378 mV	418 mV
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2501 mV	2463 mV

Transducer	Difference
Tip	0 MPa
Sleeve	0.001 kPa
Pore Pressure 2	0.011 kPa

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

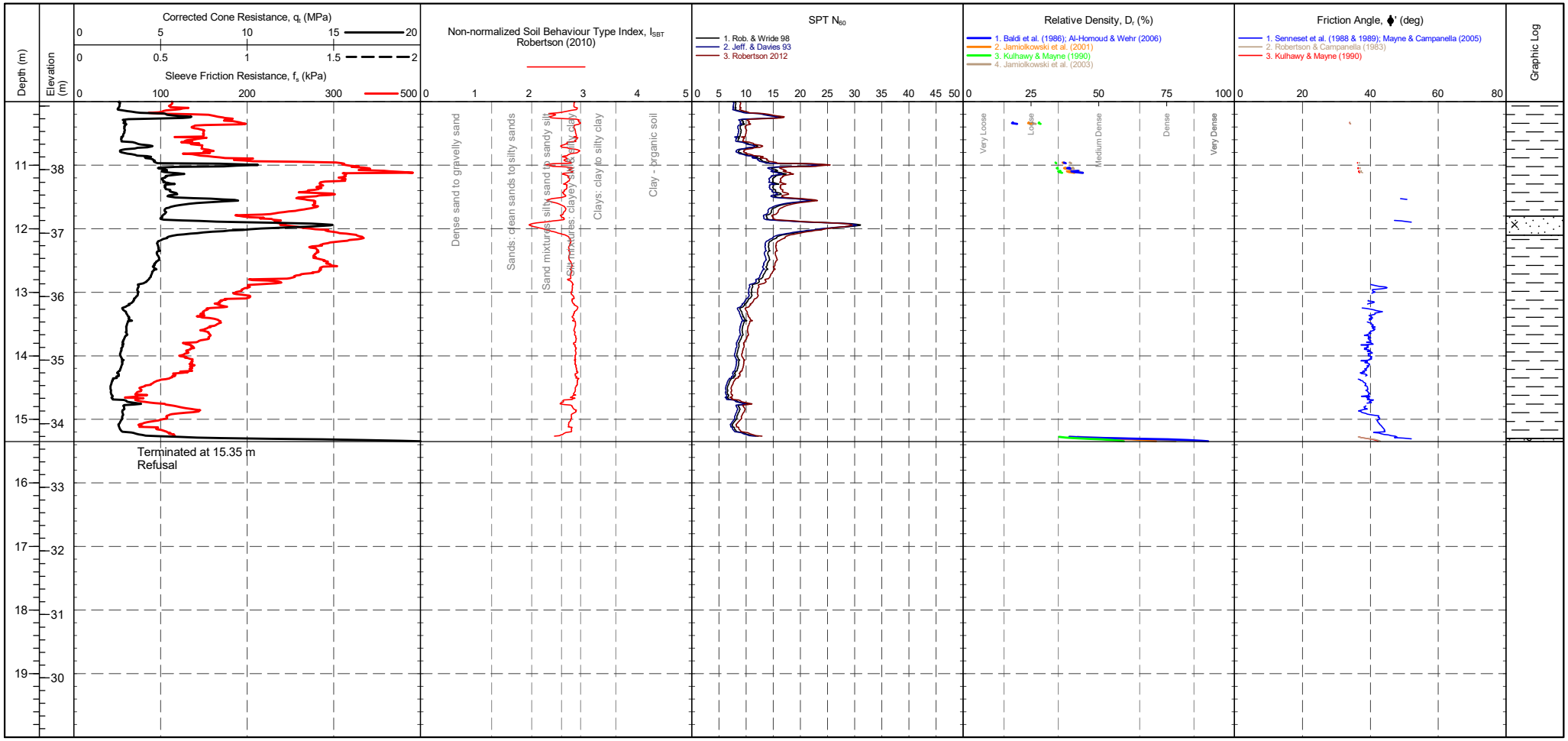
Dissipation Test

CPT LOG 02

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT19**

CLIENT : Structural Soils	EASTING : 385051.543 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398458.258 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.068 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	249 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	245 mV	247 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	378 mV	418 mV	0.011 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2501 mV	2463 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

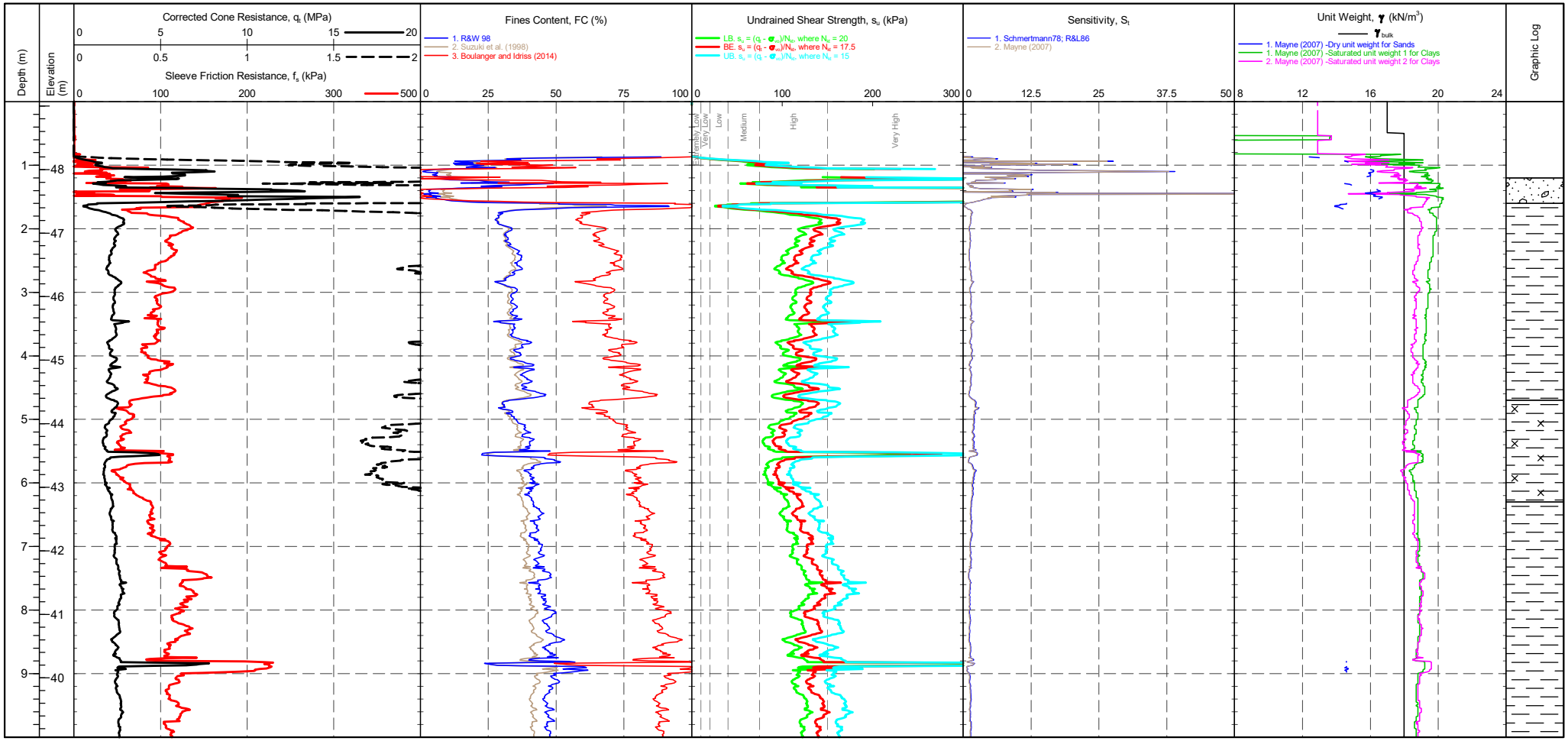
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT19**

CLIENT : Structural Soils	EASTING : 385051.543 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398458.258 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.068 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	249 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	245 mV	247 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	378 mV	418 mV	0.011 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2501 mV	2463 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

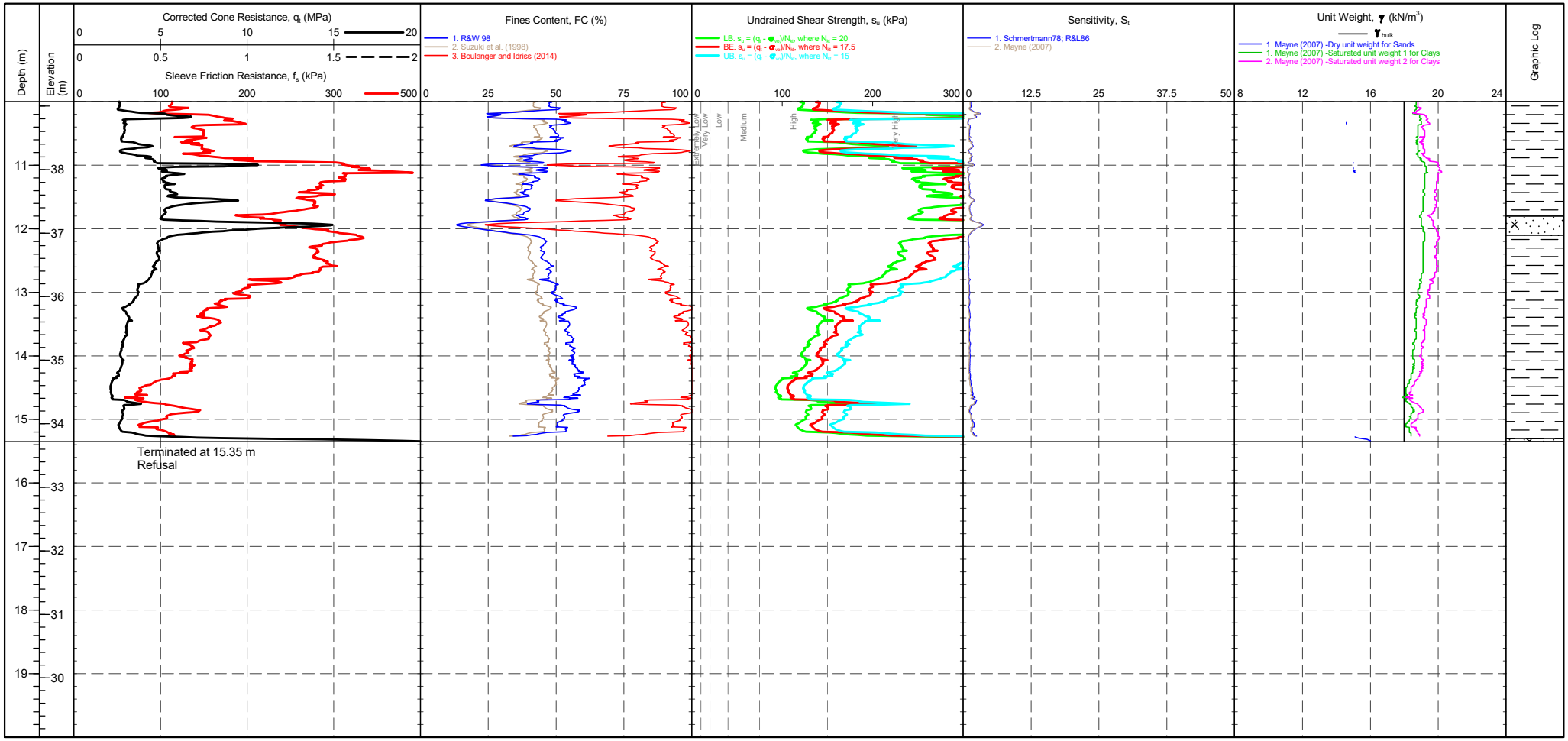
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT19**

CLIENT : Structural Soils	EASTING : 385051.543 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398458.258 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.068 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	249 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	245 mV	247 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	378 mV	418 mV	0.011 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2501 mV	2463 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

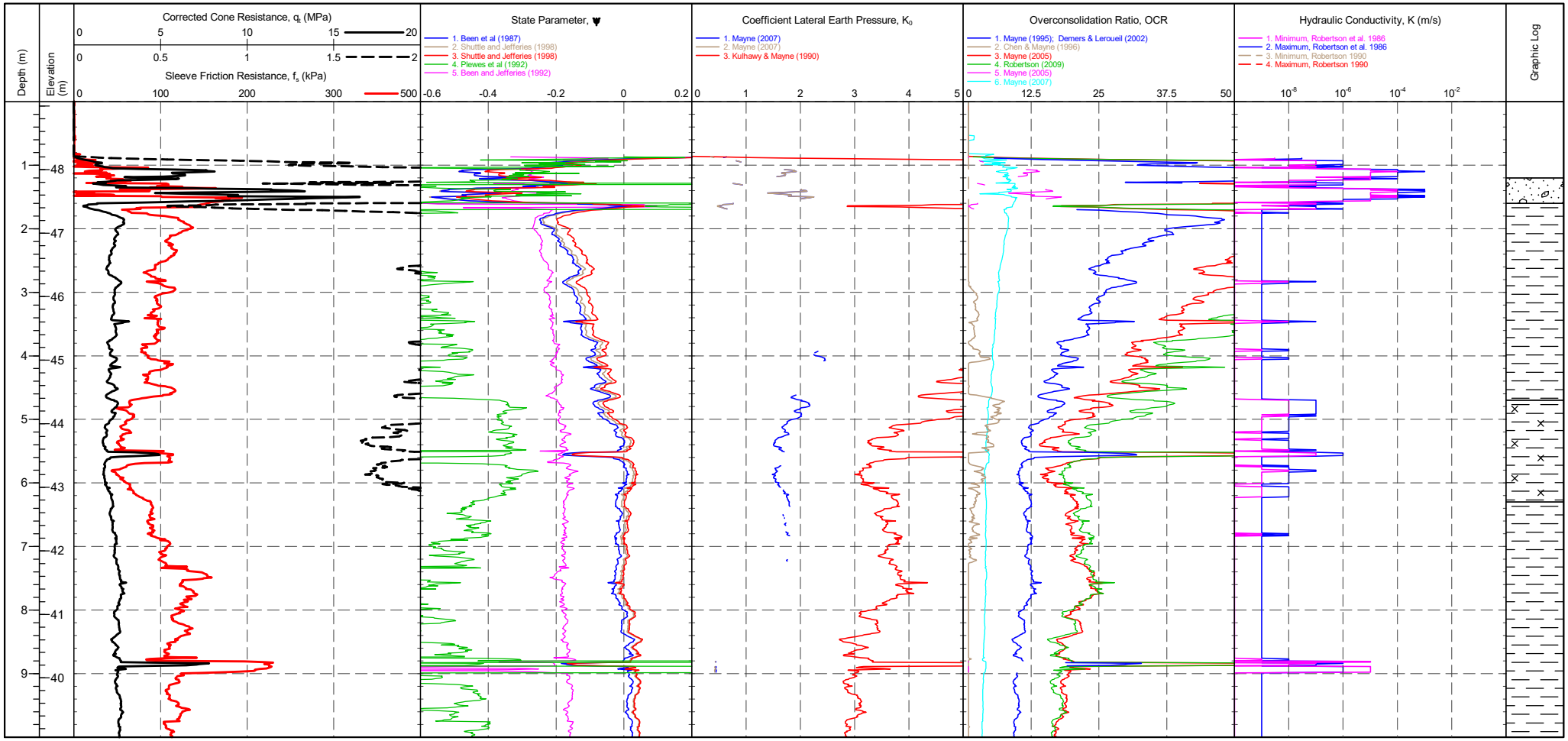
Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT19**

CLIENT : Structural Soils	EASTING : 385051.543 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398458.258 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.068 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	249 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	245 mV	247 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	378 mV	418 mV	0.011 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2501 mV	2463 mV	

Groundwater Level

Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

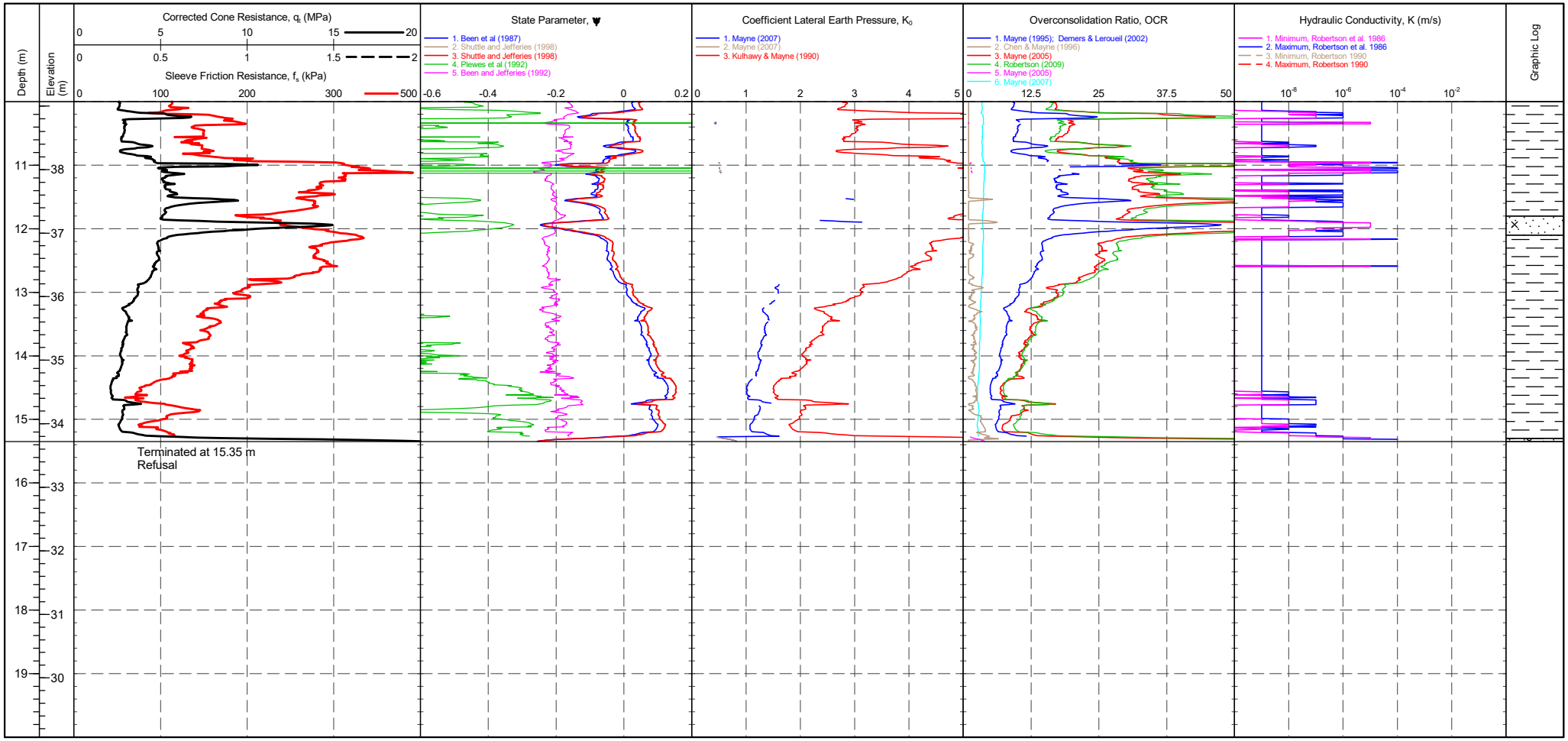
PointID: **ATK_CPT19**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385051.543 m
NORTHING : 398458.258 m
ELEVATION : 49.068 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 02/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	249 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	245 mV	247 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	378 mV	418 mV	0.011 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2501 mV	2463 mV	

Groundwater Level

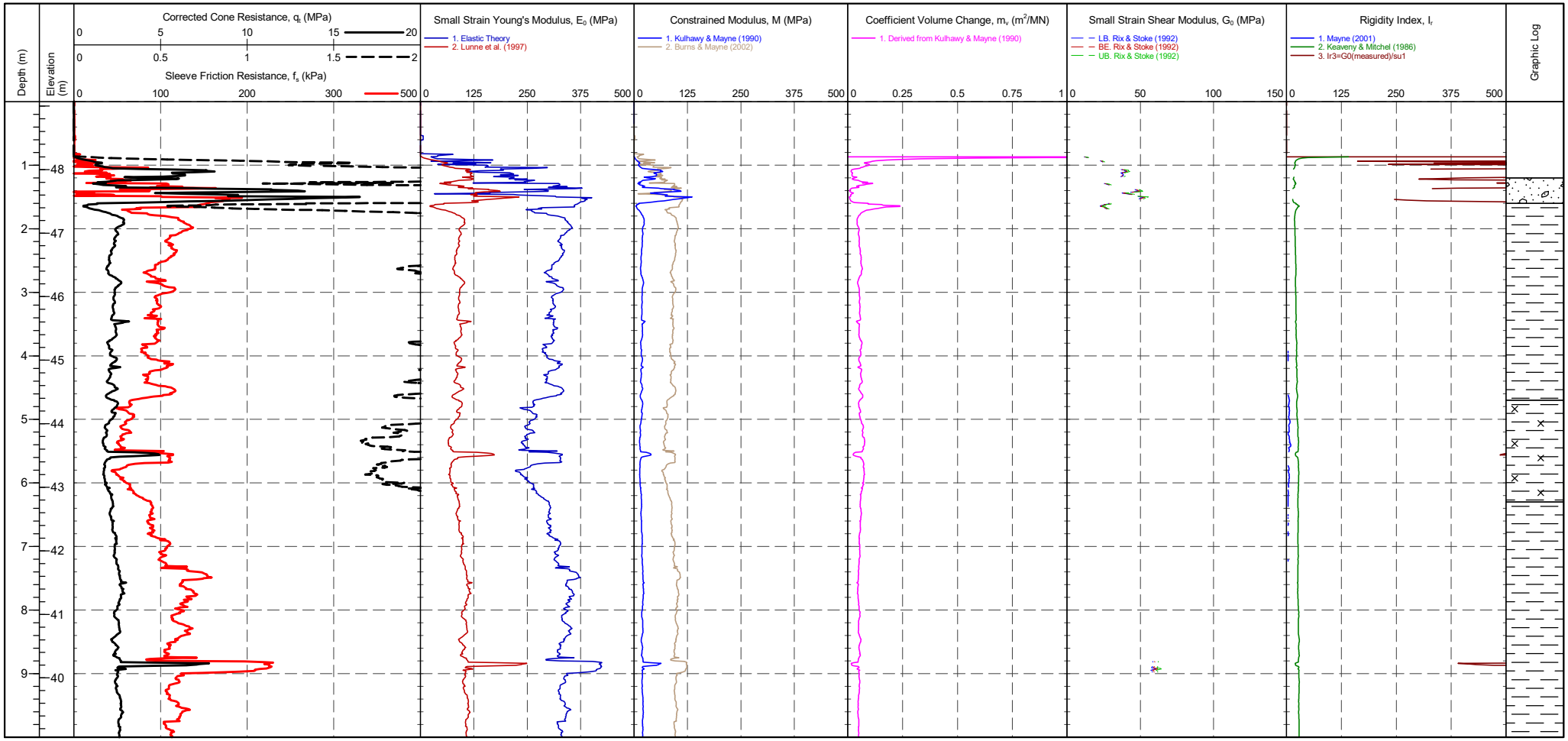
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT19**

CLIENT : Structural Soils	EASTING : 385051.543 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398458.258 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 49.068 m OD		TEST DATE : 02/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV	249 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	245 mV	247 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	378 mV	418 mV	0.011 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2501 mV	2463 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

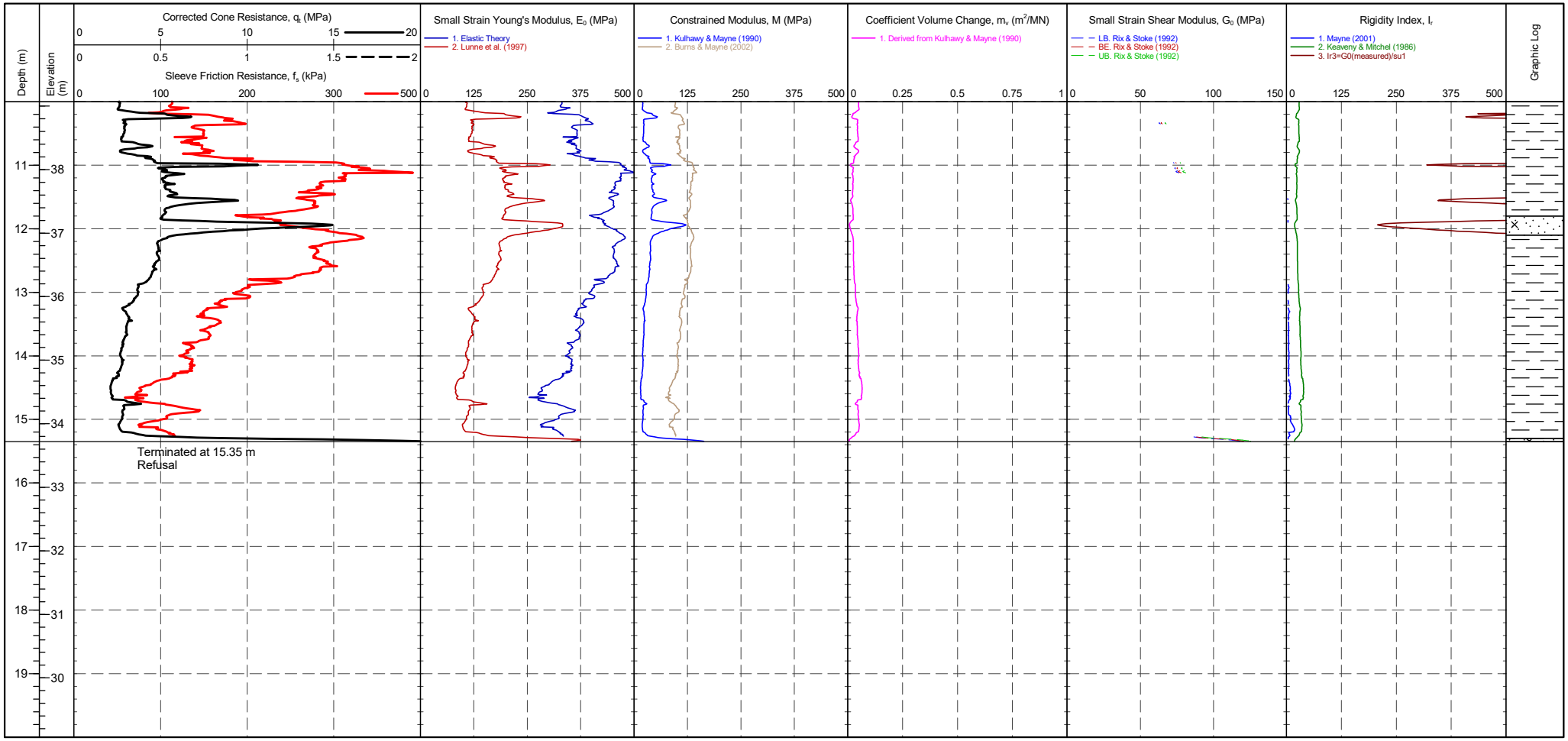
PointID: **ATK_CPT19**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385051.543 m
NORTHING : 398458.258 m
ELEVATION : 49.068 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

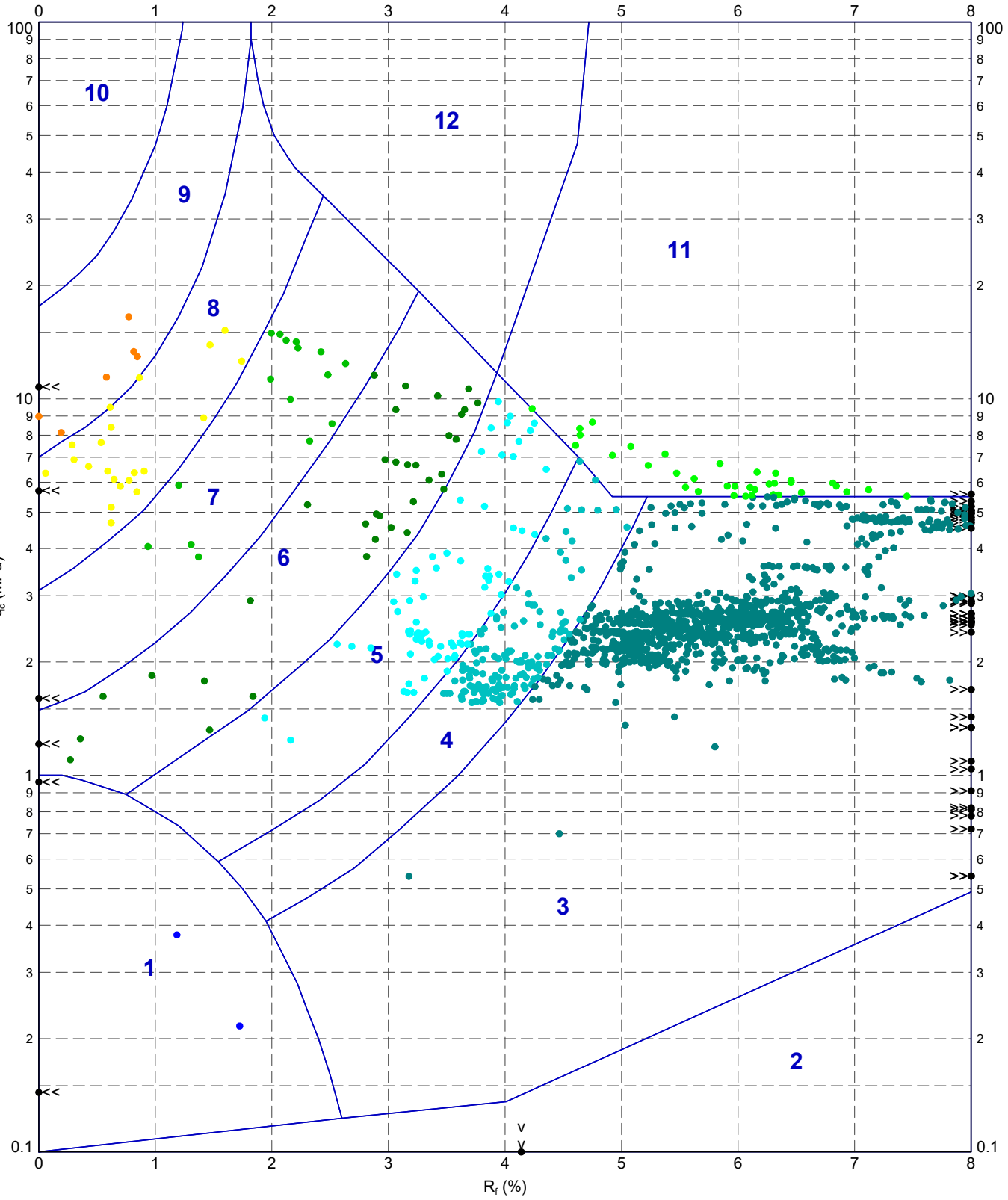
SHEET : 2 OF 2
STATUS : Final
TEST DATE : 02/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	249 mV / 249 mV / 0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	245 mV / 247 mV / 0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	378 mV / 418 mV / 0.011 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2501 mV / 2463 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

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Robertson et al. 1986 q_c vs. R_f - ATK_CPT19

DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:42 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

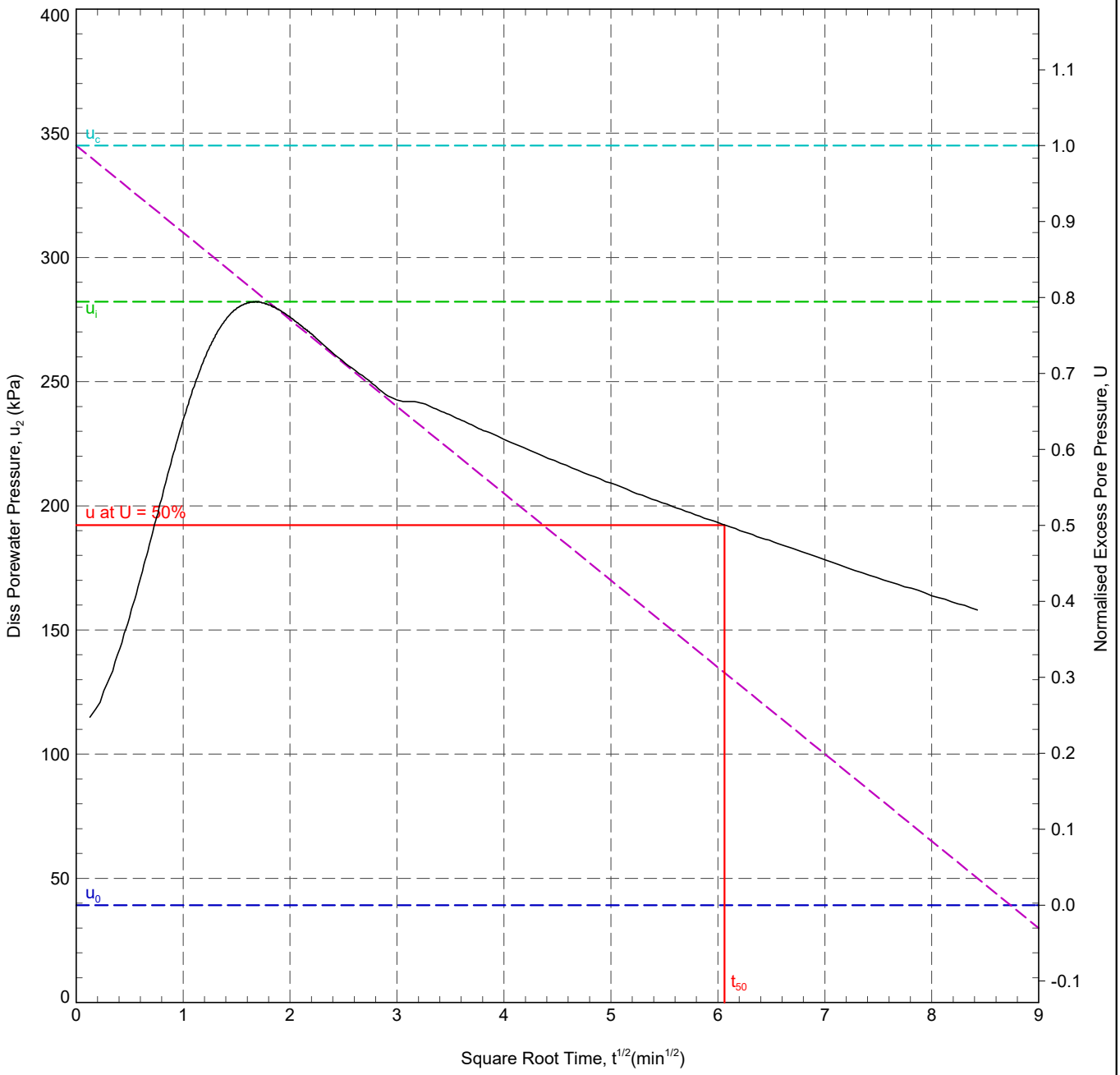
IN SITU SITE INVESTIGATION

Working with: STRUCTURAL SOILS LTD

Test ID

ATK_CPT19 - 4.50 m

CLIENT	: Structural Soils	AREA	: Ancoats Manchester	SHEET	: 1 OF 1
ENGINEER	: Tim Clifford	EASTING	: 385051.5 m	STATUS	: Final
PROJECT	: 765544 - Ancoats	NORTHING	: 398458.3 m	DATE	: 02/05/23
LOCATION	: Manchester	COORD. SYS.	:		
PROJECT No.	: 1230236	ELEVATION	: 49.07 m		



In Situ Pore Pressure, u_0:	39.2 kPa	Rigidity Index, I_r:	22.9
Initial Pore Pressure, u_i:	282.2 kPa	Horizontal Coefficient of Consolidation, c_h:	8.87x10^0 m^2/yr
Final Pore Pressure:	158.1 kPa	Ratio c_h/c_v:	1.25
Back Extrapolated Pore Pressure, u_c:	345 kPa	Vertical Coefficient of Consolidation, c_v:	7.10x10^0 m^2/yr
Degree of Dissipation:	50%		
Dissipation Pressure:	192.2 kPa		
Time for 50% Dissipation, t_{50}:	36.75 min		

RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	15/05/2023
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	15/05/2023
CONE ID	: S15-CFIP.2177	APPROVED BY	: DW	DATE:	15/05/2023
OPERATOR	: RS				

REMARK

T50 reached. Test OK.

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:42 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

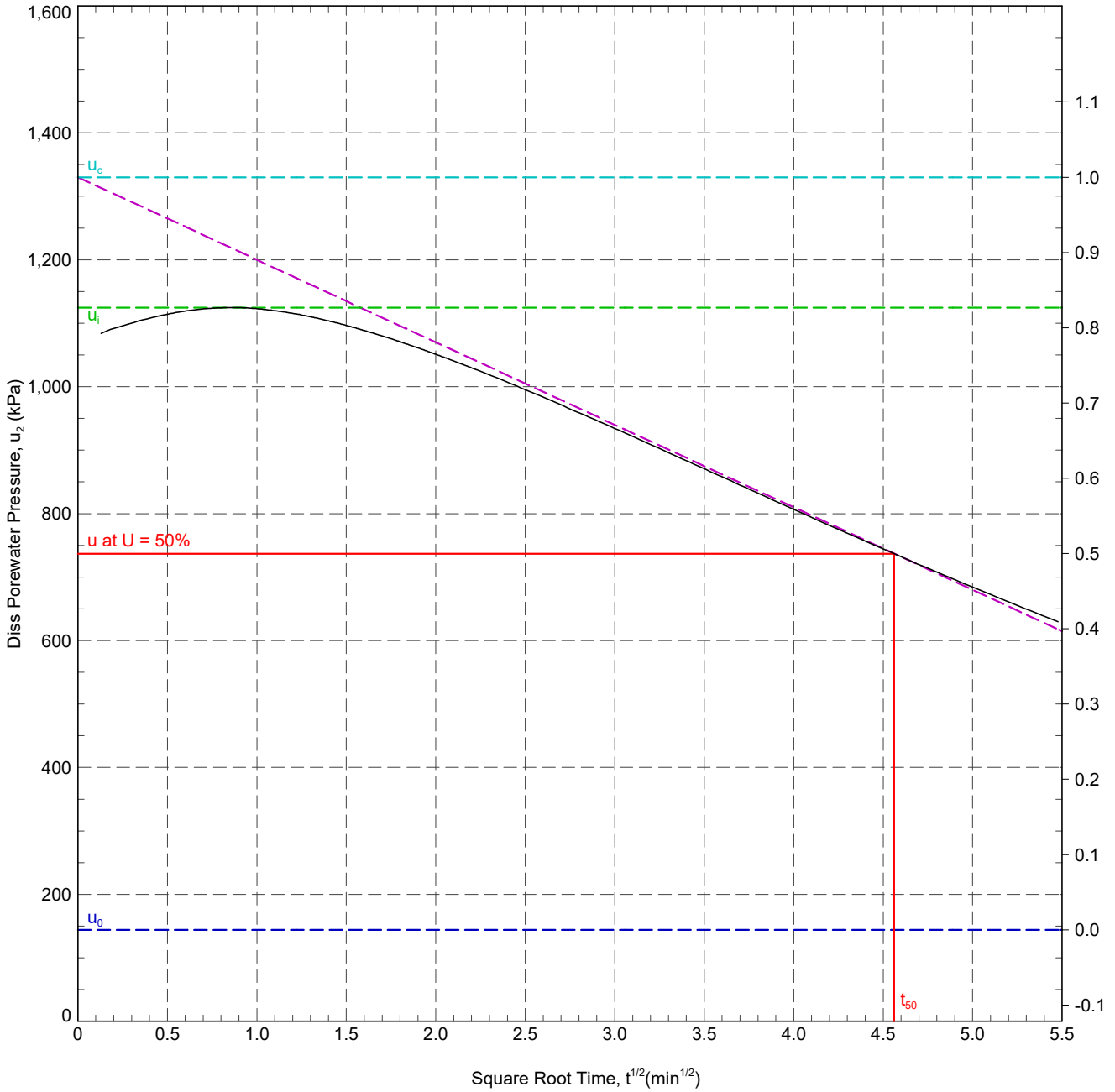
IN SITU SITE INVESTIGATION

Working with: STRUCTURAL SOILS LTD

Test ID

ATK_CPT19 - 15.20 m

CLIENT	: Structural Soils	AREA	: Ancoats Manchester	SHEET	: 1 OF 1
ENGINEER	: Tim Clifford	EASTING	: 385051.5 m	STATUS	: Final
PROJECT	: 765544 - Ancoats	NORTHING	: 398458.3 m	DATE	: 02/05/23
LOCATION	: Manchester	COORD. SYS.	:		
PROJECT No.	: 1230236	ELEVATION	: 49.07 m		



In Situ Pore Pressure, u_0:	144.2 kPa	Rigidity Index, I_r:	16.2
Initial Pore Pressure, u_i:	1124.7 kPa	Horizontal Coefficient of Consolidation, c_h:	1.32×10^1 m²/yr
Final Pore Pressure:	629.8 kPa	Ratio c_h/c_v:	1.25
Back Extrapolated Pore Pressure, u_c:	1330 kPa	Vertical Coefficient of Consolidation, c_v:	1.05×10^1 m²/yr
Degree of Dissipation:	50%		
Dissipation Pressure:	736.8 kPa		
Time for 50% Dissipation, t_{50}:	20.80 min		

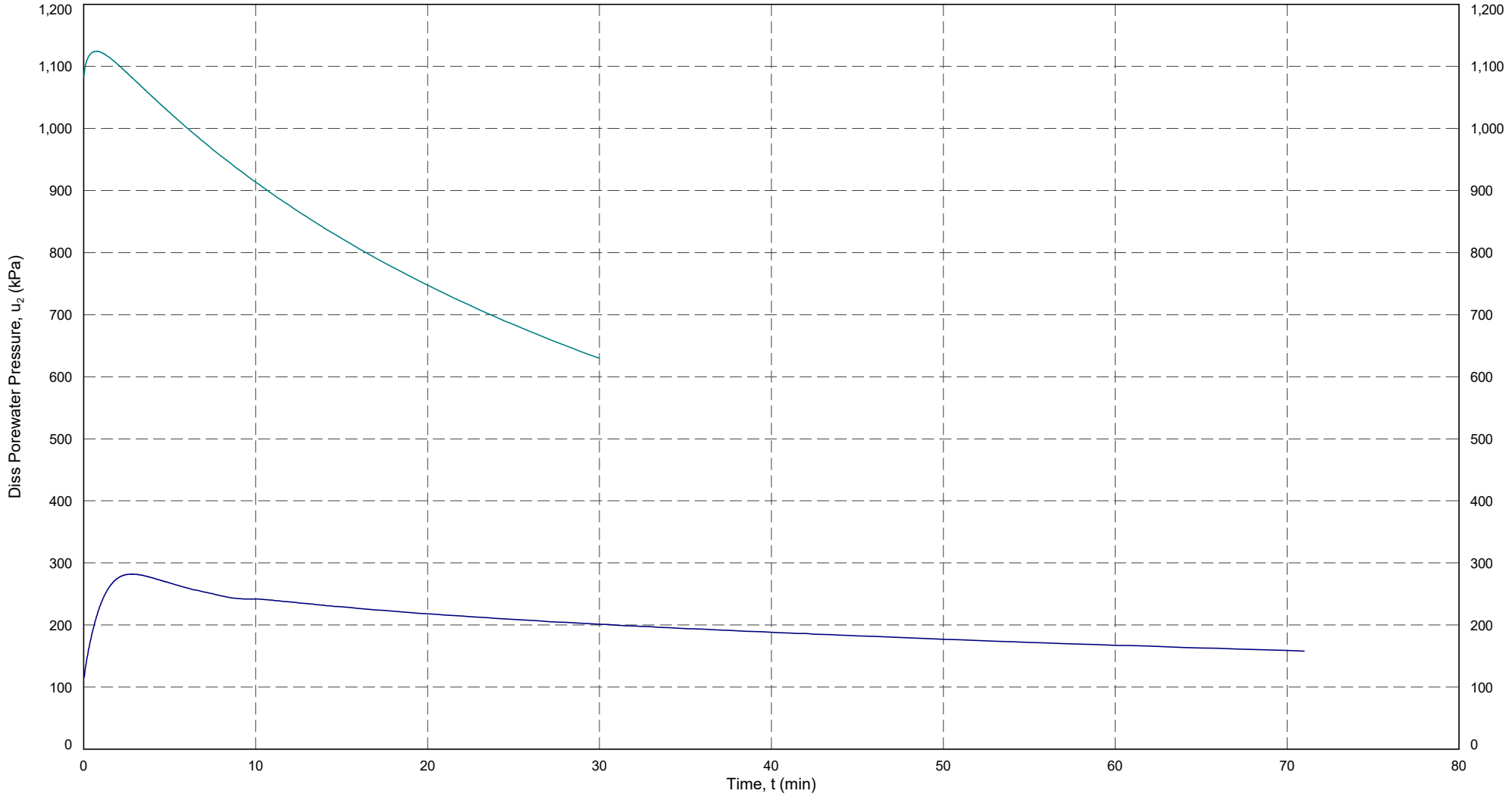
RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	15/05/2023
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	15/05/2023
CONE ID	: S15-CFIP.2177	APPROVED BY	: DW	DATE:	15/05/2023
OPERATOR	: RS				

REMARK

T50 reached. Test OK.

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:42 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

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - CHLOE.GLB Graph PPDT PORE PRESSURE VS. LIN T A4L 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:42 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



IN SITU SITE INVESTIGATION

TITLE

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Dissipation Test - ATK_CPT19

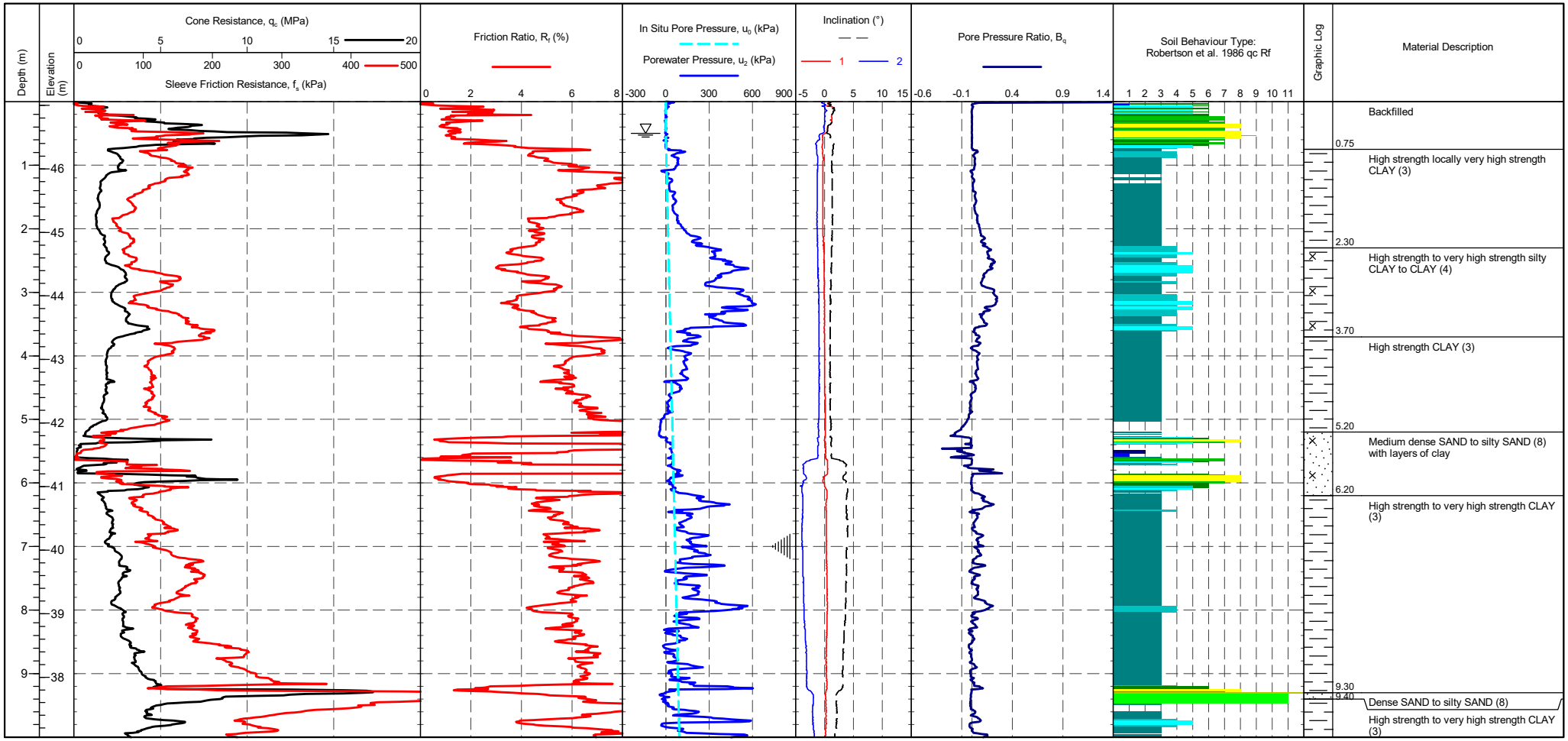
DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT20**

CLIENT : Structural Soils	EASTING : 385106.605 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398450.570 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.057 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2		
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni		
CONE AREA	: 15cm^2	OPERATOR	: RS		
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None		
FILTER POSITION	: u2	WEATHER	: Overcast & Mild		
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes.		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	246 mV	246 mV	0 MPa
Sleeve	246 mV	246 mV	0 kPa
Pore Pressure 2	384 mV	394 mV	0.003 kPa
X-Y Inclinometer	2518 mV	2483 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

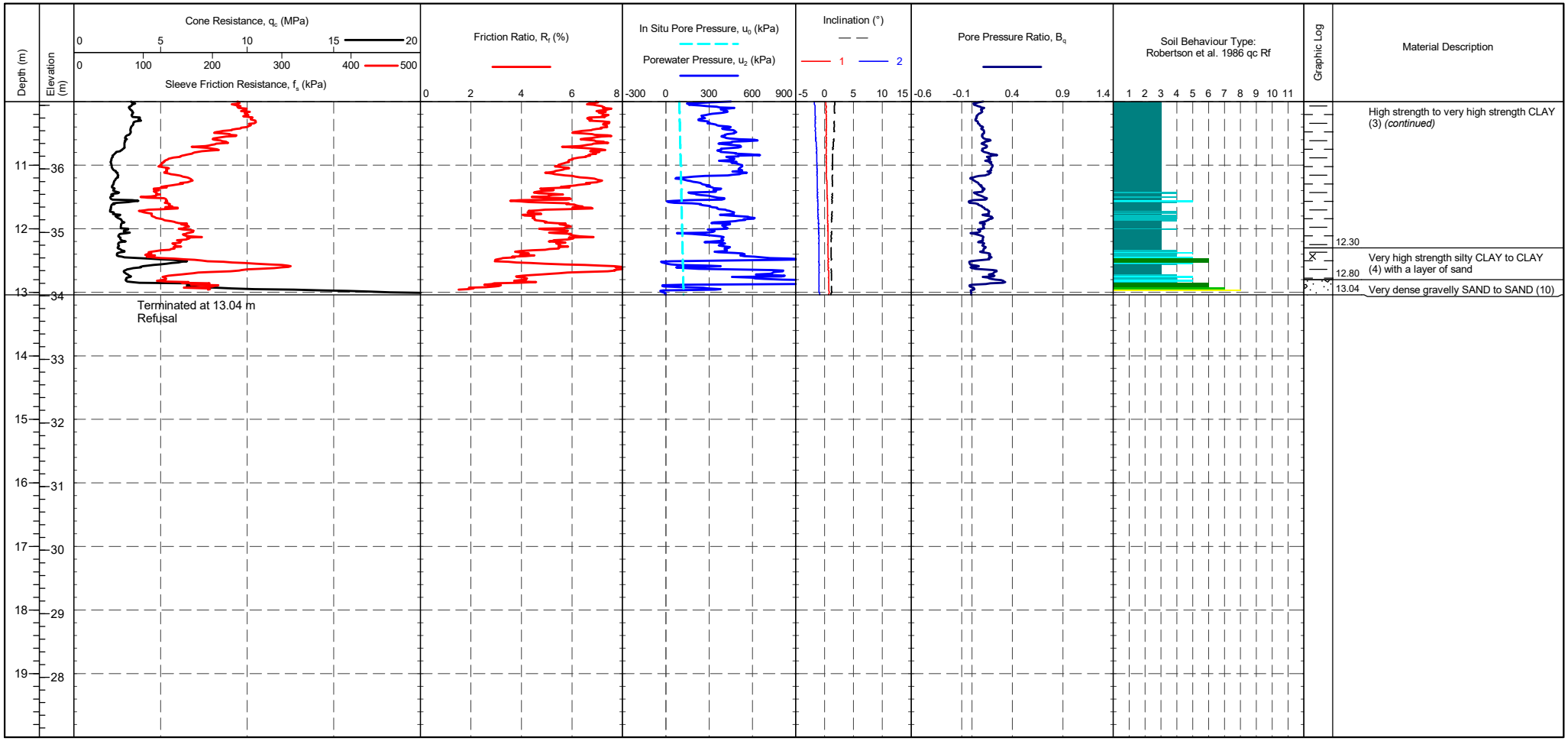
Dissipation Test

CPT LOG 01

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT20**

CLIENT : Structural Soils	EASTING : 385106.605 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398450.570 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.057 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2
CALIBRATION DATE	: 05/12/2022	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: RS
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Overcast & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	246 mV	246 mV	0 MPa
Sleeve	246 mV	246 mV	0 kPa
Pore Pressure 2	384 mV	394 mV	0.003 kPa
X-Y Inclinometer	2518 mV	2483 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: STRUCTURAL SOILS LTD

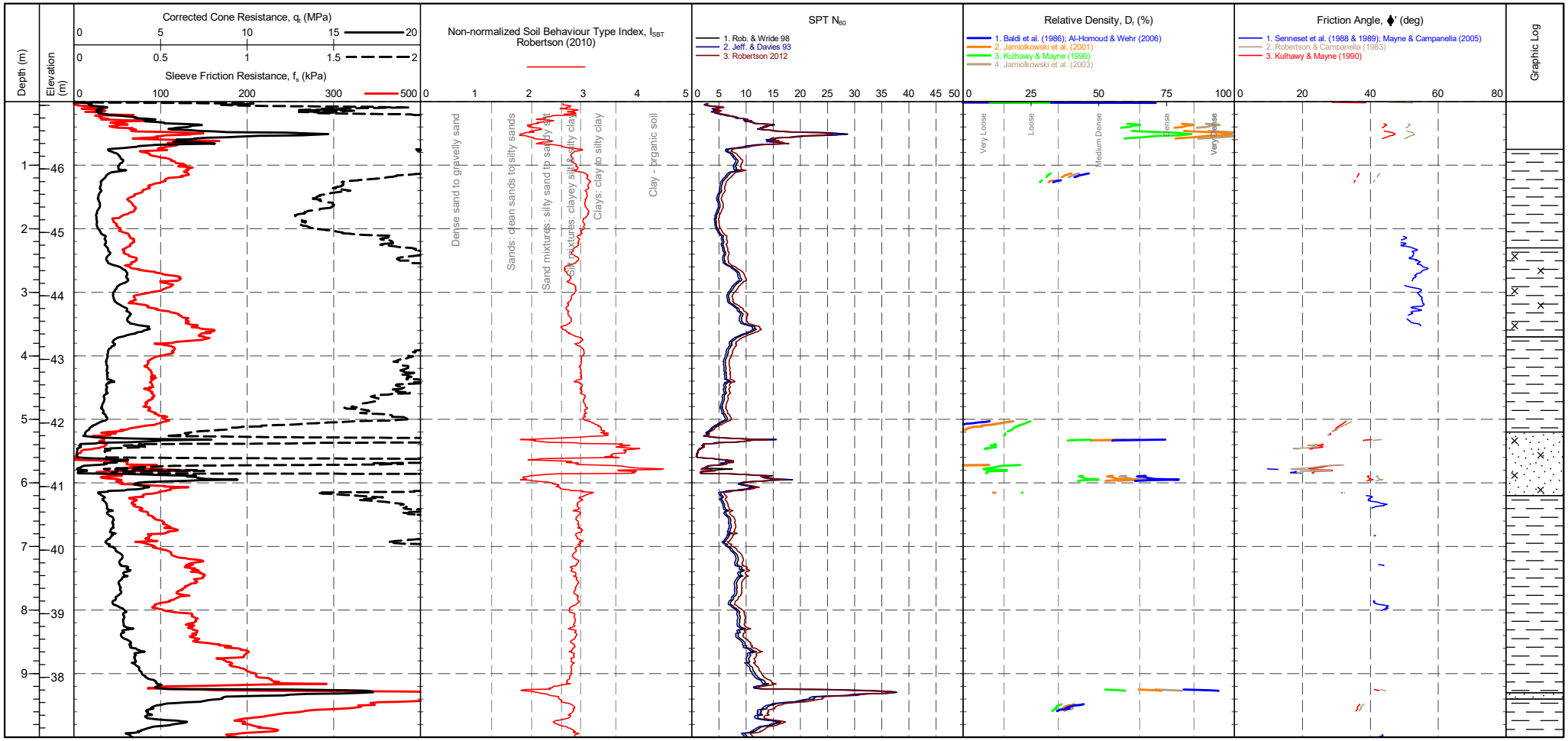
PointID: **ATK_CPT20**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385106.605 m
NORTHING : 398450.570 m
ELEVATION : 47.057 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 03/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	246 mV	246 mV	0 MPa
Sleeve	246 mV	246 mV	0 kPa
Pore Pressure 2	384 mV	394 mV	0.003 kPa
X-Y Inclinometer	2518 mV	2483 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

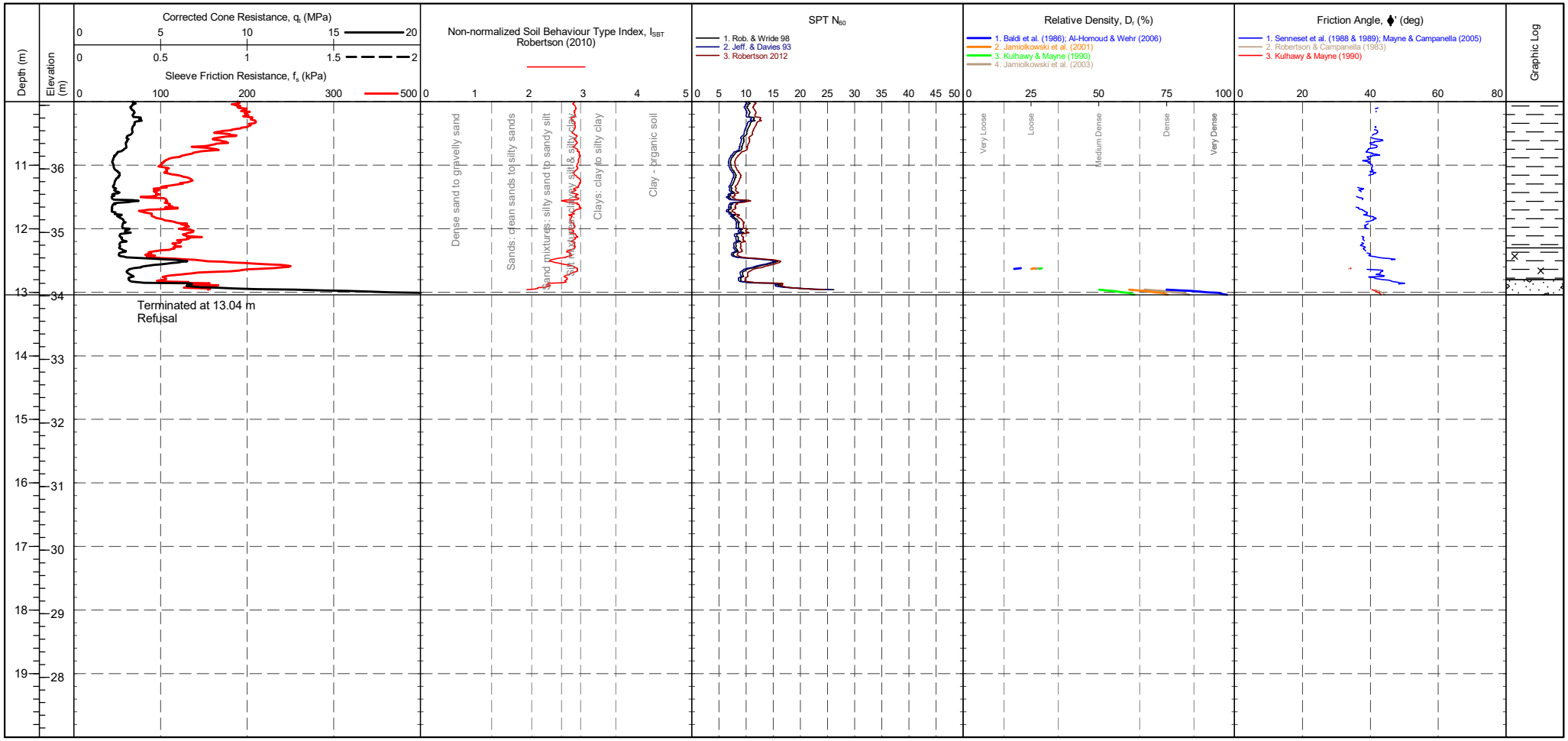
Dissipation Test

CPT LOG 02

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT20**

CLIENT : Structural Soils	EASTING : 385106.605 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398450.570 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.057 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post / Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	246 mV	246 mV / 0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	246 mV	246 mV / 0 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	384 mV	394 mV / 0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2518 mV	2483 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

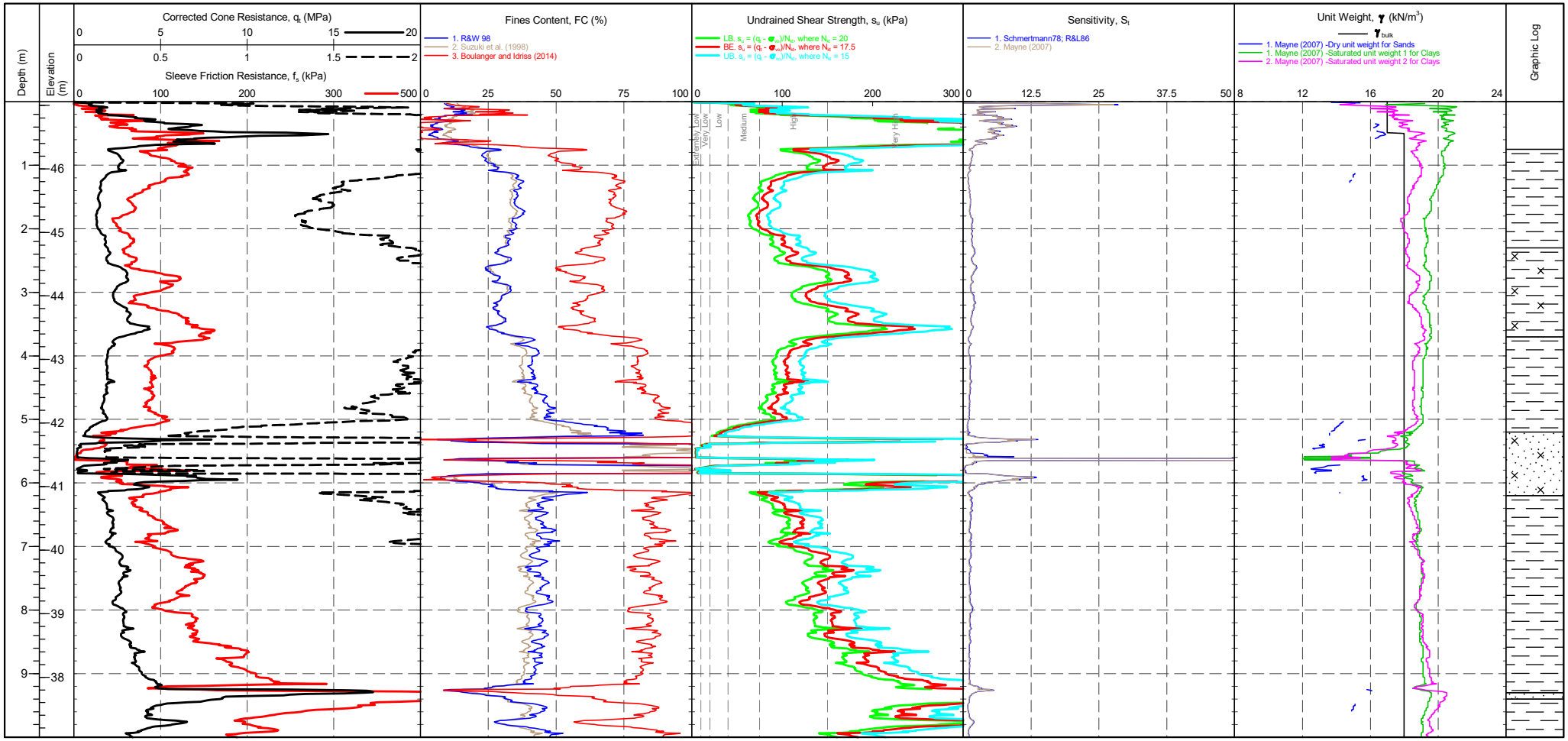
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT20**

CLIENT : Structural Soils	EASTING : 385106.605 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398450.570 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.057 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	246 mV	246 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	246 mV	246 mV	0 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	384 mV	394 mV	0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2518 mV	2483 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

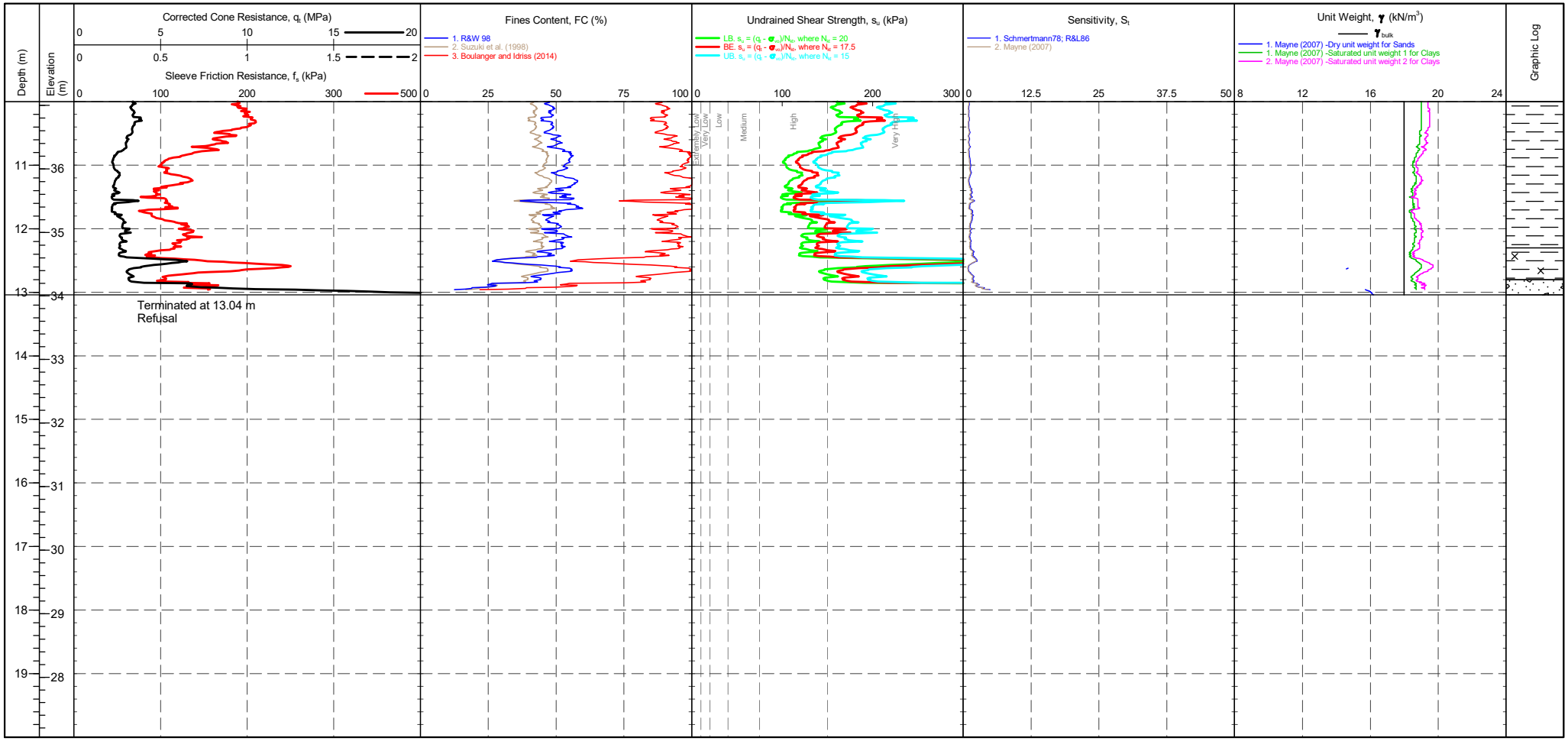
Dissipation Test

CPT LOG 03

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT20**

CLIENT : Structural Soils	EASTING : 385106.605 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398450.570 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.057 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	246 mV	246 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	246 mV	246 mV	0 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	384 mV	394 mV	0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2518 mV	2483 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

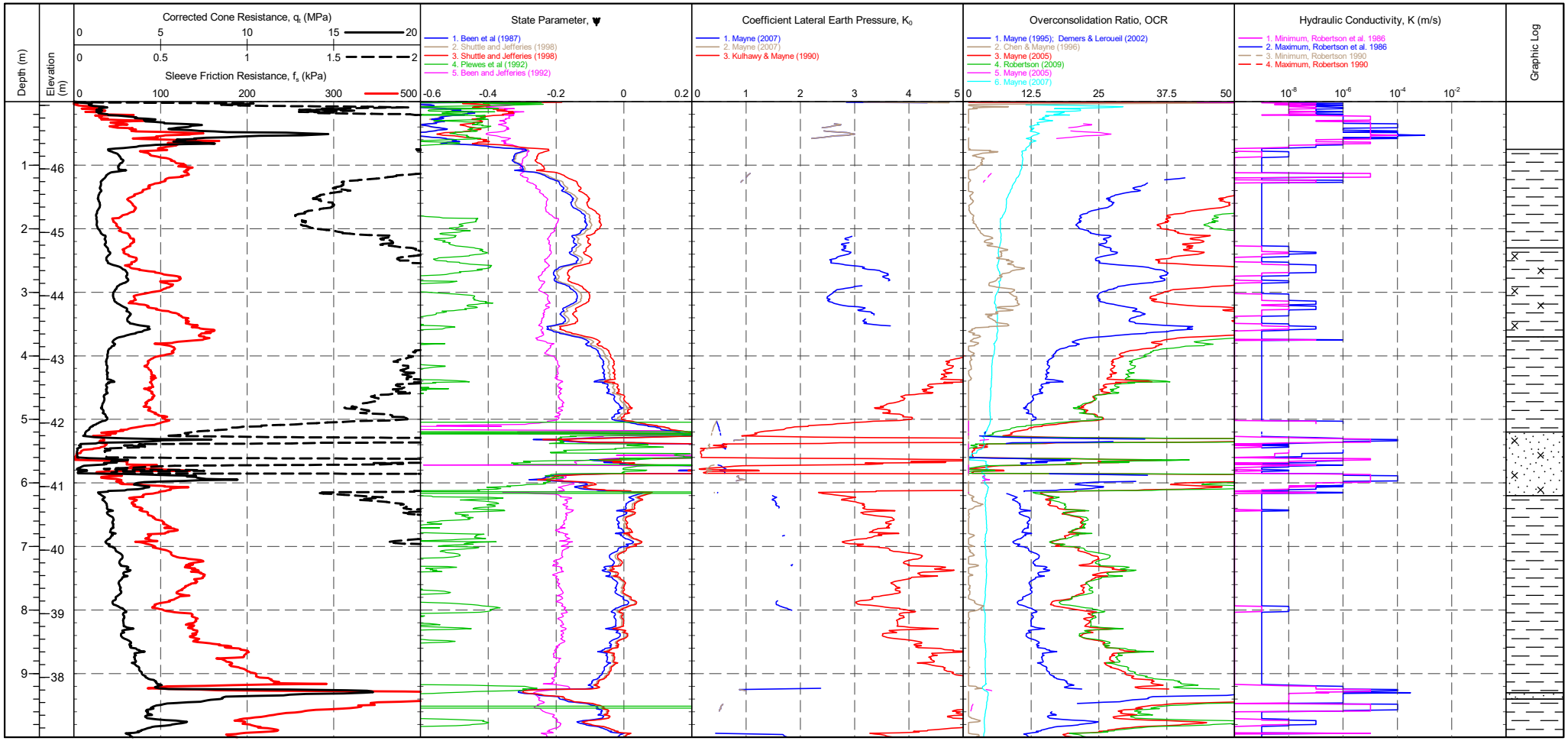
Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT20**

CLIENT : Structural Soils	EASTING : 385106.605 m	Remark:	SHEET : 1 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398450.570 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.057 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	246 mV	246 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	246 mV	246 mV	0 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	384 mV	394 mV	0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2518 mV	2483 mV	

Groundwater Level

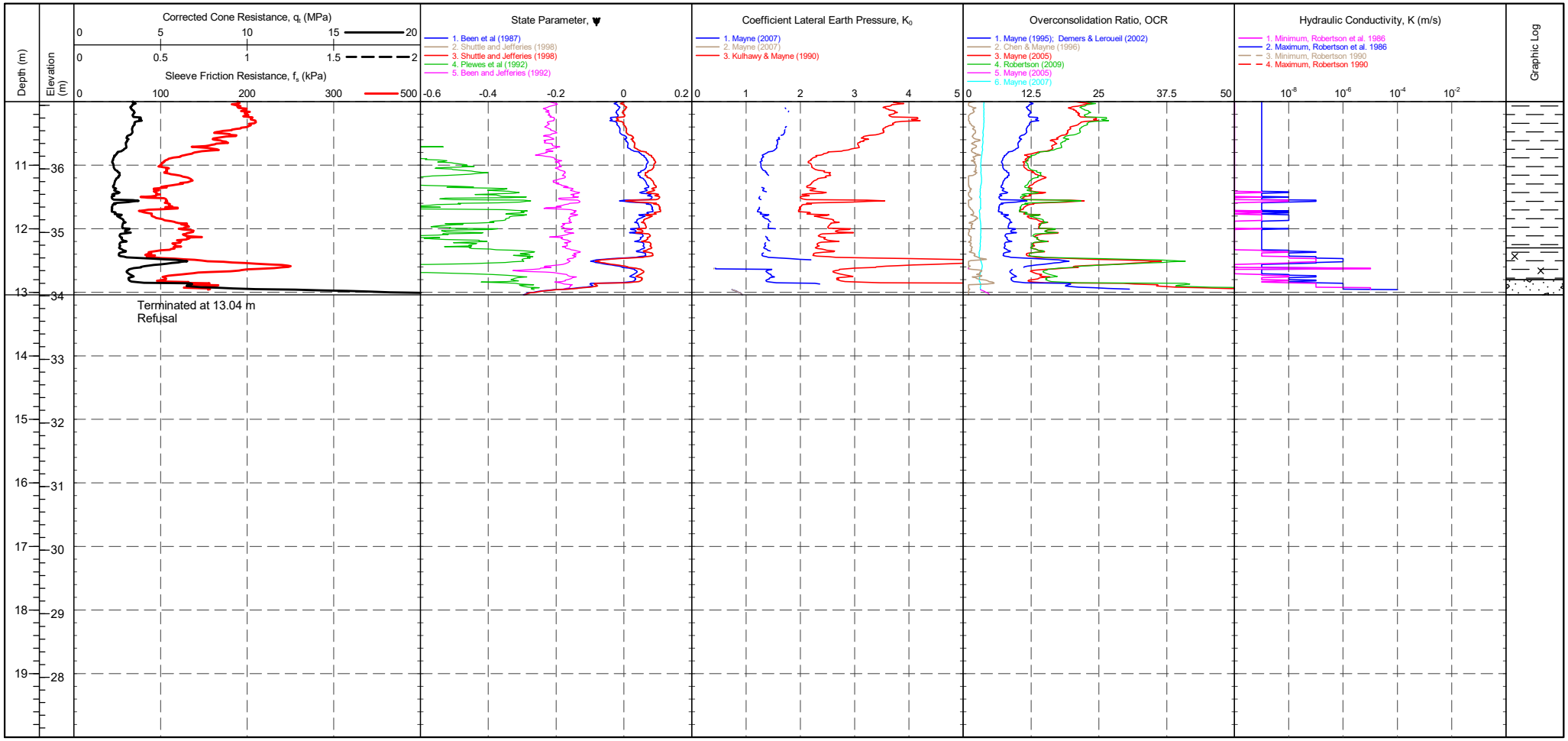
Dissipation Test

CPT LOG 04

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT20**

CLIENT : Structural Soils	EASTING : 385106.605 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398450.570 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.057 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	246 mV	246 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	246 mV	246 mV	0 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	384 mV	394 mV	0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2518 mV	2483 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

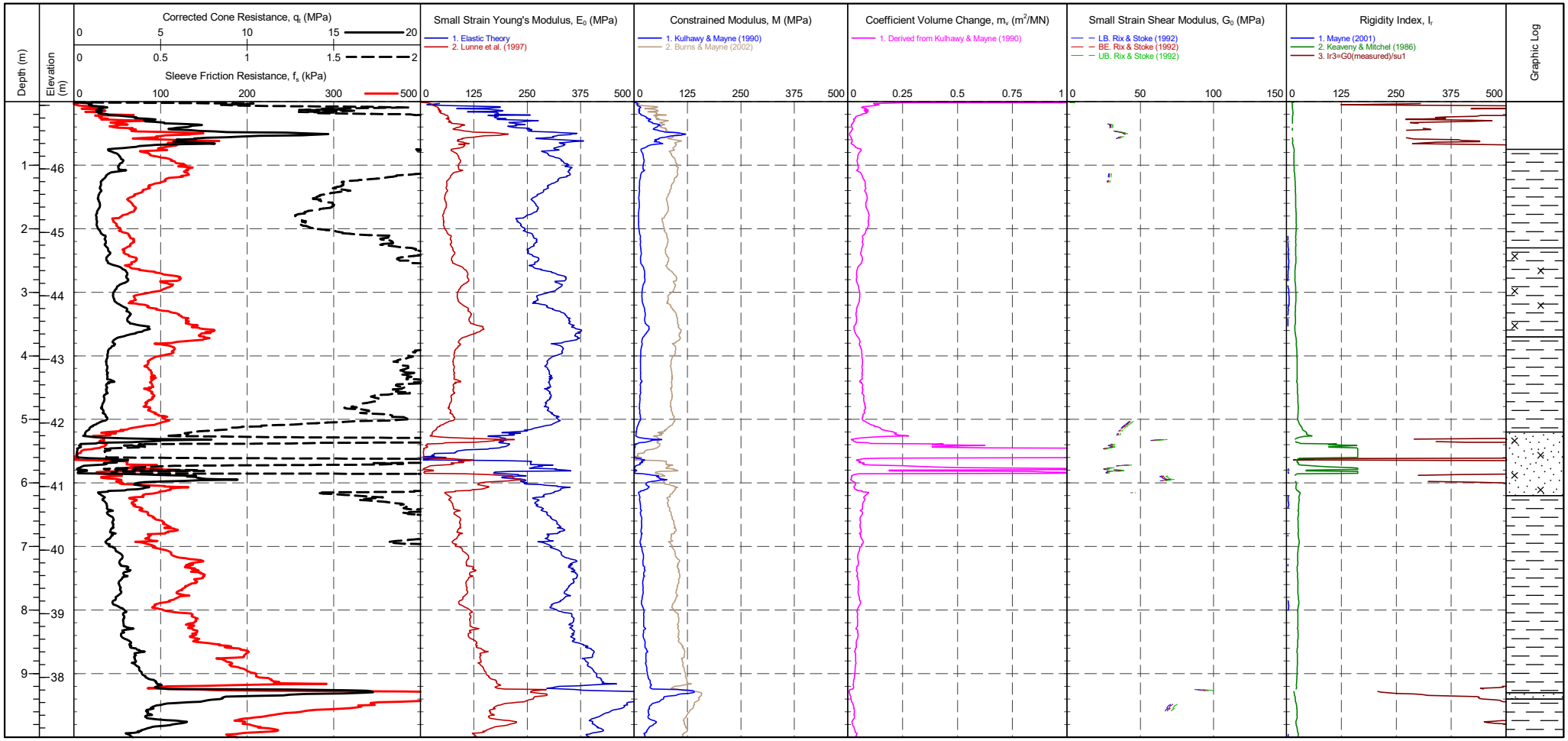
PointID: **ATK_CPT20**

CLIENT : Structural Soils
PROJECT : 765544 - Ancoats
LOCATION : Manchester
PROJECT No. : 1230236

EASTING : 385106.605 m
NORTHING : 398450.570 m
ELEVATION : 47.057 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 03/05/2023
PLOT DATE : 24/05/2023
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	: RS		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild		

Transducer	Pre	Post	Difference
Tip	246 mV	246 mV	0 MPa
Sleeve	246 mV	246 mV	0 kPa
Pore Pressure 2	384 mV	394 mV	0.003 kPa
X-Y Inclinometer	2518 mV	2483 mV	

Groundwater Level

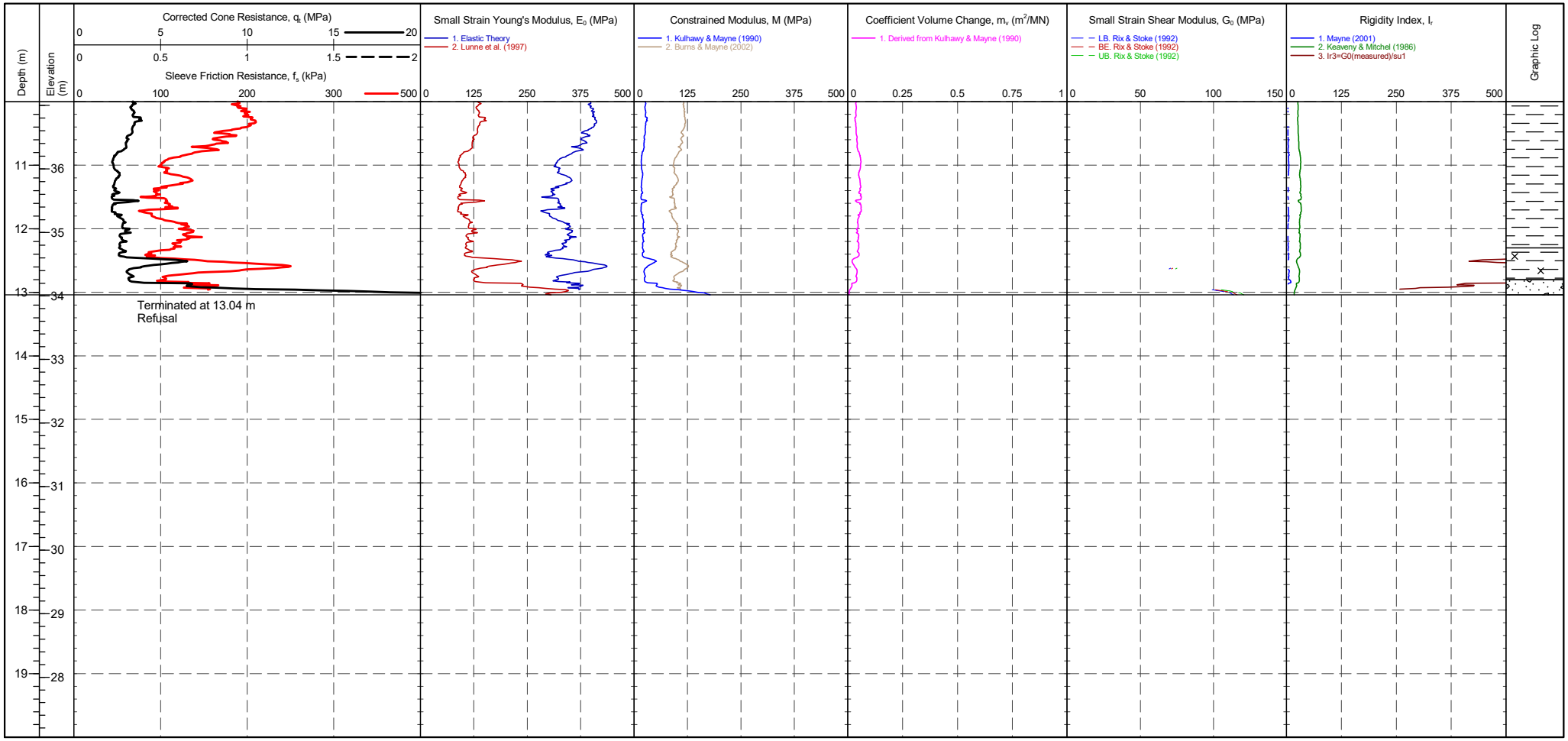
Dissipation Test

CPT LOG 05

Working with: STRUCTURAL SOILS LTD

PointID: **ATK_CPT20**

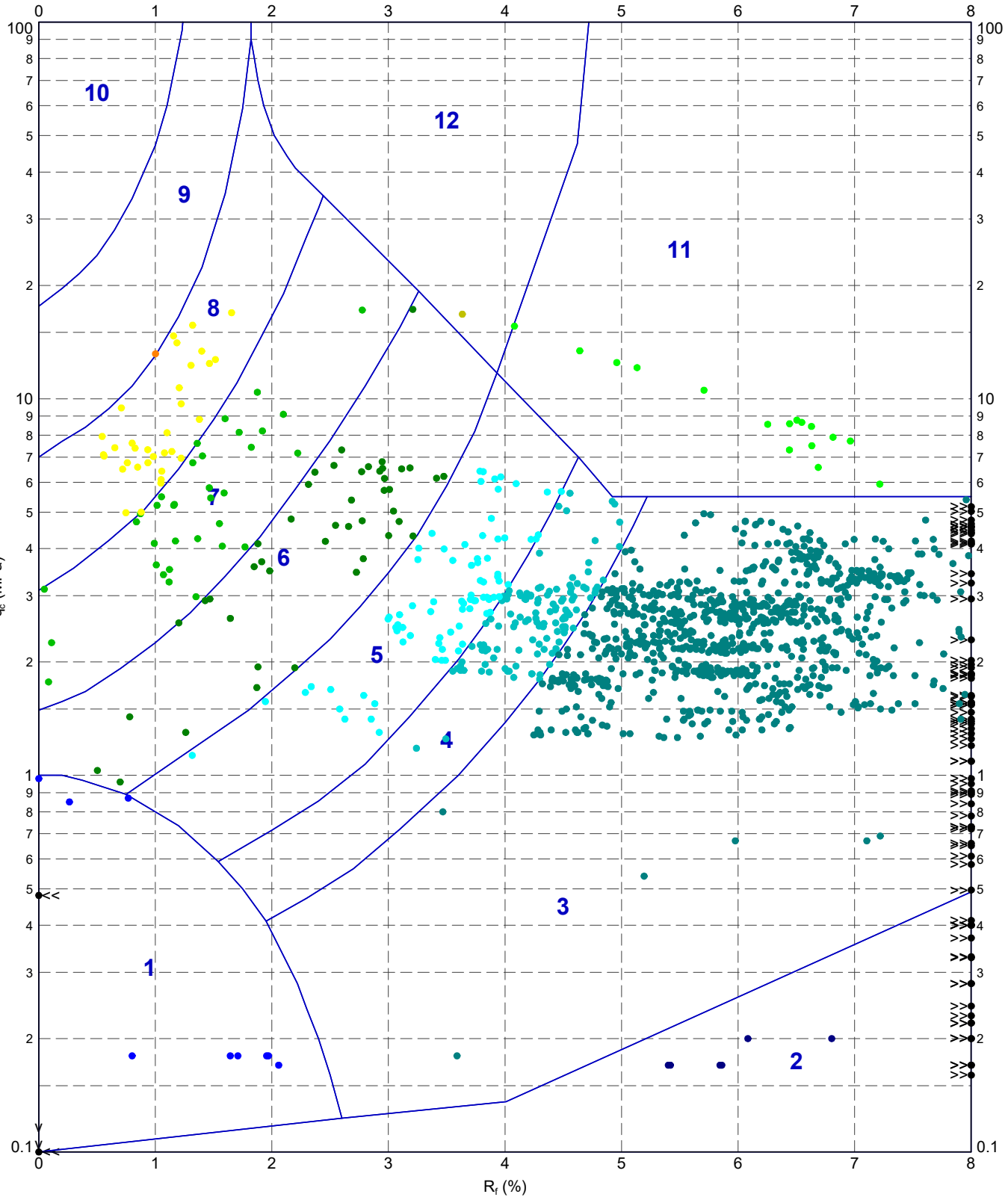
CLIENT : Structural Soils	EASTING : 385106.605 m	Remark:	SHEET : 2 OF 2
PROJECT : 765544 - Ancoats	NORTHING : 398450.570 m	Test refused on total pressure.	STATUS : Final
LOCATION : Manchester	ELEVATION : 47.057 m OD		TEST DATE : 03/05/2023
PROJECT No. : 1230236	CHECKED BY : DW		PLOT DATE : 24/05/2023
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2177	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	246 mV	246 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: RS	Sleeve	246 mV	246 mV	0 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	384 mV	394 mV	0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Overcast & Mild	X-Y Inclinometer	2518 mV	2483 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

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Robertson et al. 1986 q_c vs. R_f - ATK_CPT20

DRAWN	DATE 24/05/2023
CHECKED	DATE 24/05/2023
SCALE Not To Scale	A4
PROJECT No 1230236	FIGURE No

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:44 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

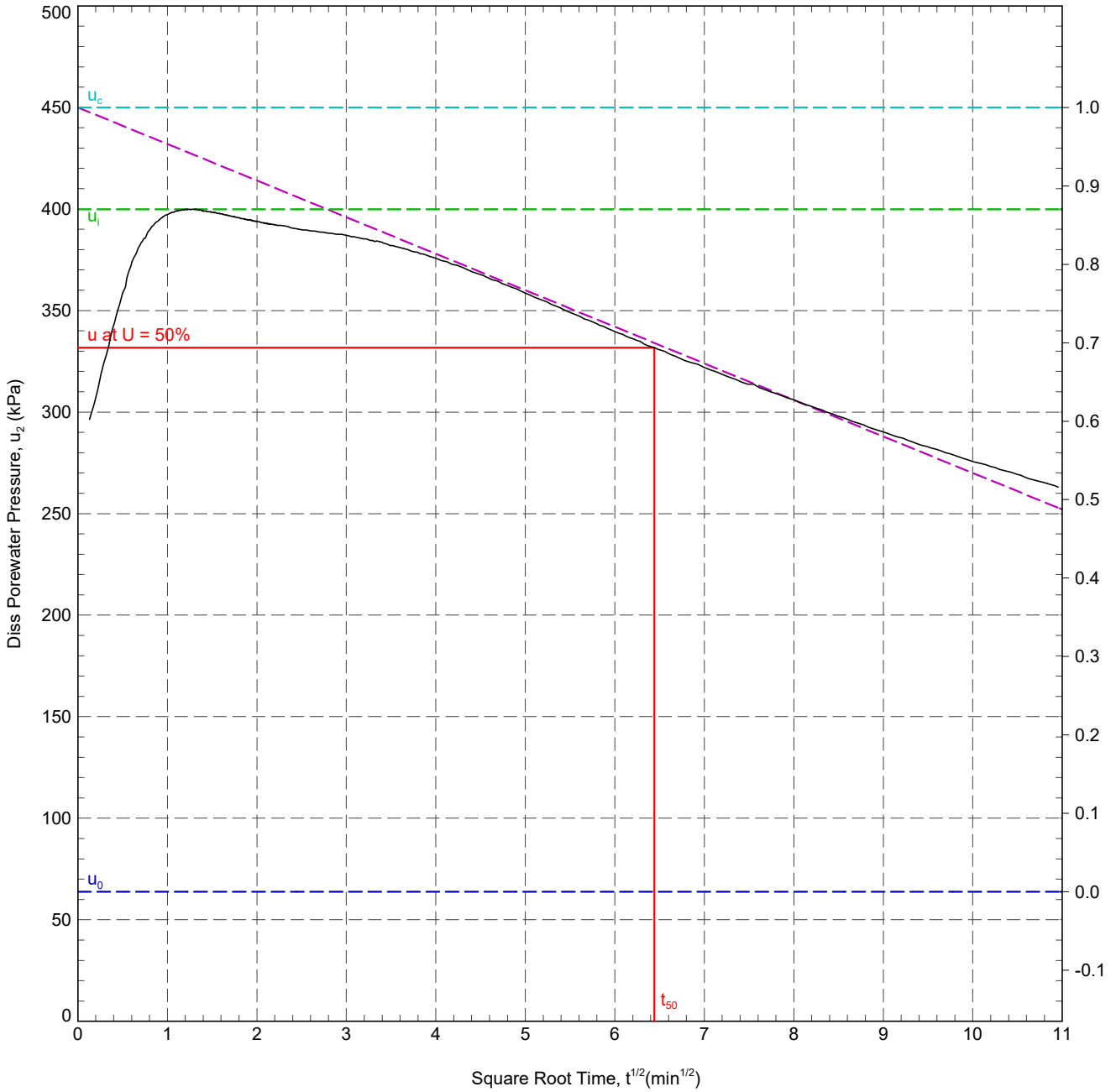
IN SITU SITE INVESTIGATION

Working with: STRUCTURAL SOILS LTD

Test ID

ATK_CPT20 - 7.00 m

CLIENT	: Structural Soils	AREA	: Ancoats, Manchester	SHEET	: 1 OF 1
ENGINEER	: Tim Clifford	EASTING	: 385106.6 m	STATUS	: Final
PROJECT	: 765544 - Ancoats	NORTHING	: 398450.6 m	DATE	: 03/05/23
LOCATION	: Manchester	COORD. SYS.	:		
PROJECT No.	: 1230236	ELEVATION	: 47.06 m		



In Situ Pore Pressure, u_0:	63.8 kPa	Rigidity Index, I_r:	3.5
Initial Pore Pressure, u_i:	399.8 kPa	Horizontal Coefficient of Consolidation, c_h:	3.07×10^0 m²/yr
Final Pore Pressure:	263.1 kPa	Ratio c_h/c_v:	1.25
Back Extrapolated Pore Pressure, u_c:	450 kPa		
Degree of Dissipation:	50%		
Dissipation Pressure:	331.7 kPa		
Time for 50% Dissipation, t_{50}:	41.50 min		

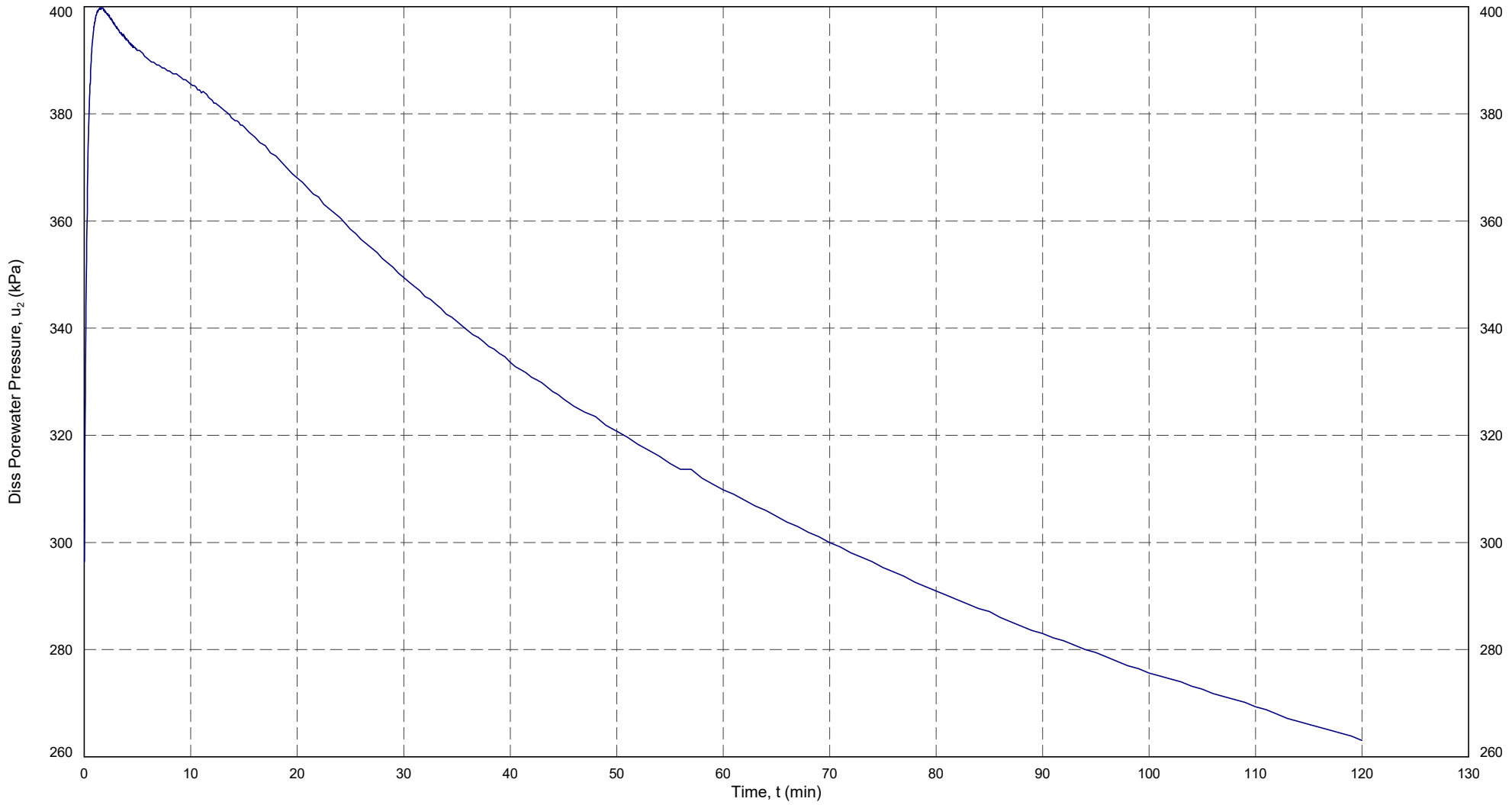
RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	15/05/2023
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	15/05/2023
CONE ID	: S15-CFIP.2177	APPROVED BY	: DW	DATE:	15/05/2023
OPERATOR	: RS				

REMARK

T50 reached. Test OK.

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:44 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

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - CHLOE.GLB Graph PPDT PORE PRESSURE VS. LIN T A4L 1230236 ANCOATS MANCHESTER STRUCTURAL SOILS.GPJ <<DrawingFile>> 24/05/2023 14:44 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



IN SITU SITE INVESTIGATION

TITLE

Structural Soils
Tim Clifford
Manchester
765544 - Ancoats
Dissipation Test - ATK_CPT20

DRAWN	DATE 24/05/2023	
CHECKED	DATE 24/05/2023	
SCALE Not To Scale		A4
PROJECT No 1230236	FIGURE No	



IN SITU SITE INVESTIGATION

Unit 23 Hastings Innovation Centre,
Highfield Drive
St. Leonards on Sea, East Sussex,
TN38 9UH, U.K.

Company No.: 6339499
VAT No.: 922 3561 41

Appendix D. GQRA Screening Sheets

Assessment Criteria : *Commercial - 1% SOM Sand*

☐ **Use MRL Values?**

Constituent	Unit	Limit of Detection	Generic Assessment Criteria	Number of Samples	Minimum Value	Maximum Value	Number of Exceedances	Locations of Exceedances	ATK TP08	ATK TP08	ATK BH01	ATK BH04	ATK BH04	ATK BH05	ATK BH08	ATK TP05	ATK TP07	ATK-BH03	ATK-BH06	ATK_TP02	ATK_CPT15	ATK_CPT16	ATK_CPT17	ATK_TP01	ATK_TP01	ATK_TP09	ATK_TP10	ATK BH08A	ATK_CPT12	ATK_CPT14	ATK_BH07	ATK_WS02	ATK_WS04	ATK_WS01	ATK_CPT03	ATK_TP04	ATK_BH12	ATK-TP03	ATK_TP06	ATK BH02a	ATK_CPT07	ATK_HDP01
									0.3m	1m	0.5m	0.4m	1.2m	0.8m	0.3m	0.8m	0.4m	0.8m	1m	1.2m	0.5m	0.1m	0.7m	0.3m	1.8m	1.3m	1.2m	1m	0.36m	0.4m	0.45m	0.5m	0.3m	0.2m	0.7m	0.3m	0.5m	1m	0.25m	1.2m	0.6m	0.4m
									12/04/2023	12/04/2023	06/04/2023	12/04/2023	12/04/2023	06/04/2023	06/04/2023	12/04/2023	14/04/2023	14/04/2023	14/04/2023	18/04/2023	17/04/2023	17/04/2023	17/04/2023	13/04/2023	13/04/2023	17/04/2023	17/04/2023	14/04/2023	17/04/2023	14/04/2023	18/04/2023	19/04/2023	19/04/2023	19/04/2023	18/04/2023	19/04/2023	21/04/2023	21/04/2023	20/04/2023	02/05/2023	02/05/2023	28/04/2023
pH	pH	0.01	No SSV	34	7.25	12.24	0		8.82	7.58	8.56	8.23	8.52	9.52	10.6	9.03	8.69	8.04	9.31	8.37	8.14	8.94	8.98	8.67	7.92	8.3	7.75	8.33	8.68	11.89	8.68	8.16	12.24	9.79	9.08	10.69	7.25	7.87	9.58	8.56	8.24	8.1
Ammonium / Ammoniacal Nitrogen as NH4D	mg/kg	0.26	No SSV	34	<0.26	53.4	0		1.38	23.2	1.91	<0.26	0.47	47.5	2.14	4.07	1.61	11.7	1.12	15.7	5.38	0.83	0.77	0.68	53.4	9.77	1.93	1.74	0.34	1.3	<0.26	1.08	<0.26	<0.26	2.07	<0.26	0.53	0.74	1.38	35.1	<0.26	1.61
Sulphate (acid soluble)	mg/kg	200	No SSV	34	<200	7800	0		<200	<200	<200	<200	420	420	<200	1200	<200	2500	880	320	<200	<200	710	<200	860	270	7800	430	<200	2200	270	880	1500	<200	230	460	500	450	<200	490	690	<200
Cyanide (free)	mg/kg	1	373	34	<1	<1	0		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cyanide (total)	mg/kg	1	No SSV	34	<1	4	0		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phenols - Total by HPLCA	mg/kg	0.2	No SSV	34	<0.2	<0.2	0		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Sulphide	mg/kg	5	No SSV	34	<5	250	0		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	250	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	45	83	78	<5	<5	<5	<5	<5	<5	<5	<5
Organic Matter	% w/w	0.1	No SSV	34	<0.1	13.3	0		<0.1	1.5	0.4	0.3	1.7	3.6	0.4	13.3	1.1	2.7	3.8	2.7	0.6	<0.1	1.3	0.5	5.4	1.5	11.6	1.3	<0.1	0.2	1	0.6	0.5	0.2	0.9	0.6	1.1	7.4	0.7	3	1.5	2
Arsenic	mg/kg	1	635	34	<1	43	0		<1	<1	<1	<1	2	4	1	43	7	2	6	4	<1	<1	<1	<1	8	<1	18	3	<1	<1	3	2	<1	<1	4	3	6	9	<1	6	3	4
Boron (water soluble)	mg/kg	1	No SSV	34	<1	1.6	0		<1	<1	<1	<1	<1	<1	<1	<1	<1	1.6	<1	1.1	1.1	<1	<1	<1	<1	1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.6	<1	<1
Cadmium	mg/kg	0.5	410	34	<0.5	1.6	0		<0.5	<0.5	<0.5	<0.5	0.6	0.7	<0.5	1.6	0.8	0.7	0.6	0.5	<0.5	<0.5	0.7	<0.5	0.6	0.7	0.6	0.7	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	0.6	0.5	1	0.7	0.7	0.5	0.7	0.7
Copper	mg/kg	1	106000	34	2	244	0		3	10	5	9	25	22	6	244	19	29	38	47	12	2	27	6	45	25	70	27	5	7	21	6	8	4	22	16	28	75	15	44	22	19
Chromium	mg/kg	1	208000	34	5	55	0		6	24	13	12	35	29	13	55	30	33	9	27	22	8	45	9	34	37	17	35	11	16	31	5	9	6	26	18	36	20	30	23	29	29
Chromium (hexavalent)	mg/kg	1	49.1	34	<1	<1	0		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead	mg/kg	1	2310	34	2	771	0		4	11	13	9	10	9	26	506	10	47	203	51	16	2	18	9	61	23	771	21	5	10	14	18	10	3	23	12	19	78	10	39	10	13
Mercury	mg/kg	0.17		34	<0.17	3.7	0		<0.17	<0.17	<0.17	<0.17	1.4	0.24	<0.17	3.7	<0.17	<0.17	1.46	<0.17	<0.17	<0.17	<0.17	<0.17	0.37	0.36	2.13	<0.17	0.29	1.84	<0.17	<0.17	1.06	<0.17	0.22	0.37	<0.17	0.54	<0.17	<0.17	0.49	<0.17
Nickel	mg/kg	1	1770	34	8	41	0		11	15	12	17	39	35	18	38	31	29	10	32	18	8	40	9	32	36	19	36	13	11	35	8	9	8	26	21	40	27	30	23	34	41
Selenium	mg/kg	1	13000	34	<1	4	0		<1	<1	<1	<1	<1	<1	1	3	<1	<1	<1	<1	<1	<1	<1	<1	4	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	mg/kg	1	7490	34	3	41	0		5	27	6	8	33	28	5	36	31	36	13	27	30	3	41	6	41	39	24	37	5	10	30	6	6	4	24	14	38	24	22	27	30	28
Zinc	mg/kg	5	1100000	34	11	315	0		13	31	59	30	63	56	25	315	49	47	133	57	29	11	97	16	63	59	135	62	18	22	50	28	26	15	42	39	61	74	56	45	56	51
Asbestos in Soil (inc. matrix)			No SSV	0	-	-	0																																			
Asbestos in soil			No SSV	34	-	-	0		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Matrix (visual)			No SSV	0	-	-	0		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos Matrix (microscope)			No SSV	0	-	-	0		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos ACM - Suitable for Water Absorption Test?			No SSV	34	-	-	0		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthene	mg/kg	0.01	83600	34	<0.01	0.93	0		<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.93	<0.01	<0.01	0.92	0.38	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Acenaphthylene	mg/kg	0.01	No SSV	34	<0.01	0.23	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.23	<0.01	<0.01	0.02	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Anthracene	mg/kg	0.02	535000	34	<0.02	1.61	0		<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	1.61	<0.02	<0.02	1.11	0.45	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(a)anthracene	mg/kg	0.04	BaP Surrogate	34	<0.04	4.92	0		<0.04	<0.04	0.18	<0.04	<0.04	<0.04	<0.04	4.92	<0.04	<0.04	1.86	0.91	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.08	<0.04	<0.04	<0.04	<0.04	0.05	0.04	<0.04	<0.04	0.08	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Benzo(a)pyrene	mg/kg	0.04	76.3	34	<0.04	3.8	0		<0.04	<0.04	0.16	<0.04	<0.04	<0.04	<0.04	3.8	<0.04	<0.04	1.26	0.88	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.06	<0.04	<0.04	<0.04	<0.04	0.05	0.04	<0.04	<0.04	0.08	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Benzo(b)fluoranthene	mg/kg	0.05	BaP Surrogate	34	<0.05	4.35	0		<0.05	<0.05	0.18	<0.05	<0.05	<0.05	<0.05	4.35	<0.05	<0.05	1.67	0.93	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	0.06	0.05	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	mg/kg	0.05	BaP Surrogate	34	<0.05	1.23	0		<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	1.23	<0.05	<0.05	0.48	0.36	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	mg/kg	0.07	BaP Surrogate	34	<0.07	1.44	0		<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	1.44	<0.07	<0.07	0.51	0.32	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
Chrysene	mg/kg	0.06	BaP Surrogate	34	<0.06	5.6	0		<0.06	<0.06	0.2	<0.06	<0.06	<0.06	<0.06	5.6	<0.06	<0.06	1.74	0.85	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.1	<0.06	<0.06	<0.06	<0.06	<0.06	0.06	<0.06	<0.06	0.1	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Dibenzo(ah)anthracene	mg/kg	0.04	BaP Surrogate	34	<0.04	0.35	0		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.35	<0.04	<0.04	0.12	0.08	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Fluoranthene	mg/kg	0.08	72200	34	<0.08	12.9	0		<0.08	<0.08	0.34	<0.08	<0.08	<0.08	<0.08	12.9	<0.08	<0.08	5.88	2.26	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	0.18	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	0.17	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Fluorene	mg/kg	0.01	66500	34	<0.01	0.75	0		<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.75	<0.01	<0.01	0.57	0.25	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Indeno(123-cd)pyrene	mg/kg	0.03	BaP Surrogate	34	<0.03	1.42	0		<0.03	<0.03	0.09	<0.03	<0.03	<0.03	<0.03	1.42	<0.03	<0.03	0.58	0.44	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Naphthalene	mg/kg	0.03	90.1	34	<0.03	0.65	0		<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.09	<0.03	<0.03	0.65	0.15	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Phenanthrene	mg/kg	0.03	No SSV	34	<0.03	9.22	0		<0.03	<0.03	0.2	<0.03	<0.03	<0.03	<0.03	9.22	<0.03	<0.03	5.87	1.54	<0.03	<0.03	0.05	<0.03	<0.03	<0.03	0.17	<0.03	<0.03	<0.03	<0.03	0.06	0.06	0.04	<0.03	0.13	<0.03	<0.03	0.04	<0.03	<0.03	<0.03
Pyrene	mg/kg	0.07	54100	34	<0.07	13	0		<0.07	<0.07	0.33	<0.07	<0.07	<0.07	<0.07	13	<0.07	<0.07	4.56	2.05	<0.07	<0.07	0.09	<0.07	<0.07	<0.07	0.2	<0.07	<0.07	<0.07	<0.07	0.09	0.09	0.09	<0.07	<0.07	0.15	<0.07	<0.07	<0.07	<0.07	<0.07
Total PAH-16MS	mg/kg	0.01	No SSV	34	<0.08	61.8	0		<0.08	<0.08	1.81	<0.08	<0.08	<0.08	<0.08	61.8	<0.08	<0.08	27.8	11.9	<0.08	<0.08	0.14	<0.08	<0.08	<0.08	0.93	<0.08	<0.08	<0.08	<0.08	0.31	0.37	<0.08	<0.08	0.92	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
TPH aliphatic C5-C6	mg/kg	0.01	4490	34	<0.01	<0.01	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
TPH aliphatic C6-C8	mg/kg	0.01	10400	34	<0.01	<0.01	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
TPH aliphatic C8-C10	mg/kg	1	1370	34	<1	2	0		<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1
TPH aliphatic C10-C12	mg/kg	1	7900	34	<1	2	0		<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
TPH aliphatic C12-C16	mg/kg	1	34000	34	<1	4	0		<1	<1	<1	<1	<1	<1	<1	3	<1	<1	1	4	<1	<1	2	<1	<1	<1	3	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
TPH aliphatic C16-C21	mg/kg	1	3620000	34	<1	6	0		2	<1	<1	<1	<1	<1	<1	4	<1	<1	2	4	<1	<1	6	2	3	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1
TPH aliphatic C21-C35	mg/kg	1	3620000	34	<1	91	0		14	<1	6	3	1	<1	7	13	<1	1	29	9	<1	3	91	82	12	2	8	2	<1	6	<1	2	4	3	2	4	<1	2	6	3	1	1
TPH aliphatic C35-C44	mg/kg	1	No SSV	34	<1	95	0		2	<1	2	<1	<1	<1	<1	23	<1	<1	10	10	<1	<1	95	36	4	3	21	2	<1	8	<1	<1	<1	<1	4	<1	<1	4	<1	<1	<1	<1
Total Aliphatics	mg/kg	1	No SSV	34	<1	194	0		18	<1	9	3	1	<1	7	46	<1	1	44	30	<1	3	194	120	18	2	23	2	<1	8	<1	2	4	3	3	10	<1	2	6	3	1	1
TPH aromatic C5-C7 (Benzene)	mg/kg	0.01	12.5	34	<0.01	0.02	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
TPH aromatic C7-C8 (Toluene)	mg/kg	0.01	27900	34	<0.01	<0.01	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
TPH aromatic C8-C10	mg/kg	1	2210	34	<1	46	0		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	1	<1	<1	20	<1	<1	<1	<1	<1	<1	46	<1	<1	3	<1	<1
TPH aromatic C10-C12	mg/kg	1	12300	34	<1	6	0		<1	<1	<1	<1	<1	<1	<1	2	<1	<1	4	6	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
TPH aromatic C12-C16	mg/kg	1	41300	34	<1	34	0		<1	<1	1	<1	<1	<1	<1	23	<1	<1	13	34	<1	<1	2	2	4	<1	8	<1	<1	<1	<1	<1	<1	<1	2	2	<1	2	4	1	<1	<1
TPH aromatic C21-C35	mg/kg	1	28400	34	<1	477	0		<1	<1	12	1	<1	<1	<1	477	<1	3	147	198	<1	1	32	24	28	4	44	4	<1	<1	<1	5	5	<1	4	5	<1	7	3	4	1	<1
TPH aromatic C35-C44	mg/kg	1	No SSV	34	<1	9	0		<1	<1	<1	<1	<1	<1	<1	2	<1	<1	1	<1	<1	<1	9	3	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Aromatics	mg/kg	1	No SSV	34	<1	651	0		<1	<1	17	1	<1	<1	<1	651	<1	3	220	335	<1	1	53	33	45	5	73	5	<1	21	<1	6	8	<1	7	57	<1	11	15	8	1	<1
TPH (Ali & Aro >C5-C44)	mg/kg	1	No SSV	34	<1	697	0		19	<1	26	5	1	<1	7	697	<1	4	264	366	<1	4	247	153	63	7	96	7	<1	29	<1	8	12	4	10	67	<1	13	21	10	2	1
Benzene	mg/kg	0.01	12.5	34	<0.01	0.02	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Toluene	mg/kg	0.01	27900	34	<0.01	<0.01	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Ethyl Benzene	mg/kg	0.01	7660	34	<0.01	<0.01	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
m & p Xylene	mg/kg	0.01	No SSV	34	<0.01	<0.01	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
o Xylene	mg/kg	0.01	3030	34	<0.01	<0.01	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Methyl tert-butyl ether	mg/kg	0.01	3140	34	<0.01	<0.01	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4-Bromophenyl phenyl ether	mg/kg	0.1	No SSV	8	<0.1	<0.1	0													<0.1					<0.1	<0.1	<0.1												<0.1			
Hexachlorobenzene	mg/kg	0.1	No SSV	8	<0.1	<0.1	0													<0.1					<0.1	<0.1	<0.1												<0.1			
Diethyl phthalate	mg/kg	0.1	108000	8	<0.1	<0.1	0													<0.1					<0.1	<0.1	<0.1												<0.1			
Dimethyl phthalate	mg/kg	0.1	No SSV	8	<0.1	<0.1	0													<0.1					<0.1	<0.1	<0.1												<0.1			
Dibenzofuran	mg/kg	0.1	No SSV	8	<0.1	1.15	0													0.233					1.15	<0.1	<0.1												<0.1			
Carbazole	mg/kg	0.1	No SSV	8	<0.1	0.536	0													0.411					0.536	<0.1	<0.1												<0.1			
Butylbenzyl phthalate	mg/kg	0.1	No SSV	8	<0.1	<0.1	0													<0.1					<0.1	<0.1	<0.1												<0.1			
Bis(2-ethylhexyl)phthalate	mg/kg

| Assessment Criteria : | | | | | | | | | Commercial - 1% SOM Sand | | | | | | | | |

Ancoats, Manchester
GPA
Controlled Waters Risk Assessment
Leachate - DWS

ATKINS

Assessment Criteria :	Drinking Water Standard England and Wales/WHO																															
CaCO (mg/l):	0.00			pH	0.00																											
Calcium (mg/l):	0.00			DOC (mg/l)	0.00			Catchment area:	Freshwater not listed																							
									Location		ATK TP08	ATK BH01	ATK BH05	ATK BH08	ATK TP05	ATK-TP07	ATK-BH06	ATK_TP02	ATK_CPT17	ATK_TP01	ATK_TP10	ATK_CPT12	ATK_CPT14	ATK_BH07	ATK_WS02	ATK_TP04	ATK-TP03	ATK BH02a
									Sample ID																					
									Depth		1m	0.5m	0.8m	0.6m	0.8m	0.4m	1m	1.2m	0.7m	1.8m	1.2m	0.36m	0.4m	0.45m	0.5m	0.3m	1m	1.2m
									Date		45028	45022	45022	45022	45028	45030	45030	45034	45033	45029	45033	45033	45030	45034	45035	45035	45037	45048
									Strata		Made Ground	Made Ground	Clay	Made Ground	Made Ground	Clay	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Sand	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground
Constituents	Unit	Limit of Detection	Generic Assessment Criteria	Number of Samples	Minimum Value	Maximum Value	Number of Exceedences	Locations of Exceedences		Zone																				
pH	pH	0.01	6.5-9.5	18	7.27	11.63	2	ATK_CPT14, 0.4m; ATK_TP04, 0.3m			7.27	7.34	7.91	7.8	7.84	8.1	9.04	7.67	8.67	7.48	7.42	8.25	11.63	8.87	7.58	11.54	7.71	7.9
Ammoniacal nitrogen	mg/l	0.065	0.39	18	<0.065	6.667	7	ATK TP08, 1m; ATK BH05, 0.8m; ATK_TP02, 1.2m; ATK_TP01, 1.8m; ATK_BH07, 0.45m; ATK_TP04, 0.3m; ATK BH02a, 1.2m			3.344	0.109	6.667	0.098	<0.065	<0.065	<0.065	1.776	<0.065	3.768	<0.065	<0.065	<0.065	1.504	<0.065	1.563	0.068	5.203
Sulphate	mg/l	1	250	18	<1	1540	2	ATK_TP10, 1.2m; ATK_WS02, 0.5m			<1	6.28	94.45	6.45	4.61	30.24	79.68	111.67	85.7	46.39	1540	17.2	1.68	67.64	428.62	13.02	78.06	57.56
Cyanide (free)	mg/l	0.005	See Cyanide (total)	18	<0.005	<0.005	0				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cyanide (total)	mg/l	0.005	0.05	18	0.005	0.228	1	ATK_TP10, 1.2m			<0.005	<0.005	<0.005	<0.005	0.018	<0.005	0.03	0.006	<0.005	<0.005	0.228	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.005
Phenol	mg/l	0.01	0.05	18	<0.01	0.03	0				<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic	mg/l	0.001	0.01	18	0.001	0.019	3	ATK-BH06, 1m; ATK_TP01, 1.8m; ATK BH02a, 1.2m			0.006	0.001	<0.001	<0.001	0.008	<0.001	0.019	0.005	0.002	0.016	0.005	<0.001	<0.001	<0.001	<0.001	0.002	0.01	0.011
Boron	mg/l	0.01	1	18	<0.01	0.302	0				0.107	0.011	0.056	0.014	0.014	<0.01	0.052	0.302	0.041	0.106	0.091	0.013	<0.01	0.033	0.026	0.011	0.097	0.302
Cadmium	mg/l	0.001	0.005	18	<0.001	<0.002	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	mg/l	0.004	2	18	0.004	0.047	0				0.039	<0.004	<0.004	<0.004	0.014	<0.004	0.006	<0.004	<0.004	0.006	0.047	0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.005
Chromium	mg/l	0.001	0.05	18	0.001	0.06	2	ATK TP05, 0.8m; ATK-BH06, 1m			0.004	0.001	<0.001	0.003	0.06	<0.001	0.057	<0.001	0.011	<0.001	0.041	0.002	0.009	0.013	0.001	0.039	0.01	<0.001
Chromium (hexavalent)	mg/l	0.05	See Total Chromium	18	<0.05	<0.1	0				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lead	mg/l	0.001	0.01	18	<0.001	0.027	2	ATK TP08, 1m; ATK TP05, 0.8m			0.027	0.006	<0.001	<0.001	0.018	<0.001	0.007	<0.001	<0.001	0.007	<0.002	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	0.005
Mercury	mg/l	0.0001	0.001	18	0.0001	<0.0002	0				<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	mg/l	0.002	0.02	18	<0.002	0.008	0				0.008	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selenium	mg/l	0.001	0.01	18	0.001	0.002	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	0.002	<0.001	<0.002	<0.001	<0.001	0.002	<0.001	0.001	0.001	<0.001
Vanadium	mg/l	0.001	N/A	18	0.001	0.042	0				0.042	0.001	<0.001	<0.001	0.002	<0.001	0.019	<0.001	0.003	0.002	0.003	0.001	<0.001	<0.001	<0.001	0.003	0.005	0.004
Zinc	mg/l	0.002	3	18	0.002	0.024	0				0.024	0.004	<0.002	<0.002	0.009	<0.002	0.003	0.002	<0.002	0.005	0.007	0.007	<0.002	<0.002	0.003	<0.002	<0.002	0.004
PAH 16MS																														
Acenaphthene	mg/l	0.00002	See BaP	18	<0.00001	0.00052	0				<0.00002	<0.00002	<0.00002	0.00008	<0.00002	<0.00002	0.00003	0.00052	<0.00001	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Acenaphthylene	mg/l	0.00002	See BaP	18	<0.00001	0.00002	0				<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00001	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00002	<0.00002
Anthracene	mg/l	0.00002	See BaP	18	<0.00002	<0.00002	0				<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Benzo(a)anthracene	mg/l	0.00002	See BaP	18	<0.00002	<0.00004	0				<0.00002	<0.00002	<0.00002	<0.00002	0.00003	<0.00002	0.00003	<0.00002	<0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Benzo(a)pyrene	mg/l	0.00002	0.00001	18	0.00002	<0.00004	2	ATK TP05, 0.8m; ATK-TP07, 0.4m			<0.00002	<0.00002	<0.00002	<0.00002	0.00003	0.00002	<0.00002	<0.00002	<0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Benzo(b)fluoranthene	mg/l	0.00002	See PAH Sum of 4	18	<0.00002	0.00005	0				<0.00002	<0.00002	<0.00002	<0.00002	0.00005	<0.00002	<0.00002	<0.00002	<0.00005	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Benzo(ghi)perylene	mg/l	0.00002	See PAH Sum of 4	18	0.00002	<0.00005	0				<0.00002	<0.00002	<0.00002	<0.00002	0.00002	0.00004	<0.00002	<0.00002	<0.00005	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Benzo(k)fluoranthene	mg/l	0.00002	See PAH Sum of 4	18	<0.00002	<0.00007	0				<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00007	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Chrysene	mg/l	0.00002	See BaP	18	0.00002	<0.00006	0				<0.00002	<0.00002	<0.00002	<0.00002	0.00004	<0.00002	0.00004	0.00002	<0.00006	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Dibenzo(ah)anthracene	mg/l	0.00002	No WSV	18	<0.00002	0.00004	0				<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00004	<0.00002	<0.00002	<0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Fluoranthene	mg/l	0.00002	See BaP	18	0.00002	<0.00008	0				0.00002	0.00005	<0.00002	0.00003	0.00006	<0.00002	0.00007	0.00005	<0.00008	0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Fluorene	mg/l	0.00002	See BaP	18	<0.00001	0.00002	0				<0.00002	<0.00002	<0.00002	0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00001	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Indeno(123-cd)pyrene	mg/l	0.00002	See PAH Sum of 4	18	0.00002	0.00004	0				<0.00002	<0.00002	<0.00002	<0.00002	0.00002	0.00004	<0.00002	<0.00002	<0.00003	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Naphthalene	mg/l	0.00002	See BaP	18	<0.00002	0.00174	0				<0.00002	<0.00002	<0.00002	0.00174	<0.00002	<0.00002	<0.00002	0.00005	<0.00003	<0.00002	<0.00002	<0.00002	<0.00002	0.00005	<0.00002	0.00005	0.00006	<0.00002
Phenanthrene	mg/l	0.00002	See BaP	18	0.00002	0.00007	0				0.00004	<0.00002	0.00002	0.00007	0.00004	<0.00002	0.00002	<0.00002	<0.00003	0.00003	<0.00002	<0.00002	<0.00002	<0.00002	0.00002	<0.00002	<0.00002	<0.00002
Pyrene	mg/l	0.00002	See BaP	18	<0.00002	0.00009	0				<0.00002	0.00005	<0.00002	0.00003	0.00006	<0.00002	0.00009	0.00004	<0.00007	0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Total PAH 16MS	mg/l	0.00002	No WSV	18	0.00002	0.00197	0				0.00006	0.0001	0.00002	0.00197	0.00035	0.00014	0.00028	0.00068	<0.00008	0.00011	<0.00002	<0.00002	<0.00002	0.00005	0.00004	0.00005	0.00006	<0.00002
TPH CWG																														
Aliphatic TPH >C5-C6	mg/l	0.001	15	18	<<0.001	<0.004	0				<0.002	<0.002	<0.002	<0.002	<0.002	<0.003	<0.003	<0.001	<0.004	<0.004	<0.004	<0.004	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
Aliphatic TPH >C6-C8	mg/l	0.001	15	18	<<0.001	<0.006	0				<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.006	<0.006	<0.006	<0.006	<0.006	<0.002	<0.003	<0.002	<0.001	<0.001
Aliphatic TPH >C8-C10	mg/l	0.01	0.3	18	<0.01	<0.01	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C10-C12	mg/l	0.01	0.3	18	<0.01	<0.01	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C12-C16	mg/l	0.01	0.3	18	<0.01	<0.01	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C16-C21	mg/l	0.01	N/A	18	<0.01	<0.01	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C21-C35	mg/l	0.02	N/A	18	<0.02	<0.02	0				<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Aliphatics	mg/l	0.01	No WSV	18	<0.02	<0.02	0				<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatic TPH >C5-C7	mg/l	0.001	0.01	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aromatic TPH >C7-C8	mg/l	0.001	0.7	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aromatic TPH >C8-C10	mg/l	0.01	0.3	18	<0.01	<0.01	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic TPH >C10-C12	mg/l	0.01	0.09	18	<0.01	0.015	0				<0.01	<0.01	<0.01	0.015	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic TPH >C12-C16	mg/l	0.01	0.09	18	<0.01	0.014	0				<0.01	<0.01	<0.01	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic TPH >C16-C21	mg/l	0.01	0.09	18	<0.01	0.018	0				<0.01	<0.01	<0.01	0.018	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Aromatics	mg/l	0.02	No WSV	18	<0.02	0.052	0				<0.02	<0.02	<0.02	0.052	<0.02	<0.02	<0.02	<0.02	<0.02	0.029	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
TPH (Ali & Aro >C5-C35)	mg/l	0.02	No WSV	18	<0.02	0.052	0				<0.02	<0.02	<0.02	0.052	<0.02	<0.02	<0.02	<0.02	<0.02	0.029	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzene	mg/l	0.001	0.001	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	mg/l	0.001	0.7	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ethyl Benzene	mg/l	0.001	No WSV	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
o Xylene	mg/l	0.001	No WSV	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
m & p Xylene	mg/l	0.001	No WSV	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MTBE	mg/l	0.001	No WSV	18	<0.001	<0.003	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	<0.003	<0.003	<0.003	<0.003	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001
Aro >C21-C35	mg/l	0.02	No WSV	18	<0.02	<0.02	0				<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Ancoats, Manchester
GPA
Controlled Waters Risk Assessment
Leachate - EQS

ATKINS

Assessment Criteria :	Freshwater EQS																										
CaCO (mg/l):	0.00		pH	0.00																							
Calcium (mg/l):	0.00		DOC (mg/l)	0.00		Catchment area:	Freshwater not listed																				
									Location		ATK TP08	ATK BH01	ATK BH05	ATK BH08	ATK TP05	ATK-TP07	ATK-BH06	ATK_TP02	ATK_CPT17	ATK_TP01	ATK_TP10	ATK_CPT12	ATK_CPT14	ATK_BH07	ATK_WS02	ATK_TP04	ATK-TP03	ATK BH02a
									Sample ID		ATK TP08	ATK BH01	ATK BH05	ATK BH08	ATK TP05	ATK-TP07	ATK-BH06	ATK_TP02	ATK_CPT17	ATK_TP01	ATK_TP10	ATK_CPT12	ATK_CPT14	ATK_BH07	ATK_WS02	ATK_TP04	ATK-TP03	ATK BH02a
									Depth		1m	0.5m	0.8m	0.6m	0.8m	0.4m	1m	1.2m	0.7m	1.8m	1.2m	0.36m	0.4m	0.45m	0.5m	0.3m	1m	1.2m
									Date		45028	45022	45022	45022	45028	45030	45030	45034	45033	45029	45033	45033	45030	45034	45035	45035	45037	45048
									Strata																			
Constituents	Unit	Limit of Detection	Generic Assessment Criteria	Number of Samples	Minimum Value	Maximum Value	Number of Exceedences	Locations of Exceedences		Zone																	
pH	pH	0.01	6-9	18	7.27	11.63	3	ATK-BH06, 1m; ATK_CPT14, 0.4m; ATK_TP04, 0.3m			7.27	7.34	7.91	7.8	7.84	8.1	9.04	7.67	8.67	7.48	7.42	8.25	11.63	8.87	7.58	11.54	7.71	7.9
Ammoniacal nitrogen	mg/l	0.065	0.2	18	<0.065	6.667	7	ATK TP08, 1m; ATK BH05, 0.8m; ATK_TP02, 1.2m; ATK_TP01, 1.8m; ATK_BH07, 0.45m; ATK_TP04, 0.3m; ATK BH02a, 1.2m			3.344	0.109	6.667	0.098	<0.065	<0.065	<0.065	1.776	<0.065	3.768	<0.065	<0.065	<0.065	1.504	<0.065	1.563	0.068	5.203
Sulphate	mg/l	1	400	18	<1	1540	2	ATK_TP10, 1.2m; ATK_WS02, 0.5m			<1	6.28	94.45	6.45	4.61	30.24	79.68	111.67	85.7	46.39	1540	17.2	1.68	67.64	428.62	13.02	78.06	57.56
Cyanide (free)	mg/l	0.005	0.001	18	<0.005	<0.005	0				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cyanide (total)	mg/l	0.005	N/A	18	0.005	0.228	0				<0.005	<0.005	<0.005	<0.005	0.018	<0.005	0.03	0.006	<0.005	<0.005	0.228	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.005
Phenol	mg/l	0.01	0.0077	18	<0.01	0.03	1	ATK BH08, 0.6m			<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic	mg/l	0.001	0.05	18	0.001	0.019	0				0.006	0.001	<0.001	<0.001	0.008	<0.001	0.019	0.005	0.002	0.016	0.005	<0.001	<0.001	<0.001	<0.001	0.002	0.01	0.011
Boron	mg/l	0.01	2	18	<0.01	0.302	0				0.107	0.011	0.056	0.014	0.014	<0.01	0.052	0.302	0.041	0.106	0.091	0.013	<0.01	0.033	0.026	0.011	0.097	0.302
Cadmium	mg/l	0.001	0.00008	18	<0.001	<0.002	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	mg/l	0.004	0.001	18	0.004	0.047	7	ATK TP08, 1m; ATK TP05, 0.8m; ATK-BH06, 1m; ATK_TP01, 1.8m; ATK_TP10, 1.2m; ATK_CPT12, 0.36m; ATK BH02a, 1.2m			0.039	<0.004	<0.004	<0.004	0.014	<0.004	0.006	<0.004	<0.004	0.006	0.047	0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.005
Chromium	mg/l	0.001	See Cr VI as first pass	18	0.001	0.06	0				0.004	0.001	<0.001	0.003	0.06	<0.001	0.057	<0.001	0.011	<0.001	0.041	0.002	0.009	0.013	0.001	0.039	0.01	<0.001
Chromium (hexavalent)	mg/l	0.05	0.0034	18	<0.05	<0.1	0				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lead	mg/l	0.001	0.0012	18	<0.001	0.027	7	ATK TP08, 1m; ATK BH01, 0.5m; ATK TP05, 0.8m; ATK-BH06, 1m; ATK_TP01, 1.8m; ATK_WS02, 0.5m; ATK BH02a, 1.2m			0.027	0.006	<0.001	<0.001	0.018	<0.001	0.007	<0.001	<0.001	0.007	<0.002	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	0.005
Mercury	mg/l	0.0001	0.00007	18	0.0001	<0.0002	1	ATK_CPT14, 0.4m			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	mg/l	0.002	0.004	18	<0.002	0.008	1	ATK TP08, 1m			0.008	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selenium	mg/l	0.001	N/A	18	0.001	0.002	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	0.002	<0.001	<0.002	<0.001	<0.001	0.002	<0.001	0.001	0.001	<0.001
Vanadium	mg/l	0.001	0.02	18	0.001	0.042	1	ATK TP08, 1m			0.042	0.001	<0.001	<0.001	0.002	<0.001	0.019	<0.001	0.003	0.002	0.003	0.001	<0.001	<0.001	<0.001	0.003	0.005	0.004
Zinc	mg/l	0.002	0.0123	18	0.002	0.024	1	ATK TP08, 1m			0.024	0.004	<0.002	<0.002	0.009	<0.002	0.003	0.002	<0.002	0.005	0.007	0.007	<0.002	<0.002	0.003	<0.002	<0.002	0.004
PAH 16MS																												
Acenaphthene	mg/l	0.00002	Screen BaP only	18	<0.00001	0.00052	0				<0.00002	<0.00002	<0.00002	0.00008	<0.00002	<0.00002	0.00003	0.00052	<0.00001	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Acenaphthylene	mg/l	0.00002	Screen BaP only	18	<0.00001	0.00002	0				<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00001	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00002	<0.00002	<0.00002	<0.00002
Anthracene	mg/l	0.00002	0.0001	18	<0.00002	<0.00002	0				<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Benzo(a)anthracene	mg/l	0.00002	Screen BaP only	18	<0.00002	<0.00004	0				<0.00002	<0.00002	<0.00002	<0.00002	<0.00003	<0.00002	0.00003	<0.00002	<0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Benzo(a)pyrene	mg/l	0.00002	0.00000017	18	0.00002	<0.00004	2	ATK TP05, 0.8m; ATK-TP07, 0.4m			<0.00002	<0.00002	<0.00002	<0.00002	0.00003	0.00002	<0.00002	<0.00002	<0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Benzo(b)fluoranthene	mg/l	0.00002	Screen BaP only	18	<0.00002	0.00005	0				<0.00002	<0.00002	<0.00002	<0.00002	0.00005	<0.00002	<0.00002	<0.00002	<0.00005	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Benzo(ghi)perylene	mg/l	0.00002	Screen BaP only	18	0.00002	<0.00005	0				<0.00002	<0.00002	<0.00002	<0.00002	0.00002	0.00004	<0.00002	<0.00002	<0.00005	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Benzo(k)fluoranthene	mg/l	0.00002	Screen BaP only	18	<0.00002	<0.00007	0				<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00007	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Chrysene	mg/l	0.00002	Screen BaP only	18	0.00002	<0.00006	0				<0.00002	<0.00002	<0.00002	<0.00002	0.00004	<0.00002	0.00004	0.00002	<0.00006	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Dibenzo(ah)anthracene	mg/l	0.00002	No WSV	18	<0.00002	0.00004	0				<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00004	<0.00002	<0.00002	<0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Fluoranthene	mg/l	0.00002	0.0000063	18	0.00002	<0.00008	7	ATK TP08, 1m; ATK BH01, 0.5m; ATK BH08, 0.6m; ATK TP05, 0.8m; ATK-BH06, 1m; ATK_TP02, 1.2m; ATK_TP01, 1.8m			0.00002	0.00005	<0.00002	0.00003	0.00006	<0.00002	0.00007	0.00005	<0.00008	0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Fluorene	mg/l	0.00002	N/A	18	<0.00001	0.00002	0				<0.00002	<0.00002	<0.00002	0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00001	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Indeno(123-cd)pyrene	mg/l	0.00002	Screen BaP only	18	0.00002	0.00004	0				<0.00002	<0.00002	<0.00002	<0.00002	0.00002	0.00004	<0.00002	<0.00002	<0.00003	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Naphthalene	mg/l	0.00002	0.002	18	<0.00002	0.00174	0				<0.00002	<0.00002	<0.00002	0.00174	<0.00002	<0.00002	<0.00002	0.00005	<0.00003	<0.00002	<0.00002	<0.00002	<0.00002	0.00005	<0.00002	0.00005	0.00006	<0.00002
Phenanthrene	mg/l	0.00002	Screen BaP only	18	0.00002	0.00007	0				0.00004	<0.00002	0.00002	0.00007	0.00004	<0.00002	0.00002	<0.00002	<0.00003	0.00003	<0.00002	<0.00002	<0.00002	<0.00002	0.00002	<0.00002	<0.00002	<0.00002
Pyrene	mg/l	0.00002	N/A	18	<0.00002	0.00009	0				<0.00002	0.00005	<0.00002	0.00003	0.00006	<0.00002	0.00009	0.00004	<0.00007	0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Total PAH 16MS	mg/l	0.00002	No WSV	18	0.00002	0.00197	0				0.00006	0.0001	0.00002	0.00197	0.00035	0.00014	0.00028	0.00068	<0.00008	0.00011	<0.00002	<0.00002	<0.00002	0.00005	0.00004	0.00005	0.00006	<0.00002
TPH CWG																												
Aliphatic TPH >C5-C6	mg/l	0.001	0.01	18	<<0.001	<0.004	0				<0.002	<0.002	<0.002	<0.002	<0.002	<0.003	<0.003	<0.001	<0.004	<0.004	<0.004	<0.004	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
Aliphatic TPH >C6-C8	mg/l	0.001	0.01	18	<<0.001	<0.006	0				<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.006	<0.006	<0.006	<0.006	<0.006	<0.002	<0.003	<0.002	<0.001	<0.001
Aliphatic TPH >C8-C10	mg/l	0.01	0.01	18	<0.01	<0.01	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C10-C12	mg/l	0.01	0.01	18	<0.01	<0.01	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C12-C16	mg/l	0.01	0.01	18	<0.01	<0.01	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C16-C21	mg/l	0.01	0.01	18	<0.01	<0.01	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C21-C35	mg/l	0.02	0.01	18	<0.02	<0.02	0				<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Aliphatics	mg/l	0.01	No WSV	18	<0.02	<0.02	0				<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatic TPH >C5-C7	mg/l	0.001	0.01	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aromatic TPH >C7-C8	mg/l	0.001	0.01	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aromatic TPH >C8-C10	mg/l	0.01	0.01	18	<0.01	<0.01	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic TPH >C10-C12	mg/l	0.01	0.01	18	<0.01	0.015	1	ATK BH08, 0.6m			<0.01	<0.01	<0.01	0.015	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic TPH >C12-C16	mg/l	0.01	0.01	18	<0.01	0.014	2	ATK BH08, 0.6m; ATK_TP01, 1.8m			<0.01	<0.01	<0.01	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic TPH >C16-C21	mg/l	0.01	0.01	18	<0.01	0.018	2	ATK BH08, 0.6m; ATK_TP01, 1.8m			<0.01	<0.01	<0.01	0.018	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Aromatics	mg/l	0.02	No WSV	18	<0.02	0.052	0				<0.02	<0.02	<0.02	0.052	<0.02	<0.02	<0.02	<0.02	<0.02	0.029	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
TPH (Ali & Aro >C5-C35)	mg/l	0.02	No WSV	18	<0.02	0.052	0				<0.02	<0.02	<0.02	0.052	<0.02	<0.02	<0.02	<0.02	<0.02	0.029	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzene	mg/l	0.001	0.01	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	mg/l	0.001	0.074	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ethyl Benzene	mg/l	0.001	No WSV	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
o Xylene	mg/l	0.001	No WSV	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
m & p Xylene	mg/l	0.001	No WSV	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MTBE	mg/l	0.001	No WSV	18	<0.001	<0.003	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	<0.003	<0.003	<0.003	<0.003	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001
Aro >C21-C35	mg/l	0.02	No WSV	18	<0.02	<0.02	0				<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Ancoats, Manchester
GPA
Controlled Waters Risk Assessment
Groundwater - DWS

ATKINS

Assessment Criteria :	*Drinking Water Standard England and Wales/WHO*																	
CaCO (mg/l):	0.00	pH	0.00															
Calcium (mg/l):	0.00	DOC (mg/l)	0.00	Catchment area:	Drinking Water Standard													
									Location									
									Sample ID		BH03	BH06	WS02	BH11	WS01	BH01	WS04	WS08	WS06
									Depth		22.25m	2.80m	1.50m	31.50m	2.20m	24.50m	3.30m	3.00m	2.00m
									Date		20-Jun-23	20-Jun-23	20-Jun-23	20-Jun-23	20-Jun-23	20-Jun-23	21-Jun-23	21-Jun-23	21-Jun-23
									Strata		Water - GW	Water - GW	Water - GW	Water - GW	Water - GW	Water - GW	Water - GW	Water - GW	Water - GW
Constituents	Unit	Limit of Detection	Generic Assessment Criteria	Number of Samples	Minimum Value	Maximum Value	Number of Exceedences	Locations of Exceedences		Zone	Sandstone	Made Ground	Made Ground	Sandston	Glacial Till	Sandstone	Glacial Till	Glacial Till	Glacial Till
pH	pH	0.01	6.5-9.5	9	6.79	8.32	0				7.9	8.32	7.41	6.79	7.78	7.7	7.74	7.55	7.46
Ammoniacal nitrogen as N	mg/l	0.05	0.39	9	<0.061	13.28	5	BH06, 2.80m; WS02, 1.50m; BH11, 31.50m; WS01, 2.20m; BH01, 24.50m			<0.061	0.534	3.39	3.066	3.043	13.28	0.149	0.068	<0.061
Cyanide (free)	mg/l	0.005	See Cyanide (total)	9	<0.005	<0.005	0				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cyanide (total)	mg/l	0.005	0.05	9	<0.005	<0.005	0				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Antimony	mg/l	0.000001	0.005	9	<0.001	<0.005	0				<0.001	<0.001	0.002	<0.001	0.004	0.003	<0.001	<0.001	<0.005
Arsenic	mg/l	0.000001	0.01	9	0.001	<0.005	0				<0.001	<0.001	0.003	0.002	<0.001	0.001	0.001	<0.001	<0.005
Cadmium	mg/l	2E-07	0.005	9	<0.0002	<0.001	0				<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001
Copper	mg/l	0.000004	2	9	0.004	<0.02	0				0.004	0.006	0.005	0.004	0.006	0.007	<0.004	<0.004	<0.02
Chromium	mg/l	0.000001	0.05	9	0.001	0.011	0				0.01	0.008	<0.001	0.001	0.011	0.007	<0.001	0.001	0.009
Lead	mg/l	0.000001	0.01	9	<0.001	<0.005	0				<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
Mercury	mg/l	1E-07	0.001	9	<0.0001	<0.0005	0				<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005
Nickel	mg/l	0.000002	0.02	9	0.002	0.02	0				<0.002	0.007	0.003	0.002	0.002	0.02	<0.002	0.003	<0.01
Selenium	mg/l	0.000001	0.01	9	0.001	0.089	3	BH06, 2.80m; WS02, 1.50m; WS01, 2.20m			<0.001	0.089	0.012	<0.001	0.037	0.001	0.002	<0.001	<0.005
Zinc	mg/l	0.000002	3	9	0.002	0.012	0				<0.002	0.005	0.002	0.006	0.002	0.012	<0.002	<0.002	<0.01
Chromium (hexavalent)	mg/l	0.01	See Total Chromium	9	<0.01	<0.02	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02
Acenaphthene	mg/l	1E-08	See BaP	9	<0.00001	0.00019	0				<0.00001	<0.00001	<0.00002	0.00002	<0.00001	0.00019	<0.00001	<0.00001	<0.00001
Acenaphthylene	mg/l	1E-08	See BaP	9	<0.00001	0.00036	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	0.00036	<0.00001	<0.00001	<0.00001
Anthracene	mg/l	1E-08	See BaP	9	0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	0.00001	<0.00001	<0.00001	<0.00001
Benzo(a)anthracene	mg/l	1E-08	See BaP	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Benzo(a)pyrene	mg/l	1E-08	0.00001	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Benzo(b)fluoranthene	mg/l	1E-08	See PAH Sum of 4	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Benzo(ghi)perylene	mg/l	1E-08	See PAH Sum of 4	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Benzo(k)fluoranthene	mg/l	1E-08	See PAH Sum of 4	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Chrysene	mg/l	1E-08	See BaP	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Dibenzo(ah)anthracene	mg/l	1E-08	No WSV	9	0.00001	<0.00002	0				0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Fluoranthene	mg/l	1E-08	See BaP	9	<0.00001	0.00005	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	0.00005	<0.00001	<0.00001	<0.00001
Fluorene	mg/l	1E-08	See BaP	9	0.00001	0.00004	0				<0.00001	<0.00001	<0.00002	0.00001	<0.00001	0.00004	<0.00001	0.00001	<0.00001
Indeno(123-cd)pyrene	mg/l	1E-08	See PAH Sum of 4	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Naphthalene	mg/l	1E-08	See BaP	9	<0.00001	0.00067	0				0.00002	<0.00001	<0.00002	0.0003	<0.00001	0.00067	<0.00001	0.00046	<0.00001
Phenanthrene	mg/l	1E-08	See BaP	9	0.00001	0.00009	0				<0.00001	<0.00001	<0.00002	0.00001	<0.00001	0.00009	<0.00001	0.00001	<0.00001
Pyrene	mg/l	1E-08	See BaP	9	<0.00001	0.0001	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	0.0001	<0.00001	<0.00001	<0.00001
Total PAH 16MS	mg/l	1E-08	No WSV	9	<0.00001	0.00151	0				0.00003	<0.00001	<0.00002	0.00034	<0.00001	0.00151	<0.00001	0.00048	<0.00001
Aliphatic TPH >C5-C6	mg/l	0.000001	15	9	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aliphatic TPH >C6-C8	mg/l	0.000001	15	9	<0.001	0.002	0				<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001
Aliphatic TPH >C8-C10	mg/l	0.000005	0.3	9	<0.005	<0.05	0				<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	0.007	<0.005
Aliphatic TPH >C10-C12	mg/l	0.000005	0.3	9	<0.005	<0.05	0				<0.005	<0.005	<0.005	0.021	<0.005	<0.05	<0.005	0.008	<0.005
Aliphatic TPH >C12-C16	mg/l	0.000005	0.3	9	<0.005	2.98	2	BH11, 31.50m; BH01, 24.50m			<0.005	<0.005	<0.005	2.264	<0.005	2.98	0.012	<0.005	<0.005
Aliphatic TPH >C16-C21	mg/l	0.000005	N/A	9	<0.005	<0.05	0				<0.005	<0.005	<0.005	0.021	<0.005	<0.05	<0.005	<0.005	<0.005
Aliphatic TPH >C21-C35	mg/l	0.000005	N/A	9	<0.005	<0.05	0				<0.005	<0.005	<0.005	0.022	<0.005	<0.05	<0.005	<0.005	0.019
Aliphatic TPH >C35-C44	mg/l	0.000005	N/A	0	0	0	0												
Total Aliphatics	mg/l	0.000005	No WSV	9	<0.005	2.98	0				<0.005	<0.005	<0.005	2.33	<0.005	2.98	0.012	0.015	0.019
Aromatic TPH >C5-C7	mg/l	0.000001	0.01	9	0.001	0.002	0				<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	0.001	<0.001
Aromatic TPH >C7-C8	mg/l	0.000001	0.7	9	0.001	0.005	0				<0.001	<0.001	<0.001	0.001	<0.001	0.005	<0.001	0.002	<0.001
Aromatic TPH >C8-C10	mg/l	0.000005	0.3	9	<0.005	0.061	0				<0.005	<0.005	0.009	0.061	<0.005	<0.05	0.007	0.038	0.006
Aromatic TPH >C10-C12	mg/l	0.000005	0.09	9	<0.005	0.125	2	BH11, 31.50m; WS08, 3.00m			<0.005	<0.005	0.012	0.093	<0.005	0.062	0.011	0.125	0.008
Aromatic TPH >C12-C16	mg/l	0.000005	0.09	9	0.007	0.497	2	BH11, 31.50m; BH01, 24.50m			0.007	0.012	0.017	0.457	0.01	0.497	0.013	0.045	0.012
Aromatic TPH >C16-C21	mg/l	0.000005	0.09	9	0.007	<0.05	0				0.007	0.009	0.016	0.033	0.009	<0.05	0.013	0.032	0.011
Aromatic TPH >C21-C35	mg/l	0.00001	0.09	9	<0.01	<0.1	0				<0.01	<0.01	0.011	0.017	<0.01	<0.1	0.011	0.013	<0.01
Aromatic TPH >C35-C44	mg/l	0.000005	N/A	0	0	0	0												
Total Aromatics	mg/l	0.00001	No WSV	9	0.014	0.662	0				0.014	0.021	0.065	0.662	0.019	0.566	0.055	0.256	0.037
TPH (Ali & Aro >C5-C44)	mg/l	0.00001	No WSV	9	0.014	3.55	0				0.014	0.021	0.065	2.99	0.019	3.55	0.067	0.271	0.056
Benzene	mg/l	0.000001	0.001	9	0.001	0.002	1	BH01, 24.50m			<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	0.001	<0.001
Toluene	mg/l	0.000001	0.7	9	0.001	0.005	0				<0.001	<0.001	<0.001	0.001	<0.001	0.005	<0.001	0.002	<0.001
Ethyl Benzene	mg/l	0.000001	No WSV	9	0.001	0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001
m & p Xylene	mg/l	0.000001	No WSV	9	0.001	0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001
o Xylene	mg/l	0.000001	No WSV	9	0.001	0.005	0				<0.001	<0.001	<0.001	0.001	<0.001	0.005	<0.001	0.002	<0.001
MTBE	mg/l	0.000001	No WSV	9	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Ancoats, Manchester
GPA
Controlled Waters Risk Assessment
Groundwater - EQS

ATKINS

Assessment Criteria :																				
								Freshwater EQS												
CaCO (mg/l):	0.00		pH	0.00																
Calcium (mg/l):	0.00		DOC (mg/l)	0.00		Catchment area:		Freshwater not listed												
									Location											
									Sample ID		BH03	BH06	WS02	BH11	WS01	BH01	WS04	WS08	WS06
									Depth		22.25m	2.80m	1.50m	31.50m	2.20m	24.50m	3.30m	3.00m	2.00m
									Date		20-Jun-23	20-Jun-23	20-Jun-23	20-Jun-23	20-Jun-23	20-Jun-23	21-Jun-23	21-Jun-23	21-Jun-23
									Strata		Water - GW	Water - GW	Water - GW	Water - GW	Water - GW	Water - GW	Water - GW	Water - GW	Water - GW
Constituents	Unit	Limit of Detection	Generic Assessment Criteria	Number of Samples	Minimum Value	Maximum Value	Number of Exceedences	Locations of Exceedences		Zone									
pH	pH	0.01	6-9	9	6.79	8.32	0				7.9	8.32	7.41	6.79	7.78	7.7	7.74	7.55	7.46
Ammoniacal nitrogen as N	mg/l	0.05	0.2	9	<0.061	13.28	5	BH06, 2.80m; WS02, 1.50m; BH11, 31.50m; WS01, 2.20m; BH01, 24.50m			<0.061	0.534	3.39	3.066	3.043	13.28	0.149	0.068	<0.061
Cyanide (free)	mg/l	0.005	0.001	9	<0.005	<0.005	0				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cyanide (total)	mg/l	0.005	N/A	9	<0.005	<0.005	0				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Antimony	mg/l	0.000001	N/A	9	<0.001	<0.005	0				<0.001	<0.001	0.002	<0.001	0.004	0.003	<0.001	<0.001	<0.005
Arsenic	mg/l	0.000001	0.05	9	0.001	<0.005	0				<0.001	<0.001	0.003	0.002	<0.001	0.001	0.001	<0.001	<0.005
Cadmium	mg/l	2E-07	0.00008	9	<0.0002	<0.001	0				<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001
Copper	mg/l	0.000004	0.001	9	0.004	<0.02	6	BH03, 22.25m; BH06, 2.80m; WS02, 1.50m; BH11, 31.50m; WS01, 2.20m; BH01, 24.50m			0.004	0.006	0.005	0.004	0.006	0.007	<0.004	<0.004	<0.02
Chromium	mg/l	0.000001	See Cr VI as first pass	9	0.001	0.011	0				0.01	0.008	<0.001	0.001	0.011	0.007	<0.001	0.001	0.009
Lead	mg/l	0.000001	0.0012	9	<0.001	<0.005	1	BH06, 2.80m			<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
Mercury	mg/l	1E-07	0.00007	9	<0.0001	<0.0005	0				<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005
Nickel	mg/l	0.000002	0.004	9	0.002	0.02	2	BH06, 2.80m; BH01, 24.50m			<0.002	0.007	0.003	0.002	0.002	0.02	<0.002	0.003	<0.01
Selenium	mg/l	0.000001	N/A	9	0.001	0.089	0				<0.001	0.089	0.012	<0.001	0.037	0.001	0.002	<0.001	<0.005
Zinc	mg/l	0.000002	0.0123	9	0.002	0.012	0				<0.002	0.005	0.002	0.006	0.002	0.012	<0.002	<0.002	<0.01
Chromium (hexavalent)	mg/l	0.01	0.0034	9	<0.01	<0.02	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02
Acenaphthene	mg/l	1E-08	Screen BaP only	9	<0.00001	0.00019	0				<0.00001	<0.00001	<0.00002	0.00002	<0.00001	0.00019	<0.00001	<0.00001	<0.00001
Acenaphthylene	mg/l	1E-08	Screen BaP only	9	<0.00001	0.00036	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	0.00036	<0.00001	<0.00001	<0.00001
Anthracene	mg/l	1E-08	0.0001	9	0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	0.00001	<0.00001	<0.00001	<0.00001
Benzo(a)anthracene	mg/l	1E-08	Screen BaP only	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Benzo(a)pyrene	mg/l	1E-08	0.00000017	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Benzo(b)fluoranthene	mg/l	1E-08	Screen BaP only	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Benzo(ghi)perylene	mg/l	1E-08	Screen BaP only	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Benzo(k)fluoranthene	mg/l	1E-08	Screen BaP only	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Chrysene	mg/l	1E-08	Screen BaP only	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Dibenzo(ah)anthracene	mg/l	1E-08	No WSV	9	0.00001	<0.00002	0				0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Fluoranthene	mg/l	1E-08	0.0000063	9	<0.00001	0.00005	1	BH01, 24.50m			<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	0.00005	<0.00001	<0.00001	<0.00001
Fluorene	mg/l	1E-08	N/A	9	0.00001	0.00004	0				<0.00001	<0.00001	<0.00002	0.00001	<0.00001	0.00004	<0.00001	0.00001	<0.00001
Indeno(123-cd)pyrene	mg/l	1E-08	Screen BaP only	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Naphthalene	mg/l	1E-08	0.002	9	<0.00001	0.00067	0				0.00002	<0.00001	<0.00002	0.0003	<0.00001	0.00067	<0.00001	0.00046	<0.00001
Phenanthrene	mg/l	1E-08	Screen BaP only	9	0.00001	0.00009	0				<0.00001	<0.00001	<0.00002	0.00001	<0.00001	0.00009	<0.00001	0.00001	<0.00001
Pyrene	mg/l	1E-08	N/A	9	<0.00001	0.0001	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	0.0001	<0.00001	<0.00001	<0.00001
Total PAH 16MS	mg/l	1E-08	No WSV	9	<0.00001	0.00151	0				0.00003	<0.00001	<0.00002	0.00034	<0.00001	0.00151	<0.00001	0.00048	<0.00001
Aliphatic TPH >C5-C6	mg/l	0.000001	0.01	9	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aliphatic TPH >C6-C8	mg/l	0.000001	0.01	9	<0.001	0.002	0				<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001
Aliphatic TPH >C8-C10	mg/l	0.000005	0.01	9	<0.005	<0.05	0				<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	0.007	<0.005
Aliphatic TPH >C10-C12	mg/l	0.000005	0.01	9	<0.005	<0.05	1	BH11, 31.50m			<0.005	<0.005	<0.005	0.021	<0.005	<0.05	<0.005	0.008	<0.005
Aliphatic TPH >C12-C16	mg/l	0.000005	0.01	9	<0.005	2.98	3	BH11, 31.50m; BH01, 24.50m; WS04, 3.30m			<0.005	<0.005	<0.005	2.264	<0.005	2.98	0.012	<0.005	<0.005
Aliphatic TPH >C16-C21	mg/l	0.000005	0.01	9	<0.005	<0.05	1	BH11, 31.50m			<0.005	<0.005	<0.005	0.021	<0.005	<0.05	<0.005	<0.005	<0.005
Aliphatic TPH >C21-C35	mg/l	0.000005	0.01	9	<0.005	<0.05	2	BH11, 31.50m; WS06, 2.00m			<0.005	<0.005	<0.005	0.022	<0.005	<0.05	<0.005	<0.005	0.019
Aliphatic TPH >C35-C44	mg/l	0.000005	0.01	0	0	0	0												
Total Aliphatics	mg/l	0.000005	No WSV	9	<0.005	2.98	0				<0.005	<0.005	<0.005	2.33	<0.005	2.98	0.012	0.015	0.019
Aromatic TPH >C5-C7	mg/l	0.000001	0.01	9	0.001	0.002	0				<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	0.001	<0.001
Aromatic TPH >C7-C8	mg/l	0.000001	0.01	9	0.001	0.005	0				<0.001	<0.001	<0.001	0.001	<0.001	0.005	<0.001	0.002	<0.001
Aromatic TPH >C8-C10	mg/l	0.000005	0.01	9	<0.005	0.061	2	BH11, 31.50m; WS08, 3.00m			<0.005	<0.005	0.009	0.061	<0.005	<0.05	0.007	0.038	0.006
Aromatic TPH >C10-C12	mg/l	0.000005	0.01	9	<0.005	0.125	5	WS02, 1.50m; BH11, 31.50m; BH01, 24.50m; WS04, 3.30m; WS08, 3.00m			<0.005	<0.005	0.012	0.093	<0.005	0.062	0.011	0.125	0.008
Aromatic TPH >C12-C16	mg/l	0.000005	0.01	9	0.007	0.497	7	BH06, 2.80m; WS02, 1.50m; BH11, 31.50m; BH01, 24.50m; WS04, 3.30m; WS08, 3.00m; WS06, 2.00m			0.007	0.012	0.017	0.457	0.01	0.497	0.013	0.045	0.012
Aromatic TPH >C16-C21	mg/l	0.000005	0.01	9	0.007	<0.05	5	WS02, 1.50m; BH11, 31.50m; WS04, 3.30m; WS08, 3.00m; WS06, 2.00m			0.007	0.009	0.016	0.033	0.009	<0.05	0.013	0.032	0.011
Aromatic TPH >C21-C35	mg/l	0.00001	0.01	9	<0.01	<0.1	4	WS02, 1.50m; BH11, 31.50m; WS04, 3.30m; WS08, 3.00m			<0.01	<0.01	0.011	0.017	<0.01	<0.1	0.011	0.013	<0.01
Aromatic TPH >C35-C44	mg/l	0.000005	0.01	0	0	0	0												
Total Aromatics	mg/l	0.00001	No WSV	9	0.014	0.662	0				0.014	0.021	0.065	0.662	0.019	0.566	0.055	0.256	0.037
TPH (Ali & Aro >C5-C44)	mg/l	0.00001	No WSV	9	0.014	3.55	0				0.014	0.021	0.065	2.99	0.019	3.55	0.067	0.271	0.056
Benzene	mg/l	0.000001	0.01	9	0.001	0.002	0				<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	0.001	<0.001
Toluene	mg/l	0.000001	0.074	9	0.001	0.005	0				<0.001	<0.001	<0.001	0.001	<0.001	0.005	<0.001	0.002	<0.001
Ethyl Benzene	mg/l	0.000001	No WSV	9	0.001	0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001
m & p Xylene	mg/l	0.000001	No WSV	9	0.001	0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001
o Xylene	mg/l	0.000001	No WSV	9	0.001	0.005	0				<0.001	<0.001	<0.001	0.001	<0.001	0.005	<0.001	0.002	<0.001
MTBE	mg/l	0.000001	No WSV	9	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Project:	Ancoats, Manchester
Project Number:	5214819
Client:	GPA

Borehole	Oxygen %v/v		Methane %v/v		Carbon Dioxide %v/v		Flow l/hr		H2S ppm	CO ppm	Hazardous Gas Values (calculated using max conc. and max steady state flow)	
	Min Min	Min Steady	Max Max	Max Steady	Max Max	Max Steady	Max Max	Max Steady	Max	Max	CH4	CO2
ATK_BH01	19.10	19.10	*<0.1*	*<0.1*	0.50	0.20	24.3	24.3	6	9	0.0243	0.1215
ATK_BH02a	19.00	19.00	*<0.1*	*<0.1*	0.50	0.50	0.6	0.6	1	19	0.0006	0.003
ATK_BH03	19.70	19.90	*<0.1*	*<0.1*	0.40	0.10	3.2	3.2		11	0.0032	0.0128
ATK_BH04	1.50	1.50	*<0.1*	*<0.1*	3.20	3.20	0.7	0.7	1	6	0.0007	0.0224
ATK_BH05	0.20	0.20	*<0.1*	*<0.1*	4.40	4.40	0.8	0.8		3	0.0008	0.0352
ATK_BH06	15.00	15.30	*<0.1*	*<0.1*	0.60	0.60	0.4	0.4		8	0.0004	0.0024
ATK_BH07	20.00	20.00	0.10	*<0.1*	0.20	0.20	0.3	0.3		14	0.0003	0.0006
ATK_BH08a	13.90	13.90	*<0.1*	*<0.1*	2.20	2.20	0.4	0.4	1	57	0.0004	0.0088
ATK_BH09	0.20	0.50	35.40	34.70	0.10	*<0.1*	0.2	0.2	1	82	0.0708	0.0002
ATK_BH10	1.60	1.60	35.40	*<0.1*	0.20	0.20	0.2	0.2	0	11	0.0708	0.0004
ATK_BH11	18.90	18.90	0.40	*<0.1*	0.10	0.10	0.9	0.9	1	440	0.0036	0.0009
ATK_BH12	18.70	18.70	0.10	*<0.1*	1.90	1.90	0.2	0.2		79	0.0002	0.0038
ATK_WS01	19.50	19.50	2.70	*<0.1*	0.90	0.80	0.1	0.1	1	2	0.0027	0.0009
ATK_WS02	14.30	14.30	*<0.1*	*<0.1*	4.00	4.00	0.1	0.1		5	0.0001	0.004
ATK_WS03	5.00	5.00	*<0.1*	*<0.1*	0.50	0.30	0.9	0.9		10	0.0009	0.0045
ATK_WS04	17.10	18.40	*<0.1*	*<0.1*	0.70	0.50	0.6	0.6		7	0.0006	0.0042
ATK_WS05	3.10	3.10	*<0.1*	*<0.1*	7.30	7.30	0.3	0.3	1	1	0.0003	0.0219
ATK_WS06	2.30	2.30	2.10	2.10	9.30	9.30	0.2	0.2		2	0.0042	0.0186
ATK_WS07	17.80	18.00	0.10	0.10	1.20	1.10	0.3	0.3		3	0.0003	0.0036
ATK_WS08	14.80	14.80	0.10	*<0.1*	0.70	0.70	0.2	0.2		11	0.0002	0.0014
ATK WS06	1.60	1.60	*<0.1*	*<0.1*	10.80	10.80	0.3	0.3			0.0003	0.0324
ATKWS07	20.70	20.70	*<0.1*	*<0.1*	0.10	0.10	0.3	0.3			0.0003	0.0003
ATKWS08	13.40	13.40	0.10	*<0.1*	1.30	1.30	0.2	0.2		3	0.0002	0.0026

Ancoats, Manchester
GPA
Controlled Waters Risk Assessment
Groundwater - DWS

ATKINS

Assessment Criteria :	*Drinking Water Standard England and Wales/WHO*																	
CaCO (mg/l):	0.00	pH	0.00															
Calcium (mg/l):	0.00	DOC (mg/l)	0.00	Catchment area:	Drinking Water Standard													
									Location									
									Sample ID		BH03	BH06	WS02	BH11	WS01	BH01	WS04	WS08	WS06
									Depth		22.25m	2.80m	1.50m	31.50m	2.20m	24.50m	3.30m	3.00m	2.00m
									Date		20-Jun-23	20-Jun-23	20-Jun-23	20-Jun-23	20-Jun-23	20-Jun-23	21-Jun-23	21-Jun-23	21-Jun-23
									Strata		Water - GW	Water - GW	Water - GW	Water - GW	Water - GW	Water - GW	Water - GW	Water - GW	Water - GW
Constituents	Unit	Limit of Detection	Generic Assessment Criteria	Number of Samples	Minimum Value	Maximum Value	Number of Exceedences	Locations of Exceedences		Zone	Sandstone	Made Ground	Made Ground	Sandston	Glacial Till	Sandstone	Glacial Till	Glacial Till	Glacial Till
pH	pH	0.01	6.5-9.5	9	6.79	8.32	0				7.9	8.32	7.41	6.79	7.78	7.7	7.74	7.55	7.46
Ammoniacal nitrogen as N	mg/l	0.05	0.39	9	<0.061	13.28	5	BH06, 2.80m; WS02, 1.50m; BH11, 31.50m; WS01, 2.20m; BH01, 24.50m			<0.061	0.534	3.39	3.066	3.043	13.28	0.149	0.068	<0.061
Cyanide (free)	mg/l	0.005	See Cyanide (total)	9	<0.005	<0.005	0				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cyanide (total)	mg/l	0.005	0.05	9	<0.005	<0.005	0				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Antimony	mg/l	0.000001	0.005	9	<0.001	<0.005	0				<0.001	<0.001	0.002	<0.001	0.004	0.003	<0.001	<0.001	<0.005
Arsenic	mg/l	0.000001	0.01	9	0.001	<0.005	0				<0.001	<0.001	0.003	0.002	<0.001	0.001	0.001	<0.001	<0.005
Cadmium	mg/l	2E-07	0.005	9	<0.0002	<0.001	0				<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001
Copper	mg/l	0.000004	2	9	0.004	<0.02	0				0.004	0.006	0.005	0.004	0.006	0.007	<0.004	<0.004	<0.02
Chromium	mg/l	0.000001	0.05	9	0.001	0.011	0				0.01	0.008	<0.001	0.001	0.011	0.007	<0.001	0.001	0.009
Lead	mg/l	0.000001	0.01	9	<0.001	<0.005	0				<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
Mercury	mg/l	1E-07	0.001	9	<0.0001	<0.0005	0				<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005
Nickel	mg/l	0.000002	0.02	9	0.002	0.02	0				<0.002	0.007	0.003	0.002	0.002	0.02	<0.002	0.003	<0.01
Selenium	mg/l	0.000001	0.01	9	0.001	0.089	3	BH06, 2.80m; WS02, 1.50m; WS01, 2.20m			<0.001	0.089	0.012	<0.001	0.037	0.001	0.002	<0.001	<0.005
Zinc	mg/l	0.000002	3	9	0.002	0.012	0				<0.002	0.005	0.002	0.006	0.002	0.012	<0.002	<0.002	<0.01
Chromium (hexavalent)	mg/l	0.01	See Total Chromium	9	<0.01	<0.02	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02
Acenaphthene	mg/l	1E-08	See BaP	9	<0.00001	0.00019	0				<0.00001	<0.00001	<0.00002	0.00002	<0.00001	0.00019	<0.00001	<0.00001	<0.00001
Acenaphthylene	mg/l	1E-08	See BaP	9	<0.00001	0.00036	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	0.00036	<0.00001	<0.00001	<0.00001
Anthracene	mg/l	1E-08	See BaP	9	0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	0.00001	<0.00001	<0.00001	<0.00001
Benzo(a)anthracene	mg/l	1E-08	See BaP	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Benzo(a)pyrene	mg/l	1E-08	0.00001	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Benzo(b)fluoranthene	mg/l	1E-08	See PAH Sum of 4	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Benzo(ghi)perylene	mg/l	1E-08	See PAH Sum of 4	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Benzo(k)fluoranthene	mg/l	1E-08	See PAH Sum of 4	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Chrysene	mg/l	1E-08	See BaP	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Dibenzo(ah)anthracene	mg/l	1E-08	No WSV	9	0.00001	<0.00002	0				0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Fluoranthene	mg/l	1E-08	See BaP	9	<0.00001	0.00005	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	0.00005	<0.00001	<0.00001	<0.00001
Fluorene	mg/l	1E-08	See BaP	9	0.00001	0.00004	0				<0.00001	<0.00001	<0.00002	0.00001	<0.00001	0.00004	<0.00001	0.00001	<0.00001
Indeno(123-cd)pyrene	mg/l	1E-08	See PAH Sum of 4	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Naphthalene	mg/l	1E-08	See BaP	9	<0.00001	0.00067	0				0.00002	<0.00001	<0.00002	0.0003	<0.00001	0.00067	<0.00001	0.00046	<0.00001
Phenanthrene	mg/l	1E-08	See BaP	9	0.00001	0.00009	0				<0.00001	<0.00001	<0.00002	0.00001	<0.00001	0.00009	<0.00001	0.00001	<0.00001
Pyrene	mg/l	1E-08	See BaP	9	<0.00001	0.0001	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	0.0001	<0.00001	<0.00001	<0.00001
Total PAH 16MS	mg/l	1E-08	No WSV	9	<0.00001	0.00151	0				0.00003	<0.00001	<0.00002	0.00034	<0.00001	0.00151	<0.00001	0.00048	<0.00001
Aliphatic TPH >C5-C6	mg/l	0.000001	15	9	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aliphatic TPH >C6-C8	mg/l	0.000001	15	9	<0.001	0.002	0				<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001
Aliphatic TPH >C8-C10	mg/l	0.000005	0.3	9	<0.005	<0.05	0				<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	0.007	<0.005
Aliphatic TPH >C10-C12	mg/l	0.000005	0.3	9	<0.005	<0.05	0				<0.005	<0.005	<0.005	0.021	<0.005	<0.05	<0.005	0.008	<0.005
Aliphatic TPH >C12-C16	mg/l	0.000005	0.3	9	<0.005	2.98	2	BH11, 31.50m; BH01, 24.50m			<0.005	<0.005	<0.005	2.264	<0.005	2.98	0.012	<0.005	<0.005
Aliphatic TPH >C16-C21	mg/l	0.000005	N/A	9	<0.005	<0.05	0				<0.005	<0.005	<0.005	0.021	<0.005	<0.05	<0.005	<0.005	<0.005
Aliphatic TPH >C21-C35	mg/l	0.000005	N/A	9	<0.005	<0.05	0				<0.005	<0.005	<0.005	0.022	<0.005	<0.05	<0.005	<0.005	0.019
Aliphatic TPH >C35-C44	mg/l	0.000005	N/A	0	0	0	0												
Total Aliphatics	mg/l	0.000005	No WSV	9	<0.005	2.98	0				<0.005	<0.005	<0.005	2.33	<0.005	2.98	0.012	0.015	0.019
Aromatic TPH >C5-C7	mg/l	0.000001	0.01	9	0.001	0.002	0				<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	0.001	<0.001
Aromatic TPH >C7-C8	mg/l	0.000001	0.7	9	0.001	0.005	0				<0.001	<0.001	<0.001	0.001	<0.001	0.005	<0.001	0.002	<0.001
Aromatic TPH >C8-C10	mg/l	0.000005	0.3	9	<0.005	0.061	0				<0.005	<0.005	0.009	0.061	<0.005	<0.05	0.007	0.038	0.006
Aromatic TPH >C10-C12	mg/l	0.000005	0.09	9	<0.005	0.125	2	BH11, 31.50m; WS08, 3.00m			<0.005	<0.005	0.012	0.093	<0.005	0.062	0.011	0.125	0.008
Aromatic TPH >C12-C16	mg/l	0.000005	0.09	9	0.007	0.497	2	BH11, 31.50m; BH01, 24.50m			0.007	0.012	0.017	0.457	0.01	0.497	0.013	0.045	0.012
Aromatic TPH >C16-C21	mg/l	0.000005	0.09	9	0.007	<0.05	0				0.007	0.009	0.016	0.033	0.009	<0.05	0.013	0.032	0.011
Aromatic TPH >C21-C35	mg/l	0.00001	0.09	9	<0.01	<0.1	0				<0.01	<0.01	0.011	0.017	<0.01	<0.1	0.011	0.013	<0.01
Aromatic TPH >C35-C44	mg/l	0.000005	N/A	0	0	0	0												
Total Aromatics	mg/l	0.00001	No WSV	9	0.014	0.662	0				0.014	0.021	0.065	0.662	0.019	0.566	0.055	0.256	0.037
TPH (Ali & Aro >C5-C44)	mg/l	0.00001	No WSV	9	0.014	3.55	0				0.014	0.021	0.065	2.99	0.019	3.55	0.067	0.271	0.056
Benzene	mg/l	0.000001	0.001	9	0.001	0.002	1	BH01, 24.50m			<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	0.001	<0.001
Toluene	mg/l	0.000001	0.7	9	0.001	0.005	0				<0.001	<0.001	<0.001	0.001	<0.001	0.005	<0.001	0.002	<0.001
Ethyl Benzene	mg/l	0.000001	No WSV	9	0.001	0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001
m & p Xylene	mg/l	0.000001	No WSV	9	0.001	0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001
o Xylene	mg/l	0.000001	No WSV	9	0.001	0.005	0				<0.001	<0.001	<0.001	0.001	<0.001	0.005	<0.001	0.002	<0.001
MTBE	mg/l	0.000001	No WSV	9	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Ancoats, Manchester
GPA
Controlled Waters Risk Assessment
Groundwater - EQS

ATKINS

Assessment Criteria :																				
								Freshwater EQS												
CaCO (mg/l):	0.00		pH	0.00																
Calcium (mg/l):	0.00		DOC (mg/l)	0.00		Catchment area:		Freshwater not listed												
									Location											
									Sample ID		BH03	BH06	WS02	BH11	WS01	BH01	WS04	WS08	WS06
									Depth		22.25m	2.80m	1.50m	31.50m	2.20m	24.50m	3.30m	3.00m	2.00m
									Date		20-Jun-23	20-Jun-23	20-Jun-23	20-Jun-23	20-Jun-23	20-Jun-23	21-Jun-23	21-Jun-23	21-Jun-23
									Strata		Water - GW	Water - GW	Water - GW	Water - GW	Water - GW	Water - GW	Water - GW	Water - GW	Water - GW
Constituents	Unit	Limit of Detection	Generic Assessment Criteria	Number of Samples	Minimum Value	Maximum Value	Number of Exceedences	Locations of Exceedences		Zone									
pH	pH	0.01	6-9	9	6.79	8.32	0				7.9	8.32	7.41	6.79	7.78	7.7	7.74	7.55	7.46
Ammoniacal nitrogen as N	mg/l	0.05	0.2	9	<0.061	13.28	5	BH06, 2.80m; WS02, 1.50m; BH11, 31.50m; WS01, 2.20m; BH01, 24.50m			<0.061	0.534	3.39	3.066	3.043	13.28	0.149	0.068	<0.061
Cyanide (free)	mg/l	0.005	0.001	9	<0.005	<0.005	0				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cyanide (total)	mg/l	0.005	N/A	9	<0.005	<0.005	0				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Antimony	mg/l	0.000001	N/A	9	<0.001	<0.005	0				<0.001	<0.001	0.002	<0.001	0.004	0.003	<0.001	<0.001	<0.005
Arsenic	mg/l	0.000001	0.05	9	0.001	<0.005	0				<0.001	<0.001	0.003	0.002	<0.001	0.001	0.001	<0.001	<0.005
Cadmium	mg/l	2E-07	0.00008	9	<0.0002	<0.001	0				<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001
Copper	mg/l	0.000004	0.001	9	0.004	<0.02	6	BH03, 22.25m; BH06, 2.80m; WS02, 1.50m; BH11, 31.50m; WS01, 2.20m; BH01, 24.50m			0.004	0.006	0.005	0.004	0.006	0.007	<0.004	<0.004	<0.02
Chromium	mg/l	0.000001	See Cr VI as first pass	9	0.001	0.011	0				0.01	0.008	<0.001	0.001	0.011	0.007	<0.001	0.001	0.009
Lead	mg/l	0.000001	0.0012	9	<0.001	<0.005	1	BH06, 2.80m			<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
Mercury	mg/l	1E-07	0.00007	9	<0.0001	<0.0005	0				<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0005
Nickel	mg/l	0.000002	0.004	9	0.002	0.02	2	BH06, 2.80m; BH01, 24.50m			<0.002	0.007	0.003	0.002	0.002	0.02	<0.002	0.003	<0.01
Selenium	mg/l	0.000001	N/A	9	0.001	0.089	0				<0.001	0.089	0.012	<0.001	0.037	0.001	0.002	<0.001	<0.005
Zinc	mg/l	0.000002	0.0123	9	0.002	0.012	0				<0.002	0.005	0.002	0.006	0.002	0.012	<0.002	<0.002	<0.01
Chromium (hexavalent)	mg/l	0.01	0.0034	9	<0.01	<0.02	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02
Acenaphthene	mg/l	1E-08	Screen BaP only	9	<0.00001	0.00019	0				<0.00001	<0.00001	<0.00002	0.00002	<0.00001	0.00019	<0.00001	<0.00001	<0.00001
Acenaphthylene	mg/l	1E-08	Screen BaP only	9	<0.00001	0.00036	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	0.00036	<0.00001	<0.00001	<0.00001
Anthracene	mg/l	1E-08	0.0001	9	0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	0.00001	<0.00001	<0.00001	<0.00001
Benzo(a)anthracene	mg/l	1E-08	Screen BaP only	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Benzo(a)pyrene	mg/l	1E-08	0.00000017	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Benzo(b)fluoranthene	mg/l	1E-08	Screen BaP only	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Benzo(ghi)perylene	mg/l	1E-08	Screen BaP only	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Benzo(k)fluoranthene	mg/l	1E-08	Screen BaP only	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Chrysene	mg/l	1E-08	Screen BaP only	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Dibenzo(ah)anthracene	mg/l	1E-08	No WSV	9	0.00001	<0.00002	0				0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Fluoranthene	mg/l	1E-08	0.0000063	9	<0.00001	0.00005	1	BH01, 24.50m			<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	0.00005	<0.00001	<0.00001	<0.00001
Fluorene	mg/l	1E-08	N/A	9	0.00001	0.00004	0				<0.00001	<0.00001	<0.00002	0.00001	<0.00001	0.00004	<0.00001	0.00001	<0.00001
Indeno(123-cd)pyrene	mg/l	1E-08	Screen BaP only	9	<0.00001	<0.00002	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Naphthalene	mg/l	1E-08	0.002	9	<0.00001	0.00067	0				0.00002	<0.00001	<0.00002	0.0003	<0.00001	0.00067	<0.00001	0.00046	<0.00001
Phenanthrene	mg/l	1E-08	Screen BaP only	9	0.00001	0.00009	0				<0.00001	<0.00001	<0.00002	0.00001	<0.00001	0.00009	<0.00001	0.00001	<0.00001
Pyrene	mg/l	1E-08	N/A	9	<0.00001	0.0001	0				<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	0.0001	<0.00001	<0.00001	<0.00001
Total PAH 16MS	mg/l	1E-08	No WSV	9	<0.00001	0.00151	0				0.00003	<0.00001	<0.00002	0.00034	<0.00001	0.00151	<0.00001	0.00048	<0.00001
Aliphatic TPH >C5-C6	mg/l	0.000001	0.01	9	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aliphatic TPH >C6-C8	mg/l	0.000001	0.01	9	<0.001	0.002	0				<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001
Aliphatic TPH >C8-C10	mg/l	0.000005	0.01	9	<0.005	<0.05	0				<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	0.007	<0.005
Aliphatic TPH >C10-C12	mg/l	0.000005	0.01	9	<0.005	<0.05	1	BH11, 31.50m			<0.005	<0.005	<0.005	0.021	<0.005	<0.05	<0.005	0.008	<0.005
Aliphatic TPH >C12-C16	mg/l	0.000005	0.01	9	<0.005	2.98	3	BH11, 31.50m; BH01, 24.50m; WS04, 3.30m			<0.005	<0.005	<0.005	2.264	<0.005	2.98	0.012	<0.005	<0.005
Aliphatic TPH >C16-C21	mg/l	0.000005	0.01	9	<0.005	<0.05	1	BH11, 31.50m			<0.005	<0.005	<0.005	0.021	<0.005	<0.05	<0.005	<0.005	<0.005
Aliphatic TPH >C21-C35	mg/l	0.000005	0.01	9	<0.005	<0.05	2	BH11, 31.50m; WS06, 2.00m			<0.005	<0.005	<0.005	0.022	<0.005	<0.05	<0.005	<0.005	0.019
Aliphatic TPH >C35-C44	mg/l	0.000005	0.01	0	0	0	0												
Total Aliphatics	mg/l	0.000005	No WSV	9	<0.005	2.98	0				<0.005	<0.005	<0.005	2.33	<0.005	2.98	0.012	0.015	0.019
Aromatic TPH >C5-C7	mg/l	0.000001	0.01	9	0.001	0.002	0				<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	0.001	<0.001
Aromatic TPH >C7-C8	mg/l	0.000001	0.01	9	0.001	0.005	0				<0.001	<0.001	<0.001	0.001	<0.001	0.005	<0.001	0.002	<0.001
Aromatic TPH >C8-C10	mg/l	0.000005	0.01	9	<0.005	0.061	2	BH11, 31.50m; WS08, 3.00m			<0.005	<0.005	0.009	0.061	<0.005	<0.05	0.007	0.038	0.006
Aromatic TPH >C10-C12	mg/l	0.000005	0.01	9	<0.005	0.125	5	WS02, 1.50m; BH11, 31.50m; BH01, 24.50m; WS04, 3.30m; WS08, 3.00m			<0.005	<0.005	0.012	0.093	<0.005	0.062	0.011	0.125	0.008
Aromatic TPH >C12-C16	mg/l	0.000005	0.01	9	0.007	0.497	7	BH06, 2.80m; WS02, 1.50m; BH11, 31.50m; BH01, 24.50m; WS04, 3.30m; WS08, 3.00m; WS06, 2.00m			0.007	0.012	0.017	0.457	0.01	0.497	0.013	0.045	0.012
Aromatic TPH >C16-C21	mg/l	0.000005	0.01	9	0.007	<0.05	5	WS02, 1.50m; BH11, 31.50m; WS04, 3.30m; WS08, 3.00m; WS06, 2.00m			0.007	0.009	0.016	0.033	0.009	<0.05	0.013	0.032	0.011
Aromatic TPH >C21-C35	mg/l	0.00001	0.01	9	<0.01	<0.1	4	WS02, 1.50m; BH11, 31.50m; WS04, 3.30m; WS08, 3.00m			<0.01	<0.01	0.011	0.017	<0.01	<0.1	0.011	0.013	<0.01
Aromatic TPH >C35-C44	mg/l	0.000005	0.01	0	0	0	0												
Total Aromatics	mg/l	0.00001	No WSV	9	0.014	0.662	0				0.014	0.021	0.065	0.662	0.019	0.566	0.055	0.256	0.037
TPH (Ali & Aro >C5-C44)	mg/l	0.00001	No WSV	9	0.014	3.55	0				0.014	0.021	0.065	2.99	0.019	3.55	0.067	0.271	0.056
Benzene	mg/l	0.000001	0.01	9	0.001	0.002	0				<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	0.001	<0.001
Toluene	mg/l	0.000001	0.074	9	0.001	0.005	0				<0.001	<0.001	<0.001	0.001	<0.001	0.005	<0.001	0.002	<0.001
Ethyl Benzene	mg/l	0.000001	No WSV	9	0.001	0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001
m & p Xylene	mg/l	0.000001	No WSV	9	0.001	0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001
o Xylene	mg/l	0.000001	No WSV	9	0.001	0.005	0				<0.001	<0.001	<0.001	0.001	<0.001	0.005	<0.001	0.002	<0.001
MTBE	mg/l	0.000001	No WSV	9	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Ancoats, Manchester
GPA
Controlled Waters Risk Assessment
Leachate - DWS

ATKINS

Assessment Criteria :	Drinking Water Standard England and Wales/WHO																															
CaCO (mg/l):	0.00			pH	0.00																											
Calcium (mg/l):	0.00			DOC (mg/l)	0.00			Catchment area:	Freshwater not listed																							
									Location		ATK TP08	ATK BH01	ATK BH05	ATK BH08	ATK TP05	ATK-TP07	ATK-BH06	ATK_TP02	ATK_CPT17	ATK_TP01	ATK_TP10	ATK_CPT12	ATK_CPT14	ATK_BH07	ATK_WS02	ATK_TP04	ATK-TP03	ATK BH02a
									Sample ID																					
									Depth		1m	0.5m	0.8m	0.6m	0.8m	0.4m	1m	1.2m	0.7m	1.8m	1.2m	0.36m	0.4m	0.45m	0.5m	0.3m	1m	1.2m
									Date		45028	45022	45022	45022	45028	45030	45030	45034	45033	45029	45033	45033	45030	45034	45035	45035	45037	45048
									Strata		Made Ground	Made Ground	Clay	Made Ground	Made Ground	Clay	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Sand	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground
Constituents	Unit	Limit of Detection	Generic Assessment Criteria	Number of Samples	Minimum Value	Maximum Value	Number of Exceedences	Locations of Exceedences		Zone																				
pH	pH	0.01	6.5-9.5	18	7.27	11.63	2	ATK_CPT14, 0.4m; ATK_TP04, 0.3m			7.27	7.34	7.91	7.8	7.84	8.1	9.04	7.67	8.67	7.48	7.42	8.25	11.63	8.87	7.58	11.54	7.71	7.9
Ammoniacal nitrogen	mg/l	0.065	0.39	18	<0.065	6.667	7	ATK TP08, 1m; ATK BH05, 0.8m; ATK_TP02, 1.2m; ATK_TP01, 1.8m; ATK_BH07, 0.45m; ATK_TP04, 0.3m; ATK BH02a, 1.2m			3.344	0.109	6.667	0.098	<0.065	<0.065	<0.065	1.776	<0.065	3.768	<0.065	<0.065	<0.065	1.504	<0.065	1.563	0.068	5.203
Sulphate	mg/l	1	250	18	<1	1540	2	ATK_TP10, 1.2m; ATK_WS02, 0.5m			<1	6.28	94.45	6.45	4.61	30.24	79.68	111.67	85.7	46.39	1540	17.2	1.68	67.64	428.62	13.02	78.06	57.56
Cyanide (free)	mg/l	0.005	See Cyanide (total)	18	<0.005	<0.005	0				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cyanide (total)	mg/l	0.005	0.05	18	0.005	0.228	1	ATK_TP10, 1.2m			<0.005	<0.005	<0.005	<0.005	0.018	<0.005	0.03	0.006	<0.005	<0.005	0.228	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.005
Phenol	mg/l	0.01	0.05	18	<0.01	0.03	0				<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic	mg/l	0.001	0.01	18	0.001	0.019	3	ATK-BH06, 1m; ATK_TP01, 1.8m; ATK BH02a, 1.2m			0.006	0.001	<0.001	<0.001	0.008	<0.001	0.019	0.005	0.002	0.016	0.005	<0.001	<0.001	<0.001	<0.001	0.002	0.01	0.011
Boron	mg/l	0.01	1	18	<0.01	0.302	0				0.107	0.011	0.056	0.014	0.014	<0.01	0.052	0.302	0.041	0.106	0.091	0.013	<0.01	0.033	0.026	0.011	0.097	0.302
Cadmium	mg/l	0.001	0.005	18	<0.001	<0.002	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	mg/l	0.004	2	18	0.004	0.047	0				0.039	<0.004	<0.004	<0.004	0.014	<0.004	0.006	<0.004	<0.004	0.006	0.047	0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.005
Chromium	mg/l	0.001	0.05	18	0.001	0.06	2	ATK TP05, 0.8m; ATK-BH06, 1m			0.004	0.001	<0.001	0.003	0.06	<0.001	0.057	<0.001	0.011	<0.001	0.041	0.002	0.009	0.013	0.001	0.039	0.01	<0.001
Chromium (hexavalent)	mg/l	0.05	See Total Chromium	18	<0.05	<0.1	0				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lead	mg/l	0.001	0.01	18	<0.001	0.027	2	ATK TP08, 1m; ATK TP05, 0.8m			0.027	0.006	<0.001	<0.001	0.018	<0.001	0.007	<0.001	<0.001	0.007	<0.002	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	0.005
Mercury	mg/l	0.0001	0.001	18	0.0001	<0.0002	0				<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	mg/l	0.002	0.02	18	<0.002	0.008	0				0.008	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selenium	mg/l	0.001	0.01	18	0.001	0.002	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	0.002	<0.001	<0.002	<0.001	<0.001	0.002	<0.001	0.001	0.001	<0.001
Vanadium	mg/l	0.001	N/A	18	0.001	0.042	0				0.042	0.001	<0.001	<0.001	0.002	<0.001	0.019	<0.001	0.003	0.002	0.003	0.001	<0.001	<0.001	<0.001	0.003	0.005	0.004
Zinc	mg/l	0.002	3	18	0.002	0.024	0				0.024	0.004	<0.002	<0.002	0.009	<0.002	0.003	0.002	<0.002	0.005	0.007	0.007	<0.002	<0.002	0.003	<0.002	<0.002	0.004
PAH 16MS																														
Acenaphthene	mg/l	0.00002	See BaP	18	<0.00001	0.00052	0				<0.00002	<0.00002	<0.00002	0.00008	<0.00002	<0.00002	0.00003	0.00052	<0.00001	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Acenaphthylene	mg/l	0.00002	See BaP	18	<0.00001	0.00002	0				<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00001	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00002	<0.00002
Anthracene	mg/l	0.00002	See BaP	18	<0.00002	<0.00002	0				<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Benzo(a)anthracene	mg/l	0.00002	See BaP	18	<0.00002	<0.00004	0				<0.00002	<0.00002	<0.00002	<0.00002	0.00003	<0.00002	0.00003	<0.00002	<0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Benzo(a)pyrene	mg/l	0.00002	0.00001	18	0.00002	<0.00004	2	ATK TP05, 0.8m; ATK-TP07, 0.4m			<0.00002	<0.00002	<0.00002	<0.00002	0.00003	0.00002	<0.00002	<0.00002	<0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Benzo(b)fluoranthene	mg/l	0.00002	See PAH Sum of 4	18	<0.00002	0.00005	0				<0.00002	<0.00002	<0.00002	<0.00002	0.00005	<0.00002	<0.00002	<0.00002	<0.00005	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Benzo(ghi)perylene	mg/l	0.00002	See PAH Sum of 4	18	0.00002	<0.00005	0				<0.00002	<0.00002	<0.00002	<0.00002	0.00002	0.00004	<0.00002	<0.00002	<0.00005	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Benzo(k)fluoranthene	mg/l	0.00002	See PAH Sum of 4	18	<0.00002	<0.00007	0				<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00007	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Chrysene	mg/l	0.00002	See BaP	18	0.00002	<0.00006	0				<0.00002	<0.00002	<0.00002	<0.00002	0.00004	<0.00002	0.00004	0.00002	<0.00006	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Dibenzo(ah)anthracene	mg/l	0.00002	No WSV	18	<0.00002	0.00004	0				<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00004	<0.00002	<0.00002	<0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Fluoranthene	mg/l	0.00002	See BaP	18	0.00002	<0.00008	0				0.00002	0.00005	<0.00002	0.00003	0.00006	<0.00002	0.00007	0.00005	<0.00008	0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Fluorene	mg/l	0.00002	See BaP	18	<0.00001	0.00002	0				<0.00002	<0.00002	<0.00002	0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00001	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Indeno(123-cd)pyrene	mg/l	0.00002	See PAH Sum of 4	18	0.00002	0.00004	0				<0.00002	<0.00002	<0.00002	<0.00002	0.00002	0.00004	<0.00002	<0.00002	<0.00003	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Naphthalene	mg/l	0.00002	See BaP	18	<0.00002	0.00174	0				<0.00002	<0.00002	<0.00002	0.00174	<0.00002	<0.00002	<0.00002	0.00005	<0.00003	<0.00002	<0.00002	<0.00002	<0.00002	0.00005	<0.00002	0.00005	0.00006	<0.00002
Phenanthrene	mg/l	0.00002	See BaP	18	0.00002	0.00007	0				0.00004	<0.00002	0.00002	0.00007	0.00004	<0.00002	0.00002	<0.00002	<0.00003	0.00003	<0.00002	<0.00002	<0.00002	<0.00002	0.00002	<0.00002	<0.00002	<0.00002
Pyrene	mg/l	0.00002	See BaP	18	<0.00002	0.00009	0				<0.00002	0.00005	<0.00002	0.00003	0.00006	<0.00002	0.00009	0.00004	<0.00007	0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Total PAH 16MS	mg/l	0.00002	No WSV	18	0.00002	0.00197	0				0.00006	0.0001	0.00002	0.00197	0.00035	0.00014	0.00028	0.00068	<0.00008	0.00011	<0.00002	<0.00002	<0.00002	0.00005	0.00004	0.00005	0.00006	<0.00002
TPH CWG																														
Aliphatic TPH >C5-C6	mg/l	0.001	15	18	<<0.001	<0.004	0				<0.002	<0.002	<0.002	<0.002	<0.002	<0.003	<0.003	<0.001	<0.004	<0.004	<0.004	<0.004	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
Aliphatic TPH >C6-C8	mg/l	0.001	15	18	<<0.001	<0.006	0				<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.006	<0.006	<0.006	<0.006	<0.006	<0.002	<0.003	<0.002	<0.001	<0.001
Aliphatic TPH >C8-C10	mg/l	0.01	0.3	18	<0.01	<0.01	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C10-C12	mg/l	0.01	0.3	18	<0.01	<0.01	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C12-C16	mg/l	0.01	0.3	18	<0.01	<0.01	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C16-C21	mg/l	0.01	N/A	18	<0.01	<0.01	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C21-C35	mg/l	0.02	N/A	18	<0.02	<0.02	0				<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Aliphatics	mg/l	0.01	No WSV	18	<0.02	<0.02	0				<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatic TPH >C5-C7	mg/l	0.001	0.01	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aromatic TPH >C7-C8	mg/l	0.001	0.7	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aromatic TPH >C8-C10	mg/l	0.01	0.3	18	<0.01	<0.01	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic TPH >C10-C12	mg/l	0.01	0.09	18	<0.01	0.015	0				<0.01	<0.01	<0.01	0.015	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic TPH >C12-C16	mg/l	0.01	0.09	18	<0.01	0.014	0				<0.01	<0.01	<0.01	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic TPH >C16-C21	mg/l	0.01	0.09	18	<0.01	0.018	0				<0.01	<0.01	<0.01	0.018	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Aromatics	mg/l	0.02	No WSV	18	<0.02	0.052	0				<0.02	<0.02	<0.02	0.052	<0.02	<0.02	<0.02	<0.02	<0.02	0.029	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
TPH (Ali & Aro >C5-C35)	mg/l	0.02	No WSV	18	<0.02	0.052	0				<0.02	<0.02	<0.02	0.052	<0.02	<0.02	<0.02	<0.02	<0.02	0.029	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzene	mg/l	0.001	0.001	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	mg/l	0.001	0.7	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ethyl Benzene	mg/l	0.001	No WSV	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
o Xylene	mg/l	0.001	No WSV	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
m & p Xylene	mg/l	0.001	No WSV	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MTBE	mg/l	0.001	No WSV	18	<0.001	<0.003	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	<0.003	<0.003	<0.003	<0.003	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001
Aro >C21-C35	mg/l	0.02	No WSV	18	<0.02	<0.02	0				<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Ancoats, Manchester
GPA
Controlled Waters Risk Assessment
Leachate - EQS

ATKINS

Assessment Criteria :	Freshwater EQS																										
CaCO (mg/l):	0.00		pH	0.00																							
Calcium (mg/l):	0.00		DOC (mg/l)	0.00		Catchment area:	Freshwater not listed																				
									Location		ATK TP08	ATK BH01	ATK BH05	ATK BH08	ATK TP05	ATK-TP07	ATK-BH06	ATK_TP02	ATK_CPT17	ATK_TP01	ATK_TP10	ATK_CPT12	ATK_CPT14	ATK_BH07	ATK_WS02	ATK_TP04	ATK-TP03	ATK BH02a
									Sample ID		ATK TP08	ATK BH01	ATK BH05	ATK BH08	ATK TP05	ATK-TP07	ATK-BH06	ATK_TP02	ATK_CPT17	ATK_TP01	ATK_TP10	ATK_CPT12	ATK_CPT14	ATK_BH07	ATK_WS02	ATK_TP04	ATK-TP03	ATK BH02a
									Depth		1m	0.5m	0.8m	0.6m	0.8m	0.4m	1m	1.2m	0.7m	1.8m	1.2m	0.36m	0.4m	0.45m	0.5m	0.3m	1m	1.2m
									Date		45028	45022	45022	45022	45028	45030	45030	45034	45033	45029	45033	45033	45030	45034	45035	45035	45037	45048
									Strata																			
Constituents	Unit	Limit of Detection	Generic Assessment Criteria	Number of Samples	Minimum Value	Maximum Value	Number of Exceedences	Locations of Exceedences		Zone																	
pH	pH	0.01	6-9	18	7.27	11.63	3	ATK-BH06, 1m; ATK_CPT14, 0.4m; ATK_TP04, 0.3m			7.27	7.34	7.91	7.8	7.84	8.1	9.04	7.67	8.67	7.48	7.42	8.25	11.63	8.87	7.58	11.54	7.71	7.9
Ammoniacal nitrogen	mg/l	0.065	0.2	18	<0.065	6.667	7	ATK TP08, 1m; ATK BH05, 0.8m; ATK_TP02, 1.2m; ATK_TP01, 1.8m; ATK_BH07, 0.45m; ATK_TP04, 0.3m; ATK BH02a, 1.2m			3.344	0.109	6.667	0.098	<0.065	<0.065	<0.065	1.776	<0.065	3.768	<0.065	<0.065	<0.065	1.504	<0.065	1.563	0.068	5.203
Sulphate	mg/l	1	400	18	<1	1540	2	ATK_TP10, 1.2m; ATK_WS02, 0.5m			<1	6.28	94.45	6.45	4.61	30.24	79.68	111.67	85.7	46.39	1540	17.2	1.68	67.64	428.62	13.02	78.06	57.56
Cyanide (free)	mg/l	0.005	0.001	18	<0.005	<0.005	0				<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cyanide (total)	mg/l	0.005	N/A	18	0.005	0.228	0				<0.005	<0.005	<0.005	<0.005	0.018	<0.005	0.03	0.006	<0.005	<0.005	0.228	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.005
Phenol	mg/l	0.01	0.0077	18	<0.01	0.03	1	ATK BH08, 0.6m			<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic	mg/l	0.001	0.05	18	0.001	0.019	0				0.006	0.001	<0.001	<0.001	0.008	<0.001	0.019	0.005	0.002	0.016	0.005	<0.001	<0.001	<0.001	<0.001	0.002	0.01	0.011
Boron	mg/l	0.01	2	18	<0.01	0.302	0				0.107	0.011	0.056	0.014	0.014	<0.01	0.052	0.302	0.041	0.106	0.091	0.013	<0.01	0.033	0.026	0.011	0.097	0.302
Cadmium	mg/l	0.001	0.00008	18	<0.001	<0.002	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	mg/l	0.004	0.001	18	0.004	0.047	7	ATK TP08, 1m; ATK TP05, 0.8m; ATK-BH06, 1m; ATK_TP01, 1.8m; ATK_TP10, 1.2m; ATK_CPT12, 0.36m; ATK BH02a, 1.2m			0.039	<0.004	<0.004	<0.004	0.014	<0.004	0.006	<0.004	<0.004	0.006	0.047	0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.005
Chromium	mg/l	0.001	See Cr VI as first pass	18	0.001	0.06	0				0.004	0.001	<0.001	0.003	0.06	<0.001	0.057	<0.001	0.011	<0.001	0.041	0.002	0.009	0.013	0.001	0.039	0.01	<0.001
Chromium (hexavalent)	mg/l	0.05	0.0034	18	<0.05	<0.1	0				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lead	mg/l	0.001	0.0012	18	<0.001	0.027	7	ATK TP08, 1m; ATK BH01, 0.5m; ATK TP05, 0.8m; ATK-BH06, 1m; ATK_TP01, 1.8m; ATK_WS02, 0.5m; ATK BH02a, 1.2m			0.027	0.006	<0.001	<0.001	0.018	<0.001	0.007	<0.001	<0.001	0.007	<0.002	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	0.005
Mercury	mg/l	0.0001	0.00007	18	0.0001	<0.0002	1	ATK_CPT14, 0.4m			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	mg/l	0.002	0.004	18	<0.002	0.008	1	ATK TP08, 1m			0.008	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selenium	mg/l	0.001	N/A	18	0.001	0.002	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	0.002	<0.001	<0.002	<0.001	<0.001	0.002	<0.001	0.001	0.001	<0.001
Vanadium	mg/l	0.001	0.02	18	0.001	0.042	1	ATK TP08, 1m			0.042	0.001	<0.001	<0.001	0.002	<0.001	0.019	<0.001	0.003	0.002	0.003	0.001	<0.001	<0.001	<0.001	0.003	0.005	0.004
Zinc	mg/l	0.002	0.0123	18	0.002	0.024	1	ATK TP08, 1m			0.024	0.004	<0.002	<0.002	0.009	<0.002	0.003	0.002	<0.002	0.005	0.007	0.007	<0.002	<0.002	0.003	<0.002	<0.002	0.004
PAH 16MS																												
Acenaphthene	mg/l	0.00002	Screen BaP only	18	<0.00001	0.00052	0				<0.00002	<0.00002	<0.00002	0.00008	<0.00002	<0.00002	0.00003	0.00052	<0.00001	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Acenaphthylene	mg/l	0.00002	Screen BaP only	18	<0.00001	0.00002	0				<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00001	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00002	<0.00002	<0.00002	<0.00002
Anthracene	mg/l	0.00002	0.0001	18	<0.00002	<0.00002	0				<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Benzo(a)anthracene	mg/l	0.00002	Screen BaP only	18	<0.00002	<0.00004	0				<0.00002	<0.00002	<0.00002	<0.00002	<0.00003	<0.00002	0.00003	<0.00002	<0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Benzo(a)pyrene	mg/l	0.00002	0.00000017	18	0.00002	<0.00004	2	ATK TP05, 0.8m; ATK-TP07, 0.4m			<0.00002	<0.00002	<0.00002	<0.00002	0.00003	0.00002	<0.00002	<0.00002	<0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Benzo(b)fluoranthene	mg/l	0.00002	Screen BaP only	18	<0.00002	0.00005	0				<0.00002	<0.00002	<0.00002	<0.00002	0.00005	<0.00002	<0.00002	<0.00002	<0.00005	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Benzo(ghi)perylene	mg/l	0.00002	Screen BaP only	18	0.00002	<0.00005	0				<0.00002	<0.00002	<0.00002	<0.00002	0.00002	0.00004	<0.00002	<0.00002	<0.00005	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Benzo(k)fluoranthene	mg/l	0.00002	Screen BaP only	18	<0.00002	<0.00007	0				<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00007	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Chrysene	mg/l	0.00002	Screen BaP only	18	0.00002	<0.00006	0				<0.00002	<0.00002	<0.00002	<0.00002	0.00004	<0.00002	0.00004	0.00002	<0.00006	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Dibenzo(ah)anthracene	mg/l	0.00002	No WSV	18	<0.00002	0.00004	0				<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00004	<0.00002	<0.00002	<0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Fluoranthene	mg/l	0.00002	0.0000063	18	0.00002	<0.00008	7	ATK TP08, 1m; ATK BH01, 0.5m; ATK BH08, 0.6m; ATK TP05, 0.8m; ATK-BH06, 1m; ATK_TP02, 1.2m; ATK_TP01, 1.8m			0.00002	0.00005	<0.00002	0.00003	0.00006	<0.00002	0.00007	0.00005	<0.00008	0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Fluorene	mg/l	0.00002	N/A	18	<0.00001	0.00002	0				<0.00002	<0.00002	<0.00002	0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00001	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Indeno(123-cd)pyrene	mg/l	0.00002	Screen BaP only	18	0.00002	0.00004	0				<0.00002	<0.00002	<0.00002	<0.00002	0.00002	0.00004	<0.00002	<0.00002	<0.00003	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Naphthalene	mg/l	0.00002	0.002	18	<0.00002	0.00174	0				<0.00002	<0.00002	<0.00002	0.00174	<0.00002	<0.00002	<0.00002	0.00005	<0.00003	<0.00002	<0.00002	<0.00002	<0.00002	0.00005	<0.00002	0.00005	0.00006	<0.00002
Phenanthrene	mg/l	0.00002	Screen BaP only	18	0.00002	0.00007	0				0.00004	<0.00002	0.00002	0.00007	0.00004	<0.00002	0.00002	<0.00002	<0.00003	0.00003	<0.00002	<0.00002	<0.00002	<0.00002	0.00002	<0.00002	<0.00002	<0.00002
Pyrene	mg/l	0.00002	N/A	18	<0.00002	0.00009	0				<0.00002	0.00005	<0.00002	0.00003	0.00006	<0.00002	0.00009	0.00004	<0.00007	0.00004	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Total PAH 16MS	mg/l	0.00002	No WSV	18	0.00002	0.00197	0				0.00006	0.0001	0.00002	0.00197	0.00035	0.00014	0.00028	0.00068	<0.00008	0.00011	<0.00002	<0.00002	<0.00002	0.00005	0.00004	0.00005	0.00006	<0.00002
TPH CWG																												
Aliphatic TPH >C5-C6	mg/l	0.001	0.01	18	<<0.001	<0.004	0				<0.002	<0.002	<0.002	<0.002	<0.002	<0.003	<0.003	<0.001	<0.004	<0.004	<0.004	<0.004	<0.004	<0.002	<0.002	<0.002	<0.002	<0.002
Aliphatic TPH >C6-C8	mg/l	0.001	0.01	18	<<0.001	<0.006	0				<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.006	<0.006	<0.006	<0.006	<0.006	<0.002	<0.003	<0.002	<0.001	<0.001
Aliphatic TPH >C8-C10	mg/l	0.01	0.01	18	<0.01	<0.01	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C10-C12	mg/l	0.01	0.01	18	<0.01	<0.01	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C12-C16	mg/l	0.01	0.01	18	<0.01	<0.01	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C16-C21	mg/l	0.01	0.01	18	<0.01	<0.01	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aliphatic TPH >C21-C35	mg/l	0.02	0.01	18	<0.02	<0.02	0				<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Total Aliphatics	mg/l	0.01	No WSV	18	<0.02	<0.02	0				<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Aromatic TPH >C5-C7	mg/l	0.001	0.01	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aromatic TPH >C7-C8	mg/l	0.001	0.01	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Aromatic TPH >C8-C10	mg/l	0.01	0.01	18	<0.01	<0.01	0				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic TPH >C10-C12	mg/l	0.01	0.01	18	<0.01	0.015	1	ATK BH08, 0.6m			<0.01	<0.01	<0.01	0.015	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic TPH >C12-C16	mg/l	0.01	0.01	18	<0.01	0.014	2	ATK BH08, 0.6m; ATK_TP01, 1.8m			<0.01	<0.01	<0.01	0.014	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic TPH >C16-C21	mg/l	0.01	0.01	18	<0.01	0.018	2	ATK BH08, 0.6m; ATK_TP01, 1.8m			<0.01	<0.01	<0.01	0.018	<0.01	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Aromatics	mg/l	0.02	No WSV	18	<0.02	0.052	0				<0.02	<0.02	<0.02	0.052	<0.02	<0.02	<0.02	<0.02	<0.02	0.029	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
TPH (Ali & Aro >C5-C35)	mg/l	0.02	No WSV	18	<0.02	0.052	0				<0.02	<0.02	<0.02	0.052	<0.02	<0.02	<0.02	<0.02	<0.02	0.029	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzene	mg/l	0.001	0.01	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	mg/l	0.001	0.074	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ethyl Benzene	mg/l	0.001	No WSV	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
o Xylene	mg/l	0.001	No WSV	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
m & p Xylene	mg/l	0.001	No WSV	18	<0.001	<0.001	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
MTBE	mg/l	0.001	No WSV	18	<0.001	<0.003	0				<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	<0.003	<0.003	<0.003	<0.003	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001
Aro >C21-C35	mg/l	0.02	No WSV	18	<0.02	<0.02	0				<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Project:	Ancoats, Manchester
Project Number:	5214819
Client:	GPA

Borehole	Oxygen %v/v		Methane %v/v		Carbon Dioxide %v/v		Flow l/hr		H2S ppm	CO ppm	Hazardous Gas Values (calculated using max conc. and max steady state flow)	
	Min Min	Min Steady	Max Max	Max Steady	Max Max	Max Steady	Max Max	Max Steady	Max	Max	CH4	CO2
ATK_BH01	19.10	19.10	*<0.1*	*<0.1*	0.50	0.20	24.3	24.3	6	9	0.0243	0.1215
ATK_BH02a	19.00	19.00	*<0.1*	*<0.1*	0.50	0.50	0.6	0.6	1	19	0.0006	0.003
ATK_BH03	19.70	19.90	*<0.1*	*<0.1*	0.40	0.10	3.2	3.2		11	0.0032	0.0128
ATK_BH04	1.50	1.50	*<0.1*	*<0.1*	3.20	3.20	0.7	0.7	1	6	0.0007	0.0224
ATK_BH05	0.20	0.20	*<0.1*	*<0.1*	4.40	4.40	0.8	0.8		3	0.0008	0.0352
ATK_BH06	15.00	15.30	*<0.1*	*<0.1*	0.60	0.60	0.4	0.4		8	0.0004	0.0024
ATK_BH07	20.00	20.00	0.10	*<0.1*	0.20	0.20	0.3	0.3		14	0.0003	0.0006
ATK_BH08a	13.90	13.90	*<0.1*	*<0.1*	2.20	2.20	0.4	0.4	1	57	0.0004	0.0088
ATK_BH09	0.20	0.50	35.40	34.70	0.10	*<0.1*	0.2	0.2	1	82	0.0708	0.0002
ATK_BH10	1.60	1.60	35.40	*<0.1*	0.20	0.20	0.2	0.2	0	11	0.0708	0.0004
ATK_BH11	18.90	18.90	0.40	*<0.1*	0.10	0.10	0.9	0.9	1	440	0.0036	0.0009
ATK_BH12	18.70	18.70	0.10	*<0.1*	1.90	1.90	0.2	0.2		79	0.0002	0.0038
ATK_WS01	19.50	19.50	2.70	*<0.1*	0.90	0.80	0.1	0.1	1	2	0.0027	0.0009
ATK_WS02	14.30	14.30	*<0.1*	*<0.1*	4.00	4.00	0.1	0.1		5	0.0001	0.004
ATK_WS03	5.00	5.00	*<0.1*	*<0.1*	0.50	0.30	0.9	0.9		10	0.0009	0.0045
ATK_WS04	17.10	18.40	*<0.1*	*<0.1*	0.70	0.50	0.6	0.6		7	0.0006	0.0042
ATK_WS05	3.10	3.10	*<0.1*	*<0.1*	7.30	7.30	0.3	0.3	1	1	0.0003	0.0219
ATK_WS06	2.30	2.30	2.10	2.10	9.30	9.30	0.2	0.2		2	0.0042	0.0186
ATK_WS07	17.80	18.00	0.10	0.10	1.20	1.10	0.3	0.3		3	0.0003	0.0036
ATK_WS08	14.80	14.80	0.10	*<0.1*	0.70	0.70	0.2	0.2		11	0.0002	0.0014
ATK WS06	1.60	1.60	*<0.1*	*<0.1*	10.80	10.80	0.3	0.3			0.0003	0.0324
ATKWS07	20.70	20.70	*<0.1*	*<0.1*	0.10	0.10	0.3	0.3			0.0003	0.0003
ATKWS08	13.40	13.40	0.10	*<0.1*	1.30	1.30	0.2	0.2		3	0.0002	0.0026

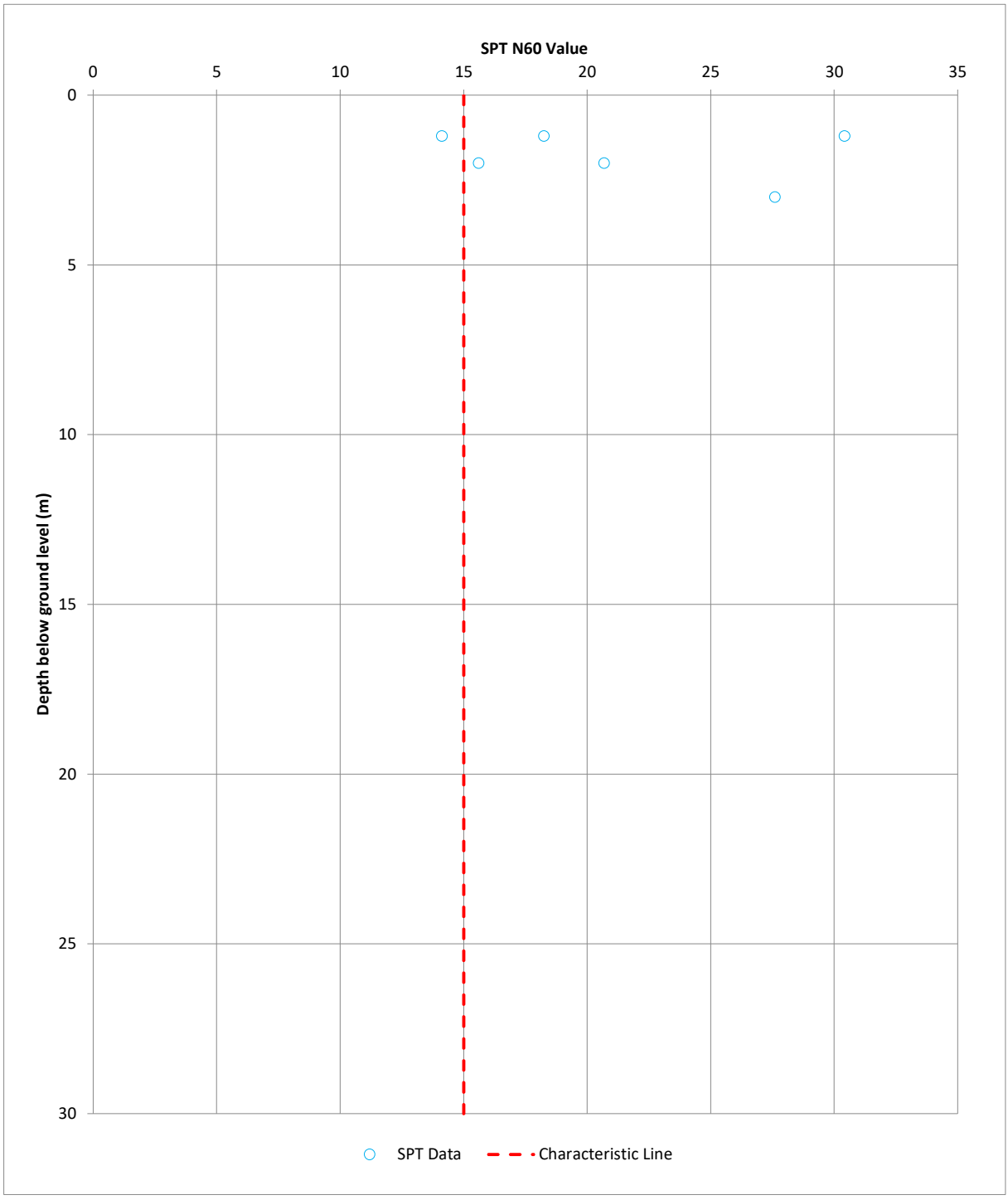
Assessment Criteria : *Commercial - 1% SOM Sand*

☐ **Use MRL Values?**

Constituent	Unit	Limit of Detection	Generic Assessment Criteria	Number of Samples	Minimum Value	Maximum Value	Number of Exceedances	Locations of Exceedances	ATK TP08	ATK TP08	ATK BH01	ATK BH04	ATK BH04	ATK BH05	ATK BH08	ATK TP05	ATK TP07	ATK-BH03	ATK-BH06	ATK_TP02	ATK_CPT15	ATK_CPT16	ATK_CPT17	ATK_TP01	ATK_TP01	ATK_TP09	ATK_TP10	ATK BH08A	ATK_CPT12	ATK_CPT14	ATK_BH07	ATK_WS02	ATK_WS04	ATK_WS01	ATK_CPT03	ATK_TP04	ATK_BH12	ATK-TP03	ATK_TP06	ATK BH02a	ATK_CPT07	ATK_HDP01
									0.3m	1m	0.5m	0.4m	1.2m	0.8m	0.3m	0.8m	0.4m	0.8m	1m	1.2m	0.5m	0.1m	0.7m	0.3m	1.8m	1.3m	1.2m	1m	0.36m	0.4m	0.45m	0.5m	0.3m	0.2m	0.7m	0.3m	0.5m	1m	0.25m	1.2m	0.6m	0.4m
									12/04/2023	12/04/2023	06/04/2023	12/04/2023	12/04/2023	06/04/2023	06/04/2023	12/04/2023	14/04/2023	14/04/2023	14/04/2023	18/04/2023	17/04/2023	17/04/2023	17/04/2023	13/04/2023	13/04/2023	17/04/2023	17/04/2023	14/04/2023	17/04/2023	14/04/2023	18/04/2023	19/04/2023	19/04/2023	19/04/2023	18/04/2023	19/04/2023	21/04/2023	21/04/2023	20/04/2023	02/05/2023	02/05/2023	28/04/2023
pH	pH	0.01	No SSV	34	7.25	12.24	0		8.82	7.58	8.56	8.23	8.52	9.52	10.6	9.03	8.69	8.04	9.31	8.37	8.14	8.94	8.98	8.67	7.92	8.3	7.75	8.33	8.68	11.89	8.68	8.16	12.24	9.79	9.08	10.69	7.25	7.87	9.58	8.56	8.24	8.1
Ammonium / Ammoniacal Nitrogen as NH4D	mg/kg	0.26	No SSV	34	<0.26	53.4	0		1.38	23.2	1.91	<0.26	0.47	47.5	2.14	4.07	1.61	11.7	1.12	15.7	5.38	0.83	0.77	0.68	53.4	9.77	1.93	1.74	0.34	1.3	<0.26	1.08	<0.26	<0.26	2.07	<0.26	0.53	0.74	1.38	35.1	<0.26	1.61
Sulphate (acid soluble)	mg/kg	200	No SSV	34	<200	7800	0		<200	<200	<200	<200	420	420	<200	1200	<200	2500	880	320	<200	<200	710	<200	860	270	7800	430	<200	2200	270	880	1500	<200	230	460	500	450	<200	490	690	<200
Cyanide (free)	mg/kg	1	373	34	<1	<1	0		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cyanide (total)	mg/kg	1	No SSV	34	<1	4	0		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phenols - Total by HPLCA	mg/kg	0.2	No SSV	34	<0.2	<0.2	0		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Sulphide	mg/kg	5	No SSV	34	<5	250	0		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	250	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	45	83	78	<5	<5	<5	<5	<5	<5	<5	<5
Organic Matter	% w/w	0.1	No SSV	34	<0.1	13.3	0		<0.1	1.5	0.4	0.3	1.7	3.6	0.4	13.3	1.1	2.7	3.8	2.7	0.6	<0.1	1.3	0.5	5.4	1.5	11.6	1.3	<0.1	0.2	1	0.6	0.5	0.2	0.9	0.6	1.1	7.4	0.7	3	1.5	2
Arsenic	mg/kg	1	635	34	<1	43	0		<1	<1	<1	<1	2	4	1	43	7	2	6	4	<1	<1	<1	<1	8	<1	18	3	<1	<1	3	2	<1	<1	4	3	6	9	<1	6	3	4
Boron (water soluble)	mg/kg	1	No SSV	34	<1	1.6	0		<1	<1	<1	<1	<1	<1	<1	<1	<1	1.6	<1	1.1	1.1	<1	<1	<1	<1	1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.6	<1	<1
Cadmium	mg/kg	0.5	410	34	<0.5	1.6	0		<0.5	<0.5	<0.5	<0.5	0.6	0.7	<0.5	1.6	0.8	0.7	0.6	0.5	<0.5	<0.5	0.7	<0.5	0.6	0.7	0.6	0.7	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	0.6	0.5	1	0.7	0.7	0.5	0.7	0.7
Copper	mg/kg	1	106000	34	2	244	0		3	10	5	9	25	22	6	244	19	29	38	47	12	2	27	6	45	25	70	27	5	7	21	6	8	4	22	16	28	75	15	44	22	19
Chromium	mg/kg	1	208000	34	5	55	0		6	24	13	12	35	29	13	55	30	33	9	27	22	8	45	9	34	37	17	35	11	16	31	5	9	6	26	18	36	20	30	23	29	29
Chromium (hexavalent)	mg/kg	1	49.1	34	<1	<1	0		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead	mg/kg	1	2310	34	2	771	0		4	11	13	9	10	9	26	506	10	47	203	51	16	2	18	9	61	23	771	21	5	10	14	18	10	3	23	12	19	78	10	39	10	13
Mercury	mg/kg	0.17		34	<0.17	3.7	0		<0.17	<0.17	<0.17	<0.17	1.4	0.24	<0.17	3.7	<0.17	<0.17	1.46	<0.17	<0.17	<0.17	<0.17	<0.17	0.37	0.36	2.13	<0.17	0.29	1.84	<0.17	<0.17	1.06	<0.17	0.22	0.37	<0.17	0.54	<0.17	<0.17	0.49	<0.17
Nickel	mg/kg	1	1770	34	8	41	0		11	15	12	17	39	35	18	38	31	29	10	32	18	8	40	9	32	36	19	36	13	11	35	8	9	8	26	21	40	27	30	23	34	41
Selenium	mg/kg	1	13000	34	<1	4	0		<1	<1	<1	<1	<1	<1	1	3	<1	<1	<1	<1	<1	<1	<1	<1	4	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	mg/kg	1	7490	34	3	41	0		5	27	6	8	33	28	5	36	31	36	13	27	30	3	41	6	41	39	24	37	5	10	30	6	6	4	24	14	38	24	22	27	30	28
Zinc	mg/kg	5	1100000	34	11	315	0		13	31	59	30	63	56	25	315	49	47	133	57	29	11	97	16	63	59	135	62	18	22	50	28	26	15	42	39	61	74	56	45	56	51
Asbestos in Soil (inc. matrix)			No SSV	0	-	-	0																																			
Asbestos in soil			No SSV	34	-	-	0		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Matrix (visual)			No SSV	0	-	-	0		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos Matrix (microscope)			No SSV	0	-	-	0		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos ACM - Suitable for Water Absorption Test?			No SSV	34	-	-	0		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthene	mg/kg	0.01	83600	34	<0.01	0.93	0		<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.93	<0.01	<0.01	0.92	0.38	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Acenaphthylene	mg/kg	0.01	No SSV	34	<0.01	0.23	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.23	<0.01	<0.01	0.02	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Anthracene	mg/kg	0.02	535000	34	<0.02	1.61	0		<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	1.61	<0.02	<0.02	1.11	0.45	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(a)anthracene	mg/kg	0.04	BaP Surrogate	34	<0.04	4.92	0		<0.04	<0.04	0.18	<0.04	<0.04	<0.04	<0.04	4.92	<0.04	<0.04	1.86	0.91	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.08	<0.04	<0.04	<0.04	<0.04	0.05	0.04	<0.04	<0.04	0.08	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Benzo(a)pyrene	mg/kg	0.04	76.3	34	<0.04	3.8	0		<0.04	<0.04	0.16	<0.04	<0.04	<0.04	<0.04	3.8	<0.04	<0.04	1.26	0.88	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.06	<0.04	<0.04	<0.04	<0.04	0.05	0.04	<0.04	<0.04	0.08	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Benzo(b)fluoranthene	mg/kg	0.05	BaP Surrogate	34	<0.05	4.35	0		<0.05	<0.05	0.18	<0.05	<0.05	<0.05	<0.05	4.35	<0.05	<0.05	1.67	0.93	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	0.06	0.05	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(ghi)perylene	mg/kg	0.05	BaP Surrogate	34	<0.05	1.23	0		<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	1.23	<0.05	<0.05	0.48	0.36	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(k)fluoranthene	mg/kg	0.07	BaP Surrogate	34	<0.07	1.44	0		<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	1.44	<0.07	<0.07	0.51	0.32	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07
Chrysene	mg/kg	0.06	BaP Surrogate	34	<0.06	5.6	0		<0.06	<0.06	0.2	<0.06	<0.06	<0.06	<0.06	5.6	<0.06	<0.06	1.74	0.85	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.1	<0.06	<0.06	<0.06	<0.06	<0.06	0.06	<0.06	<0.06	0.1	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Dibenzo(ah)anthracene	mg/kg	0.04	BaP Surrogate	34	<0.04	0.35	0		<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.35	<0.04	<0.04	0.12	0.08	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Fluoranthene	mg/kg	0.08	72200	34	<0.08	12.9	0		<0.08	<0.08	0.34	<0.08	<0.08	<0.08	<0.08	12.9	<0.08	<0.08	5.88	2.26	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	0.18	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	0.17	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Fluorene	mg/kg	0.01	66500	34	<0.01	0.75	0		<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.75	<0.01	<0.01	0.57	0.25	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Indeno(123-cd)pyrene	mg/kg	0.03	BaP Surrogate	34	<0.03	1.42	0		<0.03	<0.03	0.09	<0.03	<0.03	<0.03	<0.03	1.42	<0.03	<0.03	0.58	0.44	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Naphthalene	mg/kg	0.03	90.1	34	<0.03	0.65	0		<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.09	<0.03	<0.03	0.65	0.15	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Phenanthrene	mg/kg	0.03	No SSV	34	<0.03	9.22	0		<0.03	<0.03	0.2	<0.03	<0.03	<0.03	<0.03	9.22	<0.03	<0.03	5.87	1.54	<0.03	<0.03	0.05	<0.03	<0.03	<0.03	0.17	<0.03	<0.03	<0.03	<0.03	0.06	0.06	0.04	<0.03	0.13	<0.03	<0.03	0.04	<0.03	<0.03	<0.03
Pyrene	mg/kg	0.07	54100	34	<0.07	13	0		<0.07	<0.07	0.33	<0.07	<0.07	<0.07	<0.07	13	<0.07	<0.07	4.56	2.05	<0.07	<0.07	0.09	<0.07	<0.07	<0.07	0.2	<0.07	<0.07	<0.07	<0.07	0.09	0.09	0.09	<0.07	<0.07	0.15	<0.07	<0.07	<0.07	<0.07	<0.07
Total PAH-16MS	mg/kg	0.01	No SSV	34	<0.08	61.8	0		<0.08	<0.08	1.81	<0.08	<0.08	<0.08	<0.08	61.8	<0.08	<0.08	27.8	11.9	<0.08	<0.08	0.14	<0.08	<0.08	<0.08	0.93	<0.08	<0.08	<0.08	<0.08	0.31	0.37	<0.08	<0.08	0.92	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
TPH aliphatic C5-C6	mg/kg	0.01	4490	34	<0.01	<0.01	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
TPH aliphatic C6-C8	mg/kg	0.01	10400	34	<0.01	<0.01	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
TPH aliphatic C8-C10	mg/kg	1	1370	34	<1	2	0		<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1
TPH aliphatic C10-C12	mg/kg	1	7900	34	<1	2	0		<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
TPH aliphatic C12-C16	mg/kg	1	34000	34	<1	4	0		<1	<1	<1	<1	<1	<1	<1	3	<1	<1	1	4	<1	<1	2	<1	<1	<1	3	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
TPH aliphatic C16-C21	mg/kg	1	3620000	34	<1	6	0		2	<1	<1	<1	<1	<1	<1	4	<1	<1	2	4	<1	<1	6	2	3	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1
TPH aliphatic C21-C35	mg/kg	1	3620000	34	<1	91	0		14	<1	6	3	1	<1	7	13	<1	1	29	9	<1	3	91	82	12	2	8	2	<1	6	<1	2	4	3	2	4	<1	2	6	3	1	1
TPH aliphatic C35-C44	mg/kg	1	No SSV	34	<1	95	0		2	<1	2	<1	<1	<1	<1	23	<1	<1	10	10	<1	<1	95	36	4	3	21	2	<1	8	<1	<1	<1	<1	4	<1	<1	4	<1	<1	<1	<1
Total Aliphatics	mg/kg	1	No SSV	34	<1	194	0		18	<1	9	3	1	<1	7	46	<1	1	44	30	<1	3	194	120	18	2	23	2	<1	8	<1	2	4	3	3	10	<1	2	6	3	1	1
TPH aromatic C5-C7 (Benzene)	mg/kg	0.01	12.5	34	<0.01	0.02	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
TPH aromatic C7-C8 (Toluene)	mg/kg	0.01	27900	34	<0.01	<0.01	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
TPH aromatic C8-C10	mg/kg	1	2210	34	<1	46	0		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	1	<1	<1	20	<1	<1	<1	<1	<1	<1	46	<1	<1	3	<1	<1
TPH aromatic C10-C12	mg/kg	1	12300	34	<1	6	0		<1	<1	<1	<1	<1	<1	<1	2	<1	<1	4	6	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
TPH aromatic C12-C16	mg/kg	1	41300	34	<1	34	0		<1	<1	1	<1	<1	<1	<1	23	<1	<1	13	34	<1	<1	2	2	4	<1	8	<1	<1	<1	<1	<1	<1	<1	2	2	<1	2	4	1	<1	<1
TPH aromatic C21-C35	mg/kg	1	28400	34	<1	477	0		<1	<1	12	1	<1	<1	<1	477	<1	3	147	198	<1	1	32	24	28	4	44	4	<1	<1	<1	5	5	<1	4	5	<1	7	3	4	1	<1
TPH aromatic C35-C44	mg/kg	1	No SSV	34	<1	9	0		<1	<1	<1	<1	<1	<1	<1	2	<1	<1	1	<1	<1	<1	9	3	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Aromatics	mg/kg	1	No SSV	34	<1	651	0		<1	<1	17	1	<1	<1	<1	651	<1	3	220	335	<1	1	53	33	45	5	73	5	<1	21	<1	6	8	<1	7	57	<1	11	15	8	1	<1
TPH (Ali & Aro >C5-C44)	mg/kg	1	No SSV	34	<1	697	0		19	<1	26	5	1	<1	7	697	<1	4	264	366	<1	4	247	153	63	7	96	7	<1	29	<1	8	12	4	10	67	<1	13	21	10	2	1
Benzene	mg/kg	0.01	12.5	34	<0.01	0.02	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Toluene	mg/kg	0.01	27900	34	<0.01	<0.01	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Ethyl Benzene	mg/kg	0.01	7660	34	<0.01	<0.01	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
m & p Xylene	mg/kg	0.01	No SSV	34	<0.01	<0.01	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
o Xylene	mg/kg	0.01	3030	34	<0.01	<0.01	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Methyl tert-butyl ether	mg/kg	0.01	3140	34	<0.01	<0.01	0		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4-Bromophenyl phenyl ether	mg/kg	0.1	No SSV	8	<0.1	<0.1	0													<0.1					<0.1	<0.1	<0.1												<0.1			
Hexachlorobenzene	mg/kg	0.1	No SSV	8	<0.1	<0.1	0													<0.1					<0.1	<0.1	<0.1												<0.1			
Diethyl phthalate	mg/kg	0.1	108000	8	<0.1	<0.1	0													<0.1					<0.1	<0.1	<0.1												<0.1			
Dimethyl phthalate	mg/kg	0.1	No SSV	8	<0.1	<0.1	0													<0.1					<0.1	<0.1	<0.1												<0.1			
Dibenzofuran	mg/kg	0.1	No SSV	8	<0.1	1.15	0													0.233					1.15	<0.1	<0.1												<0.1			
Carbazole	mg/kg	0.1	No SSV	8	<0.1	0.536	0													0.411					0.536	<0.1	<0.1												<0.1			
Butylbenzyl phthalate	mg/kg	0.1	No SSV	8	<0.1	<0.1	0													<0.1					<0.1	<0.1	<0.1												<0.1			
Bis(2-ethylhexyl)phthalate	mg/kg

| Assessment Criteria : | | | | | | | | | Commercial - 1% SOM Sand | | | | | | | | |

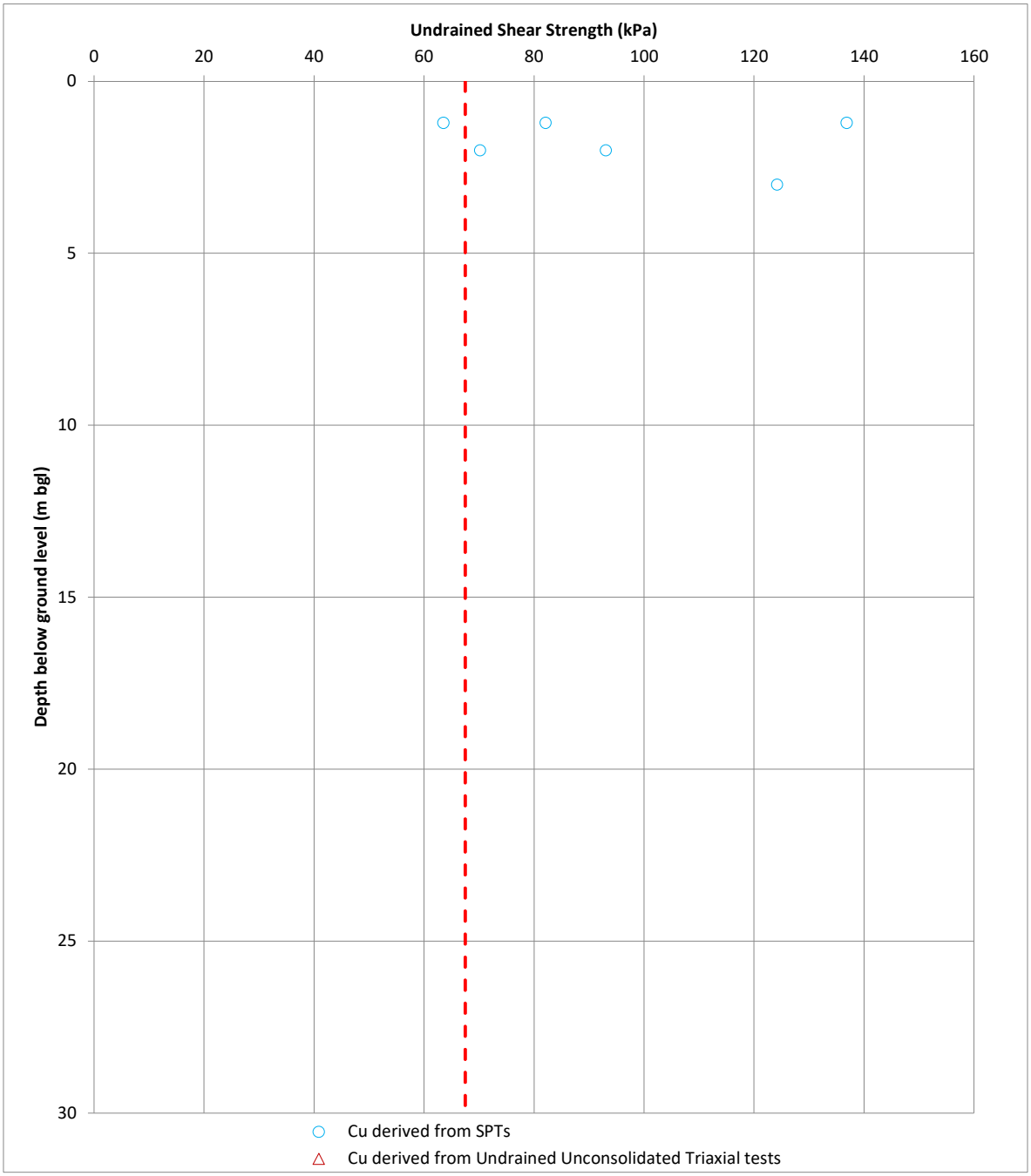
Appendix E. Geotechnical Parameter Plots



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Client: **Confidential**	Title: **SPT N60 Value vs Depth for Made Ground Cohesive**			
Project: **Ancoats, Manchester**	Sheet size: A4	Drawn: TB Date: 12.10.23	Checked: CH Date: 12.10.23	Reviewed: JH Date: 12.10.23
	Status	Figure Number: D-1		Rev

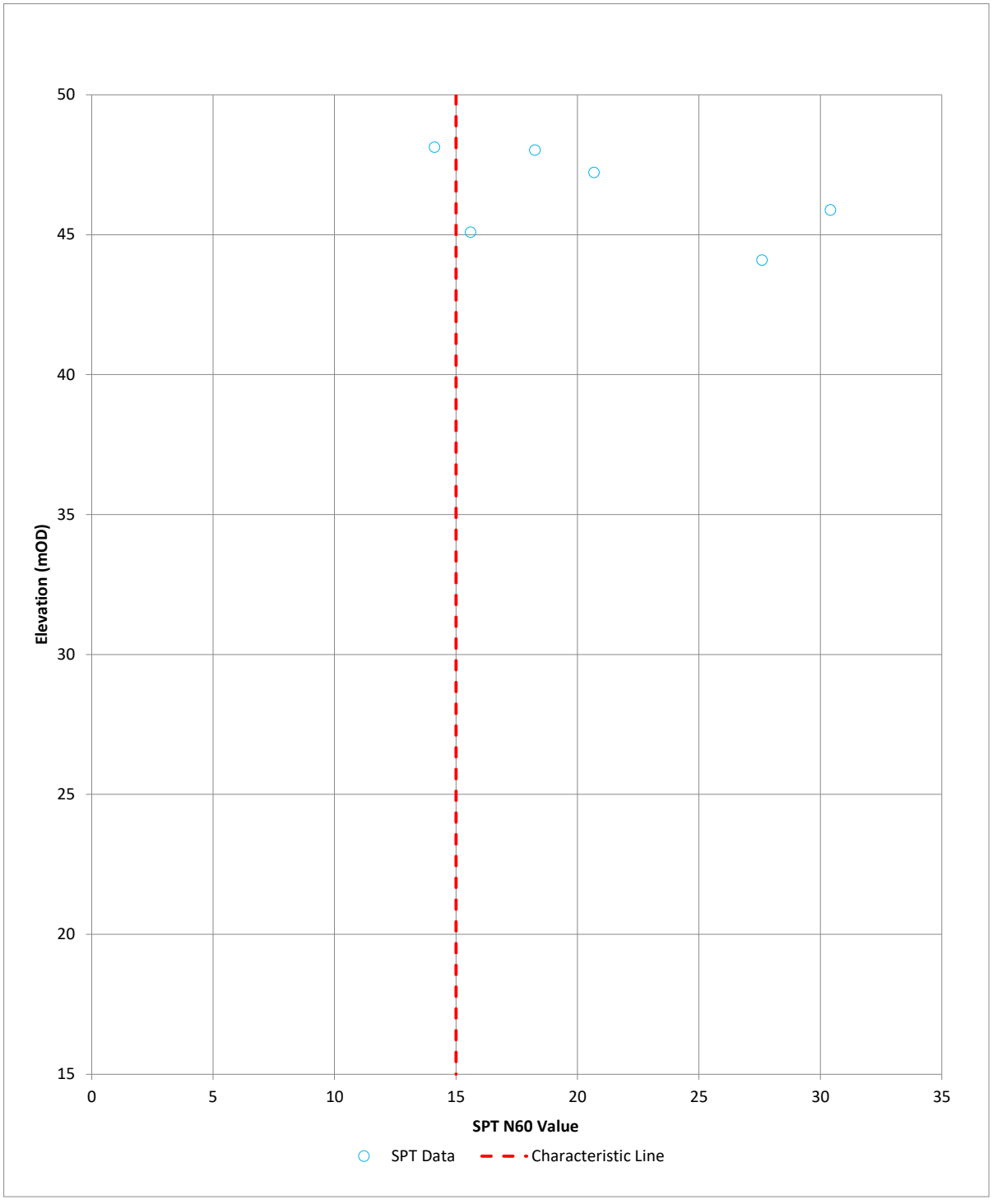


f, value (Cu = f_1N)	4.5

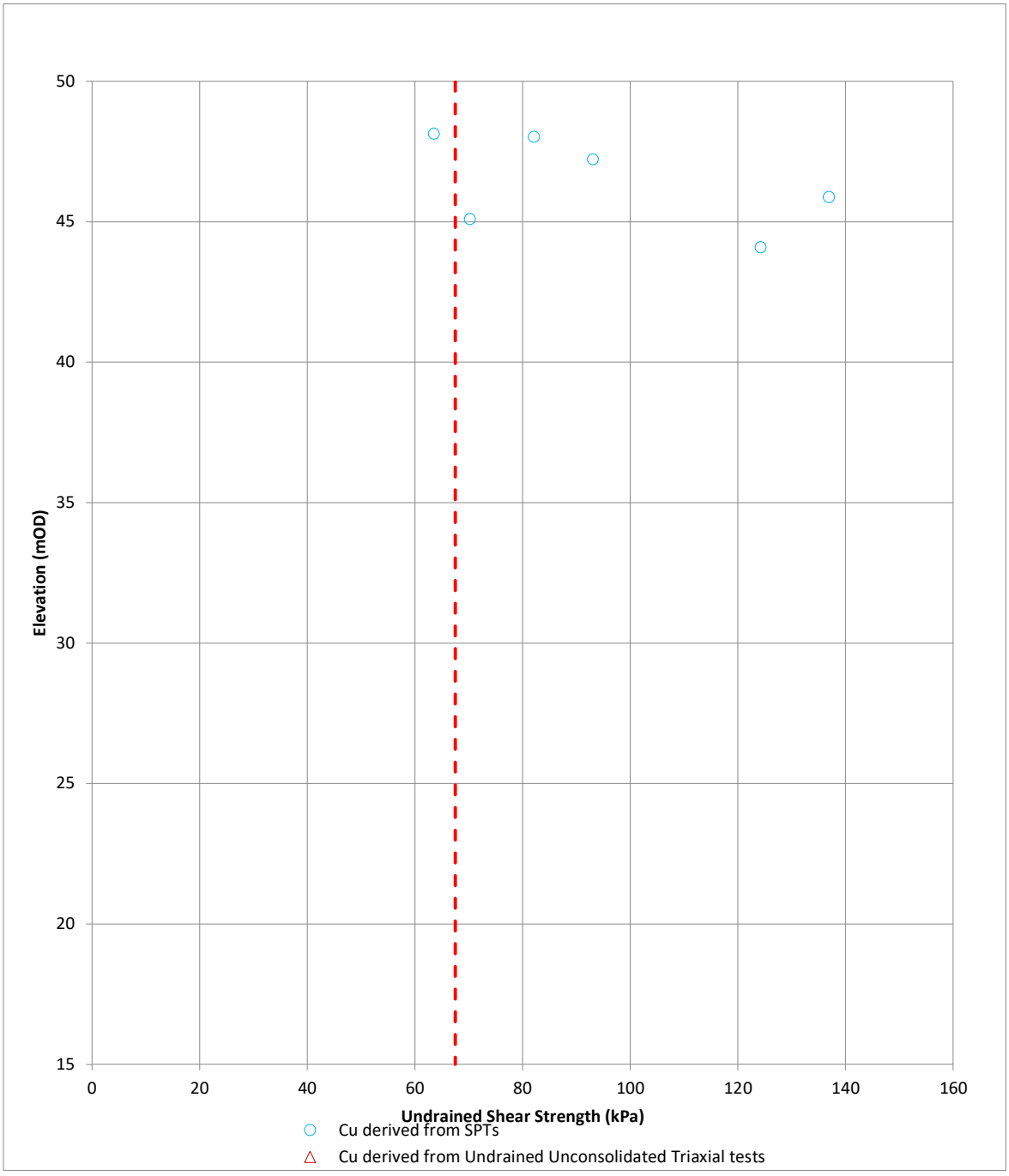
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Client	Title			
Confidential	**SPT N Value vs Depth for Made Ground Cohesive**			
Project	Sheet size	Drawn: TB	Checked: CH	Reviewed: JH
Ancoats, Manchester	A4	Date: 12.10.23	Date: 12.10.23	Date: 12.10.23
	Status	Figure Number		Rev
		D-2		



ATKINS **Atkins Limited** Chadwick House Birchwood Park Warrington WA3 6AE Tel: (01925) 238000 Fax: (01925) 238500	Client **Confidential**	Title **SPT N60 Value vs Elevation for Made Ground Cohesive**			
	Project **Ancoats, Manchester**	Sheet size A4	Drawn: TB Date: 12.10.23	Checked: CH Date: 12.10.23	Reviewed: JH Date: 12.10.23
		Status	Figure Number D-3		Rev



f, value (Cu = f_1N)	4.5

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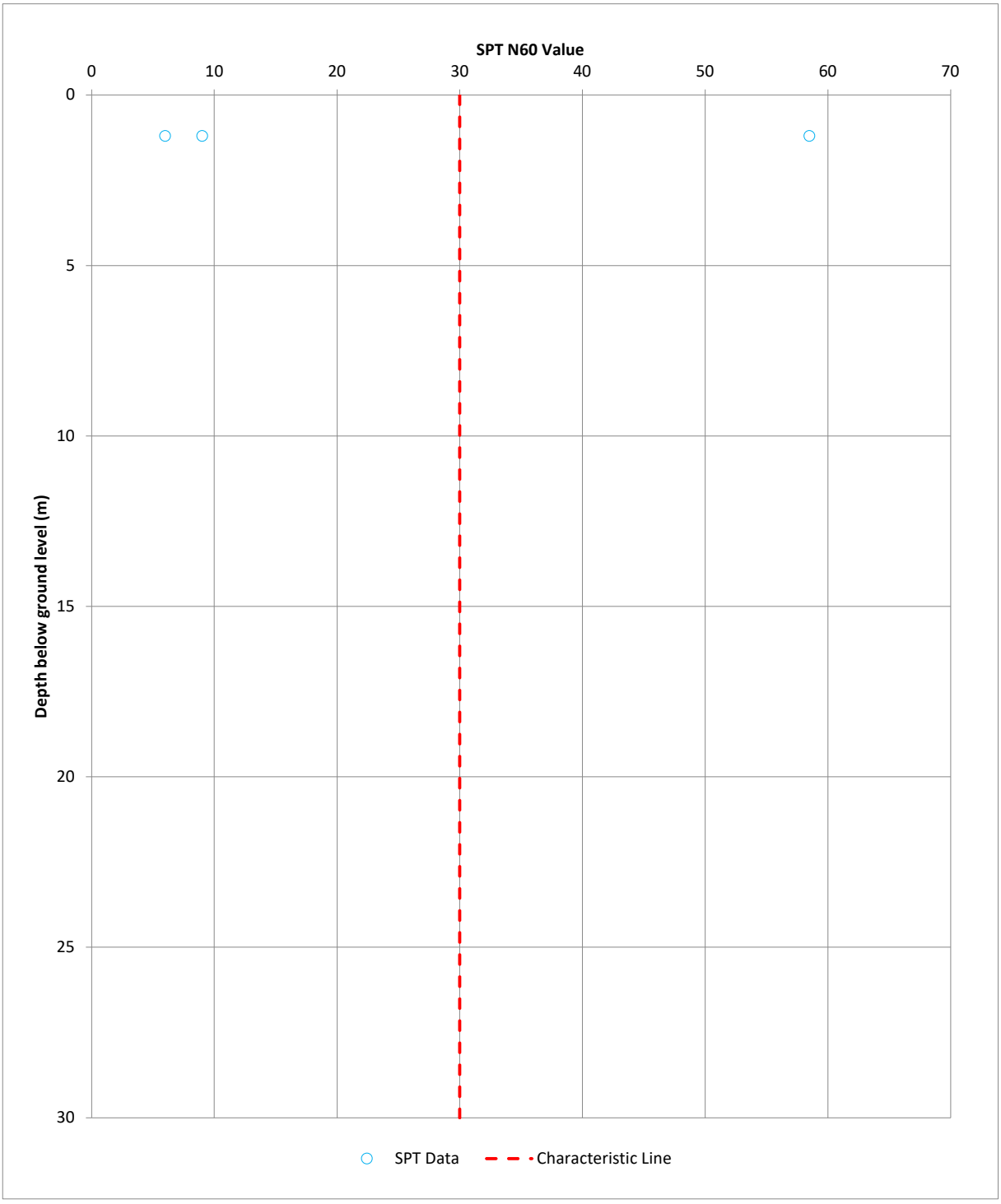
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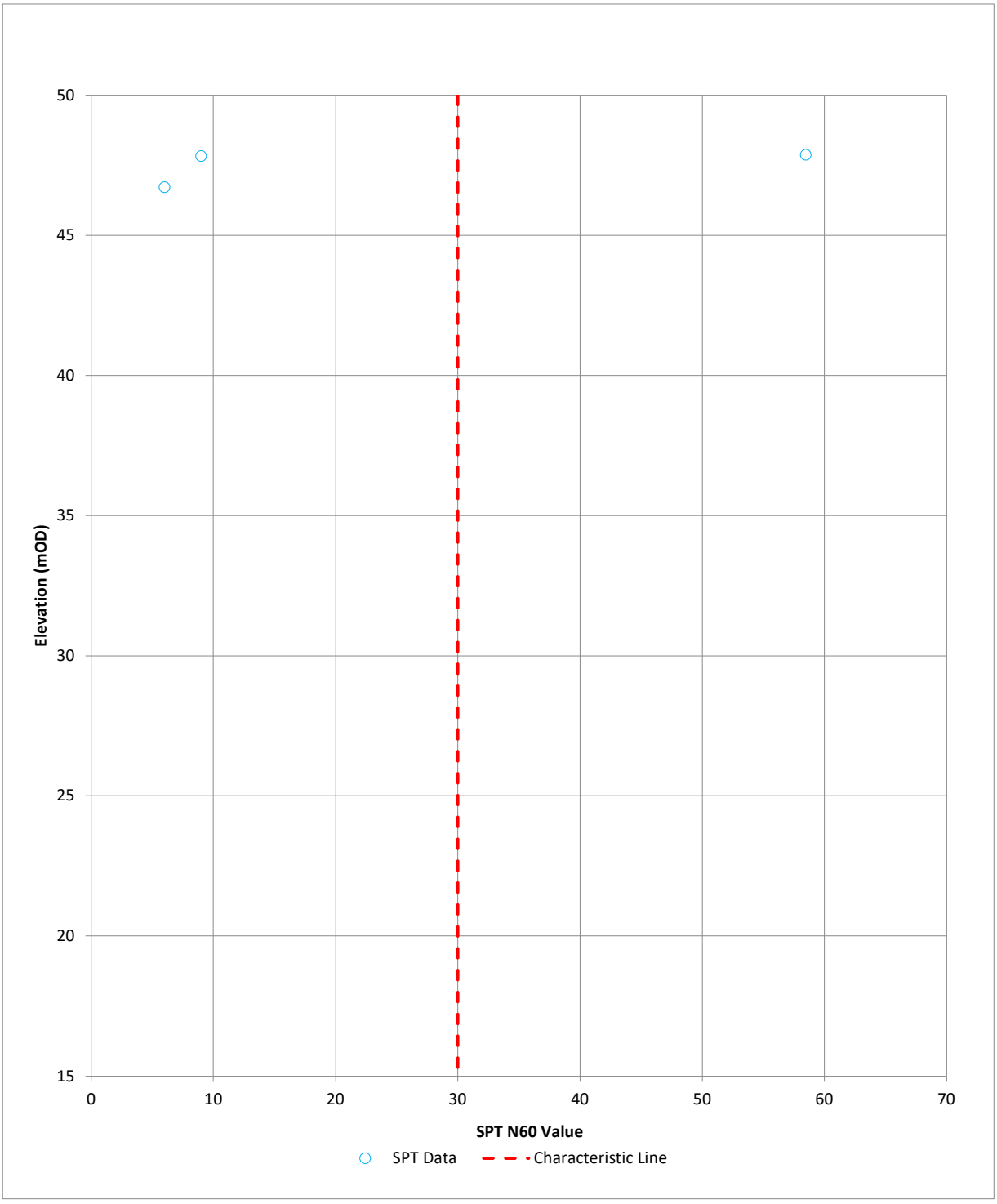
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Client	Title
Confidential	**SPT N Value vs Elevation for Made Ground Cohesive**

Project	Sheet size	Drawn: TB Date: 12.10.23	Checked: CH Date: 12.10.23	Reviewed: JH Date: 12.10.23
Ancoats, Manchester	A4			
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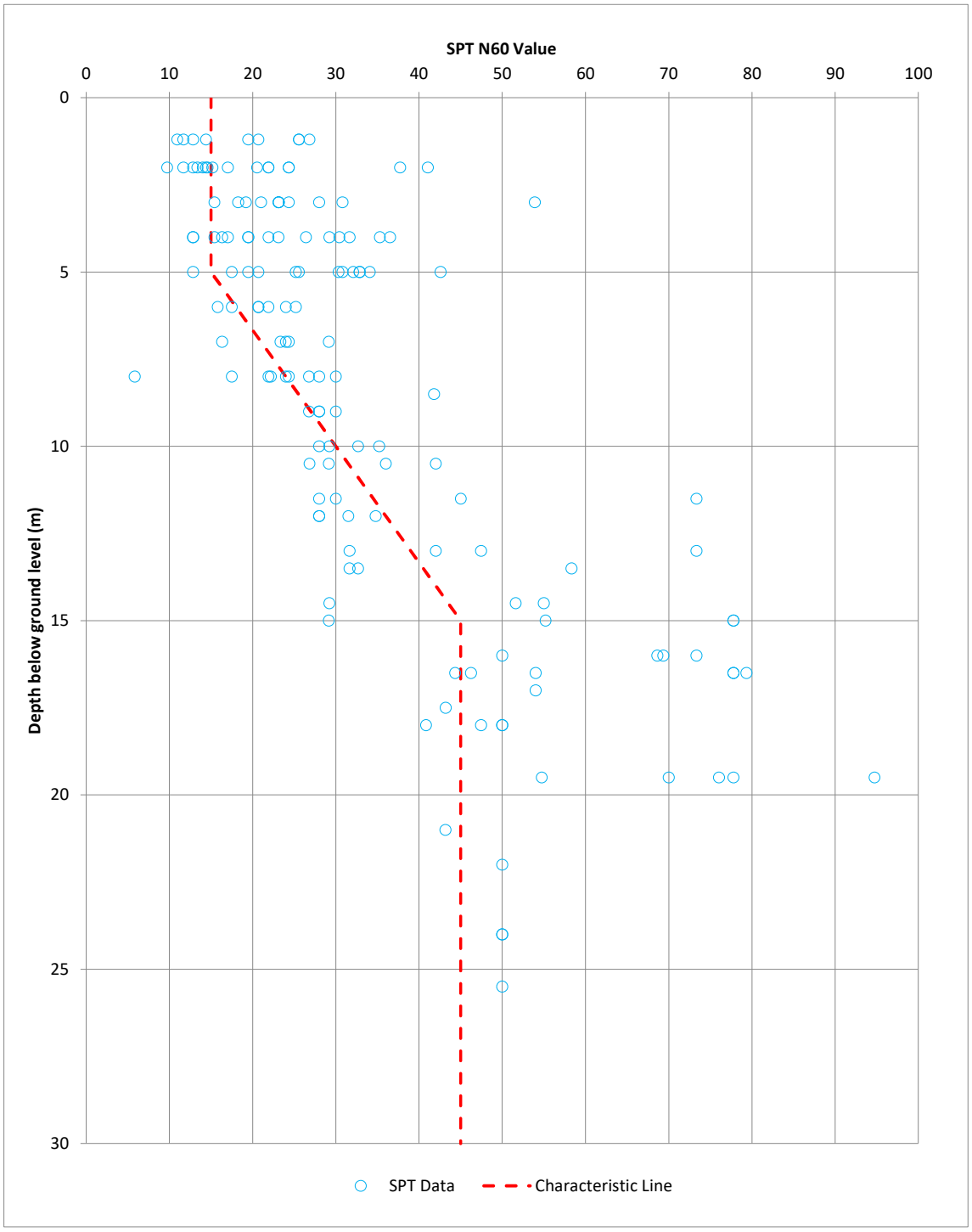


ATKINS **Atkins Limited** Chadwick House Birchwood Park Warrington WA3 6AE Tel: (01925) 238000 Fax: (01925) 238500	Client **Confidential**	Title **SPT N60 Value vs Depth for Made Ground Granular**			
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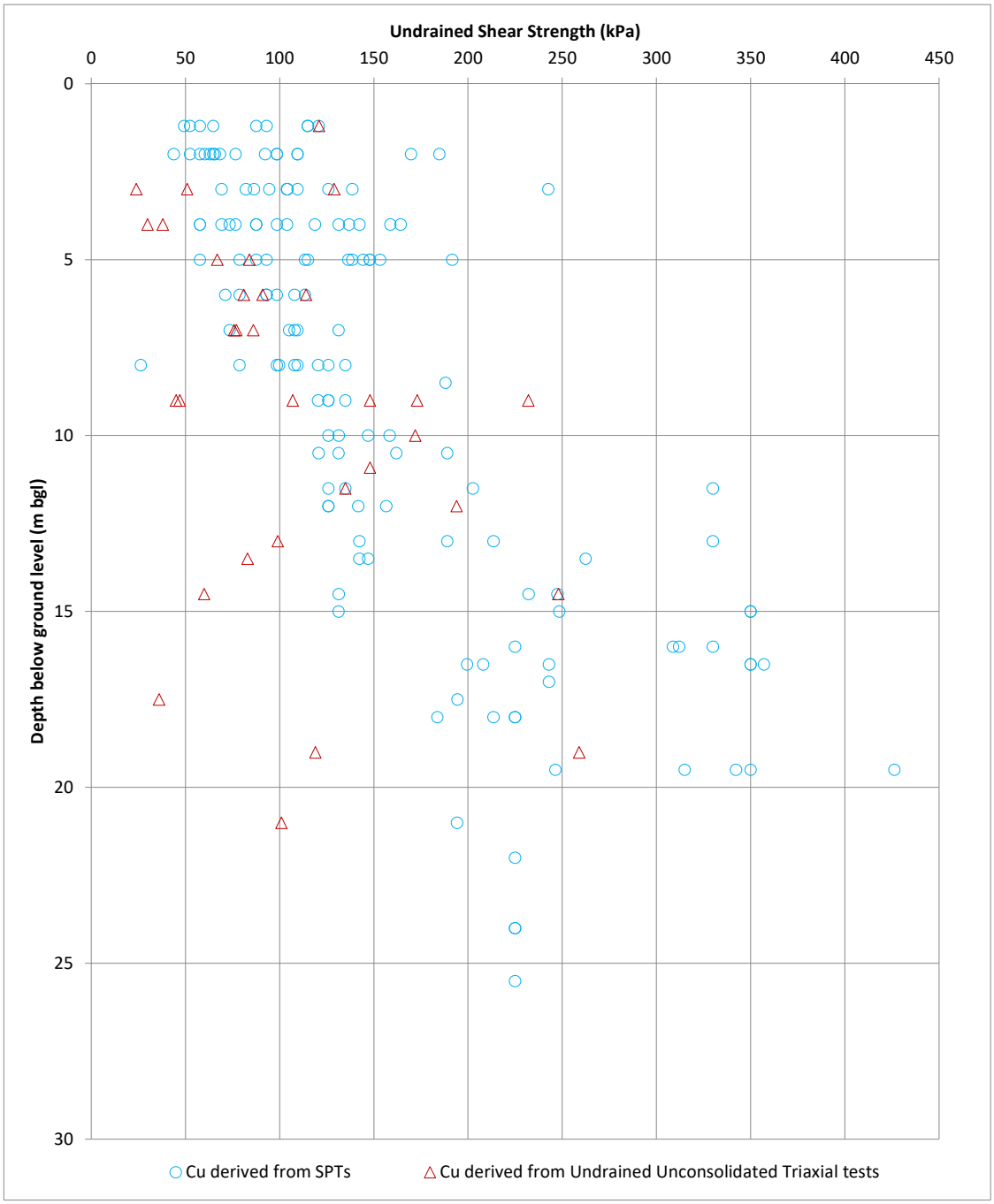


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Client: **Confidential**	Title: **SPT N60 Value vs Elevation for Made Ground Granular**			
Project: **Ancoats, Manchester**	Sheet size: A4	Drawn: TB Date: 12.10.23	Checked: CH Date: 12.10.23	Reviewed: JH Date: 12.10.23
	Status	Figure Number: D-6		Rev



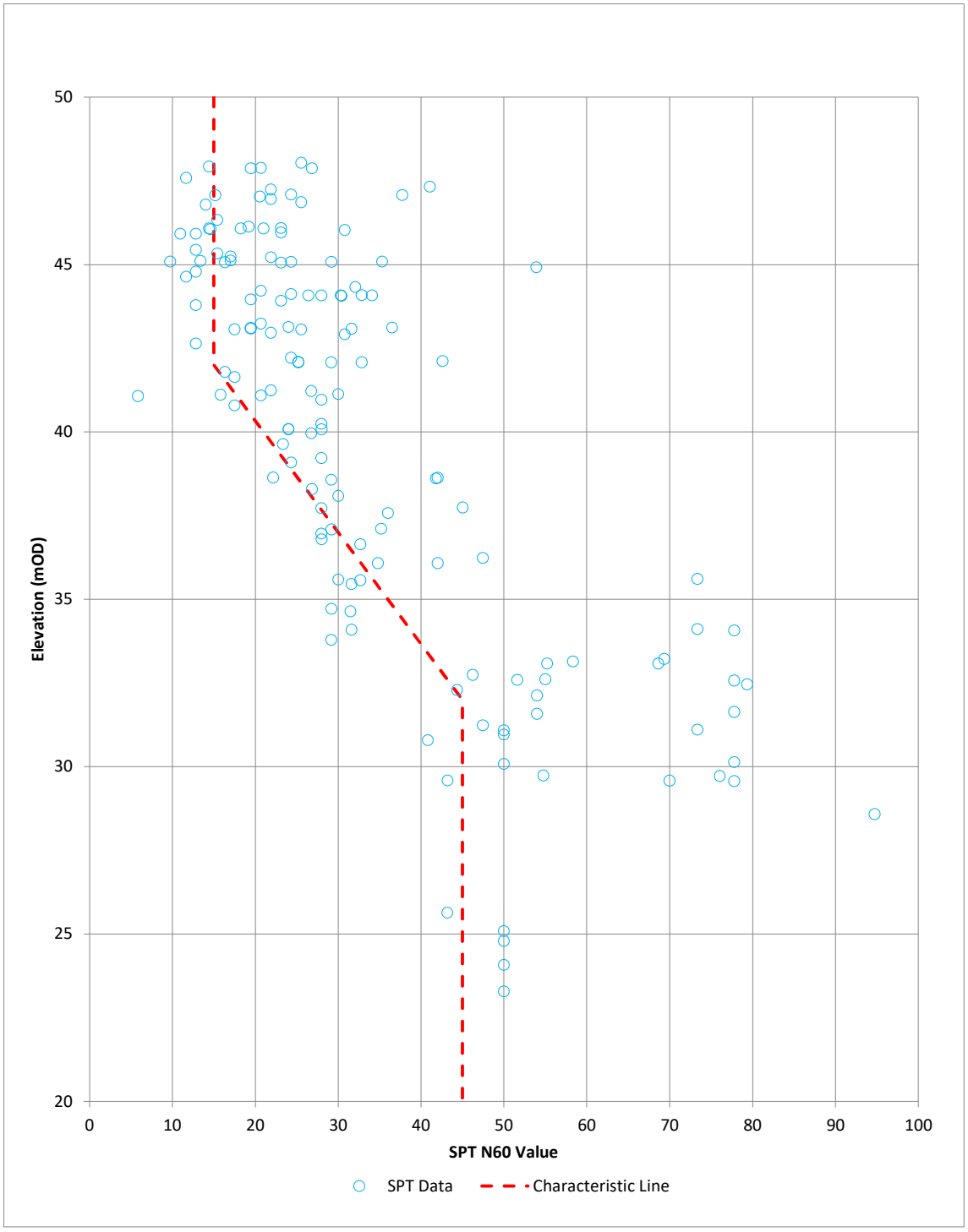
ATKINS **Atkins Limited** Chadwick House Birchwood Park Warrington WA3 6AE Tel: (01925) 238000 Fax: (01925) 238500	Client **Confidential**	Title **SPT N60 Value vs Depth for Glacial Till Cohesive**			
	Project **Ancoats, Manchester**	Sheet size A4	Drawn: TB Date: 12.10.23	Checked: CH Date: 12.10.23	Reviewed: JH Date: 12.10.23
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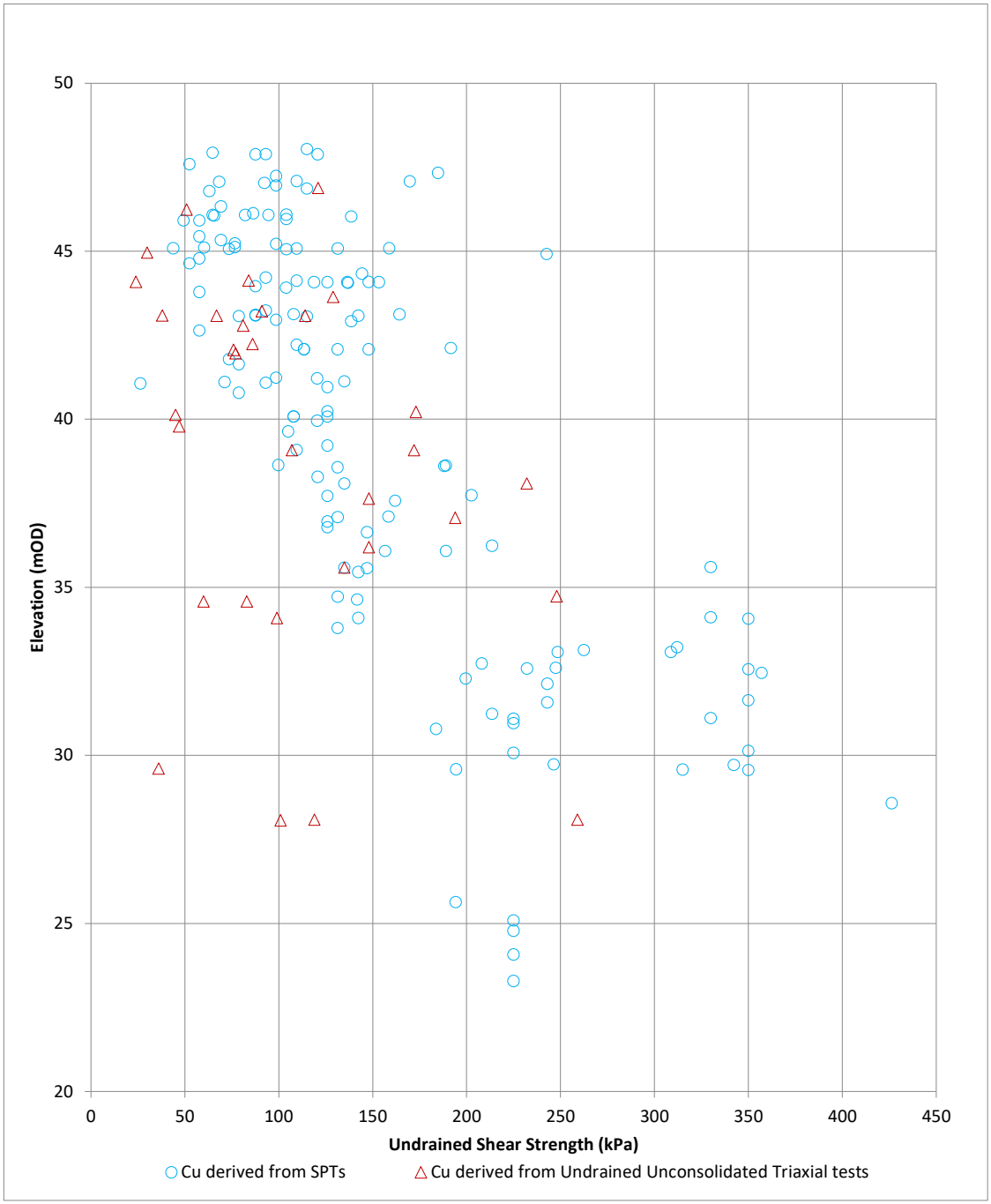
f, value (Cu = f_1N)	4.5

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Client: **Confidential**	Title: **Undrained Shear Strength vs Depth for Glacial Till Cohesive**		
Project: **Ancoats, Manchester**	Sheet size: A4	Drawn: TB Date: 12.10.23	Checked: CH Date: 12.10.23	Reviewed: JH Date: 12.10.23
	Status	Figure Number: D-8	Rev



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	Project **Ancoats, Manchester**	Sheet size A4	Drawn: TB Date: 12.10.23	Checked: CH Date: 12.10.23	Reviewed: JH Date: 12.10.23
		Status	Figure Number D-9		Rev



f, value (Cu = f_1N)	4.5

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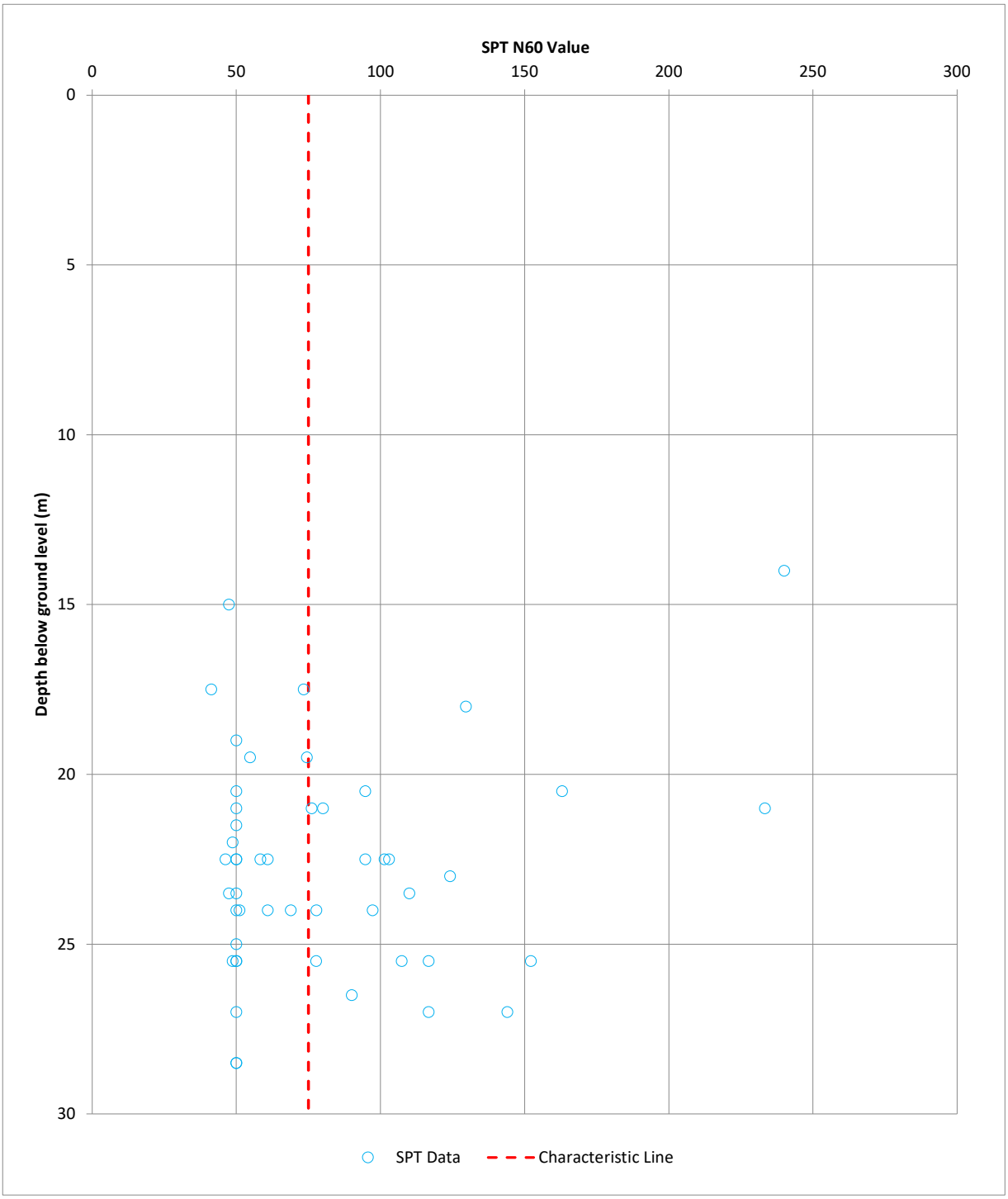
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Project: **Ancoats, Manchester**

Title: **Undrained Shear Strength vs Elevation for Glacial Till Cohesive**

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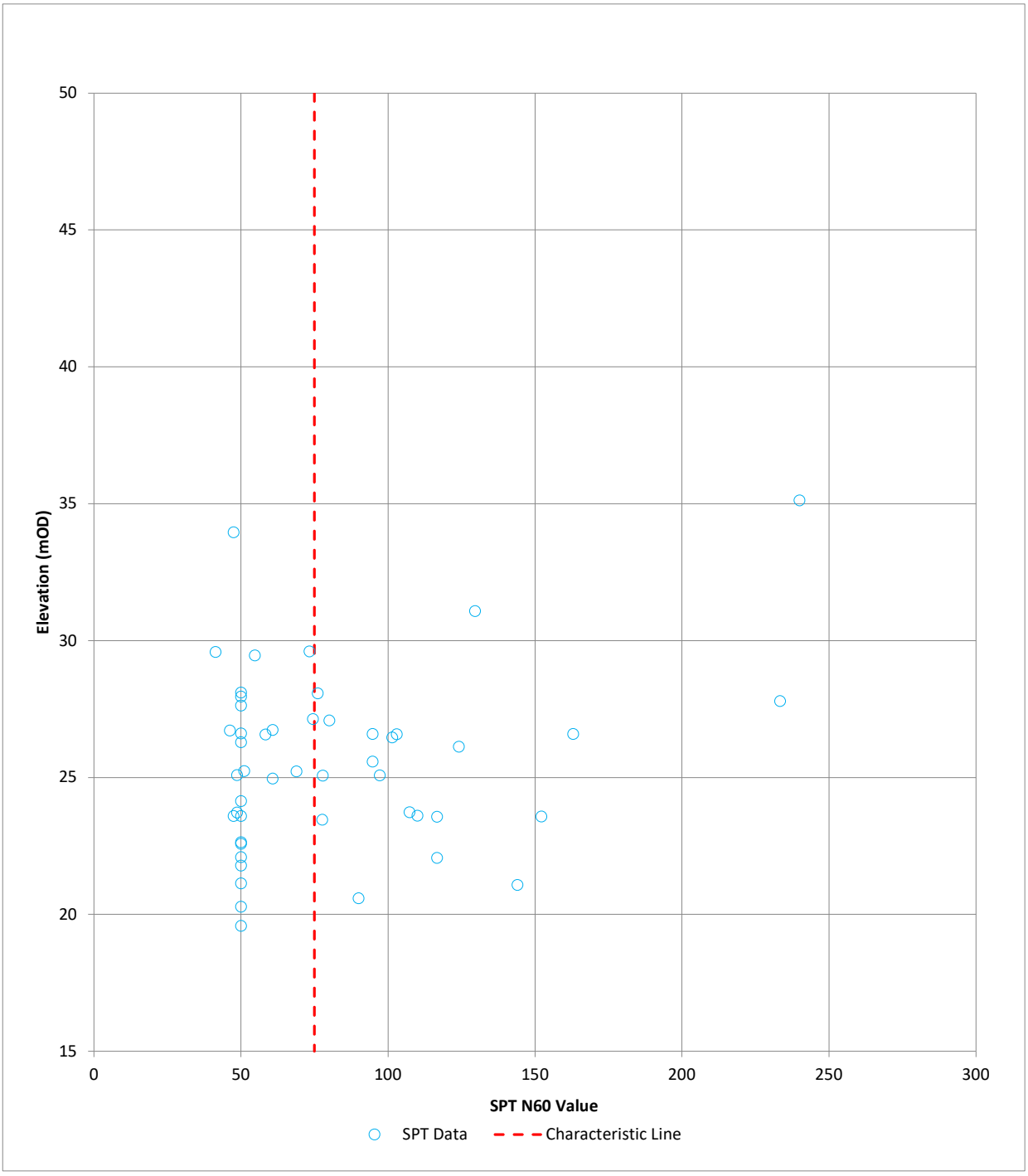
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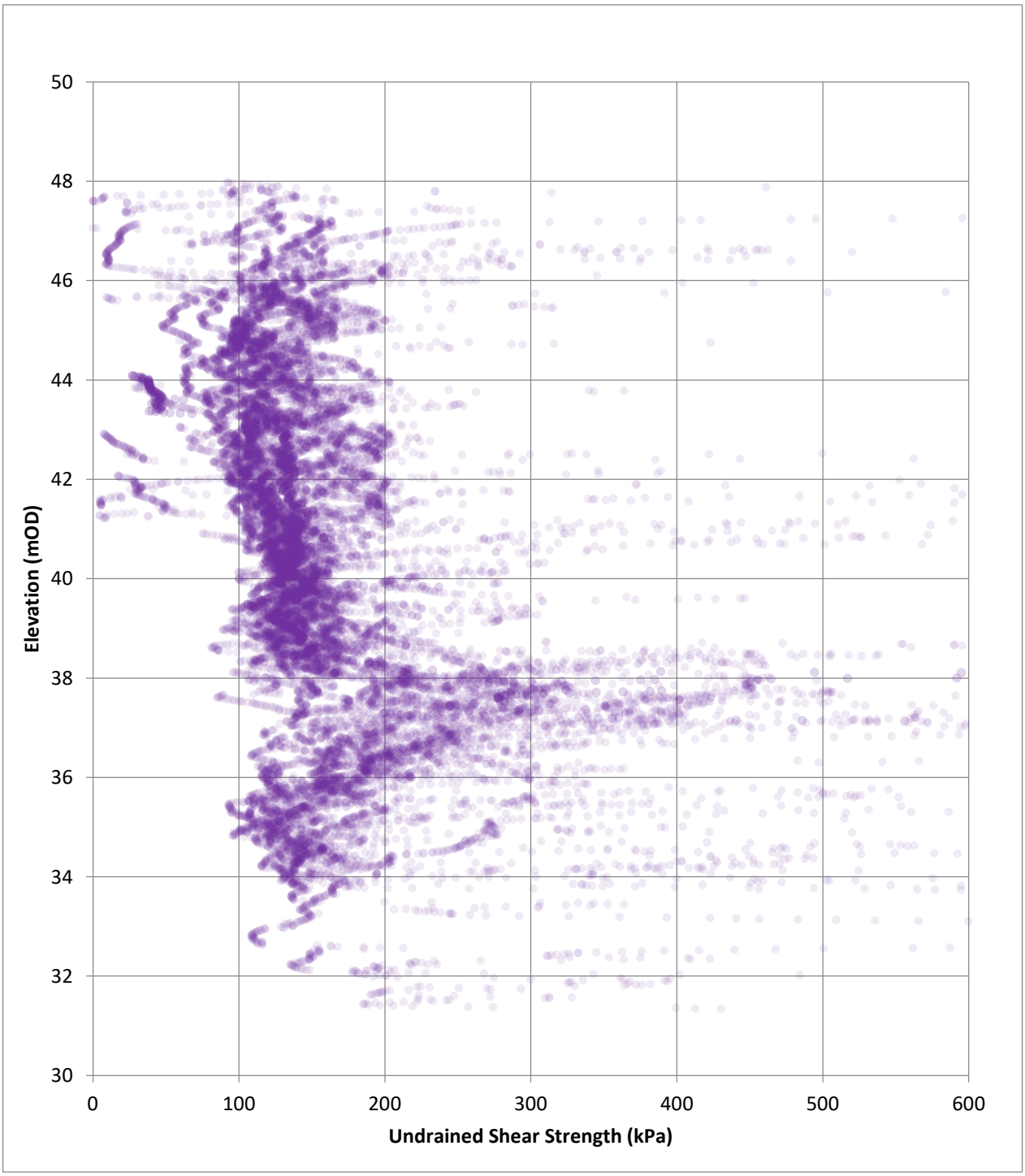
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Client: **Confidential**			Title: **SPT N60 Value vs Depth for Glacial Till Granular**	
Project: **Ancoats, Manchester**	Sheet size: A4	Drawn: TB Date: 12.10.23	Checked: CH Date: 12.10.23	Reviewed: JH Date: 12.10.23
	Status	Figure Number: D-11		Rev



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	Project **Ancoats, Manchester**	Sheet size A4	Drawn: TB Date: 12.10.23	Checked: CH Date: 12.10.23	Reviewed: JH Date: 12.10.23
		Status	Figure Number D-12		Rev



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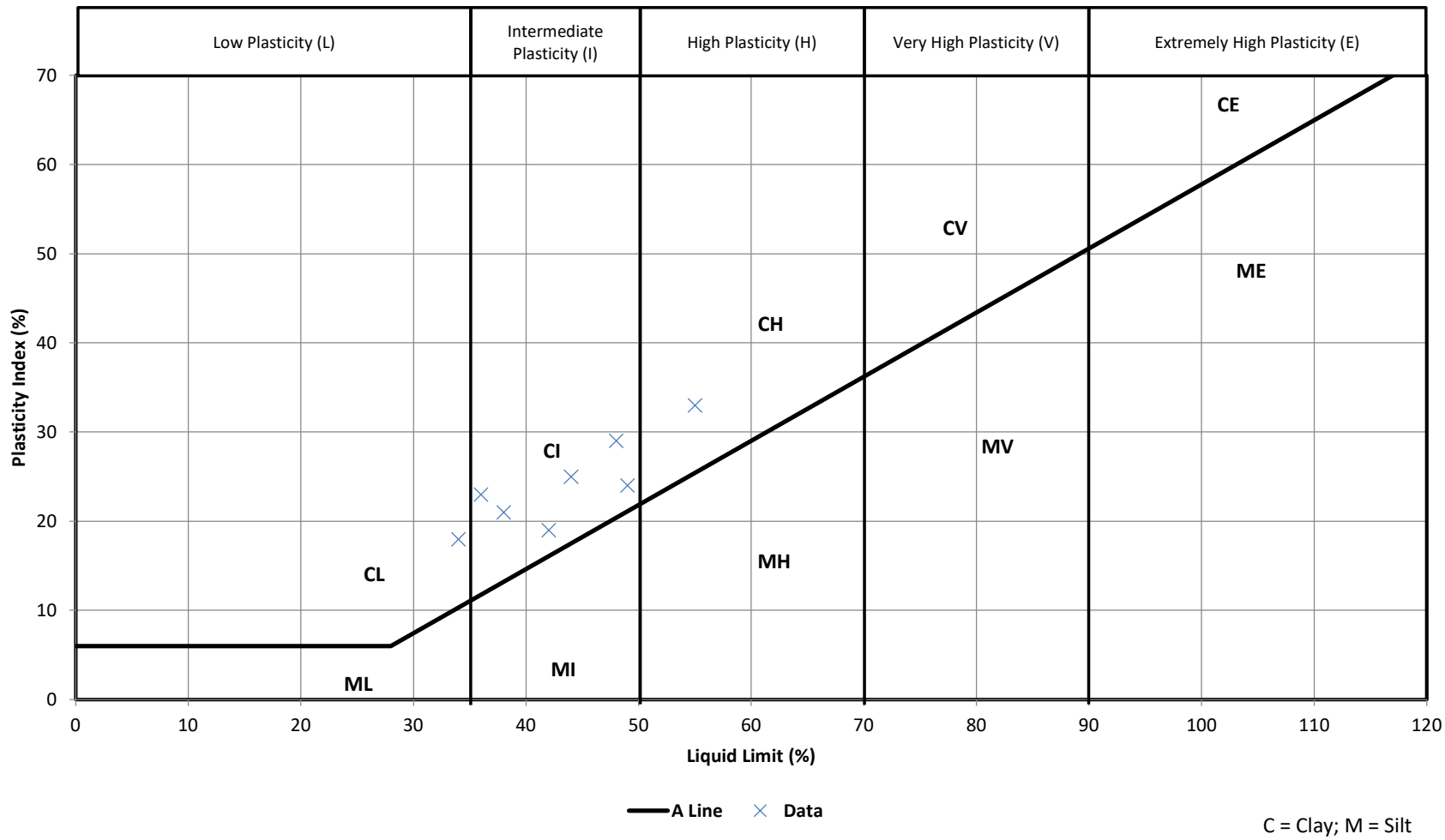
Tel: (01925) 238000
Fax: (01925) 238500

Client: **Confiential Client**	Title: **Undrained Shear Strength vs Elevation from CPT Test**			
Project: **Ancoats, Machester**	Sheet size: A4	Drawn: TB Date: 12.10.23	Checked: CH Date: 12.10.23	Reviewed: JH Date: 12.10.23
	Status	Figure Number: D-13		Rev



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Client: **Confiential Client**	Title: **Undrained Shear Strength vs Elevation for Ancoats, Manchester Site from SPT, CPT and Triaxial Tests**			
Project: **Ancoats, Machester**	Sheet size: A4	Drawn: TB Date: 12.10.23	Checked: CH Date: 12.10.23	Reviewed: JH Date: 12.10.23
	Status	Figure Number: D-14		Rev



C = Clay; M = Silt

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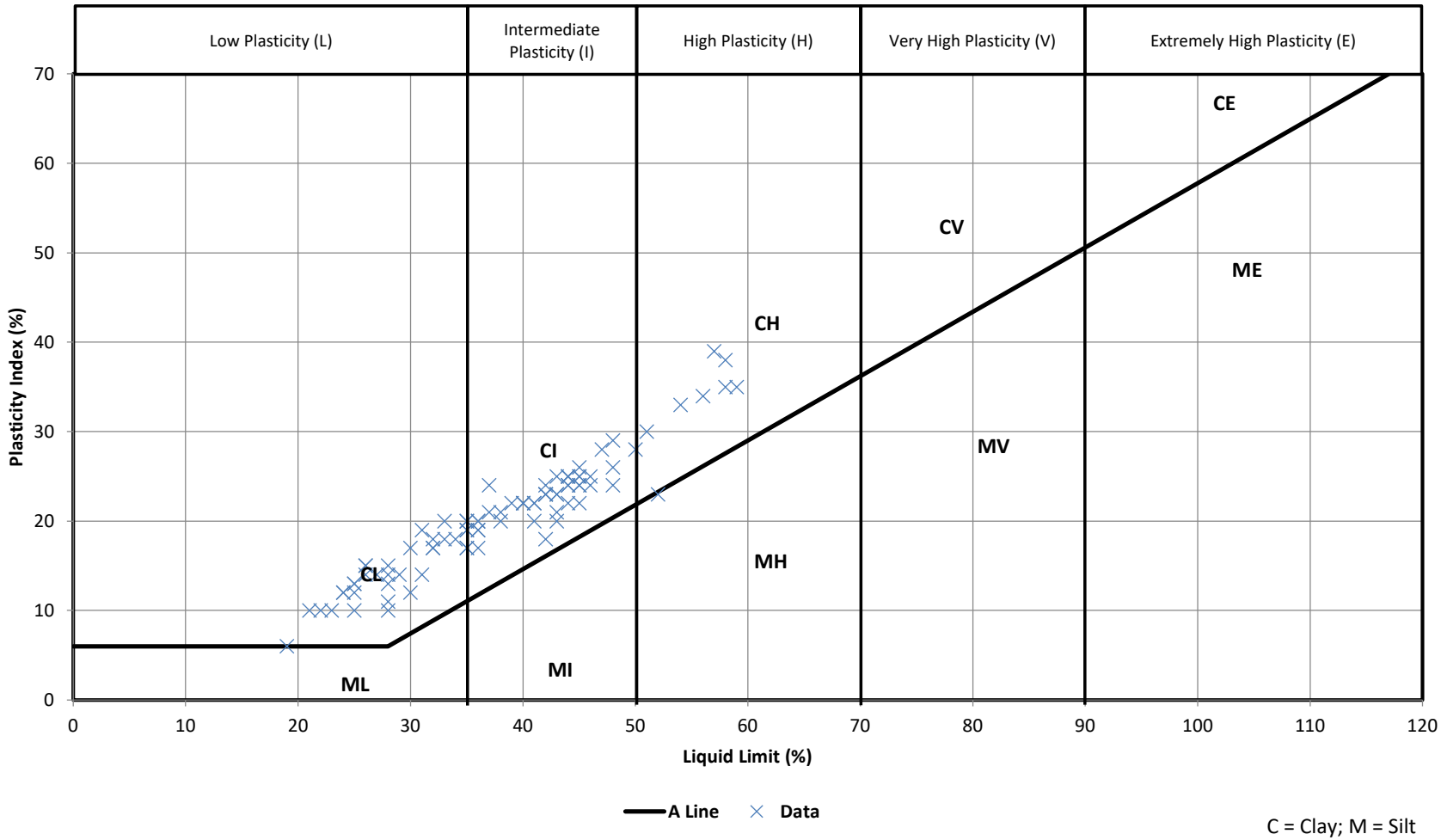
Atkins Limited

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Client: **Confidential Client**				Title: **A line for Made Ground Cohesive**	
Project: **Ancoats, Manchester**	Sheet size: A4	Drawn: TB Date: 12/10/2023	Checked: CH Date: 12/10/2023	Authorised: JH Date: 12/10/2023	
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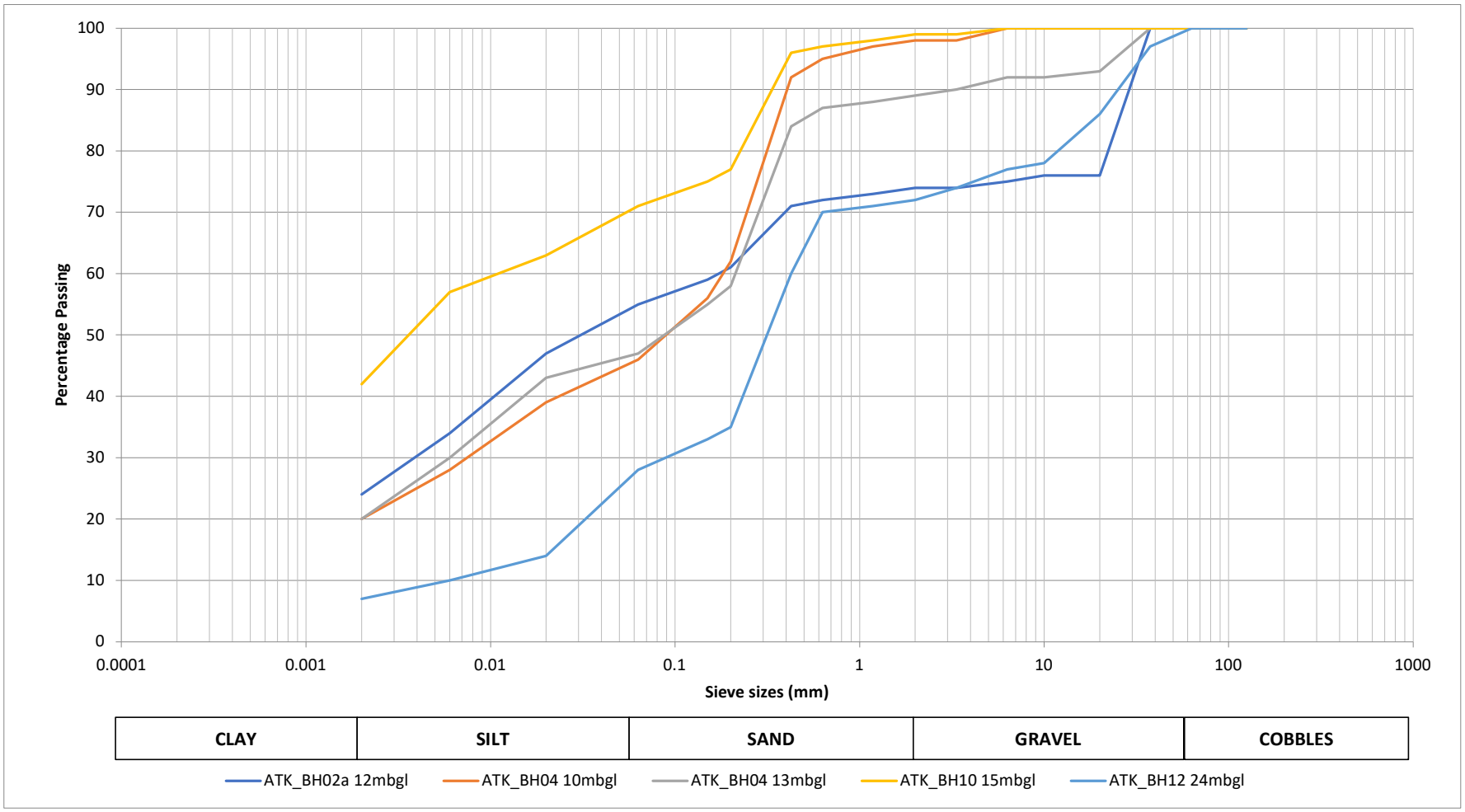
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Tel: +44 1925 238000

Fax: +44 1925 238500

Client: **Confidential Client**			Title: **A line for Glacial Till Cohesive**		
Project: **Ancoats, Manchester**	Sheet size: A4	Drawn: TB Date: 12/10/2023	Checked: CH Date: 12/10/2023	Authorised: JH Date: 12/10/2023	
	Status	Figure Number: D-16			Rev: P01



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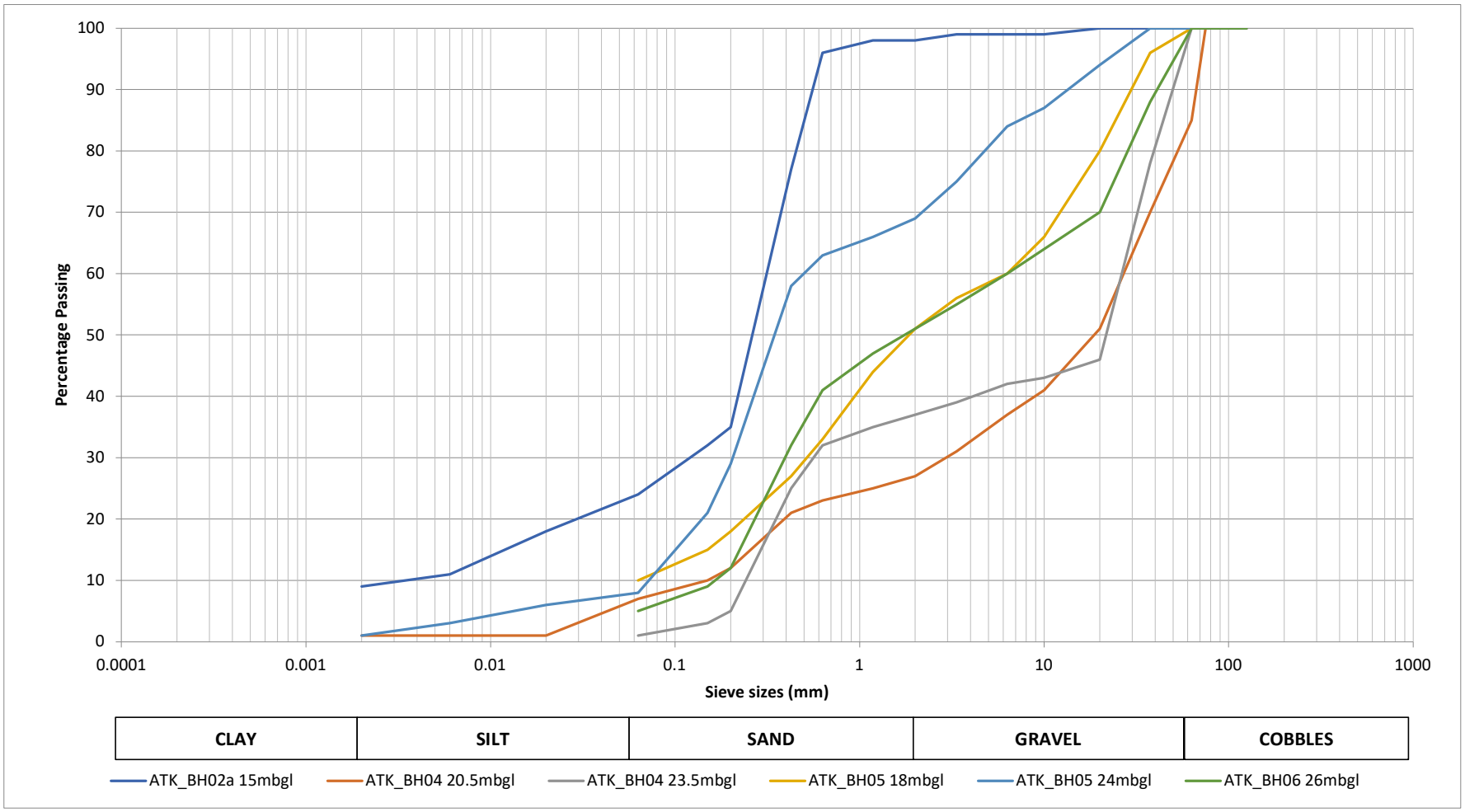
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Tel: +44 1925 238000

Fax: +44 1925 238500

Client: **Confidential**		Title: **Particle Size Distribution for Glacial Till Cohesive**			
Project: **Ancoats, Manchester**	Sheet size: A4	Drawn: TB, Date: 12.10.2023	Checked: CH, Date: 12.10.2023	Authorised: JH, Date: 12.10.2023	
	Status:	Figure Number: D-17			Rev:



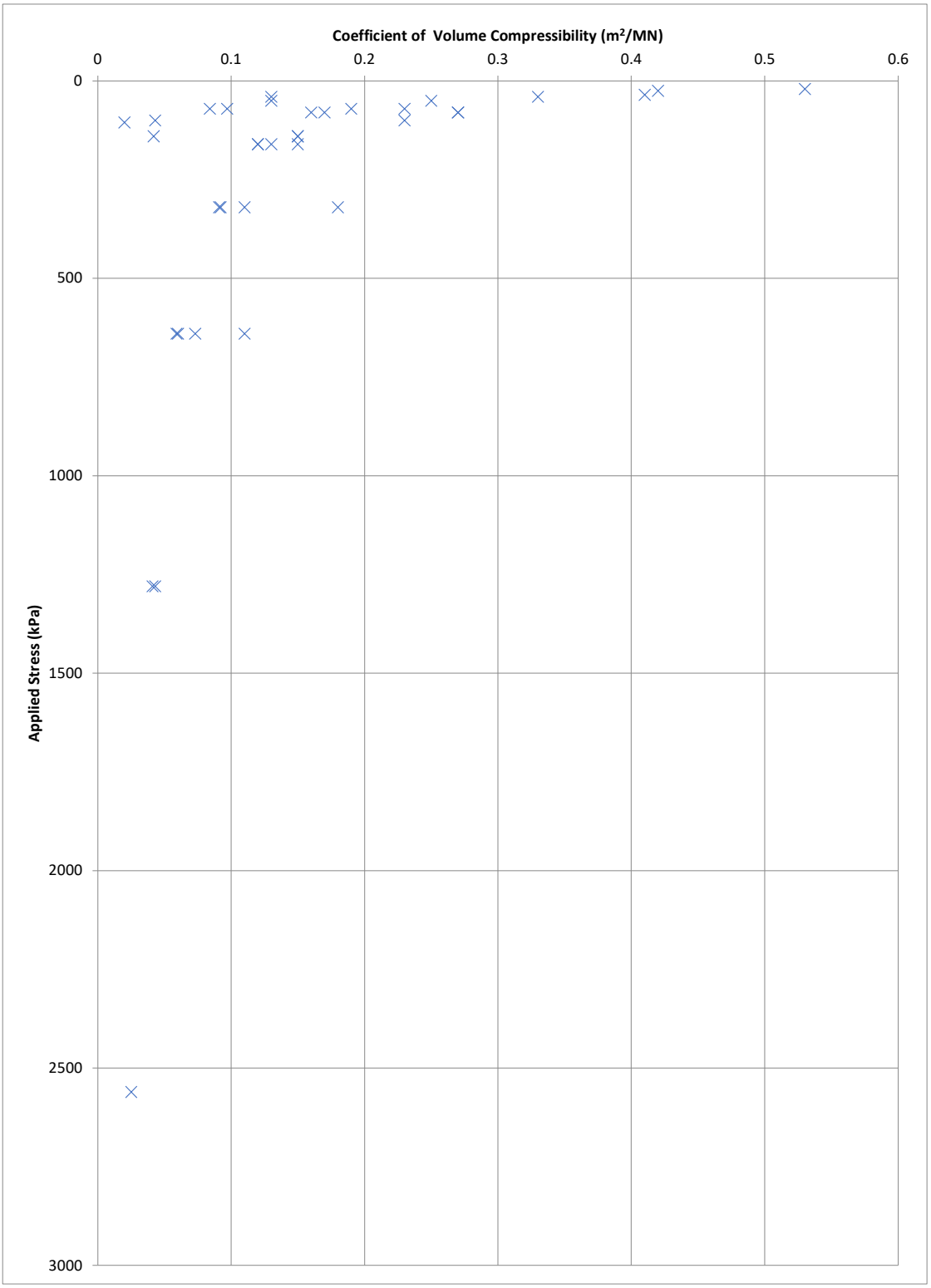
Atkins Limited

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Tel: +44 1925 238000

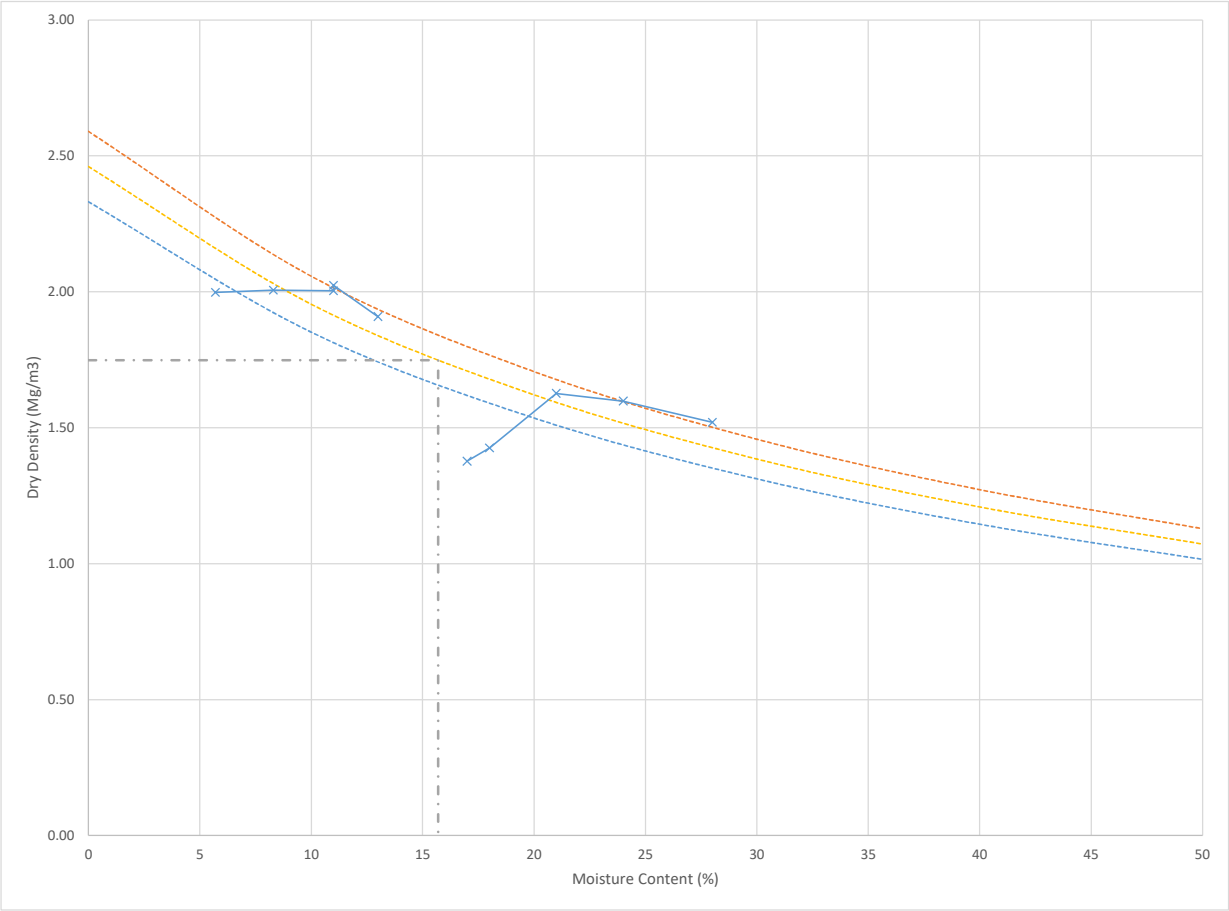
Fax: +44 1925 238500

Client: **Confidential**	Title: **Particle Size Distribution for Glacial Till Granular**				
Project: **Ancoats, Manchester**	Sheet size: A4	Drawn: TB, Date: 12.10.2023	Checked: CH, Date: 12.10.2023	Authorised: JH, Date: 12.10.2023	
	Status	Figure Number: D-18			Rev



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Fax: (01925) 238500

Client: Confidential	Title: Coefficient of Volume Compressibility vs Applied Stress for Glacial Till Cohesive			
Project: Ancoats, Manchester	Sheet Size: A4	Drawn: TB Date: 12.10.2	Checked: CH Date: 12.10.23	Reviewed: JH Date: 12.10.23
	Status	Figure No: D-19		Rev



Compaction test methods	2.5KG		
Mean proportion retained on 20mm sieve (%)	32.00	Mean maximum dry density (Mg/m^3)	1.75
Mean proportion retained on 37.5mm sieve (%)	23.00	Mean optimum moisture content (%)	15.70
Mean particle density (Mg/m^3)	2.59		

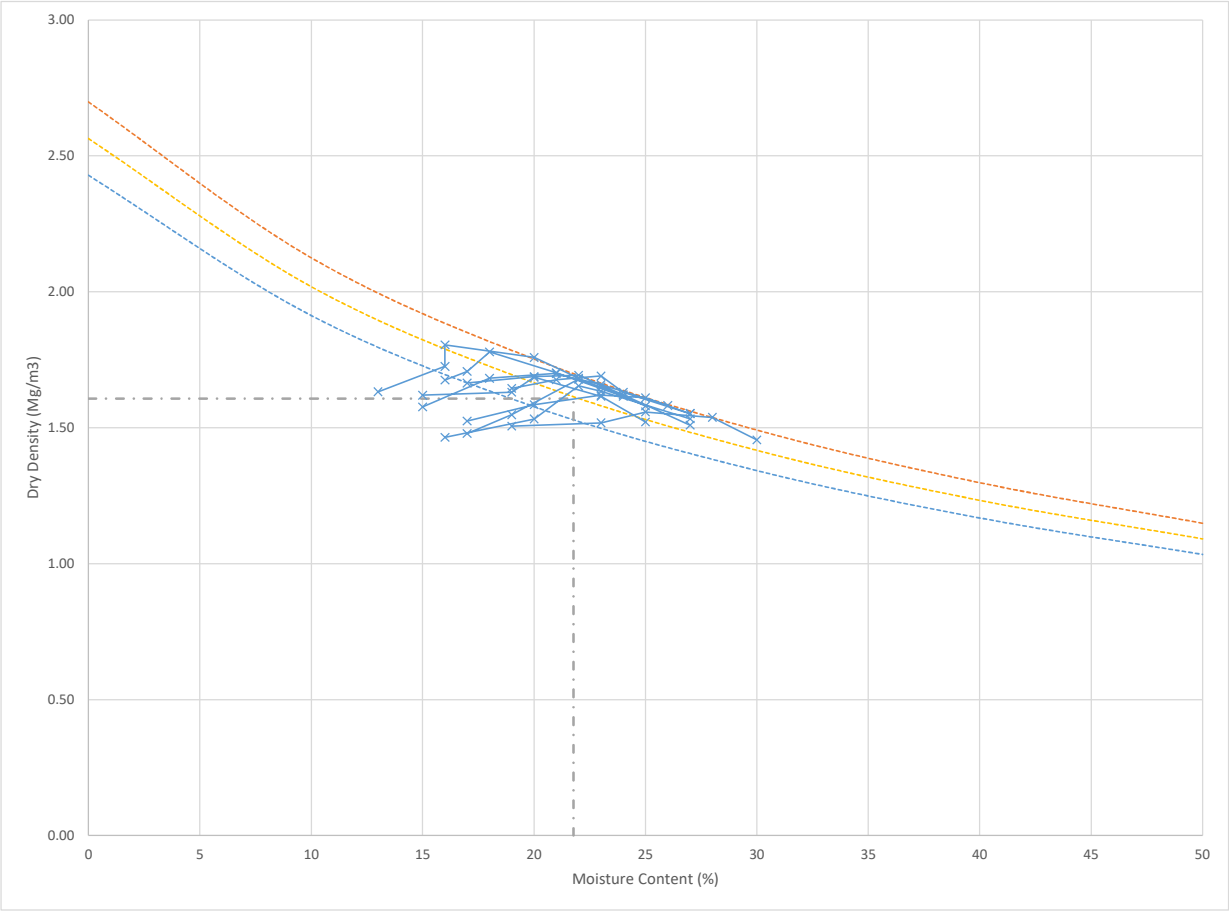
remarks:
- represents 0% air voids curve
- represents 5% air voids curve
- represents 10% air voids curve
- represents mean Optimum Moisture Content

# denotes particle density has been assigned an assumed value.

Notes:

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Client: **Confidential**	Title: **Dry Density Moisture Content Relationship for Made Ground Granular**			
Project: **Ancoats, Manchester**	Sheet size: A4	Drawn: TB Date: 12.10.23	Checked: CH Date: 12.10.23	Reviewed: JH Date: 12.10.23
	Status	Figure Number: D20.1		Rev



Compaction test methods	2.5KG		
Mean proportion retained on 20mm sieve (%)	0.14	Mean maximum dry density (Mg/m^3)	1.61
Mean proportion retained on 37.5mm sieve (%)	0.29	Mean optimum moisture content (%)	21.77
Mean particle density (Mg/m^3)	2.70		

remarks:
- represents 0% air voids curve
- represents 5% air voids curve
- represents 10% air voids curve
- represents mean Optimum Moisture Content

# denotes particle density has been assigned an assumed value.

Notes:

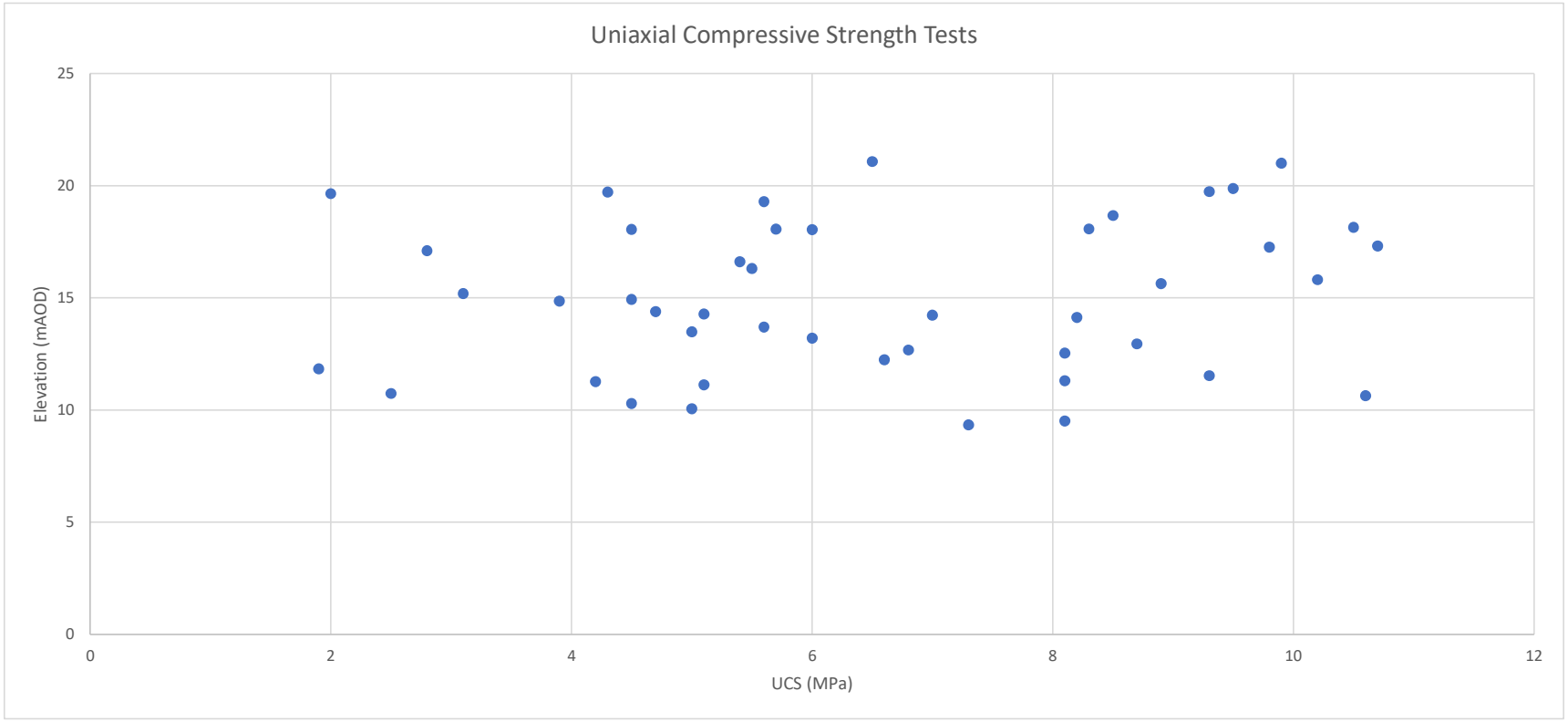
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Client: **Confidential**

Project: **Ancoats, Manchester**

Title: **Dry Density Moisture Content Relationship for Glacial Till Cohesive**

Sheet size	Drawn: TB	Checked: CH	Reviewed: JH
A4	Date: 12.10.23	Date: 12.10.23	Date: 12.10.23
Status	Figure Number	D-20.2	Rev

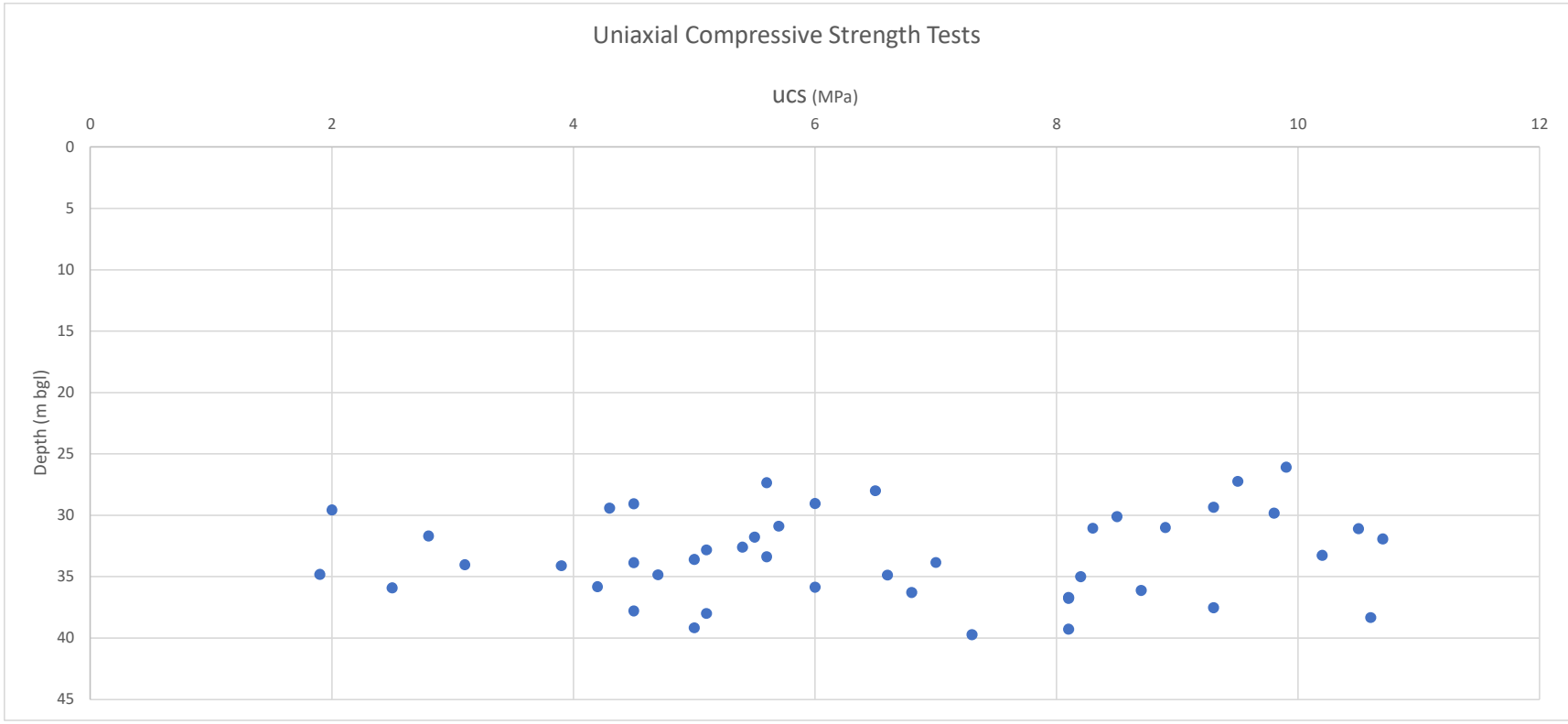


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Client: **Confidential**	Title: **Uniaxial Compressive Strength vs. Elevation for Chester Formation - Sandstone**				
Project: **Ancoats, Machester**	Sheet size: A4	Drawn: TB Date: 12.10.23	Checked: CH Date: 12.10.23	Authorised: JH Date: 12.10. 23	
	Status:	Figure Number: D-21			Rev:



ATKINS Member of the SNC-Lavalin Group Atkins, Chadwick House, Birchwood Park, Warrington, WA3 6AE	Client **Confidential**	Title **Uniaxial Compressive Strength vs. Depth for Chester Formation - Sandstone**				
	Project **Ancoats, Machester**	Sheet size A4	Drawn TB Date 12.10.23	Checked CH Date: 12.10.23	Authorised JH Date 12.10. 23	
		Status	Figure Number D-22			Rev

Appendix F. HazWaste Assessment

ATKINS

HazWasteOnline™

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.

NCAT1-0CP59-YTRMA

Job name

Ancoats

Description/Comments

Envirolab reports: 23-03615, 23-03782, 23-03870, 23-03877, 23-04044, 23-04109, 23-04228, 23-04412, 23-04698
VOC and SVOC compounds not encountered higher than the limit of detection were not included in the assessment.

Project

Former Central Retail Park

Site

Classified by

Name:
Dana Montgomery
Date:
14 Sep 2023 12:36 GMT
Telephone:
+45 32 72 10 14

Company:
Atkins Limited
Arne Jacobsens Allé 17
2300 København S

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	19 Jan 2023

Next 3 year Refresher due by Jan 2026

Purpose of classification

2 - Material Characterisation

Address of the waste

Great Ancoats Street, Manchester at National Grid Reference 385050, 398440 **Post Code** M4 6DJ

SIC for the process giving rise to the waste

41201 Construction of commercial buildings

Description of industry/producer giving rise to the waste

The site is proposed to be developed for commercial office use. GI designed and undertaken to assess geotechnical and geoenvironmental conditions at the site.

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

Ground investigation to support preliminary waste assessment.

Description of the waste

Made Ground associated with historical site use and natural soil deposits (Glacial Till).

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	WAC Results			Page
					Inert	SNRHW	Hazardous	
1	ATK TP08-2	0.3	Non Hazardous		Pass	Pass	N/A	3
2	ATK TP08-3	1	Non Hazardous		-	-	-	7
3	ATK BH01-102	0.5	Non Hazardous		-	-	-	9
4	ATK BH04-102	0.4	Non Hazardous		Pass	Pass	N/A	12
5	ATK BH04-104	1.2	Non Hazardous		-	-	-	16
6	ATK BH05-103	0.8	Non Hazardous		-	-	-	19
7	ATK BH08-101	0.3	Non Hazardous		-	-	-	21
8	ATK TP05-2	0.8	Non Hazardous		-	-	-	24
9	ATK-TP07-102	0.4	Non Hazardous		-	-	-	27
10	ATK-BH03-102	0.8	Non Hazardous		-	-	-	29
11	ATK-BH06-102	1	Non Hazardous		Pass	Pass	N/A	32
12	ATK_TP02-102	1.2	Non Hazardous		-	-	-	36
13	ATK_CPT15-102	0.5	Non Hazardous		-	-	-	39
14	ATK_CPT16-101	0.1	Non Hazardous		-	-	-	41
15	ATK_CPT17-103	0.7	Non Hazardous		-	-	-	44
16	ATK_TP01-102	0.3	Non Hazardous		-	-	-	47
17	ATK_TP01-105	1.8	Non Hazardous		-	-	-	50
18	ATK_TP09-3	1.3	Non Hazardous		-	-	-	53
19	ATK_TP10-102	1.2	Non Hazardous		-	-	-	56
20	ATK BH08A-103	1	Non Hazardous		-	-	-	59
21	ATK_CPT12-1	0.36	Non Hazardous		-	-	-	62
22	ATK_CPT14-102	0.4	Hazardous	HP 8	N/A	Pass	-	64
23	ATK_BH07-102	0.45	Non Hazardous		-	-	-	68
24	ATK_WS02-2	0.5	Non Hazardous		-	-	-	70
25	ATK_WS04-101	0.3	Hazardous	HP 8	-	-	-	73
26	ATK_WS01-101	0.2	Non Hazardous		-	-	-	76
27	ATK_CPT03-102	0.7	Non Hazardous		-	-	-	79
28	ATK_TP04-1	0.3	Non Hazardous		-	-	-	82
29	ATK_BH12-	0.5	Non Hazardous		-	-	-	85
30	ATK-TP03-103	1	Non Hazardous		-	-	-	87
31	ATK_TP06-101	0.25	Non Hazardous		-	-	-	90
32	ATK BH02a-104	1.2	Non Hazardous		-	-	-	93
33	ATK_CPT07-102	0.6	Non Hazardous		-	-	-	96
34	ATK_HDP01-101	0.4	Non Hazardous		-	-	-	99

Related documents

#	Name	Description
1	General Contaminated Soils - Including VOC/SVOC	waste stream template used to create this Job

WAC results

WAC Settings: samples in this Job do not constitute a single population.

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

Report

Created by: Dana Montgomery

Created date: 14 Sep 2023 12:36 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	102
Appendix B: Rationale for selection of metal species	104
Appendix C: Version	104

Classification of sample: ATK TP08-2

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

Sample details

Sample name:		LoW Code:	
ATK TP08-2		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.3 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.82 pH		8.82 pH	8.82 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<**LOD**
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		<1 mg/kg	1.32	<1.32 mg/kg	<0.000132 %		<**LOD**
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.5 mg/kg	1.142	<0.571 mg/kg	<0.0000571 %		<**LOD**
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		6 mg/kg	1.462	8.769 mg/kg	0.000877 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		3 mg/kg	1.126	3.378 mg/kg	0.000338 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17 mg/kg	1.353	<0.23 mg/kg	<0.000023 %		<**LOD**
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		11 mg/kg	2.976	32.739 mg/kg	0.00327 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	4 mg/kg	1.56	6.239 mg/kg	0.0004 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		5 mg/kg	1.785	8.926 mg/kg	0.000893 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		13 mg/kg	2.774	36.064 mg/kg	0.00361 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**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		TPH (C6 to C40) petroleum group		TPH		19	mg/kg		19	mg/kg	0.0019 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
18		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
19		acenaphthene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-469-6	83-32-9									
20		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
21		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
22		anthracene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
			204-371-1	120-12-7									
23		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
24		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
			204-927-3	129-00-0									
25		benzo[a]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
27		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
28		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
29		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
30		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
31		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
32		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
33		benzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
34		toluene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
35		ethylbenzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		xylene				<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		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]									
37		monohydric phenols				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
				P1186									
										Total:	0.0128 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0019%)

WAC results for sample: ATK TP08-2

WAC Settings: samples in this Job do not constitute a single population.

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

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

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

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	0.06	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.007	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	26	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<0.08	100	-	-
7	pH	pH	8.82	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	<0.01	0.5	2	25
10	barium	mg/kg	0.28	20	100	300
11	cadmium	mg/kg	<0.01	0.04	1	5
12	chromium	mg/kg	<0.01	0.5	10	70
13	copper	mg/kg	<0.04	2	50	100
14	mercury	mg/kg	<0.005	0.01	0.2	2
15	molybdenum	mg/kg	<0.01	0.5	10	30
16	nickel	mg/kg	<0.02	0.4	10	40
17	lead	mg/kg	0.04	0.5	10	50
18	antimony	mg/kg	<0.01	0.06	0.7	5
19	selenium	mg/kg	<0.01	0.1	0.5	7
20	zinc	mg/kg	0.05	4	50	200
21	chloride	mg/kg	68	800	15,000	25,000
22	fluoride	mg/kg	2	10	150	500
23	sulphate	mg/kg	66	1,000	20,000	50,000
24	phenol index	mg/kg	<0.1	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<200	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	<200	4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Missing WAC determinand value

Classification of sample: ATK TP08-3

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

Sample details

Sample name:		LoW Code:	
ATK TP08-3		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
1 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		7.58	pH		7.58	pH	7.58 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1	mg/kg	5.719	<5.719	mg/kg	<0.000572 %		<**LOD**
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	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		<1	mg/kg	1.32	<1.32	mg/kg	<0.000132 %		<**LOD**
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.5	mg/kg	1.142	<0.571	mg/kg	<0.0000571 %		<**LOD**
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		24	mg/kg	1.462	35.077	mg/kg	0.00351 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		10	mg/kg	1.126	11.259	mg/kg	0.00113 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		15	mg/kg	2.976	44.644	mg/kg	0.00446 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	11	mg/kg	1.56	17.158	mg/kg	0.0011 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		27	mg/kg	1.785	48.2	mg/kg	0.00482 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		31	mg/kg	2.774	85.999	mg/kg	0.0086 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<**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	●	TPH (C6 to C40) petroleum group		TPH		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
16		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
17	●	acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
18	●	acenaphthene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-469-6	83-32-9									
19	●	fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
20	●	phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
21	●	anthracene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
			204-371-1	120-12-7									
22	●	fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
23	●	pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
			204-927-3	129-00-0									
24		benzo[a]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
26		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
27		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
28		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
29	●	indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
30		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
31	●	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
32		benzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
33		toluene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
34	●	ethylbenzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
35		xylene				<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		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]									
36	●	monohydric phenols				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
				P1186									
										Total:	0.0253 %		

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: ATK BH01-102

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

Sample details

Sample name:	LoW Code:	
ATK BH01-102	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.5 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.56 pH		8.56 pH	8.56 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<**LOD**
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		<1 mg/kg	1.32	<1.32 mg/kg	<0.000132 %		<**LOD**
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.5 mg/kg	1.142	<0.571 mg/kg	<0.0000571 %		<**LOD**
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		13 mg/kg	1.462	19 mg/kg	0.0019 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		5 mg/kg	1.126	5.629 mg/kg	0.000563 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17 mg/kg	1.353	<0.23 mg/kg	<0.000023 %		<**LOD**
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		12 mg/kg	2.976	35.715 mg/kg	0.00357 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	13 mg/kg	1.56	20.278 mg/kg	0.0013 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		6 mg/kg	1.785	10.711 mg/kg	0.00107 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		59 mg/kg	2.774	163.675 mg/kg	0.0164 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**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		TPH (C6 to C40) petroleum group		TPH		26	mg/kg		26	mg/kg	0.0026 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
18		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
19		acenaphthene				0.01	mg/kg		0.01	mg/kg	0.000001 %	✓	
			201-469-6	83-32-9									
20		fluorene				0.01	mg/kg		0.01	mg/kg	0.000001 %	✓	
			201-695-5	86-73-7									
21		phenanthrene				0.2	mg/kg		0.2	mg/kg	0.00002 %	✓	
			201-581-5	85-01-8									
22		anthracene				0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
			204-371-1	120-12-7									
23		fluoranthene				0.34	mg/kg		0.34	mg/kg	0.000034 %	✓	
			205-912-4	206-44-0									
24		pyrene				0.33	mg/kg		0.33	mg/kg	0.000033 %	✓	
			204-927-3	129-00-0									
25		benzo[a]anthracene				0.18	mg/kg		0.18	mg/kg	0.000018 %	✓	
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				0.2	mg/kg		0.2	mg/kg	0.00002 %	✓	
		601-048-00-0	205-923-4	218-01-9									
27		benzo[b]fluoranthene				0.18	mg/kg		0.18	mg/kg	0.000018 %	✓	
		601-034-00-4	205-911-9	205-99-2									
28		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
29		benzo[a]pyrene; benzo[def]chrysene				0.16	mg/kg		0.16	mg/kg	0.000016 %	✓	
		601-032-00-3	200-028-5	50-32-8									
30		indeno[123-cd]pyrene				0.09	mg/kg		0.09	mg/kg	0.000009 %	✓	
			205-893-2	193-39-5									
31		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
32		benzo[ghi]perylene				0.07	mg/kg		0.07	mg/kg	0.000007 %	✓	
			205-883-8	191-24-2									
33		benzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
34		toluene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
35		ethylbenzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		xylene				<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		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]									
37		monohydric phenols				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
				P1186									
										Total:	0.029 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0026%)

Classification of sample: ATK BH04-102

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

Sample details

Sample name:
ATK BH04-102
Sample Depth:
0.4 m

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: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.23 pH		8.23 pH	8.23 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<LOD
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		<1 mg/kg	1.32	<1.32 mg/kg	<0.000132 %		<LOD
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.5 mg/kg	1.142	<0.571 mg/kg	<0.0000571 %		<LOD
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		12 mg/kg	1.462	17.539 mg/kg	0.00175 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		9 mg/kg	1.126	10.133 mg/kg	0.00101 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17 mg/kg	1.353	<0.23 mg/kg	<0.000023 %		<LOD
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		17 mg/kg	2.976	50.597 mg/kg	0.00506 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	9 mg/kg	1.56	14.038 mg/kg	0.0009 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		8 mg/kg	1.785	14.281 mg/kg	0.00143 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		30 mg/kg	2.774	83.224 mg/kg	0.00832 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<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		TPH (C6 to C40) petroleum group		TPH		5	mg/kg		5	mg/kg	0.0005 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
18		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
19		acenaphthene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-469-6	83-32-9									
20		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
21		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
22		anthracene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
			204-371-1	120-12-7									
23		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
24		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
			204-927-3	129-00-0									
25		benzo[a]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
27		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
28		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
29		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
30		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
31		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
32		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
33		benzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
34		toluene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
35		ethylbenzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		xylene				<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		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]									
37		monohydric phenols				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
				P1186									
										Total:	0.0205 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0005%)

WAC results for sample: ATK BH04-102

WAC Settings: samples in this Job do not constitute a single population.

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

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

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

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	0.19	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.007	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<0.08	100	-	-
7	pH	pH	8.23	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	<0.01	0.5	2	25
10	barium	mg/kg	0.2	20	100	300
11	cadmium	mg/kg	<0.01	0.04	1	5
12	chromium	mg/kg	<0.01	0.5	10	70
13	copper	mg/kg	<0.04	2	50	100
14	mercury	mg/kg	<0.005	0.01	0.2	2
15	molybdenum	mg/kg	<0.01	0.5	10	30
16	nickel	mg/kg	<0.02	0.4	10	40
17	lead	mg/kg	<0.01	0.5	10	50
18	antimony	mg/kg	<0.01	0.06	0.7	5
19	selenium	mg/kg	<0.01	0.1	0.5	7
20	zinc	mg/kg	<0.02	4	50	200
21	chloride	mg/kg	<10	800	15,000	25,000
22	fluoride	mg/kg	2	10	150	500
23	sulphate	mg/kg	23	1,000	20,000	50,000
24	phenol index	mg/kg	<0.1	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<200	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	345	4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Missing WAC determinand value

Classification of sample: ATK BH04-104

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

Sample details

Sample name:
ATK BH04-104
Sample Depth:
1.2 m

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: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.52 pH		8.52 pH	8.52 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<LOD
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2 mg/kg	1.32	2.641 mg/kg	0.000264 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.6 mg/kg	1.142	0.685 mg/kg	0.0000685 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		35 mg/kg	1.462	51.154 mg/kg	0.00512 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		25 mg/kg	1.126	28.147 mg/kg	0.00281 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		1.4 mg/kg	1.353	1.895 mg/kg	0.000189 %	✓	
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		39 mg/kg	2.976	116.074 mg/kg	0.0116 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	10 mg/kg	1.56	15.598 mg/kg	0.001 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		33 mg/kg	1.785	58.911 mg/kg	0.00589 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		63 mg/kg	2.774	174.771 mg/kg	0.0175 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<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		TPH (C6 to C40) petroleum group		TPH		1	mg/kg		1	mg/kg	0.0001 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
18		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
19		acenaphthene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-469-6	83-32-9									
20		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
21		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
22		anthracene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
			204-371-1	120-12-7									
23		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
24		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
			204-927-3	129-00-0									
25		benzo[a]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
27		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
28		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
29		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
30		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
31		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
32		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
33		benzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
34		toluene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
35		ethylbenzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		xylene				<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		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]									
37		monohydric phenols				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
				P1186									
										Total:	0.0459 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0001%)

Classification of sample: ATK BH05-103

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

Sample details

Sample name:	LoW Code:	
ATK BH05-103	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.8 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		9.52 pH		9.52 pH	9.52 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<**LOD**
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		4 mg/kg	1.32	5.281 mg/kg	0.000528 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.7 mg/kg	1.142	0.8 mg/kg	0.00008 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		29 mg/kg	1.462	42.385 mg/kg	0.00424 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		22 mg/kg	1.126	24.77 mg/kg	0.00248 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.24 mg/kg	1.353	0.325 mg/kg	0.0000325 %	✓	
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		35 mg/kg	2.976	104.169 mg/kg	0.0104 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	9 mg/kg	1.56	14.038 mg/kg	0.0009 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		28 mg/kg	1.785	49.985 mg/kg	0.005 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		56 mg/kg	2.774	155.352 mg/kg	0.0155 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**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		TPH (C6 to C40) petroleum group		TPH		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
16		naphthalene											
		601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
17		acenaphthylene											
			205-917-1	208-96-8		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
18		acenaphthene											
			201-469-6	83-32-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
19		fluorene											
			201-695-5	86-73-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
20		phenanthrene											
			201-581-5	85-01-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
21		anthracene											
			204-371-1	120-12-7		<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
22		fluoranthene											
			205-912-4	206-44-0		<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
23		pyrene											
			204-927-3	129-00-0		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
24		benzo[a]anthracene											
		601-033-00-9	200-280-6	56-55-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
25		chrysene											
		601-048-00-0	205-923-4	218-01-9		<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
26		benzo[b]fluoranthene											
		601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
27		benzo[k]fluoranthene											
		601-036-00-5	205-916-6	207-08-9		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
28		benzo[a]pyrene; benzo[def]chrysene											
		601-032-00-3	200-028-5	50-32-8		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
29		indeno[123-cd]pyrene											
			205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
30		dibenz[a,h]anthracene											
		601-041-00-2	200-181-8	53-70-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
31		benzo[ghi]perylene											
			205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
32		benzene											
		601-020-00-8	200-753-7	71-43-2		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
33		toluene											
		601-021-00-3	203-625-9	108-88-3		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
34		ethylbenzene											
		601-023-00-4	202-849-4	100-41-4		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
35		xylene											
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
36		monohydric phenols											
				P1186		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
										Total:	0.0406 %		

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: ATK BH08-101

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

Sample details

Sample name:	LoW Code:	
ATK BH08-101	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.3 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		10.6 pH		10.6 pH	10.6 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<**LOD**
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		1 mg/kg	1.32	1.32 mg/kg	0.000132 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.5 mg/kg	1.142	<0.571 mg/kg	<0.0000571 %		<**LOD**
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		13 mg/kg	1.462	19 mg/kg	0.0019 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		6 mg/kg	1.126	6.755 mg/kg	0.000676 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17 mg/kg	1.353	<0.23 mg/kg	<0.000023 %		<**LOD**
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		18 mg/kg	2.976	53.573 mg/kg	0.00536 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	26 mg/kg	1.56	40.555 mg/kg	0.0026 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		1 mg/kg	2.554	2.554 mg/kg	0.000255 %	✓	
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		5 mg/kg	1.785	8.926 mg/kg	0.000893 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		25 mg/kg	2.774	69.354 mg/kg	0.00694 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**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		TPH (C6 to C40) petroleum group		TPH		7	mg/kg		7	mg/kg	0.0007 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
18		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
19		acenaphthene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-469-6	83-32-9									
20		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
21		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
22		anthracene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
			204-371-1	120-12-7									
23		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
24		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
			204-927-3	129-00-0									
25		benzo[a]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
27		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
28		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
29		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
30		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
31		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
32		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
33		benzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
34		toluene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
35		ethylbenzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		xylene				<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		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]									
37		monohydric phenols				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
				P1186									
										Total:	0.0206 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0007%)

Classification of sample: ATK TP05-2

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

Sample details

Sample name:
ATK TP05-2
Sample Depth:
0.8 m

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: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		9.03 pH		9.03 pH	9.03 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<**LOD**
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		43 mg/kg	1.32	56.774 mg/kg	0.00568 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.6 mg/kg	1.142	1.828 mg/kg	0.000183 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		55 mg/kg	1.462	80.386 mg/kg	0.00804 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		244 mg/kg	1.126	274.717 mg/kg	0.0275 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		3.7 mg/kg	1.353	5.008 mg/kg	0.000501 %	✓	
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		38 mg/kg	2.976	113.098 mg/kg	0.0113 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	506 mg/kg	1.56	789.266 mg/kg	0.0506 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		3 mg/kg	2.554	7.662 mg/kg	0.000766 %	✓	
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		36 mg/kg	1.785	64.267 mg/kg	0.00643 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		315 mg/kg	2.774	873.856 mg/kg	0.0874 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**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		TPH (C6 to C40) petroleum group		TPH		697	mg/kg		697	mg/kg	0.0697 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		2-methyl naphthalene	202-078-3	91-57-6		0.134	mg/kg		0.134	mg/kg	0.0000134 %	✓	
18		dibenzofuran	205-071-3	132-64-9		0.233	mg/kg		0.233	mg/kg	0.0000233 %	✓	
19		carbazole	201-696-0	86-74-8		0.411	mg/kg		0.411	mg/kg	0.0000411 %	✓	
20		naphthalene	202-049-5	91-20-3		0.09	mg/kg		0.09	mg/kg	0.000009 %	✓	
21		acenaphthylene	205-917-1	208-96-8		0.23	mg/kg		0.23	mg/kg	0.000023 %	✓	
22		acenaphthene	201-469-6	83-32-9		0.93	mg/kg		0.93	mg/kg	0.000093 %	✓	
23		fluorene	201-695-5	86-73-7		0.75	mg/kg		0.75	mg/kg	0.000075 %	✓	
24		phenanthrene	201-581-5	85-01-8		9.22	mg/kg		9.22	mg/kg	0.000922 %	✓	
25		anthracene	204-371-1	120-12-7		1.61	mg/kg		1.61	mg/kg	0.000161 %	✓	
26		fluoranthene	205-912-4	206-44-0		12.9	mg/kg		12.9	mg/kg	0.00129 %	✓	
27		pyrene	204-927-3	129-00-0		13	mg/kg		13	mg/kg	0.0013 %	✓	
28		benzo[a]anthracene	200-280-6	56-55-3		4.92	mg/kg		4.92	mg/kg	0.000492 %	✓	
29		chrysene	205-923-4	218-01-9		5.6	mg/kg		5.6	mg/kg	0.00056 %	✓	
30		benzo[b]fluoranthene	205-911-9	205-99-2		4.35	mg/kg		4.35	mg/kg	0.000435 %	✓	
31		benzo[k]fluoranthene	205-916-6	207-08-9		1.44	mg/kg		1.44	mg/kg	0.000144 %	✓	
32		benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		3.8	mg/kg		3.8	mg/kg	0.00038 %	✓	
33		indeno[123-cd]pyrene	205-893-2	193-39-5		1.42	mg/kg		1.42	mg/kg	0.000142 %	✓	
34		dibenz[a,h]anthracene	200-181-8	53-70-3		0.35	mg/kg		0.35	mg/kg	0.000035 %	✓	
35		benzo[ghi]perylene	205-883-8	191-24-2		1.23	mg/kg		1.23	mg/kg	0.000123 %	✓	
36		benzene	200-753-7	71-43-2		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
37		toluene	203-625-9	108-88-3		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
38		ethylbenzene	202-849-4	100-41-4		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
39		xylene	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]		<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
40		monohydric phenols		P1186		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
41		dichloromethane; methylene chloride	200-838-9	75-09-2		<5	µg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
										Total:	0.275 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0697%)

Classification of sample: ATK-TP07-102

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

Sample details

Sample name:	LoW Code:	
ATK-TP07-102	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.4 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.69	pH		8.69	pH	8.69 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1	mg/kg	5.719	<5.719	mg/kg	<0.000572 %		<**LOD**
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	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		7	mg/kg	1.32	9.242	mg/kg	0.000924 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.8	mg/kg	1.142	0.914	mg/kg	0.0000914 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		30	mg/kg	1.462	43.847	mg/kg	0.00438 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		19	mg/kg	1.126	21.392	mg/kg	0.00214 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		31	mg/kg	2.976	92.264	mg/kg	0.00923 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	10	mg/kg	1.56	15.598	mg/kg	0.001 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		31	mg/kg	1.785	55.341	mg/kg	0.00553 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		49	mg/kg	2.774	135.933	mg/kg	0.0136 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<**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	●	TPH (C6 to C40) petroleum group		TPH		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
16		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
17	●	acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
18	●	acenaphthene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-469-6	83-32-9									
19	●	fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
20	●	phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
21	●	anthracene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
			204-371-1	120-12-7									
22	●	fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
23	●	pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
			204-927-3	129-00-0									
24		benzo[a]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
26		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
27		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
28		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
29	●	indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
30		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
31	●	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
32		benzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
33		toluene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
34	●	ethylbenzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
35		xylene				<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		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]									
36	●	monohydric phenols				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
				P1186									
										Total:	0.0383 %		

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: ATK-BH03-102

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

Sample details

Sample name:	LoW Code:	
ATK-BH03-102	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.8 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.04	pH		8.04	pH	8.04 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		1.6	mg/kg	5.719	9.151	mg/kg	0.000915 %	✓	
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	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2	mg/kg	1.32	2.641	mg/kg	0.000264 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.7	mg/kg	1.142	0.8	mg/kg	0.00008 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		33	mg/kg	1.462	48.231	mg/kg	0.00482 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		29	mg/kg	1.126	32.651	mg/kg	0.00327 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		29	mg/kg	2.976	86.312	mg/kg	0.00863 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	47	mg/kg	1.56	73.311	mg/kg	0.0047 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		36	mg/kg	1.785	64.267	mg/kg	0.00643 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		47	mg/kg	2.774	130.385	mg/kg	0.013 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<**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		TPH (C6 to C40) petroleum group		TPH		4	mg/kg		4	mg/kg	0.0004 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
18		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
19		acenaphthene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-469-6	83-32-9									
20		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
21		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
22		anthracene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
			204-371-1	120-12-7									
23		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
24		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
			204-927-3	129-00-0									
25		benzo[a]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
27		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
28		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
29		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
30		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
31		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
32		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
33		benzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
34		toluene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
35		ethylbenzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		xylene				<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		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]									
37		monohydric phenols				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
				P1186									
										Total:	0.0433 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0004%)

Classification of sample: ATK-BH06-102

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

Sample details

Sample name:
ATK-BH06-102
Sample Depth:
1 m

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: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		9.31 pH		9.31 pH	9.31 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<**LOD**
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6 mg/kg	1.32	7.922 mg/kg	0.000792 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.6 mg/kg	1.142	0.685 mg/kg	0.0000685 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		9 mg/kg	1.462	13.154 mg/kg	0.00132 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		38 mg/kg	1.126	42.784 mg/kg	0.00428 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		1.46 mg/kg	1.353	1.976 mg/kg	0.000198 %	✓	
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		10 mg/kg	2.976	29.763 mg/kg	0.00298 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	203 mg/kg	1.56	316.642 mg/kg	0.0203 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		13 mg/kg	1.785	23.207 mg/kg	0.00232 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		133 mg/kg	2.774	368.961 mg/kg	0.0369 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**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		TPH (C6 to C40) petroleum group		TPH		264	mg/kg		264	mg/kg	0.0264 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		naphthalene				0.65	mg/kg		0.65	mg/kg	0.000065 %	✓	
		601-052-00-2	202-049-5	91-20-3									
18		acenaphthylene				0.02	mg/kg		0.02	mg/kg	0.000002 %	✓	
			205-917-1	208-96-8									
19		acenaphthene				0.92	mg/kg		0.92	mg/kg	0.000092 %	✓	
			201-469-6	83-32-9									
20		fluorene				0.57	mg/kg		0.57	mg/kg	0.000057 %	✓	
			201-695-5	86-73-7									
21		phenanthrene				5.87	mg/kg		5.87	mg/kg	0.000587 %	✓	
			201-581-5	85-01-8									
22		anthracene				1.11	mg/kg		1.11	mg/kg	0.000111 %	✓	
			204-371-1	120-12-7									
23		fluoranthene				5.88	mg/kg		5.88	mg/kg	0.000588 %	✓	
			205-912-4	206-44-0									
24		pyrene				4.56	mg/kg		4.56	mg/kg	0.000456 %	✓	
			204-927-3	129-00-0									
25		benzo[a]anthracene				1.86	mg/kg		1.86	mg/kg	0.000186 %	✓	
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				1.74	mg/kg		1.74	mg/kg	0.000174 %	✓	
		601-048-00-0	205-923-4	218-01-9									
27		benzo[b]fluoranthene				1.67	mg/kg		1.67	mg/kg	0.000167 %	✓	
		601-034-00-4	205-911-9	205-99-2									
28		benzo[k]fluoranthene				0.51	mg/kg		0.51	mg/kg	0.000051 %	✓	
		601-036-00-5	205-916-6	207-08-9									
29		benzo[a]pyrene; benzo[def]chrysene				1.26	mg/kg		1.26	mg/kg	0.000126 %	✓	
		601-032-00-3	200-028-5	50-32-8									
30		indeno[123-cd]pyrene				0.58	mg/kg		0.58	mg/kg	0.000058 %	✓	
			205-893-2	193-39-5									
31		dibenz[a,h]anthracene				0.12	mg/kg		0.12	mg/kg	0.000012 %	✓	
		601-041-00-2	200-181-8	53-70-3									
32		benzo[ghi]perylene				0.48	mg/kg		0.48	mg/kg	0.000048 %	✓	
			205-883-8	191-24-2									
33		benzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
34		toluene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
35		ethylbenzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
36		xylene				<20	µg/kg		<0.02	mg/kg	<0.000002 %		<**LOD**
		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]									
37		monohydric phenols				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<**LOD**
				P1186									
										Total:	0.0996 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0264%)

WAC results for sample: ATK-BH06-102

WAC Settings: samples in this Job do not constitute a single population.

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

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

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

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	2.22	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.007	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	25	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	27.9	100	-	-
7	pH	pH	9.4	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	0.14	0.5	2	25
10	barium	mg/kg	0.34	20	100	300
11	cadmium	mg/kg	<0.01	0.04	1	5
12	chromium	mg/kg	0.26	0.5	10	70
13	copper	mg/kg	0.07	2	50	100
14	mercury	mg/kg	<0.005	0.01	0.2	2
15	molybdenum	mg/kg	0.05	0.5	10	30
16	nickel	mg/kg	<0.02	0.4	10	40
17	lead	mg/kg	0.33	0.5	10	50
18	antimony	mg/kg	0.04	0.06	0.7	5
19	selenium	mg/kg	<0.01	0.1	0.5	7
20	zinc	mg/kg	0.13	4	50	200
21	chloride	mg/kg	<10	800	15,000	25,000
22	fluoride	mg/kg	2	10	150	500
23	sulphate	mg/kg	142	1,000	20,000	50,000
24	phenol index	mg/kg	<0.1	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<200	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	531	4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Missing WAC determinand value

Classification of sample: ATK_TP02-102

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

Sample details

Sample name:
ATK_TP02-102
Sample Depth:
1.2 m

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: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.37 pH		8.37 pH	8.37 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		1.1 mg/kg	5.719	6.291 mg/kg	0.000629 %	✓	
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		4 mg/kg	1.32	5.281 mg/kg	0.000528 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.5 mg/kg	1.142	0.571 mg/kg	0.0000571 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		27 mg/kg	1.462	39.462 mg/kg	0.00395 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		47 mg/kg	1.126	52.917 mg/kg	0.00529 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17 mg/kg	1.353	<0.23 mg/kg	<0.000023 %		<LOD
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		32 mg/kg	2.976	95.24 mg/kg	0.00952 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	51 mg/kg	1.56	79.551 mg/kg	0.0051 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		27 mg/kg	1.785	48.2 mg/kg	0.00482 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		57 mg/kg	2.774	158.126 mg/kg	0.0158 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<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		TPH (C6 to C40) petroleum group		TPH		366	mg/kg		366	mg/kg	0.0366 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		2-methyl naphthalene	202-078-3	91-57-6		0.376	mg/kg		0.376	mg/kg	0.0000376 %	✓	
18		dibenzofuran	205-071-3	132-64-9		1.15	mg/kg		1.15	mg/kg	0.000115 %	✓	
19		carbazole	201-696-0	86-74-8		0.536	mg/kg		0.536	mg/kg	0.0000536 %	✓	
20		naphthalene	202-049-5	91-20-3		0.15	mg/kg		0.15	mg/kg	0.000015 %	✓	
21		acenaphthylene	205-917-1	208-96-8		0.03	mg/kg		0.03	mg/kg	0.000003 %	✓	
22		acenaphthene	201-469-6	83-32-9		0.38	mg/kg		0.38	mg/kg	0.000038 %	✓	
23		fluorene	201-695-5	86-73-7		0.25	mg/kg		0.25	mg/kg	0.000025 %	✓	
24		phenanthrene	201-581-5	85-01-8		1.54	mg/kg		1.54	mg/kg	0.000154 %	✓	
25		anthracene	204-371-1	120-12-7		0.45	mg/kg		0.45	mg/kg	0.000045 %	✓	
26		fluoranthene	205-912-4	206-44-0		2.26	mg/kg		2.26	mg/kg	0.000226 %	✓	
27		pyrene	204-927-3	129-00-0		2.05	mg/kg		2.05	mg/kg	0.000205 %	✓	
28		benzo[a]anthracene	200-280-6	56-55-3		0.91	mg/kg		0.91	mg/kg	0.000091 %	✓	
29		chrysene	205-923-4	218-01-9		0.85	mg/kg		0.85	mg/kg	0.000085 %	✓	
30		benzo[b]fluoranthene	205-911-9	205-99-2		0.93	mg/kg		0.93	mg/kg	0.000093 %	✓	
31		benzo[k]fluoranthene	205-916-6	207-08-9		0.32	mg/kg		0.32	mg/kg	0.000032 %	✓	
32		benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		0.88	mg/kg		0.88	mg/kg	0.000088 %	✓	
33		indeno[123-cd]pyrene	205-893-2	193-39-5		0.44	mg/kg		0.44	mg/kg	0.000044 %	✓	
34		dibenz[a,h]anthracene	200-181-8	53-70-3		0.08	mg/kg		0.08	mg/kg	0.000008 %	✓	
35		benzo[ghi]perylene	205-883-8	191-24-2		0.36	mg/kg		0.36	mg/kg	0.000036 %	✓	
36		benzene	200-753-7	71-43-2		20	µg/kg		0.02	mg/kg	0.000002 %	✓	
37		toluene	203-625-9	108-88-3		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
38		ethylbenzene	202-849-4	100-41-4		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
39		xylene	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]		<20	µg/kg		<0.02	mg/kg	<0.000002 %		<**LOD**
40		monohydric phenols		P1186		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<**LOD**
41		dichloromethane; methylene chloride	200-838-9	75-09-2		<5	µg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
										Total:	0.0844 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

benzene: (conc.: 2.0e-06%)

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0366%)

Classification of sample: ATK_CPT15-102

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

Sample details

Sample name:		LoW Code:	
ATK_CPT15-102		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.5 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.14	pH		8.14	pH	8.14 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		1.1	mg/kg	5.719	6.291	mg/kg	0.000629 %	✓	
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	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		<1	mg/kg	1.32	<1.32	mg/kg	<0.000132 %		<**LOD**
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.5	mg/kg	1.142	<0.571	mg/kg	<0.0000571 %		<**LOD**
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		22	mg/kg	1.462	32.154	mg/kg	0.00322 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		12	mg/kg	1.126	13.511	mg/kg	0.00135 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		18	mg/kg	2.976	53.573	mg/kg	0.00536 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	16	mg/kg	1.56	24.957	mg/kg	0.0016 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		30	mg/kg	1.785	53.556	mg/kg	0.00536 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		29	mg/kg	2.774	80.45	mg/kg	0.00805 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<**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	●	TPH (C6 to C40) petroleum group		TPH		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
16		naphthalene											
		601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
17	●	acenaphthylene											
			205-917-1	208-96-8		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
18	●	acenaphthene											
			201-469-6	83-32-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
19	●	fluorene											
			201-695-5	86-73-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
20	●	phenanthrene											
			201-581-5	85-01-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
21	●	anthracene											
			204-371-1	120-12-7		<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
22	●	fluoranthene											
			205-912-4	206-44-0		<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
23	●	pyrene											
			204-927-3	129-00-0		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
24		benzo[a]anthracene											
		601-033-00-9	200-280-6	56-55-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
25		chrysene											
		601-048-00-0	205-923-4	218-01-9		<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
26		benzo[b]fluoranthene											
		601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
27		benzo[k]fluoranthene											
		601-036-00-5	205-916-6	207-08-9		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
28		benzo[a]pyrene; benzo[def]chrysene											
		601-032-00-3	200-028-5	50-32-8		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
29	●	indeno[123-cd]pyrene											
			205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
30		dibenz[a,h]anthracene											
		601-041-00-2	200-181-8	53-70-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
31	●	benzo[ghi]perylene											
			205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
32		benzene											
		601-020-00-8	200-753-7	71-43-2		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
33		toluene											
		601-021-00-3	203-625-9	108-88-3		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
34	●	ethylbenzene											
		601-023-00-4	202-849-4	100-41-4		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
35		xylene											
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
36	●	monohydric phenols											
				P1186		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
										Total:	0.0266 %		

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: ATK_CPT16-101

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

Sample details

Sample name:		LoW Code:	
ATK_CPT16-101		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.1 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.94 pH		8.94 pH	8.94 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<**LOD**
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		<1 mg/kg	1.32	<1.32 mg/kg	<0.000132 %		<**LOD**
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.5 mg/kg	1.142	<0.571 mg/kg	<0.0000571 %		<**LOD**
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		8 mg/kg	1.462	11.692 mg/kg	0.00117 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		2 mg/kg	1.126	2.252 mg/kg	0.000225 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17 mg/kg	1.353	<0.23 mg/kg	<0.000023 %		<**LOD**
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		8 mg/kg	2.976	23.81 mg/kg	0.00238 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	2 mg/kg	1.56	3.12 mg/kg	0.0002 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		3 mg/kg	1.785	5.356 mg/kg	0.000536 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		11 mg/kg	2.774	30.516 mg/kg	0.00305 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**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		TPH (C6 to C40) petroleum group		TPH		4	mg/kg		4	mg/kg	0.0004 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
18		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
19		acenaphthene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-469-6	83-32-9									
20		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
21		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
22		anthracene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
			204-371-1	120-12-7									
23		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
24		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
			204-927-3	129-00-0									
25		benzo[a]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
27		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
28		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
29		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
30		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
31		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
32		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
33		benzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
34		toluene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
35		ethylbenzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		xylene				<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		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]									
37		monohydric phenols				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
				P1186									
										Total:	0.00951 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0004%)

Classification of sample: ATK_CPT17-103

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

Sample details

Sample name:
ATK_CPT17-103
Sample Depth:
0.7 m

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: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.98 pH		8.98 pH	8.98 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<LOD
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		<1 mg/kg	1.32	<1.32 mg/kg	<0.000132 %		<LOD
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.7 mg/kg	1.142	0.8 mg/kg	0.00008 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		45 mg/kg	1.462	65.77 mg/kg	0.00658 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		27 mg/kg	1.126	30.399 mg/kg	0.00304 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17 mg/kg	1.353	<0.23 mg/kg	<0.000023 %		<LOD
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		40 mg/kg	2.976	119.051 mg/kg	0.0119 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	18 mg/kg	1.56	28.077 mg/kg	0.0018 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		41 mg/kg	1.785	73.193 mg/kg	0.00732 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		97 mg/kg	2.774	269.092 mg/kg	0.0269 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<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		TPH (C6 to C40) petroleum group		TPH		247	mg/kg		247	mg/kg	0.0247 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
18		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
19		acenaphthene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-469-6	83-32-9									
20		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
21		phenanthrene				0.05	mg/kg		0.05	mg/kg	0.000005 %	✓	
			201-581-5	85-01-8									
22		anthracene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
			204-371-1	120-12-7									
23		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
24		pyrene				0.09	mg/kg		0.09	mg/kg	0.000009 %	✓	
			204-927-3	129-00-0									
25		benzo[a]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
27		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
28		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
29		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
30		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
31		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
32		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
33		benzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
34		toluene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
35		ethylbenzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		xylene				<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		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]									
37		monohydric phenols				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
				P1186									
										Total:	0.0838 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0247%)

Classification of sample: ATK_TP01-102

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

Sample details

Sample name:		LoW Code:	
ATK_TP01-102		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.3 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.67 pH		8.67 pH	8.67 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<**LOD**
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		<1 mg/kg	1.32	<1.32 mg/kg	<0.000132 %		<**LOD**
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.5 mg/kg	1.142	<0.571 mg/kg	<0.0000571 %		<**LOD**
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		9 mg/kg	1.462	13.154 mg/kg	0.00132 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		6 mg/kg	1.126	6.755 mg/kg	0.000676 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17 mg/kg	1.353	<0.23 mg/kg	<0.000023 %		<**LOD**
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		9 mg/kg	2.976	26.786 mg/kg	0.00268 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	9 mg/kg	1.56	14.038 mg/kg	0.0009 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		4 mg/kg	2.554	10.215 mg/kg	0.00102 %	✓	
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		6 mg/kg	1.785	10.711 mg/kg	0.00107 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		16 mg/kg	2.774	44.386 mg/kg	0.00444 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**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		TPH (C6 to C40) petroleum group		TPH		153	mg/kg		153	mg/kg	0.0153 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
18		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
19		acenaphthene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-469-6	83-32-9									
20		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
21		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
22		anthracene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
			204-371-1	120-12-7									
23		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
24		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
			204-927-3	129-00-0									
25		benzo[a]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
27		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
28		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
29		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
30		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
31		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
32		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
33		benzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
34		toluene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
35		ethylbenzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		xylene				<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		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]									
37		monohydric phenols				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
				P1186									
										Total:	0.0287 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0153%)

Classification of sample: ATK_TP01-105

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

Sample details

Sample name:
ATK_TP01-105
Sample Depth:
1.8 m

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: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		7.92 pH		7.92 pH	7.92 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<**LOD**
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8 mg/kg	1.32	10.563 mg/kg	0.00106 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.6 mg/kg	1.142	0.685 mg/kg	0.0000685 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		34 mg/kg	1.462	49.693 mg/kg	0.00497 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		45 mg/kg	1.126	50.665 mg/kg	0.00507 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.37 mg/kg	1.353	0.501 mg/kg	0.0000501 %	✓	
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		32 mg/kg	2.976	95.24 mg/kg	0.00952 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	61 mg/kg	1.56	95.149 mg/kg	0.0061 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		2 mg/kg	2.554	5.108 mg/kg	0.000511 %	✓	
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		41 mg/kg	1.785	73.193 mg/kg	0.00732 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		63 mg/kg	2.774	174.771 mg/kg	0.0175 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**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		TPH (C6 to C40) petroleum group		TPH		63	mg/kg		63	mg/kg	0.0063 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		2-methyl naphthalene	202-078-3	91-57-6		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
18		dibenzofuran	205-071-3	132-64-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
19		carbazole	201-696-0	86-74-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
20		naphthalene	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
21		acenaphthylene	205-917-1	208-96-8		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
22		acenaphthene	201-469-6	83-32-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
23		fluorene	201-695-5	86-73-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
24		phenanthrene	201-581-5	85-01-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
25		anthracene	204-371-1	120-12-7		<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
26		fluoranthene	205-912-4	206-44-0		<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
27		pyrene	204-927-3	129-00-0		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
28		benzo[a]anthracene	200-280-6	56-55-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
29		chrysene	205-923-4	218-01-9		<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
30		benzo[b]fluoranthene	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
31		benzo[k]fluoranthene	205-916-6	207-08-9		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
32		benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
33		indeno[123-cd]pyrene	205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
34		dibenz[a,h]anthracene	200-181-8	53-70-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
35		benzo[ghi]perylene	205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
36		benzene	200-753-7	71-43-2		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
37		toluene	203-625-9	108-88-3		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
38		ethylbenzene	202-849-4	100-41-4		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
39		xylene	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]		<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
40		monohydric phenols		P1186		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
41		dichloromethane; methylene chloride	200-838-9	75-09-2		<125	µg/kg		<0.125	mg/kg	<0.0000125 %		<LOD
										Total:	0.0596 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0063%)

Classification of sample: ATK_TP09-3

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

Sample details

Sample name:	LoW Code:	
ATK_TP09-3	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
1.3 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.3	pH		8.3	pH	8.3 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		1	mg/kg	5.719	5.719	mg/kg	0.000572 %	✓	
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	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		<1	mg/kg	1.32	<1.32	mg/kg	<0.000132 %		<**LOD**
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.7	mg/kg	1.142	0.8	mg/kg	0.00008 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		37	mg/kg	1.462	54.078	mg/kg	0.00541 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		25	mg/kg	1.126	28.147	mg/kg	0.00281 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.36	mg/kg	1.353	0.487	mg/kg	0.0000487 %	✓	
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		36	mg/kg	2.976	107.146	mg/kg	0.0107 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	23	mg/kg	1.56	35.876	mg/kg	0.0023 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		39	mg/kg	1.785	69.622	mg/kg	0.00696 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		59	mg/kg	2.774	163.675	mg/kg	0.0164 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<**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		TPH (C6 to C40) petroleum group		TPH		7	mg/kg		7	mg/kg	0.0007 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		2-methyl naphthalene	202-078-3	91-57-6		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
18		dibenzofuran	205-071-3	132-64-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
19		carbazole	201-696-0	86-74-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
20		naphthalene	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
21		acenaphthylene	205-917-1	208-96-8		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
22		acenaphthene	201-469-6	83-32-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
23		fluorene	201-695-5	86-73-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
24		phenanthrene	201-581-5	85-01-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
25		anthracene	204-371-1	120-12-7		<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
26		fluoranthene	205-912-4	206-44-0		<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
27		pyrene	204-927-3	129-00-0		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
28		benzo[a]anthracene	200-280-6	56-55-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
29		chrysene	205-923-4	218-01-9		<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
30		benzo[b]fluoranthene	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
31		benzo[k]fluoranthene	205-916-6	207-08-9		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
32		benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
33		indeno[123-cd]pyrene	205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
34		dibenz[a,h]anthracene	200-181-8	53-70-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
35		benzo[ghi]perylene	205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
36		benzene	200-753-7	71-43-2		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
37		toluene	203-625-9	108-88-3		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
38		ethylbenzene	202-849-4	100-41-4		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
39		xylene	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]		<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
40		monohydric phenols		P1186		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
41		dichloromethane; methylene chloride	200-838-9	75-09-2		<125	µg/kg		<0.125	mg/kg	<0.0000125 %		<LOD
										Total:	0.0469 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0007%)

Classification of sample: ATK_TP10-102

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

Sample details

Sample name:
ATK_TP10-102
Sample Depth:
1.2 m

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: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		7.75 pH		7.75 pH	7.75 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<**LOD**
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				4 mg/kg	1.884	7.536 mg/kg	0.000754 %	✓	
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		18 mg/kg	1.32	23.766 mg/kg	0.00238 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.6 mg/kg	1.142	0.685 mg/kg	0.0000685 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		17 mg/kg	1.462	24.846 mg/kg	0.00248 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		70 mg/kg	1.126	78.812 mg/kg	0.00788 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		2.13 mg/kg	1.353	2.883 mg/kg	0.000288 %	✓	
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		19 mg/kg	2.976	56.549 mg/kg	0.00565 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	771 mg/kg	1.56	1202.617 mg/kg	0.0771 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		24 mg/kg	1.785	42.844 mg/kg	0.00428 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		135 mg/kg	2.774	374.51 mg/kg	0.0375 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**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		TPH (C6 to C40) petroleum group		TPH		96	mg/kg		96	mg/kg	0.0096 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		2-methyl naphthalene	202-078-3	91-57-6		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
18		dibenzofuran	205-071-3	132-64-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
19		carbazole	201-696-0	86-74-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
20		naphthalene	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2											
21		acenaphthylene	205-917-1	208-96-8		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
22		acenaphthene	201-469-6	83-32-9		0.02	mg/kg		0.02	mg/kg	0.000002 %	✓	
23		fluorene	201-695-5	86-73-7		0.01	mg/kg		0.01	mg/kg	0.000001 %	✓	
24		phenanthrene	201-581-5	85-01-8		0.17	mg/kg		0.17	mg/kg	0.000017 %	✓	
25		anthracene	204-371-1	120-12-7		0.03	mg/kg		0.03	mg/kg	0.000003 %	✓	
26		fluoranthene	205-912-4	206-44-0		0.18	mg/kg		0.18	mg/kg	0.000018 %	✓	
27		pyrene	204-927-3	129-00-0		0.2	mg/kg		0.2	mg/kg	0.00002 %	✓	
28		benzo[a]anthracene	200-280-6	56-55-3		0.08	mg/kg		0.08	mg/kg	0.000008 %	✓	
		601-033-00-9											
29		chrysene	205-923-4	218-01-9		0.1	mg/kg		0.1	mg/kg	0.00001 %	✓	
		601-048-00-0											
30		benzo[b]fluoranthene	205-911-9	205-99-2		0.08	mg/kg		0.08	mg/kg	0.000008 %	✓	
		601-034-00-4											
31		benzo[k]fluoranthene	205-916-6	207-08-9		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
		601-036-00-5											
32		benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		0.06	mg/kg		0.06	mg/kg	0.000006 %	✓	
		601-032-00-3											
33		indeno[123-cd]pyrene	205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
34		dibenz[a,h]anthracene	200-181-8	53-70-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2											
35		benzo[ghi]perylene	205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
36		benzene	200-753-7	71-43-2		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8											
37		toluene	203-625-9	108-88-3		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3											
38		ethylbenzene	202-849-4	100-41-4		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4											
39		xylene	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]		<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-022-00-9											
40		monohydric phenols		P1186		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
41		dichloromethane; methylene chloride	200-838-9	75-09-2		<125	µg/kg		<0.125	mg/kg	<0.0000125 %		<LOD
		602-004-00-3											
										Total:	0.149 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0096%)

Classification of sample: ATK BH08A-103

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

Sample details

Sample name:		LoW Code:	
ATK BH08A-103		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
1 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.33 pH		8.33 pH	8.33 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<**LOD**
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		3 mg/kg	1.32	3.961 mg/kg	0.000396 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.7 mg/kg	1.142	0.8 mg/kg	0.00008 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		35 mg/kg	1.462	51.154 mg/kg	0.00512 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		27 mg/kg	1.126	30.399 mg/kg	0.00304 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17 mg/kg	1.353	<0.23 mg/kg	<0.000023 %		<**LOD**
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		36 mg/kg	2.976	107.146 mg/kg	0.0107 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	21 mg/kg	1.56	32.756 mg/kg	0.0021 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		37 mg/kg	1.785	66.052 mg/kg	0.00661 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		62 mg/kg	2.774	171.997 mg/kg	0.0172 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**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		TPH (C6 to C40) petroleum group		TPH		7	mg/kg		7	mg/kg	0.0007 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
18		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
19		acenaphthene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-469-6	83-32-9									
20		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
21		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
22		anthracene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
			204-371-1	120-12-7									
23		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
24		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
			204-927-3	129-00-0									
25		benzo[a]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
27		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
28		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
29		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
30		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
31		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
32		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
33		benzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
34		toluene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
35		ethylbenzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		xylene				<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		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]									
37		monohydric phenols				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
				P1186									
										Total:	0.0473 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0007%)

Classification of sample: ATK_CPT12-1

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

Sample details

Sample name:
ATK_CPT12-1
Sample Depth:
0.36 m

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: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.68 pH		8.68 pH	8.68 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<LOD
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		<1 mg/kg	1.32	<1.32 mg/kg	<0.000132 %		<LOD
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.5 mg/kg	1.142	<0.571 mg/kg	<0.0000571 %		<LOD
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		11 mg/kg	1.462	16.077 mg/kg	0.00161 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		5 mg/kg	1.126	5.629 mg/kg	0.000563 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.29 mg/kg	1.353	0.393 mg/kg	0.0000393 %	✓	
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		13 mg/kg	2.976	38.691 mg/kg	0.00387 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	5 mg/kg	1.56	7.799 mg/kg	0.0005 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		5 mg/kg	1.785	8.926 mg/kg	0.000893 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		18 mg/kg	2.774	49.935 mg/kg	0.00499 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<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		TPH (C6 to C40) petroleum group		TPH		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
16		naphthalene											
		601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
17		acenaphthylene											
			205-917-1	208-96-8		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
18		acenaphthene											
			201-469-6	83-32-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
19		fluorene											
			201-695-5	86-73-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
20		phenanthrene											
			201-581-5	85-01-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
21		anthracene											
			204-371-1	120-12-7		<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
22		fluoranthene											
			205-912-4	206-44-0		<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
23		pyrene											
			204-927-3	129-00-0		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
24		benzo[a]anthracene											
		601-033-00-9	200-280-6	56-55-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
25		chrysene											
		601-048-00-0	205-923-4	218-01-9		<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
26		benzo[b]fluoranthene											
		601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
27		benzo[k]fluoranthene											
		601-036-00-5	205-916-6	207-08-9		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
28		benzo[a]pyrene; benzo[def]chrysene											
		601-032-00-3	200-028-5	50-32-8		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
29		indeno[123-cd]pyrene											
			205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
30		dibenz[a,h]anthracene											
		601-041-00-2	200-181-8	53-70-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
31		benzo[ghi]perylene											
			205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
32		benzene											
		601-020-00-8	200-753-7	71-43-2		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
33		toluene											
		601-021-00-3	203-625-9	108-88-3		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
34		ethylbenzene											
		601-023-00-4	202-849-4	100-41-4		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
35		xylene											
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
36		monohydric phenols											
				P1186		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
										Total:	0.0141 %		

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: ATK_CPT14-102

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
ATK_CPT14-102
Sample Depth:
0.4 m

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.: 11.89 pH)

Determinands

Moisture content: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		11.89 pH		11.89 pH	11.89 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<LOD
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		<1 mg/kg	1.32	<1.32 mg/kg	<0.000132 %		<LOD
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.5 mg/kg	1.142	<0.571 mg/kg	<0.0000571 %		<LOD
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		16 mg/kg	1.462	23.385 mg/kg	0.00234 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		7 mg/kg	1.126	7.881 mg/kg	0.000788 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		1.84 mg/kg	1.353	2.49 mg/kg	0.000249 %	✓	
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		11 mg/kg	2.976	32.739 mg/kg	0.00327 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	10 mg/kg	1.56	15.598 mg/kg	0.001 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		10 mg/kg	1.785	17.852 mg/kg	0.00179 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		22 mg/kg	2.774	61.031 mg/kg	0.0061 %	✓	

#		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									
14		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<**LOD**
		024-017-00-8											
15		TPH (C6 to C40) petroleum group				29	mg/kg		29	mg/kg	0.0029 %	✓	
				TPH									
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
18		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			205-917-1	208-96-8									
19		acenaphthene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			201-469-6	83-32-9									
20		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
			201-695-5	86-73-7									
21		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
22		anthracene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<**LOD**
			204-371-1	120-12-7									
23		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-912-4	206-44-0									
24		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
			204-927-3	129-00-0									
25		benzo[a]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
27		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
28		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
29		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
30		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
31		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
32		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-883-8	191-24-2									
33		benzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
34		toluene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
35		ethylbenzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
36		xylene				<20	µg/kg		<0.02	mg/kg	<0.000002 %		<**LOD**
		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]									
37		monohydric phenols				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<**LOD**
				P1186									
										Total:	0.02 %		

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 because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

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

WAC results for sample: ATK_CPT14-102

WAC Settings: samples in this Job do not constitute a single population.

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

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

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

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	0.07	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.007	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	15	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<0.08	100	-	-
7	pH	pH	11.89	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	<0.01	0.5	2	25
10	barium	mg/kg	0.39	20	100	300
11	cadmium	mg/kg	<0.01	0.04	1	5
12	chromium	mg/kg	0.05	0.5	10	70
13	copper	mg/kg	<0.04	2	50	100
14	mercury	mg/kg	<0.005	0.01	0.2	2
15	molybdenum	mg/kg	0.01	0.5	10	30
16	nickel	mg/kg	<0.02	0.4	10	40
17	lead	mg/kg	<0.01	0.5	10	50
18	antimony	mg/kg	<0.01	0.06	0.7	5
19	selenium	mg/kg	<0.01	0.1	0.5	7
20	zinc	mg/kg	<0.02	4	50	200
21	chloride	mg/kg	190	800	15,000	25,000
22	fluoride	mg/kg	<1	10	150	500
23	sulphate	mg/kg	70	1,000	20,000	50,000
24	phenol index	mg/kg	<0.1	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<200	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	7143	4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Missing WAC determinand value

Classification of sample: ATK_BH07-102

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

Sample details

Sample name:
ATK_BH07-102
Sample Depth:
0.45 m

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: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.68 pH		8.68 pH	8.68 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<LOD
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		3 mg/kg	1.32	3.961 mg/kg	0.000396 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.8 mg/kg	1.142	0.914 mg/kg	0.0000914 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		31 mg/kg	1.462	45.308 mg/kg	0.00453 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		21 mg/kg	1.126	23.644 mg/kg	0.00236 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17 mg/kg	1.353	<0.23 mg/kg	<0.000023 %		<LOD
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		35 mg/kg	2.976	104.169 mg/kg	0.0104 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	14 mg/kg	1.56	21.837 mg/kg	0.0014 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		30 mg/kg	1.785	53.556 mg/kg	0.00536 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		50 mg/kg	2.774	138.707 mg/kg	0.0139 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<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		TPH (C6 to C40) petroleum group		TPH		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
16		naphthalene											
		601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
17		acenaphthylene											
			205-917-1	208-96-8		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
18		acenaphthene											
			201-469-6	83-32-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
19		fluorene											
			201-695-5	86-73-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
20		phenanthrene											
			201-581-5	85-01-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
21		anthracene											
			204-371-1	120-12-7		<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
22		fluoranthene											
			205-912-4	206-44-0		<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
23		pyrene											
			204-927-3	129-00-0		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
24		benzo[a]anthracene											
		601-033-00-9	200-280-6	56-55-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
25		chrysene											
		601-048-00-0	205-923-4	218-01-9		<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
26		benzo[b]fluoranthene											
		601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
27		benzo[k]fluoranthene											
		601-036-00-5	205-916-6	207-08-9		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
28		benzo[a]pyrene; benzo[def]chrysene											
		601-032-00-3	200-028-5	50-32-8		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
29		indeno[123-cd]pyrene											
			205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
30		dibenz[a,h]anthracene											
		601-041-00-2	200-181-8	53-70-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
31		benzo[ghi]perylene											
			205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
32		benzene											
		601-020-00-8	200-753-7	71-43-2		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
33		toluene											
		601-021-00-3	203-625-9	108-88-3		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
34		ethylbenzene											
		601-023-00-4	202-849-4	100-41-4		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
35		xylene											
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
36		monohydric phenols											
				P1186		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
										Total:	0.0399 %		

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: ATK_WS02-2

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

Sample details

Sample name:
ATK_WS02-2
Sample Depth:
0.5 m

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: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.16 pH		8.16 pH	8.16 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<LOD
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2 mg/kg	1.32	2.641 mg/kg	0.000264 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.5 mg/kg	1.142	<0.571 mg/kg	<0.0000571 %		<LOD
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		5 mg/kg	1.462	7.308 mg/kg	0.000731 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		6 mg/kg	1.126	6.755 mg/kg	0.000676 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17 mg/kg	1.353	<0.23 mg/kg	<0.000023 %		<LOD
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		8 mg/kg	2.976	23.81 mg/kg	0.00238 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	18 mg/kg	1.56	28.077 mg/kg	0.0018 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		6 mg/kg	1.785	10.711 mg/kg	0.00107 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		28 mg/kg	2.774	77.676 mg/kg	0.00777 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<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		TPH (C6 to C40) petroleum group		TPH		8	mg/kg		8	mg/kg	0.0008 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		2-methyl naphthalene	202-078-3	91-57-6		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
18		dibenzofuran	205-071-3	132-64-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
19		carbazole	201-696-0	86-74-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
20		naphthalene	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
21		acenaphthylene	205-917-1	208-96-8		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
22		acenaphthene	201-469-6	83-32-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
23		fluorene	201-695-5	86-73-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
24		phenanthrene	201-581-5	85-01-8		0.06	mg/kg		0.06	mg/kg	0.000006 %	✓	
25		anthracene	204-371-1	120-12-7		<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
26		fluoranthene	205-912-4	206-44-0		<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
27		pyrene	204-927-3	129-00-0		0.09	mg/kg		0.09	mg/kg	0.000009 %	✓	
28		benzo[a]anthracene	200-280-6	56-55-3		0.05	mg/kg		0.05	mg/kg	0.000005 %	✓	
29		chrysene	205-923-4	218-01-9		<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
30		benzo[b]fluoranthene	205-911-9	205-99-2		0.06	mg/kg		0.06	mg/kg	0.000006 %	✓	
31		benzo[k]fluoranthene	205-916-6	207-08-9		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
32		benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		0.05	mg/kg		0.05	mg/kg	0.000005 %	✓	
33		indeno[123-cd]pyrene	205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
34		dibenz[a,h]anthracene	200-181-8	53-70-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
35		benzo[ghi]perylene	205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
36		benzene	200-753-7	71-43-2		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
37		toluene	203-625-9	108-88-3		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
38		ethylbenzene	202-849-4	100-41-4		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
39		xylene	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]		<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
40		monohydric phenols		P1186		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
41		dichloromethane; methylene chloride	200-838-9	75-09-2		8	µg/kg		0.008	mg/kg	0.0000008 %	✓	
										Total:	0.0169 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0008%)

Classification of sample: ATK_WS04-101

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:	
ATK_WS04-101	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.3 m	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.: 12.24 pH)

Determinands

Moisture content: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		12.24	pH		12.24	pH	12.24 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1	mg/kg	5.719	<5.719	mg/kg	<0.000572 %		<**LOD**
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	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		<1	mg/kg	1.32	<1.32	mg/kg	<0.000132 %		<**LOD**
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.5	mg/kg	1.142	<0.571	mg/kg	<0.0000571 %		<**LOD**
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		9	mg/kg	1.462	13.154	mg/kg	0.00132 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		8	mg/kg	1.126	9.007	mg/kg	0.000901 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		1.06	mg/kg	1.353	1.435	mg/kg	0.000143 %	✓	
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		9	mg/kg	2.976	26.786	mg/kg	0.00268 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	10	mg/kg	1.56	15.598	mg/kg	0.001 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		6	mg/kg	1.785	10.711	mg/kg	0.00107 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		26	mg/kg	2.774	72.128	mg/kg	0.00721 %	✓	

#		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
14		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<**LOD**
15		TPH (C6 to C40) petroleum group			TPH		12	mg/kg		12	mg/kg	0.0012 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol					☑							
17		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
18		acenaphthylene		205-917-1	208-96-8		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
19		acenaphthene		201-469-6	83-32-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
20		fluorene		201-695-5	86-73-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
21		phenanthrene		201-581-5	85-01-8		0.06	mg/kg		0.06	mg/kg	0.000006 %	✓	
22		anthracene		204-371-1	120-12-7		<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<**LOD**
23		fluoranthene		205-912-4	206-44-0		<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
24		pyrene		204-927-3	129-00-0		0.09	mg/kg		0.09	mg/kg	0.000009 %	✓	
25		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
26		chrysene	601-048-00-0	205-923-4	218-01-9		0.06	mg/kg		0.06	mg/kg	0.000006 %	✓	
27		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.05	mg/kg		0.05	mg/kg	0.000005 %	✓	
28		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<**LOD**
29		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
30		indeno[123-cd]pyrene		205-893-2	193-39-5		0.03	mg/kg		0.03	mg/kg	0.000003 %	✓	
31		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
32		benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
33		benzene	601-020-00-8	200-753-7	71-43-2		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
34		toluene	601-021-00-3	203-625-9	108-88-3		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
35		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
36		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<20	µg/kg		<0.02	mg/kg	<0.000002 %		<**LOD**
37		monohydric phenols			P1186		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<**LOD**
											Total:	0.017 %		

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 because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0012%)

Classification of sample: ATK_WS01-101

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

Sample details

Sample name:
ATK_WS01-101
Sample Depth:
0.2 m

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: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		9.79 pH		9.79 pH	9.79 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<LOD
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		<1 mg/kg	1.32	<1.32 mg/kg	<0.000132 %		<LOD
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.5 mg/kg	1.142	<0.571 mg/kg	<0.0000571 %		<LOD
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		6 mg/kg	1.462	8.769 mg/kg	0.000877 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		4 mg/kg	1.126	4.504 mg/kg	0.00045 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17 mg/kg	1.353	<0.23 mg/kg	<0.000023 %		<LOD
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		8 mg/kg	2.976	23.81 mg/kg	0.00238 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	3 mg/kg	1.56	4.679 mg/kg	0.0003 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		4 mg/kg	1.785	7.141 mg/kg	0.000714 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		15 mg/kg	2.774	41.612 mg/kg	0.00416 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<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		TPH (C6 to C40) petroleum group		TPH		4	mg/kg		4	mg/kg	0.0004 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
18		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
19		acenaphthene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-469-6	83-32-9									
20		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
21		phenanthrene				0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
			201-581-5	85-01-8									
22		anthracene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
			204-371-1	120-12-7									
23		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
24		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
			204-927-3	129-00-0									
25		benzo[a]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
27		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
28		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
29		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
30		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
31		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
32		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
33		benzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
34		toluene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
35		ethylbenzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		xylene				<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		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]									
37		monohydric phenols				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
				P1186									
										Total:	0.0108 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0004%)

Classification of sample: ATK_CPT03-102

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

Sample details

Sample name:		LoW Code:	
ATK_CPT03-102		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.7 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Wet Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		pH			PH		9.08	pH		9.08	pH	9.08 pH		
2		boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1	mg/kg	5.719	<5.719	mg/kg	<0.000572 %		<**LOD**
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	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
4		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		4	mg/kg	1.32	5.281	mg/kg	0.000528 %	✓	
5		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.6	mg/kg	1.142	0.685	mg/kg	0.0000685 %	✓	
6		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		26	mg/kg	1.462	38	mg/kg	0.0038 %	✓	
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		22	mg/kg	1.126	24.77	mg/kg	0.00248 %	✓	
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.22	mg/kg	1.353	0.298	mg/kg	0.0000298 %	✓	
9		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		26	mg/kg	2.976	77.383	mg/kg	0.00774 %	✓	
10		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	23	mg/kg	1.56	35.876	mg/kg	0.0023 %	✓	
11		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
12		vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		24	mg/kg	1.785	42.844	mg/kg	0.00428 %	✓	
13		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		42	mg/kg	2.774	116.514	mg/kg	0.0117 %	✓	
14		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<**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		TPH (C6 to C40) petroleum group		TPH		10	mg/kg		10	mg/kg	0.001 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
18		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
19		acenaphthene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-469-6	83-32-9									
20		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
21		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
22		anthracene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
			204-371-1	120-12-7									
23		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
24		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
			204-927-3	129-00-0									
25		benzo[a]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
27		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
28		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
29		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
30		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
31		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
32		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
33		benzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
34		toluene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
35		ethylbenzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		xylene				<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		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]									
37		monohydric phenols				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
				P1186									
										Total:	0.0352 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.001%)

Classification of sample: ATK_TP04-1

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

Sample details

Sample name:
ATK_TP04-1
Sample Depth:
0.3 m

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: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		10.69 pH		10.69 pH	10.69 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<LOD
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		3 mg/kg	1.32	3.961 mg/kg	0.000396 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.5 mg/kg	1.142	0.571 mg/kg	0.0000571 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		18 mg/kg	1.462	26.308 mg/kg	0.00263 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		16 mg/kg	1.126	18.014 mg/kg	0.0018 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.37 mg/kg	1.353	0.501 mg/kg	0.0000501 %	✓	
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		21 mg/kg	2.976	62.502 mg/kg	0.00625 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	12 mg/kg	1.56	18.718 mg/kg	0.0012 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		14 mg/kg	1.785	24.993 mg/kg	0.0025 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		39 mg/kg	2.774	108.192 mg/kg	0.0108 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<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		TPH (C6 to C40) petroleum group		TPH		67	mg/kg		67	mg/kg	0.0067 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		2-methyl naphthalene	202-078-3	91-57-6		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
18		dibenzofuran	205-071-3	132-64-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
19		carbazole	201-696-0	86-74-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
20		naphthalene	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
21		acenaphthylene	205-917-1	208-96-8		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
22		acenaphthene	201-469-6	83-32-9		0.01	mg/kg		0.01	mg/kg	0.000001 %	✓	
23		fluorene	201-695-5	86-73-7		0.01	mg/kg		0.01	mg/kg	0.000001 %	✓	
24		phenanthrene	201-581-5	85-01-8		0.13	mg/kg		0.13	mg/kg	0.000013 %	✓	
25		anthracene	204-371-1	120-12-7		0.03	mg/kg		0.03	mg/kg	0.000003 %	✓	
26		fluoranthene	205-912-4	206-44-0		0.17	mg/kg		0.17	mg/kg	0.000017 %	✓	
27		pyrene	204-927-3	129-00-0		0.15	mg/kg		0.15	mg/kg	0.000015 %	✓	
28		benzo[a]anthracene	200-280-6	56-55-3		0.08	mg/kg		0.08	mg/kg	0.000008 %	✓	
29		chrysene	205-923-4	218-01-9		0.1	mg/kg		0.1	mg/kg	0.00001 %	✓	
30		benzo[b]fluoranthene	205-911-9	205-99-2		0.11	mg/kg		0.11	mg/kg	0.000011 %	✓	
31		benzo[k]fluoranthene	205-916-6	207-08-9		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
32		benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		0.08	mg/kg		0.08	mg/kg	0.000008 %	✓	
33		indeno[123-cd]pyrene	205-893-2	193-39-5		0.05	mg/kg		0.05	mg/kg	0.000005 %	✓	
34		dibenz[a,h]anthracene	200-181-8	53-70-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
35		benzo[ghi]perylene	205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
36		benzene	200-753-7	71-43-2		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
37		toluene	203-625-9	108-88-3		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
38		ethylbenzene	202-849-4	100-41-4		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
39		xylene	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]		<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
40		monohydric phenols		P1186		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
41		dichloromethane; methylene chloride	200-838-9	75-09-2		<5	µg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
										Total:	0.0338 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0067%)

Classification of sample: ATK_BH12-

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

Sample details

Sample name:		LoW Code:	
ATK_BH12-		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.5 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		7.25	pH		7.25	pH	7.25 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1	mg/kg	5.719	<5.719	mg/kg	<0.000572 %		<**LOD**
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	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6	mg/kg	1.32	7.922	mg/kg	0.000792 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1	mg/kg	1.142	1.142	mg/kg	0.000114 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		36	mg/kg	1.462	52.616	mg/kg	0.00526 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		28	mg/kg	1.126	31.525	mg/kg	0.00315 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		40	mg/kg	2.976	119.051	mg/kg	0.0119 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	19	mg/kg	1.56	29.636	mg/kg	0.0019 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		38	mg/kg	1.785	67.837	mg/kg	0.00678 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		61	mg/kg	2.774	169.223	mg/kg	0.0169 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<**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		TPH (C6 to C40) petroleum group		TPH		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
16		naphthalene											
		601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
17		acenaphthylene											
			205-917-1	208-96-8		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
18		acenaphthene											
			201-469-6	83-32-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
19		fluorene											
			201-695-5	86-73-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
20		phenanthrene											
			201-581-5	85-01-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
21		anthracene											
			204-371-1	120-12-7		<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
22		fluoranthene											
			205-912-4	206-44-0		<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
23		pyrene											
			204-927-3	129-00-0		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
24		benzo[a]anthracene											
		601-033-00-9	200-280-6	56-55-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
25		chrysene											
		601-048-00-0	205-923-4	218-01-9		<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
26		benzo[b]fluoranthene											
		601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
27		benzo[k]fluoranthene											
		601-036-00-5	205-916-6	207-08-9		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
28		benzo[a]pyrene; benzo[def]chrysene											
		601-032-00-3	200-028-5	50-32-8		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
29		indeno[123-cd]pyrene											
			205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
30		dibenz[a,h]anthracene											
		601-041-00-2	200-181-8	53-70-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
31		benzo[ghi]perylene											
			205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
32		benzene											
		601-020-00-8	200-753-7	71-43-2		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
33		toluene											
		601-021-00-3	203-625-9	108-88-3		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
34		ethylbenzene											
		601-023-00-4	202-849-4	100-41-4		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
35		xylene											
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
36		monohydric phenols											
				P1186		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
										Total:	0.0483 %		

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: ATK-TP03-103

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

Sample details

Sample name:	LoW Code:	
ATK-TP03-103	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
1 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		7.87 pH		7.87 pH	7.87 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<**LOD**
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		9 mg/kg	1.32	11.883 mg/kg	0.00119 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.7 mg/kg	1.142	0.8 mg/kg	0.00008 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		20 mg/kg	1.462	29.231 mg/kg	0.00292 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		75 mg/kg	1.126	84.442 mg/kg	0.00844 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.54 mg/kg	1.353	0.731 mg/kg	0.0000731 %	✓	
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		27 mg/kg	2.976	80.359 mg/kg	0.00804 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	78 mg/kg	1.56	121.666 mg/kg	0.0078 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		24 mg/kg	1.785	42.844 mg/kg	0.00428 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		74 mg/kg	2.774	205.287 mg/kg	0.0205 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**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		TPH (C6 to C40) petroleum group		TPH		13	mg/kg		13	mg/kg	0.0013 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		2-methyl naphthalene	202-078-3	91-57-6		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
18		dibenzofuran	205-071-3	132-64-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
19		carbazole	201-696-0	86-74-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
20		naphthalene	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2											
21		acenaphthylene	205-917-1	208-96-8		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
22		acenaphthene	201-469-6	83-32-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
23		fluorene	201-695-5	86-73-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
24		phenanthrene	201-581-5	85-01-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
25		anthracene	204-371-1	120-12-7		<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
26		fluoranthene	205-912-4	206-44-0		<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
27		pyrene	204-927-3	129-00-0		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
28		benzo[a]anthracene	200-280-6	56-55-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-033-00-9											
29		chrysene	205-923-4	218-01-9		<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-048-00-0											
30		benzo[b]fluoranthene	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4											
31		benzo[k]fluoranthene	205-916-6	207-08-9		<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
		601-036-00-5											
32		benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3											
33		indeno[123-cd]pyrene	205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
34		dibenz[a,h]anthracene	200-181-8	53-70-3		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2											
35		benzo[ghi]perylene	205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
36		benzene	200-753-7	71-43-2		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8											
37		toluene	203-625-9	108-88-3		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3											
38		ethylbenzene	202-849-4	100-41-4		<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4											
39		xylene	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]		<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-022-00-9											
40		monohydric phenols		P1186		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
41		dichloromethane; methylene chloride	200-838-9	75-09-2		<5	µg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		602-004-00-3											
										Total:	0.056 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0013%)

Classification of sample: ATK_TP06-101

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

Sample details

Sample name:
ATK_TP06-101
Sample Depth:
0.25 m

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: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		9.58 pH		9.58 pH	9.58 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<**LOD**
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		<1 mg/kg	1.32	<1.32 mg/kg	<0.000132 %		<**LOD**
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.7 mg/kg	1.142	0.8 mg/kg	0.00008 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		30 mg/kg	1.462	43.847 mg/kg	0.00438 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		15 mg/kg	1.126	16.888 mg/kg	0.00169 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17 mg/kg	1.353	<0.23 mg/kg	<0.000023 %		<**LOD**
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		30 mg/kg	2.976	89.288 mg/kg	0.00893 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	10 mg/kg	1.56	15.598 mg/kg	0.001 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		22 mg/kg	1.785	39.274 mg/kg	0.00393 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		56 mg/kg	2.774	155.352 mg/kg	0.0155 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**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		TPH (C6 to C40) petroleum group		TPH		21	mg/kg		21	mg/kg	0.0021 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
18		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
19		acenaphthene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-469-6	83-32-9									
20		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
21		phenanthrene				0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
			201-581-5	85-01-8									
22		anthracene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
			204-371-1	120-12-7									
23		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
24		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
			204-927-3	129-00-0									
25		benzo[a]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
27		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
28		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
29		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
30		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
31		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
32		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
33		benzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
34		toluene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
35		ethylbenzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		xylene				<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		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]									
37		monohydric phenols				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
				P1186									
										Total:	0.0391 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0021%)

Classification of sample: ATK BH02a-104

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

Sample details

Sample name:		LoW Code:	
ATK BH02a-104		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
1.2 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.56	pH		8.56	pH	8.56 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		1.6	mg/kg	5.719	9.151	mg/kg	0.000915 %	✓	
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	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6	mg/kg	1.32	7.922	mg/kg	0.000792 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.5	mg/kg	1.142	0.571	mg/kg	0.0000571 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		23	mg/kg	1.462	33.616	mg/kg	0.00336 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		44	mg/kg	1.126	49.539	mg/kg	0.00495 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17	mg/kg	1.353	<0.23	mg/kg	<0.000023 %		<**LOD**
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		23	mg/kg	2.976	68.454	mg/kg	0.00685 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	39	mg/kg	1.56	60.833	mg/kg	0.0039 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		27	mg/kg	1.785	48.2	mg/kg	0.00482 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		45	mg/kg	2.774	124.837	mg/kg	0.0125 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<**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		TPH (C6 to C40) petroleum group		TPH		10	mg/kg		10	mg/kg	0.001 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
18		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
19		acenaphthene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-469-6	83-32-9									
20		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
21		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
22		anthracene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
			204-371-1	120-12-7									
23		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
24		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
			204-927-3	129-00-0									
25		benzo[a]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
27		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
28		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
29		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
30		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
31		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
32		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
33		benzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
34		toluene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
35		ethylbenzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		xylene				<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		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]									
37		monohydric phenols				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
				P1186									
										Total:	0.0399 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.001%)

Classification of sample: ATK_CPT07-102

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

Sample details

Sample name:
ATK_CPT07-102
Sample Depth:
0.6 m

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: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.24 pH		8.24 pH	8.24 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<**LOD**
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		3 mg/kg	1.32	3.961 mg/kg	0.000396 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.7 mg/kg	1.142	0.8 mg/kg	0.00008 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		29 mg/kg	1.462	42.385 mg/kg	0.00424 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		22 mg/kg	1.126	24.77 mg/kg	0.00248 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.49 mg/kg	1.353	0.663 mg/kg	0.0000663 %	✓	
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		34 mg/kg	2.976	101.193 mg/kg	0.0101 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	10 mg/kg	1.56	15.598 mg/kg	0.001 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		30 mg/kg	1.785	53.556 mg/kg	0.00536 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		56 mg/kg	2.774	155.352 mg/kg	0.0155 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**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		TPH (C6 to C40) petroleum group		TPH		2	mg/kg		2	mg/kg	0.0002 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
18		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
19		acenaphthene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-469-6	83-32-9									
20		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
21		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
22		anthracene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
			204-371-1	120-12-7									
23		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
24		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
			204-927-3	129-00-0									
25		benzo[a]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
27		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
28		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
29		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
30		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
31		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
32		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
33		benzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
34		toluene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
35		ethylbenzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		xylene				<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		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]									
37		monohydric phenols				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
				P1186									
										Total:	0.0408 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0002%)

Classification of sample: ATK_HDP01-101

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

Sample details

Sample name:	LoW Code:	
ATK_HDP01-101	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.4 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Wet Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.1 pH		8.1 pH	8.1 pH		
2	boron { boric acid; [1] boric acid [2] }	005-007-00-2	233-139-2 [1] 234-343-4 [2]	10043-35-3 [1] 11113-50-1 [2]		<1 mg/kg	5.719	<5.719 mg/kg	<0.000572 %		<**LOD**
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 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		4 mg/kg	1.32	5.281 mg/kg	0.000528 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.7 mg/kg	1.142	0.8 mg/kg	0.00008 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		29 mg/kg	1.462	42.385 mg/kg	0.00424 %	✓	
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		19 mg/kg	1.126	21.392 mg/kg	0.00214 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.17 mg/kg	1.353	<0.23 mg/kg	<0.000023 %		<**LOD**
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		41 mg/kg	2.976	122.027 mg/kg	0.0122 %	✓	
10	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	13 mg/kg	1.56	20.278 mg/kg	0.0013 %	✓	
11	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
12	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1		28 mg/kg	1.785	49.985 mg/kg	0.005 %	✓	
13	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		51 mg/kg	2.774	141.481 mg/kg	0.0141 %	✓	
14	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }	024-017-00-8				<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<**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		TPH (C6 to C40) petroleum group		TPH		1	mg/kg		1	mg/kg	0.0001 %	✓	
16		confirm TPH has NOT arisen from diesel or petrol				☑							
17		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
18		acenaphthylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			205-917-1	208-96-8									
19		acenaphthene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-469-6	83-32-9									
20		fluorene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
			201-695-5	86-73-7									
21		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
22		anthracene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
			204-371-1	120-12-7									
23		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<LOD
			205-912-4	206-44-0									
24		pyrene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
			204-927-3	129-00-0									
25		benzo[a]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
26		chrysene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
27		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
28		benzo[k]fluoranthene				<0.07	mg/kg		<0.07	mg/kg	<0.000007 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
29		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
30		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
31		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
32		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
33		benzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
34		toluene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
35		ethylbenzene				<10	µg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		xylene				<20	µg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		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]									
37		monohydric phenols				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
				P1186									
										Total:	0.0411 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Hydrocarbons in soils - not likely to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0001%)

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

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

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

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

confirm TPH has NOT arisen from diesel or petrol

Description/Comments: Chapter 3, section 4b requires a positive confirmation for benzo[a]pyrene to be used as a marker in evaluating Carc. 1B; H350 (HP 7) and Muta. 1B; H340 (HP 11)
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

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

monohydric phenols (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)
Data source: CLP combined data
Data source date: 26 Mar 2019
Hazard Statements: Muta. 2; H341 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301 , STOT RE 2; H373 , Skin Corr. 1B; H314 , Skin Corr. 1B; H314 >= 3 % , Skin Irrit. 2; H315 1 £ conc. < 3 % , Eye Irrit. 2; H319 1 £ conc. < 3 % , Aquatic Chronic 2; H411

2-methyl naphthalene (EC Number: 202-078-3, CAS Number: 91-57-6)

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 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , STOT SE 3; H336 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

boron {boric acid; [1] boric acid [2]}

Reasonable worst-case compound based on reactivity.

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

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

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic.

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. 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 (edit as required)

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Worse case copper compounds largely soluble and likely to have been leached away if ever present.

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 {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight

vanadium {divanadium pentaoxide; vanadium pentoxide}

Worst case species

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight

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

Worst case species based on hazard statements/molecular weight

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2023.237.5731.10565 (25 Aug 2023)
HazWasteOnline Database: 2023.237.5731.10565 (25 Aug 2023)

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

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