GEOENVIRONMENTAL GROUND INVESTIGATION

Park Spring Road
Grimethorpe

Reference	**5161-JPG-XX-XX-RP-G-0603-S2-P01**
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JPG (Leeds) Ltd. Park Spring Road, Grimethorpe. As Built Exploratory Hole Location Plan. Dwg. 5161-JPG-SW-XX-DR-G-1104-S2-P01. Dated 20.03.20, last revised 24.06.20.

JPG (Leeds) Ltd. Ashes Phase 3, Park Spring Road, Grimethorpe. Conceptual Ground Model, Geological Sections. Dwg. 5161-JPG-SW-XX-DR-G-0011-S2-P03. Dated April 20, last revised 24.06.20.

Garnett Netherwood Architects (GNA). Ashes Phase 3. Site General Arrangement (GA) Plan As Proposed. Project No. 1711. Drawing Number (20) 001. Dated 09.01.2020. Revision D (26.05.2020). For The Symphony Group PLC.

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CONFIDENTIALITY STATEMENT

This report is addressed to and may be relied upon by the following:

The Symphony Group PLC
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This report has been prepared for the sole use and reliance of the above-named parties. This report shall not be relied upon or transferred to any other parties without the express written authorisation of JPG (Leeds) Limited. No responsibility will be accepted where this report is used, either in its entirety or in part, by any other party.

DOCUMENT HISTORY

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P01	11.08.2020	First Issue	Information	JBW	RJM

EXECUTIVE SUMMARY

Site Address	**Park Spring Road, Grimethorpe**
NGR	Approximate NGR 440250, 408540.
Current Site Use & Proposed Development	The site has an area of approximately 7.2 hectares and comprises a roughly rectangular-shaped parcel of land located to the north of the existing Symphony industrial development and to the west of Ferrymoor Way. At the time of the site works the site comprised undeveloped scrubland. The site generally slopes gently downwards from west to east with ground levels of approximately 42m AOD near the western boundary and 39m AOD near the eastern boundary. The ground surface is typically slightly undulating and uneven. Raised earth bunds approximately 1m high are present along the north-eastern boundary, adjacent to Ferrymoor Way, and along the south-eastern boundary with the existing industrial complex. It is proposed to develop the site for an industrial end use, comprising one large factory, access routes, lorry/container parking, car parking, box parking, and peripheral areas of landscaping.
Previous Reports	A desk study report and coal mining risk assessment for the site were prepared by JPG in November 2019. These reports include a summary of potential geotechnical, including mining, and environmental constraints and should be read in conjunction with this report.
Fieldwork	Fieldwork comprised the drilling of 13 rotary open hole boreholes, six rotary-cored boreholes, seven cable percussive boreholes and the excavation of 24 trial pits. Samples of soil were obtained and submitted for chemical and geotechnical analysis. Gas and groundwater monitoring wells were installed in selected boreholes. The installations have been monitored for gas/groundwater on six occasions.
Ground and Groundwater Conditions	Made ground was encountered in all exploratory holes and was found to extend to depths of between 0.40m and 8.80m (mean approximately 3.00m), where proven. The made ground was proven to be deepest in the south east within the area of recorded opencast backfill, and shallowest in the south outwith the backfilled opencast. The made ground was found to be underlain locally by natural clay (completely weathered bedrock) or mudstone bedrock. The natural clay soils were found to typically consist of stiff, gravelly clay, with the gravel content generally consisting of mudstone. The clay was found to extend deepest in the south east, in which mudstone bedrock was proven at 7.30m depth. Bedrock strata included mudstone, siltstone, sandstone and coal seams, representative of the Pennine Middle Coal Measures. Groundwater was encountered in trial pits as seepages at depths of between 1.10m and 3.80m. Groundwater strikes were recorded in boreholes at depths of between 2.00m and 7.90m.
Coal Mining	Based on the coal mining risk assessment carried out for the site, mitigation with regard to past opencast coal mining on the site is required. This will comprise either ground improvement and/or use an alternative foundation solution, e.g. piles. No mitigation with regard to past underground coal workings is required. There are no known mine entries on the site.
Geotechnical and Engineering Assessment	**Foundations and Ground Floor Construction** – Foundations should extend into underlying bedrock strata of suitable allowable bearing capacity. Based on the thickness of made ground it will not be feasible to adopt a shallow foundation solution, such as pad or strip foundations for the superstructure. Therefore, it will be necessary to utilise a piled foundation solution. The bearing capacity of piles depends on their size, the ground conditions and also on their method of installation. Pile design and installation is an evolving process for contractors. It is recommended that specialist piling contractors are consulted as to the suitability and bearing capacity in relation to the proven ground conditions on the site. Alternatively, ground improvement could be used to provide a suitable bearing capacity for the proposed development. Should ground improvement be considered, vibro may not be practical due to the presence of boulders. Appropriate ground improvement methods include the use of High Energy Impact Compaction (HEIC)/Rapid Impact Compaction (RIC) for foundation loading and Rolling Dynamic Compaction (RDC) for external areas. HEIC/RIC can treat up to approximately 9m of made ground, therefore the full thickness of made ground below the foundation could be treated this way. This ground improvement technique would allow the use of ground bearing slabs and pad foundations. **Earthworks** - It is proposed to carry out cut and fill earthworks to create a suitable development platform on the site. Based on the laboratory results, the colliery spoil may be too wet to be incorporated in the earthworks unless it is dried/treated. Proper selection and control will be required as part of the works in order to use the materials on the site. The material should not be allowed to deteriorate during excavation and compaction and must be sufficiently protected from traffic after placement. Following compaction of the underlying made ground by RDC/RIC, it may be necessary to import stone to bring up the site to the desired levels. Any earthworks should be carried out in accordance with the Manual of Contract Documents for Highway Works, Volume 1 Specification for Highway Works, Series 600 Earthworks. **Control of Groundwater** - During the recent JPG ground investigation groundwater was encountered in trial pits as seepages at depths of between 1.10m and 3.80m. Groundwater strikes were recorded in

	boreholes at depths of between 2.00m and 7.90m. Reference should be made to guidance given in the Manual of Contract Documents for Highway Works, Volume 1: Specification for Highway Works, Series 600 Earthworks. **Roads, Pavements and Hardstanding Surfaces** – Access roads and vehicular parking is to be constructed as part of the development. Laboratory CBR testing has recorded average CBR values of between 0.8% and 3.8% for light compaction (2.5kg rammer) and 10.5% (4.5kg rammer). Generally, where the CBR is <2.5% ground improvement is required. It is proposed that ground improvement for external areas will consist of rolling dynamic compaction. Following this treatment, a blanket of granular fill is to be installed. Pavement design will be dependent on the CBR values which can be achieved at formation level. Following the ground improvement outlined above, it is likely that a CBR of 5% can be achieved. **Excavations** - It is considered likely that if excavations were left unsupported then over time, some collapse would occur. Good working practice with respect to drainage of excavations and formations will be required to protect materials. Any excavation for structural foundations must be covered without delay with blinding concrete to prevent softening by water. The requirement for temporary support of excavations should be assessed on an individual basis and, in any case, excavations of greater than 1.2m depth requiring man entry will require temporary support in accordance with HSE guidance. Alternatively, the sides of the excavation will need to be battered back for the safety of operatives. Guidance on safe batter slopes can be obtained from CIRIA Report 97 Trenching Practice. **Obstructions** – It is noted that the colliery spoil materials contain cobbles and boulders. An allowance for excavation and processing of over-sized materials for re-use on site should be made. **Chemical Attack on Buried Concrete** - It is recommended that concrete should be designed to Aggressive Chemical Environment for Concrete (ACEC) Design Sulphate Class DS-1 and ACEC Class AC-1.
Environmental Risk Assessment	Based on the identified potential sources of contamination and available pathways and receptors, the following linkage assessments have been considered. This assessment is based on current site conditions and does not consider exposure pathways following any remediation of the site. **Sources** – The following potential sources of contamination are considered to be present on the site: • Slightly elevated concentrations of potentially leachable PAH species (including fluoranthene). • Hazardous ground gases (carbon dioxide). **Mitigation Measures** – In order to mitigate the risk posed by the potential contaminants which are present on the site, consideration should be given to the following mitigation measures. **Development and Maintenance Workers** • Site workers involved in groundworks should take the necessary measures to ensure that all works in excavations and confined spaces are carried out in accordance with best practice in order to prevent exposure to potentially hazardous gases. • Site workers involved in groundworks should use appropriate PPE, i.e. overalls and gloves. Appropriate health and safety measures, e.g. washing hands prior to eating or drinking, should also be enforced. • During development of the site, all workers should remain vigilant to the possible risk of encountering areas of potentially contaminated material. Should potentially contaminated material be encountered, site management should be informed. Further testing may then be required to assess the risk to health and safety of the site workers and the environment. • All employers involved in works at the site should produce an appropriate method statement and risk assessment, to which all employees should comply, e.g. working in confined spaces. Reference should also be made to the appropriate HSE and other guidance for working on contaminated and potentially contaminated sites. **Future Site Users** • It is recommended that a sufficient thickness of topsoil and subsoil is placed in future landscaped areas. Chemical test results indicate that the existing topsoil (present in earth bunds along the boundaries) is suitable for re-use on the site. Any imported or site-sourced material will need to be tested to confirm its suitability for use. In addition, any topsoil and subsoil which is to be used on site should not contain any manmade debris, e.g. brick, concrete or metal. • Ground gas protection measures to achieve Characteristic Situation (CS) 2 are required for new buildings constructed on the site. This will include the requirement for validation of the ground gas protection barrier.
Waste Classification	In total 20 samples were assessed using HazWasteOnline in order to determine the classification of the materials for disposal off-site. Based on the results of the chemical analysis, all the samples can be classified as non-hazardous.
Hazardous Gas	**Ground Gas Risk** – In accordance with BS8485:2015, the site is classified as Characteristic Situation (CS) 2 due to concentrations of carbon dioxide of >5% v/v. **Radon Risk** –No radon protective measures are required.
This sheet is intended as a summary only of the assessment of the site in relation to ground condition. It does not provide a definitive engineering analysis.	

1.0 INTRODUCTION

1.1 Instruction

JPG (Leeds) Limited has been instructed by The Symphony Group PLC to carry out a geoenvironmental ground investigation for a proposed industrial development at Park Spring Road, Grimethorpe. The site is located adjacent to an existing Symphony Group industrial complex.

1.2 Objectives

The objective of the geotechnical ground investigation was to identify potential geotechnical and environmental issues that may represent constraints to the proposed development of the site.

1.3 Scope of Works

The scope of the investigation was set out in proposals during December 2019 and included the following works:

- Rotary open hole boreholes within the backfilled opencast materials in order to confirm the depth to competent bedrock.
- Rotary open hole boreholes drilled outside the boundaries of the opencast and below the base of the opencast to investigate the extent of any possible shallow underground coal workings.
- Trial pitting across the site, in order to obtain samples for geotechnical and chemical testing, to assess the shallow ground conditions at the site and to confirm the composition, extent, depth and nature of any made ground and the underlying natural strata.
- Geotechnical testing of soil samples.
- Groundwater and gas monitoring of standpipes installed in boreholes.
- A qualitative (Tier 2) screening assessment using source-pathway-receptor linkages.
- Assessment of the classification of materials for disposal off-site.
- An assessment of the suitability of the natural strata and made ground for re-use in earthworks.
- Engineering assessment to include recommendations with respect to earthworks and potential foundations, ground floor and pavement design.
- Comments on the likely requirements for any remedial measures which may be required, to address potential contamination or ground gas issues.
- Recommendations for further work (if required).

1.4 Location

The site is located approximately 6km to the north east of Barnsley town centre. The approximate centre of the site is located at NGR 440250, 408540.

A site location plan is presented as Figure 1 in Appendix A.

1.5 Site Description and Topography

The site has an area of approximately 7.2 hectares and comprises a roughly rectangular-shaped parcel of land located to the north of the existing Symphony industrial development and to the west of Ferrymoor Way.

At the time of the site works the site comprised undeveloped scrubland.

The site generally slopes gently downwards from west to east with ground levels of approximately 42m AOD near the western boundary and 39m AOD near the eastern boundary. The ground surface is typically slightly undulating and uneven. Raised earth bunds approximately 1m high are present along the north-eastern boundary, adjacent to Ferrymoor Way, and along the south-eastern boundary with the existing industrial complex. At the time of the site works, there were several areas of standing water generally in the east corresponding to the lower parts of the site.

Evidence of existing or former utilities/services (manholes and a gasline marker) were noted on the earth bund near the south-eastern boundary.

The northern and western site boundaries are generally formed by steel palisade fencing with hedging beyond. The other boundaries are open. Two propane above ground storage tanks and a packaging recycling facility are present on the south-eastern boundary.

Adjacent land use includes undeveloped land to the north and east with an additional area of container parking to the north east of Ferrymoor Way. Landscaping is present to the north west and west of the site, and the existing Symphony industrial complex is present to the south east.

An aerial photograph of the site is provided as Figure 2 in Appendix A.

1.6 Development Proposals

It is proposed to develop the site for an industrial end use, comprising one large factory, access routes, lorry/container parking, car parking, and peripheral areas of landscaping. As part of the development, retaining walls are proposed in the west.

A drawing of the proposed development has been provided, which is referenced below, and a copy is contained in Appendix A.

- Garnett Netherwood Architects (GNA). Ashes Phase 3. Site General Arrangement (GA) Plan As Proposed. Project No. 1711. Drawing Number (20) 001. Dated 09.01.2020. Revision D (26.05.2020). For the Symphony Group PLC.

1.7 Previous Reports

A desk study report and coal mining risk assessment for the site have been prepared by JPG; these are referenced below.

- JPG (Leeds) Limited. Geoenvironmental Desk Study Report. Park Spring Road, Grimethorpe. Report Ref. 5161-JPG-SW-XX00-RP-G-1100-P01. Dated November 2019. For Symphony Group PLC.
- JPG (Leeds) Limited. Coal Mining Risk Assessment and Coal Recovery Report. Park Spring Road, Grimethorpe. Report Ref. 5161-JPG-SW-XX00-RP-G-1101-P01. Dated November 2019. For Symphony Group PLC.

The aforementioned desk study report and coal mining risk assessment include a summary of potential geotechnical, including mining, and environmental constraints and should be read in conjunction with this report.

1.8 Limitations

The general limitations to the nature of the investigation are outlined in Appendix G.

2.0 FIELDWORK

The intrusive investigation was designed to provide an assessment of the properties of the opencast backfill, potential underground coal workings, and the general ground, groundwater, and hazardous gas conditions at the site.

The rationale behind each exploratory location is summarised in Table 2.0 below.

Table 2.0 – Exploratory Hole Rationale

Potential Issue	Exploratory Holes
Exploratory holes targeted at backfilled opencast in south and associated highwalls. Combined gas/groundwater monitoring wells were installed in selected boreholes.	RO106, RO107, RO108, RO/RC109, RO110, RO111, RO112, RO/RC113. BH105 to BH107. TP114, TP115, TP119, TP120, TP123, TP124, TP125, TP126, TP127, TP128, TP129.
Information on potential underground coal workings outwith the opencast. Combined gas/groundwater monitoring wells were installed in selected boreholes.	RO101, RO102, RO103, RO/RC104, RO/RC105. RO101, R0102, R0103, RO106, RO109, RO110, RO113.
Rotary borehole drilled on the line of the deep adit to confirm that adit is not present at shallow depth.	RO/RC113.
Trial pits to obtain general site coverage.	TP101 to TP114, TP116 to TP119.
Cable percussive boreholes targeting the footprint of the proposed building.	BH101 to BH107 inclusive.
Cone Penetration Tests (CPTs) to obtain geotechnical parameters of the natural and made ground soils across the site.	CPT101 to CPT128 inclusive.
Trial pits and CPTs undertaken on soil bunds on north-eastern and south-eastern boundaries.	TP104, TP109, TP115, TP121, TP126, TP129, TP128. CPT106, CPT115, CPT123.

2.1 Fieldwork

The fieldwork was carried out from 3 to 27 February 2020. The works undertaken are summarised in Table 2.1 below.

Table 2.1 – Summary of Ground Investigation Works

Investigation Method	No of Positions	Maximum Depth (m bgl)	Monitoring Wells	Monitoring
Trial Pits	24	4.00	-	-
Rotary Open Hole Boreholes	13	37.00	7 x 50 mm.	GG, WL.
Cable Percussive Boreholes	7	9.10	7 x 50 mm.	GG, WL.
Cone Penetrometer Testing (CPT)	28	5.78	-	-

bgl – below ground level
GG – ground gas monitoring (methane, carbon dioxide, oxygen, hydrogen sulphide, gas flow and atmospheric pressure using a portable gas meter).
WL – standing groundwater level using an electric contact dip meter.

The ground investigation has been undertaken in general accordance with the techniques outlined in BS5930:2015 Code of Practice for Site Investigations. An exploratory hole location plan is contained in Appendix A and exploratory hole records are presented in Appendix B. The investigation was carried out under the full-time supervision of an engineer from JPG.

In-situ standard penetration tests (SPTs) were performed in the cable percussive boreholes. The results are included on the exploratory hole logs provided in Appendix B.

The results of the Cone Penetrometer Tests (CPTs) are presented in Appendix C.

2.2 Surveying

The exploratory locations were set out using a hand-held GPS unit. As-built locations were surveyed using a Leica GPS unit.

3.0 LABORATORY TESTING

3.1 Chemical Analysis

Samples obtained from the site were submitted for chemical analysis. The chemical analysis was designed to:

- Confirm that any existing topsoil is suitable for re-use on the site, i.e. within soft landscaping.
- Assess the concentrations of potential contaminants within any made ground on the site, including the colliery spoil made ground.
- Provide information on the solubility of potential contaminants and therefore the potential for impact on controlled waters.

In addition, selected samples of made ground and near surface natural soils were submitted for analysis for classification for disposal off-site.

Chemical testing was carried out for the following determinands by Derwentside Environmental Testing Services Limited (DETS) in County Durham. Chemical analysis certificates are presented in Appendix E.

Soils – General
Selected samples of soil were tested for the following contaminants on a total concentration basis:

Arsenic	Mercury	Copper
Cadmium	Lead	Nickel
Chromium	Zinc	Selenium
Cyanide (free)	Phenol	

Speciated Poly Aromatic Hydrocarbons (PAH)
Soil Organic Matter
Sulphate (water soluble) and pH
Asbestos Screen

In addition, selected samples were submitted for the following analysis:

- Hexavalent chromium, total chloride, total sulphate, total sulphide and ammoniacal nitrogen.

Samples of soil leachate were tested for the following contaminants:

Arsenic	Mercury	Copper
Cadmium	Lead	Nickel
Chromium	Zinc	Selenium
Cyanide (free)	Phenol	

Speciated Poly Aromatic Hydrocarbons (PAH)
Sulphate and pH

In addition, calorific value (CV) testing was carried out on samples of the colliery spoil in order to assess the potential for combustion.

3.2 Geotechnical Testing

In-situ standard penetration tests (SPT) were performed within the rotary boreholes. The results are presented on the exploratory hole records provided in Appendix B.

Laboratory geotechnical testing was carried out by Professional Soils Laboratory in Doncaster, in order to determine the physical characteristics of the substrata and comprised the following:

- Moisture content, Atterberg limits and particle size distributions (PSDs)/sedimentations to confirm the field descriptions of the soils encountered.
- Compaction tests (2.5kg and 4.5kg rammer) and particle density to determine the compaction properties of the soils.
- California Bearing Ratio (CBR) test (2.5kg and 4.5kg rammer) to determine the bearing characteristics of the proposed fill material.
- Consolidation testing to determine the settlement characteristics of the natural and made ground soils.
- Quick undrained triaxial tests to determine the undrained shear strength of the natural and made ground soils.
- pH, 2:1 water soluble sulphate, acid soluble sulphate and total sulphur.
- Organic content.

The geotechnical testing was carried out in accordance with BS 1377:1990, "Methods of Test for Soils for Civil Engineering Purposes". The results of the geotechnical testing are contained in Appendix D.

4.0 GROUND AND GROUNDWATER CONDITIONS

4.1 Introduction

The ground conditions encountered during the investigation were consistent with the anticipated sequence of strata indicated by the desk study information including geological mapping.

4.2 Ground Conditions

Made ground was encountered in all exploratory holes and was found to extend to depths of between 0.40m and 8.80m (mean approximately 3.00m), where proven. The made ground was proven to be deepest in the south east (RO/RC109), within the area of recorded opencast backfill, and shallowest in the south (RO113), outwith the backfilled opencast.

The made ground was generally found to comprise the following types:

- **Reworked (Made Ground) Topsoil:** Brown, sandy, gravelly clay in which the gravel included sandstone, mudstone, brick, and flint with occasional brick. This made ground was encountered in the earth bund in the south east only and not below the main plateau of the site.
- **Cohesive Colliery Spoil:** Generally firm and stiff, dark brown and grey, slightly sandy, gravelly clay with the gravel content including predominantly mudstone, siltstone, and sandstone, with rare brick fragments. This material was encountered across the site including outside the footprint of the recorded former opencast, suggesting it had been used in the subsequent restoration of the wider site area following the coal extraction.
- **Granular Colliery Spoil:** Grey, sandy, clayey gravel of generally mudstone and siltstone, encountered sporadically across the site, both over and within the aforementioned cohesive colliery spoil.
- **Coarse Colliery Spoil:** Cobbles and boulders of typically mudstone and siltstone were generally encountered in the south of the site, in the area of the former opencast coal site.

The made ground was found to be underlain locally by natural clay (completely weathered bedrock) or mudstone bedrock. The natural clay soils were found to typically consist of stiff, gravelly clay, with the gravel content generally consisting of mudstone. The clay was found to extend deepest in the south east (BH106), in which mudstone bedrock was proven at 7.30m depth.

Bedrock strata included mudstone, siltstone, sandstone and coal seams, representative of the Pennine Middle Coal Measures.

A summary of the coal seams encountered below the site is presented in Table 4.2.

Table 4.2 – Assessment of Coal Seams Encountered

BH Ref.	Coal Seam Depths (m bgl – m bgl)	Coal Seam Thickness (m)	Rock Cover (m)	Coal Seam Name (Interpreted)	Borehole Depth (m)
RO101	16.70 – 17.30	0.60	14.00	Highgate	25.00
RO/RC102	19.60 – 20.60	1.00	16.30	Highgate	24.00
RO/RC103	19.30 – 20.15	0.85	16.50	Highgate	24.00
RO/RC104	14.95 – 15.05	0.10	10.85	unnamed	20.00
	16.20 – 16.70	0.50	12.10	Highgate	
RO/RC105	17.10 – 18.05	0.95	13.10	Highgate	21.00
RO106	35.00 – 36.00	1.00	30.70	Shafton	37.00
RO107	24.80 – 24.90	0.10	21.10	unnamed	37.00
	29.40 – 29.50	0.10	25.70	unnamed	
	33.80 – 34.40	0.60	30.10	Shafton	
RO108	7.40 – 7.60	0.20	2.40	unnamed	15.00
RO/RC109	No Coal	NA	NA	NA	15.00
RO110	17.70 – 17.80	0.10	14.70	unnamed	35.00
	22.90 – 23.15	0.25	19.90	Shafton Rider	
	32.45 – 32.80	0.35	29.45	Shafton	
RO111	18.10 – 18.30	0.20	16.80	unnamed	36.00
	29.60 – 29.80	0.20	28.30	Shafton Rider?	
	33.60 – 33.90	0.30	32.30	Shafton	
RO112	3.10 – 3.80	0.70	NA	Possible coal waste or Highgate	15.00
RO/RC113	18.30 – 18.50	0.20	17.90	Shafton Rider?	35.00
	31.20 – 31.30	0.10	30.80	Shafton?	

No evidence of underground coal workings was encountered in any of the rotary boreholes. In addition, it can be seen from the above table that by applying the 10x seam thickness rule, there is sufficient rock cover over the named coal seams (Highgate, Shafton Rider and Shafton) to prevent surface instability. This confirms that even if underground coal workings were present in these coal seams, drill and grout treatment would not be required.

Geological sections have been produced by JPG and these are contained in Appendix A.

4.3 In Situ Testing

Standard Penetration Tests

The results of the Standard Penetration Tests (SPTs) in the colliery spoil and natural strata, which were carried out in the cable percussive boreholes and rotary openhole boreholes, have been corrected in accordance with the energy ratio of the testing equipment.

A summary of the results for each material type are presented in Table 4.3.1.

Table 4.3.1 – Summary of Standard Penetration test N Values

Material Type	No. of Tests	Range of N Values (Uncorrected)	Mean N Value (Uncorrected)	Range of N Values (Corrected)	Mean N Value (Corrected)
Colliery Spoil Made Ground	10	14 – 34	21	15 – 37	23
Natural Clay	3	23 – 37	32	25 – 40	35
Mudstone	30	>50 (55* – 2,727*)	746	>50 (60* – 2,517*)	732

* Extrapolated

The N Values have also been plotted against depth (m bgl) for each material type. The plots are presented as Figure 3A (colliery soil made ground) and Figure 3B (mudstone bedrock) in Appendix A and the SPT data (uncorrected) is included on the exploratory hole logs contained in Appendix B.

The SPT plots show a general increase in strength with depth of the colliery spoil made ground, natural clay, and mudstone.

Hand Shear Vanes in Trial Pits
Hand shear vanes were undertaken in some of the trial pits, where possible. Four tests carried out in colliery spoil made ground in TP109, TP110, TP114 and TP115 resulted in undrained shear strengths ranging from 27kN/m^2 to 139kN/m^2, i.e. highly variable. Two tests carried out in the natural stiff clay in TP120 and TP123 resulted in undrained shear strengths of 123kN/m2 and 80kN/m^2 respectively.

As it was not possible to carry out many hand shear vanes in the natural strata due to the thickness of made ground, laboratory hand shear vanes were subsequently scheduled on undisturbed samples obtained from cable percussive boreholes, the results of which are contained in Section 4.4 of this report.

Static Cone Penetration Testing
28 static cone penetration tests (CPTs) were carried out across the site. These were distributed roughly uniformly across the site. The tests were terminated on refusal.

The results of the CPTs are presented in the report by Lankelma, which is provided in Appendix C.

The results of the testing have been used to generate geotechnical parameters including equivalent SPT N60 values.

4.4 Laboratory Testing

Five samples of natural ground (Pennine Middle Coal Measures Formation), three samples of made ground (reworked natural) and 29 samples of colliery spoil were submitted for laboratory testing.

The testing suite was designed to classify the materials and assess the suitability of the materials for re-use in earthworks.

14 samples were submitted for moisture content testing and 12 samples were also submitted for Atterberg Limit testing. The results are summarised in Table 4.4.1.

Table 4.4.1 – Summary of Moisture Content and Atterberg Limit Testing

Material	Moisture Content (%)		Atterberg Limits Plasticity Index (%)	
	No of samples	Range	No of samples	Range
Colliery Spoil Made Ground	8	14.6 – 20.1	5	13 – 21
Natural Clay Soils	4	18.1 - 44.2	4	21 – 38
Mudstone (clayey gravel and extremely weak rock)	3	7.4 – 23.5	3	19 – 23

The colliery spoil made ground (cohesive and granular) had moisture contents that ranged between 14.6% and 20.1%. Typical moisture contents in the natural clay (cohesive residual soil) ranged between 18.1% and 44.2%. Typical moisture contents in the extremely weak mudstone ranged from 7.4% to 23.5%.

Atterberg limit tests in the cohesive and the cohesive fraction of the granular colliery spoil gave plasticity indices which ranged from 13% to 21%. Plasticity indices of the natural clay soils ranged between 21% and 38% and of the mudstone between 19% and 23%.

It was only possible to calculate the modified plasticity index of one sample of colliery spoil made ground due to the sample size and preparation method. A modified plasticity index of 5.94% has been calculated.

The results of the Atterberg limits tests in the residual soil, cohesive made ground and cohesive colliery spoil indicate the materials to be of low to intermediate plasticity. Where it has been possible to calculate a modified plasticity index for the colliery spoil, this corresponds to a low volume change potential.

Particle size distribution/sedimentation testing was carried out on four samples in order to confirm the field descriptions of the materials and determine the proportion of clay minerals in the material. The results are summarised in Table 4.4.2 below.

Table 4.4.2 – Summary of Particle Side Distribution/Sedimentation Testing

Exp Hole	Depth (m bgl)	Material	Cobbles (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)
BH101	0.70	Granular colliery spoil	0	27.3	8.2	35.5	29
BH104	0.70	Cohesive colliery spoil	0	16.8	9.4	36.3	37.5
BH106	1.50	Cohesive colliery spoil	0	27.5	8.2	31.3	33
BH107	1.50	Cohesive colliery spoil	0	20	7.9	37.1	35

Seven samples of cohesive colliery spoil and one sample of granular colliery spoil were submitted for dry density/moisture content relationship testing.

The compaction tests were carried out using a 2.5kg and a 4.5kg hammer. The results are summarised in Table 4.4.3.

Table 4.4.3 – Summary of Compaction Test Results

Exp. Hole	Depth (m bgl)	Material	Weight of Rammer	Natural Moisture Content (NMC %)	Max. Dry Density (Mg/m3)	Optimum Moisture Content (OMC %)	Suitability for Compaction and Range of Acceptable Moisture Contents (%)*
BH101	2.40	Granular colliery spoil	2.5kg	15.8	1.89	13.5	OK (13.4 – 17.8)
BH102	0.70	Cohesive colliery spoil	4.5kg	15.7	1.95	12.7	OK (12.3 – 16.9)
BH102	1.50	Cohesive colliery spoil	4.5kg	21.6	1.76	13.8	Too wet (13.3 – 18.4)
BH104	1.50	Cohesive colliery spoil	2.5kg	23.3	1.79	17.6	Too wet (16.4 – 21.4)
BH104	2.40	Granular colliery spoil	2.5kg	18.1	1.83	15.4	OK (15.0 – 20.05)
BH106	1.50	Cohesive colliery spoil	2.5kg	20.2	1.95	11.0	Too wet (11.6 – 16.2)
BH107	1.50	Cohesive colliery spoil	4.5kg	18.4	2.09	7.0	Too wet (8.4 – 13.3)
BH107	3.50	Cohesive colliery spoil	4.5kg	15.8	1.92	12.0	OK (11.8 – 16.0)

* To achieve >95% of Maximum Dry Density and <5% Air Voids

Based on the test results, 60% of the cohesive colliery spoil material is considered too wet to achieve suitable compaction in its present condition with either heavy compaction techniques or lighter.

The granular colliery spoil material can be considered suitable for re-use on site in its current condition (though any oversize material such as cobbles and boulders will need to be removed).

Four samples were also submitted for laboratory California Bearing Ratio (CBR) testing. The results are summarised in Table 4.4.4 below.

Table 4.4.4 – Summary of California Bearing Ratio Results

Exp. Hole	Depth (m bgl)	Material	Compaction Conditions	As Received Moisture Content (%)	CBR Value (%)	
					Sample Top	Sample Base
BH101	2.40	Granular colliery spoil	2.5kg	16.4	3.3	4.3
BH102	0.70	Cohesive colliery spoil	4.5kg	15.9	8.8	12.1
BH104	1.50	Cohesive colliery spoil	2.5kg	23.8	1.9	1.6
BH106	1.50	Cohesive colliery spoil	2.5kg	19.0	0.7	0.8

The laboratory CBR results for the samples compacted using a 2.5kg rammer ranged between 0.7% (BH106) and 4.3% (BH101). A 4.5kg rammer was used for sample BH102, which gave a CBR value of 8.8% (top) and 12.1% (bottom).

Three one-dimensional consolidation tests were carried out on undisturbed samples obtained from BH105 to BH107 inclusive. These included two samples of cohesive colliery spoil made ground and one of natural clay (residual soils of the MCM).

The results are summarised in Table 4.4.5.

Table 4.4.5 – Summary of One-Dimensional Consolidation Tests

Exp. Hole	Specific Depth (m bgl)	Material	Pressure Range (kPa)	Mv (m2/MN)	Cv (m2/yr)
BH105	4.55	Very stiff slightly sandy gravelly clay (Residual MCM)	0 – 50 50 – 100 100 – 200 200 – 400 400 - 200	0.388 0.226 0.167 0.114 0.008[S]	- 10.01 10.78 8.48 [S]
BH106	2.80	Firm and stiff slightly sandy gravelly clay (Colliery spoil made ground)	0 – 50 50 – 100 100 – 200 200 – 400 400 - 200	0.614 0.352 0.225 0.140 0.014[S]	- 7.84 9.11 7.85 [S]
BH107	2.75	Soft to firm slightly sandy gravelly clay (Colliery spoil made ground)	0 – 25 25 – 50 50 – 100 100 – 200 200 – 100	1.446 0.628 0.4057 0.251 0.023[S]	- 6.03 7.51 8.67 [S]

Mv – Coefficient of volume compressibility
Cv – Coefficient of the rate of volume compressibility
S – Swelling
MCM – Middle Coal Measures

The results indicate that the natural cohesive deposits in this location are of medium compressibility when the overburden pressure is taken into consideration. The cohesive colliery spoil is recorded to be of high compressibility.

Laboratory hand vane tests were carried out on undisturbed samples (top and bottom) obtained from BH101, BH103, and BH105 to BH107 inclusive, at specific depths of between 2.50m and 4.50m.

The results are summarised in Table 4.4.6.

Table 4.4.6 – Summary of Undrained Shear Strength Obtained by Laboratory Hand Shear Vanes

Exp. Hole	Specific Depth (m bgl)	Material	Shear Strength Range (kPa)	Mean Shear Strength (kPa)
BH101	2.50	Clayey gravel (Colliery spoil made ground)	9 – 11	10
BH101	2.95	Clayey gravel (Colliery spoil made ground)	11 – 18	14
BH103	3.50	Sandy gravel of mudstone (Deconstructed MCM)	9 – 15	12
BH103	3.95	Sandy gravel of mudstone (Deconstructed MCM)	17 – 19	18
BH105	2.50	Firm slightly sandy gravelly clay (Colliery spoil made ground)	25 – 57	43
BH105	2.95	Firm slightly sandy gravelly clay (Colliery spoil made ground)	13 – 34	22
BH105	4.50	Very stiff to stiff slightly sandy slightly gravelly clay (Residual MCM)	36 – 46	40
BH105	4.95	Very stiff to stiff slightly sandy slightly gravelly clay (Residual MCM)	46 - 54	50
BH106	2.50	Firm and stiff slightly sandy gravelly clay (Colliery spoil made ground)	22 – 41	31
BH106	2.95	Firm and stiff slightly sandy gravelly clay (Colliery spoil made ground)	34 – 38	36
BH107	2.50	Soft to firm sandy slightly gravelly clay (Colliery spoil made ground)	16 – 27	21
BH107	2.95	Soft to firm sandy slightly gravelly clay (Colliery spoil made ground)	22 – 25	23

MCM – Middle Coal Measures

Based on the strata descriptions, the tests carried out on the samples obtained from BH101and BH103 are predominantly granular and therefore should be disregarded from any assessment of shear strength.

Laboratory hand shear vane tests carried out on the cohesive colliery spoil in BH105 to BH107 inclusive resulted in typical undrained shear strengths indicative of low to medium strength materials.

Laboratory hand shear vane tests carried out on the natural clay in BH105 resulted in typical undrained shear strengths indicative of medium strength soil.

Laboratory quick undrained triaxial tests were carried out on undisturbed samples obtained from BH101, BH105 and BH107, at specific depths of between 2.78m and 4.60m.

The results are summarised in Table 4.4.7.

Table 4.4.7 – Summary of Undrained Shear Strength in Triaxial Compression

Exp. Hole	Specific Depth (m bgl)	Material	Shear Strength(kPa)	Mode of Failure
BH101	2.78	Clayey gravel (Colliery spoil made ground)	8	Plastic
BH105	2.79	Firm slightly sandy gravelly clay (Colliery spoil made ground)	20	Plastic
BH105	4.60	Very stiff to stiff slightly sandy slightly gravelly clay (Residual MCM)	22	Plastic
BH107	2.80	Soft to firm sandy slightly gravelly clay (Colliery spoil made ground)	15	Plastic

MCM – Middle Coal Measures

Based on the strata descriptions, the tests carried out on the sample obtained from BH101 is predominantly granular and therefore should be disregarded from any assessment of shear strength.

Quick undrained triaxial tests carried out on the cohesive colliery spoil in BH105 and BH107 resulted in typical undrained shear strengths indicative of very low to low strength materials.

The quick undrained triaxial test carried out in the natural clay in BH105 resulted in an undrained shear strength indicative of medium strength soil. This test result appears to be very low when compared to the field description of the strata consistency.

Rock core samples of the bedrock were selected and scheduled for strength testing. This included irregular, axial and diametral point load tests and laboratory unconfined compression strength (UCS) tests.

A summary of the laboratory unconfined compression strength (UCS) tests is presented in Table 4.4.8 below.

Table 4.4.8 – Summary of Laboratory Unconfined Compression Strength (UCS) Tests

Exp. Hole	Specific Depth (m bgl)	Rock Type	Unconfined Compressive Strength (MPa)	Strength Term*
RO103	11.09	Mudstone	4.9	Very weak
RO105	7.23	Sandstone	30.6	Medium strong
RO109	12.66	Siltstone	8.7	Weak

* In accordance with BS EN ISO 14689 (table 5)

The results of the point load index (PLI) tests have been corrected in accordance with Broch & Franklin (1972). The Is50 value has been multiplied by a factor of 24 in order to obtain an approximate UCS. The Is50 values have also been multiplied by a factor of 20 for comparison and correlation with the laboratory UCS tests.

The results for all the UCS tests including equivalent UCS tests based on PLIs have been plotted against depth (m bgl) and are presented as Figure 4 in Appendix A. The plot illustrates the variability in rock strength below the site.

4.5 Groundwater

During the site investigation, groundwater was not generally encountered in the trial pits within the shallow natural ground or made ground.

A summary of all groundwater encountered is presented in Table 4.5.1 below.

Table 4.5.1 – Summary of Recorded Groundwater Events.

Location	Groundwater event	Depth (mbgl)	Stratum
RO101	Strike	2.00	Cohesive colliery spoil/mudstone.
RO/RC102	Strike	7.48	Mudstone.
RO/RC103	Strike	6.42	Mudstone
RO/RC104	Strike	7.04	Mudstone.
RO/RC105	Strike	7.04	Mudstone
BH106	Strike	7.90	Cohesive residual soil.
TP101	Seepage	2.70	Cohesive residual soil.
TP102	Seepage	3.80	Sandstone.
TP106	Inflow	2.80	Cohesive colliery spoil.
TP110	Land drain	3.50	Cohesive colliery spoil.
TP111	Seepage	3.10	Cohesive colliery spoil.
TP115	Seepage	1.10	Cohesive colliery spoil.
TP121	Seepage	3.20	Cohesive colliery spoil.
TP125	Seepage	3.40	Granular colliery spoil.
TP128	Seepage	0.70	Granular colliery spoil.

Groundwater inflow was observed in TP106 at a depth of 2.80m. Groundwater seepages were noted in several trial pits, generally at depths of between 1.10m and 3.80m. TP110 encountered a small land drain at 3.50m with no discernible flow.

The majority of boreholes encountered groundwater strikes at depths of between 2.00m and 7.90m.

Monitoring wells were installed in 14 of the boreholes. Monitoring wells installed in cable percussive boreholes generally had response zones that spanned both the made ground and underlying bedrock. Monitoring wells installed in rotary boreholes generally had response zones that were sealed within bedrock strata.

A summary of the monitored groundwater levels is presented in Table 4.5.2 below.

Table 4.5.2 – Summary of Recorded Groundwater Levels.

Location	Water level during monitoring (m bgl)						
	Pipe diameter	05/03/2020	12/03/2020	16/03/2020	28/05/2020	17/06/2020	22/06/2020
BH101	50mm	2.33	2.46	2.44	4.50	3.55	2.60
BH102	50mm	3.37	3.34	3.29	DRY	5.60	DRY
BH103	50mm	3.74	3.90	3.93	4.30	4.30	4.30
BH104	50mm	DRY	DRY	DRY	DRY	DRY	DRY
BH105	50mm	DRY	DRY	DRY	DRY	DRY	DRY
BH106	50mm	5.82	6.54	6.69	8.90	7.70	7.80
BH107	50mm	1.78	1.62	1.84	4.20	4.30	4.40
RO101	50mm	2.47	2.52	2.57	4.00	4.10	4.30
RO102	50mm	3.39	3.46	3.52	5.10	5.10	5.20
RO103	50mm	1.75	1.98	2.15	3.30	3.60	3.70
RO106	50mm	6.85	6.95	7.06	NR	NR	NR
RO109	50mm	5.52	5.76	5.98	6.40	6.95	6.30
RO110	50mm	6.73	6.85	7.00	9.00	9.00	9.20
RO113	50mm	6.77	6.70	6.32	9.10	9.30	9.50

m bgl – metres below ground level; NR – Not Recorded

Groundwater monitoring has been carried out on six occasions. Across the first three visits the water levels remained relatively consistent. There was a significant drop in water levels from visit three to visit four. This is due to a 10-week gap in recordings, over which there was a considerable lack of rainfall.

Considering the disparity in data from visit 3 to visit 4, the water levels all generally exhibited a gentle decreasing trend. BH104 and BH105 both remained completely dry during the monitoring period. Water levels were generally at the lowest on the final visit, though BH101 and RO109 increased from 3.55 to 2.60m and 6.95 to 6.30m respectively from the penultimate to final monitoring visit.

It should be noted that the groundwater conditions recorded are based on observations made at the time that site work was carried out. Groundwater levels will vary owing to seasonal and weather-related effects. It should also be noted that these groundwater readings were carried out within the backfilled opencast and may not reflect the groundwater regime within the surrounding natural strata.

4.6 Obstructions

Cobbles and boulders were generally encountered in exploratory holes in the south, corresponding to the footprint of the former opencast coal site.

TP109, TP124, TP125 and TP127 to TP129 were terminated on shallow boulders, all but TP109 are in the south of the site. TP109, located on the earth bund on the north-eastern boundary, was terminated on a large mudstone boulder at 2.30m bgl.

4.7 Stability

Based on the ground conditions encountered, it is likely that excavations within cohesive soils will remain stable in the short term. However, it is considered likely that if excavations were left unsupported, collapse will occur.

Instability should be anticipated in excavations in made ground and granular soils and support of excavations will be required.

4.8 Ground Gas

Ground gas monitoring has been undertaken on six occasions. The works were carried out using a portable gas meter in accordance with the standard JPG methodology and included measurements of methane, carbon dioxide, oxygen, hydrogen sulphide, carbon monoxide, gas flows and atmospheric pressure. The results of the gas monitoring are presented in Appendix F and discussed in Section 6.7 of this report.

5.0 GEOTECHNICAL AND ENGINEERING ASSESSMENT

5.1 Development Proposals

It is proposed to develop the site for an industrial end use, comprising one large factory, access routes, lorry/container parking, car parking, and peripheral areas of landscaping. As part of the development, retaining walls are proposed in the west to accommodate the cut/fill earthworks.

A drawing of the proposed development has been provided, which is referenced below, and a copy is contained in Appendix A.

- Garnett Netherwood Architects (GNA). Ashes Phase 3. Site General Arrangement (GA) Plan As Proposed. Project No. 1711. Drawing Number (20) 001. Dated 09.01.2020. Revision D (26.05.2020), for The Symphony Group PLC.

5.2 Updated Coal Mining Risk Assessment

The coal mining risk assessment prepared for the site by JPG in November 2019 under reference 5161-JPG-SW-00-RP-G-1101-P01 has been updated to reflect the findings of the recent ground investigation.

The updated coal mining risk assessment is presented in Table 5.2 below.

Table 5.2 – Updated Coal Mining Risk Assessment

Coal Mining Issue	Yes	No	Remarks
Surface mining (opencast workings)	X		The CA CON29M report states that: 'The property is within the boundary of the Ferry Moor Revised Reclamation Scheme - Ferry Moor Area opencast site from which coal has been removed by opencast methods.' The abandonment plan for the opencast workings of the Highgate coal seam confirms that the seam was opencast in the southern third of the site, with the extraction terminating roughly along the line of an east – west trending fault. The thickness of the opencast backfill ranges between approximately 2m in the west and 7m in the east. The abandonment plan indicates that the whole site except the western margin was compacted following coal extraction. Where backfilled opencast is present below the development, there is a risk of undue settlement. In addition, where the highwall of the opencast is present, it was considered that there was a risk of differential settlement and also coal workings extending below the highwall. The ground investigation did not confirm a distinct highwall below the site; instead a significant thickness of made ground was proven across the whole site, so differential settlement due to a buried highwall is not considered an issue. In addition, no underground coal workings were proven beyond the conjectured boundary of the opencast coal site; this may be due to the presence of geological faulting. Based on the former opencasting of the site, mitigation in the form of ground improvement will be required to facilitate the proposed development.

Coal Mining Issue	Yes	No	Remarks
Underground coal mining.	X		The CON29M report states that: 'The property is in a surface area that could be affected by underground mining in 8 seams of coal at 40m to 790m depth, and last worked in 1981.' The shallowest recorded underground coal workings are in the Shafton coal seam. The CA Consultants Report states that the coal seam was worked at a depth of approximately 44m and had an extraction thickness of 1.60m. The abandonment plan for the Shafton coal seam confirms that the recorded workings extend from the Ferrymoor Colliery below the north of the site. Based on the extracted thickness and the depth to the recorded coal workings, it is not considered that the recorded workings pose a risk to the surface stability of the site. The next shallowest named coal seam below the Shafton is the Sharlston Top Coal, which has a recorded thickness of between 0.60m and 1.60m. The seam separation between the Shafton and the Sharlston Top Coal is approximately 65m. On this basis, it is not considered that any coal seams below the Shafton pose a risk to the surface stability of the site. The Consultants Coal Mining Report indicates that there are no probable unrecorded shallow workings below the site. No evidence of underground coal workings was encountered in any of the rotary boreholes drilled as part of the recent JPG ground investigation. In addition, the assessment of coal seams below the site carried out by JPG indicates that there is sufficient rock cover over the named coal seams (Highgate, Shafton Rider and Shafton) when applying the 10x seam thickness rule. This confirms that even if underground coal workings were present in these coal seams locally, drill and grout treatment would not be required. Therefore, no mitigation with regard to underground coal workings is considered necessary.
Mine entries (shafts and adits)		X	'There are no recorded coal mine entries known to the Coal Authority within, or within 20 metres, of the boundary of the property. The CA Consultants Report states that there is one mineshaft within 100m of the site, located at NGR 440263, 408293 (approximately 75m to the south west of the site). The possibility of unrecorded mine entries including bell pits within the site boundary cannot be discounted. The abandonment plan for the recorded underground workings in the Shafton coal seam indicates an adit passing below the south of the site. Based on the recorded gradient, it is estimated that the adit will be at a depth of approximately 130m below the site and extends to a coal seam below the Shafton. As part of the recent JPG ground investigation, rotary borehole RO113 was drilled to a depth of 35m over the adit in order to confirm its absence at shallow depth and also the competency of the bedrock over the recorded adit. The borehole confirmed intact rock to 35m. Therefore, no mitigation regarding known mineshafts or adits is required prior to redevelopment on the site. However, vigilance will need to be maintained during any groundworks for unrecorded mine entries and if a suspected mine entry is encountered, advice should be sought from an appropriately qualified person.
Coal mining geology (faults and fissures)		X	The CA Consultants Report indicates one geological fault trending roughly east – west below the south of the site. Further faulting is indicated on the abandonment plans for both underground and opencast coal workings. The CA CON29M report states that: 'The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.' No mitigation regarding known geological faulting below the site is required.

Coal Mining Issue	Yes	No	Remarks
Record of past mine gas emissions or potential		X	The CA CON29M report states that: 'The Coal Authority has no record of a mine gas emission requiring action.' The CA Consultants Report indicates a gas incident/remediation approximately 418m to the east. 'The site is within an area of previous interest. It is close to where the Coal Authority has investigated and subsequently remediated the effects of mine or ground gas emissions following specific reported hazards.' As part of the Stage 2 ground investigation, ground gas monitoring and a ground gas risk assessment have been carried out. The ground gas risk assessment is presented in Section 6.6 of this report.
Recorded coal mining surface hazard		X	The CA CON29M report states that: 'The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.' 'The property has not been subject to remedial works, by or on behalf of the Coal Authority, under its Emergency Surface Hazard Call Out procedures.'

Based on the coal mining risk assessment carried out for the site, mitigation with regard to past opencast coal mining on the site is required. The proposed mitigation strategy is outlined in Section 5.3 below. No other mitigation measures with regard to coal mining are considered necessary.

5.3 Foundations and Ground Floor Construction

The selection of foundation type is largely governed by the thickness of any made ground and the nature of the underlying natural strata.

As part of the 2020 JPG ground investigation, made ground was encountered in all exploratory holes and was found to extend to depths of between 0.40m and 8.80m (mean approximately 3.00m), where proven. The made ground was proven to be deepest in the south east (RO/RC109), within the area of recorded opencast backfill, and shallowest in the south (RO113), outwith the backfilled opencast.

The made ground was found to be underlain locally by natural clay (completely weathered bedrock) or mudstone bedrock. The natural clay soils were found to typically consist of stiff, gravelly clay, with the gravel content generally consisting of mudstone. The clay was found to extend deepest in the south east (BH106), in which mudstone bedrock was proven at 7.30m depth.

Bedrock strata included mudstone, siltstone, sandstone and coal seams, representative of the Pennine Middle Coal Measures.

The made ground in its current condition is unsuitable for the support of structural loads due to variations in material properties. If shallow spread foundations were to be used, these materials would become over-stressed, leading to significant settlements. It is therefore recommended that foundation loads are transferred to deeper natural strata of suitable bearing capacity.

It is therefore recommended that foundations extend into underlying bedrock strata of suitable allowable bearing capacity. Based on the thickness of made ground it will not be feasible to adopt a shallow foundation solution, such as pad or strip foundations for the superstructure.

Therefore, it will be necessary to utilise a piled foundation solution. The bearing capacity of piles depends on their size, the ground conditions, and also on their method of installation. Pile design and installation is an evolving process for contractors. It is recommended that specialist piling contractors are consulted as to the suitability and bearing capacity in relation to the proven ground conditions on the site.

Alternatively, ground improvement could be used to provide a suitable bearing capacity for the proposed development.

Should ground improvement be considered, vibro may not be practical due to the presence of boulders. Appropriate ground improvement methods include the use of High Energy Impact Compaction (HEIC)/Rapid Impact Compaction (RIC) for foundation loading and Rolling Dynamic Compaction (RDC) for external areas. HEIC/RIC can treat up to approximately 9m of made ground, therefore the full thickness of made ground below the foundation could be treated this way. This ground improvement technique would allow the use of ground bearing slabs and pad foundations.

Any earthworks/ground improvement should be designed in order to provide an acceptable allowable bearing capacity for ground floor slabs and shallow pad foundations.

5.4 Earthworks

It is proposed to carry out cut and fill earthworks to create a suitable development platform on the site.

Based on the laboratory results, the colliery spoil may be too wet to be incorporated in the earthworks unless it is dried/treated. Proper selection and control will be required as part of the works in order to use the materials on the site. The material should not be allowed to deteriorate during excavation and compaction and must be sufficiently protected from traffic after placement.

Following compaction of the underlying made ground following RDC/RIC, it may be necessary to import stone to bring up the site to the desired levels.

Any earthworks should be carried out in accordance with the Manual of Contract Documents for Highway Works, Volume 1 Specification for Highway Works, Series 600 Earthworks.

Once final site formation levels have been agreed, it is recommended that a detailed Earthworks Specification is produced prior to commencement of works on the site. This should be developed in conjunction with the Earthworks Contractor/Ground Improvement Contractor and should include a strategy to deal with the treatment of the materials during the works.

5.5 Excavations

It is considered likely that if excavations were left unsupported then over time, some collapse would occur.

Good working practice with respect to drainage of excavations and formations will be required to protect materials. Any excavation for structural foundations must be covered without delay with blinding concrete to prevent softening by water.

The requirement for temporary support of excavations should be assessed on an individual basis and, in any case, excavations of greater than 1.2m depth requiring man entry will require temporary support in accordance with HSE guidance.

Alternatively, the sides of the excavation will need to be battered back for the safety of operatives. Guidance on safe batter slopes can be obtained from CIRIA Report 97 Trenching Practice.

5.6 Control of Groundwater

During the recent JPG ground investigation groundwater was encountered in trial pits as seepages at depths of between 1.10m and 3.80m. Groundwater strikes were recorded in boreholes at depths of between 2.00m and 7.90m.

Reference should be made to guidance given in the Manual of Contract Documents for Highway Works, Volume 1: Specification for Highway Works, Series 600 Earthworks. In particular the following recommendations are made with respect to the control of surface water and shallow groundwater.

The contractor shall keep earthworks free of water including:

- Arranging for the rapid removal of water which is shed on the earthworks or enter the earthworks from any source.
- Lowering and maintaining by appropriate measures, the water level in excavations sufficiently to enable the permanent works to be constructed.

In order to keep the site free of water the contractor shall do the following:

- Form and maintain cuttings, embankments and other areas of fill with appropriate falls, gradients and sealed surfaces.
- Provide where necessary temporary watercourses, drains, and pumping.
- Discharge accumulated water and groundwater into the permanent outfalls of the drainage system where practicable; and
- Provide adequate means for trapping silt on temporary systems discharging into permanent drainage systems.

5.7 Obstructions

Cobbles and boulders were generally encountered in exploratory holes in the south, corresponding to the footprint of the former opencast coal site.

Where pad foundations are proposed, it is recommended that the footprint of the foundation is over-excavated and any boulders removed prior to treatment of the ground by rapid impact compaction, in order to avoid any hard spots remaining immediately below the foundation.

5.8 Roads, Pavements and Hardstanding Surfaces

Access roads and vehicular parking is to be constructed as part of the development. Laboratory CBR testing has recorded average CBR values of between 0.8% and 3.8% for light compaction (2.5kg rammer) and 10.5%. (4.5kg rammer) Generally, where the CBR is <2.5% ground improvement is required.

It is proposed that ground improvement for external areas will consist of rolling dynamic compaction. Following this treatment, a blanket of granular fill is to be installed.

Pavement design will be dependent on the CBR values which can be achieved at formation level. Following the ground improvement outlined above, it is likely that a CBR of 5% can be achieved.

5.9 Chemical Attack on Buried Concrete

Laboratory testing has been undertaken on samples of the made ground and natural strata to determine the sulphate content and acidity and hence the concrete class required for buried concrete.

Laboratory testing in the made ground recorded water-soluble sulphate contents ranging between <10mg/l and 470mg/l and pH values of between 6.5 and 8.9. Laboratory testing in the natural strata sample recorded water-soluble sulphate contents of between <10mg/l and 16mg/l and pH values of between 6.7 and 7.5.

Foundations are likely to come into contact with made ground and natural strata. It is therefore recommended that concrete should be designed to Aggressive Chemical Environment for Concrete (ACEC) Design Sulphate Class DS-1 and ACEC Class AC-1.

This assessment has been made in accordance with BRE Special Digest 1: 2005, entitled 'Concrete in Aggressive Ground'.

6.0 ENVIRONMENTAL RISK ASSESSMENT

6.1 Introduction

The statutory definition of contaminated land is given in the Environmental Protection Act, Part IIA, Section 78, 1990, which was introduced by the Environment Act, Section 57, Department of Environment, 1995 and is defined as:

Land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land that:

- Significant harm is being caused or there is a significant possibility of such harm being caused (where harm is defined as harm to health of living organisms or other interference with the ecological systems of which they form a part and, in the case of man, includes harm to his property); and/or
- Significant pollution of controlled waters is being caused, or there is a significant possibility of such pollution being caused (by the land).

The presence of contaminated materials on a site is generally only of concern if an actual or potentially unacceptable risk exists. The potential for harm to occur requires three conditions to be satisfied:

- **Sources** – The presence of substances (potential contaminants/pollutants), in or under the ground, that may cause harm or pollution.
- **Receptors** - The presence of a receptor which may be harmed, e.g. the water environment or humans, buildings, fauna, and flora; and
- **Pathway** - The existence of a linkage between the Source and the Receptor.

In summary, the presence of measurable concentrations of contaminants within the ground and subsurface environment does not automatically imply that a contamination problem exists, since contamination must be defined in terms of pollutant linkages and an unacceptable risk of harm to available receptors.

The nature and importance of both pathways and receptors, which are relevant to a particular site, will vary according to the sensitivity of the intended end use of the site and the sites characteristics and environmental setting.

Legislation and guidance on the assessment of contaminated sites acknowledges the need for a tiered risk-based approach. This is set out in the Environment Agency's manual Land contamination: risk management (published in June 2019) and comprises the following stages of risk assessment:

Tier 1: Preliminary risk assessment (PRA)	As part of this assessment, the overall site objectives are defined. Current and historical information about the site and the potential contaminants expected to be present are assessed and an outline conceptual model (CM) is developed. The risks are assessed qualitatively, and the findings reported in the PRA (or desk study). The report recommends what further works would be required in order to assess whether the site is suitable for its proposed use.
Tier 2: Generic quantitative risk assessment (GQRA)	The GQRA uses Generic Assessment Criteria and a standard set of generic assumptions based on specific end uses in order to assess the risks to receptors. It includes the collection of more detailed information including laboratory analysis of soil and water samples in order to inform and assess the risks.
Tier 3: Detailed quantitative risk assessment (DQRA)	If pollutant linkages are confirmed as part of the GQRA, these are known as relevant pollutant linkages (RPLs) and further detailed assessment is required. At this tier, detailed site-specific information is collected to estimate the risk or to develop site-specific assessment criteria (SSAC). This may include collecting information about the receptor.

A Tier 1 Assessment has been prepared for the site by JPG and reported as Geoenvironmental Desk Study Report. Park Spring Road, Grimethorpe. Report Ref. 5161-JPG-SW-XX00-RP-G-1100-P01, dated November 2019.

This environmental risk assessment undertaken by JPG constitutes a Tier 2 Generic Quantitative Risk Assessment (GQRA) and has been carried out in accordance with the Environment Agency's *Land contamination: risk management* guidance.

6.2 Assessment Approach

The results of the chemical analysis for each determinand will be assessed against their respective GAC.

These include the LQM/CIEH Suitable 4 Use Levels (S4UL) and Category 4 Screening Levels (C4SL) which were developed using the UK Contaminated Land Exposure Assessment (CLEA) Framework Documents and Software.

The CLEA model uses generic assumptions about the fate and transport of chemicals in the environment and a generic conceptual model (referred to as generic land use scenarios) for site conditions and human behaviour, to estimate child and adult exposures to soil contaminants for those living, working and/or playing on contaminated sites over long time periods.

The S4UL and C4SL screening levels have been derived for a variety of land uses including residential, allotments, commercial and public open space.

In the absence of S4UL and C4SL for potential contaminants, appropriate alternative GAC will be used.

Controlled Waters
No standards currently exist in the UK which provides threshold values for potential contamination in groundwater. Alternative guidance is therefore used, against which the significance of potential contaminants can be assessed.

The results of the leachate analyses will be compared to the same standards as for groundwater.

6.3 Evaluation of Soils Analysis

Initially, the results of the chemical analysis for each potential contaminant will be compared directly with their respective GAC. Based on the current development proposals for the site, i.e. industrial, the results of the chemical analysis for the soil samples have been assessed against GAC for a commercial end use.

If any significant exceedances of the GAC are noted, then the results will be subject to statistical analysis.

In total, 20 samples, 13 of cohesive colliery spoil, three of granular colliery spoil, three of reworked topsoil (made ground) and one of cohesive residual soil were submitted for chemical analysis.

Human Health
The results have been compared directly with their respective GAC. The results are summarised in Table 6.3.1.

Table 6.3.1 – Summary of Chemical Analysis Results

Determinand	GAC for Commercial End Use (mg/kg)	Sample Mean (mg/kg)	Range of Results (mg/kg)	Do any samples exceed the GAC?
Arsenic	640 (1)	9.13	1.90 – 24	No
Cadmium	190 (1)	0.53	<0.10 – 3	No
Chromium	8600 (1)	20.20	12.00 – 37	No
Hexavalent Chromium	33 (1)	<1.00	<1.0	No
Copper	68000 (1)	31.48	9.60 – 67	No
Lead	2330 (2)	45.45	10 –500	No
Mercury	1100 (1)	0.07	<0.05 – 0.09	No
Nickel	980 (1)	27.09	7.2 – 49	No
Selenium	12000 (1)	0.75	<0.5 – 0.8	No
Zinc	730000 (1)	79.85	30 – 220	No
Cyanide (free)	34(3)	<0.10	<0.1	No
Phenol - Monohydric	440(1)	0.4	<0.3 – 0.4	No
Naphthalene	190 (1)	0.11	<0.03 – 0.16	No
Acenaphthylene	83000 (1)	<0.03	<0.03	No
Acenaphthene	84000 (1)	0.03	<0.03 – 0.03	No
Fluorene	63000 (1)	<0.03	<0.03	No
Phenanthrene	22000 (1)	0.07	<0.03 – 0.13	No
Anthracene	520000 (1)	<0.03	<0.03	No
Fluoranthene	23000 (1)	0.07	<0.03 – 0.09	No
Pyrene	54000 (1)	0.06	<0.03 – 0.09	No
Benzo(a)anthracene	170 (1)	0.04	<0.03 – 0.05	No
Chrysene	350 (1)	0.04	<0.03 – 0.04	No
Benzo(b)fluoranthene	44 (1)	0.04	<0.03 – 0.04	No
Benzo(k)fluoranthene	1200 (1)	<0.03	<0.03	No
Benzo(a)pyrene	35 (1)	<0.03	<0.03	No
Indeno(1,2,3-c,d)pyrene	500 (1)	<0.03	<0.03	No
Dibenzo(a,h)anthracene	4 (1)	<0.03	<0.03	No
Benzo(g,h,i)perylene	3900 (1)	<0.03	<0.03	No

(1) S4UL, (2) C4SL, (3) Atkins AtRisk Value (Resi)

None of the above determinands were detected at concentrations in excess of their respective GAC.

Eight samples were submitted for an asbestos screen. No asbestos fibres or asbestos containing materials were detected in any of them samples.

Calorific value (CV) tests were carried out on nine samples, one of residual cohesive soil, one of granular colliery spoil and seven of cohesive colliery spoil. The test results were all below the detection limit (1.0MJ/kg).

6.4 Evaluation of Controlled Waters Analysis

Six samples were submitted for leachability analysis. The result for each determinand was compared directly against their respective GAC. The results are summarised in Table 6.4.1 below.

Table 6.4.1 – Summary of Leachability Results

Determinand	GAC (µg/l)	TP107 (0.50)	TP123 (0.30 – 0.50)	TP102 (3.00)	TP122 (0.50)	TP106 (0.30-0.50)	TP105 (2.00)
Arsenic	10 (1)	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
Cadmium	5 (1)	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chromium	50 (1)	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Copper	2000 (1)	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Lead	10 (1)	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09
Mercury	1 (1)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel	20 (1)	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Selenium	10 (1)	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Zinc	5000 (1)*	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3
pH	6.5-9.5	6.9	7.2	6.4	8.0	6.9	6.9
Cyanide Free	50 (1)	<20	<20	<20	<20	<20	<20
Sulphate	20	33	12	26	9.7	35	20
Naphthalene	4.24 (2)	< 0.05	< 0.05	0.09	< 0.05	0.08	0.22
Anthracene	0.193 (2)	< 0.01	< 0.01	0.03	< 0.01	0.01	0.04
Fluoranthene	0.0122 (2)	< 0.01	< 0.01	0.04	< 0.01	< 0.01	0.06
Benzo (a) pyrene	0.1 (1)	< 0.01	< 0.01	< 0.01	< 0.01	0.04	0.06
Sum of: Benzo (b) fluoranthene, Benzo (k) fluoranthene, Indeno (1,2,3-c,d) pyrene, and; Benzo (g,h,i) perylene.	0.1 (1)	0.03	0.01	0.12	0.02	0.35	0.51
Phenol	14.9 (2)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

(1) Water Supply (Water Quality) Regulations 2000.
*Historical 1989 Threshold Value.
(2) Water Framework Directive 2015, Surface Water, Maximum Threshold Value.

Two elevated concentrations of potentially leachable fluoranthene were recorded in TP102 (0.04ug/l) and TP105 (0.06ug/l). These samples consisted of cohesive colliery spoil. Elevated sums of PAHs [benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-c,d)pyrene and benzo(g,h,i)perylene] were also recorded in samples TP106 and TP105, with concentrations of 0.35ug/l and 0.51ug/l respectively.

6.5 Evaluation of Hazardous Gases

Based on the desk study information and ground conditions encountered, i.e. topsoil overlying colliery spoil made ground with shallow coal seams also present, it is considered that there is potential for the presence of hazardous gases on the site.

6.6 Ground Gas Monitoring

In order to assess the potential risks posed to the proposed development from hazardous gases, monitoring wells were installed in seven cable percussive boreholes and seven of the rotary open hole boreholes.

Ground gas monitoring has been undertaken on six occasions. The works were carried out using a portable infra-red gas meter in accordance with the standard JPG methodology and included the measurement of methane, carbon dioxide, oxygen, hydrogen sulphide, carbon monoxide, gas flows and atmospheric pressure.

6.7 Summary of Results

The results of the gas monitoring are presented on the site visit record sheets in Appendix F and are summarised below:

- No methane has been recorded in any of the visits.
- Carbon dioxide has been recorded in all of the monitoring wells on every visit, maximum steady concentrations ranged between 0.1% v/v and 12.4% v/v.
- Reduced oxygen concentrations (i.e. <16% v/v) were recorded in all of the monitoring visits in BH106 and RO109. The lowest recording being 0.2% v/v.
- A maximum peak and steady flow of 2.1 l/hr and 1.0 l/hr was recorded in RO101.

Four of the monitoring visits were carried out during periods of regionally falling atmospheric pressure, the remaining two were carried out during periods of regionally rising atmospheric pressure. Barometric pressures during the monitoring period ranged between 995mB and 1035mB.

6.8 Requirements for Gas Protection Measures

The results of the gas monitoring have been assessed in accordance with the following:

- BS8485:2015, 'Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings'.

A maximum steady concentration of carbon dioxide (CO_2) of 12.4% v/v was recorded in BH106 during the fifth monitoring visit. The other visits identified carbon dioxide above 5% v/v within BH106, BH105 and RO109. The source of the carbon dioxide is considered to be the colliery spoil made ground associated with the backfilled opencast sites.

Based on the maximum steady concentration of CO_2 and the maximum steady flow. The Gas Screening Value (GSV) for carbon dioxide is 0.12 l/hr. Based on this result and the elevated concentrations (>5% v/v) of CO_2 recorded on the site, the site would be classified as Characteristic Situation (CS) 2 (low risk), in accordance with BS8485:2015.

6.9 Radon Risks

The site is in a Radon Affected Area, as between 1% and 3% of properties are above the Action Level. I. In accordance with the Building Research Establishment publication BR211, no radon protective measures are required for new properties constructed on the site.

6.10 Summary of Sources, Pathways and Receptors

Sources
Based on the results of the analysis carried out, the following potential sources of contamination are considered to be present on the site:

- Slightly elevated concentrations of potentially leachable PAH species (including fluoranthene).
- Hazardous ground gases (carbon dioxide).

Pathways
Based on the available information and the proposed development of the site for an industrial end use, the following potential exposure pathways will require consideration, both during the development works and on completion of the construction.

- Leaching/migration of potential contaminants from soil into groundwater and surface water via groundwater and surface water flow.
- Inhalation of hazardous gases.

Receptors
The potential receptors are considered to be:

- Development workers and future maintenance workers involved in excavations, e.g. foundations or where services are being installed or repaired following development.
- Future end users of the site (e.g. employees).
- Groundwater in the underlying Secondary A Aquifer (bedrock); and,
- Nearby surface waters.

6.11 Source – Pathway – Receptor Linkages

Based on the above potential sources, pathways and receptors, the following linkage assessments have been considered. An updated conceptual site model illustrating the pollutant linkages at the site is presented as Figure 5 in Appendix A and discussed below.

This assessment is based on current site conditions (unless stated) and does not consider exposure pathways following any further works on the site.

Development Workers and Future Maintenance Workers
Based on the sources of potential contamination which have been identified on the site, there is a risk to development and maintenance workers involved in groundworks at the site. There is the potential for exposure to the following:

- Elevated concentrations of hazardous ground gases (carbon dioxide).

Future End Users of the Site
There is potential for exposure to the following:

- Elevated concentrations of hazardous ground gases (carbon dioxide).

Groundwater in the Underlying Aquifers and Nearby Surface Watercourse
Based on the site in its current condition, there is potential for exposure to the following:

- Slightly elevated concentrations of potentially PAH species (including fluoranthene) within the soils.

An assessment of risk to controlled waters should consider the environmental setting of the site, which is summarised below:

- The Water Supply (Water Quality) Regulations, from which the majority of the GAC for leachate have been derived is considered to be conservative when applied to an assessment of controlled waters. They are based on the concentrations of potential contaminants at the point of use, i.e. consumers' taps.
- The bedrock geology below the site is classified as a Secondary A Aquifer. There are no records of any groundwater abstractions within 1km of the site. There are no potable water abstraction licences within 2km of the site. The site does not lie within 500m of an Environment Agency Groundwater Source Protection Zone.
- The nearest watercourse is an unnamed inland river located approximately 60m to the north west.
- The shallow ground conditions include firm to very stiff cohesive residual soil and backfilled opencast overlying the bedrock. The colliery spoil is predominantly cohesive in nature. The cohesive residual soil and colliery spoil will limit the downward migration of potential contaminants to the underlying Secondary A Aquifer.
- The nature of the proposed development comprises a large industrial development with large areas of hardstanding for vehicles and storage. The building and hard cover will form a barrier to the downward migration of rainwater and therefore reduce the potential for infiltration, downward migration and leaching of potential contaminants.

Bases on the factors above, i.e. the presence of cohesive residual soil and colliery spoil, large areas of hardstanding and low sensitivity of the site with regard to controlled waters, it is concluded that there are no plausible linkages to controlled water receptors. Therefore, the risk to controlled waters is considered to be very low.

Buildings and Services
Recommendations with respect to the chemical attack on buried concrete are given Section 5.9.

6.12 Mitigation Measures

In order to mitigate the risks posed by the potential contaminants which are present on the site, consideration should be given to the following mitigation measures.

Development and Maintenance Workers

- Site workers involved in groundworks should take the necessary measures to ensure that all works in excavations and confined spaces are carried out in accordance with best practice in order to prevent exposure to potentially hazardous gases.
- Site workers involved in groundworks should use appropriate PPE, i.e. overalls and gloves. Appropriate health and safety measures, e.g. washing hands prior to eating or drinking, should also be enforced.
- During development of the site, all workers should remain vigilant to the possible risk of encountering areas of potentially contaminated material. Should potentially contaminated material be encountered, site management should be informed. Further testing may then be required to assess the risk to health and safety of the site workers and the environment.
- All employers involved in works at the site should produce an appropriate method statement and risk assessment, to which all employees should comply, e.g. working in confined spaces. Reference should also be made to the appropriate HSE and other guidance for working on contaminated and potentially contaminated sites.

Future Site Users
It is recommended that a sufficient thickness of clean cover soils (topsoil and subsoil) is placed in future landscaped areas. Chemical test results indicate that the existing topsoil is suitable for re-use on the site. Any imported or site-sourced material will need to be tested to confirm its suitability for use. In addition, any topsoil and subsoil which is to be used on site should not contain any manmade debris, e.g. brick, concrete or metal.

Ground gas protection measures to achieve Characteristic Situation (CS) 2 are required for new buildings constructed on the site. This will include the requirement for validation of the ground gas protection barrier.

6.13 Classification of Materials for Disposal Off-Site

In total 20 samples were assessed using HazWasteOnline^{tm} in order to determine the classification of the materials for disposal off-site.

Based on the results of the chemical analysis, all the samples can be classified as non-hazardous.

Details of the classification generated by HazWasteOnline^{tm}, is included in Appendix E.

The results of the chemical analysis and the waste classification should be forwarded to the landfill operator to confirm this assessment and provide a price for disposal.



JB Wilson
BEng (Hons) MIEnvSc
For and on behalf of JPG (Leeds) Limited

August 2020

Appendix A Figures/Drawings



Figure 1 – Site Location Plan	
Site	**Park Spring Road, Grimethorpe**
Client	**The Symphony Group PLC**
Job Number	**5161**
Scale	**NTS**



Figure 2 – Aerial Photograph	
Site	**Park Spring Road, Grimethorpe**
Client	**The Symphony Group PLC**
Job Number	**5161**
Scale	**NTS**

FIGURE 3A - SPT N Value vs. Depth (Made Ground & Natural Clay)

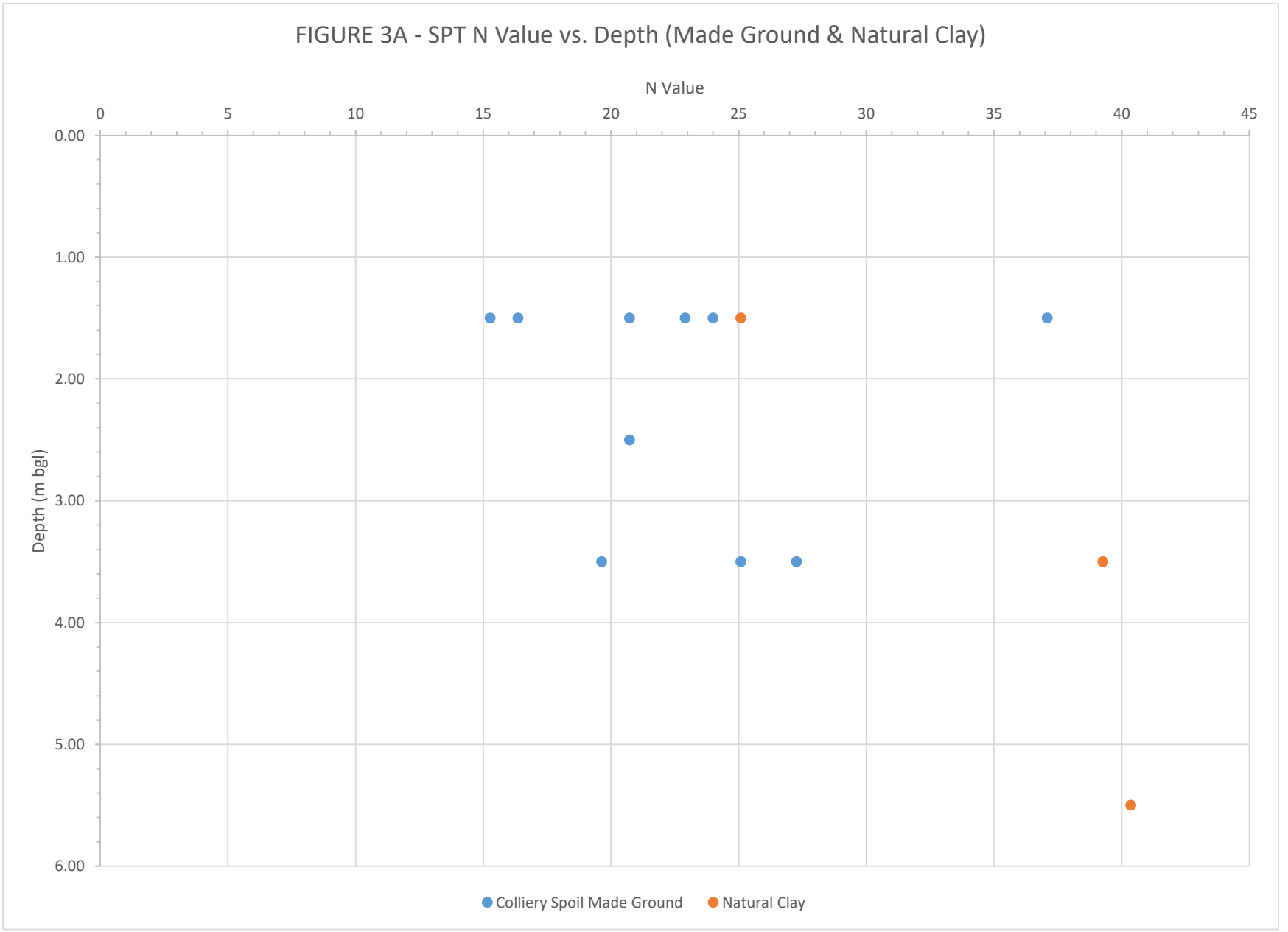


FIGURE 3B - SPT N Value vs. Depth (Mudstone)

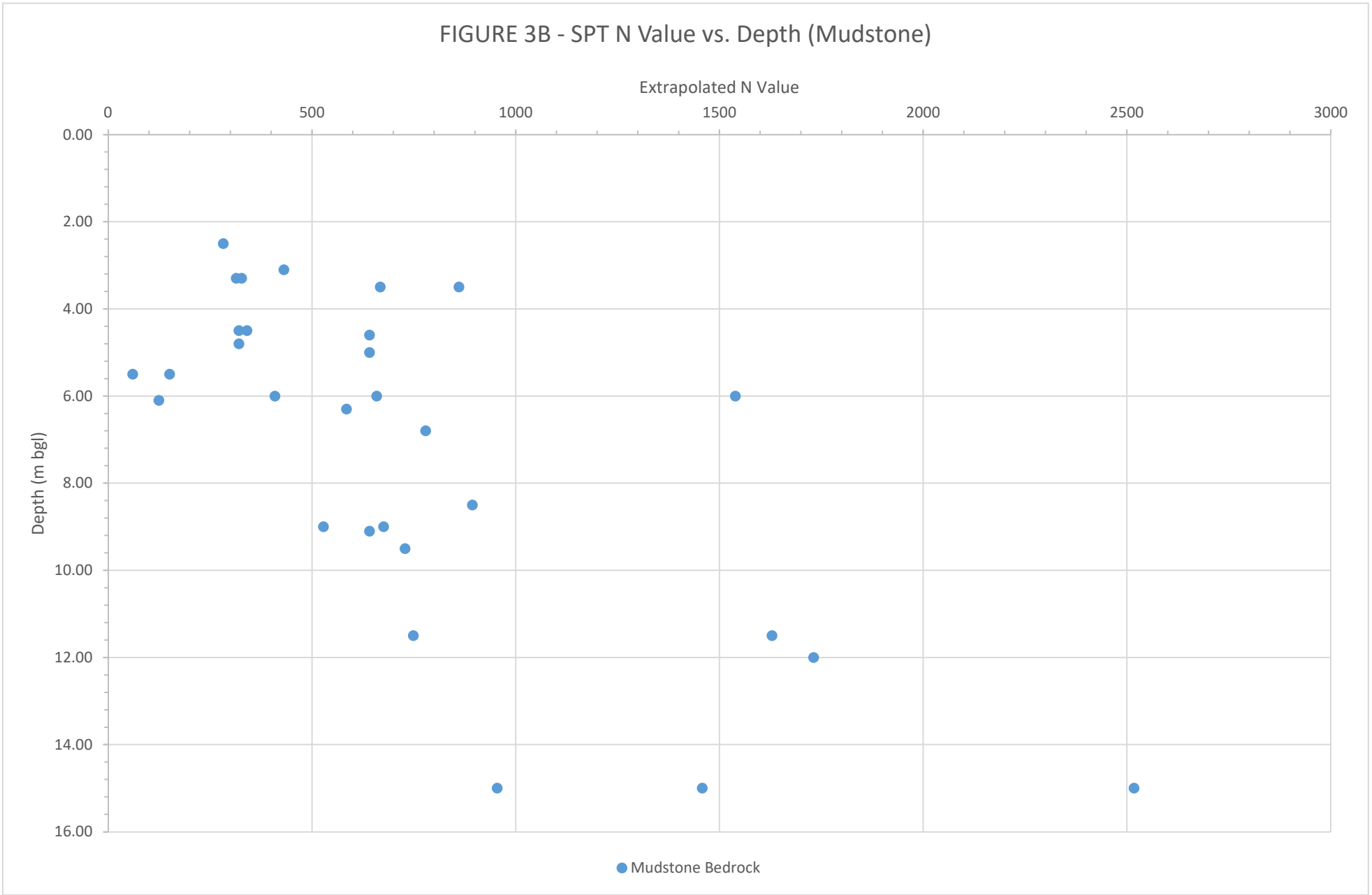
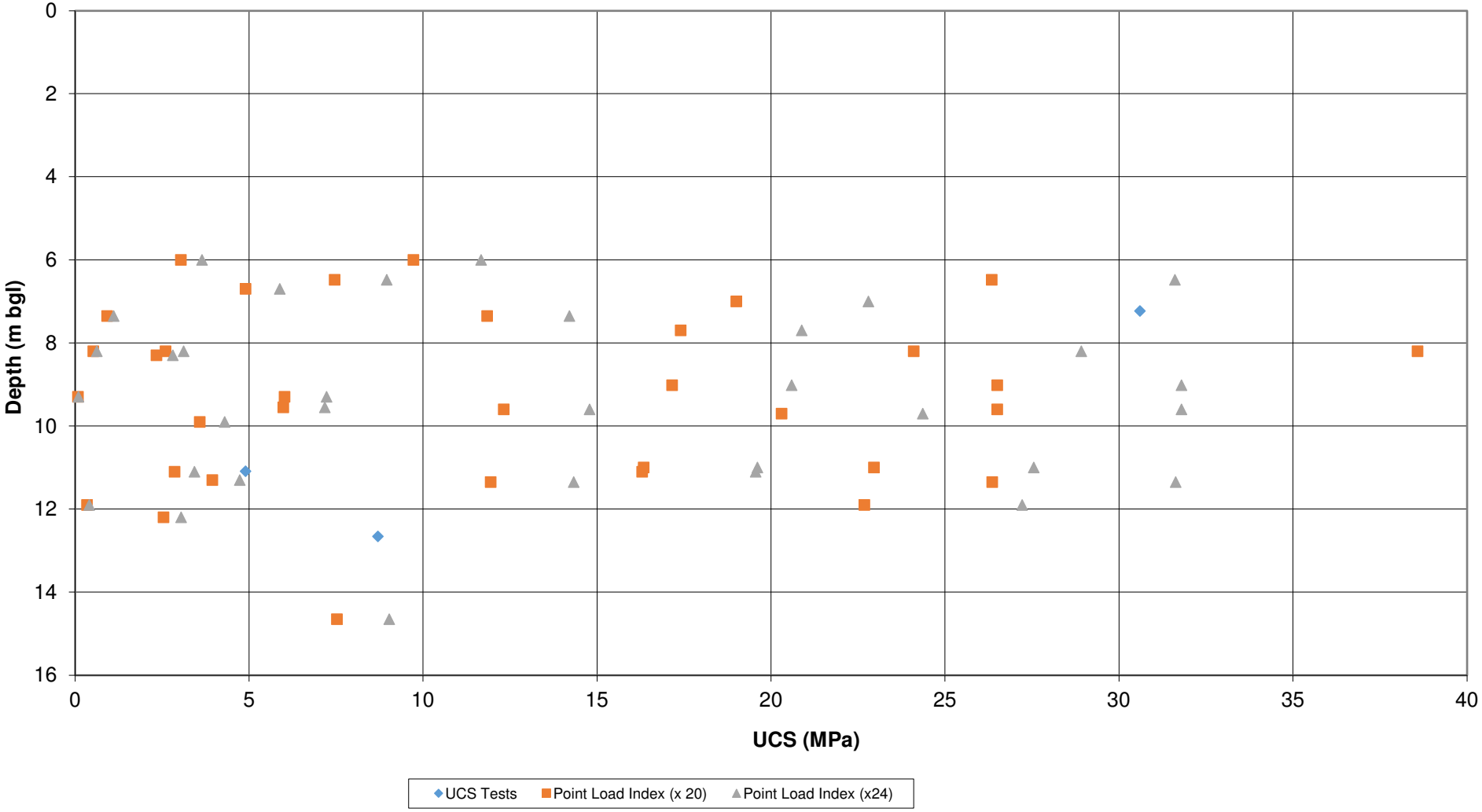


Figure 4 - Unconfined Compressive Strength vs. Depth



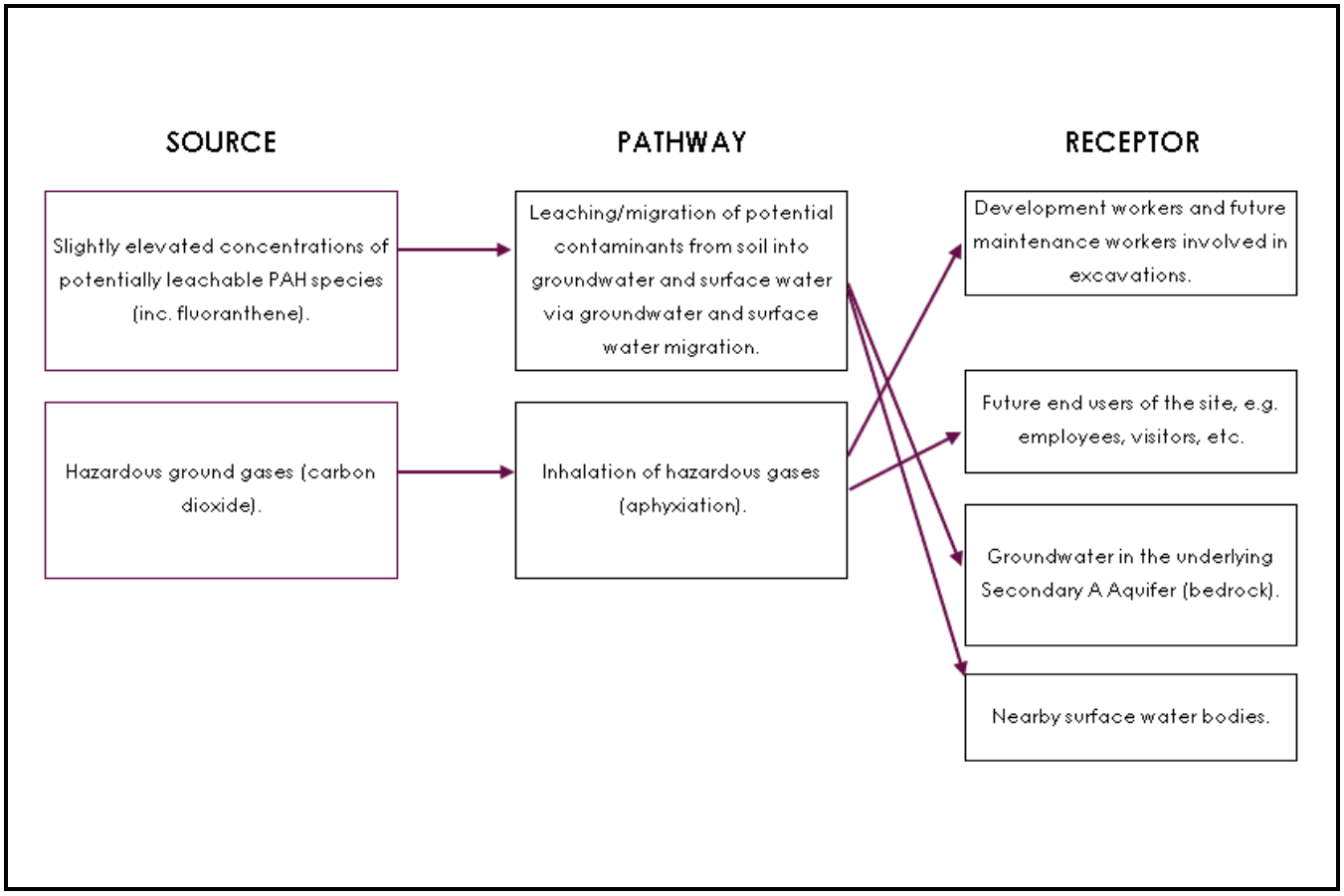


Figure 5 – Updated Conceptual Site Model	
Site	**Park Spring Road, Grimethorpe**
Client	**The Symphony Group PLC**
Job Number	**5161**
Scale	**NTS**

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NOTES

RECORDED UNDERGROUND MINEWORKINGS

Conjectured Highwall

LOCATION OF FAULT AS SHOWN ON GEOLOGICAL MAPPING

FERRYMOOR REVISED OCCS

LEGEND

- RO101 — AS BUILT JPG ROTARY OPEN HOLE
- RO/RC102 — AS BUILT JPG ROTARY OPEN HOLE WITH CORED FOLLOW ON
- BH101 — AS BUILT JPG CABLE PERCUSSIVE BOREHOLE
- CPT101 — AS BUILT JPG CONE PENETRATION TEST
- TP101 — AS BUILT JPG TRIAL PIT
- SE40NW239 — AS BUILT BGS BOREHOLE
- A — A' — SECTION LINE

REV	DESCRIPTION	DATE	BY
P03	ROTARY CORED BOREHOLES NOTED ON PLAN.	24.06.20	LSG
P02	SECTION LINES ADDED.	15.04.20	LSG
P01	FIRST ISSUE.	20.03.20	LSG

Project
PARK SPRING ROAD
GRIMETHORPE

Drawing Title
AS BUILT EXPLORATORY HOLE LOCATION PLAN

INFORMATION ISSUE

Architect
GARNETT NETHERWOOD ARCHITECTS

JPG
www.jpg.group
Leeds London Birmingham 0113 263 1155

JPG Project Ref	Scale at A1	Date	Checked	Drawn
5161	1:1000	20.03.20	JBW	LSG

5161 - JPG - SW - XX - DR - G - 1104 | S2 | P03

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NOTES

Cross Sections Have Been Produced From A Conceptual Ground Model And Should Not Be Relied Upon, Ground Conditions Projected May Not Be Representative Of The True Ground Conditions.

JPG Site Investigation Rotary Boreholes And Cable Percussive Boreholes Have Been Used To Project The Base Of Made Ground.

Contours Indicate Conjectured Base Of Made Ground Level (mAOD)

The Topographic Levels Have Been Generated From 'Survey Operations, Topographical Survey, Drawing No. 19J168/001'.

Legend

- Conjectured Made Ground
- Conjectured Coal Seam
- Recorded Underground Workings
- Intact Coal in Borehole

JPG Group 2020

- TP101 Trial Pit Location
- RO108 Rotary Borehole Location
- BH101 Cable Percussive Borehole Location
- CPT122 Cone Penetration Test Location

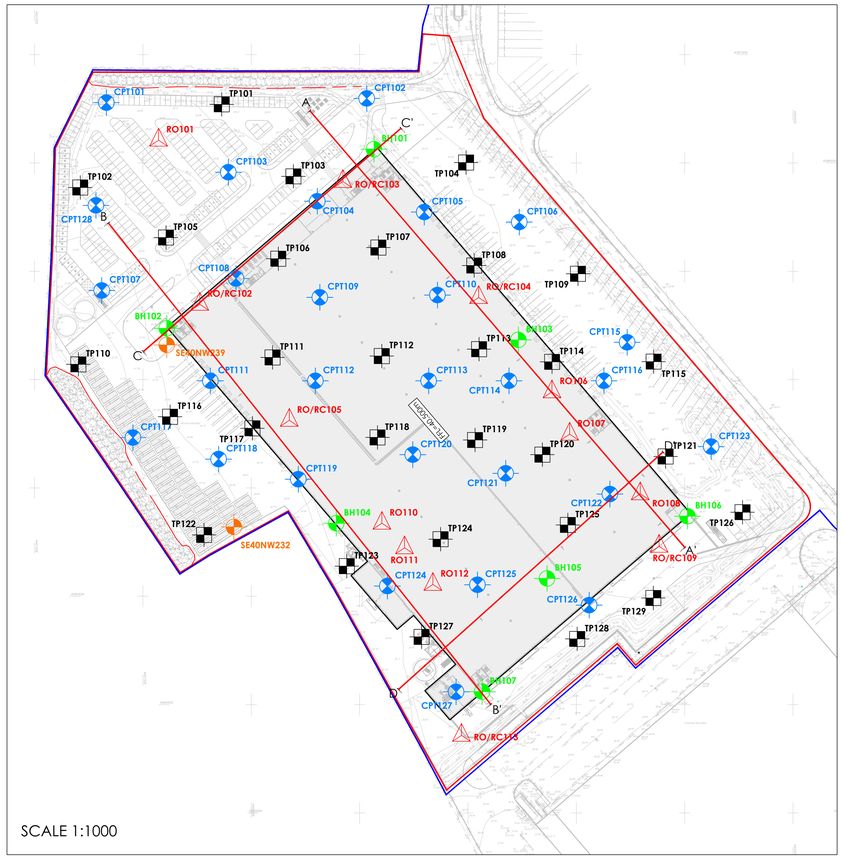
Coal Seam Data

Areas Of Potential Shallow Coal Mine Workings Within Influencing Depth Have Been Established In Accordance With CIRIA, C758D 'Abandoned Mine Workings Manual'.

The Influence Levels Have Been Shown At x10 Seam Thickness For The Top Of The Coal Seam, Using Assumed Thickness Of Seam.

The Assumed Seam Thickness Used Are As Follows (In Sequence Order):

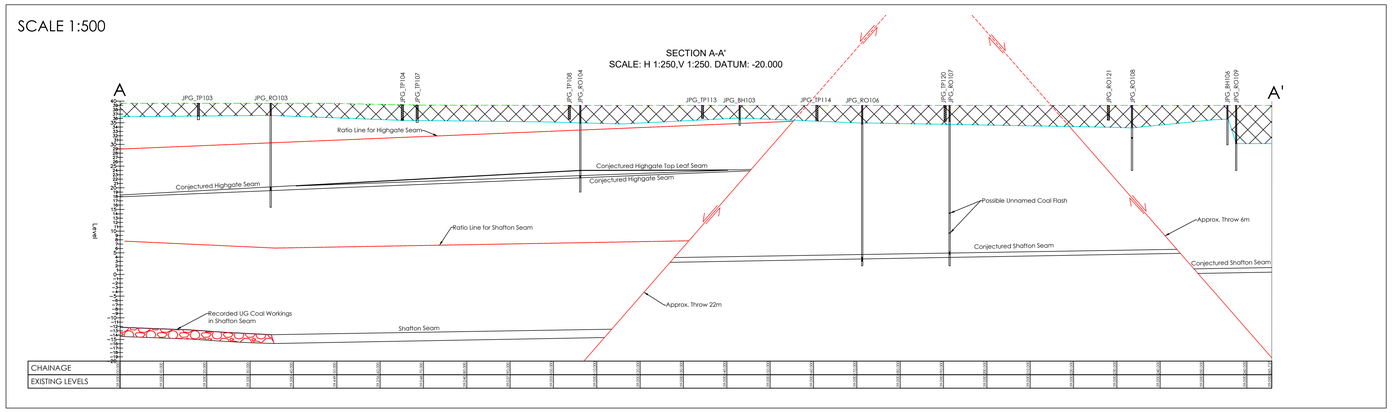
Highgate Top Leaf Seam: 0.10m
Highgate Seam: 0.80m
Shafton Rider Seam: 0.25m
Shafton Seam: 2.00m



SCALE 1:1000

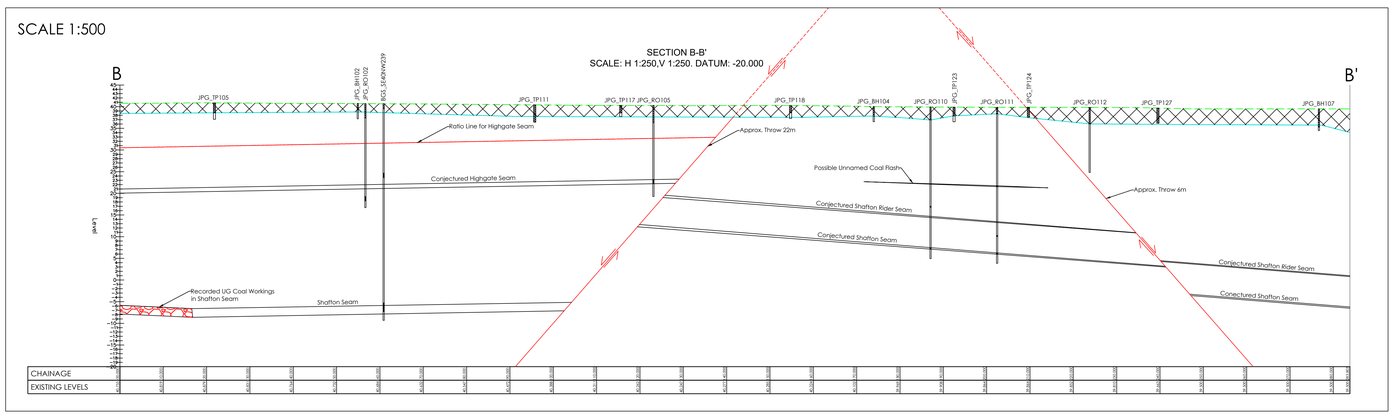
SCALE 1:500

SECTION A-A'
SCALE: H 1:250,V 1:250. DATUM: -20.000



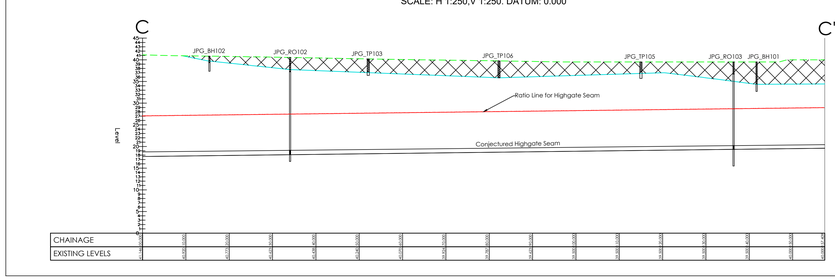
SCALE 1:500

SECTION B-B'
SCALE: H 1:250,V 1:250. DATUM: -20.000



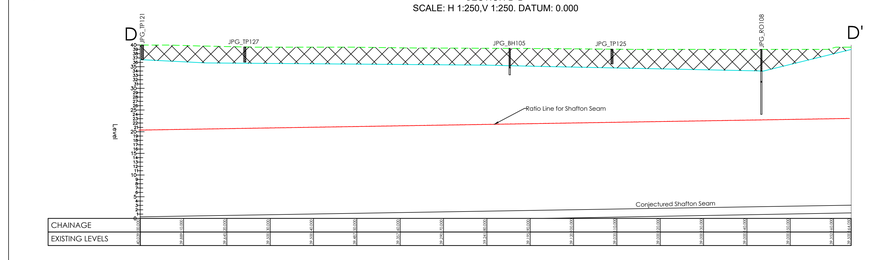
SCALE 1:500

SECTION C-C'
SCALE: H 1:250,V 1:250. DATUM: 0.000



SCALE 1:500

SECTION D-D'
SCALE: H 1:250,V 1:250. DATUM: 0.000



REV	DESCRIPTION	DATE	BY
P03	SECTIONS REVISED TO INCLUDE GROUND INVESTIGATION TRIAL PIT DATA.	24.06.20	LSG
P02	SECTIONS REVISED TO INCLUDE GROUND INVESTIGATION DATA AND PROJECTED GEOLOGY.	15.05.20	LSG
P01	FIRST ISSUE.	01.05.20	OLT

Project
ASHES PHASE 3,
PARK SPRING ROAD,
GRIMETHORPE

Drawing Title
CONCEPTUAL GROUND MODEL,
GEOLGICAL SITE SECTIONS

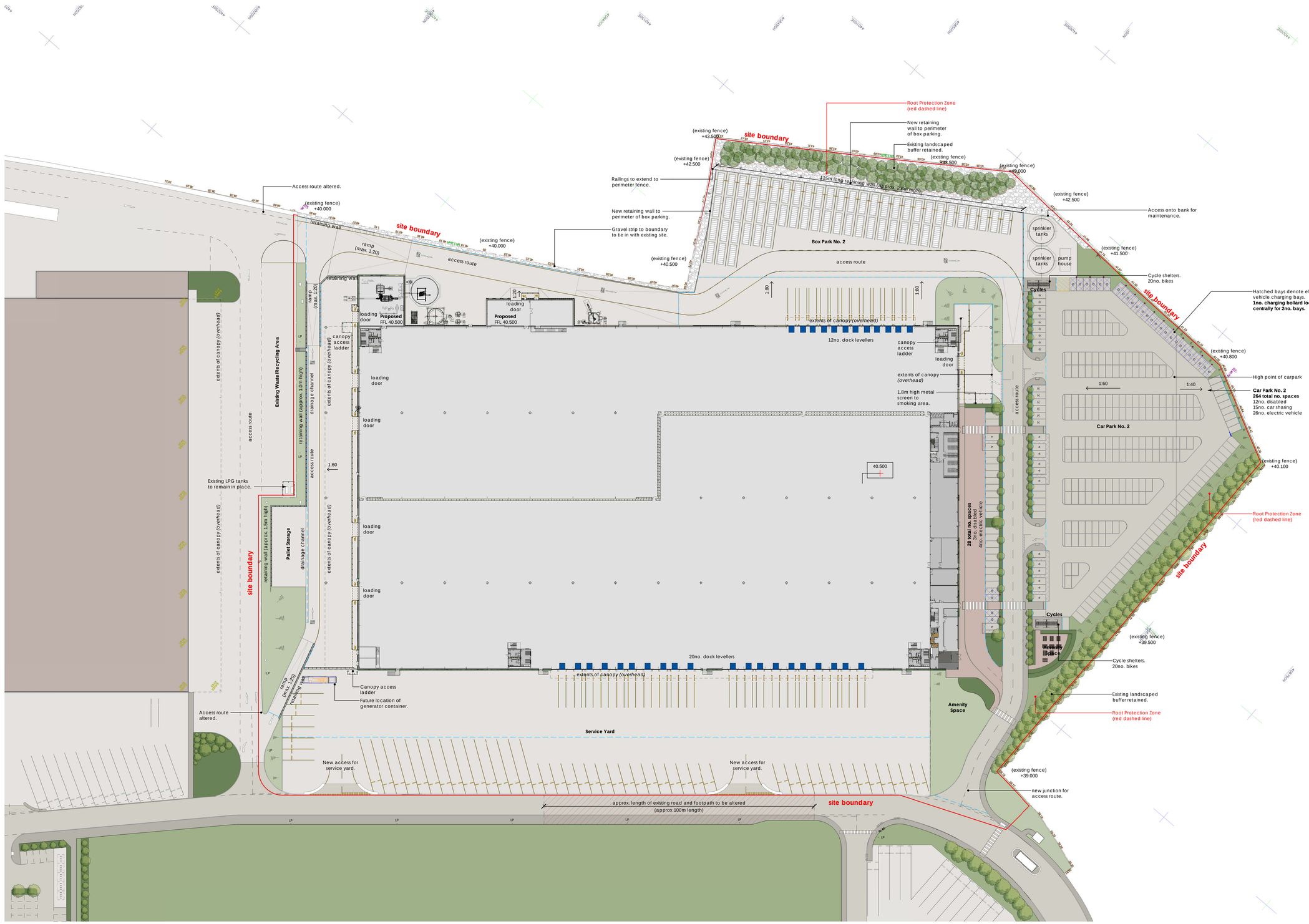
INFORMATION ISSUE

Architect
GARNETT NETHERWOOD ARCHITECTS

JPG
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JPG Project Ref	Scale at A0	Date	Checked	Drawn
5161	AS NOTED	APR'20		OLT

5161 - JPG - SW - XX - DR - G - 0011 | S2 | P03



External Works GA Plan
1 : 500

GENERAL NOTES

This drawing is to be read in conjunction with all related drawings.
Do not scale from this drawing.
All dimensions must be checked and verified on site before commencing any work or producing shop drawings.
The originator should be notified immediately of any discrepancy.
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NORTH

SCALE
0 5 10 15 20 25 50m 1:500

REVISIONS

Rev.	Date	Description	Issued By	Checked By
A	20.04.2020	Alterations made around sprinkler tank area to reduce retaining walls. Car sharing spaces allocated to Car Park No. 2.	NB	NDB
B	22.04.2020	Alterations made to car park to remove retaining walls.	NB	NDB
C	06.05.2020	Site layout updated with comments regarding retaining walls.	NB	NDB
D	26.05.2020	External works updated to incorporate SE drainage information. Alterations made to South Service Yard following discussions with Client and SE.	NB	NDB

Car Parking Schedule:
(Visitor Parking and Car Park No. 2)

15no. disabled spaces
15no. car sharing spaces
30no. electric vehicle spaces
232no. standard spaces
292 Total no. Spaces

Cycling Schedule:
40no. cycles

Box Park No. 2 Schedule:
57 Total no. Boxes

HGV Parking Schedule:
(East Service Yard)
48 Total no. Spaces

DRAWING NOTES:

External lighting design subject to local authority approval and in accordance with M&E consultants details.

All finishes to be on suitable substrate to structural engineer's design and specification.

All drainage shown is indicative and subject to Structural Engineer's details and specifications. Additional drainage requirements are to be to SE details.

New kerbs to be standard pre-cast concrete road kerbs – note all roads within the site affected by the proposed works are private roads and not adopted.

For all soft landscaping refer to Landscape Architects drawings and specifications.

PAVING TYPE 1
FOOTPATHS WITHIN SITE
Black tarmacadam footpaths. Paving to adoptable paving standards and on sub-base to engineer's specification and to local authority approval.

PAVING TYPE 2
CAR PARKING WITHIN SITE
Black tarmacadam roads and parking bays on sub-base to engineer's specification.

PAVING TYPE 3
SERVICE YARDS AND ACCESS ROUTE
New concrete service yard and access routes on sub-base to engineer's specification.

PAVING TYPE 4
FOOTPATH AND ROAD INFRONT OF OFFICE
80mm thick Tegula block paving to match factory no. 1. (**Specification: TBC**). Paving to adoptable paving standards and on sub-base to engineer's specification.

EXTERNAL STEPS
New flight of steps between levels constructed from painted galvanised steel structure with paved steps to match proposed paving.

LANDSCAPING TYPE 1
New turfed areas as indicated and subject to local authority approval.

LANDSCAPING TYPE 2
New areas of soft landscaping to tie-in with existing site and subject to local authority approval.

LANDSCAPING TYPE 3
New areas of gravel fill to tie-in with existing site and subject to local authority approval.

TREES
New trees within site. Species TBC.

CYCLE PARKING PROVISIONS
SHORT TERM STAY
Galvanised steel Sheffield Hoops to Local Authority approval.

CYCLE PARKING PROVISIONS
LONG TERM STAY
Galvanised steel Broxap Castleford cycle shelters or equal approved to local authority approval.
(4 x 10 bike shelters)

RETAINING WALL
Precast concrete retaining wall. **To SE details.**

RETAINING WALL (A)
Precast concrete retaining wall with galvanised steel armco vehicle barrier protection. **To SE details.**

RETAINING WALL (B)
Precast concrete retaining wall with 1100mm high galvanised steel keyclamp railings to top. **To SE details.**

RETAINING WALL (A and B)
Precast concrete retaining wall with galvanised steel armco vehicle barrier protection with 1100mm high pedestrian balustrade. **To SE details.**

BOLLARDS
(2no. to office main personnel doors, 4no. to all loading doors (2 internal, 2 external).
Galvanised mild steel bollards, 150mm dia x 1200mm high, bolted to concrete, filled with concrete and painted with black and yellow horizontal stripes.

EV CHARGING BOLLARDS
Pod point twin charger bollard (colour, black) to be installed within landscaping strip in accordance with manufacturer's details.

Client
The Symphony Group plc.

Project No. 1711
Project Ashes Phase 3

Drawing Title
(20) GENERAL ARRANGEMENTS
Site GA Plan As Proposed

Scale @ A0 1 : 500
Date 09.01.2020
Drawn by NB
Checked by NDB

Drawing Status
for Information

Drawing Number (20) 001
Revision D

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Appendix B Exploratory Hole Logs

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Cable Percussion Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 03/02/2020 - 04/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440256.62 N408656.37
Project No. : 5161	Crew Name:	Drilling Equipment: Dando 2000

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
BH101	CP	39.35m AoD	BW	1:55	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.10	D					MADE GROUND: Brown grey, clayey, subangular to angular, fine to coarse gravel of mudstone and siltstone.
		0.50	ES					
		0.70	B					
		1.00	D					
		1.20	ES					
		1.50	D					
		1.50	SPTLS					
		1.50 - 2.00	B					
		1.50	SPT	N=21 (2,3/3,5,7,6)				
		2.20	ES					
		2.40	B					
		2.50 - 2.95	U					
		3.00	B		3.00	36.35		MADE GROUND: Stiff grey slightly sandy, gravelly CLAY. Gravel is subangular of mudstone, siltstone and sandstone. Clay-bound gravel.
		3.20	D					
		3.40	B					
		3.50	D					
		3.50	SPTLS					
		3.50 - 4.00	B					
		3.50	SPT	N=23 (4,4/5,6,5,7)				
		4.20	D					
		4.40 - 4.95	B					
		4.50	B					
		5.00	D		5.00	34.35		Stiff, brown grey gravelly CLAY. Gravel is subangular of mudstone.
		5.20	D					
		5.40	B		5.40	33.95		Extremely weak, thinly and thickly laminated grey MUDSTONE.
		5.50	D					
		5.50	SPTLS					
		5.50 - 6.00	B					
		5.50	SPT	N=51 (5,8/51 for 265mm)				
		6.10	D		6.30	33.05		Weak, thinly and thickly laminated grey MUDSTONE.
		6.30	D					
		6.30	SPTLS					
		6.30	SPT	50 (25 for 106mm/50 for 28mm)	6.80	32.55		End of Borehole at 6.80m
		6.80	D					
		6.80	SPTLS					
		6.80	SPT	100 (50 for 51mm/100 for 42mm)				

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
6.80	200	6.80	200					0.00	6.80	90	

Remarks

1. No groundwater encountered. 2. No olfactory evidence of hydrocarbons. 3. Chiselled for 1 hour. 4. Monitoring well installed as shown above.

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Cable Percussion Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 05/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440161.03 N408573.63
Project No. : 5161	Crew Name:	Drilling Equipment: Dando 2000

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
BH102	CP	41.27m AoD	BW	1:55	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.10	D					MADE GROUND: Firm, grey brown slightly sandy gravelly CLAY. Gravel is subangular of mudstone, siltstone and sandstone.
		0.50	ES					
		0.70	B					
		1.00	D					
		1.20	ES					
		1.50	D		1.50	39.77		
		1.50 - 2.00	B					Very stiff orange brown and dark grey slightly sandy gravelly CLAY. Gravel is subangular, of mudstone and sandstone.
		1.50	SPT	N=23 (4,4/5,6,5,7)				
		2.40	B		2.40	38.87		
		2.50	D					Very weak, thinly laminated orange brown and grey MUDSTONE.
		2.50 - 3.00	B					
		2.50	SPT	50 (25 for 136mm/50 for 58mm)	3.10	38.17		Weak, thinly laminated orange brown and grey MUDSTONE.
		3.10	D		3.50	37.77		End of Borehole at 3.50m
		3.10	SPT	50 (25 for 42mm/50 for 38mm)				
		3.30	D					
		3.30	SPT	100 (50 for 51mm/100 for 50mm)				
		3.50	D					
		3.50	SPT	100 (50 for 40mm/100 for 31mm)				

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
3.50	200	3.50	200					0.00	3.50	90	

Remarks

1. No groundwater encountered. 2. No olfactory evidence of hydrocarbons. 3. Chiselled for 1 hour 30 mins. 4. Monitoring well installed as shown above.

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Cable Percussion Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 12/02/2020 - 13/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440323.24 N408568.33
Project No. : 5161	Crew Name:	Drilling Equipment: Dando 2000

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
BH103	CP	39.32m AoD	BW	1:55	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.10	D					MADE GROUND: Soft grey brown slightly sandy, gravelly CLAY. Gravel is fine to medium, subangular of mudstone, sandstone, and rare brick and coal fragments.
		0.20	B					
		0.50	ES					
		1.00	D					
		1.20	ES					
		1.50	D					
		1.50 - 2.00	B					
		1.50	SPT	N=15 (3,2/3,4,4,4)				
		2.20	ES					
		2.40	B		2.40	36.92		
		2.50	D					MADE GROUND: Firm grey brown slightly sandy, gravelly CLAY. Gravel is fine to medium, subangular of mudstone, sandstone, and rare brick and coal fragments.
		2.50 - 3.00	B					
		2.50	SPT	N=19 (2,4/4,4,5,6)				
		3.30	B		3.30	36.02		
		3.50 - 3.95	U					Thinly and thickly laminated brown MUDSTONE. Recovered as sandy gravel.
		4.00	D					
		4.30	D					
		4.50	D					
		4.50	SPT	50 (25 for 107mm/50 for 51mm)	4.60	34.72		Very Weak.
		4.60	D					End of Borehole at 4.60m
		4.60	SPT	100 (50 for 48mm/100 for 51mm)				

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
4.60	200	4.60	200					0.00	4.60	90	

Remarks

1. No groundwater encountered. 2. No olfactory evidence of hydrocarbons. 3. Chiselled for 1 hour. 4. Monitoring well installed as shown above.

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Cable Percussion Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 06/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440239.22 N408483.70
Project No. : 5161	Crew Name:	Drilling Equipment: Dando 2000

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
BH104	CP	40.48m AoD	BW	1:55	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10	D					MADE GROUND: Firm grey brown slightly sandy gravelly CLAY. Gravel is subrounded, fine to coarse, of sandstone, mudstone and rare fragements of brick and coal.
		0.50	ES					
		0.70	B					
		1.00	D					
		1.20	ES					
		1.50	D					
		1.50 - 2.00	B					
		1.50	SPT	N=34 (4,6/7,7,8,12)				
		2.20	D		2.20	38.28		Grey brown clayey slightly sandy GRAVEL. Gravel is fine to coarse, subangular, of mudstone.
		2.40	B					
		2.50 - 2.95	B					
		3.00	D					
		3.30	D		3.10	37.38		Very weak, thinly and thickly laminated grey and orange MUDSTONE.
		3.30	SPT	50 (25 for 61mm/50 for 52mm)	3.50	36.98		End of Borehole at 3.50m
		3.50	D					
		3.50	SPT	100 (50 for 51mm/100 for 49mm)				

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
3.50	200	3.50	200					0.00	3.50	90	

Remarks

1. No groundwater encountered. 2. No olfactory evidence of hydrocarbons. 3. Chiselled for 1 hour 30 mins. 4. Monitoring well installed as shown above.

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Cable Percussion Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 11/02/2020 - 12/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440336.51 N408458.25
Project No. : 5161	Crew Name:	Drilling Equipment: Dando 2000

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
BH105	CP	39.50m AoD	BW	1:55	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.10	D					MADE GROUND: Firm grey brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded, fine to coarse, of mudstone and sandstone.
		0.20	B					
		0.50	ES					
		1.00	D					
		1.20	ES					
		1.40	B					
		1.50	D					
		1.50 - 2.00	B					
		1.50	SPT	N=22 (8,8/6,5,5,6)				
		2.20	D					
		2.40	B					
		2.50 - 2.95	U					
		3.00	D					
		3.30	D					
		3.50	D					
		3.50 - 4.00	B					
		3.50	SPT	N=18 (3,4/4,5,5,4)				
		4.30	D					
		4.50 - 4.95	U		4.50	35.00		Very stiff to stiff, grey brown and orange brown, slightly sandy slightly gravelly CLAY. Gravel is fine to medium, subangular to angular of sandstone and mudstone.
		5.00	D					
		5.30	B		5.30	34.20		Extremely weak, thinly and thickly laminated grey MUDSTONE.
		5.50	D		5.50	34.00		Very weak, thinly and thickly laminated grey MUDSTONE.
		5.50 - 6.00	B					
		5.50	SPT	50 (25 for 116mm/50 for 109mm)	6.00	33.50		Weak, thinly and thickly laminated grey MUDSTONE.
		6.00	D		6.10	33.40		End of Borehole at 6.10m
		6.00	SPT	50 (25 for 43mm/50 for 40mm)				
		6.10	D					
		6.10	SPT	100 (50 for 51mm/100 for 264mm)				

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
6.10	200	6.10	200					0.00	6.10	90	

Remarks

1. No groundwater encountered. 2. No olfactory evidence of hydrocarbons. 3. Chiselled for 1 hour. 4. Monitoring well installed as shown above.

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Cable Percussion Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 10/02/2020 - 11/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440401.29 N408486.98
Project No. : 5161	Crew Name:	Drilling Equipment: Dando 2000

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
BH106	CP	38.94m AoD	BW	1:55	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.10	D					MADE GROUND: Firm and stiff slightly sandy gravelly CLAY. Gravel is subangular of mudstone and sandstone.
		0.20	B					
		0.50	ES					
		0.70	D					
		1.20	ES					
		1.50	D					
		1.50 - 2.00	B					
		1.50	SPT	N=19 (3,4/4,4,5,6)				
		2.20	ES					
		2.40	D					
		2.50 - 2.95	U					
		3.00	D		3.10	35.84		
		3.10	B					Firm, grey and orange brown slightly sandy gravelly CLAY. Gravel is subangular, fine to coarse, of sandstone, siltstone and mudstone.
		3.20	ES					
		3.40	B					
		3.50	D					
		3.50 - 3.95	B					
		3.50	SPT	N=36 (5,6/8,9,9,10)				
		4.20	D					
		4.40	B					
		4.50 - 4.95	B					
		5.00	D					
		5.20	B					
		5.40	D					
		5.50	D					
		5.50 - 6.00	B					
		5.50	SPT	N=37 (8,9/9,10,10,8)				
		6.20	D					
		6.40	B					
		6.50 - 6.95	B					
		7.00	D					
		7.30	B		7.30	31.64		Extremely weak, thinly and thickly laminated grey MUDSTONE. Recovered as clayey gravel.
		7.70	D					
		8.00	D					
		8.00 - 8.50	B					
		8.00	SPT	N=37 (7,8/10,8,9,10)				
		8.70	D					
		9.00	D		9.00	29.94		
		9.00	SPT	50 (25 for 50mm/50 for 31mm)				End of Borehole at 9.10m
		9.10	SPT	100 (50 for 61mm/100 for 51mm)				

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
9.10	200	9.10	200					0.00	9.10	90	

Remarks

1. Groundwater encountered at 7.90m. 2. No olfactory evidence of hydrocarbons. 3. Chiselled for 30 mins. 4. Monitoring well installed as shown above.

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Cable Percussion Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 06/02/2020 - 07/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440306.55 N8406.00
Project No. : 5161	Crew Name:	Drilling Equipment: Dando 2000

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
BH107	CP	39.83m AoD	BW	1:55	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.05	D					MADE GROUND: Soft to firm grey slightly sandy, slightly gravelly CLAY. Gravel is fine to medium, subangular to subrounded, of mudstone, sandstone and siltstone.
		0.50	ES					
		0.70	D					
		1.20	ES					
		1.50	D		1.50	38.33		
		1.50 - 2.00	B					MADE GROUND: Soft to firm grey sandy slightly gravelly CLAY. Gravel is fine to medium, subangular to subrounded of mudstone and sandstone.
		1.50	SPT	N=14 (3,3/2,3,4,5)				
		2.20	ES					
		2.40	D					
		2.50 - 2.95	U					
		3.00	D					
		3.20	B					
		3.40	D					
		3.50	D					
		3.50 - 4.00	B					
		3.50	SPT	N=25 (4,5/6,6,5,8)				
		4.20	D		4.20	35.63		Extremely weak, thinly and thickly bedded grey MUDSTONE. Recovered as sandy gravel.
		4.40	B					
		4.50	D					
		4.50	SPT	50 (25 for 114mm/50 for 48mm)				
		4.70	B		5.00	34.83		End of Borehole at 5.00m
		4.80	D					
		4.80	SPT	50 (25 for 93mm/50 for 51mm)				
		5.00	D					
		5.00	SPT	100 (50 for 61mm/100 for 51mm)				

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
5.00	200	5.00	200					0.00	5.00	90	

Remarks

1. No groundwater encountered. 2. No olfactory evidence of hydrocarbons. 3. Chiselled for 1 hour 30 mins. 4. Monitoring well installed as shown above.

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Rotary Open Hole Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 12/02/2020 - 13/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440157.22 N408660.49
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RO101	RO	40.30m AoD	BW	1:150	Sheet 1 of 1

Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
	▼							MADE GROUND: Firm, brown sandy clay fill (Colliery spoil).
					2.00	38.30		Grey MUDSTONE.
					4.00	36.30		Brown MUDSTONE.
					6.40	33.90		Grey MUDSTONE.
					15.00	25.30		Grey MUDSTONE.
					16.70	23.60		COAL.
					17.30	23.00		Grey MUDSTONE.
					23.80	16.50		Grey SANDSTONE.
					25.00	15.30		End of Borehole at 25.00m

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
25.00	150		3.00	150	0.00	25.00	90		0.00	25.00	Air

Remarks

1. Groundwater encountered at 2.00m. 2. No olfactory evidence of hydrocarbons. 3. Monitoring well installed as shown above. 4. Descriptions based on driller's records.

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Rotary Open Hole Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 17/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440175.96 N408584.85
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RO102	RO	41.03m AoD	BW	1:150	Sheet 1 of 1

Well	Water Strikes	In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
								MADE GROUND: Brown grey colliery spoil.
		3.00	SPT	N=19 (5,4/4,3,6,6)	3.30	37.73		
								Grey MUDSTONE.
					4.90	36.13		
								Grey MUDSTONE/SILTSTONE.
	▼	6.00	D					
		6.00	SPT	100 (25 for 39mm/100 for 42mm)				
		9.50	D					
		9.50	SPT	100 (25 for 26mm/100 for 38mm)				
		12.00	SPT	100 (25 for 17mm/100 for 16mm)				
		15.00	SPT	100 (25 for 18mm/100 for 19mm)				
					19.60	21.43		COAL.
					20.60	20.43		Grey MUDSTONE.
					24.00	17.03		End of Borehole at 24.00m

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
24.00	150		3.00	150	0.00	24.00	90		0.00	6.00	Air
									6.00	24.00	Air mist

Remarks

1. Groundwater encountered at 7.48m. 2. No olfactory evidence of hydrocarbons. 3. Monitoring well installed as shown above. 4. Descriptions based on driller's records.

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Rotary Open Hole Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 17/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440242.27 N408641.43
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RO103	RO	39.80m AoD	BW	1:150	Sheet 1 of 1

Well	Water Strikes	In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
								MADE GROUND: Brown grey colliery spoil.
		3.00	SPT	N=27 (3,4/7,6,7,7)	2.80	37.00		Grey MUDSTONE/SILTSTONE.
	▼	6.00	SPT	100 (25 for 19mm/100 for 18mm)				
		8.50	SPT	100 (25 for 27mm/100 for 31mm)				
		11.50	SPT	100 (25 for 16mm/100 for 17mm)				
		15.00	SPT	100 (25 for 20mm/100 for 11mm)				
					19.30	20.50		COAL.
					20.15	19.65		Grey MUDSTONE.
					24.00	15.80		End of Borehole at 24.00m

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
24.00	150		3.00	150	0.00	24.00	90		0.00	6.00	Air
									6.00	24.00	Air mist

Remarks

1. Groundwater encountered at 6.42m. 2. No olfactory evidence of hydrocarbons. 3. Monitoring well installed as shown above. 4. Descriptions based on driller's records.

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Rotary Open Hole Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 18/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440304.92 N408587.87
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RO104	RO	38.79m AoD	BW	1:150	Sheet 1 of 1

Well	Water Strikes	In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
								MADE GROUND: Grey brown colliery spoil.
		3.00	SPT	N=20 (5,5/5,6,4,5)				
					4.10	34.69		Grey MUDSTONE/SILTSTONE.
	▼	6.00	SPT	100 (25 for 95mm/100 for 93mm)				
		9.00	SPT	100 (25 for 47mm/100 for 87mm)				
		12.00	SPT	100 (25 for 21mm/100 for 17mm)				
		15.00	SPT	100 (25 for 19mm/100 for 20mm)	14.95	23.84		COAL.
					15.05	23.74		Grey MUDSTONE.
					16.20	22.59		COAL.
					16.70	22.09		Grey MUDSTONE.
					20.00	18.79		End of Borehole at 20.00m

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
20.00	150		4.20	150	0.00	20.00	90		0.00 6.00	6.00 20.00	Air Air mist

Remarks

1. Groundwater encountered at 7.04m. 2. No olfactory evidence of hydrocarbons. 3. Descriptions based on driller's records.

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Rotary Open Hole Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 18/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440217.54 N408531.21
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RO105	RO	39.91m AoD	BW	1:150	Sheet 1 of 1

Well	Water Strikes	In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
								MADE GROUND: Brown colliery spoil.
					1.90	38.01		MADE GROUND: Grey brown colliery spoil.
		3.00	SPT	N=19 (4,6/6,5,4,4)				
					4.00	35.91		Dark grey MUDSTONE/SILTSTONE
	▼	6.00	SPT	100 (25 for 82mm/100 for 112mm)				
		8.50	SPT	100 (25 for 32mm/100 for 29mm)				
		11.50	SPT	100 (25 for 28mm/100 for 23mm)				
		15.00	SPT	100 (25 for 19mm/100 for 19mm)				
					17.10	22.81		COAL.
					18.05	21.86		Grey MUDSTONE.
					21.00	18.91		End of Borehole at 21.00m

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
21.00	150		4.10	150	0.00	21.00	90		0.00 6.00	6.00 21.00	Air Air mist

Remarks

1. Groundwater encountered at 7.04m. 2. No olfactory evidence of hydrocarbons. 3. Descriptions based on driller's records.

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Rotary Open Hole Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 17/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440338.75 N408544.37
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RO106	RO	39.22m AoD	BW	1:150	Sheet 1 of 2

Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								MADE GROUND: Compact colliery spoil.
					4.30	34.92		Grey/brown MUDSTONE.
					7.90	31.32		Grey/brown SANDSTONE.
					10.70	28.52		Grey MUDSTONE with sandstone bands.

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
37.00	150		5.00	150	0.00	37.00	90		0.00 5.00	5.00 37.00	Air Water

Remarks

1. No groundwater encountered. 2. No olfactory evidence of hydrocarbons. 3. Monitoring well installed as shown above. 4. Descriptions based on driller's records.

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Rotary Open Hole Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 17/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440338.75 N408544.37
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RO106	RO	39.22m AoD	BW	1:150	Sheet 2 of 2

Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				Grey MUDSTONE with sandstone bands.
					35.00	4.22		COAL.
					36.00	3.22		Grey MUDSTONE.
					37.00	2.22		End of Borehole at 37.00m

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
37.00	150		5.00	150	0.00	37.00	90		0.00 5.00	5.00 37.00	Air Water

Remarks

1. No groundwater encountered. 2. No olfactory evidence of hydrocarbons. 3. Monitoring well installed as shown above. 4. Descriptions based on driller's records.

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Rotary Open Hole Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 18/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440346.93 N408524.82
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RO107	RO	38.82m AoD	BW	1:150	Sheet 1 of 2

Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				MADE GROUND: Compact colliery spoil.
					3.70	35.12		Grey MUDSTONE with sandstone bands.
					24.80	14.02		COAL.
					24.90	13.92		Grey MUDSTONE.
					29.40	9.42		COAL.
					29.50	9.32		

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
37.00	150		5.00	150	0.00	37.00	90		0.00	5.00	Air
									5.00	37.00	Water

Remarks

1. No groundwater encountered. 2. No olfactory evidence of hydrocarbons. 3. Descriptions based on driller's records.

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Rotary Open Hole Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 18/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440346.93 N408524.82
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RO107	RO	38.82m AoD	BW	1:150	Sheet 2 of 2

Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				Grey MUDSTONE.
					33.80	5.02		COAL.
					34.40	4.42		Grey MUDSTONE.
					37.00	1.82		End of Borehole at 37.00m

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
37.00	150		5.00	150	0.00	37.00	90		0.00 5.00	5.00 37.00	Air Water

Remarks

1. No groundwater encountered. 2. No olfactory evidence of hydrocarbons. 3. Descriptions based on driller's records.

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Rotary Open Hole Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 13/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440379.50 N408497.30
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RO108	RO	38.82m AoD	BW	1:150	Sheet 1 of 1

Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				MADE GROUND: Brown grey colliery spoil.
					5.00	33.82		Grey MUDSTONE.
					7.40	31.42		COAL.
					7.60	31.22		Grey MUDSTONE.
					15.00	23.82		End of Borehole at 15.00m

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
15.00	150		3.00	200	0.00	15.00	90		0.00	15.00	Air

Remarks

1. No groundwater encountered. 2. No olfactory evidence of hydrocarbons. 3. Descriptions based on driller's records.

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Rotary Open Hole Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 14/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440388.19 N408473.09
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RO109	RO	39.24m AoD	BW	1:150	Sheet 1 of 1

Well	Water Strikes	In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
								MADE GROUND: Brown grey colliery spoil and brick.
		3.00	SPT	N=20 (3,4/4,5,5,6)	3.00	36.24		MADE GROUND: Colliery spoil.
		6.00	SPT	N=14 (7,5/4,4,3,3)				
		9.00	D		8.80	30.44		Grey MUDSTONE.
		9.00	SPT	100 (25 for 52mm/100 for 41mm)				
		11.50	D					
		11.50	SPT	100 (25 for 46mm/100 for 37mm)				
		15.00	D		15.00	24.24		End of Borehole at 15.00m
		15.00	SPT	100 (25 for 21mm/100 for 29mm)				

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
15.00	150		3.00	150	0.00	15.00	90		0.00 9.00	9.00 15.00	Air Air mist

Remarks

1. No groundwater encountered. 2. No olfactory evidence of hydrocarbons. 3. Monitoring well installed as shown above. 4. Descriptions based on driller's records.

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Rotary Open Hole Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 18/02/2020 - 19/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440260.28 N408483.69
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RO110	RO	40.07m AoD	BW	1:150	Sheet 1 of 2

Well	Water Strikes	In Situ Testing: Depth (m)	In Situ Testing: Type	In Situ Testing: Results	Depth (m)	Level (m)	Legend	Stratum Description
								MADE GROUND: Brown grey colliery spoil.
					3.00	37.07		Grey brown MUDSTONE.
	▼				5.00	35.07		Grey MUDSTONE.
					6.00	34.07		Grey MUDSTONE.
					15.50	24.57		Hard grey SILTSTONE/SANDSTONE.
					17.00	23.07		Grey MUDSTONE.
					17.70	22.37		COAL.
					17.80	22.27		Grey MUDSTONE.
					22.90	17.17		COAL.
					23.15	16.92		Dark grey MUDSTONE.
					24.40	15.67		Hard grey SANDSTONE.
					25.10	14.97		Grey MUDSTONE.

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
35.00	150		4.50	150	0.00	35.00	90		0.00	6.00	Air
									6.00	35.00	Water

Remarks

1. No groundwater encountered. 2. No olfactory evidence of hydrocarbons. 3. Monitoring well installed as shown above. 4. Descriptions based on driller's records.

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Rotary Open Hole Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 18/02/2020 - 19/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440260.28 N408483.69
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RO110	RO	40.07m AoD	BW	1:150	Sheet 2 of 2

Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				Grey MUDSTONE.
					32.45	7.62		COAL.
					32.80	7.27		Dark grey MUDSTONE.
					35.00	5.07		End of Borehole at 35.00m

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
35.00	150		4.50	150	0.00	35.00	90		0.00	6.00	Air
									6.00	35.00	Water

Remarks

1. No groundwater encountered. 2. No olfactory evidence of hydrocarbons. 3. Monitoring well installed as shown above. 4. Descriptions based on driller's records.

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Rotary Open Hole Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 18/02/2020	
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440270.72 N408472.35	
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305	

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RO111	RO	49.65m AoD	BW	1:150	Sheet 1 of 2

Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								MADE GROUND: Compact colliery spoil.
					1.30	48.35		
					1.50	48.15		Firm brown clay.
								Grey MUDSTONE with sandstone bands.
					18.10	31.55		COAL.
					18.30	31.35		Grey MUDSTONE with sandstone bands.
					29.60	20.05		
					29.80	19.85		

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
36.00	150		3.00	150	0.00	36.00	90		0.00 3.00	3.00 36.00	Air Water

Remarks

1. No groundwater encountered. 2. No olfactory evidence of hydrocarbons. 3. Descriptions based on driller's records.

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Rotary Open Hole Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 18/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440270.72 N408472.35
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RO111	RO	49.65m AoD	BW	1:150	Sheet 2 of 2

Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								COAL.
								Grey MUDSTONE.
					33.60	16.05		COAL.
					33.90	15.75		Grey MUDSTONE.
					36.00	13.65		End of Borehole at 36.00m

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
36.00	150		3.00	150	0.00	36.00	90		0.00 3.00	3.00 36.00	Air Water

Remarks

1. No groundwater encountered. 2. No olfactory evidence of hydrocarbons. 3. Descriptions based on driller's records.

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Rotary Open Hole Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 13/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440283.80 N408455.48
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RO112	RO	39.59m AoD	BW	1:150	Sheet 1 of 1

Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				Grey MUDSTONE. according to driller's description. However, based on surrounding exploratory hole data, probably a mudstone/siltstone boulder. Therefore made ground.
					3.10	36.49		COAL, according to driller's log though possibly compacted coal waste.
					3.80	35.79		Brown grey MUDSTONE.
					4.50	35.09		Grey MUDSTONE.
					15.00	24.59		End of Borehole at 15.00m

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
15.00	150		3.00	150	0.00	15.00	90		0.00	15.00	Air

Remarks

1. No groundwater encountered. 2. No olfactory evidence of hydrocarbons. 3. Descriptions based on driller's records.

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Rotary Open Hole Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 19/02/2020 - 20/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440297.00 N408385.80
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RO113	RO	39.98m AoD	BW	1:150	Sheet 1 of 2

Well	Water Strikes	In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
					0.40	39.58		MADE GROUND: Colliery spoil. Weathered grey clayey MUDSTONE.
		2.60 2.60	D SPT	N=26 (5,5/6,6,7,7)	3.30	36.68		Grey MUDSTONE.
		5.60 5.60	D SPT	N=28 (3,5/6,6,7,9)				
		8.60 8.60	D SPT	100 (25 for 19mm/100 for 32mm)	8.80	31.18		Grey SANDSTONE.
		11.60 11.60	D SPT	100 (25 for 15mm/100 for 20mm)				
		14.60 14.60	D SPT	100 (25 for 20mm/100 for 20mm)	13.80	26.18		Grey MUDSTONE.
					18.30 18.50	21.68 21.48		COAL. Grey MUDSTONE with sandstone bands.

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
35.00	150		5.50	150	0.00	35.00	90		0.00 2.60	2.60 35.00	Air Water

Remarks

1. No groundwater encountered. 2. No olfactory evidence of hydrocarbons. 3. Monitoring well installed as shown above. 4. Descriptions based on driller's records.

AGS

5 John Charles Way
Leeds
LS12 6QA

Rotary Open Hole Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 19/02/2020 - 20/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440297.00 N408385.80
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RO113	RO	39.98m AoD	BW	1:150	Sheet 2 of 2

Well	Water Strikes	In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				Grey MUDSTONE with sandstone bands.
					31.20	8.78		COAL.
					31.30	8.68		Grey MUDSTONE.
					35.00	4.98		End of Borehole at 35.00m

Hole Diameter		Drill Bit Type	Casing Diameter		Inclination & Orientation				Drilling Flush		
Depth Base (m)	Diameter (mm)	Bit Type	Depth Base (m)	Diameter (mm)	Depth Top (m)	Depth Base (m)	Inclination	Orientation	Depth Top (m)	Depth Base (m)	Flush Type
35.00	150		5.50	150	0.00	35.00	90		0.00	2.60	Air
									2.60	35.00	Water

Remarks

1. No groundwater encountered. 2. No olfactory evidence of hydrocarbons. 3. Monitoring well installed as shown above. 4. Descriptions based on driller's records.

AGS

5 John Charles
Leeds
LS12 6QA

Rotary Core Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 17/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440175.96 N408584.85
Project No. : 5161	Crew Name:	Drilling Equipment:

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RC102	RC	41.03m AoD	BW	1:55	Sheet 1 of 2

Well	Water	Depth (m)	Type /Fl	Coring TCR	Coring SCR	Coring RQD	Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description
											MADE GROUND: Brown grey colliery spoil.
											0-6.00m rotary openholed.
								3.30	37.73		Grey MUDSTONE.
								4.90	36.13		Grey MUDSTONE/SILTSTONE.
		6.00 - 6.50		100	34	20		6.00	35.03		Extremely weak, grey non-intact destructured MUDSTONE.
								6.30	34.73		Strong, medium grey partially unweathered SANDSTONE.
		6.50 - 8.00		100	73	66		6.44	34.59		Extremely weak to very weak, very thinly laminated partially unweathered to distinctly weathered medium grey MUDSTONE.
								7.10	33.93		Strong to very strong medium grey partially unweathered SANDSTONE.
		8.00 - 9.50	NI 4 86	100	73	44					Interbedded sandstone and mudstone.
											Distinctly weathered mudstone.
								9.15	31.88		Medium strong thinly laminated medium grey partially unweathered MUDSTONE.
		9.50 - 11.00		100	64	15					Mudstone is weak and non-intact.
								10.67	30.36		Medium strong grey partially

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)
								0.00	12.00	90							

Remarks

AGS

JPG	5 John Charles Leeds LS12 6QA	**Rotary Core Log**

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 17/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440175.96 N408584.85
Project No. : 5161	Crew Name:	Drilling Equipment:

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RC102	RC	41.03m AoD	BW	1:55	Sheet 2 of 2

Well	Water	Depth (m)	Type /Fl	Coring TCR	Coring SCR	Coring RQD	Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description
		11.00 - 12.00		100	93	85		11.22	29.81		Medium strong grey partially unweathered SANDSTONE. Sandstone becoming weak and more weathered below 11.08m.
								12.00	29.03		Extremely weak, medium grey and dark grey, unstructured and distinctly weathered MUDSTONE.
											End of Borehole at 12.00m

12 13 14 15 16 17 18 19 20 21 22

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)
								0.00	12.00	90							

Remarks

AGS

5 John Charles
Leeds
LS12 6QA

Rotary Core Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 17/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440242.27 N408641.43
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RC103	RC	39.80m AoD	BW	1:55	Sheet 1 of 2

Well	Water	Depth (m)	Type /Fl	Coring TCR	Coring SCR	Coring RQD	Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description
											MADE GROUND: Brown grey colliery spoil.
											0-6.00m Rotary openholed.
								2.80	37.00		Grey MUDSTONE/SILTSTONE.
		6.00 - 7.50	NI 5 32	93	55	35		6.09	33.71		Extremely weak, very thinly laminated distinctly weathered dark grey MUDSTONE.
								6.43	33.37		Extremely weak to weak, partially unweathered light grey MUDSTONE.
											Below 7.25m becoming weak.
		7.50 - 8.50		97	19	0		7.44	32.36		Non-intact, destructured extremely weak medium grey MUDSTONE.
								7.62	32.18		Strong, medium grey fine grained SANDSTONE.
								7.83	31.97		Extremely weak to weak, partially unweathered light grey MUDSTONE.
		8.50 - 10.00		97	79	71		8.60	31.20		Destructured and non-intact. Strong to extremely strong, partially unweathered light grey, fine to medium grained SANDSTONE.
											Dark grey, thinly to thickly laminated.
		10.00 - 11.50		100	80	50		9.90	29.90		Weak to medium strong, thinly laminated dark and light grey SILTSTONE interlaminated with mudstone.
								10.42	29.38		Strong, dark grey partially unweathered SILTSTONE.
								10.53	29.27		

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)
								0.00	12.00	90							

Remarks

AGS

JPG	5 John Charles Leeds LS12 6QA	**Rotary Core Log**

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 17/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440242.27 N408641.43
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RC103	RC	39.80m AoD	BW	1:55	Sheet 2 of 2

Well	Water	Depth (m)	Type /Fl	Coring TCR	Coring SCR	Coring RQD	Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description
											Weak, thinly laminated dark grey partially unweathered MUDSTONE.
		11.50 - 12.00		100	58	22		11.88	27.92		
								12.00	27.80		Strong, medium grey fine grained SANDSTONE.
											End of Borehole at 12.00m

12 13 14 15 16 17 18 19 20 21 22

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)
								0.00	12.00	90							

Remarks

AGS

JPG 5 John Charles Leeds LS12 6QA	**Rotary Core Log**	
Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 18/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440304.92 N408587.87
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RC104	RC	38.79m AoD	BW	1:55	Sheet 1 of 2

Well	Water	Depth (m)	Type /Fl	Coring TCR	Coring SCR	Coring RQD	Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description
											Grey MUDSTONE/SILTSTONE. 0-6.00m Rotary openholed.
								6.00	32.79		Very weak, very thinly laminated light grey SILTSTONE interlaminated with mudstone.
								6.33	32.46		Weathering state is destructured.
		6.00 - 7.50		100	95	53		6.73	32.06		Weak, light grey fine to medium grained SANDSTONE.
											Very weak, very thinly laminated light grey SILTSTONE interlaminated with mudstone.
								7.60	31.19		Very weak, very thinly laminated light grey MUDSTONE interlaminated with siltstone.
		7.50 - 9.00	NI 50 250	93	53	22					Mudstone is very weak and destructured.
											Distinctly weathered mudstone.
		9.00 - 10.50		100	56	34		9.67	29.12		Weak, light grey fine to medium grained SANDSTONE.
								10.10	28.69		Very weak, very thinly laminated light grey MUDSTONE.
								10.27	28.52		Weak, light grey fine to medium grained SANDSTONE.
								10.78	28.01		

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)
								0.00	12.00	90							

Remarks

AGS

JPG 5 John Charles Leeds LS12 6QA	**Rotary Core Log**	
Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 18/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440304.92 N408587.87
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RC104	RC	38.79m AoD	BW	1:55	Sheet 2 of 2

Well	Water	Depth (m)	Type /Fl	Coring TCR	Coring SCR	Coring RQD	Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description
		10.50 - 12.00		100	70	30		11.19	27.60		Very weak, very thinly laminated light grey MUDSTONE.
								11.60	27.19		Weak, light grey fine to medium grained SANDSTONE.
								12.00	26.79		Very weak, very thinly laminated light grey SILTSTONE interlaminated with mudstone.
											End of Borehole at 12.00m

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)
								0.00	12.00	90							

Remarks

AGS

JPG	5 John Charles Leeds LS12 6QA	**Rotary Core Log**

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 18/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440217.54 N408531.21
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RC105	RC	39.91m AoD	BW	1:55	Sheet 1 of 2

Well	Water	Depth (m)	Type /Fl	Coring TCR	Coring SCR	Coring RQD	Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description
											MADE GROUND: Brown colliery spoil. 0-6.00m rotary openholed.
								1.90	38.01		MADE GROUND: Grey brown colliery spoil.
								4.00	35.91		Dark grey MUDSTONE/SILTSTONE.
		6.00 - 7.00	NI 8 68	100	63	60		6.00	33.91		Weak, thinly laminated light grey partially weathered SILTSTONE. Distinctly weathered.
		7.00 - 8.50		100	91	66		7.23	32.68		Medium strong partially unweathered light grey SANDSTONE.
								7.90	32.01		
								8.10	31.81		Weak, thinly laminated light grey partially weathered MUDSTONE.
		8.50 - 10.00	NI 3 19	100	55	31		9.00	30.91		Weak, thinly laminated light grey partially weathered SILTSTONE. Extremely weak, thinly laminated dark grey partially unweathered MUDSTONE.
		10.00 - 11.50		100	52	67		10.49	29.42		Medium strong partially unweathered light grey SANDSTONE.
								10.62	29.29		

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)
								0.00	12.00	90							

Remarks

AGS

JPG 5 John Charles Leeds LS12 6QA		**Rotary Core Log**
Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 18/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440217.54 N408531.21
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RC105	RC	39.91m AoD	BW	1:55	Sheet 2 of 2

Well	Water	Depth (m)	Type /Fl	Coring TCR	Coring SCR	Coring RQD	Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description
			NI								Extremely weak, thinly laminated dark grey partially unweathered MUDSTONE.
		11.50 - 12.00	12 32	100	68	58					Distinctly weathered.
								11.88 12.00	28.03 27.91		Weak, thinly laminated light grey partially weathered SILTSTONE.
											End of Borehole at 12.00m

12 13 14 15 16 17 18 19 20 21 22

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)
								0.00	12.00	90							

Remarks

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JPG	5 John Charles Leeds LS12 6QA	**Rotary Core Log**

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 14/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440388.19 N408473.09
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RC109	RC	39.24m AoD	BW	1:55	Sheet 1 of 2

Well	Water	Depth (m)	Type /Fl	Coring TCR	Coring SCR	Coring RQD	Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description
											Grey MUDSTONE. 0-9.00m rotary openholed.
		9.00 - 10.00		75	52	50		9.00	30.24		Extremely weak thinly and thickly laminated dark grey partially weathered MUDSTONE.
		10.00 - 11.50		103	89	55		10.88	28.36		

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)
								0.00	15.00	90							

Remarks

AGS

JPG 5 John Charles Leeds LS12 6QA	**Rotary Core Log**	
Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 14/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440388.19 N408473.09
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RC109	RC	39.24m AoD	BW	1:55	Sheet 2 of 2

Well	Water	Depth (m)	Type /Fl	Coring TCR	Coring SCR	Coring RQD	Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description
											Weak thinly and thickly laminated dark grey partially weathered MUDSTONE.
								11.50	27.74		
								11.64	27.60		Weak, orange brown stained, fine to medium grained SANDSTONE.
		11.50 - 13.00	NI 30 280	100	88	63					Weak, thinly to thickly laminated, light grey and dark grey SILTSTONE interlaminated with mudstone.
		13.00 - 14.50		100	88	35		13.76	25.48		
								13.83	25.42		Weak, grey fine to medium graine SANDSTONE.
											Weak, thinly to thickly laminated, light grey and dark grey SILTSTONE interlaminated with mudstone.
		14.50 - 15.00		100	86	44		14.61	24.64		
								14.65	24.60		Weak, grey fine to medium grained SANDSTONE.
								15.00	24.24		Weak, thinly to thickly laminated, light grey and dark grey SILTSTONE interlaminated with mudstone.
											End of Borehole at 15.00m

12 13 14 15 16 17 18 19 20 21 22

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)
								0.00	15.00	90							

Remarks

AGS

JPG	5 John Charles Leeds LS12 6QA	**Rotary Core Log**

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 19/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440297.00 N408385.80
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RC113	RC	39.98m AoD	BW	1:55	Sheet 1 of 2

Well	Water	Depth (m)	Type /Fl	Coring TCR	Coring SCR	Coring RQD	Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description
								0.40	39.58		MADE GROUND: Colliery spoil 0-5.60m rotary openholed.
											Weathered grey clayey MUDSTONE.
								3.30	36.68		Grey MUDSTONE.
								5.60	34.38		
		5.60 - 7.10		87	80	28					Very weak, very thinly laminated partially unweathered medium to dark grey MUDSTONE interlaminated with siltstone. Distinctly weathered, and non-intact. Distinctly weathered to destructured, non-intact.
		7.10 - 8.60	NI 11 48	100	89	80					Distinctly weathered and non-intact.
		8.60 - 10.10		100	85	76		9.02	30.96		Destructured. Medium strong, thinly laminated unweathered to partially unweathered light grey SANDSTONE.
		10.10 - 11.60		100	76	52		10.23 10.60	29.75 29.38		Very weak, very thinly laminated distinctly weathered medium to dark grey MUDSTONE interlaminated with

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)
								0.00	11.60	90							

Remarks

AGS

JPG	5 John Charles Leeds LS12 6QA	**Rotary Core Log**

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 19/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440297.00 N408385.80
Project No. : 5161	Crew Name:	Drilling Equipment: Comacchio Geo 305

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
RC113	RC	39.98m AoD	BW	1:55	Sheet 2 of 2

Well	Water	Depth (m)	Type /Fl	Coring TCR	Coring SCR	Coring RQD	Diameter Recovery (SPT)	Depth (m)	Level (m)	Legend	Stratum Description
								11.60	28.38		Very weak, very thinly laminated distinctly weathered medium to dark grey MUDSTONE interlaminated with siltstone. Medium strong, thinly laminated unweathered to partially unweathered light grey SANDSTONE. End of Borehole at 11.60m

12 13 14 15 16 17 18 19 20 21 22

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Drilling Flush					
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation	Depth Top	Depth Base	Type	Colour	Min (%)	Max (%)
								0.00	11.60	90							

Remarks

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JPG
5 John Charles Way
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LS12 6QA

Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 03/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440186.37 N408677.03
Project No. : 5161	Crew Name:	Equipment: JCB 3XC

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP101	TP	39.32m AoD	JBW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.10	ES					MADE GROUND: Very soft grey brown slightly sandy gravelly CLAY. Gravel is angular and subangular of mudstone, sandstone and rare flint.
		0.30	ES		0.20	39.12		MADE GROUND: Firm, grey brown slightly sandy gravelly CLAY. Gravel is subangular, of mudstone, siltstone and sandstone. Low subangular cobble content of sandstone and mudstone.
	▼	2.70	B		2.60	36.72		Stiff grey slightly gravelly CLAY. Gravel is subangular of mudstone and siltstone.
		3.00	D					
					3.20	36.12		End of Trial Pit at 3.20m

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. Groundwater seepage at 2.70m . 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

AGS

JPG
5 John Charles Way
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LS12 6QA

Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 05/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440121.08 N408638.67
Project No. : 5161	Crew Name:	Equipment:

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP102	TP	40.45m AoD		1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.30 - 0.50	ES					MADE GROUND: Firm and stiff grey brown slightly sandy gravelly CLAY. Gravel is subangular of mudstone and siltstone. Low cobble content of siltstone and mudstone. Rare gravel and cobbles of brick.
								At 0.30m: Concrete post: (0.60m x 0.12m x 0.12m).
		3.00	ES		2.80	37.65		MADE GROUND: Stiff grey brown very gravelly CLAY. Gravel is subangular and angular of mudstone, siltstone, sandstone, coal, and burnt shale. Low to medium cobble content of sandstone, siltstone, and brick.
					3.40	37.05		Firm, becoming stiff, orange brown mottled grey sandy CLAY.
	▼				3.60	36.85		Very stiff, orange brown and medium grey slightly sandy gravelly CLAY. Gravel is subangular, of sandstone.
					3.70	36.75		Orange brown, fine-grained SANDSTONE. Recovered as gravel and angular cobbles of sandstone.
					3.90	36.55		End of Trial Pit at 3.90m

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Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. Groundwater seepage at 3.80m. 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 03/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440219.44 N408643.81
Project No. : 5161	Crew Name:	Equipment: JCB 3CX with Two Foot Bucket

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP103	TP	39.34m AoD	JBW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.30 - 0.50	ES					MADE GROUND: Firm and stiff grey brown slightly sandy slightly gravelly CLAY. Low cobble content of mudstone and sandstone.
					2.40	36.94		MADE GROUND: Firm grey brown slightly sandy gravelly CLAY. Gravel is subangular of sandstone, brick and mudstone.
					2.95	36.39		Stiff red brown mottled grey slightly gravelly CLAY. Gravel is subangular of mudstone.
					3.80	35.54		End of Trial Pit at 3.80m

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 28/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440299.13 N408650.19
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP104	TP	40.14m AoD	BW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								MADE GROUND: Firm, dark grey slightly sandy gravelly CLAY. Gravel is subangular fine to coarse, of mudstone, sandstone and brick. Low to medium to medium content of subangular boulders of mudstone, sandstone and siltstone.
					1.20	38.94		MADE GROUND: Stiff, dark grey and grey slight sandy gravelly CLAY. Gravel is subangular, of mudstone and siltstone.
		1.50 - 2.00	D					
		1.80 - 2.00	ES					
		2.80 - 3.00	D					
					3.60	36.54		End of Trial Pit at 3.60m

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Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Trial pit walls unstable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 03/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440160.66 N408615.57
Project No. : 5161	Crew Name:	Equipment: JCB 3CX with Two Foot Bucket

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP105	TP	40.47m AoD	JBW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.30 - 0.60	ES					MADE GROUND: Firm and stiff grey slightly sandy gravelly CLAY. Gravel is subangular to subrounded, fine to coarse, of mudstone, siltstone and sandstone.
					1.90	38.57		
		2.00	ES					MADE GROUND: Stiff, black slightly sandy gravelly CLAY. Sand is fine to course of coal. Gravel is subangular and subrounded, of sandstone, coal, burnt shale and wood.
		2.10	ES					
					2.30	38.17		Firm, orange brown sightly gravelly CLAY. Gravel is tabular, coarse. of sandstone.
					2.50	37.97		Stiff, thickly laminated very dark grey slightly gravelly CLAY. Gravel is subangular, of mudstone.
					3.30	37.17		Very stiff light grey gravelly CLAY. Gravel is subangular, of mudstone.
					3.60	36.87		Light grey and brown clayey subangular fine to coarse GRAVEL of mudstone.
					3.80	36.67		End of Trial Pit at 3.80m

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 03/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440212.46 N408605.78
Project No. : 5161	Crew Name:	Equipment:

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP106	TP	39.78m AoD		1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.30 - 0.50	ES					MADE GROUND: Firm, grey brown slightly sandy slightly gravelly CLAY. Gravel is subangular of mudstone and sandstone. Low cobble content of mudstone and sandstone.
								At 1.80m: Siltstone boulder: (0.70 x 0.70 x 0.40m).
								At 2.30m: Boulder: (0.70 x 0.70 x 0.30m).
	▼							At 3.00m: Rebar encountered.
					3.00	36.78		MADE GROUND: Brown grey, clayey sandy subangular fine to coarse GRAVEL of concrete. High cobble content.
								At 3.40m: Concrete boulder: (0.50 x 0.30 x 0.20m).
					3.90	35.88		End of Trial Pit at 3.90m

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. Groundwater inflow at 2.80m. 2. Trial pit sides unstable. 3. Trial pit backfilled with arisings on completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 04/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440258.66 N408610.95
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP107	TP	39.22m AoD	JBW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.50	ES					MADE GROUND: Firm and stiff orange brown and grey brown slightly sandy gravelly CLAY. Gravel is subangular, of mudstone, siltstone and sandstone. Low cobble content of siltstone, sandstone and mudstone. Rare rebar.
								Below 2.90m: Slow digging.
		3.20	D		3.10	36.12		Stiff, orange brown and medium grey slightly gravelly CLAY. Gravel is subangular of mudstone.
					3.90	35.32		Extremely weak orange brown MUDSTONE. Recovered as subangular, fine to coarse gravel of mudstone.
					4.00	35.22		End of Trial Pit at 3.70m

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Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 27/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440302.87 N408602.64
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP108	TP	38.83m AoD	BW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								MADE GROUND: Soft, becoming firm, grey slightly sandy gravelly CLAY. Gravel is subangular, fine to medium, of mudstone.
		1.00 - 1.20	D		1.00	37.83		MADE GROUND: Firm grey slightly sandy gravelly CLAY. Gravel is angular, of mudstone. Low cobble and boulder content. Pockets of stiff orange clay.
								Mudstone boulder at 2.00m: (0.70m x 0.20m x 0.50m).
		2.50 - 2.80	ES					
		3.00 - 3.19	D					
					3.20	35.63		End of Trial Pit at 3.20m

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Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 27/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440350.76 N408598.84
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP109	TP	40.00m AoD	BW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.50 - 0.60	ES					MADE GROUND: Dark brown and orange brown slightly sandy gravelly CLAY. Gravel is sandstone, mudstone, with rare flint and brick. Low cobble content of brick. (Reworked topsoil).
		0.60		HSV=27				
		1.30 - 1.50	D		1.30	38.70		MADE GROUND: Grey, slightly sandy clayey GRAVEL. Gravel is fine to coarse, subangular to angular of mudstone. Medium cobble content of mudstone.
								At 2.30m: Mudstone boulder: (0.70m x 0.50m x 0.20m).
					2.60	37.40		End of Trial Pit at 2.60m

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Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Trial pit sides unstable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 05/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440120.21 N408557.04
Project No. : 5161	Crew Name:	Equipment:

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP110	TP	41.84m AoD		1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.50	ES					MADE GROUND: Firm and stiff grey brown slightly sandy gravelly CLAY. Gravel is subangular and angular, fine to coarse, of mudstone and siltstone. Low to medium cobble content of siltstone and mudstone.
					1.00	40.84		MADE GROUND: Stiff brown grey slightly sandy gravelly CLAY. Gravel is angular and subangular of mudstone, siltstone and sandstone.
								At 1.60m: Angular cobbles of concrete and brick. Rare timber fragments.
					1.90	39.94		MADE GROUND: Stiff red brown and grey slightly gravelly CLAY.
		2.30 2.30	D PP	139.00	2.30	39.54		MADE GROUND: Very stiff grey slightly sandy gravelly CLAY. Gravel is angular and subangular of mudstone, siltstone and burnt shale. Low cobble content and low boulder content of concrete.
	▼							At 3.30m: Red clay pipe 300mm diameter with pea gravel surround, aligned east – west. Standing water in pipe. Assumed redundant.
					3.60	38.24		End of Trial Pit at 3.60m

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. Groundwater in land drain at 3.50m. 2. Trial pit side walls remained stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 28/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440209.81 N408560.23
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP111	TP	39.99m AoD	BW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.20 - 0.30	ES					MADE GROUND: Firm, brown and grey brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded, fine to coarse, of mudstone, siltstone, sandstone and rare brick. Low cobble content of mudstone.
					0.60	39.40		MADE GROUND: Firm to stiff, brown slightly sandy gravelly CLAY. Gravel is fine to coarse, subangular to angular, of mudstone, siltstone and sandstone. Low cobble content of mudstone, siltstone, sandstone, and rare brick.
		2.00 - 2.30	D					
	▼							
		3.80 - 4.00	D					
					4.00	35.99		End of Trial Pit at 4.00m

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Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 04/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440260.23 N408560.87
Project No. : 5161	Crew Name:	Equipment: JCB 3CX with Two Foot Bucket

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP112	TP	39.41m AoD	JBW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.30 - 0.50	ES					MADE GROUND: Firm and stiff grey brown and orange brown slightly sandy gravelly CLAY. Gravel is subangular, of mudstone, siltstone and sandstone.
					1.60	37.81		MADE GROUND: Firm and stiff grey brown and orange brown gravelly CLAY. Gravel is subangular, of mudstone, siltstone and sandstone. Low to medium cobble content of mudstone, siltstone and sandstone.
		3.00	D		2.90	36.51		Extremely weak, thinly laminated grey MUDSTONE. Recovered as subangular gravel of mudstone.
					3.70	35.71		End of Trial Pit at 3.70m

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Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 27/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440305.10 N408564.05
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP113	TP	39.04m AoD	BW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.30 - 0.50	D					MADE GROUND: Soft grey slightly sandy gravelly CLAY. Gravel is subangular, fine to medium of MUDSTONE.
		0.30 - 0.50	ES		0.40	38.64		MADE GROUND: Firm grey brown and orange brown slightly sandy gravelly CLAY. Gravel is subangular to angular of mudstone, siltstone and sandstone. Rare rebar and brick.
		2.70 - 2.90	D		3.00	36.04		End of Trial Pit at 3.00m

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 28/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440338.80 N408558.19
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP114	TP	38.92m AoD	BW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.30 - 0.50	ES					MADE GROUND: Grey brown slightly sandy clayey GRAVEL. Gravel is angular to subrounded, fine to coarse, of mudstone, siltstone, sandstone and rare coal, brick and ceramic.
					0.40	38.52		MADE GROUND: Firm, grey brown slightly sandy gravelly CLAY. Gravel is fine to coarse, angular to subrounded, of sandstone, mudstone and siltstone. Low boulder content of mudstone, sandstone and siltstone. Rare wire. Locally pockets of firm clay.
		2.50	PP	76.00				Pockets of firm, grey mottled orange clay.
		2.60 - 2.80	D					
		3.20 - 3.40	D		3.20	35.72		MADE GROUND: Firm, light yelow brown mottled orange and grey, slightly sandy slightly gravelly CLAY. Gravel is subangular, fine to medium, of mudstone, sandstone and rare coal and intact brick.
					3.50	35.42		End of Trial Pit at 3.50m

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Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 27/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440385.68 N408558.30
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP115	TP	39.93m AoD	BW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.40 - 0.50	D					MADE GROUND: Dark brown and orange brown slightly sandy gravelly CLAY. Gravel is subangular, of sandstone, mudstone, with rare flint and brick. Low cobble content of brick. (Reworked topsoil).
	▼				1.40	38.53		
		1.70	PP	89.00				MADE GROUND: Grey, slightly sandy clayey GRAVEL. Gravel is fine to coarse, subangular to angular of mudstone. Medium subangular cobble content of mudstone.
		1.80 - 2.10	D					
		2.50 - 2.80	ES					
					3.30	36.63		End of Trial Pit at 3.30m

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Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. Groundwater seepage at 1.10m. 2. Trial pit sides unstable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 05/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440162.51 N408532.85
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP116	TP	41.02m AoD	JBW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.50	ES					MADE GROUND: Stiff grey brown slightly sandy gravelly CLAY. Gravel is subangular, of sandstone, mudstone and siltstone. Low cobble content of siltstone, sandstone and mudstone.
								At 1.60m: Metal pipework, bricks and rebar.
					1.80	39.22		Dark grey, grey and light grey Thickly laminated MUDSTONE with some orange staining. Recovered as angular, fine to coarse gravel of mudstone.
					2.60	38.42		Very stiff, light grey CLAY with subangular, fine to coarse gravel of mudstone. (Seat Earth).
					2.90	38.12		Very weak light grey MUDSTONE. Recovered as subangular gravel and cobbles.
					3.30	37.72		End of Trial Pit at 3.30m

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Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 05/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440200.54 N408527.53
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP117	TP	40.36m AoD	BW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.00 - 0.30	ES					MADE GROUND: Firm and stiff grey brown slightly sandy, gravelly CLAY. Gravel is subangular of mudstone, siltstone, sandstone and rare coal fragments. Low cobble content of siltstone, sandstone and mudstone.
					1.70	38.66		Extremely weak red brown and grey thinly and thickly laminated MUDSTONE. Recovered as angular and subangular, fine to coarse gravel. Below 2.00m: Recovered as subangular gravel and tabular cobbles.
					2.60	37.76		End of Trial Pit at 2.60m

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 04/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440258.25 N408523.33
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP118	TP	39.46m AoD	JBW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.20 - 0.40	ES					MADE GROUND: Firm and stiff grey brown and orange brown, slightly sandy, gravelly CLAY. Gravel is subangular, of mudstone, siltstone and sandstone. Low cobble content of mudstone, siltstone and sandstone, with rare cobbles of coal
					1.70	37.76		
		1.90	D					Firm orange brown and medium grey slightly sandy CLAY.
								Below 2.10m: Stiff becoming very stiff.
					2.80	36.66		Orange brown thinly bedded MUDSTONE.
					3.00	36.46		End of Trial Pit at 3.00m

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Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 28/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440303.27 N408522.13
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP119	TP	39.15m AoD	BW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
								MADE GROUND: Grey brown slightly sandy clayey GRAVEL. Gravel is subangular to subrounded of mudstone, sandstone, and rare brick.
					0.90	38.25		MADE GROUND: Firm, grey brown slightly sandy gravelly CLAY. Gravel is fine to coarse, subangular to angular of mudstone, sandstone, and rare brick. Locally pockets of firm clay.
		1.40 - 1.60	ES					
	▼							At 1.75m: Siltstone boulder >1.00m aligned East -West. Trial pit extended.
								Between 1.90m and 2.20m: Cobbles and boulders of mudstone.
					3.20	35.95		POSSIBLE MADE GROUND: Firm, light yellow brown, mottled orange and grey, slightly sandy slightly gravelly CLAY. Gravel is subangular, fine to medium, of sandstone.
		3.50 - 3.60	D					
					3.70	35.45		End of Trial Pit at 3.70m

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 04/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440334.34 N408515.37
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP120	TP	38.84m AoD	BW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.50	ES					MADE GROUND: Grey brown and orange brown sandy clayey, subangular, fine to coarse GRAVEL of mudstone, siltstone and sandstone.
					1.20	37.64		MADE GROUND: Grey sandy gravelly subangular COBBLES of siltstone and mudstone. Low to medium boulder content (typically 0.60m x 0.40m x 0.20m).
		3.50 3.50	D	HSV=123	3.40	35.44		Stiff red brown mottled grey, slightly sandy, slightly gravelly CLAY. Gravel is subangular, of mudstone.
					3.70	35.14		End of Trial Pit at 3.70m

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Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 27/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440391.19 N408514.53
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP121	TP	40.07m AoD	BW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.20 - 0.40 0.30 - 0.50	ES D					MADE GROUND: Dark brown and orange brown slightly sandy gravelly CLAY. Gravel is subangular and angular, of sandstone, mudstone, with rare flint and brick. Low cobble content of brick. (Reworked topsoil).
					1.10	38.97		MADE GROUND: Firm grey brown slightly sandy clayey GRAVEL. Gravel is fine to coarse, subangular to angular, of mudstone, siltstone and sandstone. Medium cobble content of mudstone and siltstone. (Colliery Spoil).
	▼	2.30 - 2.50	D					
					3.40	36.67		End of Trial Pit at 3.40m

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Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. Groundwater seepage at 3.2m. 2. Trial pit sides partially stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 05/02/2000
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440178.21 N408478.32
Project No. : 5161	Crew Name:	Equipment: JCB 3CX with Two Foot Bucket

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP122	TP	41.83m AoD	JBW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.50	ES					MADE GROUND: Grey brown slightly sandy, clayey, subangular, fine to coarse GRAVEL of mudstone, sandstone, siltstone, rare brick and coal.
					0.90	40.93		MADE GROUND: Stiff grey brown slightly sandy gravelly CLAY. Gravel is subangular, of mudstone, siltstone and sandstone with rare coal fragments. Low cobble content of siltstone, sandstone and mudstone.
					2.20	39.63		Extremely weak red brown and grey thinly and thickly laminated MUDSTONE. Recovered as angular and subangular, fine to coarse gravel.
					2.40	39.43		End of Trial Pit at 2.40m

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Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 04/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440244.08 N408463.90
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP123	TP	39.96m AoD	BW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.30 - 0.50	ES					MADE GROUND: Firm and stiff brown grey slightly sandy gravelly CLAY. Gravel is subangular, of mudstone, siltstone, sandstone and rare coal. Low cobble content of mudstone, siltstone and sandstone.
								At 1.60m: Sandstone boulders (0.3 x 0.3 x 0.2m).
					2.00	37.96		Firm, becoming stiff, orange brown mottled grey slightly sandy CLAY.
		2.30 2.30	D	HSV=80				
					2.50	37.46		Very stiff orange brown and grey gravelly CLAY. Gravel is subangular, of mudstone.
					3.00	36.96		Extremely weak, thinly and thickly laminated grey MUDSTONE. Recovered as sandy, subangular, fine to coarse gravel of MUDSTONE.
					3.40	36.56		End of Trial Pit at 3.40m

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 05/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440287.36 N408476.36
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP124	TP	39.39m AoD	BW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.50	ES					MADE GROUND: Firm and stiff grey brown slightly sandy slightly gravelly CLAY. Gravel is subangular, of mudstone, siltstone and sandstone.
					1.00	38.39		MADE GROUND: Grey sandy gravelly angular to subangular COBBLES of sandstone and siltstone. Gravel is angular and subangular, of siltstone.
					1.30	38.09		Grey subangular COBBLES and BOULDERS of siltstone.
								At 2.10m: Siltstone boulder: (0.20 x 0.70 x 0.70).
								At 2.30m: Trial pit terminated on boulders.
					2.30	37.09		End of Trial Pit at 2.30m

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Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 27/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440346.08 N408482.92
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP125	TP	39.27m AoD	BW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.10 - 0.30	ES					MADE GROUND: Grey slightly sandy clayey GRAVEL. Gravel is angular, fine to coarse, of mudstone.
					0.45	38.82		MADE GROUND: Firm, grey slightly sandy gravelly CLAY. Gravel is subangular to angular, fine to coarse, of mudstone.
		1.10 - 1.20	D					
					1.30	37.97		MADE GROUND: Grey, slightly sandy clayey GRAVEL with medium boulder and cobble content. At 1.40m: Mudstone boulder: (0.60 x 0.50 x 0.30m) At 1.50m: Mudstone boulder: (0.50 x 0.50 x 0.40m)
		3.00 - 3.20	D					
	▼				3.40	35.87		End of Trial Pit at 3.40m

1 2 3 4 5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. Groundwater seepage at 3.40m. 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 27/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440426.70 N408488.81
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP126	TP	38.71m AoD	BW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
					0.00	38.71		MADE GROUND: Soft to firm grey slightly sandy slightly gravelly CLAY. Gravel is fine to coarse, subangular to subrounded, of mudstone and sandstone.
		0.50 - 0.70	ES		0.50	38.21		Firm, grey and orange, slightly sandy slightly gravelly CLAY. Gravel is angular to subangular of mudstone.
					0.90	37.81		Extremely weak grey MUDSTONE. Recovered as gravelly clay. Gravel is fine to coarse, subangular to angular of mudstone.
					2.60	36.11		Thinly and thickly laminated grey MUDSTONE. Recovered as gravel and cobbles.
					2.70	36.01		End of Trial Pit at 2.70m

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 04/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440278.60 N408431.25
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP127	TP	39.65m AoD	JBW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.30 - 0.50	ES					MADE GROUND: Grey clayey sandy subangular and angular fine to coarse GRAVEL of mudstone, siltstone and sandstone. Medium to high cobble content of mudstone, siltstone and sandstone.
					0.90	38.75		MADE GROUND: Grey sandy gravelly subangular and angular COBBLES of mudstone and siltstone. Gravel is subangular and angular of mudstone and siltstone. Medium boulder content of siltstone and mudstone. At 0.90m: Siltstone boulder (0.60 x 0.40 x 0.30m). At 1.70m: Siltstone boulder across south end of pit (dimensions not proven). Trial pit extended to north.
					3.50	36.15		End of Trial Pit at 3.50m

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Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Some instability of trial pit walls. within coarse strata 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 04/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440350.39 N408430.32
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP128	TP	39.38m AoD	BW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.20	ES		0.30	39.08		MADE GROUND: Dark grey brown clayey sandy, subangular to angular, fine to coarse GRAVEL of mudstone, limestone and brick, with roots and rootlets. (Reworked Topsoil).
	▼	0.50	ES		0.80	38.58		MADE GROUND: Grey brown clayey sandy, subangular and angular, fine to coarse GRAVEL of sandstone, mudstone, siltstone, brick and coal.
					3.40	35.98		MADE GROUND: Grey sandy gravelly, subangular and angular COBBLES of siltstone and mudstone. Low to medium boulder content of siltstone and mudstone. At 1.50m: Siltstone boulder: (0.50 x 0.30 x 0.20m). At 1.80m: Boulder: (0.60 x 0.40 x 0.20m). End of Trial Pit at 3.40m

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. Groundwater seepage at 0.70m. 2. Some instability of trial pit walls. 3. Trial pit backfilled with arisings upon completion.

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Trial Pit Log

Project Name: Symphony Group PLC, Park Spring Road, Grimethorpe	Client: Symphony Group PLC	Date: 27/02/2020
Location: Grimethorpe, Barnsley	Contractor: AEG	Co-ords: E440385.53 N408449.22
Project No. : 5161	Crew Name:	Equipment: JCB 3CX

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP129	TP	38.78m AoD	BW	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
								MADE GROUND: Grey and grey brown slightly sandy clayey GRAVEL. Gravel is fine to coarse, angular, of mudstone.
		0.60 - 0.70	ES		0.50	38.28		MADE GROUND: Firm, grey slightly sandy slightly gravelly CLAY. Gravel is fine to coarse, subangular, of mudstone, siltstone and sandstone with rare brick fragments. Some whole bricks and plastic wire insulation. Low cobble content of mudstone.
		2.60 - 2.70	D		2.50	36.28		Extremely weak brown MUDSTONE. Recovered as sandy gravel. Gravel is subangular, fine to coarse, of mudstone.
					2.75	36.03		End of Trial Pit at 2.75m

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Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. No groundwater encountered. 2. Trial pit sides remained stable. 3. Trial pit backfilled with arisings upon completion.

AGS

Appendix C Cone Penetration Test Report

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SPRING PARK ROAD, GRIMETHORPE

SOIL INVESTIGATION

CPT REPORT

Cone penetration test
Geotechnical data interpretation

Project ref.: P-107414-1






PROJECT:	Spring Park Road, Grimpethorpe

CLIENT:	JPG

FIELDWORK

CPT rig(s)	20.5-tonne track-truck mounted CPT unit (UK3)
Date fieldwork started	9th March 2020
Date fieldwork completed	10th March 2020
Lankelma's representative	Seain Way
Client's representative	James Wilson

REPORT

Status	Revision	Action	Date	Name
Final	00	**Completed**	12/03/20	Chris Player
		Checked	12/03/20	Emma Stickland
		Approved	12/03/20	Joseph Hobbs

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APPENDIX C	**CONE PENETRATION TEST RESULTS**
APPENDIX D	**STANDARD INTERPRETATION RESULTS - SET 1**
APPENDIX E	**STANDARD INTERPRETATION RESULTS - SET 2**

1 INTRODUCTION

At the request of JPG, a soils investigation was carried out on project *Spring Park Road, Grimethorpe*.

Site location (in the general region of):

Symphony Group
Pen Hill Estate
Spring Park Road
Grimethorpe
Barnsley
S72 7EZ

2 DISCLAIMER

The investigation information, raw data and interpretations provided in this report are for the sole benefit of the Client identified at the front of the report.

Lankelma has exercised reasonable skill, care and diligence in the fieldwork and preparation of this report. This report has been completed based on information available to Lankelma at the time of preparation. The measurement and interpreted data in this report do not constitute recommendations for design purposes. An appropriately qualified person must review and interpret the data given in this report, together with any assumptions we have made that affect the data, before using the data for design or recommendation.

Lankelma accepts no responsibility for the accuracy or appropriateness of any assumptions, derived soil parameters, soil descriptions or soil unit boundaries contained in this report.

3 COMPLETED WORKS

- 34 nr. cone penetration tests (CPTu) with piezo measurement; and
- Factual report plus additional geotechnical data interpretation.

The *Summary Tables* section contains tabulated summaries of the works completed together with analysis results where necessary.

4 FIELDWORK GENERAL

Fieldwork was performed with a 20.5-tonne track-truck mounted CPT unit (UK3) equipped with a 17-tonne capacity hydraulic ram set.

The Client was responsible for the positioning and re-survey of all investigative locations.

The target depth for the investigation was 9 m below ground level. Table 1 details the final test depths and reasons for test termination (*refusal factor).* Where penetration refusal was encountered the termination depth was advised to, and agreed with, the Client's on-site representative.

5 CONE PENETRATION TESTS

Cone penetration testing was carried out in general accordance with BS ISO 22476-1:2012.

Penetrometer measurements included cone tip resistance, friction sleeve resistance and dynamic pore water pressure sampled at a 10 mm resolution.

The penetrometer was calibrated in accordance with BS8422:2003 and ASTM E74-13a. The management of calibration records is in accordance with ISO 10012. Copies of all calibration certificates for the cones used are provided in Appendix B.

The piezometer filter element was in the u_2 position and was vacuum saturated. The pore pressure system was saturated with de-aired 10000 cSt silicone oil.

5.1 GLOSSARY OF CPT TERMS AND SYMBOLS

SYMBOLS & ABBREVIATIONS

q_c :-	**Cone resistance.** The total force acting on the cone Q_c, divided by the projected area of the cone, A_c; **($q_c=Q_c/A_c$)**.
q_t :-	**Corrected cone resistance.** The cone resistance q_c corrected for pore water pressure on the cone shoulder.
f_s :-	**Friction sleeve resistance.** The total frictional force acting on the friction sleeve, F_s, divided by its surface area, A_s. **$f_s= F_s/A_s$.**
u_2 or u_1	**Water pressure. Water pressure measured at the shoulder position (u_2) or cone face (u_1)..**
R_f :-	**Friction ratio** The ratio, expressed as a percentage, of the sleeve friction, f_s, to the cone resistance, q_c, both measured at the same depth; **[$R_f= (f_s/q_c) \cdot 100$].**
γ	**Unit weight of soil.**
γ_w	**Unit weight of water.**
σ_v:-	**Total overburden stress**
σ'_v:-	**Effective overburden stress**
σ_{atm}, or, P_a	**Reference atmospheric stress = 100kPa**
$q_{t\text{-}net}$:-	**Net cone resistance = ($q_t - \sigma_v$).** Where q_t is unavailable q_c is applied.
Q_t :-	**Normalised cone resistance** (Method 1) **= ($q_c - \sigma_v)/\sigma'_v$**
q_{t1}:-	**Normalised cone resistance** (Method 2) **= $(q_t)/(\sigma'_v)^{0.5}$**

F_r:- **Normalised friction sleeve resistance = f_s /(q_c- σ_v)**

***I_c*:-** **Soil Behaviour Type Index**

SBT or SBTn: **Soil behaviour type classification**

B_q :- **Pore pressure ratio.** The net pore pressure normalized with respect to the net cone resistance. = **(u_2 – u_0)/(q_t -σ_v)**

TERMS

Cone (or tip): - The conical tip of the cone penetrometer.

Friction sleeve: - The section of the cone penetrometer upon which the sleeve friction is measured, located behind the cone tip.

Piezocone: - A cone penetrometer with a pore pressure sensor (u_2 / u_1)

Dynamic pore pressure: - The pore pressure measured during penetration (u_2 / u_1).

Soil behaviour type: - Soil classification scheme or classified soil type according to Robertson (1990, 2016) often abbreviated to SBT or SBTn.

5.2 CPT DATA REDUCTION AND PRESENTATION

The CPT results are presented in Appendix C. The corrected cone resistance (q_t), local side friction (f_s), dynamic pore water pressure (u_2), friction ratio (R_f) and inclination are all presented against depth and elevation in accordance BS ISO 22476-1:2012. CPT data and the associated derived geotechnical parameters are included in the AGS 3.1 and 4.0 data files provided.

The cone tip resistance and sleeve force measurements were converted to pressures using the nominal dimensions of the penetrometer.

For piezocone tests the corrected tip resistance was calculated according to the formula:

$$q_t = q_c + u_2 \times (1 - a)$$

Where a is the 'area ratio' and (1- a) is the proportion of cross-sectional area between the cone tip and cone body where pore pressures (positive or negative) can act to add or subtract from the total external axial force on the tip. The difference between measured and corrected values is largest in low strength soils with large excess pore pressures. The percentage adjustment is described by the curves in the following chart for alpha factor of 0.8:

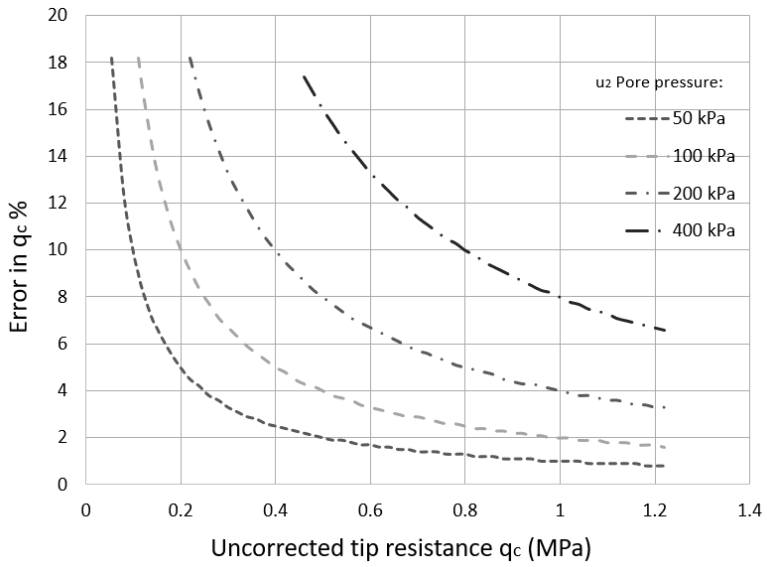


Figure 5-1 Uncorrected tip with measured tip resistance

Penetration length readings were corrected for inclination and sleeve readings were depth corrected for the dimensional offset between cone tip and sleeve during post processing. An additional shift of -80 mm was applied to the sleeve to account for tip failure zone offset (see 'CPT Interpretation Notes'). 'Rod spikes', artefacts of the pause for push rod addition, were filtered from the cone tip and sleeve data.

The raw (or corrected) data are presented in Appendix C.

Geotechnical parameters appropriate for drained and undrained cone penetration conditions were derived for corresponding drained and undrained derived soil behaviour types (SBTs) respectively, however, to account for uncertainty in the SBT correlation with drainage behaviour, all parameters were derived over a range of transitional soils within the range $2.4 < Ic < 2.7$ (see section 6.3).

In general, the engineering parameters derived are intended for non-cemented predominantly silicate soils.

5.3 IN-SITU STRESS CONDITIONS

An estimate of the vertical in-situ stress states is necessary as they are applied in many derived parameters obtained from the CPT and dissipation test.

The total vertical stress with depth was calculated as the sum of the calculated soil unit weight above a given depth. See section 5.4 for information on the empirical estimate of soil unit weight.

An arbitrary principal phreatic surface of 3.00 mBGL was applied in the calculation of effective stress.

Note: The term phreatic surface is used here, however when it is based on piezocone measurements it is assumed that the piezometric level (under hydrostatic conditions) and

groundwater table coincide. The phreatic or piezometric surface reported is intended to provide information about the assumed pore pressure distribution for calculation of relevant derived parameters from the CPT and may not represent the true position of the groundwater table or perched water bodies. Complex groundwater pressure distributions, if they are observed from the measurements, will be applied to relevant derived parameters.

5.4 SOIL UNIT WEIGHT

The soil unit weight was estimated using the following method proposed by Robertson (2010).

$$\frac{y}{y_w} = 0.27\ Log(R_f) + 0.36\ (Log(q_t/R_f)) + 1.236$$

Throughout pre-drilled zones (inspection pits or drill-out) the soil unit weight was assumed as 18 kN/m^3.

For depths where the friction sleeve measurement falls below zero, the friction sleeve was substituted with an artificial nominal 1.0 kPa resistance for the purpose of obtaining an approximate soil unit weight necessary for estimation of total vertical stress over the entire profile.

5.5 SOIL BEHAVIOUR TYPE

The soil behaviour type (SBT) was interpreted using the Robertson (1990) classification system based on the normalised cone resistance (Qt) and normalised friction sleeve resistance (Fr) for silicate soils.

While the classification based on normalised parameters is considered more accurate, particularly at depths exceeding 15-20 m, the classification is often significantly in error (artificially granular/drained) at very shallow depth (< 1-3 m). The error at shallow depth is associated with the potentially large difference between the estimated vertical effective stress (applied in normalisation) and the unknown horizontal stress influencing penetration resistance.

Robertson (2010) proposed a non-normalised version of the 1990 chart which uses dimensionless cone resistance (q_c/Pa) and friction ratio, Rf. The classification according to this chart can be more reliable at shallow depth and has been plotted as an approximate SBT index (discussed below) for comparison to the normalised classification.

The SBT chart is provided in Appendix B – *General Information,* titled 'CPT Soil Behaviour Type Chart'.

It should be noted that the SBT classification provides the general soil 'type' which typically provides a similar CPT measurement range of q_c and f_s. Correspondingly, it will also show biased towards the soil fraction that dominates the mechanical behaviour. While the repeatability and behavioural bias of the SBT is usually beneficial, the classification is not always an appropriate substitute for classification based on grain-size distribution.

The results are presented on the plots of Appendix D.

5.6 SOIL BEHAVIOUR TYPE INDEX – I_c

The main trend in soil behaviour type (SBT) variation can be expressed a continuous index, I_c, proposed by Robertson and Wride (1998) based on a similar index proposed by Jefferies and Davies (1993). The index provides a continuous profile of SBT variation with depth for end-user analysis of soil units and variation within units.

The equivalent non-normalised version, as proposed by Robertson (2010), is provided for comparison.

The basis of I_c and its approximation of the original chart classification zones may be seen from Appendix B figure 'CPT Soil Behaviour Type Chart'. The method does not identify zones 1 (*sensitive fine grained)* and zones 8 & 9 (*overconsolidated or cemented*).

Normalised SBT index I_c (Robertson and Wride, 1998)*:*

$$I_c = [(3.47 - \log Q_t)^2 + (logF_r + 1.22)^2]^{0.5}$$

Non-normalised SBT index I_c (Robertson, 2010)*:*

$$I_c = \left[\left(3.47 - \log\left(\frac{q_c}{\sigma_{atm}}\right)\right)^2 + (logR_f + 1.22)^2\right]^{0.5}$$

The results are presented on the plots of Appendix D.

5.7 RELATIVE DENSITY

The relative density of sands was calculated based on an empirical relationship proposed by Jamiolkowski *et al.* (2001) based on a large database of undisturbed frozen samples and calibration chamber tests. The expected accuracy may be evaluated from the figures presented below.

$$D_r = 100\left[0.268 \cdot \ln\left(\frac{q_t/\sigma_{atm}}{\sqrt{\sigma_{vo}'/\sigma_{atm}}}\right) - k\right]$$

k = Compressibility dependant constant can be taken as -0.675 for medium compressibility (applied value in our interpretation), <= 1 for high compressibility and >= 2 for compressible sands.

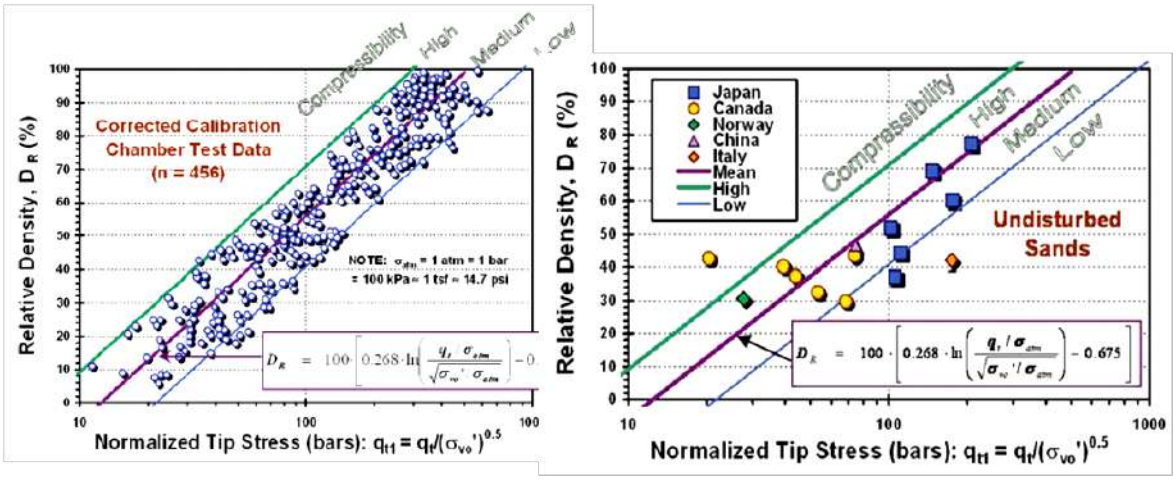


Figure 5-2 Relative density with normalised tip stress and sand compressibility from calibration chamber tests (left) and undisturbed frozen samples (right). Jamiolkowski *et al.* (2001). Reproduced from Mayne (2007).

The results are presented on the plots of Appendix E– *Standard interpretation results (set 2)*.

5.8 UNDRAINED SHEAR STRENGTH

The undrained shear strength s_u is usually estimated as a factor of net cone tip resistance (Lunne *et al*, 1981):

$$s_u = \frac{q_c - \sigma_{v0}}{N_k}$$

Where N_k is an empirical cone factor which varies with soil type, stress history, structure/fabric, plasticity and the mode of shearing.

Mayne and Peuchen (2018) performed and evaluation of 407 high-quality triaxial compression tests against net tip resistance and proposed N_{kt} factors with regression analysis details for five categories of clays shown in Table 1.

Table 1 Summary of CAUC s_u versus q_{net} for clays. Reproduced from Mayne and Peuchen (2018).

Clay Group	Number of sites	No. Data	Correlation Coefficient r_2	Factor N_{kt}	Mean Pore Pressure Parameter B_q
Offshore NC-LOC	17	115	0.98	12.32	0.51
Onshore NC-LOC	30	191	0.867	12	0.53
Sensitive NC-LOC	5	43	0.507	10.33	0.84
OC Intact	5	36	0.862	13.57	0.49
OC Fissured	5	22	0.393	22.47	-0.01
All clays	62	407	0.923	13.33	0.55

Alternatively, a variable N_{kt} factor can be estimated for the profile as a function of the pore pressure parameter B_q, applicable for B_q values of > -0.01. The following equation proposed by Mayne and Peuchen is based on the same database evaluation:

$$N_{kt} = 10.5 - 4.6 \cdot \ln(B_q + 0.1)$$

Where the pore pressure parameter B_q is the ratio of excess pore pressure to net tip resistance:

$$B_q = \frac{u_2 - u_0}{q_t - \sigma_{v0}}$$

The N_{kt} estimate has a standard error of 2.4 N_k and correlation coefficient of 0.645.

The estimate based on B_q is presented as 's_u5' on the parameter plots and is only suitable for tests that have a high-quality pore pressure data, often indicated by a positive, repeatable and dynamic response. For tests that have a reliable pore pressure response throughout, the evaluation on a point by point basis is warranted. For projects with variable response quality and with possible piezo desaturation (for example in the unsaturated zone or by dilation/cavitation) it is preferable to identify zones with reliable pore pressure response for representative soils and select a characteristic value of B_q for evaluation of N_{kt}. Lankelma are not always in view of the effort that has been made in preparation of the test location to maintain saturation of the piezo sensor.

Note: N_{kt} (with subscript 't') indicates a N_k factor that has been established using the corrected tip resistance q_t. N_{kt} can be applied to the uncorrected tip resistance q_c (non-piezocone tests) but results in a slightly lower estimate of s_u depending on the correction magnitude (q_c - q_t) in lower strength soils.

Undrained shear strengths corresponding to selected values of N_k are presented on the plots of Appendix D. *'s_u3'* on the logs (N_k = 15) has been included as a reference for comparison to traditional arbitrary N_k values of 15 and 20.

5.9 OVERCONSOLIDATION RATIO

The preconsolidation stress σ_p' was calculated based on the method proposed by Mayne et al (2009):

$$\sigma_p' = k \cdot (q_t - \sigma_{vo})^{m\prime}$$

$$OCR = \sigma_p{}'/\sigma'_{v0}{}'$$

Mayne *et al* found that the trend with mean grain size followed a power law through the addition of exponent m' and that its value can be estimated by relation to soil behaviour type index I_c:

$$m' = 1 - \frac{0.28}{1 + \left(\frac{I_c}{2.65}\right)^{25}}$$

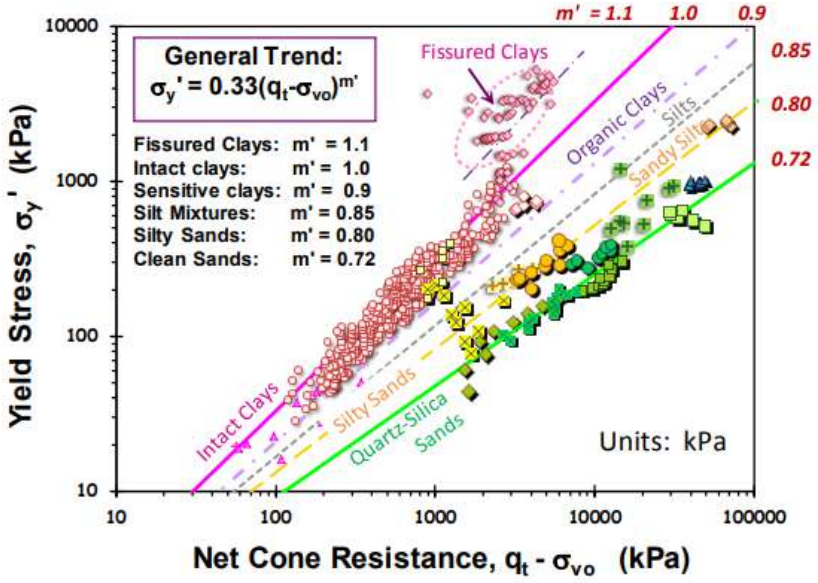


Figure 5-3 Preconsolidation stress with net cone resistance power law, reproduced from Mayne (2014).

An additional σ_p' and OCR was calculated for m' = 1.1 to reflect the upper trend for over consolidated fissured clays not captured by the soil behaviour type index I_c

5.10 SPT N60 VALUES

Equivalent SPT N60 values, defined as the non-normalised SPT blow count over a 30 cm interval, were derived for two correlations and are presented together in the results section for comparison.

Method 1 - Lunne *et al.* (1997)

$$N_{60} = \frac{q_t}{8.5 \cdot \sigma_{atm} \cdot \left(1 - \frac{I_c}{4.6}\right)}$$

Method 2 - Robertson (2012)

$$\frac{\left(\frac{q_t}{p_a}\right)}{N_{60}} = 10^{(1.268-0.2817I_c)}$$

The correlations are intended for clays, silts and sands and not for carbonates or cemented geo-materials.

The results are presented in Appendix D.

5.11 FRICTION ANGLE

Sands

The peak friction angle of granular materials was calculated using the Kulhawy and Mayne (1990) method and is an empirical relationship as a function of stress normalised cone tip resistance. The relationship is based on a calibration chamber database from 24 sands of varying mineralogy. The relationship has the form:

$$\phi' = 17.6 + 11.0 \cdot \log\left(q_{t1}\right)$$

Where:

ϕ' = Peak friction angle (degrees)

q_{t1} = stress normalised cone resistance =

$$\left(\frac{q_t}{\sigma_{atm}}\right) / \left(\frac{\sigma_{v0'}}{\sigma_{atm}}\right)^{0.5}$$

The presence of compressible minerals tends to reduce tip resistance resulting in lower estimate of friction angle, while very coarse (sand) or larger grain size tends to increase tip resistance resulting in higher estimate.

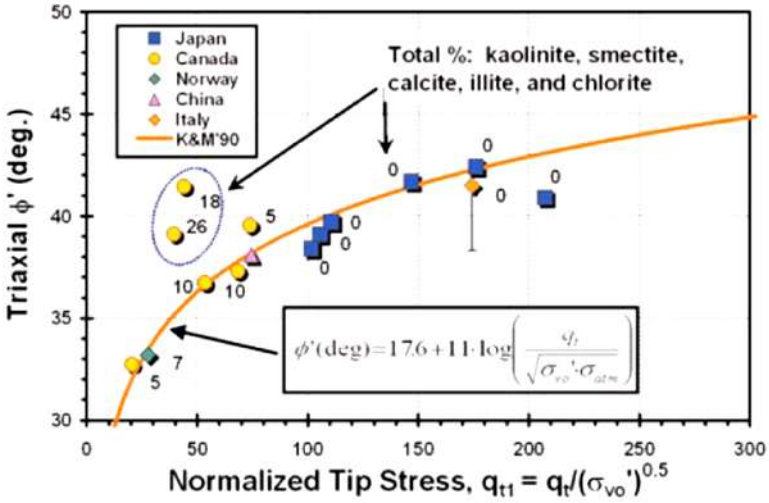


Figure 5-4 Peak triaxial friction angle from undisturbed sands with normalised cone resistance.

Fine grained soils

The effective friction angle for fine grained soils was calculated based on the Senneset *et al.* (1988, 1989) method by applying the approximate closed form solution by Mayne & Campanella (2005) as a direct function of the pore pressure parameter Bq and normalised tip resistance Q. The method is applicable where $0.1 < B_q < 1.0$ and $20° < \phi' < 45°$ and generally appropriate for non-cemented NC-LOC soils.

$$\phi' = 29.5° \, B_q^{0.121} [0.256 + 0.336 \, B_q + \log Q]$$

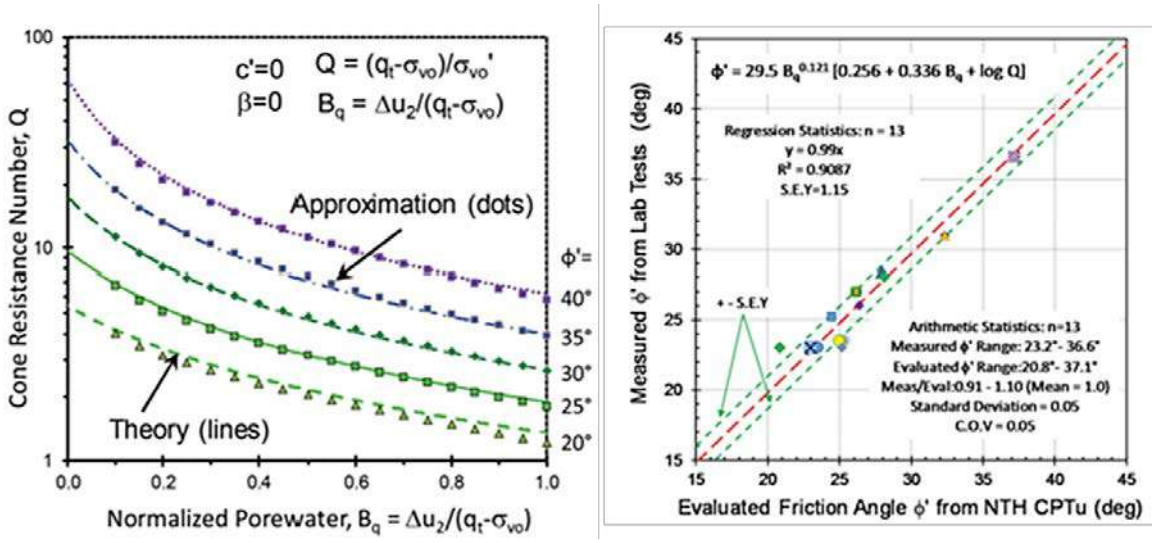


Figure 5-5 [Left] Theoretical curves with function approximation (dots) overlay [Right] calibration data from geotechnical centrifuge tests for a variety of soils. Redrawn from Ouyang & Mayne (2018).

The results are presented in Appendix E.

5.12 COEFFICIENT OF VOLUME CHANGE

Coefficient of volume change (m_v) defined as the inverse of the constrained modulus (M), is evaluated for all soil types using the constrained modulus method proposed by Mayne (2006) cited in Mayne (2007) applicable to the present state of vertical effective stress up to the pre-consolidation stress.

$$m_v = \frac{1}{M}$$

Where:

$$M = \alpha \cdot (q_t - \sigma_v)$$

$$\alpha = 5$$

An alpha factor of 8.25 reported by Kulhawy & Mayne (1990) for fine grained soils appears to provide a better fit through the data for intact non-organic clays, reducing to around 1 to 2 for organic plastic clays.

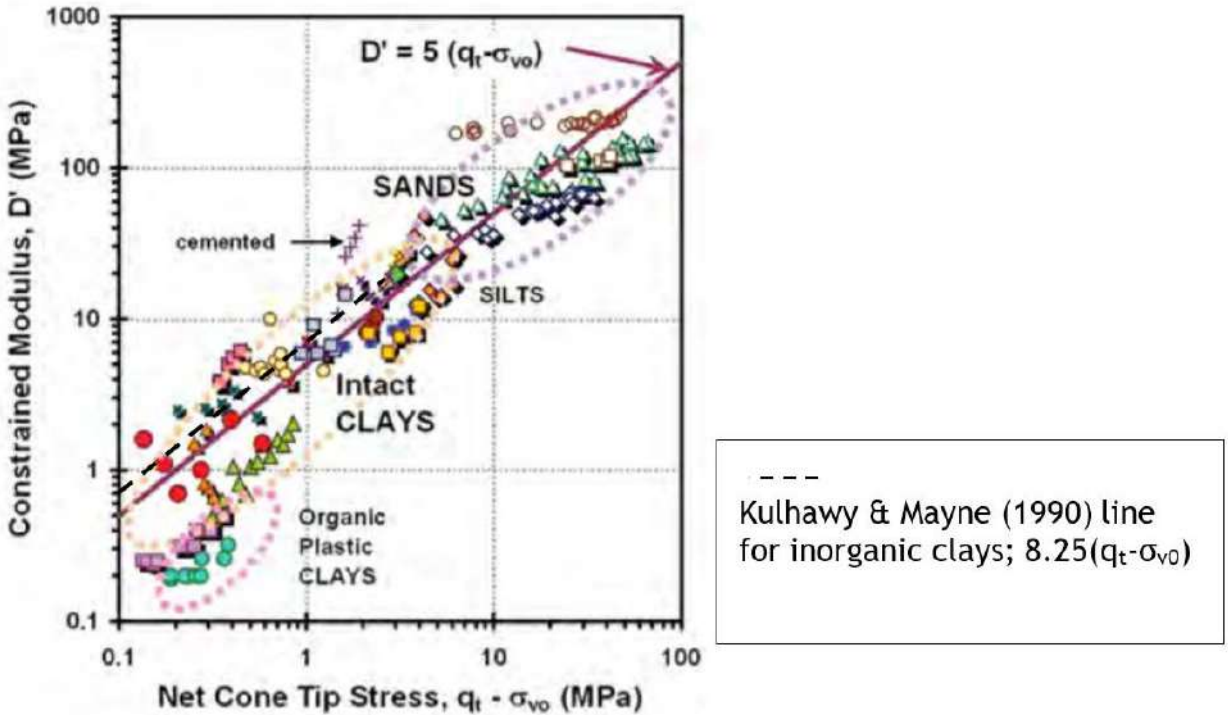


Figure 5-6 Constrained modulus of Mayne (2006). Annotated/redrawn from NCHRP Synthesis 368 (2007).

The results are presented on the plots of Appendix D.

5.13 YOUNG'S MODULUS

The Young's modulus at 25% mobilised shear strength (FOS = 4) was calculated according to the method proposed by Robertson (2009):

$E' = \alpha(q_t - \sigma_v)$
Where:

$\alpha = 0.015(10^{0.55Ic+1.68})$

The method described by Robertson may be adapted to estimate E' for loading at different percentages of yield stress.

The results are presented in Appendix E.

6 CPT INTERPRETATION NOTES

Provided below is a non-exhaustive set of notes on interpretation of the acquired CPT data with reference to examples within the dataset where appropriate.

DRAINED AND UNDRAINED SOIL BEHAVIOUR

Geotechnical parameters appropriate for drained and undrained cone penetration conditions are derived for drained and undrained soil behaviour types (SBTs) respectively, however, to help mitigate the uncertainty in the SBT correlation with drainage behaviour, all parameters are derived over the Soil Behaviour Type range 2.4 < I_c < 2.7. For partially drained conditions, error will be introduced within derived parameters.

Piezocone dynamic pore pressure and dissipation tests may be used to identify drainage conditions. Dissipation t_{50} values exceeding 50 seconds indicate undrained penetration behaviour based on the findings of Kim *et al.* (2008).

In partially drained materials the friction sleeve resistance may rise significantly immediately following a pause in penetration due to consolidation and increased effective stress on the friction sleeve.

DYNAMIC PORE PRESSURE (CPTu)

While the piezo system is saturated before use, testing through unsaturated soils may result in some degree of desaturation leading to a less accurate and more 'sluggish' pore pressure response. Desaturation can also occur during penetration due to suction during dilative shear at the cone shoulder. Dissipation tests that are undertaken following desaturation are likely to have a more pronounced initial rise and some degree of error will be present in the analysis.

If the system becomes desaturated it may or may not re-saturate at higher excess pressures later in the test. The pore pressure response in saturated contractive soils normally have a dynamic 'peaky' appearance.

The tip resistance in lower strength contractive soils without pore pressure measurement in the u_2 position is likely to be significantly lower than the equivalent corrected tip resistance depending on the magnitude of pore pressure acting in the gap between cone tip and cone body.

CONE TIP AND SLEEVE OFFSET

The accuracy of the SBT over thin layers and at layer boundaries is sensitive to offset error in the friction ratio often resulting in sharp peaks or troughs at boundaries. The friction ratio is often inaccurate in heavily disturbed soils with a 'blocky' macro fabric.

For this investigation a friction sleeve depth shift of -80mm was applied together with a 2-point (40 mm) moving average on the friction ratio to minimise the influence of this effect.

FRICTION SLEEVE DATA

There are two common causes of artificially low or negative friction sleeve measurement; 1) Sudden unequal pore pressure effects at strata boundaries often resulting in a negative spike and 2) very sensitive soils where the measured resistance falls to zero or lower due to instrument limitations or temperature effects. The latter can often be mitigated by temperature stabilisation during the test and at the time of zero output measurement.

CONE TYPE

The reference cone type has a 10 cm^2 projected cone tip area and 150 cm^2 friction sleeve area, however it is common to use the larger 15 cm^2 cone with 225 cm^2 friction sleeve area for improved sensitivity and penetration depth potential. Use of the 15 cm^2 cone will produce more pronounced transitions zones and thin layer effects (larger zone of influence and failure zone).

TRANSITION ZONES AND THIN LAYER EFFECTS

During penetration at the boundary between soils of contrasting stiffness, a transition zone is often evident prior to mobilisation of the true soil stiffness. These should be cautiously ignored in assessment of soil behaviour type and parameter evaluation. Where the stiff layer is thin (<~0.75 m) mobilised resistance may be significantly less than that of an equivalent thick layer. The effect for thin low stiffness layers is less significant. Procedures for thin-layer effect correction are provided by Robertson and Wride (1998).

GRAVELS

The presence of gravel or larger clasts in a soil is often characterised by short peaks in the CPT tip and sleeve readings, possibly with associate inclinometer 'shake' and/or sharp reductions in pore water readings due to dilation effects. Frequent gravels in soft or loose soils may generate localised erroneous friction ratio values.

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APPENDICES

APPENDIX A SUMMARY TABLES

Table 1 CPT summary

Test ID	Final depth (mBGL)	**Cone ID {C=**Cone tip; **F=**Friction Sleeve**; I=** Inclination**; P =** Piezo**; S=**Subtraction cone**; 15/10 =** cone projected area (cm2))}	CPT rig	Pre-drilled / inspection pit (m)	Refusal factor	Dissipations	Seismic cone	Easting	Northing	Elevation (m)	Date of test	Remarks
CPT101	4.24	S15-CFIP.1841	UK3		Tip load						10/03/2020	
CPT102	4.46	S15-CFIP.1841	UK3		Tip load						10/03/2020	
CPT103	4.68	S15-CFIP.1841	UK3		Tip load						10/03/2020	
CPT104	5.46	S15-CFIP.1841	UK3		Tip load						10/03/2020	
CPT105	5.70	S15-CFIP.1841	UK3		Inclination						09/03/2020	
CPT106	1.46	S15-CFIP.1841	UK3		Tip load						10/03/2020	
CPT106A	0.42	S15-CFIP.1841	UK3		Inclination						10/03/2020	
CPT106B	2.58	S15-CFIP.1841	UK3		Tip load						10/03/2020	
CPT107	3.80	S15-CFIP.1841	UK3		Inclination						10/03/2020	
CPT108	3.54	S15-CFIP.1841	UK3		Sleeve load						10/03/2020	
CPT109	3.10	S15-CFIP.1841	UK3		Tip load						10/03/2020	
CPT110	4.88	S15-CFIP.1841	UK3		Total reaction force						09/03/2020	
CPT111	3.54	S15-CFIP.1841	UK3		Total reaction force						10/03/2020	
CPT112	3.24	S15-CFIP.1841	UK3		Tip load						10/03/2020	
CPT113	3.46	S15-CFIP.1841	UK3		Tip load						09/03/2020	
CPT114	4.70	S15-CFIP.1841	UK3		Total reaction force						09/03/2020	
CPT115	2.50	S15-CFIP.1841	UK3		Tip load						10/03/2020	
CPT116	1.82	S15-CFIP.1841	UK3		Tip load						10/03/2020	
CPT116A	1.64	S15-CFIP.1841	UK3		Tip load						10/03/2020	
CPT116B	1.88	S15-CFIP.1841	UK3		Tip load						10/03/2020	
CPT117	0.16	S15-CFIP.1841	UK3		Inclination						10/03/2020	
CPT117A	4.74	S15-CFIP.1841	UK3		Tip load						10/03/2020	
CPT118	2.76	S15-CFIP.1841	UK3		Tip load						10/03/2020	
CPT119	1.80	S15-CFIP.1841	UK3		Tip load						10/03/2020	
CPT119A	2.30	S15-CFIP.1841	UK3		Total reaction force						10/03/2020	

Test ID	Final depth (mBGL)	**Cone ID {C=**Cone tip; **F=**Friction Sleeve**; I=** Inclination**; P =** Piezo**; S=**Subtraction cone**; 15/10 =** cone projected area (cm2))}	CPT rig	Pre-drilled / inspection pit (m)	Refusal factor	Dissipations	Seismic cone	Easting	Northing	Elevation (m)	Date of test	Remarks
CPT120	3.24	S15-CFIP.1841	UK3		Tip load						09/03/2020	
CPT121	4.10	S15-CFIP.1841	UK3		Tip load						09/03/2020	
CPT122	5.34	S15-CFIP.1841	UK3		Inclination						09/03/2020	
CPT123	5.78	S15-CFIP.1841	UK3		Sleeve load						09/03/2020	
CPT124	4.40	S15-CFIP.1841	UK3		Total reaction force						09/03/2020	
CPT125	5.18	S15-CFIP.1841	UK3		Total reaction force						09/03/2020	
CPT126	6.82	S15-CFIP.1841	UK3		Total reaction force						09/03/2020	
CPT127	3.20	S15-CFIP.1841	UK3		Tip load						09/03/2020	
CPT128	3.74	S15-CFIP.1841	UK3		Tip load						10/03/2020	

CPT test plots are presented in Appendix C.

APPENDIX B GENERAL INFORMATION

LIST OF FIGURES

Description	Pages included
Cone calibration certificate: S15-CFIP.1841	1
Data sheet: 20.5-tonne track-truck mounted CPT unit (UK3)	1
CPT soil behaviour type chart	1

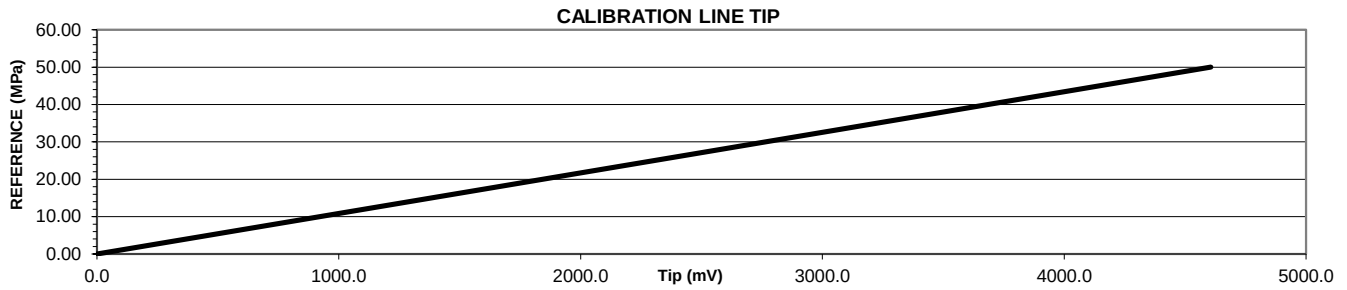
LANKELMA

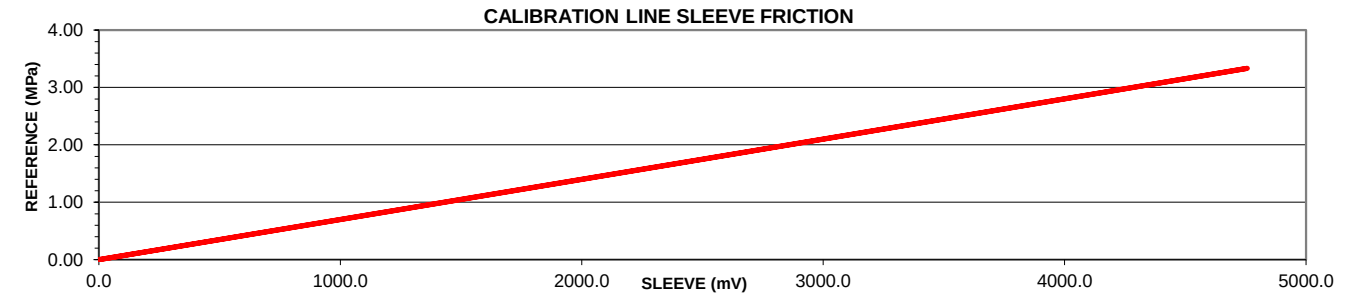
CALIBRATION CERTIFICATE

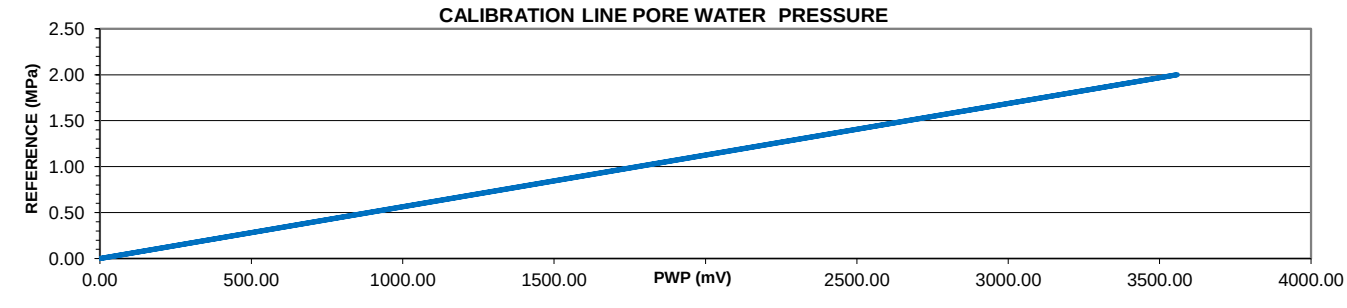
Geopoint-S15-150kN-5MPa

Cone Serial Number: S15-CFIIP.1841

REFERENCE INSTRUMENTS:	CONE END RESISTANCE	SLEEVE FRICTION	PORE WATER PRESSURE
ID	51998	51998	4009509
TYPE	AM DSCC-100kN	AM DSCC-100kN	Druck DPI 104
UNCERTAINTY (±%)	0.01	0.01	0.05
Nominal pressure (MPa,MPa,MPa)	50.00	3.33	2.00
Maximum pressure (MPa,MPa,MPa)	100.00	6.67	5.00
Area (cm²)	15	225	N/A
Sensitivity (mV/MPa)	92.13	1427.12	1778.96
Calibration file scaling factor:			
Nominal cal force (kN, kN, BAR)	75	75	20
Calibration number (mV)	4607	4757	3558
Zero point (mV)	266	243	288
Sensitivity (mV/kN, mV/kN, mV/BAR)	61.421	63.428	177.896
Inclination factors (mV)	X -20°= 556, 0°= 2493, 20°= 4441	/ Y -20°= 309, 0°= 2391, 20°= 4407	
Measured alpha factor:	0.80		
Uncertainty (%):			
Reproducibility	0.06	0.03	0.04
Linearity	0.07	0.07	0.07
Hysteresis	0.13	0.10	0.15
Combined expanded (k=2)	0.29	0.51	0.32
Application class	1	1	1







Instrument:	**S15-150kN**	**Location:**	**Lankelma Calibration Laboratory**
Serial Number:	**S15-CFIIP.1841**	**Temperature(° C)**	**19.1**
Manufacturer:	**Geopoint**	**Calibration Engineer**	**A Harman**
Date of calibration:	**07/01/2020**	**Calibration Expiry**	**06/04/2020**

Calibration signed and dated by:	Calibration checked and dated by:
AN Harman	Ed F. White



UK3
Track-truck

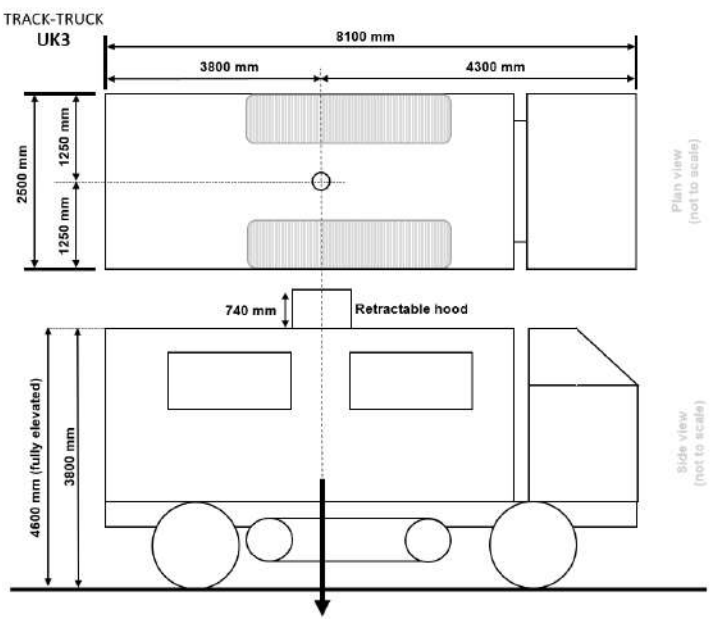
LANKELMA
01797 280050 – www.lankelma.com

Rig weight	20.5 T
Max. operating ram capacity	17 T
Max. travelling speed	86 km/h
Track material	Steel
Track length	3300 mm
Track width	650 mm
Jack plate dimensions	Tracks act as jacks
Jack arrangements	1nr. on each side
Max. ground clearance on jacks	210 mm
Max. ground bearing pressure	Tracking/pushing – 47 kPa Pulling – 88 kPa
Max. testing gradient	10 degrees
Max. traversing gradient	30 degrees (operator assessed)
Noise output at 2 m	Testing - 74 dBA Driving – 87 dBA
Clamp arrangement	36/55 push-pull clamp
Ram stroke	1.2 m
Max. casing size	55 mm

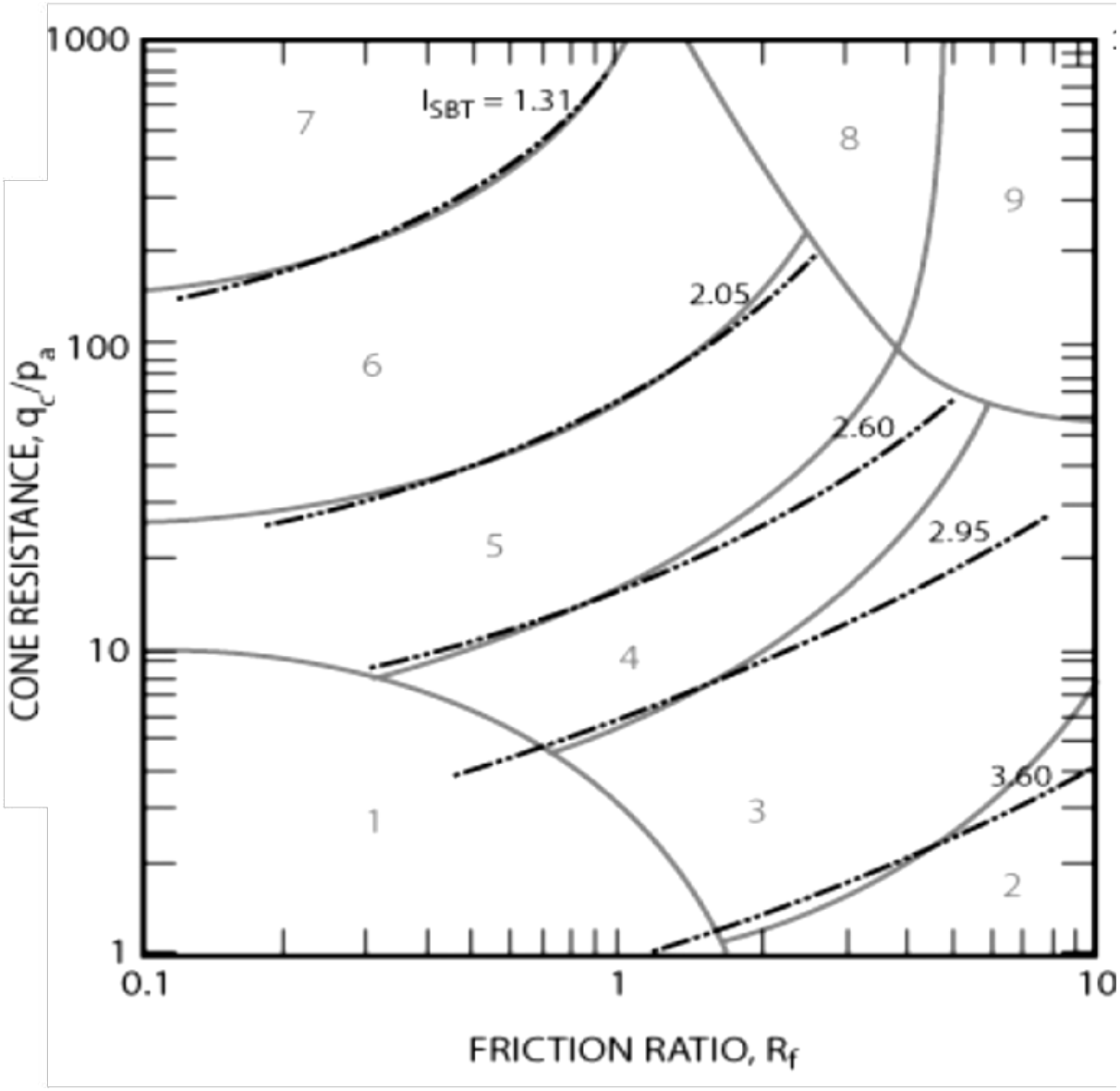
Lankelma's versatile track-truck is suitable for most geotechnical sites. The rig is driven to site as a self-contained HGV with tracks that can be deployed to cope with soft or uneven terrain. Fitted with a chalwyn valve and spark arrestor.

Typical production
An expected 100m+ of standard CPTu testing can be executed in a day (depending on conditions and access).

Specialist testing	Installations	Sampling
Seismic	VWP	MOSTAP
Pressuremeter	Piezometer	Shelby
Magnetometer	Inclinometer	
Video cone		
Wing cone		
Push-in shear vane		



CPT SOIL BEHAVIOUR TYPE CHART



Non-normalised SBT chart by Robertson *et al.* (2010) based on dimensionless cone resistance (qc/Pa) and friction ration, Rf, showing contours of *Ic* index. The chart is also applicable to normalised tip/sleeve values Q_t and F_r.

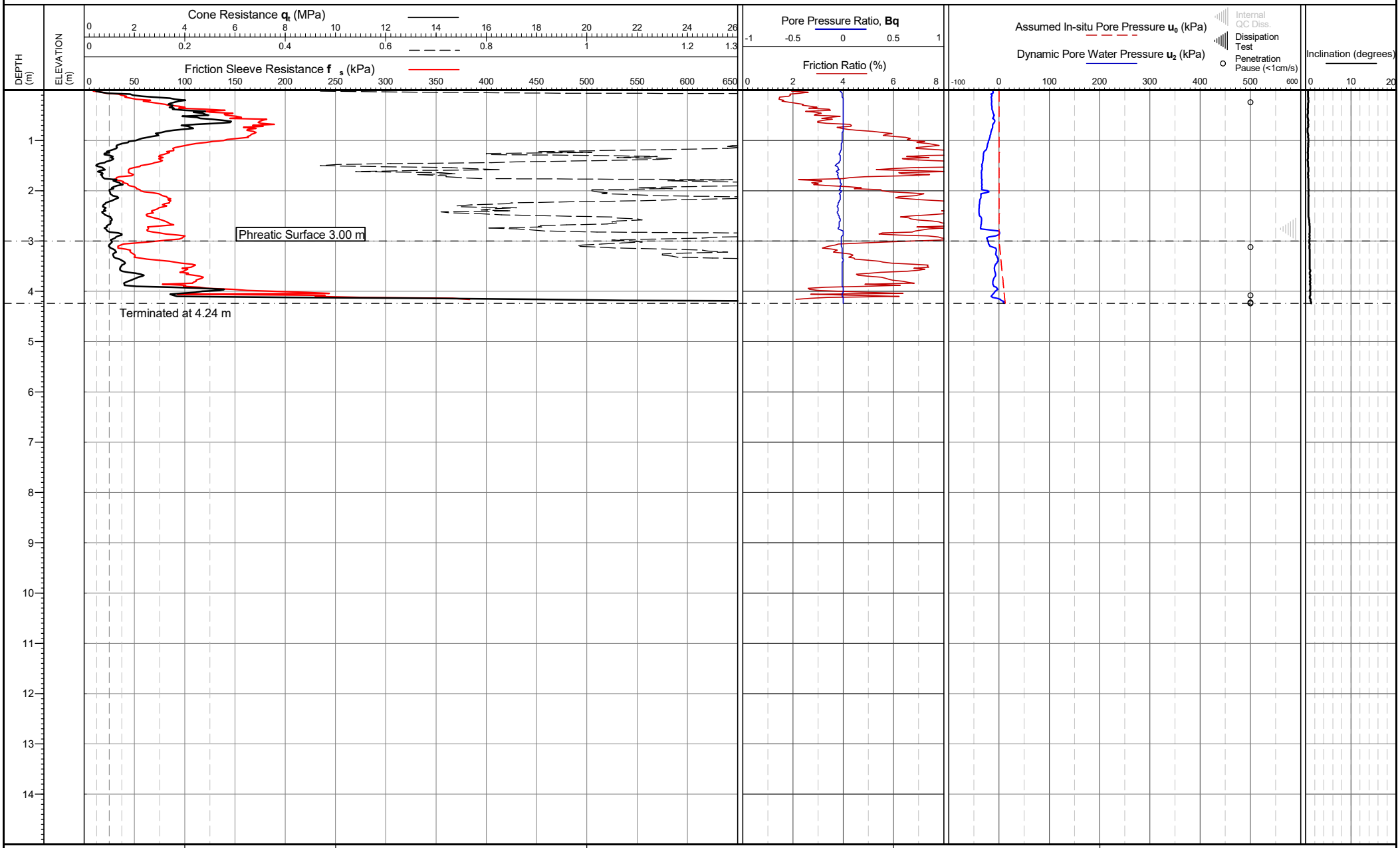
Zone	Soil Behaviour Type (SBT)		
1	Sensitive fine-grained	6	Sands: clean sand to sandy silt
2	Clay – organic soil	7	Dense sand to gravelly sand
3	Clays: Clay to silty clay	8	Stiff sand to clayey sand*
4	Silt mixtures: clayey silt to silty clay	9	Stiff fine grained*
5	Sand mixtures: Silty sand to sandy silt	*Overconsolidated or cemented	

APPENDIX C CONE PENETRATION TEST RESULTS

RAW DATA PLOTS

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

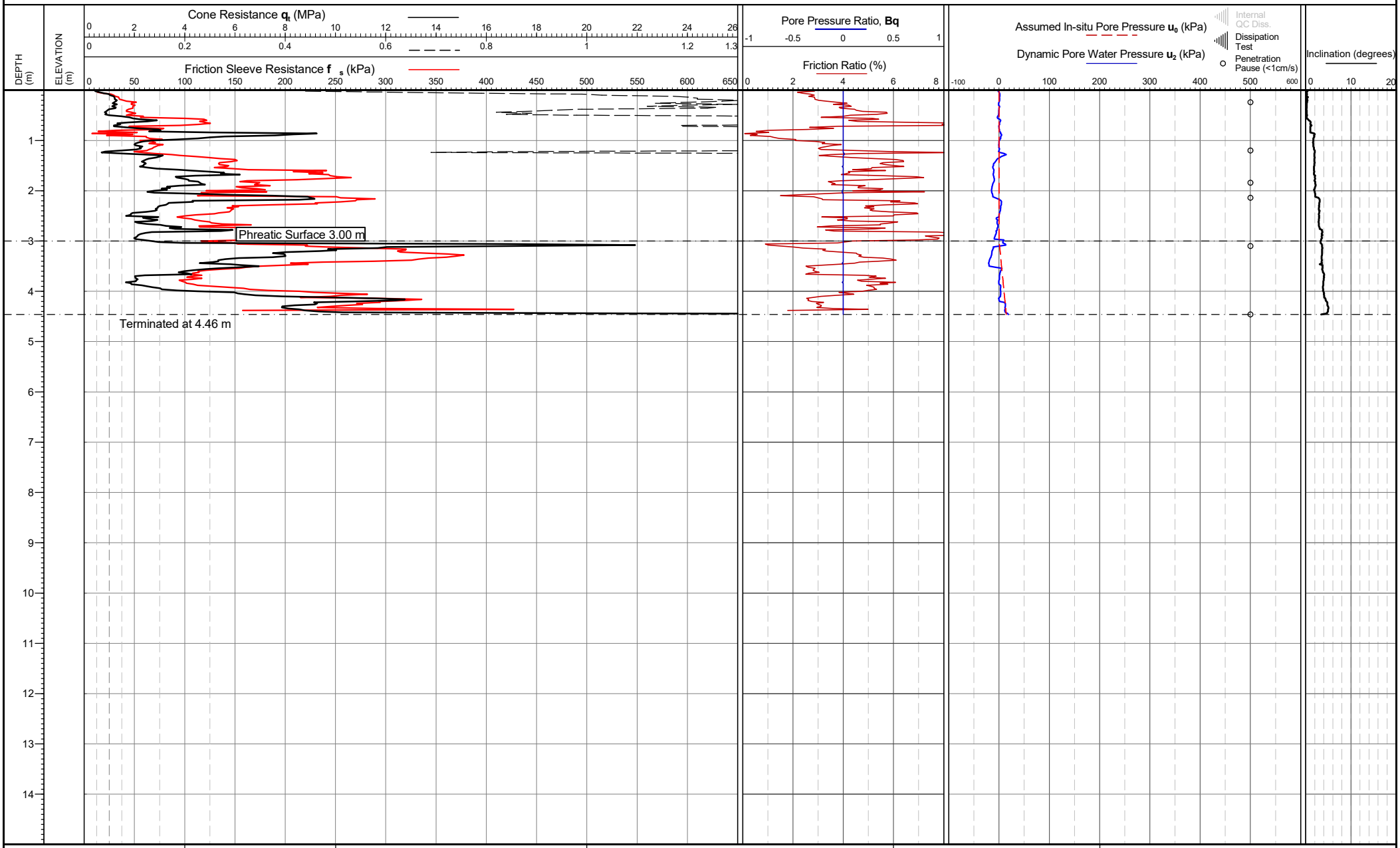


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 11:10:00	Zero drift (Pre/post test) q_c (kPa): -10.9 f_s (kPa): 1.4 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): -11.8	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Tip load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT101

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



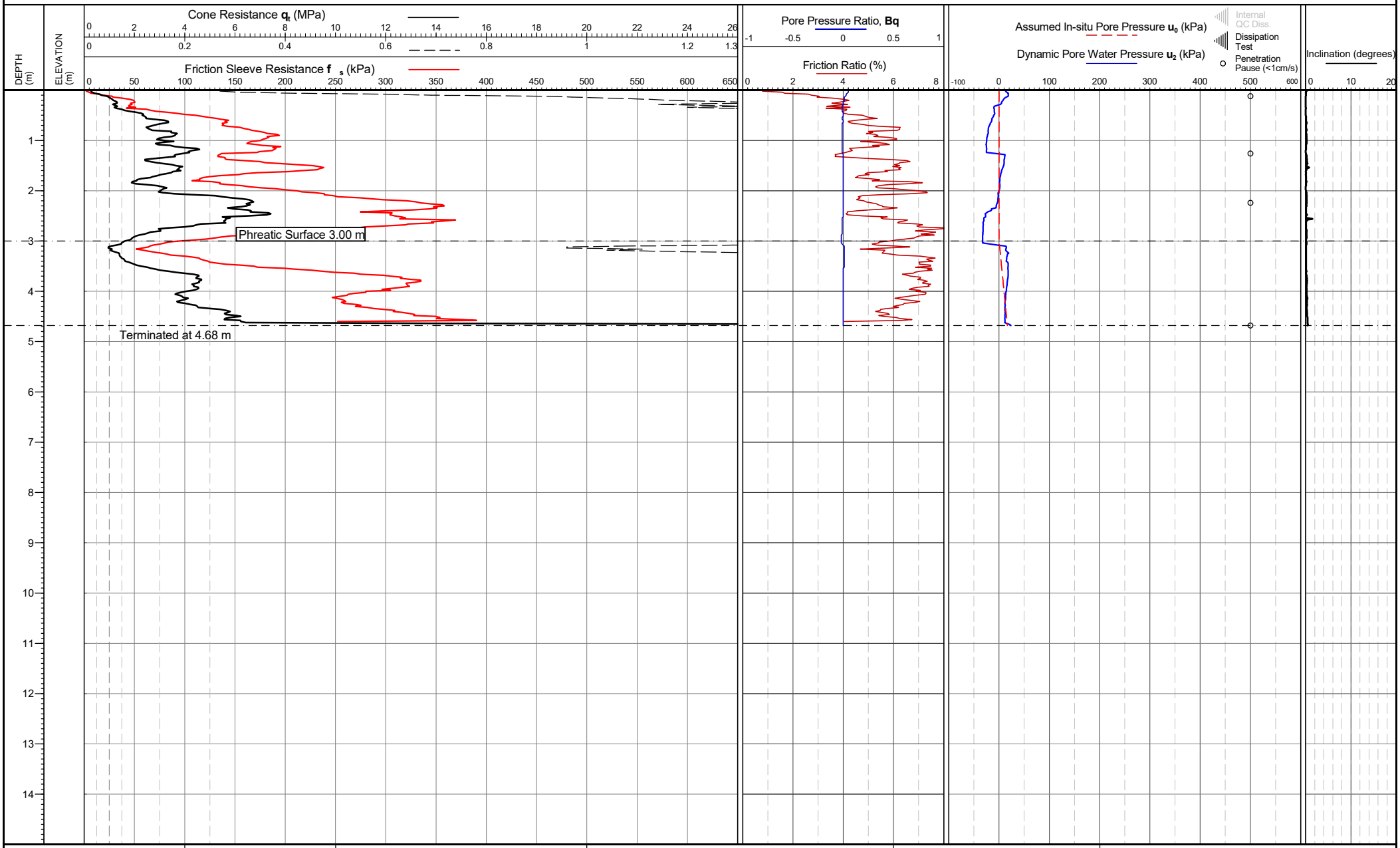
Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 12:09:00	Zero drift (Pre/post test) q_c (kPa): -54.3 f_s (kPa): 0.8 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): -0.6	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Tip load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT102

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

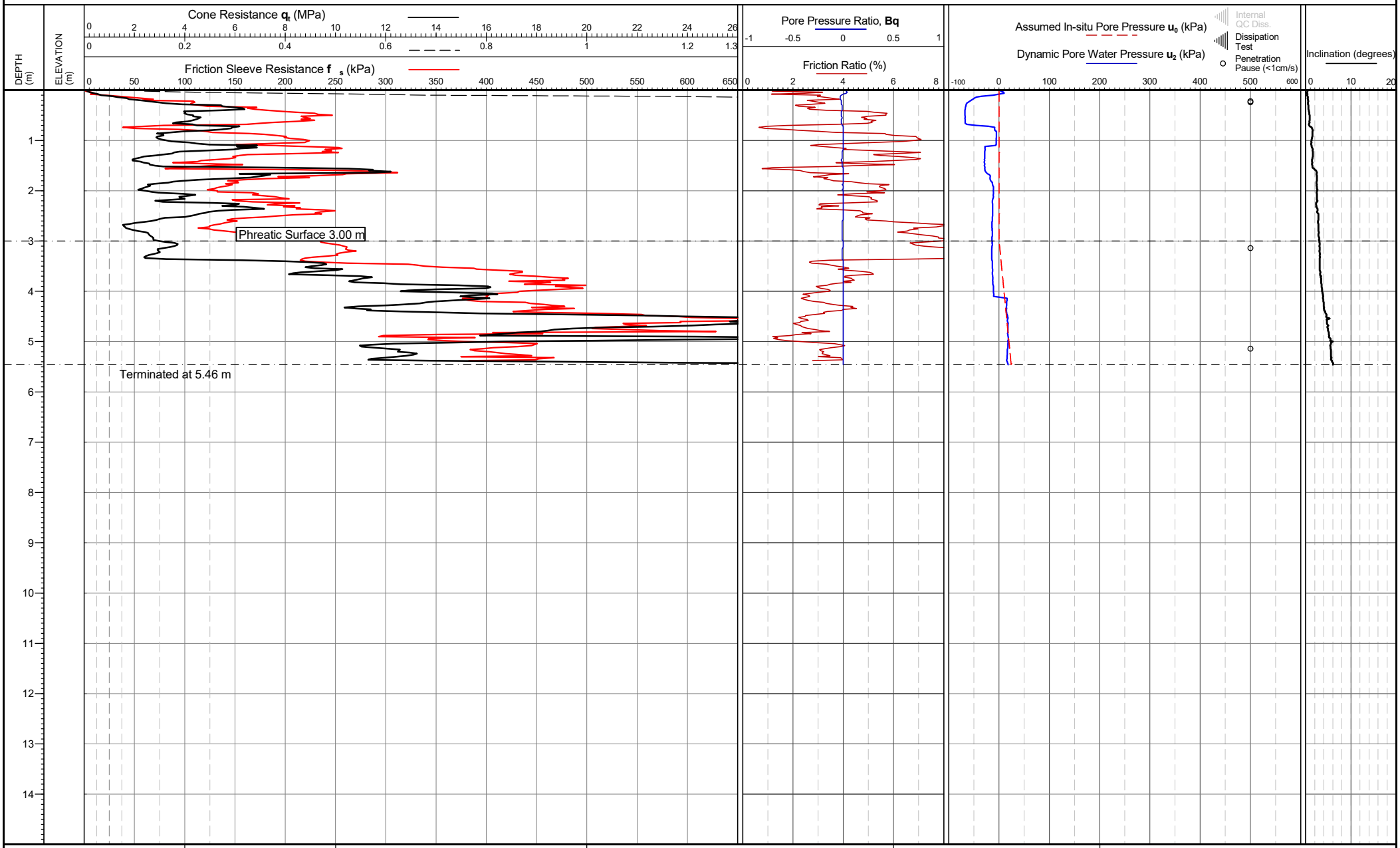


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 10:20:00	Zero drift (Pre/post test) q_c (kPa): 54.3 f_s (kPa): -0.8 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): 10.7	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Tip load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT103

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

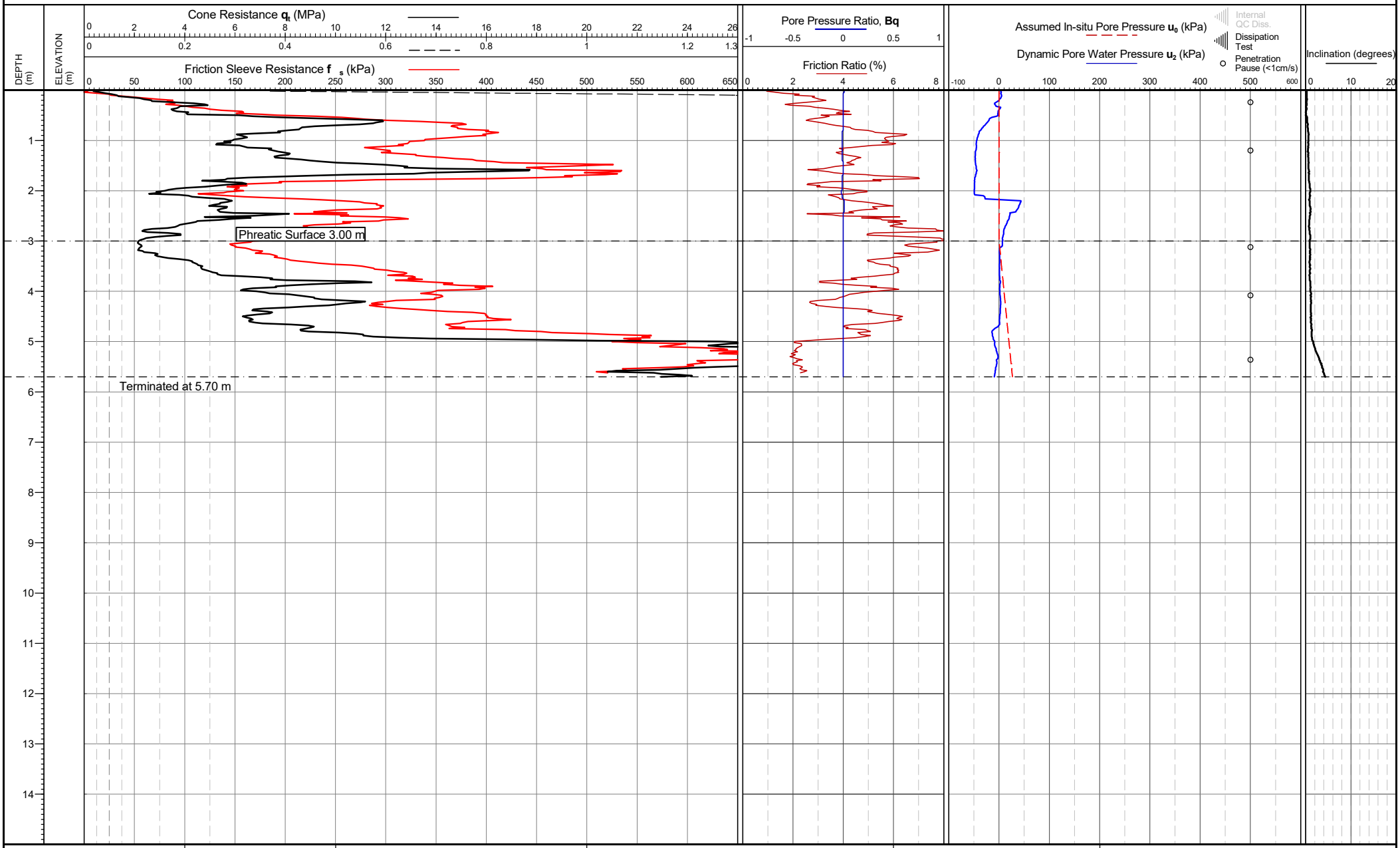


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 10:03:00	Zero drift (Pre/post test) q_c (kPa): -76.0 f_s (kPa): 0.9 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): -16.9	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Tip load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT104

Project: SPRING PARK ROAD, GRIMETHORPE

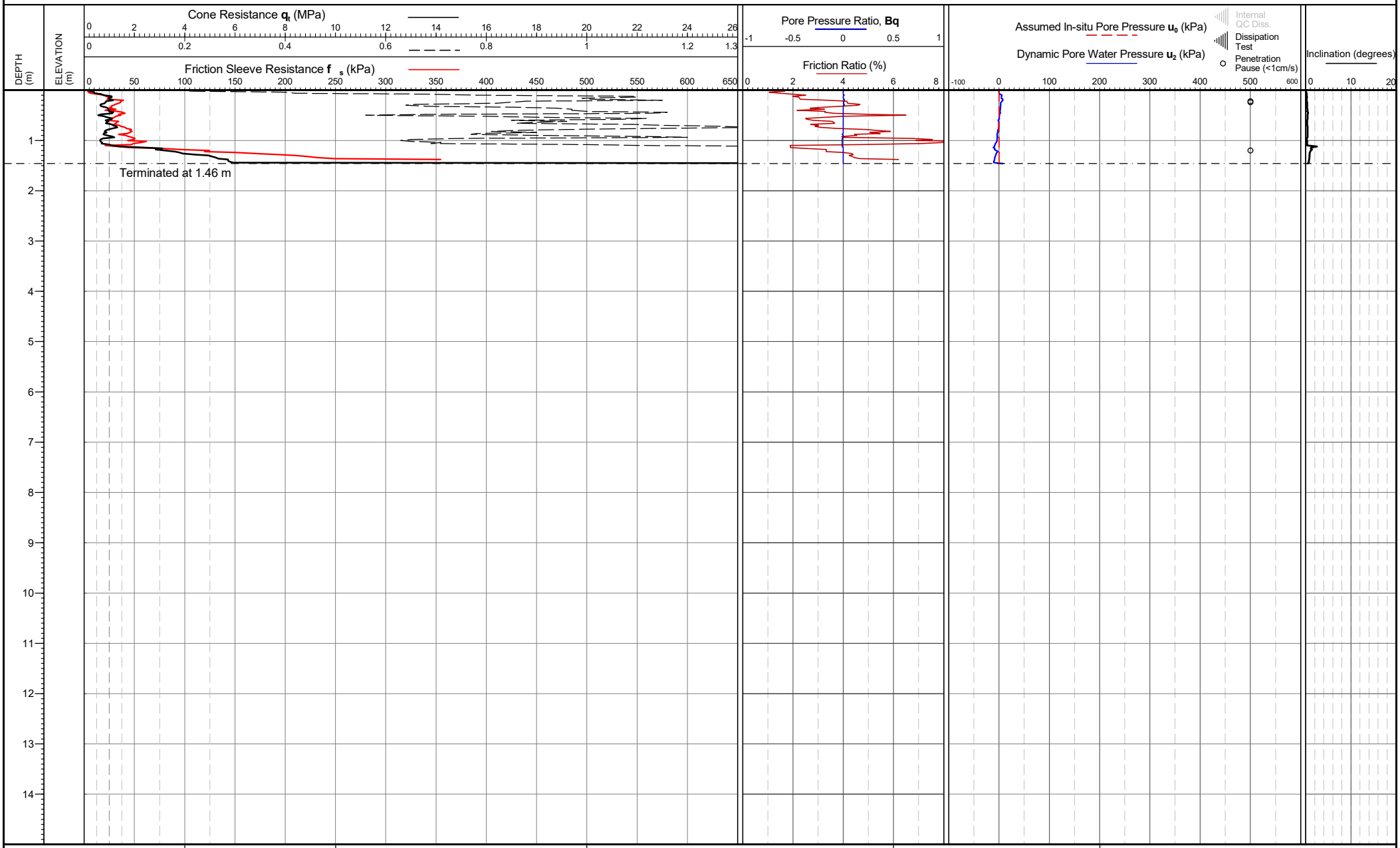
Client: JPG



Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 09/03/2020 15:01:00	Zero drift (Pre/post test) q_c (kPa): 54.3 f_s (kPa): -1.5 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): 0.6	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Inclination	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1	**TEST ID: CPT105** Page 1 of 1

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

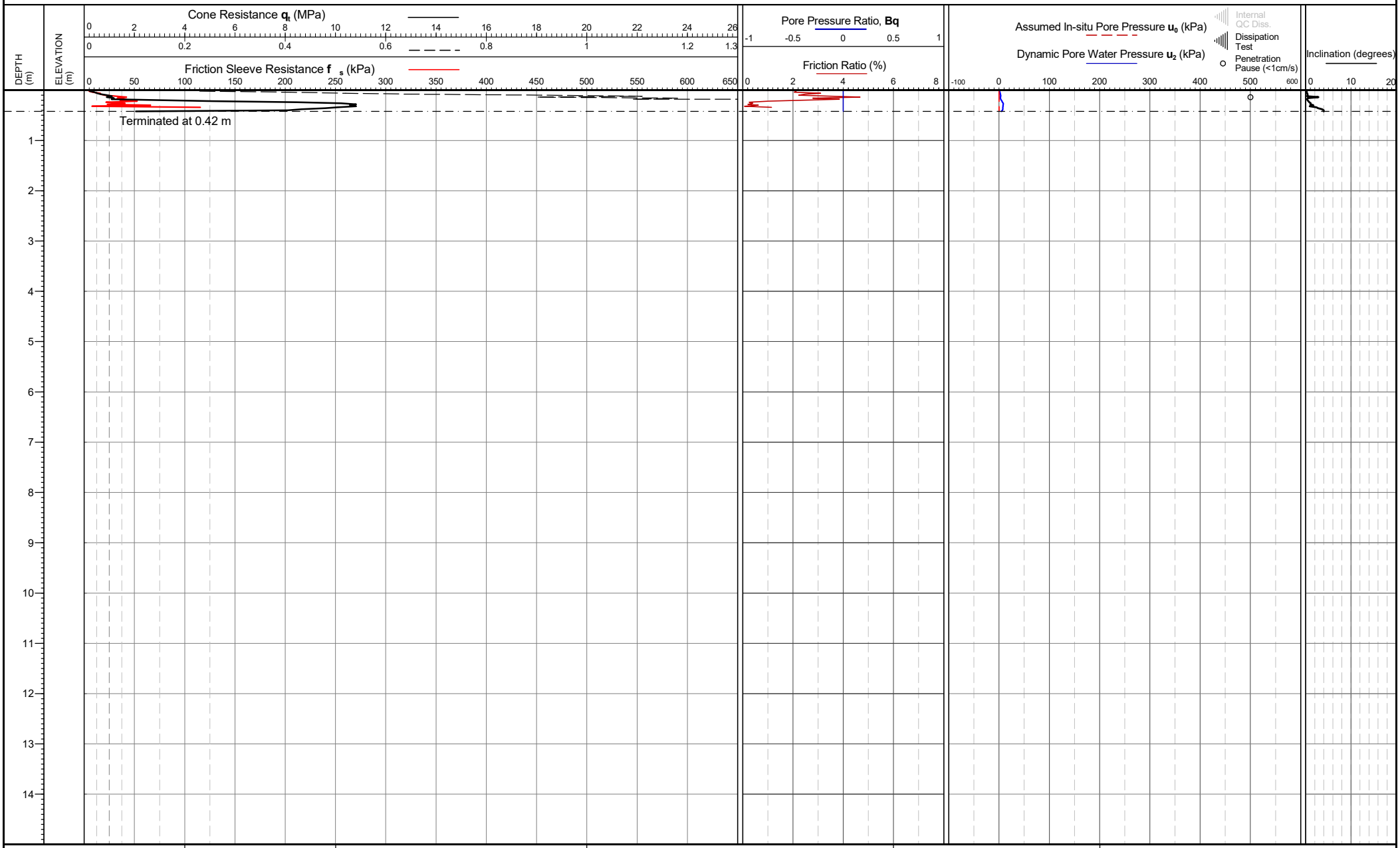


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 12:43:00	Zero drift (Pre/post test) q_c (kPa): 0.0 f_s (kPa): -1.4 ($f_{s\ drift}$ - $q_{c\ drift}$) U_2 (kPa): -4.5	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Tip load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT106

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

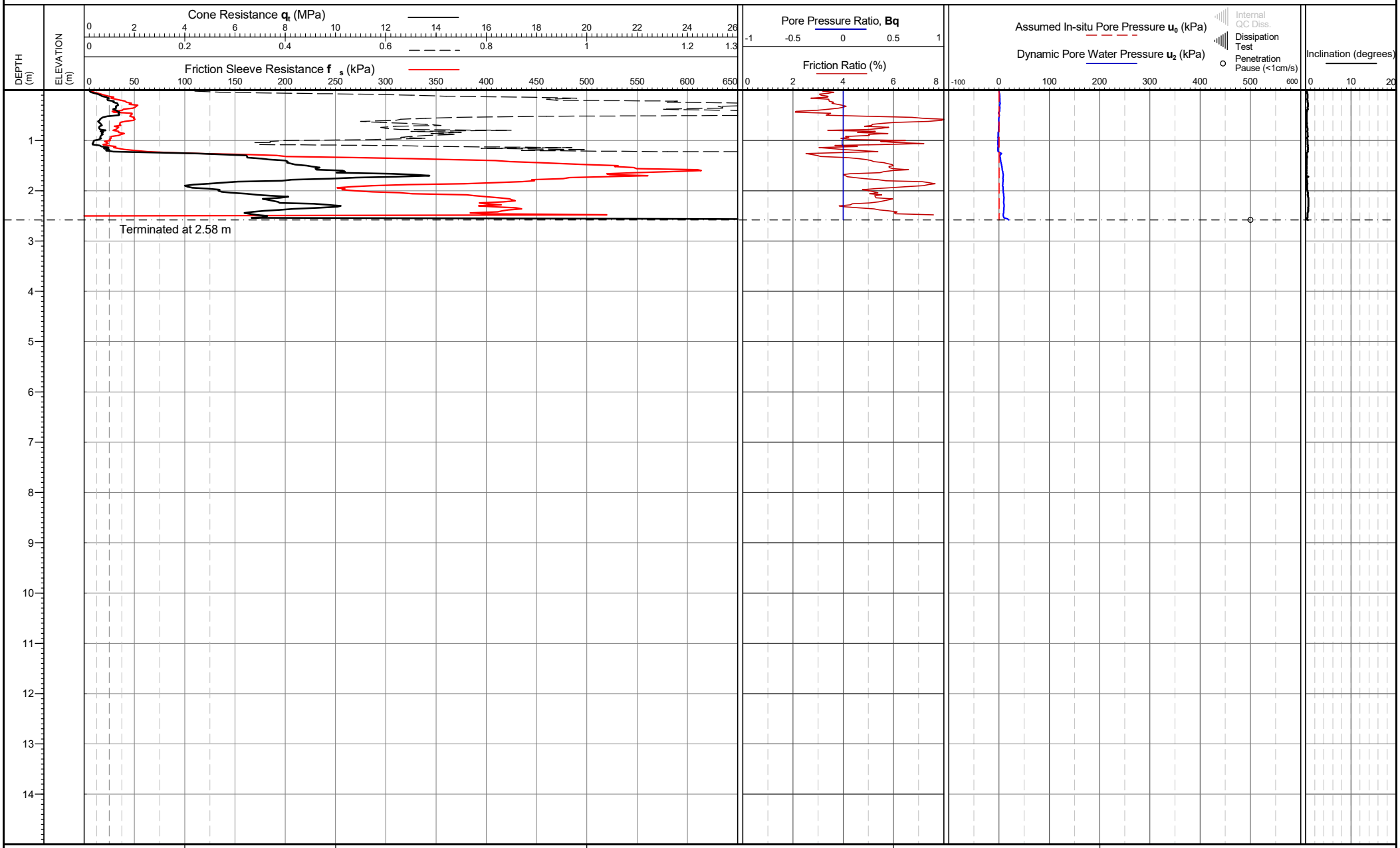


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 13:03:00	Zero drift (Pre/post test) q_c (kPa): 21.7 f_s (kPa): 0.0 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): 3.4	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Inclination	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT106A

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

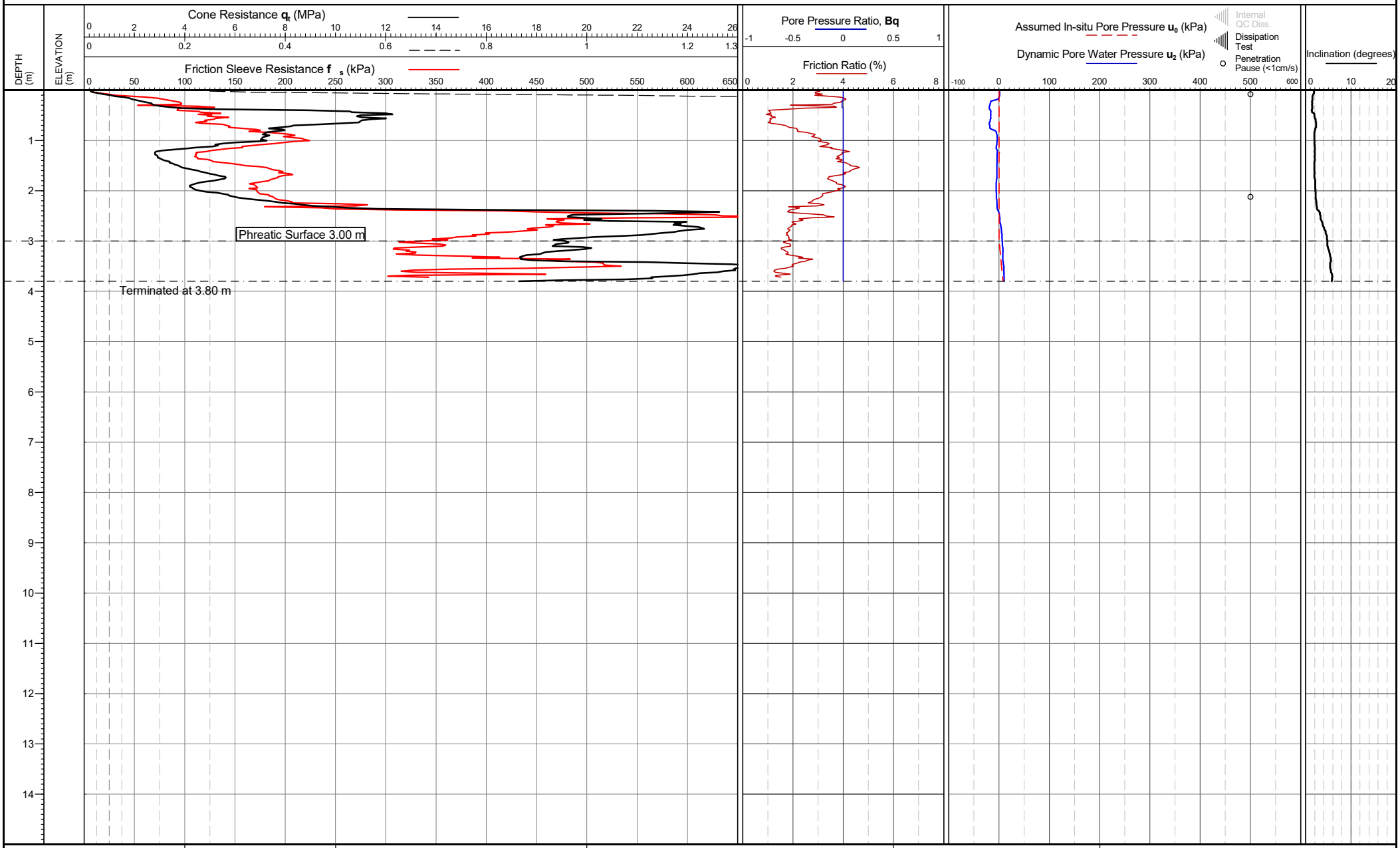


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 13:10:00	Zero drift (Pre/post test) q_c (kPa): -10.9 f_s (kPa): -0.7 ($f_{s\ drift}$ - $q_{c\ drift}$) U_2 (kPa): 1.7	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Tip load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT106B

Project: SPRING PARK ROAD, GRIMETHORPE

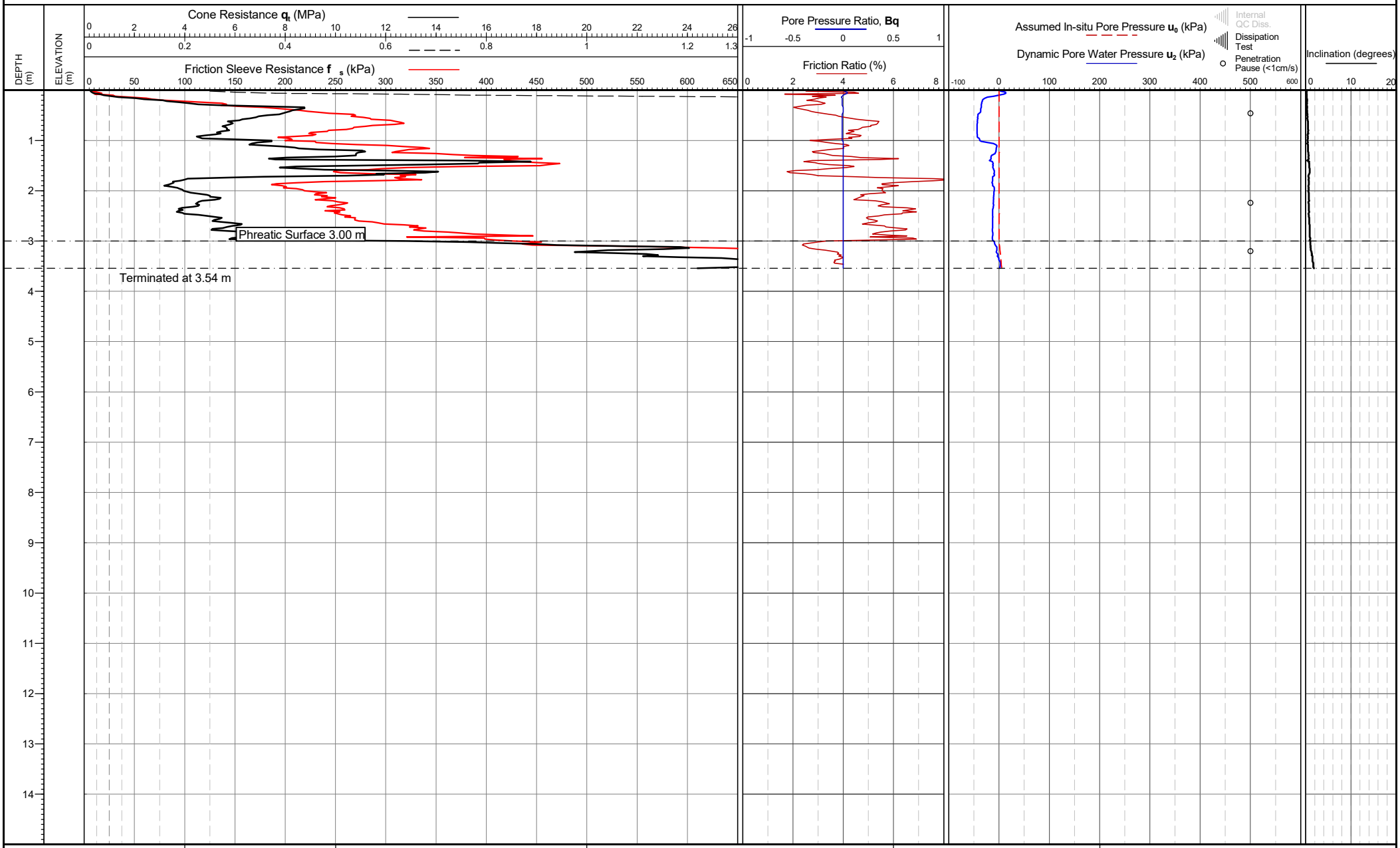
Client: JPG



Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 10:53:00	Zero drift (Pre/post test) q_c (kPa): 54.3 f_s (kPa): -1.5 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): 0.0	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Inclination	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1	**TEST ID: CPT107** Page 1 of 1

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

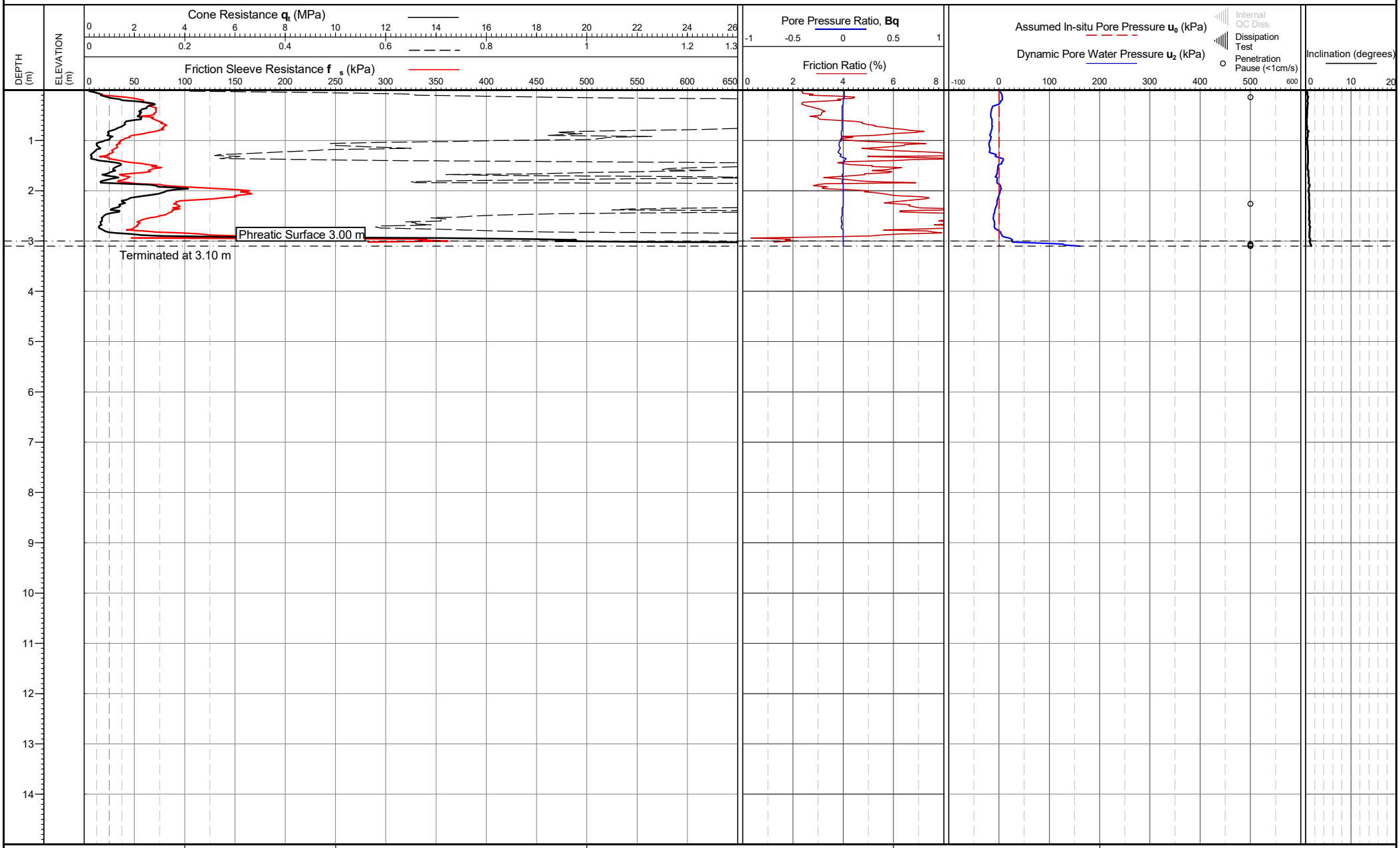


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 10:37:00	Zero drift (Pre/post test) q_c (kPa): -43.4 f_s (kPa): 0.1 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): -11.2	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Sleeve load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT108

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

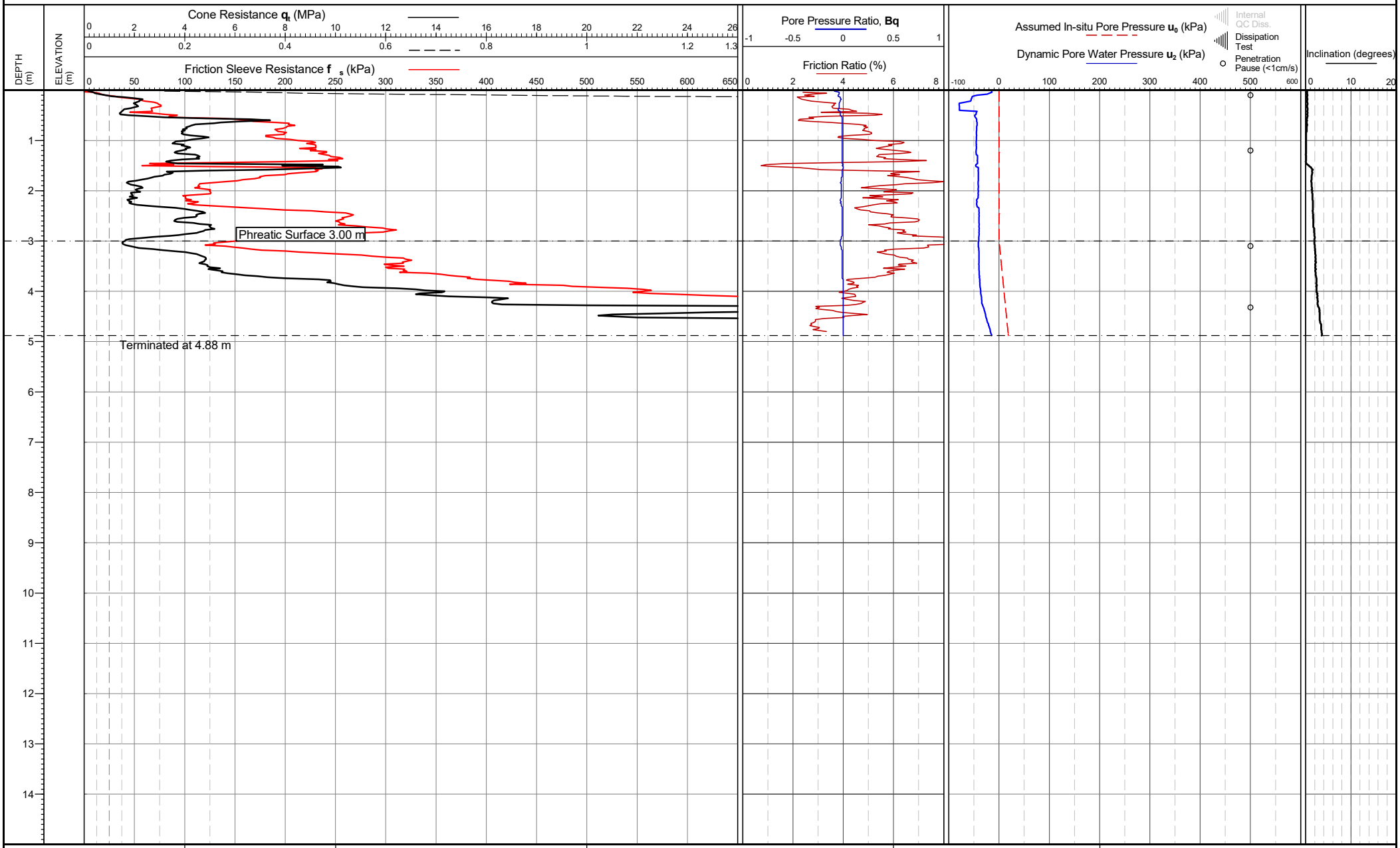


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 09:47:00	Zero drift (Pre/post test) q_c (kPa): 0.0 f_s (kPa): 0.7 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): 0.6	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Tip load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1	**TEST ID: CPT109** Page 1 of 1

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

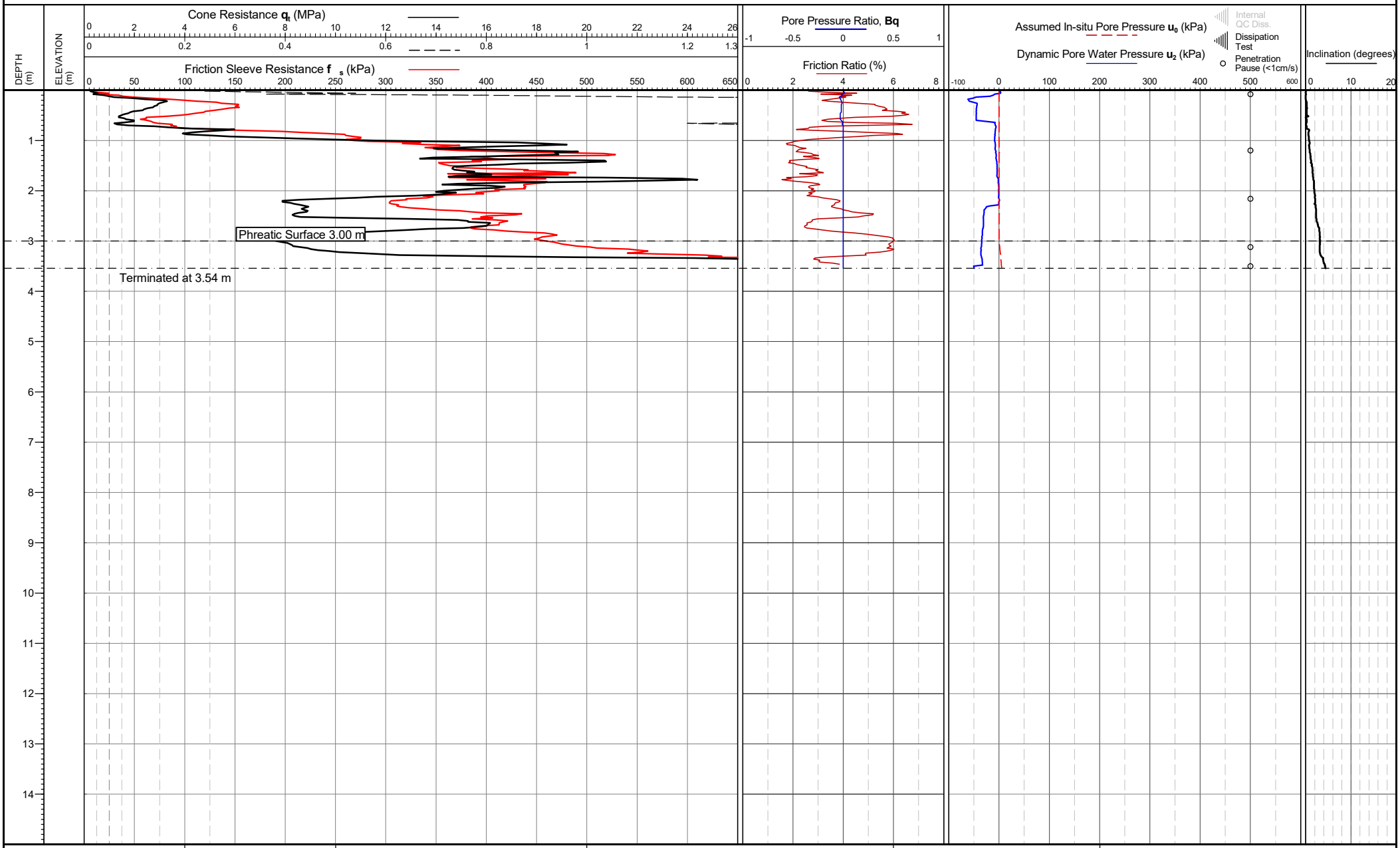


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 09/03/2020 13:50:00	Zero drift (Pre/post test) q_c (kPa): -32.6 f_s (kPa): -0.6 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): -18.5	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Total reaction force	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT110

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



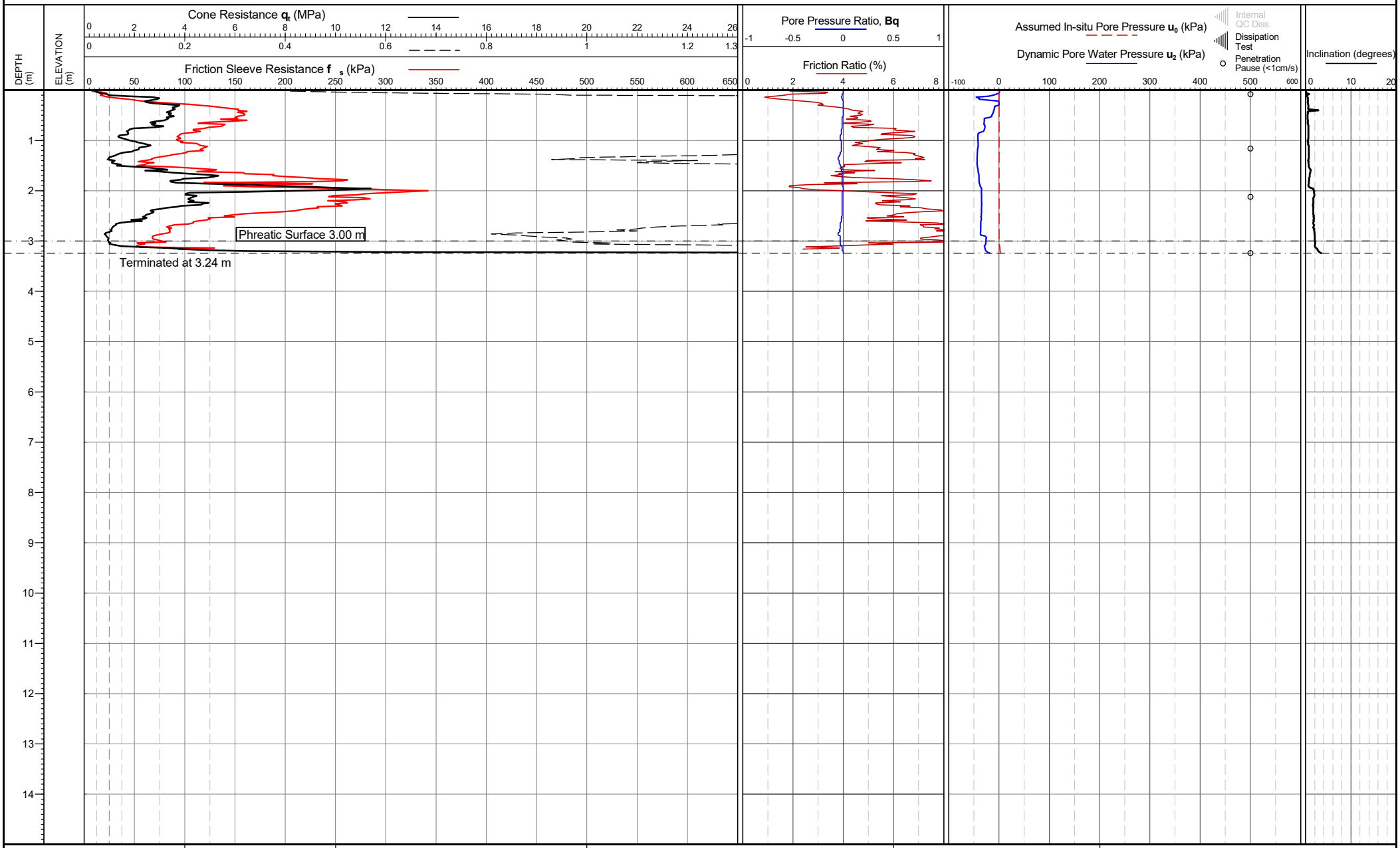
Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 09:17:00	Zero drift (Pre/post test) q_c (kPa): -97.7 f_s (kPa): 1.6 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): -4.5	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Total reaction force	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT111

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

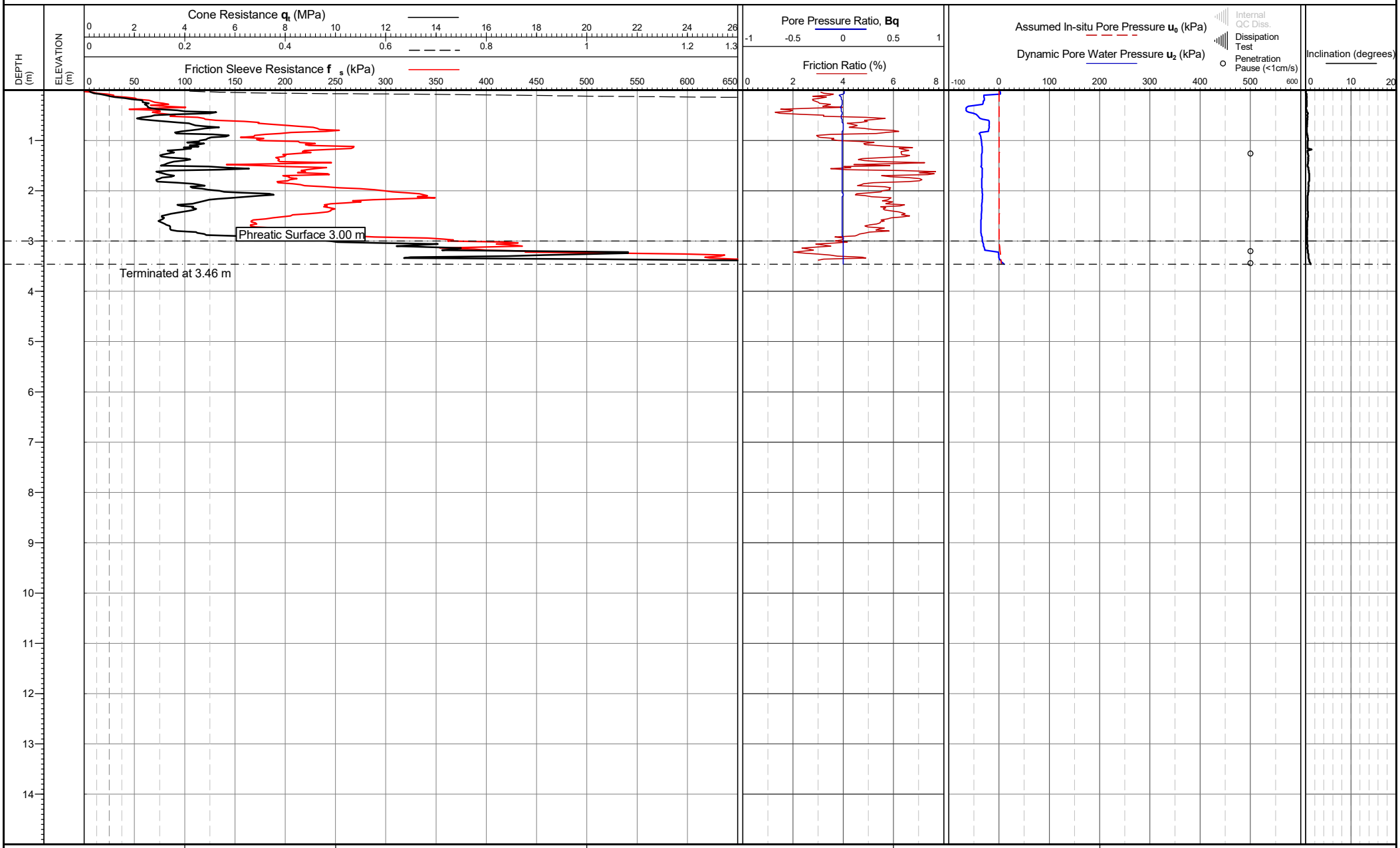


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 09:31:00	Zero drift (Pre/post test) q_c (kPa): 76.0 f_s (kPa): -1.6 ($f_{s\ drift}$ - $q_{c\ drift}$) U_2 (kPa): 3.4	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Tip load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT112

Project: SPRING PARK ROAD, GRIMETHORPE

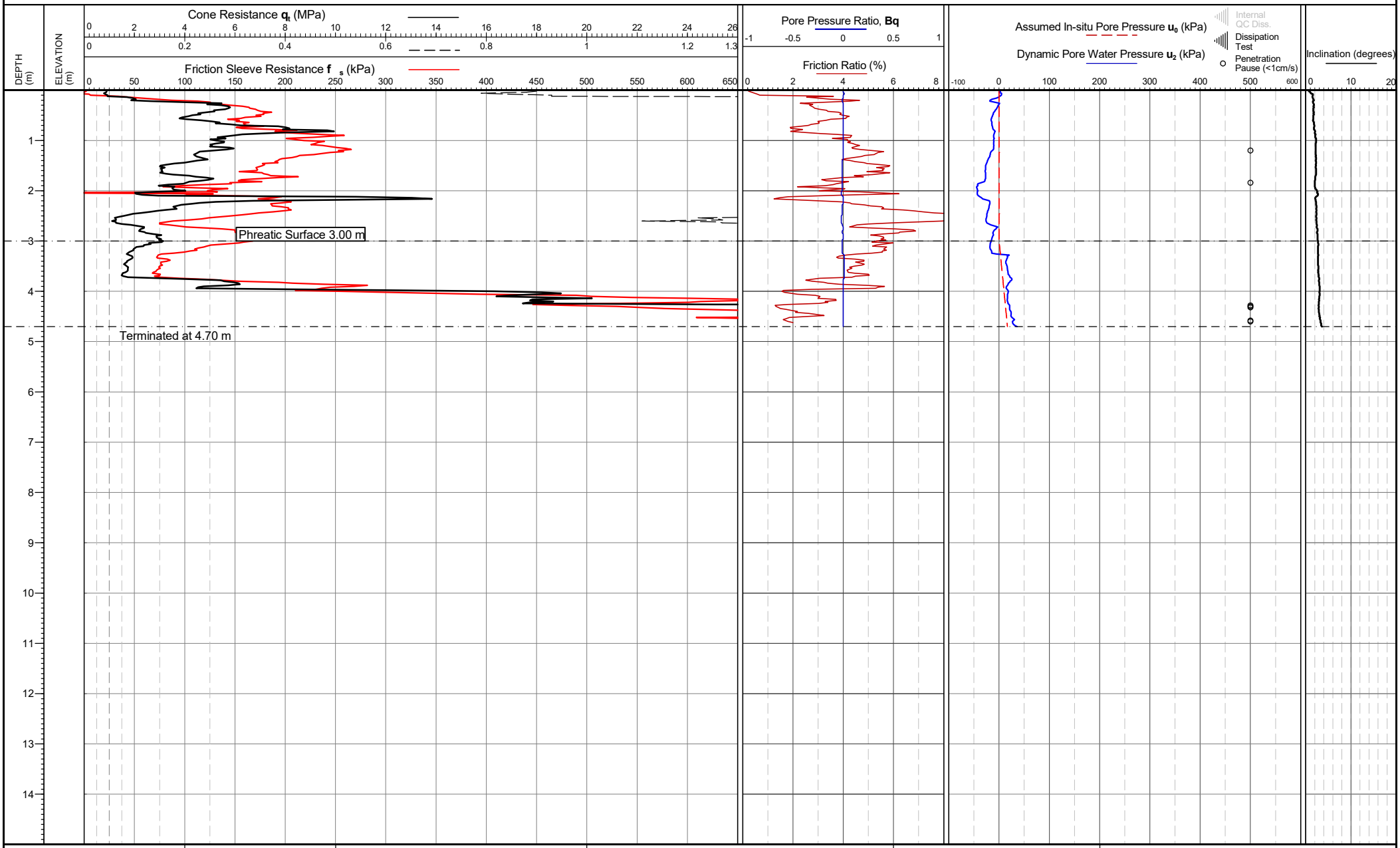
Client: JPG



Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 09/03/2020 15:29:00	Zero drift (Pre/post test) q_c (kPa): -21.7 f_s (kPa): 0.0 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): 1.7	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Tip load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1	**TEST ID: CPT113** Page 1 of 1

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

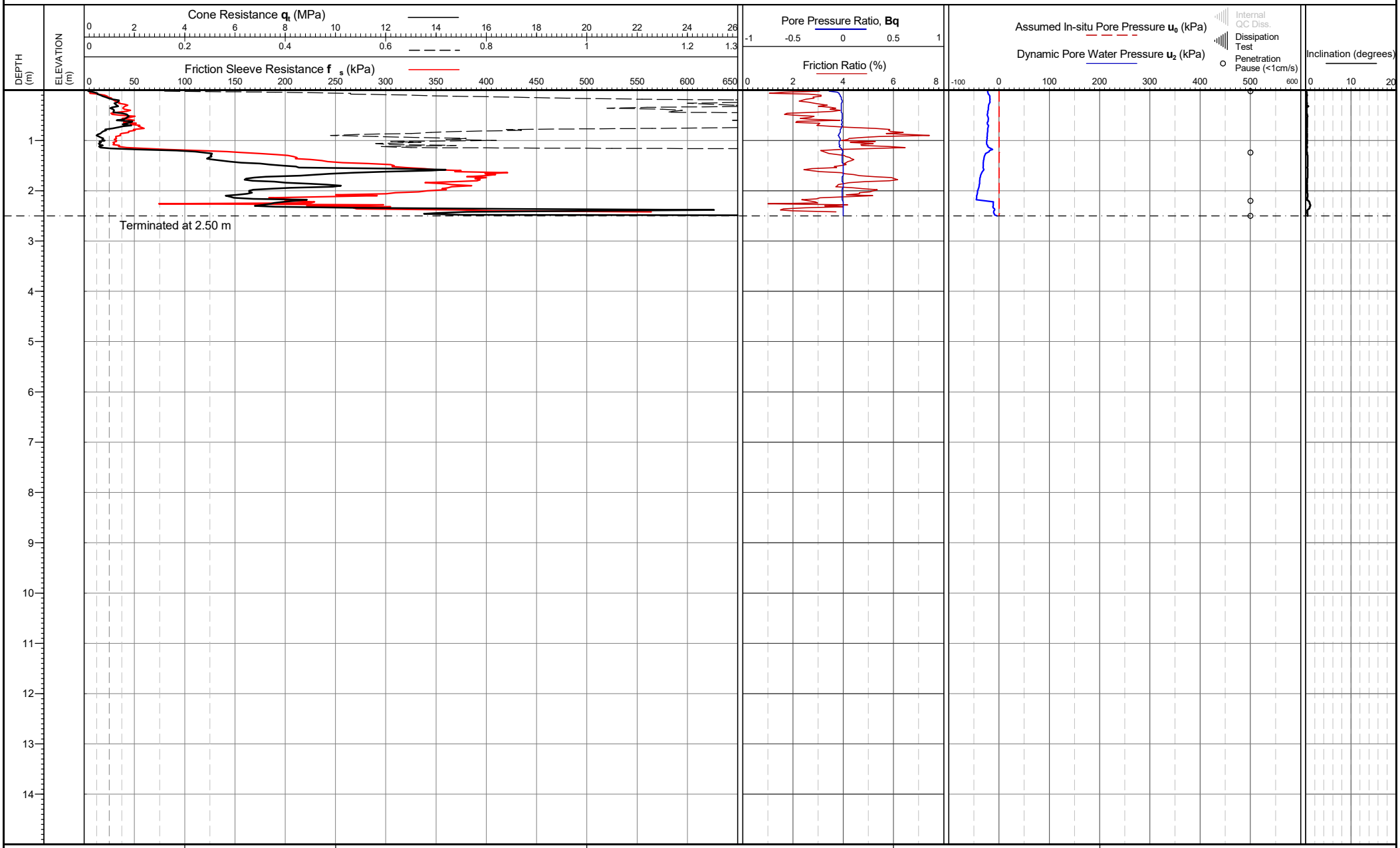


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 09/03/2020 13:30:00	Zero drift (Pre/post test) q_c (kPa): -65.1 f_s (kPa): 1.5 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): -1.7	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Total reaction force	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT114

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

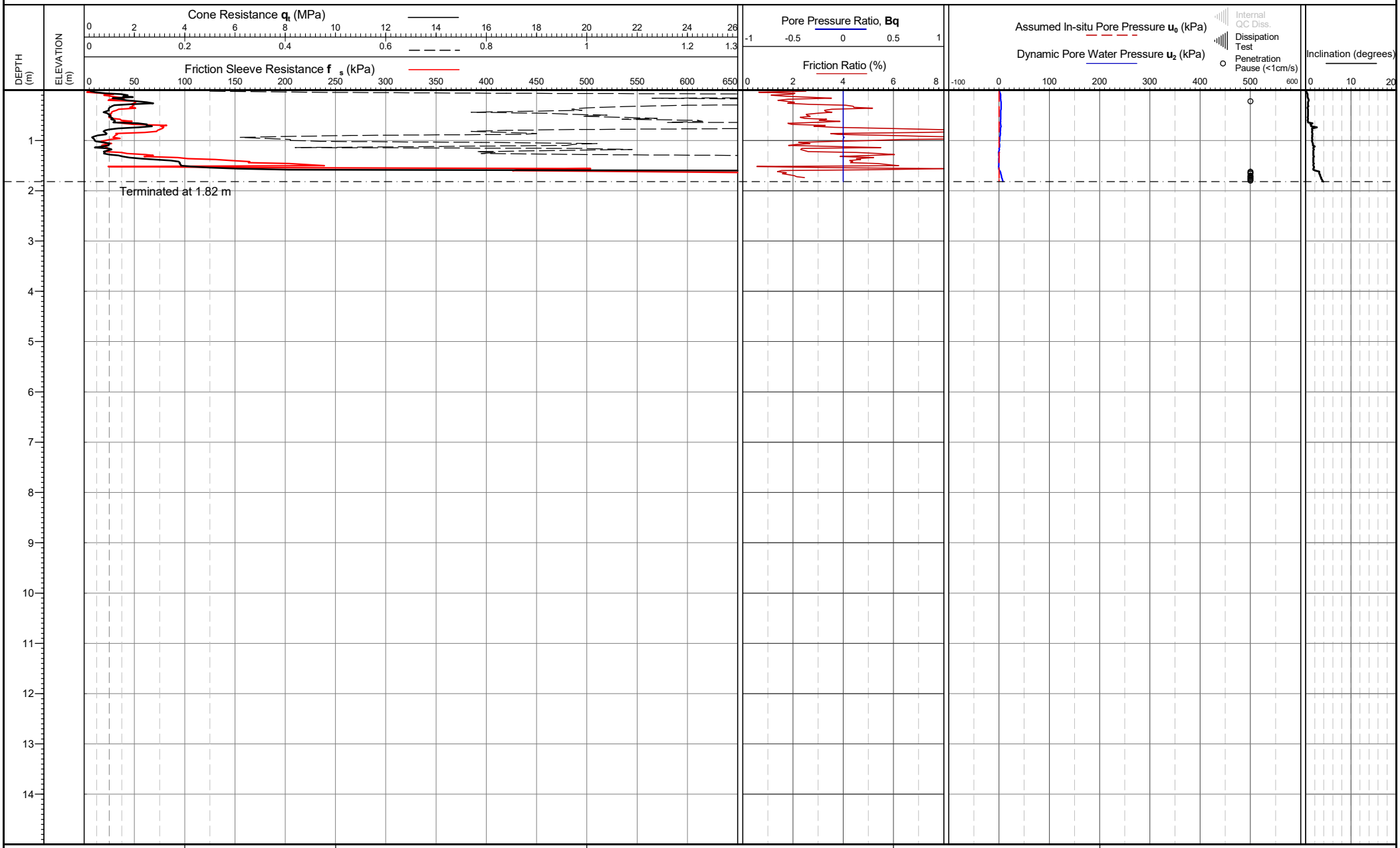


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 13:17:00	Zero drift (Pre/post test) q_c (kPa): -10.9 f_s (kPa): 1.4 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): -21.4	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Tip load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT115

Project: SPRING PARK ROAD, GRIMETHORPE

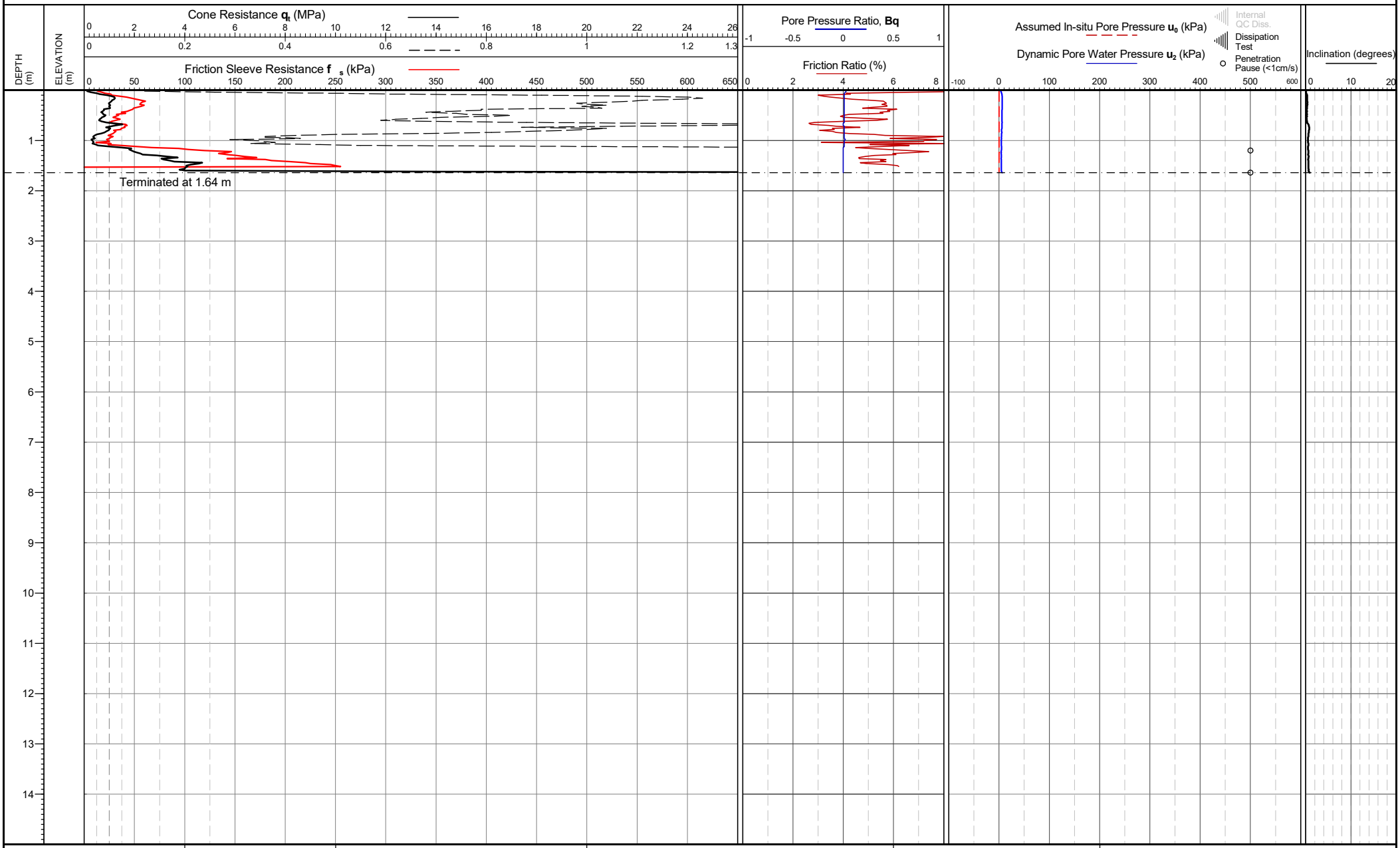
Client: JPG



Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 13:33:00	Zero drift (Pre/post test) q_c (kPa): -43.4 f_s (kPa): -6.2 ($f_{s\ drift}$ - $q_{c\ drift}$) U_2 (kPa): -5.6	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Tip load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1	**TEST ID: CPT116** Page 1 of 1

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

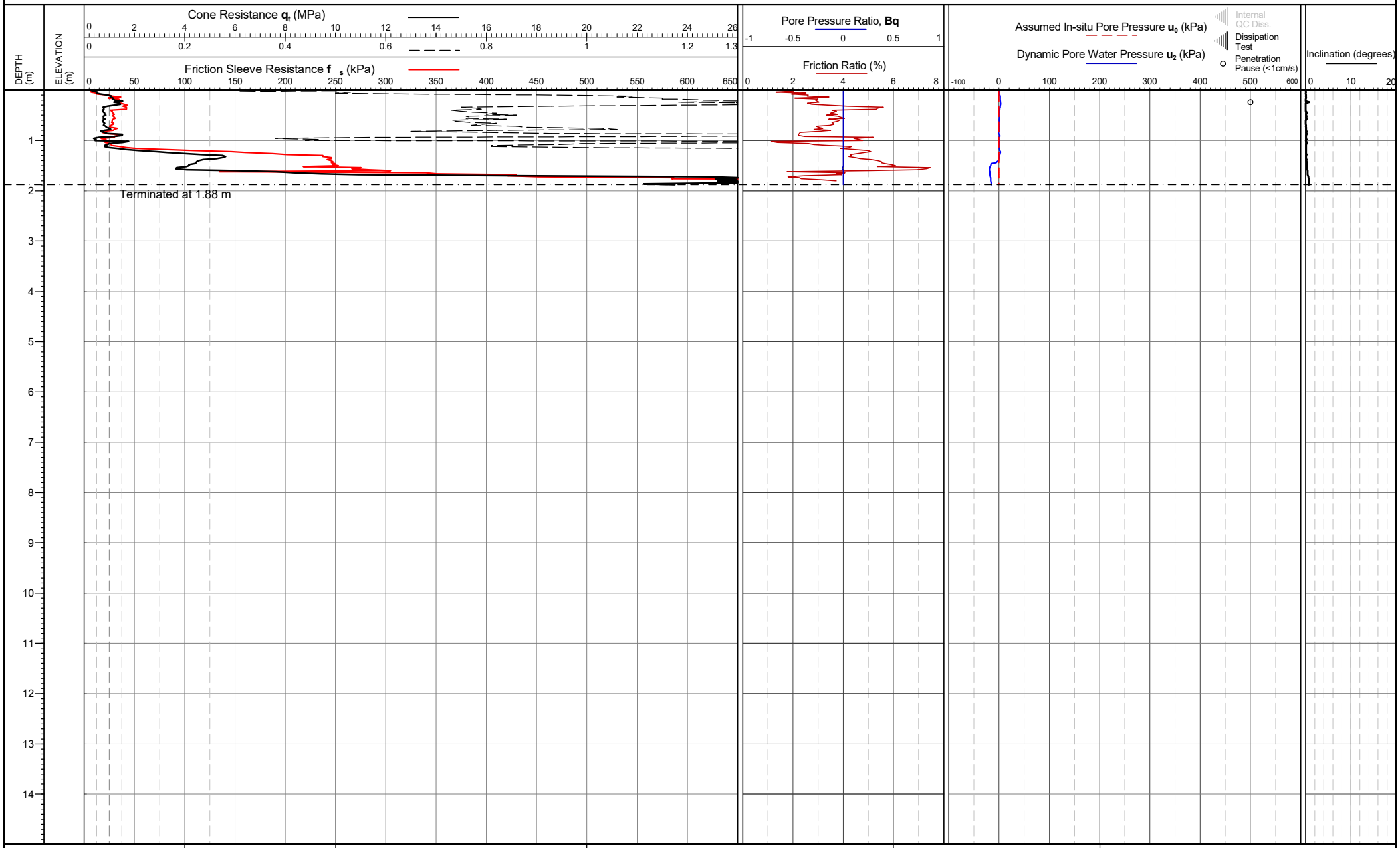


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 13:47:00	Zero drift (Pre/post test) q_c (kPa): 32.6 f_s (kPa): 0.6 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): 3.4	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Tip load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT116A

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



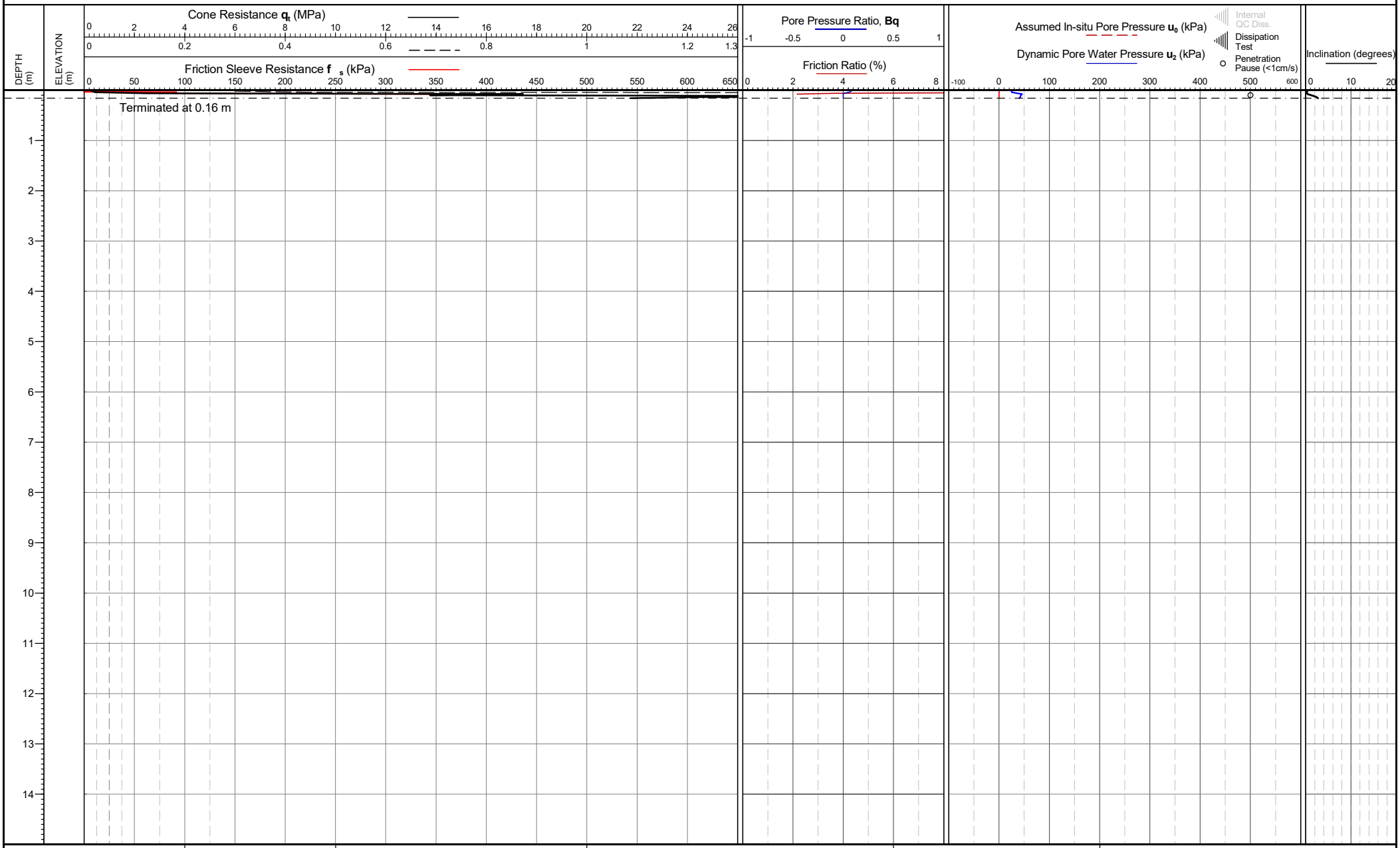
Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 13:56:00	Zero drift (Pre/post test) q_c (kPa): 0.0 f_s (kPa): -0.7 ($f_{s\ drift}$ - $q_{c\ drift}$) U_2 (kPa): -5.1	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Tip load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT116B

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

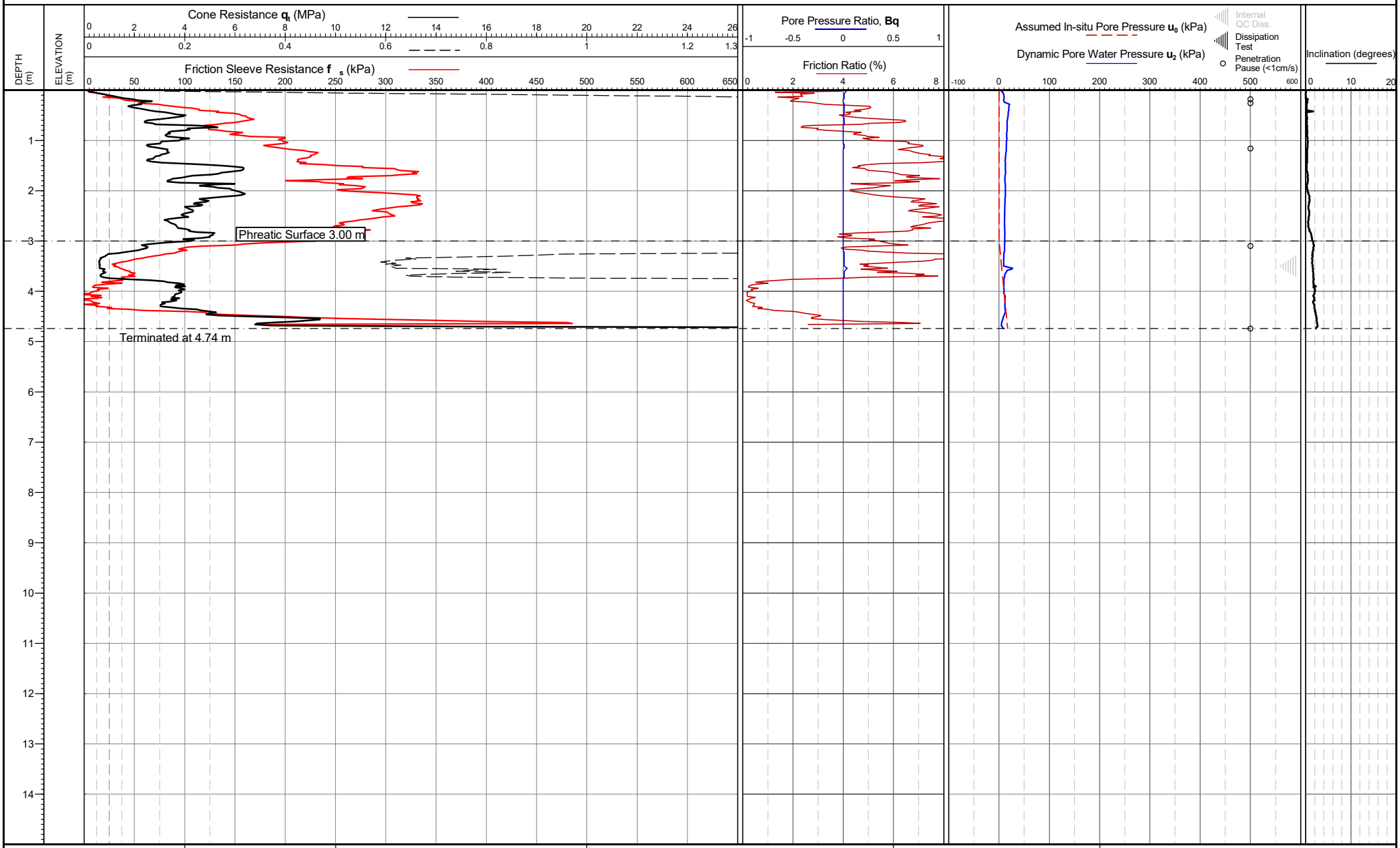


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 08:48:00	Zero drift (Pre/post test) q_c (kPa): 32.6 f_s (kPa): -0.1 ($f_{s\ drift}$ - $q_{c\ drift}$) U_2 (kPa): 23.6	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Inclination	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT117

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

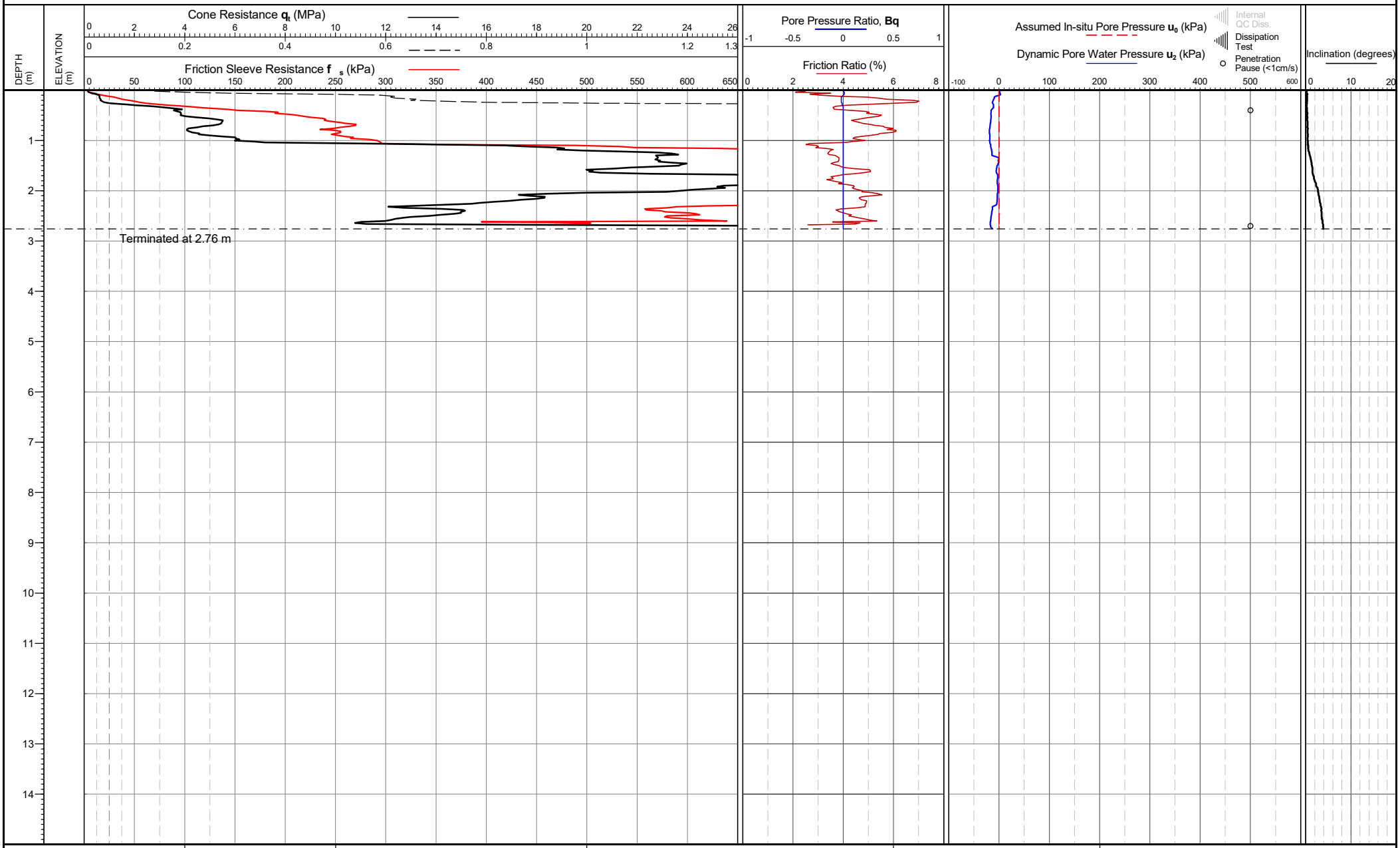


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 09:00:00	Zero drift (Pre/post test) q_c (kPa): 43.4 f_s (kPa): -0.8 ($f_{s\ drift}$ - $q_{c\ drift}$) U_2 (kPa): 2.2	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Tip load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT117A

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

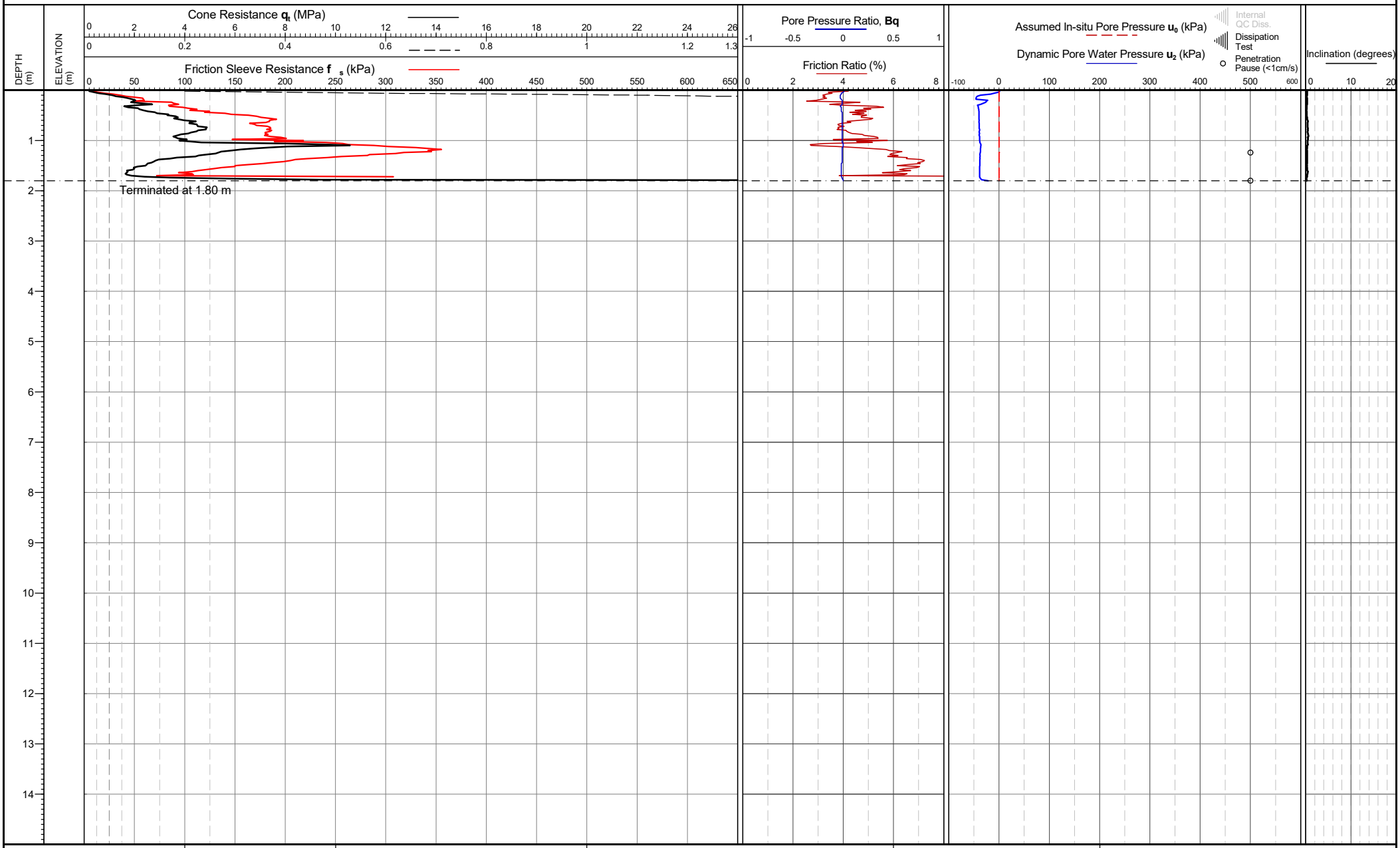


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 08:29:00	Zero drift (Pre/post test) q_c (kPa): -76.0 f_s (kPa): 0.2 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): -26.4	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Tip load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT118

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



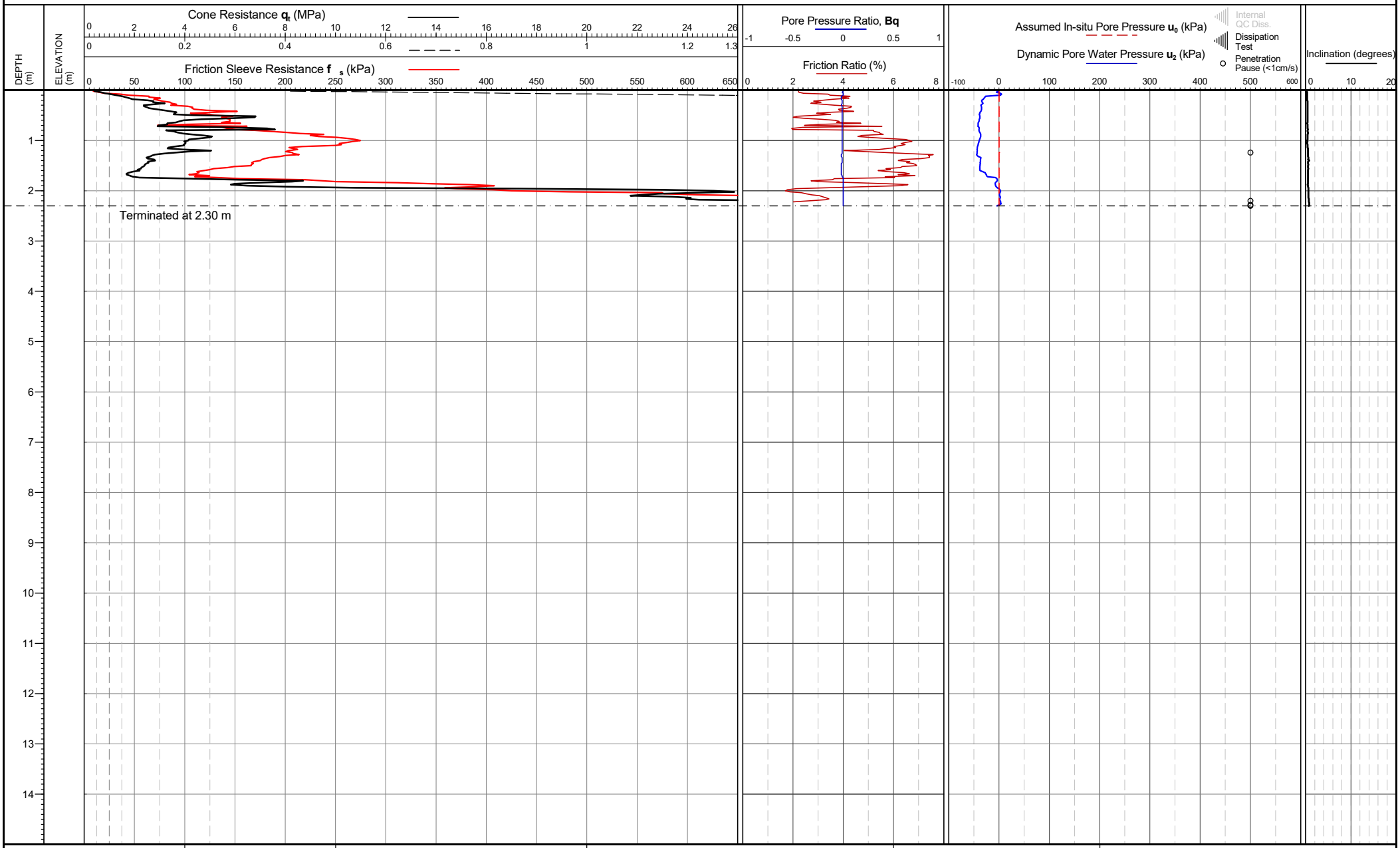
Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 08:14:00	Zero drift (Pre/post test) q_c (kPa): 10.9 f_s (kPa): -1.4 ($f_{s\ drift}$ - $q_{c\ drift}$) U_2 (kPa): 0.0	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Tip load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT119

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

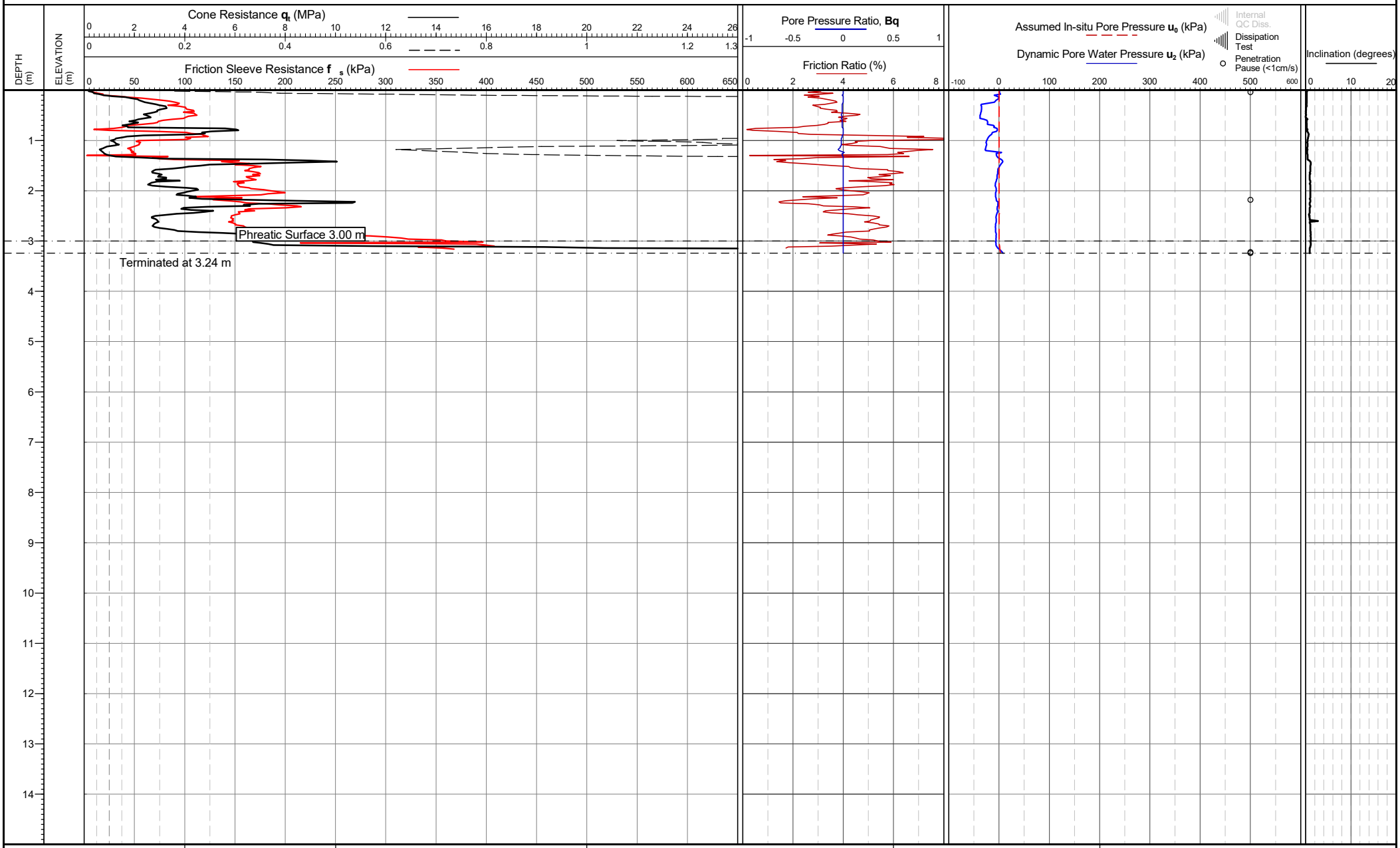


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 11:53:00	Zero drift (Pre/post test) q_c (kPa): 0.0 f_s (kPa): -1.4 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): -1.1	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Total reaction force	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT119A

Project: SPRING PARK ROAD, GRIMETHORPE

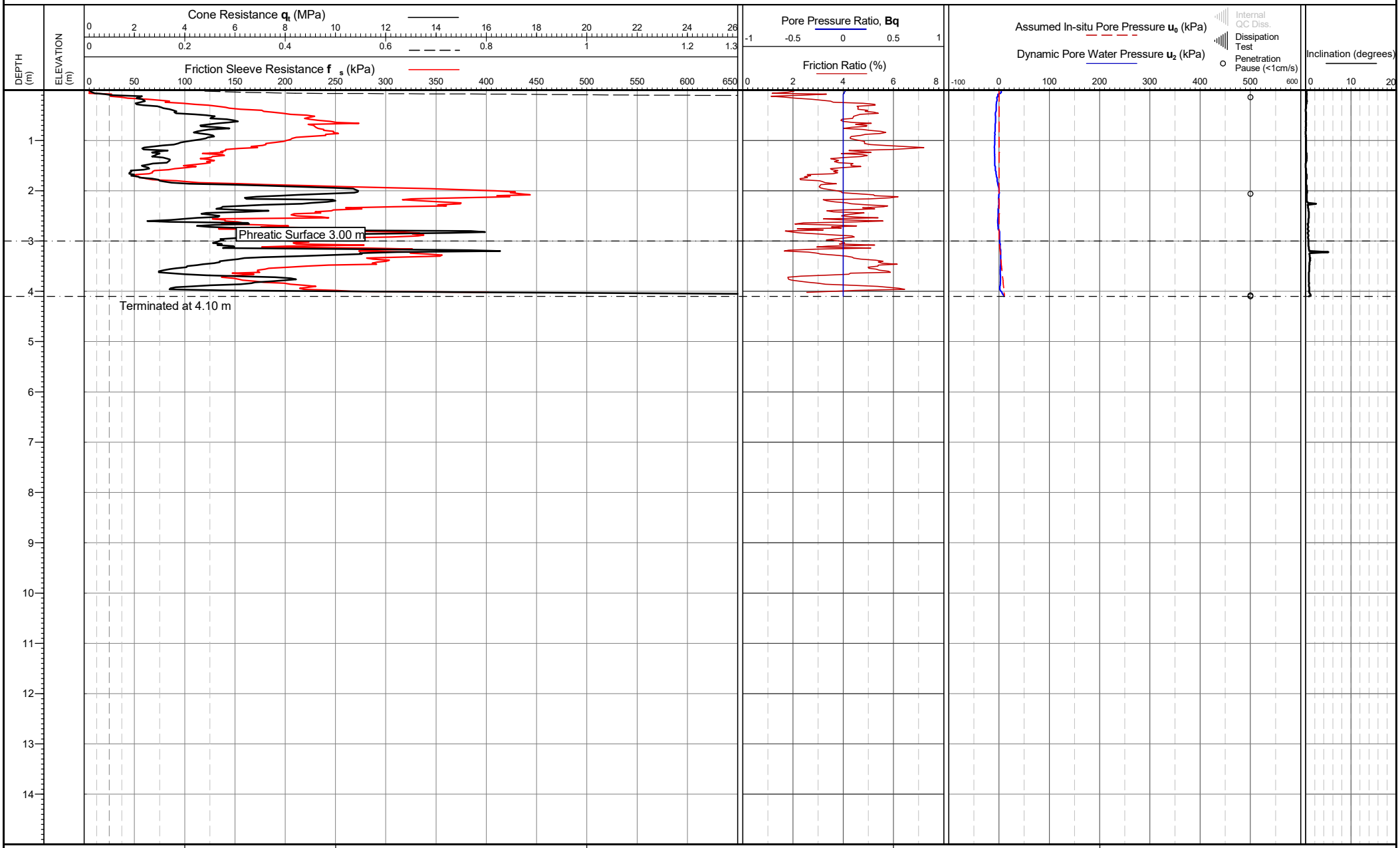
Client: JPG



Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 09/03/2020 16:04:00	Zero drift (Pre/post test) q_c (kPa): 32.6 f_s (kPa): 0.6 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): 0.6	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Tip load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1	**TEST ID: CPT120** Page 1 of 1

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

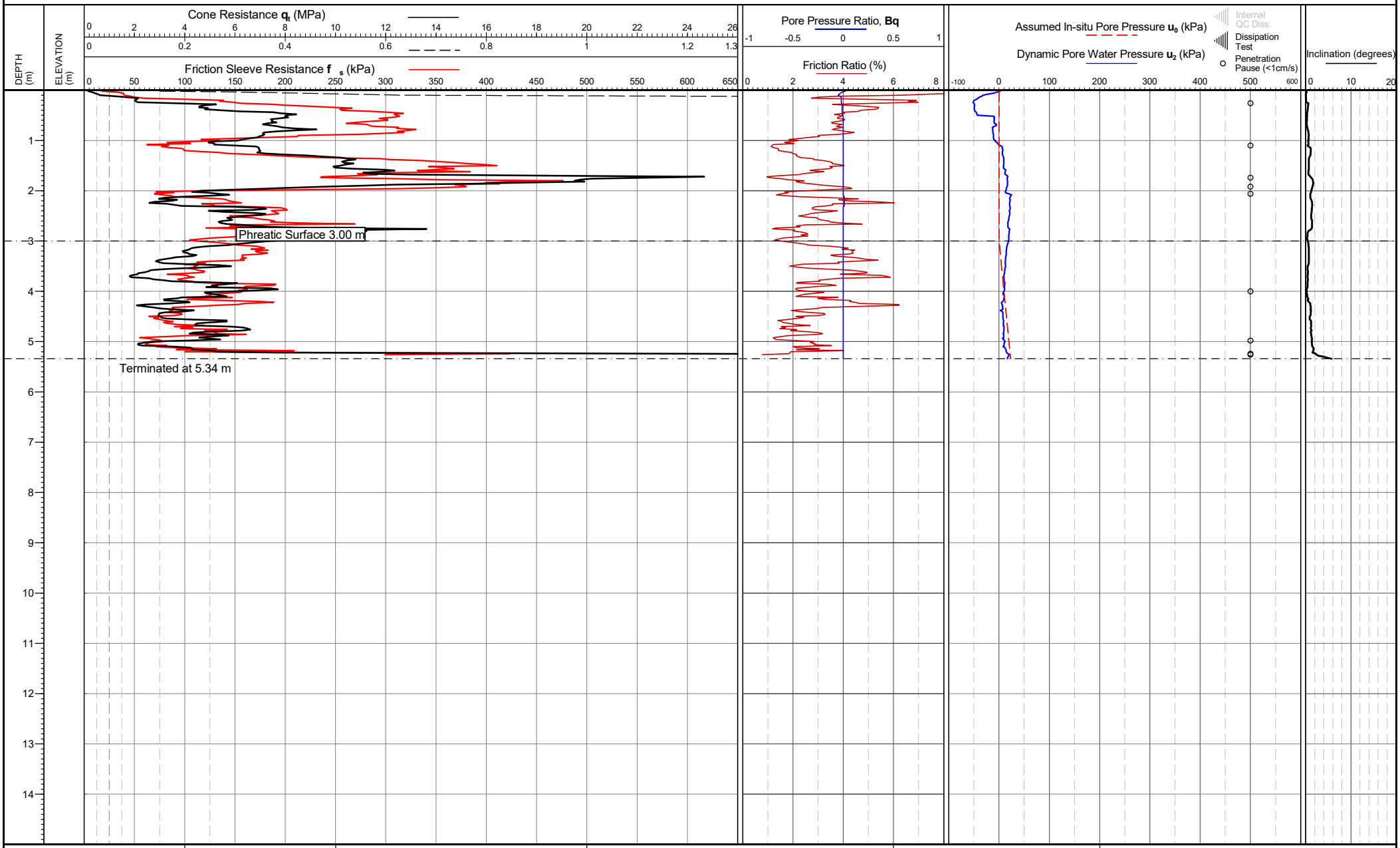


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 09/03/2020 12:43:00	Zero drift (Pre/post test) q_c (kPa): 76.0 f_s (kPa): -0.9 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): 7.3	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Tip load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1	**TEST ID: CPT121** Page 1 of 1

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

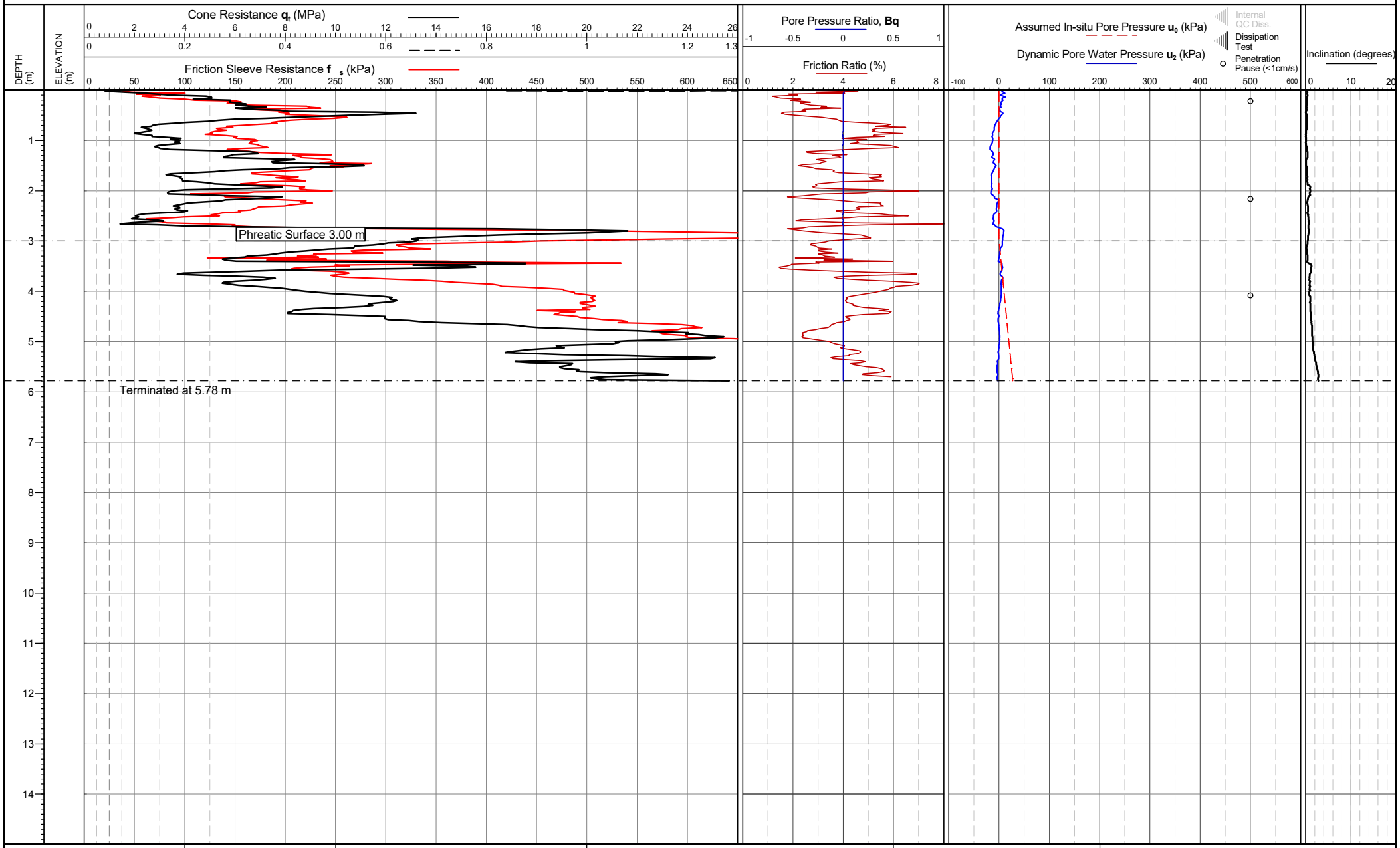


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 09/03/2020 10:34:00	Zero drift (Pre/post test) q_c (kPa): -21.7 f_s (kPa): -8.4 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): -1.1	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Inclination	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT122

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



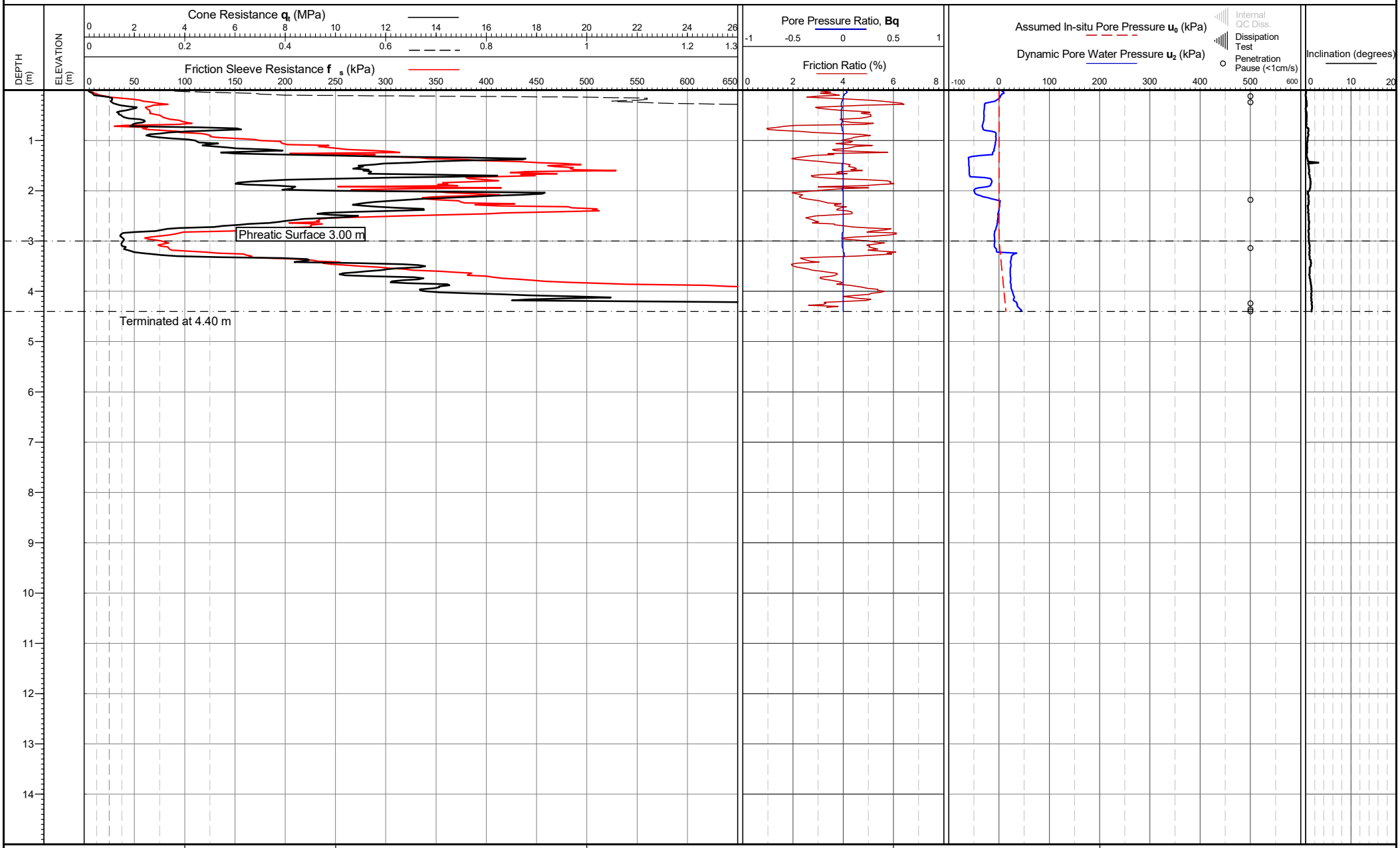
Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 09/03/2020 10:56:00	Zero drift (Pre/post test) q_c (kPa): -54.3 f_s (kPa): 0.1 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): -3.9	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Sleeve load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT123

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

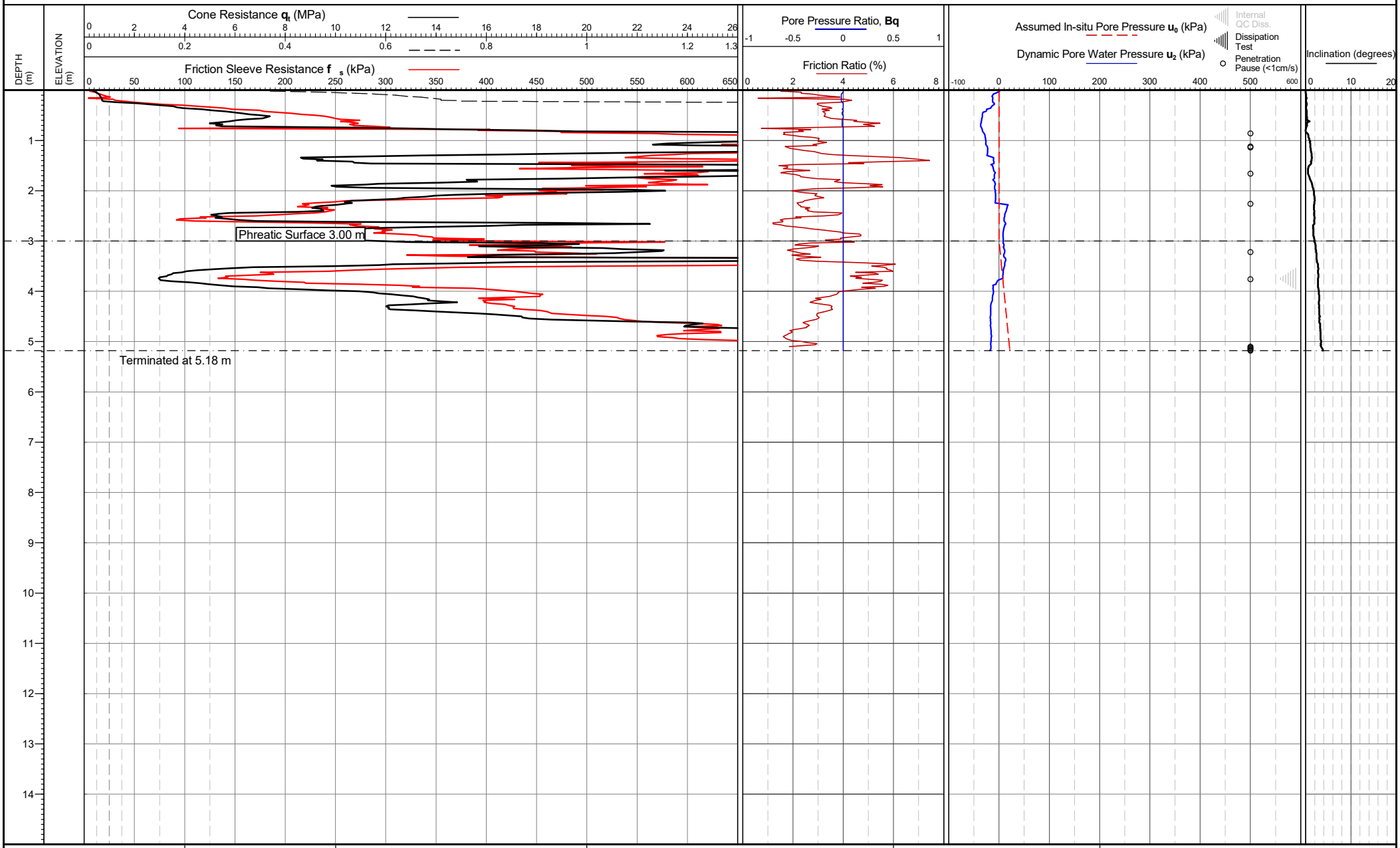
Client: JPG



Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 09/03/2020 12:01:00	Zero drift (Pre/post test) q_c (kPa): -54.3 f_s (kPa): -0.6 ($f_{s\ drift}$ - $q_{c\ drift}$) U_2 (kPa): 6.2	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Total reaction force	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1	**TEST ID: CPT124** Page 1 of 1

Project: SPRING PARK ROAD, GRIMETHORPE

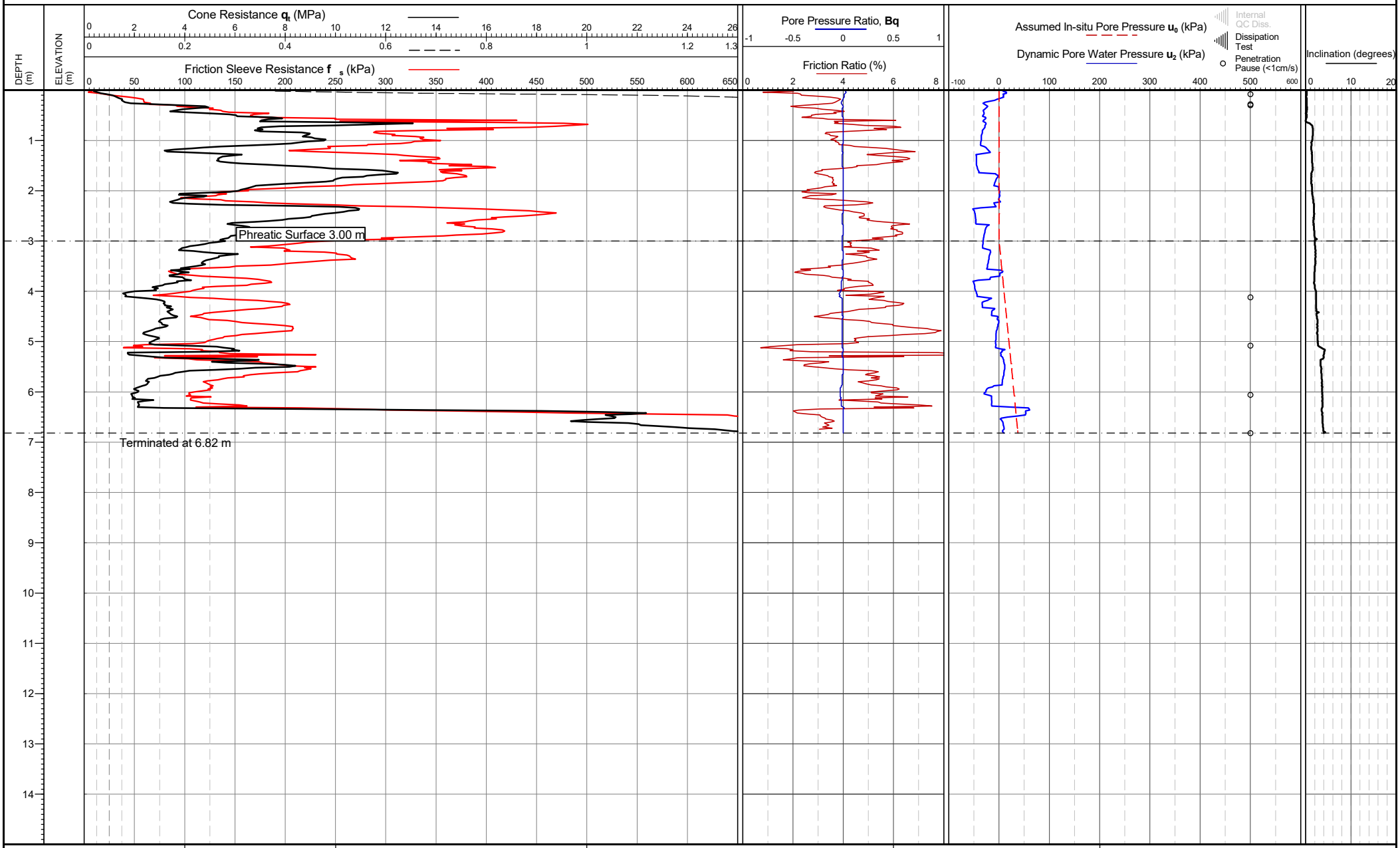
Client: JPG



Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 09/03/2020 12:17:00	Zero drift (Pre/post test) q_c (kPa): 0.0 f_s (kPa): 0.0 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): -13.5	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Total reaction force	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1	**TEST ID: CPT125** Page 1 of 1

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

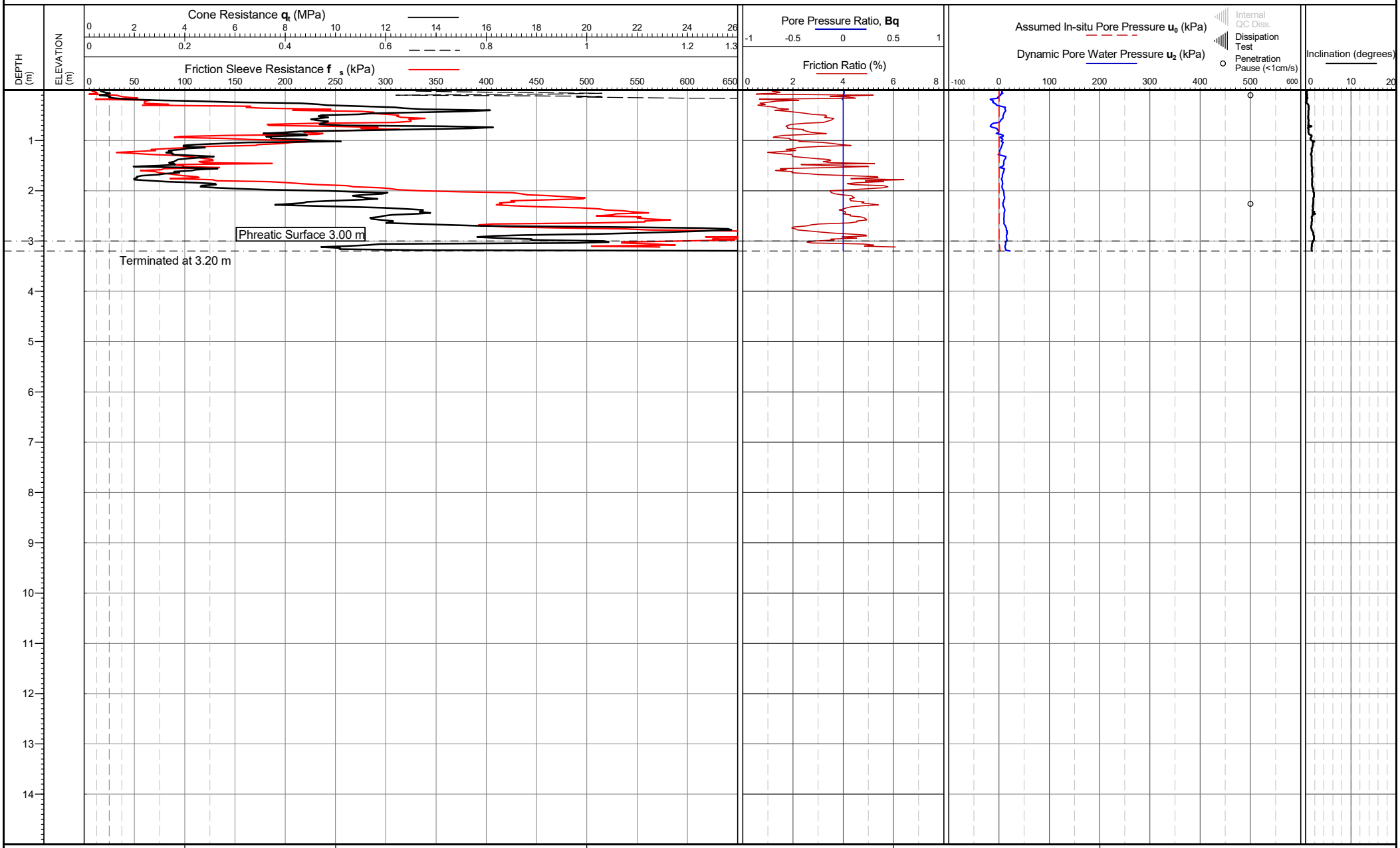


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 09/03/2020 11:17:00	Zero drift (Pre/post test) q_c (kPa): 21.7 f_s (kPa): 0.7 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): 1.1	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Total reaction force	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1	**TEST ID: CPT126** Page 1 of 1

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG

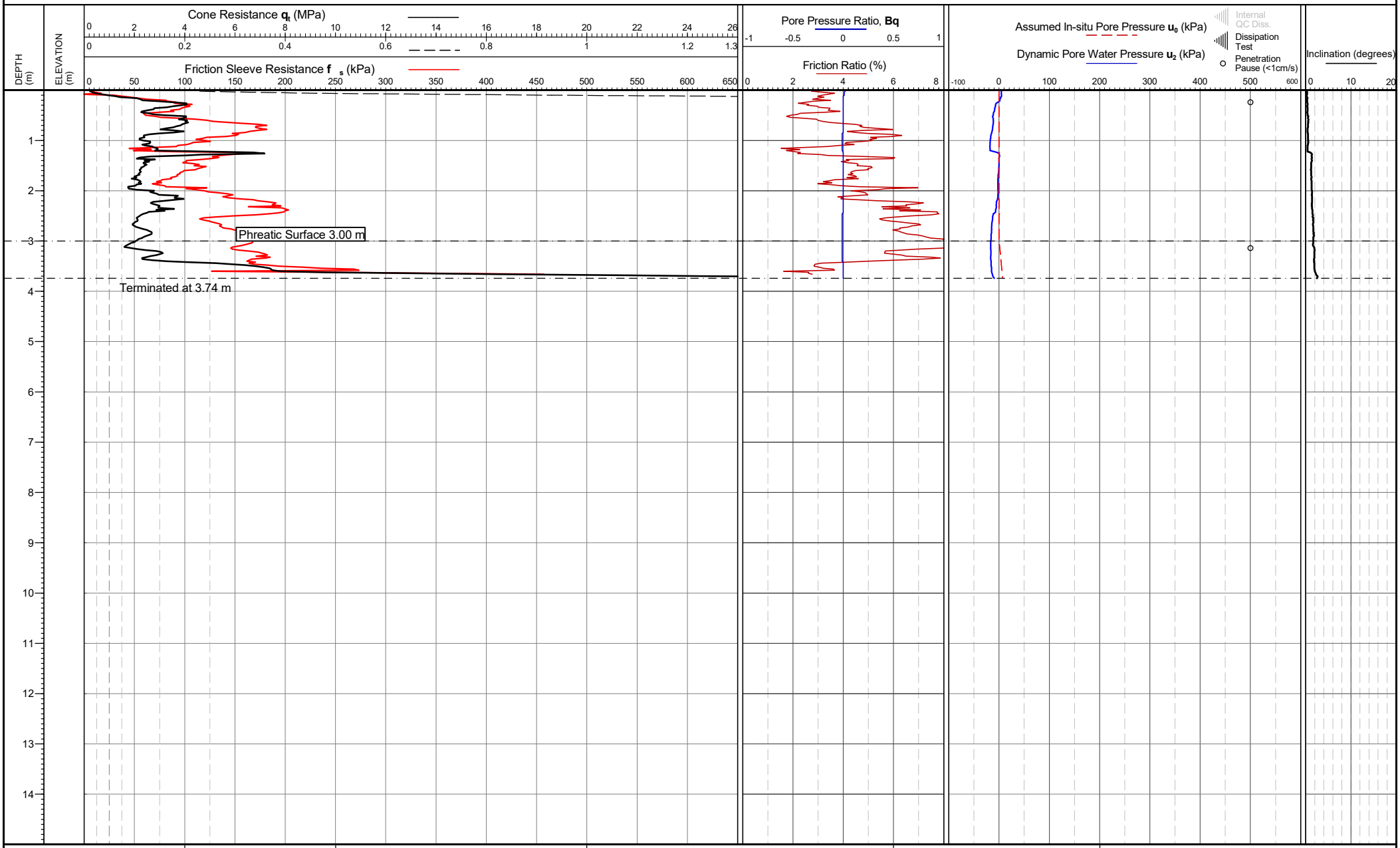


Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 09/03/2020 11:44:00	Zero drift (Pre/post test) q_c (kPa): 32.6 f_s (kPa): -0.1 ($f_{s\ drift}$ - $q_{c\ drift}$) U_2 (kPa): 0.6	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Tip load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1

TEST ID: CPT127

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500 Cone ID: S15-CFIP.1841 Operator: Jamie Butterworth Rig Used: UK3 Date of test: 10/03/2020 11:34:00	Zero drift (Pre/post test) q_c (kPa): 10.9 f_s (kPa): 0.0 ($f_{s\,drift}$ - $q_{c\,drift}$) U_2 (kPa): 2.8	Location: Barnsley, UK Coordinates: , Elevation: Coordinate system:	Remarks: *Phreatic surface origin: Arbitrary value Termination Remark: Tip load	Date of plot: 11-03-20 Checked by: Chris Player	Lankelma Project Ref: P-107414-1	**TEST ID: CPT128** Page 1 of 1

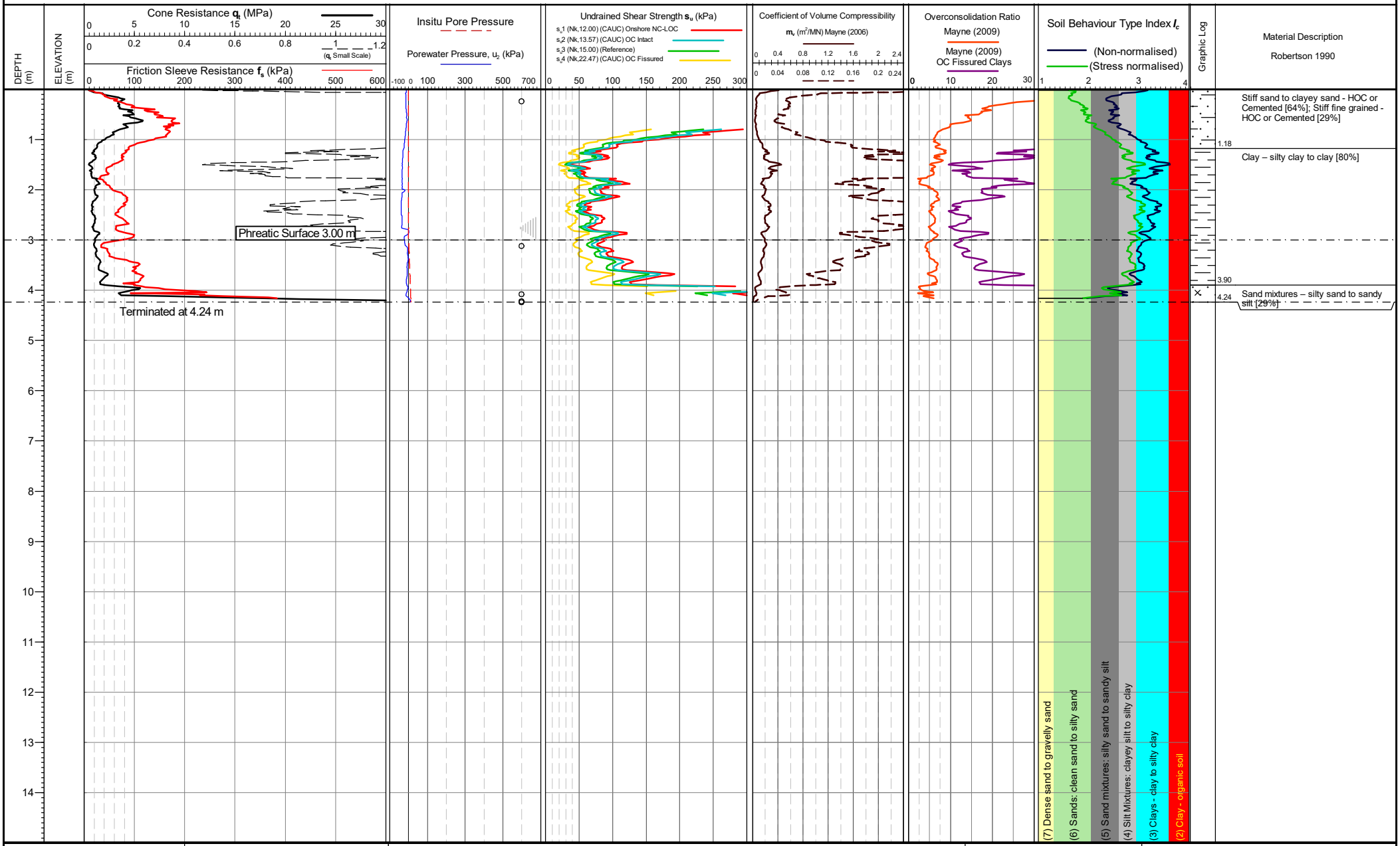
APPENDIX D STANDARD INTERPRETATION RESULTS - SET 1

UNDRAINED SHEAR STRENGTH
COEFFICIENT OF VOLUME CHANGE
OVERCONSOLIDATION RATIO
SOIL BEHAVIOUR TYPE (SBT) DESCRIPTIONS

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 11:10:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Tip load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

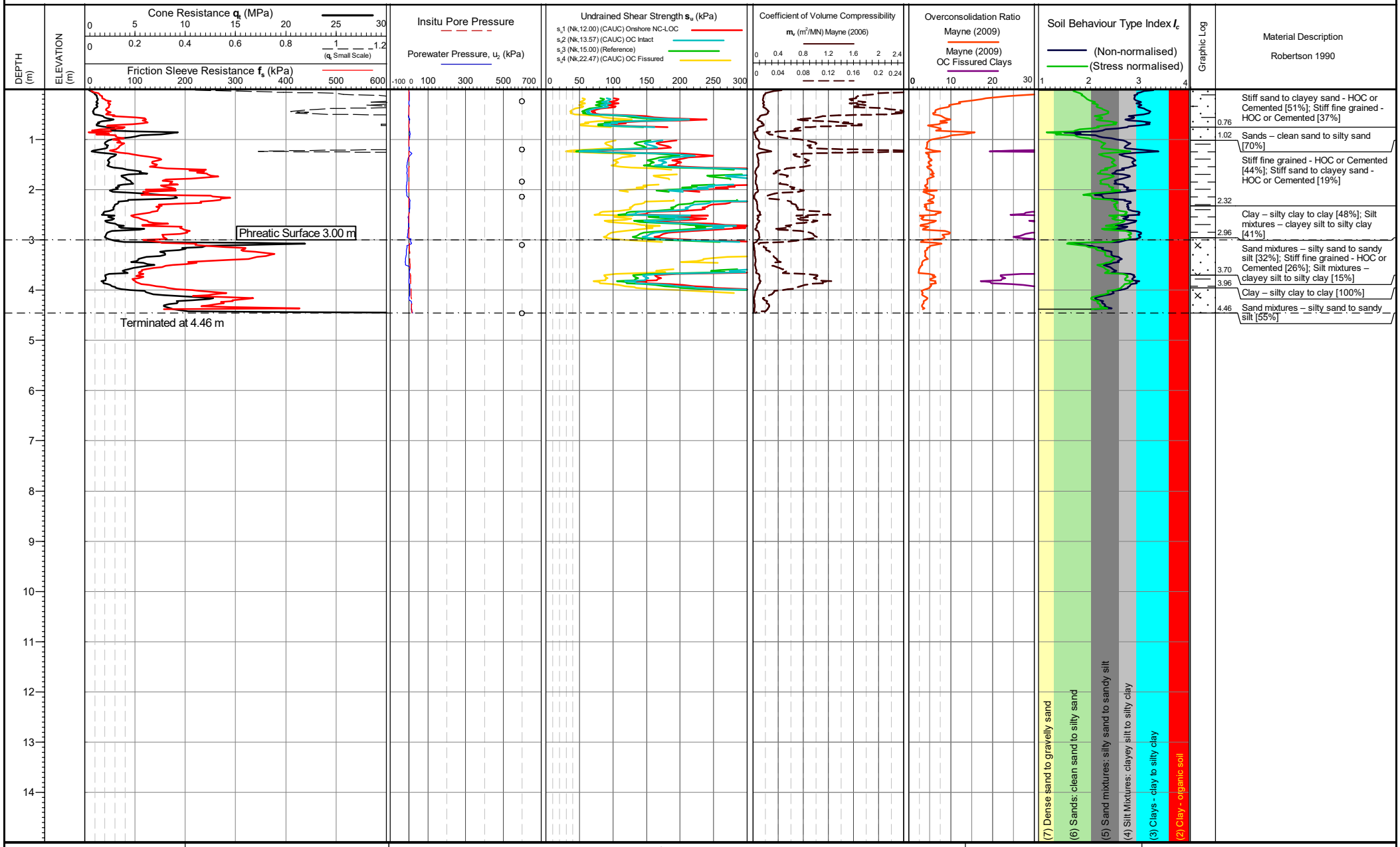
Checked by: Chris Player

Lankelma Project Ref: P-107414-1

TEST ID: CPT101

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 12:09:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Tip load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

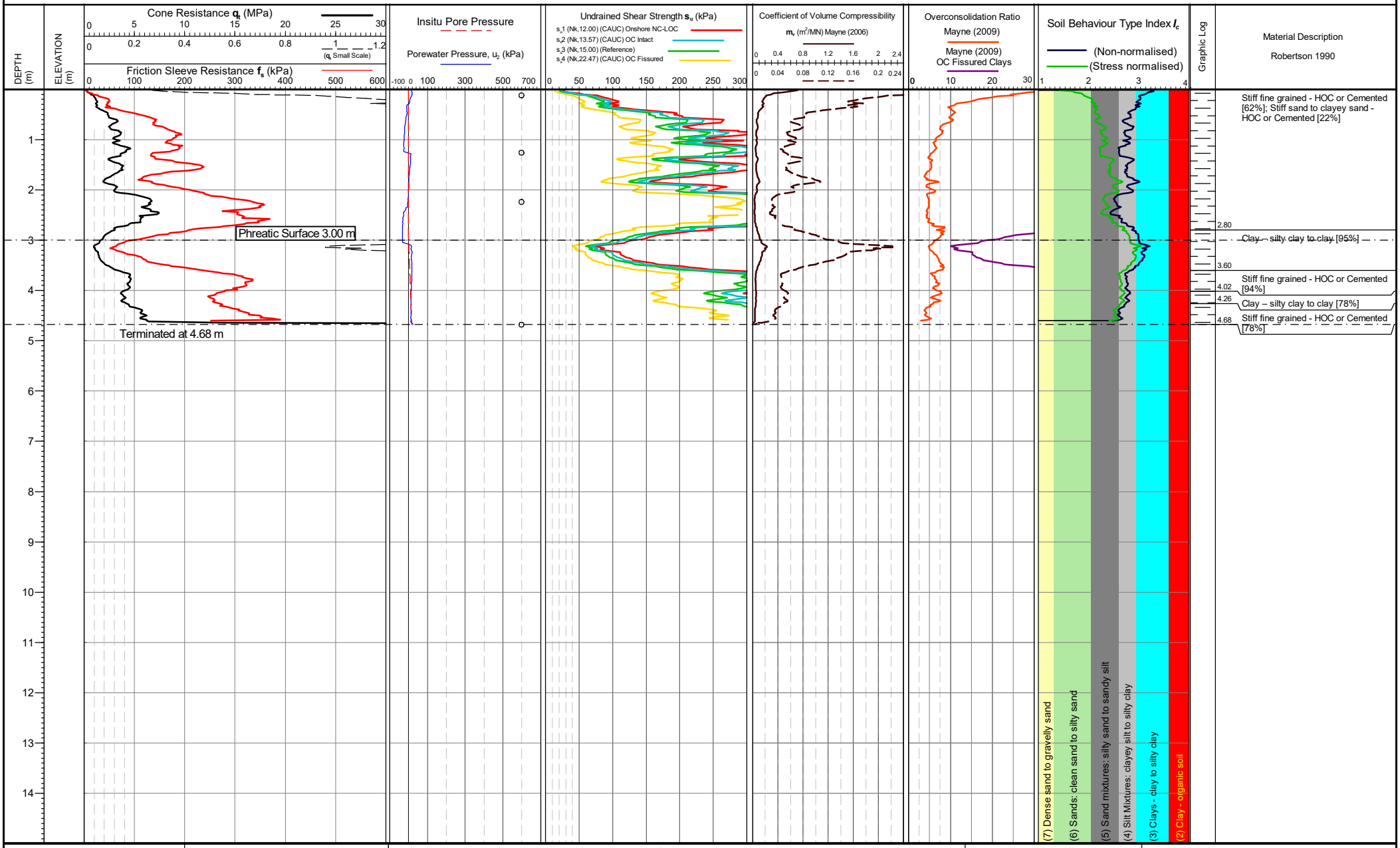
Lankelma Project Ref: P-107414-1

TEST ID: CPT102

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 10:20:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Tip load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

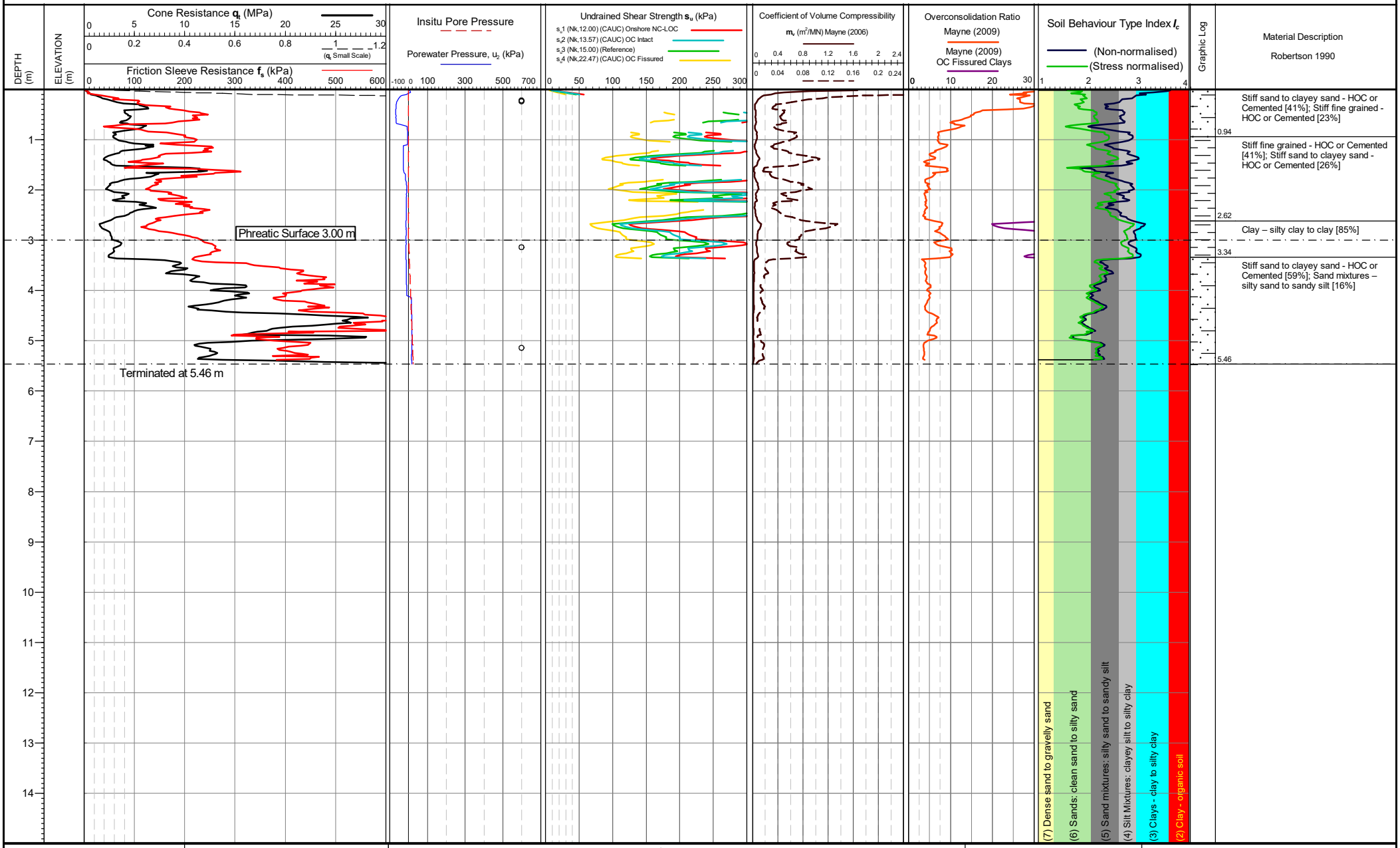
Lankelma Project Ref: P-107414-1

TEST ID: CPT103

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 10:03:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Tip load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

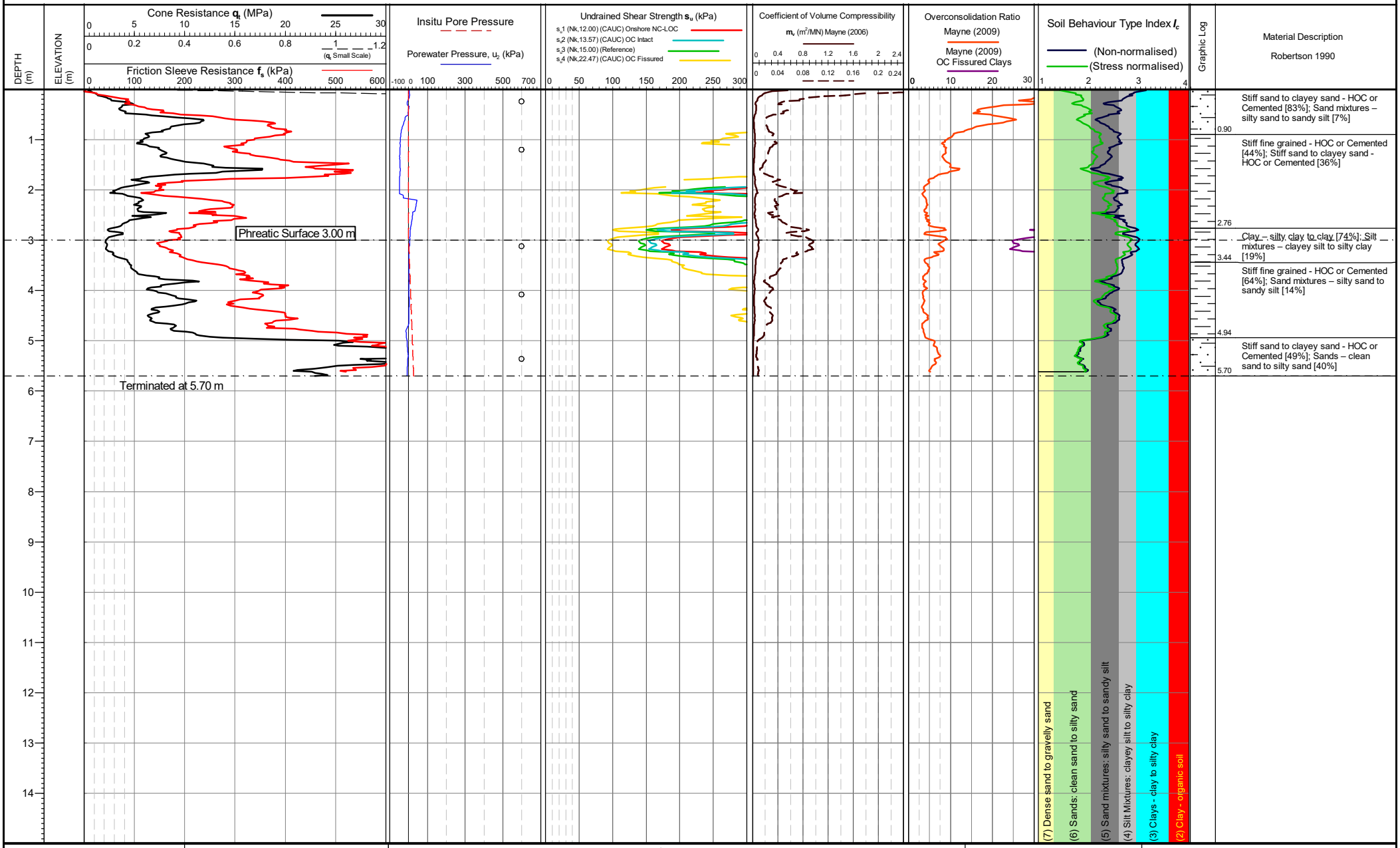
Lankelma Project Ref: P-107414-1

TEST ID: CPT104

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 09/03/2020 15:01:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Inclination

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

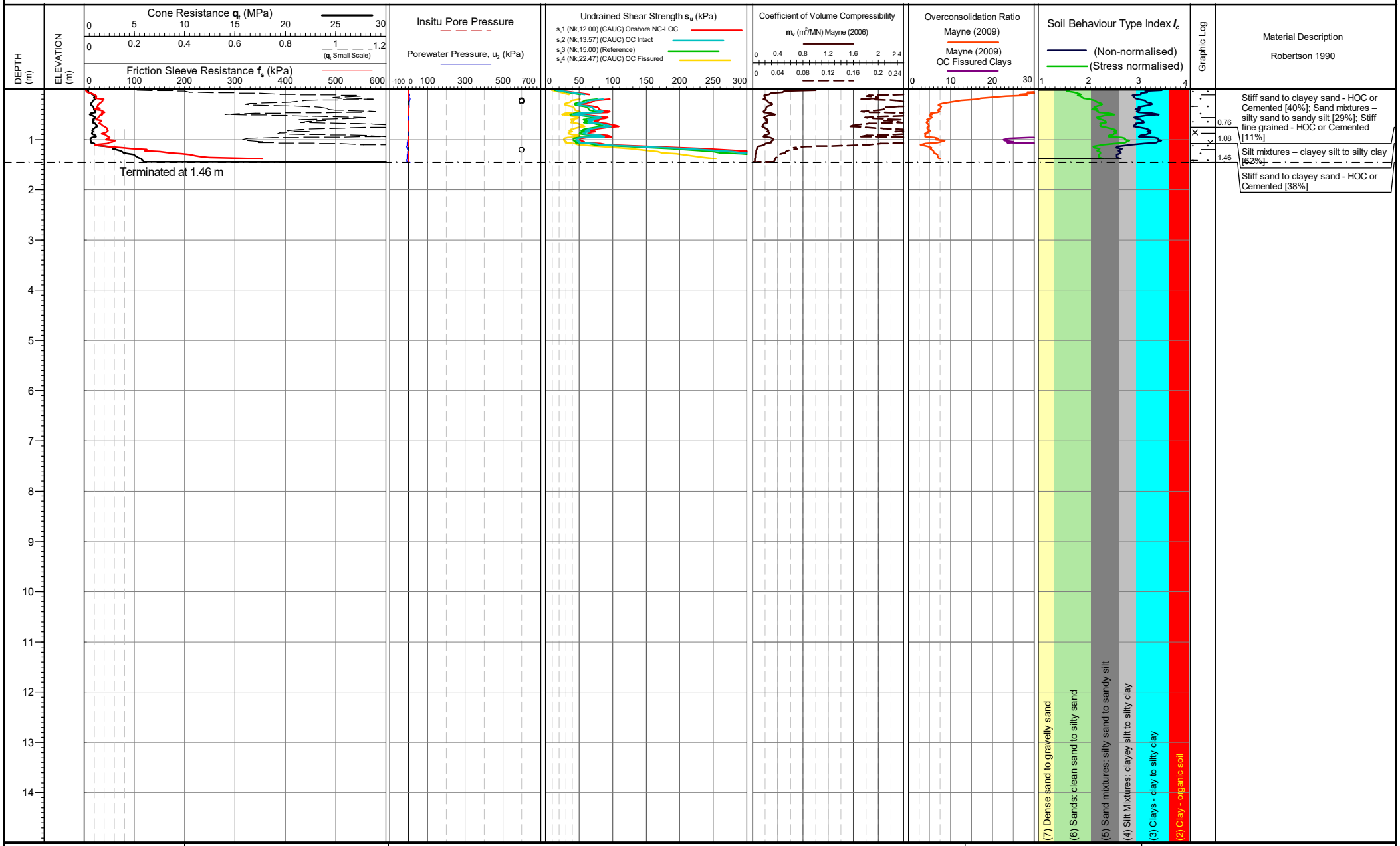
Lankelma Project Ref: P-107414-1

TEST ID: CPT105

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 12:43:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Tip load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Lankelma Project Ref: P-107414-1

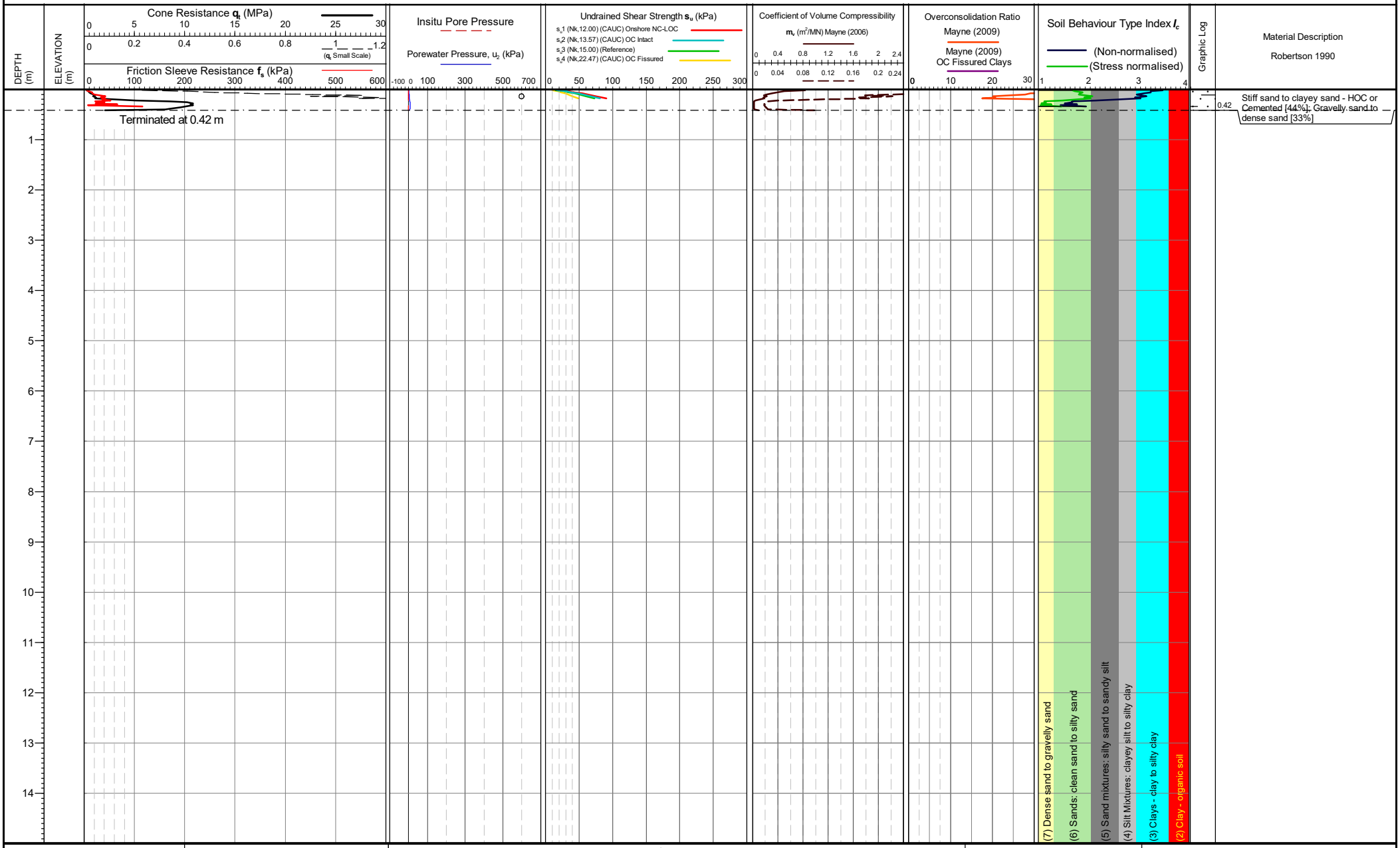
Checked by: Chris Player

TEST ID: CPT106

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 13:03:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Inclination

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

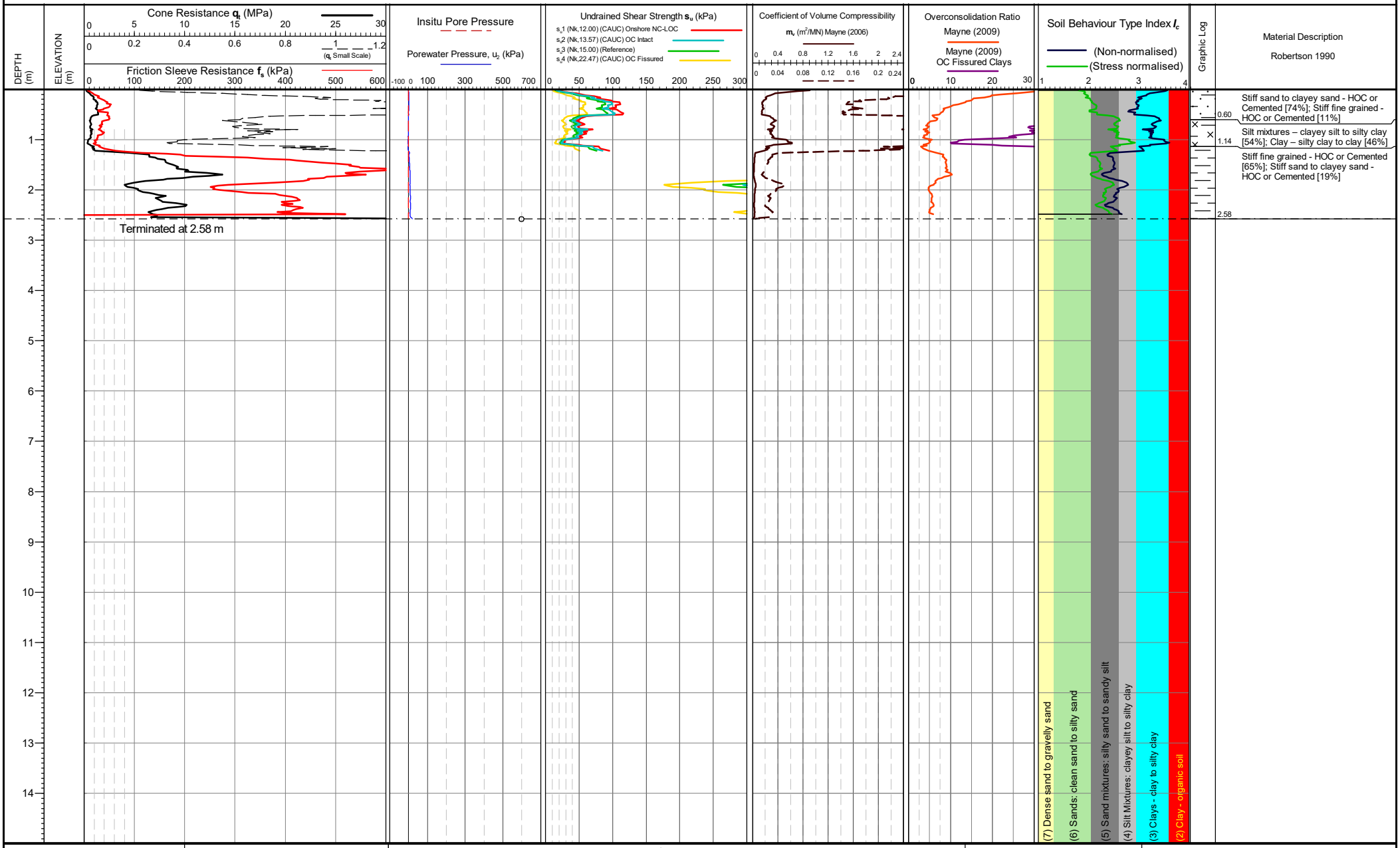
Lankelma Project Ref: P-107414-1

TEST ID: CPT106A

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 13:10:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Tip load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

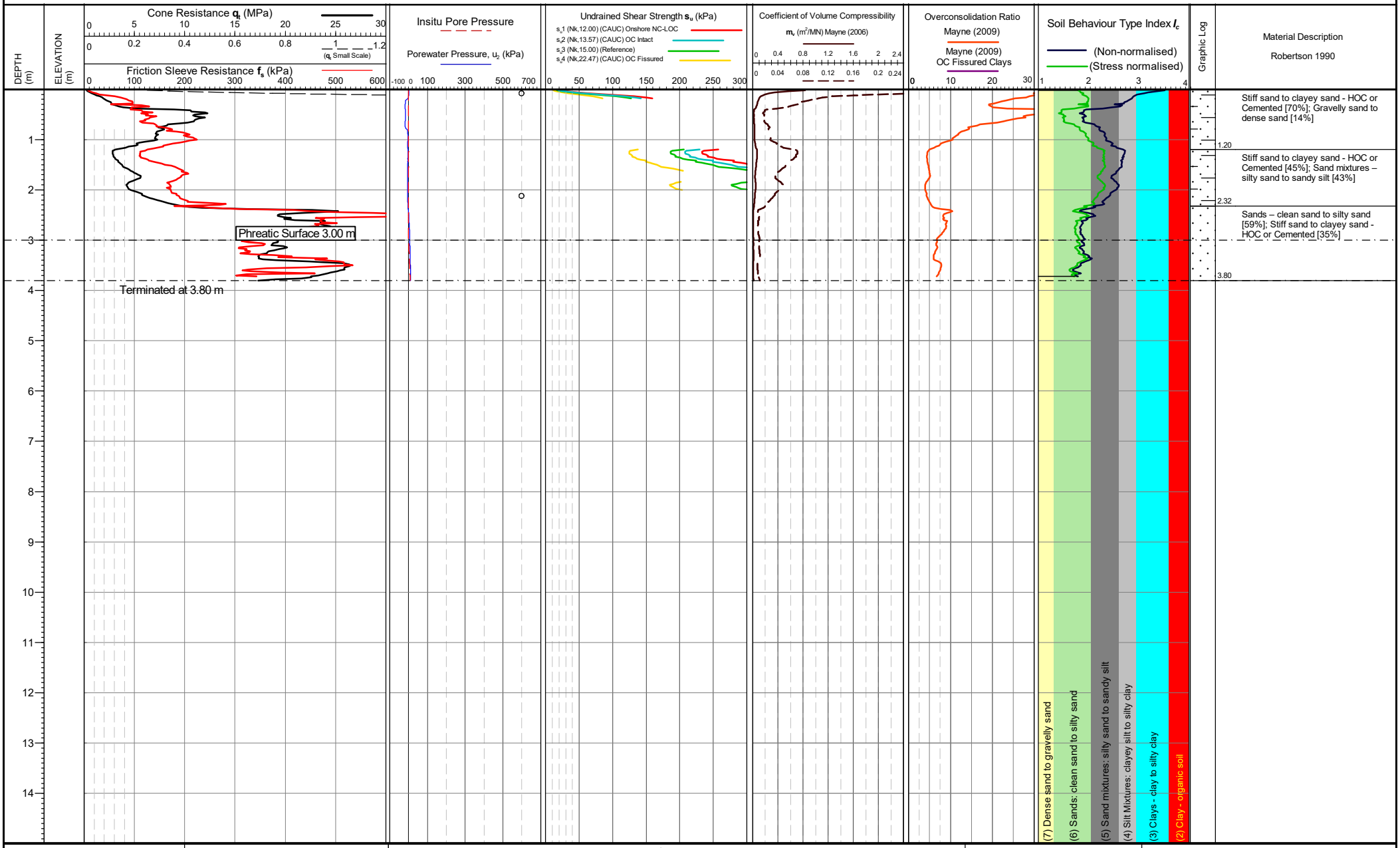
Lankelma Project Ref: P-107414-1

TEST ID: CPT106B

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 10:53:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Inclination

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

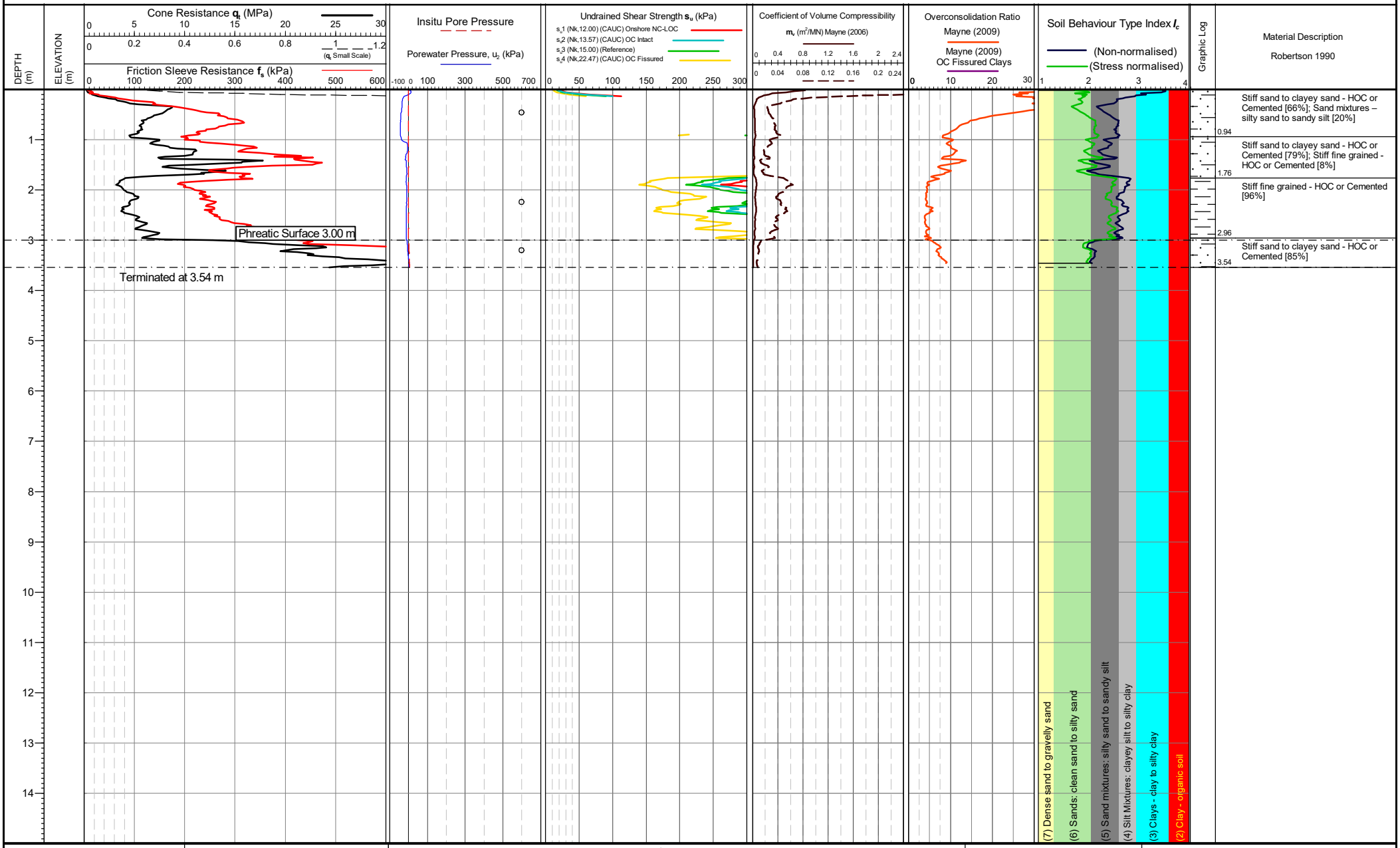
Lankelma Project Ref: P-107414-1

TEST ID: CPT107

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 10:37:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Sleeve load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

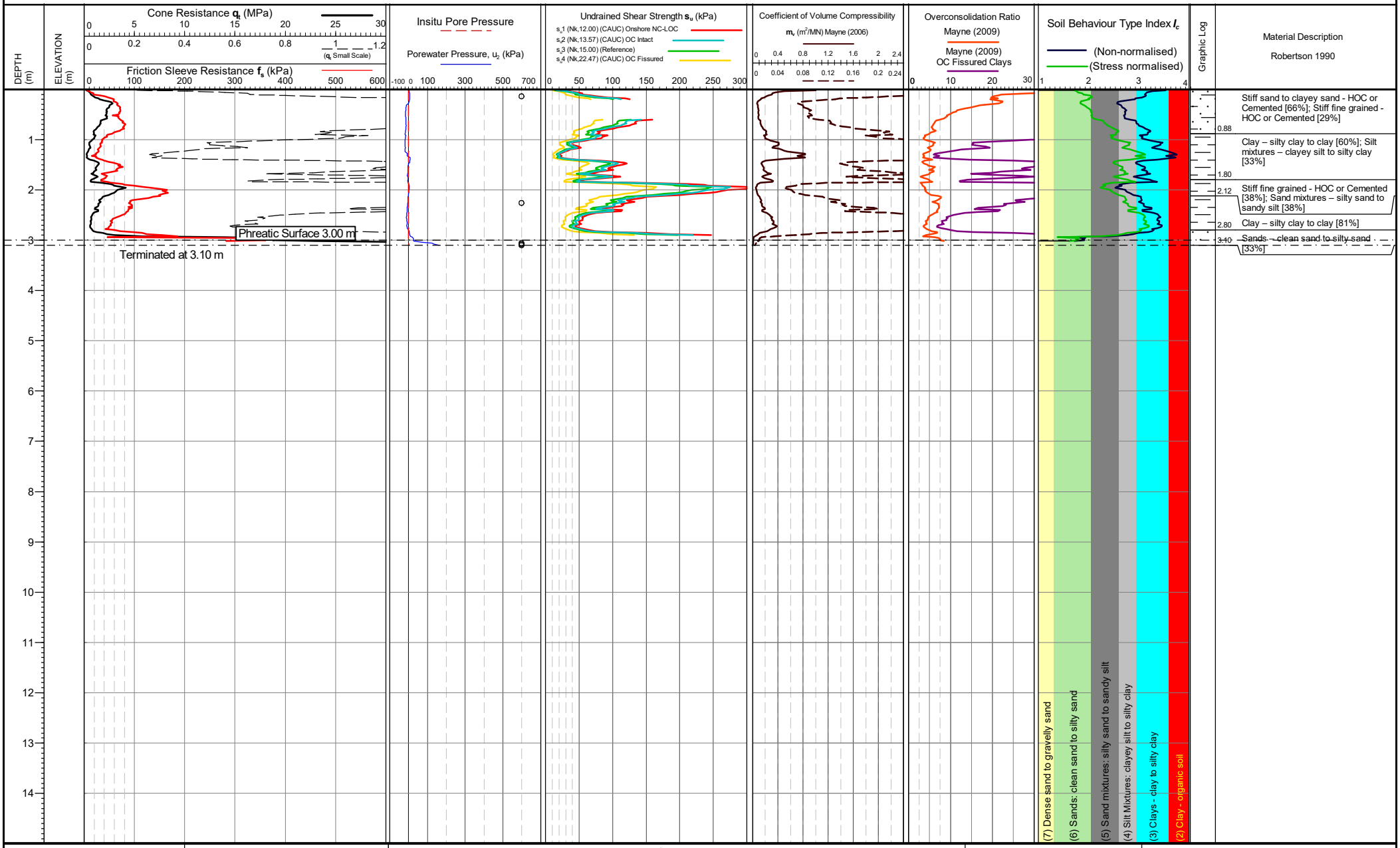
Lankelma Project Ref: P-107414-1

TEST ID: CPT108

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 09:47:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Tip load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Lankelma Project Ref: P-107414-1

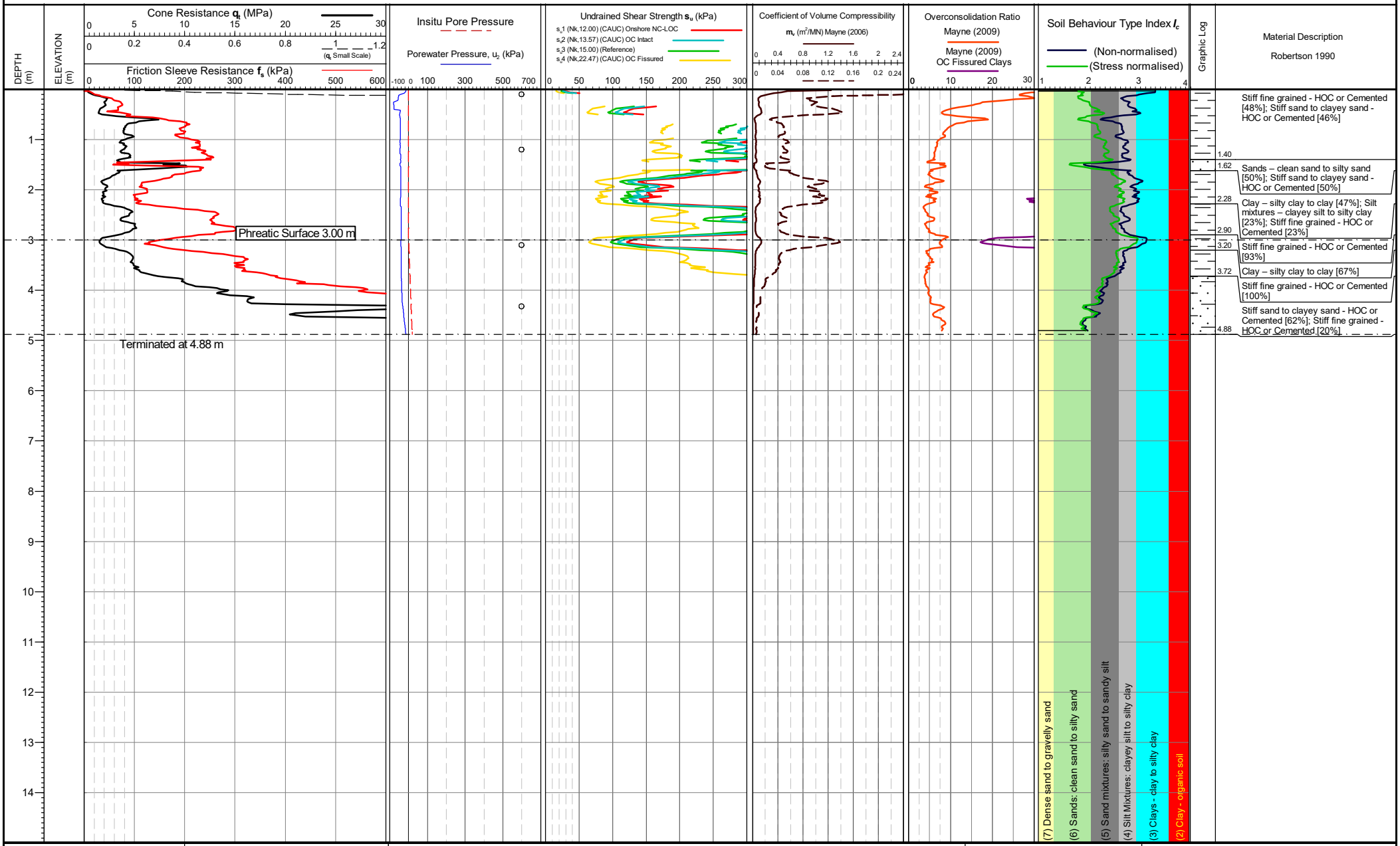
Checked by: Chris Player

TEST ID: CPT109

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 09/03/2020 13:50:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Total reaction force

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

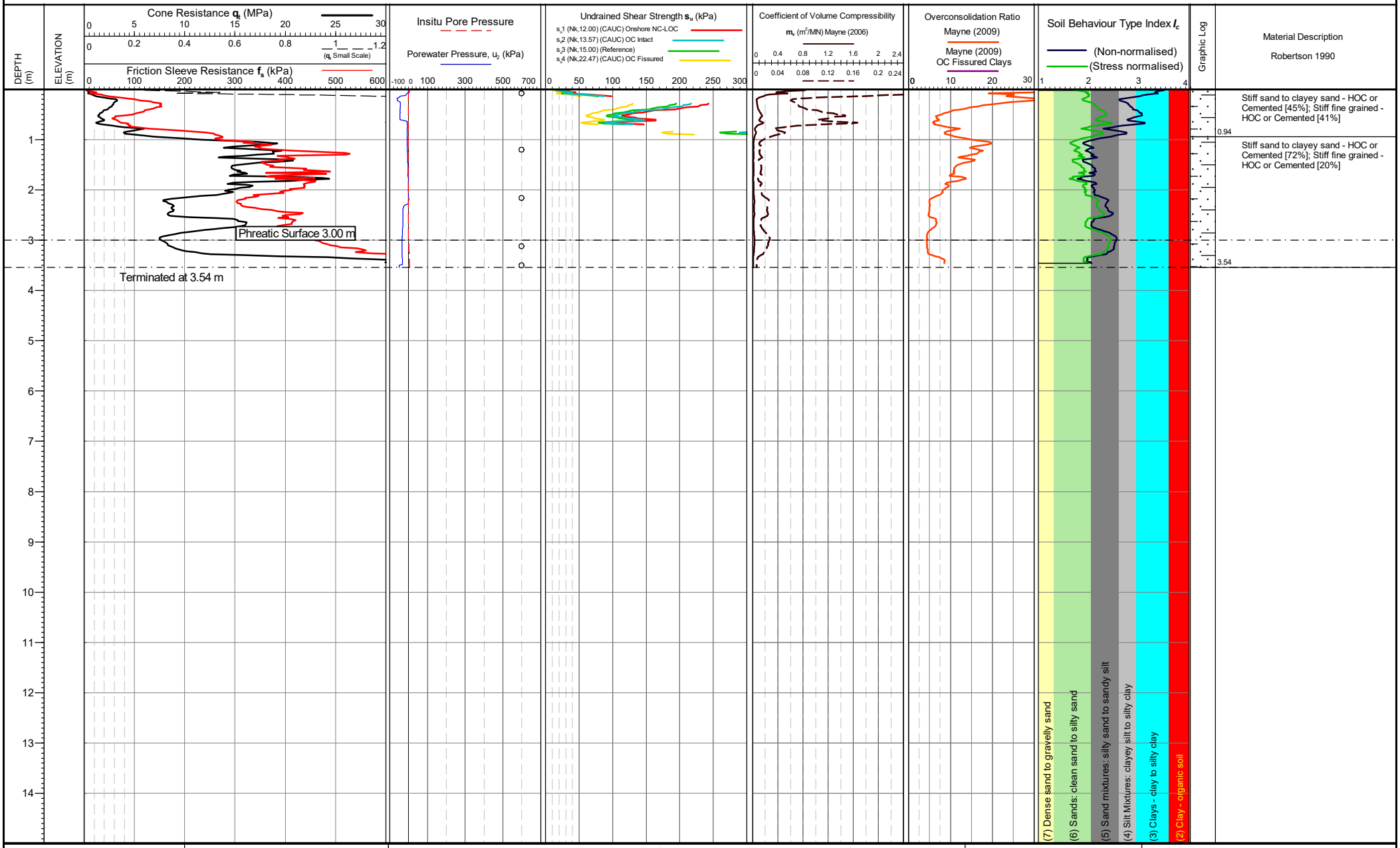
Lankelma Project Ref: P-107414-1

TEST ID: CPT110

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 09:17:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Total reaction force

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

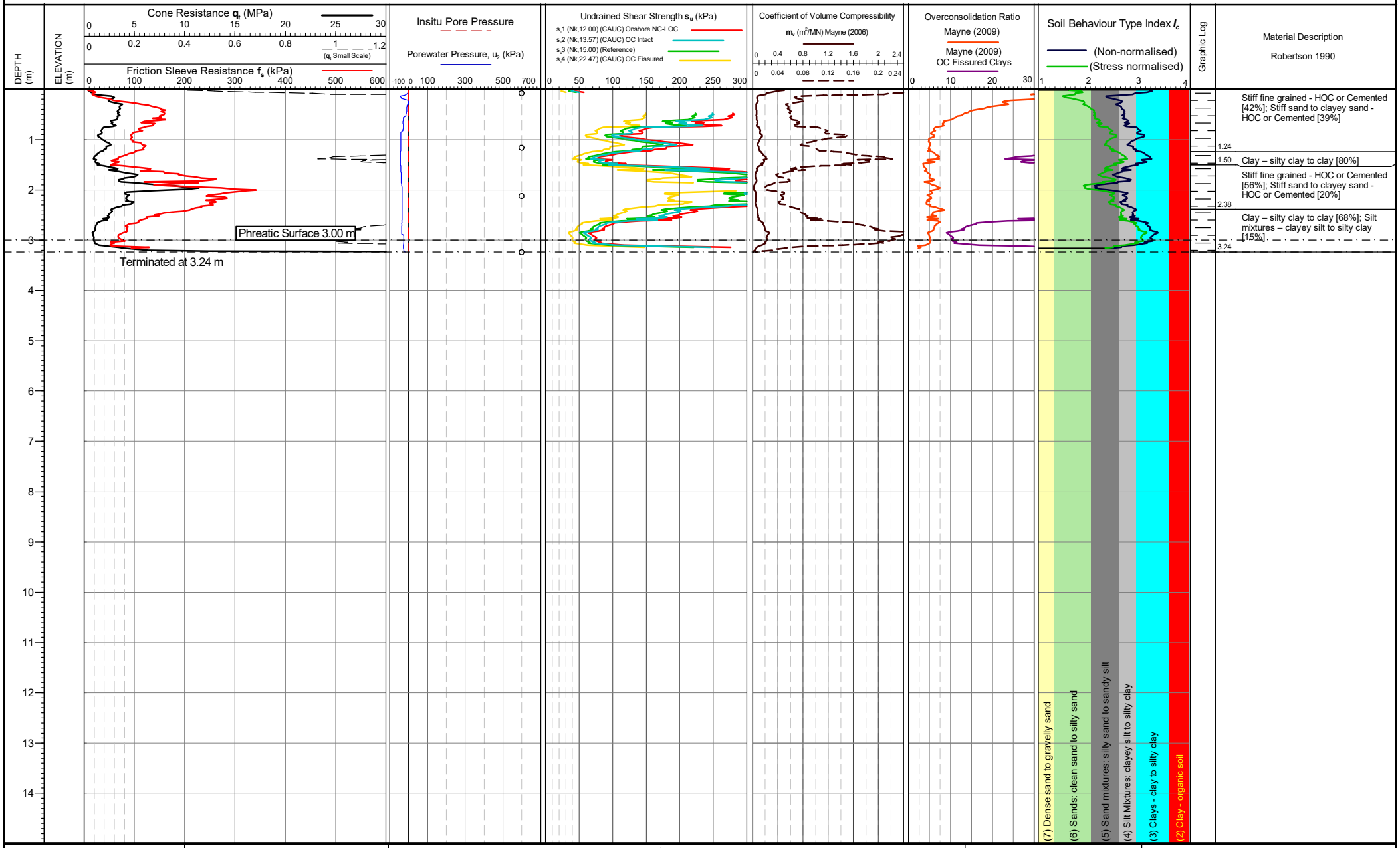
Lankelma Project Ref: P-107414-1

TEST ID: CPT111

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 09:31:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Tip load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

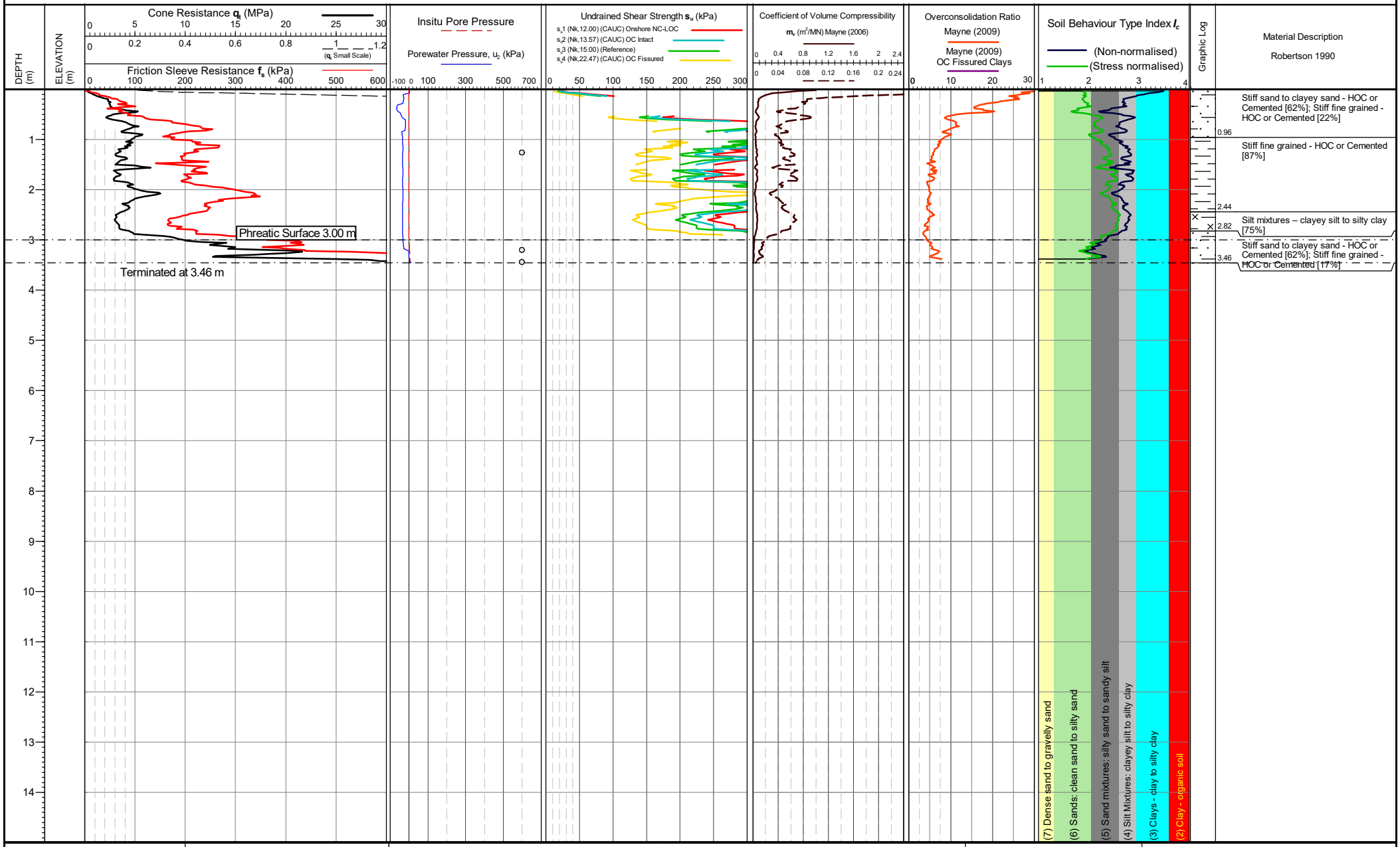
Lankelma Project Ref: P-107414-1

TEST ID: CPT112

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 09/03/2020 15:29:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Tip load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

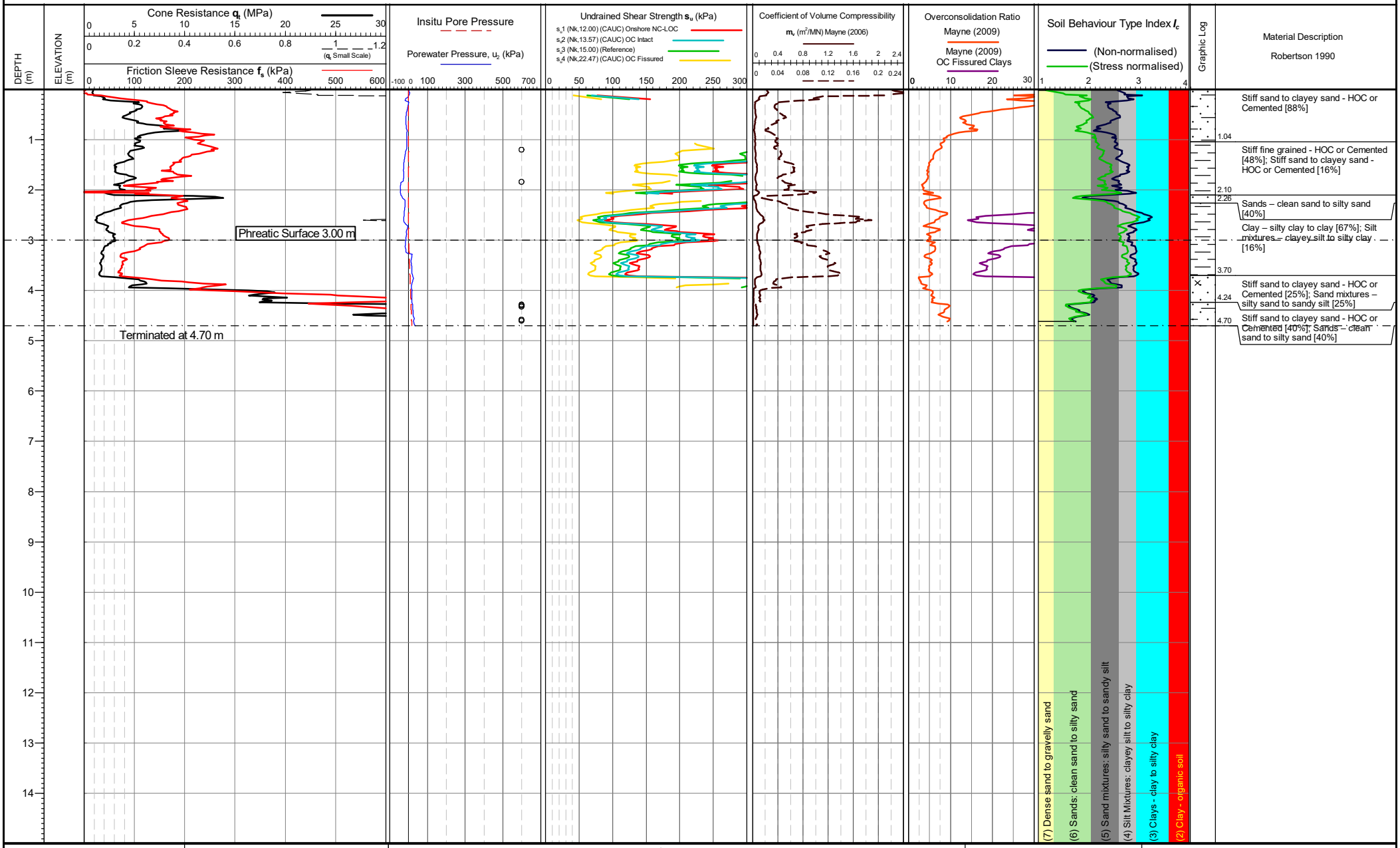
Lankelma Project Ref: P-107414-1

TEST ID: CPT113

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 09/03/2020 13:30:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Total reaction force

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

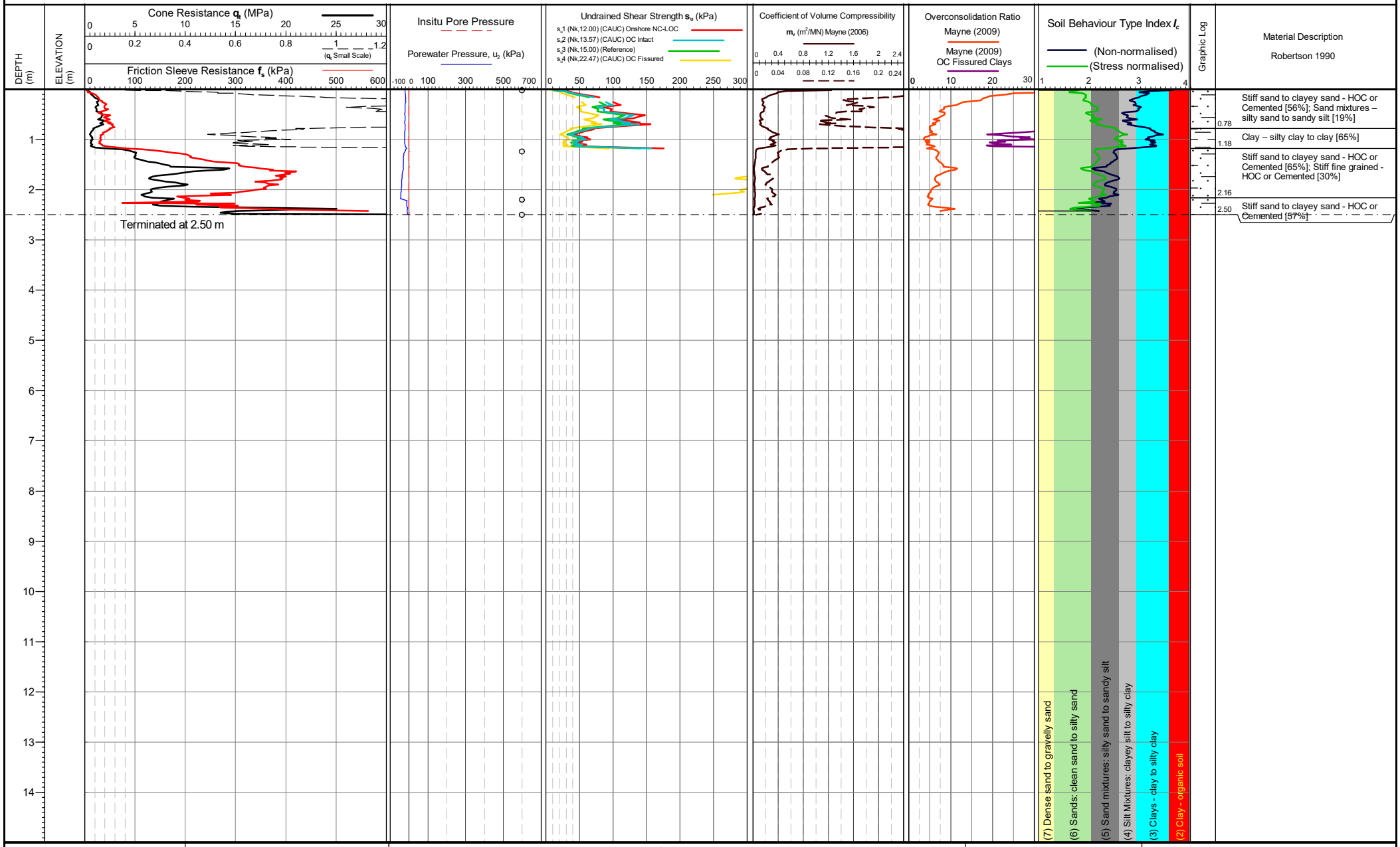
Checked by: Chris Player

Lankelma Project Ref: P-107414-1

TEST ID: CPT114

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 13:17:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Tip load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

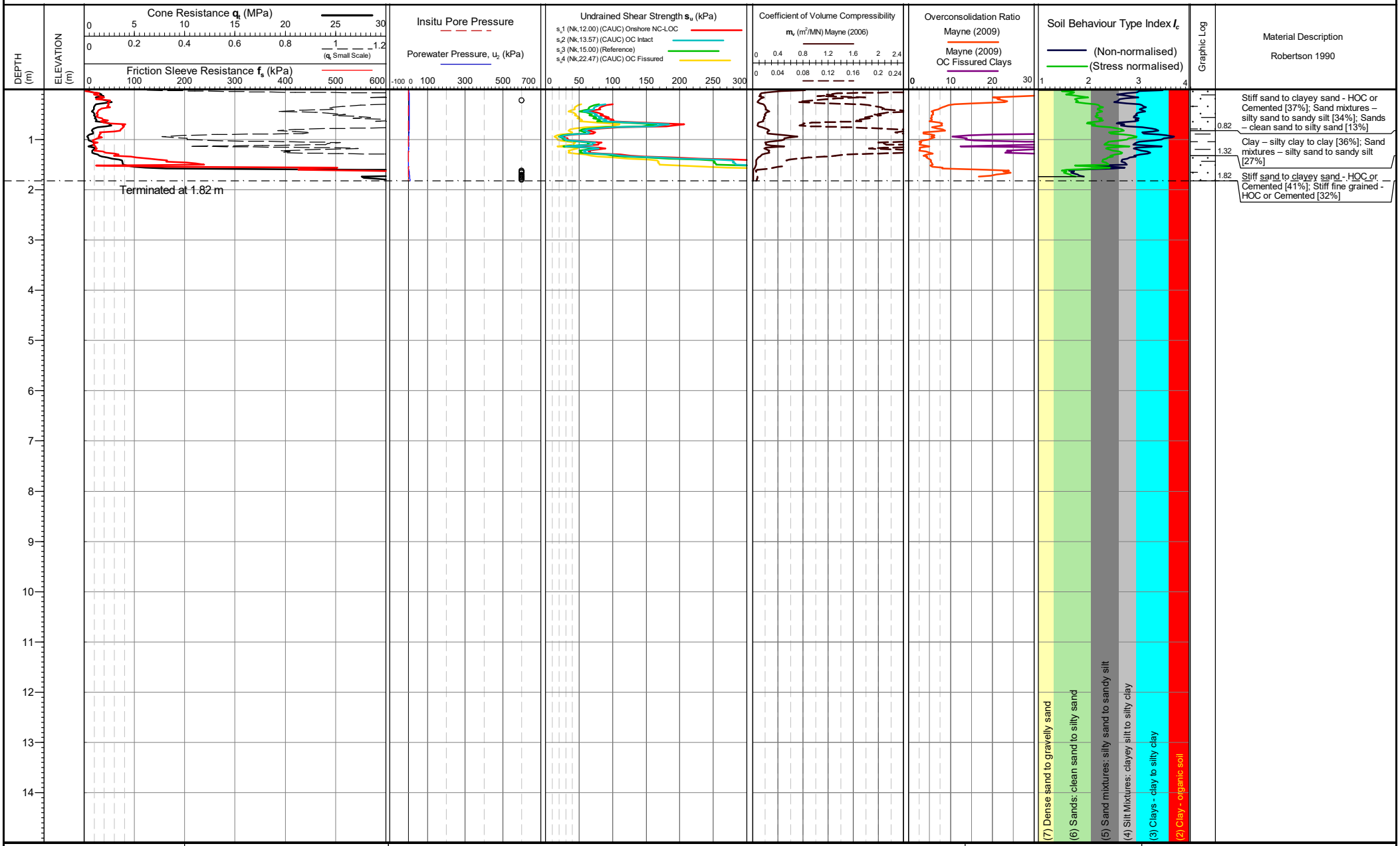
Lankelma Project Ref: P-107414-1

TEST ID: CPT115

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 13:33:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Tip load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

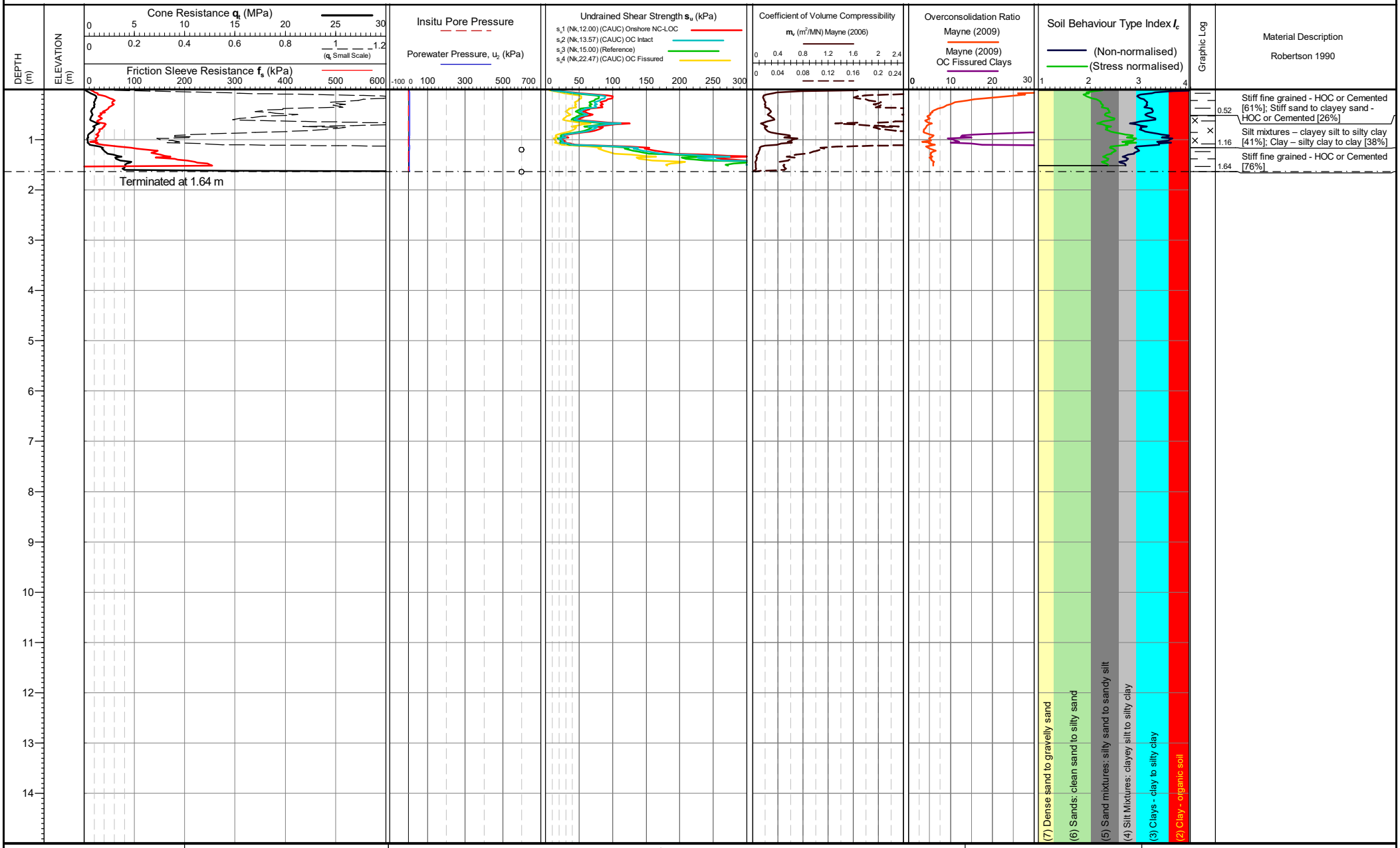
Lankelma Project Ref: P-107414-1

TEST ID: CPT116

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Graphic Log

Material Description

Robertson 1990

0.52 Stiff fine grained - HOC or Cemented [61%]; Stiff sand to clayey sand - HOC or Cemented [26%]

1.16 Silt mixtures – clayey silt to silty clay [41%]; Clay – silty clay to clay [38%]

1.64 Stiff fine grained - HOC or Cemented [76%]

Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 13:47:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Tip load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

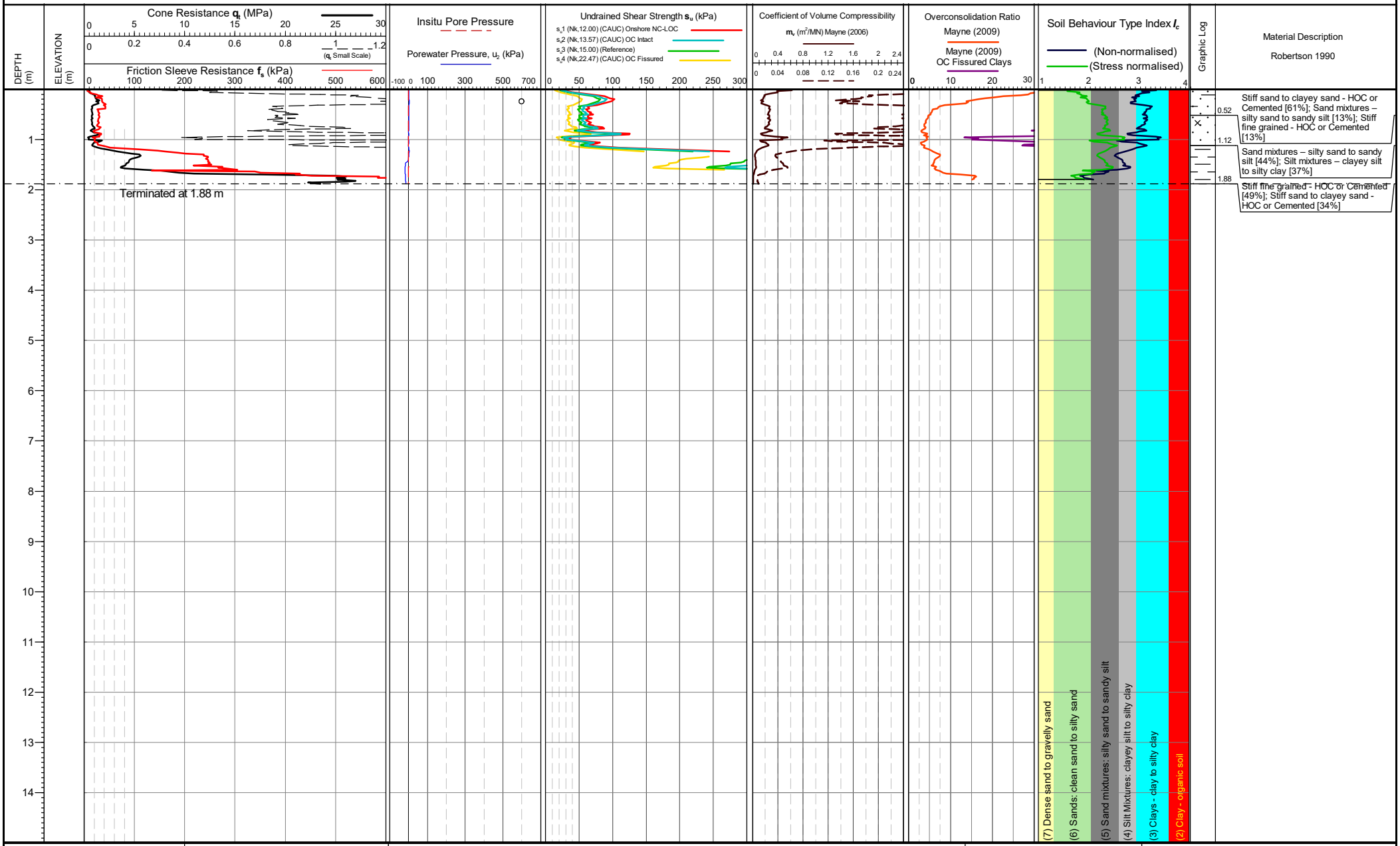
Lankelma Project Ref: P-107414-1

TEST ID: CPT116A

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 13:56:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Tip load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

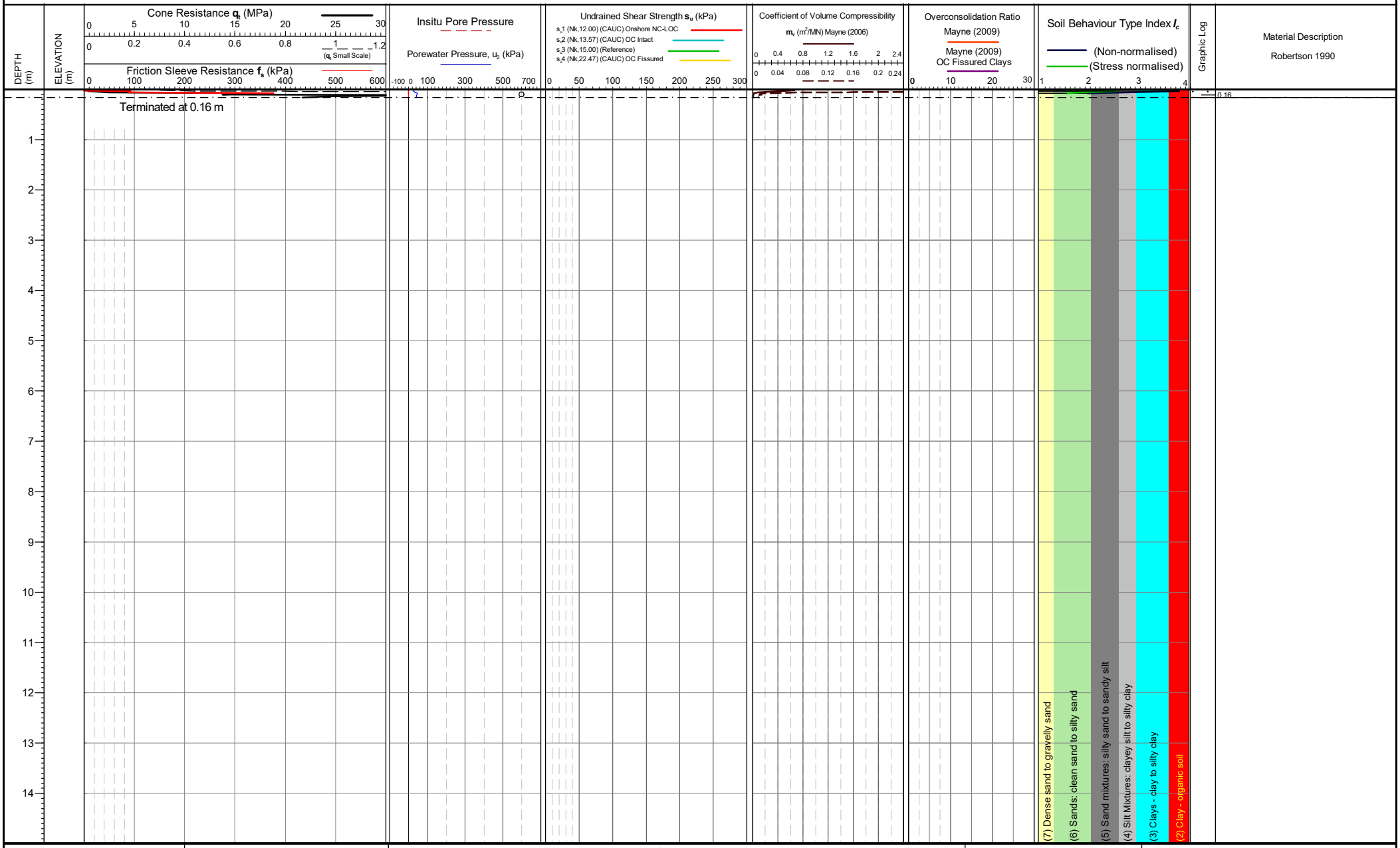
Lankelma Project Ref: P-107414-1

TEST ID: CPT116B

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 08:48:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Inclination

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

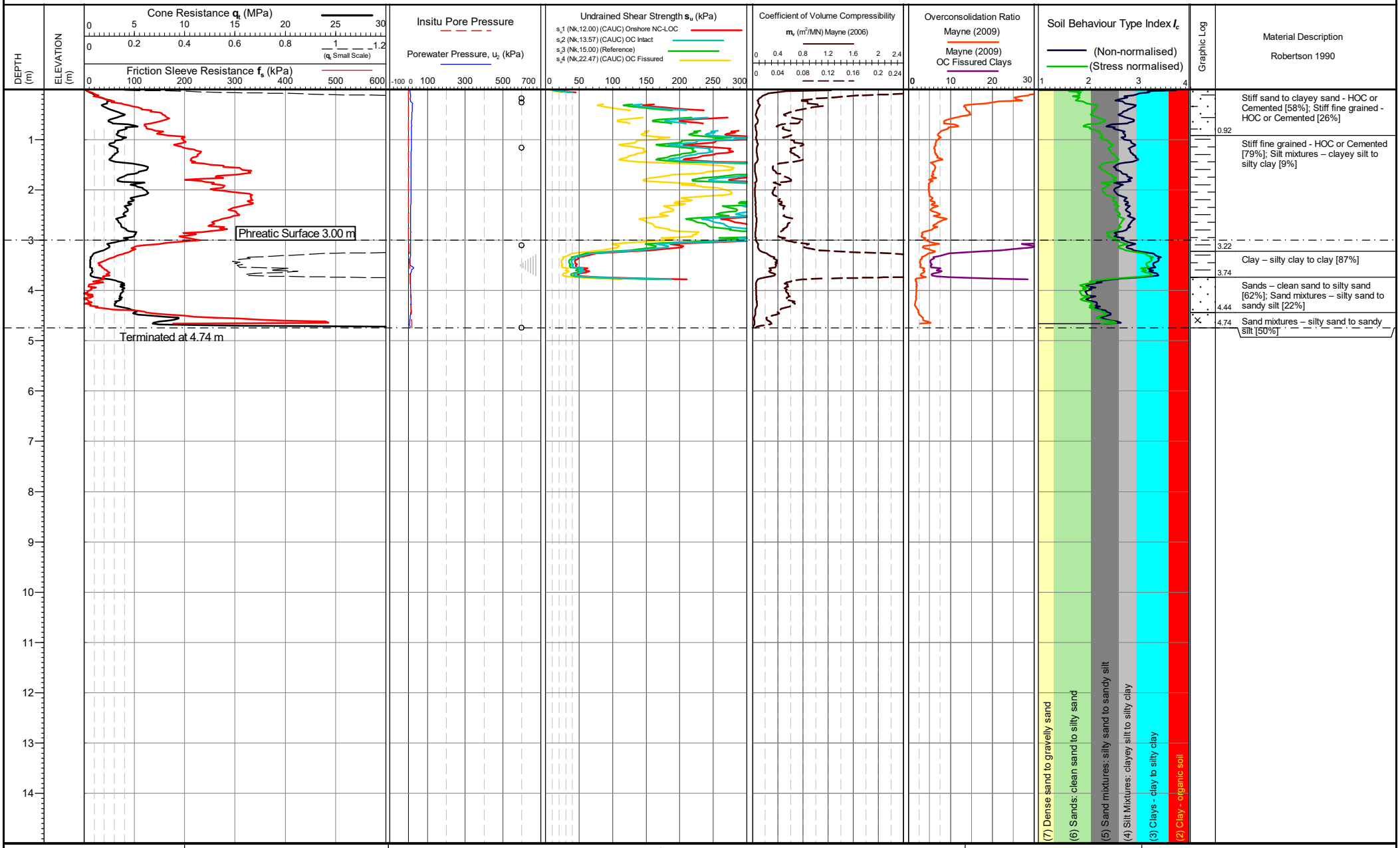
Lankelma Project Ref: P-107414-1

TEST ID: CPT117

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 09:00:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Tip load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

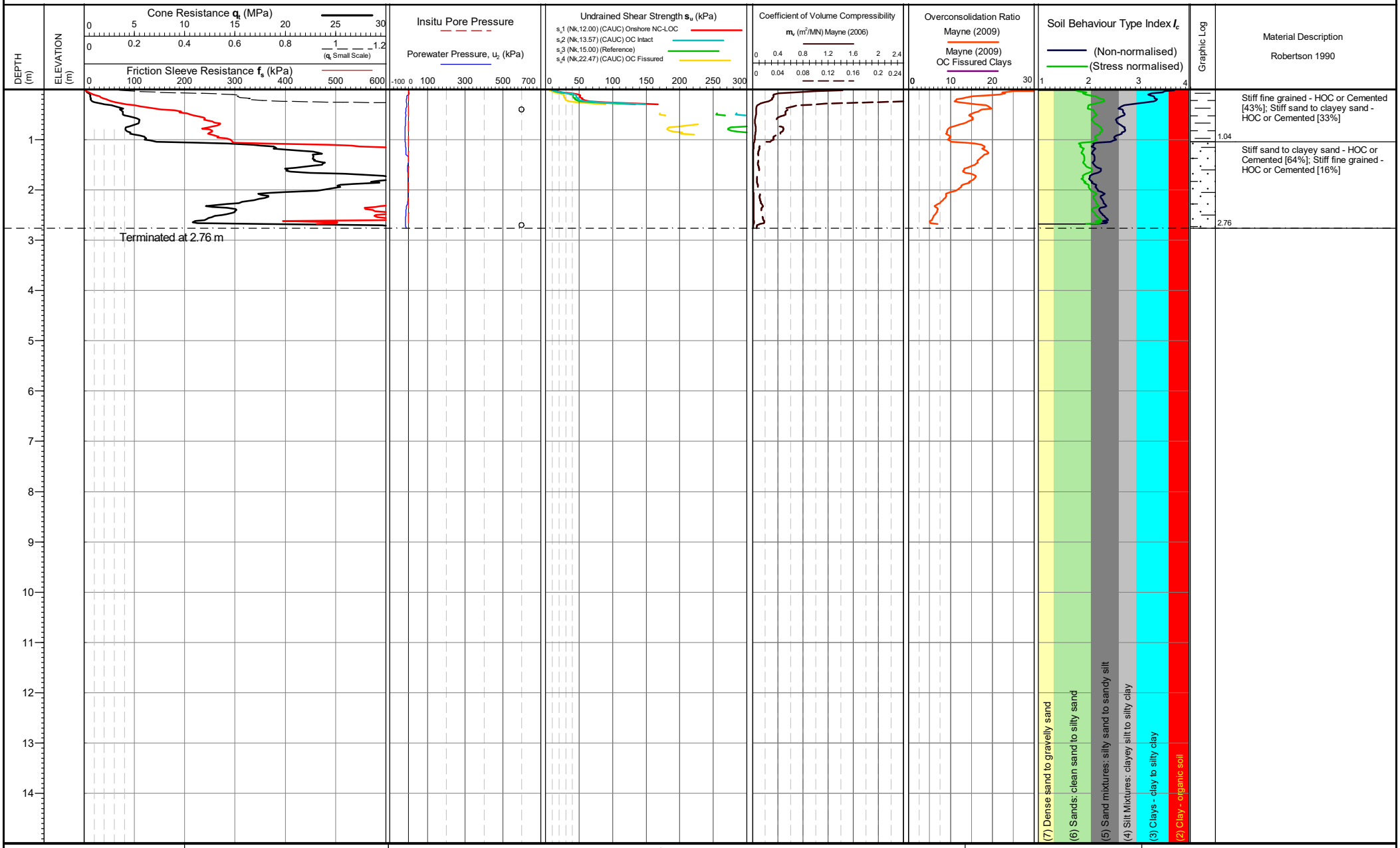
Lankelma Project Ref: P-107414-1

TEST ID: CPT117A

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 08:29:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Tip load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

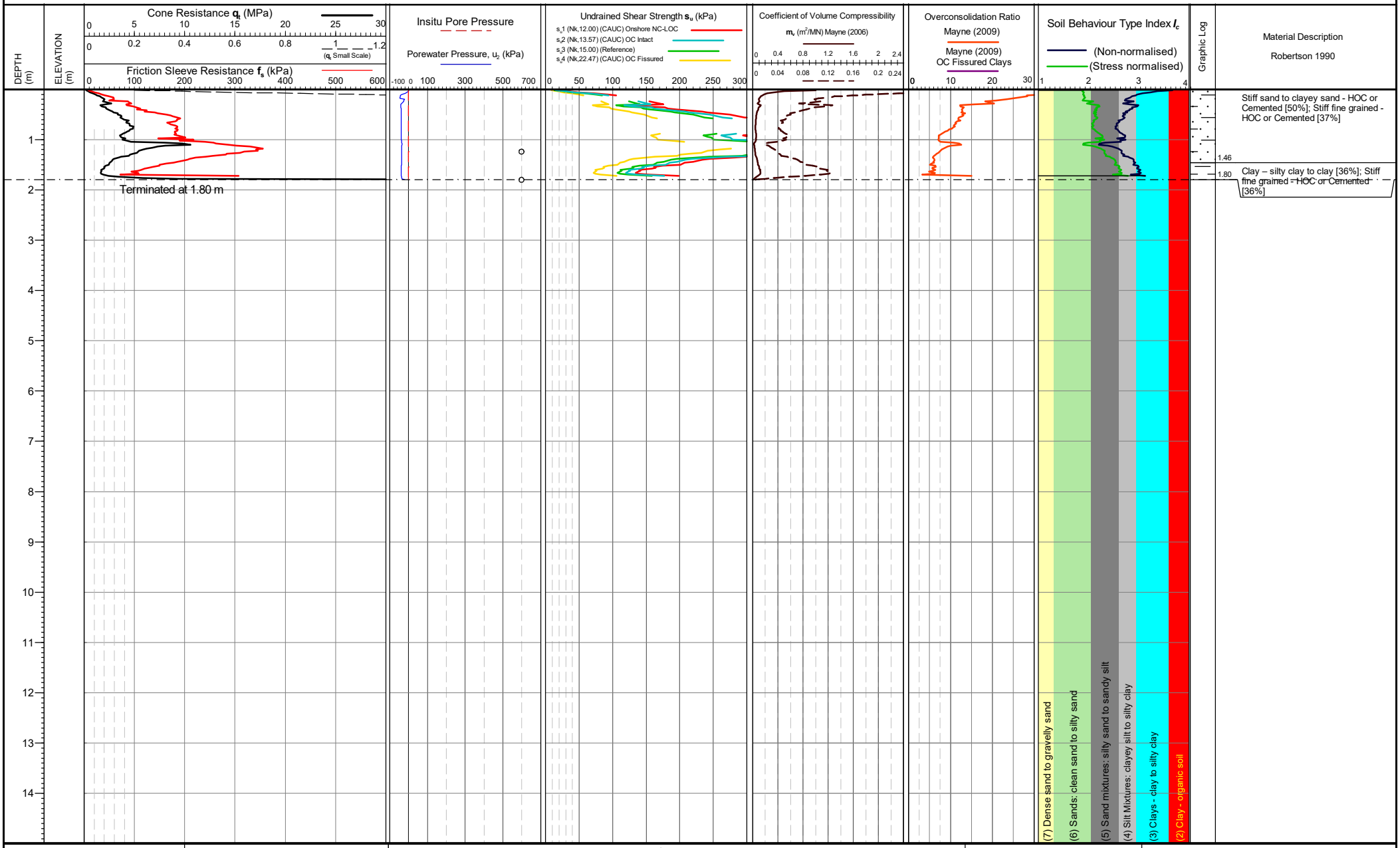
Lankelma Project Ref: P-107414-1

TEST ID: CPT118

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 08:14:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Tip load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

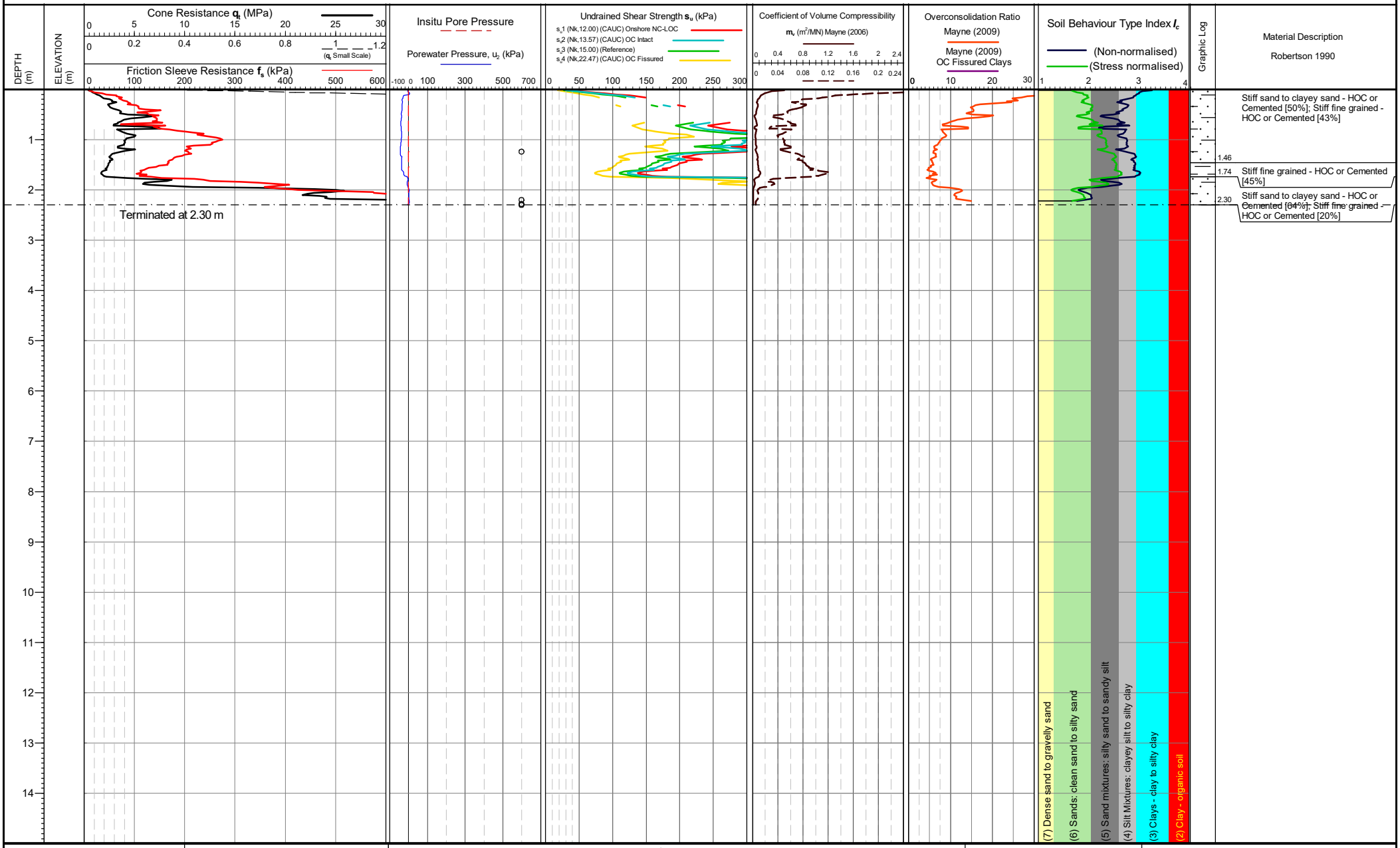
Lankelma Project Ref: P-107414-1

TEST ID: CPT119

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 11:53:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Total reaction force

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

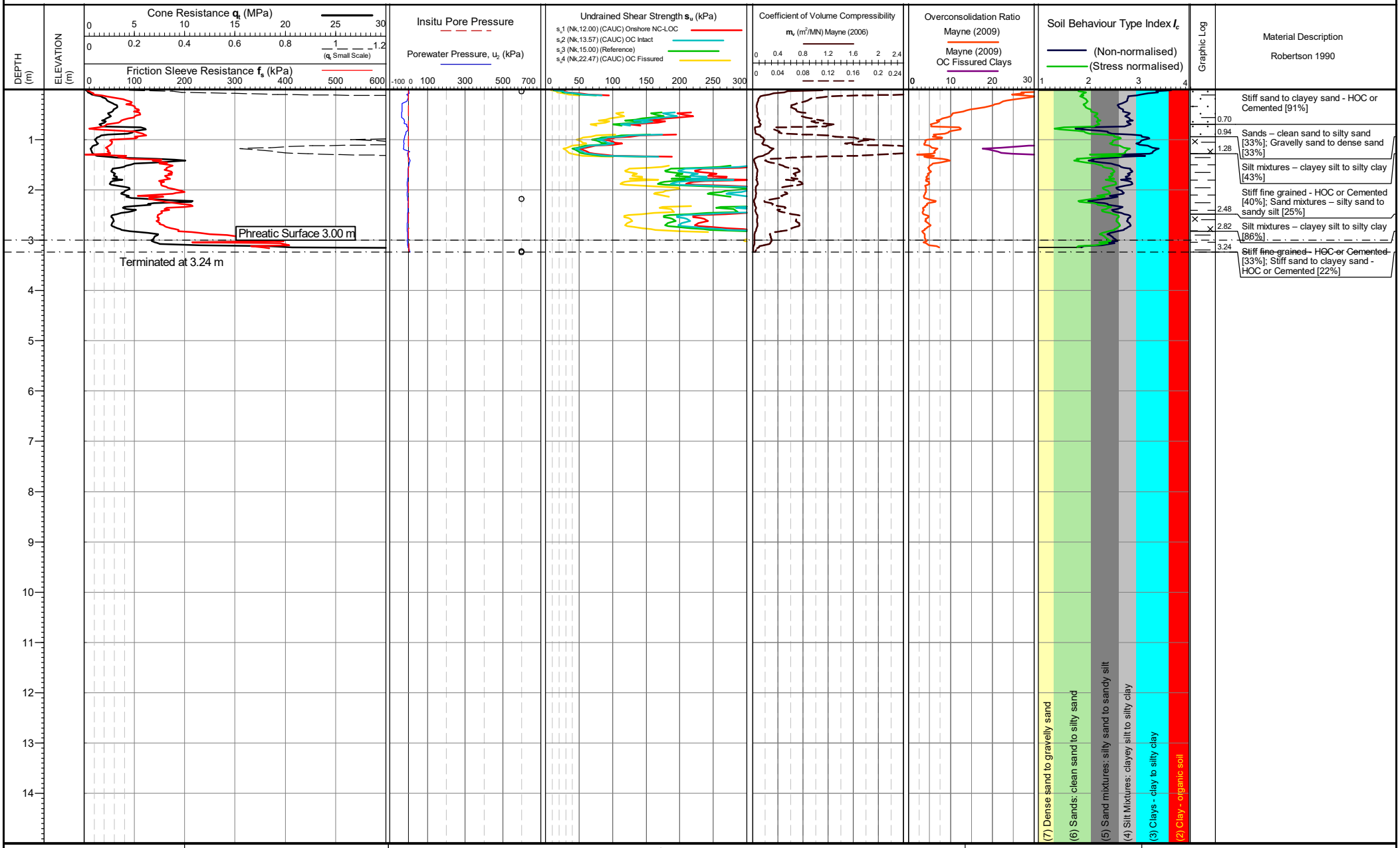
Checked by: Chris Player

Lankelma Project Ref: P-107414-1

TEST ID: CPT119A

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 09/03/2020 16:04:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Tip load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

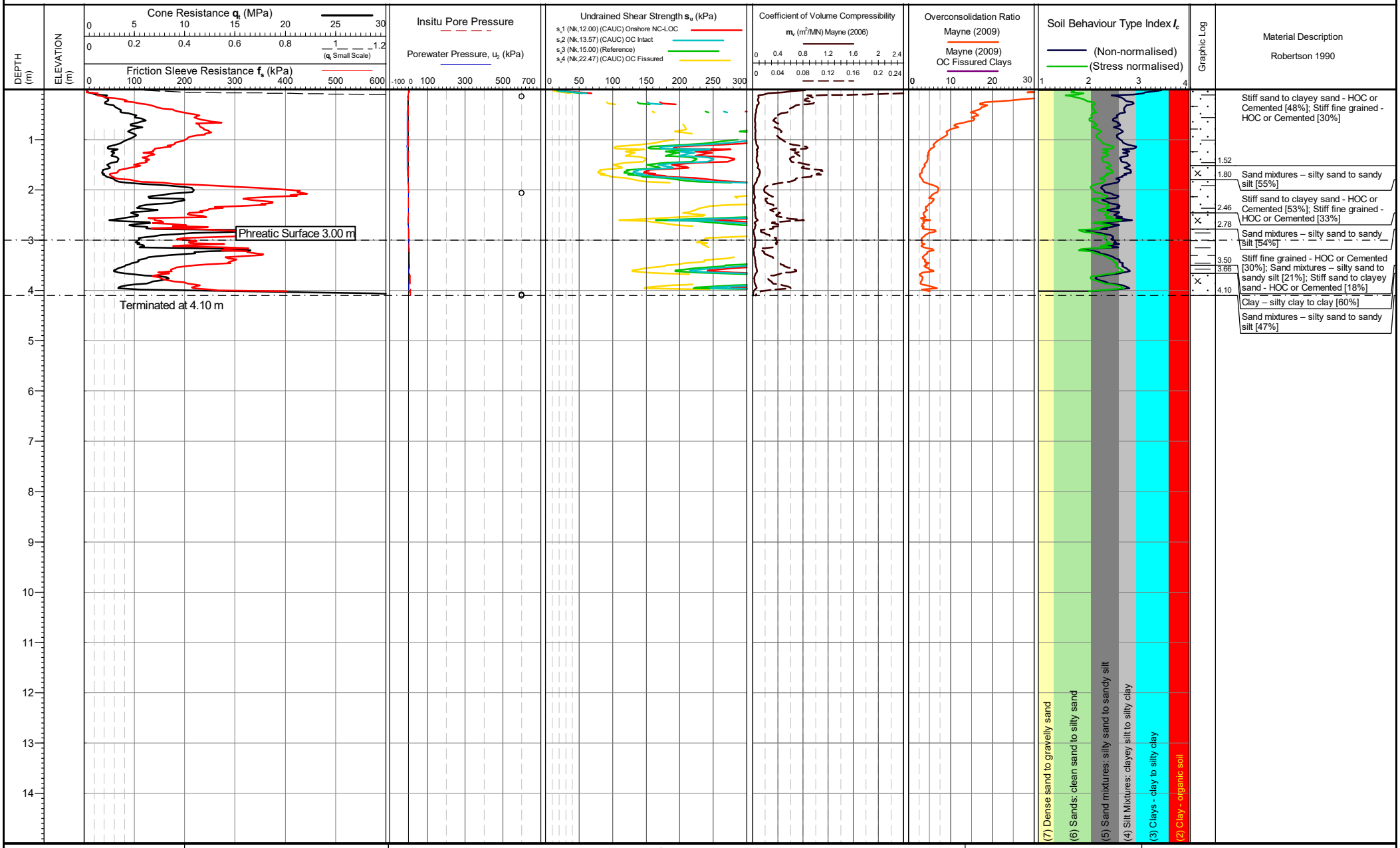
Lankelma Project Ref: P-107414-1

TEST ID: CPT120

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 09/03/2020 12:43:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Tip load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Lankelma Project Ref: P-107414-1

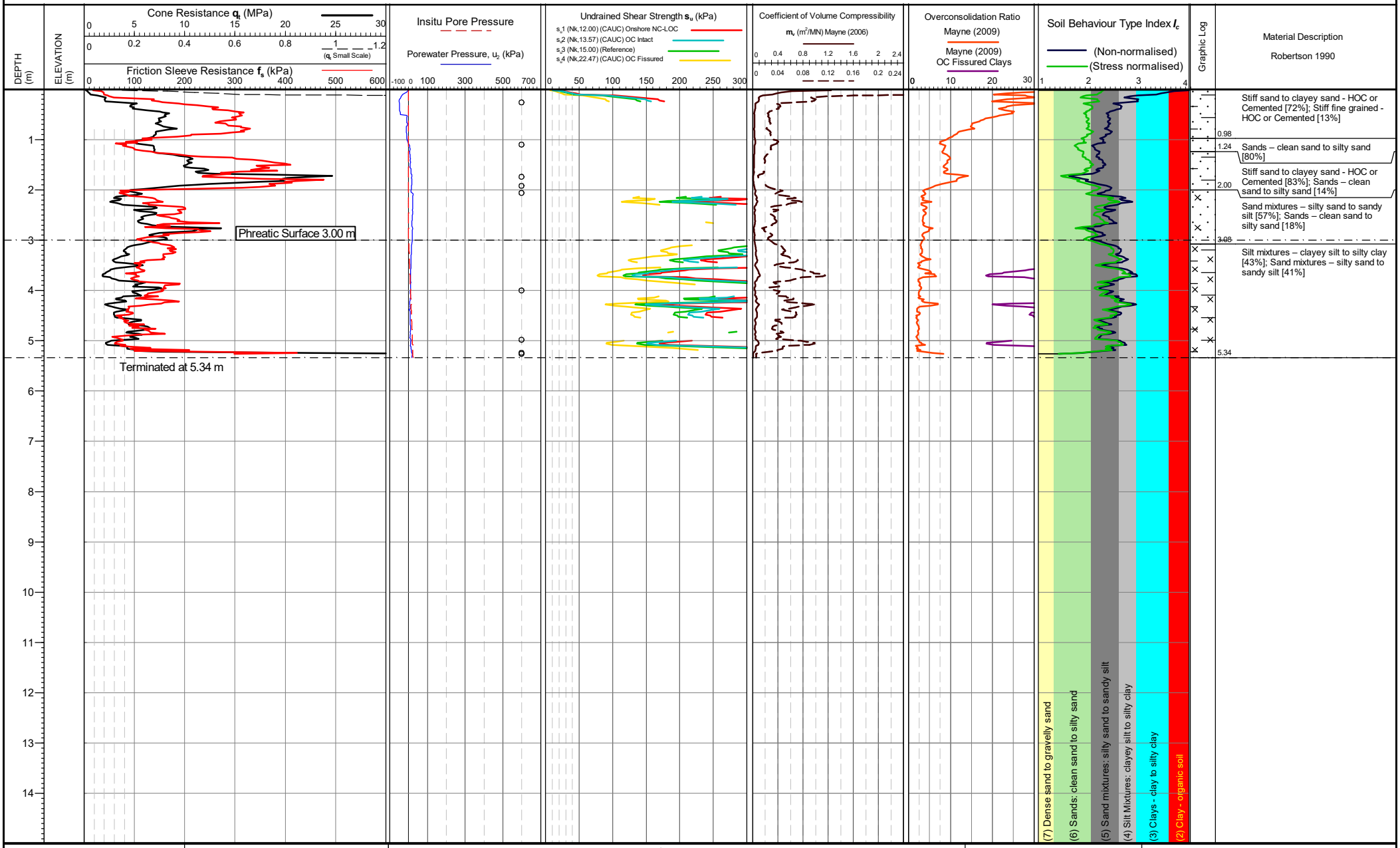
Checked by: Chris Player

TEST ID: CPT121

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 09/03/2020 10:34:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Inclination

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

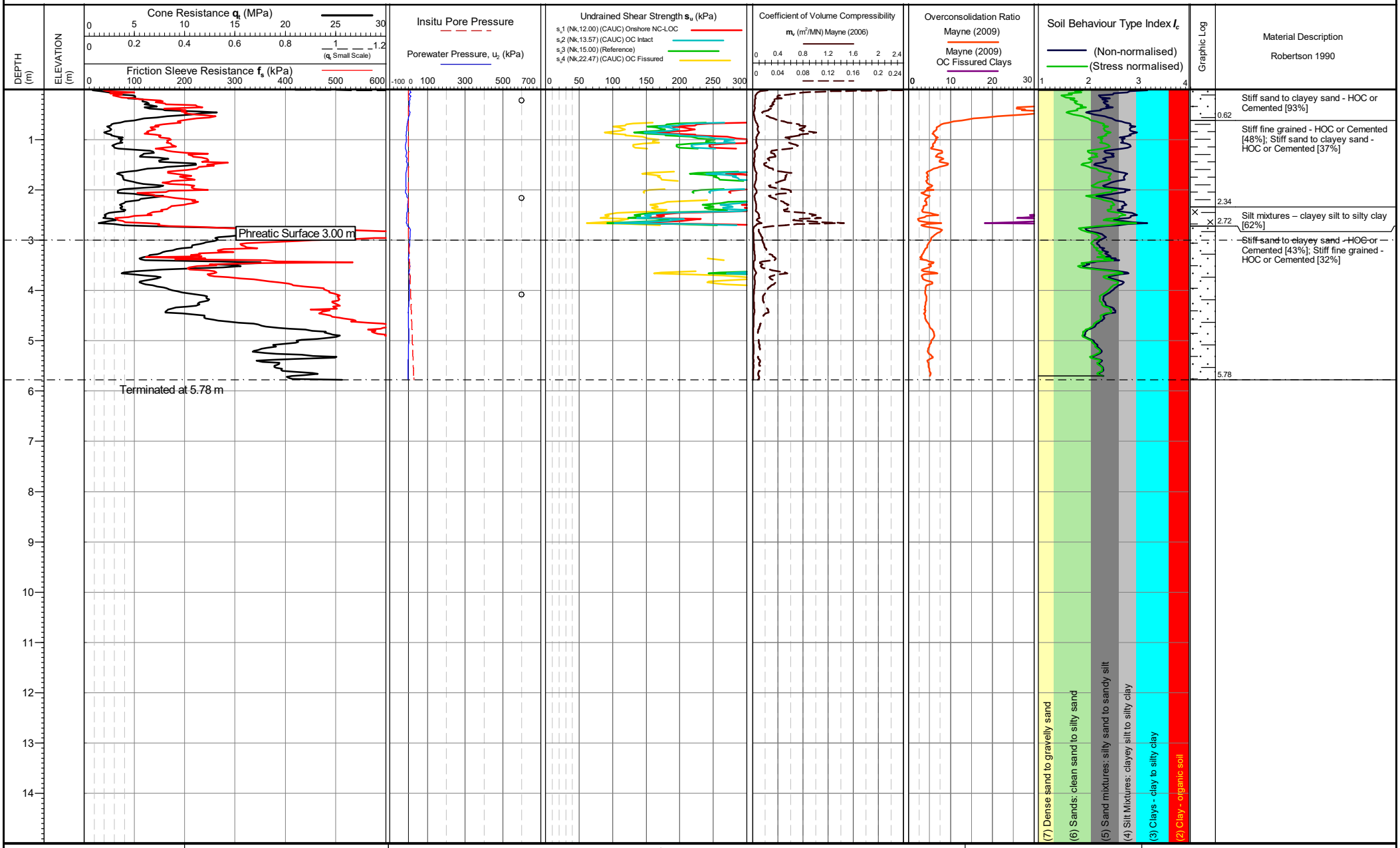
Checked by: Chris Player

Lankelma Project Ref: P-107414-1

TEST ID: CPT122

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 09/03/2020 10:56:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Sleeve load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

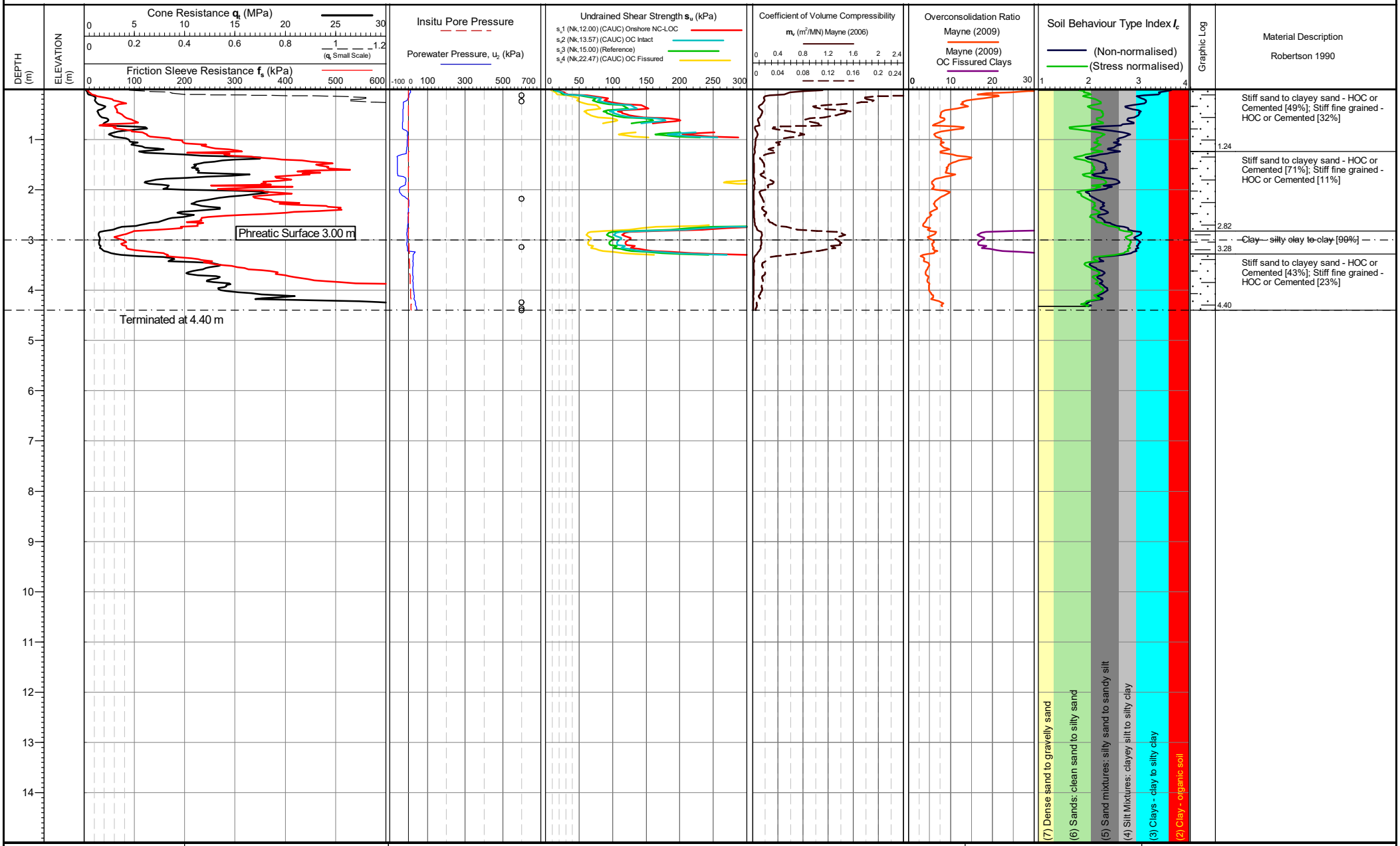
Lankelma Project Ref: P-107414-1

TEST ID: CPT123

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 09/03/2020 12:01:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Total reaction force

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

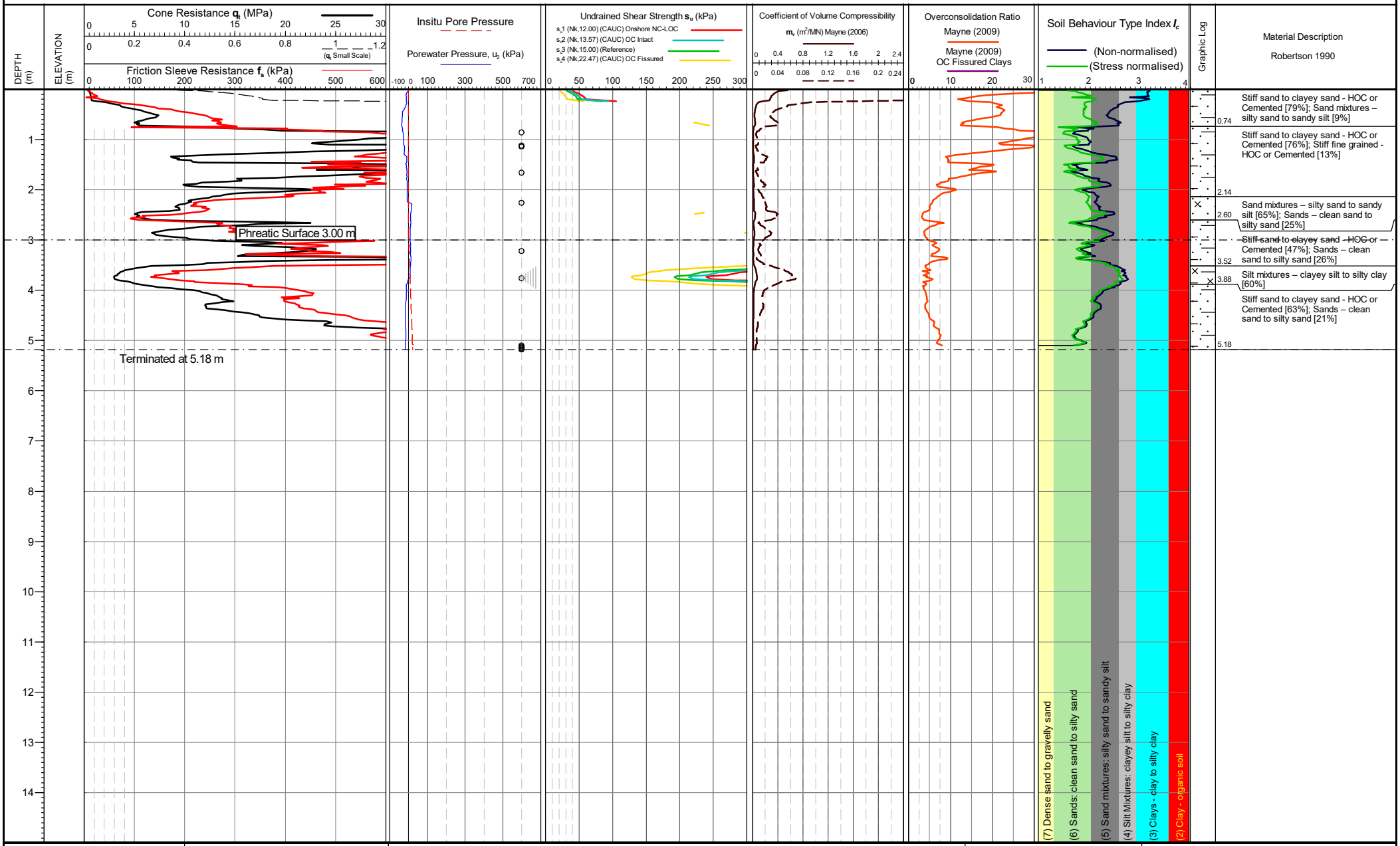
Lankelma Project Ref: P-107414-1

TEST ID: CPT124

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 09/03/2020 12:17:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Total reaction force

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

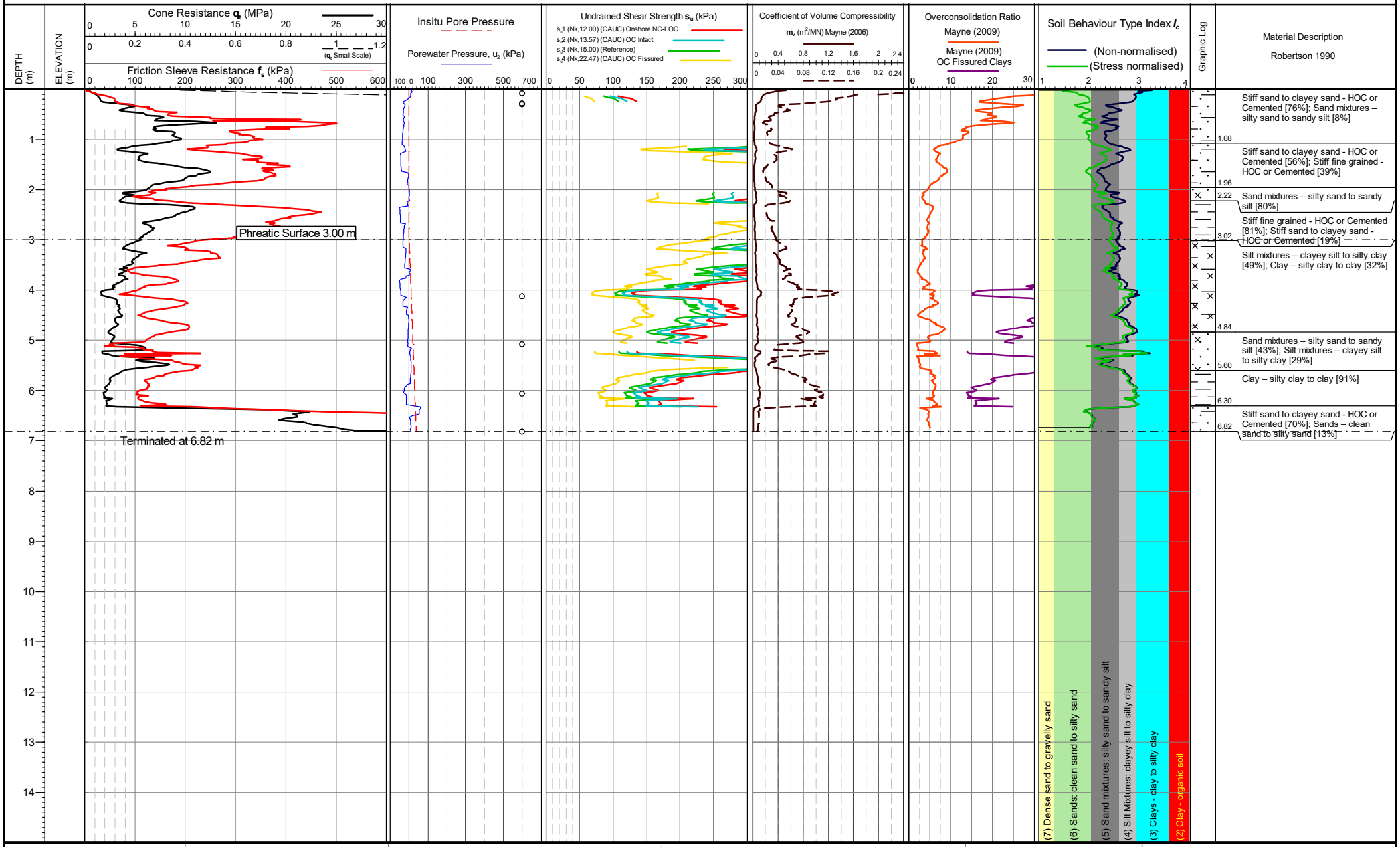
Checked by: Chris Player

Lankelma Project Ref: P-107414-1

TEST ID: CPT125

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 09/03/2020 11:17:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Total reaction force

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

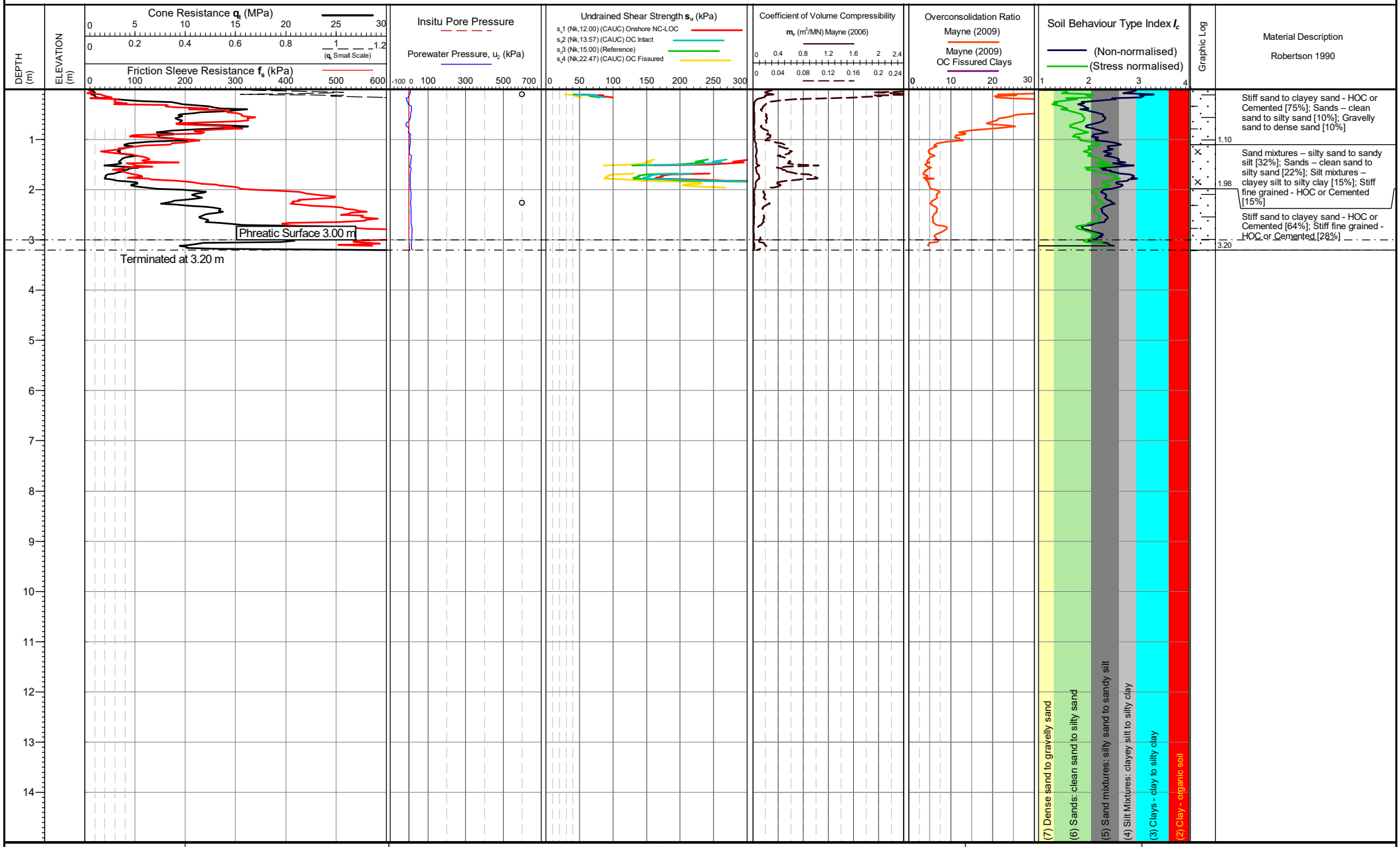
Checked by: Chris Player

Lankelma Project Ref: P-107414-1

TEST ID: CPT126

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 09/03/2020 11:44:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Tip load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

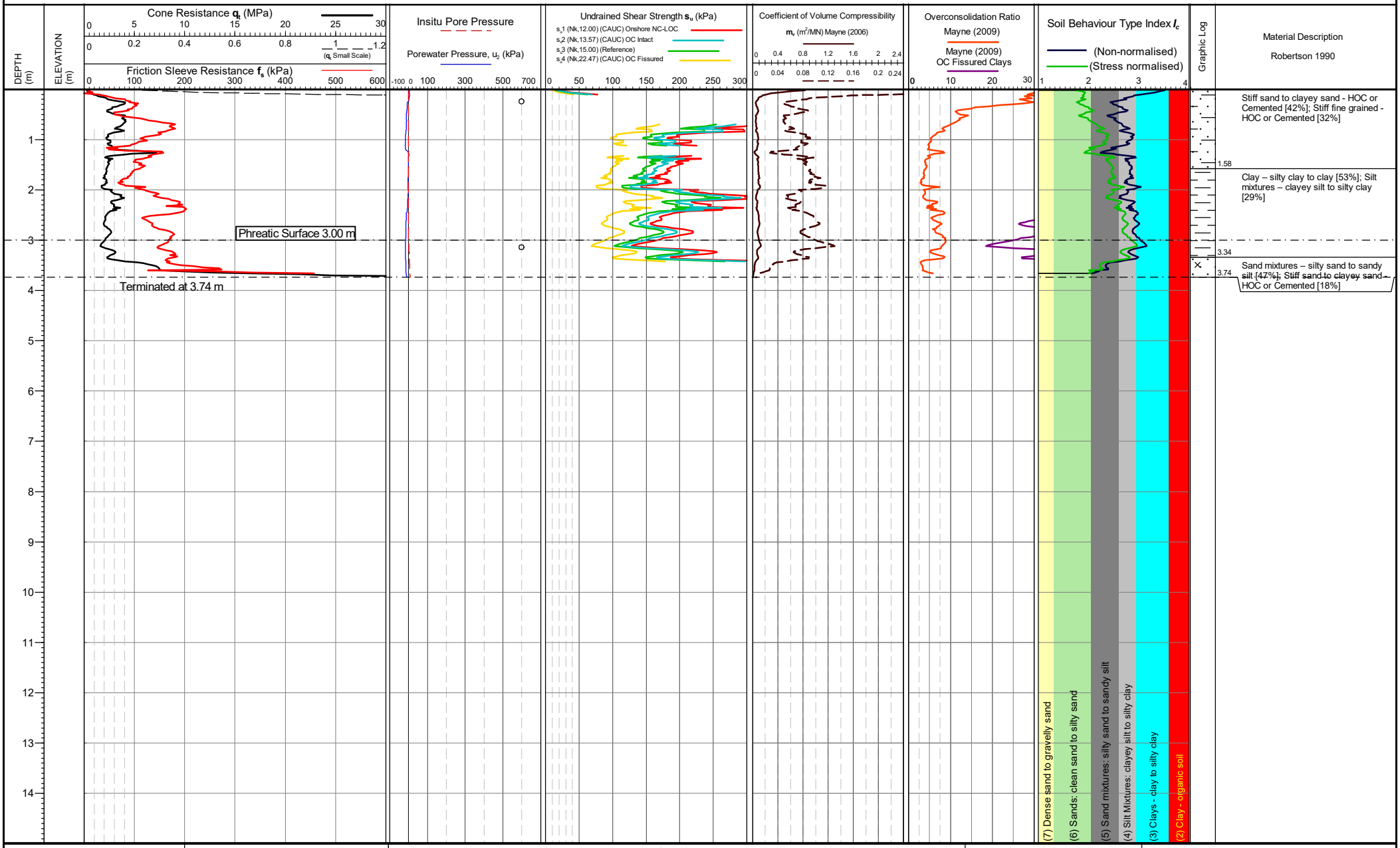
Lankelma Project Ref: P-107414-1

TEST ID: CPT127

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
ConeID: S15-CFIP.1841
Operator: Jamie Butterworth
Rig Used: UK3
Date of test: 10/03/2020 11:34:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Remarks: *Phreatic surface origin: Arbitrary value

Termination Remark:
Tip load

Internal QA Diss.
Dissipation Test
Penetration Pause (<1cm/s)

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.

See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20

Checked by: Chris Player

Lankelma Project Ref: P-107414-1

TEST ID: CPT128

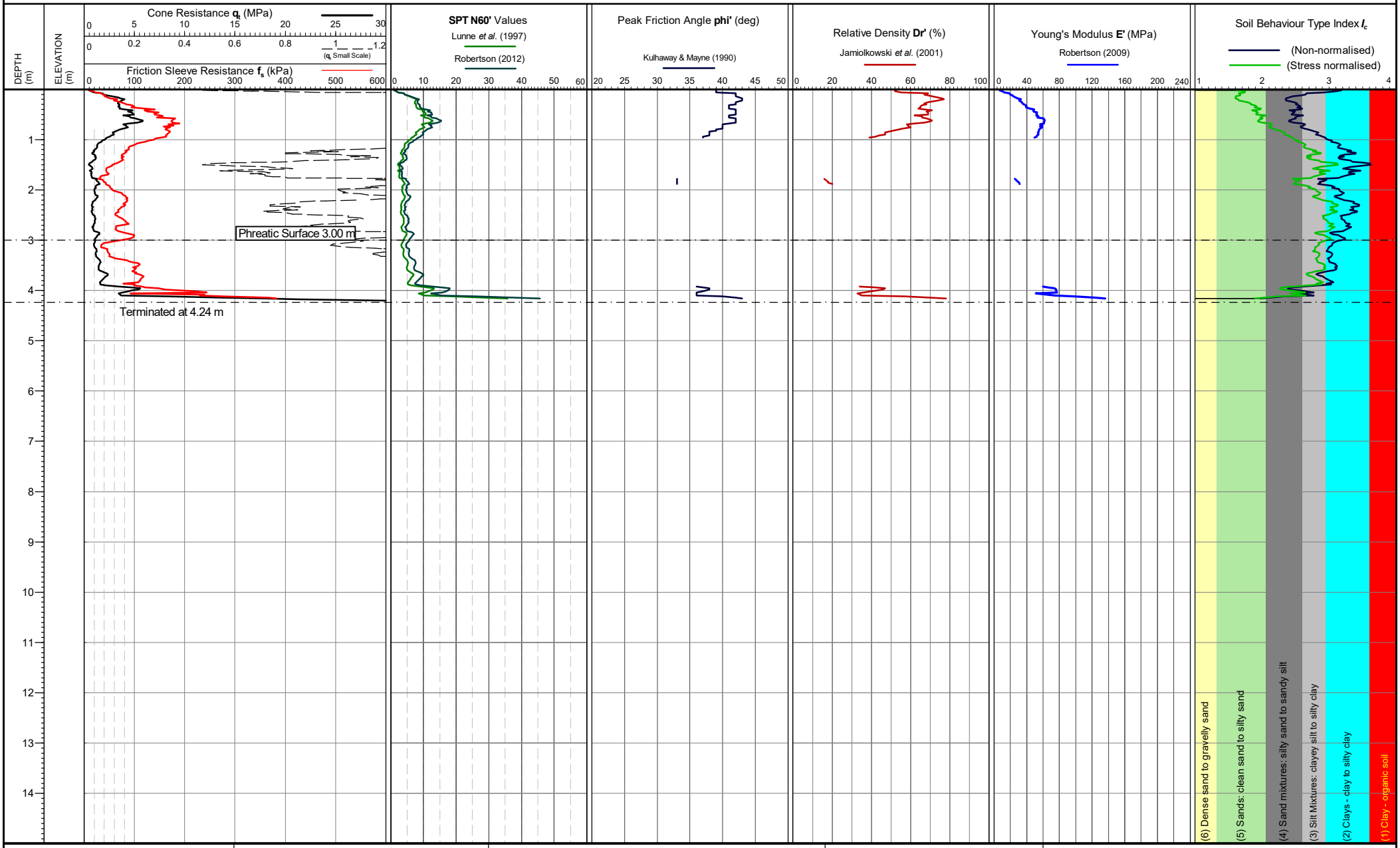
APPENDIX E STANDARD INTERPRETATION RESULTS - SET 2

EQUIVALENT SPT N60
PEAK FRICTION ANGLE
RELATIVE DENSITY
YOUNG'S MODULUS

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 11:10:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

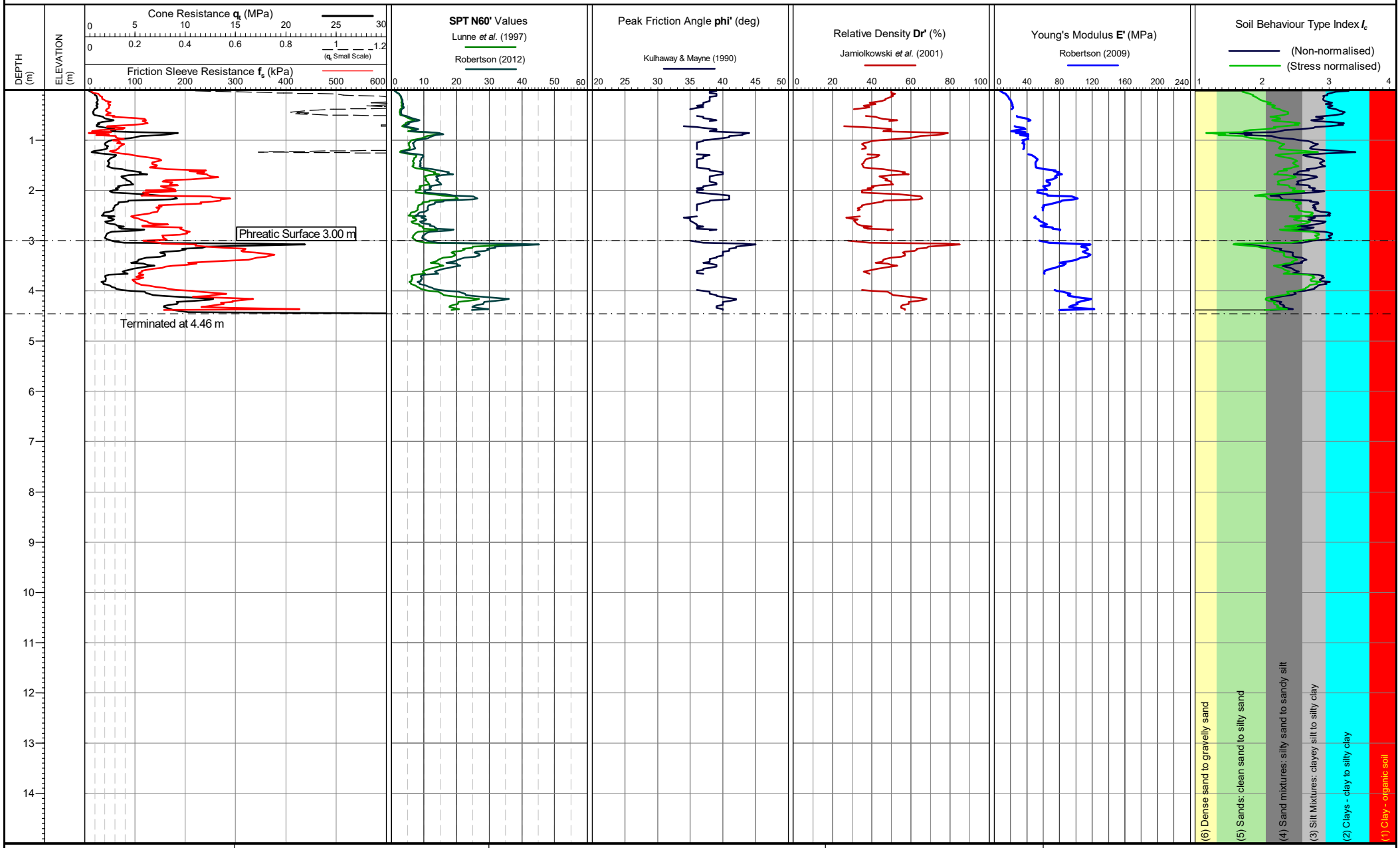
Date of plot: 11-03-20
Checked by: Chris Player

Lankelma Project Ref: P-107414-1

TEST ID: CPT101

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 12:09:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player

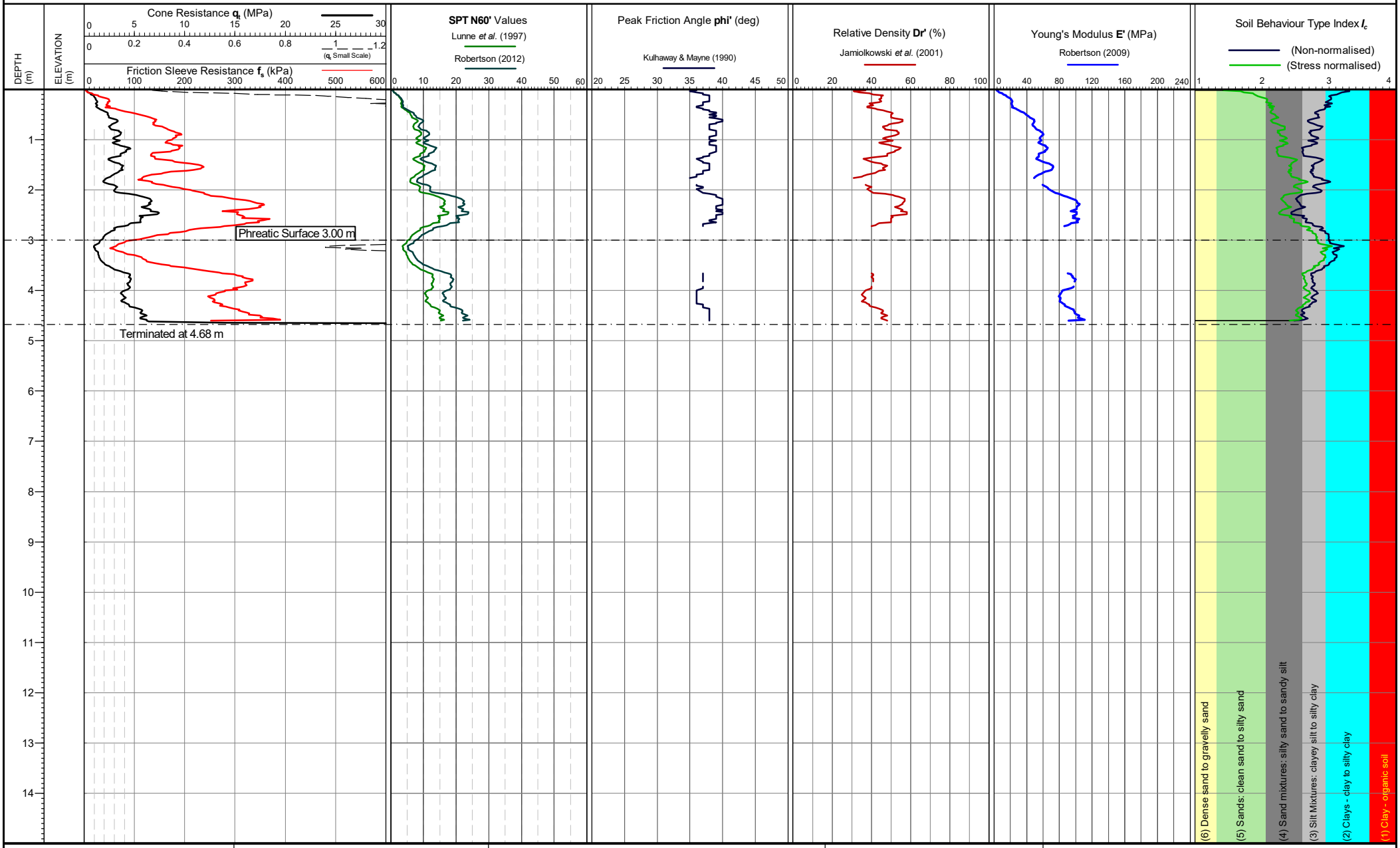
Lankelma Project Ref: P-107414-1

TEST ID: CPT102

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 10:20:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player

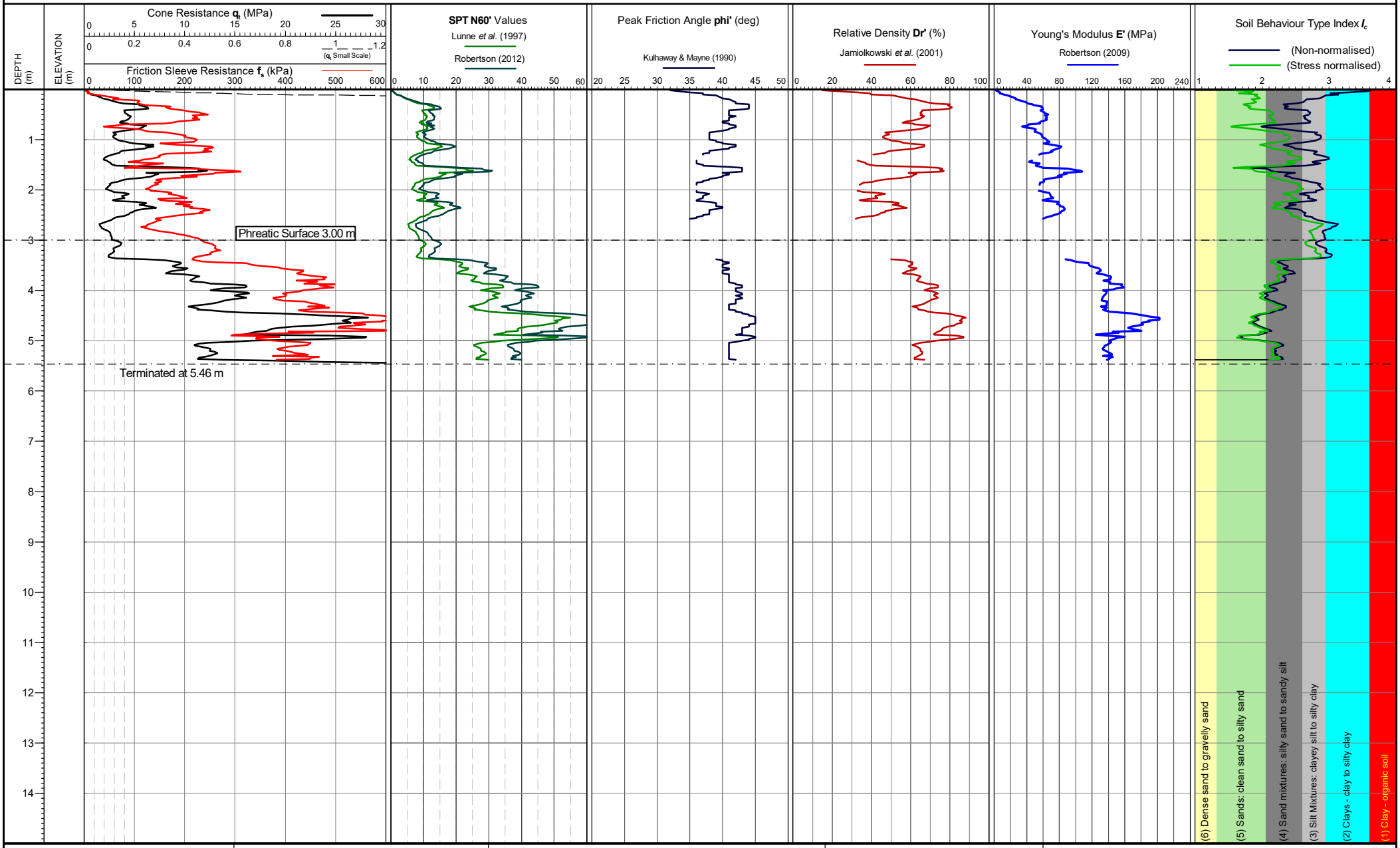
Lankelma Project Ref: P-107414-1

TEST ID: CPT103

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 10:03:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player

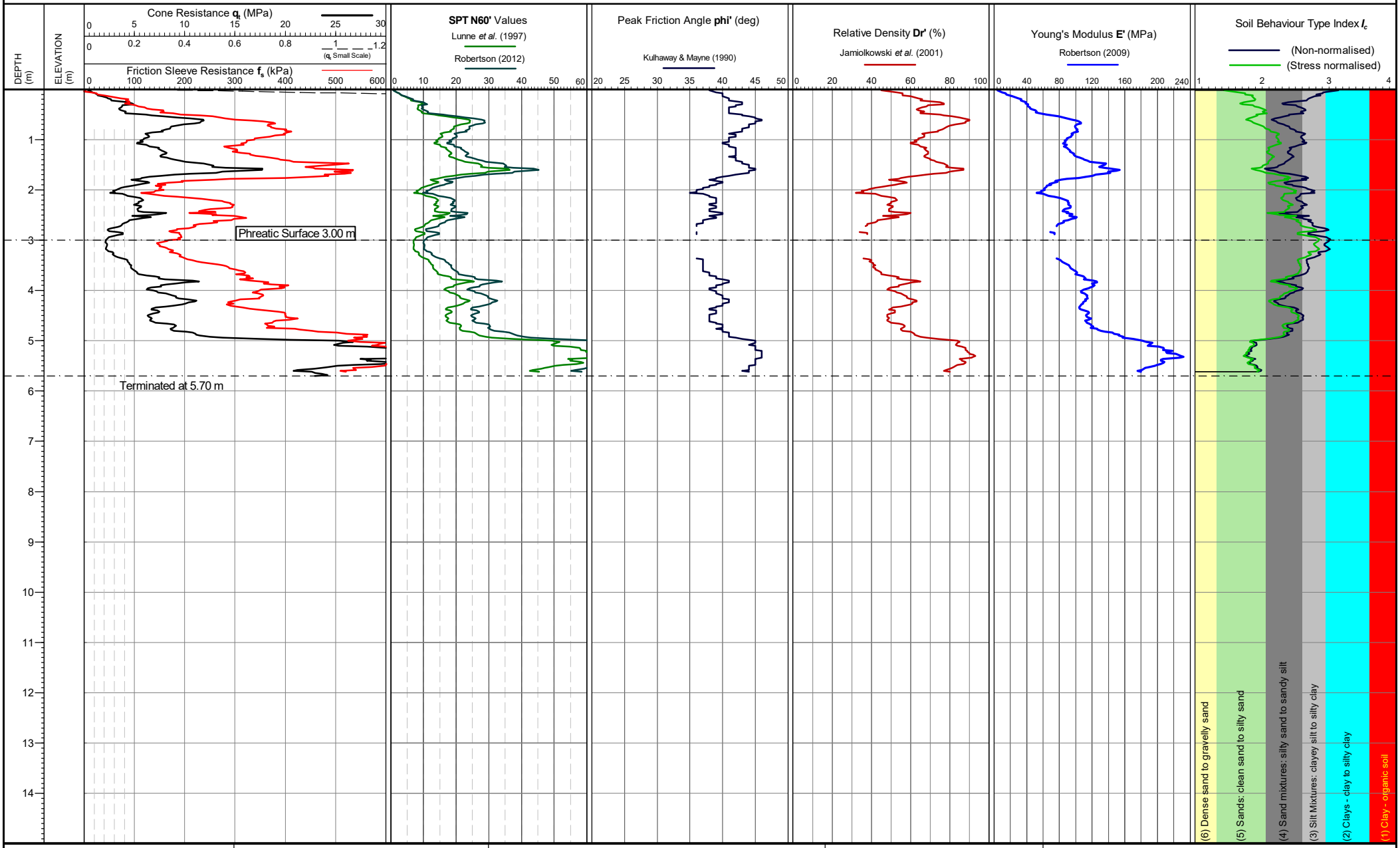
Lankelma Project Ref: P-107414-1

TEST ID: CPT104

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 09/03/2020 15:01:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

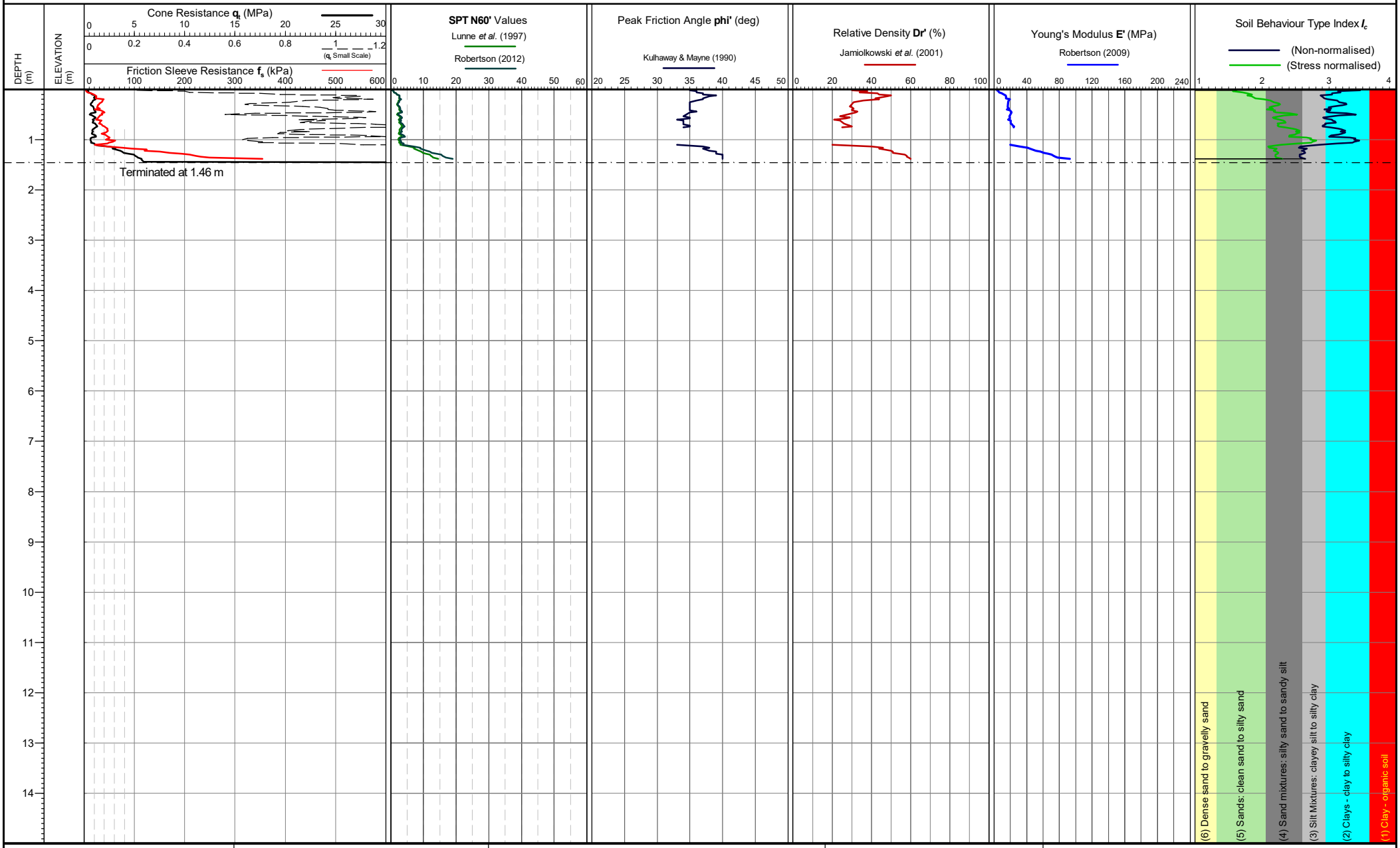
Date of plot: 11-03-20
Checked by: Chris Player
Lankelma Project Ref: P-107414-1

TEST ID: CPT105

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 12:43:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player

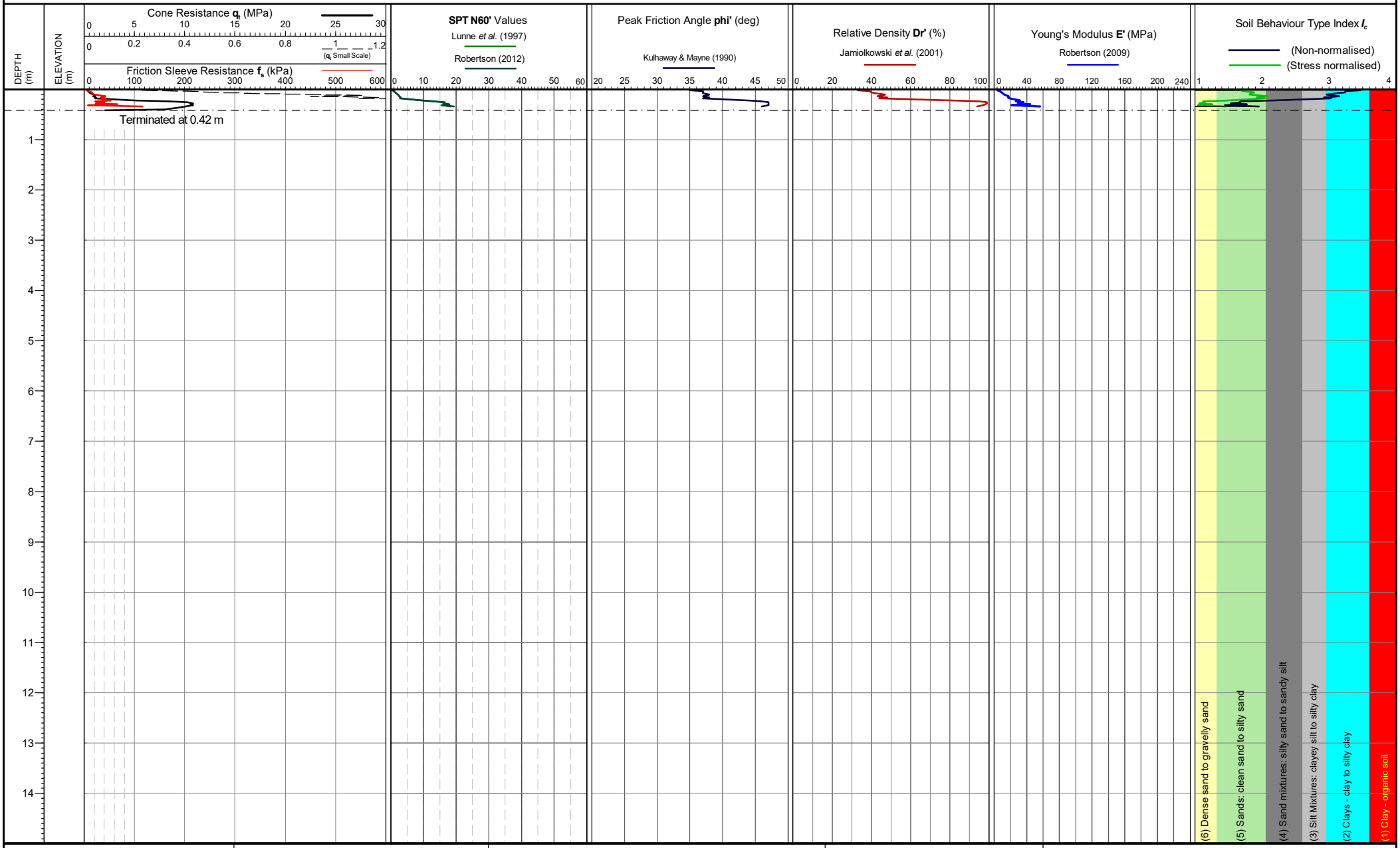
Lankelma Project Ref: P-107414-1

TEST ID: CPT106

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 13:03:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player

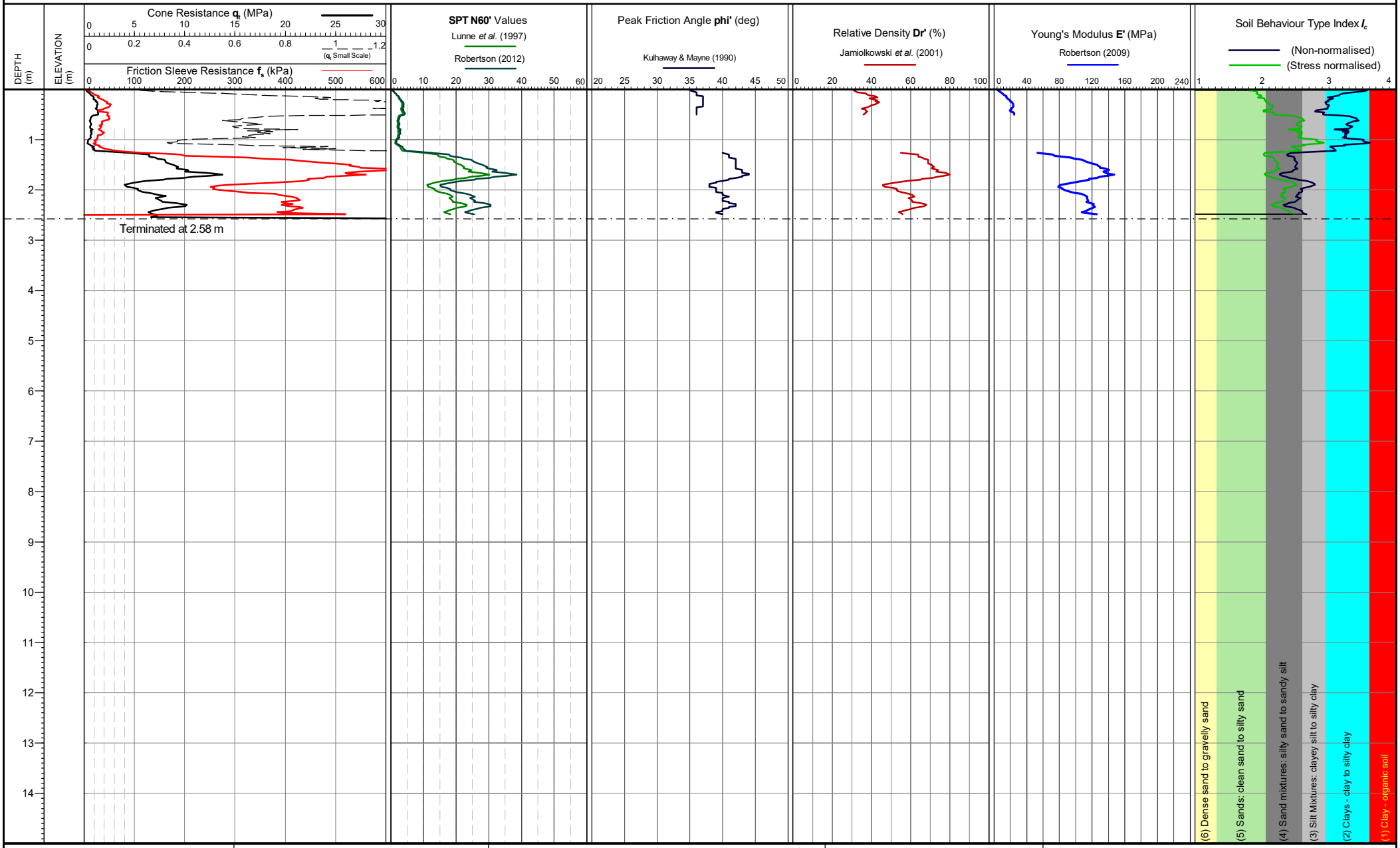
Lankelma Project Ref: P-107414-1

TEST ID: CPT106A

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 13:10:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

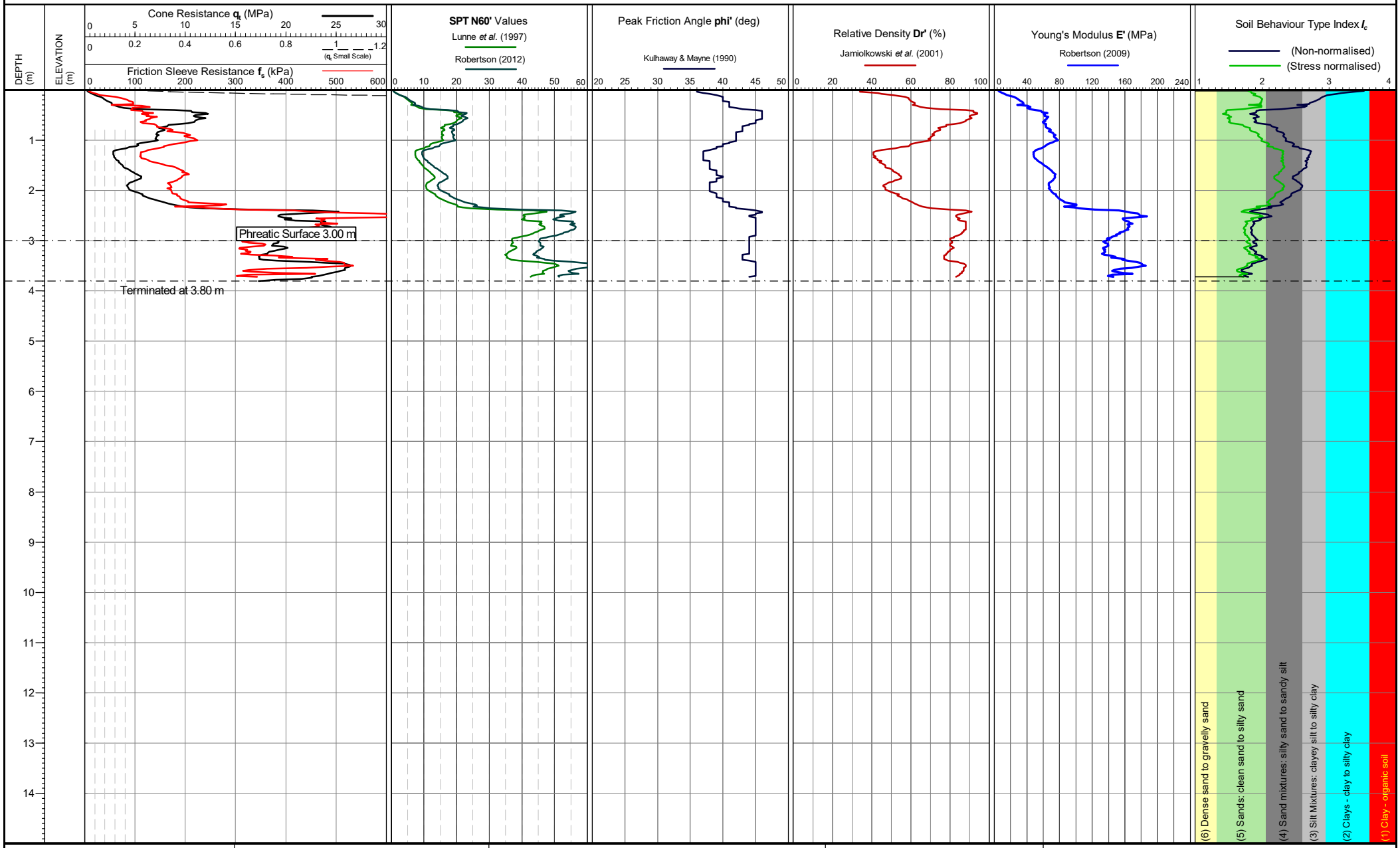
Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player
Lankelma Project Ref: P-107414-1

TEST ID: CPT106B

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 10:53:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player

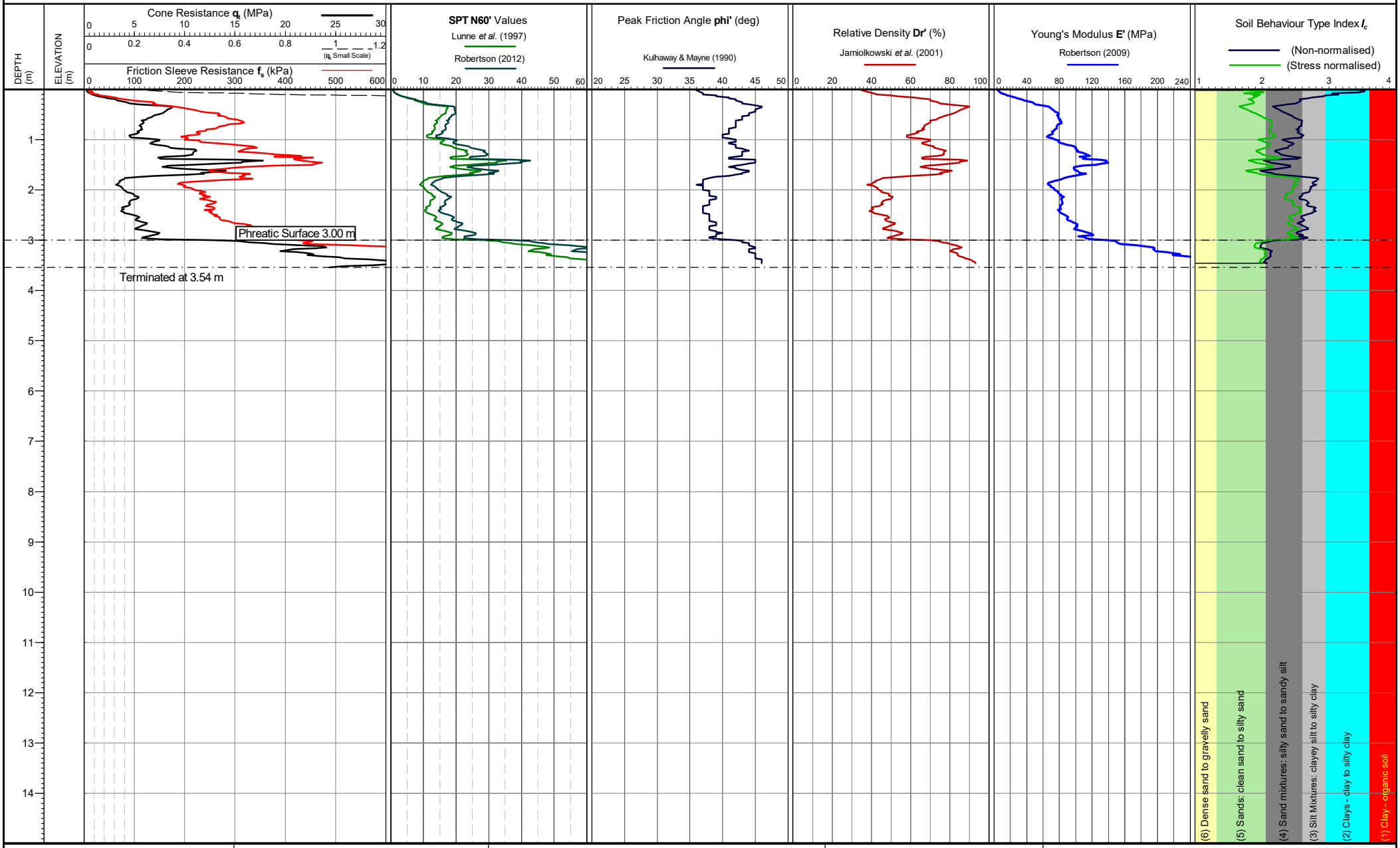
Lankelma Project Ref: P-107414-1

TEST ID: CPT107

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 10:37:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player

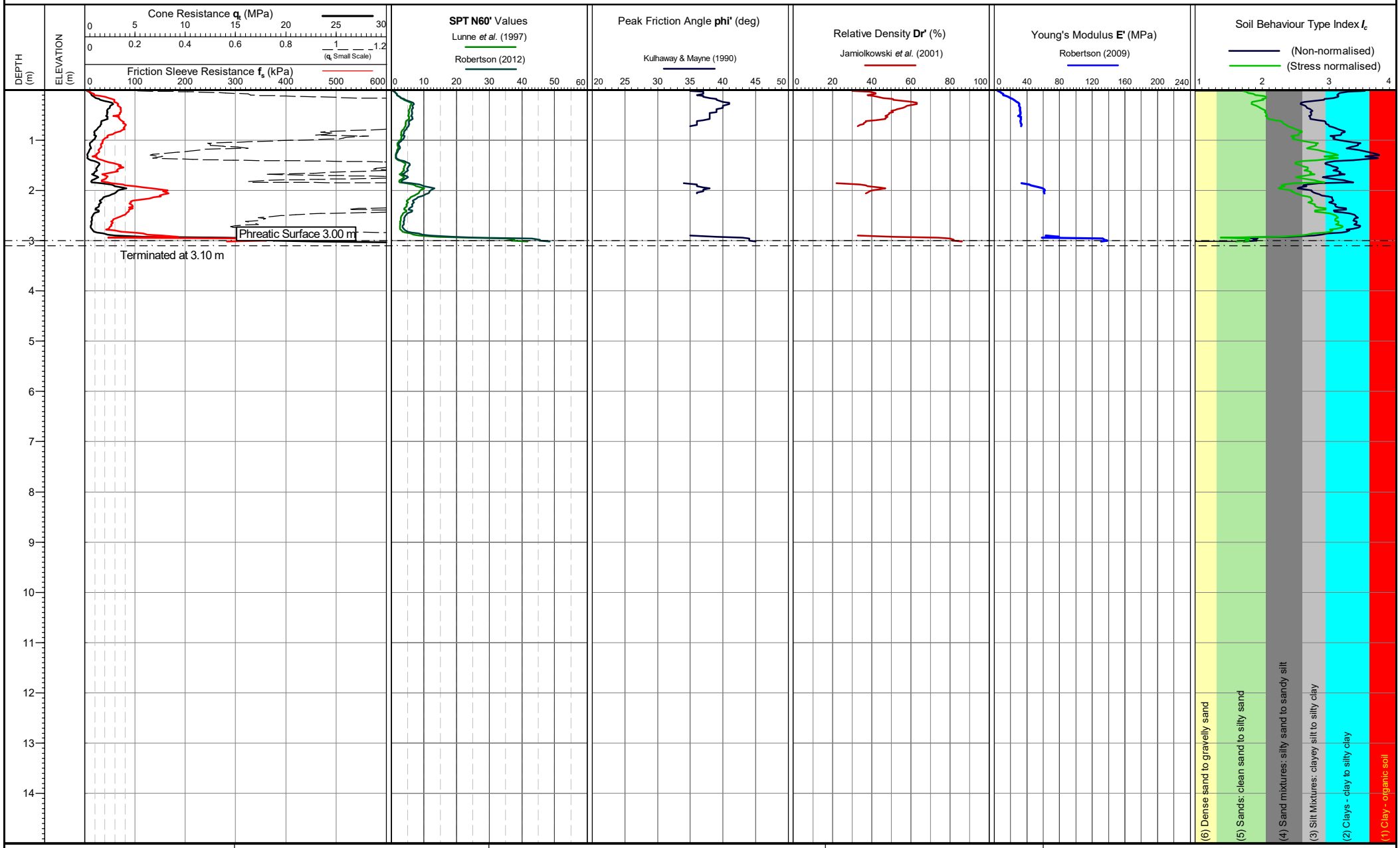
Lankelma Project Ref: P-107414-1

TEST ID: CPT108

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 09:47:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player

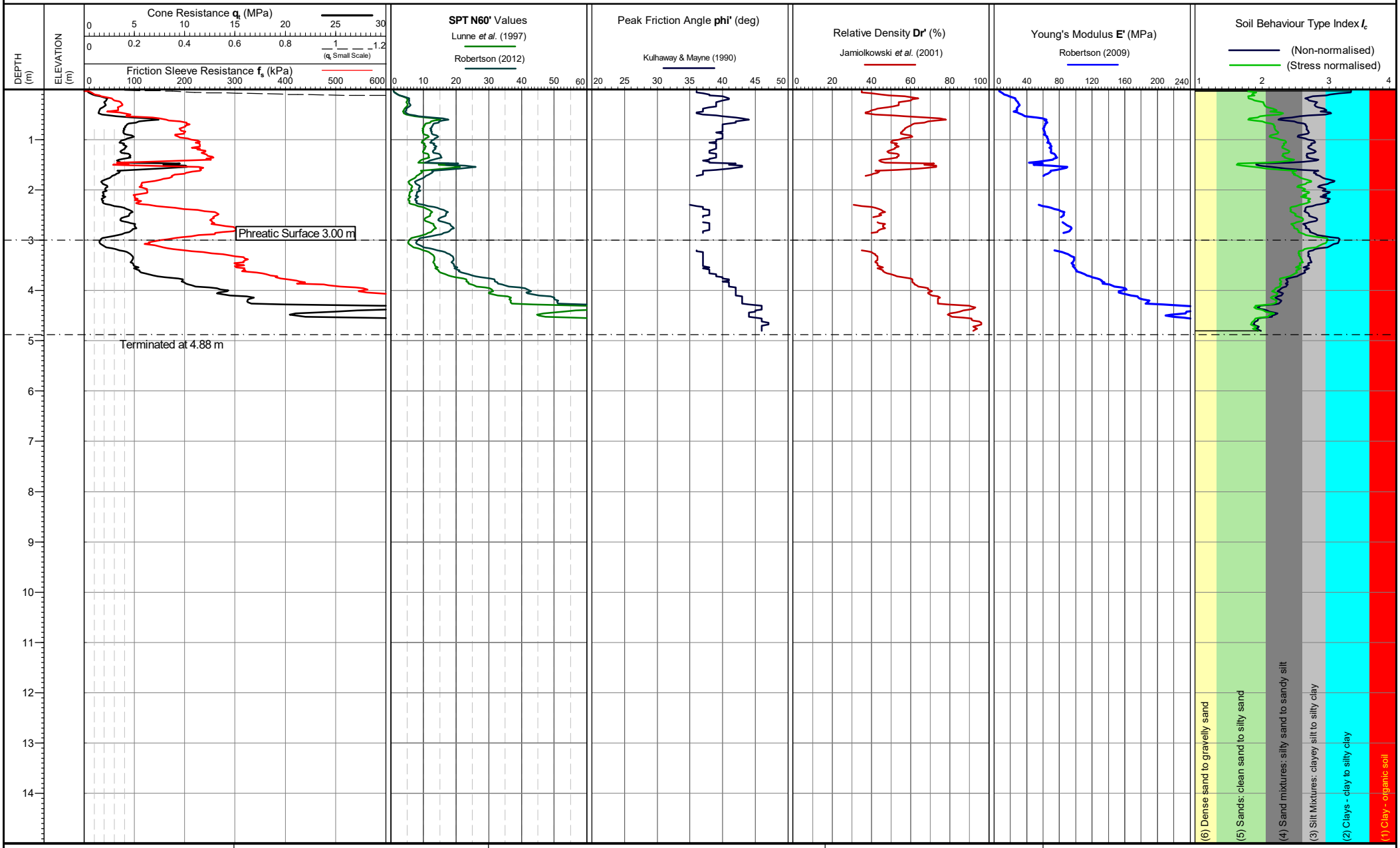
Lankelma Project Ref: P-107414-1

TEST ID: CPT109

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 09/03/2020 13:50:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player

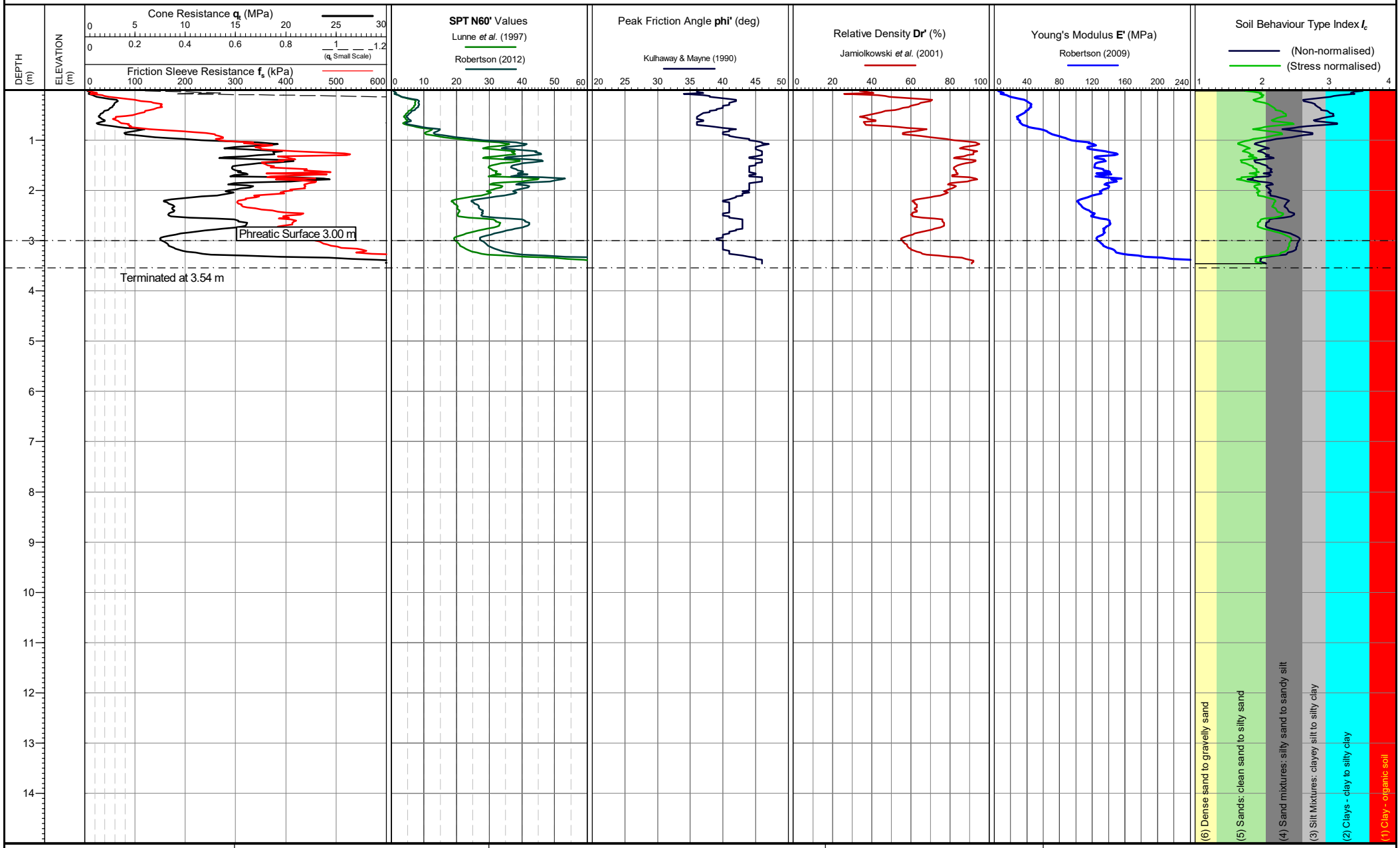
Lankelma Project Ref: P-107414-1

TEST ID: CPT110

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 09:17:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player

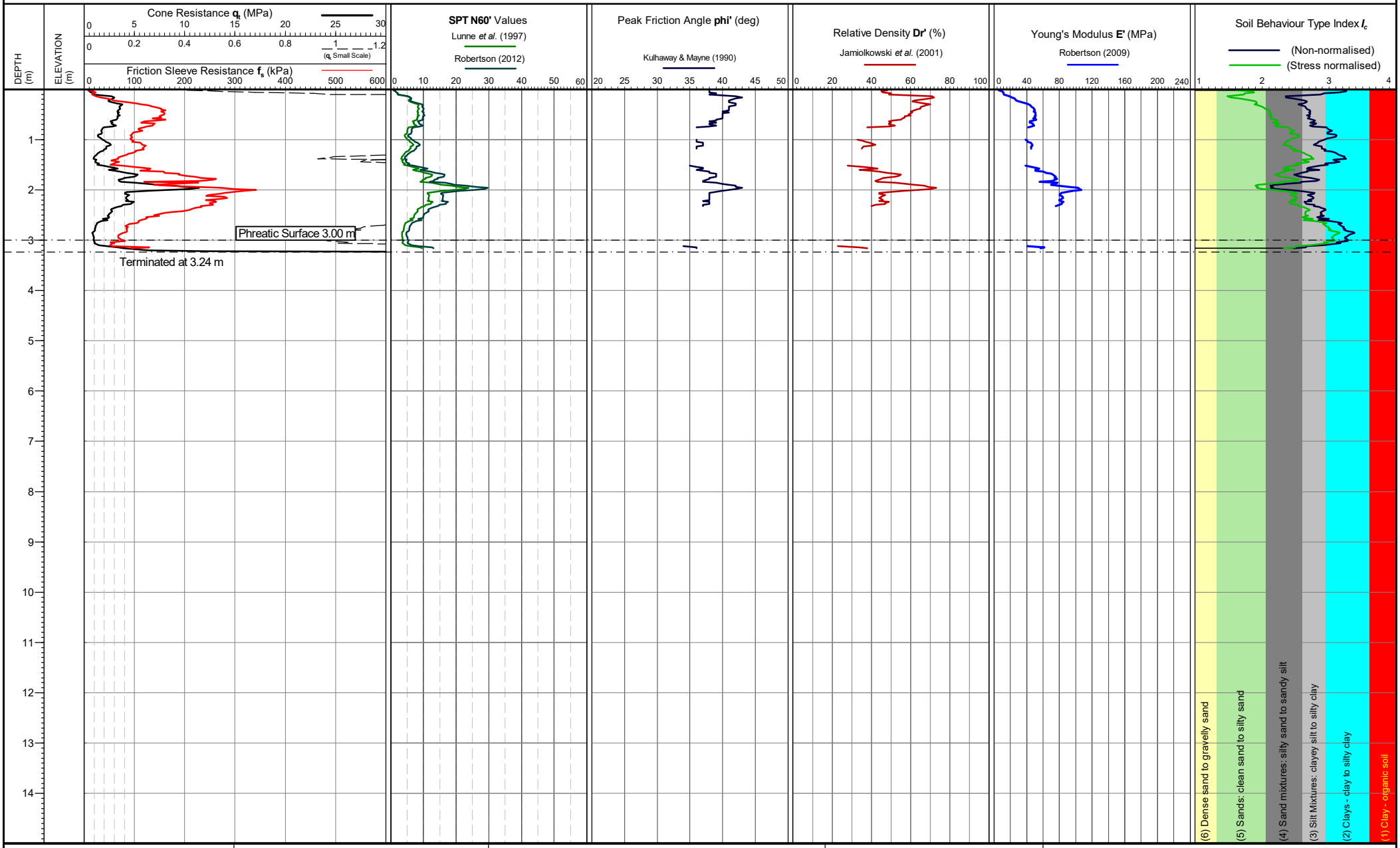
Lankelma Project Ref: P-107414-1

TEST ID: CPT111

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 09:31:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

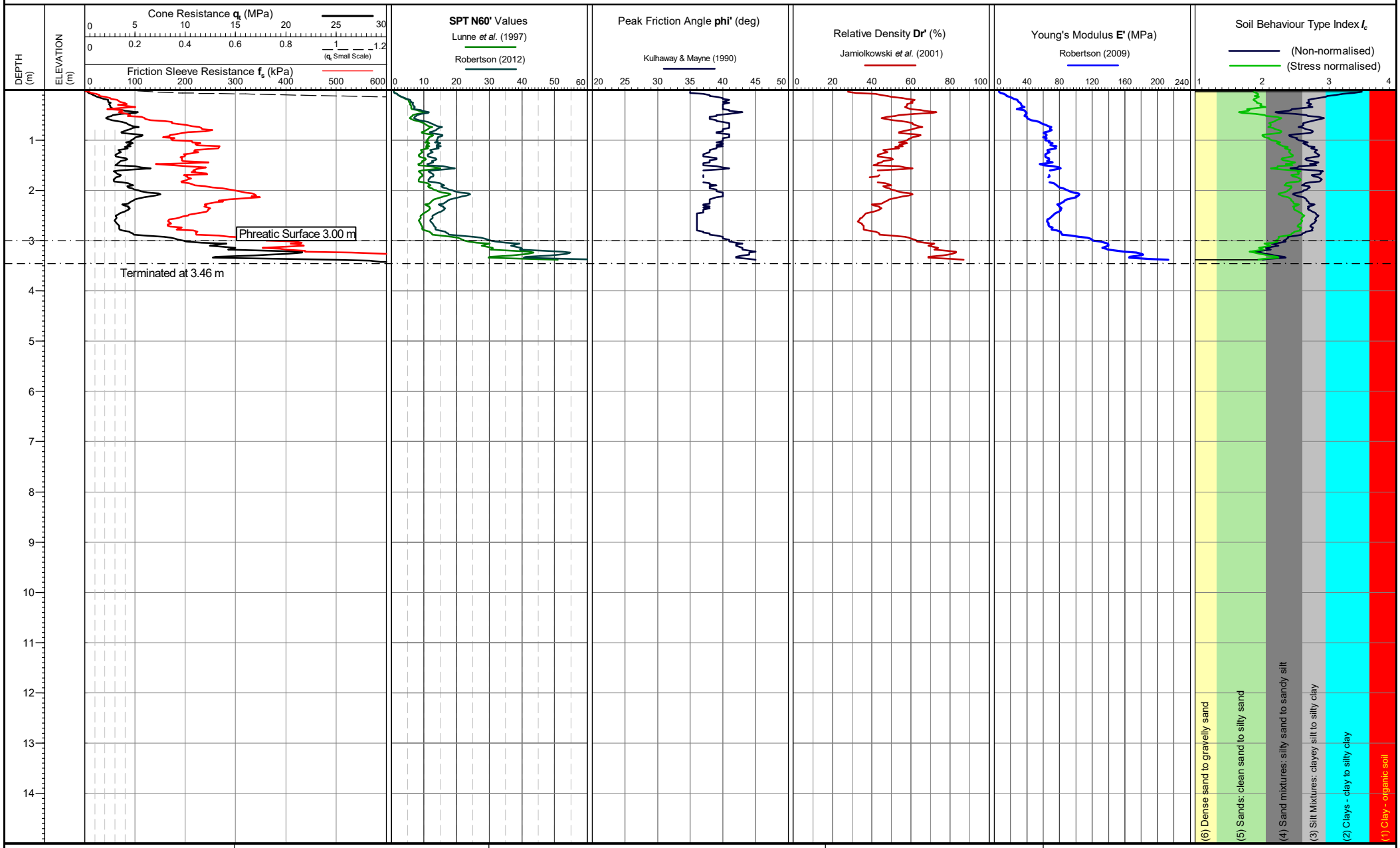
Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player
Lankelma Project Ref: P-107414-1

TEST ID: CPT112

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 09/03/2020 15:29:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

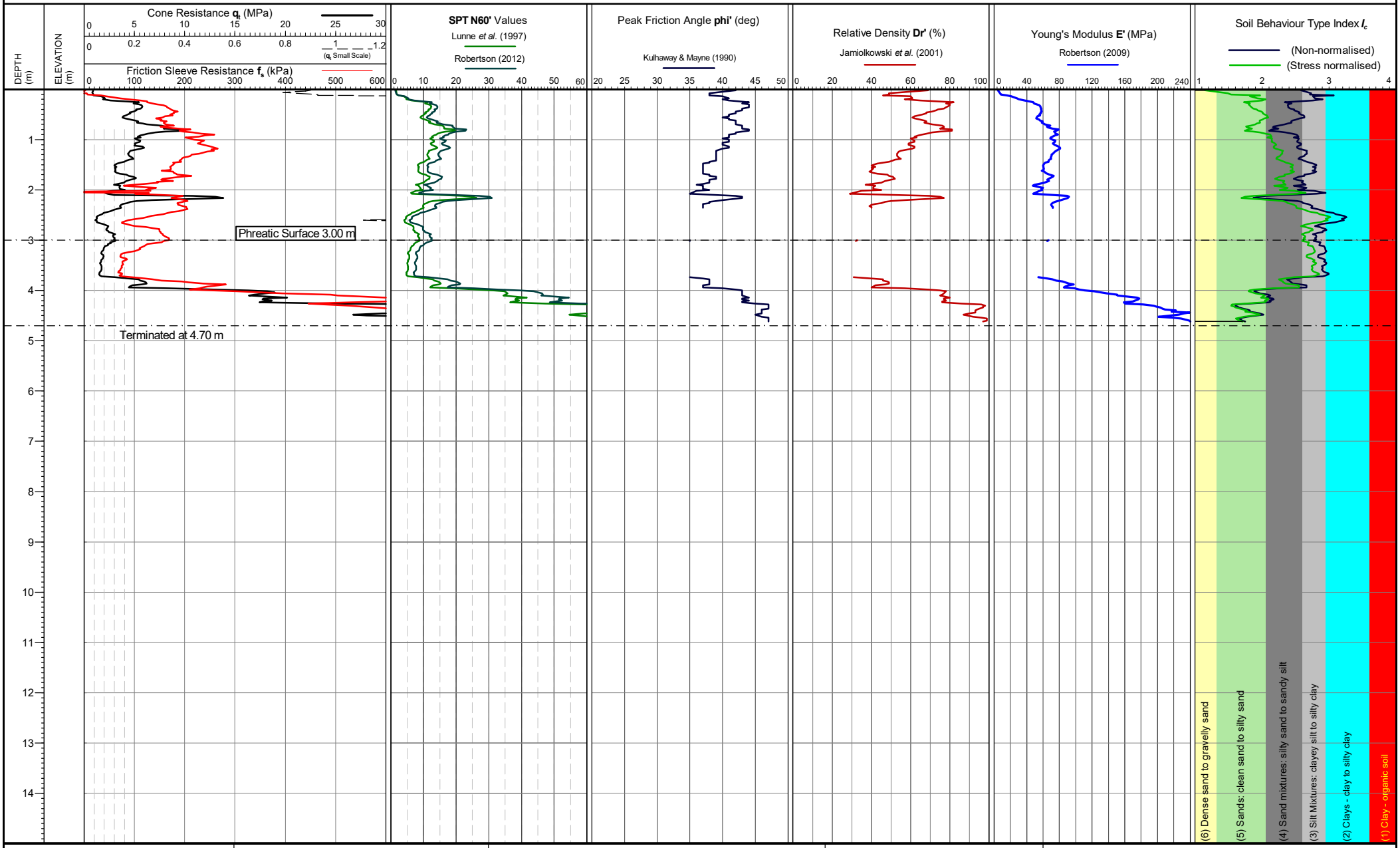
Date of plot: 11-03-20
Checked by: Chris Player
Lankelma Project Ref: P-107414-1

TEST ID: CPT113

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 09/03/2020 13:30:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player

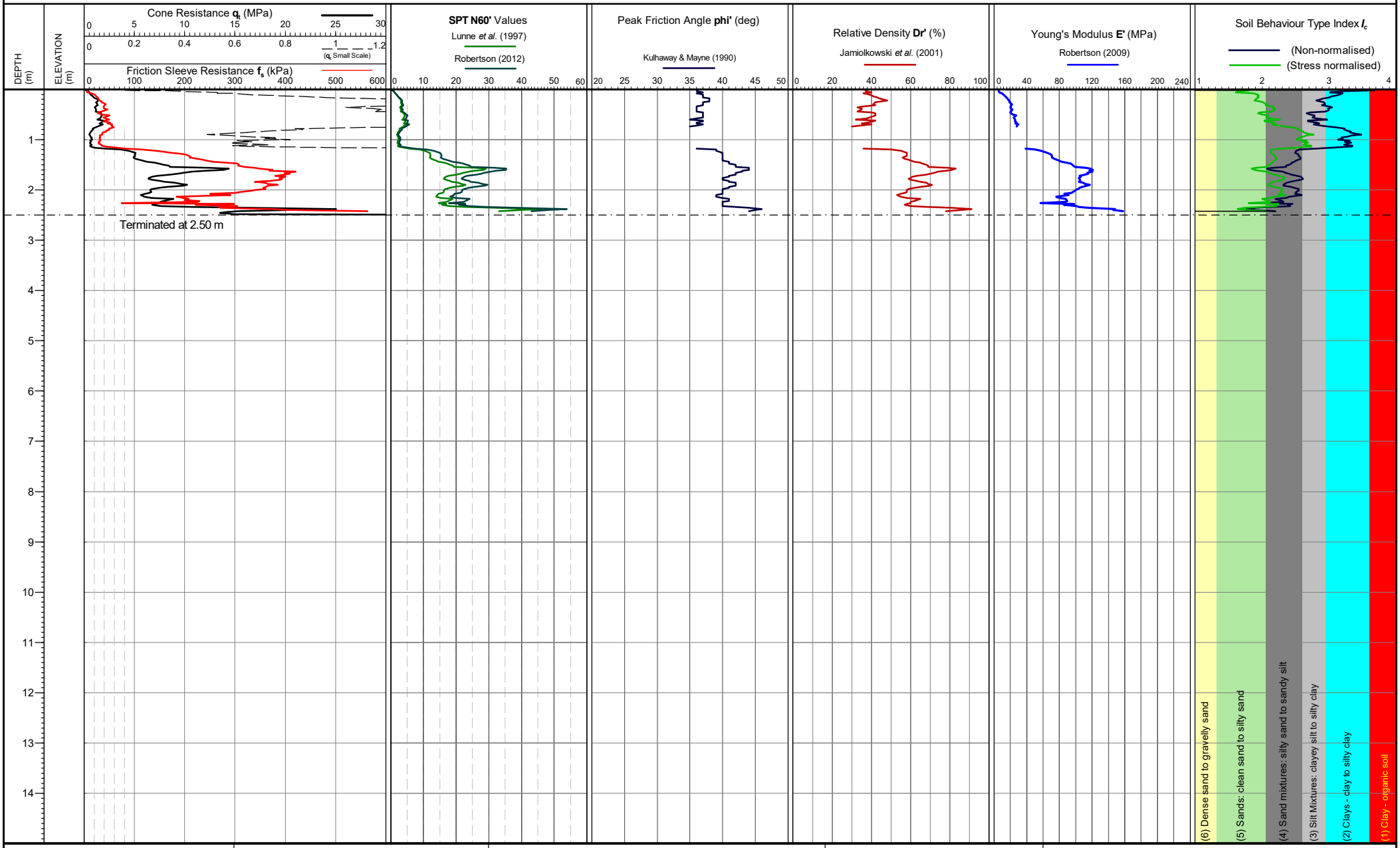
Lankelma Project Ref: P-107414-1

TEST ID: CPT114

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 13:17:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player

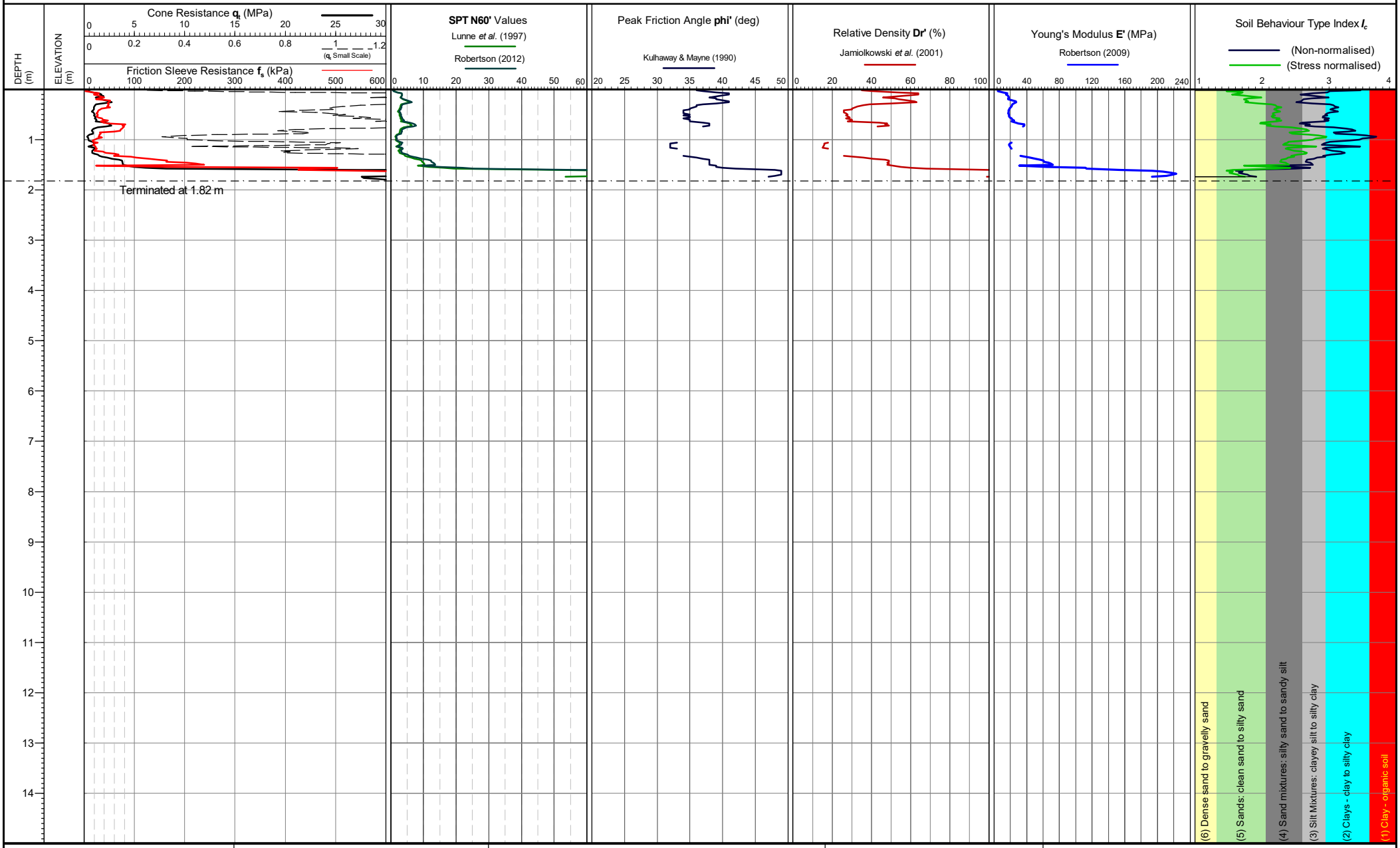
Lankelma Project Ref: P-107414-1

TEST ID: CPT115

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 13:33:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

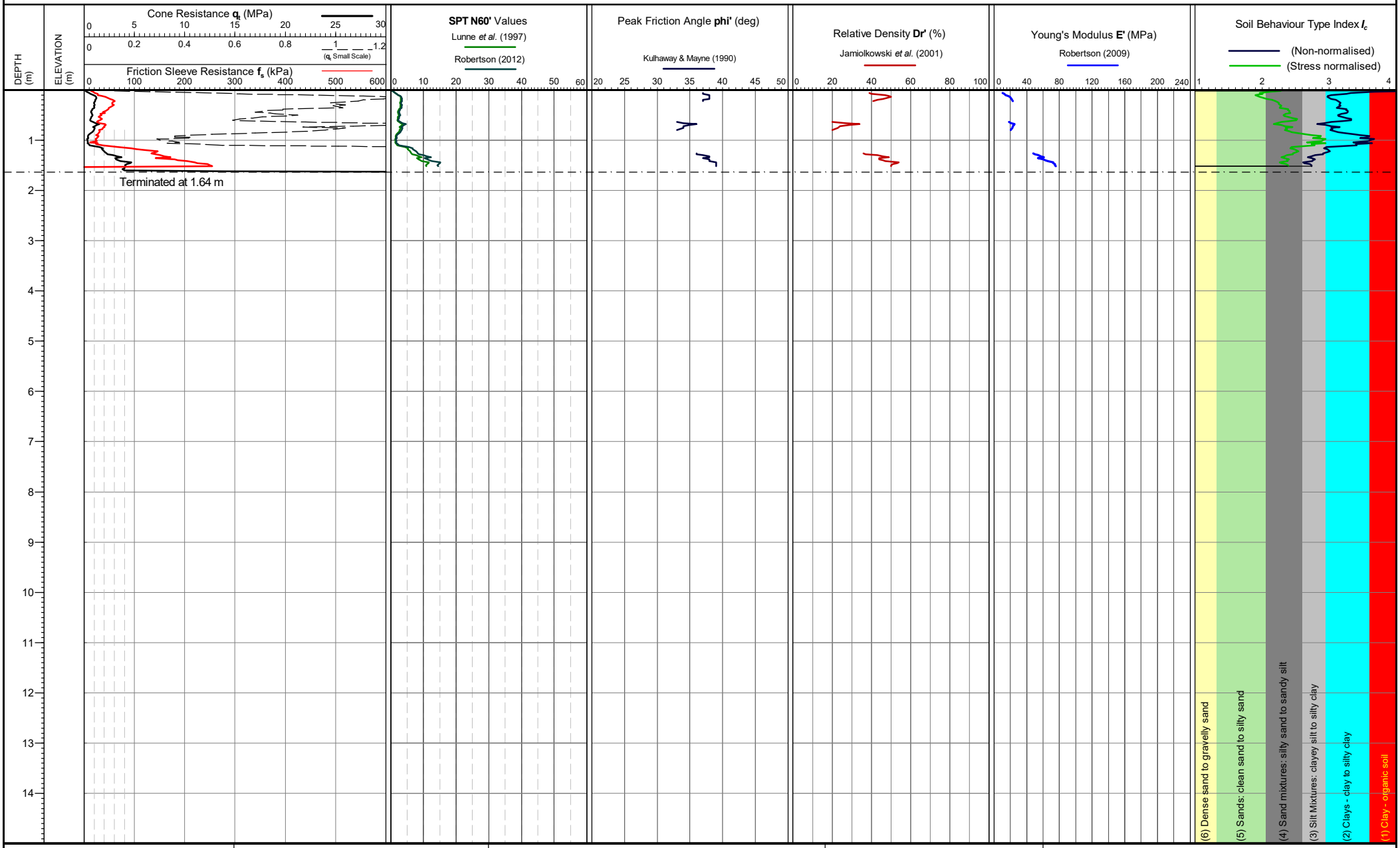
Date of plot: 11-03-20
Checked by: Chris Player
Lankelma Project Ref: P-107414-1

TEST ID: CPT116

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 13:47:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

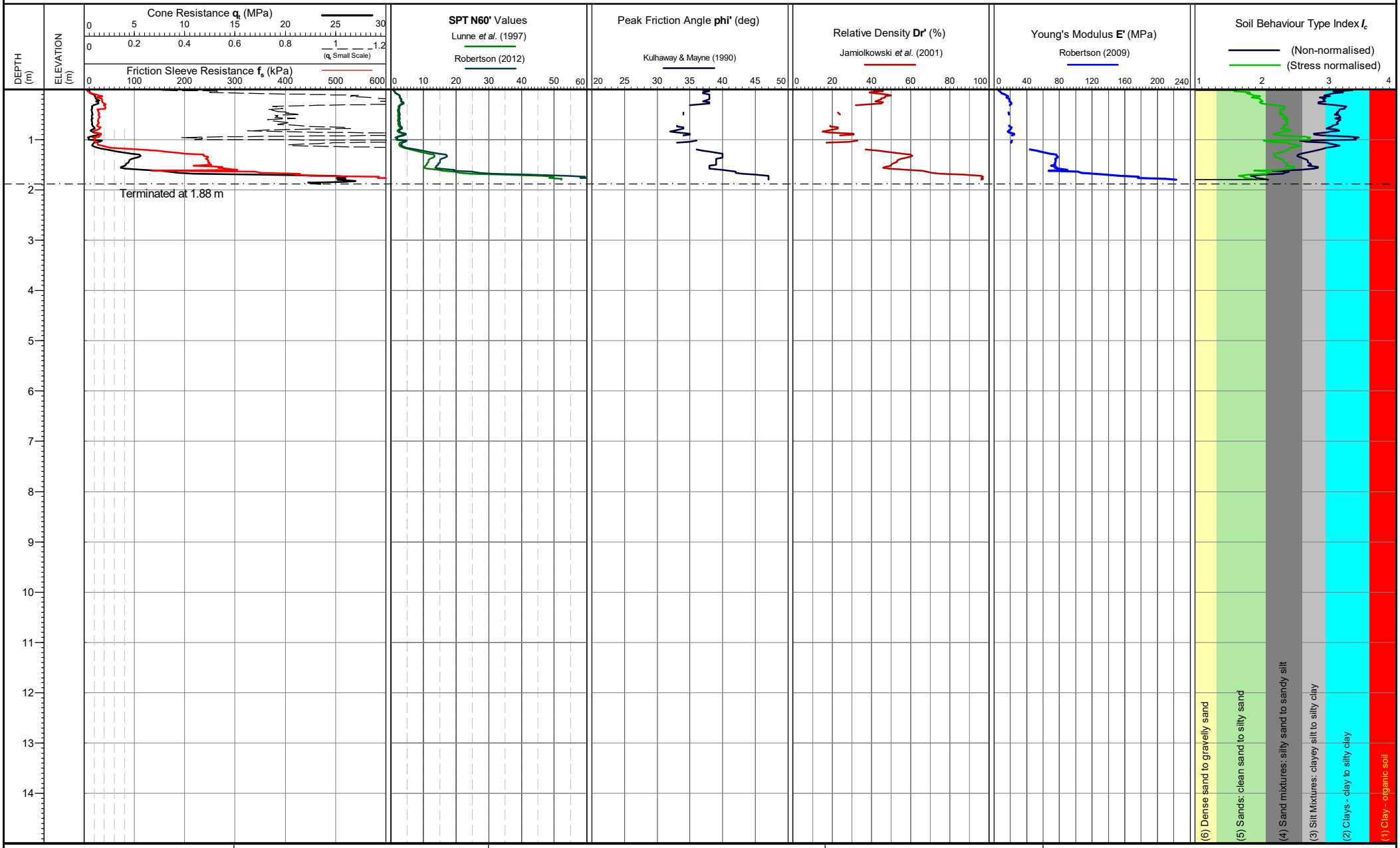
Date of plot: 11-03-20
Checked by: Chris Player
Lankelma Project Ref: P-107414-1

TEST ID: CPT116A

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 13:56:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

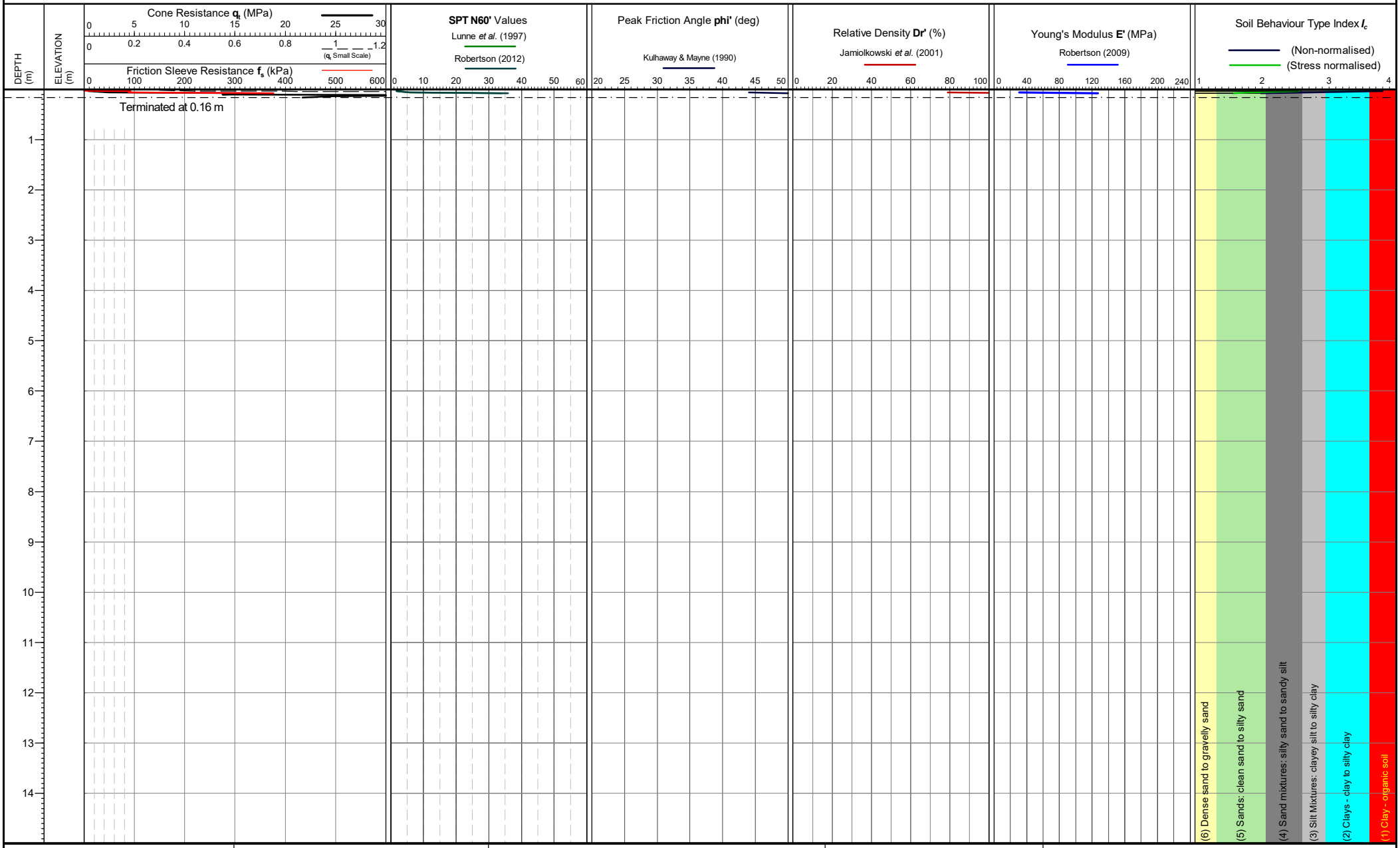
Date of plot: 11-03-20
Checked by: Chris Player
Lankelma Project Ref: P-107414-1

TEST ID: CPT116B

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 08:48:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

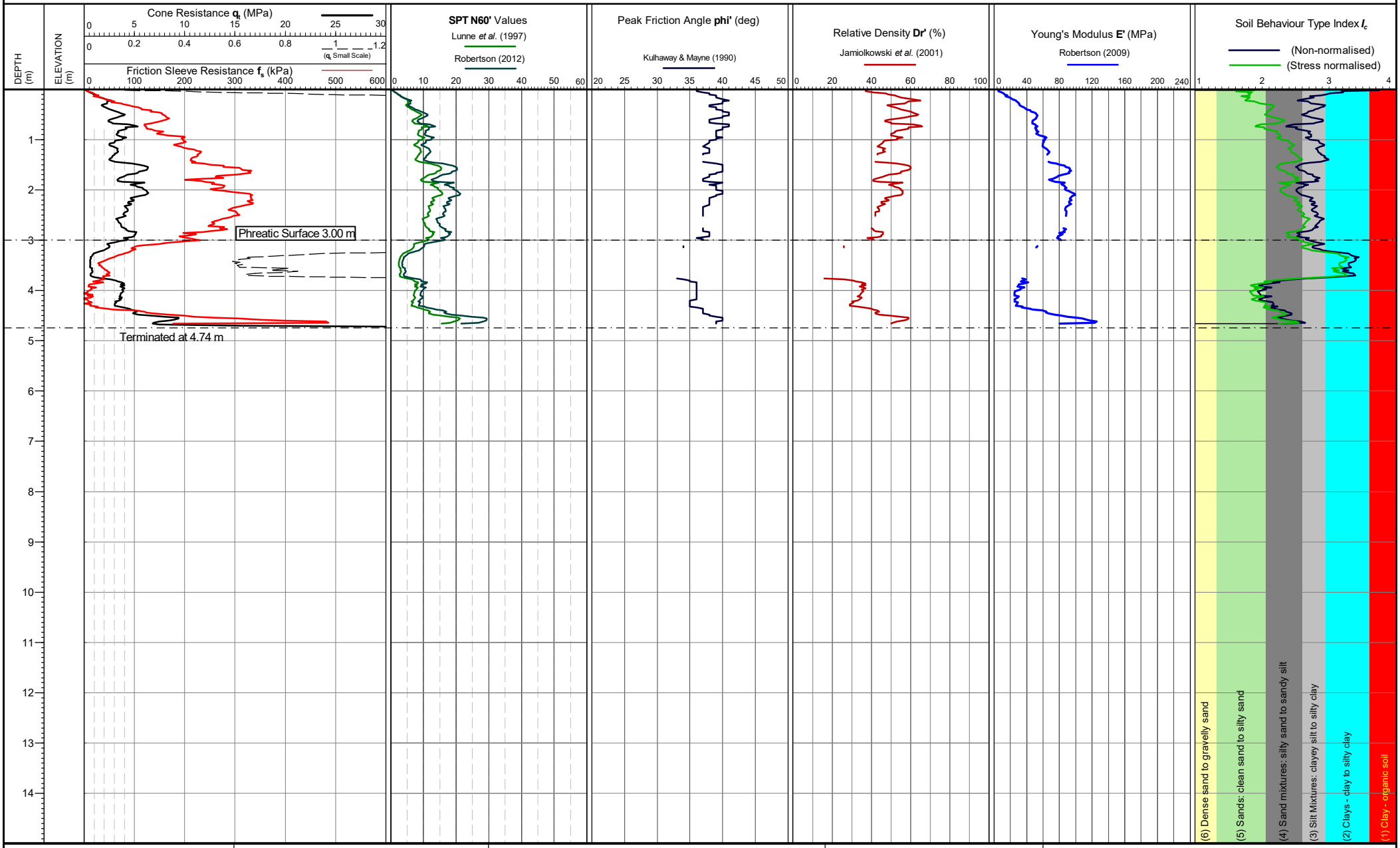
Date of plot: 11-03-20
Checked by: Chris Player
Lankelma Project Ref: P-107414-1

TEST ID: CPT117

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 09:00:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

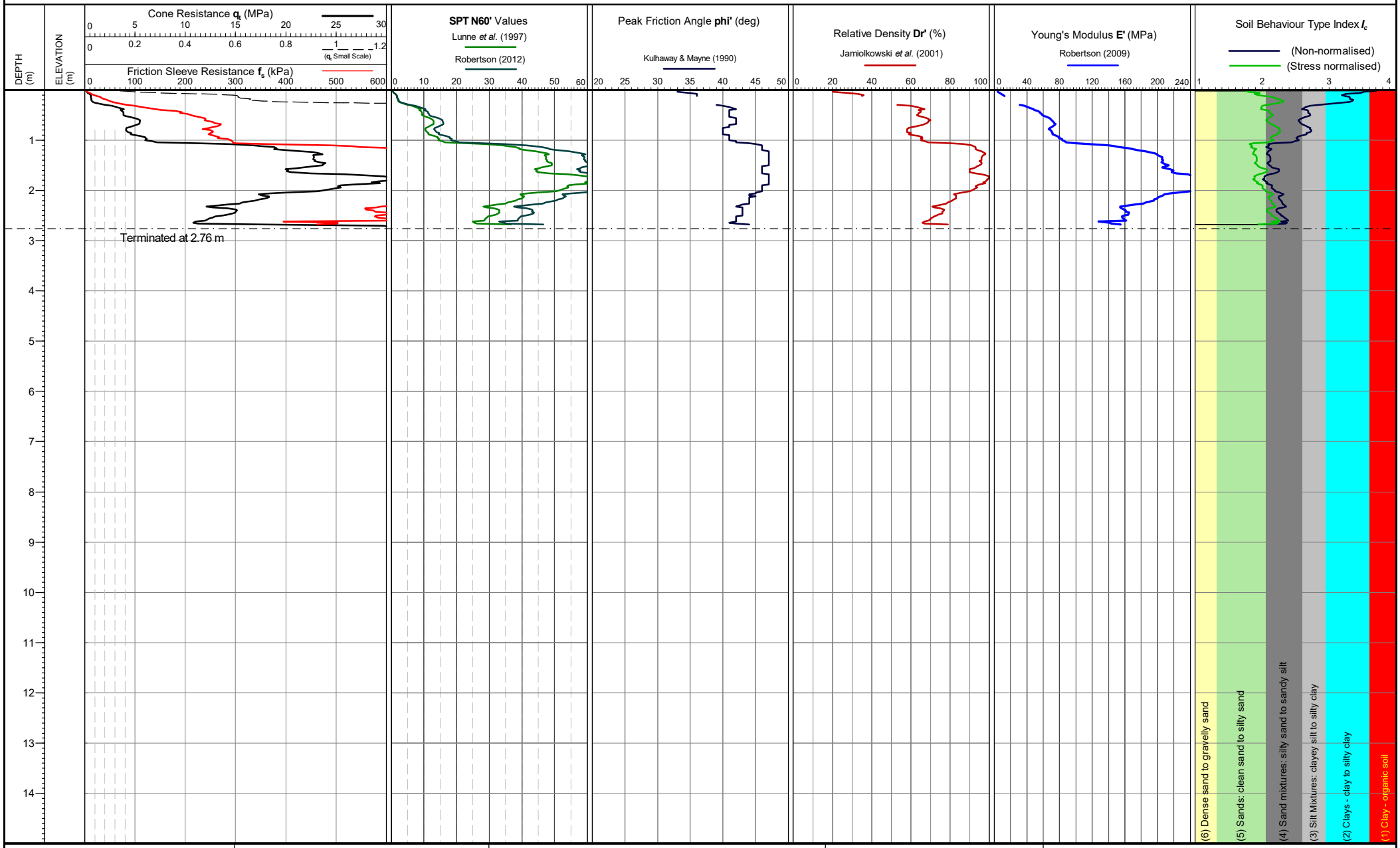
Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player
Lankelma Project Ref: P-107414-1

TEST ID: CPT117A

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 08:29:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

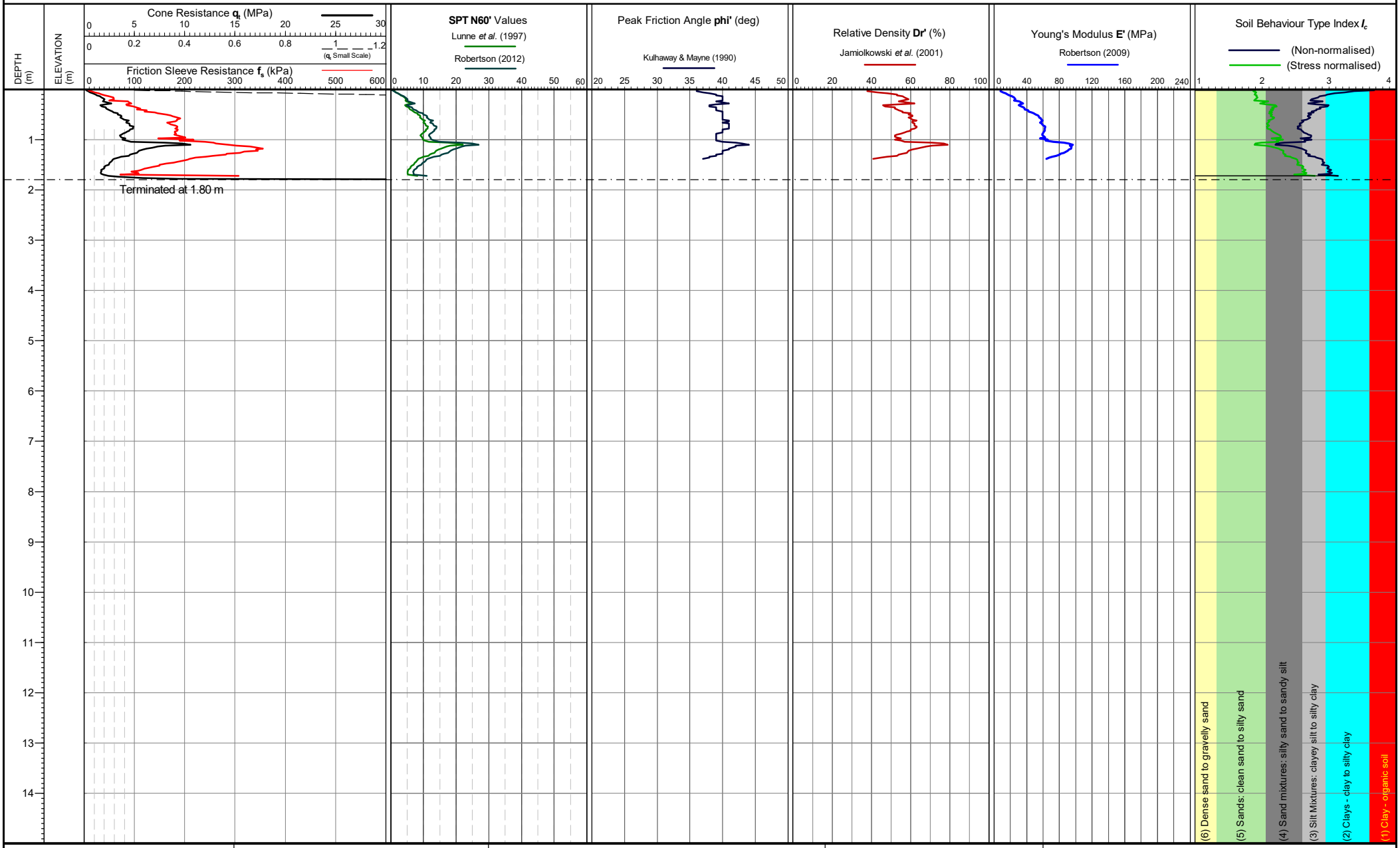
Date of plot: 11-03-20
Checked by: Chris Player
Lankelma Project Ref: P-107414-1

TEST ID: CPT118

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 08:14:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

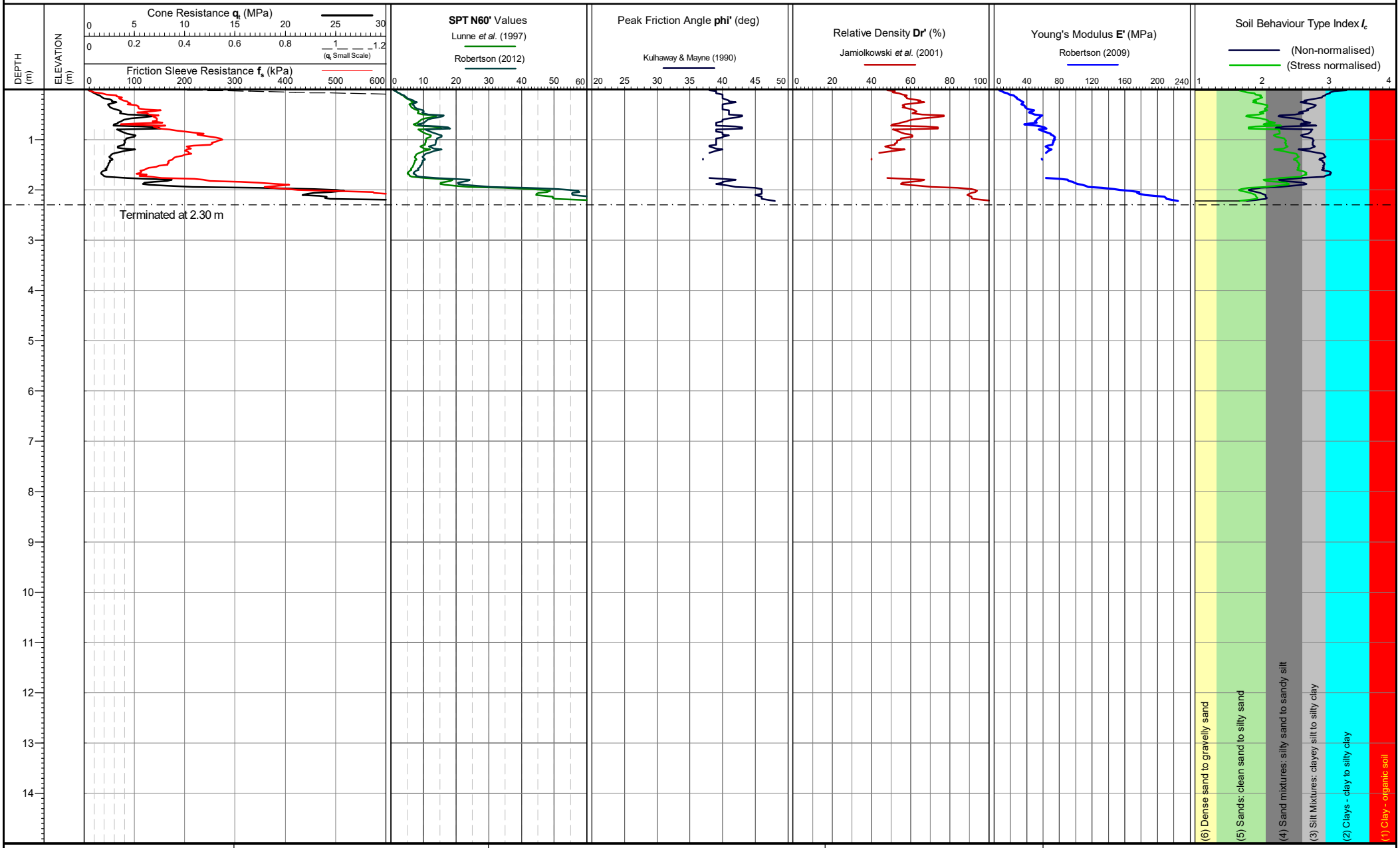
Date of plot: 11-03-20
Checked by: Chris Player
Lankelma Project Ref: P-107414-1

TEST ID: CPT119

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 11:53:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player

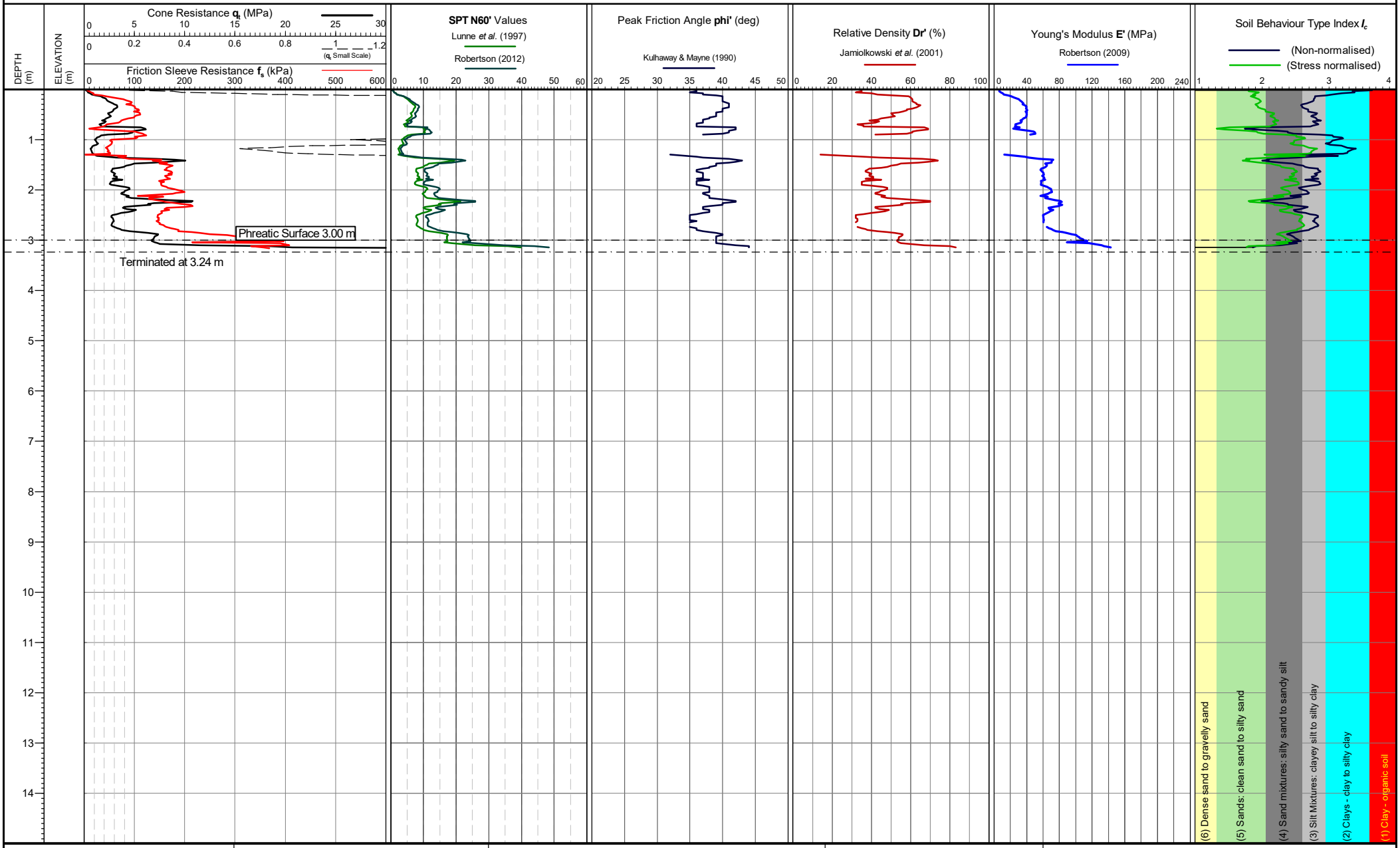
Lankelma Project Ref: P-107414-1

TEST ID: CPT119A

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 09/03/2020 16:04:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

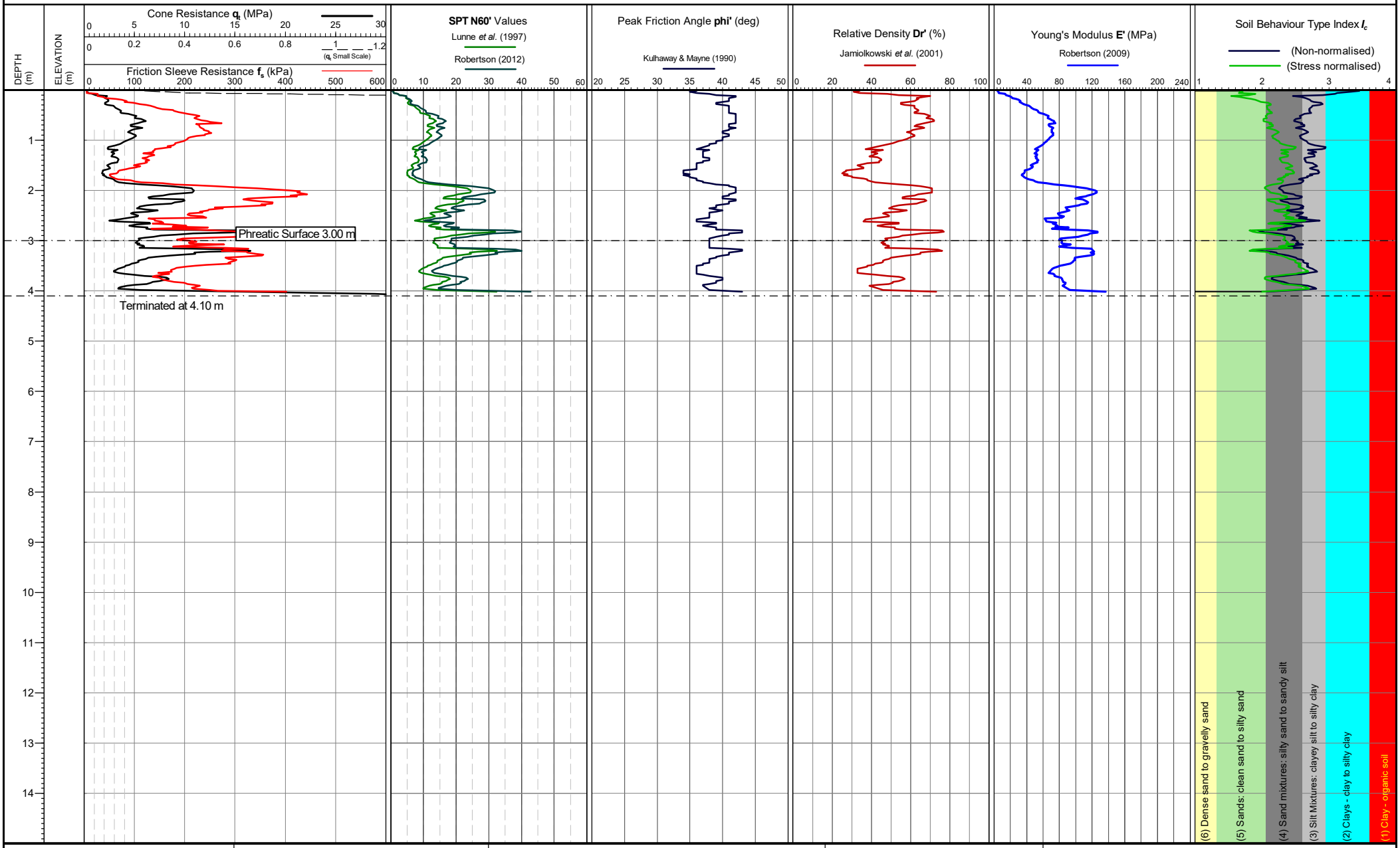
Date of plot: 11-03-20
Checked by: Chris Player
Lankelma Project Ref: P-107414-1

TEST ID: CPT120

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 09/03/2020 12:43:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

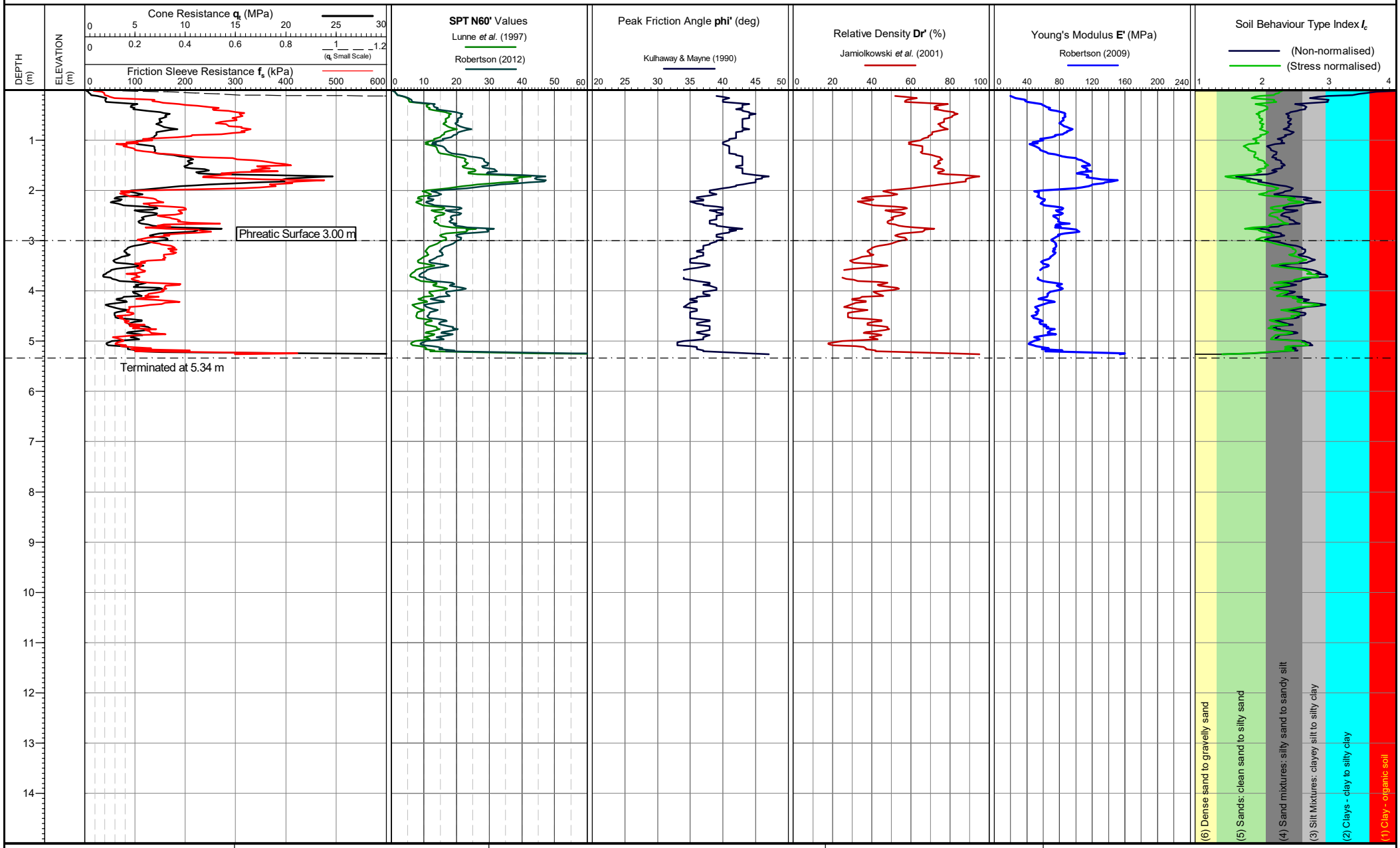
Date of plot: 11-03-20
Checked by: Chris Player

Lankelma Project Ref: P-107414-1

TEST ID: CPT121

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 09/03/2020 10:34:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player

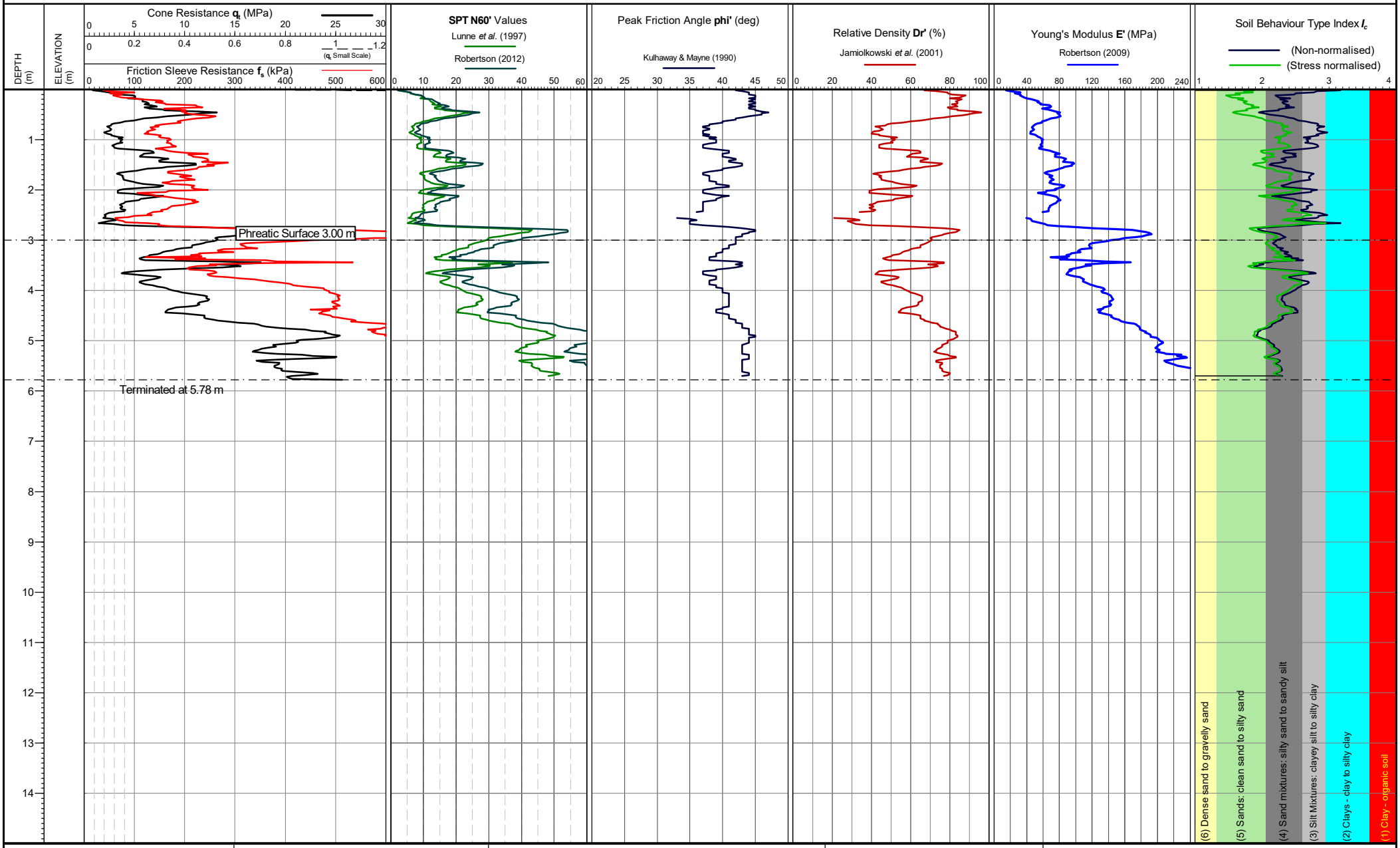
Lankelma Project Ref: P-107414-1

TEST ID: CPT122

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 09/03/2020 10:56:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player

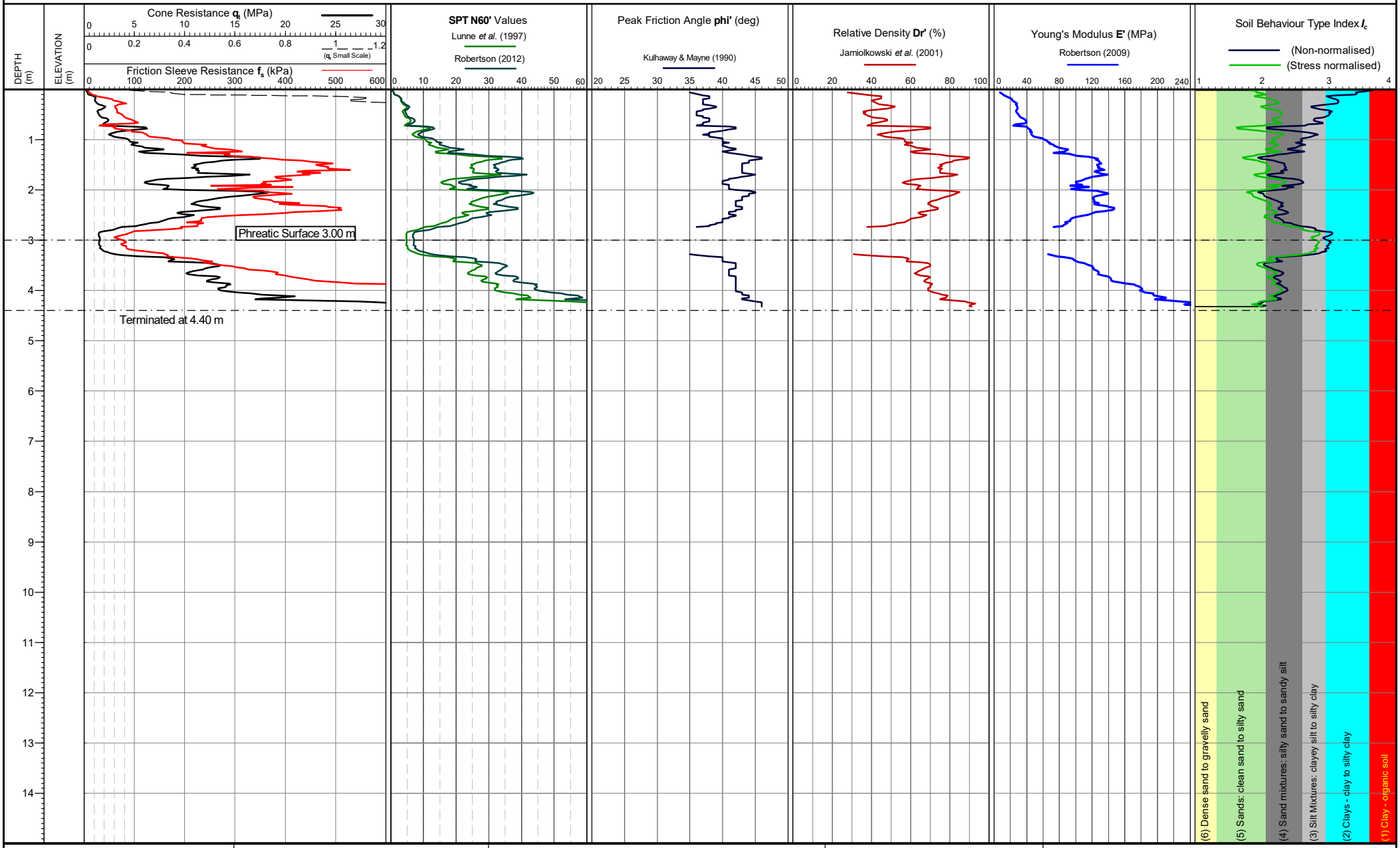
Lankelma Project Ref: P-107414-1

TEST ID: CPT123

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 09/03/2020 12:01:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player

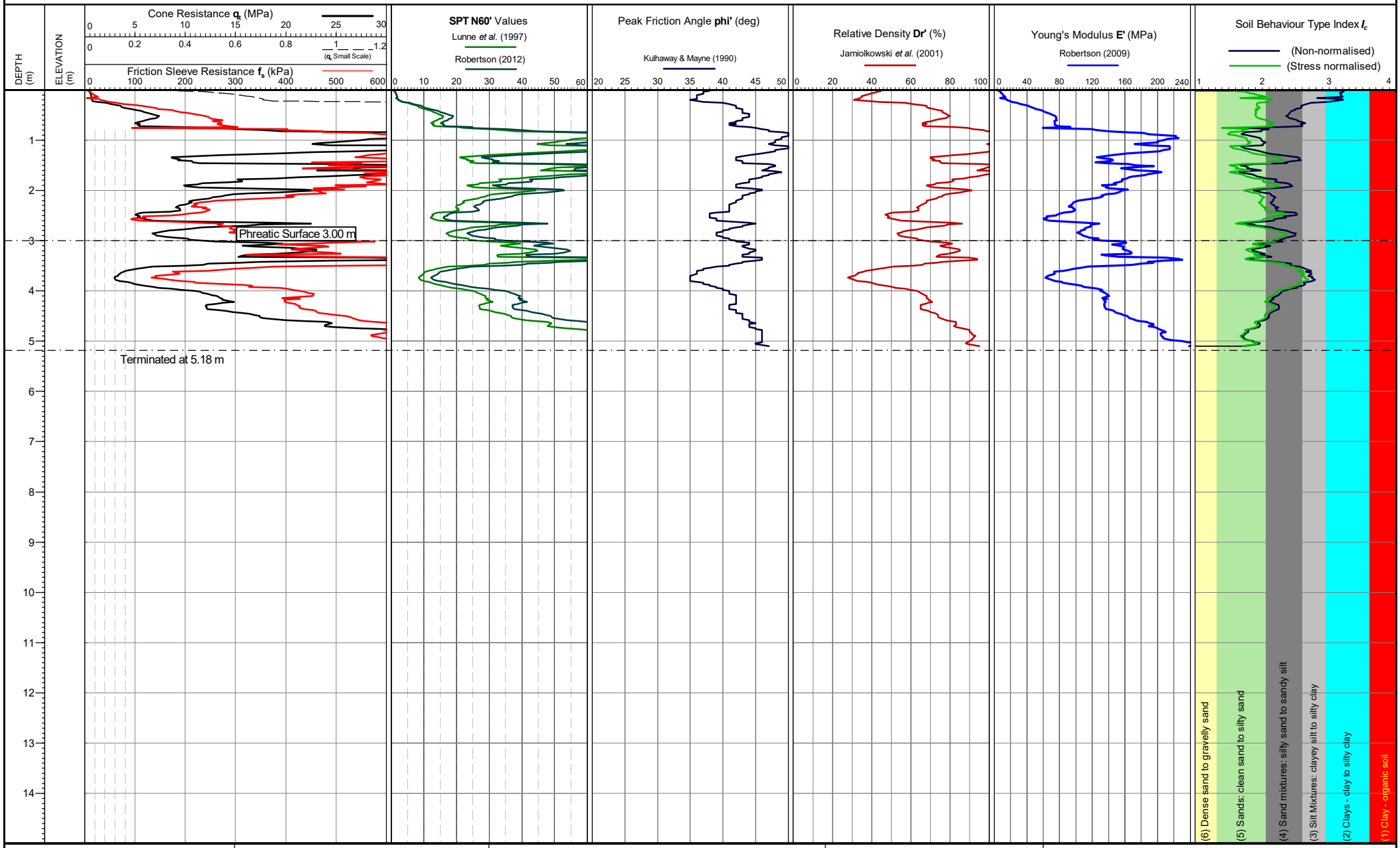
Lankelma Project Ref: P-107414-1

TEST ID: CPT124

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 09/03/2020 12:17:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player

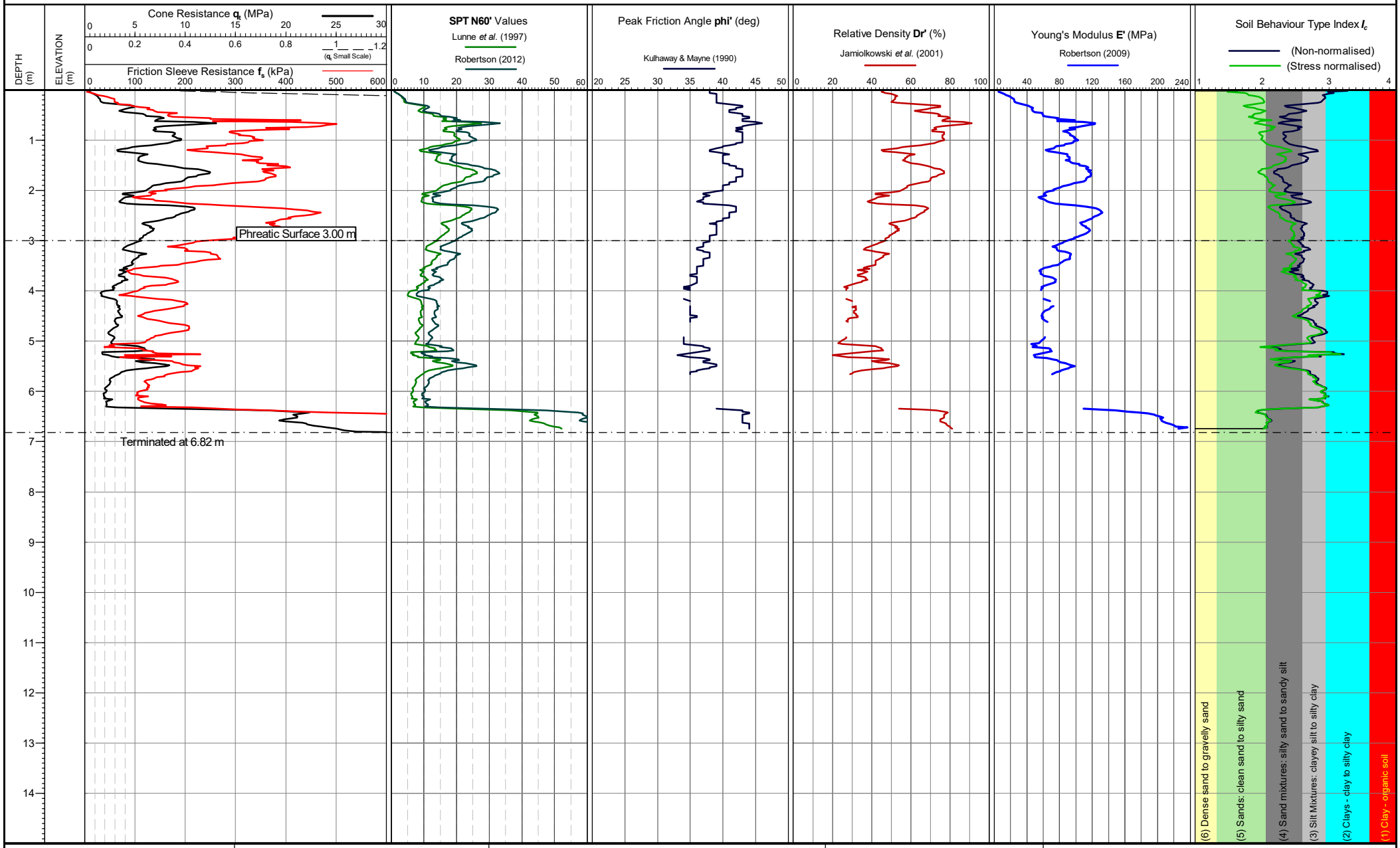
Lankelma Project Ref: P-107414-1

TEST ID: CPT125

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 09/03/2020 11:17:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

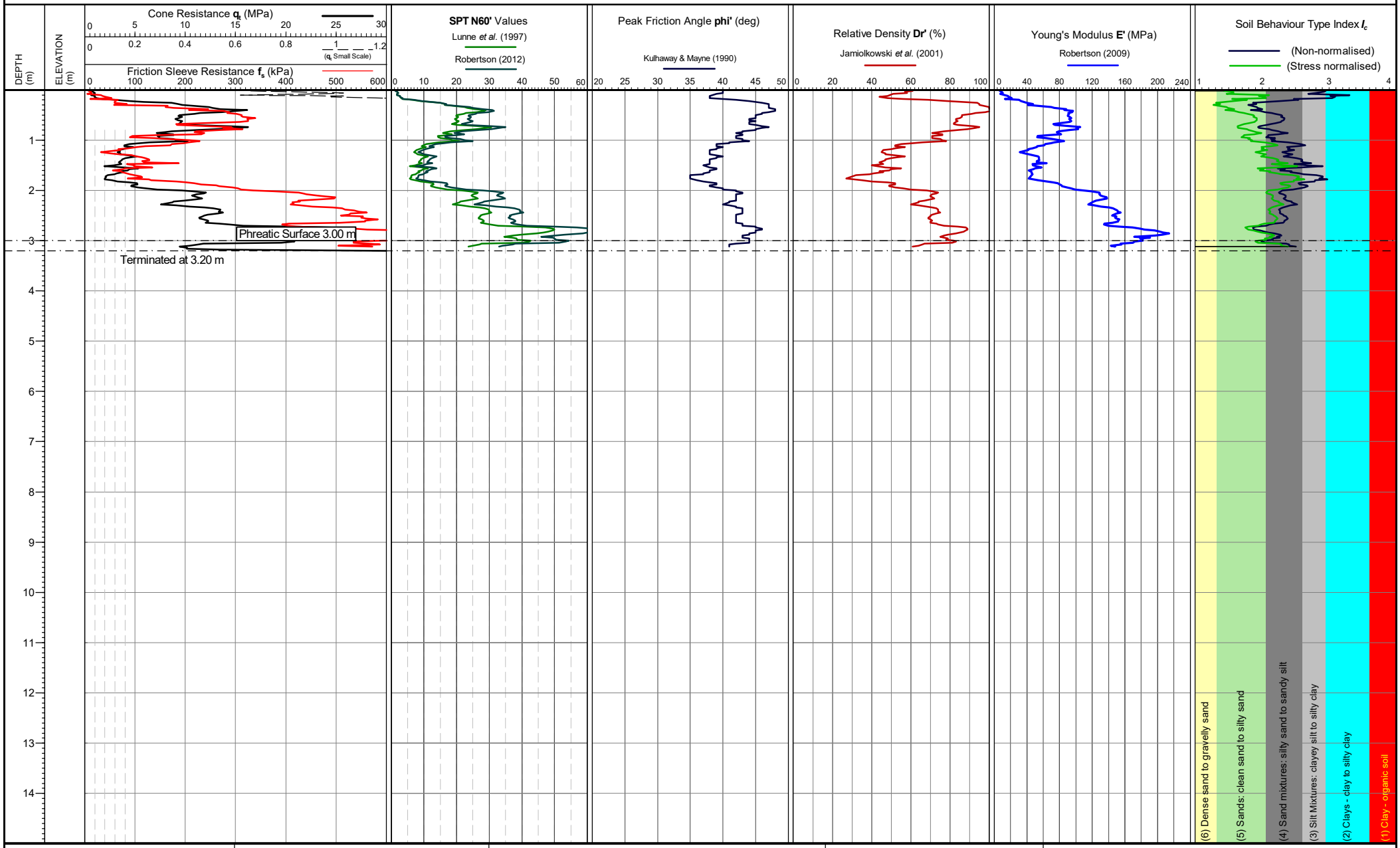
Date of plot: 11-03-20
Checked by: Chris Player

Lankelma Project Ref: P-107414-1

TEST ID: CPT126

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 09/03/2020 11:44:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player

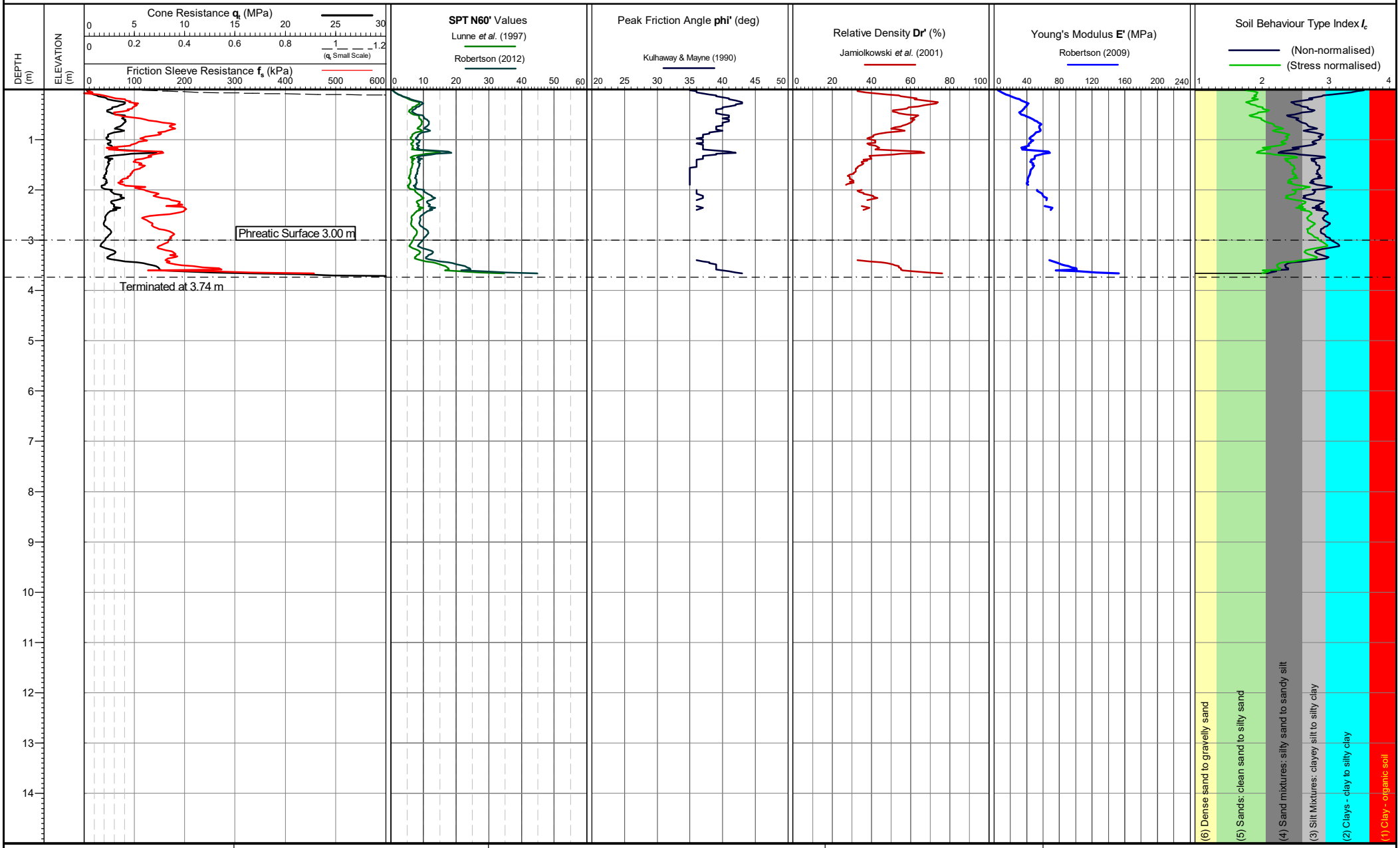
Lankelma Project Ref: P-107414-1

TEST ID: CPT127

LANKELMA

Project: SPRING PARK ROAD, GRIMETHORPE

Client: JPG



Cone area (mm2):1500
Cone ID: S15-CFIP.1841
Operator: Jamie Butterworth
Date of test: 10/03/2020 11:34:00

Location: Barnsley, UK
Coordinates: ,
Elevation:
Coordinate system:

Both drained and undrained parameters are calculated for mixed SBTs = Ic 2.40-2.70. See report section 'Drained and Undrained Behaviour' for discussion.
See report section 'Interpretive Data' for methods and discussion of parameter evaluation.

Date of plot: 11-03-20
Checked by: Chris Player

Lankelma Project Ref: P-107414-1

TEST ID: CPT128

Appendix D Geotechnical Testing Results

ALLIED EXPLORATION & GEOTECHNICS LIMITED

Head Office: Unit 25 Stella Gill Industrial Estate, Pelton Fell, Chester-le-Street, Co. Durham, DH2 2RG - Tel: 0191 3874700 Fax: 0191 3874710
Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL – Tel: 01722 735 300 Fax: 01722 735 999

LABORATORY REPORT CERTIFICATE

UKAS TESTING
1367

Contract Title:	Park Spring Road, Grimethorpe	**AEG Reference:**	4270

Client Address:
JPG (Leeds) Ltd
5 John Charles Way
Leeds
LS12 6QA

We certify that Laboratory testing was carried out on samples from the above contract in accordance with techniques outlined in BS 1377: 1990, BS EN ISO 17892:2014 or other appropriate standards as quoted. The samples were received from February 2020 and the following results, given on the attached enclosures, were obtained.

The tests carried out are indicated in the attached table showing the enclosure number and the total number of pages.

For and on behalf of Allied Exploration & Geotechnics Limited

- ☐ Nick Vater (Managing Director)
- ☐ Kevin Warriner (HSE & Quality Director)
- ☑ Michelle Selkirk (Laboratory Manager)

Signed _____ Date: 11 March 2020

Tests marked not UKAS accredited in this certificate are not included in the UKAS accreditation schedule for our laboratory. Any opinions and interpretations expressed herein are outside the scope of the laboratory's UKAS accreditation.

Please note the material was derived from samples taken outside the control of the laboratory.

LABORATORY REPORT CERTIFICATE

ENCLOSURES

Enclosure Number	Description	UKAS Accredited	Reference	No. of Pages
0	Laboratory Report Certificate	N/A		3
1	Sample Description Sheets	N/A		2
2	Moisture Content	Yes	BS 1377 Part 2 1990 (BS EN ISO 17892-1:2014)	1
2	Plasticity Index and Moisture Content	Yes	BS 1377 Part 2 1990 (BS EN ISO 17892-1:2014)	2
3	Particle Size Distribution Sieving	Yes	BS 1377 Part 2 1990	4
3	Particle Size Distribution Sedimentation	No	BS 1377 Part 2 1990	4
4	Determination of Total Sulphur, Sulphate and pH (Tested externally)	No	See DETS certificates	4
5	Determination of Dry Density/Moisture Content Relationship	Yes	BS 1377 Part 4 1990	8
6	Determination of California Bearing Ratio	Yes	BS 1377 Part 4 1990	4
7	Determination of One Dimensional Consolidation Properties	Yes	BS 1377 Part 5 1990	6
8	Shear Strength by Hand Vane	No		3
9	Undrained Shear Strength in Triaxial Cell without Pore Water Pressure Measurement	Yes	BS 1377 Part 7 1990	1

LABORATORY REPORT CERTIFICATE

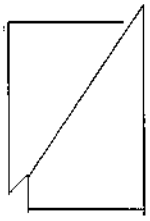
ABBREVIATIONS

All the abbreviations used on the laboratory certificates are given below:

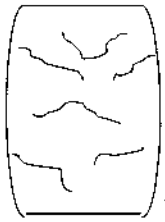
Br	Brittle	**PSD**	Particle Size Distribution by sieve analysis
C	Compound	**SB**	Shear Box
CBR	California Bearing Ratio	**SED**	Sedimentation Analysis
CDT	Consolidated Drained Triaxial	**SO4**	Sulphate (total, water extract, groundwater)
CL	Chloride content (water or soil)	**CP2**	Dry Density/Moisture Content 2.5kg rammer
US	Unsuitable sample for test	**CP4**	As above using 4.5kg rammer
UUT	Undrained Unconsolidated Triaxial	**CPV**	As above using vibrating hammer
HSV	Vane Test	**CUT**	Consolidated Undrained Triaxial
IS	Insufficient sample for test	**R**	Remoulded
LOI	Loss On Ignition	**U**	Undisturbed
M	Multi-stage testing	**MC**	Moisture Content
MCV	Moisture Content Value	**PL**	Point Load
NAT	Natural preparation method	**NMC**	Natural (or as received) moisture content
P	Plastic	**PFH**	Permeability Falling Head Method
OED	Oedometer	**PTXL**	Permeability in Triaxial Cell
OMC	Optimum Moisture Content	**ORG**	Organic content
B	Large disturbed (bulk) sample	**PD**	Particle Density (SG)
J	Small disturbed (jar) sample	**PI**	Liquid limit, plastic limit and plasticity index

Typical Mode of Failure for Triaxial Testing

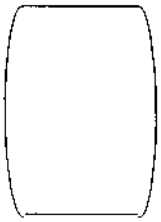
Brittle



Compound



Plastic



ALLIED EXPLORATION & GEOTECHNICS LIMITED

Head Office: Unit 25 Stella Gill Industrial Estate, Pelton Fell, Chester-le-Street, Co. Durham, DH2 2RG - Tel: 0191 387 4700 Fax: 0191 387 4710
Regional Office: Unit 20, Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL - Tel: 01772 735 300 Fax: 01772 735 999

LABORATORY SAMPLE DESCRIPTION SHEET

Exploratory Hole No.	Sample Depth (m)	ID	Description	Laboratory Tests/Remarks
BH101	0.70	B3	Brown slightly sandy slightly gravelly CLAY. Gravel of weathered mudstone.	PSD SED
BH101	2.40	B9	Grey slightly sandy gravelly CLAY of intermediate plasticity. Gravel of mudstone.	MC PI BRE CP2 CBR
BH101	2.50	U10	Extremely low strength grey slightly sandy slightly gravelly CLAY.	HSV UUT
BH101	5.50	J22	Grey GRAVEL of weathered mudstone.	MC PI(IS for LL)
BH102	0.70	B3	Brown slightly sandy slightly gravelly CLAY of intermediate plasticity. Gravel of mudstone.	MC PI BRE CP4 CBR
BH102	1.50	J6	Brown organic slightly sandy CLAY.	MC PI(IS for LL) BRE
BH102	1.50	B7	Brown slightly sandy slightly gravelly CLAY of intermediate plasticity. Gravel of mudstone.	MC PI BRE CP4
BH102	3.30	J12	Brown slightly sandy GRAVEL of weathered mudstone.	BRE
BH103	3.50	U13	Very low strength brown sandy slightly gravelly CLAY of low plasticity.	MC PI HSV IS for UUT
BH104	0.70	B3	Brown slightly sandy slightly gravelly CLAY.	PSD SED
BH104	1.50	J6	Friable grey gravelly CLAY. Gravel of mudstone.	BRE
BH104	1.50	B7	Brown slightly sandy slightly gravelly CLAY.	CP2 CBR
BH104	2.40	J8	Friable brown slightly sandy gravelly CLAY/GRAVEL of mudstone.	MC PI(IS for LL) BRE
BH104	2.40	B9	Brown slightly sandy slightly gravelly CLAY. Gravel of mudstone.	CP2
BH104	3.30	J12	Brown GRAVEL of mudstone.	BRE
BH105	2.50	U11	Low strength grey slightly sandy gravelly CLAY. Gravel of mudstone.	HSV UUT
BH105	4.50	U17	Low strength brown with grey mottling slightly sandy slightly gravelly CLAY.	OED HSV UUT
BH106	1.50	B7	Grey slightly sandy slightly gravelly CLAY. Gravel of mudstone.	MC PSD SED BRE CP2 CBR
BH106	2.50	U10	Low strength grey slightly sandy slightly gravelly CLAY. Gravel of mudstone.	OED HSV IS for UUT
BH107	1.50	B6	Brown slightly sandy slightly gravelly CLAY. Gravel of mudstone.	MC PSD SED CP4
BH107	2.50	U9	Very low strength grey slightly sandy slightly gravelly CLAY of low plasticity.	MC PI OED HSV UUT

Contract Title :-	Client :-
Park Spring Road. Grimethorpe	JPG (leeds) Ltd

Signed :-	Name :-	Page 1 of 2	
Date of issue :- 11/03/2020	Certificate No :- SD/4270/1	AEG Contract No. :- 4270	UKAS TESTING 1367

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LABORATORY SAMPLE DESCRIPTION SHEET

Exploratory Hole No.	Sample Depth (m)	ID	Description	Laboratory Tests/Remarks
BH107	3.40	J12	Brown slightly sandy slightly gravelly CLAY of intermediate plasticity. Gravel of mudstone.	MC PI
BH107	3.50	B14	Brown slightly sandy slightly gravelly CLAY.	MC CP4
BH107	4.20	J15	Brown slightly sandy gravelly CLAY.	BRE
RO109	9.00	J3	Brown friable slightly sandy slightly gravelly CLAY. Gravel of mudstone.	BRE
TP110	2.30	J	Brown slightly sandy gravelly CLAY of intermediate plasticity. Gravel of mudstone.	MC PI
TP120	3.50	J	Brown slightly sandy gravelly CLAY with occasional pockets of peat.	MC PI(IS for LL)
TP123	2.30	J	Brown with orange mottling slightly organic slightly sandy CLAY of very high plasticity with occasional pockets of peat.	MC PI

Contract Title :-	Client :-
Park Spring Road. Grimethorpe	JPG (leeds) Ltd

Signed :- msone	Name :-		Page 2 of 2
Date of issue :- 11/03/2020	Certificate No :- SD/4270/2	AEG Contract No. :- 4270	UKAS TESTING 1367

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MOISTURE CONTENT CERTIFICATE

BS 1377 : Part 2 : Clause 3.2

Exploratory Hole No.	Sample Depth (m)	Sample ID	Specific Depth (m)	Moisture Content (%)	Date Tested	Remarks
BH106	2.50	U10	2.50	15.3	27/02/2020	
BH107	1.50	B6	1.50	18.4	27/02/2020	
BH107	3.50	B14	3.50	16.9	02/03/2020	

For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-	Client :-
Park Spring Road. Grimethorpe	JPG (leeds) Ltd

Signed :-	Name :-	Page 1 of 1
Date of issue :- 11/03/2020	Certificate No :- MC/4270/1	AEG Contract No. :- 4270

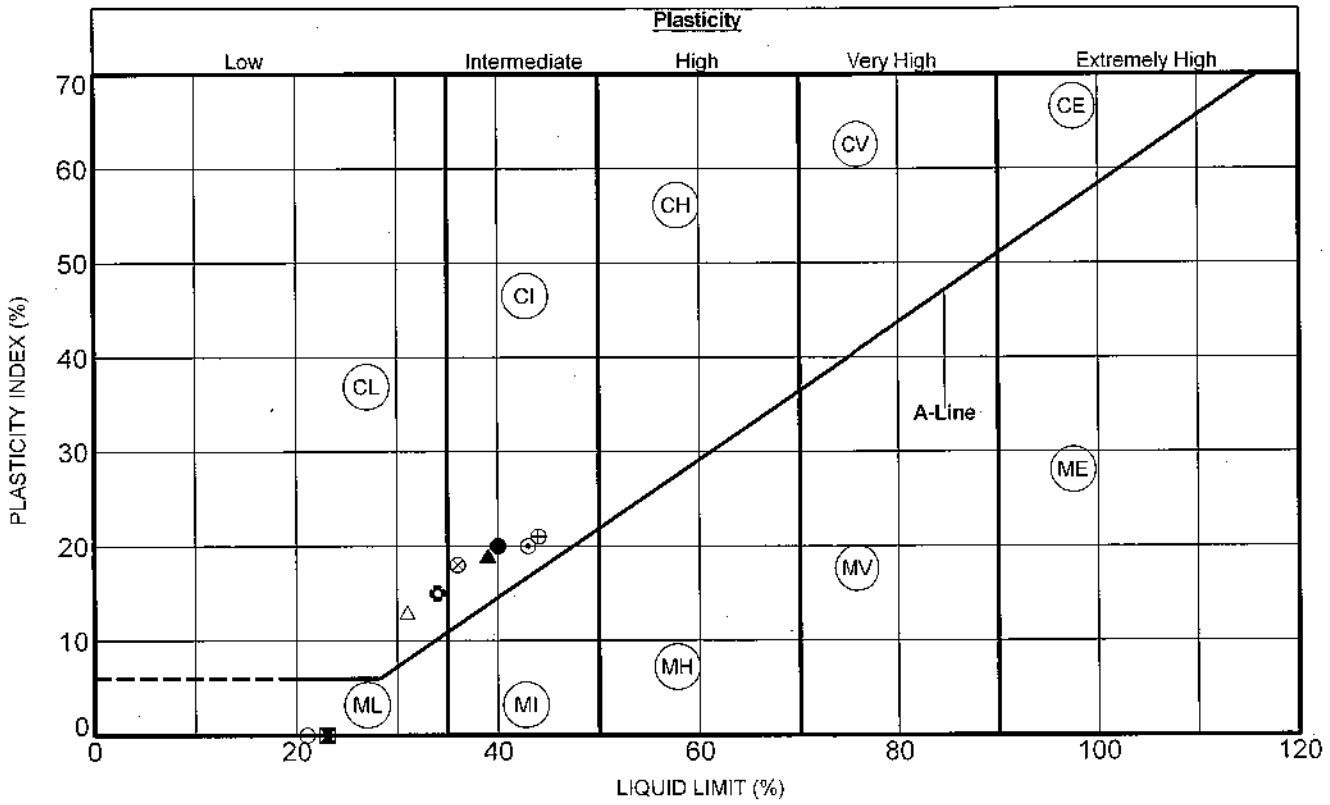
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ATTERBERG LIMITS & NATURAL MOISTURE CONTENT

Test Method :- BS 1377 : Part 2 : Clause 3.2, 4.1 to 4.4 & 5 : 1990



Exploratory Hole No.	Depth (m)	Sample Type/Ref.	Specific Depth (m)	LL	PL	PI	I_L	Preparation Method	<0.425mm (%)	m/c (%)	Date Tested	
●BH101	2.40	B9	2.40	40	20	20	-0.27	Air Dried	21.0	14.6	27/02/2020	
⊠BH101	5.50	J22	5.50		23			Air Dried	37.0	7.4	27/02/2020	
▲BH102	0.70	B3	0.70	39	20	19	0.01	Natural		20.1	27/02/2020	#
★BH102	1.50	J6	1.50		23			Natural		22.0	27/02/2020	
⊙BH102	1.50	B7	1.50	43	23	20	0.07	Natural		24.3	27/02/2020	#
✿BH103	3.50	U13	3.50	34	19	15	0.30	Natural		23.5	27/02/2020	
○BH104	2.40	J8	2.40		21			Air Dried	39.0	11.6	27/02/2020	
△BH107	2.50	U9	2.50	31	18	13	0.02	Natural		18.2	27/02/2020	
⊗BH107	3.40	J12	3.40	36	18	18	-0.06	Air Dried	33.0	17.0	27/02/2020	
⊕TP110	2.30	J	2.30	44	23	21	-0.19	Natural		19.1	27/02/2020	

For description of sample please refer to the Laboratory Sample Description Sheet. # = Insufficient for 4 point PI
If sample is prepared in the natural state we are unable to determine % retained on the 0.425mm test sieve.

Contract Title :-	Client :-
Park Spring Road. Grimethorpe	JPG (leeds) Ltd

Signed :-	Name :-	Page 1 of 2
Date of issue :- 11/03/2020	Certificate No :- PI/4270/1	AEG Contract No. :- 4270

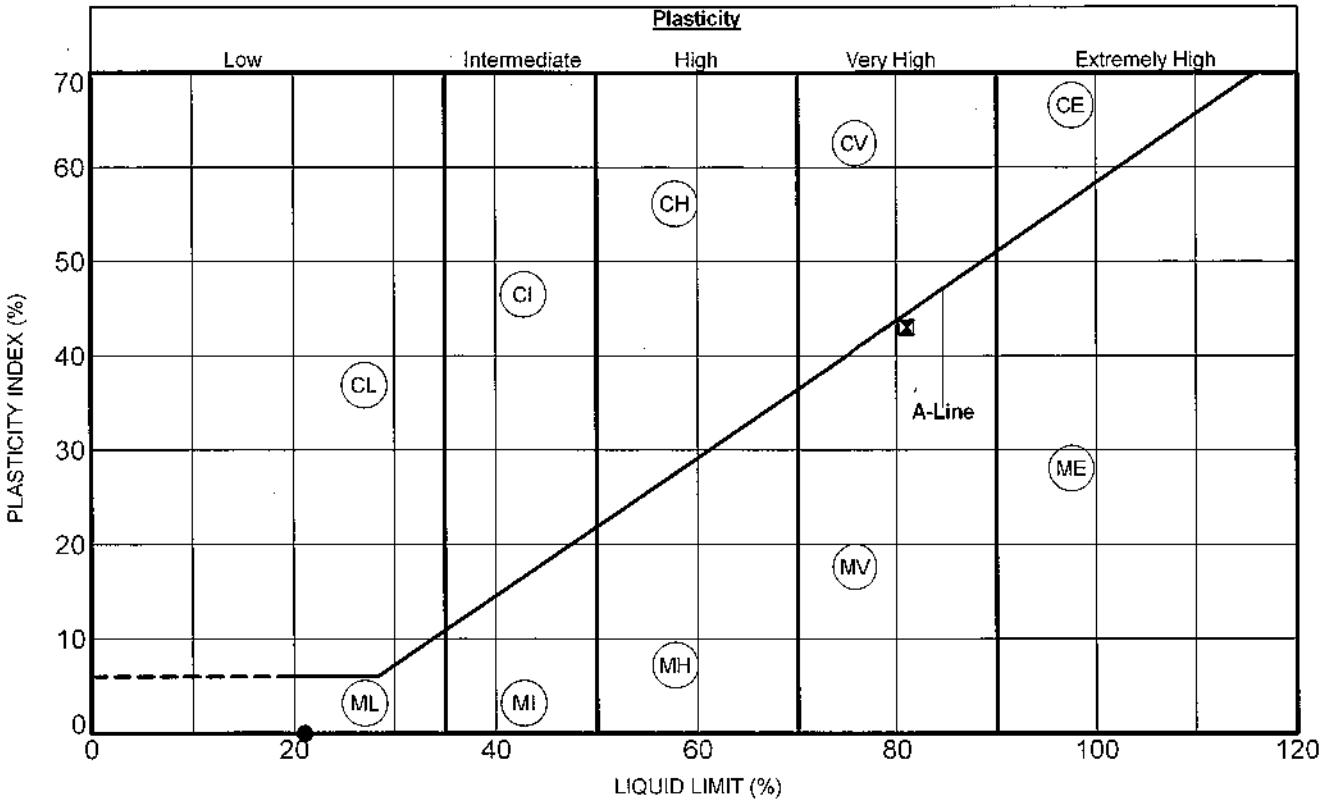
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ATTERBERG LIMITS & NATURAL MOISTURE CONTENT

Test Method :- BS 1377 : Part 2 : Clause 3.2, 4.1 to 4.4 & 5 : 1990



Exploratory Hole No.	Depth (m)	Sample Type/Ref.	Specific Depth (m)	LL	PL	PI	I_L	Preparation Method	<0.425mm (%)	m/c (%)	Date Tested
● TP120	3.50	J	3.50		21			Air Dried	29.0	18.1	27/02/2020
⧓ TP123	2.30	J	2.30	81	38	43	0.14	Natural		44.2	27/02/2020

For description of sample please refer to the Laboratory Sample Description Sheet. # = Insufficient for 4 point PI
If sample is prepared in the natural state we are unable to determine % retained on the 0.425mm test sieve.

Contract Title :-	Client :-
Park Spring Road. Grimethorpe	JPG (leeds) Ltd

Signed :-	Name :-		Page 2 of 2
Date of issue :- 11/03/2020	Certificate No :- PI/4270/2	AEG Contract No. :- **4270**	UKAS TESTING 1367

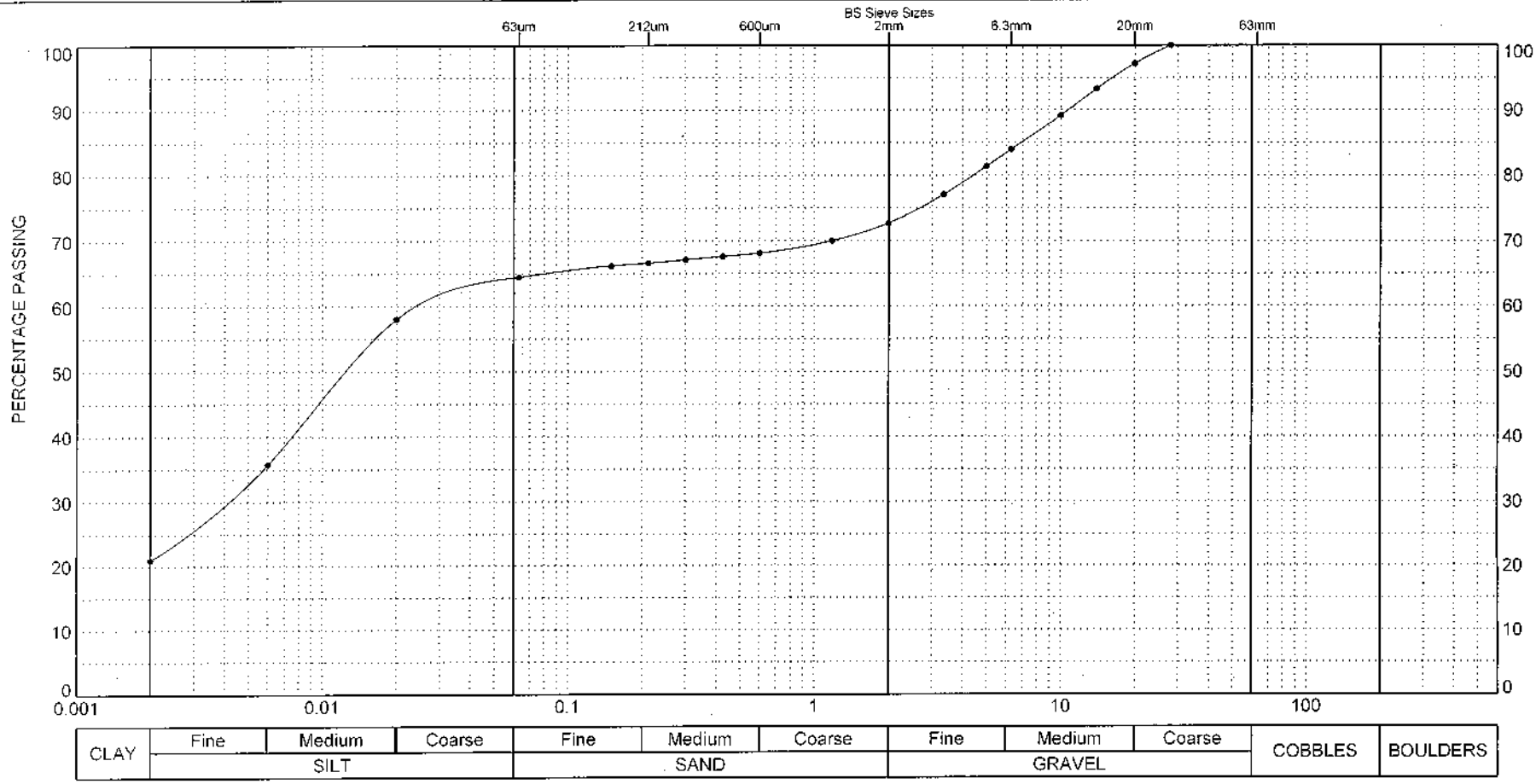
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PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990
(Test deviated from standard due to insufficient sample mass)

Exploratory Hole No :- **BH101**	Depth (m) :- **0.70**	Sample Type & No :- **B3**	Specific Depth (m) :- **0.70**	Date Tested :- **27/02/2020**



Sieve Size (mm)	Passing (%)
28	100.0
20	97.2
14	93.3
10	89.2
6.3	84.0
5	81.4
3.35	77.1
2	72.7
1.18	70.0
0.6	68.1
0.425	67.6
0.3	67.1
0.212	66.6
0.15	66.2
0.063	64.5
0.02	58.1
0.006	35.8
0.002	20.9

For description of sample please refer to the Laboratory Sample Description Sheet

Date of issue :-	Certificate No :-	Signed :-	Name :-	Page 1 of 1
10/03/2020	PSD/4270/BH101/B3/0.70	msone		

Client :-	Contract Title :-	AEG Contract No :-
JPG (leeds) Ltd	Park Spring Road. Grimethorpe	4270

UKAS TESTING
1367

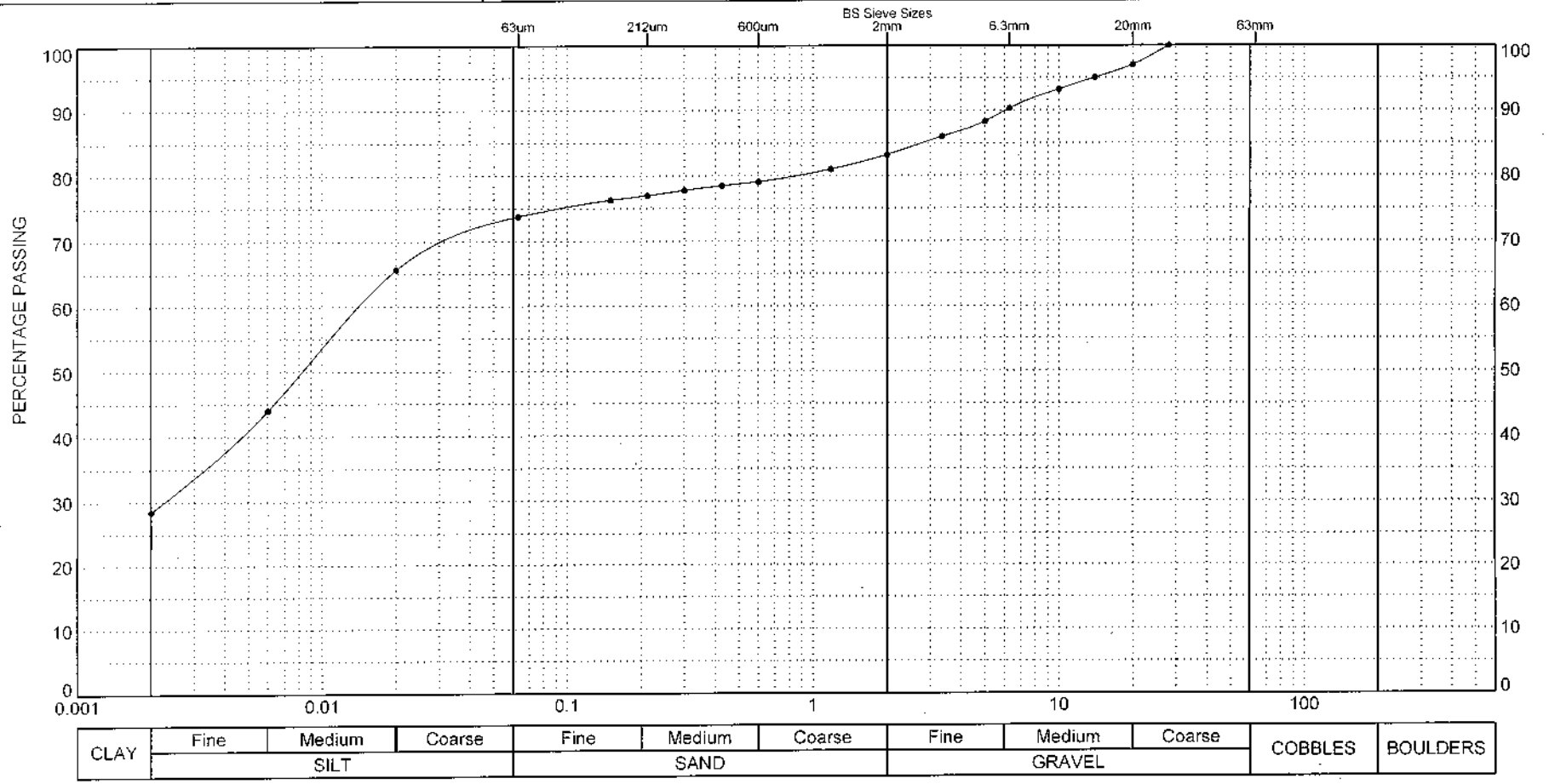
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PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

Exploratory Hole No :- **BH104**	Depth (m) :- **0.70**	Sample Type & No :- **B3**	Specific Depth (m) :- **0.70**	Date Tested :- **27/02/2020**



Sieve Size (mm)	Passing (%)
28	100.0
20	97.0
14	95.0
10	93.2
6.3	90.3
5	88.3
3.35	86.0
2	83.2
1.18	81.0
0.6	79.1
0.425	78.5
0.3	77.8
0.212	77.0
0.15	76.3
0.063	73.8
0.02	65.7
0.006	44.1
0.002	28.5

For description of sample please refer to the Laboratory Sample Description Sheet

Date of issue :-	Certificate No :-	Signed :-	Name :-	Page 1 of 1
10/03/2020	PSD/4270/BH104/B3/0.70	msone		

Client :-	Contract Title :-	AEG Contract No :-
JPG (leeds) Ltd	Park Spring Road. Grimethorpe	4270

UKAS TESTING 1367

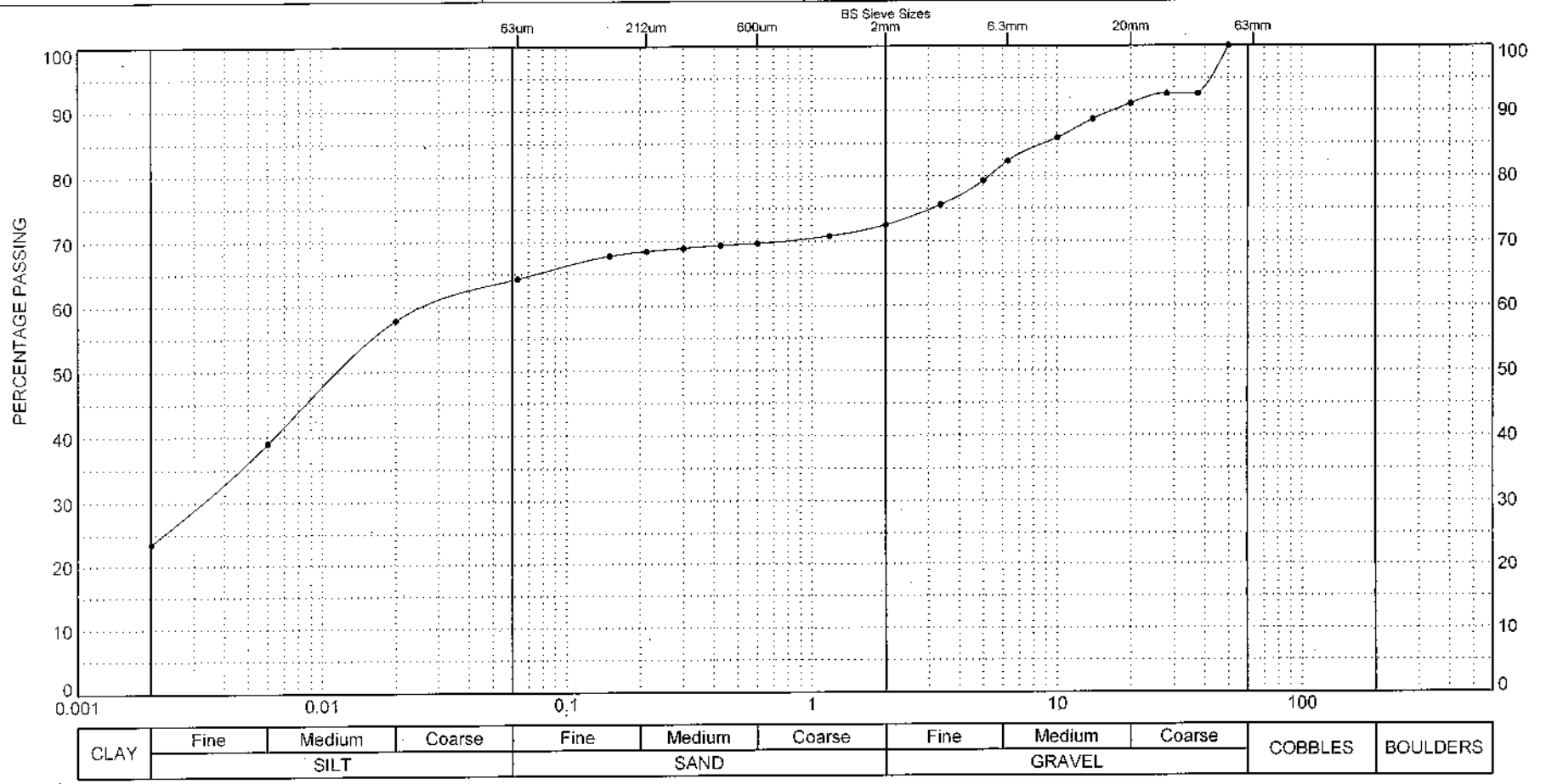
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PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

Exploratory Hole No :- **BH106**	Depth (m) :- **1.50**	Sample Type & No :- **B7**	Specific Depth (m) :- **1.50**	Date Tested :- **27/02/2020**



Sieve Size (mm)	Passing (%)
50	100.0
37.5	92.6
28	92.6
20	91.1
14	88.7
10	85.8
6.3	82.3
5	79.3
3.35	75.6
2	72.5
1.18	70.8
0.6	69.7
0.425	69.4
0.3	69.0
0.212	68.5
0.15	67.8
0.063	64.3
0.02	57.9
0.006	39.1
0.002	23.6

For description of sample please refer to the Laboratory Sample Description Sheet

Date of issue :-	Certificate No :-	Signed :-	Name :-	Page 1 of 1
10/03/2020	PSD/4270/BH106/B7/1.50			

Client :-	Contract Title :-	AEG Contract No :-
JPG (leeds) Ltd	Park Spring Road. Grimethorpe	4270

UKAS TESTING 1367

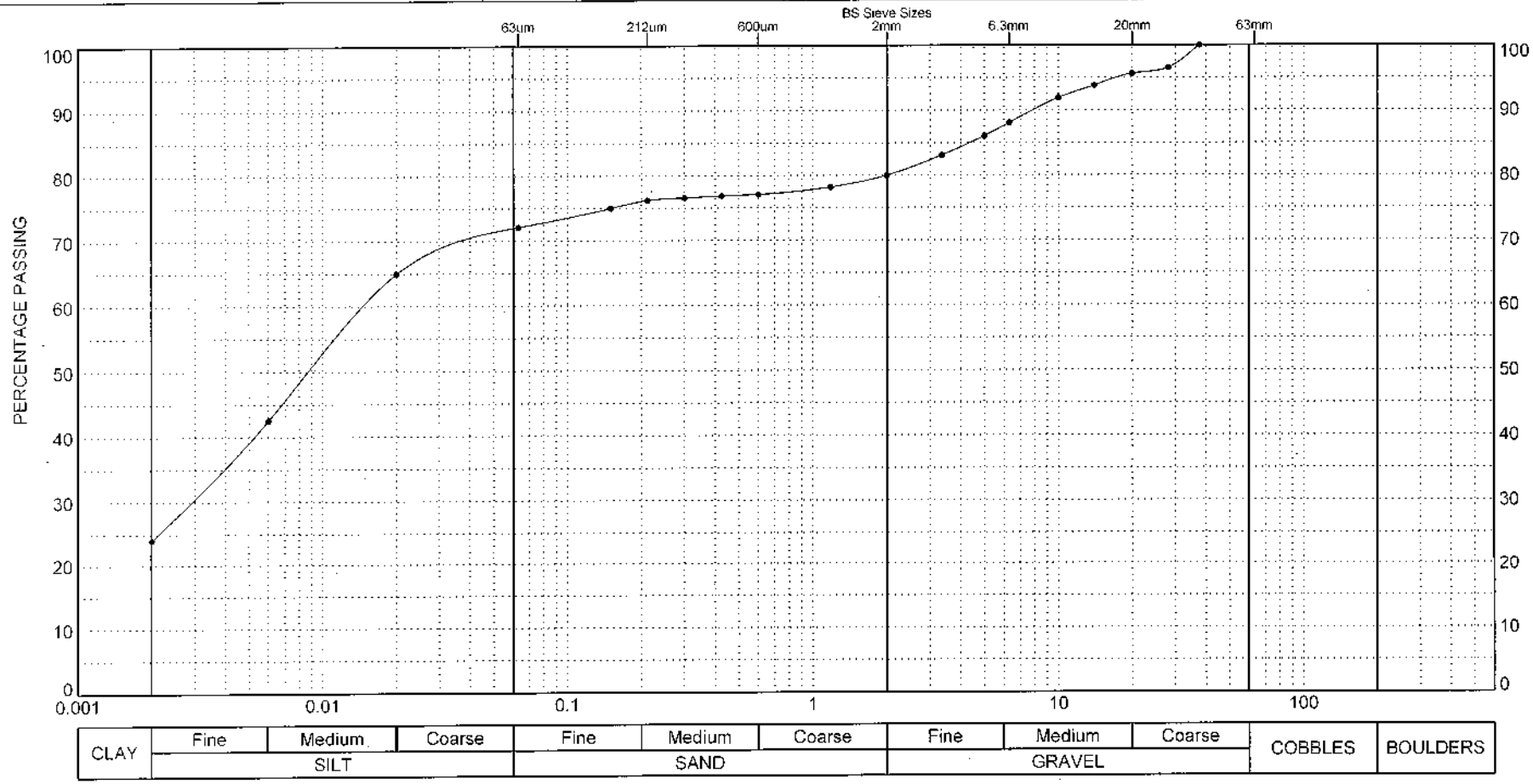
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PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

Exploratory Hole No :- **BH107**	Depth (m) :- **1.50**	Sample Type & No :- **B6**	Specific Depth (m) :- **1.50**	Date Tested :- **27/02/2020**



Sieve Size (mm)	Passing (%)
37.5	100.0
28	96.5
20	95.6
14	93.8
10	91.9
6.3	88.1
5	86.1
3.35	83.1
2	80.0
1.18	78.2
0.6	77.1
0.425	76.9
0.3	76.6
0.212	76.2
0.15	75.0
0.063	72.1
0.02	65.0
0.006	42.6
0.002	24.1

For description of sample please refer to the Laboratory Sample Description Sheet

Date of issue :-	Certificate No :-	Signed :-	Name :-	Page 1 of 1
10/03/2020	PSD/4270/BH107/B6/1.50			

Client :-	Contract Title :-	AEG Contract No :-
JPG (leeds) Ltd	Park Spring Road. Grimethorpe	4270

UKAS TESTING
1367

DETS

Certificate of Analysis

Certificate Number 20-04477

09-Mar-20

Client Allied Exploration & Geotechnics Limited
Unit 25
Stella Gill Industrial Estate
Pelton Fell
DH2 2RG

Our Reference 20-04477

Client Reference 4270

Order No (not supplied)

Contract Title Spring park Road, Grimethorpe

Description 11 Soil samples.

Date Received 02-Mar-20

Date Started 02-Mar-20

Date Completed 09-Mar-20

Test Procedures Identified by prefix DETSn (details on request).

Notes 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.

Approved By

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis

Soil Samples

Our Ref 20-04477
Client Ref 4270
Contract Title Spring park Road, Grimethorpe

			Lab No	1647878	1647879	1647880	1647881	1647882	1647883	1647884	1647885	1647886	1647887	1647888
			Sample ID	BH101	BH102	BH102	BH102	BH102	BH104	BH104	BH104	BH106	BH107	BH109
			Depth	2.40	0.70	1.50	1.50	3.30	1.50	2.40	3.30	1.50	4.20	9.00
			Other ID	9	3	6	7	12	6	8	12	7	15	3
			Sample Type	B	B	J	B	J	J	J	J	B	J	J
			Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**											
Inorganics														
pH	DETSC 2008#		pH	7.3	7.3	7.2	7.2	7.3	7.3	7.3	7.3	7.3	7.5	7.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	< 10	10	11	11	13	14	13	13	13	16	15
Sulphur as S, Total	DETSC 2320	0.01	%	0.01	0.01	< 0.01			0.02			0.02		0.01
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.02	0.02	0.02			0.02			0.02		0.03

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 20-04477
Client Ref 4270
Contract Spring park Road, Grimethorpe

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1647878	BH101 2.40 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1647879	BH102 0.70 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1647880	BH102 1.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1647881	BH102 1.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1647882	BH102 3.30 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1647883	BH104 1.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1647884	BH104 2.40 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1647885	BH104 3.30 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1647886	BH106 1.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	
1647887	BH107 4.20 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1647888	BH109 9.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (365 days), Total Sulphur ICP (365 days), Total Sulphate ICP (730 days), Metals ICP Prep (365 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Information in Support of the Analytical Results

Our Ref 20-04477
Client Ref 4270
Contract Spring park Road, Grimethorpe

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- **BH101** Depth (m) :- **2.40** Sample Type & No :- **B9**

Test Method 2.5kg Compaction Single Sample

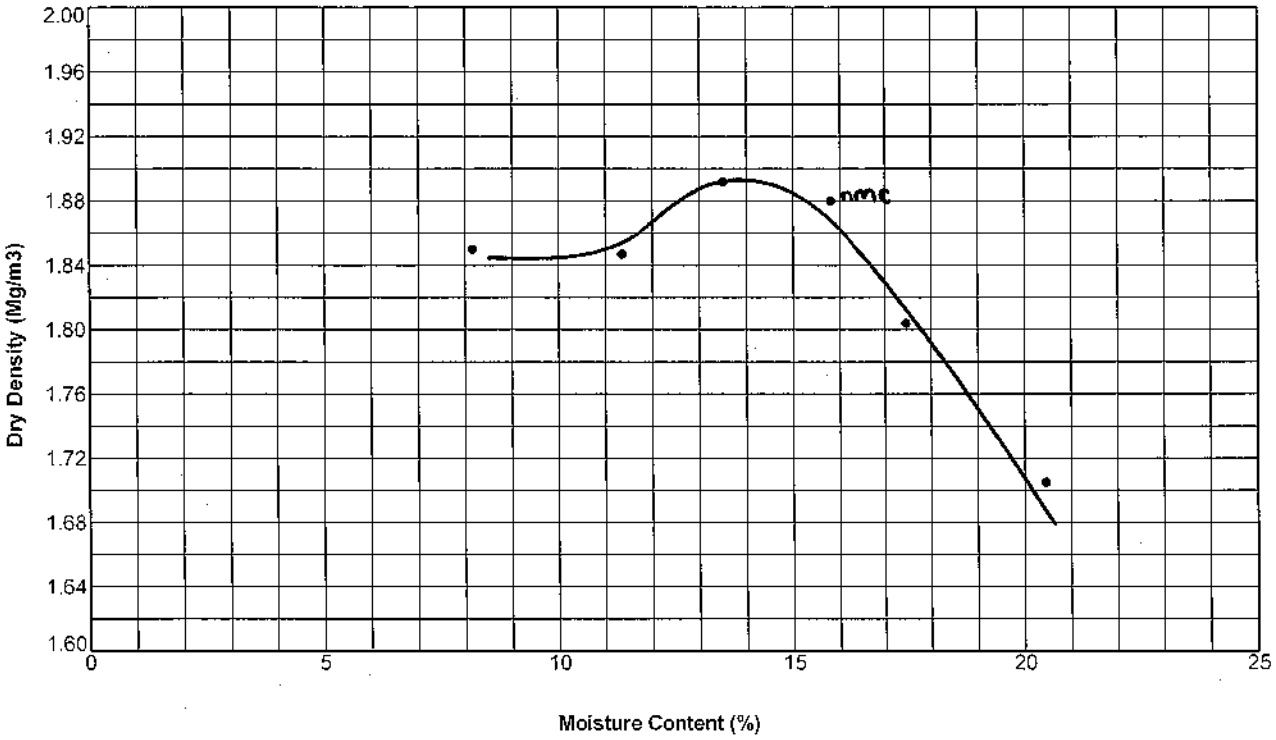
Test Results

Optimum Moisture Content (%) = **13.5** Particle Density (Assumed) = **2.70**

Maximum Dry Density (Mg/m3) = **1.89** Retained on 20mm Sieve (%) = **6.7**

Date Tested = **05/03/2020** Retained on 37.5mm Sieve (%) = **2.5**

Remarks :



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-	Client :-
Park Spring Road. Grimethorpe	JPG (leeds) Ltd

Signed :-	Name :-		Page 1 of 1
Date of issue :- 10/03/2020	Certificate No :- COMP/4270/1	AEG Contract No. :- **4270**	

UKAS TESTING 1367

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- **BH102** Depth (m) :- **0.70** Sample Type & No :- **B3**

Test Method 4.5kg Compaction Separate Samples

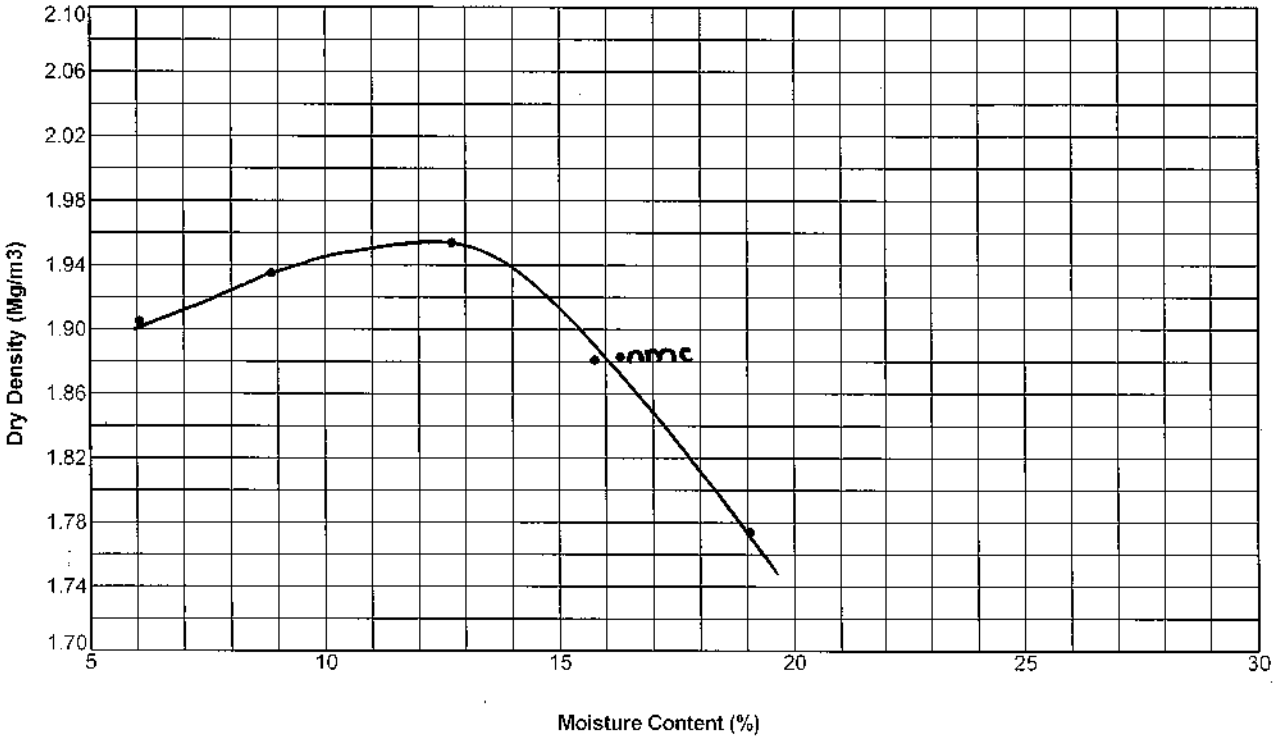
Test Results

Optimum Moisture Content (%) = **12.7** Particle Density (Assumed) = **2.75**

Maximum Dry Density (Mg/m3) = **1.95** Retained on 20mm Sieve (%) = **3.8**

Date Tested = **09/03/2020** Retained on 37.5mm Sieve (%) = **2.9**

Remarks :



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-	Client :-
Park Spring Road. Grimethorpe -	JPG (leeds) Ltd

Signed :-	Name :-		Page 1 of 1
Date of issue :- 10/03/2020	Certificate No :- COMP/4270/1	AEG Contract No. :- **4270**	UKAS TESTING 1367

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- **BH102** Depth (m) :- **1.50** Sample Type & No :- **B7**

Test Method 4.5kg Compaction Single Sample

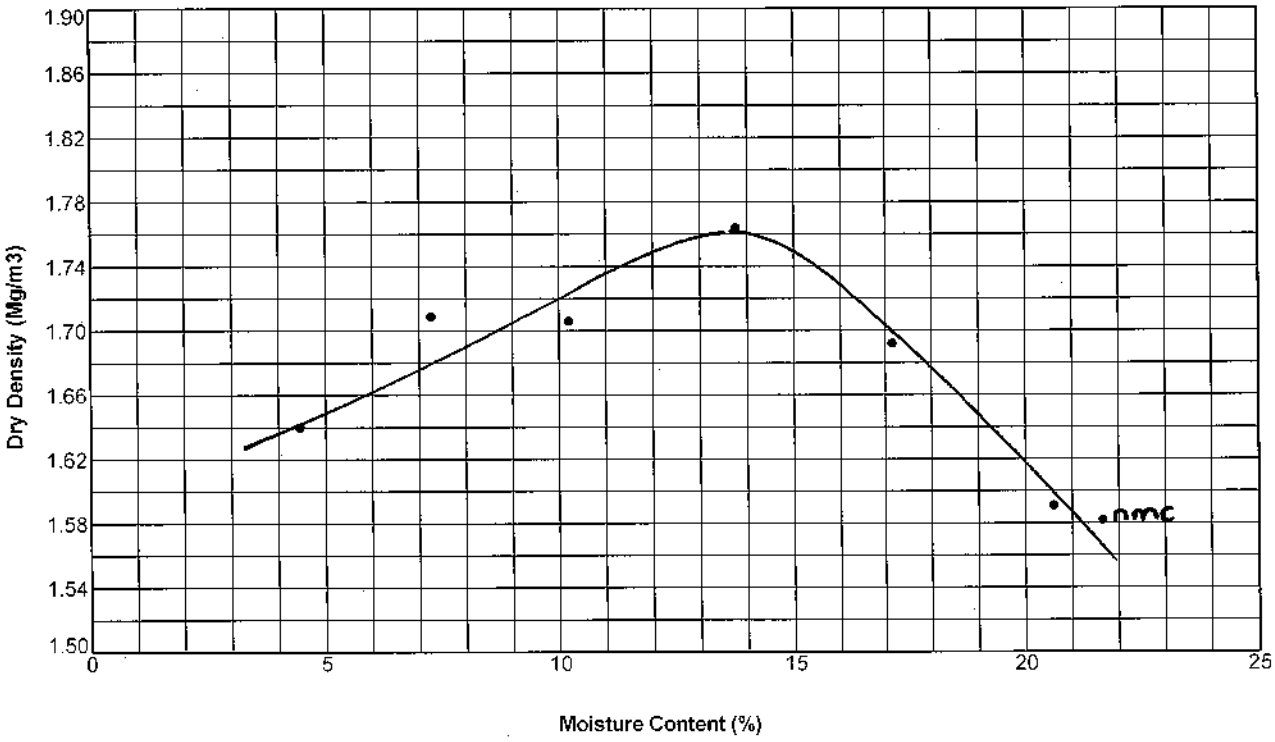
Test Results

Optimum Moisture Content (%) = **13.8** Particle Density (Assumed) = **2.45**

Maximum Dry Density (Mg/m3) = **1.76** Retained on 20mm Sieve (%) = **2.4**

Date Tested = **09/03/2020** Retained on 37.5mm Sieve (%) = **0.0**

Remarks :



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-	Client :-
Park Spring Road. Grimethorpe	JPG (leeds) Ltd

Signed :-	Name :-		Page 1 of 1
Date of issue :- 10/03/2020	Certificate No :- COMP/4270/1	AEG Contract No. :- 4270	UKAS TESTING 1367

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- **BH104** Depth (m) :- **1.50** Sample Type & No :- **B7**

Test Method 2.5kg Compaction Single Sample

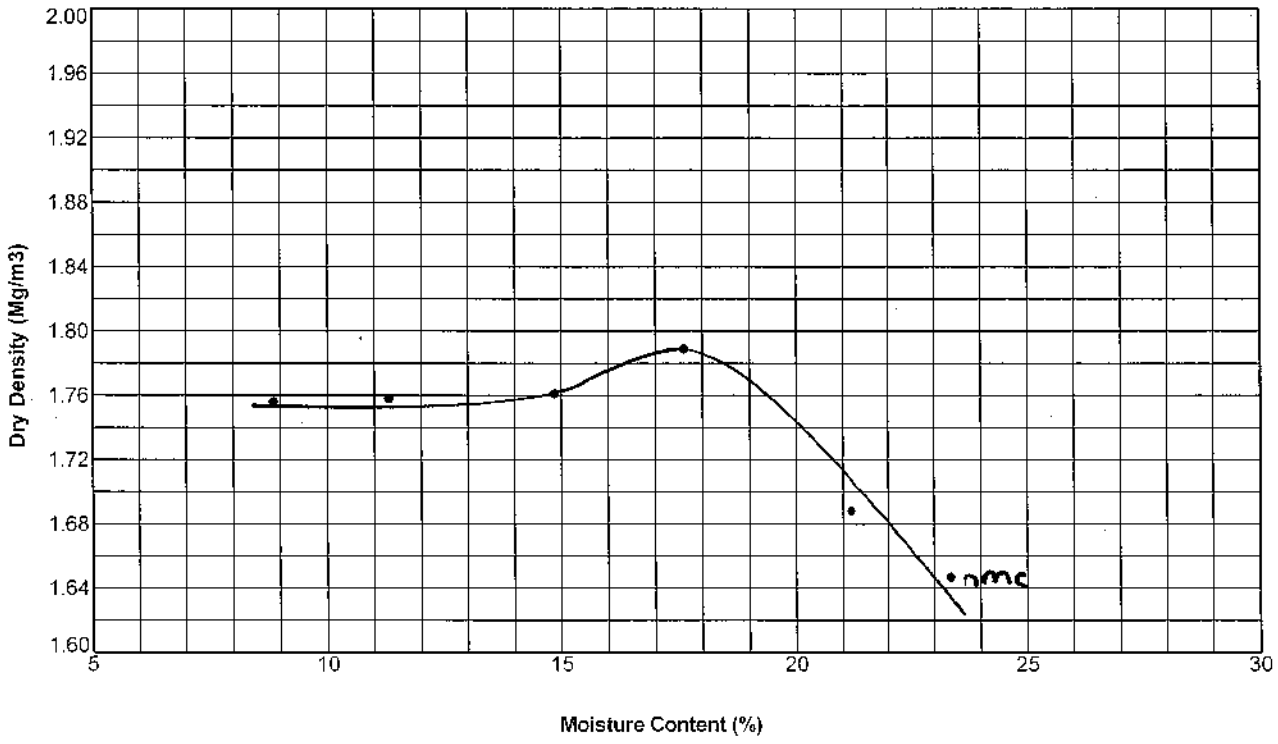
Test Results

Optimum Moisture Content (%) = **17.6** Particle Density (Assumed) = **2.70**

Maximum Dry Density (Mg/m3) = **1.79** Retained on 20mm Sieve (%) = **1.8**

Date Tested = **05/03/2020** Retained on 37.5mm Sieve (%) = **0.0**

Remarks :



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-	Client :-
Park Spring Road. Grimethorpe	JPG (leeds) Ltd

Signed :-	Name :-	Page 1 of 1	
Date of issue :- 10/03/2020	Certificate No :- COMP/4270/1	AEG Contract No. :- 4270	UKAS TESTING 1367

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- **BH104** Depth (m) :- **2.40** Sample Type & No :- **B9**

Test Method 2.5kg Compaction Single Sample

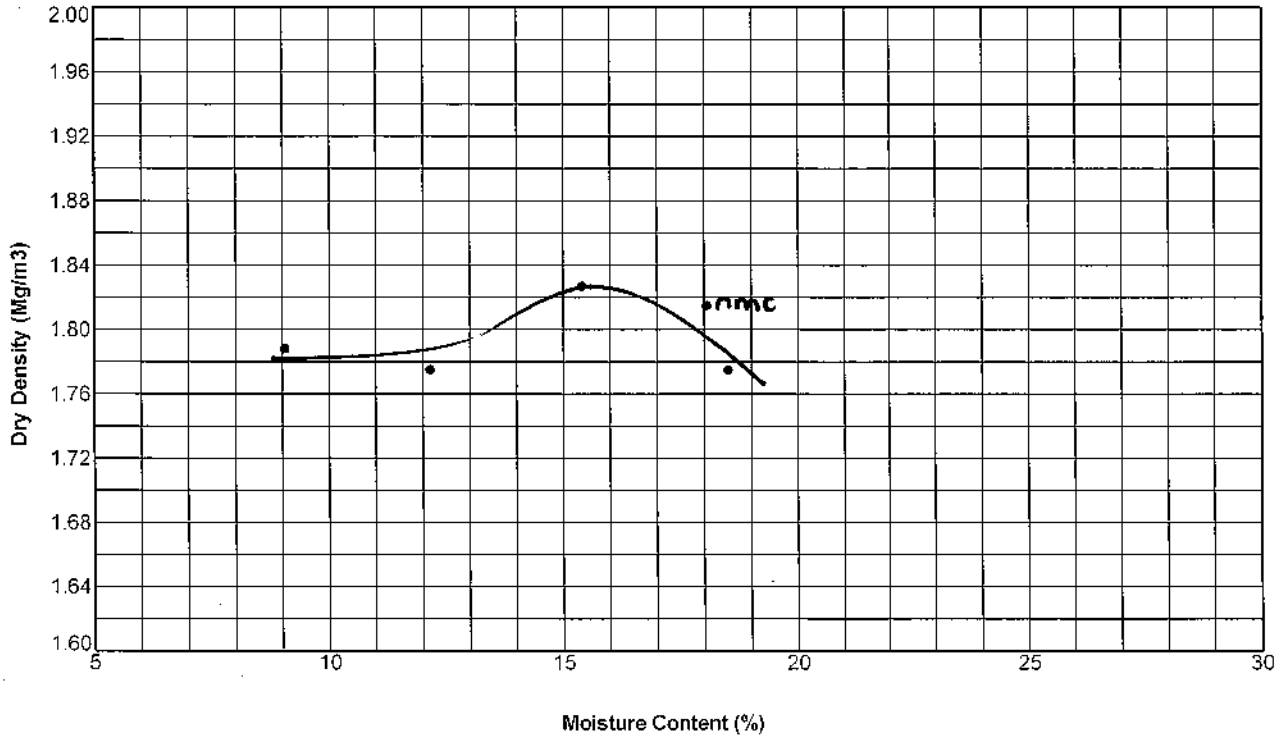
Test Results

Optimum Moisture Content (%) = **15.4** Particle Density (Assumed) = **2.70**

Maximum Dry Density (Mg/m3) = **1.83** Retained on 20mm Sieve (%) = **0.0**

Date Tested = **05/03/2020** Retained on 37.5mm Sieve (%) = **0.0**

Remarks :



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-	Client :-
Park Spring Road. Grimethorpe	**JPG (leeds) Ltd**

Signed :- MSone	Name :-	Page 1 of 1	UKAS TESTING 1367
Date of issue :- 10/03/2020	Certificate No :- COMP/4270/1	AEG Contract No. :- **4270**	

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- **BH106** Depth (m) :- **1.50** Sample Type & No :- **B7**

Test Method 2.5kg Compaction Separate Samples

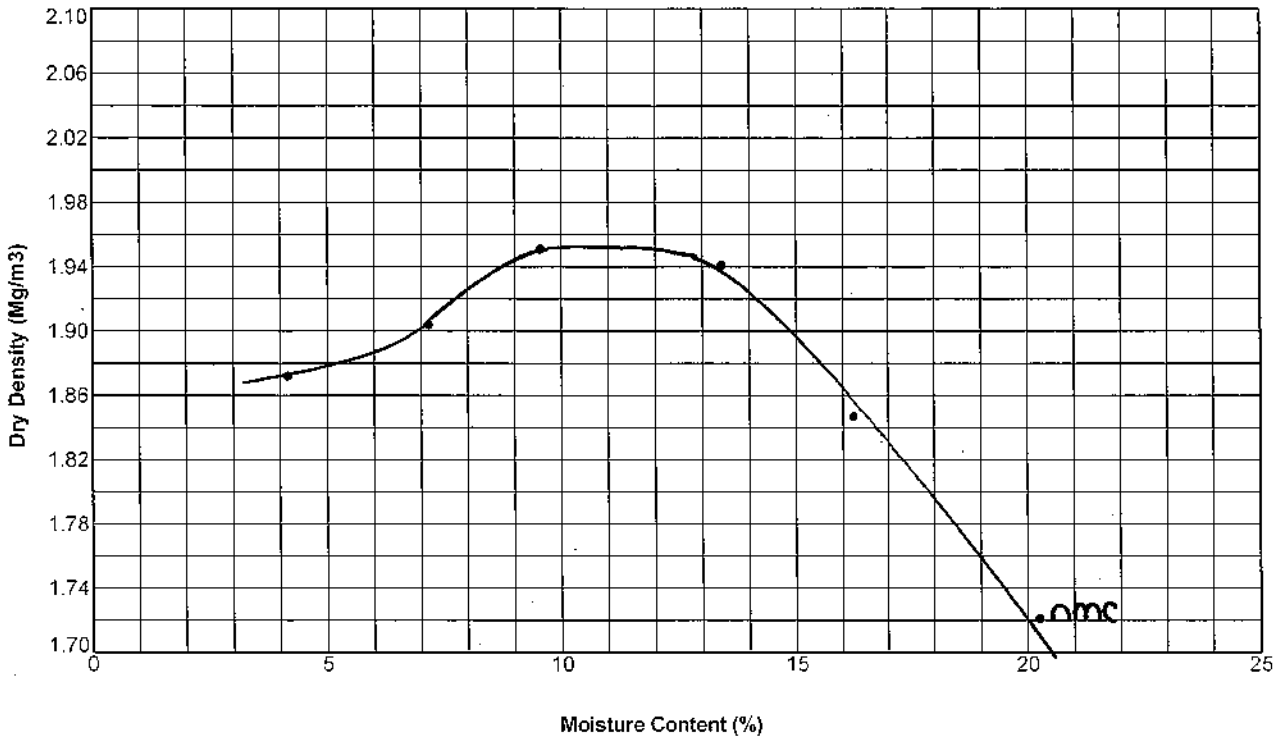
Test Results

Optimum Moisture Content (%) = **11.0** Particle Density (Assumed) = **2.70**

Maximum Dry Density (Mg/m3) = **1.95** Retained on 20mm Sieve (%) = **9.0**

Date Tested = **11/03/2020** Retained on 37.5mm Sieve (%) = **7.0**

Remarks :



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-	Client :-
Park Spring Road. Grimethorpe	JPG (leeds) Ltd

Signed :-	Name :-	Page 1 of 1	
Date of issue :- 11/03/2020	Certificate No :- COMP/4270/1	AEG Contract No. :- 4270	UKAS TESTING 1367

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- **BH107** Depth (m) :- **1.50** Sample Type & No :- **B6**

Test Method 4.5kg Compaction Single Sample

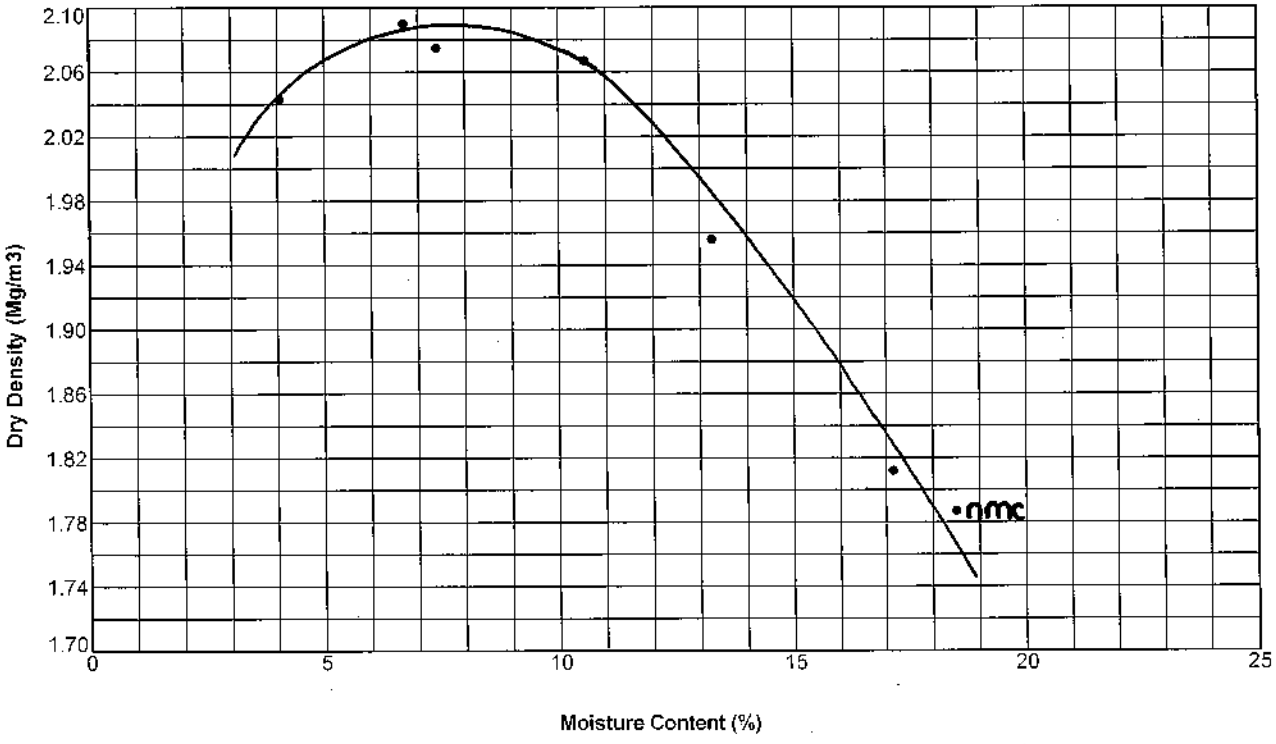
Test Results

Optimum Moisture Content (%) = **7.0** Particle Density (Assumed) = **2.70**

Maximum Dry Density (Mg/m3) = **2.09** Retained on 20mm Sieve (%) = **4.0**

Date Tested = **11/03/2020** Retained on 37.5mm Sieve (%) = **0.0**

Remarks :



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-	Client :-
Park Spring Road, Grimethorpe	JPG (leeds) Ltd

Signed :-	Name :-		Page 1 of 1
Date of issue :- 11/03/2020	Certificate No :- COMP/4270/1	AEG Contract No. :- 4270	UKAS TESTING 1367

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MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990

Specimen Identification

Exploratory Hole No :- **BH107** Depth (m) :- **3.50** Sample Type & No :- **B14**

Test Method 4.5kg Compaction Single Sample

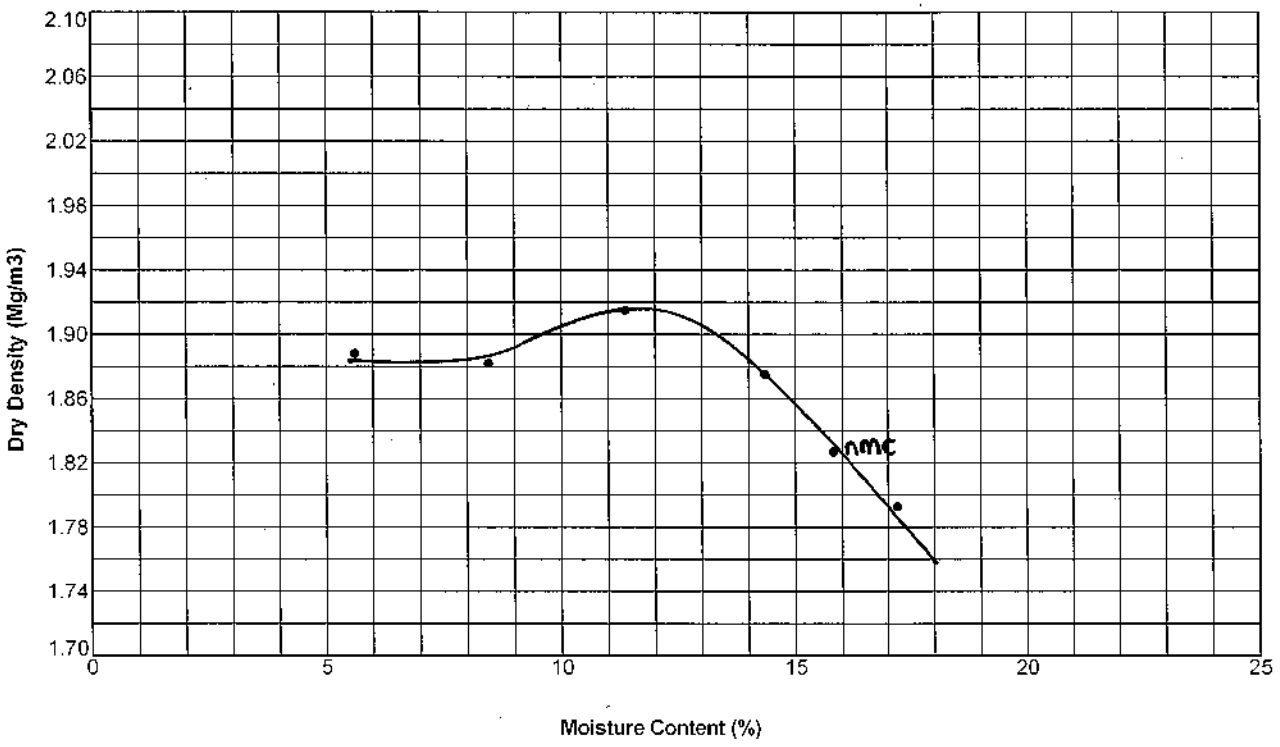
Test Results

Optimum Moisture Content (%) = **12.0** Particle Density (Assumed) = **2.65**

Maximum Dry Density (Mg/m3) = **1.92** Retained on 20mm Sieve (%) = **0.5**

Date Tested = **06/03/2020** Retained on 37.5mm Sieve (%) = **0.0**

Remarks :



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-	Client :-
Park Spring Road. Grimethorpe	JPG (leeds) Ltd

Signed :-	Name :-		Page 1 of 1
Date of issue :- 10/03/2020	Certificate No :- COMP/4270/1	AEG Contract No. :- 4270	

UKAS TESTING 1367

ALLIED EXPLORATION & GEOTECHNICS LIMITED

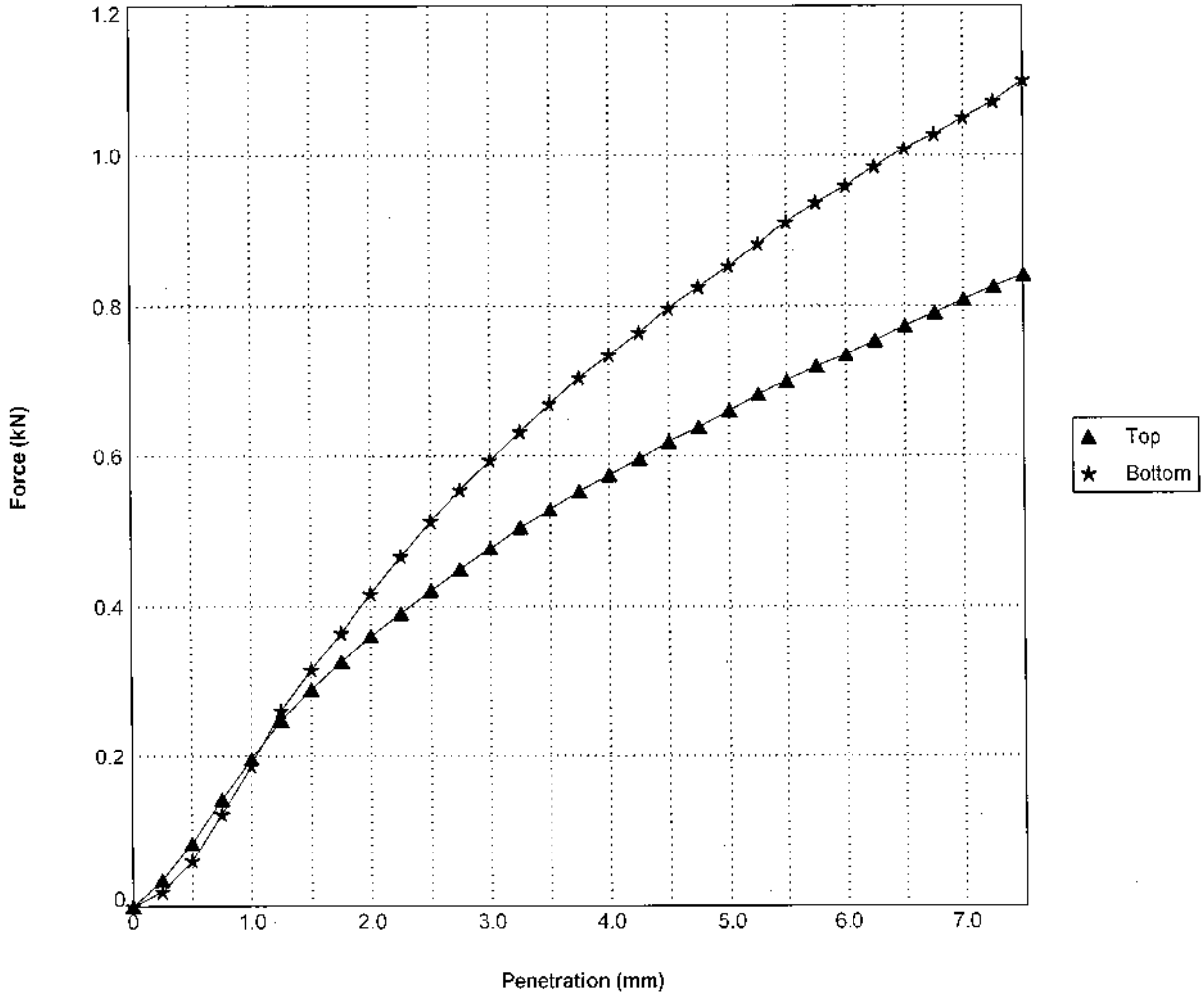
Head Office: Unit 25 Stella Gill Industrial Estate, Pelton Fell, Chester-le-Street, Co. Durham, DH2 2RG - Tel: 0191 387 4700 Fax: 0191 387 4710
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DETERMINATION OF THE CALIFORNIA BEARING RATIO

BS 1377 : Part 4 : 1990 and Part 2 : Clause 3.2 : 1990

Exploratory Hole No.- **BH101** Sample No.- **B9** Depth (m)- **2.40**

"As Received" Moisture Content (%) :	16.4	Surcharge (Kg) :	6
Retained on 20mm (%) :	6.7	Seating Load (N) :	Top 10 / Bottom 10
Correction Needed :	No	Test Moisture Content (%) :	Top 16.6 / Bottom 16.1
Soaking Time (Days) :	N/A	Bulk Density (Mg/m^3) :	2.15
Swelling (mm) :	N/A	Dry Density (Mg/m^3) :	1.85
Date Tested :	27/02/2020	CBR Value (%) :	Top 3.3 / Bottom 4.3
Preparation Method :	2.5kg Compaction		
Remarks :			



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :- Park Spring Road. Grimethorpe	Client :- JPG (leeds) Ltd

Signed :- mseve	Name :-	Page 1 of 1	UKAS TESTING 1367
Date of issue :- 10/03/2020	Certificate No :- CBR/4270/BH101/B9/2.40/1	AEG Contract No. :- 4270	

ALLIED EXPLORATION & GEOTECHNICS LIMITED

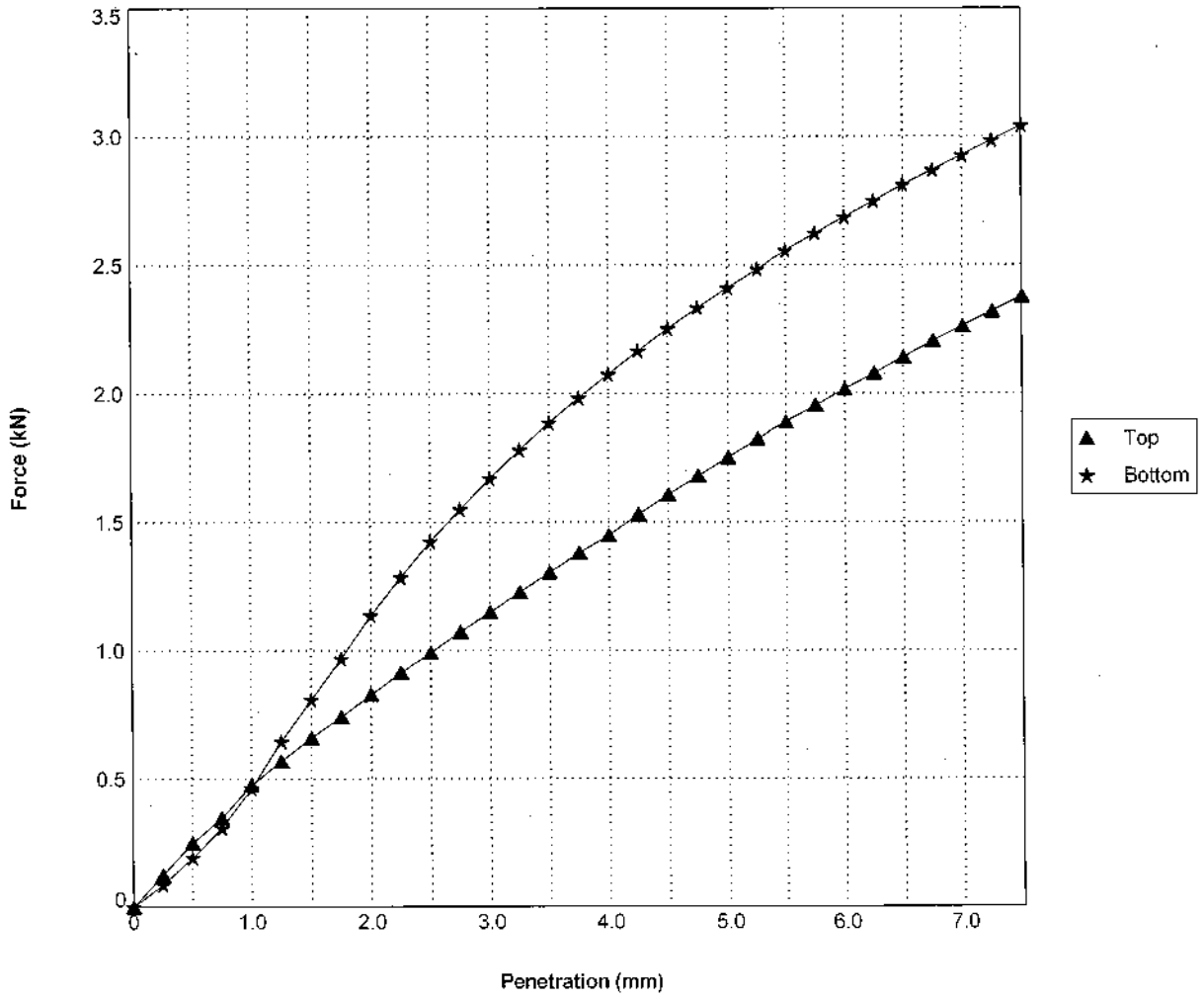
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DETERMINATION OF THE CALIFORNIA BEARING RATIO

BS 1377 : Part 4 : 1990 and Part 2 : Clause 3.2 : 1990

Exploratory Hole No.- **BH102** Sample No.- **B3** Depth (m)- **0.70**

"As Received" Moisture Content (%) :	15.9	Surcharge (Kg) :	6
Retained on 20mm (%) :	3.8	Seating Load (N) :	Top 50 / Bottom 50
Correction Needed :	No	Test Moisture Content (%) :	Top 16.3 / Bottom 15.5
Soaking Time (Days) :	N/A	Bulk Density (Mg/m^3) :	2.18
Swelling (mm) :	N/A	Dry Density (Mg/m^3) :	1.88
Date Tested :	28/02/2020	CBR Value (%) :	Top 8.8 / Bottom 12.1
Preparation Method :	4.5kg Compaction		
Remarks :			



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :- Park Spring Road. Grimethorpe	Client :- JPG (leeds) Ltd

Signed :-	Name :-		Page 1 of 1
Date of issue :- 10/03/2020	Certificate No :- CBR/4270/BH102/B3/0.70/1	AEG Contract No. :- 4270	UKAS TESTING 1367

ALLIED EXPLORATION & GEOTECHNICS LIMITED

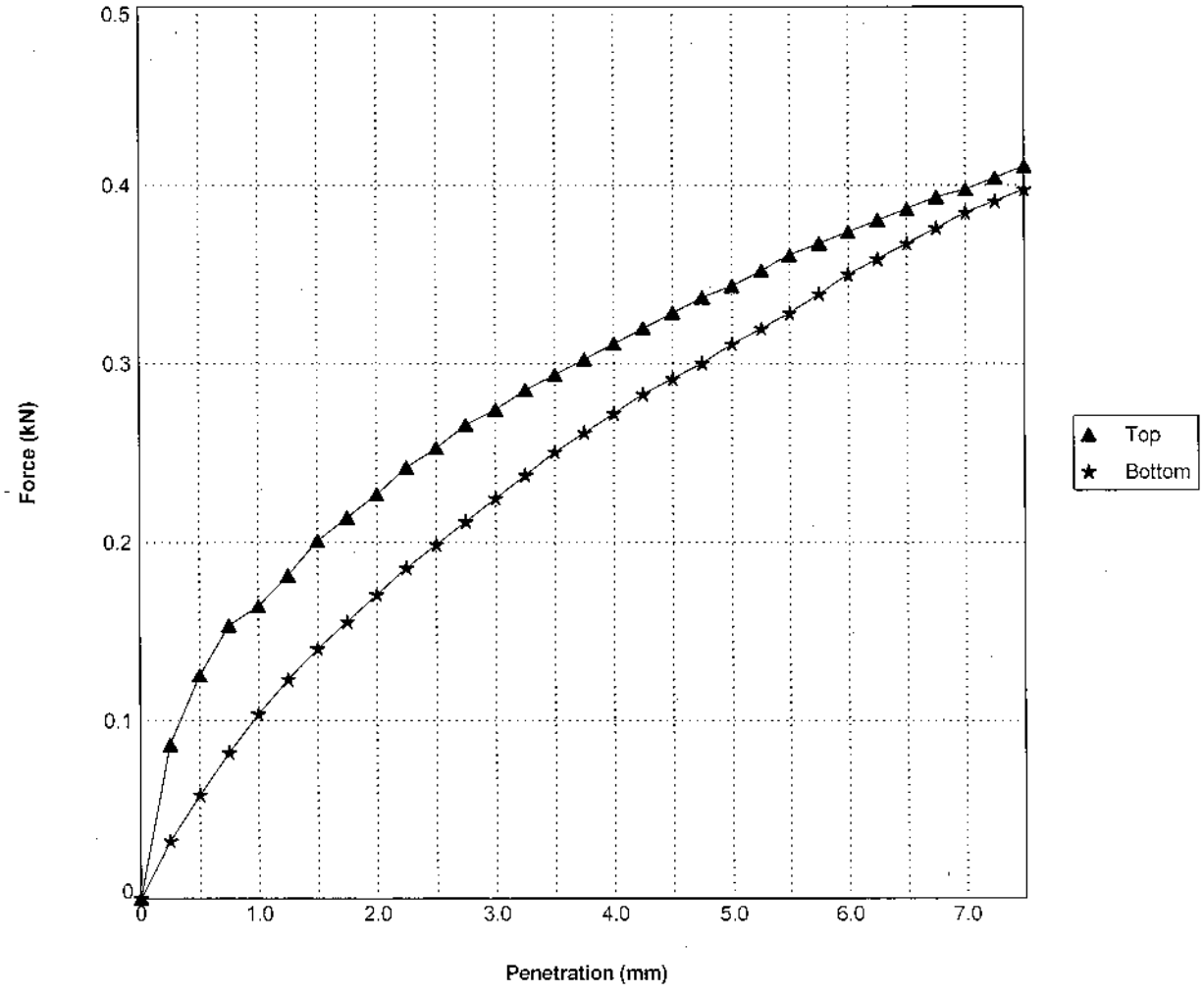
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DETERMINATION OF THE CALIFORNIA BEARING RATIO

BS 1377 : Part 4 : 1990 and Part 2 : Clause 3.2 : 1990

Exploratory Hole No.- **BH104** Sample No.- **B7** Depth (m)- **1.50**

"As Received" Moisture Content (%) :	23.8	Surcharge (Kg) :	6
Retained on 20mm (%) :	1.8	Seating Load (N) :	Top 10 / Bottom 10
Correction Needed :	No	Test Moisture Content (%) :	Top 24.4 / Bottom 23.1
Soaking Time (Days) :	N/A	Bulk Density (Mg/m^3) :	2.02
Swelling (mm) :	N/A	Dry Density (Mg/m^3) :	1.64
Date Tested :	27/02/2020	CBR Value (%) :	Top 1.9 / Bottom 1.6
Preparation Method :	2.5kg Compaction		
Remarks :			



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :- Park Spring Road. Grimethorpe	Client :- JPG (leeds) Ltd

Signed :-	Name :-	Page 1 of 1	UKAS TESTING 1367
Date of issue :- 10/03/2020	Certificate No :- CBR/4270/BH104/B7/1.50/1	AEG Contract No. :- 4270	

ALLIED EXPLORATION & GEOTECHNICS LIMITED

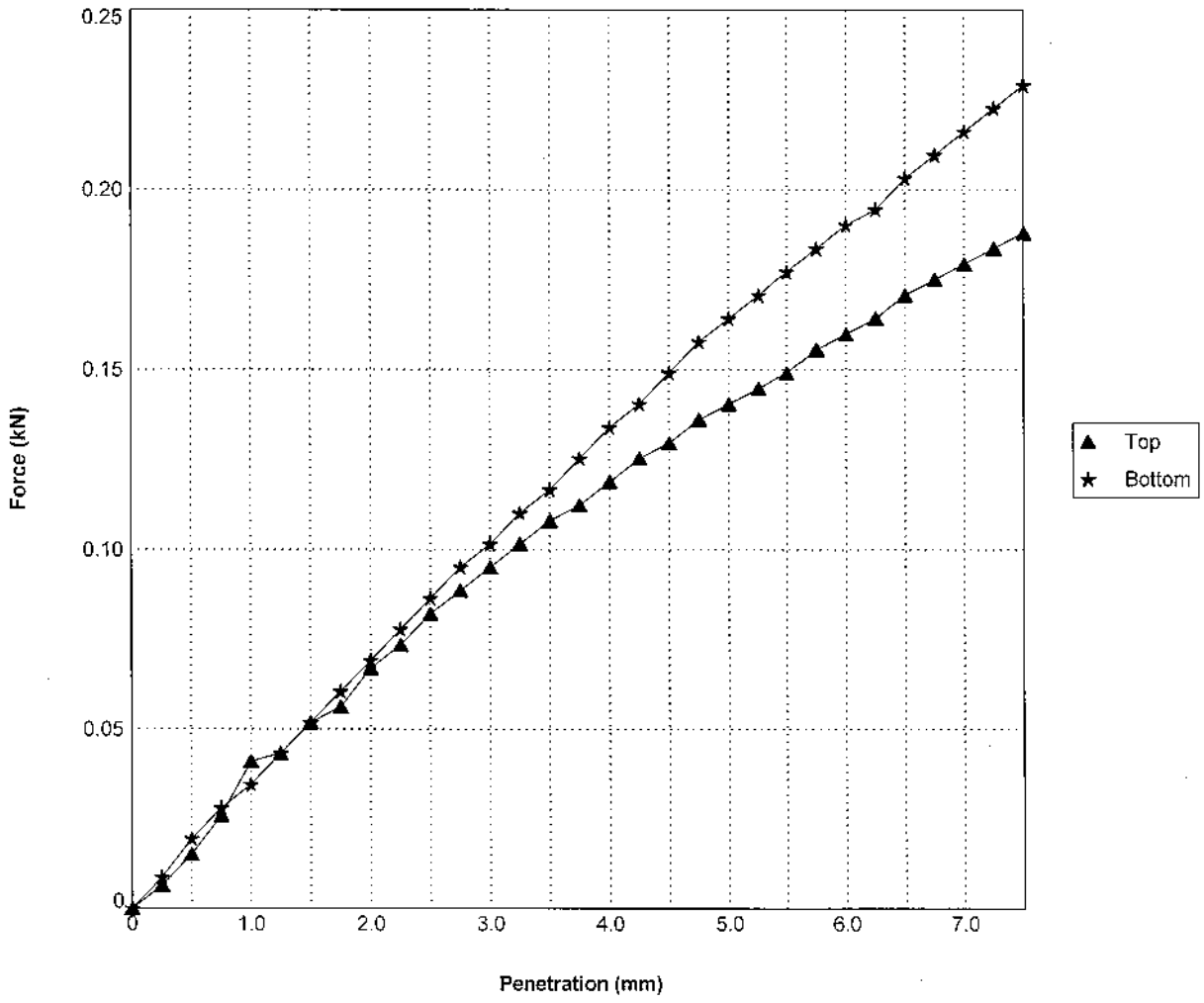
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DETERMINATION OF THE CALIFORNIA BEARING RATIO

BS 1377 : Part 4 : 1990 and Part 2 : Clause 3.2 : 1990

Exploratory Hole No.- **BH106** Sample No.- **B7** Depth (m)- **1.50**

"As Received" Moisture Content (%) :	19.0	Surcharge (Kg) :	6
Retained on 20mm (%) :	9.0	Seating Load (N) :	Top 10 / Bottom 10
Correction Needed :	No	Test Moisture Content (%) :	Top 19.1 / Bottom 18.9
Soaking Time (Days) :	N/A	Bulk Density (Mg/m^3) :	2.10
Swelling (mm) :	N/A	Dry Density (Mg/m^3) :	1.76
Date Tested :	27/02/2020	CBR Value (%) :	Top 0.7 / Bottom 0.8
Preparation Method :	2.5kg Compaction		
Remarks :			



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :- Park Spring Road, Grimethorpe	Client :- JPG (leeds) Ltd

Signed :-	Name :-		Page 1 of 1
Date of issue :- 10/03/2020	Certificate No :- CBR/4270/BH106/B7/1.50/1	AEG Contract No. :- 4270	UKAS TESTING 1367

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ONE DIMENSIONAL CONSOLIDATION PROPERTIES

BS 1377 : PART 5 : 1990 : CLAUSE 3

Exploratory Hole No	**BH105**	**Sample**	**U17**	**Depth**	**4.50m**
Specimen Type	**Undisturbed**	**Orientation**	**Vertical**	**Specific Depth**	**4.55m**

	INITIAL	FINAL			
Height	19.1	17.8	mm	Particle Density (Assumed)	2.70
Diameter	74.4	74.4	mm		
Moisture Content	22.9	18.0	%	Degree of Saturation (%)	98.7
Wet Density	2.04	2.15	Mg/m^3		
Dry Density	1.66	1.83	Mg/m^3	Test Duration (Days)	5
				Date Tested	27/02/2020

Square Root of Time Fitting Method

Pressure Range kN/m2	Mv m2/MN	Cv m2/yr	Temp C	Voids Ratio
Initial				0.626
0 - 50	0.388	.	19	0.595
50 - 100	0.226	10.01	19	0.577
100 - 200	0.167	10.78	19	0.550
200 - 400	0.114	8.48	19	0.515
400 - 200	0.008	Swelling	19	0.517

For sample description please refer to the Laboratory Sample Description Sheet.

Contract Title:	Client:
Park Spring Road. Grimethorpe	**JPG (leeds) Ltd**

	Signed:	Name:		
		M. SELKIRK	Page 1 of 2	UKAS TESTING
	Date of Issue:	Certificate No:	AEG Contract No:	1367
	06/03/2020	4270/A	4270	

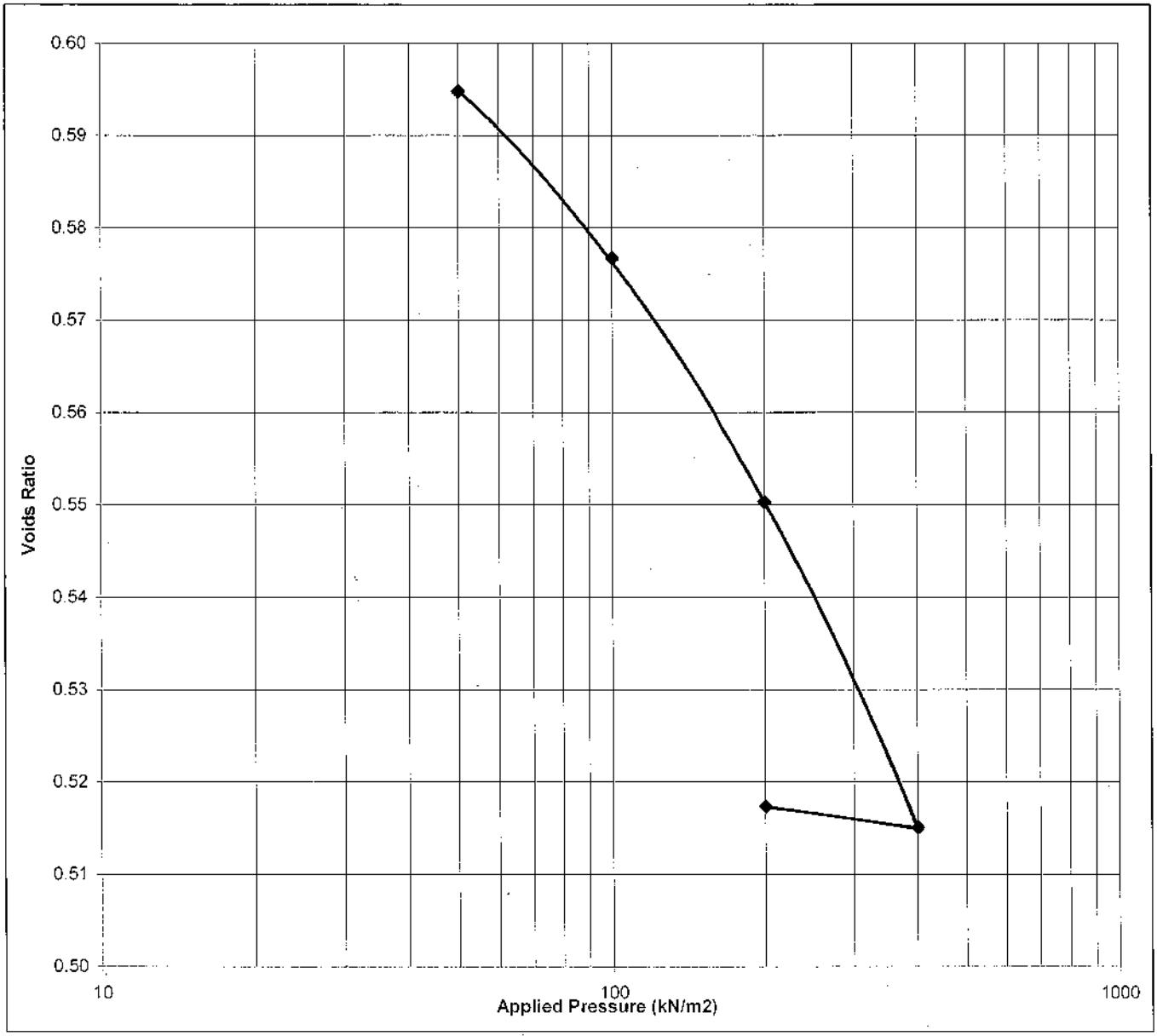
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ONE DIMENSIONAL CONSOLIDATION PROPERTIES

BS 1377 : PART 5 : 1990 : CLAUSE 3

Exploratory Hole No	**BH105**	**Sample**	**U17**	**Depth**	**4.50m**
Specimen Type	**Undisturbed**	**Orientation**	**Vertical**	**Specific Depth**	**4.55m**



Contract Title:	Client:
Park Spring Road. Grimethorpe	**JPG (leeds) Ltd**

Signed:	Name:	Page 2 of 2
	M. SELKIRK	

Date of Issue:	Certificate No:	AEG Contract No:
06/03/2020	4270/A	4270

UKAS TESTING
1367

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ONE DIMENSIONAL CONSOLIDATION PROPERTIES

BS 1377 : PART 5 : 1990 : CLAUSE 3

Exploratory Hole No	**BH106**	**Sample**	**U10**	**Depth**	**2.50m**
Specimen Type	**Undisturbed**	**Orientation**	**Vertical**	**Specific Depth**	**2.80m**

	INITIAL	FINAL			
Height	18.9	17.1	mm	Particle Density (Assumed)	2.70
Diameter	74.74	74.74	mm		
Moisture Content	18.4	17.2	%	Degree of Saturation (%)	92.0
Wet Density	2.08	2.25	Mg/m^3		
Dry Density	1.75	1.92	Mg/m^3	Test Duration (Days)	5
				Date Tested	27/02/2020

Square Root of Time Fitting Method

Pressure Range kN/m2	Mv m2/MN	Cv m2/yr	Temp C	Voids Ratio
Initial				0.540
0 - 50	0.614	.	19	0.493
50 - 100	0.352	7.84	19	0.467
100 - 200	0.225	9.11	19	0.434
200 - 400	0.140	7.85	19	0.393
400 - 200	0.014	Swelling	19	0.397

For sample description please refer to the Laboratory Sample Description Sheet.

Contract Title:	Client:
Park Spring Road. Grimethorpe	**JPG (leeds) Ltd**

AEG	Signed: msonl	Name: M. SELKIRK	Page 1 of 2	UKAS TESTING 1367
	Date of Issue: 06/03/2020	Certificate No: 4270/B	AEG Contract No: 4270	

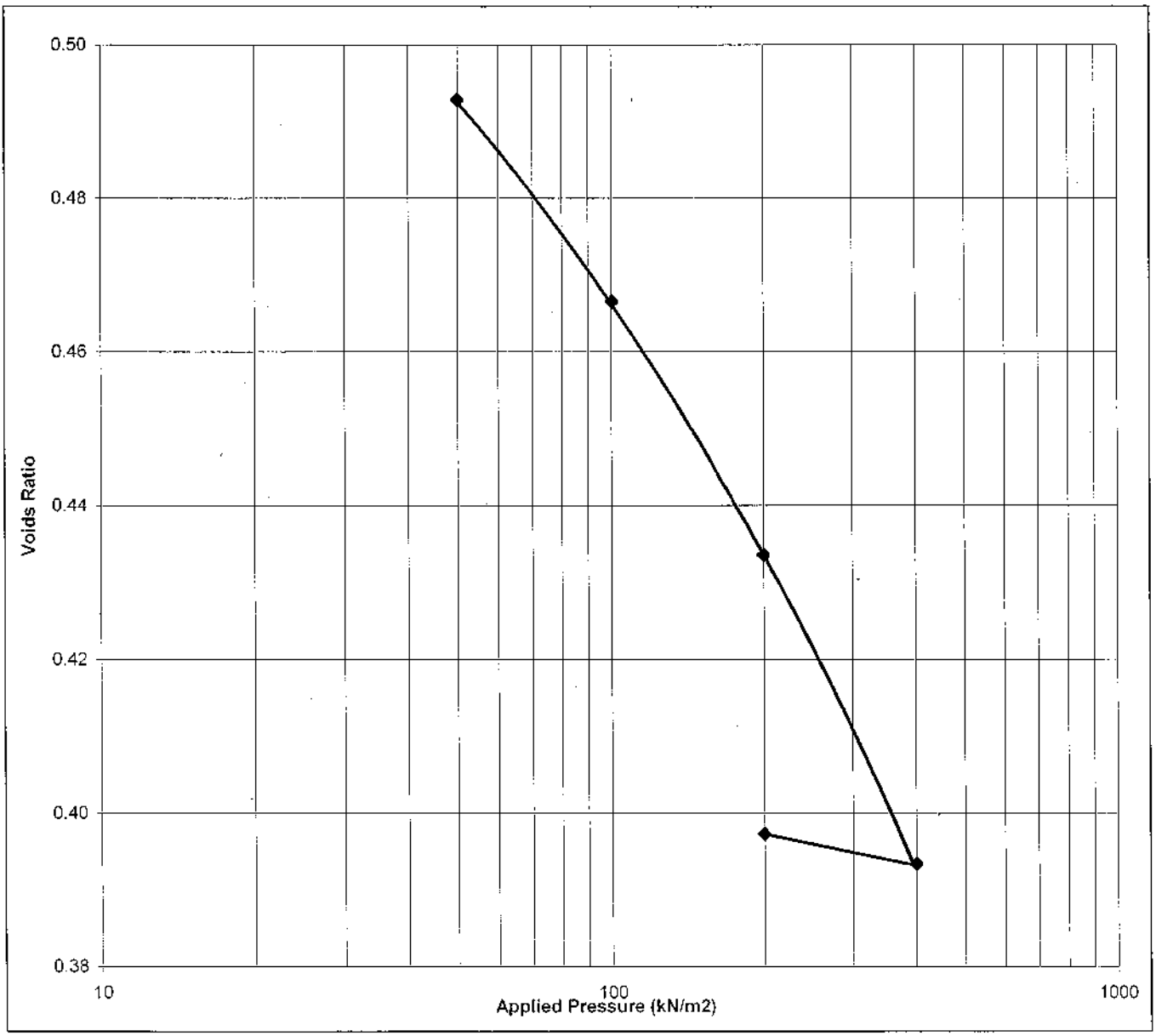
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ONE DIMENSIONAL CONSOLIDATION PROPERTIES

BS 1377 : PART 5 : 1990 : CLAUSE 3

Exploratory Hole No	**BH106**	**Sample**	**U10**	**Depth**	**2.50m**
Specimen Type	**Undisturbed**	**Orientation**	**Vertical**	**Specific Depth**	**2.80m**



Contract Title:	Client:
Park Spring Road. Grimethorpe	JPG (leeds) Ltd

Signed:	Name:	Page 2 of 2	
	M. SELKIRK		
Date of Issue:	**Certificate No:**	**AEG Contract No:**	
06/03/2020	4270/B	4270	1367

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ONE DIMENSIONAL CONSOLIDATION PROPERTIES

BS 1377 : PART 5 : 1990 : CLAUSE 3

Exploratory Hole No	**BH107**	**Sample**	**U9**	**Depth**	**2.50m**
Specimen Type	**Undisturbed**	**Orientation**	**Vertical**	**Specific Depth**	**2.75m**

	INITIAL	FINAL			
Height	18.9	17.2	mm	Particle Density (Assumed)	2.70
Diameter	74.96	74.96	mm		
Moisture Content	20.4	19.7	%	Degree of Saturation (%)	87.3
Wet Density	1.99	2.15	Mg/m^3		
Dry Density	1.66	1.79	Mg/m^3	Test Duration (Days)	5
				Date Tested	27/02/2020

Square Root of Time Fitting Method

Pressure Range kN/m2	Mv m2/MN	Cv m2/yr	Temp C	Voids Ratio
Initial				0.631
0 - 25	1.446	.	19	0.572
25 - 50	0.628	6.03	19	0.547
50 - 100	0.405	7.51	19	0.516
100 - 200	0.251	8.67	19	0.478
200 - 100	0.023	Swelling	19	0.481

For sample description please refer to the Laboratory Sample Description Sheet.

Contract Title:	Client:
Park Spring Road. Grimethorpe	**JPG (leeds) Ltd**

AEG	Signed:	Name: M. SELKIRK	Page 1 of 2	UKAS TESTING
	Date of Issue: 06/03/2020	Certificate No: 4270/C	AEG Contract No: 4270	1367

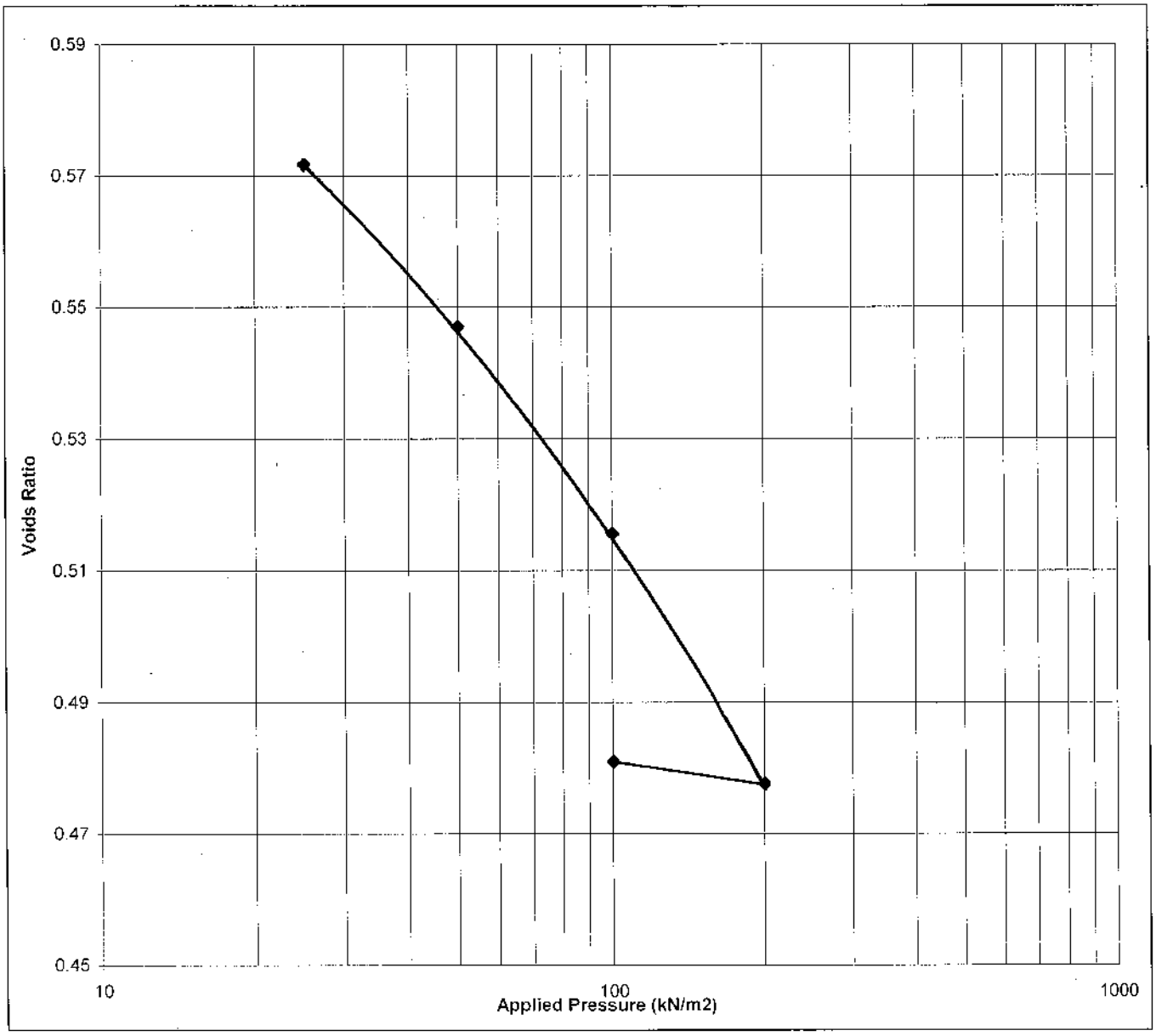
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ONE DIMENSIONAL CONSOLIDATION PROPERTIES

BS 1377 : PART 5 : 1990 : CLAUSE 3

Exploratory Hole No	**BH107**	**Sample**	**U9**	**Depth**	**2.50m**
Specimen Type	**Undisturbed**	**Orientation**	**Vertical**	**Specific Depth**	**2.75m**



Contract Title:	Client:
Park Spring Road. Grimethorpe	**JPG (leeds) Ltd**

Signed:	Name: M. SELKIRK	Page 2 of 2	
Date of Issue: 06/03/2020	Certificate No: 4270/C	AEG Contract No: 4270	UKAS TESTING 1367

ALLIED EXPLORATION & GEOTECHNICS LIMITED

Head Office: Unit 25 Stella Gill Industrial Estate, Pelton Fell, Chester-le-Street, Co. Durham, DH2 2RG - Tel: 0191 387 4700 Fax: 0191 387 4710
Regional Office: Unit 20, Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL - Tel: 01772 735 300 Fax: 01772 735 999

DETERMINATION OF SHEAR STRENGTH BY HAND VANE

Exploratory Hole No.	Sample Depth (m)	Sample ID	Specific Depth (m)	Vane Shear Strength (kPa)	Remarks
BH101	2.50	U10	2.50	11	
BH101	2.50	U10	2.50	9	
BH101	2.50	U10	2.50	9	
BH101	2.50	U10	2.50	10	Average
BH101	2.50	U10	2.95	18	
BH101	2.50	U10	2.95	11	
BH101	2.50	U10	2.95	12	
BH101	2.50	U10	2.95	14	Average
BH103	3.50	U13	3.50	15	
BH103	3.50	U13	3.50	11	
BH103	3.50	U13	3.50	9	
BH103	3.50	U13	3.50	12	Average
BH103	3.50	U13	3.95	17	
BH103	3.50	U13	3.95	17	
BH103	3.50	U13	3.95	19	
BH103	3.50	U13	3.95	18	Average
BH105	2.50	U11	2.50	57	
BH105	2.50	U11	2.50	48	
BH105	2.50	U11	2.50	25	
BH105	2.50	U11	2.50	43	Average

For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-	Client :-
Park Spring Road. Grimethorpe	JPG (leeds) Ltd

Signed :-	Name :-		Page 1 of 3
Date of issue :- 11/03/2020	Certificate No :- HSV/4270/1	AEG Contract No. :- 4270	

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DETERMINATION OF SHEAR STRENGTH BY HAND VANE

Exploratory Hole No.	Sample Depth (m)	Sample ID	Specific Depth (m)	Vane Shear Strength (kPa)	Remarks
BH105	2.50	U11	2.95	20	
BH105	2.50	U11	2.95	13	
BH105	2.50	U11	2.95	34	
BH105	2.50	U11	2.95	22	Average
BH105	4.50	U17	4.50	37	
BH105	4.50	U17	4.50	46	
BH105	4.50	U17	4.50	36	
BH105	4.50	U17	4.50	40	Average
BH105	4.50	U17	4.95	46	
BH105	4.50	U17	4.95	54	
BH105	4.50	U17	4.95	51	
BH105	4.50	U17	4.95	50	Average
BH106	2.50	U10	2.50	22	
BH106	2.50	U10	2.50	31	
BH106	2.50	U10	2.50	41	
BH106	2.50	U10	2.50	31	Average
BH106	2.50	U10	2.95	34	
BH106	2.50	U10	2.95	37	
BH106	2.50	U10	2.95	38	
BH106	2.50	U10	2.95	36	Average

For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-	Client :-
Park Spring Road. Grimethorpe	JPG (leeds) Ltd

Signed :-	Name :-		Page 2 of 3
Date of issue :- 11/03/2020	Certificate No :- HSV/4270/2	AEG Contract No. :- 4270	

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DETERMINATION OF SHEAR STRENGTH BY HAND VANE

Exploratory Hole No.	Sample Depth (m)	Sample ID	Specific Depth (m)	Vane Shear Strength (kPa)	Remarks
BH107	2.50	U9	2.50	27	
BH107	2.50	U9	2.50	16	
BH107	2.50	U9	2.50	20	
BH107	2.50	U9	2.50	21	Average
BH107	2.50	U9	2.95	25	
BH107	2.50	U9	2.95	22	
BH107	2.50	U9	2.95	22	
BH107	2.50	U9	2.95	23	Average

For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-	Client :-
Park Spring Road, Grimethorpe	JPG (leeds) Ltd

Signed :-	Name :-		Page 3 of 3
Date of issue :- 11/03/2020	Certificate No :- HSV/4270/3	AEG Contract No. :- 4270	

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UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

BS 1377 : Part 7 : Clauses 8 & 9 : 1990 Part 2 Clause 3.2

Exploratory Hole	Sample ID Depth (m)	Sample ID Type	Specific Depth (m)	Diameter (mm)	Length (mm)	Prep. Method	Stage No.	Initial Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Membrane Thickness (mm)	Membrane Correction (kPa)	Cell Pressure (kPa)	Corrected Deviator Stress (kPa)	Failure Strain (%)	Mode of Failure	cu (kPa)	Date Tested
BH101	2.50	U10	2.78	105.2	211.3	UNDISTURBED	1	16.6	1.88	1.61	0.3	1.09	50	16	20.0	P	8	27/02/2020
BH105	2.50	U11	2.79	103.2	192.4	UNDISTURBED	1	17.0	1.98	1.69	0.3	0.92	50	39	16.0	P	20	27/02/2020
BH105	4.50	U17	4.60	101.6	209.4	UNDISTURBED	1	20.8	2.02	1.67	0.3	1.12	100	44	20.0	P	22	27/02/2020
BH107	2.50	U9	2.80	107.7	211.0	UNDISTURBED	1	17.7	1.86	1.58	0.3	1.06	50	30	20.0	P	15	27/02/2020

For description of sample please refer to the Laboratory Sample Description Sheet. Please note the rate of strain was 2% per minute and the orientation of the test specimen was vertical. Latex membrane used.

Date of issue :- 10/03/2020	Certificate No :- TXL/4270/1	Signed :- MSong	Name :-	Page 1 of 1
Client :- JPG (leeds) Ltd	Contract Title :- Park Spring Road. Grimethorpe			AEG Contract No :- 4270

UKAS TESTING 1367

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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Regional Office: Unit 20, Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL - Tel: 01772 735 800 Fax: 01772 735 999

POINT LOAD STRENGTH INDEX

ISRM : 1985

Exploratory Hole No	Depth (m)	Type/ Orientation	Width (mm)	Platen Separation (mm)+	Failure Load (kN)*	De^2 (mm^2)	Point Load (IS) (MPa)	Size Factor	Point Load Index (IS50) (MPa)	Type	Date Tested
R0102	6.20	Axial	86.2	21.0	4.7	2304.8	2.05	0.98	2.011	Sandstone	18/03/2020
R0102	8.20	Diametral	217.5	80.4	6.3	6464.2	0.97	1.24	1.205	Sandstone	18/03/2020
R0102	8.20	Axial	86.4	49.8	8.9	5478.4	1.62	1.19	1.929	Sandstone	18/03/2020
R0102	9.55	Axial	86.1	54.1	1.5	5930.8	0.25	1.21	0.299	Siltstone	18/03/2020
R0102	11.30	Axial	86.2	36.6	0.7	4017.0	0.18	1.11	0.197	Siltstone	18/03/2020
R0103	6.70	Axial	86.7	51.1	1.2	5640.9	0.2	1.2	0.245	Siltstone	18/03/2020
R0103	8.30	Axial	86.2	45.5	0.5	4993.8	0.1	1.17	0.117	Siltstone	18/03/2020
R0103	9.60	Diametral	199.0	86.5	3.6	7482.3	0.48	1.28	0.616	Sandstone	18/03/2020
R0103	9.60	Irregular Lump	86.2	56.2	6.7	6168.1	1.08	1.23	1.325	Sandstone	18/03/2020
R0103	11.70	Diametral	118.1	85.1	11.6	7247.1	1.6	1.27	2.034	Siltstone#	18/03/2020
R0103	11.70	Irregular Lump	73.2	38.0	8.6	3539.2	2.43	1.08	2.628	Siltstone	18/03/2020
R0104	6.48	Diametral	159.1	80.7	2.0	6512.5	0.3	1.24	0.373	Sandstone	18/03/2020
R0104	6.48	Axial	86.2	53.4	6.4	5860.8	1.09	1.21	1.317	Sandstone	18/03/2020
R0104	7.70	Axial	86.5	32.3	2.9	3557.4	0.8	1.08	0.87	Siltstone	18/03/2020

NOTES - +Tested specimen measured using calibrated vernier calipers *Loads of less than 10kN Outside of UKAS accreditation #-Invalid Failure (Did not pass through both points) !-Too soft to register a reading

Date of issue :- 25/03/2020	Certificate No :- PL/4270/1	Signed :-	Name :-	Page 1 of 3
Client :- JPG (leeds) Ltd	Contract Title :- Park Spring Road. Grimethorpe			AEG Contract No :- 4270

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ALLIED EXPLORATION & GEOTECHNICS LIMITED

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POINT LOAD STRENGTH INDEX

ISRM : 1985

Exploratory Hole No	Depth (m)	Type/ Orientation	Width (mm)	Platen Separation (mm)+	Failure Load (kN)*	De^2 (mm^2)	Point Load (IS) (MPa)	Size Factor	Point Load Index (IS50) (MPa)	Type	Date Tested
R0104	9.70	Diametral	143.6	84.6	1.2	21.2	55.29	0.34	18.896	Siltstone	19/03/2020
R0104	9.70	Axial	86.1	49.3	4.6	5404.6	0.85	1.19	1.015	Siltstone	19/03/2020
R0104	11.35	Diametral	251.2	76.9	2.9	5913.6	0.49	1.21	0.597	Sandstone	19/03/2020
R0104	11.35	Axial	86.1	41.5	5.2	4549.5	1.15	1.14	1.318	Sandstone	19/03/2020
R0105	7.00	Axial	86.2	50.6	4.4	5553.5	0.79	1.2	0.95	Sandstone	19/03/2020
R0105	8.20	Diametral	121.8	86.0	0.2	7396.0	0.02	1.28	0.026	Sandstone#	19/03/2020
R0105	8.20	Axial	86.3	38.4	4.2	4219.4	1	1.12	0.13	Sandstone#	19/03/2020
R0105	9.90	Irregular Lump	86.7	54.1	0.9	5972.1	0.15	1.22	0.179	Siltstone	19/03/2020
R0105	11.90	Diametral	11.7	85.9	0.1	7278.8	0.01	1.28	0.017	Sandstone	19/03/2020
R0105	11.90	Axial	86.0	39.3	4.3	4304.3	1	1.13	1.134	Sandstone	19/03/2020
R0109	9.30	Diametral	136.3	85.8	0.0	7361.6	0	1.28	0.004	Siltstone	20/03/2020
R0109	9.30	Axial	86.1	52.8	1.4	5788.3	0.25	1.21	0.301	Siltstone	20/03/2020
R0109	11.10	Diametral	113.0	82.8	0.8	6855.8	0.11	1.25	0.143	Siltstone	20/03/2020
R0109	11.10	Axial	85.9	36.5	2.9	3992.1	0.73	1.11	0.815	Siltstone	20/03/2020

NOTES - +Tested specimen measured using calibrated vernier calipers *Loads of less than 10kN Outside of UKAS accreditation #-Invalid Failure (Did not pass through both points) !-Too soft to register a reading

Date of issue :- 25/03/2020	Certificate No :- PL/4270/2	Signed :- MSone	Name :-	Page 2 of 3
Client :- JPG (leeds) Ltd	Contract Title :- Park Spring Road. Grimethorpe			AEG Contract No :- 4270

UKAS TESTING 1367

ALLIED EXPLORATION & GEOTECHNICS LIMITED

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POINT LOAD STRENGTH INDEX

ISRM : 1985

Exploratory Hole No	Depth (m)	Type/ Orientation	Width (mm)	Platen Separation (mm)+	Failure Load (kN)*	De^2 (mm^2)	Point Load (IS) (MPa)	Size Factor	Point Load Index (IS50) (MPa)	Type	Date Tested
R0109	12.20	Axial	85.6	75.7	0.8	8250.5	0.09	1.31	0.127	Siltstone	19/03/2020
R0109	14.65	Axial	86.1	71.2	2.3	7805.4	0.29	1.29	0.376	Siltstone#	19/03/2020
R0113	6.00	Diametral	110.3	82.9	0.8	6872.4	0.12	1.26	0.152	Siltstone	20/03/2020
R0113	6.00	Axial	86.7	40.1	1.9	4426.6	0.43	1.14	0.486	Siltstone	20/03/2020
R0113	7.35	Diametral	114.9	84.3	0.3	7106.5	0.04	1.26	0.046	Siltstone	20/03/2020
R0113	7.35	Axial	86.3	56.7	2.3	4241.4	0.53	1.13	0.592	Siltstone	20/03/2020
R0113	9.02	Diametral	243.6	83.4	4.7	6955.6	0.68	1.26	0.858	Sandstone	20/02/2020
R0113	9.02	Axial	86.4	46.9	5.8	5159.4	1.13	1.18	1.325	Sandstone	20/03/2020
R0113	11.00	Diametral	252.3	85.6	4.7	7327.4	0.64	1.27	0.817	Sandstone	20/02/2020
R0113	11.00	Axial	86.3	61.6	6.2	6768.6	0.92	1.25	1.148	Sandstone	20/02/2020

NOTES - +Tested specimen measured using calibrated vernier calipers *Loads of less than 10kN Outside of UKAS accreditation #-Invalid Failure (Did not pass through both points) !-Too soft to register a reading

Date of issue :- 25/03/2020	Certificate No :- PL/4270/3	Signed :-	Name :-	Page 3 of 3
Client :- JPG (leeds) Ltd	Contract Title :- Park Spring Road. Grimethorpe			AEG Contract No :- 4270

UKAS TESTING 1367

LABORATORY TEST CERTIFICATE

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

Certificate No : **20/379 - 01**

To : **Michelle Selkirk**

Client : **Allied Exploration & Geotechnics Ltd.**
Unit 25 Stella Gill Industrial Estate
Pelton Fell
Chester-le-Street
County Durham
DH2 2RG

Dear Sirs,

LABORATORY TESTING OF ROCK

Introduction

We refer to samples taken from Grimethorpe 5161 and delivered to our laboratory on 02nd April 2020.

Material & Source

Sample Reference	:	See Report Plates
Sampled By	:	Client
Sampling Certificate	:	Not Supplied
Location	:	See Report Plates
Description	:	Rock Cores
Date Sampled	:	Not Supplied
Date Tested	:	02nd April 2020 Onwards
Source	:	4270 - Grimethorpe 5161

Test Results;

As Detailed On Page 2 to Page 4 inclusive

Comments;

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

Remarks;

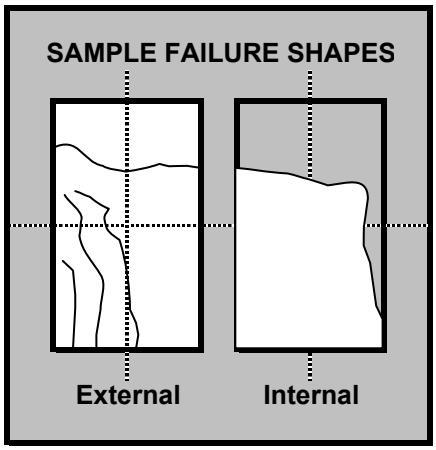
Approved for Issue

T McLelland (Director)

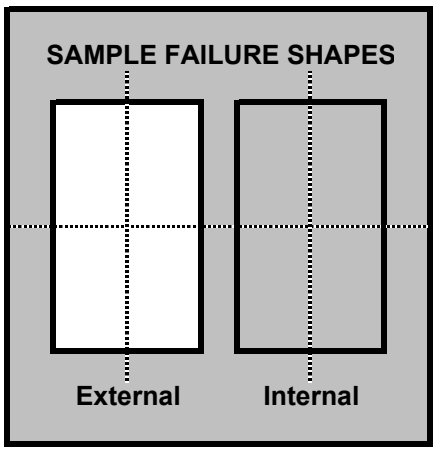
Date 08/04/2020

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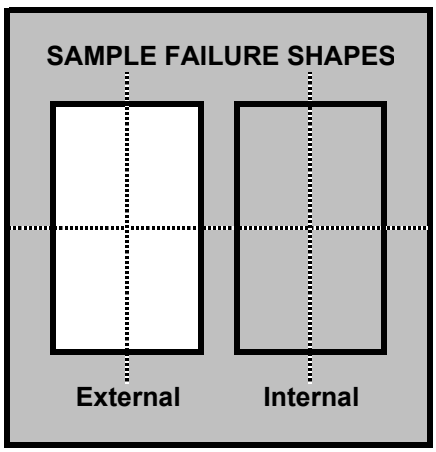
BOREHOLE		**RO103**
SAMPLE		**C**
DEPTH	m	**11.09**
SAMPLE DIAMETER	mm	**86.05**
SAMPLE HEIGHT	mm	**170.68**
TEST CONDITION		**As Received**
RATE OF LOADING	kN/s	**0.1**
TEST DURATION	min.sec	**4.50**
DATE OF TESTING		**06/04/2020**
LOAD FRAME USED		**2000kN**
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		**Unknown**
FAILURE LOAD	kN	**28.3**
UNCONFINED COMPRESSIVE STRENGTH	MPa	**4.9**
WATER CONTENT (ISRM Suggested Methods)	%	**4.0**
BULK DENSITY (ISRM Suggested Methods)	Mg/m^3	**2.50**
DRY DENSITY (ISRM Suggested Methods)	Mg/m^3	**2.41**



BOREHOLE		
SAMPLE		
DEPTH	m	
SAMPLE DIAMETER	mm	
SAMPLE HEIGHT	mm	
TEST CONDITION		
RATE OF LOADING	kN/s	
TEST DURATION	min.sec	
DATE OF TESTING		
LOAD FRAME USED		
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		
FAILURE LOAD	kN	
UNCONFINED COMPRESSIVE STRENGTH	MPa	
WATER CONTENT (ISRM Suggested Methods)	%	
BULK DENSITY (ISRM Suggested Methods)	Mg/m^3	
DRY DENSITY (ISRM Suggested Methods)	Mg/m^3	



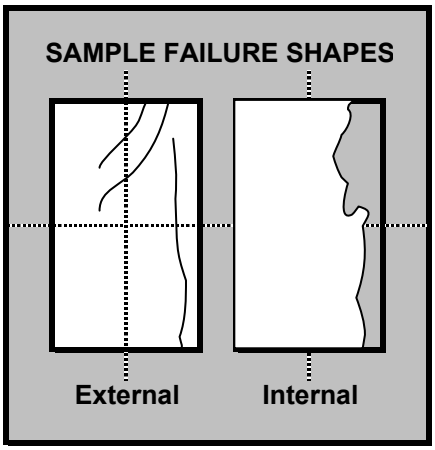
BOREHOLE		
SAMPLE		
DEPTH	m	
SAMPLE DIAMETER	mm	
SAMPLE HEIGHT	mm	
TEST CONDITION		
RATE OF LOADING	kN/s	
TEST DURATION	min.sec	
DATE OF TESTING		
LOAD FRAME USED		
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		
FAILURE LOAD	kN	
UNCONFINED COMPRESSIVE STRENGTH	MPa	
WATER CONTENT (ISRM Suggested Methods)	%	
BULK DENSITY (ISRM Suggested Methods)	Mg/m^3	
DRY DENSITY (ISRM Suggested Methods)	Mg/m^3	



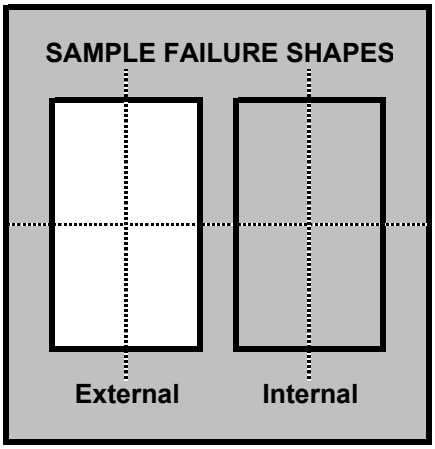
Tested in accordance with ASTM D7012 - 14

SUMMARY OF UNCONFINED COMPRESSIVE STRENGTH

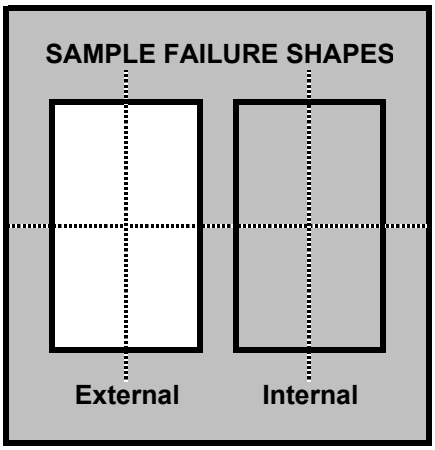
BOREHOLE		**RO105**
SAMPLE		**C**
DEPTH	m	**7.23**
SAMPLE DIAMETER	mm	**86.17**
SAMPLE HEIGHT	mm	**201.25**
TEST CONDITION		**As Received**
RATE OF LOADING	kN/s	**0.6**
TEST DURATION	min.sec	**5.11**
DATE OF TESTING		**06/04/2020**
LOAD FRAME USED		**2000kN**
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		**Unknown**
FAILURE LOAD	kN	**178.7**
UNCONFINED COMPRESSIVE STRENGTH	MPa	**30.6**
WATER CONTENT (ISRM Suggested Methods)	%	**4.3**
BULK DENSITY (ISRM Suggested Methods)	Mg/m^3	**2.47**
DRY DENSITY (ISRM Suggested Methods)	Mg/m^3	**2.37**



BOREHOLE		
SAMPLE		
DEPTH	m	
SAMPLE DIAMETER	mm	
SAMPLE HEIGHT	mm	
TEST CONDITION		
RATE OF LOADING	kN/s	
TEST DURATION	min.sec	
DATE OF TESTING		
LOAD FRAME USED		
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		
FAILURE LOAD	kN	
UNCONFINED COMPRESSIVE STRENGTH	MPa	
WATER CONTENT (ISRM Suggested Methods)	%	
BULK DENSITY (ISRM Suggested Methods)	Mg/m^3	
DRY DENSITY (ISRM Suggested Methods)	Mg/m^3	



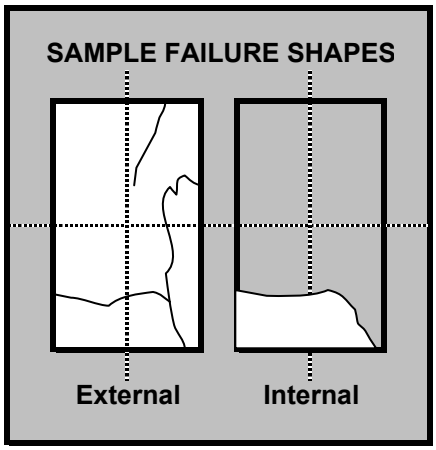
BOREHOLE		
SAMPLE		
DEPTH	m	
SAMPLE DIAMETER	mm	
SAMPLE HEIGHT	mm	
TEST CONDITION		
RATE OF LOADING	kN/s	
TEST DURATION	min.sec	
DATE OF TESTING		
LOAD FRAME USED		
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		
FAILURE LOAD	kN	
UNCONFINED COMPRESSIVE STRENGTH	MPa	
WATER CONTENT (ISRM Suggested Methods)	%	
BULK DENSITY (ISRM Suggested Methods)	Mg/m^3	
DRY DENSITY (ISRM Suggested Methods)	Mg/m^3	



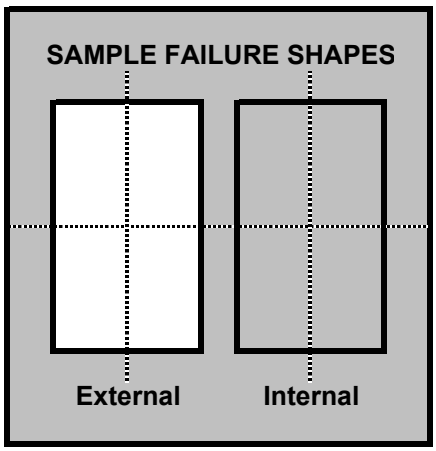
Tested in accordance with ASTM D7012 - 14

SUMMARY OF UNCONFINED COMPRESSIVE STRENGTH

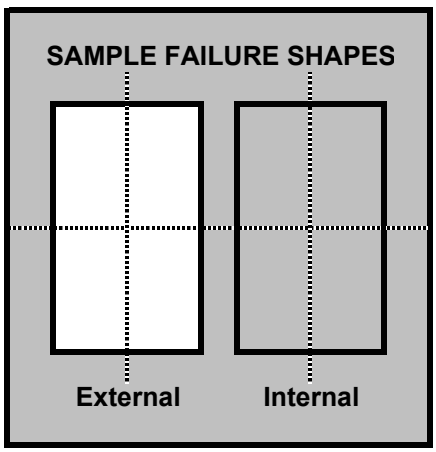
BOREHOLE		**RO109**
SAMPLE		**C**
DEPTH	m	**12.66**
SAMPLE DIAMETER	mm	**85.64**
SAMPLE HEIGHT	mm	**180.95**
TEST CONDITION		**As Received**
RATE OF LOADING	kN/s	**0.2**
TEST DURATION	min.sec	**4.00**
DATE OF TESTING		**06/04/2020**
LOAD FRAME USED		**2000kN**
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		**Unknown**
FAILURE LOAD	kN	**49.9**
UNCONFINED COMPRESSIVE STRENGTH	MPa	**8.7**
WATER CONTENT (ISRM Suggested Methods)	%	**3.7**
BULK DENSITY (ISRM Suggested Methods)	Mg/m^3	**2.55**
DRY DENSITY (ISRM Suggested Methods)	Mg/m^3	**2.46**



BOREHOLE		
SAMPLE		
DEPTH	m	
SAMPLE DIAMETER	mm	
SAMPLE HEIGHT	mm	
TEST CONDITION		
RATE OF LOADING	kN/s	
TEST DURATION	min.sec	
DATE OF TESTING		
LOAD FRAME USED		
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		
FAILURE LOAD	kN	
UNCONFINED COMPRESSIVE STRENGTH	MPa	
WATER CONTENT (ISRM Suggested Methods)	%	
BULK DENSITY (ISRM Suggested Methods)	Mg/m^3	
DRY DENSITY (ISRM Suggested Methods)	Mg/m^3	



BOREHOLE		
SAMPLE		
DEPTH	m	
SAMPLE DIAMETER	mm	
SAMPLE HEIGHT	mm	
TEST CONDITION		
RATE OF LOADING	kN/s	
TEST DURATION	min.sec	
DATE OF TESTING		
LOAD FRAME USED		
LOAD DIRECTION WITH RESPECT TO LITHOLOGY		
FAILURE LOAD	kN	
UNCONFINED COMPRESSIVE STRENGTH	MPa	
WATER CONTENT (ISRM Suggested Methods)	%	
BULK DENSITY (ISRM Suggested Methods)	Mg/m^3	
DRY DENSITY (ISRM Suggested Methods)	Mg/m^3	



Tested in accordance with ASTM D7012 - 14

SUMMARY OF UNCONFINED COMPRESSIVE STRENGTH

Appendix E Chemical Analysis Certificates and HazWasteOnline Waste Classification

STATISTICAL ASSESSMENT OF CHEMICAL ANALYSIS

The results of the chemical analysis have been assessed in accordance with CL:AIRE (Contaminated Land: Applications in Real Environments) 'Guidance on Comparing Soil Contamination Data with a Critical Concentration' published by the CIEH, May 2008.

This guidance provides a statistical approach to objectively evaluate the evidence for and against particular propositions/hypothesis and has the useful attribute of enabling decision makers to reach conclusions about the available evidence, with at least some understanding of the validity of the results.

The guidance approaches this in the context of assessing the results from two different perspectives, the Planning Scenario and Part 2A.

When assessing in terms of the Planning Scenario, the key question would be 'can we confidently say that the level of contamination on this land is low relative to some appropriate measure of risk?' Under Part 2A, the question would be 'can we confidently say that the level of contamination is high relative to some appropriate measure of risk?'

These questions are addressed through the use of formal hypothesis – the "Null Hypothesis" and the "Alternative Hypothesis".

This assessment will be carried out in accordance with the Planning Scenario, where the aim is to demonstrate 'suitability for use'. The Null Hypothesis is that the level of contamination is the same as, or higher than the critical concentration/GAC. The Alternative Hypothesis is that the level of contamination is lower than the critical concentration/GAC. Under Part 2A the opposite set of propositions are applicable.

By convention, the Null Hypothesis is the starting proposition against which the key question, as expressed by the Alternative Hypothesis, can be tested.

The assessment of the results relies on there being a normal distribution of results for a particular contaminant and that the data set under consideration is representative of the particular material which is being assessed. If more than one dataset is present, then the hypothesis should be applied individually for each data set.

Under the Planning Scenario, the statistical test is used to demonstrate that there is a 95% probability that the true population mean falls below the critical concentration/GAC.

Appropriate data sets must be created to enable the statistical testing to be carried out and three key elements must be considered prior to statistical analysis. These are as follows:

- Dealing with non-detects;
- Understanding the statistical distribution of data; and
- Dealing with outliers.

The results can then be assessed, and the results will be compared against the following:

- Sample Mean – if the sample mean of the data set is in excess of the GAC then the Upper Confidence Limit of the true population mean will be higher than the critical concentration.
- 95% of the Upper Confidence Limit.
- One Sample T Test (parametric test) carried out at the 95% confidence level.

On the basis of these tests, the validity of the Null Hypothesis can be assessed.

Certificate of Analysis

Certificate Number	20-02654
	18-Feb-20
Client	JPG (Leeds) LTD Civil & Structural Engineers 5 John Charles Way Leeds LS12 6QA
Our Reference	20-02654
Client Reference	5161
Order No	(not supplied)
Contract Title	Grimethorpe
Description	7 Soil samples, 4 Leachate samples.
Date Received	10-Feb-20
Date Started	10-Feb-20
Date Completed	18-Feb-20
Test Procedures	Identified by prefix DETSn (details on request).
Notes	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.

Approved By

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis

Soil Samples

Our Ref 20-02654
Client Ref 5161
Contract Title Grimethorpe

				Lab No	1635792	1635793	1635794	1635795	1635796	1635797
				Sample ID	TP107	TP112	TP123	TP128	TP120	TP102
				Depth	0.50	0.30-0.50	0.30-0.50	0.20	0.50	3.00
				Other ID						
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date	04/02/2020	04/02/2020	04/02/2020	04/02/2020	04/02/2020	05/02/2020
				Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Metals										
Arsenic	DETSC 2301#	0.2	mg/kg	8.3	8.4	12	6.2	12	24
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.3	< 0.1	0.1
Chromium	DETSC 2301#	0.15	mg/kg	26	29	37	12	36	22
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0	< 1.0		< 1.0
Copper	DETSC 2301#	0.2	mg/kg	39	41	43	23	43	39
Lead	DETSC 2301#	0.3	mg/kg	20	21	31	24	30	26
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	0.06	0.05
Nickel	DETSC 2301#	1	mg/kg	44	49	45	13	43	40
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.8
Zinc	DETSC 2301#	1	mg/kg	96	100	100	70	94	87
Inorganics										
pH	DETSC 2008#		pH	7.0	7.1	8.7	8.9	7.3	7.5
Calorific Value	DETSC 5008	1	MJ/kg	< 1.0		< 1.0	< 1.0		< 1.0
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Organic matter	DETSC 2002#	0.1	%	0.8	0.9	2.1	1.9	1.8	2.0
Ammoniacal Nitrogen as N	DETSC 2119#	0.5	mg/kg	1.4		2.0	2.7		4.7
Chloride	DETSC 2055	1	mg/kg	19.4		19.7	25.2		57.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	56	56	74	83	330	400
Sulphide	DETSC 2024*	10	mg/kg	20		76	32		36
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg	325		745	743		1710
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01		< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01		< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01		< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5	< 1.5		< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2		< 1.2	< 1.2		< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5	< 1.5		< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4		< 3.4	< 3.4		< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	< 10		< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01		< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01		< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01		< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9		< 0.9	< 0.9		< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5		< 0.5	< 0.5		< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6		< 0.6	< 0.6		< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4		< 1.4	< 1.4		< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	< 10		< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10		< 10	< 10		< 10

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis

Soil Samples

Our Ref 20-02654
Client Ref 5161
Contract Title Grimethorpe

			Lab No	1635792	1635793	1635794	1635795	1635796	1635797
			Sample ID	TP107	TP112	TP123	TP128	TP120	TP102
			Depth	0.50	0.30-0.50	0.30-0.50	0.20	0.50	3.00
			Other ID						
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	04/02/2020	04/02/2020	04/02/2020	04/02/2020	04/02/2020	05/02/2020
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.06
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.05
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.10
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Soil Samples

Our Ref 20-02654
Client Ref 5161
Contract Title Grimethorpe

			Lab No	1635798
			Sample ID	TP122
			Depth	0.50
			Other ID	
			Sample Type	SOIL
			Sampling Date	05/02/2020
			Sampling Time	n/s
Test	**Method**	**LOD**	**Units**	
Metals				
Arsenic	DETSC 2301#	0.2	mg/kg	22
Cadmium	DETSC 2301#	0.1	mg/kg	0.2
Chromium	DETSC 2301#	0.15	mg/kg	23
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	54
Lead	DETSC 2301#	0.3	mg/kg	43
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05
Nickel	DETSC 2301#	1	mg/kg	43
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5
Zinc	DETSC 2301#	1	mg/kg	100
Inorganics				
pH	DETSC 2008#		pH	7.9
Calorific Value	DETSC 5008	1	MJ/kg	< 1.0
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1
Organic matter	DETSC 2002#	0.1	%	1.9
Ammoniacal Nitrogen as N	DETSC 2119#	0.5	mg/kg	6.6
Chloride	DETSC 2055	1	mg/kg	51.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	380
Sulphide	DETSC 2024*	10	mg/kg	40
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg	1390
Petroleum Hydrocarbons				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis

Soil Samples

Our Ref 20-02654
Client Ref 5161
Contract Title Grimethorpe

Lab No	1635798
Sample ID	TP122
Depth	0.50
Other ID	
Sample Type	SOIL
Sampling Date	05/02/2020
Sampling Time	n/s

Test	Method	LOD	Units	
PAHs				
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10
Phenols				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis

Leachate Samples

Our Ref 20-02654
Client Ref 5161
Contract Title Grimethorpe

	Lab No	1635799	1635800	1635801	1635802
	Sample ID	TP107	TP123	TP102	TP122
	Depth	0.50	0.30-0.50	3.00	0.50
	Other ID				
	Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE
	Sampling Date	04/02/2020	04/02/2020	05/02/2020	05/02/2020
	Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Preparation							
NRA Leachate Preparation	DETSC 1009*			Y	Y	Y	Y
Metals							
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	< 0.16	< 0.16	< 0.16	< 0.16
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25	< 0.25	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	< 0.4	< 0.4	< 0.4	< 0.4
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	< 0.09	< 0.09	< 0.09
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25	< 0.25	< 0.25
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3	< 1.3	< 1.3	< 1.3
Inorganics							
pH	DETSC 2008		pH	6.9	6.9	7.2	6.4
Cyanide, Free	DETSC 2130	20	ug/l	< 20	< 20	< 20	< 20
Sulphate as SO4	DETSC 2055	0.1	mg/l	20	33	12	26
PAHs							
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05	0.09	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	0.05	0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	0.04	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.05	0.03	0.23	0.05
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	0.03	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.02	0.01	0.06	0.02
Pyrene	DETSC 3304	0.01	ug/l	0.01	0.01	0.04	0.02
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	0.05	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	0.04	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	0.01	< 0.01	0.02	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.02	0.01	0.06	0.02
PAH Total	DETSC 3304	0.2	ug/l	< 0.20	< 0.20	0.73	0.22
Phenols							
Phenol	DETSC 3451*	0.5	ug/l	< 0.50	< 0.50	< 0.50	< 0.50

Key: * -not accredited. n/s -not supplied.

Summary of Asbestos Analysis

Soil Samples

Our Ref 20-02654
Client Ref 5161
Contract Title Grimethorpe

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1635792	TP107 0.50	SOIL	NAD	none	Keith Wilson
1635794	TP123 0.30-0.50	SOIL	NAD	none	Keith Wilson
1635795	TP128 0.20	SOIL	NAD	none	Keith Wilson
1635797	TP102 3.00	SOIL	NAD	none	Keith Wilson
1635798	TP122 0.50	SOIL	NAD	none	Keith Wilson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 20-02654
Client Ref 5161
Contract Grimethorpe

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1635792	TP107 0.50 SOIL	04/02/20	GJ 250ml, GJ 60ml, PT 1L		
1635793	TP112 0.30-0.50 SOIL	04/02/20	GJ 250ml, GJ 60ml, PT 1L		
1635794	TP123 0.30-0.50 SOIL	04/02/20	GJ 250ml, GJ 60ml, PT 1L		
1635795	TP128 0.20 SOIL	04/02/20	GJ 250ml, GJ 60ml, PT 1L		
1635796	TP120 0.50 SOIL	04/02/20	GJ 250ml, GJ 60ml, PT 1L		
1635797	TP102 3.00 SOIL	05/02/20	GJ 250ml, GJ 60ml, PT 1L		
1635798	TP122 0.50 SOIL	05/02/20	GJ 250ml, GJ 60ml, PT 1L		
1635799	TP107 0.50 LEACHATE	04/02/20	GJ 250ml, GJ 60ml, PT 1L		
1635800	TP123 0.30-0.50 LEACHATE	04/02/20	GJ 250ml, GJ 60ml, PT 1L		
1635801	TP102 3.00 LEACHATE	05/02/20	GJ 250ml, GJ 60ml, PT 1L		
1635802	TP122 0.50 LEACHATE	05/02/20	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number 20-02659

14-Feb-20

Client JPG (Leeds) LTD
Civil & Structural Engineers
5 John Charles Way
Leeds
LS12 6QA

Our Reference 20-02659

Client Reference 5161

Order No (not supplied)

Contract Title Factory No 2, Grimethorpe

Description 6 Soil samples, 2 Leachate samples.

Date Received 10-Feb-20

Date Started 10-Feb-20

Date Completed 14-Feb-20

Test Procedures Identified by prefix DETSn (details on request).

Notes 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.

Approved By

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis

Soil Samples

Our Ref 20-02659
Client Ref 5161
Contract Title Factory No 2, Grimethorpe

	Lab No	1635817	1635818	1635819	1635821	1635822	1635823
	Sample ID	TP106	TP103	TP101	TP105	TP105	BH101
	Depth	0.30-0.50	0.30-0.50	0.10	2.00	2.10	2.20
	Other ID						
	Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampling Date	04/02/2020	04/02/2020	04/02/2020	04/02/2020	04/02/2020	05/02/2020
	Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	14	13	11	12		12
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	< 0.1	0.1	0.1		0.2
Chromium	DETSC 2301#	0.15	mg/kg	24	20	21	23		20
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0	< 1.0		
Copper	DETSC 2301#	0.2	mg/kg	67	43	37	41		35
Lead	DETSC 2301#	0.3	mg/kg	500	25	25	37		21
Mercury	DETSC 2325#	0.05	mg/kg	0.09	0.07	0.08	0.08		0.07
Nickel	DETSC 2301#	1	mg/kg	38	33	36	34		35
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5		< 0.5
Zinc	DETSC 2301#	1	mg/kg	220	85	88	100		84
Inorganics									
pH	DETSC 2008#		pH	7.3	7.6	7.7	7.6		7.6
Calorific Value	DETSC 5008	1	MJ/kg	< 1.0	< 1.0	< 1.0	< 1.0		
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Organic matter	DETSC 2002#	0.1	%	1.8	2.0	1.9	1.9		
Ammoniacal Nitrogen as N	DETSC 2119#	0.5	mg/kg	3.0		3.1	2.9		
Chloride	DETSC 2055	1	mg/kg	32.7		25.8	38.0		
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	280	280	470	250		240
Sulphide	DETSC 2024*	10	mg/kg	< 10		< 10	140		
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg	1170		1220	1200		
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5	< 1.5	3.8	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2		< 1.2	< 1.2	18	
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5	< 1.5	82	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4		< 3.4	< 3.4	820	
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	< 10	930	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9		< 0.9	< 0.9	1.4	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5		< 0.5	< 0.5	12	
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6		< 0.6	< 0.6	110	
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4		< 1.4	< 1.4	1400	
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	< 10	1500	
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10		< 10	< 10	2500	

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis

Soil Samples

Our Ref 20-02659
Client Ref 5161
Contract Title Factory No 2, Grimethorpe

	Lab No	1635817	1635818	1635819	1635821	1635822	1635823
	Sample ID	TP106	TP103	TP101	TP105	TP105	BH101
	Depth	0.30-0.50	0.30-0.50	0.10	2.00	2.10	2.20
	Other ID						
	Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampling Date	04/02/2020	04/02/2020	04/02/2020	04/02/2020	04/02/2020	05/02/2020
	Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
PAHs							
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.16		< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03		< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.03		< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03		< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.13		< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03		< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.05		< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.04		< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.04		< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03		< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03		< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03		< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03		< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03		< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03		< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03		< 0.03
Naphthalene	DETSC 3301	0.1	mg/kg					< 0.1	
Acenaphthylene	DETSC 3301	0.1	mg/kg					0.2	
Acenaphthene	DETSC 3301	0.1	mg/kg					0.2	
Fluorene	DETSC 3301	0.1	mg/kg					0.1	
Phenanthrene	DETSC 3301	0.1	mg/kg					0.2	
Anthracene	DETSC 3301	0.1	mg/kg					0.3	
Fluoranthene	DETSC 3301	0.1	mg/kg					0.4	
Pyrene	DETSC 3301	0.1	mg/kg					0.3	
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg					0.9	
Chrysene	DETSC 3301	0.1	mg/kg					1.2	
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg					0.3	
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg					0.4	
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg					0.6	
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg					0.4	
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg					1.4	
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg					0.5	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	0.41		< 0.10
PAH Total	DETSC 3301	1.6	mg/kg					7.4	
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3		0.4

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Summary of Chemical Analysis
Leachate Samples

Our Ref 20-02659
Client Ref 5161
Contract Title Factory No 2, Grimethorpe

			Lab No	1635824	1635825
			Sample ID	TP106	TP105
			Depth	0.30-0.50	2.00
			Other ID		
			Sample Type	LEACHATE	LEACHATE
			Sampling Date	04/02/2020	04/02/2020
			Sampling Time	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Preparation					
NRA Leachate Preparation	DETSC 1009*			Y	Y
Metals					
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	< 0.16	< 0.16
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	< 0.4	< 0.4
Lead, Dissolved	DETSC 2306	0.09	ug/l	< 0.09	< 0.09
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25
Zinc, Dissolved	DETSC 2306	1.3	ug/l	< 1.3	< 1.3
Inorganics					
pH	DETSC 2008		pH	8.0	6.9
Cyanide, Free	DETSC 2130	20	ug/l	< 20	< 20
Sulphate as SO4	DETSC 2055	0.1	mg/l	9.7	35
PAHs					
Naphthalene	DETSC 3304	0.05	ug/l	0.08	0.22
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	0.01
Acenaphthene	DETSC 3304	0.01	ug/l	0.02	0.10
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	0.06
Phenanthrene	DETSC 3304	0.01	ug/l	0.06	0.41
Anthracene	DETSC 3304	0.01	ug/l	0.01	0.04
Fluoranthene	DETSC 3304	0.01	ug/l	0.05	0.11
Pyrene	DETSC 3304	0.01	ug/l	0.05	0.11
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	0.02	0.02
Chrysene	DETSC 3304	0.01	ug/l	0.04	0.13
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.06	0.13
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.02	0.04
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	0.04	0.06
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	0.12	0.12
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	0.01	0.02
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.15	0.22
PAH Total	DETSC 3304	0.2	ug/l	0.72	1.8
Phenols					
Phenol	DETSC 3451*	0.5	ug/l	< 0.50	< 0.50

Key: * -not accredited. n/s -not supplied.

Summary of Asbestos Analysis

Soil Samples

Our Ref 20-02659
Client Ref 5161
Contract Title Factory No 2, Grimethorpe

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1635817	TP106 0.30-0.50	SOIL	NAD	none	Lee Kerridge
1635819	TP101 0.10	SOIL	NAD	none	Lee Kerridge
1635821	TP105 2.00	SOIL	NAD	none	Lee Kerridge

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 20-02659
Client Ref 5161
Contract Factory No 2, Grimethorpe

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1635817	TP106 0.30-0.50 SOIL	04/02/20	GJ 250ml, GJ 60ml, PT 1L		
1635818	TP103 0.30-0.50 SOIL	04/02/20	GJ 250ml, GJ 60ml, PT 1L		
1635819	TP101 0.10 SOIL	04/02/20	GJ 250ml, GJ 60ml, PT 1L		
1635820	TP101 0.30 SOIL	04/02/20	GJ 250ml, GJ 60ml, PT 1L		
1635821	TP105 2.00 SOIL	04/02/20	GJ 250ml, GJ 60ml, PT 1L		
1635822	TP105 2.10 SOIL	04/02/20	GJ 250ml		
1635823	BH101 2.20 SOIL	05/02/20	GJ 250ml x2, GJ 60ml x2, PT 1L x2		
1635824	TP106 0.30-0.50 LEACHATE	04/02/20	GJ 250ml, GJ 60ml, PT 1L		
1635825	TP105 2.00 LEACHATE	04/02/20	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number 20-05008

13-Mar-20

Client JPG (Leeds) LTD
Civil & Structural Engineers
5 John Charles Way
Leeds
LS12 6QA

Our Reference 20-05008

Client Reference 5161

Order No 5161

Contract Title Factory No 2, Grimethorpe

Description One Soil sample.

Date Received 06-Mar-20

Date Started 06-Mar-20

Date Completed 13-Mar-20

Test Procedures Identified by prefix DETSn (details on request).

Notes 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.

Approved By

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 20-05008
Client Ref 5161
Contract Title Factory No 2, Grimethorpe

Lab No	1651177
Sample ID	TP113
Depth	2.70-2.90
Other ID	
Sample Type	SOIL
Sampling Date	27/02/2020
Sampling Time	n/s

Test	Method	LOD	Units	
Metals				
Arsenic	DETSC 2301#	0.2	mg/kg	12
Cadmium	DETSC 2301#	0.1	mg/kg	3.0
Chromium	DETSC 2301#	0.15	mg/kg	19
Copper	DETSC 2301#	0.2	mg/kg	48
Lead	DETSC 2301#	0.3	mg/kg	29
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05
Nickel	DETSC 2301#	1	mg/kg	32
Selenium	DETSC 2301#	0.5	mg/kg	0.7
Zinc	DETSC 2301#	1	mg/kg	140
Inorganics				
pH	DETSC 2008#		pH	7.5
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1
Organic matter	DETSC 2002#	0.1	%	1.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	52
PAHs				
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10
Phenols				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 20-05008
Client Ref 5161
Contract Factory No 2, Grimethorpe

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1651177	TP113 2.70-2.90 SOIL	27/02/20	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number 20-04689

11-Mar-20

Client JPG (Leeds) LTD
Civil & Structural Engineers
5 John Charles Way
Leeds
LS12 6QA

Our Reference 20-04689

Client Reference 5161

Order No 5161

Contract Title Factory No.2, Grimethorpe

Description 7 Soil samples.

Date Received 04-Mar-20

Date Started 04-Mar-20

Date Completed 11-Mar-20

Test Procedures Identified by prefix DETSn (details on request).

Notes 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.

Approved By

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 20-04689
Client Ref 5161
Contract Title Factory No.2, Grimethorpe

			Lab No	1649344	1649345	1649346	1649347	1649348	1649349	1649350
			Sample ID	TP121	TP109	TP104	TP125	TP126	TP119	TP111
			Depth	0.20-0.40	0.50-0.60	1.80-2.00	0.10-0.30	0.50-0.70	1.40-1.60	0.20-0.30
			Other ID							
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	27/02/2020	27/02/2020	27/02/2020	27/02/2020	27/02/2020	27/02/2020	27/02/2020
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Metals										
Arsenic	DETSC 2301#	0.2	mg/kg	2.2	2.4	2.1	2.3	1.9	2.4	2.3
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	13	13	13	14	12	14	13
Copper	DETSC 2301#	0.2	mg/kg	10	12	10	12	11	9.6	12
Lead	DETSC 2301#	0.3	mg/kg	11	11	11	11	10	11	12
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	7.7	8.3	8.4	8.5	7.2	8.4	8.2
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	33	34	31	34	30	35	36
Inorganics										
pH	DETSC 2008#		pH	6.5	6.5	7.4	6.7	6.7	7.0	8.4
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Organic matter	DETSC 2002#	0.1	%	0.7	0.7	0.5	0.7	1.0	1.1	0.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	< 10	< 10	< 10	< 10	< 10	11	12
PAHs										
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.06	0.05	0.08	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.08	0.05	0.09	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.07	0.05	0.09	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.05	0.03	0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.03	< 0.03	0.04	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.03	0.04	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.26	0.19	0.30	< 0.10	< 0.10	< 0.10	< 0.10
Phenols										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 20-04689
Client Ref 5161
Contract Factory No.2, Grimethorpe

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1649344	TP121 0.20-0.40 SOIL	27/02/20	GJ 250ml, GJ 60ml, PT 1L		
1649345	TP109 0.50-0.60 SOIL	27/02/20	GJ 250ml, GJ 60ml, PT 1L		
1649346	TP104 1.80-2.00 SOIL	27/02/20	GJ 250ml, GJ 60ml, PT 1L		
1649347	TP125 0.10-0.30 SOIL	27/02/20	GJ 250ml, GJ 60ml, PT 1L		
1649348	TP126 0.50-0.70 SOIL	27/02/20	GJ 250ml, GJ 60ml, PT 1L		
1649349	TP119 1.40-1.60 SOIL	27/02/20	GJ 250ml, GJ 60ml, PT 1L		
1649350	TP111 0.20-0.30 SOIL	27/02/20	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Certificate of Analysis

Certificate Number	20-05734
	23-Mar-20
Client	JPG (Leeds) LTD Civil & Structural Engineers 5 John Charles Way Leeds LS12 6QA
Our Reference	20-05734
Client Reference	5161
Order No	(not supplied)
Contract Title	(not supplied)
Description	3 Water samples.
Date Received	16-Mar-20
Date Started	16-Mar-20
Date Completed	23-Mar-20
Test Procedures	Identified by prefix DETSn (details on request).
Notes	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.

Approved By

Adam Fenwick
Contracts Manager

UKAS TESTING
2139

Summary of Chemical Analysis
Water Samples

Our Ref 20-05734
Client Ref 5161
Contract Title

	Lab No	1655270	1655271	1655272
	Sample ID	RO103	RO106	RO110
	Depth	6.95	1.98	6.85
	Other ID			
	Sample Type	WATER	WATER	WATER
	Sampling Date	12/03/2020	12/03/2020	12/03/2020
	Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Preparation						
NRA Leachate Preparation	DETSC 1009*			Y	Y	Y
Metals						
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	2.7	0.70	0.43
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	16	5.2	0.45
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	< 0.25	0.34
Copper, Dissolved	DETSC 2306	0.4	ug/l	2000	400	0.7
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.12	0.14	0.13
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	3.5	2.1	2.8
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.62	< 0.25	< 0.25
Zinc, Dissolved	DETSC 2306	1.3	ug/l	330	3.6	11
Inorganics						
pH	DETSC 2008		pH	7.2	6.9	6.9
Cyanide, Free	DETSC 2130	20	ug/l	< 20	< 20	< 20
Sulphate as SO4	DETSC 2055	0.1	mg/l	680	600	720
PAHs						
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	0.02
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20	< 0.20	< 0.20
Phenols						
Phenol	DETSC 3451*	0.5	ug/l	< 0.50	< 0.50	< 0.50

Key: * -not accredited. n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 20-05734
Client Ref 5161
Contract

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1655270	RO103 6.95 WATER	12/03/20	GB 1L, GV x2, PB 1L	pH/Cond/TDS (1 days)	
1655271	RO106 1.98 WATER	12/03/20	GB 1L, GV x2, PB 1L	pH/Cond/TDS (1 days)	
1655272	RO110 6.85 WATER	12/03/20	GB 1L, GV x2, PB 1L	pH/Cond/TDS (1 days)	

Key: G-Glass P-Plastic B-Bottle V-Vial

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Waste Classification Report

AYK8G-AVP37-JJXSW

Job name

5161 Symphony Kitchen, Grimethorpe

Description/Comments

Project

5161

Site

Symphony Kitchens, Grimethorpe

Related Documents

#	Name	Description
None		

Waste Stream Template

JPG WASTE STREAM V20

Classified by

Name:
John Parkinson
Date:
12 Jun 2020 15:27 GMT
Telephone:
0113 263 1155

Company:
JPG (LEEDS) Ltd
5 John Charles Way
Leeds
LS12 6QA

HazWasteOnline™ Training Record:

Course	Date
Hazardous Waste Classification	11 Sep 2017
Advanced Hazardous Waste Classification	11 Mar 2020

Report

Created by: John Parkinson
Created date: 12 Jun 2020 15:27 GMT

Job summary

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
1	TP107	0.50	Non Hazardous		3
2	TP112	0.30-0.50	Non Hazardous		5
3	TP123	0.30-0.50	Non Hazardous		7
4	TP128	0.20	Non Hazardous		9
5	TP120	0.50	Non Hazardous		11
6	TP102	3.00	Non Hazardous		13
7	TP122	0.50	Non Hazardous		15
8	TP106	0.30-0.50	Non Hazardous		17
9	TP103	0.30-0.50	Non Hazardous		19
10	TP101	0.10	Non Hazardous		21
11	TP105	2.00	Non Hazardous		23
12	BH101	2.20	Non Hazardous		25

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
13	TP121	0.20-0.40	Non Hazardous		27
14	TP109	0.50-0.60	Non Hazardous		29
15	TP104	1.80-2.00	Non Hazardous		31
16	TP125	0.10-0.30	Non Hazardous		33
17	TP126	0.50-0.70	Non Hazardous		35
18	TP119	1.40-1.60	Non Hazardous		37
19	TP111	0.20-0.30	Non Hazardous		39
20	TP113	2.70-2.90	Non Hazardous		41
21	TP107[2]	0.50	Non Hazardous		43
22	TP112[2]	0.30-0.50	Non Hazardous		45
23	TP123[2]	0.30-0.50	Non Hazardous		47
24	TP128[2]	0.20	Non Hazardous		49
25	TP120[2]	0.50	Non Hazardous		51
26	TP102[2]	3.00	Non Hazardous		53
27	TP122[2]	0.50	Non Hazardous		55
28	TP106[2]	0.30-0.50	Non Hazardous		57
29	TP103[2]	0.30-0.50	Non Hazardous		59
30	TP101[2]	0.10	Non Hazardous		61
31	TP105[2]	2.00	Non Hazardous		63
32	BH101[2]	2.20	Non Hazardous		65
33	TP121[2]	0.20-0.40	Non Hazardous		67
34	TP109[2]	0.50-0.60	Non Hazardous		69
35	TP104[2]	1.80-2.00	Non Hazardous		71
36	TP125[2]	0.10-0.30	Non Hazardous		73
37	TP126[2]	0.50-0.70	Non Hazardous		75
38	TP119[2]	1.40-1.60	Non Hazardous		77
39	TP111[2]	0.20-0.30	Non Hazardous		79
40	TP113[2]	2.70-2.90	Non Hazardous		81

Appendices	Page
Appendix A: Classifier defined and non CLP determinands	83
Appendix B: Rationale for selection of metal species	84
Appendix C: Version	85

Classification of sample: TP107

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

Sample details

Sample Name:	LoW Code:
TP107	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
0.50 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.3 mg/kg	1.32	10.959 mg/kg	0.0011 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<**LOD**
3	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 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		39 mg/kg	1.126	43.91 mg/kg	0.00439 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	20 mg/kg	1.56	31.196 mg/kg	0.002 %		
7	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05 mg/kg	1.16	<0.058 mg/kg	<0.0000058 %		<**LOD**
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		44 mg/kg	2.976	130.956 mg/kg	0.0131 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<**LOD**
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		96 mg/kg	2.774	266.318 mg/kg	0.0266 %		
11	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<**LOD**
12	pH			PH		7 pH		7 pH	7pH		
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1 mg/kg	1.884	<0.188 mg/kg	<0.0000188 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
15	•	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
16	•	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-469-6	83-32-9									
17	•	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-695-5	86-73-7									
18	•	phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
19	•	anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-371-1	120-12-7									
20	•	fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-912-4	206-44-0									
21	•	pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
27	•	indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
29	•	benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-883-8	191-24-2									
30		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0524 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP112

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

Sample details

Sample Name:	LoW Code:
TP112	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
0.30-0.50 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	arsenic { arsenic trioxide }		8.4 mg/kg	1.32	11.091 mg/kg	0.00111 %		
	033-003-00-0 / 215-481-4 / 1327-53-3							
2	cadmium { cadmium oxide }		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
	048-002-00-0 / 215-146-2 / 1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		29 mg/kg	1.462	42.385 mg/kg	0.00424 %		
	/ 215-160-9 / 1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }		41 mg/kg	1.126	46.161 mg/kg	0.00462 %		
	029-002-00-X / 215-270-7 / 1317-39-1							
5	lead { lead chromate }	1	21 mg/kg	1.56	32.756 mg/kg	0.0021 %		
	082-004-00-2 / 231-846-0 / 7758-97-6							
6	mercury { mercury(II) sulfide }		<0.05 mg/kg	1.16	<0.058 mg/kg	<0.0000058 %		<LOD
	/ 215-696-3 / 1344-48-5							
7	nickel { nickel chromate }		49 mg/kg	2.976	145.837 mg/kg	0.0146 %		
	028-035-00-7 / 238-766-5 / 14721-18-7							
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<LOD
	034-002-00-8 / /							
9	zinc { zinc chromate }		100 mg/kg	2.774	277.415 mg/kg	0.0277 %		
	024-007-00-3 / 236-878-9 / 13530-65-9							
10	pH		7.1 pH		7.1 pH	7.1 pH		
	/ / PH							
11	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 }		<0.1 mg/kg	1.884	<0.188 mg/kg	<0.0000188 %		<LOD
	006-007-00-5 / /							
12	naphthalene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
	601-052-00-2 / 202-049-5 / 91-20-3							
13	acenaphthylene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
	/ 205-917-1 / 208-96-8							
14	acenaphthene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
	/ 201-469-6 / 83-32-9							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
19		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
20		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
28		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0546 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP123

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

Sample details

Sample Name:
TP123
Sample Depth:
0.30-0.50 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% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12 mg/kg	1.32	15.844 mg/kg	0.00158 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<**LOD**
3	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 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		43 mg/kg	1.126	48.413 mg/kg	0.00484 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	31 mg/kg	1.56	48.354 mg/kg	0.0031 %		
7	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05 mg/kg	1.16	<0.058 mg/kg	<0.0000058 %		<**LOD**
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		45 mg/kg	2.976	133.932 mg/kg	0.0134 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<**LOD**
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		100 mg/kg	2.774	277.415 mg/kg	0.0277 %		
11	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<**LOD**
12	pH			PH		8.7 pH		8.7 pH	8.7 pH		
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1 mg/kg	1.884	<0.188 mg/kg	<0.0000188 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
15	•	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
16	•	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-469-6	83-32-9									
17	•	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
18	•	phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
19	•	anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
20	•	fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
21	•	pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27	•	indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29	•	benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
30		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0575 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP128

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

Sample details

Sample Name:	LoW Code:
TP128	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
0.20 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6.2	mg/kg	1.32	8.186	mg/kg	0.000819 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.3	mg/kg	1.142	0.343	mg/kg	0.0000343 %		
3	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 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		23	mg/kg	1.126	25.895	mg/kg	0.00259 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	24	mg/kg	1.56	37.436	mg/kg	0.0024 %		
7	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<**LOD**
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		13	mg/kg	2.976	38.691	mg/kg	0.00387 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		70	mg/kg	2.774	194.19	mg/kg	0.0194 %		
11	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
12	pH			PH		8.9	pH		8.9	pH	8.9 pH		
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
15	•	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
16	•	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-469-6	83-32-9									
17	•	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
18	•	phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
19	•	anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
20	•	fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
21	•	pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27	•	indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29	•	benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
30		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0323 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP120

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

Sample details

Sample Name:	LoW Code:
TP120	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
0.50 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12	mg/kg	1.32	15.844	mg/kg	0.00158 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
3	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 %		
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		43	mg/kg	1.126	48.413	mg/kg	0.00484 %		
5	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	30	mg/kg	1.56	46.794	mg/kg	0.003 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		0.06	mg/kg	1.16	0.0696	mg/kg	0.00000696 %		
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		43	mg/kg	2.976	127.979	mg/kg	0.0128 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		94	mg/kg	2.774	260.77	mg/kg	0.0261 %		
10	pH			PH		7.3	pH		7.3	pH	7.3 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
19		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
20		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
28		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0538 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP102

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

Sample details

Sample Name:	LoW Code:
TP102	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
3.00 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		24	mg/kg	1.32	31.688	mg/kg	0.00317 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.1	mg/kg	1.142	0.114	mg/kg	0.0000114 %		
3	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 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		39	mg/kg	1.126	43.91	mg/kg	0.00439 %		
6	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 %		
7	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		0.05	mg/kg	1.16	0.058	mg/kg	0.0000058 %		
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		40	mg/kg	2.976	119.051	mg/kg	0.0119 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.8	mg/kg	2.554	2.043	mg/kg	0.000204 %		
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		87	mg/kg	2.774	241.351	mg/kg	0.0241 %		
11	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
12	pH			PH		7.5	pH		7.5	pH	7.5 pH		
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
		601-052-00-2	202-049-5	91-20-3									
15	•	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
16	•	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-469-6	83-32-9									
17	•	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
18	•	phenanthrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			201-581-5	85-01-8									
19	•	anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
20	•	fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
21	•	pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27	•	indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29	•	benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
30		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0509 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP122

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

Sample details

Sample Name:
TP122
Sample Depth:
0.50 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% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		22	mg/kg	1.32	29.047	mg/kg	0.0029 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
3	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 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		54	mg/kg	1.126	60.798	mg/kg	0.00608 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	43	mg/kg	1.56	67.072	mg/kg	0.0043 %		
7	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<**LOD**
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		43	mg/kg	2.976	127.979	mg/kg	0.0128 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		100	mg/kg	2.774	277.415	mg/kg	0.0277 %		
11	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
12	pH			PH		7.9	pH		7.9	pH	7.9 pH		
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
15	•	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
16	•	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-469-6	83-32-9									
17	•	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-695-5	86-73-7									
18	•	phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
19	•	anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-371-1	120-12-7									
20	•	fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-912-4	206-44-0									
21	•	pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
27	•	indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
29	•	benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-883-8	191-24-2									
30		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0586 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP106

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

Sample details

Sample Name:	LoW Code:
TP106	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
0.30-0.50 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		14	mg/kg	1.32	18.485	mg/kg	0.00185 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
3	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 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		67	mg/kg	1.126	75.435	mg/kg	0.00754 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	500	mg/kg	1.56	779.908	mg/kg	0.05 %		
7	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		0.09	mg/kg	1.16	0.104	mg/kg	0.0000104 %		
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		38	mg/kg	2.976	113.098	mg/kg	0.0113 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		220	mg/kg	2.774	610.312	mg/kg	0.061 %		
11	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
12	pH			PH		7.3	pH		7.3	pH	7.3 pH		
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
15	•	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
16	•	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-469-6	83-32-9									
17	•	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
18	•	phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
19	•	anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
20	•	fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
21	•	pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27	•	indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29	•	benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
30		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.137 %		

Key

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

Classification of sample: TP103

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

Sample details

Sample Name:	LoW Code:
TP103	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
0.30-0.50 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	arsenic { arsenic trioxide }		13 mg/kg	1.32	17.164 mg/kg	0.00172 %		
	033-003-00-0 / 215-481-4 / 1327-53-3							
2	cadmium { cadmium oxide }		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
	048-002-00-0 / 215-146-2 / 1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		20 mg/kg	1.462	29.231 mg/kg	0.00292 %		
	215-160-9 / 1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }		43 mg/kg	1.126	48.413 mg/kg	0.00484 %		
	029-002-00-X / 215-270-7 / 1317-39-1							
5	lead { lead chromate }	1	25 mg/kg	1.56	38.995 mg/kg	0.0025 %		
	082-004-00-2 / 231-846-0 / 7758-97-6							
6	mercury { mercury(II) sulfide }		0.07 mg/kg	1.16	0.0812 mg/kg	0.00000812 %		
	215-696-3 / 1344-48-5							
7	nickel { nickel chromate }		33 mg/kg	2.976	98.217 mg/kg	0.00982 %		
	028-035-00-7 / 238-766-5 / 14721-18-7							
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<LOD
	034-002-00-8							
9	zinc { zinc chromate }		85 mg/kg	2.774	235.802 mg/kg	0.0236 %		
	024-007-00-3 / 236-878-9 / 13530-65-9							
10	pH		7.6 pH		7.6 pH	7.6 pH		
	PH							
11	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 }		<0.1 mg/kg	1.884	<0.188 mg/kg	<0.0000188 %		<LOD
	006-007-00-5							
12	naphthalene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
	601-052-00-2 / 202-049-5 / 91-20-3							
13	acenaphthylene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
	205-917-1 / 208-96-8							
14	acenaphthene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
	201-469-6 / 83-32-9							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
19		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
20		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
28		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0456 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP101

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

Sample details

Sample Name:	LoW Code:
TP101	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
0.10 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		11	mg/kg	1.32	14.524	mg/kg	0.00145 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.1	mg/kg	1.142	0.114	mg/kg	0.0000114 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		21	mg/kg	1.462	30.693	mg/kg	0.00307 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		37	mg/kg	1.126	41.658	mg/kg	0.00417 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	25	mg/kg	1.56	38.995	mg/kg	0.0025 %		
7	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		0.08	mg/kg	1.16	0.0928	mg/kg	0.00000928 %		
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		36	mg/kg	2.976	107.146	mg/kg	0.0107 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		88	mg/kg	2.774	244.125	mg/kg	0.0244 %		
11	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
12	pH			PH		7.7	pH		7.7	pH	7.7 pH		
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
15	•	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
16	•	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-469-6	83-32-9									
17	•	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
18	•	phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
19	•	anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
20	•	fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
21	•	pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27	•	indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29	•	benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
30		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0478 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP105

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

Sample details

Sample Name:
TP105
Sample Depth:
2.00 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% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12	mg/kg	1.32	15.844	mg/kg	0.00158 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.1	mg/kg	1.142	0.114	mg/kg	0.0000114 %		
3	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 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		41	mg/kg	1.126	46.161	mg/kg	0.00462 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	37	mg/kg	1.56	57.713	mg/kg	0.0037 %		
7	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		0.08	mg/kg	1.16	0.0928	mg/kg	0.00000928 %		
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		34	mg/kg	2.976	101.193	mg/kg	0.0101 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		100	mg/kg	2.774	277.415	mg/kg	0.0277 %		
11	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
12	pH			PH		7.6	pH		7.6	pH	7.6 pH		
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				0.16	mg/kg		0.16	mg/kg	0.000016 %		
		601-052-00-2	202-049-5	91-20-3									
15	•	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
16	•	acenaphthene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
			201-469-6	83-32-9									
17	•	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
18	•	phenanthrene				0.13	mg/kg		0.13	mg/kg	0.000013 %		
			201-581-5	85-01-8									
19	•	anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
20	•	fluoranthene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			205-912-4	206-44-0									
21	•	pyrene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27	•	indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29	•	benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
30		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0526 %		

Key

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

Classification of sample: BH101

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

Sample details

Sample Name:	LoW Code:
BH101	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
2.20 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12	mg/kg	1.32	15.844	mg/kg	0.00158 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
3	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 %		
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		35	mg/kg	1.126	39.406	mg/kg	0.00394 %		
5	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 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		0.07	mg/kg	1.16	0.0812	mg/kg	0.00000812 %		
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		35	mg/kg	2.976	104.169	mg/kg	0.0104 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		84	mg/kg	2.774	233.028	mg/kg	0.0233 %		
10	pH			PH		7.6	pH		7.6	pH	7.6 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
19		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
20		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
28		phenol				0.4	mg/kg		0.4	mg/kg	0.00004 %		
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0445 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP121

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

Sample details

Sample Name:	LoW Code:
TP121	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
0.20-0.40 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2.2	mg/kg	1.32	2.905	mg/kg	0.00029 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
3	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 %		
4	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 %		
5	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 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<**LOD**
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		7.7	mg/kg	2.976	22.917	mg/kg	0.00229 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		33	mg/kg	2.774	91.547	mg/kg	0.00915 %		
10	pH			PH		6.5	pH		6.5	pH	6.5 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				0.08	mg/kg		0.08	mg/kg	0.000008 %		
			205-912-4	206-44-0									
19		pyrene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
			204-927-3	129-00-0									
20		benzo[a]anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
										Total:	0.0161 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP109

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

Sample details

Sample Name:	LoW Code:
TP109	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
0.50-0.60 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	arsenic { arsenic trioxide }		2.4 mg/kg	1.32	3.169 mg/kg	0.000317 %		
	033-003-00-0 / 215-481-4 / 1327-53-3							
2	cadmium { cadmium oxide }		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
	048-002-00-0 / 215-146-2 / 1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		13 mg/kg	1.462	19 mg/kg	0.0019 %		
	/ 215-160-9 / 1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }		12 mg/kg	1.126	13.511 mg/kg	0.00135 %		
	029-002-00-X / 215-270-7 / 1317-39-1							
5	lead { lead chromate }	1	11 mg/kg	1.56	17.158 mg/kg	0.0011 %		
	082-004-00-2 / 231-846-0 / 7758-97-6							
6	mercury { mercury(II) sulfide }		<0.05 mg/kg	1.16	<0.058 mg/kg	<0.0000058 %		<LOD
	/ 215-696-3 / 1344-48-5							
7	nickel { nickel chromate }		8.3 mg/kg	2.976	24.703 mg/kg	0.00247 %		
	028-035-00-7 / 238-766-5 / 14721-18-7							
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<LOD
	034-002-00-8 / /							
9	zinc { zinc chromate }		34 mg/kg	2.774	94.321 mg/kg	0.00943 %		
	024-007-00-3 / 236-878-9 / 13530-65-9							
10	pH		6.5 pH		6.5 pH	6.5 pH		
	/ / PH							
11	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 }		<0.1 mg/kg	1.884	<0.188 mg/kg	<0.0000188 %		<LOD
	006-007-00-5 / /							
12	naphthalene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
	601-052-00-2 / 202-049-5 / 91-20-3							
13	acenaphthylene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
	/ 205-917-1 / 208-96-8							
14	acenaphthene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
	/ 201-469-6 / 83-32-9							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			205-912-4	206-44-0									
19		pyrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			204-927-3	129-00-0									
20		benzo[a]anthracene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
										Total:	0.0168 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP104

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

Sample details

Sample Name:		LoW Code:	
TP104		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
1.80-2.00 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2.1	mg/kg	1.32	2.773	mg/kg	0.000277 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
3	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 %		
4	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 %		
5	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 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<**LOD**
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		8.4	mg/kg	2.976	25.001	mg/kg	0.0025 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		31	mg/kg	2.774	85.999	mg/kg	0.0086 %		
10	pH			PH		7.4	pH		7.4	pH	7.4 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				0.08	mg/kg		0.08	mg/kg	0.000008 %		
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
			205-912-4	206-44-0									
19		pyrene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
			204-927-3	129-00-0									
20		benzo[a]anthracene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
										Total:	0.0157 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP125

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

Sample details

Sample Name:	LoW Code:
TP125	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
0.10-0.30 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2.3	mg/kg	1.32	3.037	mg/kg	0.000304 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		14	mg/kg	1.462	20.462	mg/kg	0.00205 %		
4	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 %		
5	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 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<**LOD**
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		8.5	mg/kg	2.976	25.298	mg/kg	0.00253 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		34	mg/kg	2.774	94.321	mg/kg	0.00943 %		
10	pH			PH		6.7	pH		6.7	pH	6.7 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
19		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
20		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
										Total:	0.017 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP126

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

Sample details

Sample Name:	LoW Code:
TP126	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
0.50-0.70 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		1.9	mg/kg	1.32	2.509	mg/kg	0.000251 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
3	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 %		
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		11	mg/kg	1.126	12.385	mg/kg	0.00124 %		
5	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 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<**LOD**
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		7.2	mg/kg	2.976	21.429	mg/kg	0.00214 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		30	mg/kg	2.774	83.224	mg/kg	0.00832 %		
10	pH			PH		6.7	pH		6.7	pH	6.7 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
19		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
20		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
										Total:	0.0149 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP119

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

Sample details

Sample Name:	LoW Code:
TP119	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
1.40-1.60 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2.4	mg/kg	1.32	3.169	mg/kg	0.000317 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		14	mg/kg	1.462	20.462	mg/kg	0.00205 %		
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		9.6	mg/kg	1.126	10.809	mg/kg	0.00108 %		
5	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 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<**LOD**
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		8.4	mg/kg	2.976	25.001	mg/kg	0.0025 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		35	mg/kg	2.774	97.095	mg/kg	0.00971 %		
10	pH			PH		7	pH		7	pH	7pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
19		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
20		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
										Total:	0.017 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP111

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

Sample details

Sample Name:	LoW Code:
TP111	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
0.20-0.30 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2.3	mg/kg	1.32	3.037	mg/kg	0.000304 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
3	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 %		
4	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 %		
5	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 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<**LOD**
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		8.2	mg/kg	2.976	24.405	mg/kg	0.00244 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		36	mg/kg	2.774	99.869	mg/kg	0.00999 %		
10	pH			PH		8.4	pH		8.4	pH	8.4 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
19		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
20		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
										Total:	0.0174 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP113

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

Sample details

Sample Name:	LoW Code:
TP113	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
2.70-2.90 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12	mg/kg	1.32	15.844	mg/kg	0.00158 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		3	mg/kg	1.142	3.427	mg/kg	0.000343 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		19	mg/kg	1.462	27.77	mg/kg	0.00278 %		
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		48	mg/kg	1.126	54.043	mg/kg	0.0054 %		
5	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	29	mg/kg	1.56	45.235	mg/kg	0.0029 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<**LOD**
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		32	mg/kg	2.976	95.24	mg/kg	0.00952 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.7	mg/kg	2.554	1.788	mg/kg	0.000179 %		
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		140	mg/kg	2.774	388.381	mg/kg	0.0388 %		
10	pH			PH		7.5	pH		7.5	pH	7.5 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
19		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
20		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
28		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0617 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP107[2]

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

Sample details

Sample Name:
TP107[2]
Sample Depth:
0.50 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% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.3	mg/kg	1.32	10.959	mg/kg	0.0011 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
3	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 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		39	mg/kg	1.126	43.91	mg/kg	0.00439 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	20	mg/kg	1.56	31.196	mg/kg	0.002 %		
7	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<**LOD**
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		44	mg/kg	2.976	130.956	mg/kg	0.0131 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		96	mg/kg	2.774	266.318	mg/kg	0.0266 %		
11	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
12	pH			PH		7	pH		7	pH	7pH		
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
15	•	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
16	•	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-469-6	83-32-9									
17	•	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
18	•	phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
19	•	anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
20	•	fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
21	•	pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27	•	indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29	•	benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
30		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0524 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP112[2]

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

Sample details

Sample Name:	LoW Code:
TP112[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
0.30-0.50 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.4	mg/kg	1.32	11.091	mg/kg	0.00111 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
3	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 %		
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		41	mg/kg	1.126	46.161	mg/kg	0.00462 %		
5	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 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<**LOD**
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		49	mg/kg	2.976	145.837	mg/kg	0.0146 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		100	mg/kg	2.774	277.415	mg/kg	0.0277 %		
10	pH			PH		7.1	pH		7.1	pH	7.1 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
19		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
20		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
28		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0546 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP123[2]

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

Sample details

Sample Name:
TP123[2]
Sample Depth:
0.30-0.50 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% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12	mg/kg	1.32	15.844	mg/kg	0.00158 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
3	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 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		43	mg/kg	1.126	48.413	mg/kg	0.00484 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	31	mg/kg	1.56	48.354	mg/kg	0.0031 %		
7	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<**LOD**
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		45	mg/kg	2.976	133.932	mg/kg	0.0134 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		100	mg/kg	2.774	277.415	mg/kg	0.0277 %		
11	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
12	pH			PH		8.7	pH		8.7	pH	8.7 pH		
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
15	•	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
16	•	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-469-6	83-32-9									
17	•	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
18	•	phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
19	•	anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
20	•	fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
21	•	pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27	•	indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29	•	benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
30		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0575 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP128[2]

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

Sample details

Sample Name:
TP128[2]
Sample Depth:
0.20 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% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6.2	mg/kg	1.32	8.186	mg/kg	0.000819 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.3	mg/kg	1.142	0.343	mg/kg	0.0000343 %		
3	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 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		23	mg/kg	1.126	25.895	mg/kg	0.00259 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	24	mg/kg	1.56	37.436	mg/kg	0.0024 %		
7	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<**LOD**
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		13	mg/kg	2.976	38.691	mg/kg	0.00387 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		70	mg/kg	2.774	194.19	mg/kg	0.0194 %		
11	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
12	pH			PH		8.9	pH		8.9	pH	8.9 pH		
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
15	•	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
16	•	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-469-6	83-32-9									
17	•	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-695-5	86-73-7									
18	•	phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
19	•	anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-371-1	120-12-7									
20	•	fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-912-4	206-44-0									
21	•	pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
27	•	indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
29	•	benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-883-8	191-24-2									
30		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0323 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP120[2]

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

Sample details

Sample Name:	LoW Code:
TP120[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
0.50 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12	mg/kg	1.32	15.844	mg/kg	0.00158 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
3	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 %		
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		43	mg/kg	1.126	48.413	mg/kg	0.00484 %		
5	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	30	mg/kg	1.56	46.794	mg/kg	0.003 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		0.06	mg/kg	1.16	0.0696	mg/kg	0.00000696 %		
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		43	mg/kg	2.976	127.979	mg/kg	0.0128 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		94	mg/kg	2.774	260.77	mg/kg	0.0261 %		
10	pH			PH		7.3	pH		7.3	pH	7.3 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
19		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
20		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
28		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0538 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP102[2]

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

Sample details

Sample Name:	LoW Code:	
TP102[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
3.00 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		24	mg/kg	1.32	31.688	mg/kg	0.00317 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.1	mg/kg	1.142	0.114	mg/kg	0.0000114 %		
3	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 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		39	mg/kg	1.126	43.91	mg/kg	0.00439 %		
6	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 %		
7	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		0.05	mg/kg	1.16	0.058	mg/kg	0.0000058 %		
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		40	mg/kg	2.976	119.051	mg/kg	0.0119 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.8	mg/kg	2.554	2.043	mg/kg	0.000204 %		
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		87	mg/kg	2.774	241.351	mg/kg	0.0241 %		
11	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
12	pH			PH		7.5	pH		7.5	pH	7.5 pH		
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
		601-052-00-2	202-049-5	91-20-3									
15	•	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
16	•	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-469-6	83-32-9									
17	•	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
18	•	phenanthrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			201-581-5	85-01-8									
19	•	anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
20	•	fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
21	•	pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27	•	indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29	•	benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
30		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0509 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP122[2]

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

Sample details

Sample Name:
TP122[2]
Sample Depth:
0.50 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% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		22	mg/kg	1.32	29.047	mg/kg	0.0029 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
3	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 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		54	mg/kg	1.126	60.798	mg/kg	0.00608 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	43	mg/kg	1.56	67.072	mg/kg	0.0043 %		
7	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<LOD
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		43	mg/kg	2.976	127.979	mg/kg	0.0128 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		100	mg/kg	2.774	277.415	mg/kg	0.0277 %		
11	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
12	pH			PH		7.9	pH		7.9	pH	7.9 pH		
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
15	●	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
16	●	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-469-6	83-32-9									
17	●	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-695-5	86-73-7									
18	●	phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
19	●	anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-371-1	120-12-7									
20	●	fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-912-4	206-44-0									
21	●	pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
27	●	indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
29	●	benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-883-8	191-24-2									
30		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0586 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP106[2]

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

Sample details

Sample Name:	LoW Code:
TP106[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
0.30-0.50 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		14	mg/kg	1.32	18.485	mg/kg	0.00185 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
3	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 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		67	mg/kg	1.126	75.435	mg/kg	0.00754 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	500	mg/kg	1.56	779.908	mg/kg	0.05 %		
7	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		0.09	mg/kg	1.16	0.104	mg/kg	0.0000104 %		
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		38	mg/kg	2.976	113.098	mg/kg	0.0113 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		220	mg/kg	2.774	610.312	mg/kg	0.061 %		
11	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
12	pH			PH		7.3	pH		7.3	pH	7.3 pH		
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
15	•	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
16	•	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-469-6	83-32-9									
17	•	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-695-5	86-73-7									
18	•	phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
19	•	anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-371-1	120-12-7									
20	•	fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-912-4	206-44-0									
21	•	pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
27	•	indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
29	•	benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-883-8	191-24-2									
30		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.137 %		

Key

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

Classification of sample: TP103[2]

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

Sample details

Sample Name:	LoW Code:
TP103[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
0.30-0.50 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		13	mg/kg	1.32	17.164	mg/kg	0.00172 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
3	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 %		
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		43	mg/kg	1.126	48.413	mg/kg	0.00484 %		
5	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	25	mg/kg	1.56	38.995	mg/kg	0.0025 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		0.07	mg/kg	1.16	0.0812	mg/kg	0.00000812 %		
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		33	mg/kg	2.976	98.217	mg/kg	0.00982 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		85	mg/kg	2.774	235.802	mg/kg	0.0236 %		
10	pH			PH		7.6	pH		7.6	pH	7.6 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene	201-695-5	86-73-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
16		phenanthrene	201-581-5	85-01-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
17		anthracene	204-371-1	120-12-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
18		fluoranthene	205-912-4	206-44-0		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
19		pyrene	204-927-3	129-00-0		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
20		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
21		chrysene	601-048-00-0	205-923-4	218-01-9	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
22		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
23		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
24		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
25		indeno[123-cd]pyrene	205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
26		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
27		benzo[ghi]perylene	205-883-8	191-24-2		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
28		phenol	604-001-00-2	203-632-7	108-95-2	<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
										Total:	0.0456 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP101[2]

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

Sample details

Sample Name:
TP101[2]
Sample Depth:
0.10 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% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		11	mg/kg	1.32	14.524	mg/kg	0.00145 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.1	mg/kg	1.142	0.114	mg/kg	0.0000114 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		21	mg/kg	1.462	30.693	mg/kg	0.00307 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		37	mg/kg	1.126	41.658	mg/kg	0.00417 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	25	mg/kg	1.56	38.995	mg/kg	0.0025 %		
7	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		0.08	mg/kg	1.16	0.0928	mg/kg	0.00000928 %		
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		36	mg/kg	2.976	107.146	mg/kg	0.0107 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		88	mg/kg	2.774	244.125	mg/kg	0.0244 %		
11	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
12	pH			PH		7.7	pH		7.7	pH	7.7 pH		
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
15	•	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
16	•	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-469-6	83-32-9									
17	•	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-695-5	86-73-7									
18	•	phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			201-581-5	85-01-8									
19	•	anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-371-1	120-12-7									
20	•	fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-912-4	206-44-0									
21	•	pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
27	•	indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
29	•	benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-883-8	191-24-2									
30		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0478 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP105[2]

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

Sample details

Sample Name:	LoW Code:
TP105[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
2.00 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12	mg/kg	1.32	15.844	mg/kg	0.00158 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.1	mg/kg	1.142	0.114	mg/kg	0.0000114 %		
3	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 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<**LOD**
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		41	mg/kg	1.126	46.161	mg/kg	0.00462 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	37	mg/kg	1.56	57.713	mg/kg	0.0037 %		
7	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		0.08	mg/kg	1.16	0.0928	mg/kg	0.00000928 %		
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		34	mg/kg	2.976	101.193	mg/kg	0.0101 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		100	mg/kg	2.774	277.415	mg/kg	0.0277 %		
11	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
12	pH			PH		7.6	pH		7.6	pH	7.6 pH		
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				0.16	mg/kg		0.16	mg/kg	0.000016 %		
		601-052-00-2	202-049-5	91-20-3									
15	•	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
16	•	acenaphthene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
			201-469-6	83-32-9									
17	•	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
18	•	phenanthrene				0.13	mg/kg		0.13	mg/kg	0.000013 %		
			201-581-5	85-01-8									
19	•	anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
20	•	fluoranthene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			205-912-4	206-44-0									
21	•	pyrene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27	•	indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29	•	benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
30		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0526 %		

Key

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

Classification of sample: BH101[2]

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

Sample details

Sample Name:	LoW Code:
BH101[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
2.20 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12 mg/kg	1.32	15.844 mg/kg	0.00158 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2 mg/kg	1.142	0.228 mg/kg	0.0000228 %		
3	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 %		
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		35 mg/kg	1.126	39.406 mg/kg	0.00394 %		
5	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 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		0.07 mg/kg	1.16	0.0812 mg/kg	0.00000812 %		
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		35 mg/kg	2.976	104.169 mg/kg	0.0104 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<LOD
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		84 mg/kg	2.774	233.028 mg/kg	0.0233 %		
10	pH			PH		7.6 pH		7.6 pH	7.6 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1 mg/kg	1.884	<0.188 mg/kg	<0.0000188 %		<LOD
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
13	acenaphthylene		205-917-1	208-96-8		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
14	acenaphthene		201-469-6	83-32-9		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
19		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
20		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
28		phenol				0.4	mg/kg		0.4	mg/kg	0.00004 %		
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0445 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP121[2]

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

Sample details

Sample Name:	LoW Code:
TP121[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
0.20-0.40 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2.2	mg/kg	1.32	2.905	mg/kg	0.00029 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
3	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 %		
4	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 %		
5	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 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<**LOD**
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		7.7	mg/kg	2.976	22.917	mg/kg	0.00229 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		33	mg/kg	2.774	91.547	mg/kg	0.00915 %		
10	pH			PH		6.5	pH		6.5	pH	6.5 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				0.08	mg/kg		0.08	mg/kg	0.000008 %		
			205-912-4	206-44-0									
19		pyrene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
			204-927-3	129-00-0									
20		benzo[a]anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
										Total:	0.0161 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP109[2]

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

Sample details

Sample Name:	LoW Code:
TP109[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
0.50-0.60 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2.4	mg/kg	1.32	3.169	mg/kg	0.000317 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
3	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 %		
4	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 %		
5	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 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<**LOD**
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		8.3	mg/kg	2.976	24.703	mg/kg	0.00247 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		34	mg/kg	2.774	94.321	mg/kg	0.00943 %		
10	pH			PH		6.5	pH		6.5	pH	6.5 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			205-912-4	206-44-0									
19		pyrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			204-927-3	129-00-0									
20		benzo[a]anthracene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
										Total:	0.0168 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP104[2]

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

Sample details

Sample Name:	LoW Code:
TP104[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
1.80-2.00 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2.1	mg/kg	1.32	2.773	mg/kg	0.000277 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
3	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 %		
4	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 %		
5	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 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<**LOD**
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		8.4	mg/kg	2.976	25.001	mg/kg	0.0025 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		31	mg/kg	2.774	85.999	mg/kg	0.0086 %		
10	pH			PH		7.4	pH		7.4	pH	7.4 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				0.08	mg/kg		0.08	mg/kg	0.000008 %		
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
			205-912-4	206-44-0									
19		pyrene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
			204-927-3	129-00-0									
20		benzo[a]anthracene				0.03	mg/kg		0.03	mg/kg	0.000003 %		
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				0.04	mg/kg		0.04	mg/kg	0.000004 %		
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
										Total:	0.0157 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP125[2]

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

Sample details

Sample Name:	LoW Code:
TP125[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
0.10-0.30 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2.3 mg/kg	1.32	3.037 mg/kg	0.000304 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		14 mg/kg	1.462	20.462 mg/kg	0.00205 %		
4	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 %		
5	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 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05 mg/kg	1.16	<0.058 mg/kg	<0.0000058 %		<**LOD**
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		8.5 mg/kg	2.976	25.298 mg/kg	0.00253 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<**LOD**
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		34 mg/kg	2.774	94.321 mg/kg	0.00943 %		
10	pH			PH		6.7 pH		6.7 pH	6.7 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1 mg/kg	1.884	<0.188 mg/kg	<0.0000188 %		<**LOD**
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
19		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
20		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
										Total:	0.017 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP126[2]

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

Sample details

Sample Name:	LoW Code:
TP126[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
0.50-0.70 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		1.9	mg/kg	1.32	2.509	mg/kg	0.000251 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
3	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 %		
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		11	mg/kg	1.126	12.385	mg/kg	0.00124 %		
5	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 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<**LOD**
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		7.2	mg/kg	2.976	21.429	mg/kg	0.00214 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		30	mg/kg	2.774	83.224	mg/kg	0.00832 %		
10	pH			PH		6.7	pH		6.7	pH	6.7 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
19		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
20		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
										Total:	0.0149 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP119[2]

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

Sample details

Sample Name:	LoW Code:
TP119[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
1.40-1.60 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2.4	mg/kg	1.32	3.169	mg/kg	0.000317 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		14	mg/kg	1.462	20.462	mg/kg	0.00205 %		
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		9.6	mg/kg	1.126	10.809	mg/kg	0.00108 %		
5	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 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<**LOD**
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		8.4	mg/kg	2.976	25.001	mg/kg	0.0025 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		35	mg/kg	2.774	97.095	mg/kg	0.00971 %		
10	pH			PH		7	pH		7	pH	7pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
19		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
20		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
										Total:	0.017 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP111[2]

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

Sample details

Sample Name:
TP111[2]
Sample Depth:
0.20-0.30 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% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2.3	mg/kg	1.32	3.037	mg/kg	0.000304 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
3	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 %		
4	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 %		
5	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 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<**LOD**
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		8.2	mg/kg	2.976	24.405	mg/kg	0.00244 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<**LOD**
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		36	mg/kg	2.774	99.869	mg/kg	0.00999 %		
10	pH			PH		8.4	pH		8.4	pH	8.4 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
19		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
20		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
										Total:	0.0174 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP113[2]

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

Sample details

Sample Name:	LoW Code:
TP113[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	
2.70-2.90 m	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12	mg/kg	1.32	15.844	mg/kg	0.00158 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		3	mg/kg	1.142	3.427	mg/kg	0.000343 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		19	mg/kg	1.462	27.77	mg/kg	0.00278 %		
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		48	mg/kg	1.126	54.043	mg/kg	0.0054 %		
5	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	29	mg/kg	1.56	45.235	mg/kg	0.0029 %		
6	mercury { mercury(II) sulfide }		215-696-3	1344-48-5		<0.05	mg/kg	1.16	<0.058	mg/kg	<0.0000058 %		<**LOD**
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		32	mg/kg	2.976	95.24	mg/kg	0.00952 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.7	mg/kg	2.554	1.788	mg/kg	0.000179 %		
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		140	mg/kg	2.774	388.381	mg/kg	0.0388 %		
10	pH			PH		7.5	pH		7.5	pH	7.5 pH		
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<**LOD**
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
16		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
18		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
19		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
20		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-883-8	191-24-2									
28		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0617 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non CLP determinands

chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Conversion factor: 1.462
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: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Repr. 1B H360FD , Skin Sens. 1 H317 , Resp. Sens. 1 H334 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302 , Acute Tox. 4 H332

mercury(II) sulfide (EC Number: 215-696-3, CAS Number: 1344-48-5)

Conversion factor: 1.16
Description/Comments: Data from ECHA's C&L and SDS Sigma Aldrich V6 dated 17/9/2019 Threshold for EUH031 based on calculation method in WM3 Box C12.1
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/8530
Data source date: 14 May 2020
Hazard Statements: EUH031 >= 1 %, EUH031 , Skin Sens. 1 H317 , STOT RE 2 H373

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

CLP index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Data source: Commission Regulation (EC) No 790/2009 - 1st Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP1)
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
14 Dec 2015 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

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: Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 1 H310 , Acute Tox. 1 H330 , Acute Tox. 4 H302

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: Aquatic Chronic 2 H411 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

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 Chronic 1 H410 , Aquatic Acute 1 H400

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: Skin Irrit. 2 H315 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Carc. 2 H351 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302

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: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

- **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: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Acute Tox. 4 H302

- **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: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315

- **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 Chronic 1 H410 , Aquatic Acute 1 H400

- **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: Aquatic Chronic 2 H411 , Repr. 2 H361d , Carc. 1B H350 , Muta. 1B H340 , STOT RE 2 H373 , Asp. Tox. 1 H304 , Flam. Liq. 3 H226

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

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

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides.

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass.

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight.

mercury {mercury(II) sulfide}

Worst case CLP species based on hazard statements/molecular weight.

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight.

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil.

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight.

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]

chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1, May 2018
HazWasteOnline Classification Engine Version: 2020.141.4306.8485 (20 May 2020)
HazWasteOnline Database: 2020.143.4308.8487 (22 May 2020)

This classification utilises the following guidance and legislation:
WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018
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 Wastes 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
POPs Regulation 2004 - Regulation 850/2004/EC of 29 April 2004
1st ATP to POPs Regulation - Regulation 756/2010/EU of 24 August 2010
2nd ATP to POPs Regulation - Regulation 757/2010/EU of 24 August 2010

Appendix F Gas and Groundwater Monitoring Results

GAS AND GROUNDWATER MONITORING RESULTS

Site: Grimethorpe
Job No: 5161 **Client:** Symphony Group PLC
Visit No: 1 **Date:** 05/03/2020

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Monitoring Location	Gas Concentration									Gas Emission Rate		GWL	Base of Standpipe
	Peak			Steady			Highest	Highest	Lowest				
BH	CH_4		CO_2	CH_4		CO_2	H_2S	CO	O_2	Litre/Hour			
	% lel	%v/v	%	% lel	%v/v	%	ppm	ppm	%	Peak	Steady	(m) bgl	
BH101	0.0	0.0	1.0	0.0	0.0	0.6	3	2	20.7	0.0	0.0	2.33	6.47
BH102	0.0	0.0	4.2	0.0	0.0	4.2	0	0	3.9	1.3	1.2	3.37	3.47
BH103	0.0	0.0	0.3	0.0	0.0	0.1	0	0	20.0	0.0	0.0	3.74	4.34
BH104	0.0	0.0	2.2	0.0	0.0	0.8	0	0	13.1	0.1	0.1	DRY	3.30
BH105	0.0	0.0	4.2	0.0	0.0	4.2	0	0	8.6	0.2	0.2	DRY	5.89
BH106	0.0	0.0	6.2	0.0	0.0	6.2	0	4	7.1	0.0	0.0	5.82	8.65
BH107	0.0	0.0	1.5	0.0	0.0	0.3	0	0	20.1	0.0	0.0	1.78	5.08
RO101	0.0	0.0	3.0	0.0	0.0	2.9	0	4	17.6	2.1	1.0	2.47	25.02
RO102	0.0	0.0	1.9	0.0	0.0	1.9	0	6	20.5	1.4	0.9	3.39	24.94
RO103	0.0	0.0	0.1	0.0	0.0	0.1	0	0	20.9	0.0	0.0	1.75	23.24
RO106	0.0	0.0	0.2	0.0	0.0	0.1	0	0	20.9	0.2	0.2	6.85	19.03
RO109	0.0	0.0	10.7	0.0	0.0	10.7	0	3	4.7	0.1	0.1	5.52	9.16
RO110	0.0	0.0	2.7	0.0	0.0	2.7	0	0	15	1	1	6.73	24.52
RO113	0.0	0.0	1.9	0.0	0.0	0.9	0	0	18.7	0.2	0.2	6.77	25.36

Ambient Concentration (% volume): CH_4 0.0 %v/v CO_2 0.1 %v/v
O_2 21.2 %v/v

Barometric Pressure: **Start** 996
End 995
Barometric Pressure Trend: Falling
Weather: Partially cloudy

Monitoring Equipment: GA5000
Serial Number of Equipment: G505491
Date of Last Calibration: 13.Nov.2019
Operator: B. Whitaker

Key	Remarks
NR - Not Recorded NA - Not Applicable	

Checked: JBW **Approved: JBW**

GAS AND GROUNDWATER MONITORING RESULTS

Site: Grimethorpe
Job No: 5161 **Client:** Symphony Group PLC
Visit No: 2 **Date:** 12/03/2020

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Monitoring Location	Gas Concentration									Gas Emission Rate		GWL	Base of Standpipe
	Peak			Steady			Highest	Highest	Lowest				
BH	CH_4		CO_2	CH_4		CO_2	H_2S	CO	O_2	Litre/Hour			
	% lel	%v/v	%	% lel	%v/v	%	ppm	ppm	%	Peak	Steady	(m) bgl	
BH101	0.0	0.0	0.6	0.0	0.0	0.3	0	0	20.1	0.0	0.0	2.46	6.47
BH102	0.0	0.0	0.0	0.0	0.0	0.0	1	0	20.8	0.0	0.0	3.34	3.47
BH103	0.0	0.0	0.3	0.0	0.0	0.1	0	0	20.4	0.0	0.0	3.90	4.34
BH104	0.0	0.0	0.3	0.0	0.0	0.1	1	0	19.4	0.0	0.0	DRY	3.30
BH105	0.0	0.0	4.7	0.0	0.0	4.7	0	0	9.0	0.1	0.1	DRY	5.89
BH106	0.0	0.0	10.2	0.0	0.0	10.2	1	2	0.2	0.2	0.2	6.54	8.65
BH107	0.0	0.0	0.8	0.0	0.0	0.1	1	0	20.7	0.0	0.0	1.62	5.08
RO101	0.0	0.0	2.6	0.0	0.0	2.6	0	0	17.9	0.0	0.0	2.52	25.02
RO102	0.0	0.0	2.2	0.0	0.0	2.2	0	0	19.9	-0.3	-0.3	3.46	24.94
RO103	0.0	0.0	0.1	0.0	0.0	0.1	0	0	20.6	0.0	0.0	1.98	23.24
RO106	0.0	0.0	0.5	0.0	0.0	0.1	1	0	16.0	0.0	0.0	6.95	19.03
RO109	0.0	0.0	4.7	0.0	0.0	4.7	1	1	13.1	0.0	0.0	5.76	9.16
RO110	0.0	0.0	0.1	0.0	0.0	0.1	1	0	20.6	0	0	6.85	24.52
RO113	0.0	0.0	1	0.0	0.0	0.3	1	0	19.1	0	0	6.70	25.36

Ambient Concentration (% volume): CH_4 0.0 %v/v; CO_2 0.1 %v/v; O_2 20.3 %v/v

Barometric Pressure: Start 1000; End 998
Barometric Pressure Trend: Rising
Weather: Overcast

Monitoring Equipment: GA5000
Serial Number of Equipment: G505491
Date of Last Calibration: 13.Nov.2019
Operator:

Key	Remarks
NR - Not Recorded NA - Not Applicable	

Checked: **Approved:**

GAS AND GROUNDWATER MONITORING RESULTS

Site: Grimethorpe
Job No: 5161 **Client:** Symphony Group PLC
Visit No: 3 **Date:** 16/03/2020

CIVIL & STRUCTURAL ENGINEERING

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Monitoring Location	Gas Concentration									Gas Emission Rate		GWL	Base of Standpipe
	Peak			Steady			Highest	Highest	Lowest				
BH	CH_4		CO_2	CH_4		CO_2	H_2S	CO	O_2	Litre/Hour			
	% lel	%v/v	%	% lel	%v/v	%	ppm	ppm	%	Peak	Steady	(m) bgl	
BH101	0.0	0.0	0.7	0.0	0.0	0.3	0	0	20.0	0.1	0.1	2.44	6.47
BH102	0.0	0.0	0.1	0.0	0.0	0.0	1	0	20.7	-1.2	-1.2	3.29	3.47
BH103	0.0	0.0	0.4	0.0	0.0	0.1	1	0	20.5	0.1	0.1	3.93	4.34
BH104	0.0	0.0	0.1	0.0	0.0	0.1	0	0	20.1	0.0	0.0	DRY	3.30
BH105	0.0	0.0	1.3	0.0	0.0	1.3	0	0	19.2	-0.2	-0.2	DRY	5.89
BH106	0.0	0.0	9.2	0.0	0.0	9.1	0	1	2.5	0.0	0.0	6.69	8.65
BH107	0.0	0.0	0.5	0.0	0.0	0.1	1	0	20.2	0.0	0.0	1.84	5.08
RO101	0.0	0.0	2.6	0.0	0.0	2.6	1	6	17.7	-0.1	-0.1	2.57	25.02
RO102	0.0	0.0	1.8	0.0	0.0	1.5	1	4	20.0	0.1	0.1	3.52	24.94
RO103	0.0	0.0	0.1	0.0	0.0	0.1	0	0	20.3	0.0	0.0	2.15	23.24
RO106	0.0	0.0	0.4	0.0	0.0	0.1	1	0	16.5	0.0	0.0	7.06	19.03
RO109	0.0	0.0	7.7	0.0	0.0	7.7	2	3	8.2	0.0	0.0	5.98	9.16
RO110	0.0	0.0	0.1	0.0	0.0	0.1	1	0	20.4	-0.5	-0.5	7	24.52
RO113	0.0	0.0	2.1	0.0	0.0	2.1	1	1	16	0.1	0.1	6.32	25.36

Ambient Concentration (% volume): CH_4 0.0 %v/v; CO_2 0.1 %v/v; O_2 20.2 %v/v

Barometric Pressure: Start 1016; End 1017
Barometric Pressure Trend: Rising
Weather: Sunny

Monitoring Equipment: GA5000
Serial Number of Equipment: G505491
Date of Last Calibration: 13.Nov.2019
Operator:

Key	Remarks
NR - Not Recorded NA - Not Applicable	

Checked: **Approved:**

GAS AND GROUNDWATER MONITORING RESULTS

Site: Grimethorpe
Job No: 5161 **Client:** Symphony Group PLC
Visit No: 1 **Date:** 28/05/2020

CIVIL & STRUCTURAL ENGINEERING

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Monitoring Location	Gas Concentration									Gas Emission Rate		GWL	Base of Standpipe
	Peak			Steady			Highest	Highest	Lowest				
BH	CH_4		CO_2	CH_4		CO_2	H_2S	CO	O_2	Litre/Hour			
	% lel	%v/v	%	% lel	%v/v	%	ppm	ppm	%	Peak	Steady	(m) bgl	
BH101	0.0	0.0	3.3	0.0	0.0	3.3	4	0	16.3	0.2	0.2	4.50	6.00
BH102	0.0	0.0	1.5	0.0	0.0	1.5	4	3	19.0	0.1	0.1	Dry	3.50
BH103	0.0	0.0	0.6	0.0	0.0	0.6	4	1	20.0	0.2	0.2	4.30	4.30
BH104	0.0	0.0	0.9	0.0	0.0	0.9	4	0	20.6	0.0	0.0	Dry	3.30
BH105	0.0	0.0	1.6	0.0	0.0	1.6	3	3	15.1	-0.4	-0.4	Dry	6.00
BH106	0.0	0.0	2.8	0.0	0.0	1.8	4	4	16.5	-0.4	-0.4	8.90	8.90
BH107	0.0	0.0	1.0	0.0	0.0	1.0	2	1	19.0	-0.3	-0.3	4.20	5.20
R0101	0.0	0.0	3.6	0.0	0.0	3.6	4	7	12.7	0.1	0.1	4.00	12.20
RO102	0.0	0.0	1.8	0.0	0.0	1.8	4	2	29.8	-12.3	-12.3	5.10	24.30
RO103	0.0	0.0	0.5	0.0	0.0	0.5	4	2	20.2	0.2	0.2	3.30	23.60
RO106	0.0	0.0	0.1	0.0	0.0	0.1	4	1	19.3	0.0	0.0	N/R	N/R
RO109	0.0	0.0	4.0	0.0	0.0	4.0	3	11	15.0	-0.4	-0.4	6.40	9.30
RO110	0.0	0.0	0.2	0.0	0.0	0.2	5	4	20.9	N/R	N/R	9	25.00
RO113	0.0	0.0	2	0.0	0.0	2	2	2	18.6	-0.3	-0.3	9.10	25.90

Ambient Concentration (% volume): CH_4 0.0 %v/v CO_2 0.0 %v/v
O_2 20.5 %v/v

Barometric Pressure: **Start** 1035
End 1035
Barometric Pressure Trend: Falling
Weather:

Monitoring Equipment: GA5000
Serial Number of Equipment: G505491
Date of Last Calibration: 13.Nov.2019
Operator:

Key	Remarks
NR - Not Recorded NA - Not Applicable	

Checked: **Approved:**

GAS AND GROUNDWATER MONITORING RESULTS

Site: Grimethorpe
Job No: 5161 **Client:** Symphony Group PLC
Visit No: 1 **Date:** 17/06/2020

CIVIL & STRUCTURAL ENGINEERING

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Monitoring Location	Gas Concentration									Gas Emission Rate		GWL	Base of Standpipe
	Peak			Steady			Highest	Highest	Lowest				
BH	CH_4		CO_2	CH_4		CO_2	H_2S	CO	O_2	Litre/Hour			
	% lel	%v/v	%	% lel	%v/v	%	ppm	ppm	%	Peak	Steady	(m) bgl	
BH101	0.0	0.0	10.3	0.0	0.0	2.8	1	1	9.5	0.1	0.1	3.55	6.00
BH102	0.0	0.0	1.4	0.0	0.0	1.4	0	0	20.0	0.0	0.0	5.60	6.00
BH103	0.0	0.0	1.7	0.0	0.0	0.3	0	0	20.8	-0.1	-0.1	4.30	4.40
BH104	0.0	0.0	0.7	0.0	0.0	0.5	0	0	20.6	0.1	0.1	Dry	3.40
BH105	0.0	0.0	6.7	0.0	0.0	6.7	0	0	14.3	-0.1	-0.1	Dry	5.90
BH106	0.0	0.0	12.4	0.0	0.0	12.4	0	0	2.4	0.0	0.0	7.70	8.90
BH107	0.0	0.0	0.3	0.0	0.0	0.2	0	0	19.7	0.0	0.0	4.30	5.30
R0101	0.0	0.0	6.2	0.0	0.0	6.2	2	5	10.0	0.0	0.0	4.10	18.30
RO102	0.0	0.0	2.6	0.0	0.0	2.6	1	3	19.8	0.0	0.0	5.10	24.40
RO103	0.0	0.0	0.3	0.0	0.0	0.1	1	0	20.4	-0.1	-0.1	3.60	23.80
RO106	0.0	0.0	0.6	0.0	0.0	0.1	1	3	16.3	0.0	0.0	N/R	N/R
RO109	0.0	0.0	10.2	0.0	0.0	10.2	1	1	9.1	0.0	0.0	6.95	9.40
RO110	0.0	0.0	0.1	0.0	0.0	0.1	1	2	21.2	N/R	N/R	9	24.80
RO113	0.0	0.0	4.8	0.0	0.0	4.8	0	0	17.1	0	0	9.30	25.80

Ambient Concentration (% volume): CH_4 0.0 %v/v CO_2 0.1 %v/v
O_2 21.1 %v/v

Barometric Pressure: **Start** 1009
End 1010
Barometric Pressure Trend: Regionally falling (locally rising)
Weather:

Monitoring Equipment: GA5000
Serial Number of Equipment: G505491
Date of Last Calibration: 13.Nov.2019
Operator:

Key	Remarks
NR - Not Recorded NA - Not Applicable	

Checked: **Approved:**

GAS AND GROUNDWATER MONITORING RESULTS

Site: Grimethorpe
Job No: 5161 **Client:** Symphony Group PLC
Visit No: 1 **Date:** 22/06/2020

CIVIL & STRUCTURAL ENGINEERING

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Monitoring Location	Gas Concentration									Gas Emission Rate		GWL	Base of Standpipe
	Peak			Steady			Highest	Highest	Lowest				
BH	CH_4		CO_2	CH_4		CO_2	H_2S	CO	O_2	Litre/Hour			
	% lel	%v/v	%	% lel	%v/v	%	ppm	ppm	%	Peak	Steady	(m) bgl	
BH101	0.0	0.0	6.1	0.0	0.0	3.2	1	1	13.8	0.2	0.2	2.60	6.00
BH102	0.0	0.0	0.9	0.0	0.0	0.9	2	0	18.2	0.1	0.1	Dry	3.50
BH103	0.0	0.0	1.4	0.0	0.0	0.2	20.4	1	0.0	0.2	0.2	4.30	4.30
BH104	0.0	0.0	0.8	0.0	0.0	0.7	1	1	20.3	0.0	0.0	Dry	3.40
BH105	0.0	0.0	0.6	0.0	0.0	0.6	1	0	2.4	0.1	0.1	Dry	6.10
BH106	0.0	0.0	12.7	0.0	0.0	12.7	1	1	3.9	0.1	0.1	7.80	8.95
BH107	0.0	0.0	0.4	0.0	0.0	0.1	0	0	19.6	0.1	0.1	4.40	5.30
R0101	0.0	0.0	6.0	0.0	0.0	6.0	10	2	6.0	0.2	0.2	4.30	18.40
RO102	0.0	0.0	2.0	0.0	0.0	2.0	2	3	20.0	0.0	0.0	5.20	14.30
RO103	0.0	0.0	0.2	0.0	0.0	0.1	1	1	20.0	0.2	0.2	3.7	23.70
RO106	0.0	0.0	0.9	0.0	0.0	0.2	1	0	16.2	0.1	0.1	N/R	N/R
RO109	0.0	0.0	10.8	0.0	0.0	10.4	1	1	9.6	0.1	0.1	6.30	9.45
RO110	0.0	0.0	0.1	0.0	0.0	0	2	1	21.3	N/R	N/R	9.2	25.90
RO113	0.0	0.0	5.9	0.0	0.0	5.9	0	0	15.9	0.1	0.1	9.50	25.90

Ambient Concentration (% volume): CH_4 0.0 %v/v; CO_2 0.1 %v/v; O_2 21.2 %v/v

Barometric Pressure: Start 1017; End 1019
Barometric Pressure Trend: Regionally falling (locally rising)
Weather:

Monitoring Equipment: GA5000
Serial Number of Equipment: G505491
Date of Last Calibration: 13.Nov.2019
Operator:

Key	Remarks
NR - Not Recorded NA - Not Applicable	

Checked: **Approved:**

Appendix G Notes on Limitations

General

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

JPG (Leeds) Limited accepts no responsibility or liability for:

a) the consequences of this document being used for any purpose or project other than for which it was commissioned, and

b) this document to any third party with whom an agreement has not been executed.

Phase I Desk Study Reports
The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources (including the Client), together with (where appropriate) a brief walk over inspection of the site and meetings and discussions with relevant authorities and other interested parties. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only to the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, JPG (Leeds) Limited reserves the right to review such information and, if warranted, to modify the opinions accordingly.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

Phase II Geo-Environmental Investigations
The investigation of the site has been carried out to provide sufficient information concerning the type and degree of contamination, geotechnical characteristics and ground and groundwater conditions to allow a reasonable assessment of the environmental risks together with engineering and development implications. The objectives of the investigation have been limited to establishing the risks associated with potential human targets, building materials, the environment (including adjacent land), and to surface and groundwater.

The amount of exploratory work and chemical testing undertaken has necessarily been restricted by the short timescale available, and the locations of exploratory holes have been restricted to the areas unoccupied by the building(s) on the site and by buried services. A more comprehensive investigation may be required if the site is to be redeveloped as, in addition to risk assessment, a number of important engineering and environmental issues may need to be resolved.

For these reasons if costs have been included in relation to site remediation these must be considered as tentative only and must, in any event, be confirmed by a qualified quantity surveyor.

The exploratory holes undertaken, which investigate only a small volume of the ground in relation to the size of the site, can only provide a general indication of site conditions. The opinions provided and recommendations given in this report are based on the ground conditions apparent at the site of each of the exploratory holes. There may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been taken into account in this report.

The comments made on groundwater conditions are based on observations made at the time that site work was carried out. It should be noted that groundwater levels will vary owing to seasonal, tidal and weather-related effects.

The number of sampling points and the methods of sampling and testing do not preclude the existence of localised "hotspots" of contamination where concentrations may be significantly higher than those actually encountered.

The risk assessment and opinions provided, inter alia, take into consideration currently available guidance values relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values.

The scope of the investigation was selected on the basis of the specific development proposed by the Client and may be inappropriate to another form of development or scheme.

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