HAND AUGER BOREHOLE LOG - HA36

Client: Woods Group
Project: 133 Fitzgerald Road
Site Location: Drury
Project No.: AKS2023-0072
Date: 18/04/2024
Borehole Location: Refer to Site Plan Logged by: AZ Checked by: SA Scale: 1:25 Sheet 1 of 1

Position: 417010.1mE; 774046.1mN Projection: NZTM
Datum: NZVD2016 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
	0.3	Peak = >140kPa				CL: Silty CLAY with trace sand: reddish brown mottled red. Low plasticity; sand, fine to medium. (Fill)			
						... at 0.40m, becoming dark reddish brown, gravel absent.	M	H	
	0.6	Peak = UTP				... at 0.60m, becoming brown mottled dark brown			
	0.9	Peak = 121kPa Residual = 47kPa							
	1.0	Peak = 166kPa Residual = 50kPa		1		CH: Silty CLAY: yellowish brown streaked red and light grey. Highly plastic. (Auckland Volcanics)	M to W	VSt	
	1.2	Peak = UTP				... at 1.20m, becoming greenish brown streaked orange.			
	1.6	Peak = UTP					M	H	
						... at 1.80m, becoming orange-brown streaked red.			
	2.0	Peak = UTP		2		Borehole terminated at 2.0 m			
				3					
				4					
				5					

Termination Reason: Target Depth Reached
Shear Vane No: 2323 DCP No:
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA37

Client: Woods Group
Project: 133 Fitzgerald Road
Site Location: Drury
Project No.: AKS2023-0072
Date: 19/04/2024
Borehole Location: Refer to Site Plan Logged by: AZ Checked by: SA Scale: 1:25 Sheet 1 of 1

Position: 416937.0mE; 774014.5mN Projection: NZTM
Datum: NZVD2016 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description (Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit))	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
	0.3	Peak = >140kPa				CL: Silty CLAY with trace sand: dark reddish brown mottled orange. Low plasticity; sand, fine to coarse. (Fill)			
	0.6	Peak = 113kPa Residual = 47kPa					M		
	0.7	Peak = 151kPa Residual = 83kPa				*... at 0.70m, becoming orange.*			
	0.9	Peak = UTP		1		CH: Silty CLAY: orange streaked red. Highly plastic. (Auckland Volcanics)		VSt to H	
	1.2	Peak = 124kPa Residual = 30kPa				CH: Silty CLAY: orange. Highly plastic. (Auckland Volcanics)			
	1.6	Peak = UTP				CL: Silty CLAY: brownish green. Low plasticity. (Auckland Volcanics)	M to W		
	2.0	Peak = UTP		2					
	2.4	Peak = >140kPa				CL: Silty CLAY: brown streaked bluish grey. Low plasticity (Auckland Volcanics)		H	
	2.8	Peak = >140kPa				CL: Silty CLAY with trace sand: orange-brown mottled reddish brown. Low plasticity; sand, fine to coarse. (Auckland Volcanics)	M		
				3		ML: Sandy SILT with minor gravel: reddish brown. Non-plastic; sand, fine to coarse; gravel, fine. (Auckland Volcanics)			
						Borehole terminated at 3.0 m			
				4					
				5					

Termination Reason: Target Depth Reached
Shear Vane No: 2323 DCP No:
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA38

Client: Woods Group
Project: 133 Fitzgerald Road
Site Location: Drury
Project No.: AKS2023-0072
Date: 18/04/2024
Borehole Location: Refer to Site Plan Logged by: HA Checked by: SA Scale: 1:25 Sheet 1 of 1

Position: 416860.4mE; 773984.6mN Projection: NZTM
Datum: NZVD2016 Survey Source: Hand Held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm)
	0.3	Peak = UTP				CL: Silty CLAY: orange streaked red. Low plasticity. (Fill)			
						... at 0.40m, becoming mottled dark brown			
	0.6	Peak = UTP				... at 0.50m, becoming mottled light yellow.			
						... at 0.70m, becoming dark brown.	M	H	
	0.9	Peak = UTP		1		... at 1.00m, becoming brown mottled dark brown.			
	1.2	Peak = UTP				... at 1.20m, becoming orange-brown streaked red			
						CH: Silty CLAY: brown. Highly plastic. (Fill)			
	1.6	Peak = >193kPa				... at 1.50m, becoming streaked red.			
	2.0	Peak = 110kPa Residual = 41kPa		2		CH: Silty CLAY: dark reddish brown. Highly plastic. (Auckland Volcanics)	M to W	VSt to H	
	2.4	Peak = 151kPa Residual = 83kPa				CH: Silty CLAY: yellowish brown. Highly plastic. (Auckland Volcanics)			
	2.8	Peak = 153kPa Residual = 69kPa				... at 2.80m, becoming mottled orange.			
				3		Borehole terminated at 3.0 m			
				4					
				5					

Termination Reason: Target Depth Reached
Shear Vane No: 2323 DCP No:
Remarks: Groundwater not encountered.

This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

HAND AUGER BOREHOLE LOG - HA39

Client: Woods Group
Project: 133 Fitzgerald Road
Site Location: Drury
Project No.: AKS2023-0072
Date: 23/04/2024
Borehole Location: Refer to Site Plan

PRELIMINARY

CMW Geosciences

Scale: 1:25 Sheet 1 of 1

Position: Projection: NZTM
Datum: NZVD2016 Survey Source: Hand-held GPS

Groundwater	Samples & Insitu Tests: Depth	Samples & Insitu Tests: Type & Results	RL (m)	Depth (m)	Graphic Log	Material Description (Soil: Soil symbol; soil type; colour; structure; bedding; plasticity; sensitivity; additional comments. (origin/geological unit) Rock: Colour; fabric; rock name; additional comments. (origin/geological unit))	Moisture Condition	Consistency/ Relative Density	Dynamic Cone Penetrometer (Blows/100mm) 5 10 15
	0.3	Peak = UTP		0		CL: Silty CLAY: orange-brown streaked red. Low plasticity. (Auckland Volcanics)			
						... at 0.30m, becoming dark reddish brown mottled orange.			
	0.6	Peak = UTP							
	0.9	Peak = UTP				... at 0.90m, becoming orange-brown.			
				1		Borehole terminated at 1.0 m			
				2					
				3					
				4					
				5					

Termination Reason: Target depth reached.
Shear Vane No: 2323 DCP No:
Remarks: Groundwater not encountered.

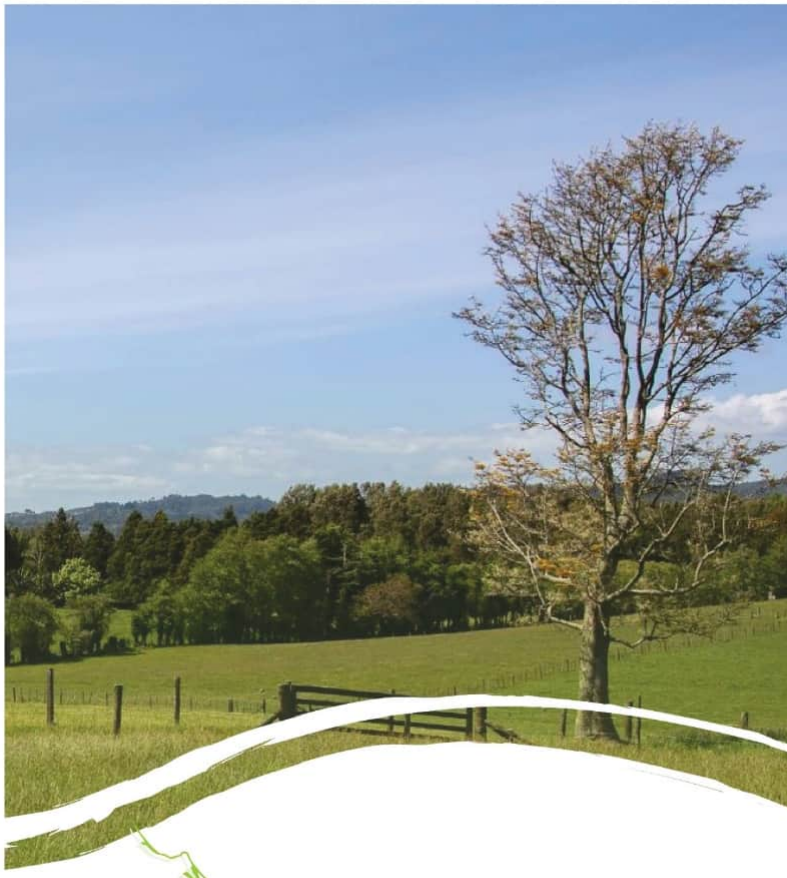
This report is based on the attached field description for soil and rock, CMW Geosciences - Field Logging Guide, Revision 3 - April 2018.

APPENDIX H

Aurecon Geotechnical Investigation Report







Drury Centre

Geotechnical Investigation Report

Kiwi Property Holdings No.2 Ltd

Reference: 510611

Revision: 5

2022-10-04

aurecon
Bringing ideas to life

Pragmatix

Kiwi Property



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Document control						aurecon
Report title		Geotechnical Investigation Report				
Document code			**Project number**		510611	
File path		Https://aurecongroup.sharepoint.com/sites/510611/5 Deliver Design/505 Field Investigations/Geotechnical/GIR/Report - For Fast Track/Rev5/510611-002-REP-GG-001[5] GIR.docx				
Client		Kiwi Property Holdings No.2 Ltd				
Client contact		David Schwartfeger	**Client reference**			
Rev	**Date**	**Revision details/status**	**Author**	**Reviewer**	**Verifier** (if required)	**Approver**
1	2021-05-07	Updated for Fast Track Issue	WM/GO/AH	JM	JL	JK
2	2021-05-11	Updated for Plan Change	WM/GO/AH	JM	JL	JK
3	2021-06-02	Updated Section 5.9.1	WM/GO/AH	JM	JL	JK
4	2021-11-11	Updated for development phase naming and address	WM/GO/AH	JM	JL	JK
5	2022-10-04	Updated for FTC Resubmission	WM/GO/AH	JM	JL	JK
Current revision		**5**				

Approval			
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Executive Summary

Introduction

Kiwi Property Holdings No.2 Ltd (Kiwi Property) are proposing to develop an area of land to the south of Drury into the new Drury Centre Precinct. The site is located between Flanagan Road to the north, Fitzgerald Road to the east, Brookfield Road to the south and the Hingaia Stream to the west. The area typically comprises gently rolling hill country that has two prominent ridgelines trending east-west and north-south. In addition, there is a gully area in the northern part of the site.

The development will require extensive earthworks to prepare building platforms and at this stage the earthworks will include cutting the prominent ridgelines to use as bulk fill source. Fill will be placed across the site and in the gully area in the northern part of the site.

Kiwi Property has engaged Aurecon New Zealand Ltd (Aurecon) to provide engineering services for the development, part of which is to undertake a geotechnical investigation for the development to confirm the ground conditions, assess the geotechnical hazards that may affect any future development, and to provide indicative engineering mitigation measures, as required.

Geotechnical Investigations

The geotechnical investigations comprised a review of relevant previous geotechnical investigations carried out onsite and a site-specific investigation. The purpose of the investigation was to obtain information of the ground and groundwater conditions to allow the development of the geologic model and identifying geotechnical hazards.

The site-specific geotechnical investigations comprised of the following:

- Fifteen rotary cored machine boreholes to a maximum depth of 35m bgl.
- Fifty-five Cone Penetration Tests (CPTs) to a maximum depth of 25m bgl.
- Five Seismic Dilatometer Tests (sDMT) to a maximum depth of 18.5m bgl.
- Thirty-two test pits to a maximum depth of 3m bgl.
- Ten hand-augered holes to a maximum depth of 3m bgl.
- MASW geophysical investigations with a total length of 5.7km.

The investigation also includes bulk sampling for the purpose of laboratory testing to inform the design and construction for site earthworks, pavement, retaining walls and foundations.

Ground Conditions

The geotechnical investigations indicate ground conditions in the central and southern parts of the site comprise South Auckland Volcanic Field (SAVF) basalts and air fall deposits, overlying Tauranga Group alluvium at depth. The SAVF deposits have a relatively thick weathering profile, with up to 10m of residual soil and completely weathered volcanics at the ground surface. Slightly weathered to unweathered basalt was generally encountered 15m to 20m below ground, to at least 25m depth. Occasional weathered zones up to 1.5m thick were encountered within the slightly or unweathered basalt, but typically the weathering grade reduces with depth.

At the northern end of the site, along the western site boundary near the Hingaia Stream and within topographic lows, Tauranga Group alluvium is present at the ground surface. The alluvium at the ground surface and within topographic lows (inferred reworked tephras) is less dense or softer than the alluvium at depth and inferred to be much younger. The younger deposits generally comprise silt and clay, sometimes with organic and pumecious content. The older Tauranga Group alluvium consists of silt, clay, peat and dense sands. Peat was encountered at >20m depth at the very northern end of the site, along with some poorly to moderately well cemented silts and sands from 15m depth.

Geotechnical Assessment

A detailed geotechnical assessment has been undertaken on the site and based on this assessment we note the following:

- The liquefaction potential at the site is negligible.
- The existing steep slopes along the western side of the site are considered to be stable in their current state and have adequate FoS in all cases assessed. When assessed with the proposed earthfill, the slopes still have adequate FoS. Further assessment of the proposed engineered fill and cuts slopes along the boundaries of the site was also undertaken. The results indicate that the earthworks slopes have adequate FoS and bulk earthworks is unlikely to pose a slope stability issue to neighbouring properties.
- Settlements are expected to be minor for the superlots in the southeast and will effectively be immediate (i.e. within weeks of loading), due to the depth of the static groundwater surface relative to weathered rock level.
- Settlements for the retail areas in the development will also be modest, however through the central gully area moving north where groundwater depth is shallow relative to the weathered rock level (Carpark / Reserve area to some extent, but M11 in particular), some time-dependent behaviour can be expected (e.g. in the order of 6 months for 90% primary consolidation completion) but preloading the ground may have the benefit of increasing the rate of settlement and reducing the settlement time.
- The soil reactivity is assessed as Class M.
- The depth to competent basalt is up to 10m below ground level. Therefore, based on the current earthworks plans the majority of the earthworks will be within residual soil and completely weathered basalt, which should be feasibly excavated with conventional excavation methods.

Based on our assessment we consider that the site is suitable to develop from geotechnical perspective, provided the recommendation provided in this report are followed.

During the preparation of this geotechnical investigation report the property at 61 Brookfield Road was acquired by Kiwi Property. Due to timing, investigations were not able to be completed on this property, but it is anticipated that the ground conditions and the geotechnical assessment will be similar to the southern part of the site. The intention is to carry out investigations in this area, and a supplementary geotechnical investigation report will be prepared presenting the investigation results and our geotechnical assessment.

Engineering Recommendations

A summary of the geotechnical conditions and recommendations for the site are provided in the table below. The table should be read in conjunction with the details presented in the relevant sections of this report.

Aspect	Recommendation
Site Subsoil Class (NZS 1170.5:2004)	C in southern part of site and D in northern part of site
Soil Reactivity Class (AS 2870:2011)	M
Expected subgrade CBR on virgin ground	4%
Permanent cut/fill slopes	Up to 3m high: 3H:1V (18°) or flatter should be used but steeper slope of 2.5H:1V (21°) are also suitable. Over 3m: Specific assessment required but slopes of 3H:1V and 2.5H:1V should be suitable.
Temporary cut/fill slopes	Up to 3m high: 1H:1V or flatter Over 3m: Specific assessment required.
Earthworks	Insitu natural soils obtained from the excavations is likely to be suitable for use as Engineered Fill, provided they are free from organic, contaminated, and other deleterious matter. Filling shall be carried out in accordance with NZS4431:2022 – Engineered fill construction for lightweight structures.
Building foundations	Due to commercial nature of the buildings, specific investigation and design will be required.

Geotechnical Summary

We consider that at the site there are no significant geotechnical hazards, other than the potential for settlement of soft soils due to loading from the proposed earthfilling. However, provided that the geotechnical recommendations given within this report are followed, and the appropriate engineering measures are implemented, we consider the development is unlikely to be affected by significant geotechnical hazards nor will the development worsen, accelerate or result in material damage. Therefore, from a geotechnical perspective, we consider that safe and stable building platforms can be created, and the proposed development can proceed.

An explanatory statement is presented in Section 9 and this report shall be read as a whole.

1 Introduction

1.1 General

This report has been prepared in support of the application by Kiwi Property Holdings No 2 Limited (the "applicant" or "Kiwi Property") for a referred project under the Covid 19 Recovery (Fast track Consenting) Act 2020 (the Act). In summary, the Drury Centre Precinct project involves subdivision, land use and discharge consents for the development of buildings for large format retail activities up to a maximum gross floor area (GFA) of 24,000m2, the creation of balance superlots for future development, three open space reserves including restoration and enhancements along the Hingaia Stream, the construction and installation of three waters reticulation, upgrades to existing transport infrastructure and associated enabling bulk earthworks (the "project" or the "proposal"). The project site is across multiple contiguous properties on Flanagan, Fitzgerald and Brookfield Roads, Drury, Auckland (the Site).

The 48.9 ha site for the Drury Centre Precinct project forms part of a larger land area within Drury which was recently rezoned as part of Private Plan Change – Drury Central (PC48) promulgated by Kiwi Property. PC48 has rezoned the land from its former Future Urban Zone (FUZ) to urban zones which include Business - Metropolitan Centre, Business - Mixed Use and Open Space – Informal Recreation zones under the Auckland Unitary Plan (AUP(OP)). The relationship of this project and PC48 is detailed in the Assessment of Environmental Effects (AEE) prepared by Barker and Associates (B&A).

1.2 Proposal

Kiwi Property are proposing the subdivision and development of the current project area for the Drury Centre. The proposal will result in the development of a large format retail (LFR) centre, superlots for future development to the east of the LFR and parks/reserves including an open space reserve adjacent the Hingaia Stream. The construction of roads to vest, associated site preparation works, and construction of civil infrastructure and landscaping are also proposed.

The area typically comprises gently rolling hill country that has two prominent ridgelines trending east-west and north-south. In addition, there is a gully area in the northern part of the site. The development will require extensive earthworks to prepare building platforms and at this stage the earthworks will include cutting the prominent ridgelines to use as bulk fill source. Fill will be placed across the site and in the gully area in the northern part of the site.

1.3 Scope of Services

As part of this fast track consent a geotechnical assessment is required to assess the feasibility of the land for the proposed development.

Kiwi Property has engaged Aurecon New Zealand Ltd (Aurecon) to provide engineering services for the development, part of which is to undertake a geotechnical investigation for the development to confirm the ground conditions, assess the geotechnical hazards that may affect any future development, and to provide indicative engineering mitigation measures, as required.

This report documents the results of the geotechnical investigations, identifies the geotechnical hazards that may affect the development, and provides preliminary geotechnical engineering recommendations for developing the site, as well as recommendations for further work. The scope of works included the following:

- A site walkover and reconnaissance of the surroundings to identify site specific hazards from a geotechnical perspective.
- Review previous geotechnical investigation testing that has been carried out across the site.

- Organise and supervise the following geotechnical investigations:
  - Fifteen geotechnical boreholes
  - Fifty-five Cone Penetration Tests (CPTs)
  - Five Seismic Dilatometer Tests (sDMT)
  - Thirty-two test pits
  - Ten hand-augered holes
  - MASW (multi-channel analysis of surface waves) geophysical investigations.
- Laboratory testing of soil samples taken during the geotechnical investigations.
- Undertake a geotechnical assessment for the site, which included settlement, liquefaction and slope stability analysis, to assess the suitability of the land for development.
- Prepare this geotechnical report for the site detailing the investigation results and providing geotechnical engineering recommendations for the site development.

Our work has been carried out under an agreement between Kiwi Property and Aurecon. An explanatory statement is presented in Section 9 and this report shall be read as a whole.

During the preparation of this geotechnical investigation report the property at 61 Brookfield Road was acquired by Kiwi Property. Due to timing, investigations were not able to be completed on this property, but the intention is to carry out investigations in this area, and a supplementary geotechnical investigation report will be prepared presenting the investigation results and our geotechnical assessment.

2 Site Conditions

2.1 Site Description

The current project area comprises approximately 48.9ha of land at 133, 139, 155, 173 and 189 Fitzgerald Road; 61 and 97 Brookfield Road; 108, 116, 120, 124, 128 and 132 Flanagan Road, Drury, Auckland (refer to Figure 1 below). The site is bound by rural properties to the north, Fitzgerald Road to the east, Brookfield Road and rural properties to the south and the Hingaia Stream and rural properties to the west.

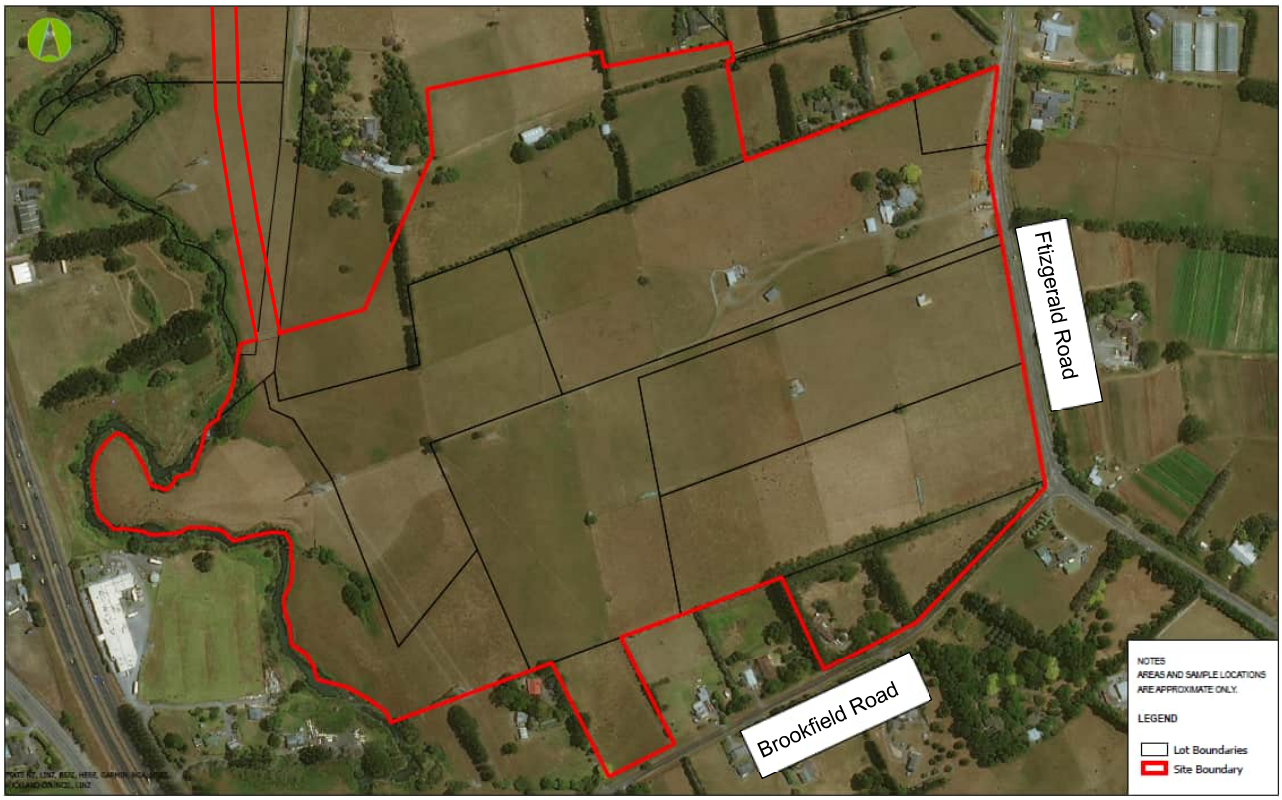


Figure 1: Site Location

The main site features of the site are as follows (see Drawing 510611-002-FIG-GG-0001 in Appendix A):

- The site is located directly south of Drury Township, South Auckland and is approximately 33km southeast of Auckland Central Business District (CBD).
- The proposed site to be developed is largely farmland.
- The site consists of several individual properties and is currently used as farmland. The area is separated into paddocks by fences and established hedges.
- The site is located in hill country with grass covered slopes that vary from gentle to steep in gradient. Auckland Council GIS indicate that site levels range from approximately 30m above sea level nearby to Fitzgerald Road and Flanagan Road, to 6m above sea level adjacent to the Hingaia Stream.
- There are two prominent ridgelines trending east-west and north-south. In addition, there is a gully area in the northern part of the site. Running through the central part of the site is a topographic low the runs into the northern gully area.
- The Hingaia Stream flows from south to north along the western side of the site. The hill side adjacent to the stream is moderately steep with slopes typically ranging from 5° to 20°. Immediately adjacent to the stream there are locally steeper slopes up 30°. At the time of the investigation the stream was flowing.

- Apart from the Hingaia Stream, the only other drainage feature is a gully area in the northern part of the site. At its southern end the gully is relatively shallow at less the 2m deep. However, further to the north the gully is deeply incised and is up to 8m deep, with the gully sides sloping at 15° to 20°. At the time of the investigation the gully had a low flow of water, with stagnant water at the southern end.
- Structures currently on the proposed site include a handful of farm sheds and residential dwellings. Both 220kV and 100kV overhead transmission lines run the length of the western side of the site. These transmission lines sit outside the current area to be developed.
- The site currently has two access points at 139 Fitzgerald Road and 120 Flanagan Road, Drury.

2.2 Regional Geology

The surface geology of the Auckland area is described in GNS 1:250,000 scale in the geological map of the Auckland area (Edbrooke, 2001). At the time of this report GNS were developing a 1:50,000 scale map of the South Auckland area which is due to be published in 2021.

Edbrooke's 1:250,000 scale map is suitable for the purpose of understanding the regional geologic stratigraphy for this project. Edbrooke's map illustrates that South Auckland Volcanic Field (SAVF) basalt lava covers a large proportion of the southern section of the site, while the northern section is predominantly underlain by Tauranga Group alluvium.

- The Tauranga Group sediments comprise Pumiceous mud, sand and gravel with muddy peat and lignite: rhyolite pumice, including non-welded ignimbrite, tephra and alluvial pumice deposits; massive micaceous sand. Typically, in the area, the Tauranga Group comprises estuarine, fluvial and lacustrine deposits and includes unconsolidated silts and clays, sand, gravelly sand which are often interbedded with peat and organic rich clays as well as pumiceous materials ranging from silts to gravel clasts.
- SAVF comprises *fine-grained and coarse-grained, porphyritic, olivine basalt, basanite and hawaiite lava flows.* SAVF is highly variable due to age, erosion and weathering which has resulted in weathering profiles ranging from clay/silt residual soils to slightly weathered basalt.

2.3 Seismicity

The Auckland area is one of the lowest earthquake activity regions in New Zealand. The GNS New Zealand Active Fault Database indicates there are no known active faults onsite, with the nearest active fault being the Wairoa North and South Faults located approximately 13km east of the site, within the Hunua Ranges. GNS have not established a recurrence interval and date for the last event at the Wairoa Faults. Nearby inactive faults include the Glenbrook Fault, Waiau Fault, Drury Fault and Hunua Fault which are located within approximately 5km of the site.

2.4 Volcanic Activity

The SAVF is located approximately 40km south of Auckland City and is centred around the Manukau Lowlands, extending over 300km^2 to the Hunua Ranges in the east, Waikato River valley in the south, and Waiuku in the west. The SAVF comprises over 97 subaerial volcanic centres with an eruption history that dates from 0.5 and 1.6 million years. The volcanic field is considered extinct and SAVF derived volcanism is unlikely to pose a risk to future developments.

2.5 Aerial Photograph Interpretation

Aerial photography dating from 1942 to 2017 from Retrolens and Auckland Council GeoMaps have been reviewed. The past land use has been discussed in the detail in the contamination reports but from a geotechnical aspect the following was noted (see 1942 aerial photograph for locations of the features discussed):

- Land use has mostly been agricultural with minor associated earthworks.
- The landform and geomorphology of the site captured in the 1942 aerial appears similar to the current landform.
- Both the Hingaia Stream and the gully in the north part of the site are within well incised drainage channels. Adjacent to these drainage features, the slopes show the typical erosion pattern formed by the streams meandering and incising. The erosional patterns appear shallower in the upper slopes (possibly as the upper slopes comprise stiff to hard clays of the SAVF), while further down the slope the erosional patterns are steeper in the incised channels (possibly due to the lesser competent Tauranga Group).
- On the western slope, just to the south of the homestead, there is a degraded scarp feature. This feature is present in all of the aerial photographs reviewed and there appears to be no changes to this feature since 1942. Of particular note this feature is well degraded in the 1942 aerial photograph. It is likely that this feature represents the headscarp of a pre-historic landslide that may have formed in the upper soil profile due to the meandering and incising of the Hingaia Stream removing the toe of the slope.
- There is no evidence of slope instability in the aerial photographs.

A copy of the aerial photography from 1942 to 2010 is provided in Appendix B. The 2017 aerial photograph can be directly accessed off Auckland Council GeoMaps.

3 Geotechnical Investigations

3.1 General

The geotechnical investigations comprised a review of relevant previous geotechnical investigations carried out onsite and a site-specific investigation undertaken between 24 November 2020 and 18 January 2021. The purpose of the investigation was to obtain information of the ground and groundwater conditions to allow the development of the geologic model and identifying geotechnical hazards.

The site-specific geotechnical investigations comprised of the following:

- Fifteen rotary cored machine boreholes to a maximum depth of 35m bgl.
- Fifty-five Cone Penetration Tests (CPTs) to a maximum depth of 25m bgl.
- Five Seismic Dilatometer Tests (sDMT) to a maximum depth of 18.5m bgl.
- Thirty-two test pits to a maximum depth of 3m bgl.
- Ten hand-augered holes to a maximum depth of 3m bgl.
- MASW (multi-channel analysis of surface waves) geophysical investigations with a total length of 5.7km.

The investigation also included bulk sampling for the purpose of laboratory testing to inform the design and construction for site earthworks, pavement, retaining walls and foundations.

The geotechnical investigations cover the properties included within the development. Future development of the Drury Centre, further to the current area of consenting, may include the area to the north and therefore these areas were included as part of this geotechnical investigation.

It is noted that during the preparation of this geotechnical investigation report the property at 61 Brookfield Road was acquired by Kiwi Property. Due to timing, investigations were not able to be completed on this property, but the intention is to carry out investigations in this area, and a supplementary geotechnical investigation report will be prepared presenting the investigation results and our geotechnical assessment.

3.2 Previous Investigations

A review of previous geotechnical investigations (ENGEO 2017a and 2017b) indicates a number of investigations that had been carried out on the site. These have included geotechnical boreholes, hand auger holes and laboratory testing. The test locations are shown in Drawings 510611-002-FIG-0001 to 0005 in Appendix A. The logs and laboratory test results are presented in Appendix C.

The summary of previous geotechnical investigations at the site are as follows:

- Boreholes BH01 to BH04 were drilled in November and December of 2016 to depths ranging from 15.45m to 24.95m. Standing water was recorded using a dip-meter at the time of drilling. Piezometers were also installed in these Boreholes BH02, BH03 and BH04.
- Boreholes BH05 and BH06 were drilled in November of 2017 to depths of 18.95m and 30.5m respectively. No piezometers were installed in these boreholes however, standing water was recorded using a dip-metre at the time of drilling.
- Hand auger holes HA01 to HA24 were completed between December 2016 and January 2017 to depths of up to 5m.
- Laboratory testing comprising moisture contents, linear shrinkage and allophane content.

A review of the New Zealand Geotechnical Database identified three wells within close proximity to the site with information relevant for the geotechnical investigations. A summary of these logs is provided in Table 1. The test locations are shown in Drawings 510611-002-FIG-0001 to 0005 in Appendix A and the well logs are presented in Appendix C. Although these are well logs, these provide an indication of the ground conditions at depth.

Table 1 Well Logs

Well No	Depth (m)	Summary
BC4033	104	Clay over basalt to 32m, overlying silt and peat to 93m with shell beds and sandstone at depth.
BC4088	112	Clay over basalt to 42m, overlying mud, clay and peat to 104m with shells and sands depth.
B22837	84	Clay over basalt to 48m, overlying sand, mudstone and peat to depth.

3.3 Recent Investigations

3.3.1 Methodology

Service Location and Clearance of Investigation Locations

Each test location was assessed using service locations plans from utility providers and cleared of underground services by Underground Service Locators Ltd and Bay Locate Ltd. Each location was scanned using a Cable Avoidance Tool (CAT) and a Ground Penetrating Radar (GPR), before being marked in preparation for the commencement of ground investigations.

Investigation Location Accuracy

Ground investigation locations were located using a digital device containing a KMZ file of the proposed ground investigation coordinates. Additionally, geographic features including landmarks and topography were used to verify these locations. In the instance where factors such as above and below ground services, vegetation and/or steep terrain impeded investigations, locations were moved locally, and their coordinates updated accordingly. All locations were marked out using wooden stakes during the service location phase of ground investigation. Investigation collars were recorded to an accuracy of ±10m horizontally and ±1m vertically.

Investigation Number System

The investigation numbering system adopted for this project is as follows:

- '(Test Type)(Unique ID)' - e.g. '*BH001*'

The prefix for each investigation is presented in Table 2.

Table 2 Investigation Type

Prefix	Investigation
BH	Geotechnical Borehole
CPT	Cone Penetration Test
sDMT	Seismic Dilatometer Test
TP	Test Pit
HA	Hand Auger Borehole

3.3.2 Geotechnical Boreholes

A total of 15 rotary cored machine boreholes were carried out by Perry Geotech Ltd using using both a track-mounted drill rig and a sonic drill rig. These were completed from 24 November 2020 to 14 January 2021 and were supervised and logged by an Aurecon Engineering Geologist. All boreholes had a target depth of 25m bgl (below ground level) however if geological features of importance are encountered, target depths were extended. HQ sized drilling equipment with a rotary core drilling technique was used for the boreholes. Recovered core was wrapped and placed in core boxes for storage after being logged by an Aurecon Engineering Geologist in general accordance with the New Zealand Geotechnical Society (NZGS) *Guidelines for Soil and Rock Description.*

Standard Penetration Tests (SPTs) were typically carried out at 1.5m intervals generally in accordance with NZS 4402:6.5.1:1986, modified to conclude at 50 drive blows (or 50 seating blows if achieved before 150mm seating drive) in line with common industry practice. Retrieved samples were logged, bagged and stored in the core boxes.

Hand shear vane tests were carried out in the end of the core barrel to establish the soils shear strength. Shear vane testing was carried out in general accordance with the New Zealand Geotechnical Society Guidelines (NZGS, 2001).

The borehole locations are shown in Drawings 510611-002-FIG-0001 to 0005 in Appendix A. Borehole logs and core photographs are presented in Appendix D, together with an explanatory statement outlining the terms and symbols used on the logs.

A summary of complete machine boreholes is presented in Table 3.

Table 3 Summary of Borehole Investigations

BH ID	Completion Date	Coordinates		Collar (m RL)	Termination	
		Easting (mE)	Northing (mN)		Depth (m bgl)	Reason
BH001	24/11/2020	417191	774155	24	25.50	Target Depth
BH002	25/11/2020	417081	774102	24	25.57	Target Depth
BH003	01/12/2020	416917	774329	23	25.50	Target Depth
BH004	26/11/2020	416787	773943	25	25.50	Target Depth
BH005	30/11/2020	416795	774189	22	25.50	Target Depth
BH006	17/12/2020	416588	774318	19	26.45	Target Depth
BH007	04/12/2020	416790	774485	15	25.50	Target Depth
BH008	15/12/2020	416451	774474	8	25.76	Target Depth
BH009	16/12/2020	416437	774505	8	27.45	Target Depth
BH010	14/12/2020	416536	774498	19	32.45	Target Depth
BH011	15/01/2021	416476	774550	18	25.95	Target Depth
BH012	10/12/2020	416626	774546	24	25.95	Target Depth
BH013	Borehole not carried out due to contaminated soil below topsoil					
BH014	14/01/2020	416485	774665	14	35.00	Target Depth
BH015	09/12/2020	416594	774710	18	25.95	Target Depth
BH016	08/12/2020	416713	774752	12.5	25.95	Target Depth

3.3.3 Standpipe Piezometers

Following the completion of drilling, open standpipe piezometers were installed in nine of the fifteen boreholes to enable groundwater level measurements. Standpipe installations comprise screwed-together 32mm diameter PVC pipe, with a slotted section over the screened depth (depth of interest). Summary construction details of the screened interval for each piezometer are listed in Table 4. Each piezometer is illustrated as a graphic on the corresponding borehole log, and detailed construction records are provided in Appendix E.

Table 4 Summary of Piezometers Installed

BH ID	Date Drilled	Collar (m RL)	Screened Depth (m, bgl)
BH001	22 November 2020	24	12.2 to 15.2
BH003	02 December 2020	23	6.1 to 9.1
BH005	30 November 2020	22	9.0 to 12.0
BH006	17 December 2020	19	12.0 to 15.0
BH007	03 December 2020	15	9.0 to 11.0
BH009	18 December 2020	8	6.0 to 9.0
BH011	15 January 2021	18	12.0 to 15.0
BH015	09 December 2020	18	3.0 to 6.0
BH016	08 December 2020	12.5	7.0 to 10.0

3.3.4 Cone Penetrometer Tests (CPT)

The CPTs were carried out by Perry Geotech Ltd using a track-mounted CPT rig. Cone Penetration Tests were carried out in accordance with ASTM D5778-12. Fifty-five CPTs were carried out across the site area to provide an understanding of the ground conditions. The CPTs were undertaken between 23 November 2020 and 2 December 2020.

In the instance where refusal was met at a shallow depth, a twin test was carried out approximately 1m adjacent to the original location to determine whether refusal was caused by localised ground conditions. Where a CPT was repeated the twin test is identified with an ‘’A’ suffix.

A summary of the completed CPTs is presented in Table 5. The CPT locations are shown in Drawings 510611-002-FIG-0001 to 0005 in Appendix A and the investigation logs are presented in Appendix F.

Table 5 Summary of CPTs

CPT ID	Completion Date	Coordinates		Collar (m RL)	Termination	
		Easting (mE)	Northing (mN)		Depth (m bgl)	Reason
CPT001	01/12/2020	417276	774125	32	9.43	Refusal
CPT002A	01/12/2020	417163	774097	23	12.16	Refusal
CPT003	01/12/2020	417183	774142	24	19.52	Refusal
CPT004	01/12/2020	417217	774196	26	15.14	Refusal
CPT005	01/12/2020	417227	774322	29	21.31	Refusal
CPT006	01/12/2020	417104	774272	30	22.59	Refusal
CPT007	01/12/2020	417051	774039	21	19.93	Refusal
CPT008	01/12/2020	416907	773864	16	8.06	Refusal
CPT009	01/12/2020	416910	773982	19	13.12	Refusal
CPT010	01/12/2020	416943	774057	23	11.58	Refusal

CPT ID	Completion Date	Coordinates		Collar (m RL)	Termination	
		Easting (mE)	Northing (mN)		Depth (m bgl)	Reason
CPT011	01/12/2020	416987	774224	28	7.08	Refusal
CPT012	01/12/2020	416976	774372	22	12.73	Refusal
CPT013	01/12/2020	416877	774264	22	19.8	Refusal
CPT014	01/12/2020	416908	774163	23	17.99	Refusal
CPT015	01/12/2020	416863	774077	20	17.44	Refusal
CPT016	01/12/2020	416831	773989	21	11.37	Refusal
CPT017	01/12/2020	416740	774008	25	13.83	Refusal
CPT018	01/12/2020	416807	774109	22	17.62	Refusal
CPT019	30/11/2020	416791	774208	21	11.59	Refusal
CPT020	30/11/2020	416668	774126	25	14.65	Refusal
CPT021	30/11/2020	416627	774213	25	10.26	Refusal
CPT022	30/11/2020	416582	774292	19	17.22	Refusal
CPT023	30/11/2020	416696	774270	27	19.53	Refusal
CPT024	30/11/2020	416796	774324	18	14.50	Refusal
CPT025	30/11/2020	416867	774371	19	25.00	Target Depth
CPT026	30/11/2020	416614	774325	21	11.6	Refusal
CPT027	24/11/2020	416583	774368	21	16.14	Refusal
CPT028	30/11/2020	416708	774346	27	16.45	Refusal
CPT029A	30/11/2020	416844	774426	19	1.48	Refusal
CPT030	30/11/2020	416768	774435	16	25.00	Target Depth
CPT031	24/11/2020	416472	774474	9	5.59	Refusal
CPT032	30/11/2020	416549	774488	22	11.66	Refusal
CPT033	27/11/2020	416605	774513	25	20.52	Refusal
CPT034	26/11/2020	416689	774476	25	25.00	Target Depth
CPT035	27/11/2020	416693	774535	20	19.62	Refusal
CPT036	27/11/2020	416766	774546	14	25.00	Target Depth
CPT037	27/11/2020	416836	774570	15	25.00	Target Depth
CPT038	27/11/2020	416431	774540	7	10.08	Refusal
CPT039	27/11/2020	416484	774551	19	13.40	Refusal
CPT040	26/11/2020	416633	774601	21	18.13	Refusal
CPT041	26/11/2020	416721	774610	13	25.00	Target Depth
CPT042	27/11/2020	416765	774647	11	25.00	Target Depth
CPT043	27/11/2020	416800	774715	12	9.80	Refusal
CPT044	23/11/2020	416638	774662	18	7.98	Refusal
CPT045	25/11/2020	416552	774617	20	21.6	Refusal
CPT046	26/11/2020	416393	774596	9	25.00	Target Depth
CPT047	26/11/2020	416411	774650	9	25.01	Target Depth
CPT048A	26/11/2020	416492	774645	14	25.00	Target Depth
CPT049	26/11/2020	416520	774672	17	8.91	Refusal
CPT050	26/11/2020	416610	774711	17	12.63	Refusal

CPT ID	Completion Date	Coordinates		Collar (m RL)	Termination	
		Easting (mE)	Northing (mN)		Depth (m bgl)	Reason
CPT051	26/11/2020	416618	774788	13	25.01	Target Depth
CPT052	26/11/2020	416693	774793	13	25.00	Target Depth
CPT053	26/11/2020	416786	774793	14	25.00	Target Depth
CPT054	25/11/2020	417276	774125	32	25.01	Target Depth
CPT055	25/11/2020	417163	774097	23	7.56	Refusal

3.3.5 Seismic Dilatometer (sDMT)

The sDMTs were carried out by Perry Geotech Ltd using a track-mounted CPT rig. sDMTs were carried out in accordance with ASTM D6635-01. The five sDMTs were carried out specifically in the northern part of the site where the greater fill depths are proposed. The sDMT were undertaken between 23 November 2020 and 25 November 2020.

In the instance where refusal was met at a shallow depth, a twin test was carried out approximately 1m adjacent to the original location to determine whether refusal was caused by localised ground conditions. Where a sDMT was repeated, the twin test is identified with an ‘’A’ suffix.

The sDMTs measured every 250mm with seismic readings taken every 500mm until refusal or the target depth was reached.

A summary of the completed sDMTs is presented in Table 6. The sDMT locations are shown in Drawings 510611-002-FIG-0001 to 0005 in Appendix A and the investigation logs are presented in Appendix G.

Table 6 Summary of Seismic Dilatometers

SDMT ID	Completion Date	Coordinates		Collar (m RL)	Termination	
		Easting (mE)	Northing (mN)		Depth (m bgl)	Reason
sDMT001	24/11/2020	416820	774369	17	11.00	Refusal
sDMT002	24/11/2020	416789	774601	12	8.50	Refusal
sDMT003	23/11/2020	416745	774759	11	8.50	Refusal
sDMT004A	23/11/2020	416720	774650	12	2.50	Refusal
sDMT005	25/11/2020	416774	774499	15	18.50	Refusal

3.3.6 Test Pits (TP)

The test pits were carried out using a 13t excavator provided by Land Clearing Solution Ltd and supervised by an Aurecon Engineering Geologist. Thirty-two test pits were carried out across the site area to provide an understanding of the upper surficial soil profile and allow bulk sampling of soil for laboratory testing. The test pit was logged by an Aurecon Engineering Geologist in general accordance with the New Zealand Geotechnical Society (NZGS) *Guidelines for Soil and Rock Description.* Test pits were undertaken between 7 December 2020 and 10 December 2020.

A summary of the completed test pits is presented in Table 7. The test pit locations are shown in Drawings 510611-002-FIG-0001 to 0005 in Appendix A and the investigation logs are presented in Appendix H.

Table 7 Summary of Test Pits

TP ID	Completion Date	Coordinates		Collar (m RL)	Termination	
		Easting (mE)	Northing (mN)		Depth (m bgl)	Reason
TP001	07/12/2020	417228	774154	27	3.2	Target Depth
TP002	07/12/2020	417225	774257	28	3.2	Target Depth
TP003	07/12/2020	417202	774328	30	3.5	Target Depth
TP004	07/12/2020	417128	774429	28	2.5	Refusal
TP005	07/12/2020	417081	774296	31	3.0	Target Depth
TP006	07/12/2020	417081	774158	27	2.8	Target Depth
TP007	08/12/2020	416992	774074	23	3.0	Target Depth
TP008	08/12/2020	416994	774162	26	3.1	Target Depth
TP009	08/12/2020	416897	773892	19	3.0	Target Depth
TP010	08/12/2020	416890	773844	16	2.8	Target Depth
TP011	08/12/2020	416629	773962	12	3.0	Target Depth
TP012	08/12/2020	416671	773922	15	1.4	Refusal
TP013	08/12/2020	416820	774039	22	2.9	Target Depth
TP014	08/12/2020	416871	774221	22	3.1	Target Depth
TP015	08/12/2020	416506	774075	12	3.0	Target Depth
TP016	08/12/2020	416561	774100	14	3.0	Target Depth
TP017	08/12/2020	416723	774167	27	2.8	Target Depth
TP018	08/12/2020	416821	774291	18	3.1	Target Depth
TP019	10/12/2020	416600	774211	20	3.0	Target Depth
TP020	10/12/2020	416563	774282	15	3.0	Target Depth
TP021	Test pit not carried out due to contaminated soil below topsoil					
TP022	10/12/2020	416430	774381	8	3.0	Target Depth
TP023	10/12/2020	416535	774403	21	3.0	Target Depth
TP024	09/12/2020	416818	774497	19	3.0	Target Depth
TP025	09/12/2020	416631	774512	25	3.0	Target Depth
TP026	10/12/2020	416480	774511	13	3.0	Target Depth
TP027	Test pit not carried out due to contaminated soil below topsoil					
TP028	10/12/2020	416478	774604	11	3.0	Target Depth
TP029	10/12/2020	416573	774666	18	3.6	Target Depth
TP030	09/12/2020	416635	774648	19	3.0	Target Depth
TP031	09/12/2020	416764	774654	10	3.0	Target Depth
TP032	09/12/2020	416622	774751	14	3.0	Target Depth
TP033	09/12/2020	416651	774725	9	3.0	Target Depth
TP034	09/12/2020	416794	774760	13	3.0	Target Depth

3.3.7 Hand Auger Holes (HA)

Ten hand auger holes were carried out across the site by an Aurecon Engineering Geologist to provide information on near surface soil type in areas not readily accessible by an excavator. Hand auger holes were drilled to a target depth of 3m bgl with shear vane readings undertaken at 0.5m intervals throughout the profile. Recovered disturbed sample was logged by an Aurecon Engineering Geologist in general accordance with the New Zealand Geotechnical Society (NZGS) *Guidelines for Soil and Rock Description.* Hand augers were undertaken between 13 January 2021 and 18 January 2021.

If refusal was met, a twin hole was carried out approximately 1m adjacent to the original location to determine whether refusal was caused by localised ground conditions. Scala penetrometer testing was carried out at the base of all hand auger hole. A summary of the completed hand augers is presented in Table 8. The test locations are shown in Drawings 510611-002-FIG-0001 to 0005 in Appendix A and the investigation logs are presented in Appendix I.

Table 8 Summary of Hand Auger Holes

HA ID	Completion Date	Coordinates		Termination	
		Easting (mE)	Northing (mN)	Depth (m bgl)	Reason
HA001	13/01/2021	416556	774146	3.0	Target Depth
HA002	13/01/2021	416540	774248	2.8	Refusal
HA003	14/01/2021	416641	774280	3.0	Target Depth
HA004	14/01/2021	416461	774430	3.0	Target Depth
HA005	15/01/2021	416643	774789	2.1	Hole Collapse
HA006	15/01/2021	416818	774612	1.4	Refusal
HA007	15/01/2021	416465	774645	3.0	Target Depth
HA008	18/01/2021	417189	774090	3.0	Target Depth
HA009	18/01/2021	416352	774619	0.4	Refusal
HA010	18/01/2021	416408	774537	3.0	Target Depth

3.3.8 Geophysical Investigations

Nineteen Multi-channel Analysis of Surface Waves (MASW) profile lines were undertaken by Southern Geophysical Limited in November 2020. These profile lines had a total length of 5.7km and comprised individual MASW soundings at approximately 5m spacing.

From the MASW soundings, shear wave velocity profile sections have been produced for the upper 25m of the soil profile. The MASW soundings were undertaken to obtain information between the physical control points (i.e. CPTs, boreholes and test pits). Boreholes and test pits were used to calibrate the MASW profiles.

The MASW was able to provide indicative information on the depths of the basalt and the weathering profile within the basalt formation. The locations of the profile lines are shown in Drawings 510611-002-FIG-0001 to 0005 in Appendix A and the Geophysical Report is presented in Appendix J.

3.4 Geotechnical Laboratory Testing

3.4.1 General

Laboratory testing was carried out to determine soil properties from samples taken from rotary cored machine boreholes and test pits. Samples collected were submitted to Babbage Geotechnical Laboratory (BGL) operated by Babbage Consultant Ltd and based in Auckland, which is International Accreditation New Zealand (IANZ) accredited.

The scope of testing and the relevant standards are presented in Table 9. The test results are summarised in the following sections (Table 10 to Table 16) and the detailed laboratory test results are included in Appendix K.

Table 9 Scope of Laboratory Testing

Test	Test Standard
Natural Moisture Content	NZS 4402 Test 2.1
Atterberg Limit	NZS 4402 Test 2.1, 2.2, 2.3, 2.4
Linear Shrinkage	NZS 4402 Test 2.6
Particle Size Distribution	NZS 4402 Test 2.1, 2.8.1 (75mm) and 2.8.4
Compaction Testing	NZS 4402 Test 4.1.2
CBR Testing	NZS 4402 Test 6.1.1
Allophane Testing	NZS 4402 Test 3.4

3.4.2 Natural Moisture Content Testing

A summary of natural moisture content testing completed by BGL is summarised in Table 10.

Table 10 Natural Moisture Content Results

Test Location	Soil Description	Sample Depth (m below ground level)	Moisture Content (%)
TP001	CLAY	0.8 - 1.2	61.9
TP002	Clayey SILT	0.5 - 0.9	40.0
TP002	CLAY	0.9 - 2.5	69.7
TP003	Silty CLAY	1.6 - 1.9	73.9
TP011	CLAY	2.2 - 2.5	27.1
TP015	Silty CLAY	1.2 - 1.8	69.9
TP019	Cobbly GRAVEL	1.0 - 1.2	49.7
TP024	Silty CLAY	1.1 - 1.8	56.0
TP032	SILT	2.0 - 3.0	73.6
BH007	SILT	6.0 - 6.5	62.6
BH014	CLAY	33.0 - 33.5	52
BH014	Organic CLAY	34.5 – 35.0	136

3.4.3 Atterberg Limit Testing

A summary of Atterberg limit testing completed by BGL is summarised in Table 11.

Table 11 Atterberg Limit Results

Test Location	Soil Description	Sample Depth (m below ground level)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Moisture Content (%)
TP003	Clayey SILT	0.25 - 0.8	104	42	62	53.3
TP004	Silty CLAY	2.0 - 2.5	83	51	32	47.3
TP005	CLAY	2.1 - 2.4	75	50	25	46.9
TP006	Clayey SILT	1.8 - 2.1	68	44	24	39.3
TP008	Silty CLAY	2.3 - 2.7	74	36	38	43.5
TP010	CLAY	1.5 - 1.8	74	33	41	43.0
TP014	CLAY	1.7 - 2.8	97	46	51	51.6
TP017	CLAY	2.2 - 2.5	77	48	29	45.1
TP019	Clayey SILT	0.25 - 0.75	79	34	45	33.3
TP025	Silty CLAY	0.7 - 1.5	83	37	46	40.2
TP029	Silty CLAY	1.8 - 2.4	82	27	55	32.6
TP031	Silty CLAY	0.6 - 1.8	66	33	33	49.3

Test Location	Soil Description	Sample Depth (m below ground level)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Moisture Content (%)
TP032	Silty CLAY	0.7 - 2.0	109	33	76	53.6
BH007	Pumiceous SILT	2.0 - 2.5	100	42	58	74.3
BH008	Clayey SILT	8.0 - 8.5	131	42	89	92.6
BH014	SILT	18.0 – 18.5	130	38	92	96.3
BH015	Silty CLAY	8.5 - 9.0	85	25	60	58.9
BH016	Sandy CLAY	11.0 - 11.5	108	33	75	83.8
BH016	Organic CLAY	24.0 – 24.5	173	60	113	113

3.4.4 Linear Shrinkage Testing

A summary of linear shrinkage testing completed by BGL is summarised in Table 12.

Table 12 Linear Shrinkage Results

Test Location	Soil Description	Sample Depth (m below ground level)	Linear Shrinkage (%)
TP003	Clayey SILT	0.25 - 0.8	22
TP004	Silty CLAY	2.0 - 2.5	21
TP005	CLAY	2.1 - 2.4	18
TP006	Clayey SILT	1.8 - 2.1	16
TP008	Silty CLAY	2.3 - 2.7	18
TP010	CLAY	1.5 - 1.8	19
TP014	CLAY	1.7 - 2.8	21
TP017	CLAY	2.2 - 2.5	16
TP019	Clayey SILT	0.25 - 0.75	20
TP025	Silty CLAY	0.7 - 1.5	20
TP029	Silty CLAY	1.8 - 2.4	23
TP031	Silty CLAY	0.6 - 1.8	14
TP032	Silty CLAY	0.7 - 2.0	26

3.4.5 Particle Size Distribution Testing

A summary of particle size distribution testing completed by BGL is summarised in Table 13.

Table 13 Particle Size Distribution Results

Test Location	Soil Description[1]	Sample Depth (m below ground level)	Clay Content (%)	Silt Content (%)	Sand Content (%)	Gravel Content (%)
TP003	Clayey SILT	0.25 - 0.8	75	20	4	1
TP004	Clayey SILT	0.6 - 1.1	74	23	3	0
TP023	GRAVEL & COBBLES[2]	0.75 - 3.0	29	53	16	2
TP029	Silty CLAY	1.8 - 2.4	44	44	12	0
TP031	SILT	2.7 - 3.0	22	50	28	0
BH015	SAND minor silt	14.0 - 14.5	6	19	75	0
BH016	Silty SAND	13.5 - 14.0	28	61	11	0

1. Soil description based on field description from test pit of borehole core sample
2. Highly weathered basalt logged as gravel/cobbles which could be broken apart by hand

3.4.6 Compaction Testing

A summary of compaction testing completed by BGL is summarised in Table 14.

Table 14 Compaction Testing Results

Test Location	Soil Description	Sample Depth (m below ground level)	Maximum Dry Density (t/m^3)	Optimum Moisture Content (%)
TP005	CLAY	2.1 - 2.4	1.17	44
TP008	Silty CLAY	2.3 - 2.7	1.24	40
TP017	CLAY	2.2 - 2.5	1.21	44
TP023	GRAVEL & COBBLES[1]	0.75 - 3.0	1.14	43
TP025	Silty GRAVEL[1]	1.5 - 3.0	1.17	55

1. Highly weathered basalt logged as gravel/cobbles which could be broken apart by hand

3.4.7 California Bearing Ratio (CBR) Testing

A summary of California Bearing Ratio (CBR) testing completed by BGL is summarised in Table 15.

Table 15 California Bearing Ratio Results

Test Location	Soil Description	Sample Depth (m below ground level)	CBR (%)
TP005	CLAY	2.1 - 2.4	12
TP009	Silty CLAY	2.4 - 2.8	2.5
TP014	CLAY	1.7 - 2.8	7
TP025	Silty GRAVEL[1]	1.5 - 3.0	4
TP029	Silty CLAY	0.7 - 1.8	4.5

1. Highly weathered basalt logged as gravel/cobbles which could be broken apart by hand

3.4.8 Allophane Testing

A summary of allophane testing completed by BGL is summarised in Table 16.

Table 16 Allophane Testing Results

Test Location	Soil Description	Sample Depth (m below ground level)	Allophane Content (%)
TP001	CLAY	0.8 - 1.2	> 7
TP002	Clayey SILT	0.5 - 0.9	> 7
TP003	Clayey SILT	0.25 - 0.8	> 7
TP003	Silty CLAY	1.6 - 1.9	> 7
TP004	Clayey SILT	0.6 - 1.1	> 7
TP004	Silty CLAY	2.0 - 2.5	> 7
TP005	CLAY	2.1 - 2.4	> 7
TP006	Clayey SILT	1.8 - 2.1	> 7
TP008	Silty CLAY	2.3 - 2.7	> 7
TP009	Silty CLAY	2.4 - 2.8	> 7
TP010	CLAY	1.5 - 1.8	< 5
TP011	CLAY	2.2 - 2.5	< 5
TP014	CLAY	1.7 - 2.8	< 5
TP015	Silty CLAY	1.2 - 1.8	5 – 7
TP017	CLAY	2.2 - 2.5	5 – 7
TP019	Clayey SILT	0.25 - 0.75	5 – 7
TP023	GRAVEL & COBBLES[1]	0.75 - 3.0	< 5
TP024	Silty CLAY	1.1 - 1.8	> 7
TP025	Silty CLAY	0.7 - 1.5	< 5

Test Location	Soil Description	Sample Depth (m below ground level)	Allophane Content (%)
TP029	Silty CLAY	0.7 - 1.8	> 7
TP029	Silty CLAY	1.8 - 2.4	< 5
TP031	Silty CLAY	0.6 - 1.8	< 5
TP032	Silty CLAY	0.7 - 2.0	< 5
BH007	Pumiceous SILT	2.0 - 2.5	< 5

1. Highly weathered basalt logged as gravel/cobbles which could be broken apart by hand

3.5 Groundwater Monitoring

Groundwater levels were measured from the installed piezometers on a regular basis. Groundwater level measurements are presented in Table 17, along with reduced levels in metres above sea level. It is noted that groundwater levels may vary seasonally.

Table 17 Groundwater Level Measurements

Borehole ID	Date Drilled	Collar (m RL)	Screened Depth (m bgl)	Measured Groundwater Depth (m bgl) (Values in m RL)			
				3 February 2021	18 March 2021	13 April 2021	26 May 2021
BH001	22 November 2020	24	12.0 to 15.0	10.88 (13.12)	11.43 (12.57)	11.45 (12.55)	11.25 (12.75)
BH003	02 December 2020	23	6.0 to 9.0	9.01 (13.99)	Dry	Dry	Dry
BH005	30 November 2020	22	9.0 to 12.0	8.13 (13.87)	8.56 (13.44)	8.71 (13.29)	8.61 (13.39)
BH006	17 December 2020	19	12.0 to 15.0	6.70 (12.3)	7.09 (11.91)	7.27 (11.73)	7.35 (11.65)
BH007	03 December 2020	15	9.0 to 11.0	4.25 (10.75)	4.61 (10.38)	4.81 (10.19)	4.42 (10.58)
BH009	18 December 2020	8	6.0 to 9.0	4.33 (3.67)	4.41 (3.59)	4.47 (3.53)	4.35 (3.65)
BH011	15 January 2021	18	12.0 to 15.0	8.35 (9.65)	9.53 (8.47)	9.52 (8.48)	9.55 (8.45)
BH015	09 December 2020	18	3.0 to 6.0	5.23 (12.77)	5.67 (12.33)	5.66 (12.34)	5.77 (12.23)
BH016	08 December 2020	12.5	7.0 to 10.0	4.65 (7.85)	4.92 (7.58)	5.12 (7.48)	4.55 (7.95)

4 Geological Interpretation

4.1 Ground Conditions

The ground conditions encountered across the site are summarised in Table 18. Four geological cross sections for the site have been prepared and the cross-section locations are shown on Drawing 510611-002-FIG-0006 in Appendix A. The cross sections (A-A', B-B', C-C' and D-D') are presented on Drawings 510611-002-FIG-0007 to 0010.

Table 18 Summary of Ground Conditions

Geological Unit	Lithology	Depth Below Ground Level (m bgl)	Indicative Thickness (m)	Indicative CPT Cone Tip Resistance (MPa)	Corrected Vane Shear Strength (kPa)	SPT "N" Values (blows / 300 mm)
Topsoil	Sandy silt to organic silt with trace rootlets.	0 – 0.35	0.25 – 0.35	-	-	-
Fill[2]	-	-	-	-	-	-
Completely Weathered Volcanics to Residual Soil [SAVF]	Clay and silt, sometimes with minor basalt gravel	0.3 (below topsoil)	2 – 10 [4]	1 – 10	18 – >213 or UTP	0 – 27
Moderately Weathered to Highly Weathered Volcanics [SAVF]	Sand and gravel. Gravels in highly weathered intervals weathered to clay	1 - 10	9 – 13 (1.5 in BH007)	0.3 – 30	n/a [1]	8 – 50+
Unweathered to Slightly Weathered Volcanics [SAVF]	Massive to vesicular basalt	10 - 20	>15	n/a [1]	n/a [1]	50+
Tauranga Group (Younger deposits, overlying and interbedded with SAVF)	Alluvial and colluvial deposits (clay, organic silt, silt, peat, sand) and reworked tephra (pumecious sand or silt)	0.3 (below topsoil)	<9	0.15 – 15	28 - >213 or UTP	0 – 5
Tauranga Group (Older deposits, generally underlying SAVF)	Alluvial deposits (clay, organic silt, silt, peat, sand), occasionally cemented	0.3 – 15 (northern and western site margins) 32 – 41[3] (south part of site, underlying SAVF)	>25	0.2 - >30	38 - >213 or UTP	3 – 50

NOTES:

[1] Refusal / unable to penetrate

[2] Geotechnical investigations avoided known fill areas due to contamination. Refer DSI report, dated 19 February 2021 for fill areas.

[3] Limited data available. Depths determined from historic Auckland Council waterbore records. No recent geotechnical investigations have encountered Tauranga Group below SAVF in the southern part of the site.

[4] Completely weathered / residual thicknesses only <10m in southern part of site

The geotechnical investigations indicate ground conditions in the central and southern parts of the site comprise South Auckland Volcanic Field (SAVF) basalts and air fall deposits, overlying Tauranga Group alluvium at depth (inferred from historical well log records). The SAVF basalts originated from a volcano vent or fissure located south of the site (Hayward 2017) and it is inferred the lava flowed northward, following a paleo-valley laterally constrained to the west by Tauranga Group alluvium. The SAVF deposits have a relatively thick weathering profile, with up to 10m of residual soil and completely weathered volcanics at the ground surface. Slightly weathered to unweathered basalt was generally encountered 15m to 20m below ground, to at least 25m depth. Occasional weathered zones up to 1.5m thick were encountered within the slightly or unweathered basalt, but typically the weathering grade reduces with depth. Joints within the basalt are common.

At the northern end of the site, along the western site boundary near the Hingaia Stream and within topographic lows, Tauranga Group alluvium is present at the ground surface. The alluvium at the ground surface and within topographic lows (inferred reworked tephras) is less dense or softer than the alluvium at depth and inferred to be much younger. The younger deposits generally comprise silt and clay, sometimes with organic and pumecious content. The older Tauranga Group alluvium consists of silt, clay, peat and dense sands. Peat was encountered at >20m depth at the very northern end of the site, along with some poorly to moderately well cemented silts and sands from 15m depth.

4.1.1 Topsoil

Topsoil encountered in the geotechnical investigations was typically 0.25m thick, up to 0.5m thick. Topsoil may exceed 0.5m thickness in some areas, given the current agricultural land use.

4.1.2 Completely Weathered Volcanics to Residual Soil

Completely weathered basalt to residual soil was encountered from the ground surface down to a maximum depth of 10m and was recovered as silt or clay, sometimes with minor gravel and / or sand. Shear vane readings and field observation indicate the soil is sensitive. The completely weathered volcanics are generally very stiff to hard, with the exception of the eastern slope adjacent to the topographic low, where CPTs show a zone of soft to stiff weathered volcanics to between 5m and 10m below ground level.

4.1.3 Highly to Moderately Weathered Volcanics

Highly to moderately weathered SAVF basalt was encountered below and interbedded with the completely weathered basalt. The highly weathered basalt was generally recovered as sand and gravel mixtures, with clasts ranging from extremely weak (stiff) to weak. The moderately weathered basalt was recovered as cobbles with clasts ranging from extremely weak to weak.

CPTs were generally able to penetrate the highly weathered volcanics. It is noted that CPT030 passed through an anomalous soft to firm zone from 10m to 15m below ground level, likely related to either a primary basalt emplacement feature or preferential weathering. No similar zones were encountered by other CPTs within the weathered volcanics.

4.1.4 Slightly to Unweathered Volcanics

The slightly to unweathered basalt ranged from massive (no vesicles) to highly vesicular and are moderately strong to strong. Joints are common and range from widely to very closely spaced, typically with clay veneer or infill.

4.1.5 Tauranga Group Alluvium

The younger Tauranga Group Alluvium within the central topographic low is comprised of clayey and silty soils with minor layers of peats or organic clays. Alluvial deposits are up to 9m thick, inferred from BH007 and the surrounding CPTs. It is likely the surficial material within the topographic low is relatively young, based on the thin weathering profile encountered within BH007.

Older Tauranga Group Alluvium is encountered in the northern and western parts of the site, underlying up to 17m of weathered SAVF. Boreholes drilled at lower elevations (off the slope) encountered alluvium either from the ground surface or underlying up to 4m of weathered SAVF. Investigations carried out on the western side of the site, near the Hingaia Stream, show silts and clays to 15m below ground, underlain by fine to medium cemented sand. The alluvium at the northern end of the site is predominantly silt and clay, with peat and organic clay encountered 17m below ground. CPTs indicate the upper 5m of alluvium generally includes soft soil.

4.1.6 Corestones

Corestones are slightly or unweathered blocks of basalt present within the residual soil or completely to moderately weathered rock profile. Corestones were not observed in the investigation holes but are known to be common in the area and are anticipated to be present on site.

4.2 Geomorphology

The site comprises an area of elevated, gently undulating ground, that has been eroded by a central drainage path. The drainage path slopes to the north and becomes incised near the northern site boundary, before meeting lower lying ground. Subtle terrace features are preserved on the sides of the incised gully.

The western site margin, adjacent to the Hingaia Stream, is moderately steep with slopes ranging from 5° to 20°. A degraded headscarp feature is evident on the slope, adjacent to a house on Flanagan Road. This feature is approximately 2m high and 150m wide. The feature in its current form is visible in the earliest aerial photographs from 1942, which indicates there has been no changes/movement historically. Slope movement is possibly the result of undercutting by the Hingaia Stream when it was higher than its present, incised level. It is noted that the southern part of the stream is flowing over relatively competent basalt, as can be seen in aerial photos. The height of the scarp and morphology the slope below the scarp indicates the failure was relatively shallow and likely took place in the upper soil profile.

No evidence for recent large-scale movement was observed during site walkovers undertaken in November and December 2021 (e.g. tension cracks), or apparent on historical aerial photographs (refer Section 2.5), and the slip features are softened in appearance, indicating they have not recently been active. Testing undertaken within the slip extents did not show any sign of soft zones at depths that could be identified to the slope movement. It is inferred the western-margin landslide area is inactive. Slope stability modelling has been undertaken for the western margin and results are presented in Section 5.5.

Along the steeper sections of the western slope adjacent to the Hingaia Stream, ‘stepped’ surface features are present, which are typical of near surface soil creep.

4.3 Groundwater

Piezometers were installed within nine of the geotechnical boreholes. Groundwater levels were measured from the time of installation through to midway 2021, prior to a Covid19 lockdown. Groundwater level readings are summarised in Section 3.5 and have been inputted into the 3D geology model to develop a groundwater level surface across the site.

The piezometers located on elevated ground in the central and southern parts of the site indicate groundwater between 8m and 11m below ground level. The piezometers located in lower lying areas, namely the topographic low through the centre of the site and near the northern site boundary, indicate groundwater between 4m and 7m below ground level. It is noted that groundwater level may vary seasonally, and perched groundwater may be encountered during earthworks.

4.4 3D Geology Model

A 3D geology model was developed for the site using the commercially available Leapfrog Works 4.0 software. The model was constructed using ground investigation data (geotechnical and geophysical) and shows the nature of the inferred ground conditions summarised in Section 4.1. The focus of the current version of the model (Version 1) is the South Auckland Volcanics, which are modelled by weathering grade to support earthworks decision making. The Tauranga Group alluvium is modelled as a single unit. The geology is shown in more detail on the 2D geological cross sections (Drawings 510611-002-FIG-0007 to 0010) and the model is secondary to the interpretation presented on the cross sections.

The 3D geological model can be viewed by interested parties, as required, but due to the licencing requirement an Aurecon Engineering Geologist will need to administer the software. The viewing of the 3D model can be carried out online via MS Teams.

It is noted the 3D geology model is a simplification of the actual ground conditions and should be treated as an estimate of the ground conditions. The form of the model is a function of the input topographic, geologic, stratigraphic data and correlation; judgement by the modelling geologist; and interpolation methods provided by the 3D modelling software. Model uncertainty arises due to both absence of data or lack of knowledge, as it is not possible to fully see or investigate the subsurface geology and relationships, and necessary modelling restrictions such as gridding algorithms.

4.5 Geophysical Interpretation

As part of the geophysical investigation, Southern Geophysical Ltd undertook interpretation of the MASW profiles based on the calibration with the boreholes and test pits. A summary from the geophysical report is provided below:

- The southern part of the site appears to consist of stiff near surface clays and silts (generally shear wave velocity, Vs, 200m/s to 500m/s with some lower velocity zones) overlying basalt.
- The basalt is highly weathered close to the surface (Vs 150m/s to 400m/s), with unweathered basalt ranging from 400m/s to over 700m/s.
- The middle part of the site shows basalt thinning to the north. There is still a stiff surface layer of silts and clays overlying weathered basalt, but the contact between the basalt and the underlying sediments is hard to clearly delineate due to overlapping Vs ranges between the two units.
- To the north the basalt is not present in the MASW. The MASW in this area shows a sequence of silts and clays (Vs100 m/s to 300m/s) overlying a higher velocity sequence of sands, silts and clays (Vs 300m/s to over 500m/s).

4.6 Geotechnical Parameters

Geotechnical design parameters have been derived for the primary engineering geological units in Table 19. These parameters are based on the investigation and laboratory results, experience with similar materials and applied engineering judgement.

Table 19 Preliminary Geotechnical Design Parameters

Layer Description	Unit Weight (γ, kN/m^3)	Effective Cohesion (c', kPa)	Effective Friction Angle (ϕ', °)	Undrained Shear Strength (Su, kPa)
Topsoil	14-16	-	-	-
Completely Weathered Volcanics to Residual Soil [SAVF]	17	2	26	75
Moderately Weathered to Highly Weathered Volcanics [SAVF]	21-23	10	33	-
Unweathered to Slightly Weathered Volcanics [SAVF]	24	10	35	-
Tauranga Group (Younger deposits, overlying and interbedded with SAVF)	17	2	26	40
Engineered Fill (Site-won Silts/Clays)	18.5	5	32	100

5 Engineering Considerations

5.1 Introduction

Kiwi Property are proposing the subdivision and development of the current project area for the Drury Centre. The proposal will result in the development of a large format retail (LFR) centre, superlots for future development and parks/reserves including an open space reserve adjacent the Hingaia Stream. The construction of roads to vest, associated site preparation works and construction of civil infrastructure and landscaping are also proposed. The proposed development is shown in Appendix L.

The Drury Centre project will include the development of the southern part of the site where there will be the LFR buildings on the western side and superlots for future development on the eastern side. The intention is to develop this part of the site as the current project area. Future development of the Drury Centre, further to this current area of consenting, may include the area to the north and therefore these areas were included as part of this geotechnical assessment.

The development will require extensive earthworks to prepare building platforms and at this stage the earthworks will include cutting the prominent ridgelines to use as a source of bulk fill. Fill will be placed across the site and in the gully area in the northern part of the site.

Based on the investigations the geotechnical aspects that need to be considered for the development area as follows:

- Future earthworks
- Subsoil classification
- Geotechnical assessment, including:
  - Liquefaction
  - Slope stability
  - Consolidation settlement
  - Soil reactivity
- Development recommendations, including:
  - Site earthworks including suitability of site won fill, cut batters and earthfilling
  - Foundation requirements
  - Retaining walls
  - Pavement
  - General site development recommendations

Each of these is discussed in the following sections.

5.2 Earthworks

The development will require extensive earthworks to prepare building platforms. Overall, the earthworks will comprise cutting the prominent ridgelines to use as a bulk fill source and placing it as engineered fill across the site and in particular in the gully area in the northern part of the site. The extent of earthworks will be finalised during detailed design but the indicative cut-fill plans for the development are provide in Appendix L.

Based on the indicative earthworks plans, the site works will comprise the following:

- Cutting the prominent north-south trending ridgeline on the western side of the site by up to 9m.
- Cutting the prominent east-west trending ridgeline in the southern part of the site by up to 5m.
- The intention is to use site-won insitu soil, cut from site as engineered fill for the bulk filling.
- Earthfill will be required along the southern side of the site and in the low area between the two ridgelines. In these areas the earthfill is likely to be up to 4m thick.
- Earthfill will extend out on to the steeper slopes adjacent to the Hingaia Stream. These areas of fill are likely to be up to 5m thick but typically less than 3m. Some of these earthfill slopes are likely to require retaining walls along the base of the slope, which may be in the order of 5m in height.
- Earthfill will be placed in the northern gully area, up to 8m thick where the current gully has deeply incised.
- Along the southern property boundary earthfill levels will typically meet the existing ground level but there are sections where there will be in the order of 3m of fill along the boundary. At this stage it is anticipated that for the most part, the earthfill will be battered to the boundary.
- Cut batters will be required in the south west and south east corners of the site, which are likely to be in the order of 3m to 3.5m in height. Due to the height, these cuts are likely to require retaining, permanent batters if there are no restrictions to space, or a combination of both.
- In addition to the retaining walls discussed above, to form relatively flat building platforms retaining walls will be required within the development. Typically, these will be less than 1.5m.

5.3 Subsoil Classification

We have assessed the sites flexibility based on the following:

- Site stratigraphy typically comprises of SAVF of variable weathering overlying Tauranga Group over the majority of the site with Tauranga Group soil present in the northern part of the site. The Tauranga Group overlies basement rock of the Waitemata Group which likely to be at a significant depth.
- Clause 3.1.3 and Table 3.2 of NZS 1170.5:2004.

Due to the change in the geology across the development area, the site is likely to respond differently and therefore we consider that the site subsoil category in terms of NZS 1170.5:2004 Clause 3.1.3 in the southern part of the site is **Class C (Shallow soil)** and northern part of the site is **Class D (Deep or soft soil).**

The above subsoil classifications are considered suitable for the geotechnical assessment detailed in this report. However, due to variability across the site, it is recommended that a more detailed assessment of site period is undertaken for the structural design of any building. Further recommendations on this aspect is proved in Section 7.

5.4 Liquefaction

Under cyclic loading loose, non-plastic materials such as gravel, sand and silt can decrease in volume. If these soils are saturated and rapid loading occurs under un-drained conditions, the soil densification causes pore water pressure to increase. The increase in pore water pressure results in a loss of soil strength due to a decrease in effective stress, and eventually leads to liquefaction once the effective stress drops to near zero. Liquefaction can lead to large displacements of foundations, flow failures of slopes, ground surface settlement, sand boils, and post-earthquake stability failures

5.4.1 Potential for Liquefaction

Three primary factors contribute to liquefaction potential:

- Soil grading and density;
- Groundwater; and
- Earthquake intensity and level of ground shaking.

Each of these is discussed below.

Soil Grading and Density

The CPT logs used in the analysis encountered predominantly silty and clayey soil, but at the northern end of the site loose to medium dense sand soils were encountered which are considered to be potentially liquefiable from a soil character and density perspective. In situ materials with higher silt and clay contents are considered non-liquefiable and the underlying weathered basalt is also considered to be non-liquefiable. Further discussions with regard to the Fines Content Correction Factor (C_{FC}) and Soil Character Index (Ic) specific to the site are provided in the following sections.

Groundwater

Groundwater levels recorded in the piezometers have been inputted into the Leapfrog geological model to develop a groundwater level surface across the site. This groundwater surface has been used to extrapolate a groundwater level at each of the CPT locations used for the liquefaction analysis. These depths assume that groundwater levels are static, but seasonal variations may affect the actual groundwater levels site. Trialling shallower groundwater levels in the analysis made no significant difference to the calculated liquefaction induced settlements or ground damage, and the levels used were considered appropriate.

Earthquake Intensity and Shaking

The development is likely to comprise retail and residential structures and for our assessment we assume these structures will be Importance Level 2 (IL2) buildings. MBIE/NZGS *Module 1: Overview of the guidelines,* dated November 2021, recommends the following design earthquake events for liquefaction triggering analysis for Importance Level 2 (IL2) buildings:

- Serviceability Limit State (SLS) event - 25 year return period
- Ultimate Limit State (ULS) event - 500 year return period

The MfE/MBIE *Planning and engineering guidance for potentially liquefiable-prone land,* dated September 2017, indicates a 100 year return period event should also be assessed to determine the sensitivity to onset of damage, however given the predominantly non-liquefiable clayey soil at the site and the likely low liquefaction vulnerability, only the two earthquake events above have been assessed.

The damage criteria for each design event as stated in NZS1170.5 and is summarised in the Table 20.

Table 20 Design Earthquake Objectives

Design Earthquake	Damage Criteria
SLS	It is expected that there should not be damage to the structure or non-structural elements that would prevent the building from being used as originally intended.
ULS	Buildings/structures designed for the ULS event are expected to retain their structural integrity and form during an earthquake and not endanger life. Some plastic deformation of structural elements within the structure is expected to occur but ideally the damage can be repaired, and the structure can be returned to service after the event, although repair may be uneconomical.

The earthquake magnitude and peak ground acceleration (PGA) had been determined using the risk-based method detailed in MBIE/NZGS (2021) *Module 1: Overview of the guidelines.* At the time of undertaking the liquefaction assessment the previous version of the module (dated 2016) was used. Using this version, we had assumed a Class C site subsoil category. Part of the site is Class D, but the Class C requires the use of a site response factor of 1.33 while Class D is 1.0. Therefore, assuming Class C for the entire site is considered to be conservative. Based on the previous module version the earthquake parameters are present below.

Earthquake parameters for IL2 structures:

- Serviceability Limit State (SLS) - 1/25 year event – Magnitude 5.8 and PGA 0.05g
- Ultimate Limit State (ULS) – 1/500year event – Magnitude 5.8 and PGA 0.18g

It is possible that some of the retail or residential buildings will be Importance Level 3 (IL3) structures. For an IL3 structure the earthquake design cases will be as follows:

- Serviceability Limit State (SLS) – 1/25 year event – Magnitude 5.8 and PGA 0.05g
- Ultimate Limit State (ULS) - 1/1000 year event – Magnitude 5.8 and PGA 0.24g

Based on the current module, dated 2021, earthquake parameters for IL2 and IL3 structures are as follows:

- Serviceability Limit State (SLS) - 1/25 year event – Magnitude 5.9 and PGA 0.06g
- Ultimate Limit State (ULS) – 1/500year event – Magnitude 5.9 and PGA 0.15g
- Ultimate Limit State (ULS) - 1/1000 year event – Magnitude 5.9 and PGA 0.20g

The differences in the earthquake parameters between the two version of MBIE/NZGS (dated 2016 and 2021) and between IL2 and IL3 structure are not significant. Given the predominantly non-liquefiable clayey soil at the site and the likely low liquefaction vulnerability, it is not expected that the liquefaction results will significantly change and therefore our assessment is based on IL2 structure using the previous module (dated 2016) earthquake parameters. If an IL3 structure is proposed, then a specific liquefaction assessment for the structure will be required with earthquake parameters that are specifically derived for an IL3 structure.

5.4.2 Determination of Liquefaction Design Parameters

In accordance with the MBIE/NZGS Guidelines (2021) we have used the liquefaction triggering assessment proposed by Boulanger and Idriss (2014) to determine the potential for the soils underlying the site to liquefy. This assessment includes two parameters which are considered to have a significant effect on liquefaction triggering as follows:

- The Fines Content Correction Factor (C_{FC}), which accounts for finer grained soils generally being less prone to liquefaction during earthquake events.
- The Soil Character Index (Ic) cut-off, which specifies an Ic where soils will not liquefy under seismic loading. This parameter is usually based on the soil plasticity/cohesiveness.

The C_{FC} and Ic cut-off design parameters can be defined with laboratory testing of soil samples in conjunction with information from CPTs.

Fines Content Correction Factor (C_{FC})

We have assessed the C_{FC} based on the method proposed in Boulanger and Idriss (2014). Soil samples were retrieved from the borehole drilled onsite for laboratory testing to determine the fines content. Refer to Appendix K for a copy of the laboratory results. The fines content results were plotted against the Ic at corresponding depths from adjacent CPT data to determine the representative C_{FC} for the site soils. The results once plotted were considered inconclusive therefore a C_{FC} of 0 is considered reasonable for the site.

I_c Cut-off

The Ic cut-off design parameter specifies an Ic value where soils will not liquefy. Generally, the Ic cut-off represents the transition between a soil exhibiting clay like behaviour (undrained/cohesive behaviour and with low liquefaction potential) and a soil with sand like behaviour (drained/cohesionless behaviour with the potential to liquefy), as outlined in Boulanger and Idriss (2014).

Idriss and Boulanger (2008) states that fine grained soils can reasonably be expected to exhibit clay-like behaviour if they have a Plasticity Index (PI) ≥7. Furthermore, the MBIE/NZGS *"Earthquake Geotechnical Engineering Practise - Module 3: Identification, assessment and mitigation of liquefaction hazards"*, dated November 2021, states that a PI of 12 represents soils that are not susceptible to liquefaction.

Laboratory testing has been undertaken to assess the PI for the site soils. Refer to Appendix K for a copy of the laboratory results. The test results indicate that most of the soil samples had a PI of 25 or greater, suggesting that the soils will exhibit clay-like behaviour with low liquefaction potential (Idriss and Boulanger, 2008).

The PI test results have been plotted against the corresponding Ic from adjacent CPT data at the sample depth (see Appendix M). The plot indicates that soil samples with an Ic of 2.4 or greater generally have a PI value of 12, corresponding to a soil not susceptible to liquefaction. The results suggest that an Ic cut-off of 2.4 is a reasonably value for the soils on site.

5.4.3 Liquefaction Assessment

A liquefaction assessment has been undertaken for the development using a total of 55 CPTs located across the site, which is slightly more than one CPT per hectare. Based on MfE/MBIE (2017) this is considered to be equivalent to a Level C – Detailed Wide Assessment, which is more than appropriate given the predominantly non-liquefiable clayey soil at the site and the likely low liquefaction vulnerability.

Assessment Methodology

The ability for soils to resist the effect of ground shaking associated with the design ground accelerations has been assessed from the subsoil information obtained from CPTs and laboratory testing of soil samples. Liquefaction can have several effects on buildings and land. In our assessment we have considered the following on a site-specific basis:

- The nature of the soil profile.
- Liquefaction induced ground damage.
- Limitations of the prescribed liquefaction assessment methodologies as discussed in Boulanger et. al. (2016)

The liquefaction assessment is presented in the following sections.

Site Specific Soil Profile

Laboratory testing has been undertaken for the site, which has allowed us to define a representative soil profile and associated site-specific design parameters for our liquefaction assessment. Based on our investigations we adopted the following site-specific design parameters for our liquefaction assessment:

- C_{FC} of 0.0
- Ic cut-off of 2.4

Liquefaction Induced Ground Damage and Crust Thickness

As part of our liquefaction assessment we have also calculated the Liquefaction Severity Number (LSN). LSN assesses the potential for ground damage based on the proximity of a soil profile's liquefiable layers to the ground surface, considering the influence of non-liquefiable layers (the crust) and therefore tends to better reflect the more damaging effects of shallow liquefaction. Tonkin & Taylor (T&T) have developed LSN

based on investigation data and observations made following major earthquake events in Christchurch. The calculated LSN was based on Boulanger and Idriss (2014) triggering methodology with Zhang et al (2002) volumetric densification strain.

The Tonkin and Taylor (2015) report, "*Canterbury Earthquake Sequence: Increased Liquefaction Vulnerability Assessment Methodology*", prepared for the EQC, indicates that a LSN value of 16 is considered generally representative of the transition between land which is materially vulnerable to liquefaction and land which is not.

The level of ground damage associated with LSNs is summarised in Table 21, based on T&T (2013) observations.

Table 21 LSN Ranges and Observed Effects (Tonkin & Taylor, 2013)

LSN Range	Predominant Performance
0-10	Little to no expression of liquefaction, minor effects
10-20	Minor expression of liquefaction, some sand boils
20-30	Moderate expression of liquefaction, with sand boils and some structural damage
30-40	Moderate to severe expression of liquefaction, settlement can cause structural damage
40-50	Major expression of liquefaction, undulations and damage to ground surface, severe total and differential settlement of structures
>50	Severe damage, extensive evidence of liquefaction at surface, severe total and differential settlements affecting structures, damage to services

Based on empirical data from *Bowen et al* (2013), a thick non-liquefiable surface layers can reduce surface expression of liquefaction and ground damage in areas not subject to lateral spreading. Therefore, as a large portion of the site has a silt layer in the upper 2m to 3m, we have considered the presence of a thick non-liquefiable crust in our assessment.

Limitations of the Prescribed Liquefaction Methodology (Boulanger et al. 2016)

Liquefaction susceptibility has been calculated using the CPT based liquefaction triggering procedure of Idriss and Boulanger (2014). It is noted that this methodology has significant limitations as discussed in Boulanger et. al. (2016). Limitations suggested in this paper which apply to the site include:

- Reduced cone tip penetration (q_c) in sand near interfaces with silts or clays.
- Thin layer effects where penetration resistance is reduced in sand layers less than 1m thick where there are low strength clays or silts above and below the sand layer.
- Assuming 100% saturation below the groundwater table underestimates cyclic strength for partially saturated zones.
- Correlations for estimating shear and volumetric strains have been developed primarily from data sets for sands and clays and the subsequent applicability of these correlations to intermediate (silty) soils is unknown.
- The assumption that liquefiable layers are laterally continuous can contribute to over-estimation of potential liquefaction effects.
- Thick crust layers of non-liquefiable soil can reduce surface expression of liquefaction in areas not subject to lateral spreading.
- Liquefaction of loose layers in one interval of a soil profile may reduce the seismic demand on other soil layers.
- Seepage within stratified soil profiles driven by excess pore pressures may increase or decrease surface expression of liquefaction.

At this stage the effect of reduced cone tip penetrations due to interfaces between sandy and silty material has not been accounted for using thin layer correction.

The effect of the remainder of these known limitations is not able to be corrected for, but the liquefaction assessment is likely to be conservative based on the site-specific soil profile.

The liquefaction assessment has been carried out using the references in Table 22.

Table 22 Liquefaction Assessment References

Test	Liquefaction Assessment Method	Fines Content	Liquefaction Cut Off	Liquefaction Settlement Method	Liquefaction Ground Damage Method
CPT	Boulanger and Idriss (2014)	Based on Ic with C_{FC}=0.0	Based on a 2.4 Ic cut off	Zhang et. al. (2002)	LSN (van Ballegooy et al., 2014)

Liquefaction Results

The results from our liquefaction assessment are presented in Appendix M and summarised in Table 23. Due to the large number of liquefaction output plots these have not been included with the report but can be provided on request.

Table 23 Liquefaction Assessment Summary

Earthquake Event	Settlement	LSN	Ground Damage/ Surface Expression
SLS (0.05g, M_w5.8)	0mm	0	No ground damage expected
ULS (0.18g, M_w5.8)	<10mm	1 to 2	None to minor ground damage expected.

Based on our results the site is expected to perform relatively well with negligible liquefaction induced settlement or ground damage.

Lateral Spreading

Lateral spreading occurs as the surface soils move downslope or towards a free edge, such as a river or basin. Lateral spreading can occur during an earthquake under seismic loading and following the earthquake until the excess pore water pressure caused by ground shaking dissipate and the soil regains strength.

We consider the site is unlikely to be affected by lateral spreading based the predominantly non-liquefiable clayey soil at the site and the liquefaction assessment results.

Liquefaction Category

From the liquefaction results the site has been classified in accordance to the Technical Category developed in the Canterbury region by MBIE (2012). This classification system is divided into three technical categories that reflect both the liquefaction experience to date and future performance expectations. The categories and corresponding criteria are summarised as follows:

- **Technical Category 1 (TC1)** – Future land damage from liquefaction is unlikely, and ground settlements are expected to be within normally accepted tolerances.
- **Technical Category 2 (TC2)** – Minor to moderate land damage form liquefaction is possible in future large earthquakes.
- **Technical Category 3 (TC3)** – Moderate to significant land damage from liquefaction is possible in future large earthquakes.

The MBIE Guidelines indicate the following liquefaction deformation limits for house foundations as summarised in Table 24.

Table 24 Liquefaction Deformation Limits

Technical Category	Liquefaction Deformation Limits				Likely Implication for House Foundations (subject to individual assessment)
	Vertical		Lateral		
	SLS	ULS	SLS	ULS	
TC1	15mm	25mm	Nil	Nil	Standard NZS3604 type foundations with tied slabs
TC2	50mm	100mm	50mm	100mm	MBIE enhanced foundation solutions
TC3	>50mm	>100mm	>50mm	>100mm	Site specific foundation solution

We have assessed the equivalent Technical Category based on the following:

- Index settlement (i.e. settlement over top 10m of soil profile) tolerances specified in the MBIE Guidelines (2012 and 2014)
- LSN, based on the descriptions in Table 21 and the Tonkin and Taylor (2015) report:
  - TC2 corresponds to a LSN < 16 under SLS loading, and a LSN < 30 under ULS loading
  - TC3 corresponds to a LSN > 16 under SLS loading, and a LSN > 30 under ULS loading
- The presence of a thick non-liquefiable crust surface layer.

Based on this table the equivalent technical classification for the site and IL2 buildings is likely to be TC1.

In addition, classification of the land has also been undertaken using MfE/MBIE (2017) liquefaction vulnerability classification system. Based on the assessment result and Table 4.4 from the guidance document, the site is likely to have a *Very Low Liquefaction Vulnerability.*

5.4.4 Conclusions

Based on the results of our liquefaction assessment we draw the following conclusions:

- Liquefaction induced settlements and ground damage is unlikely to affect the site.
- The land is likely to be equivalent to Technical Category TC1 or *Very Low Liquefaction Vulnerability*.

5.4.5 Earthworks Effect on Liquefaction

Based on Section 5.2, the proposed earthworks will require cuts up to 9m and engineered fill up to 8m. This level of earthworks is unlikely to affect the liquefaction results presented above. In areas where there is cut ground the groundwater level will be closer to the finished earthworks surface, but as the cut ground is within the SAVF and the groundwater level is sitting within the weathered basalt, liquefaction is unlikely. In areas where there is engineered fill, this will increase the thickness of the non-liquefiable layer, which will reduce the effect of liquefaction at depth on any shallow founded building.

5.5 Slope Stability Assessment

5.5.1 General

In assessing the slope stability issues at the site we note the following:

- Based on our site walkover and review of aerial dated from 1942 to 2017, generally there is no evidence of active or recent slope instability.
- The western slopes adjacent to the Hingaia Stream are typically range from 5° to 20°. Immediately adjacent to the stream there are locally steeper slopes up 30°. There is no evidence of recent slope instability on the western slopes but there is a degraded headscarp feature (as discussed in Section 4.2). Investigations around the degraded headscarp did not identify any apparent slip surface. Nonetheless, due to the steepness of the slope and the presence of the degraded headscarp a slope stability analysis has been undertaken, which is detailed in the following section.
- Along the steeper sections of the western slope adjacent to the Hingaia Stream (i.e. slopes in the order of 25° to 30°), 'stepped' surface features are present. These 'stepped' features are typical of long term creep of the surface soil, most likely exacerbated by stock movement. Hand auger investigations carried out on these slopes did not identify any soft soil layers and therefore these features are not considered to be evidence of slope instability.
- Steep slopes are present on the sides of the gully in the northern part of the site, however this gully will be filled as part of a future stage of earthworks and therefore no further stability assessment is required.

As discussed in Section 5.2 future development of the site will require earthfill slopes, which will be engineered to ensure their stability. We note the following regarding these earthfill slopes:

- Earthfill up to 4m thick will extend out on to the western slopes adjacent to the Hingaia Stream. As the earthfill will be placed on moderately steep slopes, a slope stability analysis has been undertaken, which is detailed in the following section.
- Along the northern and eastern property boundaries in the northern gully area, and the southern property boundary, earthfill levels are likely to be 2m to 3m above existing ground level. As the earthfill will be placed on relatively flat ground and typically no higher than 3m, an engineered solution can be provided. Therefore, these earthfill slopes will be designed during the earthworks detailed design, and no further assessment is required at this stage.

5.5.2 Slope Stability Analysis

For our stability analysis of the current western slope we have assessed two slope profiles. XS1 is located near the southern end of the slope, while XS2 is located through the part of the slope with the degraded headscarp (see Drawing 510611-002-FIG-0006 in Appendix A).

In accordance with Auckland Council (2013) *Code of Practice for Land Development and Subdivision*: *Section 2: Earthworks and Geotechnical Requirements*, we have carried out modelling for three cases, which include normal groundwater condition, extreme groundwater conditions and seismic conditions (150 yr event).

For the extreme groundwater condition, we have taken the current groundwater levels and raised them by 1m above those recorded. Given the elevated nature of the site, we consider that this is appropriate. However, the intention is to carry out on-going groundwater monitoring to understand how the groundwater levels change and if there is a notable difference, then additional analysis can be undertaken. It is also noted once the site is developed there will be low surface water infiltration as the majority of the site will be buildings or hardstand areas with stormwater runoff controlled, so in the future surface recharge is likely to be minimal.

The horizontal seismic coefficient for use in the seismic condition has been derived using the MBIE/NZGS (2021) *Module 1: Overview of the guidelines*. The peak ground acceleration (PGA) for use in the analysis has been calculated as 0.12g. No topographic amplification factors have been applied to the slope due to the low terrain

The target factors of safety (FoS) for each case are as follows:

- Normal conditions FoS = 1.5
- Extreme groundwater condition FoS = 1.3
- Seismic condition FoS = 1.2

Soil parameters used are detailed in Table 19 in Section 4.6. For the normal and extreme groundwater conditions effective (drained) soil parameters have been used, while for the seismic case undrained shear strength parameter have been used. All analyses were completed using the limit equilibrium software SLOPE/W from GeoStudio (version 10.0.2.18035).

To assess the sensitivity of the slope analysis to the failure surface location on the slope we have reviewed the following failure cases:

- Global Rotational – Modelled a global failure through the main part of the slope using an entry and exit slip surface.
- Global Translational – Modelled the slip surface as a translational failure plane, typically within the surficial residual soil and completely weather basalt, to understand the sensitivity of the model to a shallow translational failure.
- Toe Failure – Modelled a failure through the toe of the slope using and entry and exit slip surface, as the toe of the slope tends to be the steeper.
- Scarp Failure – For XS2 only which is located through the degraded headscarp, we have modelled a failure through upper part of the slope in the degraded headscarp. For this an entry and exit slip surface has been used.

A summary of the slope stability analysis results is presented in Table 25 with the outputs of the analysis provided in Appendix N. In all cases the FoS is greater than the target FoS. It is noted that the seismic cases tend to have higher FoS as the undrained shear strengths are used in the analysis.

Table 25 Slope Stability Analysis Results

Cross Section	Case	Global Rotational	Global Translational	Toe Failure	Scarp Failure
XS1	Static	2.07	2.46	1.79	N/A
XS1	Extreme Groundwater	1.56	2.34	1.45	N/A
XS1	Seismic	2.81	5.14	4.11	N/A
XS2	Static	2.84	4.63	1.47	2.21
XS2	Extreme Groundwater	2.68	4.63	1.32	2.21*
XS2	Seismic	3.35	6.31	1.97	3.44

*Due to the depth of the groundwater levels, analysis results are similar to static for scarp failure.

Given that there has been no apparent evidence of slope instability on the westerns slopes since 1942, it is considered that the results above tend to reflect the current stability of these western slopes.

The future site development will include earthfill up to 4m thick will extending out on to the western slopes adjacent to the Hingaia Stream. As the earthworks will be built on to the slope, we have carried out a stability analysis to assess whether the earthfill will have a detrimental effect on slope stability. It is noted that this is a preliminary analysis based on the current earthworks design and further assessment of the earthfill slope stability will be required once the earthworks design is finalised. The analysis is based on the following:

- Two slope profiles have been assessed that include XS2, located through the part of the slope with the degraded headscarp, and XS3 located further to the north (see Drawing 510611-002-FIG-0006 in Appendix A). The previous profile XS1 has not been assessed as the extent of fill was minimal and XS3 was assessed instead as the earthfill in this area was up to 4m deep.
- The three modelling cases discussed above have been assessed, with the same elevation in groundwater levels and horizontal seismic coefficient.
- The effective and undrained shear strength soil parameters provided in Table 19 have been used. This includes the earthfill slope which uses the Engineered Fill parameter in the table.
- The modelling of the engineered fill has been simplified by modelling it as a layer immediately overlying the insitu soil, with no benching. However, it is expected that the slope will be benched to allow placement of earthfill during construction.
- As we are assessing the effect of the earthfill slope on the insitu soil, the failure surface assessed is an entry and exit slip surface set to run through the earthfill slope and into the underlying insitu soil.

Based on these parameters the FoS for the indicative earthfill slopes assessed are provided in Table 26.

Table 26 Earthfill Slope Stability Analysis Results

Cross Section	Case	Factor of Safety
XS2	Static	1.76
XS2	Extreme Groundwater	1.63
XS2	Seismic	1.09
XS3	Static	1.55
XS3	Extreme Groundwater	1.55
XS3	Seismic	1.45

The results indicate an adequate factor of safety can be achieved. The exception is the seismic case for XS2, which has a FoS lower than 1.2. Although it is not significant it does indicate that further assessment will be required during the detailed design of the earthworks to assess whether engineering measures, such as geogrid reinforcement or a shear key, will be required to achieve the required factor of safety. Or alternatively a building setback could be imposed on earthfill slopes, where the building setback is defined as areas with a FoS against instability less than required. Building setback, if required, will need to be assessed as part of any earthwork detailed design.

5.5.3 Boundary Slope Stability

Following the initial slope stability assessment detailed above, addition slope stability assessment was undertaken for the proposed engineered fill and cut slopes adjacent to the boundaries, as this is where the higher fill/cut slopes are located. The details of the boundary slope stability assessment are present is a specific report presented in Appendix O. Four typical sections were assessed with slopes at 3H:1V as well as a slightly steeper design slope of 2.5H:1V.

The analysis indicates that generally an adequate FoS can be achieved for 3H:1V and 2.5H:1V earthworks slopes, and bulk earthworks is unlikely to pose a slope stability issue to neighbouring properties.

5.6 Settlement Assessment

5.6.1 Overview and Assumptions

The proposed development will involve significant cut and fill volumes to achieve site levels for the various building platforms which are shown on the plan in Appendix L. As the site investigations indicate part of the site is underlain by soft cohesive soils prone to consolidation, time-dependent settlement has been assessed.

Key assumptions of the settlement analysis are summarised as follows:

- For the purpose of settlement assessment, the compressible strata of interest are generally the SAVF completely weathered volcanics / residual soils and Tauranga Group alluvium. The moderately to highly weathered SAVF basalt was generally recovered as sand and gravel mixtures or as basalt cobbles and are considered as effectively incompressible (or more correctly will settle very little and very quickly) for the purposes of this assessment.
- Loading from earthfill is assumed to be essentially a 1D problem as it is spread over a wide area, i.e. the stress increment at depth is equal to the surface load. This differs from loading from a footing for example where the stress at depth reduces as the load spreads.
- Bulk unit weight of the imported fill material is assumed to be $\gamma = 18.5 kN/m^3$ in line with Auckland Council guidance. However, if earthfill with a higher unit weight is to be used then further settlement assessment will be required.
- The analysis has been undertaken for the specific areas of the site, which has included the specific building locations, within the current project area (see Appendix L for layout plan). Since this assessment the property at 61 Brookfield Road was acquired by Kiwi Property, which has altered the master plan.
- The earthworks and development plans for the area north of the current project area are not as developed, so this area has been separated into four areas depending on depth of fill and underlying ground conditions.

5.6.2 Components of Total Settlement

Static soil settlements are generally considered as a sum of three main components, namely

1. Immediate settlements (elastic)
2. Primary consolidation settlements
3. Secondary consolidation (creep) settlements

Immediate settlements are those which occur in a matter of hours, days or at most one to two weeks after loading. They generally occur in free-draining cohesionless soils (e.g. sands) where the volume of water squeezed from the pores in the soil results in settlement.

Primary consolidation occurs when saturated cohesive materials (e.g. clays and silts) settle by mechanism of water ‘squeezing’ out of the pore spaces in the soil. Excess pore pressure carries applied loads in the short term, the pressure gradient drives movement of water out of the soil to other free-draining layers and the load transfers to the soil skeleton which then results in soil settlement. Due to the low permeability of clayey materials this process is time-dependent, occurring over months, years and sometimes decades.

Secondary (creep) settlement can be expected to occur after substantial completion of primary consolidation. Soils with no absent of peat or organics generally undergo limited creep deformations and are therefore not assessed for most soils.

5.6.3 Casagrande Plasticity Plot

Wesley (2003) notes that the Casagrande plasticity plot can be used to broadly classify soil behaviour, and soils lying well above the 'A' line are likely to be difficult soils characterised by low shear strength, high compressibility and susceptibility to shrink-swell problems. The weathered volcanics to residual soil generally plots below the 'A' line, whereas the Tauranga Group soils plot slightly above the 'A' line.

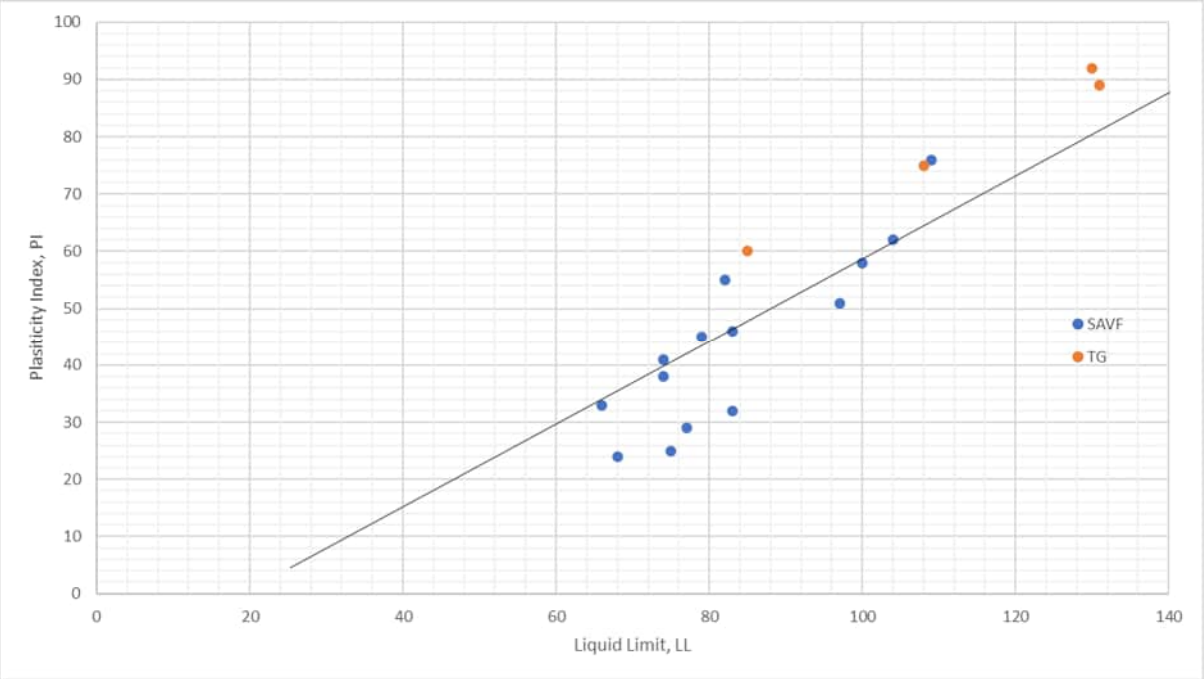


Figure 2. Casagrande plasticity plot with Atterberg Limits samples

5.6.4 Stiffness and Compressibility Parameters

Calculation of immediate and time-dependent (consolidation) settlements requires a number of geotechnical parameters. These have been estimated as follows:

- The **coefficient of compressibility, m_v (MPa^{-1})** has been estimated from CPT-based relationships and checked against typical values in literature (e.g. Look, 2007) as CPT are prone to underestimating soil stiffness.
- The **compression index, c_c,** and **recompression index, c_r**, have been assessed from empirical correlations with the Atterberg limits (e.g. see Bowles, 1996) in absence of oedometer testing, and checked against typical values in literature and experience in similar soil conditions.
- The **overconsolidation ratio (OCR)** has been estimated (in absence of oedometer testing) from empirical correlations with CPT and using the screening tool from Bowles (1996) to broadly classify if soils are likely overconsolidated or normally consolidated.
- The **coefficient of consolidation, c_v (m^2/yr)** has been derived from empirical correlations with the CPT and Atterberg limits data and checked against values in literature (e.g. Look, 2007) and experience in similar Auckland soils.
- The **void ratio, e_0,** has been estimated from the water content from the Atterberg limits testing using the fundamental relationship $e_0 = w_n G_s$, where $G_s = 2.65$ for most inorganic soils.

Table 27 Summary of Ground Model Parameters for Settlement Analysis

Geological Unit	Soil Description	γ [kN/m^3]	s_u [kPa]	m_v [MPa]	OCR	e_0	c_c	c_r	c_v [m^2/yr]	$c_{v\text{-}r}$ [m^2/yr]
Completely Weathered Volcanics to Residual Soil [SAVF]	Stiff to hard CLAYS	17	100	0.075	5	1.2	0.4	0.05	5	15
Younger and older alluvial and colluvial deposits [TG]	Firm to stiff CLAYS	16.5	70	0.1	2.5	1.5	0.5	0.05	4	12
Younger and older alluvial and colluvial deposits [TG]	Soft to firm CLAYS / SILTS / Organic CLAYS / PEATS	15	30	0.5	1.2	2.0	0.7	0.1	4	12
Moderately Weathered to Highly Weathered Volcanics [SAVF]		Assumed to be effectively incompressible relative to soils above								

5.6.5 Settlement Timeframe and Precompression

The Contractor has proposed importing the bulk fill material in advance of programme if a noticeable acceleration in the time for settlement to occur can be achieved. Based on understanding of the quantity of fill material likely to be available at the time of writing, two scenarios in addition to the no surcharge (default) case have been considered:

1. Additional 1m surcharge above finished level
2. Additional 2m surcharge above finished level

There are potential benefits (likely in the order of 20% or so for a 50% ratio of pre-load surcharge to permanent surcharge, depending on specific pre-load surcharge heights) to adding pre-load surcharge if this can be effectively monitored during the construction phase. Preliminary analysis indicates preloading can increase the rate of settlement and hence reduce the settlement time. This can be further reviewed as part of the detailed design of the earthworks.

5.6.6 Summary

Table 28 Summary of Expected Settlements

Development Area	Building Platform*	Fill Load	Depth to HW Rock	GWL	Immediate Settlement	Consolidation Settlement	U = 90% Time
Current	R10, R11, R12, R16	≤ 2m	~ 8m	> 8m	15 – 40mm	0mm	-
Current	R19, R22	≤ 3m	~ 6m	> 6m	15 – 45mm	0mm	-
Current	R18, R21	≤ 4.5m	~ 6m	> 6m	25 – 70mm	0mm	-
Current	R20	≤ 3m	~ 4m	> 4m	15 – 40mm	0mm	-
Current	M11	≤ 4m	< 10m	> 5m	35 – 55mm	25 – 35mm	~ 6 months
Current	M12B	≤ 2.5m	~ 7m	> 6m	15 – 40mm	5 – 10 mm	~ 1 month
North	Northwest	≤ 4.5m	> 20m	~ 5m	65 – 85mm	60 - 110mm	~2.5 years
North	Northeast	≤ 8m	> 20m	> 5m	75 – 95mm	75 - 130mm	~2.5 years
North	Centre	≤ 6m	~ 9m	> 3m	60 – 95mm	30 – 55mm	~ 9 months
North	South	≤ 5.5m	~ 8m	> 5m	50 – 65mm	20 – 30mm	~ 6 months

*Updated building platforms analysed presented, with the original building platforms analysed in brackets.

The above estimates are noted as preliminary in nature and are based on a number of assumptions, including building layout and size. Settlement estimates are provided as a range on the basis that any prediction is typically no more accurate than a half to double order of magnitude, and settlement timeframes are similarly uncertain. The settlement estimates should be refined as the detailed design of the earthworks is finalised.

Further, the estimates do not consider differential settlements (only maximum expected settlements by a range of methods), which may be significant where cut and fill volumes differ significantly over a short area.

Finally, there is an anomaly around CPT030 where a 5m thick layer of very soft material was encountered at around 10m depth. This layer does not closely match the soils encountered nearby or geologically. It lies within a zone of cut and therefore is not of relevance to settlement calculations but represents a geotechnical uncertainty if this layer extends further into the gully area.

5.7 Soil Reactivity

Soil reactivity is a measure of the relative amount of shrinkage and swelling due to moisture changes. The assessment of soil reactivity is based on an understanding of the site soils, laboratory testing for plasticity index and linear shrinkage, and a review of 2008 BRANZ research report into expansive soils in the Auckland region.

Section 17 of NZS 3604:2011 classifies soils with liquid limits over 50% and/or a linear shrinkage above 15% as highly expansive. Some of the laboratory test results presented in Appendix K exceed these values. Thirteen soil samples were collected and tested for Atterberg limits and linear shrinkage. Using the laboratory test results and recommended climatic parameters, a surface movement of approximately 30mm is calculated using the approach presented in the BRANZ report and AS 2870:2011. The results of this assessment are presented in Appendix P. This magnitude of surface movement correlates to an AS 2870:2011 Class M site classification.

As there will be a significant amount of earthworks, specific sampling and testing to confirm the soil reactivity class should be undertaken when earthworks are near completed at the approximate finished subgrade levels. A Geotechnical Engineer should assess these results and confirm whether the preliminary classification of M remains appropriate as part of the Geotechnical Completion Report in accordance with the Auckland Council *Code of Practice for Land Development and Subdivision*.

Building foundations on this development will be subject to specific foundation investigation and design. To mitigate soil expansivity effects all lightweight structures, pipework and shallow foundations in the subdivision should be designed in accordance with AS 2870:2011 requirements for Class M, founded 450mm below finished ground level, or designed to accommodate 20mm to 40mm of ground surface movement. Where foundations cross cut/fill interfaces, they should be designed considering the effects of soil reactivity occurring within the natural clay and engineered fill. This will require specific engineering design and detailing.

5.8 Geotechnical Assessment Conclusion

Based on the geotechnical assessment presented in the above sections we note the following:

- The liquefaction potential at the site is negligible.
- The existing steep slopes along the western side of the site are considered to be stable in their current state and have adequate FoS in all cases assessed. When assessed with the proposed earthfill, the slopes still have adequate FoS. Further assessment of the proposed engineered fill and cuts slopes along the boundaries of the site was also undertaken. The results indicate that the earthworks slopes have adequate FoS and bulk earthworks is unlikely to pose a slope stability issue to neighbouring properties.
- Settlements are expected to be minor for the superlot area in the southeast and will effectively be immediate (i.e. within weeks of loading), due to the depth of the static groundwater surface relative to weathered rock level.
- Settlements for the retail areas in the development will also be modest, however through the central gully area moving north where groundwater depth is shallow relative to the weathered rock level (Carpark / Reserve area to some extent, but M11 in particular), some time-dependent behaviour can be expected (e.g. in the order of 6 months for 90% primary consolidation completion) but preloading may have the benefit of increasing the rate of settlement and reducing the settlement time.
- Settlements for areas north of the development are variable and time-dependent, especially those areas where the depth of potentially compressible cohesive soil is in the order of 20m with limited intermediate sand layers and fill heights are >5m, such as to the northeast part of the site. As the earthworks design for areas north of current project area are not as developed, further assessment will be required during the detailed design of the earthworks in these areas.
- The soil reactivity is assessed as Class M.

Based on our assessment we consider that the site is suitable to develop from geotechnical perspective, provided the recommendation provided below are followed.

It has been previously noted that during the preparation of this geotechnical investigation report the property at 61 Brookfield Road was acquired by Kiwi Property. Due to timing, investigations were not able to be completed on this property, but it is anticipated that the ground conditions and the geotechnical assessment will be similar to the southern part of the site. The intention is to carry out investigations in this area, and a supplementary geotechnical investigation report will be prepared presenting the investigation results and our geotechnical assessment.

5.9 Engineering Recommendations

Based on our assessment present in the previous sections, the site is considered suitable for the proposed development. Geotechnical engineering recommendations for the development are provided in the following sections.

5.9.1 Groundwater Take, Use and Diversion

The AUP(OP) outlines the requirements for compliance with respect to any take or diversion of groundwater due to engineering works. Section E7 of the AUP(OP) presents the criteria for assessing activities which intercept groundwater, and whether these are permitted or require consent as a discretionary activity under the plan.

The proposed features of the redevelopment which may trigger this section of the plan are likely to be retaining walls in areas of cut and basement structures below the groundwater level. The relevant activities as presented in Table E7.4.1 of the AUP(OP) are generally:

- (A17) Dewatering or groundwater level control associated with a groundwater diversion permitted under the Unitary Plan;
- (A19) Land Drainage; and
- (A27) Diversion of groundwater caused by any excavation (including trench) or tunnel.

The requirements for activities to be permitted are detailed in Section E7 of the AUP(OP), specifically Clauses E7.6.1.6, E7.6.1.9 and E7.6.1.10. If the natural groundwater regime will be changed by any retaining wall or basement structures, consent is likely to be required.

Based on our understanding of the proposed earthworks and our current knowledge of the groundwater level across the site, the bulk earthworks and service trenches are unlikely to encounter groundwater. The exception is likely to be where service trenches are installed in the lower elevations. Such as the stormwater pipelines close to the Hingaia Stream on the western side of the development and the wastewater pipeline in the northern part of the site. Construction of these service trenches at the lower elevations may encounter groundwater and require temporary dewatering while the pipes are being installed. Permanent dewatering is not required. Based on our understanding, as dewatering is temporary for the purpose of construction, it is considered a permitted activity under Section E7 provided it complies with the activity standards. Further review is provided in Appendix C of the Civil Report, which confirms that the relevant permitted activity standards are satisfied, and groundwater diversion consents are not required.

In addition to this review, it is recommended that a qualified resource management planner carries out a planning assessment to ensure any site activity complies with AUP(OP) Section E7.

5.9.2 Earthworks

The geotechnical investigations indicate the near-surface soils across the site are predominantly silt and clay originating from the residual to completely weathered SAVF.

The cut-fill plans (Appendix L) indicate cuts up to 9m and fills up to 8m are proposed for the development.

The following should be considered during the design and assessment of the site earthworks:

- Excavations for the proposed development are expected to be within the near-surface clay and silt soils and therefore should be excavatable using conventional hydraulic plant. Allowance should be made for the presence of tree roots and other obstructions within these soils, and for the possible intersection of highly to moderately weathered SAVF materials, generally recovered as very dense sand and basalt gravel during geotechnical investigations.
- Based on the investigations undertaken and the geological model produced, we consider it is highly unlikely that slightly weathered and unweathered rock will be expose and therefore rock breaking equipment is unlikely to be required for the proposed earthworks.
- Laboratory testing of the insitu natural soils, indicate allophane clay is present. Soils with allophane clay require careful handling by an experienced earthworks contractor as it can lose strength when too heavily trafficked or compacted. To assess the potential for the insitu soil to lose strength, a site trial using a plateau test for compacting the soil, may be beneficial to assess the level of compaction required before the fill starts to lose strength.
- Near-surface soils may be reactive to moisture and have the propensity to become slick, softened and sticky when exposed to high moisture conditions or saturated. Earthwork should be carried out during dry weather. Material exposed for prolonged periods of time should be protected against water ingress and site grading should minimise water ponding and infiltration.
- Earthworks should be in accordance with Auckland Council's Code of Practice for Land Development and Subdivision; "Section 2: Earthworks and Geotechnical Requirements".
- During the detailed design phase of the development, the earthworks will need to be assessed by a Geotechnical Engineer once the location and form have been finalised, to confirm the earthworks requirements. The earthworks specification should be reviewed by a Geotechnical Engineer to ensure an appropriate level of testing is undertaken to characterise the range of soil types that will be used on site.
- Any temporary excavations greater than 1.5m depth should be supported with a temporary ground retention system (e.g. engineer designed shoring or temporary retaining walls such as sheet piles). When shields or ground support systems are not used to support an excavation, the sides of the excavations should be battered in accordance with Section 5.9.4.
- Care should be taken to regularly inspect the area around trench excavations and reasonable effort should be made to ensure that the excavation is temporary and only remains open for a limited period of time.
- Corestones are slightly or unweathered blocks of basalt present within the residual soil or completely to moderately weathered rock profile. Corestones were not observed in the investigation holes but are known to be common in the area and are anticipated to be exposed during site earthworks. As these are typically isolated basalt blocks limited in size, it is anticipated that these can be removed using conventional earthworks equipment. Corestones could be stored once excavated and incorporated into site landscaping.

5.9.3 Surface Preparation

Site preparation of the fill areas should include the removal of any topsoil material, uncontrolled fill and organic matter. Topsoil thickness will vary across the site due to past agriculture use. Following site stripping, the exposed subgrade is to be proof rolled or tested using DCP or hand shear vanes, and any local soft spots should be undercut and backfilled as directed by the Geotechnical Engineer. Before filling commences in any area of the site, the cleared and stripped surface should be inspected by a Geotechnical Engineer. Areas where uncontrolled fill is present may require additional undercut.

Where the stripped profile exceeds a gradient of 4H:1V, the slope should be benched prior to filling. Further advice should be sought from the Geotechnical Engineer during detailed design if required.

5.9.4 Batter Angles

Earthworks design may utilise cut and fill batter slopes to achieve proposed levels at the site; this design should follow the Auckland Council Code of Practice.

Based on our assessment of the near-surface soils at the site and the slope stability assessment, the following slope angles are considered generally appropriate:

- Permanent slopes generally not exceeding 3m in height should be at 3H:1V (18°) but steeper slope of 2.5H:1V (21°) are also suitable.
- Temporary slopes not exceeding 3m in height should be at 1H:1V (45°).
- Permanent slopes exceeding 3m in height should be assessed but typically slopes of 3H:1V to 2.5H:1V should be suitable.
- Temporary slopes exceeding 3m in height should be assessed on a case-by-case basis.

These recommendations may be amended following any supplementary investigations and analysis.

Batter slope design should also consider landscaping and maintenance requirements, which may be flatter than the angle given above.

Groundwater seepages, although unlikely, maybe encountered in cut excavations. If significant groundwater inflows are encountered and left untreated, slumping of cuts could occur. If groundwater seepages are encountered these should be inspected by a Geotechnical Engineer and site-specific treatment adopted, as required.

5.9.5 Fill Material

Insitu natural soils obtained from the excavations is likely to be suitable for use as Engineered Fill, provided these are free from organic, contaminated, and other unsuitable material. Based on the laboratory testing, insitu soils are likely to be wet of optimum moisture content, therefore allowance should be made for the appropriate treatment of the soils during earthworks.

It is likely as the development progresses and insitu soils are further excavated additional laboratory testing, include soil compaction testing, will be required to assess the soils ability for reuse.

In addition, consideration should be given to whether lime or cement stabilisation would be advantageous to the reuse of site-won, insitu material.

5.9.6 Placement and Compaction

Filling shall be carried out in accordance with NZS4431:2022 – *Engineered fill construction for lightweight structures*, with appropriate on-site quality control. Structural fill material should not be placed until a Geotechnical Engineer has inspected and approved the surface preparation.

Fill material should be placed in near horizontal layers of uniform thickness, and the fill material shall be placed and spread in a systematic manner and in uniform near horizontal layers. Layer thicknesses should be appropriate for the compaction machinery employed on site (generally 200mm).

After each layer of fill has been placed, spread evenly and brought to a suitable water content (±2% of optimum moisture content), it should be compacted to the level required by the earthworks specification.

Granular fill (including broken rock) should achieve impact values (Clegg Hammer) of 20 to 25. Clay fill should achieve the design shear strength; this is likely to be a minimum of 120kPa with air voids of <8%.

The optimum moisture content and maximum dry density for compaction should be established for both site-won insitu material and imported granular fill prior to commencing earthworks at the site.

5.9.7 Fill Slopes

Earthfill slopes are likely to be stable at slope of 3H:1V and 2.5H:1V. If earthfill slopes are required to be steeper, then the use of geogrids or retaining walls may be required to reinforce the fill edge. This should be assessed by a Geotechnical Engineer as part of the detail design.

The earthfill slope could be vulnerable to erosion if concentrated stormwater flows develop. To control runoff from the fill batters and scouring of the fill, the front face should be planted and stormwater runoff directed away from the fill face.

Large earthfill slopes that will be formed in existing drainage paths will need subsurface drains to a collect any groundwater seeps or residual flows and direct it a safe distance away from the fill slopes or alternatively be connected into the stormwater reticulation system.

5.9.8 Engineered Fill Testing

Testing should be undertaken on representative samples of the engineered fill that is placed as part of the earthworks. As part of the detailed design documentation an earthworks specification will be prepared, which will detail the type and frequency of testing required. Testing of the engineered fill shall typically comprise a combination of the following:

- Shear Vane Testing, for clay fill;
- Impact Hammer Testing (Clegg Hammer), for granular fill; and
- Density Testing (Nuclear Densometer).

5.9.9 Settlement Monitoring

Methodology

Due to the presence of potentially soft soils at the site prone to consolidation settlements, staged earthworks are recommended. This would comprise of placing engineered fill then leave it until the majority of the settlement in the underlying soft soil has occurred. It is likely preloading may be undertaken to increase the rate of settlement and reduce the settlement time. The extent of preloading will be developed as part of the earthworks detailed design.

The intention is to undertake an observational approach with the proposed preloading, whereby the earthfill is monitored to determine the rate and magnitude of settlement. The topsoil will be stripped, and engineered fill placed with the appropriate standard of compaction and quality assurance testing. The fill will be placed to the final earthworks design level, topped with additional soil for preloading if required, and monitored over a certain amount of time. Indicative target settlements to achieve are as follows:

- Settlement magnitude – 90% consolidation settlement
- Settlement differential – less than 25mm between adjacent monitoring points

Monitoring

Monitoring of settlement would be undertaken using settlement plates installed on the underlying subgrade prior to filling and settlement pins installed on the finished fill surface. The monitoring will need to be undertaken by a registered surveyor and a monitoring schedule will need to be developed as part of the earthworks detailed design. As the engineered fill and preload soil is placed the following will need to be carried out:

- Settlement plates will need to be extended above final earthworks surface or the preload soil surface, if present, and monitored.
- Settlement pins will need to be established on the final earthworks surface or the preload soil surface, if present, and monitored.

Geotechnical Certification

The settlement results will be assessed by a suitably qualified Chartered Geotechnical Engineer. Once the settlement rates and magnitudes reach the levels nominated above, then the preload can be removed. Aurecon are able to carry out the required construction monitoring and provide certification of the fill and the suitability of the site for building development with a Geotechnical Completion Report.

5.9.10 Retaining Structures

Currently detailed design of individual retaining structures has not been completed, however the proposed locations and sizes of retaining walls are presented in Appendix L. The proposed walls range from approximately 1m to 5m in height.

Based on the nature of the development and the ground conditions, retaining walls are likely to comprise of geogrid reinforced mechanically stabilised earth (MSE) structures, segmental block walls, geogrid reinforced slopes and/or the use of building structures (i.e. integrated structural wall). Typical wall details are provided in Appendix L. Further consideration will be given to cost-effective wall types and their appearance as the design develops.

During the detailed design phase of the development, the retaining walls will need specific investigation and design by a Geotechnical Engineer once the location and form have been finalised. However, we make the following recommendations regarding the design and construction of the retaining walls:

- Design of temporary and permanent retaining structures should adopt the geotechnical parameters outlined in Table 19. Retaining walls will require sufficient embedment outside the zone of influence of adjacent structures' foundations (deep or shallow).
- Where buildings, roads or shared access-ways are proposed within the retained height from the top of the wall, retaining structures should be designed considering "at rest" lateral earth pressure coefficients (K_0) or "active" lateral earth pressures (K_a) with impact of wall deformation assessed. Allowance should be made for appropriate traffic and seismic loads.
- All retaining walls should be designed and constructed with appropriate toe and backfill drainage.
- Timber pole walls should be backfilled with lightly compacted, free draining aggregate (SAP50 scoria, clean graded gravel or similar) minimum thickness 300mm. This material should be capped with at least 200mm topsoil or impermeable pavement to minimise surface water ingress.
- Separation geotextile should be installed at the interface of cut soil and free-draining aggregate, and above the aggregate before placing topsoil/pavement. Toe drainage should discharge a safe distance away from any buildings or other structures or alternatively be connected into the stormwater reticulation system.
- Site-won, insitu soil is likely to be suitable for use in the MSE structures, subject to confirmation by a Geotechnical Engineer. If site-won soill is to be used, appropriate mixing and conditioning may be required. If site-won soil is not deemed suitable, MSE structures should utilise selected/imported granular material.

Retaining structures designed and constructed in line with the recommendations in this report are likely to undergo negligible deflection.

5.9.11 Foundations

The development will comprise of large format retail (LFR) and superlots for future development. Buildings within the superlots have not yet been determined. The LFR buildings will be located in the south western part of the site and are likely to comprise one to two storey, warehouse type structures. The superlots will be located in the south eastern and northern parts of the site. The heights of the future buildings on the superlots have not been confirmed nor the locations finalised. At this stage buildings will not have basements.

Building foundations on the development will be subject to specific foundation investigation and design, however the following general recommendations are provided on the likely foundation requirements.

In considering foundation options the following is noted about the ground conditions:

- The underlying insitu natural ground conditions over the majority of the site are considered to be relatively competent with stiff to hard silt/clay overlying weathered basalt profile.
- Insitu natural ground conditions in the northern part of the site comprise stiff to hard silt/clay and completely weather basalt overlying Tauranga Group, which can be variable, with softer soil layers at depth. It is noted that the northern area of the site will be filled with up to 6m to 8m of engineered fill, which will provide competent founding conditions.
- The site development will be required extensive earthworks, and the intention is that all earthworks will be carried out to an appropriate standard. Provided the earthworks achieves require compaction standards then the engineered fill will be suitable for foundations.

Foundation Options

Given the natural of the insitu natural ground conditions and the extent of the earthworks it is anticipated that the LFR and low height buildings (i.e. six storeys or less) can use shallow foundations, provided the structures are lightweight in construction. If heavier weight structures are constructed piled foundations (either displacement or bored and cast in situ) founded into the weathered basalt may be required or alternatively a raft slab to allow even distribution of building loads.

For taller buildings (i.e. seven storeys or higher), piles foundation may be required and be founded into the less weathered basalt or dense sand within the Tauranga Group if end bearing is required. However, if a competent bearing layer is not present the piles may need to be friction piles. Based on the testing to date piles, if required may be in the order of 10m to 30m below existing ground levels depending on the location on site, the underlying ground conditions and building loads. If piled foundations are adopted, the designer should consider the comments outlined in the following section.

General Recommendations

The following general recommendations apply to foundations on the site:

- Shallow foundations complying with AS 2870:2011 requirements for Class M soils.
- Given the nature of the soil and the extensive earthwork, shallow foundations are likely to use a geotechnical ultimate bearing capacity of 300kPa.
- Structural design should allow for potential differential settlement resulting from founding partly on silt/clay partly on engineered fill and partly on weathered basalt, where appropriate.
- All topsoil and organic-comprising material should be removed from any excavation, and soft spots should be undercut and replaced with selected hardfill as directed by the Engineer. Allowance should be made for geotextile separation layer (such as Bidim A29 or similar) at the base of the undercut.
- Foundation excavations (including piles and shallow footings) should be inspected by a geotechnical engineer prior to placement of any concrete, hardfill or geotextile.

Piled Foundations

Where piled foundations are adopted, the designer needs to consider the settlement tolerance (both differential and total) of the supported structure, including its associated utilities.

Piled foundation design should consider the construction methodology and relative stiffness of the end-bearing layer when considering what proportion of potential skin friction can be mobilised. Greater movements are generally required to mobilise skin friction in soil layers compared to rock.

Consequently, bored and continuous flight auger (CFA) piles embedded into basalt should not rely on skin friction within residual and overlying soils due to the movements required to mobilise this capacity, relative to the likely settlement at the base.

Strength reduction factors should be selected by the pile designer as outlined in Table 4, B1/VM4 of the NZ Building Code, in line with the amount and type of pile testing undertaken.

Allowance should be made for temporary or permanent casing for bored piles during construction. The implications of this casing should be considered during design and cost estimation.

5.9.12 Pavements

The new development will require pavement and hardstand areas, which require a California Bearing Ratio (CBR) value for design. The indicative CBR for the in-situ ground at the site has been obtained from the laboratory testing and the investigation results.

Laboratory testing was undertaken on soil sample taken from across the site. The results are presented in Appendix K and indicate the laboratory derived CBR ranges from 2.5% to 12% for clayey soils. A review of the near surface investigation results generally indicates the undrained shear strength of the silts and clays are stiff to hard. Based on Look (2007) Table 13.8, this correlates to a CBR of 4% to 10%. At this stage it is recommended that for pavements on a silt or clay subgrade, a CBR of 4% should be adopted.

Due to the size of the development the CBR will vary across the site and therefore during the detailed design phase of the development, specific assessment of the CBR in smaller localised areas can be carried out based on the investigation information.

Pavements should incorporate appropriate surface and subsurface drainage with the aim of maintaining a relatively stable moisture condition within the subgrade soils. The pavement subgrade should be inspected by a Geotechnical Engineer and proof rolled to identify any localised soft areas that will need to be undercut and replaced with compacted engineer fill.

It is noted the silty/clayey subgrade under the pavement could be adversely affected if exposed to rainfall, stormwater runoff and ponding. Runoff and ponding shall be kept off the exposed pavement subgrade surface and the subgrades shall be maintained during construction to ensure they do not deteriorate.

5.9.13 Contamination

The contamination detailed site investigation (DSI) undertaken for the site identified the presence of old landfill in the northwest corner of the site, in the low area next to the Hingaia Stream. The extent of this fill area is detailed in the DSI report. This part of the site is not immediately within the area that will be developed but if future works extent into this area, then further geotechnical investigation will be required to provide design information.

5.9.14 Summary of Geotechnical Recommendations

Table 29 below provides a summary of the geotechnical conditions and recommendations for the site; the table should be read in conjunction with the details presented in the relevant sections above.

Table 29 Summary of Geotechnical Recommendations

Aspect	Recommendation
Site Subsoil Class (NZS 1170.5:2004)	C in southern part of site and D in northern part of site
Soil Reactivity Class (AS 2870:2011)	M
Expected subgrade CBR on virgin ground	4%
Permanent cut/fill slopes	Up to 3m high: 3H:1V (18°) or flatter should be used but steeper slope of 2.5H:1V (21°) are also suitable. Over 3m: Specific assessment required but slopes of 3H:1V and 2.5H:1V should be suitable.
Temporary cut/fill slopes	Up to 3m high: 1H:1V or flatter Over 3m: Specific assessment required.

Aspect	Recommendation
Earthworks	Insitu natural soils obtained from the excavations is likely to be suitable for use as Engineered Fill, provided they are free from organic, contaminated, and other deleterious matter. Filling shall be carried out in accordance with NZS4431:2022 – Engineered fill construction for lightweight structures.
Building foundations	Due to commercial nature of the buildings, specific investigation and design required.

6 Geotechnical Summary

Based on our assessment we consider that at the site there are no significant geotechnical hazards, other than the potential for settlement of soft soils due to loading from the proposed earthfilling. However, provided that the geotechnical recommendations given within this report are followed, and the appropriate engineering measures are implemented, then we consider that the development is unlikely to be affected by significant geotechnical hazards nor will the development worsen, accelerate or result in material damage. Therefore, from a geotechnical perspective, we consider that safe and stable building platforms can be created, and the proposed development can proceed.

7 Further Geotechnical Involvement

7.1 Further Ground Investigations

The current level of testing provides a detailed understanding of the ground conditions at the site that can be used to undertaken earthwork design and provide and an indication of the foundation requirements. However, based on a review of the investigation results and the development plans, further ground investigation may include the following:

- Shallow investigations (i.e. test pits and/or hand augers) for retaining walls or mechanically stabilised earth (MSE) structures locations if required as part of the earthworks phase of the development.
- A geotechnical borehole in the vicinity of CPT030 to provide additional information on the soft layer at 5m to 10m depth.
- On-going groundwater level measurements to understand the change in the groundwater levels across the site, especially during the winter months.
- Permeability testing in boreholes at depth for stormwater discharge of buildings, only if in ground disposal is considered.

7.2 Detailed Design Input

Following completion of further investigations, a Geotechnical Engineer shall be retained to:

- Review and input for landform/earthworks design, identification of unsuitable soils that require undercut.
- Design and analysis of any engineered earthfill slope, retaining walls and any ground improvement, if required.
- Confirm earthworks stability and settlements, once the earthworks design is finalised.
- Review the earthworks specification to ensure an appropriate level of testing is undertaken to characterise the range of soil types that will be used on site.
- Prepare a detailed geotechnical report assessing the specific design layout to be submitted with consent documentation and support detailed design.

7.3 Construction Observations

Prior to and during the earthworks construction a Geotechnical Engineer will be required to visit the site to monitor and certify completion of earthworks including subgrade, fill reuse, compaction and specific observations during construction. This may also include observations to monitor and certify construction of retaining walls, if required by the design. As discussed in previous sections, compliance testing with supporting laboratory testing undertaken by an IANZ-accredited laboratory will be required to certify the placement of fill.

7.4 Geotechnical Completion Reporting

A Geotechnical Completion Report or Reports (GCR) will be required on completion of the development to support legal titling and subsequent building consent applications for structures. The GCR should include:

- A factual account of scope and methodology for earthworks undertaken on site, including any deviations from the agreed specification.
- A record of supervision and inspection history.
- A record of compliance testing as identified by the earthworks specification.
- Testing of finished earthworks platforms to confirm the final soil reactivity class.

- Any building restriction lines (if required).
- Producer statements for any engineer designed retaining walls.
- General and specific recommendations for building development.
- Statement of professional opinion by a Geotechnical Engineer confirming the suitability for building development.

7.5 Specific Investigation and Design

Specific investigation and foundation design will be required for the LFR buildings and superlots. The testing done to date provides an overview of the ground conditions and it can be used to support the foundation design of the new building, but it will need to be supplemented with building specific geotechnical investigations.

The site investigations have identified areas of South Auckland Volcanic Field (SAVF) basalt overlying Tauranga Group alluvium to uncertain depth. The depth of 'basement rock' below this material is uncertain and was not encountered in any of the site investigations, however is inferred from nearby well logs to be in the range of 50m or more. Due to this complex profile with various thicknesses of volcanic rock overlying a limited depth of soils with unknown density below, parts of the site are likely close to the Class C / Class D site flexibility boundary which is defined as a site with a T = 0.6s fundamental site period under NZS1170.5:2004. The liquefaction and slope stability assessments have been assessed conservatively assuming the worst-case peak ground accelerations (PGAs). However, a more detailed assessment of site period should be considered at the design stage of any proposed building to inform seismic loading for structural design, particularly for high importance level structures, and constrain the location of the transition zone. There are various geophysical methods available, each with their own merits and limitations, to assess site period. These include but are not limited to (see NZS1170.5 Clause 3.1.3.1 for details):

- H/V Spectral Ratio testing (referred to as Nakamura Ratios in NZS1170.5)
- Refraction Microtremor (ReMi) testing
- Downhole shear wave velocity testing
- Other geophysical surface wave methods
- Deep boreholes with SPT testing to basement rock (least preferred method due to uncertain depth to rock)

Depending on the importance level of proposed structures, a more rigorous assessment of the seismic site hazard can be undertaken via a Probabilistic Seismic Hazard Assessment (PSHA) study. PSHA studies are used to justify a departure from NZS1170.5 under the provision of Clause 1.4 'Special Studies'.

It is possible that some of the building structures will be Importance Level 3 (IL3). If this is the case, then a specific liquefaction assessment for the structure will be required with earthquake parameters that are specifically derived from MBIE/NZGS (2021) *Module 1: Overview of the guidelines* for an IL3 structure.

8 Safety in Design

Safety in design is an important consideration during design and construction of the development. A detailed safety in design assessment has not been completed at this stage however, typical geotechnical hazards that will need to be considered at this stage of the project will include:

- Stability of cut slopes
- Stability of excavations for foundations
- Stormwater runoff infiltration causing soft, slippery subgrade
- Falls into excavations
- Construction safety around machinery
- A detailed safety in design hazard assessment will be required as part of final design.

Safety in design should be considered a ‘Live’ process and the type and scope of identified hazards may change during the design and construction phases of the project. Therefore, the Safety and Design Register should be periodically updated throughout the life of the project.

9 Explanatory Statement

We have prepared this report in accordance with the brief as provided. The contents of the report are for the sole use of the Client and no responsibility or liability will be accepted to any third party. Data or opinions contained within the report may not be used in other contexts or for any other purposes without our prior review and agreement.

The recommendations in this report are based on data collected at specific locations and by using appropriate investigation methods with limited site coverage. Only a finite amount of information has been collected to meet the specific financial and technical requirements of the Client's brief and this report does not purport to completely describe all the site characteristics and properties. The nature and continuity of the ground between test locations has been inferred using experience and judgment and it must be appreciated that actual conditions could vary from the assumed model.

Subsurface conditions relevant to construction works should be assessed by contractors who can make their own interpretation of the factual data provided. They should perform any additional tests as necessary for their own purposes.

Subsurface conditions, such as groundwater levels, can change over time. This should be borne in mind, particularly if the report is used after a protracted delay.

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10 References

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Appendices

Appendix A - Drawings

N

SHEET 2

SHEET 3

SHEET 5

SHEET 4

LEGEND

- GEOTECHNICAL INVESTIGATIONS AREA
- MAP FRAME
- 61 BROOKFIELD ROAD (approx.)

AURECON GI

- BOREHOLE (BH)
- CONE PENETRATION TEST (CPT)
- TEST PIT (TP)
- HAND AUGER (HA)
- SEISMIC DILATOMETER (sDMT)
- MASW

EXISTING GI / WELLS

- BOREHOLE (BH)
- WATERBORE (WB)
- HAND AUGER (HA)

NOTES:
1. THE PROPERTY AT 61 BROOKFIELD ROAD WAS ACQUIRED FOLLOWING THE GEOTECHNICAL INVESTIGATION PROGRAM. GEOTECHNICAL INVESTIGATIONS WILL BE CARRIED OUT AT 61 BROOKFIELD ROAD AT A LATER TIME.

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0 50 100 200 300 400 500 Metres

CLIENT

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Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
A	31-03-21	GEOTECHNICAL INVESTIGATION LOCATIONS	J KUPEC

SCALE	SIZE
1:5,000	A3

DRAWN: M DOONEY
DESIGNED: J MUIRSON
REVIEWED: -

FOR INFORMATION
NOT FOR CONSTRUCTION

APPROVED

PROJECT	KIWI PROPERTY GROUP LIMITED
TITLE	DRURY CENTRE PROJECT GEOTECHNICAL INVESTIGATION LOCATIONS GIS SHEET 1 OF 5

DOCUMENT	PROJECT No.	WBS	TYPE	DISC	NUMBER	REVISION
	510611	002	FIG	GG	0001	A



Metres

0 15 30 60 90 120 150

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Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
A	31-03-21	GEOTECHNICAL INVESTIGATION LOCATIONS	J KUPEC

SCALE	SIZE
1:2,000	A3

DRAWN: M DOONEY
DESIGNED: J MUIRSON
REVIEWED: -

FOR INFORMATION
NOT FOR CONSTRUCTION

APPROVED

PROJECT	KIWI PROPERTY GROUP LIMITED
TITLE	DRURY CENTRE PROJECT GEOTECHNICAL INVESTIGATION LOCATIONS GIS SHEET 2 OF 5

DOCUMENT	PROJECT No.	WBS	TYPE	DISC	NUMBER	REVISION
	510611	002	FIG	GG	0002	A

LEGEND

- GEOTECHNICAL INVESTIGATIONS AREA

AURECON GI

- BOREHOLE (BH)
- CONE PENETRATION TEST (CPT)
- TEST PIT (TP)
- HAND AUGER (HA)
- SEISMIC DILATOMETER (sDMT)
- MASW

EXISTING GI / WELLS

- BOREHOLE (BH)
- WATERBORE (WB)
- HAND AUGER (HA)

HA009, MASW 18, TP027, CPT048, TP028, CPT047, CPT042, CPT043, HA006, sDMT003, CPT039, CPT041, BH011, CPT040, HA010, BH012, MASW 11, CPT038, CPT037, HA19, BC4033, HA18, CPT035, TP025, BH009, TP026, BH010, MASW 14, sDMT002, TP024, BH007, MASW 17, CPT034, BH008, CPT033, CPT036, MASW 16, HA004, CPT032, CPT031, MASW 12, MASW 10, TP023, BH04, TP022, BH05, TP021, HA14, sDMT001, CPT027, CPT029, HA15, CPT030, MASW 9, HA16, BH003, BH006, CPT026, MASW 7, HA17, CPT028, CPT024, TP018, HA07, TP020, HA003, MASW 6, CPT025, CPT015, HA002, TP014, TP019, CPT023, CPT021, HA10, BH005, MASW 8, TP017, CPT016, MASW 5, MASW 3, HA001

N

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0 15 30 60 90 120 150 Metres

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REV	DATE	REVISION DETAILS	APPROVED
A	31-03-21	GEOTECHNICAL INVESTIGATION LOCATIONS	J KUPEC

SCALE	1:2,000
SIZE	A3
DRAWN	M DOONEY
DESIGNED	J MUIRSON
REVIEWED	-

FOR INFORMATION
NOT FOR CONSTRUCTION

APPROVED

PROJECT	KIWI PROPERTY GROUP LIMITED
TITLE	DRURY CENTRE PROJECT GEOTECHNICAL INVESTIGATION LOCATIONS GIS SHEET 3 OF 5

DOCUMENT	PROJECT No.	WBS	TYPE	DISC	NUMBER	REVISION
	510611	002	FIG	GG	0003	A



Metres

0 15 30 60 90 120 150

CLIENT

REV	DATE	REVISION DETAILS	APPROVED
A	31-03-21	GEOTECHNICAL INVESTIGATION LOCATIONS	J KUPEC

SCALE	SIZE
1:2,000	A3

DRAWN: M DOONEY

DESIGNED: J MUIRSON

REVIEWED: -

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APPROVED

PROJECT	KIWI PROPERTY GROUP LIMITED
TITLE	DRURY CENTRE PROJECT GEOTECHNICAL INVESTIGATION LOCATIONS GIS SHEET 4 OF 5

DOCUMENT	PROJECT No.	WBS	TYPE	DISC	NUMBER	REVISION
	510611	002	FIG	GG	0004	A

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Kiwi Property



0 15 30 60 90 120 150 Metres

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REV	DATE	REVISION DETAILS	APPROVED
A	31-03-21	GEOTECHNICAL INVESTIGATION LOCATIONS	J KUPEC

SCALE	SIZE
1:2,000	A3

DRAWN: M DOONEY
DESIGNED: J MUIRSON
REVIEWED: -

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NOT FOR CONSTRUCTION

APPROVED

PROJECT	KIWI PROPERTY GROUP LIMITED
TITLE	DRURY CENTRE PROJECT GEOTECHNICAL INVESTIGATION LOCATIONS GIS SHEET 5 OF 5

DOCUMENT	PROJECT No.	WBS	TYPE	DISC	NUMBER	REVISION
	510611	002	FIG	GG	0005	A



Metres

0 62.5 125 250 375 500

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CLIENT

Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
A	31-03-21	GEOTECHNICAL INVESTIGATION REPORT	J KUPEC

SCALE	SIZE
1:5,000	A3

DRAWN: G O'SULLIVAN

DESIGNED: G O'SULLIVAN

REVIEWED: J MUIRSON

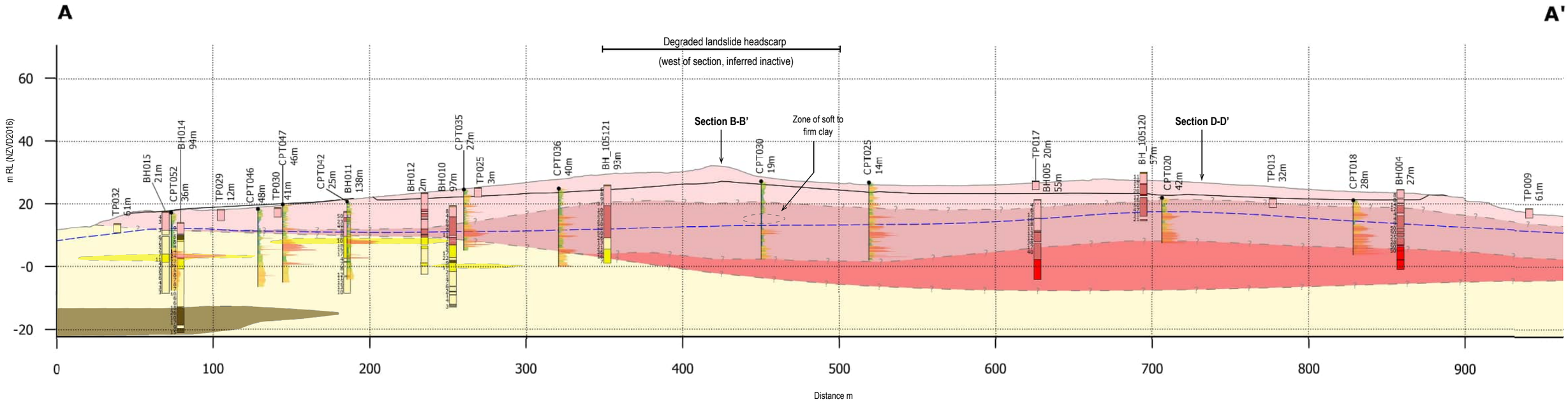
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APPROVED

PROJECT: KIWI PROPERTY GROUP LIMITED

TITLE: GEOTECHNICAL SECTION LOCATIONS

DOCUMENT	PROJECT No.	WBS	TYPE	DISC	NUMBER	REVISION
	510611	002	FIG	GG	0006	A



LEGEND

GEOLOGY

- Topsoil
- Fill
- South Auckland Volcanic Field - Residual Soil to Completely Weathered (VRb / VRr / VRt)
- South Auckland Volcanic Field - Highly Weathered to Moderately Weathered (VWb / VWt)
- South Auckland Volcanic Field - Slightly Weathered to Unweathered (VUb)
- Tauranga Group - Silt / Clay (TAz / TAc)
- Tauranga Group - Sand (TAs)
- Tauranga Group - Organic Clay / Peat (TAo / TAp)

CPT qc (MPa)

0 10 20 30 40

qc displayed on section as a coloured bar chart

SURFACES

—— Proposed Earthworks Surface (15-02-2021)

- - - - Inferred Groundwater Profile (Summer 2020/21)

NOTES:
1. Refer to GIS (510611-002-06-REP-GG-001) for geological unit descriptions.
2. Groundwater surface based on Summer 2020/21 readings.
3. Depth to Tauranga Group below unweathered SAVF is based on historical well information (not shown).

REV	DATE	REVISION DETAILS	APPROVED
A	31-03-21	GEOTECHNICAL INVESTIGATION REPORT	J KUPEC

CLIENT: Kiwi Property

SCALE: H1:2500 V1:1250 | SIZE: A3

DRAWN: G O'SULLIVAN

DESIGNED: G O'SULLIVAN

REVIEWED: J MUIRSON

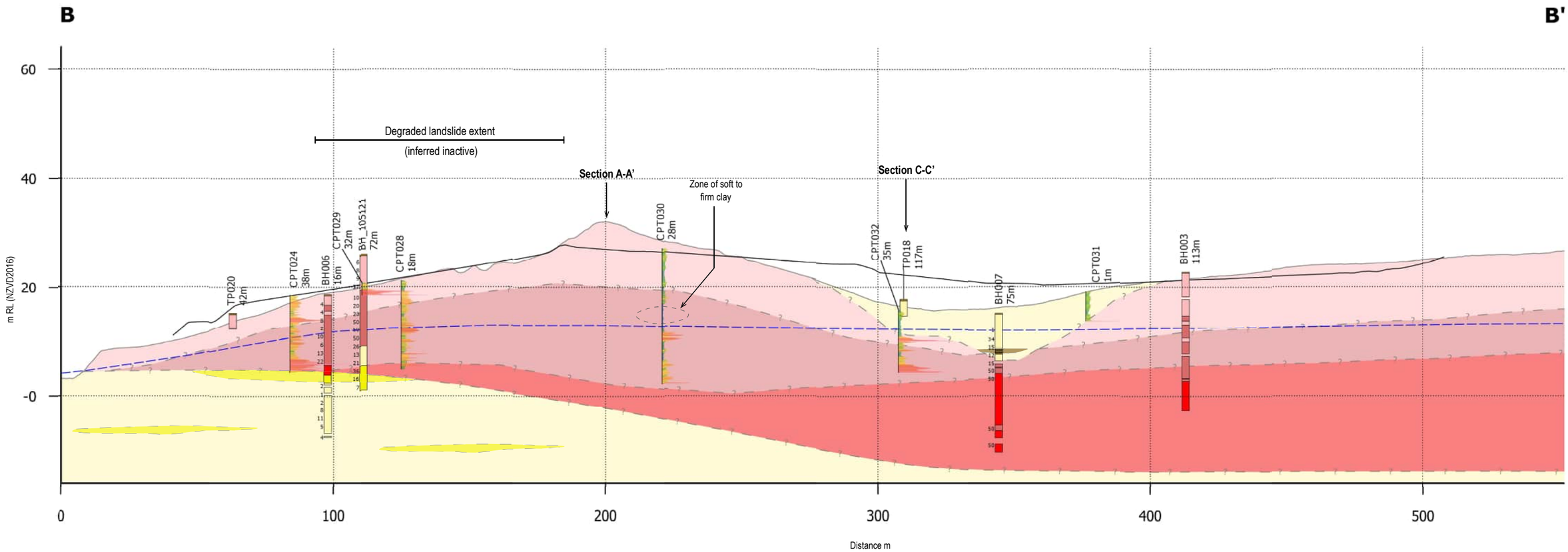
FOR INFORMATION
NOT FOR CONSTRUCTION

APPROVED

PROJECT: KIWI PROPERTY GROUP LIMITED

TITLE: DRURY CENTRE PROJECT
GEOTECHNICAL SECTION A-A'

DOCUMENT: PROJECT No. 510611 – WBS 002 – TYPE FIG – DISC GG – NUMBER 0007 – REVISION A



LEGEND

GEOLOGY

- Topsoil
- Fill
- South Auckland Volcanic Field - Residual Soil to Completely Weathered (VRb / VRr / VRt)
- South Auckland Volcanic Field - Highly Weathered to Moderately Weathered (VWb / VWt)
- South Auckland Volcanic Field - Slightly Weathered to Unweathered (VUb)
- Tauranga Group - Silt / Clay (TAz / TAc)
- Tauranga Group - Sand (TAs)
- Tauranga Group - Organic Clay / Peat (TAo / TAp)

CPT qc (MPa)

0 10 20 30 40

qc displayed on section as a coloured bar chart

SURFACES

—— Proposed Earthworks Surface (15-02-2021)

- - - - Inferred Groundwater Profile (Summer 2020/21)

NOTES:

1. Refer to GIS (510611-002-06-REP-GG-001) for geological unit descriptions.
2. Groundwater surface based on Summer 2020/21 readings.
3. Depth to Tauranga Group below unweathered SAVF is based on historical well information (not shown).

CLIENT

REV	DATE	REVISION DETAILS	APPROVED
A	31-03-21	GEOTECHNICAL INVESTIGATION REPORT	J KUPEC

SCALE	SIZE
H1:1500 V1:750	A3

DRAWN: G O'SULLIVAN

DESIGNED: G O'SULLIVAN

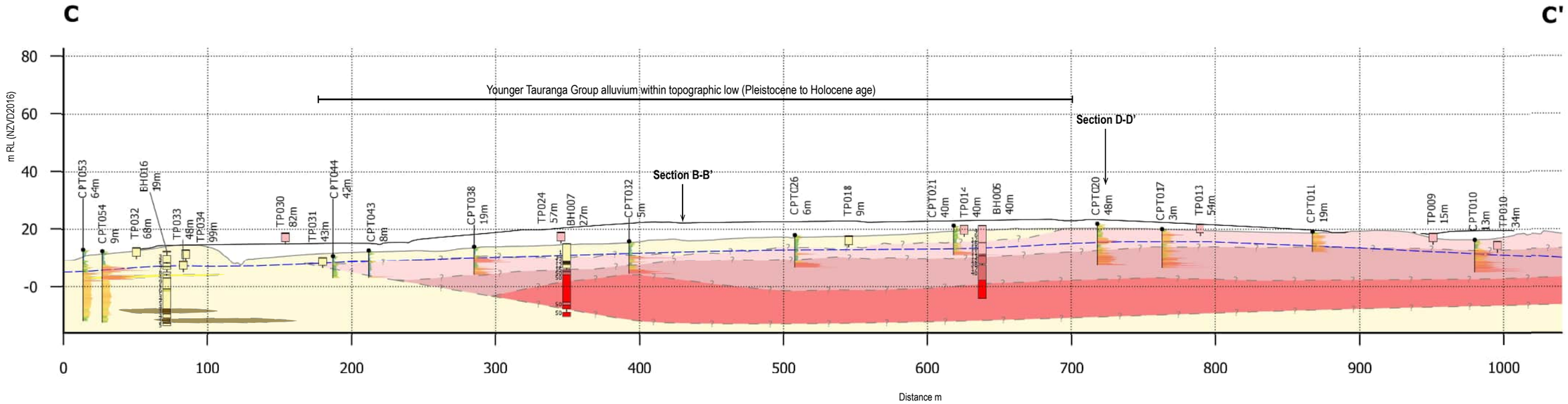
REVIEWED: J MUIRSON

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NOT FOR CONSTRUCTION

APPROVED

PROJECT	KIWI PROPERTY GROUP LIMITED
TITLE	DRURY CENTRE PROJECT GEOTECHNICAL SECTION B-B'

DOCUMENT	PROJECT No.	WBS	TYPE	DISC	NUMBER	REVISION
	510611	002	FIG	GG	0008	A



LEGEND

GEOLOGY

- Topsoil
- Fill
- South Auckland Volcanic Field - Residual Soil to Completely Weathered (VRb / VRr / VRt)
- South Auckland Volcanic Field - Highly Weathered to Moderately Weathered (VWb / VWt)
- South Auckland Volcanic Field - Slightly Weathered to Unweathered (VUb)
- Tauranga Group - Silt / Clay (TAz / TAc)
- Tauranga Group - Sand (TAs)
- Tauranga Group - Organic Clay / Peat (TAo / TAp)

CPT qc (MPa)

0 10 20 30 40

qc displayed on section as a coloured bar chart

SURFACES

- Proposed Earthworks Surface (15-02-2021)
- Inferred Groundwater Profile (Summer 2020/21)

NOTES:
1. Refer to GIS (510611-002-06-REP-GG-001) for geological unit descriptions.
2. Groundwater surface based on Summer 2020/21 readings.
3. Depth to Tauranga Group below unweathered SAVF is based on historical well information (not shown).
4. Tauranga Group alluvium within topographic low is commonly pumecious, often with organic content.

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CLIENT: Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
A	31-03-21	GEOTECHNICAL INVESTIGATION REPORT	J KUPEC

SCALE	SIZE
H1:3000 V1:1500	A3

DRAWN: G O'SULLIVAN
DESIGNED: G O'SULLIVAN
REVIEWED: J MUIRSON

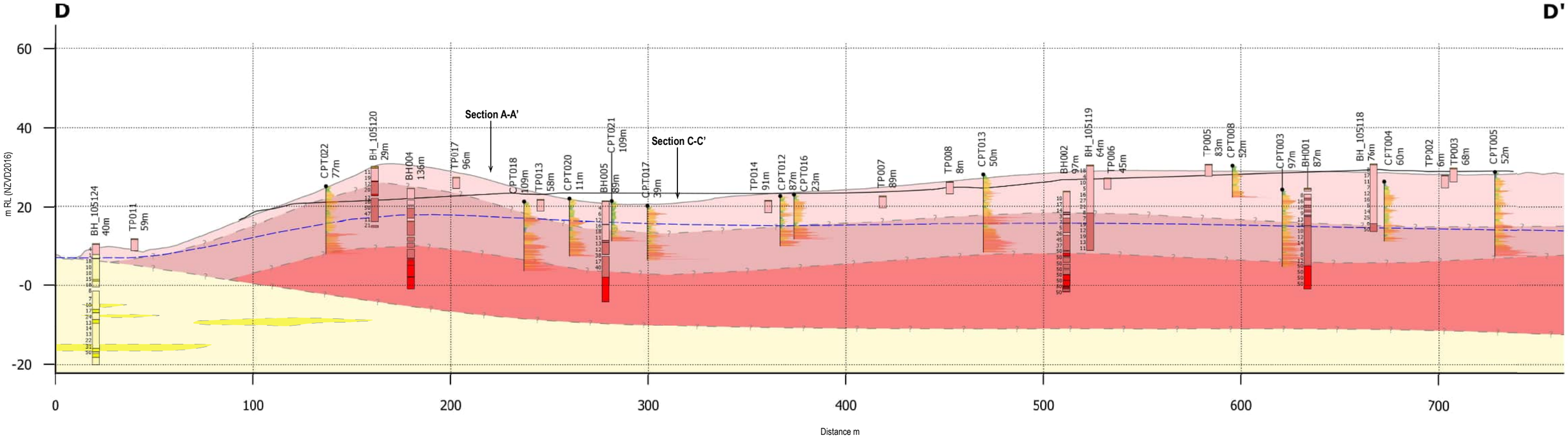
FOR INFORMATION
NOT FOR CONSTRUCTION

APPROVED

PROJECT: KIWI PROPERTY GROUP LIMITED

TITLE: DRURY CENTRE PROJECT
GEOTECHNICAL SECTION C-C'

DOCUMENT: PROJECT No. 510611 – WBS 002 – TYPE FIG – DISC GG – NUMBER 0009 – REVISION A



LEGEND

GEOLOGY

- Topsoil
- Fill
- South Auckland Volcanic Field - Residual Soil to Completely Weathered (VRb / VRr / VRt)
- South Auckland Volcanic Field - Highly Weathered to Moderately Weathered (VWb / VWt)
- South Auckland Volcanic Field - Slightly Weathered to Unweathered (VUb)
- Tauranga Group - Silt / Clay (TAz / TAc)
- Tauranga Group - Sand (TAs)
- Tauranga Group - Organic Clay / Peat (TAo / TAp)

CPT qc (MPa)

0 10 20 30 40

qc displayed on section as a coloured bar chart

SURFACES

—— Proposed Earthworks Surface (15-02-2021)

- - - - Inferred Groundwater Profile (Summer 2020/21)

NOTES:

1. Refer to GIS (510611-002-06-REP-GG-001) for geological unit descriptions.
2. Groundwater surface based on Summer 2020/21 readings.
3. Depth to Tauranga Group below unweathered SAVF is based on historical well information (not shown).

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CLIENT: Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
A	31-03-21	GEOTECHNICAL INVESTIGATION REPORT	J KUPEC

SCALE	SIZE
H1:2000 V1:1000	A3

DRAWN: G O'SULLIVAN

DESIGNED: G O'SULLIVAN

REVIEWED: J MUIRSON

FOR INFORMATION
NOT FOR CONSTRUCTION

APPROVED

PROJECT: KIWI PROPERTY GROUP LIMITED

TITLE: DRURY CENTRE PROJECT
GEOTECHNICAL SECTION D-D'

DOCUMENT	PROJECT No.	WBS	TYPE	DISC	NUMBER	REVISION
	510611	002	FIG	GG	0010	A

Appendix B – Aerial Photographs

NOTES
SOURCED FROM HTTP://RETROLENS.NZ AND LINCENSED BY LINZ CC-BY 3.0 OPUS
DOWNLOADED 15 OCTOBER 2020

Northern gully

Erosional patterns

Degraded scarp

Hingaia Stream

Erosional patterns

VICTORIA ST
FIRTH ST
SH 22 GREAT SOUTH RD
SH 1
MERCER ST
SH 1 AUCKLAND-HAMILTON MWY
FITZGERALD RD
PITT RD
GREAT SOUTH RD
TEGAL RD
BROOKFIELD RD

SOURCES: ESRI, HERE, GARMIN, USGS, INTERMAP, INCREMENT P, NRCAN, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), ESRI KOREA, ESRI (THAILAND), NGCC, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY

LEGEND
LOT BOUNDARIES
SITE BOUNDARY

100 50 0 100 200
Meters



aurecon

CLIENT
Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
A	22.10.2020	FOR ISSUE WITH PRELIMINARY SITE INVESTIGATION	W. NEL

SCALE	SIZE
1:1,715	A3

DRAWN: R. COLVIN / S. ENSOLL
DESIGNED: R. COLVIN
CHECKED: T. DEE

PRELIMINARY
NOT FOR CONSTRUCTION
DATE 22.10.20

PROJECT: DRURY PRECINCT
TITLE: PRELIMINARY SITE INVESTIGATION - HISTORICAL AERIAL PHOTOGRAPHS 1942

DRAWING No.	PROJECT No.	WBS	TYPE	DISC	NUM	REV
	510611	0100	DRG	KF	0004	A

NOTES
SOURCED FROM HTTP://RETROLENS.[illegible] LICENSED BY LINZ CC-BY 3.0 OPUS
DOWNLOADED 15 OCTOBER 2020

VICTORIA ST
FIRTH ST
SH 22 GREAT SOUTH RD
SH 1
FLANAGAN RD
MERCER ST
SH 1
SH 1 AUCKLAND-HAMILTON MWY
FITZGERALD RD
PITT RD
GREAT SOUTH RD
HARRISONVILLE
TEGAL RD
BROOKFIELD RD

SOURCES: ESRI, HERE, GARMIN, USGS, INTERMAP, INCREMENT P, NRCAN, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), ESRI KOREA, ESRI (THAILAND), NGCC, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY

LEGEND
- LOT BOUNDARIES
- SITE BOUNDARY

100 50 0 100 200
Meters



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CLIENT
Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
A	22.10.2020	FOR ISSUE WITH PRELIMINARY SITE INVESTIGATION	W. NEL

SCALE	SIZE
1:1,715	A3

DRAWN: R. COLVIN / S. ENSOLL
DESIGNED: R. COLVIN
CHECKED: T. DEE

PRELIMINARY
NOT FOR CONSTRUCTION
DATE 22.10.20

PROJECT: DRURY PRECINCT
TITLE: PRELIMINARY SITE INVESTIGATION - HISTORICAL AERIAL PHOTOGRAPHS 1960

DRAWING No.	PROJECT No.	WBS	TYPE	DISC	NUM	REV
	510611 -	0100 -	DRG -	KF -	0005 -	A

NOTES
SOURCED FROM HTTP://RETROLENS.NZ AND LINCENSED BY LINZ CC-BY 3.0 OPUS
DOWNLOADED 15 OCTOBER 2020

VICTORIA ST
SH 22 GREAT SOUTH RD
SH 1
FLANAGAN RD
MERCER ST
SH 1
SH 1 AUCKLAND-HAMILTON MWY
PITT RD
GREAT SOUTH RD
TEGAL RD
FITZGERALD RD
BROOKFIELD RD

SOURCES: ESRI, HERE, GARMIN, USGS, INTERMAP, ...MENT P, NRCAN, ESRI JAPAN, METI, ESRI CHINA ...G KONG), ESRI KOREA, ESRI (THAILAND), NGCC, (C) OPE... STMAP CONTRIBUTORS, AND THE GIS USER COMMUN...

LEGEND
- LOT BOUNDARIES
- SITE BOUNDARY

100 50 0 100 200
Meters

aurecon

CLIENT
Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
A	22.10.2020	FOR ISSUE WITH PRELIMINARY SITE INVESTIGATION	W. NEL

SCALE	SIZE
1:1,715	A3

DRAWN: R. COLVIN / S. ENSOLL
DESIGNED: R. COLVIN
CHECKED: T. DEE

PRELIMINARY
NOT FOR CONSTRUCTION
DATE 22.10.20

PROJECT: DRURY PRECINCT
TITLE: PRELIMINARY SITE INVESTIGATION - HISTORICAL AERIAL PHOTOGRAPHS 1974

DRAWING No.	PROJECT No.	WBS	TYPE	DISC	NUM	REV
	510611	0100	DRG	KF	0006	A

NOTES
SOURCED FROM HTTP://RETROLENS.NZ AND LINCENSED BY LINZ CC-BY 3.0 OPUS
DOWNLOADED 15 OCTOBER 2020

VICTORIA ST
FIRTH ST
SH 22 GREAT SOUTH RD
SH 1
FLANAGAN RD
MERCER ST
SH 1
SH 1 AUCKLAND-HAMILTON MWY
FITZGERALD RD
PITT RD
GREAT SOUTH RD
BROOKFIELD RD
TEGAL RD

SOURCES: ESRI, HERE, GARMIN, USGS, INTERMAP, INCREMENT P, NRCAN, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), ESRI KOREA, ESRI (THAILAND), NGCC, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY

LEGEND
- LOT BOUNDARIES
- SITE BOUNDARY

100 50 0 100 200 Meters



aurecon

CLIENT: Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
A	22.10.2020	FOR ISSUE WITH PRELIMINARY SITE INVESTIGATION	W. NEL

SCALE: 1:1,715 | SIZE: A3
DRAWN: R. COLVIN / S. ENSOLL
DESIGNED: R. COLVIN
CHECKED: T. DEE

PRELIMINARY
NOT FOR CONSTRUCTION
DATE 22.10.20

PROJECT: DRURY PRECINCT
TITLE: PRELIMINARY SITE INVESTIGATION - HISTORICAL AERIAL PHOTOGRAPHS 1981

DRAWING No. PROJECT No. 510611 - WBS 0100 - TYPE DRG - DISC KF - NUM 0007 - REV A

NOTES
SOURCED FROM AUCKLAND COUNCIL GEOMAPS.
DOWNLOADED 15 OCTOBER 2020

VICTORIA ST
FIRTH ST
SH 22 GREAT SOUTH RD
SH 1
Karaka Reserve
Flanagan Road
FLANAGAN RD
MERCER ST
SH 1
SH 1 AUCKLAND-HAMILTON MWY
Runciman
Fitzgerald Road
FITZGERALD RD
PITT RD
GREAT SOUTH RD
TEGAL RD
Brookfield Road
BROOKFIELD RD

SOURCES: ESRI, HERE, GARMIN, USGS, INTERMAP, INCREMENT P, NRCAN, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), ESRI KOREA, ESRI (THAILAND), NGCC, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY

LEGEND
- LOT BOUNDARIES
- SITE BOUNDARY

100 50 0 100 200
Meters



aurecon

CLIENT
Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
A	22.10.2020	FOR ISSUE WITH PRELIMINARY SITE INVESTIGATION	W. NEL

SCALE	SIZE
1:1,715	A3

DRAWN: R. COLVIN / S. ENSOLL
DESIGNED: R. COLVIN
CHECKED: T. DEE

PRELIMINARY
NOT FOR CONSTRUCTION
DATE 22.10.20

PROJECT: DRURY PRECINCT
TITLE: PRELIMINARY SITE INVESTIGATION - HISTORICAL AERIAL PHOTOGRAPHS 1996

DRAWING No.	PROJECT No.	WBS	TYPE	DISC	NUM	REV
	510611	0100	DRG	KF	0008	A

NOTES
SOURCED FROM AUCKLAND COUNCIL GEOMAPS.
DOWNLOADED 15 OCTOBER 2020

Hanagan Road
Karaka Reserve
Runciman
Brookfield Road
Fitzgerald Road
Great South
Victoria Street
Mercer Street
SH 22 GREAT SOUTH RD
SH 1
SH 1 - AUCKLAND-HAMILTON MWY
ELANAGAN RD
MERCER ST
FITZGERALD RD
BROOKFIELD RD
PITT RD
TEGAL RD
VICTORIA ST

SOURCES: ESRI, HERE, GARMIN, USGS, INTERMAP, INCREMENT P, NRCAN, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), ESRI KOREA, ESRI (THAILAND), NGCC, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY

LEGEND
- LOT BOUNDARIES
- SITE BOUNDARY

100 50 0 100 200
Meters



aurecon

CLIENT
Kiwi Property

REV	DATE	REVISION DETAILS	APPROVED
A	22.10.2020	FOR ISSUE WITH PRELIMINARY SITE INVESTIGATION	W. NEL

SCALE	SIZE
1:1,715	A3

DRAWN: R. COLVIN / S. ENSOLL
DESIGNED: R. COLVIN
CHECKED: T. DEE

PRELIMINARY
NOT FOR CONSTRUCTION
DATE 22.10.20

PROJECT	DRURY PRECINCT
TITLE	PRELIMINARY SITE INVESTIGATION - HISTORICAL AERIAL PHOTOGRAPHS 2010

DRAWING No.	PROJECT No.	WBS	TYPE	DISC	NUM	REV
	510611 -	0100 -	DRG -	KF -	0009 -	A

Appendix C - Previous Geotechnical Investigation Logs

NZGD ID: Other_80323

KIWI WELLDRILLERS N.Z.

ISO 9002 CERTIFED

KEVIN BROWN LTD.

PH. 0800 822 822

MEMBER NZ. DRILLERS FED

BRANCHES:

BAY OF ISLANDS
WARKWORTH
GLENBROOK

PO BOX 400 OREWA
FAX 09 425 0228
E-Mail
kevin@kiwiwelldrillers.co.nz

BORE LOG FORM

Client BAIMIN LIU
Address 164 FITZGERALD RD DRURY
PH TOMMY 021 049 8039
Grid Reference No..1774080 5890810
Consent No. Bore I.D. 22837

Driller GARRY HAYES
Drilling Method ROT.- MUD
Date of Finishing 13.4 . 2007
Purpose of Bore STOCK & DOMESTIC

BORE LOG

Depth from Surface Top	Bottom	Description of Ground Passed Through
0.0	1.0	BROWN SOFT VOLC CLAY
1.0	4.0	BROWN RED FINE SOFT CLAY
4.0	14.0	MULTI COLOUR SILTY CLAY
14.0	16.0	BROWN GREY BASALT WITH ASH LAYERS
16.0	48.0	BLACK BROWN GREY BLUE HARD BASALT WITH ASH LAYERS
48.0	56.5	FIRM FINE SANDY ASH SAND
56.5	61.0	GREY BROWN MUDSTONE WITH 5% SHELL
61.0	62.0	PEAT
62.0	63.0	DK BROWN MUDSTONE
63.0	68.0	LT. GREY BR MUDSTONE
68.0	70.0	SANDY GREY MUDSTONE
70.0	72.0	SANDY GR. MUDST. 5% SHELL
72.0	84.0	FINE GREY SANDY MUDSTONE

WELL CONSTRUCTION

All measurements from the top of the casing

Depth of bore (M) 83.70
Depth of casing (M) 48.00
Diameter of Casing PVC 104 (mm)
Screens: 80mm PVC
From 47.70 m to 83.70 m
Slot size and type 80mm KIWI CUT
SLOTS 48-61m 64 - 83.7m
Grouting 10 Bags

Pump Tests:

Method of development AIR INDUCTION
Static water level 25.70 m
Duration of test 18 HOURS
Max 2000 ltrs p/hr
Test discharge (m^3/hr) 2.0
Drawdown level 46.00 m
PUMP DEPTH 47.00 m
PUMP VOLUME up to 1800 ltrs p/hr
Type pump to suit construction of bore for client
100mm SUBMERSIBLE PUMP SET AT 47.00 m. FOR 1800 lph
Water Quality Basic on site taste test GOOD

REMARKS

5 % CIRCULATION LOSS @ 61.00m. 100% @ 72.00m.

KIWI 110107136

NZGD ID: Other_80323

NZGD ID: Other_78827

BC 4033 SBLO NO

SHEET No. R12	GRID REF. 84 1529	G.S. WELL No.	AREA DRURY.
CATCHMENT	WATER AUTHORITY ARWB	WATER USE	PERMIT No.

Well depth (m) 101	Measured / Reported	Well diameter (mm) 150mm	Wellhead altitude (m) a.m.s.l.
Yield m³/day 1090 m³/d	Drawdown (m) 14.73		Specific l/min/metre capacity m²/day
Driller BROWN BROTHERS NZ LTD	Drilling date 150585		Well status DRILL CASE SCREEN
Owner R FLANAGAN LTD	Address FLANAGAN RD, DRURY		
Pump Type	Well Type	Type of development	
Screen Type STAINLESS	Slot sizes ?	Set at 96m – 101m	
Source of information on well location, log, etc. PUMP TEST REPORT N PRESTNEY.		Date 29/7/88	

STATIC WATER LEVELS (m below surface)

HIGHEST	LOWEST	MEAN	RANGE	FREQUENCY OF MEASUREMENT	PERIOD OF MEASUREMENT
		13.76m			

AQUIFER CHARACTERISTICS

Transmissivity (m²/day) 287 | Storage coefficient | Water Temperature(°C)

Permeability (m²/day) | Specific yield

LOCATION SKETCH

CUSTOMER NUMBER	9773
PROPERTY OWNER CODE	
PROPERTY CODE	7860
BORE CODE	4033

TEST PUMPING		RECOVERY		REMARKS
Drawdown (metres)	After time (min)	Residual Drawdown (m)	After time (min)	96m OF 100mm CASING. PUMP TEST 1.5hrs @ 2500 GPH 1.5hrs @ 5000 GPH 1.5hrs @ 7500 GPH 19.5 @ 10000GPH

AS 4414

OTHER DATA

Pump Test	✓
Chemical Analysis	✓
Geophysical Data	
Lithological Log	✓
Isotope Date	
Card Type	

NZGD ID: Other_78827

NZGD ID: Other_78827

REDUCED LEVEL IN METRES above + below – m.s.l.	GRAPHIC LOG	DEPTH IN METRES Below ground surface	LITHOLOGY < = drillwater gain > = drill water loss Reduced level of surface	COLOUR	STATIC WATER LEVEL (a) Related to ground surface	STATIC WATER LEVEL (b) Related to m.s.l.	CASING	SCREEN	Approximate yield (litres/min) m³/day	Specific capacity (litres/min/metre) m³/day
		17.0	CLAYS							
		32.1	BASALTS & LAYERS OF GREEN SILT							
		40.8	FIRM GREEN SILTY SAND.							
		43.2	PEAT.							
		47.1	GREY SILT.							
		52.2	GREEN SILT.							
		55.2	GREY SILT.							
		61.2	PEAT.							
		63.3	LT GREY SILT.							
		71.0	PEAT.							
		76.5	GREY SILT							
		79.6	PEAT & SILT.							
		83.6	LT GREEN SILT.							
		93.1	PEAT & SILT							
		104.4	SHELLBED			96.0		101.0		
			SANDSTONE.							

STRATA GRAPHIC LOG FROM PROBE HOLE ACTUAL HOLE 101.0 DEEP

NZGD ID: Other_78827

NZGD ID: Other_78815

BC 4058

ON GTGS 256

SHEET No. N47		WELL No.	AREA Drury
CATCHMENT Pahurehure	WATER AUTHORITY	WATER USE	PERMIT No.

Well depth (m) 112.8	Measured / Reported	Well diameter (mm) 76	Wellhead altitude (m) a.m.s.l. 29.0
Yield m³/day 54.5	Drawdown (m) 7.6	Specific 1/min/metre capacity m³/day 7.2	
Driller K. J. Hutchinson	Drilling date 65/1/26	Well status Drilled - Screened	
Owner A Flanagan	Address Fitzgerald Rd - Drury		
Pump Type	Well Type	Type of development	
Screen Type Brass Gauze	Slot sizes 16 Mesh	Set at See Below	
Source of information on well location, log, etc.		Date	

LOCATION SKETCH

Nr IT. 1:19...

STATIC WATER LEVELS (m below surface)

HIGHEST	LOWEST	MEAN	RANGE	FREQUENCY OF MEASUREMENT
		18.3		PERIOD OF MEASUREMENT

AQUIFER CHARACTERISTICS

Transmissivity (m²/day) | Storage coefficient | Water Temperature(°C)

Permeability (m²/day) | Specific yield

TEST PUMPING		RECOVERY		REMARKS
Drawdown (metres)	After time (min)	Residual Drawdown (m)	After time (min)	

Pump 32.3

Casing 86.9

Screen 6.1m and 22.6m of 38mm riser pipe into casing (Diam 38mm)

E.4.660296

OTHER DATA

Pump Test

Chemical Analysis

Geophysical Data

Lithological Log

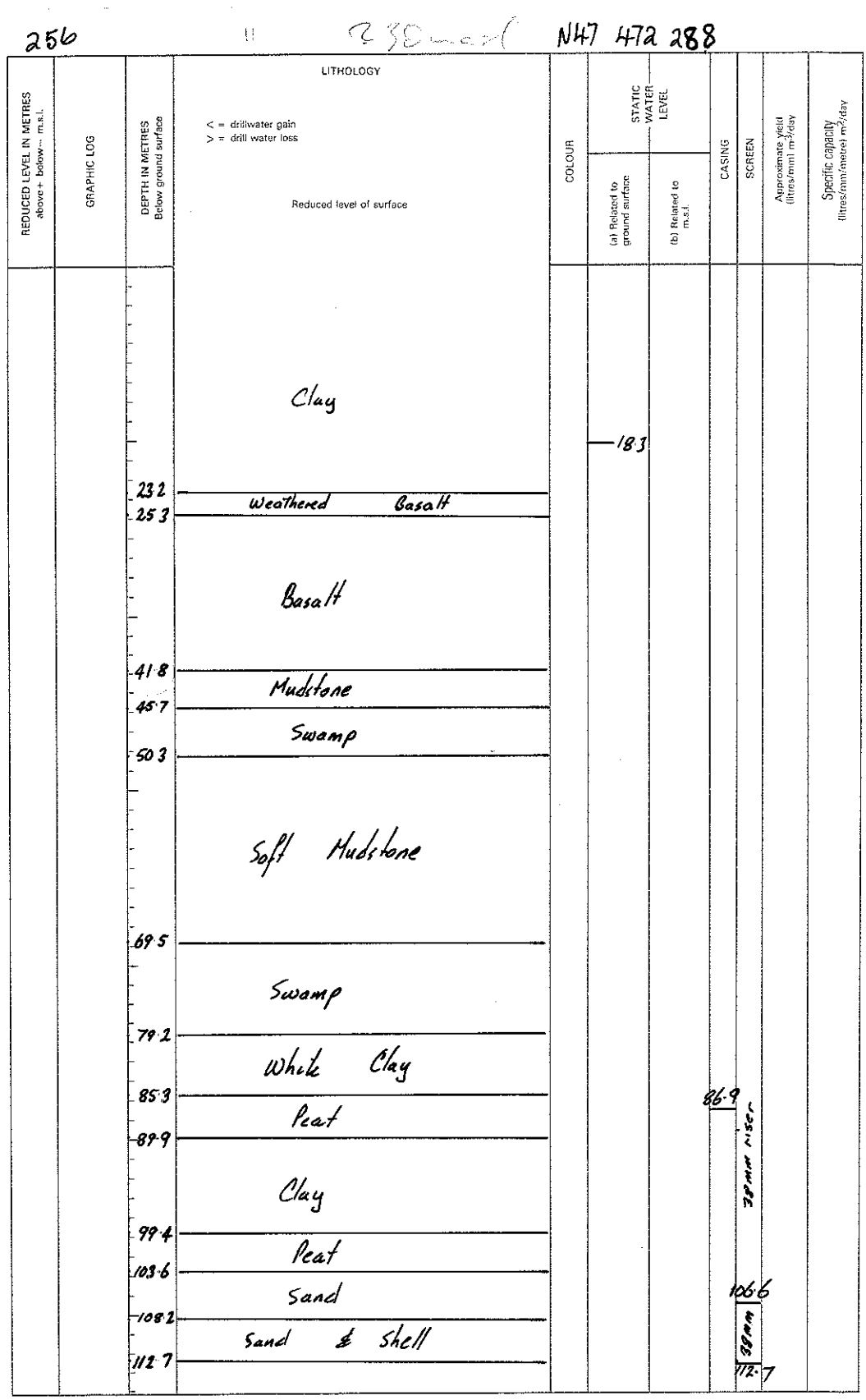
Isotope Date

Card Type

NZGD ID: Other_78815

NZGD ID: Other_78815

256 N47 472 288



NZGD ID: Other_78815

NZGD ID: BH_105118

ENGEO Expect Excellence

LOG OF BORING BH01

Geotechnical Investigation
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 21/11/16
Hole Depth : 16.95 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : DCB / HL
Latitude : 174.957322
Longitude : 37.110847

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Torvane Shear (kPa)	Total Core Recovery (%)	Notes
0	TS		ML	Clayey SILT with minor rootlets; dark brown. Low plasticity [TOPSOIL].				NA					
0.5	AUCKLAND VOLCANIC SOILS		ML	Clayey SILT; orange brown. Low plasticity.				VSt			129/67		Soil sample 1 taken from 0.4 m to 0.8 m depth.
1.0			CH	Silty CLAY; orange brown. High plasticity.				VSt					
1.5			ML	Clayey SILT with minor sand; orange brown with dark red and light grey mottles. Low plasticity, well graded.					1/1//1/2/2/3 N=8		129/37		
2.0													
2.5							M	VSt			UTP		
3.0									2/2//3/4/5/5 N=17		UTP		
3.5													
4.0								VSt					
4.5									2/2//2/2/3/4 N=11		120/90		
5.0			CH	Silty CLAY with minor sand; brown with light grey mottles. High plasticity, well graded. Sand, fine to medium, subrounded to subangular.				F					

TS = TOPSOIL
Dip test showed standing water at 15.52 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH01 TB REVIEWED.GPJ NZ DATA TEMPLATE 2.GDT 17/1/17

NZGD ID: BH_105118

NZGD ID: BH_105118

ENGEO Expect Excellence

LOG OF BORING BH01

Geotechnical Investigation
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 21/11/16
Hole Depth : 16.95 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : DCB / HL
Latitude : 174.957322
Longitude : 37.110847

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Torvane Shear (kPa)	Total Core Recovery (%)	Notes
5.5	AUCKLAND VOLCANIC SOILS		CH	Silty CLAY with minor sand; brown with light grey mottles. High plasticity, well graded. Sand, fine to medium, subrounded to subangular.			M	F	1/1//1/2/2/2 N=7		48/30		
6.0													
6.5													
7.0								VSt	1/2//2/2/3/5 N=12		183/75		
7.5													
8.0			ML	Clayey SILT with some gravel; brown with dark reddish brown with occasional red and white bands with dark brown mottles. Low plasticity, poorly graded. Gravel, fine and coarse basalt, angular [COMPLETELY WEATHERED BASALT].							UTP		
8.5													
9.0									3/3//4/4/4/4 N=16		UTP		
9.5								H					
10.0													

TS = TOPSOIL
Dip test showed standing water at 15.52 m depth.

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NA = Not Assessed

GEOSCIENCE MACHINE BORING BH01 TB REVIEWED.GPJ NZ DATA TEMPLATE 2.GDT 17/1/17

NZGD ID: BH_105118

NZGD ID: BH_105118

ENGEO Expect Excellence

LOG OF BORING BH01

Geotechnical Investigation
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 21/11/16
Hole Depth : 16.95 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : DCB / HL
Latitude : 174.957322
Longitude : 37.110847

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Torvane Shear (kPa)	Total Core Recovery (%) 25 50 75	Notes
10.5	AUCKLAND VOLCANIC SOILS		ML	Clayey SILT with some gravel; brown with dark reddish brown with occasional red and white bands with dark brown mottles. Low plasticity, poorly graded. Gravel, fine and coarse basalt, angular [COMPLETELY WEATHERED BASALT].					2/1//2/1/1/1 N=5		200+		
11.0													
11.5				Becomes some basalt gravel at 11.5 m depth.									
12.0											UTP		
12.5									3/3//2/3/4/5 N=14				
13.0							M	H					
13.5											UTP		
14.0									4/4//5/6/6/8 N=25				
14.5				Becomes brown with reddish brown mottles and black carbonaceous staining at 14.5 m depth.									
15.0			GW	Fine to coarse basalt GRAVEL; dark greyish black. Well graded, subangular to angular [HIGHLY WEATHERED BASALT].				L	1/1//1/2/2/1 N=6		UTP		
15.5													

TS = TOPSOIL
Dip test showed standing water at 15.52 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH01 TB REVIEWED.GPJ NZ DATA TEMPLATE 2.GDT 17/1/17

NZGD ID: BH_105118

NZGD ID: BH_105118

ENGEO Expect Excellence

LOG OF BORING BH01

Geotechnical Investigation
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 21/11/16
Hole Depth : 16.95 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : DCB / HL
Latitude : 174.957322
Longitude : 37.110847

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Torvane Shear (kPa)	Total Core Recovery (%) 25 50 75	Notes
16.0	AUCKLAND VOLCANIC SOILS		GW	Fine to coarse basalt GRAVEL; dark greyish black. Well graded, subangular to angular [HIGHLY WEATHERED BASALT].			M	L					
16.5								VD	6/7//8/17/14/11 for 70 mm N=50				

End of Hole Depth: 16.95 m
Termination: Target depth

TS = TOPSOIL
Dip test showed standing water at 15.52 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH01 TB REVIEWED.GPJ NZ DATA TEMPLATE 2.GDT 17/1/17

NZGD ID: BH_105118

NZGD ID: BH_105119

LOG OF BORING BH02

Geotechnical Investigation
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 21/11/16
Hole Depth : 21.45 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : DCB / HL
Latitude : 174.955397
Longitude : 37.111397

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Torvane Shear (kPa)	Total Core Recovery (%)	Notes
0.0	TS		ML	SILT with minor rootlets; dark brown. Low plasticity [TOPSOIL].				NA					
0.5	AUCKLAND VOLCANIC SOILS		CH	Silty CLAY; brown with light brown and red brown mottles. High plasticity.				VSt			127/63		Soil sample 2 taken from 0.4 m to 0.8 m depth.
1.0			ML	Clayey SILT with trace sand; brown with light brown and red brown mottles. Low plasticity.				H					
1.5			ML	Clayey SILT; intermixed light brown, pink and reddish brown. High plasticity.				VSt-H	2/2//3/4/5/6 N=18		200+		
2.0													
2.5			CH	Silty CLAY with trace sand; intermixed light brown and reddish brown. High plasticity.			M	F-St					
3.0											52/22		
3.5			ML	Clayey SILT with trace sand; brownish orange with light brown and reddish brown mottles. Low plasticity.				St-VSt	1/0//1/0/1/2 N=4				
4.0													
4.5											114/48		
5.0			CH	Silty CLAY with trace sand; brownish orange with occasional bands of CLAY; light grey. High plasticity.				St	1/2//2/2/2/4 N=10				

TS = TOPSOIL
Dip test showed standing water at 15.55 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH01 TB REVIEWED.GPJ NZ DATA TEMPLATE 2.GDT 17/1/17

NZGD ID: BH_105119

NZGD ID: BH_105119

LOG OF BORING BH02

Geotechnical Investigation
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 21/11/16
Hole Depth : 21.45 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd

Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : DCB / HL
Latitude : 174.955397
Longitude : 37.111397

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Torvane Shear (kPa)	Total Core Recovery (%)	Notes
5.5	AUCKLAND VOLCANIC SOILS		CH	Silty CLAY with trace sand; brownish orange with occasional bands of CLAY; light grey. High plasticity.				St					
			ML	Clayey SILT with trace sand; brownish orange with light brown and reddish brown mottles. Low plasticity.				St			90/45		
6.0									2/1//1/1/2/1 N=5				
6.5			CH	Silty CLAY with trace sand; intermixed brown and light grey. High plasticity.									
7.0				Becomes light bluish grey with reddish brown bands at 7.0 m depth.				VSt			150/120		
7.5							M		2/2//3/4/4/5 N=16				
8.0													
8.5			ML	Clayey SILT; dark brown and light bluish grey streaks. Low plasticity.				H			UTP		
9.0			ML	SILT with trace gravel; brown with light blusih grey mottles. Low plasticity, poorly graded.					4/5//5/7/7/8 N=27				
9.5								H					
10.0													
			ML					VSt-H					

TS = TOPSOIL
Dip test showed standing water at 15.55 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH01 TB REVIEWED.GPJ NZ DATA TEMPLATE 2.GDT 17/1/17

NZGD ID: BH_105119

NZGD ID: BH_105119

ENGEO Expect Excellence

LOG OF BORING BH02

Geotechnical Investigation
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 21/11/16
Hole Depth : 21.45 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : DCB / HL
Latitude : 174.955397
Longitude : 37.111397

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Torvane Shear (kPa)	Total Core Recovery (%)	Notes
10.5	AUCKLAND VOLCANIC SOILS		ML	SILT with minor gravel; brown. Low plasticity, poorly graded. Gravel, fine to medium basalt, subangular to angular.				VSt-H	5/4//4/4/6/7 N=21		200+		
12.0			GW	Silty fine to coarse basalt GRAVEL with some sand; dark reddish brown with occasional CLAY; light yellowish brown bands. Well graded, subangular to angular. Sand, fine to coarse, subrounded to subangular [COMPLETELY WEATHERED BASALT].					2/1//2/2/2/2 N=8		180/37		
13.0				Becomes dark brown at 13.0 m depth.			M	L					
13.5									2/2//1/2/2/2 N=7		UTP		
14.5								MD					
15.0									2/3//3/5/5/6 N=19		UTP		
15.5						▼							

TS = TOPSOIL
Dip test showed standing water at 15.55 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH01 TB REVIEWED.GPJ NZ DATA TEMPLATE 2.GDT 17/1/17

NZGD ID: BH_105119

NZGD ID: BH_105119

ENGEO Expect Excellence

LOG OF BORING BH02

Geotechnical Investigation
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 21/11/16
Hole Depth : 21.45 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : DCB / HL
Latitude : 174.955397
Longitude : 37.111397

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Torvane Shear (kPa)	Total Core Recovery (%)	Notes
16.0	AUCKLAND VOLCANIC SOILS		GW	Silty fine to coarse basalt GRAVEL with some sand; dark reddish brown with occasional CLAY; light yellowish brown bands. Well graded, subangular to angular. Sand, fine to coarse, subrounded to subangular [COMPLETELY WEATHERED BASALT].									
16.5				70 mm thick band of coarse SAND; brown. Poorly graded, subrounded to subangular encountered at 16.4 m depth.					3/3//3/2/3/4 N=12		UTP		
17.0													
17.5													
18.0							M	MD	2/2//2/4/6/7 N=19		UTP		
18.5			GW	Fine to coarse basalt GRAVEL with minor silt and sand; dark greyish black. Well graded, subangular to angular. Sand, fine to coarse, subrounded to subangular [HIGHLY WEATHERED BASALT].									
19.0													
19.5									3/4//3/3/3/4 N=13		UTP		
20.0				Occasional 50 mm thick bands of CLAY; light yellowish brown encountered from 20.0 m depth.									
20.5													

Total Core Recovery (%): 25 50 75

TS = TOPSOIL
Dip test showed standing water at 15.55 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH01 TB REVIEWED.GPJ NZ DATA TEMPLATE 2.GDT 17/1/17

NZGD ID: BH_105119

NZGD ID: BH_105119

ENGEO
Expect Excellence

LOG OF BORING BH02

Geotechnical Investigation
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 21/11/16
Hole Depth : 21.45 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : DCB / HL
Latitude : 174.955397
Longitude : 37.111397

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Torvane Shear (kPa)	Total Core Recovery (%) 25 50 75	Notes
21.0			GW	Fine to coarse basalt GRAVEL with minor silt and sand; dark greyish black. Well graded, subangular to angular. Sand, fine to coarse, subrounded to subangular [HIGHLY WEATHERED BASALT].			M	MD	2/2//3/2/3/3 N=11				

End of Hole Depth: 21.45 m
Termination: Target depth

TS = TOPSOIL
Dip test showed standing water at 15.55 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH01 TB REVIEWED.GPJ NZ DATA TEMPLATE 2.GDT 17/1/17

NZGD ID: BH_105119

NZGD ID: BH_105120

ENGEO Expect Excellence

LOG OF BORING BH03

Geotechnical Investigation
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 22/11/2016
Hole Depth : 15.45 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : DCB / HL
Latitude : 174.952191
Longitude : 37.113055

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Torvane Shear (kPa)	Total Core Recovery (%)	Notes
0.0	TS		ML	SILT with trace rootlets, dark brown. Low plasticity [TOPSOIL].				NA					
0.5	AUCKLAND VOLCANIC SOILS		ML	SILT; dark brown with reddish orange bands and reddish brown speckles. Low plasticity. 170 mm thick band of silty CLAY; brown with reddish brown streaks encountered at 0.65 m depth.			M	VSt-H	1/2//2/2/4/3 N=11		200+		Soil sample 3 taken from 0.5 m to 0.8 m depth.
1.0											200+		
1.5													
2.0													
2.5													
3.0									2/3//3/4/5/7 N=19		105/30		
3.5			BD	Basalt boulder; grey. Vesicular.				MS					
4.0			GW	Highly weathered SANDSTONE recovered as: Coarse sandstone GRAVEL with some sand; light brown with black staining. Well graded, subangular to angular.				MD					
4.5			GW	Silty fine to coarse basalt GRAVEL; dark grey with reddish brown mottles. Well graded, subangular to angular.				MD			UTP		
5.0									2/3//3/3/3/3 N=12				

TS = TOPSOIL
Dip test showed standing water at at 13.11 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH01 TB REVIEWED.GPJ NZ DATA TEMPLATE 2.GDT 17/1/17

NZGD ID: BH_105120

NZGD ID: BH_105120

ENGEO Expect Excellence

LOG OF BORING BH03

Geotechnical Investigation
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 22/11/2016
Hole Depth : 15.45 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : DCB / HL
Latitude : 174.952191
Longitude : 37.113055

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Torvane Shear (kPa)	Total Core Recovery (%) 25 50 75	Notes
5.5	AUCKLAND VOLCANIC SOILS		GW	Silty fine to coarse basalt GRAVEL; dark grey with reddish brown mottles. Well graded, subangular to angular.				MD	2/3//3/3/3/3 N=12				
6.0				Occasional thin bands of CLAY; light brown encountered from 6.0 m depth.					2/3//3/5/4/8 N=20		UTP		
6.5			SW	Fine to coarse SAND; greyish brown with white speckles. Well graded, subrounded to subangular.				MD					
7.0			BD	Becomes brown at 6.8 m depth. Basalt boulder; grey. Vesicular.				MS					
7.5				Core loss.	NR		M	NA					
8.0			GW	Silty fine to coarse basalt GRAVEL with some sand; dark reddish brown with occasional bands of CLAY; light yellowish brown bands. Well graded, subangular to angular. Sand, fine to coarse, subrounded to subangular [COMPLETELY WEATHERED BASALT].					2/4//3/3/3/3 N=12				
8.5													
9.0								MD	2/3/4/2/4/6 N=16		UTP		
9.5													
10.0								VD					

TS = TOPSOIL
Dip test showed standing water at at 13.11 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH01 TB REVIEWED.GPJ NZ DATA TEMPLATE 2.GDT 17/1/17

NZGD ID: BH_105120

NZGD ID: BH_105120

ENGEO Expect Excellence

LOG OF BORING BH03

Geotechnical Investigation
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 22/11/2016
Hole Depth : 15.45 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : DCB / HL
Latitude : 174.952191
Longitude : 37.113055

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Torvane Shear (kPa)	Total Core Recovery (%) 25 50 75	Notes
10.5	AUCKLAND VOLCANIC SOILS		GW	Silty fine to coarse basalt GRAVEL with some sand; dark reddish brown with occasional bands of CLAY; light yellowish brown bands. Well graded, subangular to angular. Sand, fine to coarse, subrounded to subangular [COMPLETELY WEATHERED BASALT].			M	VD	6/12//17/19/14 for 55 mm N=50		UTP		
11.0													
11.5													
12.0									7/11//6/6/17/18 N=47		UTP		
12.5													
13.0						▼							
13.5								MD	2/2//2/3/3/3 N=11		UTP		
14.0				Core loss.	NR								
14.5								NA					
15.0			GW	Silty fine to coarse basalt GRAVEL with some sand; dark reddish brown with occasional bands of CLAY; light yellowish brown bands. Well graded, subangular to angular. Sand, fine to coarse, subrounded to subangular [COMPLETELY WEATHERED BASALT].					1/2//4/5/5/7 N=21		UTP		

End of Hole Depth: 15.45 m
Termination: Target depth

TS = TOPSOIL
Dip test showed standing water at at 13.11 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH01 TB REVIEWED.GPJ NZ DATA TEMPLATE 2.GDT 17/1/17

NZGD ID: BH_105120

NZGD ID: BH_105121

ENGEO Expect Excellence

LOG OF BORING BH04

Drury Development Project
120 Flanagan Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 21/12/2016
Hole Depth : 24.95 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : NB / HL
Latitude : 37.063612
Longitude : 174.570219

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Shear Vane (kPa)	Total Core Recovery (%)	Notes
0.0	TS		ML	SILT with some clay; dark brown. Low plasticity [TOPSOIL].									
0.5	AUCKLAND VOLCANIC SOILS		CH	CLAY with trace sand and silt; yellowy brown with grey streaks. High plasticity.			M				UTP		
1.0				Becomes wet from 0.7 m depth.							UTP		
1.5				Becomes light grey with red and orange streaks from 1.1 m depth.					1/1//1/1/2/1/2 N=6				
2.0								VSt-H					
2.5													
3.0							W		1/2//1/2/2/3 N=8				
3.5													
4.0													
4.5			MH	SILT with some clay; greyish brown. High plasticity.				VSt	1/2//2/2/2/3 N=9				
5.0				Sandy SILT; pinkish red with dark red streaks. Low plasticity. Sand, fine to coarse, well graded, subrounded to subangular.				VSt-H					

TS = TOPSOIL
UTP = UNABLE TO PENETRATE

Dip test showed standing water at 11.8 m depth.

GEOSCIENCE MACHINE BORING BH04.GPJ NZ DATA TEMPLATE 2.GDT 1/2/17

NZGD ID: BH_105121

NZGD ID: BH_105121

ENGEO Expect Excellence

LOG OF BORING BH04

Drury Development Project
120 Flanagan Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 21/12/2016
Hole Depth : 24.95 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : NB / HL
Latitude : 37.063612
Longitude : 174.570219

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Shear Vane (kPa)	Total Core Recovery (%) 25 50 75	Notes
5.5	AUCKLAND VOLCANIC SOILS			Sandy SILT; pinkish red with dark red streaks. Low plasticity. Sand, fine to coarse, well graded, subrounded to subangular. Relic rock structure encountered from 5.6 m depth. Changed to HQTT at 6.0 m depth.				VSt-H	7/7//7/10/10/10 N=37				
6.0													
6.5			ML	Silty fine to coarse basalt GRAVEL with some clay; reddish brown with black staining. Low plasticity. Gravel, fine to coarse basalt, well graded, subrounded to subangular [COMPLETELY WEATHERED BASALT]. Occasional extremely weak, highly weathered basalt gravel encountered from 7.0 m depth.			W	MD	2/2//2/2/2/4 N=10				
7.0													
7.5													
8.0													
8.5													
9.0													
9.5									4/4//4/5/5/6 N=20				
10.0													

TS = TOPSOIL
UTP = UNABLE TO PENETRATE

Dip test showed standing water at 11.8 m depth.

GEOSCIENCE MACHINE BORING BH04.GPJ NZ DATA TEMPLATE 2.GDT 1/2/17

NZGD ID: BH_105121

NZGD ID: BH_105121

ENGEO Expect Excellence

LOG OF BORING BH04

Drury Development Project
120 Flanagan Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 21/12/2016
Hole Depth : 24.95 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : NB / HL
Latitude : 37.063612
Longitude : 174.570219

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Shear Vane (kPa)	Total Core Recovery (%)	Notes
10.5	AUCKLAND VOLCANIC SOILS		ML	Silty fine to coarse basalt GRAVEL with some clay; reddish brown with black staining. Low plasticity. Gravel, fine to coarse basalt, well graded, subrounded to subangular [COMPLETELY WEATHERED BASALT]. Core loss due to becoming core bound on basalt from 10.5 m to 11.0 m depth.								25 50 75	
11.0									2/2//4/5/7/7 N=23				
11.5						▼		MD					
12.0													
12.5									11/12//13/20/17 for 60 mm N=50				
13.0							W						
13.5													
14.0								VD	8/10//12/17/12/9 for 55 mm N=50				
14.5													
15.0													
15.5													

TS = TOPSOIL
UTP = UNABLE TO PENETRATE

Dip test showed standing water at 11.8 m depth.

GEOSCIENCE MACHINE BORING BH04.GPJ NZ DATA TEMPLATE 2.GDT 1/2/17

NZGD ID: BH_105121

NZGD ID: BH_105121

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LOG OF BORING BH04

Drury Development Project
120 Flanagan Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 21/12/2016
Hole Depth : 24.95 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : NB / HL
Latitude : 37.063612
Longitude : 174.570219

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Shear Vane (kPa)	Total Core Recovery (%) 25 50 75	Notes
16.0	AUCKLAND VOLCANIC SOILS		ML	Silty fine to coarse basalt GRAVEL with some clay; reddish brown with black staining. Low plasticity. Gravel, fine to coarse basalt, well graded, subrounded to subangular [COMPLETELY WEATHERED BASALT].				VD	13/13//14/22/14 for 50 mm N=50				
16.5													
17.0	ALLUVIUM		CL	CLAY with minor silt and gravel; yellowish brown with dark brown streaks and black staining. Low plasticity. Gravel, fine, poorly graded, subrounded to subangular.			W		3/2//5/9/5/7 N=26				
17.5													
18.0													
18.5								VSt-H	2/2//2/3/3/5 N=13				
19.0													
19.5													
20.0									2/3//4/5/6/6 N=21				
20.5			SP	Silty fine SAND with trace clay; light brown. Sand, fine, poorly graded, subrounded to subangular.				MD-D					

TS = TOPSOIL
UTP = UNABLE TO PENETRATE

Dip test showed standing water at 11.8 m depth.

GEOSCIENCE MACHINE BORING BH04.GPJ NZ DATA TEMPLATE 2.GDT 1/2/17

NZGD ID: BH_105121

NZGD ID: BH_105121

ENGEO Expect Excellence

LOG OF BORING BH04

Drury Development Project
120 Flanagan Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 21/12/2016
Hole Depth : 24.95 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : NB / HL
Latitude : 37.063612
Longitude : 174.570219

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Shear Vane (kPa)	Total Core Recovery (%) 25 50 75	Notes
21.0	ALLUVIUM		SP	Silty fine SAND with trace clay; light brown. Sand, fine, poorly graded, subrounded to subangular.			W	MD-D	5/5//7/10/9/10 N=36				
21.5													
22.0													
22.5													
23.0									2/3//3/4/4/5 N=16				
23.5													
24.0													
24.5			SP	Fine to medium SAND with trace clay; dark bluish grey. Poorly graded, subrounded to subangular.				L	2/2//2/1/2/2 N=7				

End of Hole Depth: 24.95 m
Termination: Target depth

Dip test showed standing water at 11.8 m depth.

TS = TOPSOIL
UTP = UNABLE TO PENETRATE

GEOSCIENCE MACHINE BORING BH04.GPJ NZ DATA TEMPLATE 2.GDT 1/2/17

NZGD ID: BH_105121

NZGD ID: BH_105122

ENGEO Expect Excellence

LOG OF BORING BH05

Geotechnical Investigation
Road 1 Slope Stability Assessment
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 23/11/17
Hole Depth : 18.95 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : AK / HL
Latitude : 174.565586
Longitude : 37.63748

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Shear Vane (kPa)	Total Core Recovery (%)	Notes
0.0	TS		ML	TOPSOIL.				N/A					
0.5	AUCKLAND VOLCANIC SOILS		ML	SILT with some fine to coarse sand; brown. Low plasticity.				F			52/18		
1.0											62/18		
1.5			ML	Fine to medium sandy SILT minor clay; light brown. Low plasticity.					1/0//0/0/1/0 N=1		20/11		
2.0								F					
2.5						▼	W						
3.0			ML	Clayey SILT with minor fine to medium sand; orange brown. Low plasticity. Becomes orange brown with grey streaks at 3.1 m depth.				F	0/0//0/0/1/2 N=3		31/14		
3.5													
4.0	ALLUVIUM		ML	Clayey, fine to coarse sandy SILT; light greenish grey. Low plasticity.				F - St					
4.5			ML	Fine to coarse sandy SILT with minor woody organics; dark greenish grey with dark grey mottles. Low plasticity.				St					
			PT	Fibrous PEAT; black.				St			23/3		
			ML	Fine to coarse sandy SILT with minor fine to medium gravel; dark grey with dark green mottles. Low plasticity. Gravel, subrounded to subangular.				St	1/0//1/1/1/1 N=4				
5.0			ML	Clayey SILT with minor fine sand; light greenish grey. Low plasticity.			M	VSt - H					

TS = TOPSOIL
Dip test showed standing water at at 2.59 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH05-06 18122017.GPJ NZ DATA TEMPLATE 2.GDT 19/12/17

NZGD ID: BH_105122

NZGD ID: BH_105122

ENGEO Expect Excellence

LOG OF BORING BH05

Geotechnical Investigation
Road 1 Slope Stability Assessment
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 23/11/17
Hole Depth : 18.95 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : AK / HL
Latitude : 174.565586
Longitude : 37.63748

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Shear Vane (kPa)	Total Core Recovery (%)	Notes
5.5	ALLUVIUM		ML	Clayey SILT with minor fine sand; light greenish grey. Low plasticity.			M	VSt - H					
6.0			ML	Gravelly, fine to coarse sandy SILT; dark grey with dark green streaks. Low plasticity. Gravel, fine to coarse, rounded to subangular.			S	VSt - H	2/2//4/5/5/5 N=19		UTP		
6.5			ML	Fine to coarse sandy SILT with minor fine to medium gravel; dark grey with dark green streaks. Low plasticity. Gravel, subrounded to subangular. Becomes dark greenish grey with dark grey streaks at 6.75 m depth. Becomes SILT with some fine to coarse sand at 7.01 m depth.			M	H					
7.0				Becomes SILT with trace sand at 7.12 m depth.			W				UTP		
7.5		NR		CORE LOSS [Wash out].	NR			N/A					
8.0			CH	Silty CLAY; Bluish grey. High plasticity.			M	H	2/2//2/2/3/3 N=10				
9.5									2/2//3/2/3/2 N=10				
10.0													

TS = TOPSOIL
Dip test showed standing water at at 2.59 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH05-06 18122017.GPJ NZ DATA TEMPLATE 2.GDT 19/12/17

NZGD ID: BH_105122

NZGD ID: BH_105122

ENGEO Expect Excellence

LOG OF BORING BH05

Geotechnical Investigation
Road 1 Slope Stability Assessment
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 23/11/17
Hole Depth : 18.95 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : AK / HL
Latitude : 174.565586
Longitude : 37.63748

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Shear Vane (kPa)	Total Core Recovery (%) 25 50 75	Notes
10.5	ALLUVIUM		CH	Silty CLAY; Bluish grey. High plasticity.			M	H					
11.0			ML	Clayey SILT; dark grey. Low plasticity.					2/2//2/2/3/3 N=10				
11.5								H					
12.0													
12.5			SW	Fine to medium SAND with trace silt; grey. Well graded.					2/3//3/4/6/10 N=23				
13.0							W						
13.5													
14.0								MD - D	5/5//8/9/10/13 N=40				
14.5													
15.0				CORE LOSS	NR			N/A					
15.5			SP					VD					

TS = TOPSOIL
Dip test showed standing water at at 2.59 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH05-06 18122017.GPJ NZ DATA TEMPLATE 2.GDT 19/12/17

NZGD ID: BH_105122

NZGD ID: BH_105122

ENGEO Expect Excellence

LOG OF BORING BH05

Geotechnical Investigation
Road 1 Slope Stability Assessment
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 23/11/17
Hole Depth : 18.95 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd

Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : AK / HL
Latitude : 174.565586
Longitude : 37.63748

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Shear Vane (kPa)	Total Core Recovery (%) 25 50 75	Notes
16.0	ALLUVIUM		SP	Fine to medium SAND with trace silt; grey. Poorly graded.				VD	9/10//16/13/16/5 for 25 mm N=50				
16.5													
17.0							W		8/10//15/14/16/5 for 15 mm N=50				
17.5													
18.0				CORE LOSS [Wash out].	NR			N/A					
18.5			SP	Fine to medium SAND; dark grey. Poorly graded.				VD	13/17//9/25/6 for 15 mm N=50				

End of Hole Depth: 18.95 m
Termination: Target depth

TS = TOPSOIL
Dip test showed standing water at at 2.59 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH05-06 18122017.GPJ NZ DATA TEMPLATE 2.GDT 19/12/17

NZGD ID: BH_105122

NZGD ID: BH_105124

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LOG OF BORING BH06

Geotechnical Investigation
Road 1 Slope Stability Assessment
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 23/11/17
Hole Depth : 30.5 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : BF / HL
Latitude : 174.57298
Longitude : -37.65068

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Shear Vane (kPa)	Total Core Recovery (%)	Notes
0	TS		ML	TOPSOIL.				N/A					
	AUCKLAND VOLCANIC SOILS		ML	Fine to medium sandy SILT with trace rootlets; brown. Low plasticity.				St					
0.5			ML	Clayey SILT with minor fine to medium SAND; orange brown with grey mottles. Low plasticity.							87/44		
1.0											147/64		
1.5			ML	100 mm layer of silty CLAY, orange brown, low plasticity at 1.4 m depth.				St	1/0//1/1/1/1 N=4				
2.0						▼							
2.5							W						
	ALLUVIUM		ML	Fine to medium sandy SILT; grey. Low plasticity.				St					
3.0			CH	Fine to medium sandy CLAY with trace woody inclusions; grey. High plasticity.				F - St	0/0//1/0/0/0 N=1		42/8		
3.5			SP	Silty fine to coarse SAND; dark grey. Poorly graded.				L					
4.0			CH	Fine to medium sandy CLAY with trace woody inclusions; grey. High plasticity.				F					
4.5			ML	Clayey SILT with minor sand; grey. Low plasticity.				H			UTP		
5.0			ML	Fine sandy SILT; grey. Low plasticity.				H	1/2//3/4/5/6 N=18				0.5 m of disturbed soil fabric at 6.5 m depth.

TS = TOPSOIL
Dip test showed standing water at at 2.0 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH05-06 18122017.GPJ NZ DATA TEMPLATE 2.GDT 19/12/17

NZGD ID: BH_105124

NZGD ID: BH_105124

ENGEO Expect Excellence

LOG OF BORING BH06

Geotechnical Investigation
Road 1 Slope Stability Assessment
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 23/11/17
Hole Depth : 30.5 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : BF / HL
Latitude : 174.57298
Longitude : -37.65068

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Shear Vane (kPa)	Total Core Recovery (%) 25 50 75	Notes
5.5	ALLUVIUM		ML	Fine sandy SILT; grey. Low plasticity.				H					
6.0			ML	Clayey SILT; bluish grey. Low plasticity.					1/2/1/1/2/4 N=10		UTP		
6.5													
7.0													
7.5								H	2/1//2/2/3/3 N=10		UTP		
8.0							W						
8.5													
9.0			SP	Silty fine to coarse SAND; dark grey. Poorly graded.				MD	1/2//2/4/4/5 N=15				
9.5			ML	Clayey SILT with minor fine sand; grey with orange mottles. Low plasticity.									
10.0								H					

TS = TOPSOIL
Dip test showed standing water at at 2.0 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH05-06 18122017.GPJ NZ DATA TEMPLATE 2.GDT 19/12/17

NZGD ID: BH_105124

NZGD ID: BH_105124

ENGEO Expect Excellence

LOG OF BORING BH06

Geotechnical Investigation
Road 1 Slope Stability Assessment
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 23/11/17
Hole Depth : 30.5 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : BF / HL
Latitude : 174.57298
Longitude : -37.65068

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Shear Vane (kPa)	Total Core Recovery (%)	Notes
10.5			ML	Clayey SILT with minor fine sand; grey with orange mottles. Low plasticity.				H	6/6//5/4/5/4 N=18				
11.0				CORE LOSS									
11.5		NR			NR			N/A					
12.0	ALLUVIUM		CH	Silty CLAY with minor fine to medium sand; light grey with occasional orange mottles. High plasticity.			W		1/1//2/2/2/2 N=8				
13.0													
13.5								H					
14.0									1/1//1/2/2/2 N=7				
14.5													
15.0				Becomes with some fine sand.									
15.5									2/1//2/3/3/2				

TS = TOPSOIL
Dip test showed standing water at at 2.0 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH05-06 18122017.GPJ NZ DATA TEMPLATE 2.GDT 19/12/17

NZGD ID: BH_105124

NZGD ID: BH_105124

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LOG OF BORING BH06

Geotechnical Investigation
Road 1 Slope Stability Assessment
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 23/11/17
Hole Depth : 30.5 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : BF / HL
Latitude : 174.57298
Longitude : -37.65068

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Shear Vane (kPa)	Total Core Recovery (%)	Notes
16.0	ALLUVIUM		CH	Silty CLAY with minor fine to medium sand; light grey with occasional orange mottles. High plasticity. Becomes with minor organic inclusions and light grey with dark brown streaks at 16 m depth.				H	N=10 2/1//2/3/3/2 N=10				
16.5			SP	Fine to medium SAND with trace carbonaceous inclusions; dark brown with black streaks. Poorly graded.				MD					
17.0									3/4//4/4/4/5 N=17				
17.5			ML	CLayey SILT with some fine sand and trace organic inclusions; grey. Low plasticity.				H					
18.0			CH	Silty CLAY with trace organic inclusions; light brown. High plasticity.			W	H					
18.5				10 cm layer of medium to coarse SAND at 18.8 m depth.					3/4//5/6/6/7 N=24				
19.0			SP	Fine to medium SAND with trace organic inclusions; dark brown with black streaks. Poorly graded.				MD					
19.5				50 mm layer of black, fibrous decomposed wood at 19.6 m depth.									
20.0			CH	Silty CLAY with trace sand; light grey. High plasticity.				VSt - H	3/2//3/3/3/4 N=13				
20.5													

TS = TOPSOIL
Dip test showed standing water at at 2.0 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH05-06 18122017.GPJ NZ DATA TEMPLATE 2.GDT 19/12/17

NZGD ID: BH_105124

NZGD ID: BH_105124

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LOG OF BORING BH06

Geotechnical Investigation
Road 1 Slope Stability Assessment
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 23/11/17
Hole Depth : 30.5 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : BF / HL
Latitude : 174.57298
Longitude : -37.65068

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Shear Vane (kPa)	Total Core Recovery (%) 25 50 75	Notes
21.0	ALLUVIUM		CH	Silty CLAY with trace sand; light grey. High plasticity.									
21.5				Becomes with minor sand at 21.8 m depth.					2/2//3/3/4/4 N=14				
22.0								VSt - H					
22.5													
23.0				Becomes with trace fibrous organic inclusions.					1/2//2/3/4/4 N=13				
23.5							W						
24.0			ML	Fine to medium sandy SILT with some clay; light grey. Low plasticity.									
24.5									3/4//5/6/5/6 N=22				
25.0								H					
25.5													
26.0			CH	Silty CLAY with trace fine sand and organic inclusions; light grey. High plasticity.				H					

TS = TOPSOIL
Dip test showed standing water at at 2.0 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH05-06 18122017.GPJ NZ DATA TEMPLATE 2.GDT 19/12/17

NZGD ID: BH_105124

NZGD ID: BH_105124

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LOG OF BORING BH06

Geotechnical Investigation
Road 1 Slope Stability Assessment
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Date : 23/11/17
Hole Depth : 30.5 m
Drilling Method : Mud Rotary
Drilling Contractor : Prodrill Ltd
Core Diameter : 83 mm
Hammer Efficiency : 56 %
Logged By/Reviewed By : BF / HL
Latitude : 174.57298
Longitude : -37.65068

Depth (m)	Material	Sample Type	USCS Symbol	DESCRIPTION	Log Symbol	Water Level	Moisture	Consistency/ Density Index	SPT N-Value	Pocket Pen. UCS (kPa)	Shear Vane (kPa)	Total Core Recovery (%)	Notes
26.5	ALLUVIUM		CH	Silty CLAY with trace fine sand and organic inclusions; light grey. High plasticity.				H	4/5//7/7/8/9 N=31				
27.0			SP	Medium to coarse SAND with minor fibrous organics; dark brown with black streaks. Poorly graded.				MD					
27.5			ML	Fine to medium sandy SILT with trace fibrous organics; dark brown. Low plasticity.				H					
28.0			SP	Medium to coarse SAND with trace fibrous organics; dark brown. Poorly graded.			W	MD	5/5//11/16/15/8 N=50+				
28.5			ML	Clayey SILT with trace fine sand and fibrous organics; grey. Low plasticity.				H					
29.0													
29.5													
30.0													
30.5				End of Hole Depth: 30.5 m Termination: Target depth									

TS = TOPSOIL
Dip test showed standing water at at 2.0 m depth.

UTP = UNABLE TO PENETRATE
NA = Not Assessed

GEOSCIENCE MACHINE BORING BH05-06 18122017.GPJ NZ DATA TEMPLATE 2.GDT 19/12/17

NZGD ID: BH_105124



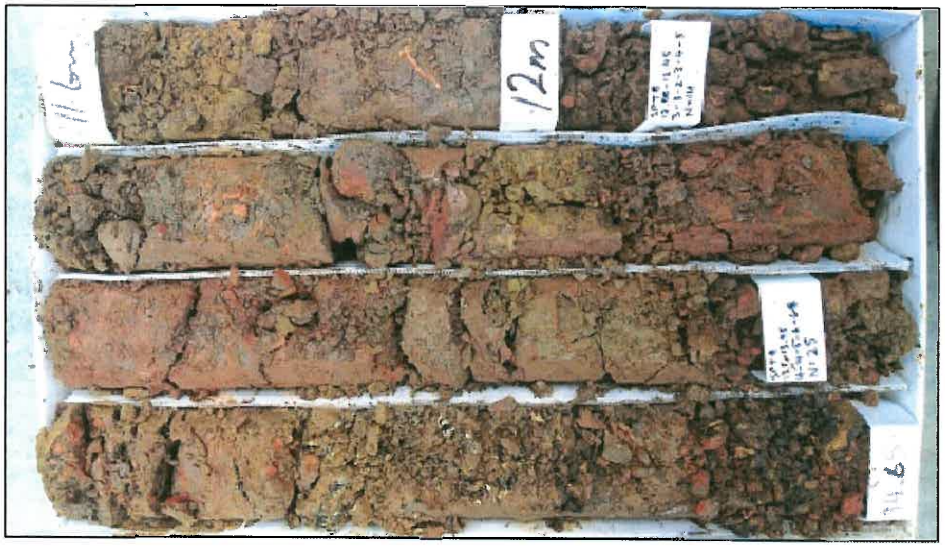






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Date	19/01/2017	**Client**	Kiwi Property Group Ltd
Drawn by	KJL	**Project**	133 Fitzgerald Road, Drury
Approved by	HL	**Description**	BH01 (0.0 m to 11.6 m depth)
Scale (approx.)	N/A	**ENGEO Ref.**	13451.000.000

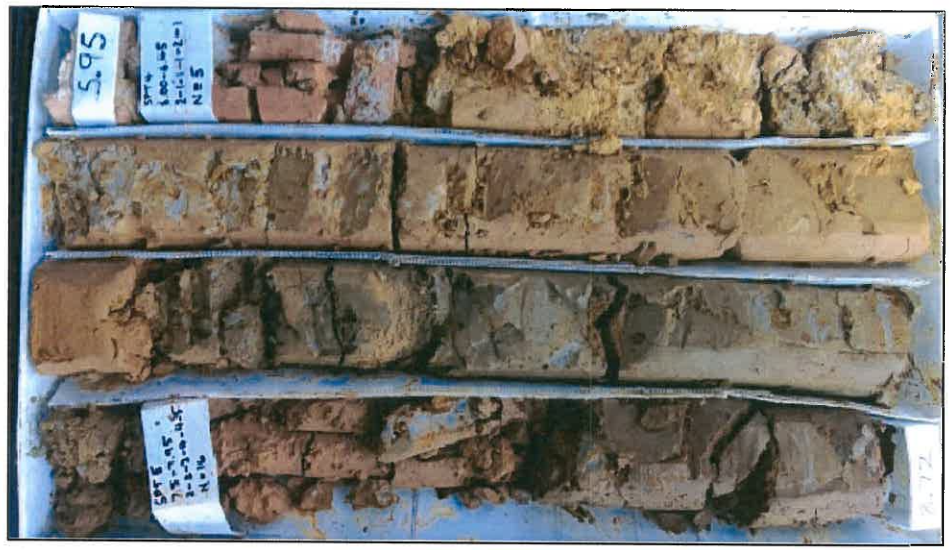


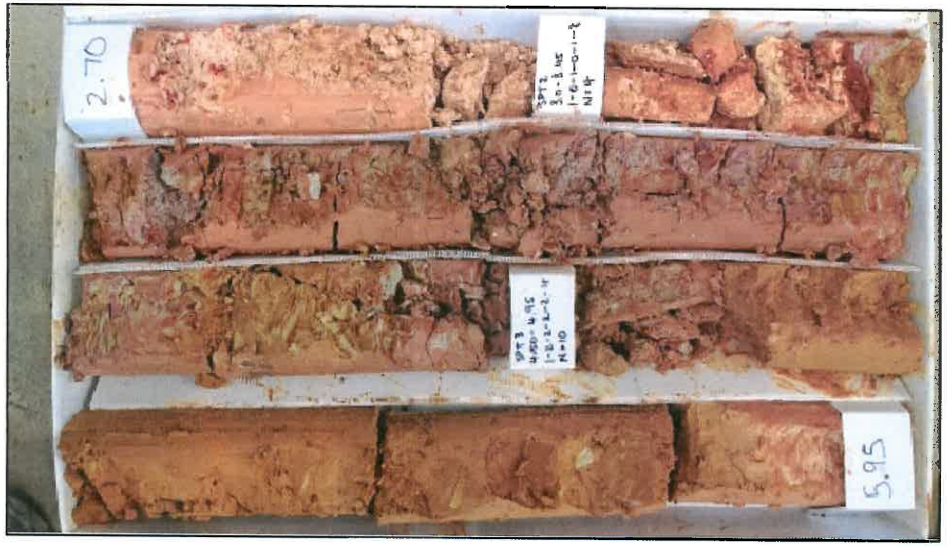


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Date	19/01/2017	**Client**	Kiwi Property Group Ltd
Drawn by	KJL	**Project**	133 Fitzgerald Road, Drury
Approved by	HL	**Description**	BH01 (11.6 m to 16.95 m depth)
Scale (approx.)	N/A	**ENGEO Ref.**	13451.000.000





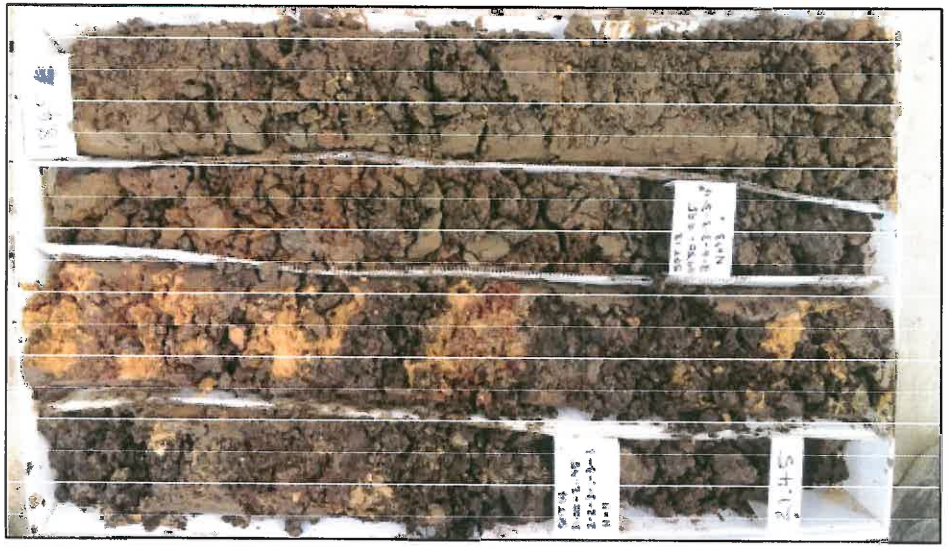




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Date	19/01/2017	**Client**	Kiwi Property Group Ltd
Drawn by	KJL	**Project**	133 Fitzgerald Road, Drury
Approved by	HL	**Description**	BH02 (0.0 m to 11.77 m depth)
Scale (approx.)	N/A	**ENGEO Ref.**	13451.000.000







ENGEO
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Date	19/01/2017	**Client**	Kiwi Property Group Ltd
Drawn by	KJL	**Project**	133 Fitzgerald Road, Drury
Approved by	HL	**Description**	BH02 (11.77 m to 21.45 m depth)
Scale (approx.)	N/A	**ENGEO Ref.**	13451.000.000









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Date	19/01/2017	**Client**	Kiwi Property Group Ltd
Drawn by	KJL	**Project**	133 Fitzgerald Road, Drury
Approved by	HL	**Description**	BH03 (0.0 m to 11.7 m depth)
Scale (approx.)	N/A	**ENGEO Ref.**	13451.000.000



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Date	19/01/2017	**Client**	Kiwi Property Group Ltd
Drawn by	KJL	**Project**	133 Fitzgerald Road, Drury
Approved by	HL	**Description**	BH03 (11.7 m to 15.45 m depth)
Scale (approx.)	N/A	**ENGEO Ref.**	13451.000.000









ENGEO
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Date	01/02/2017	**Client**	Kiwi Property Group Ltd
Drawn by	KJL	**Project**	120 Flanagan Road, Drury
Approved by	HL	**Description**	BH04 (0.0 m to 15.0 m depth)
Scale (approx.)	N/A	**ENGEO Ref.**	13451.000.000







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Date	01/02/2017	**Client**	Kiwi Property Group Ltd
Drawn by	KJL	**Project**	120 Flanagan Road, Drury
Approved by	HL	**Description**	BH04 (15.0 m to 24.95 m depth)
Scale (approx.)	N/A	**ENGEO Ref.**	13451.000.000

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LOG OF AUGER HA01

Drury Development Project
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 21/12/16
Hole Depth : 3 m
Hole Diameter : 50 mm
Shear Vane No : 1546
Logged By : RHB
Reviewed By : KJL
Latitude : 37.110472
Longitude : 174.955375

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer Blows per 100mm
0.0	TS	ML	SILT; brown. Low plasticity [TOPSOIL].			D	NA	200+	
0.5	AUCKLAND VOLCANIC SOILS	CH	Silty CLAY with trace sand; brown with orange streaks. High plasticity.				H	105/63	
			Becomes moist at 0.6 m depth.			M	VSt	108/72	
1.0								132/75	
1.5			Becomes wet at 1.6 m depth.					165/75	
			CLAY; light brown with grey streaks. High plasticity.				VSt	173/123	
2.0		CH				W		180/105	
			Becomes orange brown at 2.4 m depth.				H	200+	
2.5								UTP	
3.0			End of Hole Depth: 3 m Termination Condition: Practical refusal					UTP	
3.5									
4.0									
4.5									
5.0									

Hand auger met practical refusal at 3 m depth on hard material.
Standing groundwater was not encountered
TS = TOPSOIL
NA = Not Assessed

GEOSCIENCE HAND AUGER HA01-HA12 NB-RHB.GPJ NZ DATA TEMPLATE 2.GDT 18/1/17

LOG OF AUGER HA02

Drury Development Project
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 20/12/16
Hole Depth : 4.2 m
Hole Diameter : 50 mm

Shear Vane No : 1546
Logged By : NB
Reviewed By : KJL
Latitude : 37.111827
Longitude : 174.956052

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer Blows per 100mm
0.0	TS	ML	Clayey SILT; brown. Low plasticity [TOPSOIL].			D	H	200+	
0.5	AUCKLAND VOLCANIC SOILS	CH	CLAY with trace silt and sand; orangey brown. High plasticity.			M	VSt	141/78	
			Trace fine basalt encountered at 0.7 m depth.					182/80	
1.0								200+	
			Becomes wet at 1.3 m depth.				H	200+	
1.5								UTP	
2.0								UTP	
		ML	SILT with some clay; brownish orange. Low plasticity.			W	H	UTP	
2.5								UTP	
			Trace sand encountered at 2.8 m depth.					UTP	
3.0								UTP	
3.5								200+	
								200+	
4.0								UTP	
			End of Hole Depth: 4.2 m Termination Condition: Practical refusal						
4.5									
5.0									

Hand auger met practical refusal at 4.2 m depth on hard material.
Standing groundwater was not encountered
TS = TOPSOIL

GEOSCIENCE HAND AUGER HA01-HA12 NB-RHB.GPJ NZ DATA TEMPLATE 2.GDT 18/1/17

ENGEO
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LOG OF AUGER HA03

Drury Development Project
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 20/12/16
Hole Depth : 2.9 m
Hole Diameter : 50 mm
Shear Vane No : 1917
Logged By : NB
Reviewed By : KJL
Latitude : 37.112066
Longitude : 174.957677

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer Blows per 100mm (2 4 6 8 10 12)
0	TS	ML	SILT with some clay; light brown. Low plasticity [TOPSOIL].			D	NA		
0.5	AUCKLAND VOLCANIC SOILS	CH	CLAY with silt and trace sand; yellowish brown. High plasticity. Becomes wet at 0.6 m depth.			M	H	UTP	
							St	66/21	
1.0		ML	Clayey SILT with trace sand and charcoal; dark orangey brown with light grey streaks. High plasticity.				H	92/45	
1.5		CH	CLAY with some silt; light brownish grey with dark orangey brown and pale red streaks. High plasticity. Trace gravel encountered at 1.4 m depth.			W	H	200+	
2.0								200+	
								200+	
2.5		ML	Band of gravel encountered between 2.2 m to 2.3 m depth. Becomes dry at 2.25 m depth. SILT with some clay and trace gravel; dark brownish grey. Low plasticity. Becomes moist at 2.6 m depth.			D	H	UTP	
						M		UTP	
3.0			End of Hole Depth: 2.9 m Termination Condition: Practical refusal					UTP	

Hand auger met practical refusal at 2.9 m depth on hard material.
Standing groundwater was not encountered
TS = TOPSOIL
NA = Not Assessed

GEOSCIENCE HAND AUGER HA01-HA12 NB-RHB.GPJ NZ DATA TEMPLATE 2.GDT 18/1/17

ENGEO
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LOG OF AUGER HA04

Drury Development Project
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 20/12/16
Hole Depth : 3.3 m
Hole Diameter : 50 mm
Shear Vane No : 1546
Logged By : RHB
Reviewed By : KJL
Latitude : 37.112588
Longitude : 174.957425

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer Blows per 100mm (2 4 6 8 10 12)
0.0	TS	ML	SILT; brown with organics. Low plasticity [TOPSOIL].			D	H	UTP	
0.5	AUCKLAND VOLCANIC SOILS	CH	Silty CLAY with trace gravel; light brown. High plasticity.				St	90/29	
1.0			Becomes moist at 0.9 m depth.			M	H	200+	
			Band of highly plastic CLAY encountered between 1.2 m and 1.25 m depth.					200+	
1.5			Becomes wet at 1.4 m depth.				VSt	135/80	
		ML	SILT with some trace sand; orange brown. High plasticity.					146/71	
2.0							H	UTP	
		ML	Sandy SILT with trace basalt; brownish orange. Low plasticity, well graded. Sand, fine to coarse, well graded, subrounded to subangular.			W	H	UTP	
2.5								UTP	
3.0			Trace basalt gravel encountered at 3.2 m depth.					UTP	
			End of Hole Depth: 3.3 m Termination Condition: Practical refusal						
3.5									
4.0									
4.5									
5.0									

Hand auger met practical refusal at 3.3 m depth on hard material.
Standing groundwater was not encountered
TS = TOPSOIL

GEOSCIENCE HAND AUGER HA01-HA12 NB-RHB.GPJ NZ DATA TEMPLATE 2.GDT 18/1/17

ENGEO
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LOG OF AUGER HA05

Drury Development Project
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 20/12/16
Hole Depth : 4.2 m
Hole Diameter : 50 mm
Shear Vane No : 1546
Logged By : RHB
Reviewed By : KJL
Latitude : 37.11273
Longitude : 174.955072

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer Blows per 100mm (2 4 6 8 10 12)
0	TS	ML	SILT; dark brown. Low plasticity [TOPSOIL].			D	H	200+	
0.5	AUCKLAND VOLCANIC SOILS	CH	Silty CLAY; light orange. High plasticity. Trace basalt gravel encountered and becomes moist at 0.7 m depth.				VSt-H	196/80	
1.0								200+	
1.5		CH	CLAY; reddish brown with light grey streaks. High plasticity. Trace sand and silt encountered at 1.8 m depth.			M	H	UTP	
2.0								UTP	
2.5			Becomes wet at 2.3 m depth. Silty CLAY with trace sand; dark brown. High plasticity.			W	H	UTP	
3.0		CH						UTP	
3.5								UTP	
4.0								UTP	
4.5			End of Hole Depth: 4.2 m Termination Condition: Practical refusal						
5.0									

Hand auger met practical refusal at 4.2 m depth on hard material.
Standing groundwater was not encountered
TS = TOPSOIL

GEOSCIENCE HAND AUGER HA01-HA12 NB-RHB.GPJ NZ DATA TEMPLATE 2.GDT 18/1/17

LOG OF AUGER HA06

Drury Development Project
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 20/12/16
Hole Depth : 2.8 m
Hole Diameter : 50 mm

Shear Vane No : 1917
Logged By : NB
Reviewed By : KJL
Latitude : 37.113747
Longitude : 174.955283

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer Blows per 100mm
0	TS	ML	SILT with some clay; dark brown. Low plasticity [TOPSOIL].			D	NA		
0.5	AUCKLAND VOLCANIC SOILS	ML	SILT with some clay; grey brown with dark orange brown streaks. Low plasticity. Trace basalt gravel encountered at 0.4 m depth.			M	H	UTP UTP	
1.0		ML	SILT with thin bands of clay and trace gravel; dark brown with dark orange streaks. Low plasticity.			W	H	UTP UTP UTP UTP UTP UTP UTP UTP	
2.0									
2.5									
3.0			End of Hole Depth: 2.8 m Termination Condition: Practical refusal						
3.5									
4.0									
4.5									
5.0									

Hand auger met practical refusal at 2.8 m depth on hard material.
Standing groundwater was not encountered
TS = TOPSOIL
NA = Not Assessed

GEOSCIENCE HAND AUGER HA01-HA12 NB-RHB.GPJ NZ DATA TEMPLATE 2.GDT 18/1/17

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LOG OF AUGER HA07

Drury Development Project
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 21/12/16
Hole Depth : 5 m
Hole Diameter : 50 mm

Shear Vane No : 1546
Logged By : RHB
Reviewed By : KJL
Latitude : 37.111286
Longitude : 174.953602

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer Blows per 100mm (2 4 6 8 10 12)
0.0	TS	ML	SILT; dark brown. Low plasticity [TOPSOIL].			D	H	UTP	
0.5	AUCKLAND VOLCANIC SOILS	CH	Silty CLAY with trace sand; orange brown. High plasticity. Becomes moist at 0.6 m depth.			M	H	200+	
1.0			Becomes wet at 1.0 m depth.					200+	
1.5		CH	CLAY; light brown with white streaks. High plasticity.			W	St-VSt	150/75	
2.0			Becomes saturated at 2.0 m depth.					75/54	
2.5								78/44	
3.0		CH	CLAY with trace gravel; dark orange red. High plasticity.			S	VSt	53/18	
3.5								188/15	
4.0		CH	CLAY; very light brown with white streaks. High plasticity. Poor recovery from 4.1 m depth.				St	108/57	
4.5							VSt	102/30	
5.0			End of Hole Depth: 5 m Termination Condition: Target depth				H	104/44	
								135/39	
								90/15	
								113/27	
								200+	
								200+	

Hand auger met target depth at 5 m.
Standing groundwater was not encountered
TS = TOPSOIL

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LOG OF AUGER HA08

Drury Development Project
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 20/12/16
Hole Depth : 2.9 m
Hole Diameter : 50 mm

Shear Vane No : 1546
Logged By : RHB
Reviewed By : KJL
Latitude : 37.113011
Longitude : 174.953977

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer Blows per 100mm
0	TS	ML	SILT; brown with trace sand. Low plasticity [TOPSOIL].			D	H	200+	
			Becomes moist at 0.3 m depth.						
0.5	AUCKLAND VOLCANIC SOILS		Silty CLAY; light brown with trace gravel and sand. High plasticity.			M	VSt	113/45	
			Becomes wet at 0.8 m depth.					200+	
1.0								200+	
1.5		CH					H	200+	
			Band of highly plastic CLAY encountered between 1.7 m and 1.75 m depth.			W		UTP	
2.0								UTP	
								200+	
2.5			Trace basalt gravel encountered at 2.4 m depth.						
		CH	CLAY; dark brown. High plasticity.				H	200+	
3.0			End of Hole Depth: 2.9 m Termination Condition: Practical refusal						
3.5									
4.0									
4.5									
5.0									

Hand auger met practical refusal at 2.9 m depth on hard material.
Standing groundwater was not encountered
TS = TOPSOIL

GEOSCIENCE HAND AUGER HA01-HA12 NB-RHB.GPJ NZ DATA TEMPLATE 2.GDT 18/1/17

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LOG OF AUGER HA09

Drury Development Project
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 20/12/16
Hole Depth : 3 m
Hole Diameter : 50 mm
Shear Vane No : 1917
Logged By : NB
Reviewed By : KJL
Latitude : 37.114077
Longitude : 174.954222

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer Blows per 100mm (2 4 6 8 10 12)
0.0	TS	ML	SILT with some clay; dark brown. Low plasticity [TOPSOIL].			D	NA	UTP	
			Becomes moist at 0.2 m depth.						
0.5	AUCKLAND VOLCANIC SOILS	ML	Clayey SILT with trace sand and gravel; light greyish brown with dark orange streaks. High plasticity.			M	H	148/64	
							VSt		
1.0							St	97/39	
			Becomes wet at 1.1 m depth.					UTP	
1.5		CH	CLAY with some silt; dark greyish brown with light grey streaks. High plasticity.			W	H	200+	
2.0								UTP	
								UTP	
2.5								200+	
								200+	
3.0			End of Hole Depth: 3 m Termination Condition: Practical refusal					200+	
3.5									
4.0									
4.5									
5.0									

Hand auger met practical refusal at 3 m depth on hard material.
Standing groundwater was not encountered
TS = TOPSOIL

GEOSCIENCE HAND AUGER HA01-HA12 NB-RHB.GPJ NZ DATA TEMPLATE 2.GDT 18/1/17

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LOG OF AUGER HA10

Drury Development Project
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 21/12/16
Hole Depth : 3.4 m
Hole Diameter : 50 mm

Shear Vane No : 1546
Logged By : RHB
Reviewed By : KJL
Latitude : 37.112163
Longitude : 174.952166

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer Blows per 100mm
0.0	TS	ML	SILT; dark brown. Low plasticity [TOPSOIL].			D	H	UTP	
0.5	AUCKLAND VOLCANIC SOILS	CH	Silty CLAY; orange brown. High plasticity. Becomes moist at 0.6 m depth.				H	200+	
1.0								200+	
1.5			CLAY with trace gravel; dark brown. High plasticity. Becomes moist at 1.8 m depth.			M		200+	
2.0		CH	Band of weathered basalt gravel encountered between 2.2 m and 2.25 m depth.				H	200+	
2.5						W		UTP	
3.0			Band of weathered basalt gravel encountered between 2.8 m and 3.0 m depth.					200+	
3.5			End of Hole Depth: 3.4 m Termination Condition: Practical refusal					200+	
4.0									
4.5									
5.0									

Hand auger met practical refusal at 3.4 m depth on hard material.
Standing groundwater was not encountered
TS = TOPSOIL
NA = Not Assessed

GEOSCIENCE HAND AUGER HA01-HA12 NB-RHB.GPJ NZ DATA TEMPLATE 2.GDT 18/1/17

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LOG OF AUGER HA11

Drury Development Project
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 20/12/16
Hole Depth : 2.5 m
Hole Diameter : 50 mm
Shear Vane No : 1546
Logged By : RHB
Reviewed By : KJL
Latitude : 37.113297
Longitude : 174.951558

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer Blows per 100mm
0	TS	ML	SILT; dark brown. Low plasticity [TOPSOIL].				H	UTP	
0.5	AUCKLAND VOLCANIC SOILS	ML	Silty CLAY with trace basalt gravel; orange brown. High plasticity. Becomes moist at 0.7 m depth.			D	H	UTP	
1.0		CH	CLAY; reddish brown with dark orange streaks. High plasticity. Becomes wet at 1.0 m depth.			M	H	UTP	
1.5						W		200+	
2.0			Trace gravel and sand encountered at 1.7 m depth.					200+	
2.5		ML	SILT with trace clay and sand; dark orange brown. Low plasticity. Trace siltstone gravel encountered at 2.4 m depth.			S	H	UTP	
3.0			End of Hole Depth: 2.5 m Termination Condition: Practical refusal						
3.5									
4.0									
4.5									
5.0									

Hand auger met practical refusal at 2.5 m depth on hard material.
Standing groundwater was not encountered
TS = TOPSOIL

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LOG OF AUGER HA12

Drury Development Project
133 Fitzgerald Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 20/12/16
Hole Depth : 1.4 m
Hole Diameter : 50 mm
Shear Vane No : 1917
Logged By : NB
Reviewed By : KJL
Latitude : 37.114119
Longitude : 174.1141194

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Scala Penetrometer Blows per 100mm (2 4 6 8 10 12)
0.0	TS	ML	SILT with some clay; dark brown. Low plasticity [TOPSOIL].				NA		
0.5	AUCKLAND VOLCANIC SOILS	CH	CLAY with some silt; dark greyish brown with light grey streaks. High plasticity.			D	H	UTP	
1.0			Becomes moist at 0.8 m depth.			M		UTP	
1.5			End of Hole Depth: 1.4 m Termination Condition: Practical refusal					UTP	
2.0									
2.5									
3.0									
3.5									
4.0									
4.5									
5.0									

Hand auger met practical refusal at 1.4 m depth on hard material.
Standing groundwater was not encountered
TS = TOPSOIL
NA = Not Assessed

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LOG OF HAND AUGER HA13

Drury Development Project
120 Flanagan Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 17/01/17
Hole Depth : 4 m
Hole Diameter : 50 mm
Shear Vane No : 1413
Logged By : NB
Reviewed By : HL
Latitude : 37.06349
Longitude : 174.57201

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Notes/Remarks
0.0	TS	ML	SILT with some clay; dark brown. Low plasticity [TOPSOIL].			D	H	UTP	
0.5	AUCKLAND VOLCANIC SOILS	ML	SILT with some clay; dark reddish brown. Low plasticity.			M	H	UTP UTP UTP	
1.0			Becomes wet at 1.2 m depth.					UTP	
1.5								200+	
2.0								200+	
2.5		CH	CLAY with minor silt and trace sand; light brown. High plasticity.			W	VSt	149/63 194/54 133/30	
3.0								125/22	
3.5							VSt	189/30 124/33	
4.0		ML	SILT with minor clay and trace sand; dark reddish brown. High plasticity.				H	UTP	
4.5			End of Hole Depth: 4 m Termination Condition: Practical refusal						
5.0									

Hand auger met practical refusal at 4 m depth on hard material.
Standing groundwater not encountered.
TS = TOPSOIL

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LOG OF HAND AUGER HA14

Drury Development Project
120 Flanagan Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 17/01/17
Hole Depth : 4.5 m
Hole Diameter : 50 mm
Shear Vane No : 1413
Logged By : NB
Reviewed By : HL
Latitude : 37.06379
Longitude : 174.57069

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Notes/Remarks
0.0	TS	ML	SILT with some clay; dark brown. Low plasticity [TOPSOIL].			D	H	UTP	
0.5	AUCKLAND VOLCANIC SOILS	ML	SILT with some clay; dark orange brown with bluish grey streaks. Low plasticity.			M	H	UTP UTP	
1.0		CH	CLAY with trace silt and sand; light grey with light brown streaks. High plasticity. Becomes light brown with grey and dark orange streaks at 1.3 m depth.				VSt-H	200+ 200+ 159/75	
2.0	ALLUVIUM	CH	CLAY with minor silt and trace sand; white with dark orange and dark red streaks. High plasticity.			W	St-VSt	95/38 110/25 76/21	
3.0			Becomes saturated at 2.8 m depth.					117/22 98/22	
3.5			Ground water seeping in and poor recovery from 3.5 m depth.		▼	S		79/19 83/17	
4.0		ML	Sandy SILT; grey with bluish grey streaks. Low plasticity. Sand, fine to coarse, subangular to subrounded.				H	136/76	
4.5			End of Hole Depth: 4.5 m Termination Condition: Practical refusal					UTP	
5.0									

Hand auger met practical refusal at 4.5 m depth on hard material.
Standing groundwater was encountered at 3.5 m.
TS = TOPSOIL

GEOSCIENCE HAND AUGER - NO SCALA DRURY HA13-24.GPJ NZ DATA TEMPLATE 2.GDT 1/2/17

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LOG OF HAND AUGER HA15

Drury Development Project
120 Flanagan Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 16/01/17
Hole Depth : 3.6 m
Hole Diameter : 50 mm
Shear Vane No : 1413
Logged By : NB
Reviewed By : HL
Latitude : 37.06383
Longitude : 174.57053

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Notes/Remarks
0.0	TS	ML	SILT with some clay; dark brown. Low plasticity [TOPSOIL]				H	UTP	
0.5	COLLUVIUM	CL	CLAY with minor silt and occasional topsoil inclusions; light brown with dark brown grey mottles. Low plasticity [COLLUVIUM].				H	UTP UTP	
1.0	AUCKLAND VOLCANIC SOILS	ML	Clayey SILT with trace sand; light brown with dark red streaks. Low plasticity.			D	VSt-H	UTP 171/124	
1.5		CH	CLAY with minor silt and trace sand; grey with dark orange brown and dark reddish brown streaks. High plasticity.				H	200+	
2.0		ML	SILT with some clay; dark brownish red. Low plasticity.			W	H	UTP UTP UTP	
2.5									
3.0			Occasional bands of light grey CLAY encountered from 3.0 m depth.					200+ UTP	
3.5		SW	Fine to coarse SAND with trace gravel; dark grey with grey streaks. Well graded, subrounded to subangular.			S	VD	UTP	
			End of Hole Depth: 3.6 m Termination Condition: Practical refusal						
4.0									
4.5									
5.0									

Hand auger met practical refusal at 3.6 m depth on hard material.
Standing groundwater not encountered.
TS = TOPSOIL

GEOSCIENCE HAND AUGER - NO SCALA DRURY HA13-24.GPJ NZ DATA TEMPLATE 2.GDT 1/2/17

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LOG OF HAND AUGER HA16

Drury Development Project
120 Flanagan Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 16/01/17
Hole Depth : 2.8 m
Hole Diameter : 50 mm
Shear Vane No : 1546
Logged By : RHB
Reviewed By : HL
Latitude : 37.06388
Longitude : 174.57033

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Notes/Remarks
	TS	ML	SILT with trace rootlets; brown. Low plasticity [TOPSOIL].				H	200+	
0.5	AUCKLAND VOLCANIC SOILS	ML	Clayey SILT; brown with orange mottles and grey streaks. Low plasticity.			D	H	UTP	
1.0		CH	Silty CLAY; greyish red with orange streaks. High plasticity.				VSt-H	200+	
			Becomes moist at 1.1 m depth.			M		200+	
1.5			Becomes wet at 1.4 m depth.					196/27	
			Trace sand encountered from 1.6 m depth.					200+	
2.0		ML	SILT; dark grey. Low plasticity.			W	H	UTP	
								UTP	
2.5		ML	Clayey SILT; dark brown with orange mottles. Low plasticity.				H	UTP	
			End of Hole Depth: 2.8 m Termination Condition: Practical refusal						
3.0									
3.5									
4.0									
4.5									
5.0									

Hand auger met practical refusal at 2.8 m depth on hard material.
Standing groundwater not encountered.
TS = TOPSOIL

GEOSCIENCE HAND AUGER - NO SCALA DRURY HA13-24.GPJ NZ DATA TEMPLATE 2.GDT 1/2/17

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LOG OF HAND AUGER HA17

Drury Development Project
120 Flanagan Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 16/01/17
Hole Depth : 3 m
Hole Diameter : 50 mm
Shear Vane No : 1546
Logged By : RHB
Reviewed By : HL
Latitude : 37.06402
Longitude : 174.56593

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Notes/Remarks
0.0	TS	ML	SILT; dark brown. Low plasticity [TOPSOIL].			D	H	200+	
0.5	AUCKLAND VOLCANIC SOILS	CH	Silty CLAY; light brown with grey streaks. High plasticity. Becomes moist at 0.6 m depth.				H	200+	
1.0		CH	CLAY with minor gravel; orange grey with dark orange streaks. High plasticity. Gravel, fine to coarse, well graded, subangular to subrounded. Becomes wet at 1.2 m depth.			M	VSt	200+ 120/54	
1.5		CH	Silty CLAY; light orange with reddish brown streaks. High plasticity.				H VSt	200+ 135/18	
2.0		CH	CLAY; light brownish grey with dark brown mottles. High plasticity.			W	H	UTP	
2.5		MH	Clayey SILT with trace gravel; reddish brown. High plasticity.				H	UTP UTP	
3.0			End of Hole Depth: 3 m Termination Condition: Practical refusal					UTP	
3.5									
4.0									
4.5									
5.0									

Hand auger met practical refusal at 3 m depth on hard material.
Standing groundwater not encountered.
TS = TOPSOIL

GEOSCIENCE HAND AUGER - NO SCALA_DRURY HA13-24.GPJ NZ DATA TEMPLATE 2.GDT 1/2/17

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LOG OF HAND AUGER HA18

Drury Development Project
120 Flanagan Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 16/01/17
Hole Depth : 3.9 m
Hole Diameter : 50 mm
Shear Vane No : 1413
Logged By : NB
Reviewed By : HL
Latitude : 37.06334
Longitude : 174.57024

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Notes/Remarks
0.0	TS	ML	SILT with some clay; dark brown. Low plasticity [TOPSOIL].				H	UTP	
0.5	AUCKLAND VOLCANIC SOILS	CH	CLAY with minor silt; light brown with dark brown streaks. High plasticity.			D		UTP	
1.0			Trace sand encountered at 0.9 m depth.					184/94	
1.5			Becomes wet at 1.2 m depth.				VSt-H	192/60	
2.0		ML	SILT with some clay; greenish brown with light brown streaks. Low plasticity.			M	H	190/63	
2.5								UTP	
3.0		CH	CLAY with minor silt and trace gravel; light grey with dark red, brown and grey streaks. High plasticity.				H	UTP	
3.5		ML	SILT with some clay; dark brownish red. Low plasticity.				H	UTP	
4.0			End of Hole Depth: 3.9 m Termination Condition: Practical refusal						
4.5									
5.0									

Hand auger met practical refusal at 3.9 m depth on hard material.
Standing groundwater not encountered.
TS = TOPSOIL

GEOSCIENCE HAND AUGER - NO SCALA DRURY HA13-24.GPJ NZ DATA TEMPLATE 2.GDT 1/2/17

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LOG OF HAND AUGER HA19

Drury Development Project
120 Flanagan Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 16/01/17
Hole Depth : 4.2 m
Hole Diameter : 50 mm
Shear Vane No : 1546
Logged By : RHB
Reviewed By : HL
Latitude : 37.06322
Longitude : 174.57088

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Notes/Remarks
0.0	TS	ML	SILT with trace gravel; brown. Low plasticity [TOPSOIL].			D	H	200+	
0.5	AVS	CH	Silty CLAY; brownish orange with black streaks. High plasticity. Becomes moist at 0.5 m depth.			M	H	200+	
							F	45/15	
1.0	ALLUVIUM	CH	CLAY; light brown. High plasticity.			W	St	72/18	
1.5								80/24	
2.0		CH	CLAY with trace gravel; light grey. High plasticity.			S	St-VSt	128/27	
2.5			Ground water seeping in at 2.5 m depth.		▼			117/51	
								101/44	
3.0								75/27	
3.5		CL	Sandy CLAY with some silt; dark bluish green. Low plasticity. Sand, fine to coarse, subangular to subrounded.				VSt-H	150/47	
								165/30	
4.0		CH	CLAY; light grey. High plasticity.				H	UTP	
			End of Hole Depth: 4.2 m Termination Condition: Practical refusal					UTP	
4.5									
5.0									

Hand auger met practical refusal at 4.2 m depth on hard material.
Standing groundwater was encountered at 2.6 m.
TS = TOPSOIL
AVS = AUCKLAND VOLCANIC SOILS

GEOSCIENCE HAND AUGER - NO SCALA DRURY HA13-24.GPJ NZ DATA TEMPLATE 2.GDT 1/2/17

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LOG OF HAND AUGER HA20

Drury Development Project
120 Flanagan Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 16/01/17
Hole Depth : 5 m
Hole Diameter : 50 mm
Shear Vane No : 1413
Logged By : NB
Reviewed By : HL
Latitude : 37.06287
Longitude : 174.57099

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Notes/Remarks
0.5	FILL	ML	SILT with some clay and trace gravel; dark brown with dark grey and light grey streaks. Low plasticity [FILL].			D	H	UTP	
								UTP	
			Becomes moist at 0.7 m depth.					UTP	
1.0	ALLUVIUM	CH	CLAY with trace silt and trace sand; light grey with white mottles and dark grey streaks. Low plasticity.			M	St-VSt	130/62	
1.5			Trace organics encountered from 1.4 m depth. Becomes wet.			W		70/38	
			Minor organics encountered from 1.7 m depth. Becomes saturated.			S	F	48/25	
2.0		ML	SILT with some clay and minor sand; bluish green with grey streaks. Low plasticity. Sand, fine to coarse, well graded, subangular to subrounded.				H	200+	
2.5		OH	Organic CLAY; purplish grey with dark grey streaks. High plasticity			W	VSt	159/38	
								125/29	
3.0								106/38	
								143/40	
3.5		PT	Fibrous PEAT with minor clay; dark brown with black and purplish grey streaks.				NA	83/32	
		CH	CLAY; light bluish grey. High plasticity.			S	St-VSt	84/32	
4.0								140/41	
4.5								140/48	
								98/97	
5.0			End of Hole Depth: 5 m Termination Condition: Target depth						

Hand auger met target depth at 5 m.
Standing groundwater not encountered.
TS = TOPSOIL
NA = NOT ASSESSED

GEOSCIENCE HAND AUGER - NO SCALA_DRURY HA13-24.GPJ_NZ DATA TEMPLATE 2.GDT 1/2/17

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LOG OF HAND AUGER HA21

Drury Development Project
120 Flanagan Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 16/01/17
Hole Depth : 3.8 m
Hole Diameter : 50 mm
Shear Vane No : 1413
Logged By : NB
Reviewed By : HL
Latitude : 37.06298
Longitude : 174.57051

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Notes/Remarks
0.0	FILL	ML	SILT with some clay and minor gravel; brownish grey. Low plasticity [FILL]. Gravel, coarse, poorly graded, subangular to angular.			M	H	UTP	
0.5	FILL	CH	CLAY with minor silt; grey with brown streaks. Low plasticity [FILL].			M	H	UTP	
1.0	AUCKLAND VOLCANIC SOILS	ML	SILT with some clay and trace sand; light orange brown with dark reddish brown streaks. High plasticity.				VSt-H	UTP 197/70 200+ 200+	
2.0	AUCKLAND VOLCANIC SOILS	CH	CLAY with minor silt; light grey with orange and red streaks. High plasticity.			W	VSt H	192/117 173/125 UTP UTP	
3.5	AUCKLAND VOLCANIC SOILS	CH	CLAY with trace silt; dark brownish green. High plasticity.				H	UTP UTP	
4.0			End of Hole Depth: 3.8 m Termination Condition: Practical refusal						
4.5									
5.0									

Hand auger met practical refusal at 3.8 m depth on hard material.
Standing groundwater not encountered.

GEOSCIENCE HAND AUGER - NO SCALA DRURY HA13-24.GPJ NZ DATA TEMPLATE 2.GDT 1/2/17

ENGEO
Expect Excellence

LOG OF HAND AUGER HA22

Drury Development Project
120 Flanagan Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 16/01/17
Hole Depth : 5 m
Hole Diameter : 50 mm
Shear Vane No : 1546
Logged By : RHB
Reviewed By : HL
Latitude : 37.06293
Longitude : 174.57008

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Notes/Remarks
	TS	ML	SILT; dark brown. Low plasticity [TOPSOIL].			D	H	200+	
0.5	AUCKLAND VOLCANIC SOILS	CH	Silty CLAY; light brown with red and orange streaks. High plasticity. Becomes moist at 0.6 m depth.				H	200+	
			Silty CLAY; orange. High plasticity.					200+	
1.0		CH	Trace gravel encountered from 1.1 m to 1.2 m depth.			M	H	200+	
1.5			CLAY; light brownish orange with reddish streaks. High plasticity.					200+	
			Becomes dark grey with light grey bluish streaks from 1.7 m depth.					200+	
2.0		CH	Becomes light orange with light grey streaks from 2.2 m depth.				VSt-H	200+	
2.5			Becomes dark orange at 2.7 m depth.					168/98	
								149/72	
3.0			Silty CLAY; pinkish red with white streaks. High plasticity.					150/98	
						W		149/93	
3.5			Becomes orange with grey white streaks from 3.6 m depth.					165/87	
								177/45	
4.0		CH					VSt-H	200+	
4.5			Becomes orange red at 4.3 m.					200+	
								200+	
5.0			End of Hole Depth: 5 m Termination Condition: Target depth						

Hand auger met target depth at 5 m.
Standing groundwater not encountered.
TS = TOPSOIL

GEOSCIENCE HAND AUGER - NO SCALA DRURY HA13-24.GPJ NZ DATA TEMPLATE 2.GDT 1/2/17

ENGEO
Expect Excellence

LOG OF HAND AUGER HA23

Drury Development Project
120 Flanagan Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 16/01/17
Hole Depth : 4.2 m
Hole Diameter : 50 mm
Shear Vane No : 1413
Logged By : NB
Reviewed By : HL
Latitude : 37.06259
Longitude : 174.57052

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Notes/Remarks
	TS	ML	SILT with some clay; dark brown. Low plasticity [TOPSOIL].			D	H	UTP	
0.5	ALLUVIUM	CH	CLAY with trace sand; light grey with light brown and light orange streaks. High plasticity.			M	H	UTP	
1.0			Becomes light brown with grey streaks and wet from 0.9 m depth.			W	St	84/48	
1.5			Becomes saturated from 1.4 m depth.				F	44/25	
			Becomes grey at 1.7 m depth.					40/25	
2.0			Groundwater seeping in at 2.0 m depth.				VSt	105/41	
2.5		OH	Organic CLAY; purplish grey. High plasticity.			S	VSt	162/51	
3.0			Poor recovery from 3.2 m depth.				H	163/51	
3.5		CH	Sandy CLAY; bluish grey with brownish grey streaks. High plasticity. Sand, fine, poorly graded, subrounded to subrounded.				H	165/48	
4.0			End of Hole Depth: 4.2 m Termination Condition: Practical refusal					173/48	
4.5								200+	
5.0								UTP	
								UTP	
								UTP	

Hand auger met practical refusal at 4.2 m depth on hard material.
Standing groundwater not encountered.
TS = TOPSOIL

ENGEO
Expect Excellence

LOG OF HAND AUGER HA24

Drury Development Project
120 Flanagan Road
Drury
13451.000.000

Client : Kiwi Property Group Ltd
Client Ref. : 13451
Date : 16/01/17
Hole Depth : 5 m
Hole Diameter : 50 mm
Shear Vane No : 1546
Logged By : RHB
Reviewed By : HL
Latitude : 37.06245
Longitude : 174.57084

Depth (m)	Material	USCS Symbol	DESCRIPTION	Graphic Symbol	Water Level	Moisture Cond.	Consistency/ Density Index	Shear Vane Undrained Shear Strength (kPa) Peak/Remolded	Notes/Remarks
0	TS	ML	SILT; brown with orange mottles. Low plasticity [TOPSOIL].				F		
	ALLUVIUM	CH	Silty CLAY; dark brown. High plasticity.			D	H	200+	
0.5		ML	Clayey SILT; light orange brown. Low plasticity				VSt	200+	
		CH	Silty CLAY; light orange with pinkish red streaks. High plasticity				VSt	147/87	
1.0		CH	CLAY; light grey with reddish pink streaks. High plasticity.			M	VSt	196/128	
1.5								158/113	
								120/63	
2.0			Becomes wet at 1.9 m depth.				H	200+	
		CH	CLAY; dark grey. High plasticity.				H	200+	
2.5						W		200+	
3.0			CLAY; white grey. High plasticity.		▼		VSt	196/87	
			Groundwater seeping in at 3.2 m.					150/77	
3.5			Becomes saturated at 3.5 m depth.			S		146/65	
		CH						120/56	
4.0							St	75/42	
4.5								81/32	
								71/48	
5.0			End of Hole Depth: 5 m Termination Condition: Target depth						

Hand auger met target depth at 5 m.
Standing groundwater was encountered at 3.0 m.
TS = TOPSOIL

GEOSCIENCE HAND AUGER - NO SCALA DRURY HA13-24.GPJ NZ DATA TEMPLATE 2.GDT 1/2/17

East Tamaki Laboratory

Coffey Services (NZ) Limited

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PO Box 58877, Botany, Manukau NZ 2163

Phone: +64 9 272 3375
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coffey
A TETRA TECH COMPANY

Material Test Report

Report No: ETAM17S-00118-1
Issue No: 1

Client: ENGEO Limited
PO Box 305136, Triton Plaza
Auckland 0757

Principal:
Project No.: 773-ETAM00143AA
Project Name: 13451 - ENGEO Testing
Lot No.: - **TRN:** -

Tests indicated as not accredited are outside the scope of the laboratory's accreditation.
{This document may not be altered or reproduced except in full. This report relates only to the positions tested.}

IANZ ACCREDITED LABORATORY

Approved Signatory: James McKelvey
(Senior Technician)
IANZ Accredited Laboratory Number:105
Date of Issue: 18/01/2017

Sample Details

Sample ID: ETAM17S-00118
Client Sample: -
Date Sampled: 21/12/2016
Source: Unknown (Sampled by Client)
Material: Disturbed Soil
Specification: No Specification
Sampling Method: Unknown (Not IANZ Endorsed)
Project Location: 13451
Sample Location: BH01
0.5 - 0.6 m

Test Results

Description	Method	Result	Limits
Liquid Limit	NZS 4402:1986 Test 2.2	118	
Plastic Limit	NZS 4402:1986 Test 2.3	Not Tested	
Plasticity Index	NZS 4402:1986 Test 2.4	Not Tested	
Linear Shrinkage	NZS 4402:1986 Test 2.6	25	
Curling		No	
Cracking		Yes	
Sample History		Natural state	
Fraction Tested		Passing 425µm sieve	
Date Tested		16/01/2017	
Moisture Content (%)	NZS 4402:1986 Test 2.1	63.8	
Date Tested		12/01/2017	

Comments

Work Order: ETAM17W00052
Tested By: CP

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Material Test Report

Report No: ETAM17S-00117-1
Issue No: 1

Client: ENGEO Limited
PO Box 305136, Triton Plaza
Auckland 0757

Principal:
Project No.: 773-ETAM00143AA
Project Name: 13451 - ENGEO Testing
Lot No.: - **TRN:** -

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IANZ ACCREDITED LABORATORY

Approved Signatory: James McKelvey
(Senior Technician)
IANZ Accredited Laboratory Number:105
Date of Issue: 18/01/2017

Sample Details

Sample ID: ETAM17S-00117
Client Sample: -
Date Sampled: 21/12/2016
Source: Unknown (Sampled by Client)
Material: Disturbed Soil
Specification: No Specification
Sampling Method: Unknown (Not IANZ Endorsed)
Project Location: 13451
Sample Location: BH01
0.5 - 0.6 m

Test Results

Description	Method	Result	Limits
Allophane Content	NZS 4402:1986 Test 3.4	>7%	
Date Tested		12/01/2017	

Comments

Work Order: ETAM17W00052
Tested By: CP

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Material Test Report

Report No: ETAM17S-00119-1
Issue No: 1

Client: ENGEO Limited
PO Box 305136, Triton Plaza
Auckland 0757

Principal:
Project No.: 773-ETAM00143AA
Project Name: 13451 - ENGEO Testing
Lot No.: - **TRN:** -

Tests indicated as not accredited are outside the scope of the laboratory's accreditation.
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IANZ ACCREDITED LABORATORY

Approved Signatory: James McKelvey
(Senior Technician)
IANZ Accredited Laboratory Number:105
Date of Issue: 18/01/2017

Sample Details

Sample ID: ETAM17S-00119
Client Sample: -
Date Sampled: 21/12/2016
Source: Unknown (Sampled by Client)
Material: Disturbed Soil
Specification: No Specification
Sampling Method: Unknown (Not IANZ Endorsed)
Project Location: 13451
Sample Location: BH02
0.5 m

Test Results

Description	Method	Result	Limits
Allophane Content	NZS 4402:1986 Test 3.4	5 - 7 %	
Date Tested		12/01/2017	

Comments

Work Order: ETAM17W00052
Tested By: CP

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Material Test Report

Report No: ETAM17S-00121-1
Issue No: 1

Client: ENGEO Limited
PO Box 305136, Triton Plaza
Auckland 0757

Principal:
Project No.: 773-ETAM00143AA
Project Name: 13451 - ENGEO Testing
Lot No.: - **TRN:** -

Tests indicated as not accredited are outside the scope of the laboratory's accreditation.
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IANZ ACCREDITED LABORATORY

Approved Signatory: James McKelvey
(Senior Technician)
IANZ Accredited Laboratory Number:105
Date of Issue: 18/01/2017

Sample Details

Sample ID: ETAM17S-00121
Client Sample: -
Date Sampled: 21/12/2016
Source: Unknown (Sampled by Client)
Material: Disturbed Soil
Specification: No Specification
Sampling Method: Unknown (Not IANZ Endorsed)
Project Location: 13451
Sample Location: BH03

Test Results

Description	Method	Result	Limits
Liquid Limit	NZS 4402:1986 Test 2.2	127	
Plastic Limit	NZS 4402:1986 Test 2.3	Not Tested	
Plasticity Index	NZS 4402:1986 Test 2.4	Not Tested	
Linear Shrinkage	NZS 4402:1986 Test 2.6	24	
Curling		No	
Cracking		Yes	
Sample History		Natural state	
Fraction Tested		Passing 425µm sieve	
Date Tested		16/01/2017	
Moisture Content (%)	NZS 4402:1986 Test 2.1	50.2	
Date Tested		12/01/2017	

Comments

Work Order: ETAM17W00052
Tested By: CP

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Material Test Report

Report No: ETAM17S-00120-1
Issue No: 1

Client:	ENGEO Limited PO Box 305136, Triton Plaza Auckland 0757
Principal:	
Project No.:	773-ETAM00143AA
Project Name:	13451 - ENGEO Testing
Lot No.:	-
TRN:	-

Tests indicated as not accredited are outside the scope of the laboratory's accreditation.
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IANZ ACCREDITED LABORATORY

Approved Signatory: James McKelvey
(Senior Technician)
IANZ Accredited Laboratory Number:105
Date of Issue: 18/01/2017

Sample Details

Sample ID:	ETAM17S-00120
Client Sample:	-
Date Sampled:	21/12/2016
Source:	Unknown (Sampled by Client)
Material:	Disturbed Soil
Specification:	No Specification
Sampling Method:	Unknown (Not IANZ Endorsed)
Project Location:	13451
Sample Location:	BH03

Test Results

Description	Method	Result	Limits
Allophane Content	NZS 4402:1986 Test 3.4	5 - 7 %	
Date Tested		12/01/2017	

Comments

Work Order: ETAM17W00052
Tested By: CP

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Material Test Report

Report No: ETAM17S-00122-1
Issue No: 1

Client:	ENGEO Limited PO Box 305136, Triton Plaza Auckland 0757
Principal:	
Project No.:	773-ETAM00143AA
Project Name:	13451 - ENGEO Testing
Lot No.:	-
TRN:	-

Tests indicated as not accredited are outside the scope of the laboratory's accreditation.
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IANZ ACCREDITED LABORATORY

Approved Signatory: James McKelvey
(Senior Technician)
IANZ Accredited Laboratory Number:105
Date of Issue: 18/01/2017

Sample Details

Sample ID:	ETAM17S-00122
Client Sample:	-
Date Sampled:	21/12/2016
Source:	Unknown (Sampled by Client)
Material:	Disturbed Soil
Specification:	No Specification
Sampling Method:	Unknown (Not IANZ Endorsed)
Project Location:	13451
Sample Location:	HA11 0.4 m

Test Results

Description	Method	Result	Limits
Allophane Content	NZS 4402:1986 Test 3.4	5 - 7 %	
Date Tested		12/01/2017	

Comments

Work Order: ETAM17W00052
Tested By: CP

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Appendix D – Geotechnical Borehole Logs

aurecon
Level 4, 139 Carlton Gore Road
PO Box 9762, Newmarket
Auckland, New Zealand
Tel: +64 9 520 6019
www.aurecongroup.com

Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH001

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 417191.000m
Northing: 774155.000m
Reduced level: 24.000m (NZVD2016)

Date started: 24/11/2020
Date completed: 24/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3	23	1		T	**0m:** SILT with some clay; brown. Soft to firm, wet, low plasticity.	MI						**0m: TOPSOIL**	
					0.3m: CLAY with trace organics; brownish red. Firm, moist, high plasticity.	CH						**0.3m: SOUTH AUCKLAND VOLCANIC FIELD** 0.3m: Organics comprise of rootlets.	
				VRb	**0.75m:** Grades to trace fine gravels; reddish brown. Sub-angular to angular, highly weathered basalt.			100					
SPT	22	2			**1.5m:** CLAY with minor silt; orangish brown banded with light grey and red. Firm, moist, high plasticity.	CH	1.5m: SPT 2// 1,2,2,3 N = 8	100					
HQ3	21	3		VWt	**2.5m:** CLAY with minor sand and trace silt; brownish red. Firm, moist, high plasticity.	CH		100					
SPT				VRb	**3m:** Sandy fine to coarse GRAVEL with some clay; reddish brown. Medium dense, moist. Gravel, sub-angular to angular, highly weathered, slightly vesicular basalt. Sand is fine to medium. Clay is low plasticity. [Completely weathered, reddish brown, slightly vesicular BASALT; extremely weak].	CW	3m: SPT 5// 3,4,4,5 N = 16	100					
HQ3	20	4						100					
				VWb	**4.25m:** Highly weathered, brownish black, moderately vesicular BASALT; extremely weak. [Silty fine to coarse GRAVEL; brownish black. Medium dense, moist. Gravel, sub-angular to angular, highly weathered, moderately vesicular basalt].	HW	4.5m: SPT 2// 2,2,3,3 N = 10						
SPT	19	5				CW		100					

Box 1
Box 2

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 24/11/20 07:15 | m | 8.1 m bgl

aurecon
Level 4, 139 Carlton Gore Road
PO Box 9762, Newmarket
Auckland, New Zealand
Tel: +64 9 520 6019
www.aurecongroup.com

Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH001

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 417191.000m
Northing: 774155.000m
Reduced level: 24.000m (NZVD2016)

Date started: 24/11/2020
Date completed: 24/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				VRb	**4.9m:** Silty fine to coarse GRAVEL with some clay; brownish black. Medium dense, moist. Gravel, sub-angular to angular, completely weathered basalt. Silt, low plasticity. [Completely weathered, brownish mottled yellow BASALT; extremely weak].	CW							
				VWb	**5.45m:** Highly weathered, brownish black, slightly vesicular BASALT; extremely weak. [Silty fine to coarse GRAVEL with some clay; brownish black. Loose, moist. Gravel, sub-angular to angular, highly weathered, slightly vesicular basalt. Silt, low plasticity].	HW		100					
SPT	18	6		VRb	**6m:** Silty CLAY with some gravel; brownish black. Firm, moist, high plasticity. Gravel, fine to coarse, sub-angular to angular, completely weathered, moderately vesicular basalt. [Completely weathered, brownish mottled yellow, moderately vesicular BASALT; extremely weak].	CW	6m: SPT 3// 2,2,2,3 N = 9	100					
HQ3				VWb	**6.7m:** Highly weathered, brownish mottled yellow, moderately vesicular BASALT; extremely weak. [Silty CLAY with some gravel; brown mottled yellow. Firm, moist, high plasticity. Gravel, fine to coarse, sub-angular to angular, highly weathered, moderately vesicular basalt].	HW							
	17	7		VRb	**6.9m:** Sandy fine to coarse GRAVEL with some silt and trace clay; brown mottled yellow. Medium dense, moist. Gravel, sub-angular to angular, highly weathered, moderately vesicular basalt. Sand is fine to medium. Silt is low plasticity. [Completely weathered, brown mottled yellow, moderately vesicular BASALT; extremely weak].	CW		100					
SPT					**7.1m:** Highly weathered, brown mottled yellow, moderately vesicular BASALT; extremely weak. [Sandy fine to coarse GRAVEL with some silt and trace clay; brown mottled yellow. Medium dense, moist. Gravel, fine to coarse, sub-angular to angular, highly weathered, moderately vesicular basalt. Sand is fine to medium. Silt is low plasticity].	HW	7.5m: SPT 4// 2,3,4,4 N = 13	100					
	16	8											
HQ3				VWb	**8.05m:** Highly weathered, reddish brown mottled orange, moderately vesicular BASALT; extremely weak. [Silty fine to medium SAND; reddish brown mottled orange. Medium dense, moist, partially welded]. **8.16m to 8.19m:**...Moderately inclined, 30mm black ash layer. **8.2m to 8.25m:**...Moderately inclined, 50mm black ash layer. **8.37m:** Highly weathered, brown, moderately vesicular BASALT; extremely weak. [COBBLES with some gravel and minor clay; brown. Medium dense, moist. Gravel, fine to coarse, sub-angular to angular, highly weathered, slightly vesicular basalt. Clay is high plasticity].	HW		100					
SPT	15	9					9m: SPT 5// 3,3,4,4 N = 14	100					
HQ3				VRb	**9.45m:** Silty CLAY; reddish brown mottled orange. Soft, moist, high plasticity. [Completely weathered, reddish brown mottled orange BASALT; extremely weak].	CW							
	14	10		VWb	**9.65m:** Highly weathered, brownish black, slightly vesicular BASALT; extremely weak. [COBBLES with some gravel; brown. Medium dense, moist. Gravel, fine to coarse, sub-angular to angular, highly	HW		100	53	10			

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 24/11/20 07:15 | m | 8.1 m bgl

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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PO Box 9762, Newmarket
Auckland, New Zealand
Tel: +64 9 520 6019
www.aurecongroup.com

Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH001

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 417191.000m
Northing: 774155.000m
Reduced level: 24.000m (NZVD2016)

Date started: 24/11/2020
Date completed: 24/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3					weathered, slightly vesicular basalt].								
					10m: Highly weathered, brownish black mottled yellow and orange, slightly vesicular BASALT; extremely weak. [Silty SAND with some gravel; brownish black mottled yellow and orange. Loose, moist. Gravel, fine to coarse, sub-angular to angular, highly weathered, slightly vesicular basalt. Silt is low plasticity].			100	53	10			
SPT	13	11				HW	10.5m: SPT 2// 1,2,3,4 N = 10	100					
HQ3					**11.15m:** Moderately weathered, brownish black, slightly vesicular BASALT; extremely weak. [COBBLES with some gravel; brownish black. Medium dense, moist. Gravel, fine to coarse, sub-angular to angular, moderately weathered, slightly vesicular basalt].	MW							
					11.45m: Highly weathered, brownish black mottled yellow, slightly vesicular BASALT; extremely weak. [Silty fine to coarse SAND with some gravel; brownish black mottled yellow. Medium dense, moist. Gravel, fine to coarse, sub-angular to angular, highly weathered, slightly vesicular basalt. Sand is fine to medium. Silt is low plasticity].			100	45				
SPT	12	12		VWb		HW	12m: SPT 4// 3,3,3,3 N = 12	100					
					12.55m: Highly weathered, brown mottled yellow, slightly vesicular BASALT; extremely weak. [COBBLES with some gravel; brownish black. Medium dense, moist. Gravel, fine to coarse, sub-angular to angular, highly weathered, slightly vesicular basalt].	HW							
HQ3	11	13			**12.95m:** Highly weathered, brown mottled orange, slightly vesicular BASALT; extremely weak. [Silty fine to medium SAND with some gravel; brownish mottled orange. Medium dense, moist. Gravel, fine to coarse, sub-angular to angular, highly weathered, slightly vesicular basalt].			100	23				
SPT	10	14				HW	13.5m: SPT 6// 3,3,4,4 N = 14	100					
HQ3					**14.75m to 14.85m:**...Black and mottled yellow			100	84	19			
	9	15											

Box 4
Box 5

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 24/11/20 07:15 | m | 8.1 m bgl

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Tel: +64 9 520 6019
www.aurecongroup.com

Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH001

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 417191.000m
Northing: 774155.000m
Reduced level: 24.000m (NZVD2016)

Date started: 24/11/2020
Date completed: 24/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
SPT					**12.95m:** Highly weathered, brown mottled orange, slightly vesicular BASALT; extremely weak. [Silty fine to medium SAND with some gravel; brownish mottled orange. Medium dense, moist. Gravel, fine to coarse, sub-angular to angular, highly weathered, slightly vesicular basalt].	HW	15m: SPT 3// 2,2,2,2 N = 8	100					
HQ3	8	16			**15.4m:** Highly weathered, brown, slightly vesicular BASALT; extremely weak. [Silty fine to medium SAND with trace gravel; brownish black. Loose, moist. Gravel, fine to medium, sub-angular to angular, highly weathered, slightly vesicular basalt]. **15.6m:** Highly weathered, brownish mottled yellow, slightly vesicular BASALT; extremely weak. [COBBLES with some gravel; brownish mottled yellow. Loose, moist. Gravel, fine to coarse, sub-angular to angular, highly weathered, slightly vesicular basalt].	HW HW		100	41	27		
SPT					**16.45m:** Highly weathered, brownish grey, slightly vesicular BASALT; extremely weak. [COBBLES with some gravel; brownish grey. Loose, moist. Gravel, fine to coarse, sub-angular to angular, highly weathered, slightly vesicular basalt].	HW	16.5m: SPT 3// 1,2,2,3 N = 8	100					
HQ3	7	17		VWb	**16.95m:** Moderately weathered, greenish grey, moderately vesicular BASALT; weak. Vesicles are <15mm diameter.	MW						16.95m: Broken on recovery, black staining	
					17.2m: Moderately weathered, brownish grey, slightly vesicular BASALT; weak.	MW		100	26			17.2m: Broken on recovery, black staining	
SPT	6	18			**17.7m:** Silty fine to medium SAND with some gravel; grey mottled brown. Medium dense, moist. Gravel, fine to coarse, sub-angular to angular, highly weathered, basalt.	SP	18m: SPT 6// 3,3,2,4 N = 12	100				17.7m: Material recovered may have come from an in-filled void	
HQ3	5	19			**18.45m:** Highly weathered, brownish black with speckled yellow, slightly vesicular BASALT; weak. [Clayey fine to coarse GRAVEL with trace silt; brownish black with speckled yellow. Medium dense, moist. Gravel, sub-angular to angular, highly weathered, slightly vesicular basalt].	HW		100	56			
				Vt	**19.3m:** Highly weathered, brownish black, moderately vesicular BASALT; extremely weak. [Silty fine to medium SAND with some gravel; brownish mottled yellow. Medium dense, moist. Gravel, fine to coarse, sub-angular to angular, highly weathered, moderately vesicular basalt].	HW SW	19.5m: SPTC 20 for 55mm// N = 50+	N/A				19.5m: 5 blows for 0mm, SPT bouncing 19.5m to 19.8m: CZ Sn 1-5mm MW Clay in-fill	
SPTC HQ3	4	20		VUb	**19.5m:** Slightly weathered, dark grey, highly vesicular BASALT; weak. Vesicles are <15mm diameter. **19.7m:** Moderately weathered, dark grey, highly vesicular BASALT; weak. Vesicles are <15mm diameter.	MW		100	45			19.7m: Some silty CLAY in-fill material, yellowish brown	

Box 5 Box 6 Box 7

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 24/11/20 07:15 | m | 8.1 m bgl

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH001

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 417191.000m
Northing: 774155.000m
Reduced level: 24.000m (NZVD2016)

Date started: 24/11/2020
Date completed: 24/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS VWS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3					**19.7m:** Moderately weathered, dark grey, highly vesicular BASALT; weak. Vesicles are <15mm diameter.			100	45			19.95m to 20m: JT 50-60° UnRo Cn MW 20.1m to 20.7m: CZ 1-5mm HW Clay in-fill	
SPTC	3	21			**21m to 23.1m:**...Vesicles are 15mm to 30mm diameter.		21m: SPTC 20 for 65mm// N = 50+	N/A				21m: 5 blows for 0mm, SPT bouncing	
HQ3						MW		100	70	58		21.25m to 21.38m: JT 10-40° UnRo Sn 1-5mm HW Clay in-fill 21.4m to 21.75m: CZ 1-2mm MW Clay in-fill	
SPTC	2	22		VUb			22.505m: SPTC 20 for 30mm// N = 50+	N/A				22.505m: 5 blows for 0mm, SPT bouncing	
HQ3	1	23			**23.1m:** Unweathered, dark grey, BASALT; moderately strong.	UW		100	73	52		22.85m to 23.25m: JT PlSm Sn 1-5mm MW Clay in-fill 23.4m to 23.45m: JT UnSm Sn 1-5mm MW Clay in-fill	
SPTC	0	24					24m: SPTC 20 for 70mm// N = 50+	N/A				24m: 5 blows for 0mm, SPT bouncing	
HQ3	-1	25			**24.27m:** Unweathered, dark grey, highly vesicular BASALT; moderately strong. Vesicles are <25mm diameter.	UW		100	71	59		24.27m: Some silty CLAY in-fill material, yellowish brown 24.5m to 24.55m: JT 80-85° StRo Sn 5-10mm MW Clay in-fill 24.57m to 24.87m: JT UnRo Sn 1-5mm MW Clay in-fill	

Box 7
Box 8

REMARKS:
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Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 24/11/20 07:15 | m | 8.1 m bgl

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BH001

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Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
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Northing: 774155.000m
Reduced level: 24.000m (NZVD2016)

Date started: 24/11/2020
Date completed: 24/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3 (Box 8)				VUb	**24.27m:** Unweathered, dark grey, highly vesicular BASALT; moderately strong. Vesicles are <25mm diameter.	UW		100	71	59		25.25m to 25.35m: JT 50-55° PlSm Cn UW	
					End of borehole at 25.5m (Target depth reached)								

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 24/11/20 07:15 | m | 8.1 m bgl

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Client: **Kiwi Properties Ltd**
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Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH002

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 417081.000m
Northing: 774102.000m
Reduced level: 24.000m (NZVD2016)

Date started: 24/11/2020
Date completed: 25/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				T	**0m:** Silty CLAY; brown. Soft, moist, high plasticity, rootlets.	OH						**0m: TOPSOIL**	
					0.2m: Silty CLAY; orange brown. Stiff, moist, high plasticity.	CH						**0.2m: SOUTH AUCKLAND VOLCANIC FIELD**	
					0.6m: Silty CLAY; orange brown. Firm, moist, high plasticity.	CH		100					
	23	1			**0.85m:** CLAY with some silt; brownish orange. Firm, moist, high plasticity.	CH							
SPT							1.5m: SPT 2// 1,2,3,4 N = 10	100					
HQ3	22	2			**1.95m:** SILT with some clay and trace sand and gravel; orange brown. Fine, moist, high plasticity. Sand is fine. Gravel is fine, sub-rounded, basalt.	MH							
				VRb	**2.45m:** Silty CLAY with trace gravel; brownish orange. Stiff, moist, high plasticity. Gravel is fine to medium, basalt [Completely weathered, brownish orange BASALT; extremely weak].	CH		100					
	21	3											
SPT					**3m:** Clayey SILT with trace gravel; brownish orange. Firm, moist, high plasticity. Gravel is medium basalt [Completely weathered, brownish orange BASALT; extremely weak].	MH	3m: SPT 6// 5,4,4,4 N = 17	100					
HQ3					**3.45m:** Silty CLAY with trace gravel; brownish orange. Firm, moist, high plasticity. Gravel is fine to medium, sub-angular, basalt [Completely weathered, brownish orange BASALT; extremely weak].	CH							
	20	4			**3.95m:** SILT with some clay and gravel; brownish red. Stiff, moist, high plasticity. Gravel is fine to coarse, basalt [Completely weathered, brownish red BASALT; extremely weak].	MH		100					
SPT					**4.5m:** Sandy SILT with some gravel; brownish orange. Stiff, moist, low plasticity. Sand is fine to coarse. Gravel is fine to medium, basalt [Completely weathered, brownish orange BASALT; extremely weak].	ML	4.5m: SPT 4// 3,3,4,4 N = 14	100					
	19	5						100	43				

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. BH002 backfilled upon completion.

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH002

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 417081.000m
Northing: 774102.000m
Reduced level: 24.000m (NZVD2016)

Date started: 24/11/2020
Date completed: 25/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				VRb		ML							
				VWb	**5.25m:** Highly weathered, brownish red, BASALT; very weak [Silty GRAVEL with some clay; brownish red. Stiff, moist, low plasticity. Gravel is fine to medium, sub-angular, gravel].	HW							
				VRb	**5.35m:** Silty CLAY with trace sand; orange brown. Firm, moist, high plasticity. Sand is fine [Completely weathered, orange brown BASALT; extremely weak].	CH		100	43				
				VWb	**5.65m:** Highly weathered, brown, slightly vesicular BASALT, extremely weak [Gravelly SILT with minor clay; brown. Loose, moist, uniformly graded. Gravel is fine to medium, sub-angular, basalt].	HW							
	18	6			**5.9m:** Silty CLAY with trace sand; orange brown. Firm, moist, high plasticity. Sand is fine [Completely weathered, orange brown BASALT; extremely weak].	CH							
SPT				VRb	**6m:** SILT with trace sand; brown. Very loose, wet, non-plastic. Sand is fine [Completely weathered, brown BASALT; extremely weak].	ML	6m: SPT 2// 0,1,1,1 N = 3	100					
					6.65m: SILT trace sand; brownish red. Very loose, moist, poorly graded. Sand is fine [Completely weathered, brownish red BASALT; extremely weak].	ML							
HQ3	17	7		VWb	**6.75m:** Highly weathered, orange brown, BASALT; extremely weak [Gravelly SILT with some cobbles; orange brown. Very loose to loose, moist, well graded].	HW		100	71				
SPT							7.5m: SPT 2// 2,1,2,2 N = 7	100					
	16	8		VRb	**7.95m:** SILT with some sand and minor gravel; brown. Loose, wet, well graded. Sand is fine. Gravel is fine, sub-rounded, basalt.	ML						7.95m: In-filled void.	
HQ3				VWb	**8.15m:** Highly weathered, brown, BASALT; very weak [Gravelly SILT with some cobbles; brown. Loose, moist, well graded. Gravel is fine to coarse, sub-angular, basalt]. **8.16m to 9m:**...Yellowish brown clay nodules (>2mm).	HW		100	81			
	15	9					9m: SPT 2// 1,1,2,1 N = 5						
SPT								100					
HQ3								100	62				
	14	10			**9.85m to 10.35m:**...Moderately vesicular, >5mm diameter.								

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. BH002 backfilled upon completion.

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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BH002

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 417081.000m
Northing: 774102.000m
Reduced level: 24.000m (NZVD2016)

Date started: 24/11/2020
Date completed: 25/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				VWb	**8.15m:** Highly weathered, brown, BASALT; very weak [Gravelly SILT with some cobbles; brown. Loose, moist, well graded. Gravel is fine to coarse, sub-angular, basalt].	HW		100	62			10.25m: JT 10° Ro Vn	
					10.35m to 10.5m:...Yellowish brown clay nodules (feldspar, >2mm).							10.4m: JT 45° Ro Cn	
SPT	13	11		VRb	**10.5m:** Highly weathered, brown, BASALT; extremely weak [Sandy SILT, with minor gravel; brown. Medium dense, moist, well graded. Gravel is fine, sub-angular, basalt].	HW	10.5m: SPT 6// 4,4,8,10 N = 26	100					
HQ3					**11.15m:** Highly weathered, brown, slightly vesicular BASALT; very weak [GRAVEL with some silt; brown. Dense, moist, poorly graded].			100	86	13			
					11.65m to 11.85m:...Clayey SILT with minor sand; brown. Soft to firm, moist, high plasticity. Sand is fine.							11.65m: Filled void within basalt.	
	12	12										11.85m to 12.95m: Recovered as gravel and cobbles.	
SPT						HW	12m: SPT 7// 4,6,14,19 N = 43	100					
HQ3	11	13		VWb	**12.95m:** Medium to coarse sandy SILT with minor gravel; brown. Dense, moist, well graded. Gravel is fine, basalt [Completely weathered, brown, BASALT; extremely weak].	CW		100	67	12			
					13.3m: Highly weathered, brown, moderately vesicular BASALT; very weak. Vesicles are >5mm diameter.								
SPT							13.5m: SPT 10// 6,9,12,10 N = 37	100					
HQ3	10	14			**14.2m to 14.7m:**...Yellowish brown clay nodules (feldspar, >5mm).	HW		100	64	22			
	9	15			**14.8m:** Highly weathered, brown, BASALT; very weak, highly fractured [GRAVEL with some minor cobbles and trace silt; brown. Dense, moist, poorly graded. Gravel and cobbles are	HW						14.8m to 15.4m: CZ 70° Ro Cn	

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. BH002 backfilled upon completion.

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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BH002

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 417081.000m
Northing: 774102.000m
Reduced level: 24.000m (NZVD2016)

Date started: 24/11/2020
Date completed: 25/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
SPTC				Vx	angular, basalt]. **15m:** NO RECOVERY		15m: SPTC 50 for 120mm// N = 50+	N/A					
HQ3	8	16		VWb	**15.135m:** Highly weathered, brown, BASALT; very weak, highly fractured [GRAVEL with some minor cobbles and trace silt; brown. Dense, moist, poorly graded. Gravel and cobbles are angular, basalt].	HW							
				VUb	**15.66m:** Slightly weathered, brownish grey, moderately vesicular BASALT; very weak. Vesicles are >5mm diameter.	SW		100	47	34			
				VWb	**16.4m:** Moderately weathered, brown, moderately vesicular BASALT; moderately strong. Vesicles are >5mm diameter and infilled with greyish brown clay.	MW							
SPTC				Vx	**16.45m to 16.5m:**...Vesicles infilled with yellowish brown clay. **16.5m:** NO RECOVERY		16.5m: SPTC 12// 24,26 for 30mm N = 50+	N/A					
HQ3	7	17		VWb	**16.755m:** Slightly weathered, brown, moderately vesicular BASALT; moderately strong. Vesicles are >5mm diameter and infilled with greyish brown clay.	SW		100	74	61		17.4m: JT 45° Ro Vn	
SPTC	6	18		Vx	**18m:** NO RECOVERY		18m: SPTC 11// 12,13,14,12 N = 51	N/A					
HQ3	5	19		VWb	**18.45m:** Slightly weathered, brown, BASALT; moderately strong, moderately vesicular (>5mm, infilled with greyish brown clay). **18.46m to 18.55m:**...Yellowish brown clay.	SW		100	70	61		18.8m: JT 45° Ro Cn 18.95m: JT 50° Ro Cn	
					19.3m: Highly weathered, brown BASALT; very weak [Cobbly GRAVEL; brown, mottled yellow brown. Very dense, moist, poorly graded].	HW						19.35m to 19.5m: CZ 20° Ro Cn	
SPTC				Vx	**19.5m:** NO RECOVERY		19.5m: SPTC 10// 16,20 for 50mm N = 50+	N/A				19.5m: SPT hammer bouncing. N value of 50+ inferred.	
HQ3	4	20		VWb	**19.775m:** Moderately weathered, brown, highly vesicular BASALT; moderately strong. Vesicles are >5mm diameter.	MW		100	86	42			

REMARKS:
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Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				VWb	**19.775m:** Moderately weathered, brown, highly vesicular BASALT; moderately strong. Vesicles are >5mm diameter.							20.15m: JT 45° Ro Cn	
					20.3m to 21m:...Moderately vesicular. Vesicles are >5mm diameter.	MW		100	86	42			
					20.8m to 20.9m:...Yellowish brown clay.							20.8m: JT 55° Ro Cn 20.9m: JT 55° Ro Cn	
	3	21											
SPTC				Vx	**21m:** NO RECOVERY		21m: SPTC 28 for 115mm// N = 50+	N/A				21m: SPT hammer bouncing. N value of 50+ inferred.	
HQ3				VUb	**21.115m:** Slightly weathered, grey, highly vesicular BASALT; strong. Vesicles are >10mm diameter.	SW		100	95	95		21.9m: JT 0° Ro Cg	
	2	22											
SPTC				Vx	**22.5m:** SOLID CONE SPT, NO RECOVERY		22.5m: SPTC 25 for 65mm// N = 50+	N/A				22.5m: SPT hammer bouncing. N value of 50+ inferred.	
HQ3				VUb	**22.57m:** Slightly weathered, grey, highly vesicular BASALT; strong. Vesicles are 10mm to 30mm.	SW		100	95	84		23.65m: JT 5° Ro Cn	
	1	23			**23.15m to 23.35m:**...Yellowish brown clay.								
					23.65m to 24m:...Highly vesicular. Vesicles are >10mm diameter.								
SPTC	0	24		Vx	**24m:** NO RECOVERY		24m: SPTC 25 for 25mm// N = 50+	N/A				24m: SPT hammer bouncing. N value of 50+ inferred.	
HQ3				VUb	**24.025m:** Slightly weathered, grey, highly vesicular BASALT; strong. Vesicles are >10mm diameter.	SW							
				VWb	**24.3m:** Highly weathered, brown, mottled yellowish brown BASALT; extremely weak [Clayey GRAVEL; brown, mottled yellowish brown. Very dense, moist, gap graded].	HW							
				VUb	**24.45m:** Slightly weathered, grey, highly vesicular BASALT; strong. Vesicles are >10mm diameter.	SW		100	46	46		24.65m: JT 15° Ro Cn	
				VWb	**24.8m:** Highly weathered, brown, mottled yellowish brown BASALT; extremely weak [Clayey GRAVEL; brown, mottled yellowish brown. Very dense, moist, gap graded].	HW							
	-1	25											

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. BH002 backfilled upon completion.

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH002

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 417081.000m
Northing: 774102.000m
Reduced level: 24.000m (NZVD2016)

Date started: 24/11/2020
Date completed: 25/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				VWb	**24.8m:** Highly weathered, brown, mottled yellowish brown BASALT; extremely weak [Clayey GRAVEL; brown, mottled yellowish brown. Very dense, moist, gap graded].	HW		100	46	46			
				VUb	**25.3m:** Slightly weathered, grey, highly vesicular BASALT; strong. Vesicles are >10mm diameter.	SW							
SPTC				Vx	**25.5m:** NO RECOVERY End of borehole at 25.57m (Target Depth Reached)		25.5m: SPTC 25 for 70mm// N = 50+	N/A				25.5m: SPT hammer bouncing. N value of 50+ inferred.	

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. BH002 backfilled upon completion.

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH003

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416917.000m
Northing: 774329.000m
Reduced level: 23.000m (NZVD2016)

Date started: 30/11/2020
Date completed: 1/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				T	**0m:** Silty CLAY; brown. Firm, moist, high plasticity, organic topsoil.	OH						**0m: TOPSOIL**	
					0.16m: CLAY with minor silt; brownish orange. Stiff, moist, high plasticity.	CH						**0.16m: SOUTH AUCKLAND VOLCANIC FIELD**	
					0.6m: CLAY with minor silt; brownish orange. Very stiff, moist, high plasticity [Recovered as firm, wet to moist].	CH	0.7m: IBTHSV UTP	100					
	22	1			**0.9m:** CLAY with minor silt; brownish orange, banded grey. Very stiff, moist, high plasticity.	CH							
SPT							1.5m: SPT 5// 3,4,4,4 N = 15						
	21	2					1.5m: IBTHSV UTP	100					
HQ3				VRb	**2m:** CLAY with minor silt; reddish brown. Stiff, moist, high plasticity.	CH							
					2.5m: Silty CLAY with minor sand; reddish brown. Stiff, moist, high plasticity. Sand is fine.	CH		100					
	20	3			**2.9m:** Sandy SILT with minor clay; reddish brown. Stiff, moist, low plasticity. Sand is fine to medium.	SW-SM	3m: SPT 4// 3,2,2,2 N = 9						
SPT					**3.2m:** Sandy CLAY with minor silt; orange brown. Firm, moist, high plasticity.	SC	3m: IBTHSV UTP	100				3.2m: Indented by strong finger pressure, core inferred to be disturbed by drilling.	
HQ3	19	4			**3.8m:** CLAY with some silt; orange brown. Stiff, moist, high plasticity.	CH		100					
U54				Vx	**4.5m:** Push tube yet to be logged.		4.5m: IBTHSV 61/21 kPa	100					
	18	5											

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 01/12/20 07:10 | m | 4.9 m bgl

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Client: **Kiwi Properties Ltd**
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Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH003

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416917.000m
Northing: 774329.000m
Reduced level: 23.000m (NZVD2016)

Date started: 30/11/2020
Date completed: 1/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
SPT				VRb	**5m:** Clayey fine to medium GRAVEL; greenish grey. Loose, moist, low plasticity [Completely weathered, greenish grey BASALT; extremely weak].	CW	5m: SPT 3// 2,1,1,2 N = 6	100					
HQ3	17	6			**5.73m:** Gravelly CLAY; brownish orange. Loose, moist, low plasticity [Completely weathered, brownish orange BASALT; extremely weak].	GC	6m: SPT 2// 1,1,2,2 N = 6	100					
SPT					**6.3m:** Silty CLAY with some gravel; orange brown. Firm, moist, high plasticity. Gravel is fine, basalt [Completely weathered, orange brown BASALT; extremely weak].	CH		100					
HQ3	16	7			**7.4m:** Gravelly CLAY; dark brown. Stiff, moist, high plasticity [Completely weathered, dark brown BASALT; extremely weak].	GC	7.5m: SPT 2// 1,1,0,1 N = 3	100					
SPT	15	8		VWb	**8.08m:** Highly weathered, dark brown BASALT; very weak [Recovered as clayey GRAVEL with some silt; dark brown. Very loose, moist, low plasticity. Gravel is coarse, angular, basalt].	HW							
HQ3					**8.15m:** Highly weathered, orange brown, slightly vesicular BASALT; very weak [Recovered as clayey GRAVEL with some silt; orange. Very loose, moist, low plasticity. Gravel is medium to coarse, sub-angular, basalt].	HW		100					
	14	9			**8.4m:** Highly weathered, orange brown BASALT; extremely weak [Gravelly CLAY with minor silt; orange brown. Firm, moist, high plasticity. Gravel is fine to coarse].	HW							
SPT				VRb	**9m:** Gravelly CLAY with minor silt; orange brown. Soft, moist, high plasticity. Gravel is fine to medium [Completely weathered, orange brown, BASALT; extremely weak].	CW	9m: SPT 1// 1,3,4,4 N = 12 9m: IBTHSV 18/3 kPa	100					
HQ3	13	10		VWb	**9.7m:** Highly weathered, dark brown BASALT; very weak [Silty fine to coarse GRAVEL with minor clay; dark brown. Medium dense, moist, uniformly graded].	HW		100					

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 01/12/20 07:10 | m | 4.9 m bgl

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH003

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416917.000m
Northing: 774329.000m
Reduced level: 23.000m (NZVD2016)

Date started: 30/11/2020
Date completed: 1/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes
HQ3				HW						
			10.2m: Moderately weathered, dark brown, slightly vesicular BASALT; very weak. Vesicles are >5mm diameter.	MW		100				
SPT			**10.4m:** Highly weathered, orange brown BASALT; very weak [Silty CLAY with minor gravel; orange brown. Very stiff, moist, high plasticity. Gravel is fine, sub-angular, basalt].	HW	10.5m: SPT 2// 2,3,3,4 N = 12	100				
	12	11			10.5m: IBTHSV UTP					
HQ3			**11.2m:** Highly weathered, greenish grey BASALT; very weak. Some yellowish brown clay nodules (>1mm).	HW		100	55	0		11.25m: JT -35° Ro Sn 11.32m: JT -32° Ro Cn 11.45m to 11.48m: JT -52° Ro Vn 11.56m: JT -34° Ro Cg 11.6m to 11.65m: JT -54° Ro Sn
			11.7m: Highly weathered, orange brown BASALT; extremely weak, black staining [SILT with some clay and minor gravel; orange brown. Very stiff, moist, high plasticity].	HW						11.7m to 12.15m: CZ Ro Sn
	11	12	**11.92m:** Highly weathered, greenish grey BASALT; very weak, some yellowish brown clay nodules (>1mm), black staining.	HW	12m: SPT 11// 7,9,11,12 N = 39					11.92m: JT -32° Ro Sn
SPT			**12.15m:** Clayey SILT with minor gravel; greenish grey. Very stiff, moist, high plasticity. Gravel is fine to medium, sub-angular, basalt [Completely weathered, greenish grey BASALT; extremely weak].	CW	12m: IBTHSV UTP	100				
HQ3			**12.85m:** Moderately weathered, greenish grey, slightly vesicular BASALT; very weak. Vesicles are >1mm diameter.	MW		100	27	0		12.84m to 12.95m: JT -81° Ro Sn 13m: JT -5° Ro Cn
	10	13	**13.35m:** Highly weathered, dark brown BASALT; very weak [Silty medium GRAVEL with minor clay; dark brown. Medium dense, moist, well graded. Gravel is sub-angular basalt].	HW	13.5m: SPT 4// 2,3,4,5 N = 14					
SPT						100				
HQ3			**13.95m:** Moderately weathered, greenish grey, slightly vesicular BASALT; very weak. Vesicles are >1mm diameter.	MW		100	86	24		14.55m to 14.7m: JT -64° Ro Vn 14.84m: JT -5° Ro Sn
	9	14								
	8	15								

Layer Code: VWb; VRb; VWb

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 01/12/20 07:10 | m | 4.9 m bgl

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Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH003

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416917.000m
Northing: 774329.000m
Reduced level: 23.000m (NZVD2016)

Date started: 30/11/2020
Date completed: 1/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
SPTC				Vx	**15m:** NO RECOVERY		15m: SPTC 9// 5,6,6,12 N = 29	N/A					
HQ3	7	16		VWb	**15.45m:** Moderately weathered, greenish grey, slightly vesicular BASALT; very weak. Vesicles are >1mm diameter.	MW						15.78m to 15.88m: JT -60° Ro Sn	
					15.9m: Highly weathered, brown BASALT; very weak [Gravelly CLAY; yellowish brown. Stiff to very stiff, moist, high plasticity. Gravel is fine to medium].	HW		100	44	26			
SPT	6	17			**16.2m:** Moderately weathered, dark brown, slightly vesicular BASALT; very weak. Vesicles are >2mm diameter.	MW	16.5m: SPT 4// 3,4,4,5 N = 16	100					
HQ3								100	65	52		17.76m to 17.81m: JT -51° Ro Cn 17.83m to 17.88m: JT -46° Ro Cn	
SPT	5	18					18m: SPT 3// 19,5 for 5mm N = 50+	100				18m: SPT hammer bouncing. N value of 50+ inferred.	
HQ3	4	19			**18.23m:** Highly weathered, dark brown BASALT; extremely weak. Recovered as gravelly CLAY; dark brown. Firm, moist, high plasticity.	HW							
					18.37m: Moderately weathered, dark brown, slightly vesicular BASALT; very weak. Vesicles are >2mm diameter.	MW		100	46	0		18.43m: JT -27° Ro Cn 18.53m: JT -29° Ro Cn 18.57m to 18.83m: JT -84° Ro Vn	
					19.09m: Moderately weathered, dark brown, slightly vesicular BASALT; moderately strong. Vesicles are >2mm diameter.	MW						19.05m: JT -28° Ro Cn 19.1m: JT -38° Ro Vn 19.3m to 19.36m: JT -39° Ro Sn	
SPTC				Vx	**19.5m:** NO RECOVERY		19.5m: SPTC 25 for 70mm// N = 50+	N/A				19.45m: JT -42° Ro Cn 19.5m: SPT hammer bouncing. N value of 50+ inferred.	
HQ3	3	20		VWb	**19.58m:** Moderately weathered, dark brown, slightly vesicular BASALT; moderately strong. Vesicles are >2mm diameter.	MW		100	92	73		19.6m: JT -5° Ro Cn 19.85m: JT -50° Ro Sn 19.9m: JT -50° Ro Cn	

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 01/12/20 07:10 | m | 4.9 m bgl

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Database File: 510611_V3.GPJ **Library File:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Project: **Drury Development**
Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH003

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416917.000m
Northing: 774329.000m
Reduced level: 23.000m (NZVD2016)

Date started: 30/11/2020
Date completed: 1/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3	2	21		VUb	**20.05m:** Slightly weathered, bluish grey, highly vesicular BASALT; strong. Vesicles are >20mm diameter.	MW / SW		100	92	73		20.7m: JT -12° Ro Cg	
					20.57m: Slightly weathered, brownish grey, moderately vesicular BASALT; moderately strong. Vesicles are >20mm diameter, infilled with yellow brown clay. **20.76m to 20.79m:**...Joint with yellowish brown clay. **20.95m to 21.15m:**...Joint with yellowish brown clay. **21.15m to 21.3m:**...Joint with yellowish brown clay.	SW						21.1m to 21.17m: JT -56° Ro Vn 21.26m to 21.32m: JT -61° Ro Cn	
HQ3	1	22			**21.75m:** Slightly weathered, bluish grey, slightly vesicular BASALT; strong. Vesicles are >15mm diameter.	SW		100	81	70		21.68m to 21.74m: JT -74° Ro Cg 22.23m: JT -37° Ro Sn	
HQ3	0	23			**23m:** Slightly weathered, bluish grey, highly vesicular BASALT; strong. Vesicles are >30mm diameter, some infilled with yellowish brown clay.	SW		100	75	69		22.69m to 22.74m: JT -51° Ro Cn 23.24m: JT -36° Ro Vn 23.34m: JT -45° Ro Vn	
HQ3	-1	24			**24.2m:** Slightly weathered, bluish grey, moderately vesicular BASALT; strong. Vesicles are >10mm diameter.	SW		100	87	79		24m to 24.06m: JT -42° Ro Cn 24.49m: JT -44° Ro Vn 24.69m to 24.75m: JT -49° Ro Cn	
	-2	25											

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 01/12/20 07:10 | m | 4.9 m bgl

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH003

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416917.000m
Northing: 774329.000m
Reduced level: 23.000m (NZVD2016)

Date started: 30/11/2020
Date completed: 1/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				VUb	**24.2m:** Slightly weathered, bluish grey, moderately vesicular BASALT; strong. Vesicles are >10mm diameter.	SW						25.09m: JT -34° Ro Cn	
					25.2m: Slightly weathered, bluish grey, highly vesicular BASALT; strong. Vesicles are >30mm diameter. **25.3m to 25.5m:**...Brown discolouration.	SW		100	87	79		25.27m: JT -3° Ro Cn	
					End of borehole at 25.5m (Target Depth Reached)								

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 01/12/20 07:10 | m | 4.9 m bgl

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH004

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416787.000m
Northing: 773943.000m
Reduced level: 25.000m (NZVD2016)

Date started: 25/11/2020
Date completed: 26/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy / Defect Description / Additional Notes	Installation
HQ3	24	1		T	**0m:** Silty CLAY; brown. Soft, moist, high plasticity, rootlets.	OH						**0m: TOPSOIL**	
				VRt	**0.15m:** CLAY with some silt and trace sand; brownish orange. Firm to stiff, moist, high plasticity. Sand is fine.	CH		100				**0.15m: SOUTH AUCKLAND VOLCANIC FIELD**	
SPT	23	2			**1.5m:** Silty CLAY with minor sand; brownish orange. Very stiff, wet to moist, high plasticity. Sand is fine, pumiceous.	CH	1.5m: SPT 2// 2,2,2,2 N = 8 1.5m: IBTHSV 115/36 kPa	100					
HQ3					**2.45m:** Silty CLAY with minor sand; brownish orange. Very stiff, moist, high plasticity. Sand is pumiceous.	CH		67					
	22	3		Vx	**2.65m:** CORE LOSS								
SPT					**3m:** Silty CLAY with minor sand; brownish orange. Stiff, moist, high plasticity. Sand is pumiceous.	CH	3m: SPT 4// 2,2,2,2 N = 8 3m: IBTHSV 92/28 kPa	100					
HQ3	21	4		VRt	**3.85m:** CLAY with minor silt; greenish grey, banded reddish brown. Stiff, moist, high plasticity.	CH		71					
					4m: SILT with some clay; reddish brown. Very stiff, moist, high plasticity.	MH							
				Vx	**4.2m:** CORE LOSS								
SPT	20	5		VRt	**4.5m:** SILT with some clay; reddish brown. Very stiff, moist, high plasticity.	MH	4.5m: SPT 4// 3,3,4,4 N = 14 4.5m: IBTHSV 125/39 kPa	100					
								100					

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. BH004 backfilled upon completion.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH004

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416787.000m
Northing: 773943.000m
Reduced level: 25.000m (NZVD2016)

Date started: 25/11/2020
Date completed: 26/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3	19	6		VWb	**5.03m:** Highly weathered, orange brown, slightly vesicular BASALT; very weak [Gravelly SILT with trace sand; orange brown. Medium dense, moist, well graded. Sand is fine].			100					
SPT						HW	6m: SPT 5// 3,3,3,3 N = 12 6m: IBTHSV 31/9 kPa	100					
HQ3	18	7			**7.2m to 7.3m:**...Moderately vesicular (>10mm).			100					
SPT	17	8		VRt	**7.5m:** Fine ASH [Clayey SILT with trace sand; brownish orange. Loose, moist, low plasticity. Sand is fine].	CL-ML	7.5m: SPT 1// 1,1,1,1 N = 4 7.5m: IBTHSV 67/15 kPa	100					
					8.1m: Coarse ASH, laminated to very thin bedding [Sandy SILT with minor gravel; brown. Loose, moist, well graded. Sand is fine to coarse. Gravel is fine, sub-rounded].	SW-SM							
HQ3	16	9		VWb	**8.35m:** Highly weathered, orange brown, slightly vesicular BASALT; very weak [Gravelly SILT with some clay; orange brown. Loose, moist, low plasticity. Gravel is fine, sub-angular basalt].			100					
SPT						HW	9m: SPT 2// 0,1,1,2 N = 4 9m: IBTHSV UTP	100					
HQ3	15	10						100	18				

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
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Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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BH004

BOREHOLE INFORMATION
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Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416787.000m
Northing: 773943.000m
Reduced level: 25.000m (NZVD2016)

Date started: 25/11/2020
Date completed: 26/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
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Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				VWb	**8.35m:** Highly weathered, orange brown, slightly vesicular BASALT; very weak [Gravelly SILT with some clay; orange brown. Loose, moist, low plasticity. Gravel is fine, sub-angular basalt].			100	18				
SPT						HW	10.5m: SPT 2// 2,2,3,2 N = 9	100					
	14	11					10.5m: IBTHSV UTP						
HQ3					**11.4m:** Moderately weathered, greenish grey, slightly vesicular BASALT; very weak. Vesicles are >2mm diameter.	MW		100	19			11.2m: JT -65° Ro Cn 11.7m: JT -32° Ro Sn	
	13	12											
SPTC				Vx	**12m:** NO RECOVERY		12m: SPTC 7// 6,12,16,18 N = 52	N/A					
HQ3				VWb	**12.45m:** Moderately weathered, greyish brown, moderately vesicular BASALT; very weak. Vesicles are >10mm diameter. **12.7m to 13.05m:**...Recovered as gravelly SILT with some clay; reddish brown. Medium dense, moist, low plasticity.	MW		100	32				
	12	13			**13.05m:** Moderately weathered, reddish brown, moderately vesicular BASALT; very weak. Vesicles are >5mm diameter.	MW							
SPTC				Vx	**13.5m:** NO RECOVERY		13.5m: SPTC 12// 13,19,18 for 65mm N = 50+	N/A					
HQ3				VWb	**13.865m:** Moderately weathered, reddish brown, moderately vesicular BASALT; very weak. Vesicles are >5mm diameter.	MW		100	44				
	11	14											
	10	15											

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. BH004 backfilled upon completion.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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BH004

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416787.000m
Northing: 773943.000m
Reduced level: 25.000m (NZVD2016)

Date started: 25/11/2020
Date completed: 26/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
SPTC				Vx	**15m:** NO RECOVERY		15m: SPTC 9// 5,6,7,7 N = 25	N/A					
HQ3	9	16		VWb	**15.45m:** Moderately weathered, orange brown, highly vesicular BASALT; very weak. Vesicles are >10mm diameter, some infilled with yellowish brown clay.	MW		100	81	32			
SPT	8	17		VWb	**16.5m:** Highly weathered, orange brown BASALT; extremely weak [Silty GRAVEL; orange brown. Medium dense, moist, uniformly graded. Gravel is fine, sub-angular, basalt].	HW	16.5m: SPT 10// 6,7,7,8 N = 28	100					
HQ3				VWb	**17.2m:** Moderately weathered, orange brown, highly vesicular BASALT; very weak. Vesicles are >10mm diameter, some infilled with yellowish brown clay.	MW		100	57	15		17.5m to 17.6m: CZ -30° Ro Sn	
	7	18		VUb	**17.7m:** Slightly weathered, reddish brown, moderately vesicular BASALT; moderately strong. Vesicles are >5mm diameter, infilled with reddish brown clay.	SW							
SPTC				Vx	**18m:** NO RECOVERY		18m: SPTC 9// 20,5 for 70mm N = 50+	N/A				18m: SPT hammer bouncing. N value of 50+ inferred.	
HQ3	6	19		VUb	**18.22m:** Slightly weathered, grey BASALT; strong.	SW		100	68	68		18.2m: JT -73° Ro Cn 18.22m to 18.8m: Highly fractured due to drilling breaks. 18.4m: JT -0° Ro Cn 18.65m: JT -56° Ro Cn 18.7m: JT -70° Ro Sn 18.75m: JT -75° Ro Sn 18.8m: JT -65° Ro Sn	
SPTC				Vx	**19.5m:** NO RECOVERY	SW	19.5m: SPTC 15 for 5mm// N = 50+	N/A				19.5m: SPT hammer bouncing. N value of 50+ inferred.	
HQ3	5	20		VUb	**19.52m:** Slightly weathered, grey BASALT; strong. **19.65m:** Slightly weathered, grey, highly vesicular BASALT; strong. Vesicles are >10mm diameter, some infilled with yellowish brown clay.	SW		100	77	51			

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. BH004 backfilled upon completion.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH004

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416787.000m
Northing: 773943.000m
Reduced level: 25.000m (NZVD2016)

Date started: 25/11/2020
Date completed: 26/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3	4	21		VUb	**19.65m:** Slightly weathered, grey, highly vesicular BASALT; strong. Vesicles are >10mm diameter, some infilled with yellowish brown clay. **20.4m to 21.4m:**...Orange brown.	SW		100	77	51		20.17m: JT -40° Ro Cn 20.47m: JT -65° Ro Cn 20.52m: JT -60° Ro Cn 20.65m: JT -55° Ro Cn 20.87m: JT -44° Ro Cn 21.1m to 21.2m: CZ -11° Ro Vn	
HQ3	3	22		VRb	**22.4m:** Silty CLAY with minor gravel; yellowish brown. Firm, moist, highly plastic. Gravel is fine, sub-angular to sub-rounded basalt [Completely weathered, yellowish brown BASALT; extremely weak].	CW		100	64	38		21.6m: JT -36° Ro Cn 21.65m: JT -82° Ro Cn 21.7m: JT -41° Ro Cn 21.88m: JT -5° Ro Cn 21.9m: JT -50° Ro Cn 22.2m: JT -60° Ro Cn	
HQ3	2	23		VUb	**22.5m:** Slightly weathered, grey, highly vesicular BASALT; strong. Vesicles are >10mm diameter, some infilled with yellowish brown clay. **22.8m:** Slightly weathered, orange brown, highly vesicular BASALT; strong. Vesicles are 5mm to 20mm diameter, some infilled with yellowish brown clay. **23.6m:**...Light grey. **23.7m to 24.3m:**...Vesicles are ~50mm diameter.	SW		100	91	81		23.1m: JT -40° Ro Cn 23.2m: JT -40° Ro Cn 23.45m: JT -55° Ro Cn 23.75m: JT -50° Ro Cn 23.8m: JT -40° Ro Cn	
HQ3	1	24			**24.3m:**...Moderately vesicular (>10mm).			100	69	61		24.45m: JT -36° Ro Cn 24.75m: JT -34° Ro Vn 24.8m: JT -74° Ro Sn	
	0	25											

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. BH004 backfilled upon completion.

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Project: **Drury Development**
Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH004

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416787.000m
Northing: 773943.000m
Reduced level: 25.000m (NZVD2016)

Date started: 25/11/2020
Date completed: 26/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				VUb	**22.8m:** Slightly weathered, orange brown, highly vesicular BASALT; strong. Vesicles are 5mm to 20mm diameter, some infilled with yellowish brown clay.	SW		100	69	61		25m: JT -22° Ro Cn 25.05m: JT -74° Ro Cn 25.07m: JT -39° Ro Cn	

End of borehole at 25.5m (Target Depth Reached)

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. BH004 backfilled upon completion.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH005

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416795.000m
Northing: 774189.000m
Reduced level: 22.000m (NZVD2016)

Date started: 26/11/2020
Date completed: 30/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
Input by: BGW
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				T	**0m:** SILT with minor clay and trace rootlets; brown. Stiff, moist, low plasticity.	ML						**0m: TOPSOIL**	
					0.15m: Silty CLAY with trace sand; brown speckled black. Very stiff, moist, high plasticity.	CH						**0.15m: SOUTH AUCKLAND VOLCANIC FIELD**	
	21	1			**0.7m:** CLAY with some silt and trace sand; reddish brown mottled light brown. Very stiff, moist, high plasticity. Sand is fine to medium mica.	CH	1.45m: IBHSV UTP 1.5m: SPT 2// 1,1,1,1 N = 4	100					
SPT								100					
HQ3	20	2		VRr				100					
					2.65m: Silty CLAY with minor sand and trace gravel; reddish brown. Firm, moist, high plasticity. Sand is fine to coarse. Gravel is fine, very highly weathered feldspar.	CH							
	19	3			**2.9m:** Silty CLAY with trace sand and gravel; brown streaked orange. Stiff, moist, high plasticity. Sand is mica and quartz. Gravel is fine, completely weathered feldspar and slightly weathered quartz.	CH	2.95m: IBHSV UTP 3m: SPT 2// 1,1,2,2 N = 6	100					
SPT													
HQ3							3.75m: IBHSV UTP	100					
	18	4			**3.85m:** CLAY with some silt and trace sand; orange brown, mottled light grey. Firm, moist, high plasticity. Sand is fine to medium.	CH	4.45m: IBHSV UTP 4.5m: SPT 4// 2,3,3,4 N = 12						
SPT								100					
	17	5						100					

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10.0 m horizontal and ±1.0 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 30/11/20 00:00 | 25.50m | 5.9 m bgl

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH005

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416795.000m
Northing: 774189.000m
Reduced level: 22.000m (NZVD2016)

Date started: 26/11/2020
Date completed: 30/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
Input by: BGW
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				VRr	**3.85m:** CLAY with some silt and trace sand; orange brown, mottled light grey. Firm, moist, high plasticity. Sand is fine to medium.	CH							
					5.35m: CLAY with minor silt and sand; reddish brown, mottled light grey. Stiff, moist, high plasticity. Sand is fine to medium, mica, quartz and feldspar fragments.	CH		100					
					5.83m:...brown.								
	16	6		VAx	**5.9m:** CORE LOSS.		5.95m: IBHSV UTP						
SPT					**6m:** Silty CLAY with trace sand; brownish red. Very stiff, moist, high plasticity. Sand is medium.		6m: SPT 6// 3,4,4,5 N = 16	100					
HQ3	15	7				CH		100				7.1m: JT 45° UnRo	
SPT							7.5m: SPT 6// 4,4,5,5 N = 18	100					
HQ3	14	8		VRr				100					
					8.55m: Clayey SILT with trace sand; brown. Stiff, moist, high plasticity. Sand is medium.								
SPT	13	9				CH	9m: SPT 4// 3,3,2,3 N = 11	100					
HQ3								90					
	12	10				HW							

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10.0 m horizontal and ±1.0 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 30/11/20 00:00 | 25.50m | 5.9 m bgl

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BH005

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416795.000m
Northing: 774189.000m
Reduced level: 22.000m (NZVD2016)

Date started: 26/11/2020
Date completed: 30/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
Input by: BGW
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				VWb	**9.95m:** Highly weathered, orange brown, highly vesicular BASALT; very weak. Vesicles are 5mm in diameter. **10.2m to 10.35m:**...Clayey SILT (Completely weathered BASALT) **10.32m to 10.34m:**...Clay infill of vesicle, subhorizontal.	HW		90				10.1m: JT 45° UnRo (clay)	
				VAx	**10.4m:** CORE LOSS								
SPT	11	11			**10.5m:** Highly weathered, grey brown, spotted light brown, highly vesicular BASALT; extremely weak. Vesicles are 5mm in diameter.		10.5m: SPT 4// 3,3,4,3 N = 13	67					
HQ3					**11.4m:**...dark brown			100					
					11.8m:...slightly vesicular.								
SPT	10	12		VWb		HW	12m: SPT 6// 3,3,3,3 N = 12	40					
HQ3	9	13			**12.7m:** dark orange brown.			100				12.55m to 12.75m: JT 85° PlRo Sn 12.8m: JT 45° PlRo Sn 12.9m: JT 45° PlRo Sn	
SPT	8	14		VAx	**13.5m:** NO RECOVERY		13.5m: SPT 10// 7,9,10,12 N = 38	0					
HQ3	7	15		VWb	**13.95m:** Highly weathered, grey brown spotted light brown, slightly vesicular BASALT; very weak. Vesicles are 5mm in diameter.	HW		100	10				

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10.0 m horizontal and ±1.0 m vertical.
2. 1.0m galvanised steel upstand installed.

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 30/11/20 00:00 | 25.50m | 5.9 m bgl

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH005

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416795.000m
Northing: 774189.000m
Reduced level: 22.000m (NZVD2016)

Date started: 26/11/2020
Date completed: 30/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
Input by: BGW
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
SPT				VWb	**13.95m:** Highly weathered, grey brown spotted light brown, slightly vesicular BASALT; very weak. Vesicles are 5mm in diameter.	HW	15m: SPT 4// 3,4,4,6 N = 17	100				15.27m: JT 45° PlRo Sn	
HQ3	6	16						100	7			15.7m: JT 45° PlRo Cg(clay) 16.1m: JT 45° PlRo Sn	
SPT							16.5m: SPT 3// 6,7,11,16 N = 40	100					
HQ3	5	17						100	0			17.3m to 18m: FT 85° PlRo Sn(Slickensides apparent on surfaces)	
SPTC	4	18			**17.8m:** Moderately weathered, greyish brown spotted light brown, highly vesicular BASALT; very weak. Vesicles are 5mm in diameter.	MW	18m: SPTC 30 for 90mm// N = 50+	N/A				18m: SPT hammer bouncing, test discontinued. 18.05m to 18.3m: JI 85° 18.3m to 18.65m: JT 85° PlSm Sn	
HQ3	3	19						100	7	7		18.7m: JT 45° PlRo Sn 18.75m: JT 45° PlRo Sn 18.8m: JT 55° PlRo Cg(clay) 18.9m to 19.02m: JT 85° PlRo Cg(clay) 19.02m to 19.32m: JT 45° PlRo Sn	
SPT				VUb	**19.2m:** Unweathered, grey BASALT; moderately strong.	UW	19.5m: SPT 20 for 70mm// N = 50+					19.35m: JT 45° PlRo Sn 19.5m: SPT hammer bouncing, test discontinued.	
HQ3	2	20						100	63	63		19.87m to 20.9m: JT 90° PlRo Sn	

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10.0 m horizontal and ±1.0 m vertical.
2. 1.0m galvanised steel upstand installed.

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 30/11/20 00:00 | 25.50m | 5.9 m bgl

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH005

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416795.000m
Northing: 774189.000m
Reduced level: 22.000m (NZVD2016)

Date started: 26/11/2020
Date completed: 30/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
Input by: BGW
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3	1	21		VUb	**19.2m:** Unweathered, grey BASALT; moderately strong.	UW		100	63	63		20.55m to 20.75m: FT 55° UnRo Sn(Slickensides apparent on surfaces)	
HQ3	0	22			**21.65m:** Unweathered, brownish grey BASALT; moderately strong.	UW		100	13	13		21.1m to 21.3m: JT 55° PlRo Sn(Slickensides apparent on surfaces) 21.6m to 21.95m: JT 85° PlRo Sn(clay and fine to coarse angular gravel fragments) 21.7m to 22m: FT (clay and fine to coarse angular gravel fragments) 22.05m to 22.5m: JI 65° (Clay 1 to 2mm) 22.5m to 22.7m: JT 85° PlRo Cg(clay 1mm) 22.7m to 22.95m: JT 65° PlRo Cg(clay 2mm)	
HQ3	-1	23			**22.8m:** Unweathered, grey BASALT; moderately strong.			100	70	43		23.14m to 23.21m: FT (sand, clay and fine to coarse angular gravel fragments) 23.27m to 23.59m: JT 55° PlRo Cg(clay 1mm) 23.6m: JT 10° PlRo Sn	
HQ3	-2	24			**23.85m to 23.89m:**...Completely weathered quartz nodule.	UW						23.96m: JT 15° PlRo Cg(clay 2mm) 24m to 24.18m: JT 45° PlRo Cg(clay <1mm)	
HQ3	-3	25						100	83	40		24.2m to 24.35m: JI 70° (clay <1mm)	

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10.0 m horizontal and ±1.0 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 30/11/20 00:00 | 25.50m | 5.9 m bgl

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **133 Fitzgerald Road, Drury**
Project Reference: **510611**

BH005

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416795.000m
Northing: 774189.000m
Reduced level: 22.000m (NZVD2016)

Date started: 26/11/2020
Date completed: 30/11/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
Input by: BGW
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				VUb	**22.8m:** Unweathered, grey BASALT; moderately strong.	UW		100	83	40		25.45m: JT 45° PlRo Sn	

End of borehole at 25.5m (Target Depth)

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10.0 m horizontal and ±1.0 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 30/11/20 00:00 | 25.50m | 5.9 m bgl

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **120 Flanagan Road, Drury**
Project Reference: **510611**

BH006

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416588.000m
Northing: 774318.000m
Reduced level: 19.000m (NZVD2016)

Date started: 17/12/2020
Date completed: 17/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
Input by: BGW
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3	18	1		T	**0m:** SILT with minor clay and trace rootlets; brown. Very stiff, moist, low plasticity.	ML						**0m: TOPSOIL**	
				VRb	**0.2m:** Clayey SILT with trace sand and organic rootlets; brown. Stiff, moist, high plasticity. Sand is fine to medium.	MH						**0.2m: SOUTH AUCKLAND VOLCANIC FIELD**	
					0.5m: CLAY with some silt; brownish orange. Stiff, moist, high plasticity.	CH		100					
SPT	17	2			**1.2m:** CLAY with some silt; bluish grey, mottled orange. Very stiff, moist, high plasticity. [Completely weathered BASALT]	CH	1.4m: IBHSV 112/18 kPa 1.5m: SPT 2// 1,1,1,1 N = 4	100					
HQ3	16	3		VWb	**1.95m:** Highly weathered, greyish brown and orange, highly vesicular BASALT; extremely weak (GRAVEL/COBBLES with trace sand; Loose.)	HW		100	70	61		1.97m: JT 45° PlRo Sn 2.05m: JT 10° PlRo Sn 2.54m to 2.63m: JT 45° PlRo Sn 2.68m: JT 45° PlRo Sn 2.85m to 3m: JT 55° PlRo Sn	
SPT				VRb	**3m:** CLAY with some silt; brownish orange. Very stiff, moist, high plasticity. [Completely weathered BASALT]	CH	3m: SPT 2// 1,1,1,1 N = 4	100	100				
HQ3	15	4		VWb	**3.75m:** Highly weathered, greyish brown and orange, highly vesicular BASALT; extremely weak (GRAVEL/COBBLES with trace sand; Loose.)	HW		90	34			3.82m to 3.92m: JT 50° PlRo Sn 3.95m: JT 45° PlRo Cg(Clay 2mm)	
SPT	14	5			**4.5m:**...Orange brown and light yellow.		4.5m: SPT 3// 3,1,2,2 N = 8	100	0				

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10.0 m horizontal and ±1.0 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **120 Flanagan Road, Drury**
Project Reference: **510611**

BH006

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416588.000m
Northing: 774318.000m
Reduced level: 19.000m (NZVD2016)

Date started: 17/12/2020
Date completed: 17/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
Input by: BGW
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
Box 3 HQ3	13	6		VWb	**3.75m:** Highly weathered, greyish brown and orange, highly vesicular BASALT; extremely weak (GRAVEL/COBBLES with trace sand; Loose.)			100	0				
SPT							6m: SPT 1// 1,0,1,0 N = 2	100					
HQ3	12	7						100	0			6.85m: JT 45° PlRo Sn 7.12m: JT 45° PlRo Sn 7.15m: JT 45° PlRo Sn	
SPT					**7.5m:**...Slightly vesicular.	HW	7.5m: SPT 5// 2,3,3,2 N = 10	49				7.4m to 7.47m: JT 45° PlRo Sn 7.47m: JT 45° PlRo Sn	
HQ3	11	8						100	30			8.49m to 8.55m: JT 45° PlRo Sn 8.52m to 8.82m: JT 80° PlRo Sn 8.58m to 8.64m: JT 45° PlRo Sn 8.76m: JT 10° PlRo Sn 8.82m: JT 45° PlRo Sn	
SPT	10	9			**9.15m:**...Light yellow and brown.		9m: SPT 3// 2,1,1,2 N = 6	100				8.91m: JT 45° PlRo Sn	
HQ3	9	10						100	19			9.48m: JT 45° PlRo Sn 9.53m: JT 45° PlRo Sn 9.6m: JT 45° PlRo Sn 9.73m: JT 45° PlRo Sn 9.76m: JT 90° PlRo	

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10.0 m horizontal and ±1.0 m vertical.
2. 1.0m galvanised steel upstand installed.

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

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Location: **120 Flanagan Road, Drury**
Project Reference: **510611**

BH006

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416588.000m
Northing: 774318.000m
Reduced level: 19.000m (NZVD2016)

Date started: 17/12/2020
Date completed: 17/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
Input by: BGW
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3					**3.75m:** Highly weathered, greyish brown and orange, highly vesicular BASALT; extremely weak (GRAVEL/COBBLES with trace sand; Loose.)	HW		100	19			10.4m: JT 45° PlRo Sn	
SPT	8	11			**10.5m:** Moderately weathered, brown and light yellow, moderately vesicular BASALT; very weak.		10.5m: SPT 3// 4,3,3,3 N = 13	100					
HQ3				VWb		MW		100	0			11.78m: JT 45° PlRo Sn	
SPT	7	12					12m: SPT 6// 6,7,4,5 N = 22	31					
HQ3	6	13						100	0			13m: Core recovered as broken basalt.	
SPTC					**13m:** Slightly weathered, grey, slightly vesicular BASALT; moderately strong.		13.5m: SPTC 50 for 10mm// N = 50+	N/A				13.16m to 13.4m: JT 85° PlRo Cg(Clay 1mm) 13.4m to 13.55m: JT 45° PlRo Sn 13.55m to 13.63m: JT 45° PlRo Sn 13.63m to 13.68m: JT 55° PlRo Sn	
HQ3	5	14		VUb		SW		54	0				
	4	15		TAs		SM						**14.88m: TAURANGA GROUP**	

Box 4
Box 5

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10.0 m horizontal and ±1.0 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **120 Flanagan Road, Drury**
Project Reference: **510611**

BH006

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416588.000m
Northing: 774318.000m
Reduced level: 19.000m (NZVD2016)

Date started: 17/12/2020
Date completed: 17/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
Input by: BGW
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
Box 5 HQ3				TAs	**14.88m:** Silty fine to coarse SAND; light yellowish brown. Dense, moist, moderately cemented. Indistinct, laminated to very thin, subhorizontal bedding. Sand is quartz, mica and trace amounts of green olivine.	SM		100	90	87		15.53m to 15.65m: JT 65° PlRo	
	3	16		TAz	**16.2m:** Sandy SILT with minor clay; light brown, speckled orange. Hard, moist, low plasticity. Sand is fine.	MH						16.2m: BPJT 45° PlRo	
SPTC				TAc TAx	**16.45m:** CLAY with some silt; light brown, mottled orange brown. Soft, moist, high plasticity. **16.5m:** NO RECOVERY	CH	16.5m: SPTC 1// 1,0,1,0 N = 2	N/A					
HQ3	2	17		TAc	**16.95m:** CLAY with some silt; light brown, mottled orange brown. Soft, moist, high plasticity.	CH		100					
				TAz	**17.3m:** Clayey SILT; grey. Firm, moist, high plasticity.	MH							
	1	18			**17.8m:** Clayey SILT with some sand; grey and brown. Soft, moist, high plasticity. Sand is fine to medium.	MH							
Box 6 SPT				TAx	**18m:** NO RECOVERY		18m: SPT 2// 0,0,0,1 N = 1	0					
HQ3	0	19		TAz	**18.45m:** Clayey SILT with some sand; grey and brown. Soft, moist, high plasticity. **18.55m:** Clayey SILT; grey. Firm to stiff, moist, high plasticity.	MH MH		100					
SPT	-1	20					19.5m: SPT 1// 0,0,1,1 N = 2	100					
								100					

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10.0 m horizontal and ±1.0 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **120 Flanagan Road, Drury**
Project Reference: **510611**

BH006

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416588.000m
Northing: 774318.000m
Reduced level: 19.000m (NZVD2016)

Date started: 17/12/2020
Date completed: 17/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
Input by: BGW
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
Box 6 HQ3	-2	21			**18.55m:** Clayey SILT; grey. Firm to stiff, moist, high plasticity.			100					
SPT							21m: SPT 3// 2,1,3,2 N = 8	100					
Box 7 HQ3	-3	22		TAz				100					
SPT						MH	22.5m: SPT 6// 2,2,3,4 N = 11	100					
HQ3	-4	23						100					
Box 8 SPT	-5	24					23.95m: IBHSV UTP 24m: SPT 2// 2,1,1,1 N = 5	100					
HQ3	-6	25						100					

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10.0 m horizontal and ±1.0 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **120 Flanagan Road, Drury**
Project Reference: **510611**

BH006

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416588.000m
Northing: 774318.000m
Reduced level: 19.000m (NZVD2016)

Date started: 17/12/2020
Date completed: 17/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
Input by: BGW
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				TAz	**18.55m:** Clayey SILT; grey. Firm to stiff, moist, high plasticity.	MH	25.45m: IBHSV UTP	100					
U54	-7	26		TAx	**25.5m:** PUSH TUBE NOT YET EXTRACTED		25.9m: IBHSV UTP	100					
SPT				TAz	**26m:** Clayey SILT; grey. Stiff, moist, high plasticity.	MH	26m: SPT 2// 1,1,1,1 N = 4	56					
				TAx	**26.25m:** NO RECOVERY								

End of borehole at 26.45m (Target Depth)

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10.0 m horizontal and ±1.0 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **132 Flanagan Road, Drury**
Project Reference: **510611**

BH007

Sheet **1** of **6**

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416790.000m
Northing: 774485.000m
Reduced level: 15.100m (NZVD2016)

Date started: 2/12/2020
Date completed: 4/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3	15	1		T	**0m:** Silty CLAY; dark brown. Firm, moist, high plasticity, some organics.	MH						**0m: TOPSOIL**	
					0.2m: CLAY with minor silt; dark orange mottled brown. Firm; moist, high plasticity.	CH		100				**0.2m: SOUTH AUCKLAND VOLCANIC FIELD**	
	14				**1.08m:** SILT with minor clay; white grey mottled orange. Soft, moist, low plasticity.	ML							
SPT					**1.36m:** Pumecious SILT with trace clay; white with mottled orange staining. Firm, moist, low plasticity.		1.5m: SPT 1// 0,0,0,0 N = 0						
					1.7m to 2.69m:...becomes pinkish white, mottled orange		1.5m: 50/18 kPa	100					
HQ3	13	2		VRt		ML		100				1.95m: Expansive soils (1.18m)	
SPT	12	3					3m: SPT 0// 1,0,0,0 N = 1 3m: 55/6 kPa	100					
HQ3	11	4			**3.4m:** Pumecious sandy SILT; yellowish brown. Soft, moist, non-plastic. Very thin, subhorizontal bedding. Sand is medium to coarse.	ML		100				3.45m: Expansive soils (1.2m)	
					4.05m: Pumecious sandy SILT; light yellowish brown. Firm, moist, non-plastic. Sand is fine. **4.07m to 4.14m:**...Brown staining.	ML							
SPT		5			**4.43m:** Pumecious SILT with some sand; brownish yellow. Stiff, moist, non-plastic. Sand is fine.	ML	4.5m: SPT 9// 6,6,10,12 N = 34	100					
								100					

Box 1
Box 2

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 03/12/20 08:00 | m | 4.1 m bgl

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **132 Flanagan Road, Drury**
Project Reference: **510611**

BH007

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416790.000m
Northing: 774485.000m
Reduced level: 15.100m (NZVD2016)

Date started: 2/12/2020
Date completed: 4/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy / Defect Description / Additional Notes	Installation
Box 2 HQ3	10			TAc	**5.05m:** CLAY with minor silt; brownish orange banded bluish grey. Stiff, moist, high plasticity.	ML / CH						4.95m: Expansive soils (1.65m) **5.05m: TAURANGA GROUP**	
					5.35m: SILT with minor clay; bluish grey. Stiff, moist, non-plastic.	ML		100					
		6		TAz	**5.82m:** SILT with some clay; purple brown. Stiff, moist, low plasticity.	ML							
Box 2 SPT	9				**6m:** SILT with minor clay; blue grey. Firm, moist, non-plastic.	ML	6m: SPT 3// 3,4,4,4 N = 15 6m: 39/3 kPa	100					
Box 3 HQ3				TAo	**6.54m:** Organic clayey SILT; black. Firm, moist, high plasticity.	OH							
		7		TAz	**6.9m:** SILT with minor clay and organics; light brown, thinly laminated to laminated sub-horizontal beds of organics. Firm, moist, non-plastic. Organics are amorphous.	ML		100					
	8			TAo	**7.04m:** Organic clayey SILT; black. Firm, moist, high plasticity.	OH							
Box 3 SPT					**7.57m:** SILT with trace clay and organics; greenish grey, thinly laminated to laminated sub-horizontal beds of organics. Very stiff, moist, non-plastic. Organics are amorphous and fibrous.	ML	7.5m: SPT 3// 2,3,3,4 N = 12 7.5m: UTP	100				7.57m: Organics comprise of rootlets	
		8			**7.8m:** SILT; greenish grey. Firm, moist, non-plastic.								
Box 3 HQ3	7			TAz		ML						7.95m: Expansive soils (1.2m)	
					8.42m: SILT with some clay; bluish grey. Stiff, moist, low plasticity.	ML		100					
		9		TAg	**8.8m:** Silty fine to coarse GRAVEL; blue grey. Medium dense, moist. [Gravels, sub-angular to angular, highly weathered, basalt. Silt is non-plastic].	GW	9m: SPT 5// 3,3,4,5 N = 15 9m: UTP						
Box 4 SPT	6							100					
Box 4 HQ3				VWb	**9.34m:** Highly weathered, bluish grey, moderately vesicular BASALT; extremely weak. [GRAVEL and COBBLES with some silt; bluish grey. Medium dense, moist. Gravels, sub-angular to angular, highly weathered, moderately vesicular basalt. Silt is non-plastic].	HW						**9.34m: SOUTH AUCKLAND VOLCANIC FIELD**	
					9.52m: Highly weathered, dark grey BASALT; extremely weak, slightly vesicular. [Medium to coarse GRAVEL; dark grey. Medium dense, moist. Gravels, sub-angular to angular, highly weathered, slightly vesicular basalt].	HW		100					
	10					GP-GC							

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 03/12/20 08:00 | m | 4.1 m bgl

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HQ3	5			VRb	**9.96m:** Gravelly CLAY; purple grey. Soft, moist, high plasticity. Gravels, fine to medium, sub-angular to angular, highly weathered, slightly vesicular basalt.	GP-GC						9.96m: Possible in-filled void, easily indented by fingers.	
					10.06m: Highly weathered, dark grey, slightly vesicular BASALT; extremely weak. [Gravels, fine to coarse, sub-angular to angular, highly weathered, slightly vesicular, basalt].	HW		100					
SPT				VWb			10.5m: SPT 23 for 30mm// N = 50+	100				10.5m: SPT hammer bouncing	
					10.75m: Moderately weathered, dark grey BASALT; extremely weak. [Gravels, fine to coarse, sub-angular to angular, highly weathered, basalt].	MW							
		11											
	4				**11.08m:** Slightly weathered, dark bluish grey, slightly vesicular BASALT; strong. moderately vesicular. Vesicles are [5-30mm in width by 5-20mm in length].			100	79	79		11.27m: JT -26° Ro Cn	
												11.43m: JT -34° Ro Vn	
												11.55m: JT -36° Ro Cn	
					11.7m:...Moderately vesicular. Vesicles are [5-30mm in width by 5-20mm in length].							11.68m: JT -24° Ro Vn	
												11.8m: JT -3° Ro Vn	
		12											
SPT	3						12m: SPT 25 for 70mm// N = 50+	0				12m: SPT hammer bouncing	
						SW						12.16m: JT -2° PlRo Cn 12.2m to 12.25m: JT -2° PlRo Cn	
												12.45m to 12.5m: CZ	
HQ3								100	79	50		12.76m: JT -9° PlRo Cn	
												12.87m: JT -3° PlRo Cn 12.9m: JT -3° PlRo Cn	
		13											
	2			VUb								13.05m to 13.26m: CZ	
					13.5m: Unweathered, bluish grey, slightly vesicular BASALT; strong.							13.5m to 13.7m: JT -70° StRo Cn	
												13.72m to 13.81m: JT -44° StRo Cn	
		14											
	1					UW		100	73	49		14.12m to 14.53m: JT -67° UnRo Cn	
												14.54m to 14.62m: JT -35° UnRo Cn	
												14.73m to 14.8m: JT -64° UnRo Cn	
		15											

Box 4 | Box 5 | Box 6

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HQ3 Box 6	0	16		VUb	**13.5m:** Unweathered, bluish grey, slightly vesicular BASALT; strong.	UW		100	71	62		15.03m to 15.13m: JT -70° UnRo Cg SW 15.62m: JT -53° UnRo Cn 15.63m to 15.82m: JT -75° UnRo Cn	
HQ3	-1	17			**16.05m:** Unweathered, bluish grey, moderately vesicular BASALT; strong. Vesicles are [5-30mm in width by 5-20mm in length].			100	91	77		16.05m: Joint in-fill is bluish green silty clay 16.12m: JT -15° PlRo Cg 3-4mm 16.13m to 16.75m: JT -45° PlRo Cg clay coating 17.13m to 17.18m: JT -37° StRo Cg 3-4mm clayin-fill 17.19m: JT -3° PlRo Sn	
HQ3 Box 7	-2	18			**18m to 18.45m:**...Highly vesicular. Vesicles are [2-20mm in width by 10-20mm in length].	UW		100	85	83		18.57m: JT -45° PlRo Vn silt 18.98m: JT -34° PlRo Cg(clay 10mmmm) 18.99m to 19.12m: JT -86° PlRo	
HQ3	-3	19			**19.2m to 19.4m:**...Slightly vesicular. Vesicles are [10-15mm in width by 2mm-15mm in length].			100	43	39		19.17m: JT -45° PlRo 19.18m to 19.35m: JT -75° PlRo (silt 30mmmm) 19.62m: JT -3° PlRo	
	-4	20											

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Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3 Box 7	-5			VUb	**16.05m:** Unweathered, bluish grey, moderately vesicular BASALT; strong. Vesicles are [5-30mm in width by 5-20mm in length].	UW						20.3m: JT -5° UnRo 20.35m: JT -3° UnRo	
								100	43	39			
				TAg	**20.55m:** Sandy silty fine to coarse grained GRAVEL; Bluish grey mottled green. Medium dense, moist. Gravels, sub-angular to angular, highly weathered, vesicular, basalt. Sand, fine to medium].							20.53m: JT -5° UnRo	
SPT	-6	21				GW	21m: SPT 11// 9,12,20,9 for 15mm N = 50+	100					
HQ3				VUb	**21.55m:** Unweathered, bluish grey, slightly vesicular BASALT; strong.	UW						21.6m: JT -6° PlRo 21.68m: JT -6° PlRo	
	-7	22						100	79	73		21.95m: JT -5° PlRo	
												22.38m: JT -3° UnRo	
HQ3 Box 8	-8	23		Vx	**22.9m:** CORE LOSS.			27	8	0		22.9m: Core washed away, gravelly area	
		24											
SPTC	-9				**24m:** Unweathered, bluish grey, slightly vesicular BASALT; strong. Vesicles are <30mm diameter.		24m: SPTC 13// 13,15,18,4 for 5mm N = 50+	N/A				24m: Recovered as broken basalt.	
HQ3				VUb		UW		100	77	47			
		25											

REMARKS:
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2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

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Date Time | Hole Depth | Water Level
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Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
Box 8 HQ3 Box 9	-10			VUb	**24m:** Unweathered, bluish grey, slightly vesicular BASALT; strong. Vesicles are <30mm diameter.	UW		100	77	47			
					End of borehole at 25.5m (Target depth reached)								

REMARKS:
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Date Time | Hole Depth | Water Level
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Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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BH008

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416451.000m
Northing: 774474.000m
Reduced level: 8.000m (NZVD2016)

Date started: 15/12/2020
Date completed: 15/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
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Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3	7	1		T	**0m:** SILT with minor clay, gravel and trace rootlets; brown. Very stiff, moist, low plasticity. Gravel is weathered, subangular, fine to medium sandstone.	ML							**0m: TAURANGA GROUP**	
				TAx	**0.2m:** CORE LOSS			13					
SPT	6	2		TAs	**1.5m:** Fine to medium SAND with some silt and trace clay; orange and light brown. Very loose, moist, non-plastic. **1.85m to 2.15m:**...light brown, mottled orange.	SM	1.5m: SPT 0// 0,0,0,0 N = 0	22					
HQ3								100					
U54	5	3		TAx	**2.5m:** PUSH TUBE YET TO BE EXTRACTED			100					
SPT				TAc	**3m:** Sandy CLAY with some silt; light brown mottled orange. Firm, moist, high plasticity. Sand is fine to medium.	CH	3m: SPT 2// 1,2,1,1 N = 5	100					
HQ3	4	4			**3.6m to 3.68m:**...Iron iroxide staining. Some highly weathered, fine sandstone gravel. **3.68m:** Silty CLAY with trace sand; light brown. Firm, moist, high plasticity. Sand is fine to medium **3.85m:** Silty CLAY; greyish green. Firm, moist, high plasticity.	CH CH		57					
				TAx	**3.9m:** CORE LOSS		4.45m: IBHSV 76/21 kPa						
SPT	3	5		TAc	**4.5m:** Silty CLAY; greyish green. Stiff, moist, high plasticity.	CH	4.5m: SPT 2// 1,1,1,1 N = 4	100					
								100					

REMARKS:
1) BH008 backfilled upon completion.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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HQ3				TAc	**4.5m:** Silty CLAY; greyish green. Stiff, moist, high plasticity.	CH							
				TAz	**5.1m:** Clayey SILT; grey. Firm, moist, high plasticity. Contains ancient shell impressions, approximately <20mm in size.	MH		100					
	2	6		TAc	**5.85m:** Silty CLAY; grey. Very stiff, moist, highly plastic.	CH	5.95m: IBHSV UTP 6m: SPT 1// 1,1,1,1 N = 4						
SPT								100					
HQ3													
	1	7			**6.15m:** Clayey SILT with trace organics; grey. Firm, moist, high plasticity. Organics are fibrous <10mm in size. Contains ancient shell impressions, approximately <20mm in size.			100					
SPT							7.5m: SPT 1// 1,0,1,1 N = 3	93					
	0	8		TAz		MH						7.92m to 7.95m: No recovery	
HQ3								100					
	-1	9					8.95m: IBHSV UTP 9m: SPT 1// 1,1,1,1 N = 4						
SPT								100					
HQ3								100					
	-2	10											

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HQ3				TAz	**6.15m:** Clayey SILT with trace organics; grey. Firm, moist, high plasticity. Organics are fibrous <10mm in size. Contains ancient shell impressions, approximately <20mm in size.	MH	10.45m: IBHSV UTP	100					
SPT				TAx	**10.68m:** NO RECOVERY		10.5m: SPT 2// 0,0,0,1 N = 1	40					
HQ3	-3	11		TAz	**10.95m:** Clayey SILT with trace organics; grey. Firm, moist, low plasticity. Organics are fibrous <10mm in size. Contains ancient shell impressions, approximately <20mm in size.			100					
SPT	-4	12					12m: SPT 2// 1,0,1,1 N = 3	100					
HQ3	-5	13		TAz	**13.1m:**...Trace unweathered, subangular, fine to medium volcaniclastic gravel.	MH	12m: IBHSV UTP	100					
SPT	-6	14			**13.5m:**...Organics are fibrous and <50mm in length.		13.5m: SPT 1// 1,1,1,1 N = 4	100					
HQ3	-7	15						97					

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SPT				TAc	**15m:** Silty CLAY with minor organics; greyish green mottled brown. Firm, moist, high plasticity. Organics are fibrous and <50mm in length.	CH	15m: SPT 2// 1,0,1,1 N = 3	100				14.97m to 15m: No recovery	
HQ3	-8	16		TAz	**15.75m:** Clayey SILT with trace organics; grey. Firm, moist, high plasticity. Organics are fibrous, <10mm in size. Contains ancient shell impressions, approximately <20mm in size.	MH							
				TAp	**15.9m:** Fibrous PEAT; brown. Firm, moist. **15.96m to 15.99m:**...Silty Sand inclusion	PT		100					
					16.25m: Amorphous PEAT; brown. Very stiff, moist, low plasticity.	PT	16.3m: IBHSV 128/24 kPa						
					16.3m to 16.33m:...Pumiceous SILT								
SPT				TAo	**16.4m:** Organic CLAY with trace sand; brown. Firm, moist, high plasticity. Sand is fine to medium.	OH	16.5m: SPT 2// 1,1,1,1 N = 4	100					
HQ3	-9	17											
				TAp	**17.5m:** Fibrous PEAT; brown. Firm, moist.	PT		100					
				TAz	**17.57m:** Sandy clayey SILT with minor organics; brown. Very stiff, moist, low plasticity. Sand is fine to medium. Organics are fibrous, <40mm in length.	ML							
				TAs	**17.66m:** Clayey, silty SAND with some organics; light green, banded brown. Loose, moist. Organics are fibrous, <40mm in length.	SC	18m: SPT 3// 2,1,1,1 N = 5	82				18.37m to 18.45m: No recovery	
SPT	-10	18											
				TAc	**18.49m:** Silty CLAY with trace sand and organics; brown and green. Firm, moist, high plasticity. Sand is fine to medium.	CH							
HQ3	-11	19		TAs	**18.75m:** Pumiceous SAND with some silt and minor organics; brownish grey. Loose, moist. Sand is fine to medium. Organics are fibrous and <30mm in length.	SM		100					
SPT							19.5m: SPT 2// 2,2,2,1 N = 7						
					19.72m: Fine to medium SAND with minor silt; green. Loose, moist, homogeneous. Sand is predominantly mica and quartz.	SM		100					
	-12	20						100					

REMARKS:
1) BH008 backfilled upon completion.

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

aurecon
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www.aurecongroup.com

Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **108 Flanagan Road, Drury**
Project Reference: **510611**

BH008

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416451.000m
Northing: 774474.000m
Reduced level: 8.000m (NZVD2016)

Date started: 15/12/2020
Date completed: 15/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
Input by: BGW
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3	-13	21		TAs	**19.72m:** Fine to medium SAND with minor silt; green. Loose, moist, homogeneous. Sand is predominantly mica and quartz. **20.54m to 20.68m:**...Very thin, undulating laminae, <1mm, with minor specks of weathered pumice.	SM		100					
SPT							21m: SPT 5// 1,2,2,2 N = 7	100					
HQ3	-14	22		TAs	**21.5m:** Fine to medium SAND with minor silt; green. Very dense, moist, moderately cemented, homogeneous. Sand is predominantly mica and quartz.	SM		100					
SPT					**22.3m:** Fine to medium SAND with minor silt; greyish green. Very dense, moist, uncemented, homogeneous. Sand is predominantly mica and quartz.		22.5m: SPT 23// 50 for 20mm N = 50+	100					
HQ3	-15	23				SM		85					
	-16	24		TAx	**23.8m:** CORE LOSS.								
SPT					**24m:** Fine to medium SAND with minor silt; green. Very dense, moist, uncemented. Indistinctly, laminated to very thinly, subhorizontally bedded. Sand is predominantly mica and quartz.		24m: SPT 17// 31,19 for 25mm N = 50+	100					
HQ3				TAs		SM		52					
	-17	25		TAx	**24.9m:** CORE LOSS								

REMARKS:
1) BH008 backfilled upon completion.

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

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BH008

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416451.000m
Northing: 774474.000m
Reduced level: 8.000m (NZVD2016)

Date started: 15/12/2020
Date completed: 15/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
Input by: BGW
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				TAx	**24.9m:** CORE LOSS			52					
SPT				TAs	**25.5m:** Fine to medium SAND with minor silt; green. Very dense, moist, uncemented. Indistinctly, laminated to very thinly, subhorizontally bedded. Contains minor, weathered, fine pumice. Sand is predominantly mica and quartz.	SM	25.5m: SPT 18// 12,38 for 30mm N = 50+	100					

End of borehole at 25.76m (Target Depth)

REMARKS:
1) BH008 backfilled upon completion.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **108 Flanagan Road, Drury**
Project Reference: **510611**

BH009

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416437.000m
Northing: 774505.000m
Reduced level: 8.000m (NZVD2016)

Date started: 16/12/2020
Date completed: 16/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
Input by: BGW
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy / Defect Description / Additional Notes	Installation
HQ3				T	**0m:** SILT with minor clay, trace gravel and organics; brown. Very stiff, moist, low plasticity. Gravel is weathered, subangular, fine to medium sandstone. Organics are fibrous rootlets.	ML						**0m: TAURANGA GROUP**	
				TAc	**0.2m:** Silty CLAY with trace rootlets; yellowish brown, mottled grey. Very stiff, wet, high plasticity.	CH		60					
	7	1		TAx	**0.9m:** NO RECOVERY								
SPT							1.5m: SPT 0// 0,0,0,0 N = 0	0					
Box 1 HQ3	6	2		TAz	**1.95m:** Clayey SILT with minor sand and trace gravel; grey speckled bluish grey. Very soft, moist, high plasticity. Gravel, fine, completely weathered basalt. **2.55m to 2.77m:**...Iron oxide staining on indistinct, gently inclined, laminated to very thin beds.	MH		100					
SPT	5	3		TAc	**2.8m:** Sandy CLAY with some silt; light brown mottled orange brown. Very stiff, moist, high plasticity. Sand is fine to medium.	CH	2.95m: IBHSV UTP 3m: SPT 3// 3,2,2,3 N = 10	100					
HQ3	4	4		TAs	**3.55m:** Silty fine to medium SAND with trace gravel; orange brown mottled grey, speckled black. Loose, wet. Gravel is fine to medium, completely weathered sandstone.	SM		81					
				TAc	**4.1m:** Sandy CLAY with some silt; light brown mottled orange brown. Firm, moist, high plasticity. Sand is fine to medium.	CH							
				TAx	**4.3m:** CORE LOSS		4.3m: IBHSV 28 kPa						
Box 2 SPT	3	5		TAc	**4.5m:** Silty CLAY with minor sand and trace organics; grey. Firm, moist, high plasticity. Sand is fine to medium. Organics are fibrous, <5mm in length.	CH	4.5m: SPT 2// 0,1,1,1 N = 3	100					
								100					

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10.0 m horizontal and ±1.0 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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Location: **108 Flanagan Road, Drury**
Project Reference: **510611**

BH009

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416437.000m
Northing: 774505.000m
Reduced level: 8.000m (NZVD2016)

Date started: 16/12/2020
Date completed: 16/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
Input by: BGW
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS, WS, MWS, CS, VCS, ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				TAc	**4.5m:** Silty CLAY with minor sand and trace organics; grey. Firm, moist, high plasticity. Sand is fine to medium. Organics are fibrous, <5mm in length.	CH		100					
SPT	2	6		TAc	**5.9m:** Silty CLAY with some organics, gravel and trace sand; grey speckled light green. Firm, moist, high plasticity. Organics are fibrous, <20mm in length. Gravel is fine to medium, completely weathered, subrounded siltstone. Sand is fine to medium.	CH	5.95m: IBHSV 50/12 kPa 6m: SPT 1// 0,1,1,1 N = 3	100					
HQ3	1	7		TAz	**6.85m:** Clayey SILT with some gravel, trace sand and organics; grey speckled green. Firm, moist, high plasticity. Gravel is completely weathered, subrounded siltstone. Organics are fibrous, <25mm in length.	MH		100					
U54	0	8		TAz		MH		100					
SPT				TAz		MH	8m: SPT 2// 1,1,1,1 N = 4	100					
HQ3	-1	9		TAz		MH		100					
SPT				TAz		MH	8.95m: IBHSV 44/10 kPa 9m: SPT 2// 0,2,1,1 N = 4	100					
HQ3	-2	10		TAz		MH		100					

Box 2
Box 3

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10.0 m horizontal and ±1.0 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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Location: **108 Flanagan Road, Drury**
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BH009

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416437.000m
Northing: 774505.000m
Reduced level: 8.000m (NZVD2016)

Date started: 16/12/2020
Date completed: 16/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
Input by: BGW
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				TAz	**6.85m:** Clayey SILT with some gravel, trace sand and organics; grey speckled green. Firm, moist, high plasticity. Gravel is completely weathered, subrounded siltstone. Organics are fibrous, <25mm in length.		10.45m: IBHSV 38/8 kPa	100					
SPT							10.5m: SPT 1// 1,0,1,1 N = 3	100					
HQ3	-3	11				MH		100					
SPT	-4	12					11.95m: IBHSV 44/10 kPa 12m: SPT 1// 1,1,1,1 N = 4	100					
HQ3					**12.45m:**...Greyish green, speckled brown.								
	-5	13		TAc	**12.85m:** Silty CLAY with trace organics; greyish green. Very stiff, moist, high plasticity. Organics are fibrous, <10mm in size.	CH		100					
SPT					**13.85m:**...brown		13.45m: IBHSV UTP 13.5m: SPT 2// 1,1,1,1 N = 4	100					
	-6	14			**13.94m:** Fine to medium SAND with minor silt; green. Loose, moist. Sand is predominantly mica and quartz.	SM							
HQ3				TAs	**14.25m to 14.31m:**...Pumiceous fine to medium sand.			100					
					14.6m: Fine to medium SAND with some silt and trace clay; light brown, speckled green. Loose, moist.	SM						14.6m: On reworking shows slight plasticity.	
					14.77m to 14.86m:...Clay								
	-7	15			**14.86m:** Pumiceous fine to medium SAND with minor silt; light grey, mottled green. Medium dense, moist, uncemented.	SM							

Box 3
Box 4

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10.0 m horizontal and ±1.0 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 12/03/2021

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **108 Flanagan Road, Drury**
Project Reference: **510611**

BH009

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416437.000m
Northing: 774505.000m
Reduced level: 8.000m (NZVD2016)

Date started: 16/12/2020
Date completed: 16/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
Input by: BGW
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
SPT						SM	15m: SPT 10// 7,5,6,7 N = 25	100					
HQ3	-8	16		TAs	**15.1m:** Fine to medium SAND with minor silt; green. Medium dense, moist, poorly cemented, homogeneous.			95					
SPT					**16.5m:**...Uncemented	SM	16.5m: SPT 6// 3,3,4,3 N = 13	82				16.45m to 16.5m: Core loss.	
HQ3	-9	17						100				16.87m to 16.95m: No recovery.	
SPT	-10	18		TAx	**18.3m:** NO RECOVERY		18m: SPT 5// 4,3,5,4 N = 16	67					
HQ3	-11	19		TAs	**18.45m:** Fine to medium SAND with minor silt; green. Medium dense, moist, uncemented, homogeneous.	SM		100					
SPT							19.5m: SPT 6// 3,5,4,4 N = 16	69					
	-12	20		TAx	**19.81m:** NO RECOVERY	SM		100					

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10.0 m horizontal and ±1.0 m vertical.
2. 1.0m galvanised steel upstand installed.

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 12/03/2021

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BH009

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416437.000m
Northing: 774505.000m
Reduced level: 8.000m (NZVD2016)

Date started: 16/12/2020
Date completed: 16/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
Input by: BGW
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3	-13	21		TAs	**19.95m:** Fine to medium SAND with minor silt; greyish green. Medium dense, moist, uncemented, homogeneous.	SM		100					
SPT					**21m:**...loose		21m: SPT 3// 2,1,2,1 N = 6	53					
				TAx	**21.24m:** NO RECOVERY								
Box 6 HQ3	-14	22		TAs	**21.45m:** Fine to medium SAND with minor silt; greyish green. Medium dense, moist, uncemented, homogeneous. **21.6m:**...Green speckled yellow. Trace fine completely weathered pumice.			100					
SPT							22.5m: SPT 8// 6,4,5,7 N = 22	80					
HQ3	-15	23				SM		100				22.86m to 22.95m: No recovery.	
Box 7 HQ3	-16	24										23.55m to 24m: Core slipped out of barrel, redrilled.	
SPT							24m: SPT 6// 5,3,3,7 N = 18	64					
HQ3	-17	25		TAx	**24.45m:** CORE LOSS			0					

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10.0 m horizontal and ±1.0 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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BH009

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Tracked Rig
Contractor: Perry Geotech

CO-ORDINATES: Mt Eden 2000
Easting: 416437.000m
Northing: 774505.000m
Reduced level: 8.000m (NZVD2016)

Date started: 16/12/2020
Date completed: 16/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: BGW
Input by: BGW
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				TAx	**24.45m:** CORE LOSS			0					
SPT				TAs	**25.5m:** Fine to medium SAND with minor silt; greenish grey. Medium dense, moist, uncemented, homogeneous.	SM	25.5m: SPT 7// 2,7,5,9 N = 23	100					
HQ3	-18	26		TAz	**25.95m:** Sandy SILT; greenish grey. Medium dense, wet, non-plastic, dilatant.	ML		86					
				TAs	**26.15m:** Fine to medium SAND with minor silt; greenish grey. Medium dense, moist, uncemented, homogeneous.	SM							
	-19	27		TAx	**26.85m:** CORE LOSS								
SPT				TAs	**27m:** Fine to medium SAND with minor silt; greenish grey. Medium dense, moist, uncemented, homogeneous.	SM	27m: SPT 13// 3,9,7,9 N = 28	100					

End of borehole at 27.45m (Target Depth)

Box 7

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10.0 m horizontal and ±1.0 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 12/03/2021

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **132 Flanagan Road, Drury**
Project Reference: **510611**

BH010

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416536.000m
Northing: 774498.000m
Reduced level: 19.000m (NZVD2016)

Date started: 11/12/2020
Date completed: 14/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3	18	1		T	**0m:** SILT with some clay and trace sand; dark brown. Stiff, moist, high plasticity. Sand is fine to medium.	MH		100				**0m: TOPSOIL**	
					0.34m: Clayey SILT with trace sand; yellowish brown. Stiff, moist, high plasticity. Sand is fine to medium.	MH						**0.34m: SOUTH AUCKLAND VOLCANIC FIELD**	
Box 1 SPT	17	2		VRb	**1m:** Silty CLAY; yellowish brown mottled grey and red. Firm, moist, high plasticity.	CH	1.5m: SPT 3// 2,2,2,2 N = 8	100					
HQ3	16	3						100					
SPT					**2.95m:** Silty fine to medium GRAVEL with minor clay; orange brown. Loose, moist. Gravel is sub-angular to angular, completely weathered basalt; extremely weak. Silt is low plasticity. [Completely weathered BASALT].	GM	3m: SPT 1// 1,1,1,1 N = 4	100					
Box 2 HQ3	15	4		VWb	**3.6m:** Highly weathered, yellowish dark brown mottled red, highly vesicular BASALT; very weak. [Silty fine to medium GRAVEL and COBBLES with minor clay; yellowish dark brown mottled red. Loose, moist. Gravel is sub-angular to angular, highly weathered, basalt].	HW		100					
SPT	14	5					4.5m: SPT 3// 1,2,2,1 N = 6	100					

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. BH010 backfilled upon completion.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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BH010

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416536.000m
Northing: 774498.000m
Reduced level: 19.000m (NZVD2016)

Date started: 11/12/2020
Date completed: 14/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3					**3.6m:** Highly weathered, yellowish dark brown mottled red, highly vesicular BASALT; very weak. [Silty fine to medium GRAVEL and COBBLES with minor clay; yellowish dark brown mottled red. Loose, moist. Gravel is sub-angular to angular, highly weathered, basalt].			100				5.15m to 5.28m: JT -64° UnSm 5.41m: JT -9° StRo 5.5m: JT -3° PlRo 5.65m to 5.68m: JT -74° UnRo	
	13	6											
SPT					**6m:**...Moderately vesicular.		6m: SPT 4// 3,2,2,2 N = 9	100					
HQ3												6.62m: JT -3° PlRo 6.78m: JT -3° PlRo (Silty Clay 15-20mm) 6.86m: JT -5° PlRo	
	12	7						100					
					7.05m to 7.2m:...Completely weathered zone								
				VWb		HW							
SPT							7.5m: SPT 2// 3,2,1,3 N = 9	100					
	11	8											
HQ3								100				8.68m to 8.75m: JT -76° UnRo 8.85m: JT -65° UnRo	
	10	9											
SPT							9m: SPT 3// 2,3,2,4 N = 11	100					
HQ3					**9.55m:** Silty fine to medium GRAVEL and COBBLES with minor clay; brown mottled orange and red. Loose, moist. Gravel is sub-angular to angular, completely weathered, moderately vesicular basalt. [Completely weathered BASALT].			100					
	9	10		VRb		GM							

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. BH010 backfilled upon completion.

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **132 Flanagan Road, Drury**
Project Reference: **510611**

BH010

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416536.000m
Northing: 774498.000m
Reduced level: 19.000m (NZVD2016)

Date started: 11/12/2020
Date completed: 14/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				VRb		GM							
SPT	8	11			**10.25m:** Highly weathered, creamish white mottled brown and speckled orange, moderately vesicular BASALT; extremely weak. [Silty fine to medium GRAVEL and COBBLES with some clay; creamish white mottled brown and speckled orange. Loose, moist. Gravel is sub-angular to angular, highly weathered, moderately vesicular BASALT].		10.5m: SPT 3// 3,1,1,2 N = 7	100					
HQ3				VWb		HW		100					
SPT	7	12					12m: SPT 4// 3,2,2,1 N = 8	100					
HQ3	6	13		TAs	**12.6m:** Sandy CLAY; greyish light brown. Soft, moist, low plasticity.	CL		100				**12.6m: TAURANGA GROUP**	
SPT	5	14					13.5m: SPT 3// 1,1,1,2 N = 5	100					
HQ3	4	15						100					

REMARKS:
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2. BH010 backfilled upon completion.

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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BH010

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Date started: 11/12/2020
Date completed: 14/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
SPT					**12.6m:** Sandy CLAY; greyish light brown. Soft, moist, low plasticity.	CL	15m: SPT 5// 5,4,5,3 N = 17	100					
HQ3	3	16		TAs	**15.7m:** Silty fine to medium SAND; greyish light brown. Medium dense, moist. **15.82m to 15.95m:**...Thinly laminated to laminated, sub-horizontal bedding. **15.85m to 15.87m:**...Slightly cemented.	SM		100					
SPT							16.5m: SPT 6// 6,5,4,7 N = 22	100					
HQ3	2	17		TAc	**16.65m:** Sandy CLAY with some silt and organics; greyish yellow brown. Stiff, moist, high plasticity. Sand is fine to medium. Organics are amorphous.	CH		100					
					17.31m: Silty CLAY; light brown mottled grey and orange. Very stiff, moist, high plasticity.	CH							
	1	18		TAo	**17.51m:** Organic CLAY with some silt; dark grey mottled brown. Stiff, moist, high plasticity.	OH		100					
SPT							18m: SPT 5// 3,2,2,2 N = 9						
HQ3	0	19		TAs	**18.23m:** Silty fine to medium SAND with some clay; greyish light brown. Medium dense, moist. Clay is low plasticity.	SM		100					
SPT							19.5m: SPT 7// 2,2,5,8 N = 17	100					
	-1	20			**19.8m:** Fine to medium SAND with minor silt; greyish light brown. Medium dense, moist. Sand is fine to medium.	SP		100					

Box 5
Box 6

REMARKS:
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Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
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Northing: 774498.000m
Reduced level: 19.000m (NZVD2016)

Date started: 11/12/2020
Date completed: 14/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
Box 6 HQ3	-2	21		TAs	**19.8m:** Fine to medium SAND with minor silt; greyish light brown. Medium dense, moist. Sand is fine to medium.	SP		100					
					20.8m: Fine to medium SAND with some silt; yellowish light brown. Medium dense, moist.	SP							
SPT				TAc	**21m:** Sandy CLAY with some silt; orange brown mottled grey. Stiff, moist, high plasticity. Sand is fine to medium.	CH	21m: SPT 0// 1,0,1,0 N = 2	100					
Box 7 HQ3	-3	22		TAz	**21.6m:** SILT with some clay and trace sand; greenish grey. Stiff, moist, high plasticity. Sand is fine.	MH		100					
SPT	-4	23					22.5m: SPT 0// 0,1,0,0 N = 1	100					
HQ3	-5	24						100					
Box 8 SPT							24m: SPT 0// 2,1,2,2 N = 7	100					
HQ3	-6	25						100					

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Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416536.000m
Northing: 774498.000m
Reduced level: 19.000m (NZVD2016)

Date started: 11/12/2020
Date completed: 14/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				TAz	**25.1m:** Clayey SILT; greenish grey. Stiff, moist, high plasticity.	MH		100					
SPT				TAx	**25.65m:** CORE LOSS.	MH	25.5m: SPT 1// 1,2,1,2 N = 6	33				25.65m: Full SPT not recovered.	
HQ3	-7	26		TAz	**25.95m:** SILT with some clay and trace sand; greenish grey. Stiff, moist, high plasticity. Sand, fine.	MH		100					
SPT	-8	27		TAx	**27.3m:** CORE LOSS		27m: SPT 0// 0,1,1,0 N = 2	67				27.3m: Washed out sand	
HQ3	-9	28		TAz	**27.45m:** SILT with some clay and trace sand; greenish grey. Stiff, moist, high plasticity. Sand, fine.	MH		100					
					27.85m: Clayey SILT; greenish grey. Soft, moist, high plasticity.	CL-ML							
SPT	-10	29		TAx	**28.5m:** CORE LOSS		28.5m: SPT 1// 0,1,0,0 N = 1	78				28.5m: Washed out sand	
					28.6m: SILT with some clay; greenish grey. Firm, moist, high plasticity.							28.6m: Upon extraction core swelled approximately 0.50m	
HQ3	-11	30		TAz		MH		100				28.95m: 0.50m Pickup (Swell)	

Box 8 | Box 9 | Box 10

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BH010

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Easting: 416536.000m
Northing: 774498.000m
Reduced level: 19.000m (NZVD2016)

Date started: 11/12/2020
Date completed: 14/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
SPT				TAz	**28.6m:** SILT with some clay; greenish grey. Firm, moist, high plasticity.	MH	30m: SPT 2// 1,1,1,1 N = 4	100					
HQ3	-12	31		TAz	**30.5m:** SILT with some clay; greenish grey. Very stiff to hard, moist, high plasticity.	MH	30.45m: ITHSV 167/15 kPa	100					
U54				TAx	**31.5m:** CORE LOSS							31.5m: Washed out sand	
	-13	32		TAz	**31.65m:** SILT with some clay; greenish grey. Very stiff to hard, moist, high plasticity.	MH		70					
SPT				TAx	**32m:** CORE LOSS		32m: SPT 1// 1,0,1,1 N = 3					32m: Washed out sand	
				TAz	**32.21m:** SILT with some clay; greenish grey. Very stiff to hard, moist, high plasticity.	MH	32m: ITHSV UTP	53					

End of borehole at 32.45m (Target depth reached)

REMARKS:
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2. BH010 backfilled upon completion.

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Hand Shear Vane Serial No: DR4938 Correction Factor: 1.519

Box :10
Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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BH011

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416476.000m
Northing: 774550.000m
Reduced level: 18.000m (NZVD2016)

Date started: 14/01/2021
Date completed: 15/01/2021
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
				T	**0m:** Silty SAND with some clay; dark brown. Firm, moist, high plasticity.	SM						**0m: TOPSOIL**	
HQ3	17	1			**0.3m:** Silty CLAY with minor sand; reddish orange brown. Firm, moist, high plasticity. [Completely weathered, reddish orange brown, moderately vesicular BASALT; Extremely weak].	CH		100				**0.3m: SOUTH AUCKLAND VOLCANIC FIELD**	
SPTC				VRb	**1m:** Silty fine to coarse GRAVEL and COBBLES with some clay; greyish red and black. Medium dense, moist, well graded. Gravel, sub-angular to angular, completely weathered to highly weathered, moderately vesicular, BASALT. Silt is low plasticity. [Completely weathered BASALT].	GM	1.5m: SPTC 20 for 15mm// N = 50+	N/A				1.5m: SPT hammer bouncing	
HQ3	16	2		VWb	**1.95m:** Moderately weathered; grey BASALT. Moderately strong.	MW		100	27	27		2.15m: Recovered as broken basalt	
					2.15m: Highly weathered, reddish brown, slightly vesicular BASALT; extremely weak. [Silty fine to coarse GRAVEL with minor sand; reddish brown. Medium dense, moist,well graded. Gravel, sub-angular to angular, highly weathered, slightly vesicular basalt].	HW							
					2.35m: Moderately weathered; grey BASALT. Moderately strong.	MW						2.55m: Recovered as gravels and cobbles.	
	15	3			**2.55m:** Highly weathered, reddish brown, slightly vesicular BASALT; extremely weak. [Fine to coarse GRAVEL with some silt and trace clay; reddish brown. Medium dense, dry].	HW	3m: SPTC 6// 4,5,6,8 N = 23						
SPTC								N/A					
HQ3	14	4		VRb	**3.2m:** Highly weathered, dark brown mottled orange, slightly vesicular BASALT; extremely weak. [Clayey silty fine to coarse GRAVEL; dark brown mottled orange. Medium dense, moist, well graded. Gravel, sub-angular to angular, highly weathered, slightly vesicular BASALT, extremely weak. Clay is high plasticity].	HW		100					
SPTC							4.5m: SPTC 12// 8,11,15,15 N = 49	N/A					
	13	5				GM		100					

Box 1
Box 2

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: 359 Correction Factor: 1.503

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 15/01/21 00:00 | m | 7.1 m bgl

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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BH011

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416476.000m
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Date started: 14/01/2021
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Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				VRb	**4.95m:** Silty fine to medium Gravel; brown mottled yellow and black. Loose, saturated, poorly graded. Gravel, sub-angular to angular, completely weathered, moderately vesicular basalt, extremely weak. Silt is non-plastic. [Completely weathered BASALT].	GM							
					5.15m: Silty clayey fine to medium Gravel; brown mottled yellow and grey. Loose, moist, poorly graded. Gravel, sub-angular to angular, completely weathered, highly vesicular basalt, extremely weak. Silt and clay is high plasticity. [Completely weathered BASALT].	GM		100				
	12	6			**5.7m:** Clayey fine to medium GRAVEL with minor silt; brown mottled yellow and grey. Loose, moist, poorly graded. Gravel, sub-angular to angular, completely weathered, highly vesicular basalt, extremely weak. Clay is high plasticity. [Completely weathered BASALT]. **5.75m to 6m:**...Colour change, black mottled yellow and grey		6m: SPTC 4// 2,2,2,2 N = 8					
SPTC						GC		N/A					
HQ3	11	7						100					
					7.2m: Highly weathered, brownish orange mottled yellow, highly vesicular BASALT; extremely weak. [Clayey fine to coarse GRAVEL with minor silt; brownish orange mottled yellow. Loose; moist, well graded. Gravel, sub-angular to angular, completely weathered, highly vesicular basalt, extremely weak. Clay and silt is high plasticity].	HW						
SPT					**7.45m:** Clayey fine to medium GRAVEL; brown mottled orange and yellow. Loose, moist, poorly graded. Gravel, sub-angular to angular, completely weathered, moderately vesicular basalt, extremely weak. Clay is high plasticity. [Completely weathered BASALT].	GC	7.5m: SPT 3// 2,2,2,2 N = 8	100				
	10	8											
HQ3					**8.15m:** Silty fine to medium SAND with minor clay; light yellowish grey. Loose, moist. Silt and clay is low plasticity.	SM		100				**8.15m: TAURANGA GROUP**	
	9	9		TAs	**8.9m:** Silty fine to medium SAND with some clay; brownish yellow. Medium dense, moist. Silt and clay is low plasticity. **8.95m to 9.05m:**...Minor organics		9m: SPT 3// 2,2,3,3 N = 10						
SPT						SM		100					
HQ3								100					
	8	10											

Box 2 | Box 3 | Box 4

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2. 1.0m galvanised steel upstand installed.

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Water Level Readings:
Date Time | Hole Depth | Water Level
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BH011

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Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				TAs	**8.9m:** Silty fine to medium SAND with some clay; brownish yellow. Medium dense, moist. Silt and clay is low plasticity.	SM		100					
SPT							10.5m: SPT 5// 3,4,5,6 N = 18	100					
HQ3	7	11			**10.9m:** Fine to medium SAND with some silt and trace clay; Light brownish yellow. Medium dense, moist, uniformly graded. Silt and clay is low plasticity.			100					
SPT	6	12					12m: SPT 4// 3,4,4,4 N = 15	100					
HQ3	5	13				SP		100					
SPT	4	14					13.5m: SPT 6// 3,4,5,5 N = 17	100					
HQ3	3	15			**14.9m to 14.92m:**...Moderately cemented			100					

Box 4
Box 5

REMARKS:
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Hand Shear Vane Serial No: 359 Correction Factor: 1.503

Water Level Readings:
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SPT				TAz	**15m:** Silty CLAY with trace sand; grey. Very stiff, moist, high plasticity. Sand is fine to medium.		15m: SPT 2// 1,1,1,1 N = 4 15m: IBHSV UTP	100					
HQ3	2	16		TAz		CH		100					
				TAs	**16.15m:** Silty fine to medium SAND; greyish green. Medium dense, moist, well graded.	SM							
SPT				TAz	**16.35m:** SILT with minor clay; greyish green. Very stiff, moist, low plasticity.	ML	16.5m: SPT 2// 1,2,2,2 N = 7 16.5m: IBHSV UTP	100					
HQ3	1	17		TAc	**17.15m:** Silty CLAY; greyish green. Very stiff, moist, high plasticity.	CH							
				TAz	**17.45m:** SILT with minor clay; greyish green. Very stiff, moist, low plasticity.	ML		100					
SPT	0	18					18m: SPT 2// 2,2,2,2 N = 8 18m: IBHSV UTP	100					
HQ3	-1	19						100					
U54	-2	20					19.5m: IBHSV UTP	100					

Box 5
Box 6

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Date completed: 15/01/2021
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
SPT				TAz	**17.45m:** SILT with minor clay; greyish green. Very stiff, moist, low plasticity.	ML	20m: SPT 4// 3,3,3,3 N = 12	100					
HQ3	-3	21		TAx	**20.45m:** CORE LOSS			52				20.45m: Washed out sand	
SPT					**20.95m:** SILT with minor clay; greyish green. Very stiff, moist, low plasticity.		21m: SPT 4// 3,3,2,3 N = 11 21m: IBHSV UTP	100					
HQ3	-4	22				ML		100					
SPT					**22.6m:** SILT with some clay; greyish green. Very stiff, moist, high plasticity.	MH	22.5m: SPT 5// 3,3,3,3 N = 12	100					
HQ3	-5	23		TAz	**23.1m:** SILT with minor clay; greyish green. Very stiff, moist, low plasticity.		23.5m: IBHSV UTP	100					
SPT	-6	24				ML	24m: SPT 5// 3,3,3,4 N = 13	100					
HQ3	-7	25						100					

Box 7
Box 8

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: 359 Correction Factor: 1.503

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 15/01/21 00:00 | m | 7.1 m bgl

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **132 Flanagan Road, Drury**
Project Reference: **510611**

BH011

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416476.000m
Northing: 774550.000m
Reduced level: 18.000m (NZVD2016)

Date started: 14/01/2021
Date completed: 15/01/2021
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				TAz	**23.1m:** SILT with minor clay; greyish green. Very stiff, moist, low plasticity.	ML	25m: IBHSV UTP	100					
SPT							25.5m: SPT 4// 2,2,3,3 N = 10	100					

Box 8

End of borehole at 25.95m (Target depth reached)

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: 359 Correction Factor: 1.503

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 15/01/21 00:00 | m | 7.1 m bgl

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Project: **Drury Development**
Location: **132 Flanagan Road, Drury**
Project Reference: **510611**

BH012

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416626.000m
Northing: 774546.000m
Reduced level: 24.000m (NZVD2016)

Date started: 9/12/2020
Date completed: 10/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
				T	**0m:** Clayey SILT; dark brown. Firm, moist, high plasticity, organics (rootlets).	OH						**0m: TOPSOIL**	
					0.17m: Silty CLAY; brown, speckled black. Firm, moist, high plasticity.	CH						**0.17m: SOUTH AUCKLAND VOLCANIC FIELD**	
HQ3	23	1			**0.47m:** CLAY with some silt; orange brown. Firm, moist, high plasticity.	CH		100					
					1m: Silty CLAY; brownish orange. Stiff, moist, high plasticity.	CH							
					1.2m: CLAY with some silt; brown. Very stiff, moist, high plasticity.	CH							
SPT							1.5m: SPT 2// 1,1,1,1 N = 4						
	22	2			**1.65m:** Silty CLAY; orange brown, speckled grey. Very stiff, moist, high plasticity.	CH	1.5m: IBTHSV 170/74 kPa	100					
HQ3				VRb	**2.25m:** Silty CLAY with trace sand and gravel; reddish brown. Stiff, moist, high plasticity. Sand is fine. Gravel is fine.	CH		100	0	0			
	21	3			**2.85m:** Silty CLAY with minor gravel; orange brown. Very stiff, moist, high plasticity. Gravel is fine to medium, highly weathered, basalt [Completely weathered, orange brown BASALT; extremely weak].	CH	3m: SPT 1// 1,0,1,0 N = 2 3m: IBTHSV UTP	100					
SPT													
HQ3					**3.4m:** Silty CLAY with minor gravel and trace sand; dark brown. Stiff, moist, high plasticity. Gravel is fine. Sand is fine to medium [Completely weathered, dark brown BASALT; extremely weak].	CH		100	0	0			
	20	4			**4.38m to 4.41m:**...Reddish brown clay.								
					4.41m: Silty CLAY with minor sand, orange brown. Very stiff, moist, high plasticity. Sand is fine to medium [Completely weathered, orange brown, slightly vesicular BASALT; very weak].	CH	4.5m: SPT 1// 1,1,0,0 N = 2 4.5m: IBTHSV 176 kPa	100					
SPT				VRt	**4.75m:** SILT with some clay and minor gravel, dark brown with yellowish brown mottling. Very stiff, moist, low plasticity. Gravel is fine, sub-rounded to rounded, lapilli.	ML		100	81	34			
	19	5											

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. BH012 backfilled upon completion.

Hand Shear Vane Serial No: 2006 Correction Factor: 1.588

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **132 Flanagan Road, Drury**
Project Reference: **510611**

BH012

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416626.000m
Northing: 774546.000m
Reduced level: 24.000m (NZVD2016)

Date started: 9/12/2020
Date completed: 10/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
				VRt		ML							
HQ3	18	6		VWb	**5.18m:** Highly weathered, dark brown, moderately vesicular BASALT; weak. Vesicles are >5mm diameter, infilled with red brown clay.	HW		100	81	84		5.42m to 5.48m: JT -47° Ro Vn	
					5.54m: Highly weathered, orange brown, slightly vesicular BASALT; very weak. Vesicles are >2mm diameter.	HW						5.56m: JT -9° Ro Vn	
					5.82m to 5.96m:...Moderately vesicular. Vesicles are >15mm diameter.							5.74m: FL -3° Ro Cg 5.81m: FL -6° Ro Sn	
SPT				VRb	**5.96m:** Silty CLAY with minor gravel; brownish orange. Very stiff, moist, high plasticity. Gravel is fine, sub-angular, basalt [Completely weathered, brownish orange BASALT, extremely weak].	CH	6m: SPT 1// 1,1,1,1 N = 4 6m: IBTHSV UTP	100					
HQ3	17	7		VWb	**6.52m:** Highly weathered, orange brown, slightly vesicular BASALT; very weak. Vesicles are >5mm diameter.	HW		100	81	54		6.6m: JT -32° Ro Sn 6.69m: JT -7° Ro Sn	
												7.2m: JT -31° Ro Sn	
SPT	16	8		VRb	**7.55m:** Clayey SILT with trace gravel; brownish orange. Stiff, moist, high plasticity. Gravel is fine, sub-angular [Completely weathered, brownish orange BASALT; extremely weak].	MH	7.5m: SPT 3// 2,2,1,2 N = 7 7.5m: IBTHSV UTP	100					
HQ3				VWb	**8.05m:** Silty medium GRAVEL with minor clay; reddish brown. Loose, moist, well graded. Gravel is sub-angular basalt [Completely weathered, reddish brown BASALT; extremely weak].	GW							
					8.15m: Highly weathered, brown, slightly vesicular BASALT; very weak. Vesicles are >5mm diameter.	HW						8.32m: JT -5° Ro Vn	
					8.44m: Clayey SILT with some gravel; orange brown. Stiff, moist, high plasticity. Gravel is medium to coarse, sub-angular, basalt [Completely weathered, orange brown, slightly vesicular BASALT; very weak, highly fractured. Vesicles are >2mm diameter].	CW		100	40	40		8.52m to 8.59m: JT -54° Ro Sn 8.521m to 8.95m: CZ -54° Sm Cn	
	15	9											
SPT				VRb	**9m:** Clayey SILT with minor gravel; orange brown with pink grey speckles. Very stiff, moist, high plasticity. Gravel is fine, basalt [Completely weathered, orange brown BASALT; extremely weak].		9m: SPT 1// 0,0,0,0 N = 0 9m: IBTHSV UTP	100					
HQ3						MH		100	9	0		9.45m to 9.53m: Soft, wet due to SPT.	
	14	10											

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. BH012 backfilled upon completion.

Hand Shear Vane Serial No: 2006 Correction Factor: 1.588

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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Location: **132 Flanagan Road, Drury**
Project Reference: **510611**

BH012

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416626.000m
Northing: 774546.000m
Reduced level: 24.000m (NZVD2016)

Date started: 9/12/2020
Date completed: 10/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				VRb	**9m:** Clayey SILT with minor gravel; orange brown with pink grey speckles. Very stiff, moist, high plasticity. Gravel is fine, basalt [Completely weathered, orange brown BASALT; extremely weak]. **10.24m to 10.29m:**...Black speckled mottling.	MH		100	9	0			
SPT	13	11			**10.29m:** Silty CLAY with minor gravel; orange brown. Stiff, moist, high plasticity. Gravel is fine [Completely weathered, orange brown BASALT; extremely weak].	CH	10.5m: SPT 1// 1,0,1,0 N = 2	100					
HQ3					**11.06m:** Clayey SILT with minor gravel; orange brown, mottled yellowish brown and red. Stiff, moist, high plasticity. Gravel is fine, sub-angular, basalt [Completely weathered, orange brown BASALT; extremely weak].	MH		100	36	26			
SPT	12	12		VWb	**11.53m:** Highly weathered, brown, slightly vesicular BASALT; very weak. Vesicles are >5mm diameter.	HW	12m: SPT 6// 3,3,2,2 N = 10	100				11.68m: JT -44° Ro Sn 11.72m: JT -36° Ro Sn 11.84m: JT -23° Ro Sn 11.87m to 11.91m: JT -55° Ro Sn	
HQ3	11	13			**12.6m:** Highly weathered, orange brown, mottled yellow brown and red, slightly vesicular BASALT; very weak. Vesicles are >2mm diameter. **13m to 13.08m:**...extremely weak [Silty CLAY with some gravel; orange brown. Soft to firm, wet to moist, high plasticity. Gravel is fine to medium.].	HW		100	66	44		12.62m: JT -8° Ro Cn 13.14m to 13.19m: JT -49° Sm Vn	
				VRb	**13.2m:** CLAY with some silt; yellowish brown. Stiff, moist, high plasticity.	CH							
SPT	10	14		VWb	**13.45m:** Highly weathered, orange brown, slightly vesicular BASALT; weak. Vesicles are >2mm diameter.	HW	13.5m: SPT 6// 3,4,4,4 N = 15	100				13.42m to 13.48m: JT -69° Ro Cn 14.15m to 14.23m: JT -70° Sm Cn	
HQ3	9	15		TAs	**14.22m:** Silty fine SAND; greenish brown. Loose to medium dense, moist, well graded.	SM		100	24	0		**14.22m: TAURANGA GROUP**	

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. BH012 backfilled upon completion.

Hand Shear Vane Serial No: 2006 Correction Factor: 1.588

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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Project: **Drury Development**
Location: **132 Flanagan Road, Drury**
Project Reference: **510611**

BH012

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416626.000m
Northing: 774546.000m
Reduced level: 24.000m (NZVD2016)

Date started: 9/12/2020
Date completed: 10/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
SPT				TAs	**14.22m:** Silty fine SAND; greenish brown. Loose to medium dense, moist, well graded.		15m: SPT 1// 1,1,1,1 N = 4	100					
HQ3	8	16		TAs	**15.95m to 16.5m:**...Orange banded staining.	SM		100					
SPT				TAx	**16.5m:** NO RECOVERY		16.5m: SPT 3// 0,1,1,2 N = 4	0				16.5m: Failed push tube - Non-cohesive soil - Sample washed out	
HQ3	7	17		TAs	**16.95m:** Silty fine SAND; greenish brown. Loose, moist, poorly graded.	SM		100					
					17.25m to 17.35m:...Wet.								
SPT	6	18		TAc	**17.8m:** Silty CLAY with trace sand; yellowish brown. Stiff, moist, high plasticity. Sand is fine. Indistinct, laminated to very thin sub-horizontal bedding.	CH	18m: SPT 3// 1,1,1,1 N = 4	100					
HQ3	5	19		TAz	**18.85m:** Sandy SILT; yellowish brown. Stiff, moist, low plasticity. Sand is fine.	ML		100					
					19.11m: Silty CLAY; brownish orange. Stiff, moist, high plasticity.	CH							
SPT	4	20		TAc	**19.35m:** CLAY with some silt and trace sand; bluish grey. Firm, moist, high plasticity. Sand is fine.	CH	19.5m: SPT 0// 0,0,0,0 N = 0	100					
								100					

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. BH012 backfilled upon completion.

Hand Shear Vane Serial No: 2006 Correction Factor: 1.588

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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Location: **132 Flanagan Road, Drury**
Project Reference: **510611**

BH012

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416626.000m
Northing: 774546.000m
Reduced level: 24.000m (NZVD2016)

Date started: 9/12/2020
Date completed: 10/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				TAc	**19.35m:** CLAY with some silt and trace sand; bluish grey. Firm, moist, high plasticity. Sand is fine.	CH		100					
SPT	3	21		TAc	**20.73m:** CLAY with some silt and minor sand; bluish grey. Stiff, moist, high plasticity. Sand is fine.	CH	21m: SPT 1// 1,0,1,0 N = 2						
HQ3				TAc	**21.2m:** CLAY with minor silt; bluish grey. Stiff, moist, high plasticity.	CH		100					
	2	22		TAc	**21.6m:** CLAY with some silt; orange brown. Very stiff, moist, high plasticity.	CH		100					
				TAz	**22.03m:** Clayey SILT; greyish brown. Stiff, moist, high plasticity.	CH							
SPT				TAc	**22.25m:** CLAY with some silt; orange brown. Stiff, moist, high plasticity.	CH							
				TAs	**22.33m:** Silty pumiceous fine to medium SAND with minor clay; yellowish brown. Medium dense, moist, well graded.	SM	22.5m: SPT 5// 4,3,3,5 N = 15	100					
HQ3	1	23		TAs	**22.95m:** Fine to medium SAND with some silt; yellowish brown. Medium dense, moist, poorly graded.	SP		100					
				TAz	**23.32m:** SILT with minor clay and trace sand; orange brown, mottled brown. Stiff, moist, low plasticity, moderately cemented.	ML							
				TAz	**23.72m:** SILT with minor clay and trace sand; orange brown, mottled brown. Stiff, moist, low plasticity, moderately cemented. Indistinct, laminated sub-horizontal bedding.	ML							
SPT	0	24		TAc	**23.83m:** Silty CLAY; bluish grey. Stiff, moist, high plasticity.	CH	24m: SPT 0// 0,0,1,0 N = 1	100					
HQ3				TAz	**24.85m:** Clayey SILT; bluish grey. Very stiff, moist, high plasticity.	MH		100					
	-1	25											

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. BH012 backfilled upon completion.

Hand Shear Vane Serial No: 2006 Correction Factor: 1.588

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **132 Flanagan Road, Drury**
Project Reference: **510611**

BH012

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416626.000m
Northing: 774546.000m
Reduced level: 24.000m (NZVD2016)

Date started: 9/12/2020
Date completed: 10/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				TAz	**24.85m:** Clayey SILT; bluish grey. Very stiff, moist, high plasticity.	MH		100					
SPT							25.5m: SPT 2// 1,0,1,1 N = 3	100					

End of borehole at 25.95m (Target Depth Reached)

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. BH012 backfilled upon completion.

Hand Shear Vane Serial No: 2006 Correction Factor: 1.588

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **132 Flanagan Road, Drury**
Project Reference: **510611**

BH014

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416485.000m
Northing: 774665.000m
Reduced level: 14.000m (NZVD2016)

Date started: 13/01/2021
Date completed: 14/01/2021
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3	13	1		T	**0m:** SILT with some clay and trace organics; brown. Soft, moist, low plasticity.	ML						**0m: TOPSOIL** 0m: Organics comprise of rootlets	
					0.25m: CLAY with some silt and trace sand; yellowish brown. Firm, moist, high plasticity.	CH						**0.25m: SOUTH AUCKLAND VOLCANIC FIELD**	
					0.63m: Silty CLAY; brown. Firm, moist, high plasticity.	CH		100					
SPT	12	2		VRb	**1.3m:** CLAY with trace silt; grey mottled orange and red. Stiff, moist, high plasticity.	CH	1.5m: SPT 3// 2,2,2,3 N = 9 1.5m: IBHSV 120/48 kPa	100					
HQ3					**1.95m:** Silty CLAY with some sand; yellowish brown. Soft, saturated, high plasticity.	CH							
	11	3			**2.35m:** CLAY with trace silt; grey mottled orange and red. Stiff, moist, high plasticity.	CH		100					
SPT					**3.15m:** Silty CLAY; yellowish brown mottled grey. Very stiff, moist, high plasticity.	CH	3m: SPT 1// 0,0,0,0 N = 0 3m: IBHSV 117/36 kPa	100					
HQ3					**3.75m:** CORE LOSS								
	10	4		TCc	**3.95m:** Silty CLAY; yellowish brown. Soft, moist, high plasticity.	CH		81				**3.95m: TAURANGA GROUP**	
SPT				TLo	**4.15m:** Sandy CLAY with minor organics; greyish green. Stiff, moist, high plasticity. Sand, medium to coarse. Organics are fibrous.	OH	4.5m: SPT 2// 1,1,1,2 N = 5 4.5m: IBHSV 60/15 kPa	100					
	9	5						100					

Box 1
Box 2

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. BH014 backfilled upon completion.

Hand Shear Vane Serial No: 359 Correction Factor: 1.503

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **132 Flanagan Road, Drury**
Project Reference: **510611**

BH014

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416485.000m
Northing: 774665.000m
Reduced level: 14.000m (NZVD2016)

Date started: 13/01/2021
Date completed: 14/01/2021
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				TLo	**4.15m:** Sandy CLAY with minor organics; greyish green. Stiff, moist, high plasticity. Sand, medium to coarse. Organics are fibrous.	OH							
HQ3	8	6		TAs	**5.5m:** Silty fine to medium SAND; greyish green. Loose, moist.	SM		100					
SPT				TAc	**6.1m:** Silty CLAY; greyish green. Firm, moist, high plasticity.	CH	6m: SPT 2// 2,2,2,2 N = 8	100				6m: Non-cohesive soils	
HQ3	7	7		TAz	**6.45m:** SILT with minor sand; dark greyish green. Firm, moist, non-plastic. Sand is fine to medium.	ML		100					
SPT	6	8		TAc	**7.15m:** CLAY with minor sand and organics; light brownish green. Very stiff, moist, high plasticity. Organics are amorphous.	CH	7.5m: SPT 1// 1,1,1,1 N = 4 7.5m: IBHSV UTP	100					
HQ3				TAc	**8.05m:** CLAY with minor sand and organics; bluish green. Stiff, moist, high plasticity. Sand is fine to medium. Organics are amorphous and fibrous.	CH		100					
SPT	5	9		TAz	**8.7m:** Sandy SILT with some clay; greyish green. Very stiff, moist, low plasticity. Sand is fine to medium.	ML	9m: SPT 5// 3,3,4,3 N = 13 9m: IBHSV UTP	100					
HQ3	4	10						95					

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. BH014 backfilled upon completion.

Hand Shear Vane Serial No: 359 Correction Factor: 1.503

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				TAz	**8.7m:** Sandy SILT with some clay; greyish green. Very stiff, moist, low plasticity. Sand is fine to medium.			95					
SPT				TAz	**10.6m to 10.75m:**...Completely weathered; brown BASALT cobble. Very weak, highly vesicular.	ML	10.5m: SPT 7// 5,5,8,6 N = 24 10.5m: IBHSV UTP	100					
HQ3	3	11		VWb	**11m:** Sandy SILT with some clay; light yellowish brown with orange and green staining. Firm, moist, low plasticity. Sand is fine to medium.	MI-SP		100				11.2m: Possible corestone	
					11.2m: Highly weathered, grey, highly vesicular BASALT; extremely weak. [Silty, fine to coarse GRAVEL with some sand and trace clay; Light yellowish brown. Medium dense, moist, non-plastic. Gravel, sub-angular to angular, sub-rounded to rounded, highly weathered, extremely weak, highly vesicular, basalt].	HW							
					11.55m: Fine to medium SAND with some silt; light yellowish brown with orange staining. Medium dense, moist.								
SPT	2	12		TAs	**11.9m to 12m:**...Sandy SILT		12m: SPT 8// 5,6,6,6 N = 23	100				12m: Non-cohesive soils	
HQ3	1	13		TAs		SP		100					
SPT	0	14		TAs			13.5m: SPT 13// 7,8,10,11 N = 36	100				13.5m: Non-cohesive soils	
HQ3				TAs				100					
					14.55m: Fine to medium SAND with minor silt; greyish green. Medium dense, moist.	SP							
	-1	15		TAz		ML							

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Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
SPT					**14.9m:** SILT with some clay; greyish green. Firm, moist, low plasticity.		15m: SPT 3// 1,1,2,1 N = 5	100				15m: Sliding in tube	
HQ3	-2	16				ML		100					
SPT					**16.65m:** Sandy SILT with trace clay; greyish green. Stiff, moist, non-plastic.	ML	16.5m: SPT 3// 2,2,2,2 N = 8	100				16.5m: Sliding in tube	
HQ3	-3	17		TAz	**16.95m:** SILT with minor clay; greyish green. Stiff, moist, low plasticity.			100					
SPT	-4	18				ML	18m: SPT 3// 1,2,2,2 N = 7 18m: IBHSV 51/15 kPa	100					
HQ3	-5	19						100					
SPT	-6	20					19.5m: SPT 2// 1,2,2,3 N = 8 19.5m: IBHSV 55/18 kPa	100					
								100					

Box 6
Box 7

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Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3	-7	21		TAz	**16.95m:** SILT with minor clay; greyish green. Stiff, moist, low plasticity.			100					
SPT						ML	21m: SPT 3// 2,1,2,2 N = 7 21m: IBHSV 54/15 kPa	78				21m: full spt not recovered	
HQ3	-8	22						100					
SPT							22.5m: SPT 4// 2,2,3,3 N = 10 22.5m: IBHSV 72/24 kPa	100					
HQ3	-9	23		TAc	**22.75m:** Silty CLAY with minor sand; brownish green. Stiff, moist, high plasticity. Sand is fine to medium.	CH		100					
SPT	-10	24					24m: SPT 3// 1,1,2,2 N = 6	100					
HQ3	-11	25						100					

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Hand Shear Vane Serial No: 359 Correction Factor: 1.503

Water Level Readings:
Date Time | Hole Depth | Water Level
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Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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BH014

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CO-ORDINATES: Mt Eden 2000
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Reduced level: 14.000m (NZVD2016)

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Date completed: 14/01/2021
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Azimuth: N/A

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Input by: STH
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Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				TAc	**22.75m:** Silty CLAY with minor sand; brownish green. Stiff, moist, high plasticity. Sand is fine to medium.			100					
SPT	-12	26				CH	25.5m: SPT 2// 1,1,2,2 N = 6	100					
HQ3	-13	27						100					
SPT				TAo	**27m:** Organic CLAY; dark brown, mottled green. Firm, moist, high plasticity. Fibrous plant material [20%].	OH	27m: SPT 3// 3,5,5,5 N = 18	100					
HQ3	-14	28		TAp	**27.55m:** Fibrous PEAT; brown. Firm, moist, low density.	PT		100				27.55m: Strong organic odour.	
SPT	-15	29		TAo	**28.4m:** Organic CLAY; black mottled dark brown. Stiff, moist, high plasticity. Amorphous plant material [10%].	OH	28.5m: SPT 5// 5,7,7,7 N = 26	100				28.4m: Strong organic odour.	
HQ3	-16	30						100					

Box 9
Box 10

REMARKS:
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Hand Shear Vane Serial No: 359 Correction Factor: 1.503

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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Azimuth: N/A

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Input by: STH
Reviewed by: GO
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Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
SPT				TAo	**28.4m:** Organic CLAY; black mottled dark brown. Stiff, moist, high plasticity. Amorphous plant material [10%].	OH	30m: SPT 3// 2,2,3,3 N = 10	100					
HQ3	-17	31		TAp	**30.55m:** Fibrous PEAT; brownish black. Stiff, moist, low density.	PT		100				30.55m: Strong organic odour.	
SPT				TAo	**31.4m:** Organic CLAY; brownish black. Firm, moist, high plasticity.	OH	31.5m: SPT 3// 3,4,5,5 N = 17	100				31.4m: Strong organic odour.	
HQ3	-18	32						100					
SPT				TAc	**32.65m:** CLAY with some organics and trace silt; greyish green. Firm, moist, high plasticity.	CH	33m: SPT 1// 2,2,2,3 N = 9	100					
HQ3	-19	33						100					
SPT				TAo	**33.65m:** Organic CLAY; brownish black. Firm, moist, high plasticity. Amorphous plant material [30%].	OH	34.5m: SPT 3// 3,3,4,5 N = 15	100				33.65m: Strong organic odour.	
HQ3	-20	34						100					
	-21	35			End of borehole at 35m (Target depth reached)								

Box 10 | Box 11 | Box 12

REMARKS:
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Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Hand Shear Vane Serial No: 359 Correction Factor: 1.503

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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BH015

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416594.000m
Northing: 774710.000m
Reduced level: 18.000m (NZVD2016)

Date started: 8/12/2020
Date completed: 9/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy / Defect Description / Additional Notes	Installation
HQ3				T	**0m:** SILT with some clay; dark brown. Firm, moist, low plasticity, organics (rootlets).	OH						**0m: TOPSOIL**	
					0.3m: Silty CLAY; orange brown. Firm, moist, high plasticity.	CH						**0.3m: SOUTH AUCKLAND VOLCANIC FIELD**	
					0.6m: Silty CLAY; brownish orange. Firm, moist, high plasticity.	CH		100					
	17	1			**0.95m:** CLAY with some silt; brownish orange. Stiff, moist, high plasticity.	CH							
SPT					**1.65m:** CLAY with minor silt; orange grey. Very stiff, moist, high plasticity.		1.5m: SPT 0// 1,1,1,1 N = 4 1.5m: IBTHSV 127/67 kPa	100					
HQ3	16	2		Va		CH		100					
	15	3			**3m to 3.75m:**...Firm.		3m: SPT 2// 1,0,1,1 N = 3 3m: IBTHSV 32/19 kPa	100					
SPT					**3.5m to 3.6m:**...Black organic smudges.								
HQ3					**3.75m:** CLAY with some silt; grey, mottled pink. Firm, moist, high plasticity. **3.85m to 4.13m:**...Minor sand.	CH		100					
	14	4					4.5m: SPT 0// 0,0,0,0 N = 0						
SPT					**4.7m:** Silty CLAY; pinkish grey. Soft, moist, high plasticity.	CH		100					
	13	5						100					

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: 2006 Correction Factor: 1.588

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 09/12/20 07:10 | m | 1.8 m bgl

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HQ3	12	6		Va	**4.7m:** Silty CLAY; pinkish grey. Soft, moist, high plasticity.	CH		100					
					5.45m: Clayey SILT; brownish orange, mottled pink. Soft, moist, high plasticity.	MH							
					5.93m: Silty CLAY; orange brown. Firm, moist, high plasticity.	CH	6m: SPT 1// 1,0,1,1 N = 3						
SPT				TAc	**6.15m:** CLAY with some silt; bluish grey. Soft to firm, moist, high plasticity. **6.25m to 6.35m:**...Minor sand, fine.			100				**6.15m: TAURANGA GROUP**	
HQ3	11	7			**6.38m to 6.47m:**...CLAY with trace silt; orange. Firm, moist, high plasticity.	CH		100					
					7.4m to 7.5m:...Some sand, fine.								
U54	10	8		TAx	**7.5m:** NO RECOVERY			0				7.5m: Failed push tube - Non-cohesive soil - Sample washed out	
SPT				TAc	**8m:** Silty CLAY; bluish grey. Very stiff, moist, high plasticity.	CH	8m: SPT 2// 1,2,2,1 N = 6	100					
HQ3	9	9			**8.7m to 8.73m:**...Fibrous organics.			100					
SPT				TAz	**8.9m:** SILT with some clay; greenish grey. Very stiff, moist, moderately plasticity.	ML	9m: SPT 4// 1,2,2,2 N = 7	100					
HQ3	8	10						100					

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HQ3				TAz	**10.05m:** Clayey SILT with trace sand; brownish grey. Very stiff, moist, high plasticity. Sand is fine.	ML		100					
SPT	7	11					10.5m: SPT 1// 1,2,1,1 N = 5	100					
HQ3	6	12				MH	12m: SPT 1// 1,0,1,0 N = 2	100					
SPT								100					
HQ3	5	13					13.5m: SPT 3// 2,2,1,2 N = 7	100					
SPT	4	14			**13.6m:** Fine to medium SAND with minor silt; greenish grey. Medium dense, moist, well graded.			100					
HQ3	3	15		TAs		SP		100					

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SPT				TAs	**13.6m:** Fine to medium SAND with minor silt; greenish grey. Medium dense, moist, well graded.	SP	15m: SPT 5// 3,4,2,2 N = 11	100					
HQ3	2	16		TAs	**15.45m:** Fine to medium SAND with some silt; greenish grey. Medium dense, wet, well graded.	SP		100				15.45m: Shows dilatant behaviour	
SPT				TAz	**16.3m:** SILT with minor clay; bluish grey. Stiff, moist, low plasticity, moderately cemented. Thinly laminated to laminated, subhorizontal bedding.	ML	16.5m: SPT 2// 1,1,1,1 N = 4	100					
HQ3	1	17		TAz		ML		100				17.3m: JT -26° Sm Cn 17.45m: JT -26° Ro Cn 17.5m: JT -6° Ro Cn 17.68m: JT -2° Ro Cn	
SPT	0	18		TAz		ML	18m: SPT 2// 1,1,2,1 N = 5	100					
HQ3	-1	19		TAz		ML		100				18.55m: JT -8° Sm Cn 18.551m to 18.7m: JT -81° Sm Cn 18.7m: JT -19° Sm Cn	
				TAc	**19.05m:** CLAY with some silt; greenish grey. Stiff, moist, high plasticity.	CH							
SPT	-2	20		TAz	**19.45m:** SILT with minor clay; bluish grey. Stiff, moist, low plasticity, moderately cemented. Thinly laminated to laminated, subhorizontal bedding.	ML	19.5m: SPT 2// 3,1,0,1 N = 5	100					
								100					

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BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416594.000m
Northing: 774710.000m
Reduced level: 18.000m (NZVD2016)

Date started: 8/12/2020
Date completed: 9/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3	-3	21		TAz	**19.45m:** SILT with minor clay; bluish grey. Stiff, moist, low plasticity, moderately cemented. Thinly laminated to laminated, subhorizontal bedding.	ML						19.95m to 20.18m: JT -77° Sm Cn
					20.45m: Silty CLAY; greenish grey. Stiff, moist, high plasticity.	CH		100				20.45m: JT -9° Ro Cn
SPT							21m: SPT 2// 1,2,1,2 N = 6	100					
HQ3	-4	22		TAc	**21.3m:** CLAY with some silt; greenish grey. Very stiff, moist, high plasticity.	CH		100				21.75m: JT -2° Ro Cn	
					21.85m: Silty CLAY; greenish grey. Stiff, moist, high plasticity.	CH						22m: JT -6° Ro Cn	
					22m: CLAY with some silt; greenish grey. Very stiff, moist, high plasticity.	CH						22.3m: JT -4° Ro Cn	
SPT							22.5m: SPT 1// 1,1,1,1 N = 4	100					
HQ3	-5	23		TAz	**22.6m:** SILT with minor clay; bluish grey. Stiff, moist, low plasticity, moderately cemented. Thinly laminated to laminated, subhorizontal bedding.	ML		100				23.05m to 23.15m: JT -81° Sm Cn	
												23.65m: JT -7° Ro Cn	
SPT	-6	24					24m: SPT 1// 0,1,1,1 N = 3	100					
HQ3								100				24.45m to 24.65m: JT -86° Sm Cn	
	-7	25										24.82m to 25.11m: JT -81° Sm Cn	

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: 2006 Correction Factor: 1.588

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 09/12/20 07:10 | m | 1.8 m bgl

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Client: **Kiwi Properties Ltd**
Project: **Drury Development**
Location: **132 Flanagan Road, Drury**
Project Reference: **510611**

BH015

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416594.000m
Northing: 774710.000m
Reduced level: 18.000m (NZVD2016)

Date started: 8/12/2020
Date completed: 9/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: WBM
Input by: WBM
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				TAz	**22.6m:** SILT with minor clay; bluish grey. Stiff, moist, low plasticity, moderately cemented. Thinly laminated to laminated, subhorizontal bedding.	ML		100				25.07m: JT -24° Sm Cn 25.11m to 25.2m: JT -59° Sm Cn	
SPT							25.5m: SPT 1// 0,1,1,1 N = 3	100					

End of borehole at 25.95m (Target Depth Reached)

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: 2006 Correction Factor: 1.588

Water Level Readings:
Date Time | Hole Depth | Water Level
(1) 09/12/20 07:10 | m | 1.8 m bgl

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

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Location: **132 Flanagan Road, Drury**
Project Reference: **510611**

BH016

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416713.000m
Northing: 774752.000m
Reduced level: 12.500m (NZVD2016)

Date started: 8/12/2020
Date completed: 8/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
				T	**0m:** Sandy SILT; dark brown. Firm, dry. Sand is fine to medium.	ML						**0m: TOPSOIL**	
HQ3	12	1		TAx	**0.35m:** CORE LOSS.			23				**0.35m: TAURANGA GROUP** 0.35m: Washed out sand.	
SPT	11			TAc	**1.5m:** Silty CLAY with minor sand; light grey mottled orange. Firm, moist, high plasticity. Sand is fine to medium.	CH	1.5m: SPT 0// 1,0,1,1 N = 3 1.5m: IBTHSV 44/13 kPa	100					
HQ3	10	2						100					
U54								100					
SPT	9	3					3m: SPT 2// 1,0,1,1 N = 3	100					
HQ3		4			**3.45m:** Silty CLAY with some sand and trace organics; grey mottled brown. Soft, moist, high plasticity. Sand is fine to medium.	CH		67				3.45m: Organics comprise of rootlets.	
	8			TAx	**4.15m:** CORE LOSS.							4.15m: Washed out sand.	
SPT		5		TAc	**4.5m:** Silty CLAY with some sand and trace organics; bluish grey. Firm, moist, high plasticity. Sand is fine to medium.	CH	4.5m: SPT 3// 2,1,1,1 N = 5	100				4.5m: Decomposed organics. 4.5m: Sliding in tube	
								100					

Box 1

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: 2006 Correction Factor: 1.588

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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Location: **132 Flanagan Road, Drury**
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BH016

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416713.000m
Northing: 774752.000m
Reduced level: 12.500m (NZVD2016)

Date started: 8/12/2020
Date completed: 8/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3	7			TAc	**4.5m:** Silty CLAY with some sand and trace organics; bluish grey. Firm, moist, high plasticity. Sand is fine to medium.	CH		100					
				TAs	**5.55m:** Fine to coarse SAND with some silt; brownish grey. Medium dense, moist.	SW							
SPT	6			TAz	**5.8m:** Sandy SILT with minor clay; greyish green. Soft, moist, non-plastic. Sand is fine to medium.	ML	6m: SPT 3// 1,2,2,2 N = 7	100				6m: Sliding in tube	
HQ3	6			TAx	**6.6m:** CORE LOSS.			19				6.6m: Washed out sand.	
SPT	5			TAz	**7.5m:** Sandy SILT with some clay; brownish grey. Firm, moist, low plasticity. Sand is fine to medium.	ML	7.5m: SPT 4// 2,2,2,2 N = 8	100				7.5m: Sliding in tube	
HQ3	4			TAx	**8.2m:** CORE LOSS.			56				8.2m: Bottom very stiff, top recovered washed out sand	
SPT	3			TAc	**8.86m:** Silty CLAY with some sand; grey. Very stiff, moist, high plasticity. Sand is fine to medium.	CH	9m: SPT 2// 1,1,1,1 N = 4 9m: IBTHSV UTP	100					
HQ3				TAs	**9.45m:** Silty fine to medium SAND; greyish green. Very loose, moist.	SM		100					
	10			TAc	**9.65m:** Sandy CLAY with some silt; grey. Very stiff, moist, high plasticity. Sand is fine to medium.	CH							

Box 2

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
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Hand Shear Vane Serial No: 2006 Correction Factor: 1.588

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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Location: **132 Flanagan Road, Drury**
Project Reference: **510611**

BH016

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416713.000m
Northing: 774752.000m
Reduced level: 12.500m (NZVD2016)

Date started: 8/12/2020
Date completed: 8/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
Box 2 HQ3	2	11		TAc	**9.65m:** Sandy CLAY with some silt; grey. Very stiff, moist, high plasticity. Sand is fine to medium.	CH	10.5m: SPT 4// 1,2,2,4 N = 9 10.5m: IBTHSV 152/32 kPa	100					
SPT								100					
Box 3 HQ3	1	12						100					
SPT	0						12m: SPT 2// 1,1,1,2 N = 5 12m: IBTHSV 137/32 kPa	100					
HQ3		13			**12.45m:** CLAY with some silt; green. Stiff, moist, high plasticity.	CH		100					
SPT	-1			TAs	**13.3m:** Silty fine to medium SAND with minor clay; bluish green. Loose, moist, non-plastic.	SM	13.5m: SPT 3// 2,1,1,2 N = 6 13.5m: IBTHSV 140/32 kPa	100					
Box 4 HQ3	-2	14 15		TAz	**13.95m:** Sandy SILT with some clay, greyish green. Firm, moist, low plasticity. Sand is fine to medium.	ML		100					

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
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Hand Shear Vane Serial No: 2006 Correction Factor: 1.588

Water Level Readings:
Date Time | Hole Depth | Water Level
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BH016

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416713.000m
Northing: 774752.000m
Reduced level: 12.500m (NZVD2016)

Date started: 8/12/2020
Date completed: 8/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
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Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
SPT					**15m:** Silty CLAY with some sand; greyish green. Very stiff, moist, high plasticity.		15m: SPT 2// 1,2,1,1 N = 5 15m: IBTHSV 121/25 kPa	100					
HQ3	-3	16				CH		100					
SPT	-4						16.5m: SPT 2// 1,1,1,1 N = 4	100					
HQ3		17		TAc	**16.95m:** Silty CLAY; greyish green. Firm, moist, high plasticity.							16.95m: 18.45-19.50 Core drilling disturbed	
	-5							100					
SPT		18					18m: SPT 3// 1,1,2,1 N = 5	100					
HQ3	-6				**18.65m to 18.75m:**...Coarse Siltstone gravel.	CH							
		19						100					
SPT	-7						19.5m: SPT 2// 1,1,2,1 N = 5	100					
		20						100					

Box 4
Box 5

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: 2006 Correction Factor: 1.588

Water Level Readings:
Date Time | Hole Depth | Water Level
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BH016

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416713.000m
Northing: 774752.000m
Reduced level: 12.500m (NZVD2016)

Date started: 8/12/2020
Date completed: 8/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3	-8	21		TAo	**20.05m:** Organic CLAY; brown mottled green. Stiff, moist, high plasticity.	CH / OH		100				20.05m: Strong organic smell.	
				TAp	**20.7m:** Amorphous PEAT with some clay; black. Stiff, moist, low density.	PT							
SPT	-9	22		TAo	**21m:** Organic CLAY; brown. Soft, moist, high plasticity.	OH	21m: SPT 2// 0,1,1,1 N = 3	100				21m: Strong organic smell.	
HQ3					**21.85m to 21.93m:**...80mm layer of fibrous wood.			100					
	-10	23		TAc	**22m:** CLAY with some silt and trace organics; green mottled brown. Firm, moist, high plasticity. Organics are amorphous.	CH	22.5m: SPT 0// 1,1,1,1 N = 4	100					
SPT				TAo	**23.3m:** Organic CLAY; brown. Firm, moist, high plasticity.	OH						23.3m: Strong organic smell.	
HQ3	-11	24		TAp	**23.5m:** Fibrous PEAT; black mottled brown. Firm, moist, low density.	PT		100					
				TAo	**23.9m:** Organic CLAY; brown. Firm, moist, high plasticity.	OH	24m: SPT 2// 1,0,1,1 N = 3	100					
SPT	-12	25											
HQ3				TAp	**24.78m:** Fibrous PEAT; black. Firm, moist, low density.	PT		100				24.78m: Contains large fragments of wood.	

REMARKS:
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Hand Shear Vane Serial No: 2006 Correction Factor: 1.588

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

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BH016

BOREHOLE INFORMATION
Method: Rotary Core Wireline
Equipment: Track Mounted Drill Rig
Contractor: Perry Geotech Ltd

CO-ORDINATES: Mt Eden 2000
Easting: 416713.000m
Northing: 774752.000m
Reduced level: 12.500m (NZVD2016)

Date started: 8/12/2020
Date completed: 8/12/2020
Inclination: 90°
Azimuth: N/A

Logged by: STH
Input by: STH
Reviewed by: GO
Verified by: JM

Method	R.L. (m)	Length (m)	Graphic Log	Layer Code	Material Description	Weathering/USC	Testing	TCR (%)	SCR (%)	RQD (%)	Fracture Log (VWS WS MWS CS VCS ECS)	Stratigraphy Defect Description Additional Notes	Installation
HQ3				TAp	**24.78m:** Fibrous PEAT; black. Firm, moist, low density.	PT							
HQ3	-13			TAc	**25.2m:** CLAY with some silt and some organics; brown. Firm, moist, high plasticity.	CH		100					
SPT				TAc		CH	25.5m: SPT 3// 2,1,1,1 N = 5	100					

End of borehole at 25.95m (Target depth reached)

REMARKS:
1. Investigation collar is recorded to an accuracy of ±10 m horizontal and ±1 m vertical.
2. 1.0m galvanised steel upstand installed.

Hand Shear Vane Serial No: 2006 Correction Factor: 1.588

Water Level Readings:
Date Time | Hole Depth | Water Level
No water level recorded

Database File: 510611_V3.GPJ **Library file:** AURECON_AKL_20201012.GLB **Template:** AURECON_AKL_20170201.GDT **Report File:** AURECON DH LOG V3.9 0DP **Date Generated:** 8/03/2021

Kiwi Property

DRURY DEVELOPMEMT

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Borehole Reference:	**BH001**	Date Drilled:	**23/11/2020-24/11/2020**
Photographed By:	**STH**	Date Photographed:	**23/11/2020-24/11/2020**



Box 1. - Depth: 00.00 m to 02.80 m.



Box 2. - Depth: 02.80 m to 06.55 m.

Borehole Reference:	**BH001**	Date Drilled:	**23/11/2020-24/11/2020**
Photographed By:	**STH**	Date Photographed:	**23/11/2020-24/11/2020**



Box 3. - Depth: 06.55m to 09.85 m.



Box 4. - Depth: 09.85 m to 13.25 m.

Kiwi Property

DRURY DEVELOPMEMT

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Borehole Reference:	**BH001**	Date Drilled:	**23/11/2020-24/11/2020**
Photographed By:	**STH**	Date Photographed:	**23/11/2020-24/11/2020**



Box 5. - Depth: 13.25 m to 16.45 m.



Box 6. - Depth: 16.45 m to 19.50 m.

Borehole Reference:	**BH001**	Date Drilled:	**23/11/2020-24/11/2020**
Photographed By:	**STH**	Date Photographed:	**23/11/2020-24/11/2020**



Box 7. - Depth: 19.50 m to 22.95 m.



Box 8. - Depth: 22.95 m to 25.5 m.

Kiwi Property

DRURY DEVELOPMEMT

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Borehole Reference:	**BH002**	Date Drilled:	**25/11/2020**
Photographed By:	**BGW**	Date Photographed:	**25/11/2020**



Box 1. - Depth: 00.00 m to 03.45 m.



Box 2. - Depth: 03.45 m to 06.70 m.

Borehole Reference:	**BH002**	Date Drilled:	**25/11/2020**
Photographed By:	**BGW**	Date Photographed:	**25/11/2020**



Box 3. - Depth: 06.70 m to 09.85 m.



Box 4. - Depth: 09.85 m to 12.85 m.

Borehole Reference:	**BH002**	Date Drilled:	**25/11/2020**
Photographed By:	**BGW**	Date Photographed:	**25/11/2020**



Box 5. - Depth: 12.85 m to 15.66 m.



Box 6. - Depth: 15.66 m to 19.35 m.

Borehole Reference:	**BH002**	Date Drilled:	**25/11/2020**
Photographed By:	**BGW**	Date Photographed:	**25/11/2020**



Box 7. - Depth: 19.35 m to 22.20 m.



Box 8. - Depth: 22.20 m to 25.20 m.

Borehole Reference:	**BH002**	Date Drilled:	**25/11/2020**
Photographed By:	**BGW**	Date Photographed:	**25/11/2020**



Box 9. - Depth: 25.20 m to 25.56 m.

Kiwi Property

DRURY DEVELOPMEMT

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Borehole Reference:	**BH003**	Date Drilled:	**01/12/2020-02/12/2020**
Photographed By:	**WBM**	Date Photographed:	**01/12/2020-02/12/2020**



Box 1. - Depth: 00.00 m to 02.55 m.



Box 2. - Depth: 02.55 m to 06.00 m.

Borehole Reference: **BH003** Date Drilled: **01/12/2020-02/12/2020**

Photographed By: **WBM** Date Photographed: **01/12/2020-02/12/2020**



Box 3. - Depth: 06.00 m to 09.85 m.



Box 4. - Depth: 09.85 m to 13.05 m.

Borehole Reference:	**BH003**	Date Drilled:	**01/12/2020-02/12/2020**
Photographed By:	**WBM**	Date Photographed:	**01/12/2020-02/12/2020**



Box 5. - Depth: 13.05 m to 16.40 m.



Box 6. - Depth: 16.40 m to 19.22 m.

Borehole Reference: **BH003** Date Drilled: **01/12/2020-02/12/2020**

Photographed By: **WBM** Date Photographed: **01/12/2020-02/12/2020**



Box 7. - Depth: 19.22 m to 22.00 m.



Box 8. - Depth: 22.00 m to 24.85 m.

Borehole Reference:	**BH003**	Date Drilled:	**01/12/2020-02/12/2020**
Photographed By:	**WBM**	Date Photographed:	**01/12/2020-02/12/2020**



Box 9. - Depth: 24.85 m to 25.50 m.

Kiwi Property

DRURY DEVELOPMEMT

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Borehole Reference:	**BH001**	Date Drilled:	**24/11/2020-25/11/2020**
Photographed By:	**BW**	Date Photographed:	**26/11/2020**



Box 1. - Depth: 00.00 m to 03.75 m.



Box 2. - Depth: 03.75 m to 06.95 m.

Borehole Reference:	**BH001**	Date Drilled:	**24/11/2020-25/11/2020**
Photographed By:	**BW**	Date Photographed:	**26/11/2020**



Box 3. - Depth: 07.05 m to 10.20 m.



Box 4. - Depth: 10.20 m to 13.25 m.

Borehole Reference:	**BH001**	Date Drilled:	**24/11/2020-25/11/2020**
Photographed By:	**BW**	Date Photographed:	**26/11/2020**



Box 5. - Depth: 13.25 m to 16.95 m.



Box 6. - Depth: 16.95 m to 19.87 m.

Borehole Reference:	**BH001**	Date Drilled:	**24/11/2020-25/11/2020**
Photographed By:	**BW**	Date Photographed:	**26/11/2020**



Box 7. - Depth: 19.87 m to 22.70 m.



Box 8. - Depth: 22.70 to 25.50 m.

Borehole Reference:	BH005	Date Drilled:	26/11/2020-30/11/2020
Photographed By:	BGW	Date Photographed:	26/11/2020-30/11/2020



Box 1. - Depth: 00.00 m to 02.85 m.



Box 2. - Depth: 02.85 m to 06.45 m.

Borehole Reference:	BH005	Date Drilled:	26/11/2020-30/11/2020
Photographed By:	BGW	Date Photographed:	26/11/2020-30/11/2020



Box 3. - Depth: 06.45 m to 09.80 m.



Box 4. - Depth: 09.80 m to 12.70 m.

Borehole Reference:	BH005	Date Drilled:	26/11/2020-30/11/2020
Photographed By:	BGW	Date Photographed:	26/11/2020-30/11/2020



Box 5. - Depth: 12.70 m to 15.90 m.



Box 6. - Depth: 15.90 m to 18.90 m.

Borehole Reference:	BH005	Date Drilled:	26/11/2020-30/11/2020
Photographed By:	BGW	Date Photographed:	26/11/2020-30/11/2020



Box 7. - Depth: 18.90 m to 21.65 m.



Box 8. - Depth: 21.65 m to 24.60 m.

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Borehole Reference:	BH005	Date Drilled:	26/11/2020-30/11/2020
Photographed By:	BGW	Date Photographed:	26/11/2020-30/11/2020



Box 9. - Depth: 24.60 m to 25.50 m.

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Borehole Reference:	BH006	Date Drilled:	17/12/2020-18/12/2020
Photographed By:	BGW	Date Photographed:	17/12/2020-18/12/2020



Box 1. - Depth: 00.00 m to 03.45 m.



Box 2. - Depth: 03.45 m to 07.05 m.

Borehole Reference:	BH006	Date Drilled:	17/12/2020-18/12/2020
Photographed By:	BGW	Date Photographed:	17/12/2020-18/12/2020



Box 3. - Depth: 07.05 m to 10.10 m.



Box 4. - Depth: 10.10 m to 13.05 m.

Borehole Reference:	BH006	Date Drilled:	17/12/2020-18/12/2020
Photographed By:	BGW	Date Photographed:	17/12/2020-18/12/2020



Box 5. - Depth: 13.05 m to 16.50 m.



Box 6. - Depth: 16.50 m to 20.35 m.

Borehole Reference:	BH006	Date Drilled:	17/12/2020-18/12/2020
Photographed By:	BGW	Date Photographed:	17/12/2020-18/12/2020



Box 7. - Depth: 20.35 m to 23.55 m.



Box 8. - Depth: 23.55 m to 26.45 m.

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Borehole Reference:	**BH007**	Date Drilled:	**02/02/2020-03/02/2020**
Photographed By:	**STH**	Date Photographed:	**02/02/2020-03/02/2020**



Box 1. - Depth: 00.00 m to 02.83 m.



Box 2. - Depth: 02.83 m to 06.00 m.

Borehole Reference:	**BH007**	Date Drilled:	**02/02/2020-03/02/2020**
Photographed By:	**STH**	Date Photographed:	**02/02/2020-03/02/2020**



Box 3. - Depth: 06.00 m to 09.13 m.



Box 4. - Depth: 09.13 m to 12.00 m.

Borehole Reference:	**BH007**	Date Drilled:	**02/02/2020-03/02/2020**
Photographed By:	**STH**	Date Photographed:	**02/02/2020-03/02/2020**



Box 5. - Depth: 12.00 m to 14.90 m.



Box 6. - Depth: 14.90 m to 17.68 m.

Borehole Reference:	**BH007**	Date Drilled:	**02/02/2020-03/02/2020**
Photographed By:	**STH**	Date Photographed:	**02/02/2020-03/02/2020**



Box 7. - Depth: 17.68 m to 20.80 m.



Box 8. - Depth: 20.80 m to 25.10 m.

Borehole Reference:	**BH007**	Date Drilled:	**02/02/2020-03/02/2020**
Photographed By:	**STH**	Date Photographed:	**02/02/2020-03/02/2020**



Box 9. - Depth: 25.10m to 25.50 m.

Borehole Reference:	BH008	Date Drilled:	15/12/2020
Photographed By:	BGW	Date Photographed:	15/12/2020



Box 1. - Depth: 00.00 m to 05.30 m.



Box 2. - Depth: 05.30 m to 08.30 m.

Borehole Reference:	BH008	Date Drilled:	15/12/2020
Photographed By:	BGW	Date Photographed:	15/12/2020



Box 3. - Depth: 08.30 m to 11.55 m.



Box 4. - Depth: 11.55 m to 14.90 m.

Borehole Reference:	BH008	Date Drilled:	15/12/2020
Photographed By:	BGW	Date Photographed:	15/12/2020

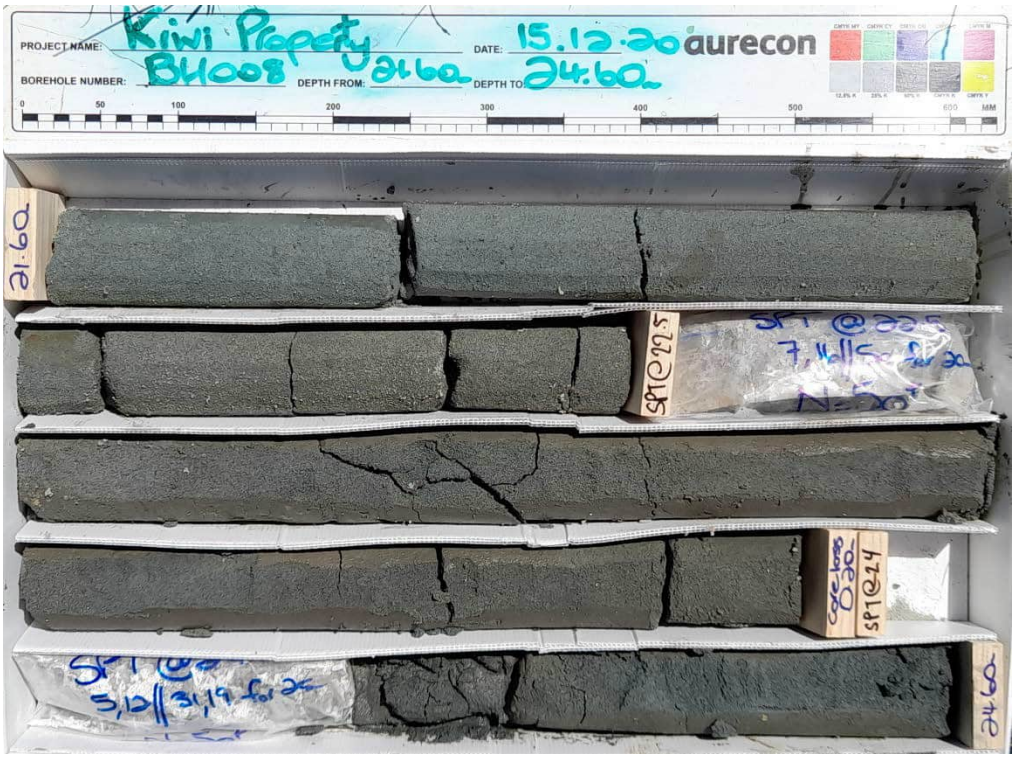


Box 5. - Depth: 14.90 m to 18.00 m.

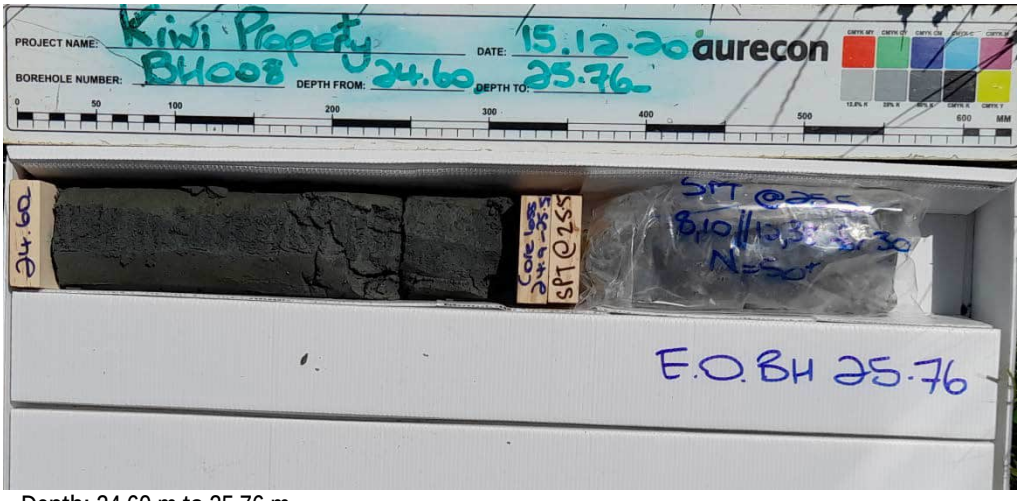


Box 6. - Depth: 18.00 m to 21.60 m.

Borehole Reference:	BH008	Date Drilled:	15/12/2020
Photographed By:	BGW	Date Photographed:	15/12/2020



Box 7. - Depth: 21.60 m to 24.60 m.



Box 8. - Depth: 24.60 m to 25.76 m.

Borehole Reference:	BH009	Date Drilled:	16/12/2020
Photographed By:	BGW	Date Photographed:	16/12/2020



Box 1. - Depth: 00.00 m to 04.50 m.



Box 2. - Depth: 04.50 m to 08.85 m.

Borehole Reference:	BH009	Date Drilled:	16/12/2020
Photographed By:	BGW	Date Photographed:	16/12/2020



Box 3. - Depth: 08.85 m to 12.45 m.



Box 4. - Depth: 12.45 m to 15.75 m.

Borehole Reference:	BH009	Date Drilled:	16/12/2020
Photographed By:	BGW	Date Photographed:	16/12/2020



Box 5. - Depth: 15.75 m to 19.30 m.



Box 6. - Depth: 19.30 m to 22.95 m.

Borehole Reference:	BH009	Date Drilled:	16/12/2020
Photographed By:	BGW	Date Photographed:	16/12/2020



Box 7. - Depth: 22.95 m to 27.45 m.

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Borehole Reference:	**BH010**	Date Drilled:	**10/12/2020-14/12/2020**
Photographed By:	**STH**	Date Photographed:	**10/12/2020-14/12/2020**



Box 1. - Depth: 00.00 m to 03.45m.



Box 2. - Depth: 03.45 m to 07.05 m.

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Borehole Reference:	**BH010**	Date Drilled:	**10/12/2020-14/12/2020**
Photographed By:	**STH**	Date Photographed:	**10/12/2020-14/12/2020**



Box 3. - Depth: 07.05 m to 10.05 m.



Box 4. - Depth: 10.05 m to 13.30 m.

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Borehole Reference:	**BH010**	Date Drilled:	**10/12/2020-14/12/2020**
Photographed By:	**STH**	Date Photographed:	**10/12/2020-14/12/2020**



Box 5. - Depth: 13.30 m to 16.50 m.



Box 6. - Depth: 16.50 m to 20.20 m.

Borehole Reference:	**BH010**	Date Drilled:	**10/12/2020-14/12/2020**
Photographed By:	**STH**	Date Photographed:	**10/12/2020-14/12/2020**



Box 7. - Depth: 20.20 m to 23.25 m.



Box 8. - Depth: 23.25 m to 26.40 m.

Borehole Reference:	**BH010**	Date Drilled:	**10/12/2020-14/12/2020**
Photographed By:	**STH**	Date Photographed:	**10/12/2020-14/12/2020**



Box 9. - Depth: 26.40 m to 29.75 m.



Box 10. - Depth: 29.75 m to 32.45 m.

Borehole Reference:	**BH011**	Date Drilled:	**14/01/2020-15/01/2020**
Photographed By:	**STH**	Date Photographed:	**14/01/2020-15/01/2020**



Box 1. - Depth: 00.00 m to 03.45 m.



Box 2. - Depth: 03.45 m to 07.05 m.

Borehole Reference:	**BH011**	Date Drilled:	**14/01/2020-15/01/2020**
Photographed By:	**STH**	Date Photographed:	**14/01/2020-15/01/2020**



Box 3. - Depth: 07.05 m to 09.65 m.

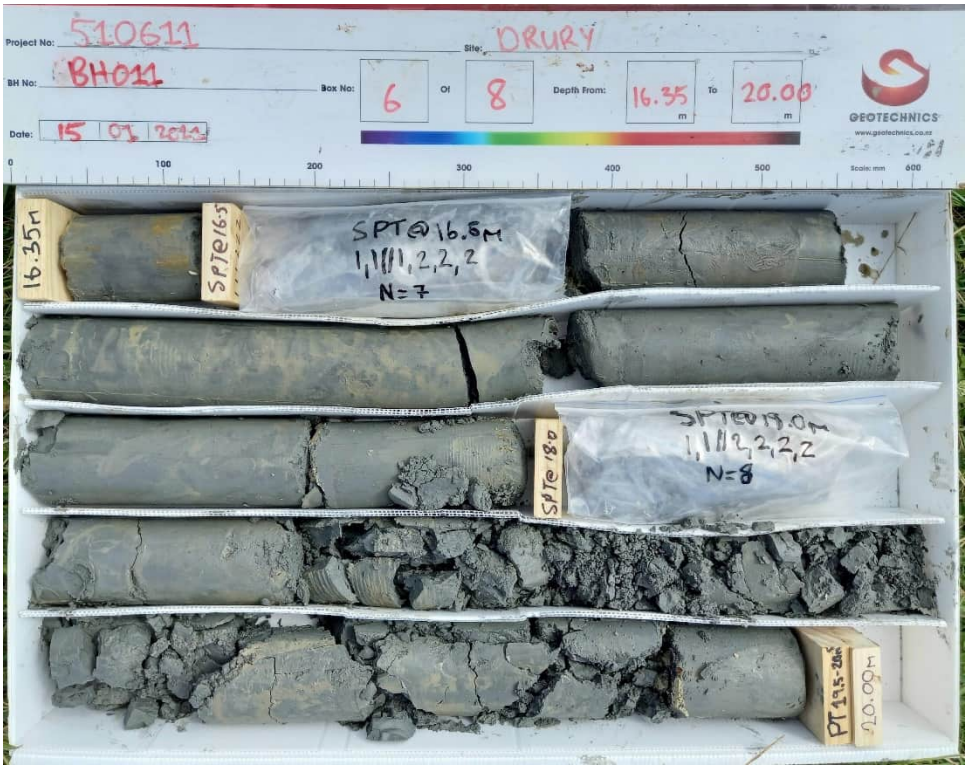


Box 4. - Depth: 09.65 m to 13.05 m.

Borehole Reference:	**BH011**	Date Drilled:	**14/01/2020-15/01/2020**
Photographed By:	**STH**	Date Photographed:	**14/01/2020-15/01/2020**



Box 5. - Depth: 13.05 m to 16.35 m.



Box 6. - Depth: 16.35 m to 20.00 m.

Borehole Reference:	**BH011**	Date Drilled:	**14/01/2020-15/01/2020**
Photographed By:	**STH**	Date Photographed:	**14/01/2020-15/01/2020**



Box 7. - Depth: 20.00 m to 23.35 m.



Box 8. - Depth: 23.35 m to 29.95 m.

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Borehole Reference:	**BH012**	Date Drilled:	**09/12/2020-10/12/2020**
Photographed By:	**WBM**	Date Photographed:	**10/12/2020**



Box 1. - Depth: 00.00 m to 03.00 m.



Box 2. - Depth: 03.00 m to 06.00 m.

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Borehole Reference:	**BH012**	Date Drilled:	**09/12/2020-10/12/2020**
Photographed By:	**WBM**	Date Photographed:	**10/12/2020**



Box 3. - Depth: 06.00 m to 09.45 m.



Box 4. - Depth: 09.45 m to 12.85 m.

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Borehole Reference:	**BH012**	Date Drilled:	**09/12/2020-10/12/2020**
Photographed By:	**WBM**	Date Photographed:	**10/12/2020**



Box 5. - Depth: 12.85 m to 16.10 m.



Box 6. - Depth: 16.10 m to 20.25 m.

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Borehole Reference:	**BH012**	Date Drilled:	**09/12/2020-10/12/2020**
Photographed By:	**WBM**	Date Photographed:	**10/12/2020**



Box 7. - Depth: 20.25 m to 23.65 m.



Box 8. - Depth: 23.65 m to 25.95 m.

Borehole Reference:	**BH014**	Date Drilled:	**13/01/2020-14/01/2020**
Photographed By:	**STH**	Date Photographed:	**13/01/2020-14/01/2020**

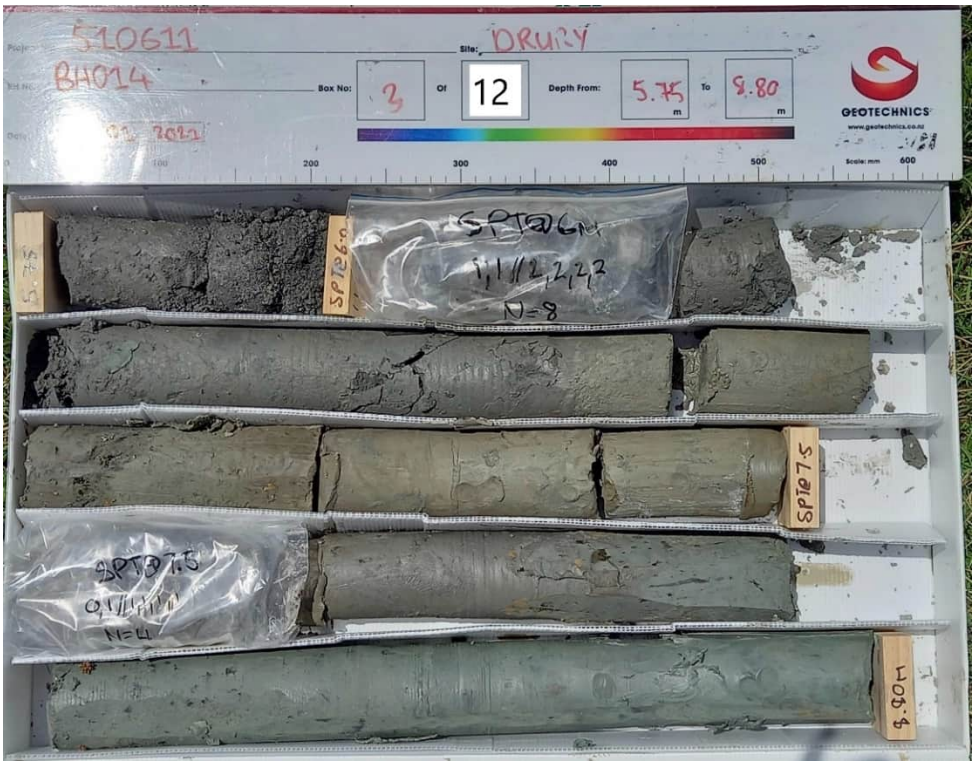


Box 1. - Depth: 00.00 m to 02.35 m.

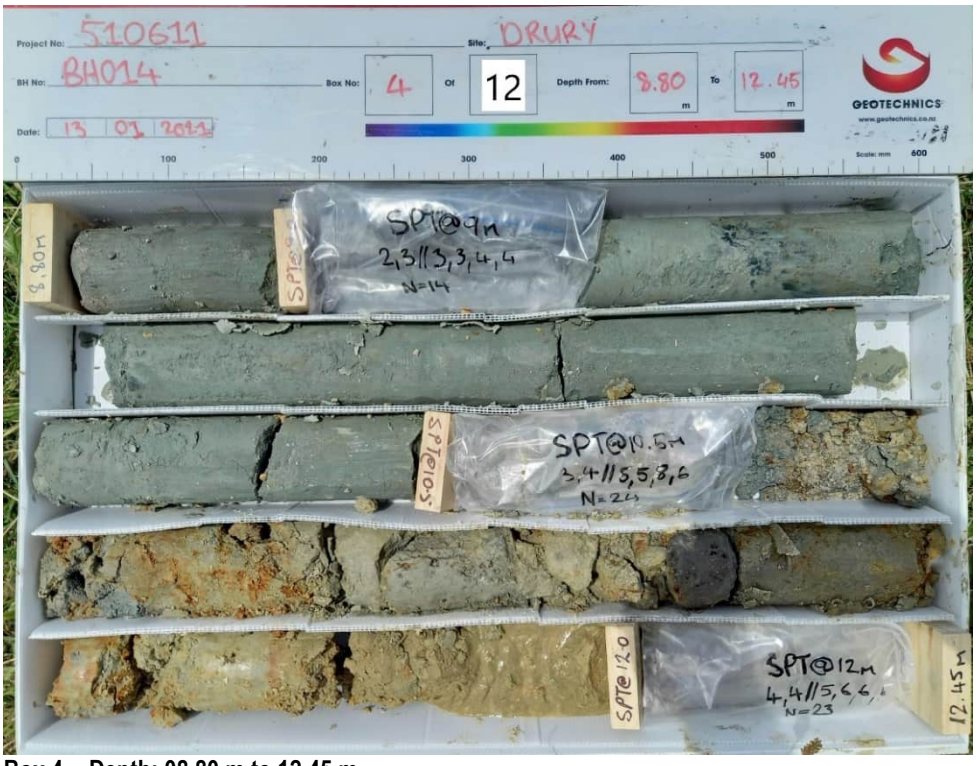


Box 2. - Depth: 02.35 m to 05.75 m.

Borehole Reference:	**BH014**	Date Drilled:	**13/01/2020-14/01/2020**
Photographed By:	**STH**	Date Photographed:	**13/01/2020-14/01/2020**

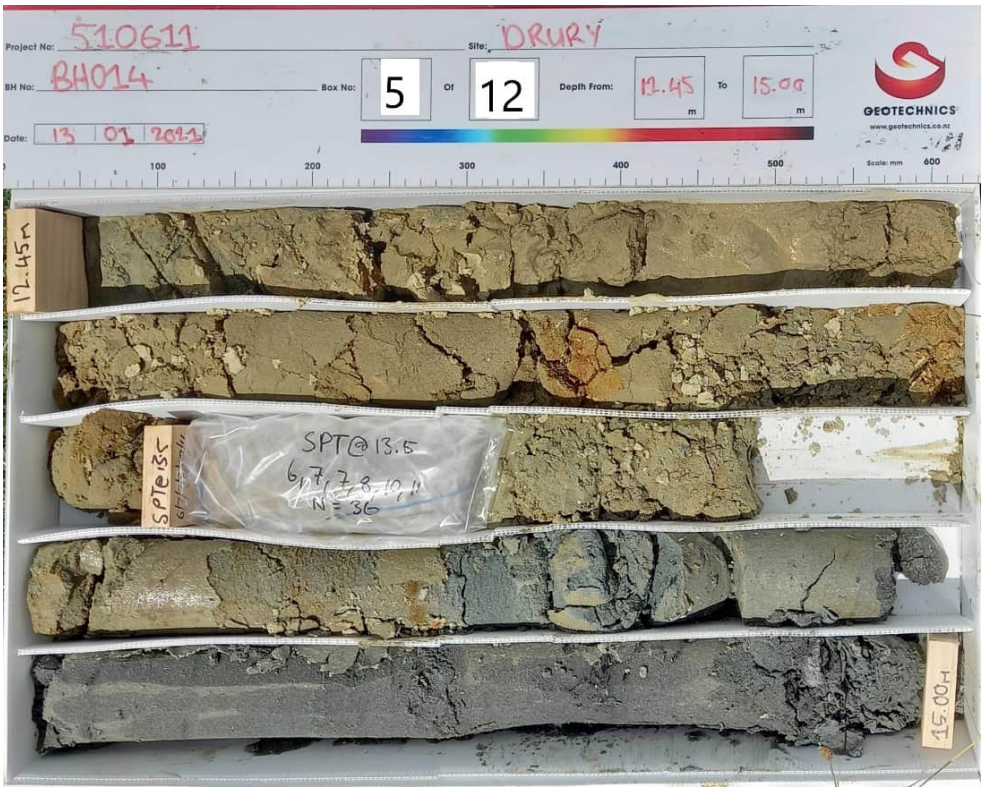


Box 3. - Depth: 05.75 m to 08.80 m.



Box 4. - Depth: 08.80 m to 12.45 m.

Borehole Reference:	**BH014**	Date Drilled:	**13/01/2020-14/01/2020**
Photographed By:	**STH**	Date Photographed:	**13/01/2020-14/01/2020**



Box 5. - Depth: 12.45 m to 15.00 m.

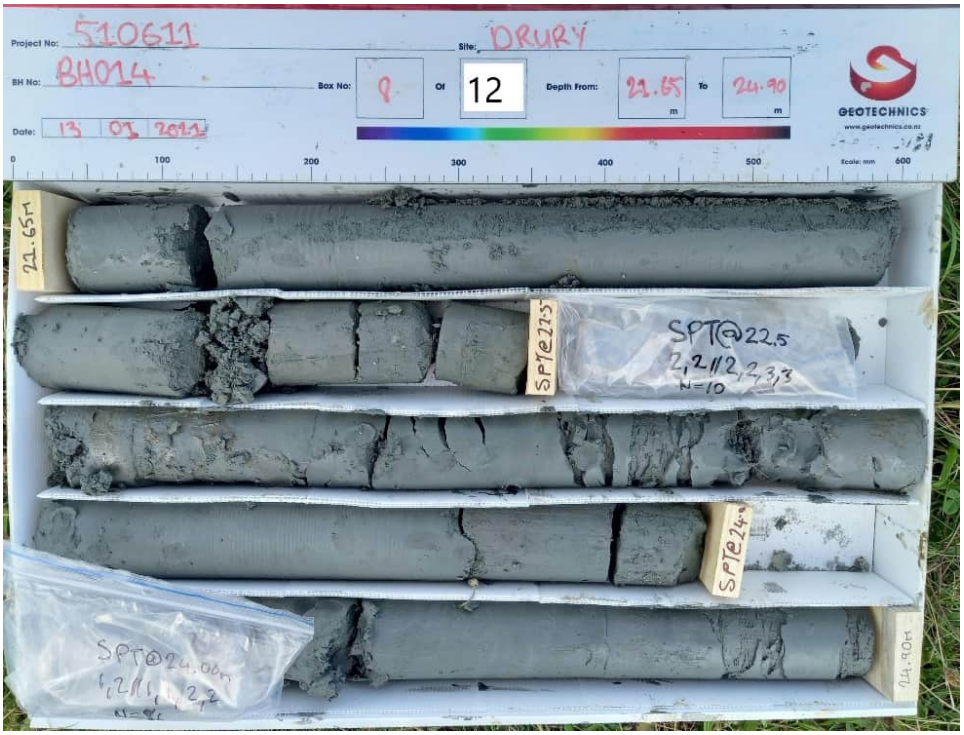


Box 6. - Depth: 15.00 m to 18.45 m.

Borehole Reference:	**BH014**	Date Drilled:	**13/01/2020-14/01/2020**
Photographed By:	**STH**	Date Photographed:	**13/01/2020-14/01/2020**



Box 7. - Depth: 18.45 m to 21.65 m.



Box 8. - Depth: 21.65 m to 24.90 m.

Borehole Reference:	**BH014**	Date Drilled:	**13/01/2020-14/01/2020**
Photographed By:	**STH**	Date Photographed:	**13/01/2020-14/01/2020**



Box 9. - Depth: 24.90 m to 27.85 m.



Box 10. - Depth: 27.85 m to 30.90 m.

Borehole Reference:	**BH014**	Date Drilled:	**13/01/2020-14/01/2020**
Photographed By:	**STH**	Date Photographed:	**13/01/2020-14/01/2020**



Box 11. - Depth: 30.90 m to 34.15 m.



Box 12. - Depth: 34.15 m to 34.95 m.

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Borehole Reference:	**BH015**	Date Drilled:	**08/12/2020-09/12/2020**
Photographed By:	**WBM**	Date Photographed:	**09/12/2020**



Box 1. - Depth: 00.00 m to 04.25 m.



Box 2. - Depth: 04.25 m to 08.00 m.

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Borehole Reference:	**BH015**	Date Drilled:	**08/12/2020-09/12/2020**
Photographed By:	**WBM**	Date Photographed:	**09/12/2020**



Box 3. - Depth: 08.00 m to 11.05 m.



Box 4. - Depth: 11.05 m to 14.05 m.

Borehole Reference:	**BH015**	Date Drilled:	**08/12/2020-09/12/2020**
Photographed By:	**WBM**	Date Photographed:	**09/12/2020**



Box 5. - Depth: 14.05 m to 18.45 m.

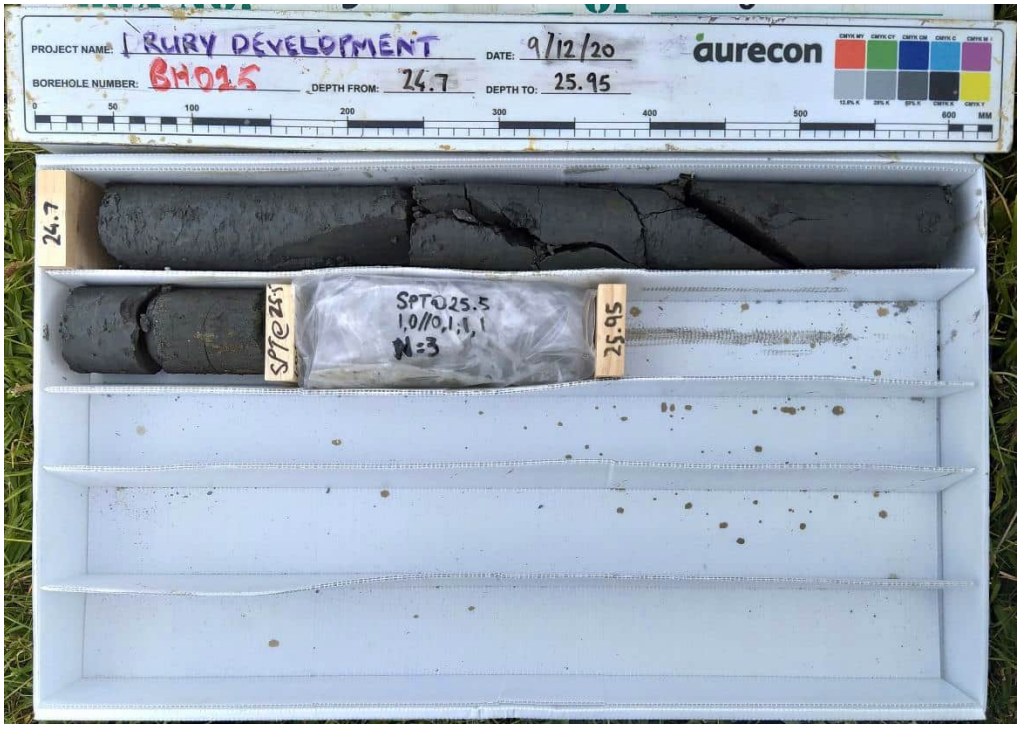


Box 6. - Depth: 18.45 m to 21.55 m.

Borehole Reference:	**BH015**	Date Drilled:	**08/12/2020-09/12/2020**
Photographed By:	**WBM**	Date Photographed:	**09/12/2020**



Box 7. - Depth: 21.55 m to 24.70 m.



Box 8. - Depth: 24.70 m to 25.95 m.

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Borehole Reference:	**BH016**	Date Drilled:	**07/12/2020-08/12/2020**
Photographed By:	**STH**	Date Photographed:	**08/12/2020**



Box 1. - Depth: 00.00 m to 05.05 m.



Box 2. - Depth: 05.05 m to 10.18 m.

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Borehole Reference:	**BH016**	Date Drilled:	**07/12/2020-08/12/2020**
Photographed By:	**STH**	Date Photographed:	**08/12/2020**



Box 3. - Depth: 10.18 m to 13.20 m.



Box 4. - Depth: 13.20 m to 16.35 m.

Borehole Reference:	**BH016**	Date Drilled:	**07/12/2020-08/12/2020**
Photographed By:	**STH**	Date Photographed:	**08/12/2020**



Box 5. - Depth: 16.35 m to 20.15 m.



Box 6. - Depth: 20.15 m to 23.25 m.

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Borehole Reference:	**BH016**	Date Drilled:	**07/12/2020-08/12/2020**
Photographed By:	**STH**	Date Photographed:	**08/12/2020**

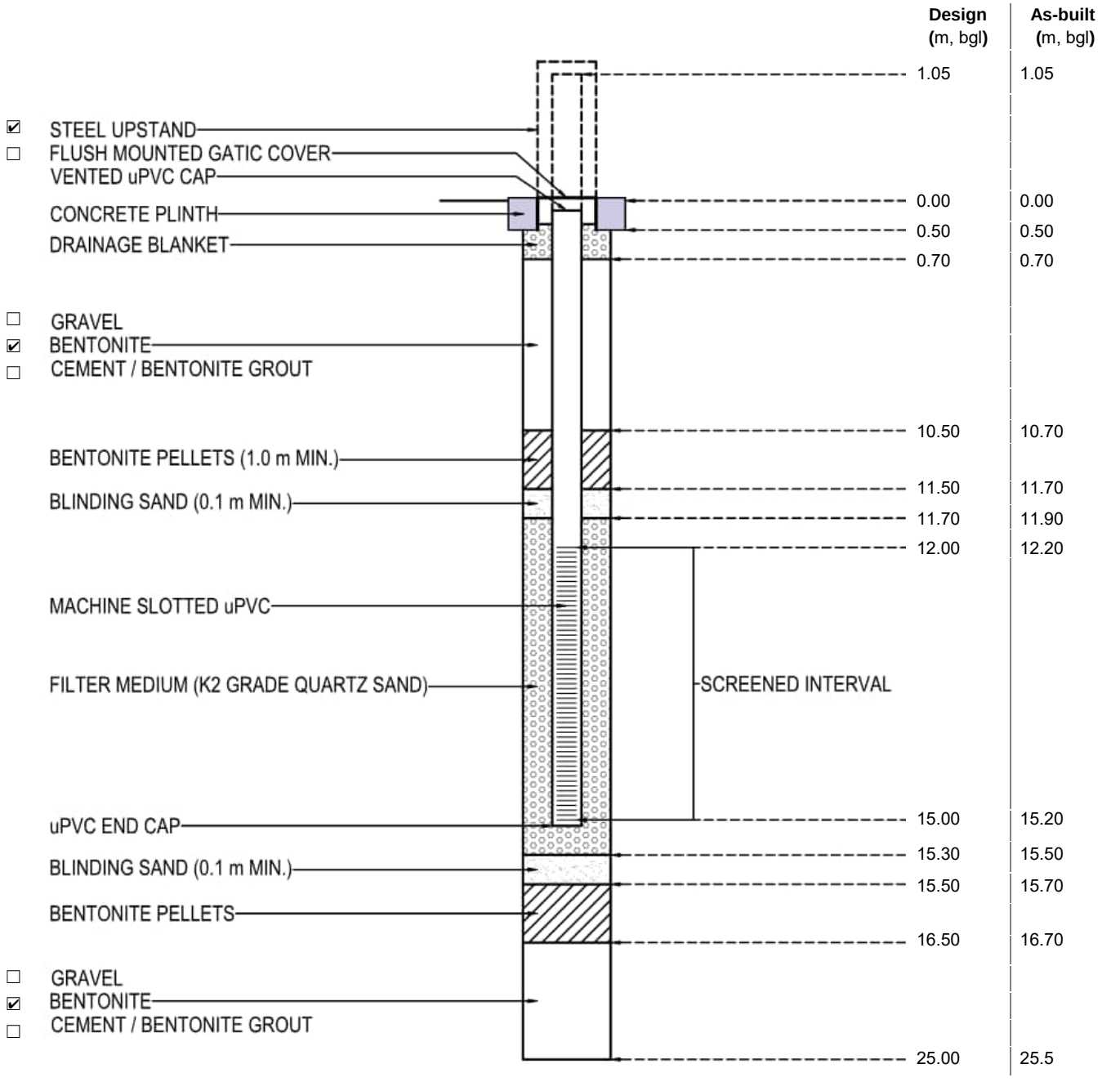


Box 7. - Depth: 23.25 m to 25.95 m.

Appendix E – Piezometer Installation

Standpipe Construction Log

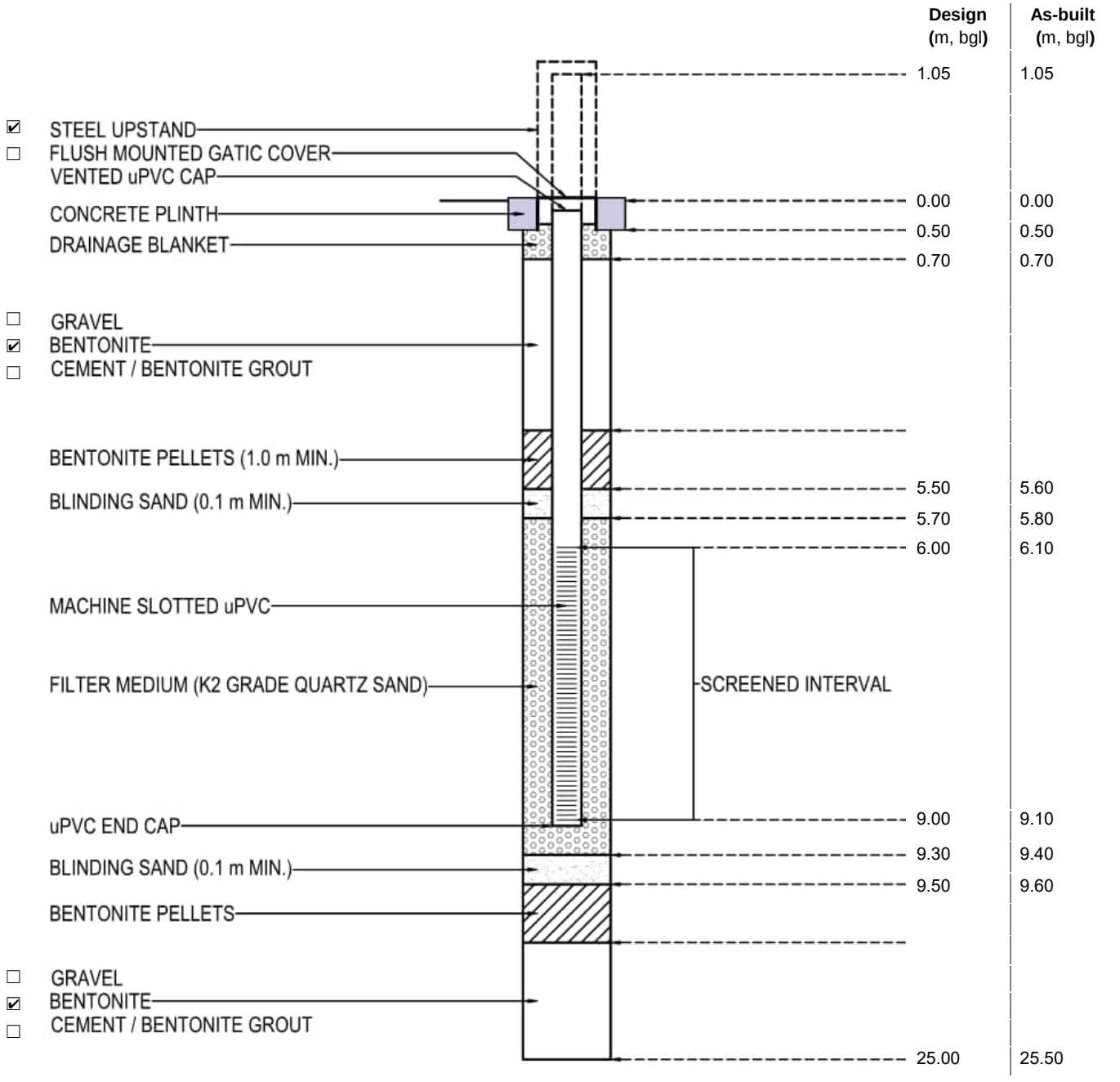
Project	Drury Development	Reference	510611
BH ID	BH001	Piezometer ID	BH001
Date Drilled	21-Nov-2020	Date Installed	22-Nov-2020
Designed By	SOM	As-built By	STH
Coordinates	(EDENTM2000)	Collar Elevation	m RL (AUCKHT1946)



Date Developed	22-Nov-2020	Development Method	Air lift
uPVC Diameter	32 mm ID	uPVC Connection Type	Threaded, environmental
Notes			

Standpipe Construction Log

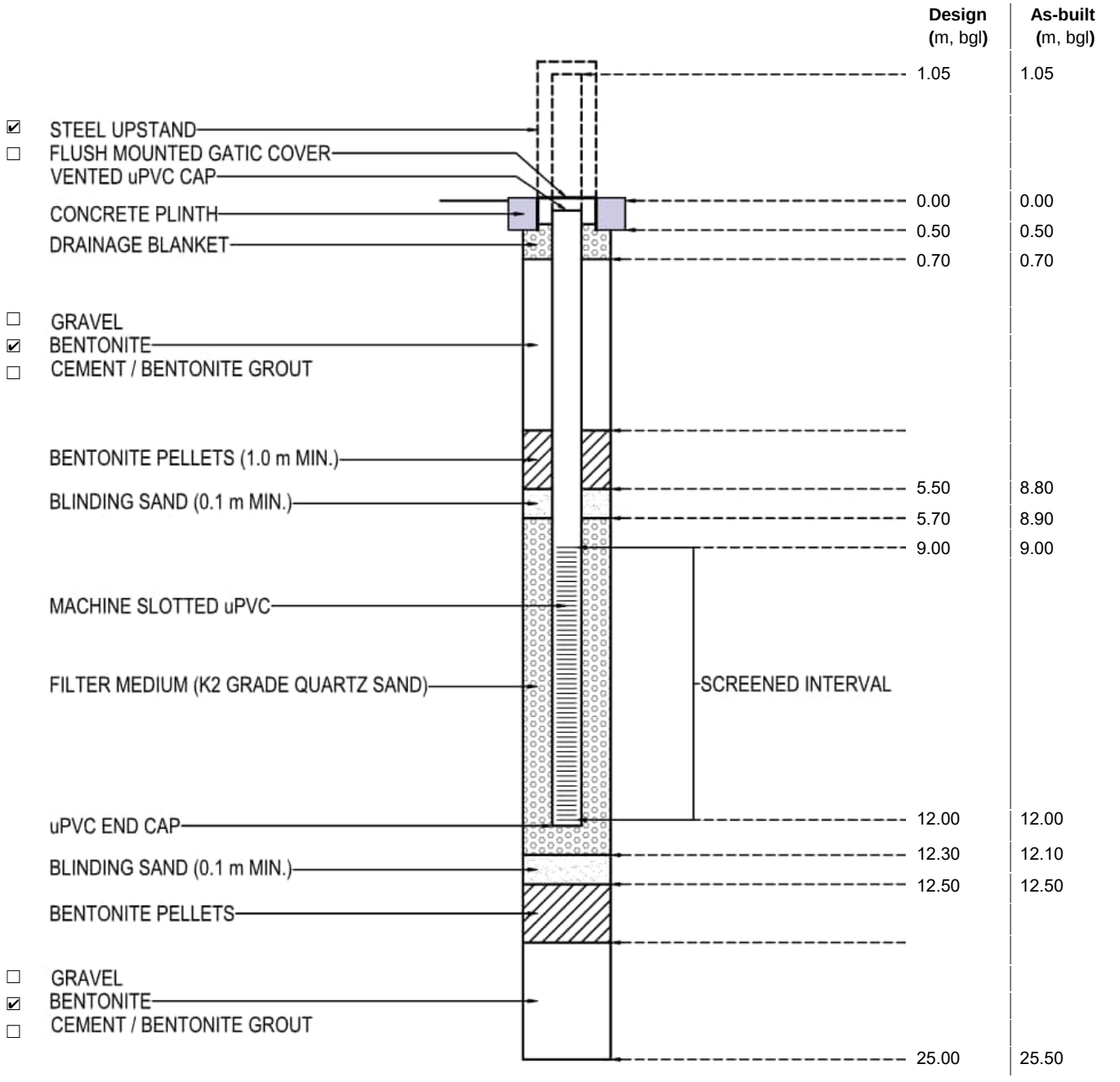
Project	Drury Development	Reference	510611
BH ID	BH003	Piezometer ID	BH003
Date Drilled	01-Dec-2020	Date Installed	02-Dec-2020
Designed By	SOM	As-built By	WBTM
Coordinates	(EDENTM2000)	Collar Elevation	m RL (AUCKHT1946)



Date Developed	02-Dec-2020	Development Method	Air lift
uPVC Diameter	32 mm ID	uPVC Connection Type	Threaded, environmental
Notes			

Standpipe Construction Log

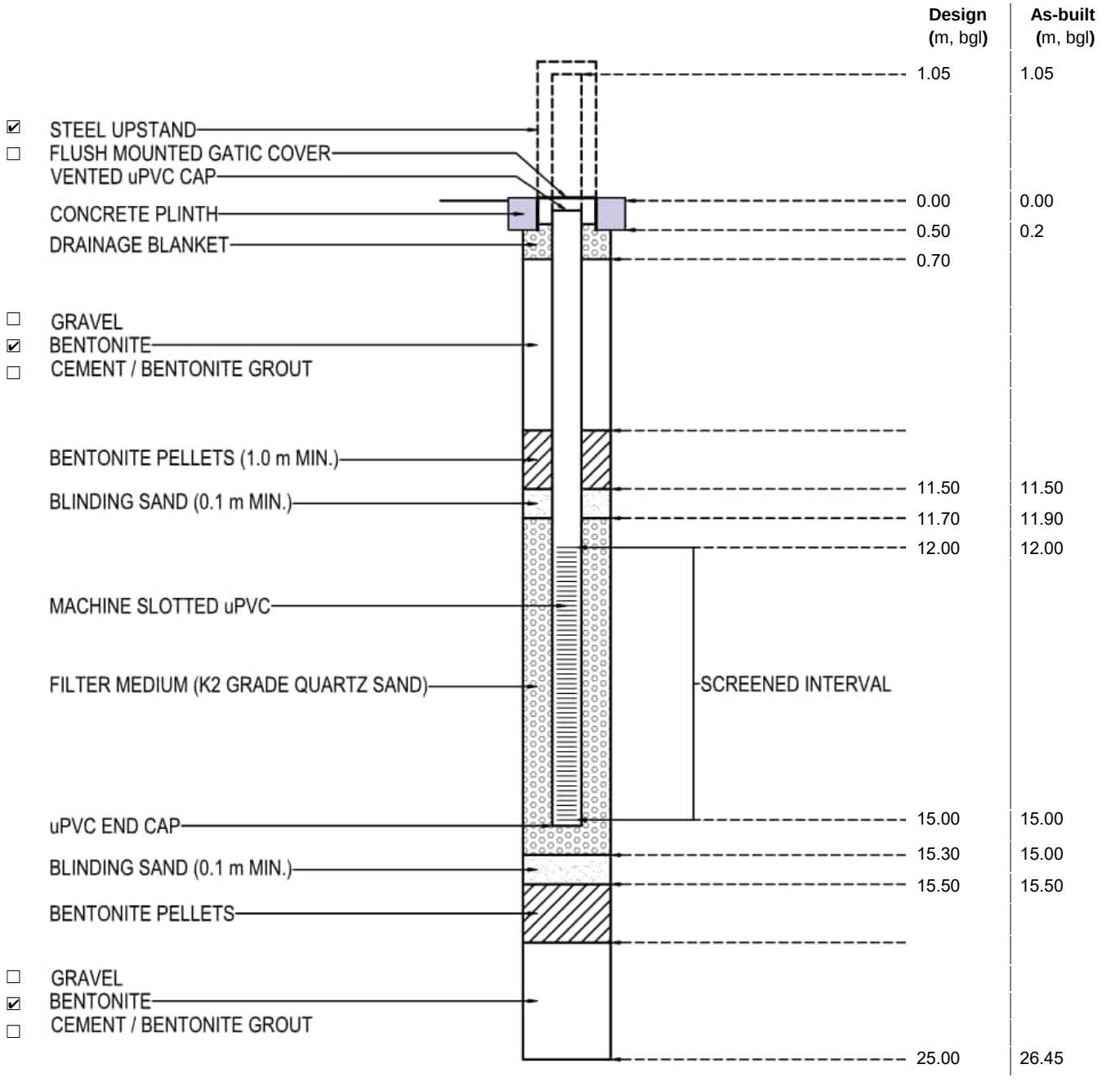
Project	Drury Development	Reference	510611
BH ID	BH005	Piezometer ID	BH005
Date Drilled	28-Nov-2020	Date Installed	30-Nov-2020
Designed By	SOM	As-built By	BGW
Coordinates	(EDENTM2000)	Collar Elevation	m RL (AUCKHT1946)



Date Developed	30-Nov-2020	Development Method	Air lift
uPVC Diameter	32 mm ID	uPVC Connection Type	Threaded, environmental
Notes			

Standpipe Construction Log

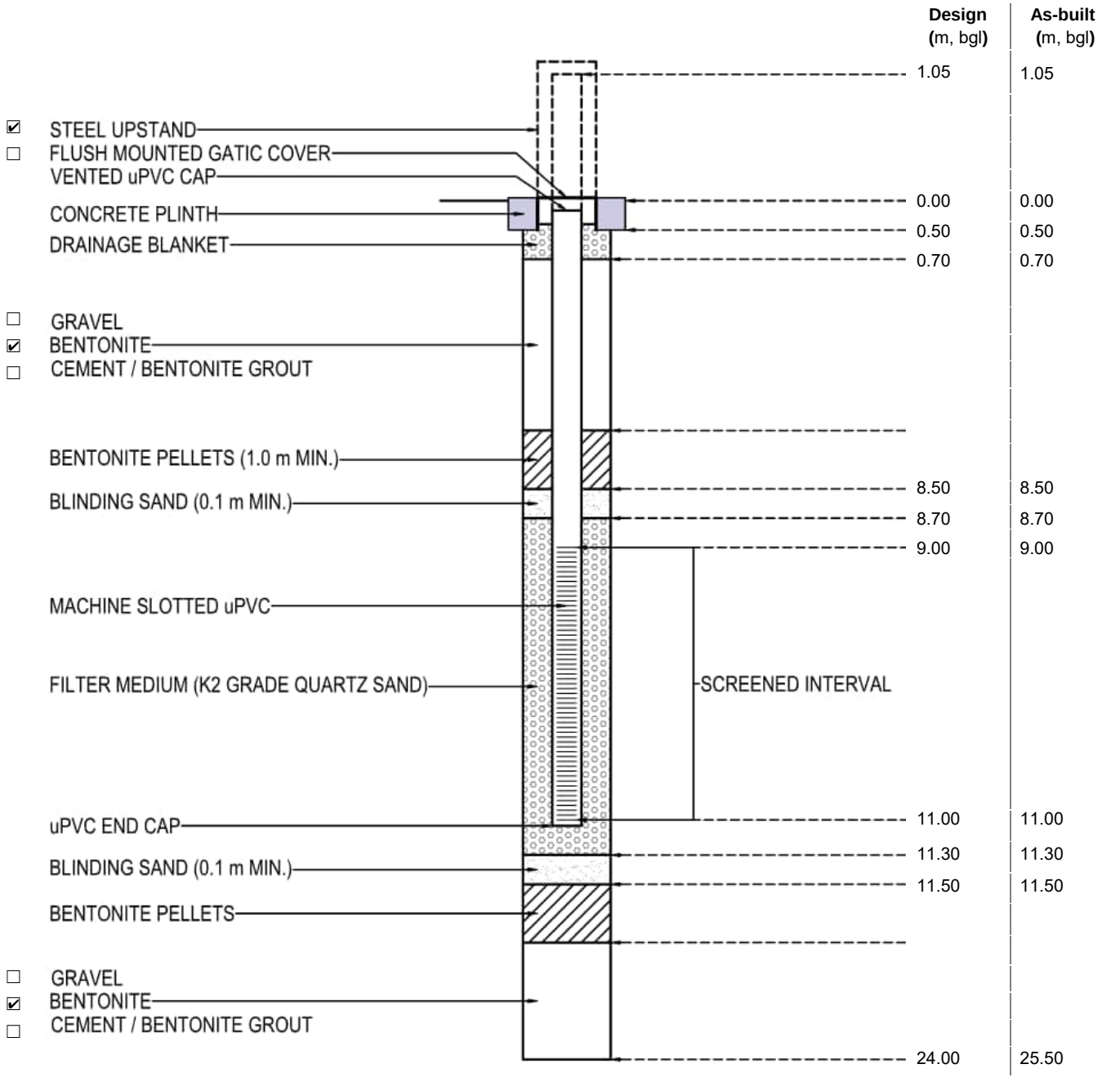
Project	Drury Development	Reference	510611
BH ID	BH006	Piezometer ID	BH006
Date Drilled	17-Dec-2020	Date Installed	17-Dec-2020
Designed By	SOM	As-built By	BGW
Coordinates	(EDENTM2000)	Collar Elevation	m RL (AUCKHT1946)



Date Developed	17-Dec-2020	Development Method	Air lift
uPVC Diameter	32 mm ID	uPVC Connection Type	Threaded, environmental
Notes			

Standpipe Construction Log

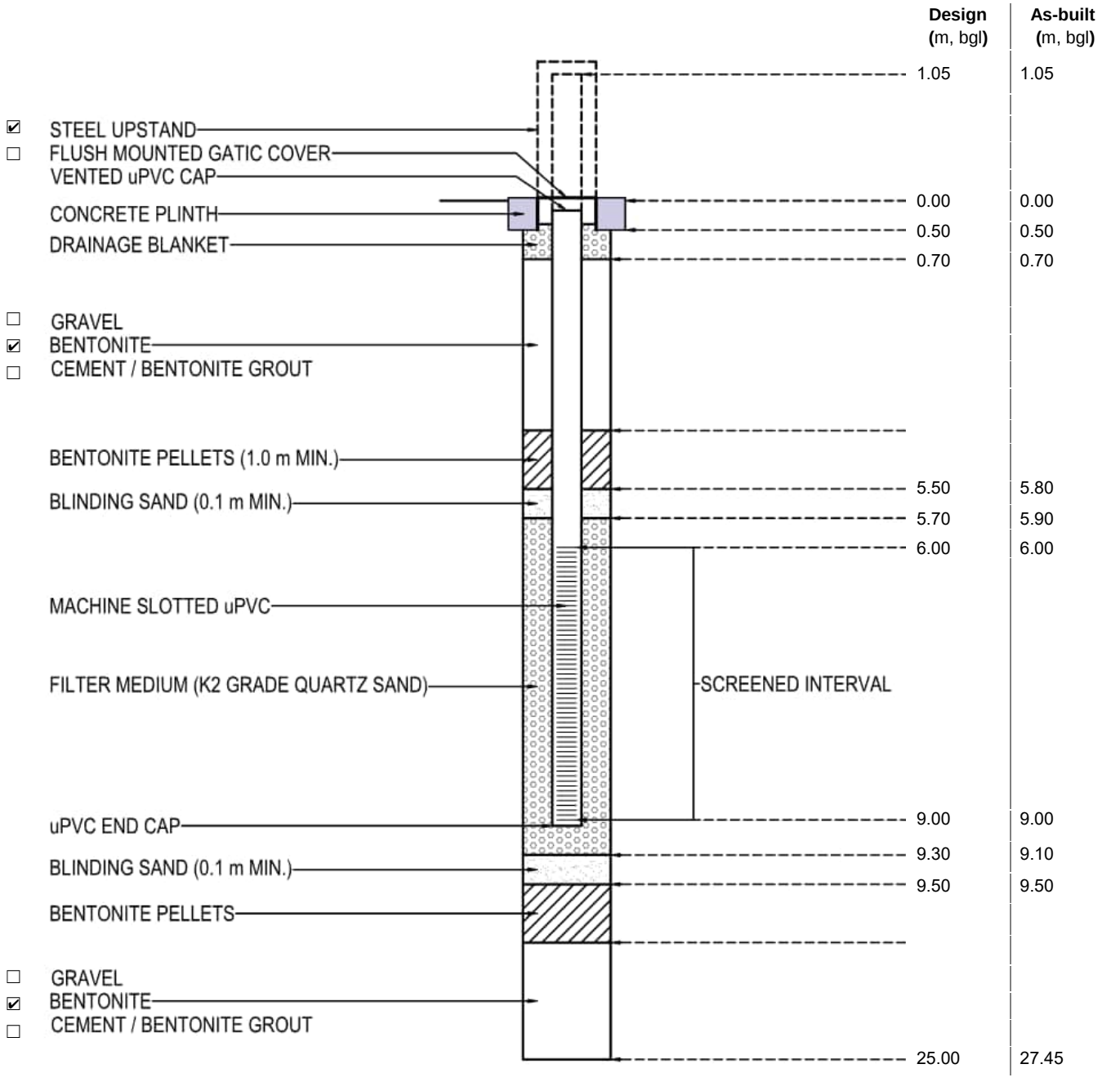
Project	Drury Development	Reference	510611
BH ID	BH007	Piezometer ID	BH007
Date Drilled	02-Dec-2020	Date Installed	03-Dec-2020
Designed By	SOM	As-built By	STH
Coordinates	(EDENTM2000)	Collar Elevation	m RL (AUCKHT1946)



Date Developed	03-Dec-2020	Development Method	Air lift
uPVC Diameter	32 mm ID	uPVC Connection Type	Threaded, environmental
Notes			

Standpipe Construction Log

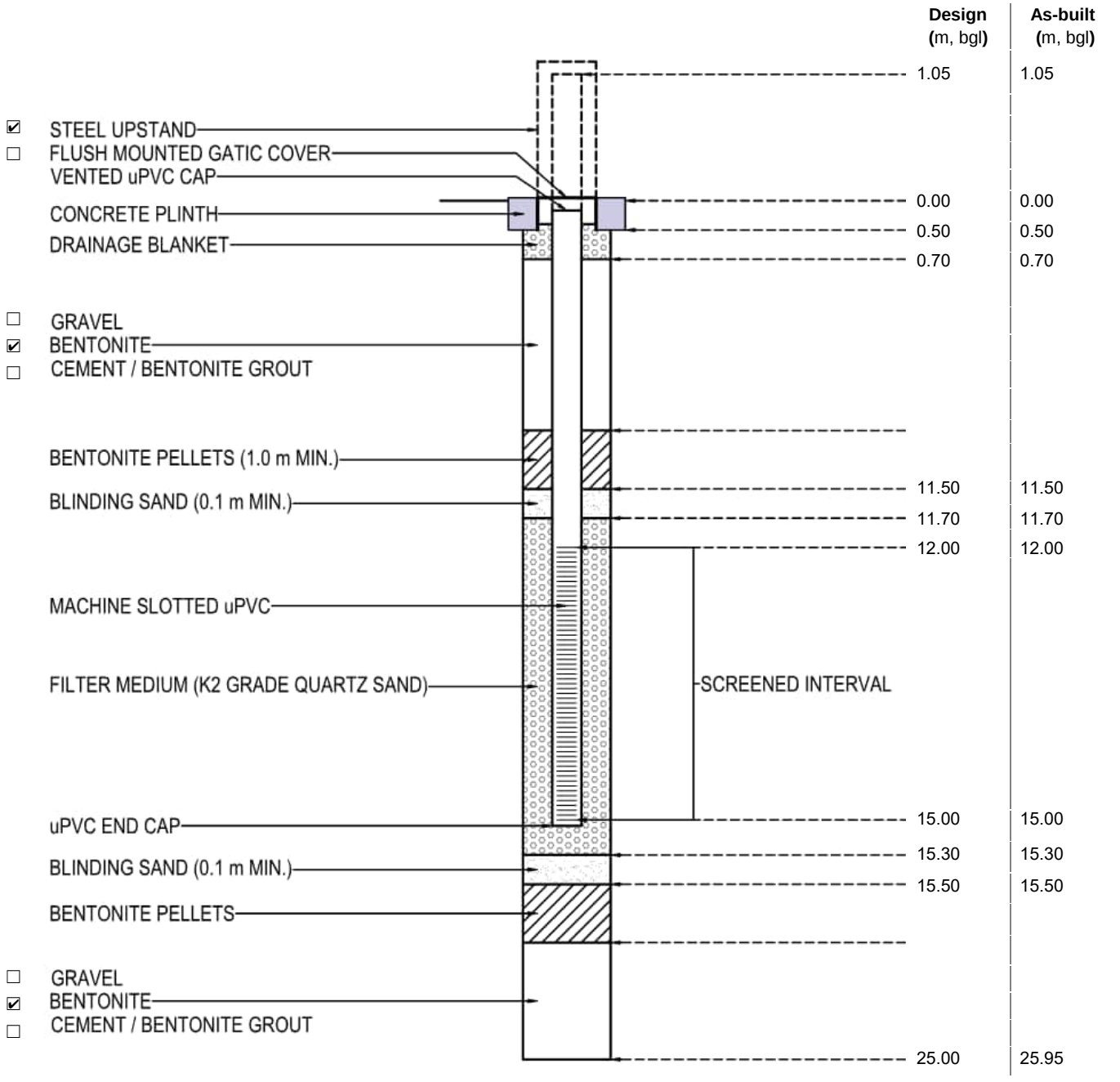
Project	Drury Development	Reference	510611
BH ID	BH009	Piezometer ID	BH009
Date Drilled	16-Dec-2020	Date Installed	18-Dec-2020
Designed By	SOM	As-built By	BGW
Coordinates	(EDENTM2000)	Collar Elevation	m RL (AUCKHT1946)



Date Developed	18-Dec-2020	Development Method	Air lift
uPVC Diameter	32 mm ID	uPVC Connection Type	Threaded, environmental
Notes			

Standpipe Construction Log

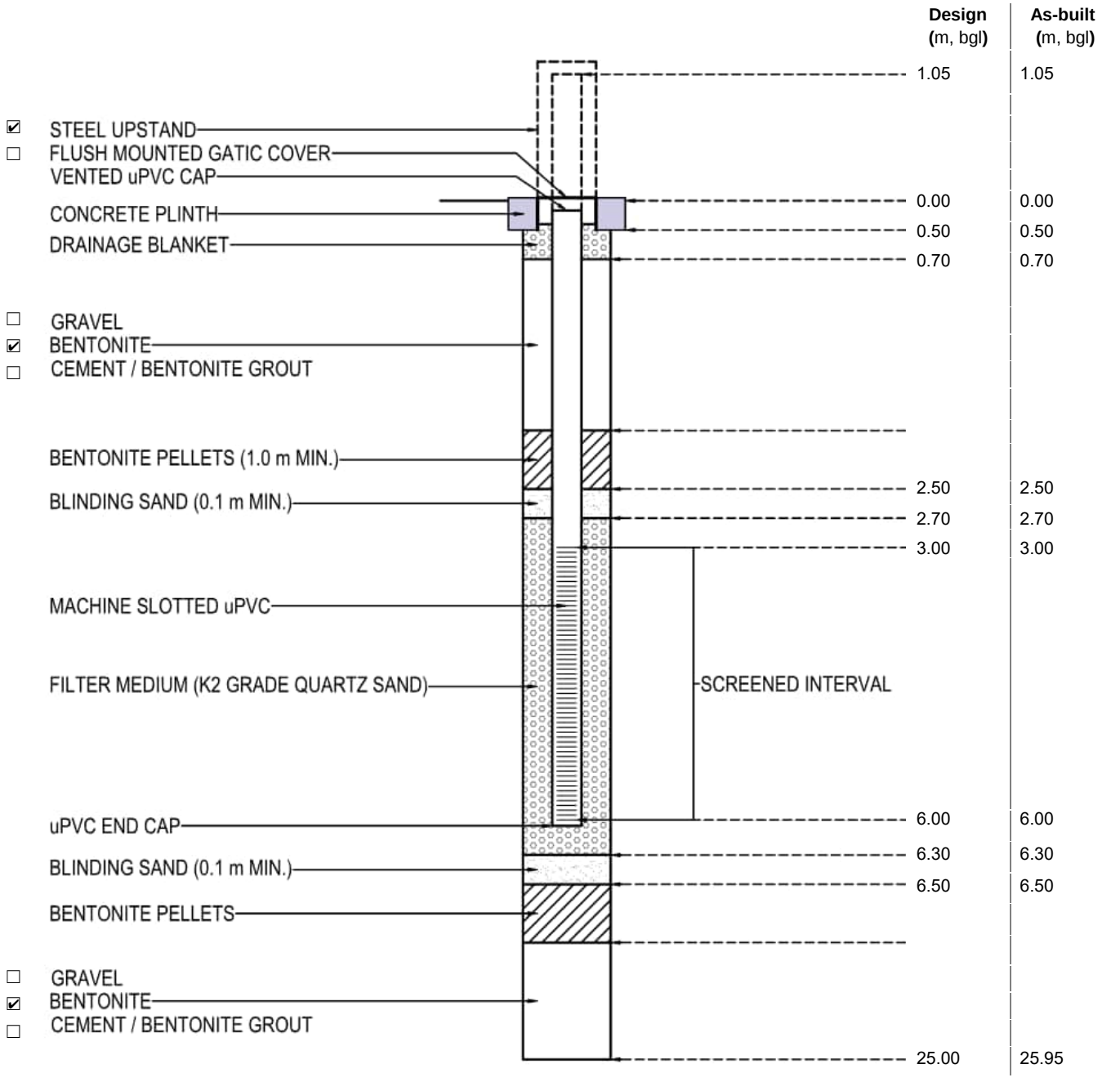
Project	Drury Development	Reference	510611
BH ID	BH011	Piezometer ID	BH011
Date Drilled	14-Jan-2021	Date Installed	15-Jan-2021
Designed By	SOM	As-built By	STH
Coordinates	(EDENTM2000)	Collar Elevation	m RL (AUCKHT1946)



Date Developed	15-Jan-2020	Development Method	Air lift
uPVC Diameter	32 mm ID	uPVC Connection Type	Threaded, environmental
Notes			

Standpipe Construction Log

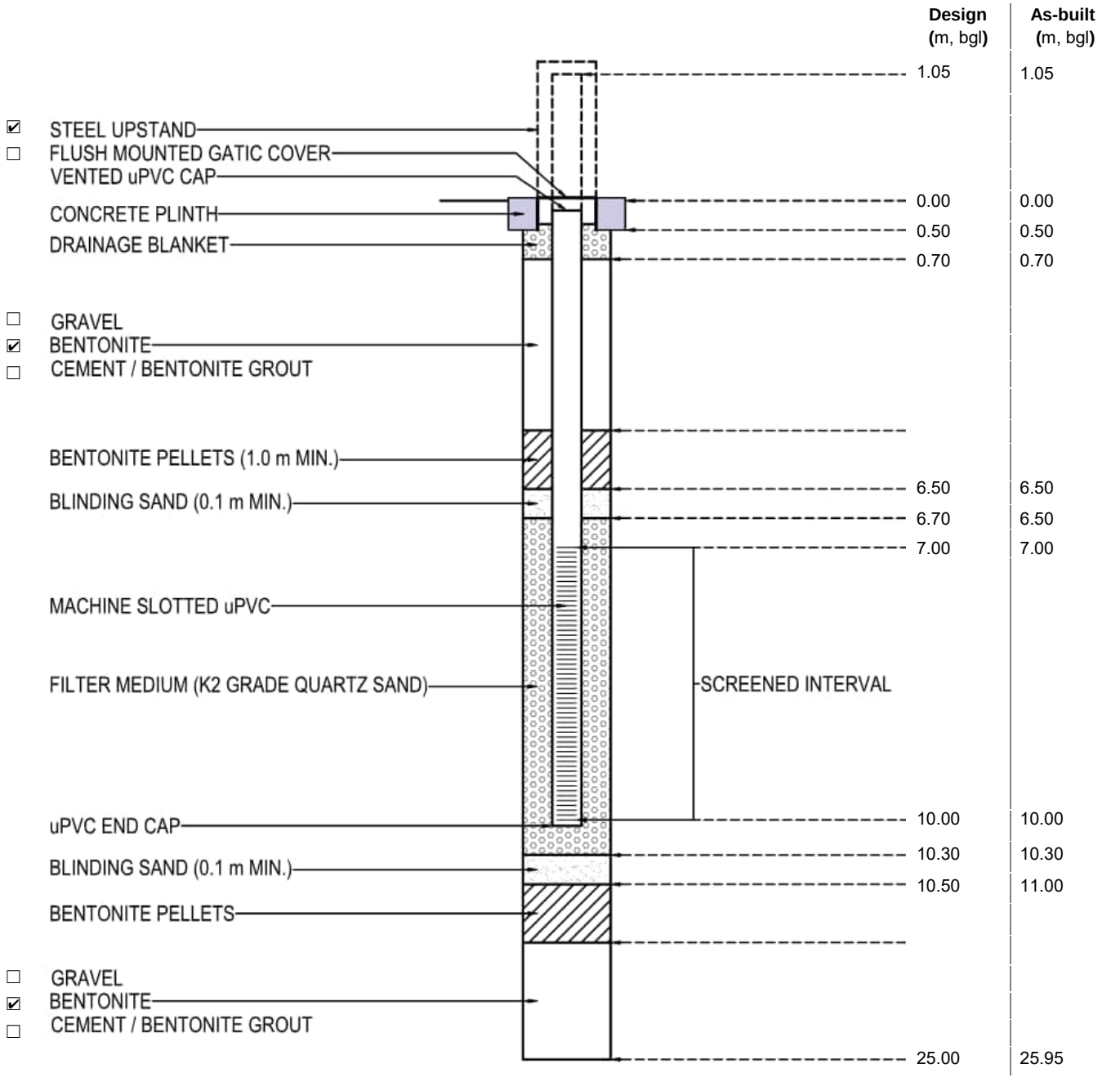
Project	Drury Development	Reference	510611
BH ID	BH015	Piezometer ID	BH015
Date Drilled	08-Dec-2020	Date Installed	09-Dec-2020
Designed By	SOM	As-built By	WBM
Coordinates	(EDENTM2000)	Collar Elevation	m RL (AUCKHT1946)



Date Developed	09-Dec-2020	Development Method	Air lift
uPVC Diameter	32 mm ID	uPVC Connection Type	Threaded, environmental
Notes			

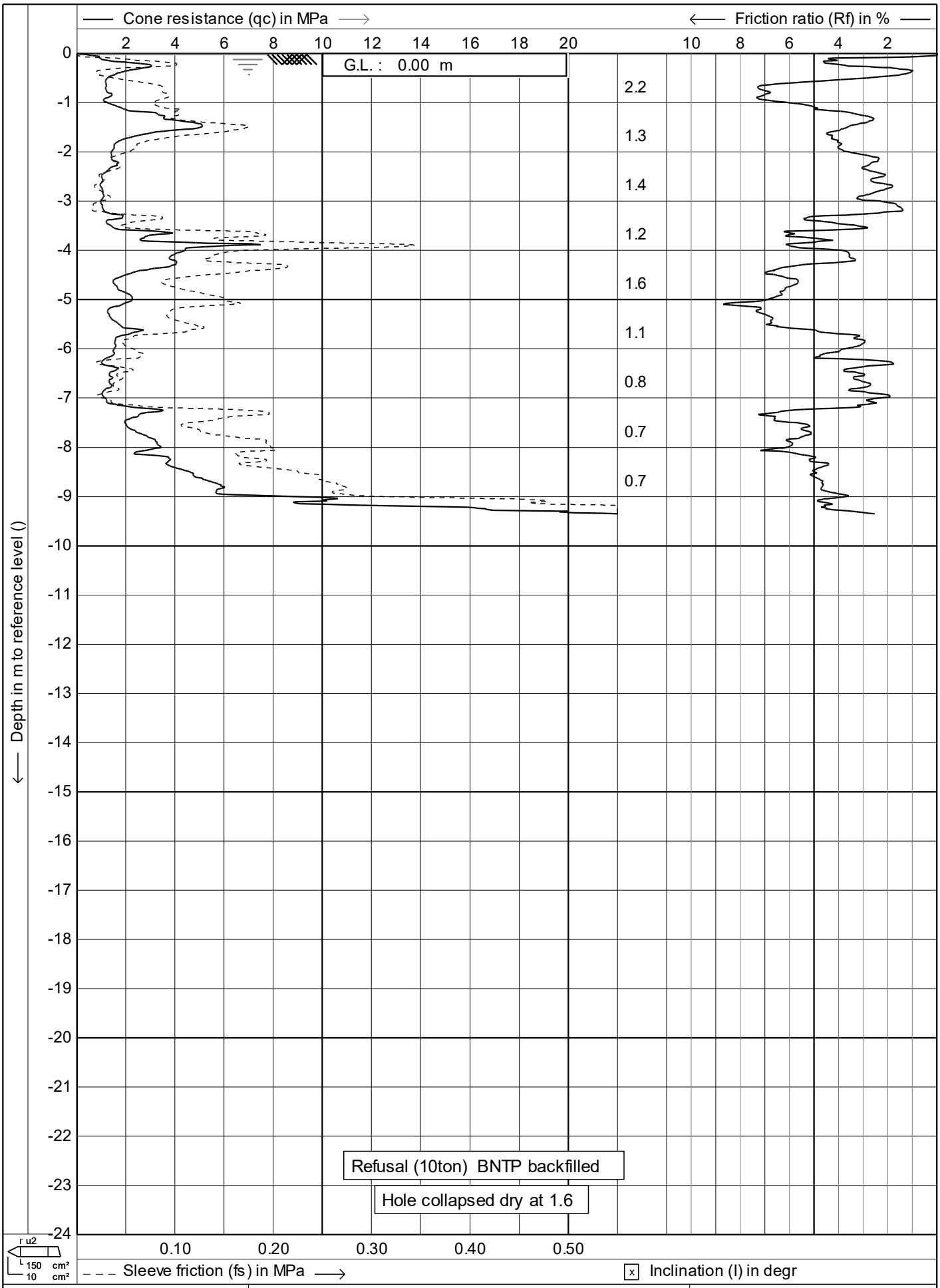
Standpipe Construction Log

Project	Drury Development	Reference	510611
BH ID	BH016	Piezometer ID	BH016
Date Drilled	07-Dec-2020	Date Installed	08-Dec-2020
Designed By	SOM	As-built By	STH
Coordinates	(EDENTM2000)	Collar Elevation	m RL (AUCKHT1946)



Date Developed	08-Dec-2020	Development Method	Air lift
uPVC Diameter	32 mm ID	uPVC Connection Type	Threaded, environmental
Notes			

Appendix F – Cone Penetration Tests (CPT) Logs



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

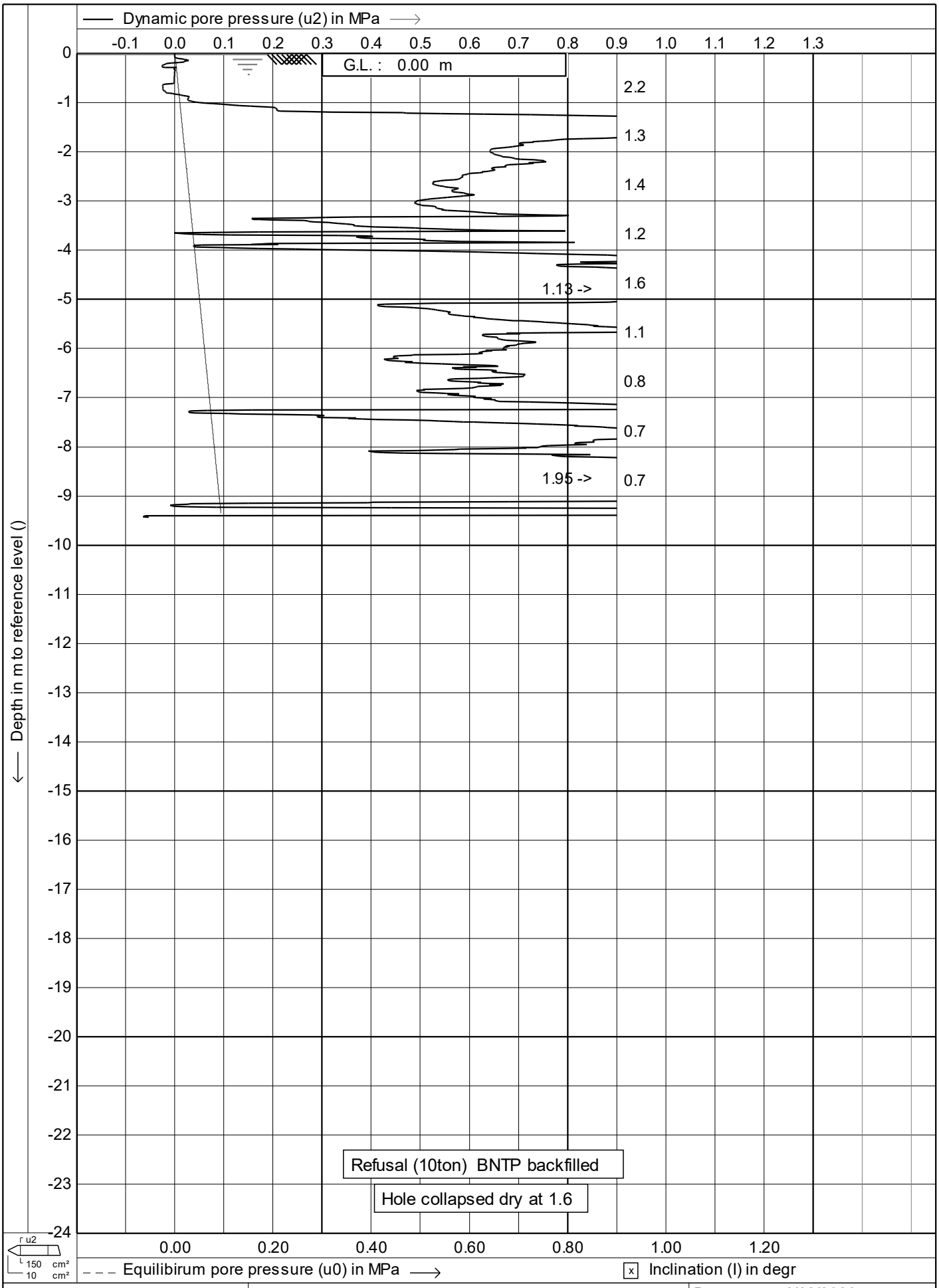
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **001** 1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

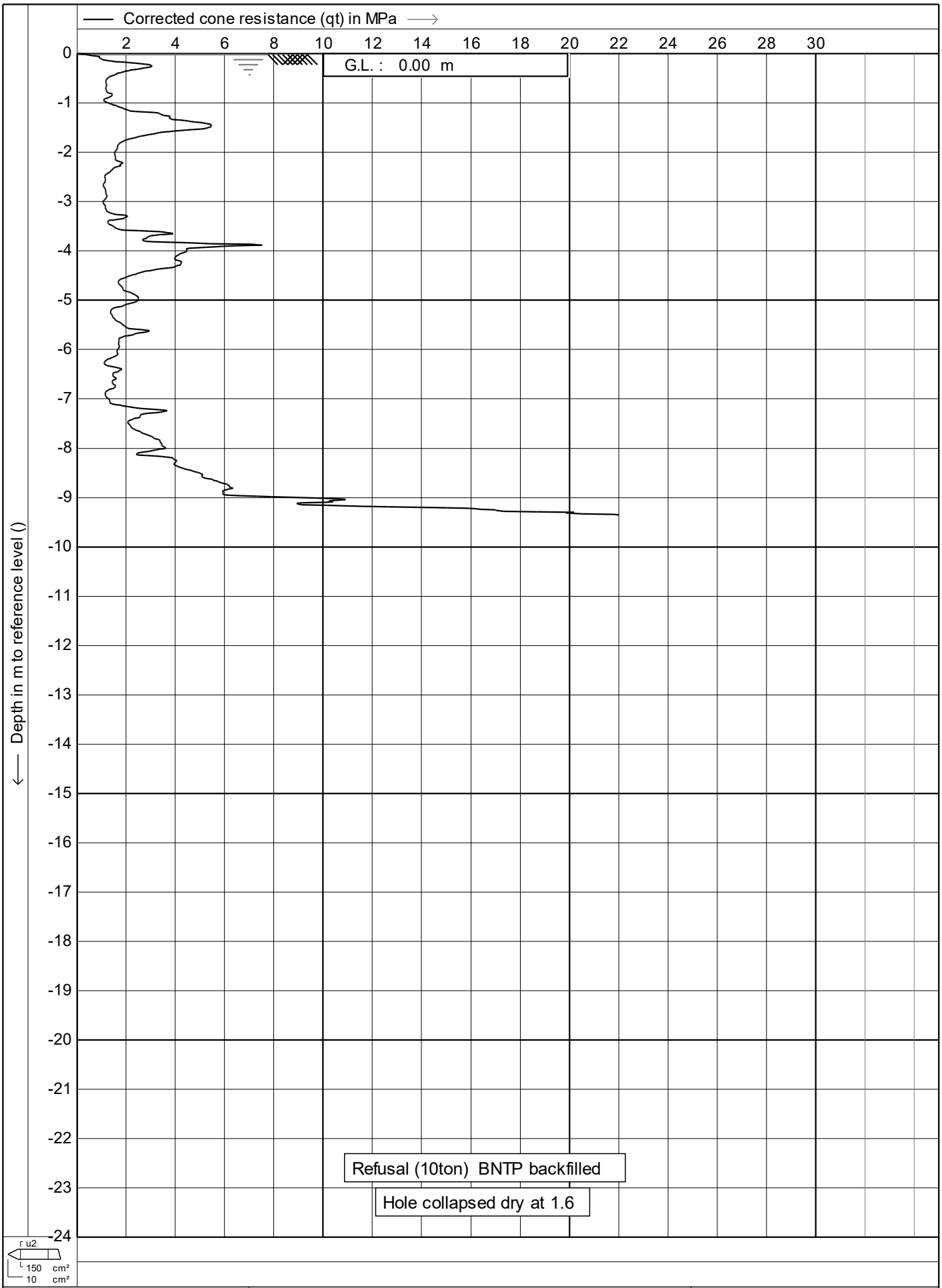
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **001**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

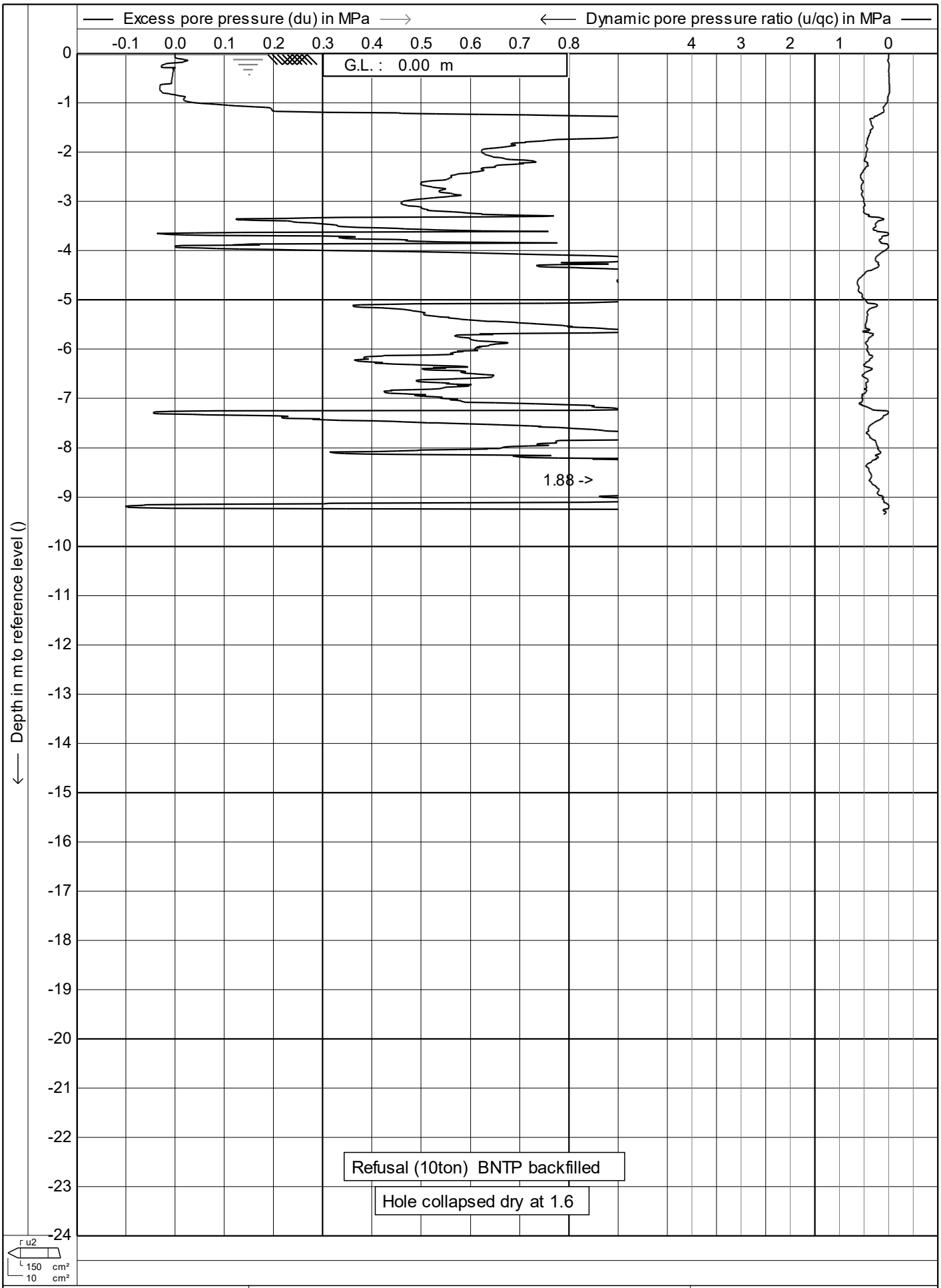
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **001**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

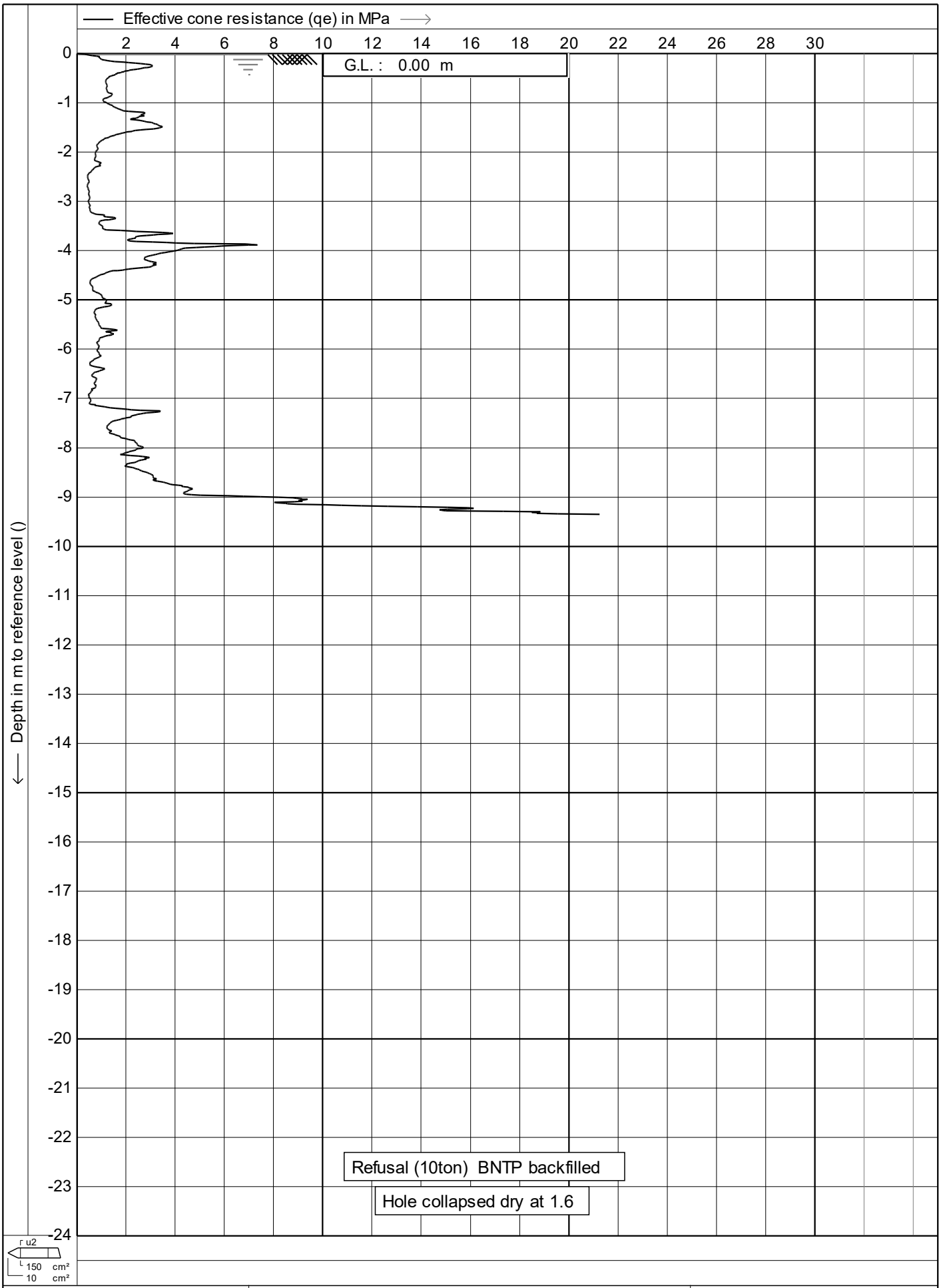
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **001** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

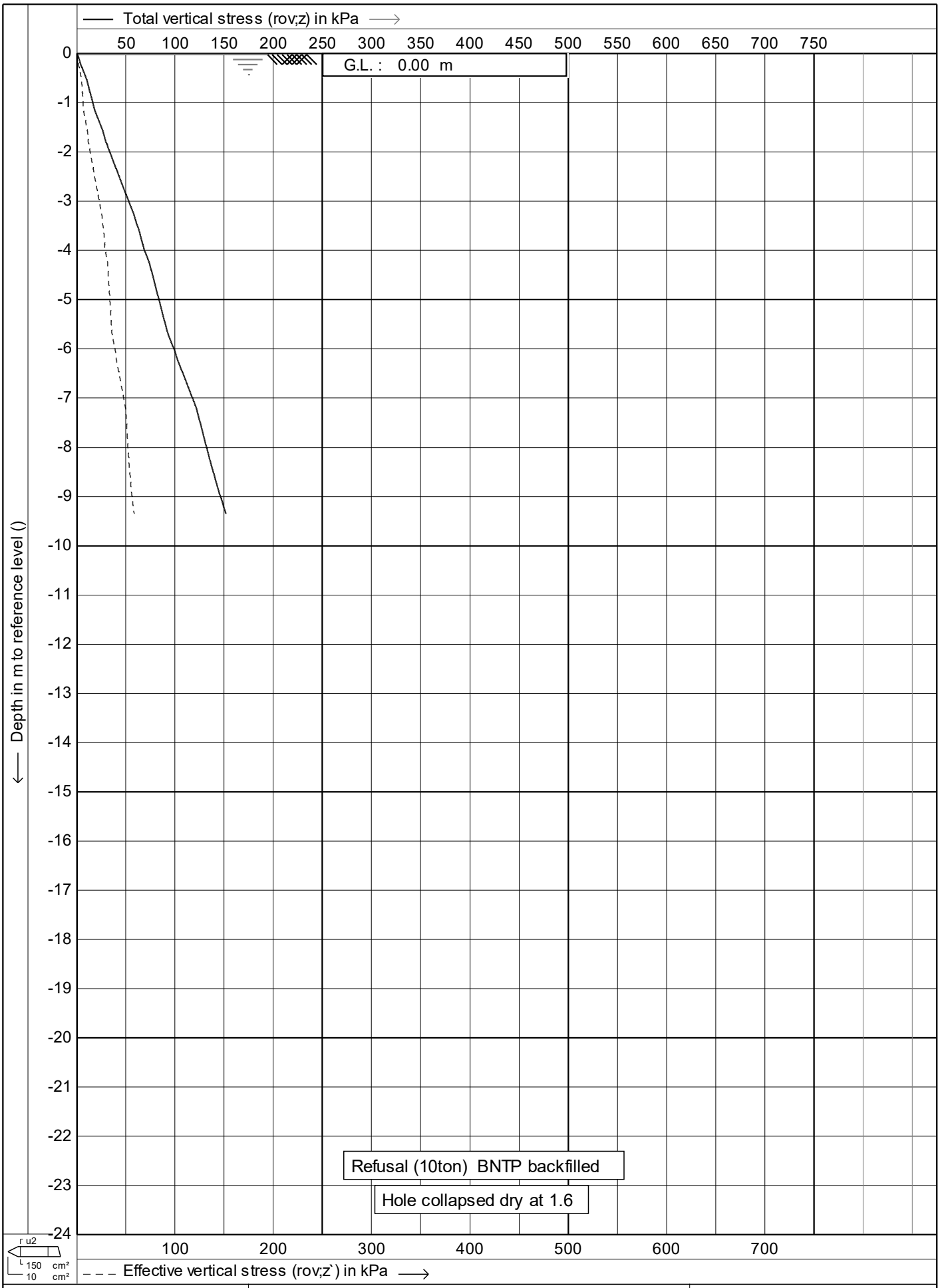
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **001**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

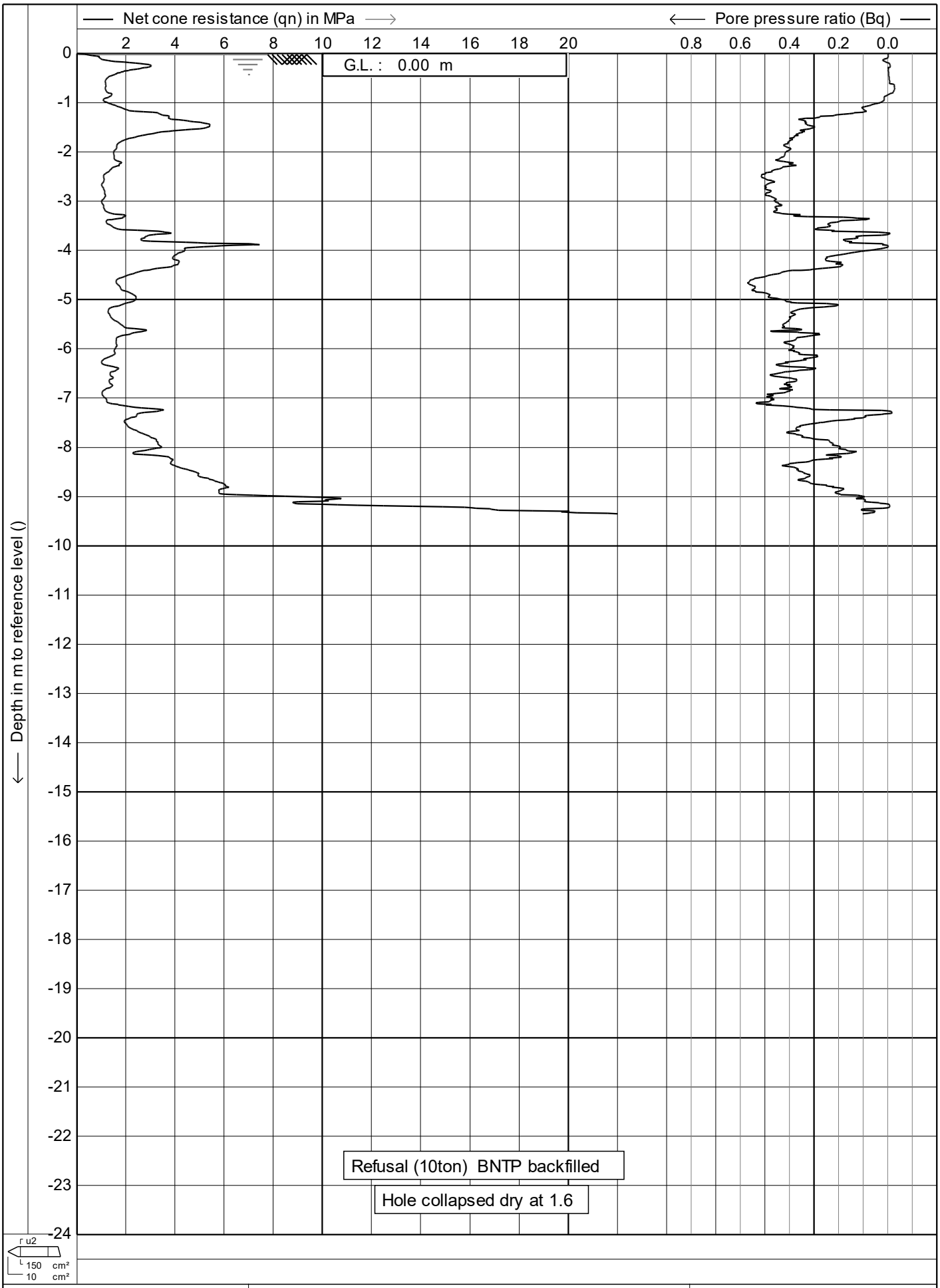
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **001**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

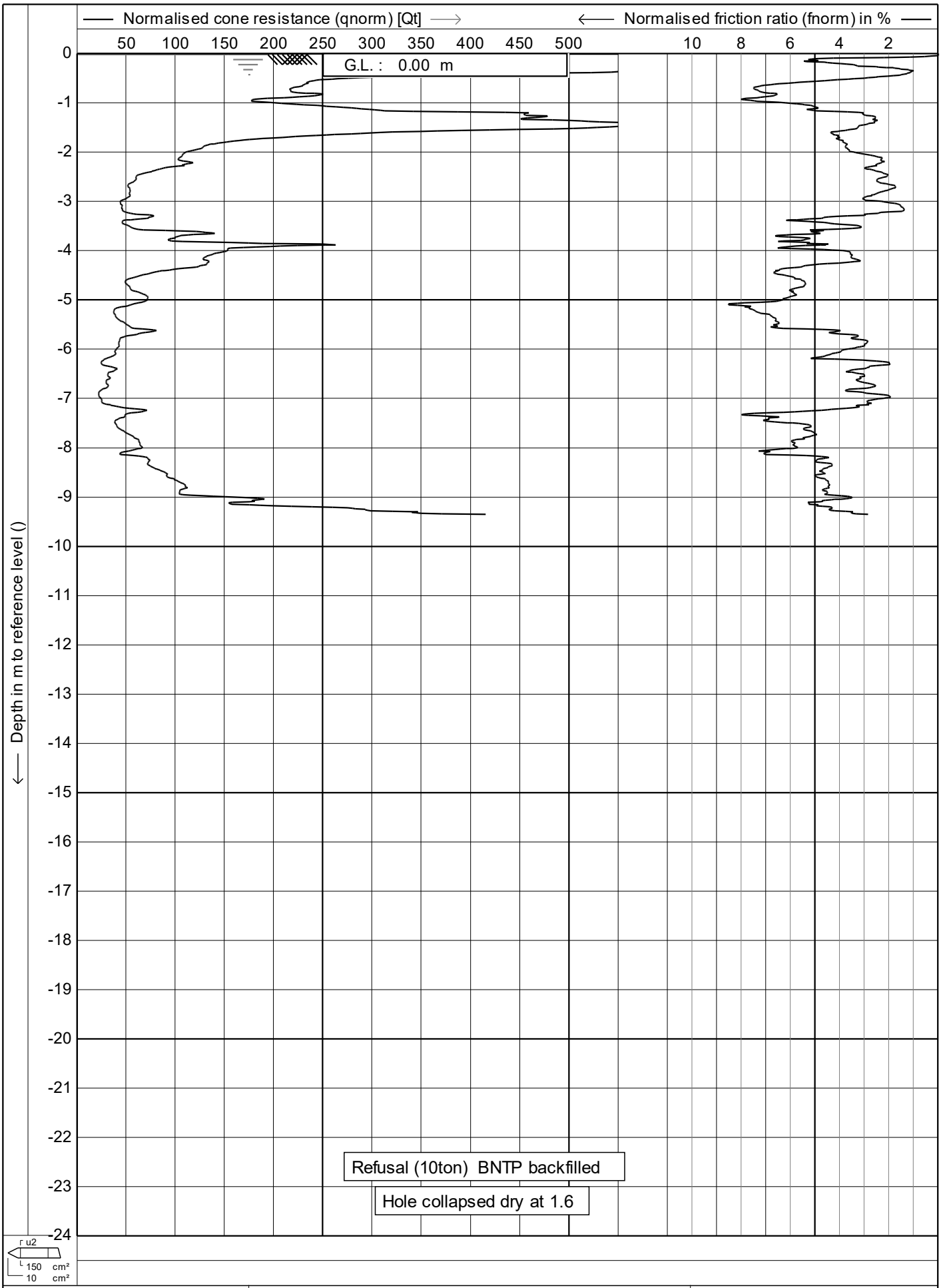
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **001**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

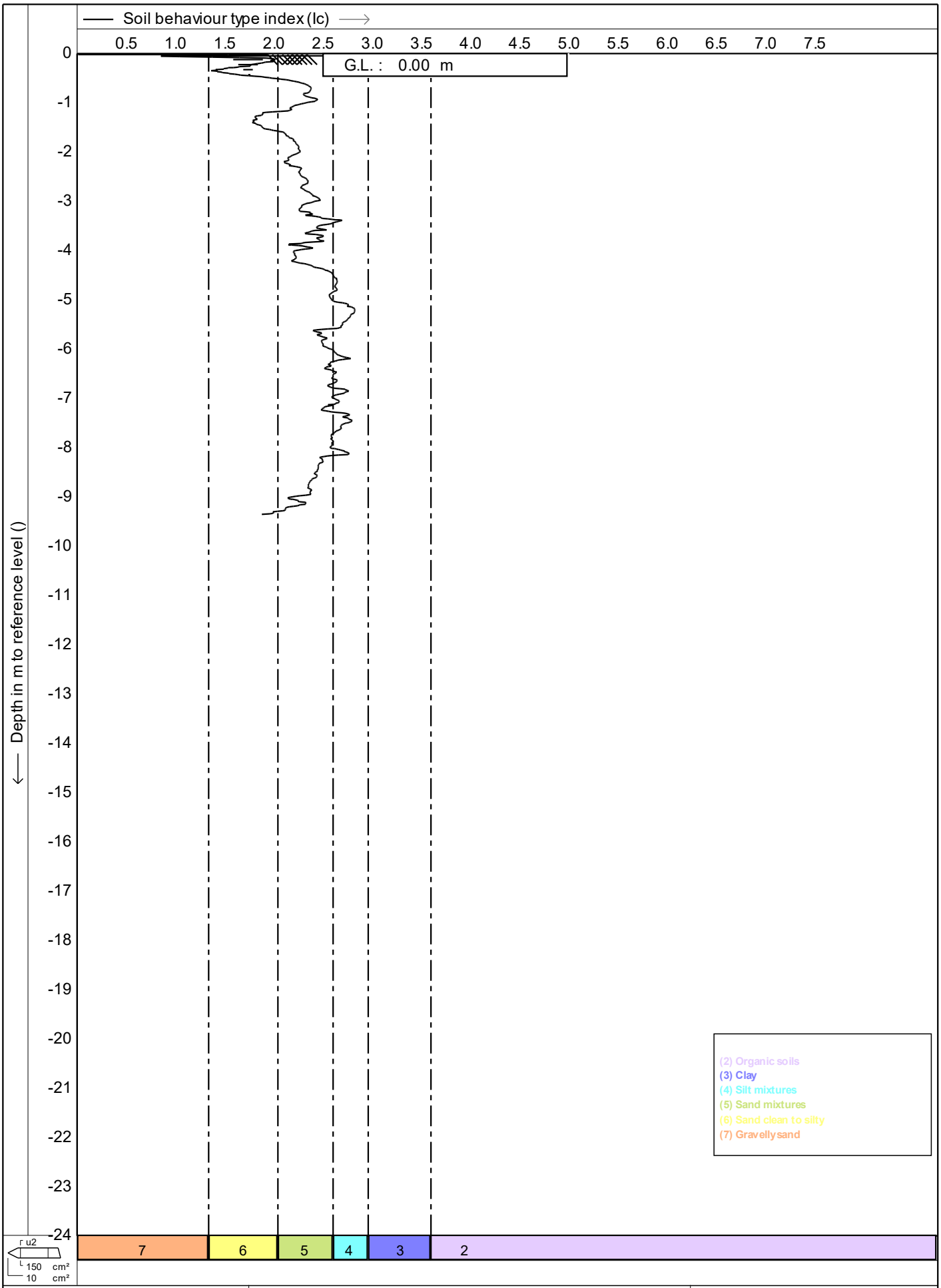
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **001**

8/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

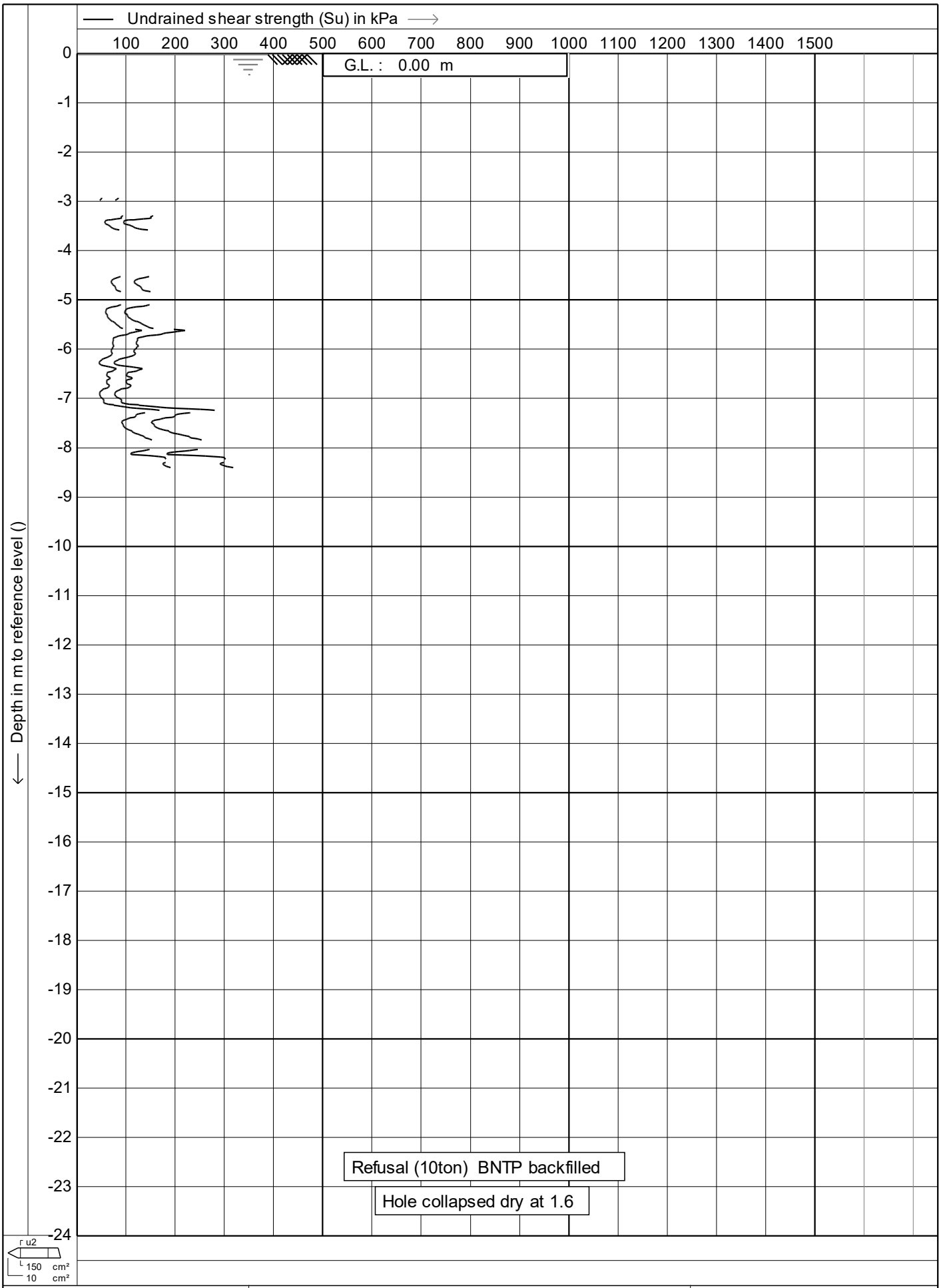
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **001**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

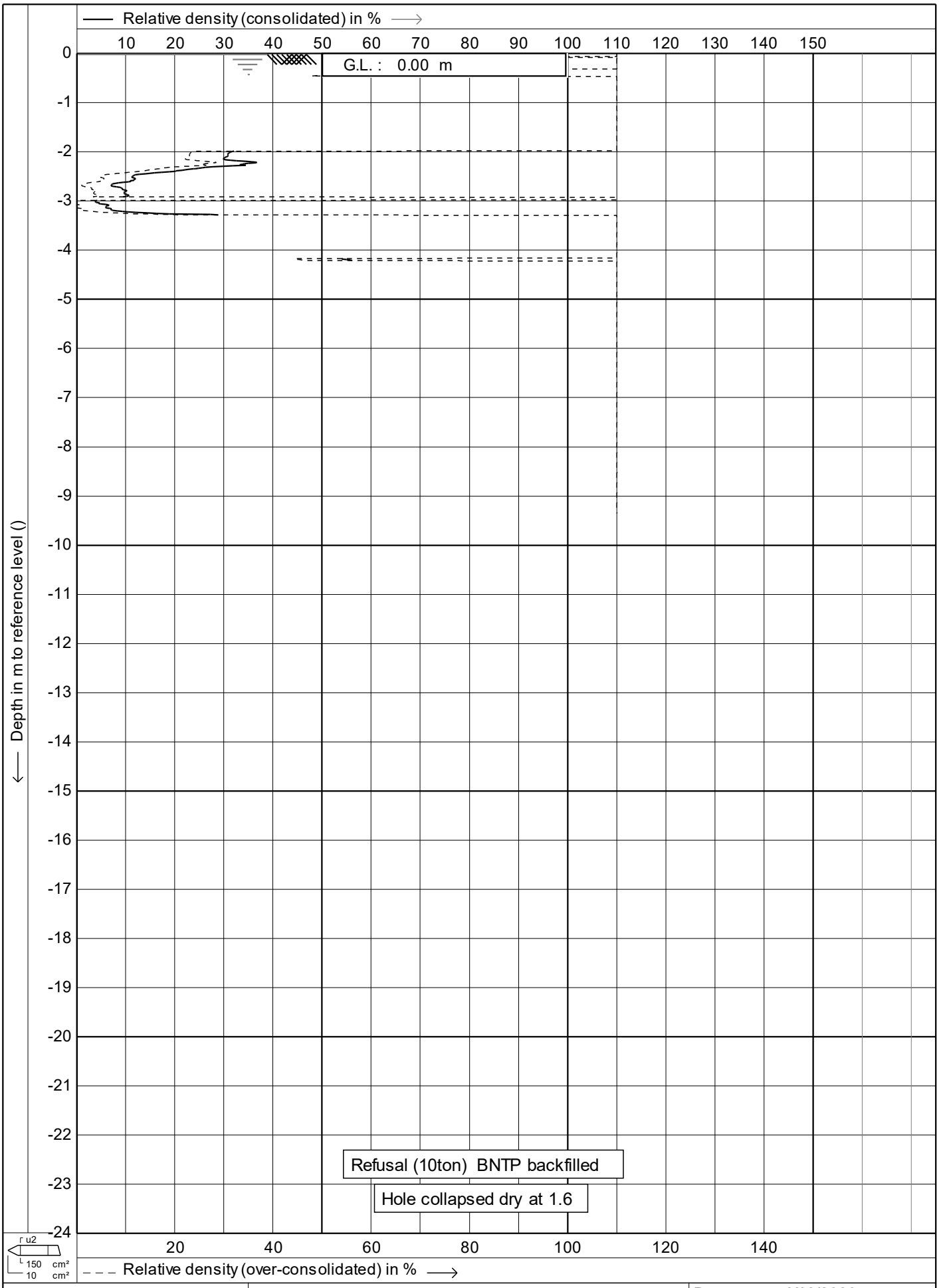
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **001** **10/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

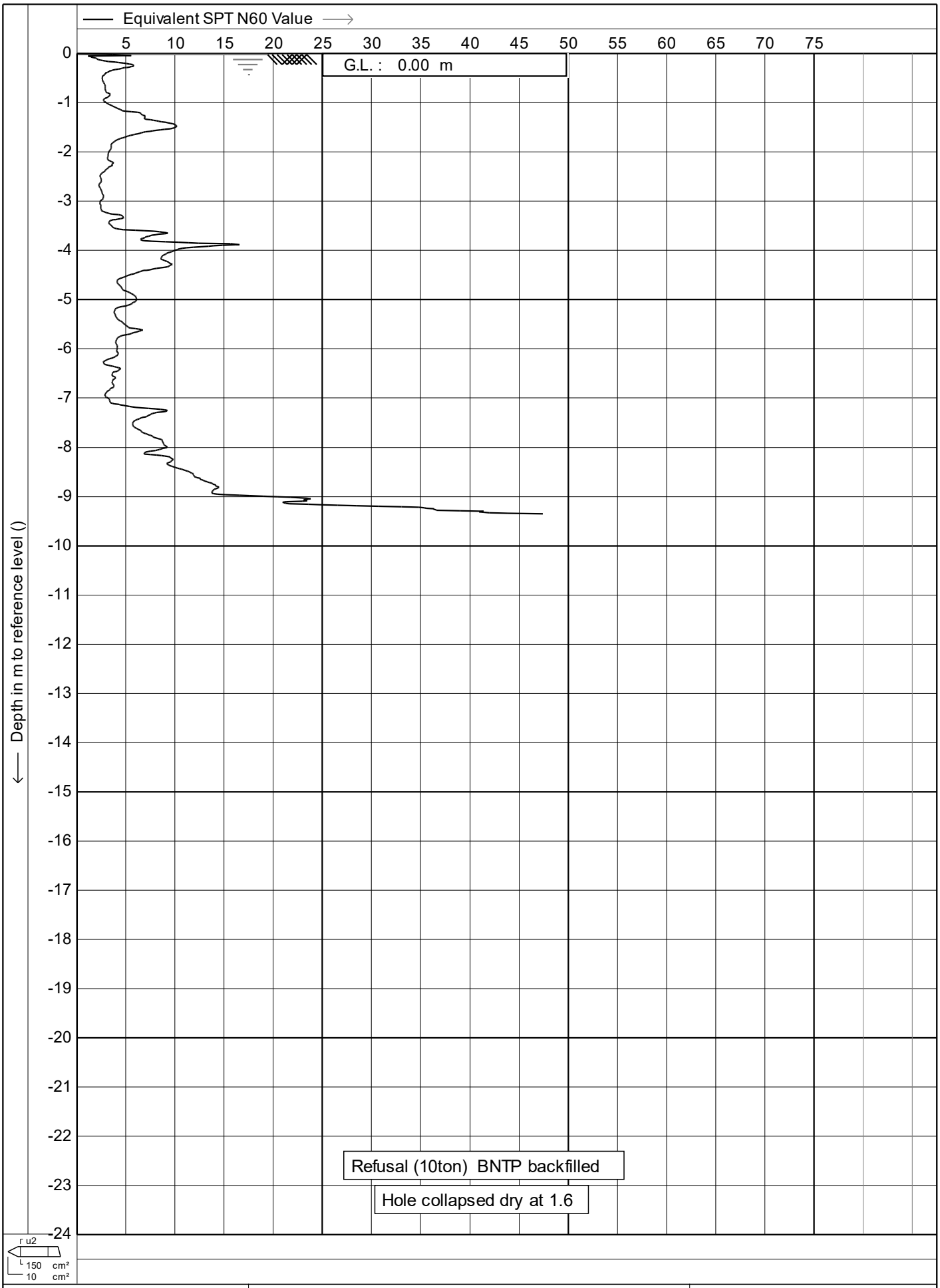
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **001**

11/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

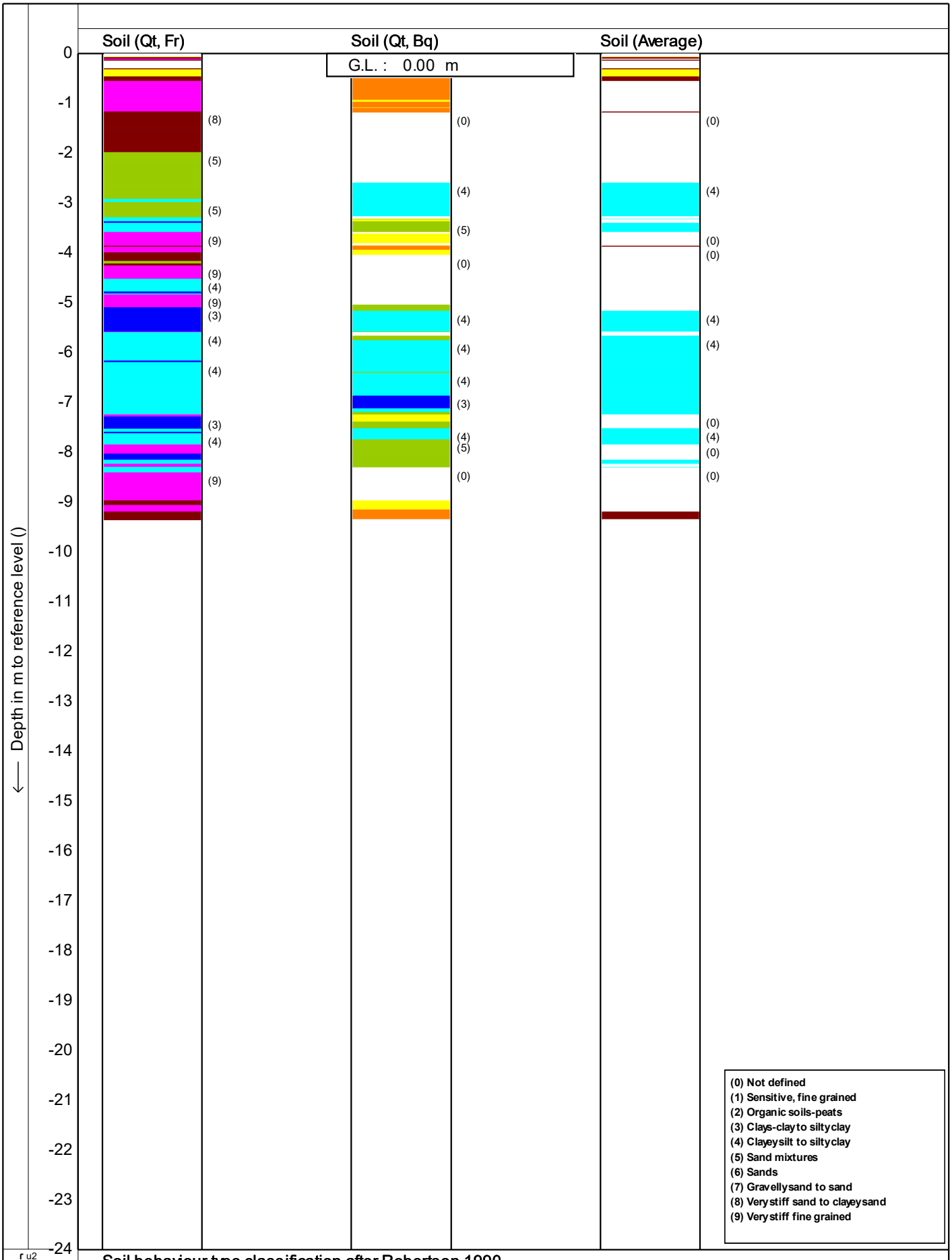
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **001**

12/14

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

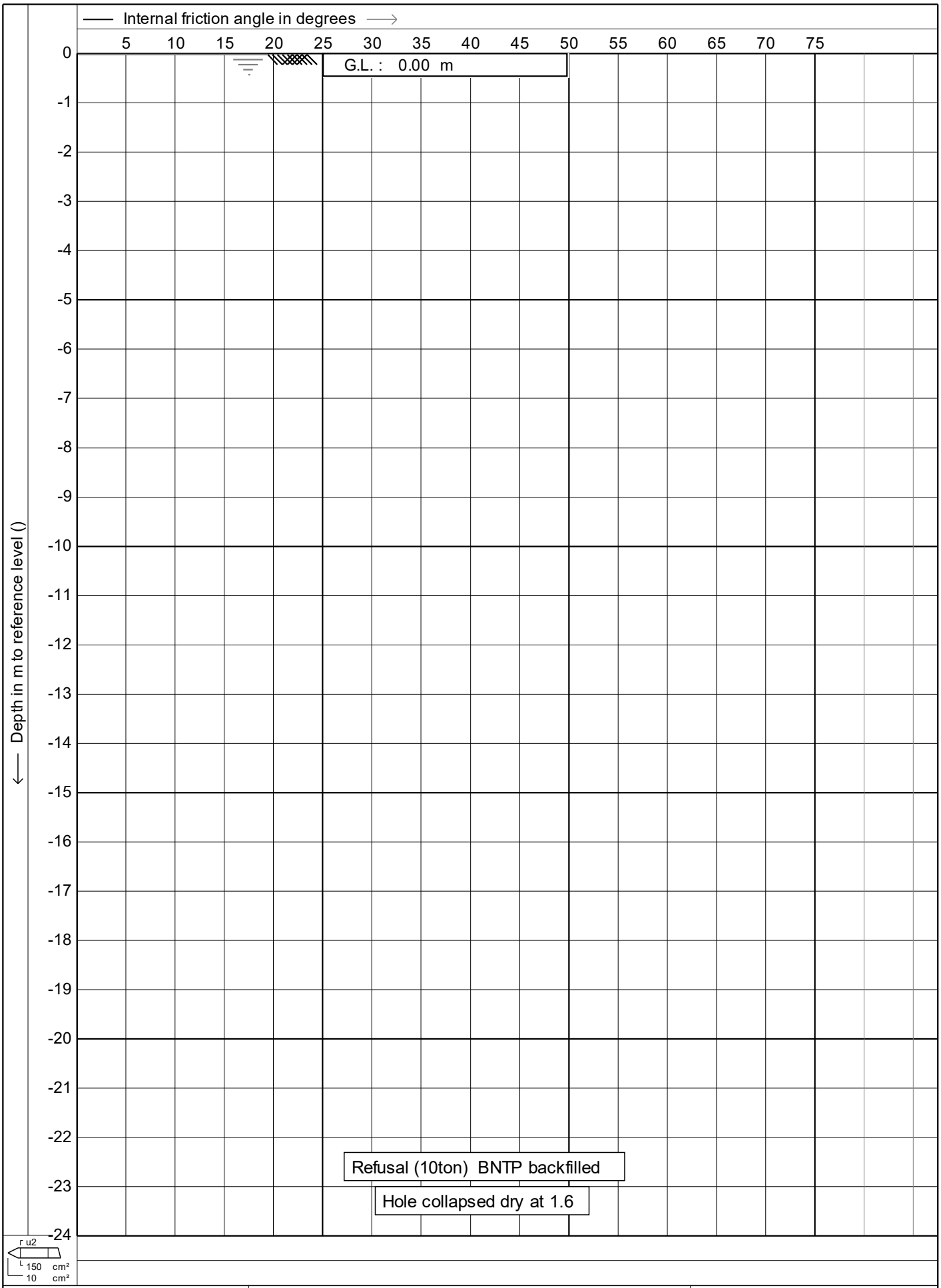
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **001**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

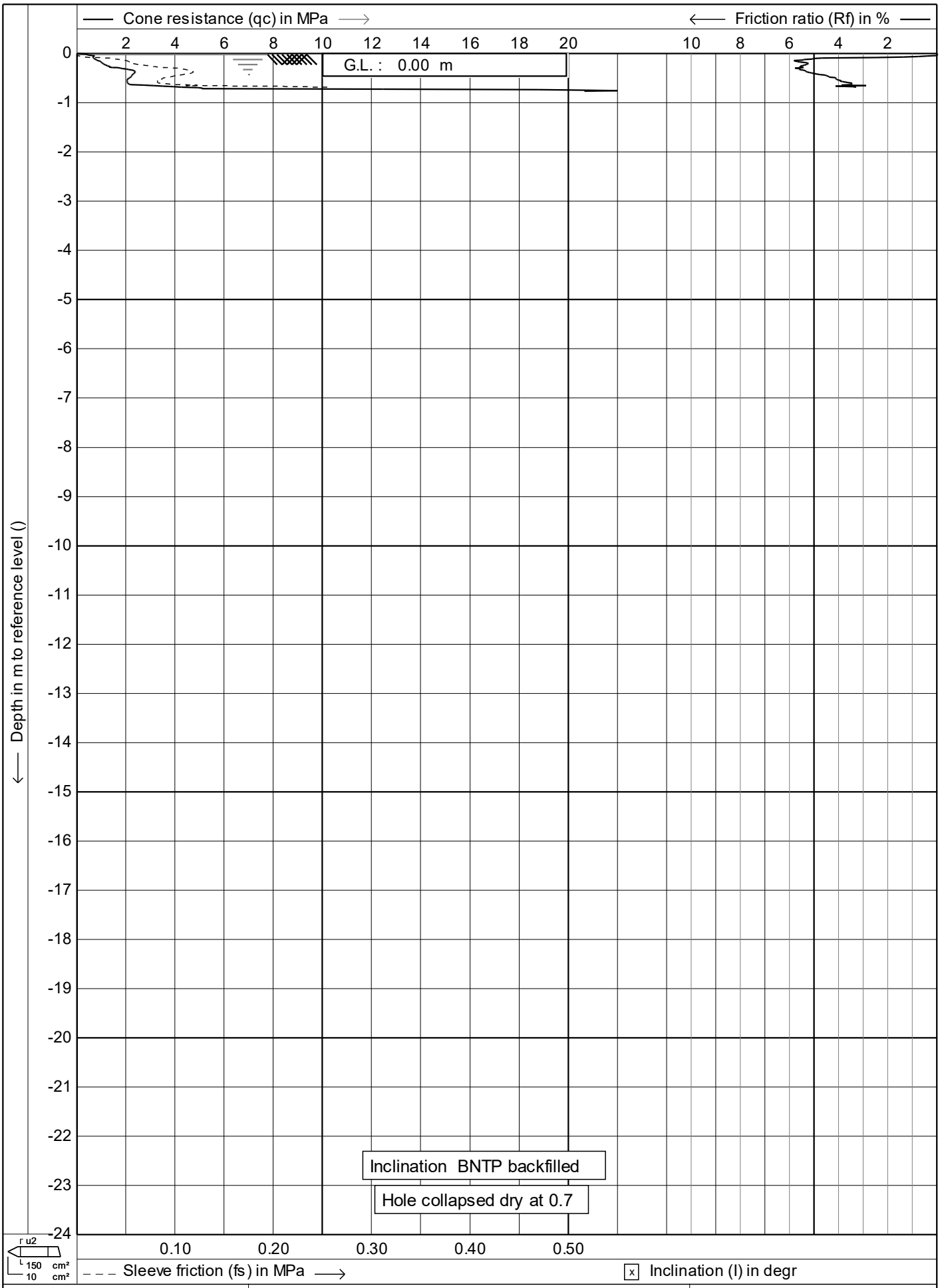
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **001**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

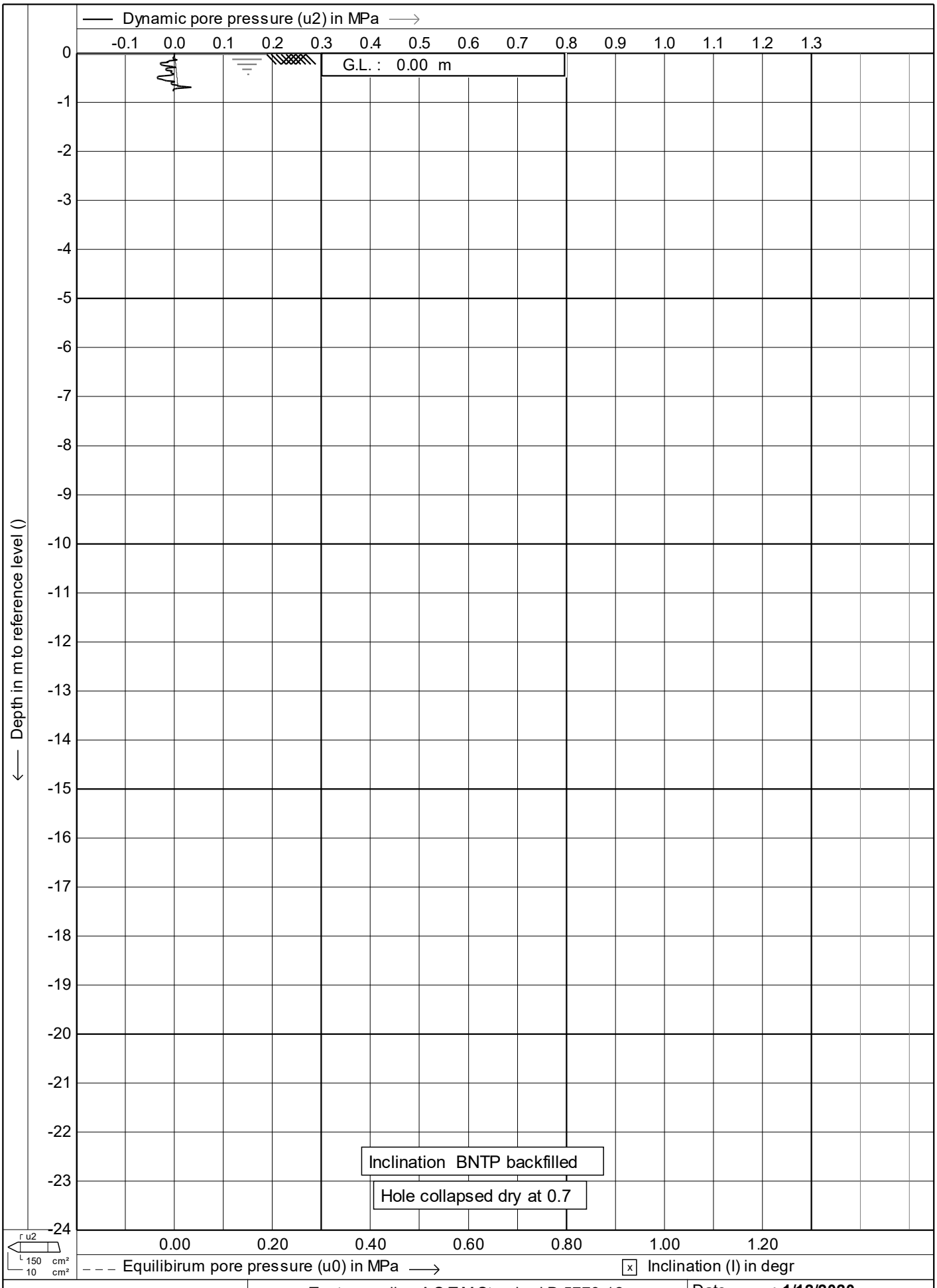
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002** **1/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

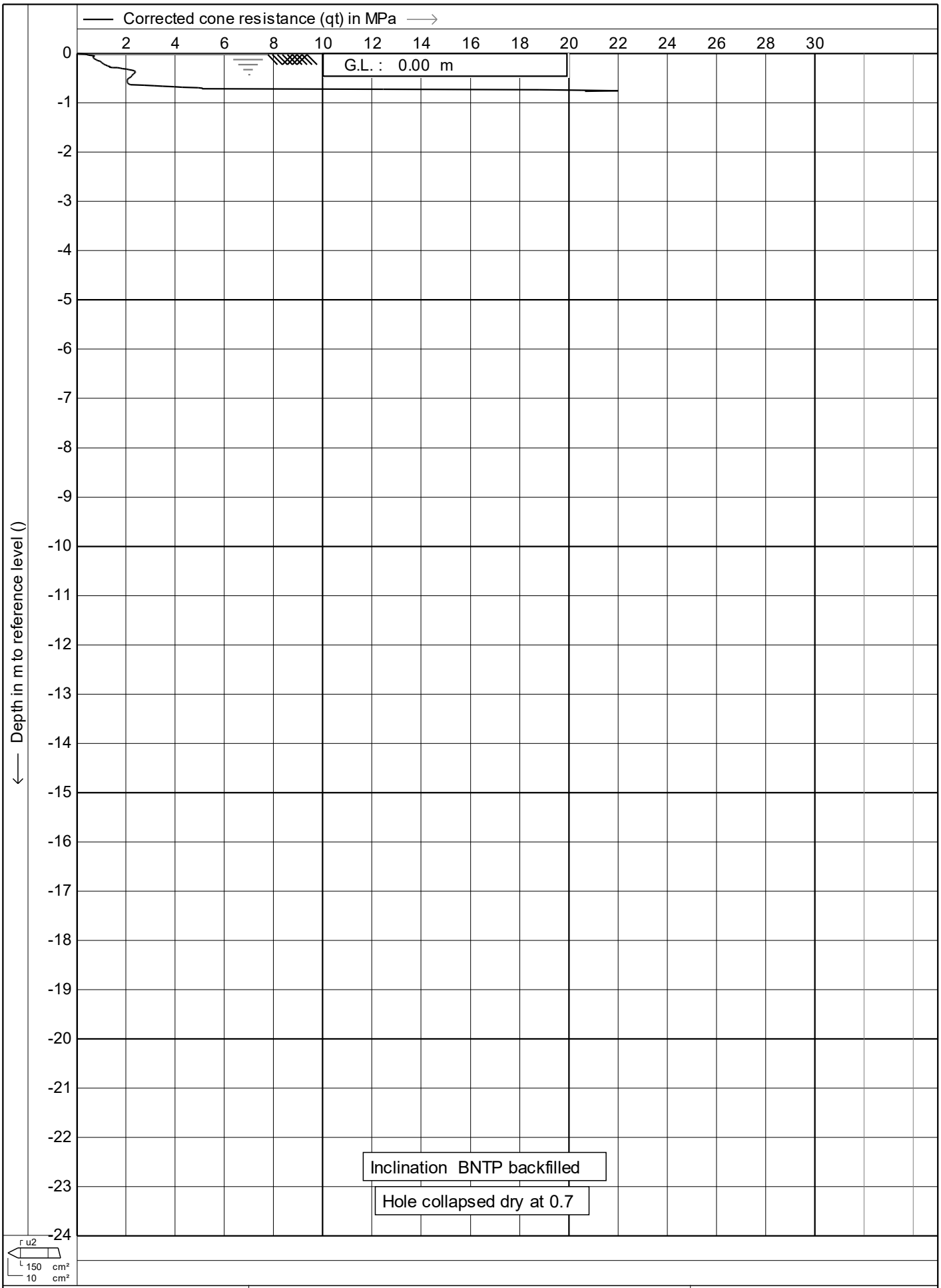
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

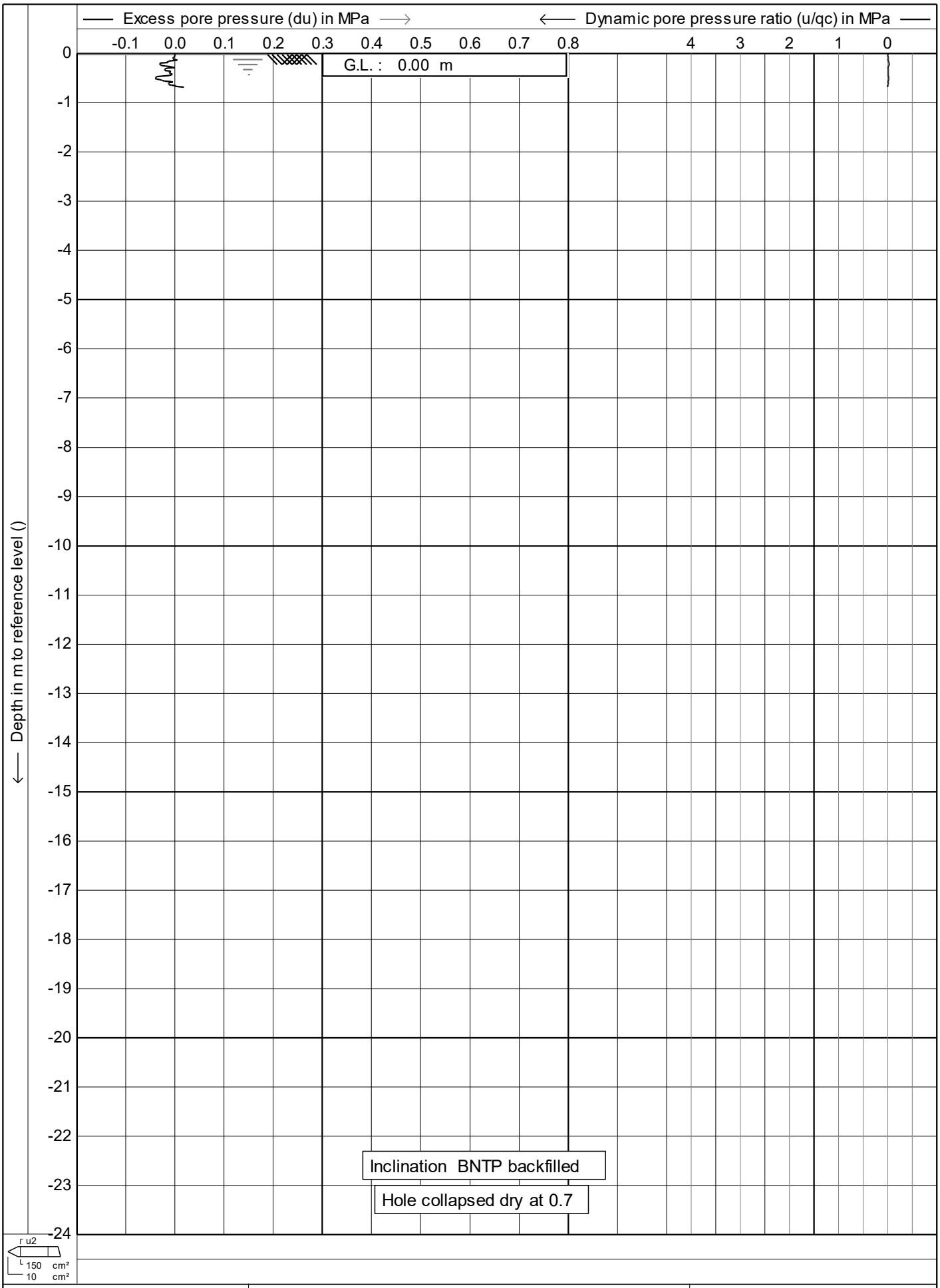
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

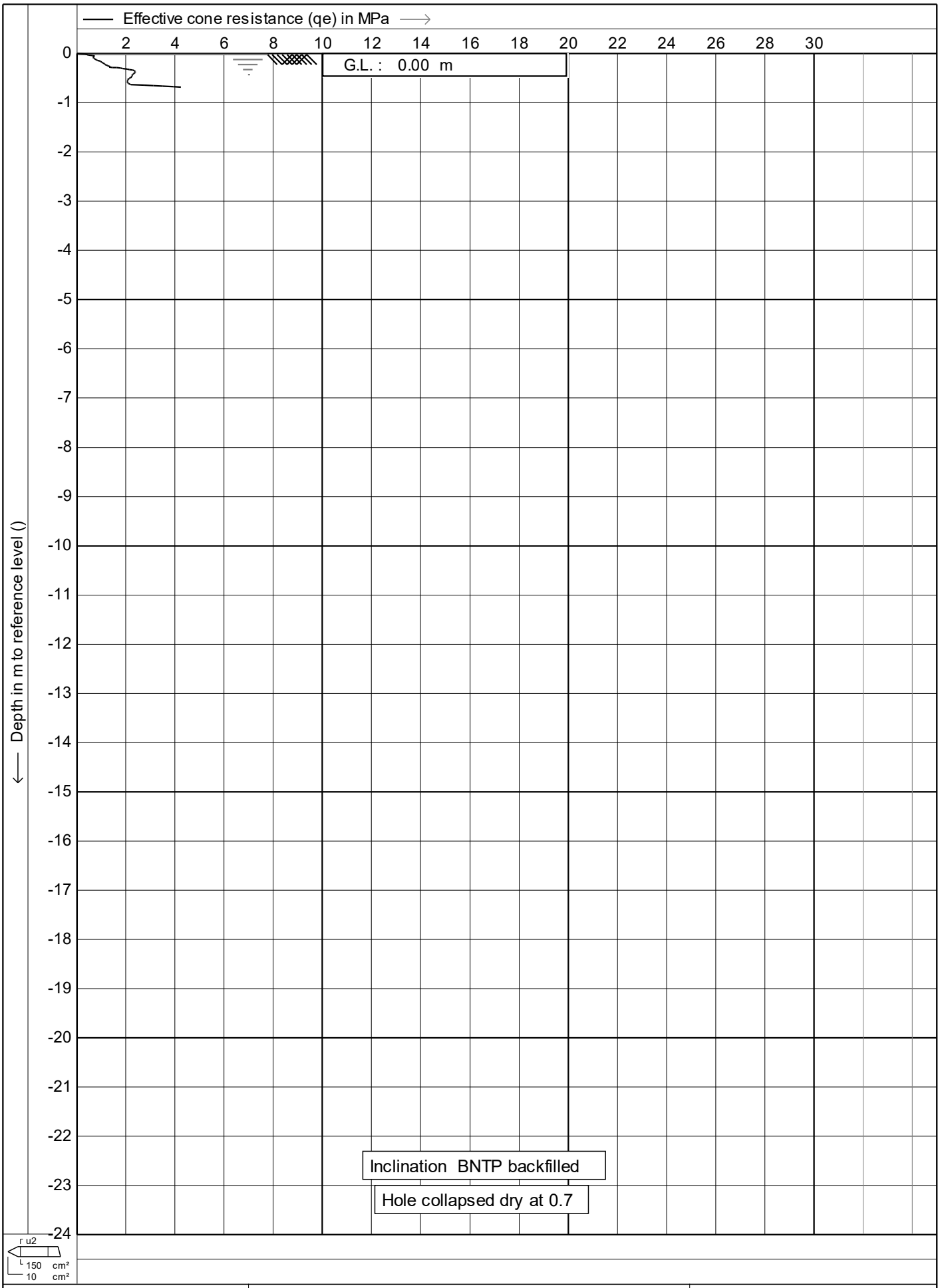
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

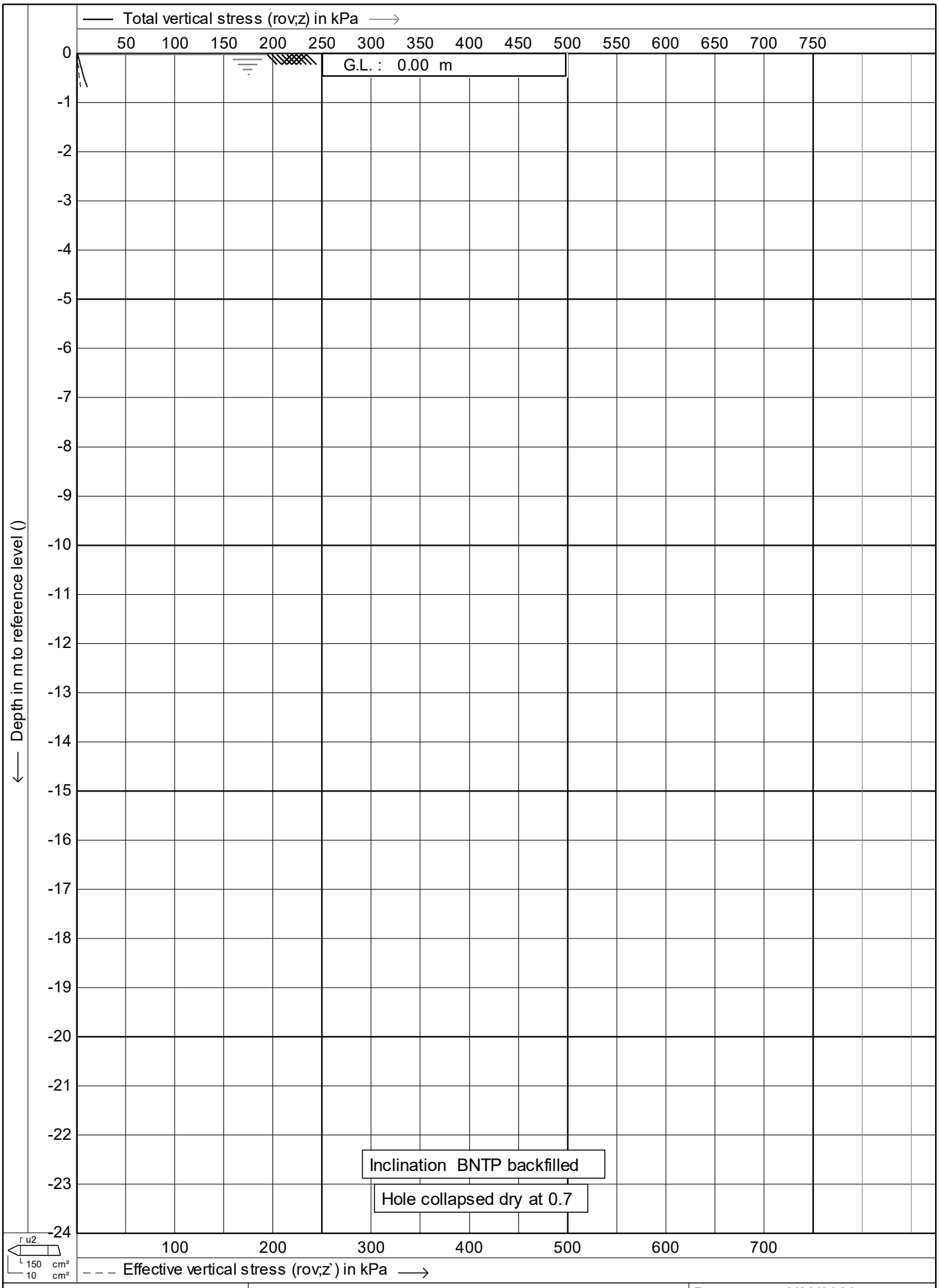
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

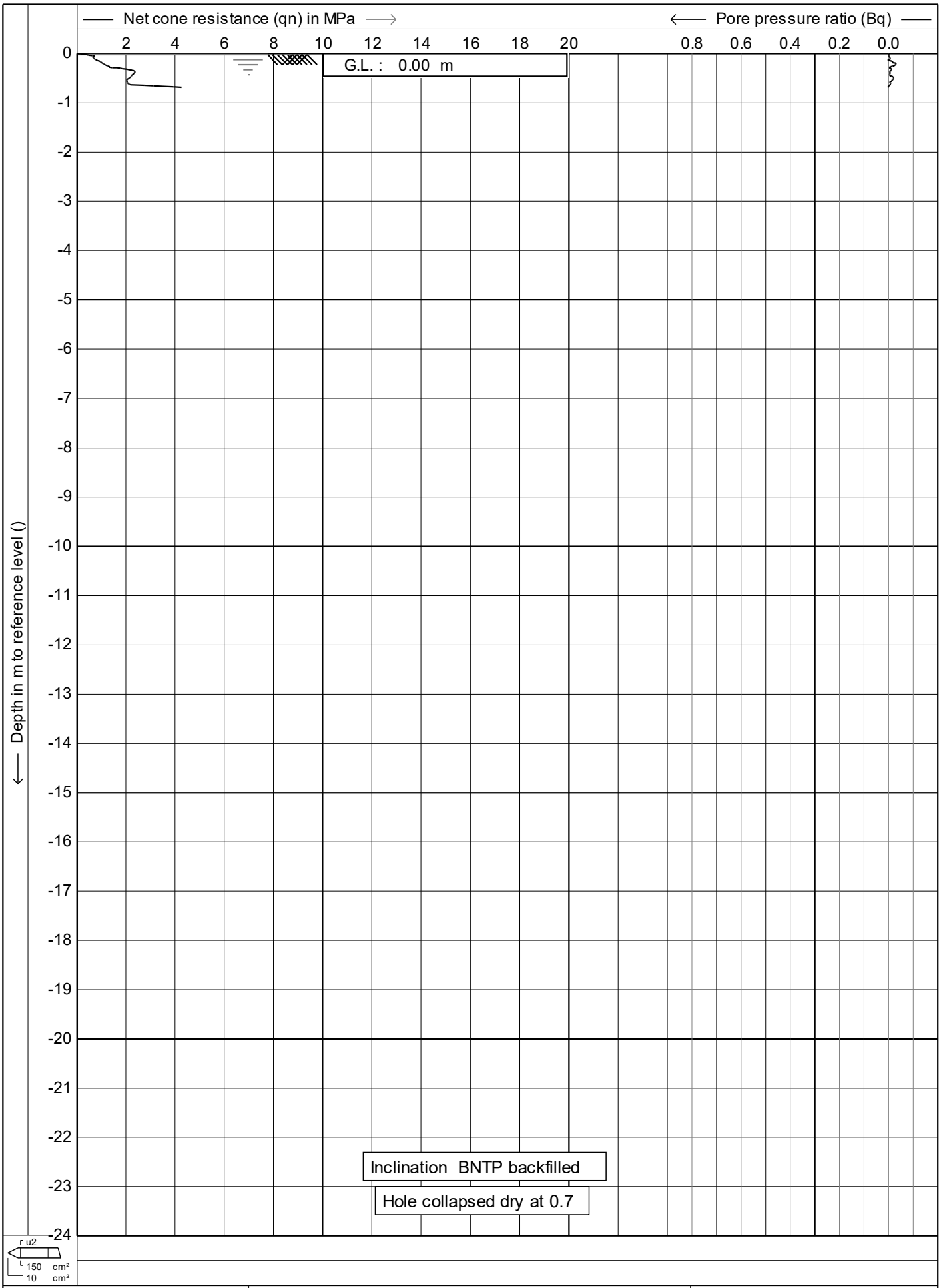
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002**

6/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

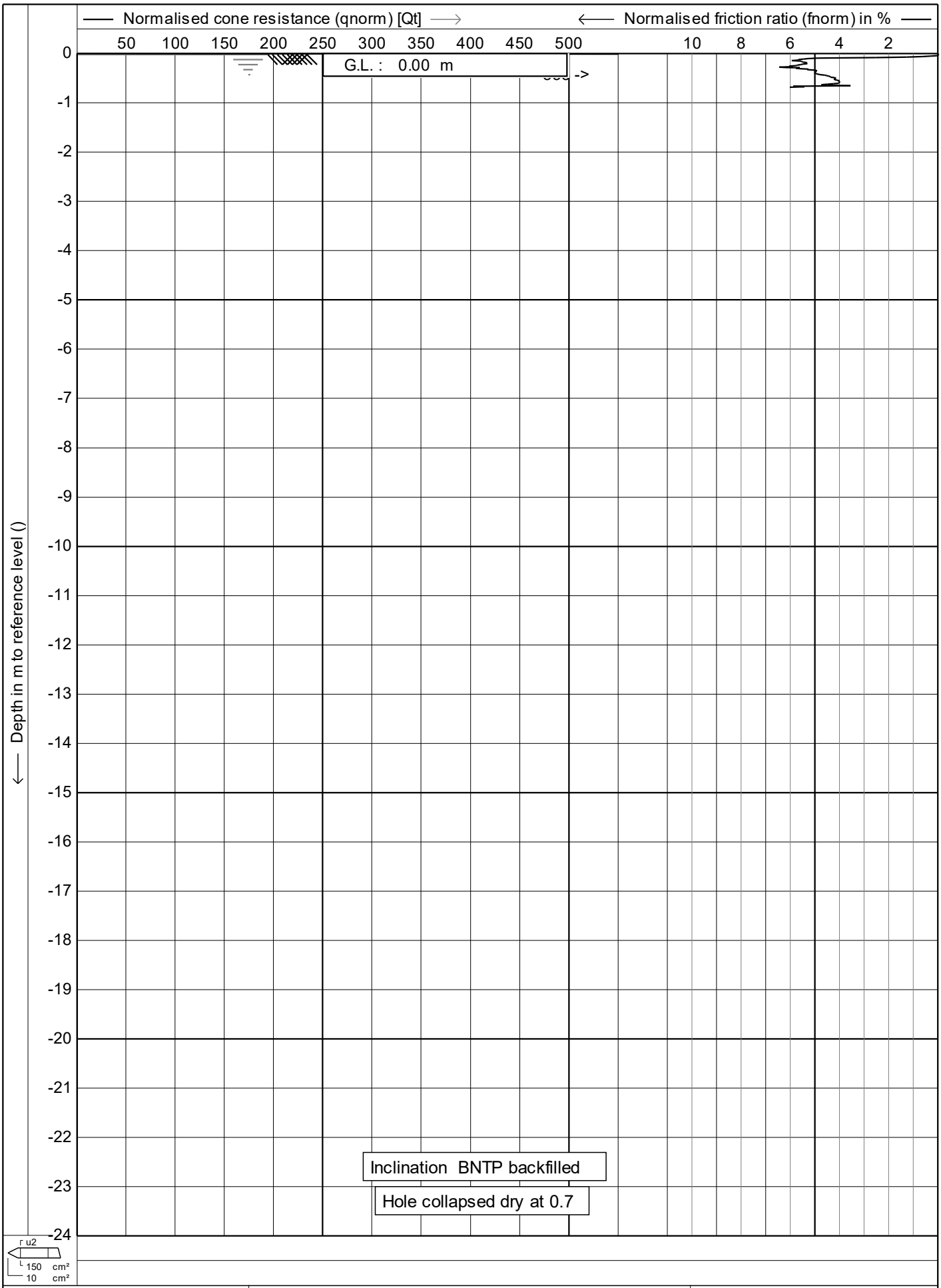
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002** **7/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

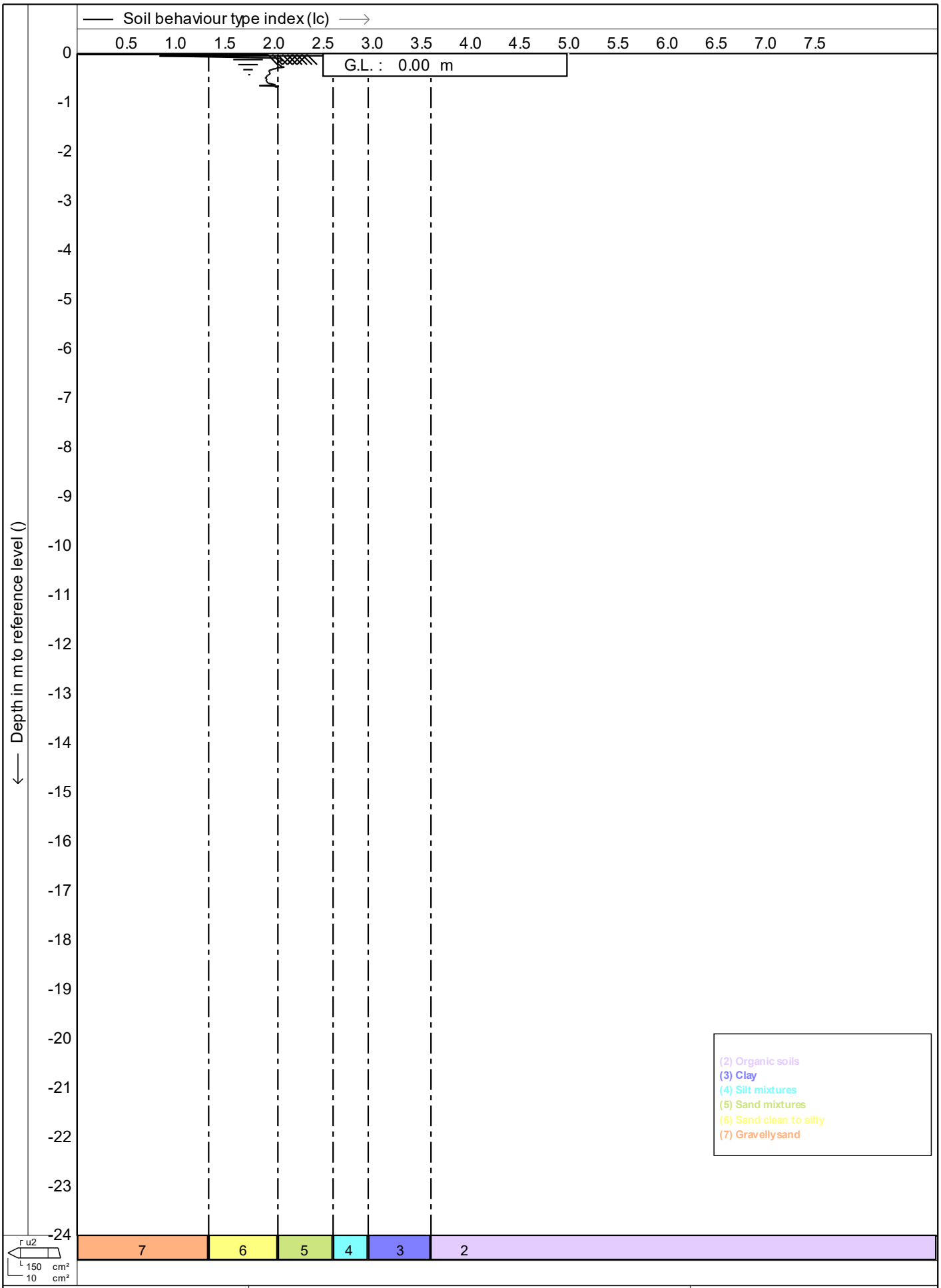
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002** **8/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

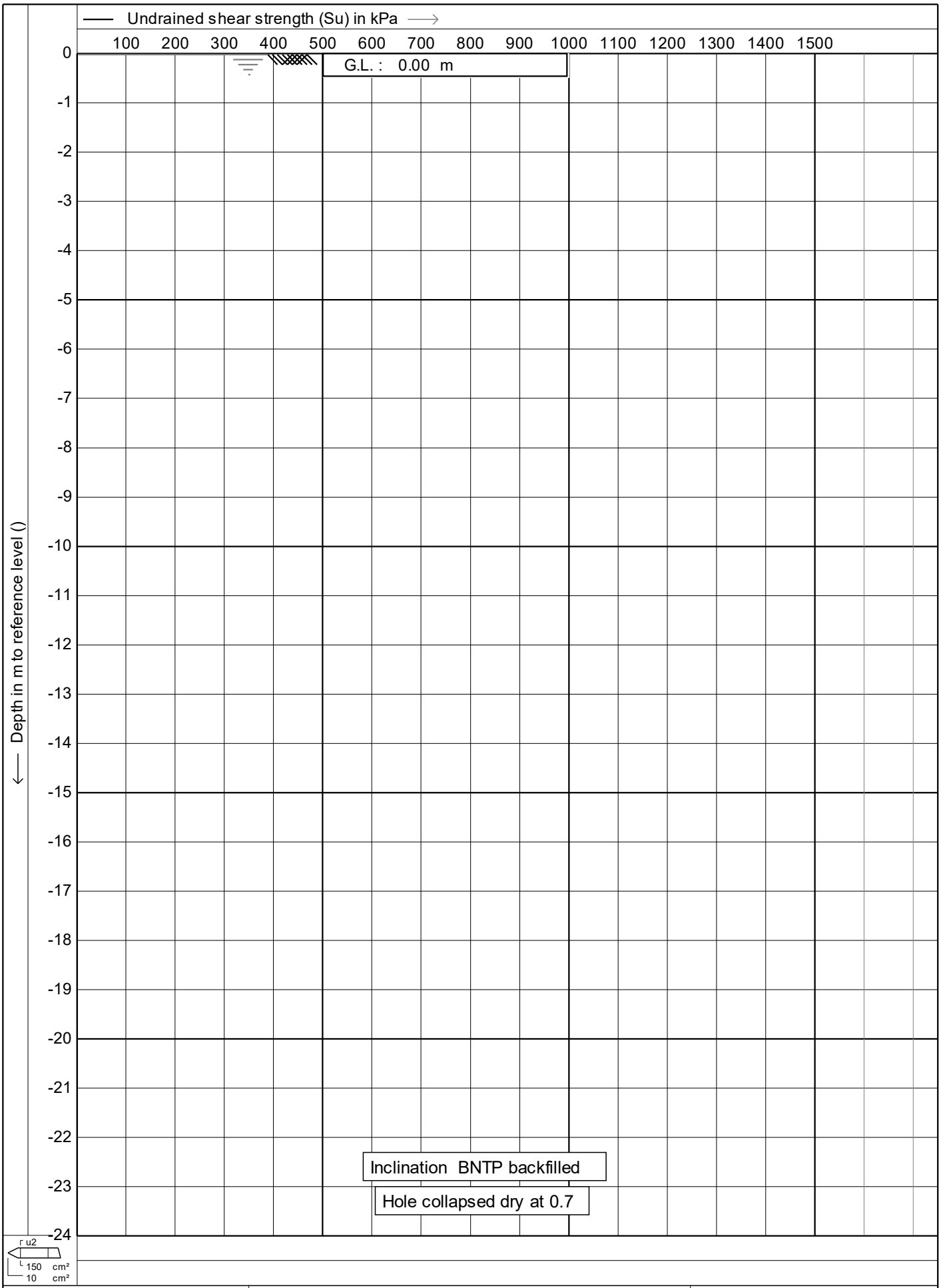
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

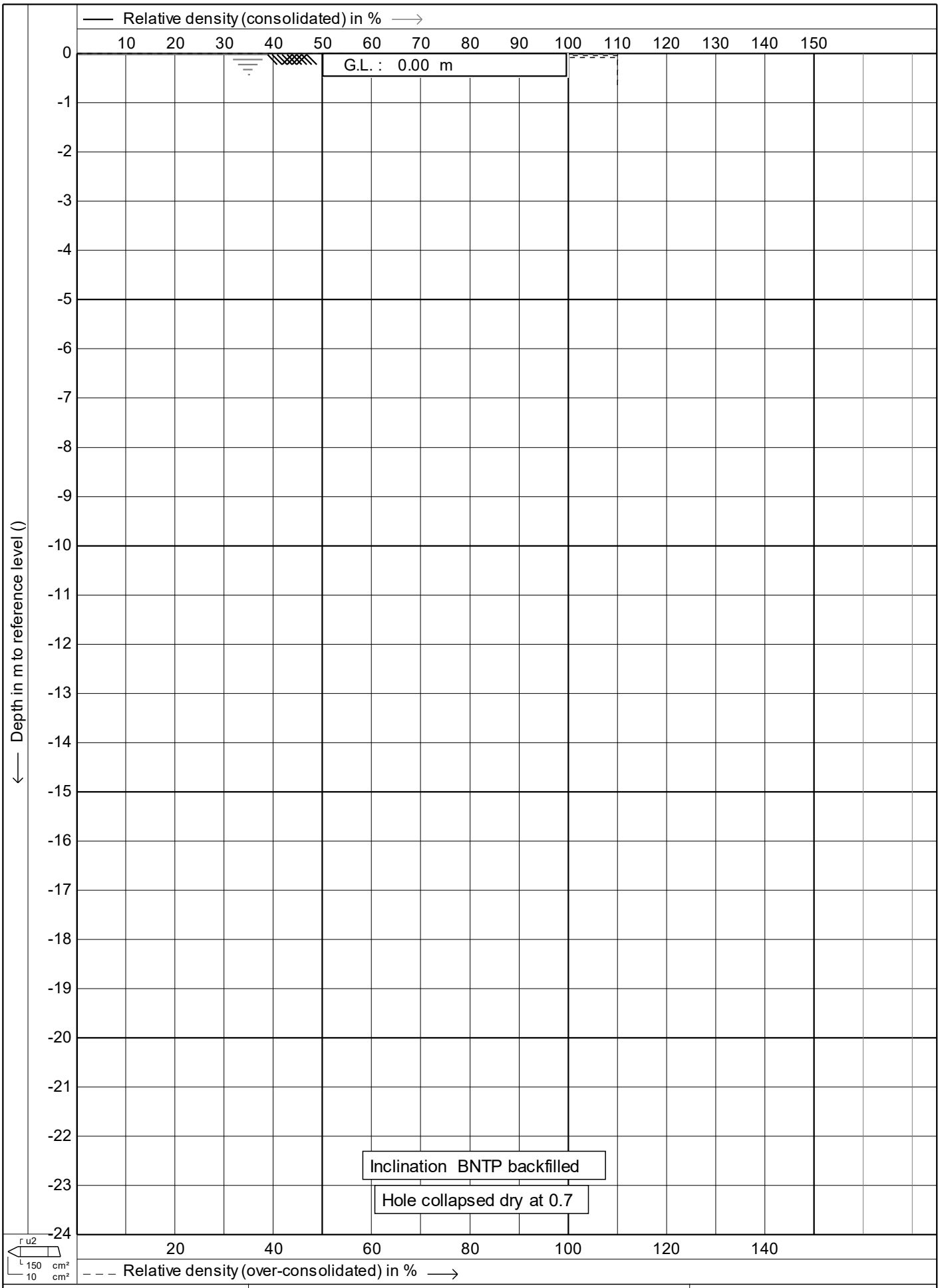
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **002**

10/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

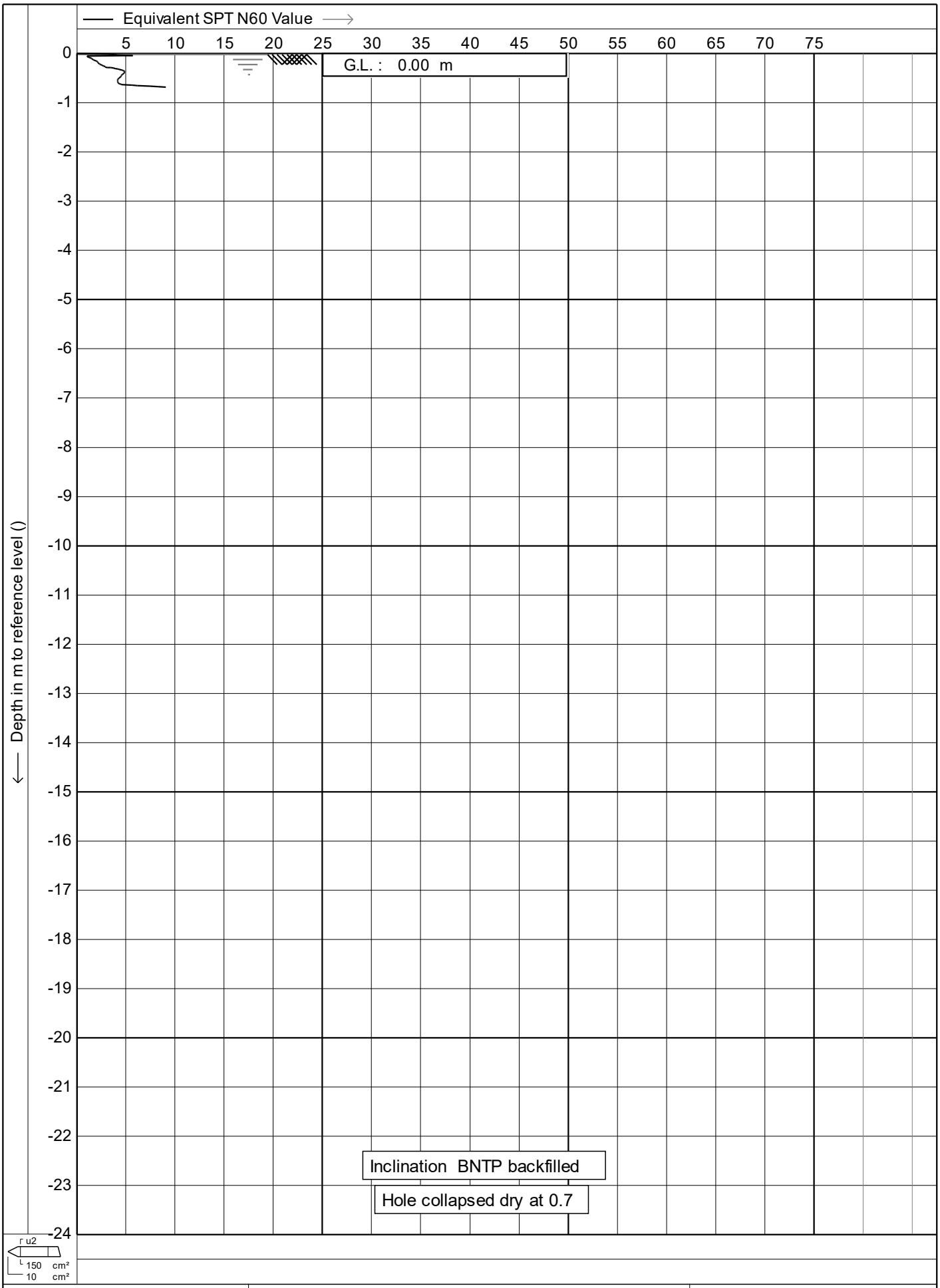
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002** **11/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

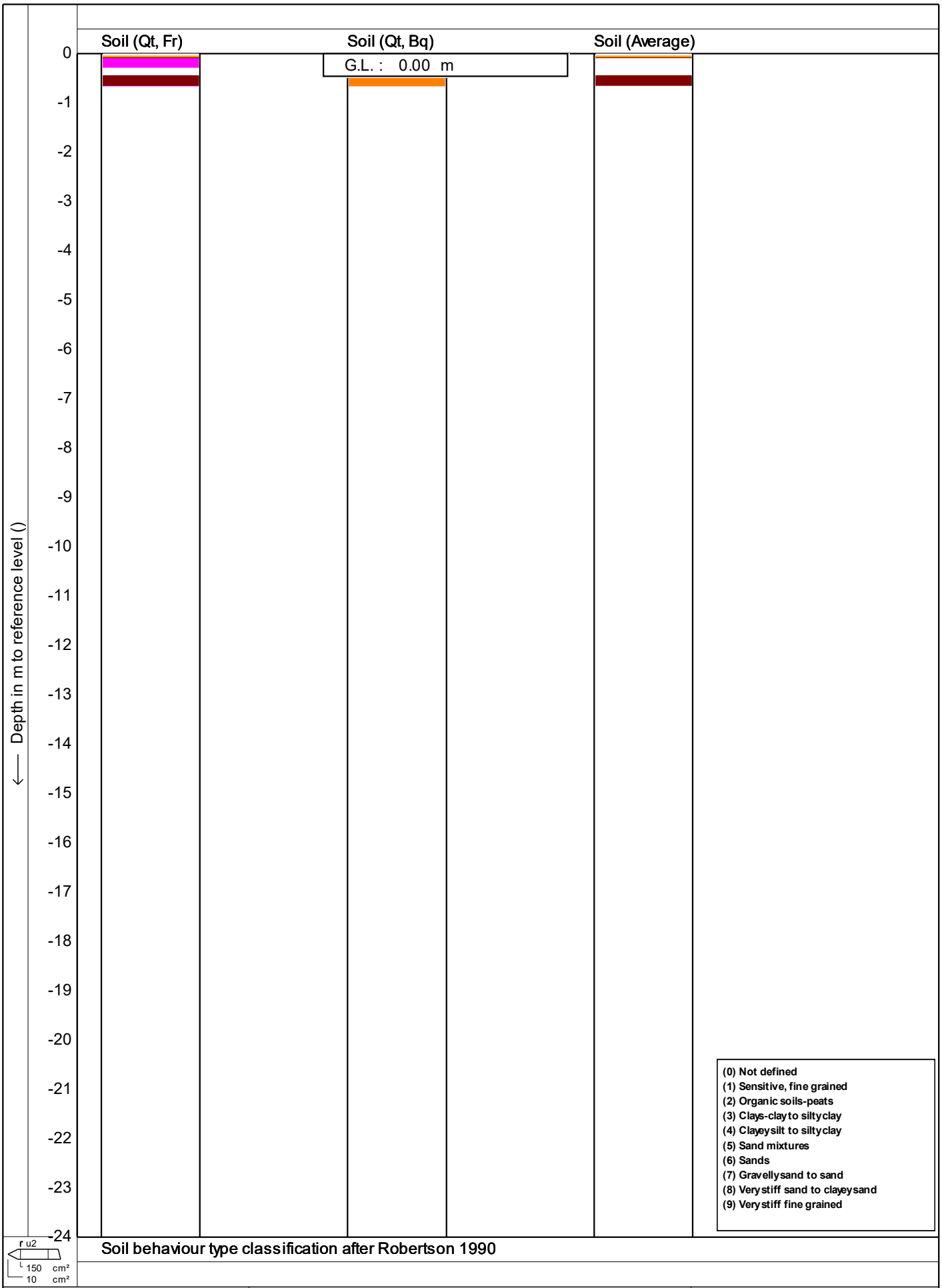
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **002**

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

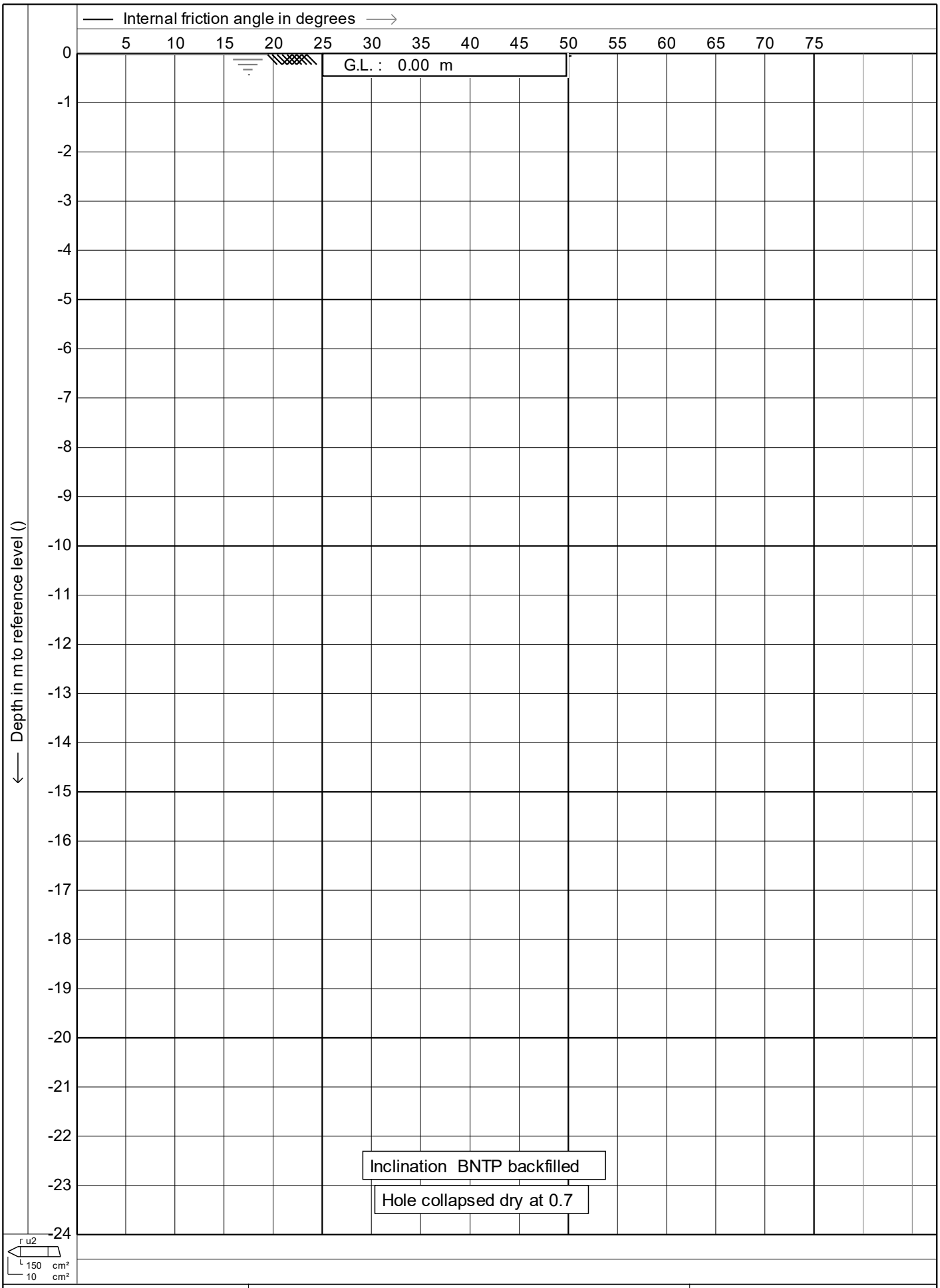
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

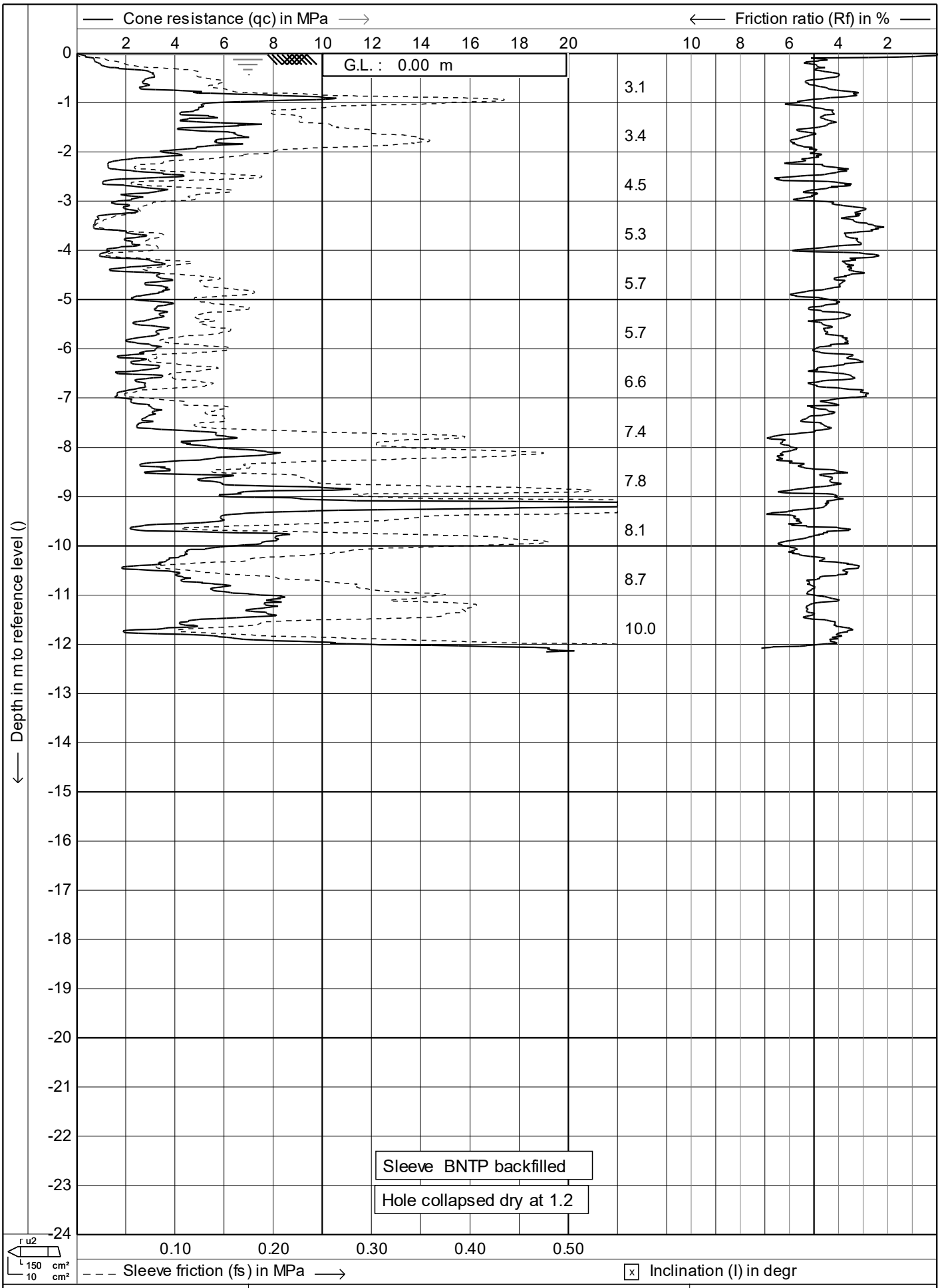
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **002**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

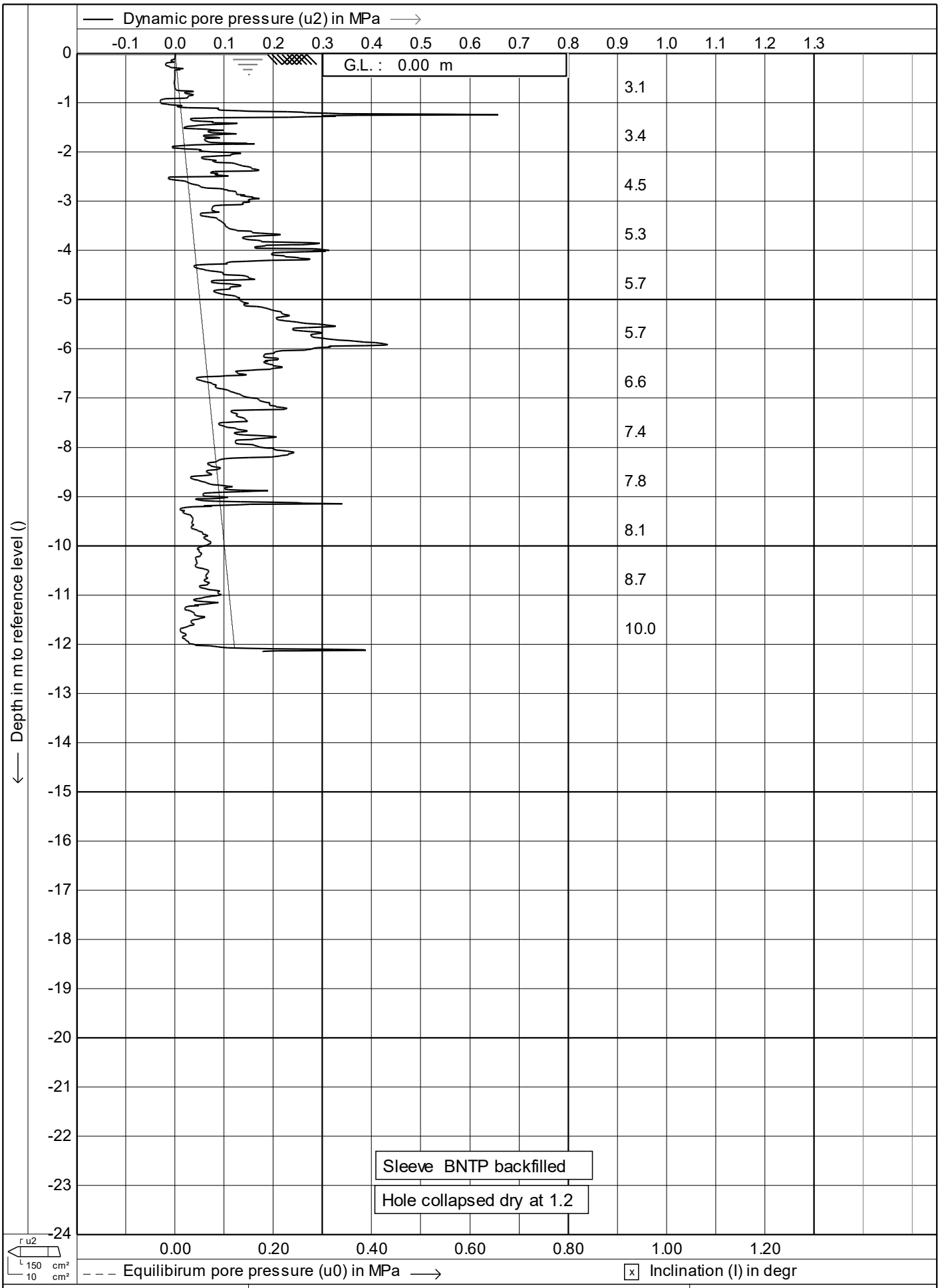
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002a** **1/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

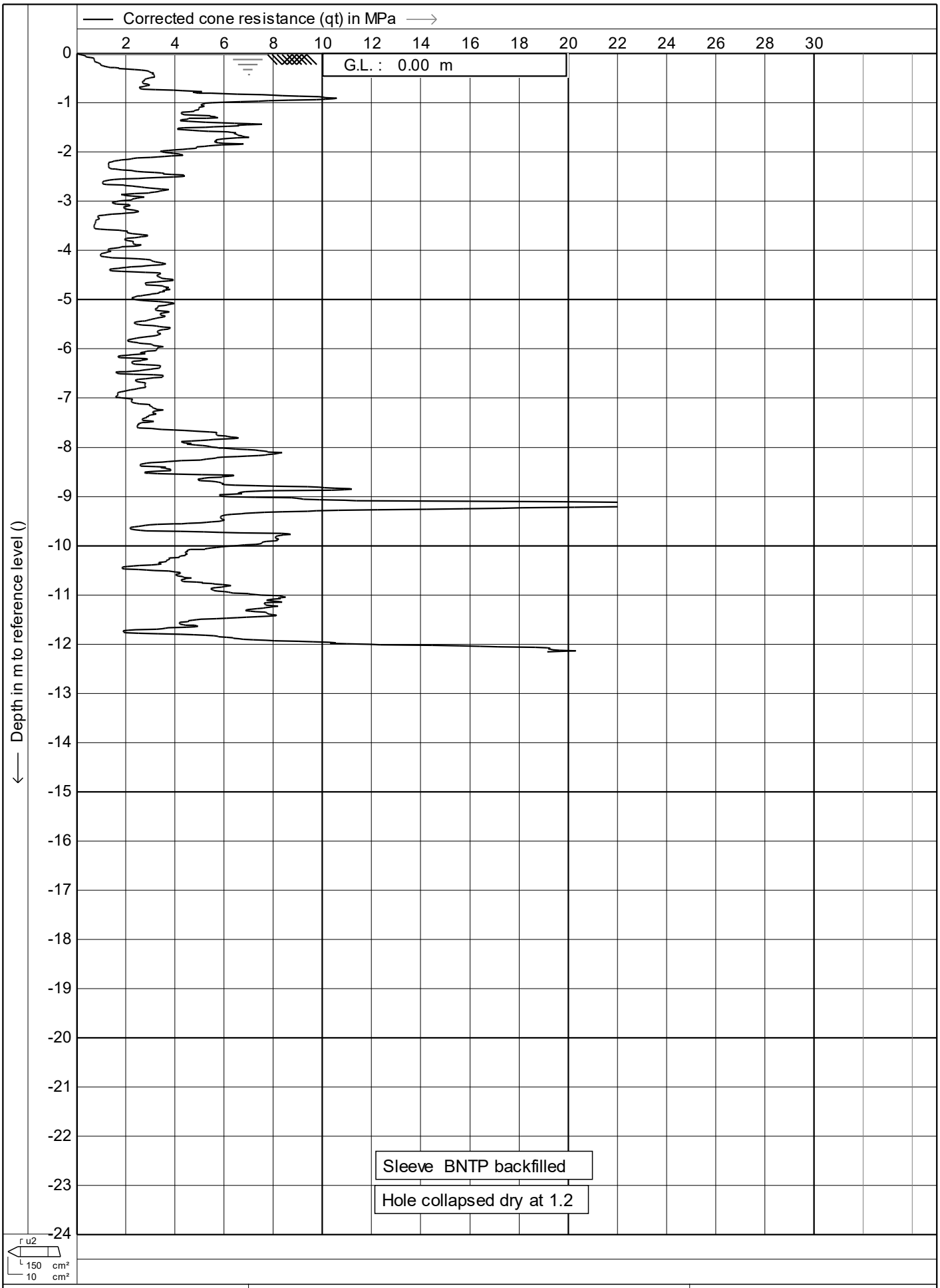
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002a**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

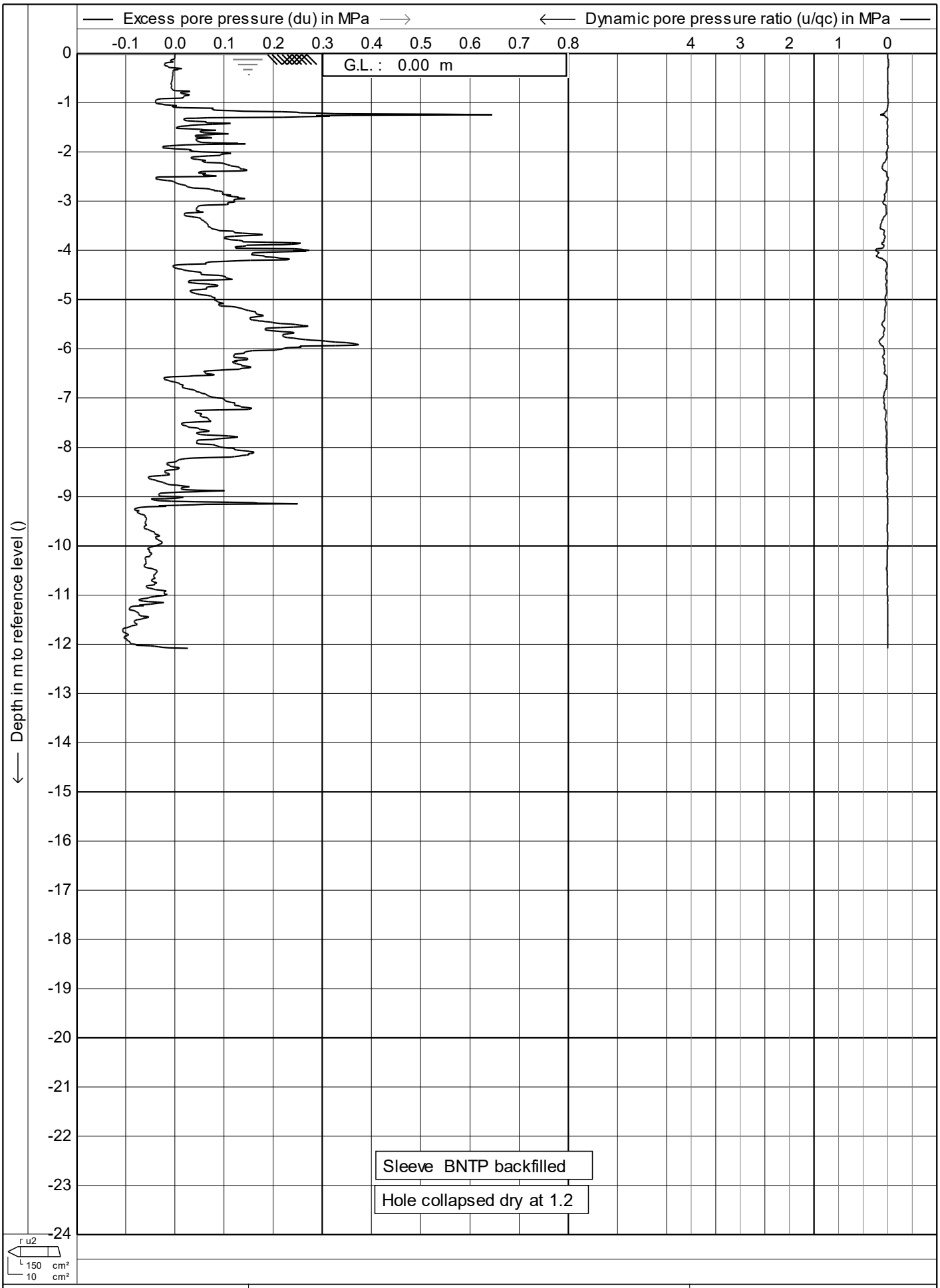
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **002a** **3/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

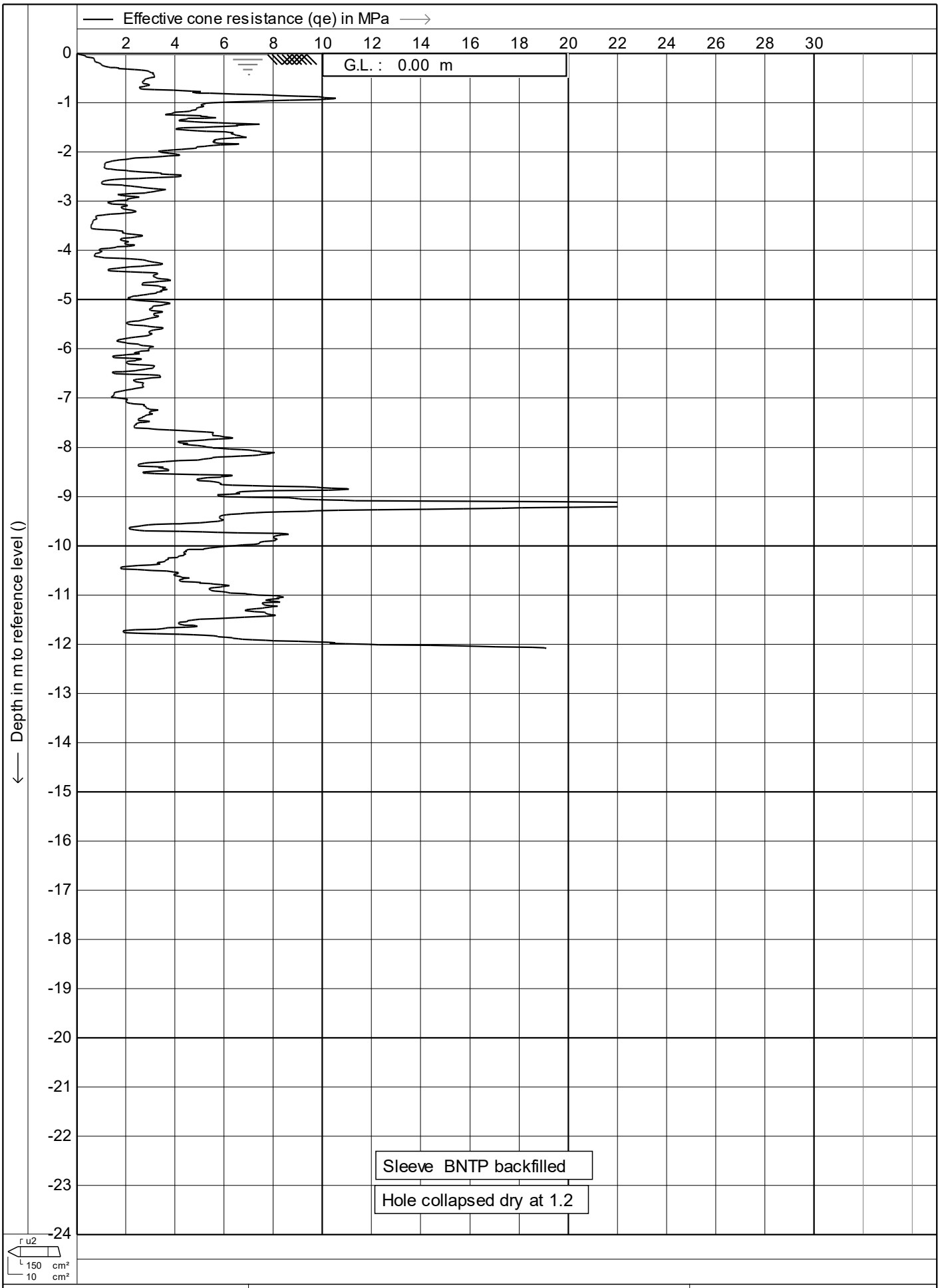
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002a** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

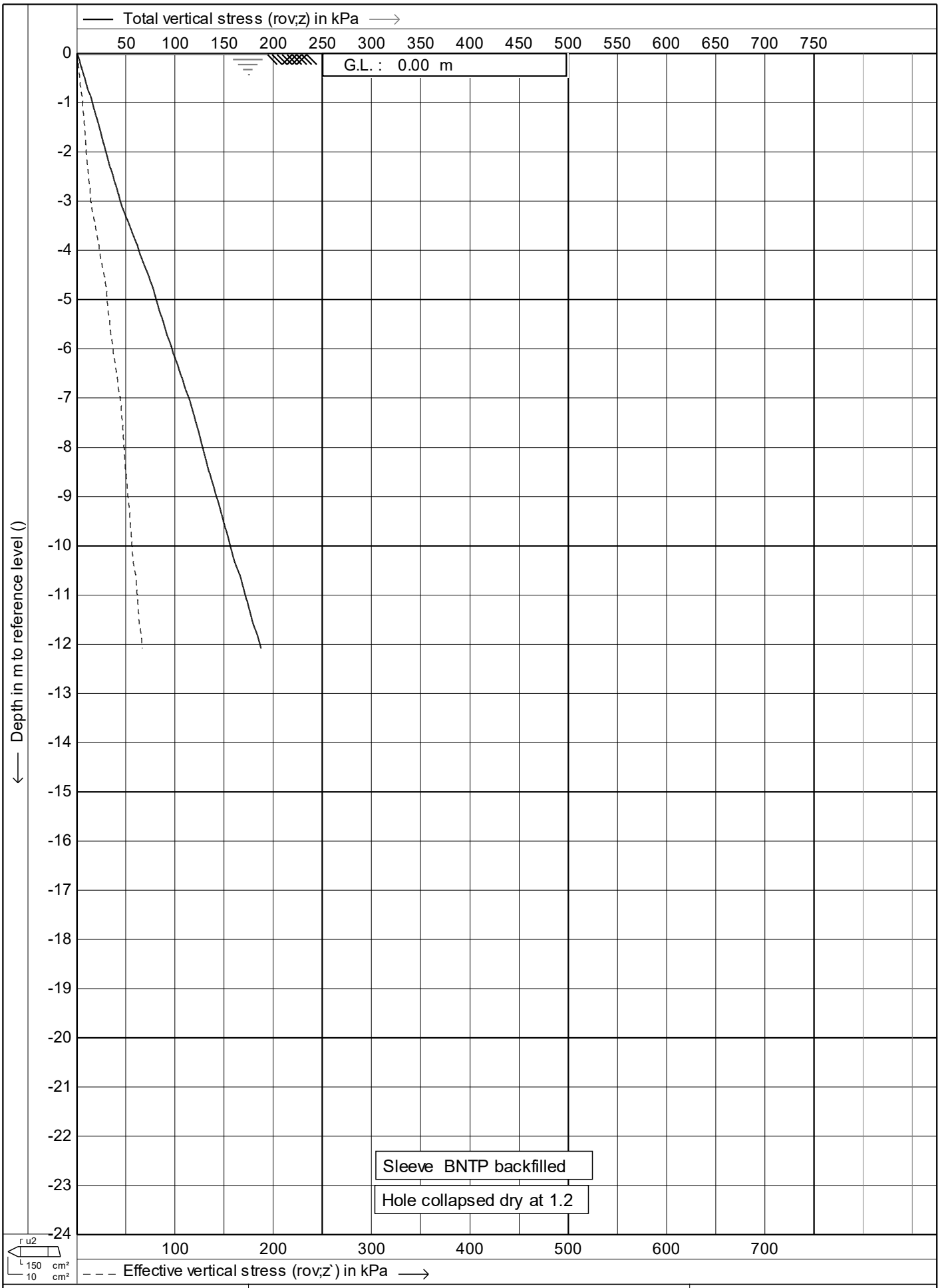
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **002a**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

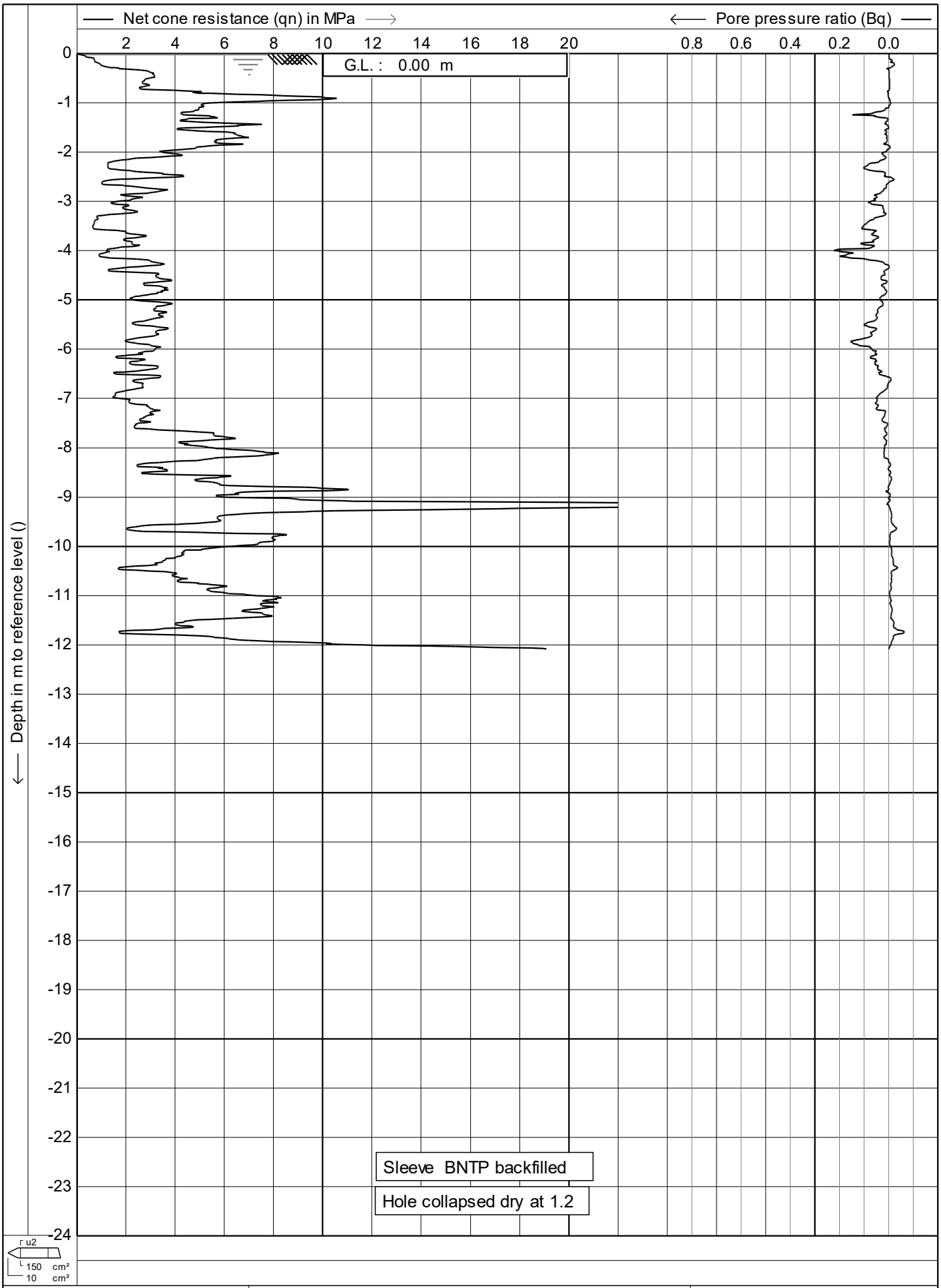
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **002a**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

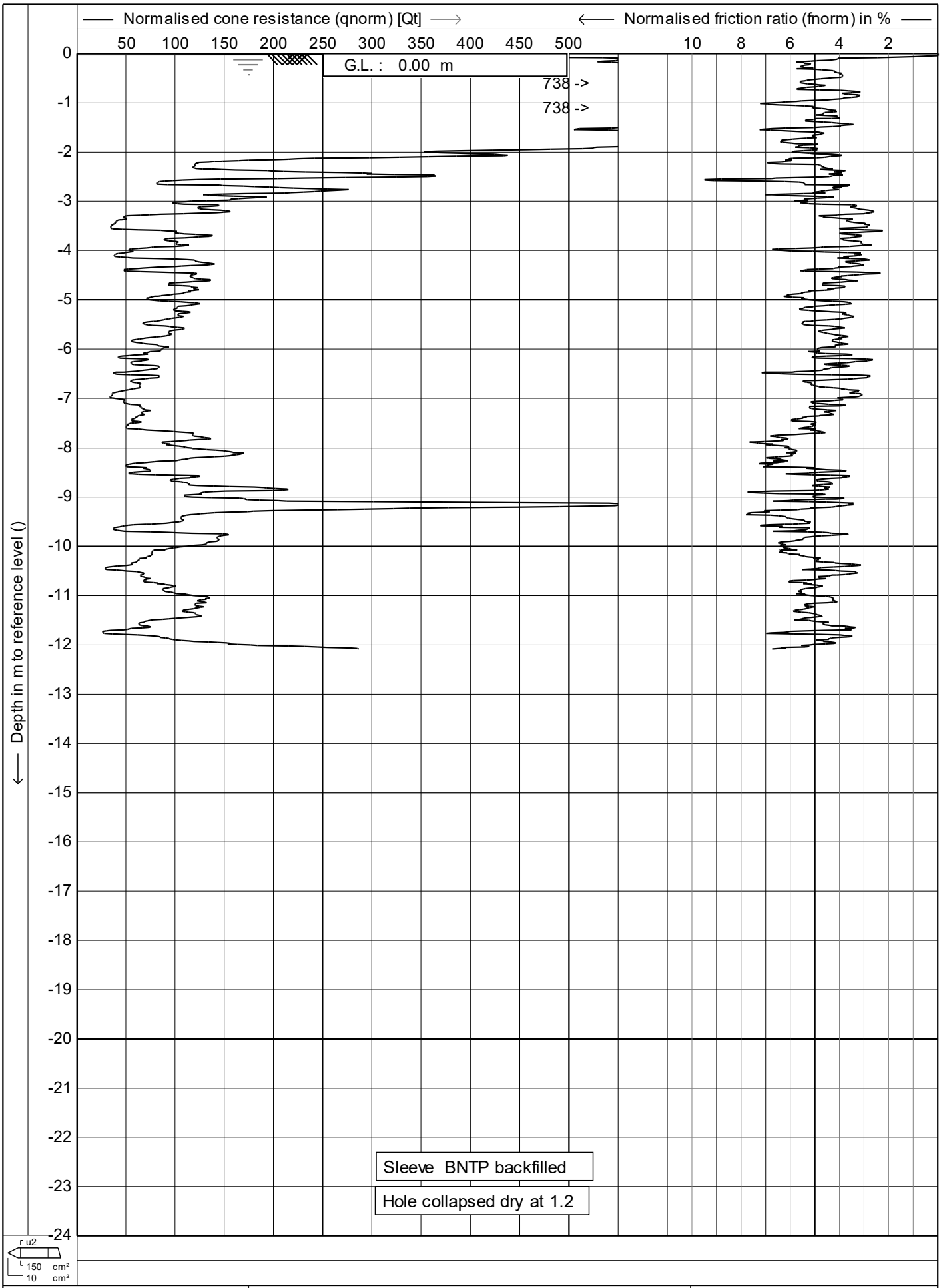
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002a** **7/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

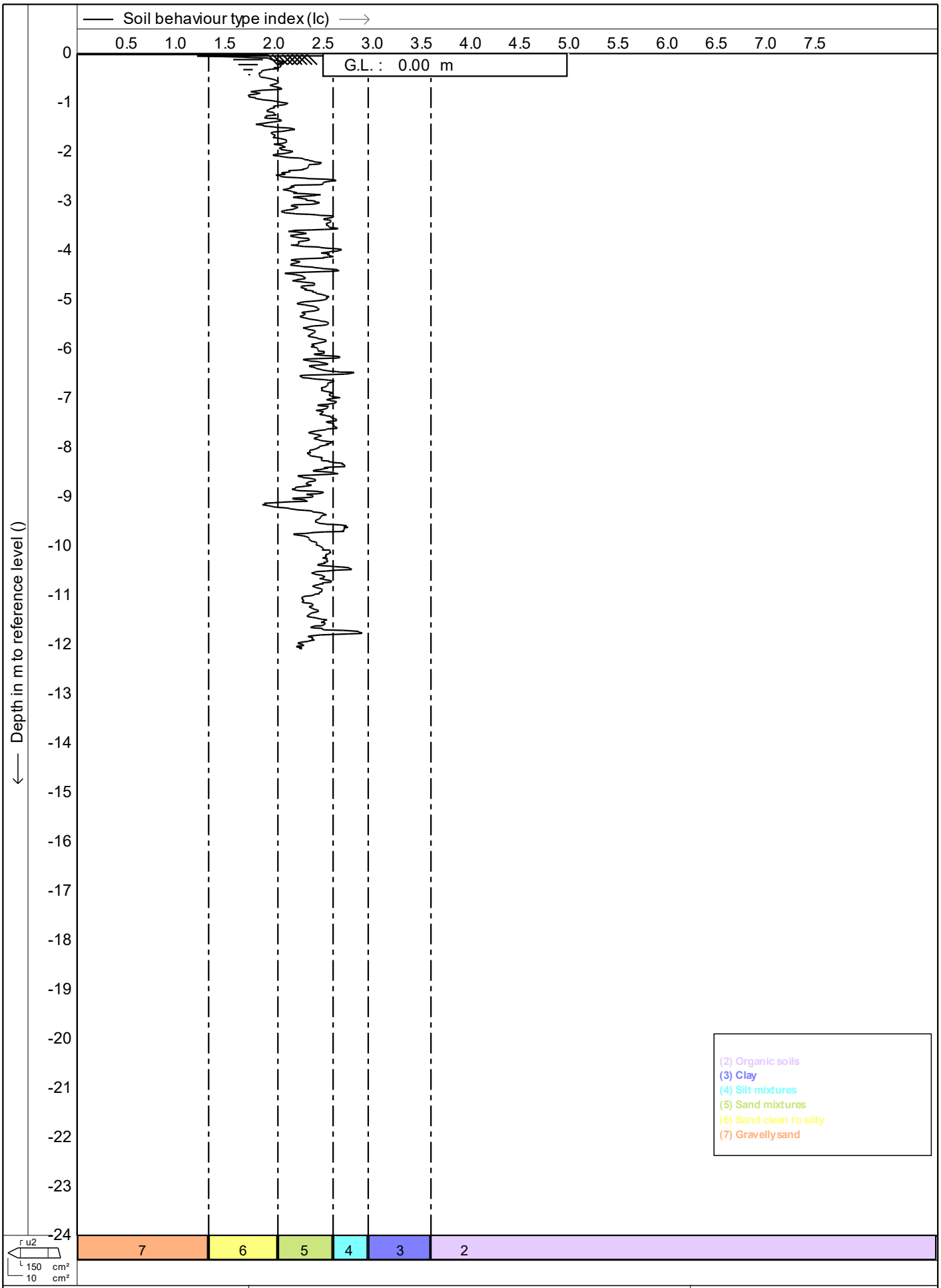
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002a** **8/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

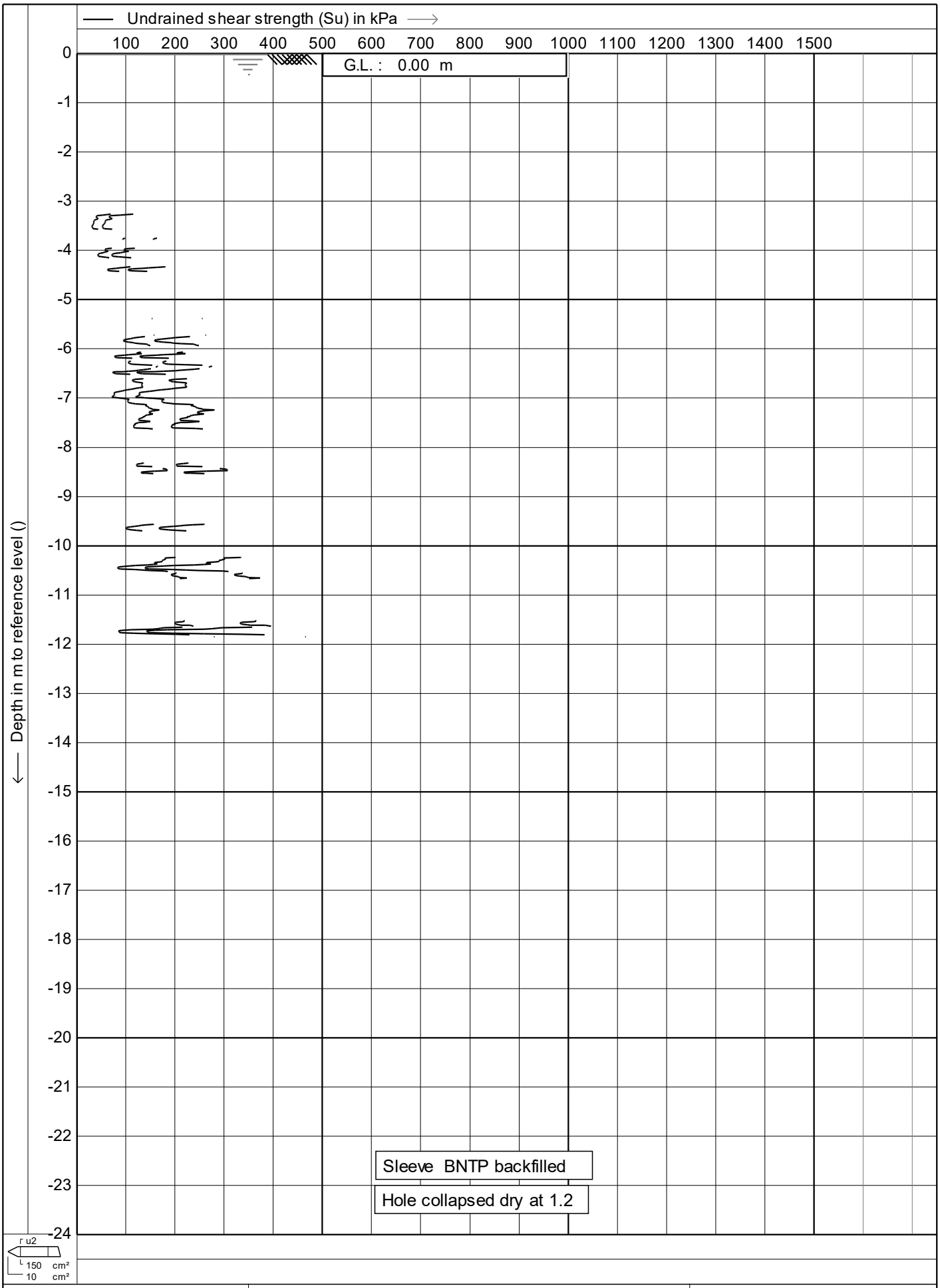
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002a** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

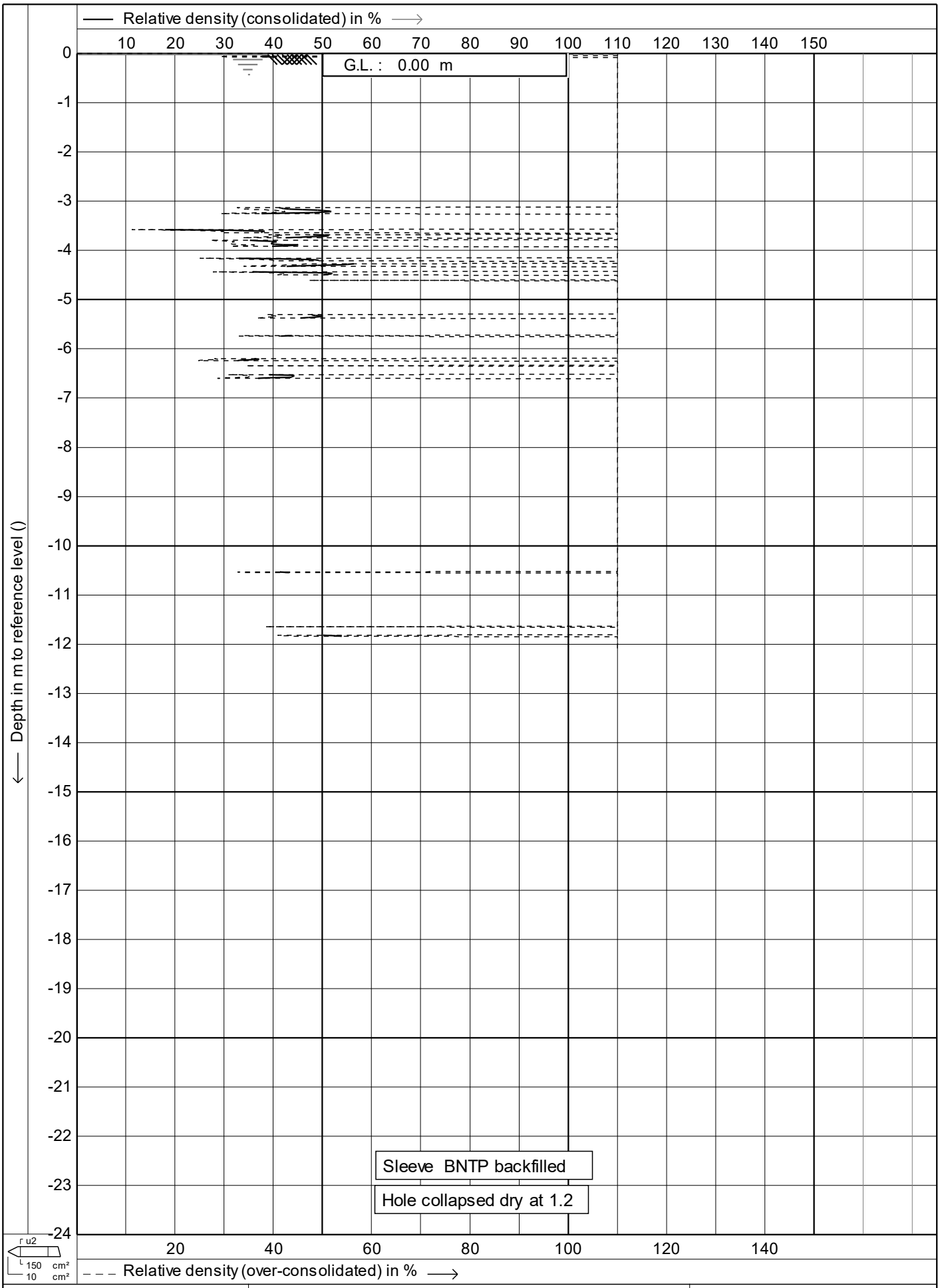
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002a** **10/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

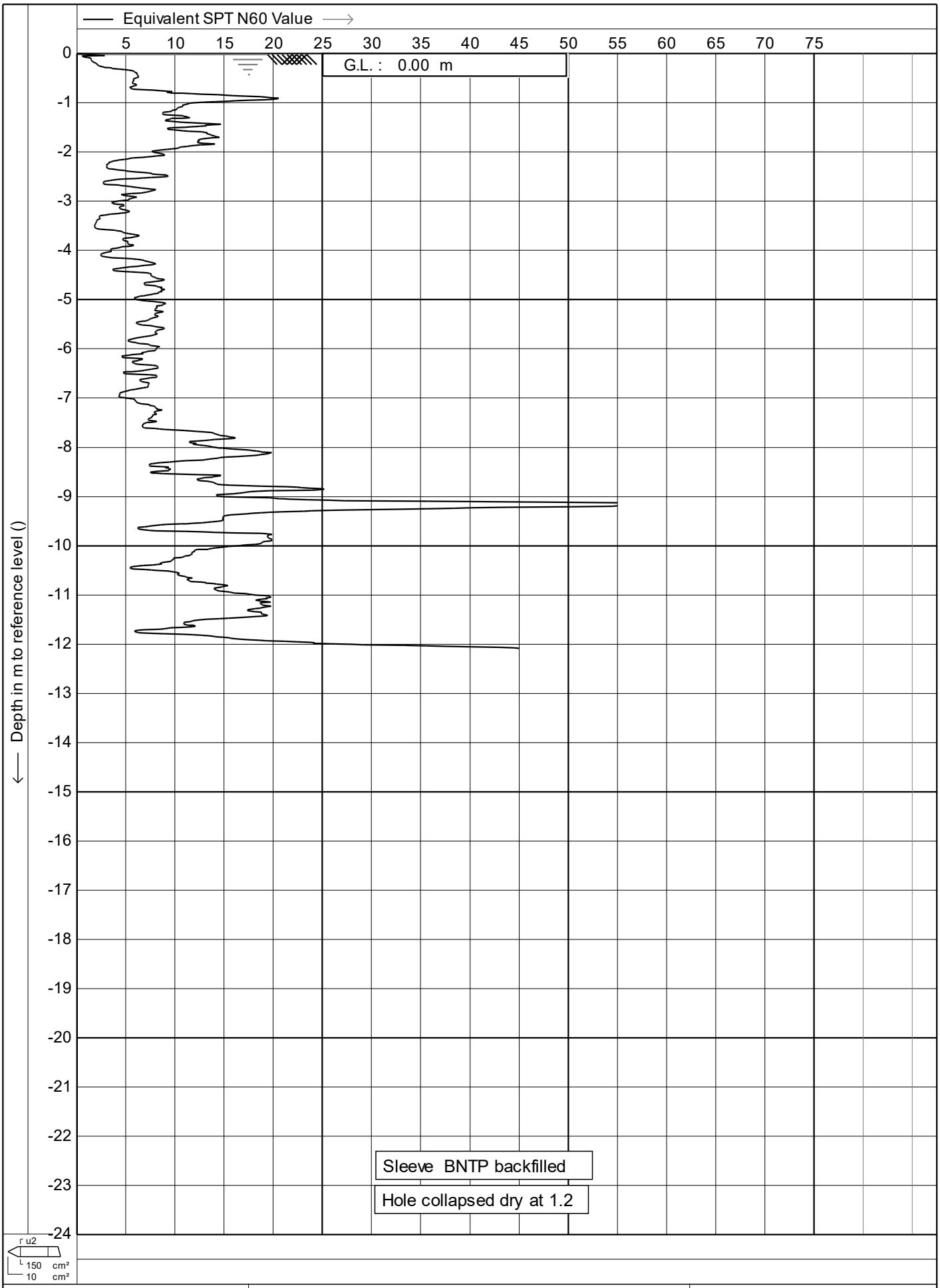
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002a** **11/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

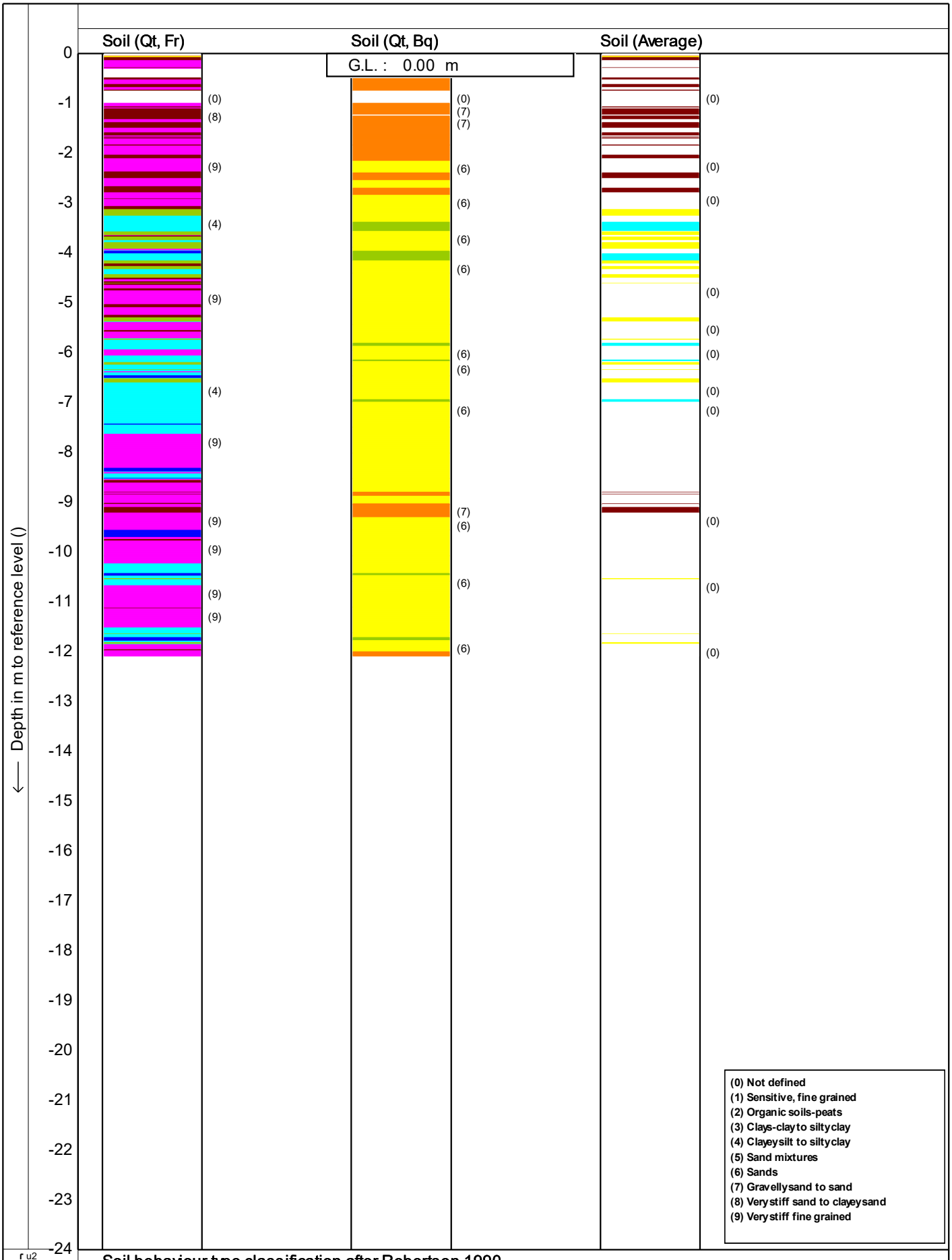
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Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **002a**

12/14

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

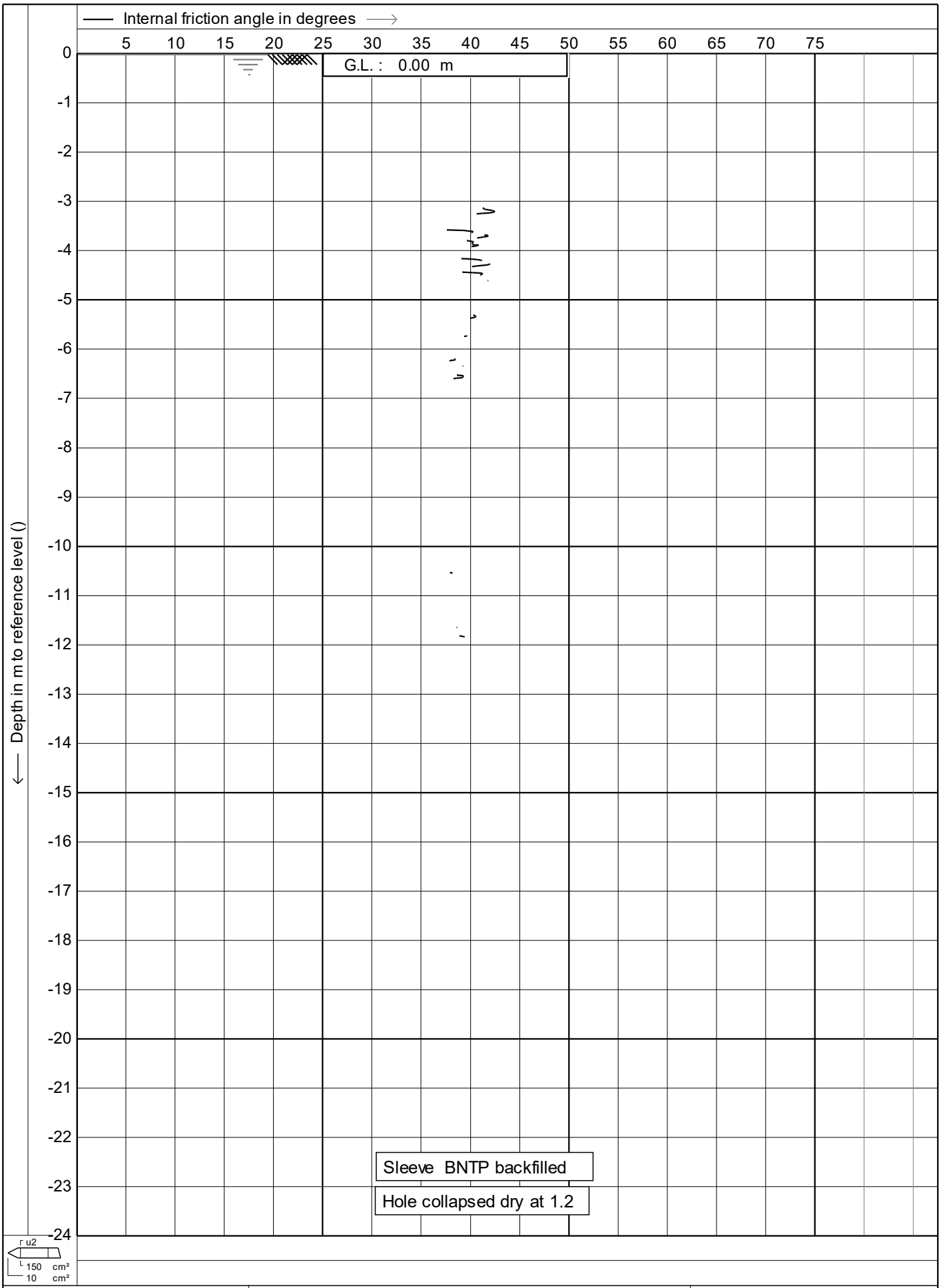
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002a**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

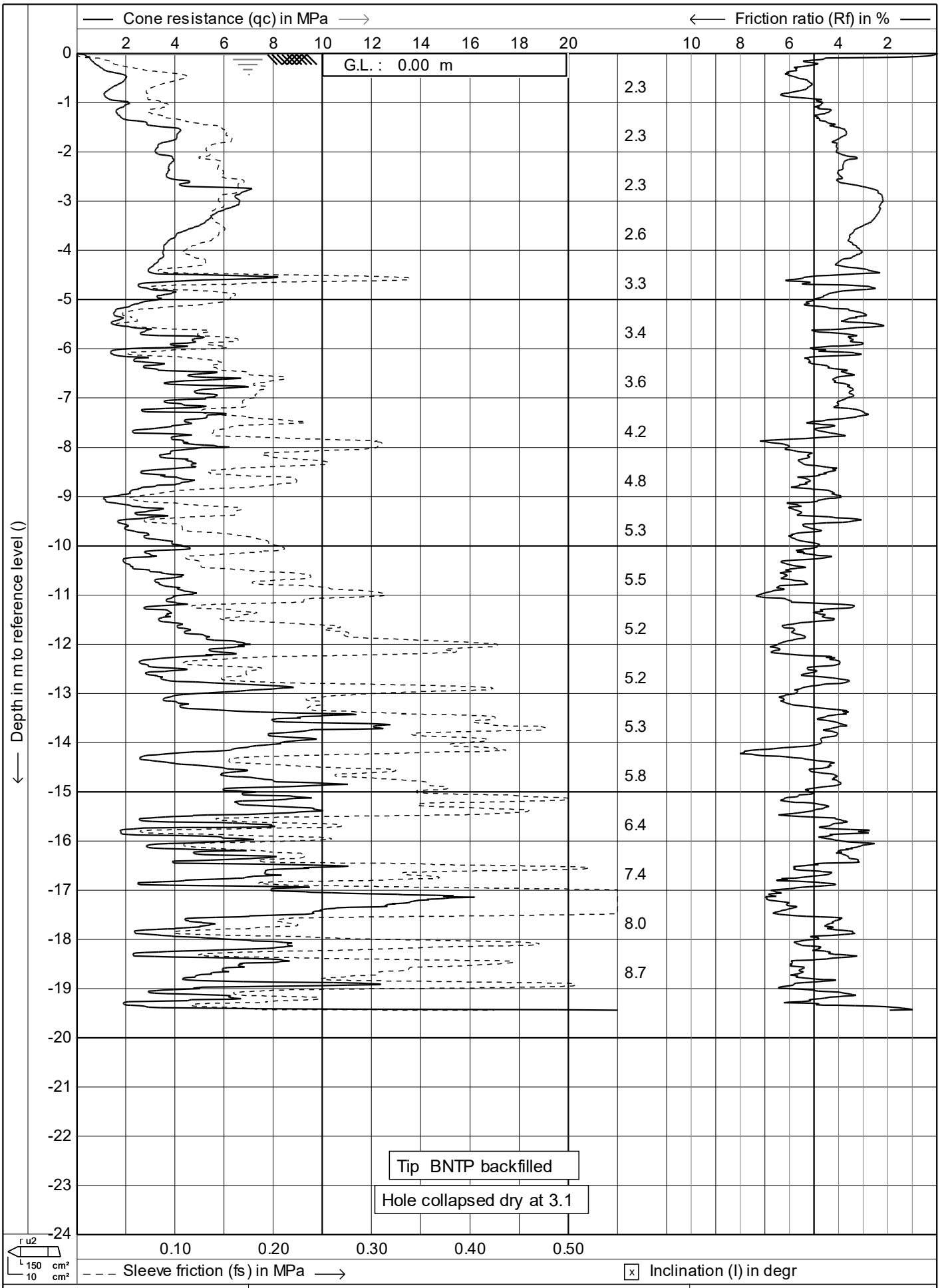
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **002a** **14/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

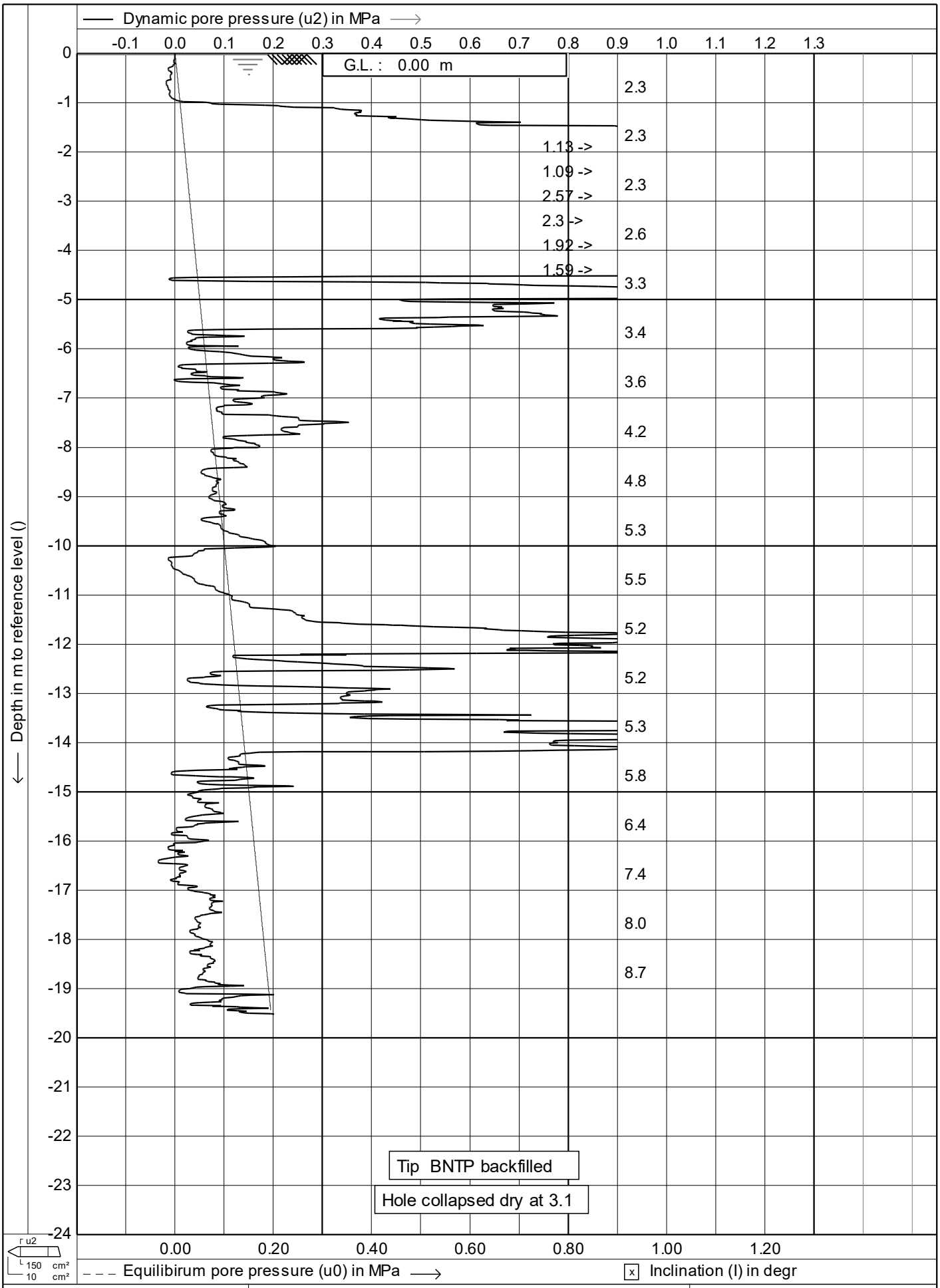
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **003**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

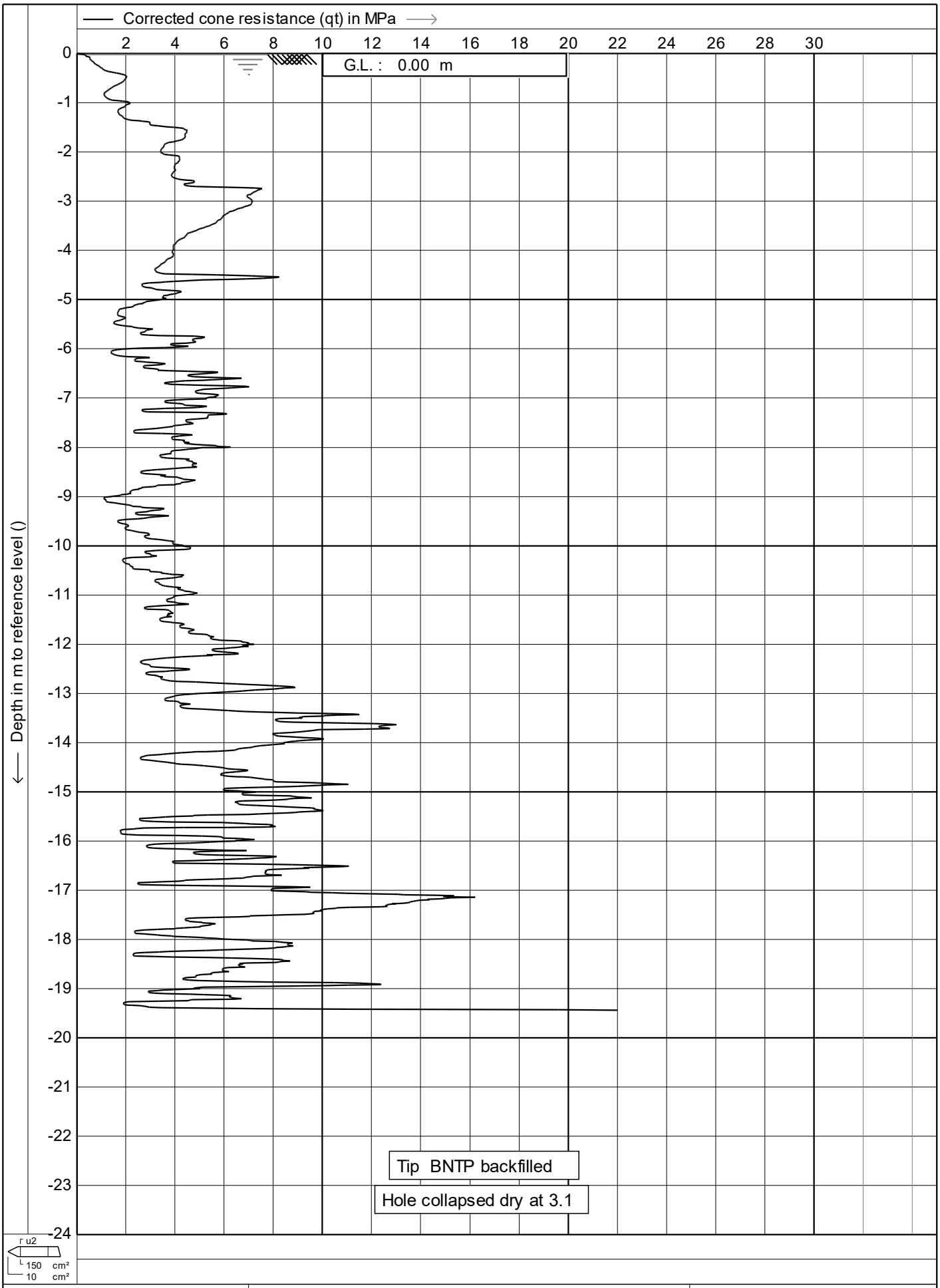
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Project no. : **05AU7**

CPT no. : **003**

2/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

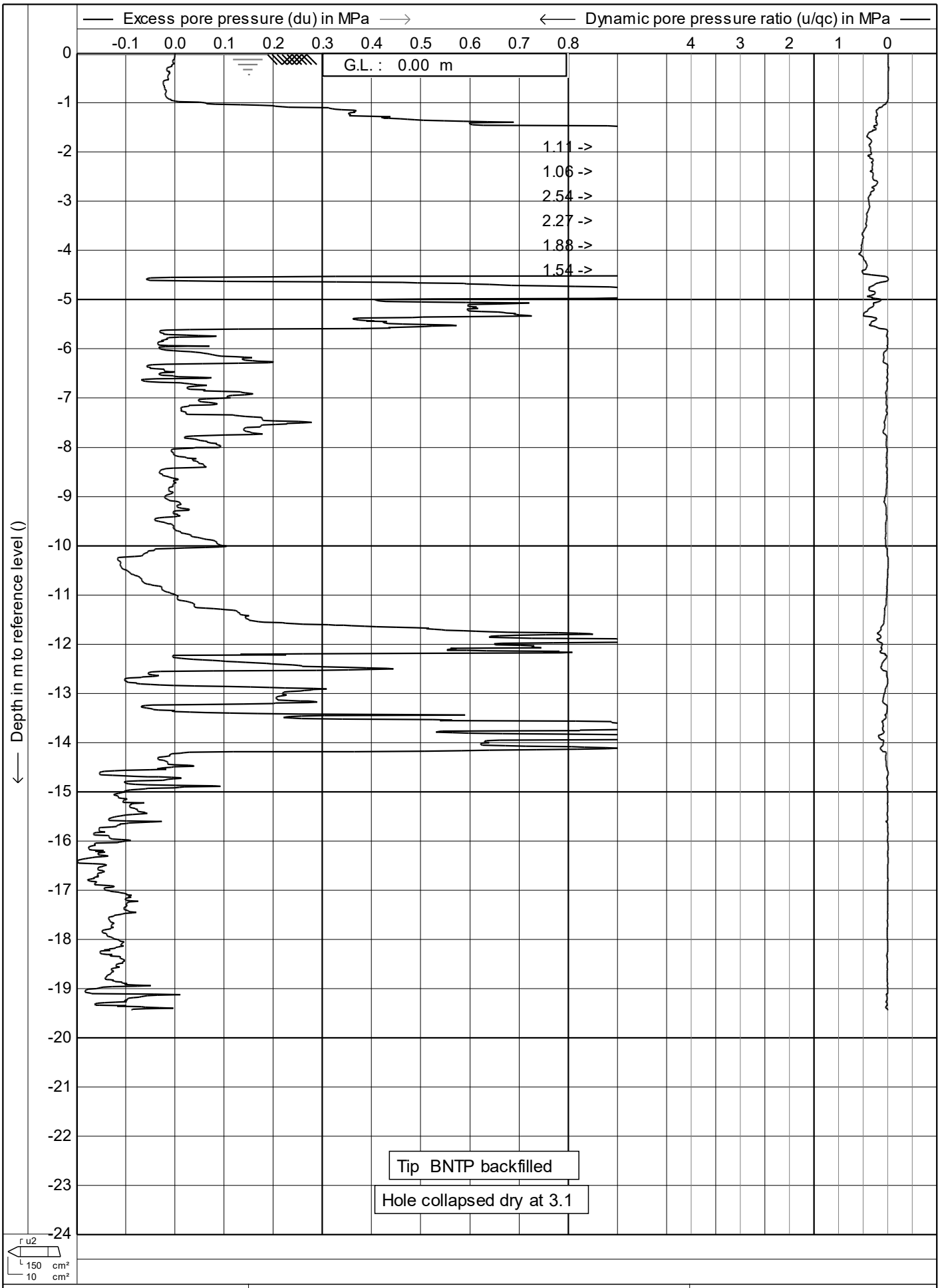
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **003** **3/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

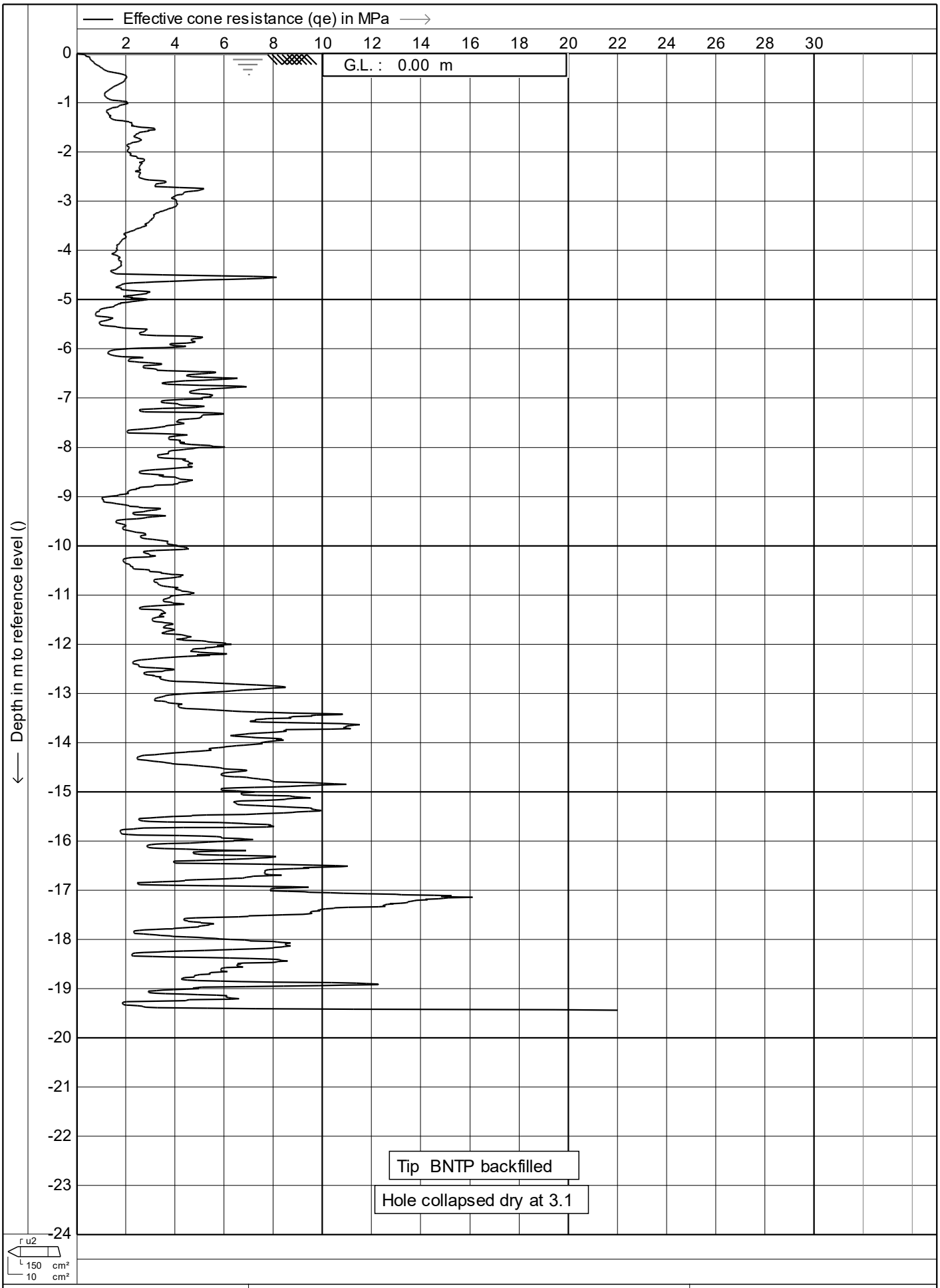
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **003** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

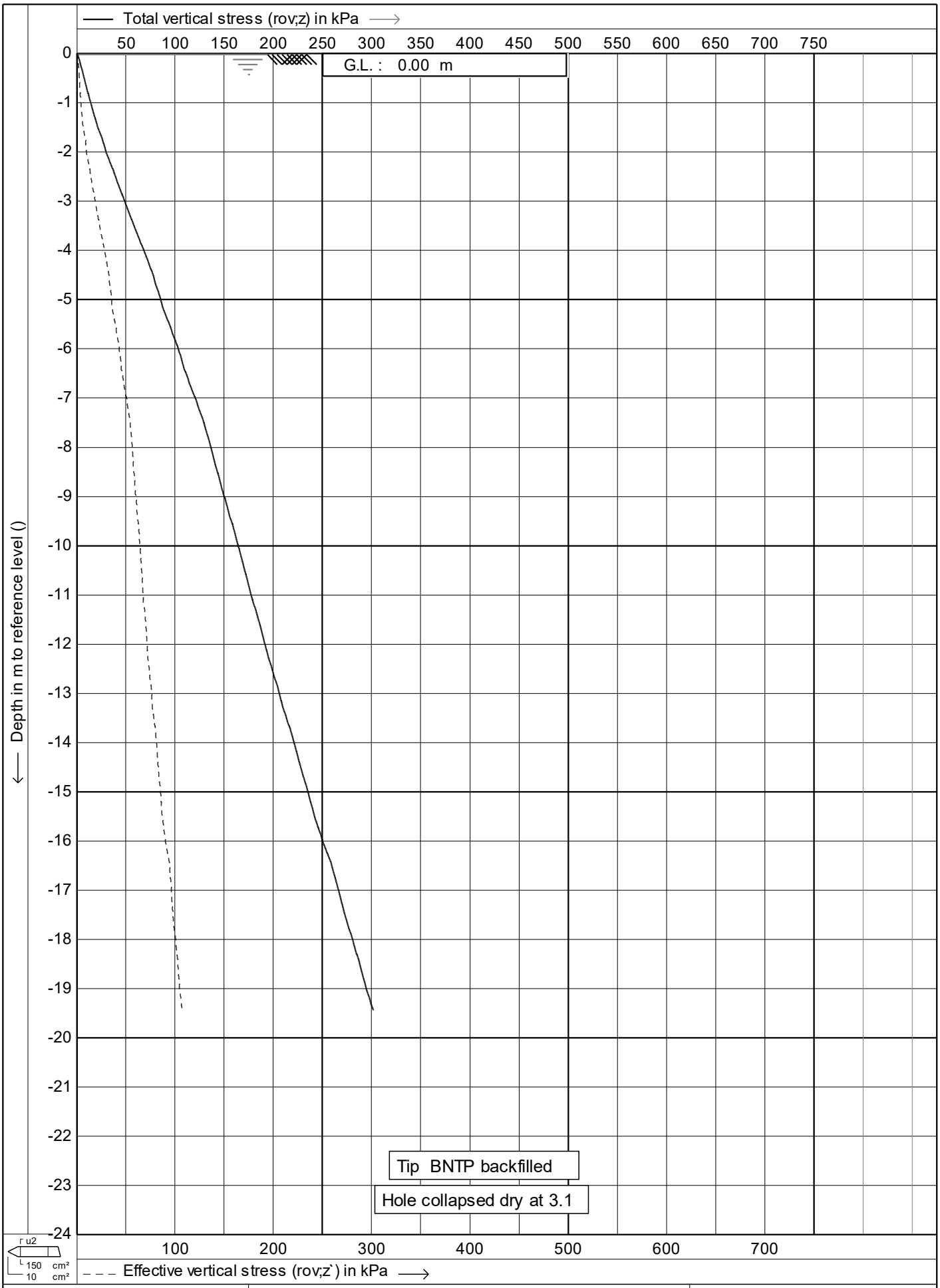
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **003**

5/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

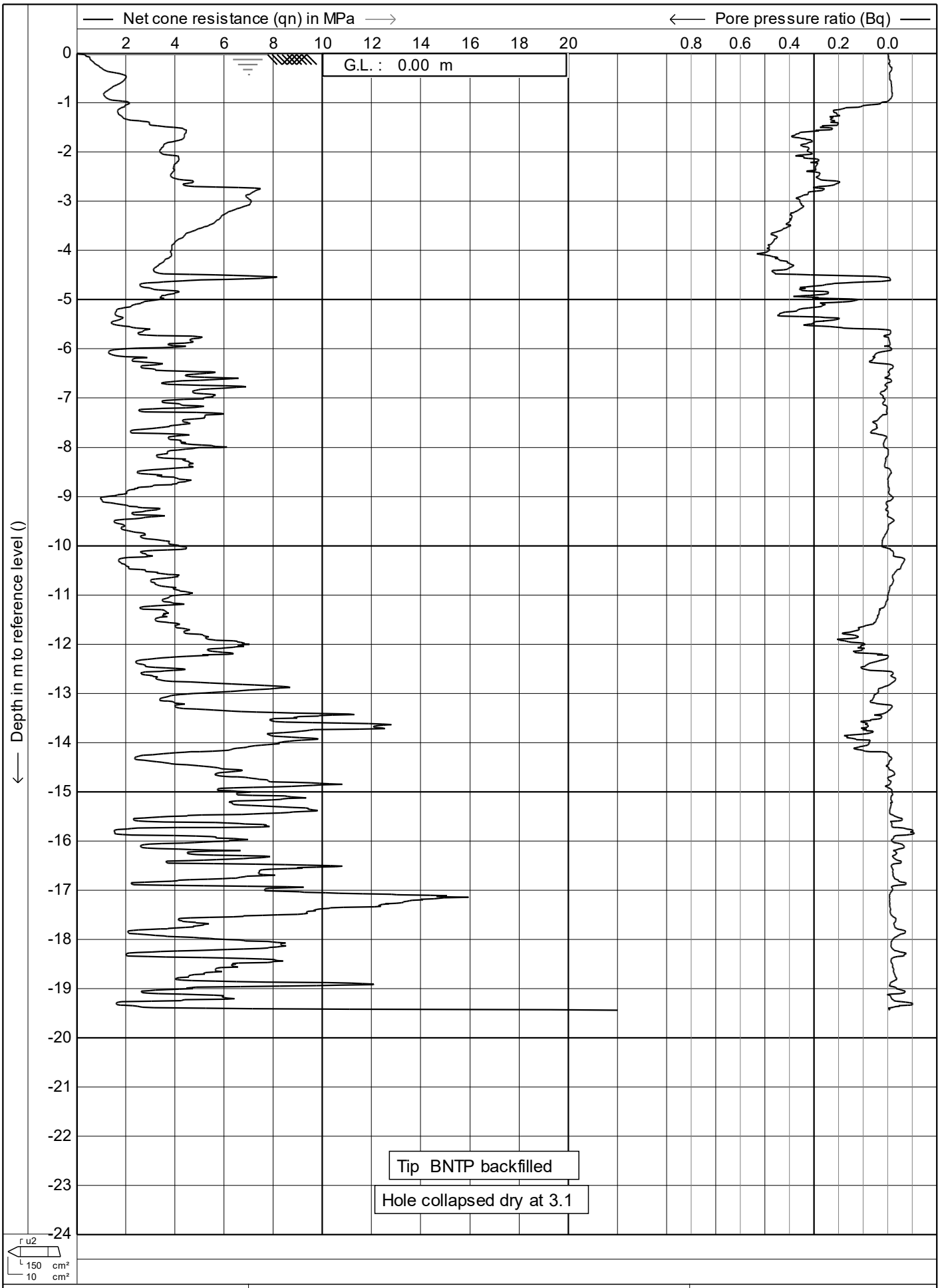
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Project no. : **05AU7**

CPT no. : **003**

6/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

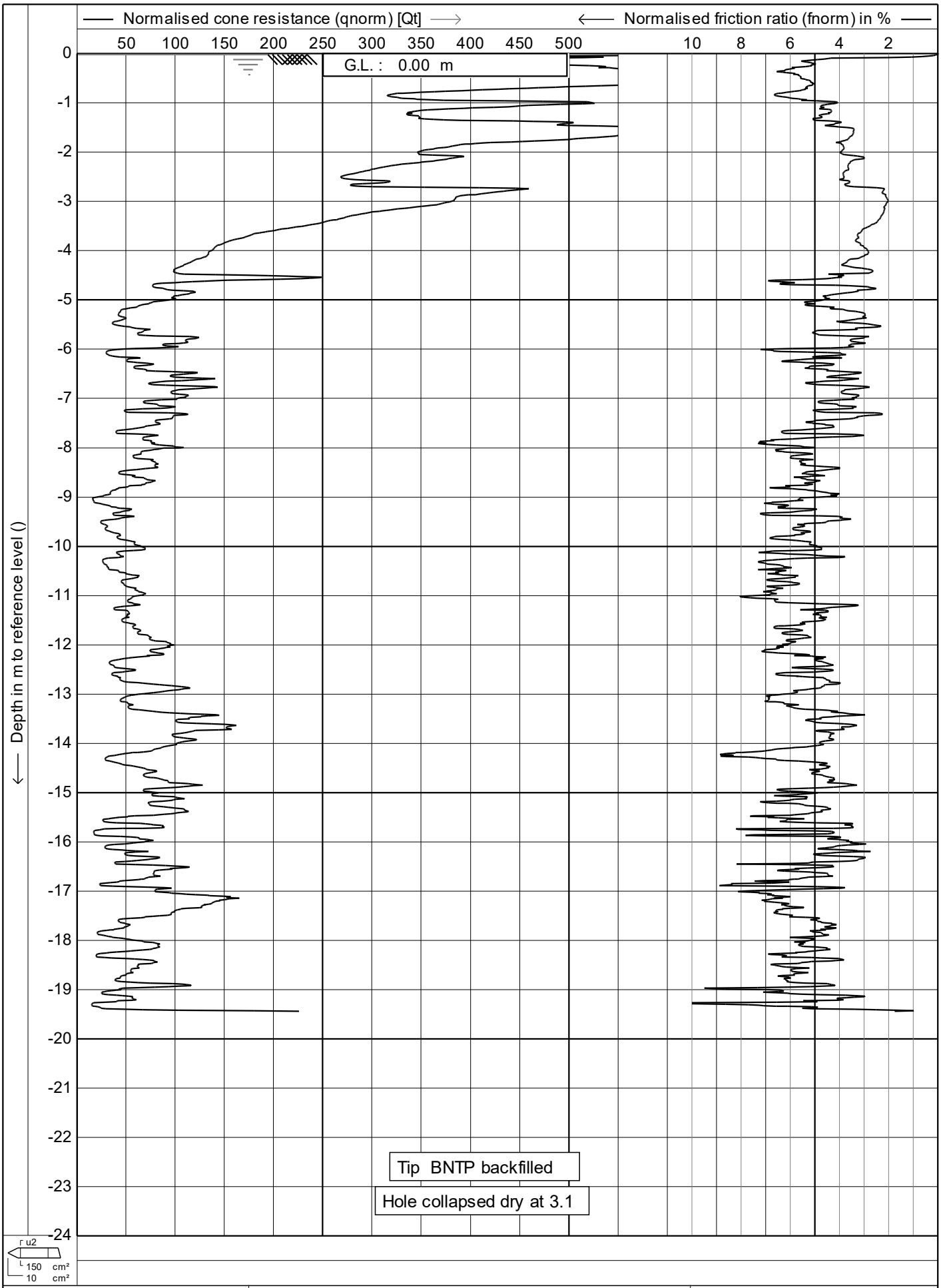
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **003**

7/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

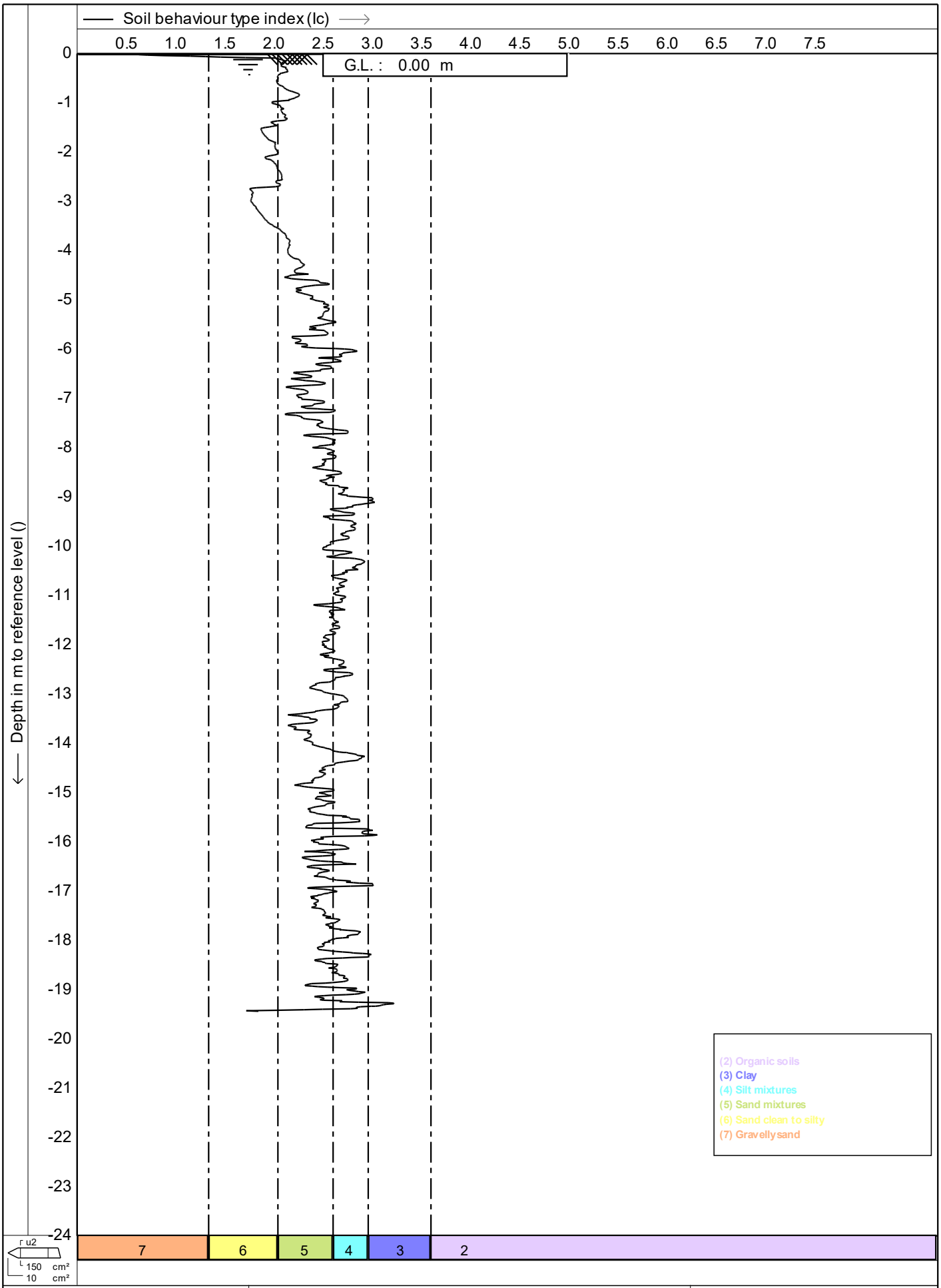
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **003**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

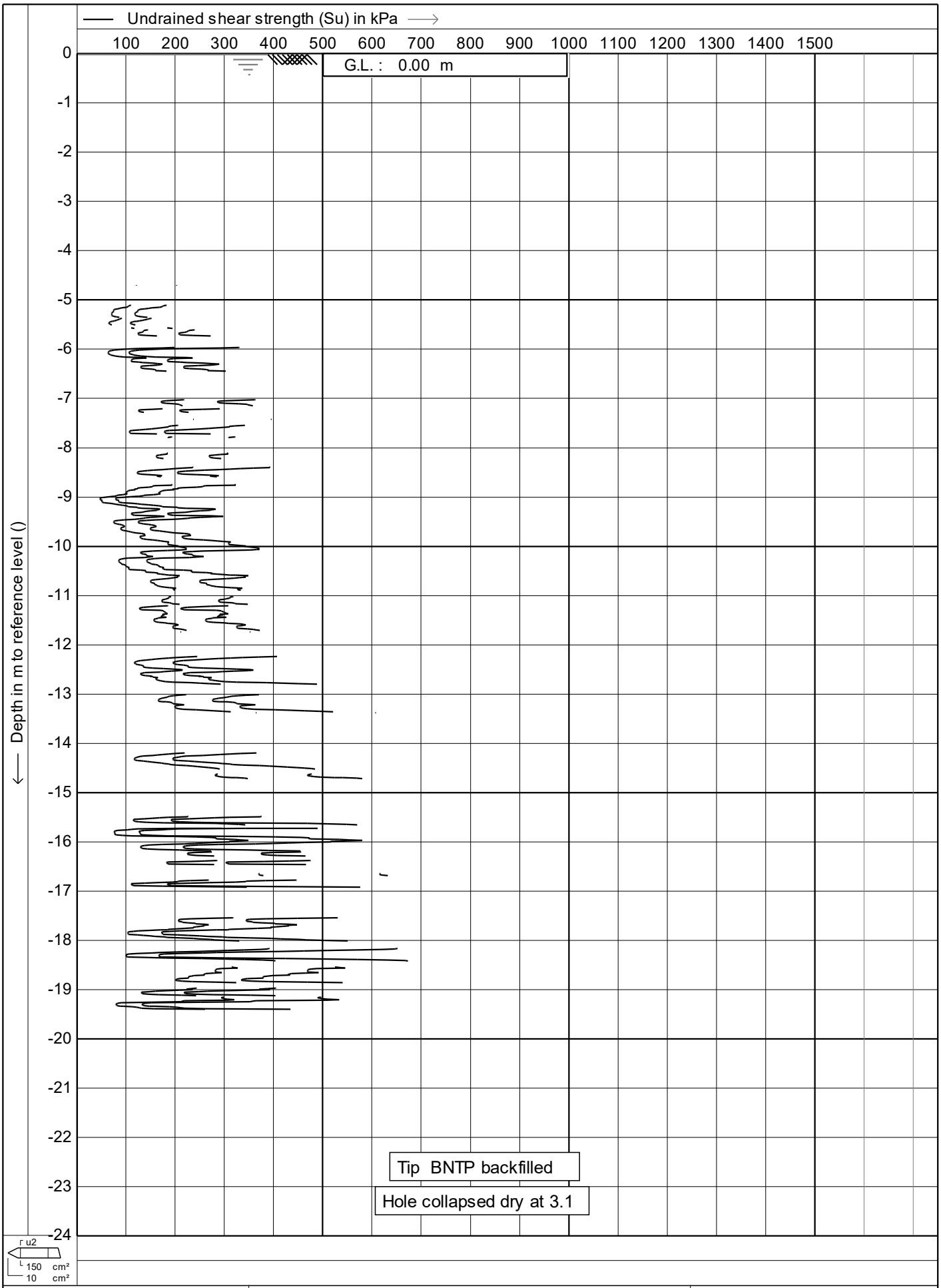
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **003** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

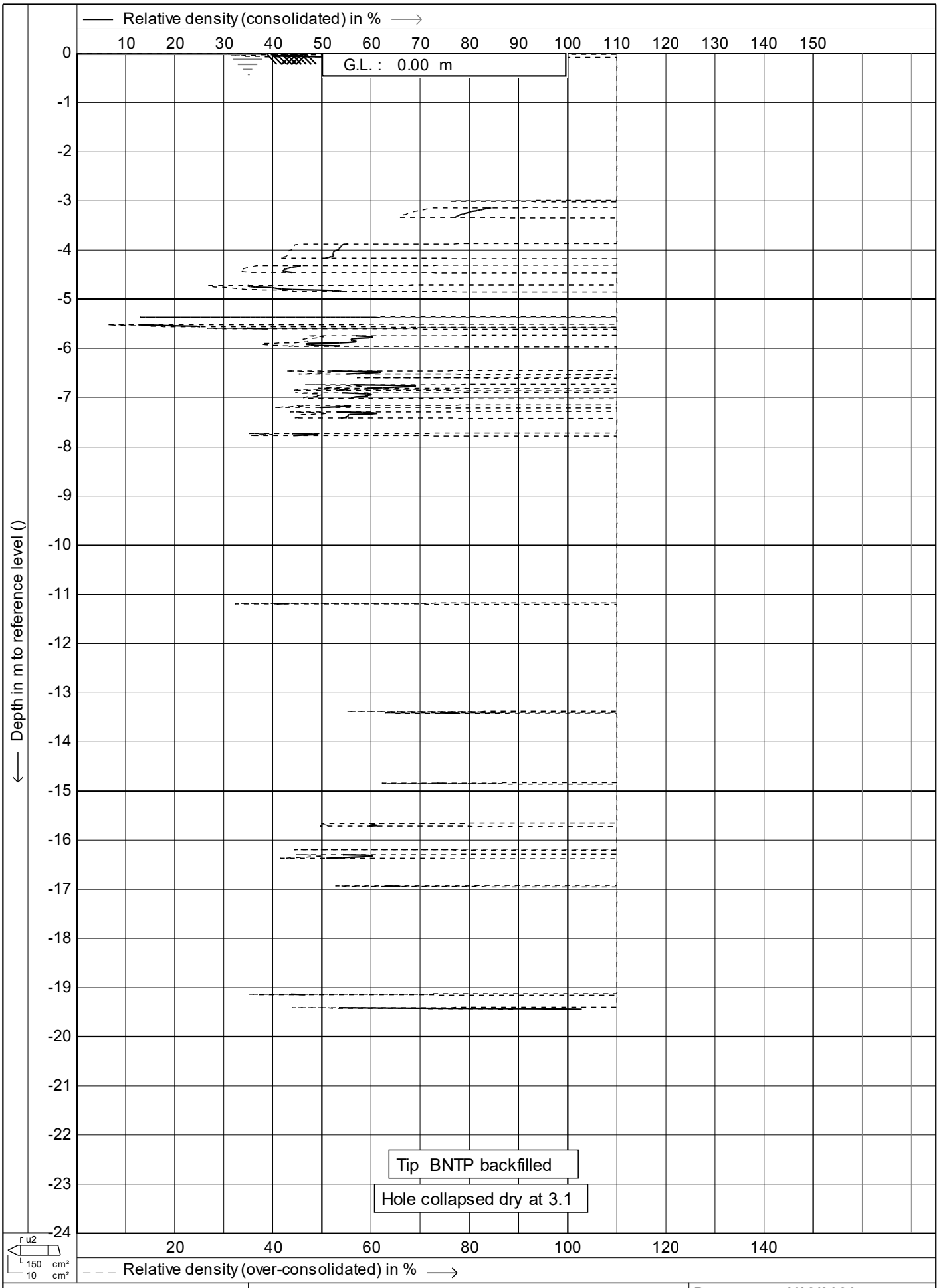
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **003**

10/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

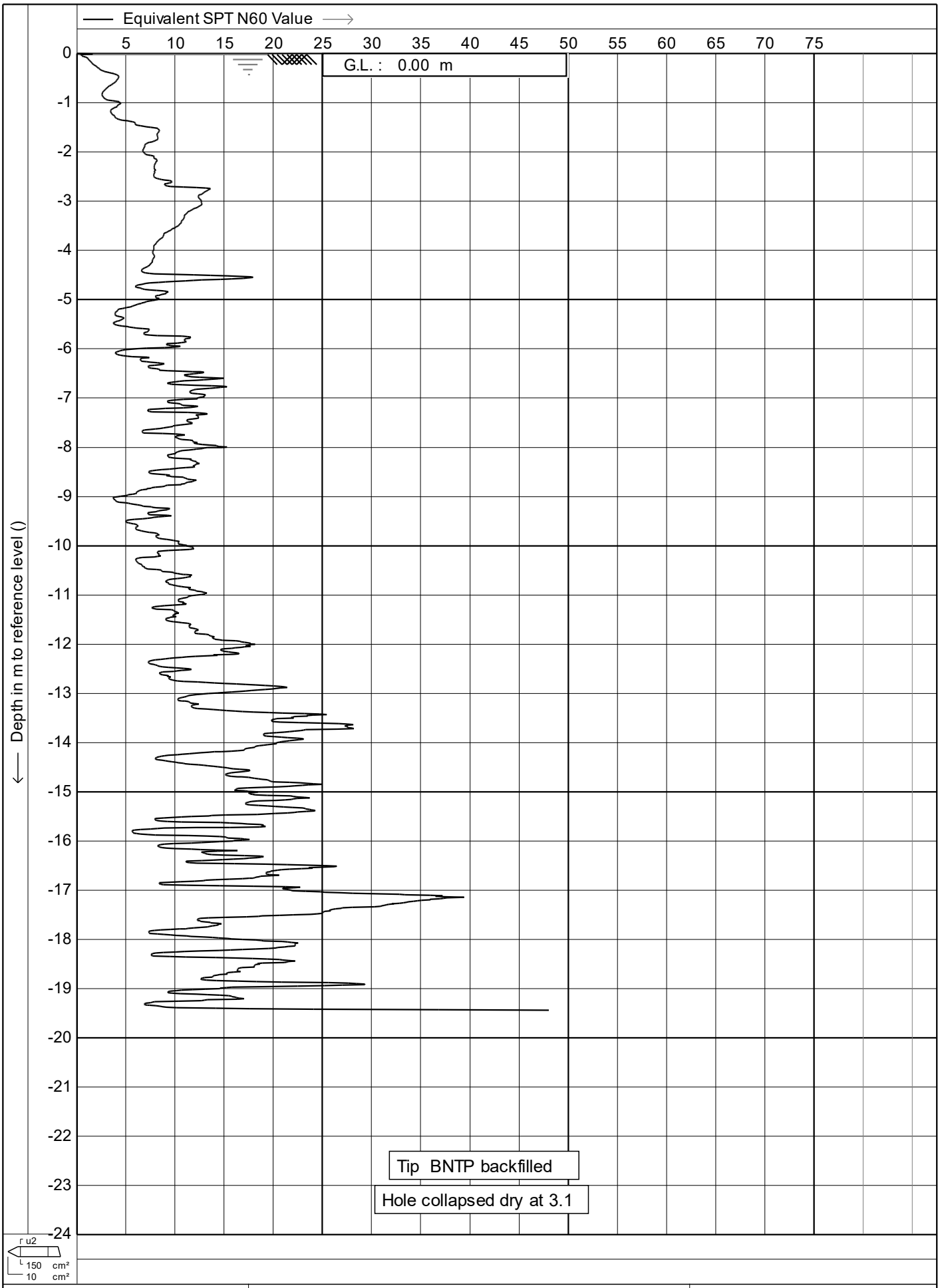
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **003**

11/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

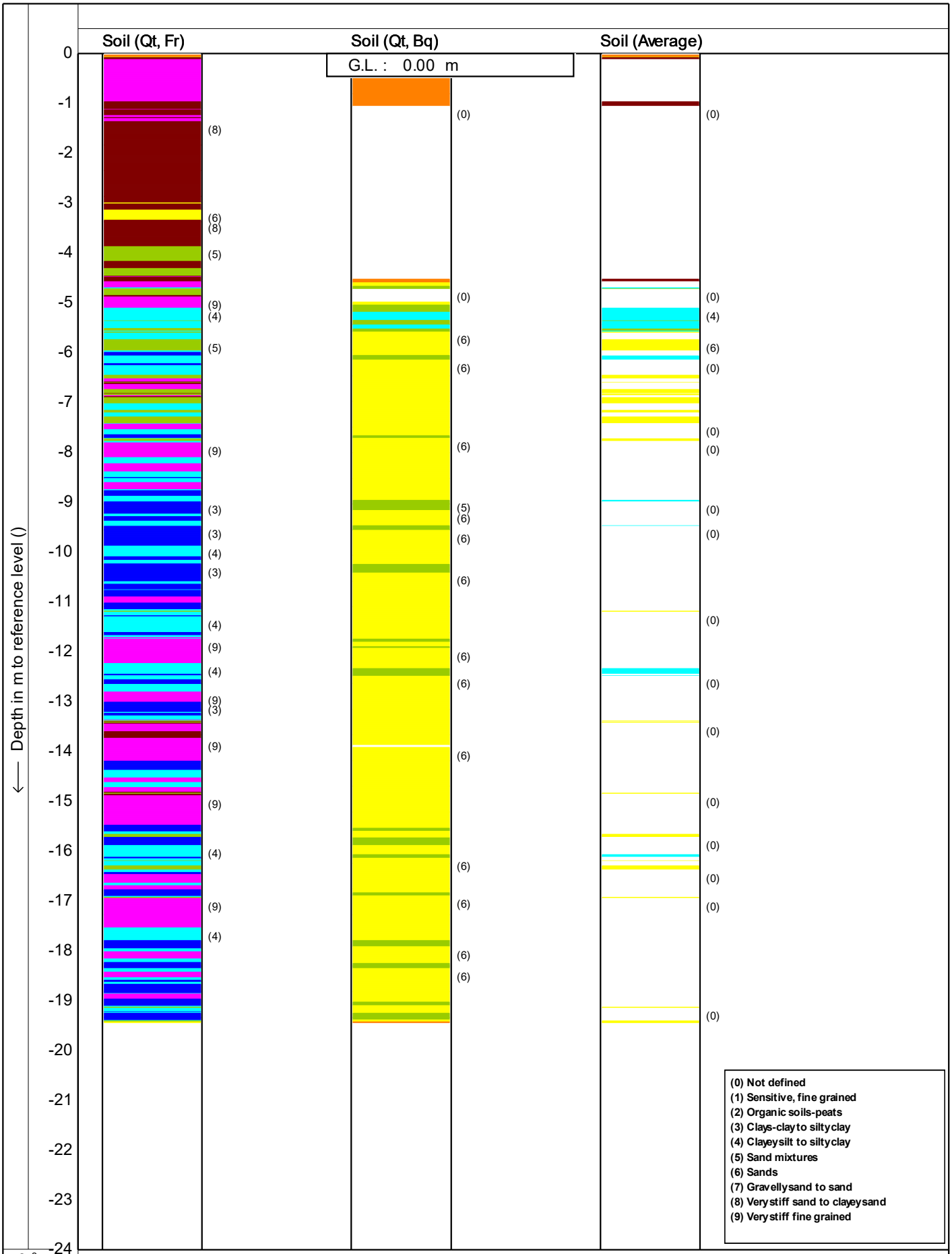
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **003**

12/14

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

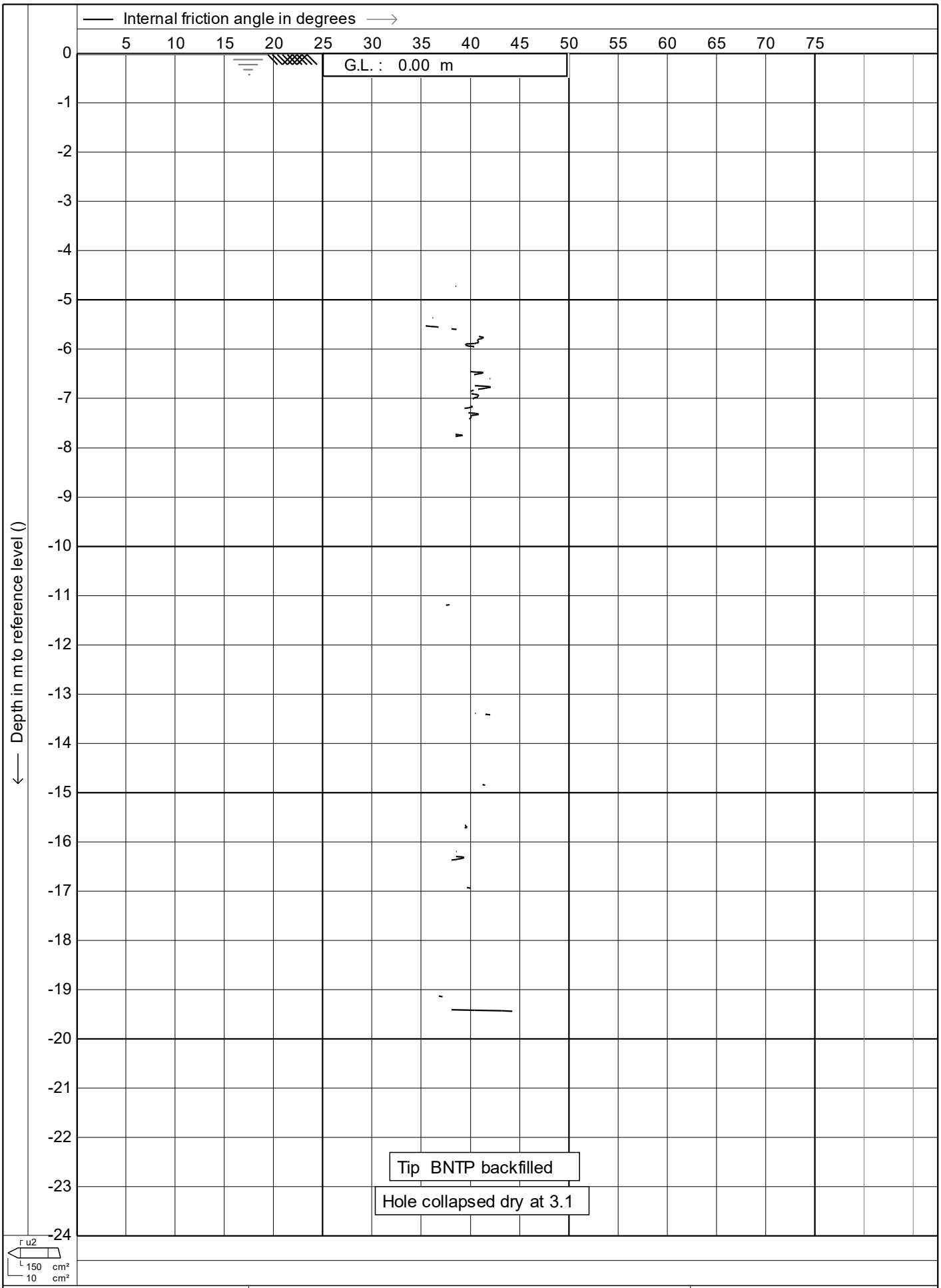
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **003**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

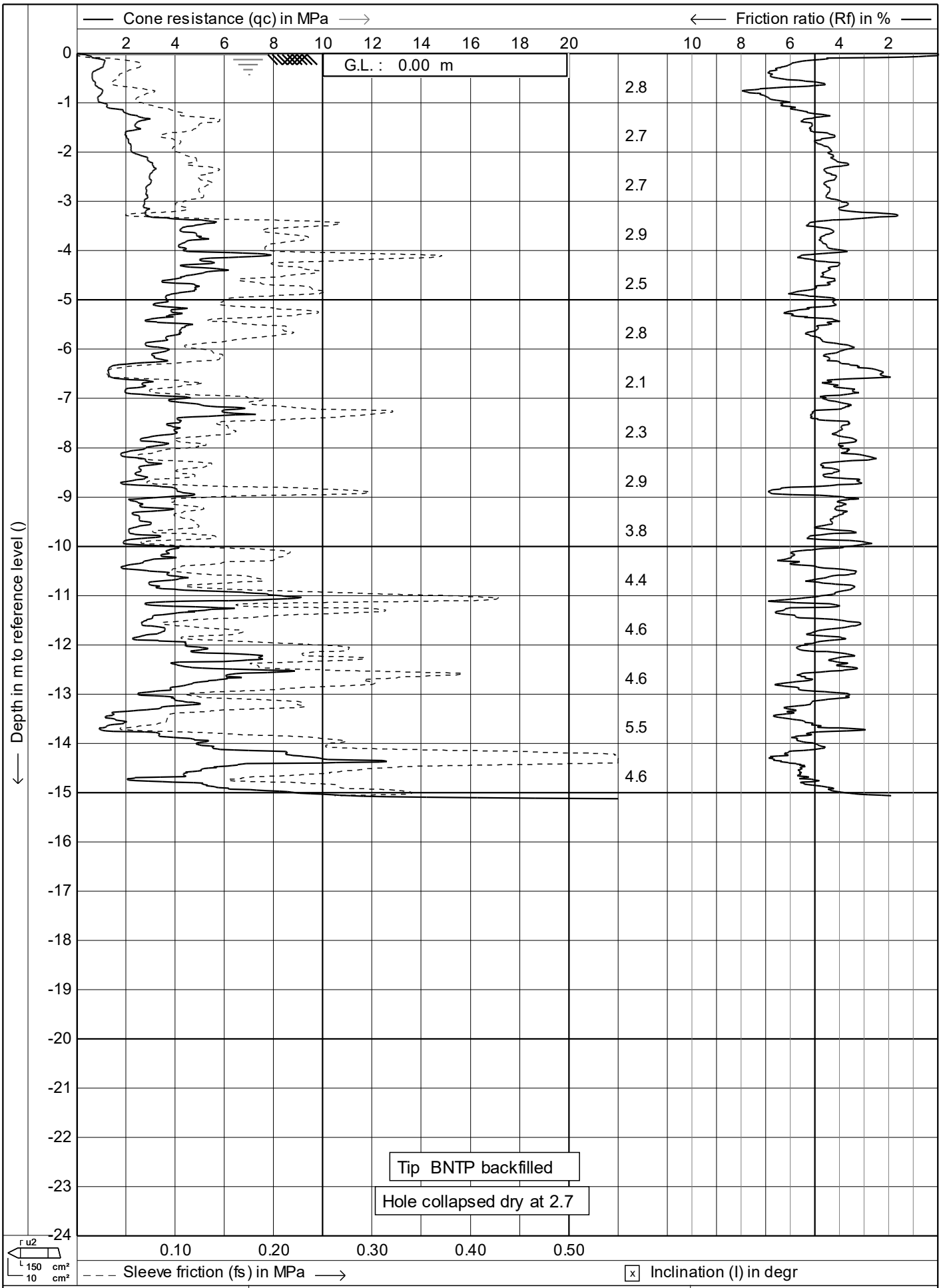
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **003**

14/14

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

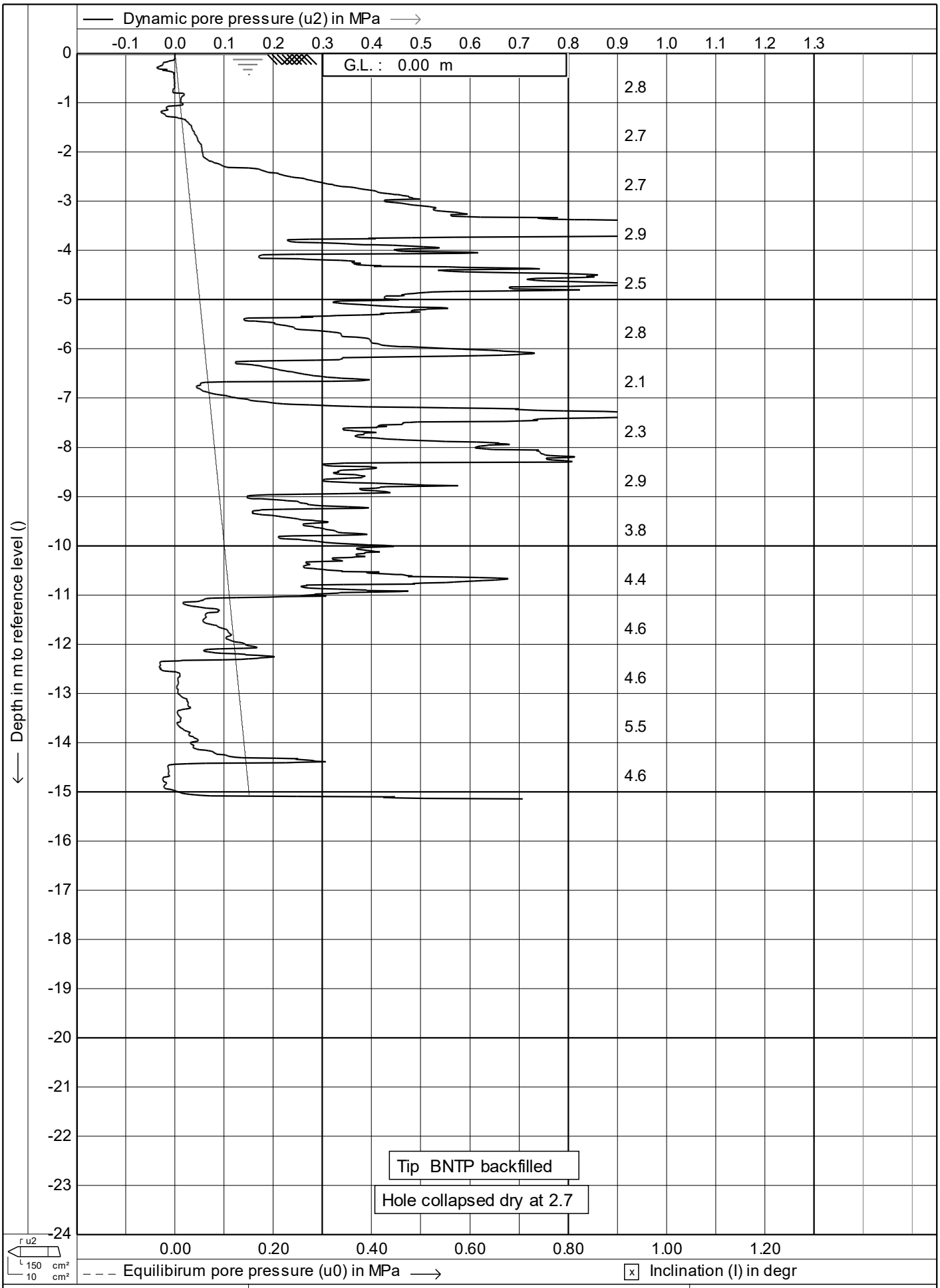
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Project no. : **05AU7**

CPT no. : **004**

1/14

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

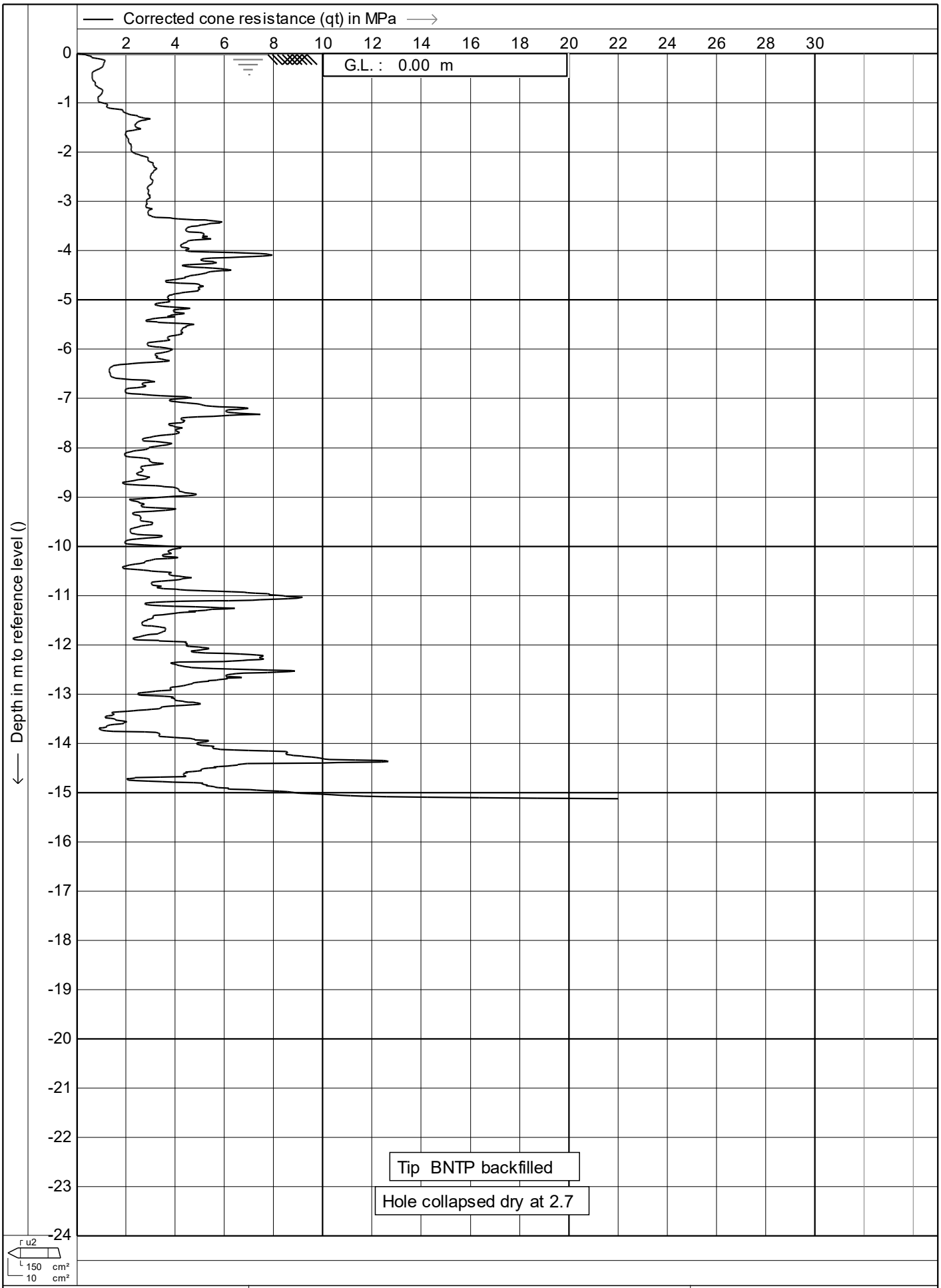
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

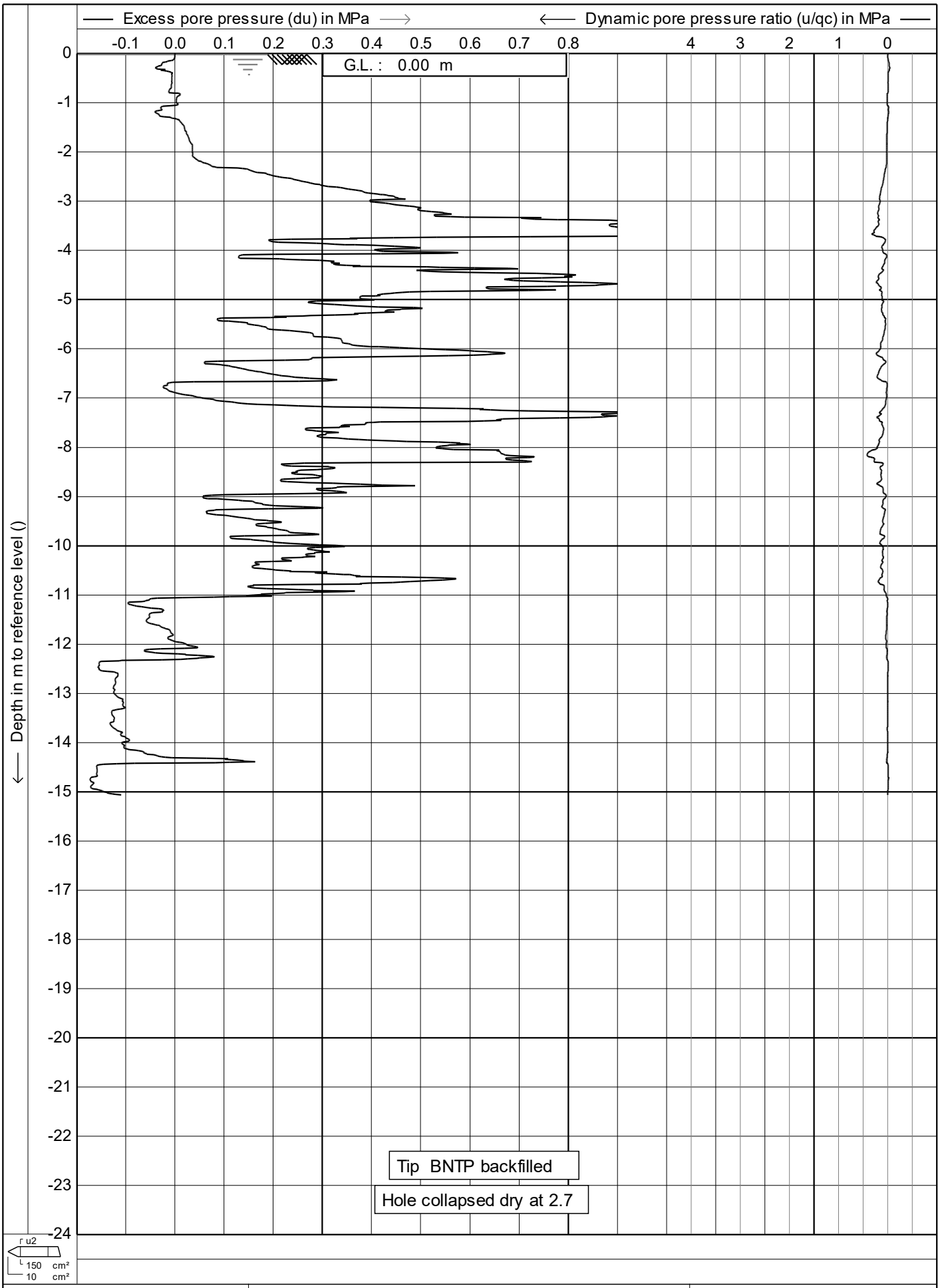
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **004** **3/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

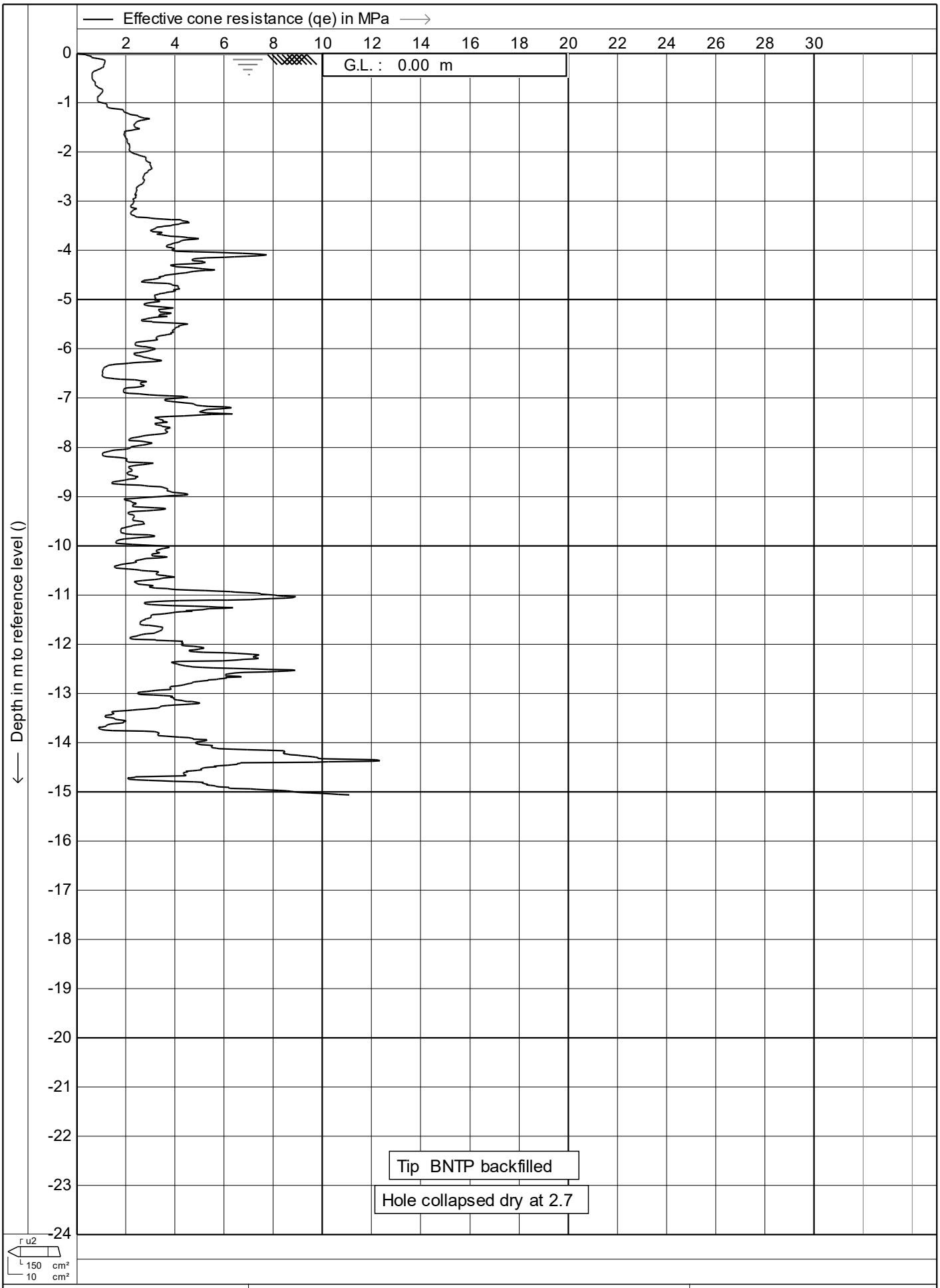
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **004**

4/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

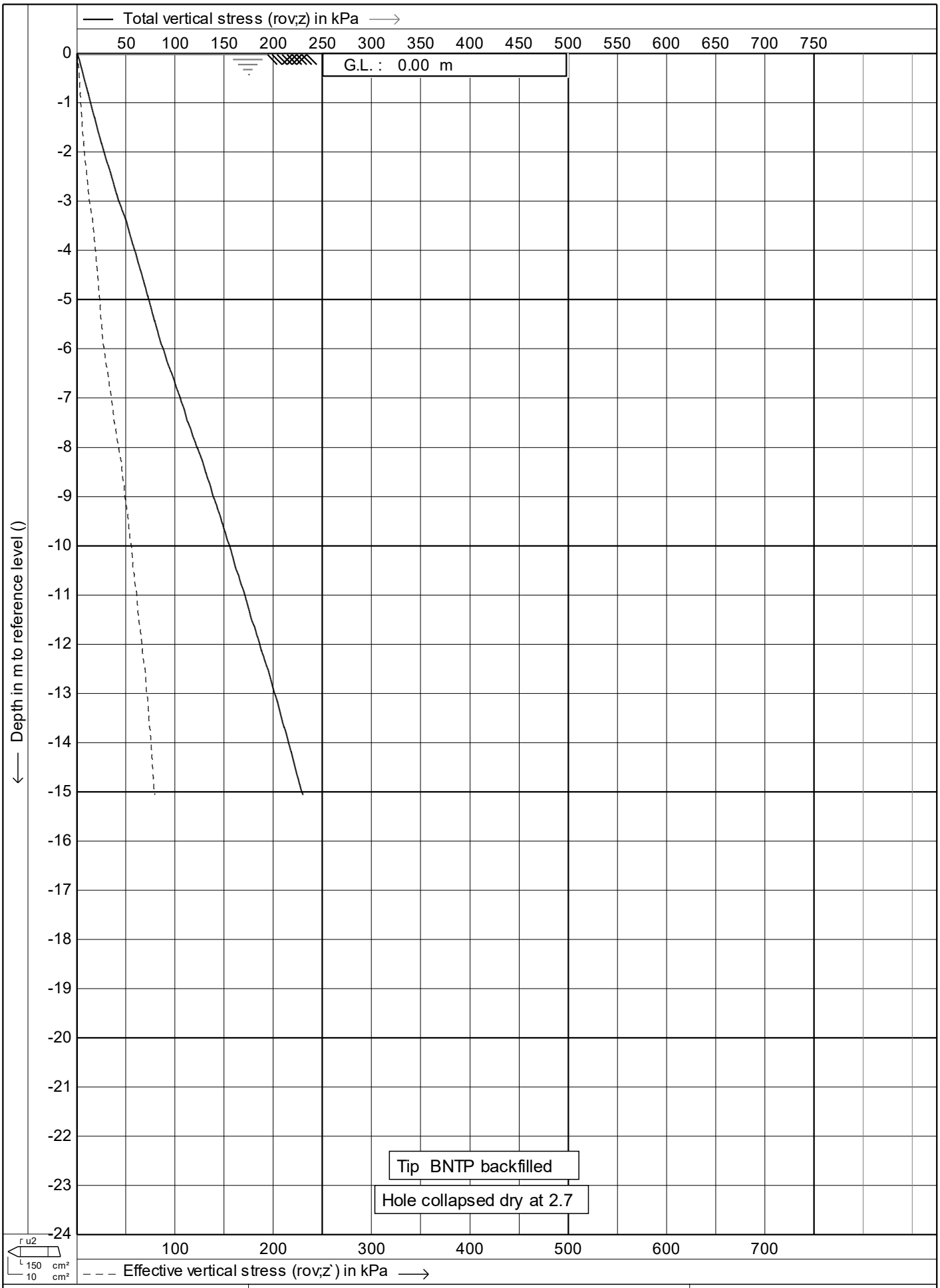
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **004** **5/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

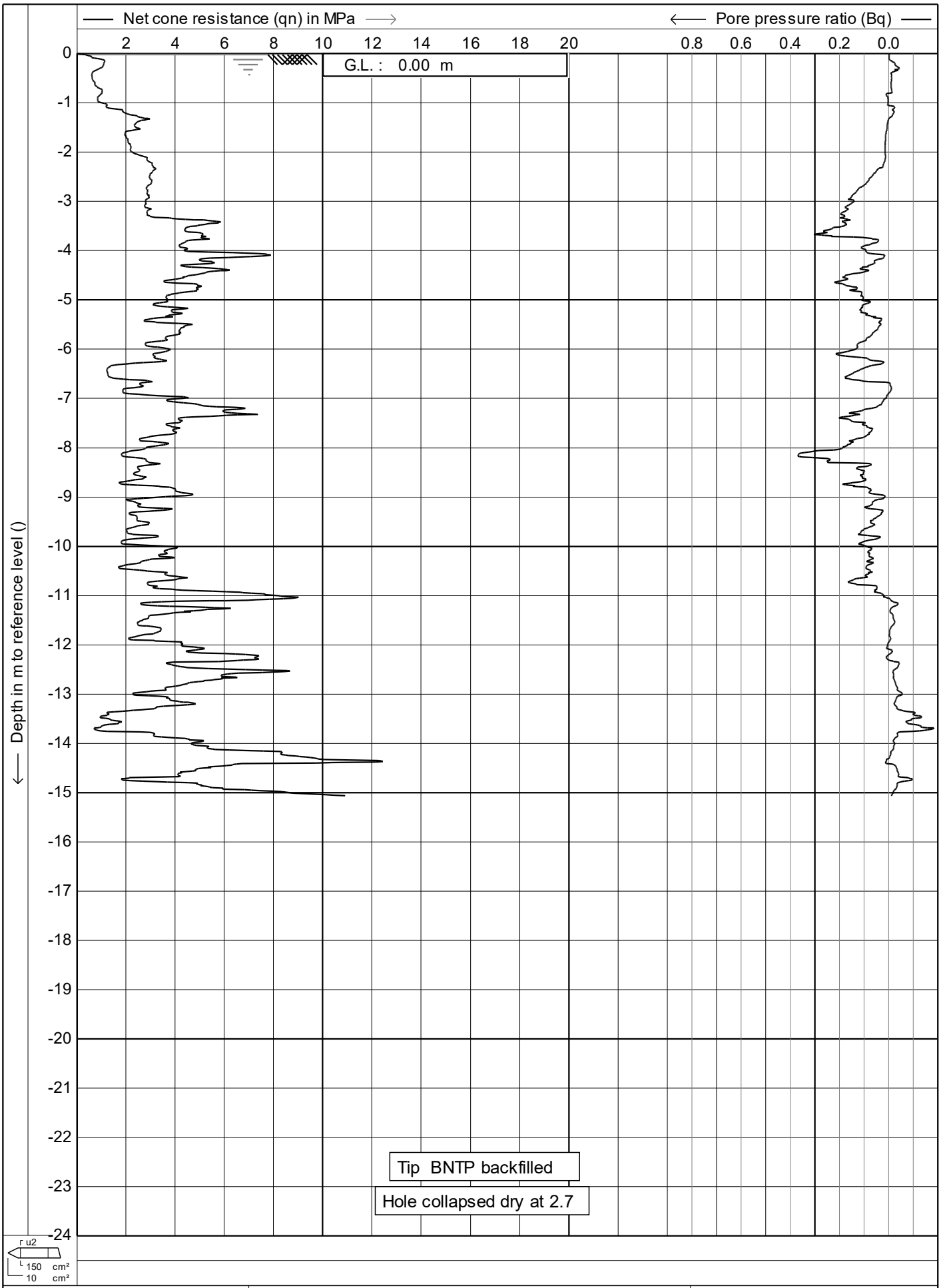
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **004**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

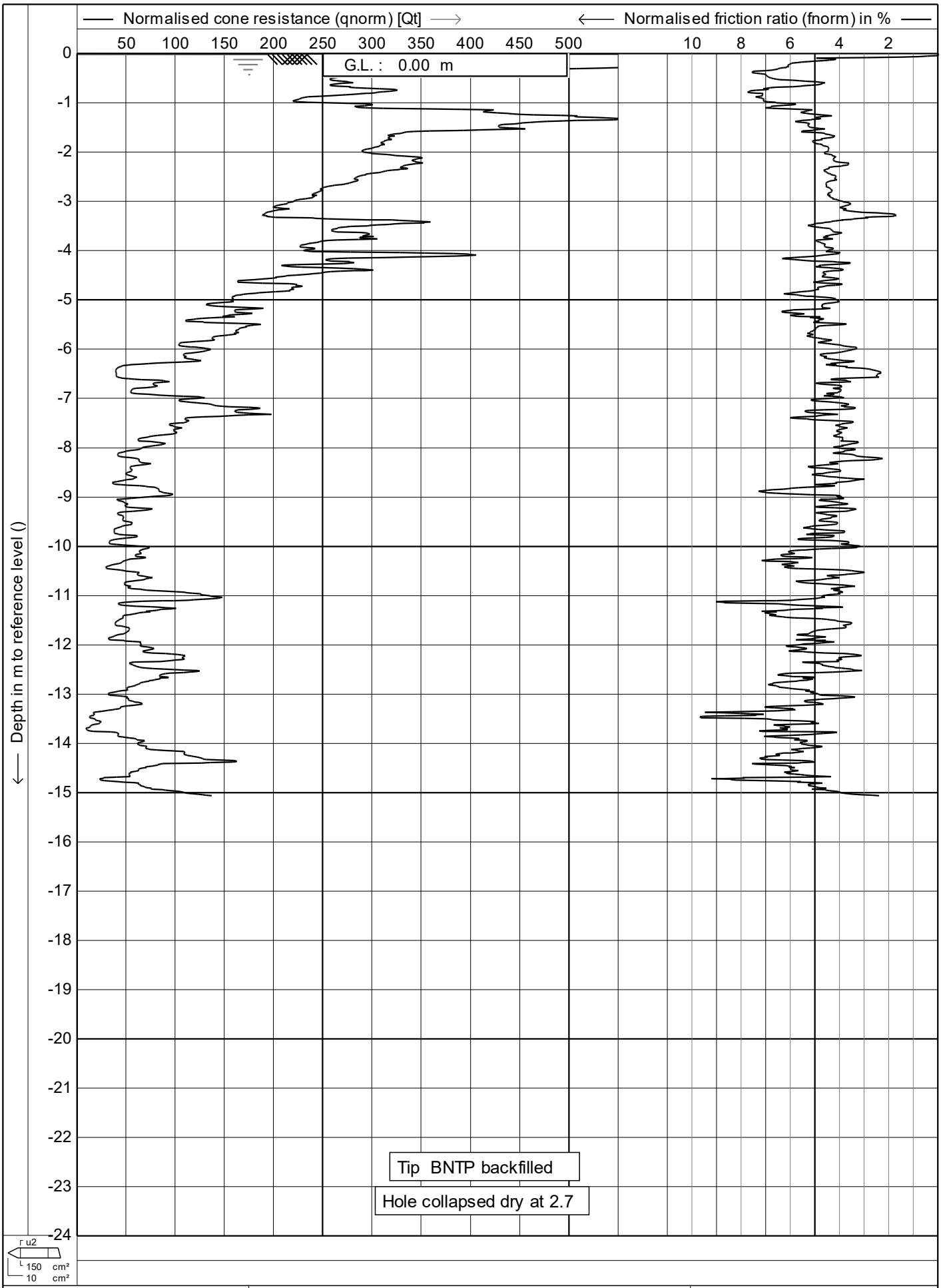
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **004** **7/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

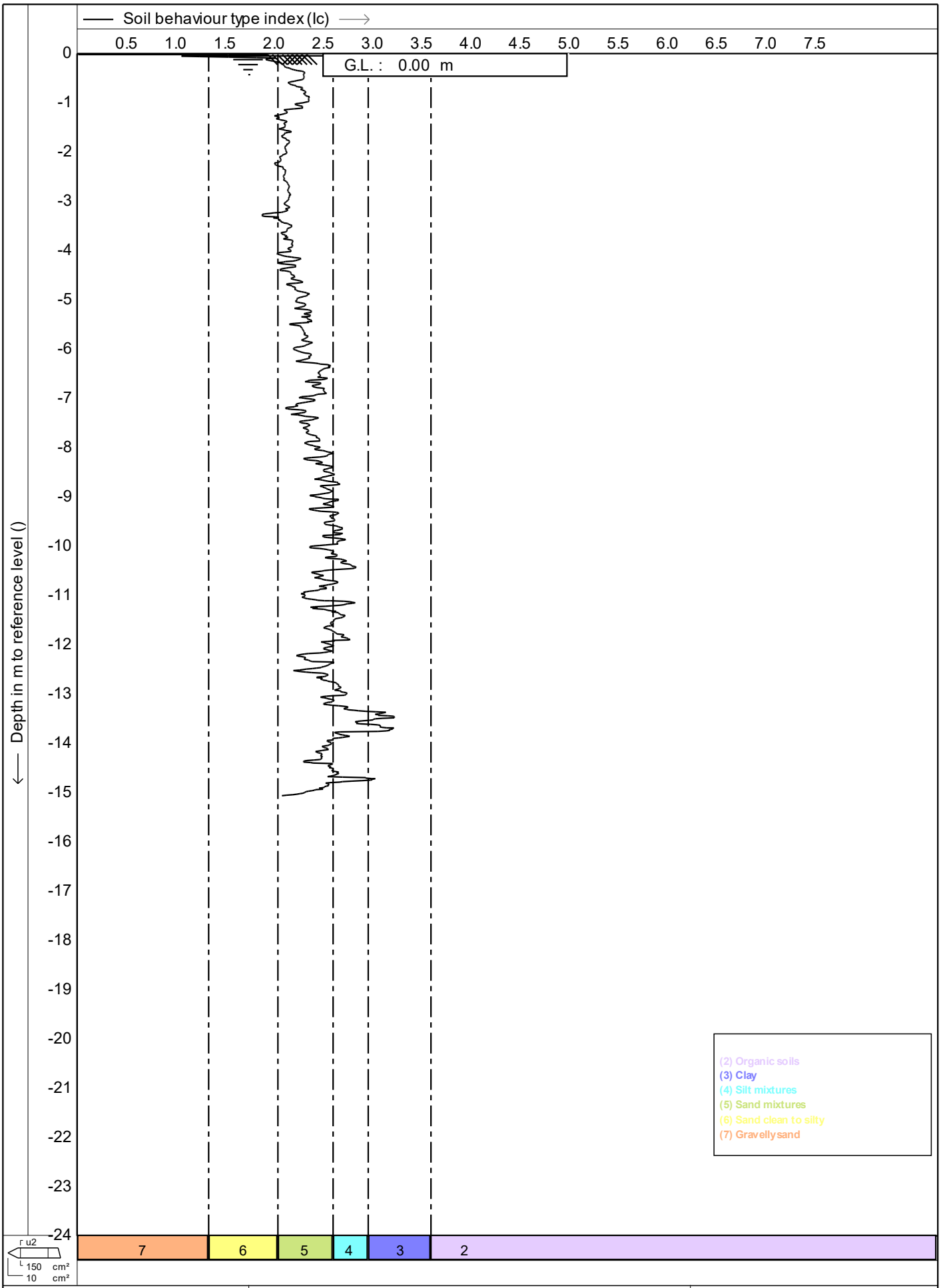
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **004** **8/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

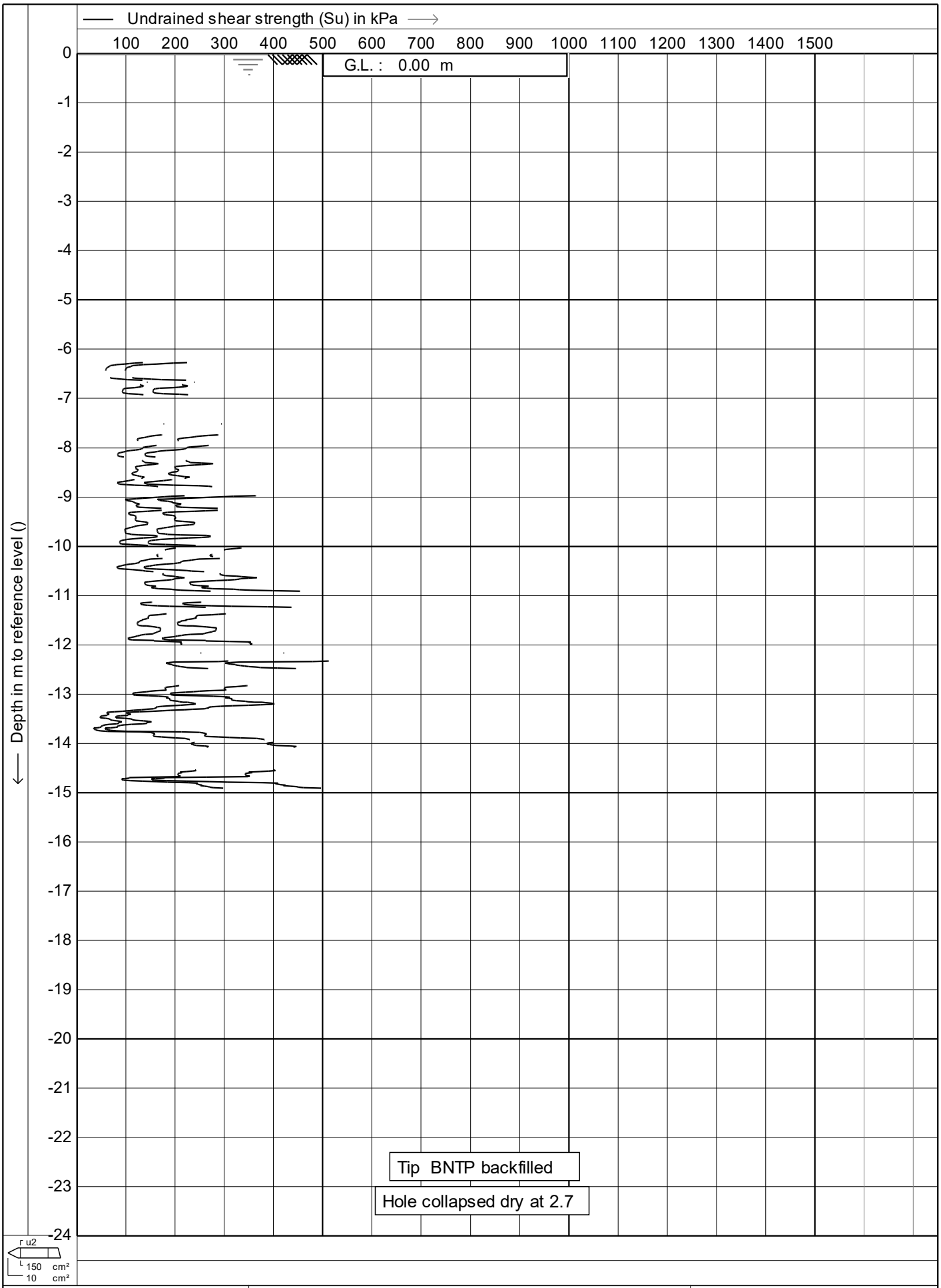
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **004** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

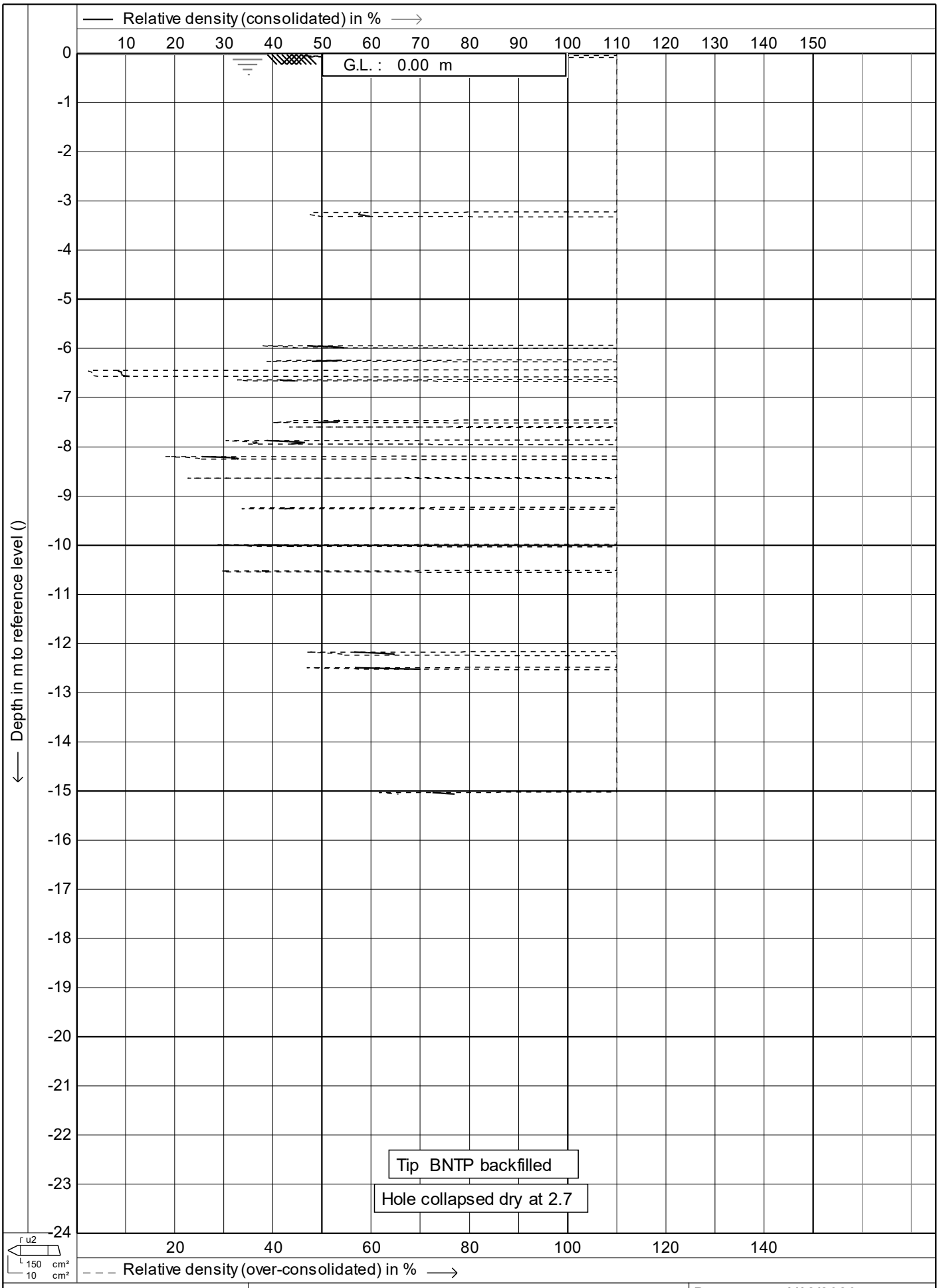
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **004**

10/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

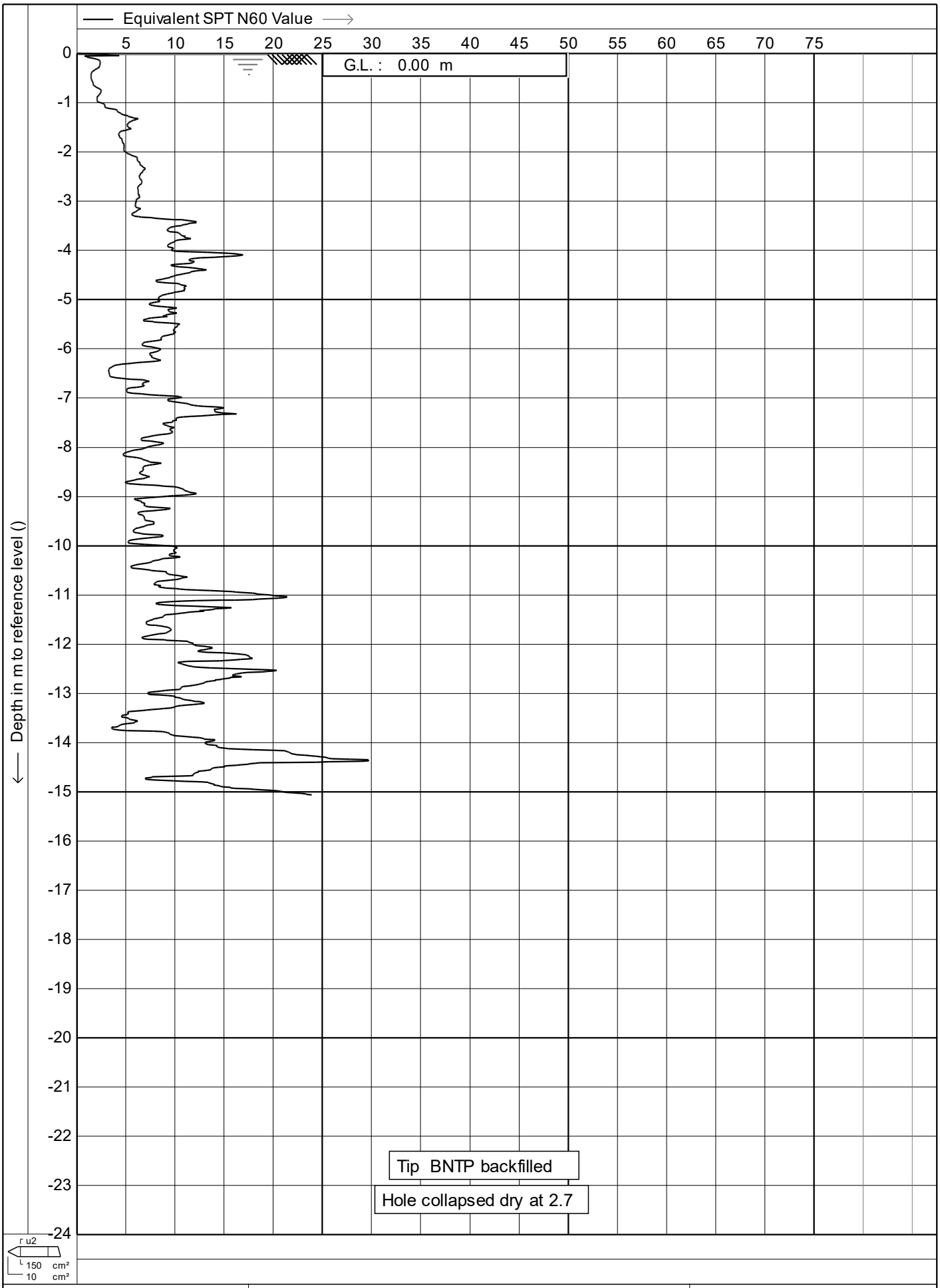
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **004**

11/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

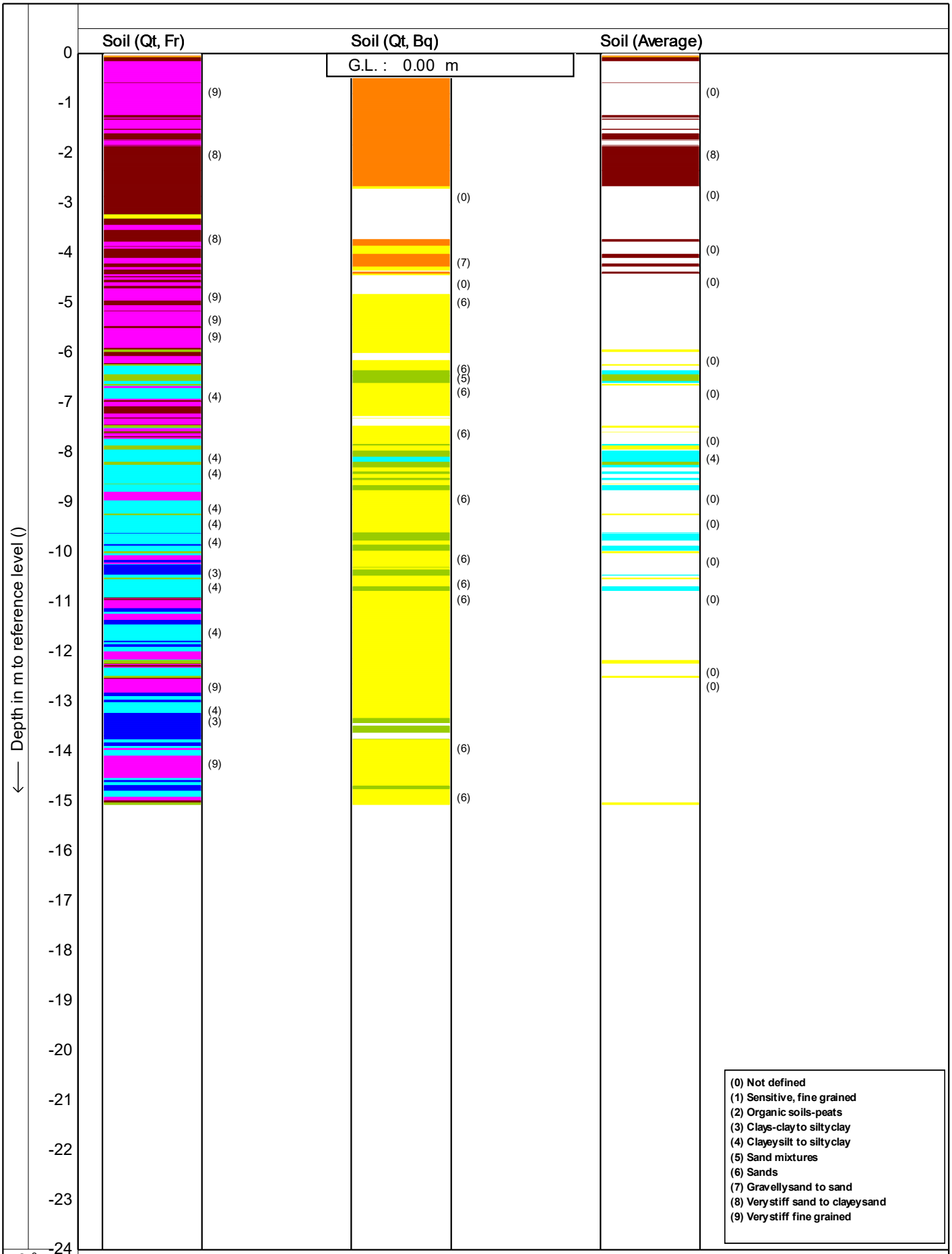
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **004**

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

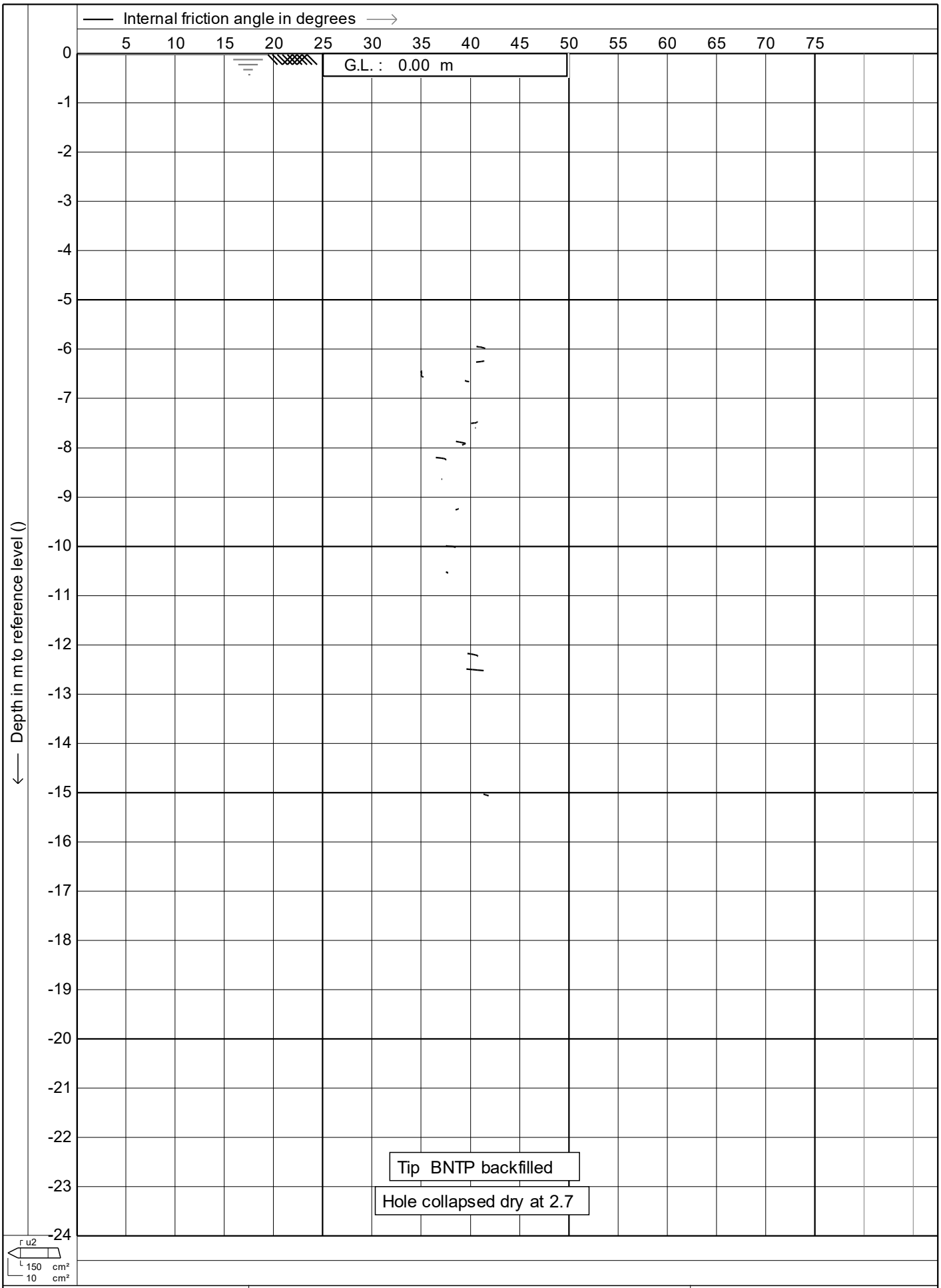
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **004**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

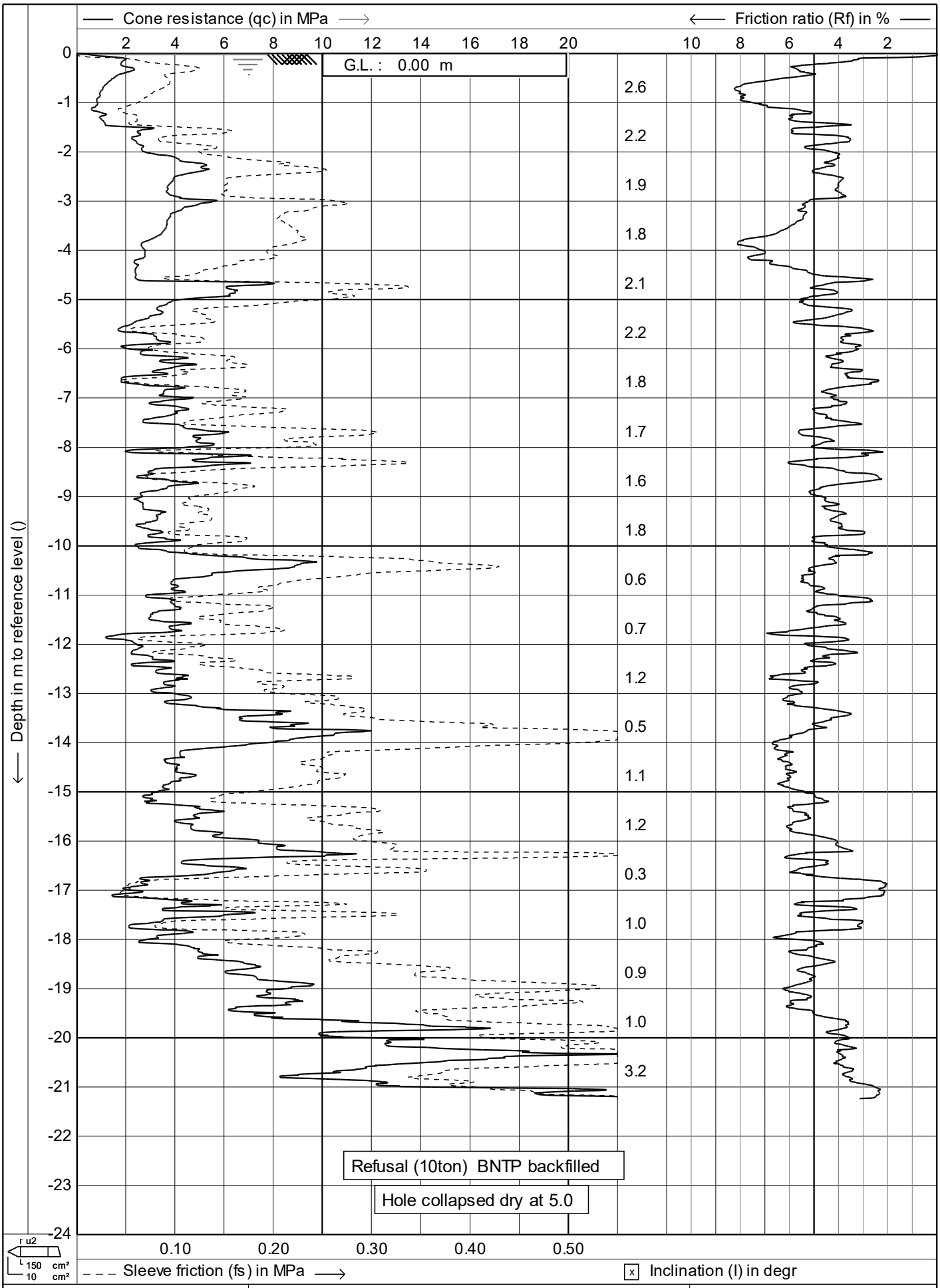
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **004**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

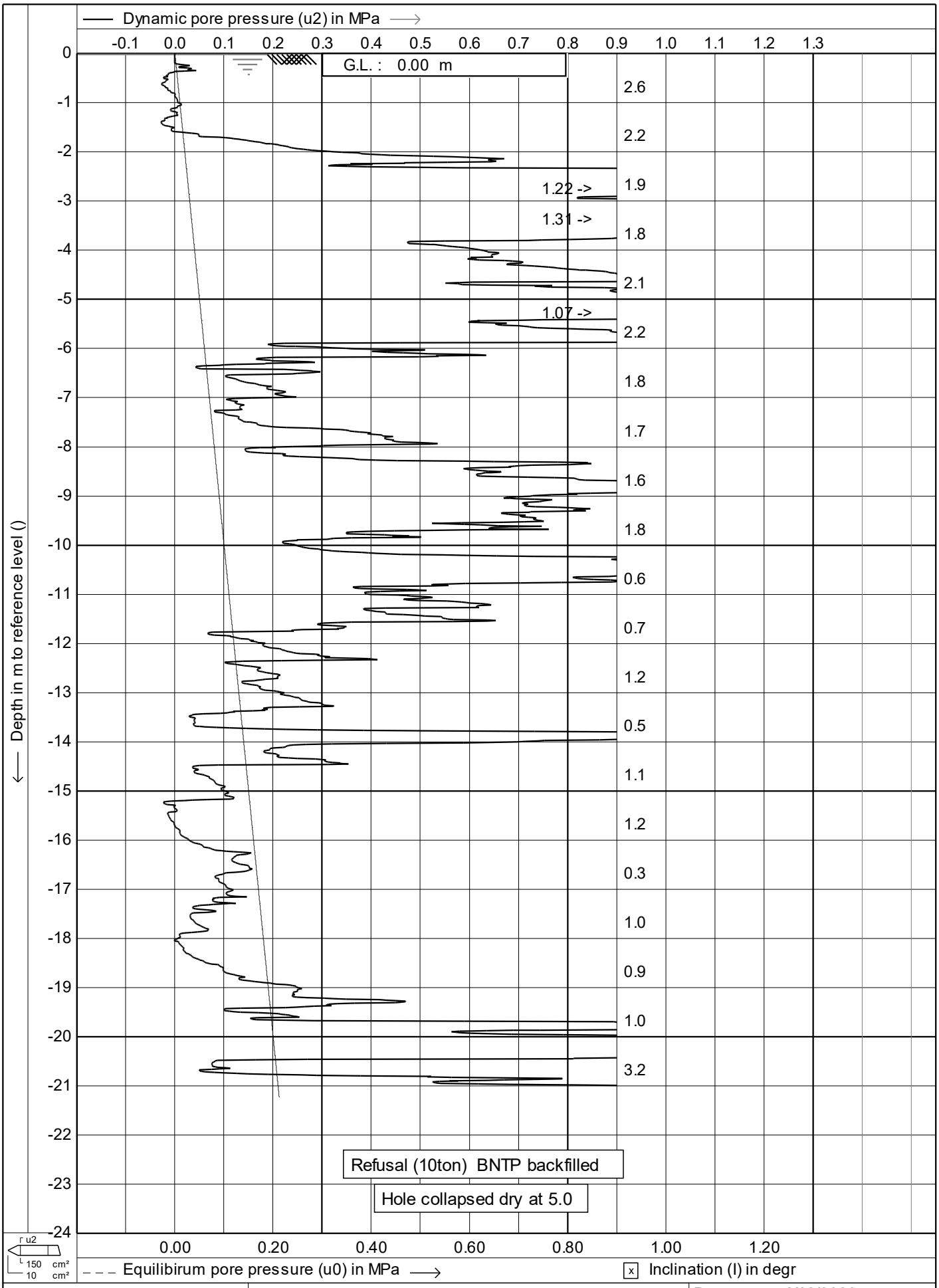
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **005**

1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

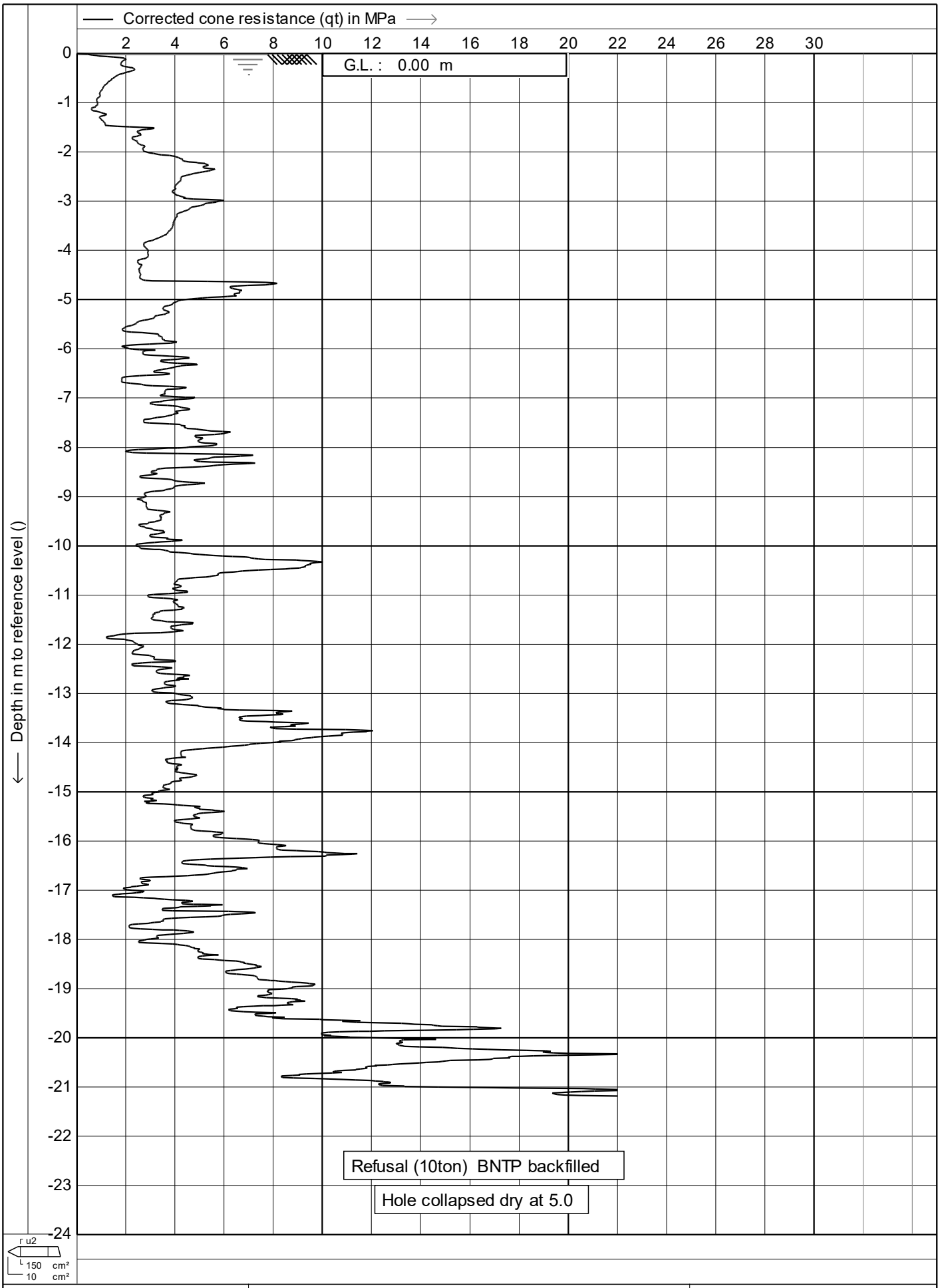
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **005**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

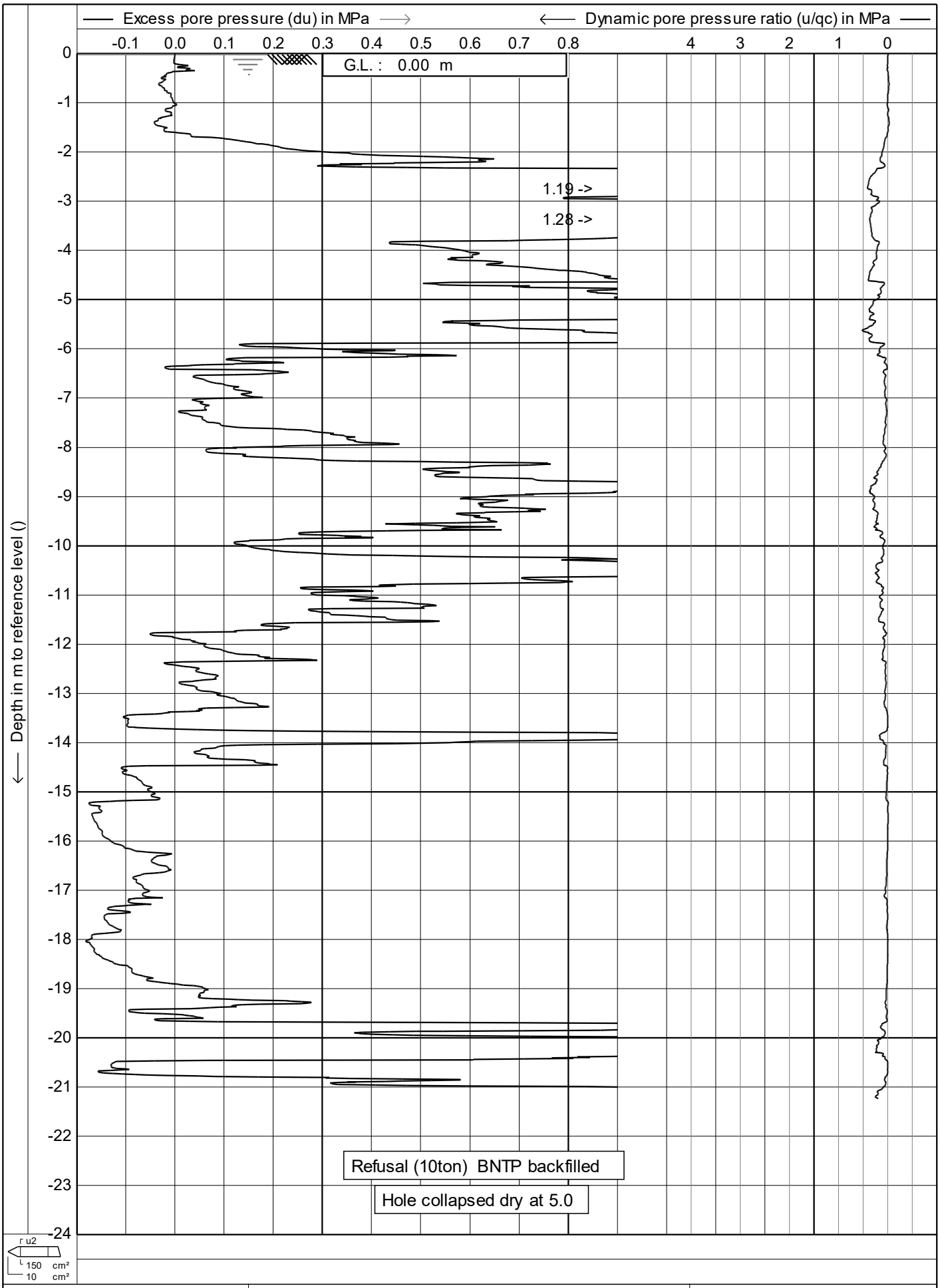
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **005**

3/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

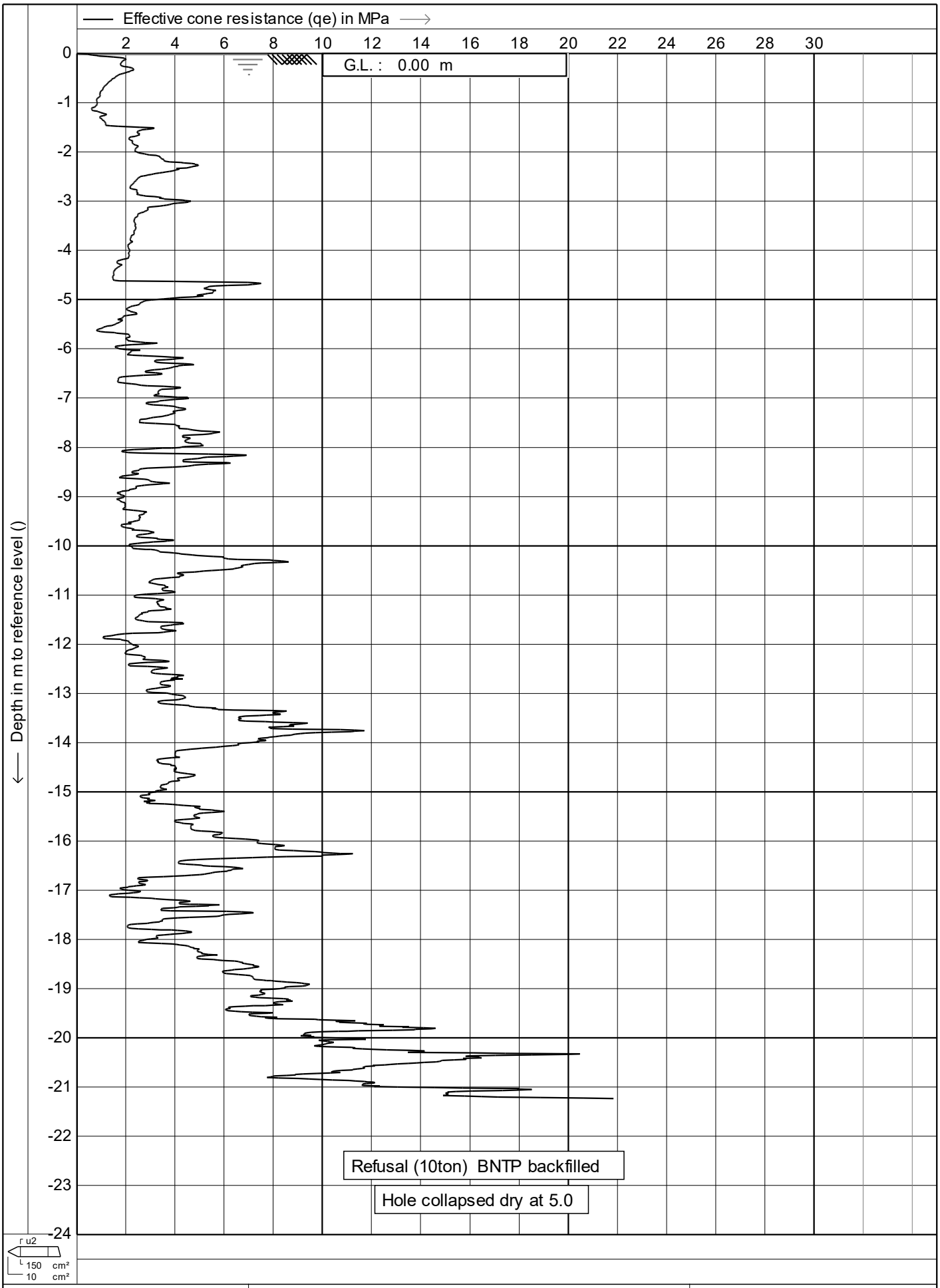
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **005** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

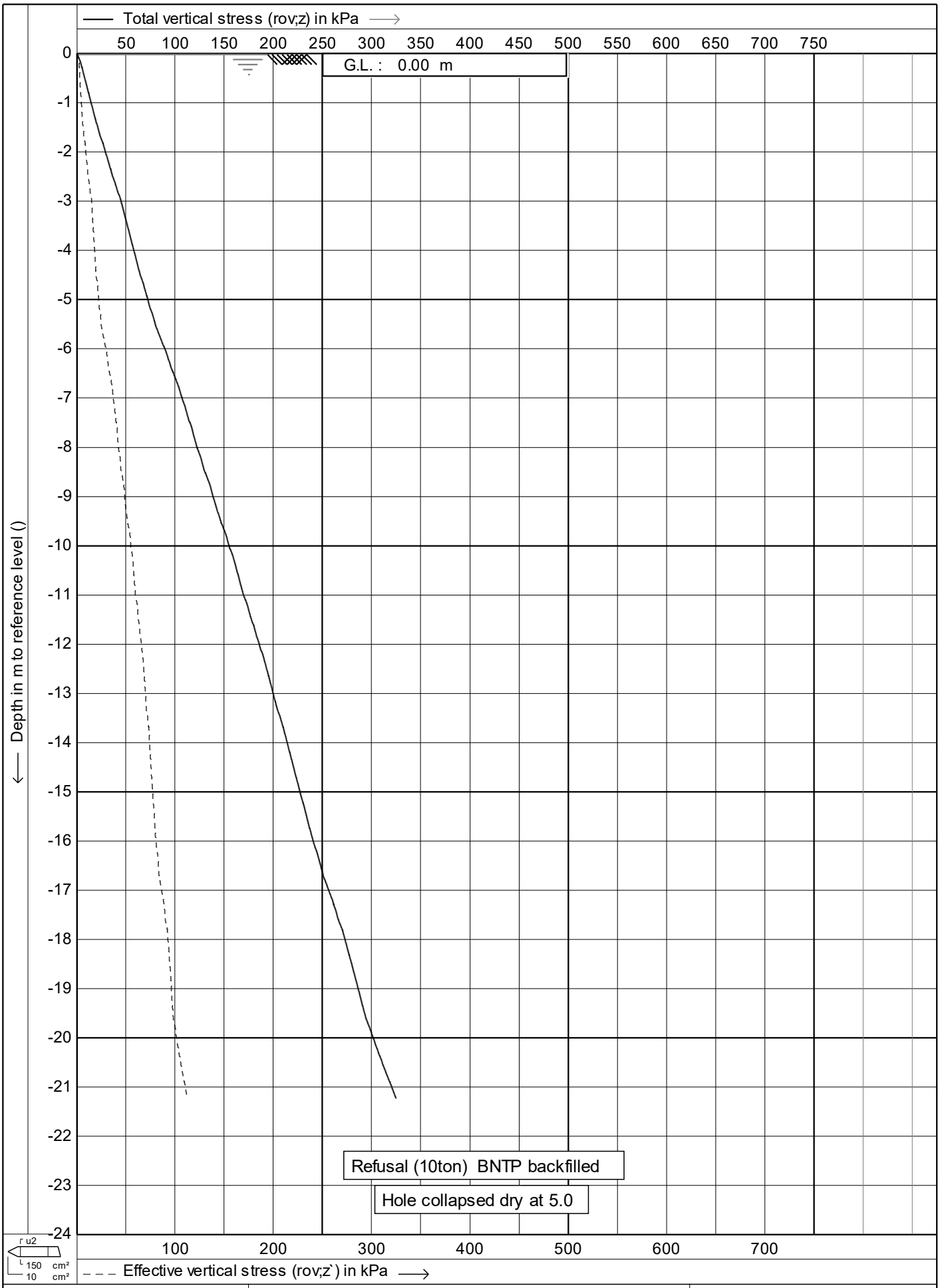
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **005**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

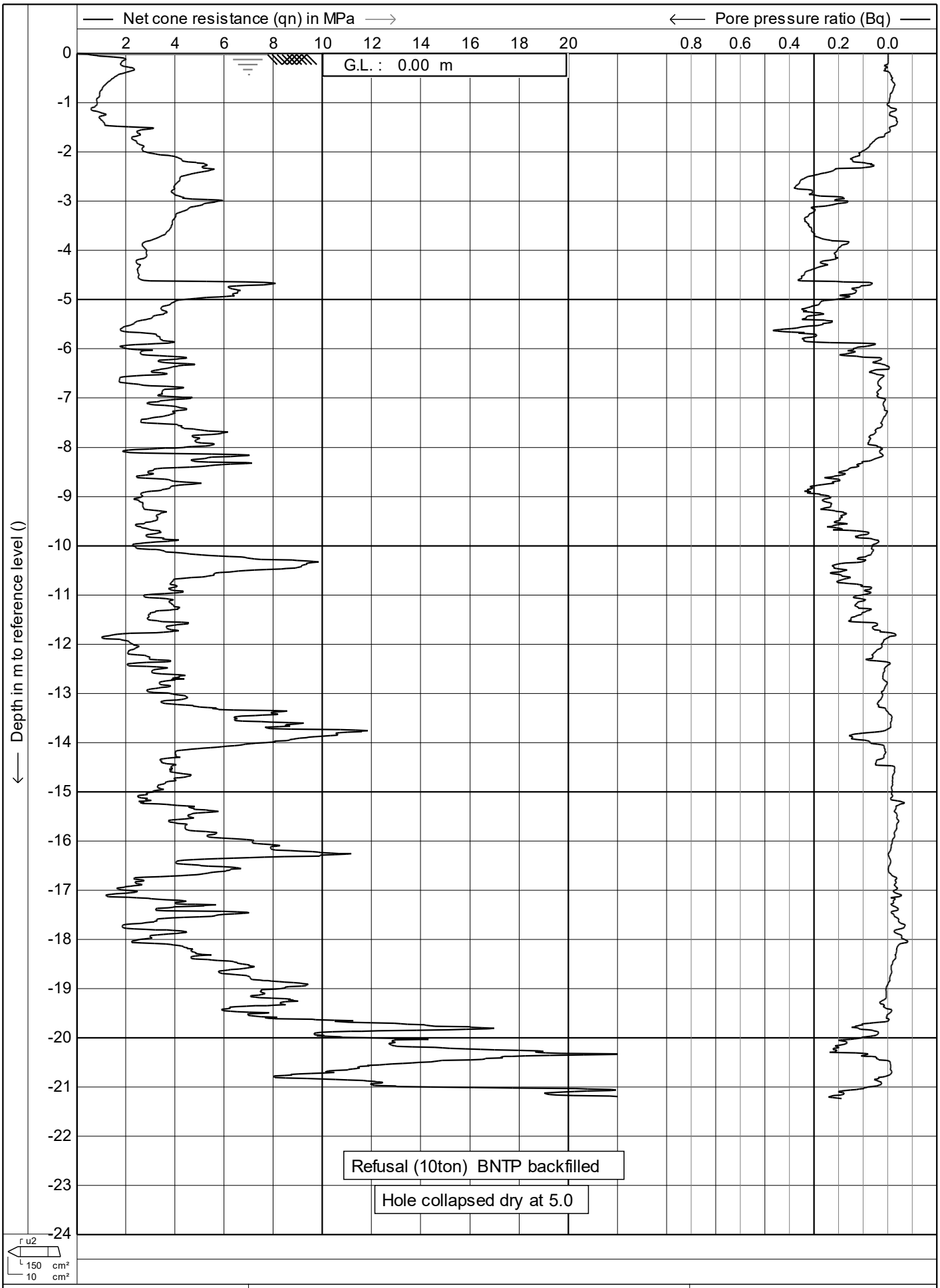
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **005**

6/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

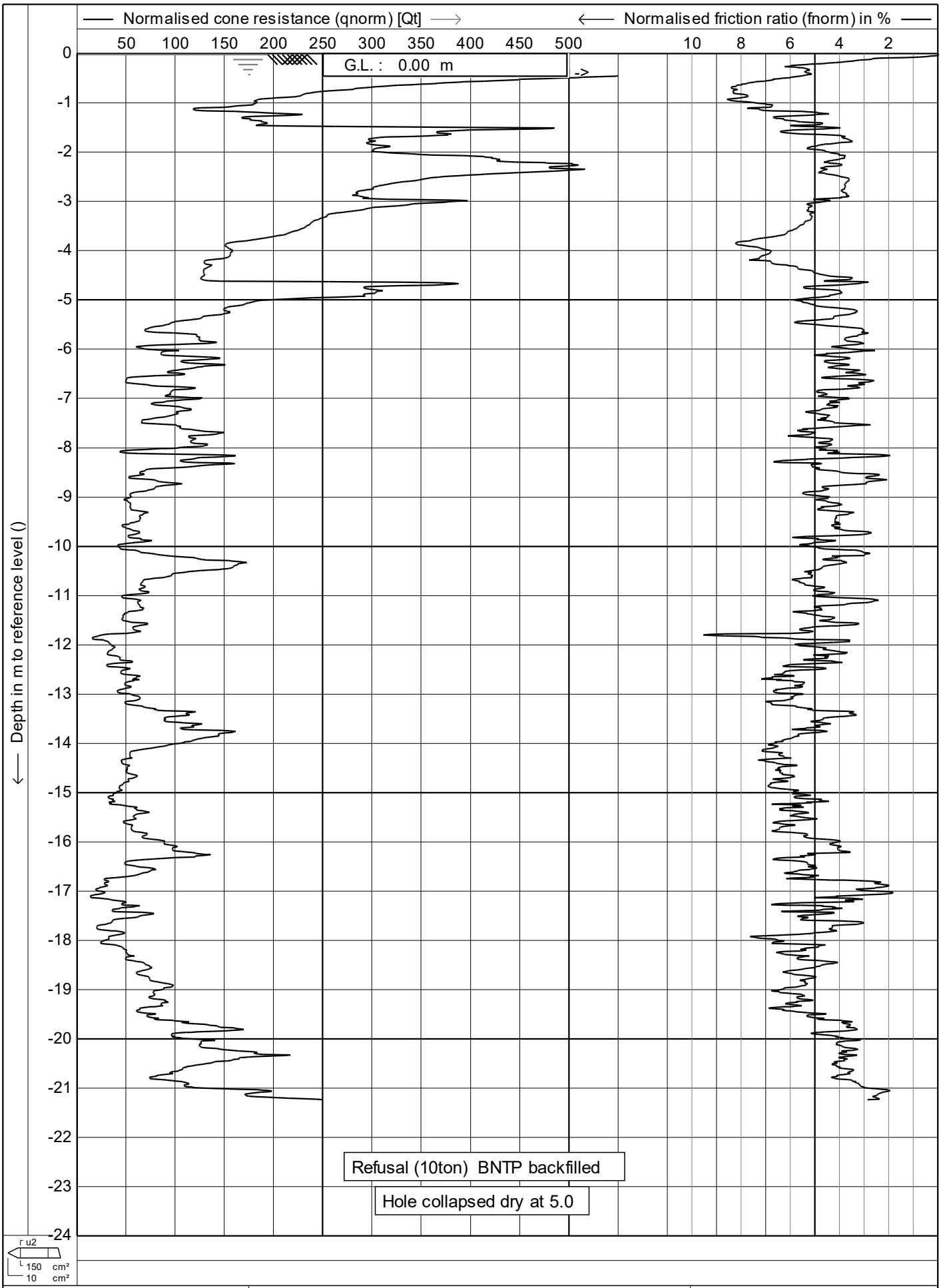
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **005** **7/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

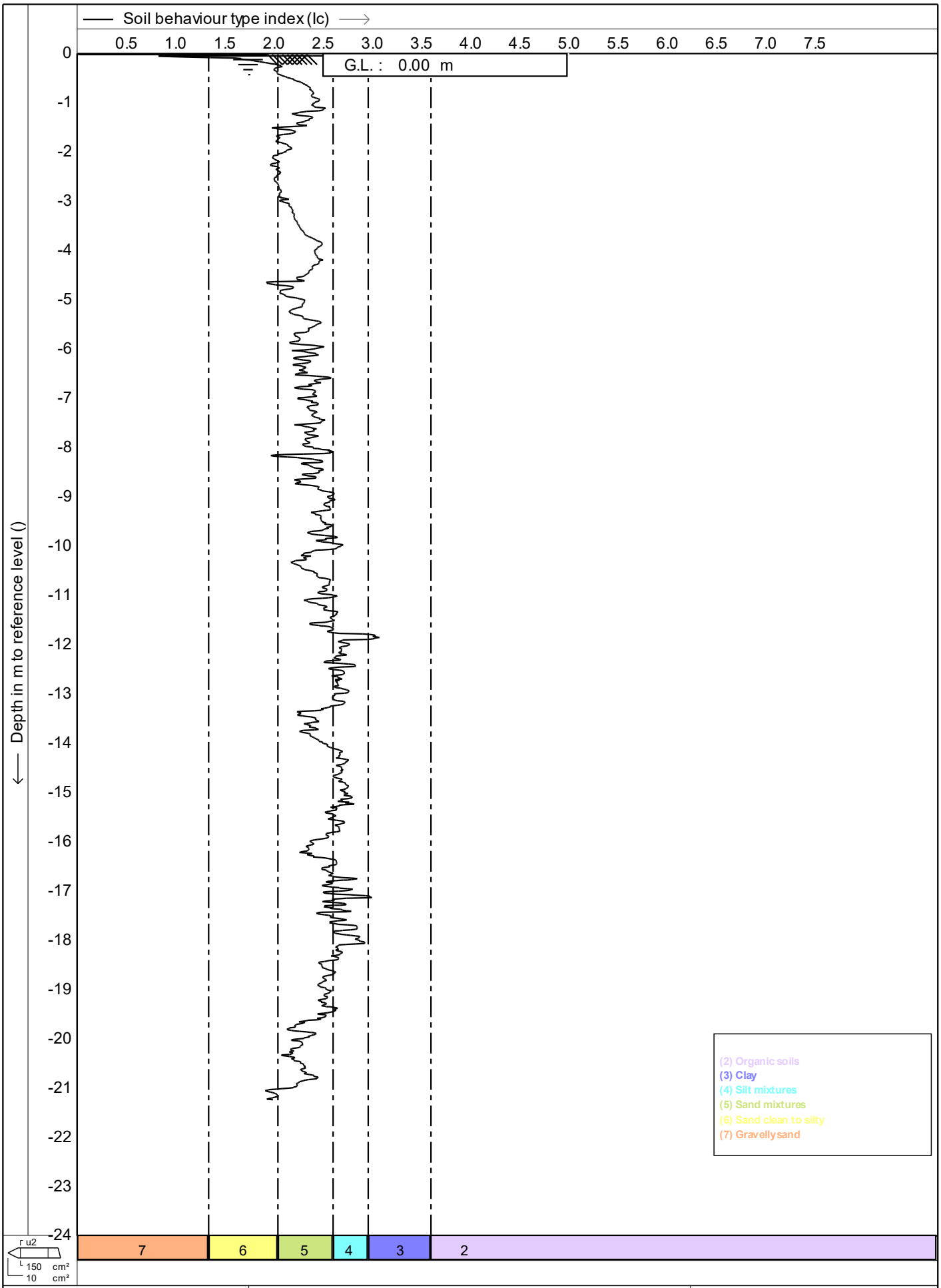
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **005**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

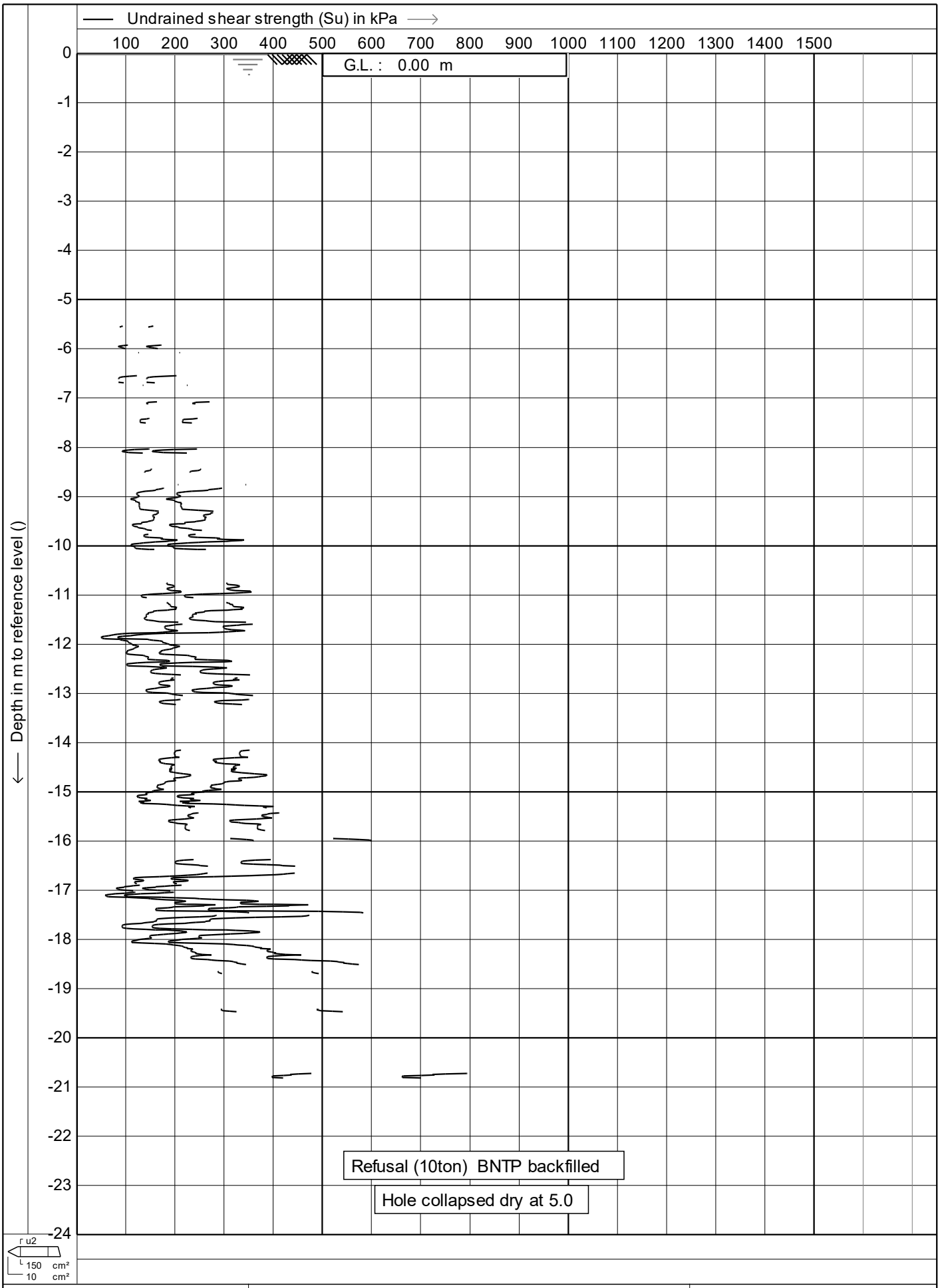
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **005**

9/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

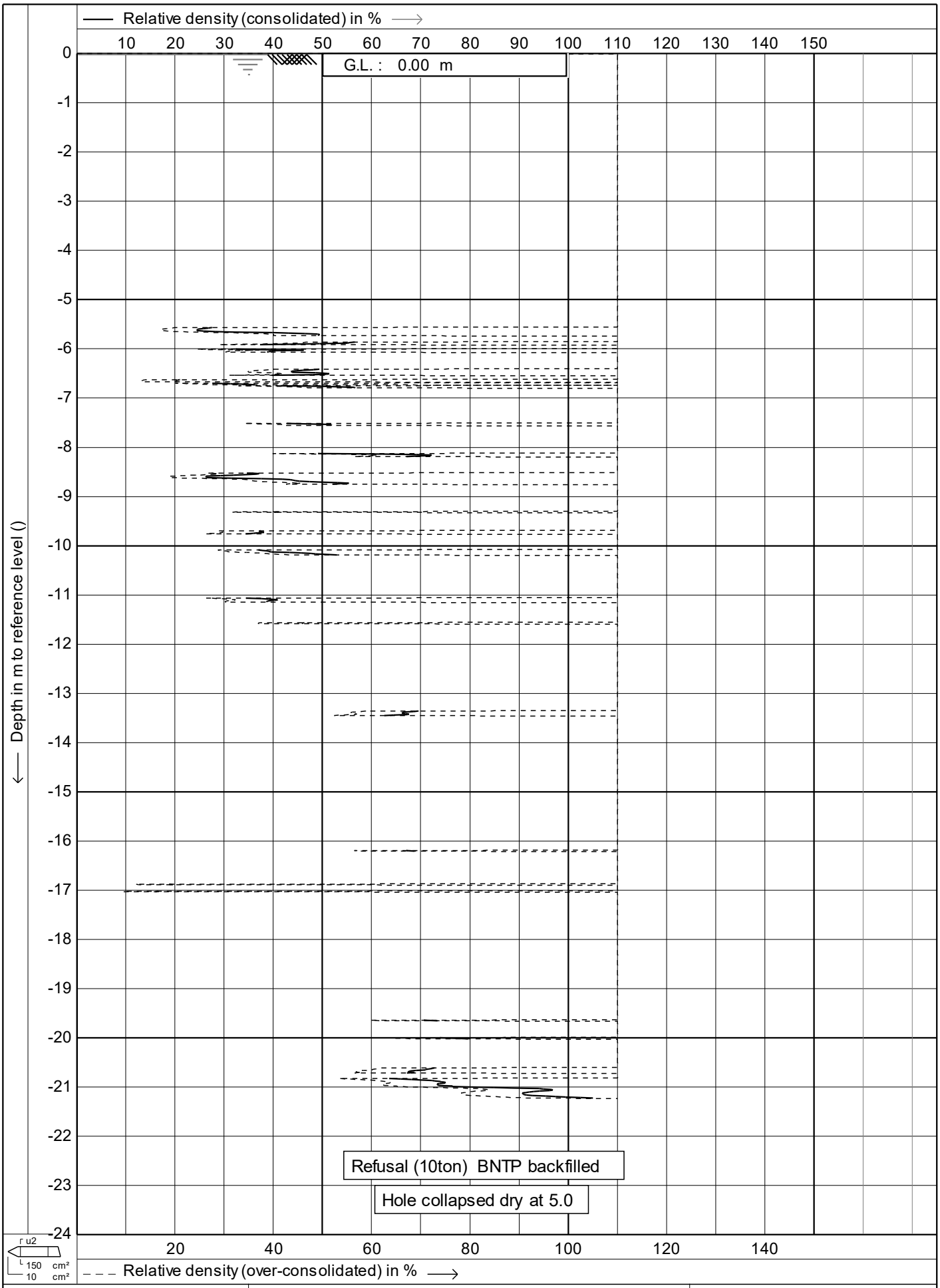
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **005**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

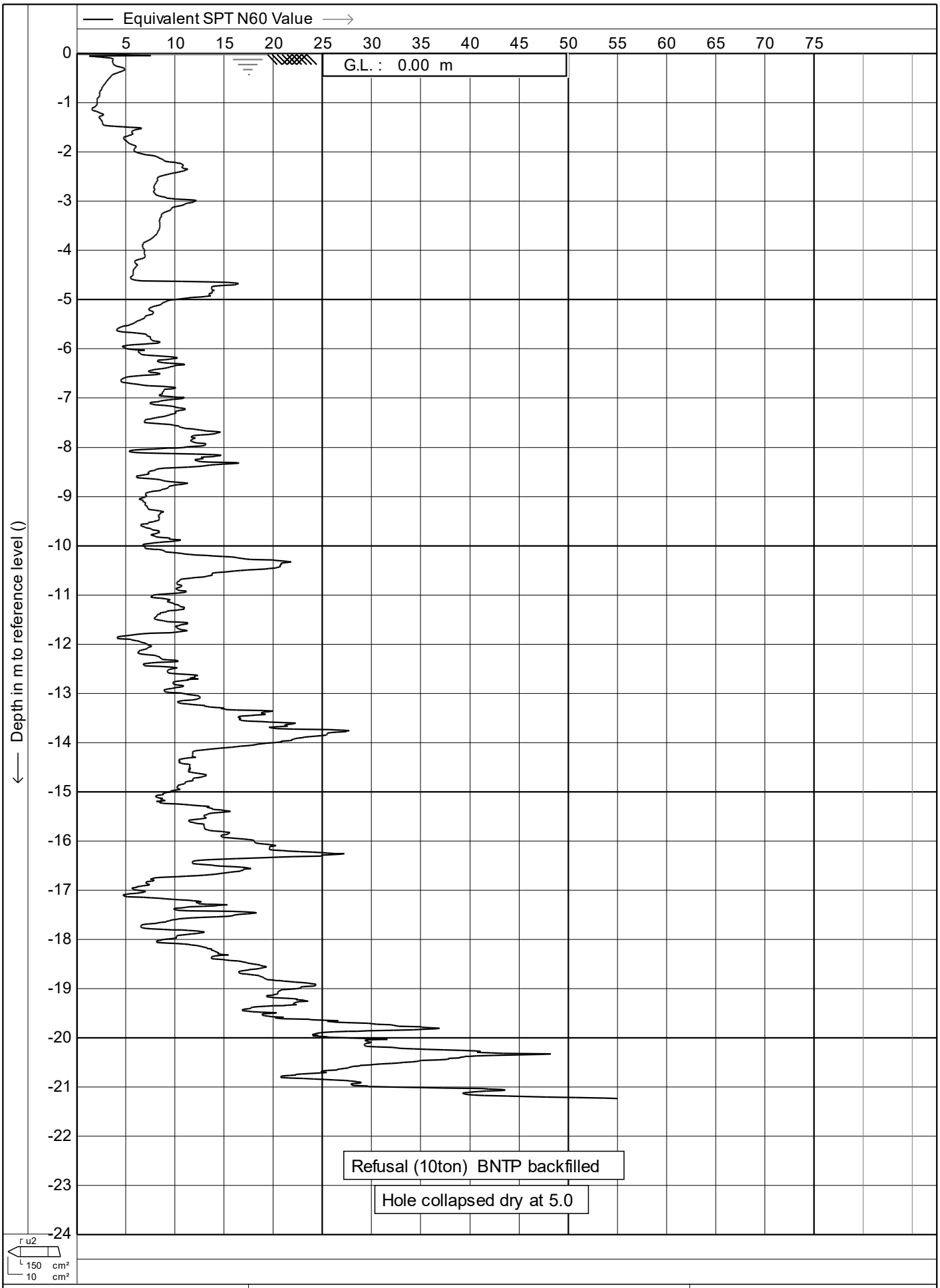
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **005**

11/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

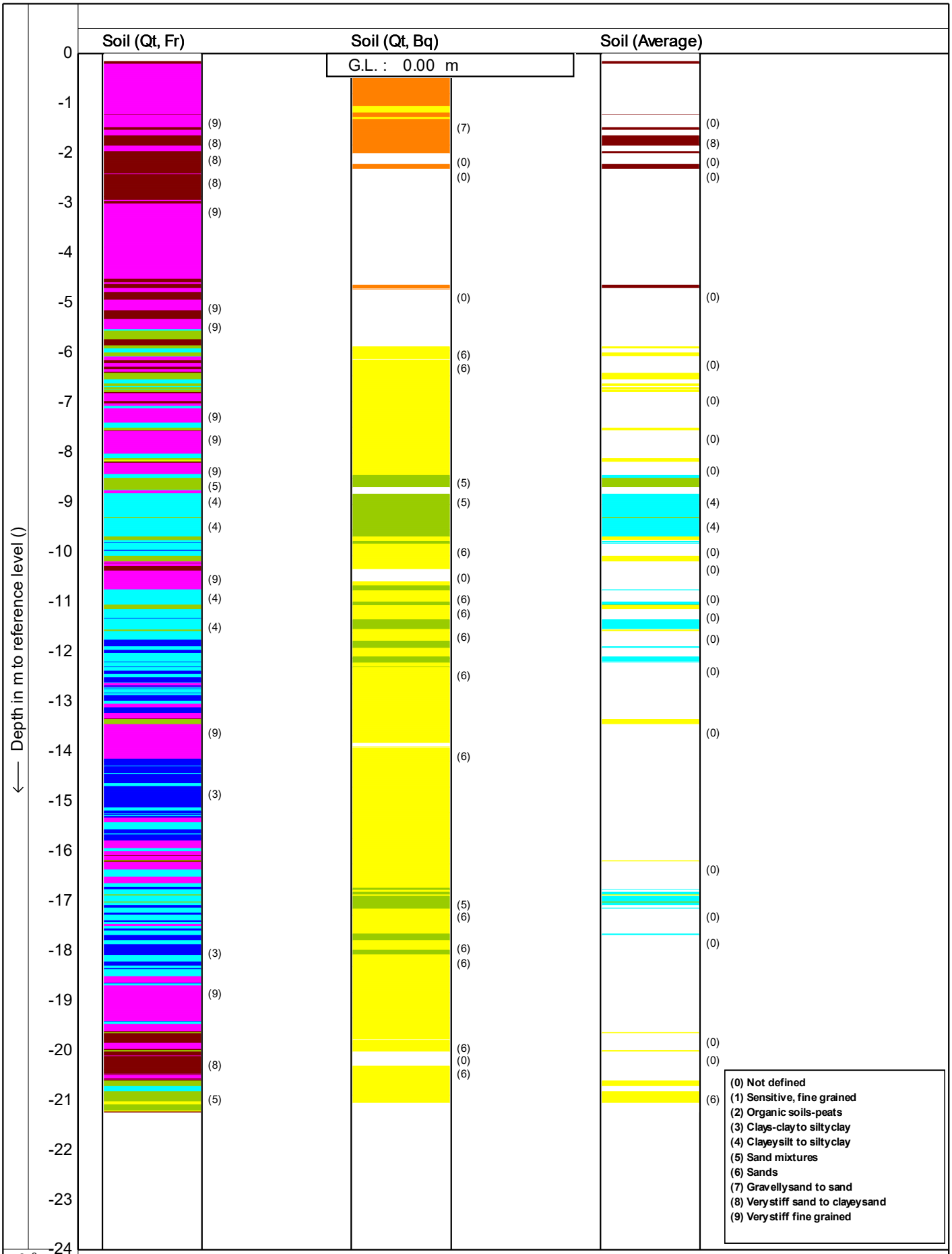
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **005**

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

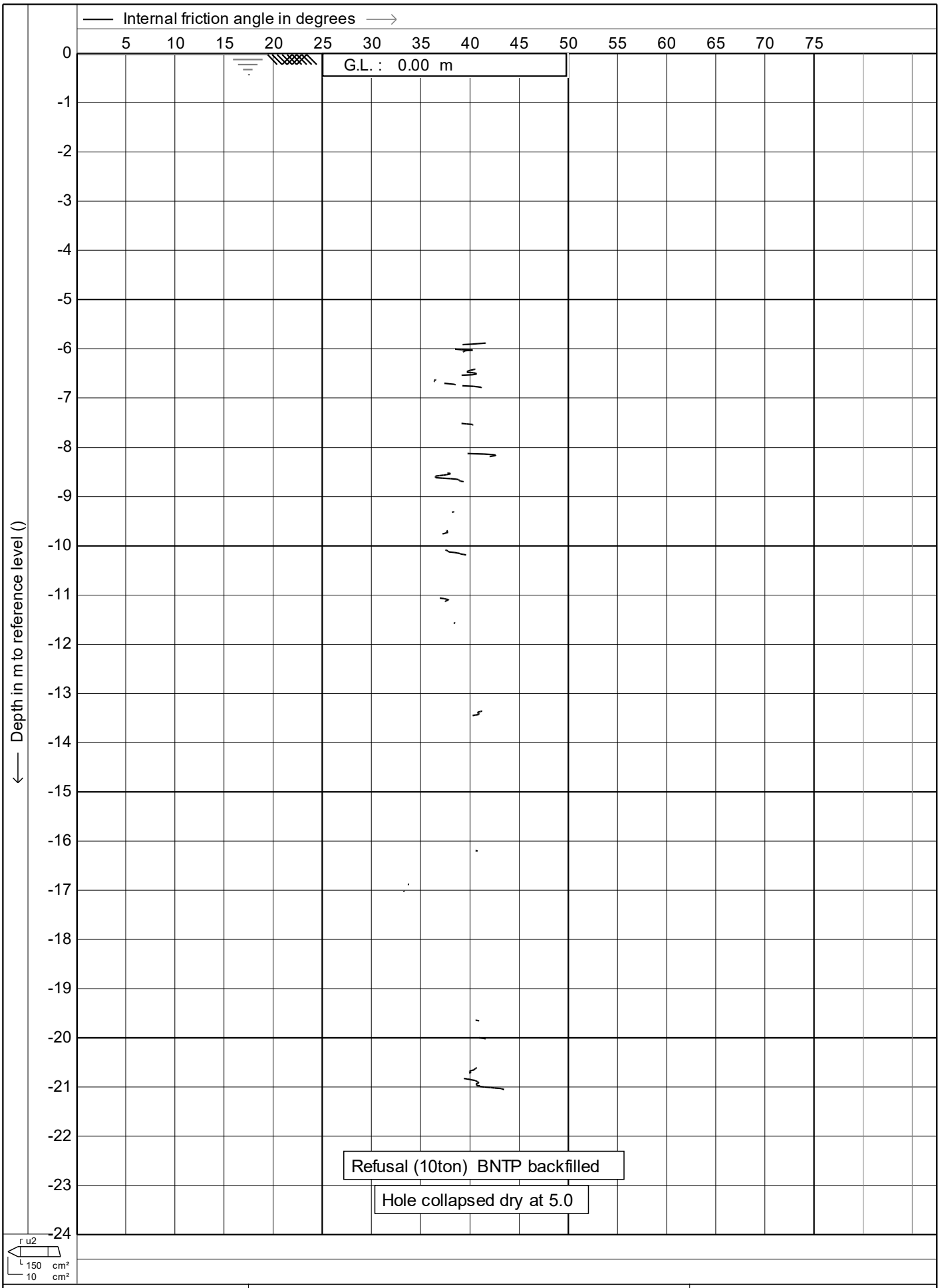
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **005**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

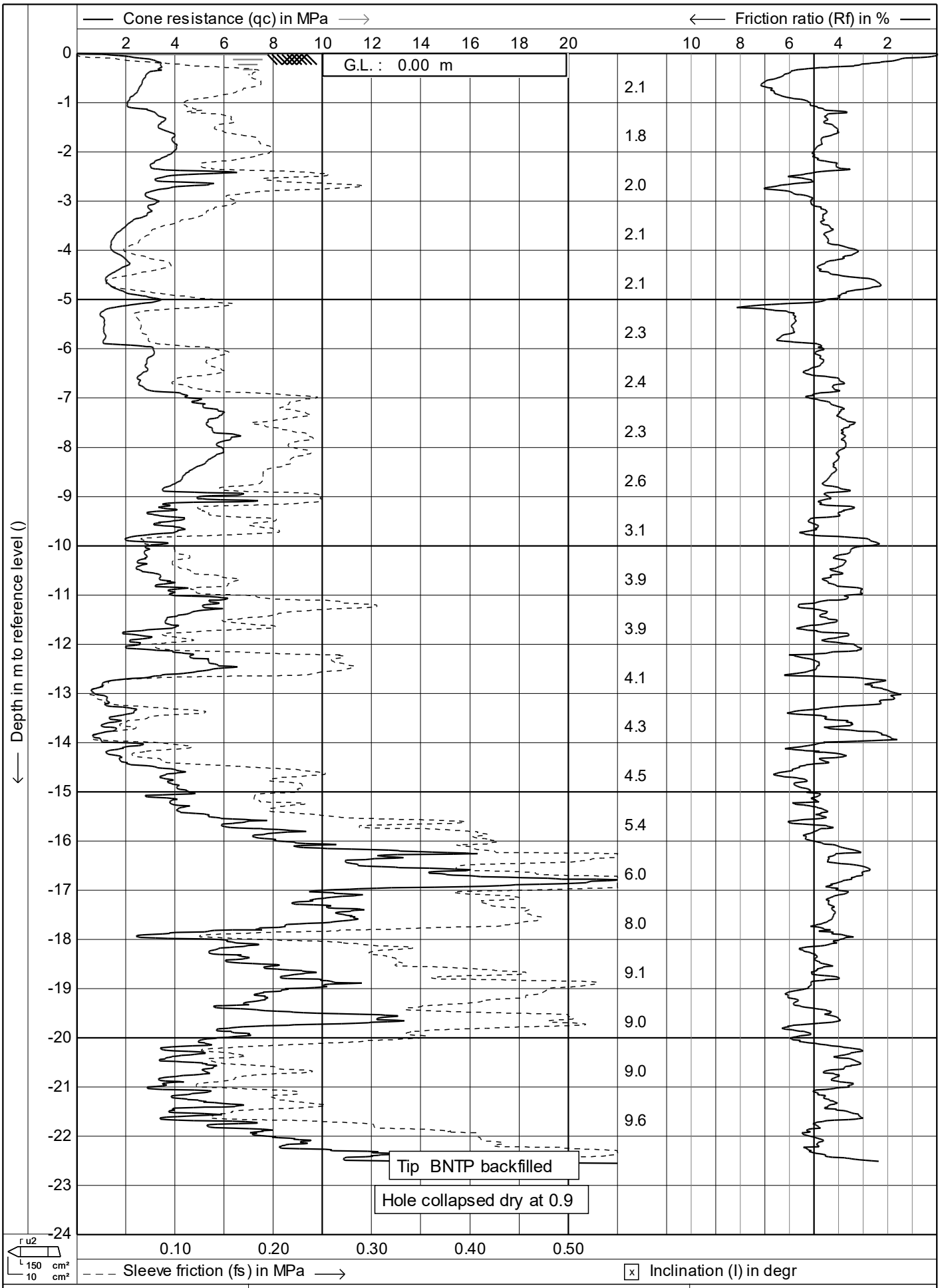
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **005** **14/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **2/12/2020**

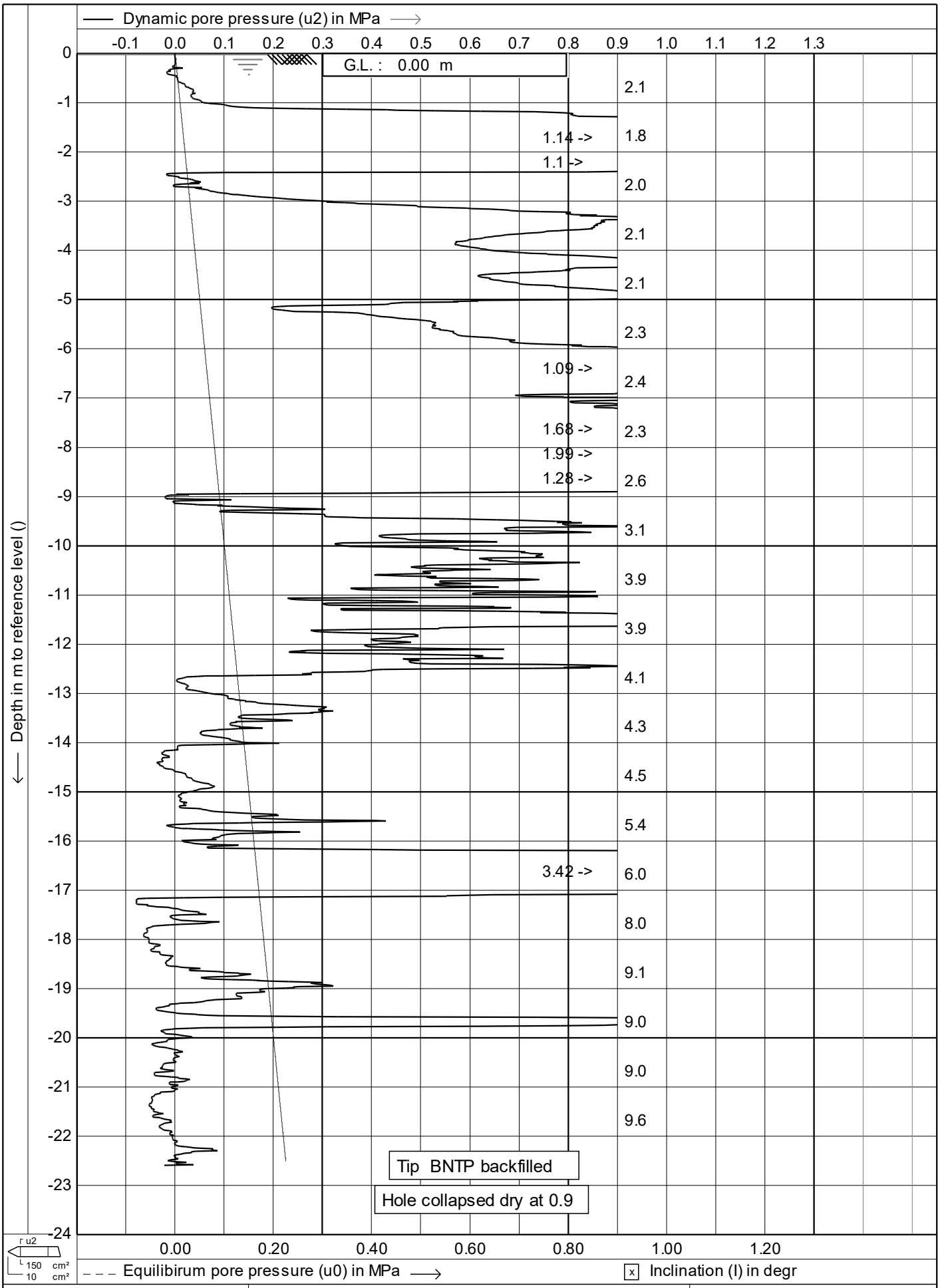
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **006**

1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

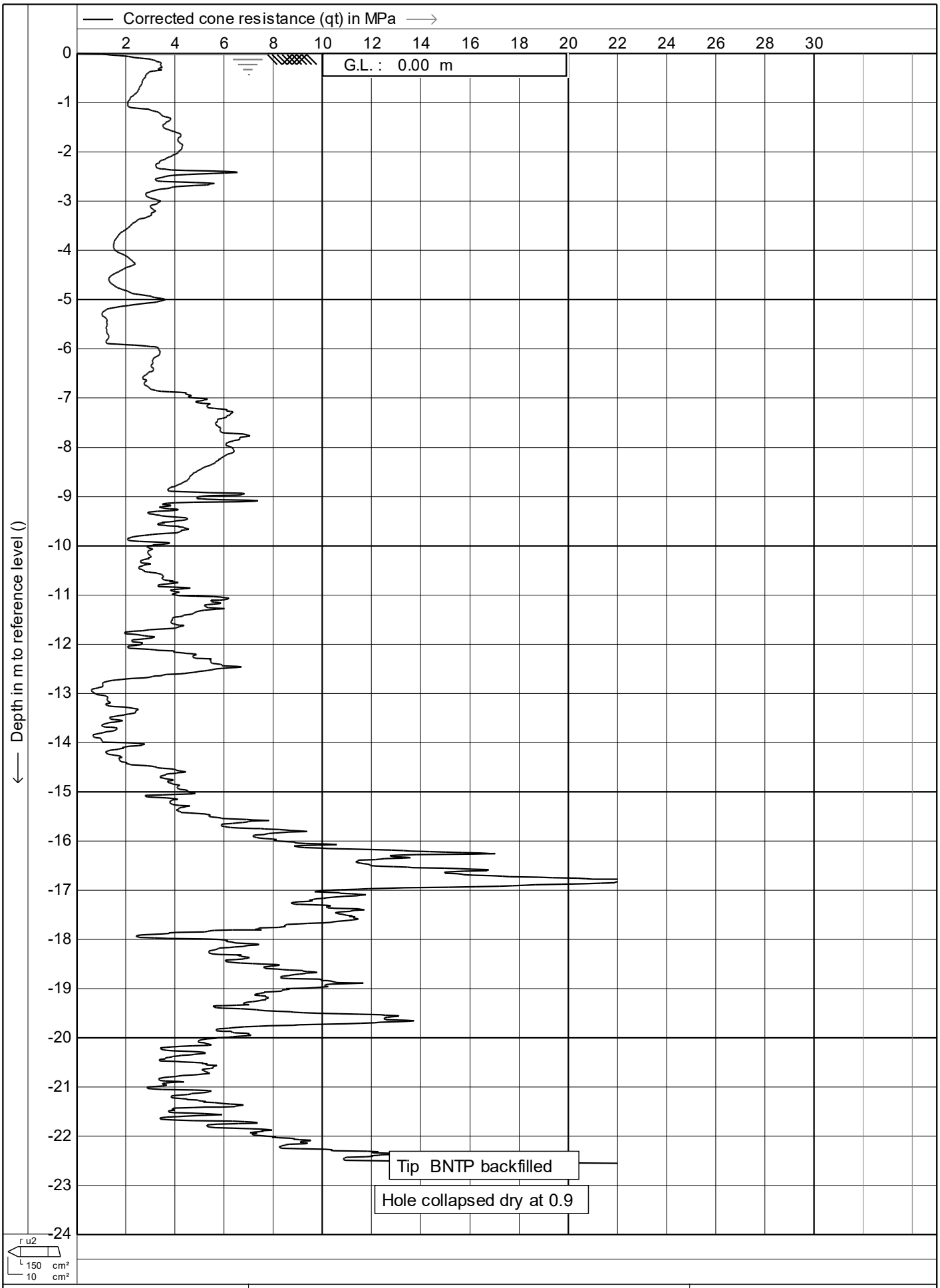
Date : **2/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **006**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

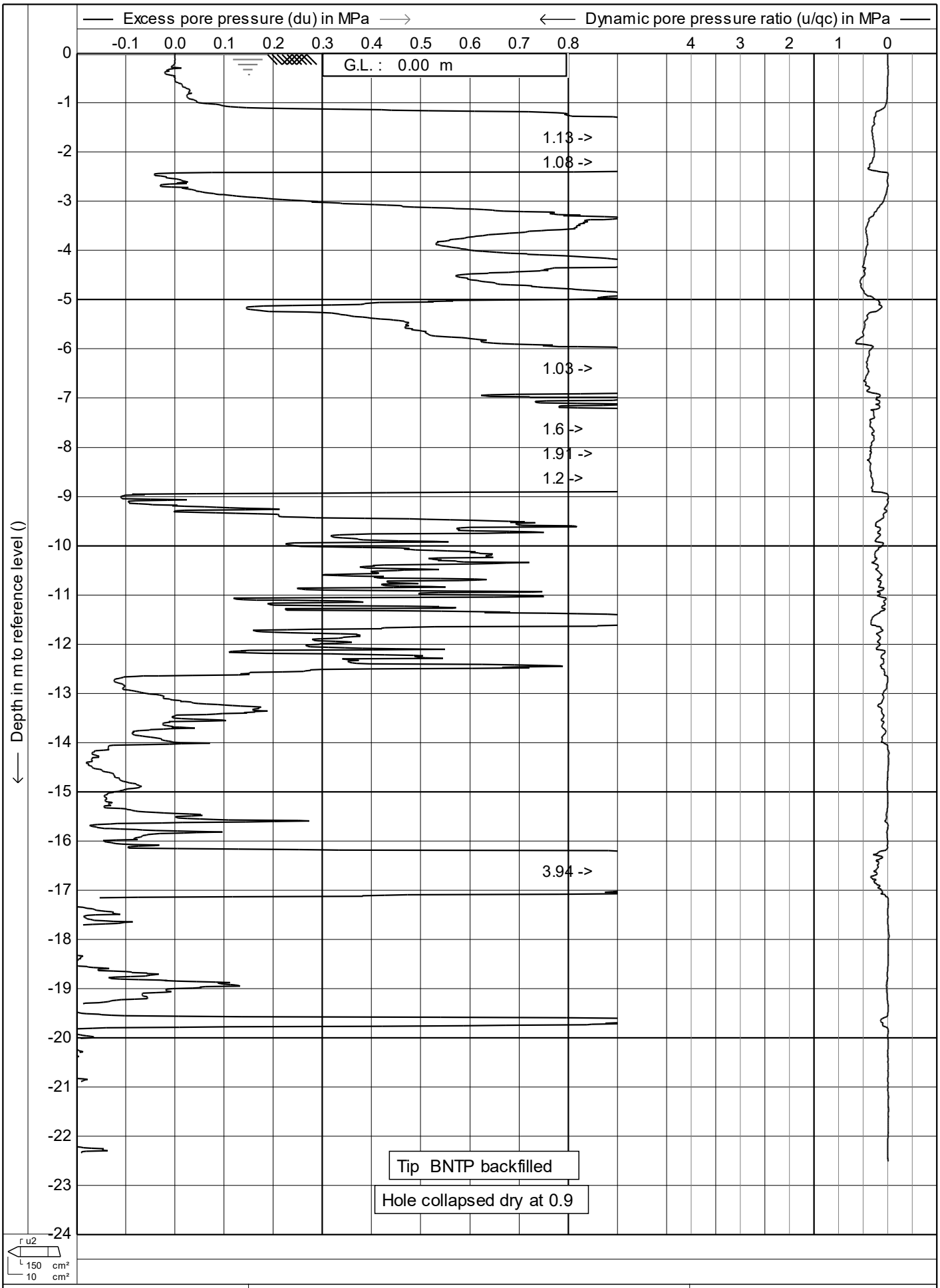
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **2/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **006**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

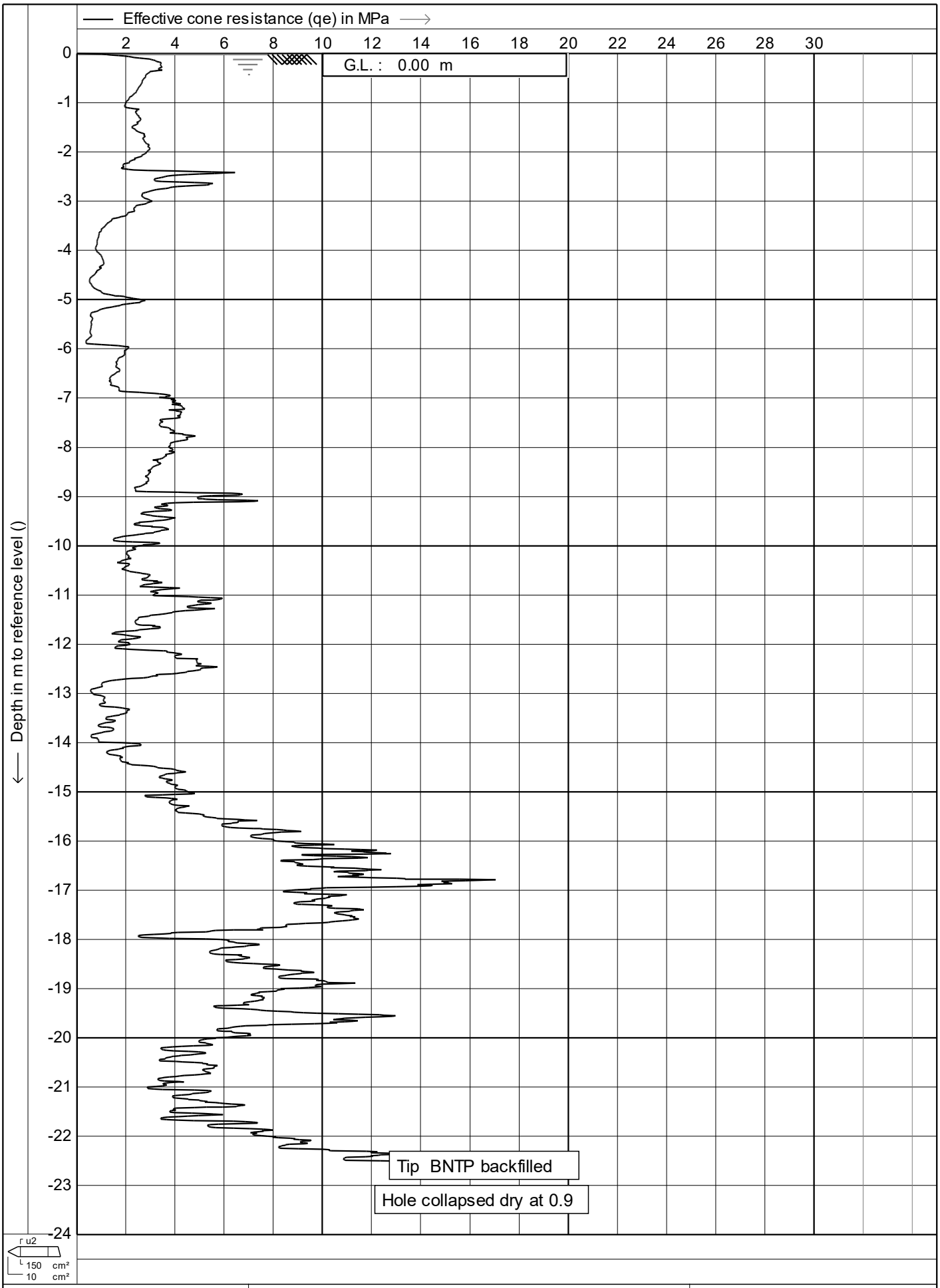
Date : **2/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **006** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

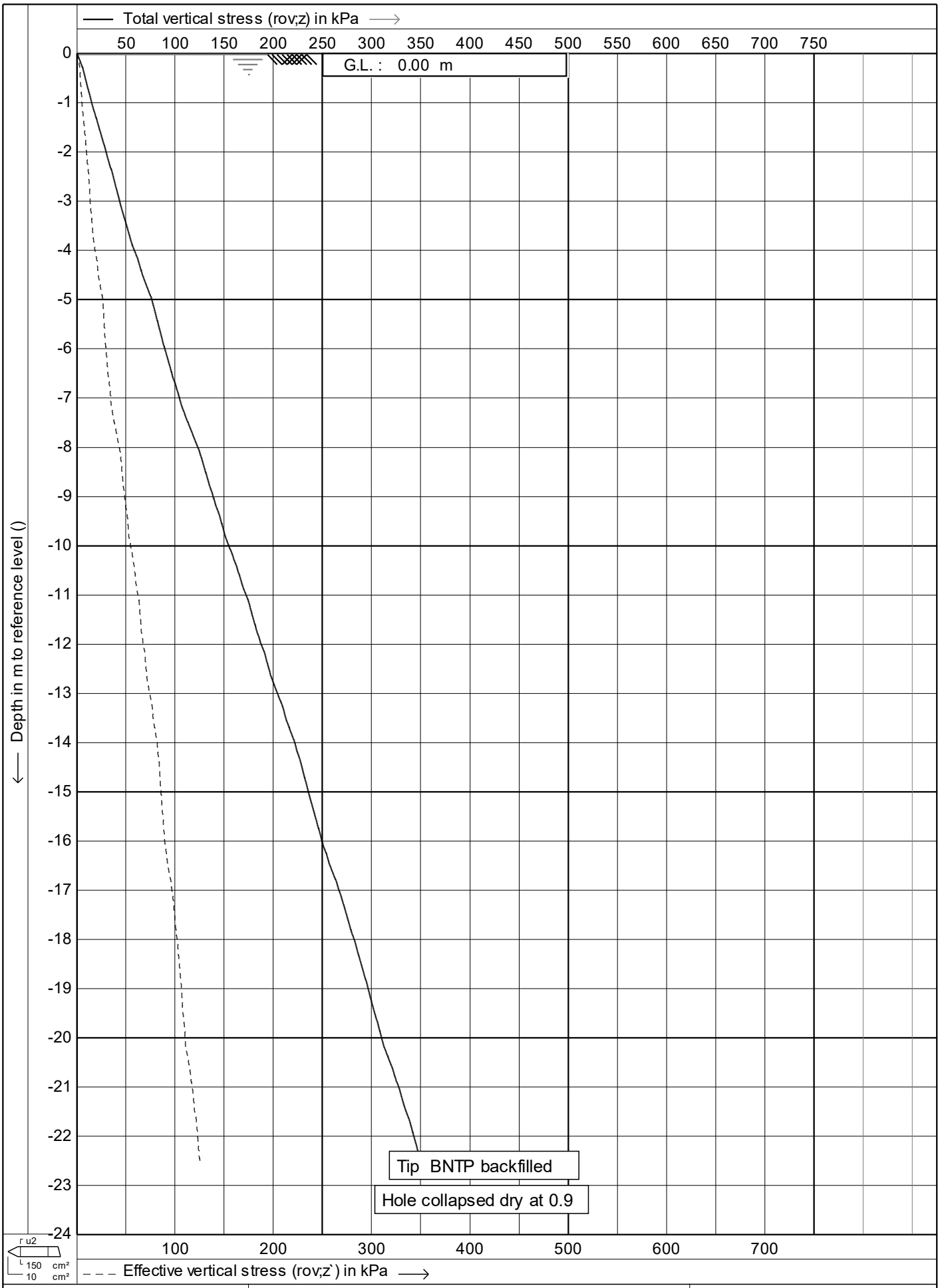
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **2/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **006**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

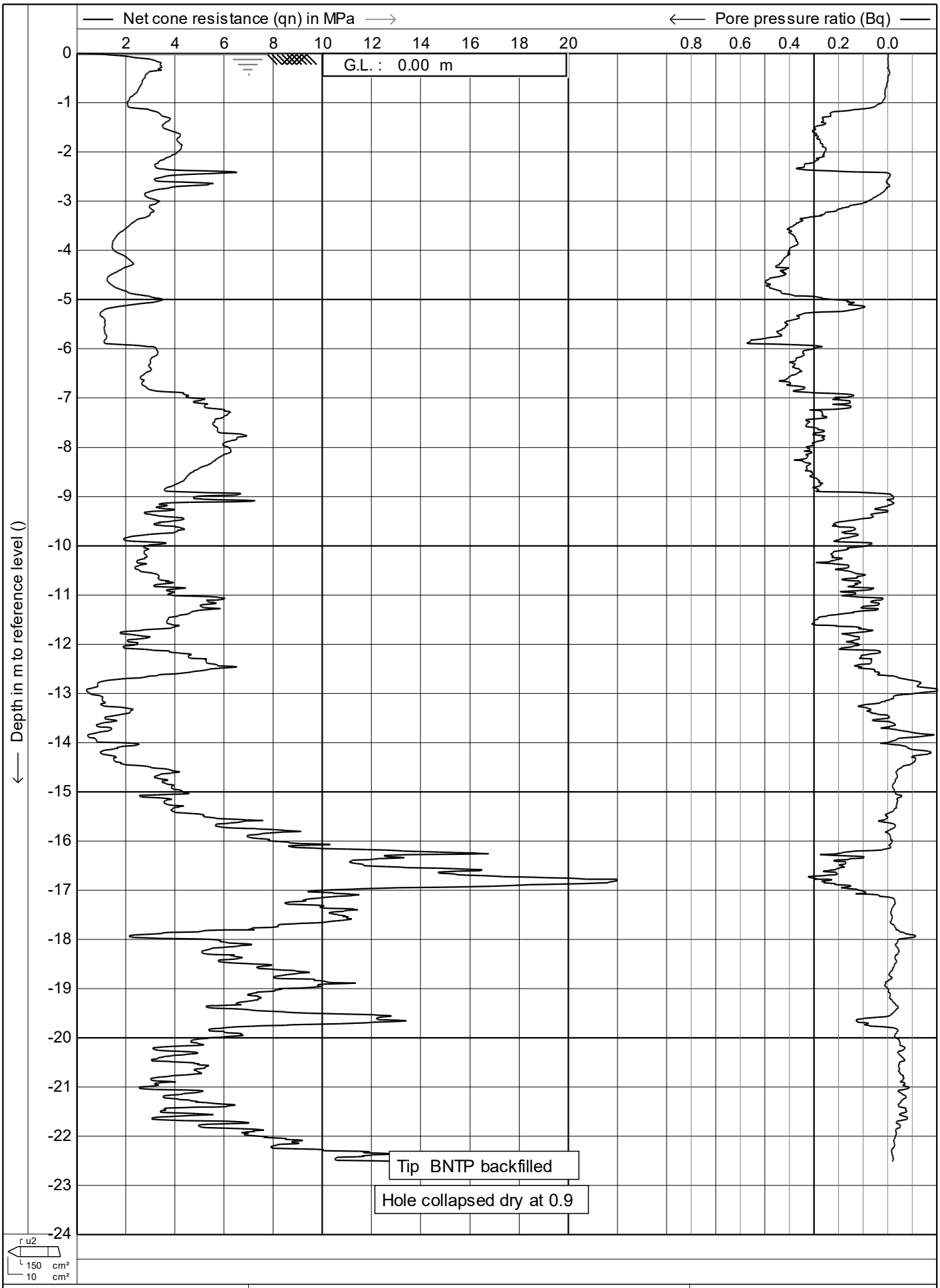
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **2/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **006**

6/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **2/12/2020**

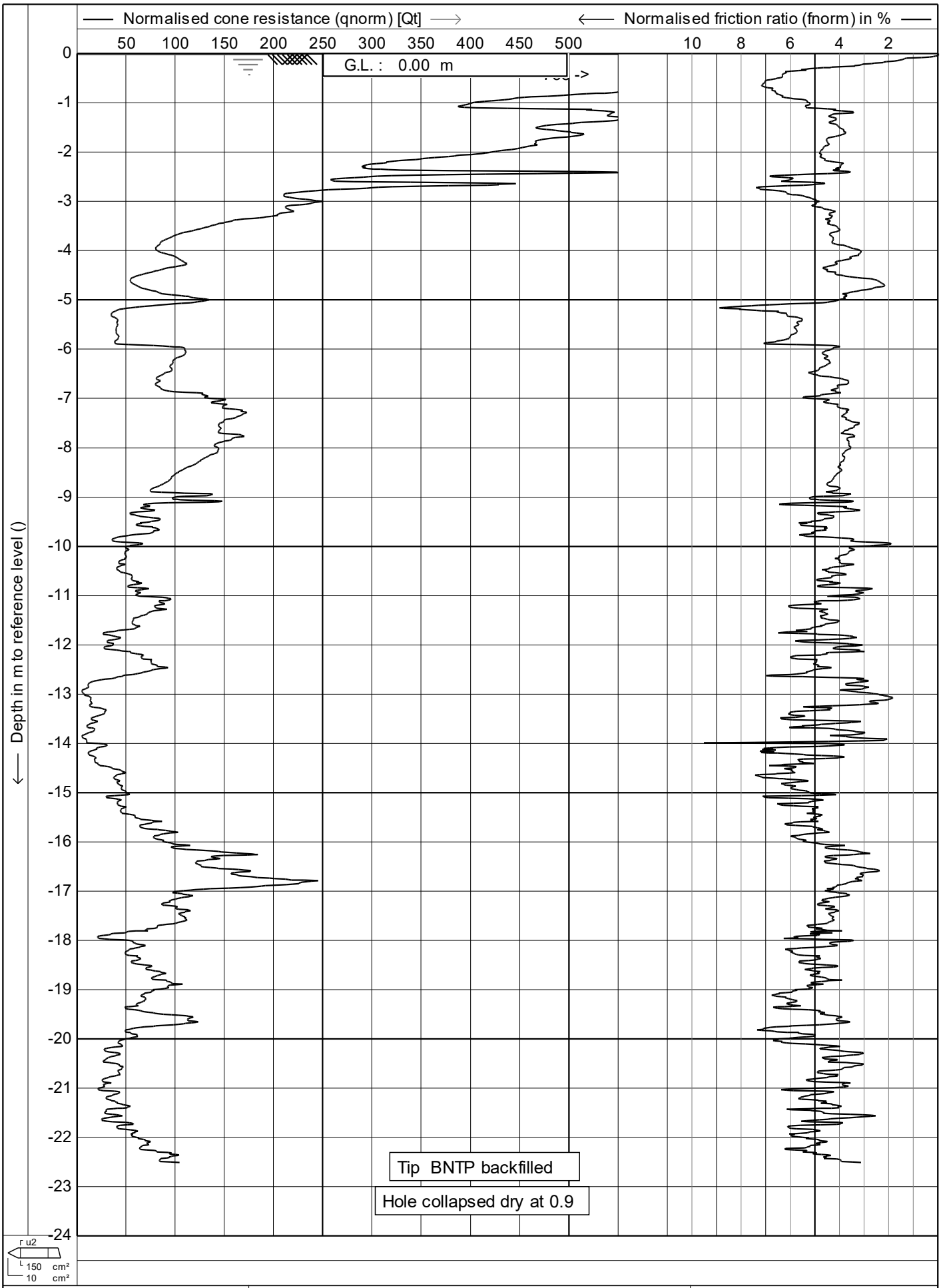
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **006**

7/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

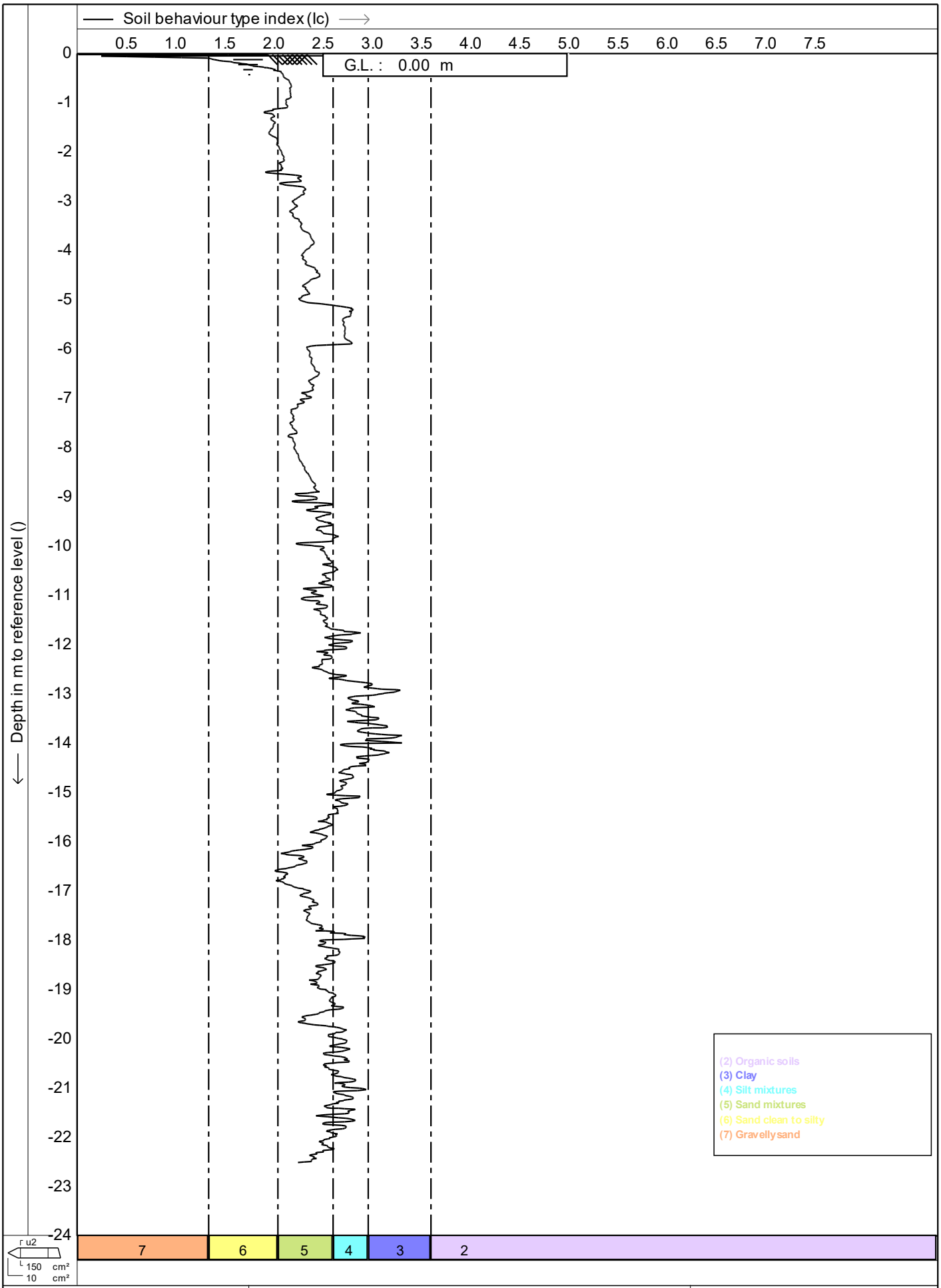
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **2/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **006**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

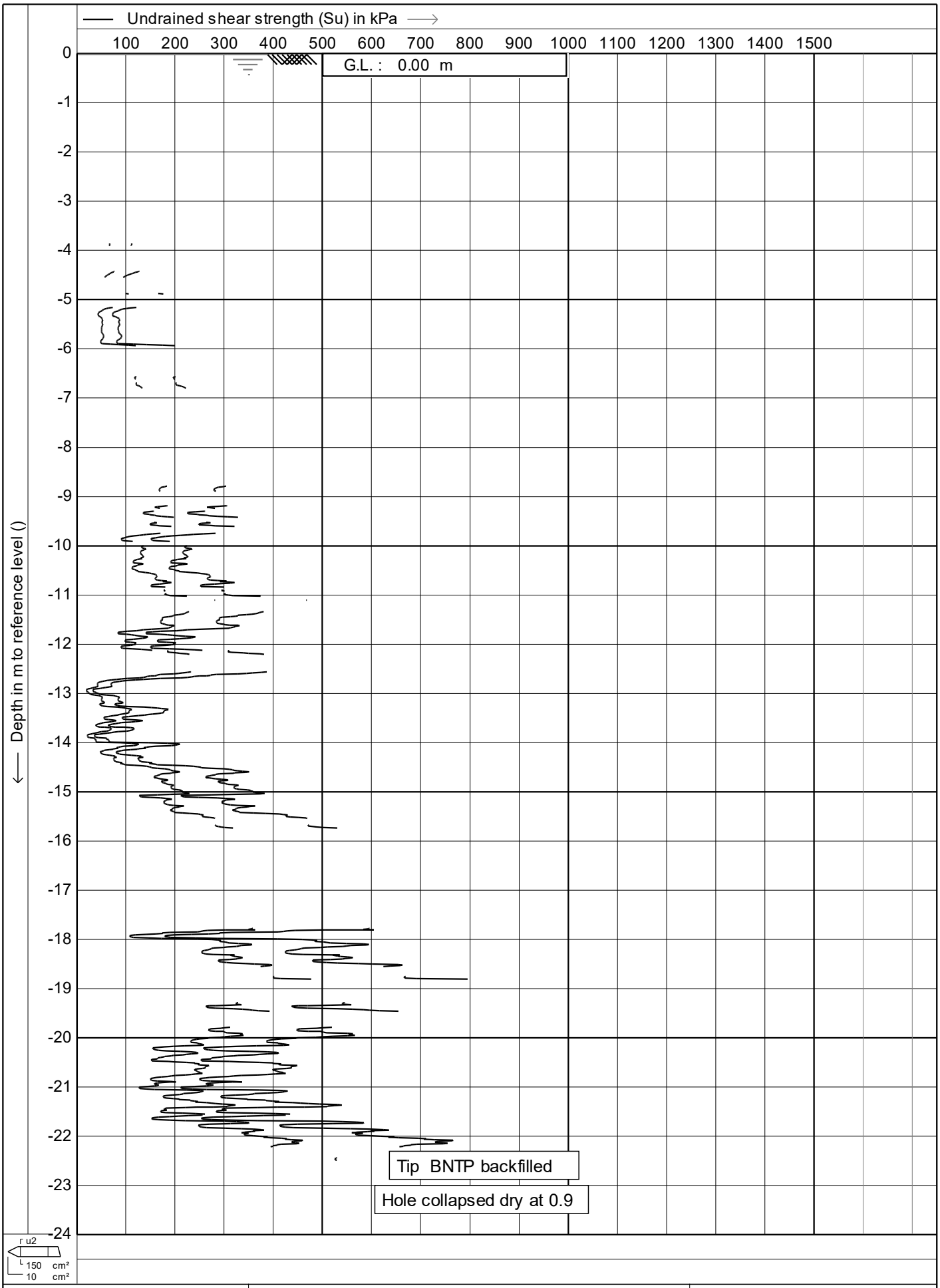
Date : **2/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **006** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

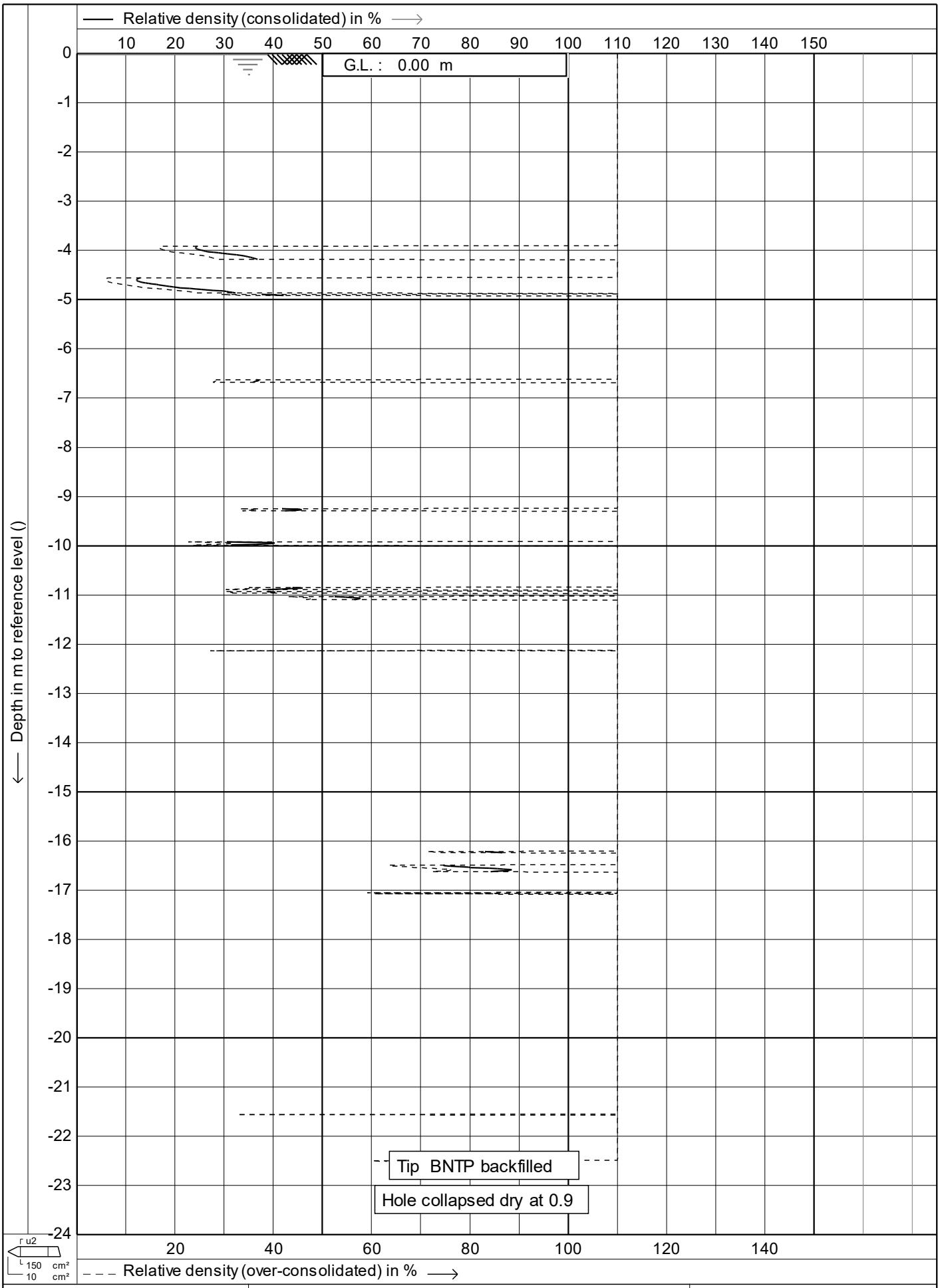
Date : **2/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **006** **10/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

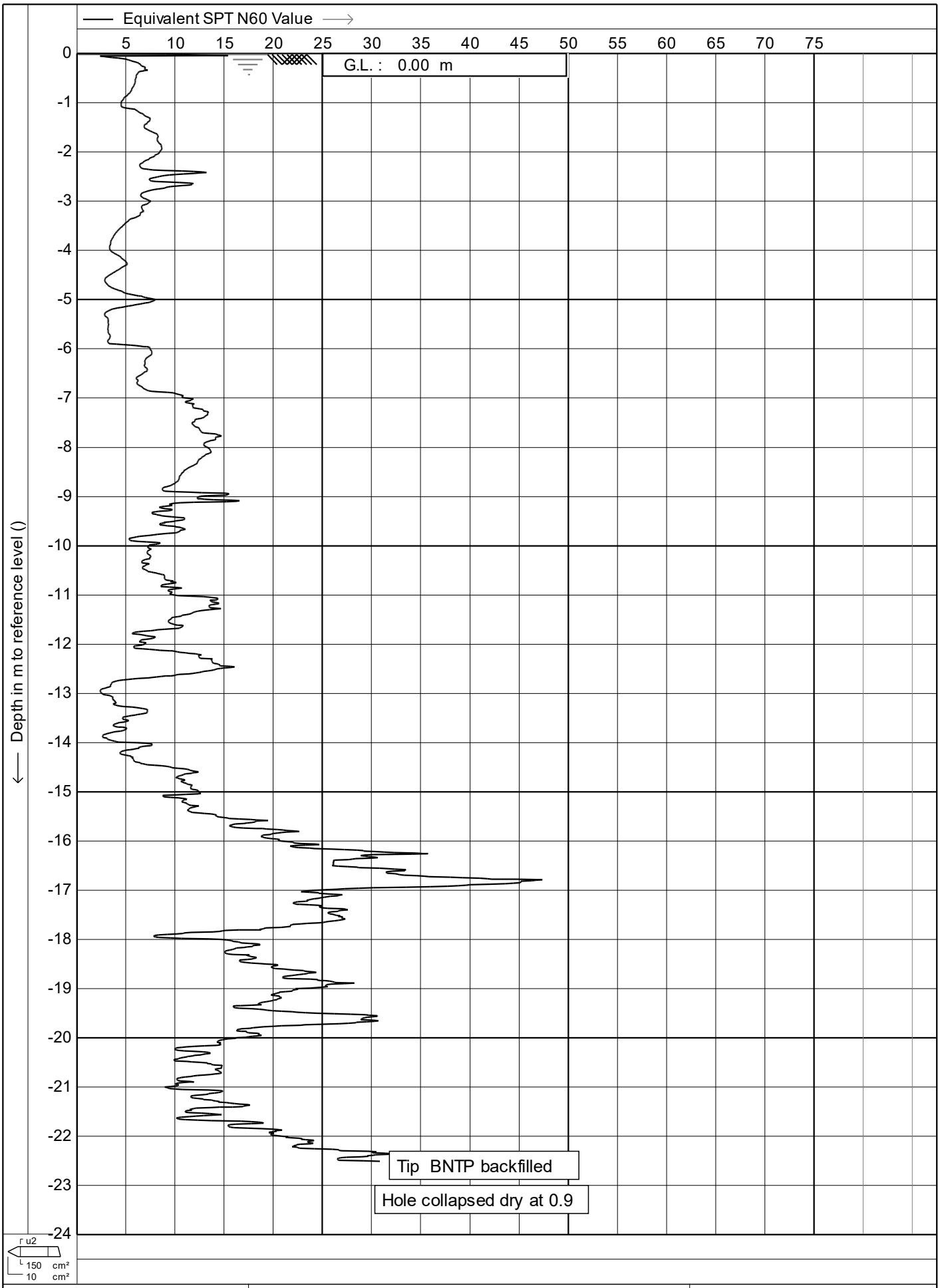
Date : **2/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **006** **11/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **2/12/2020**

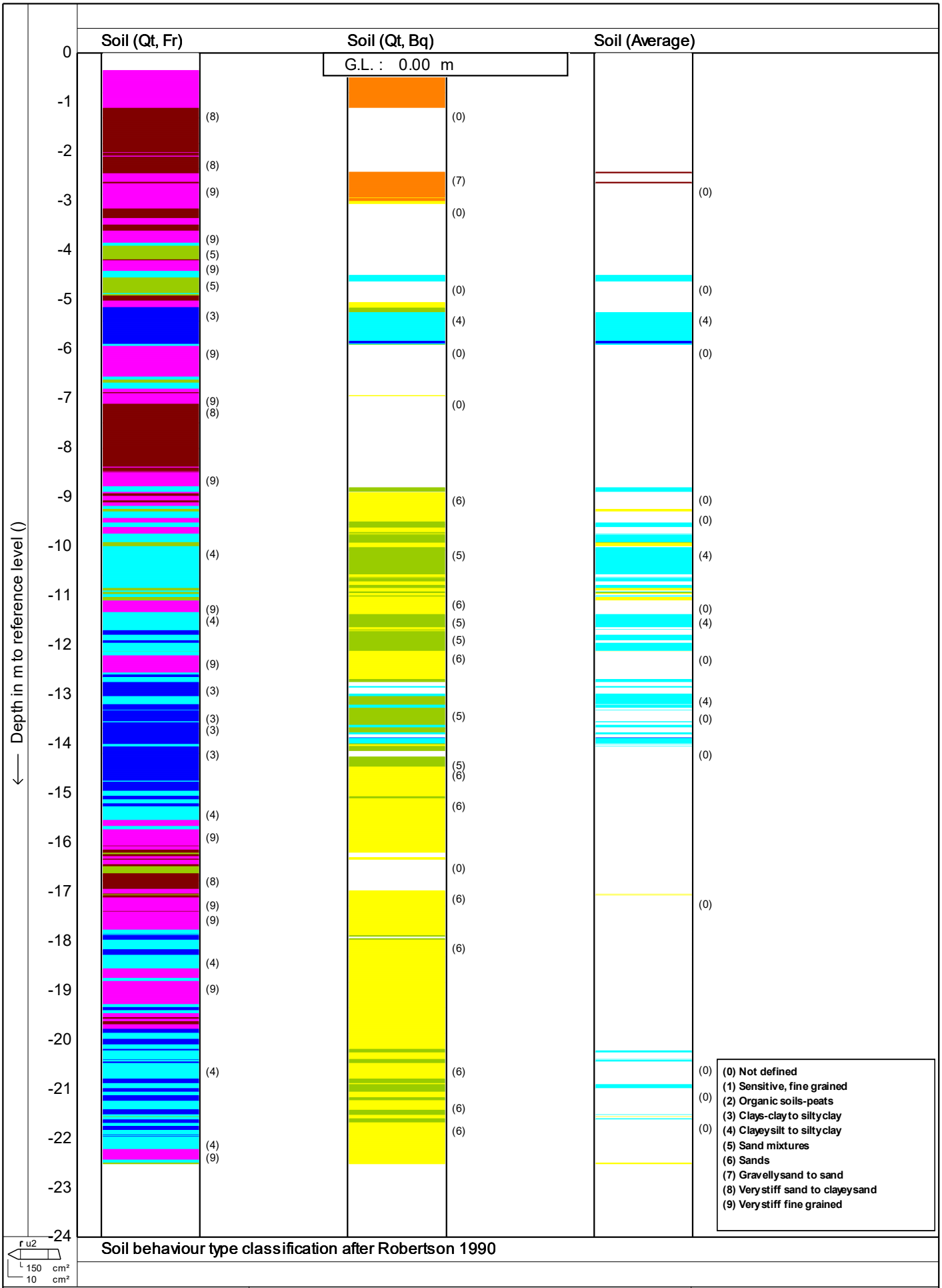
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **006**

12/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

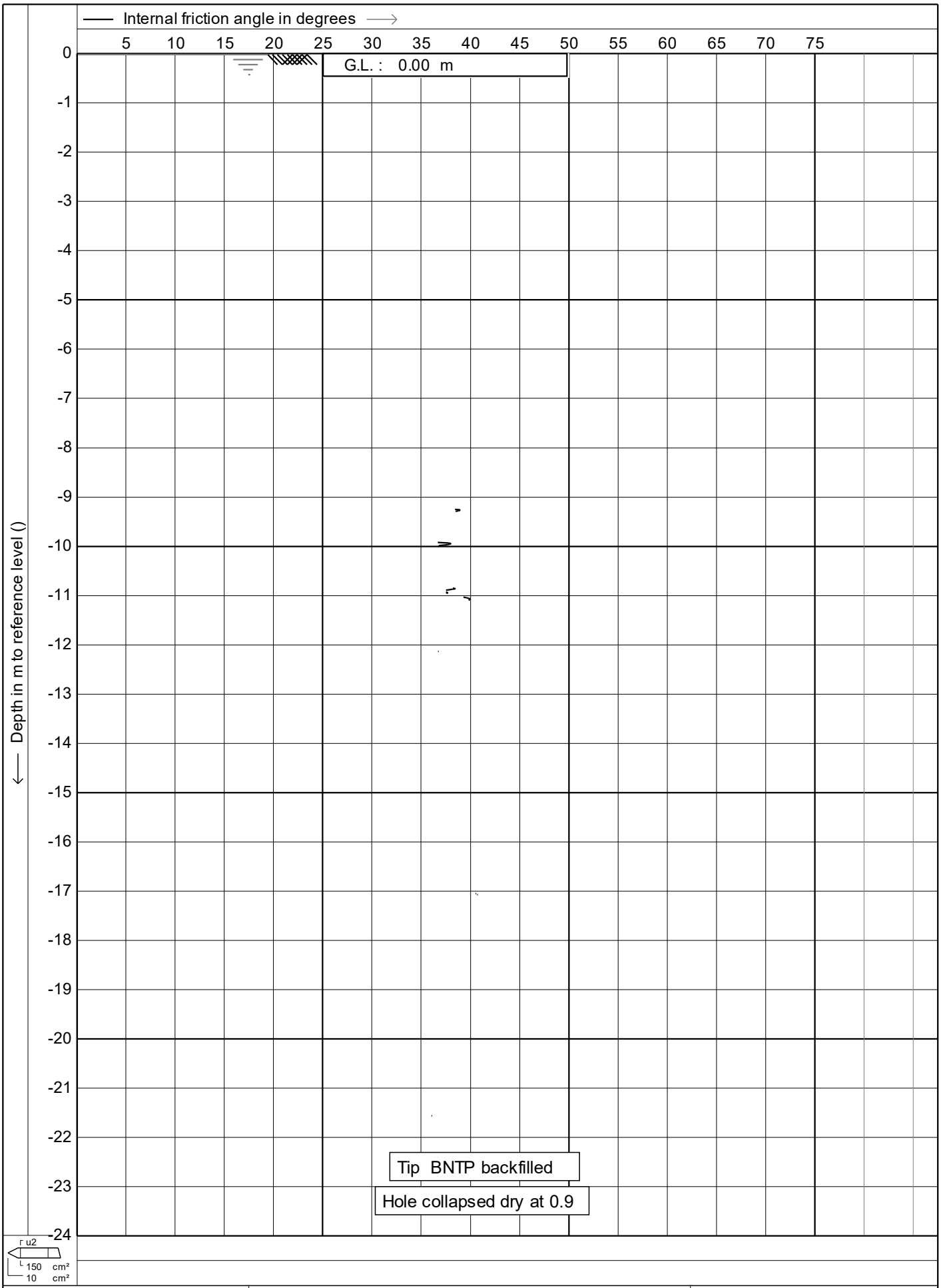
Date : **2/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **006**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

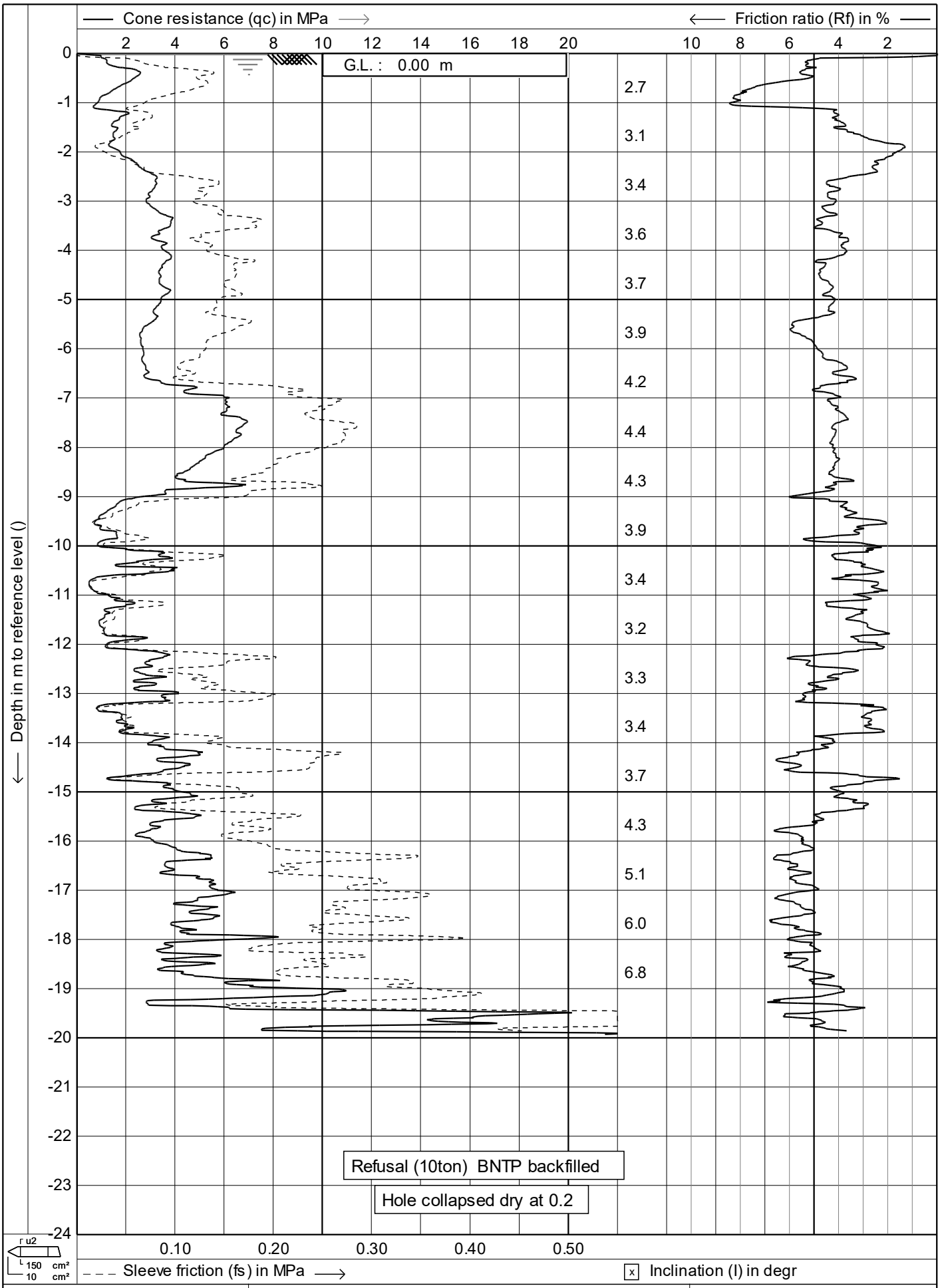
Date : **2/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **006** **14/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

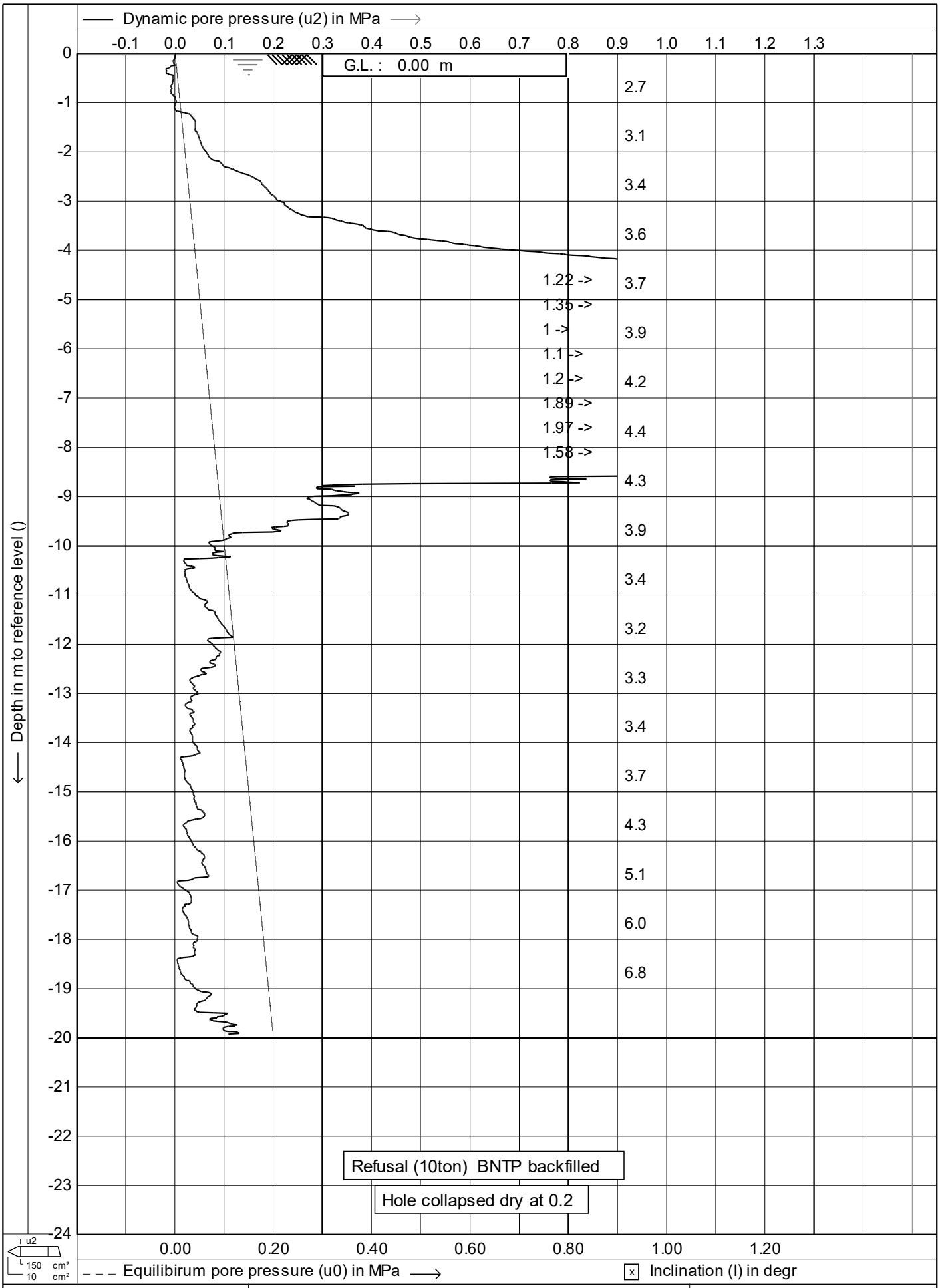
Date : **2/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **007**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

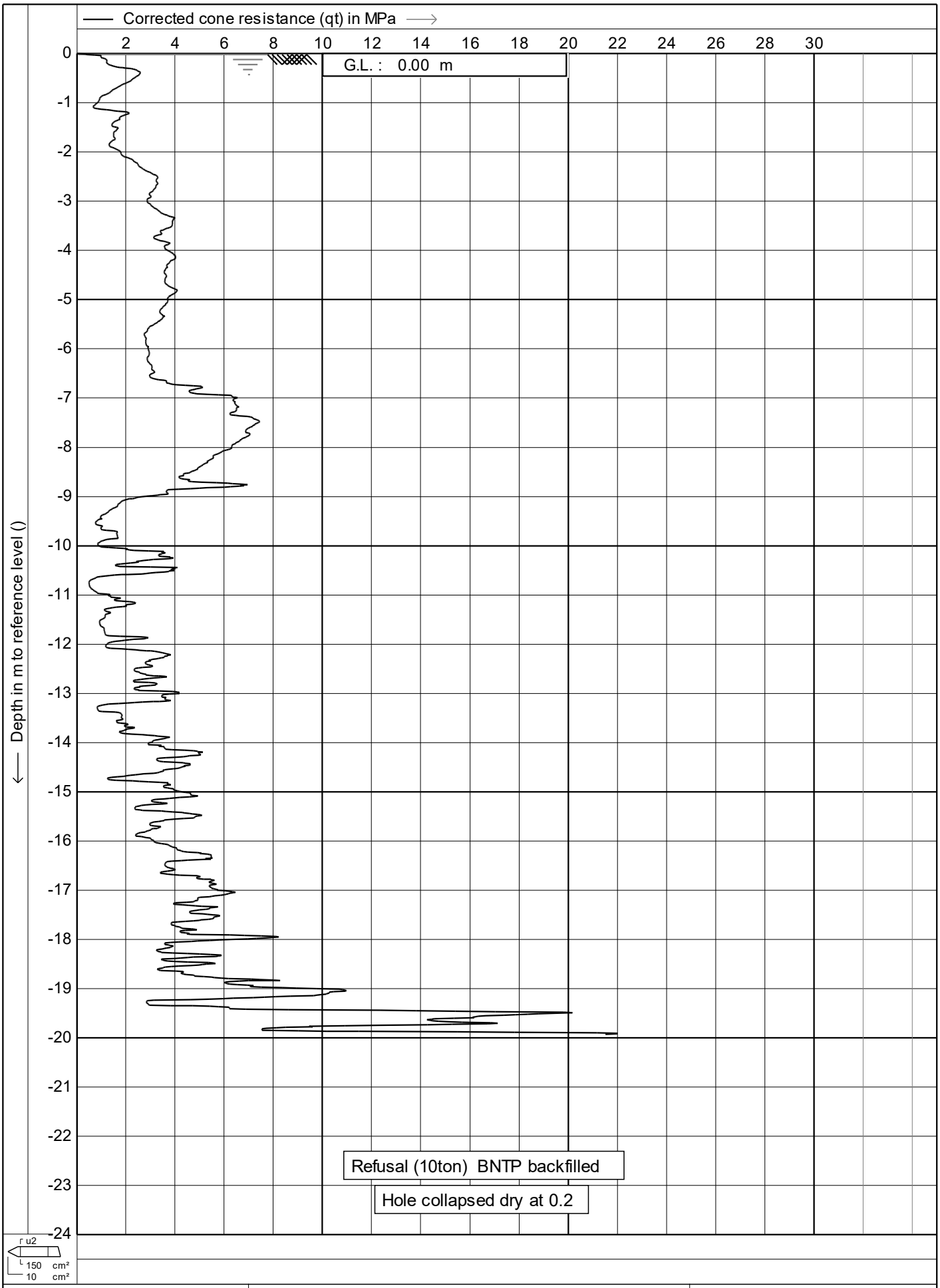
Date : **2/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **007**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

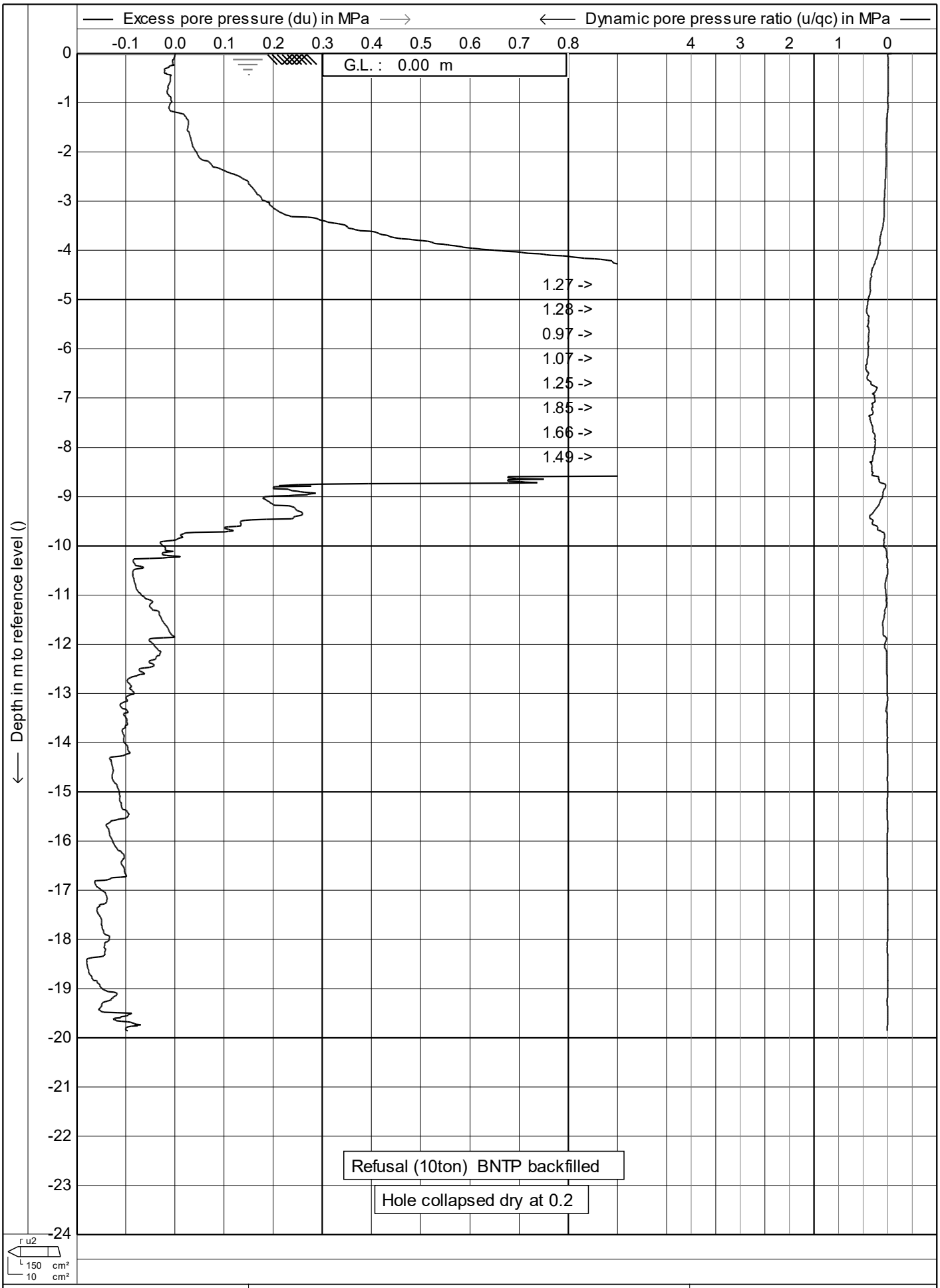
Date : **2/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **007**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **2/12/2020**

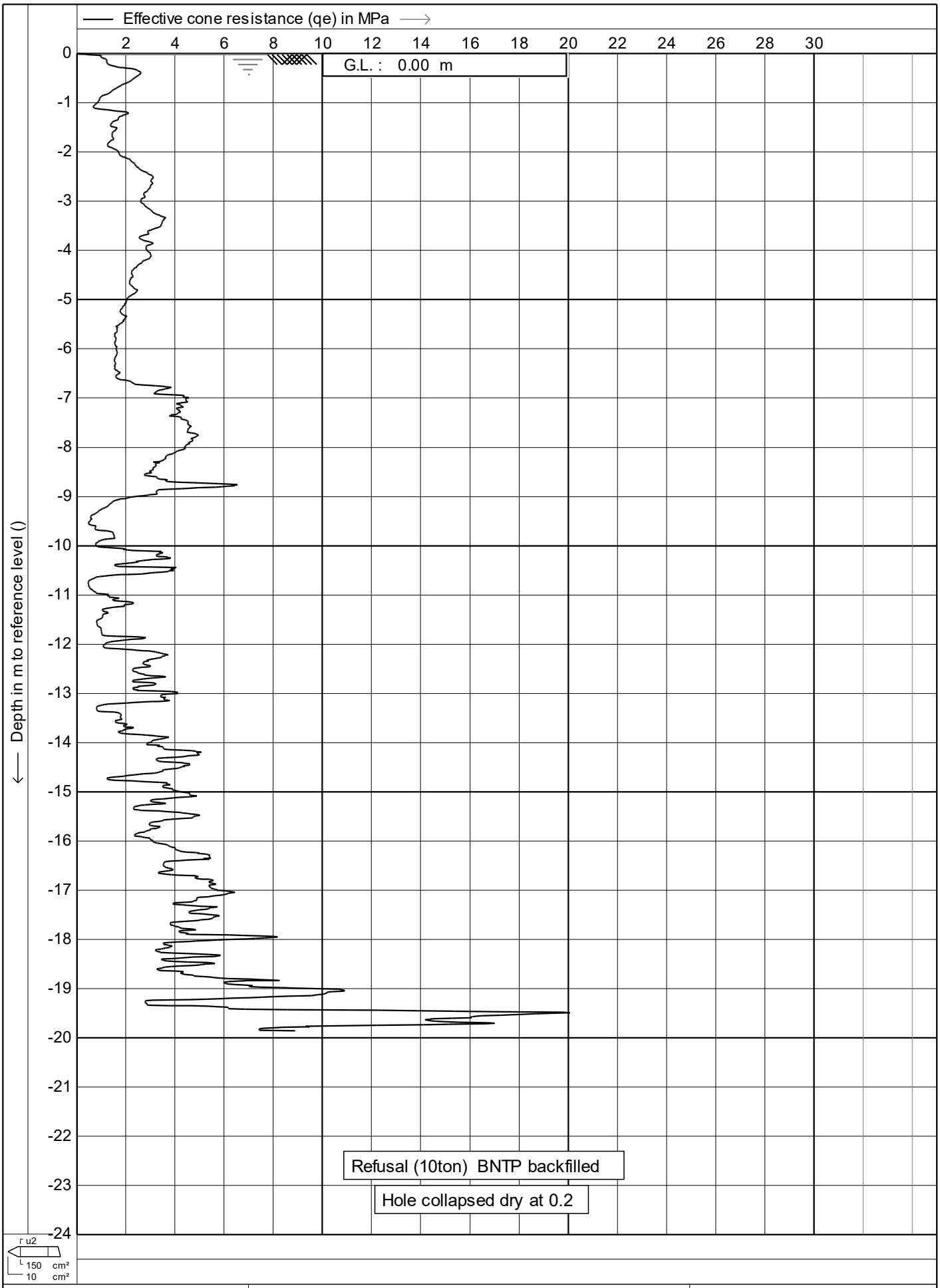
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **007**

4/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

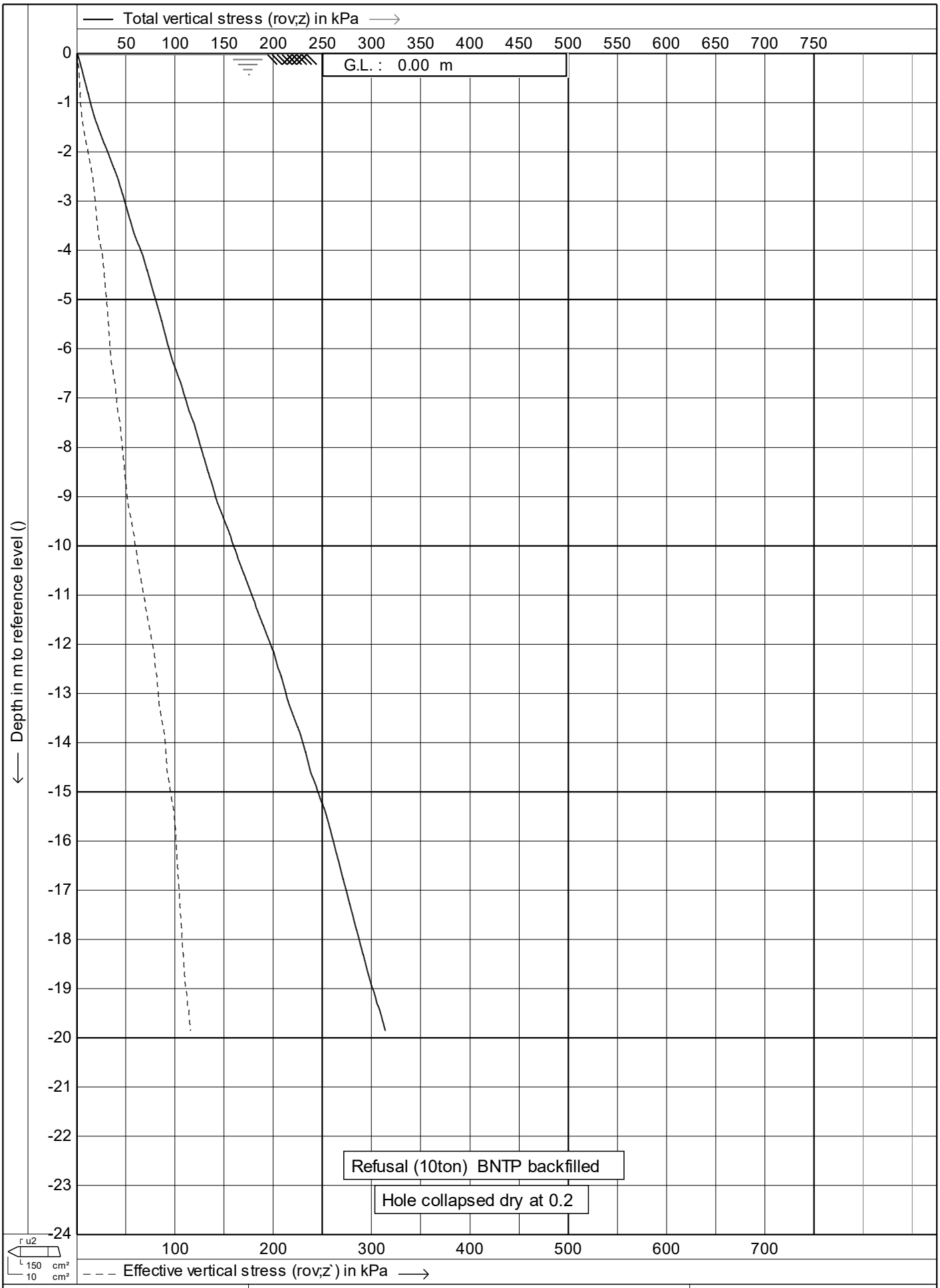
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

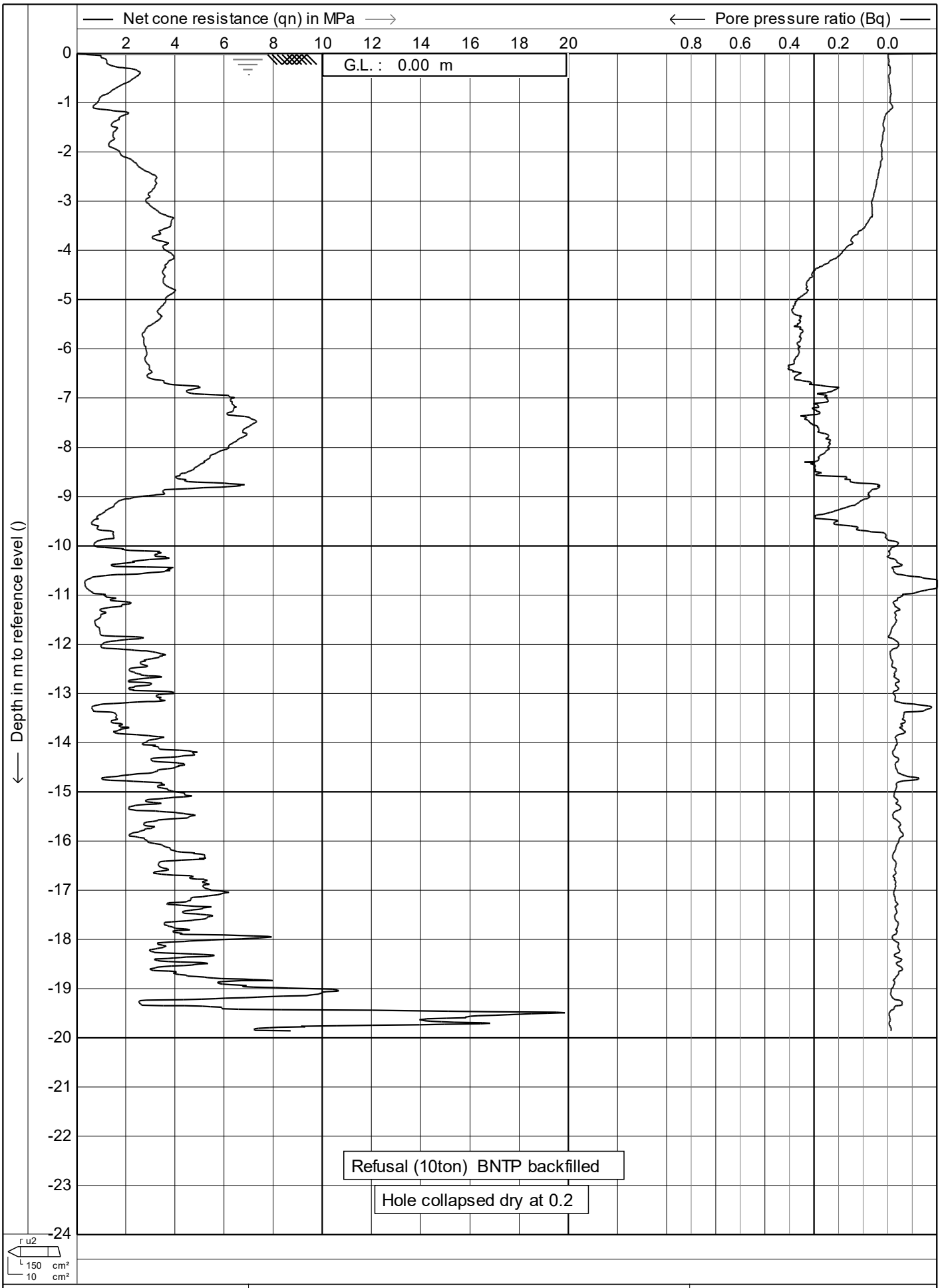
Date	: **2/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **007**

1.48



PERRY GEOTECH	Test according A.S.T.M Standard D 5778-12	Date : **2/12/2020**
	Project : **Site Investigations**	Cone no. : **C10CFIIP.C14426**
	Location: **Fitzgerald Rd - Drury**	Project no. : **05AU7**
	Position: **0, 0**	CPT no. : **007** **6/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

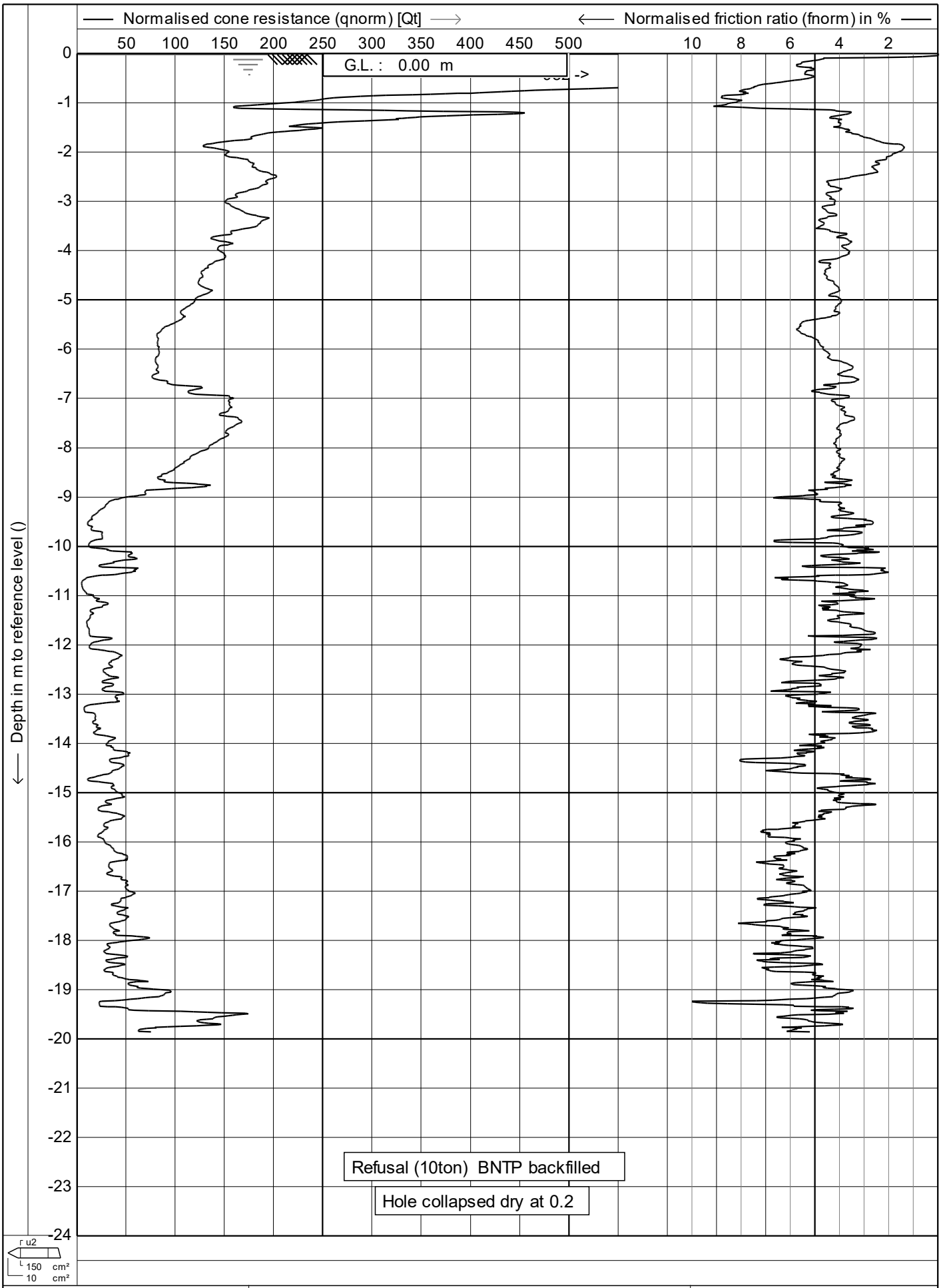
Date : **2/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **007** **7/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

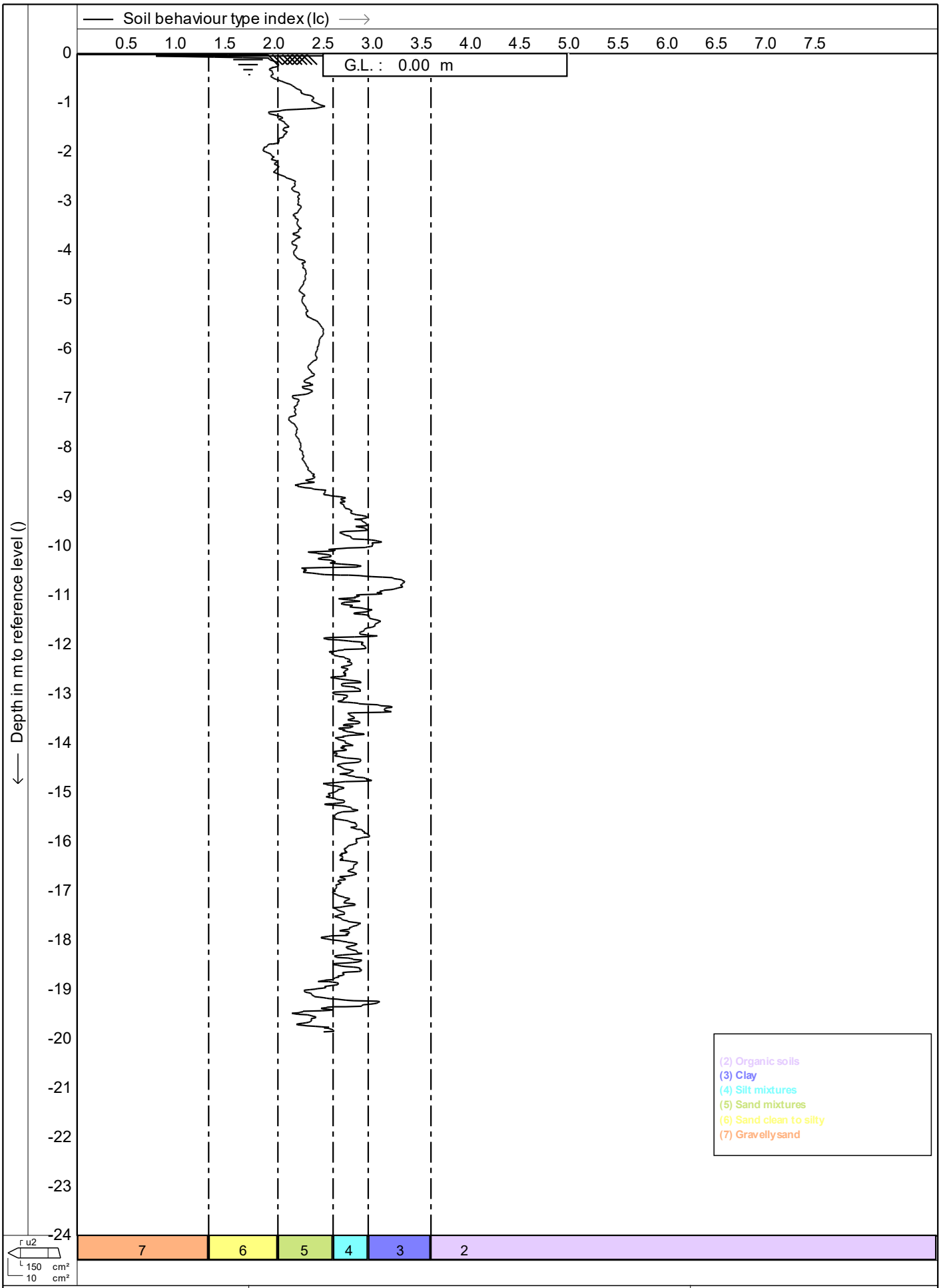
Date : **2/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **007** **8/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

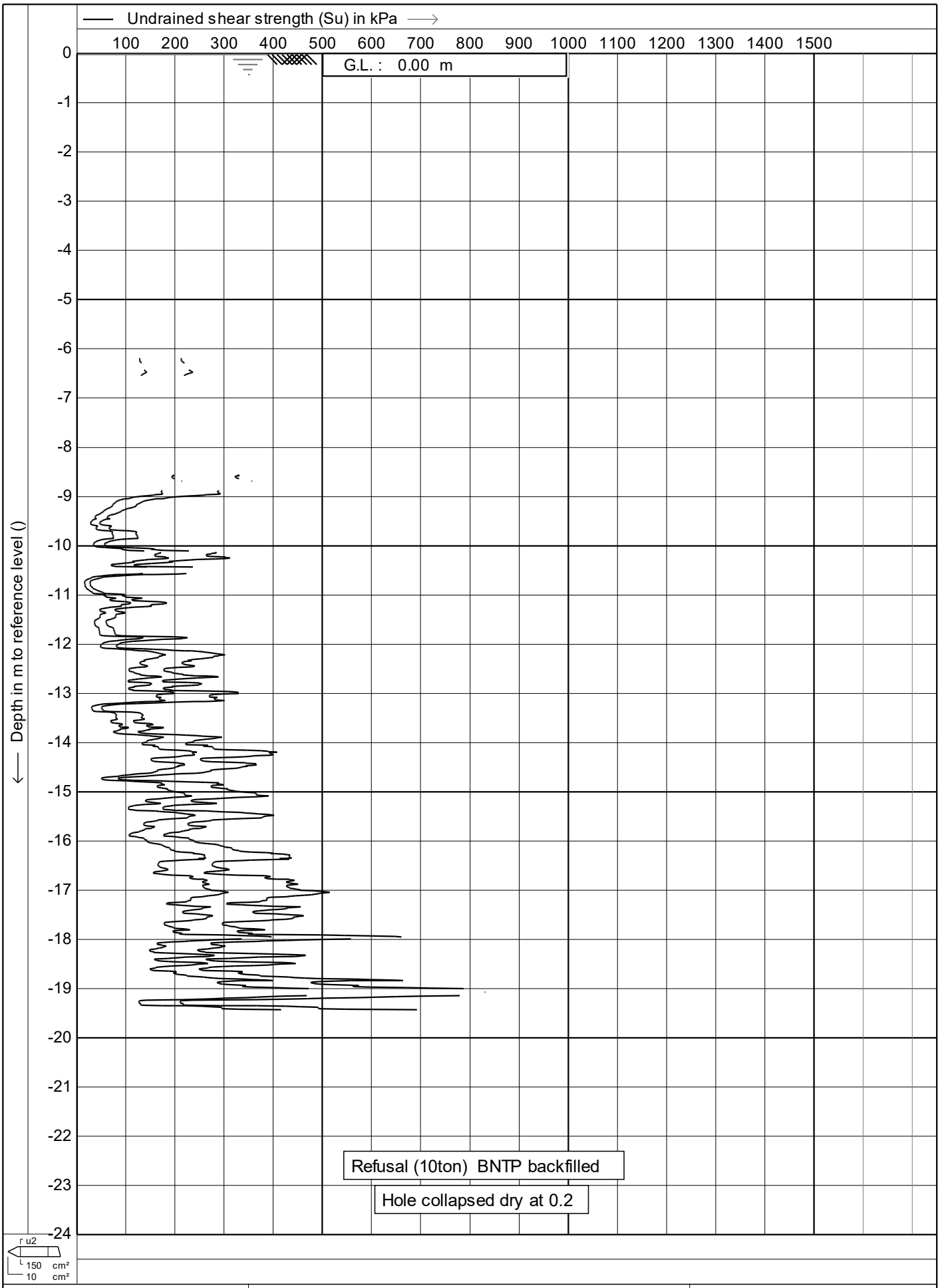
Date : **2/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **007** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **2/12/2020**

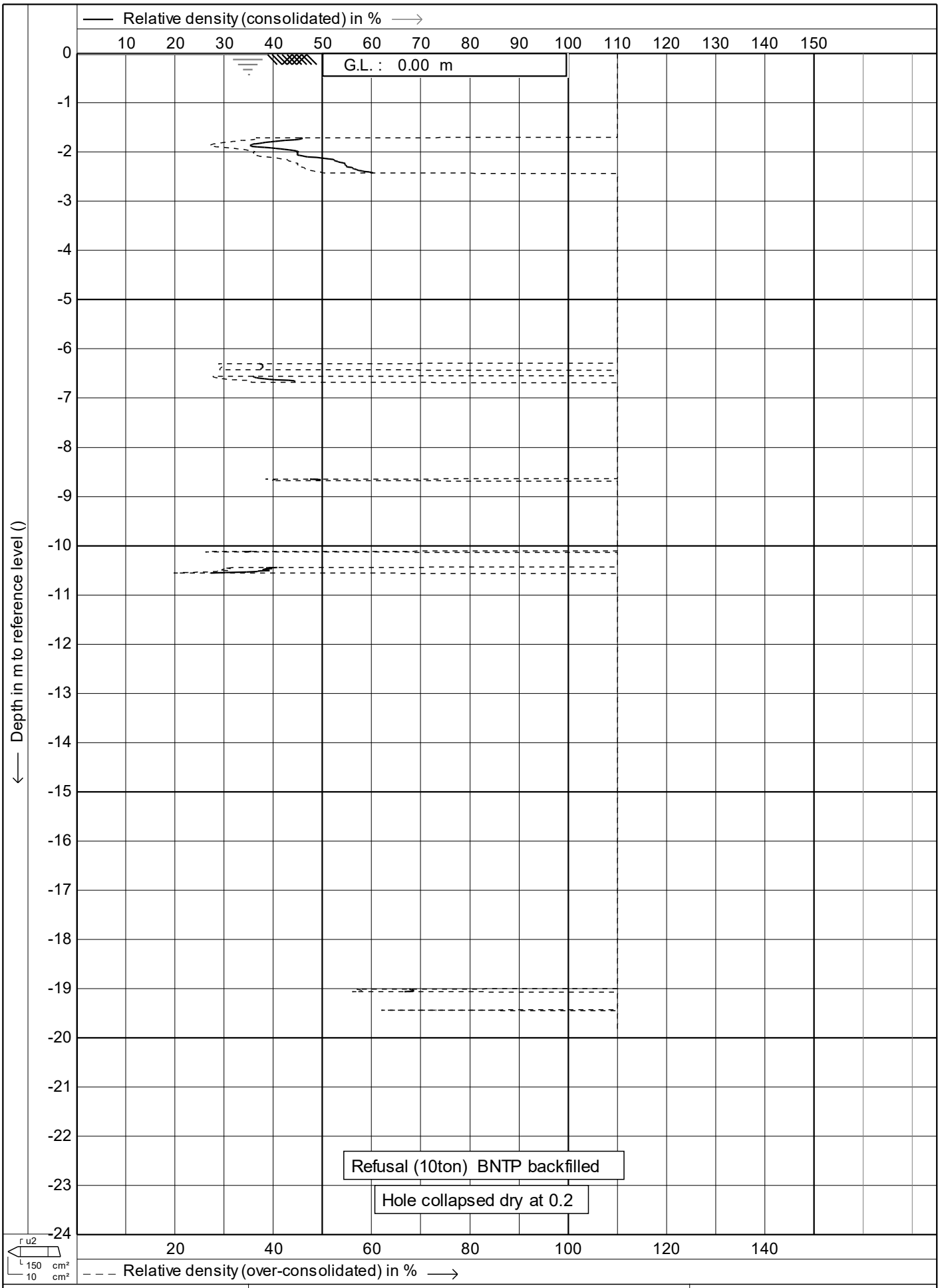
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **007**

10/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

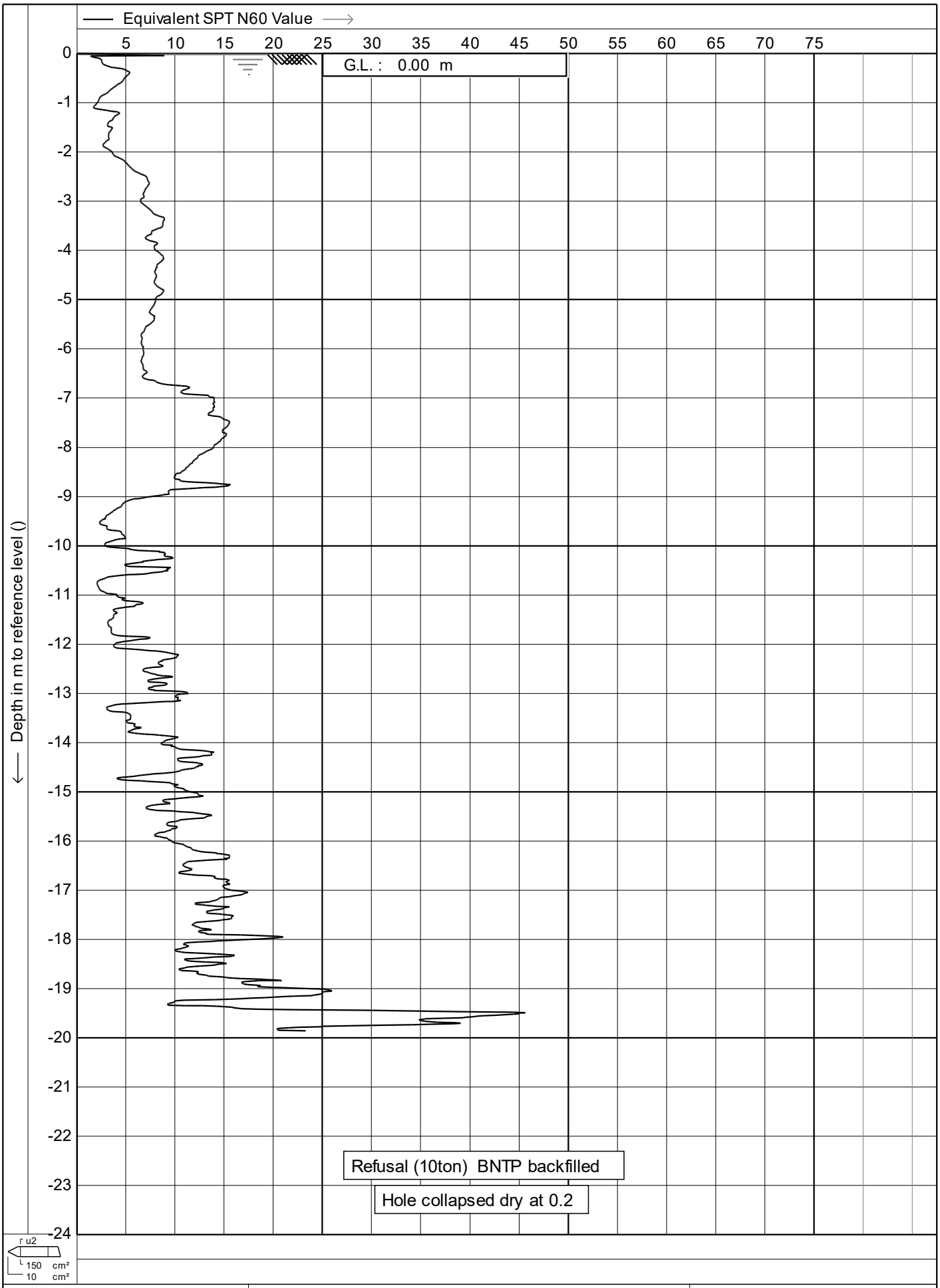
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **2/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **007**

11/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

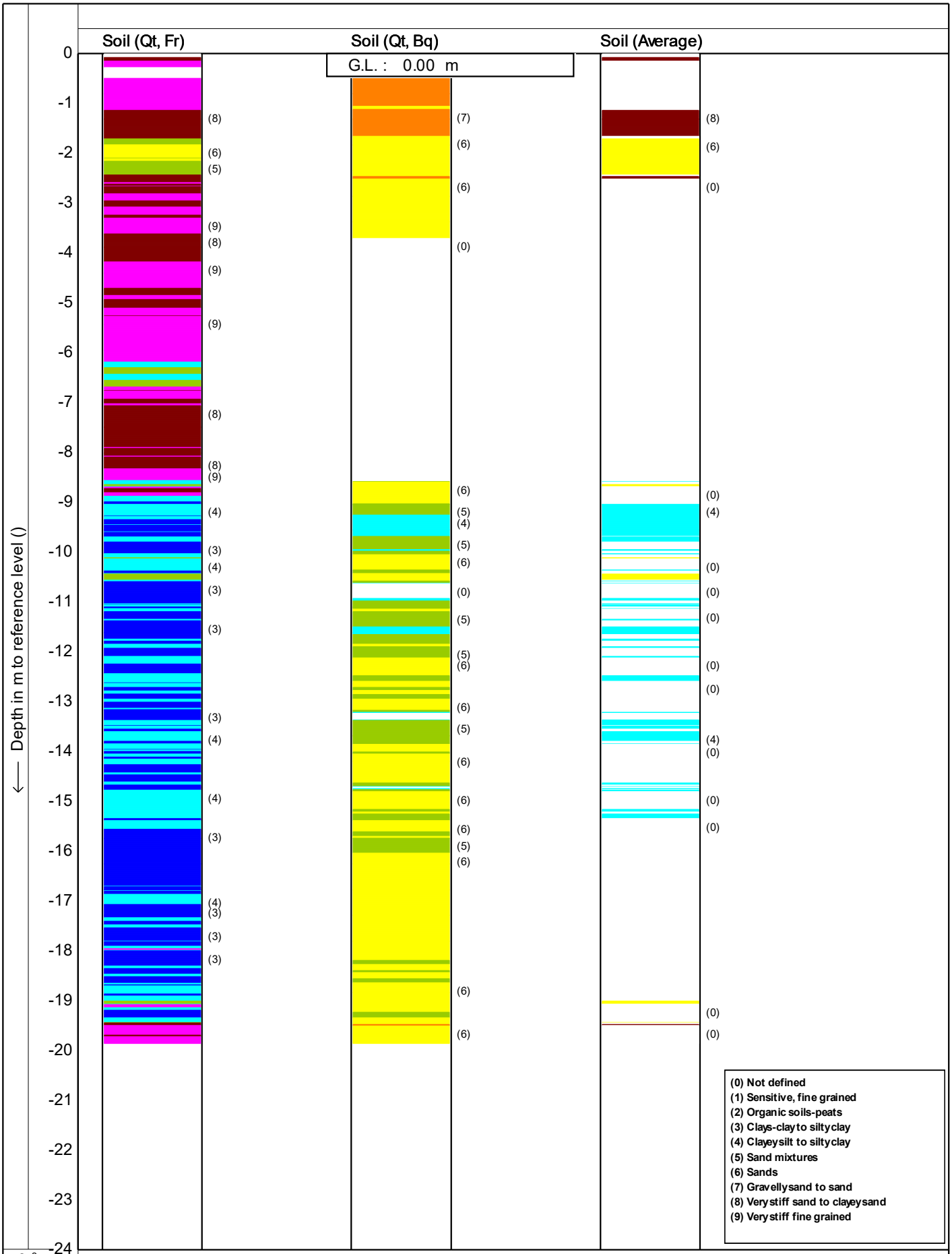
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **2/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **007**

12/14

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

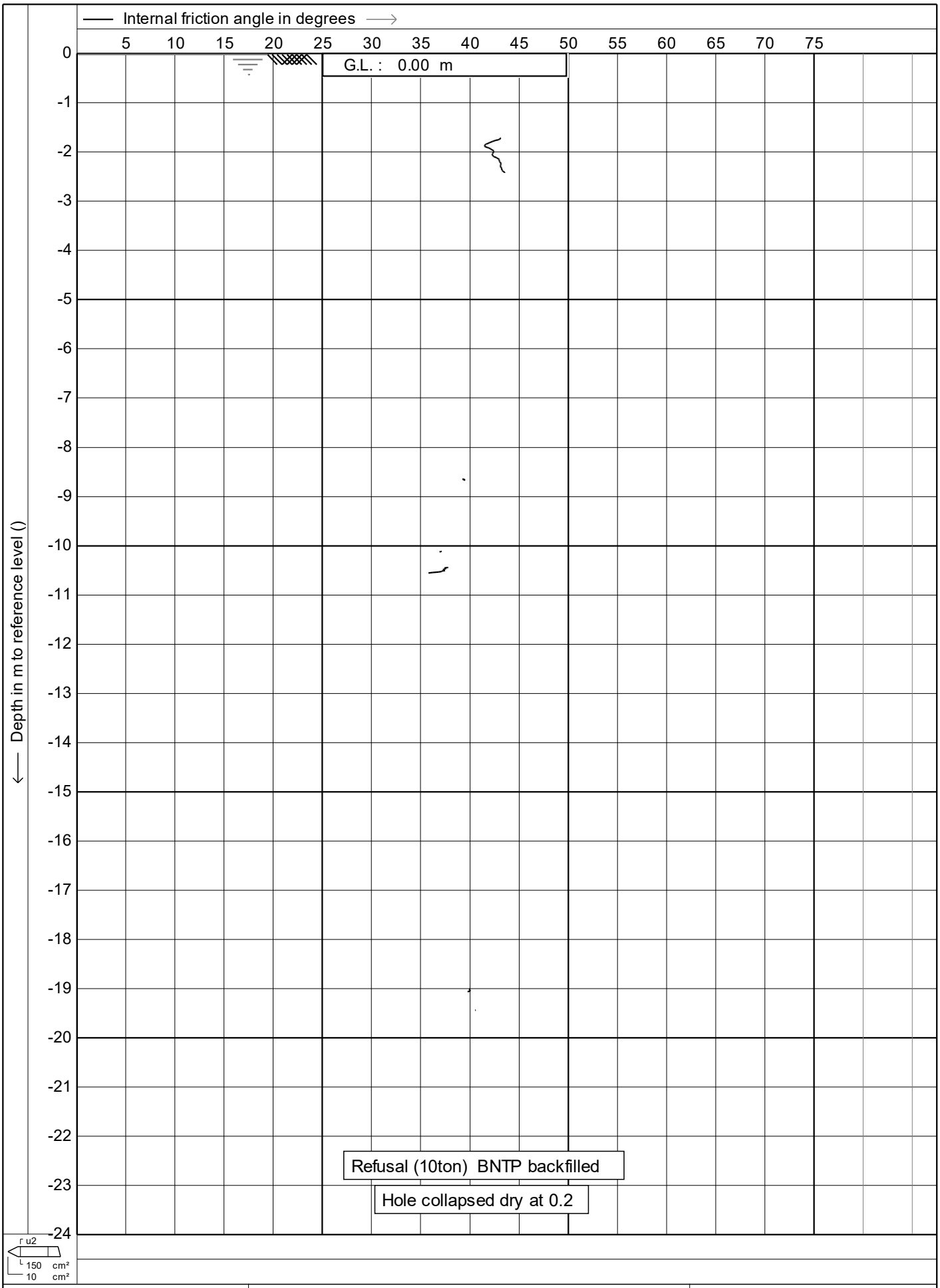
Date : **2/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **007**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

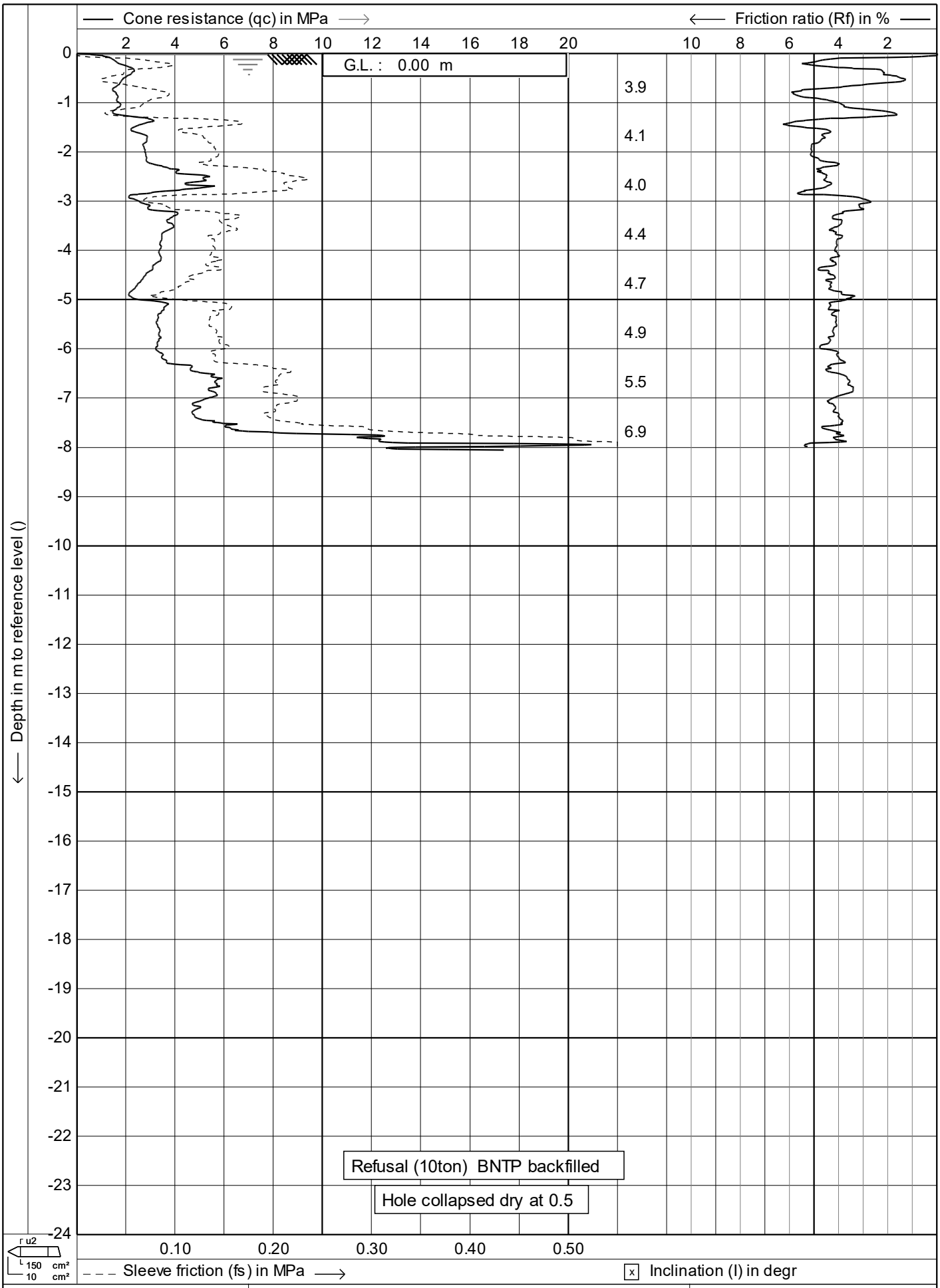
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **2/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **007**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

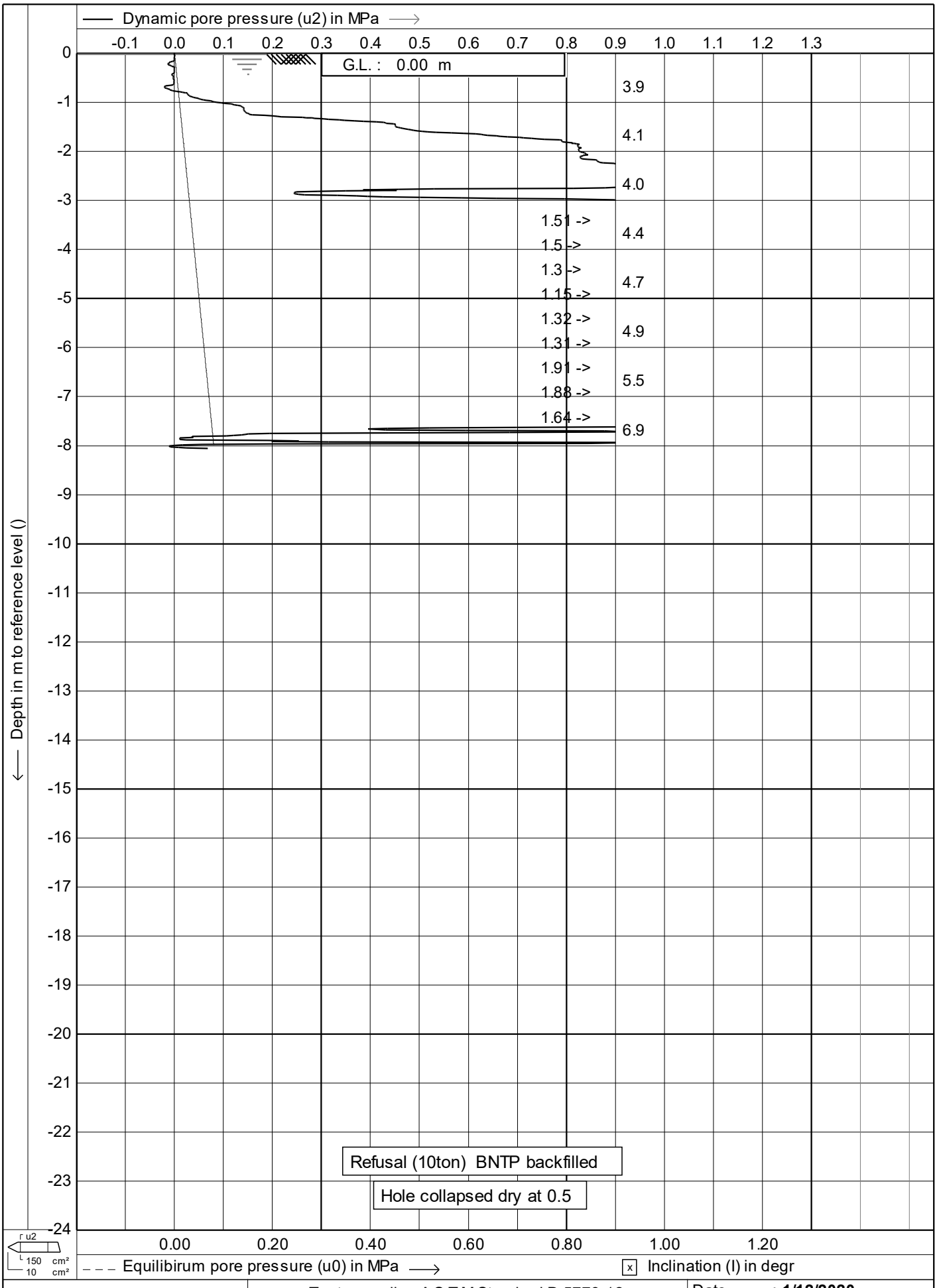
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **008**

1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

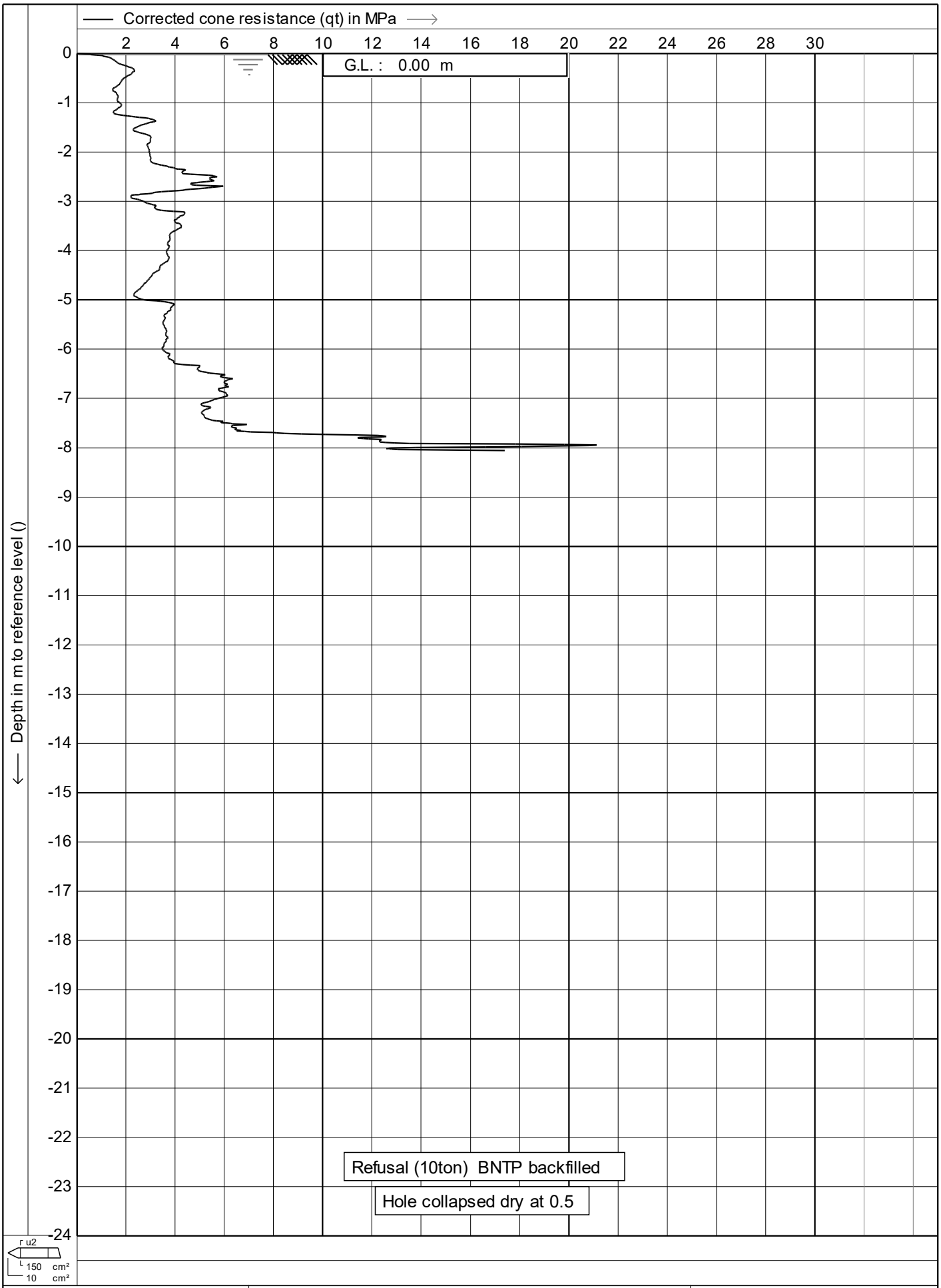
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **008**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

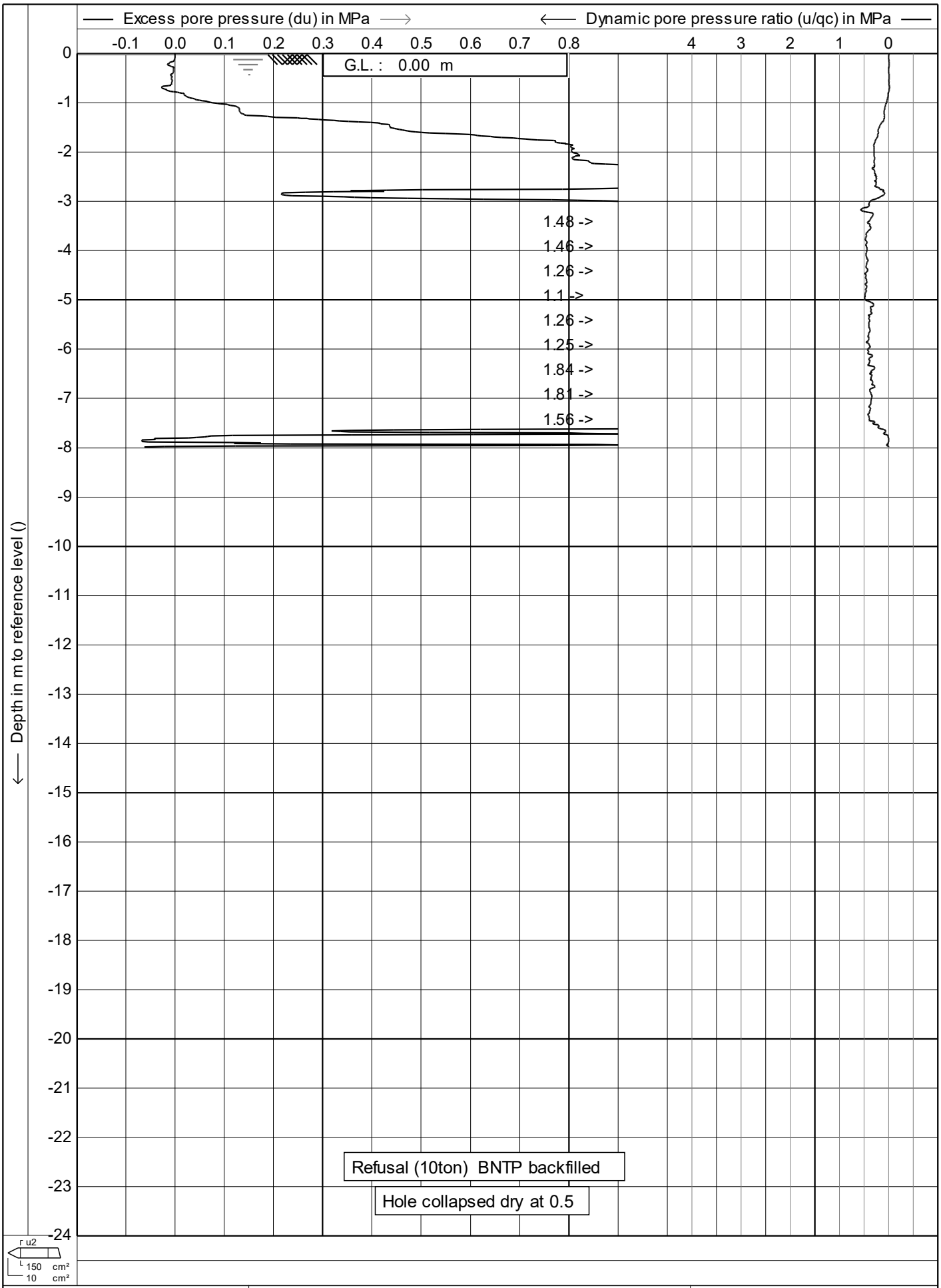
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **008**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

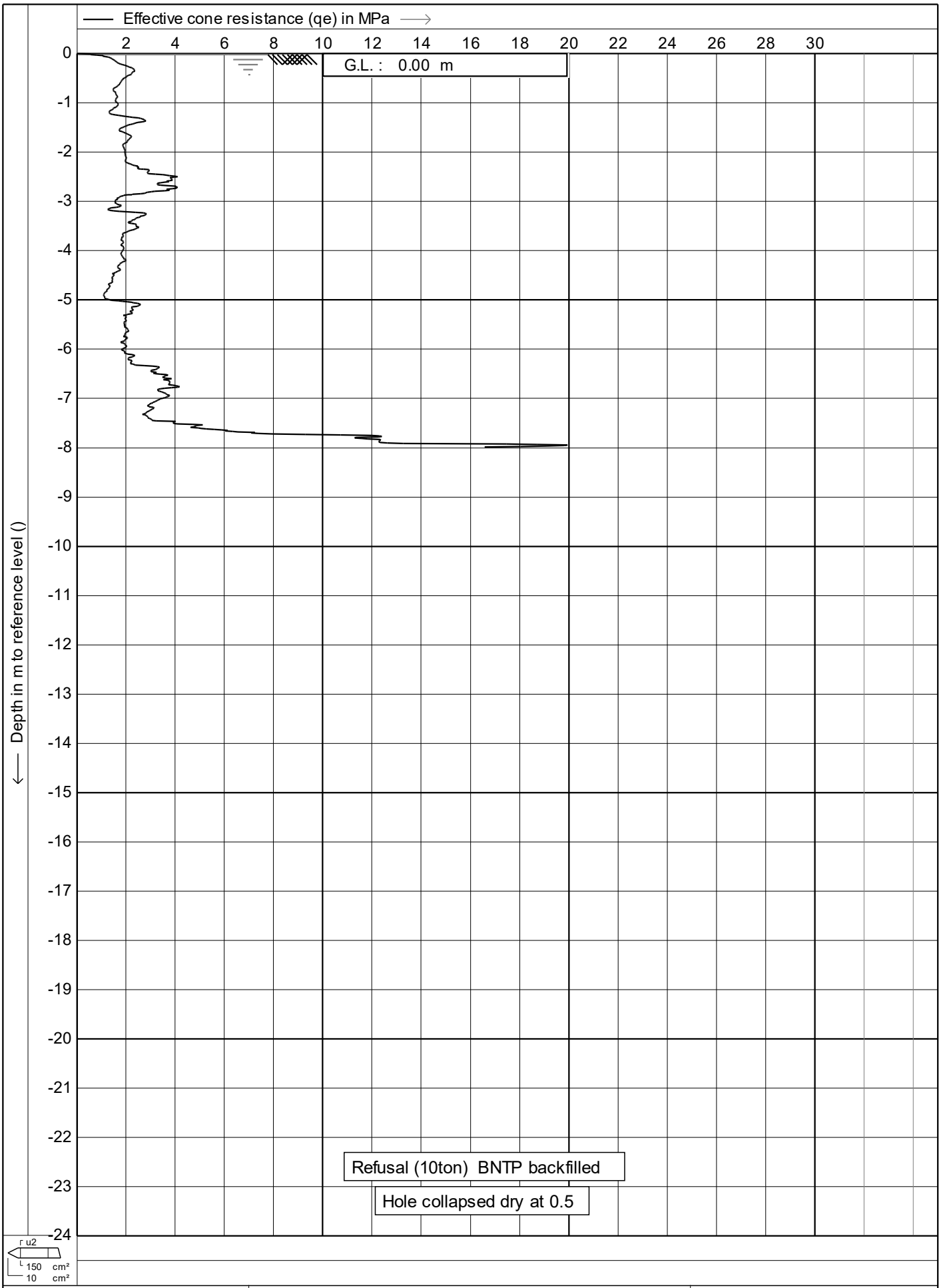
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **008** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

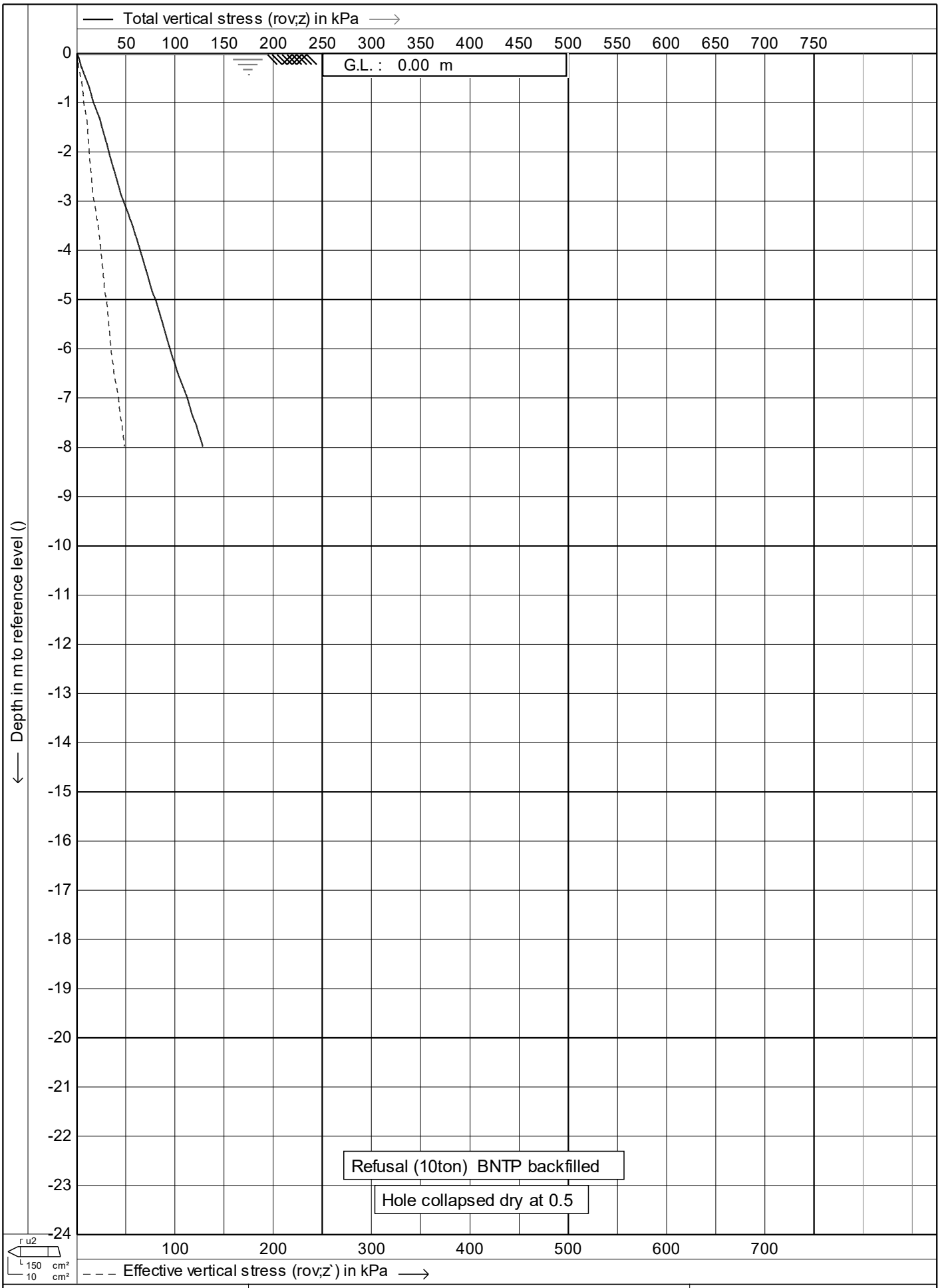
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Project no. : **05AU7**

CPT no. : **008**

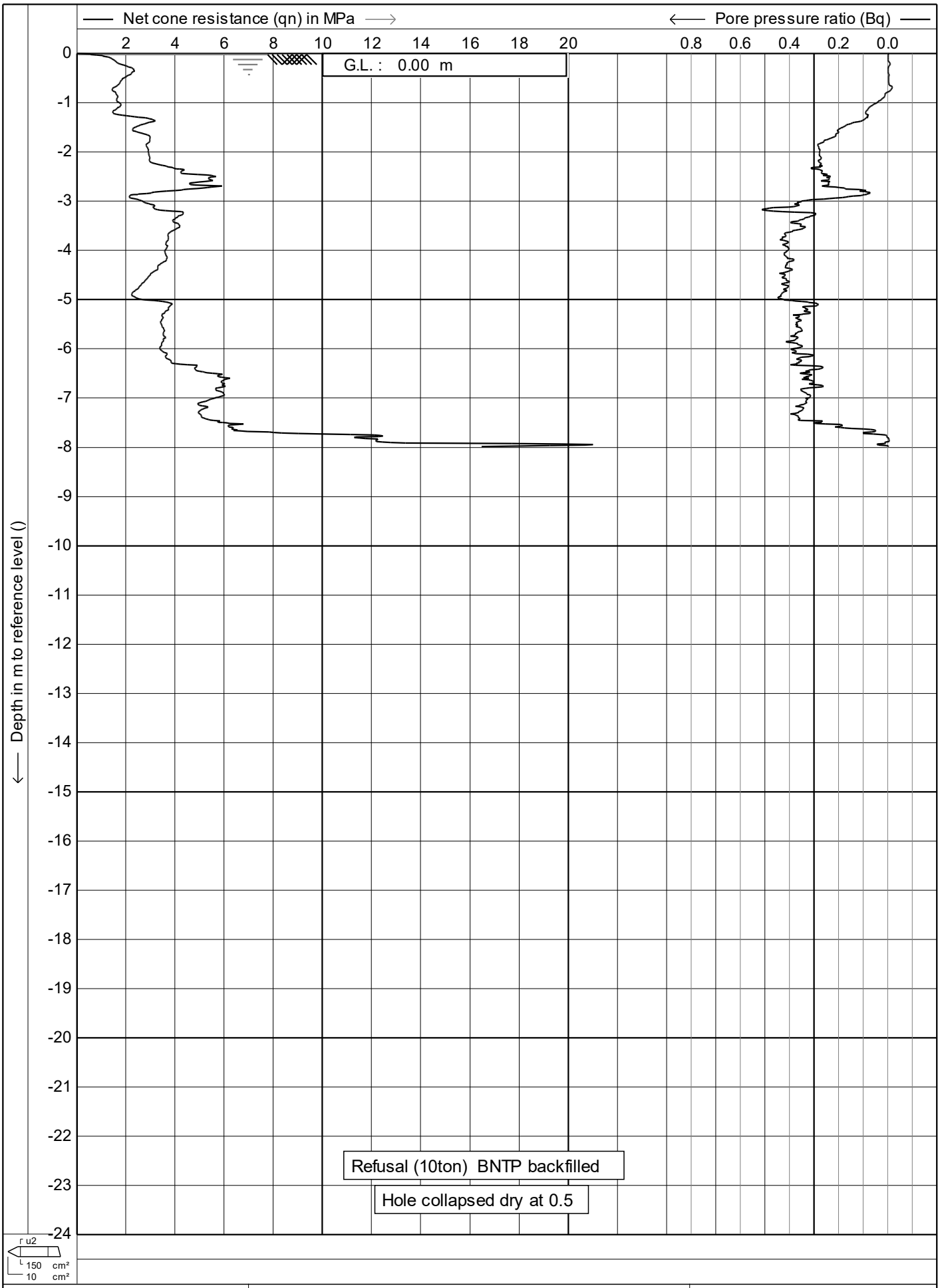
5/14

1.48



PERRY GEOTECH	Test according A.S.T.M Standard D 5778-12	Date : **1/12/2020**
	Project : **Site Investigations**	Cone no. : **C10CFIIP.C14426**
	Location: **Fitzgerald Rd - Drury**	Project no. : **05AU7**
	Position: **0, 0**	CPT no. : **008** **6/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

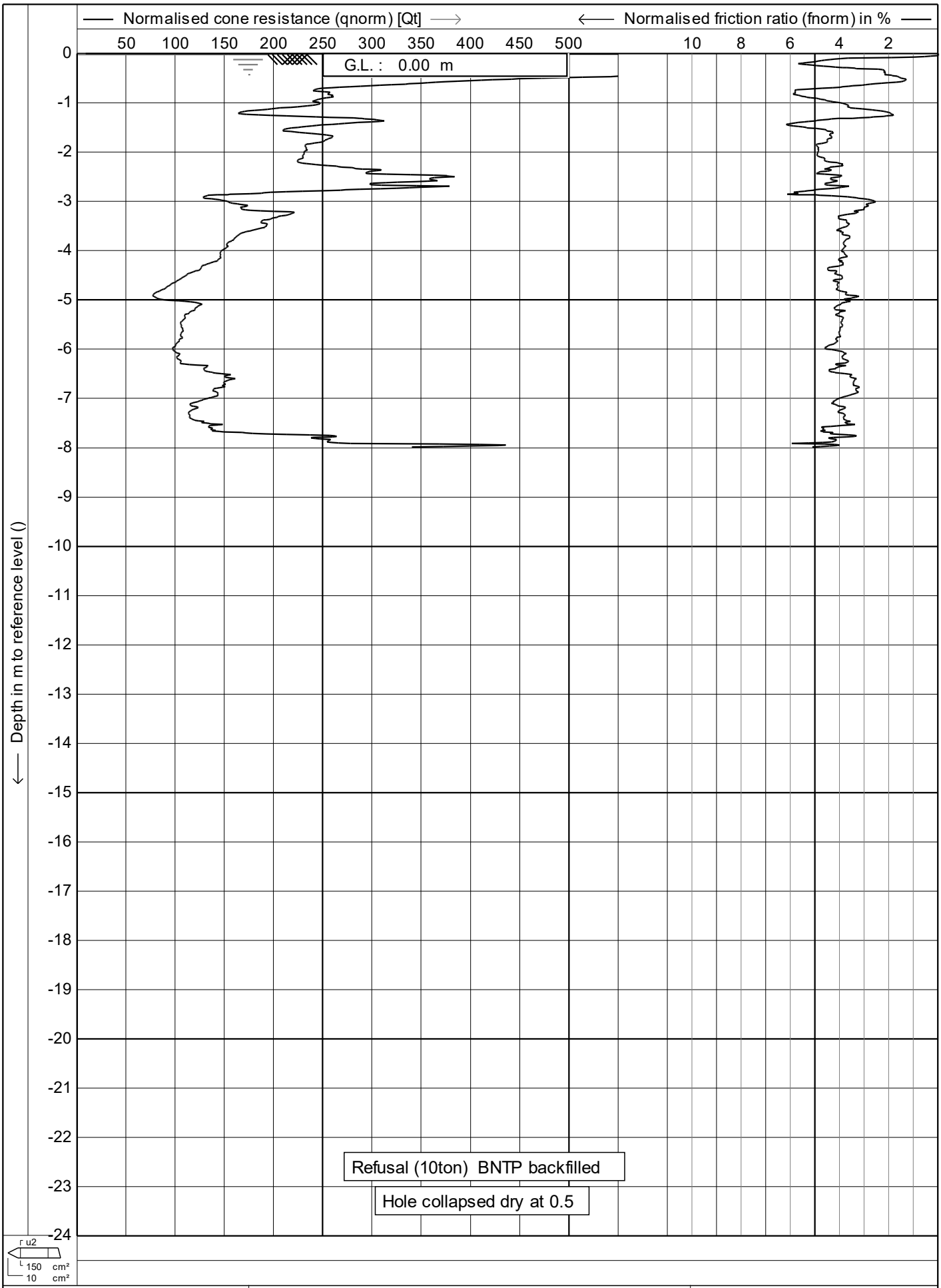
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **008**

7/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

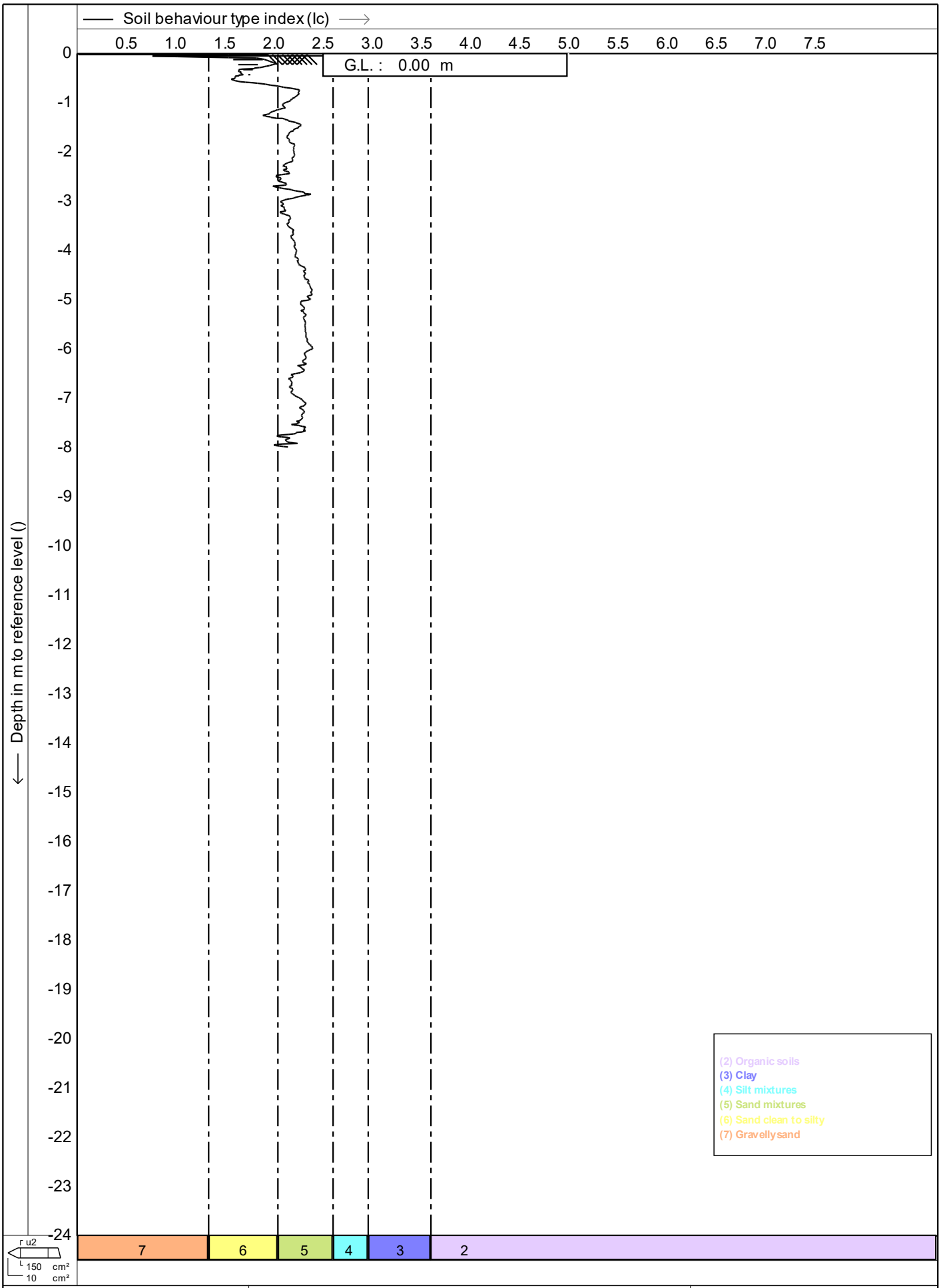
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **008**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

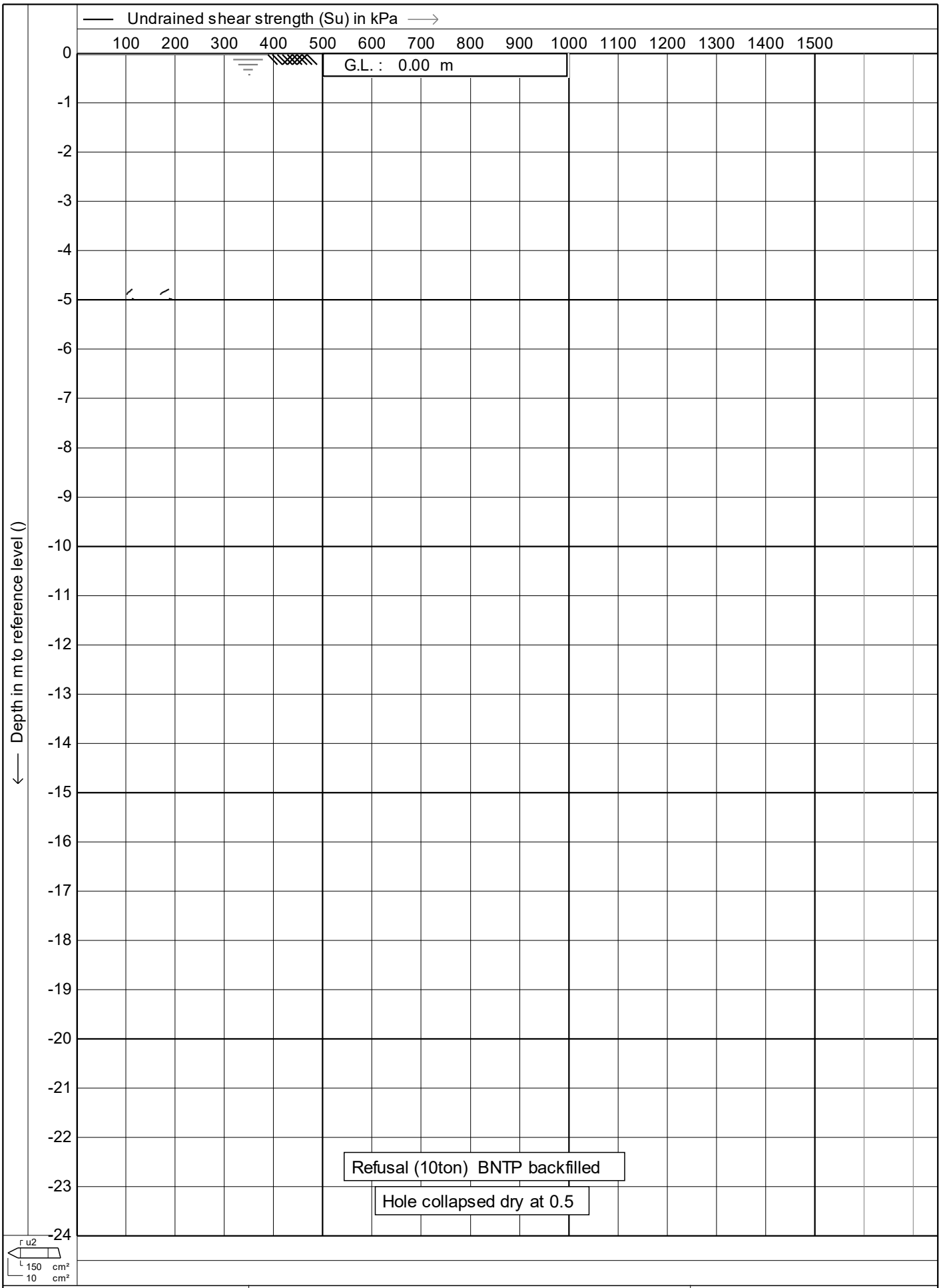
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **008** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

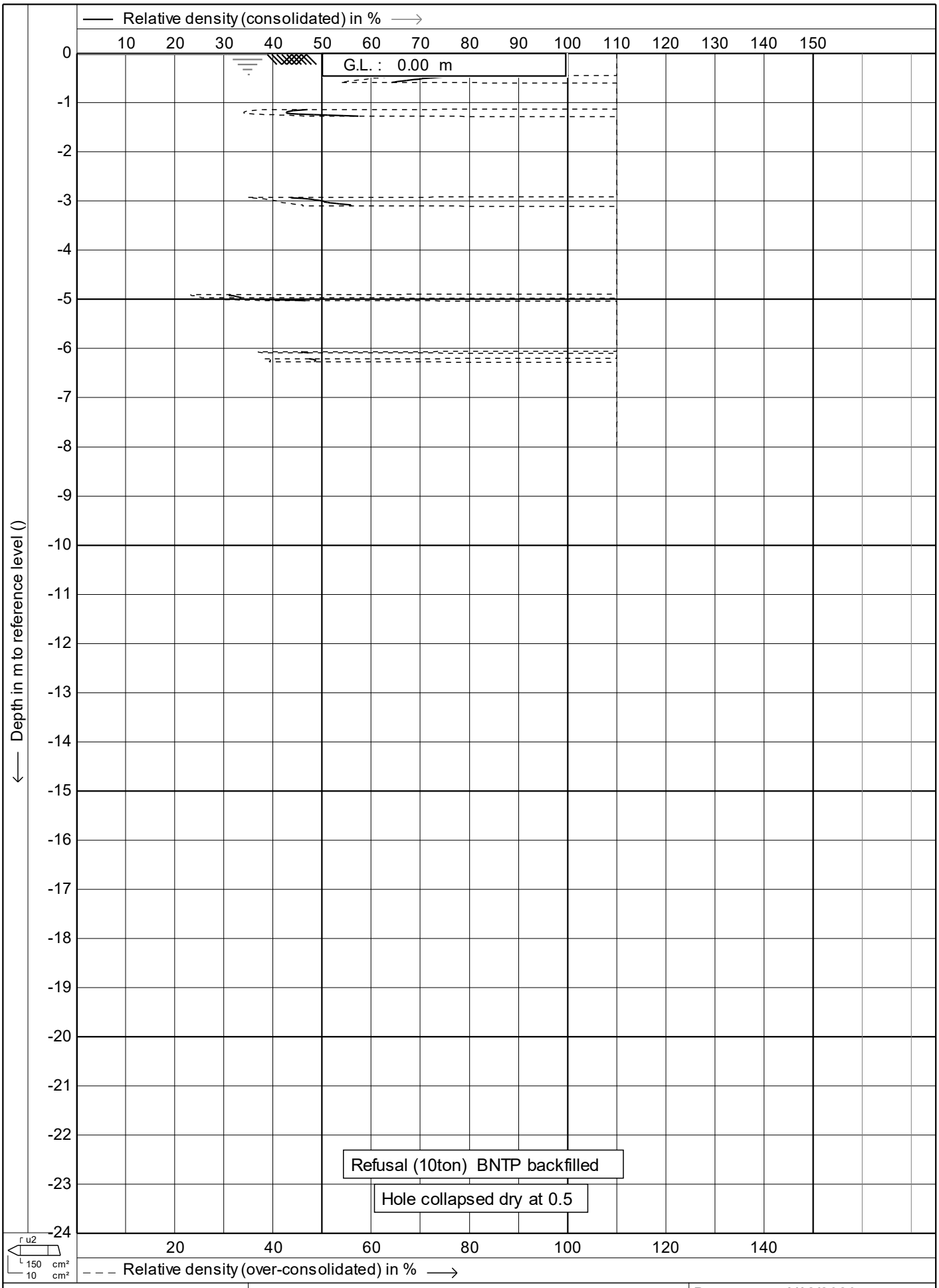
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **008**

10/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

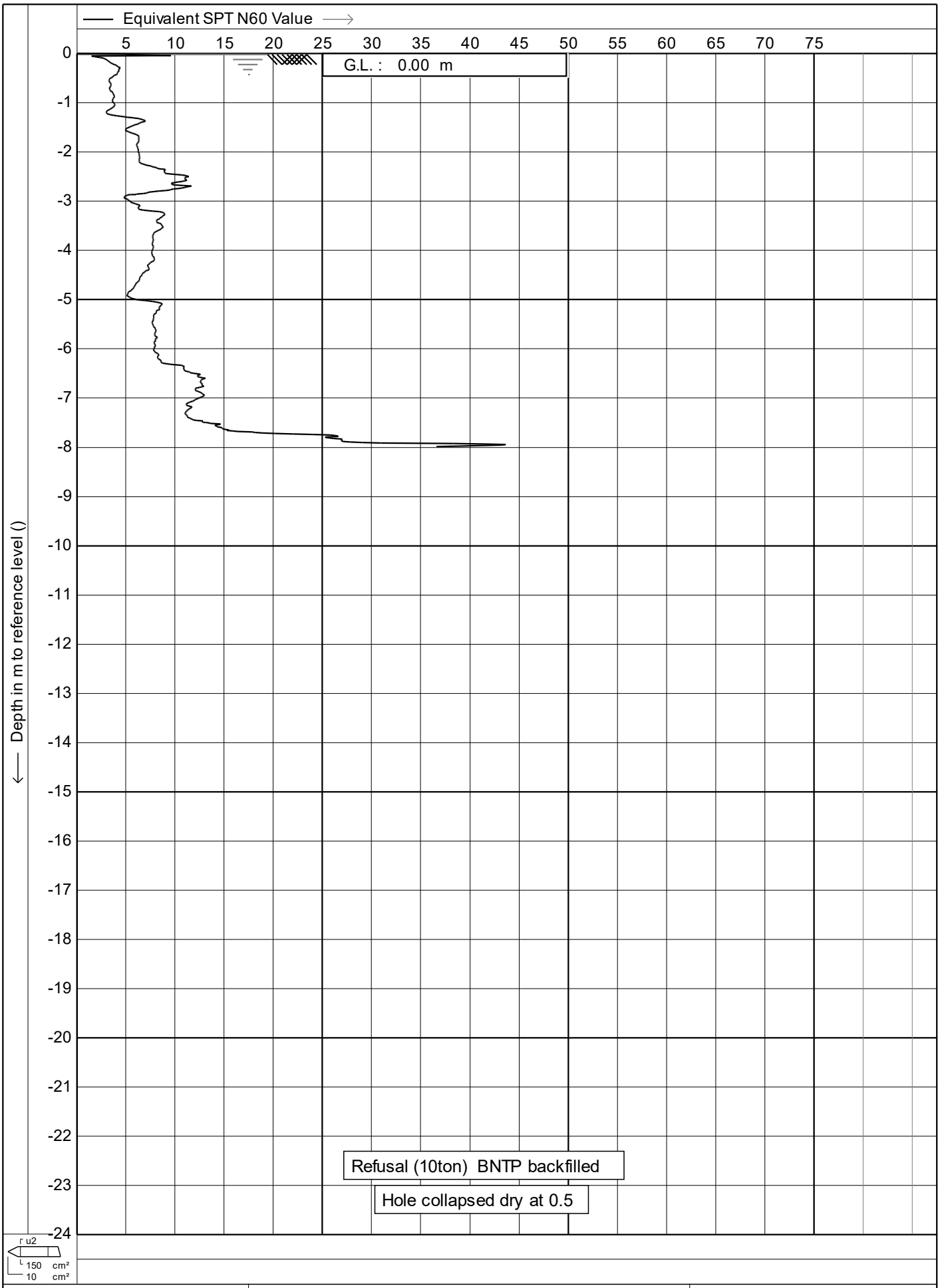
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **008** **11/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

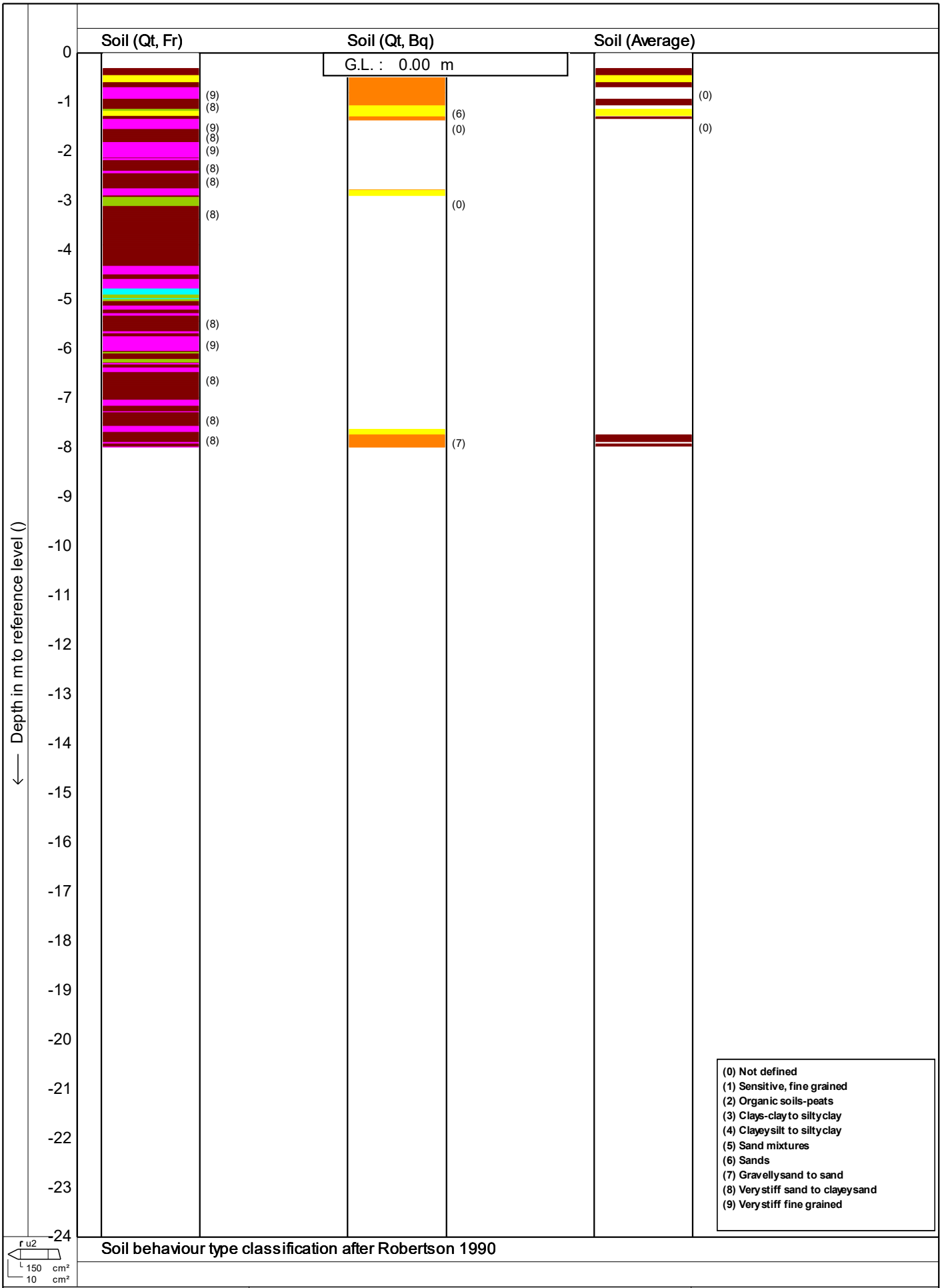
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **008**

12/14

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

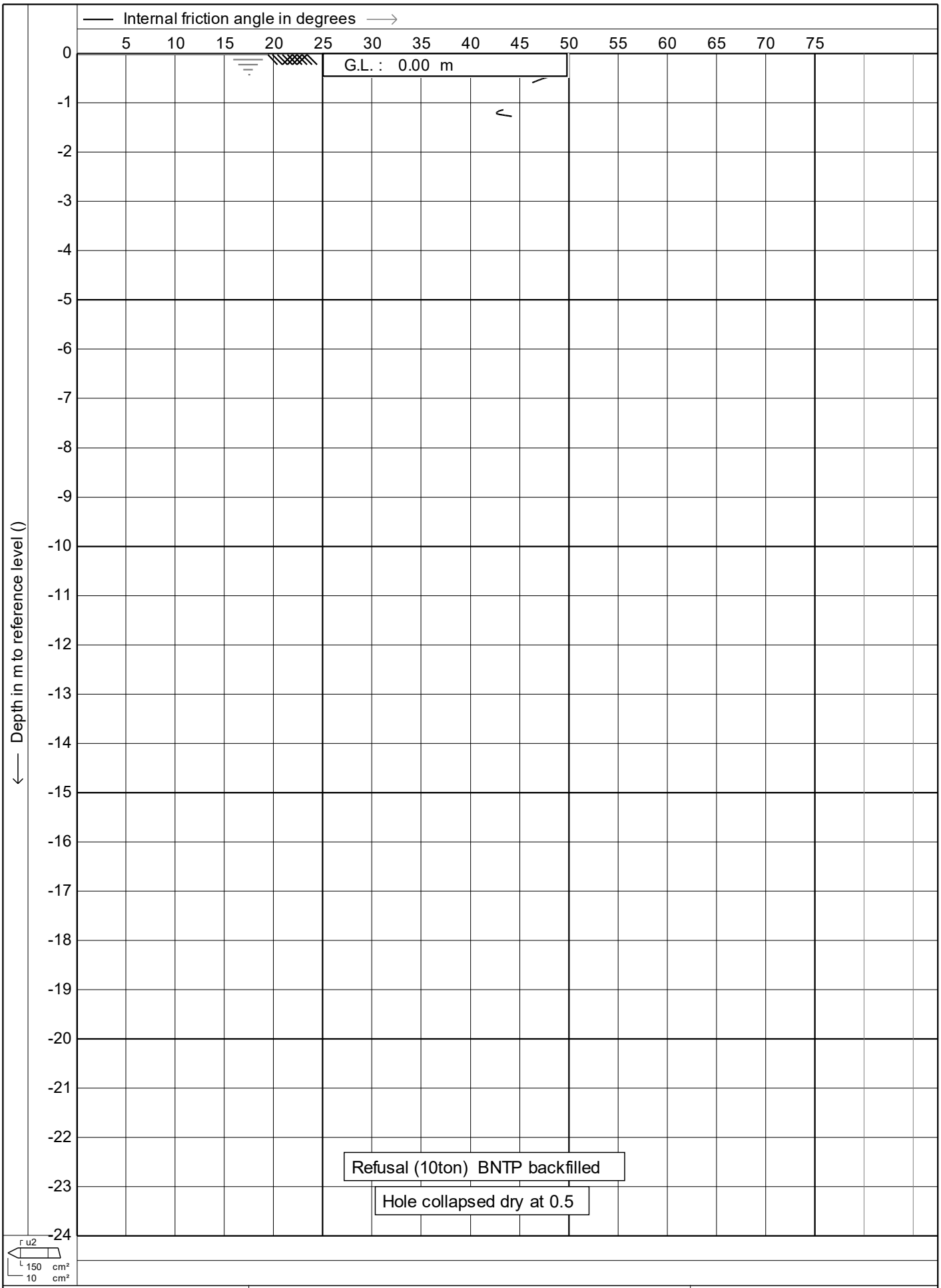
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **008**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

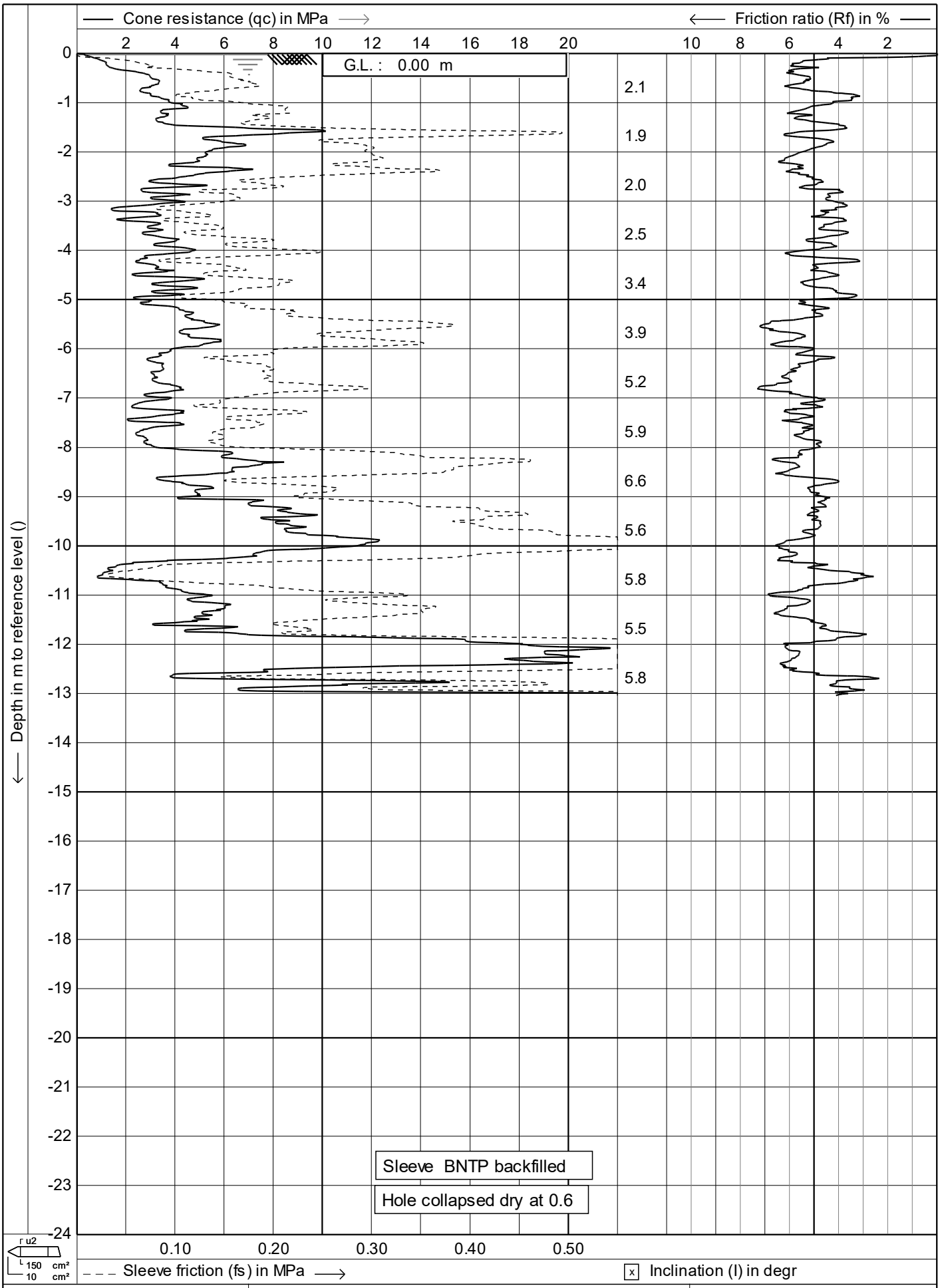
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **008** **14/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

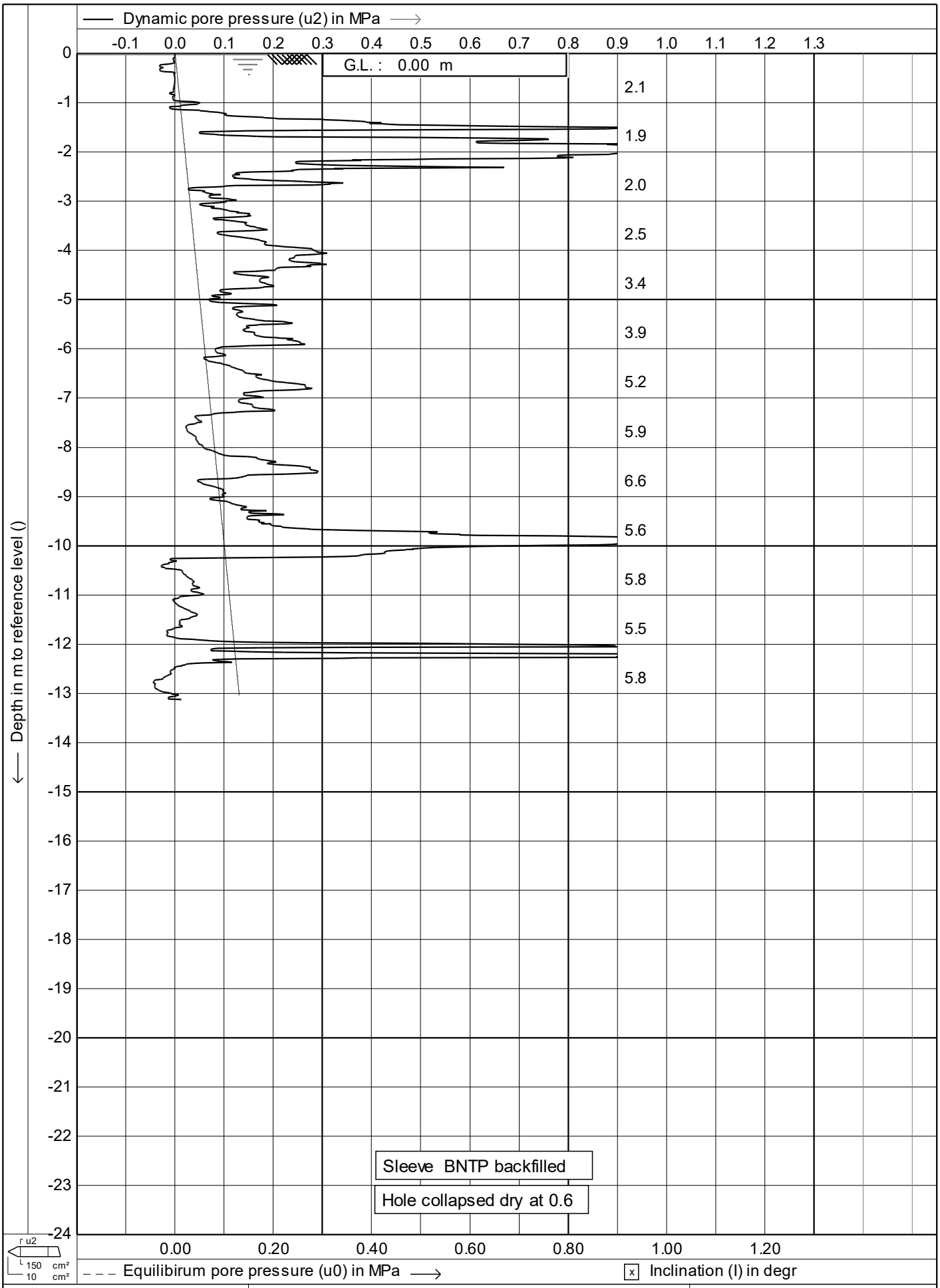
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **009**

1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

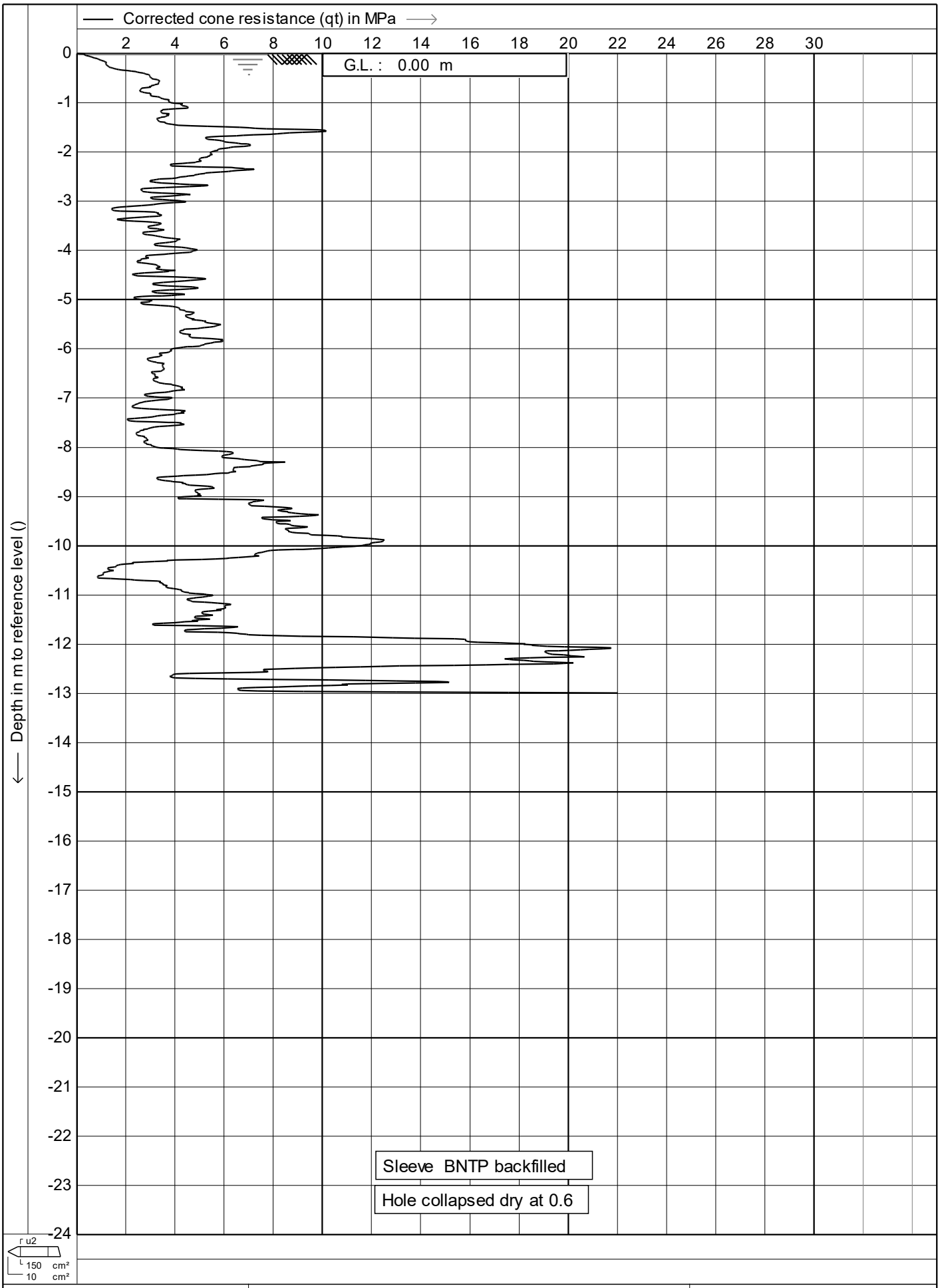
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **009**

2/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

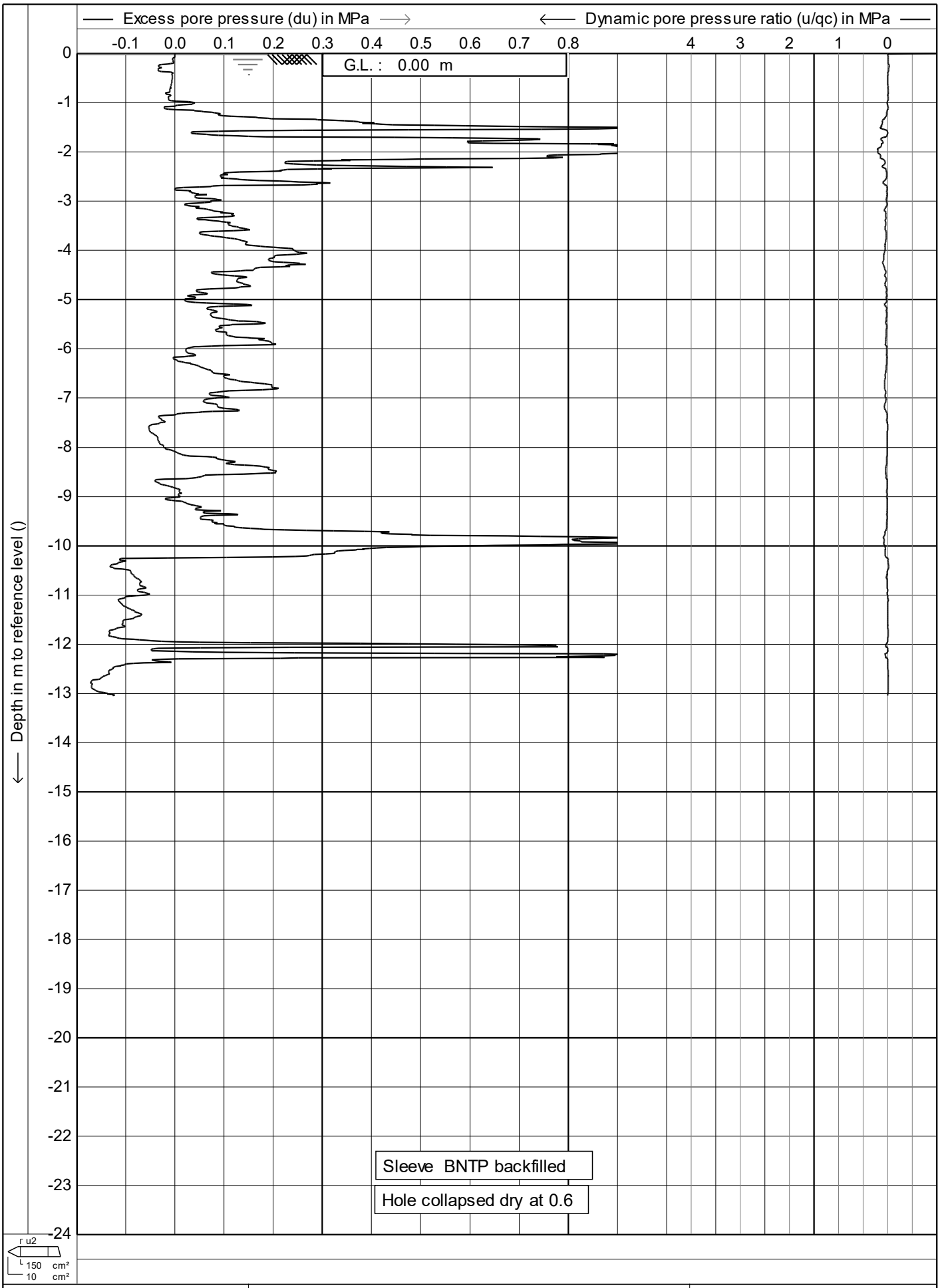
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **009** **3/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

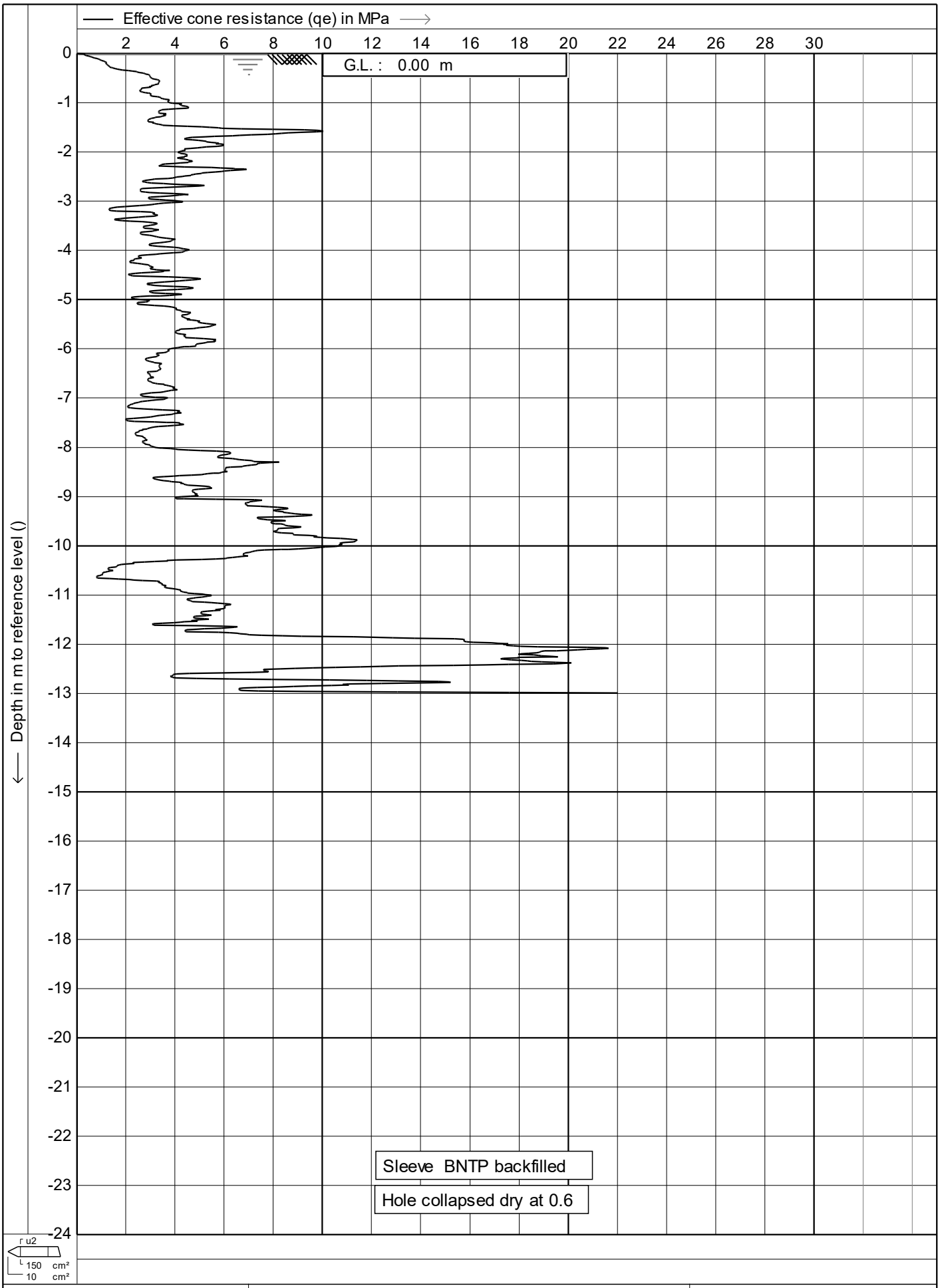
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **009** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

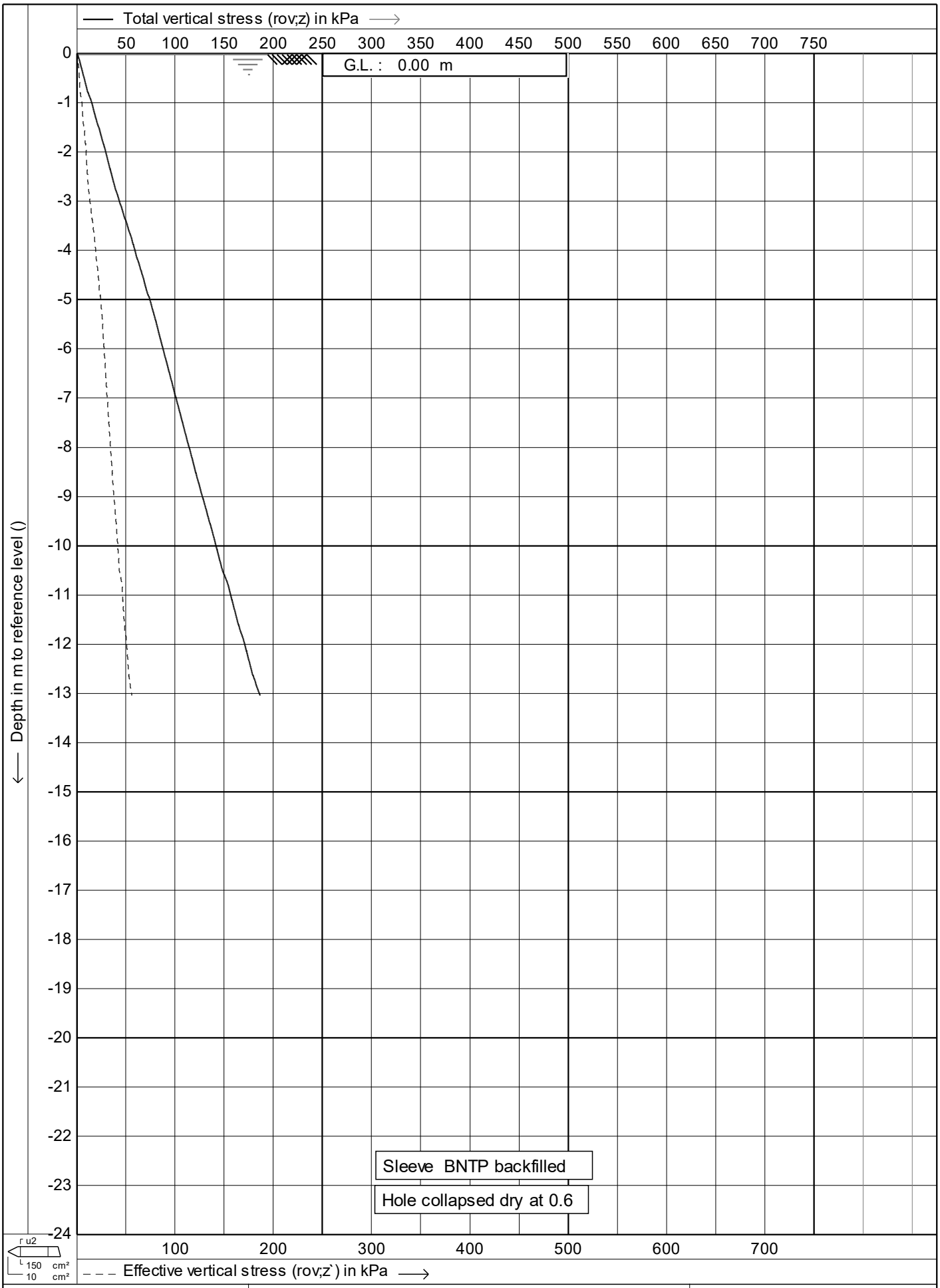
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **009**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

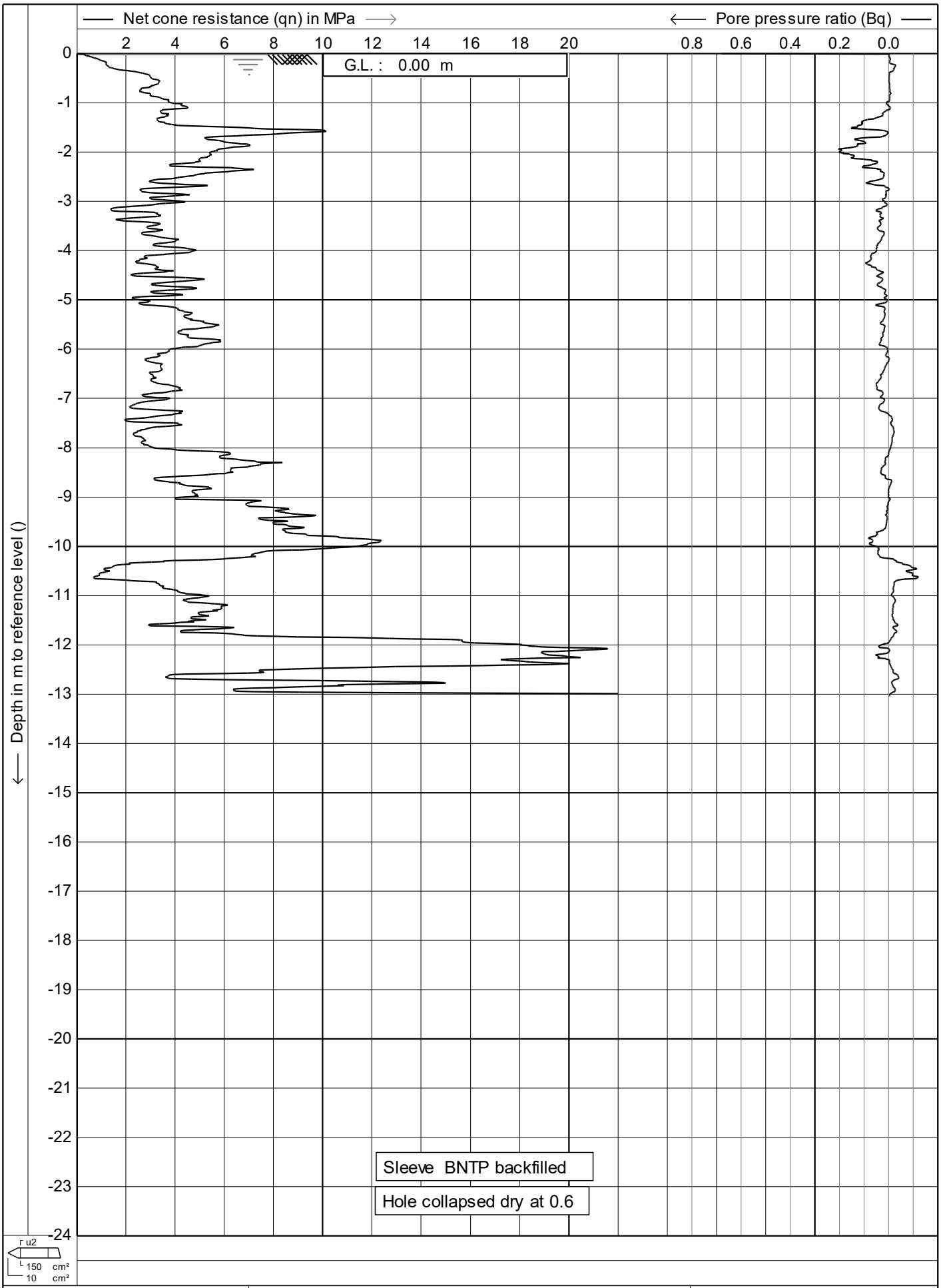
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **009**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

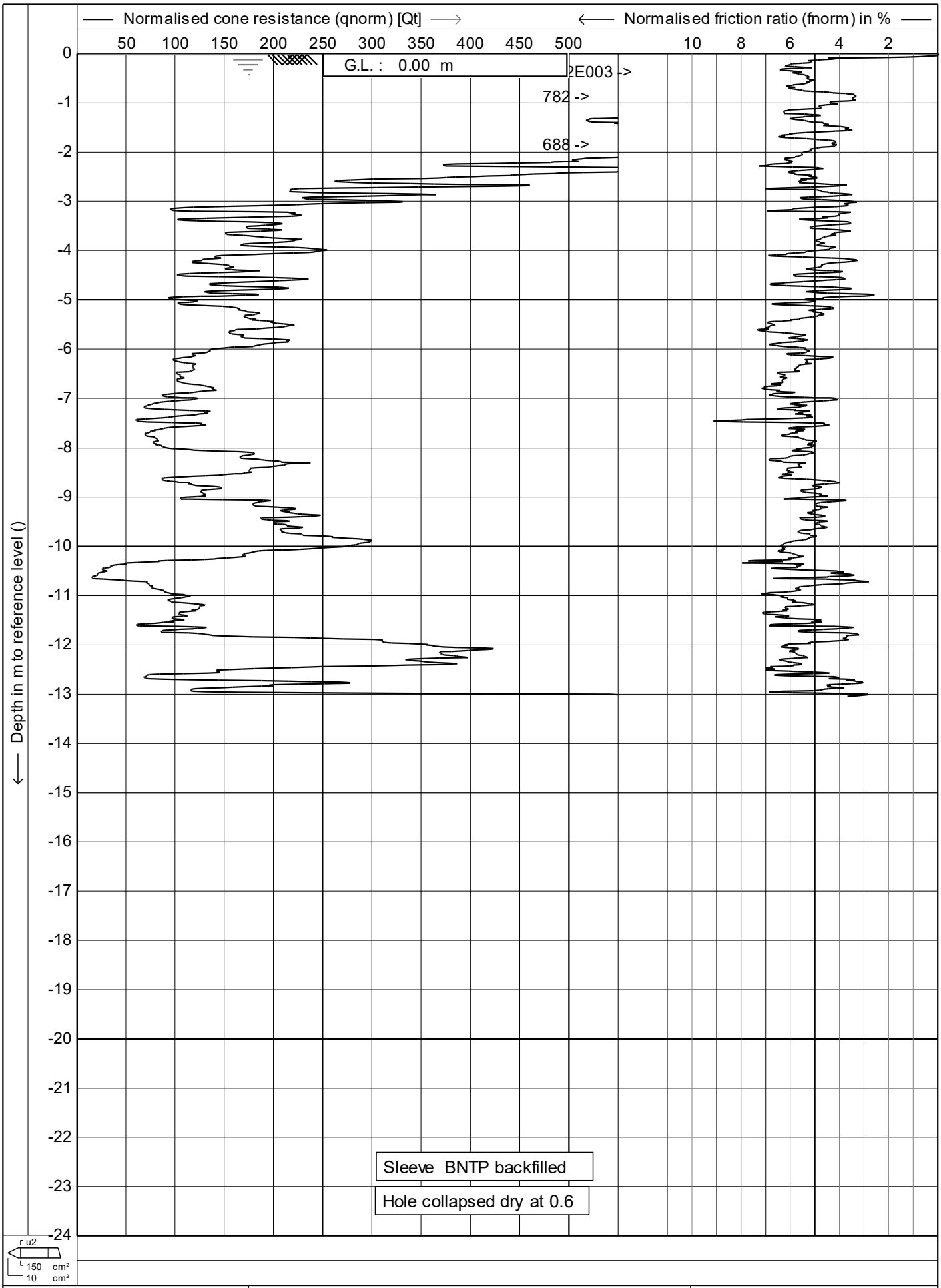
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **009** **7/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

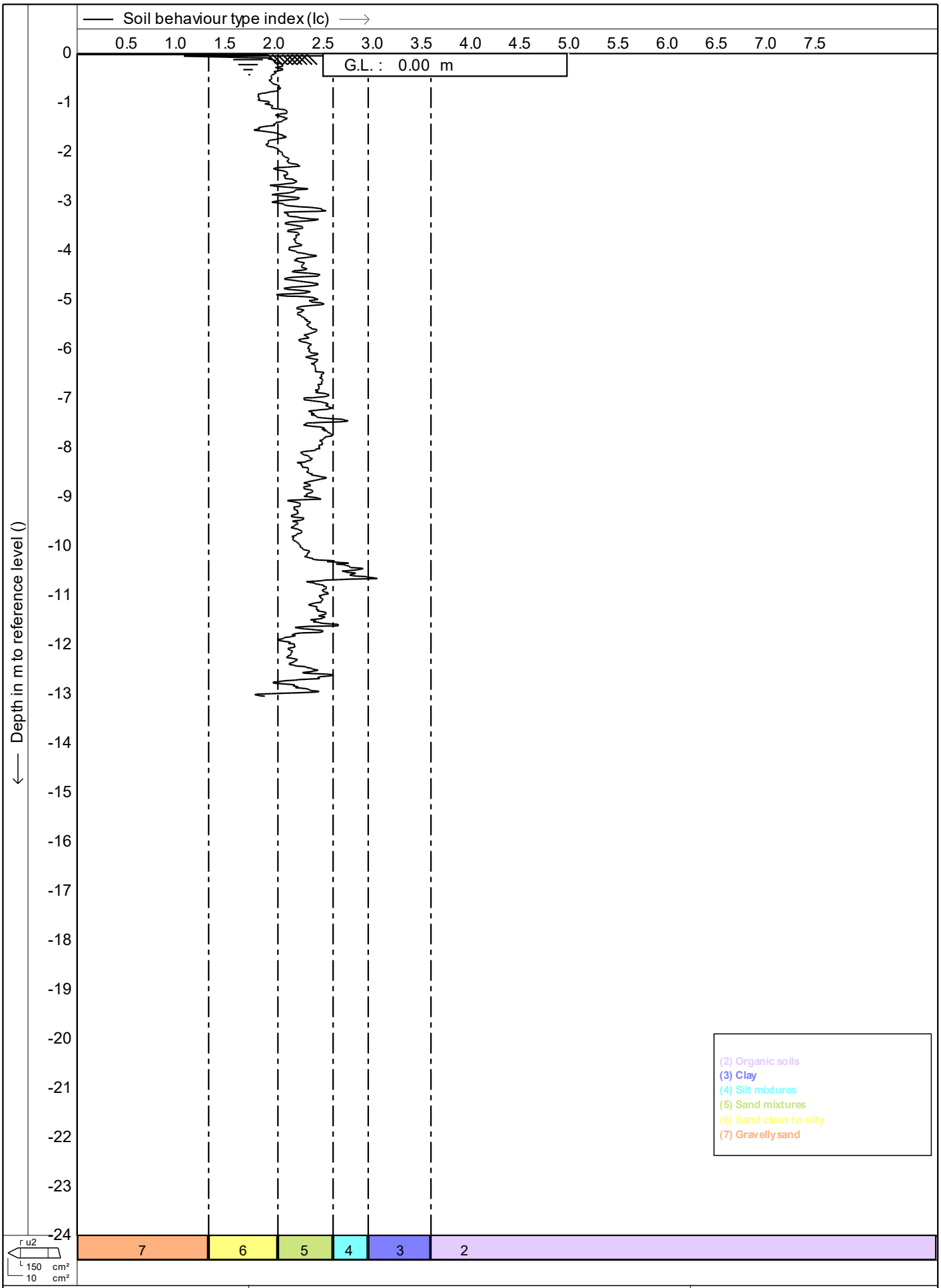
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **009** **8/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

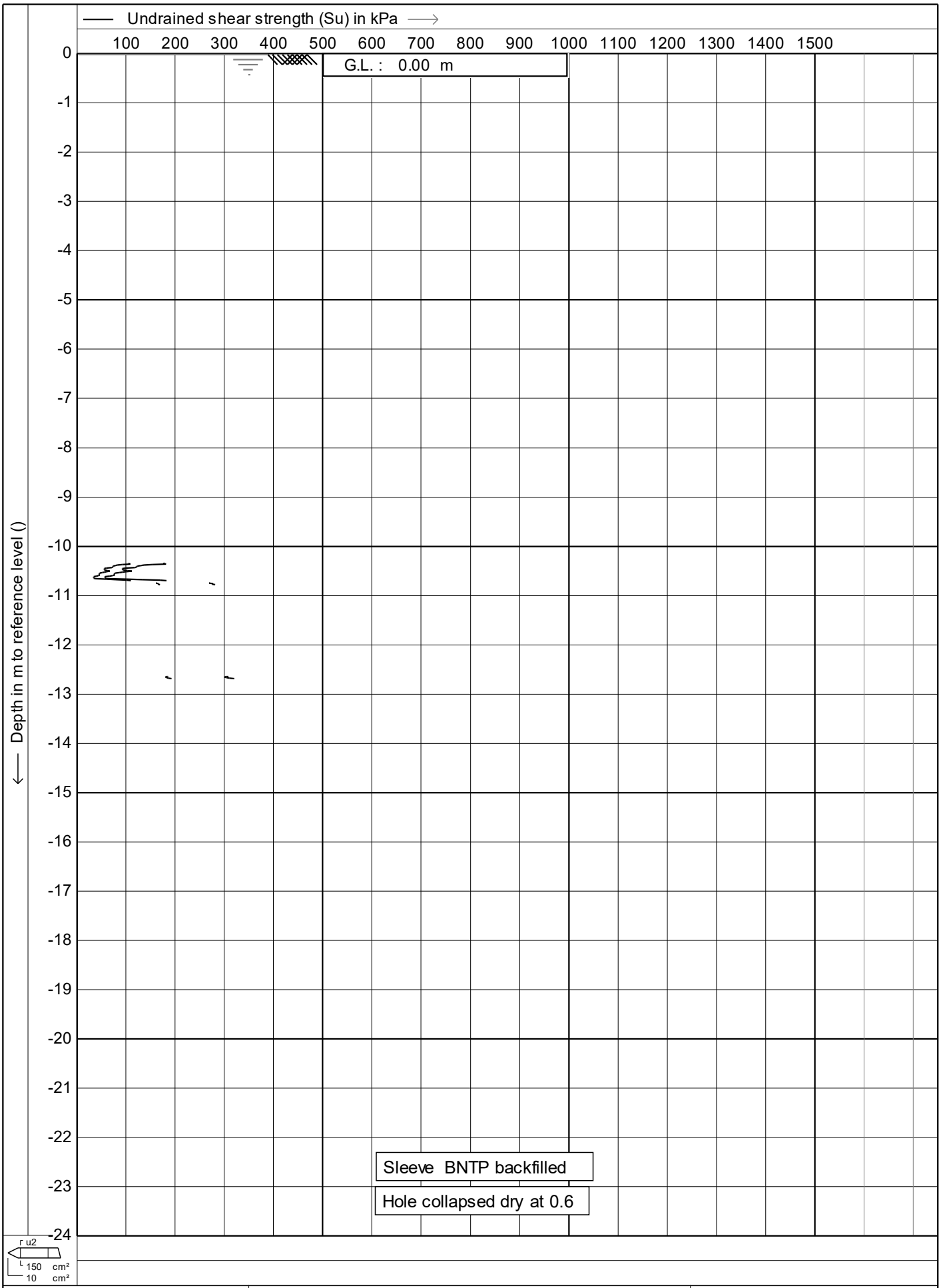
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **009** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

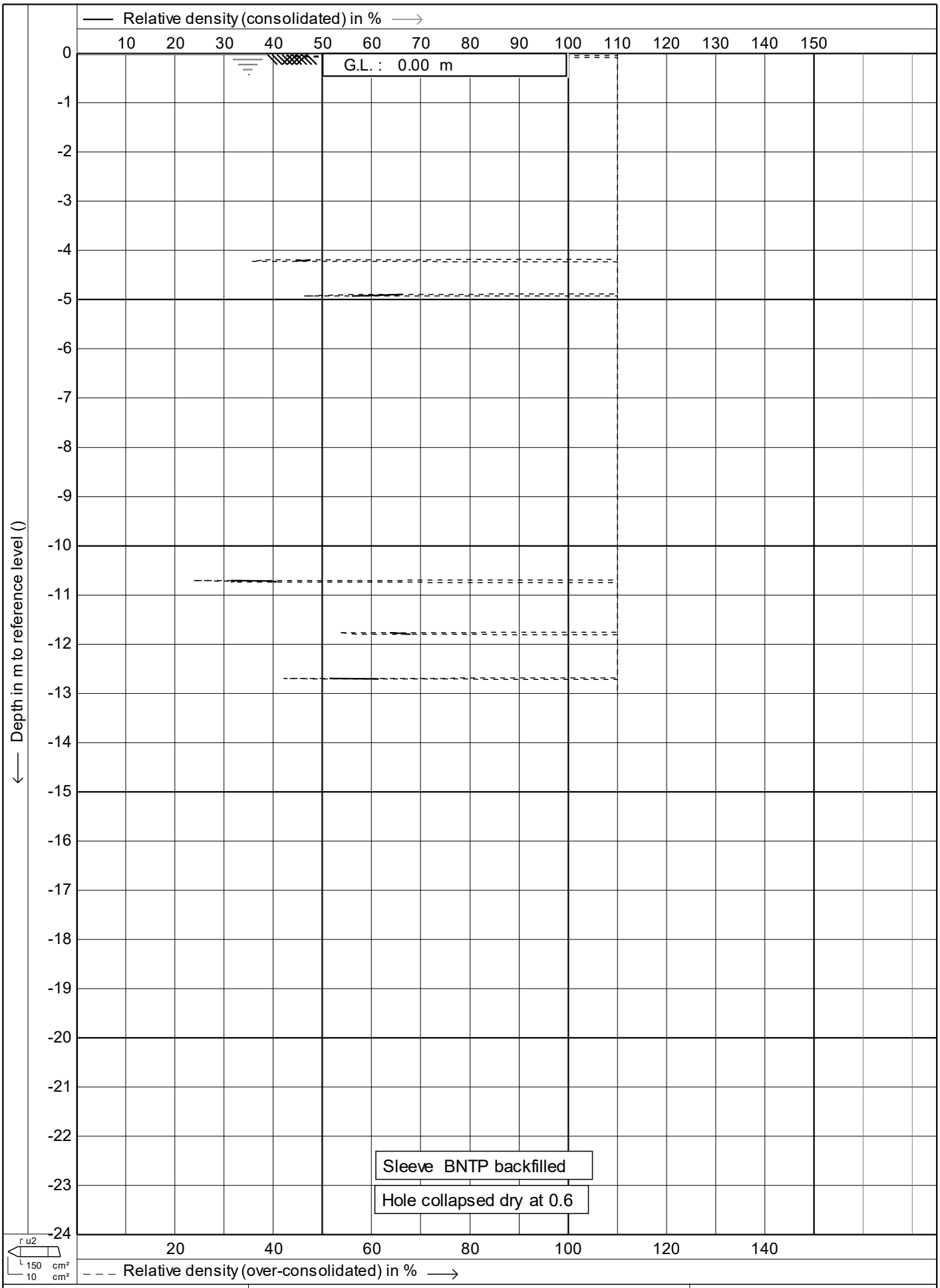
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Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **009**

10/14

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

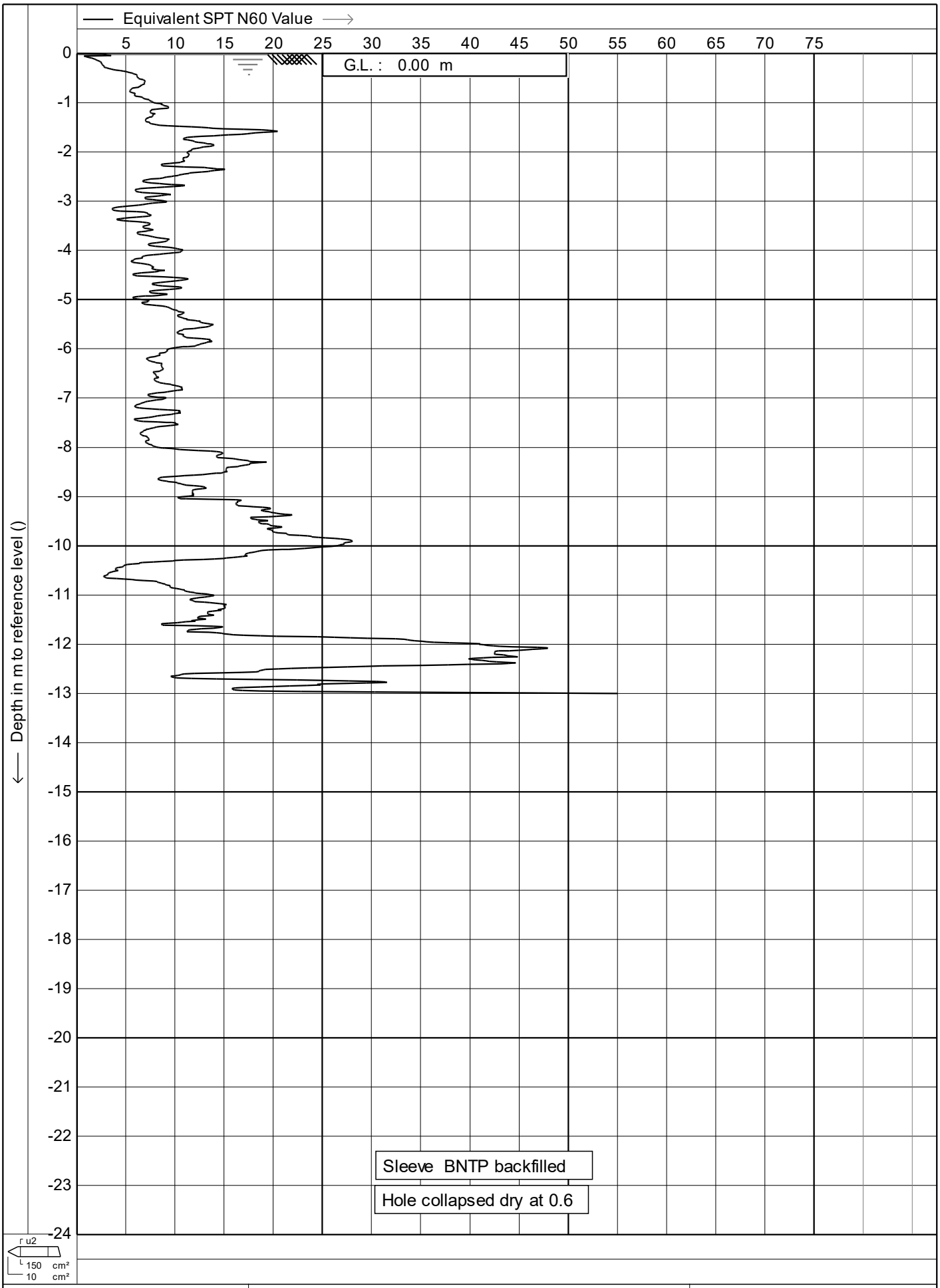
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **009**

11/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

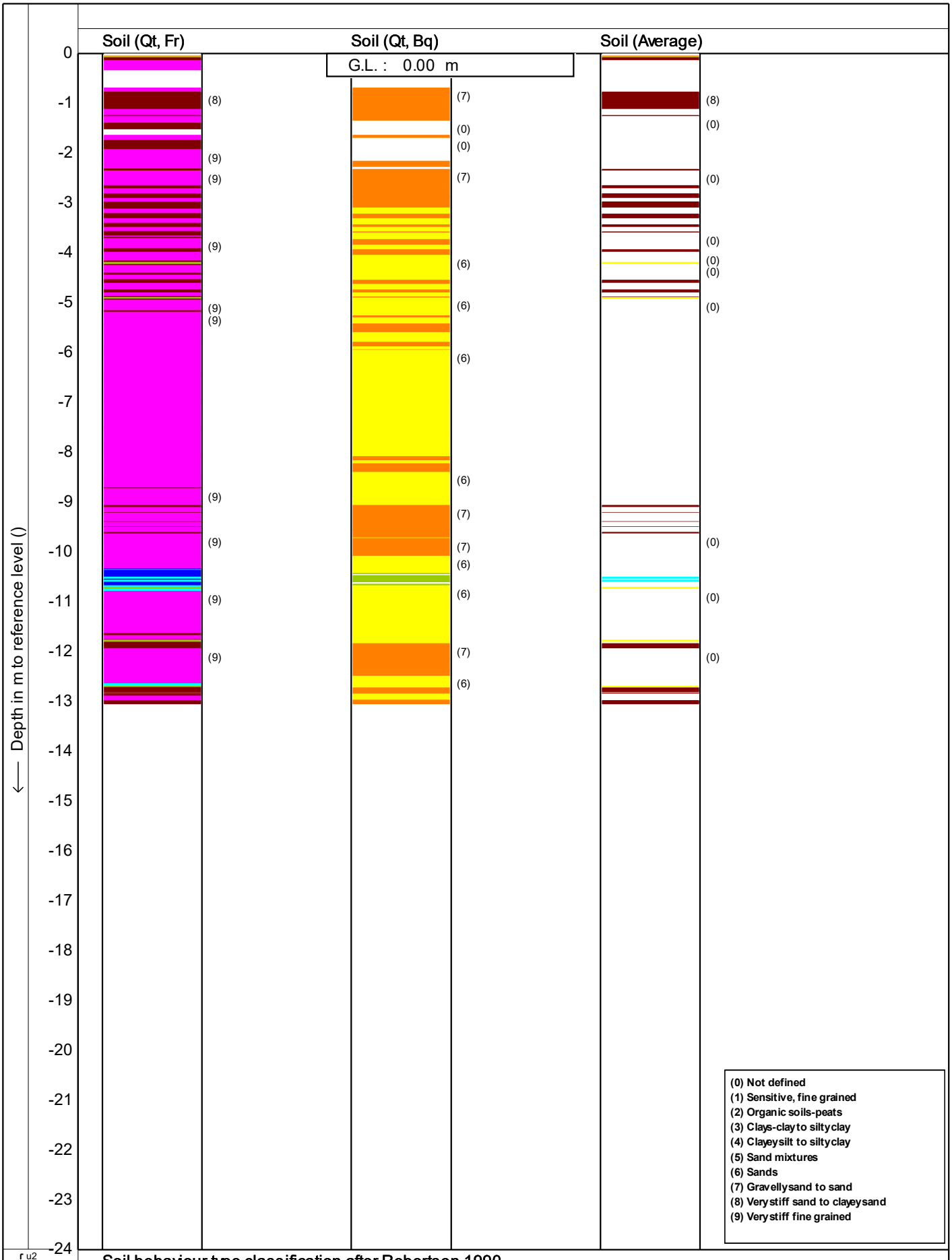
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **009** **12/14**

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

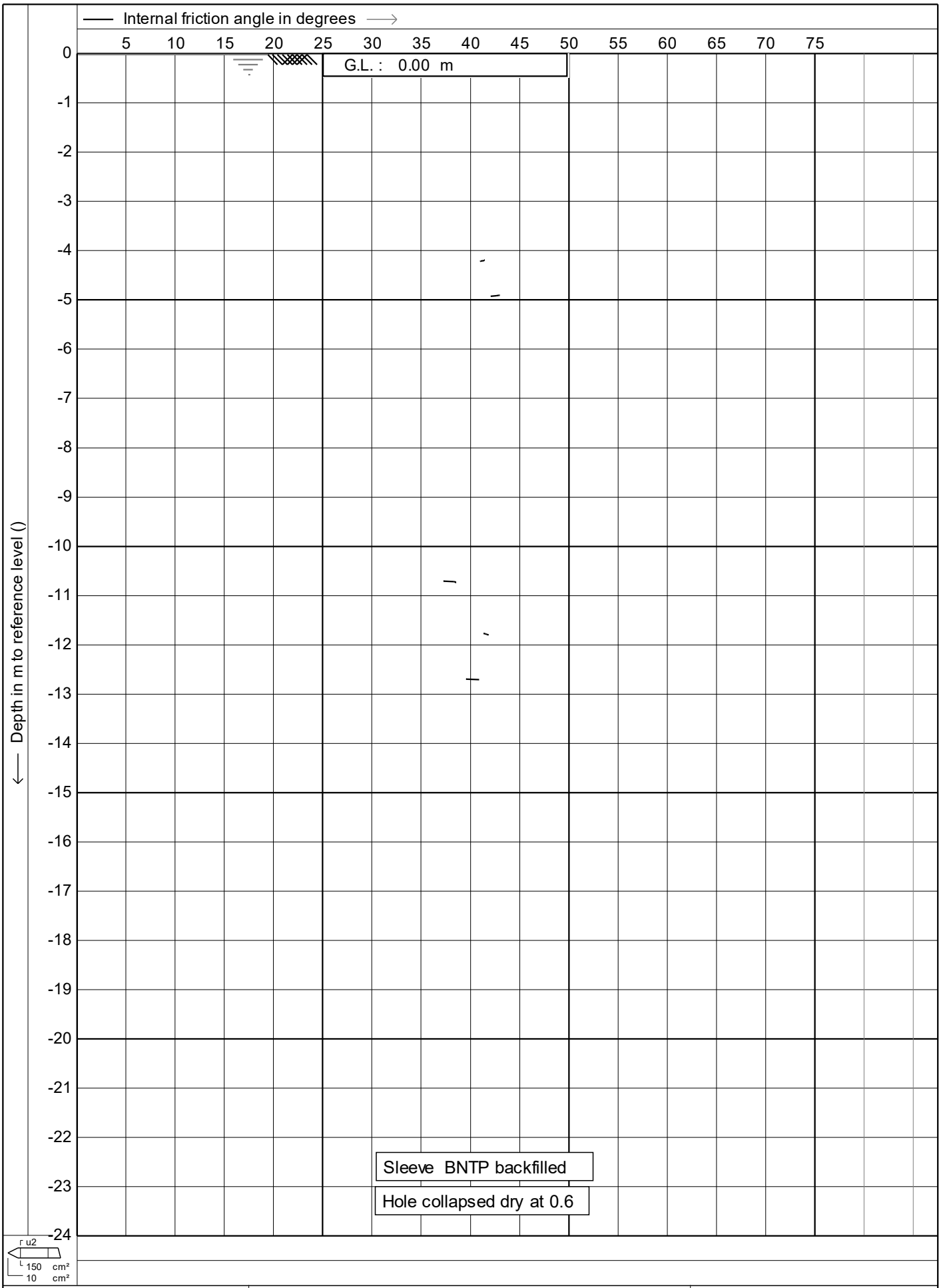
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **009**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

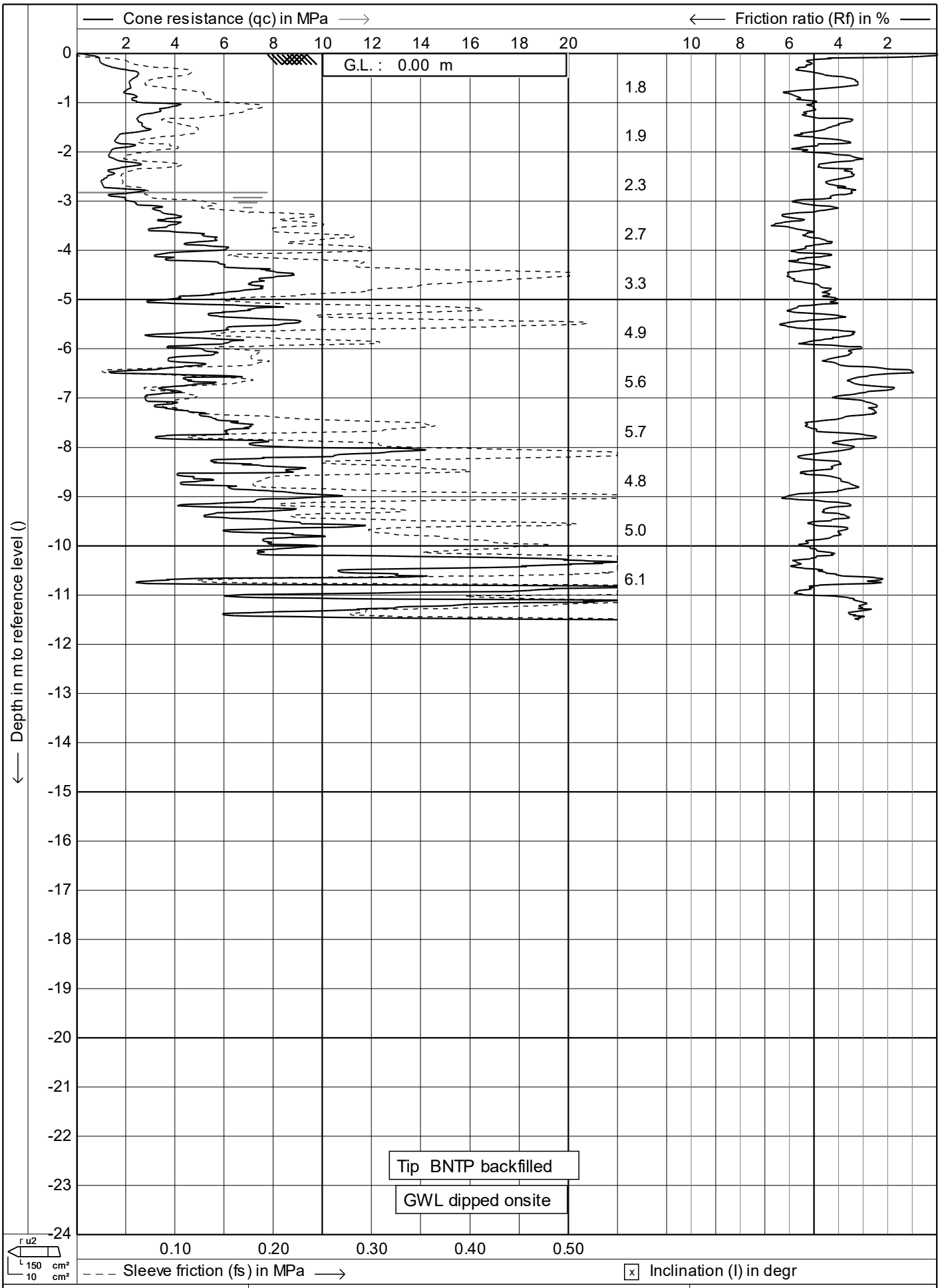
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **009** **14/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

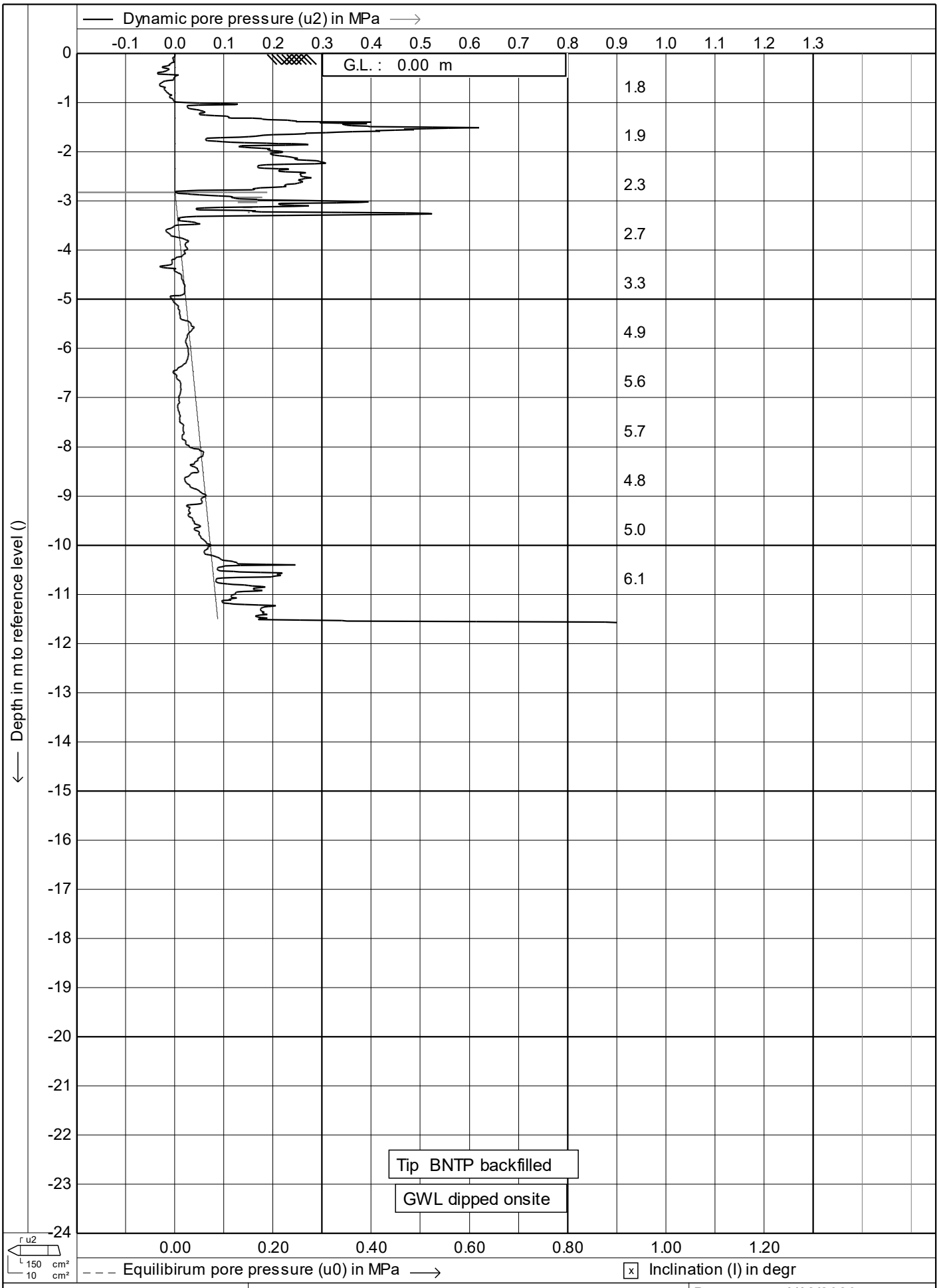
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Project no. : **05AU7**

CPT no. : **010**

1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

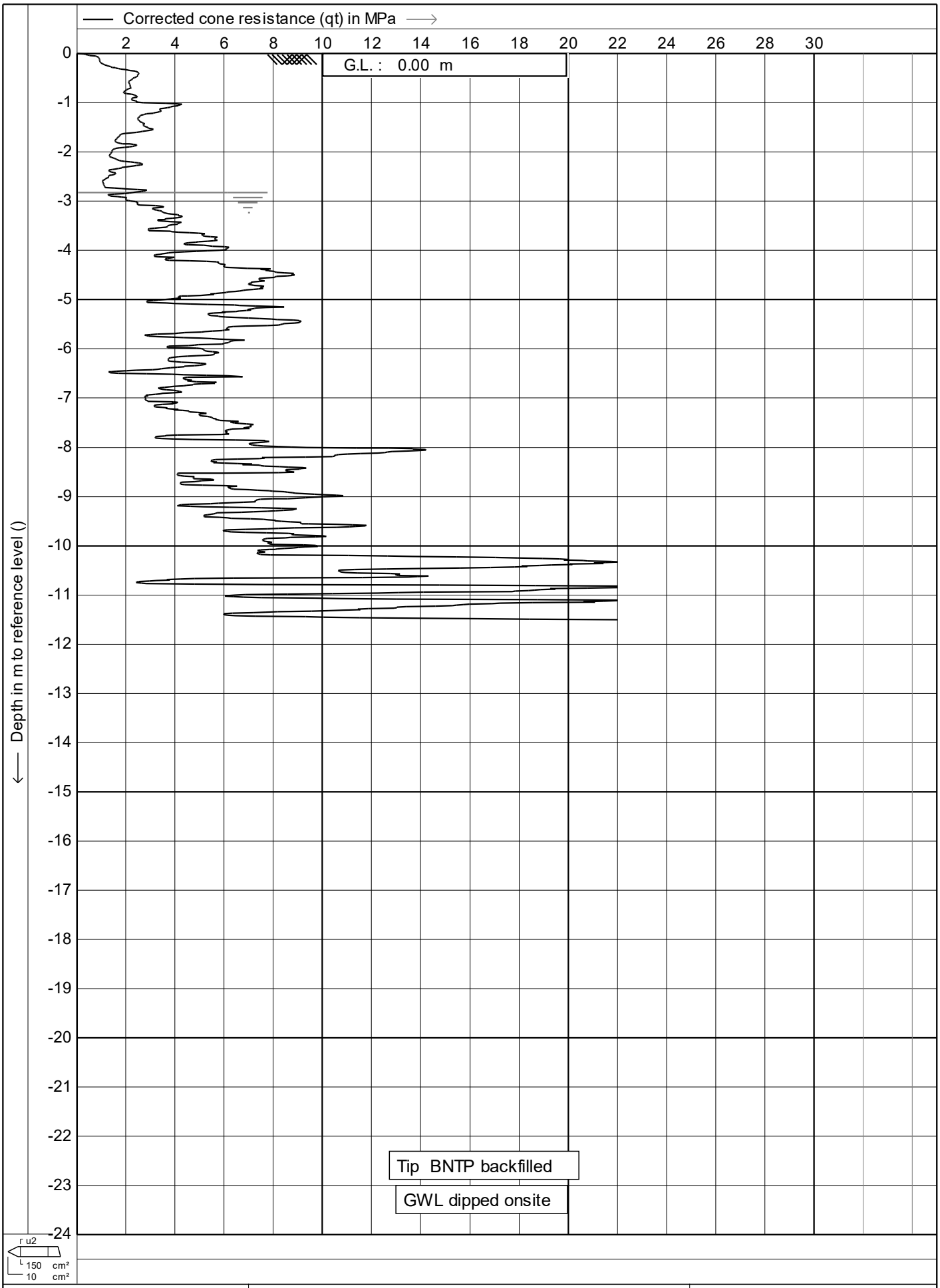
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **010**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

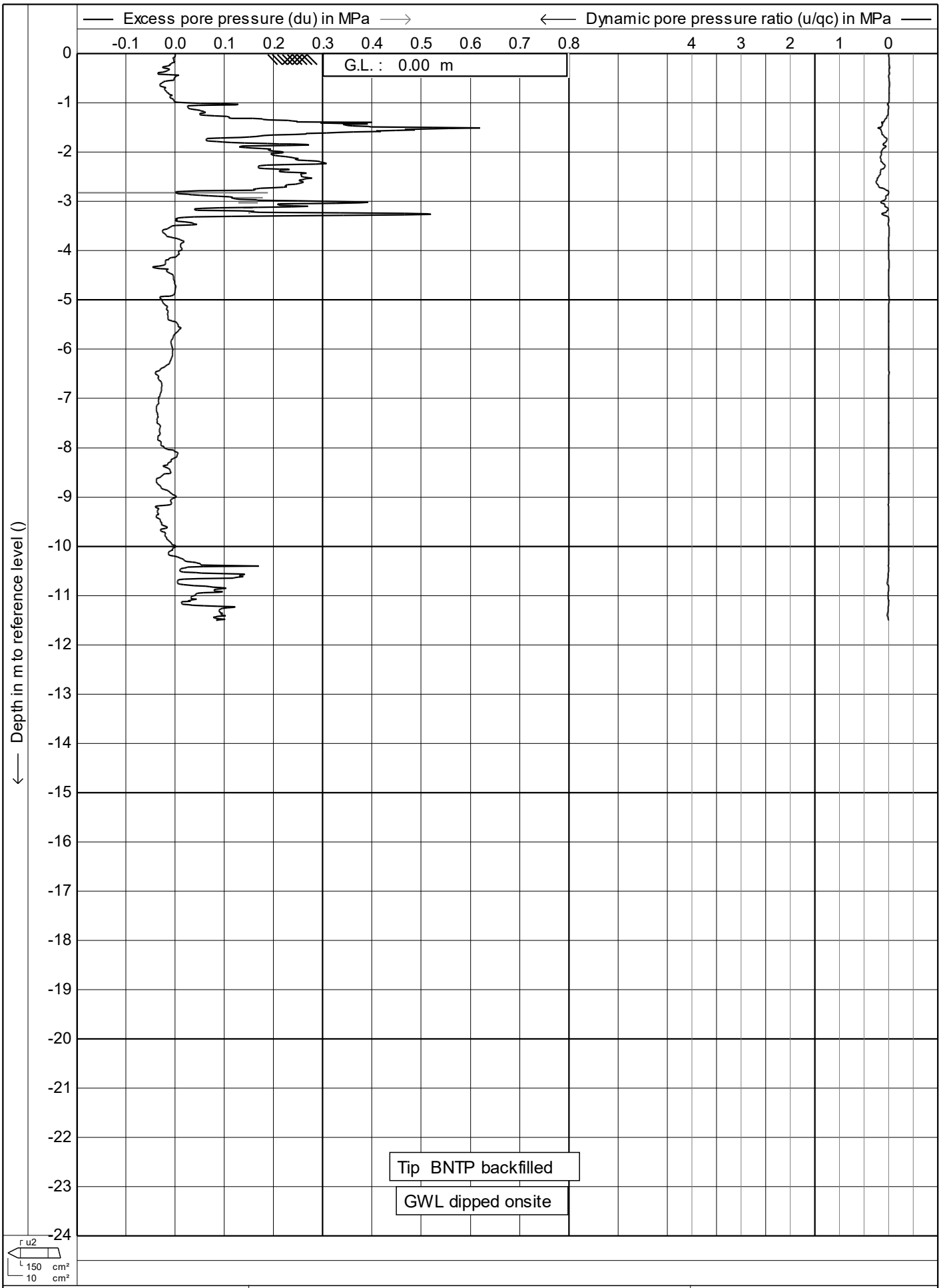
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **010** **3/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

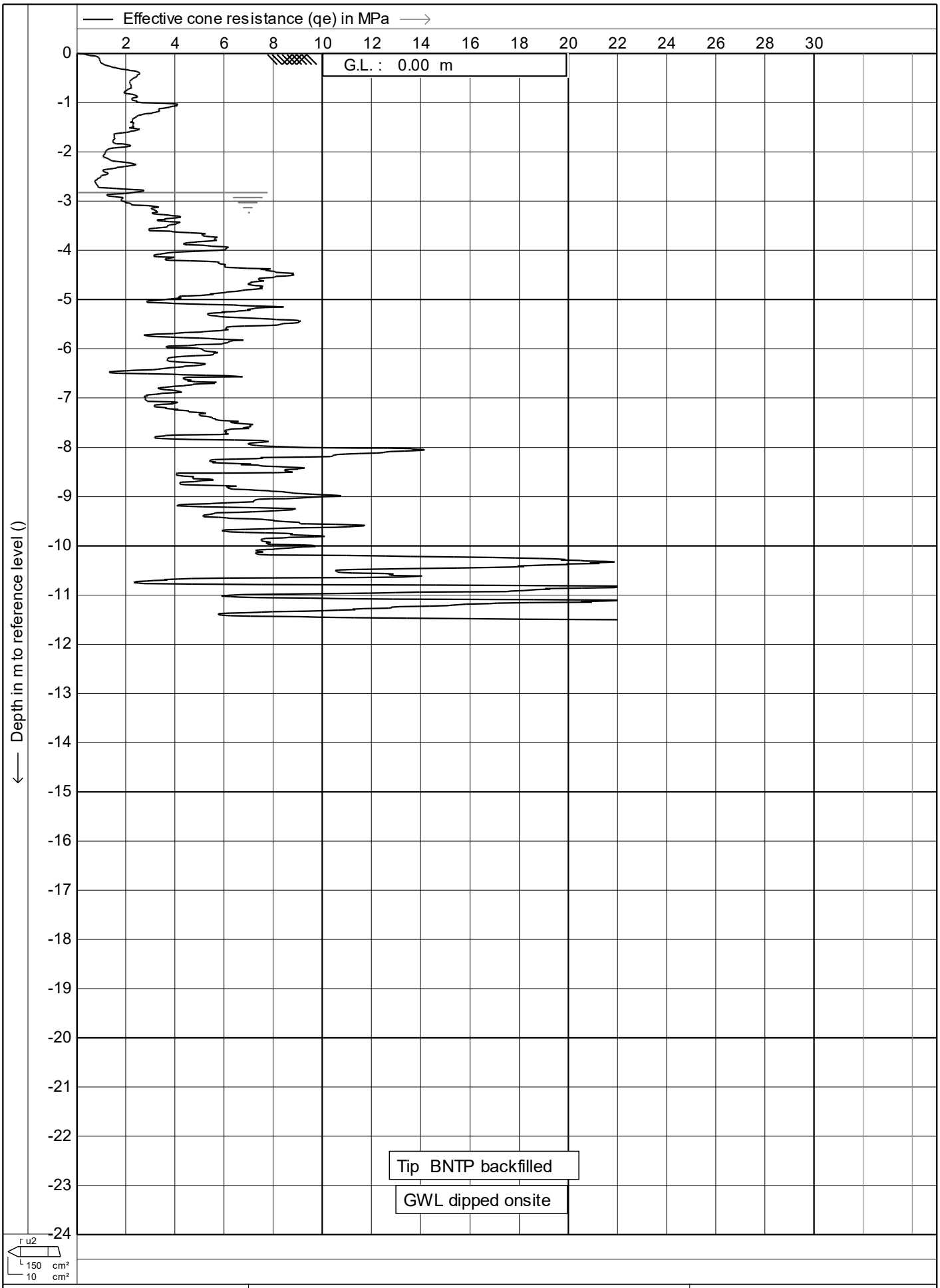
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **010**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

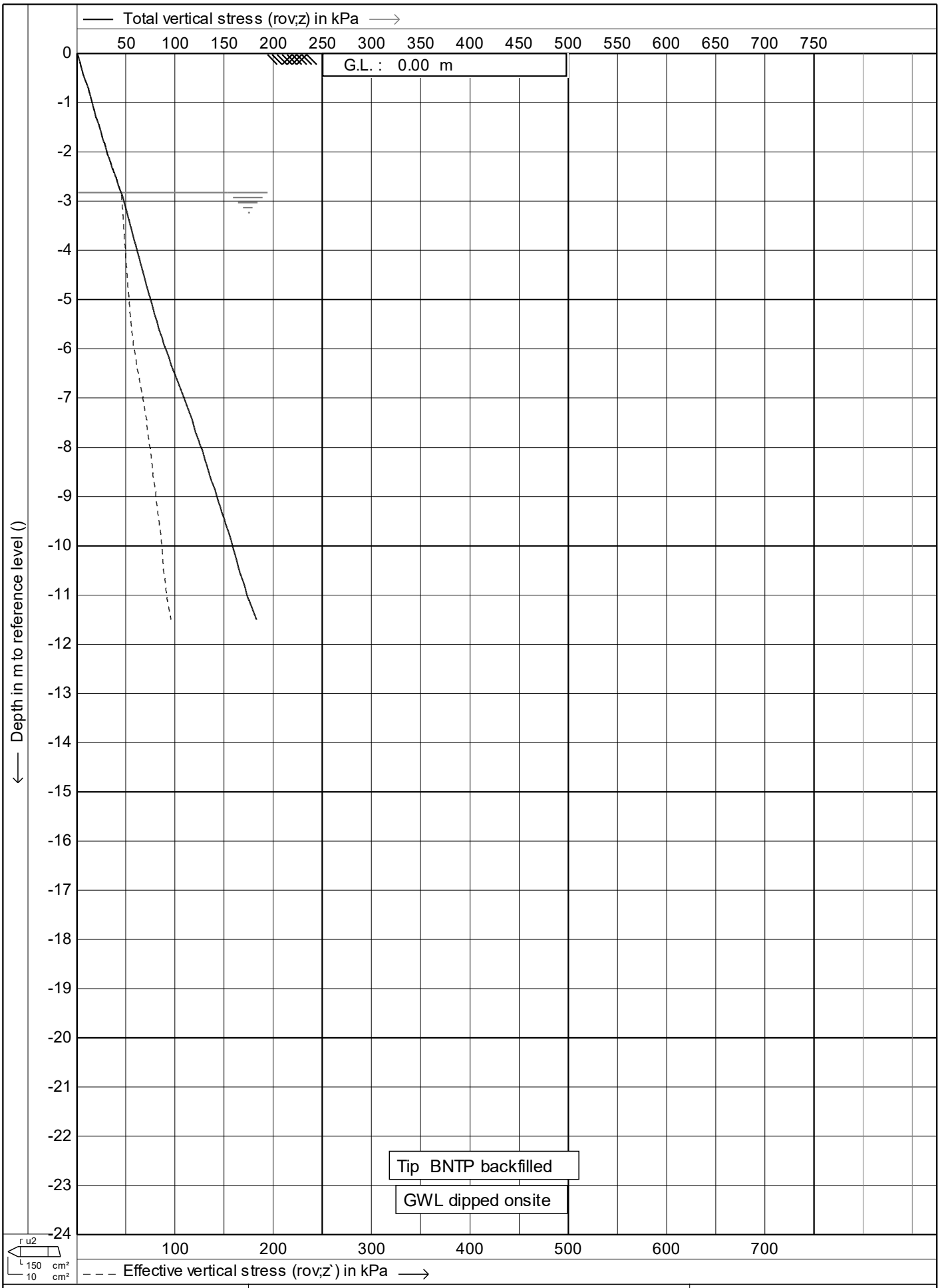
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Project no. : **05AU7**

CPT no. : **010**

5/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

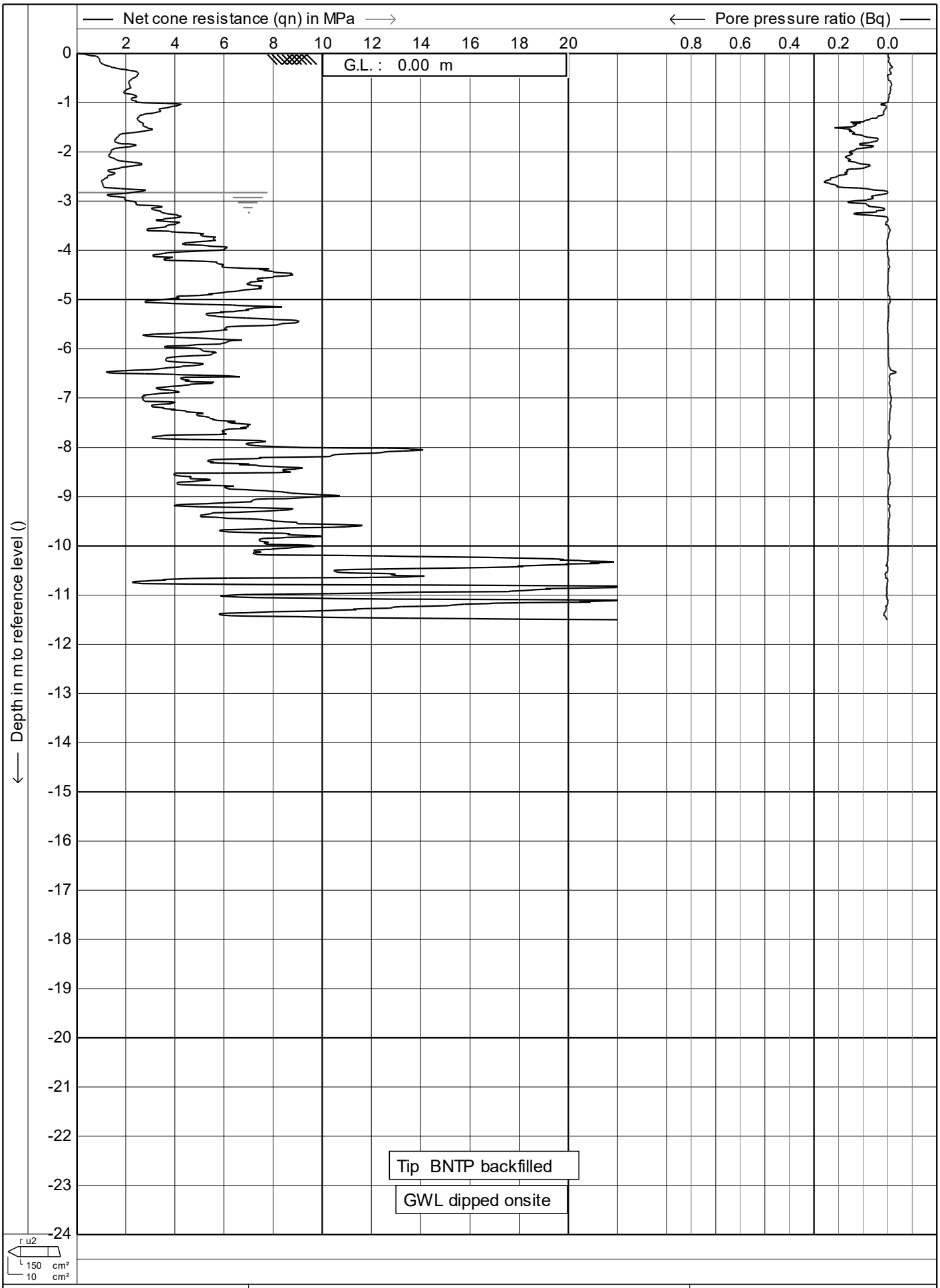
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **010**

6/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

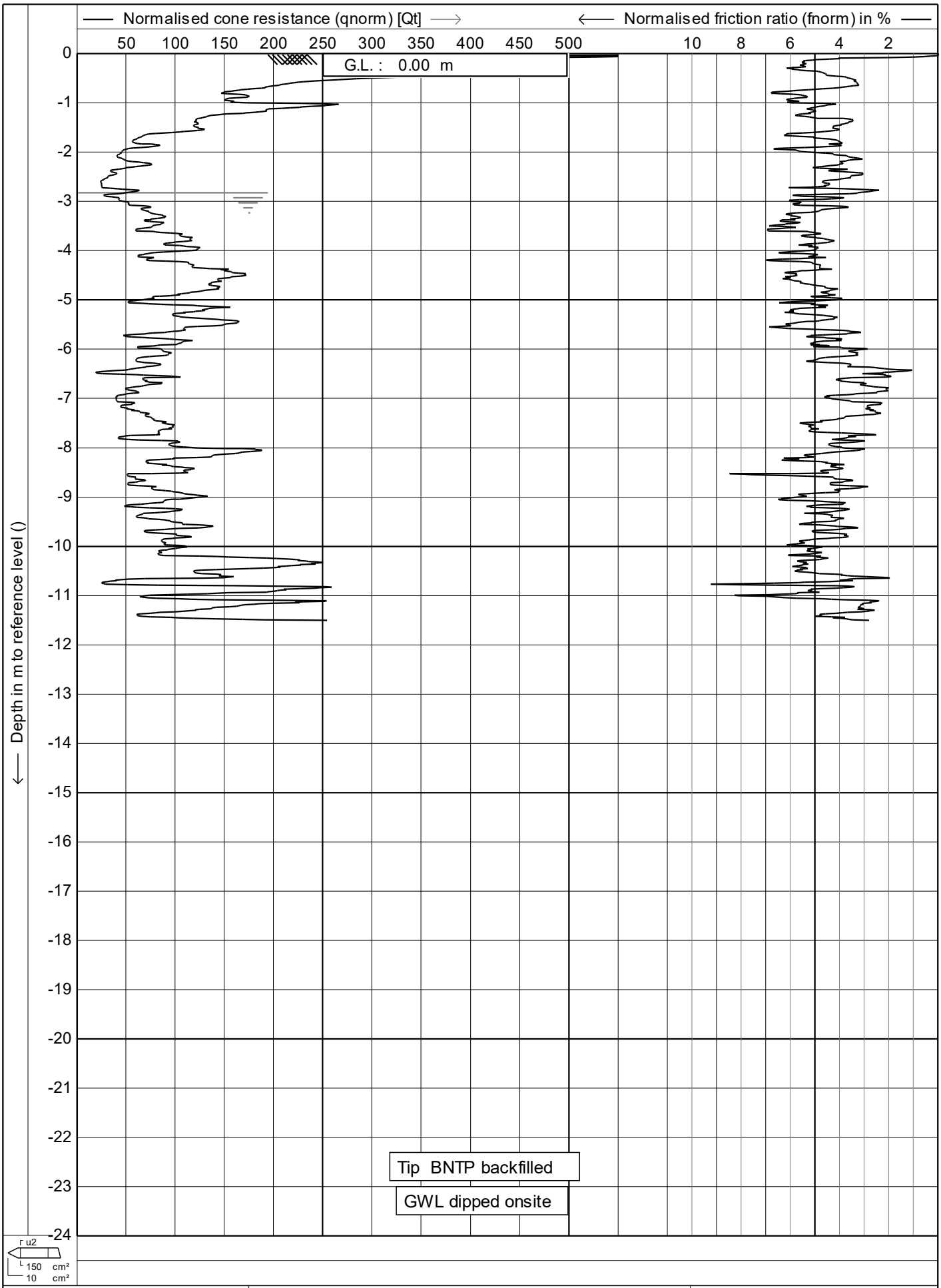
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **010**

7/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

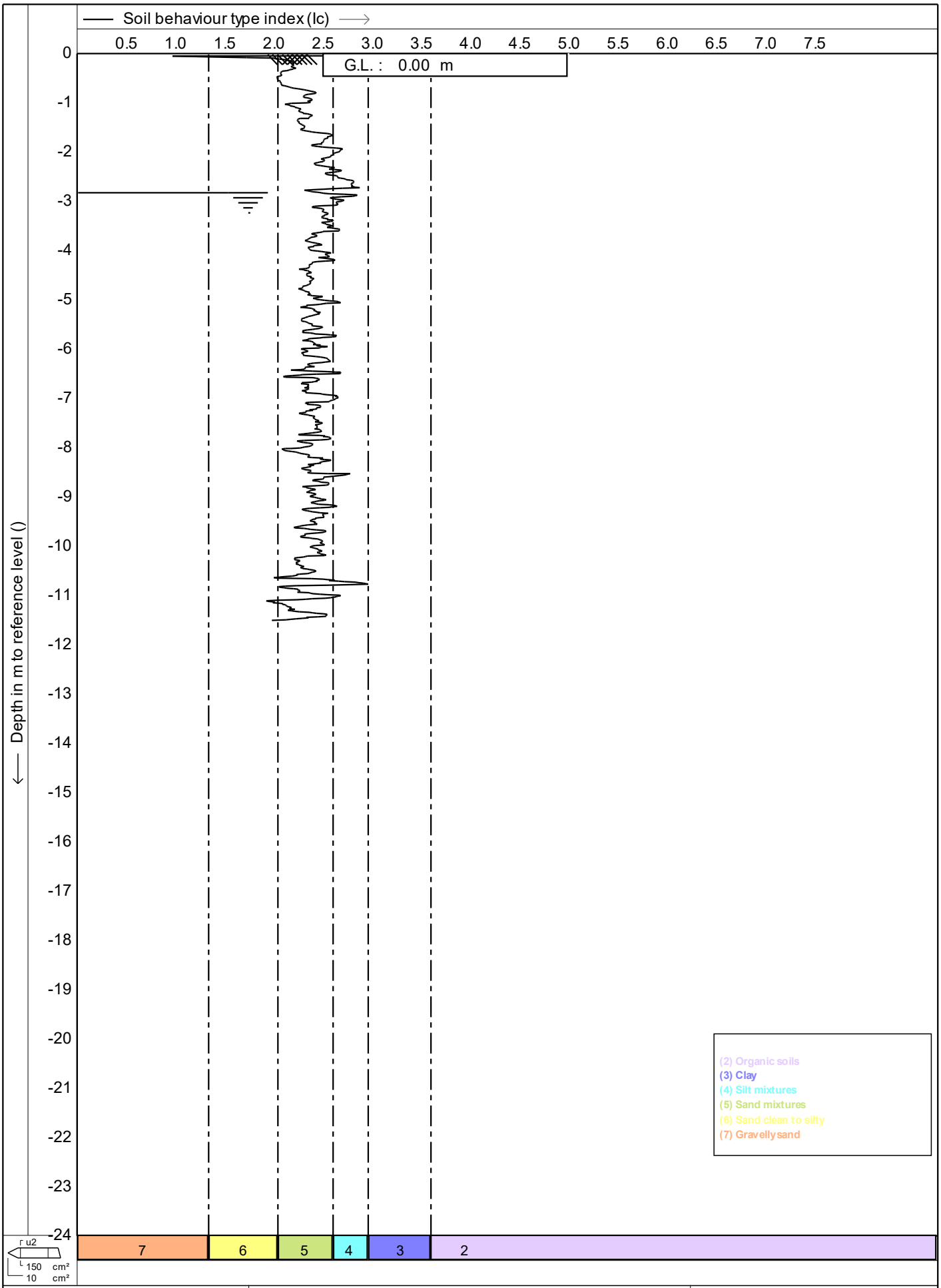
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **010**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

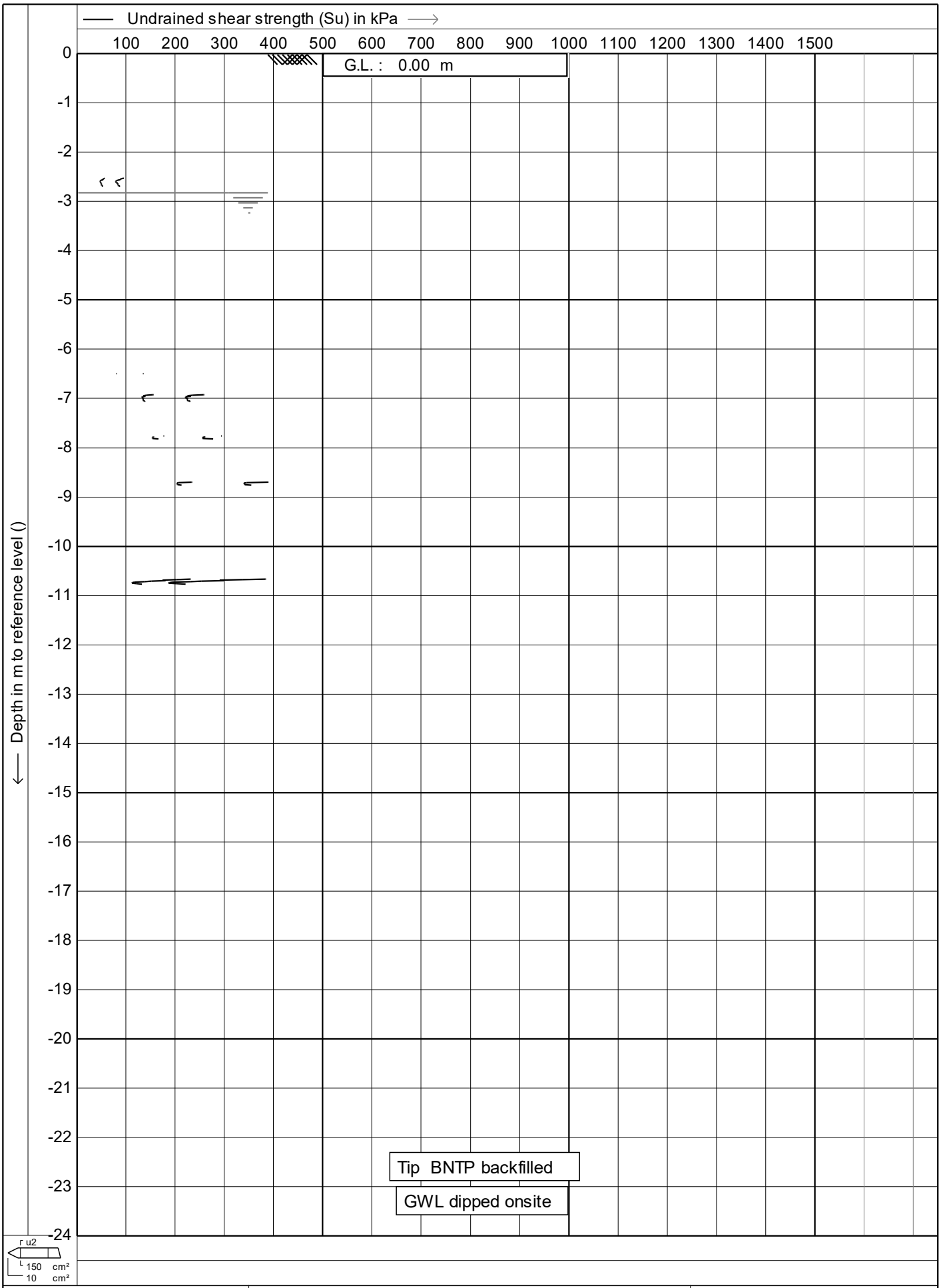
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **010** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

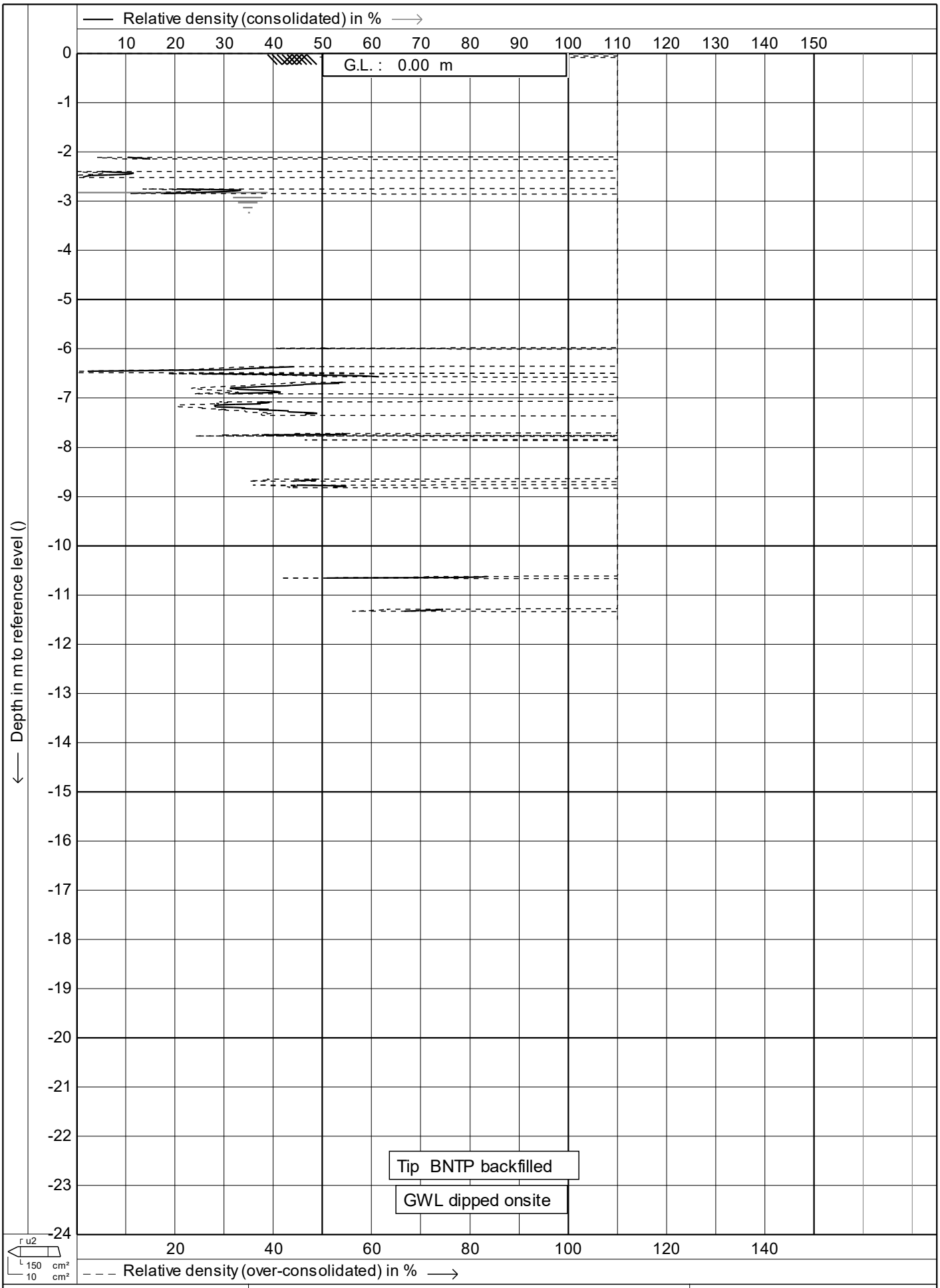
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **010**

10/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

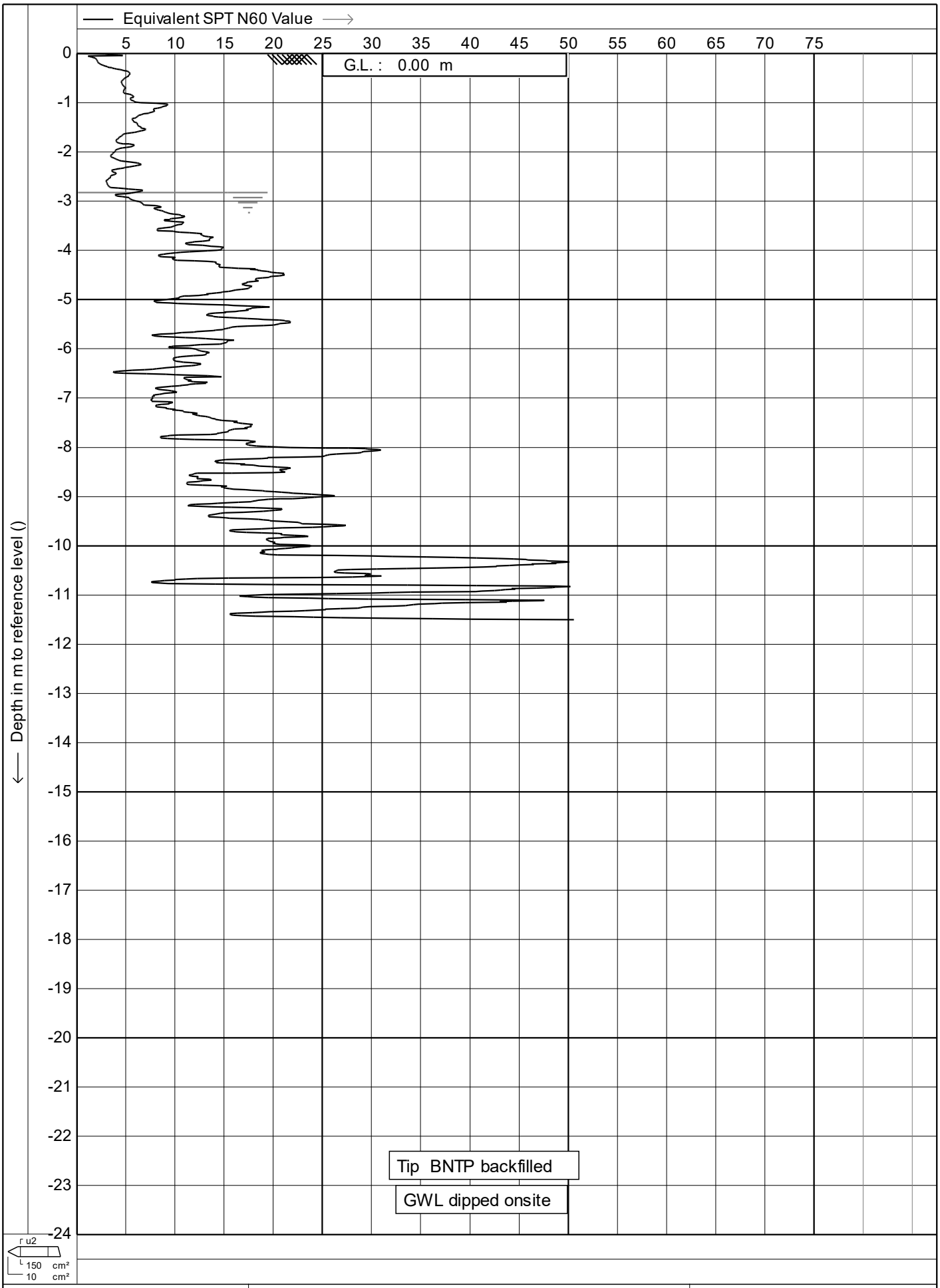
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **010**

11/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

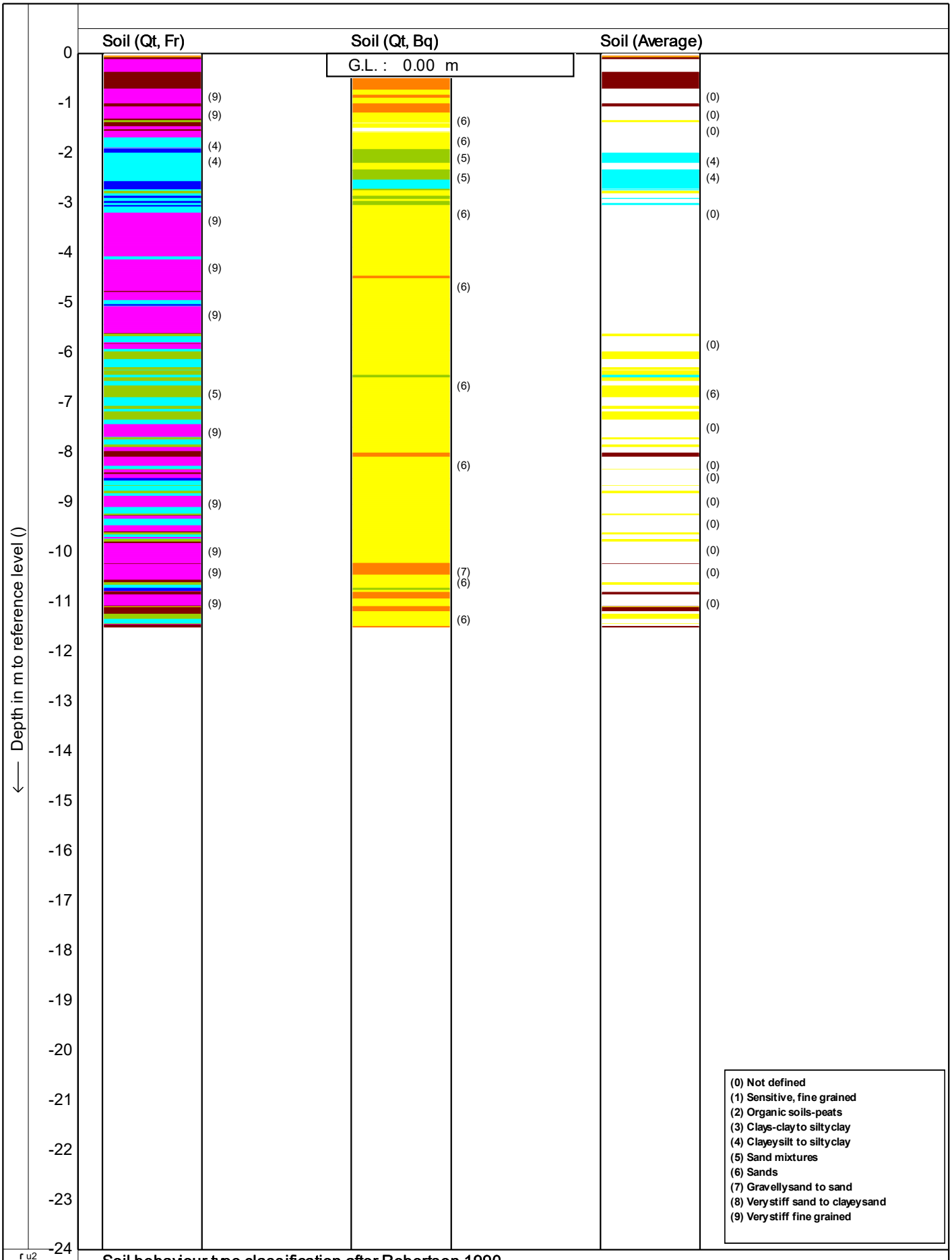
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **010**

12/14

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

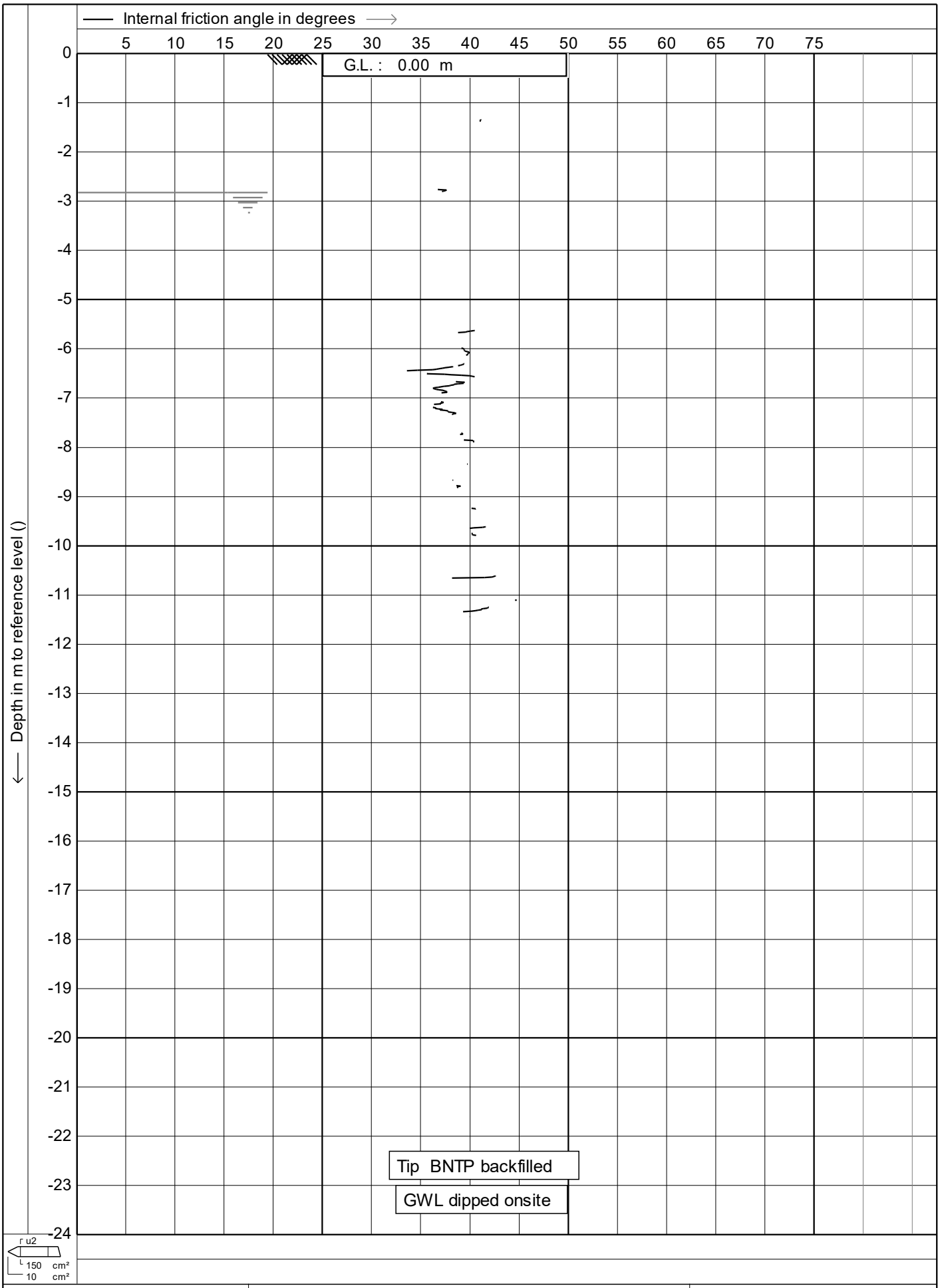
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **010**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

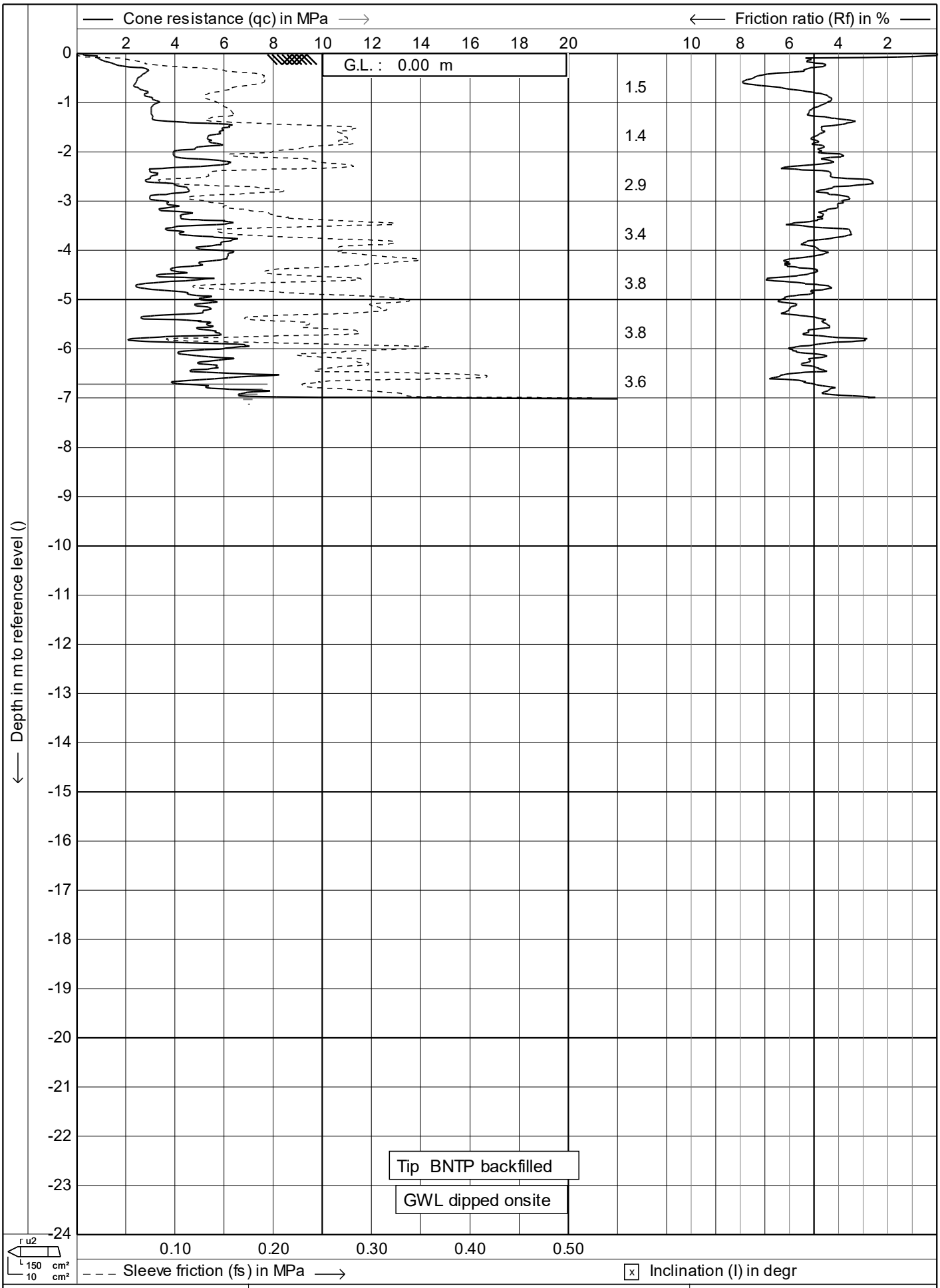
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **010** **14/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

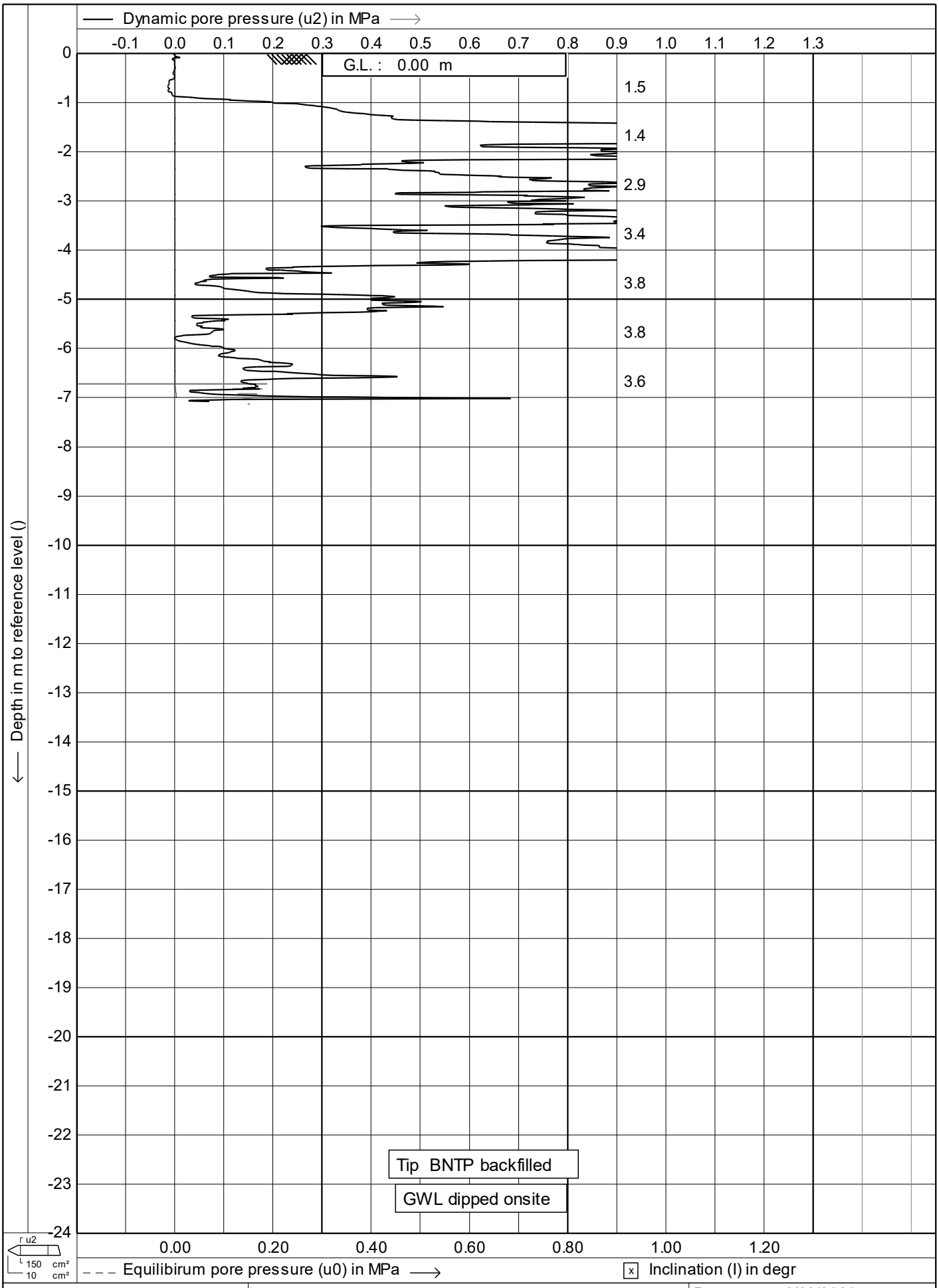
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **011**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

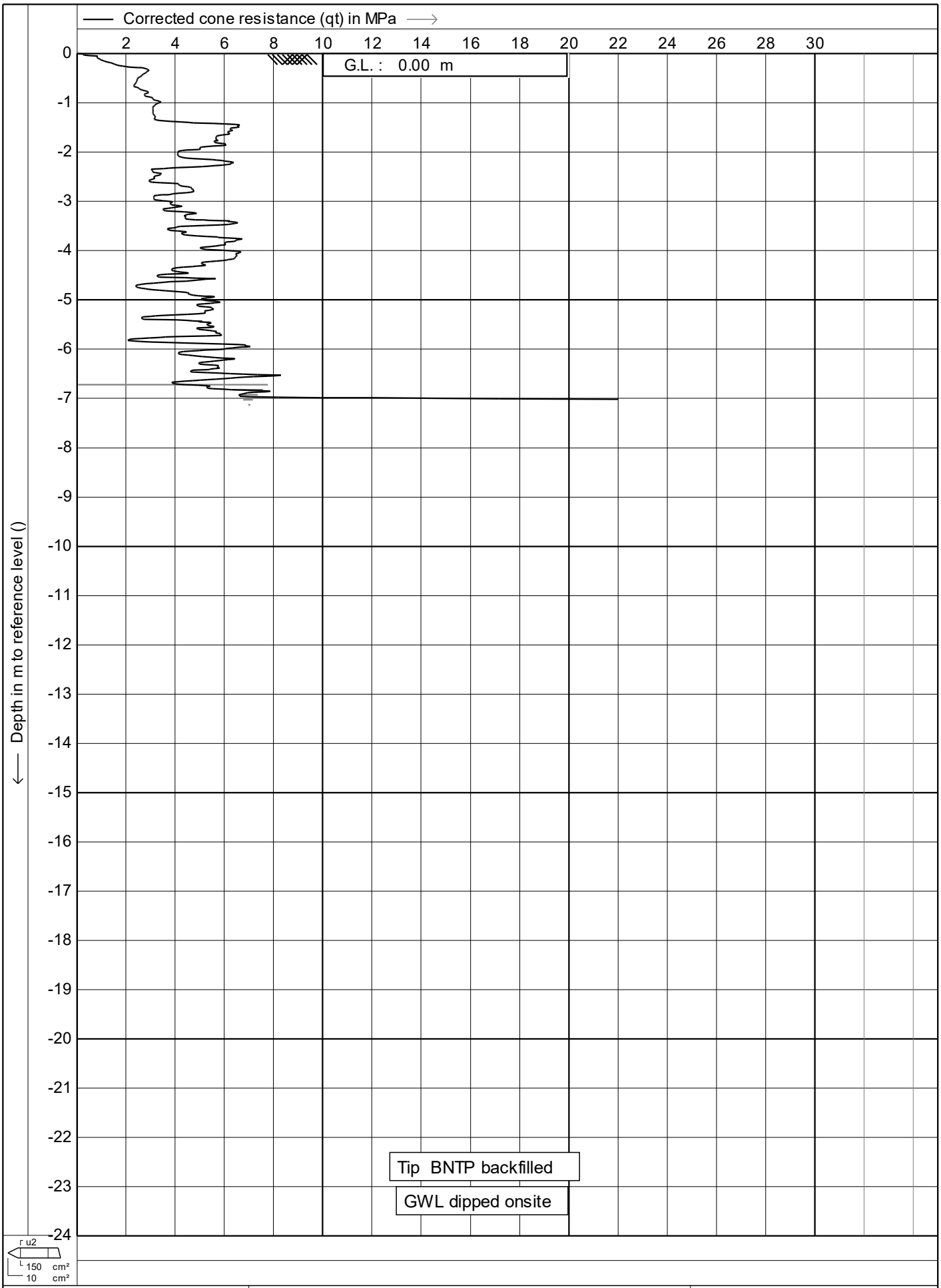
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **011**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

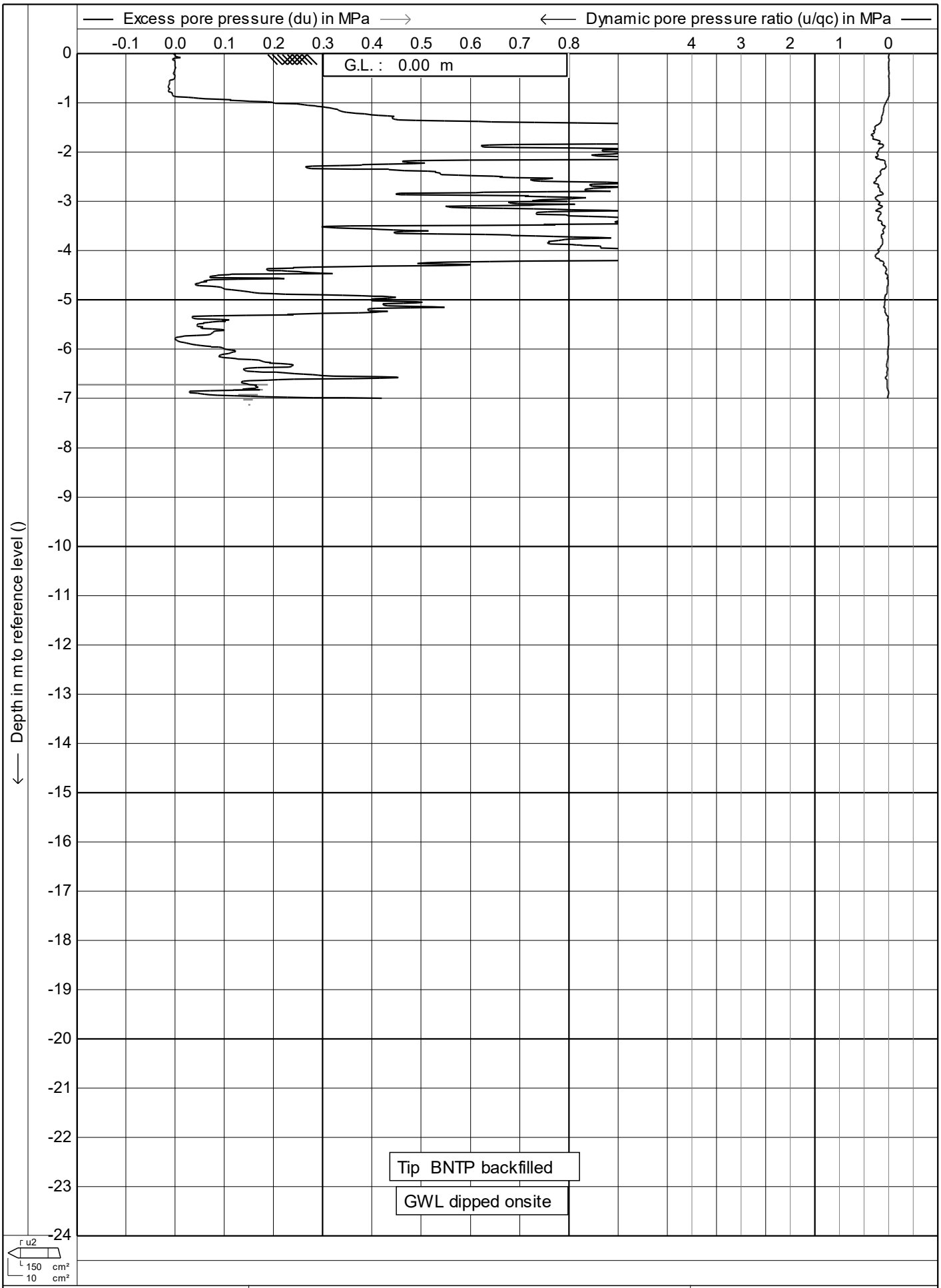
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **011**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

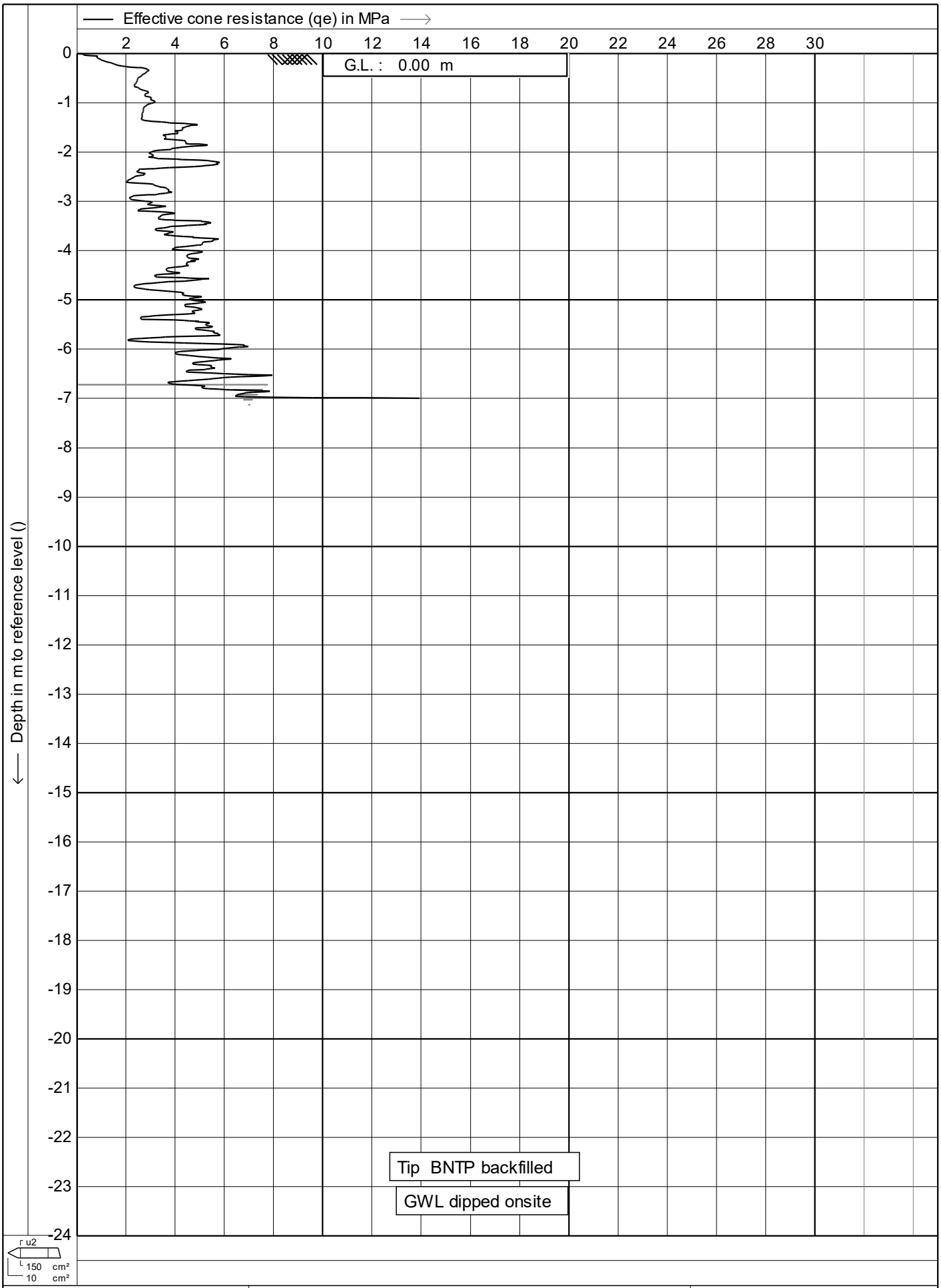
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **011** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

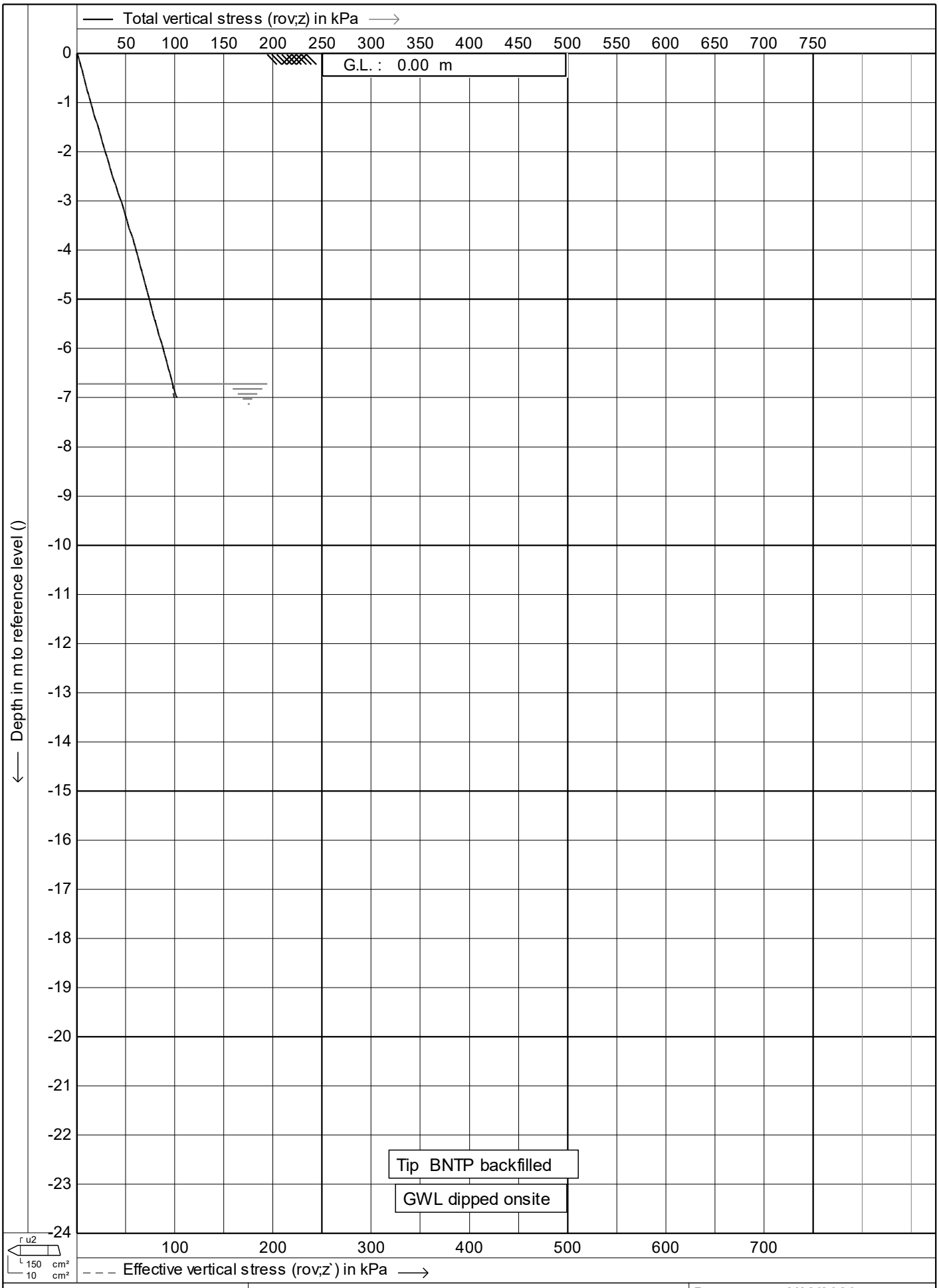
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **011**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

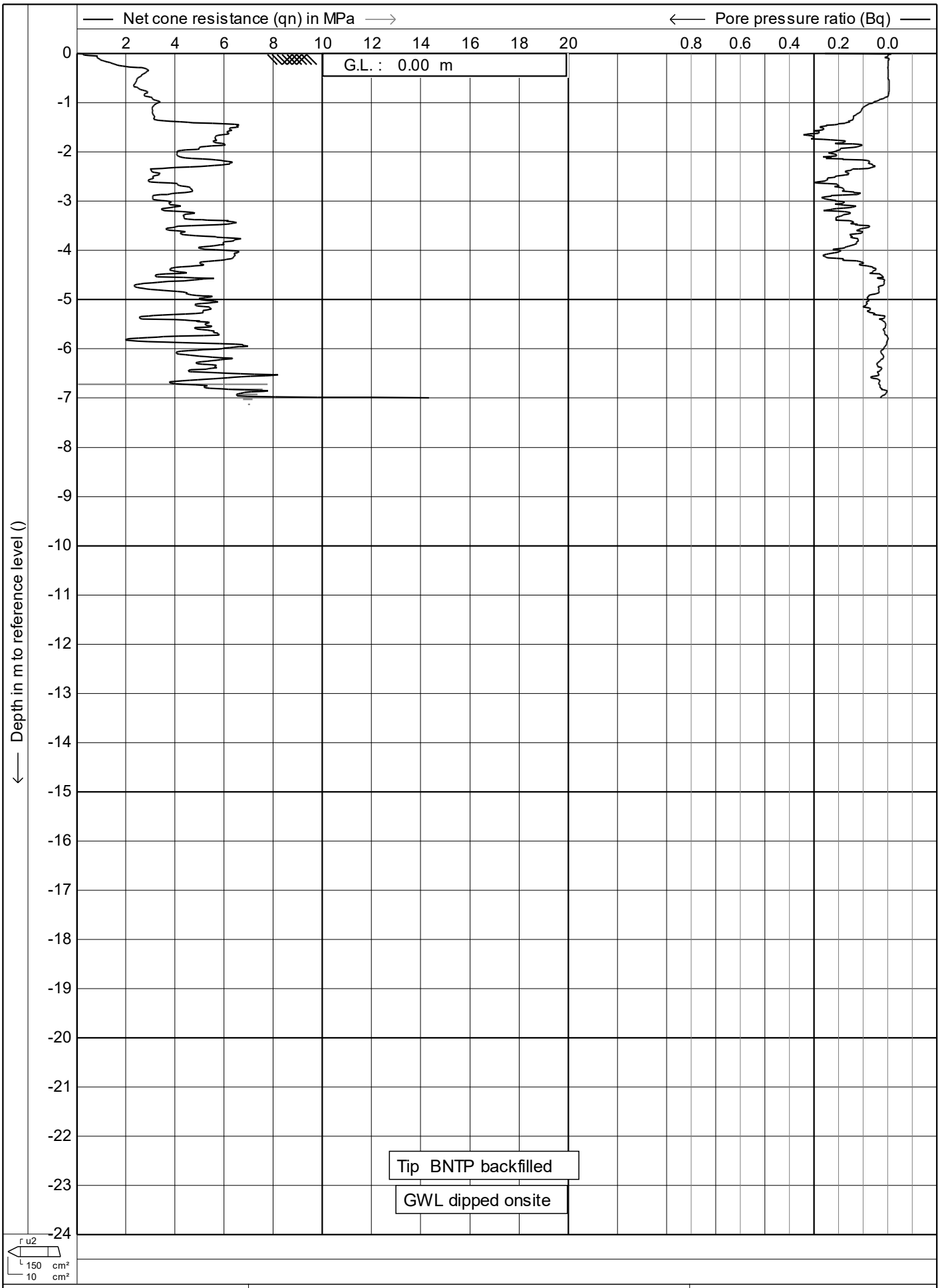
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **011**

6/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

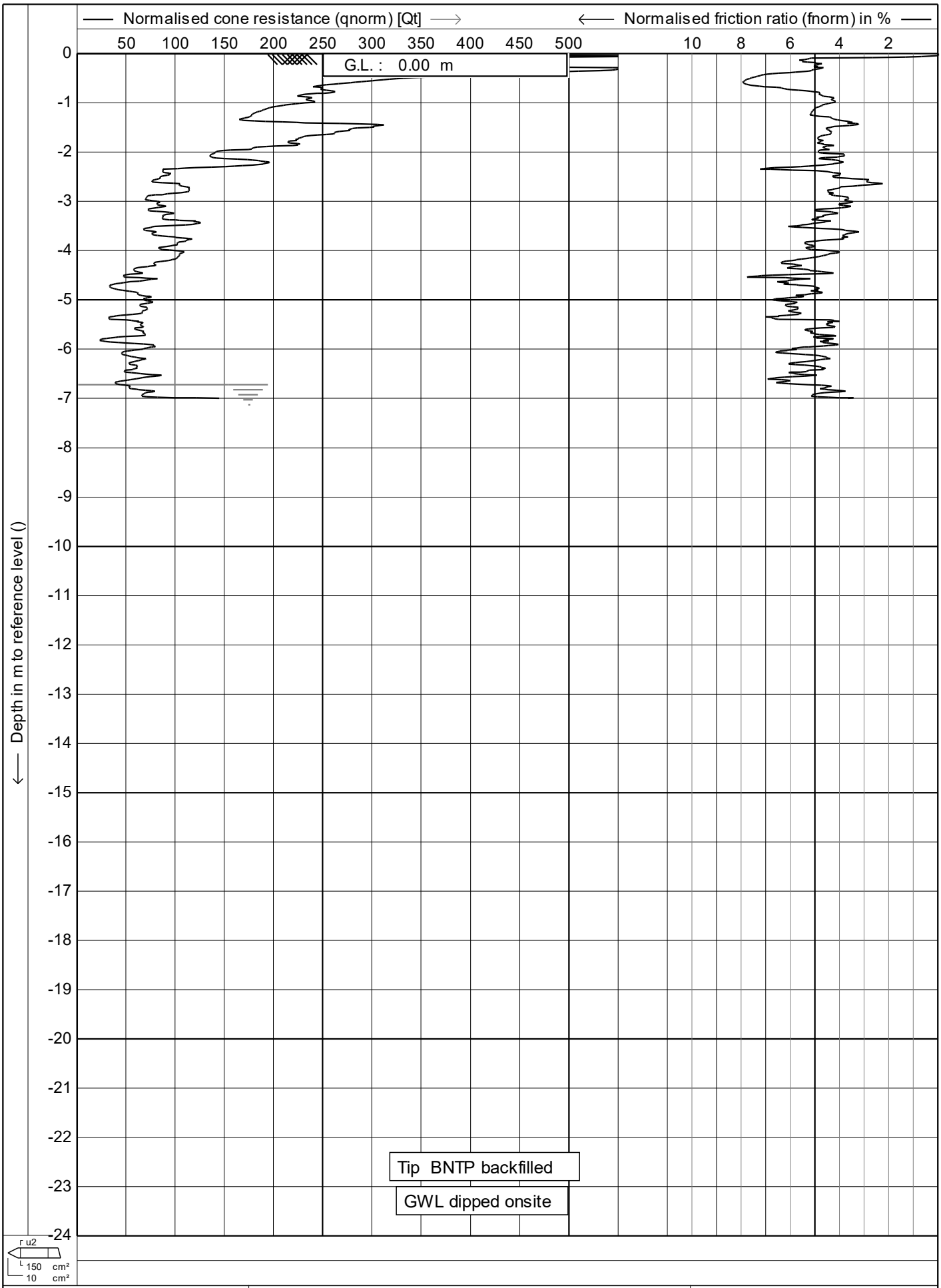
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **011**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

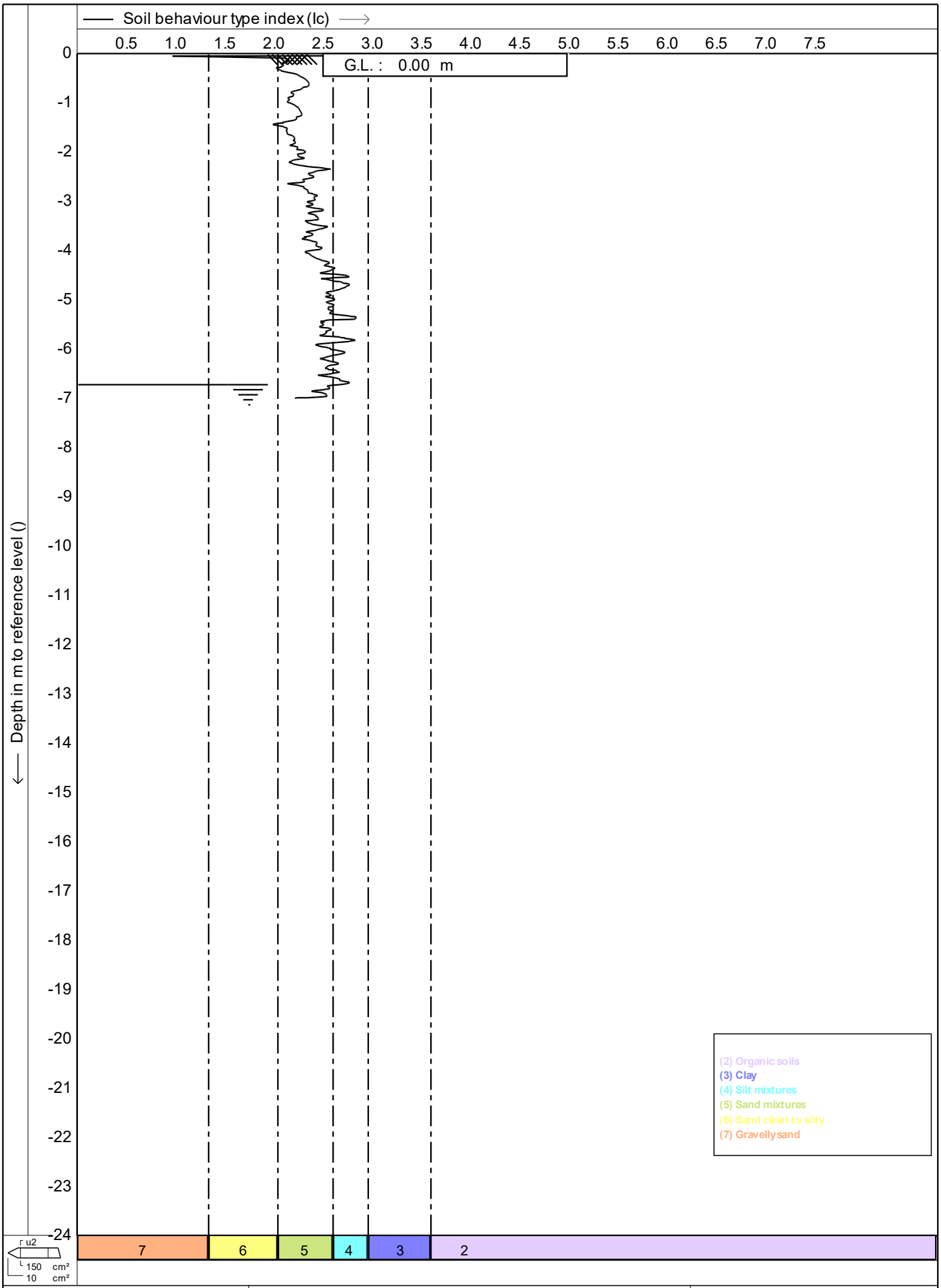
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **011**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

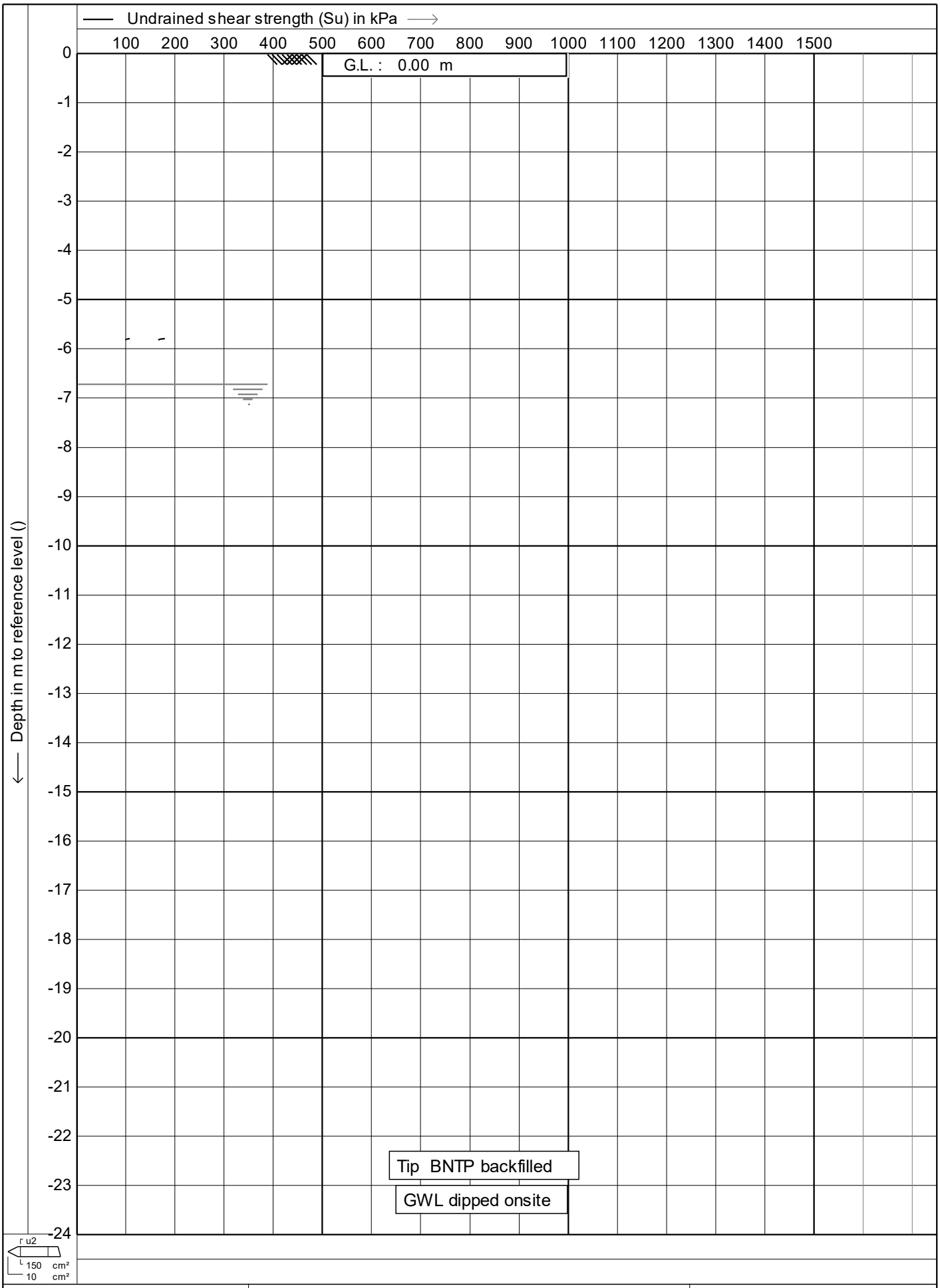
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **011**

9/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

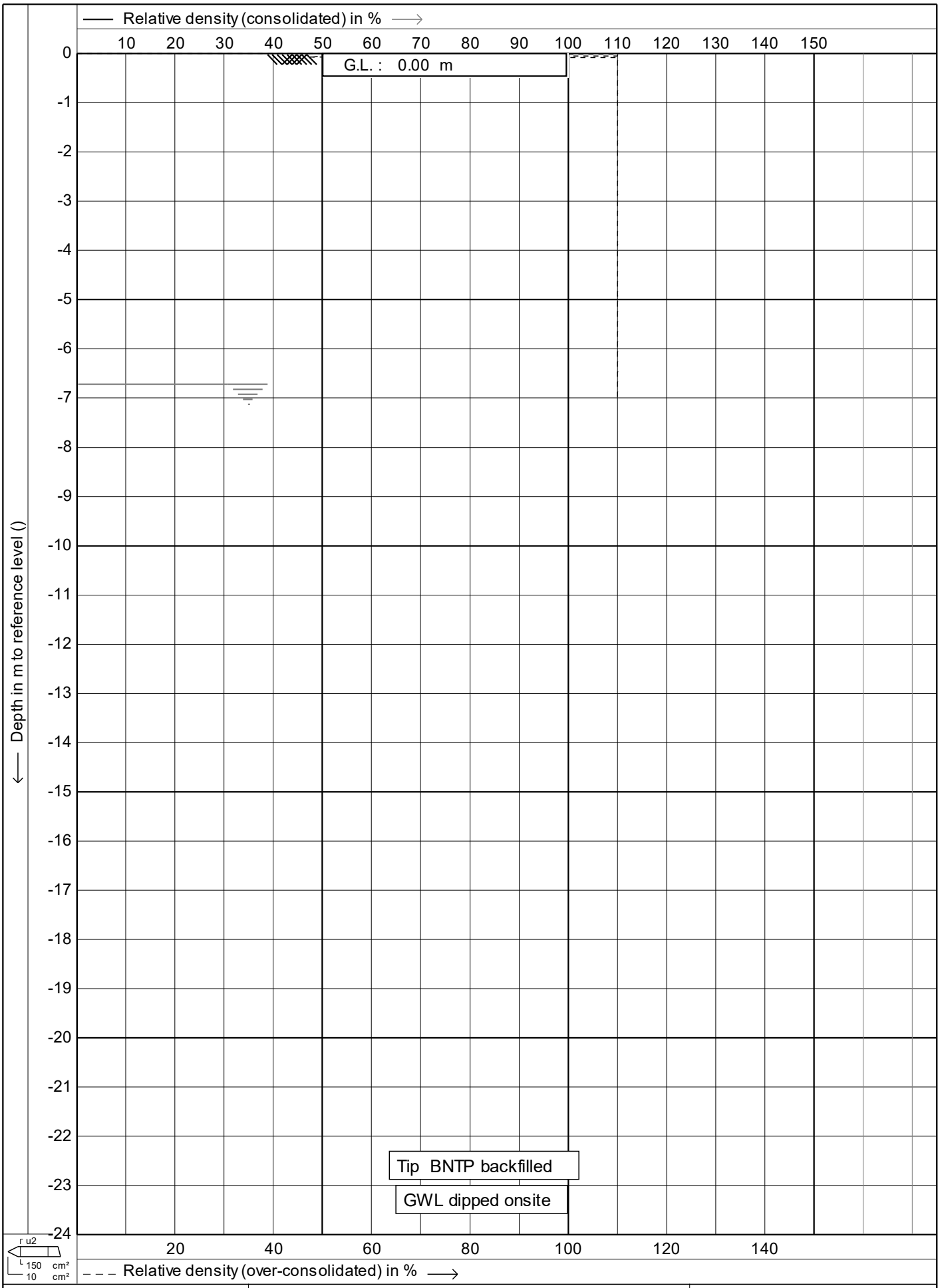
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **011**

10/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

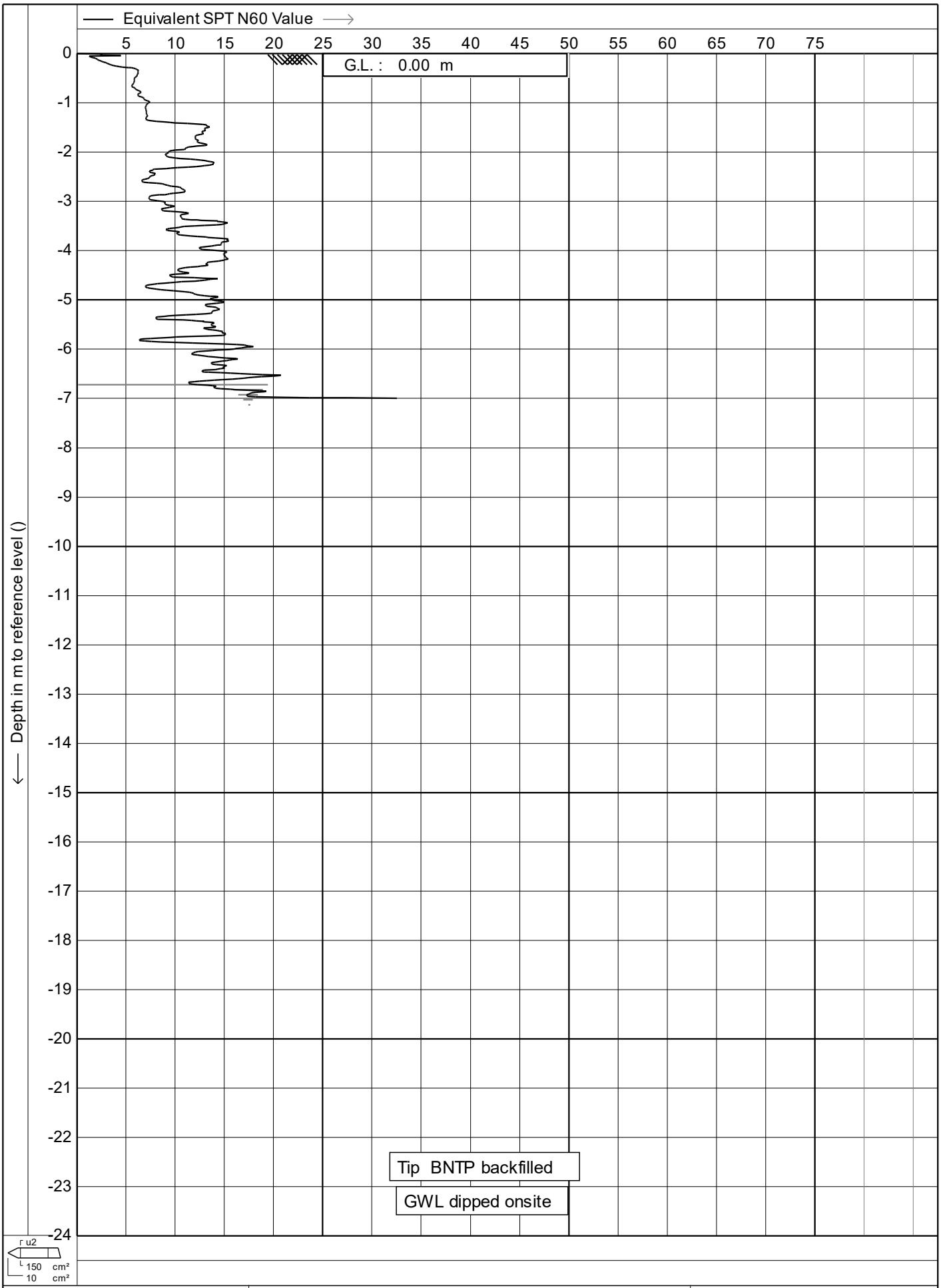
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **011** **11/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

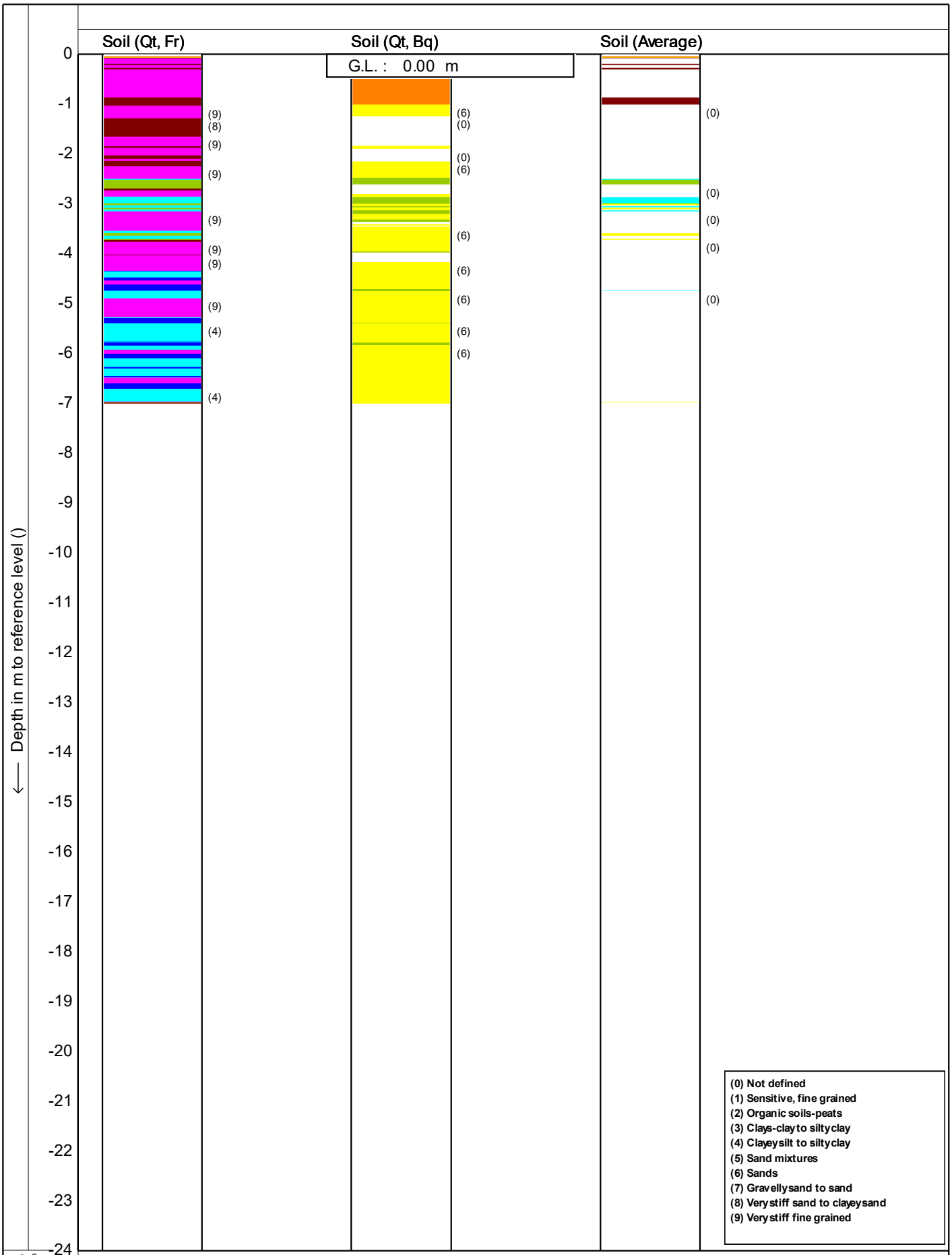
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **011**

12/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

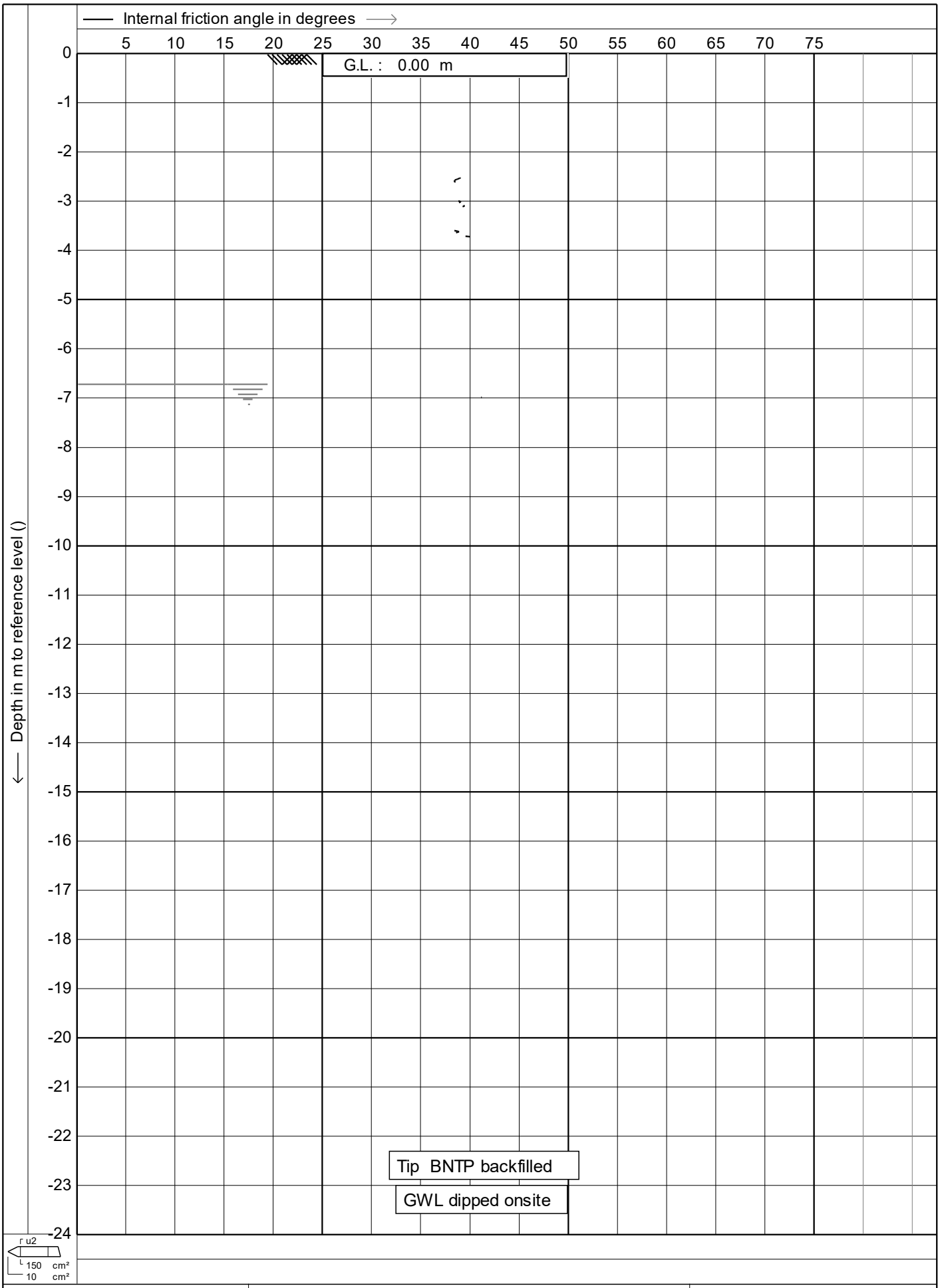
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **011**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

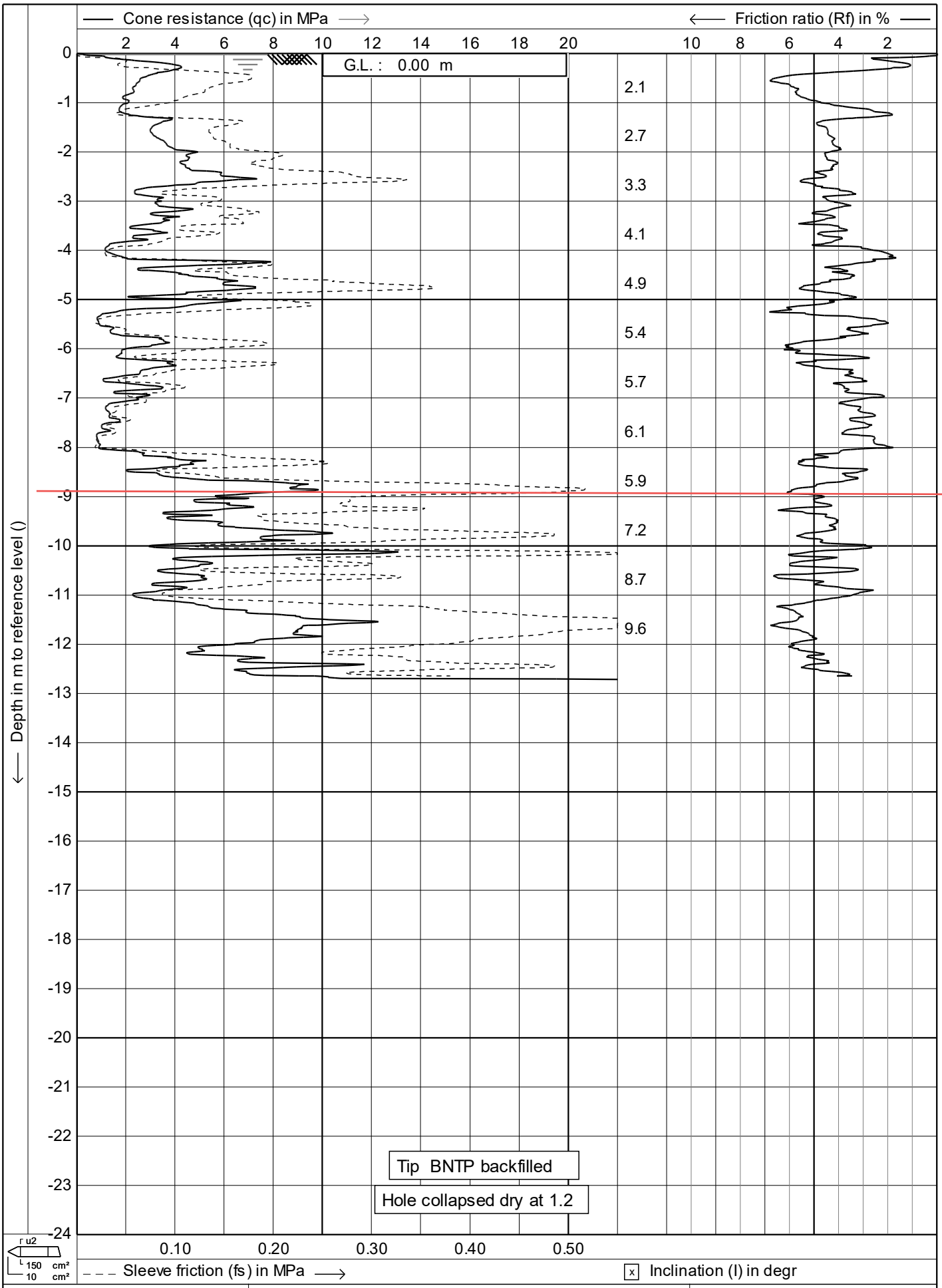
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **011**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

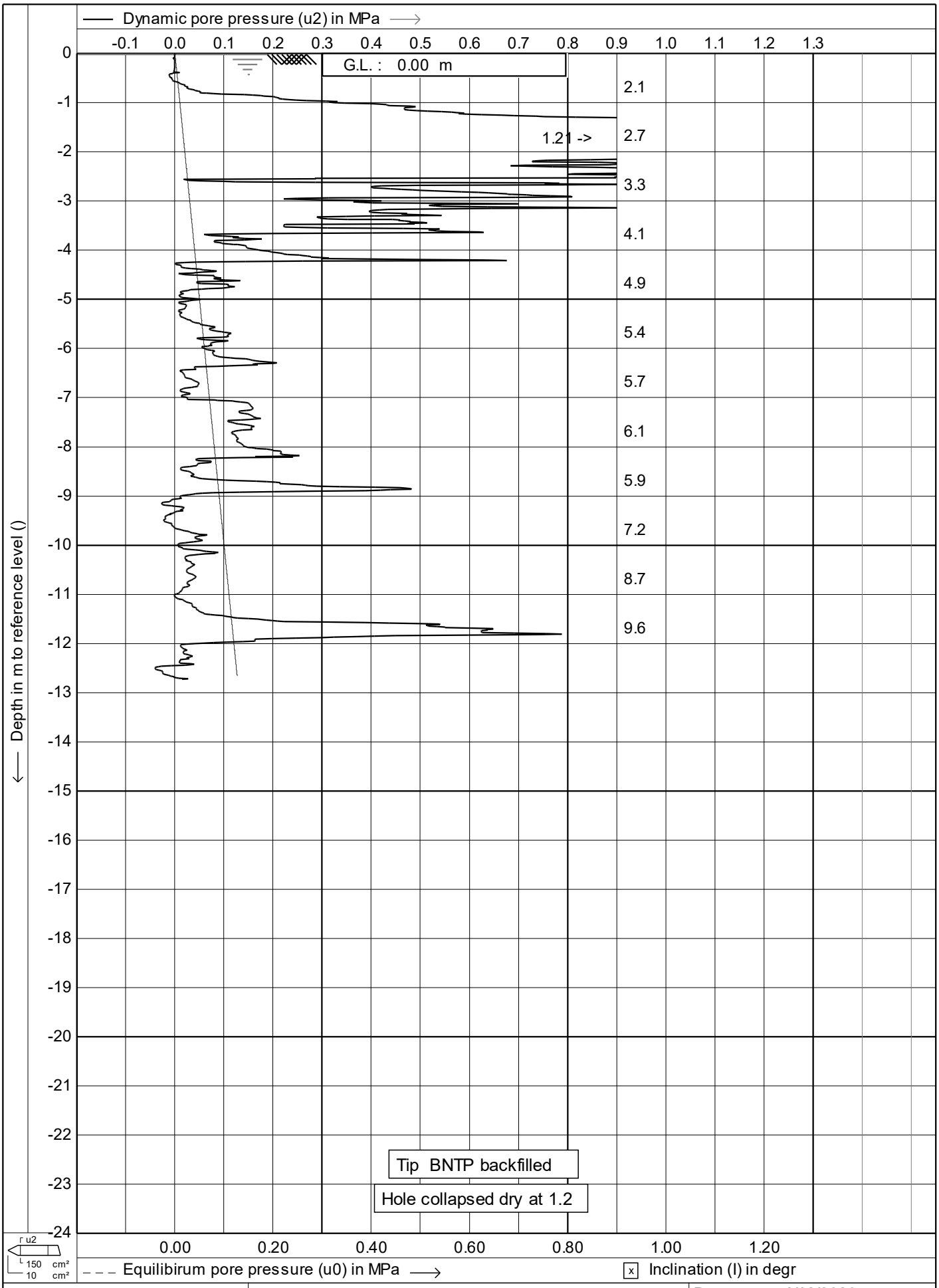
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **012**

1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

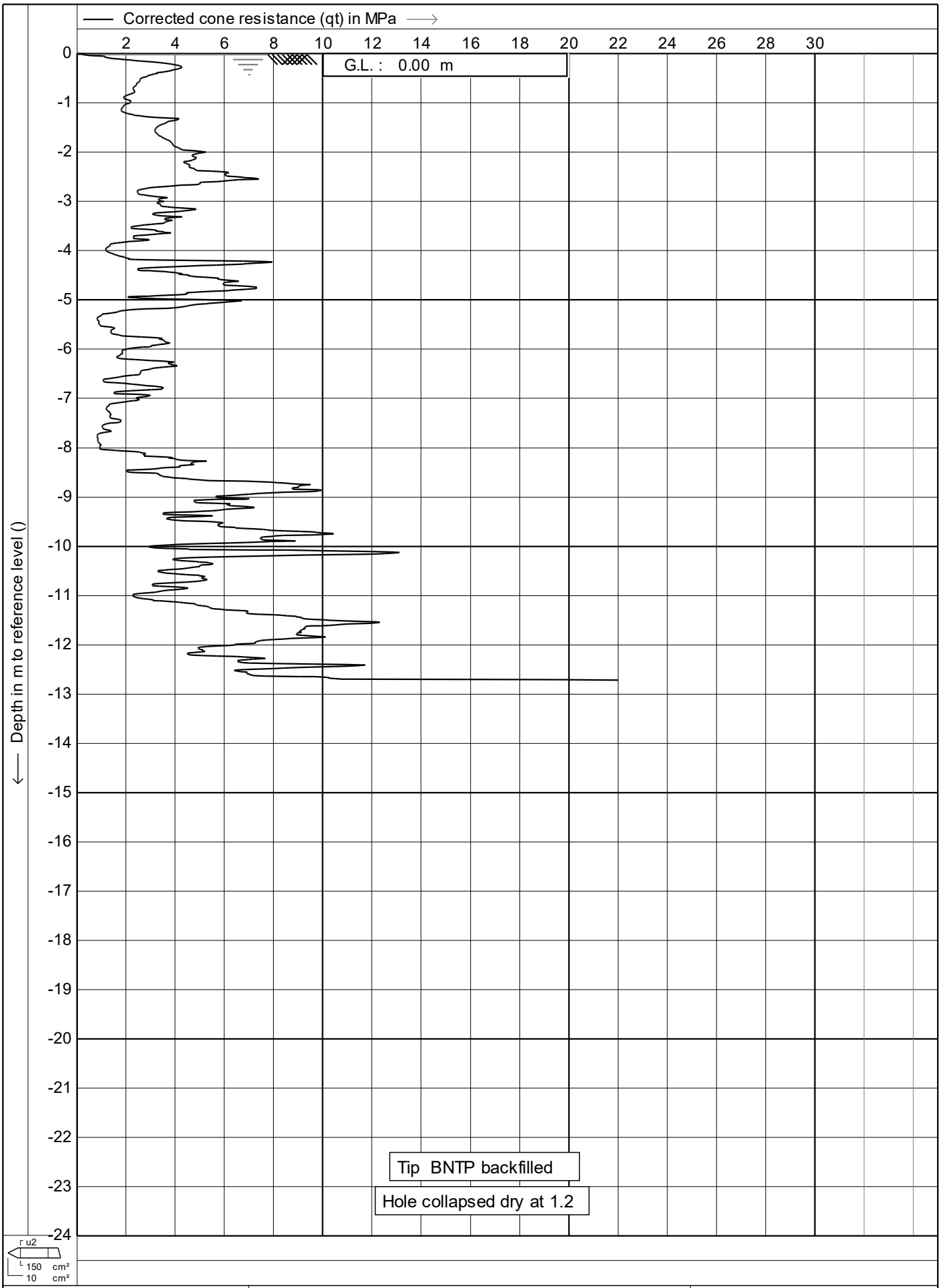
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **012**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

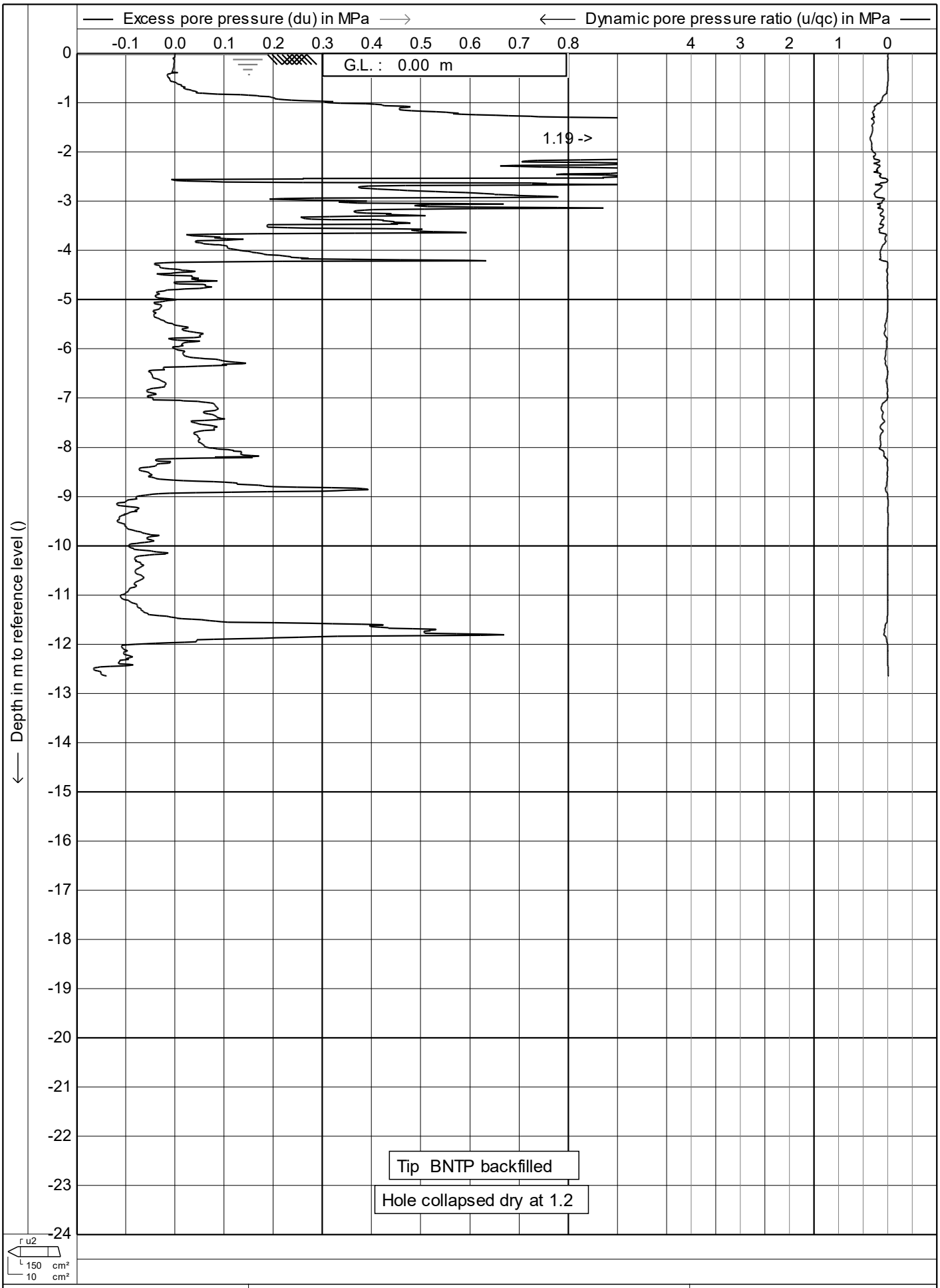
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **012**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

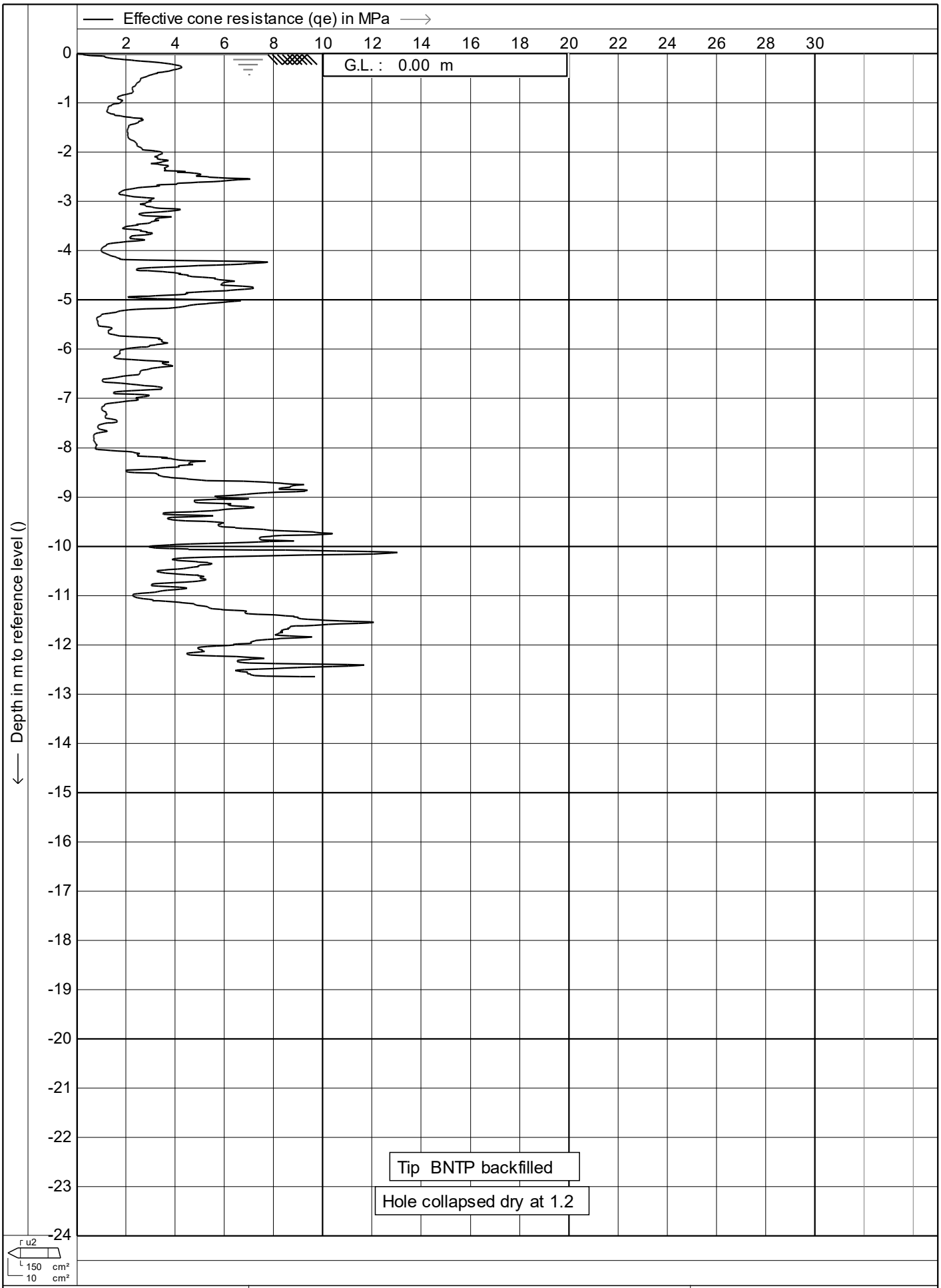
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **012**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

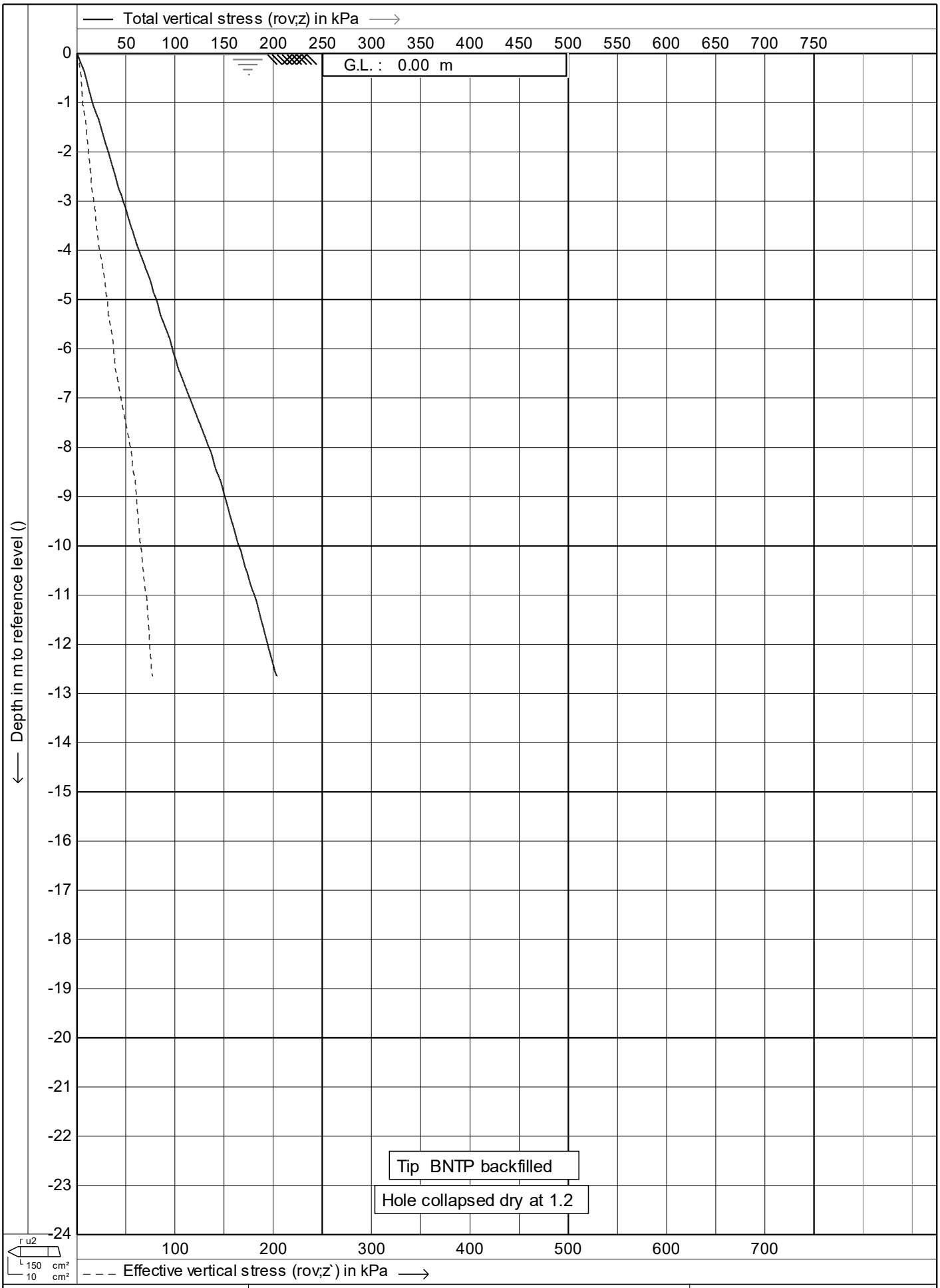
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **012**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

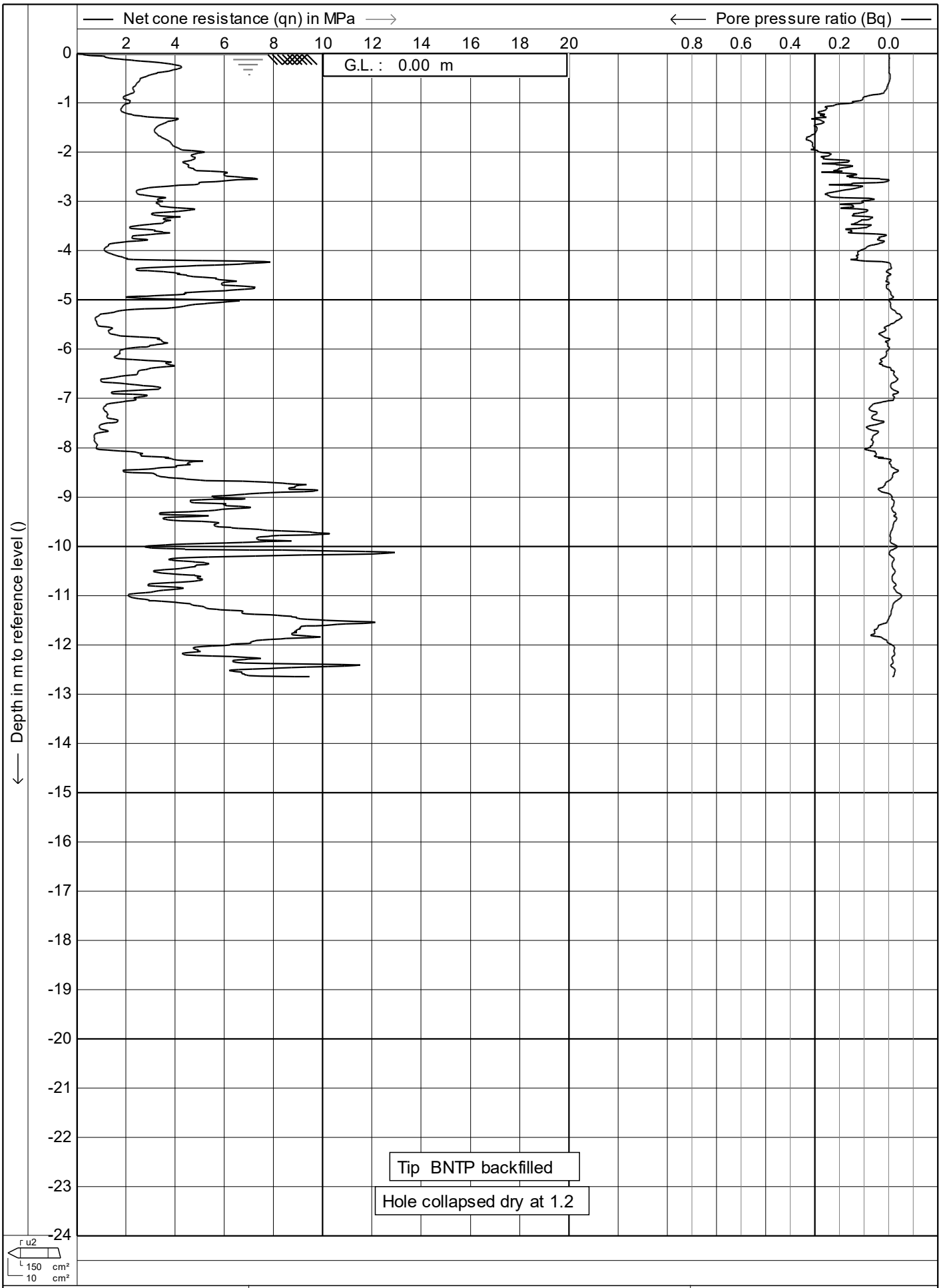
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **012**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

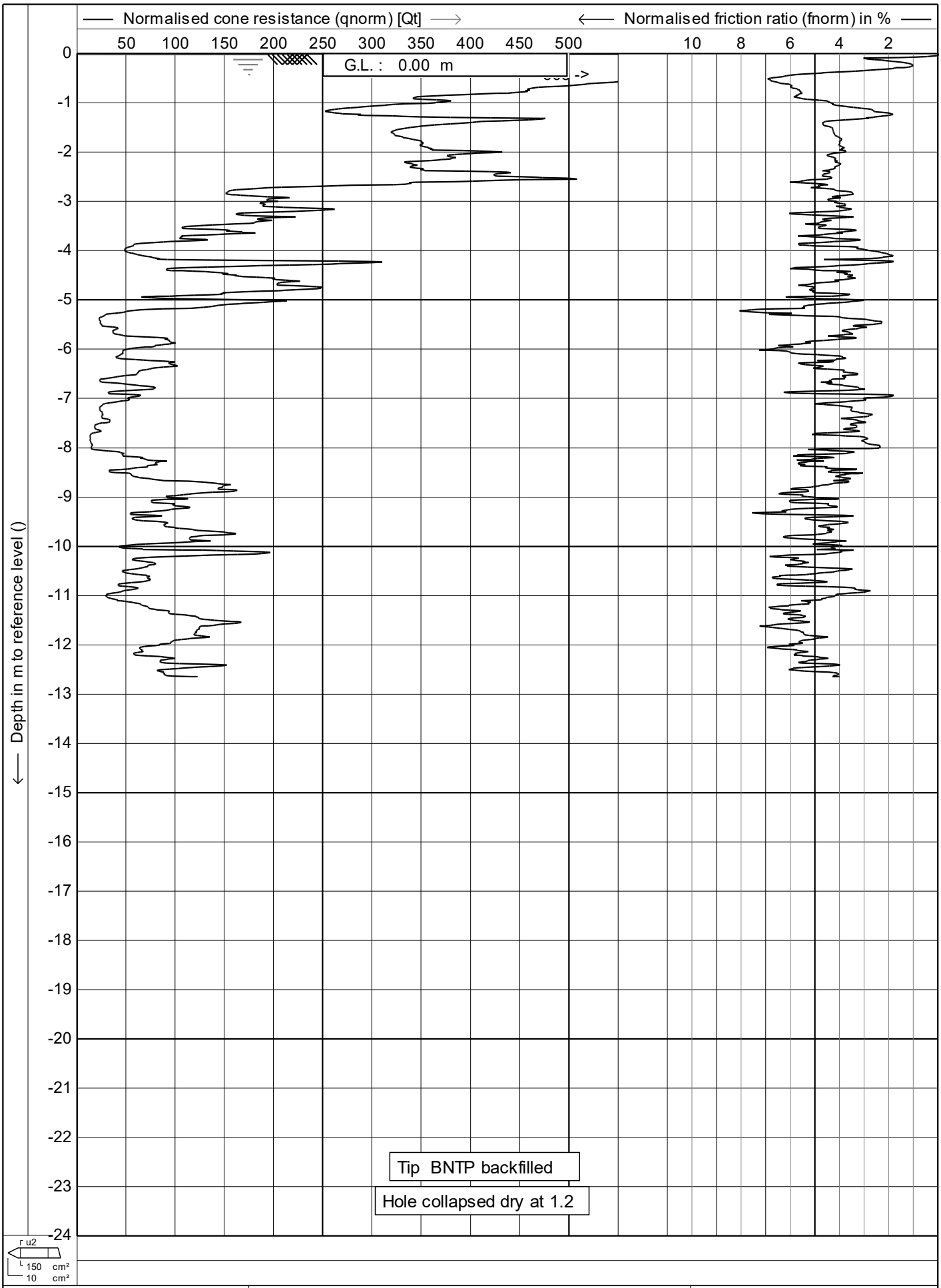
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **012**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

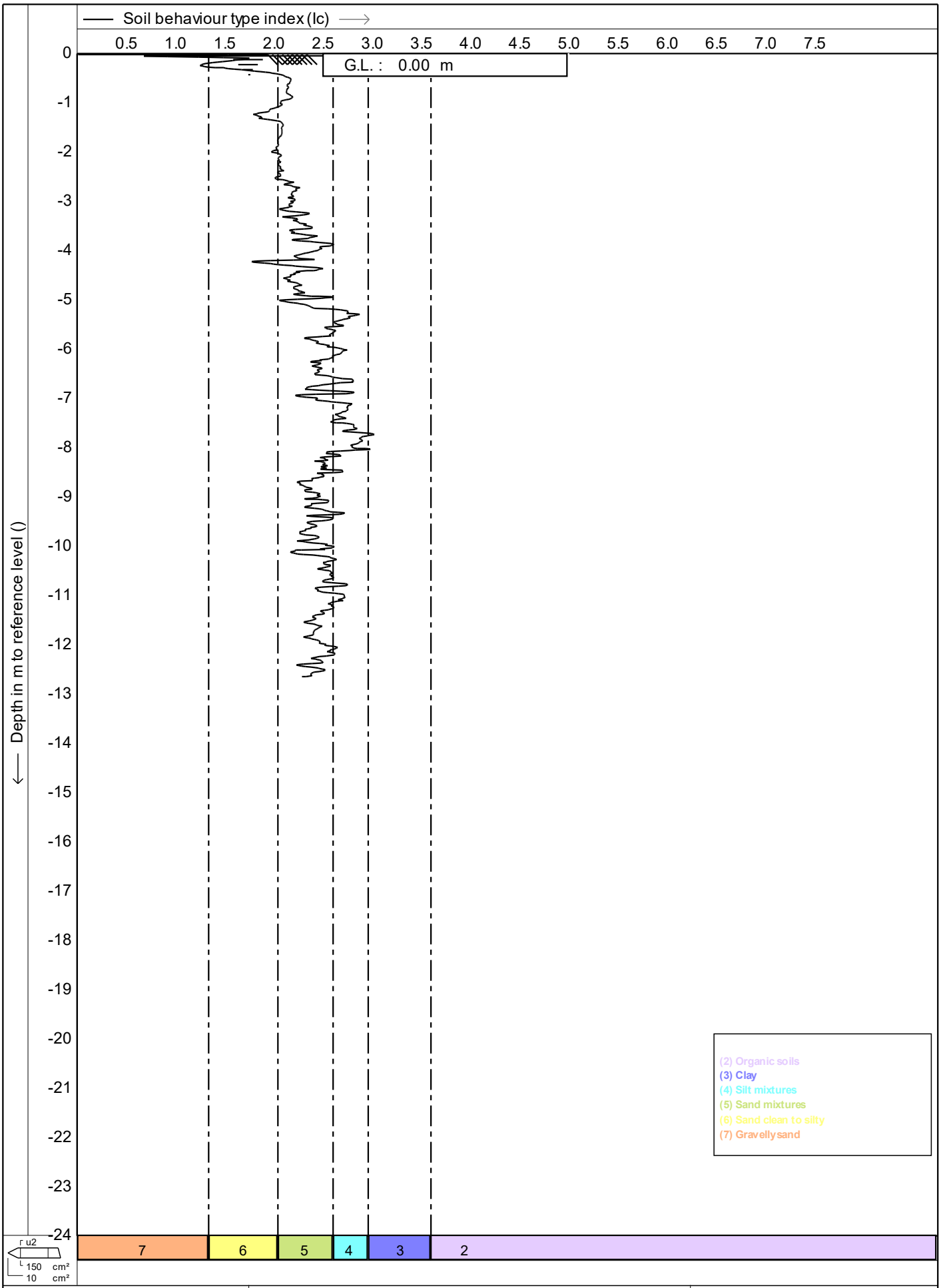
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **012** **8/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

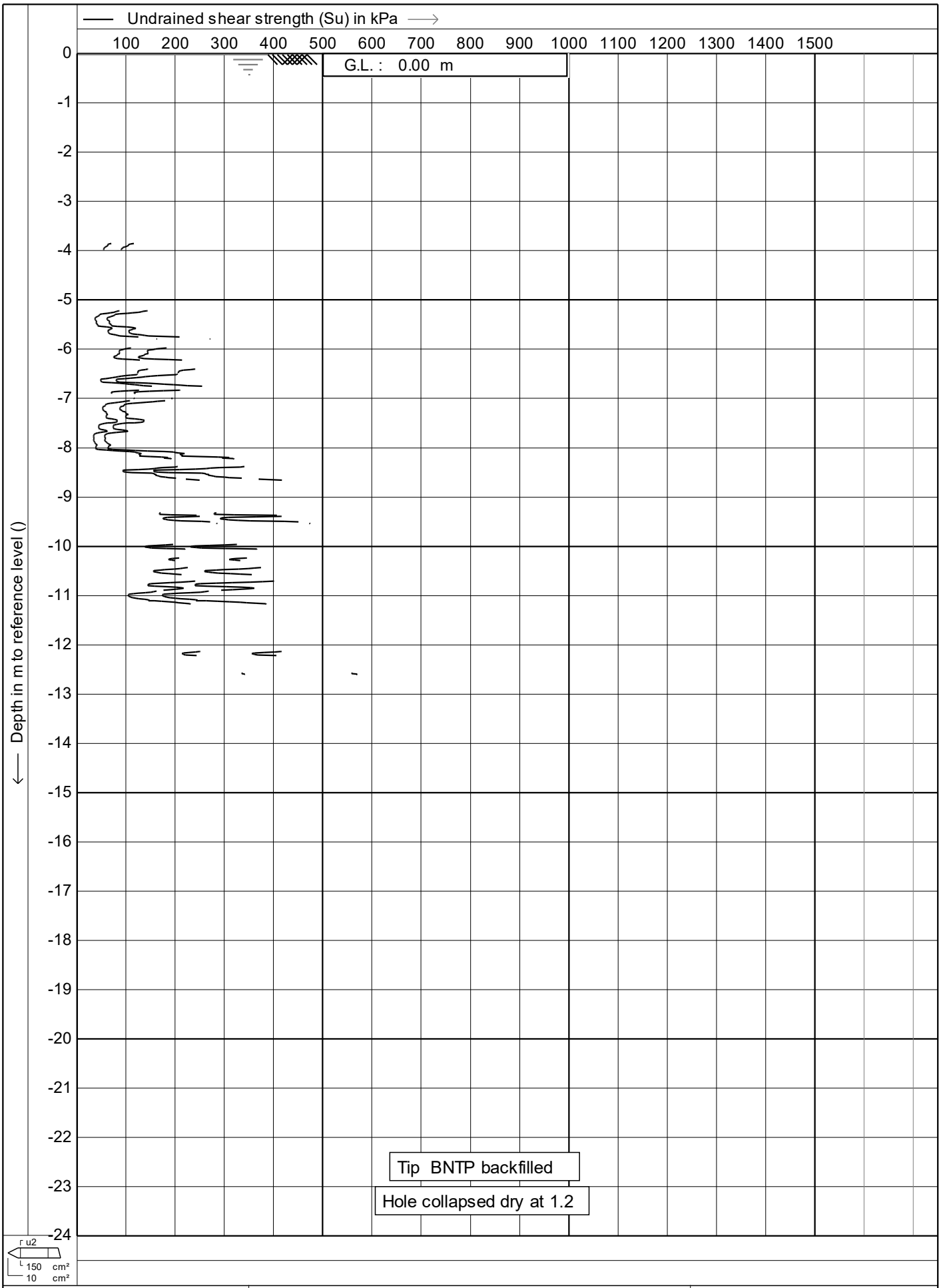
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **012**

9/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

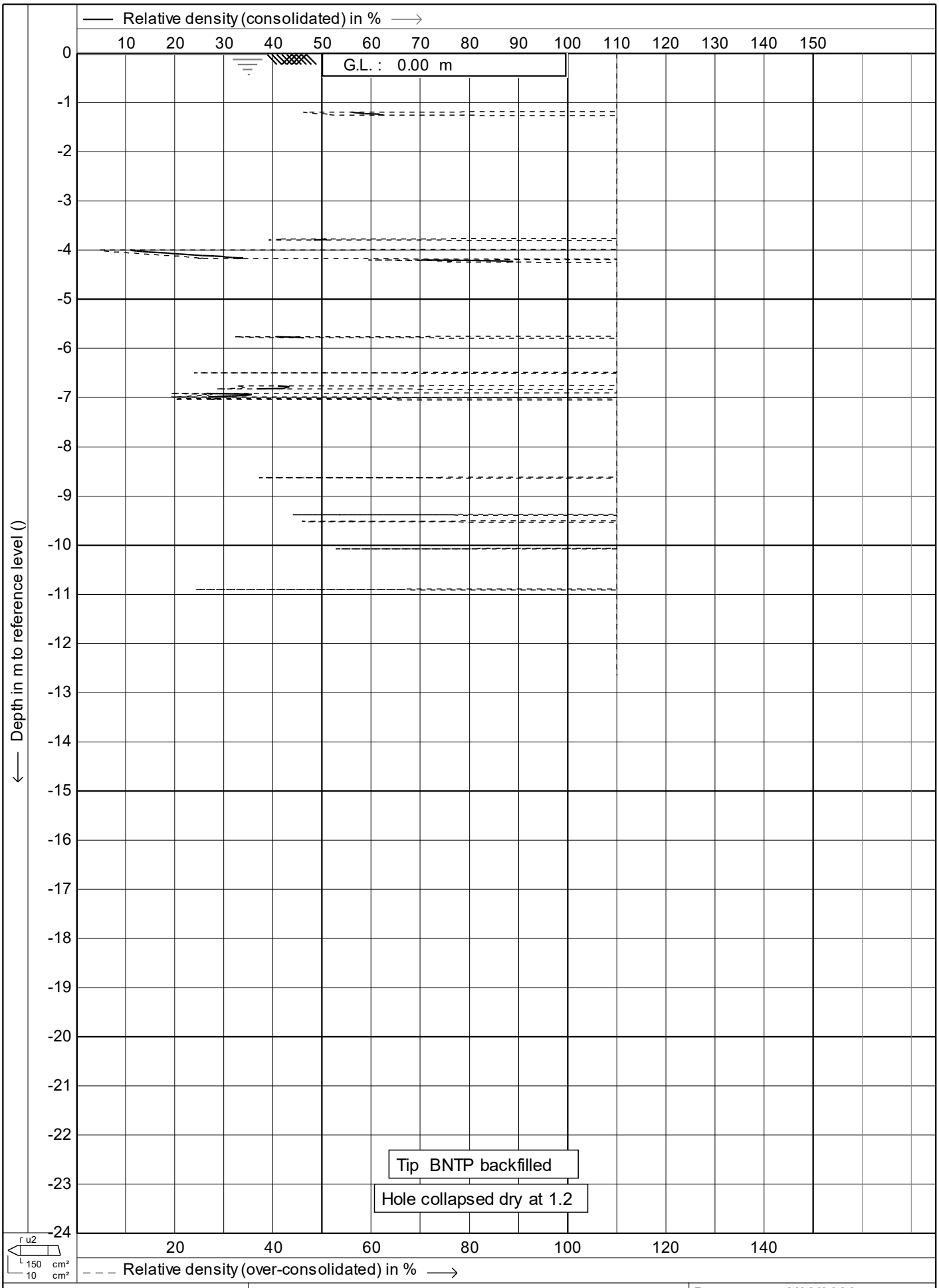
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **012**

10/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

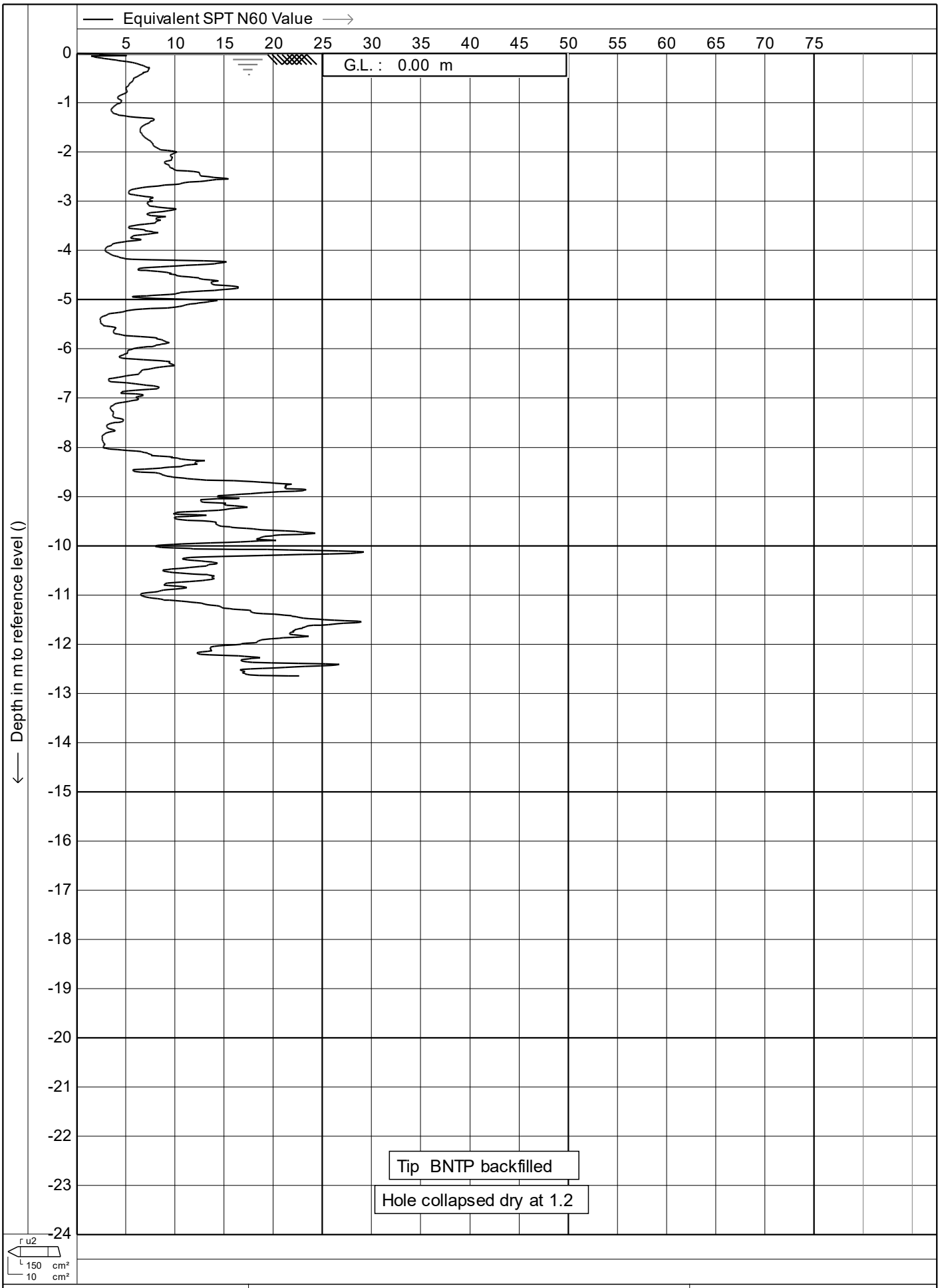
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **012** **11/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

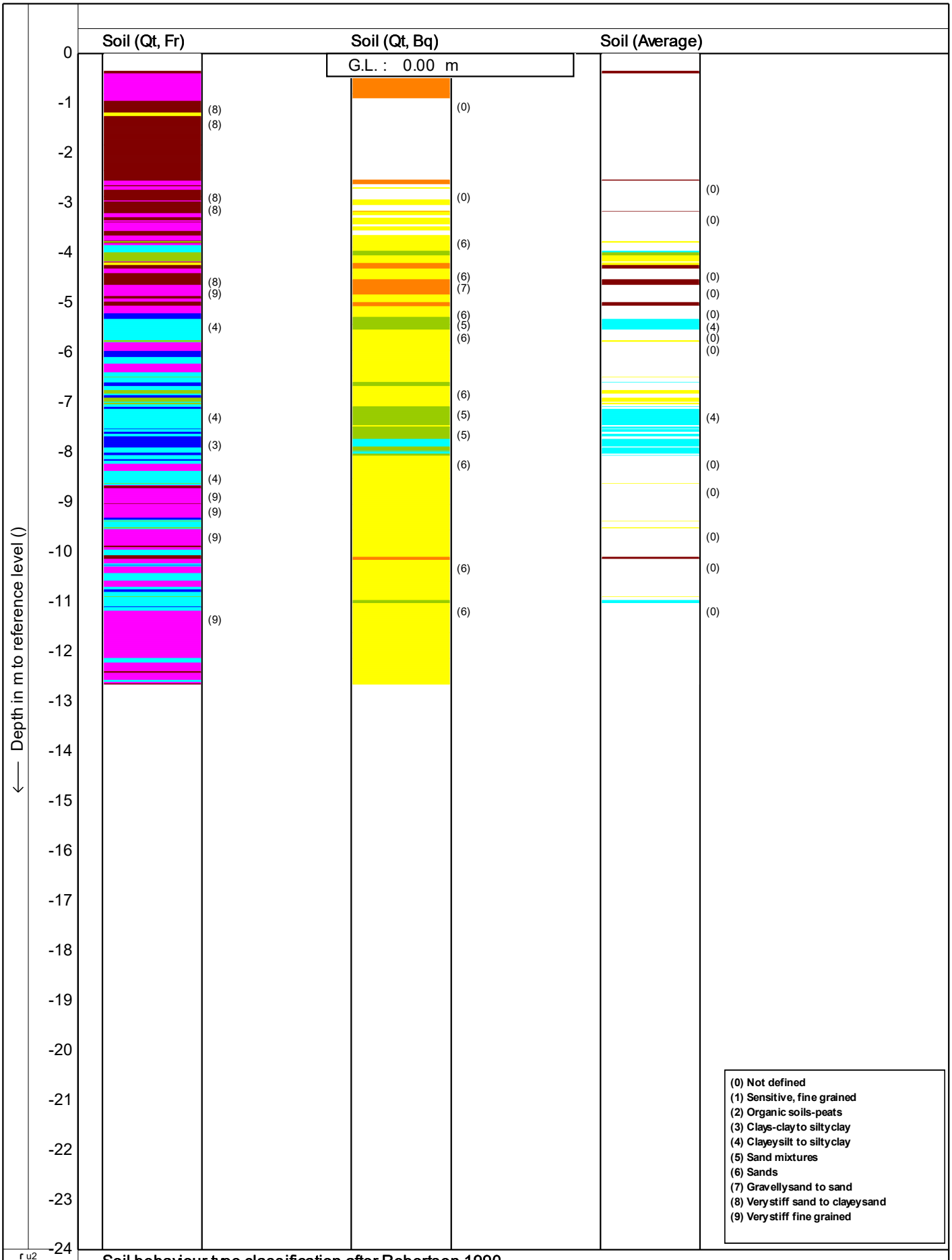
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **012**

12/14

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

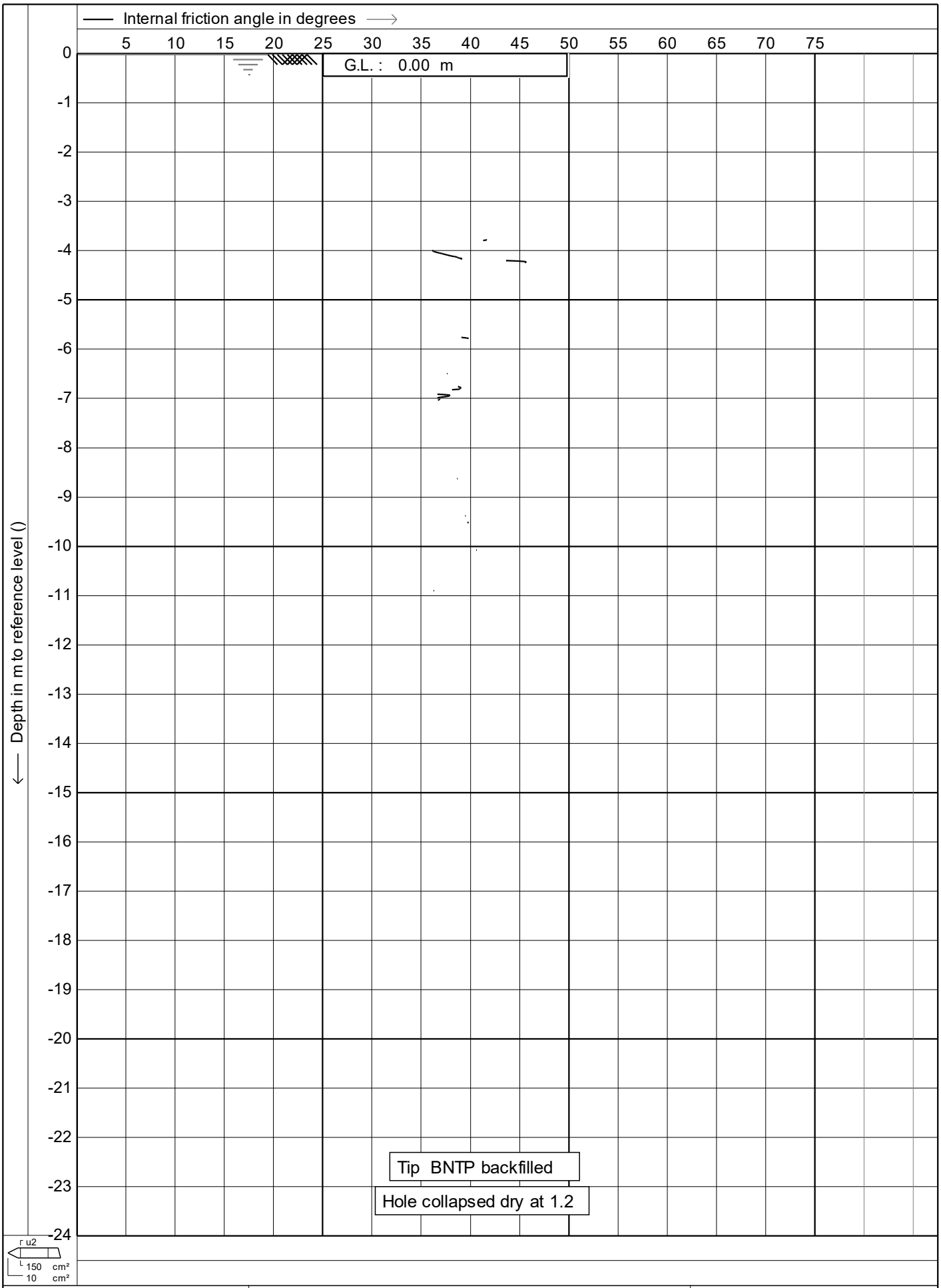
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **012**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

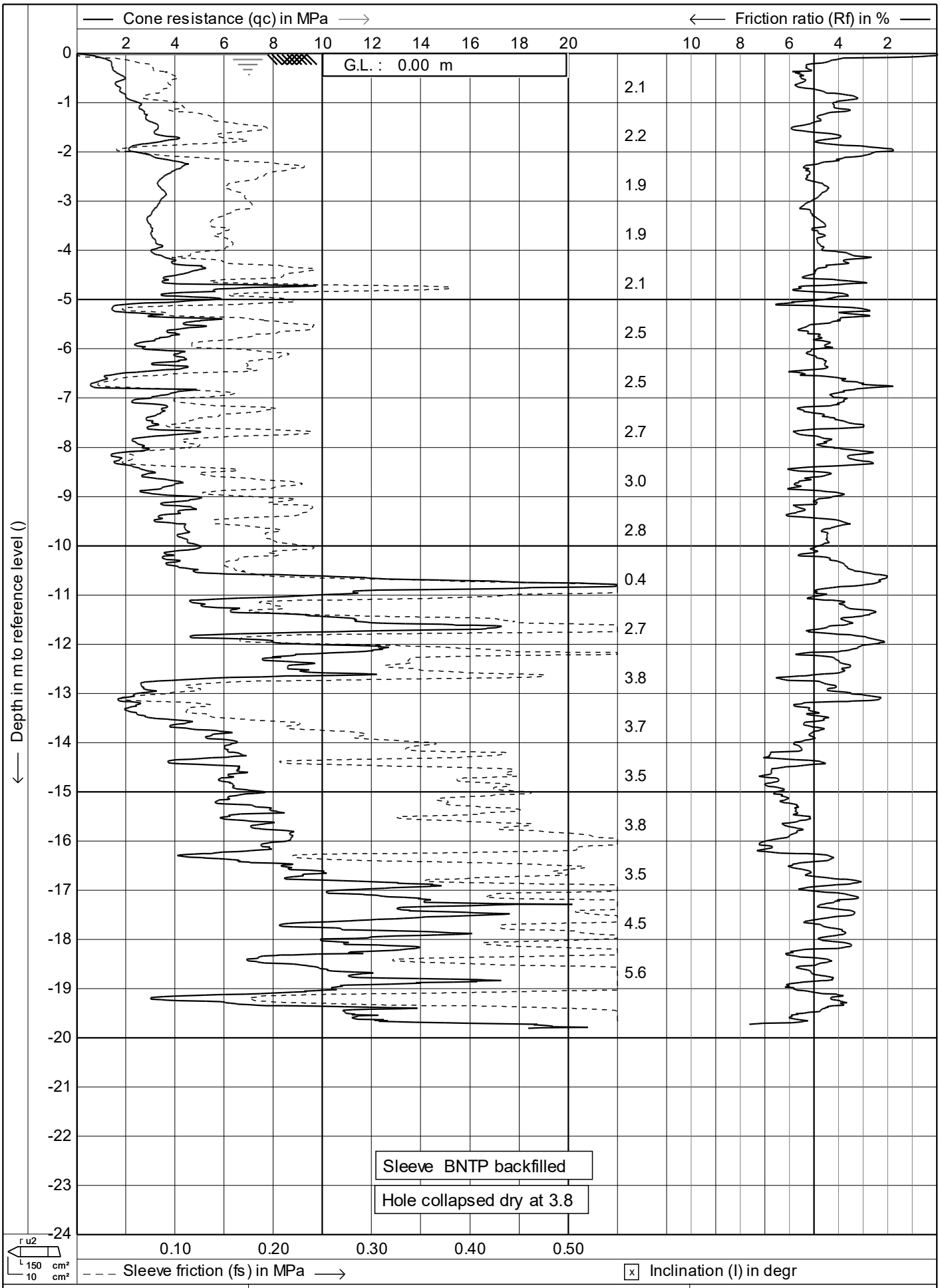
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **012**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

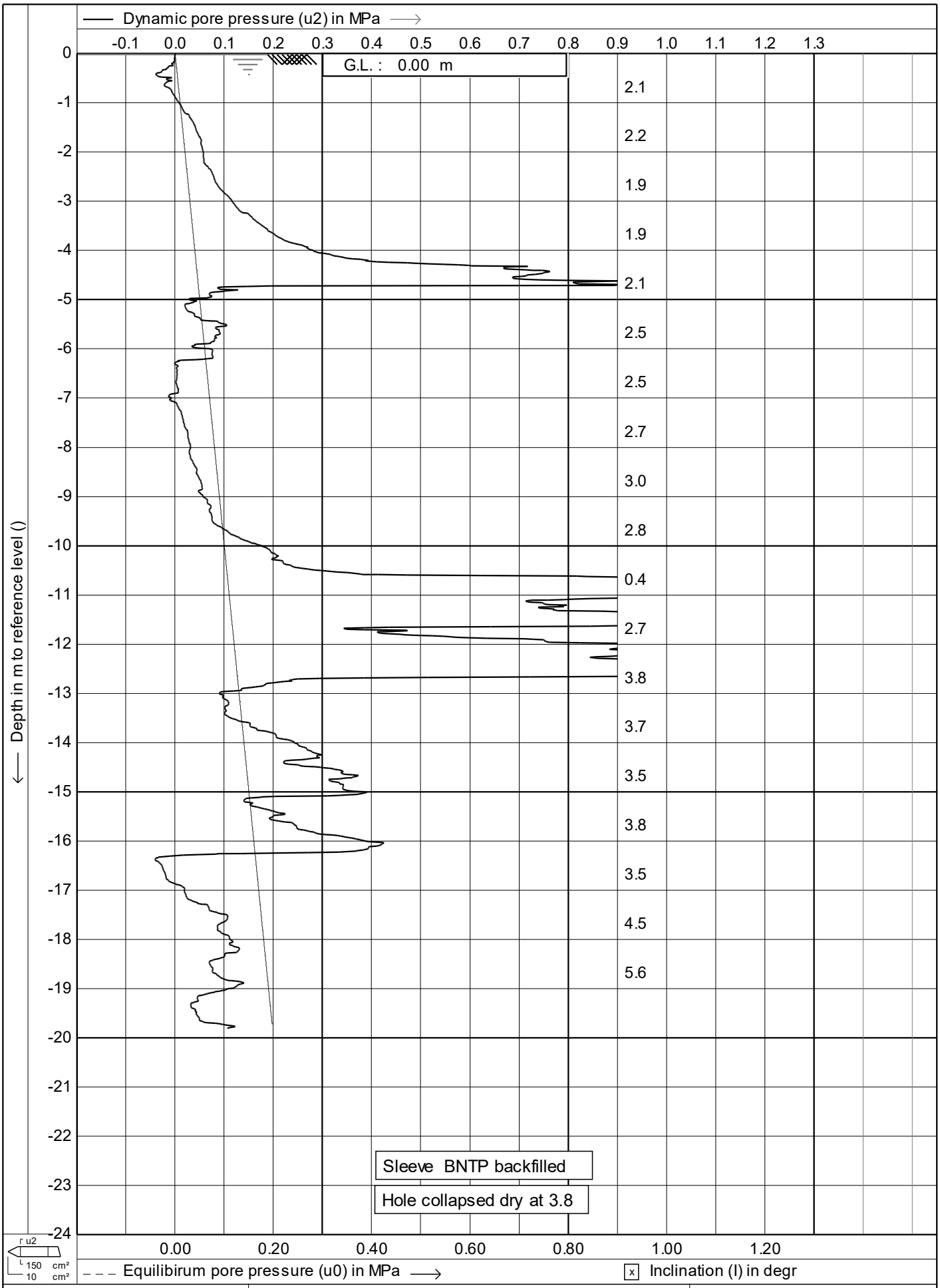
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **013**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

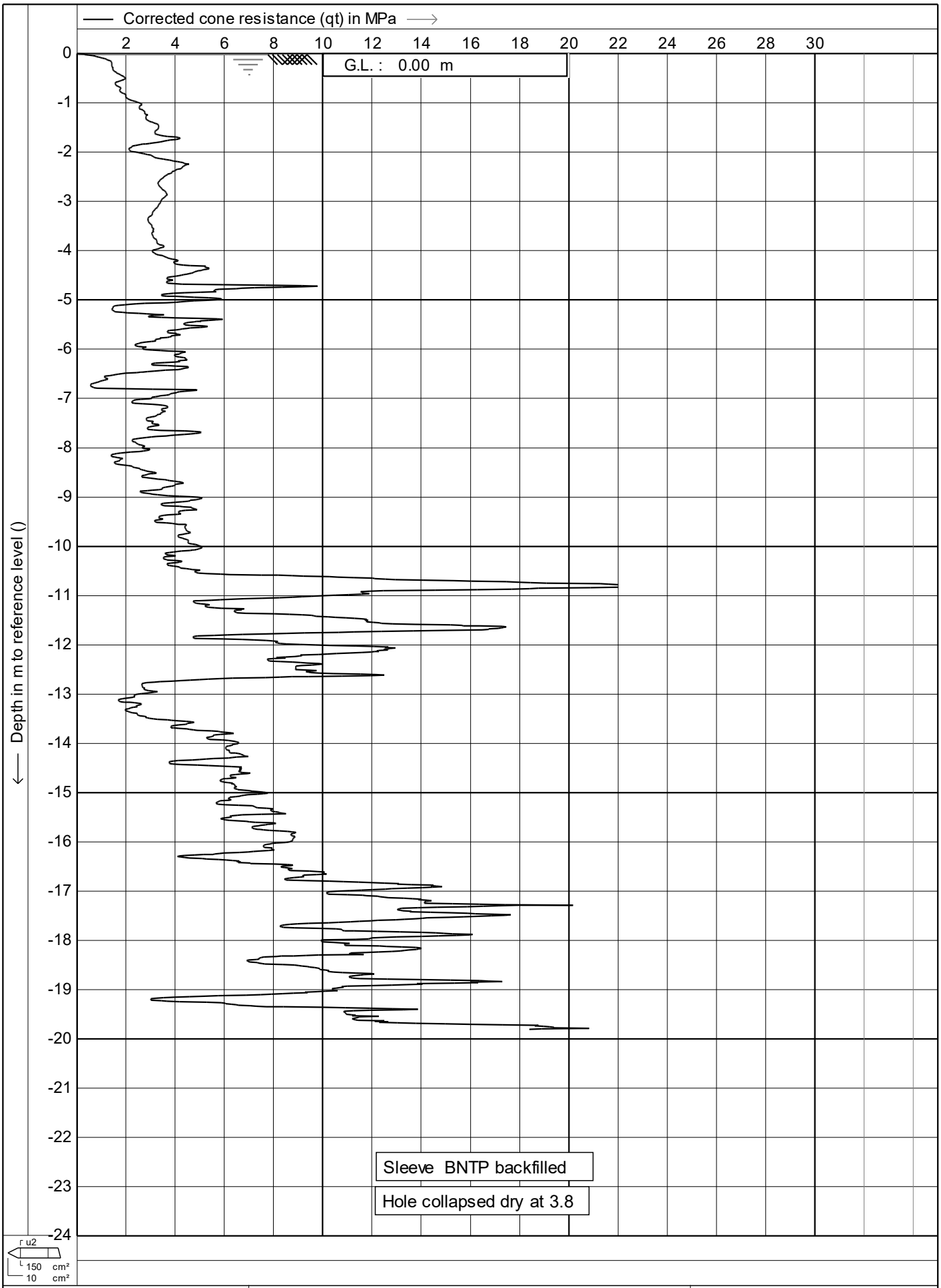
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **013**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

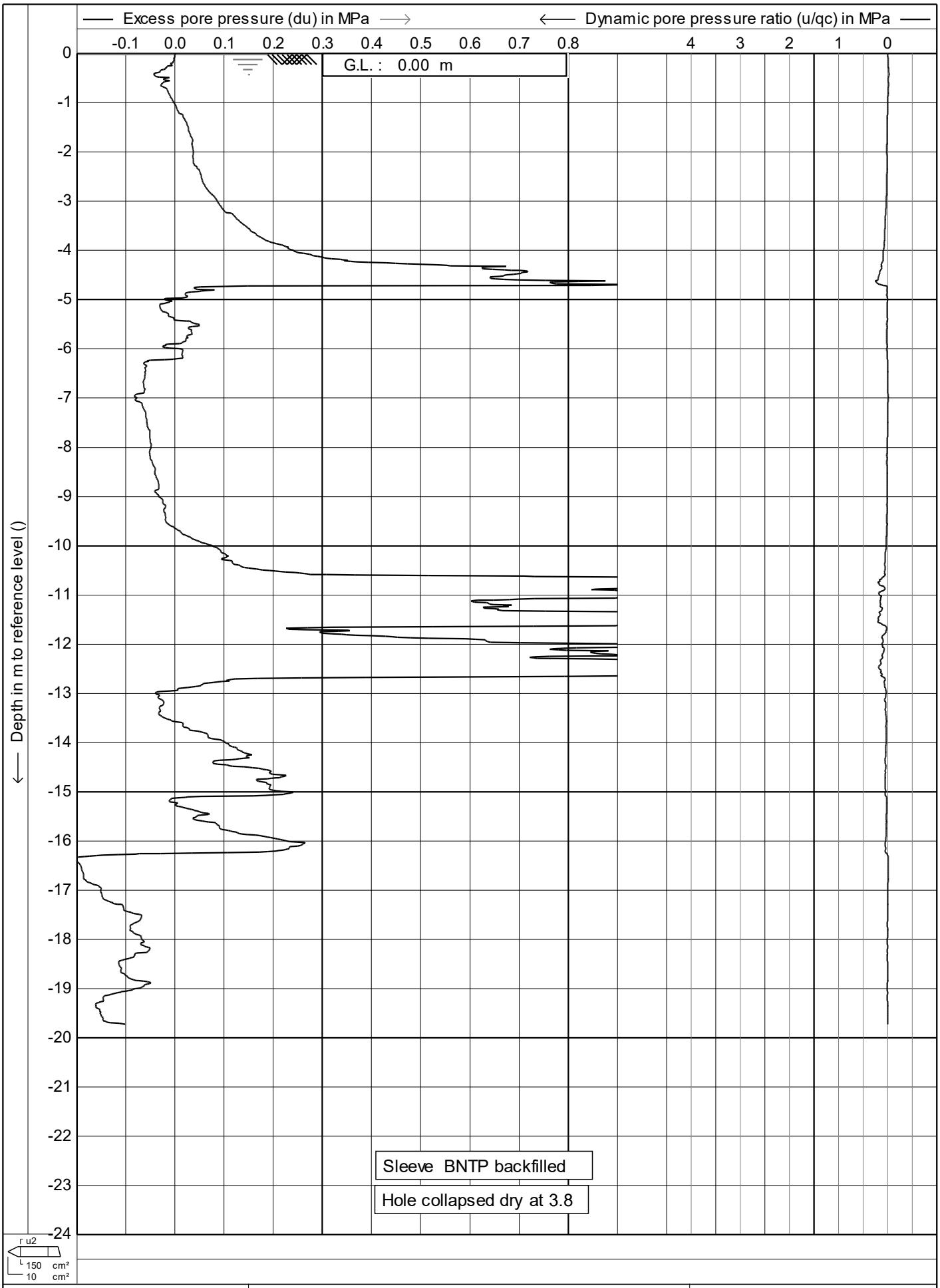
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **013**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

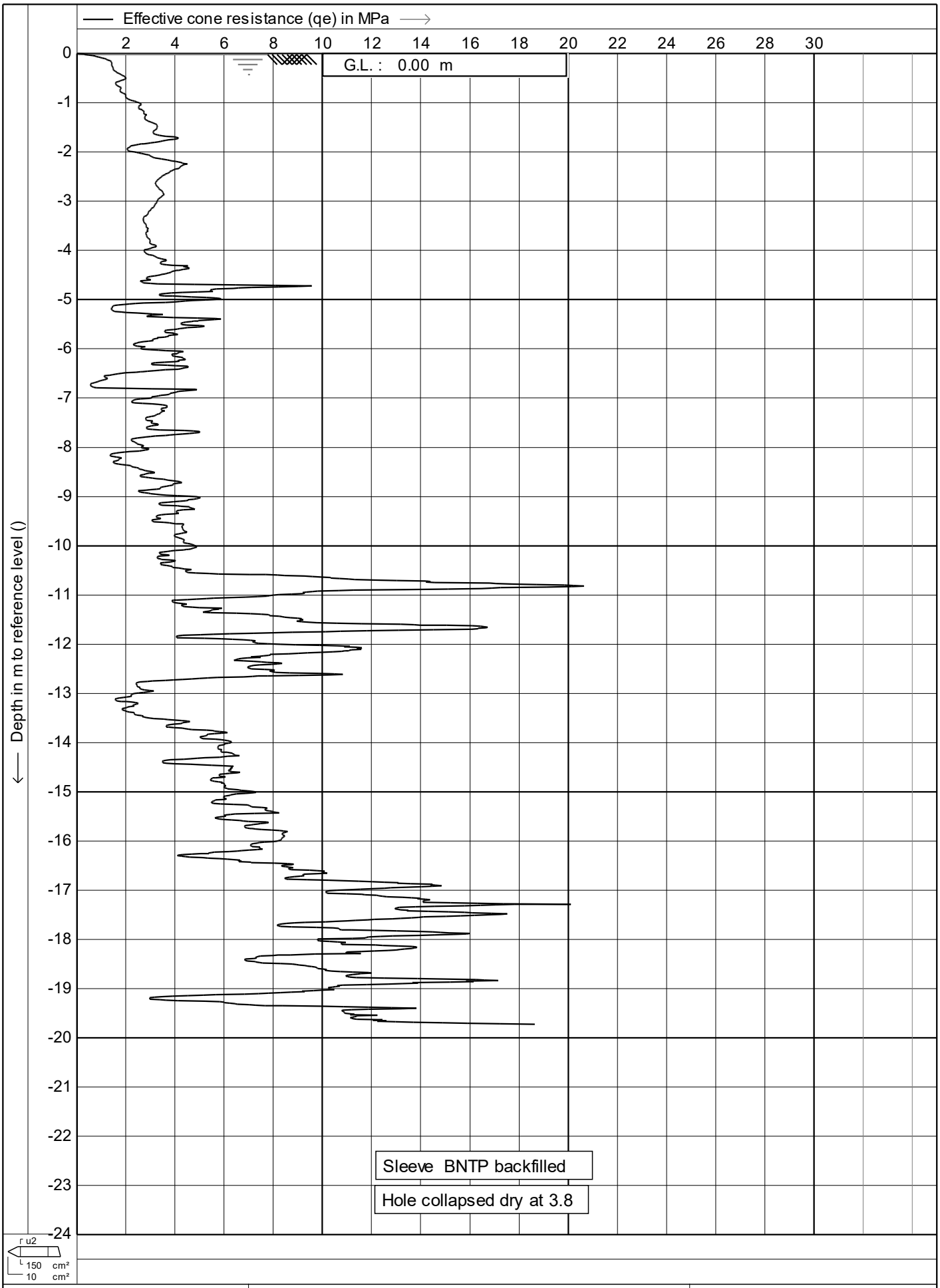
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **013** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

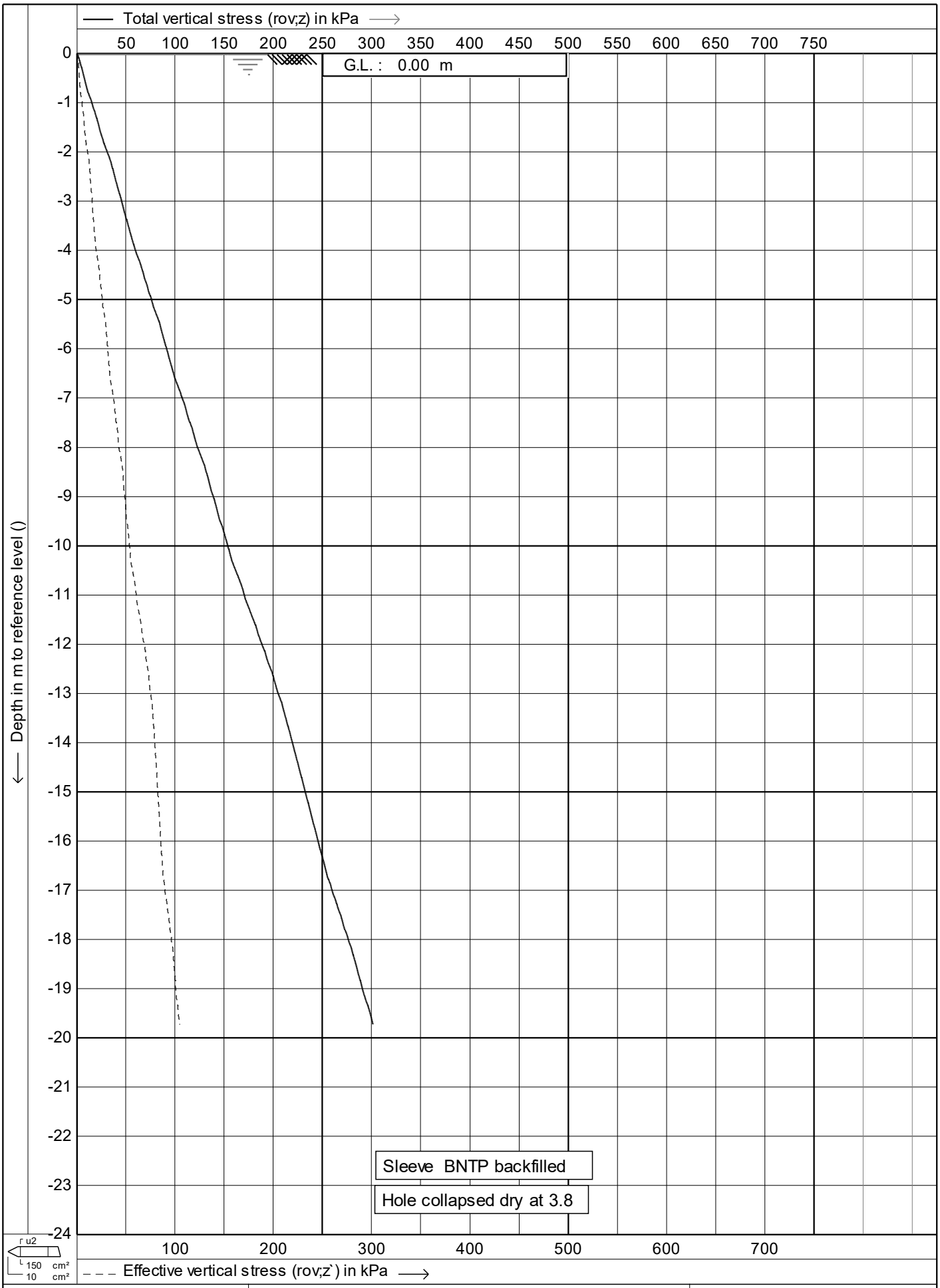
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **013**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

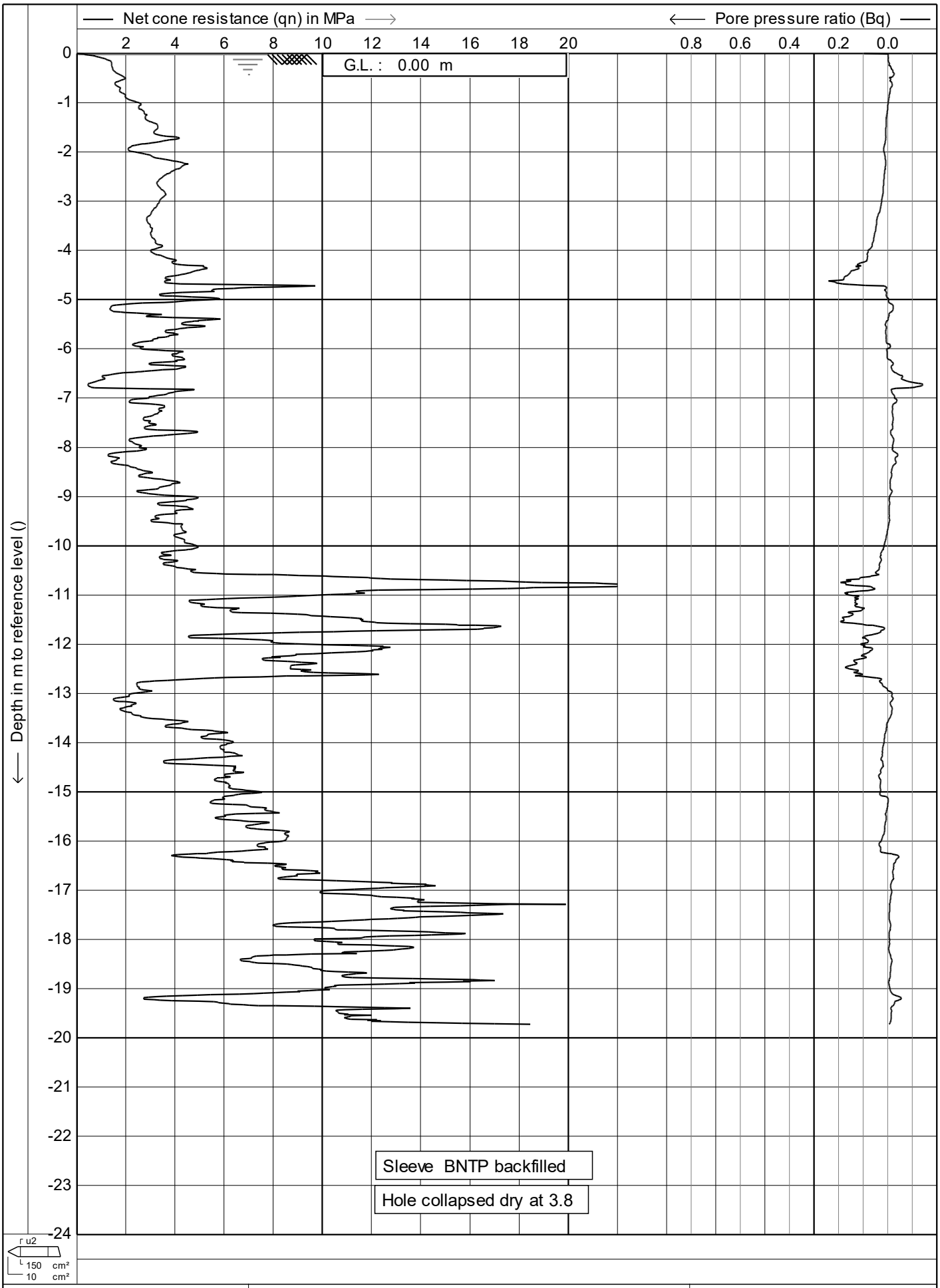
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **013** **6/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

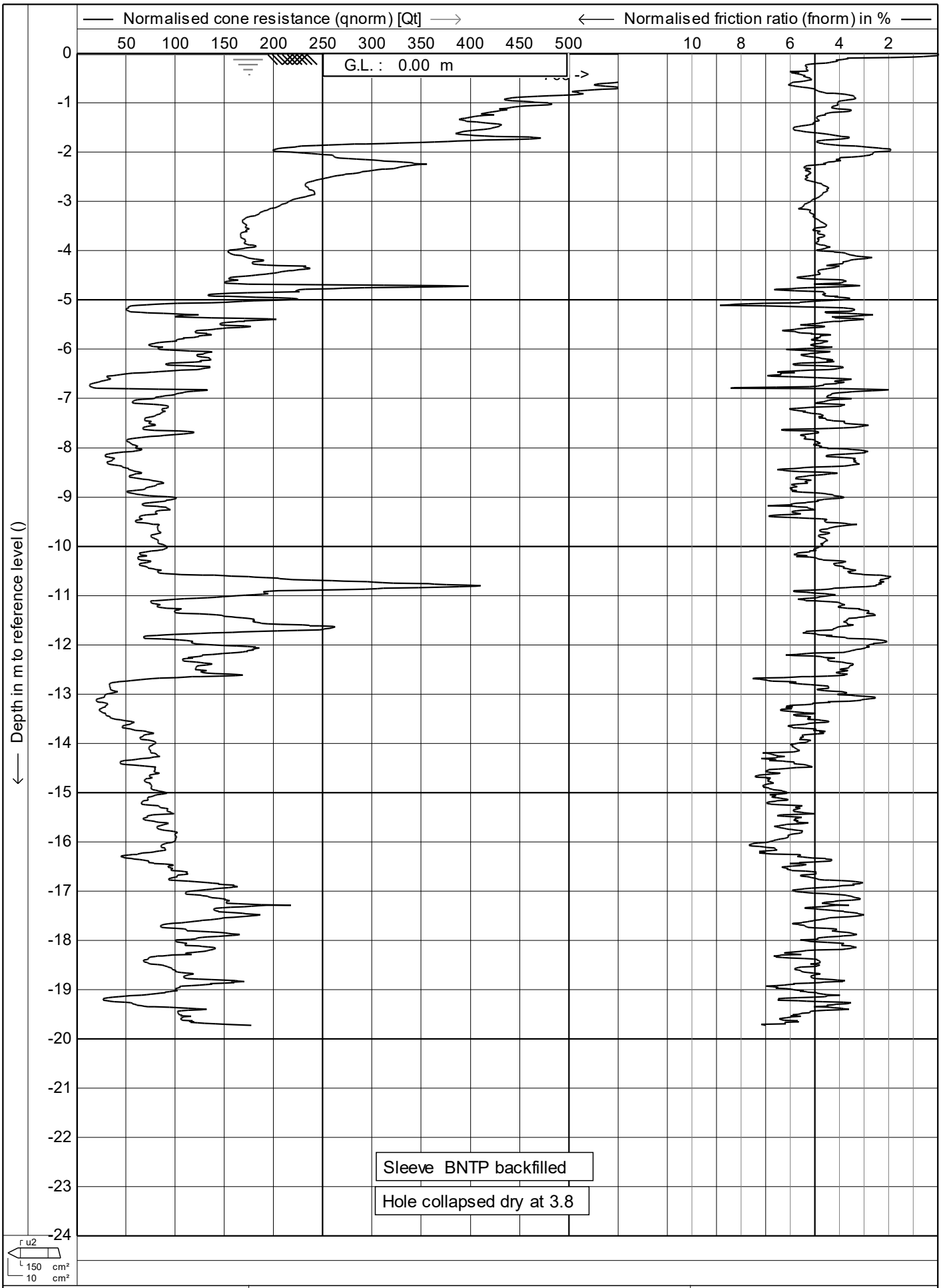
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **013**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

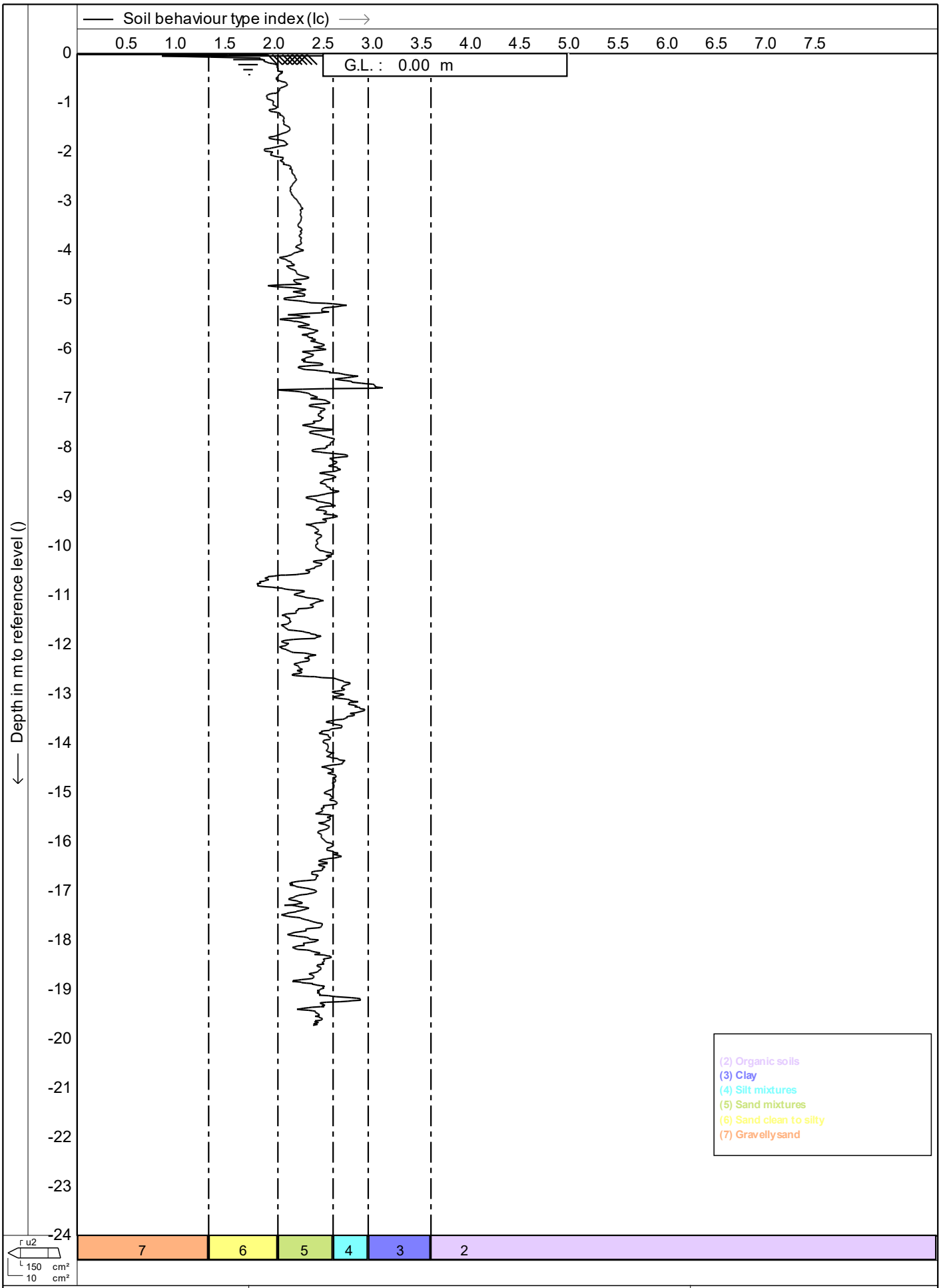
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **013**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

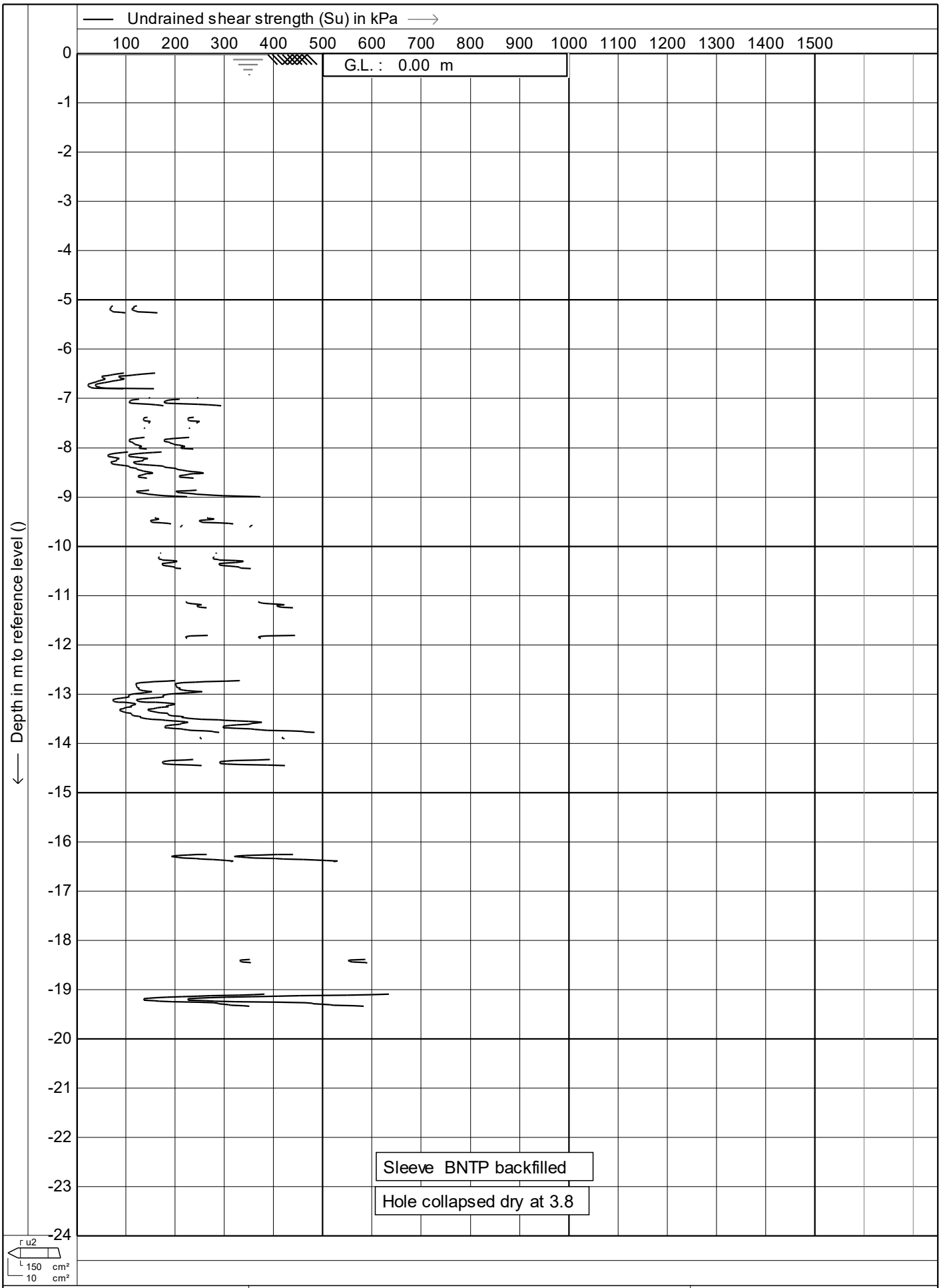
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **013** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

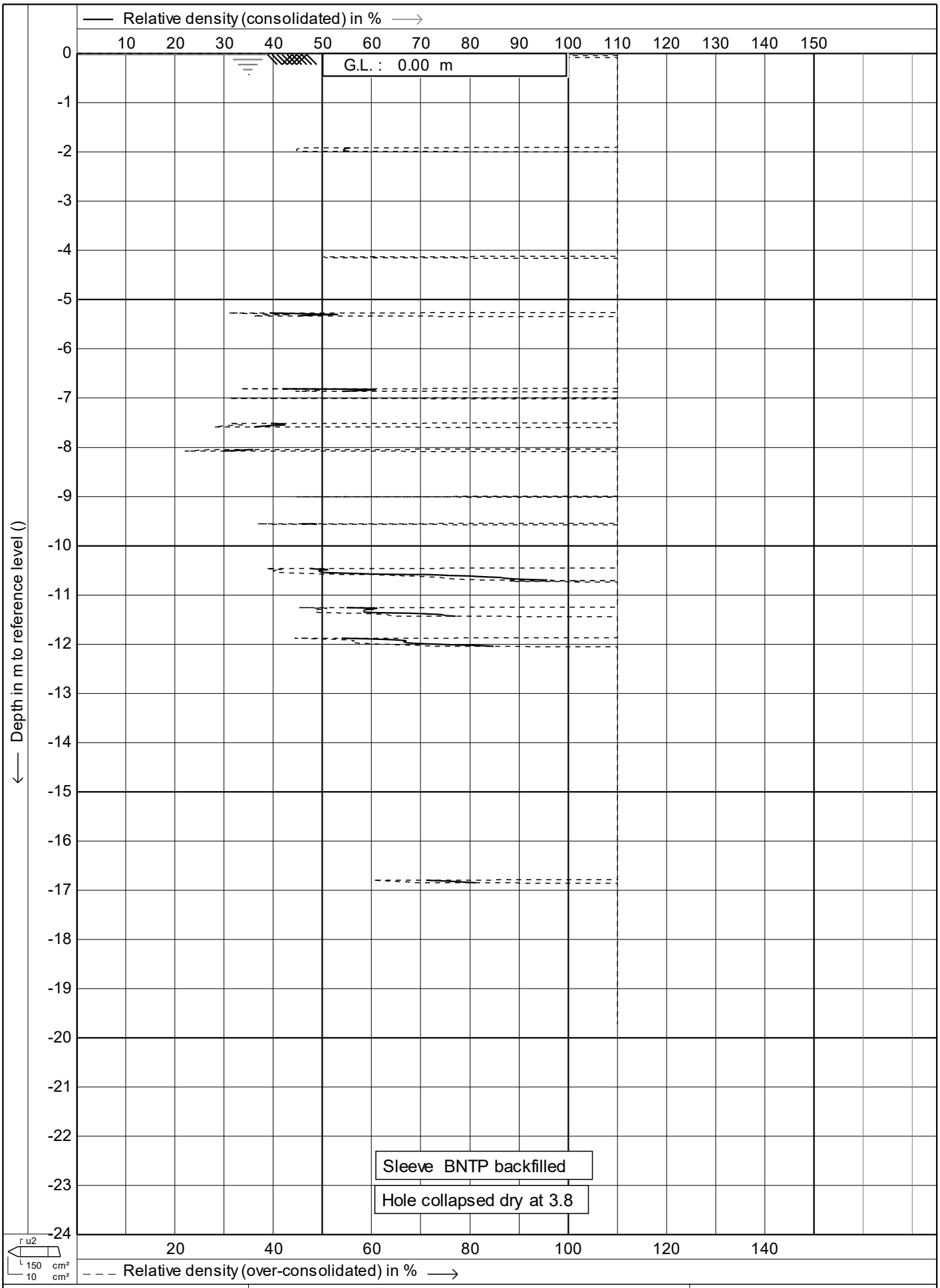
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **013** **10/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

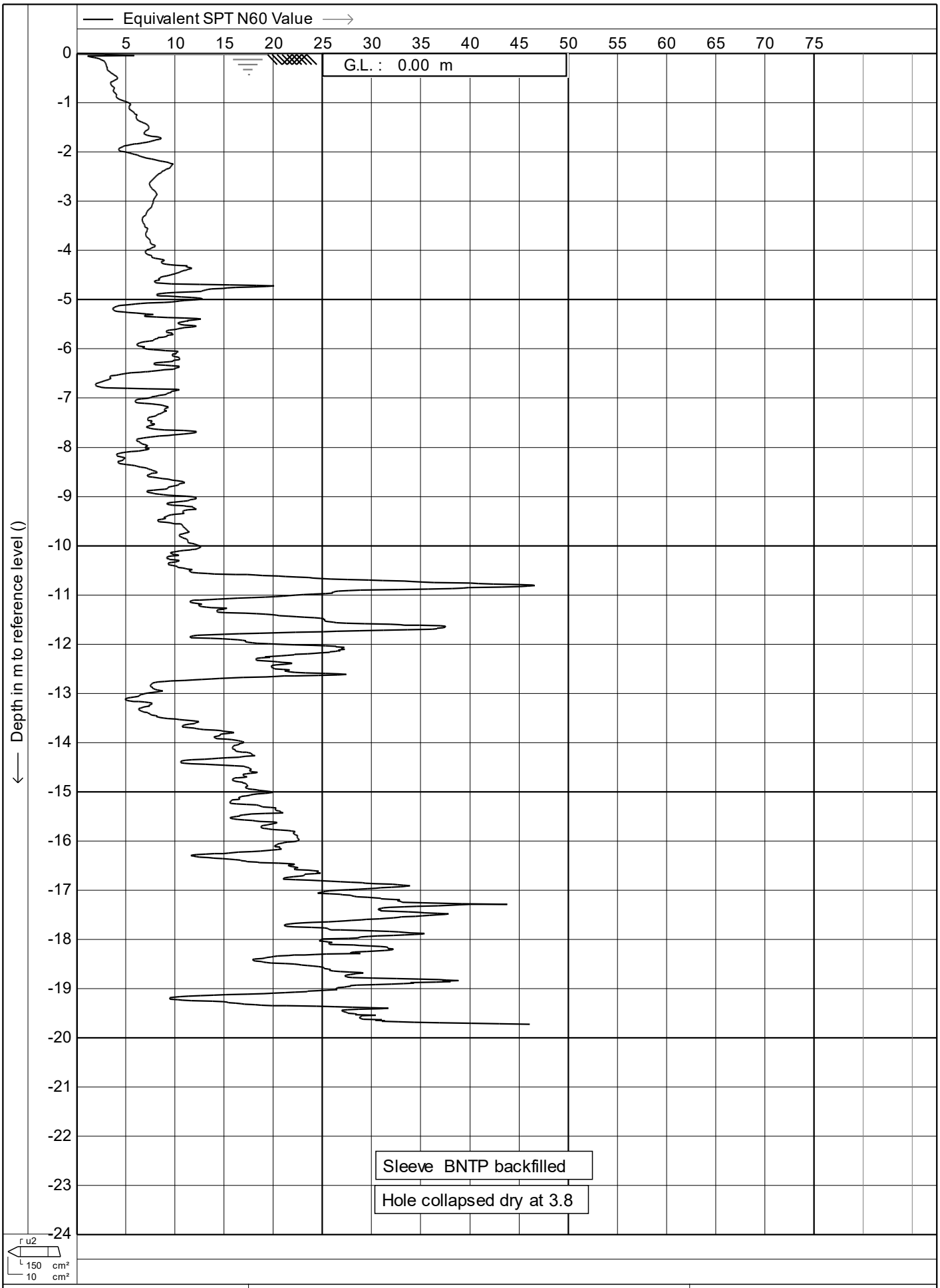
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **013**

11/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

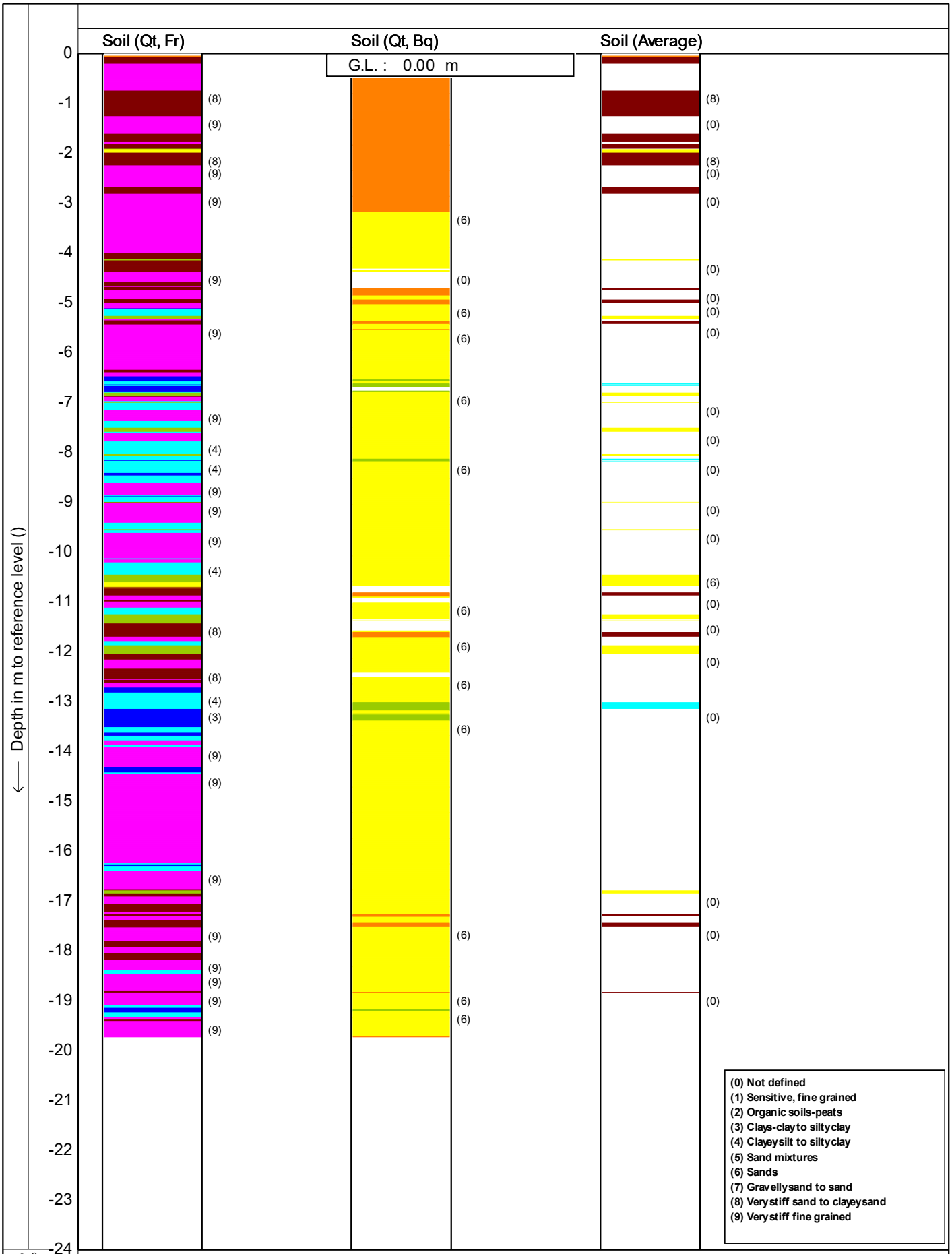
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **013**

12/14

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

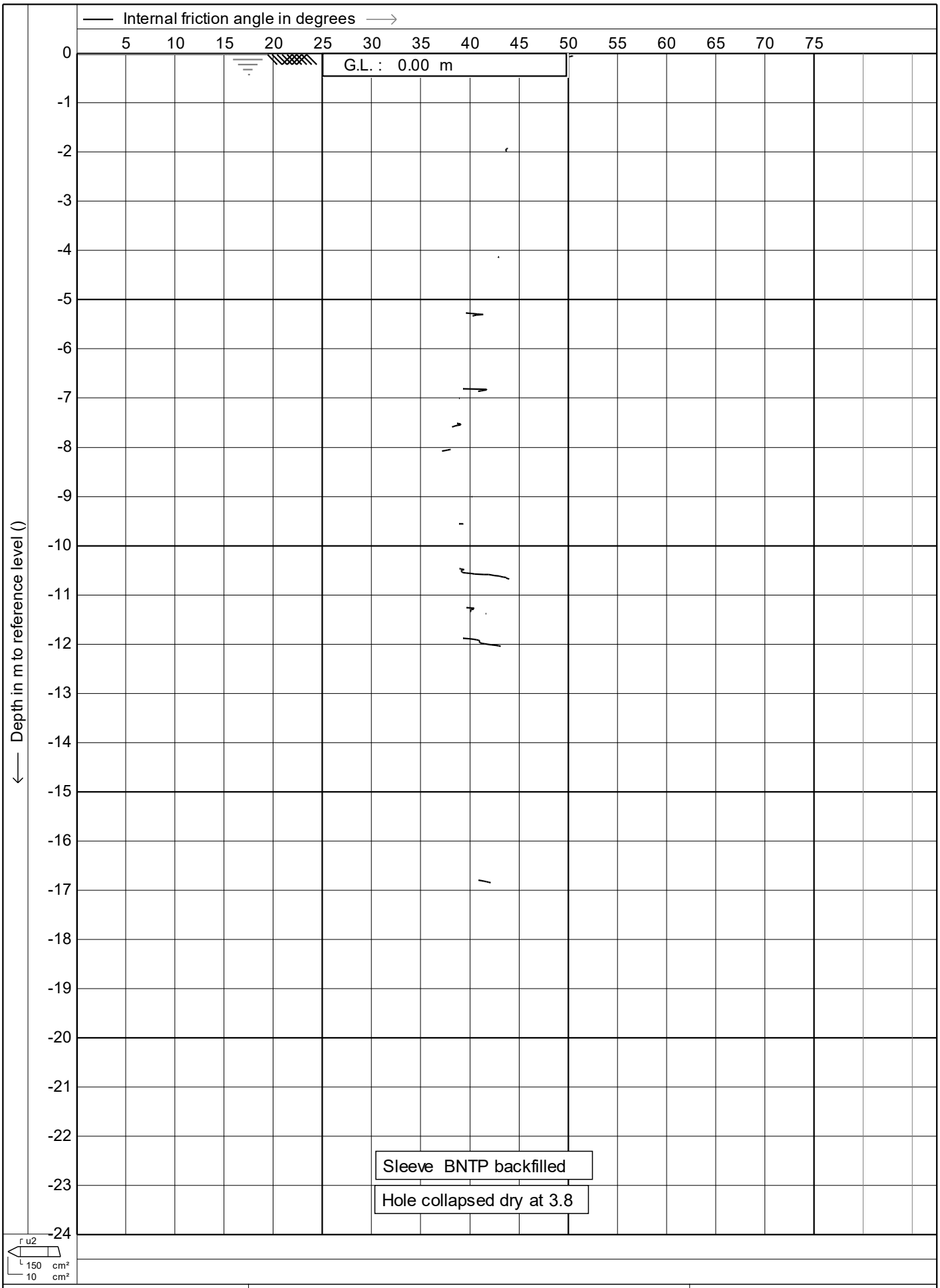
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **013**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

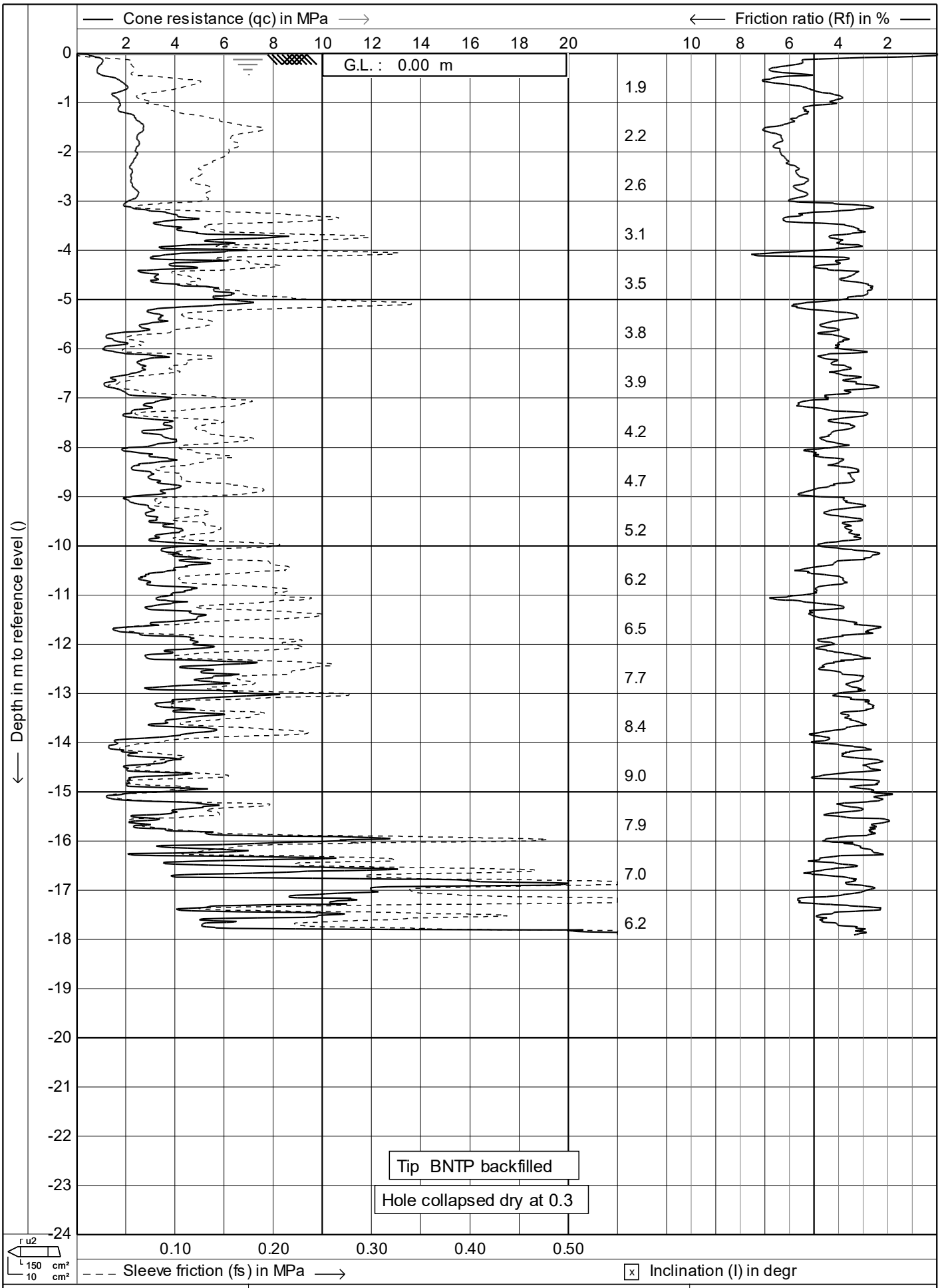
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **013**

14/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

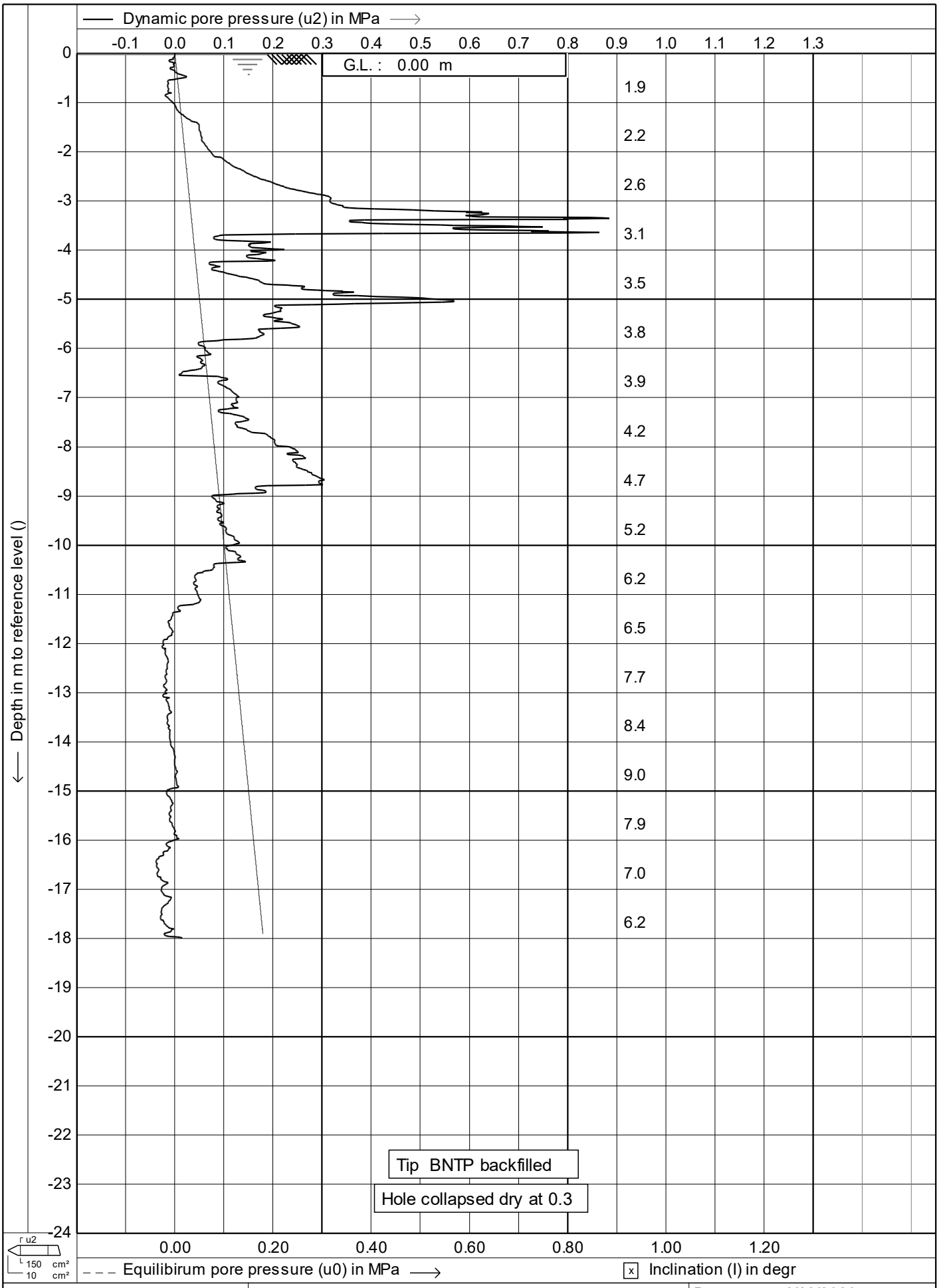
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **014**

1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

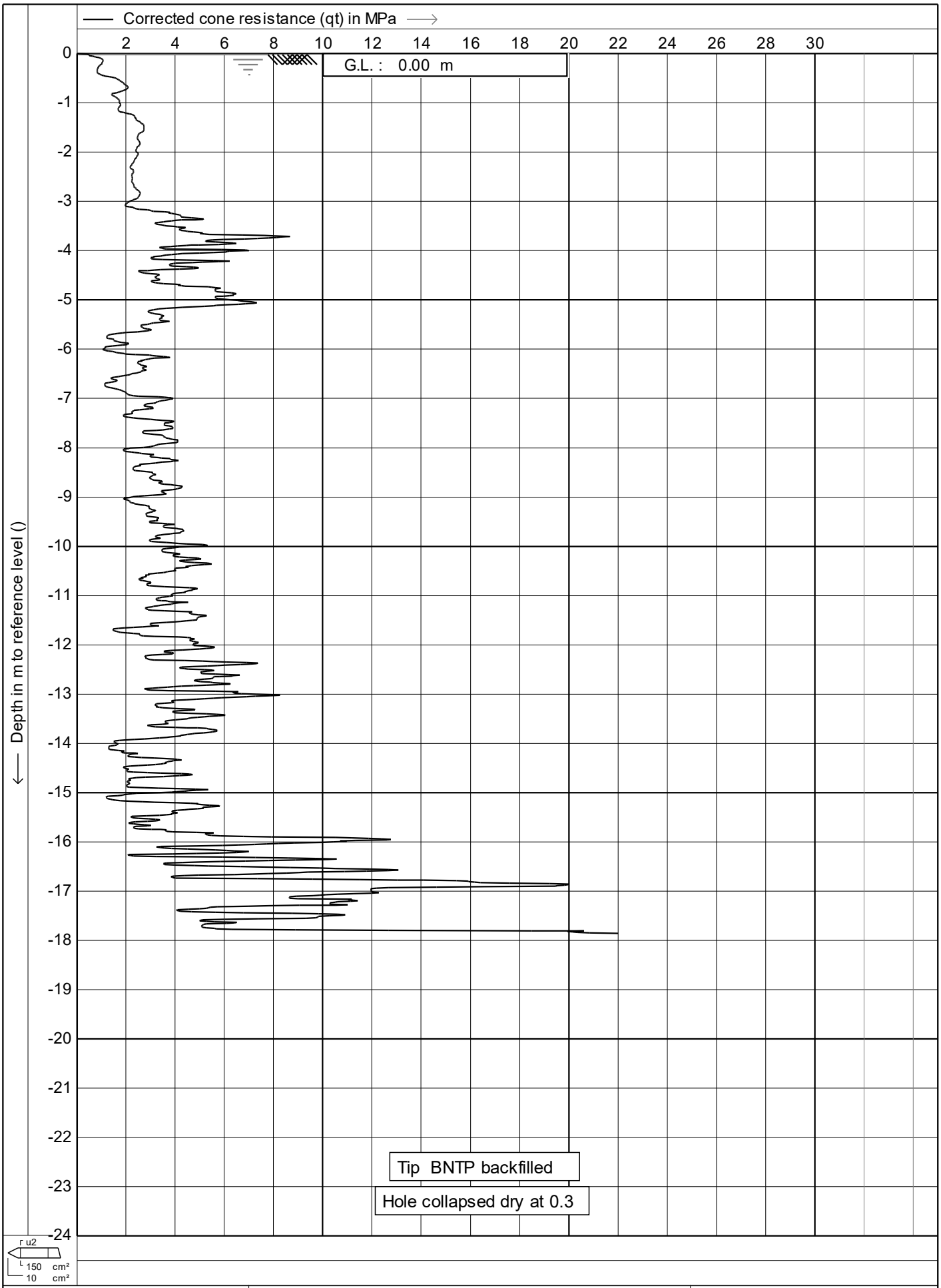
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Project no. : **05AU7**

CPT no. : **014**

2/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

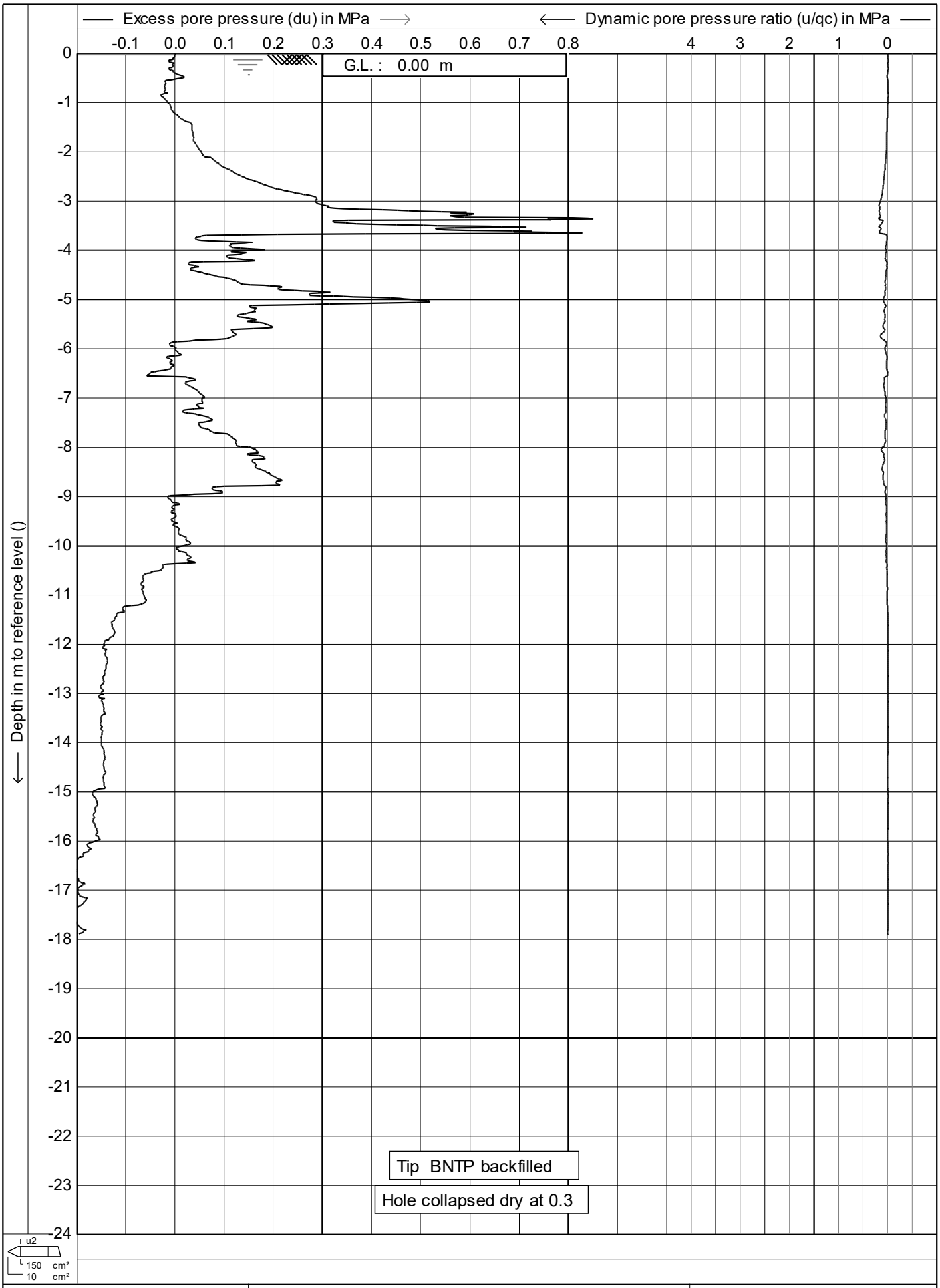
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **014**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

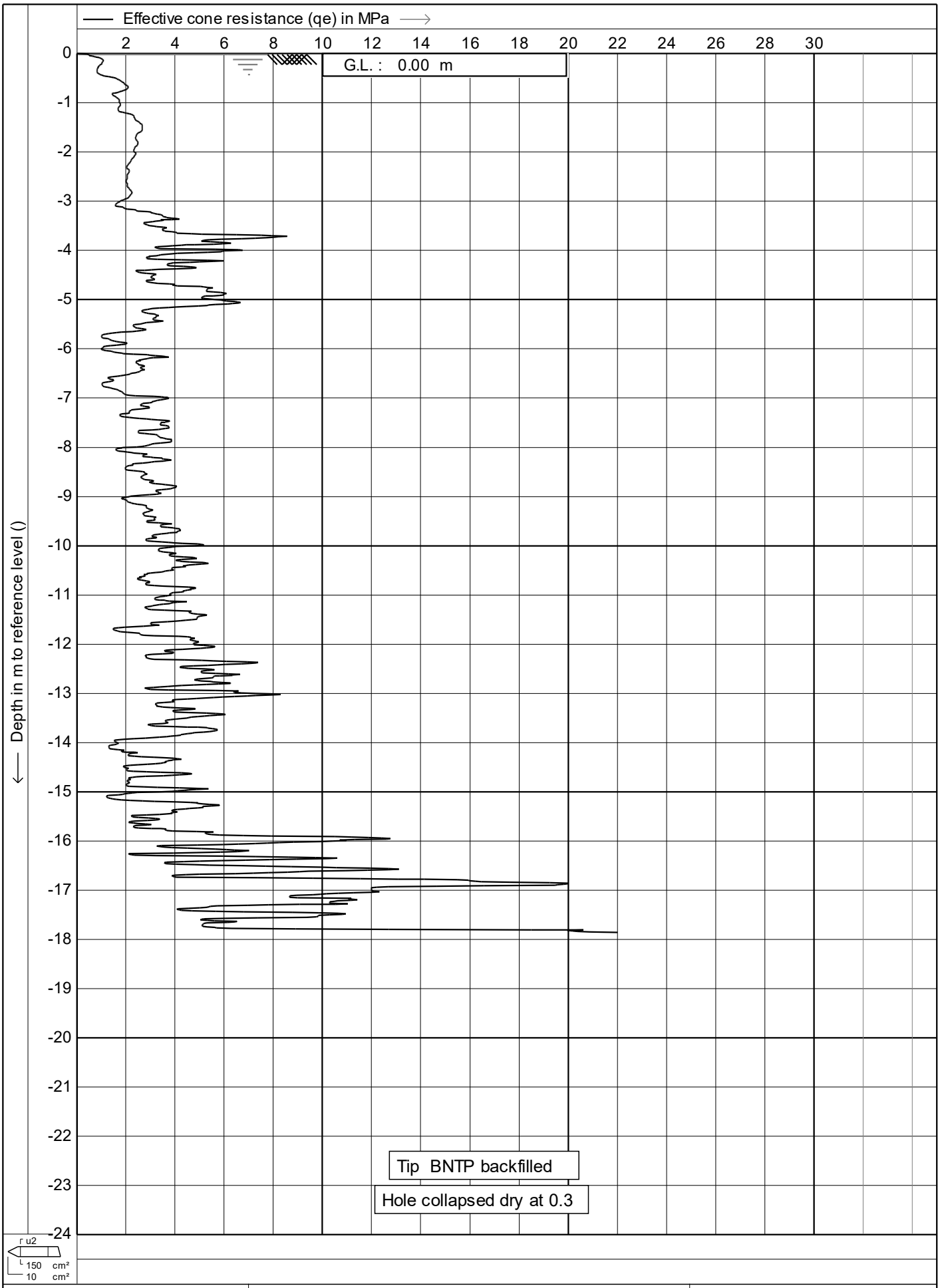
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **014** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

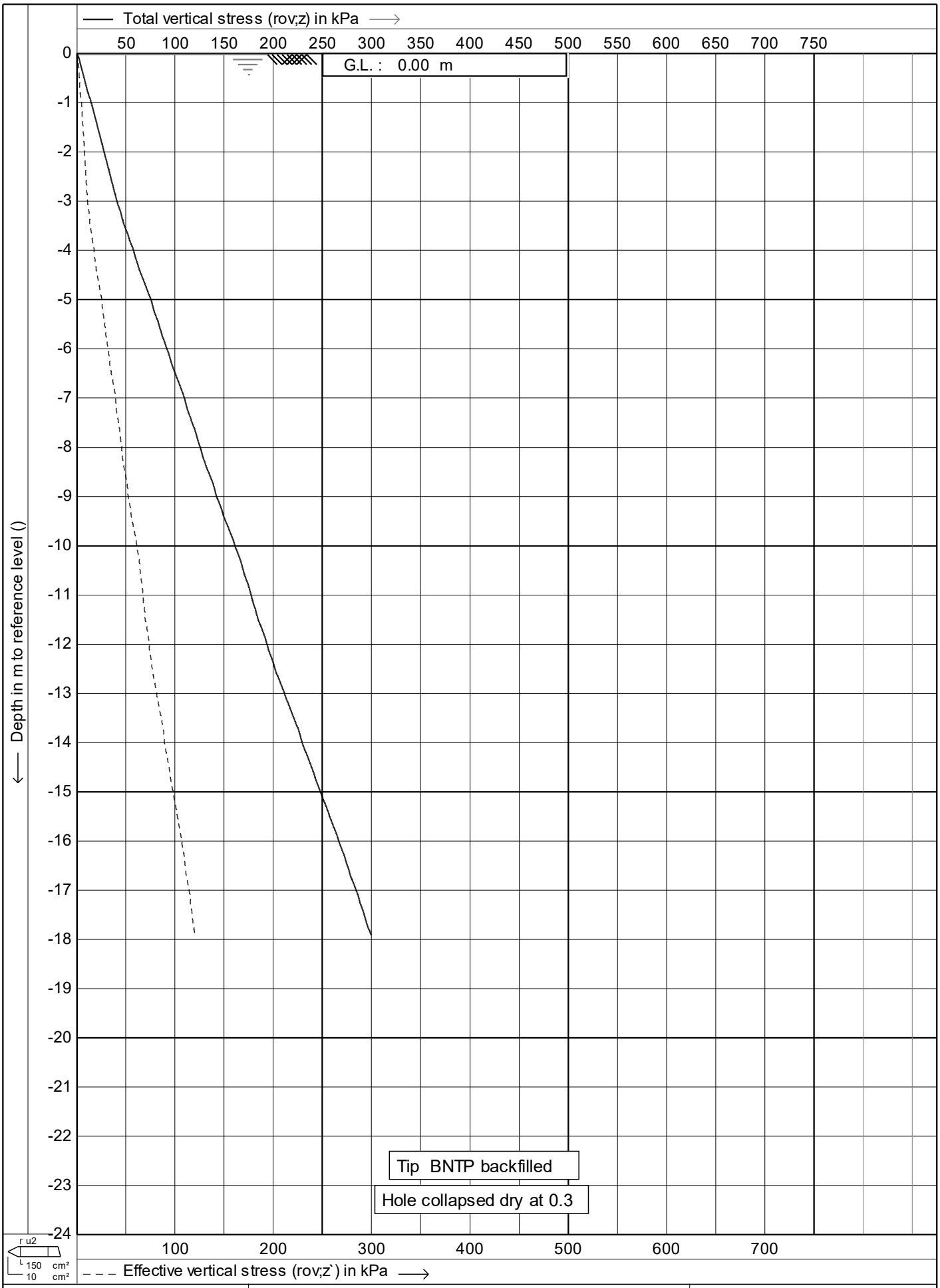
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **014**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

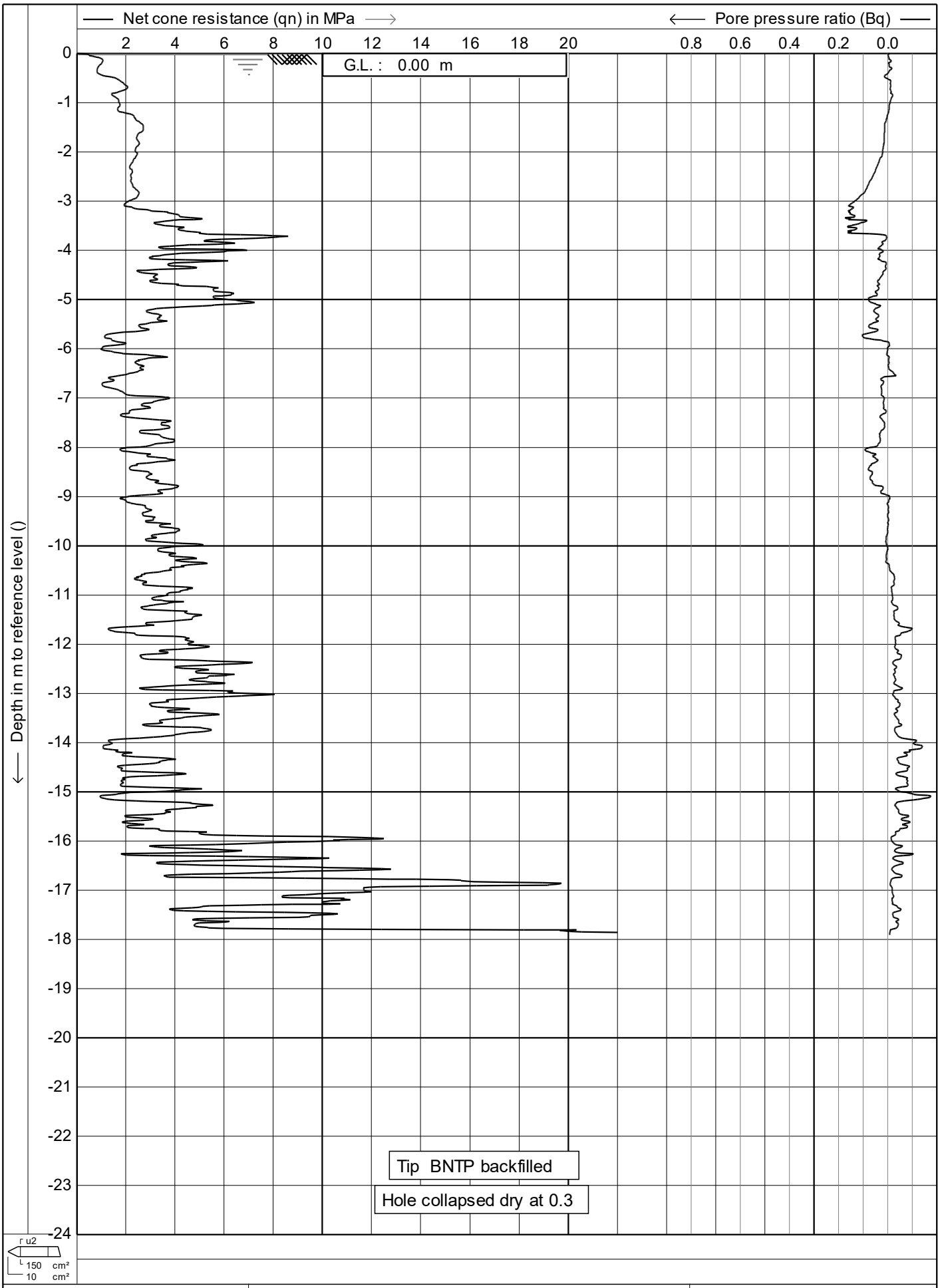
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **014** **6/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

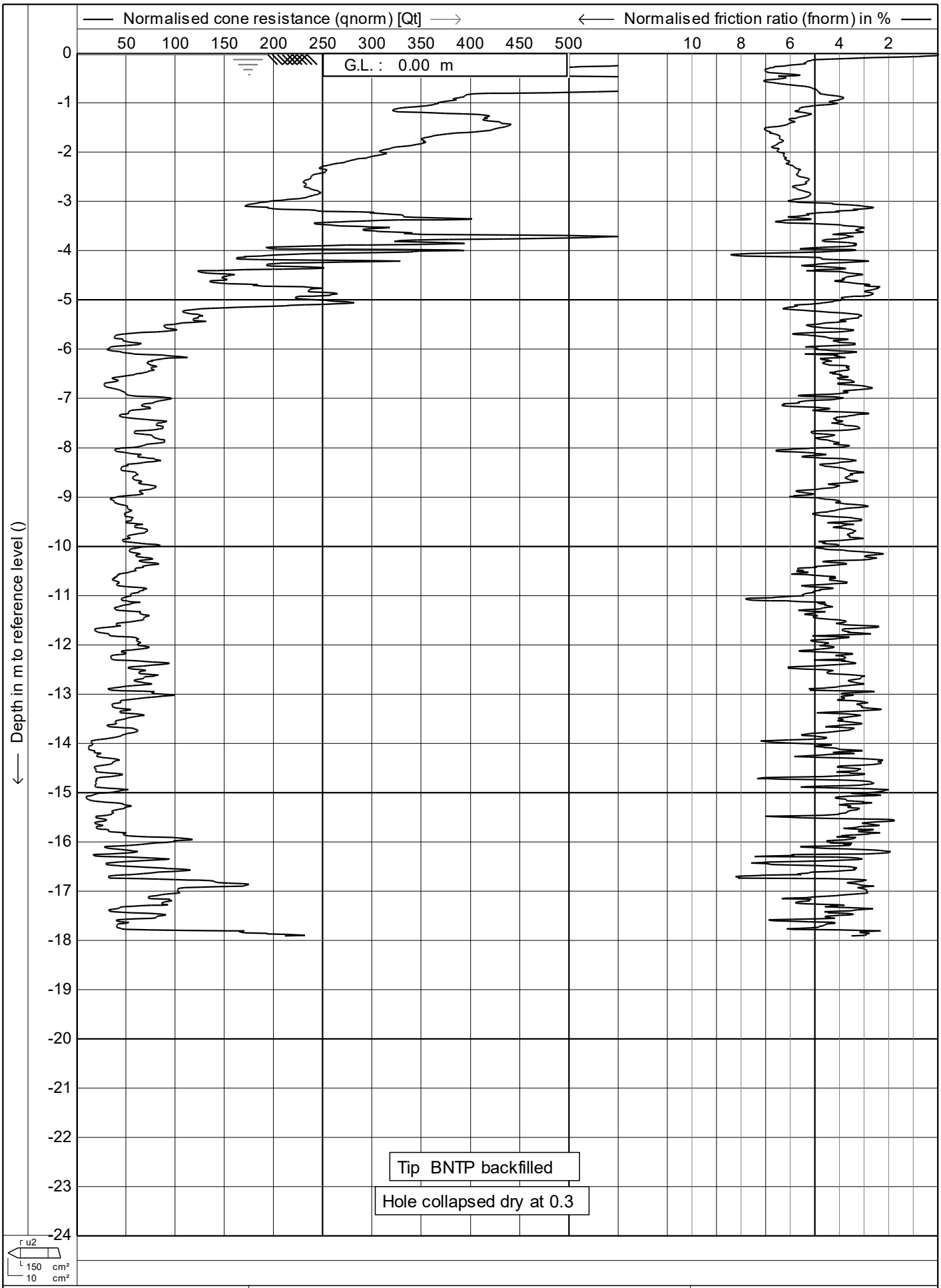
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **014** **7/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

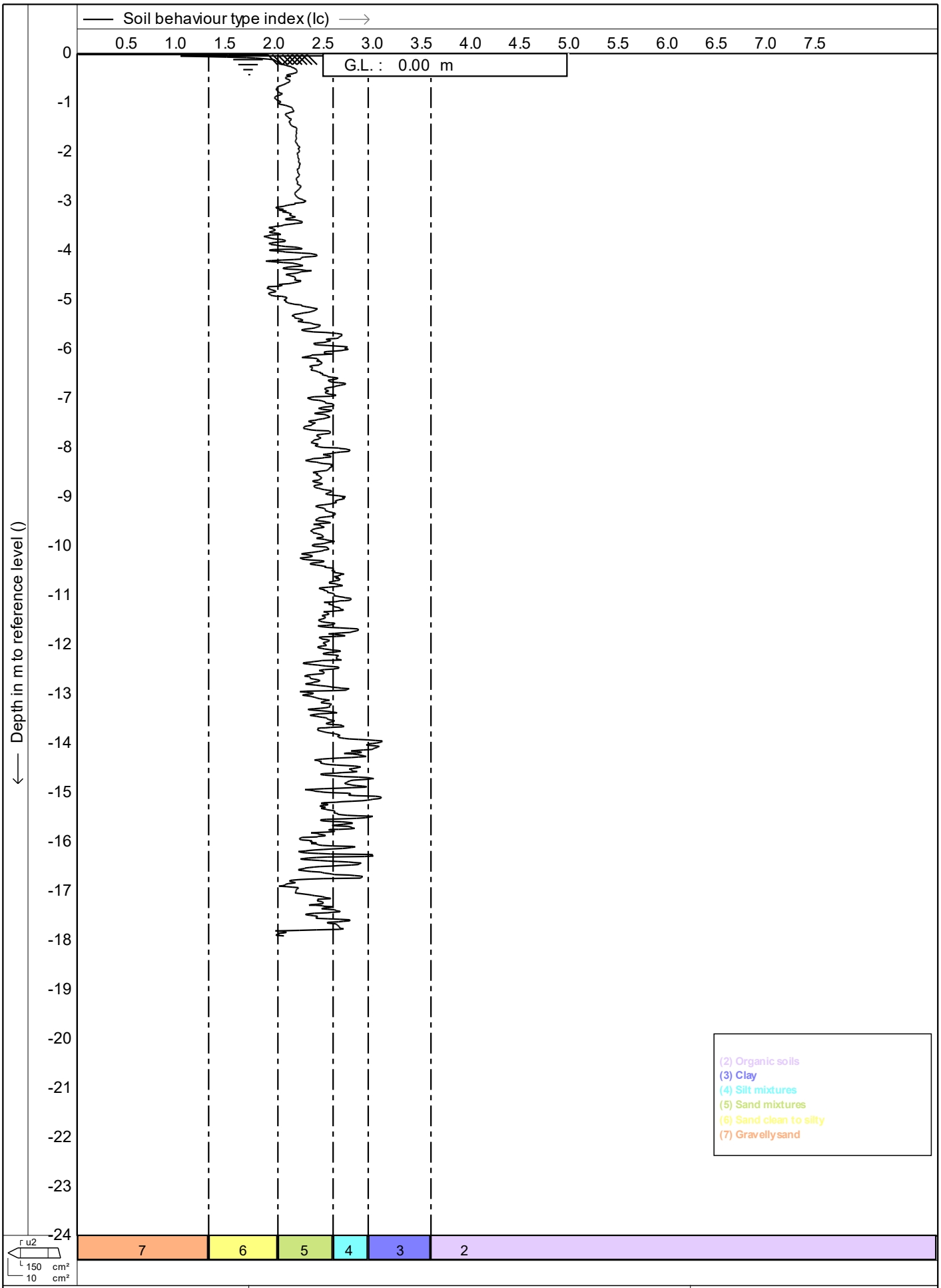
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **014**

8/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

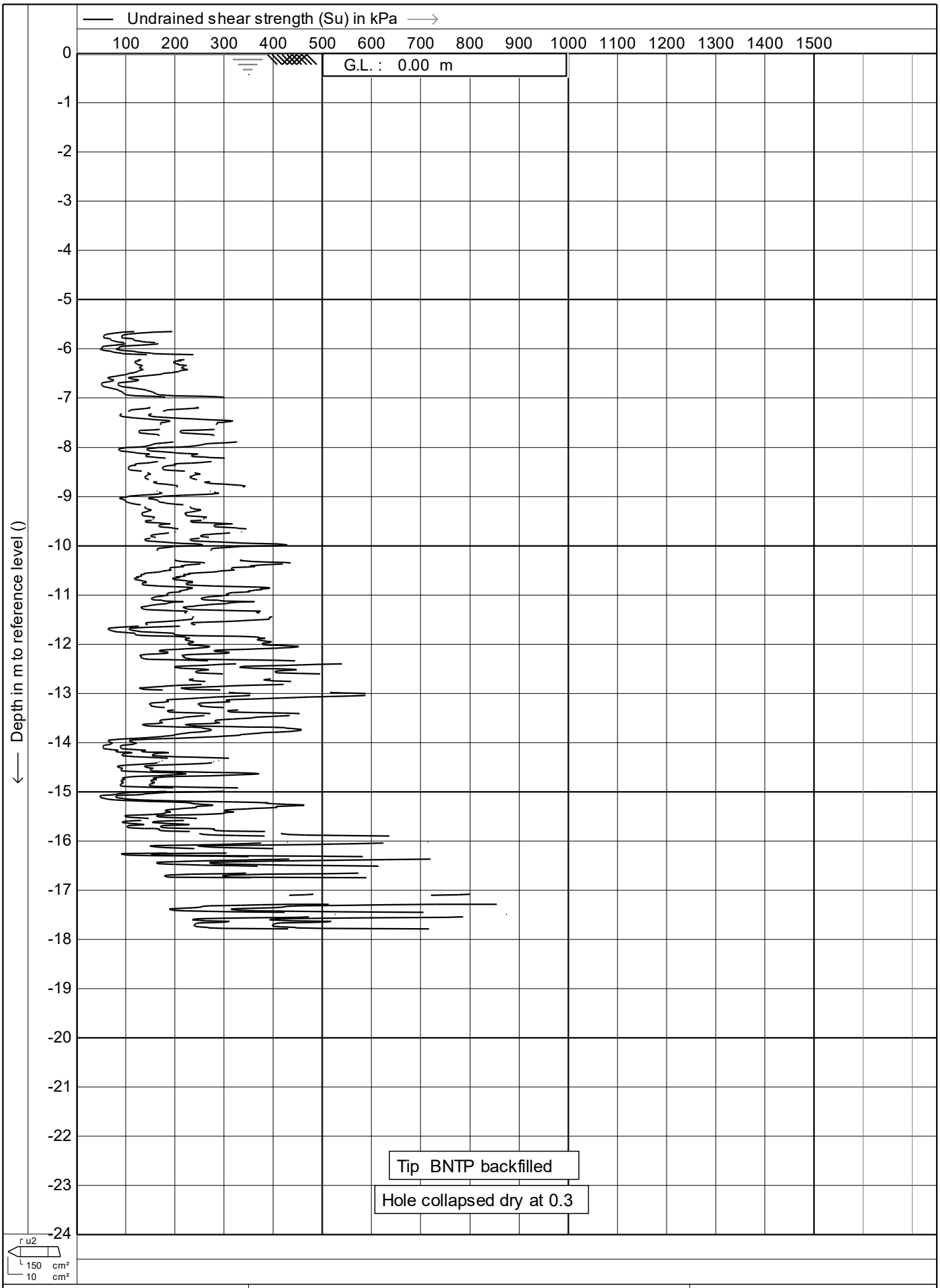
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **014** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

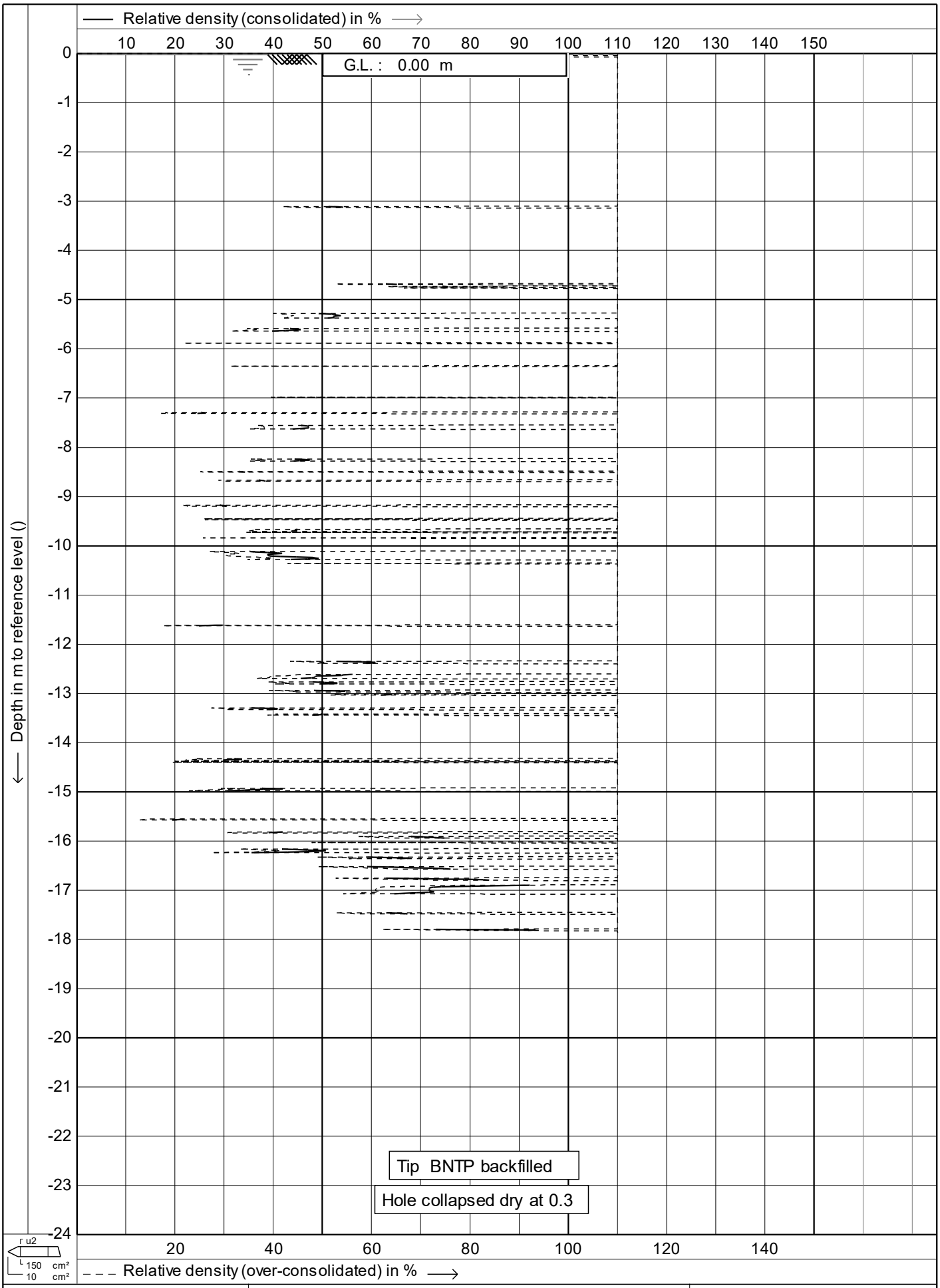
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **014**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

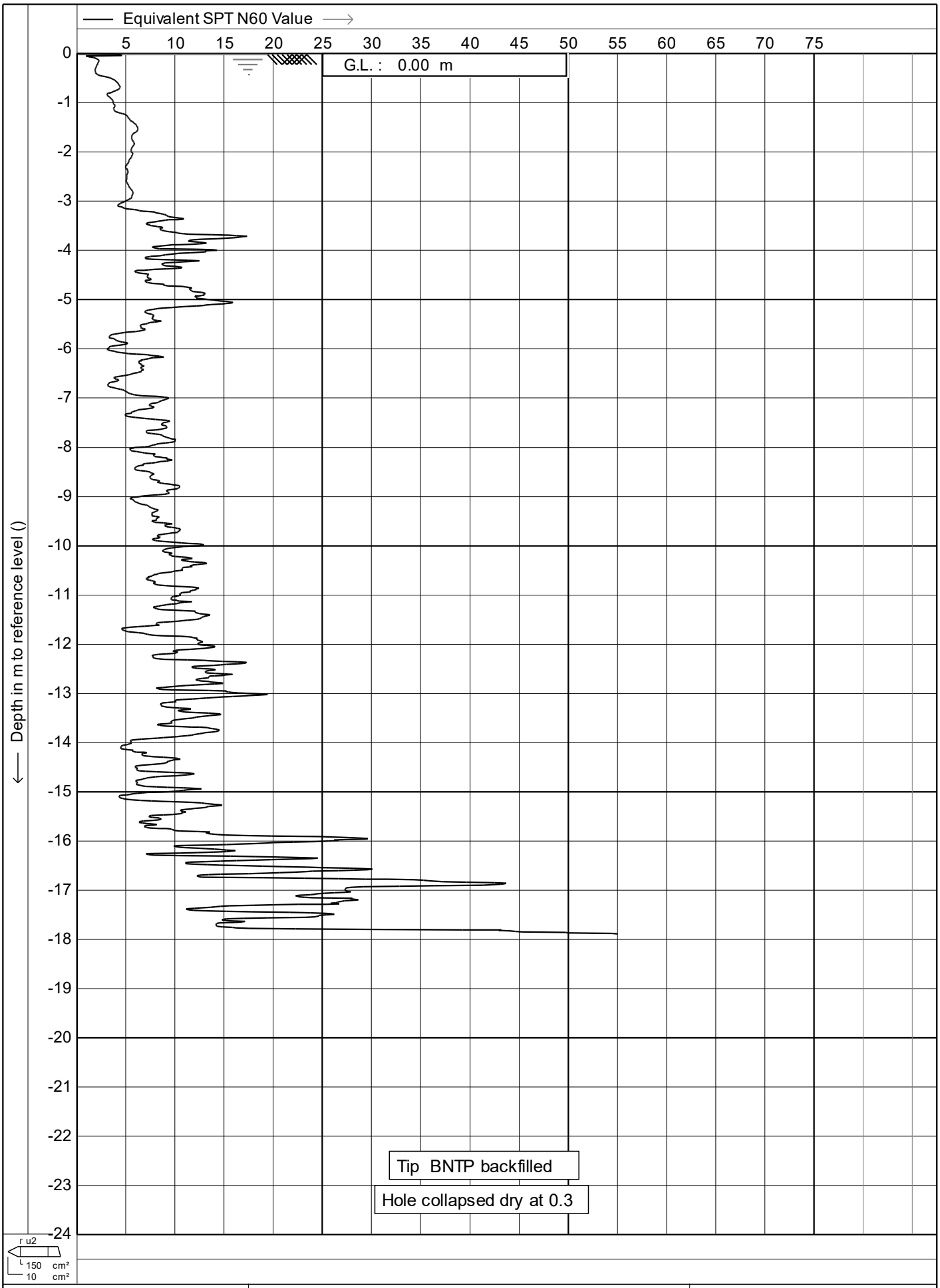
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **014** **11/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

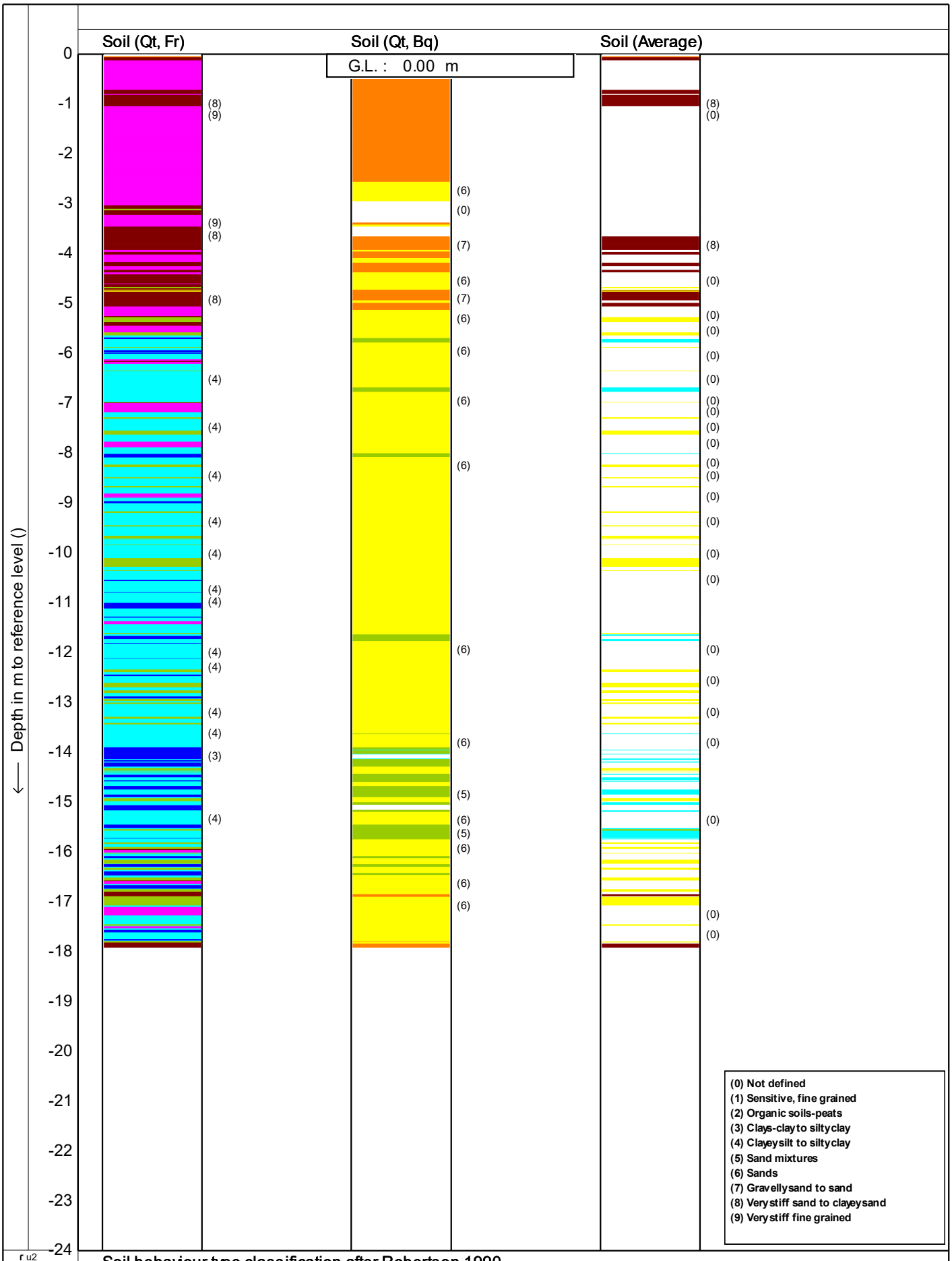
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **014**

12/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

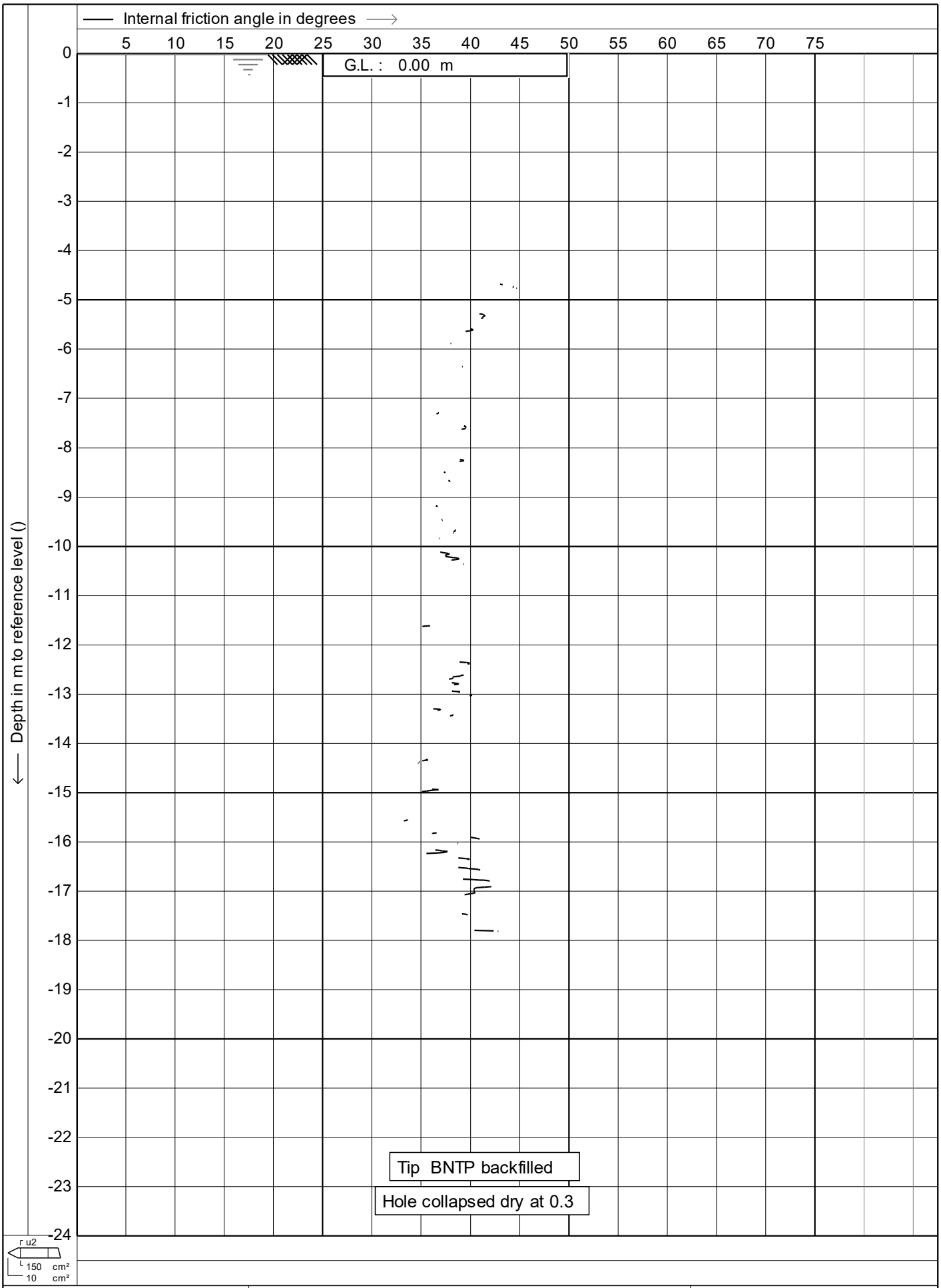
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **014**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

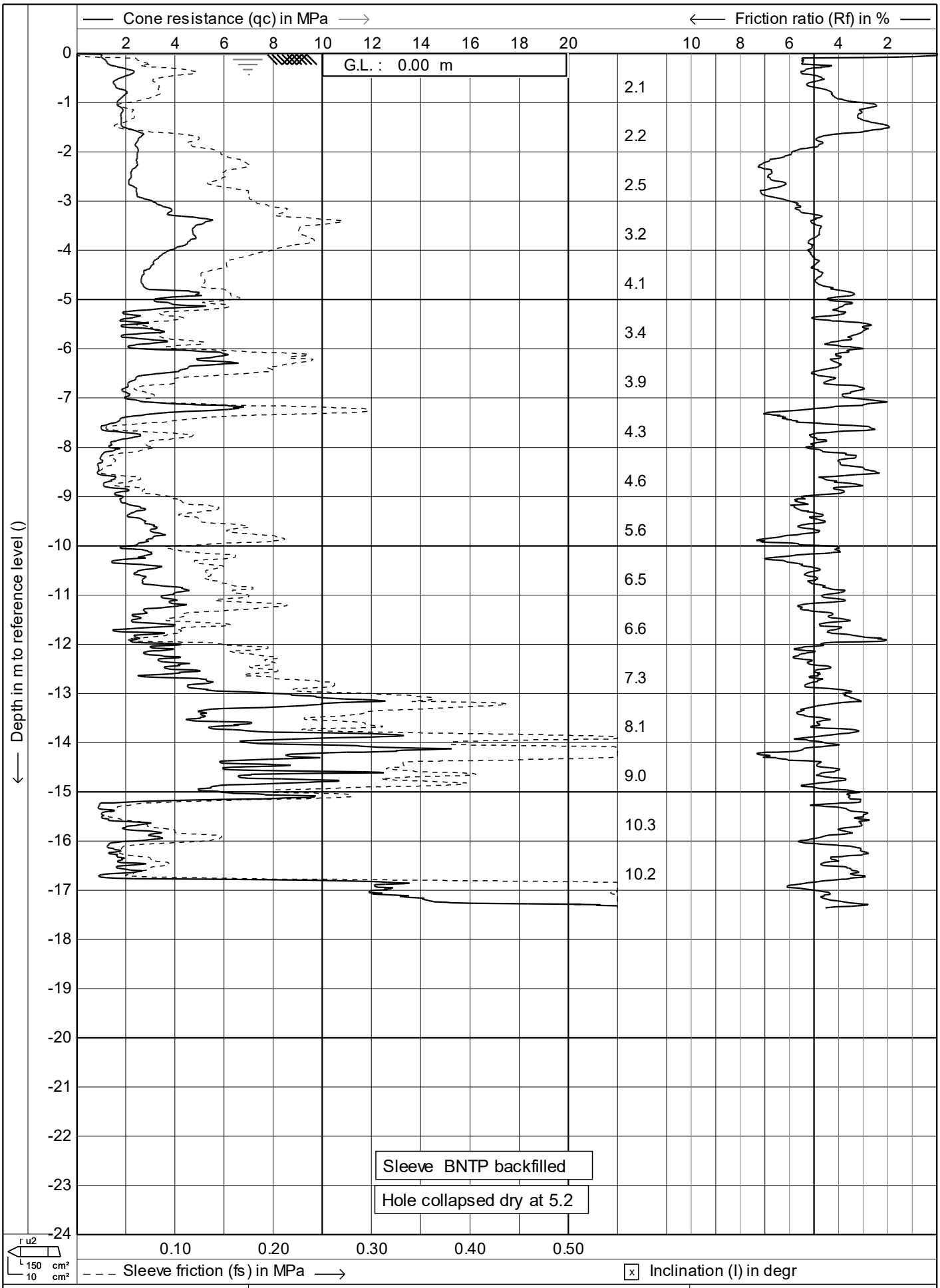
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **014** **14/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

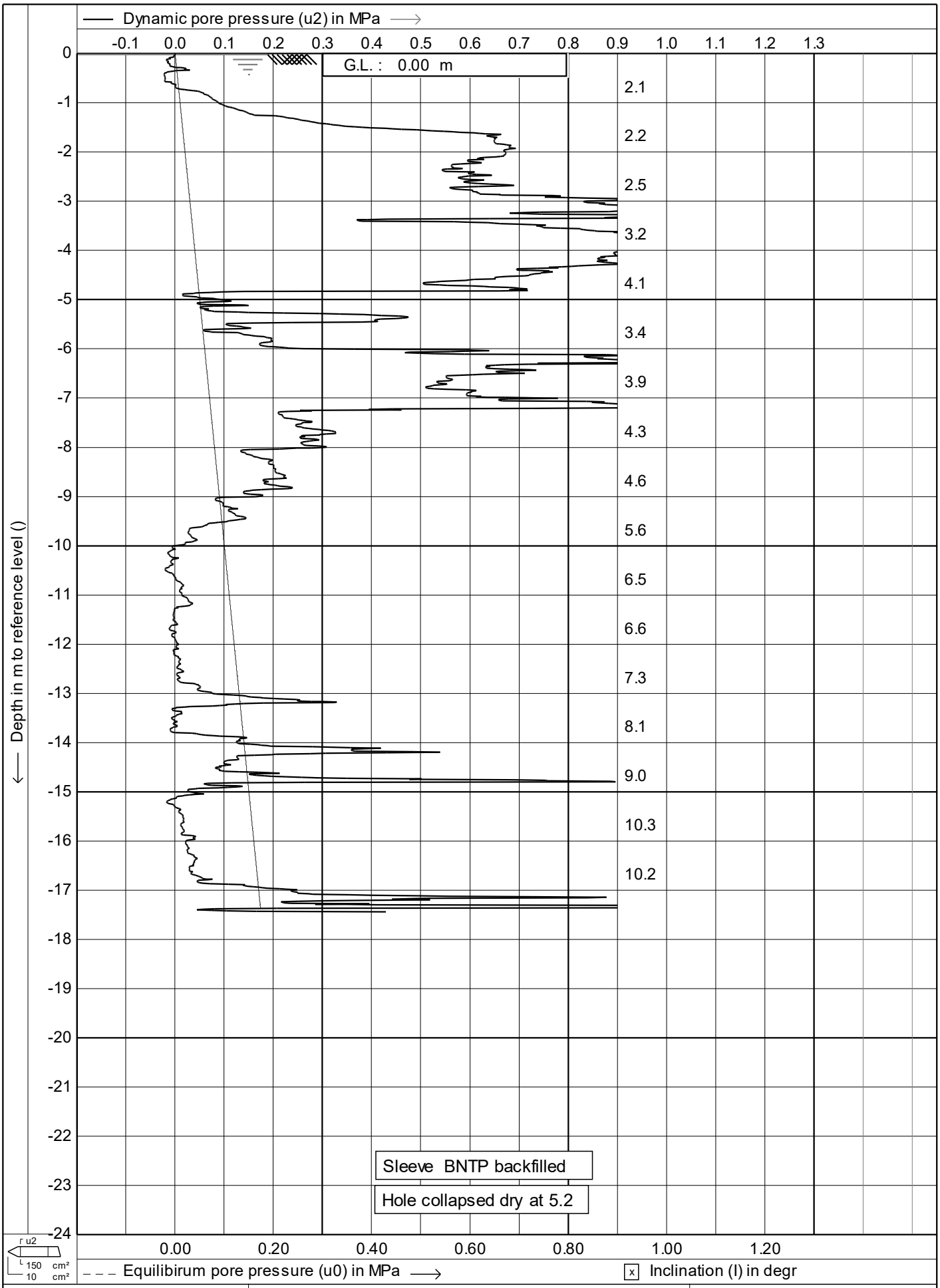
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **015**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

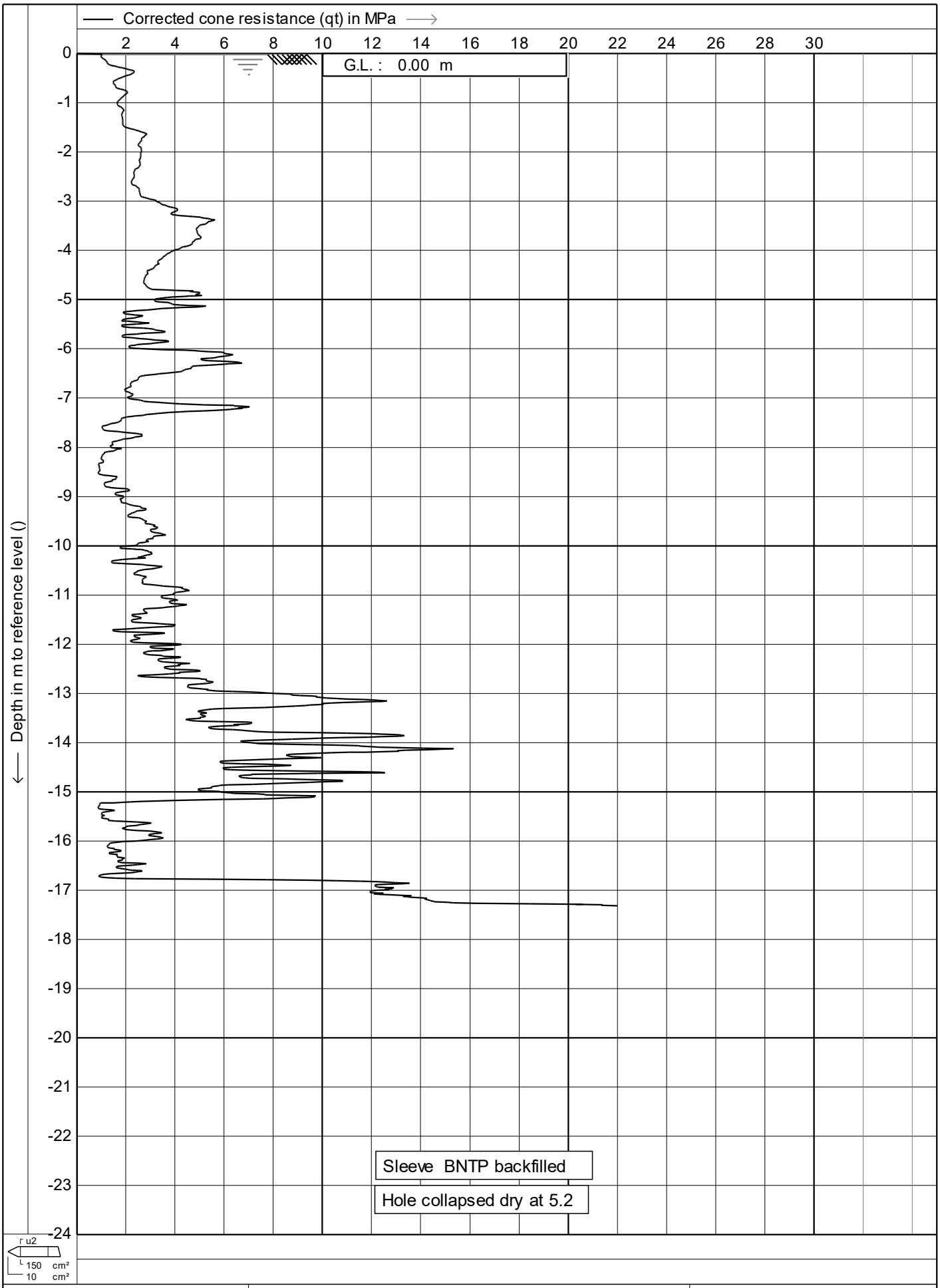
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **015**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

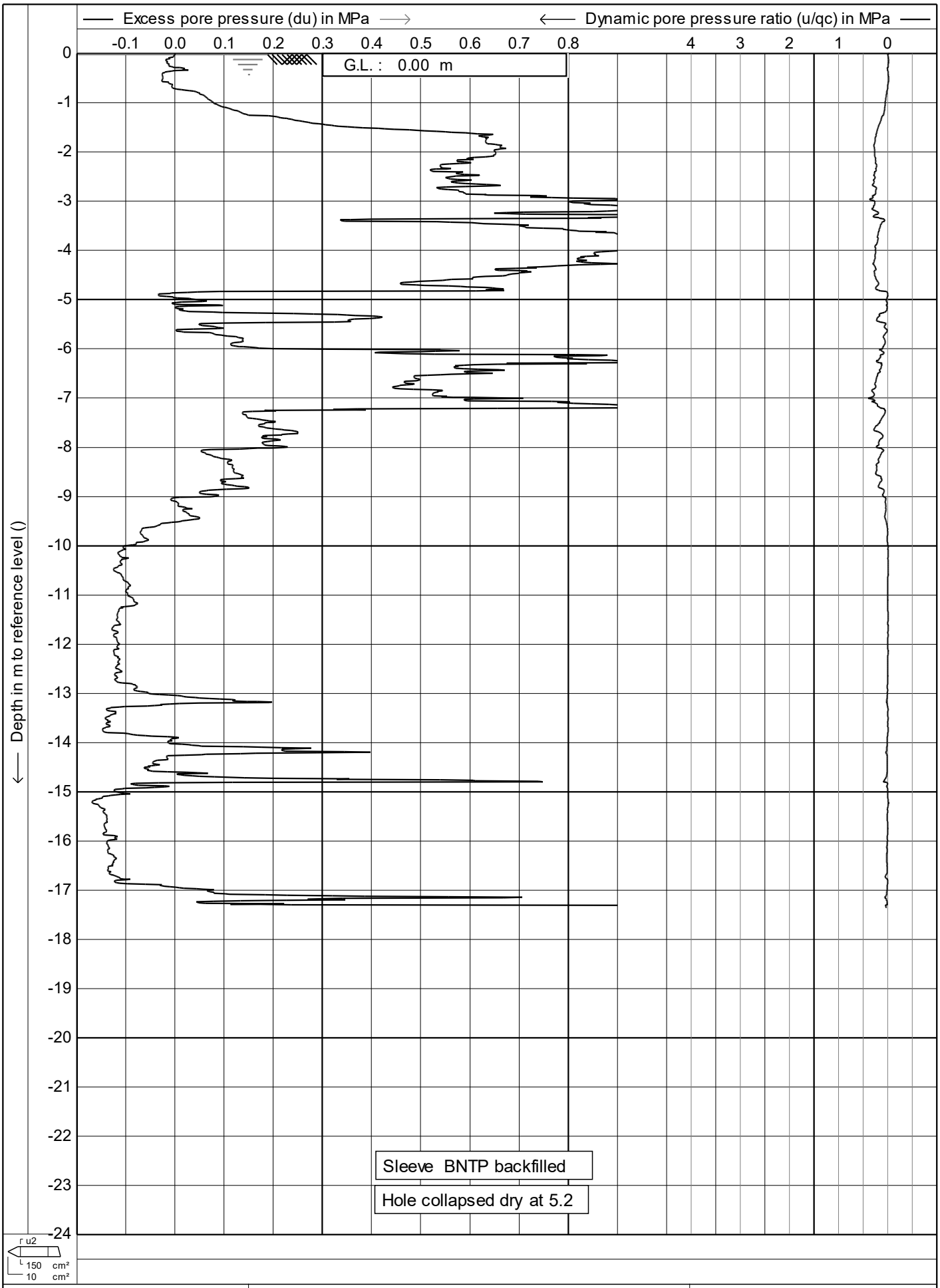
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **015** **3/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

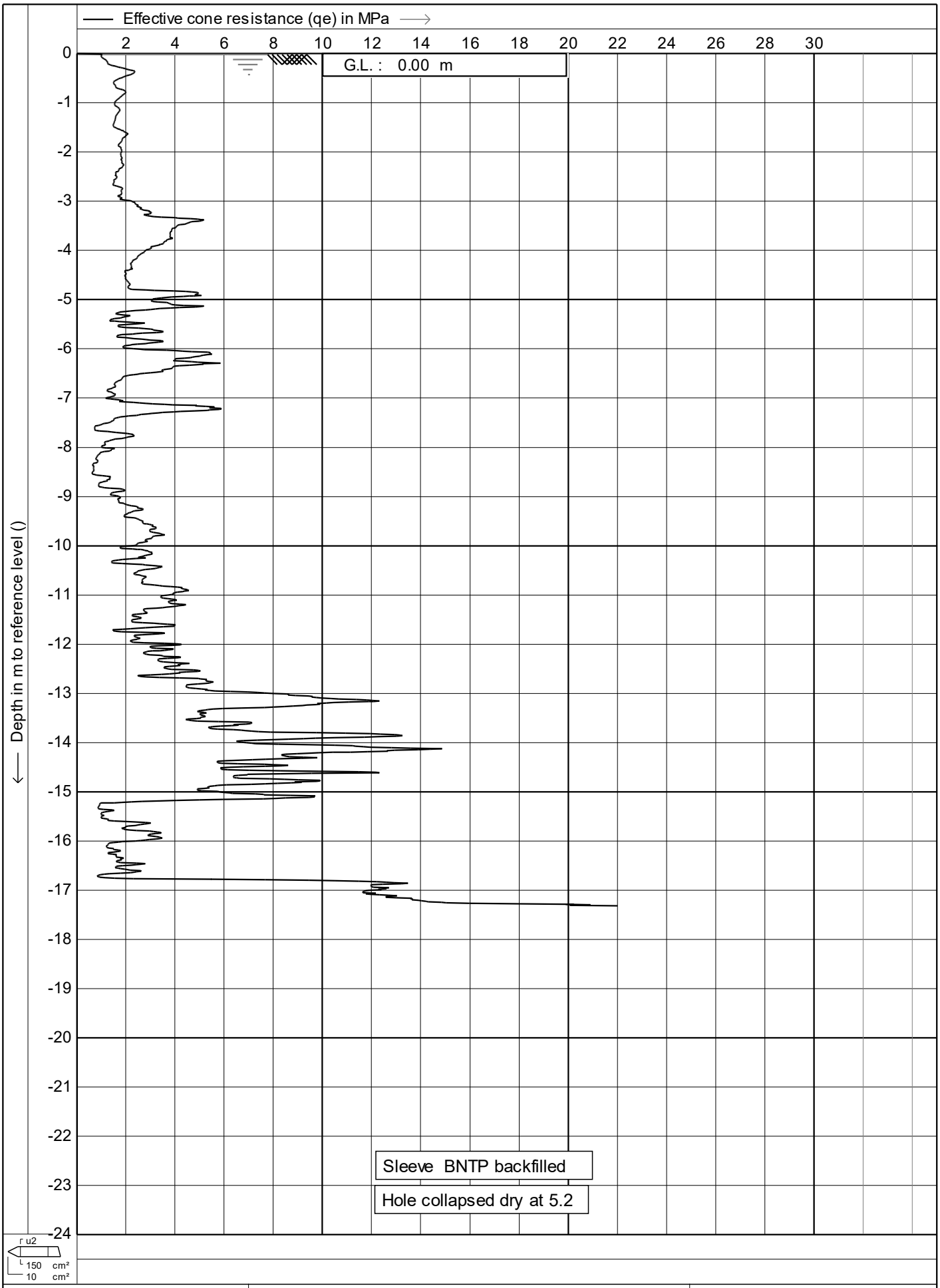
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **015**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

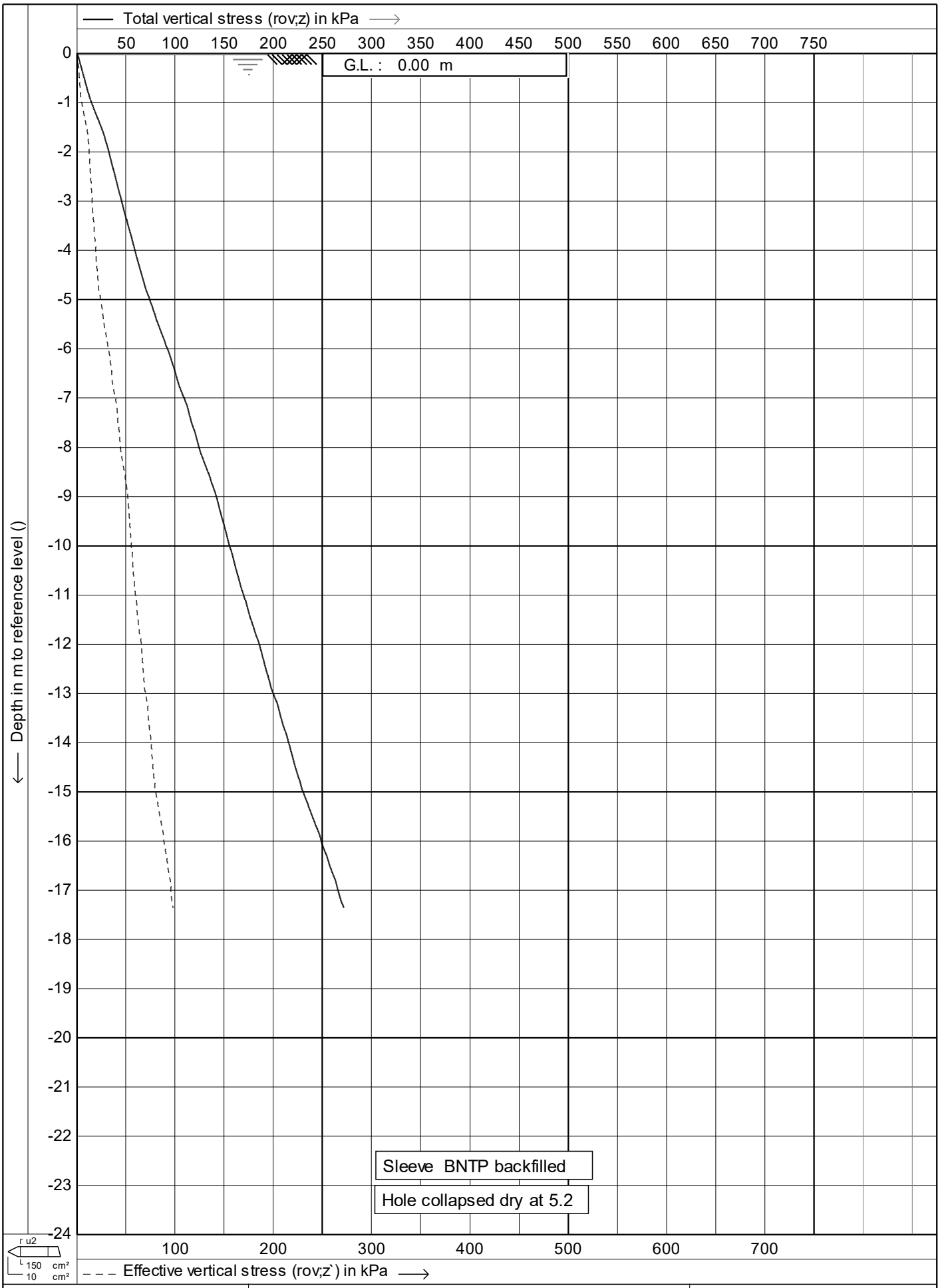
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **015**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

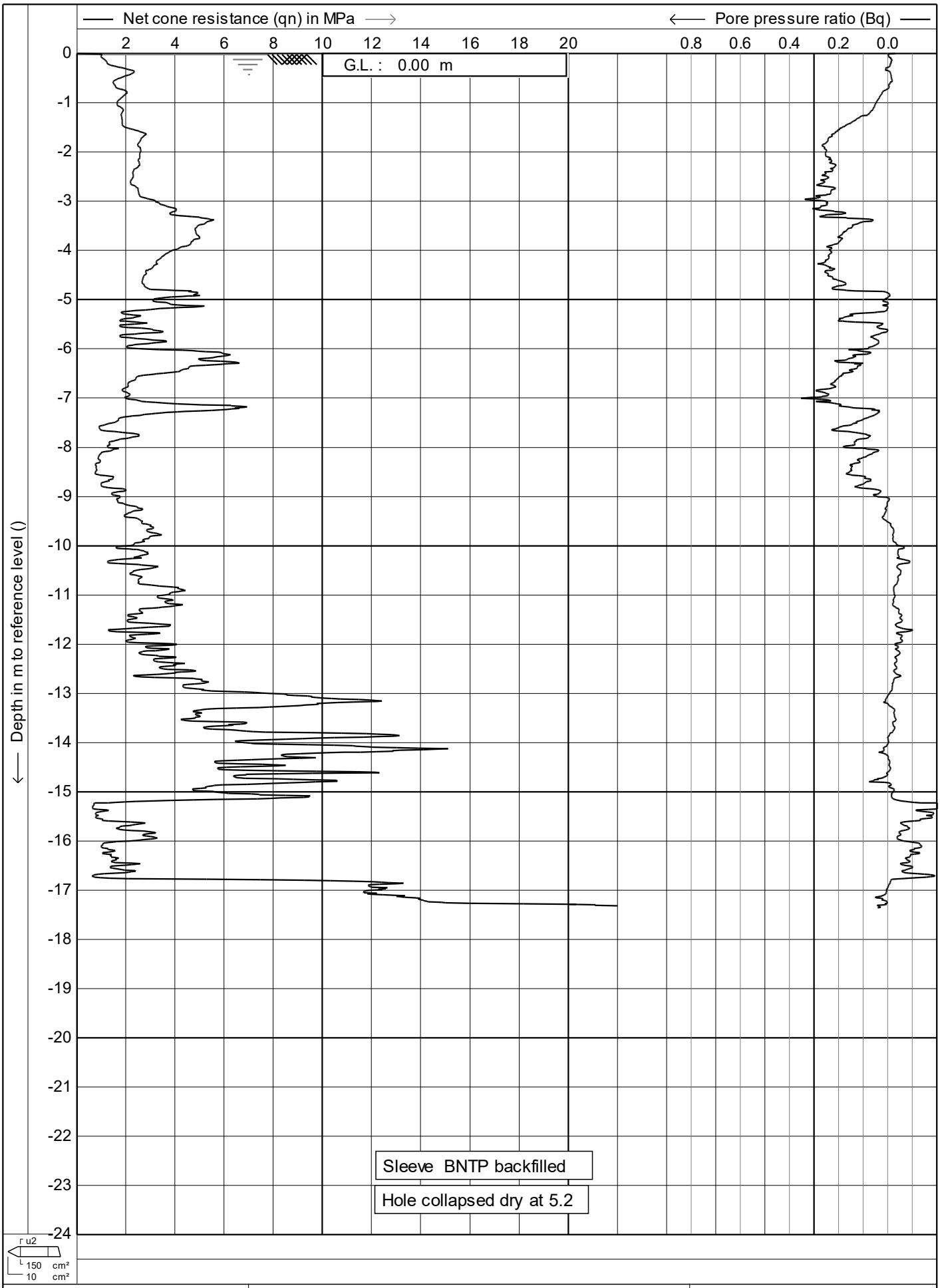
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **015**

6/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

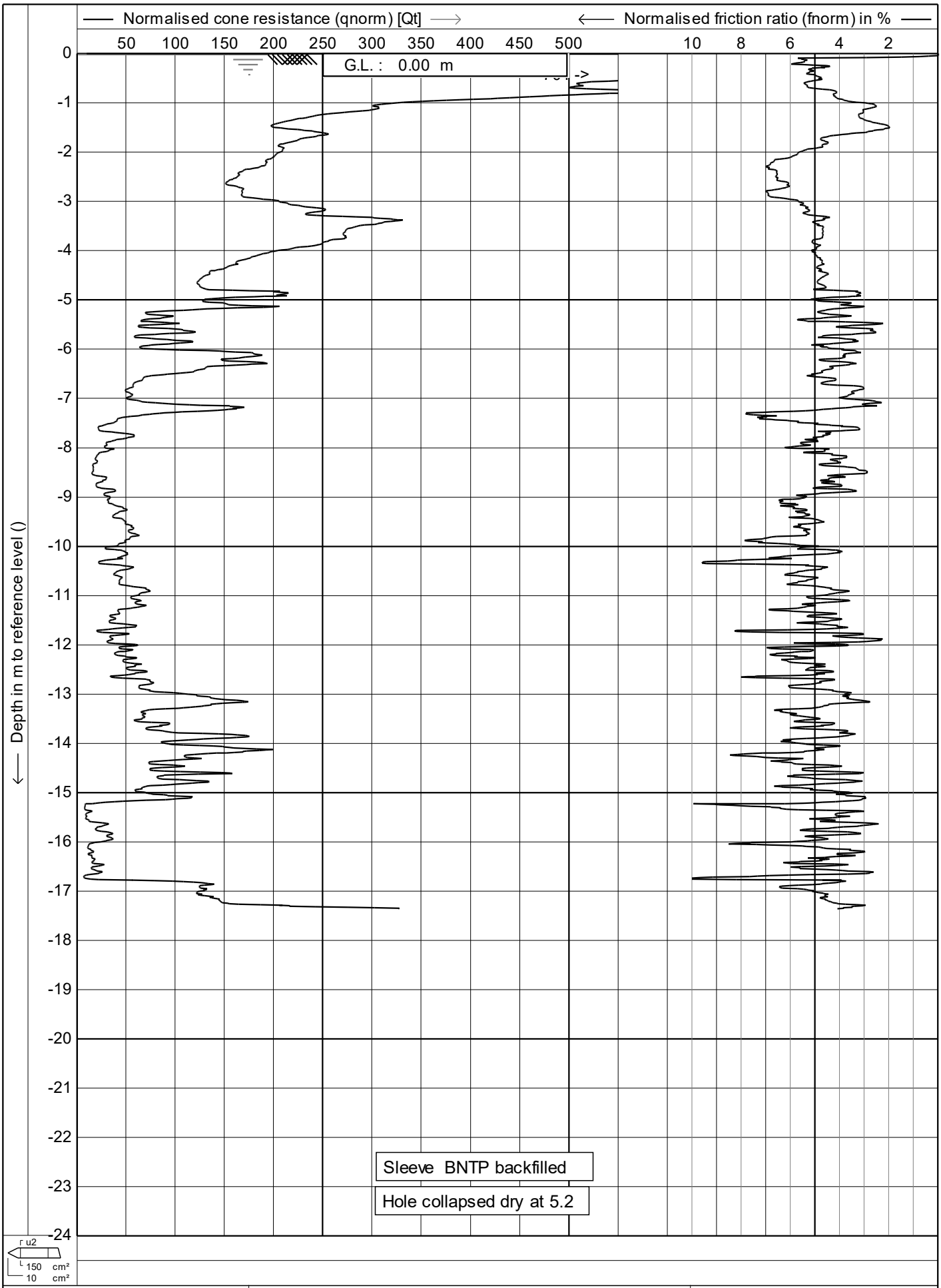
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **015**

7/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

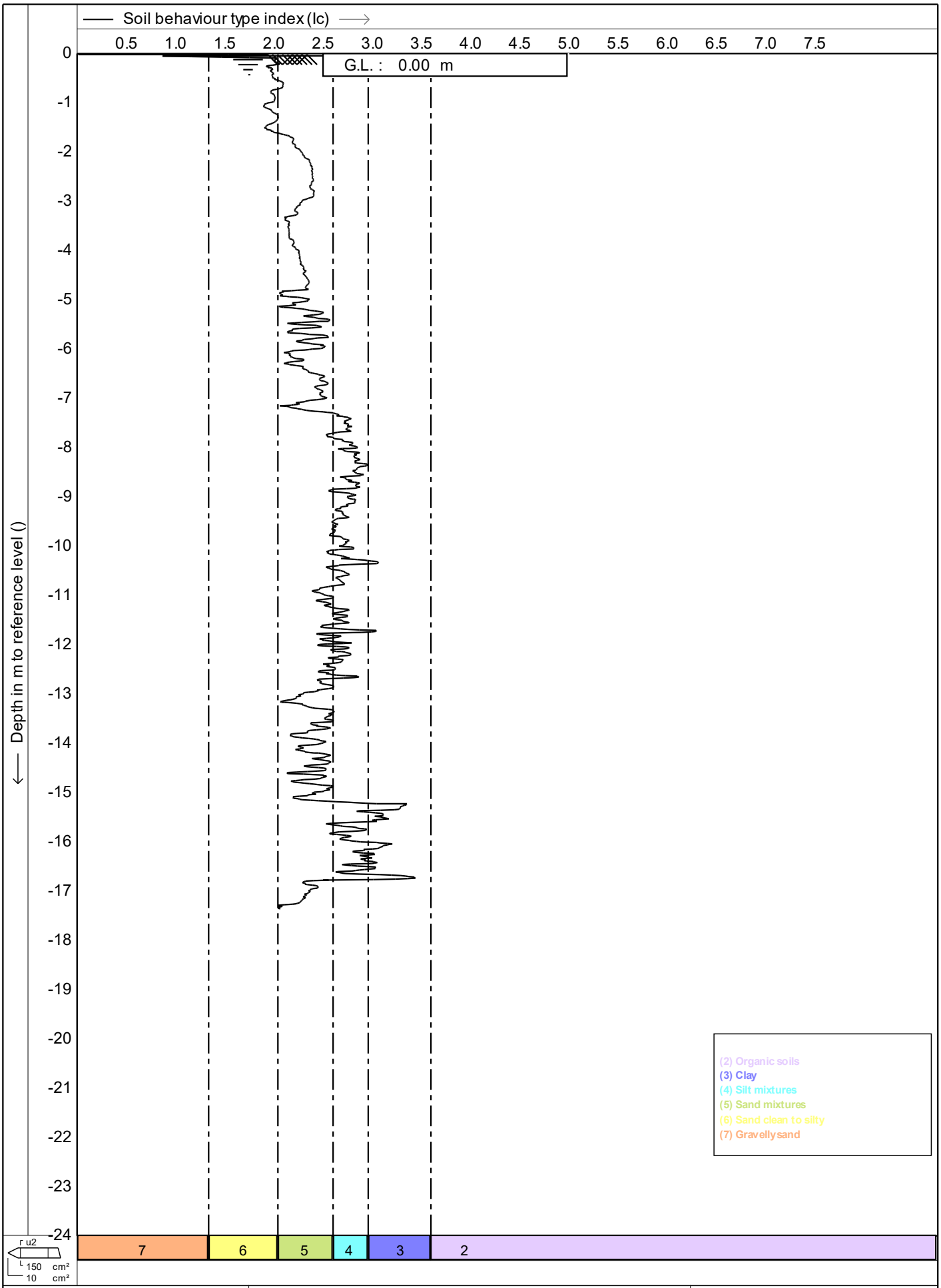
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **015**

8/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

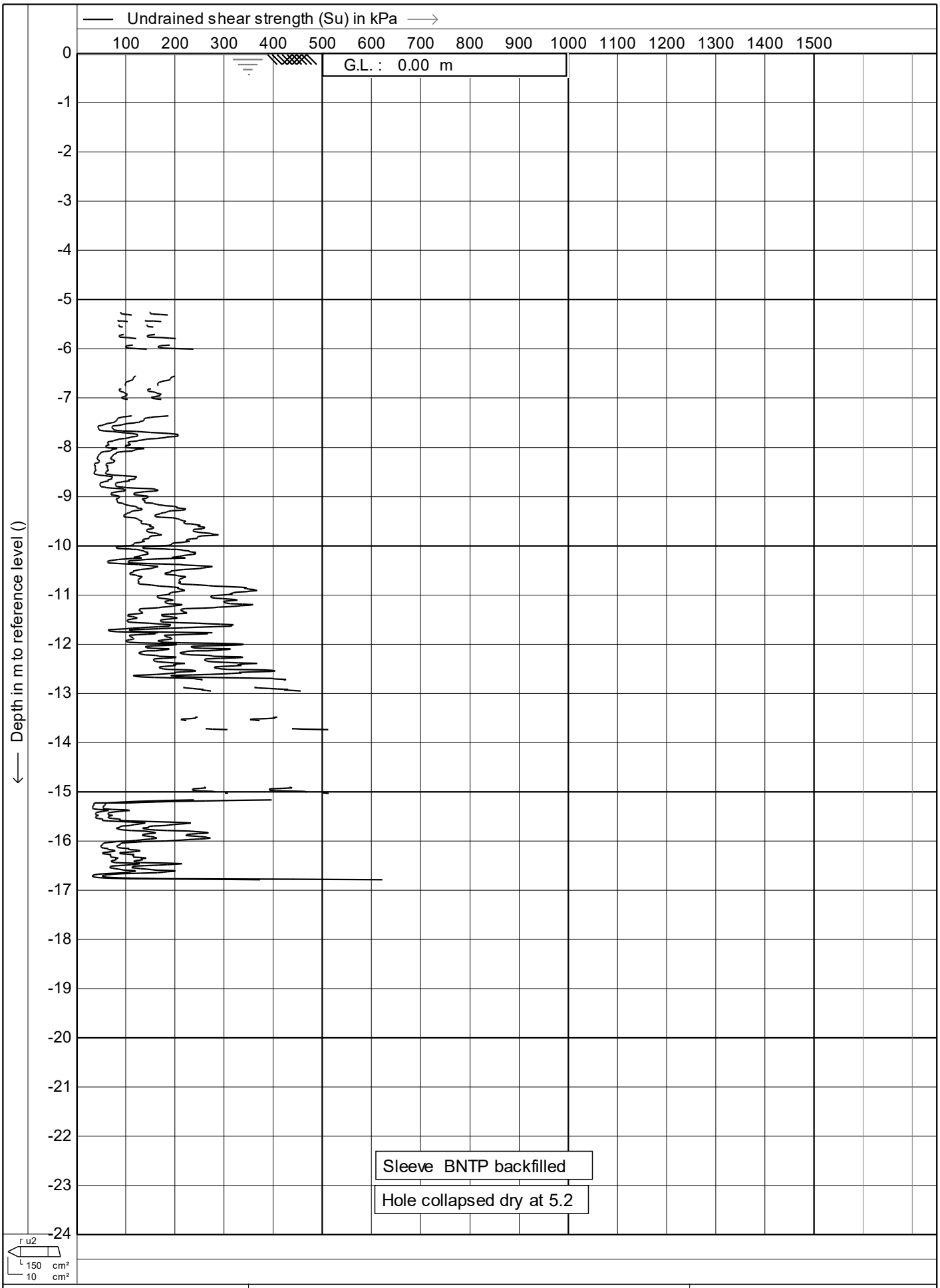
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **015**

9/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

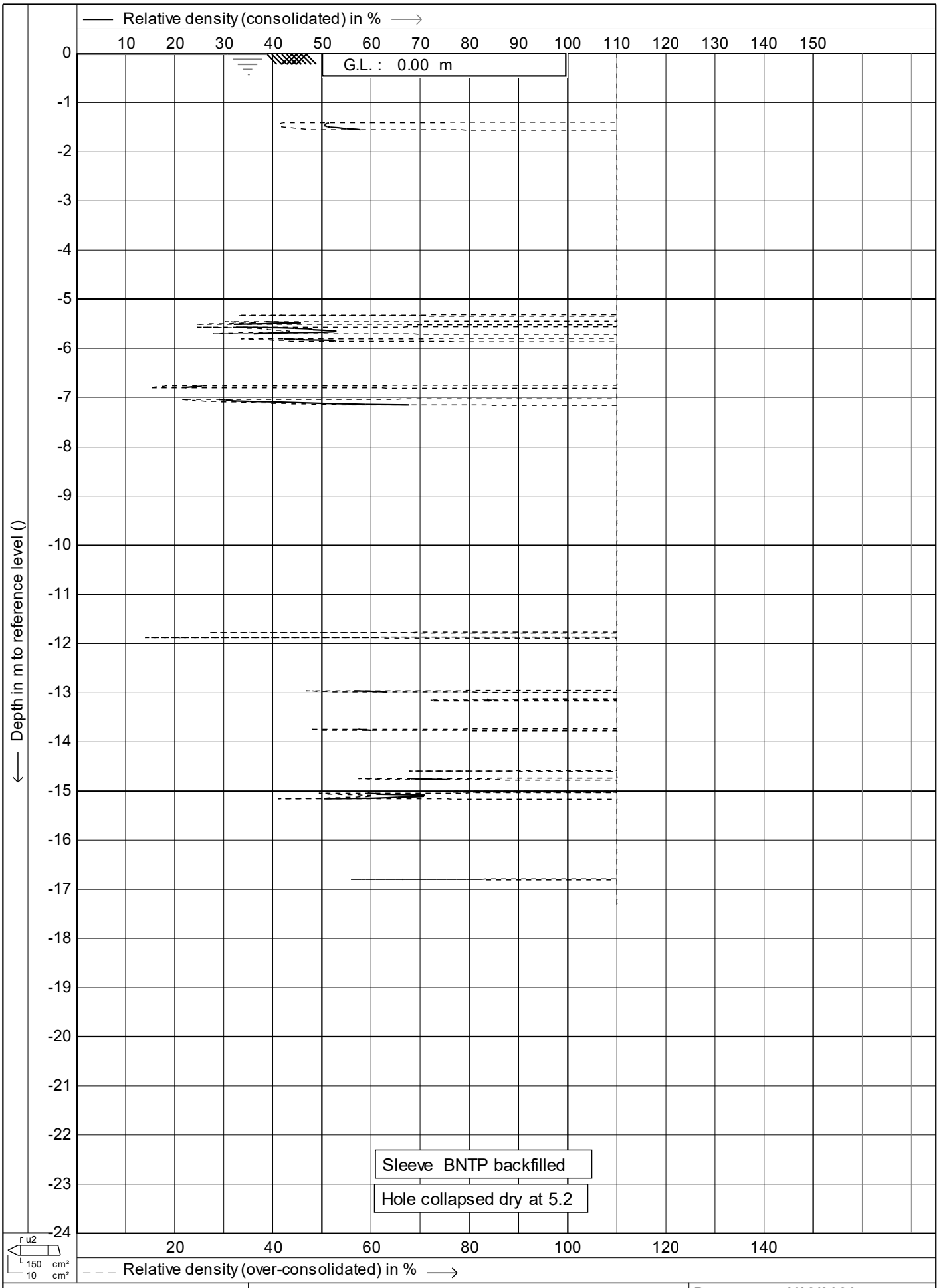
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **015** **10/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

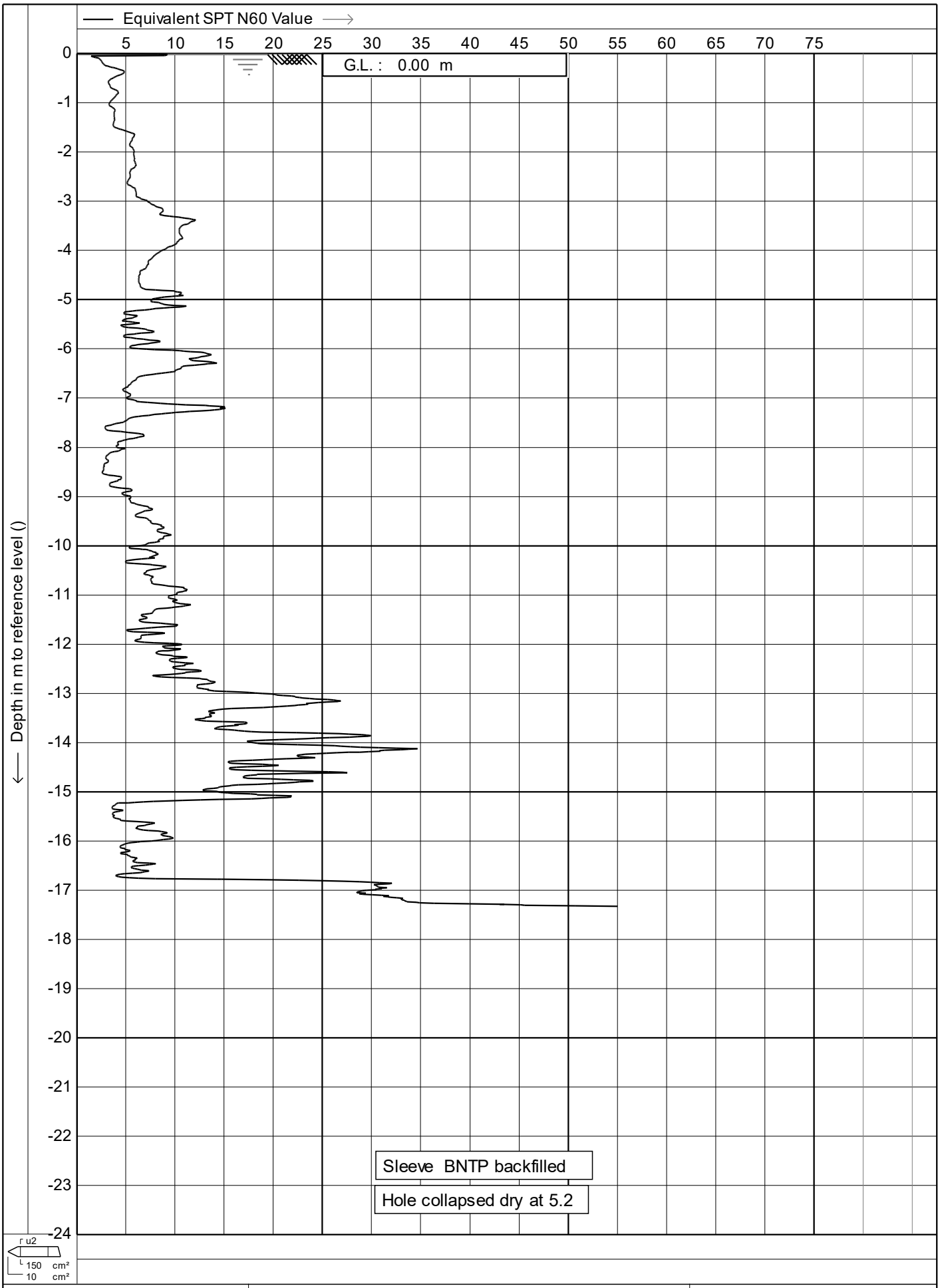
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **015**

11/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

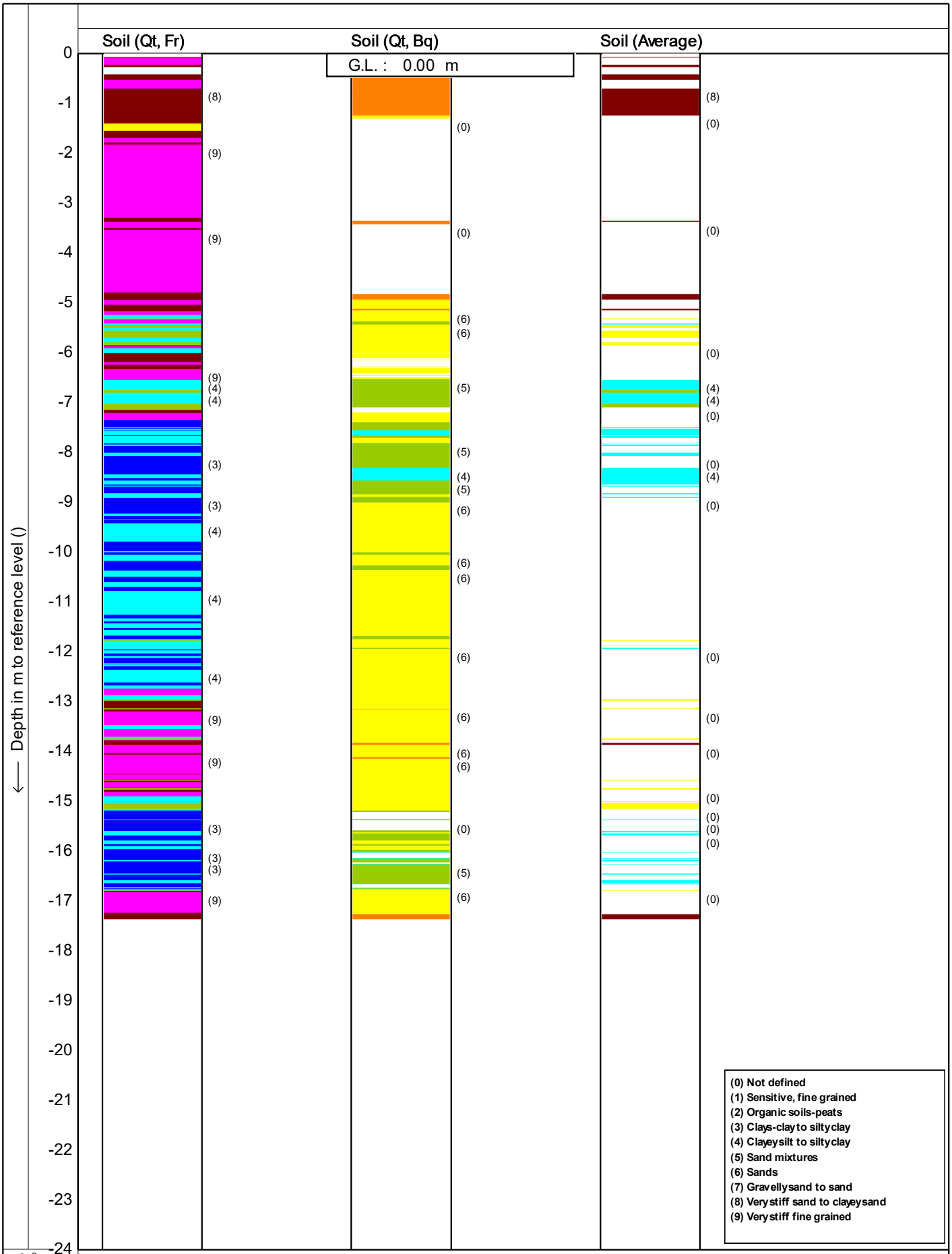
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **015**

12/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

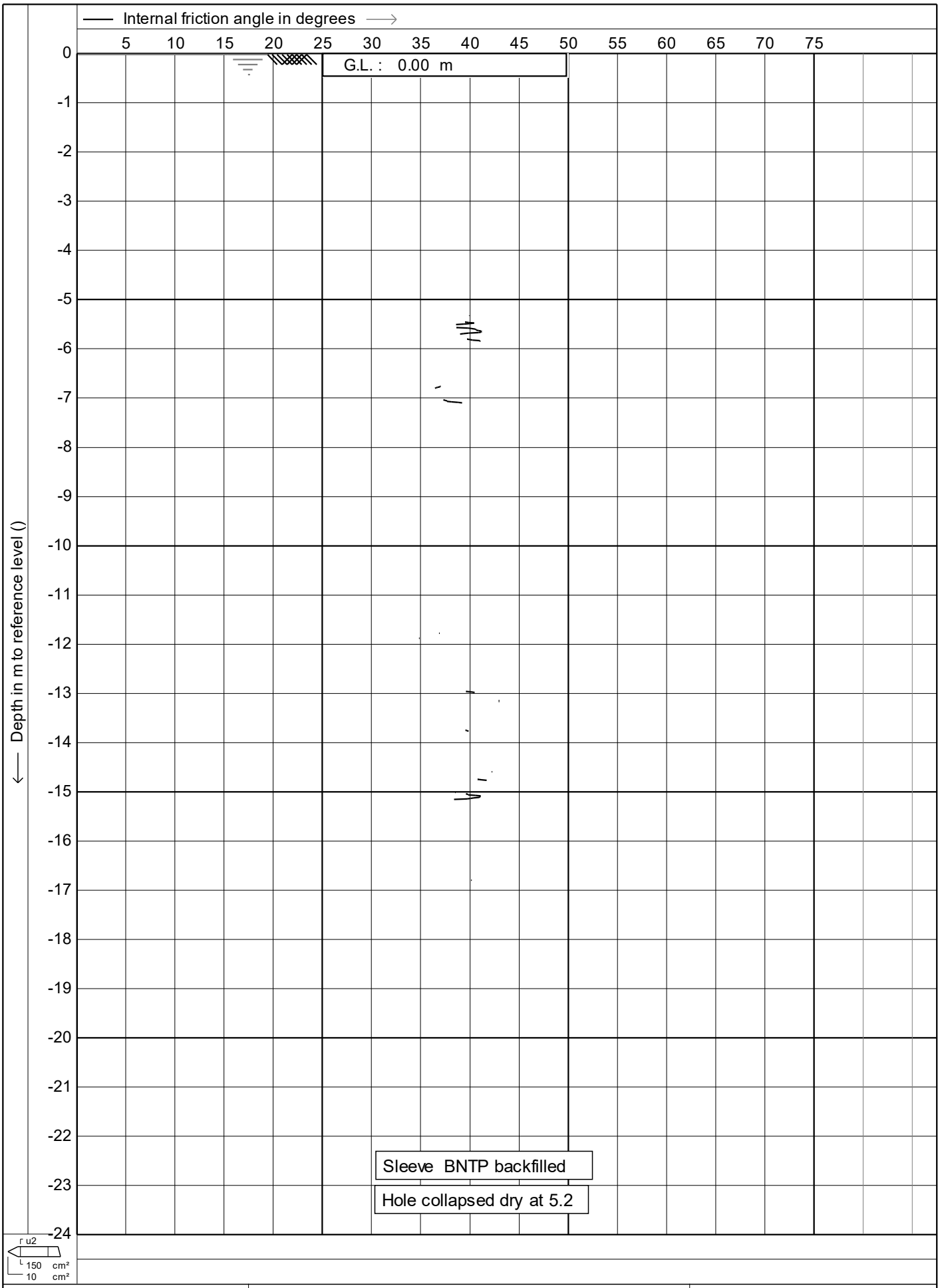
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

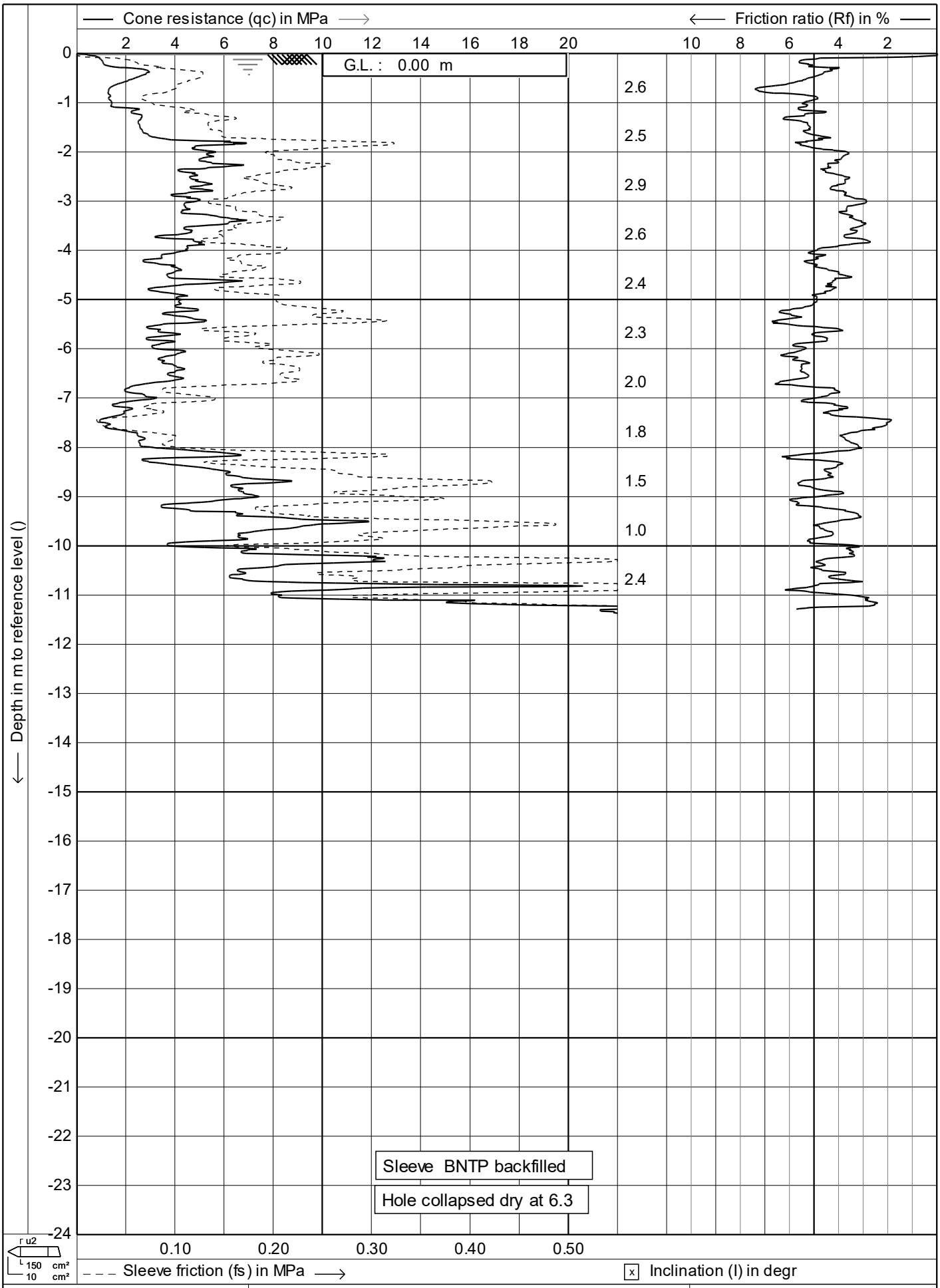
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **015** **14/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

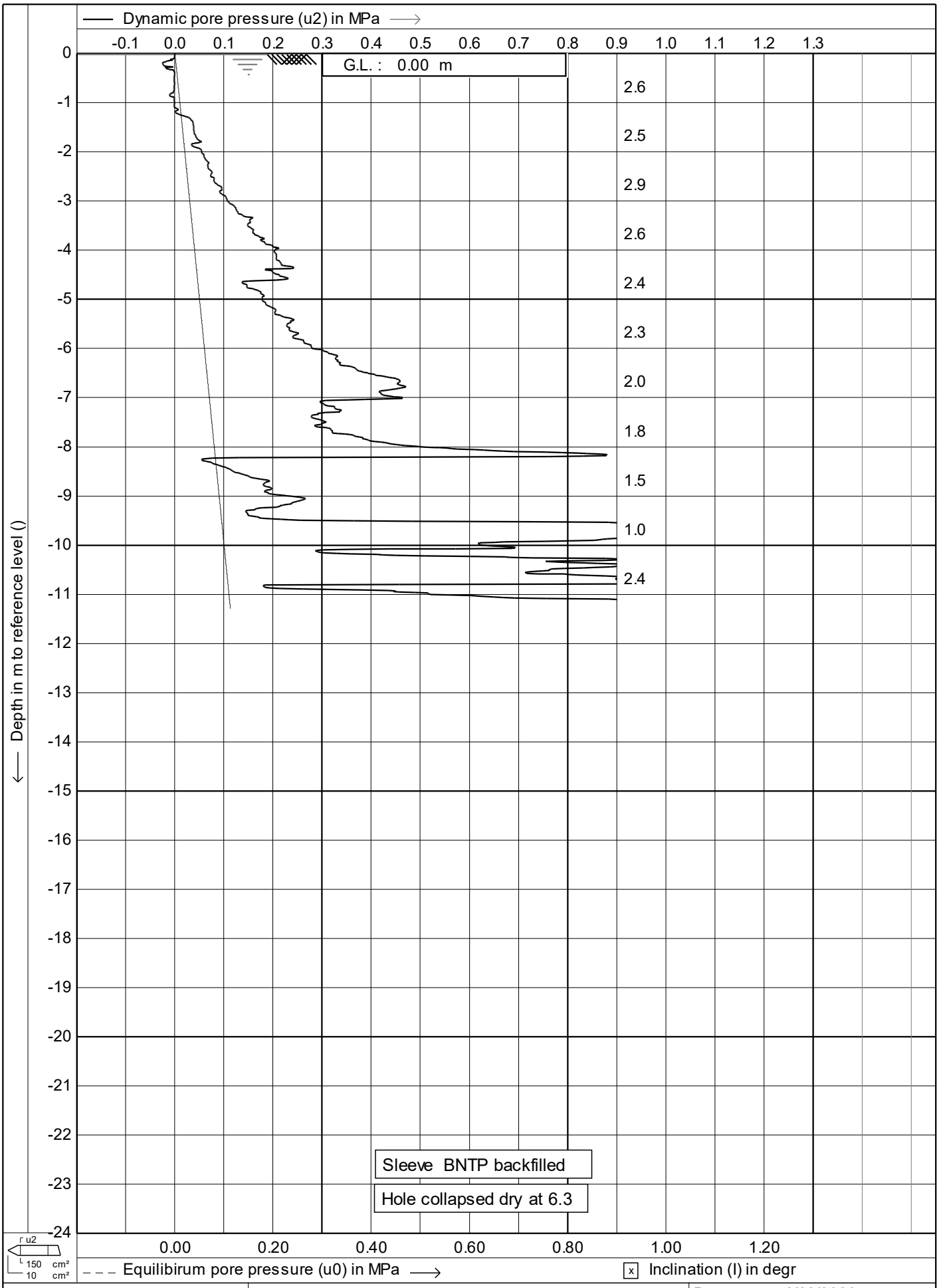
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **016**

1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

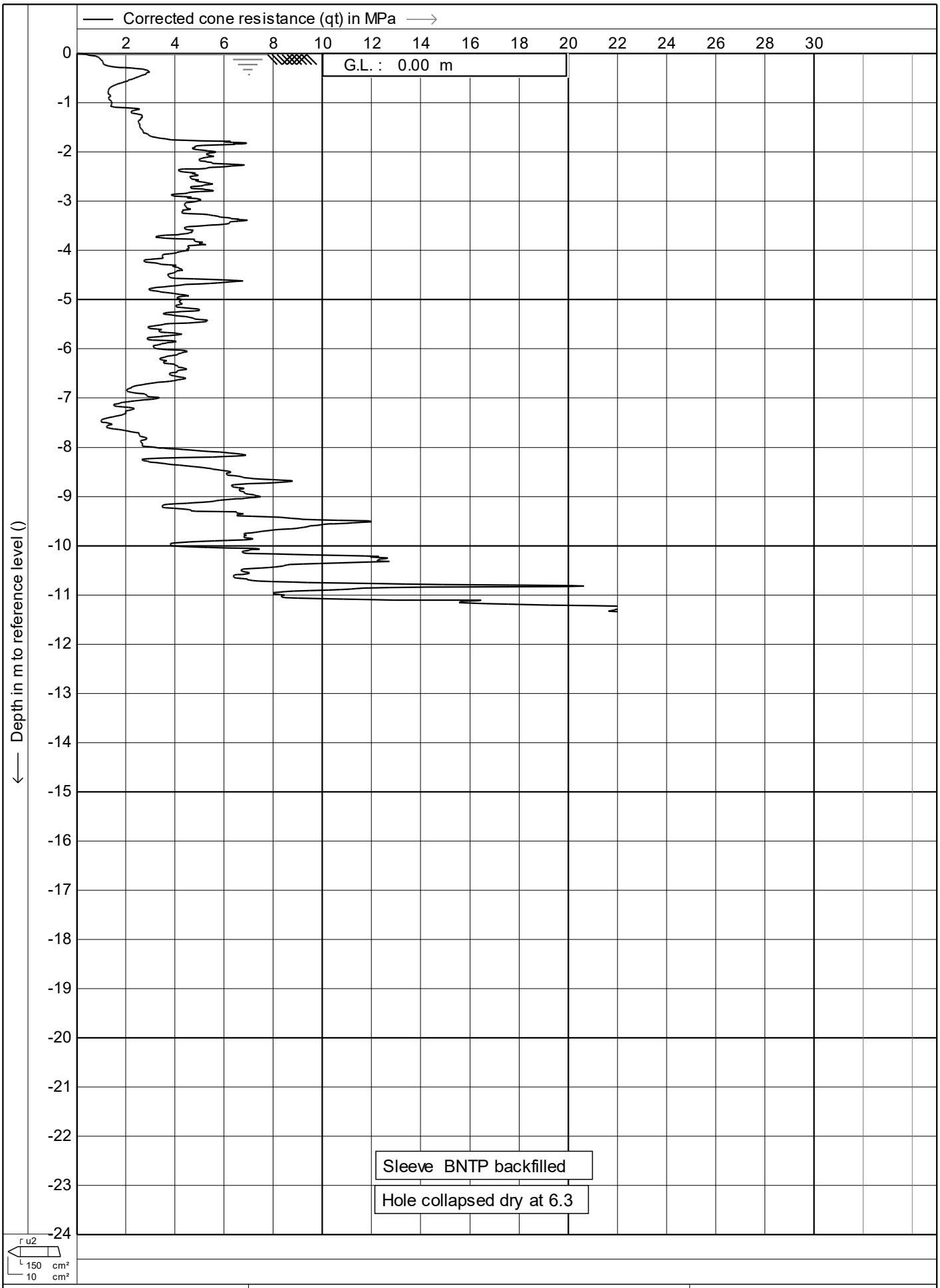
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **016**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

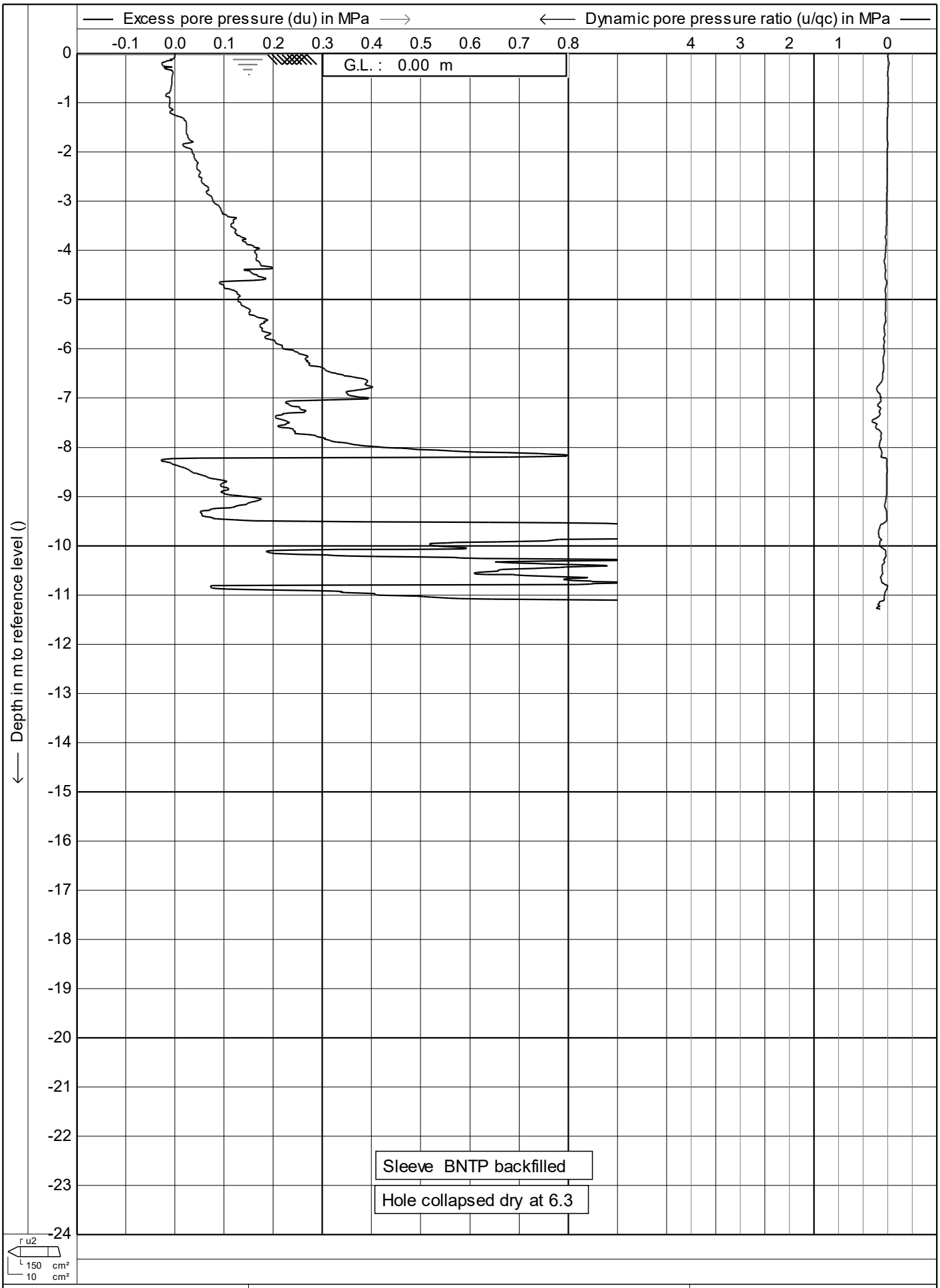
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **016** **3/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

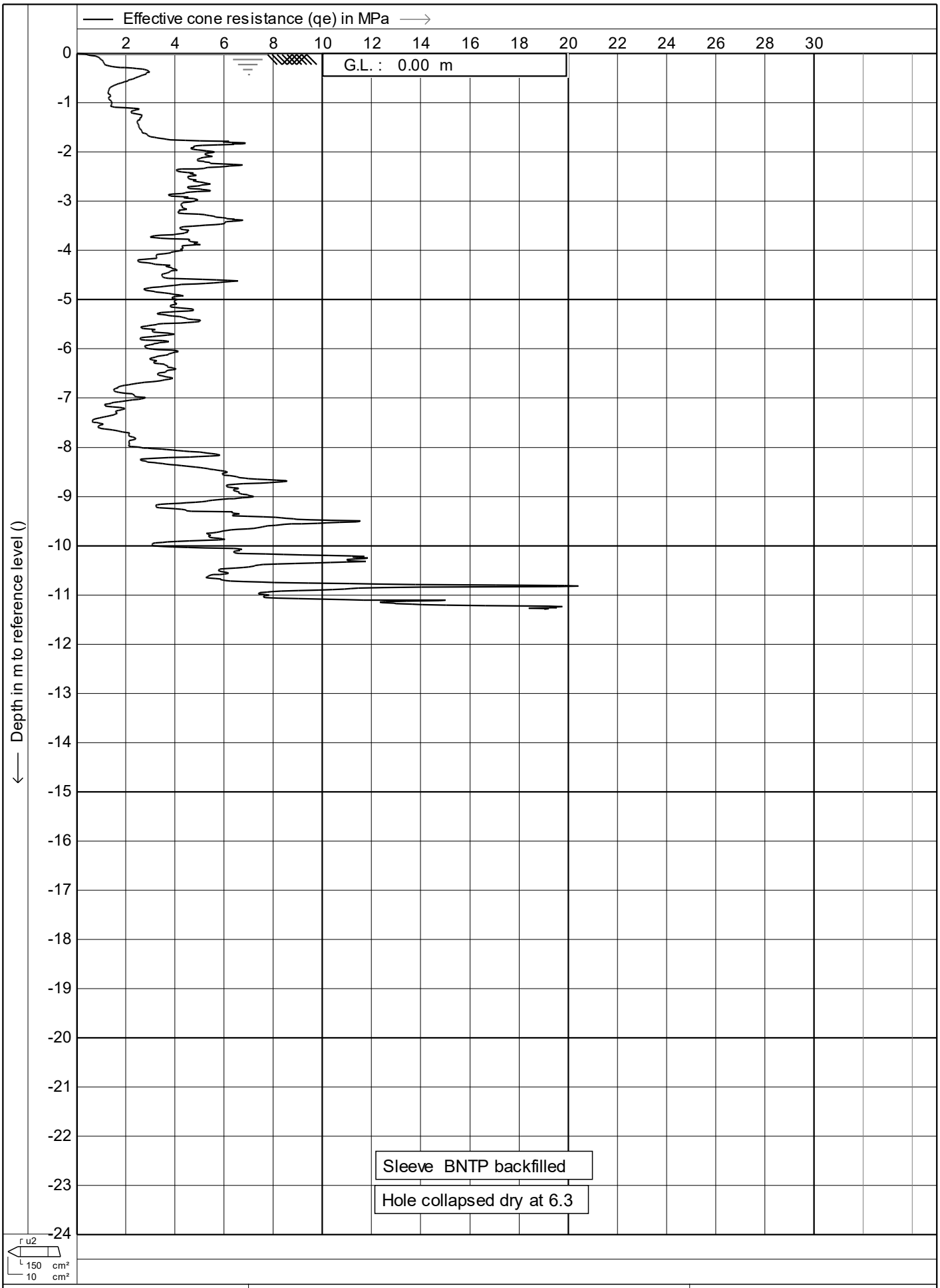
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **016** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

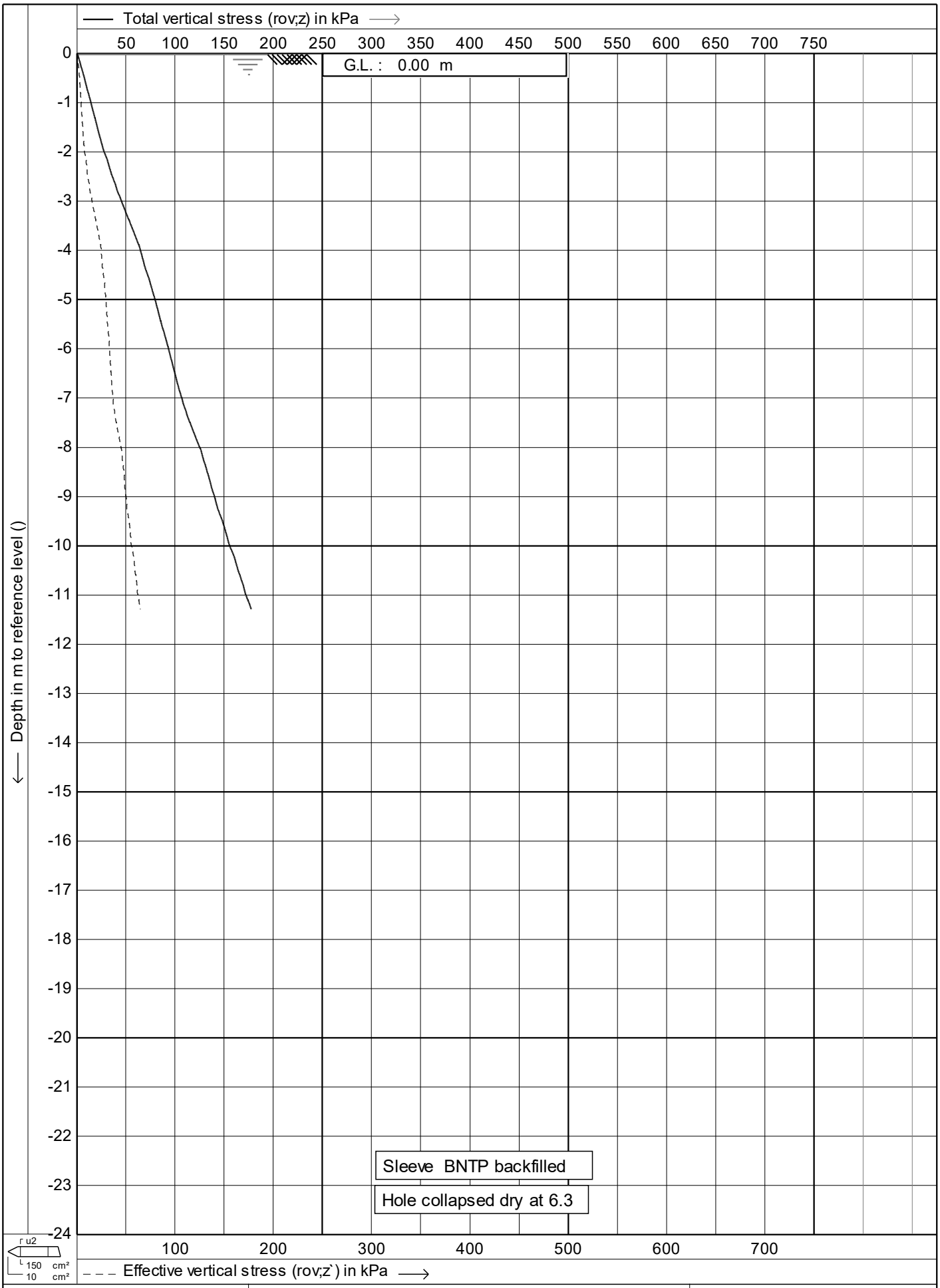
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Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **016**

5/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

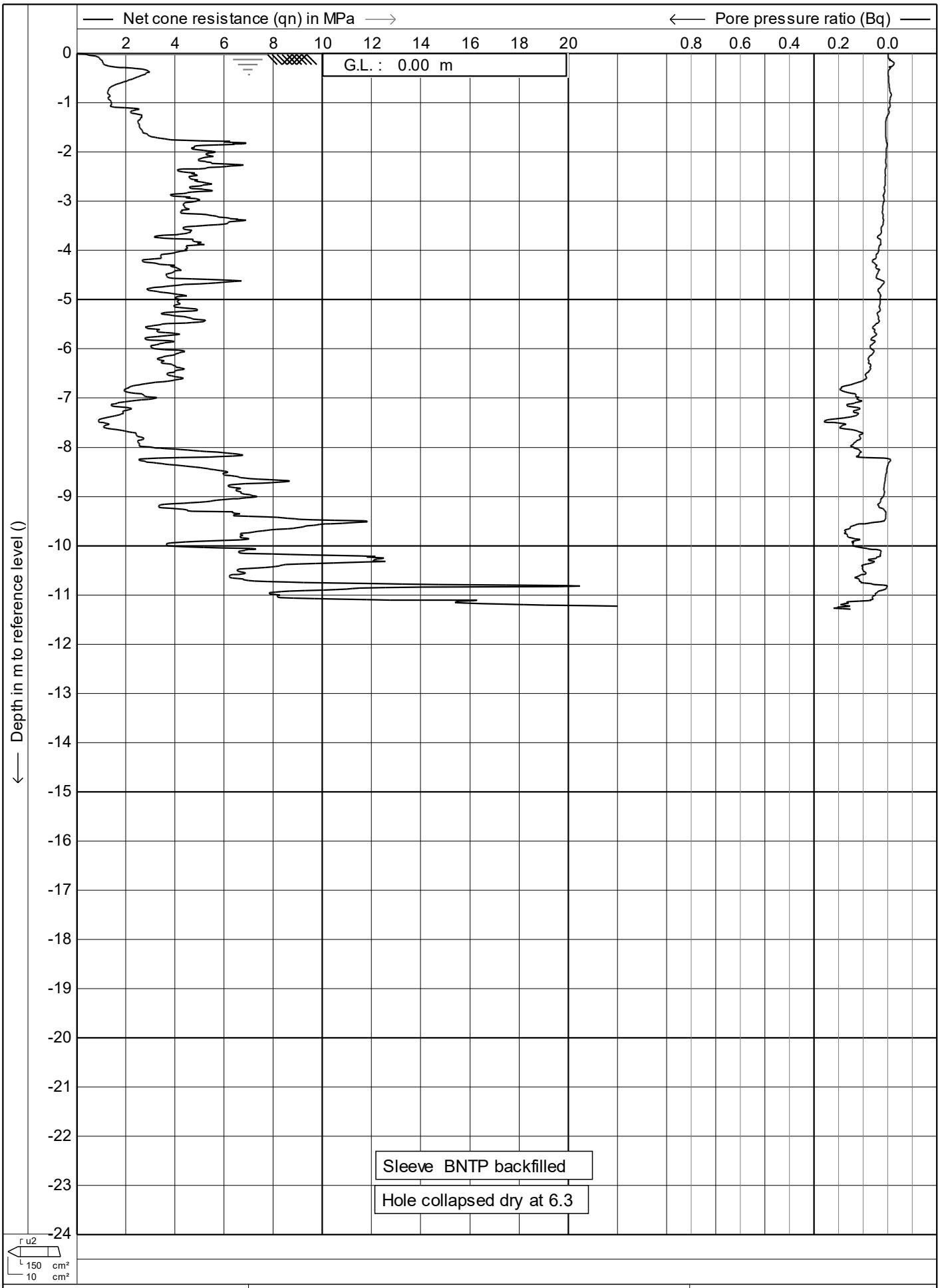
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **016** **6/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

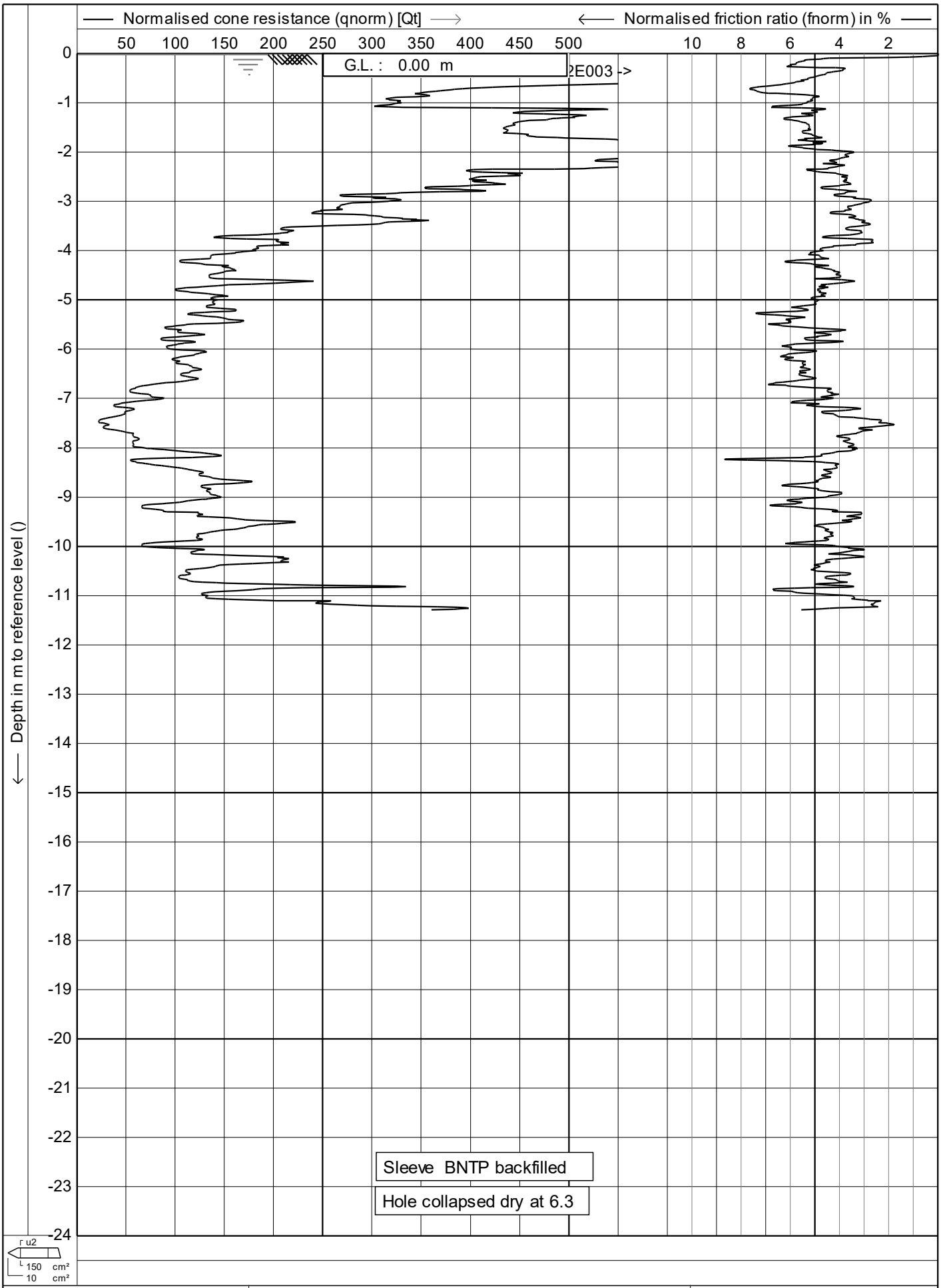
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **016**

7/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

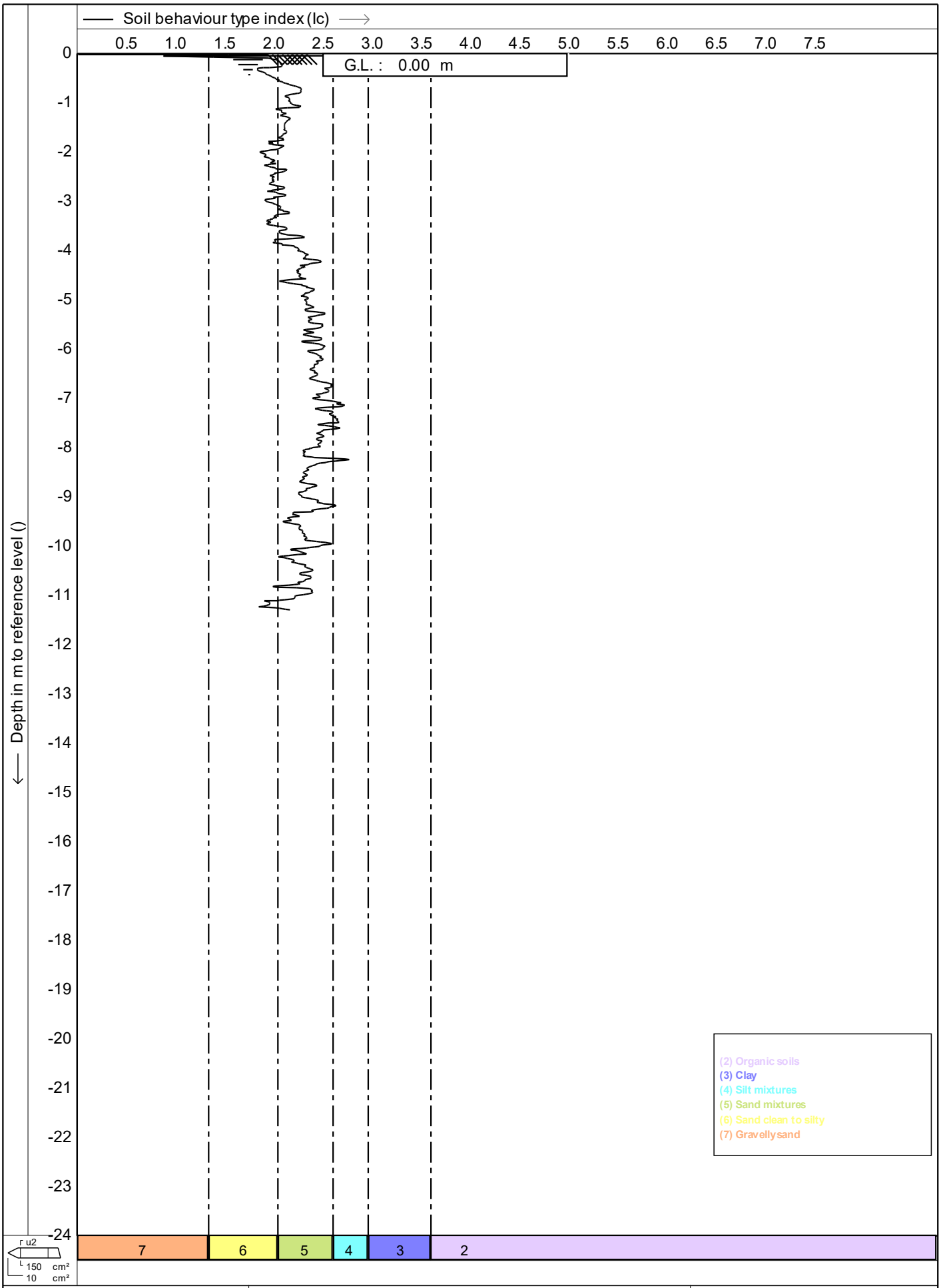
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **016**

8/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

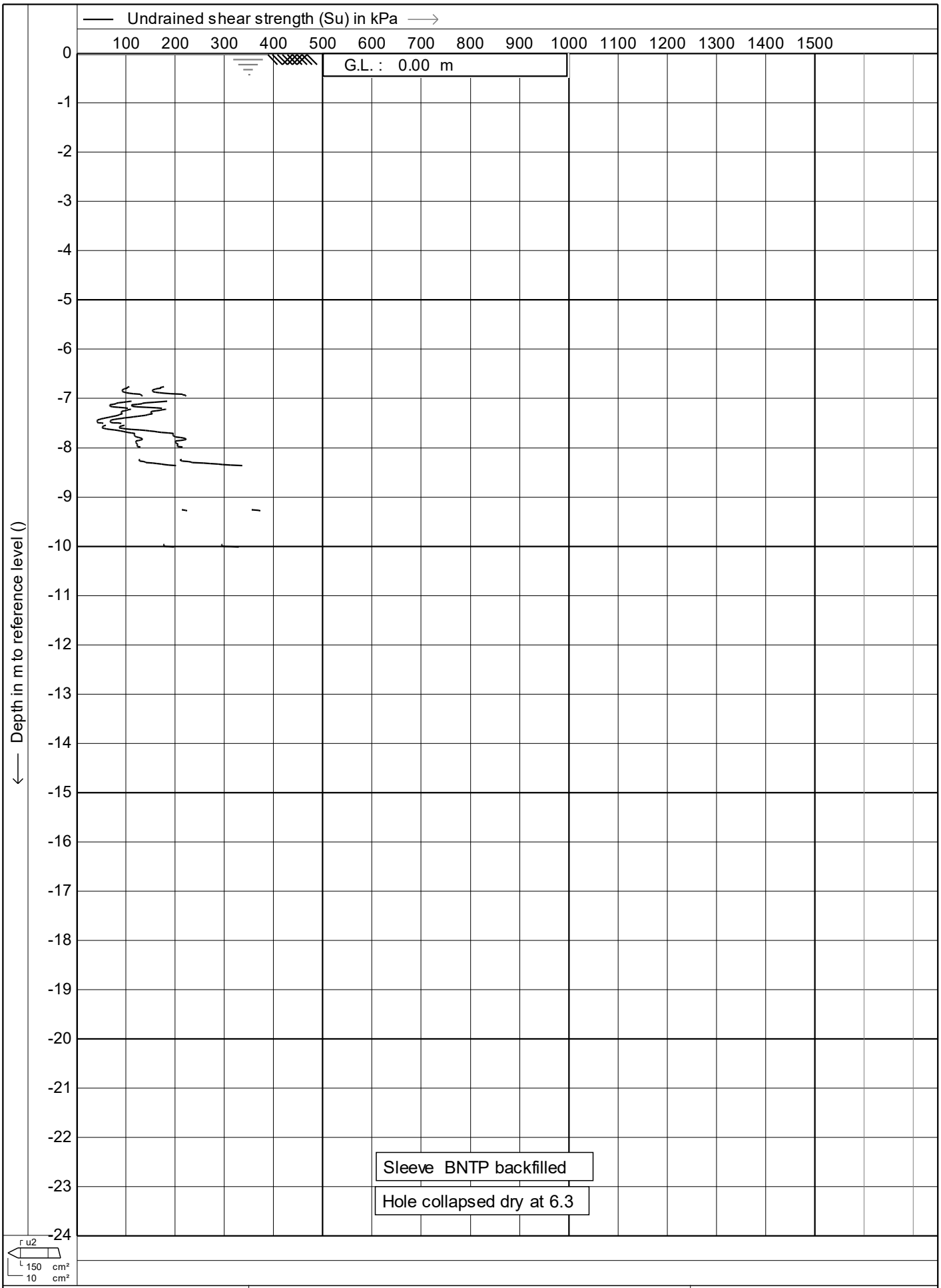
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **016** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

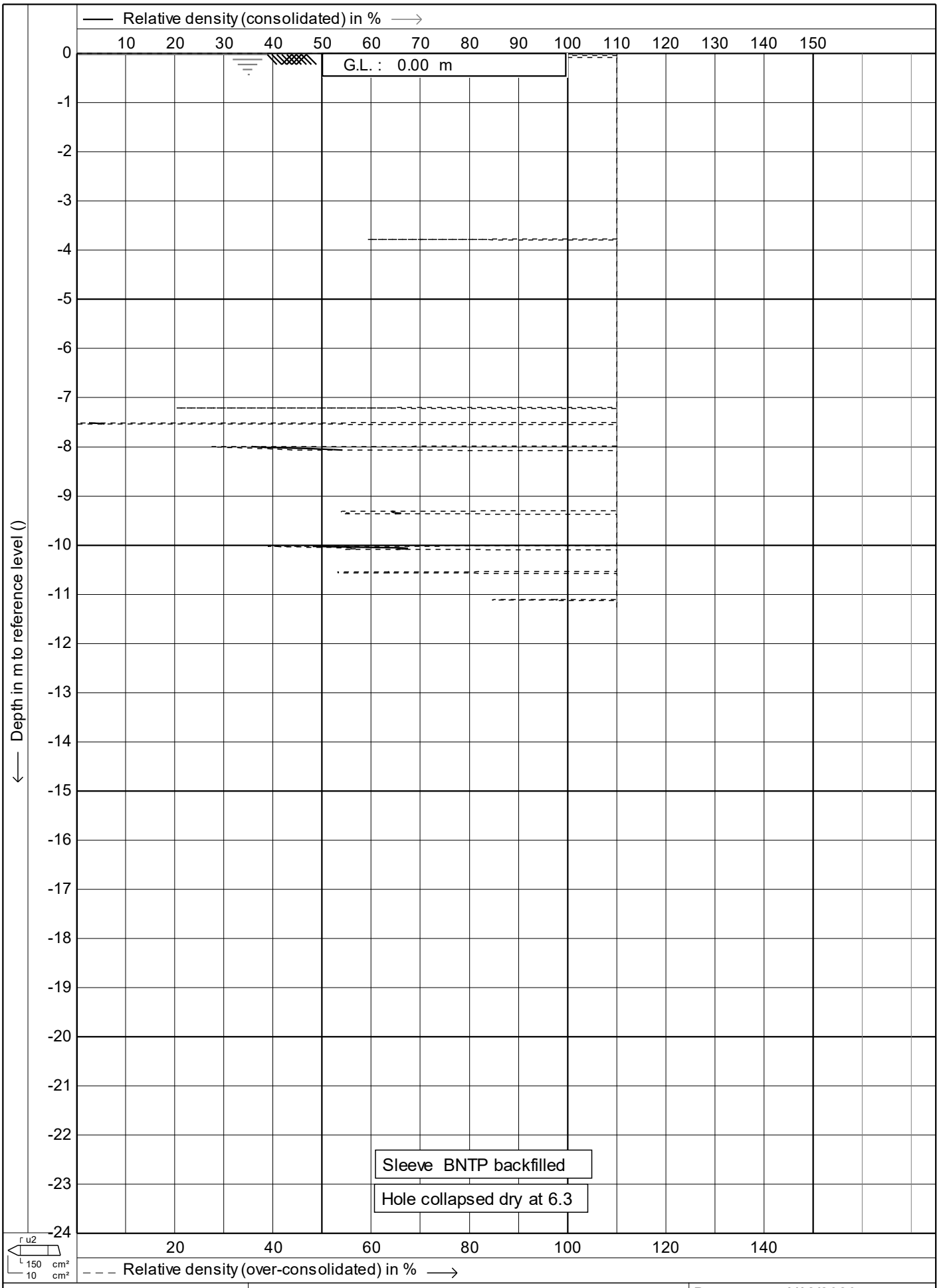
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **016**

10/14

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

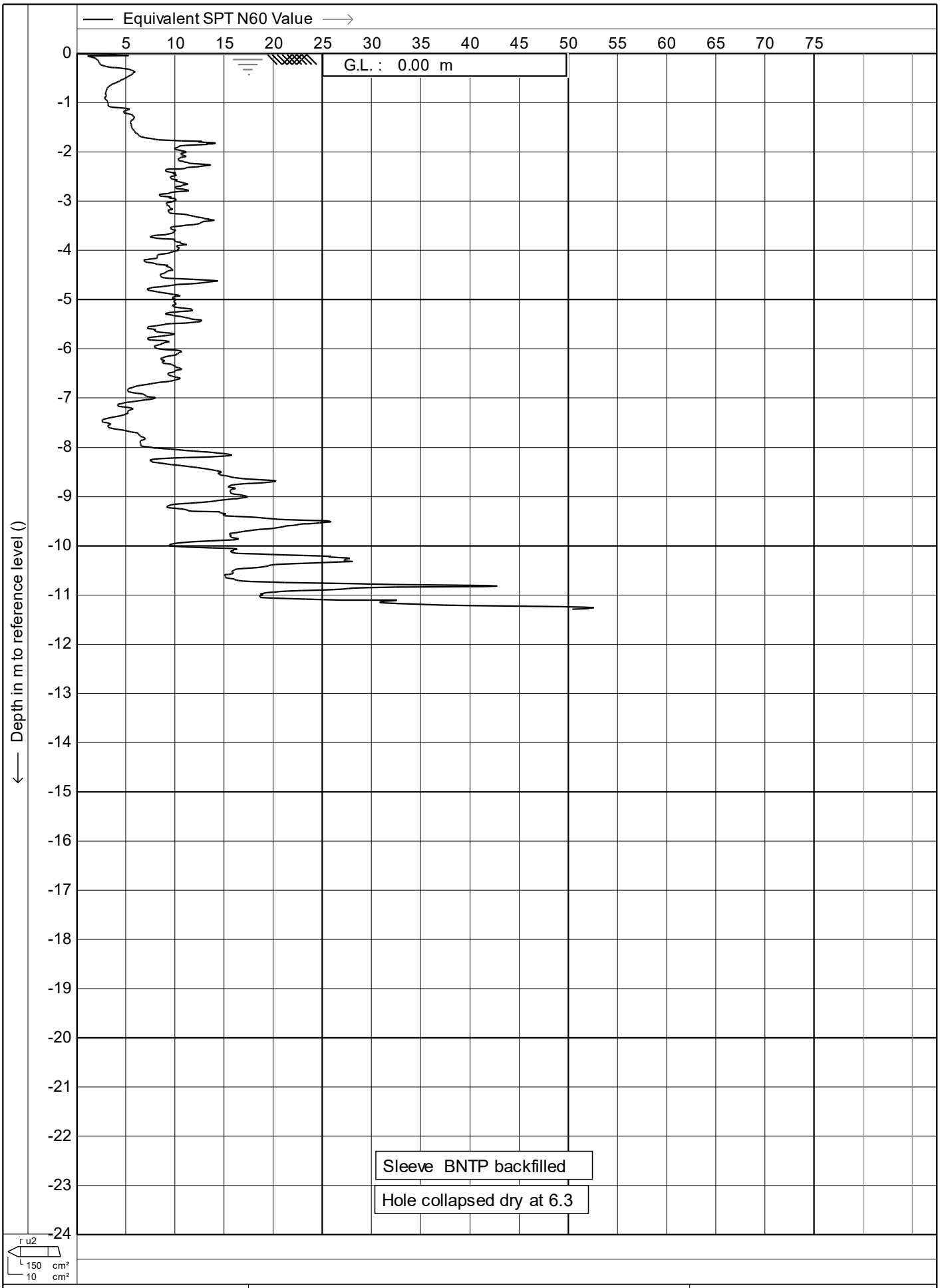
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Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **016**

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Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

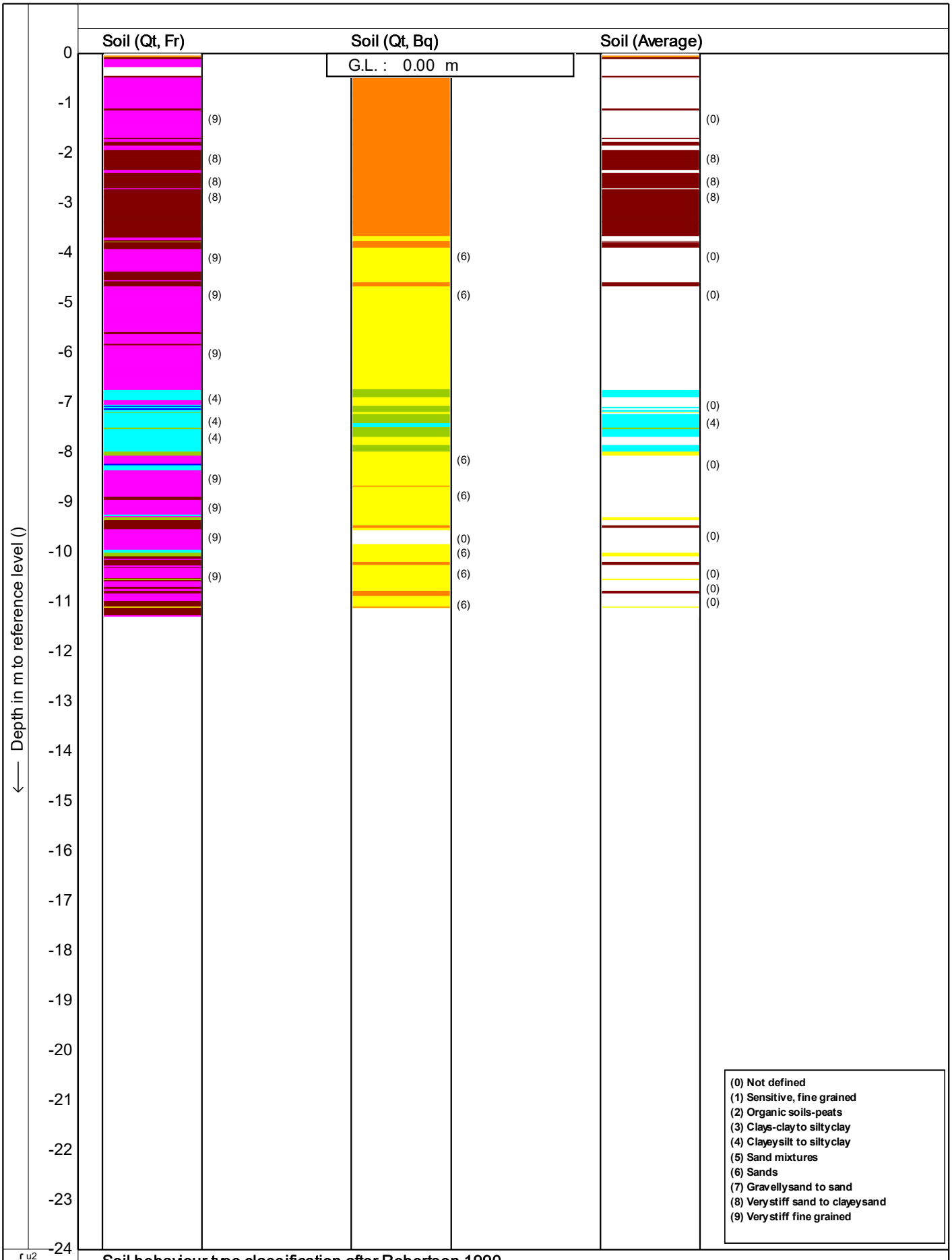
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **016**

12/14

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Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

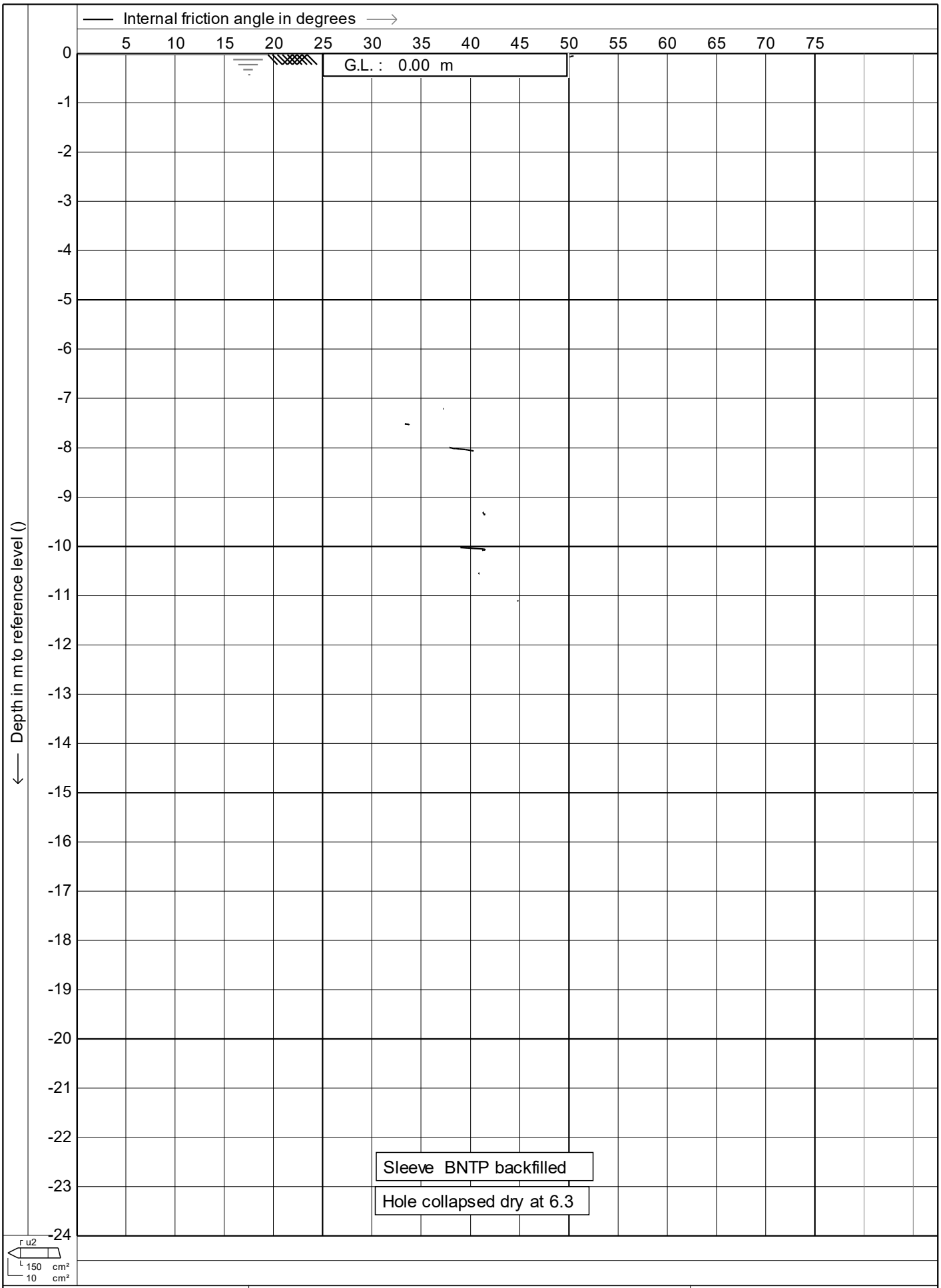
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Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

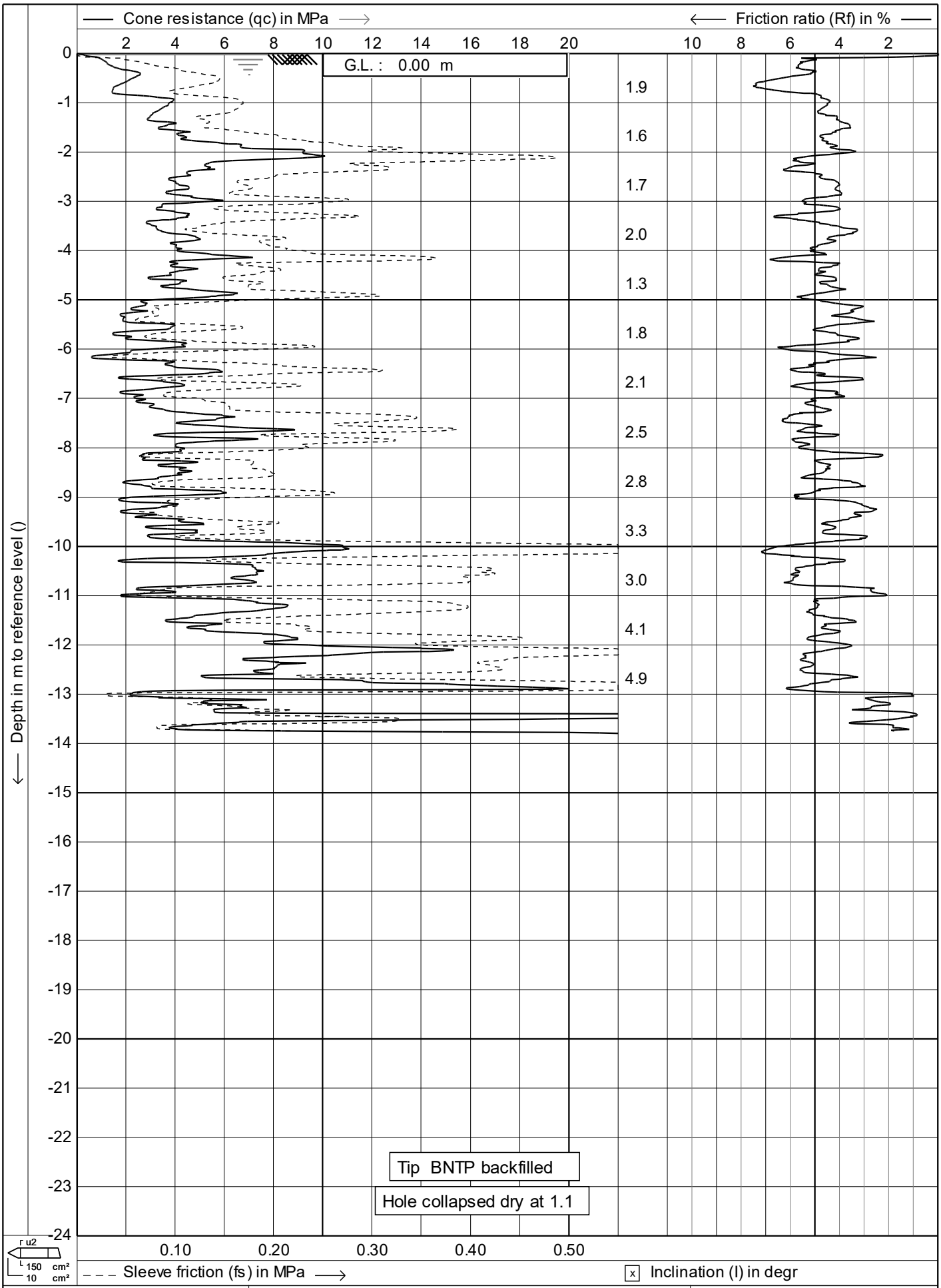
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Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

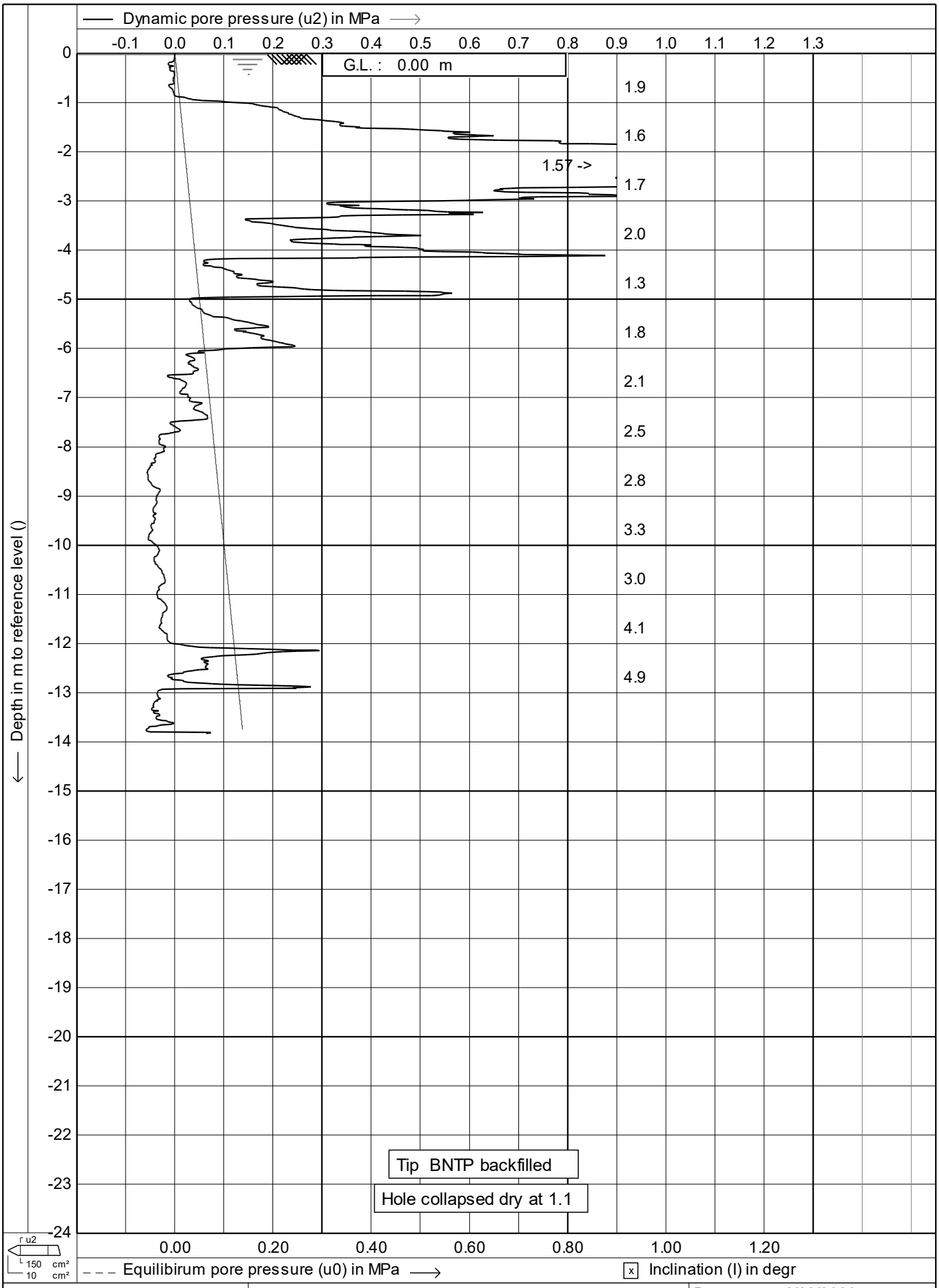
Cone no. : **C10CFIIP.C14426**

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Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

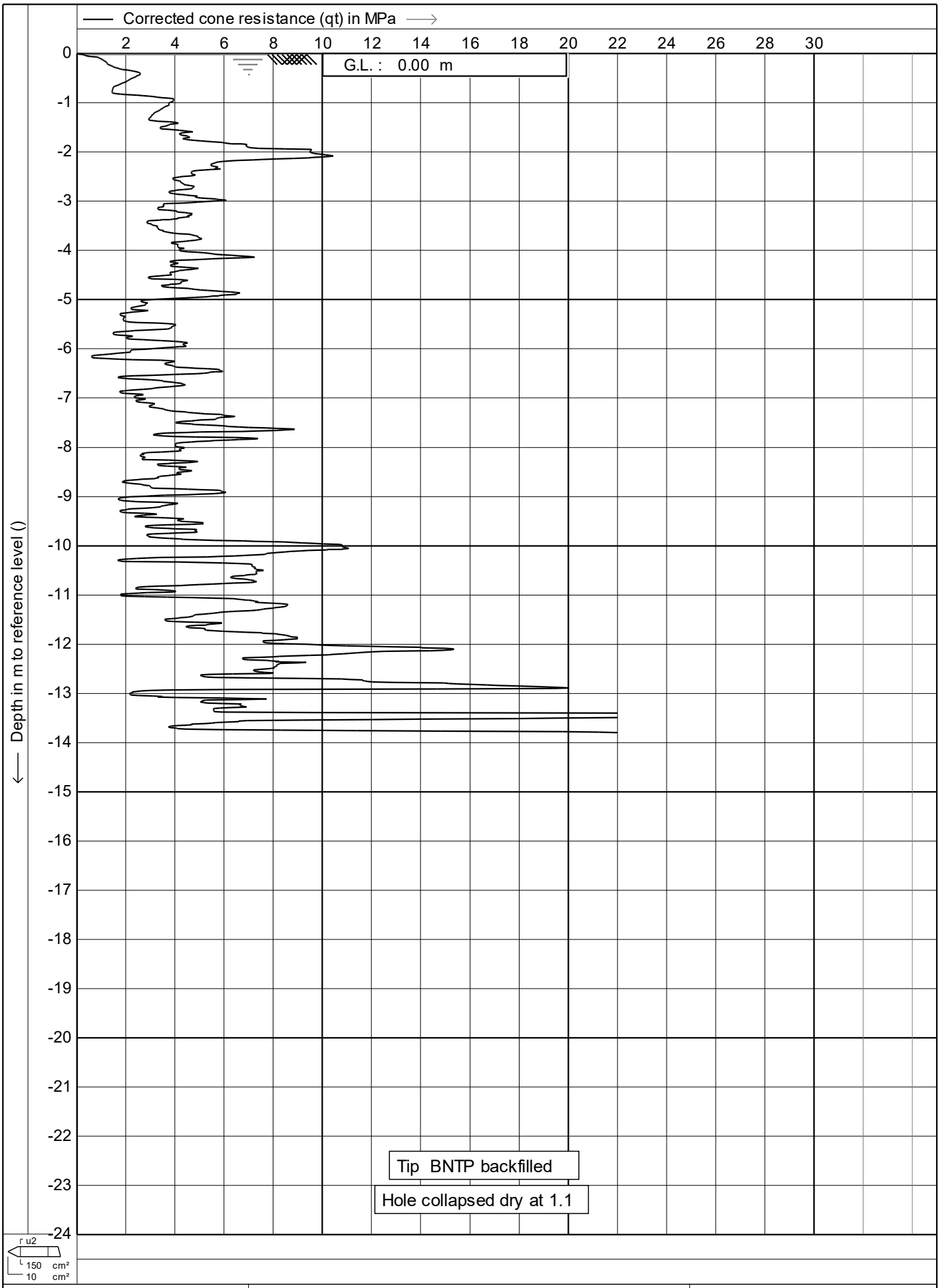
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

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Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

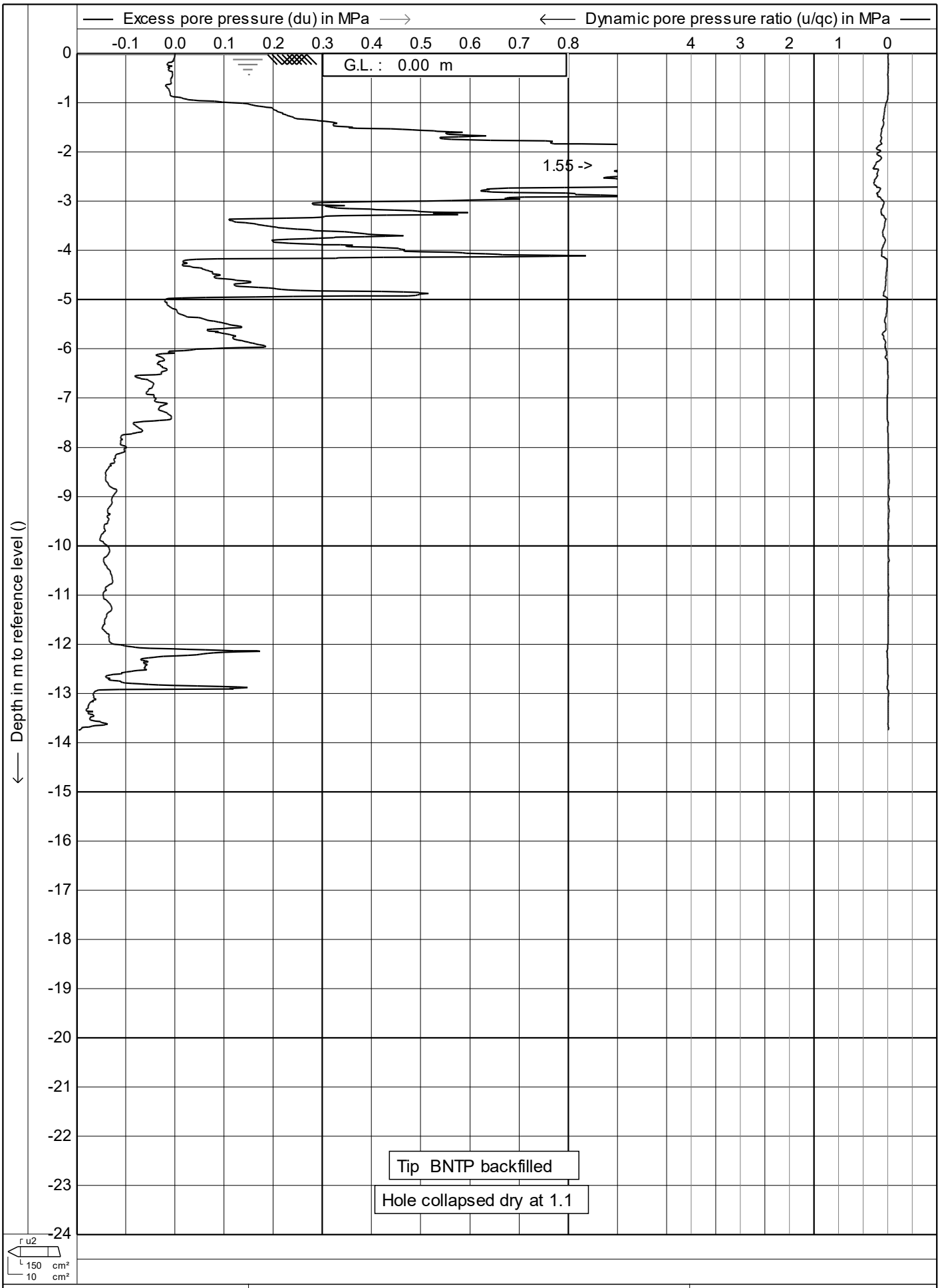
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **017** **3/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

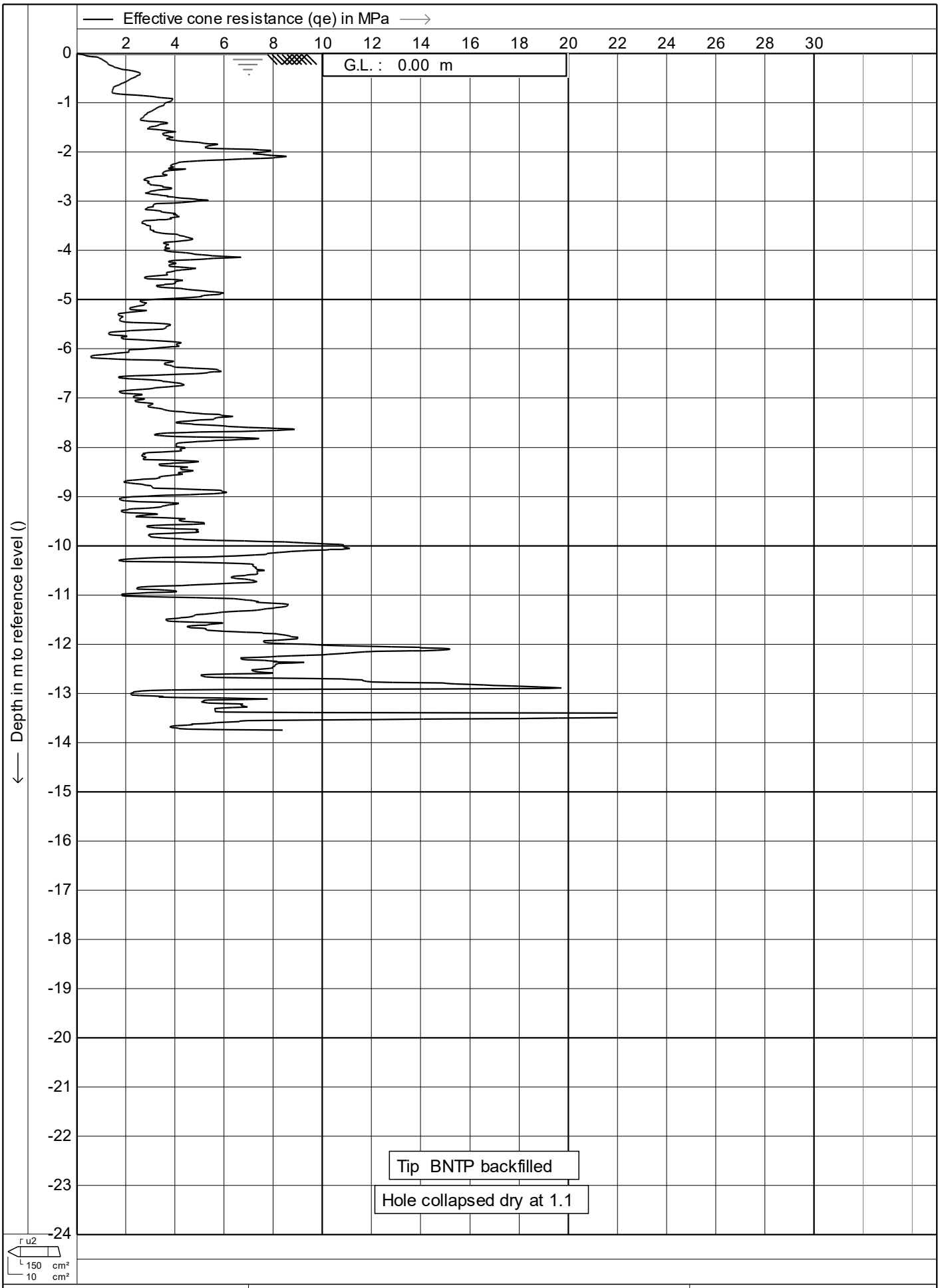
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **017** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

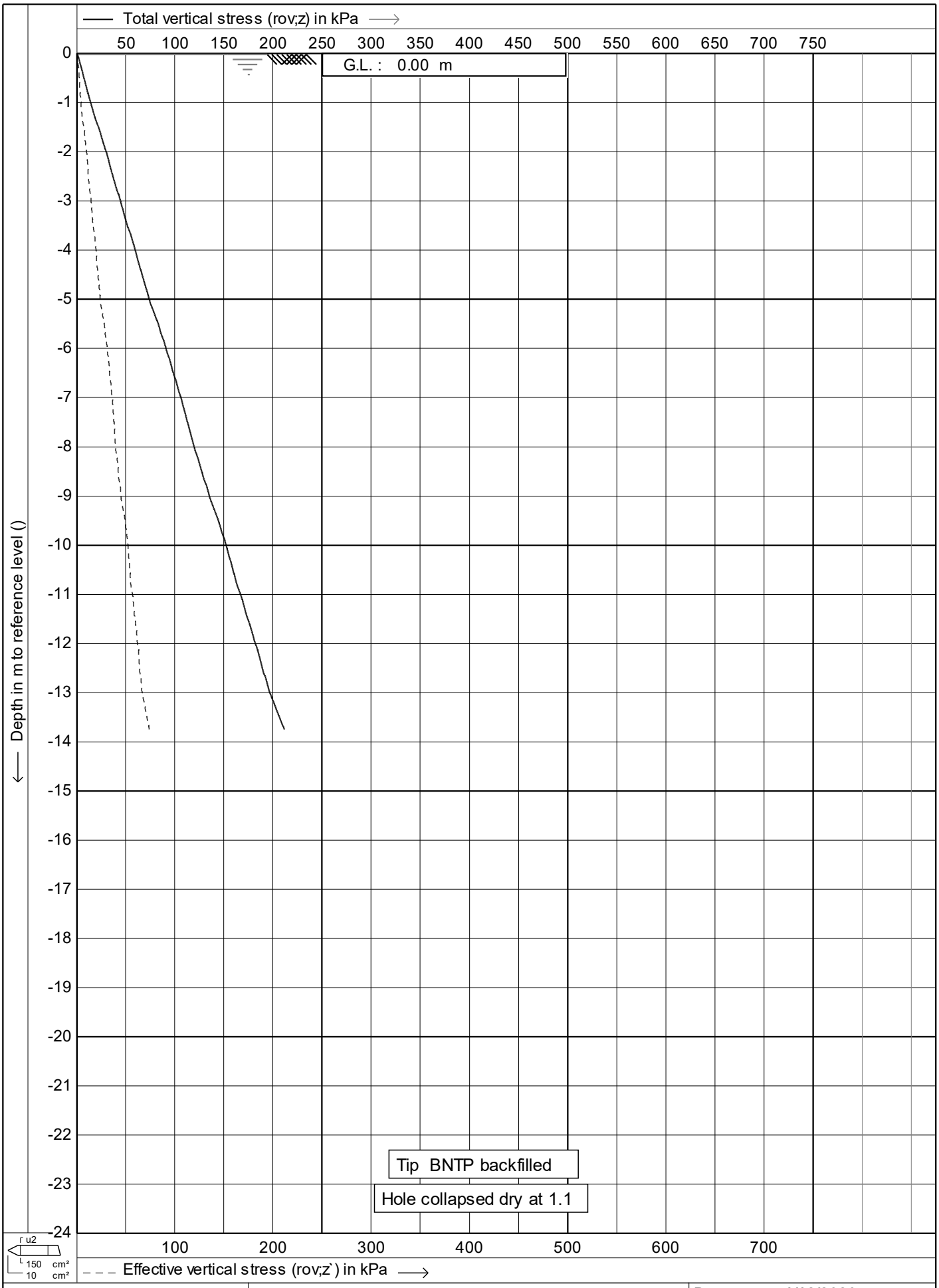
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **017**

5/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

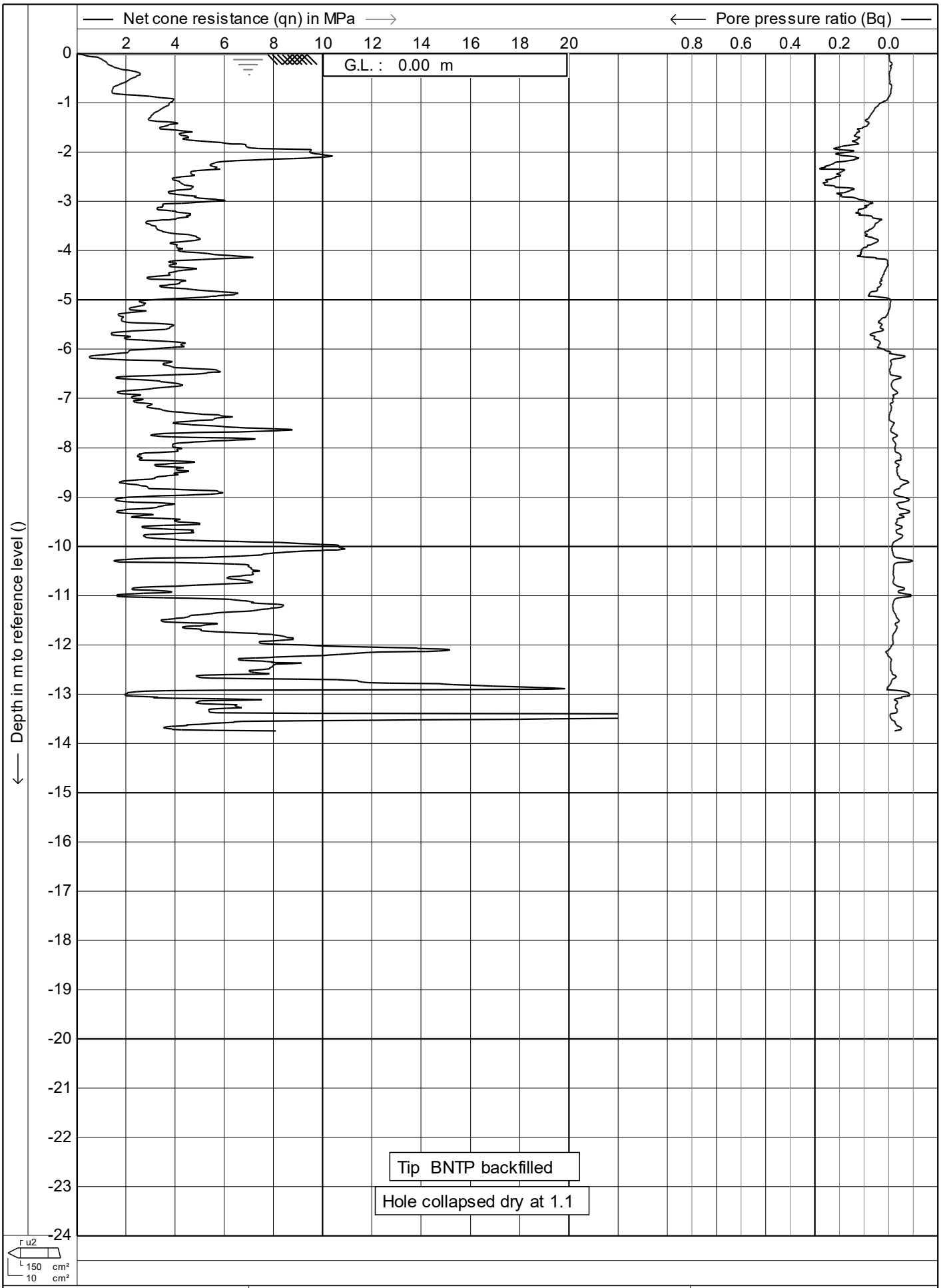
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **017**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

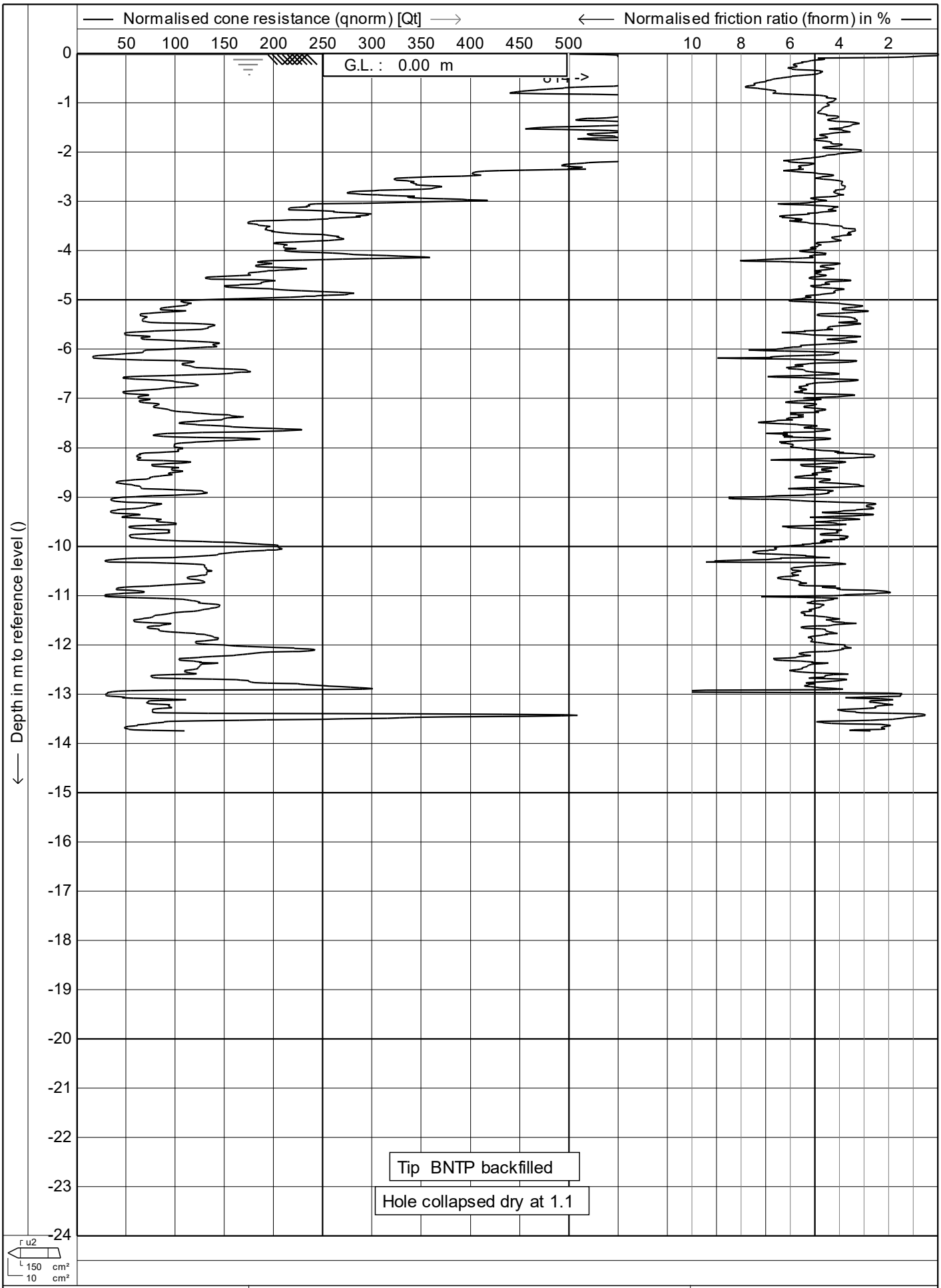
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **017**

7/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

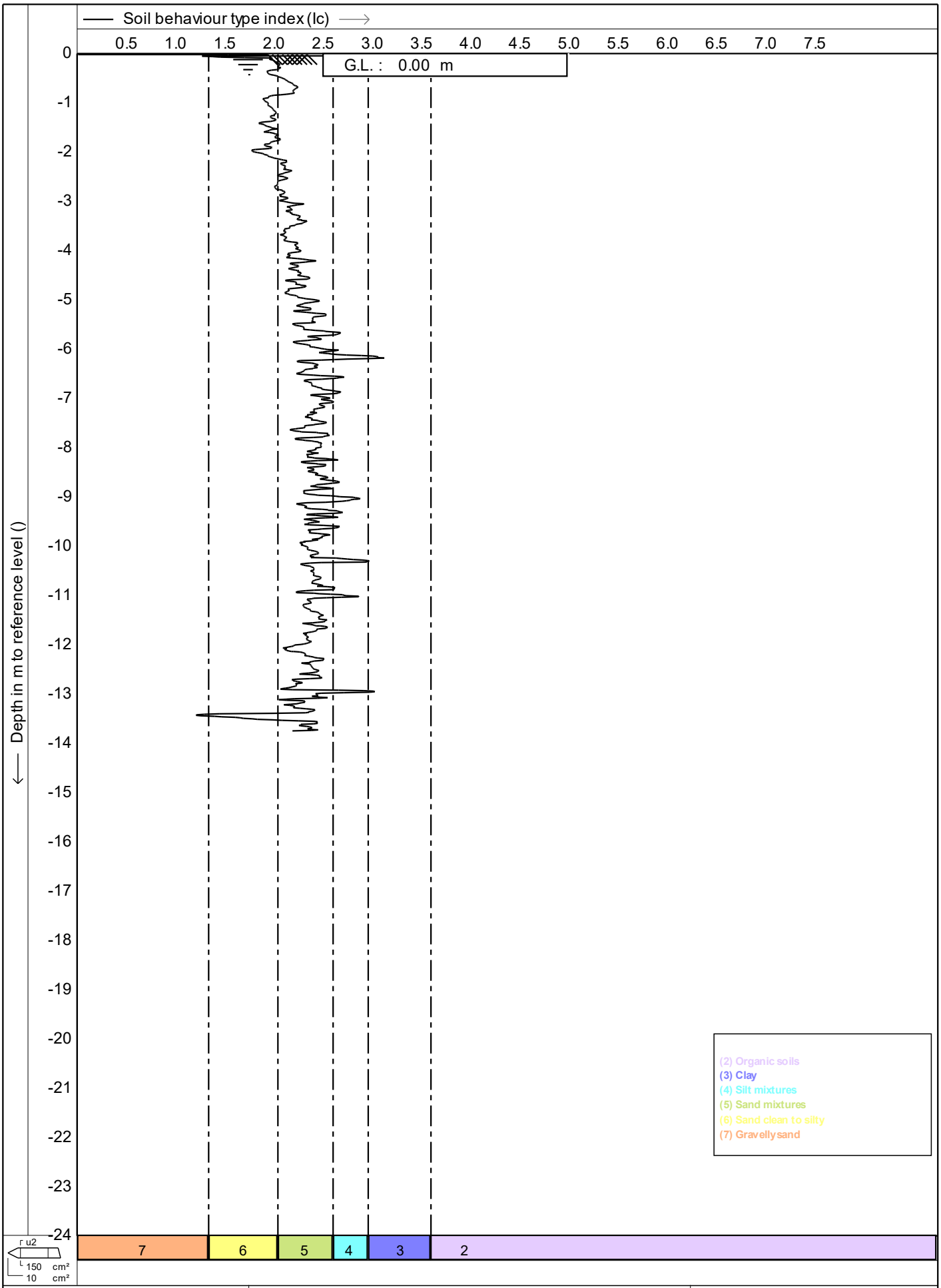
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **017**

8/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

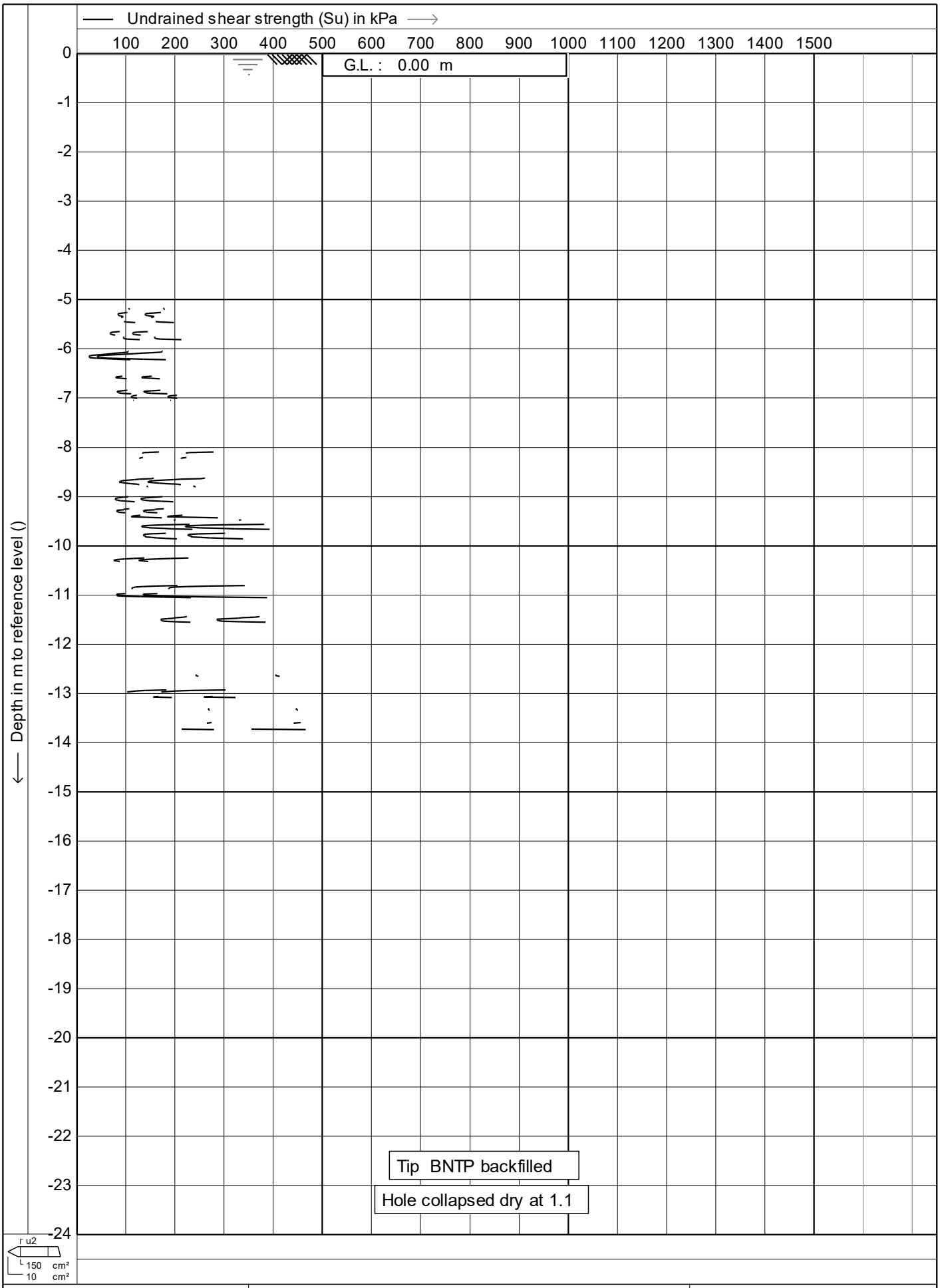
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **017**

9/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

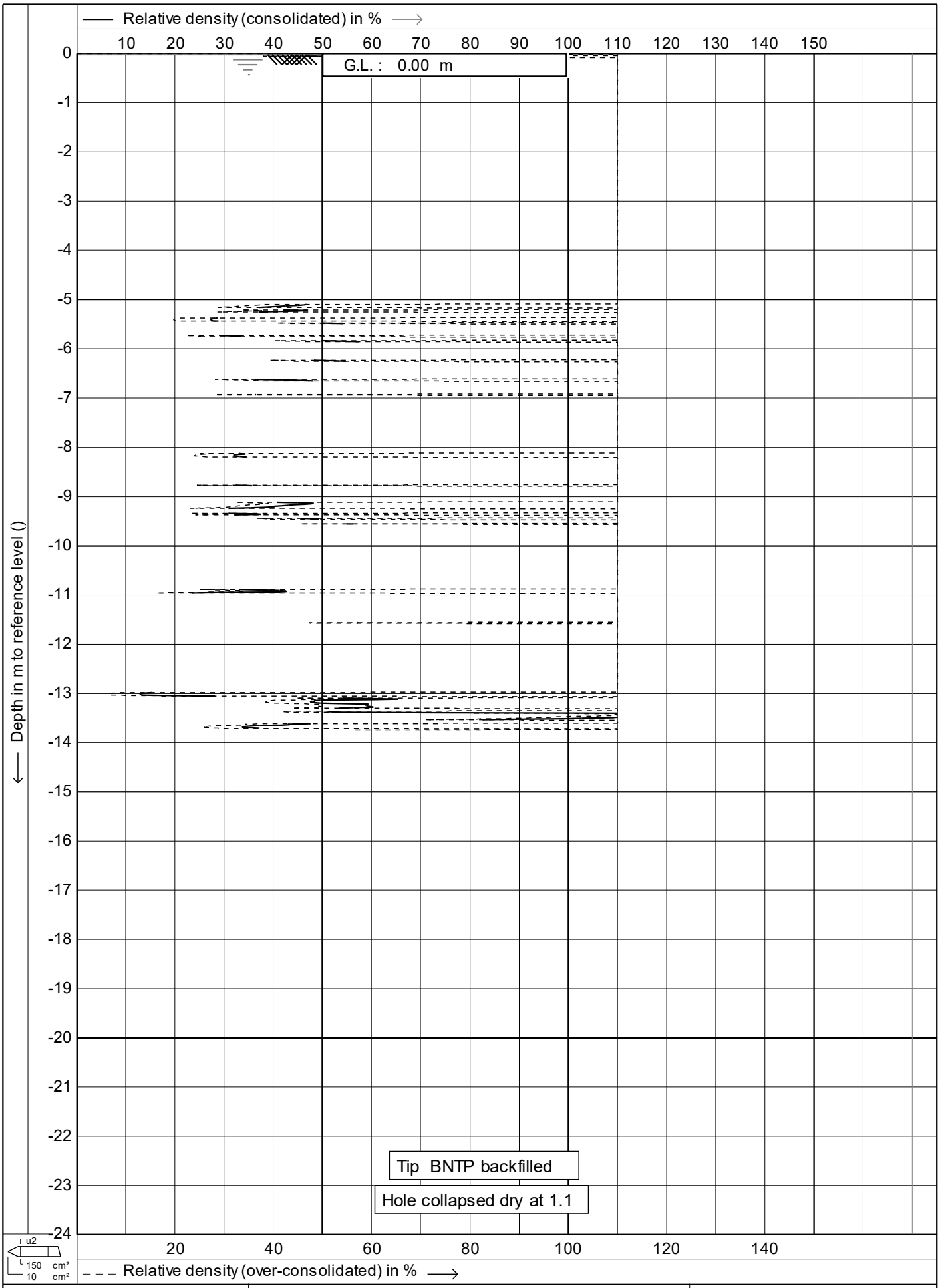
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
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Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

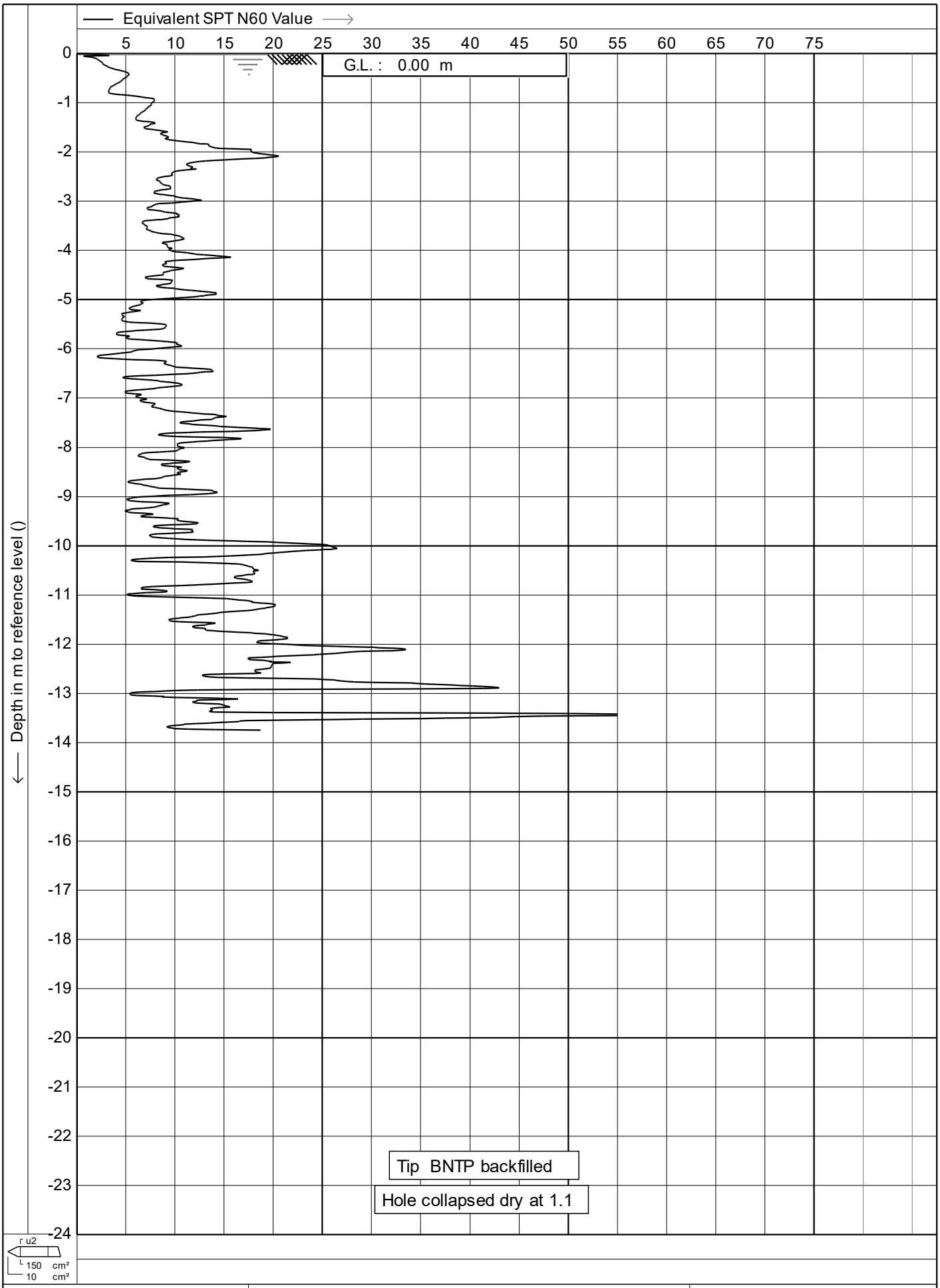
Cone no. : **C10CFIIP.C14426**

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Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

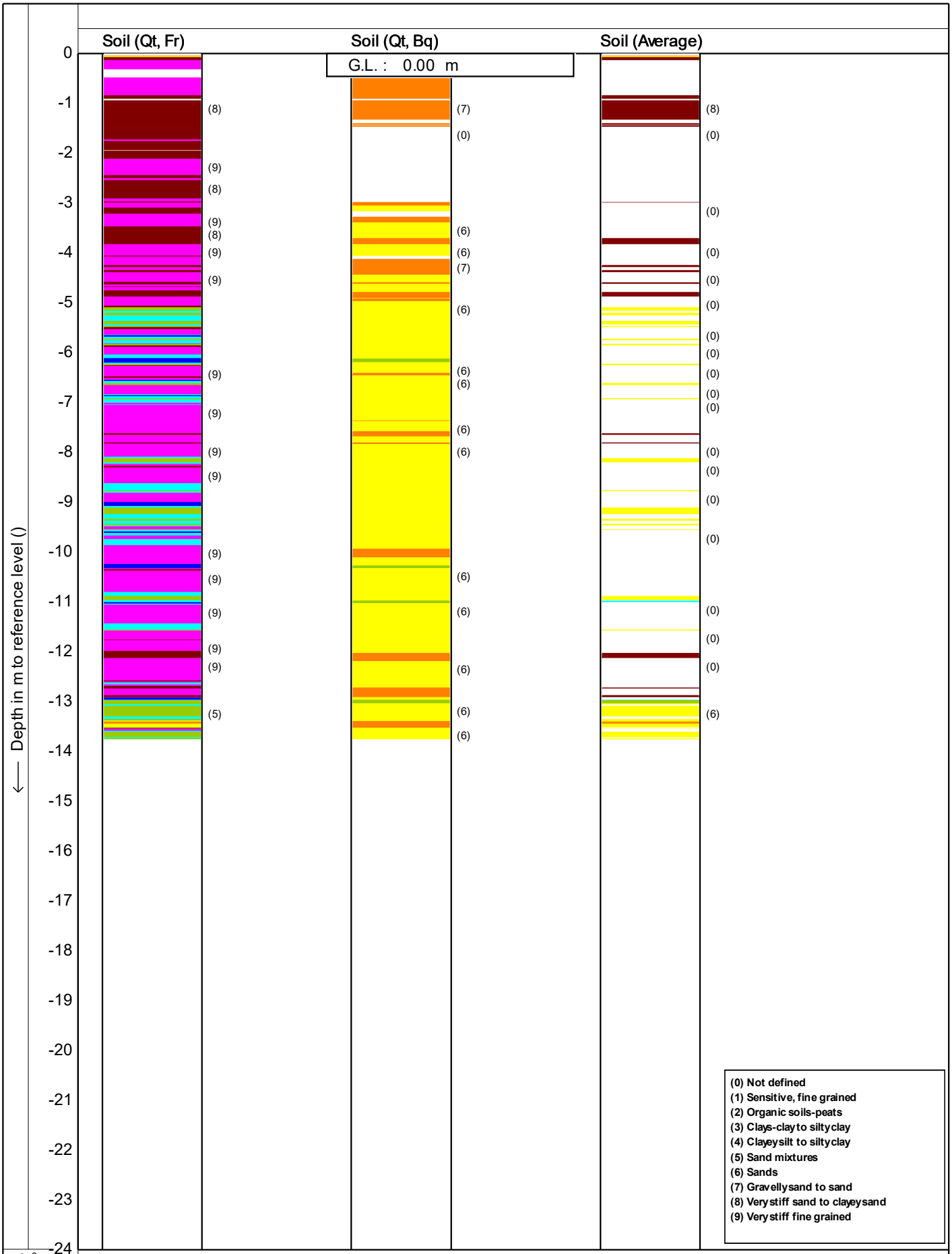
Cone no. : **C10CFIIP.C14426**

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Position: **0, 0**

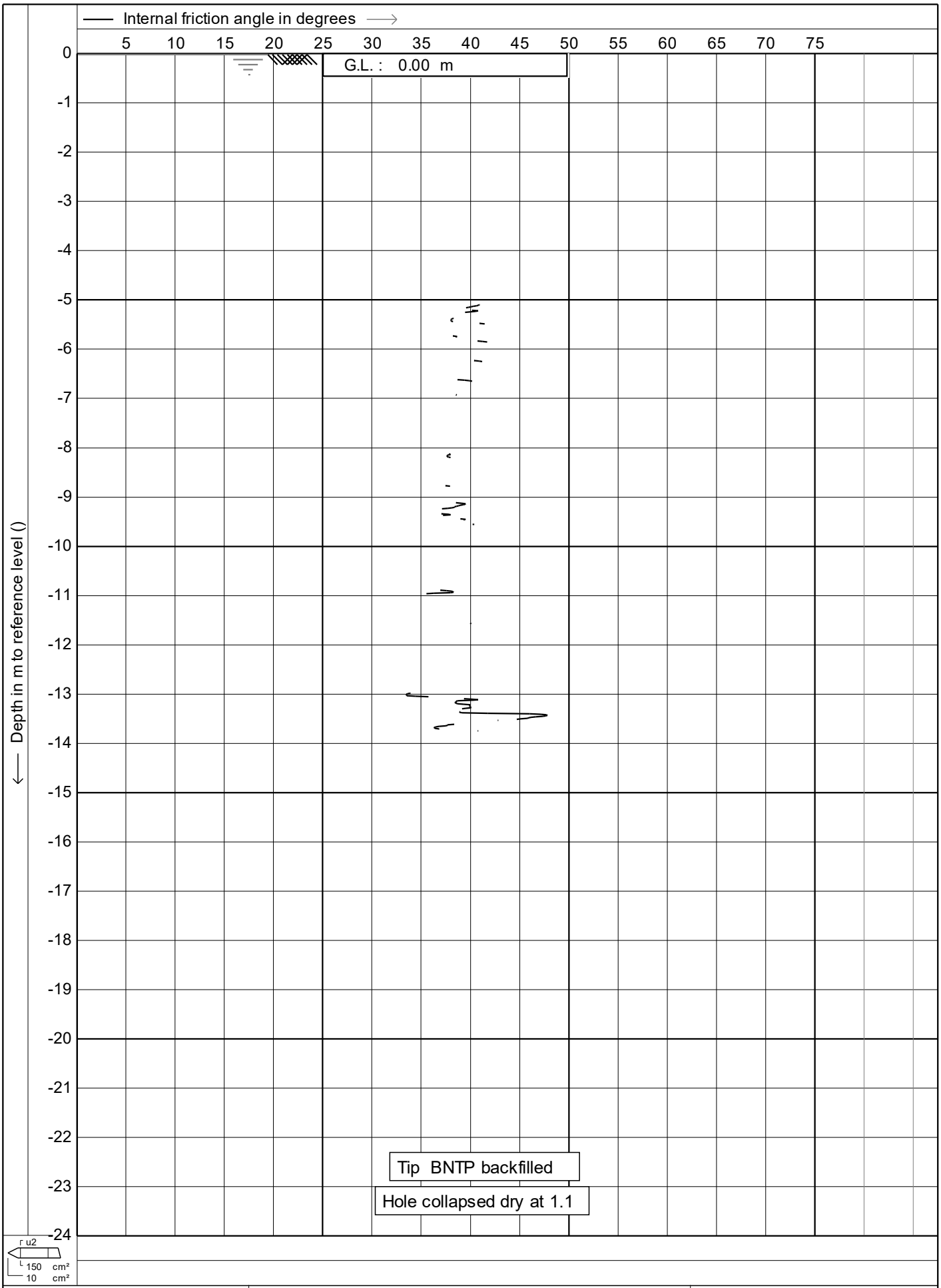
Date : **1/12/2020**

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Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

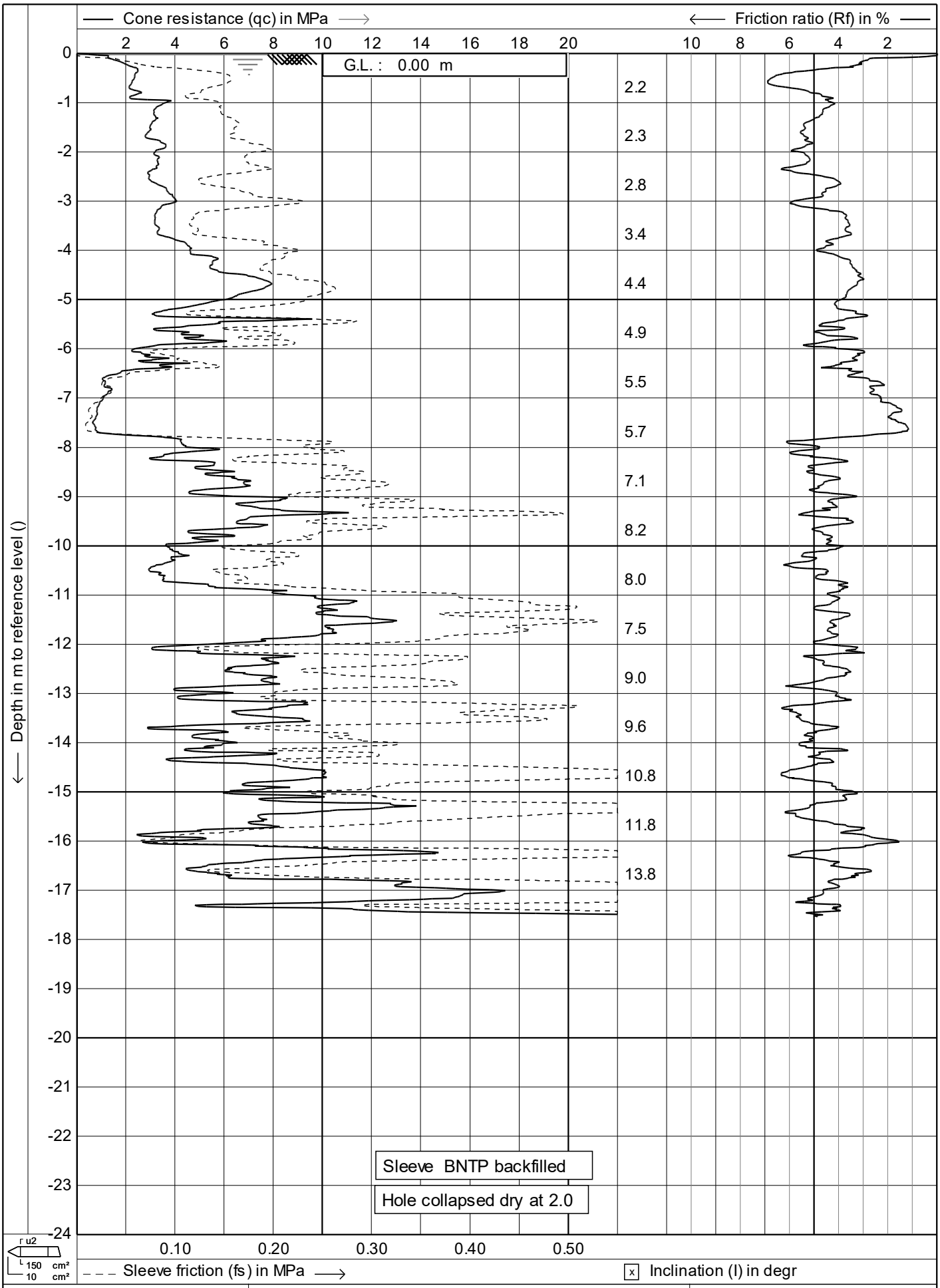
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Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

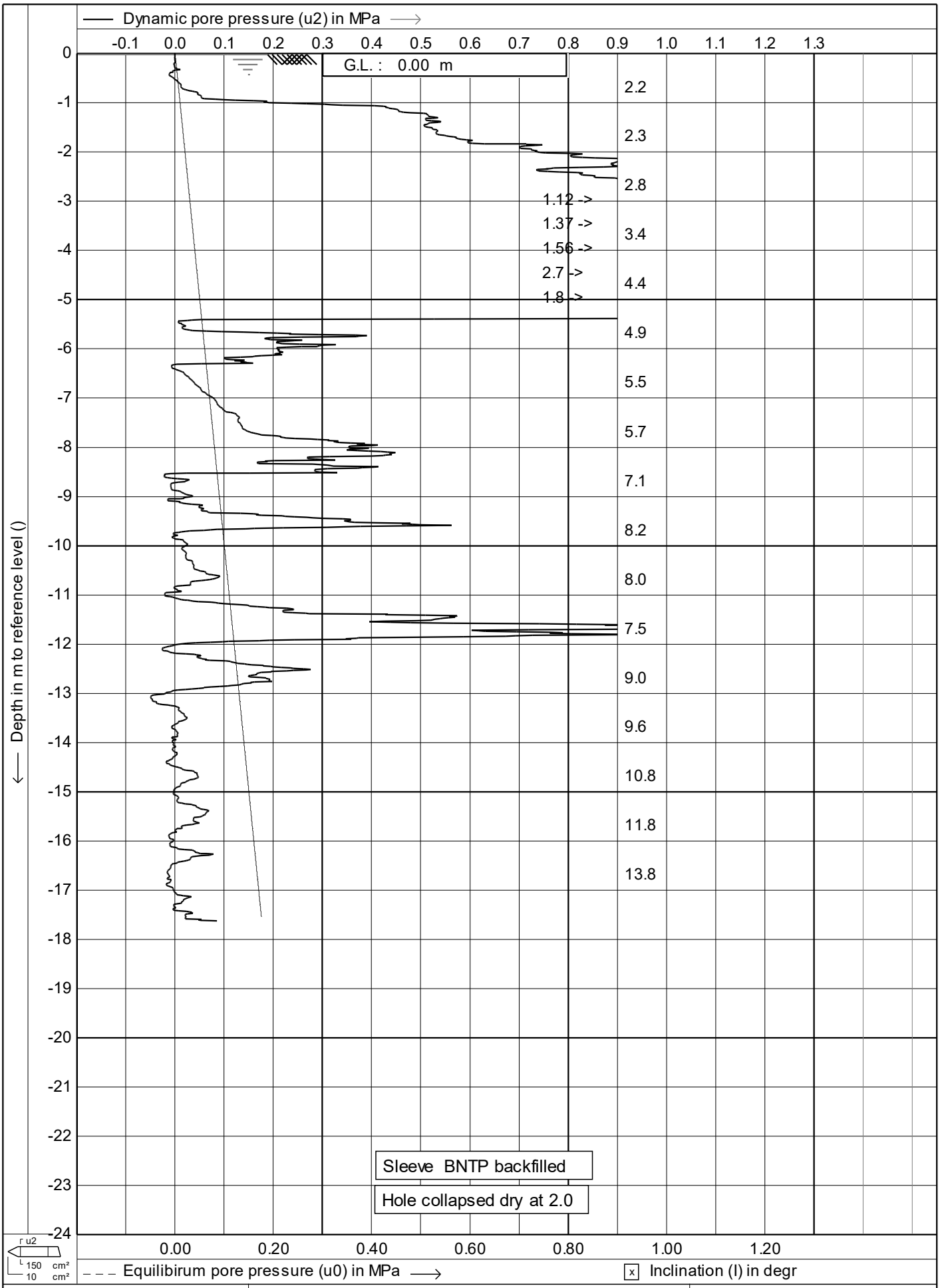
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Position: **0, 0**

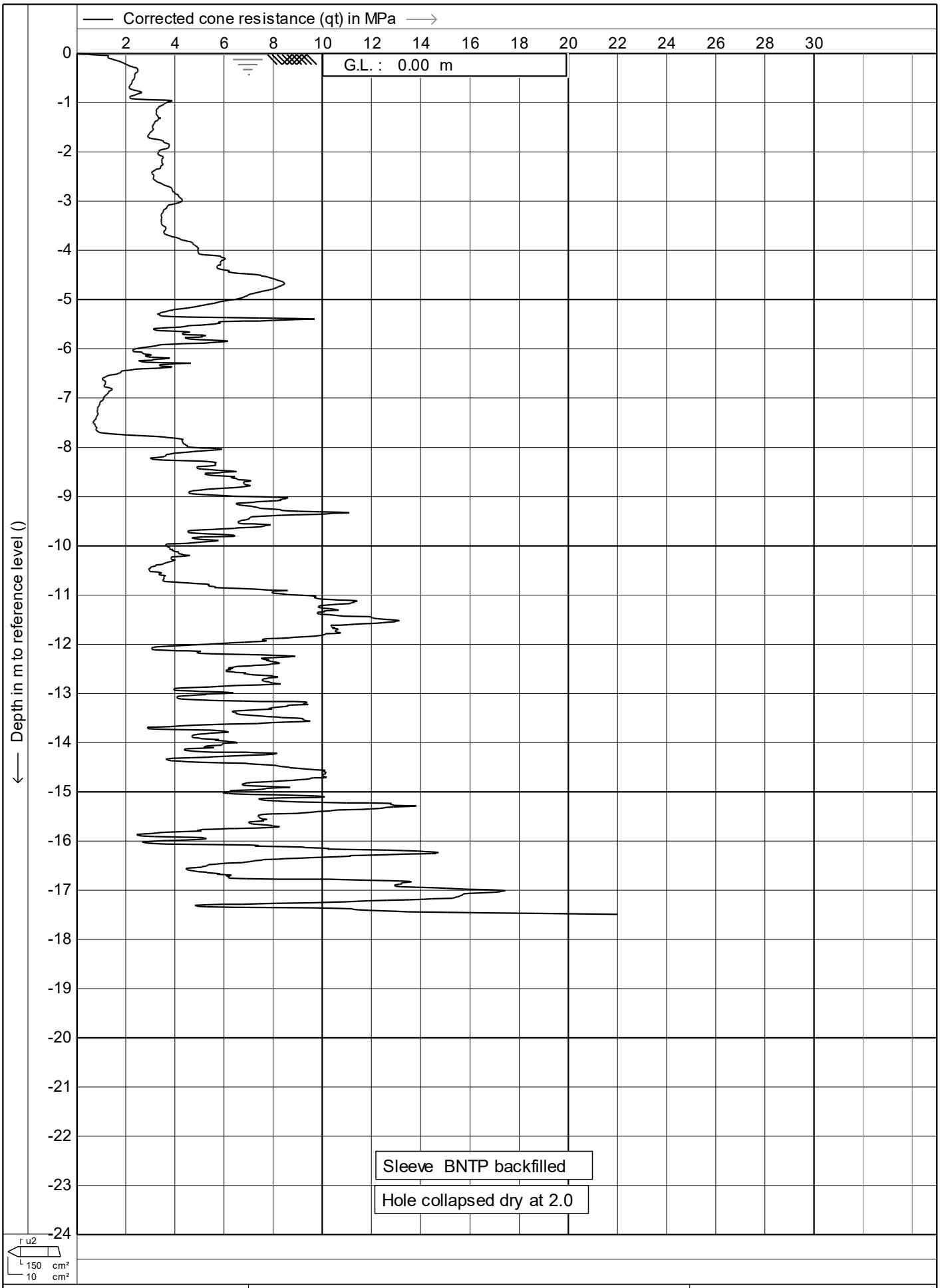
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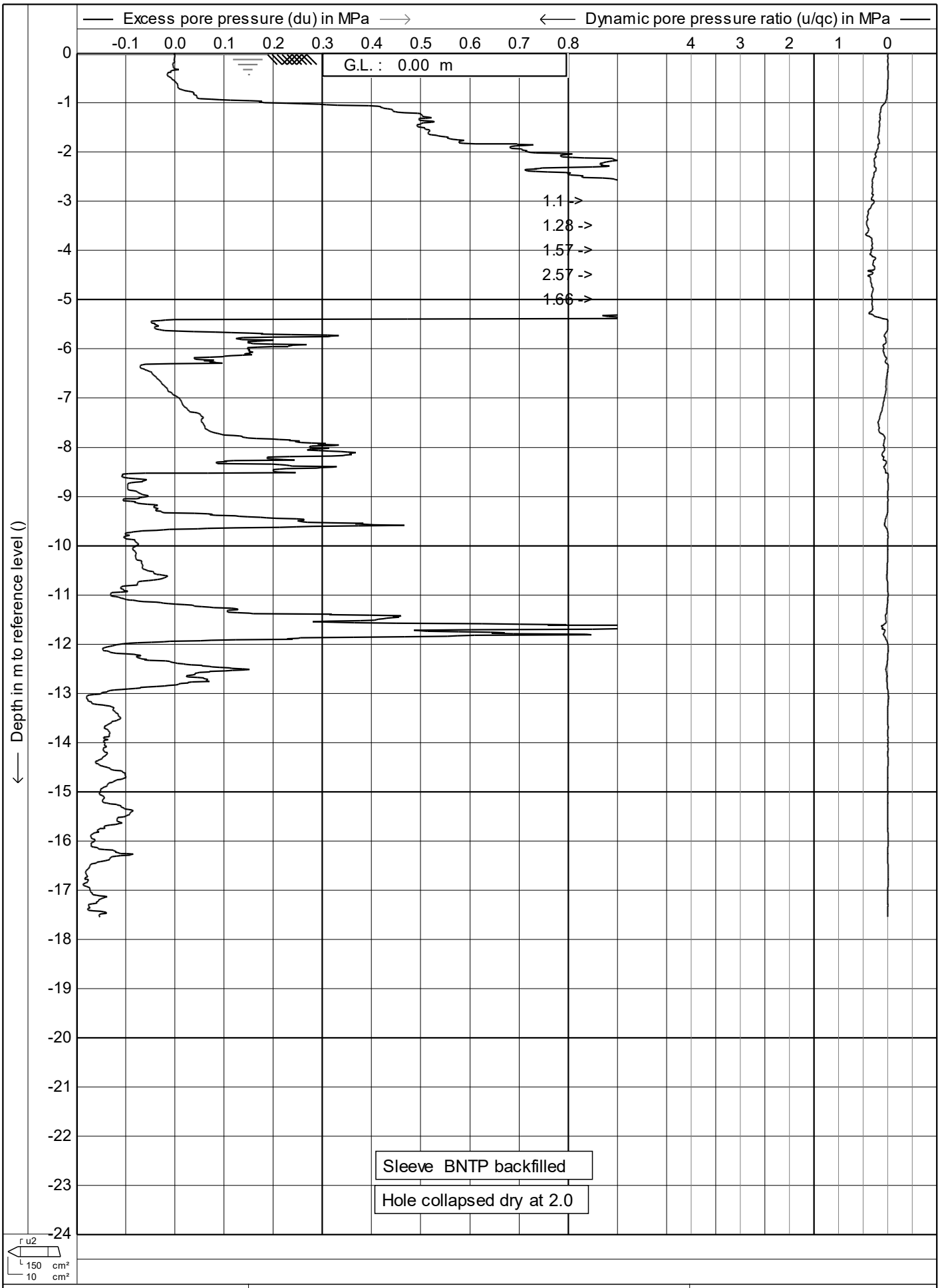
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Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

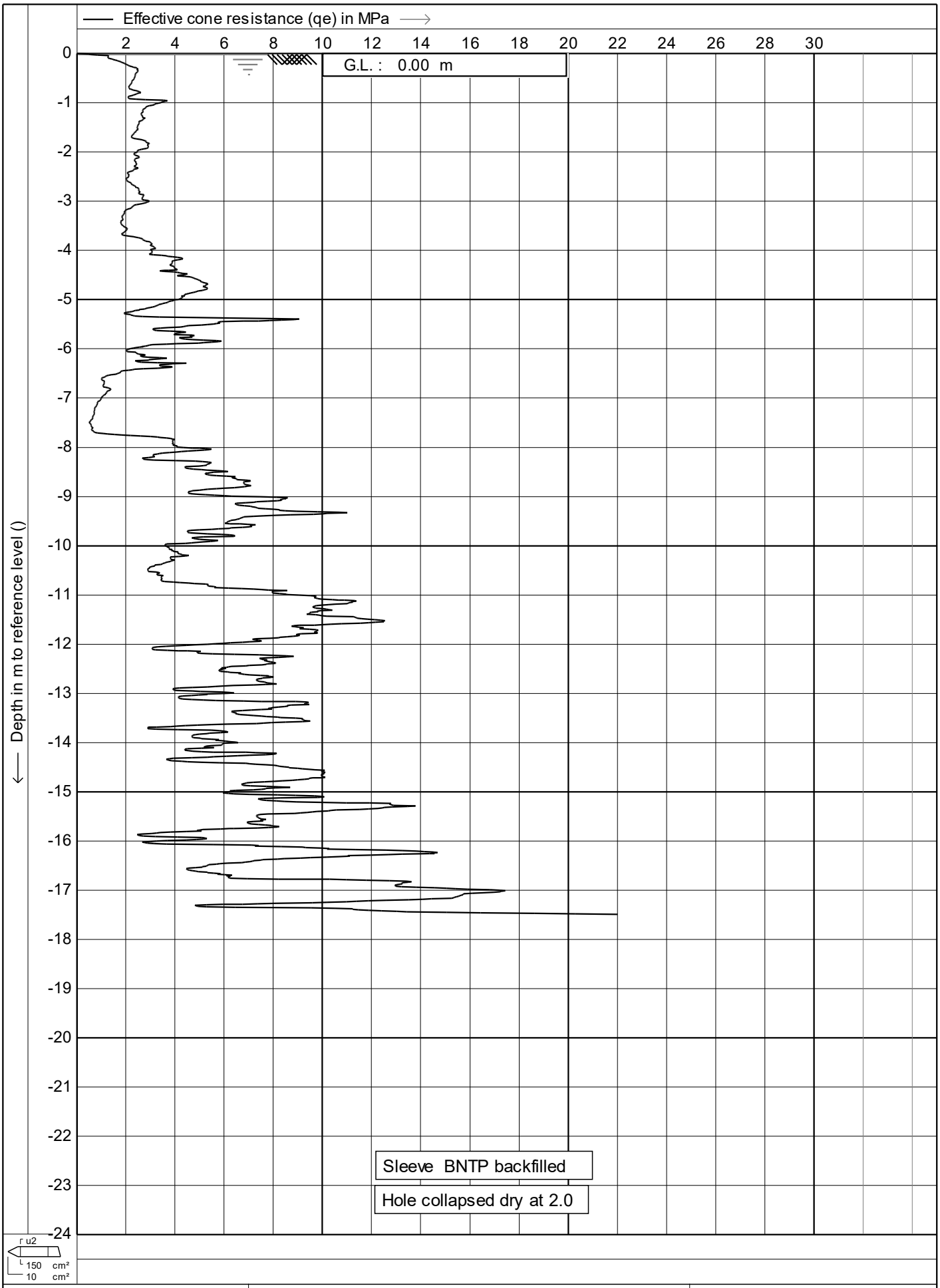
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **018** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

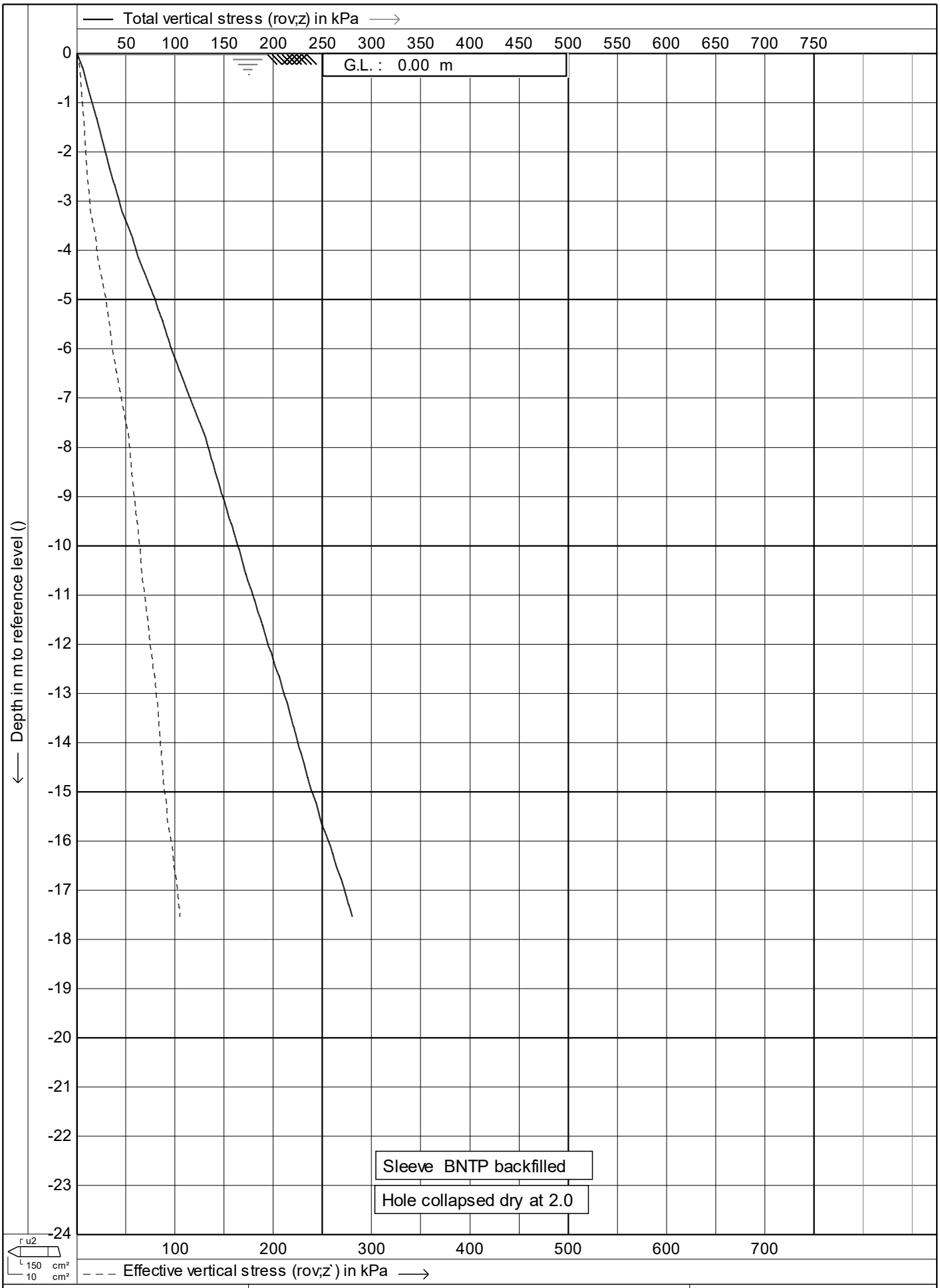
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **018**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

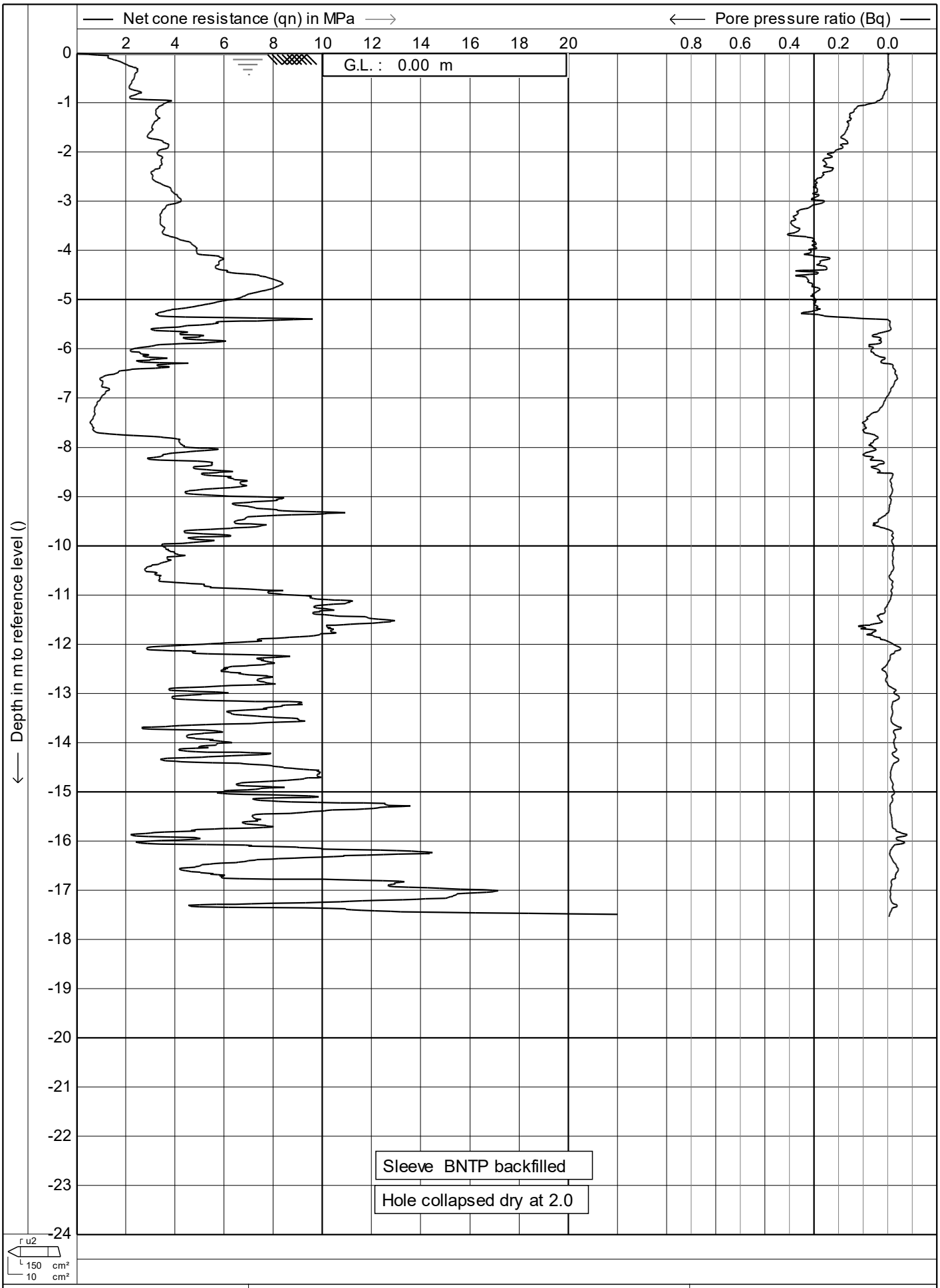
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **1/12/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **018**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

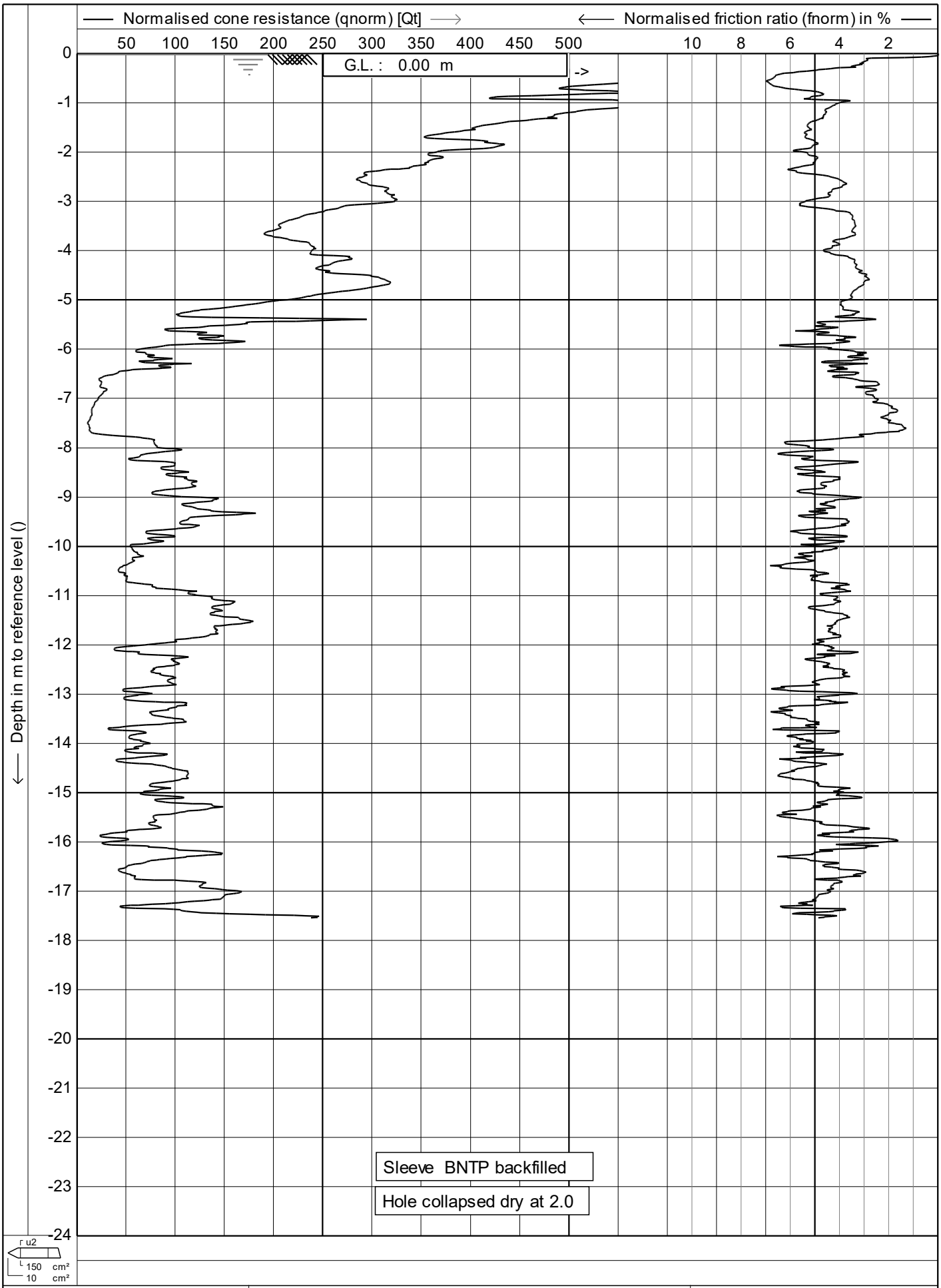
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **018** **7/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

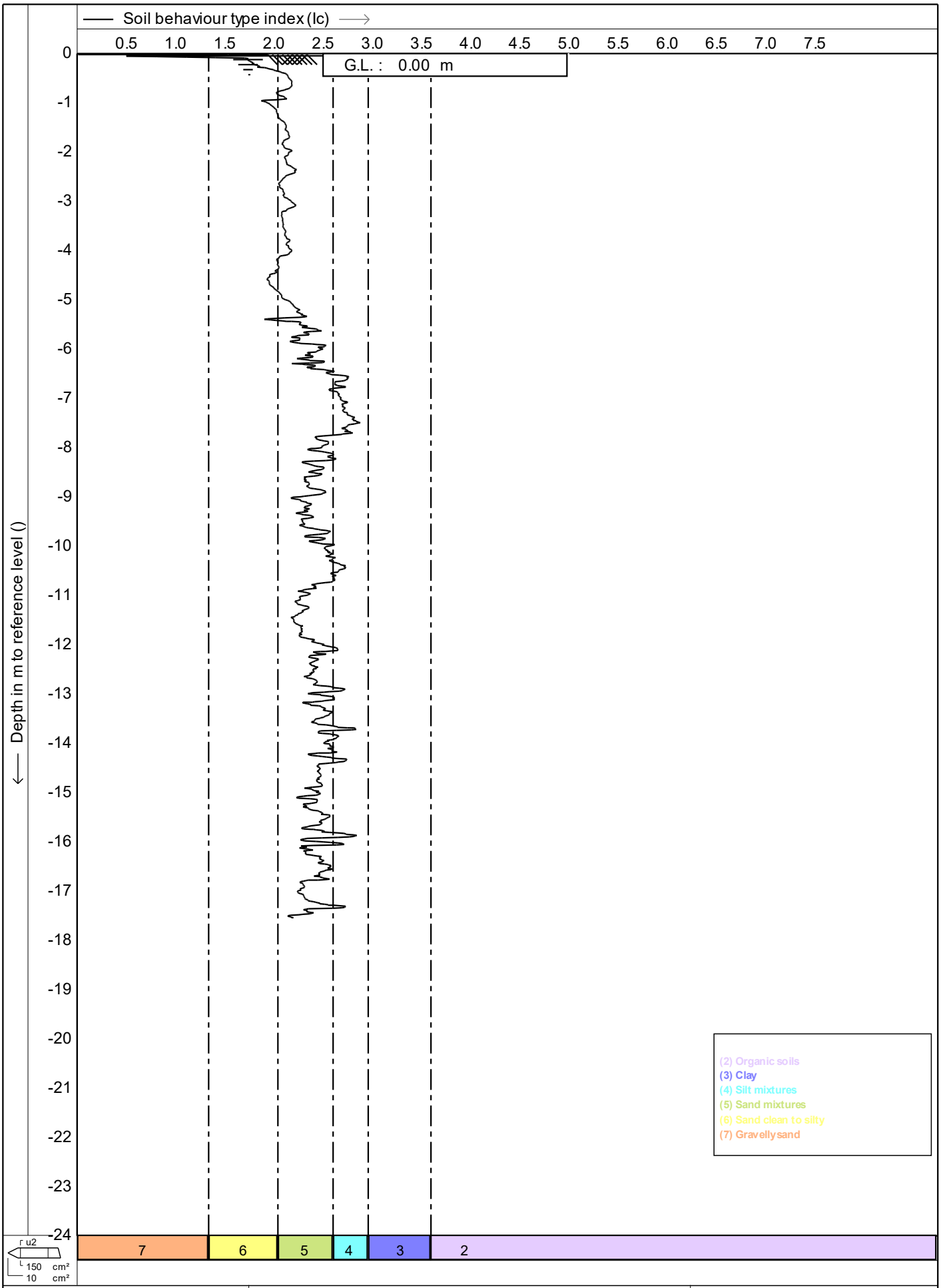
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Project no. : **05AU7**

CPT no. : **018**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

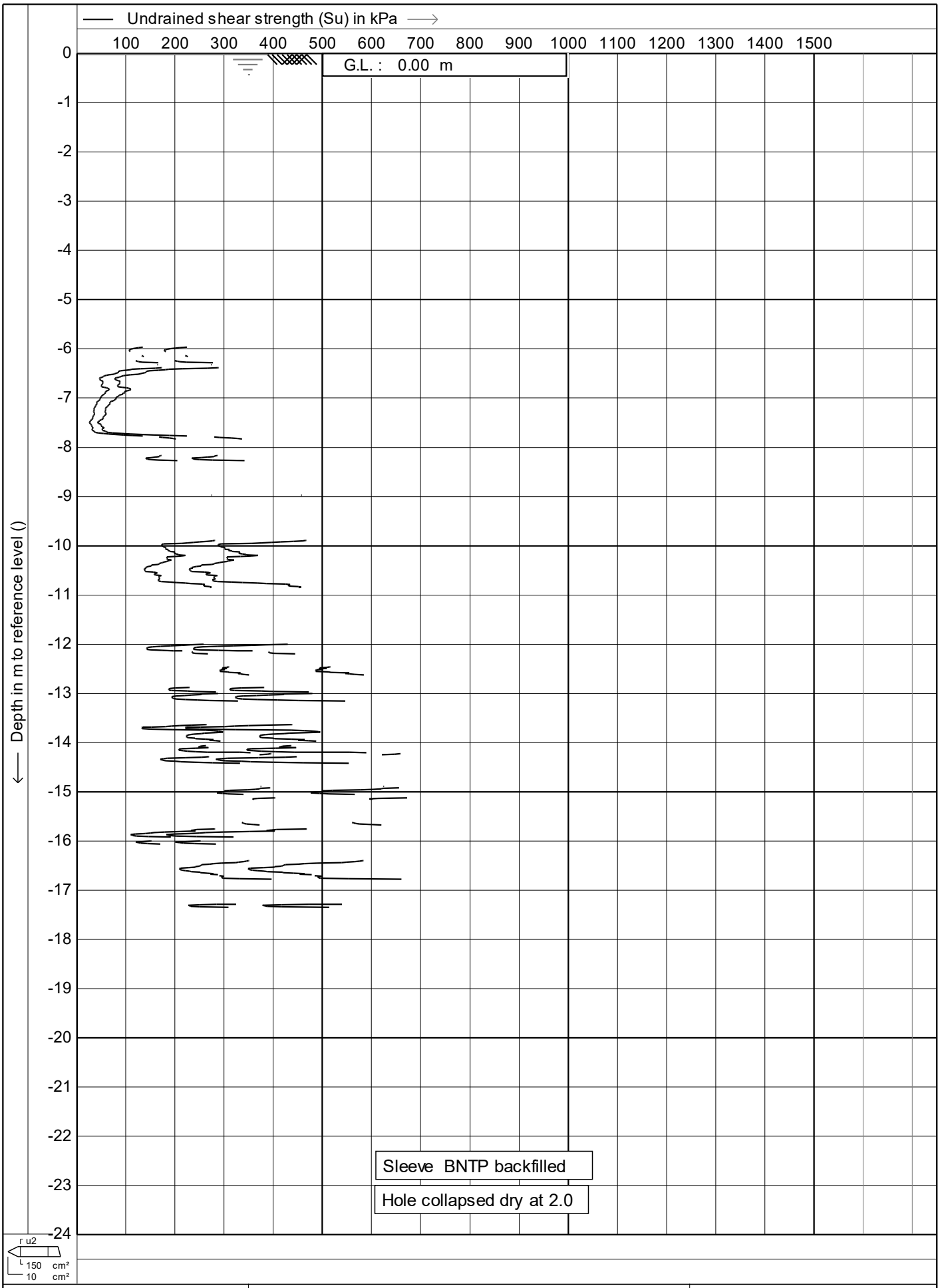
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **018**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

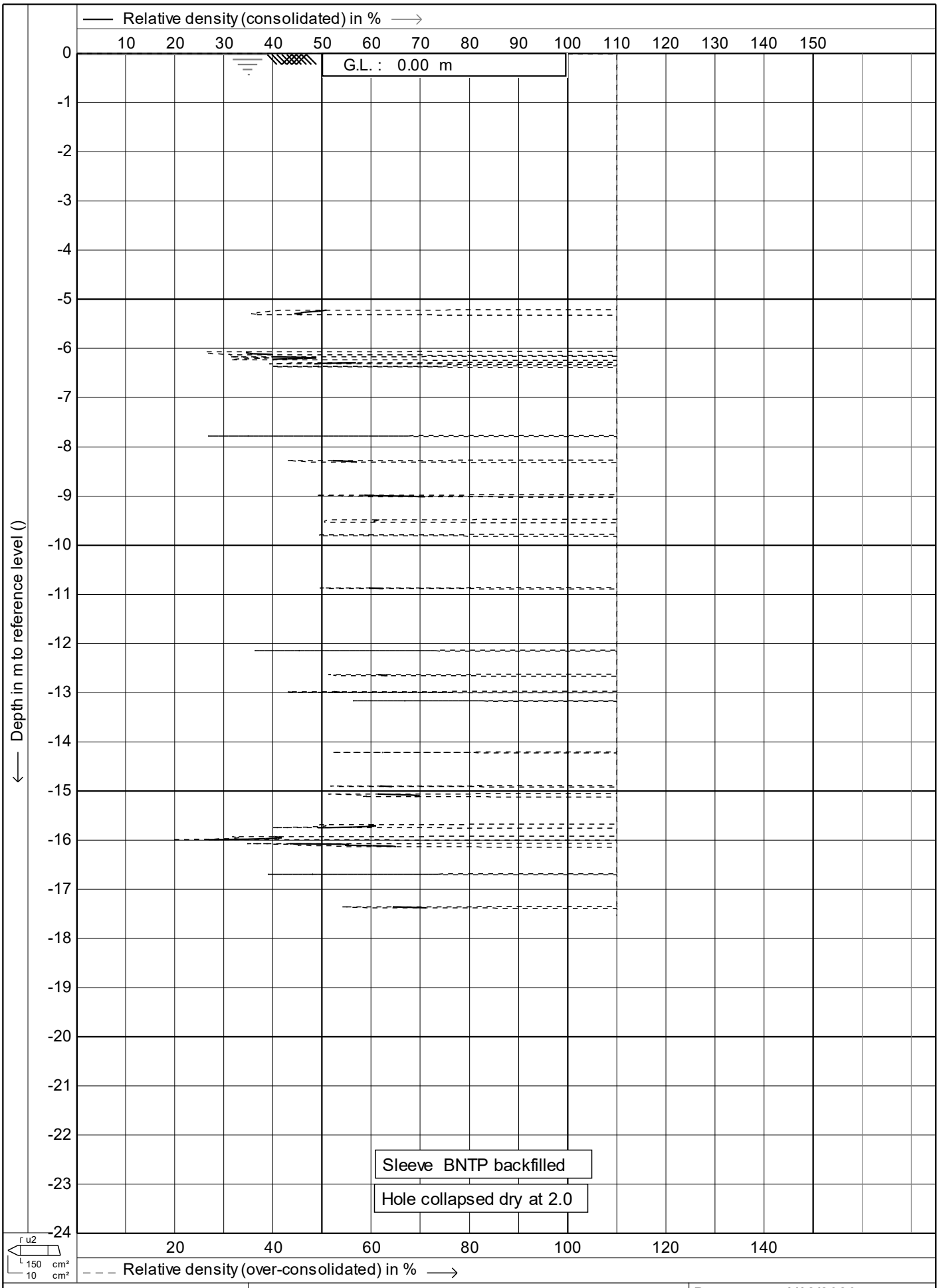
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Project no. : **05AU7**

CPT no. : **018**

10/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

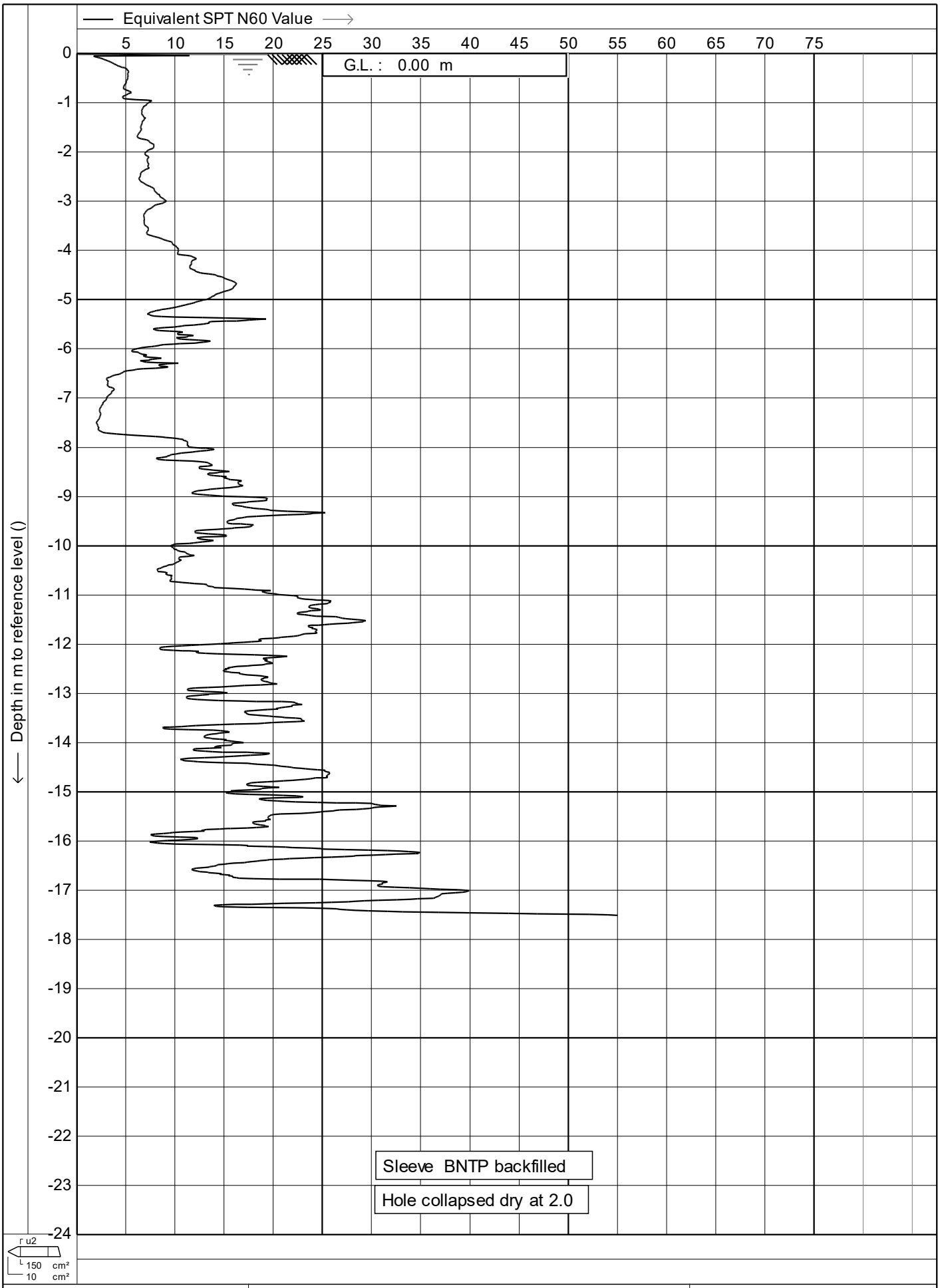
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Project no. : **05AU7**

CPT no. : **018**

11/14

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

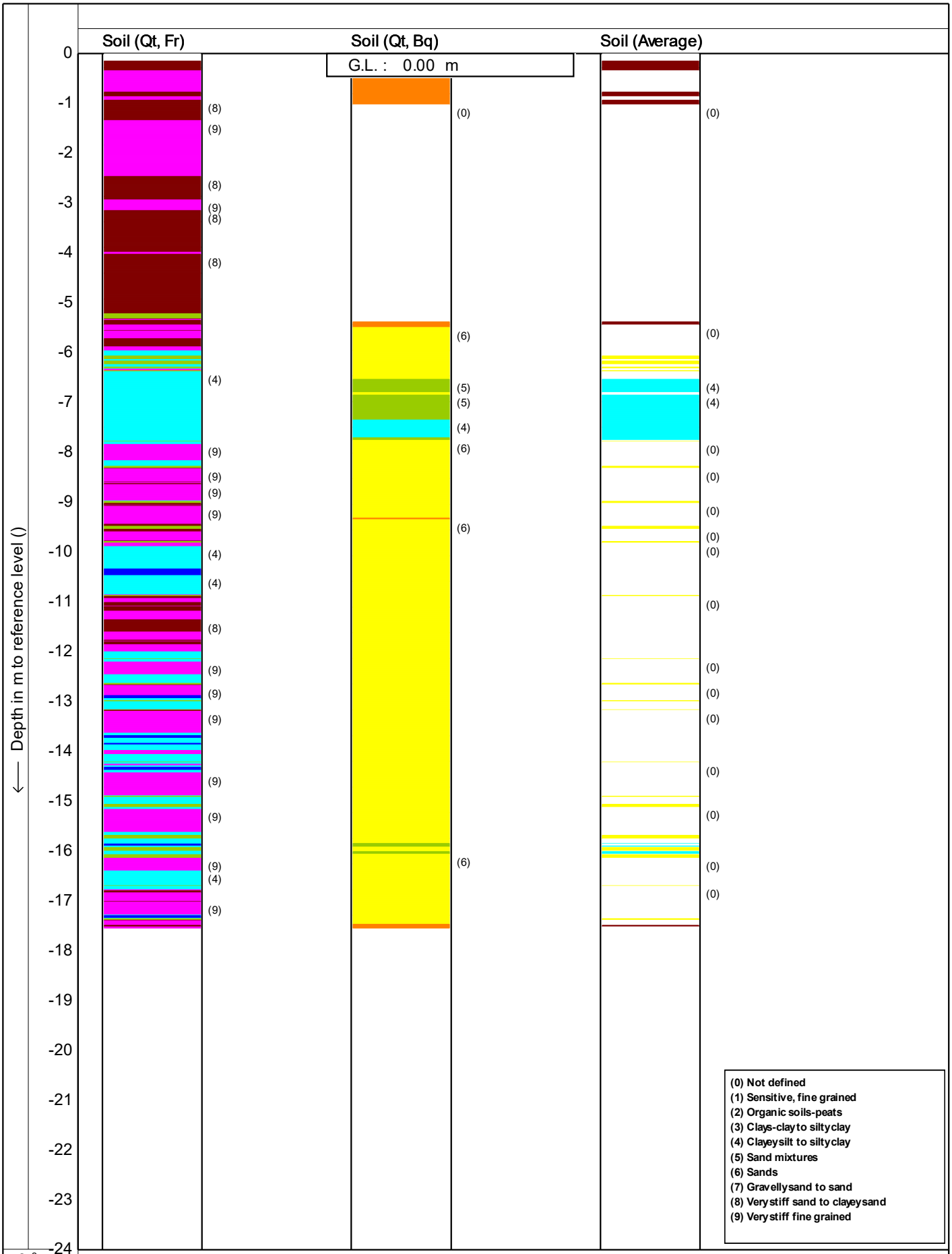
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Project no. : **05AU7**

CPT no. : **018**

12/14

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

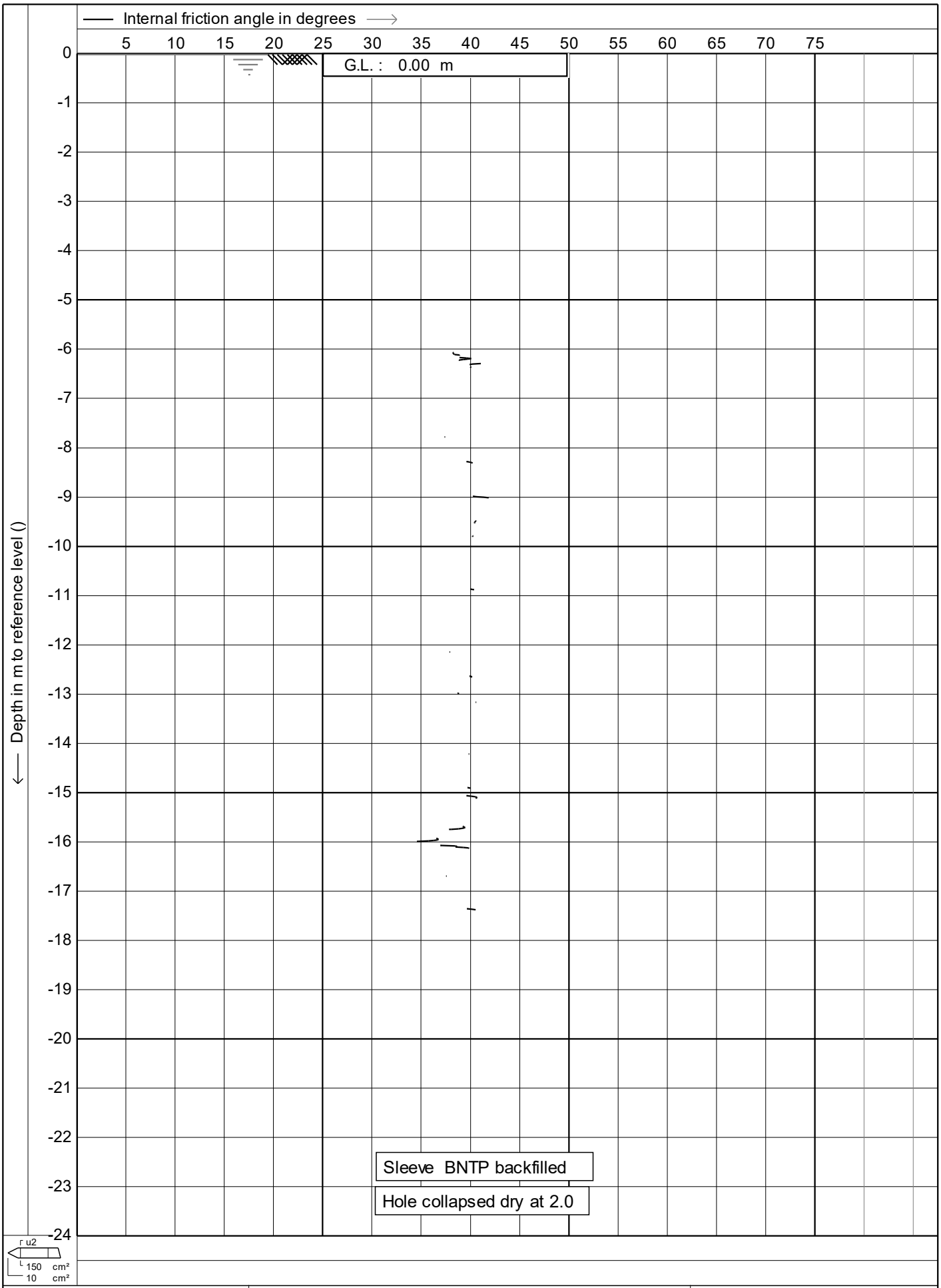
Date : **1/12/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **018**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **1/12/2020**

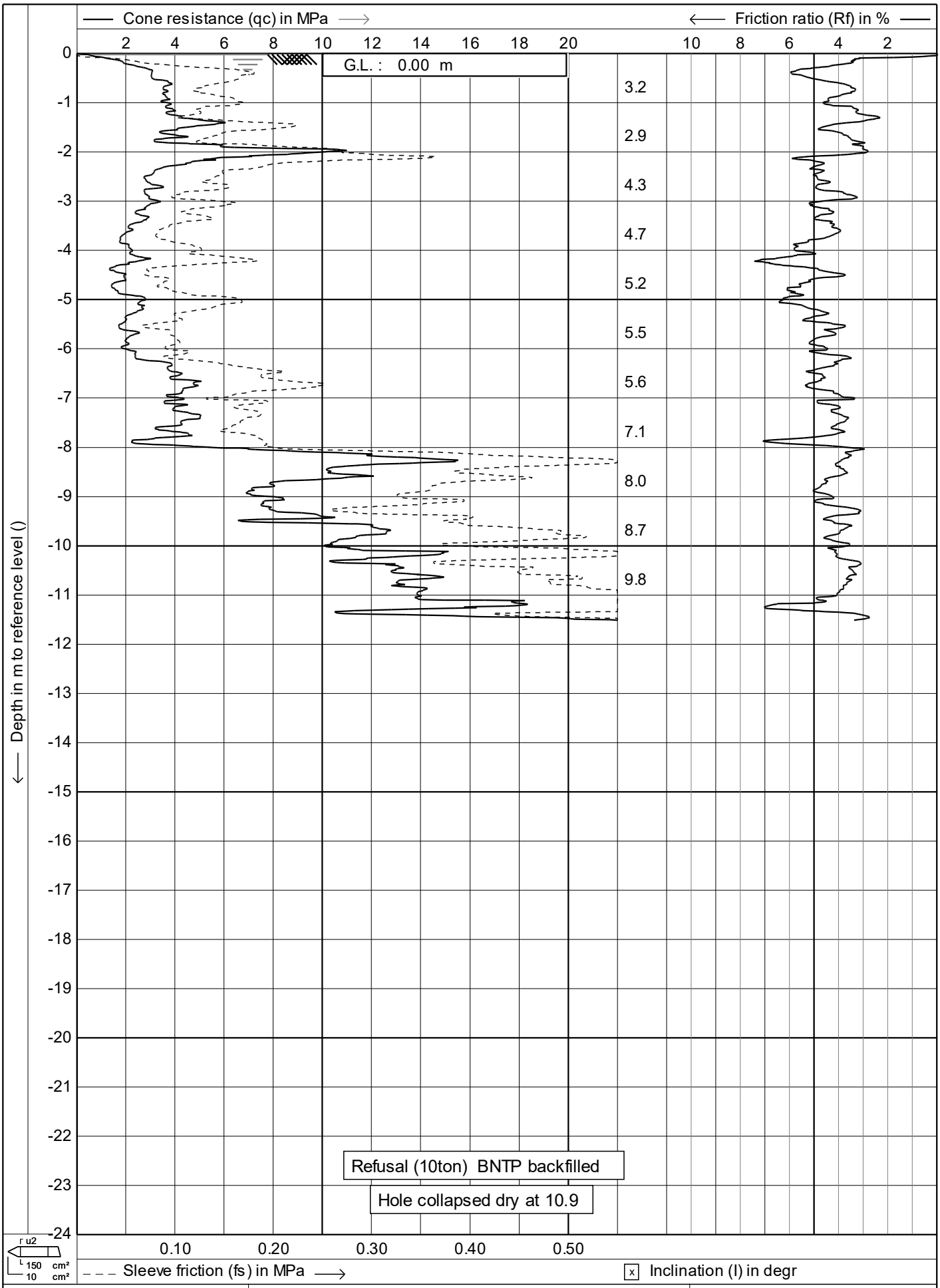
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Project no. : **05AU7**

CPT no. : **018**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

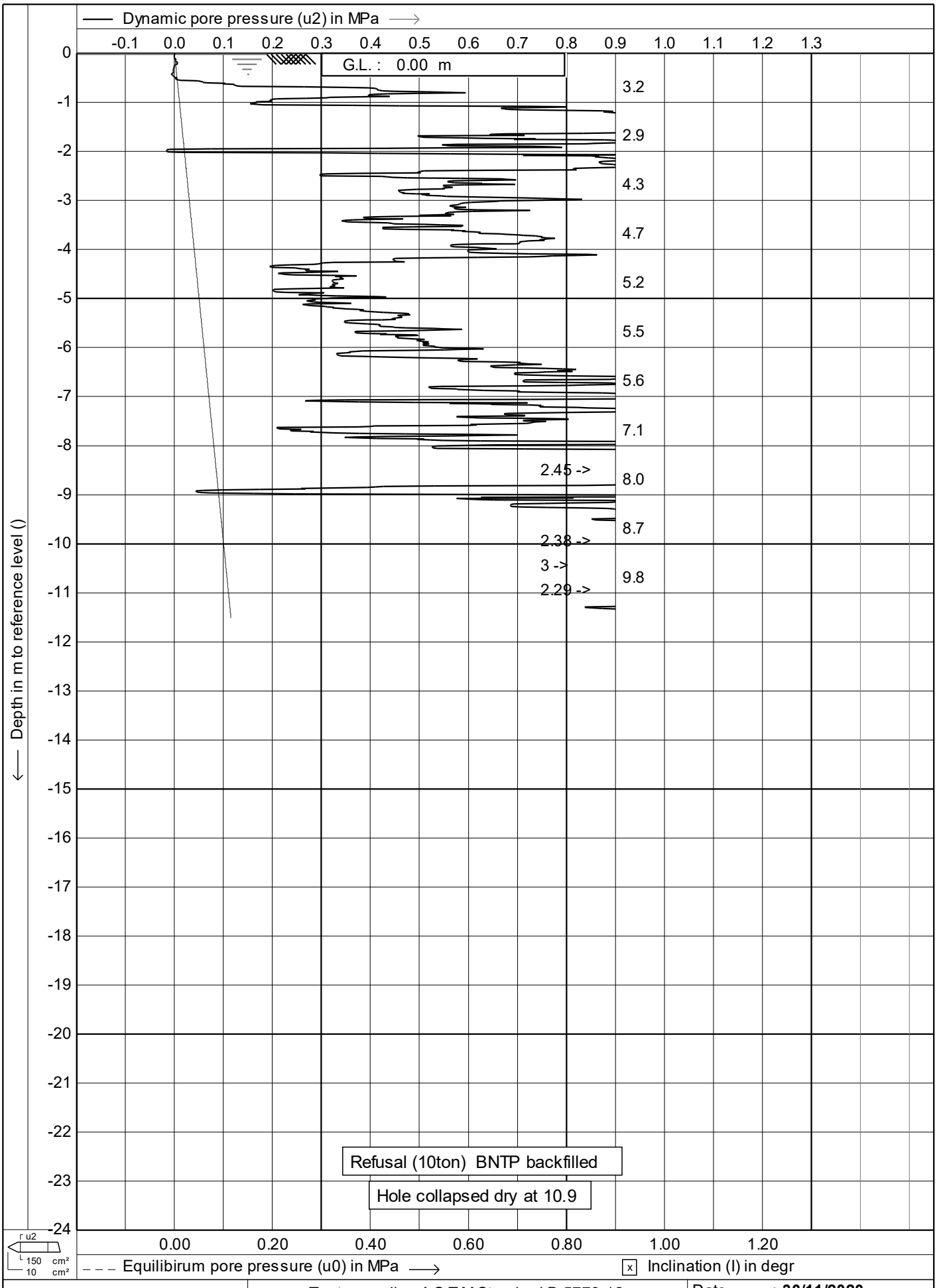
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Project no. : **05AU7**

CPT no. : **019**

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Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

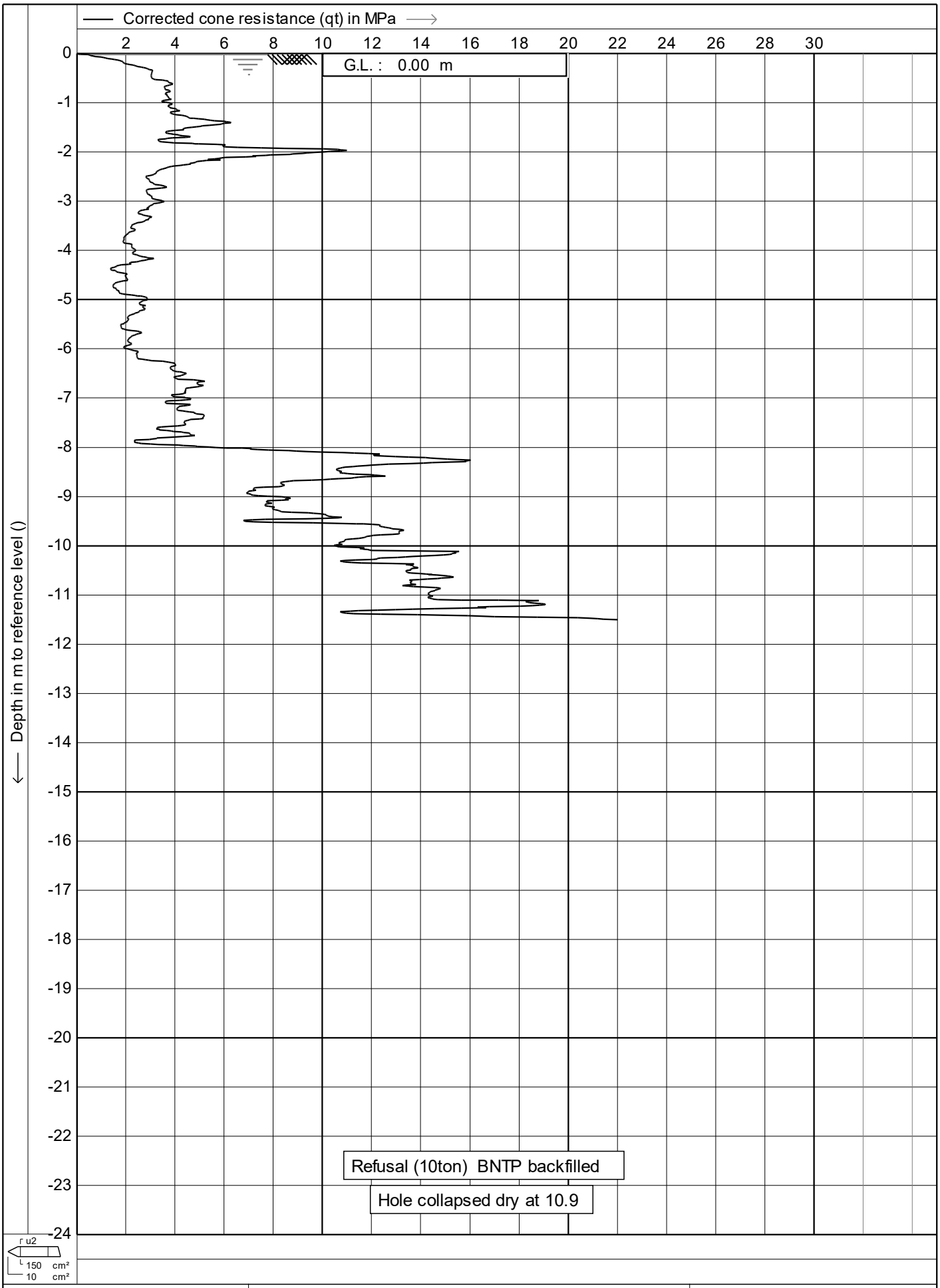
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **019**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

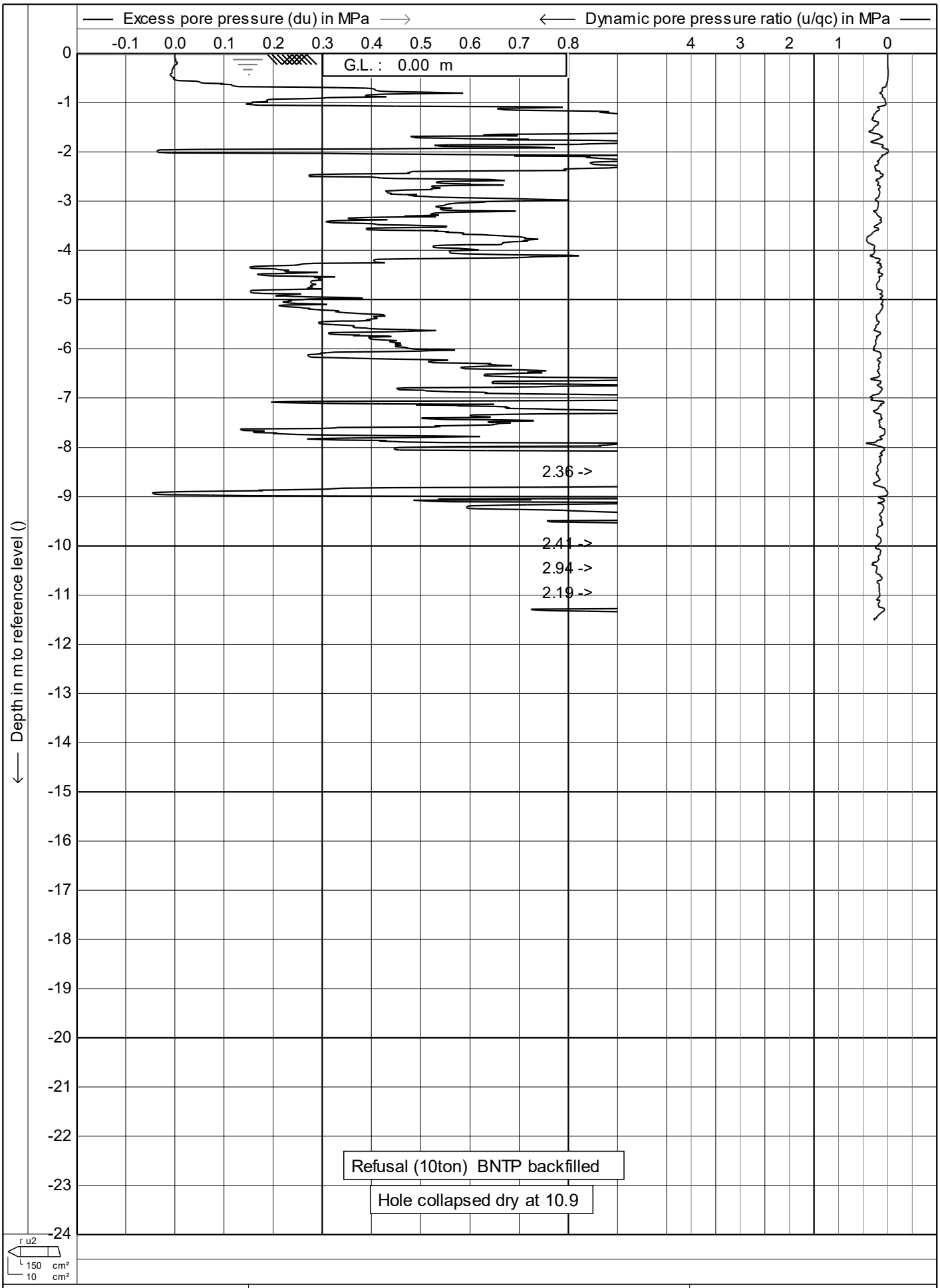
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Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

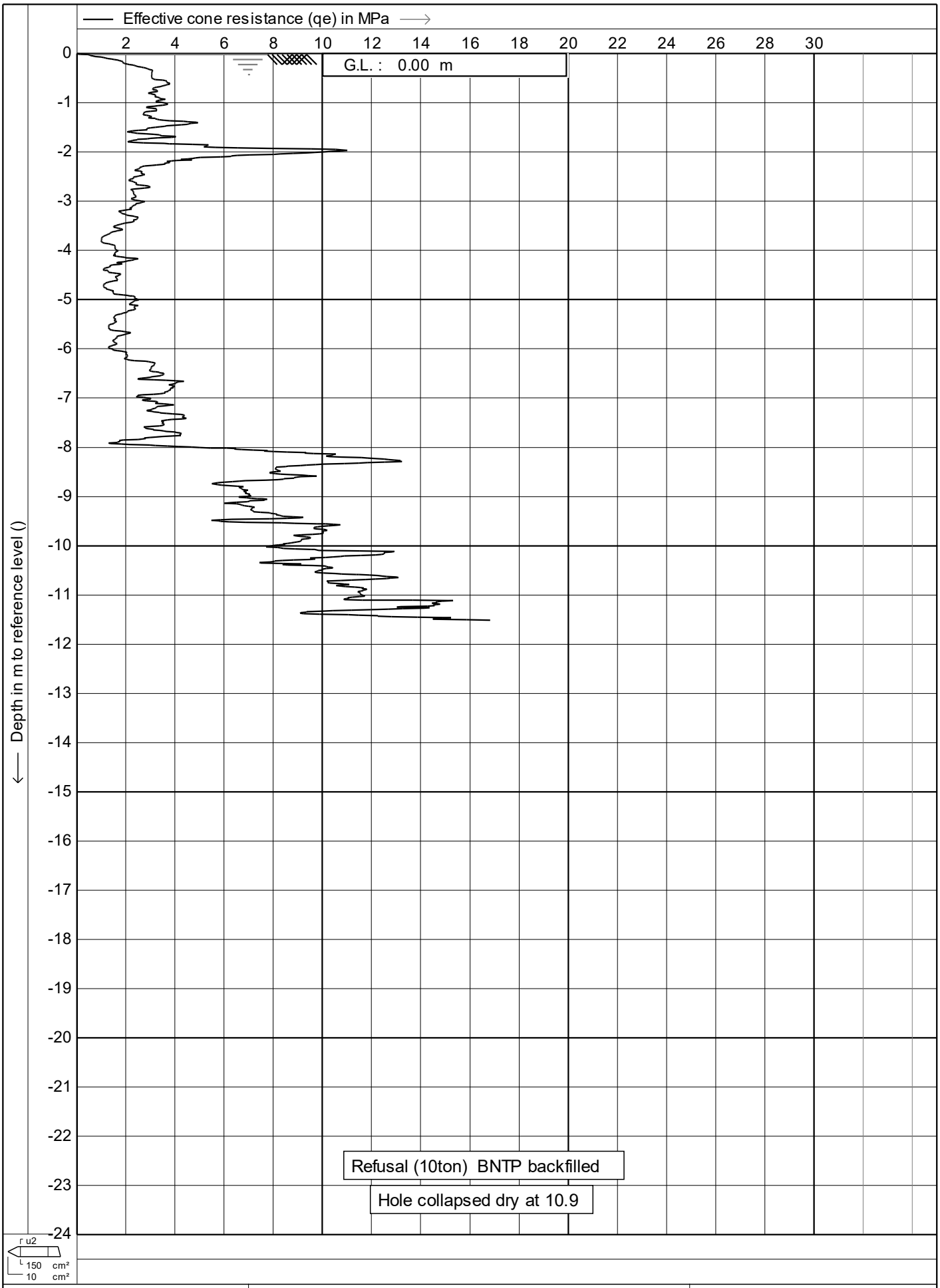
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **019** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

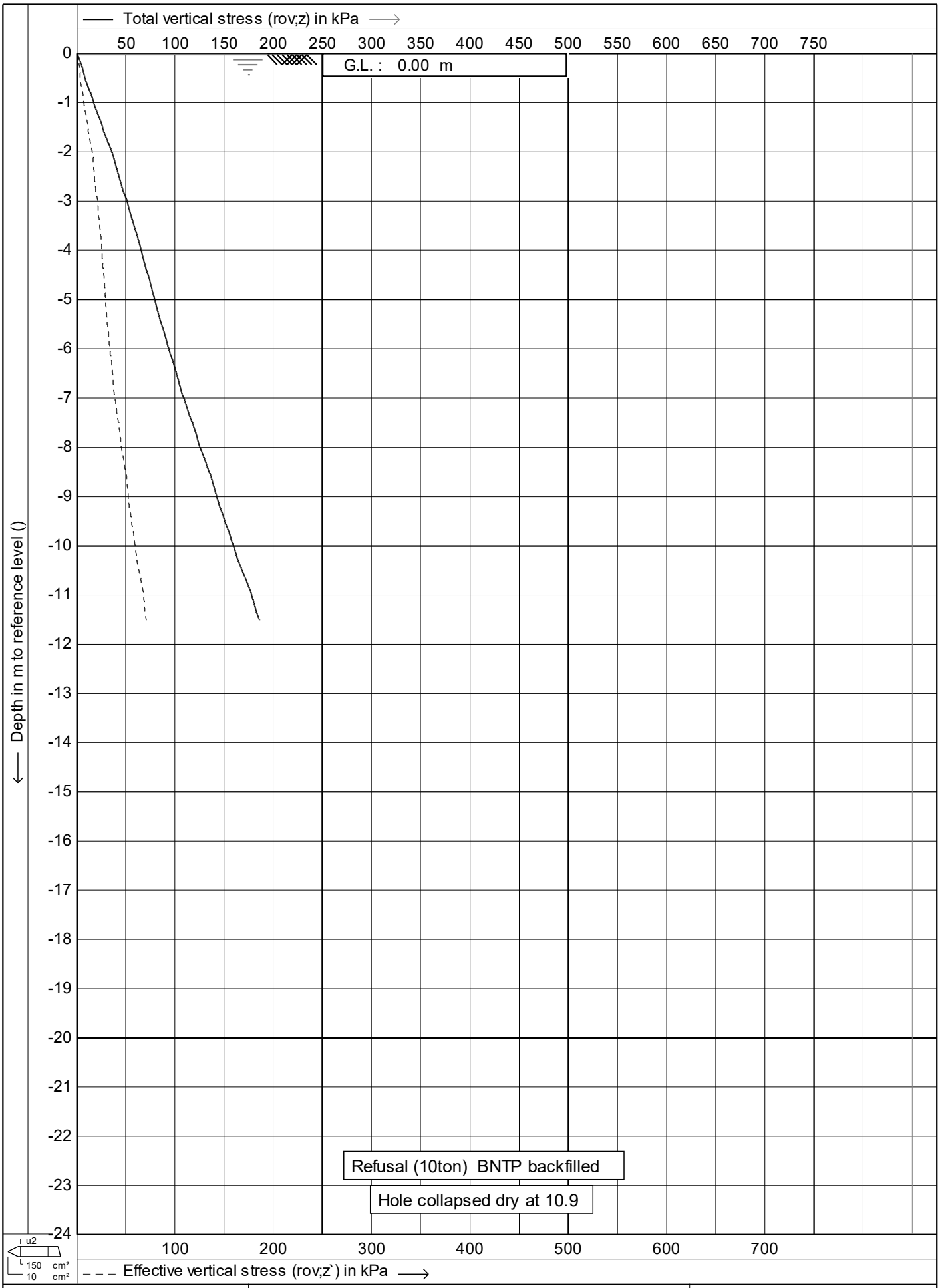
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Project no. : **05AU7**

CPT no. : **019**

5/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

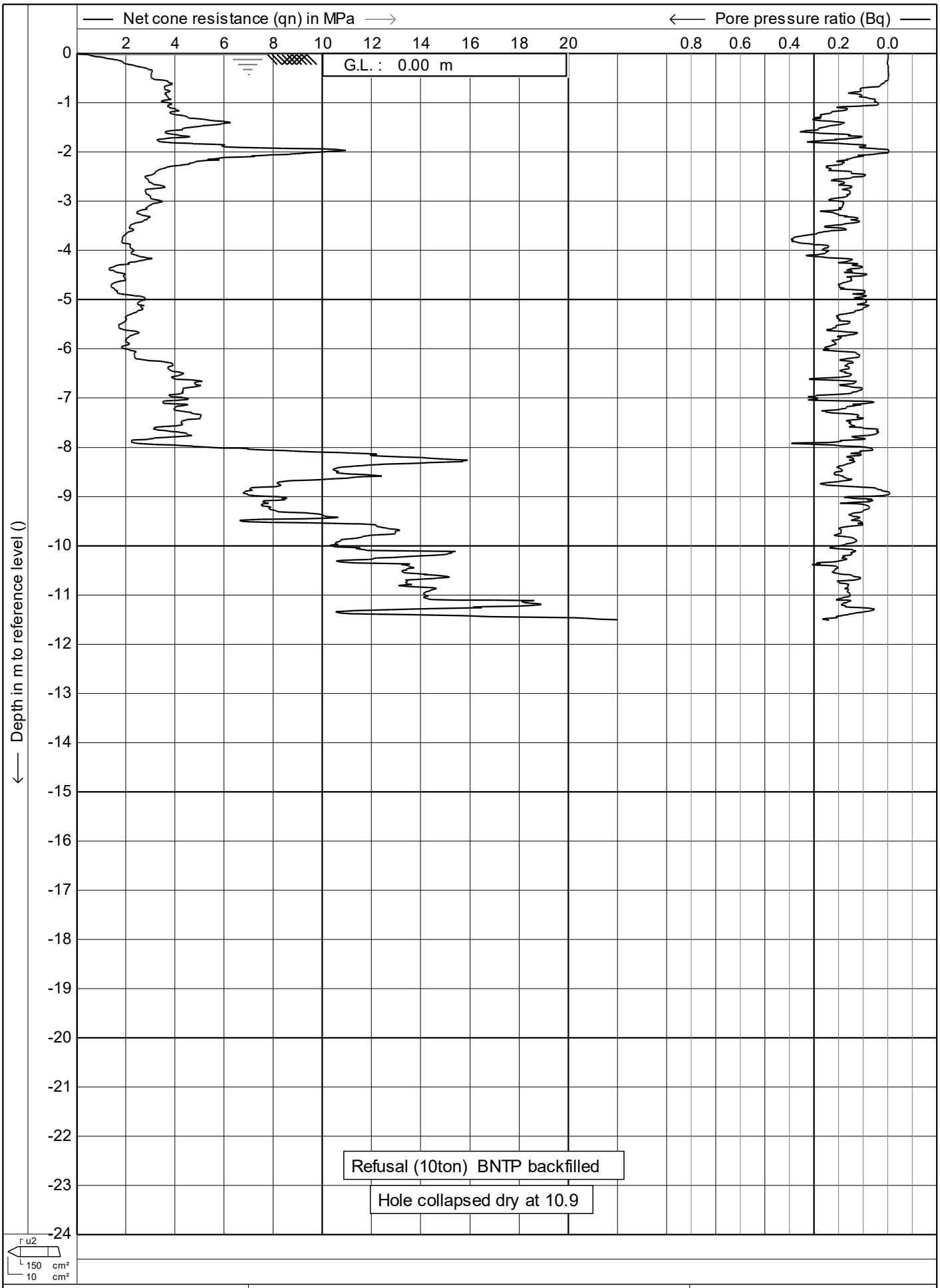
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **019**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

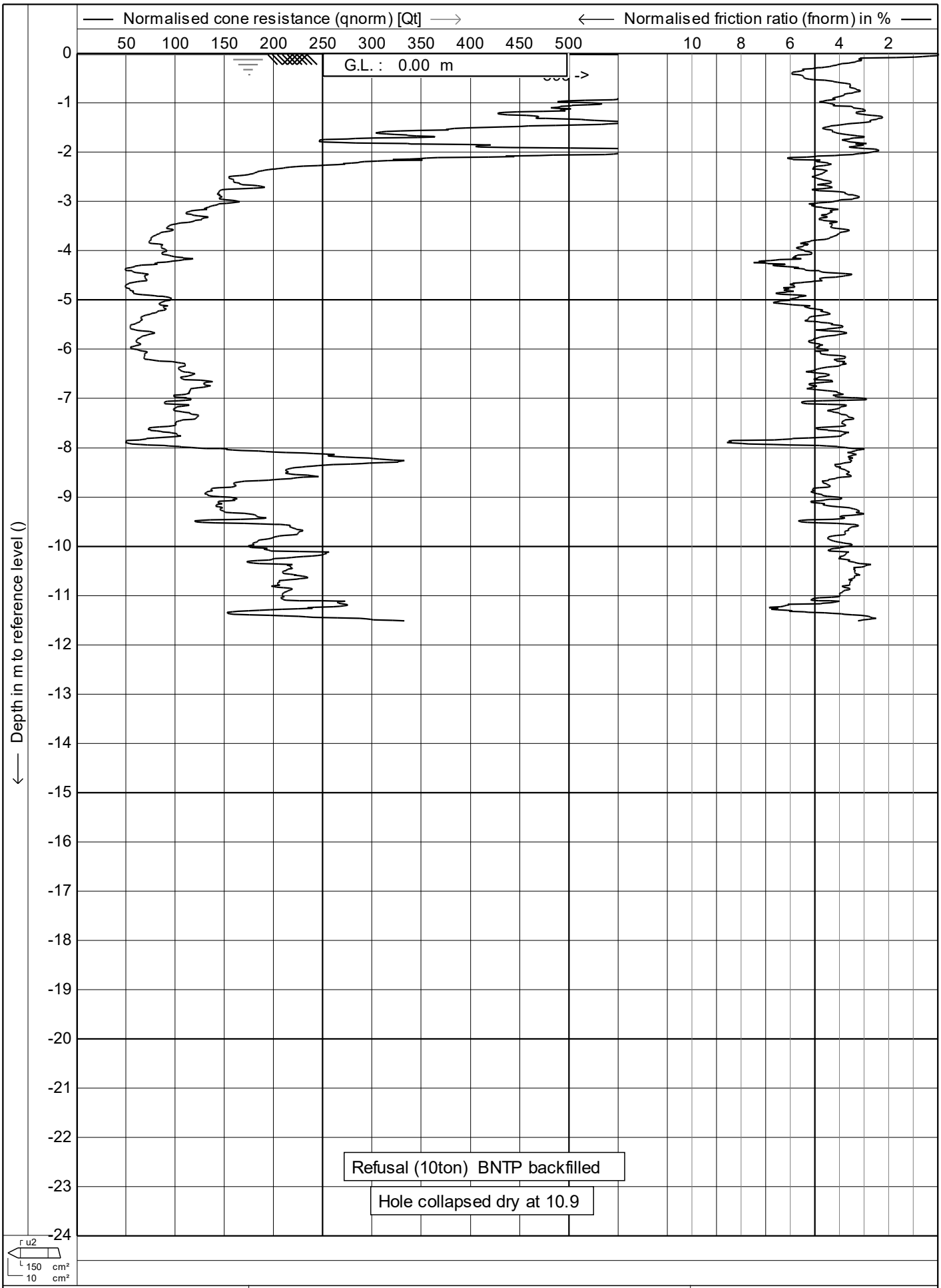
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **019**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

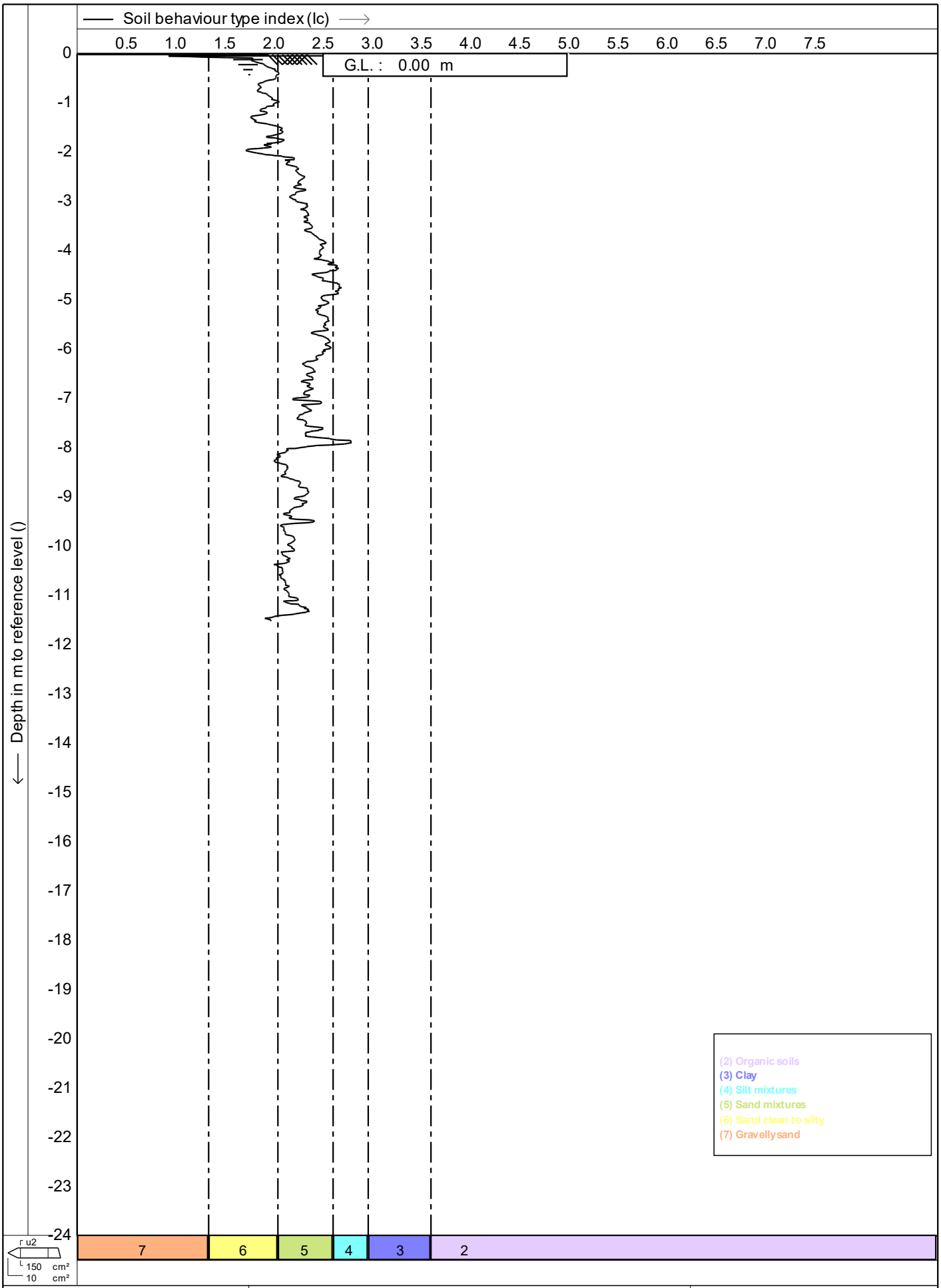
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

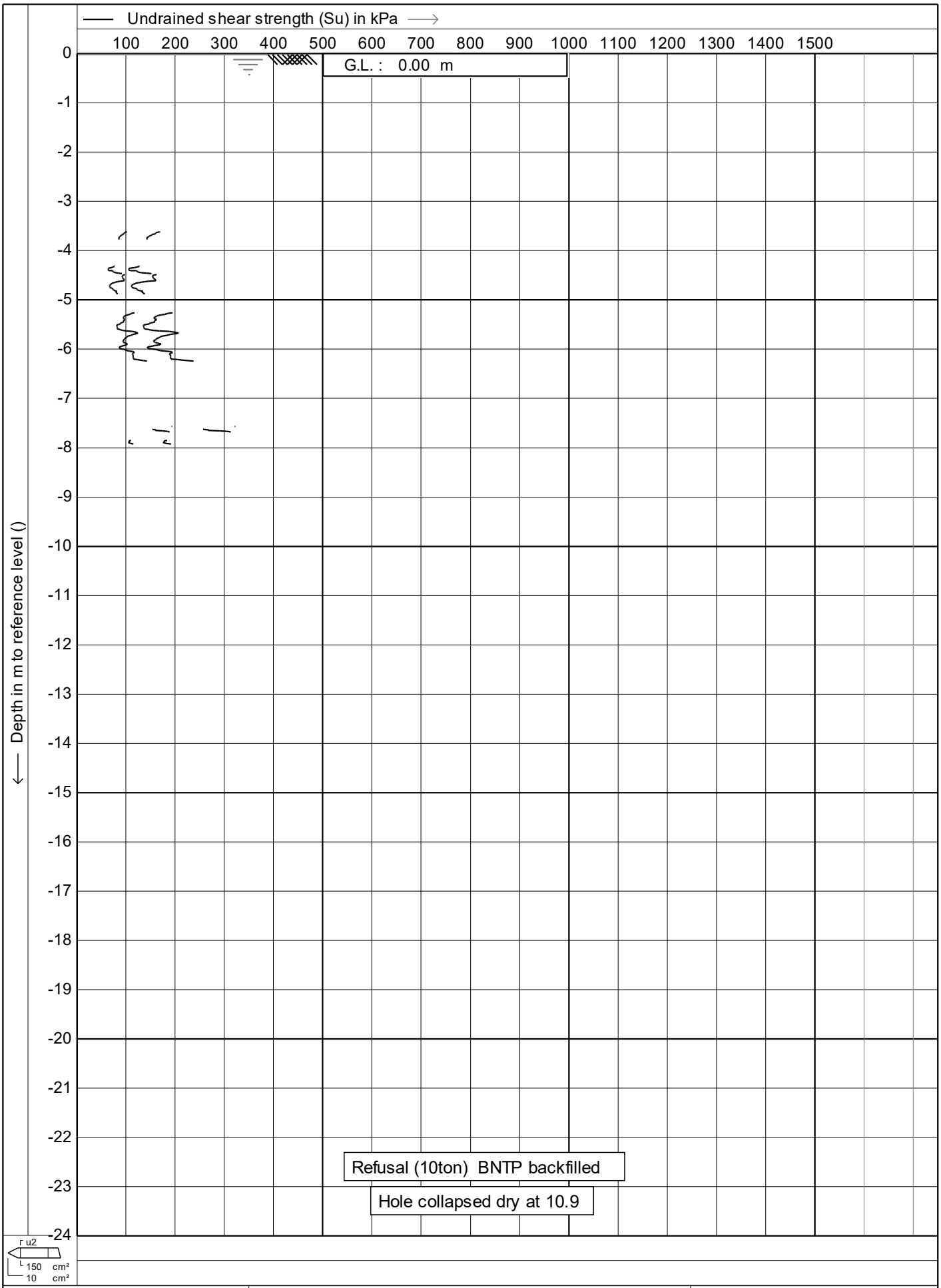
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **019**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

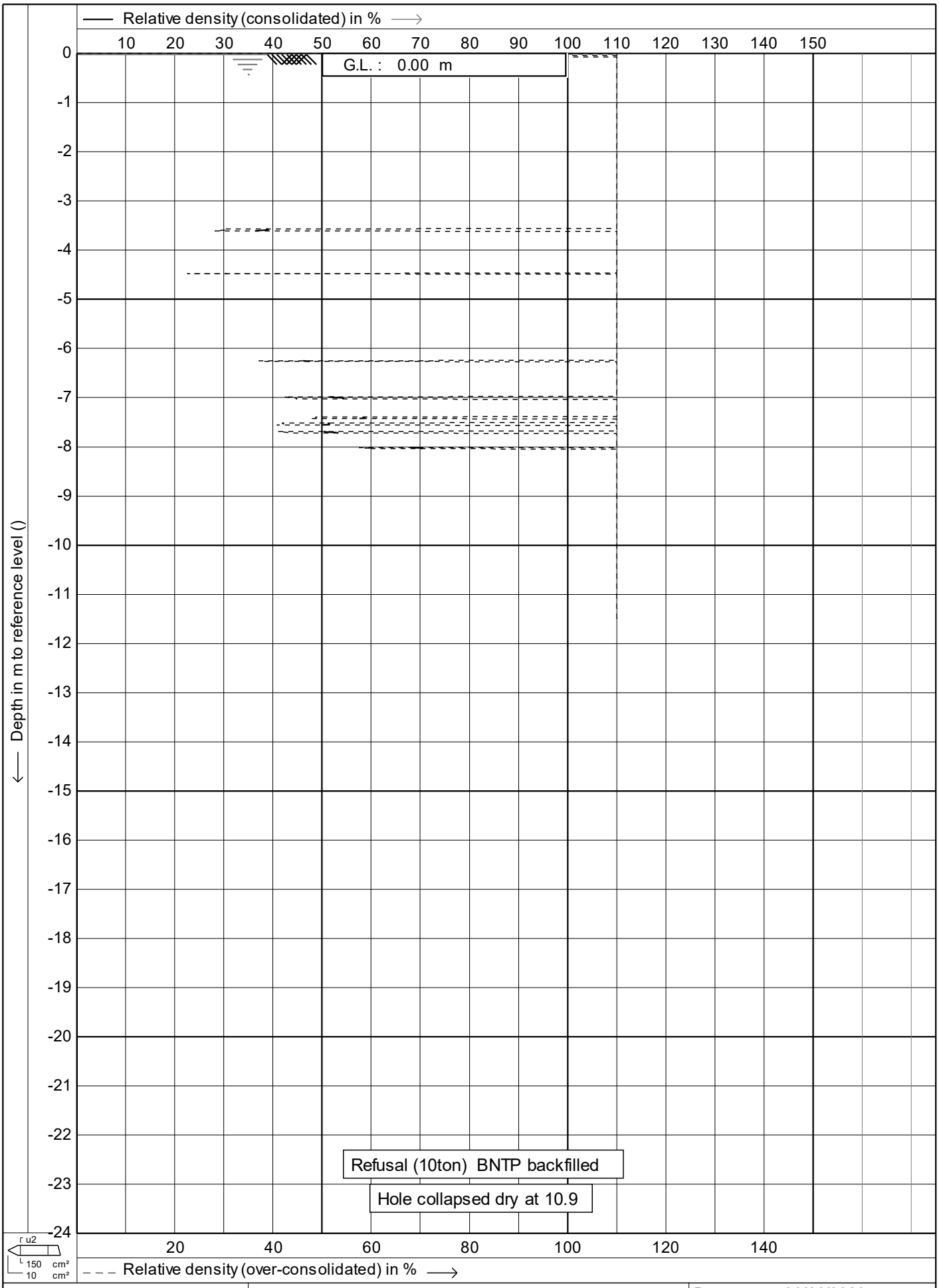
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

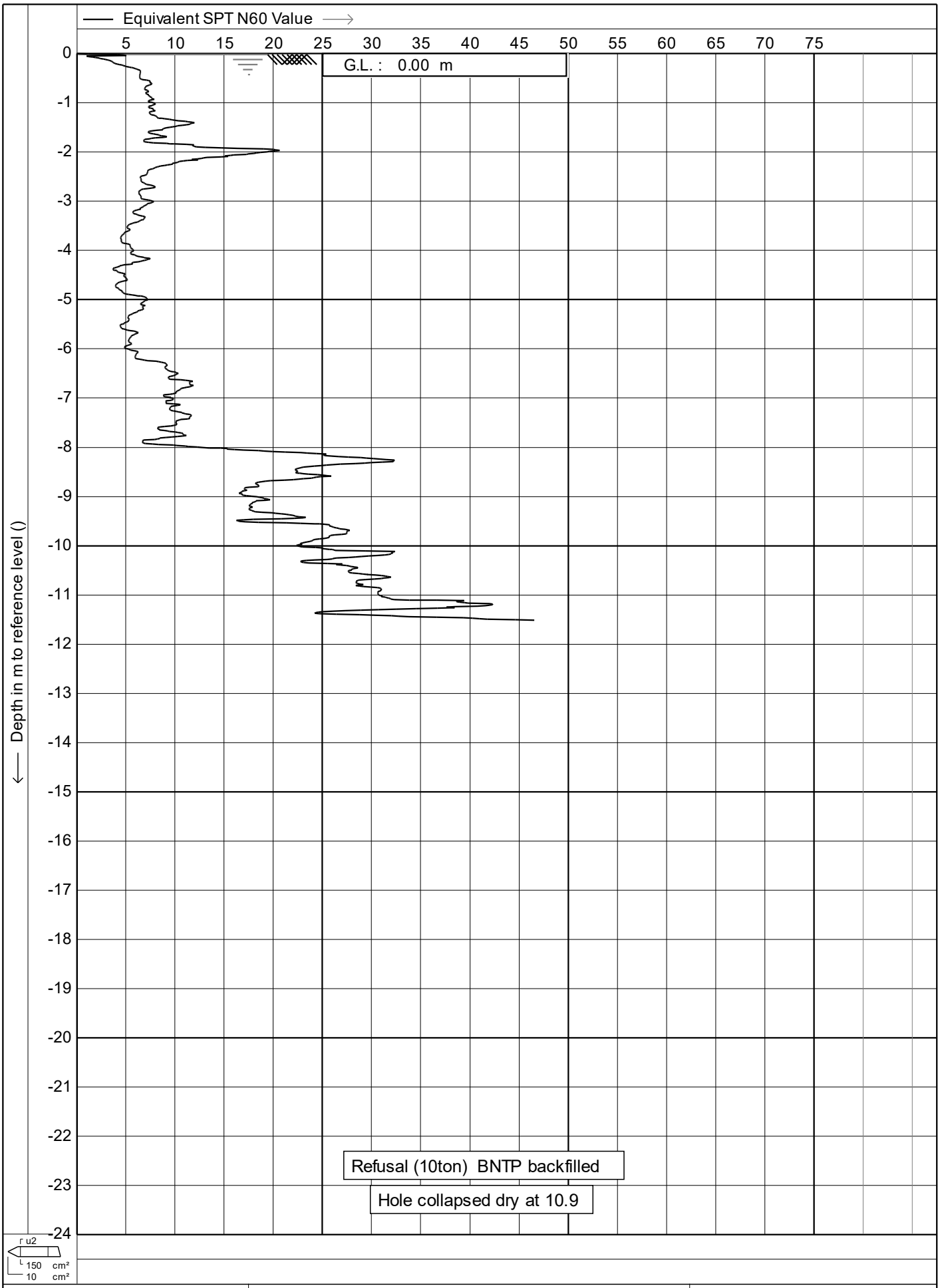
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **019** **11/14**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

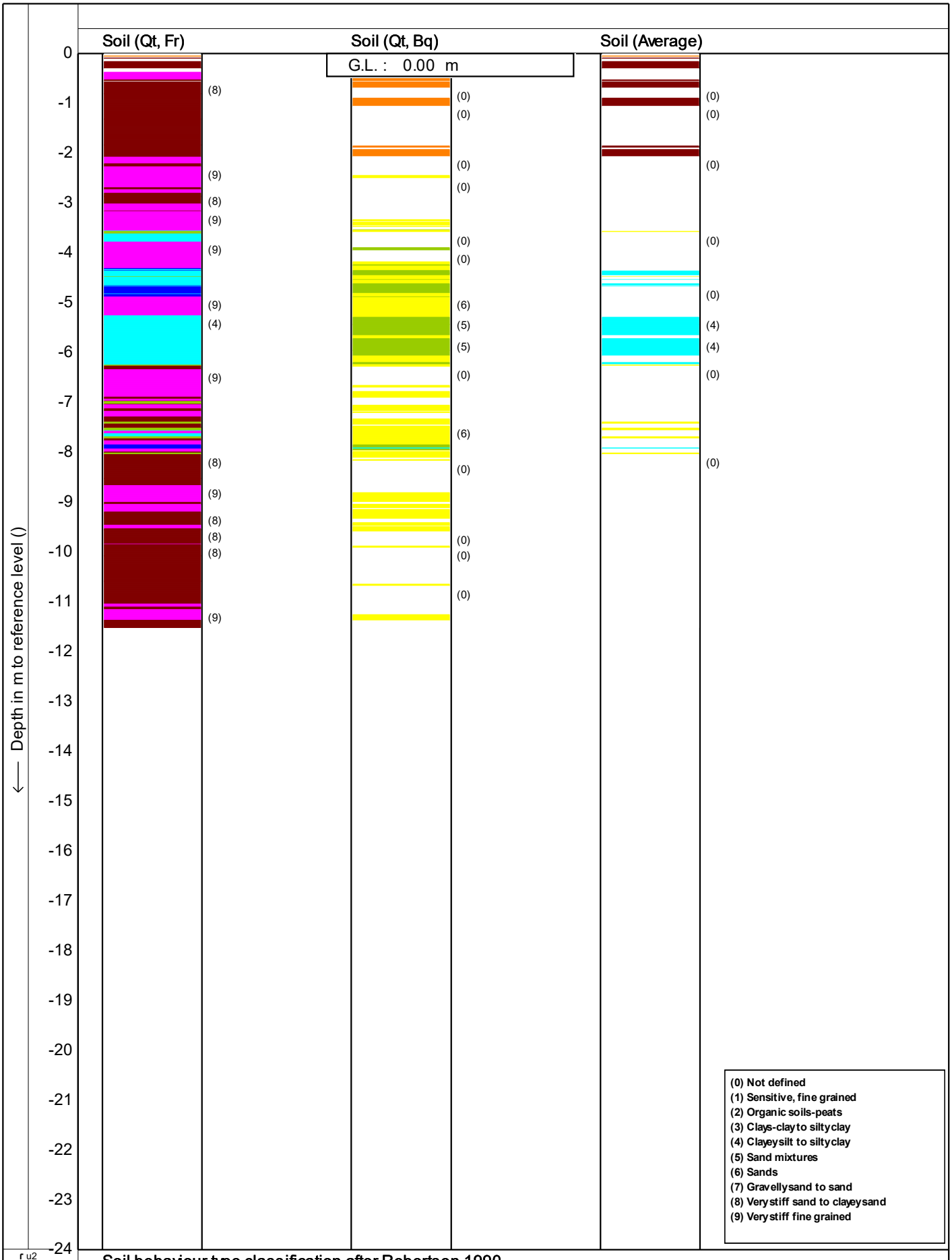
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **019**

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1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

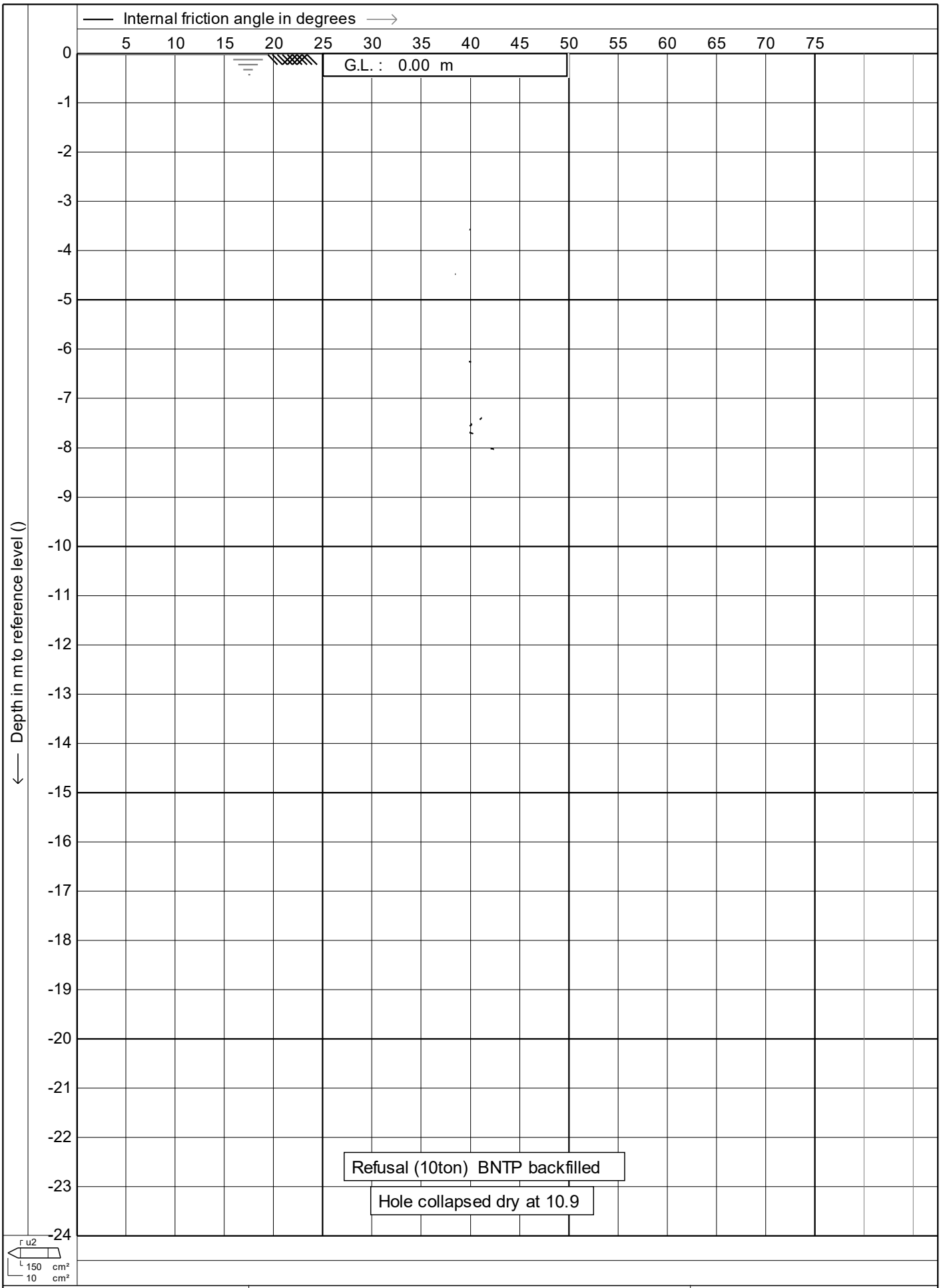
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

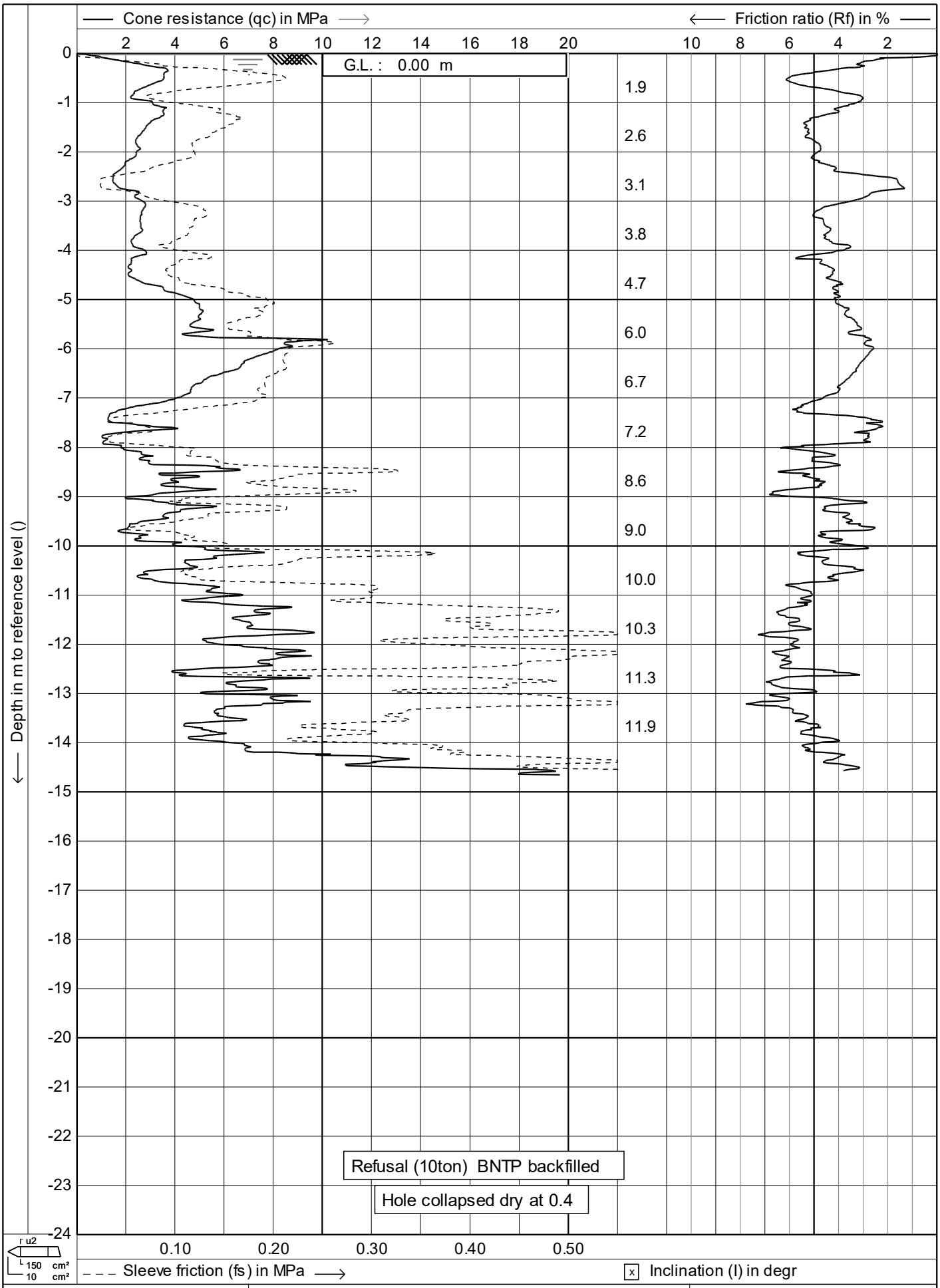
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **019** **14/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

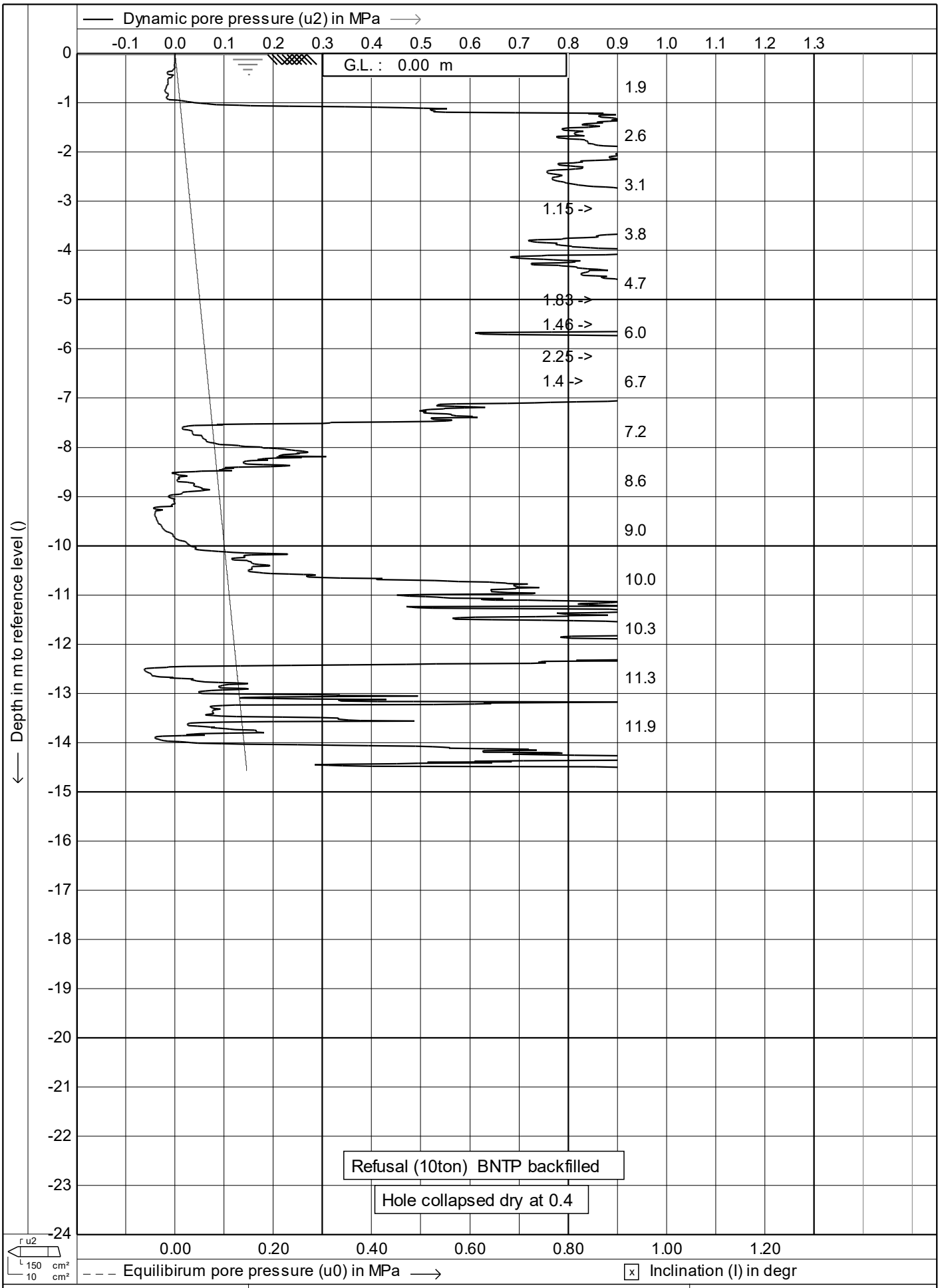
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **020**

1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

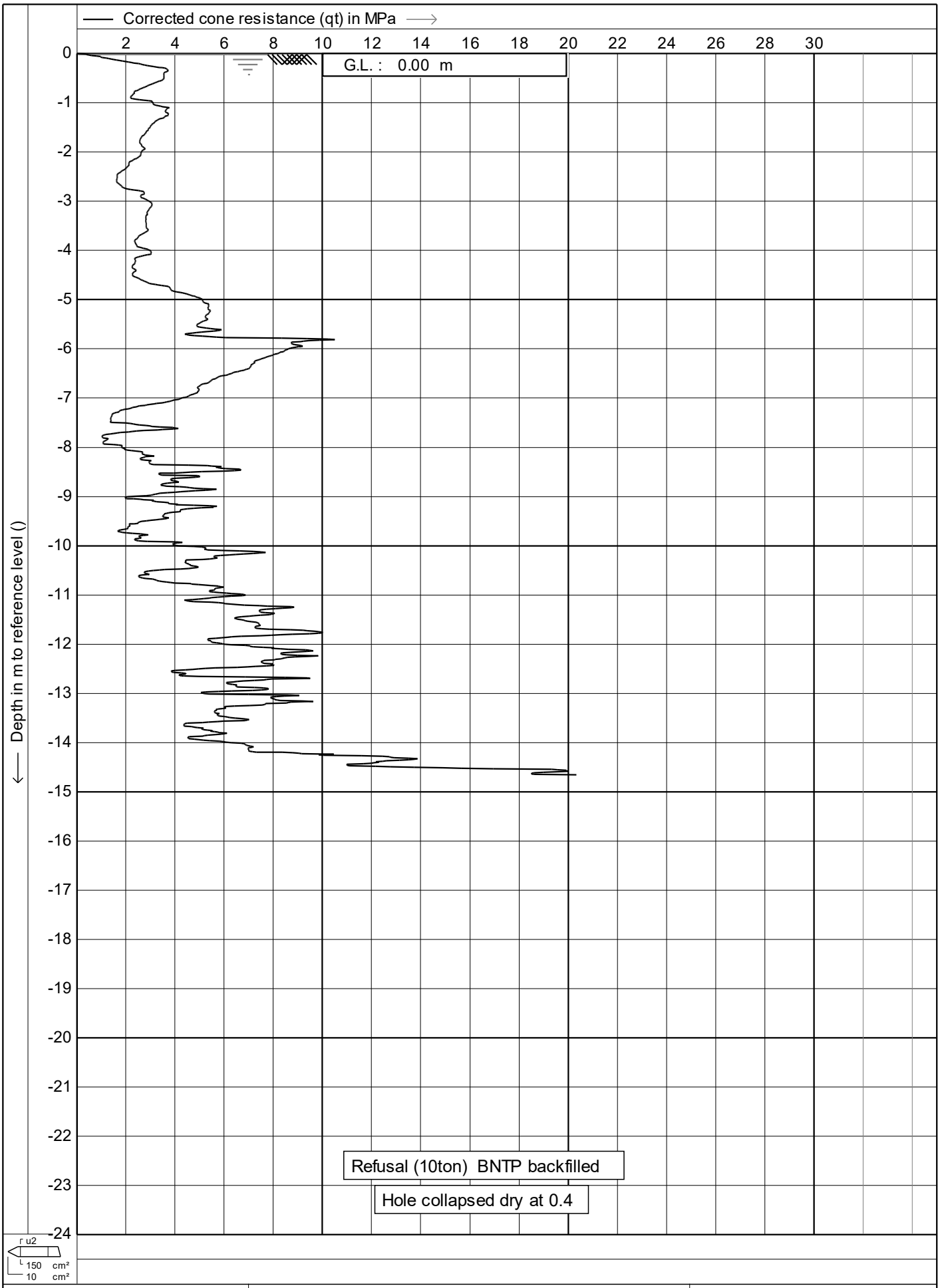
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **020**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

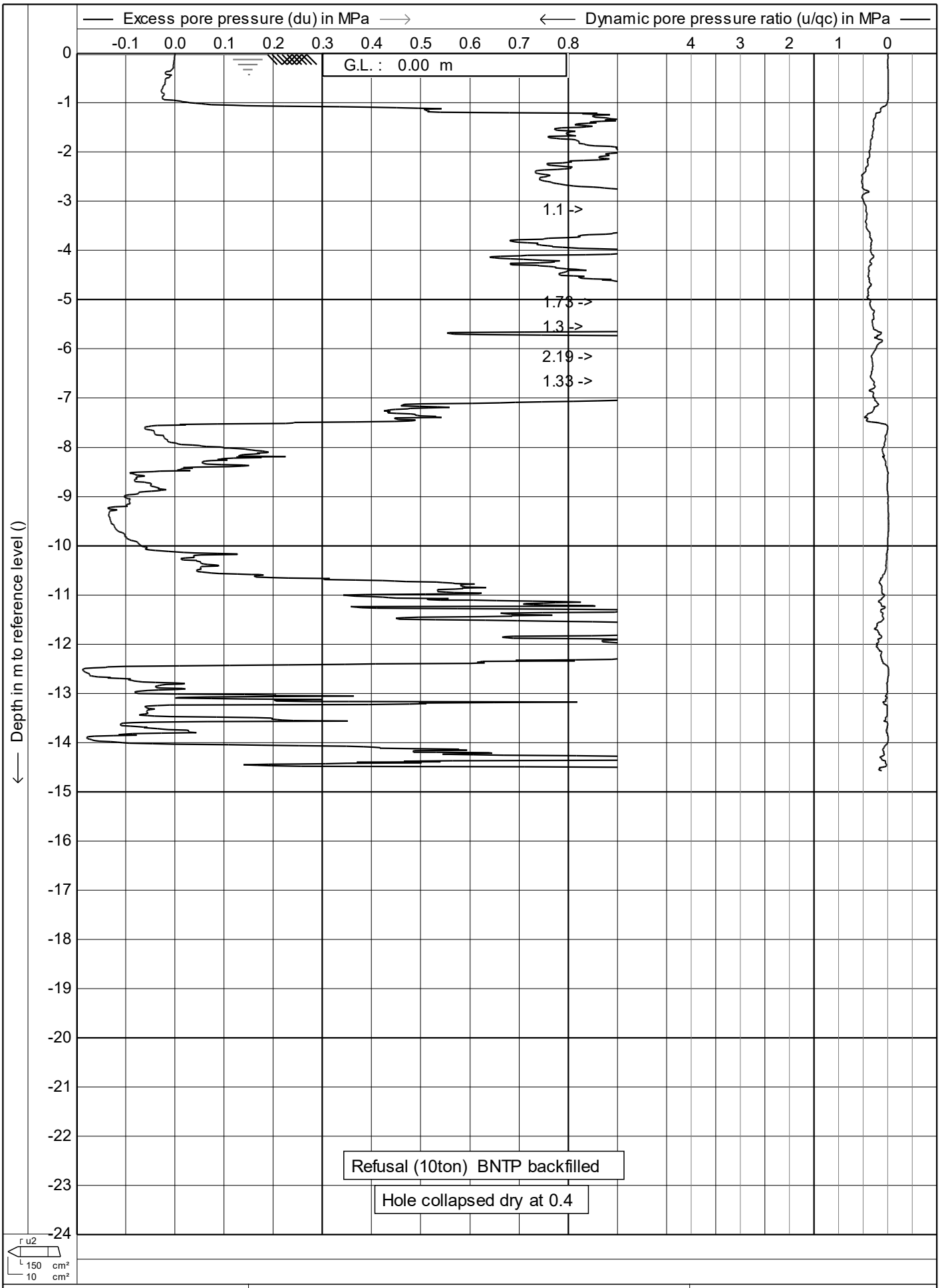
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
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Test according A.S.T.M Standard D 5778-12

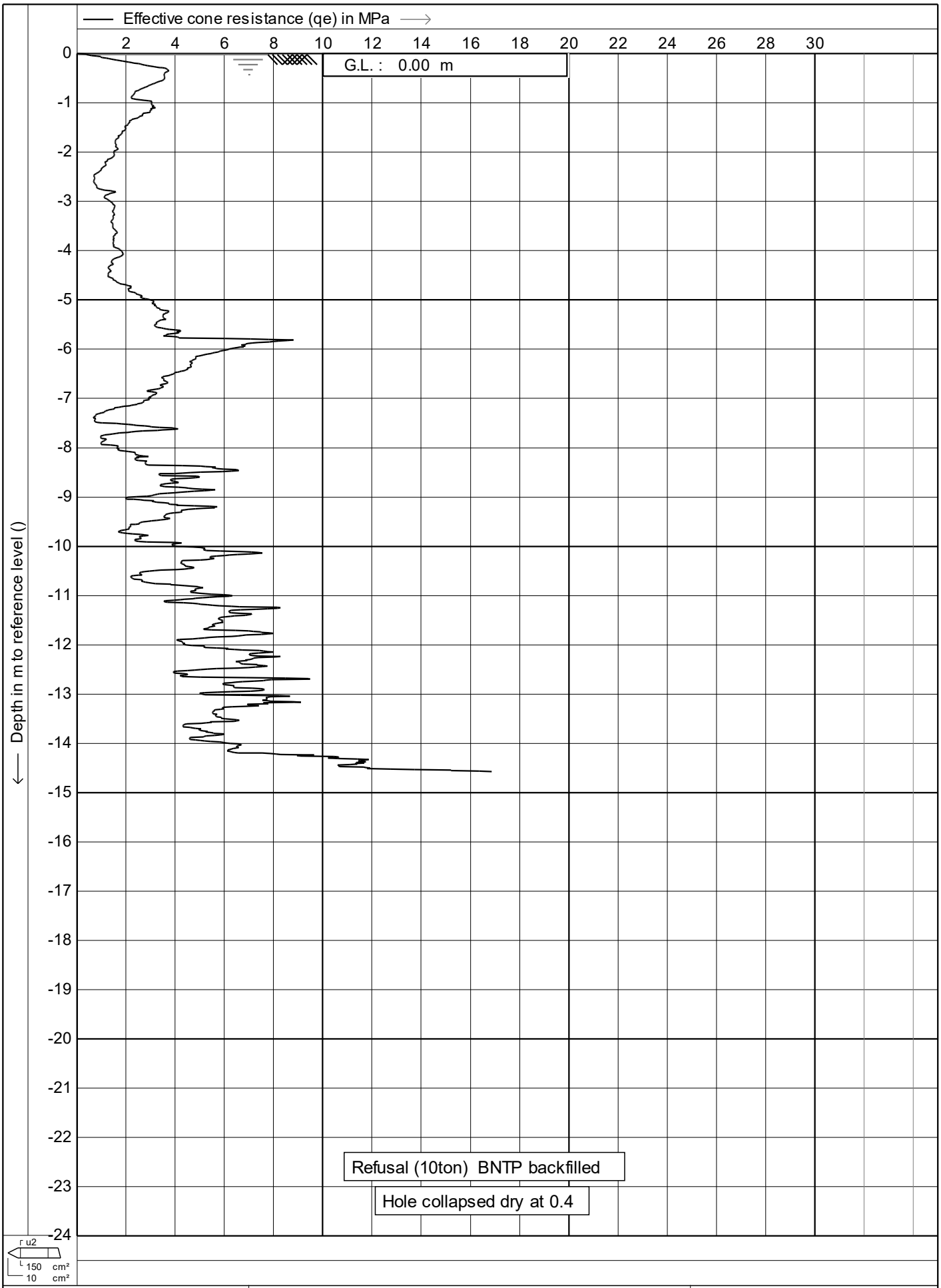
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
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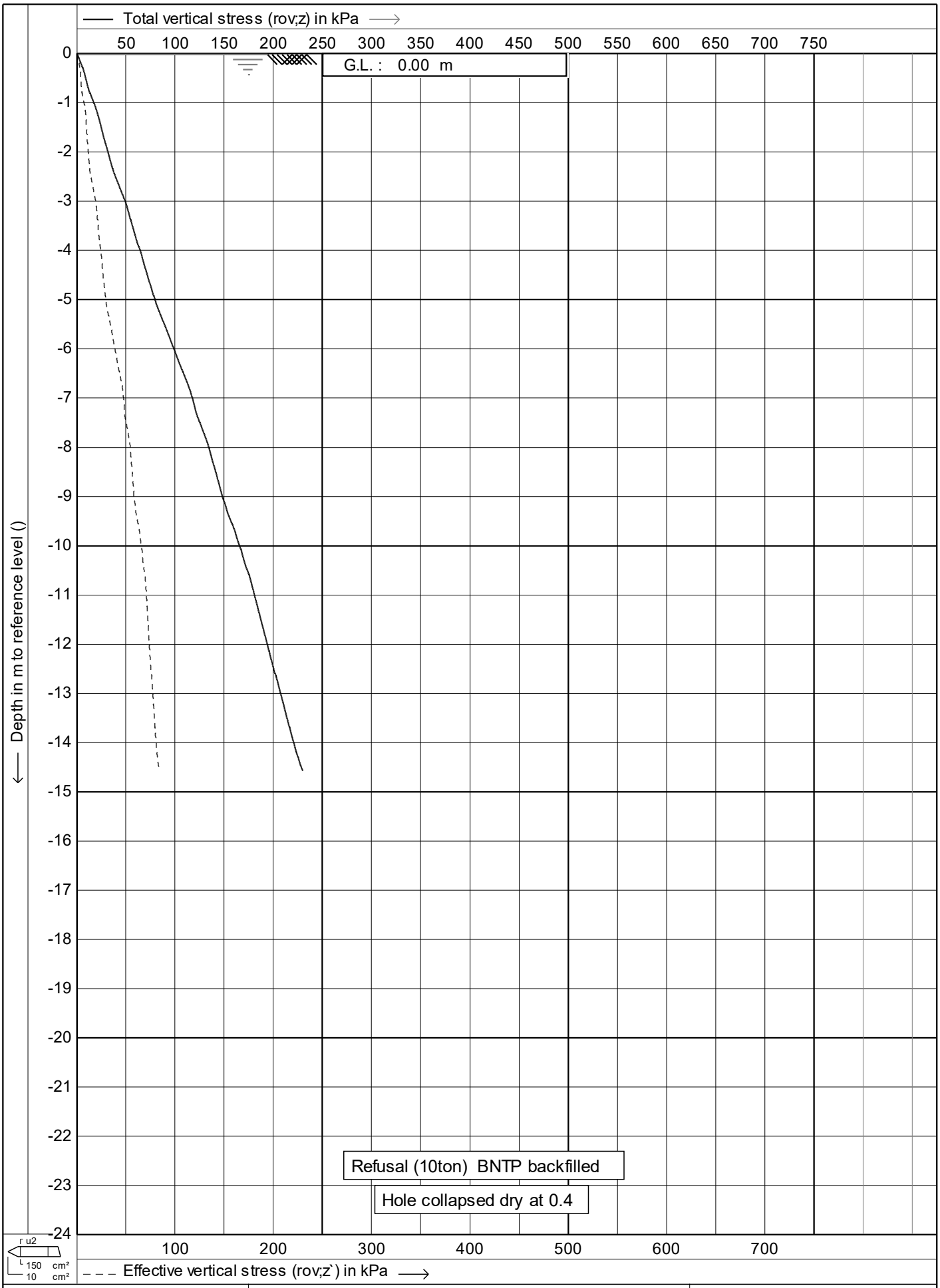
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
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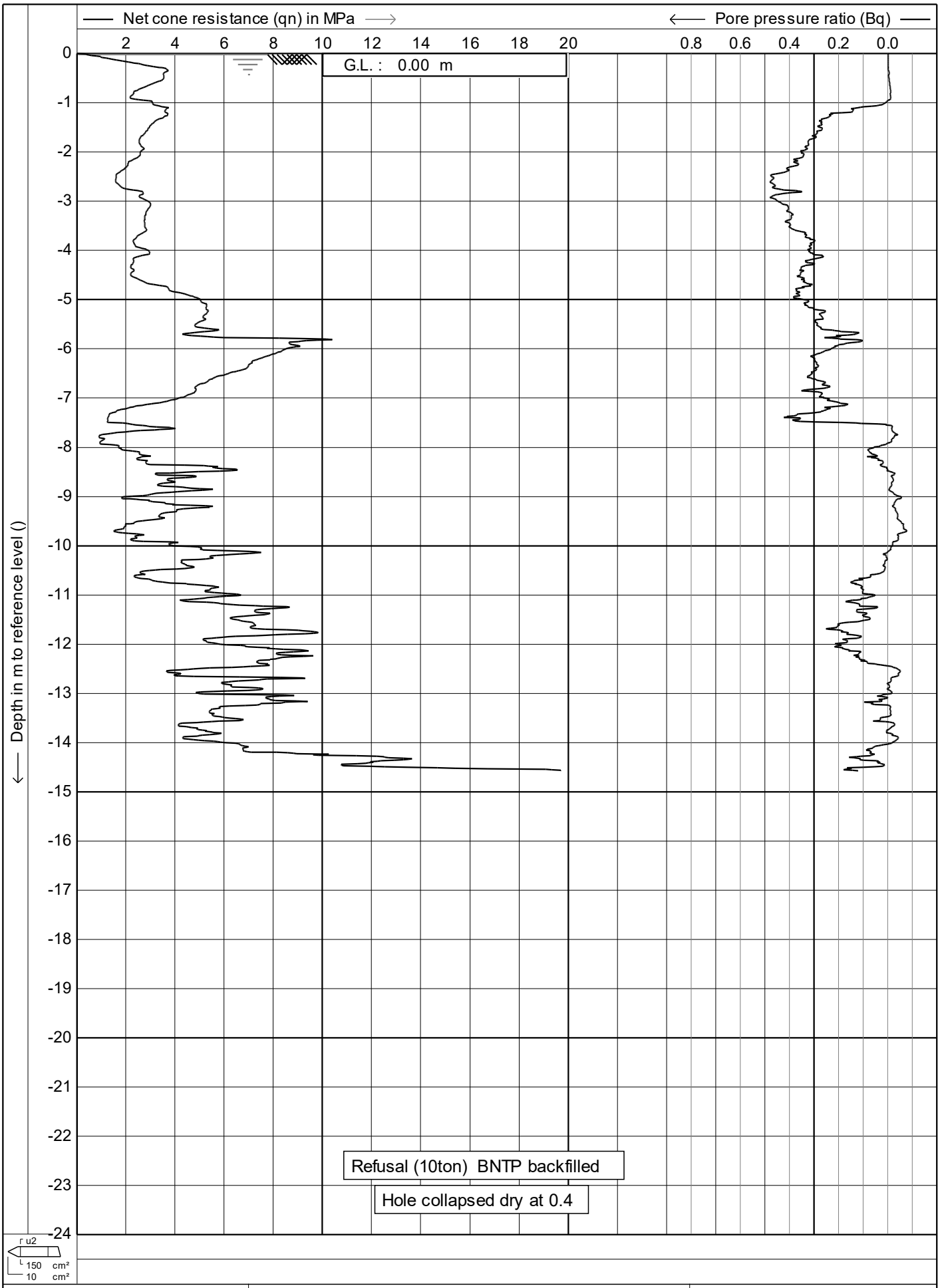
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
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PERRY GEOTECH

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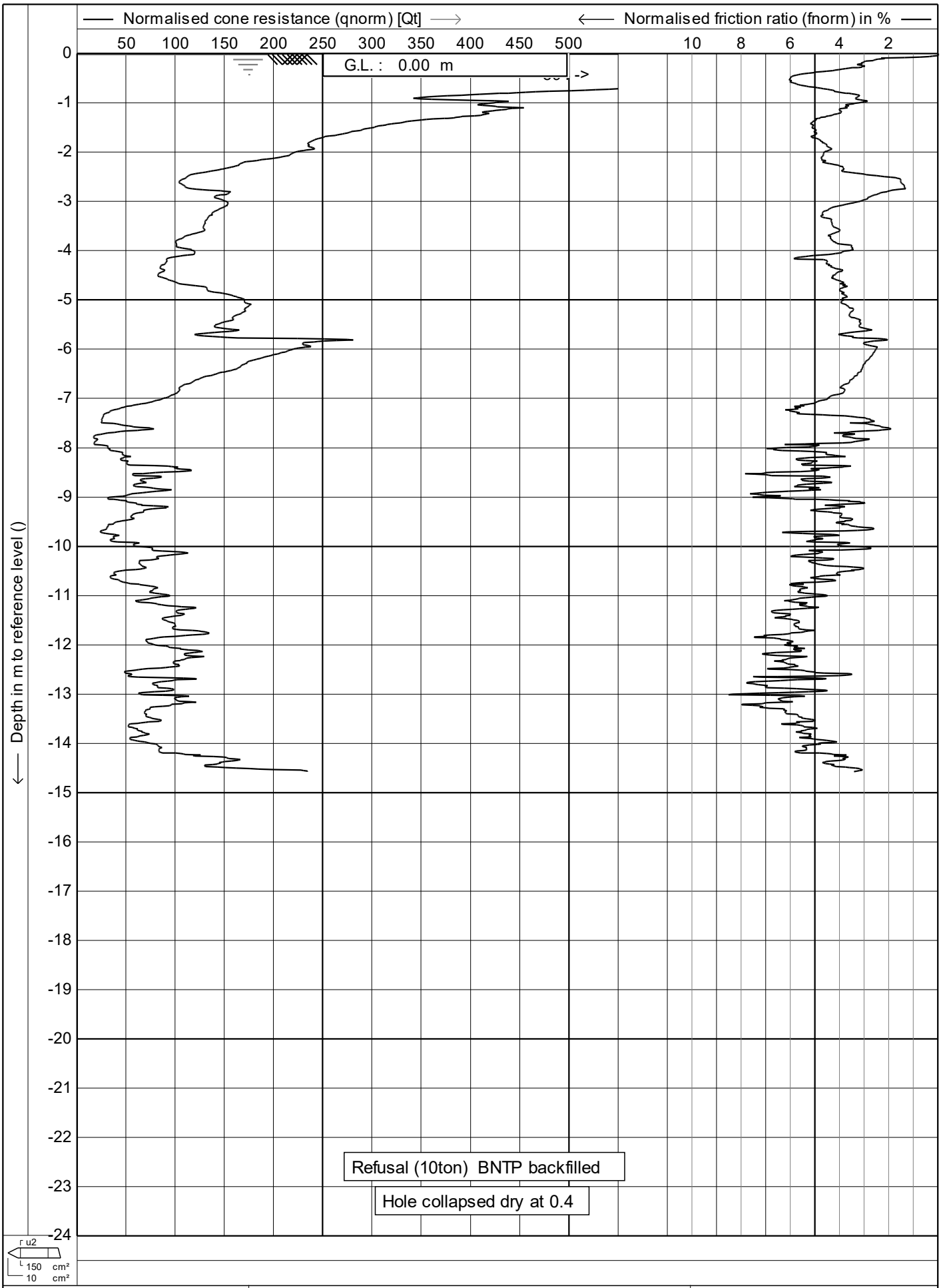
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

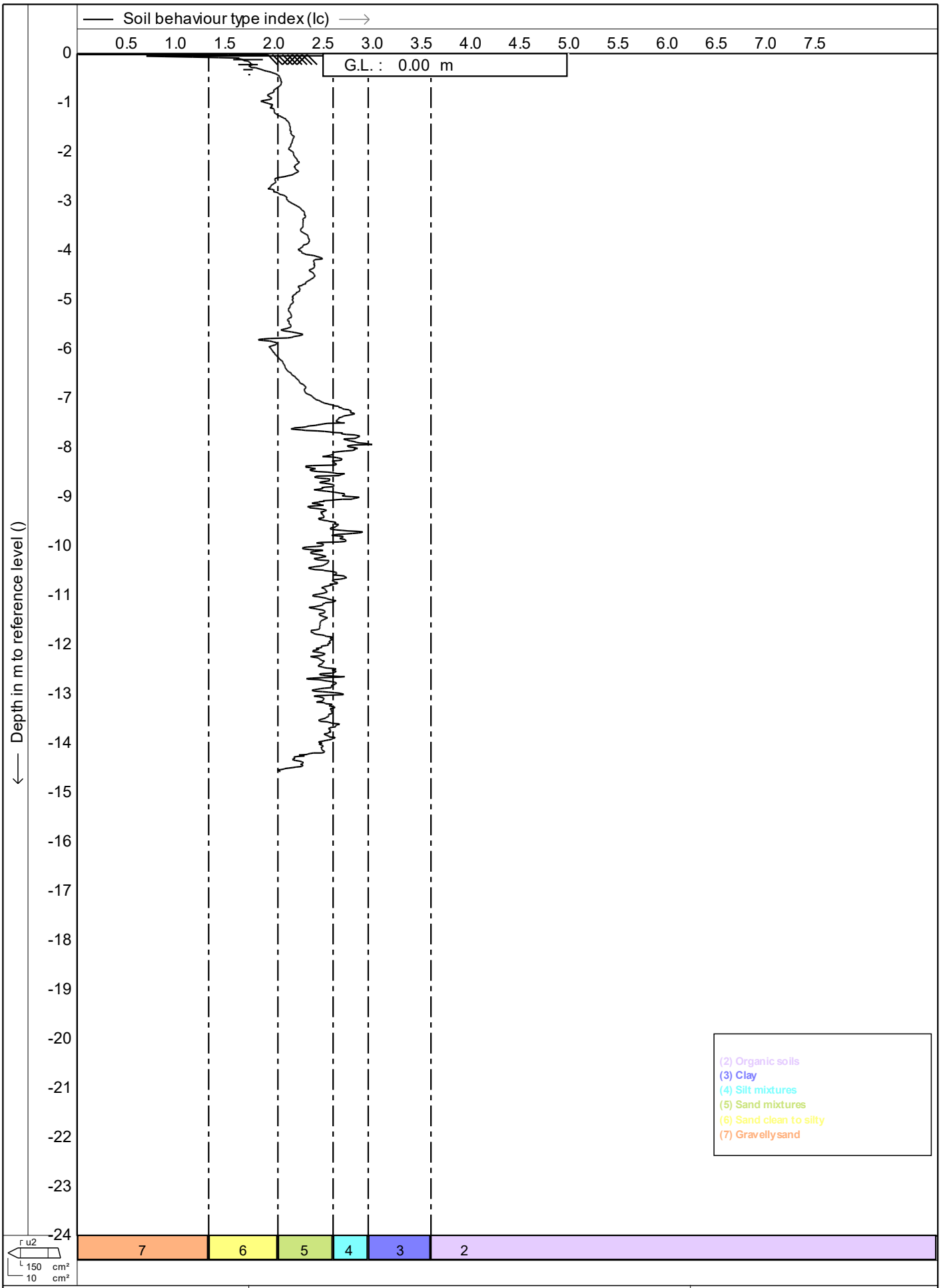
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **020**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

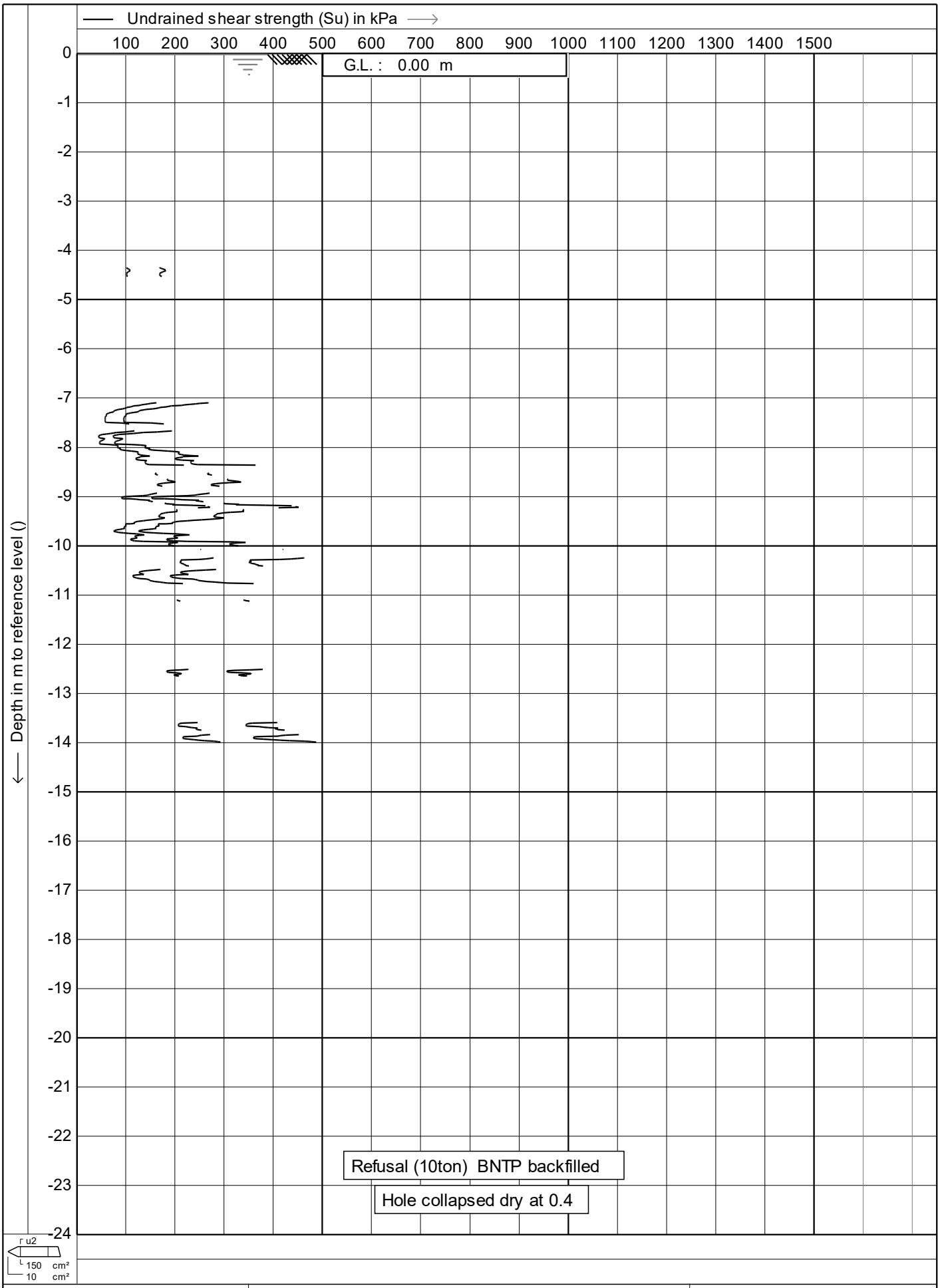
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **020**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

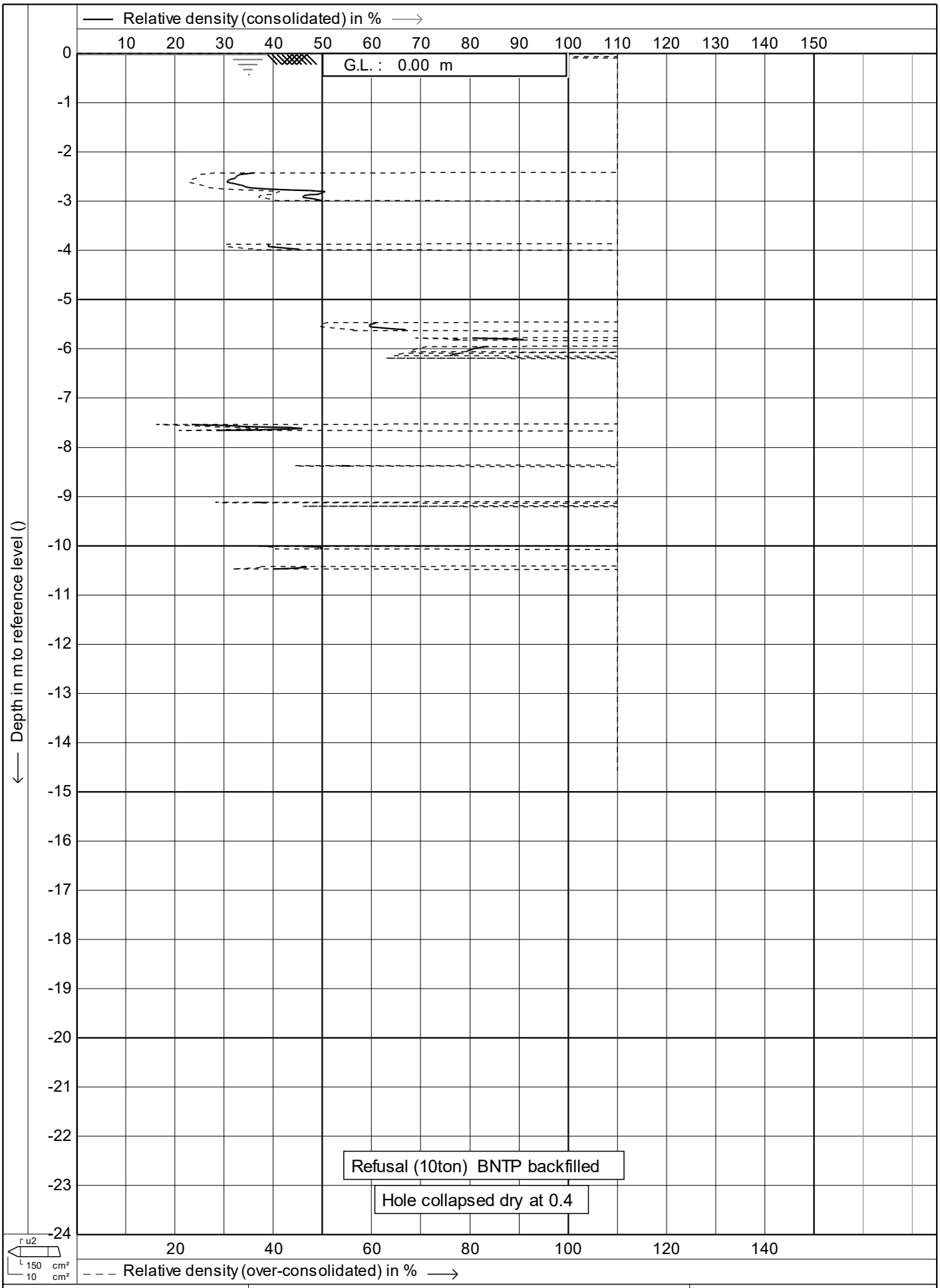
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **020**

10/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

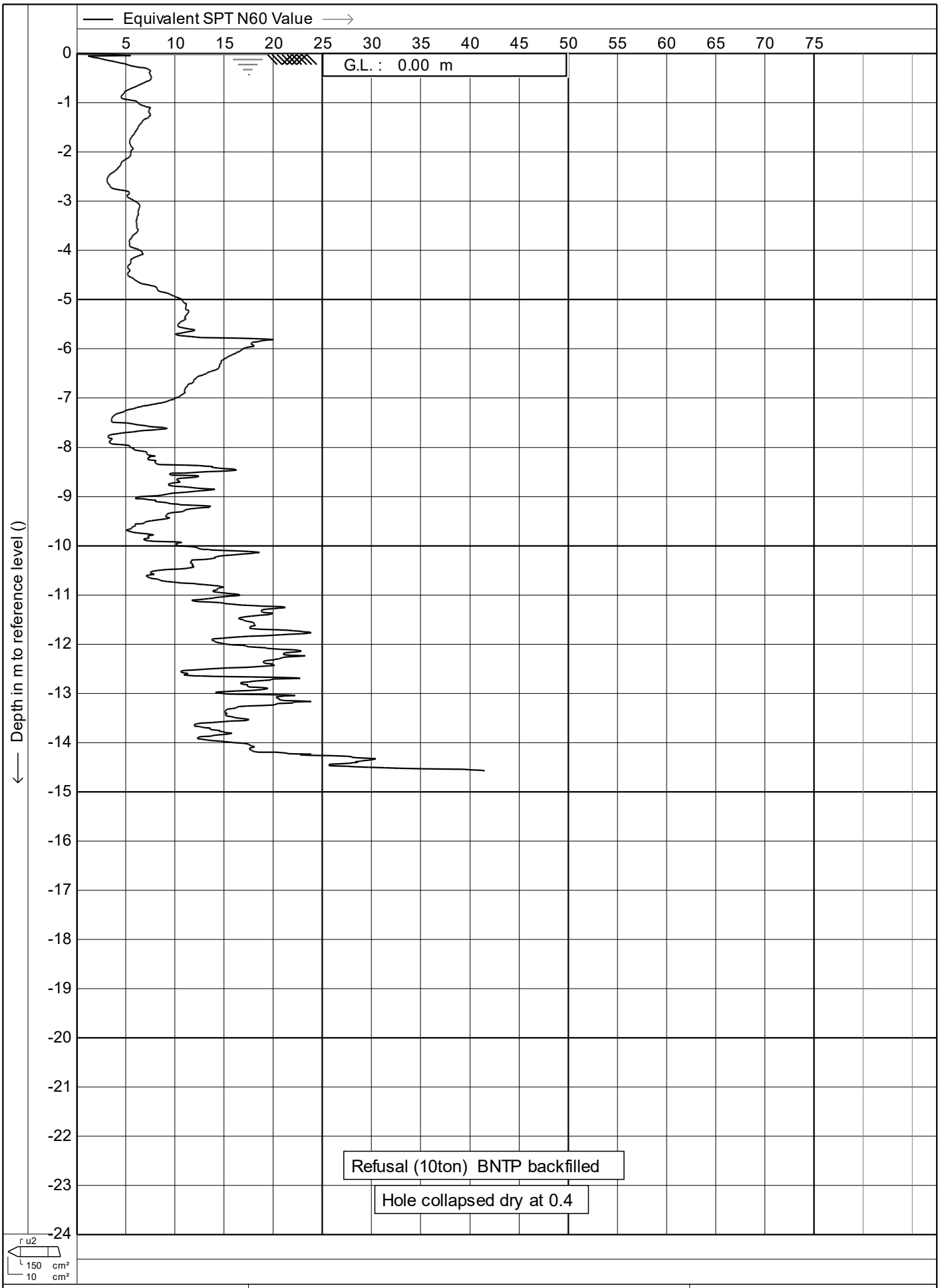
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **020**

11/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

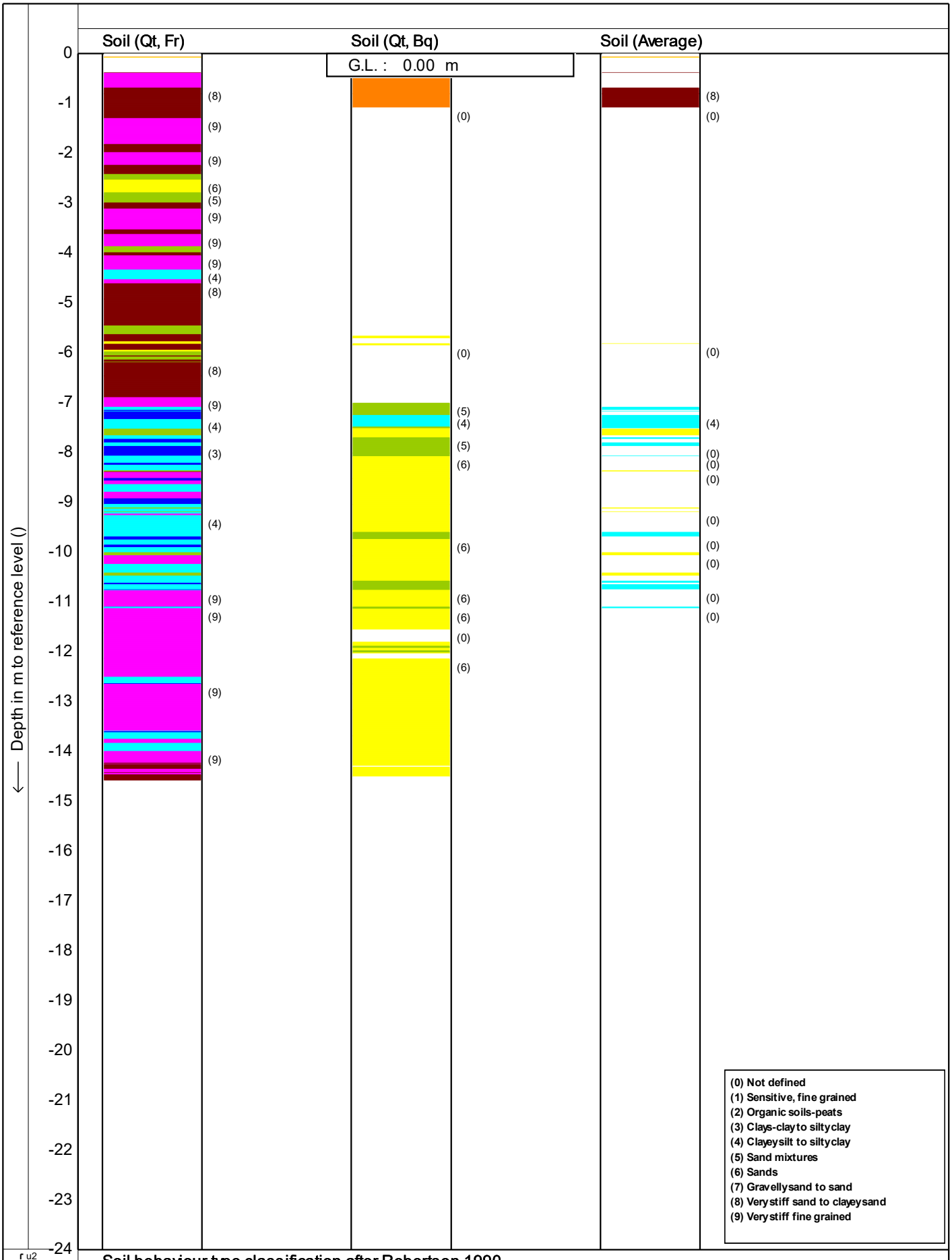
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **020**

12/14

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

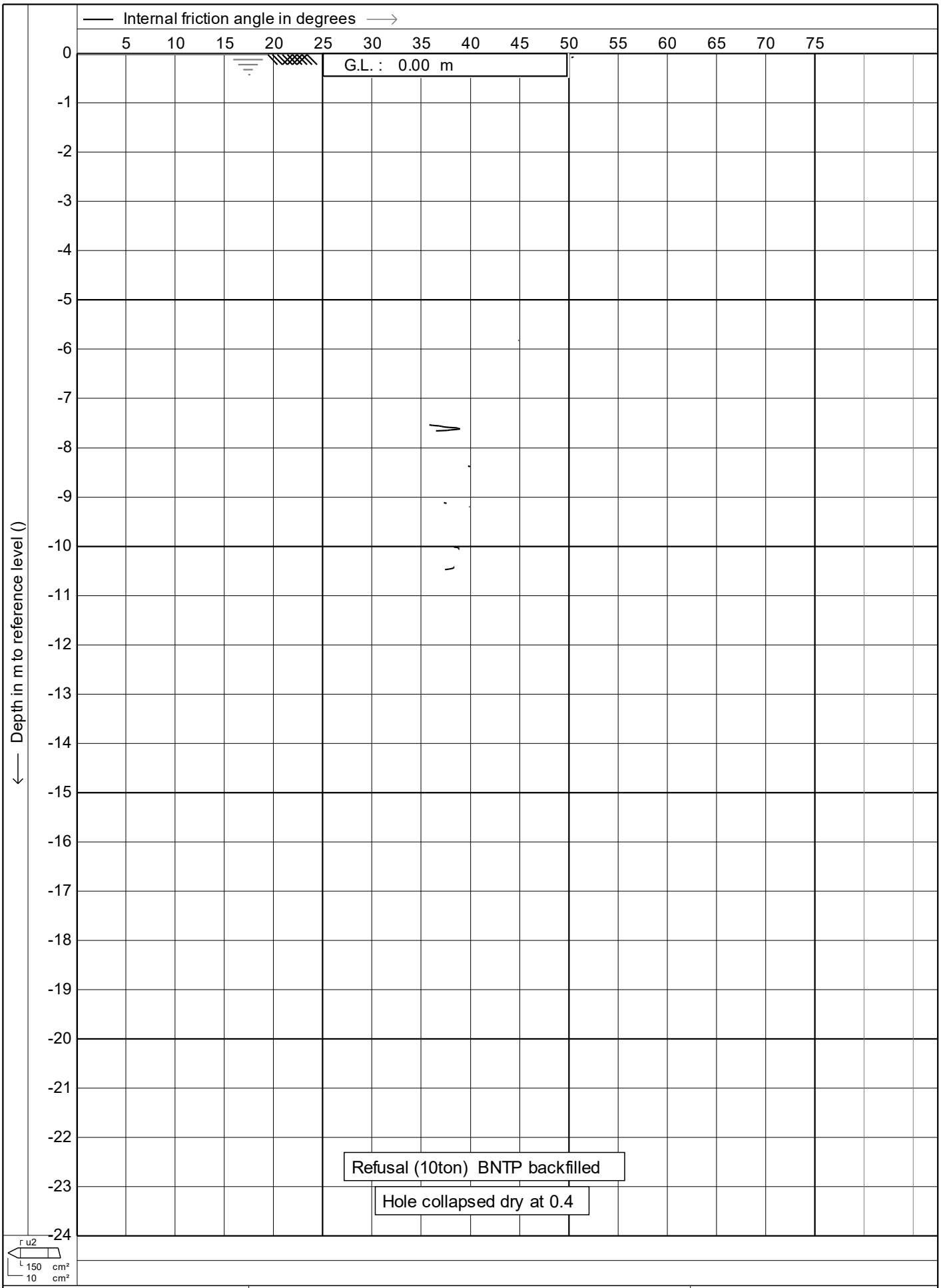
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **020**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

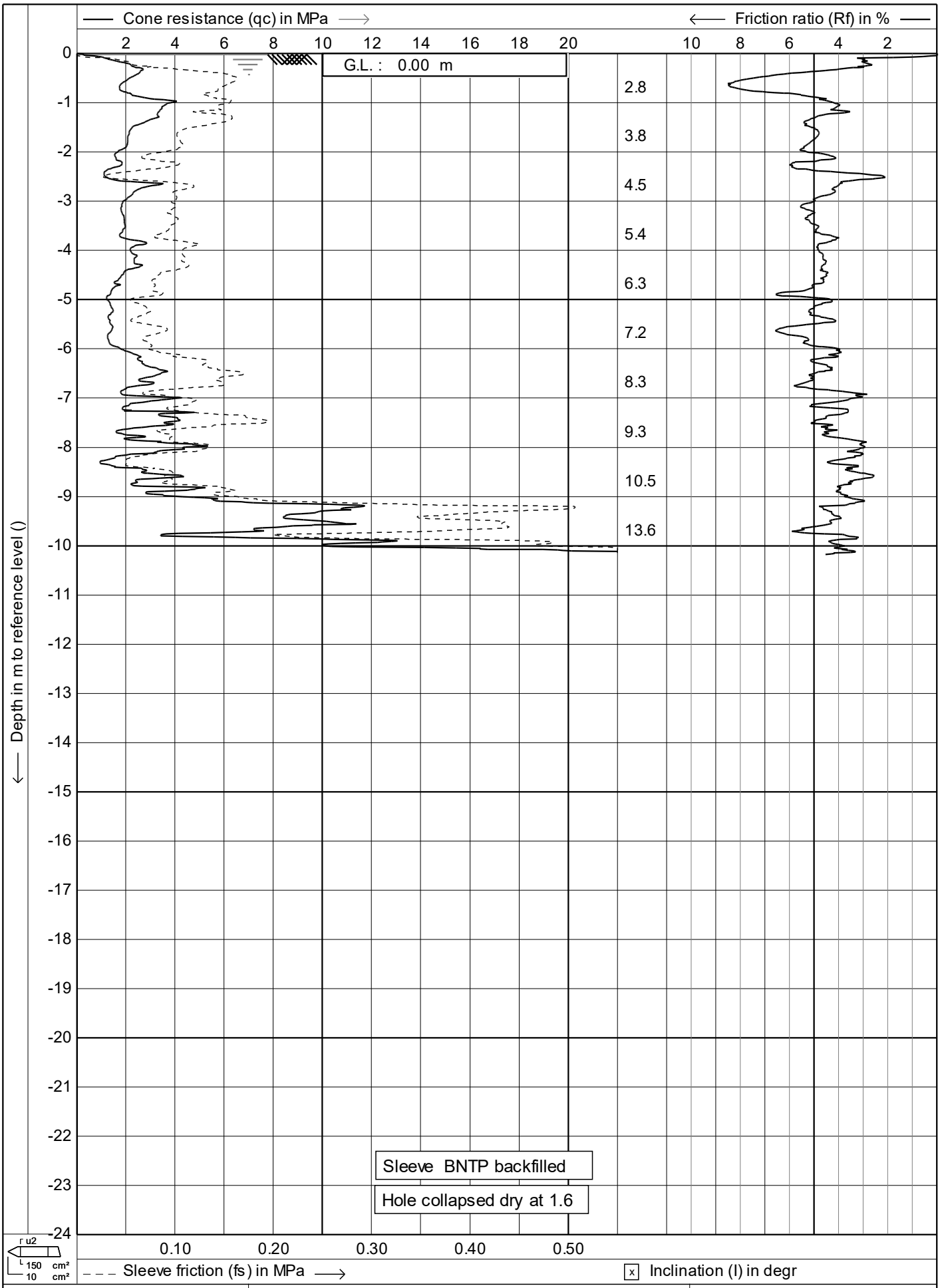
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **020** **14/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

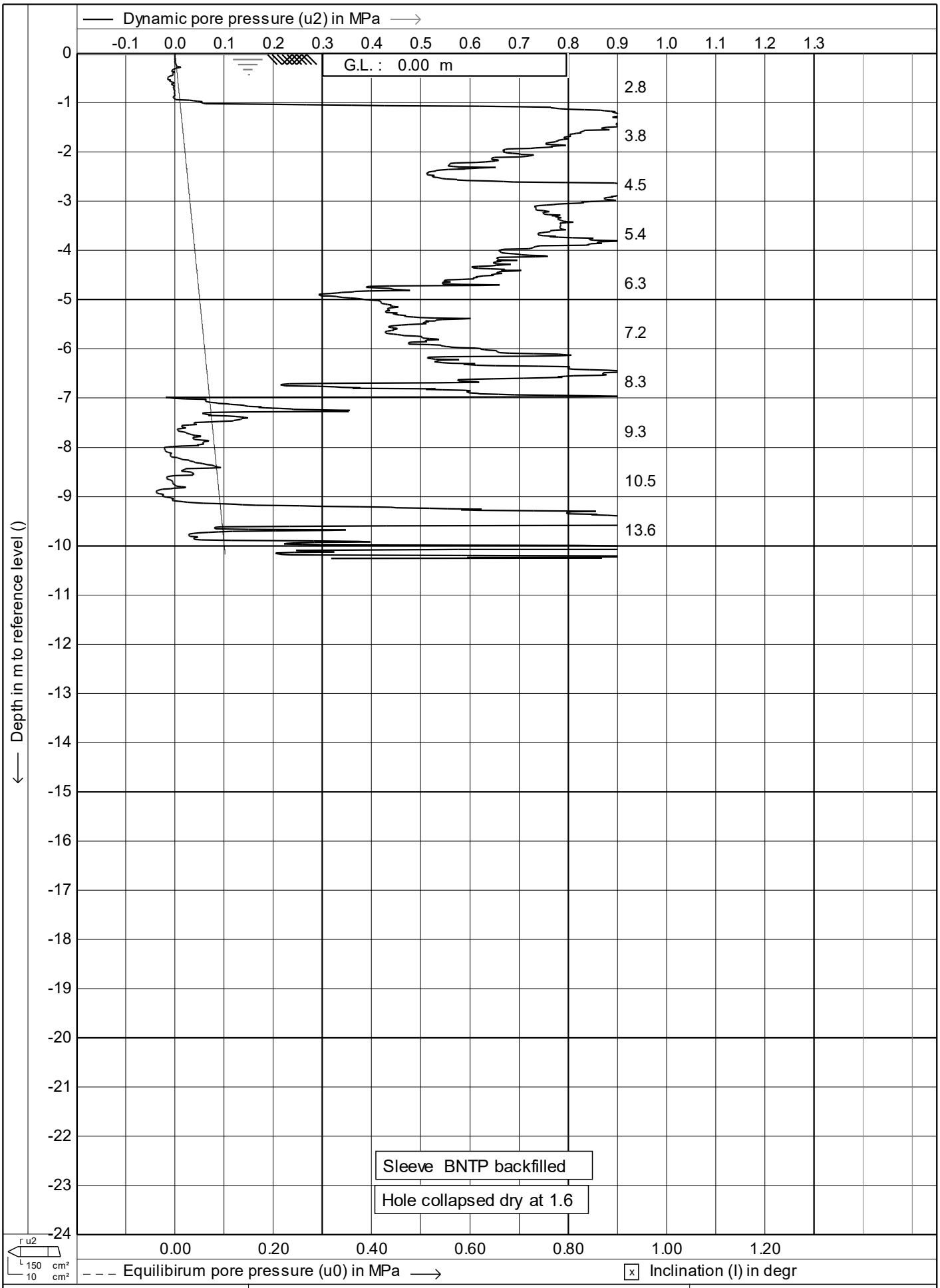
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **021**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

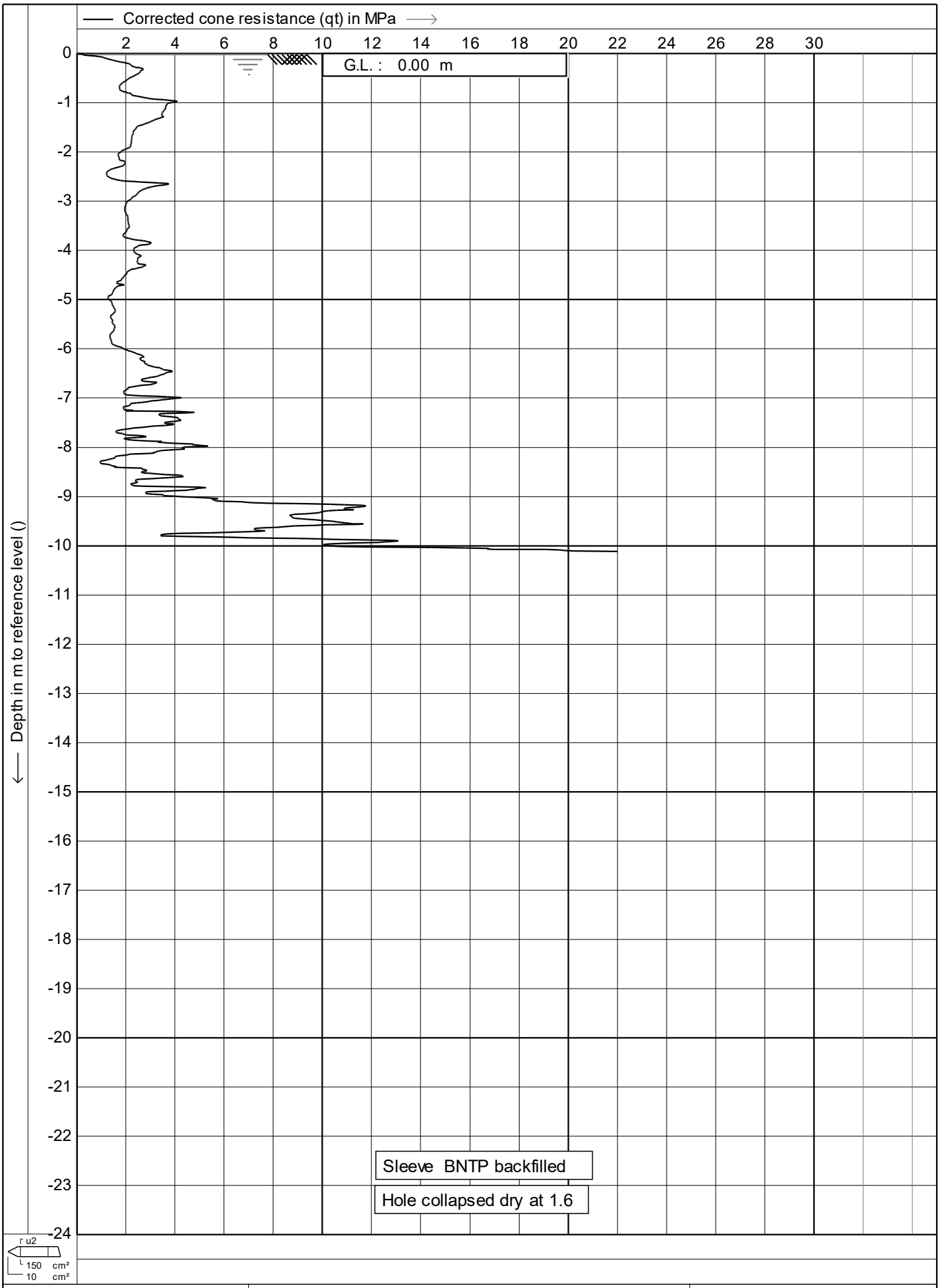
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **021**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

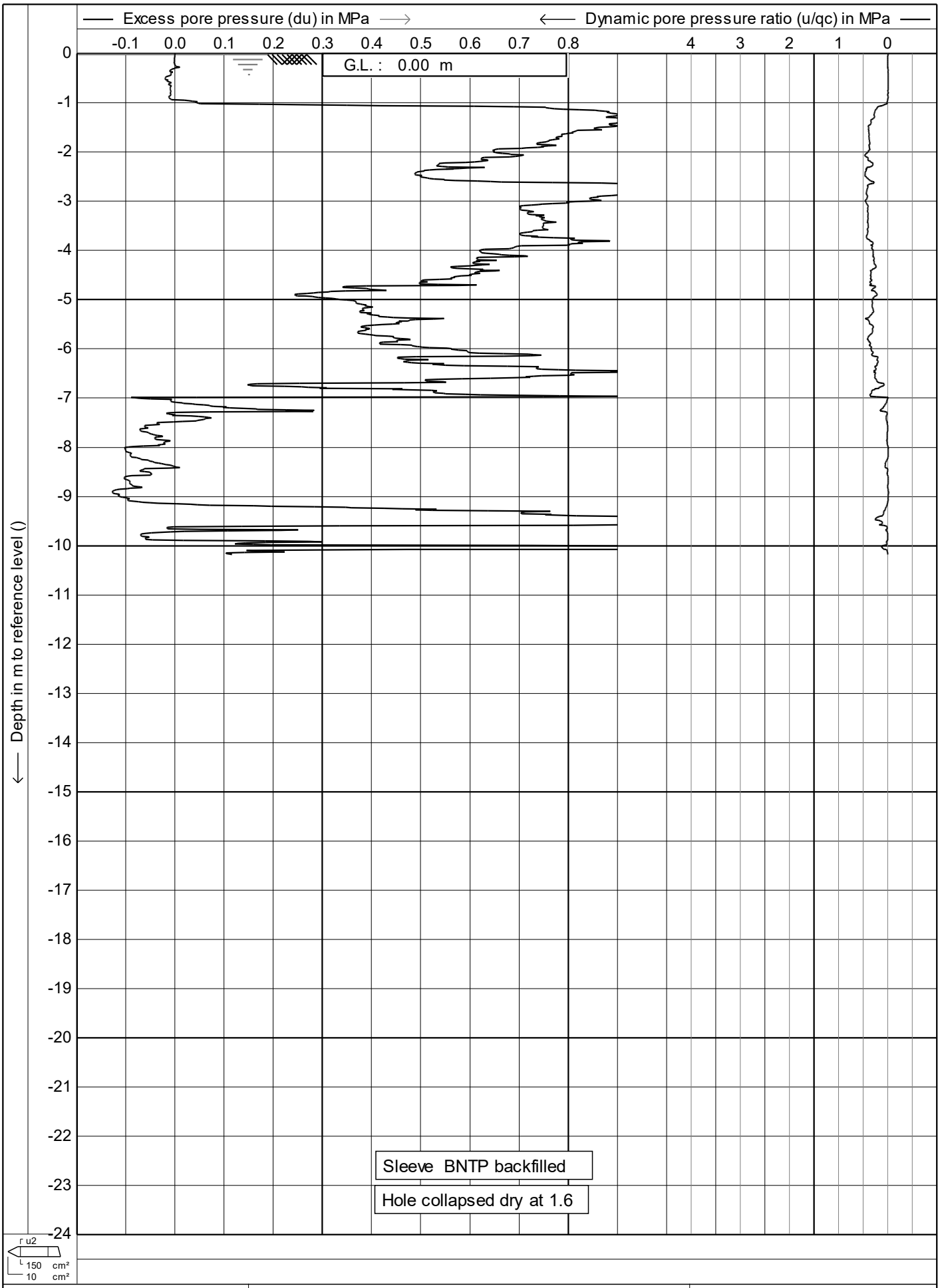
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **021** **3/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

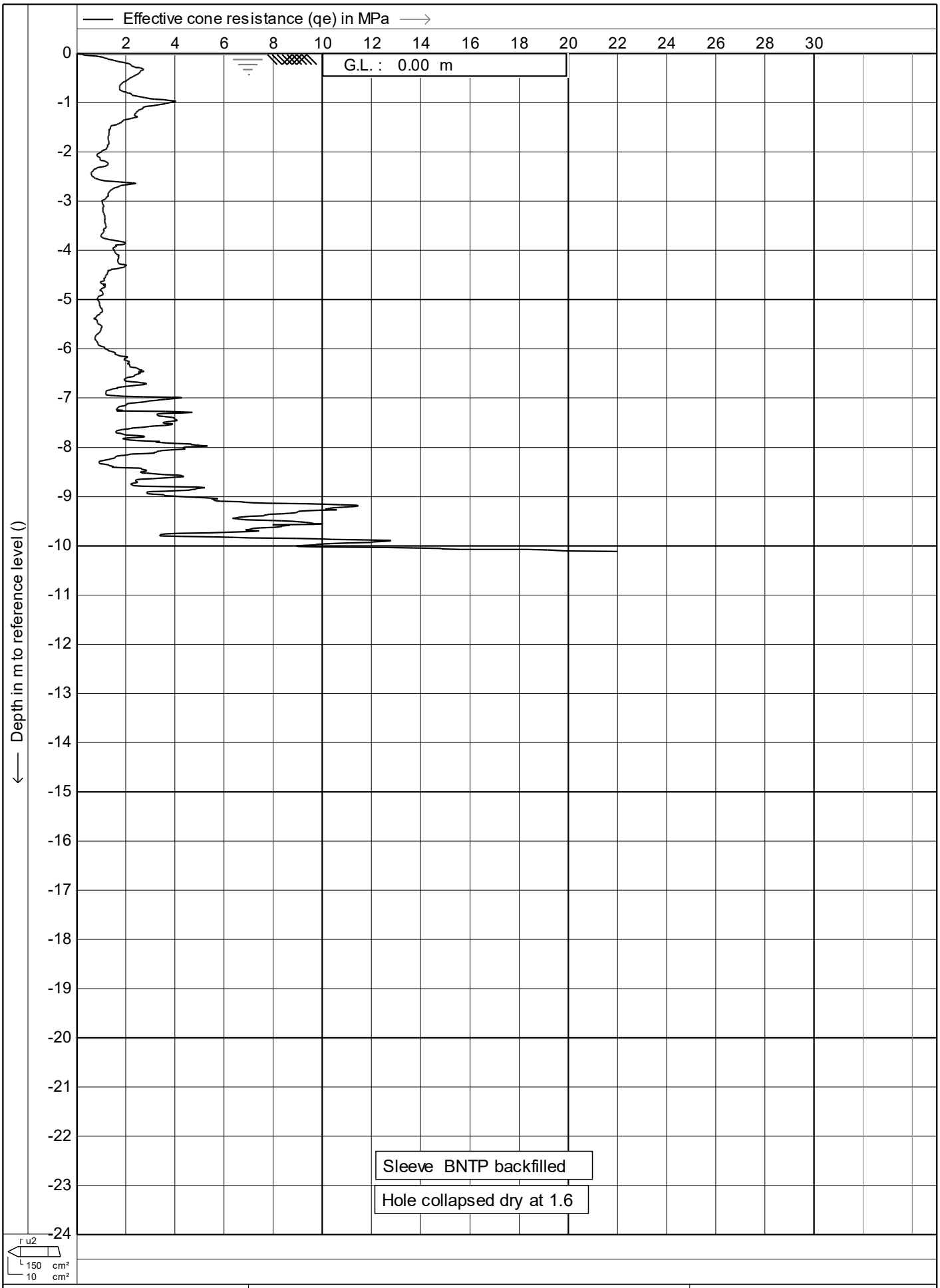
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **021** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

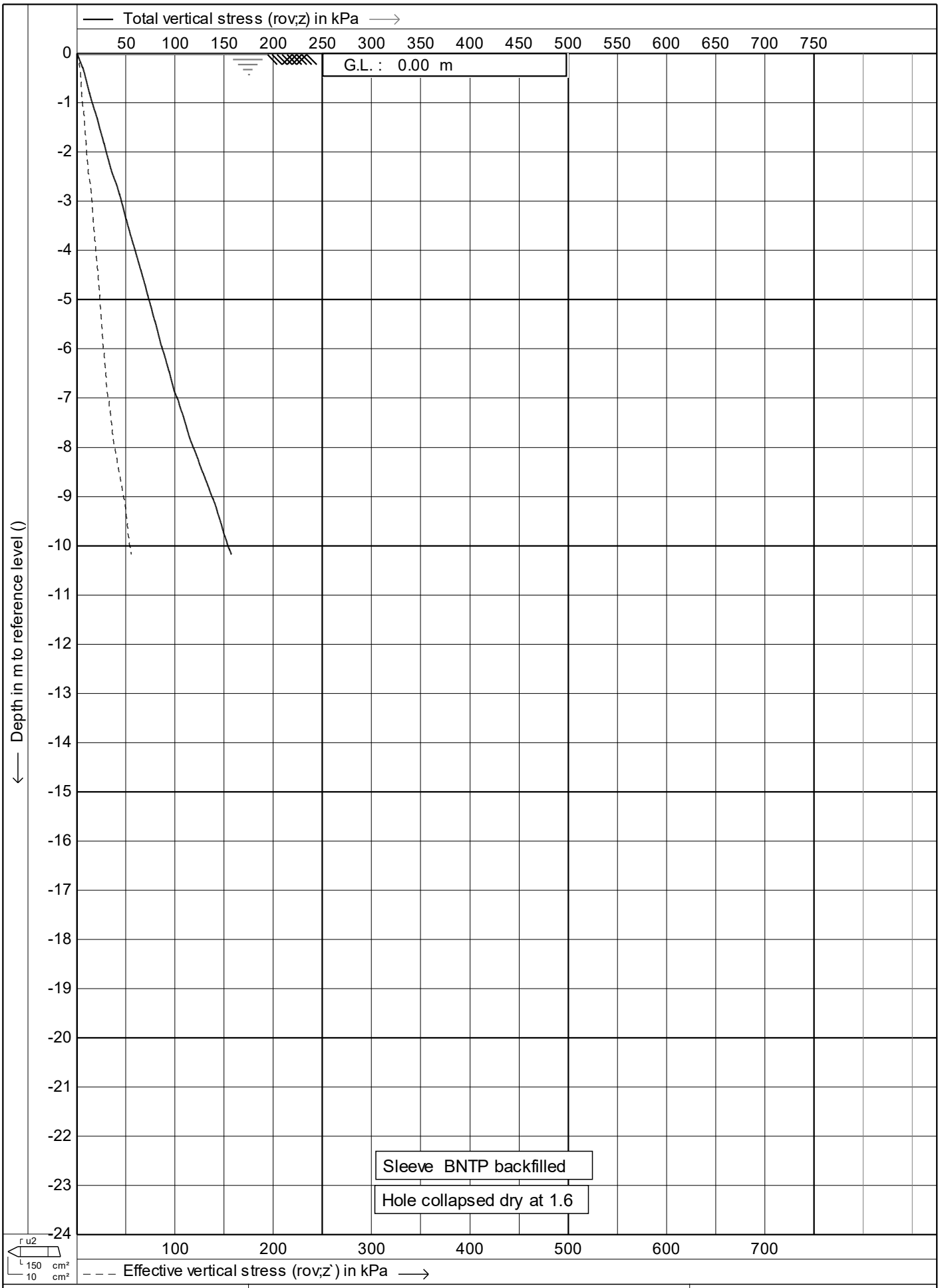
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **021**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

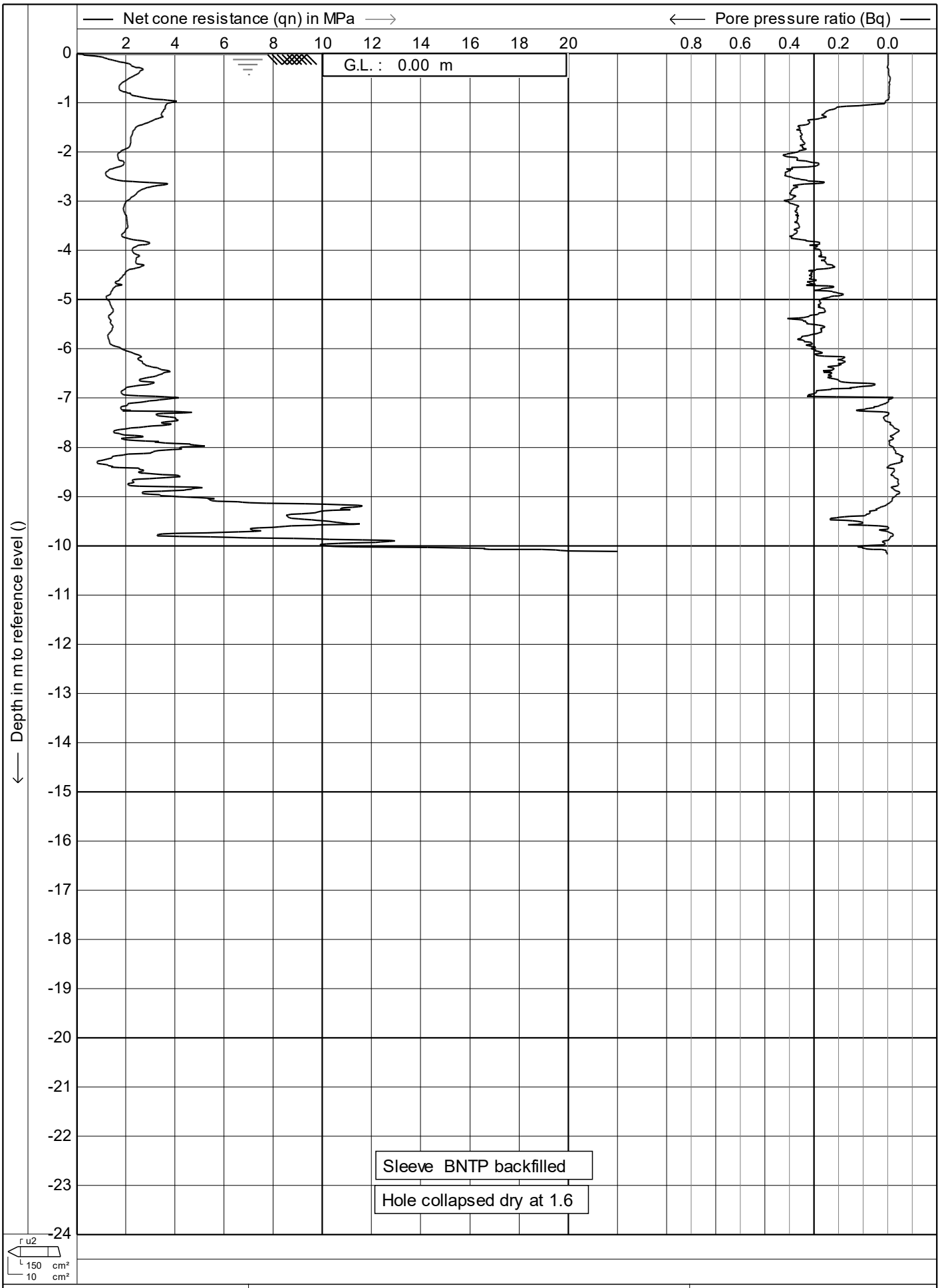
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **021**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

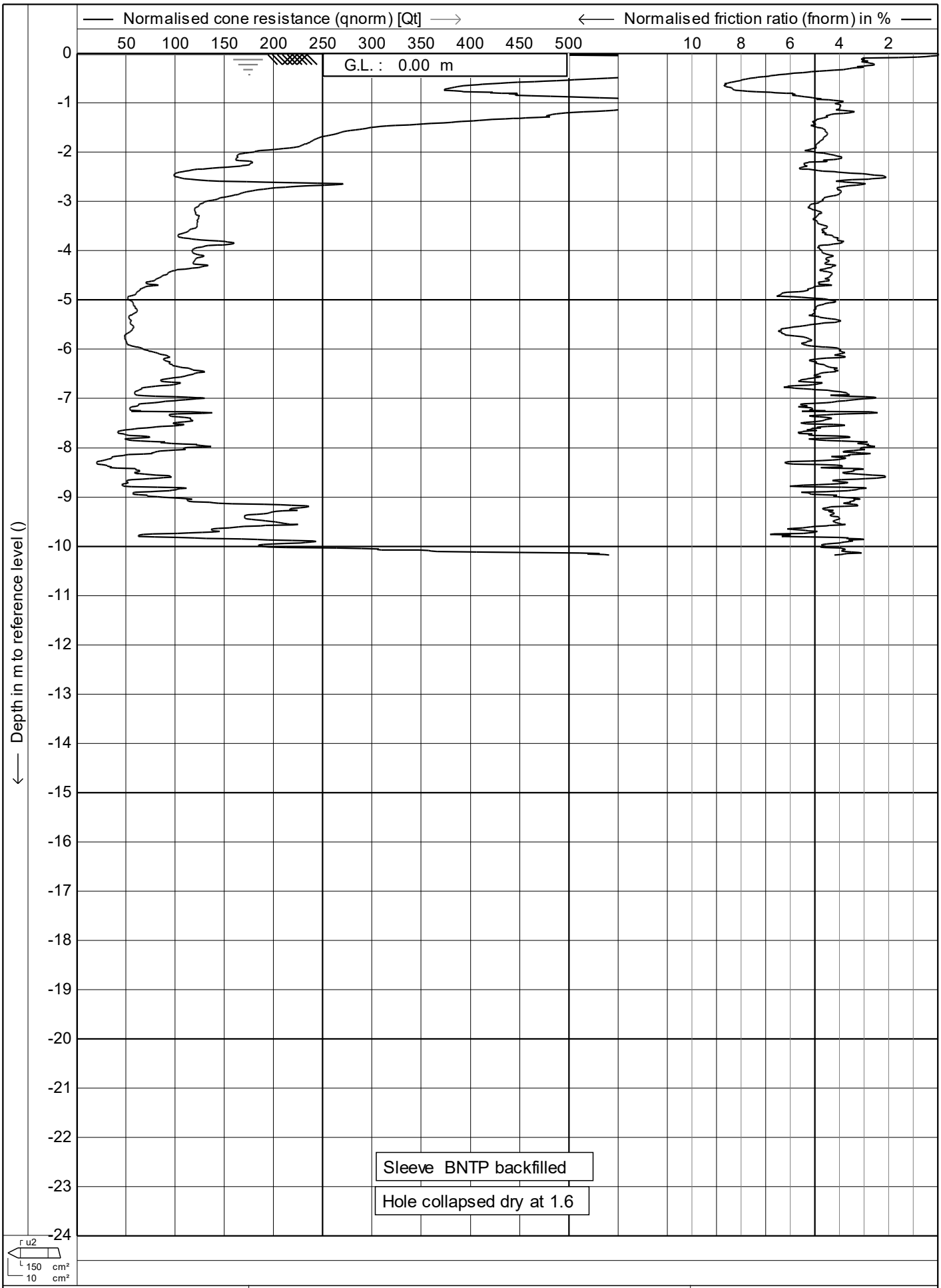
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **021** **7/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

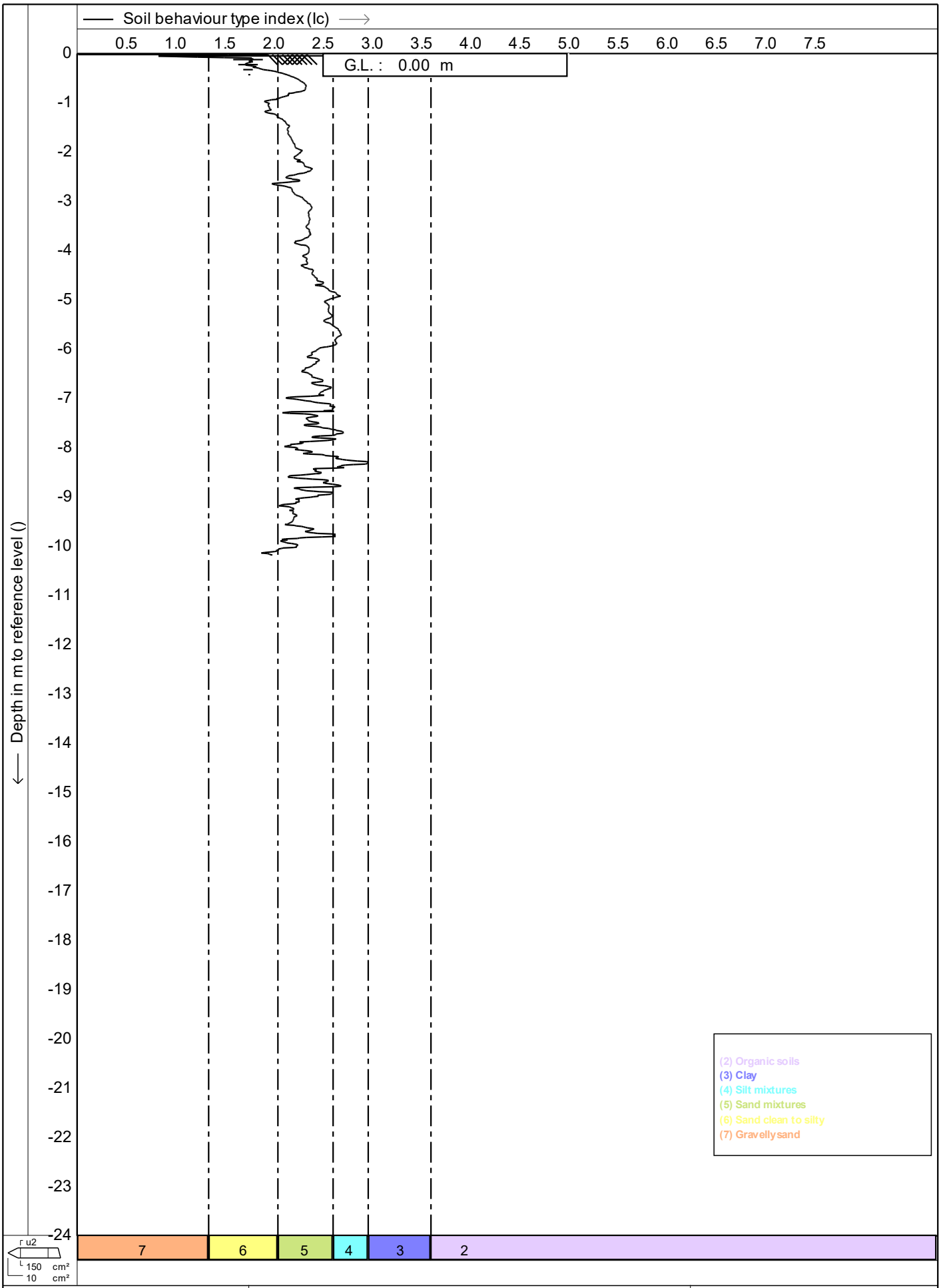
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **021** **8/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

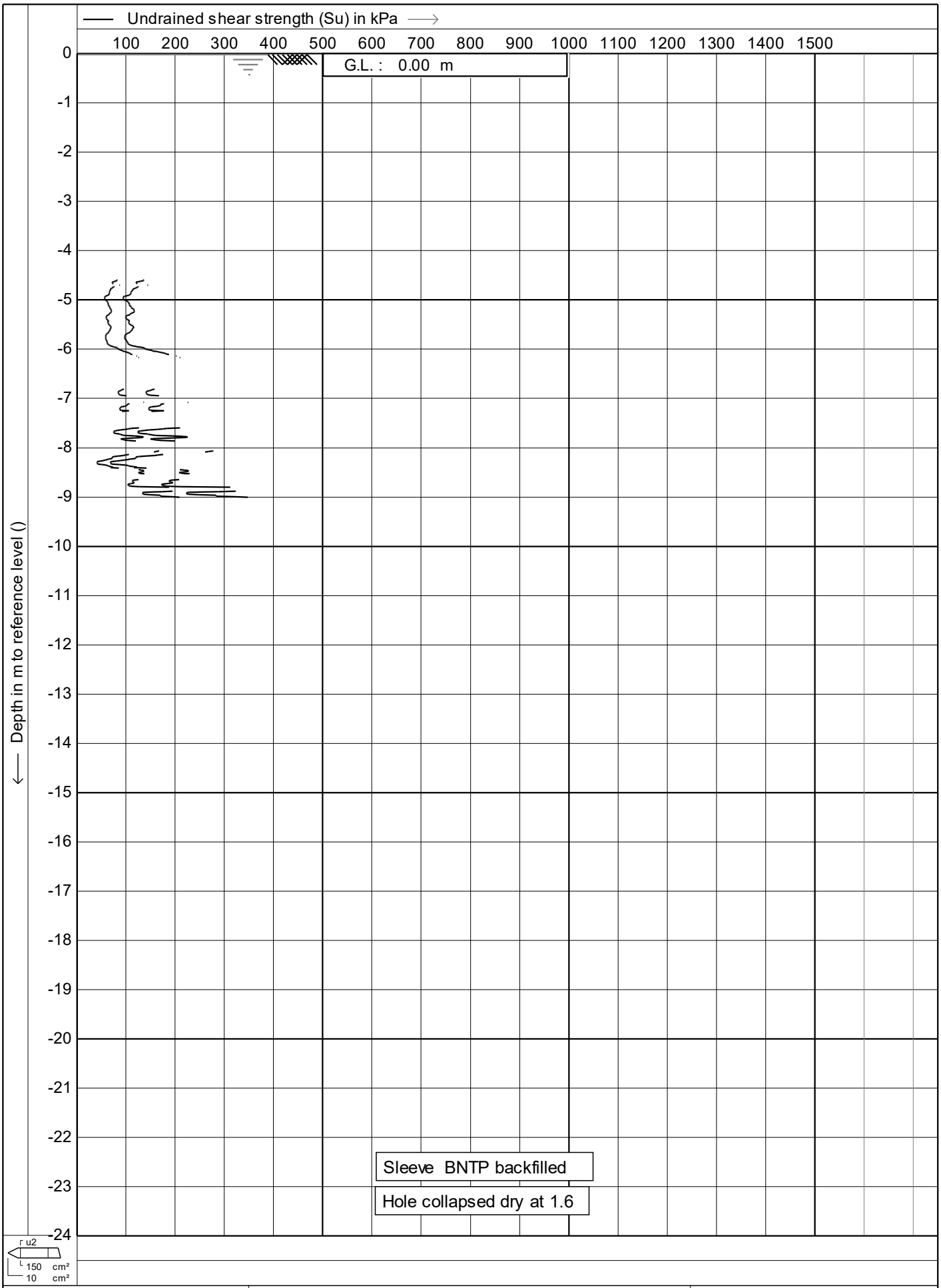
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **021**

9/14

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

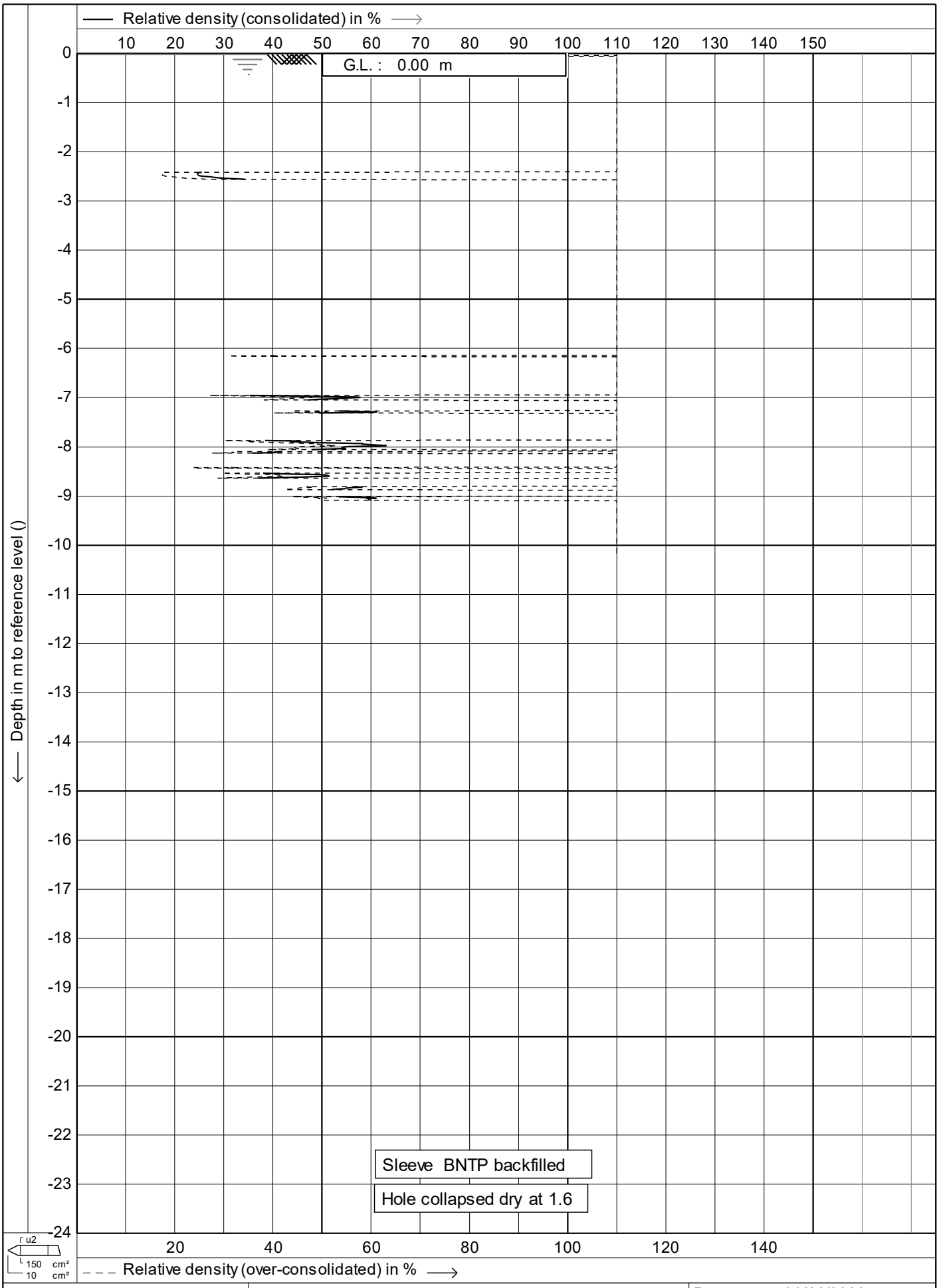
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **021**

10/14

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

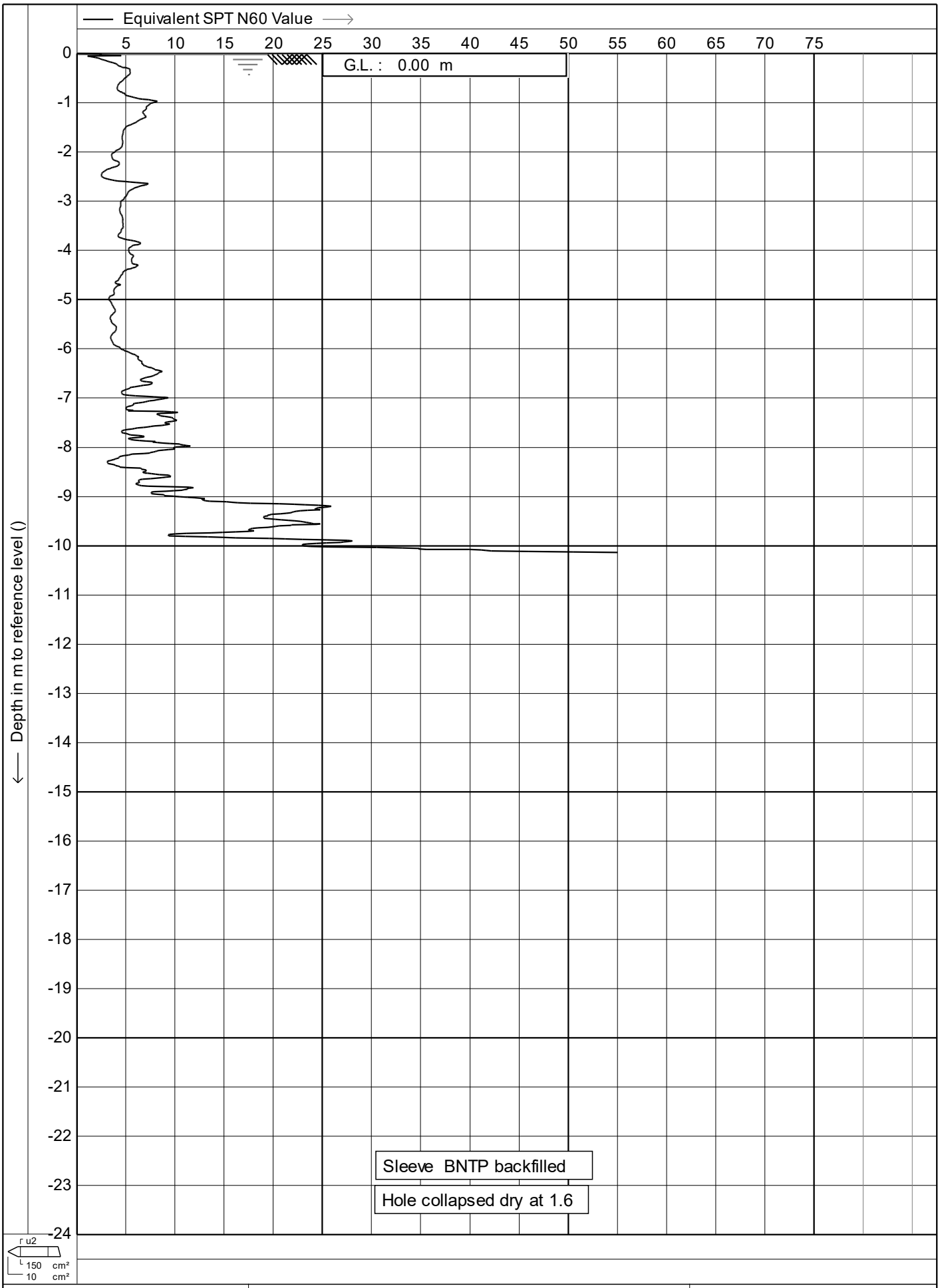
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **021**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

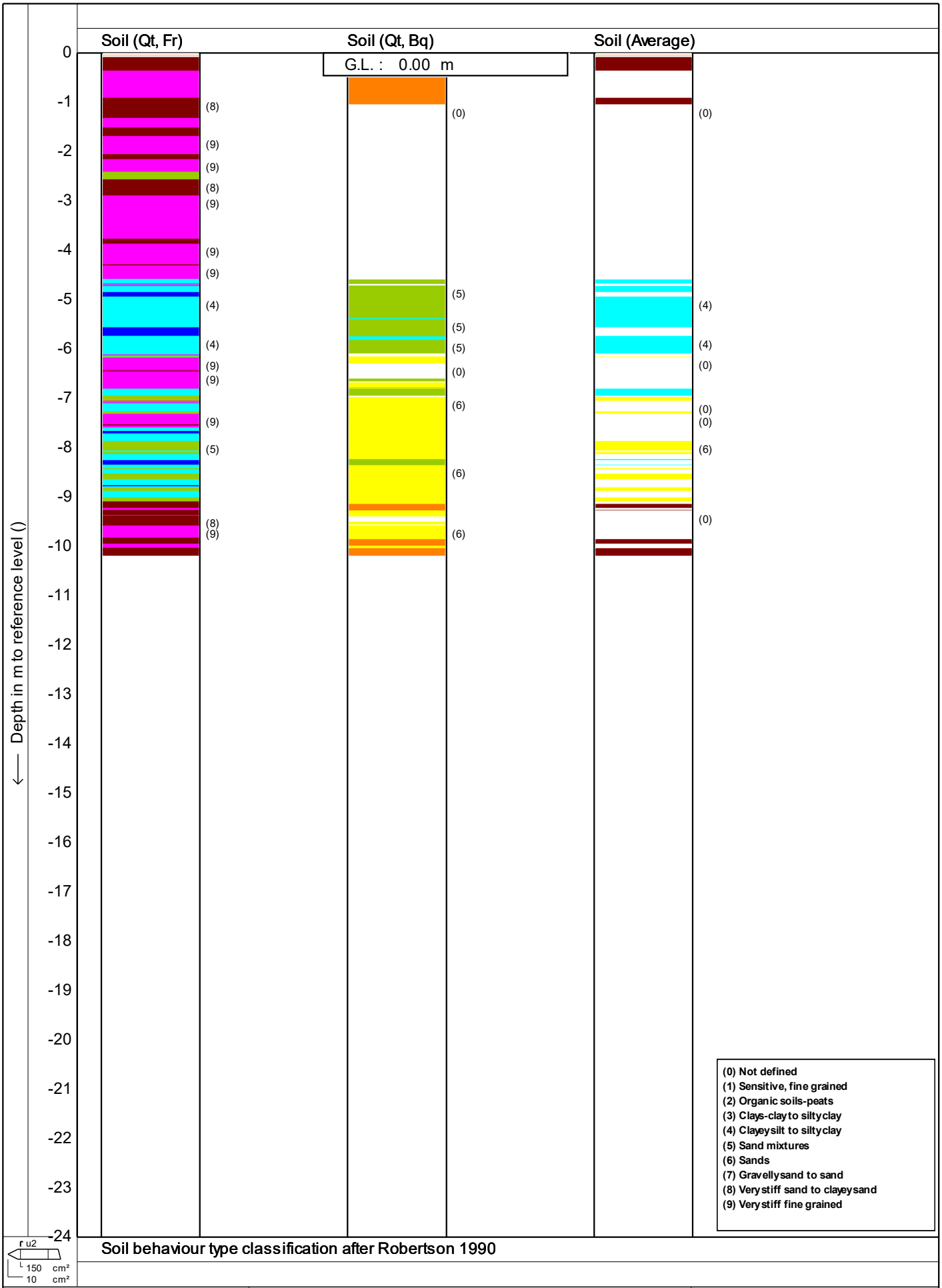
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **021**

12/14

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

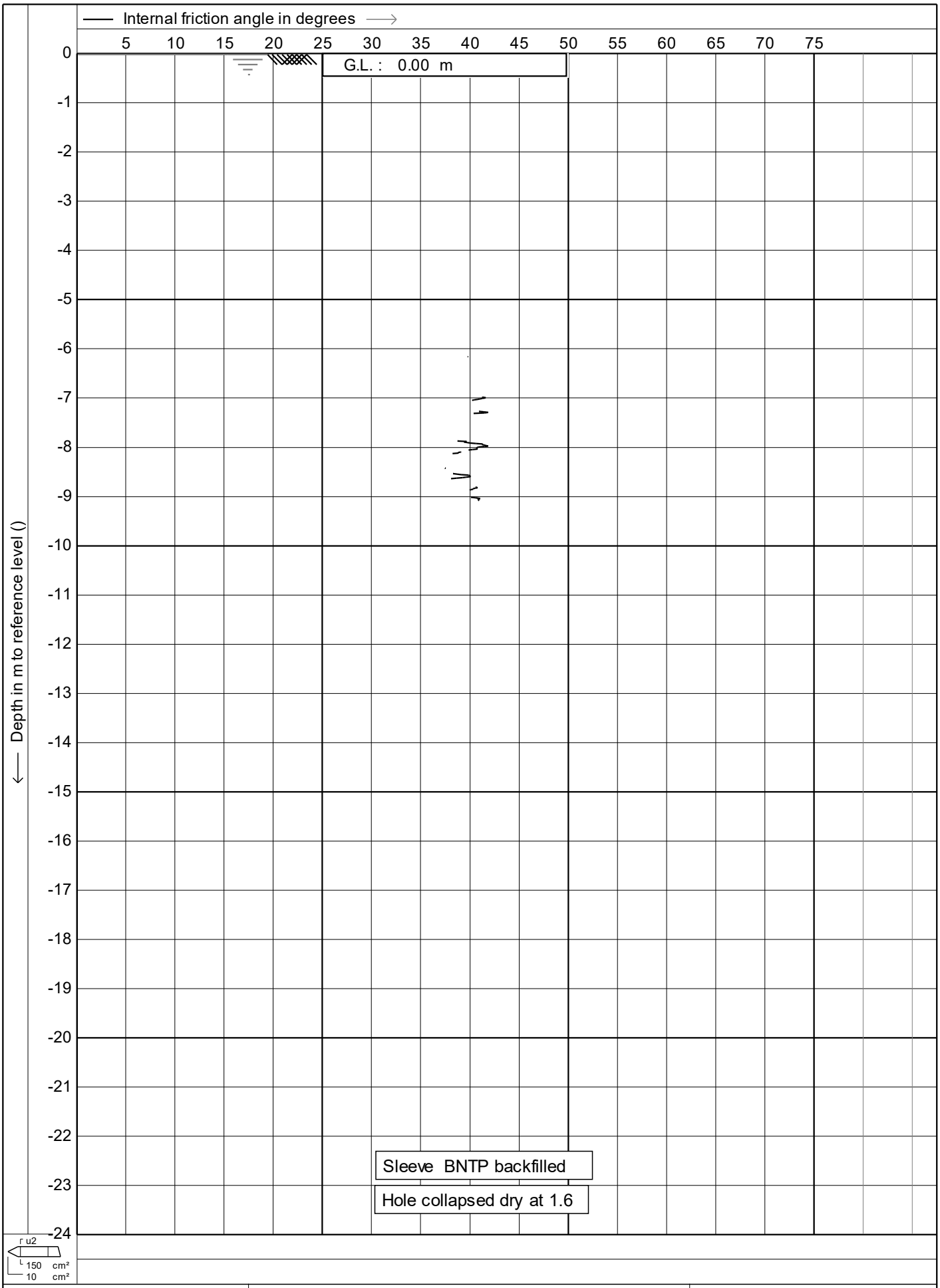
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **021**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

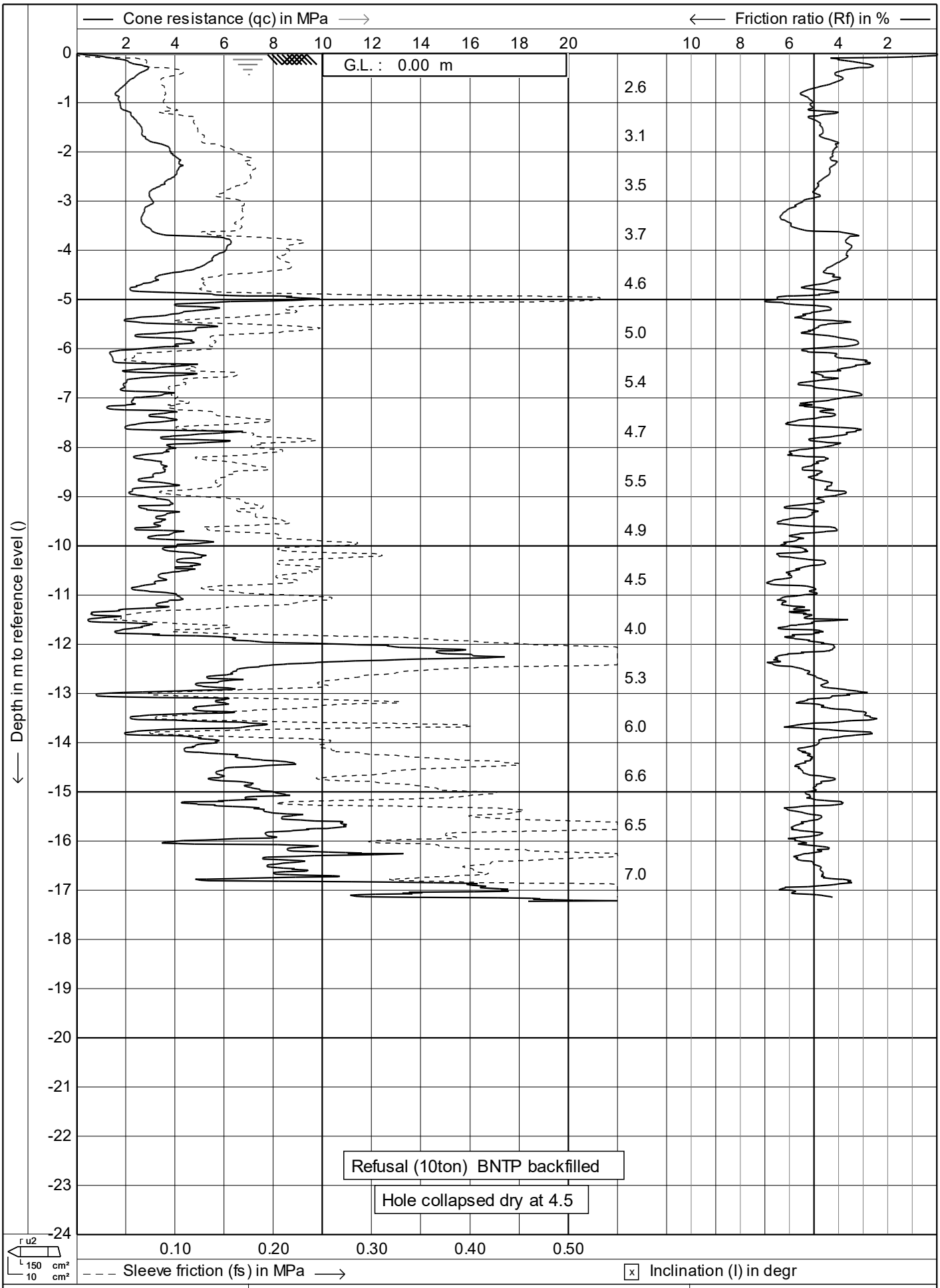
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **021**

14/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

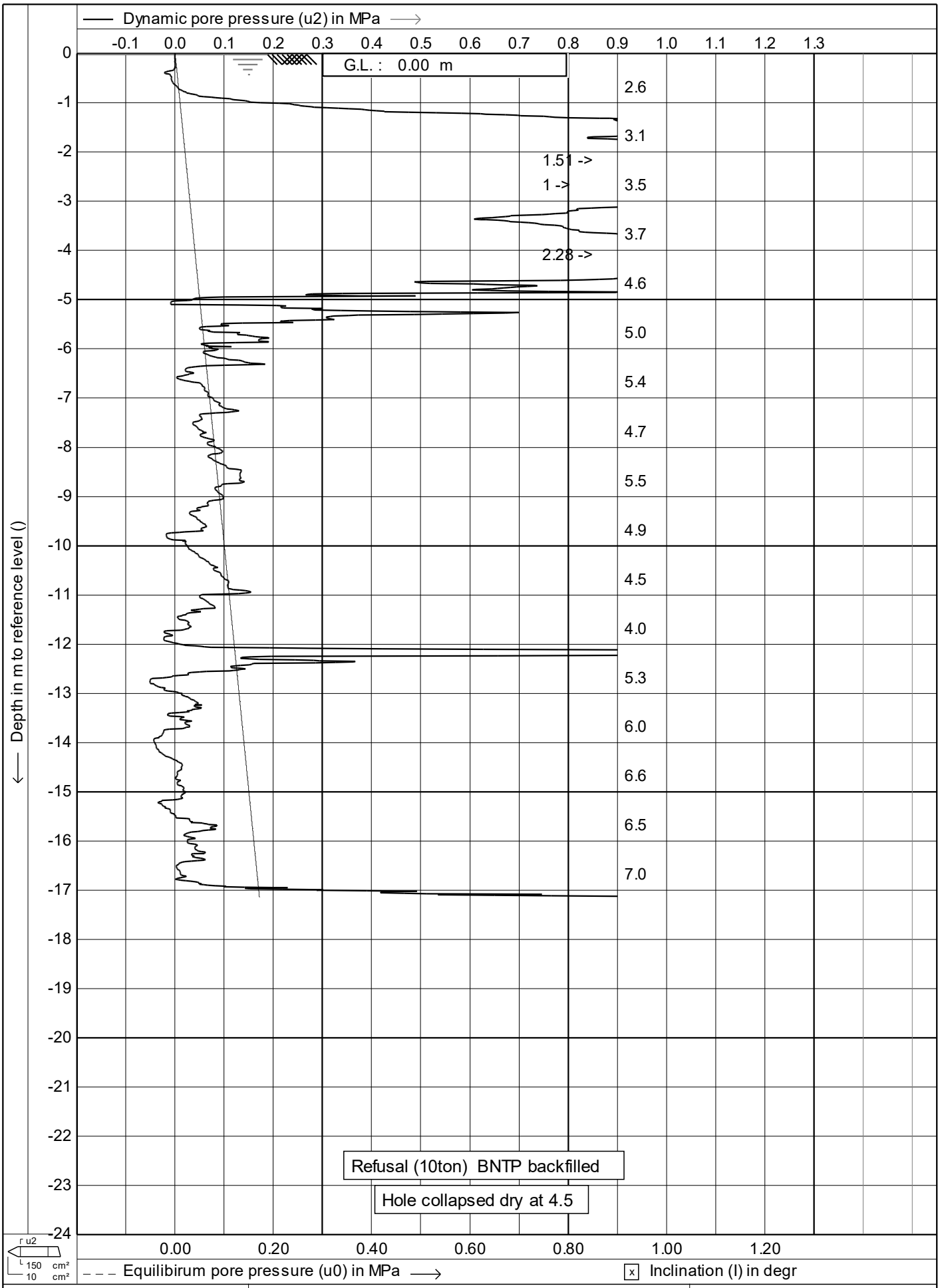
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **022**

1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

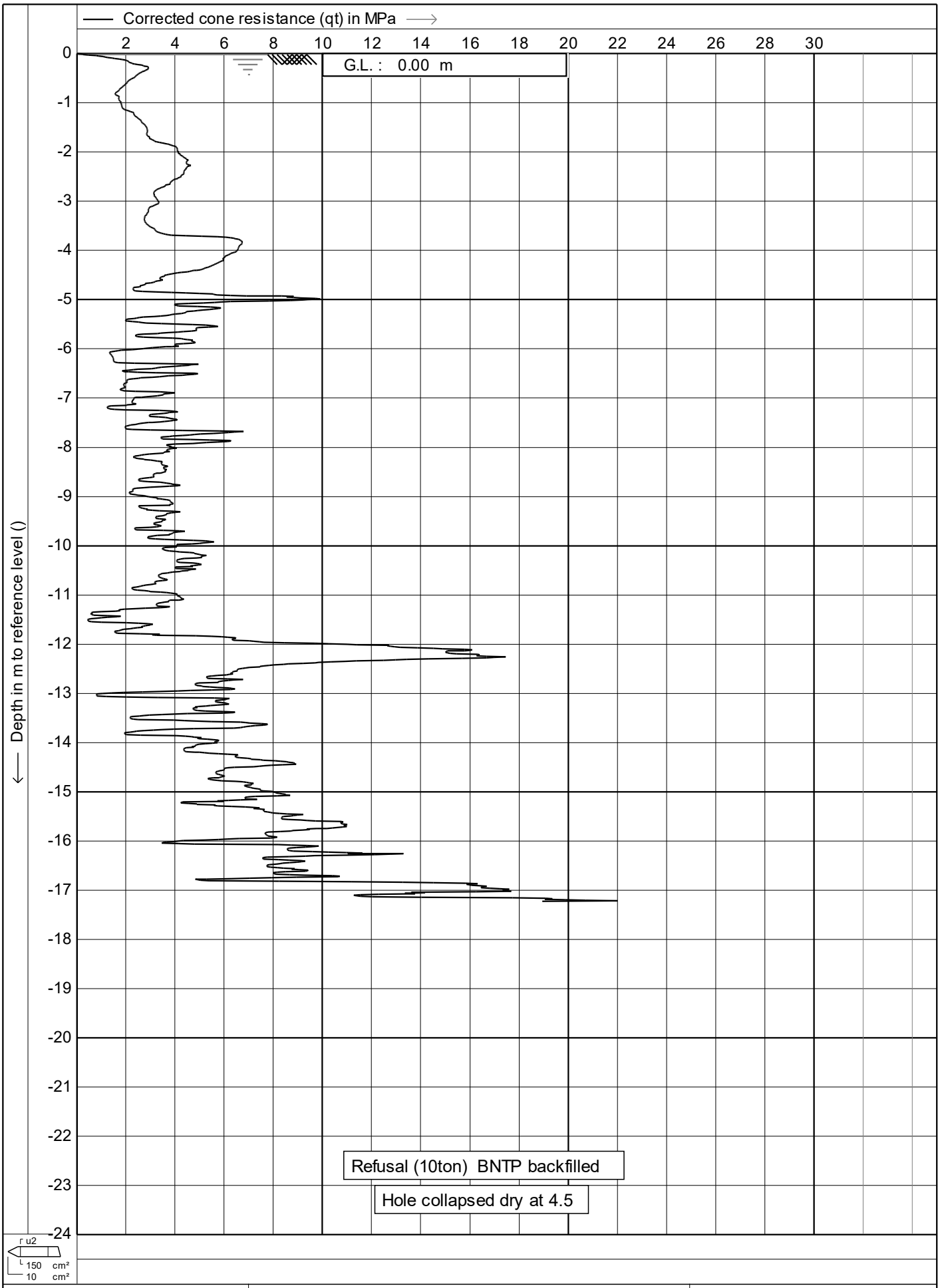
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **022**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

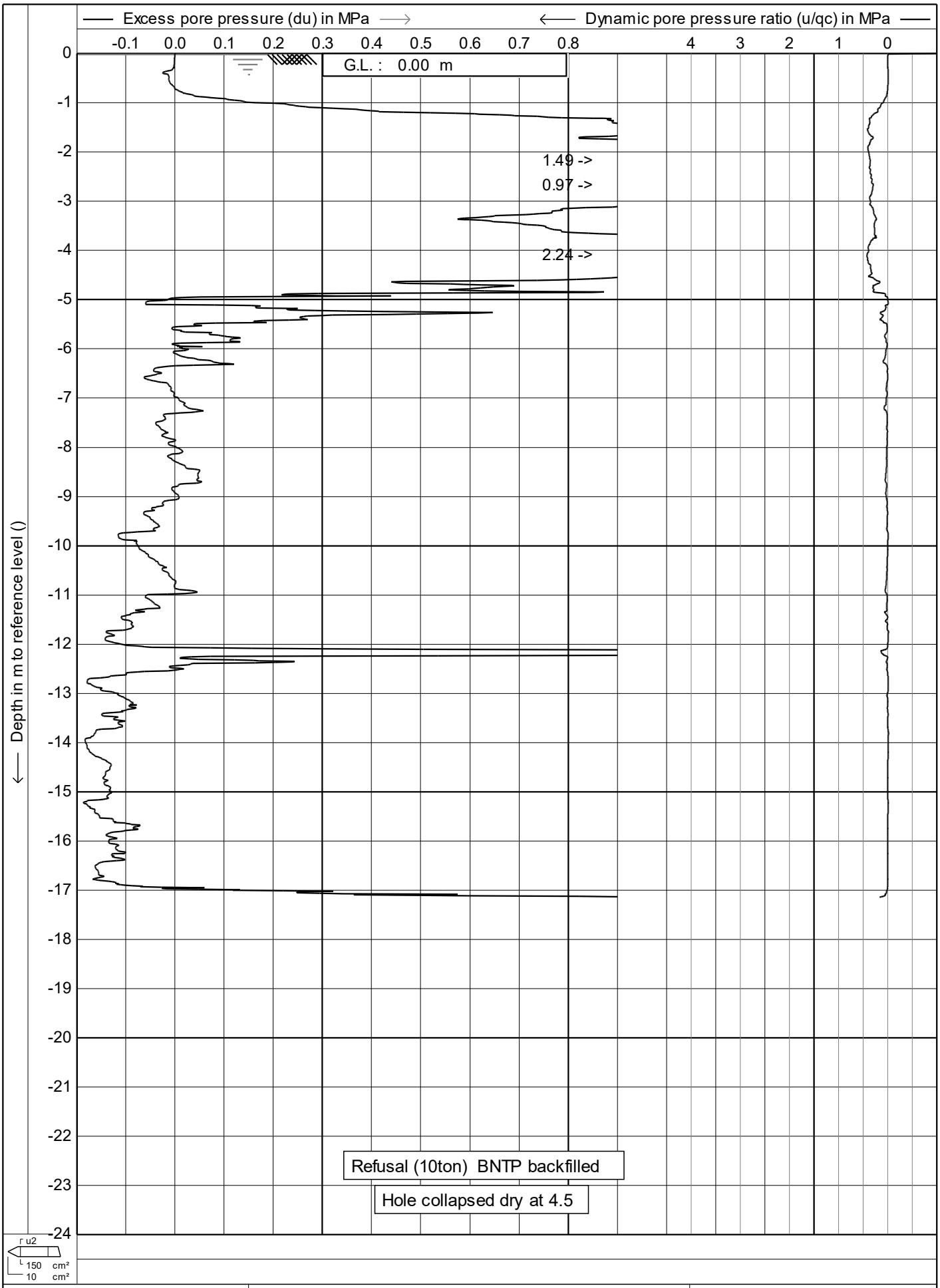
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **022**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

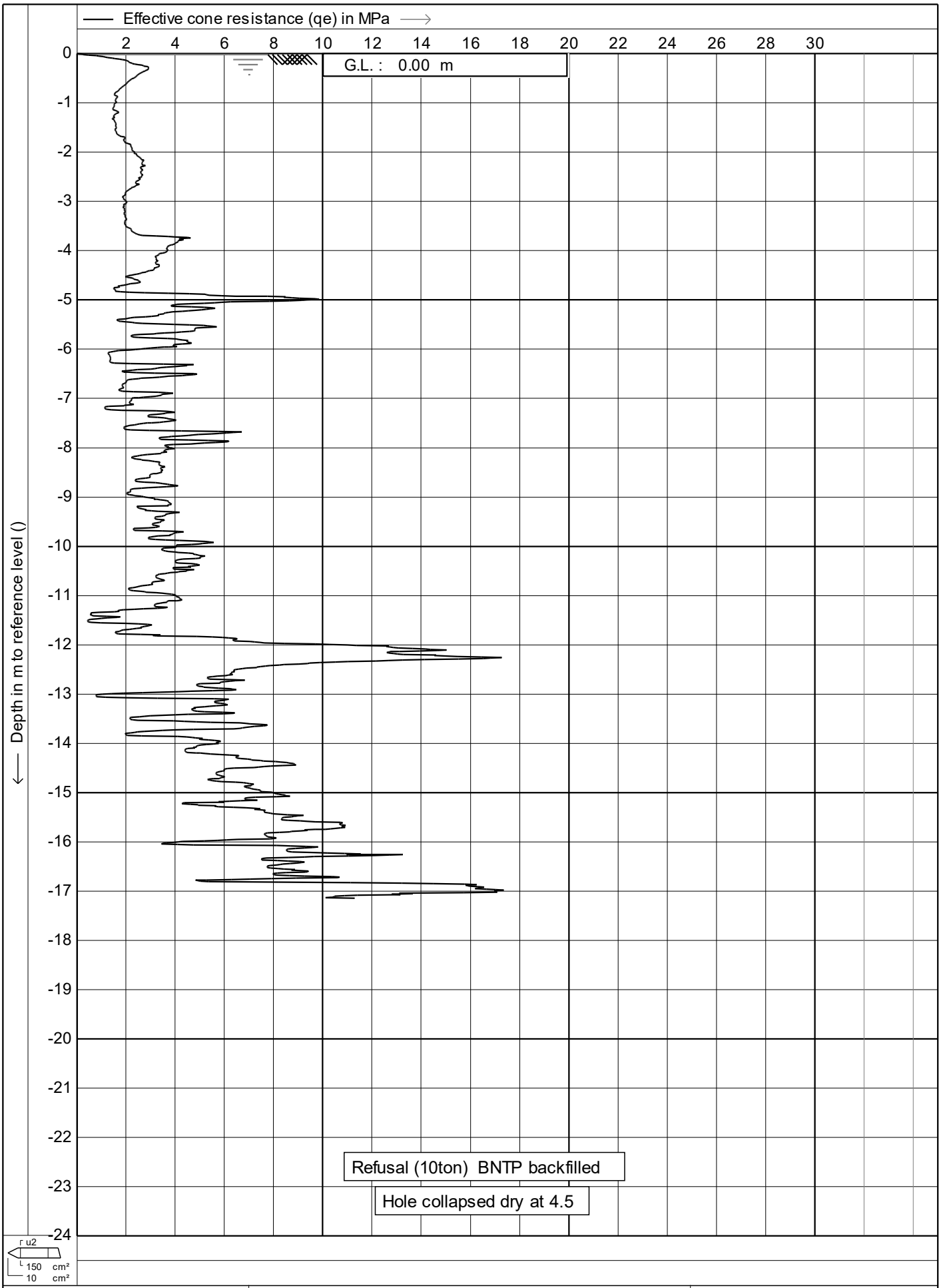
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **022**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

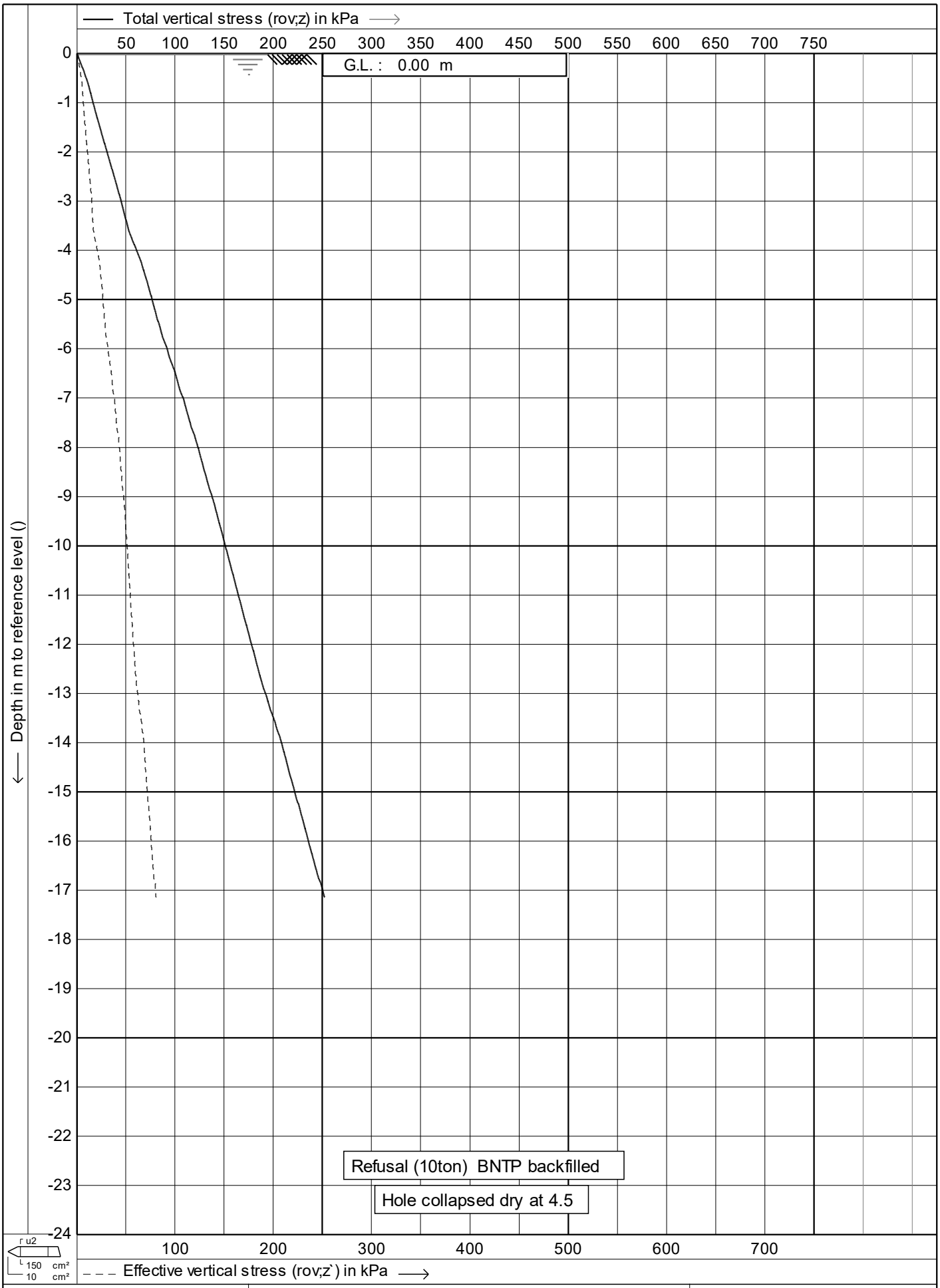
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **022**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

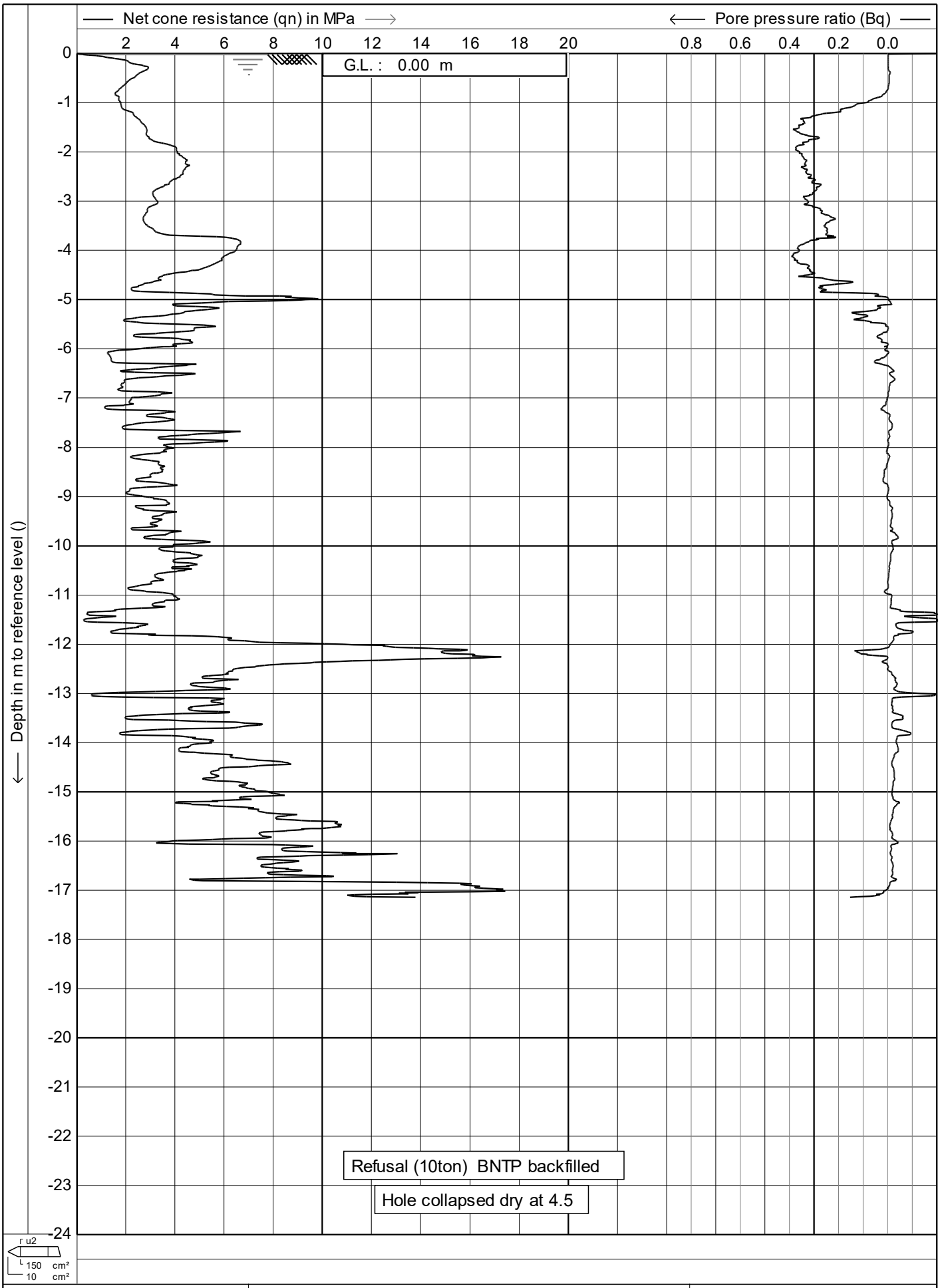
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **022**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

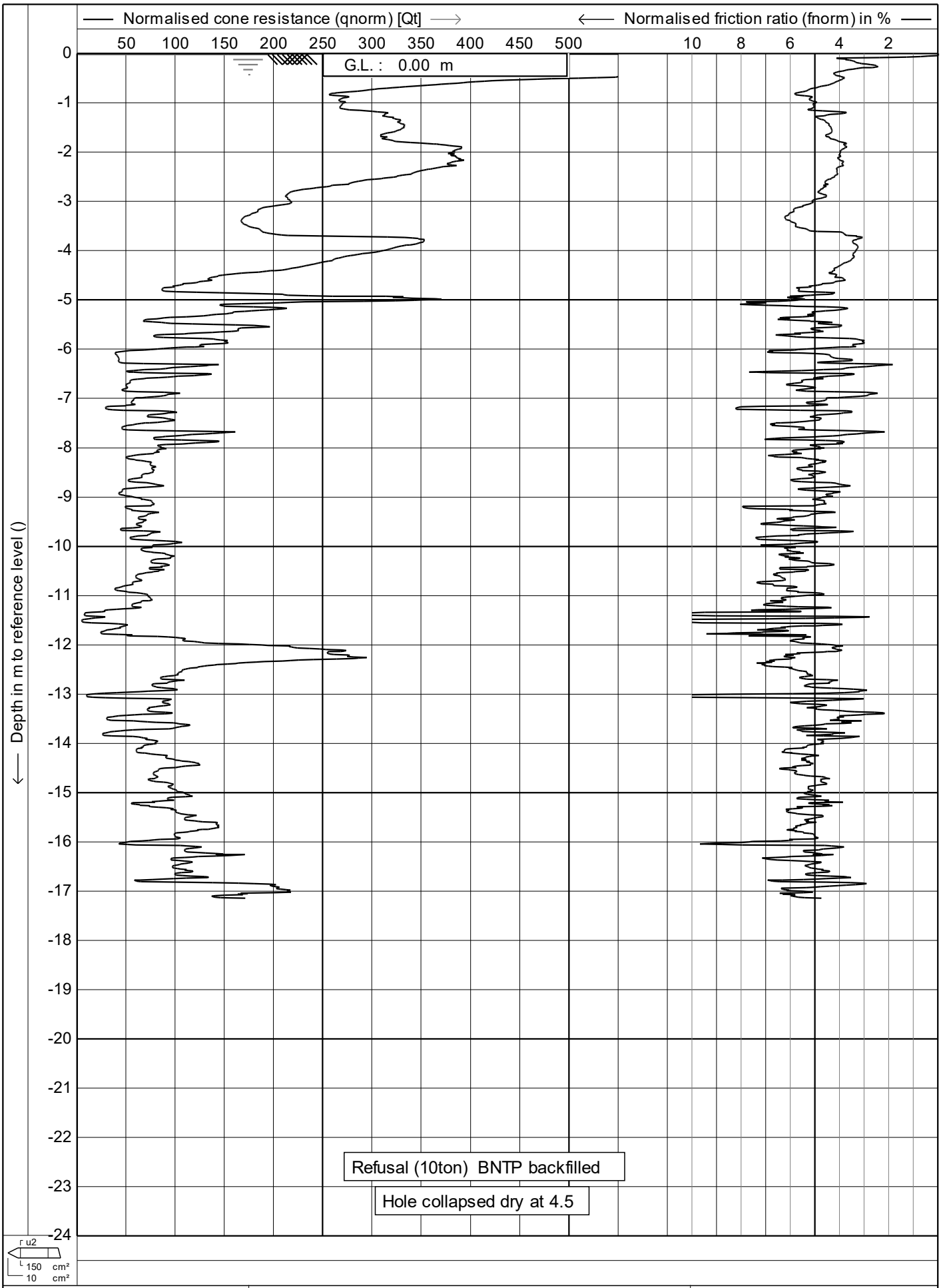
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **022**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

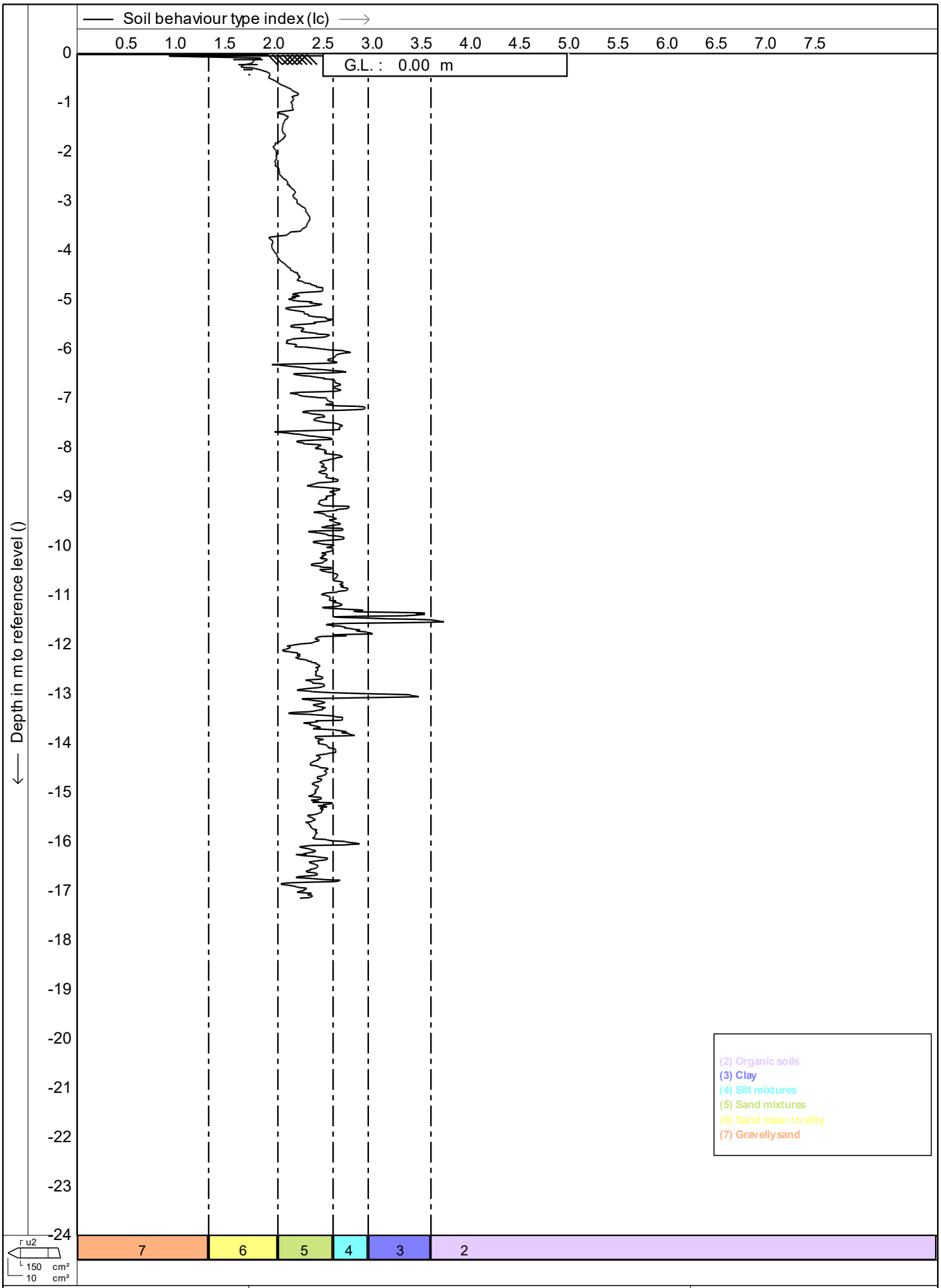
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **022**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

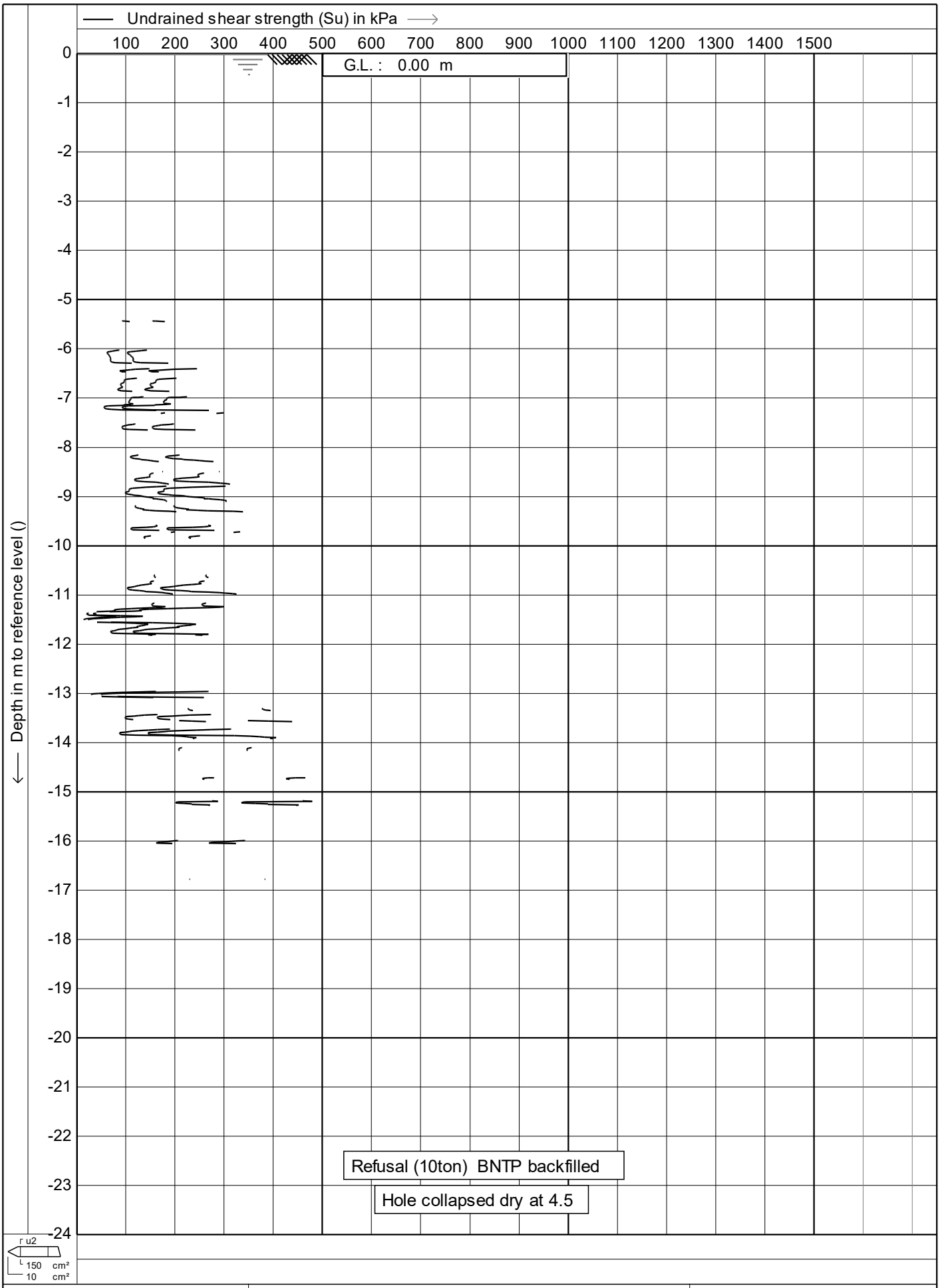
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **022** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

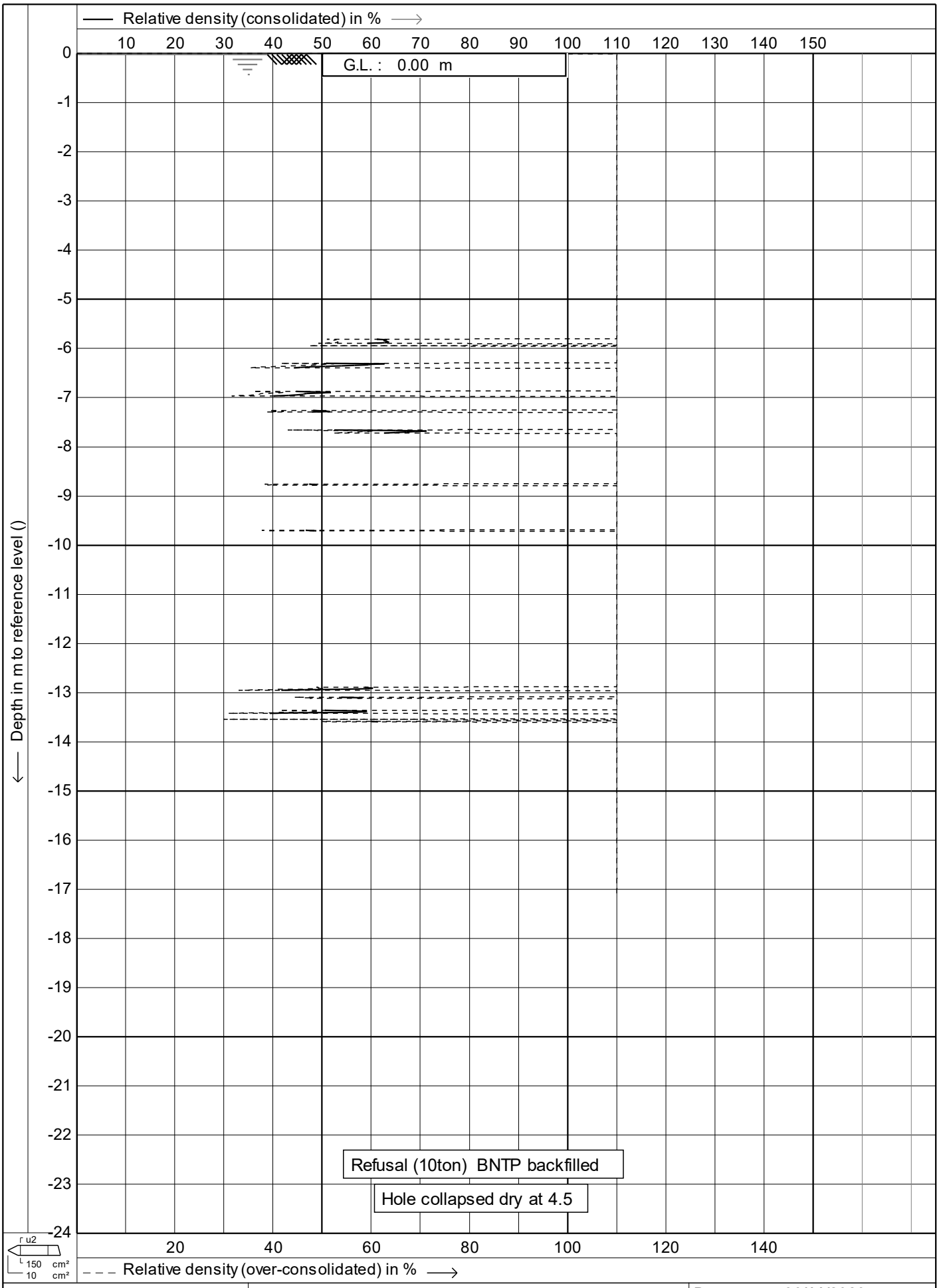
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **022**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

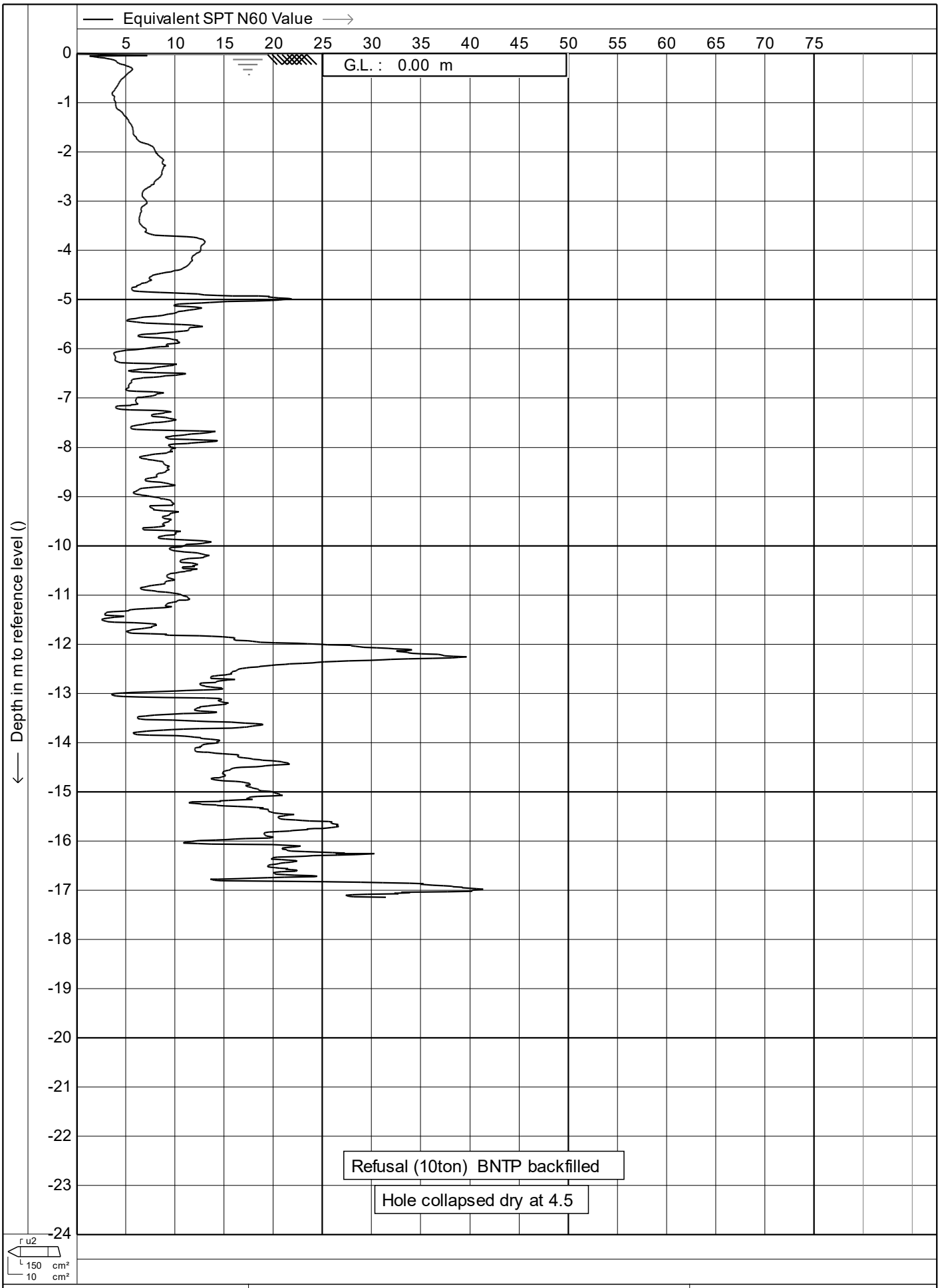
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **022**

11/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

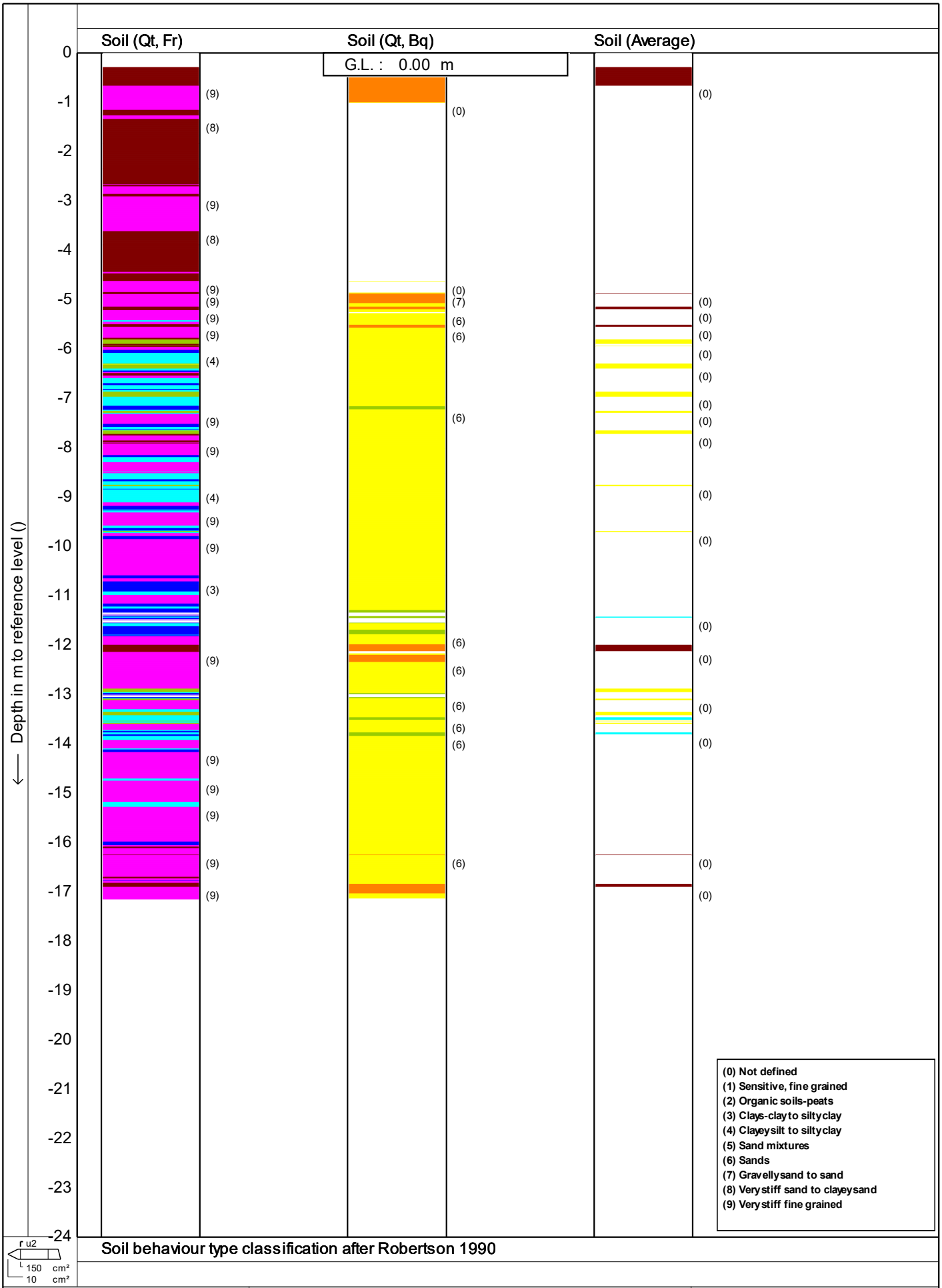
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **022**

12/14

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

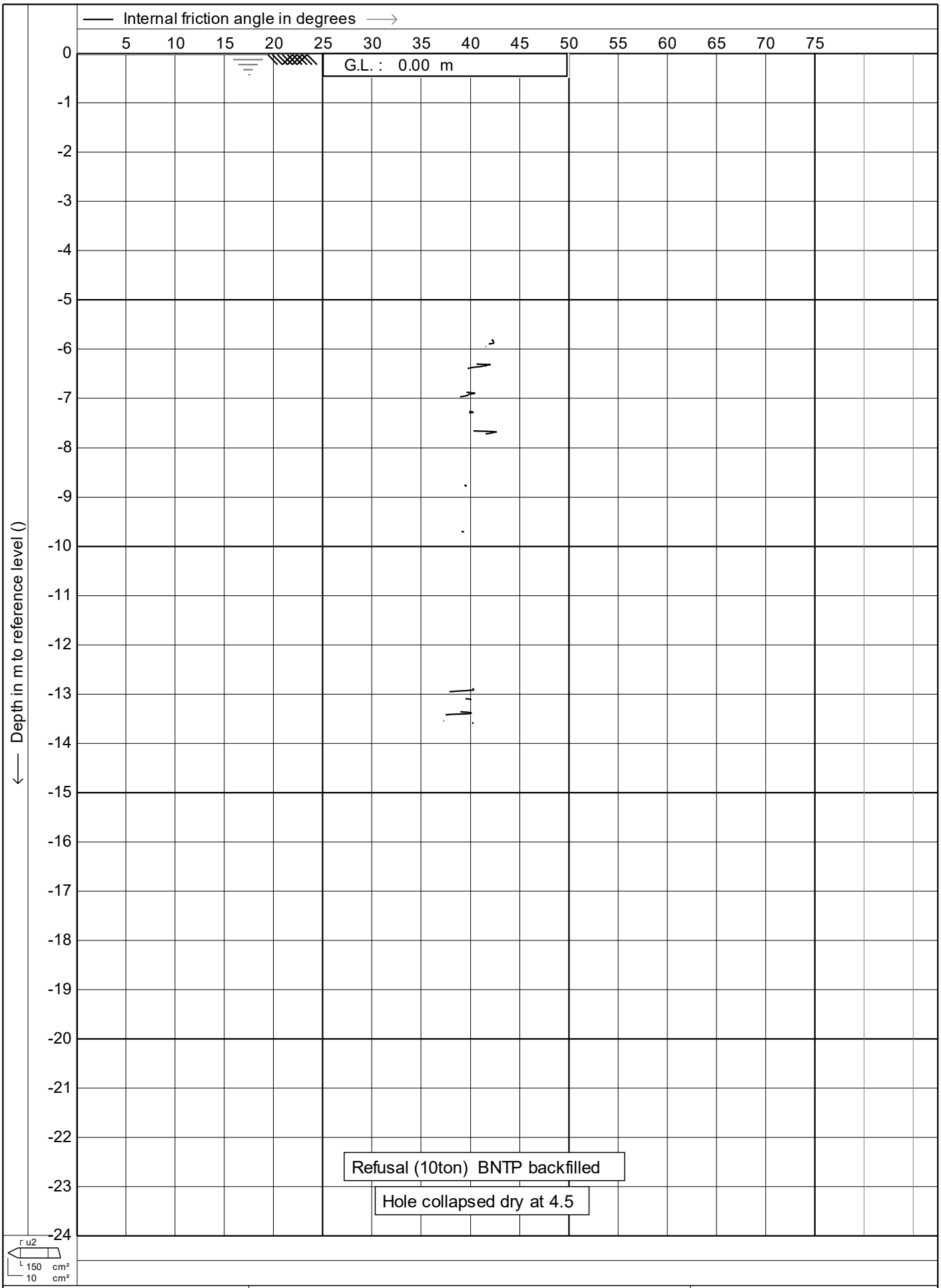
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **022**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

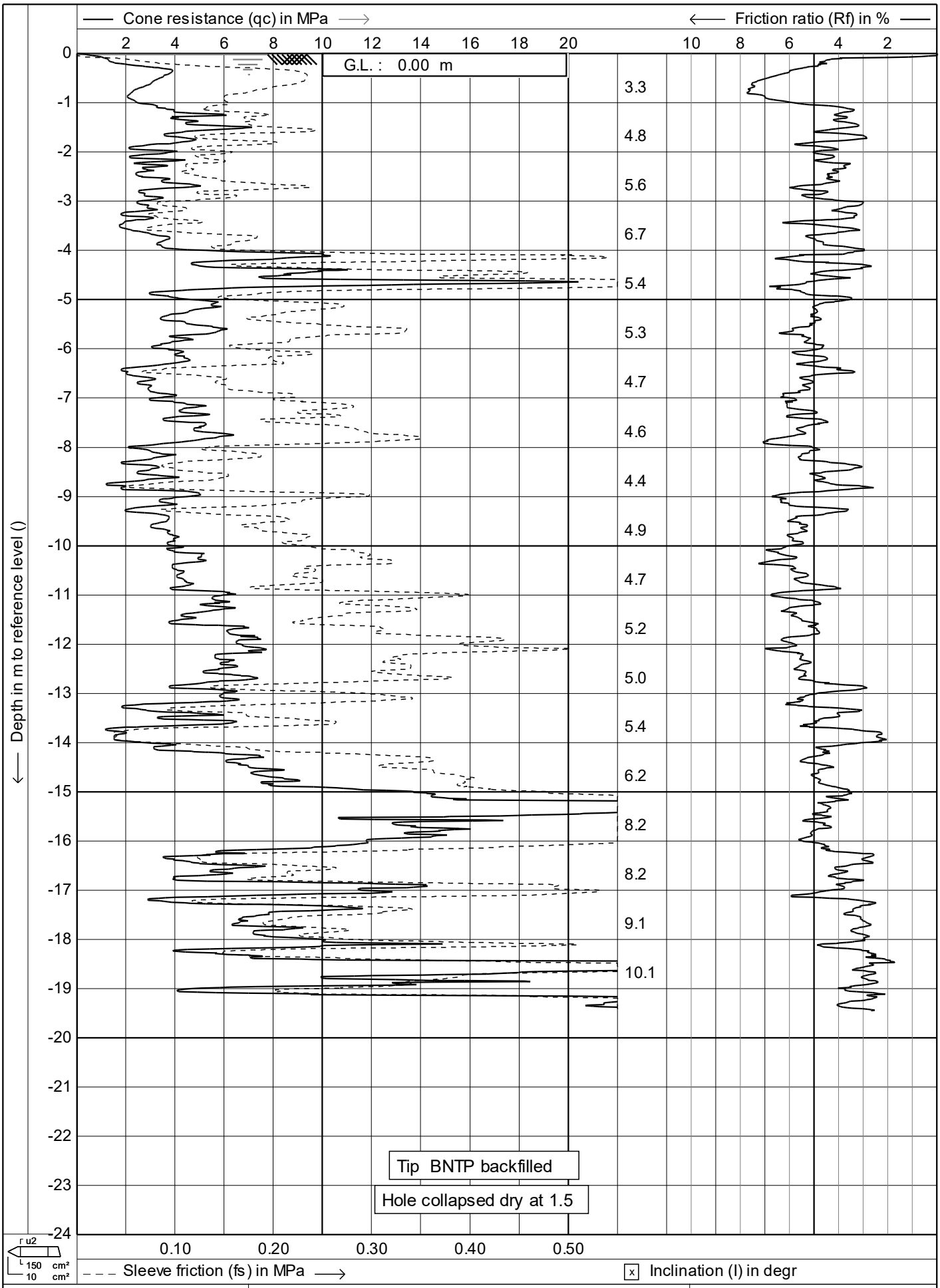
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **022**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

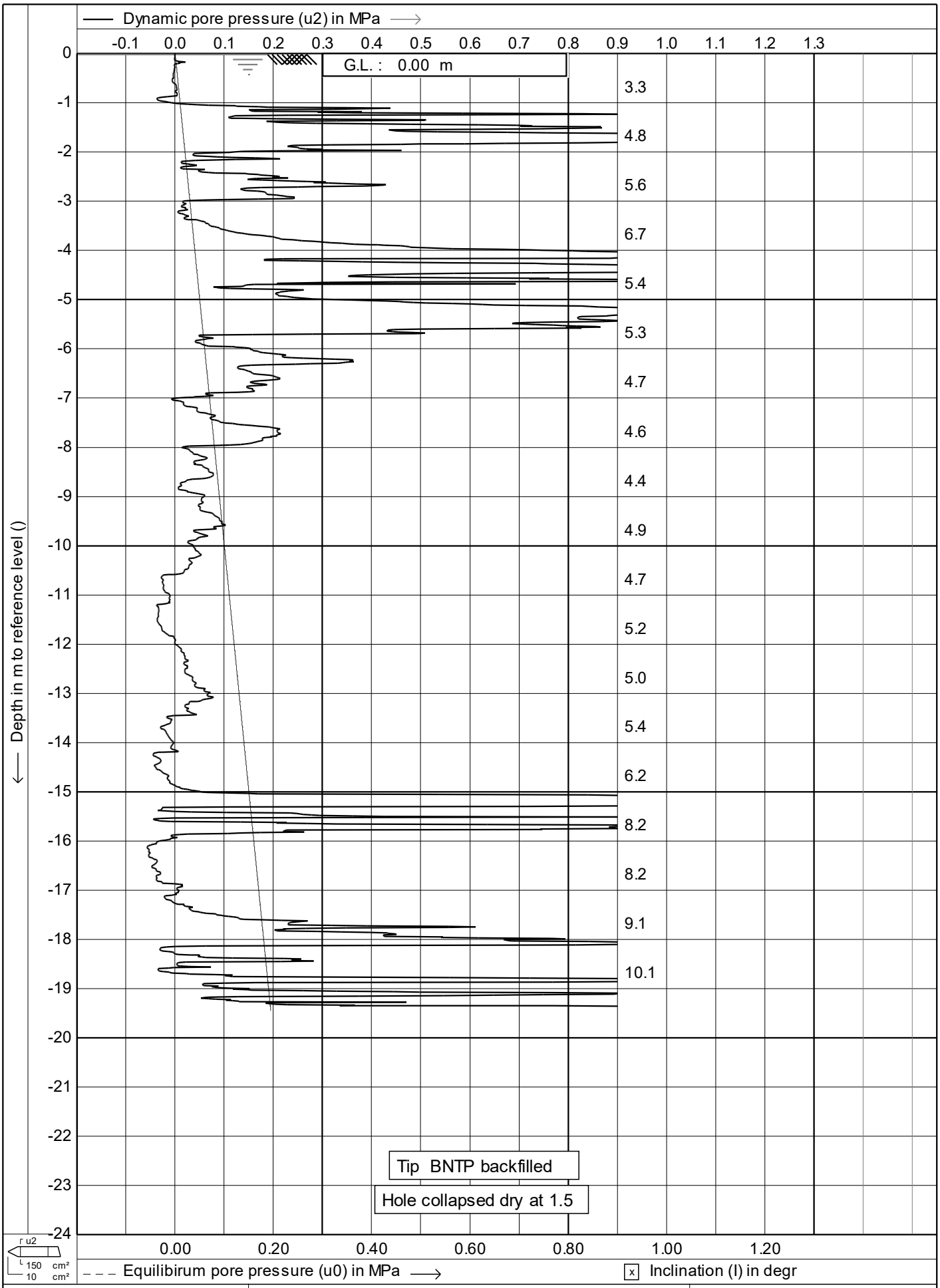
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **023**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

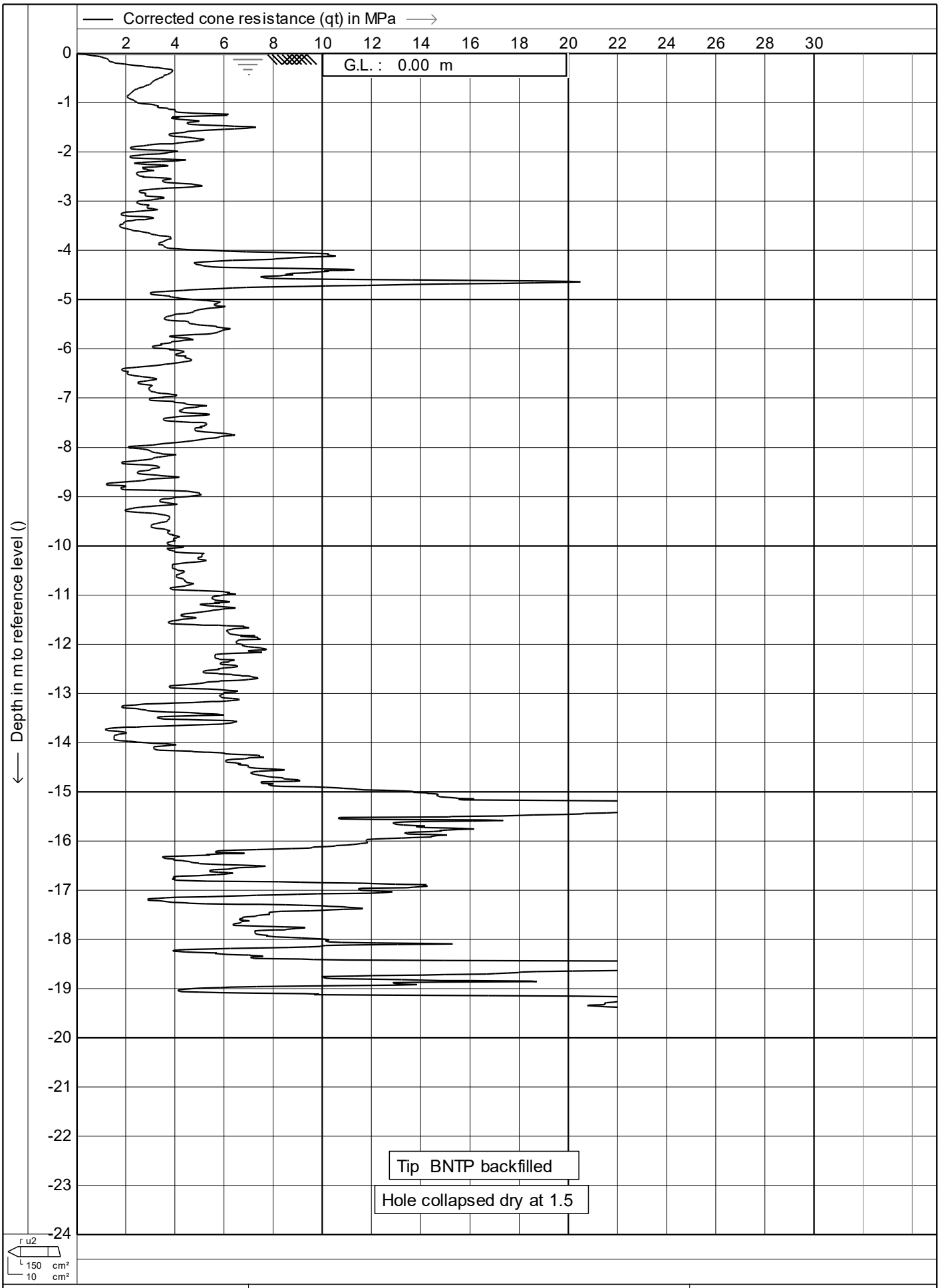
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **023**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

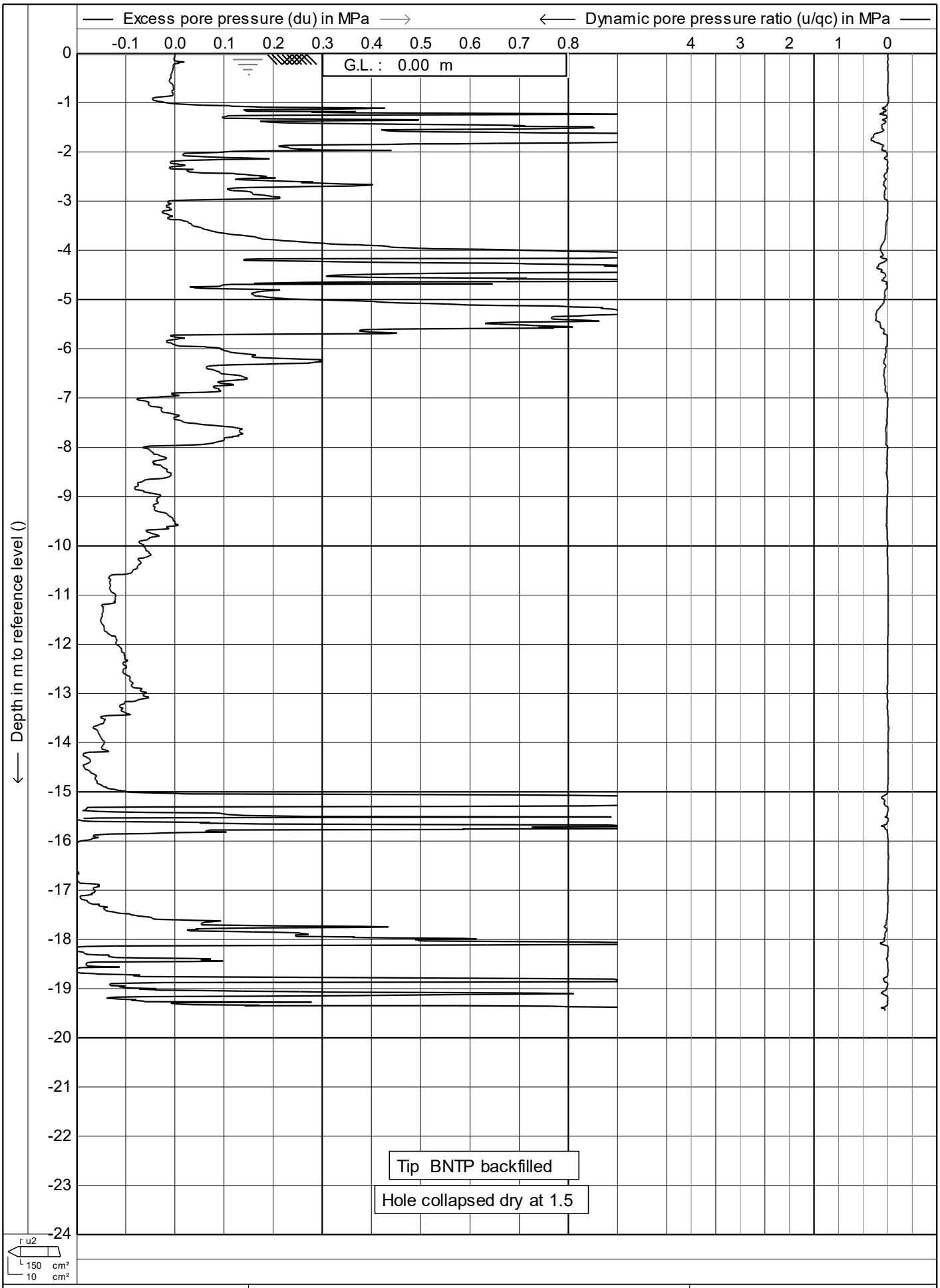
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **023**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

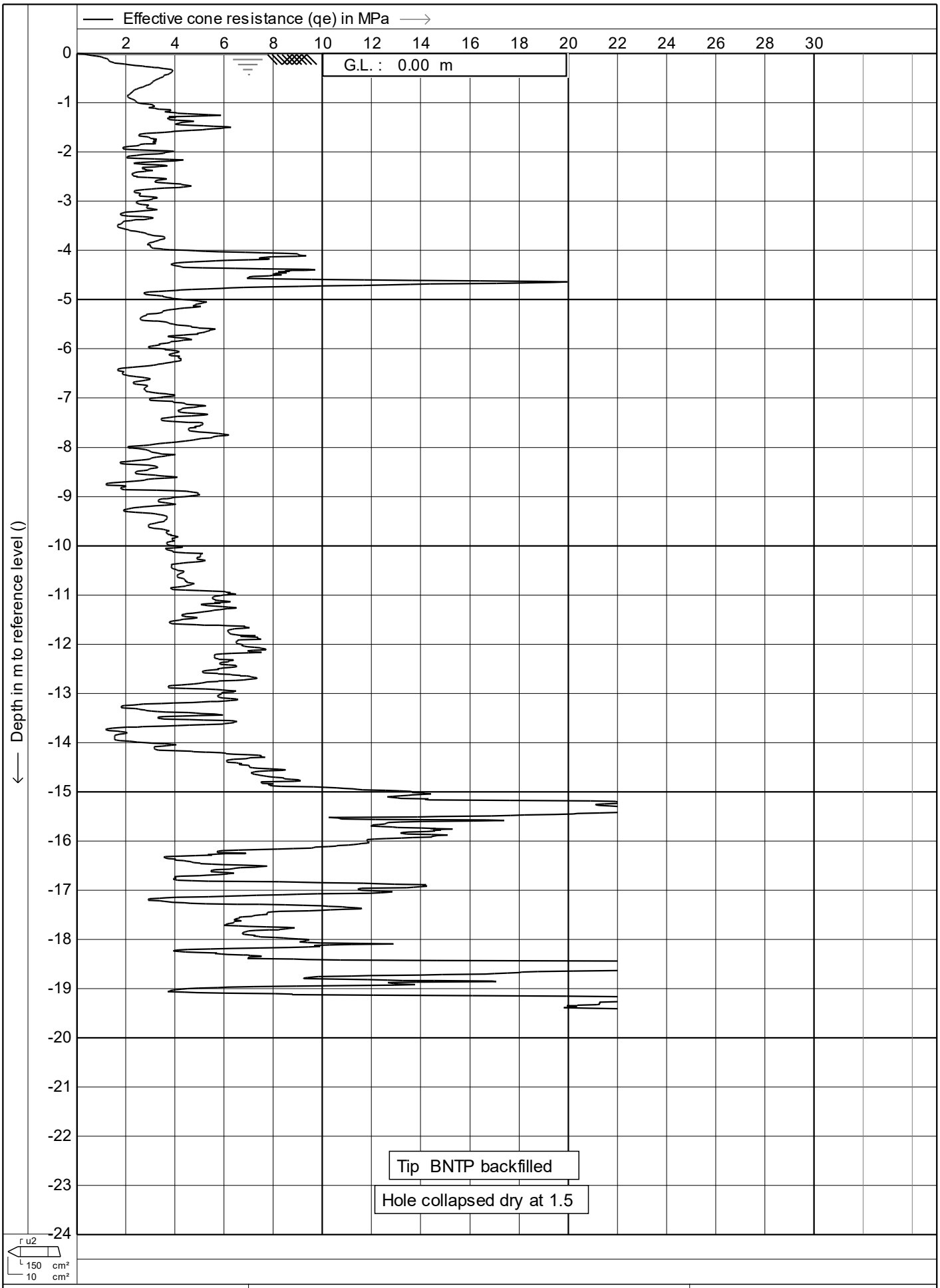
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **023** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

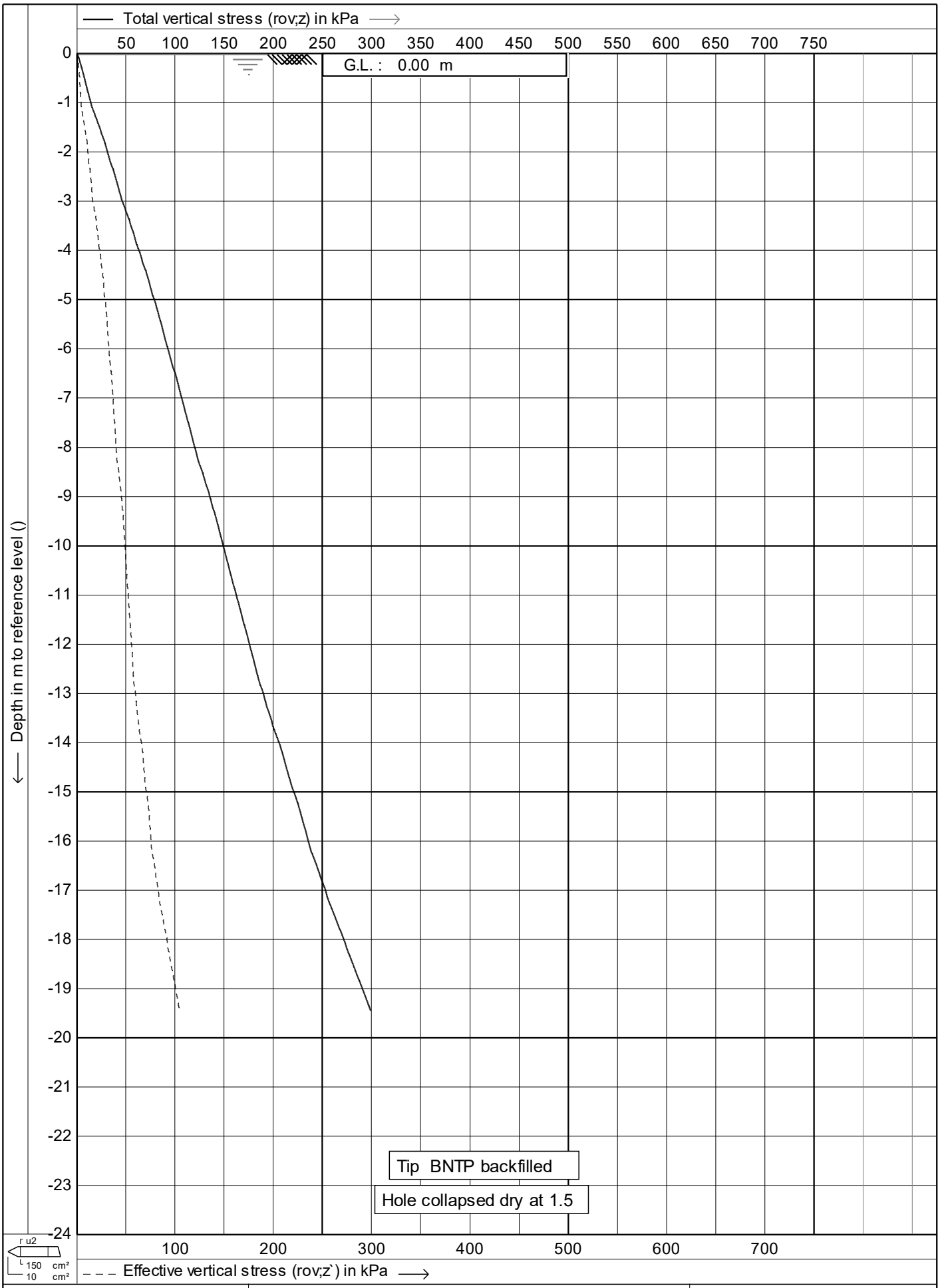
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **023**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

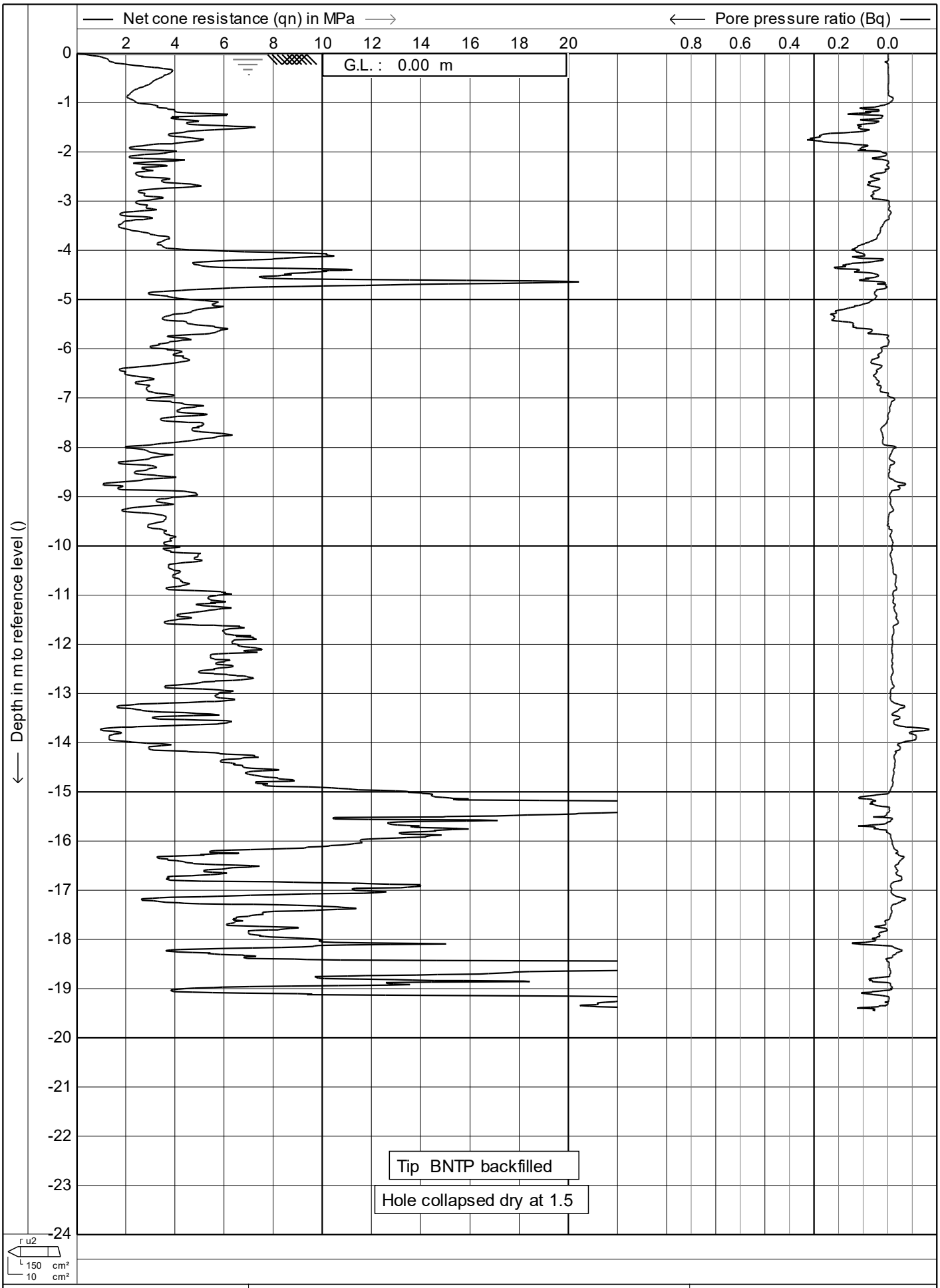
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **023**

6/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

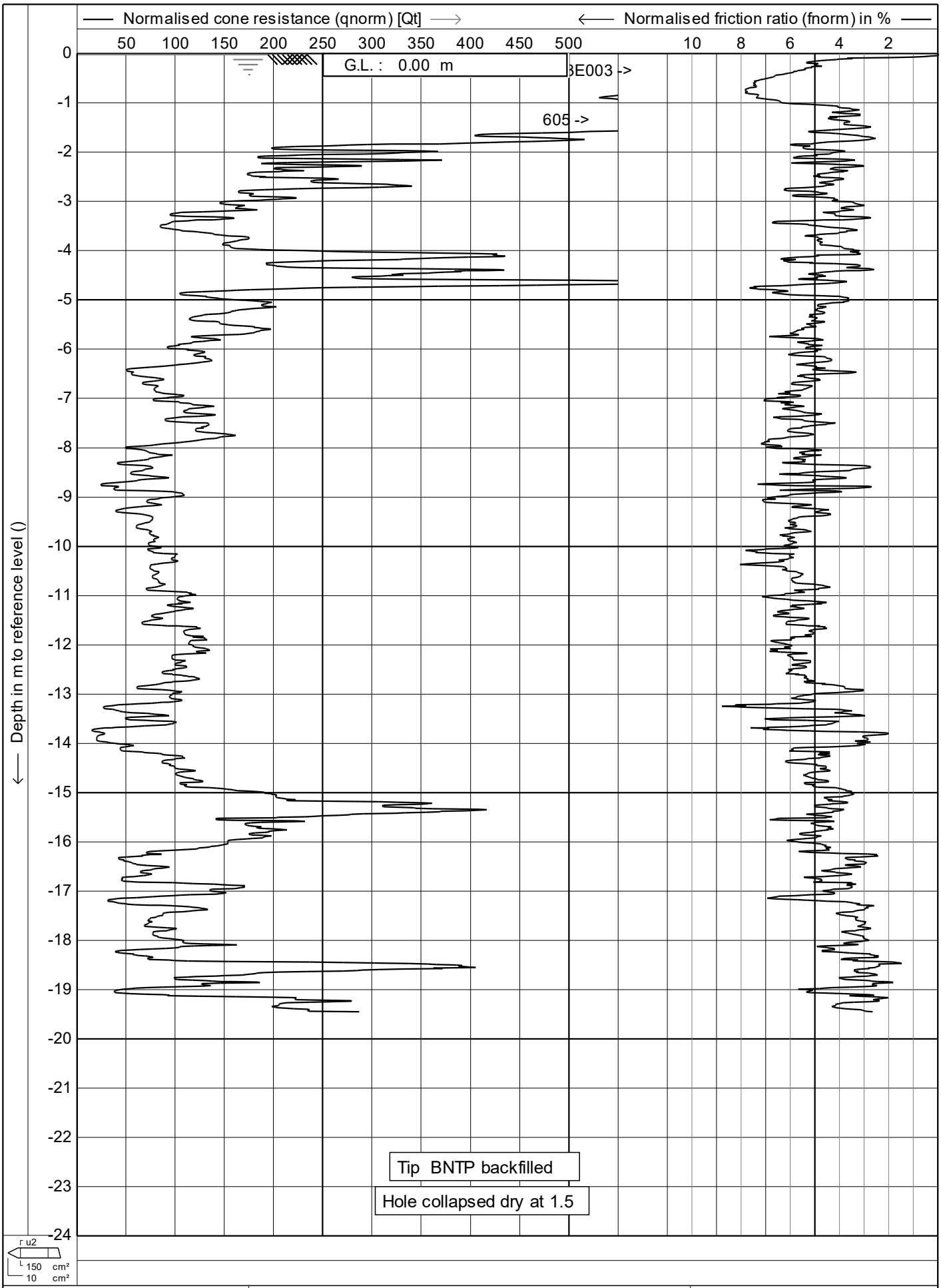
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **023**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

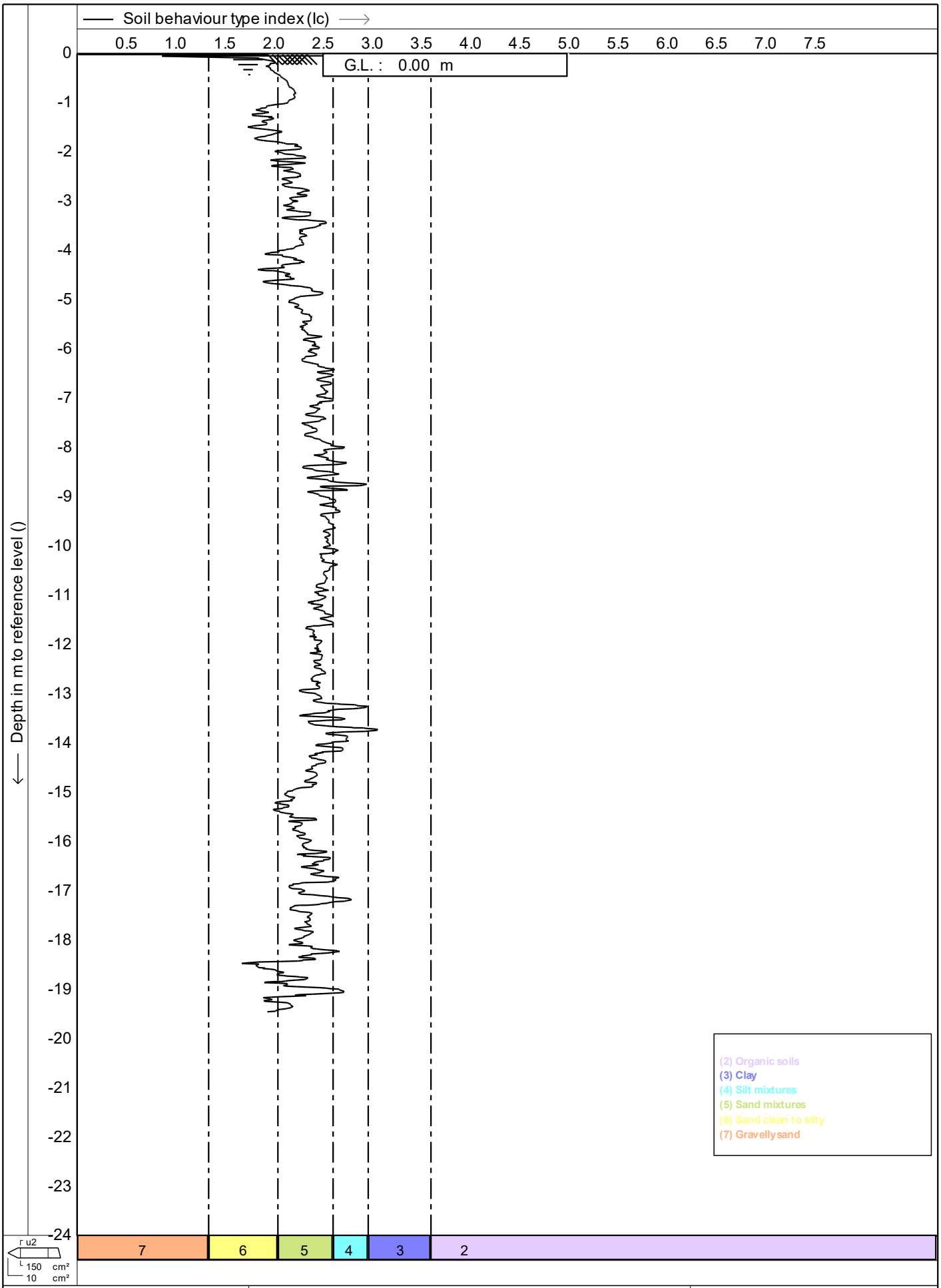
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

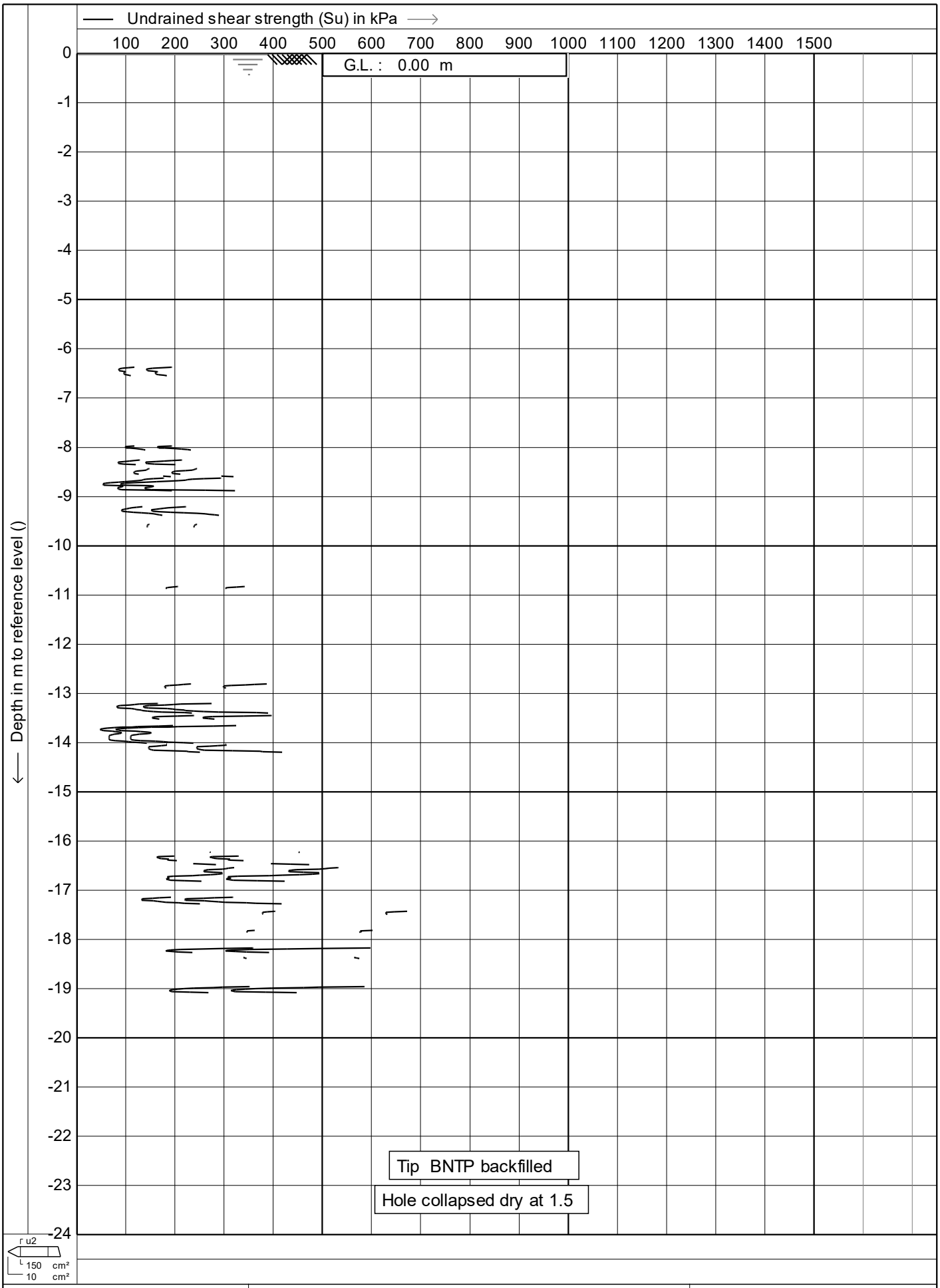
Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **023**

1.48



PERRY GEOTECH	Test according A.S.T.M Standard D 5778-12	Date : **30/11/2020**
	Project : **Site Investigations**	Cone no. : **C10CFIIP.C14426**
	Location: **Fitzgerald Rd - Drury**	Project no. : **05AU7**
	Position: **0, 0**	CPT no. : **023** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

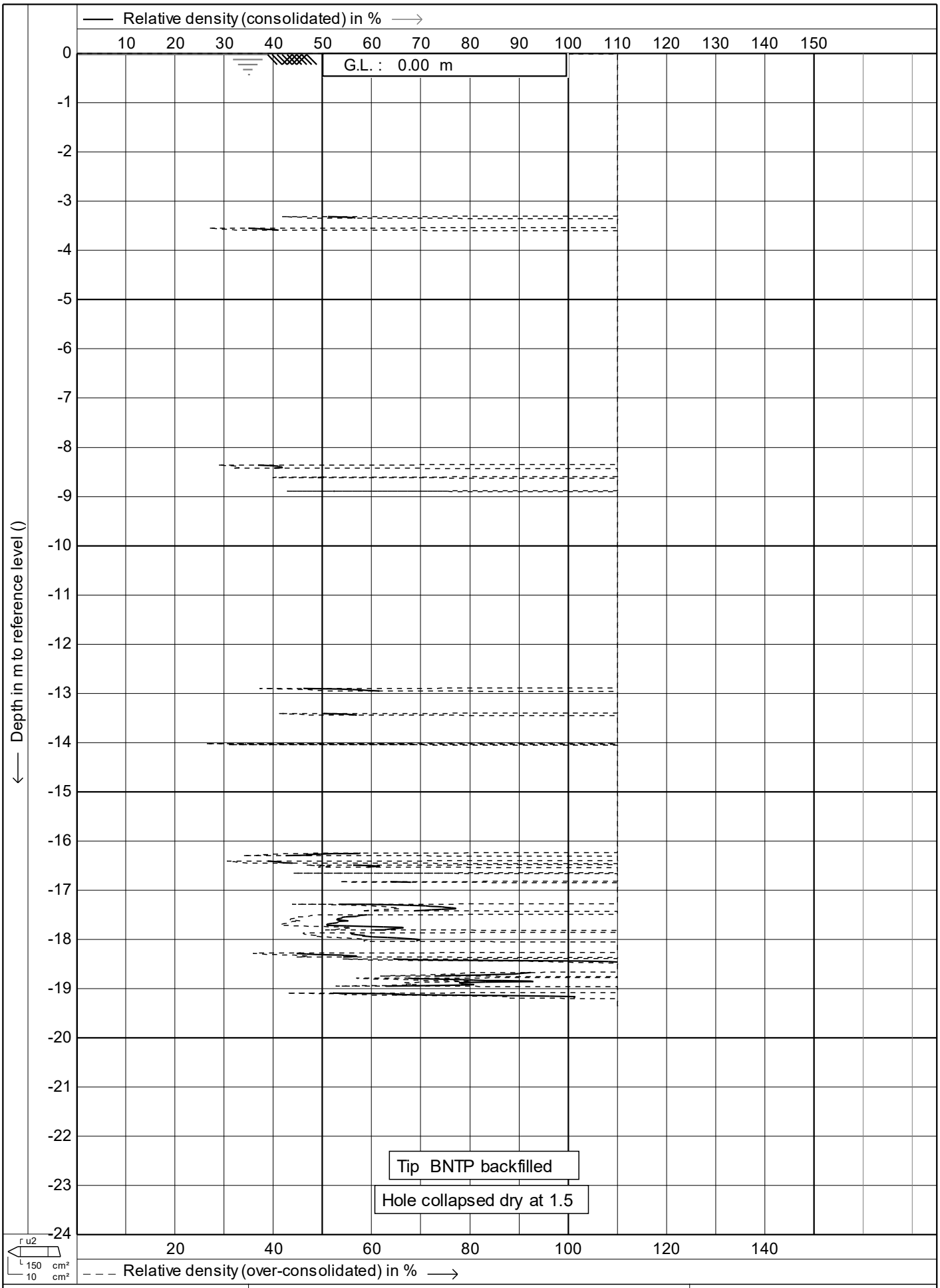
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **023**

10/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

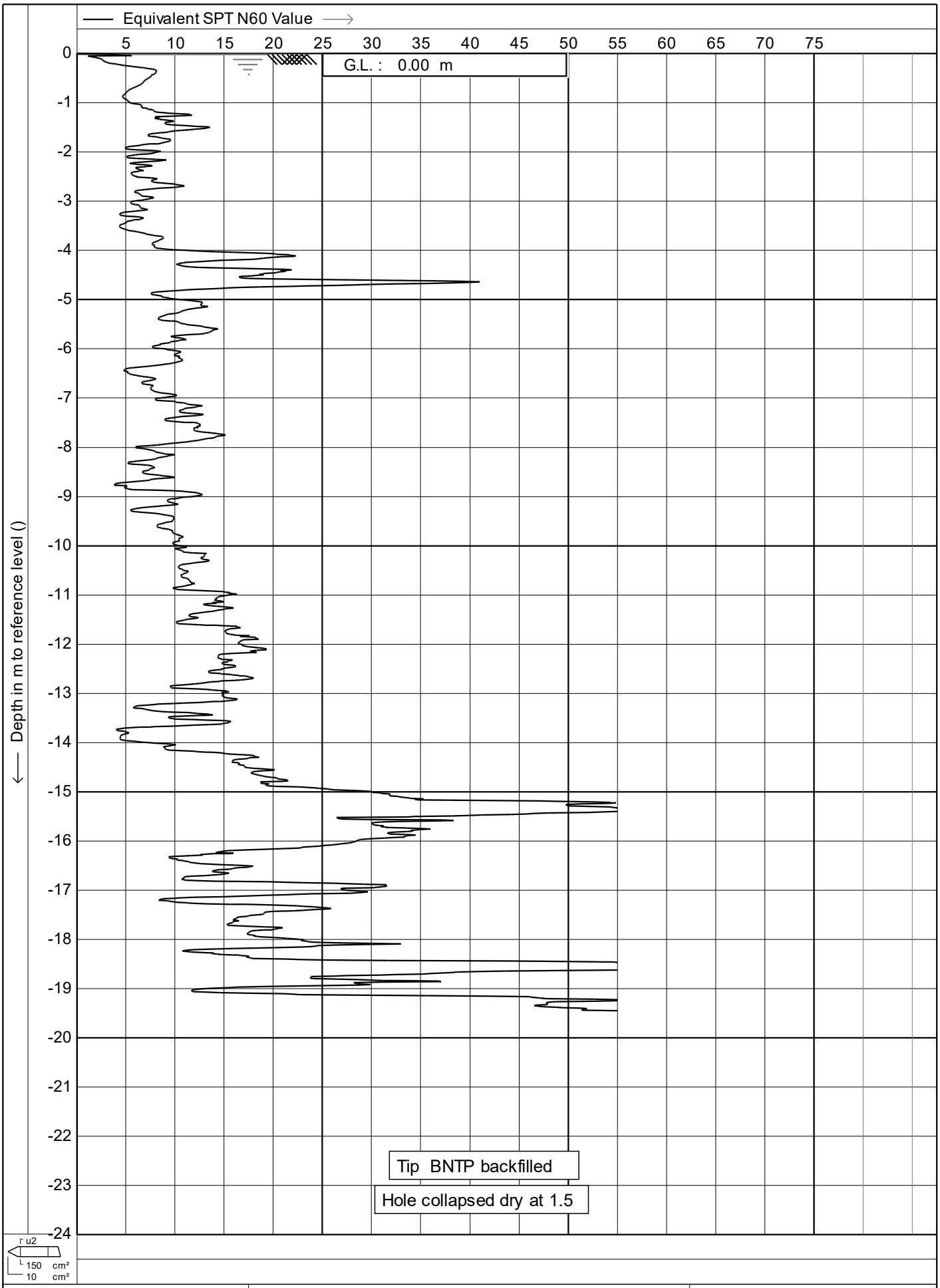
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **023** **11/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

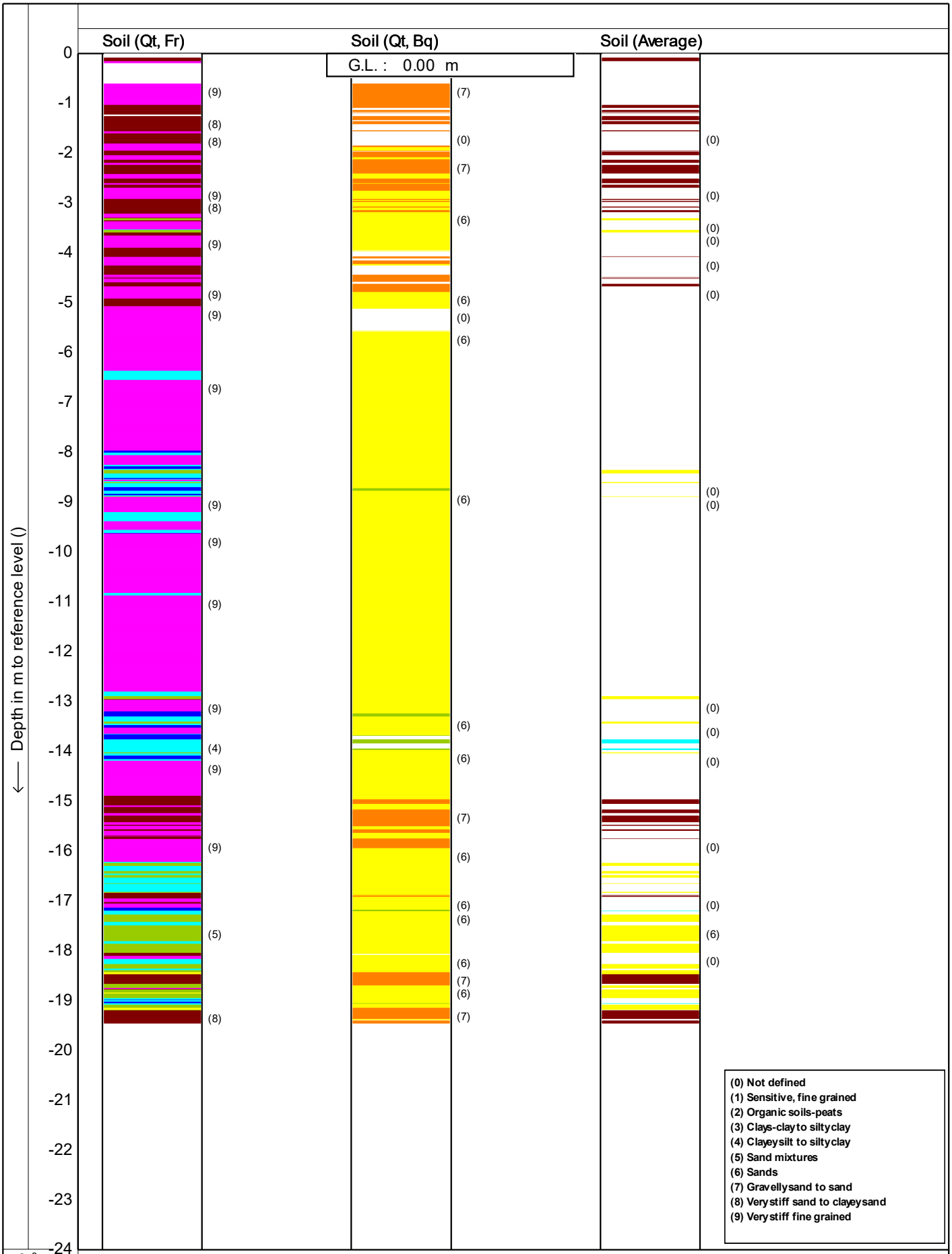
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **023**

12/14

1.48



Soil behaviour type classification after Robertson 1990

r u2
150 cm²
10 cm²

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

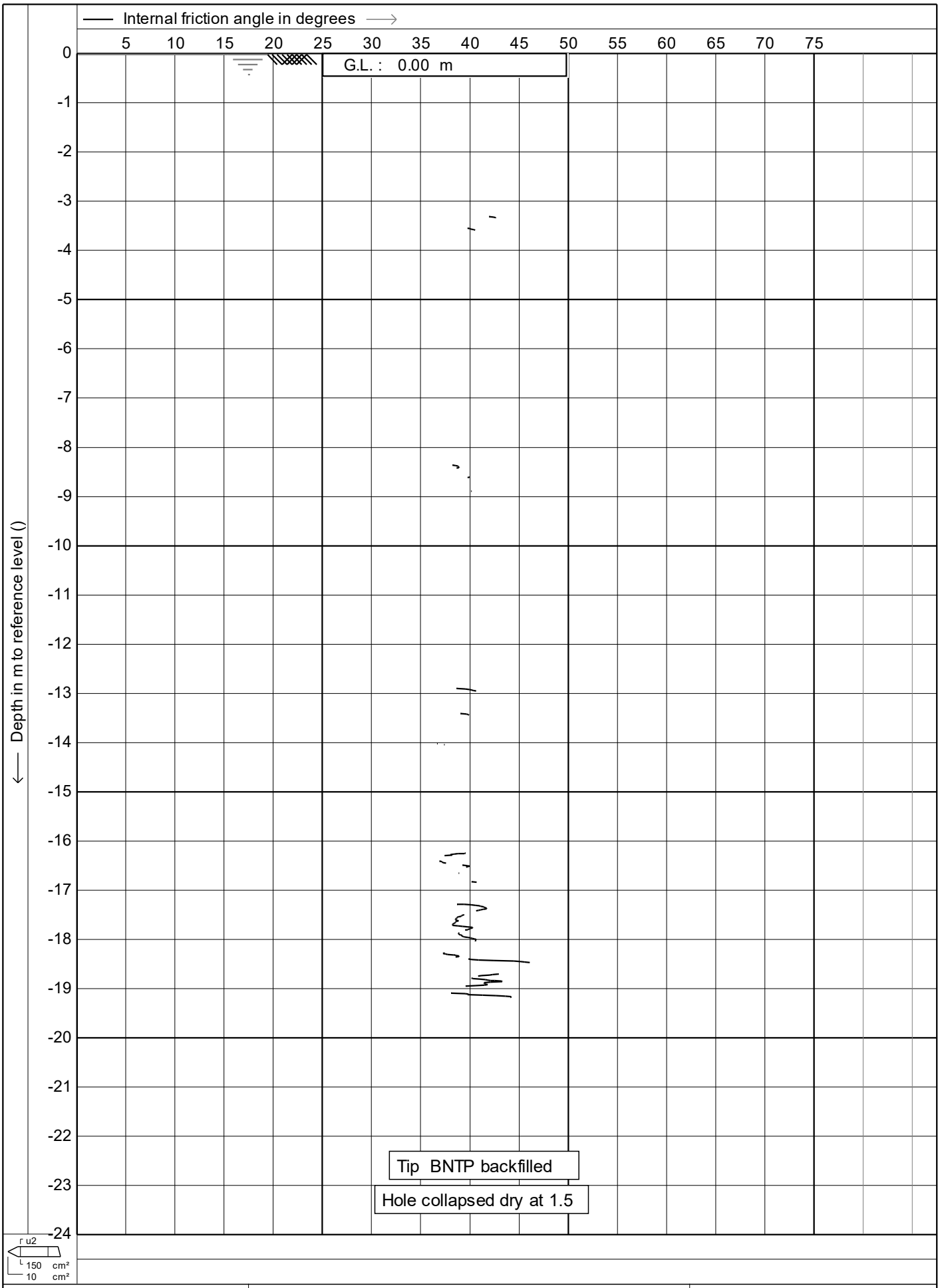
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **023**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

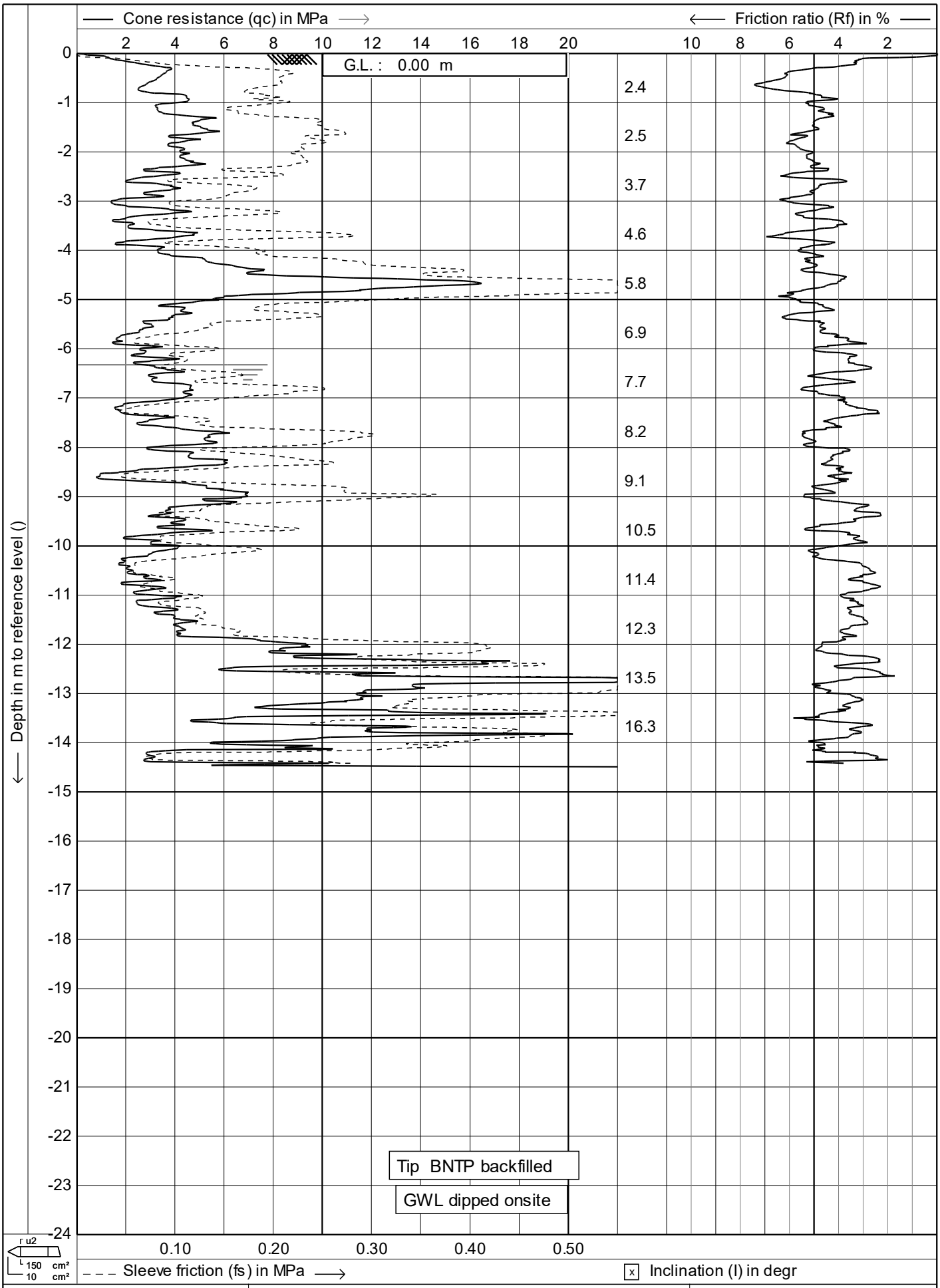
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **023**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

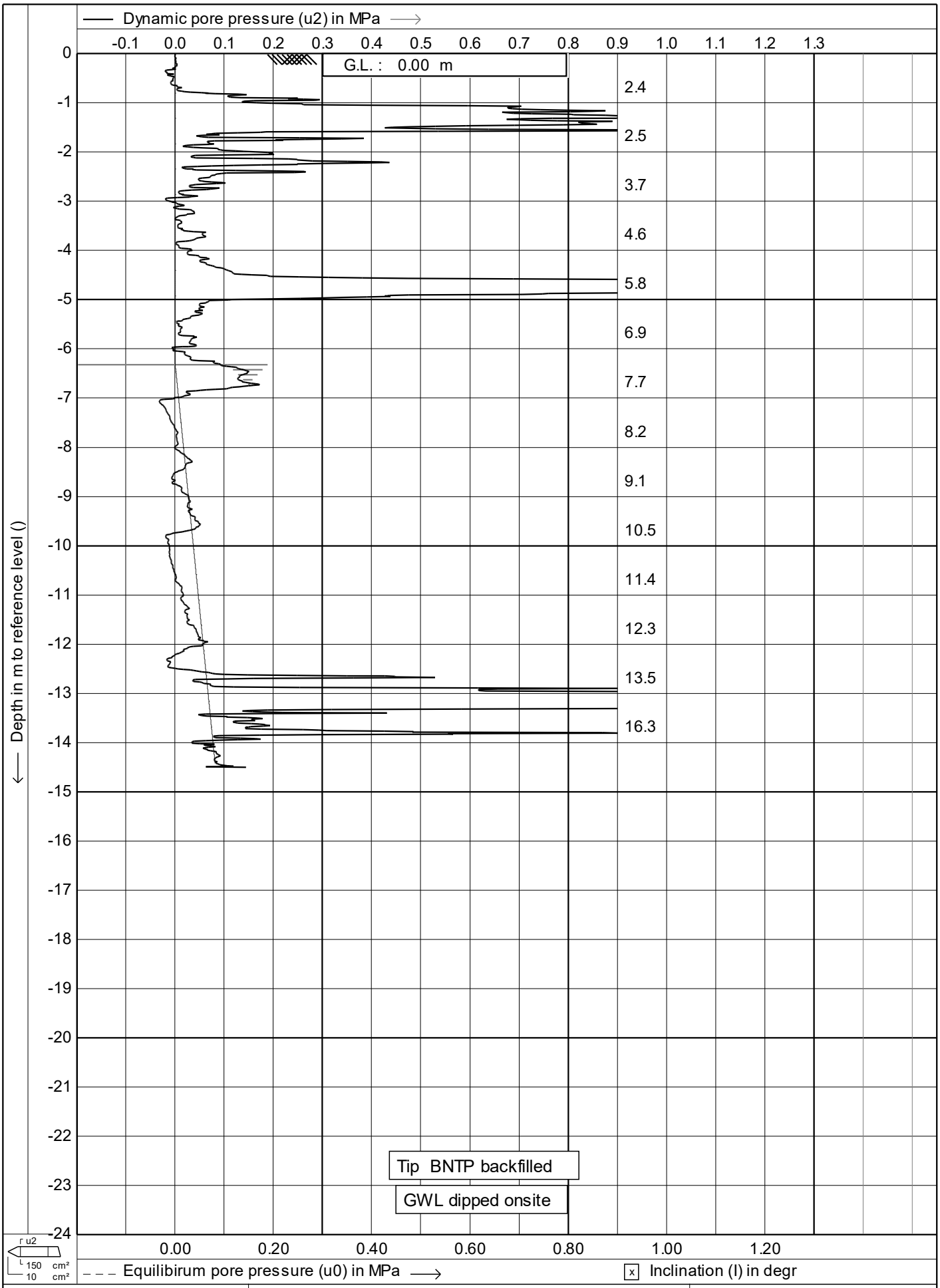
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **024**

1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

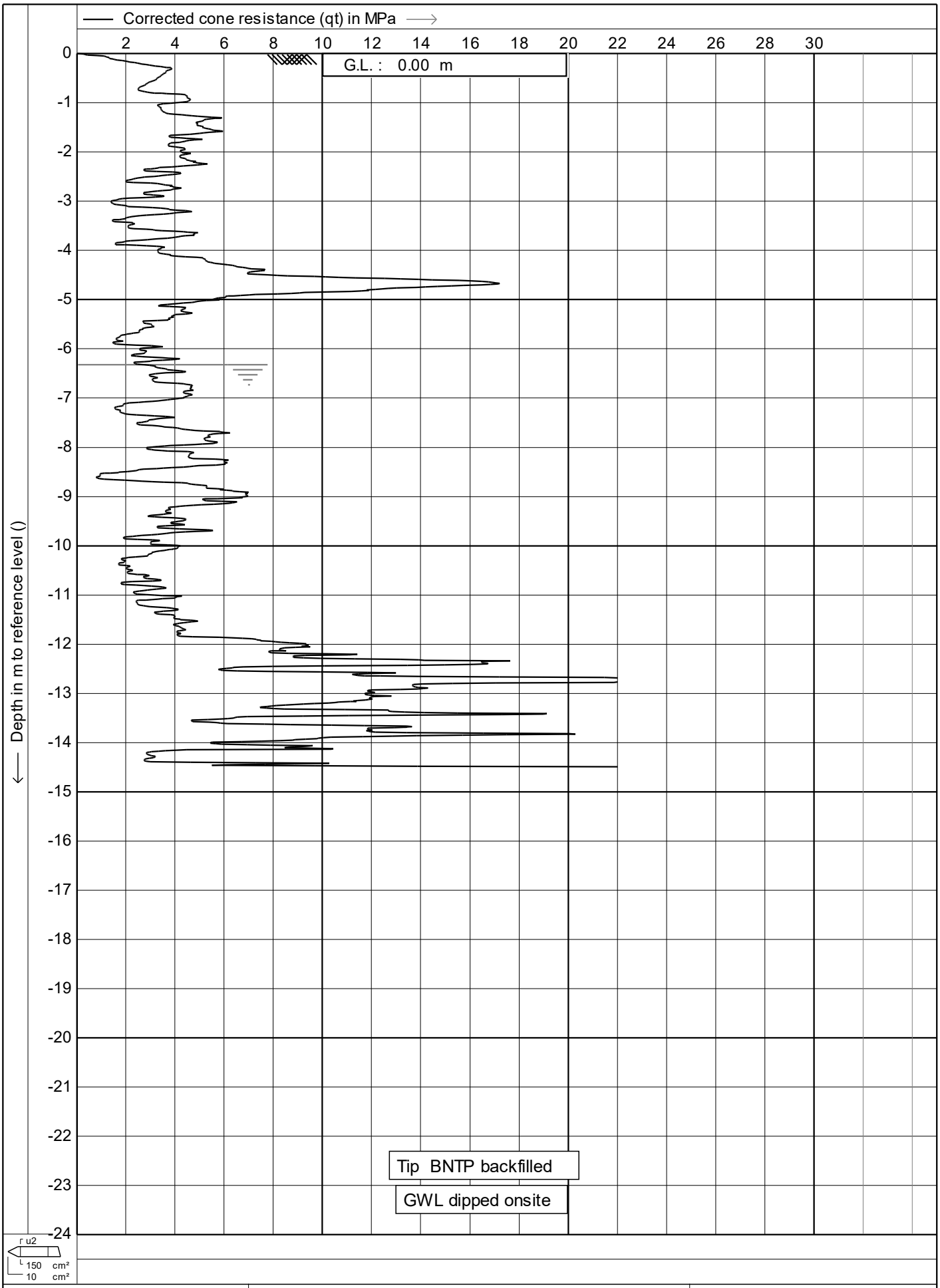
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **024** **2/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

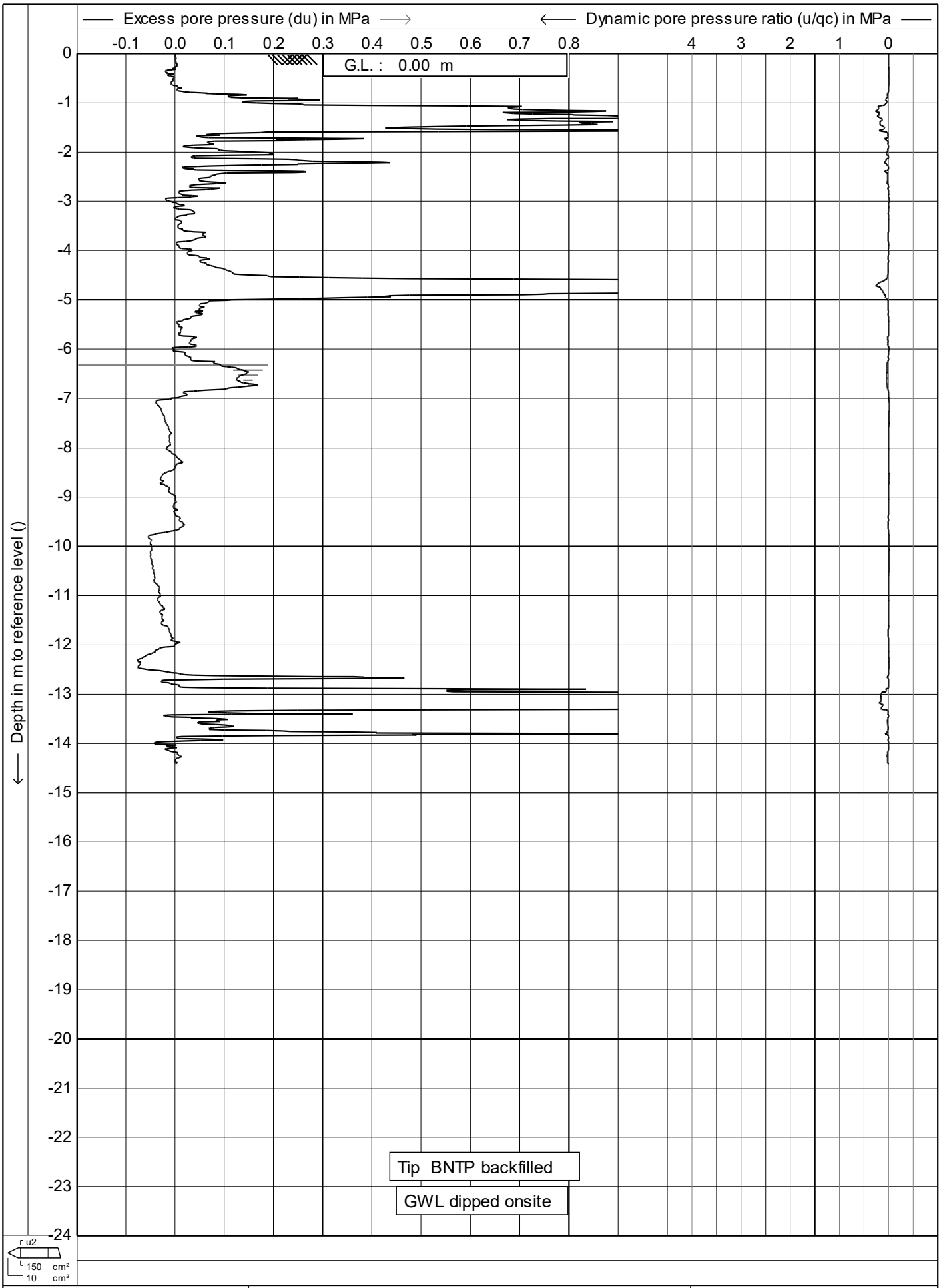
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **024**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

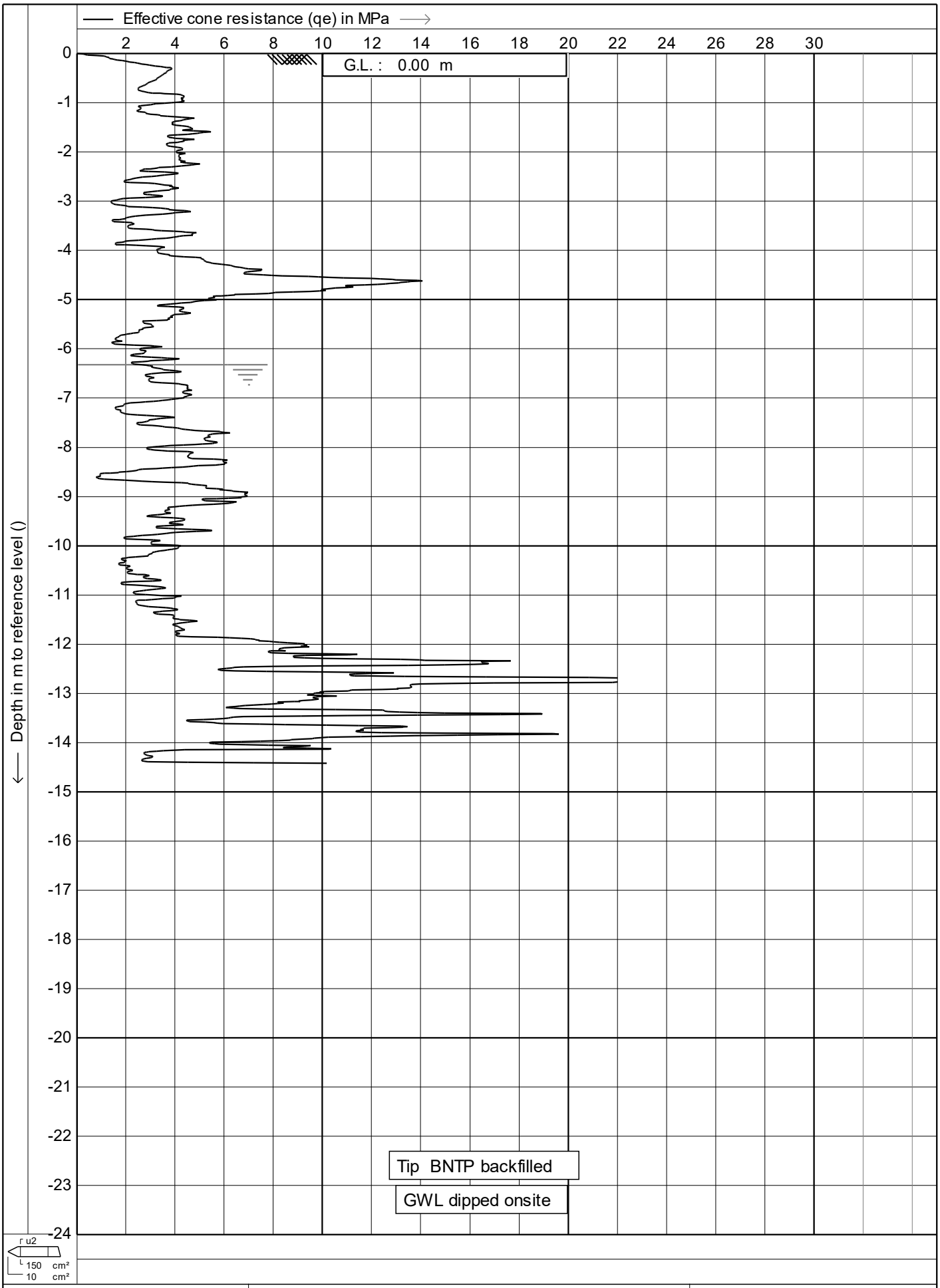
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **024**

4/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

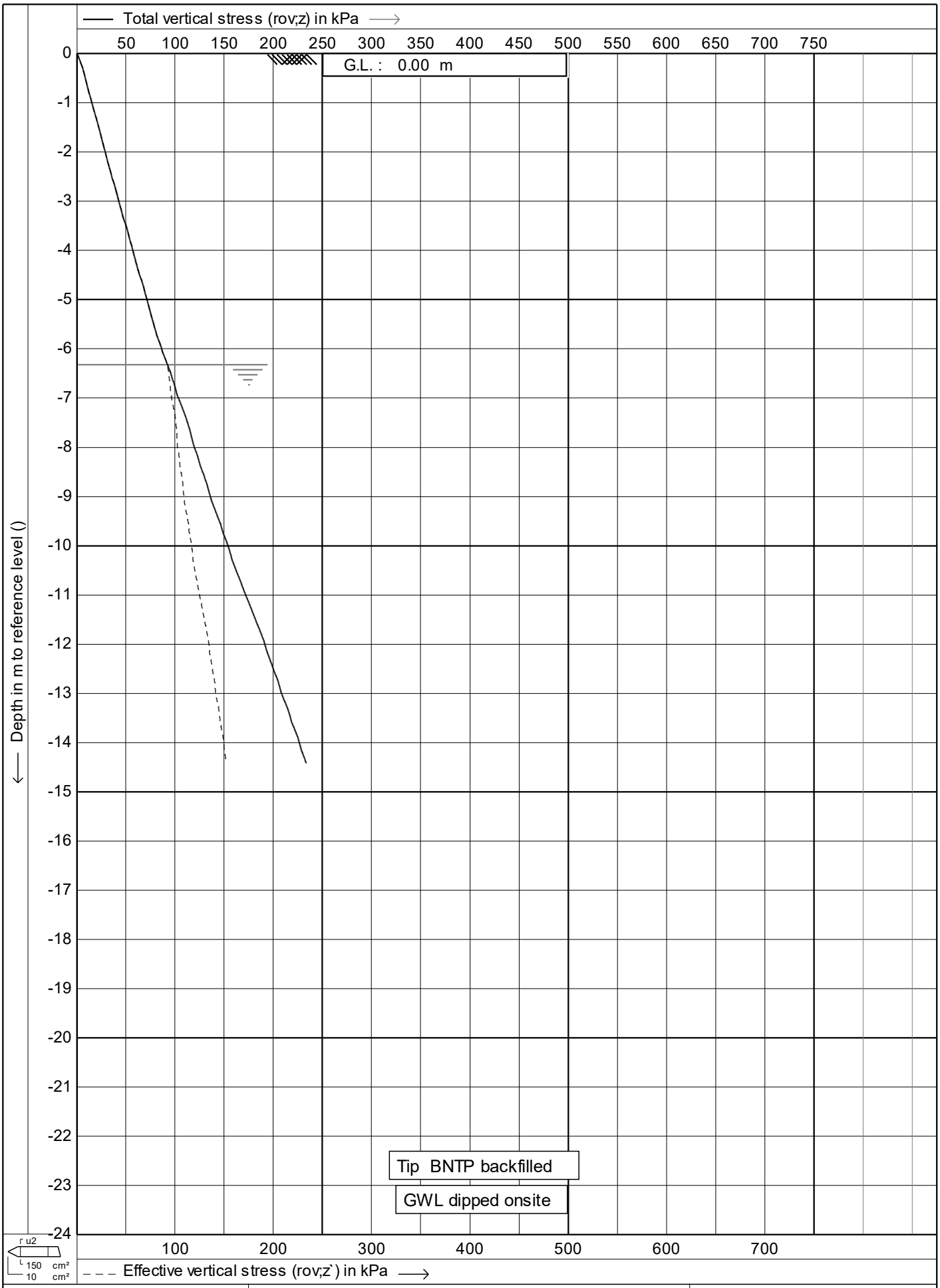
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **024**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

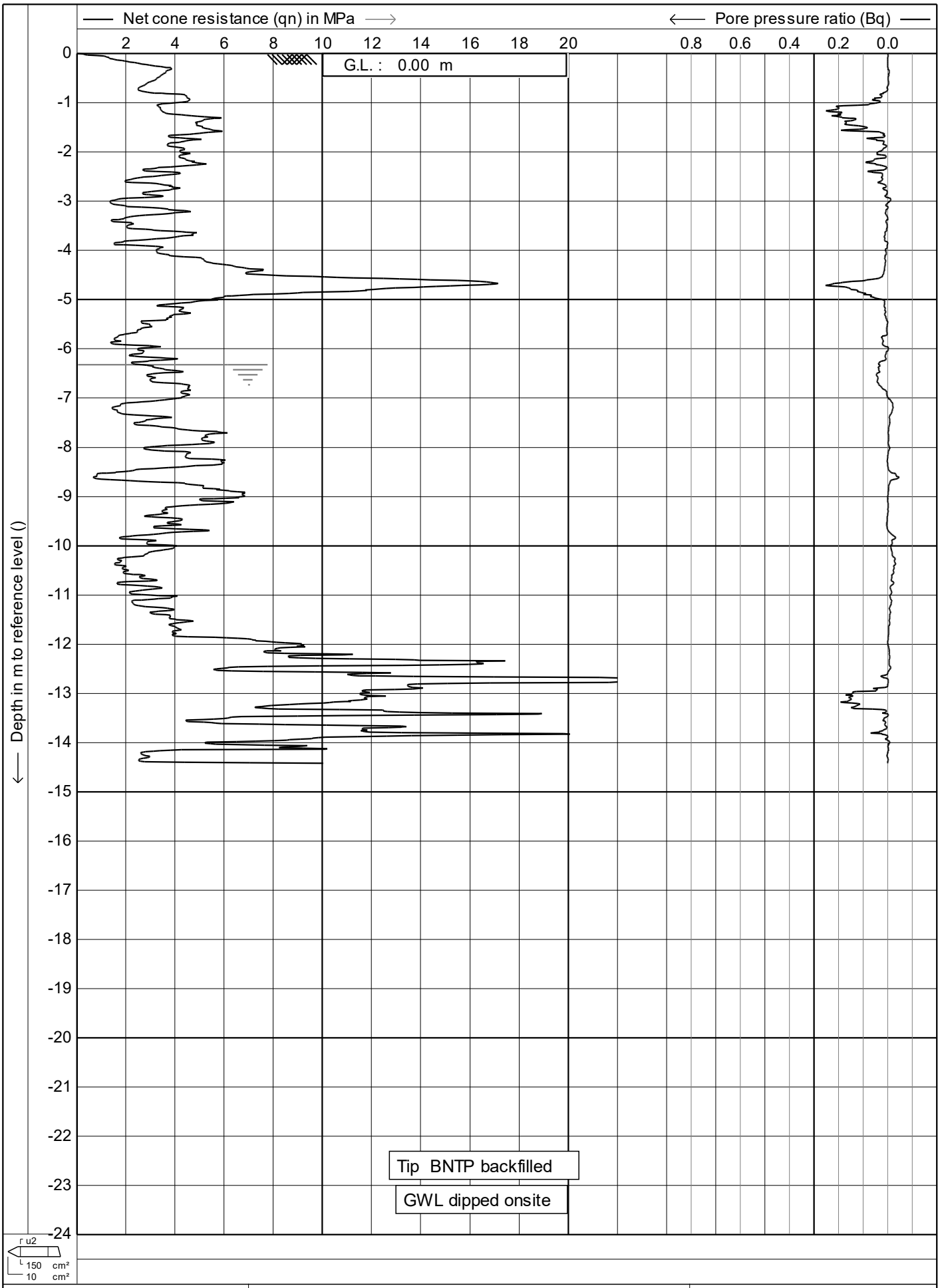
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **024** **6/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

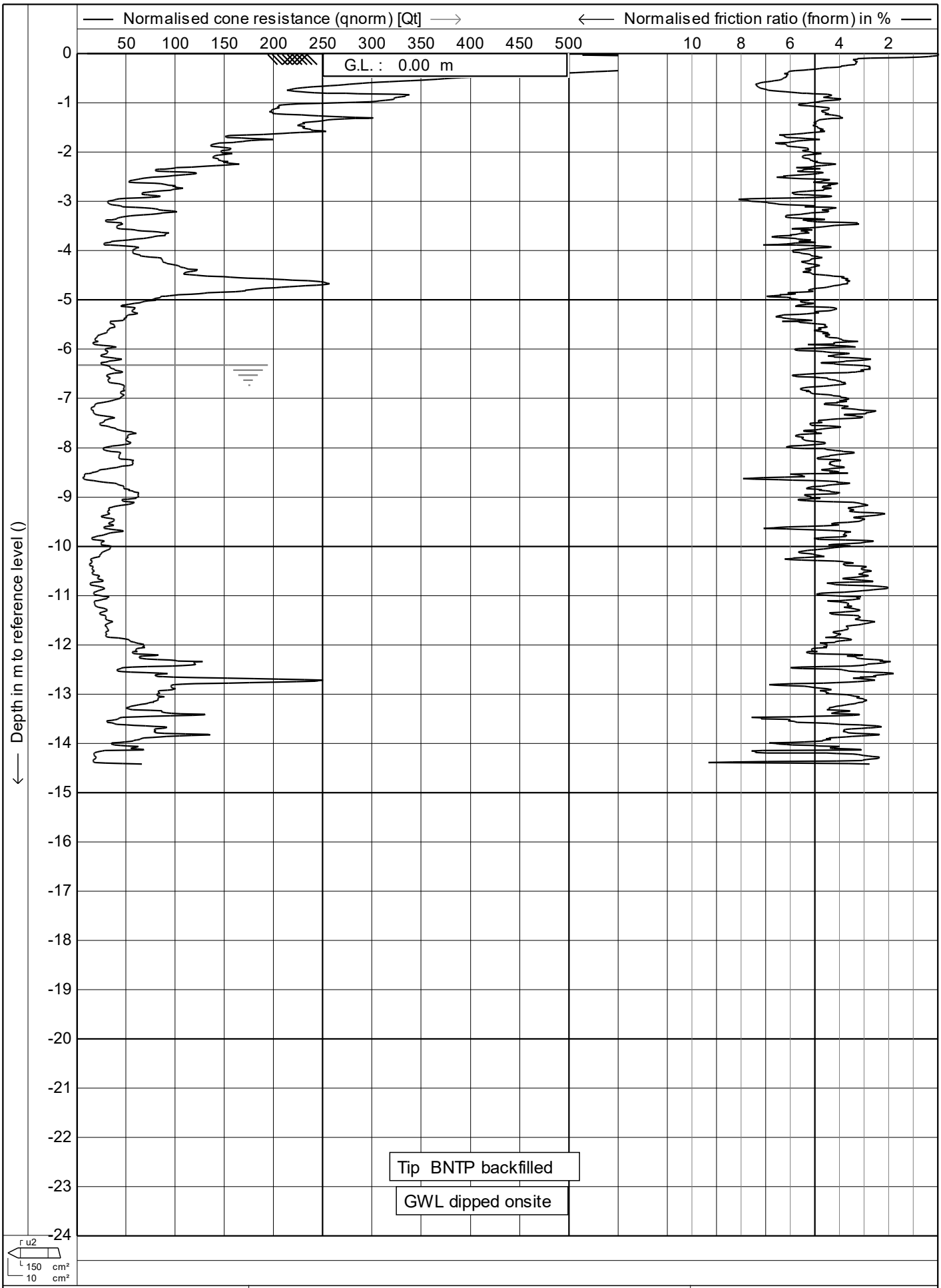
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **024** **7/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

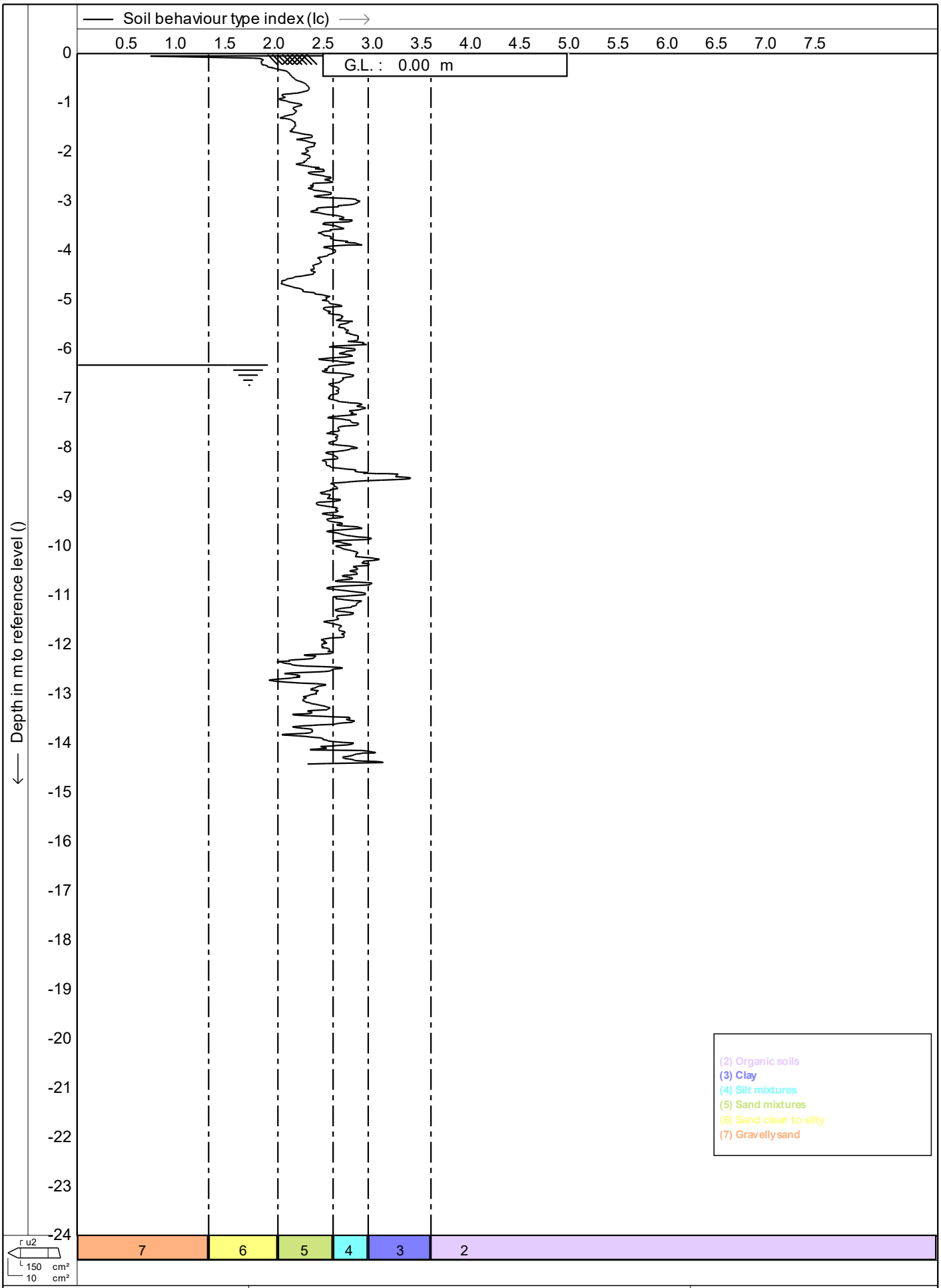
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **024**

8/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

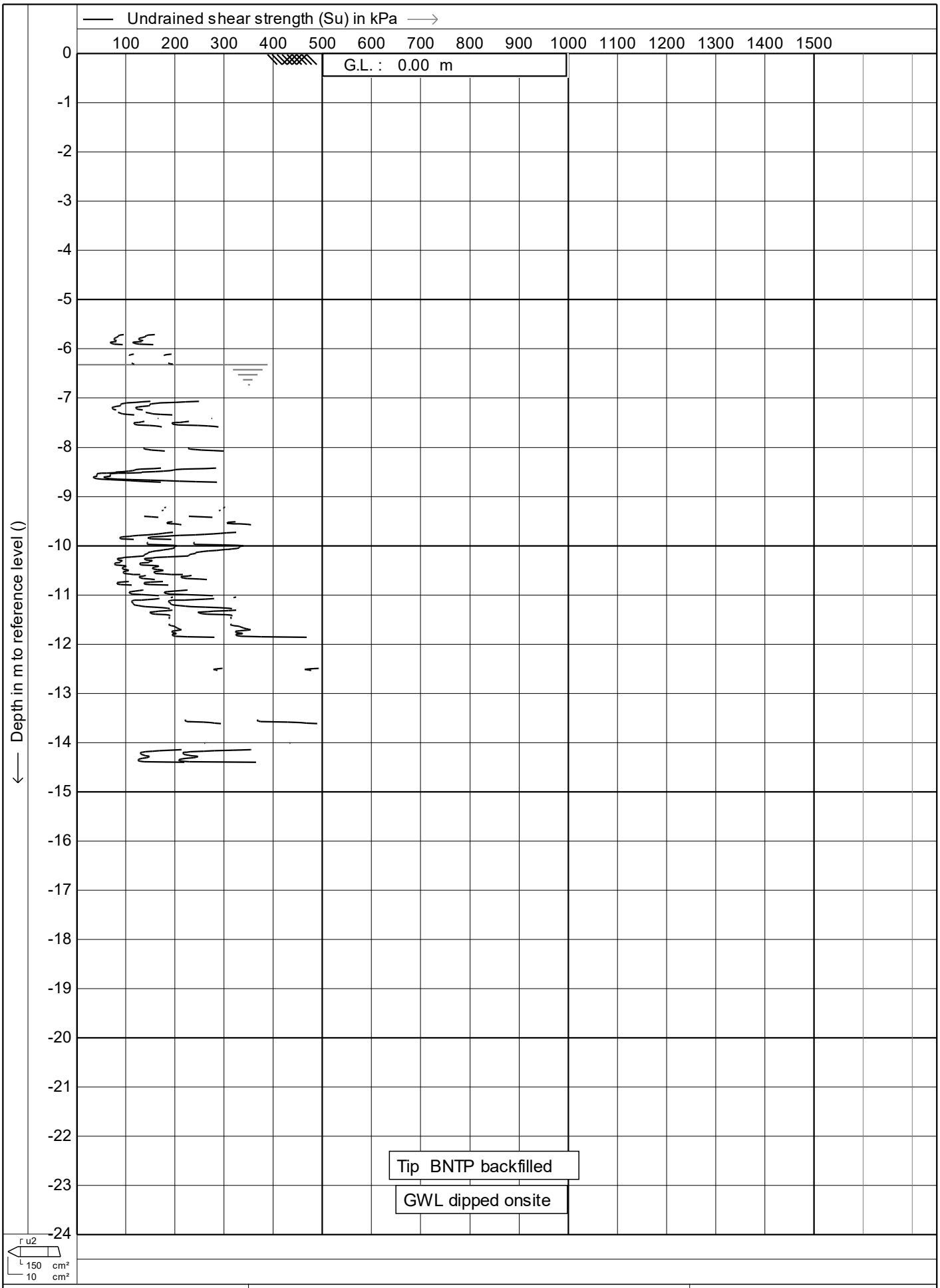
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **024** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

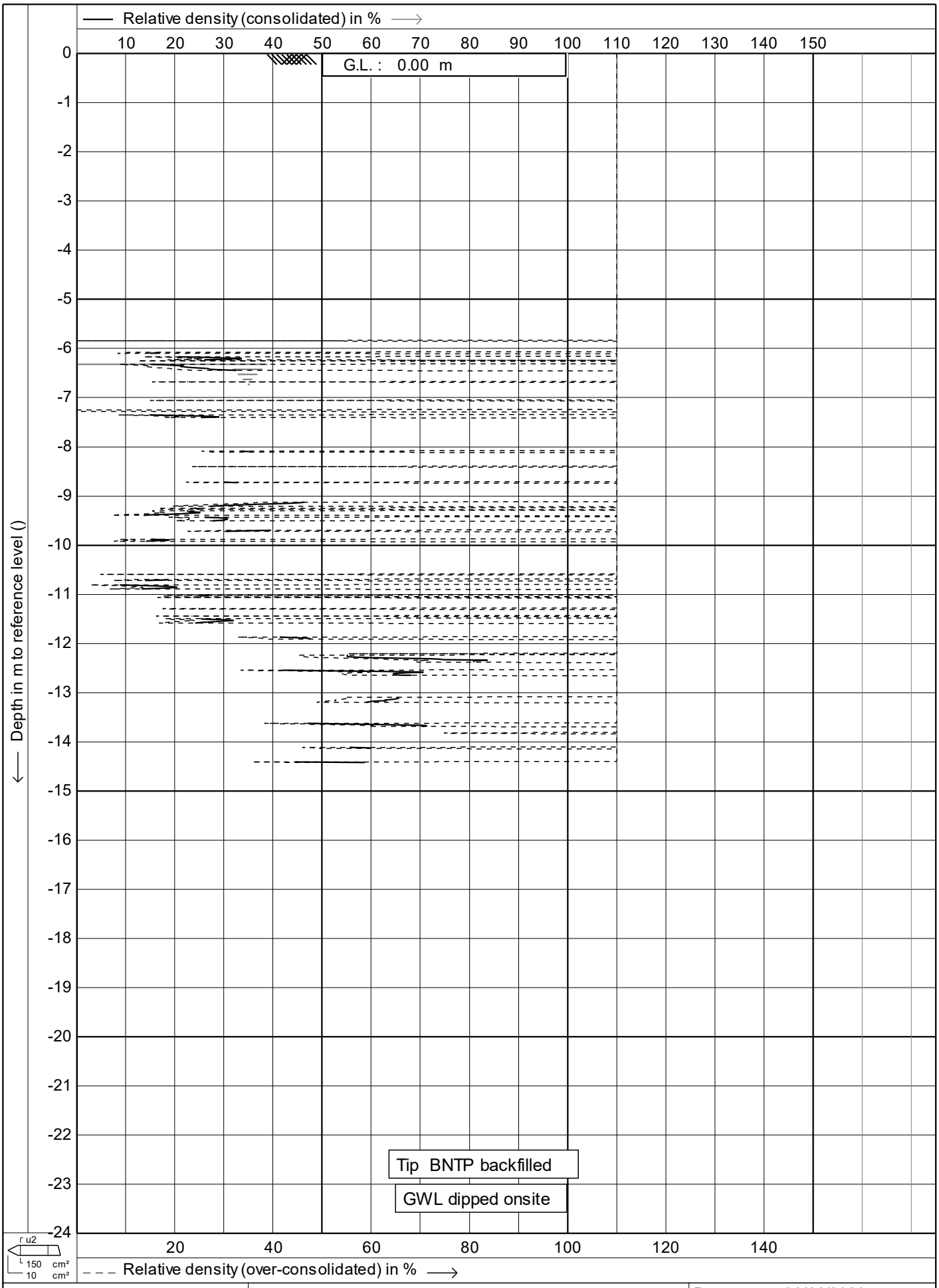
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **024** **10/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

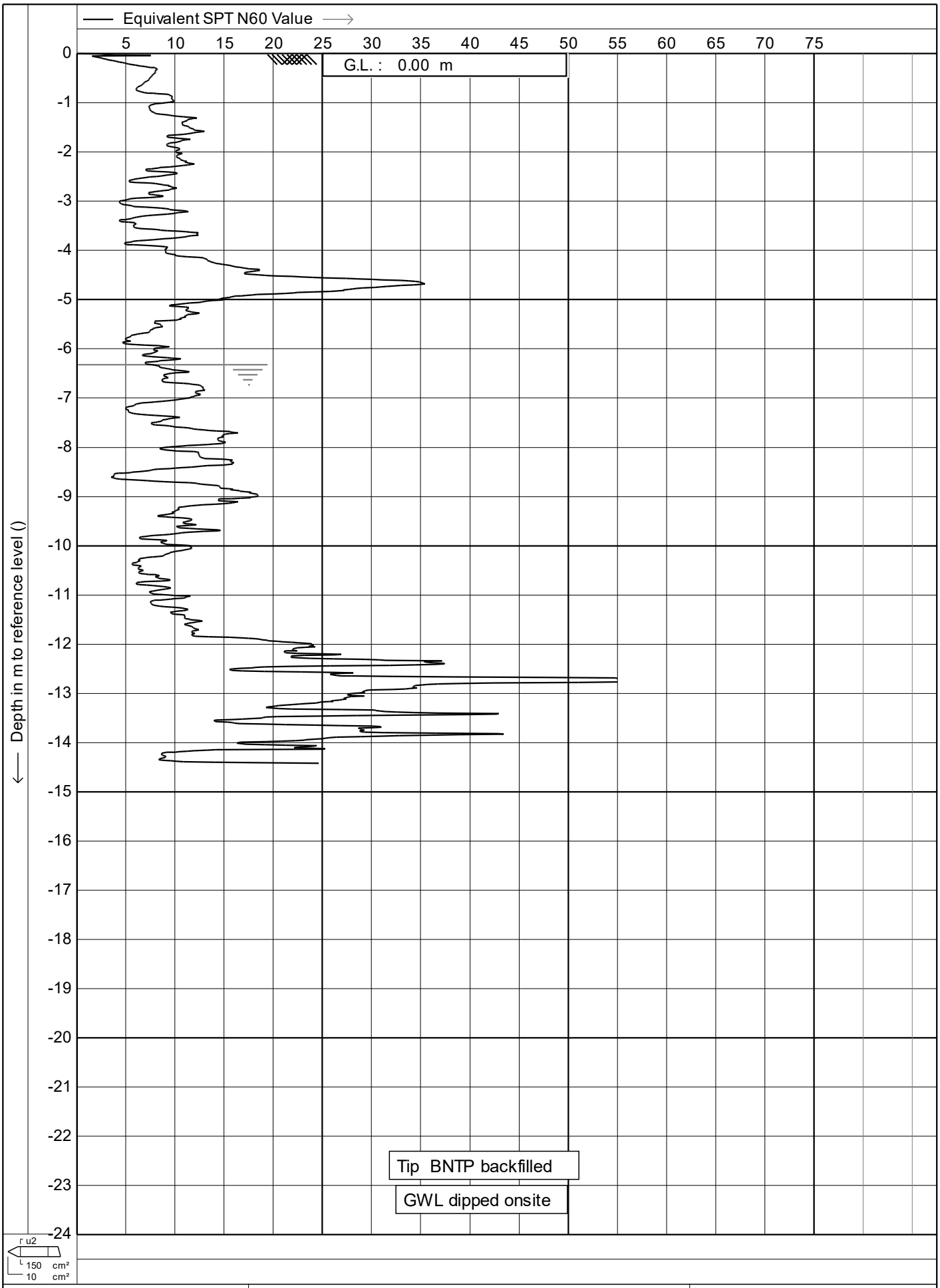
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **024**

11/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

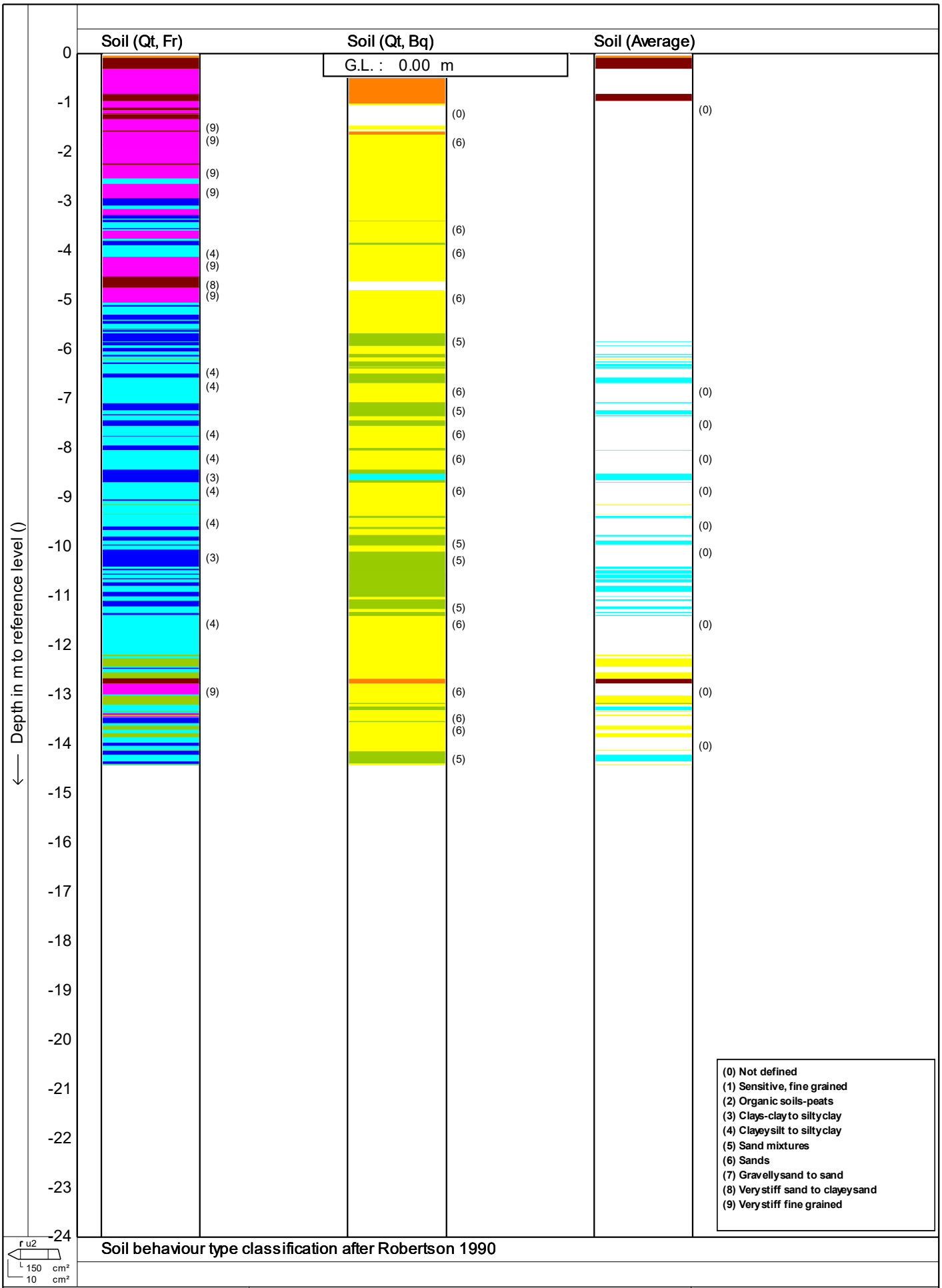
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **024** **12/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

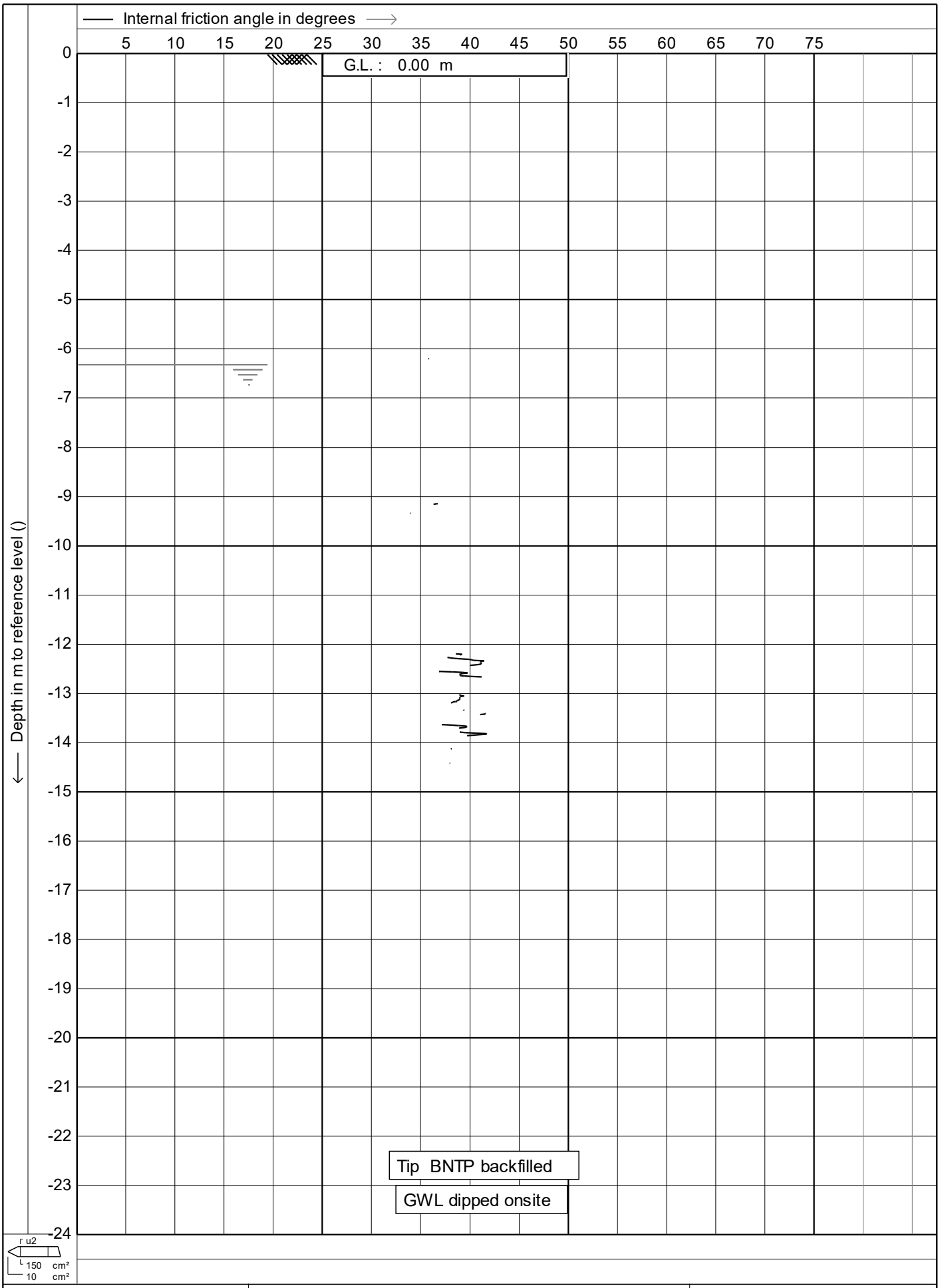
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **024**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

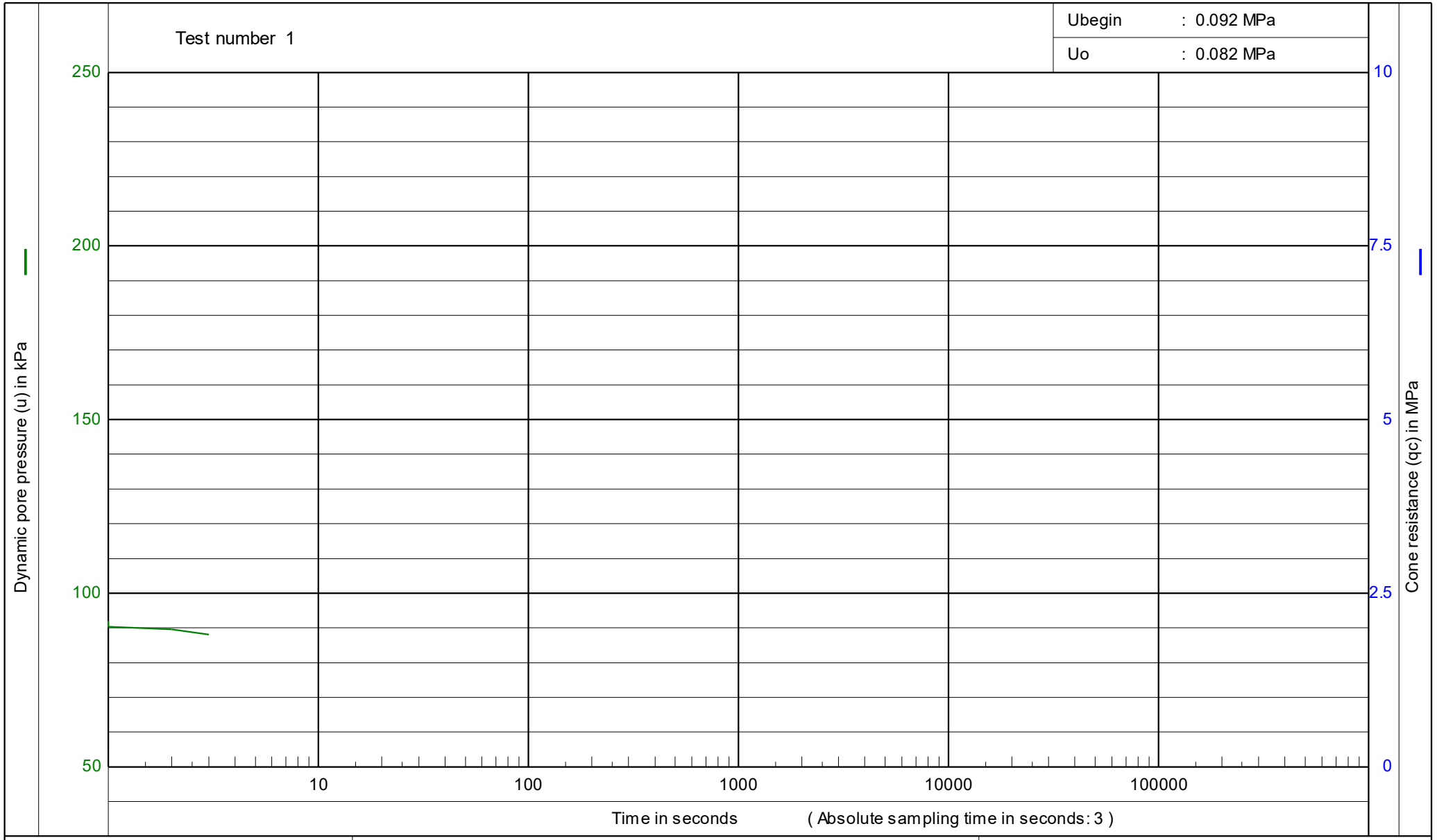
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **024** **14/14**

1.48



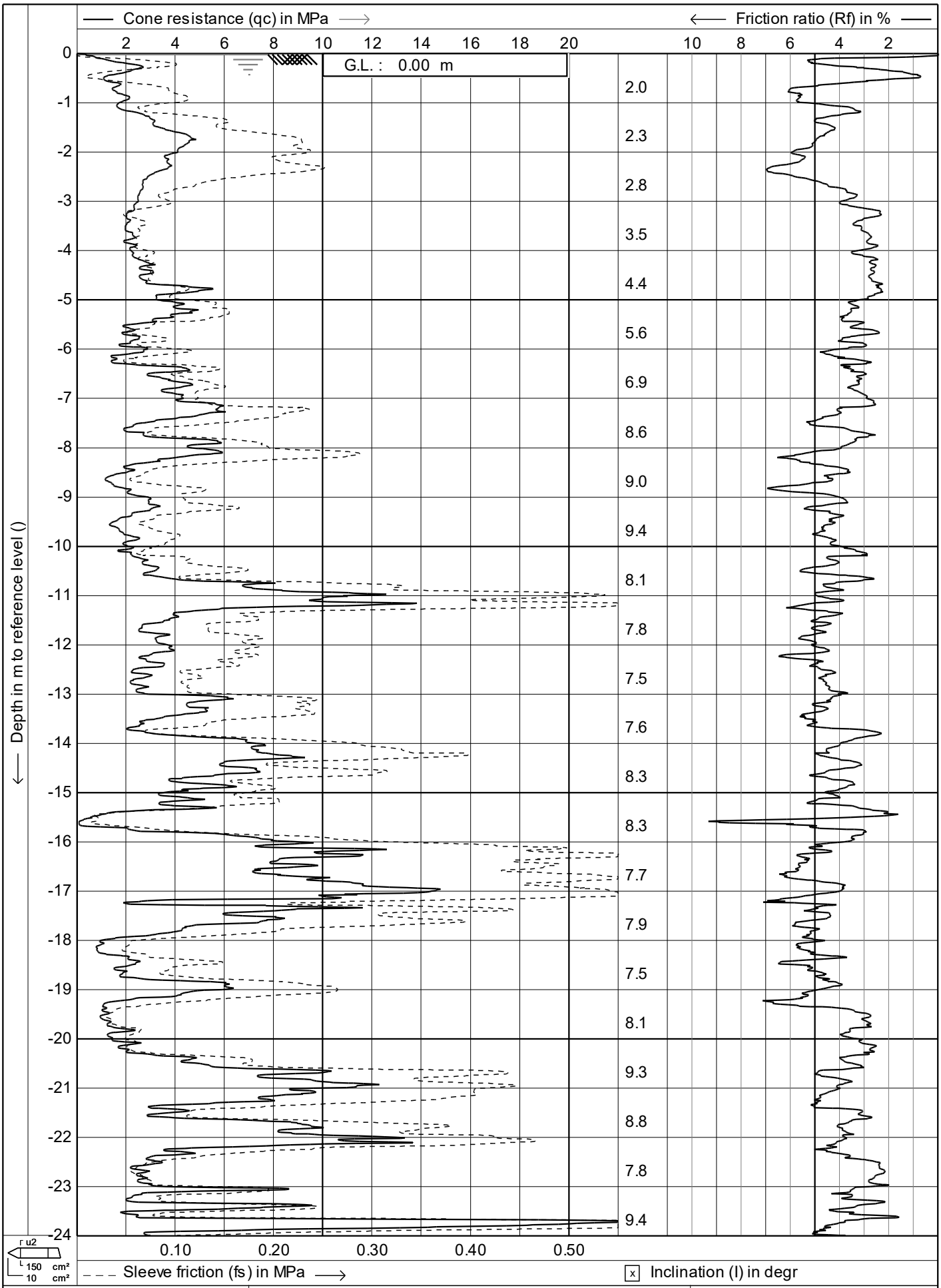
PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : Site Investigations

Location : Fitzgerald Rd - Drury

Date	: 30/11/2020	
Project no.	: 05AU7	
CPT no.	: 024	
Test depth	: 14.50	[m] - G.L.
Water level	: 6.30	[m] - G.L.



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

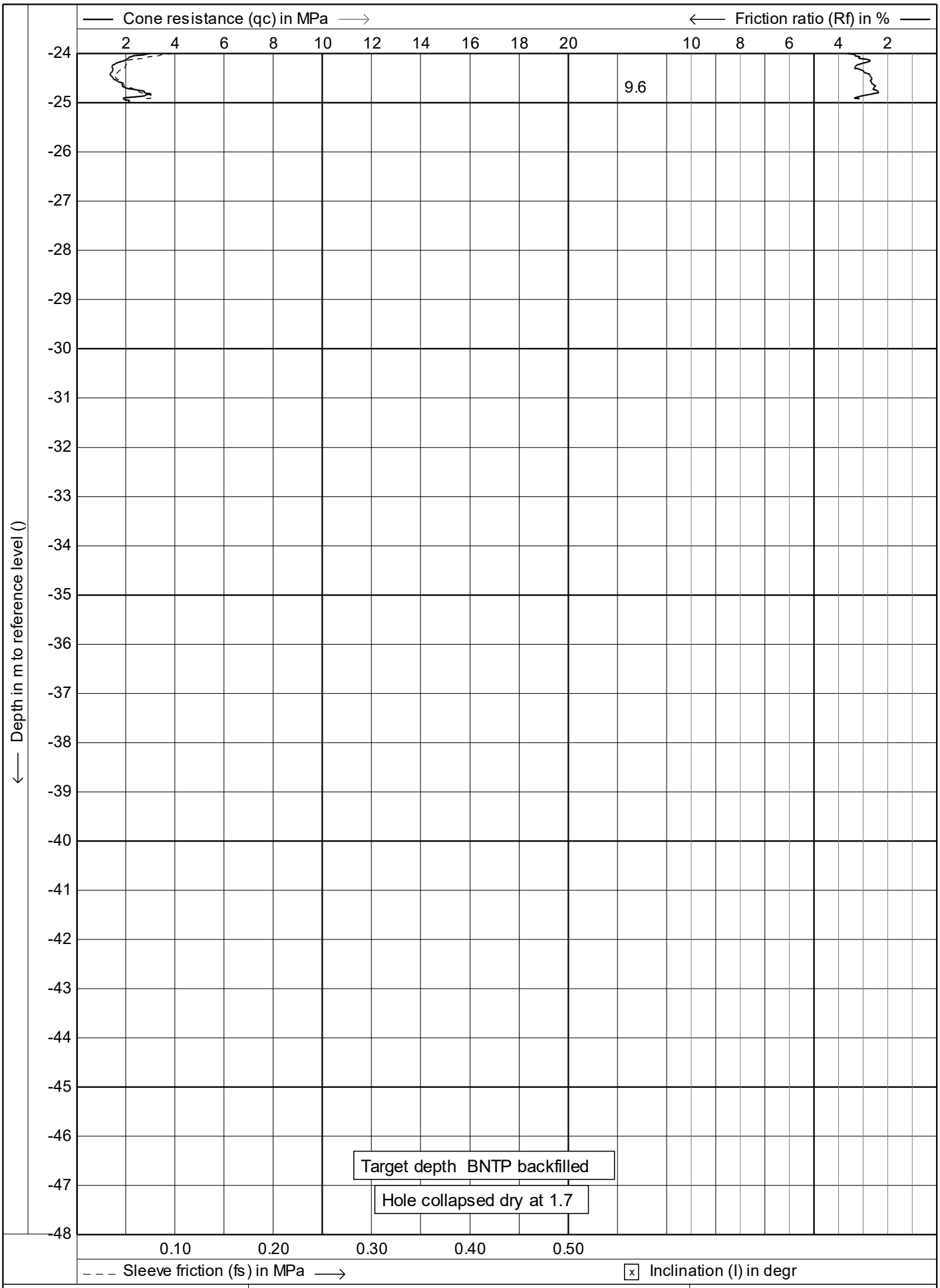
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **025**

1/28

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

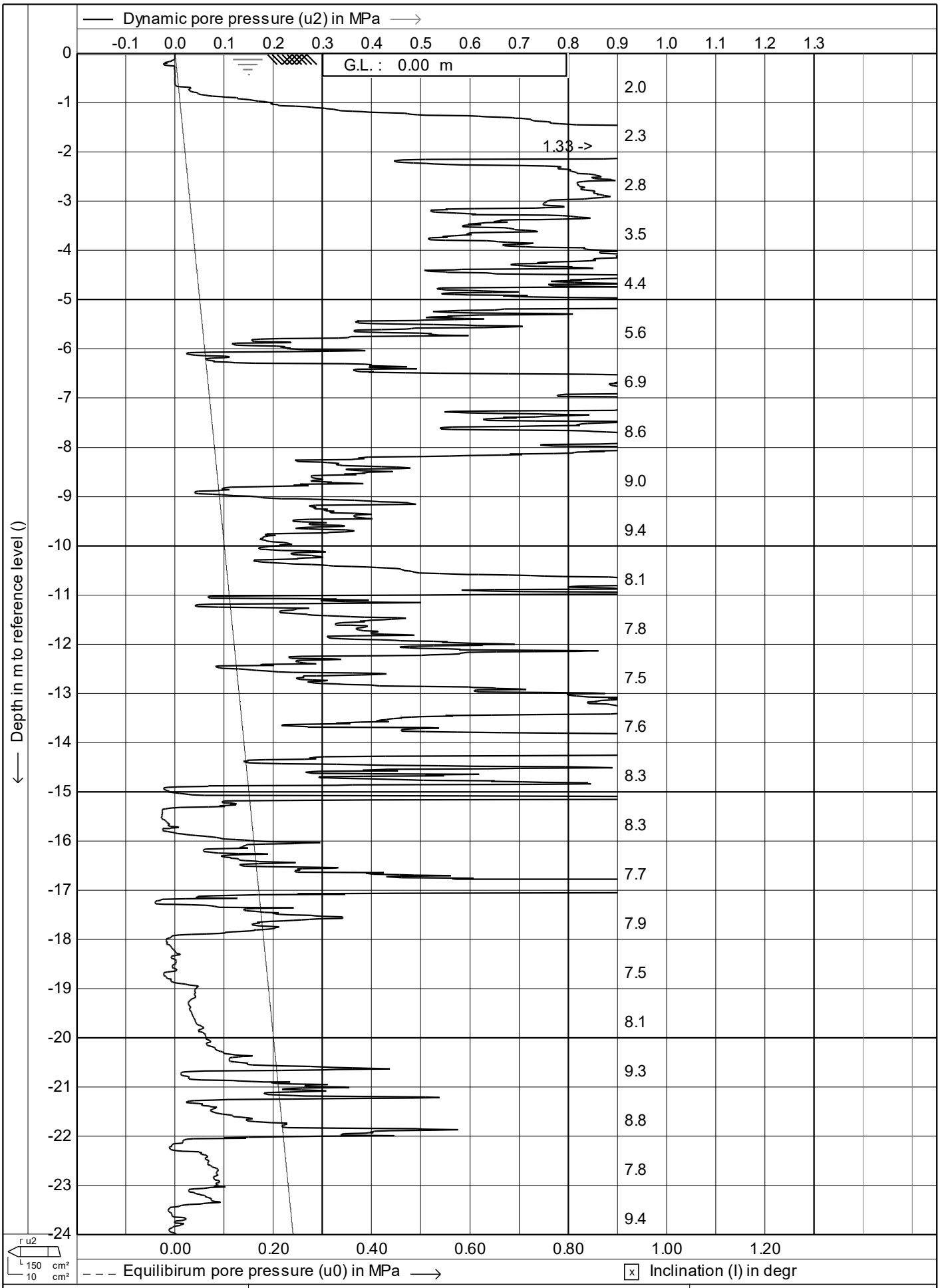
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

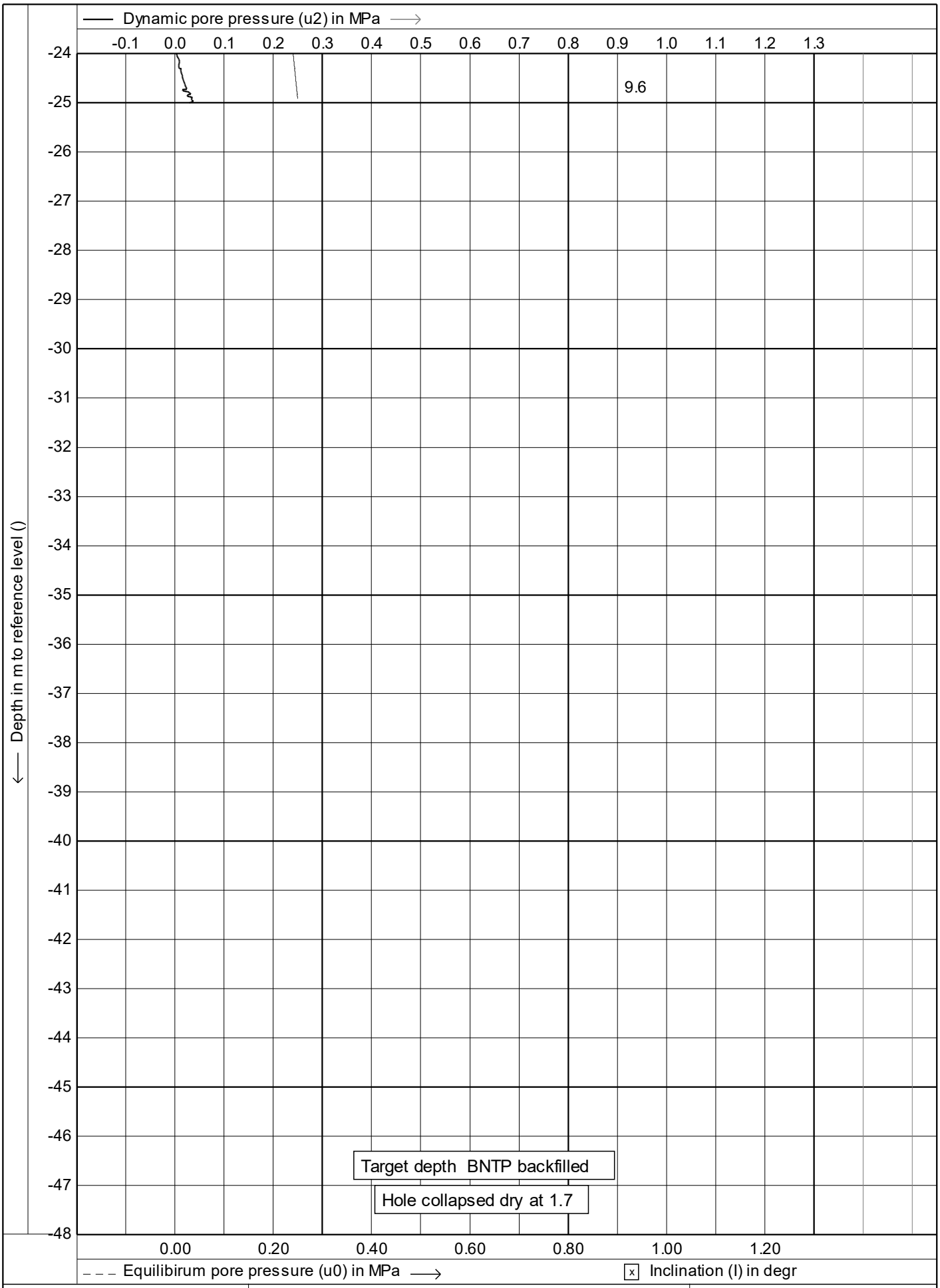
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **025**

3/28

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

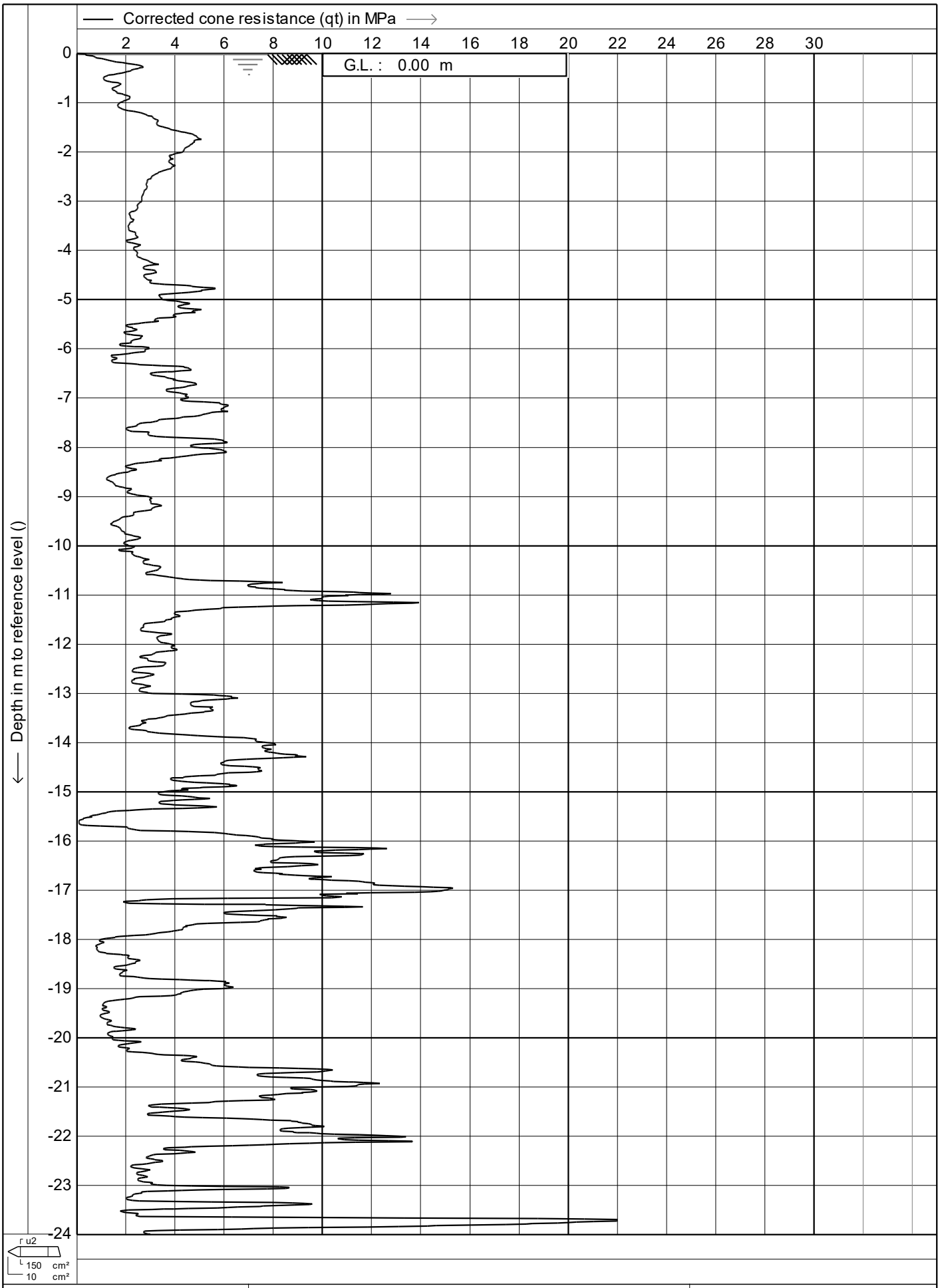
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

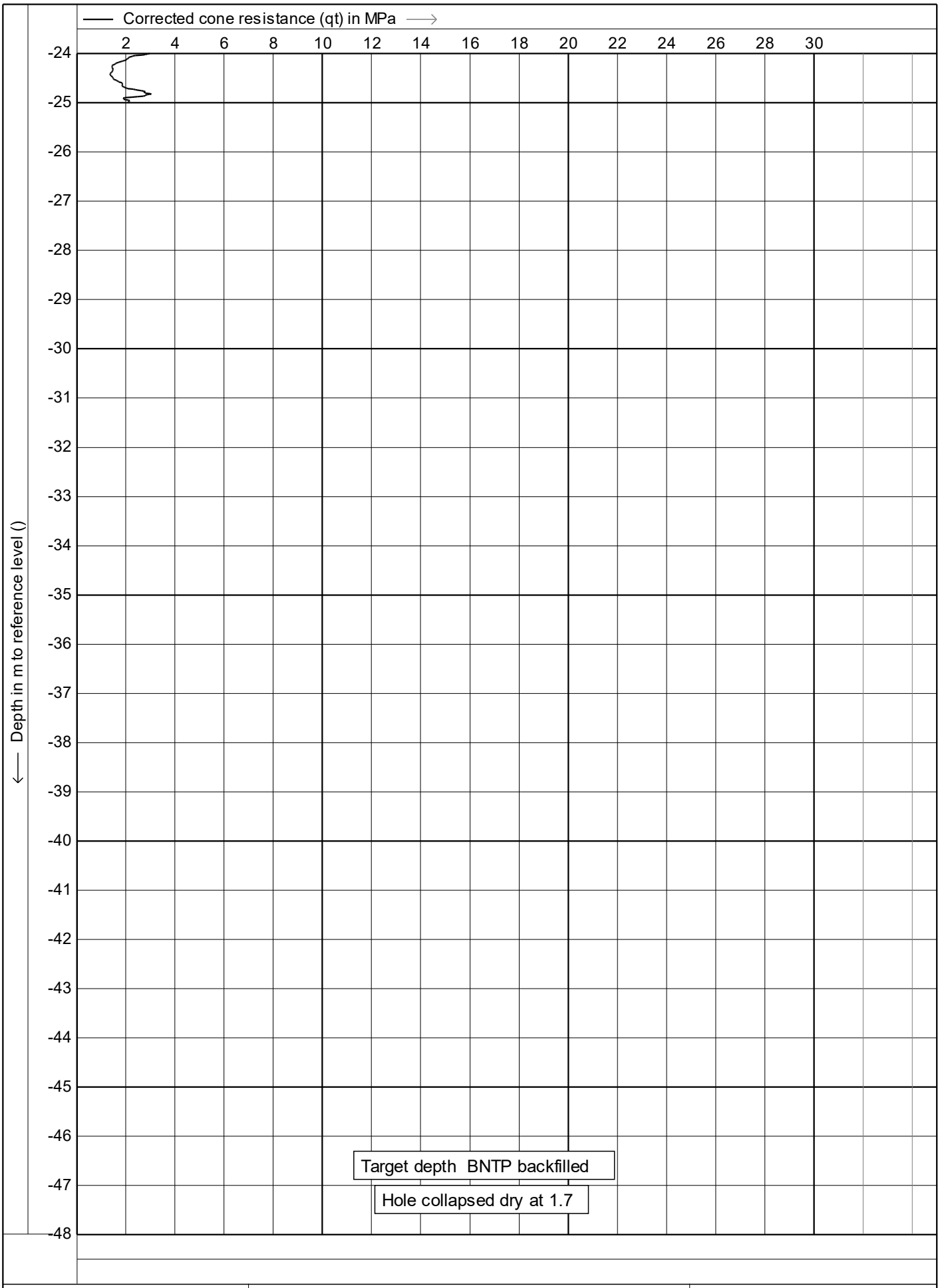
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

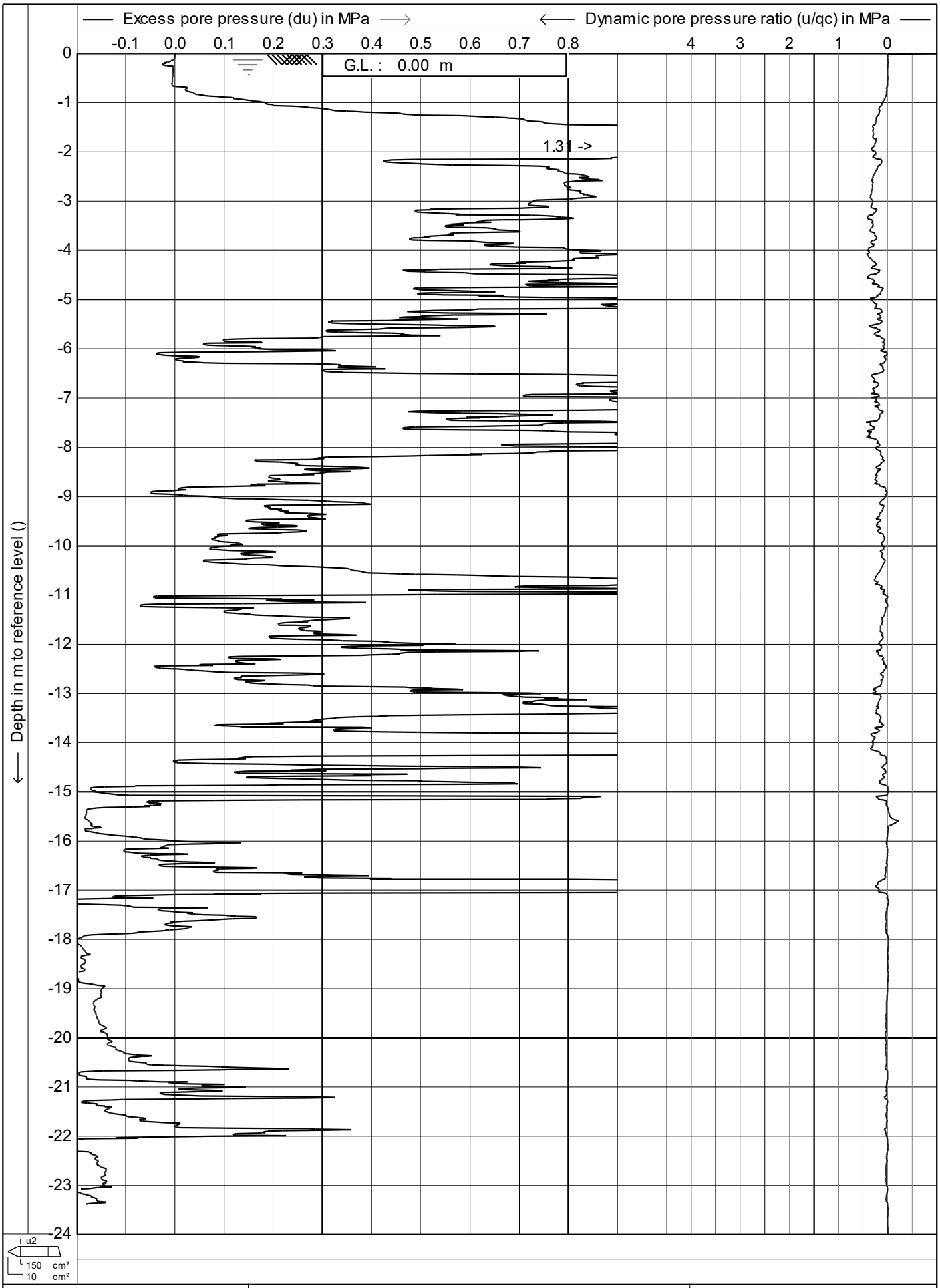
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

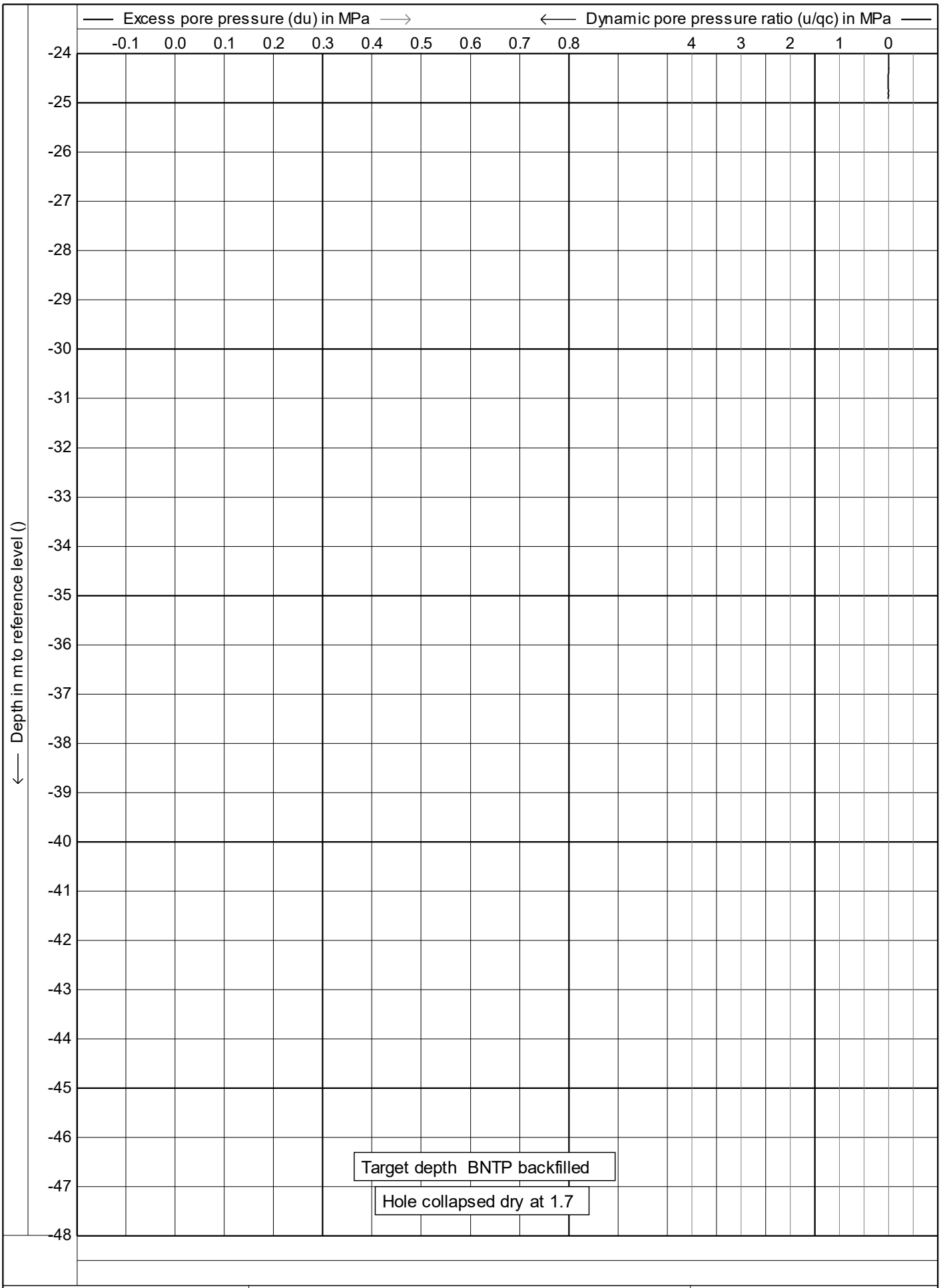
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

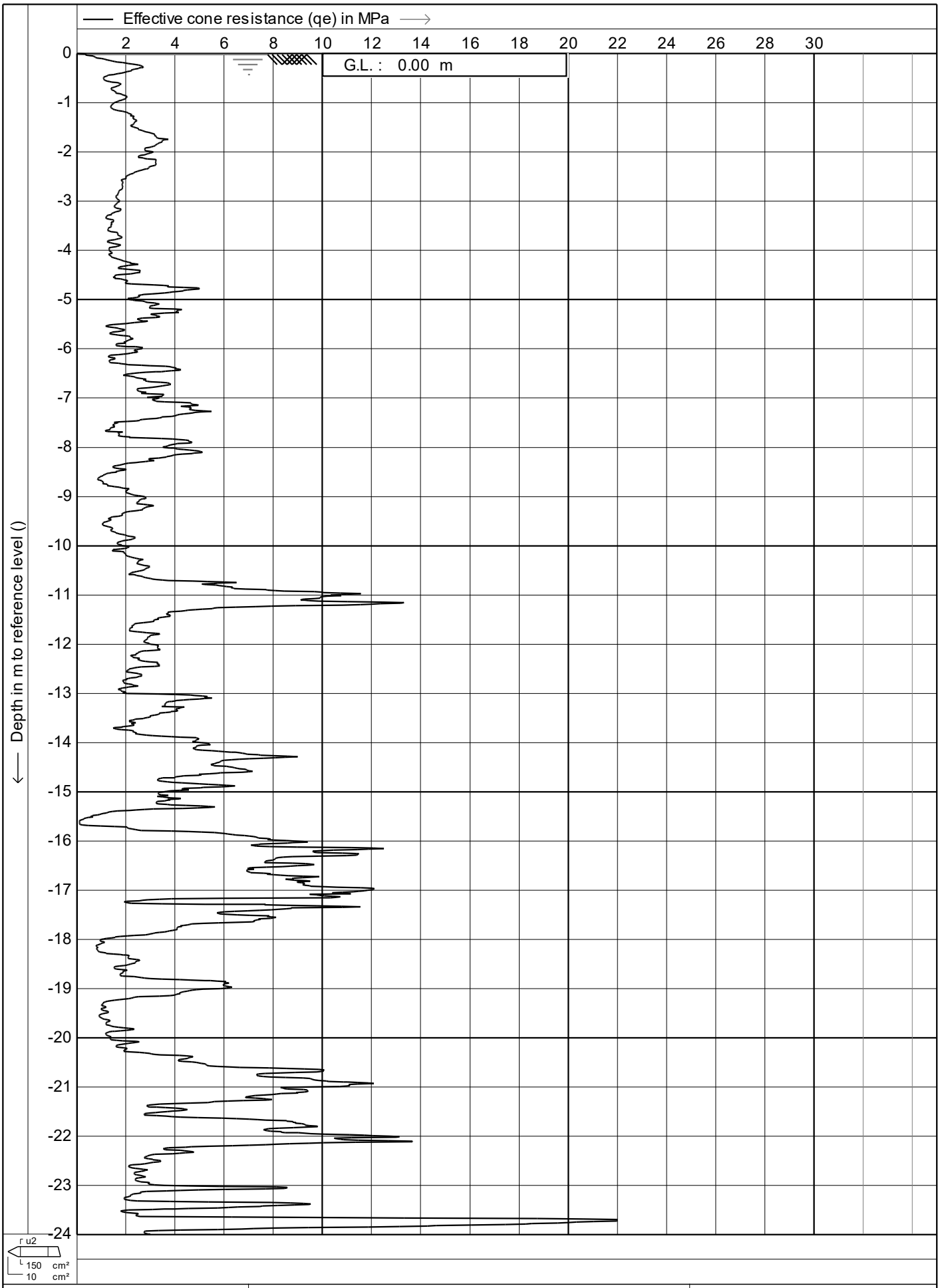
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

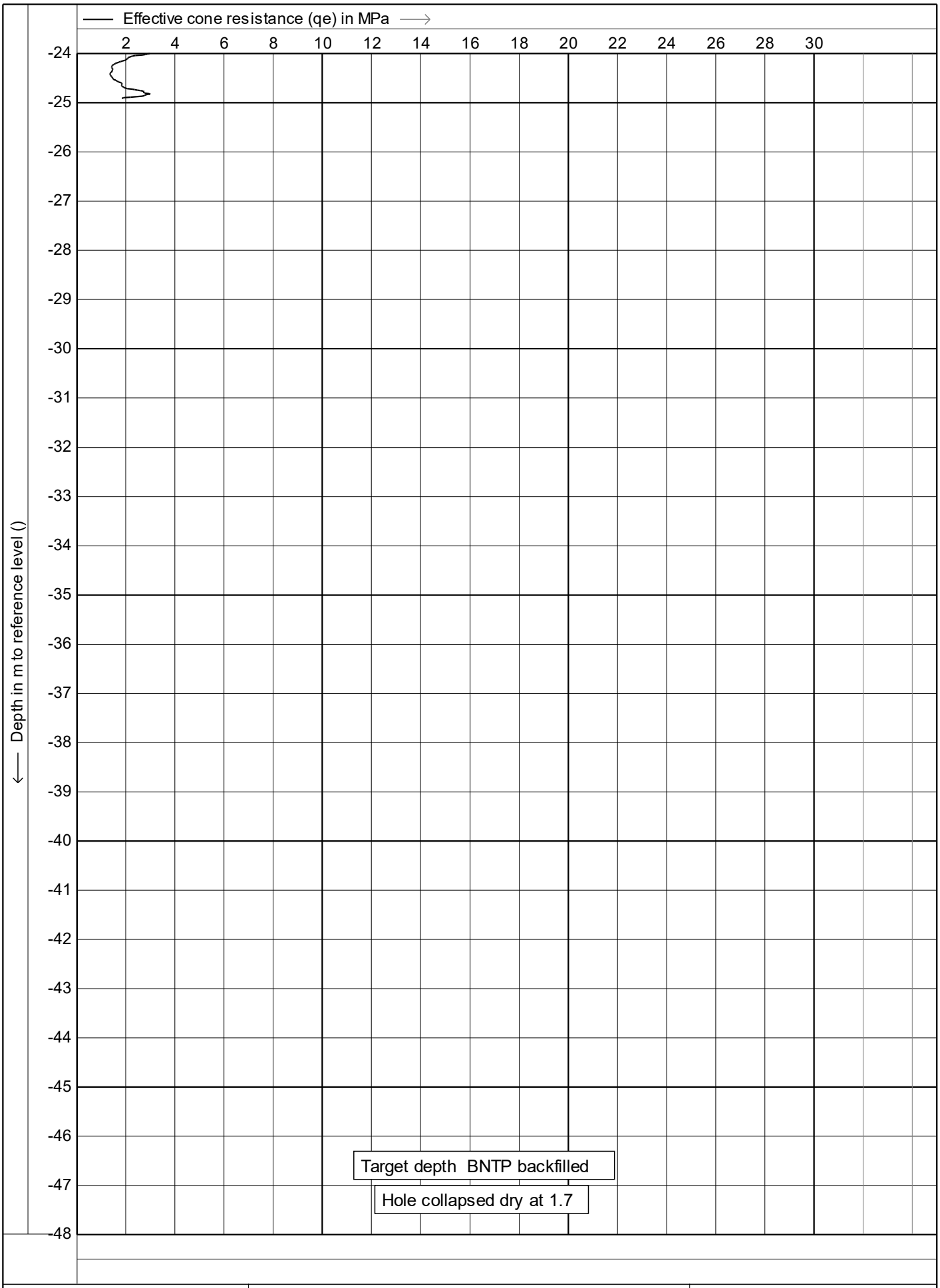
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025** **9/28**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

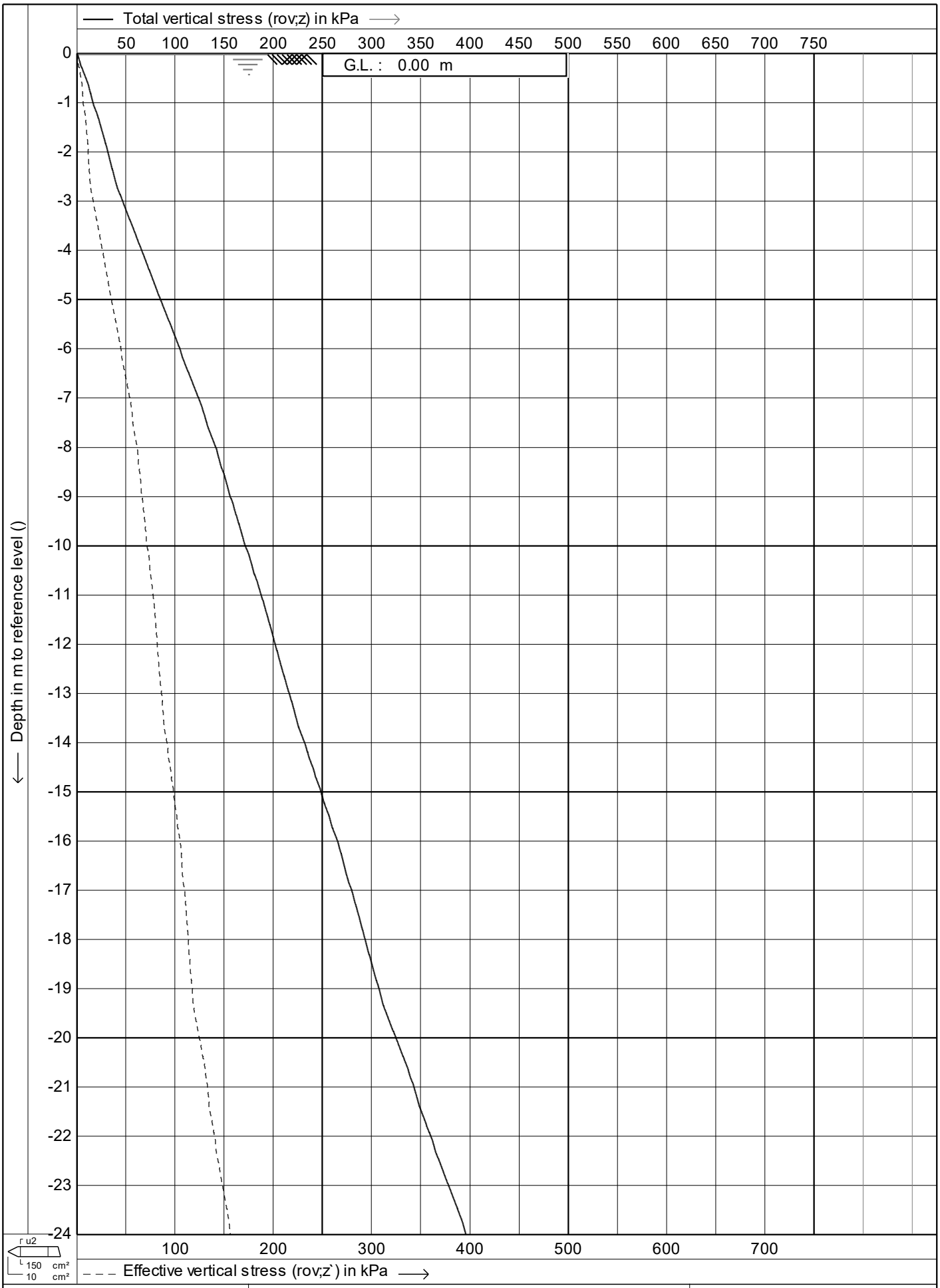
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025**

10/28

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

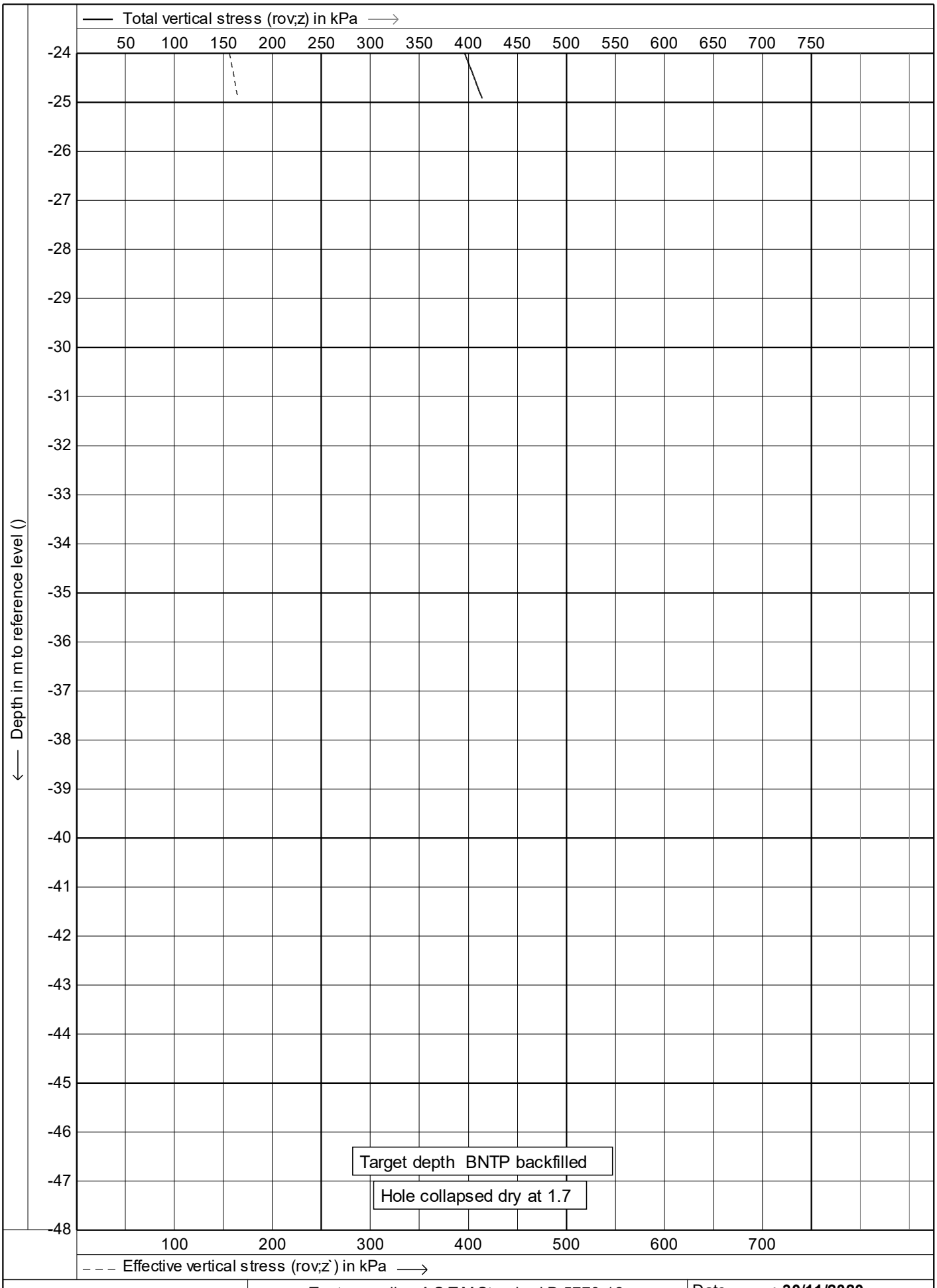
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

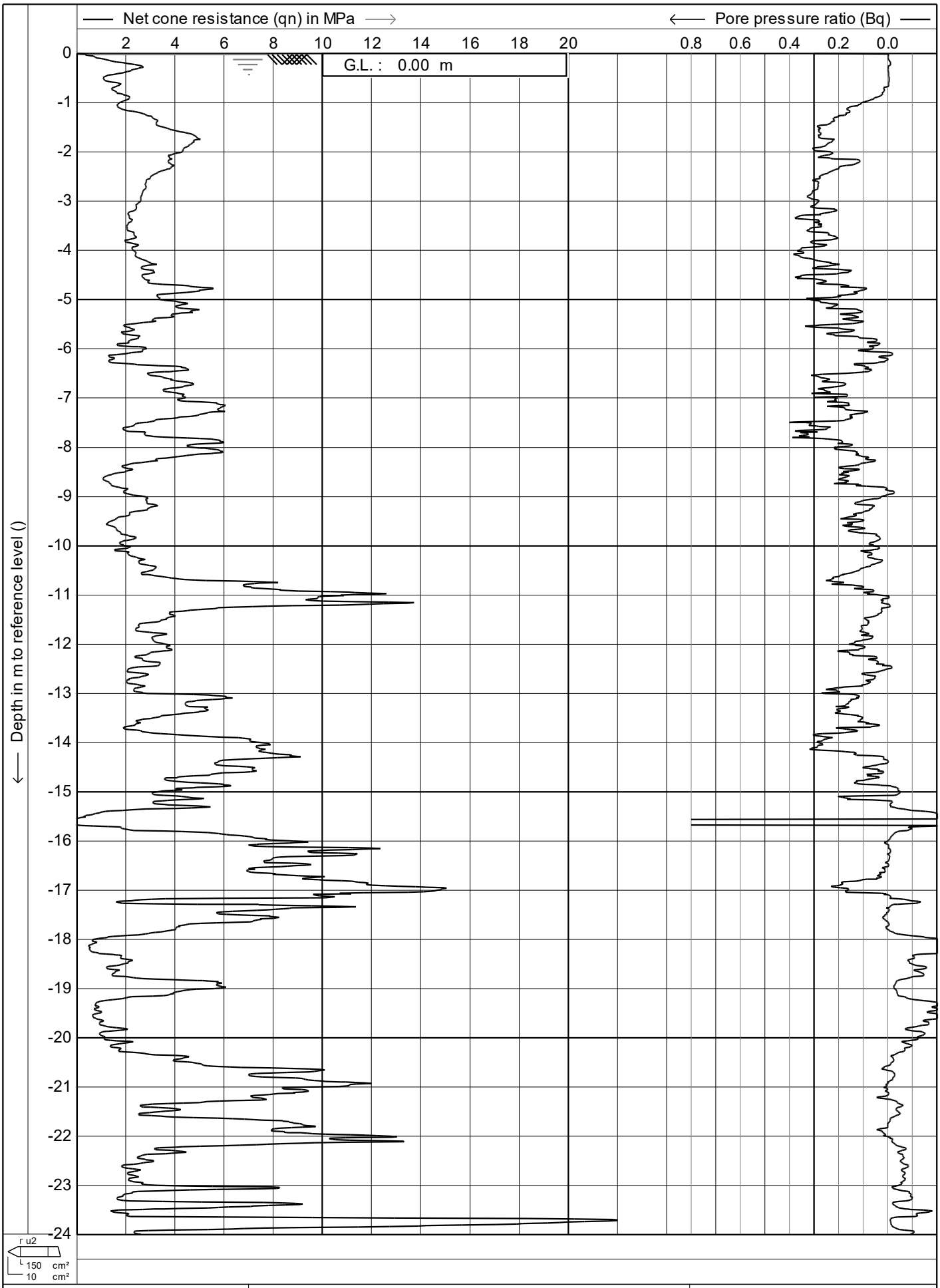
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

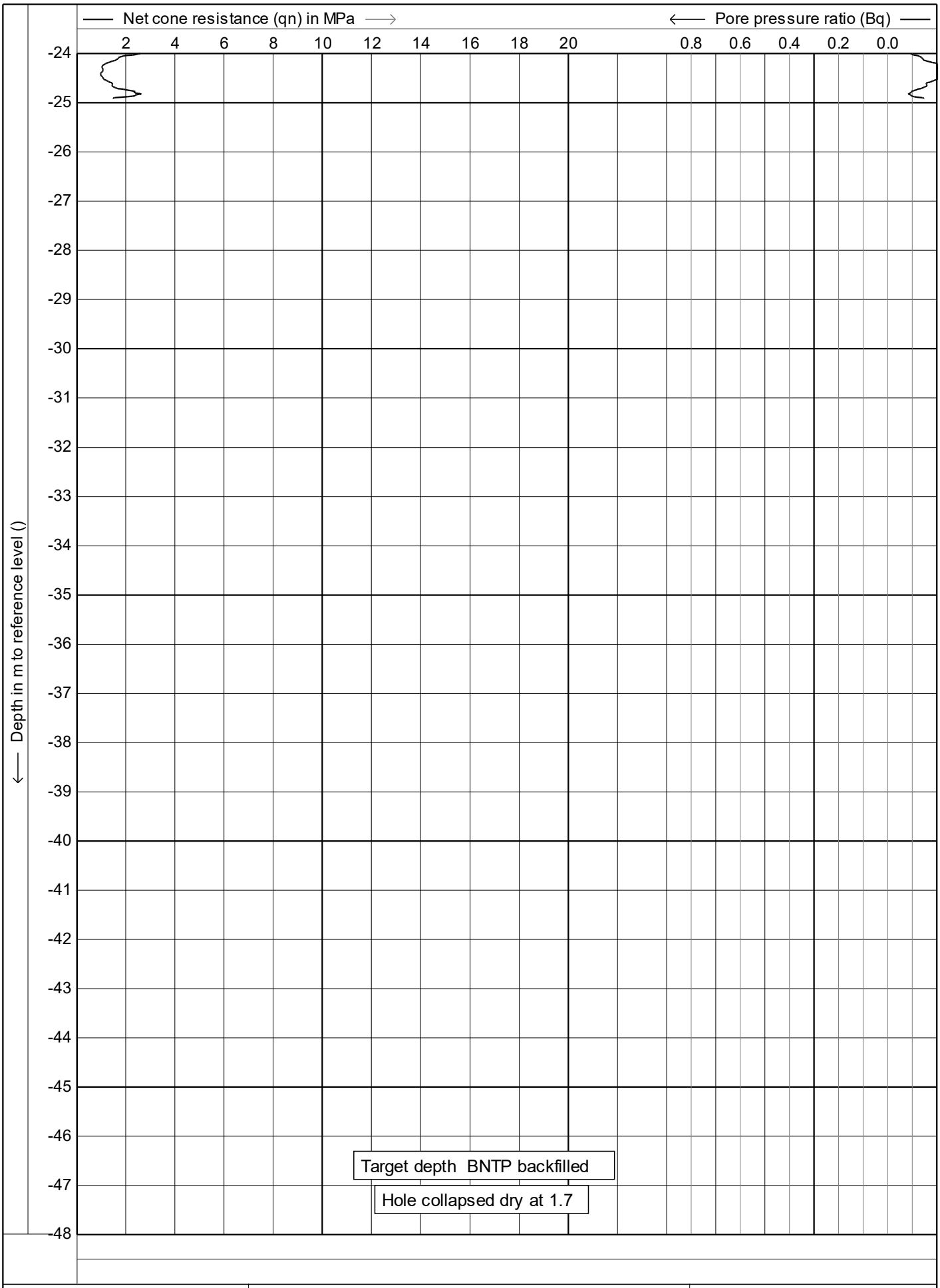
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

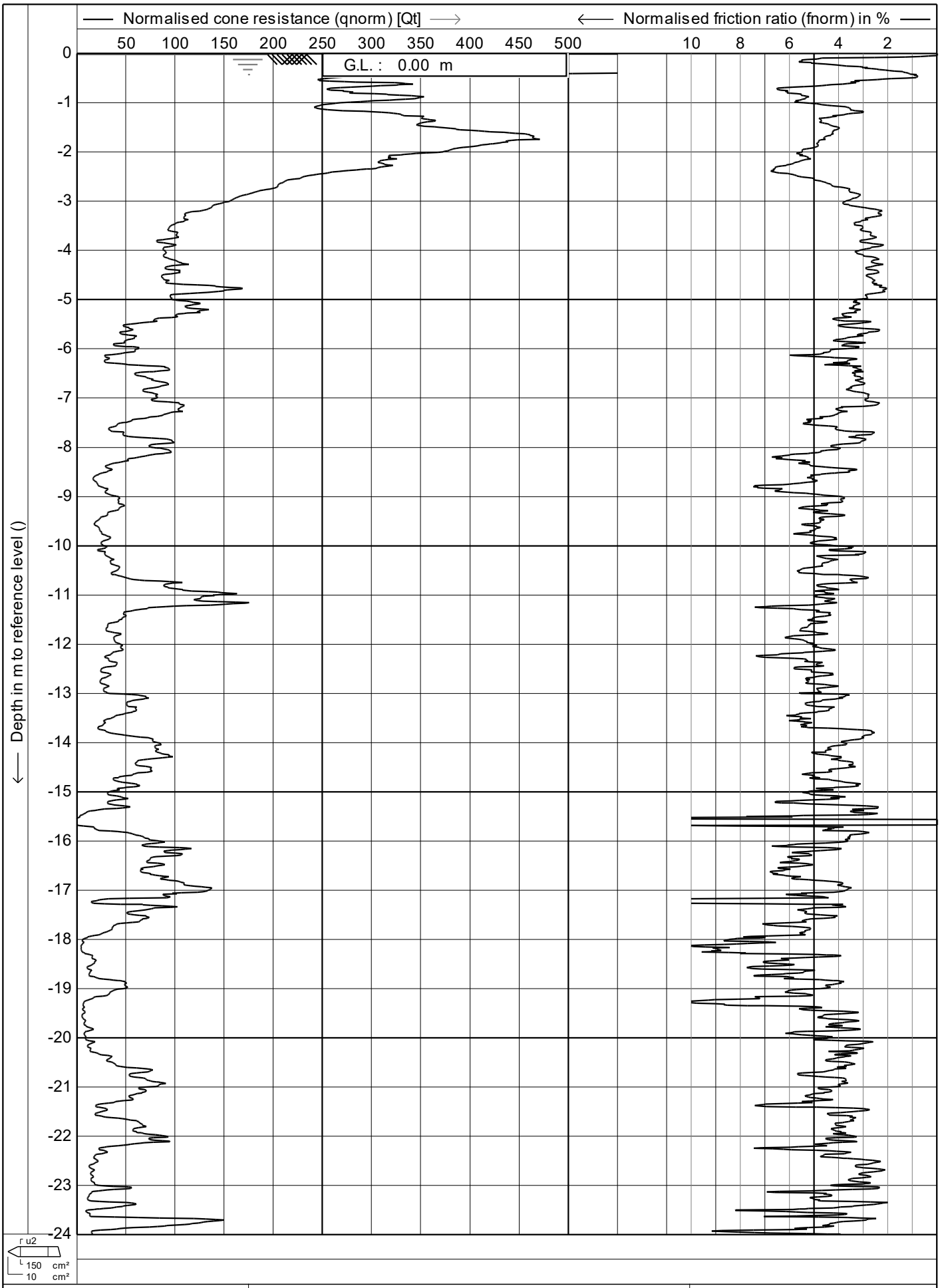
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

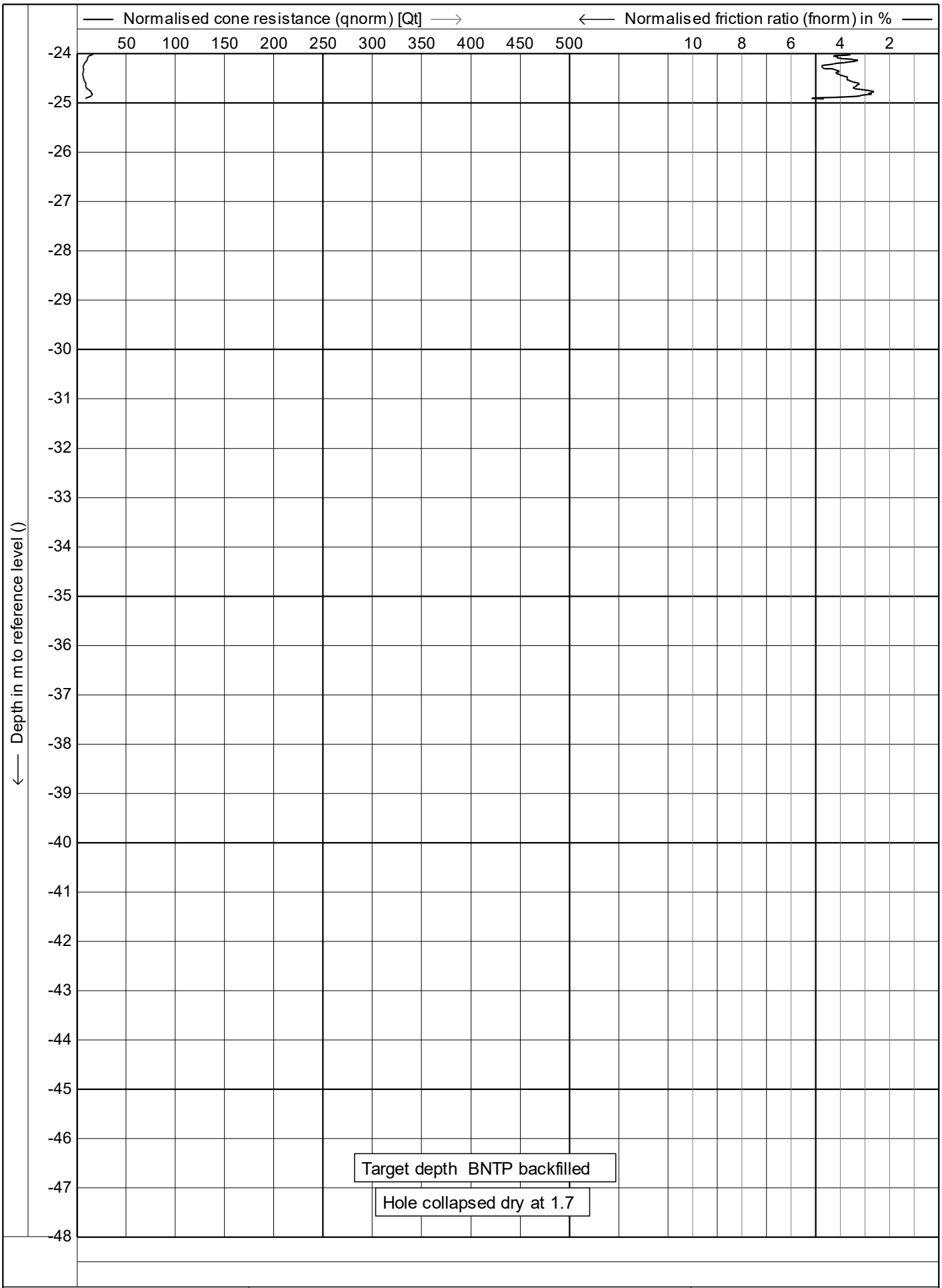
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

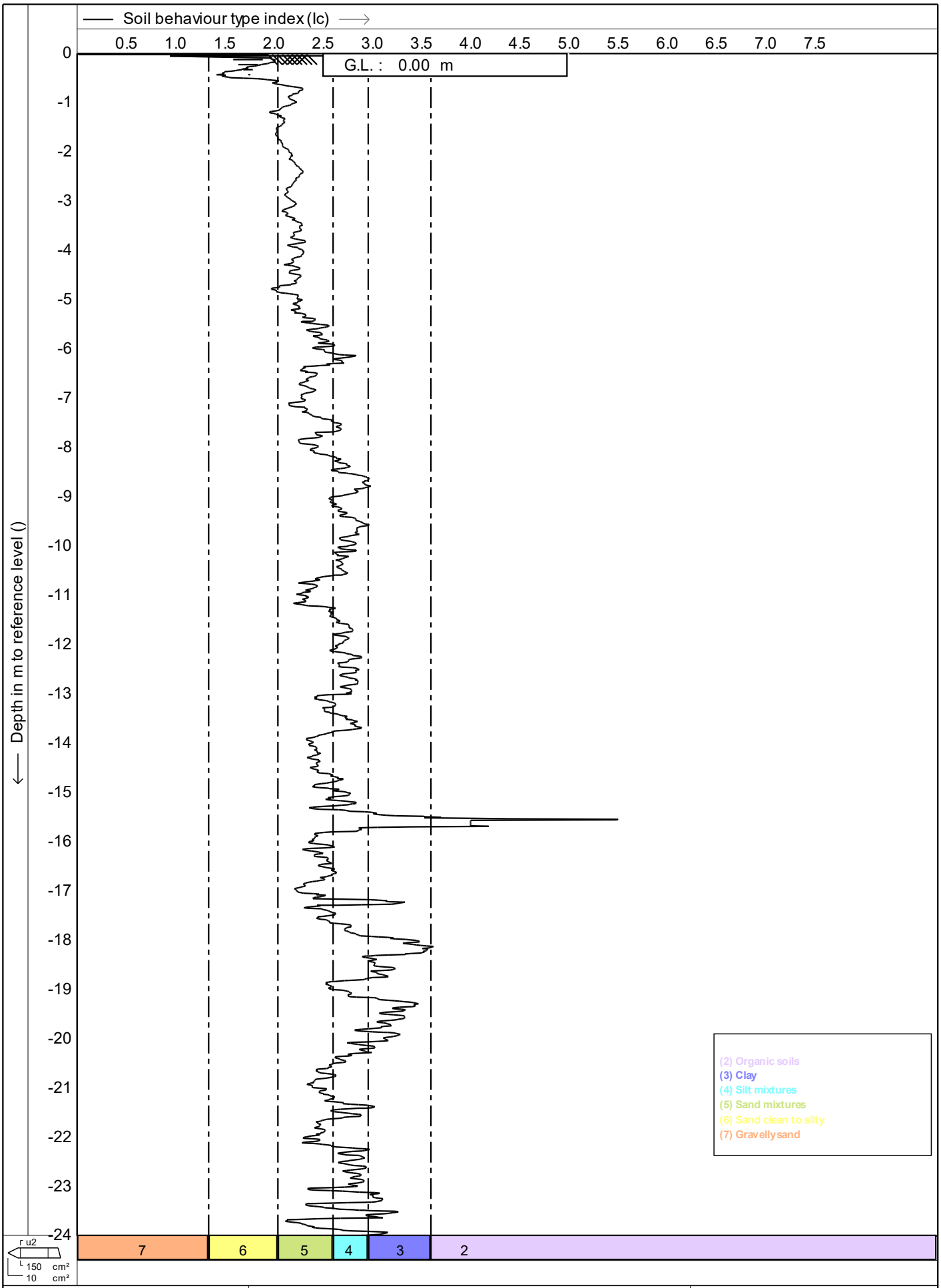
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

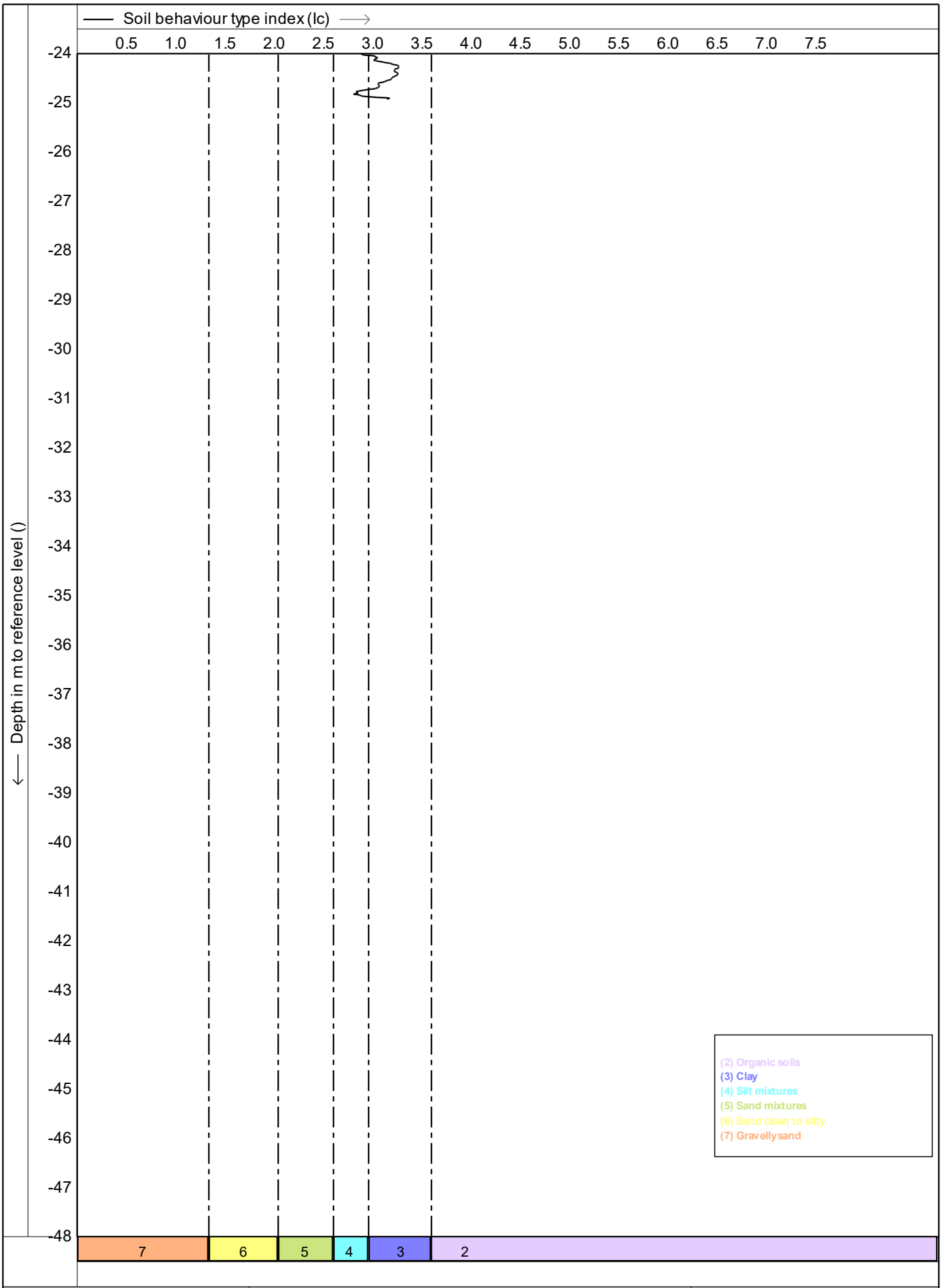
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **025** **17/28**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

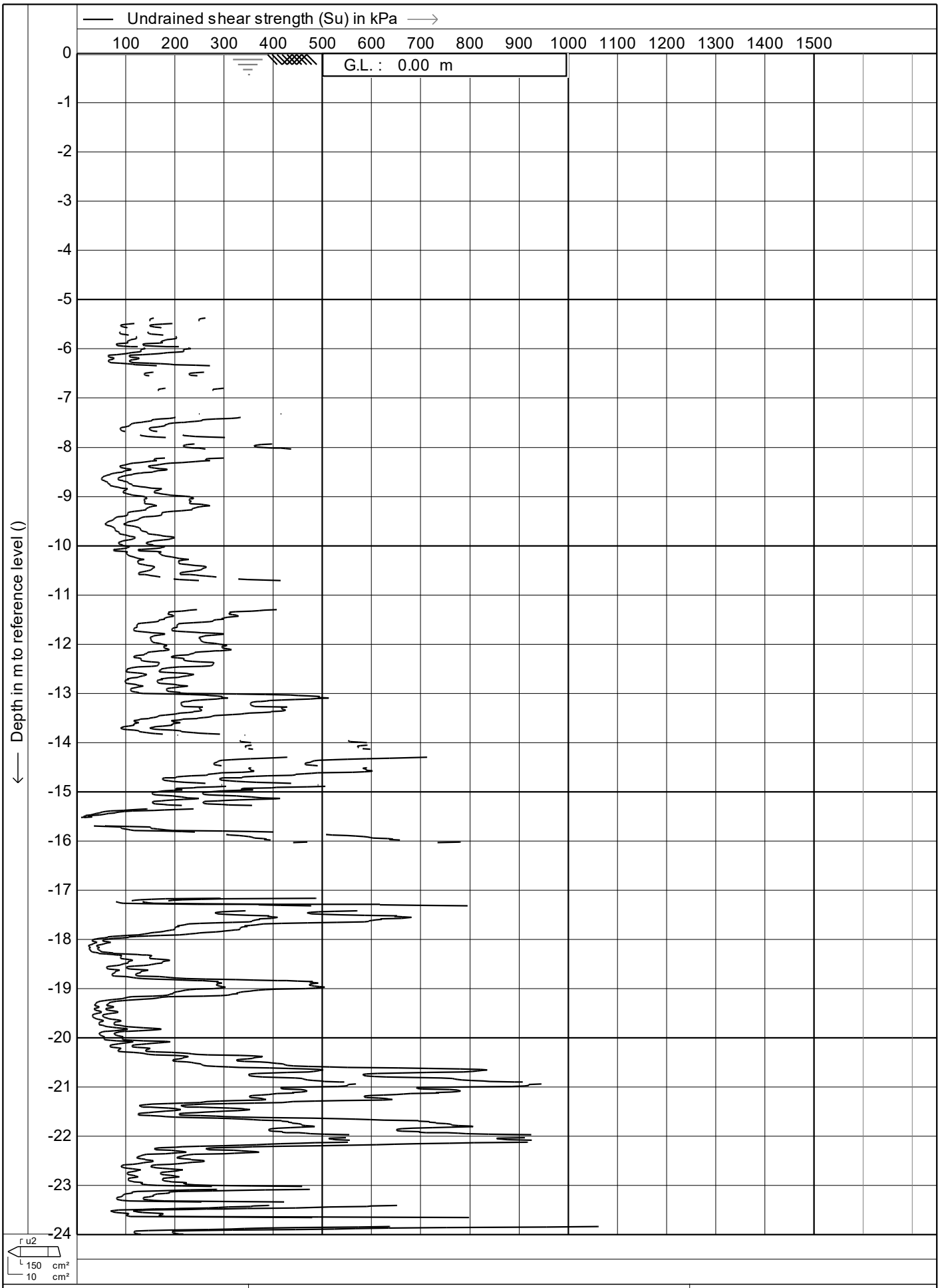
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

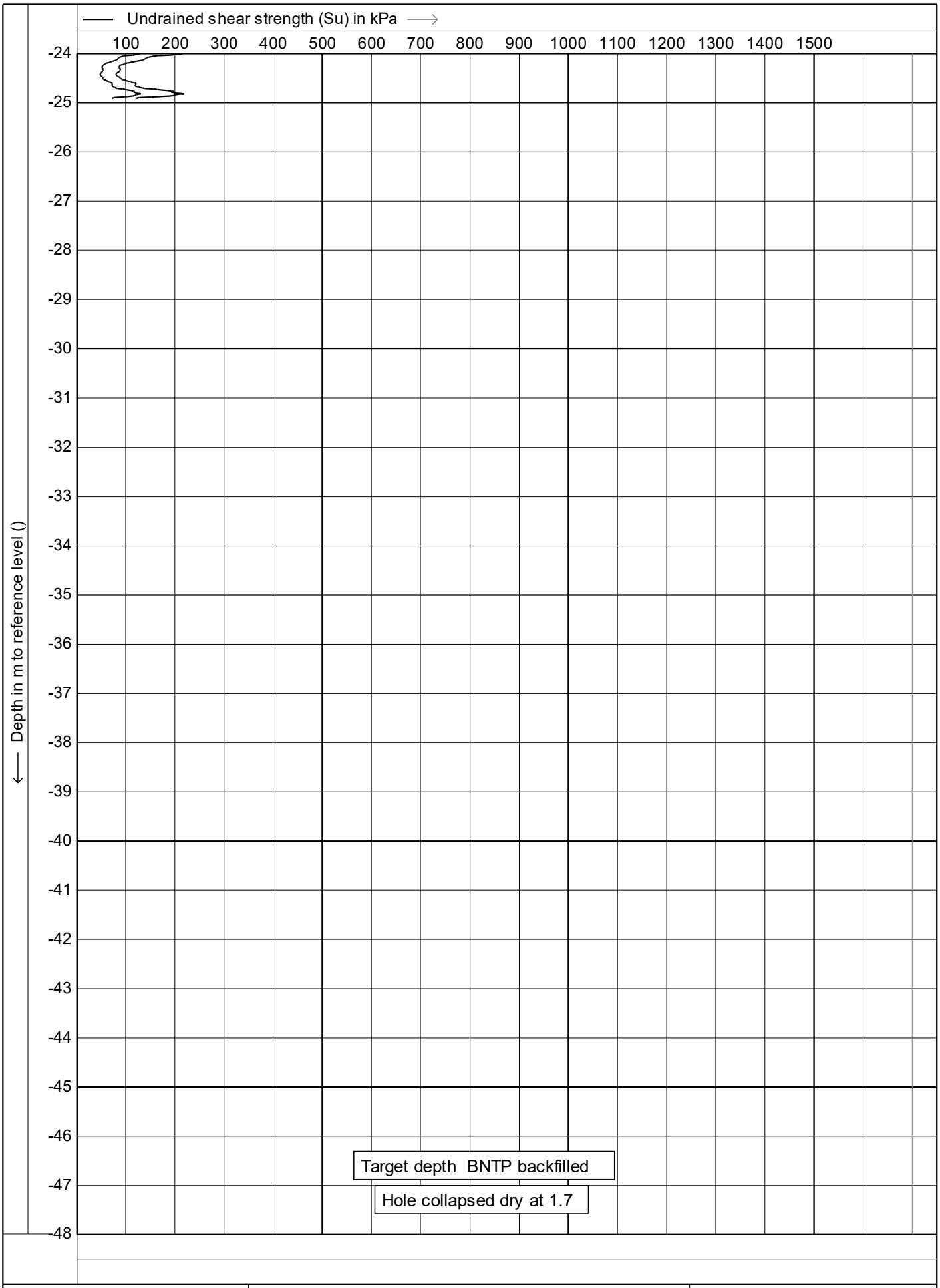
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

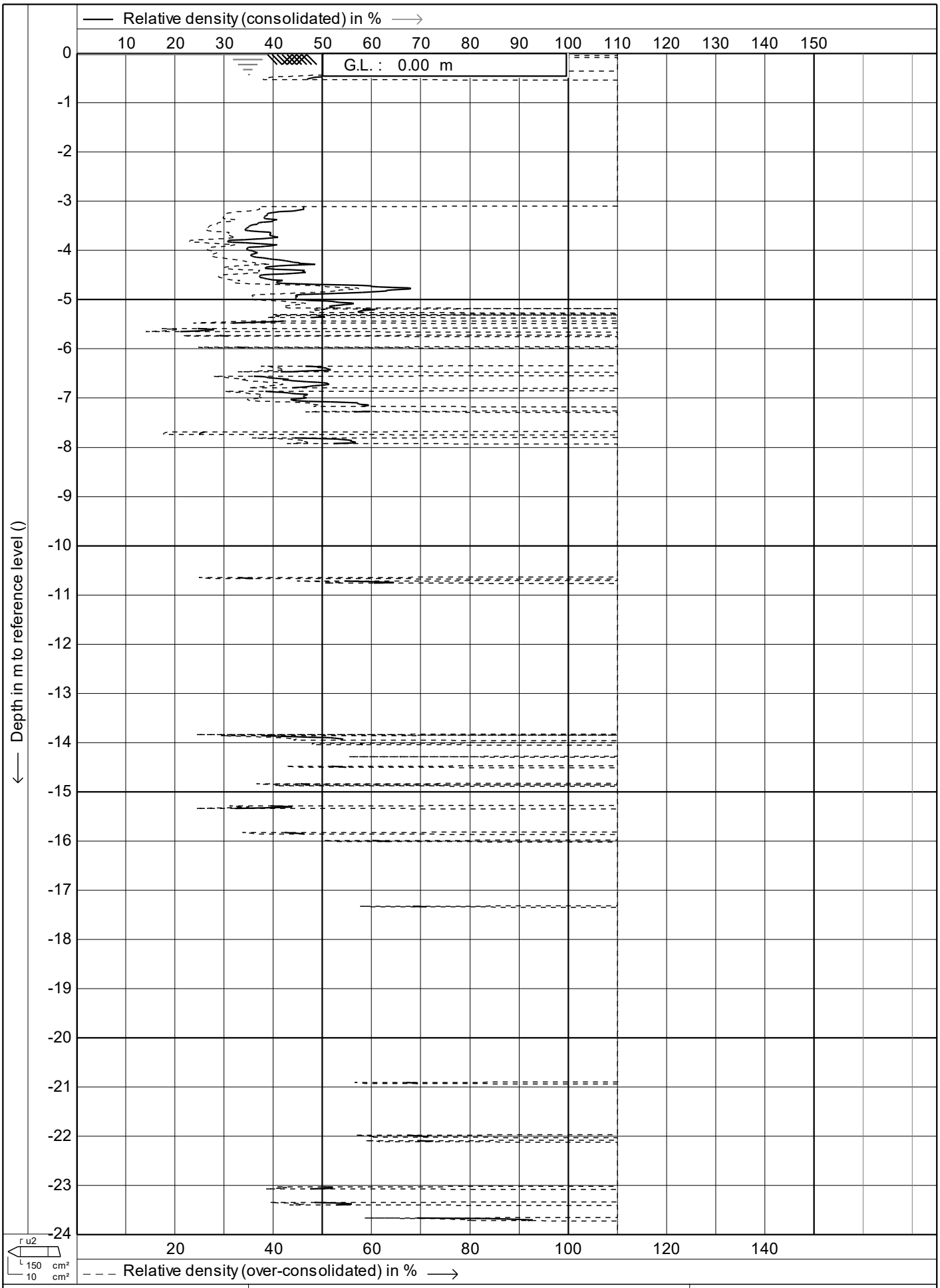
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

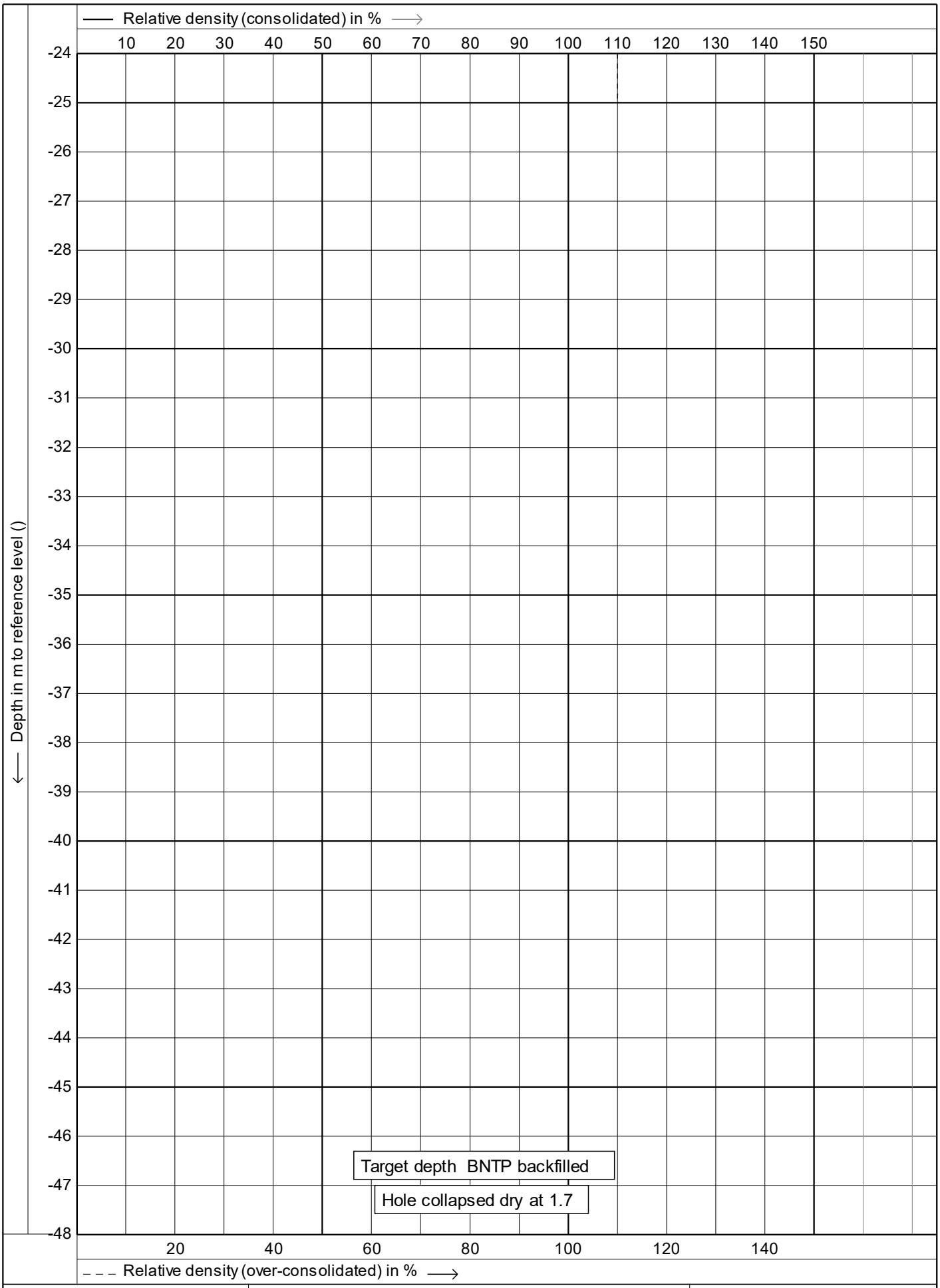
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

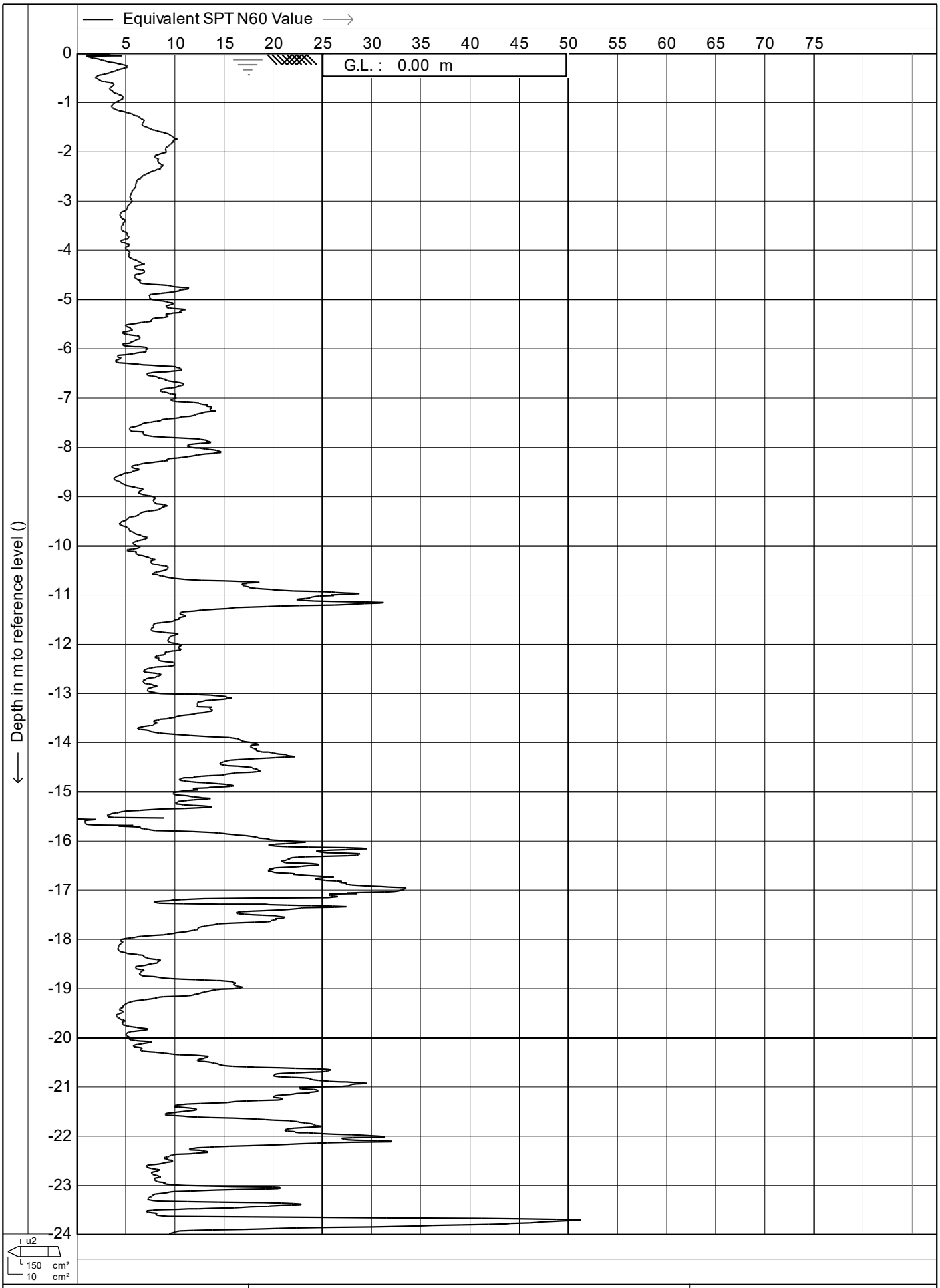
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

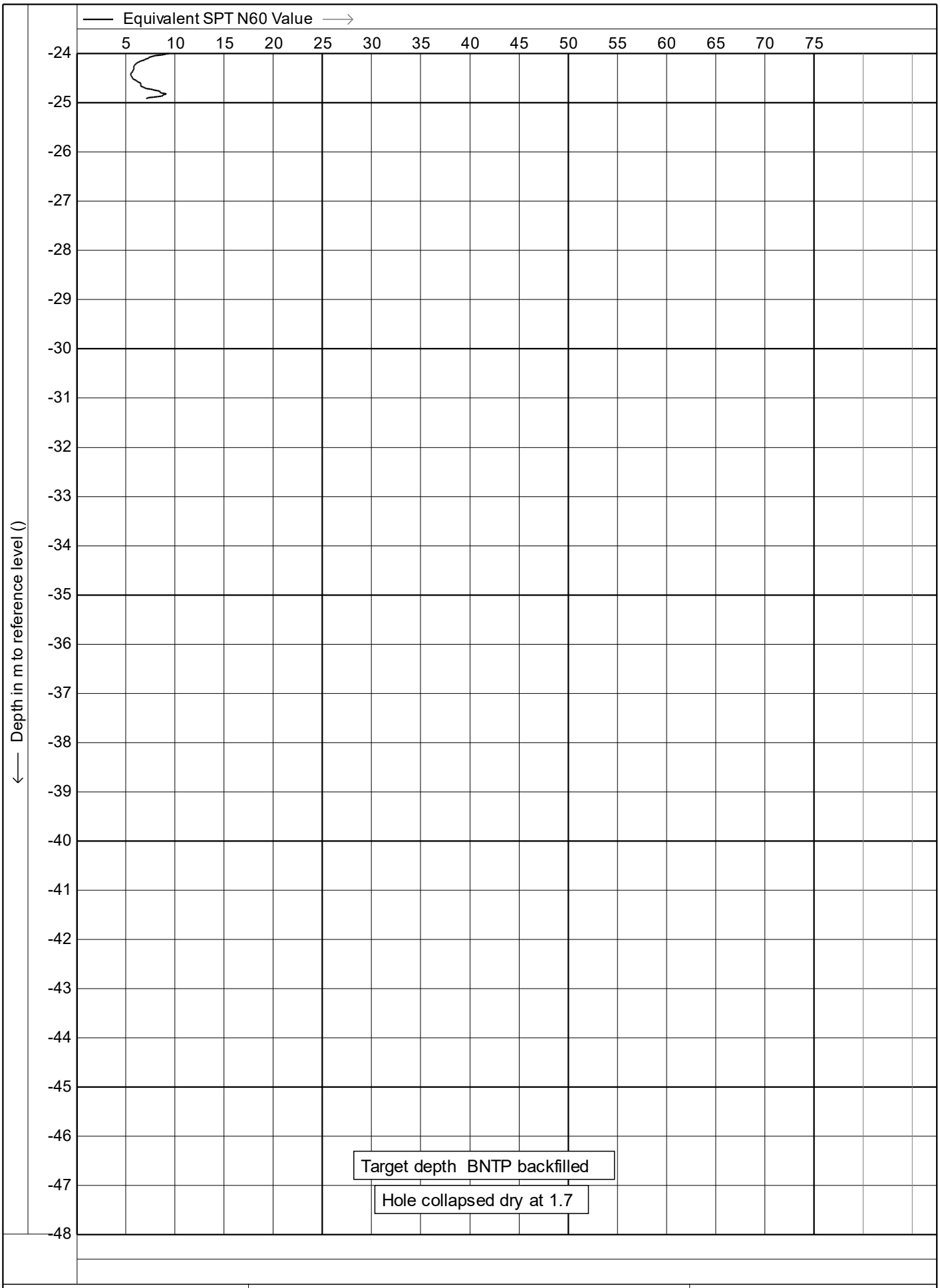
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

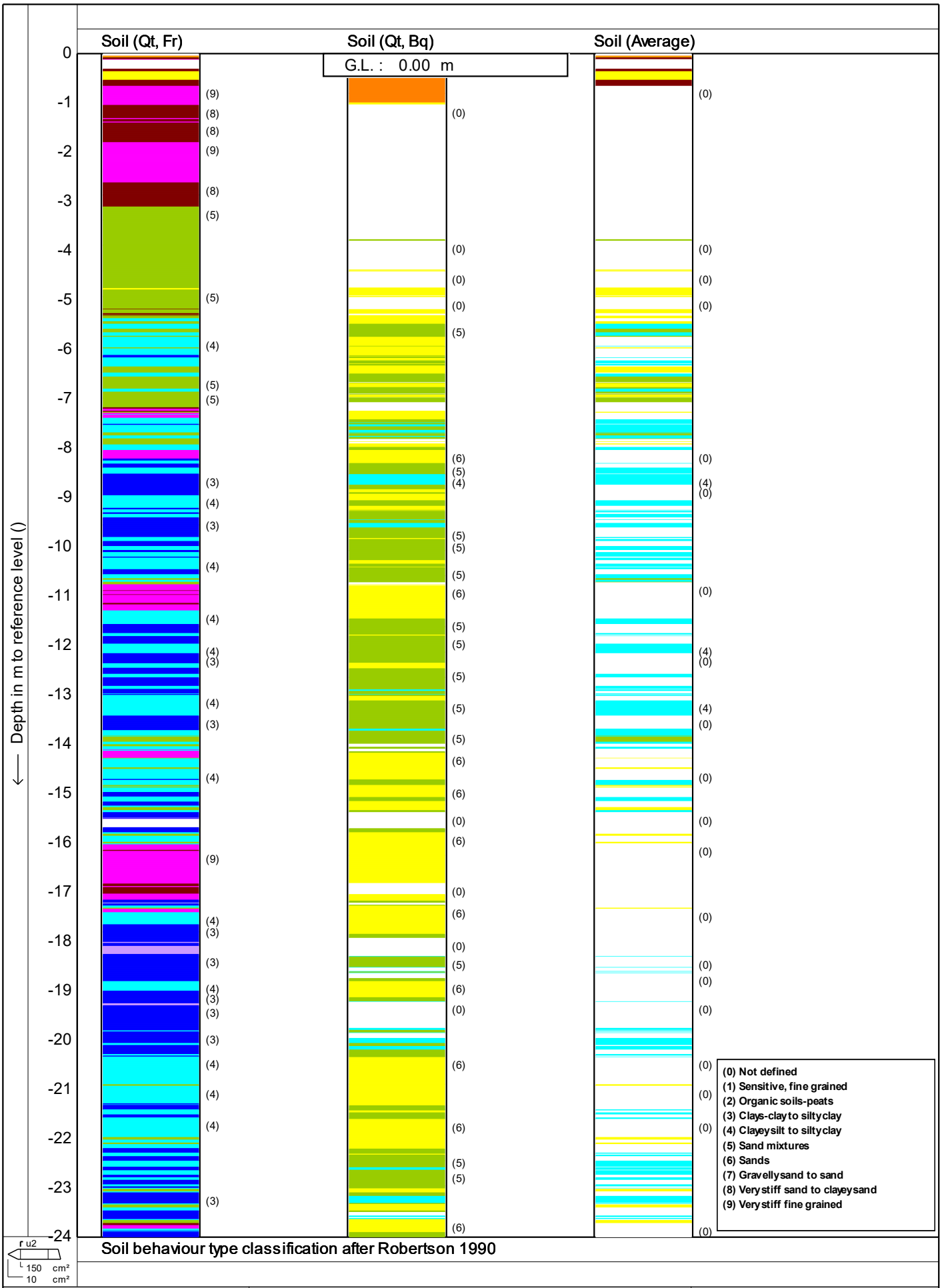
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025**

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

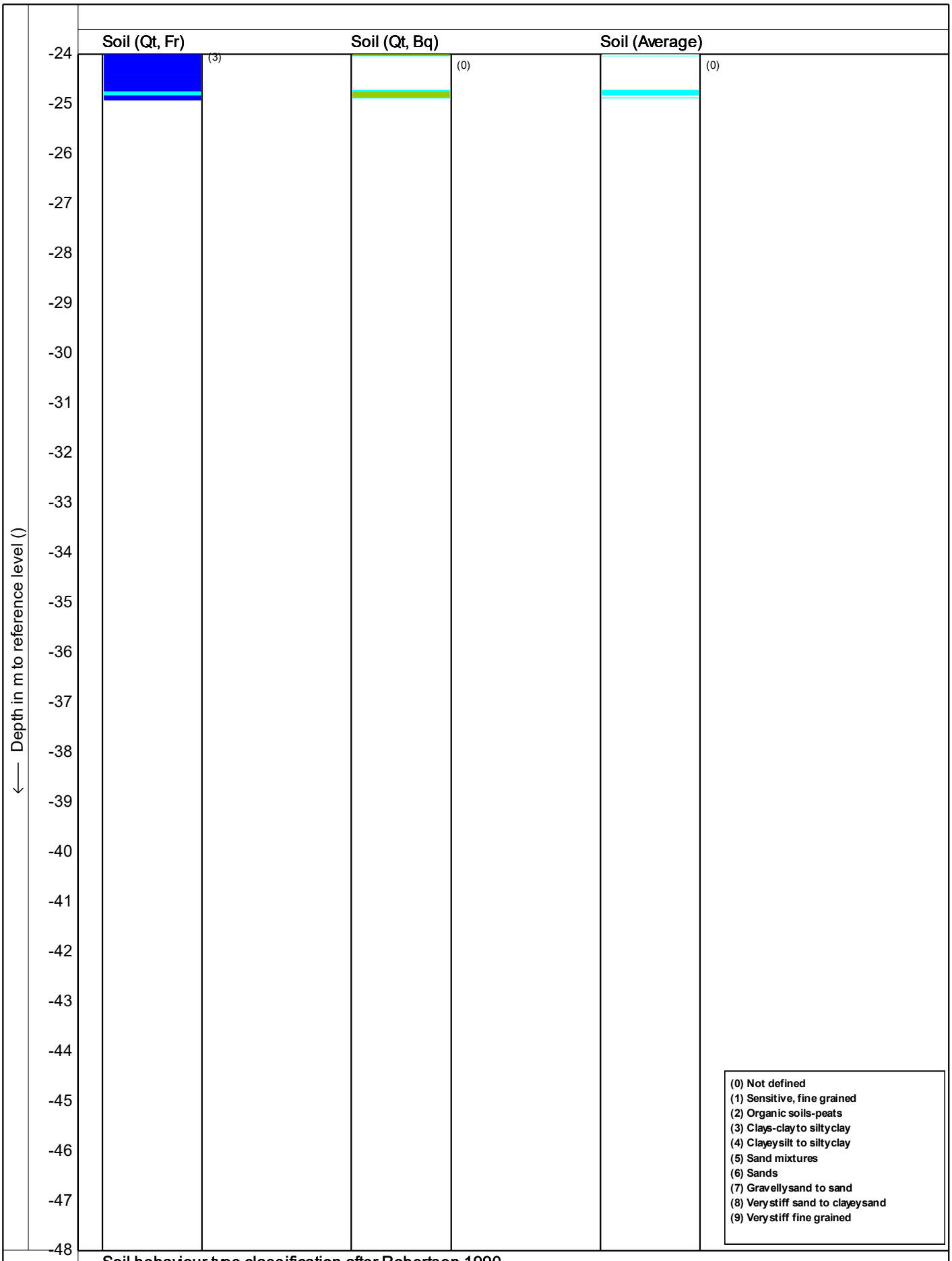
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **025**

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

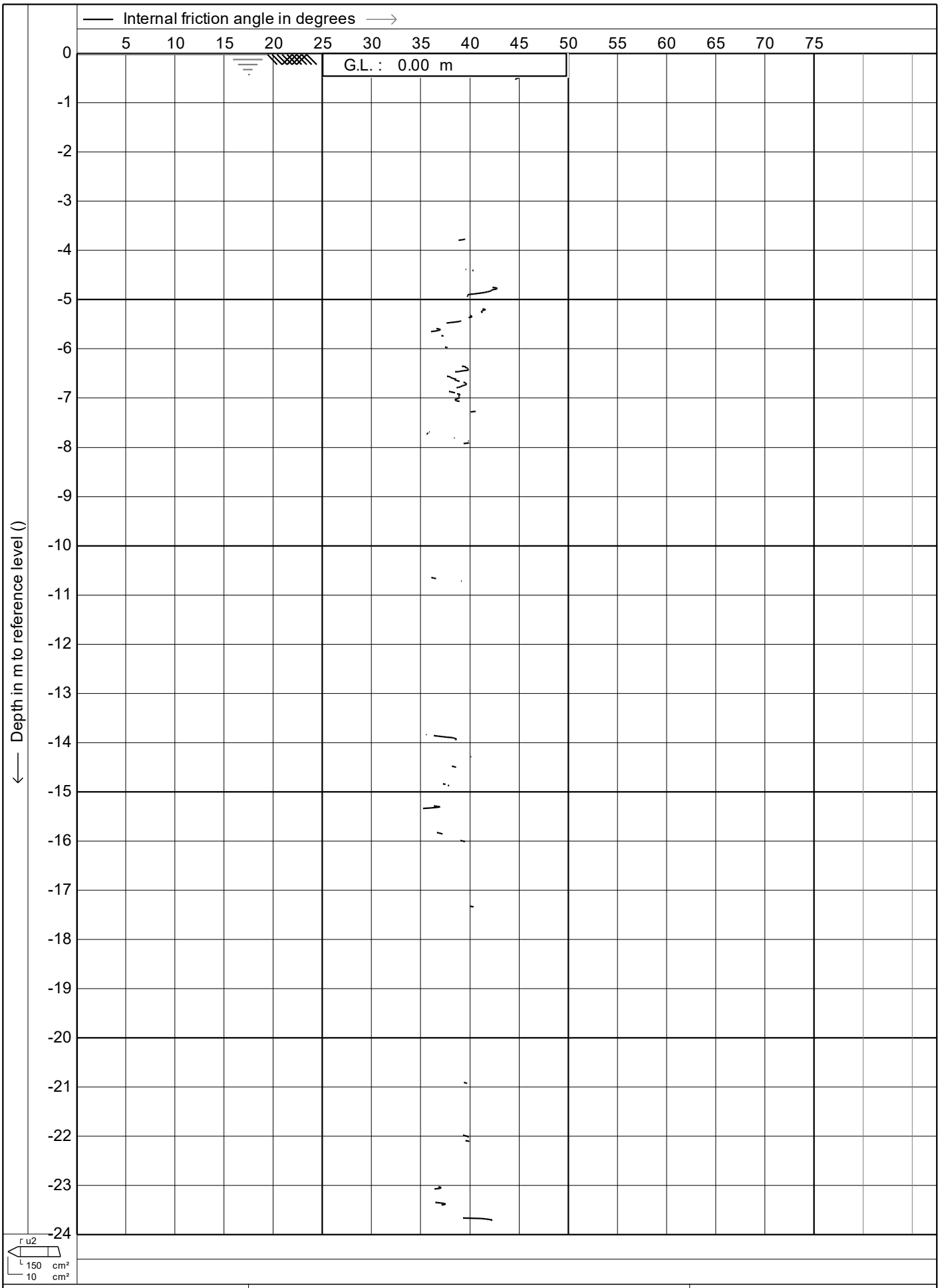
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

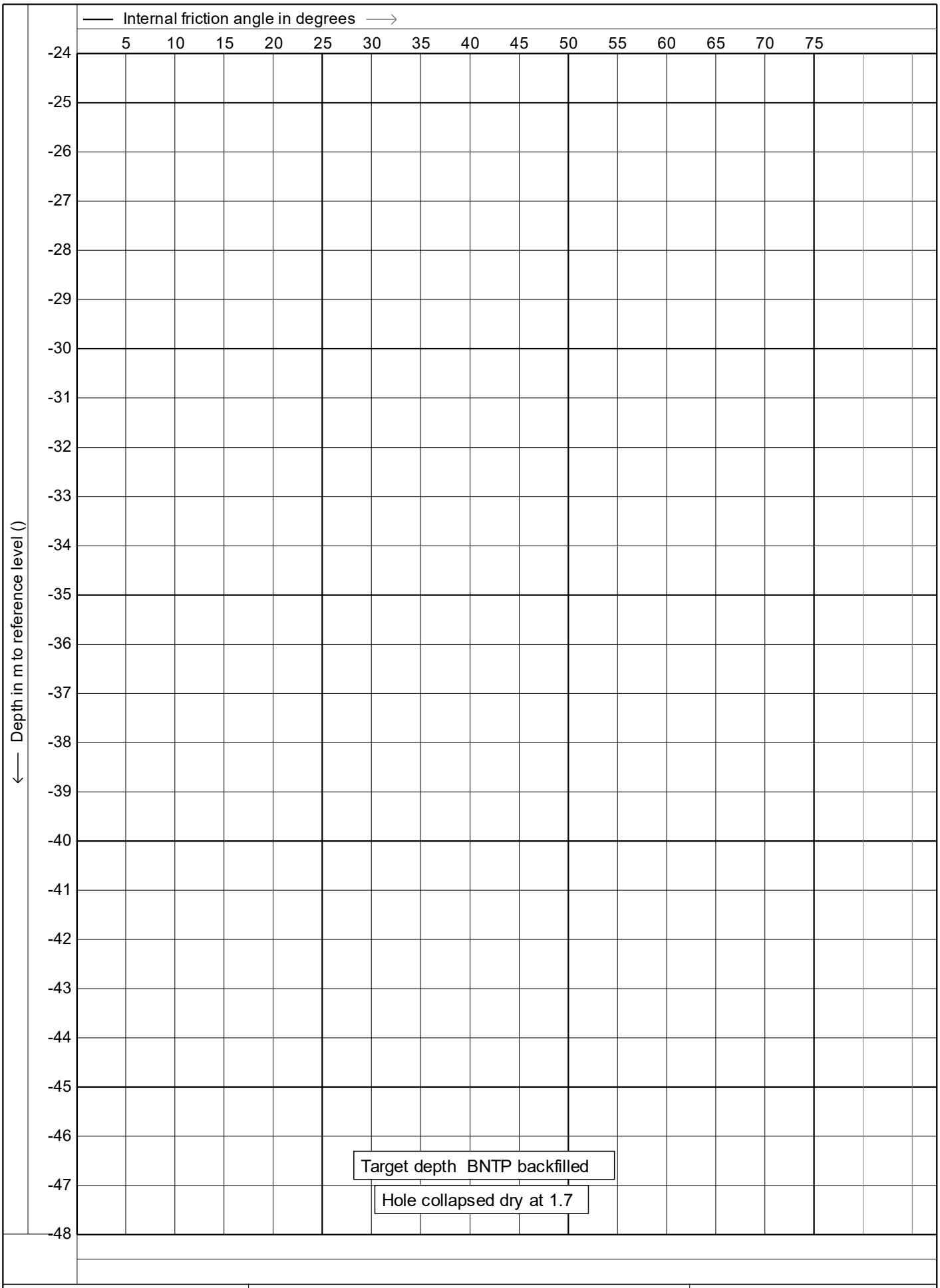
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

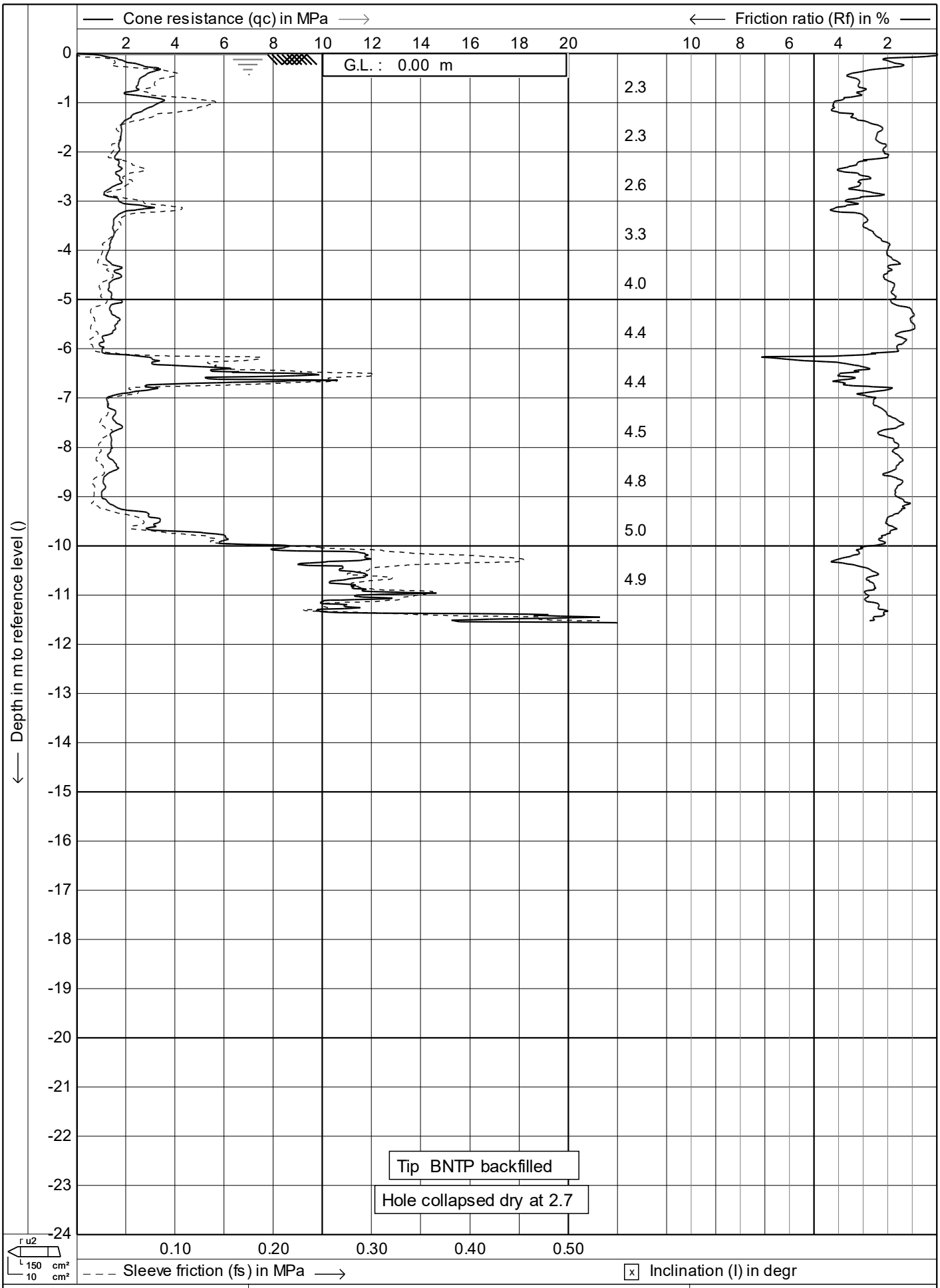
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **025**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

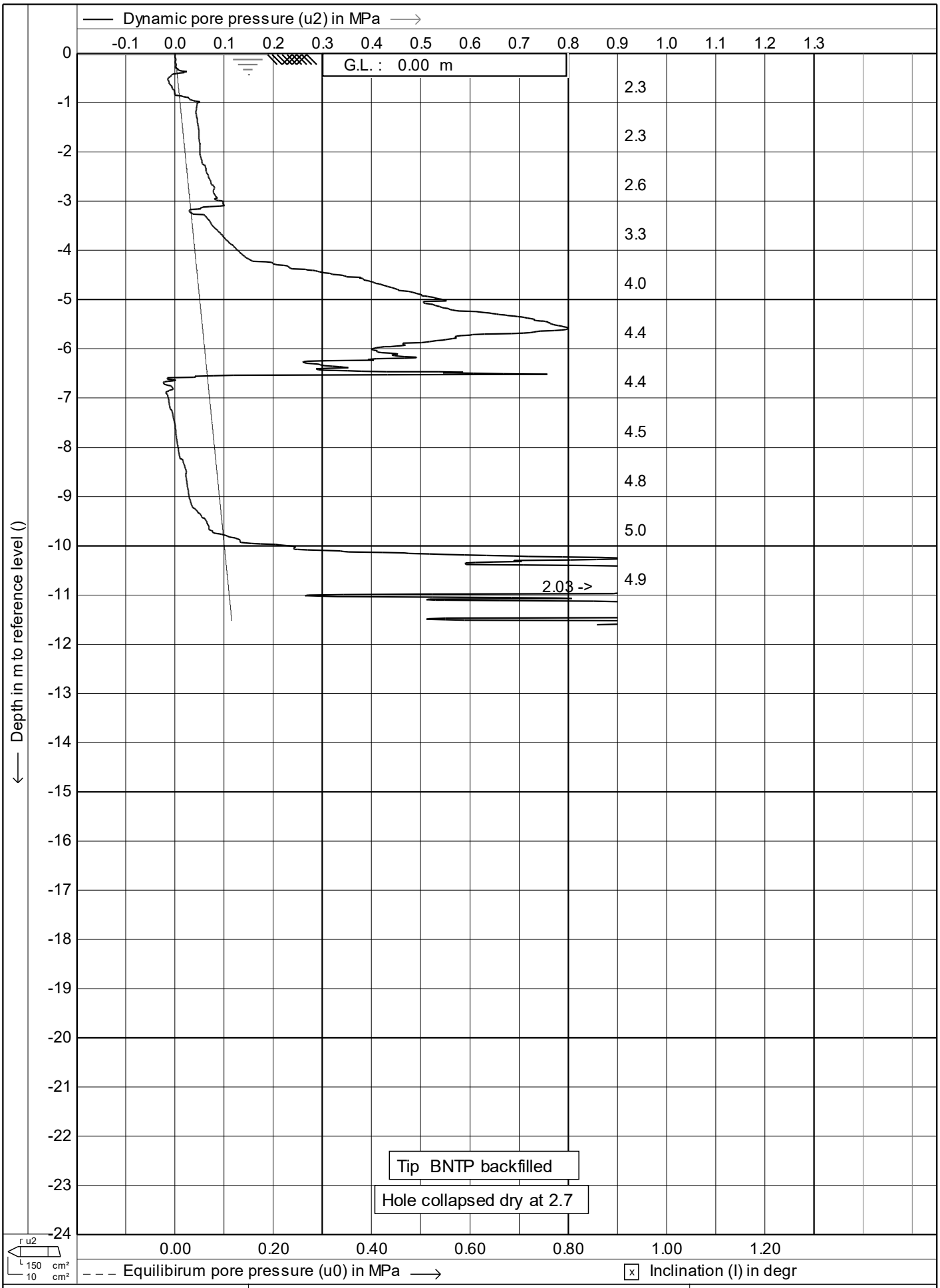
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **026**

1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

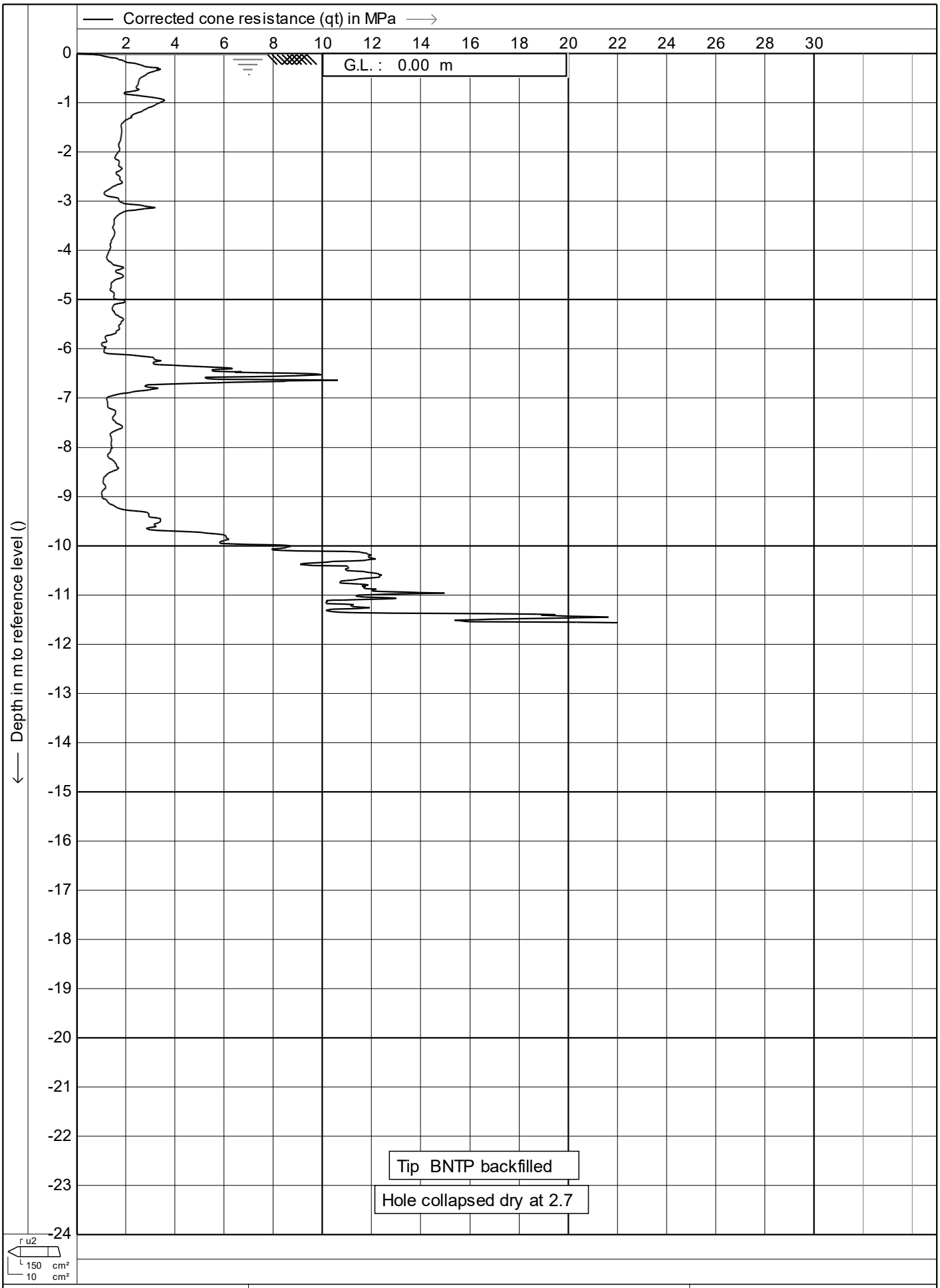
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **026**

2/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

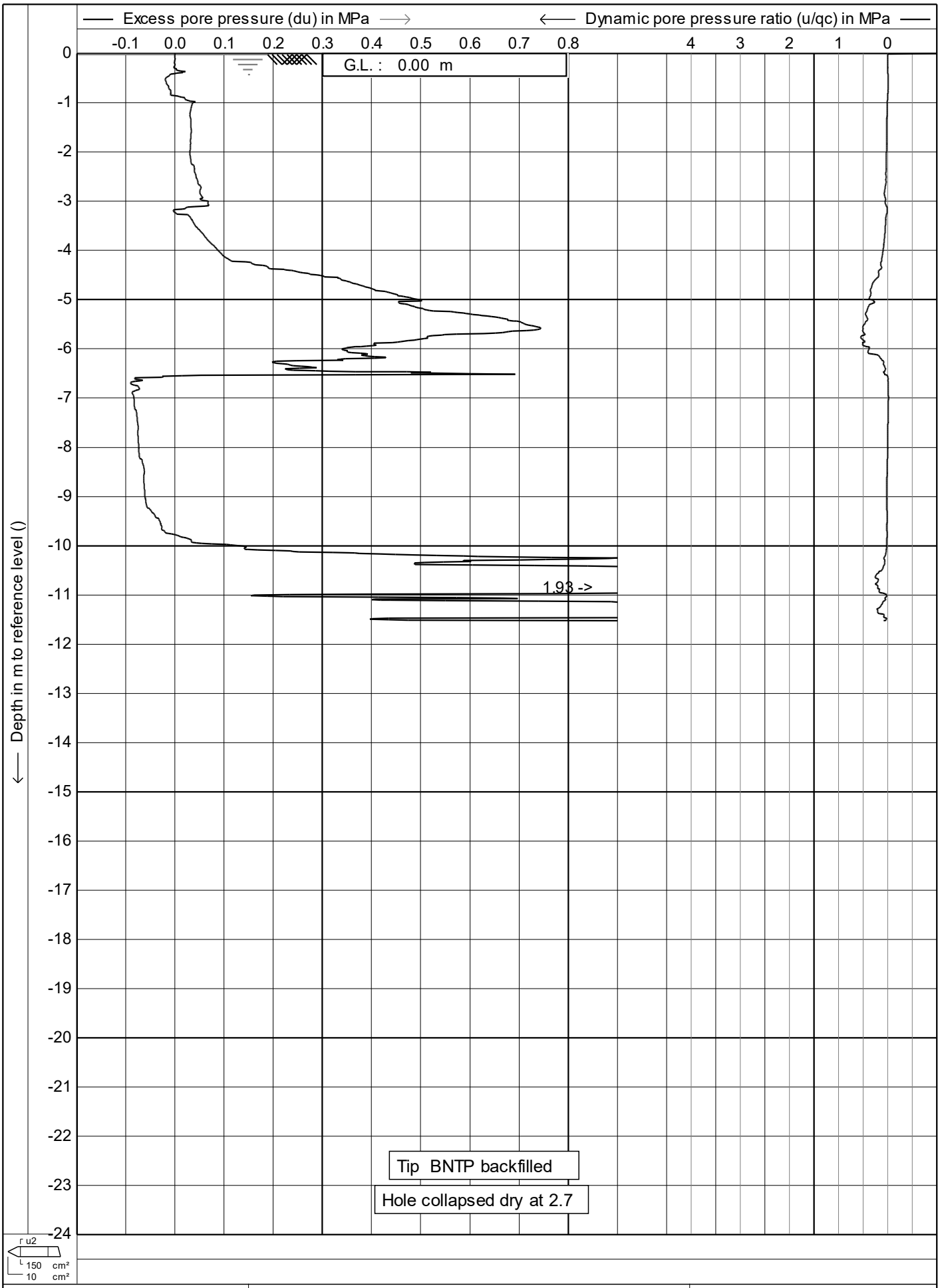
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **026** **3/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

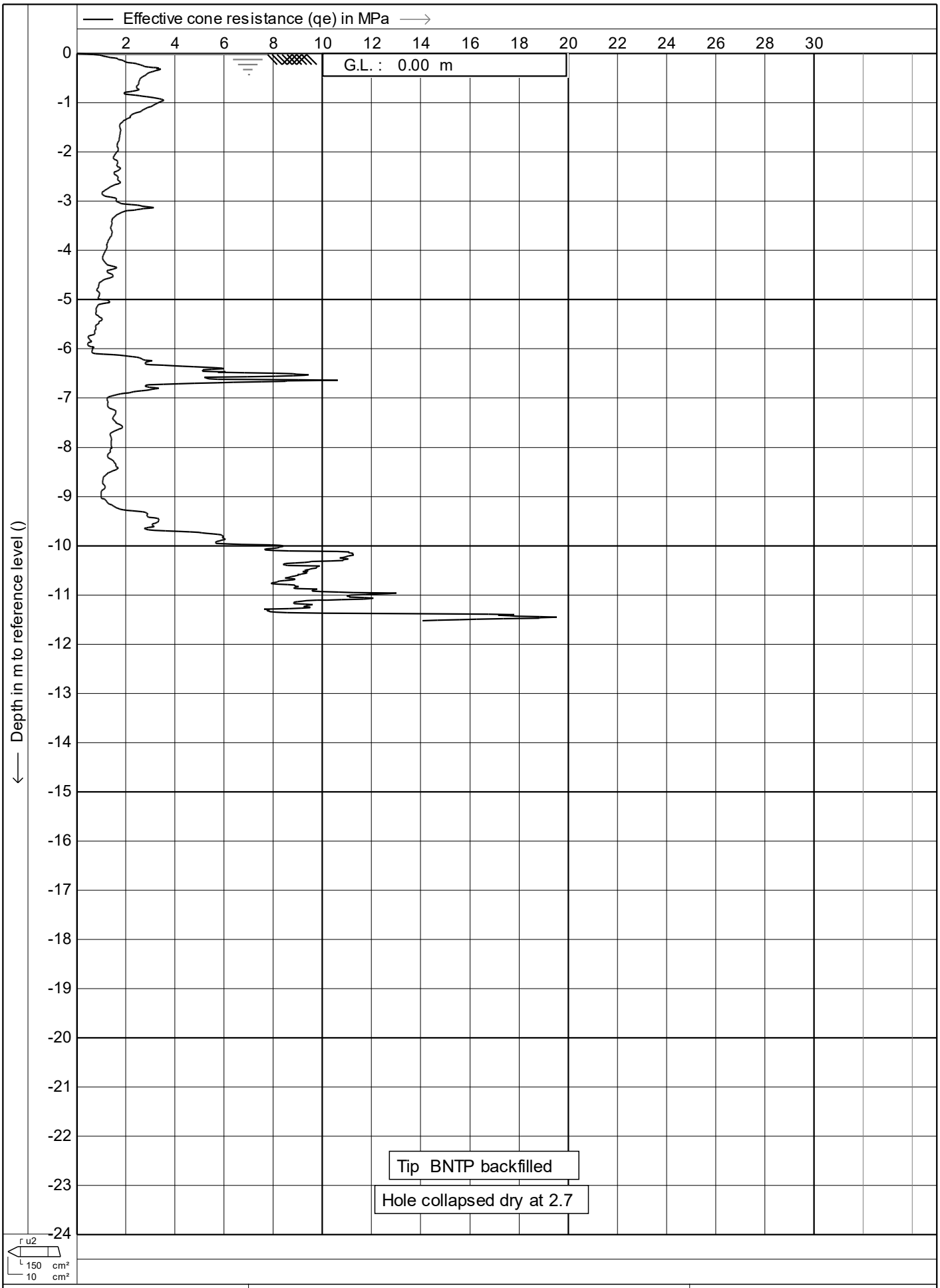
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **026** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

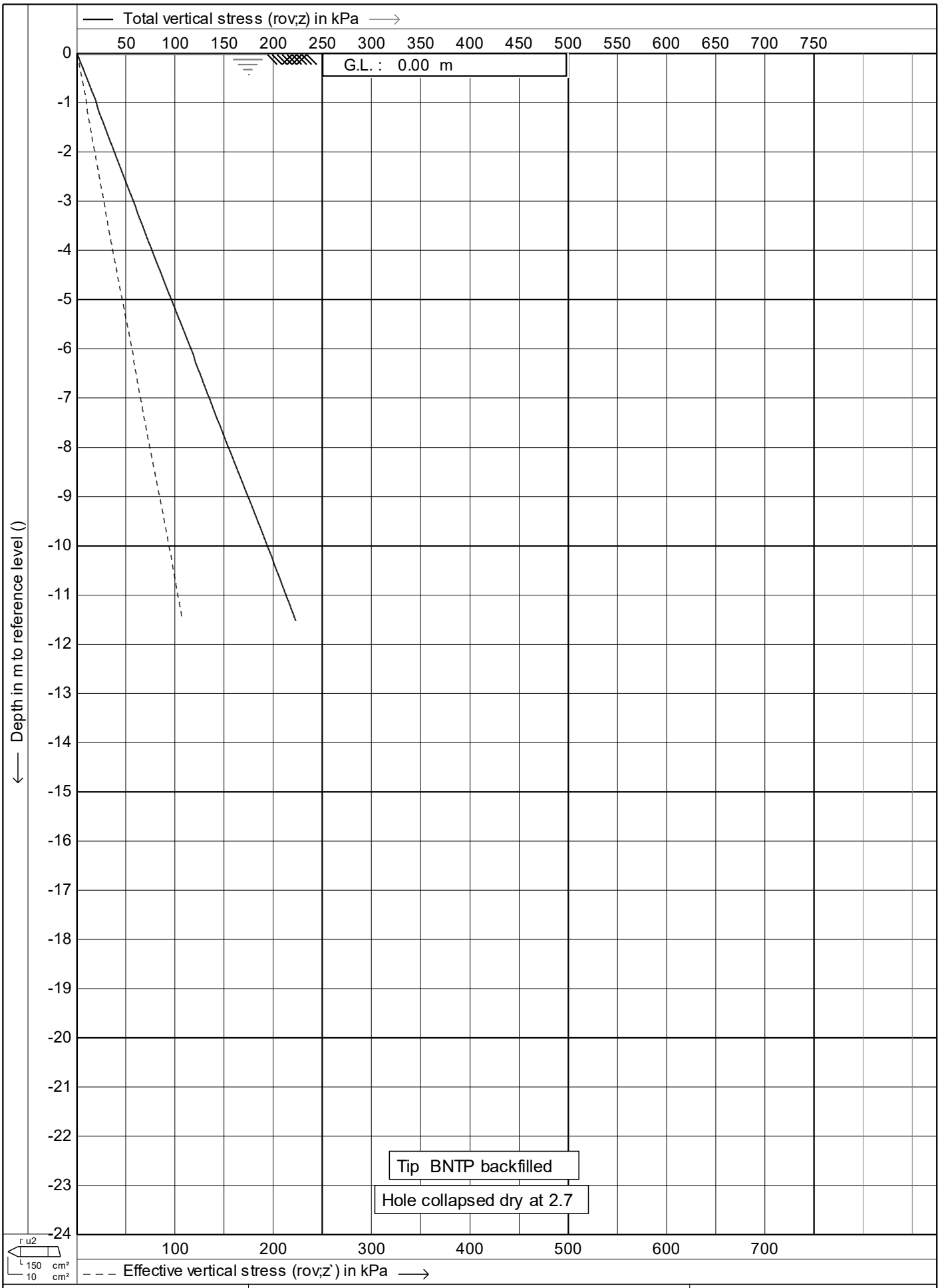
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **026** **5/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

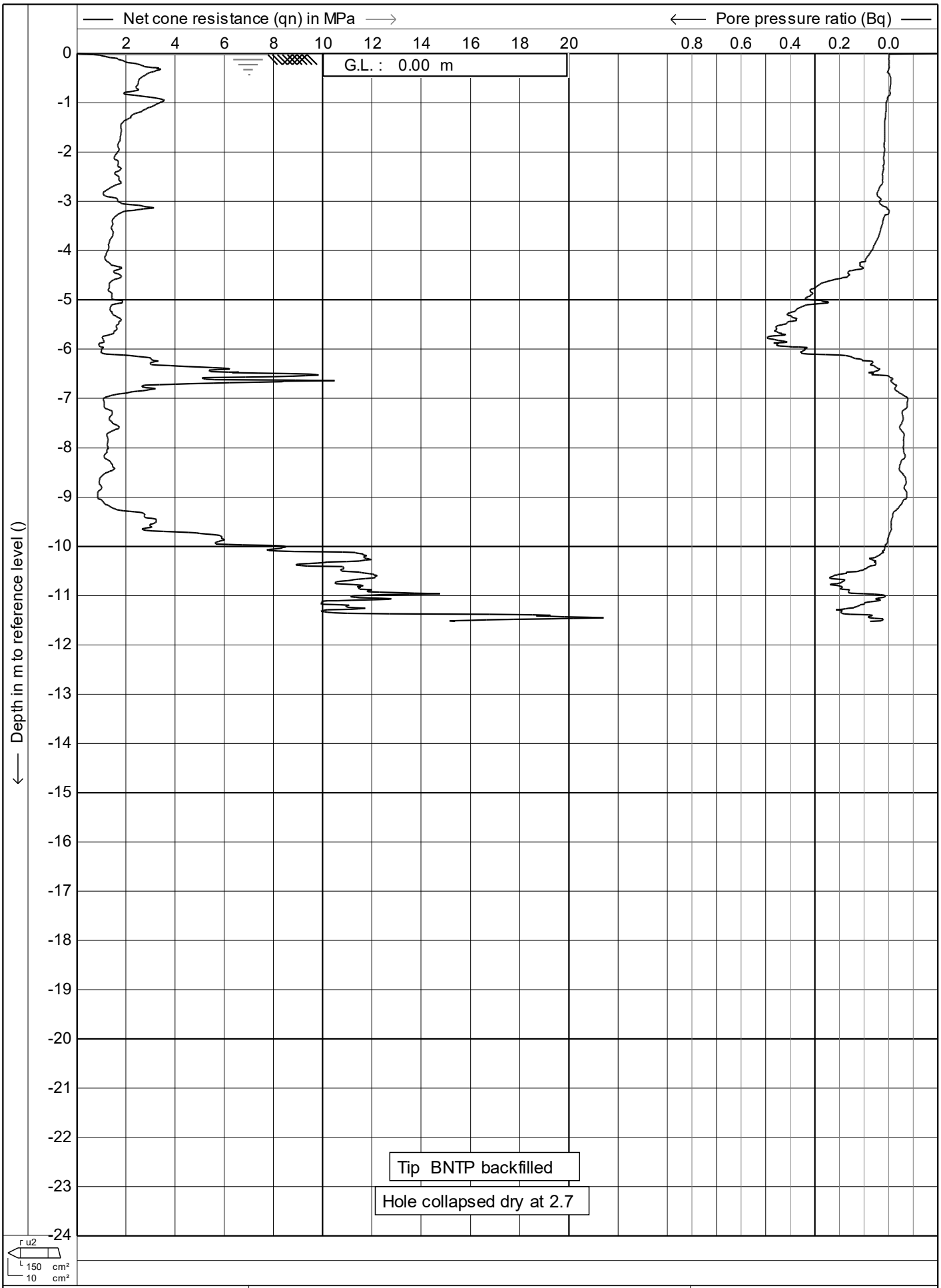
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **026** **6/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

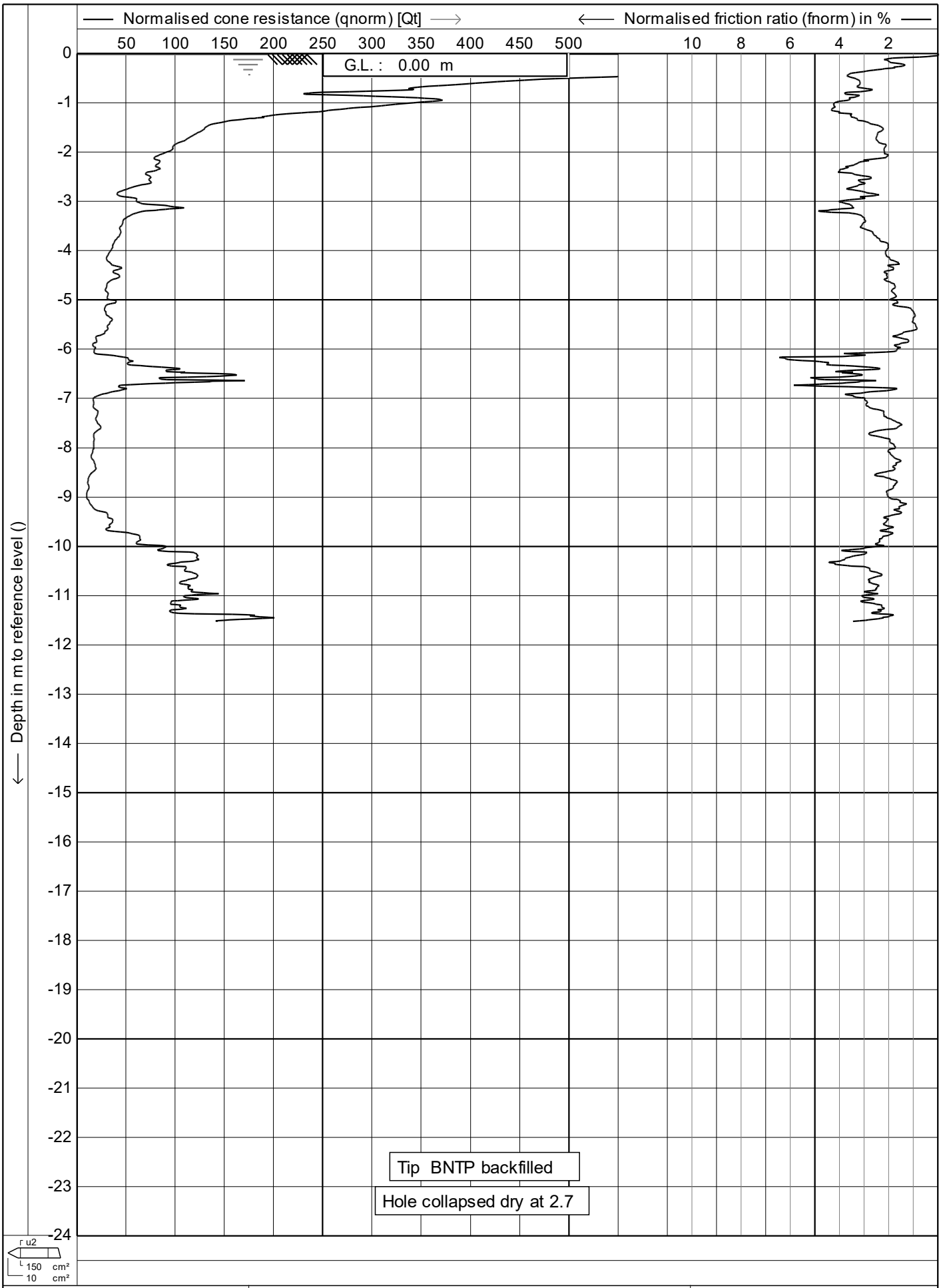
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **026**

7/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

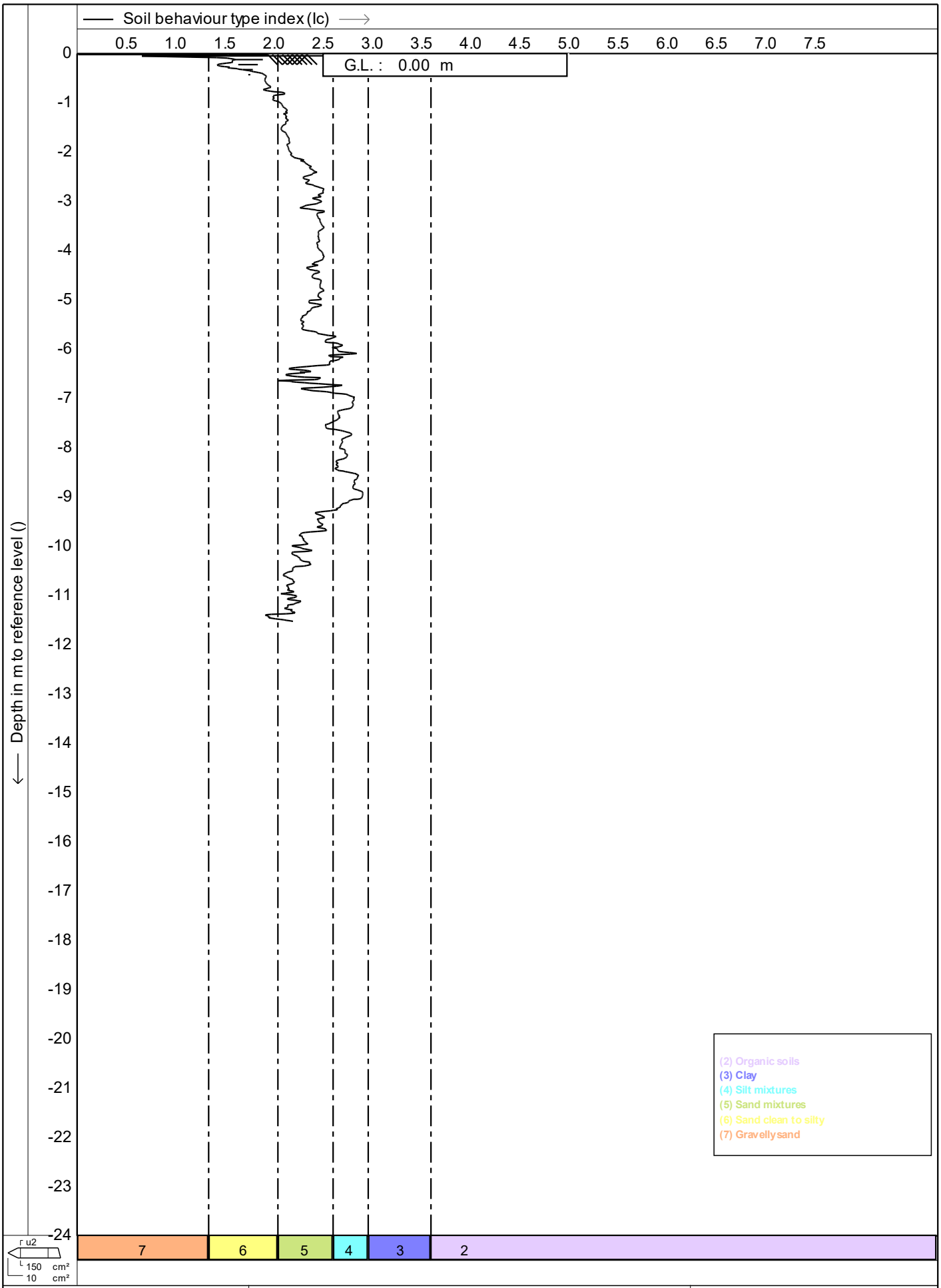
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **026**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

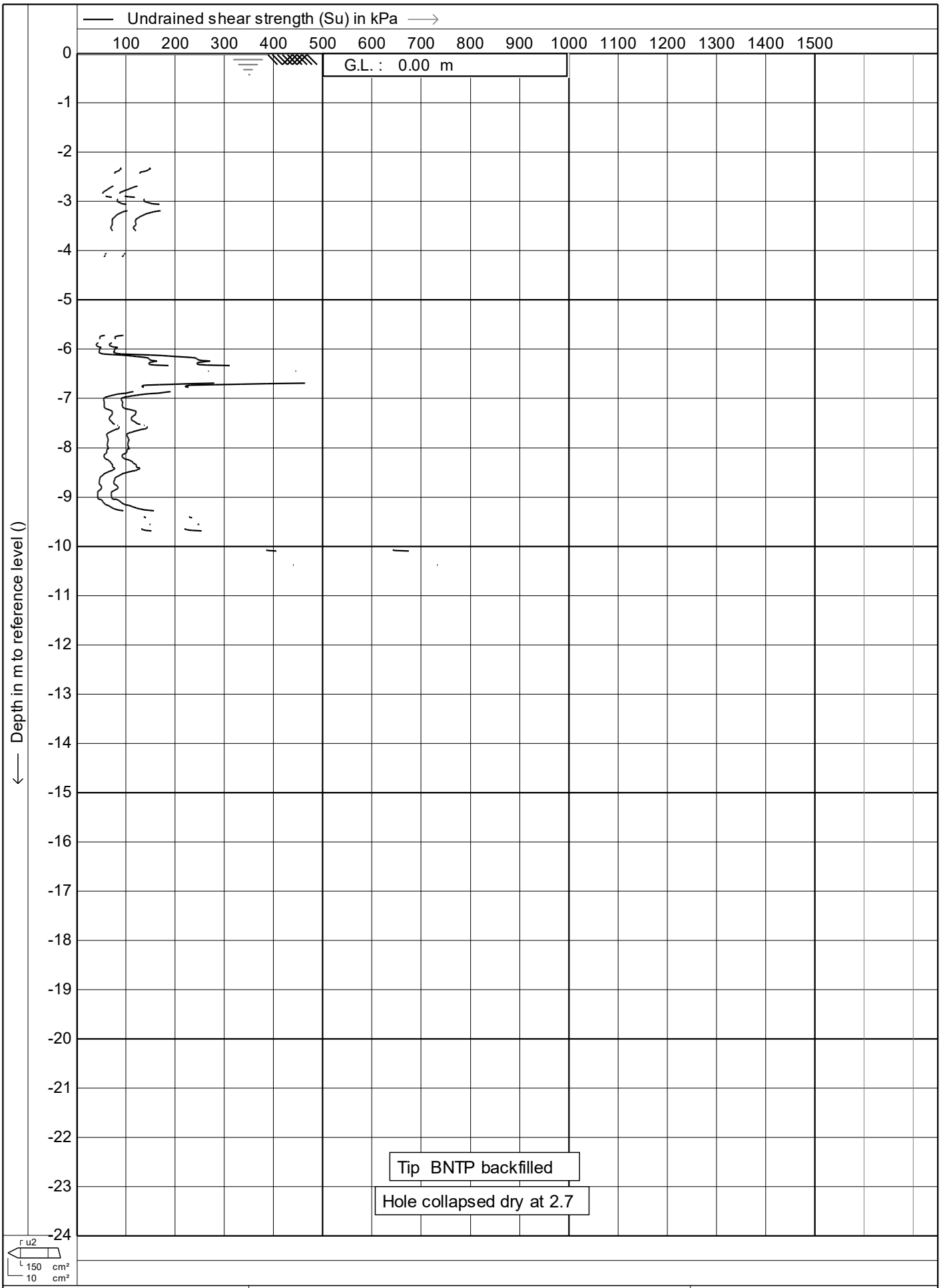
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **026** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

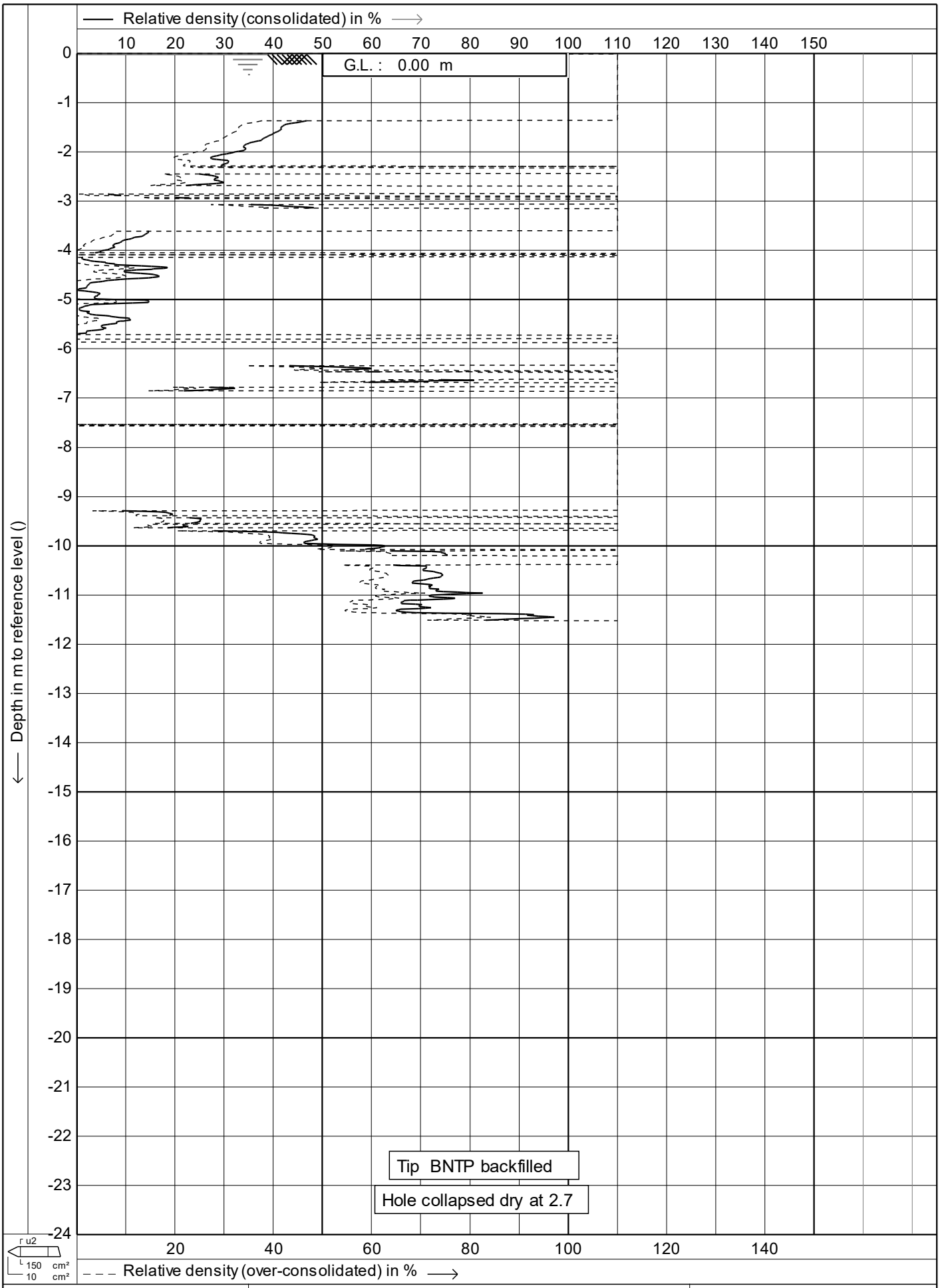
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **026**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

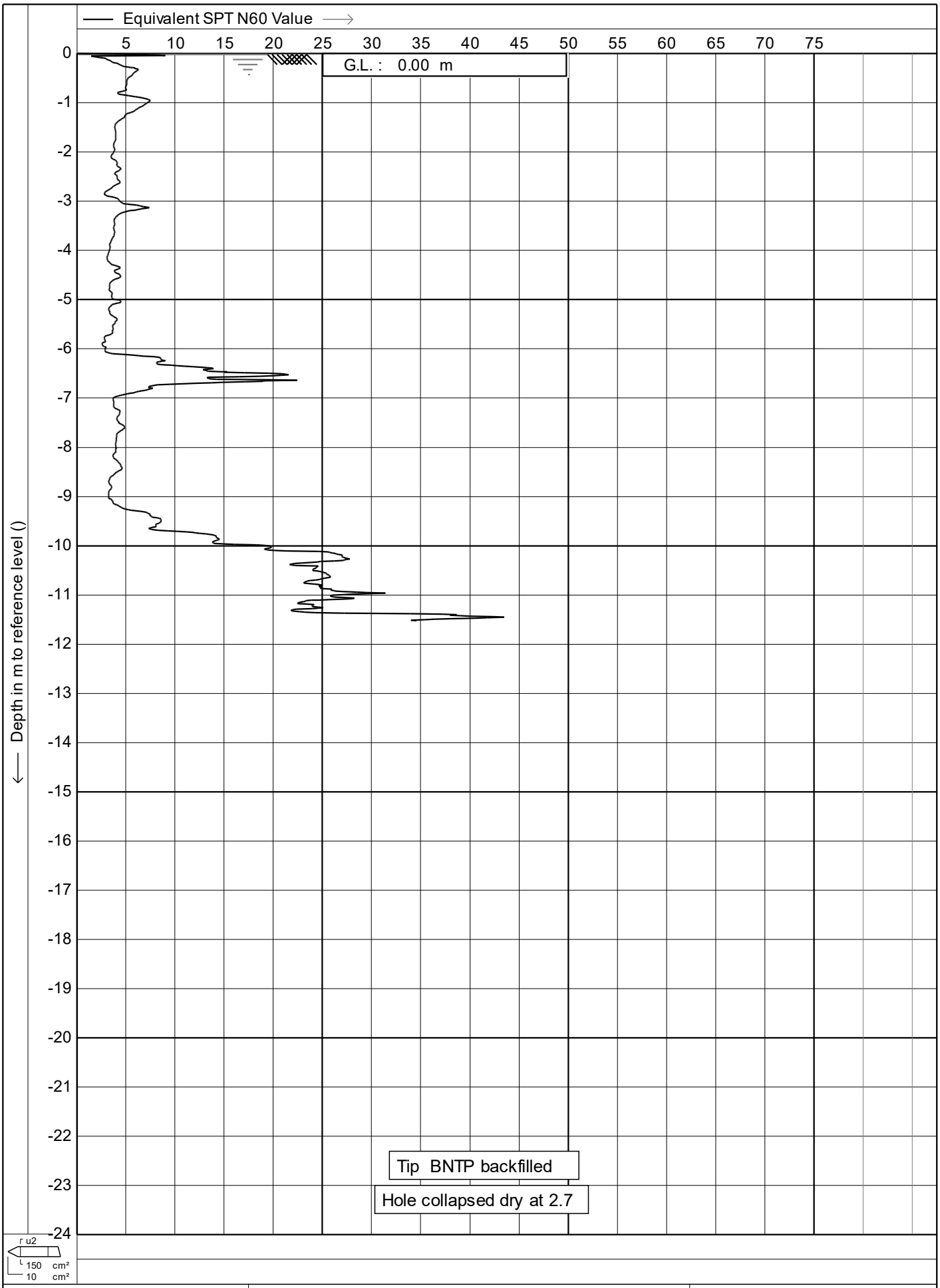
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **026** **11/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

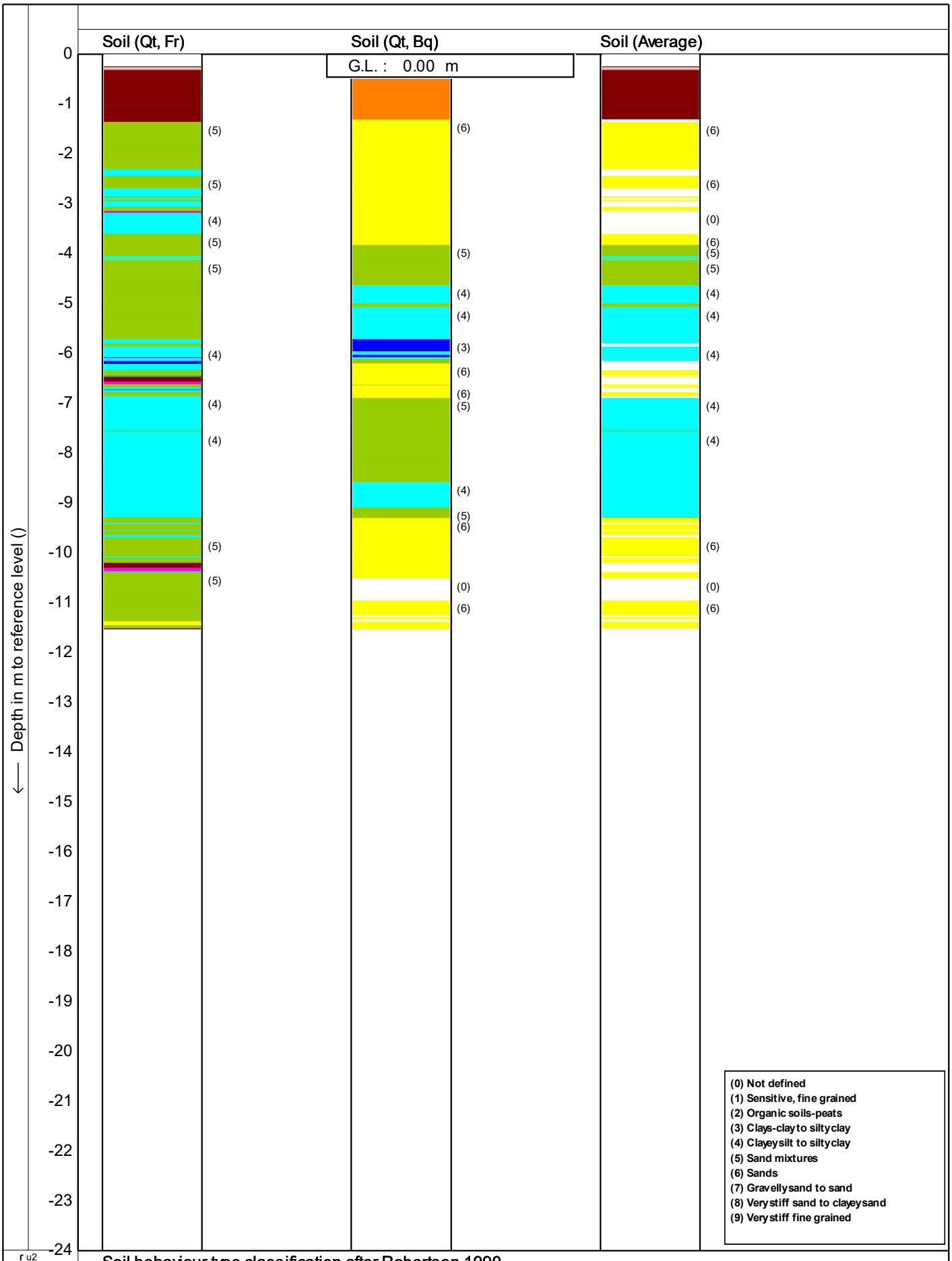
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **026**

12/14

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

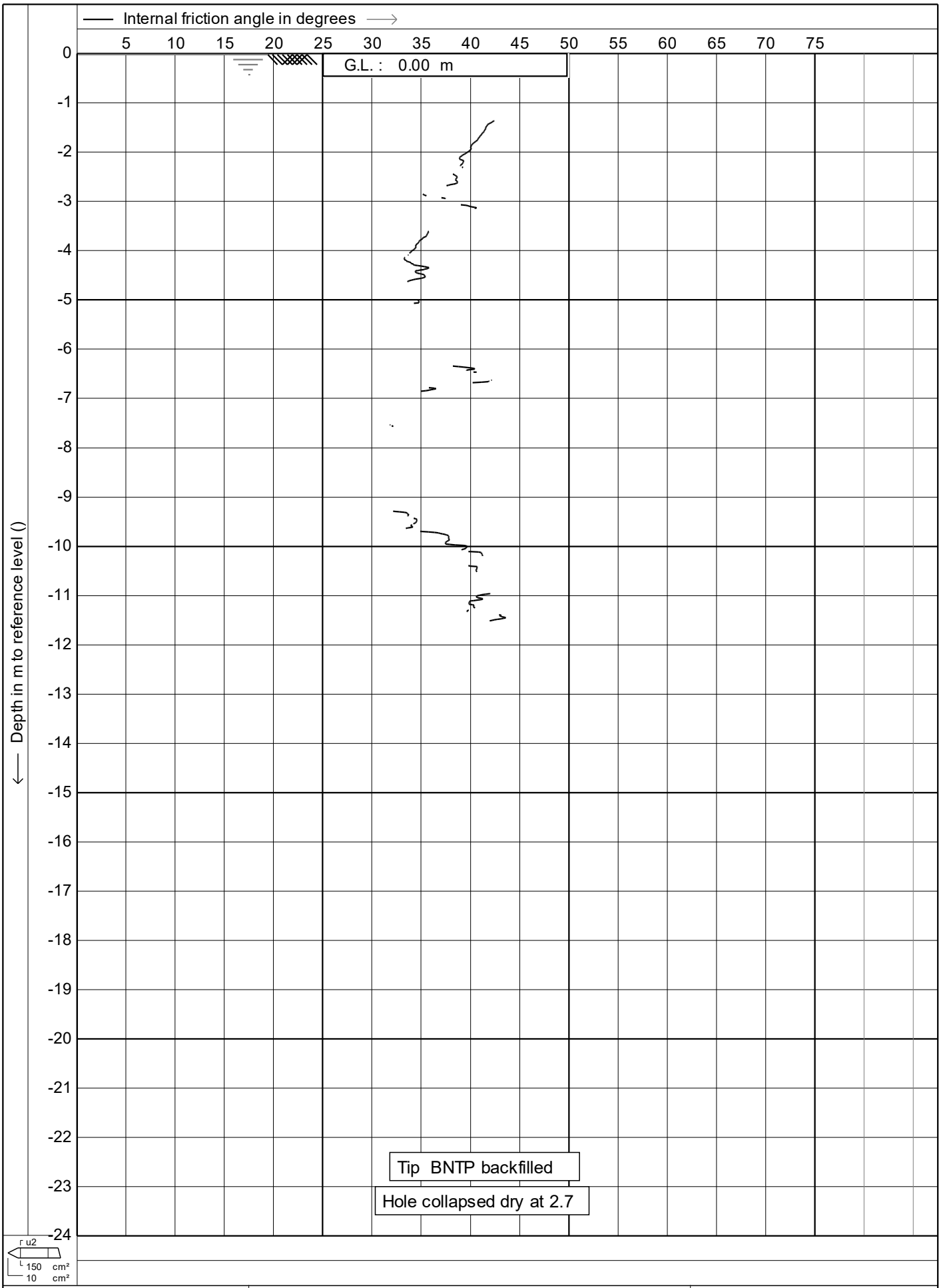
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **026**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

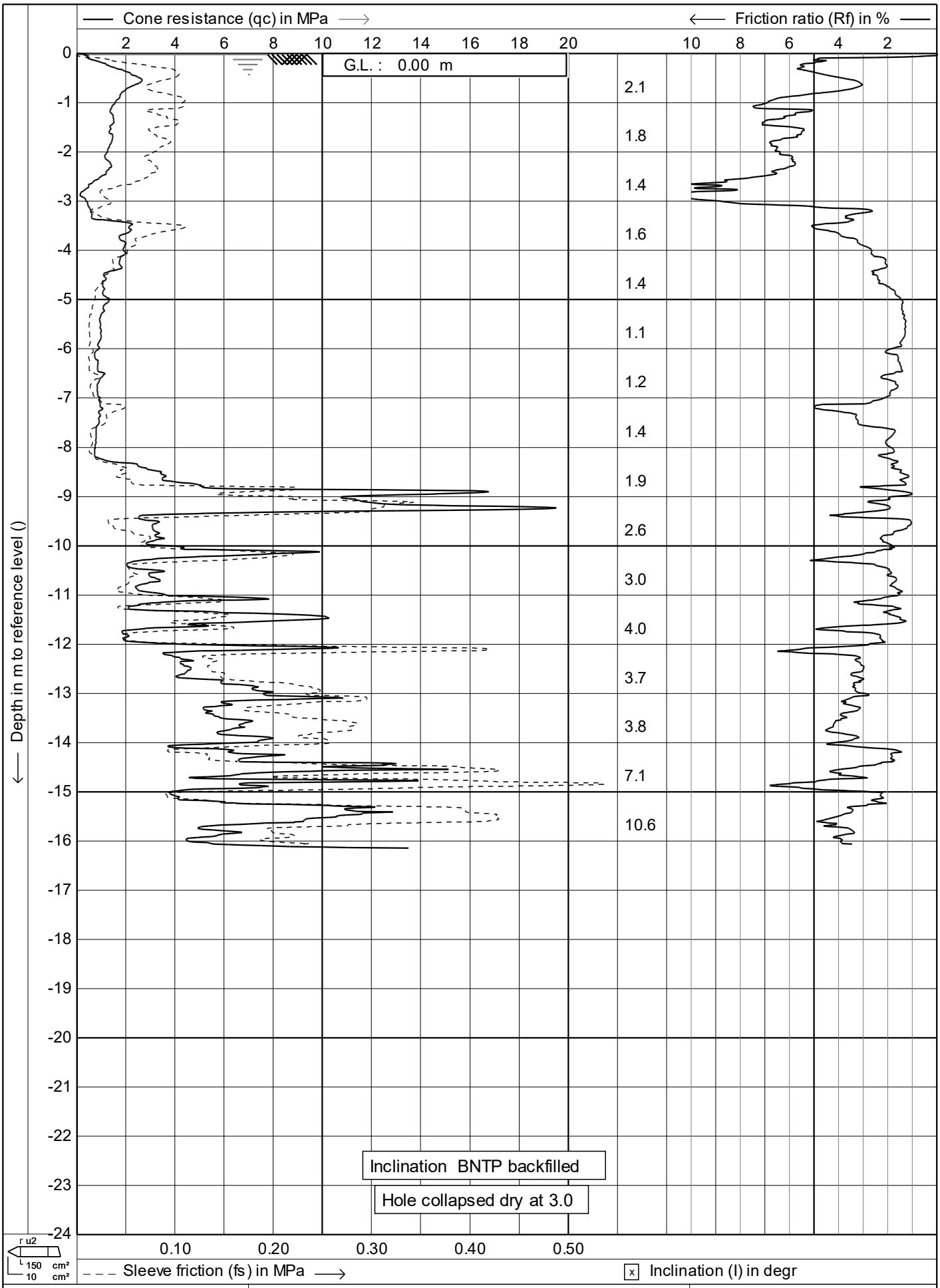
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **026** **14/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **24/11/2020**

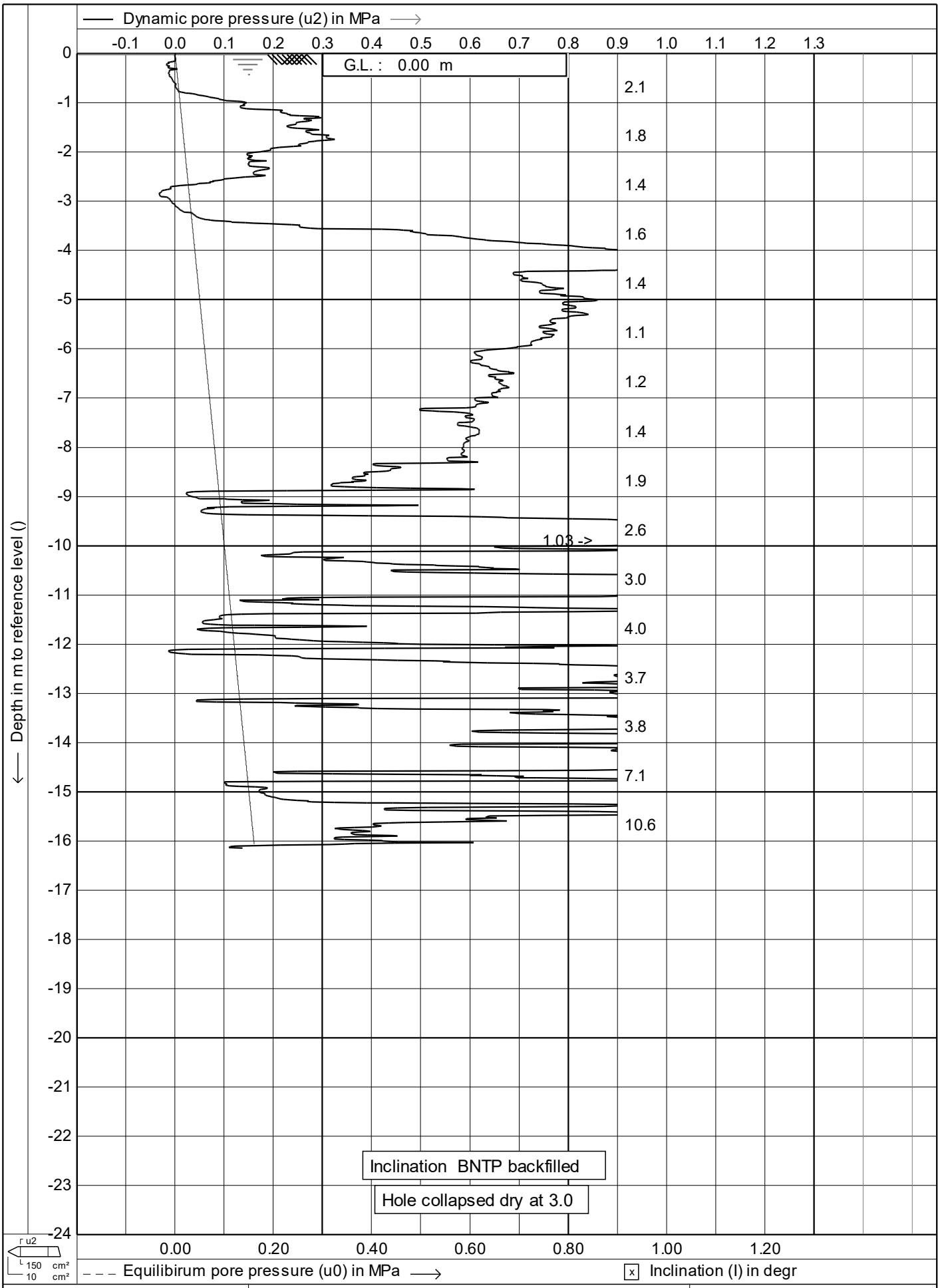
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **027**

1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

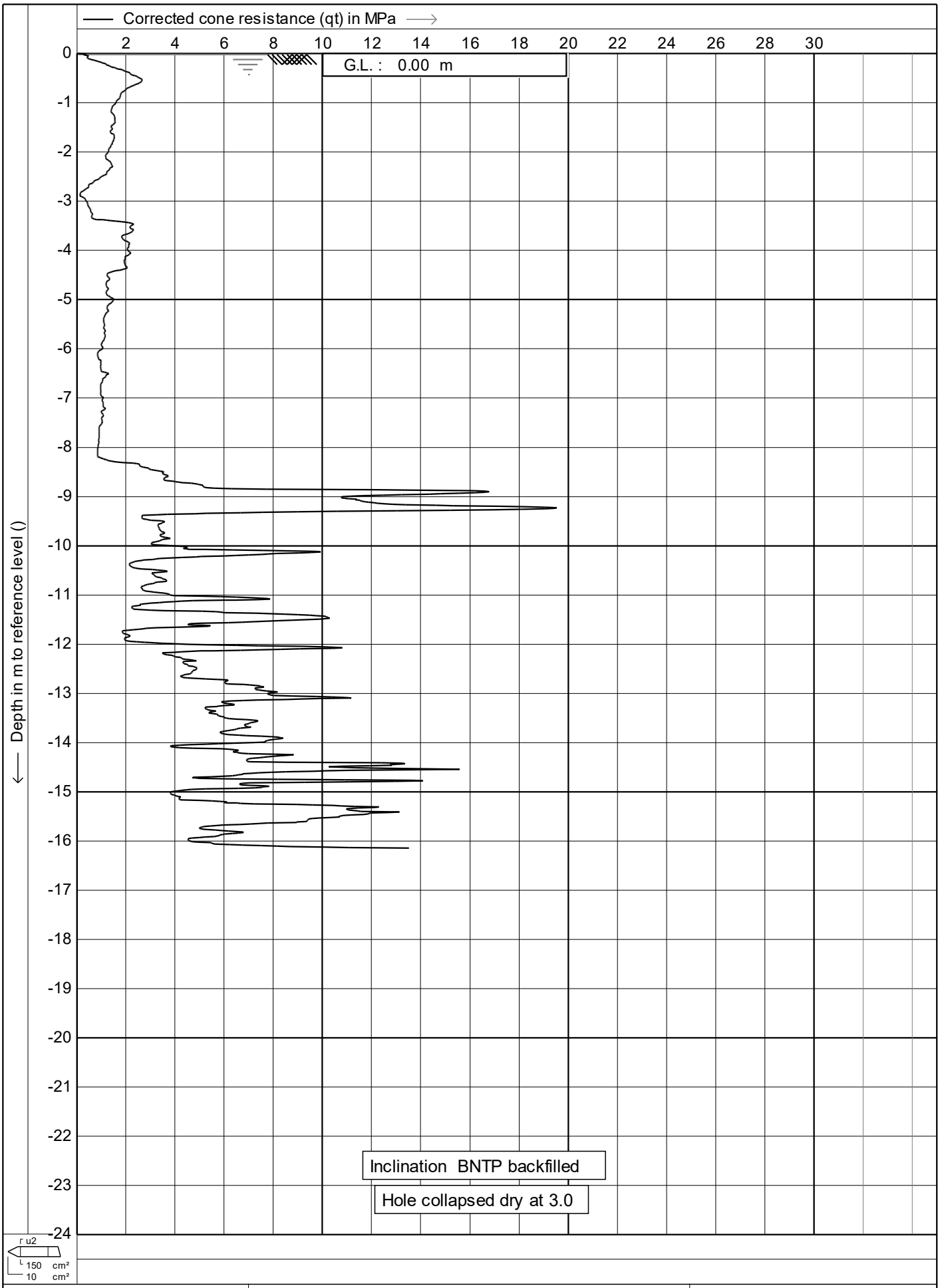
Date : **24/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **027**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

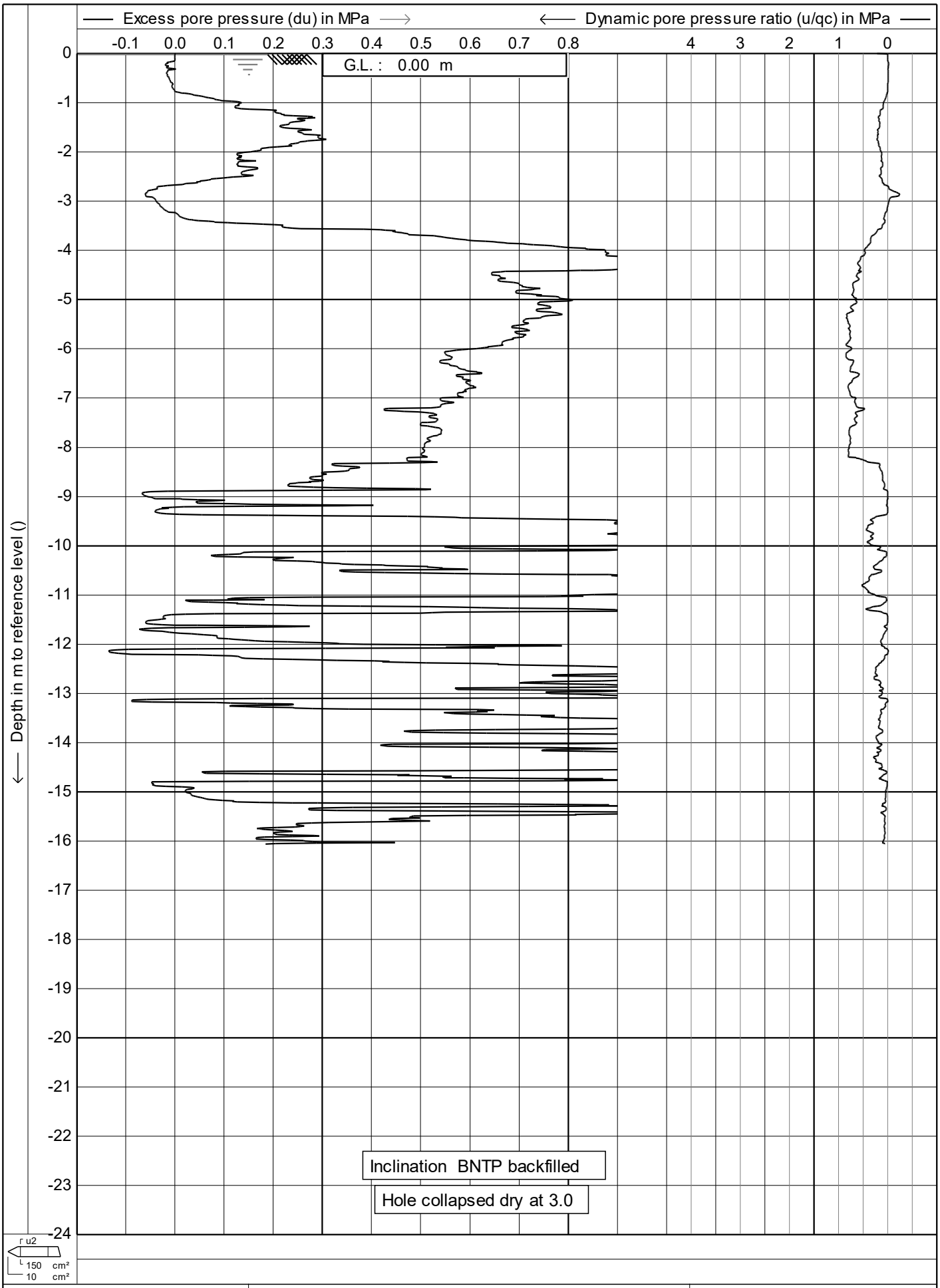
Date : **24/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **027** **3/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

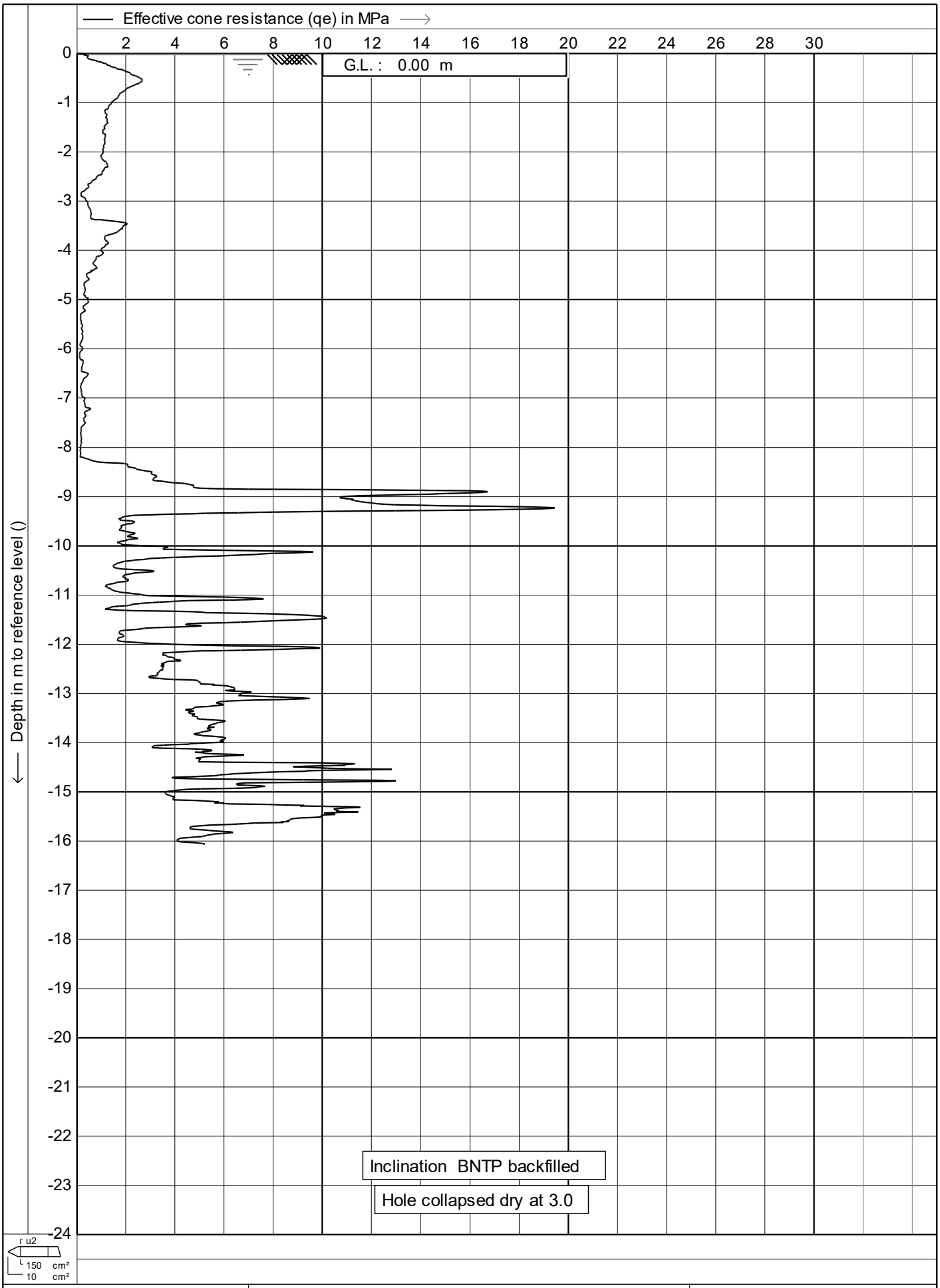
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **24/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **027**

4/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

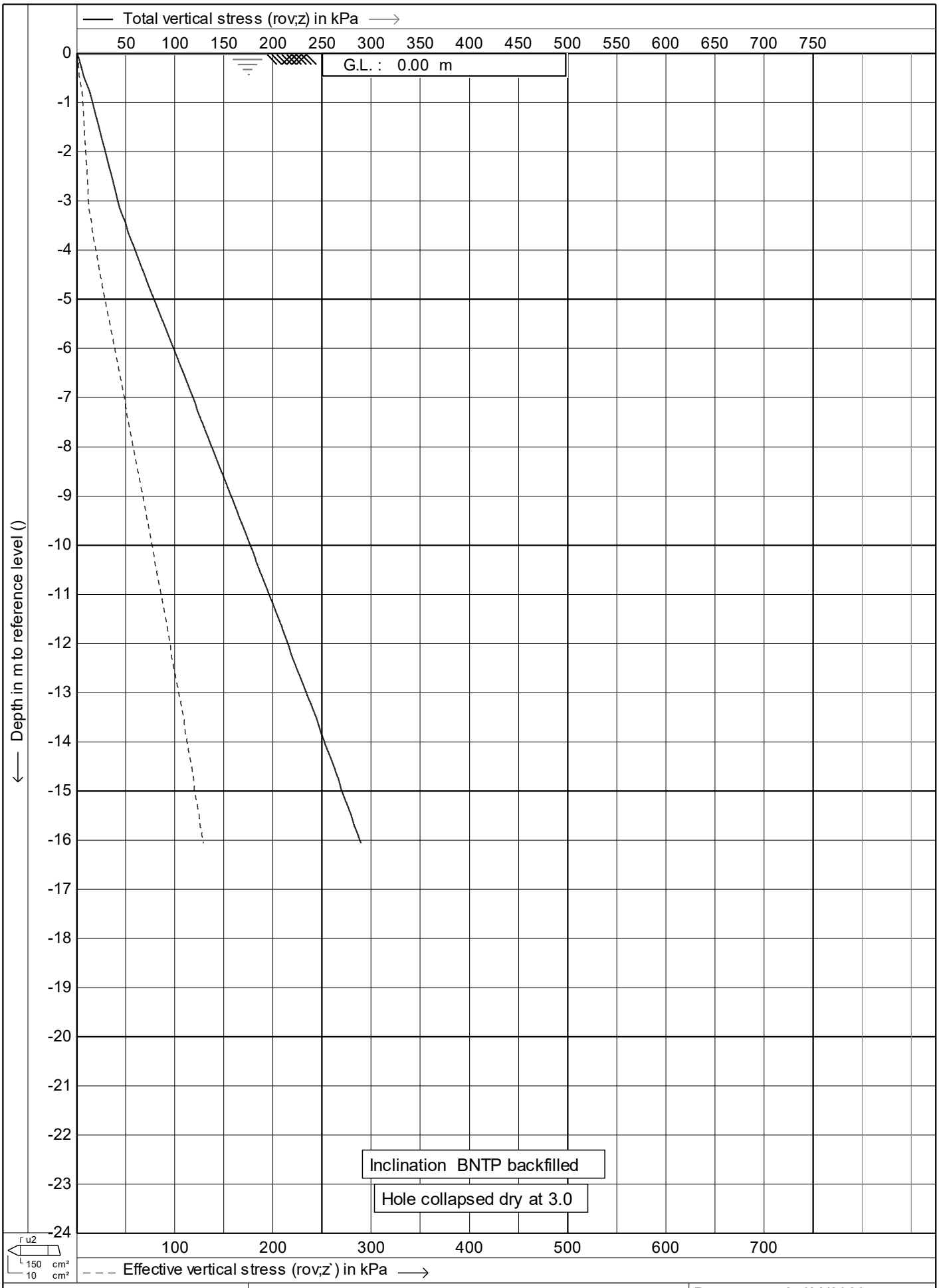
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **24/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **027**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **24/11/2020**

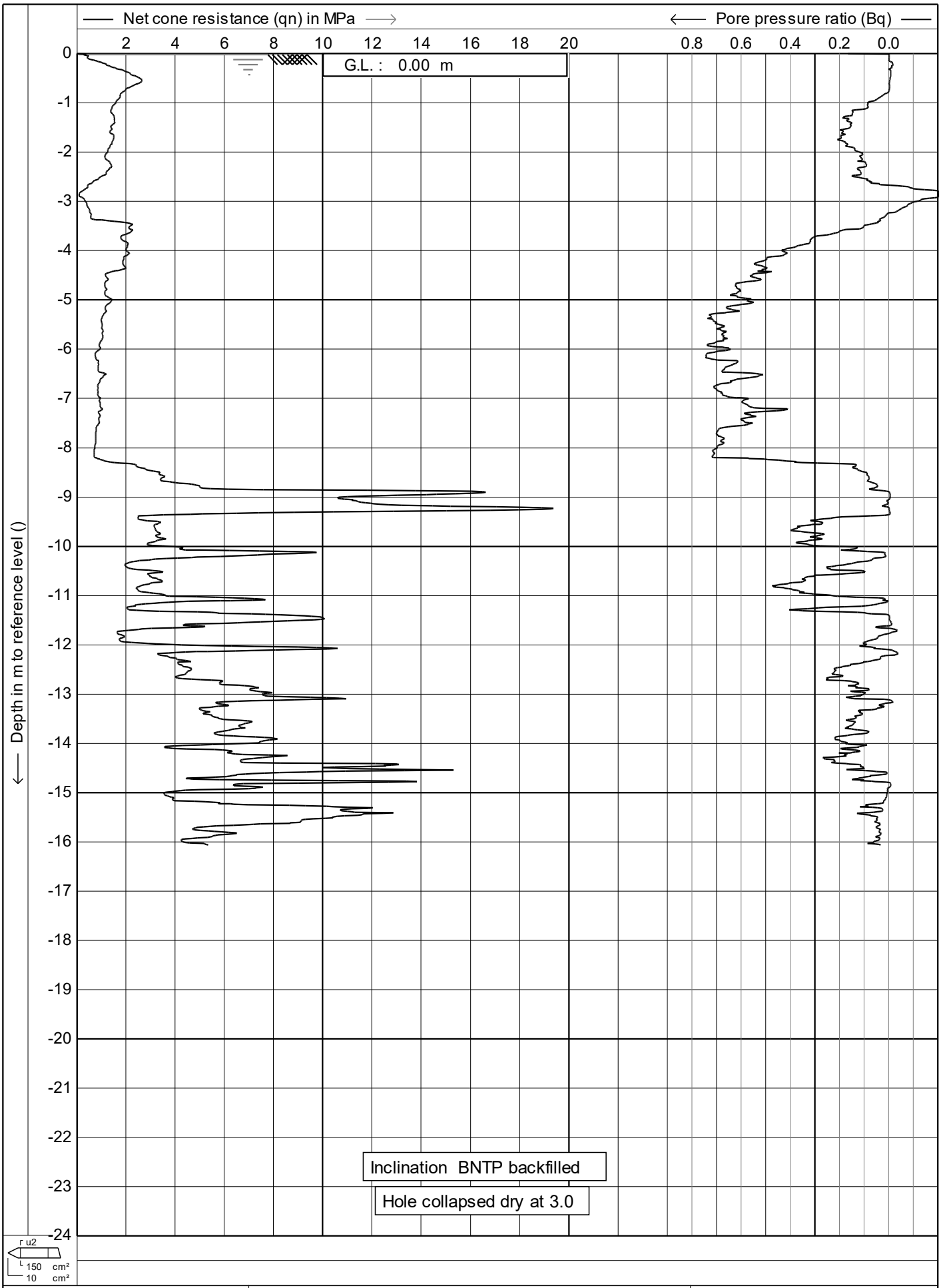
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **027**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **24/11/2020**

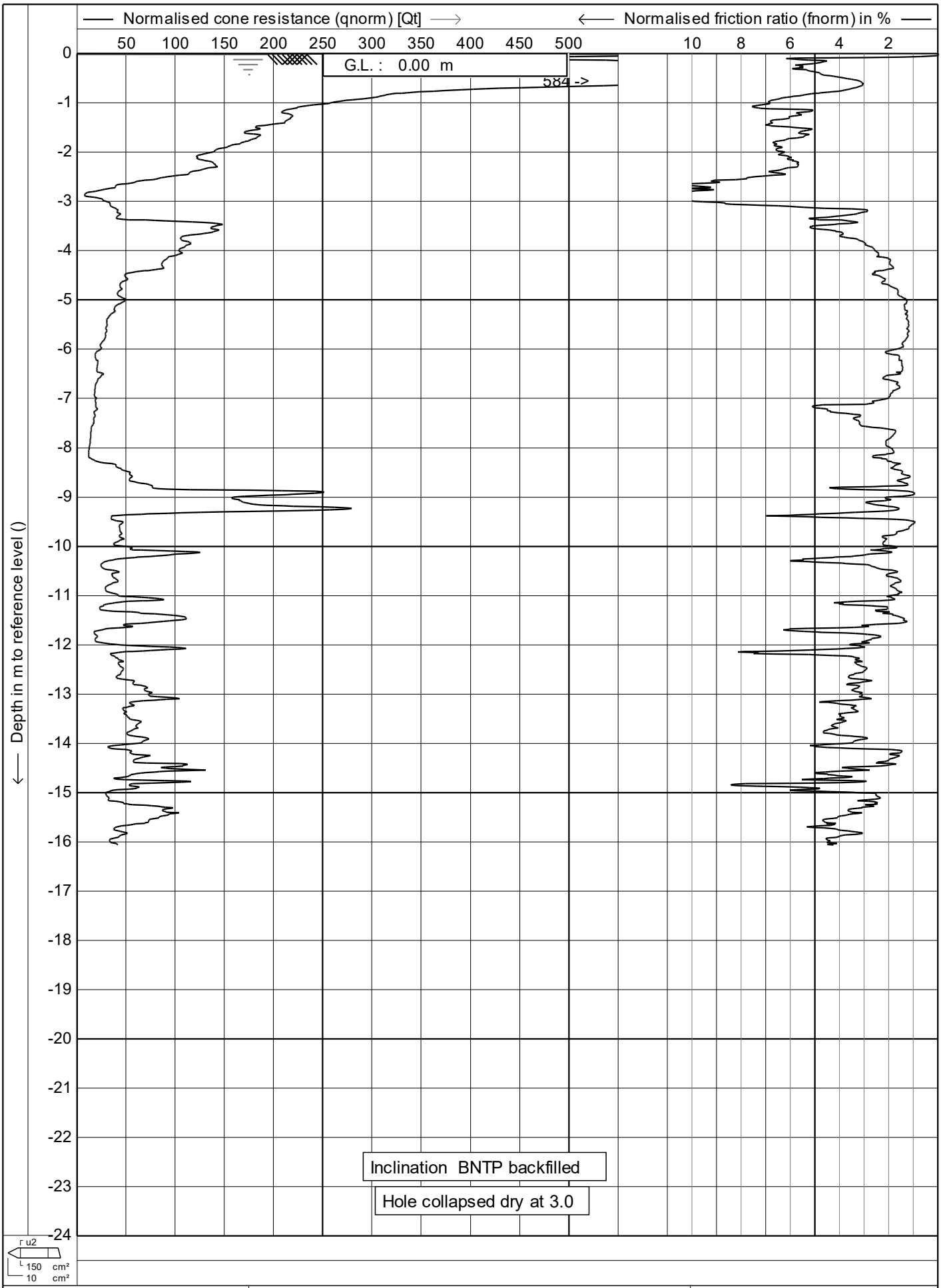
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **027**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

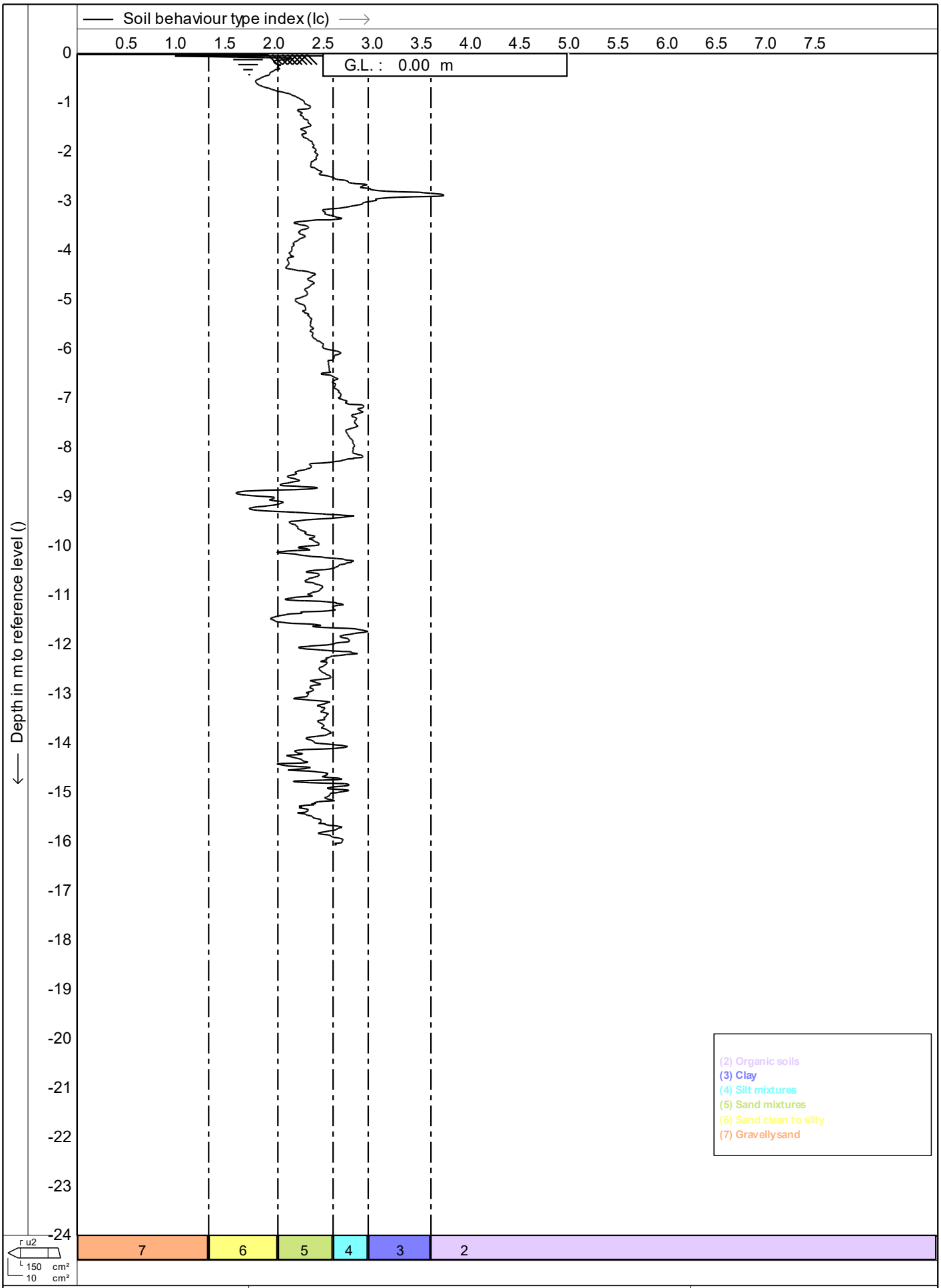
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **24/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **027**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

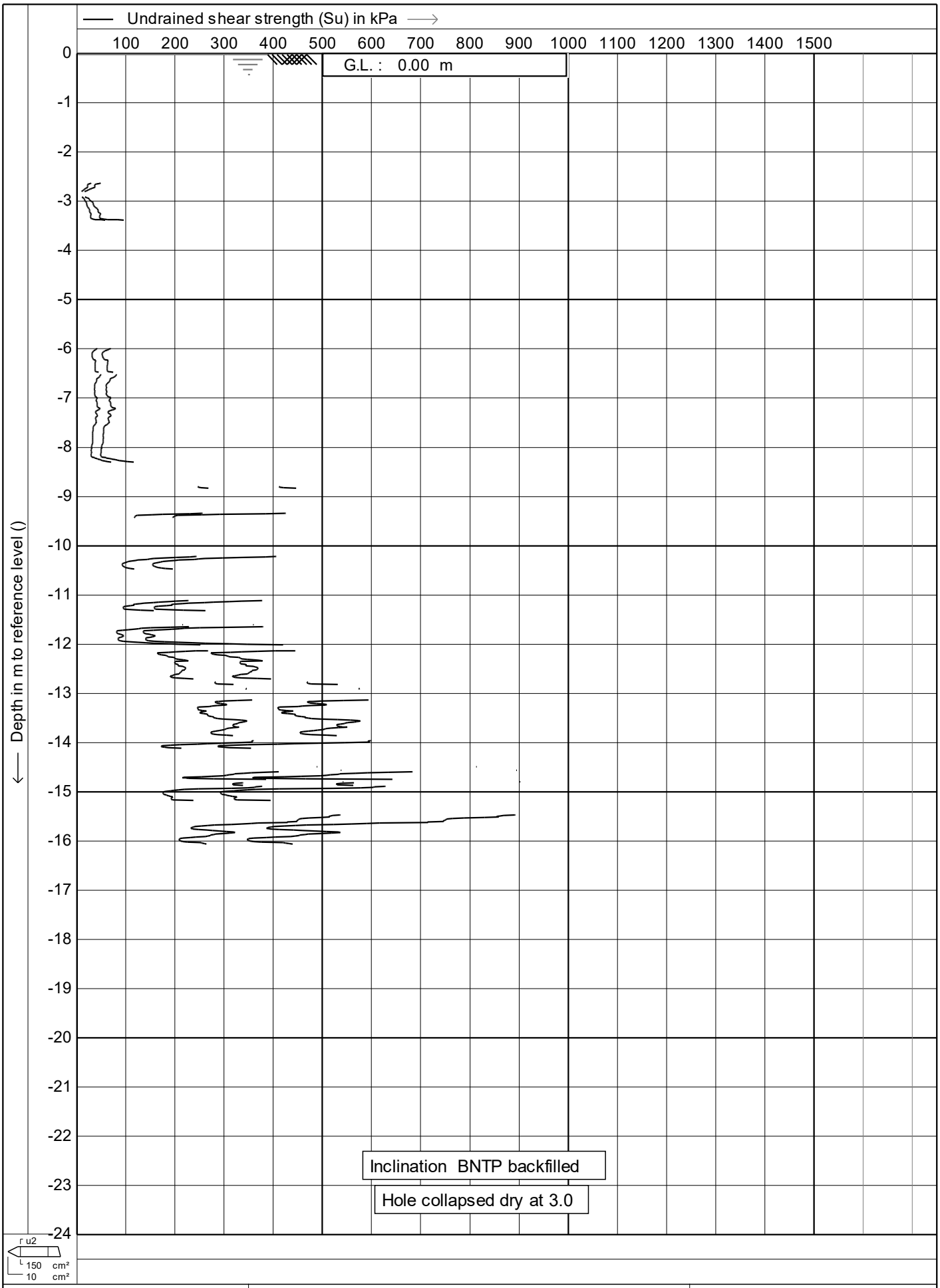
Date : **24/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **027** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

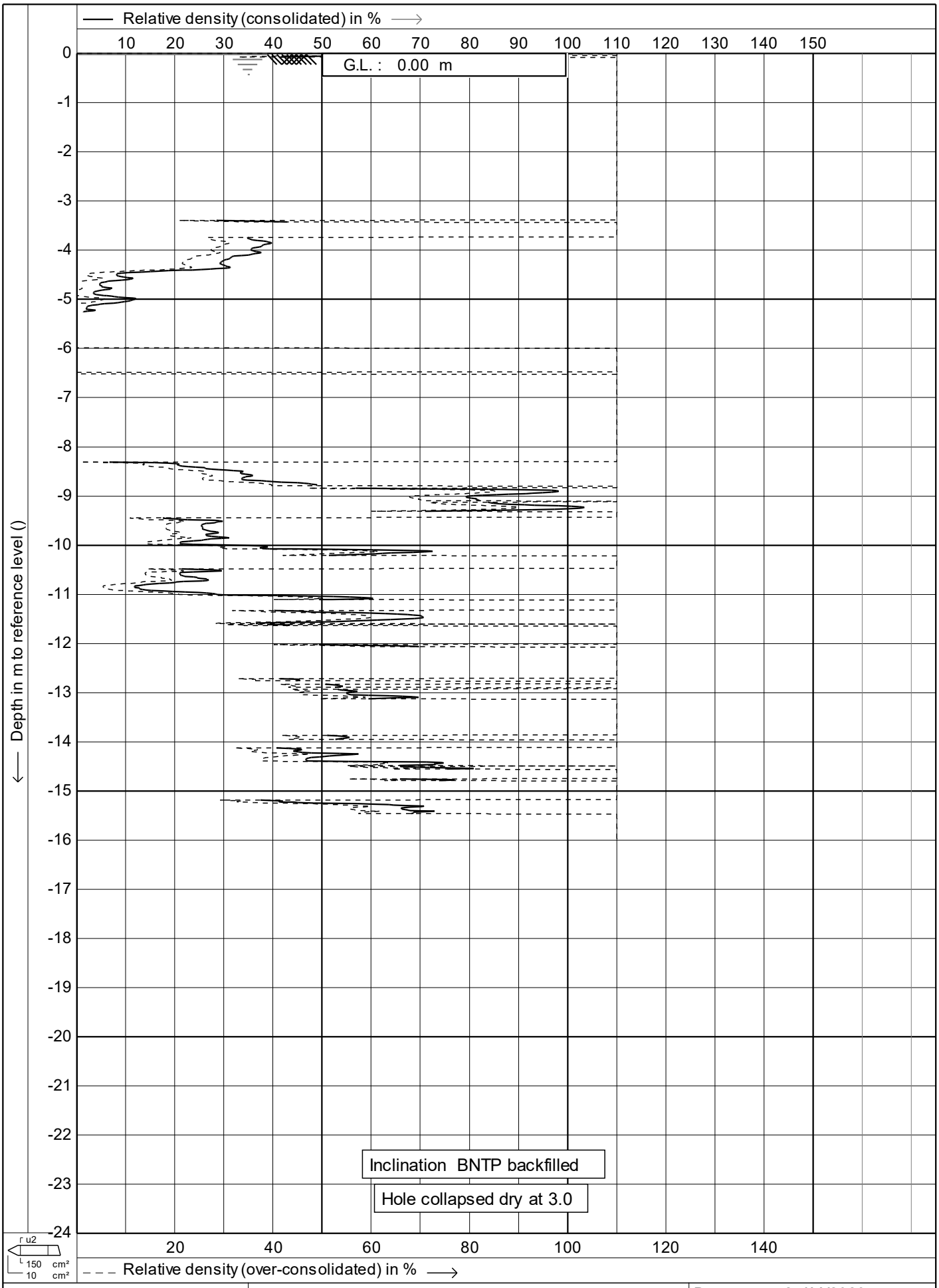
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **24/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **027**

10/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

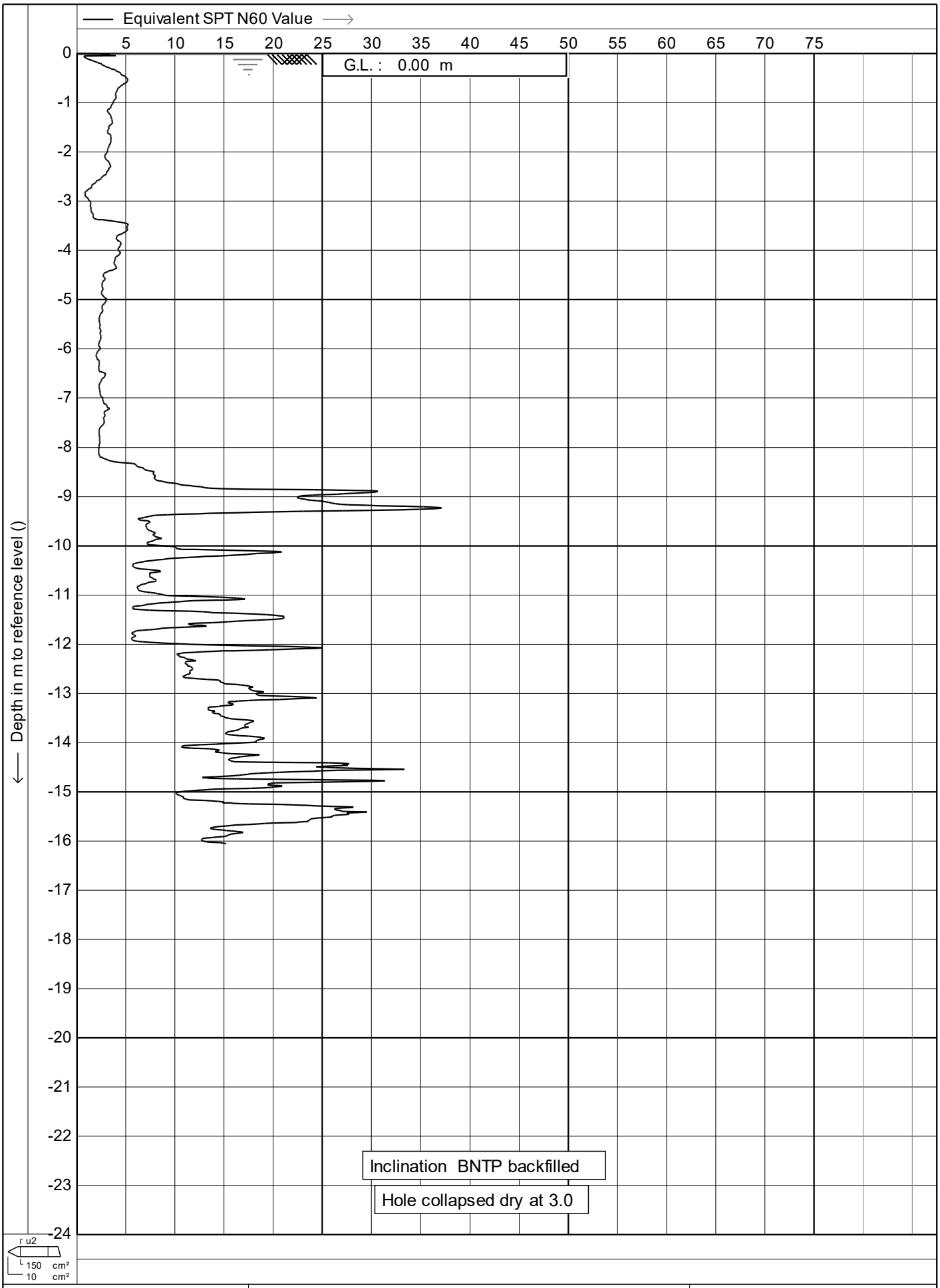
Date : **24/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **027** **11/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

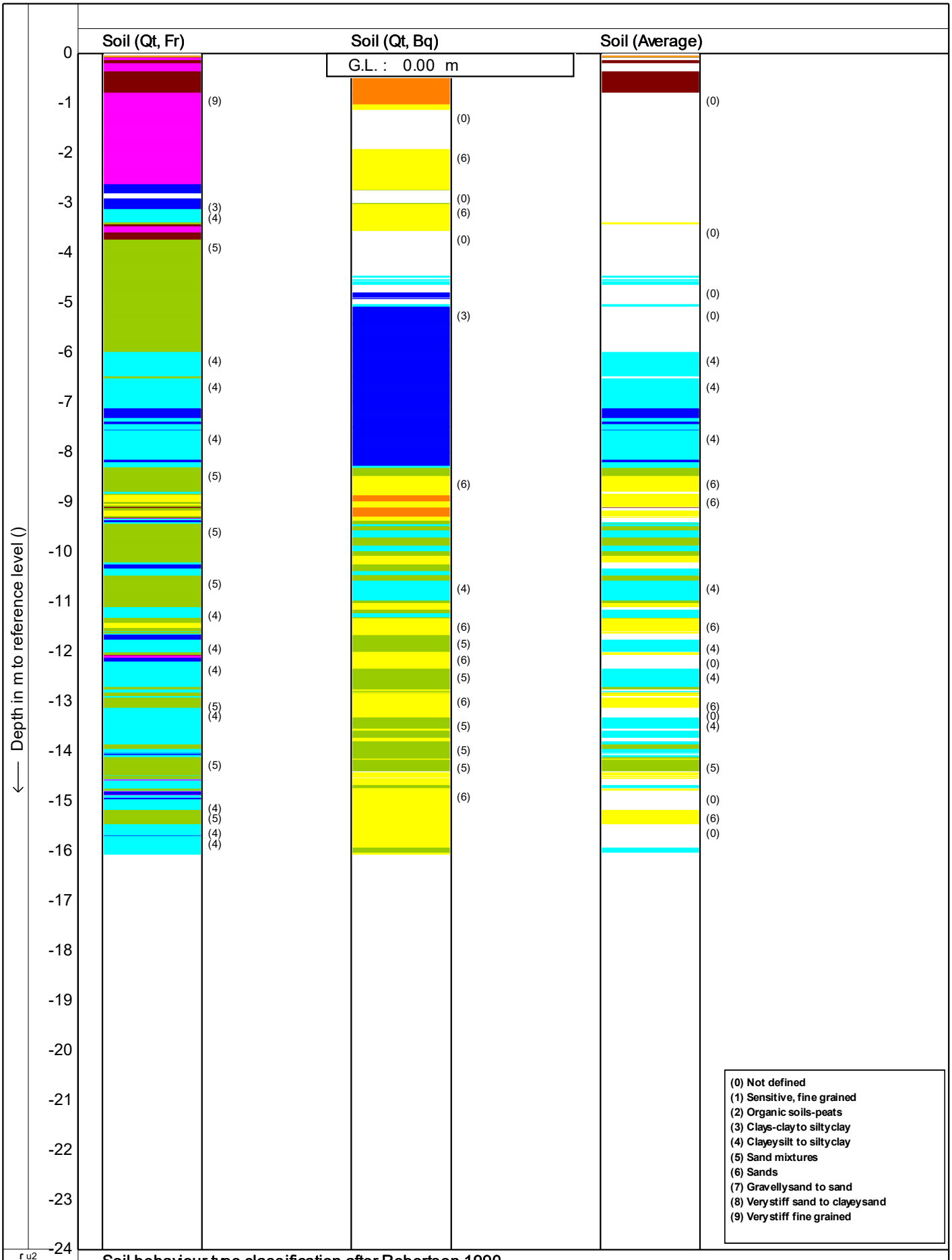
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **24/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **027**

1.48



Soil behaviour type classification after Robertson 1990

f u2
150 cm²
10 cm²

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

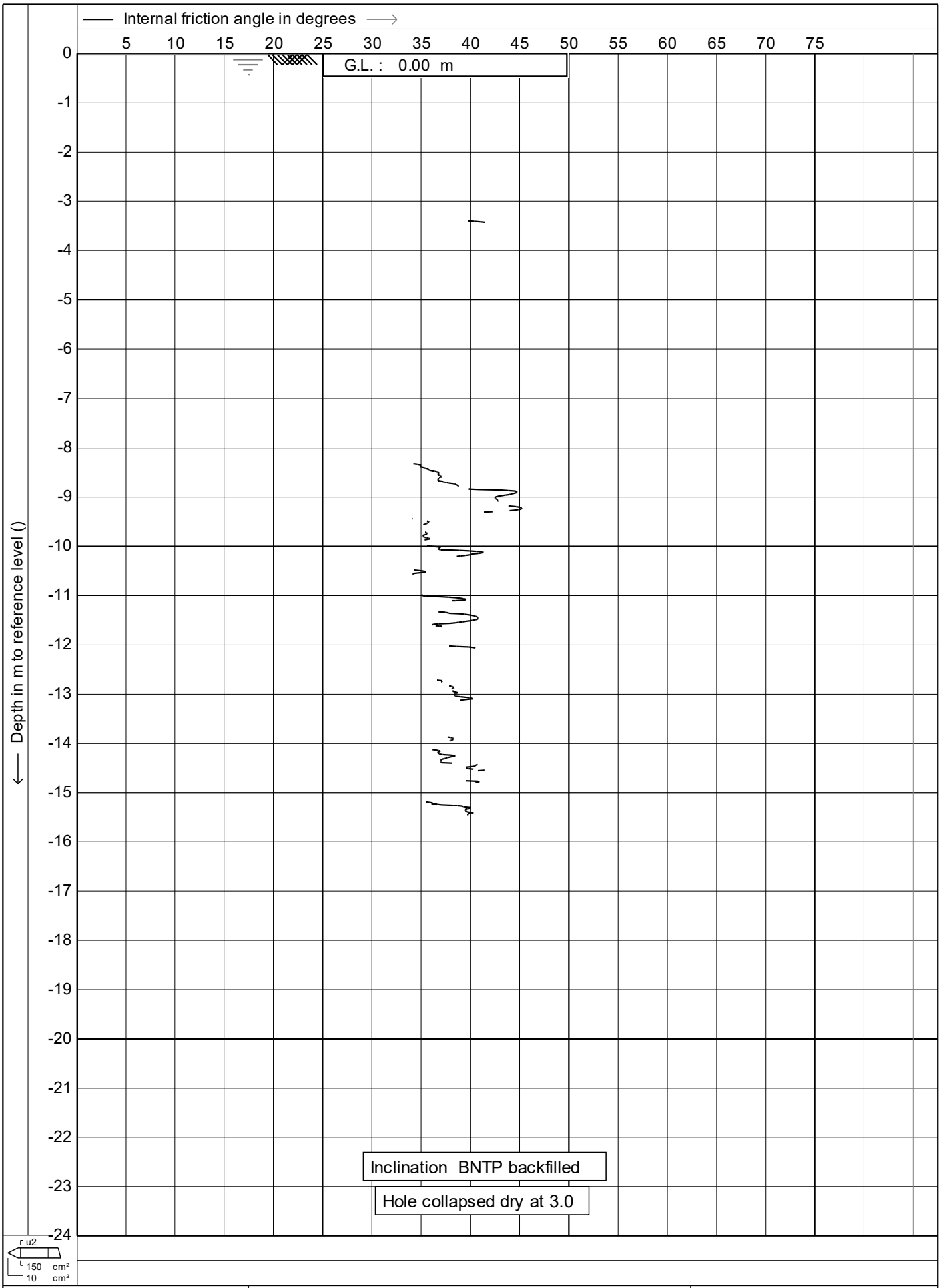
Date : **24/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **027**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

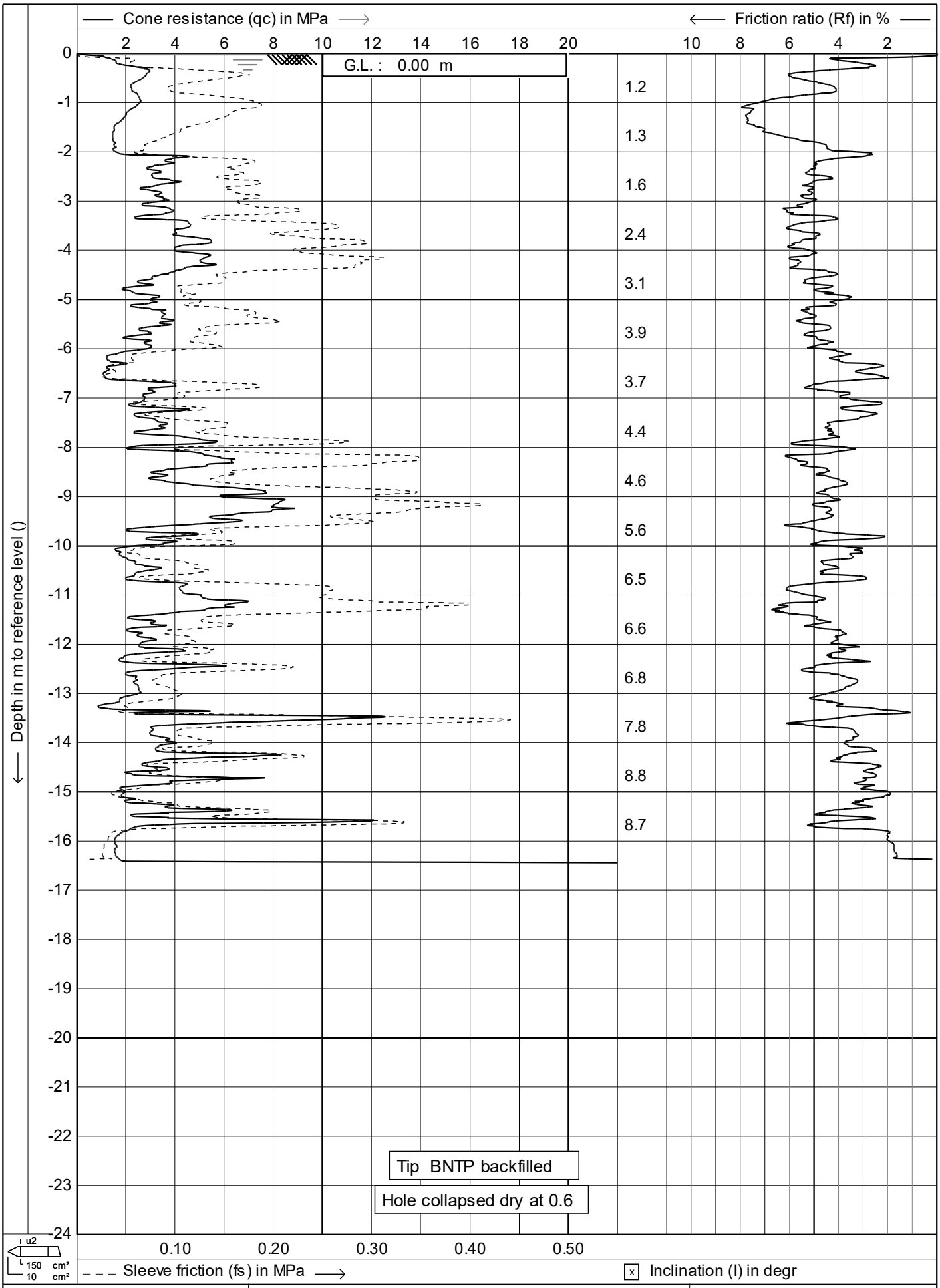
Date : **24/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **027** **14/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

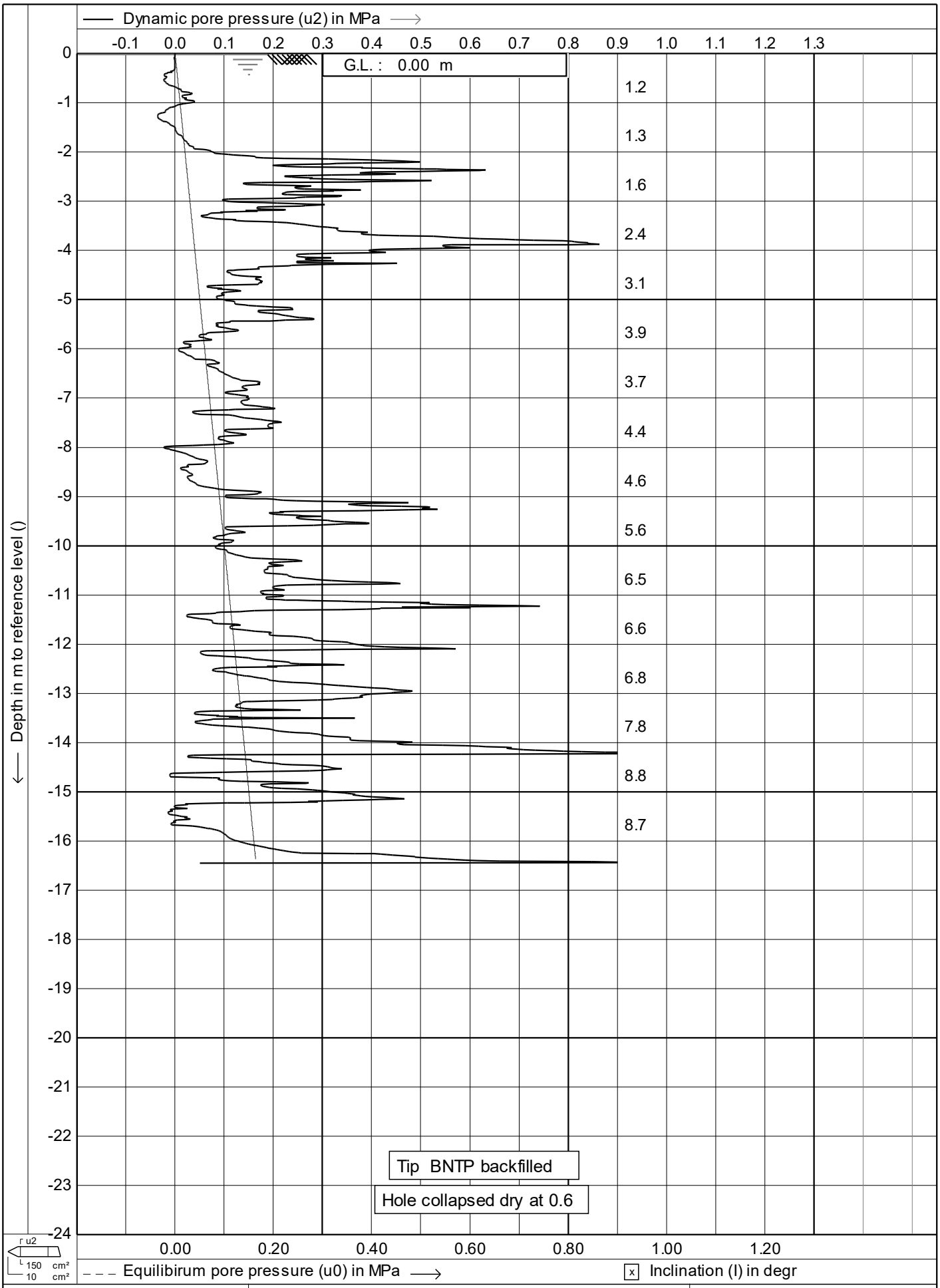
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **028**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

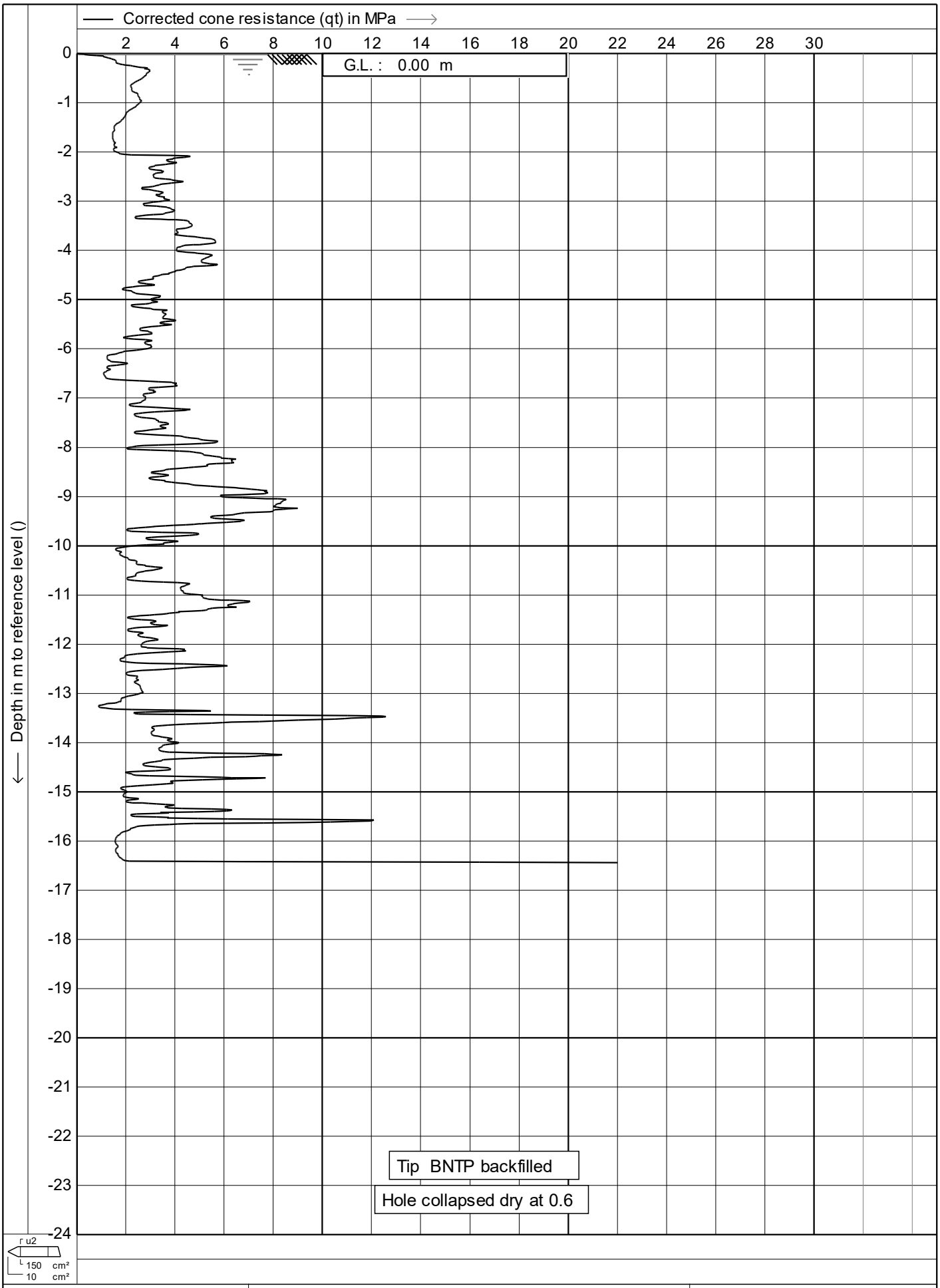
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **028**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

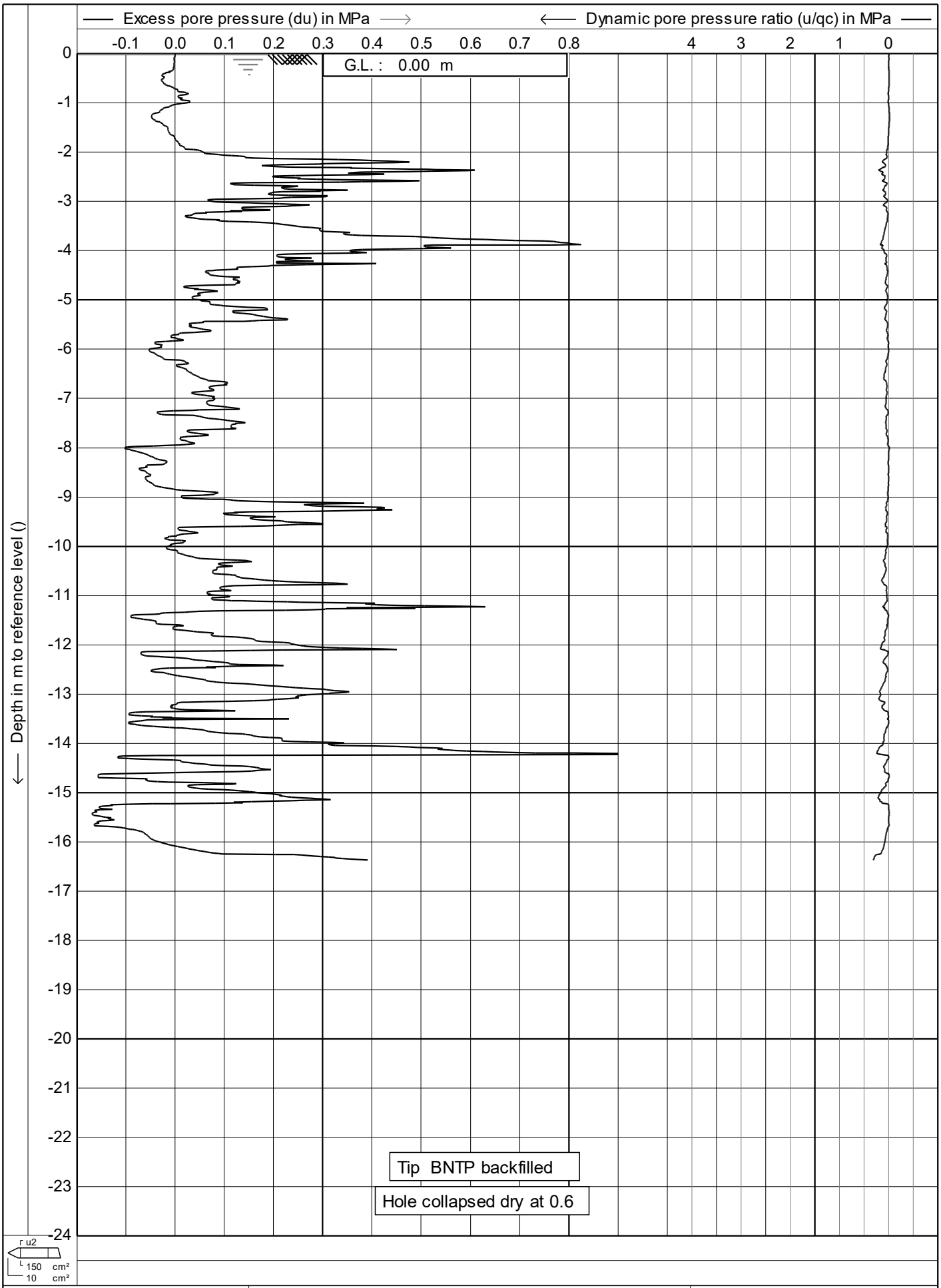
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **028** **3/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

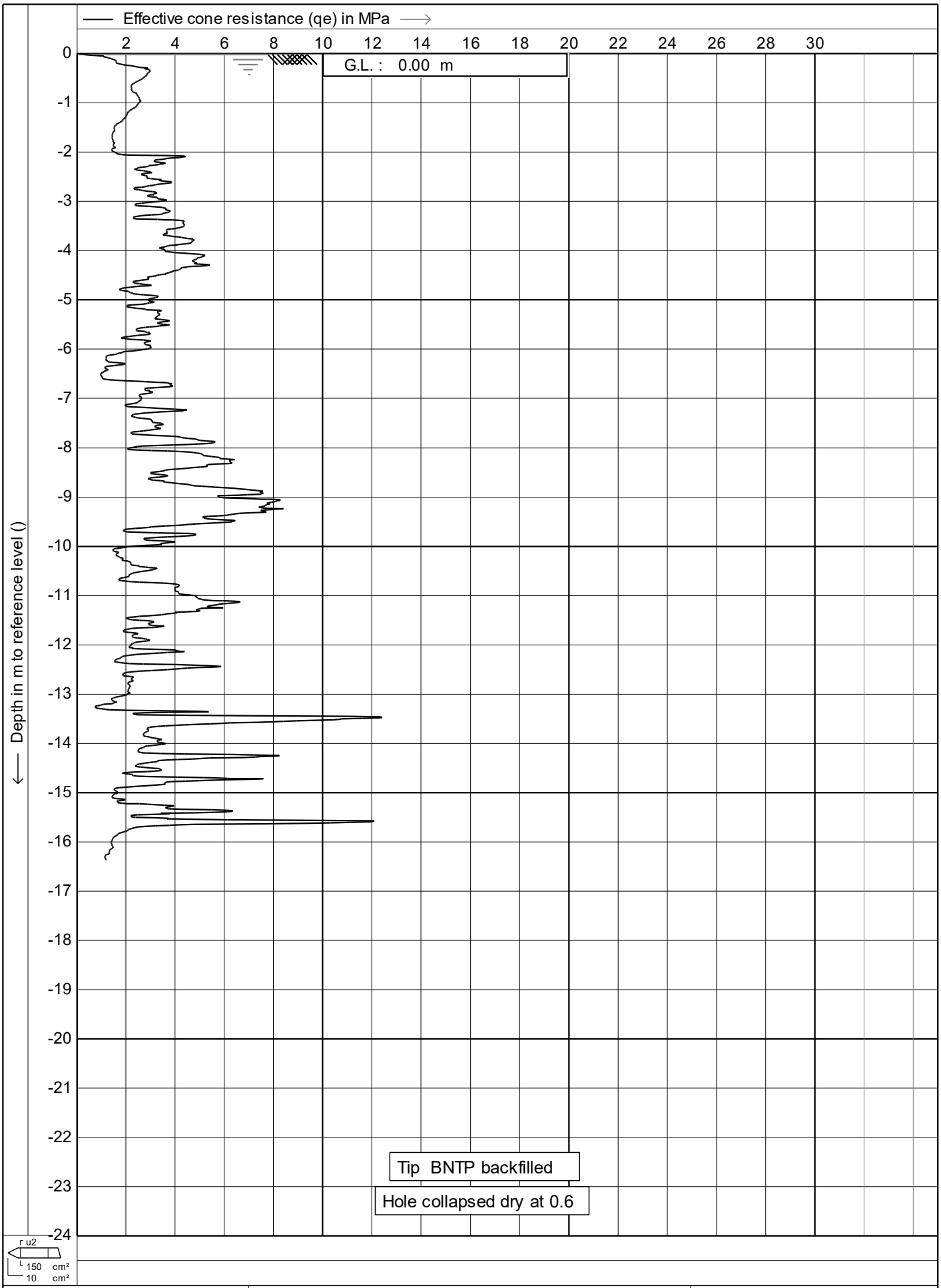
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **028** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

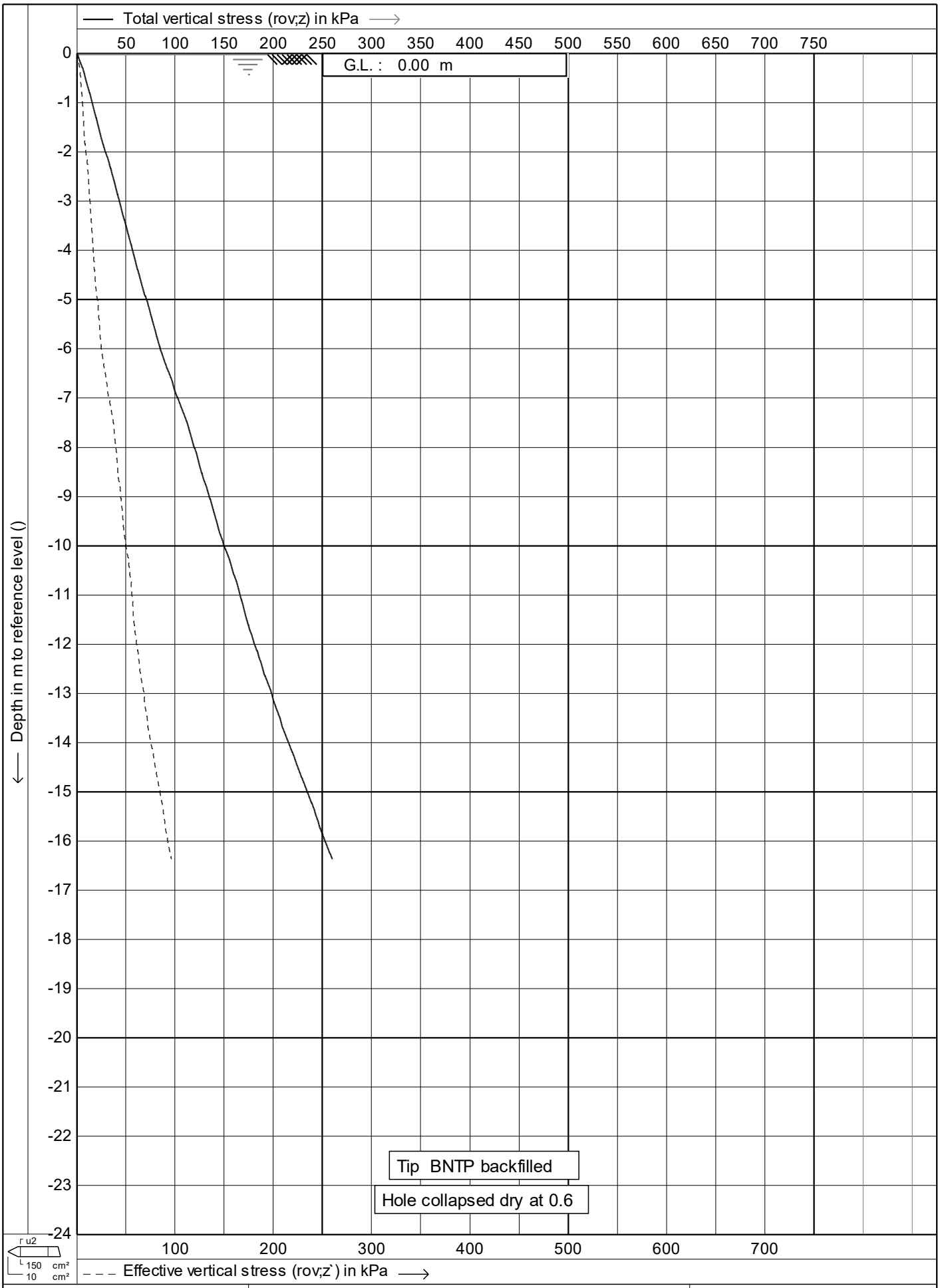
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **028**

5/14

1.48



Test according A.S.T.M Standard D 5778-12

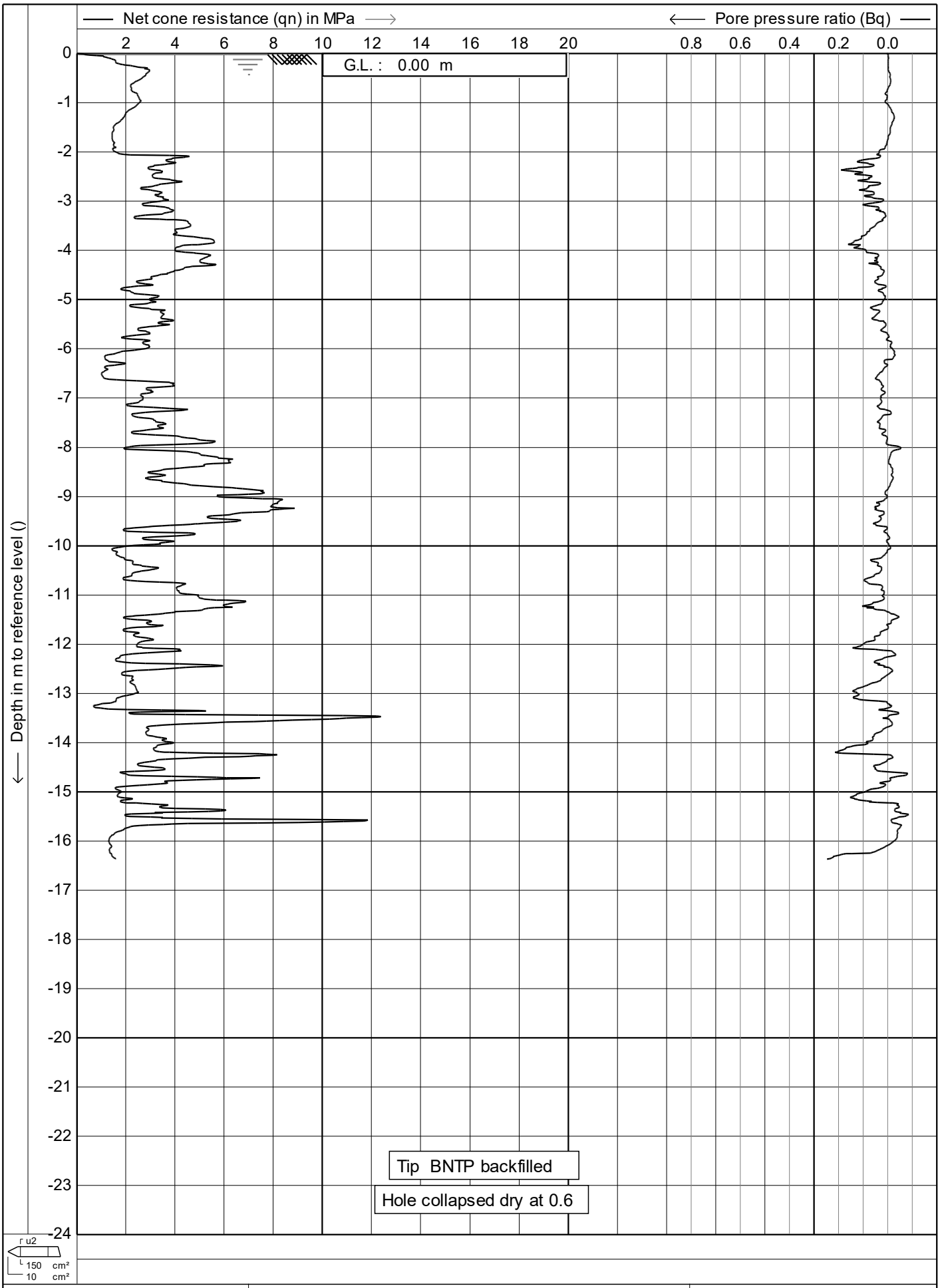
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **028**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

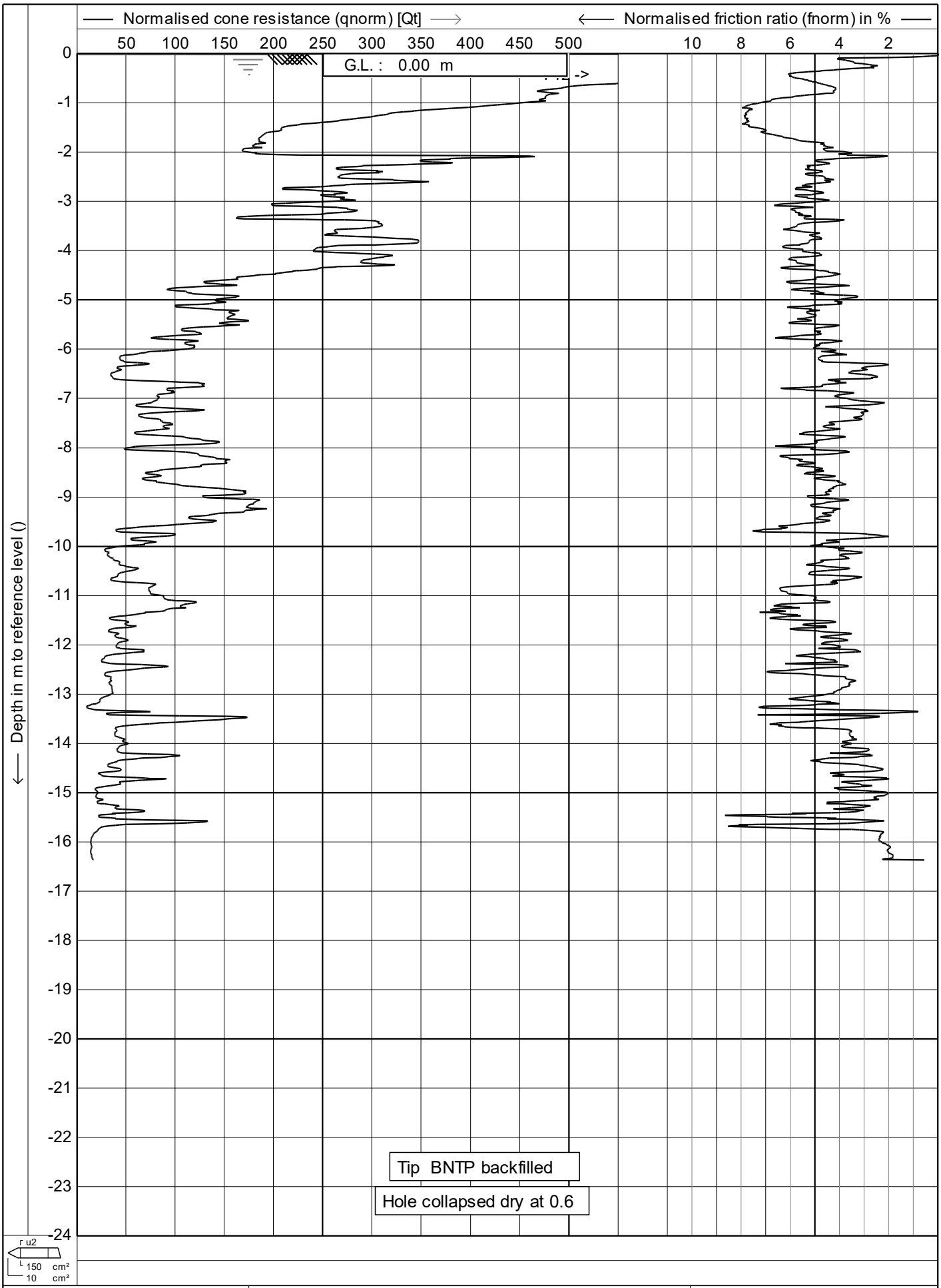
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **028**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

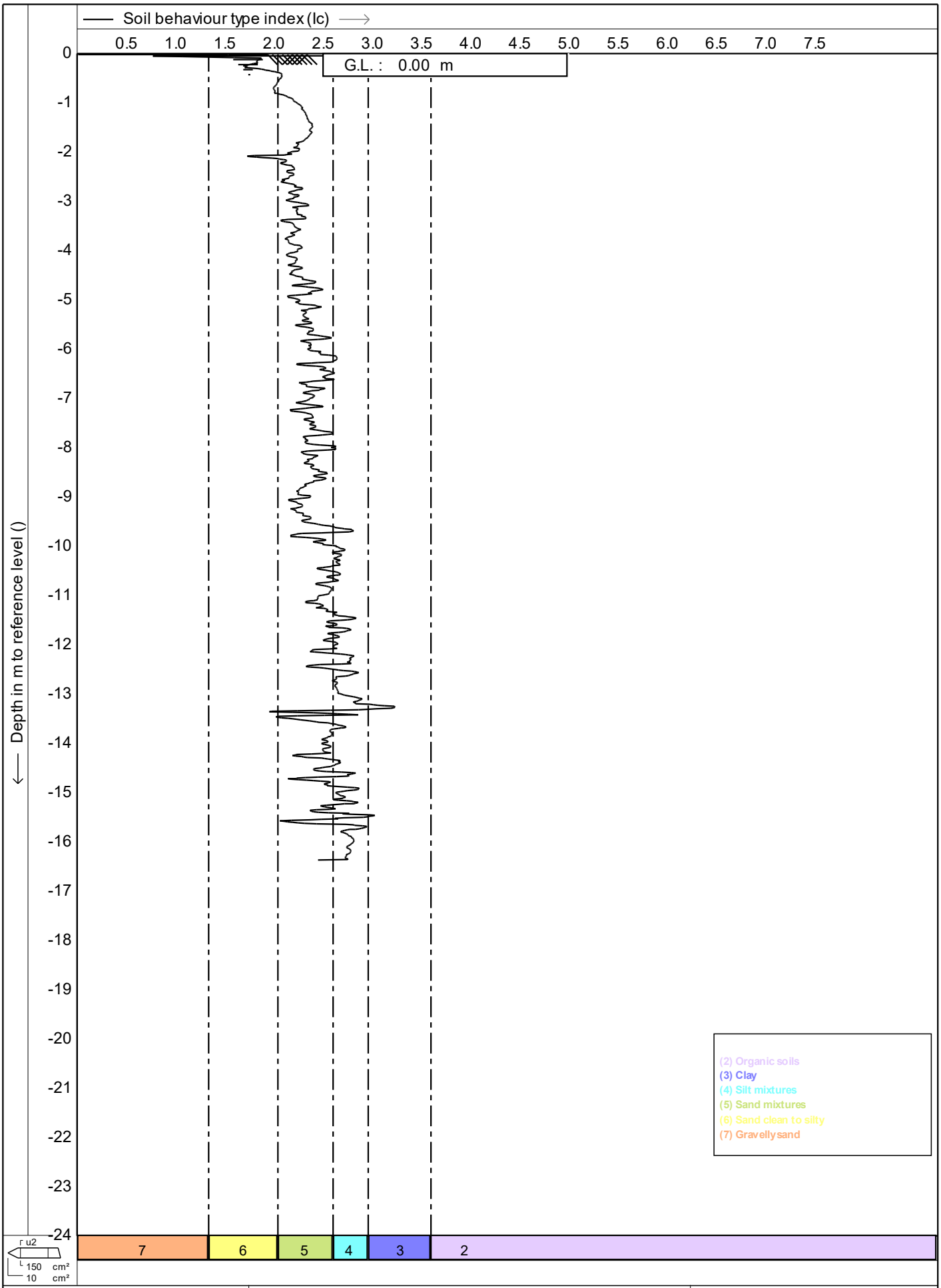
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **028**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

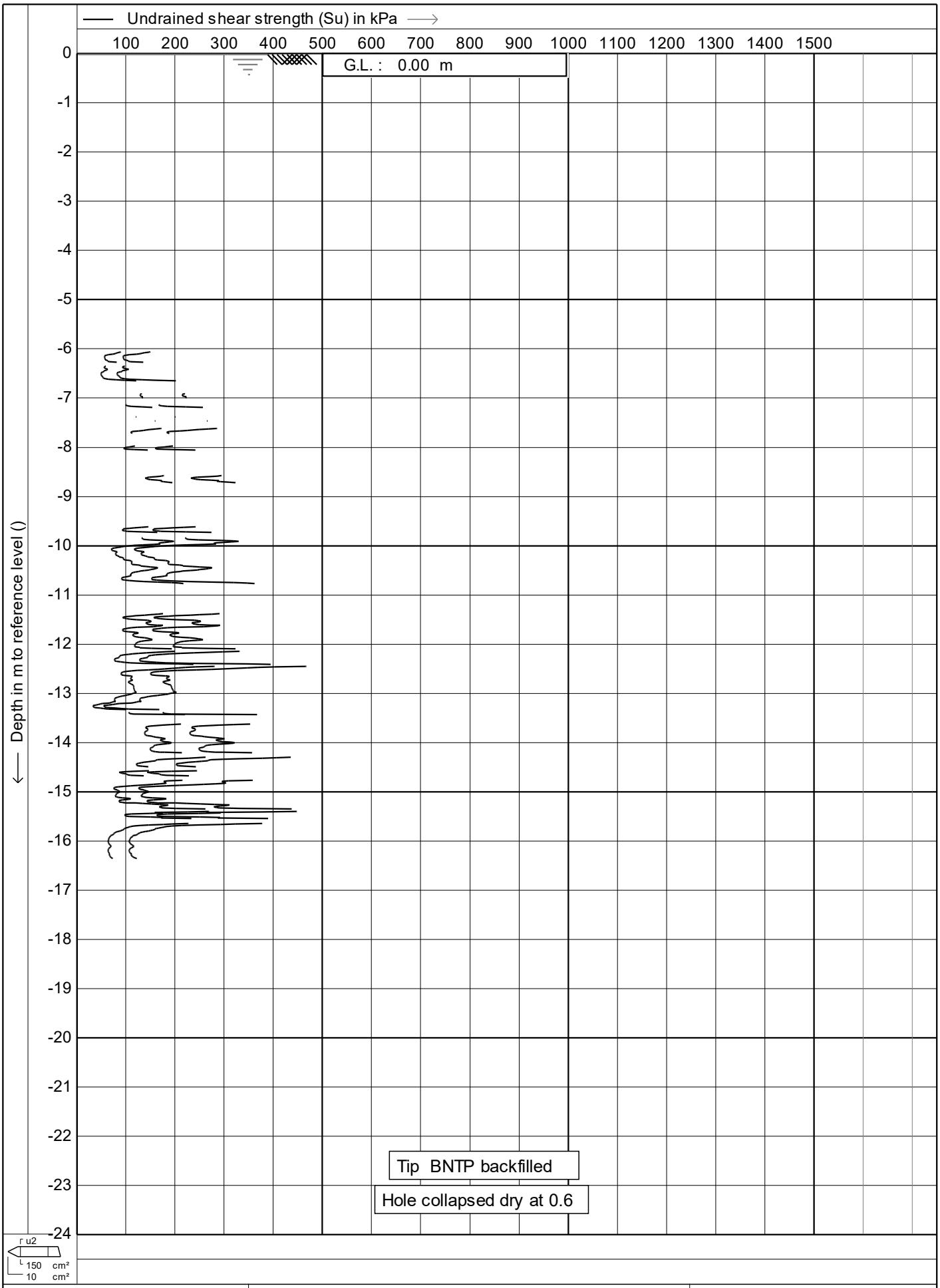
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **028** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

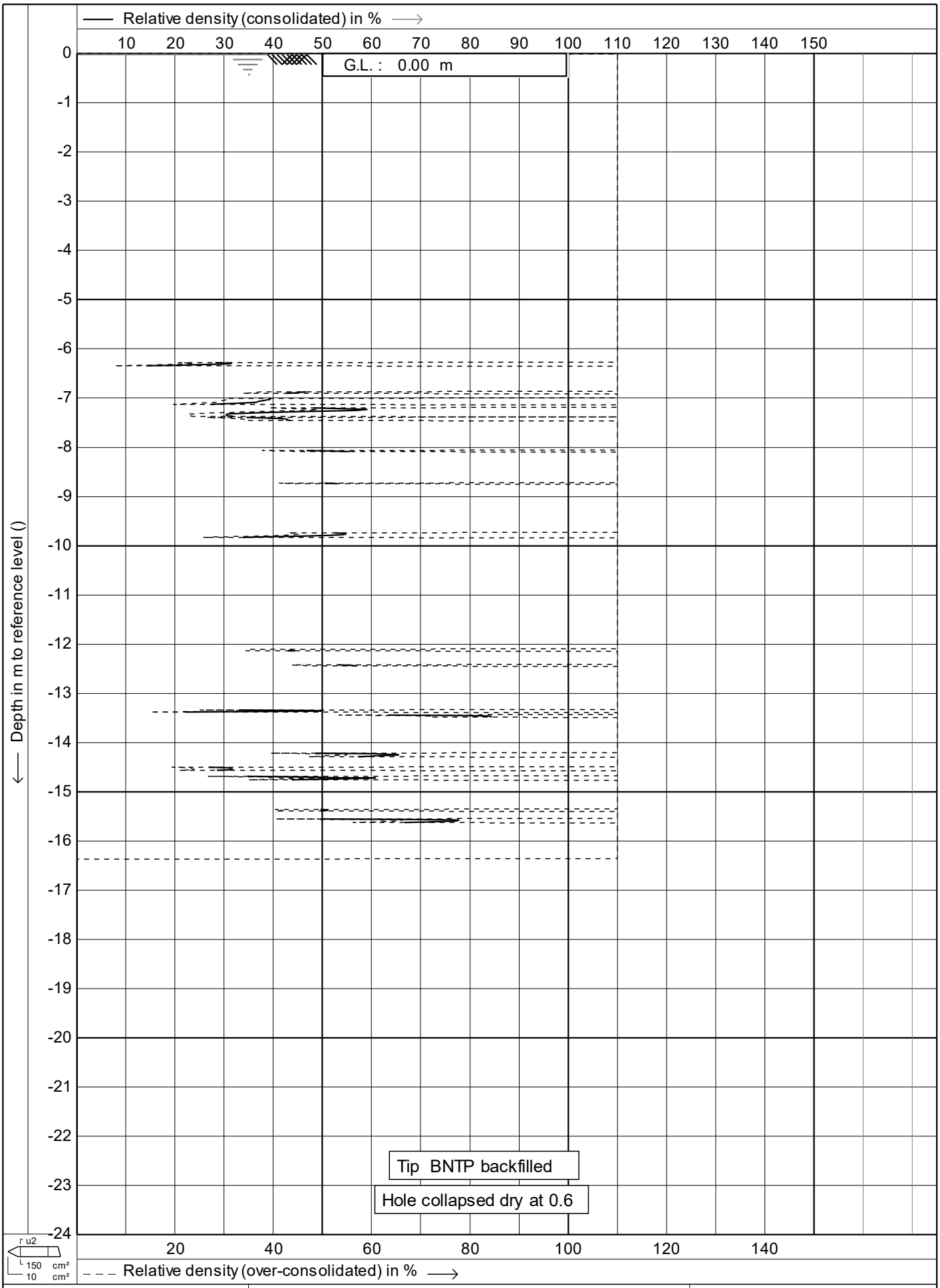
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **028** **10/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

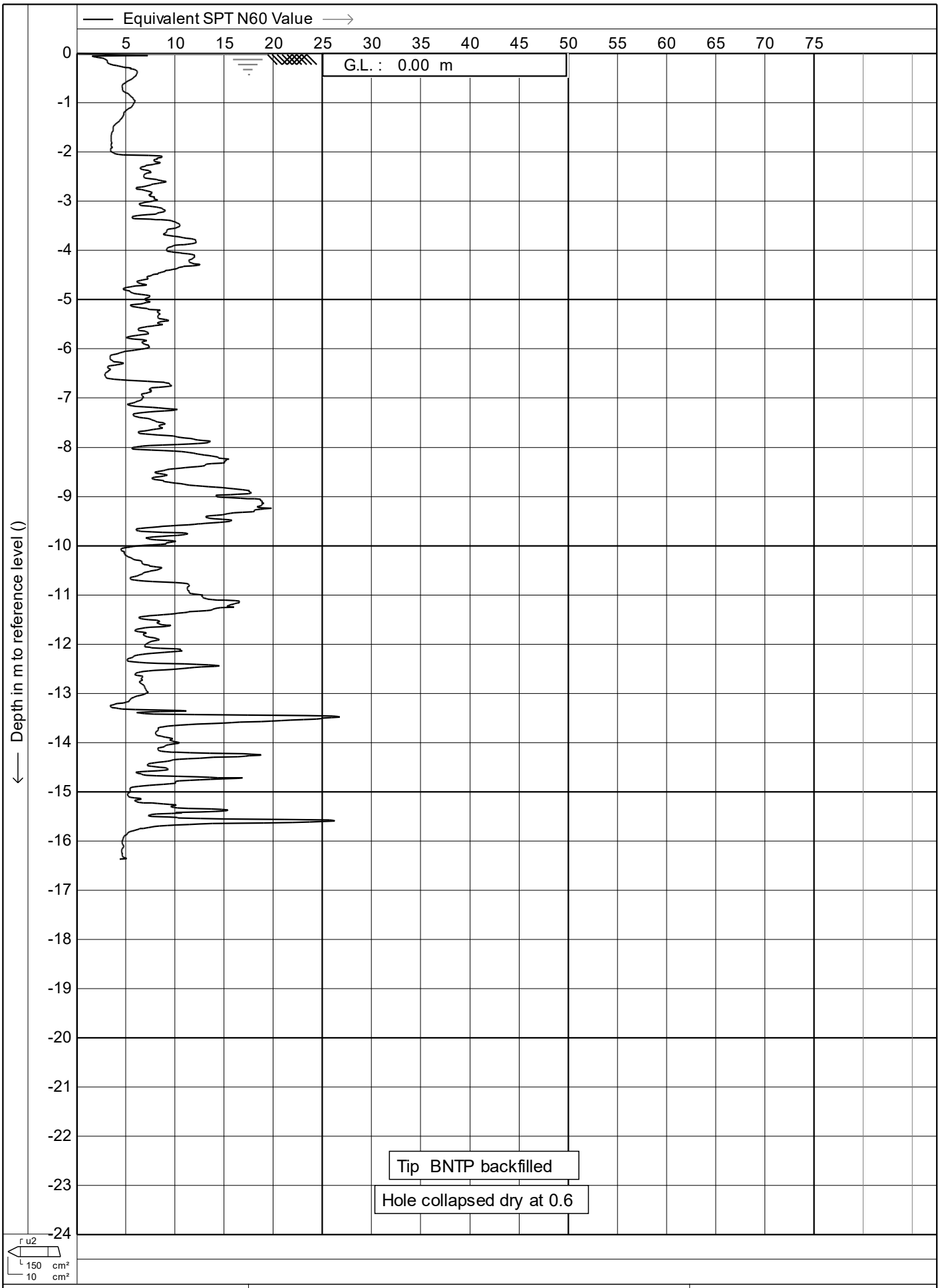
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **028** **11/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

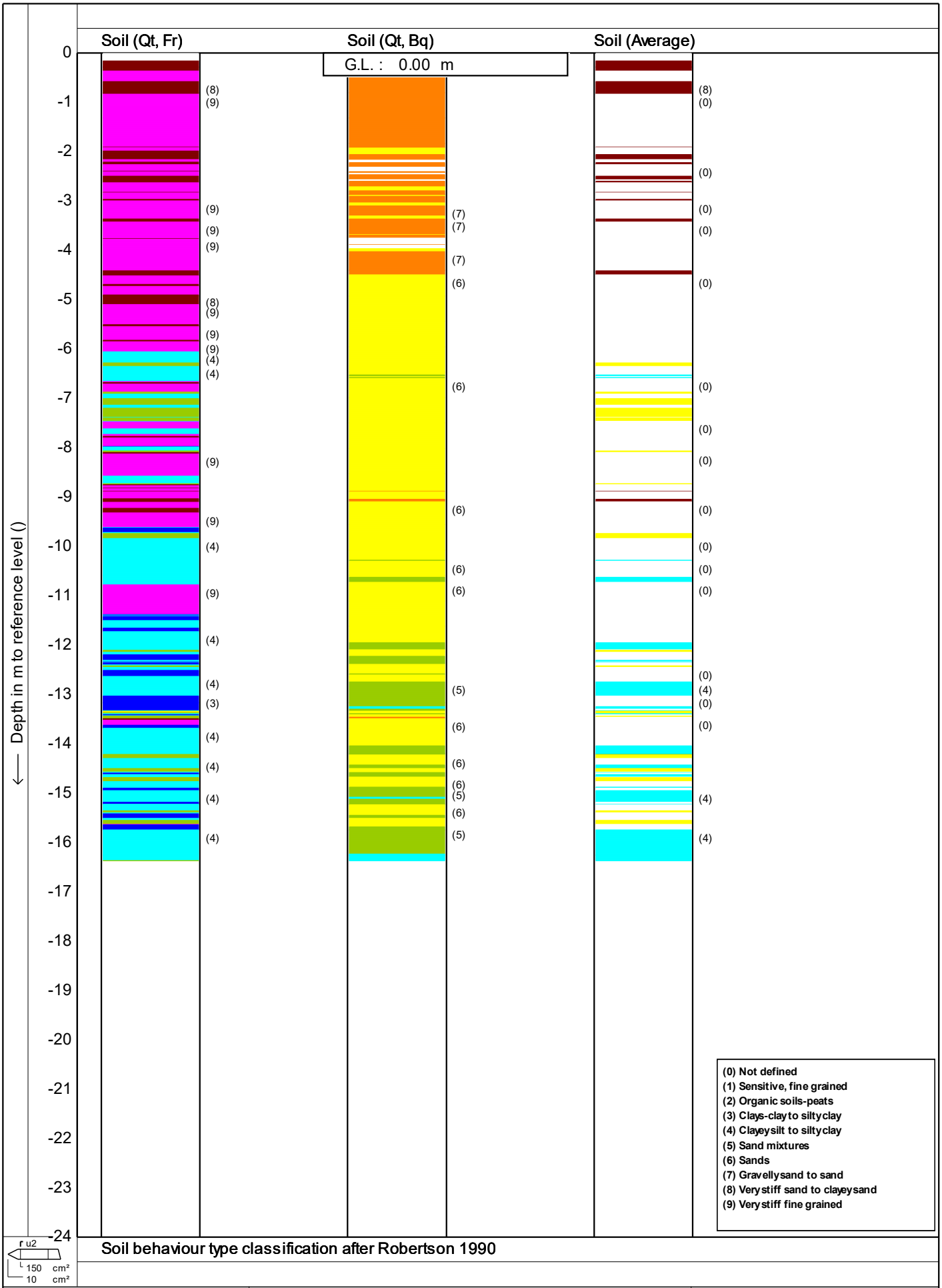
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **028** **12/14**

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

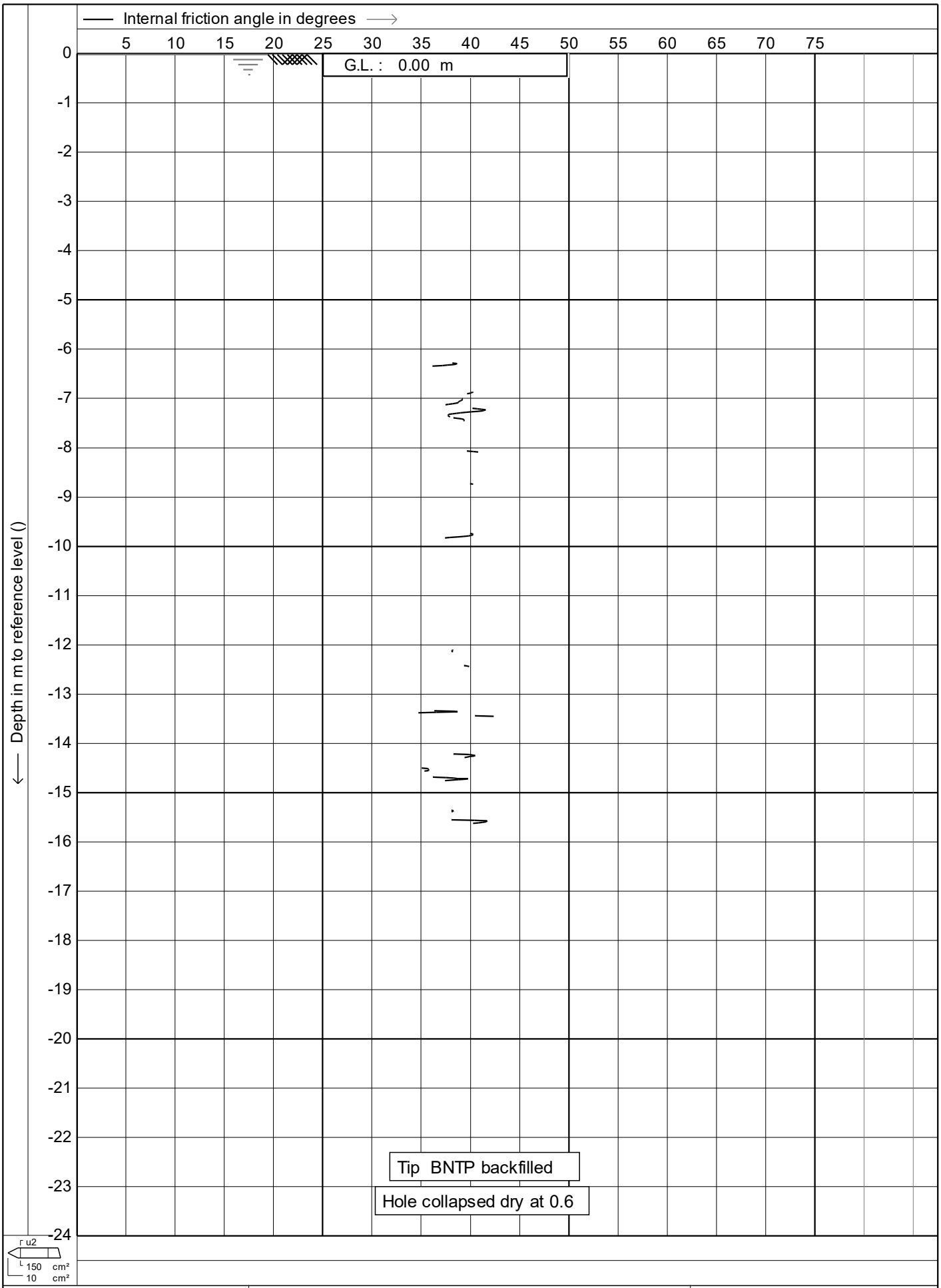
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **028**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

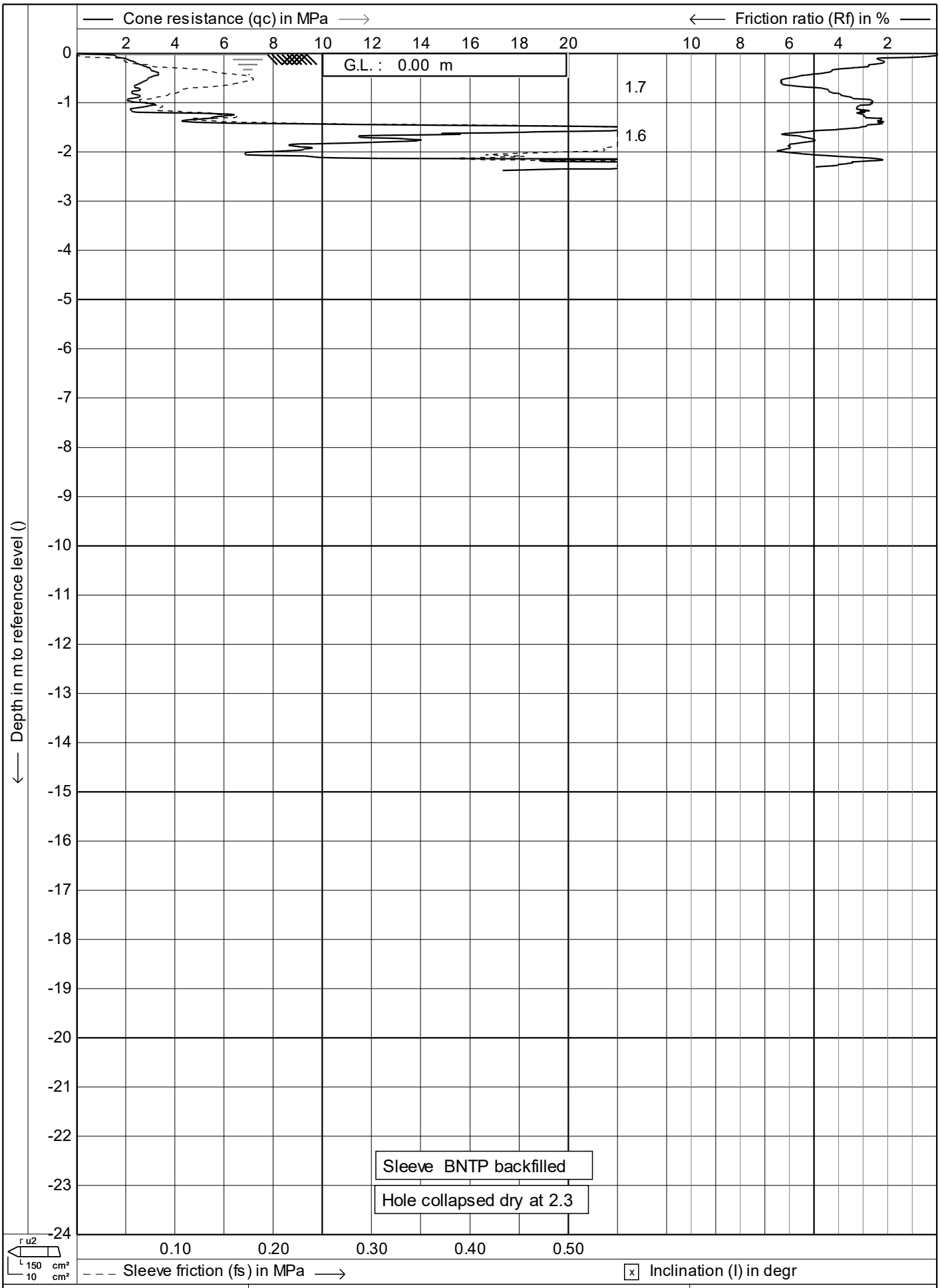
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **028** **14/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

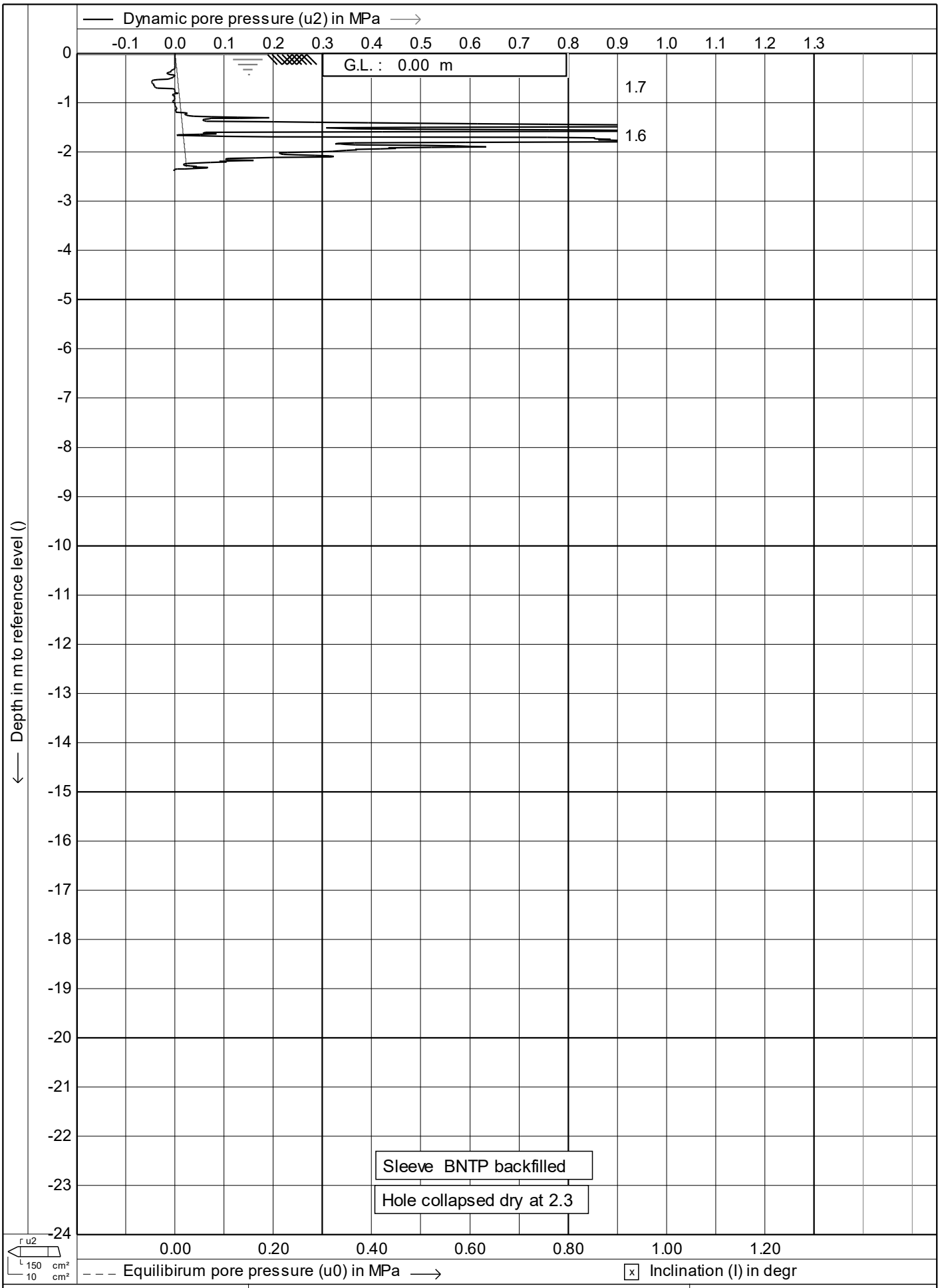
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Project no. : **05AU7**

CPT no. : **029**

1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

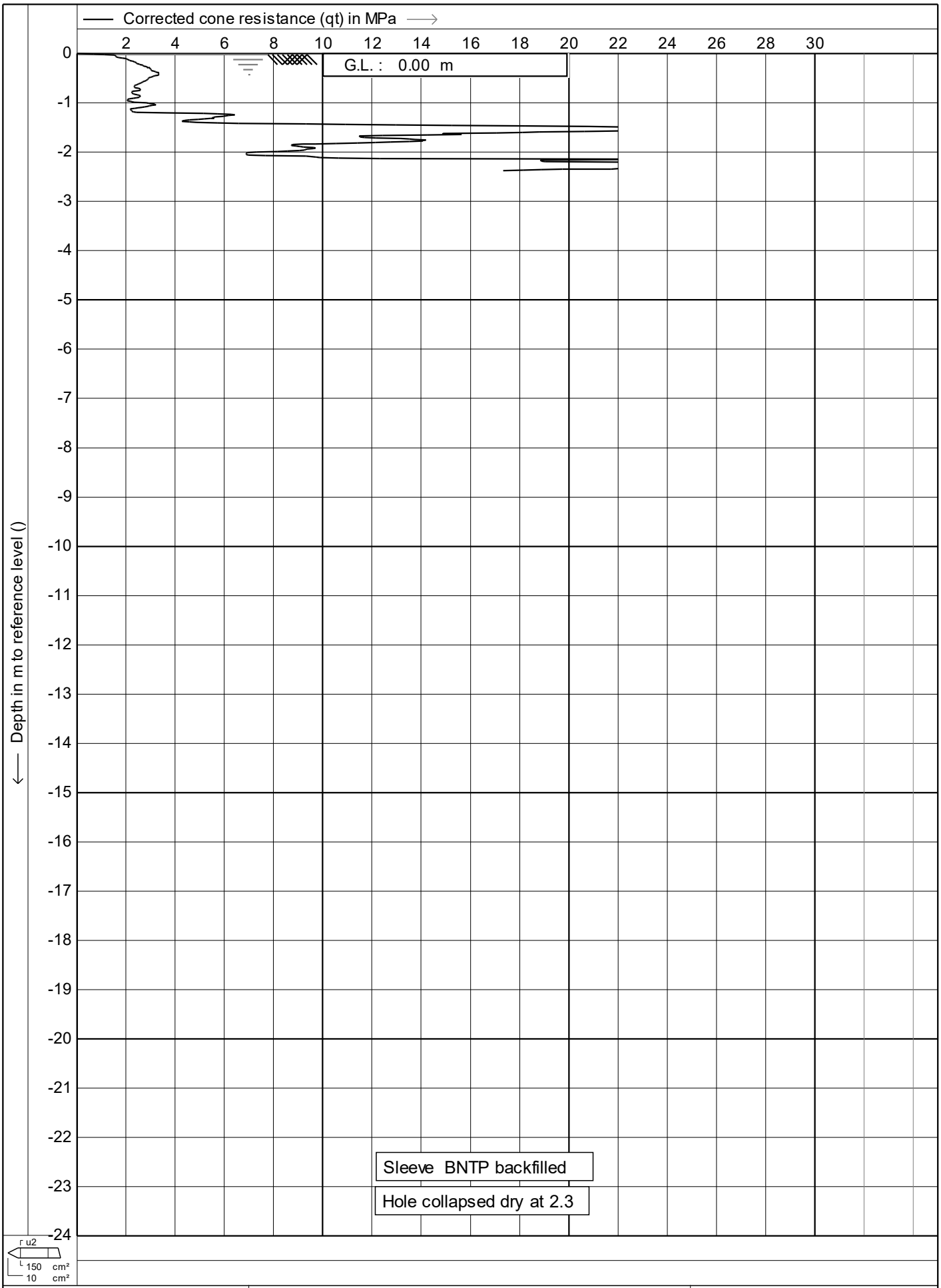
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Project no. : **05AU7**

CPT no. : **029**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

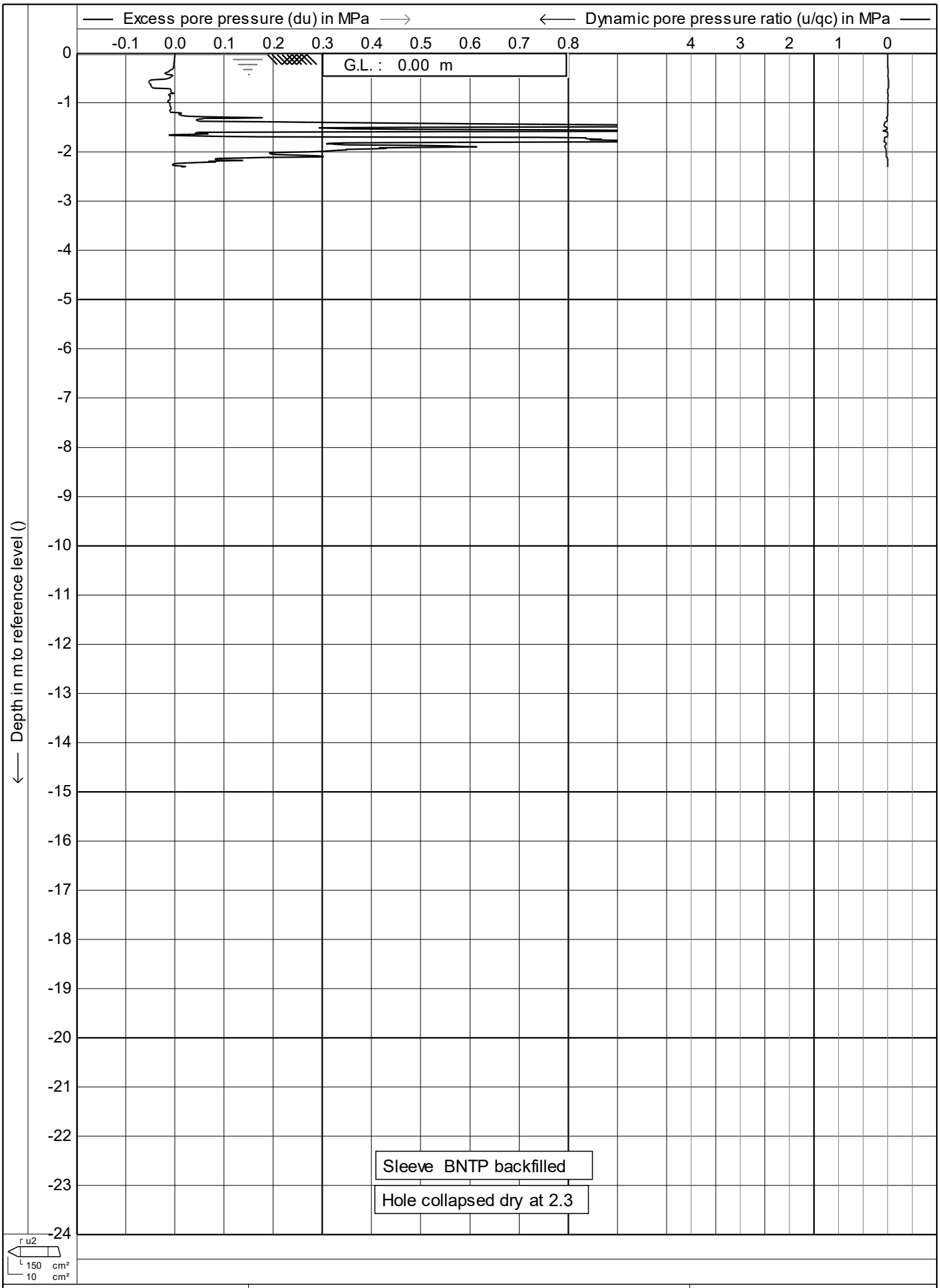
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **029** **3/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

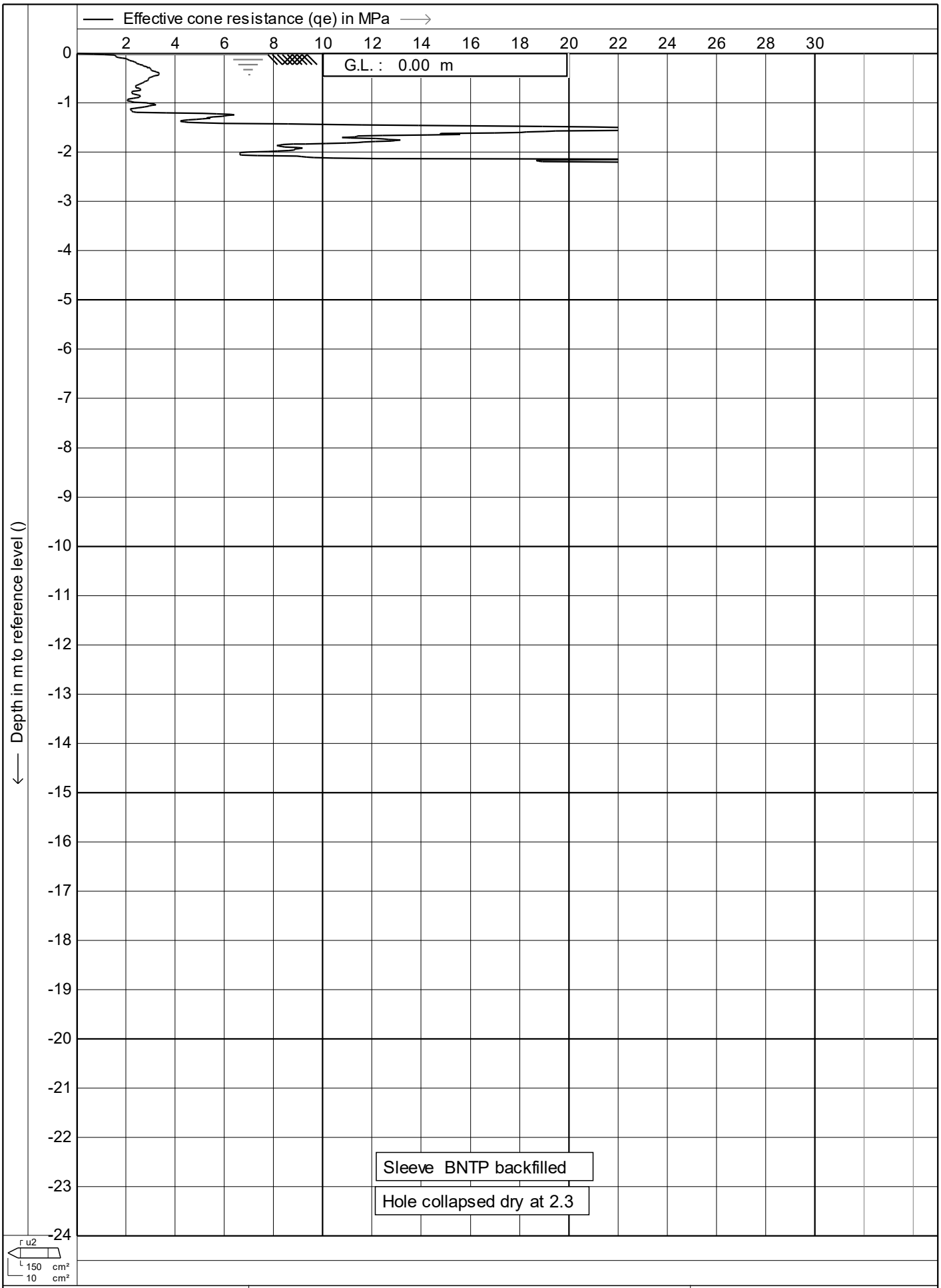
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **029** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

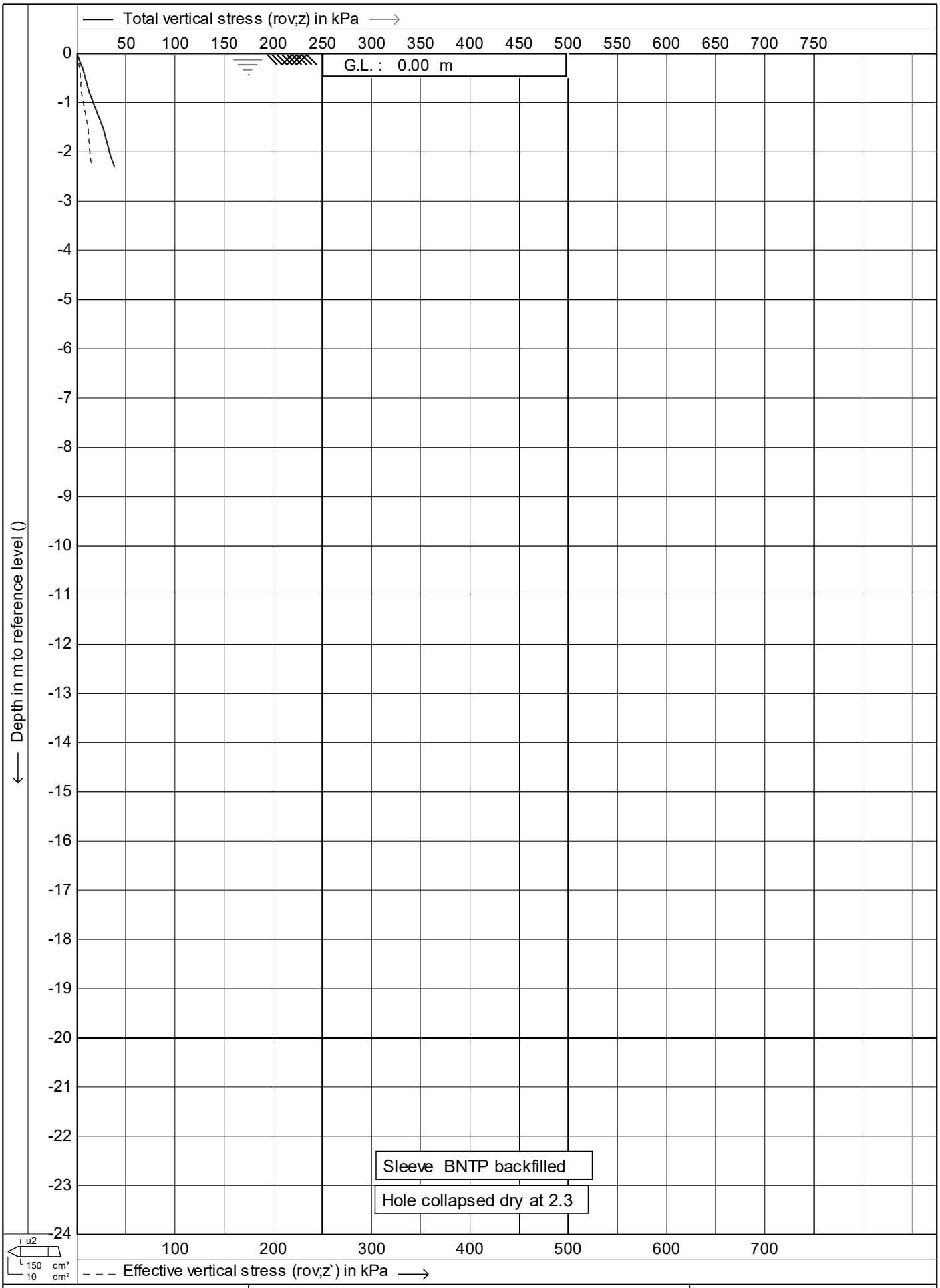
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Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **029**

5/14

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

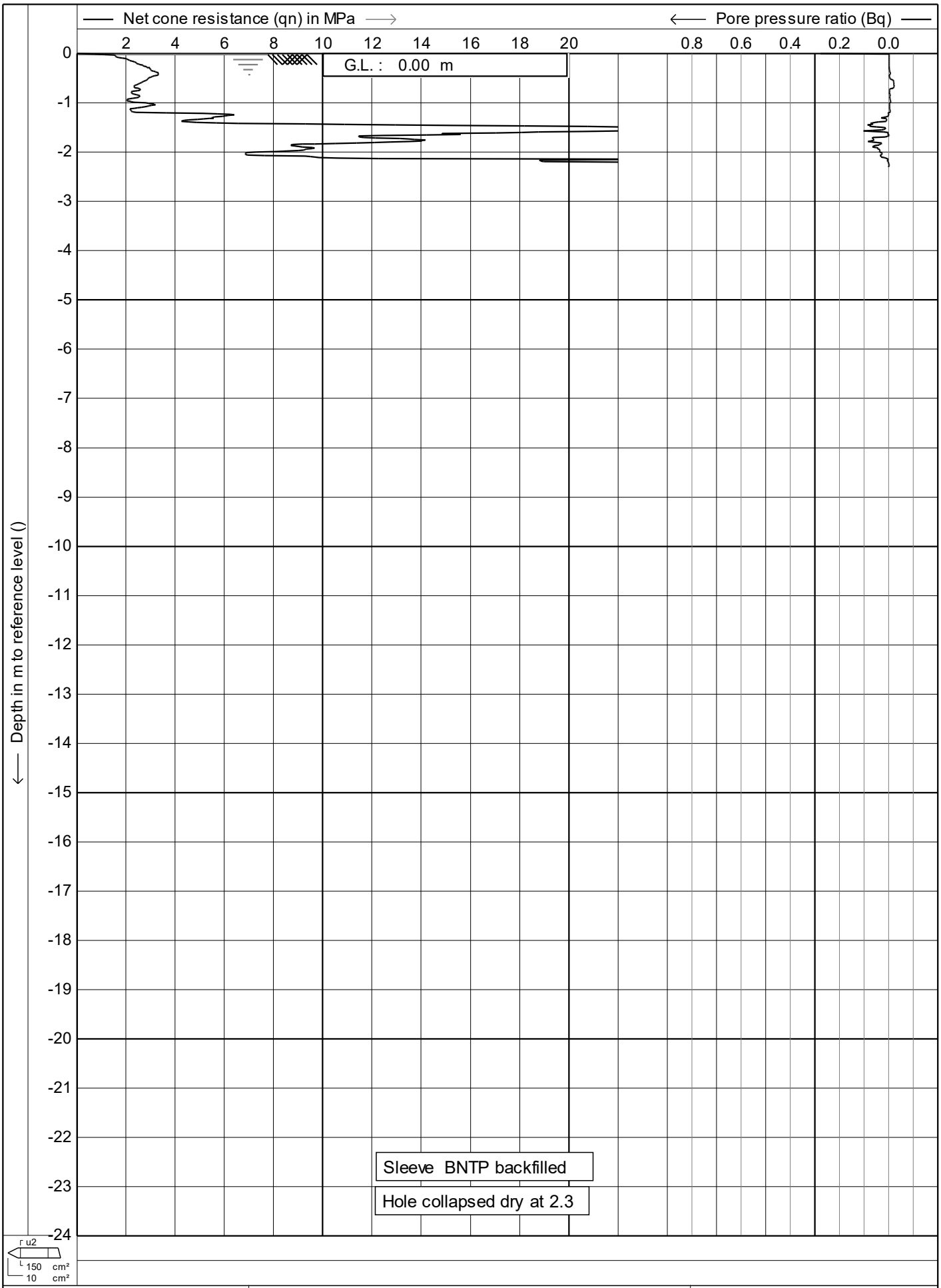
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Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **029**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

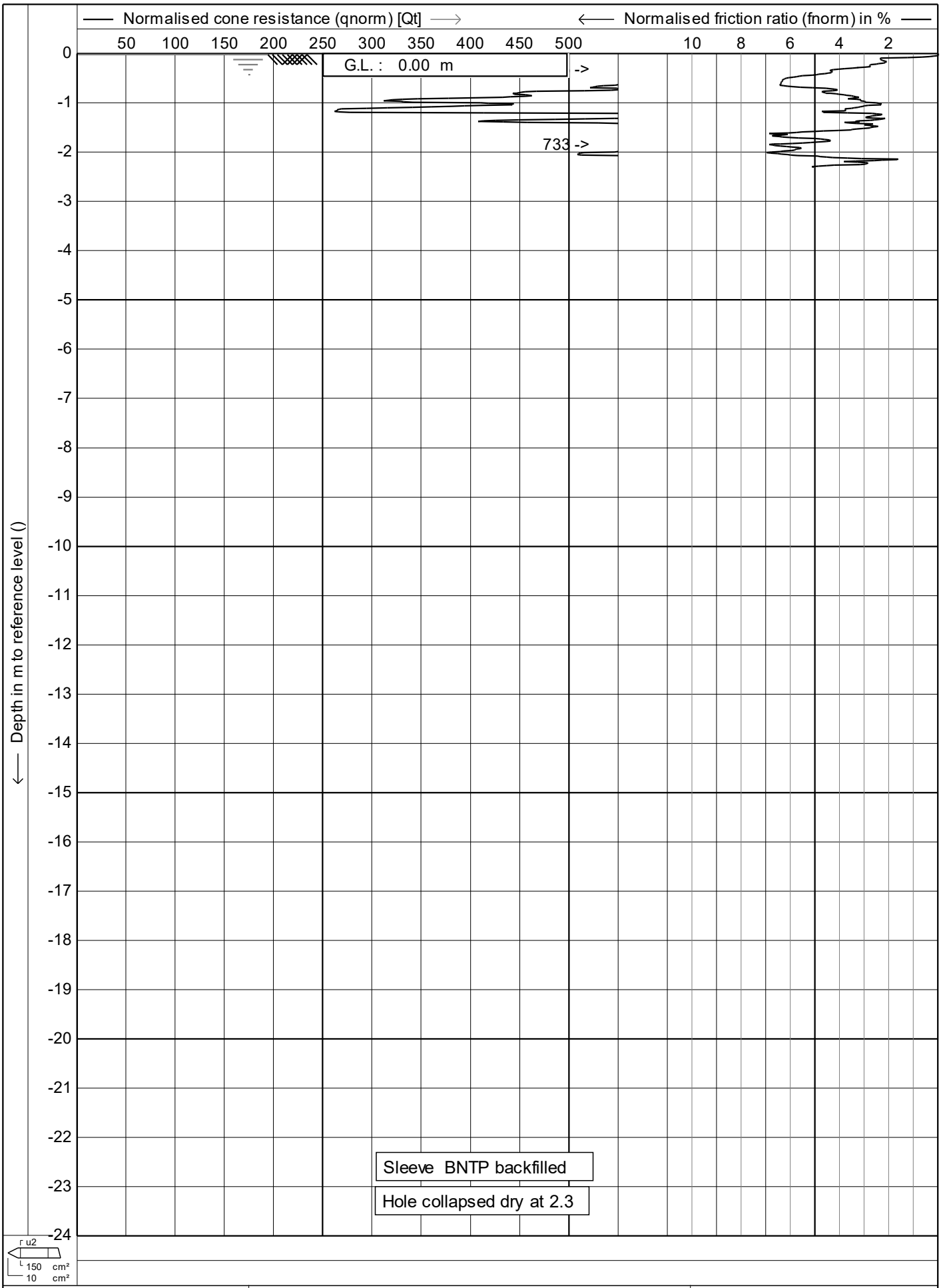
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **029** **7/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

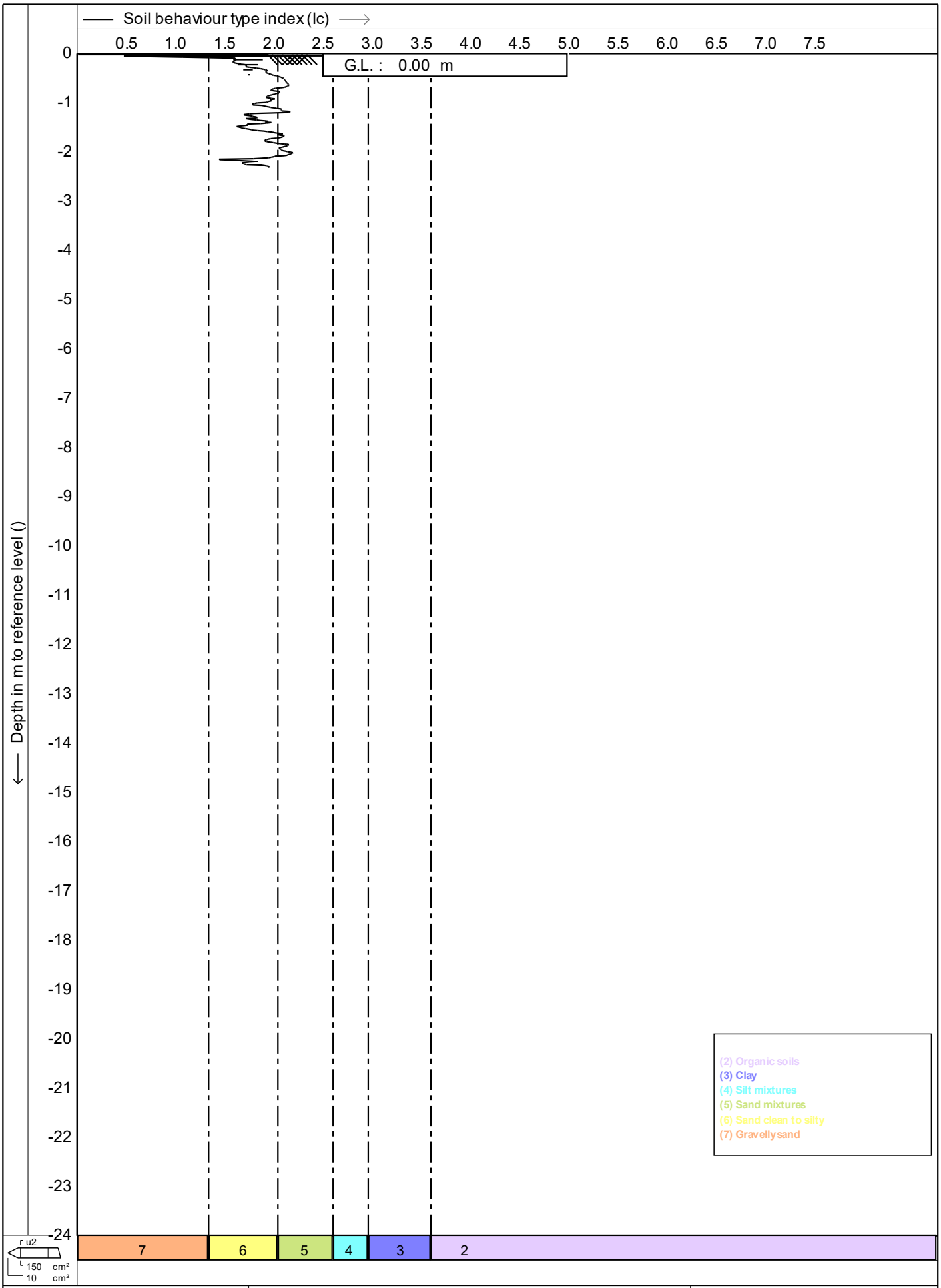
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **029** **8/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

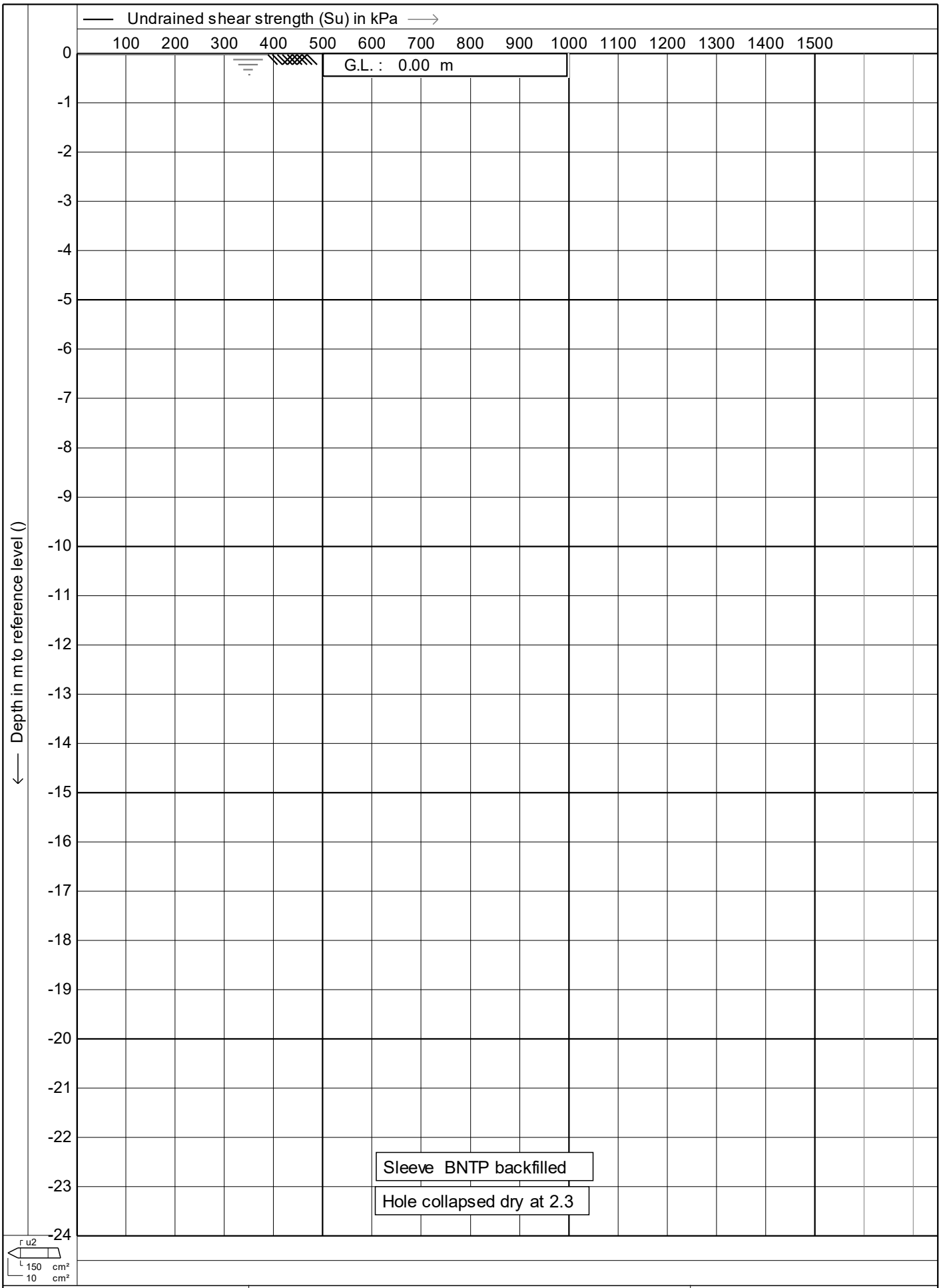
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **029** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

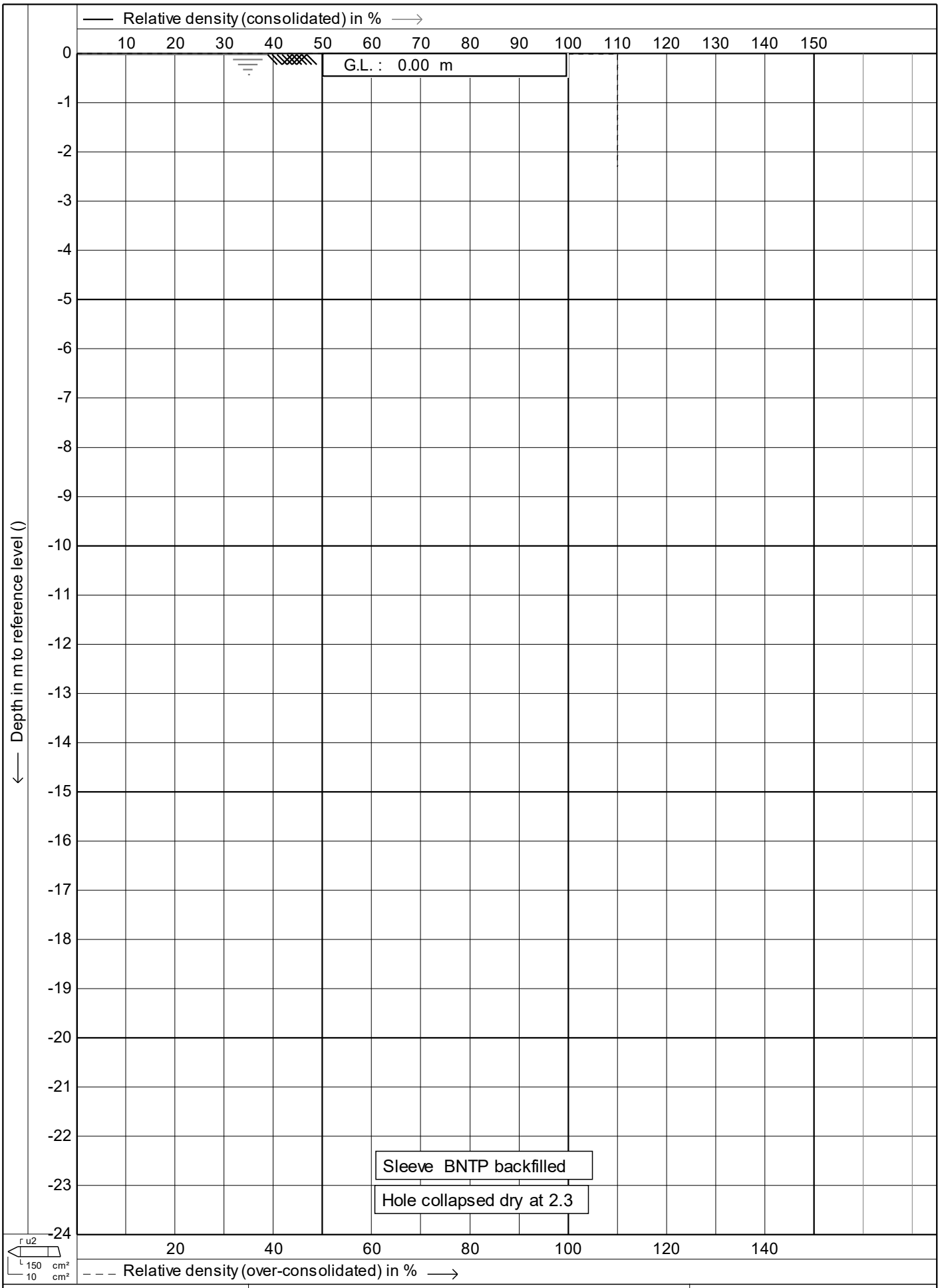
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **029** **10/14**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

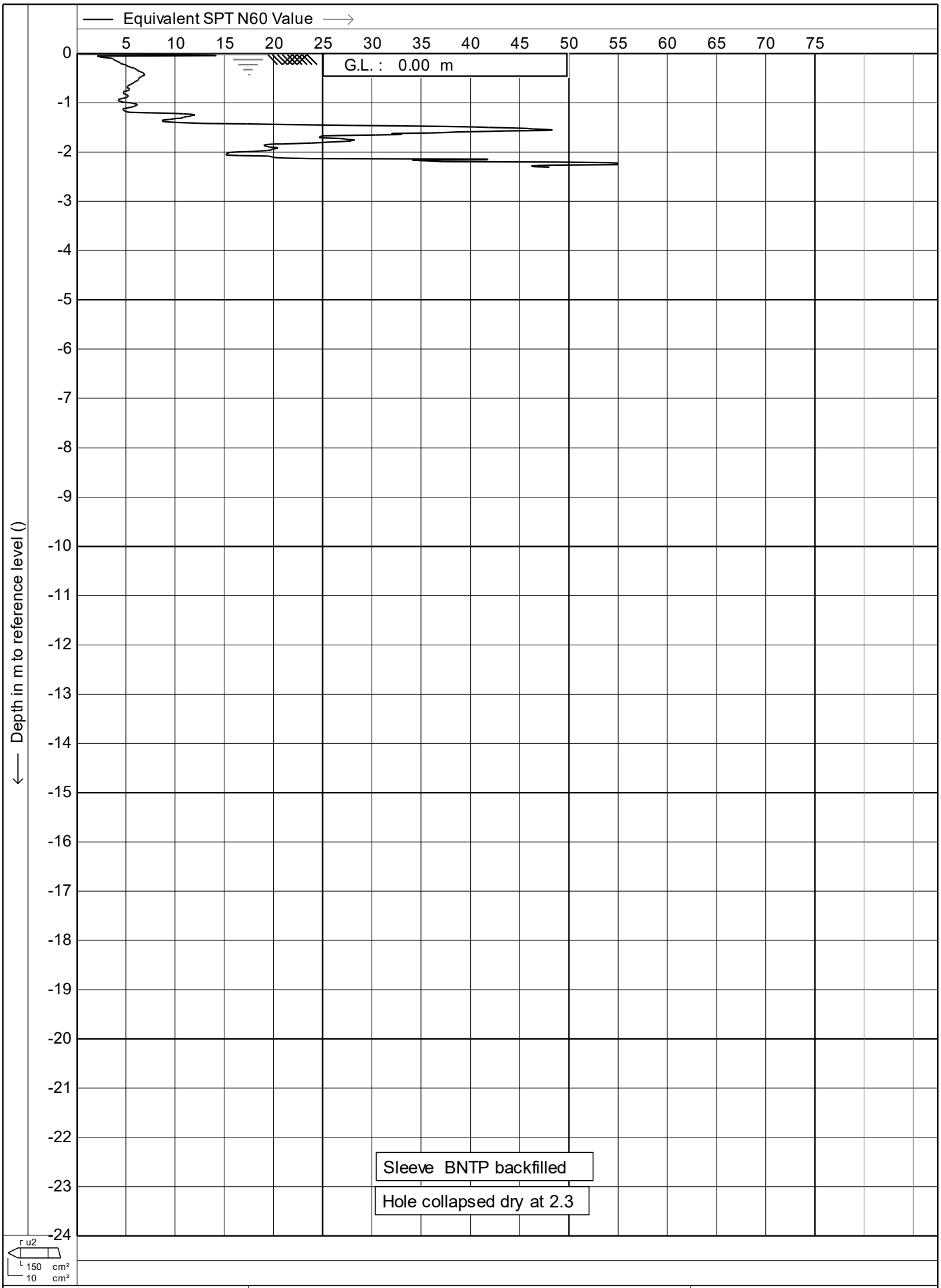
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **029** **11/14**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

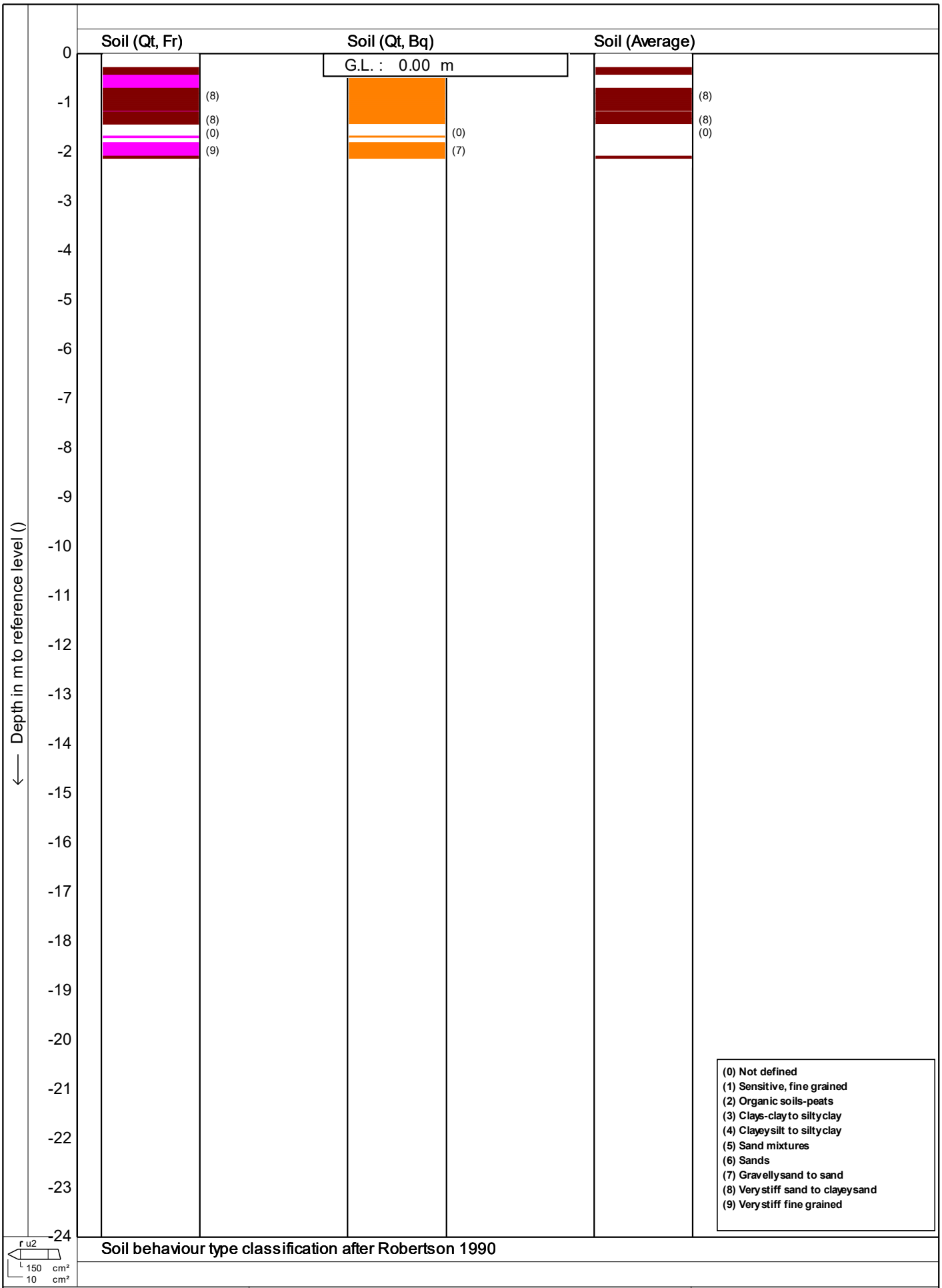
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **029**

12/14

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

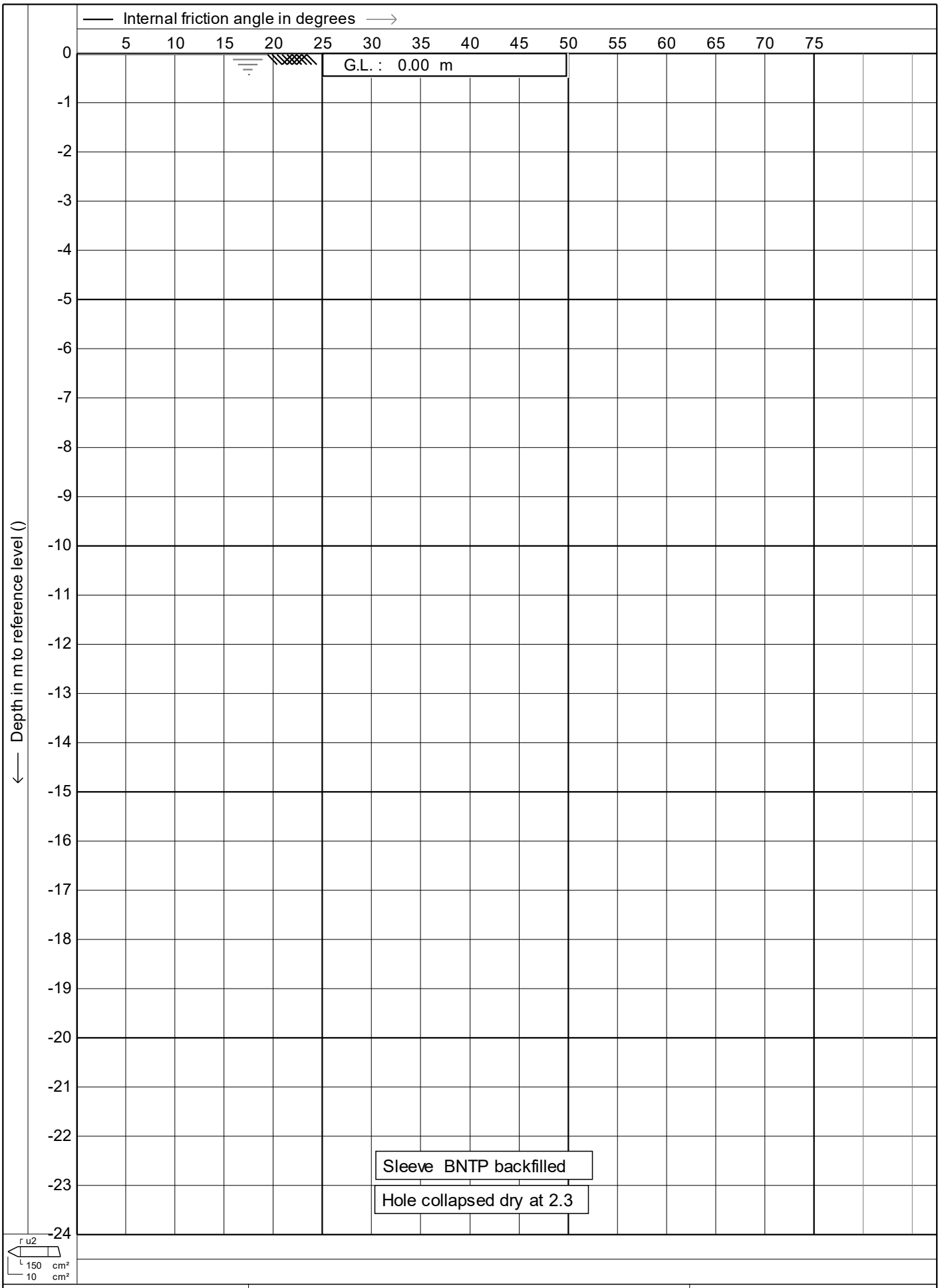
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **029**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

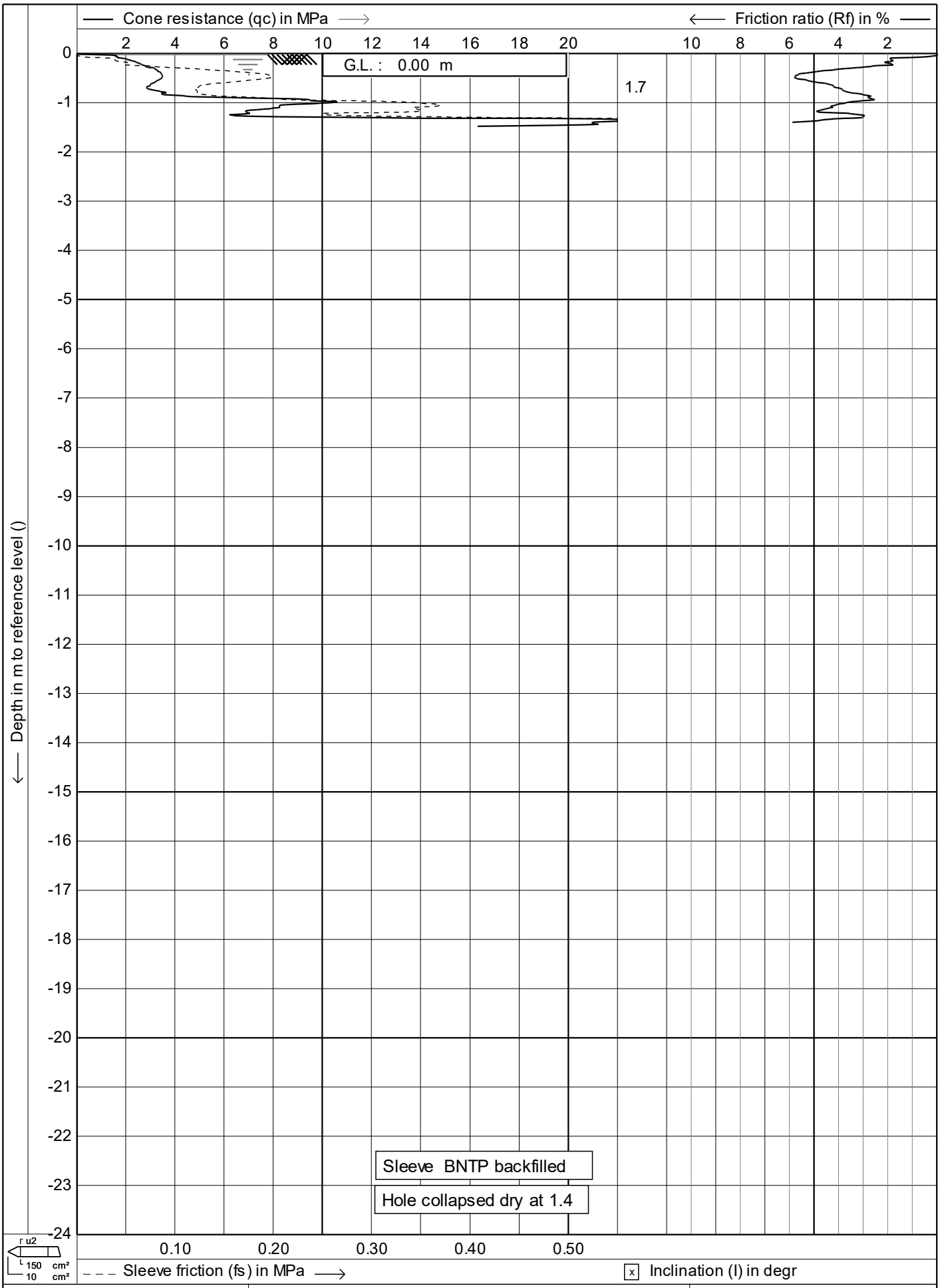
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **029**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

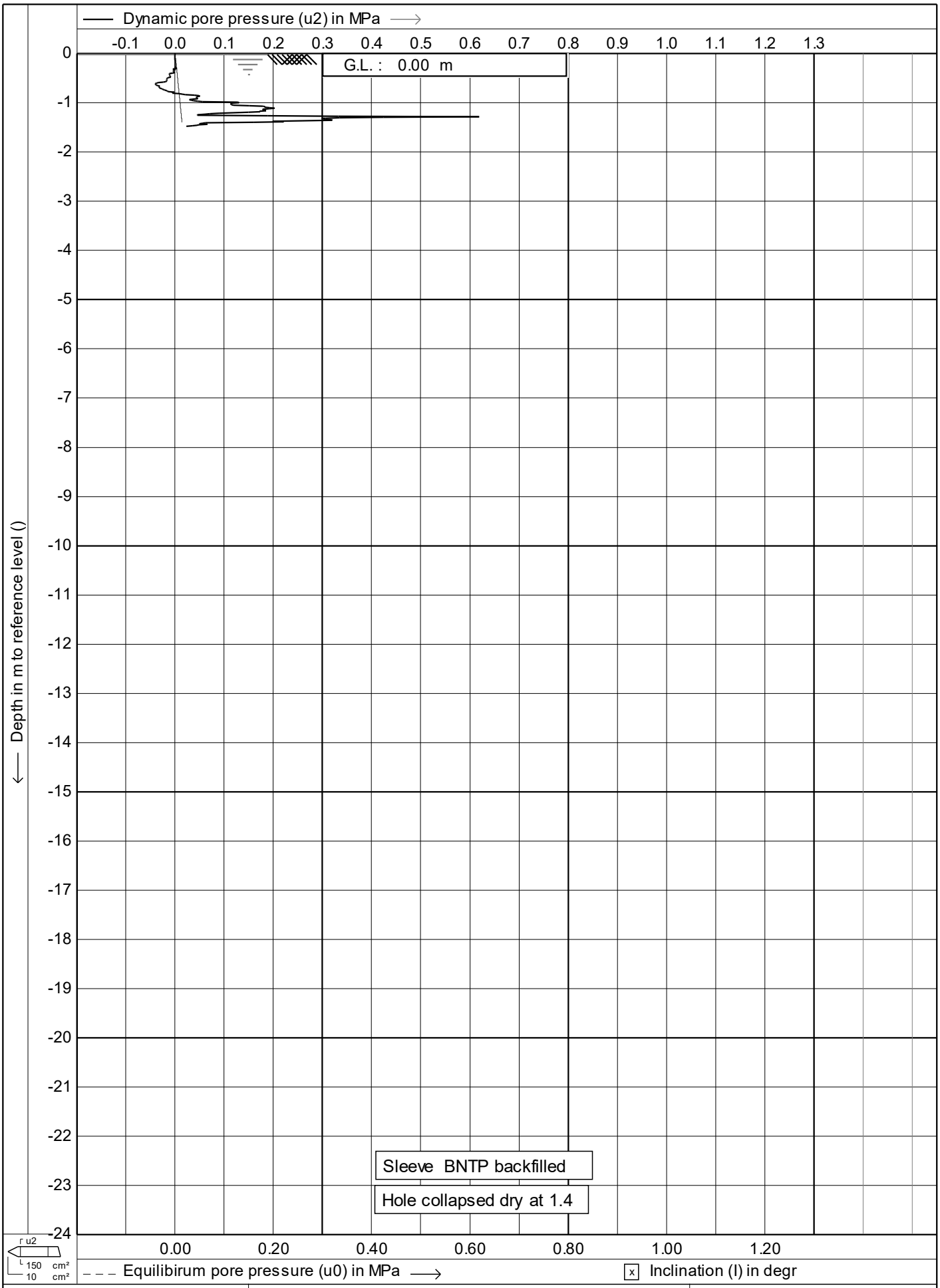
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **029a** **1/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

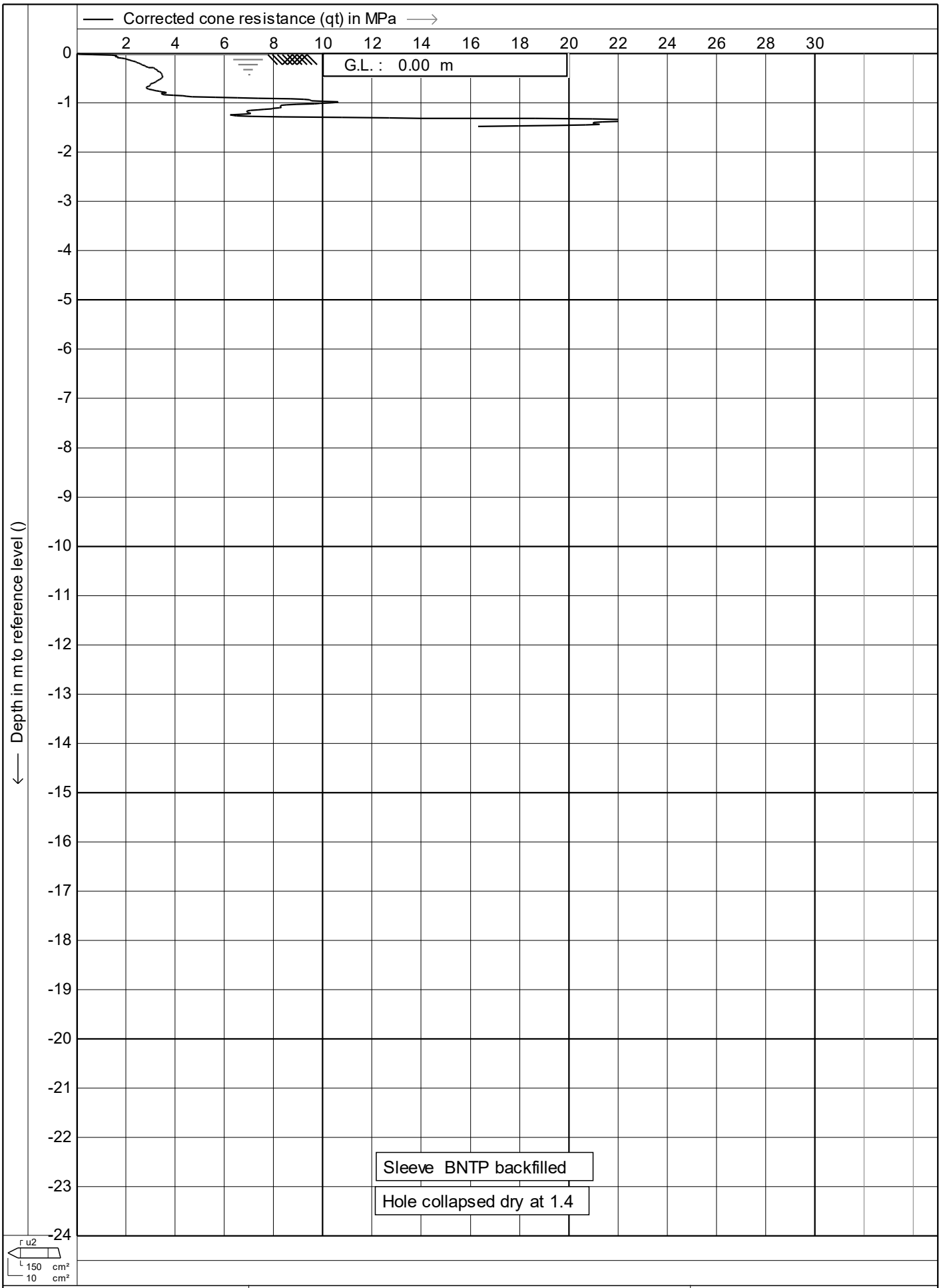
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

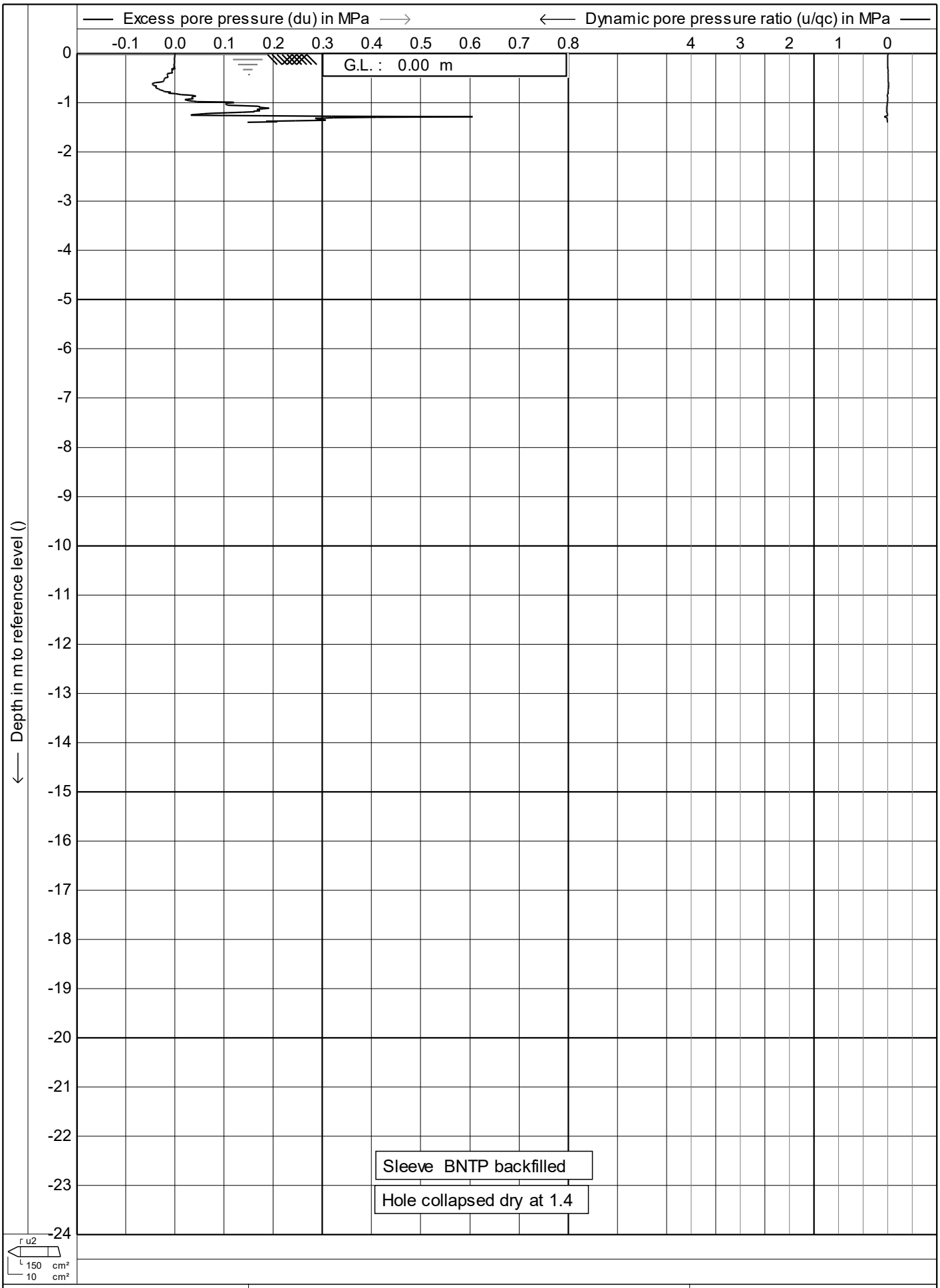
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **029a** **3/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

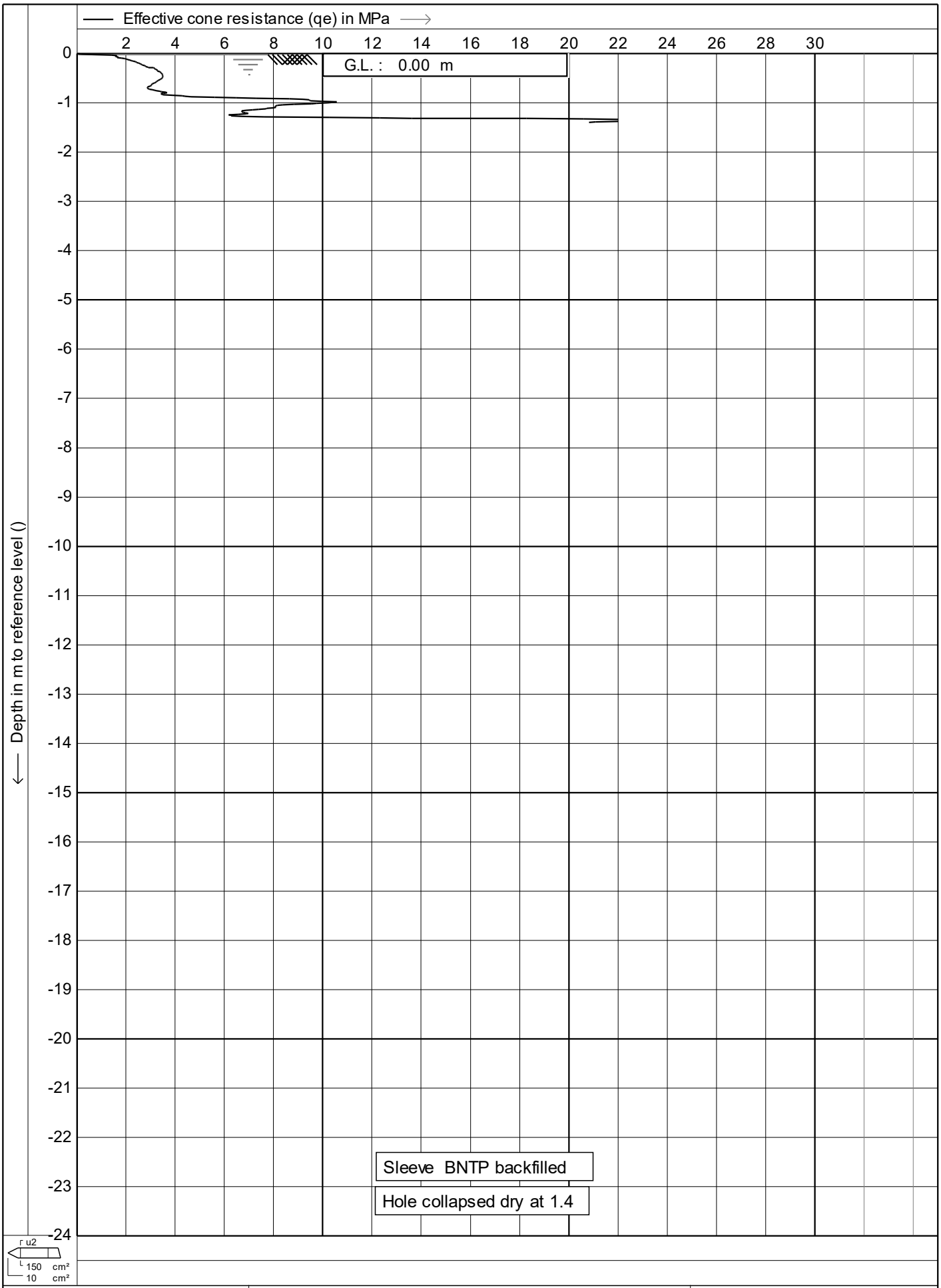
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **029a** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

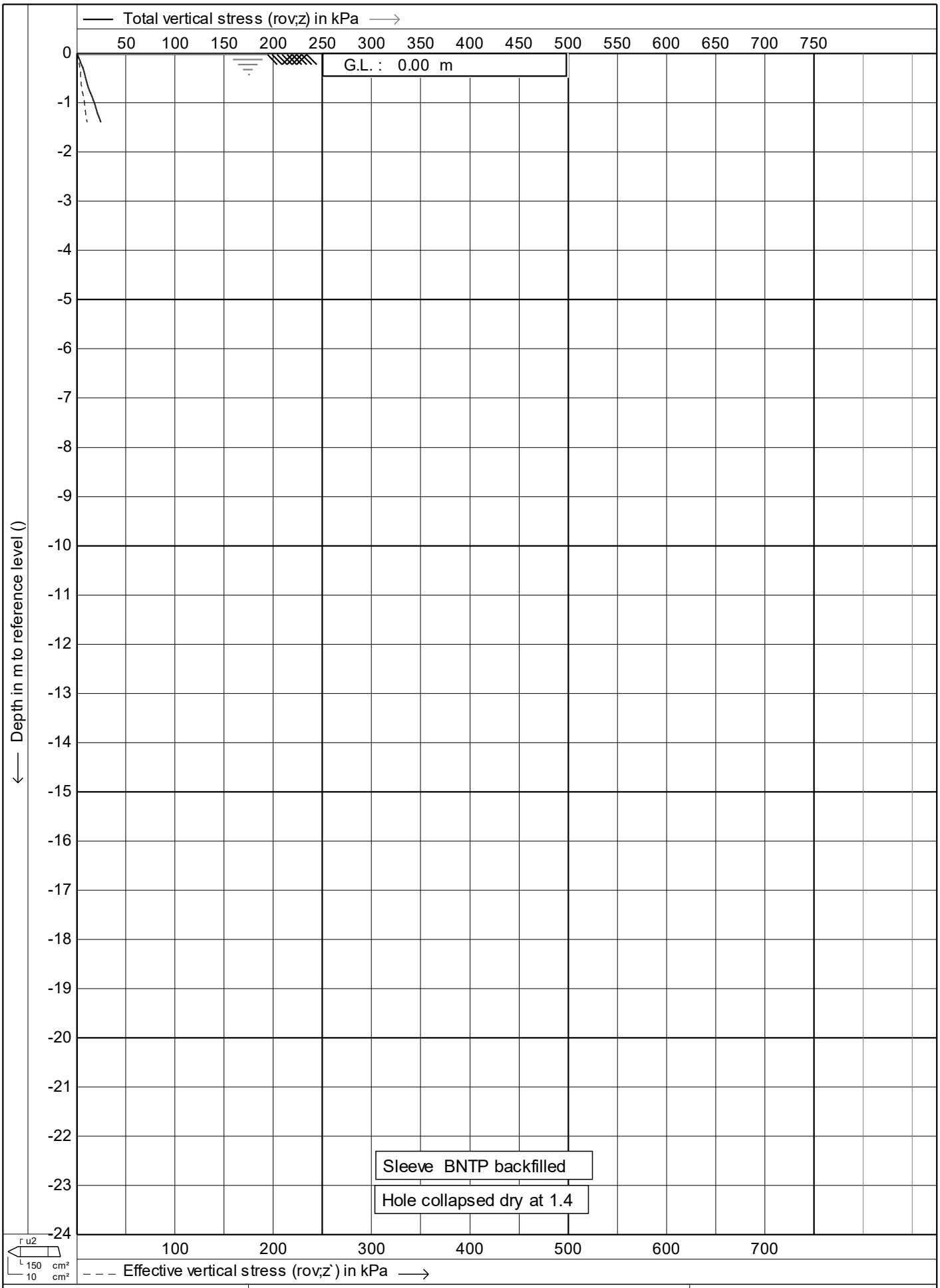
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **029a** **5/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

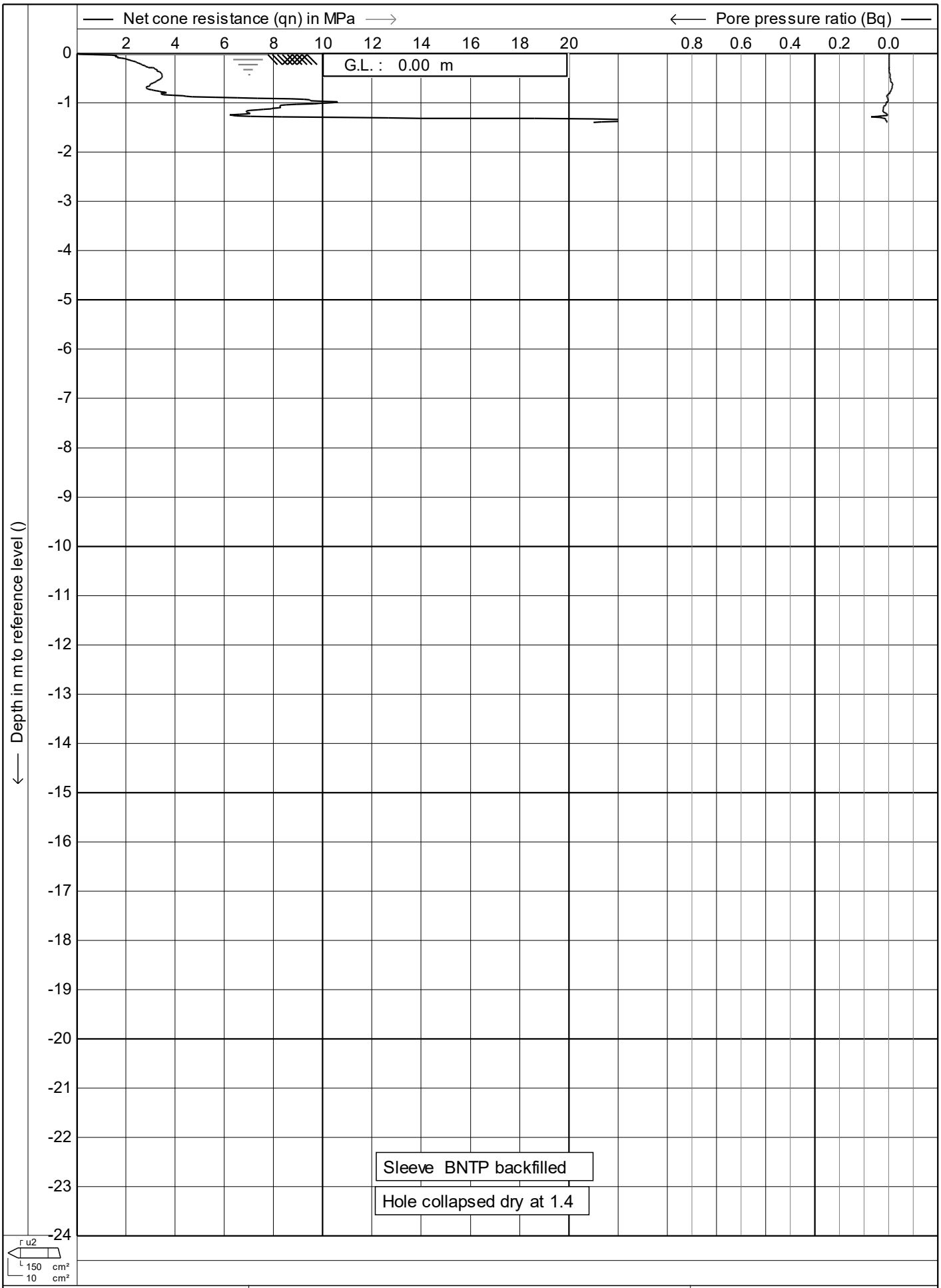
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **029a**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

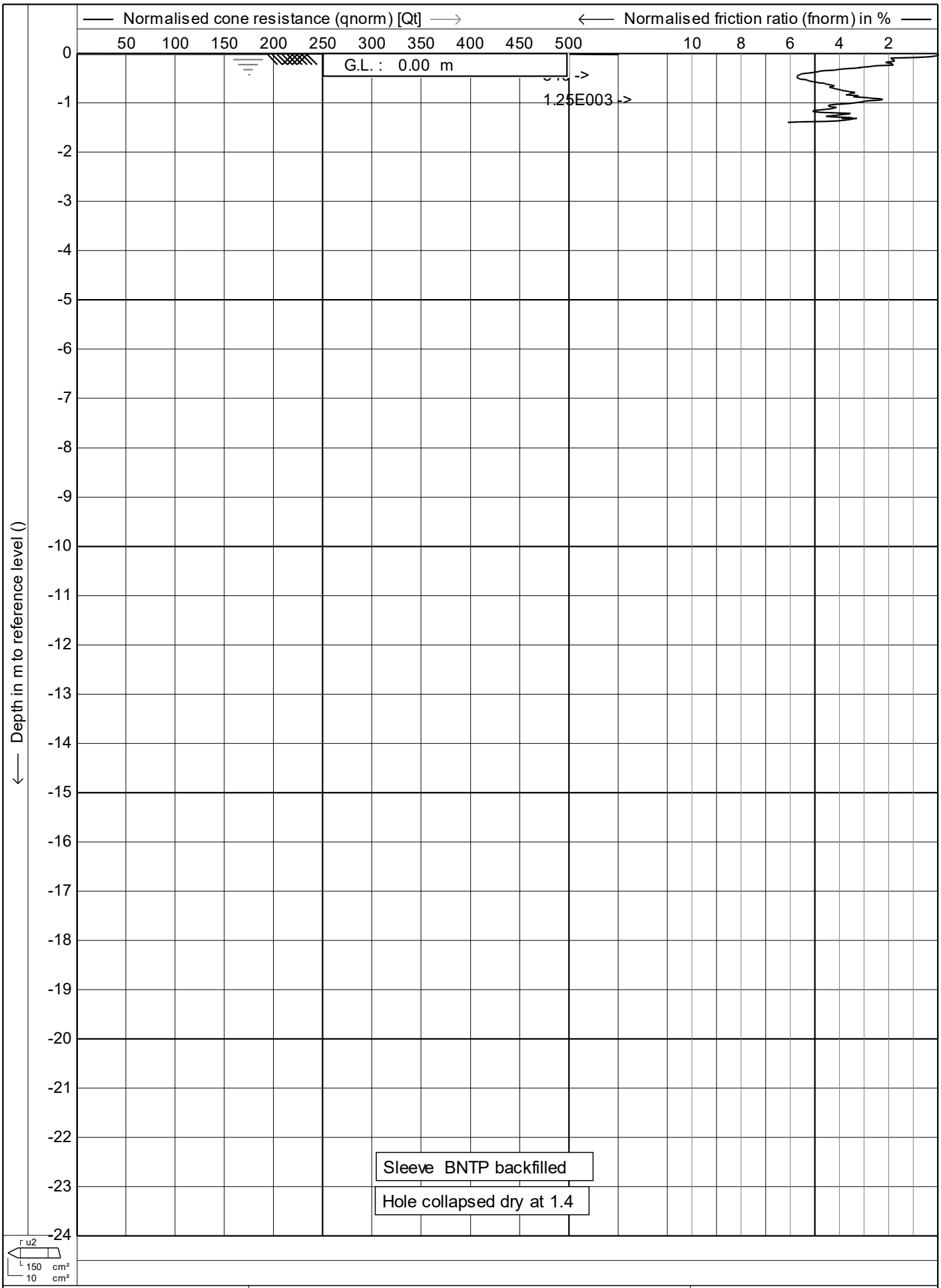
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **029a** **7/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

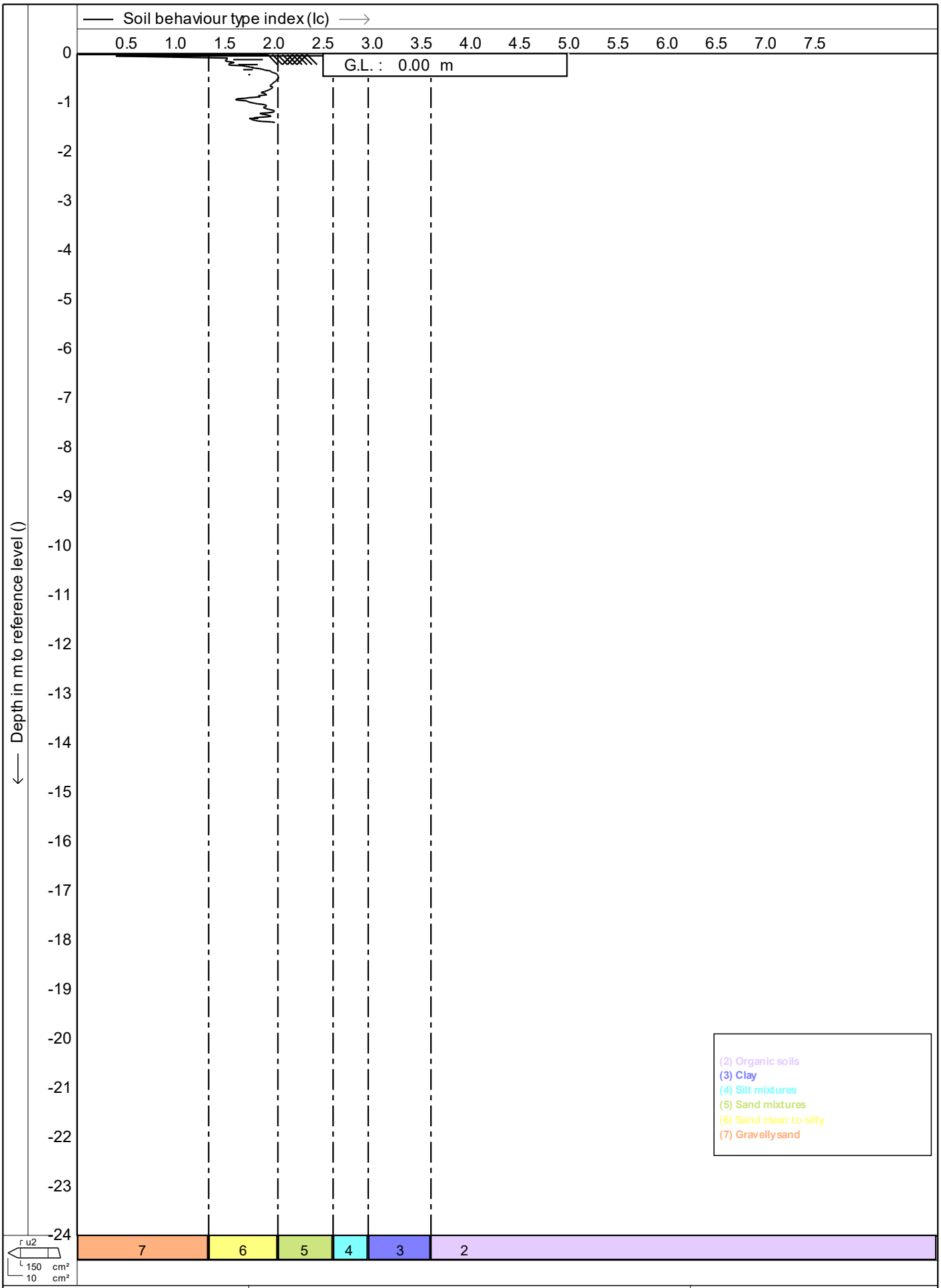
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **029a** **8/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

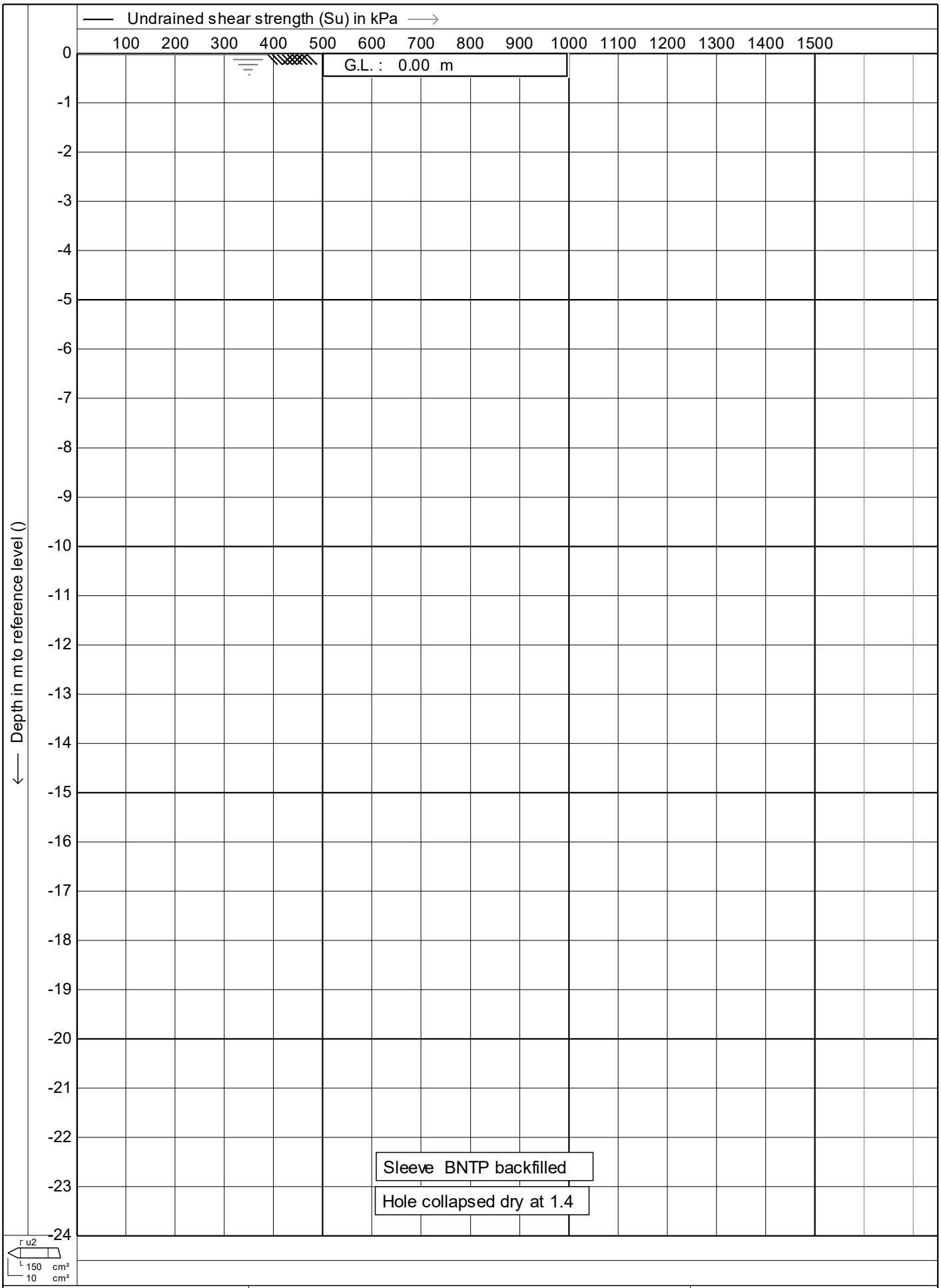
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **029a** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

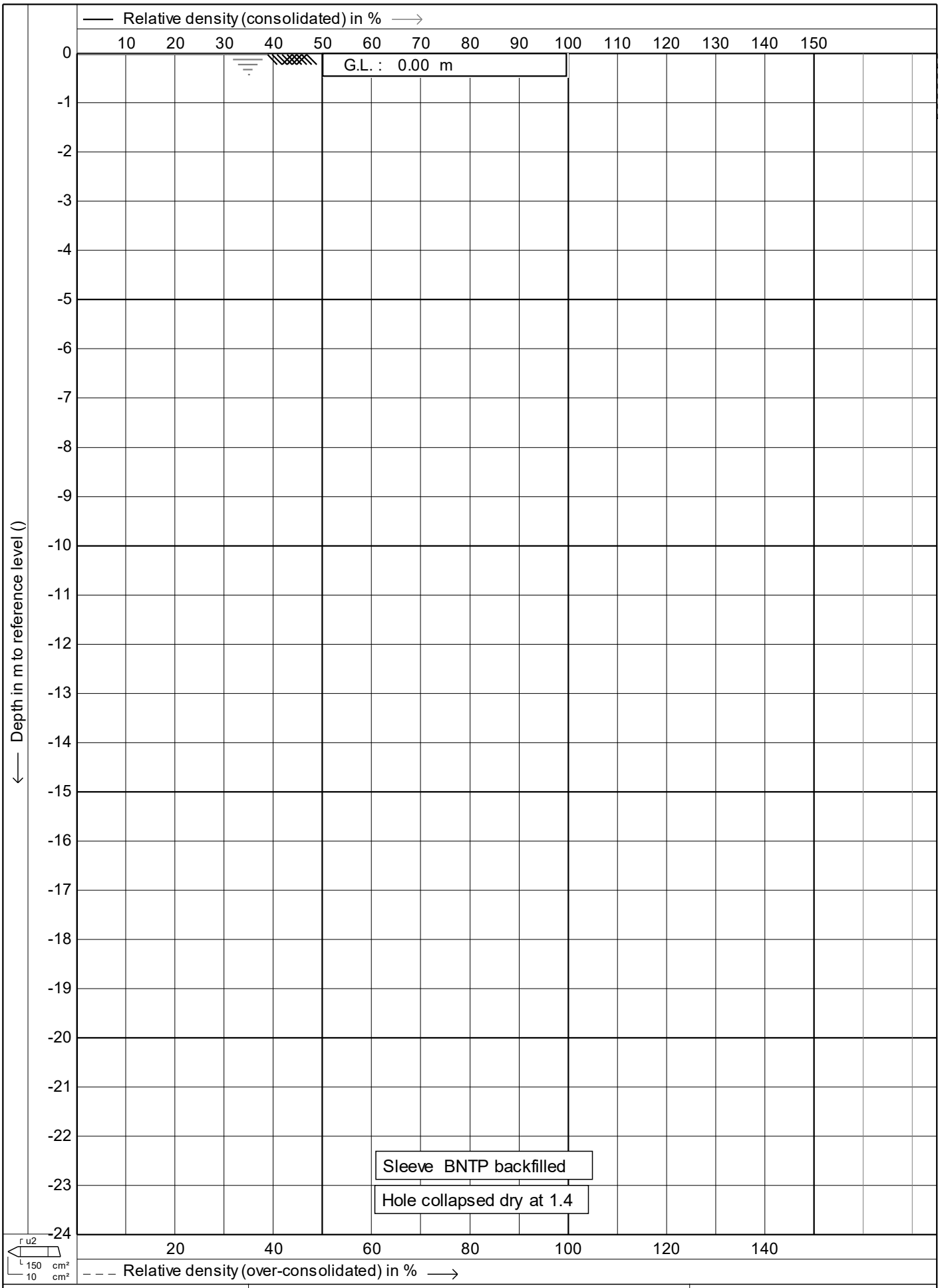
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **029a** **10/14**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

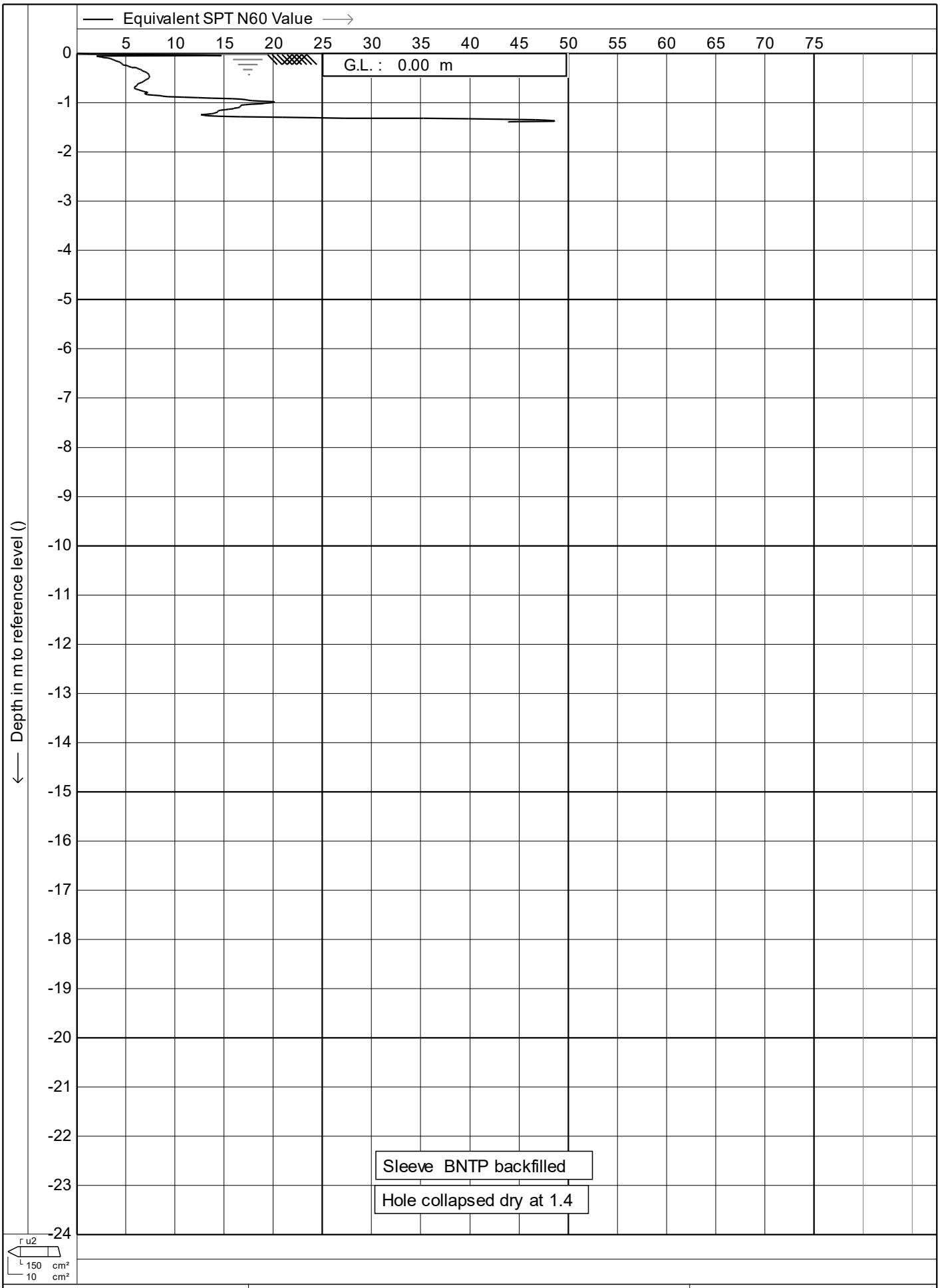
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

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Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

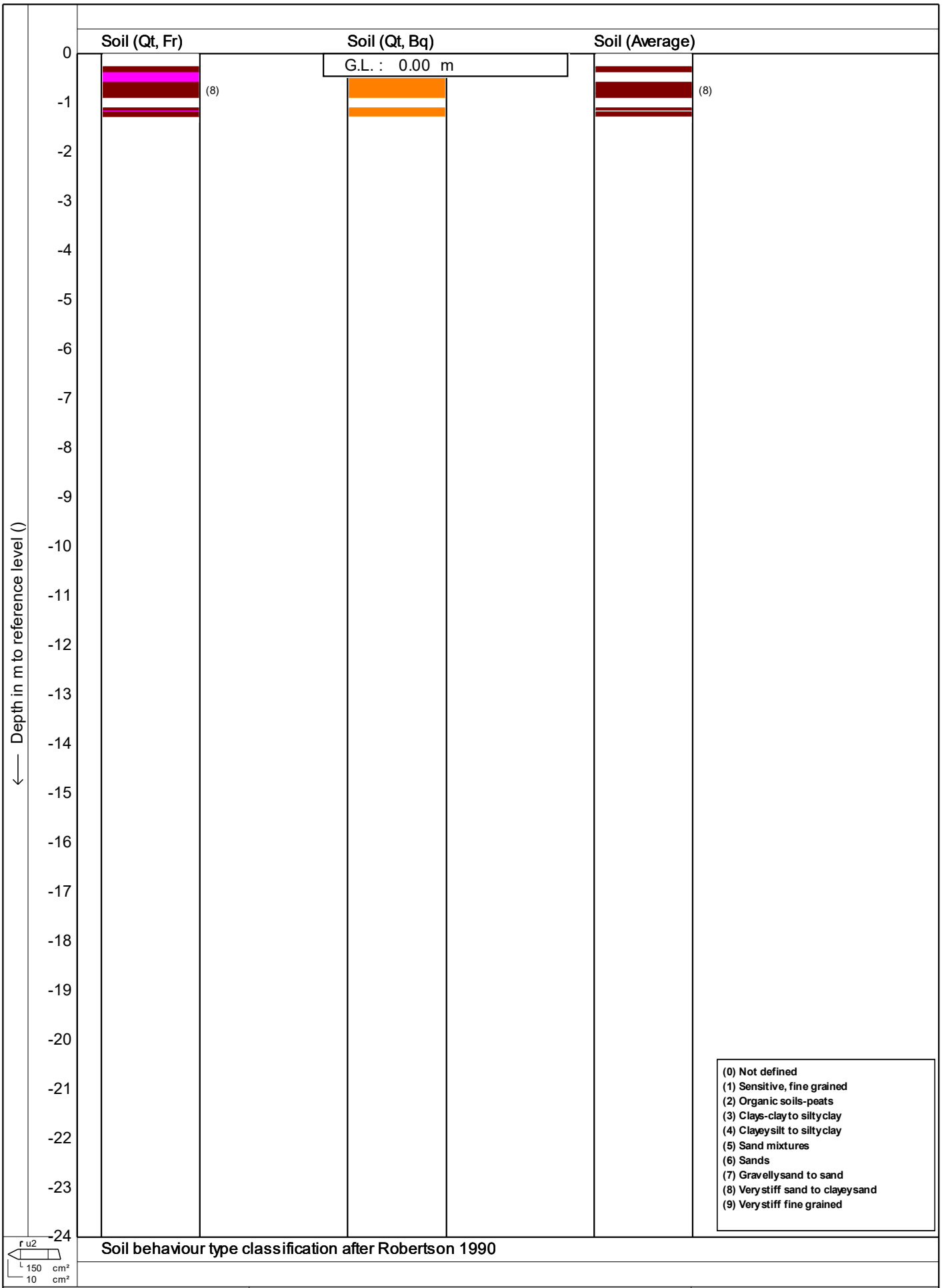
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **029a** **12/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

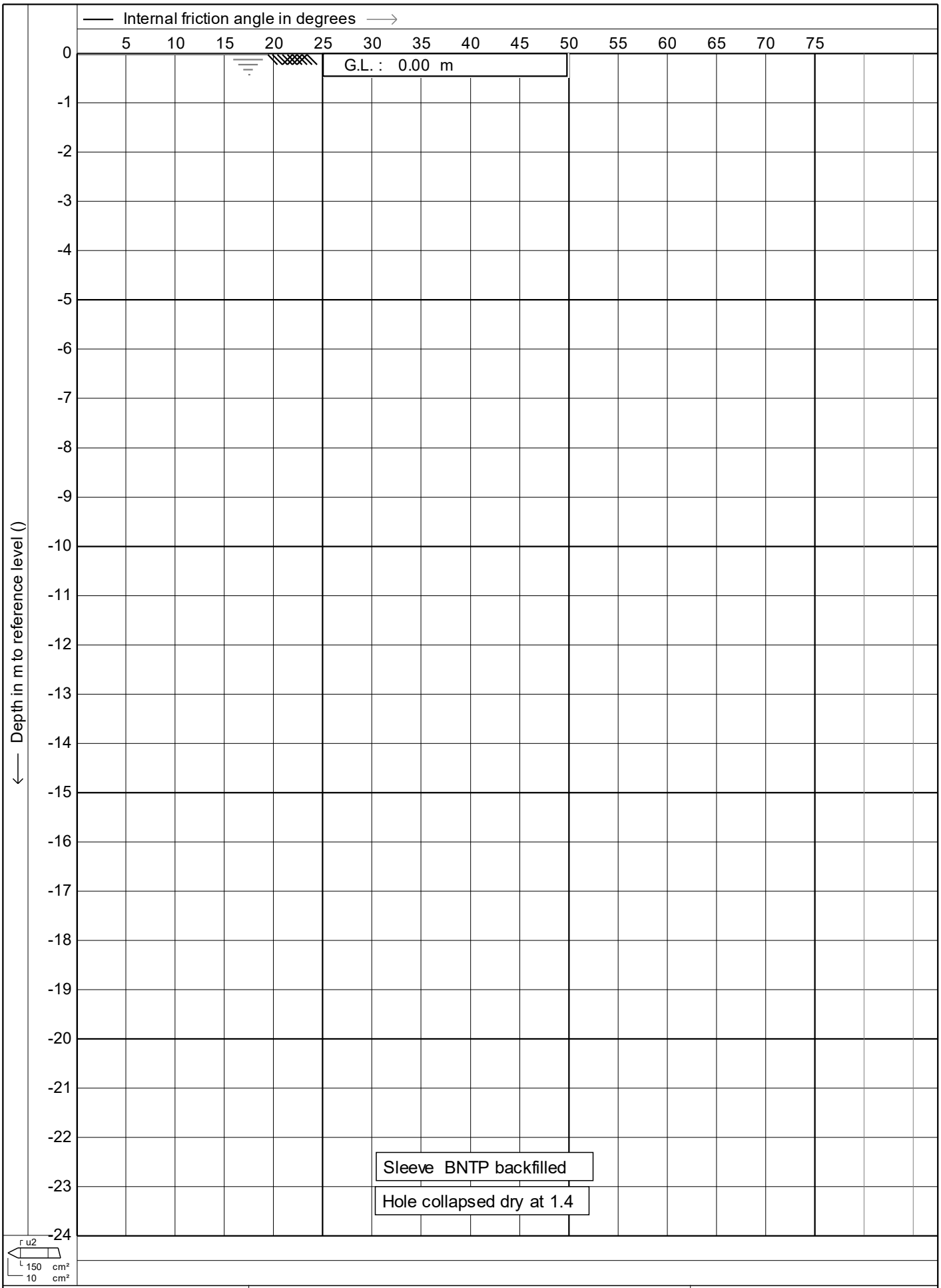
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **029a**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

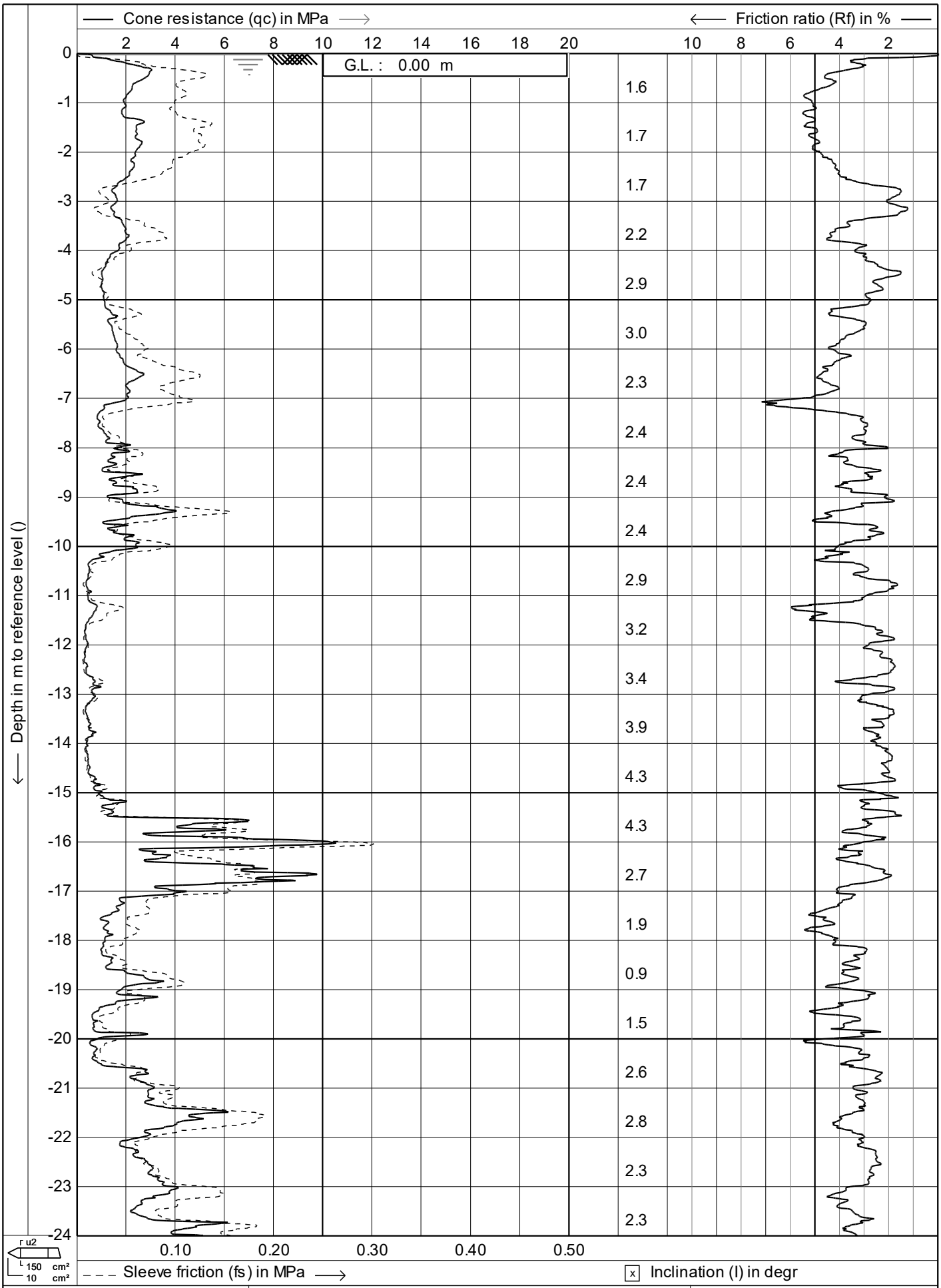
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **029a** **14/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

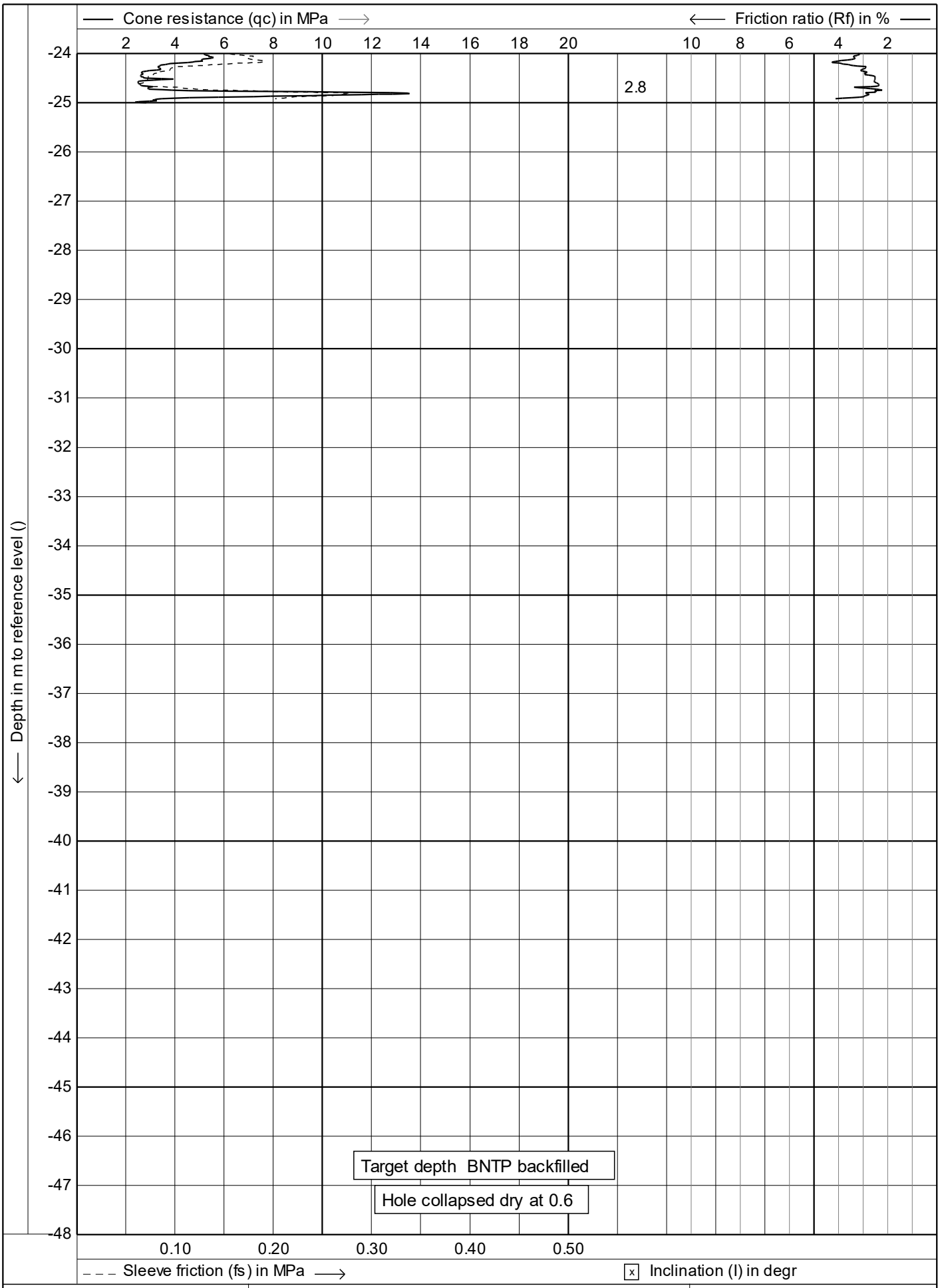
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **030**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

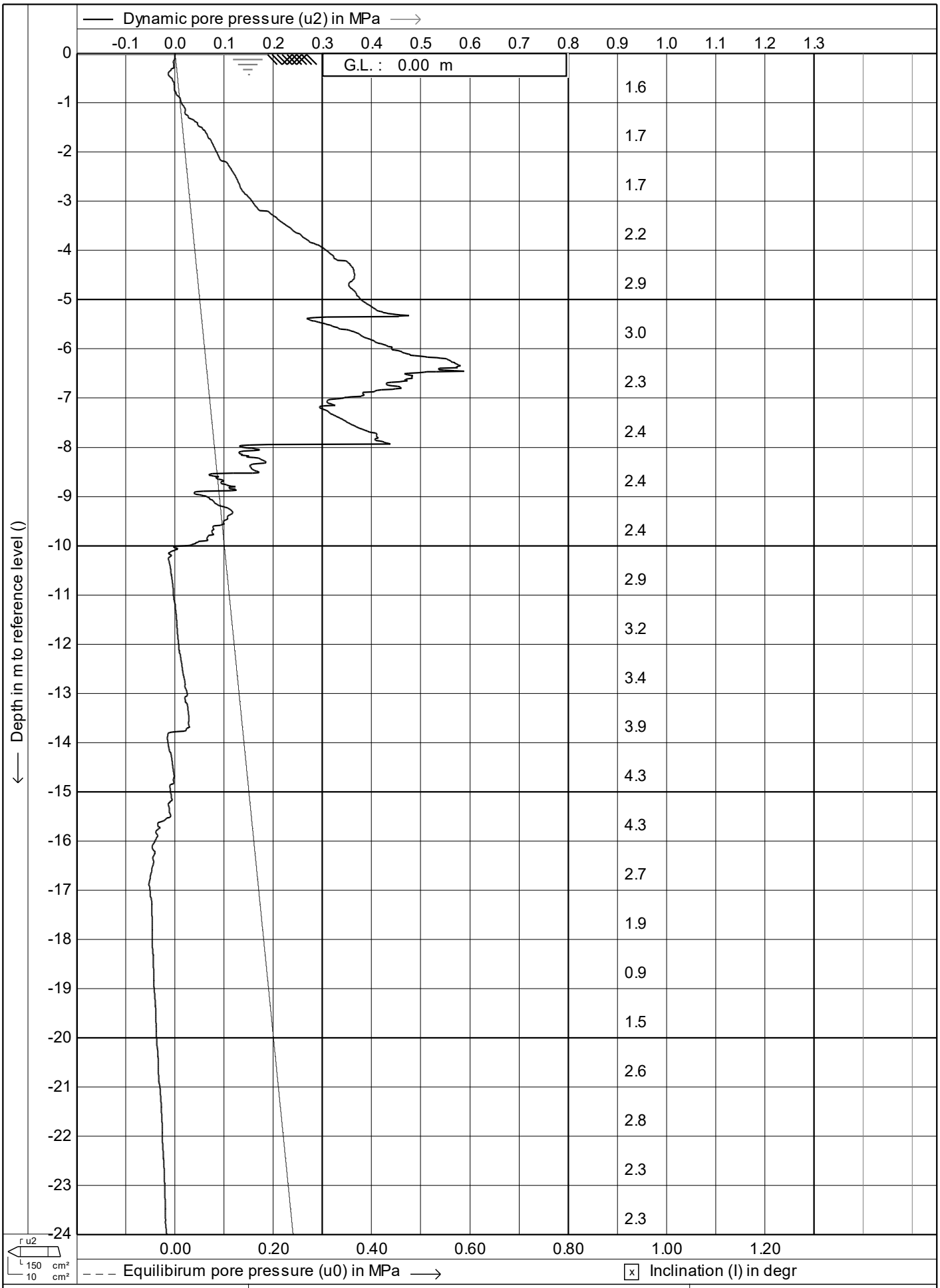
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **030**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

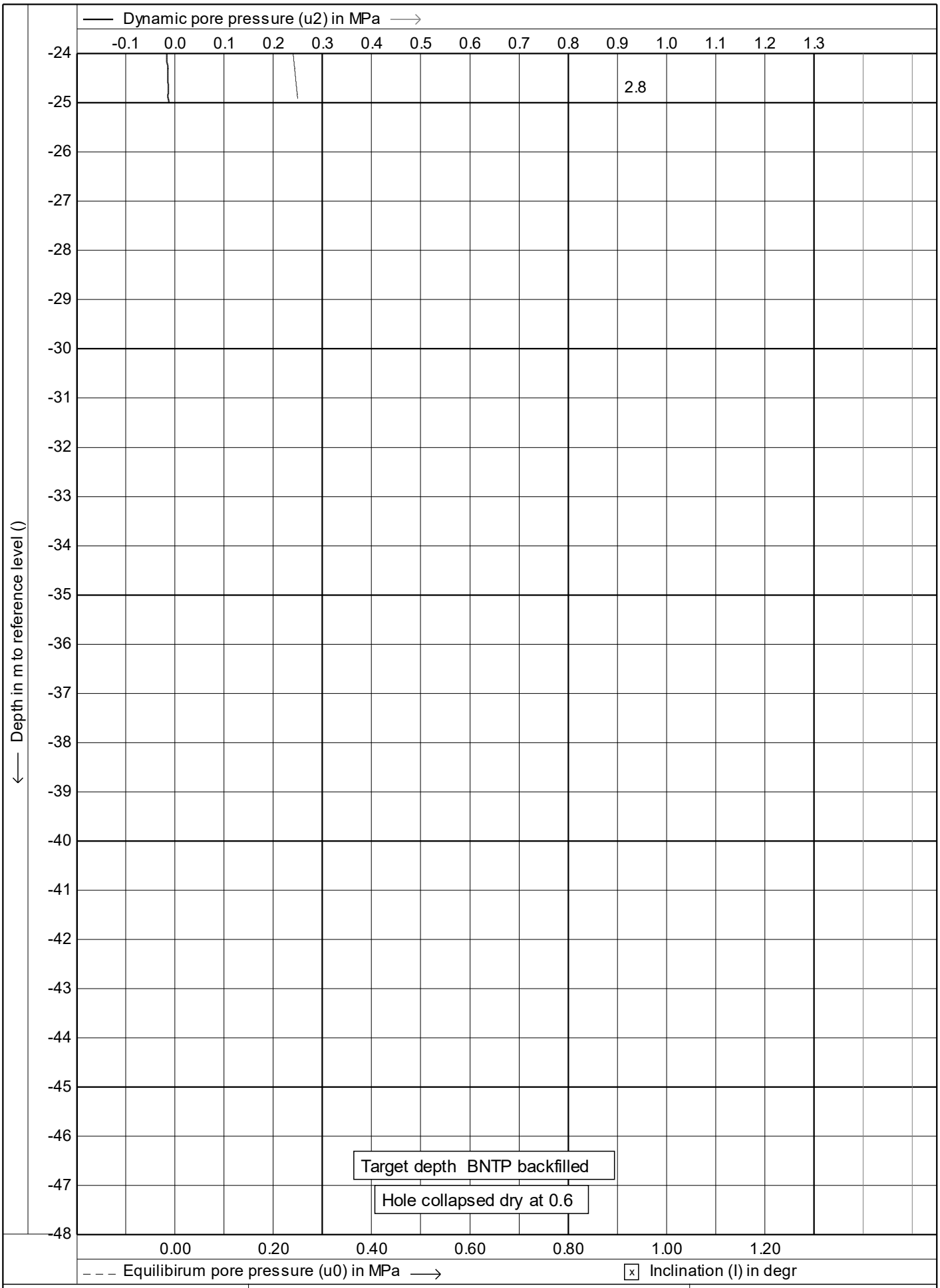
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **030**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

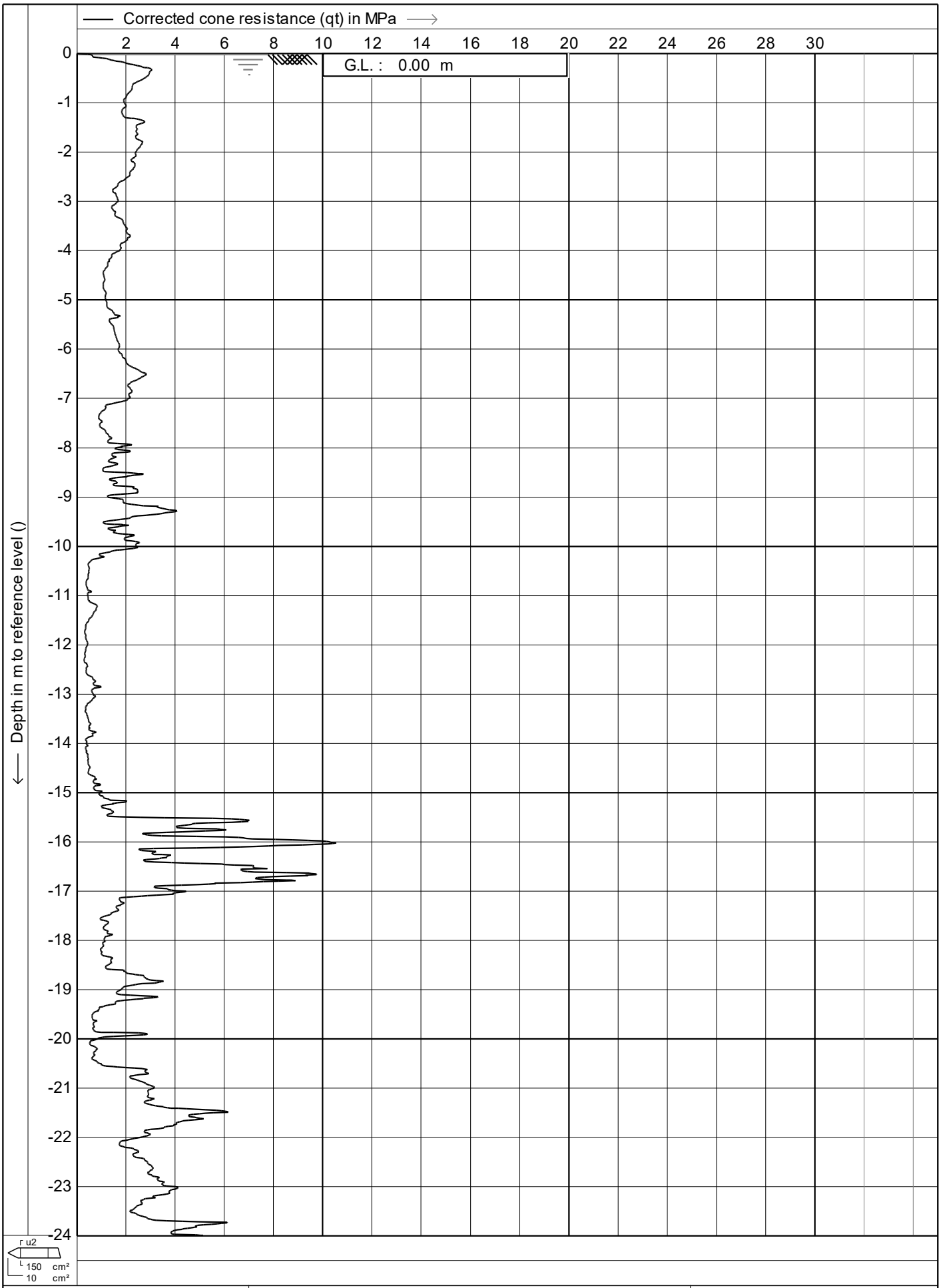
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **030**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

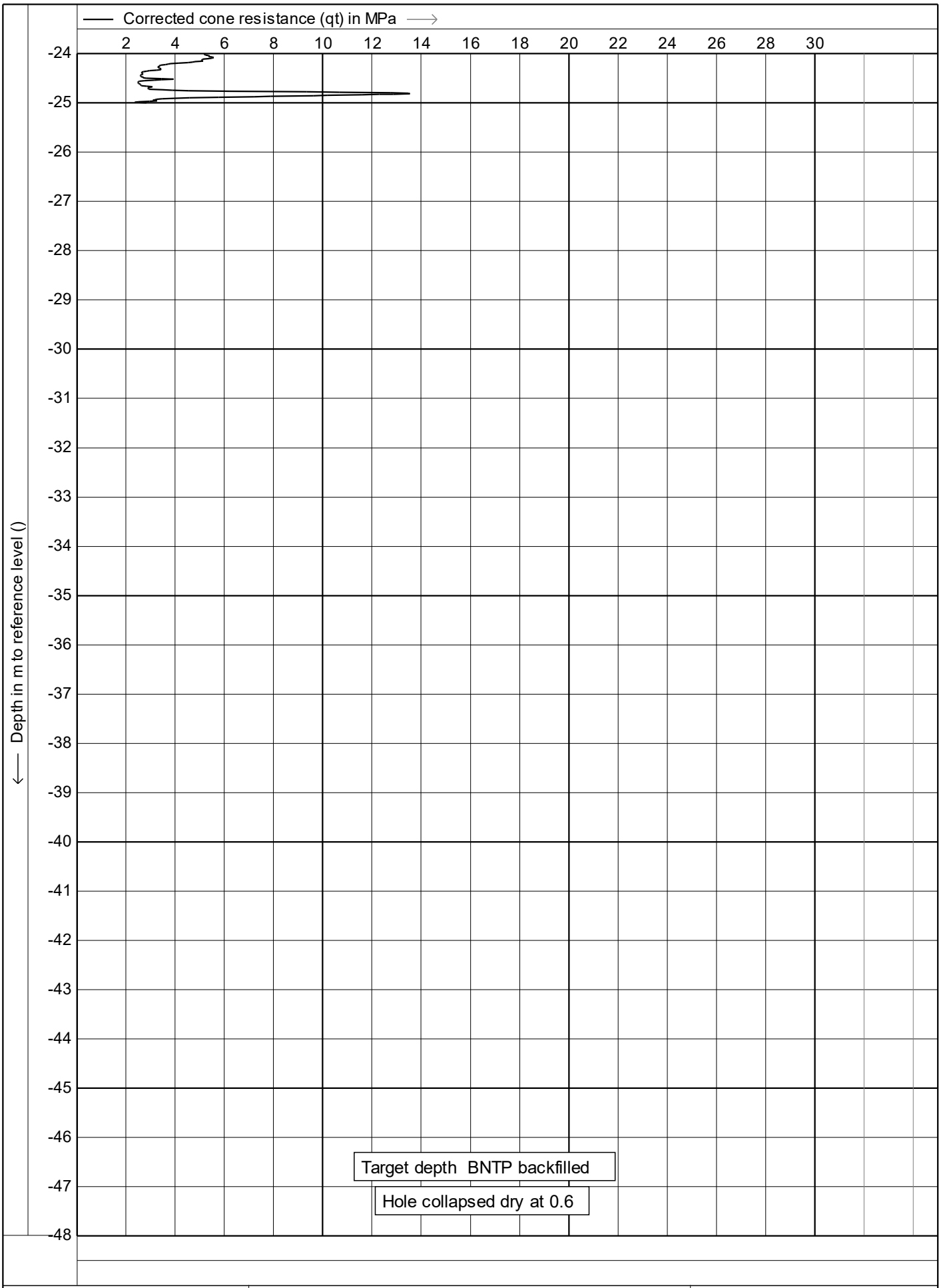
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **030**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

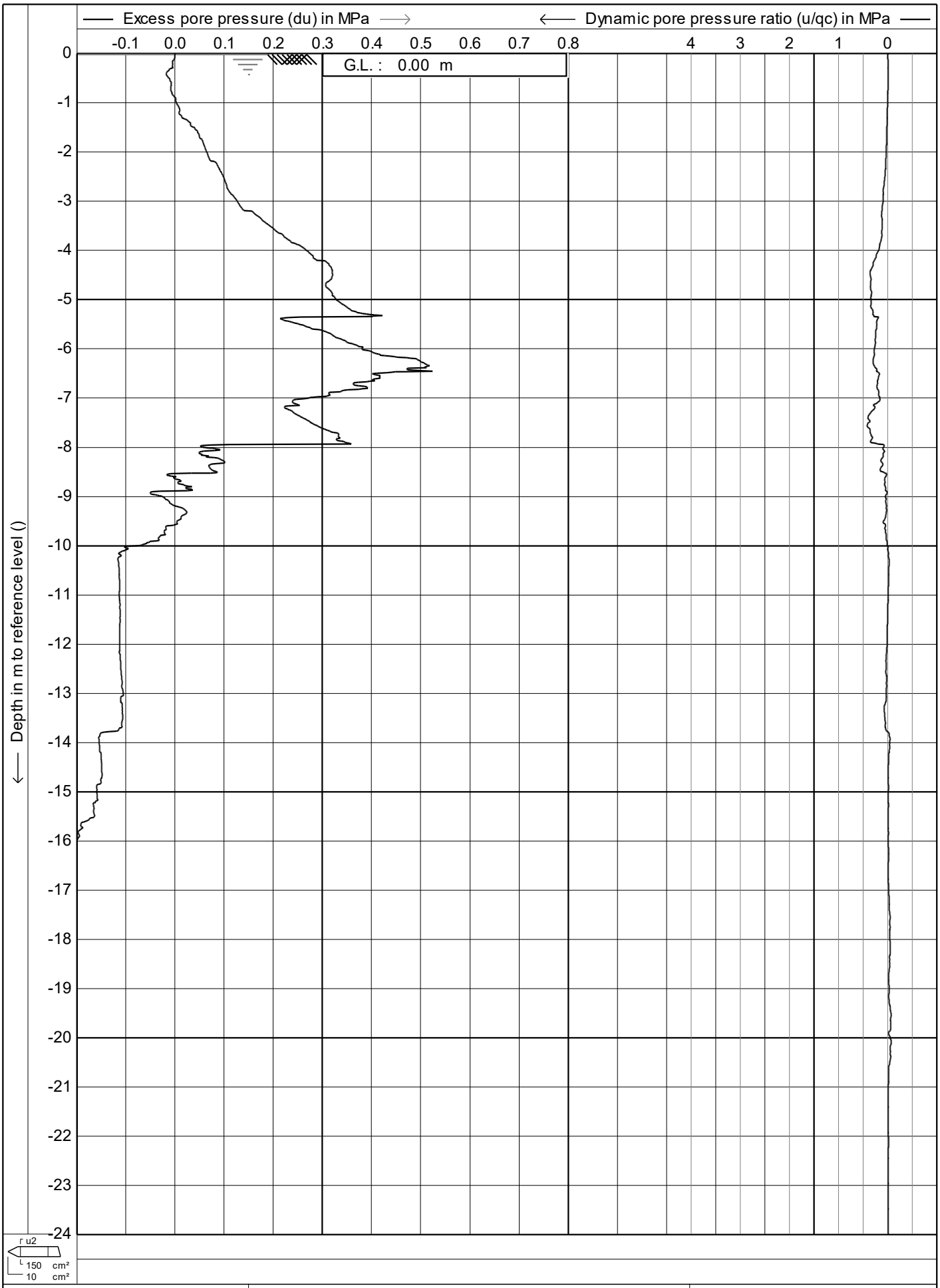
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **030**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

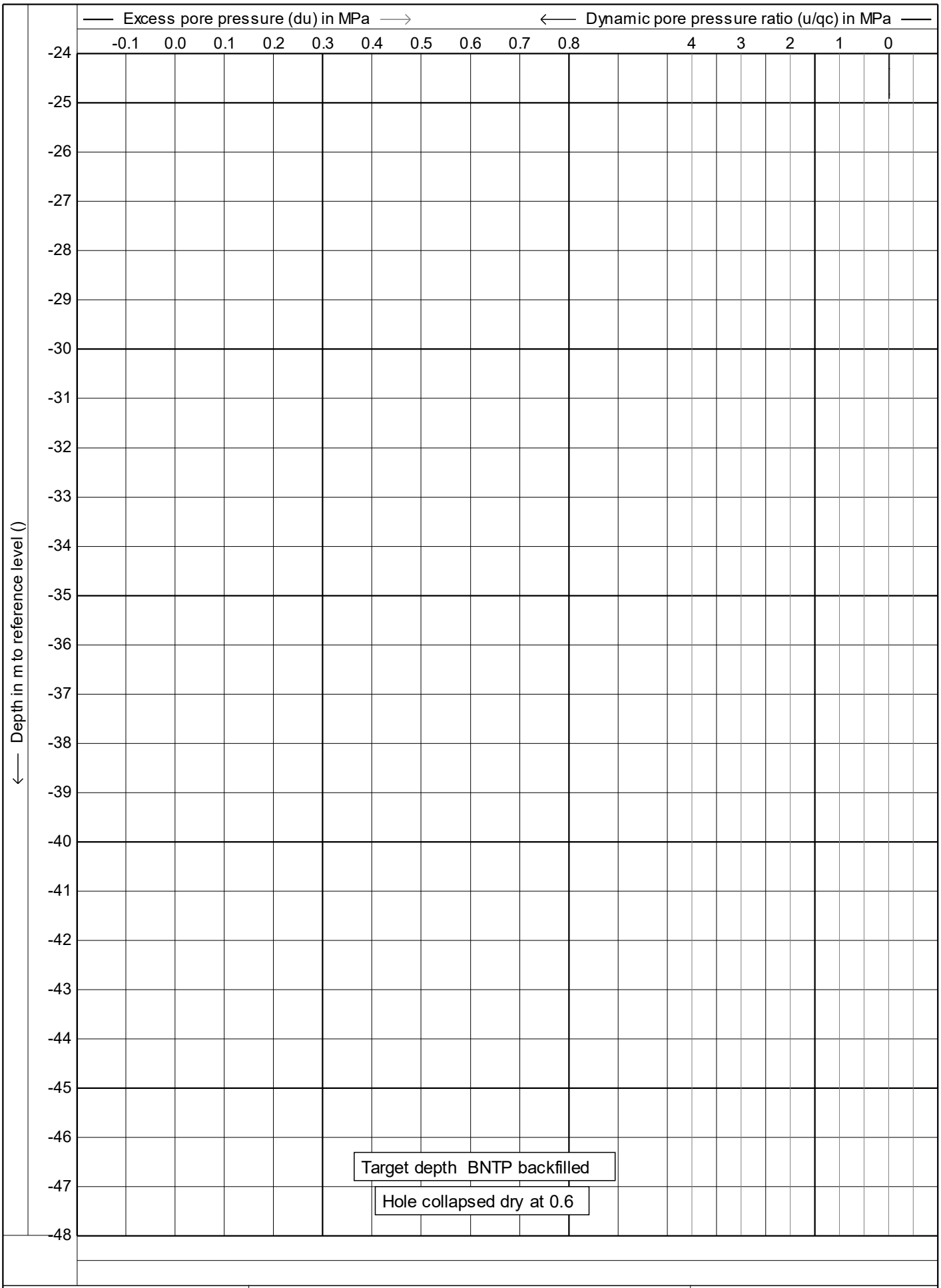
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **030**

7/28

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

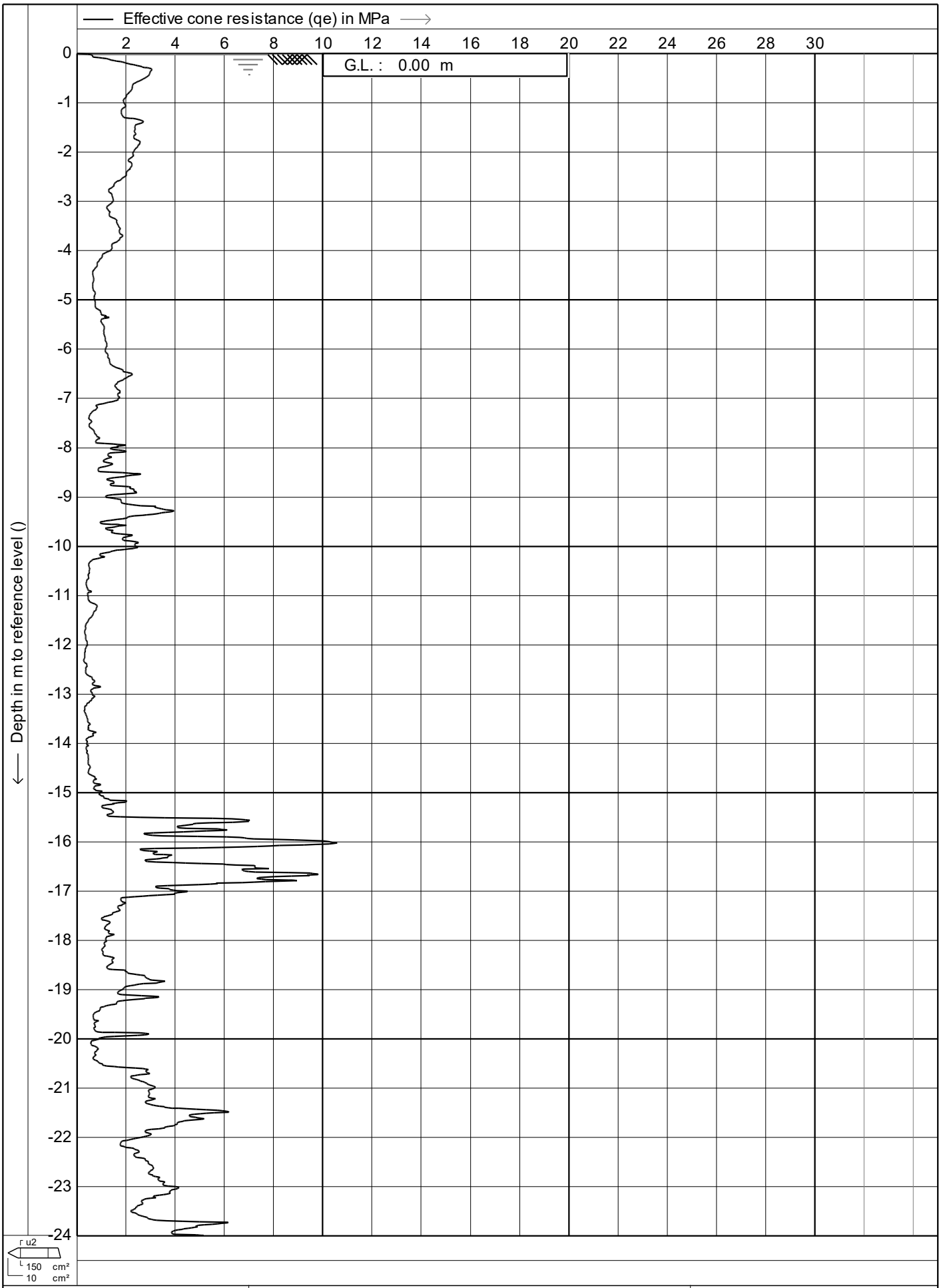
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **030**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

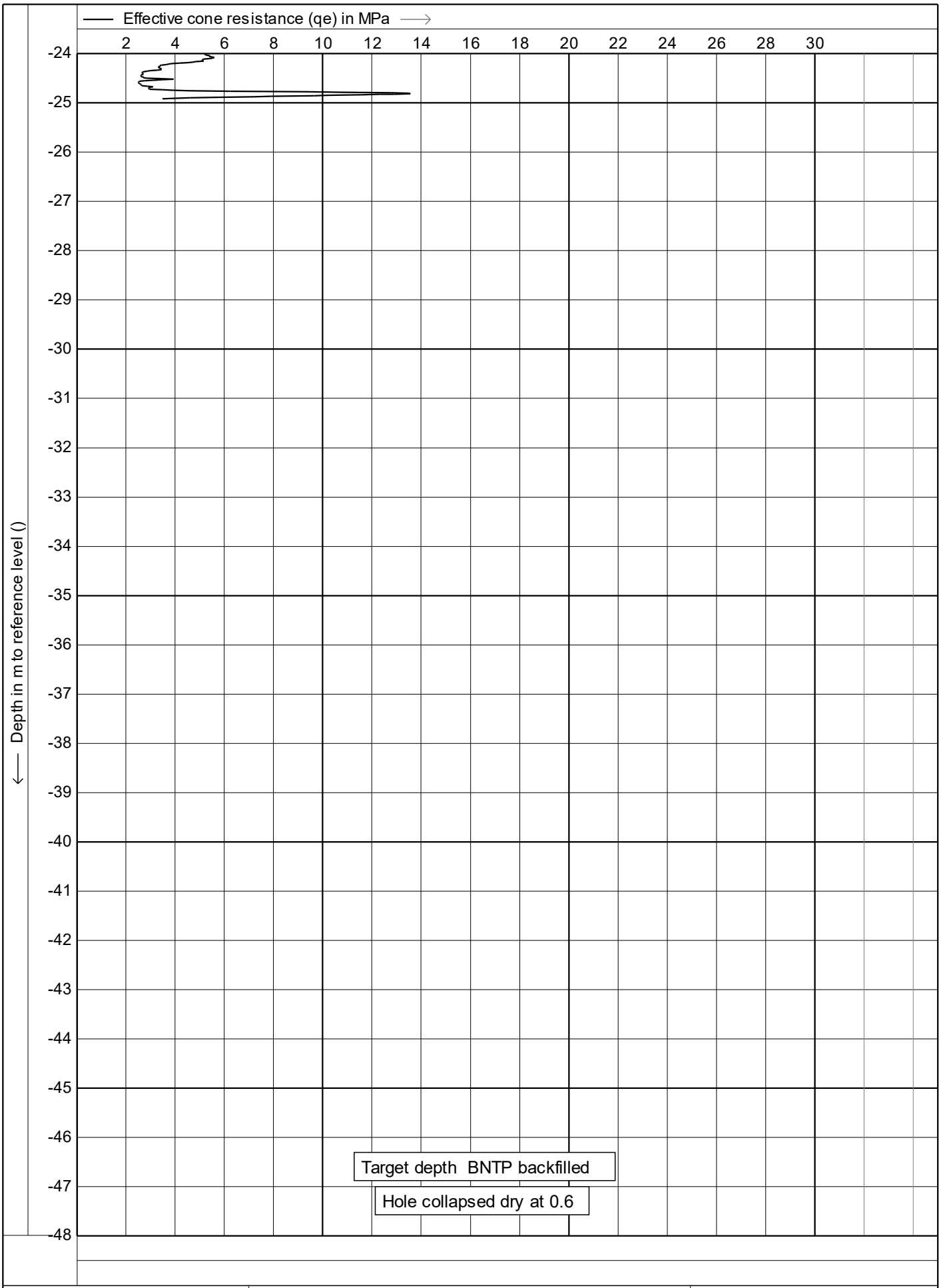
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **030** **9/28**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

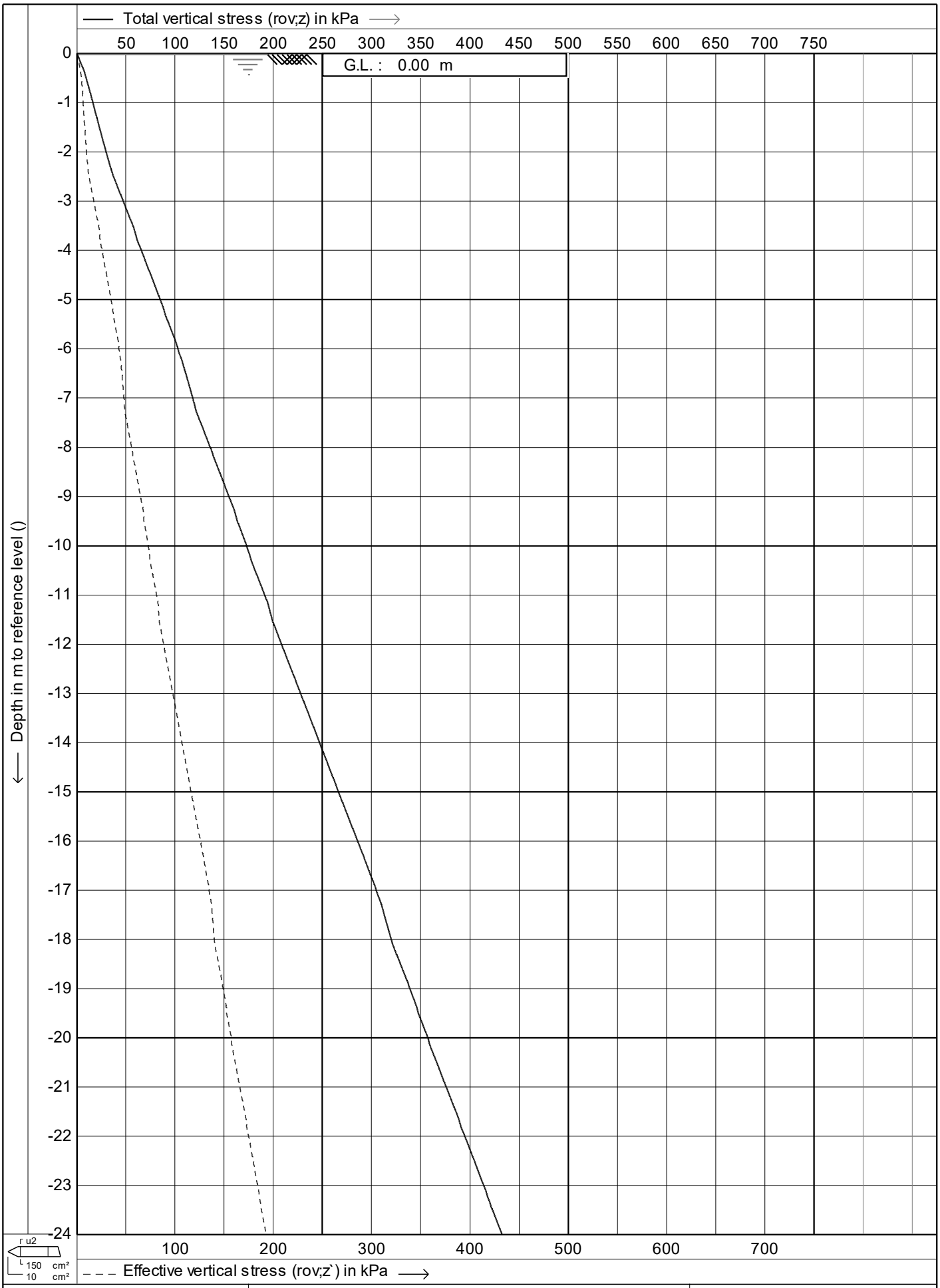
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **030**

10/28

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

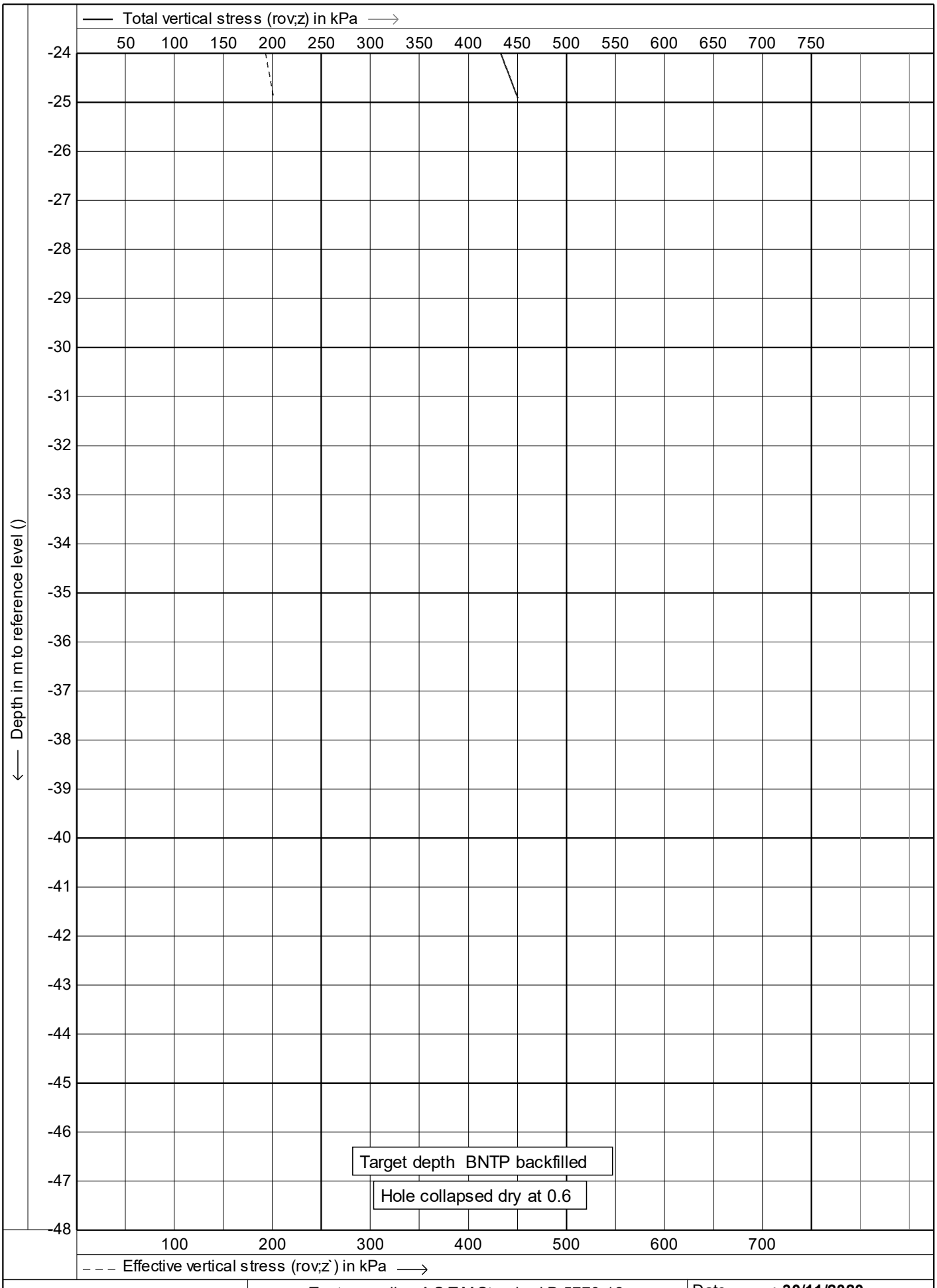
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **030**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

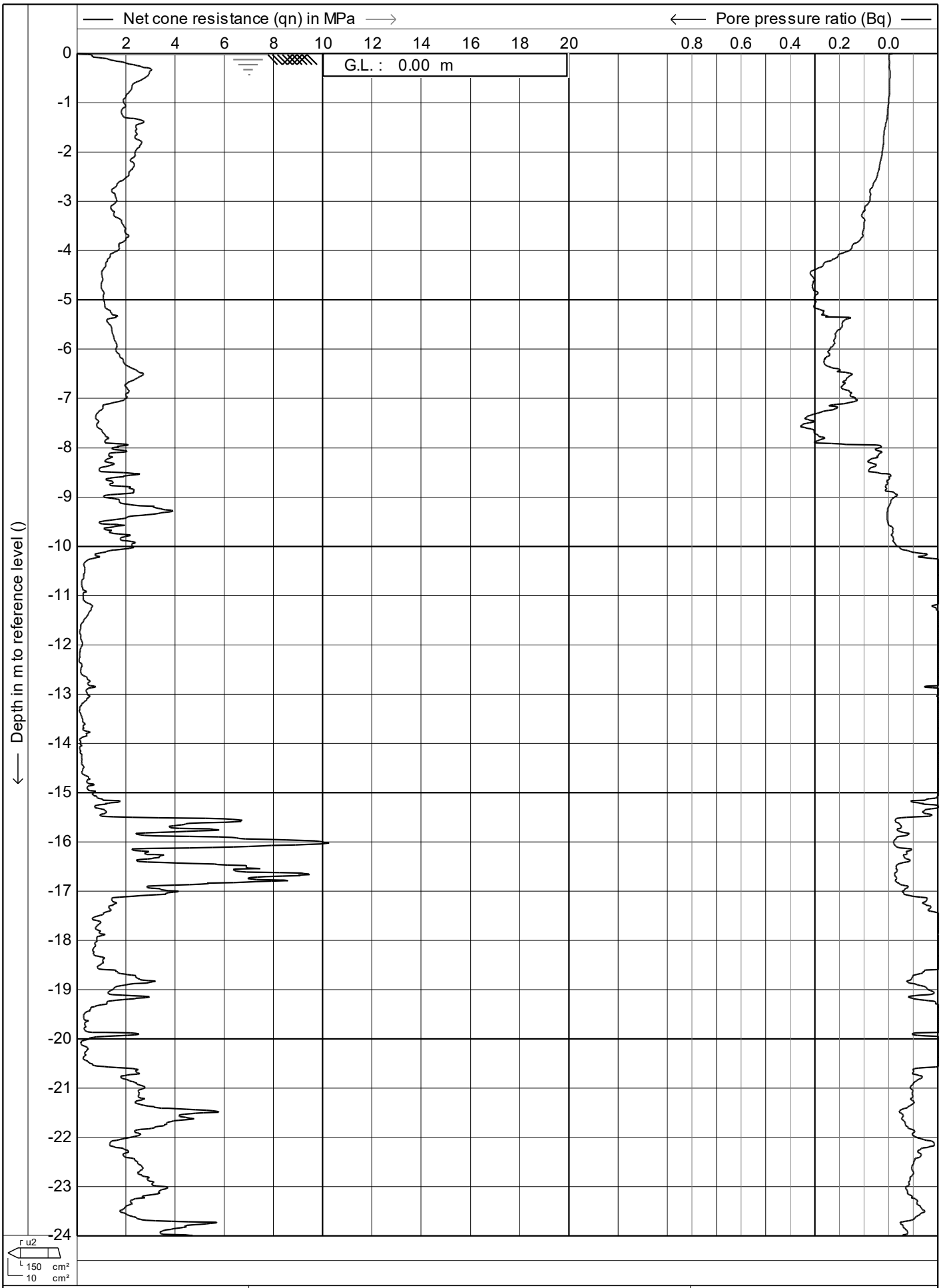
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **030**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

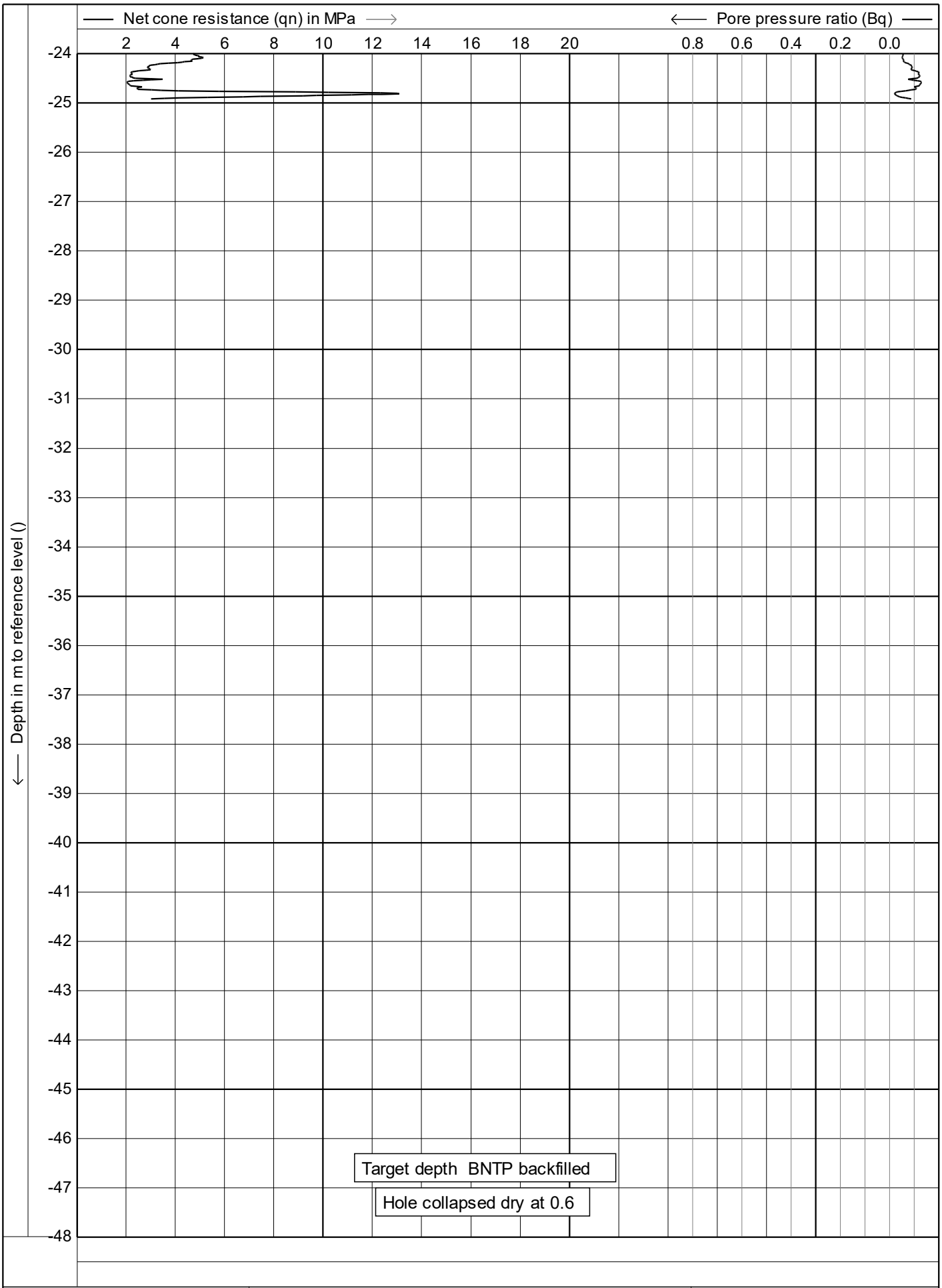
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **030**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

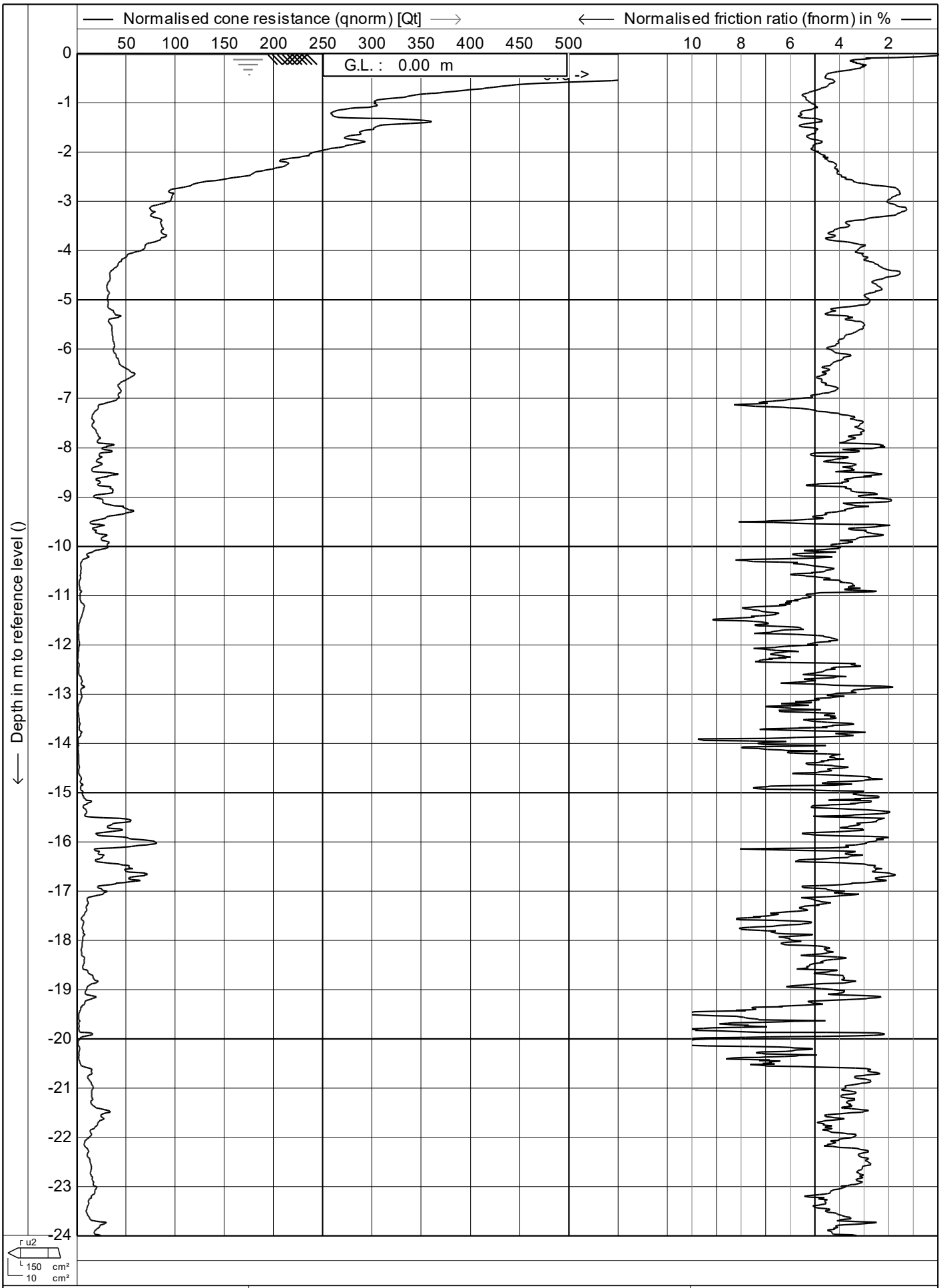
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **030**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

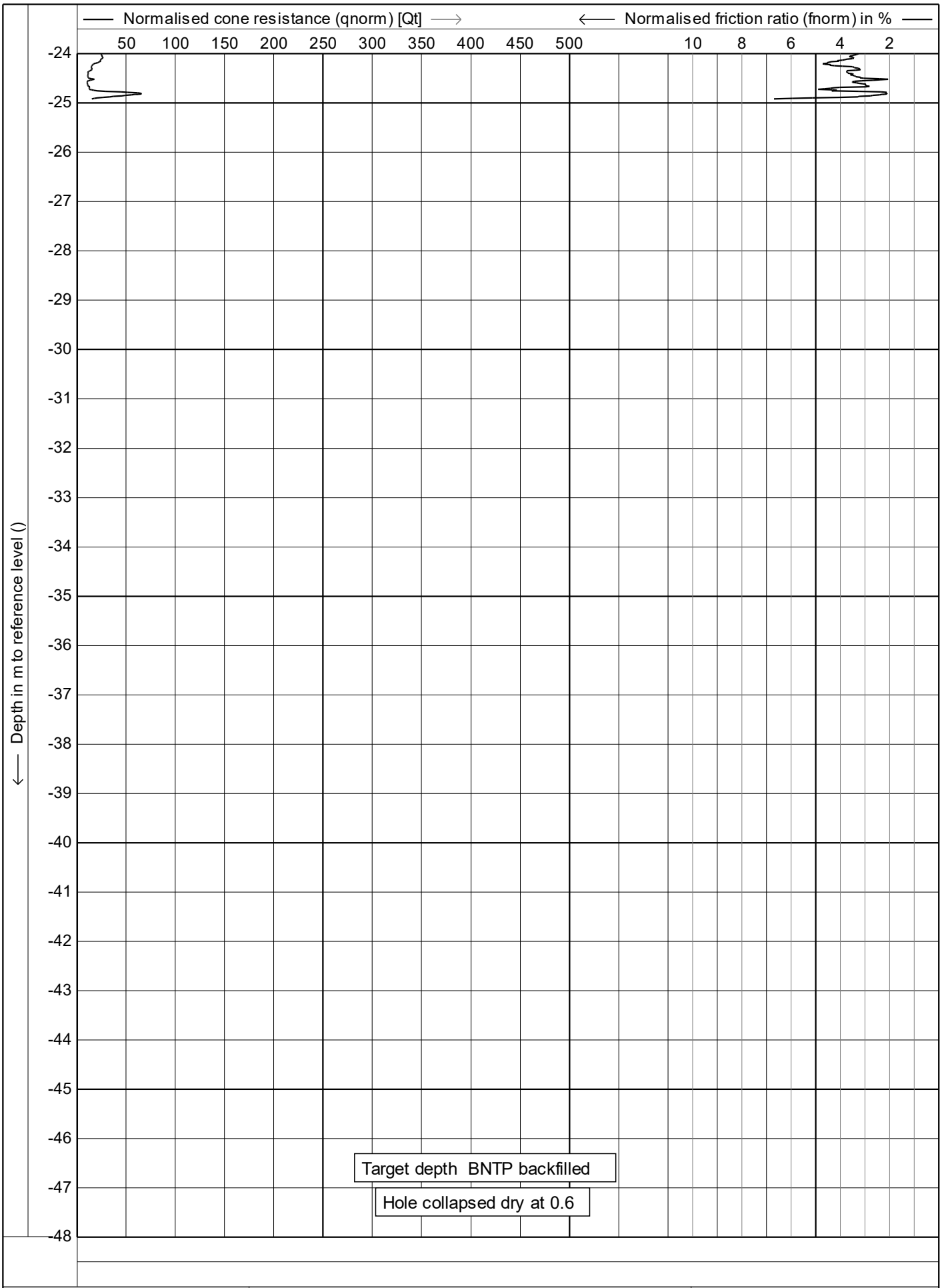
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **030**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

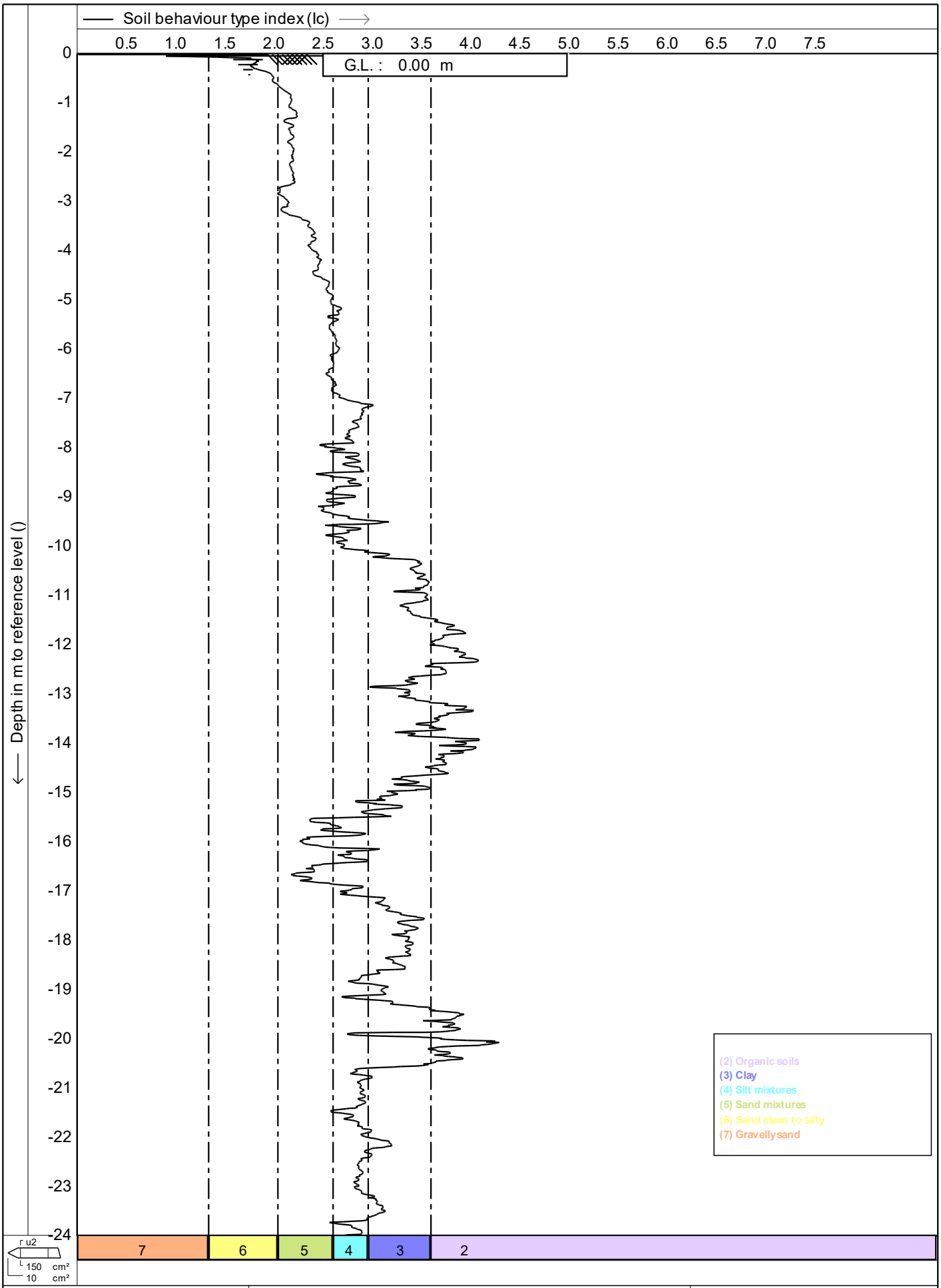
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **030**

16/28

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

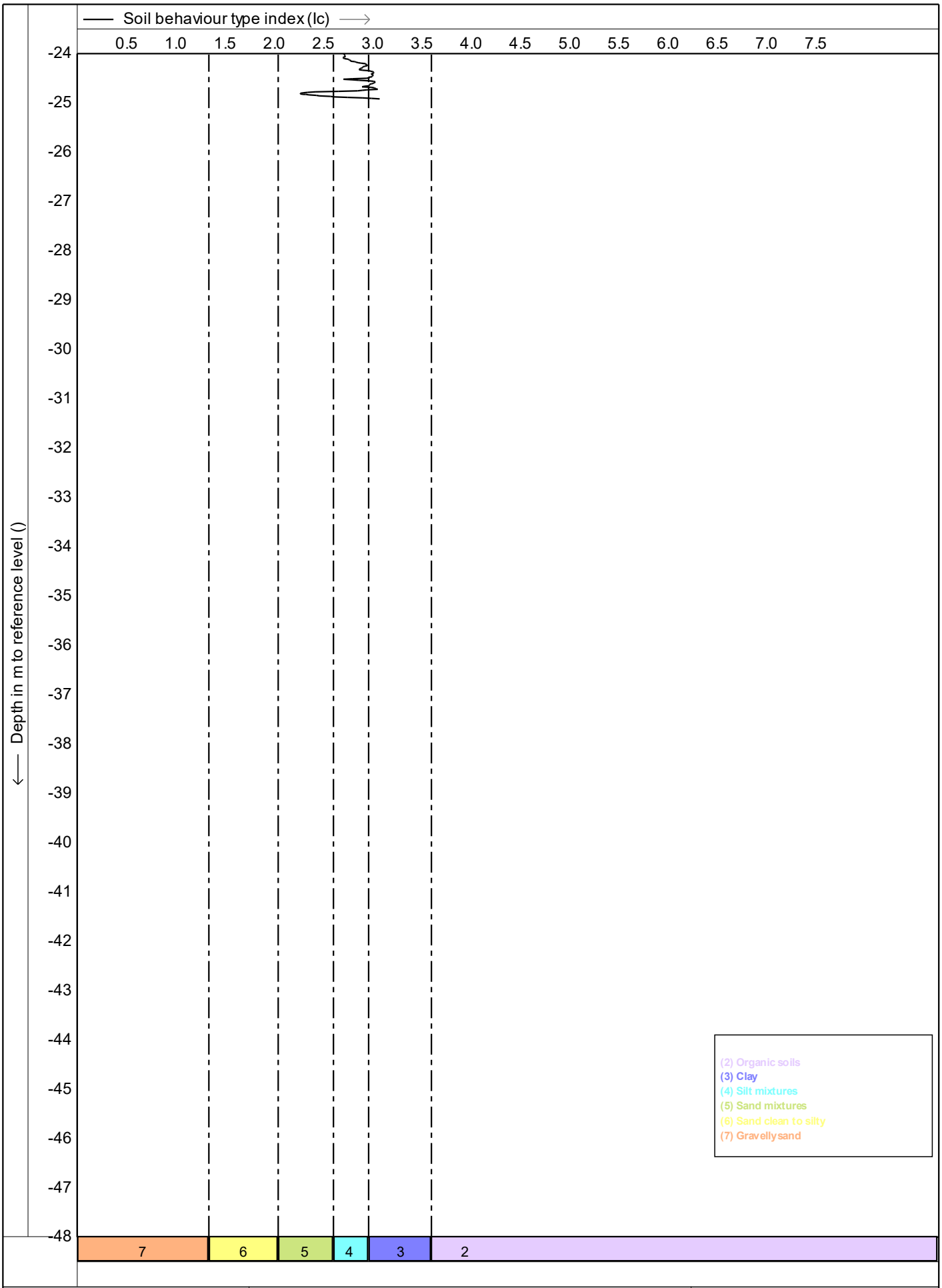
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **030**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

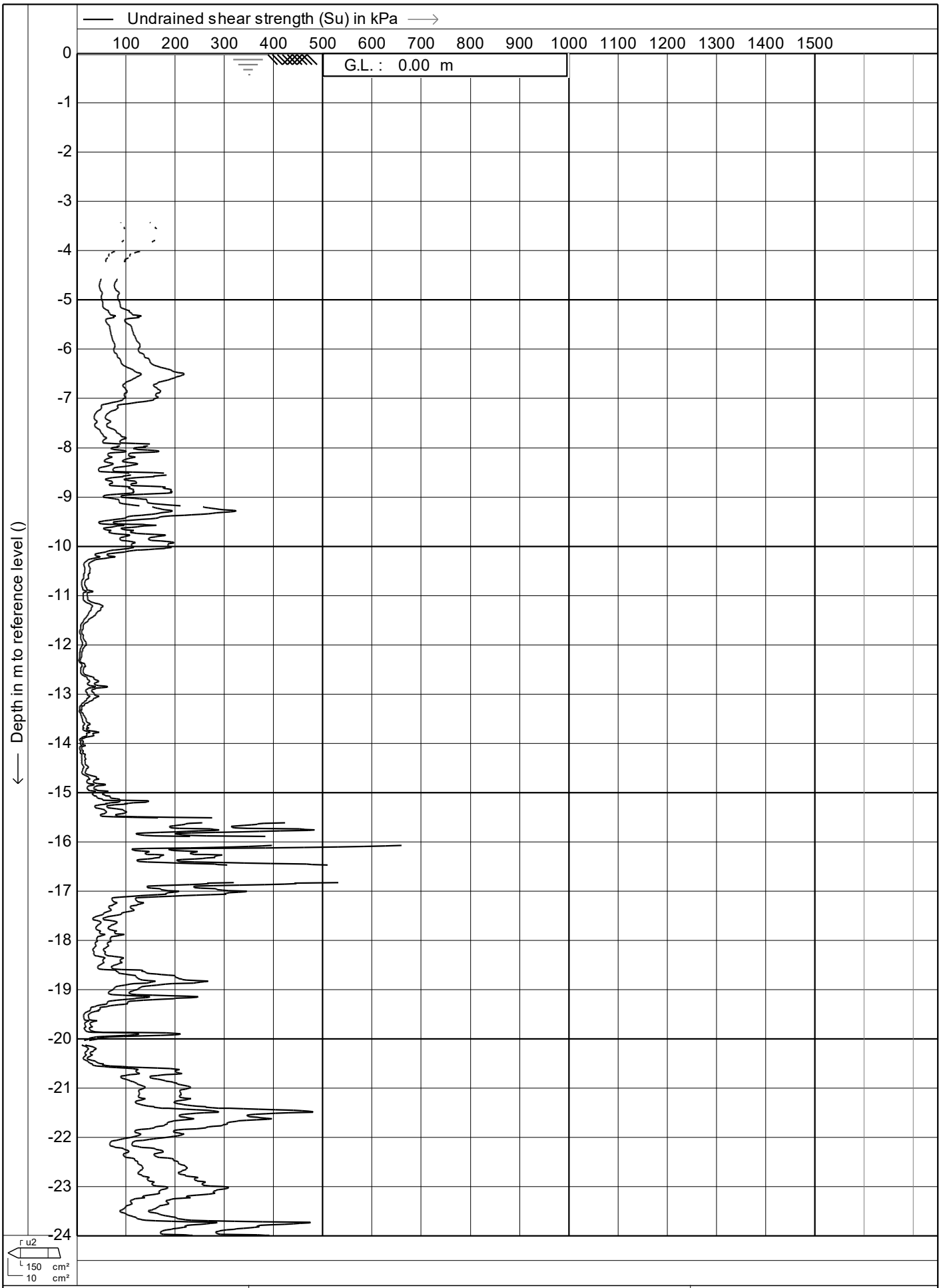
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **030**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

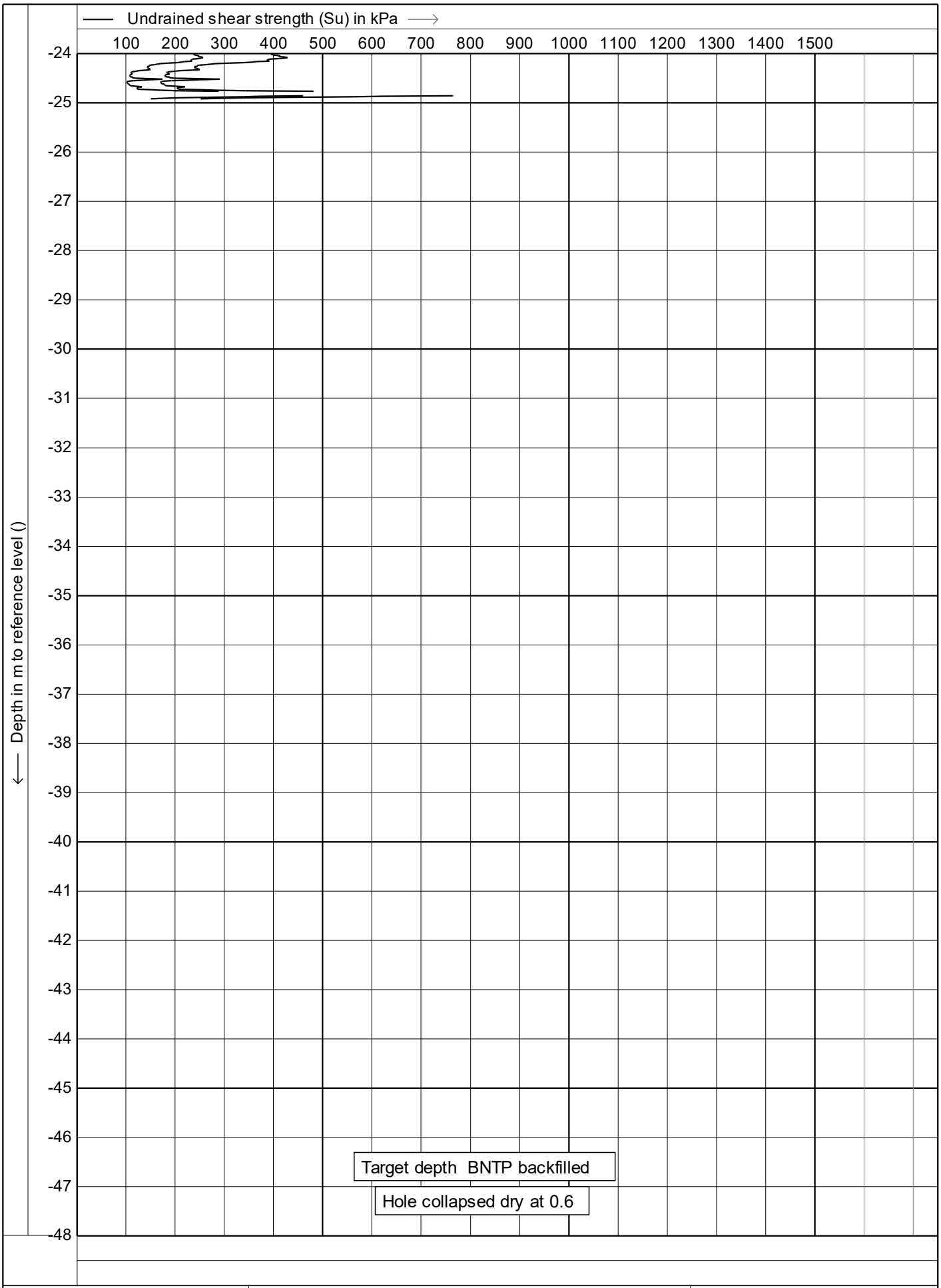
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **030**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

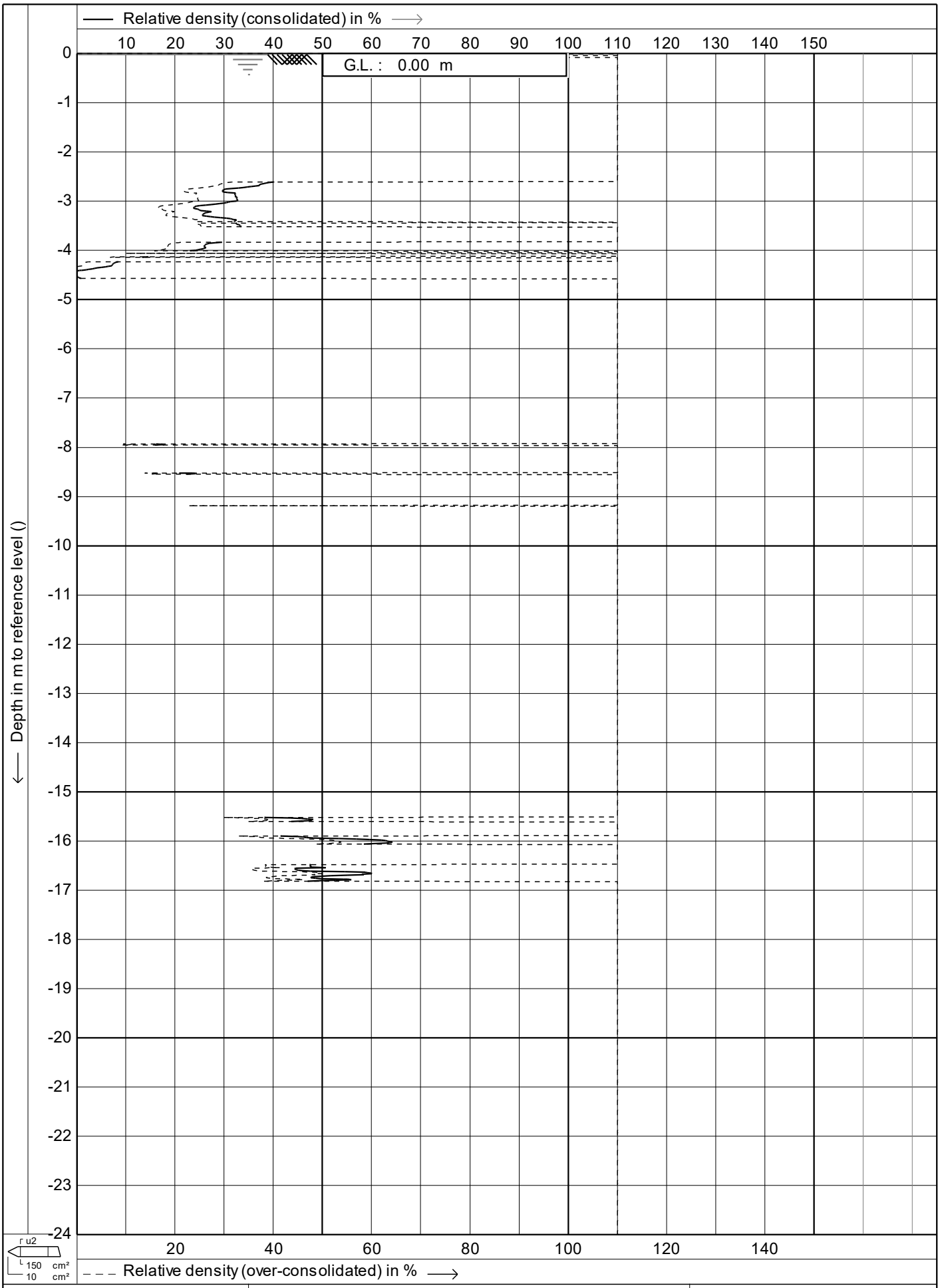
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

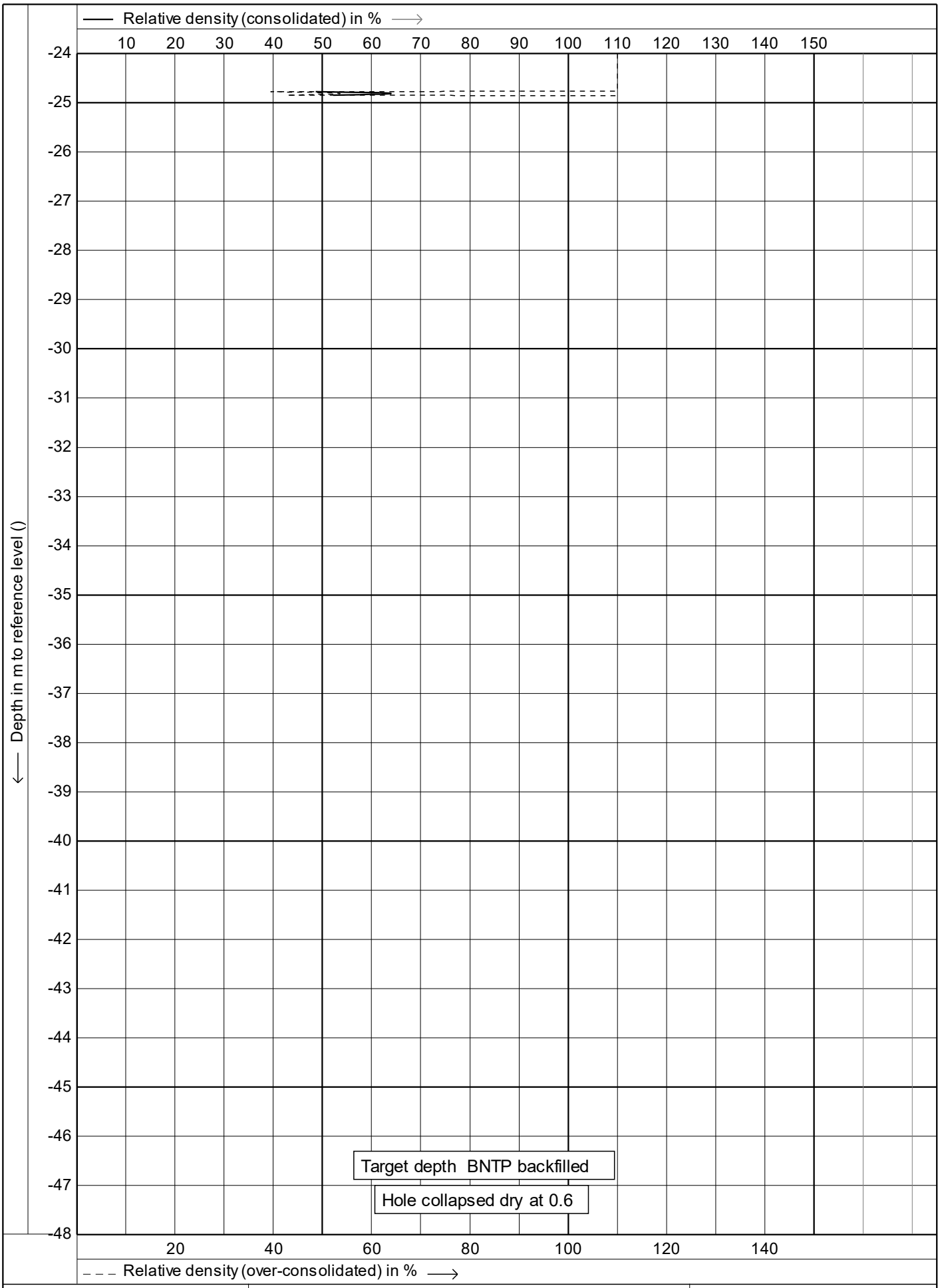
Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **030**

1.48



PERRY GEOTECH	Test according A.S.T.M Standard D 5778-12	Date : **30/11/2020**
	Project : **Site Investigations**	Cone no. : **C10CFIIP.C14426**
	Location: **Fitzgerald Rd - Drury**	Project no. : **05AU7**
	Position: **0, 0**	CPT no. : **030** **21/28**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

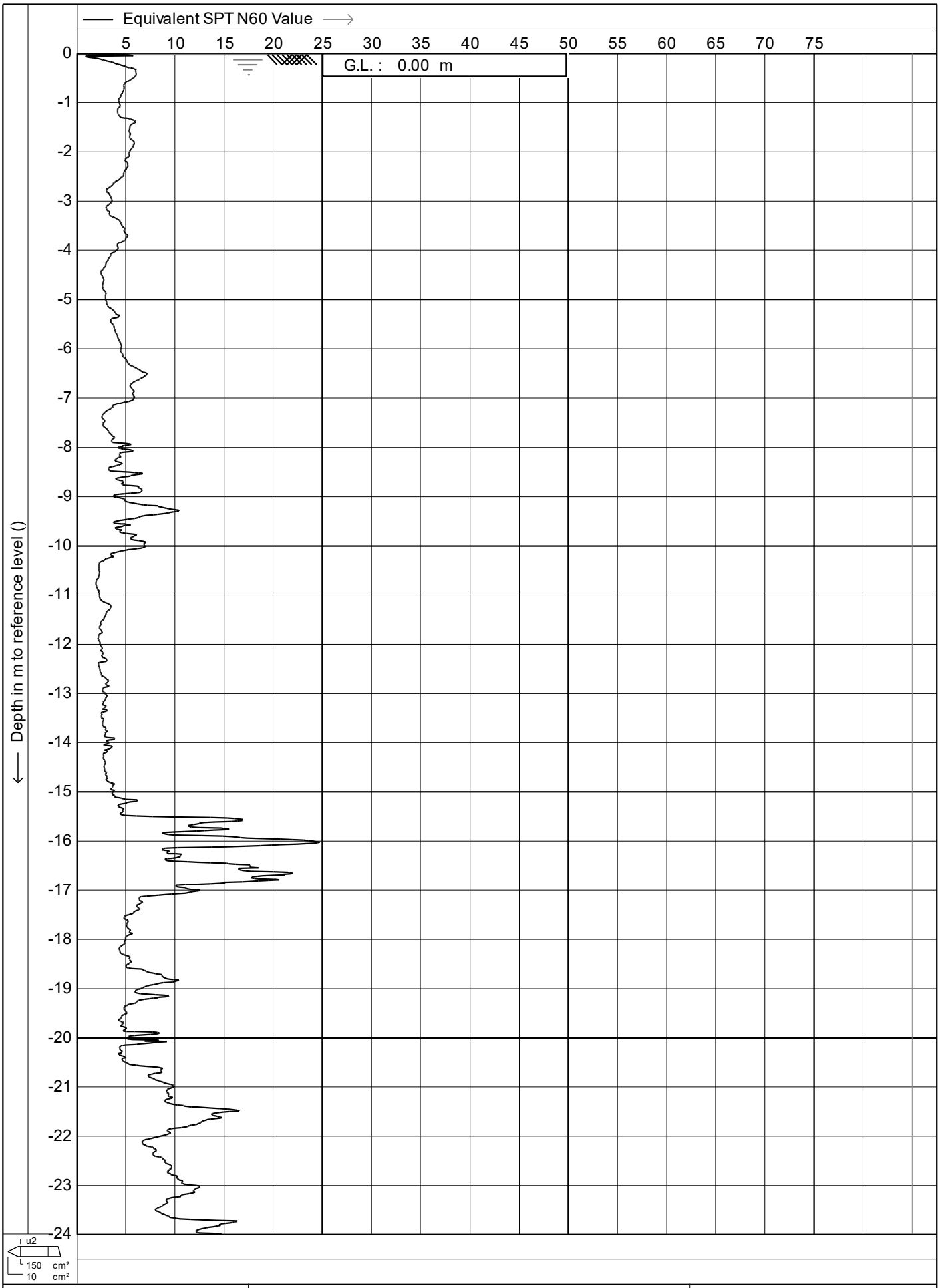
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **030**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

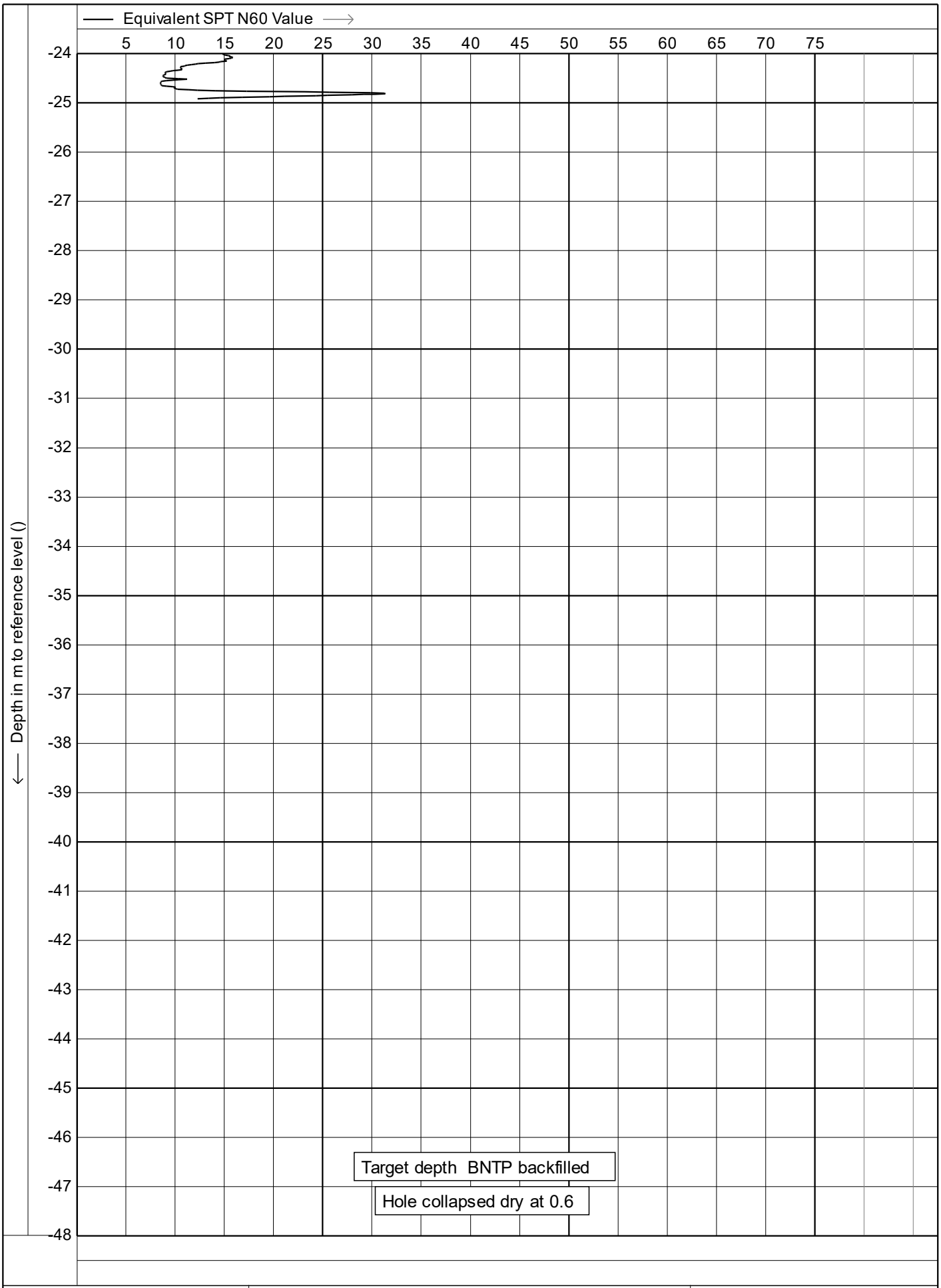
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **030**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

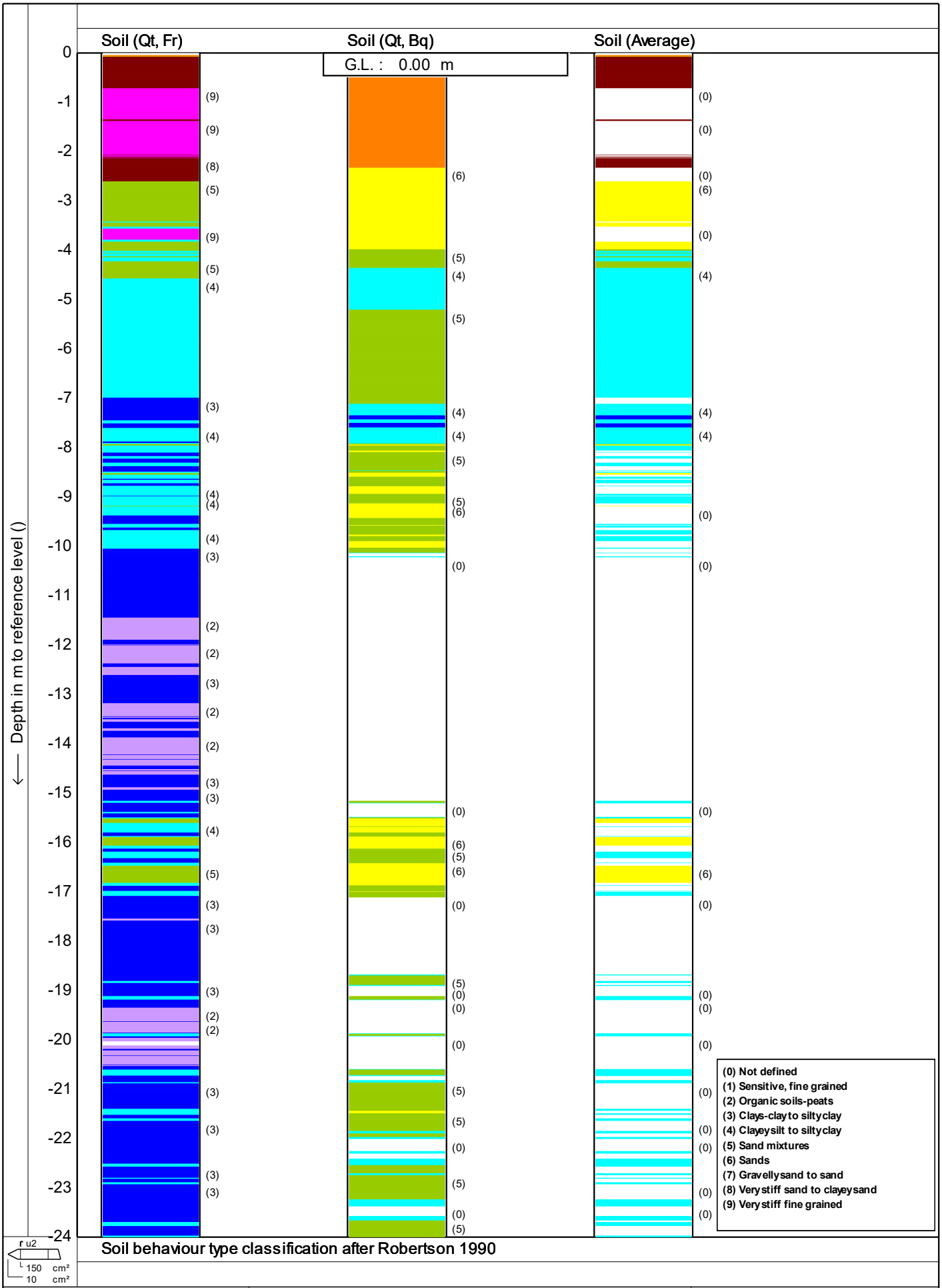
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **030**

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

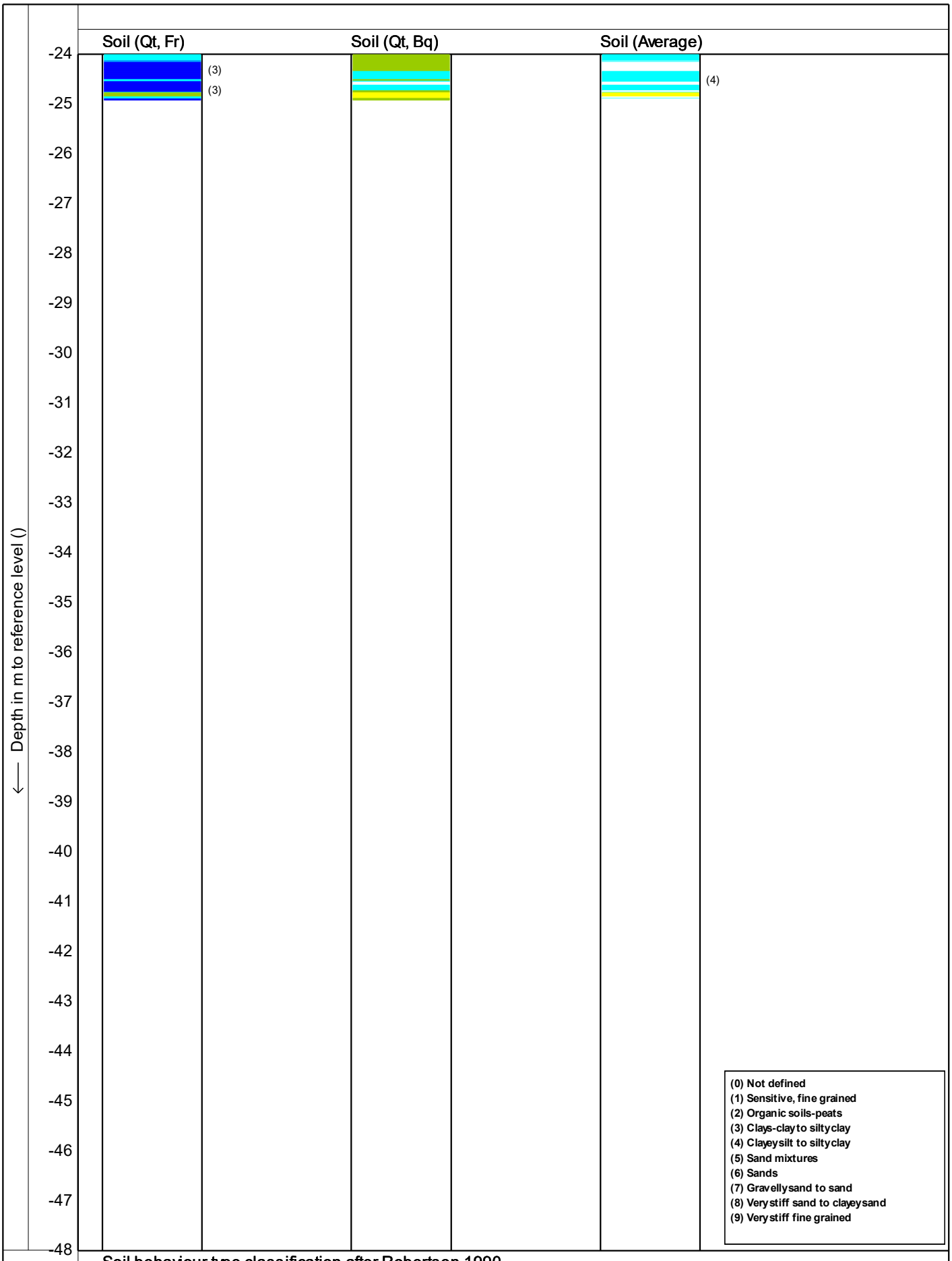
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **030**

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

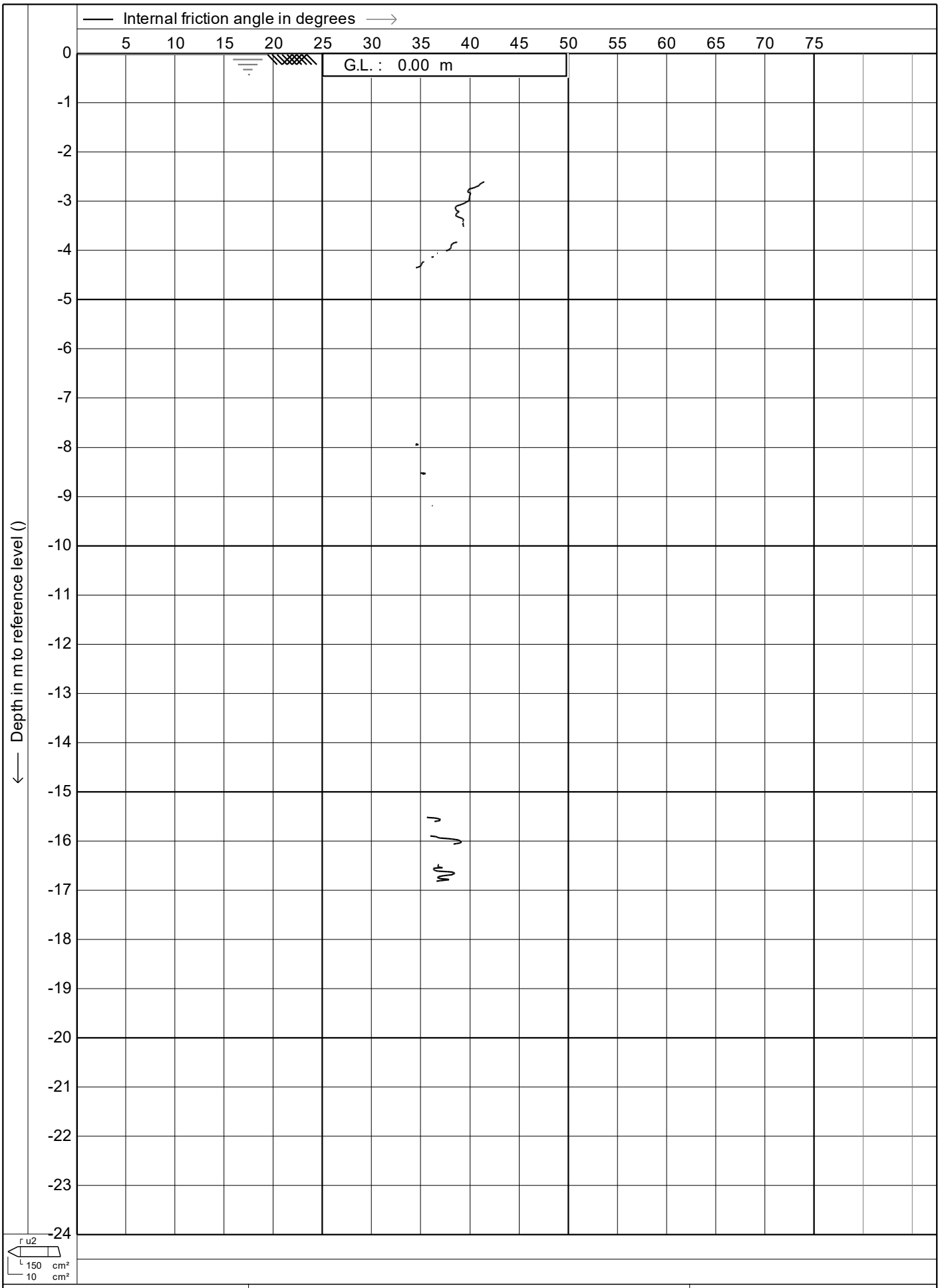
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **030**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

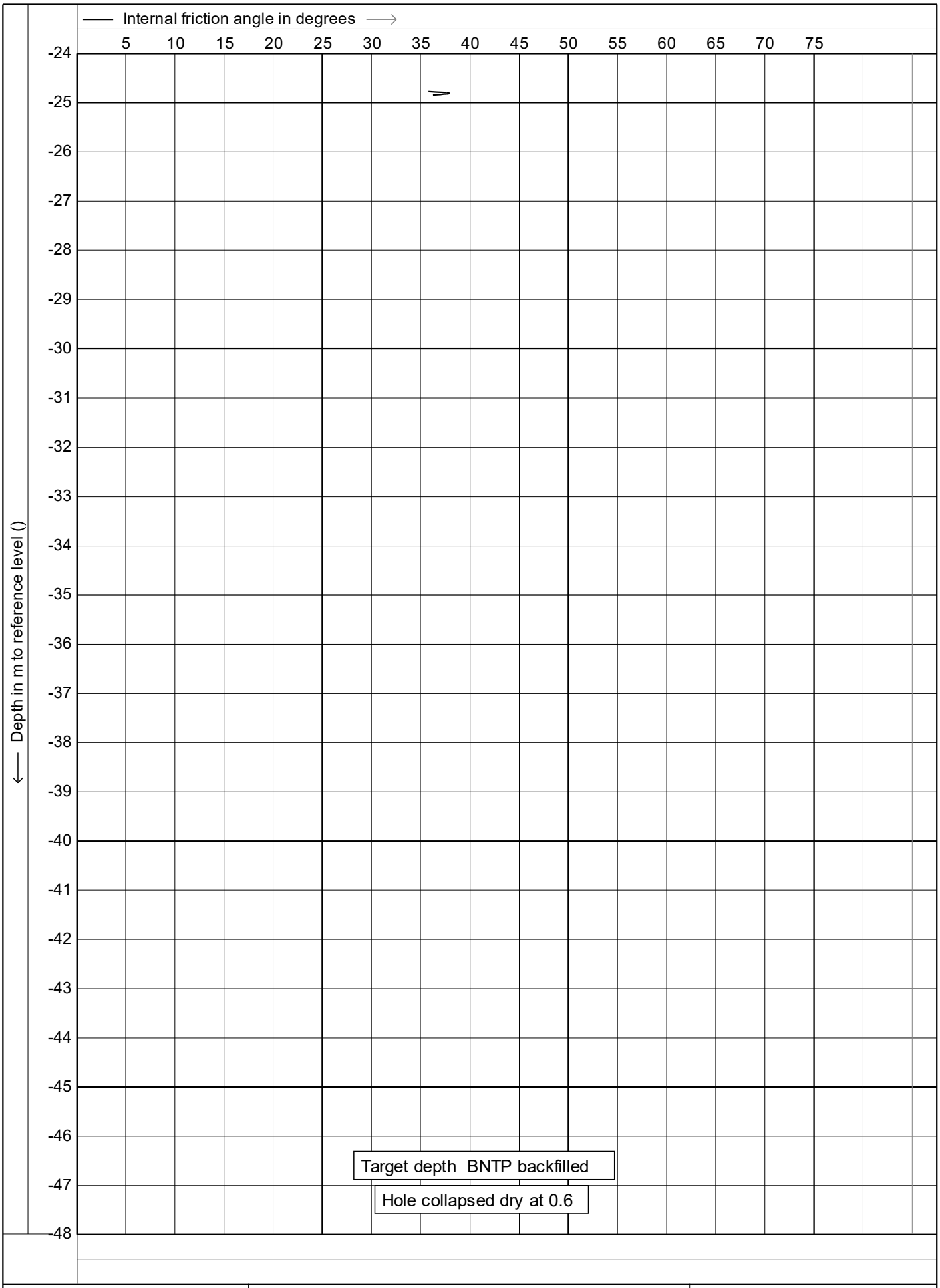
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **030**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

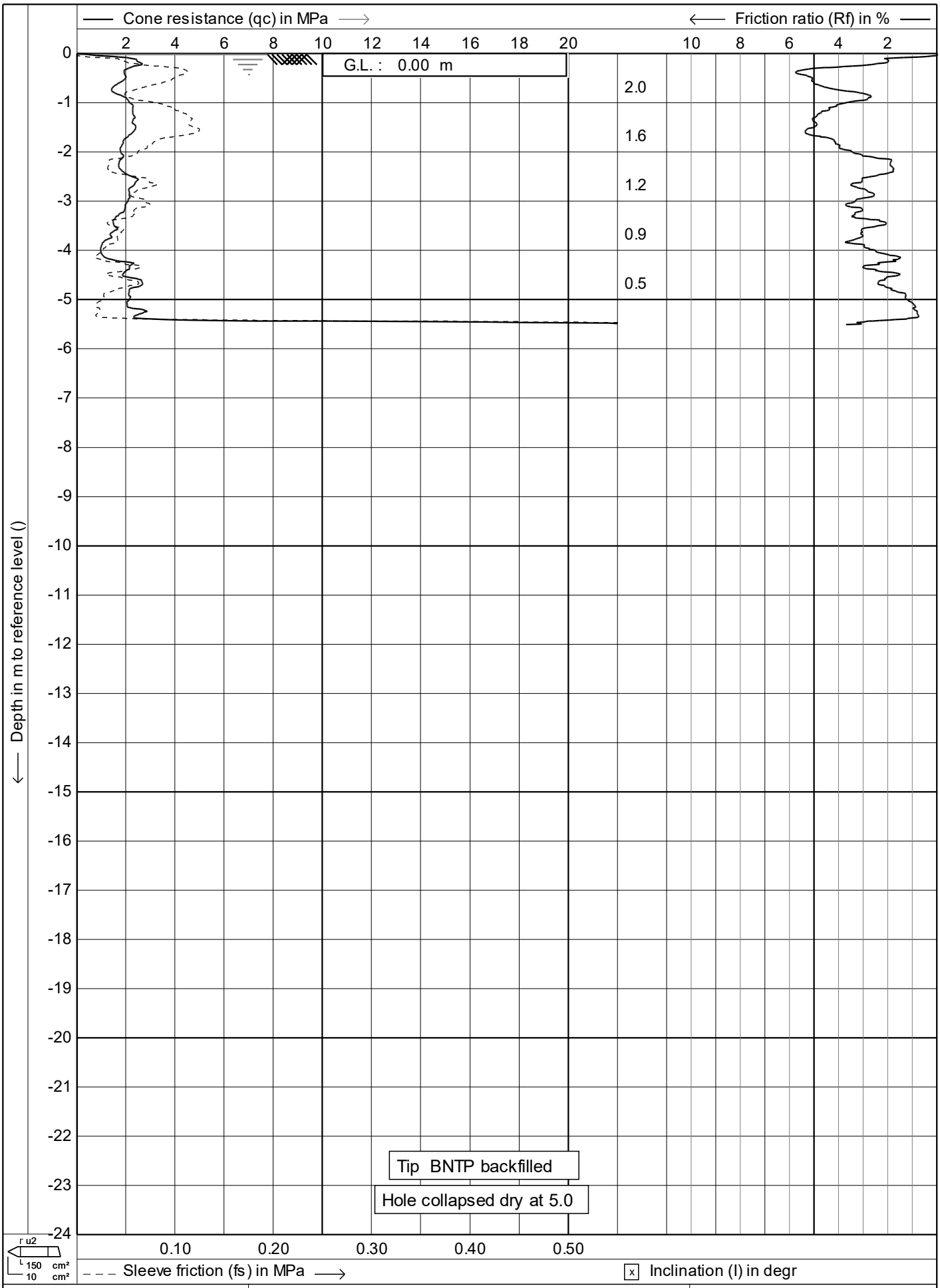
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **030**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **24/11/2020**

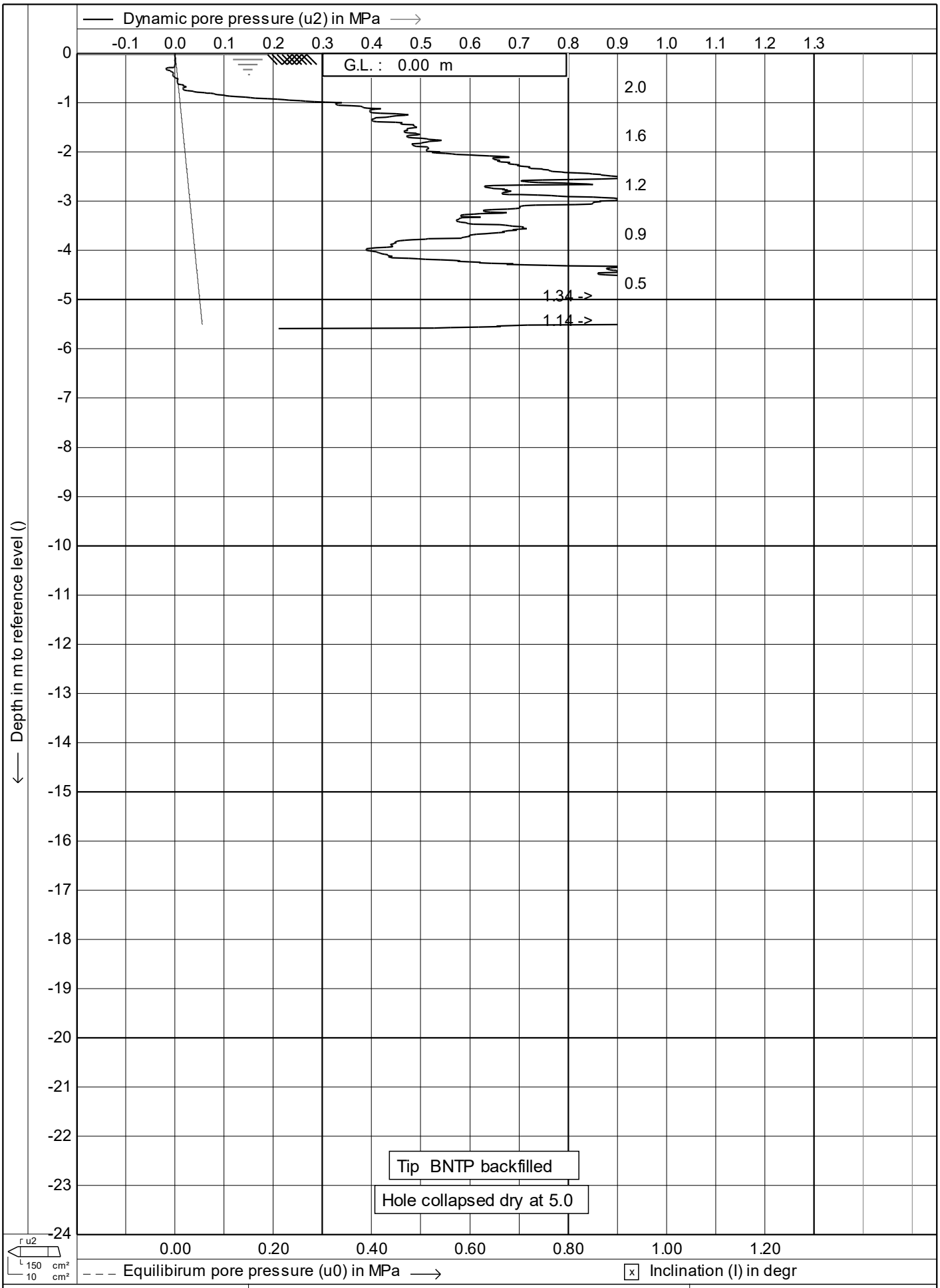
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **031**

1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

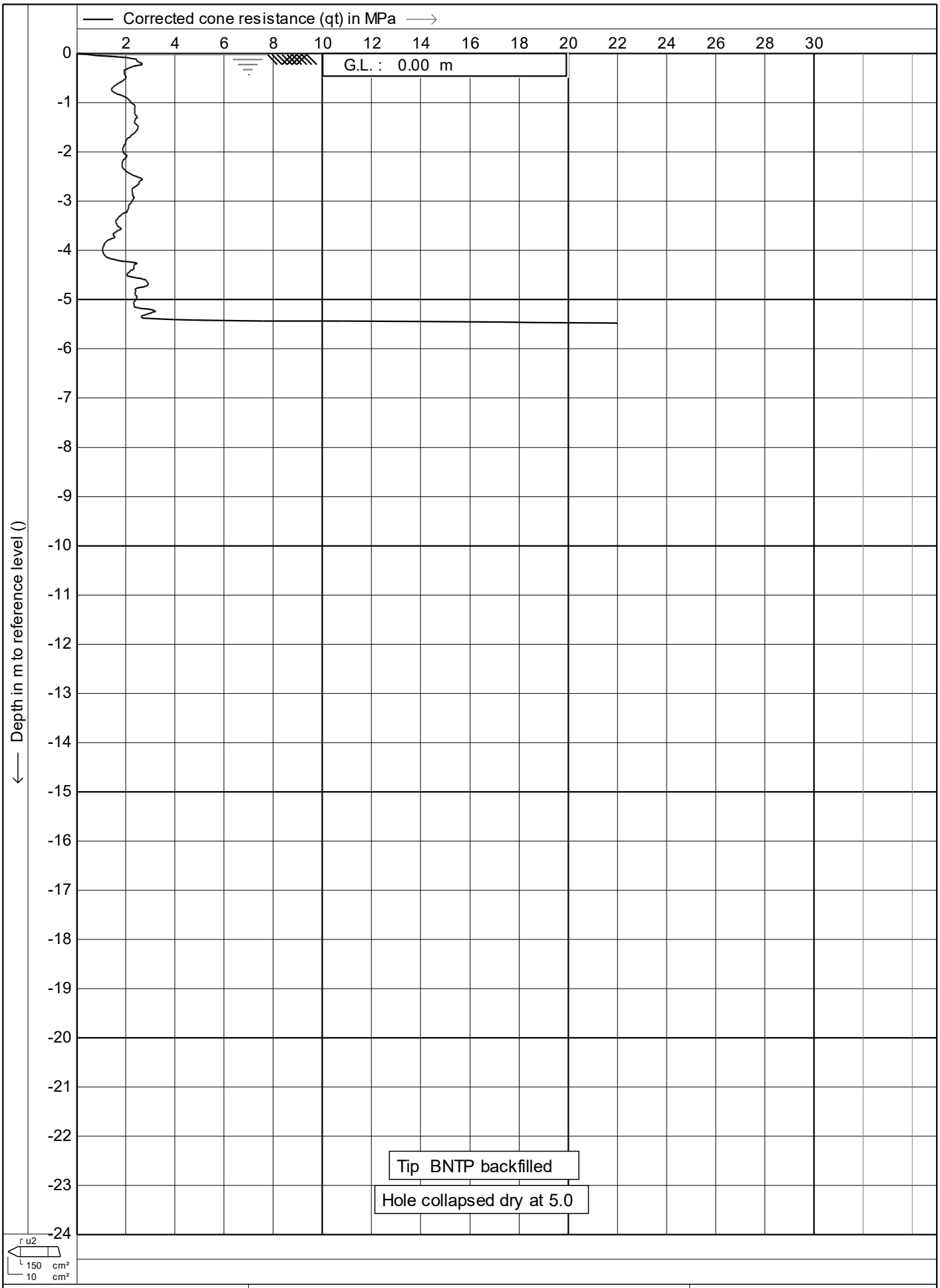
Date : **24/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **031**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

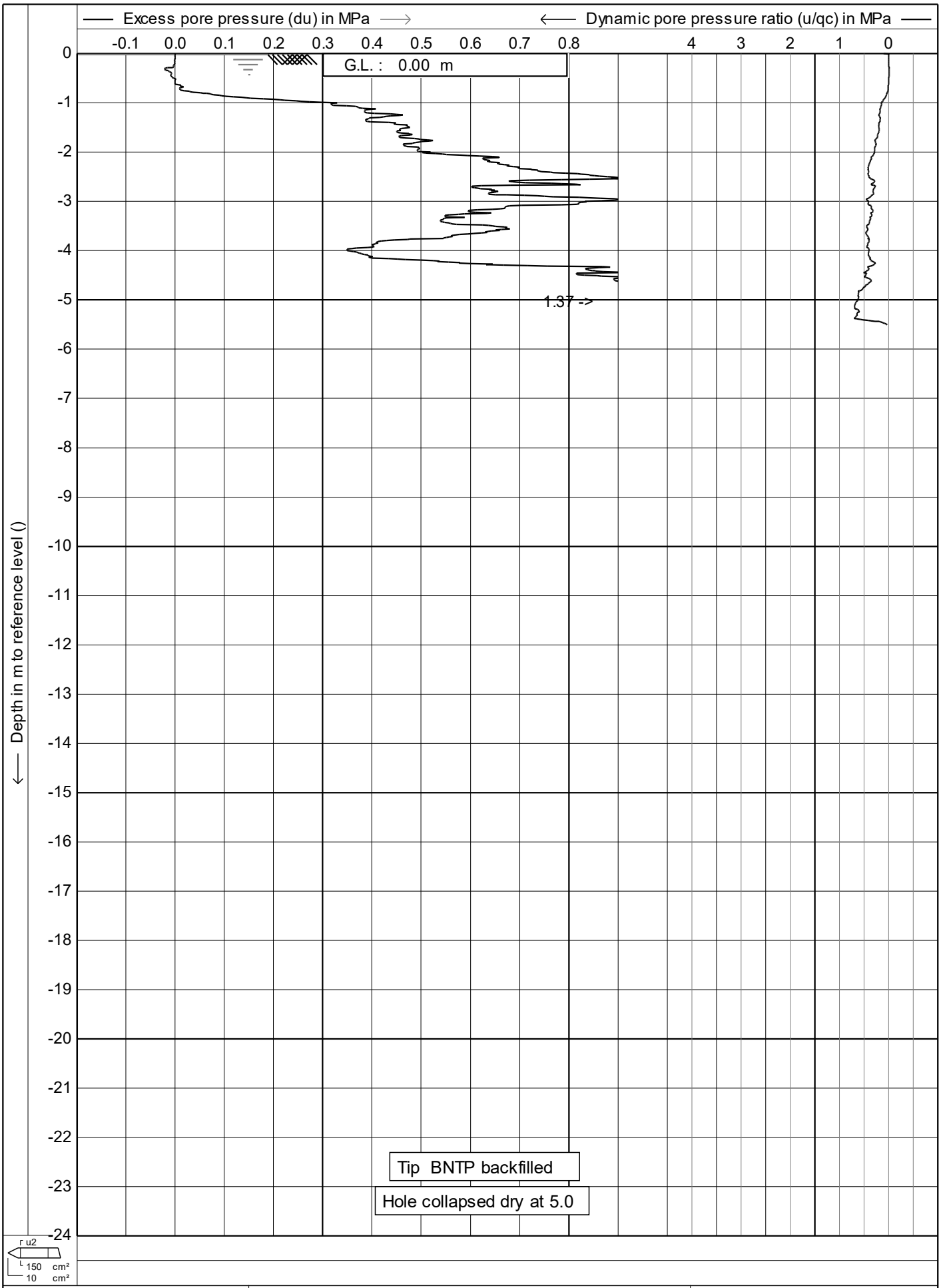
Date : **24/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **031** **3/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

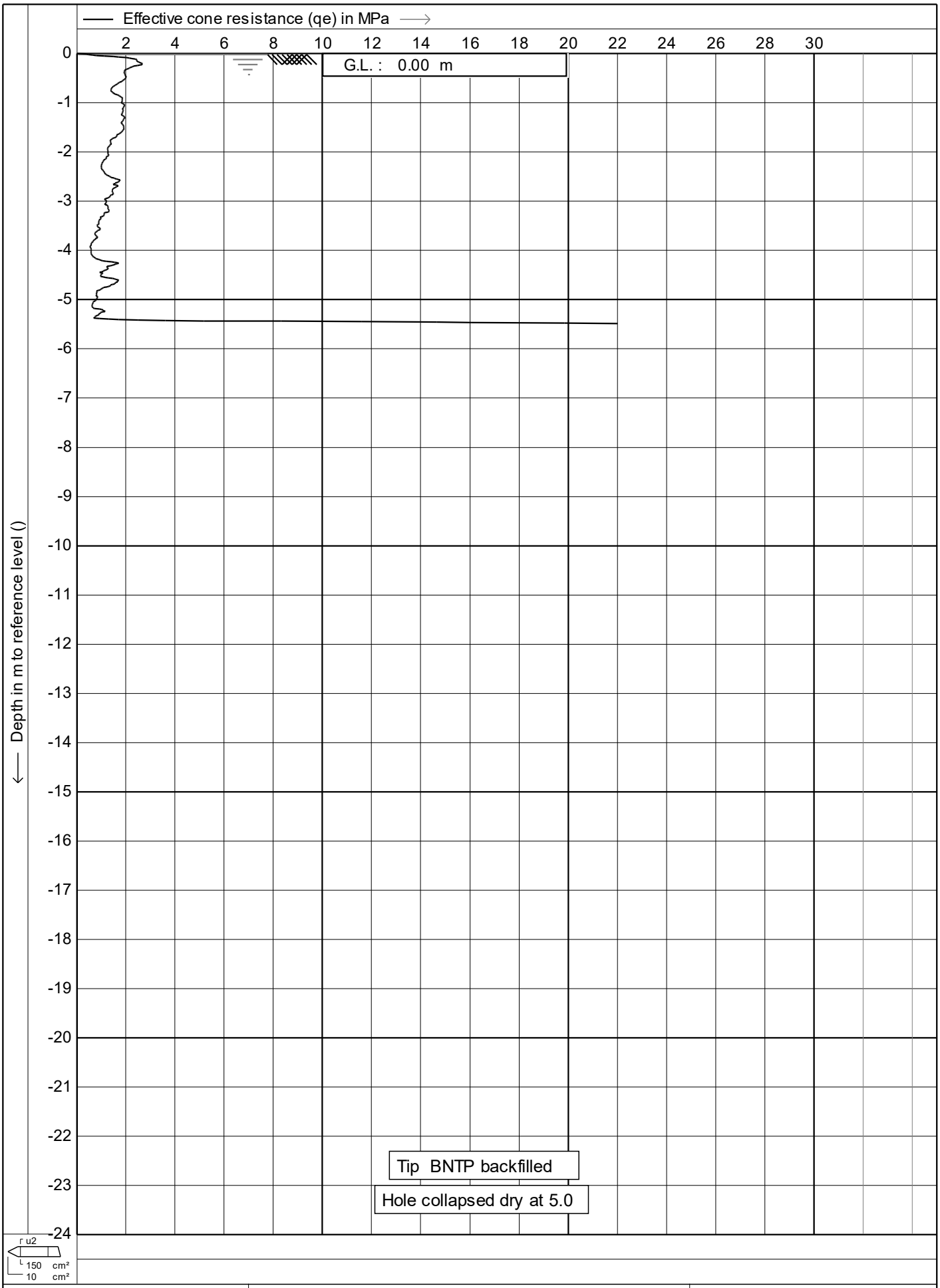
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **24/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **031**

4/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **24/11/2020**

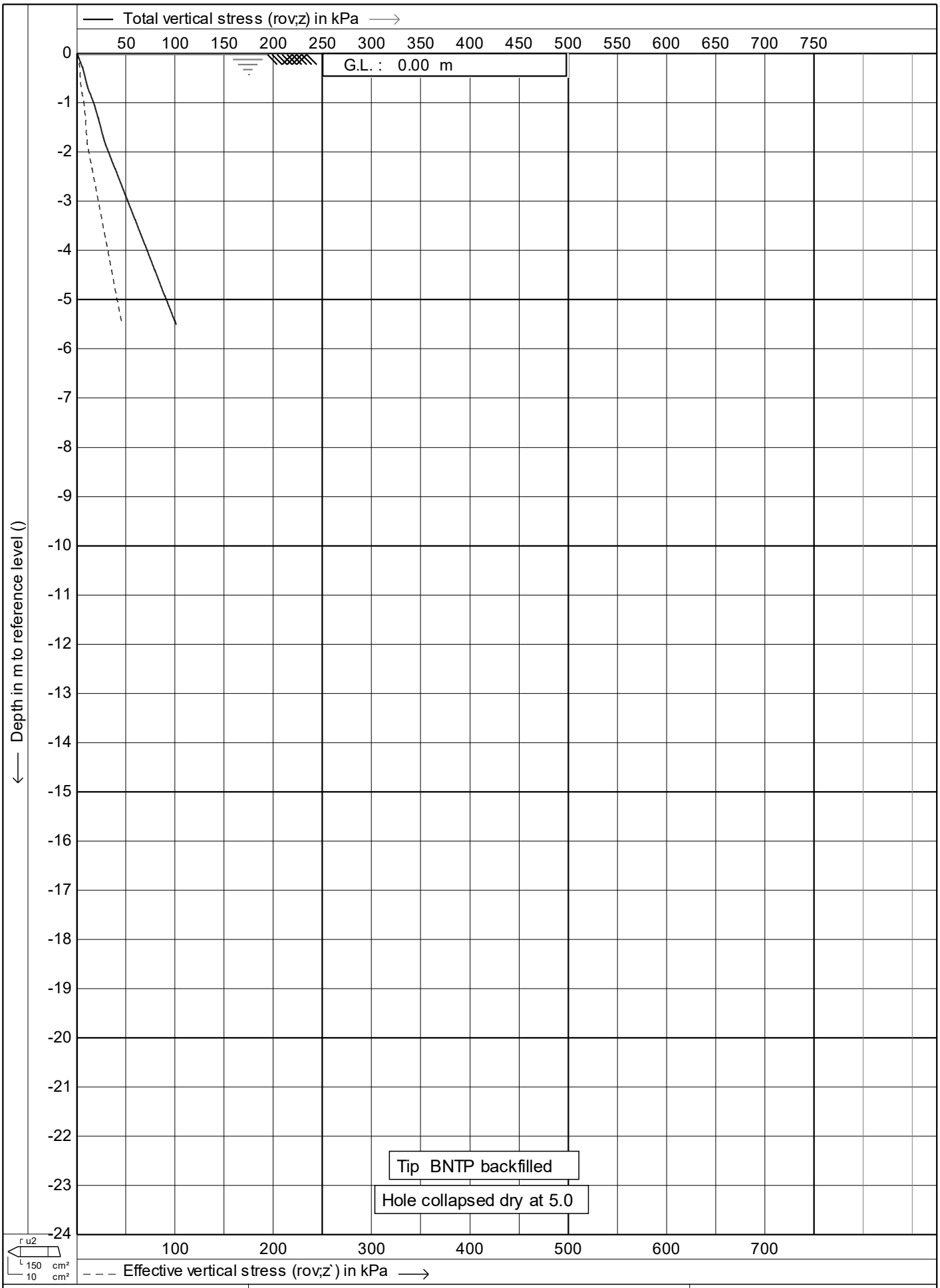
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **031**

5/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

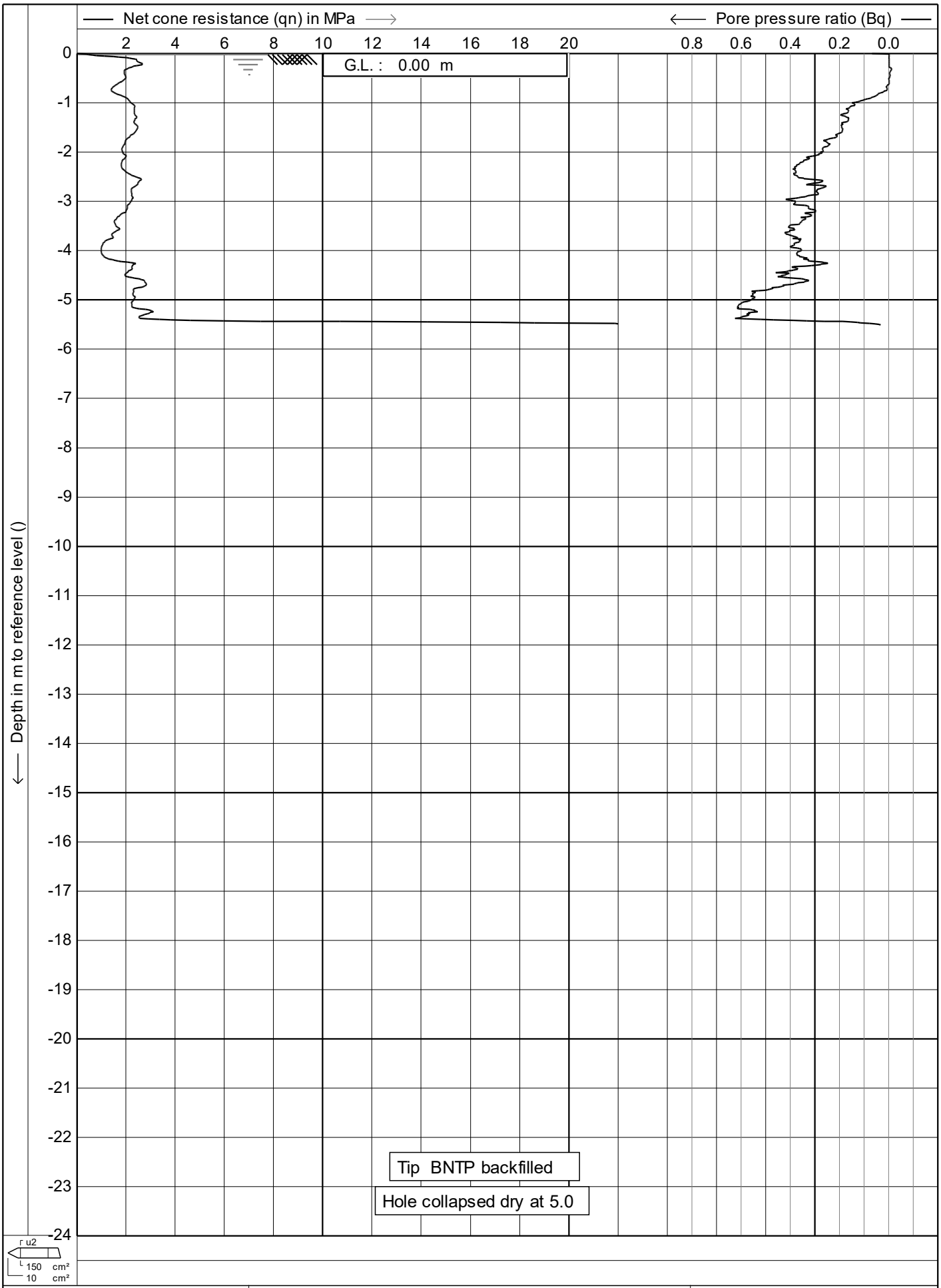
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **24/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **031**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **24/11/2020**

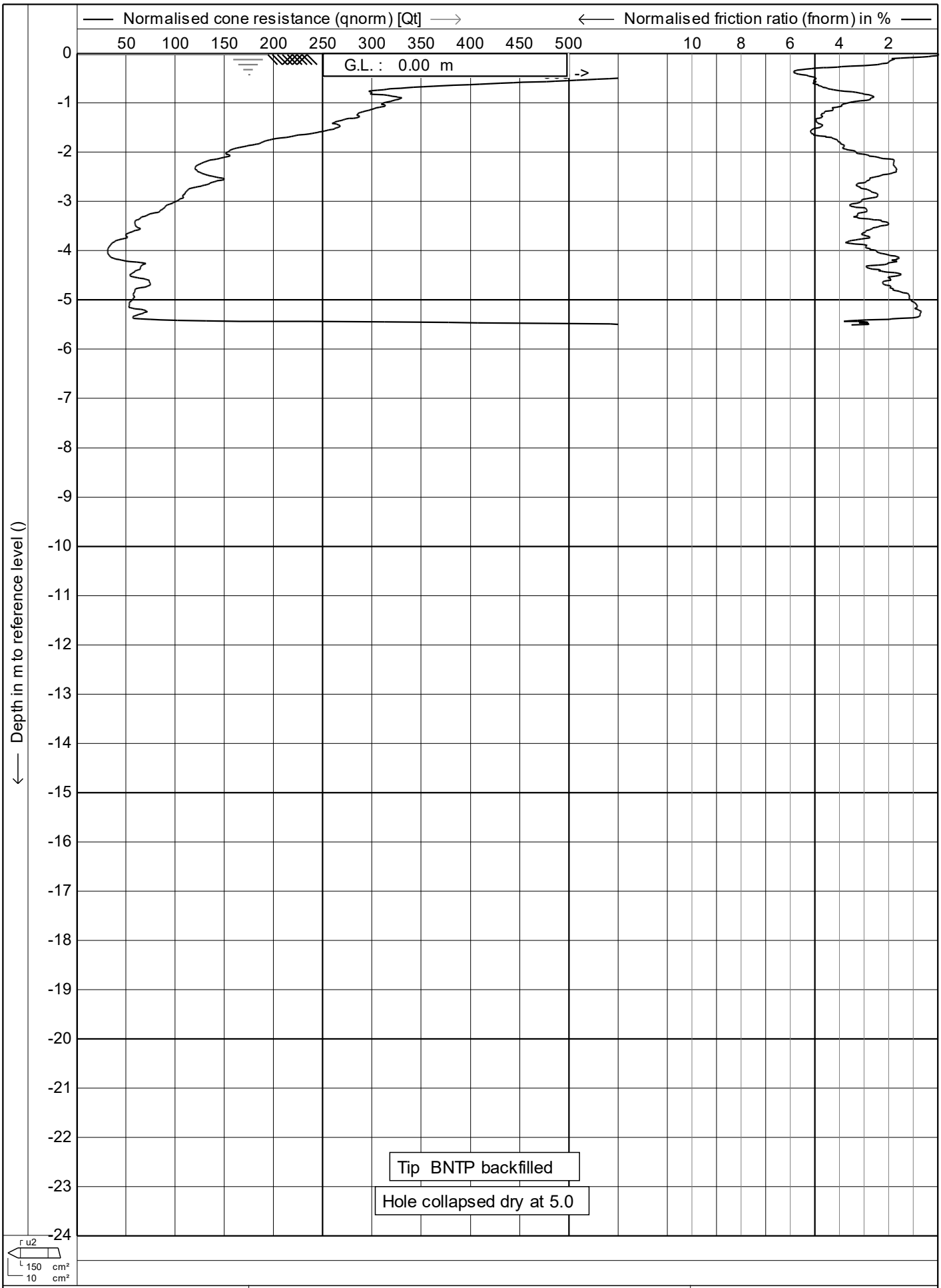
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Project no. : **05AU7**

CPT no. : **031**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

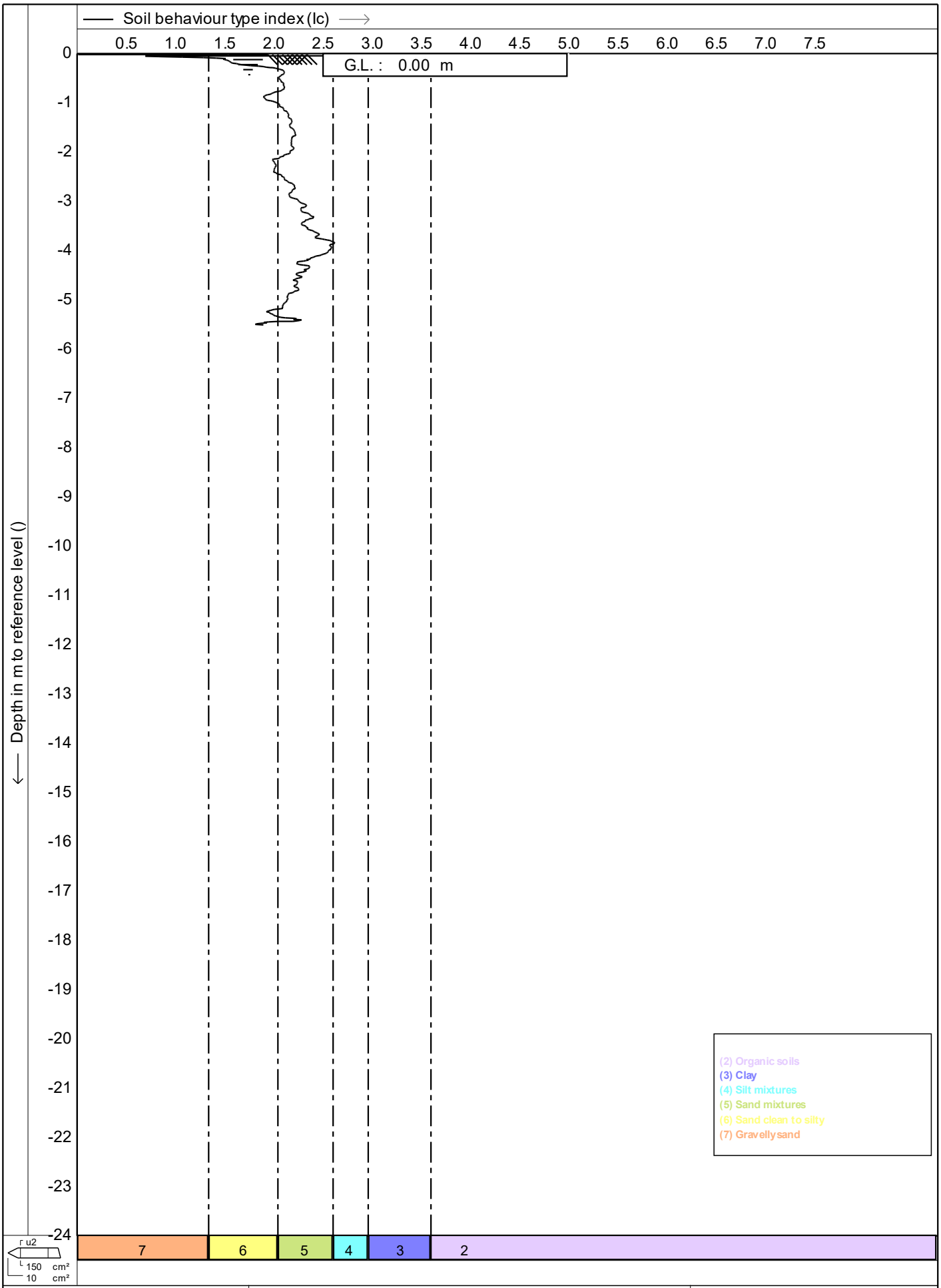
Date : **24/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **031**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **24/11/2020**

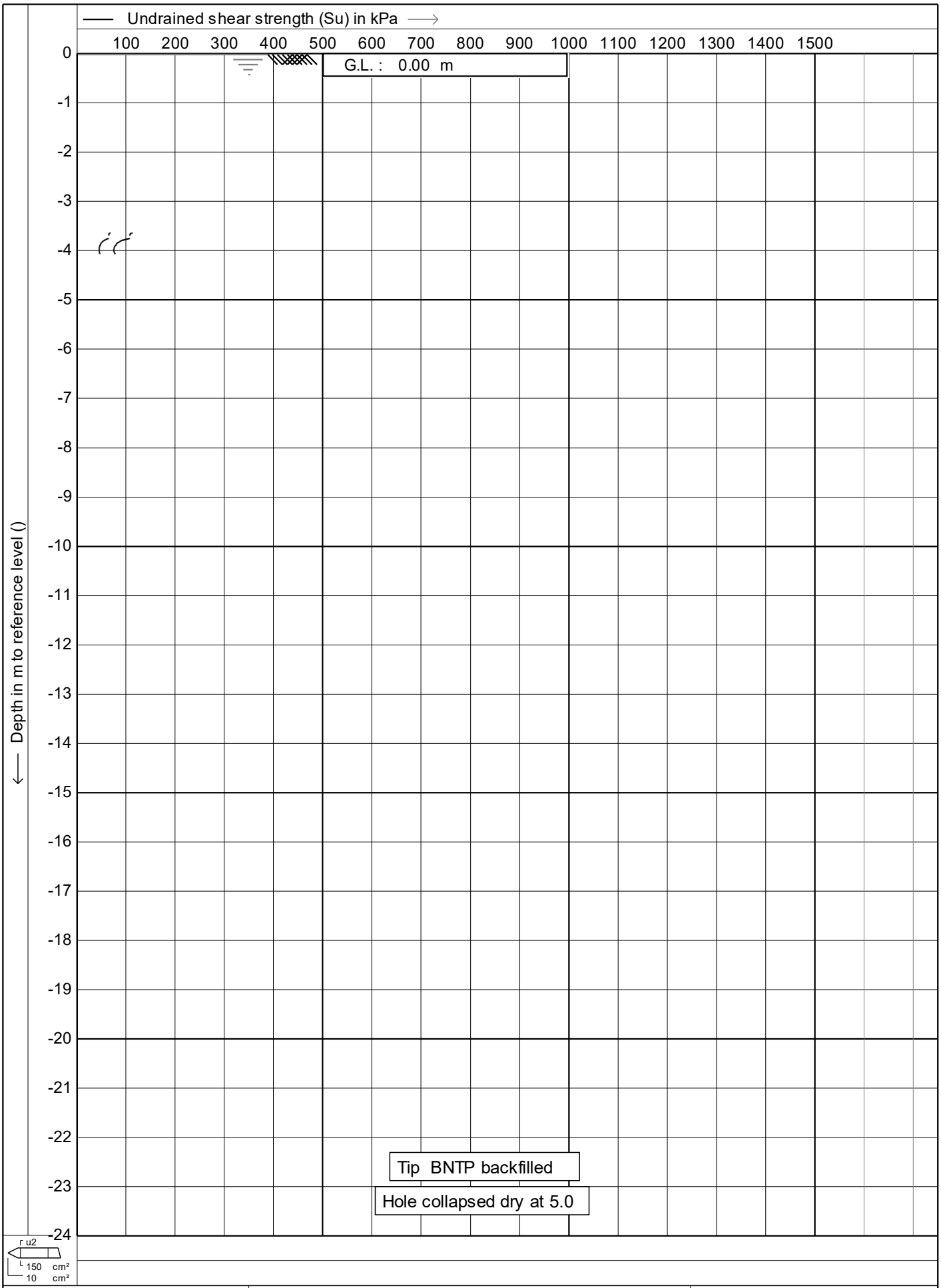
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **031**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

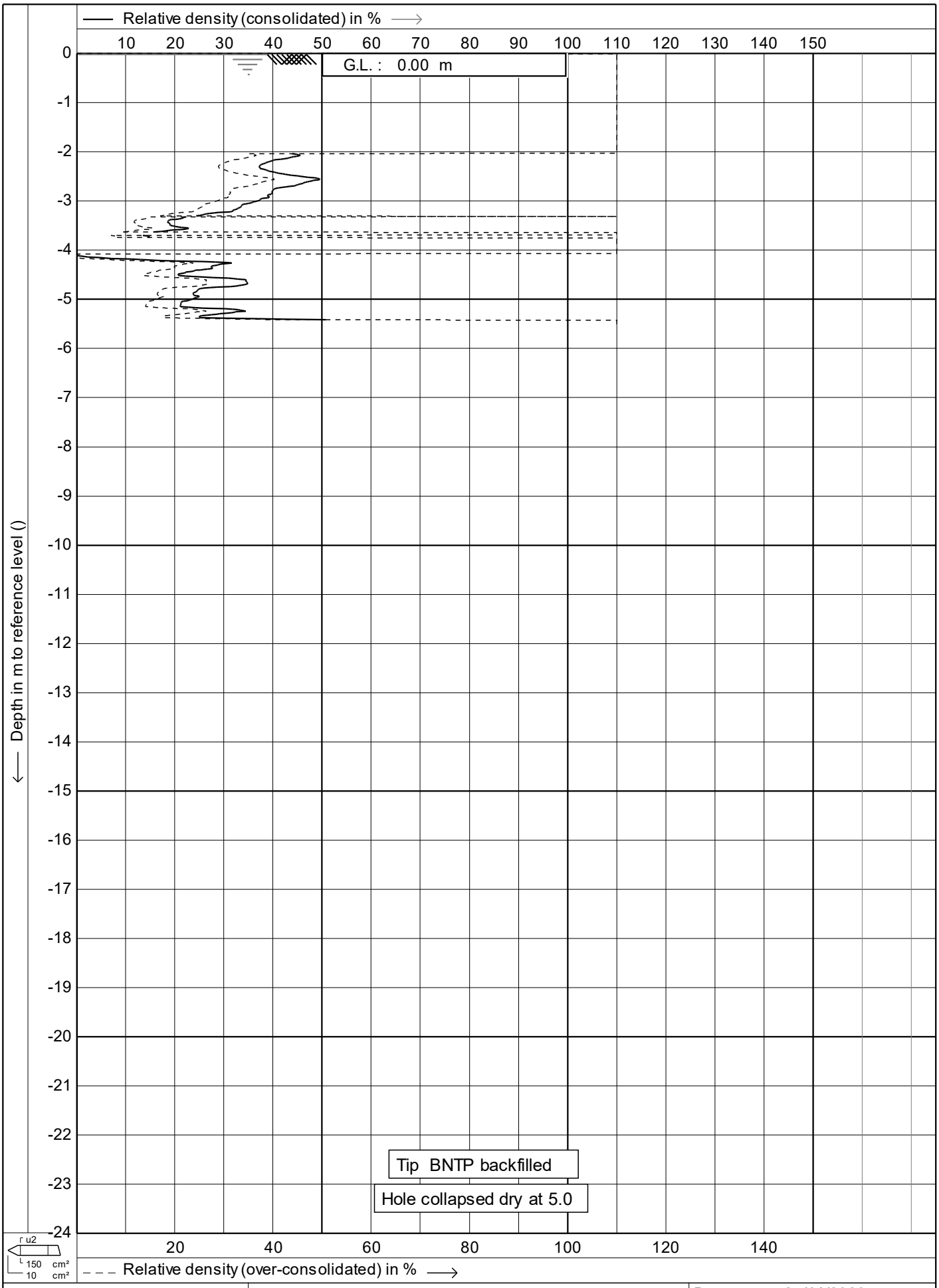
Date : **24/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **031** **10/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

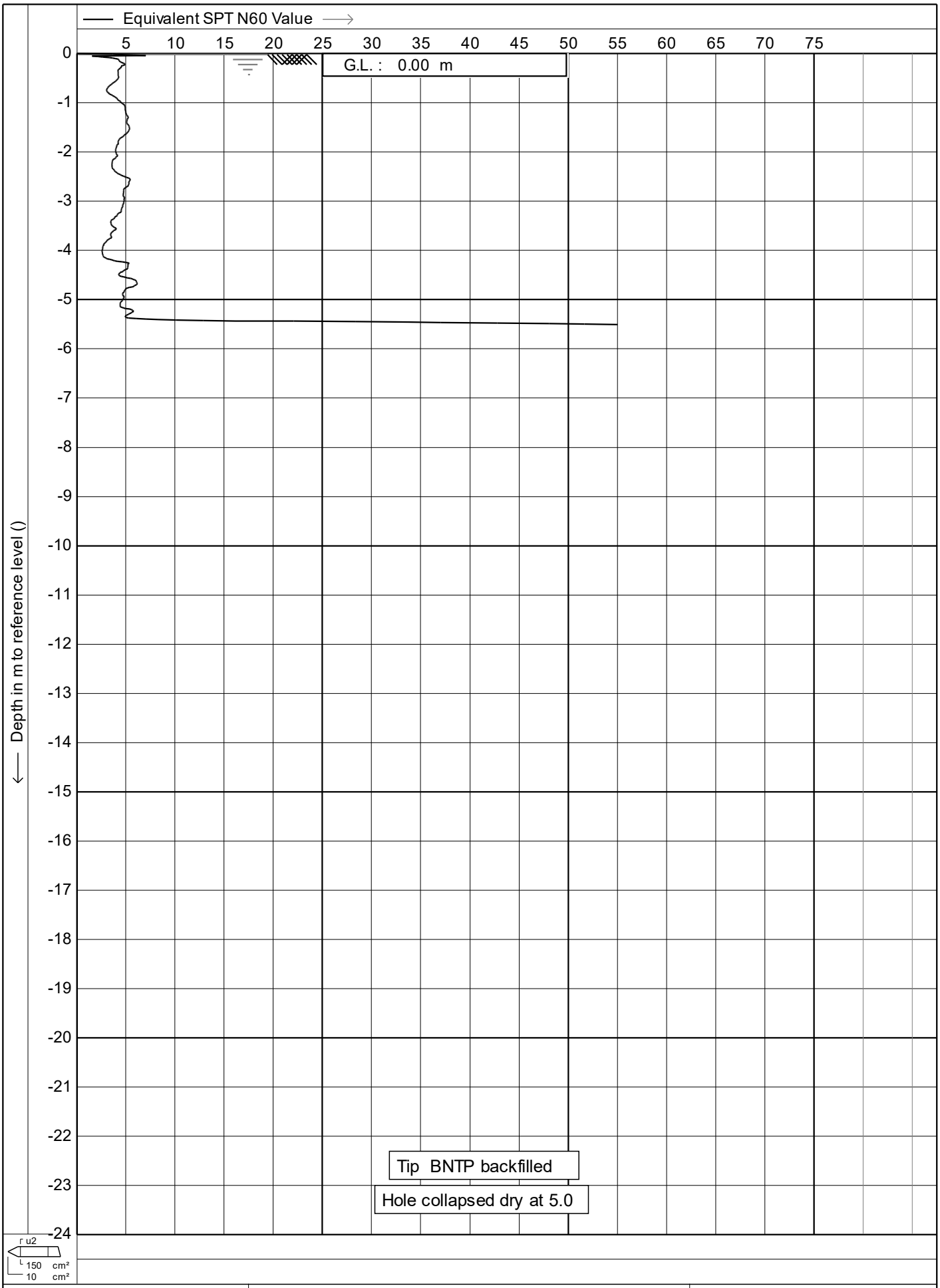
Date : **24/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **031** **11/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

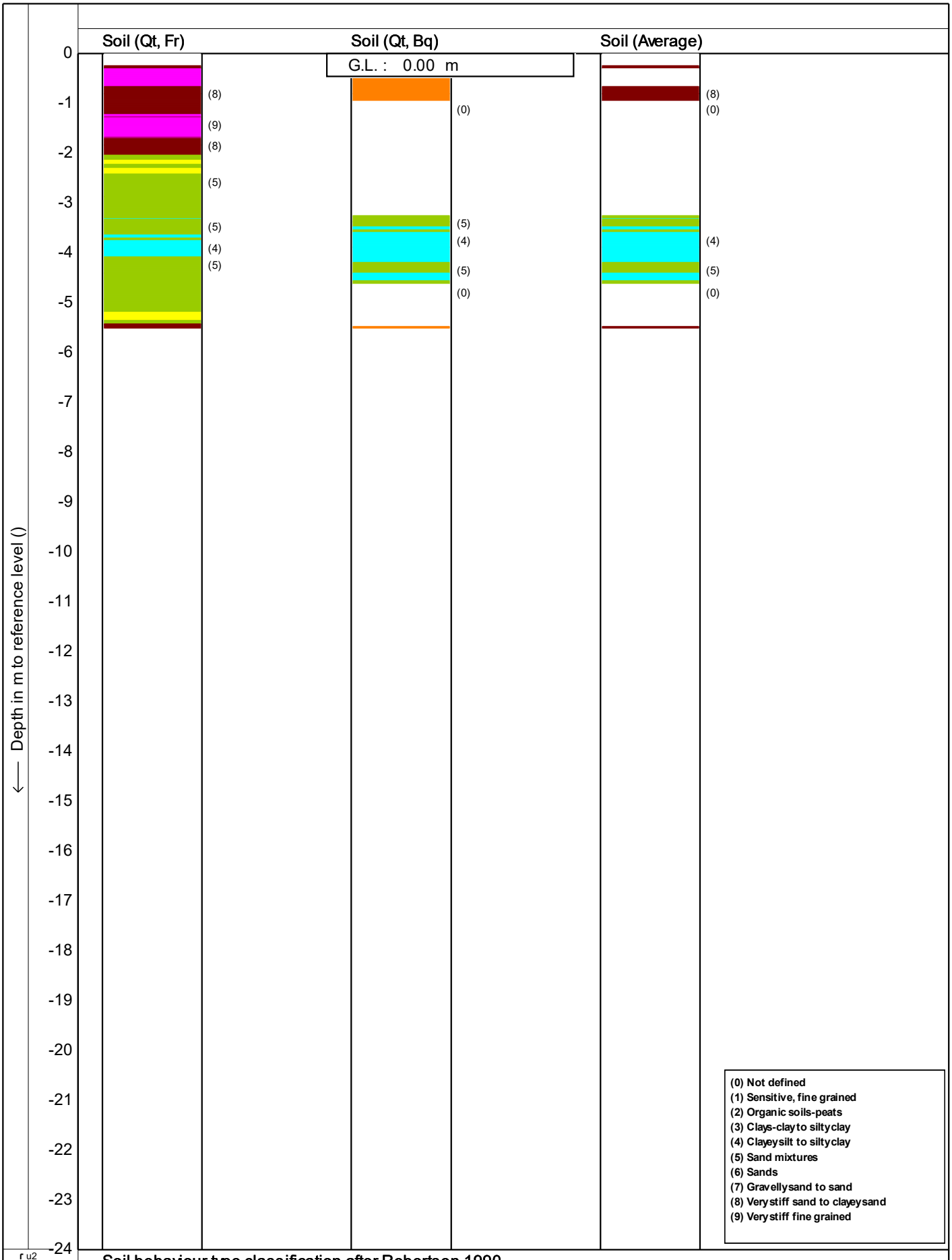
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **24/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **031**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

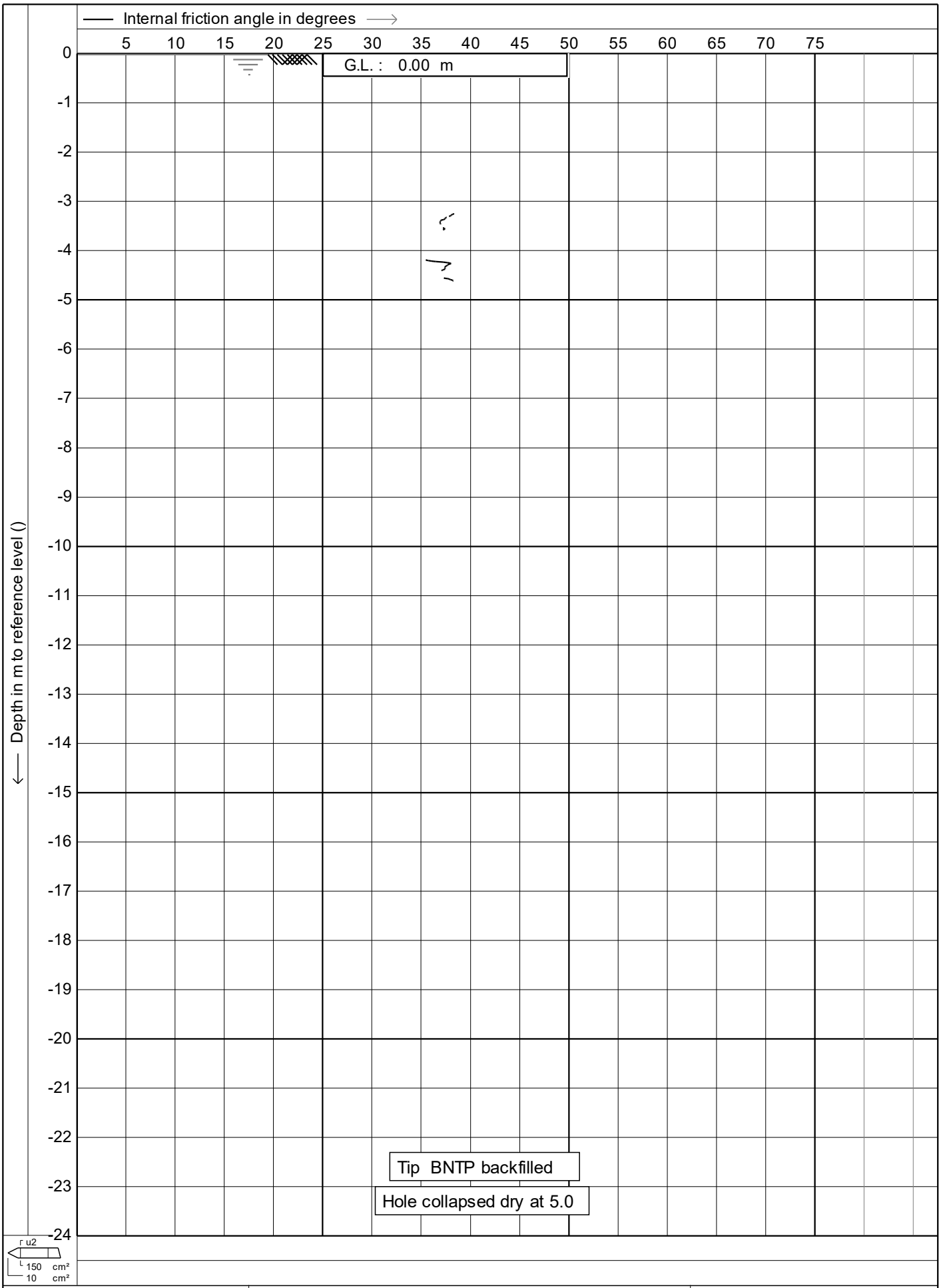
Date : **24/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **031**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

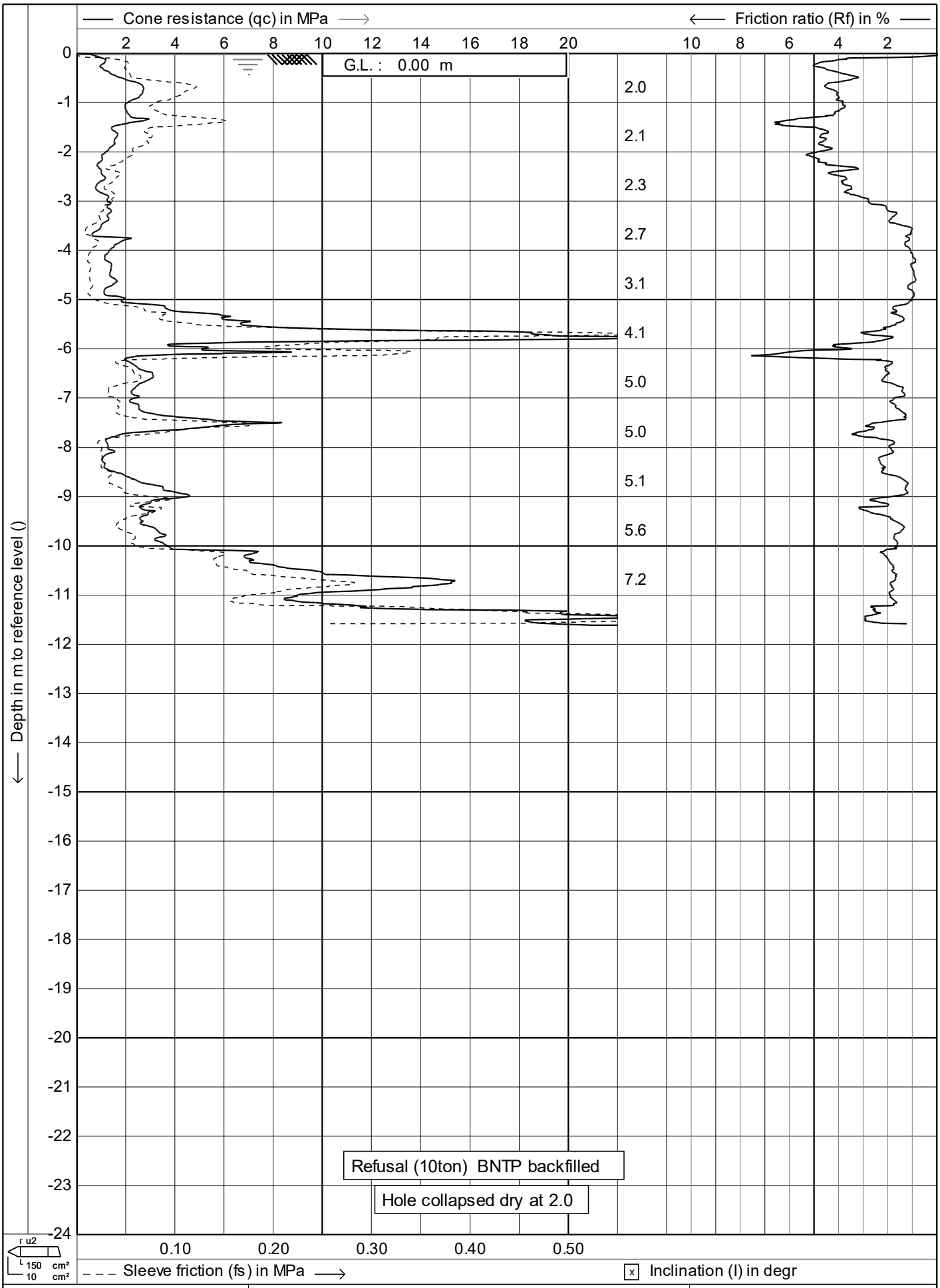
Date : **24/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **031** **14/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **30/11/2020**

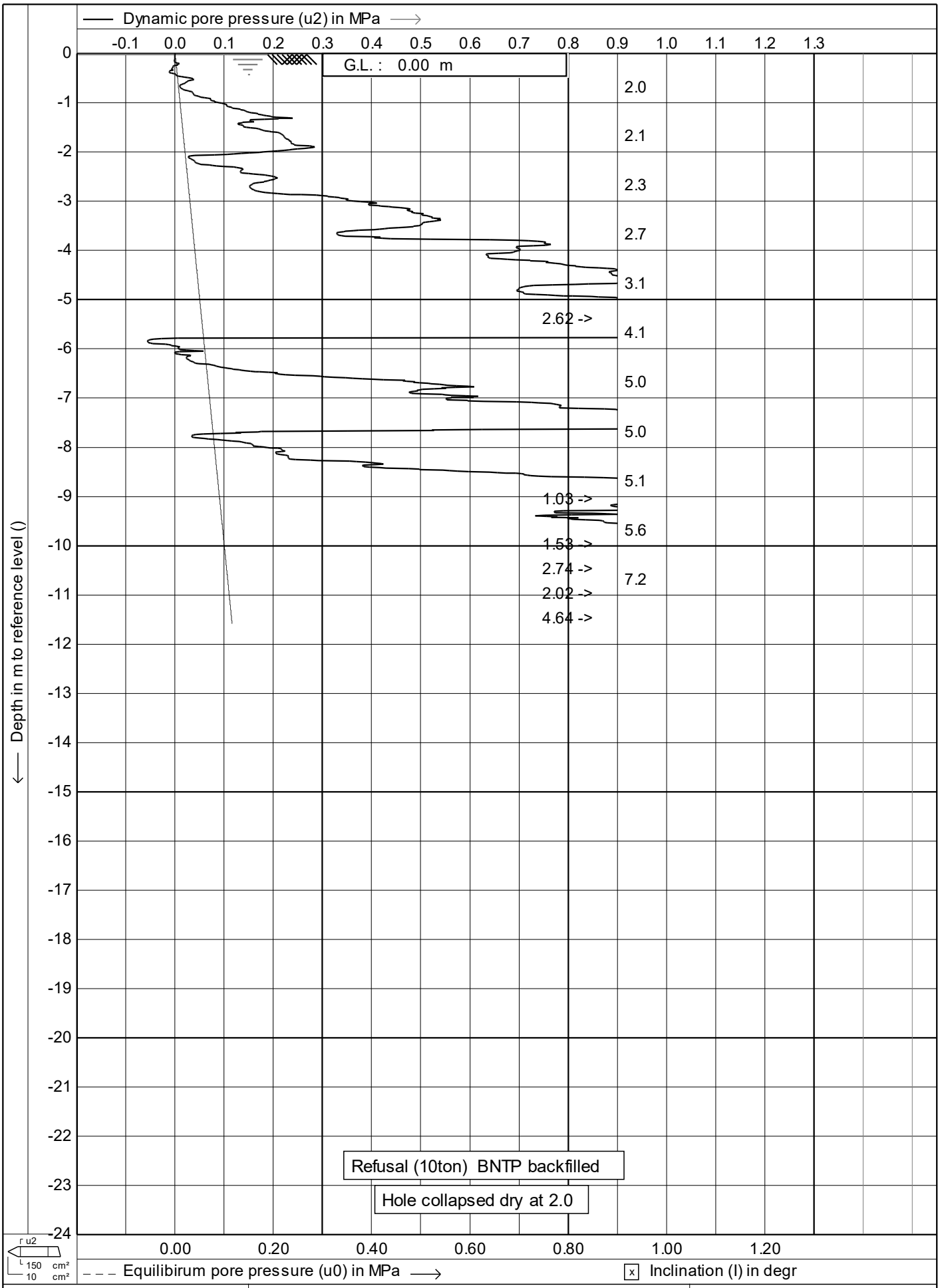
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **032**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

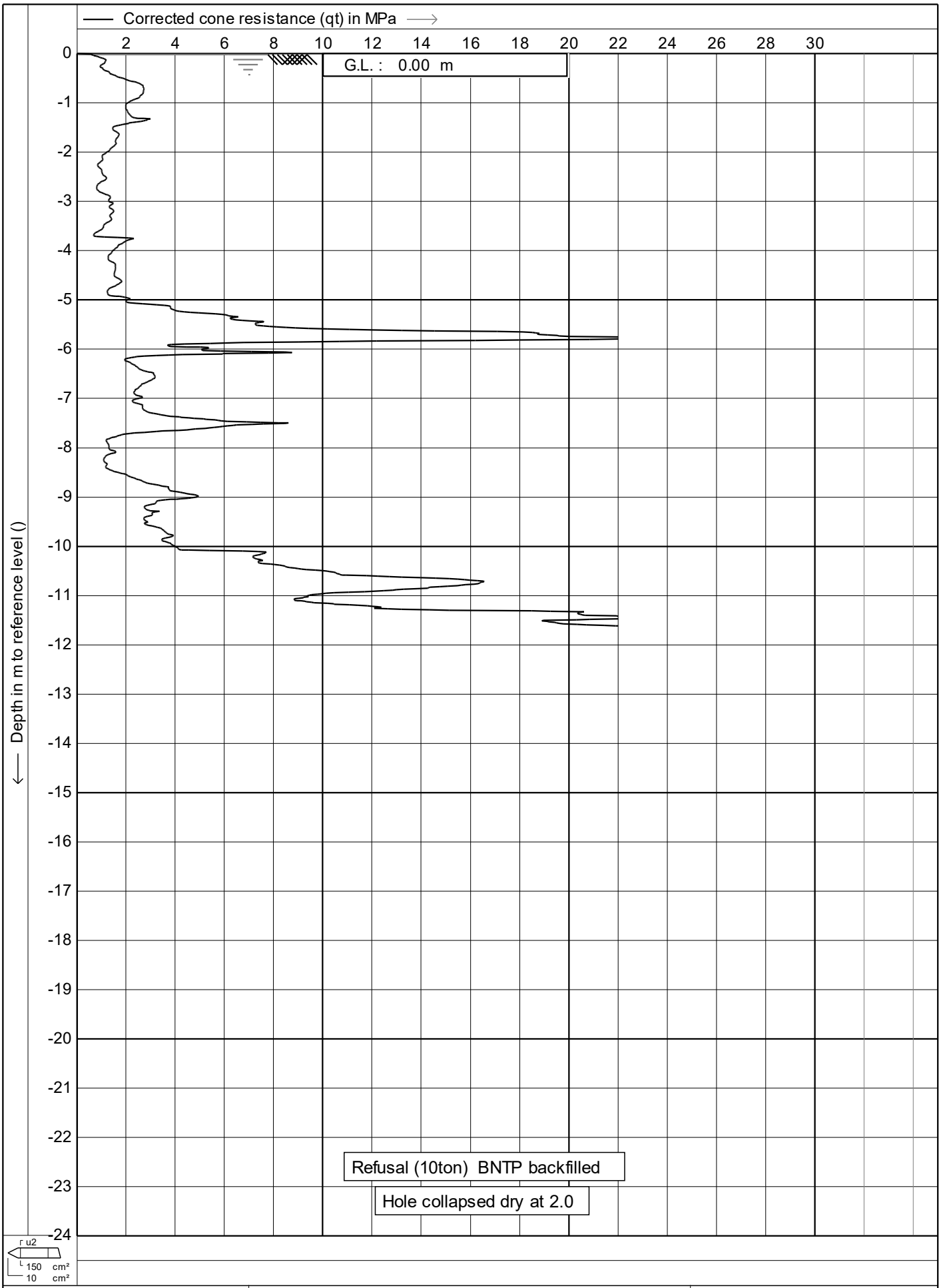
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **032**

1.48



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Test according A.S.T.M Standard D 5778-12

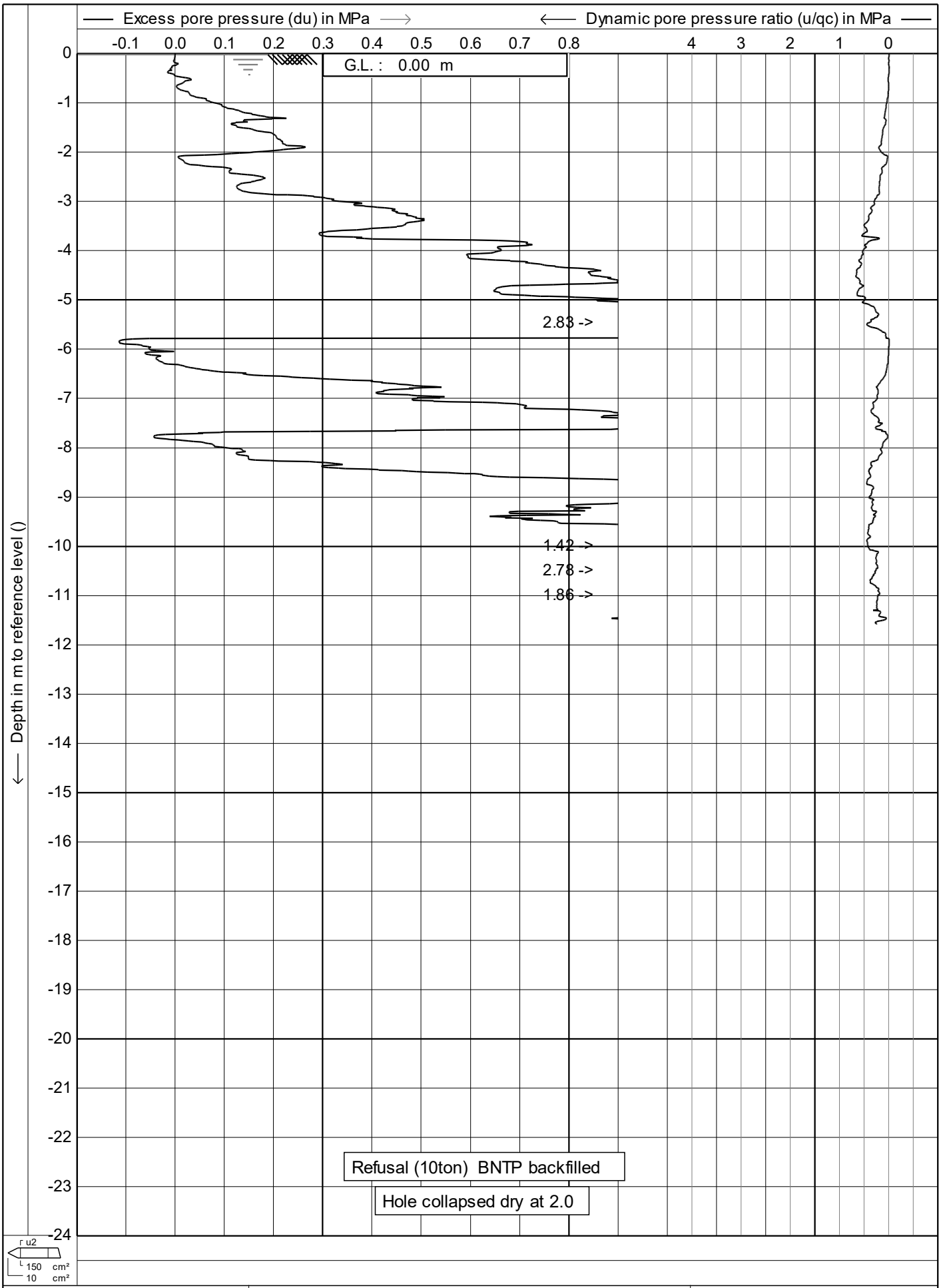
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
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Test according A.S.T.M Standard D 5778-12

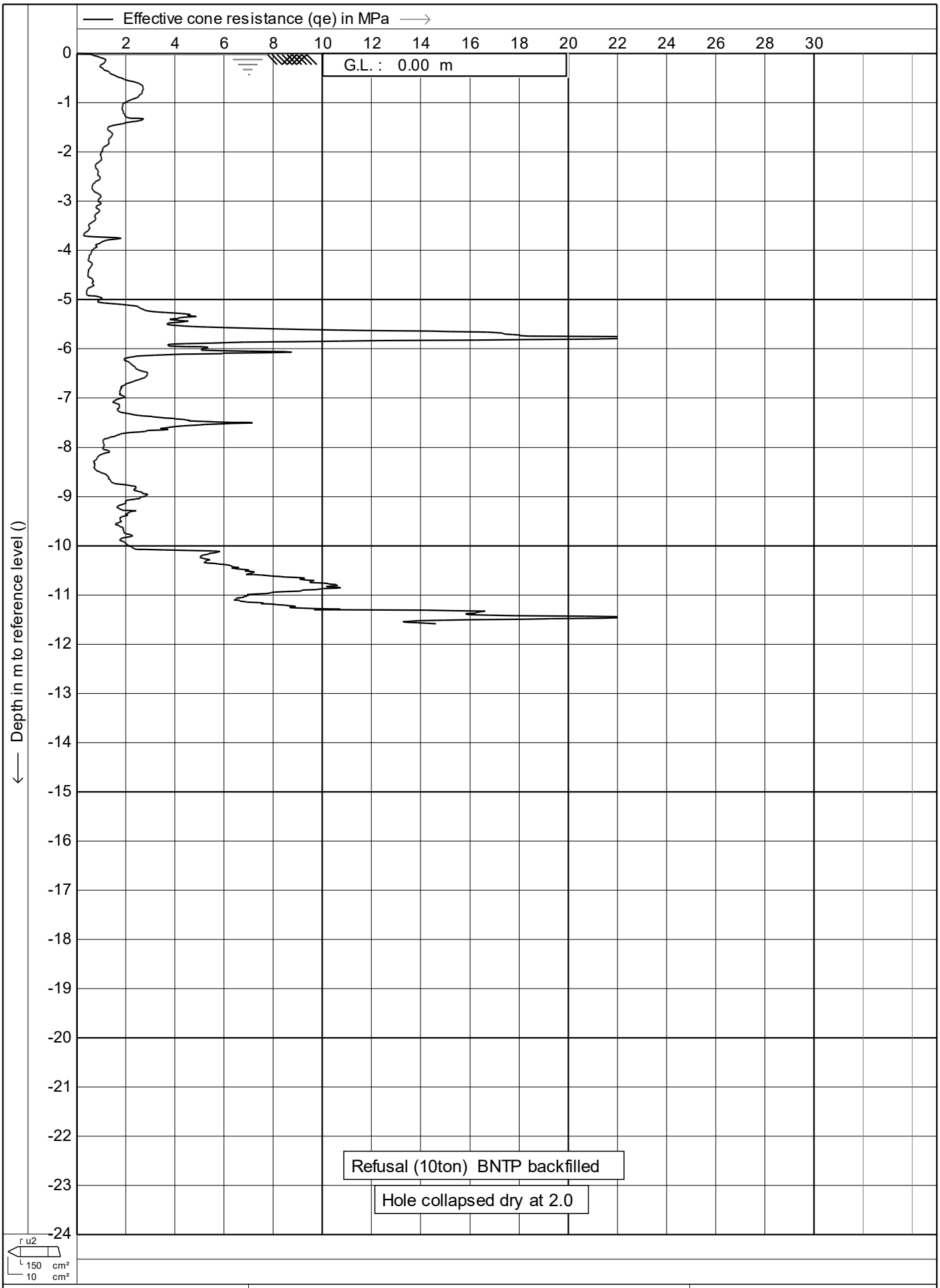
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **032**

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Test according A.S.T.M Standard D 5778-12

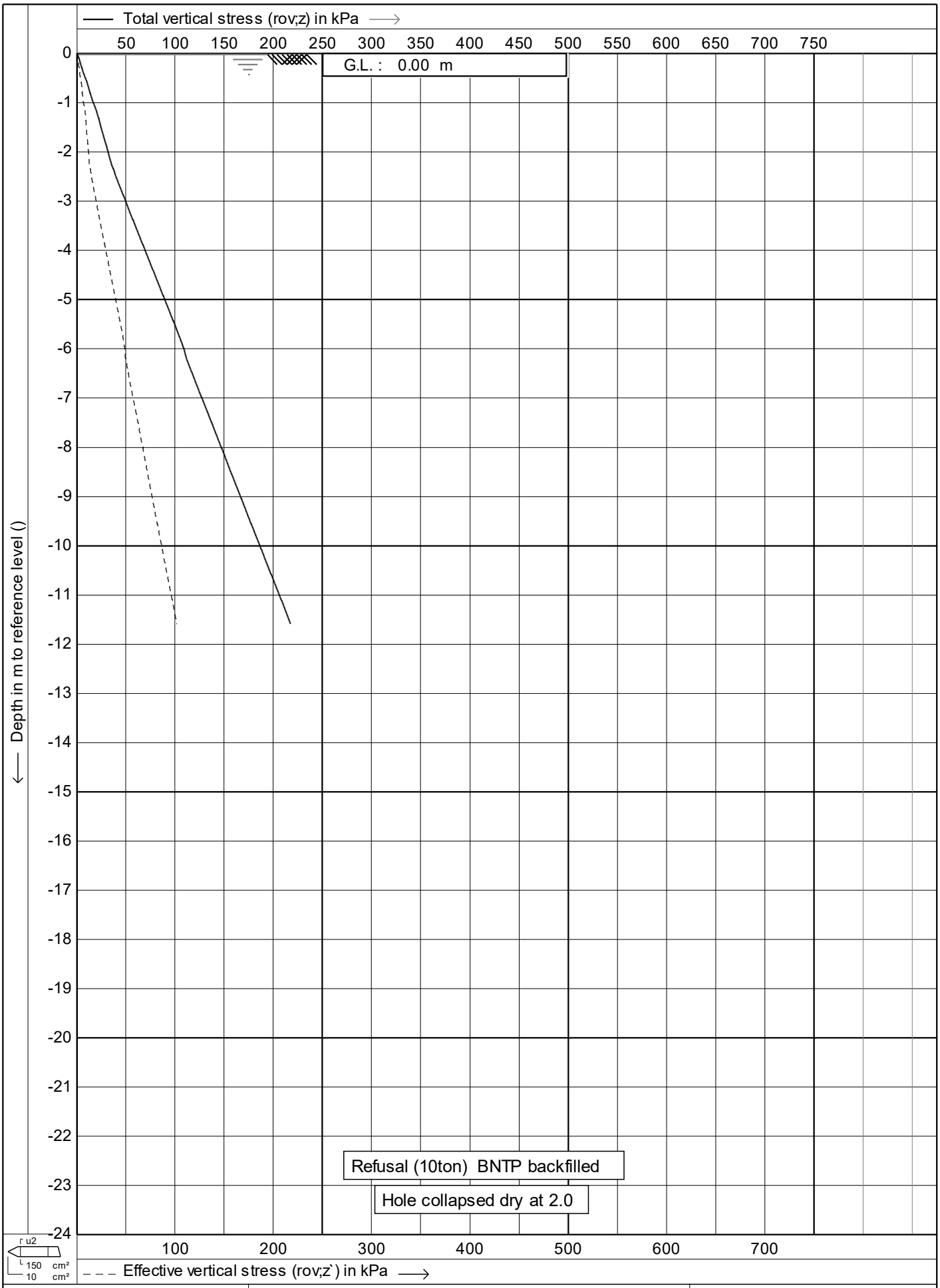
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **032**

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Test according A.S.T.M Standard D 5778-12

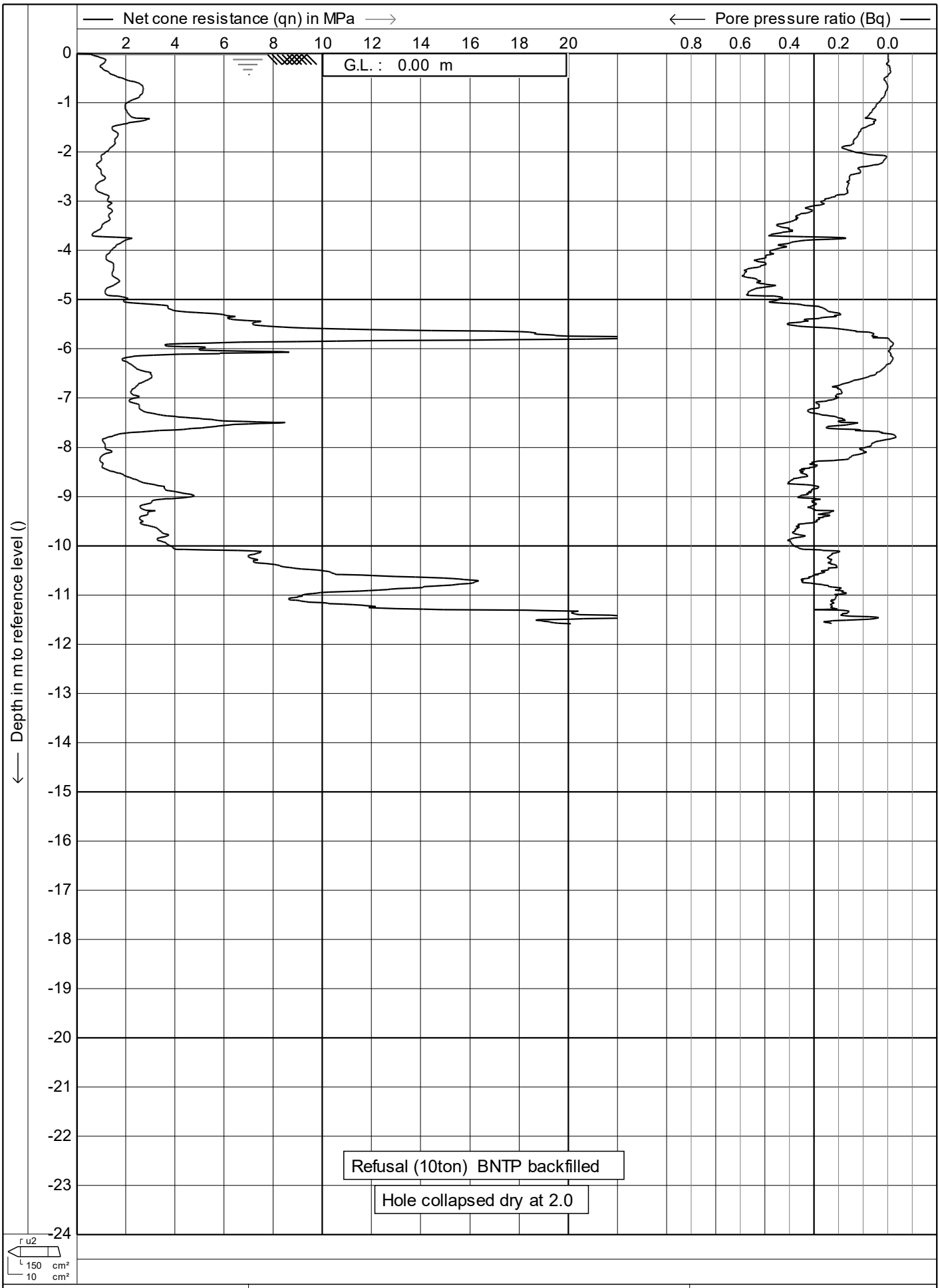
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **032**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

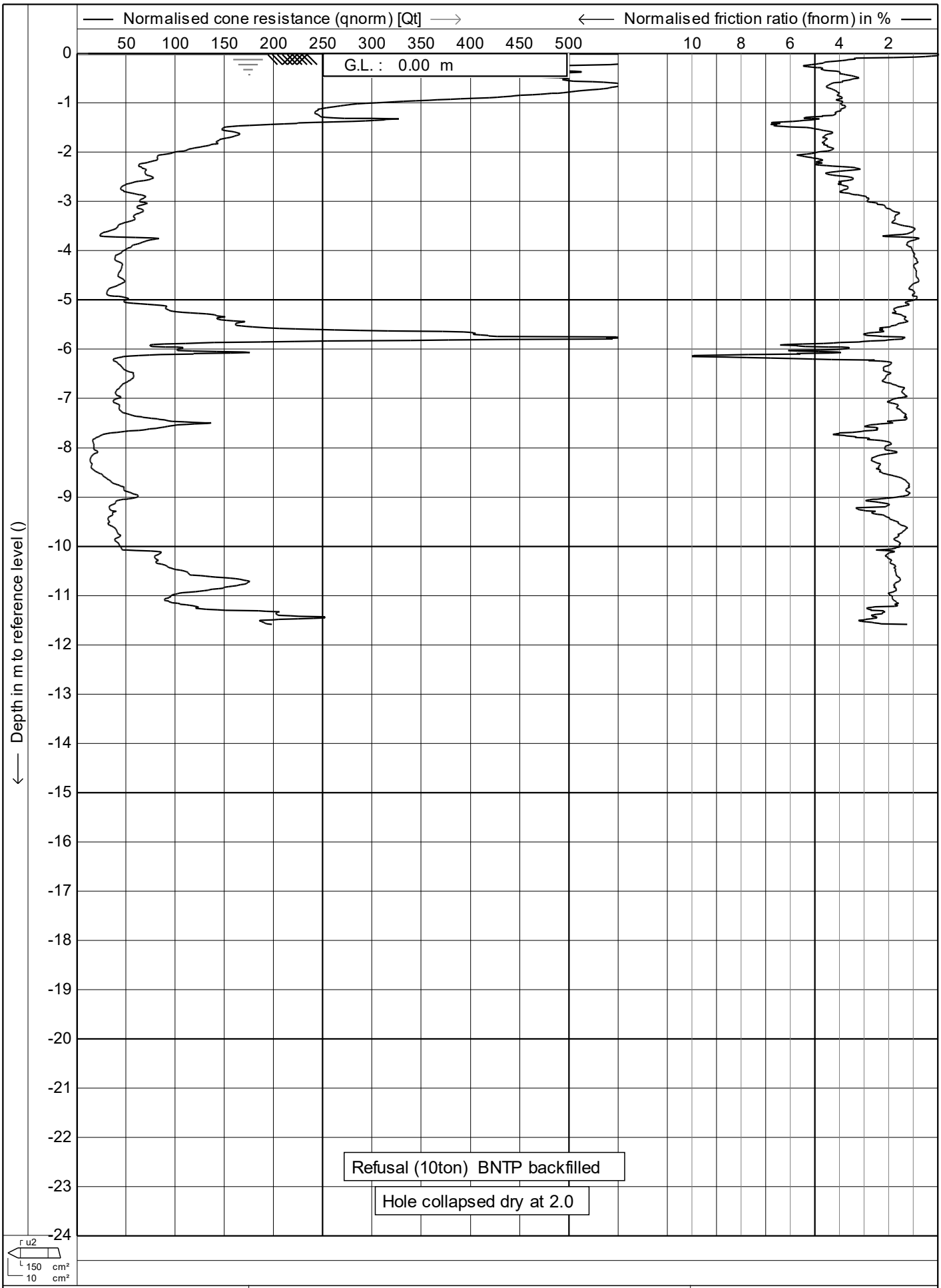
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **032**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

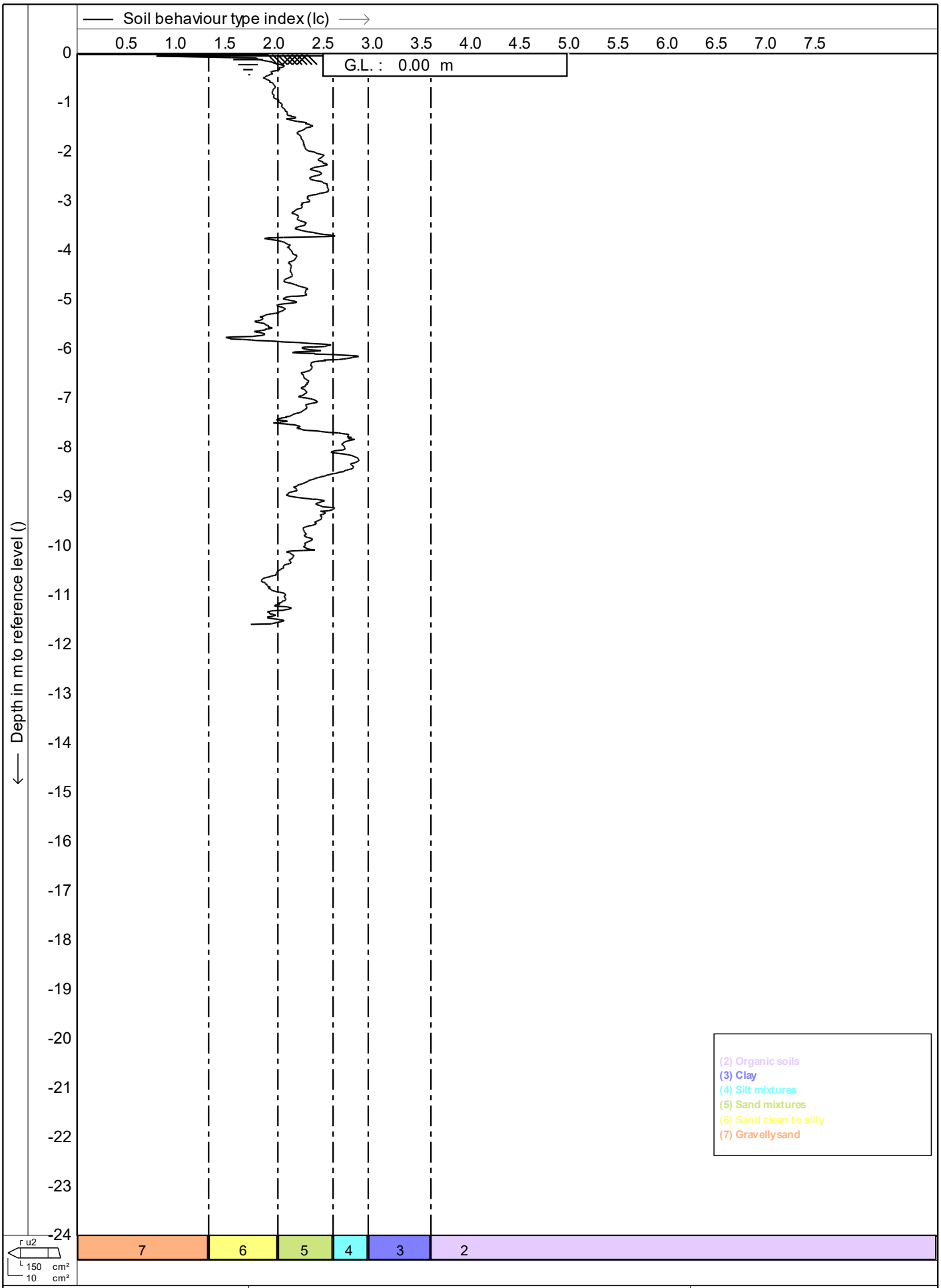
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **032**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

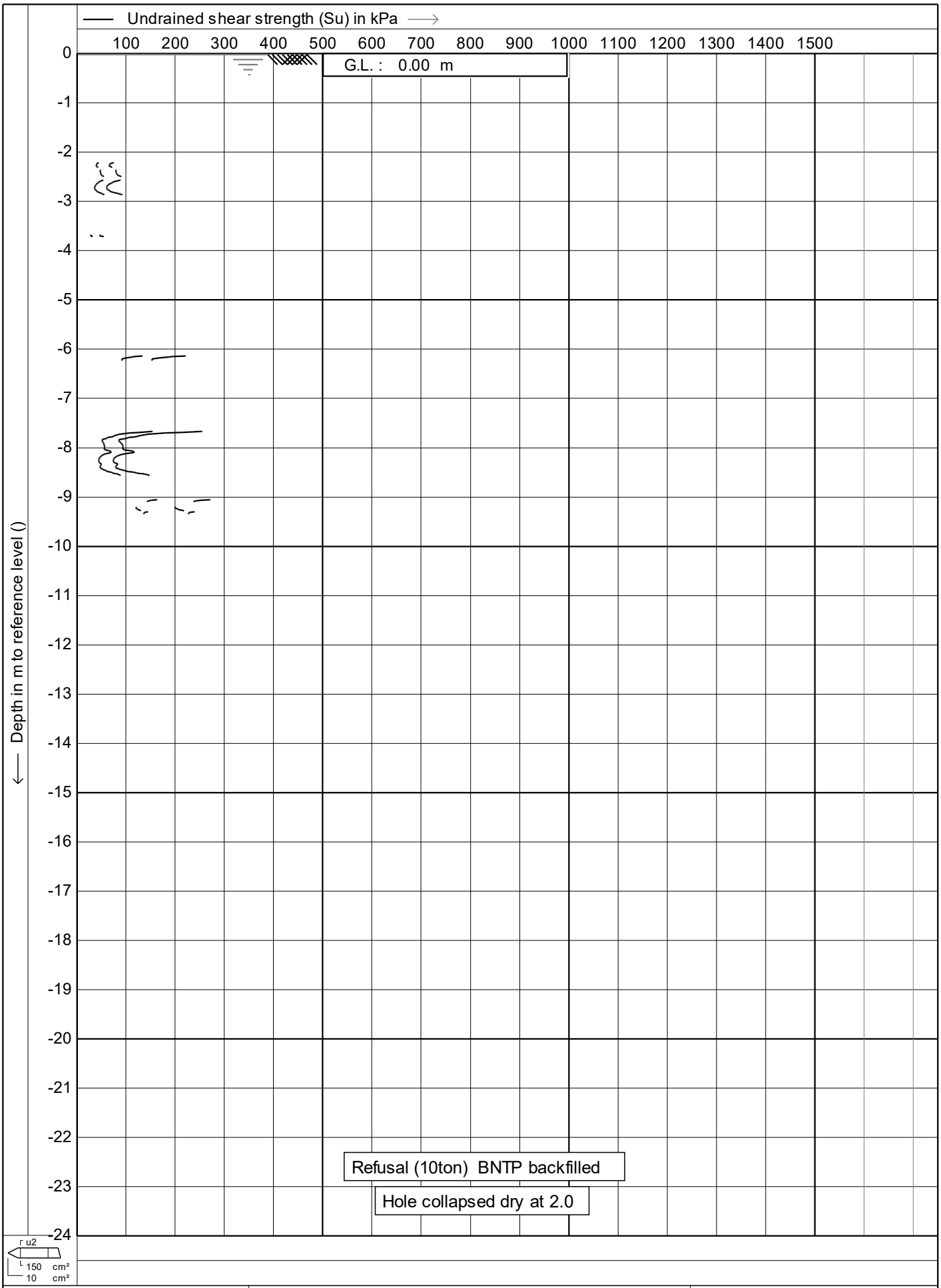
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **032** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

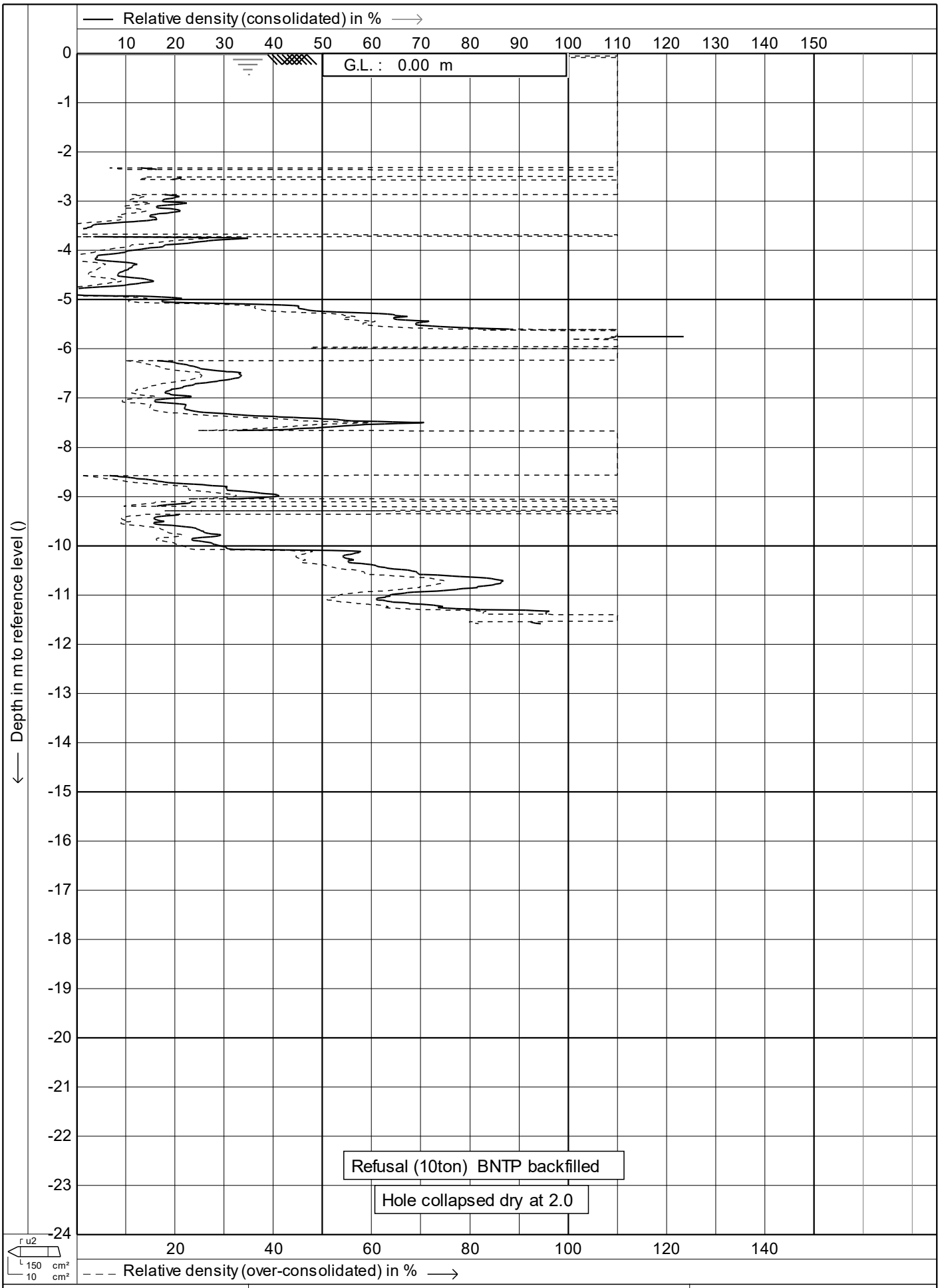
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **032**

10/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

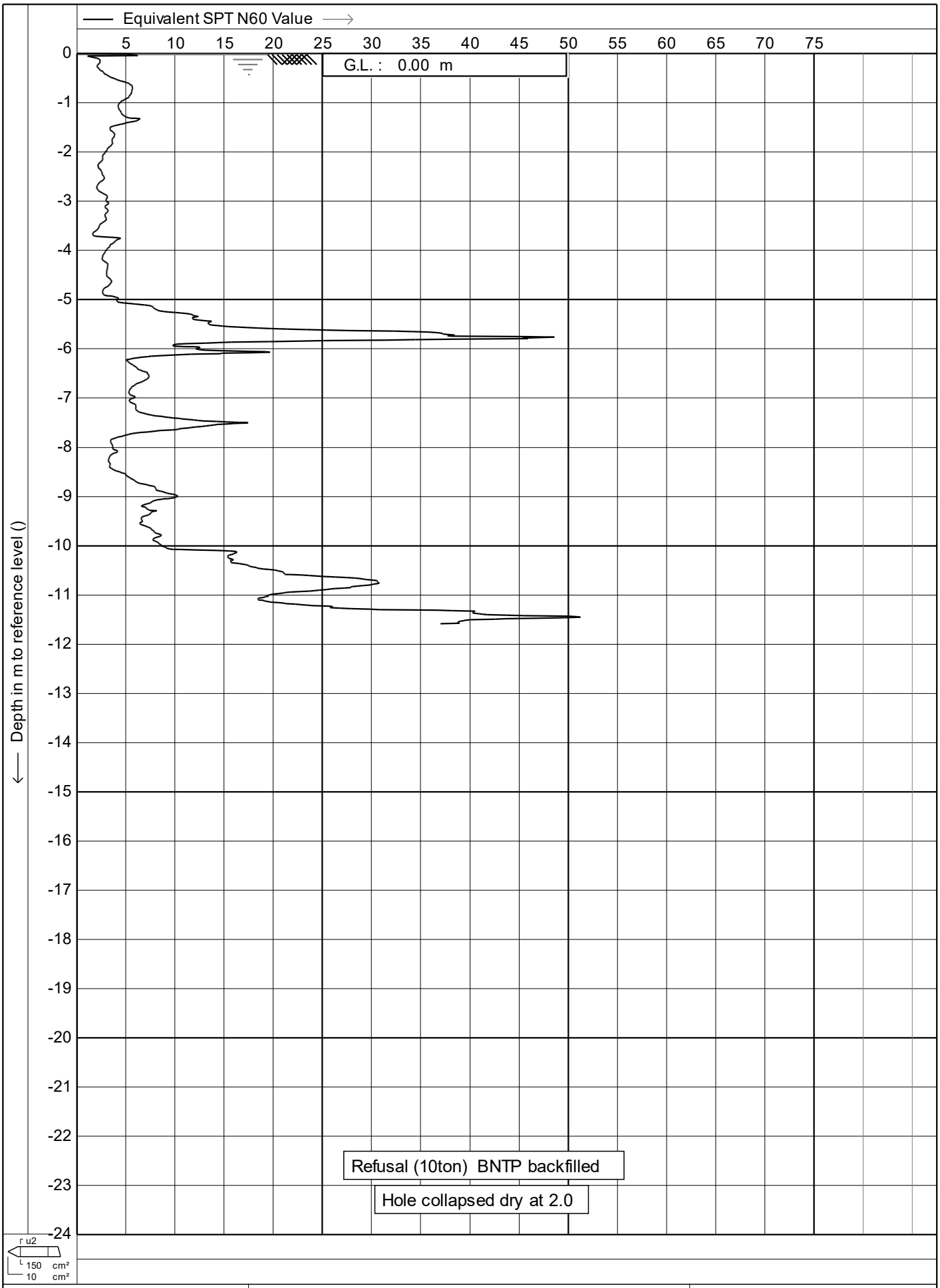
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **032**

11/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

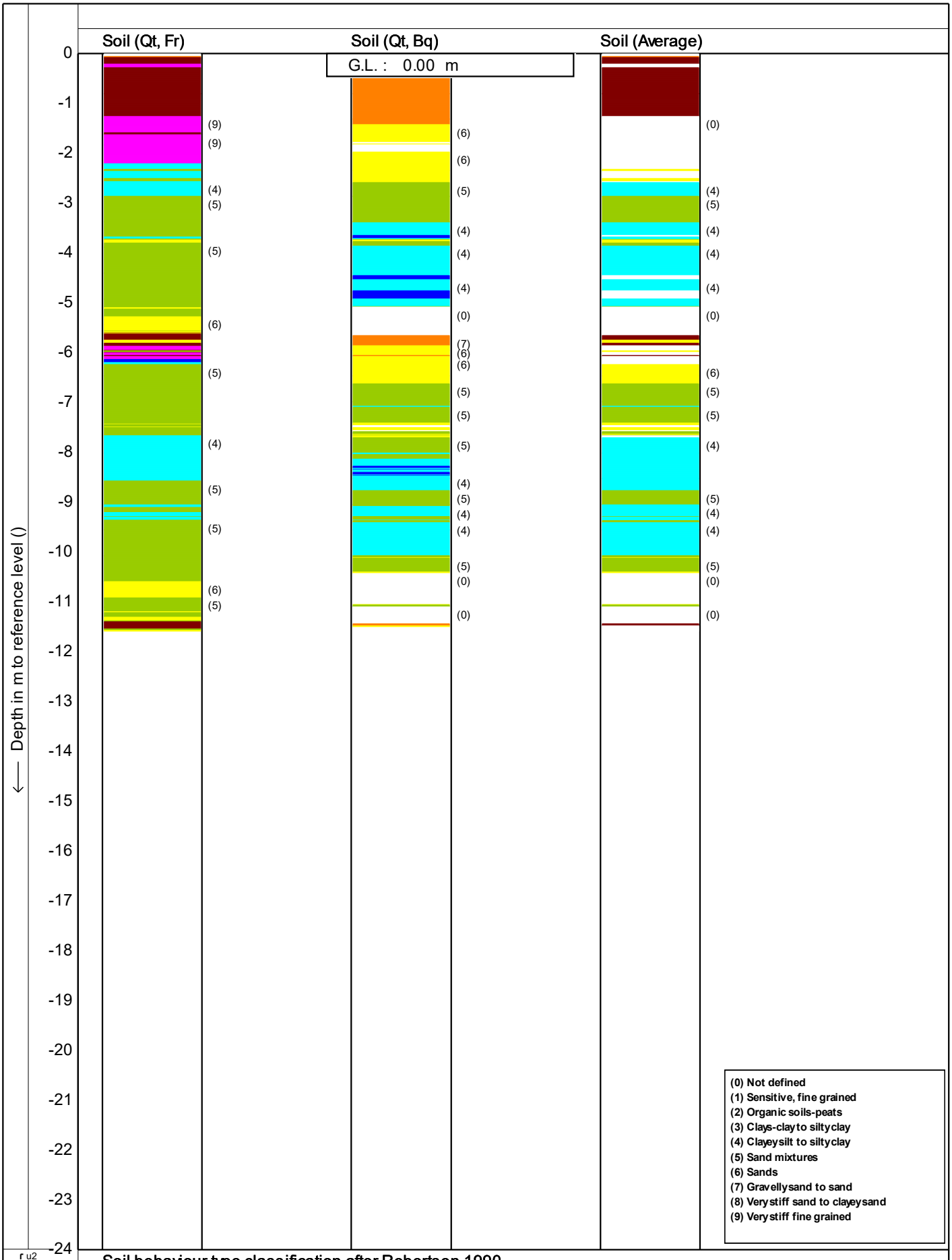
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **30/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **032**

12/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

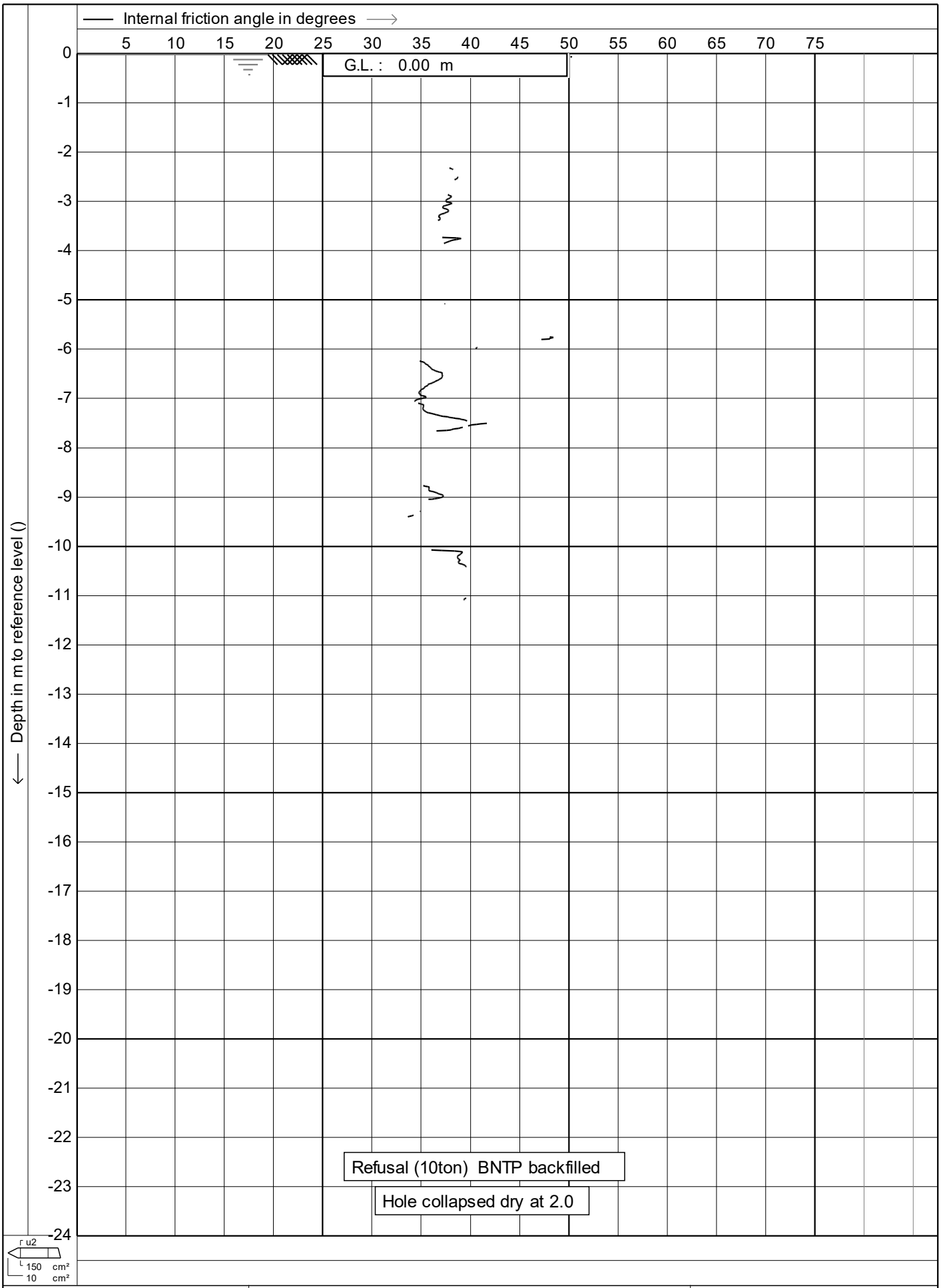
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **032**

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Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

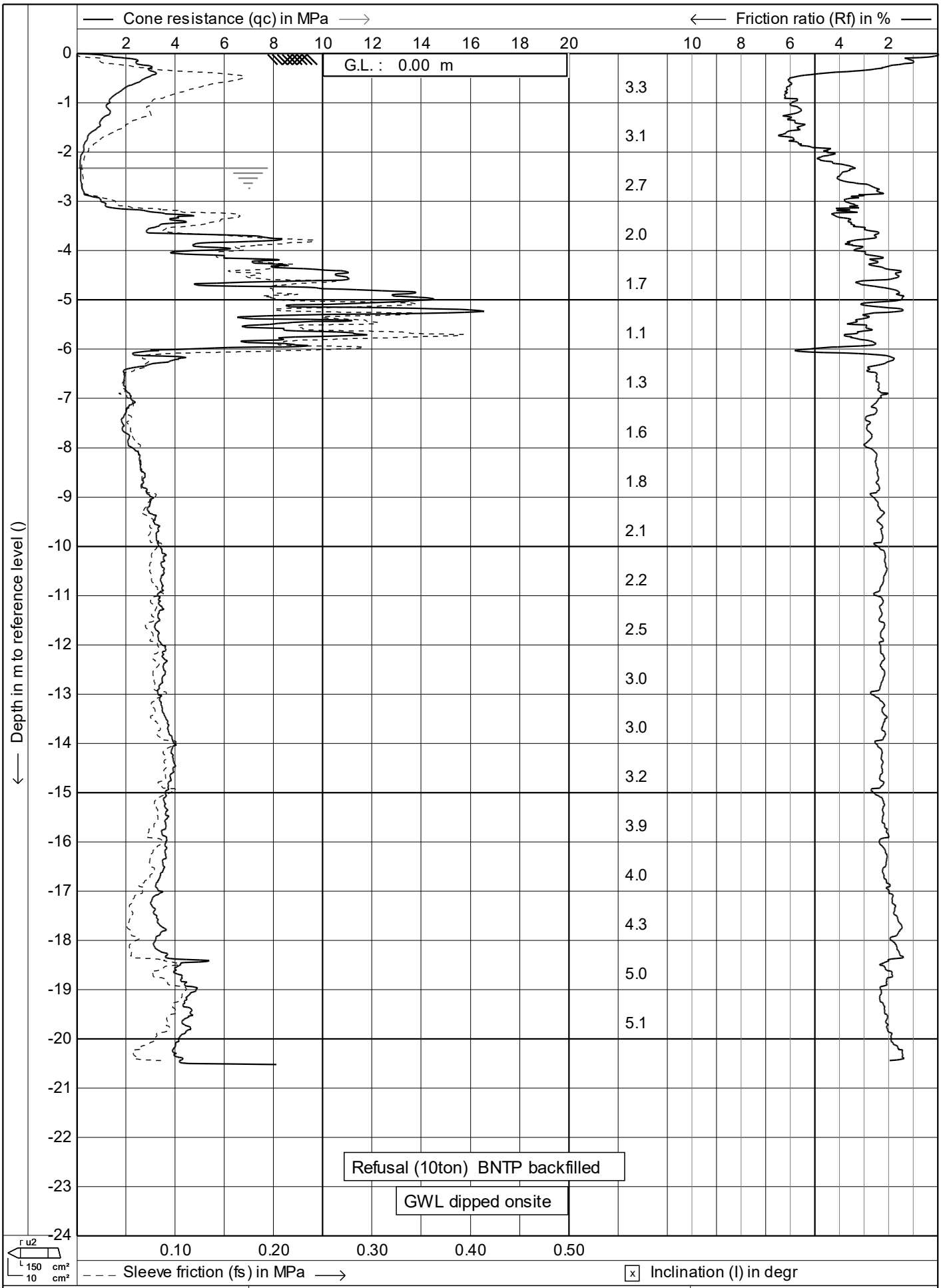
Date : **30/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **032**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **27/11/2020**

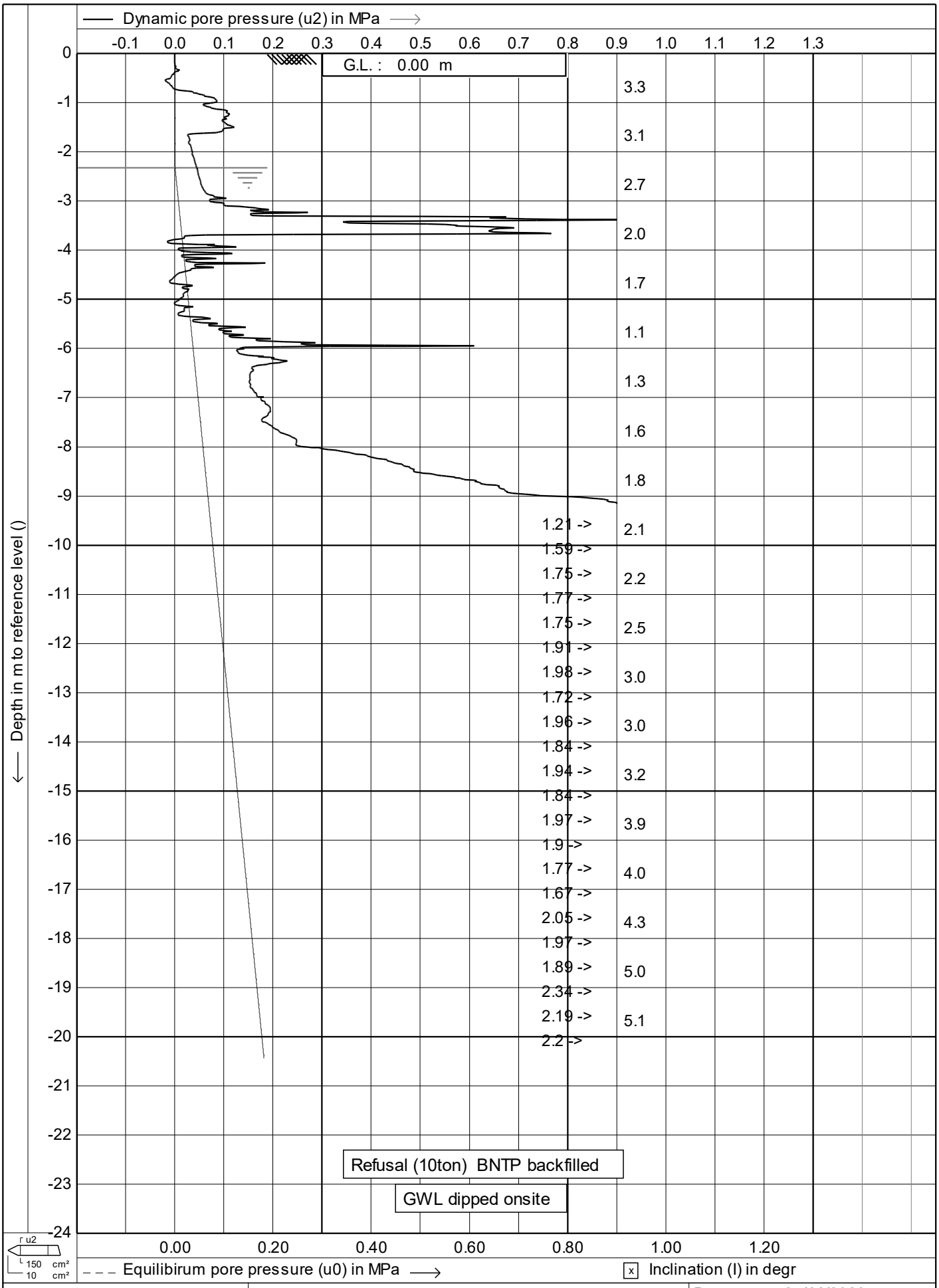
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **033**

1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

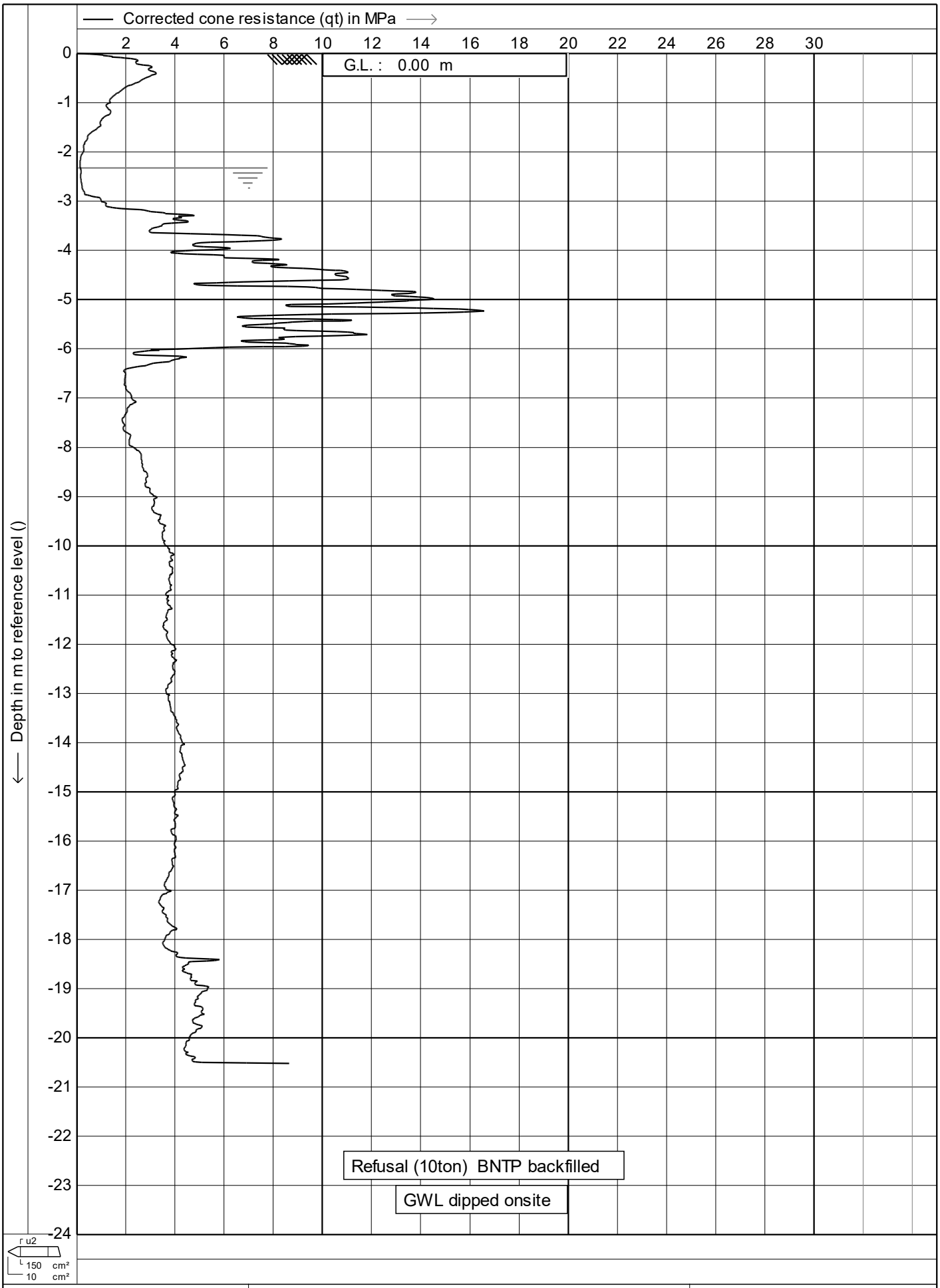
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **033**

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Test according A.S.T.M Standard D 5778-12

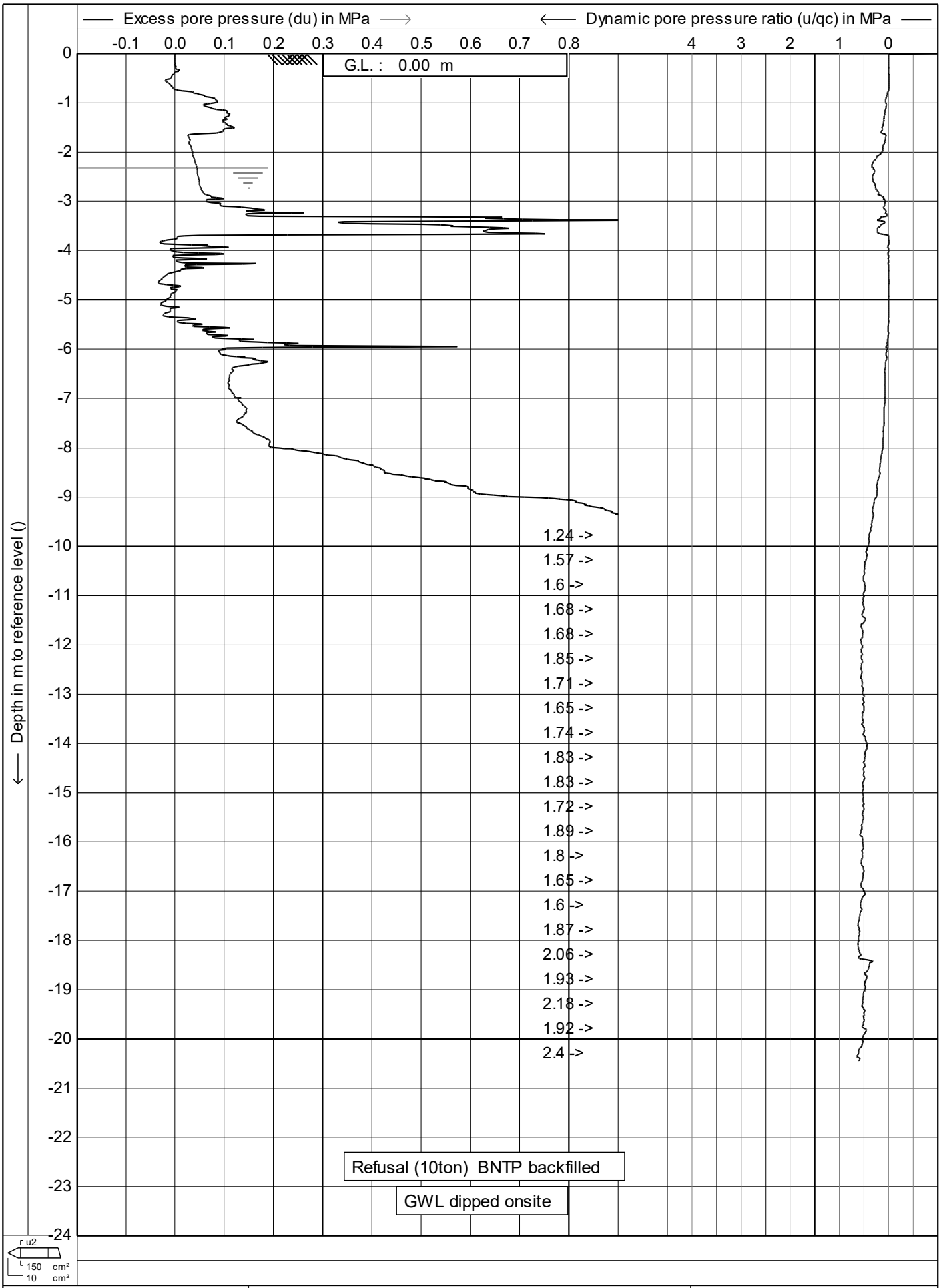
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

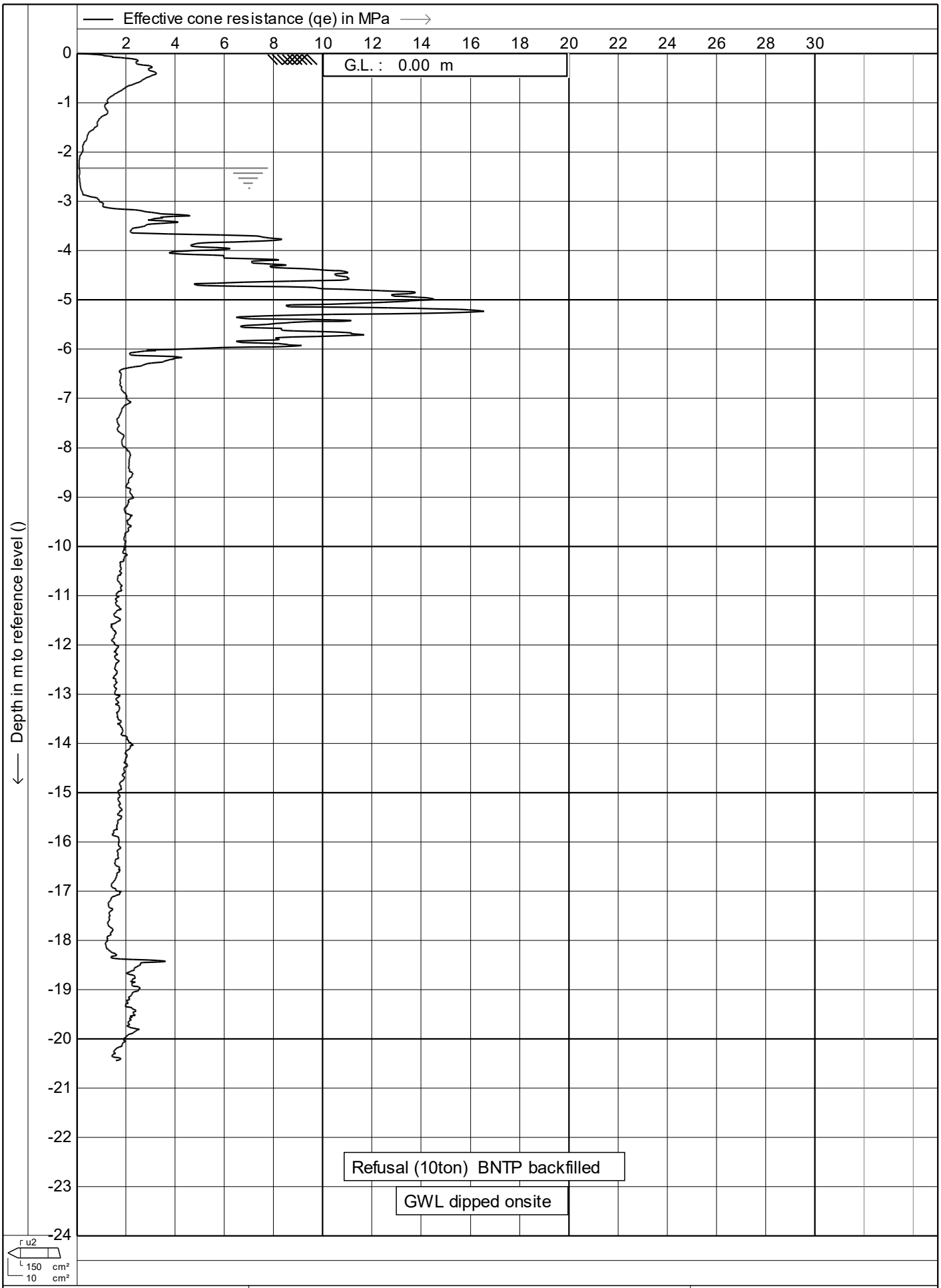
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **033** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

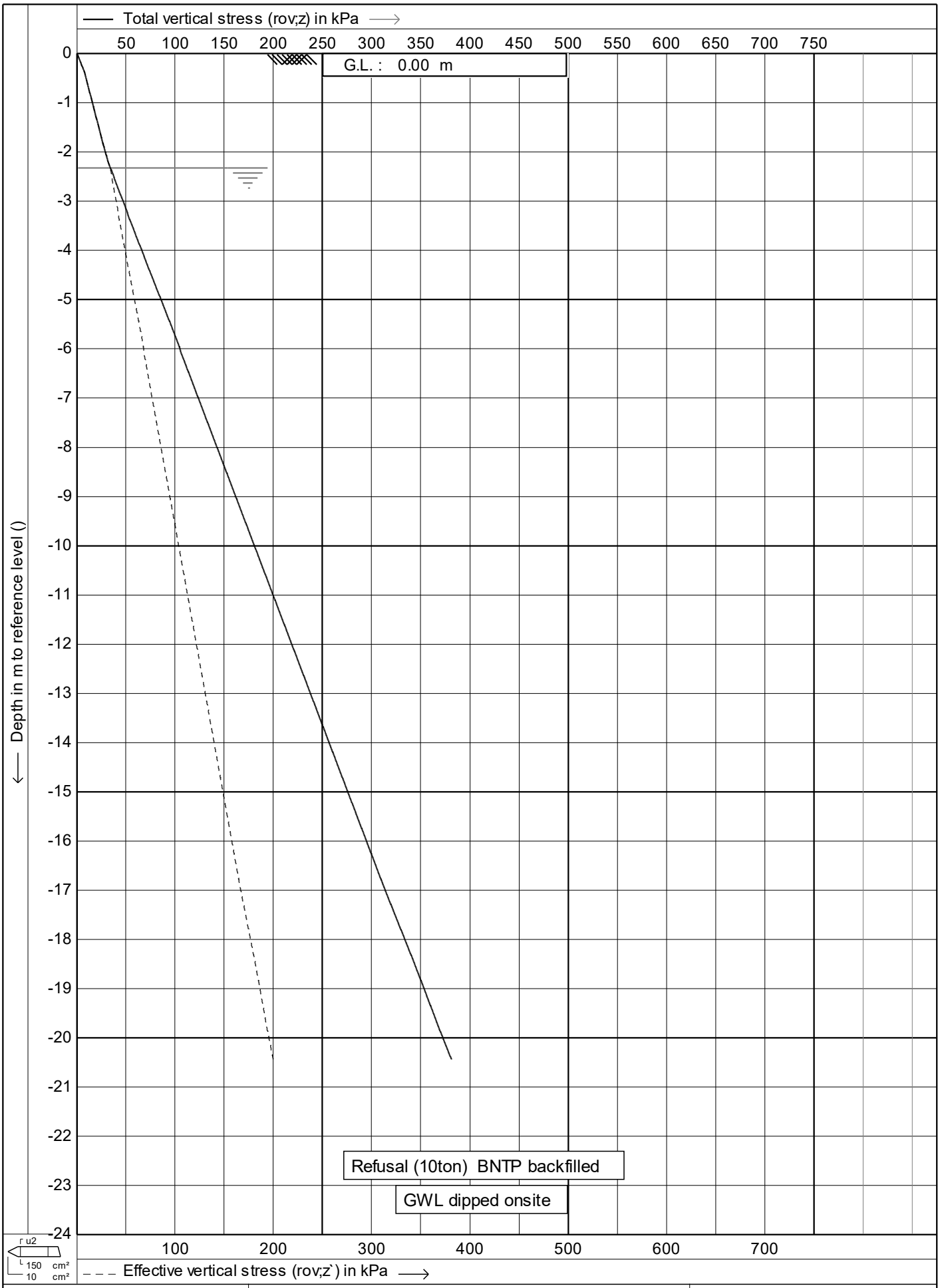
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **033**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

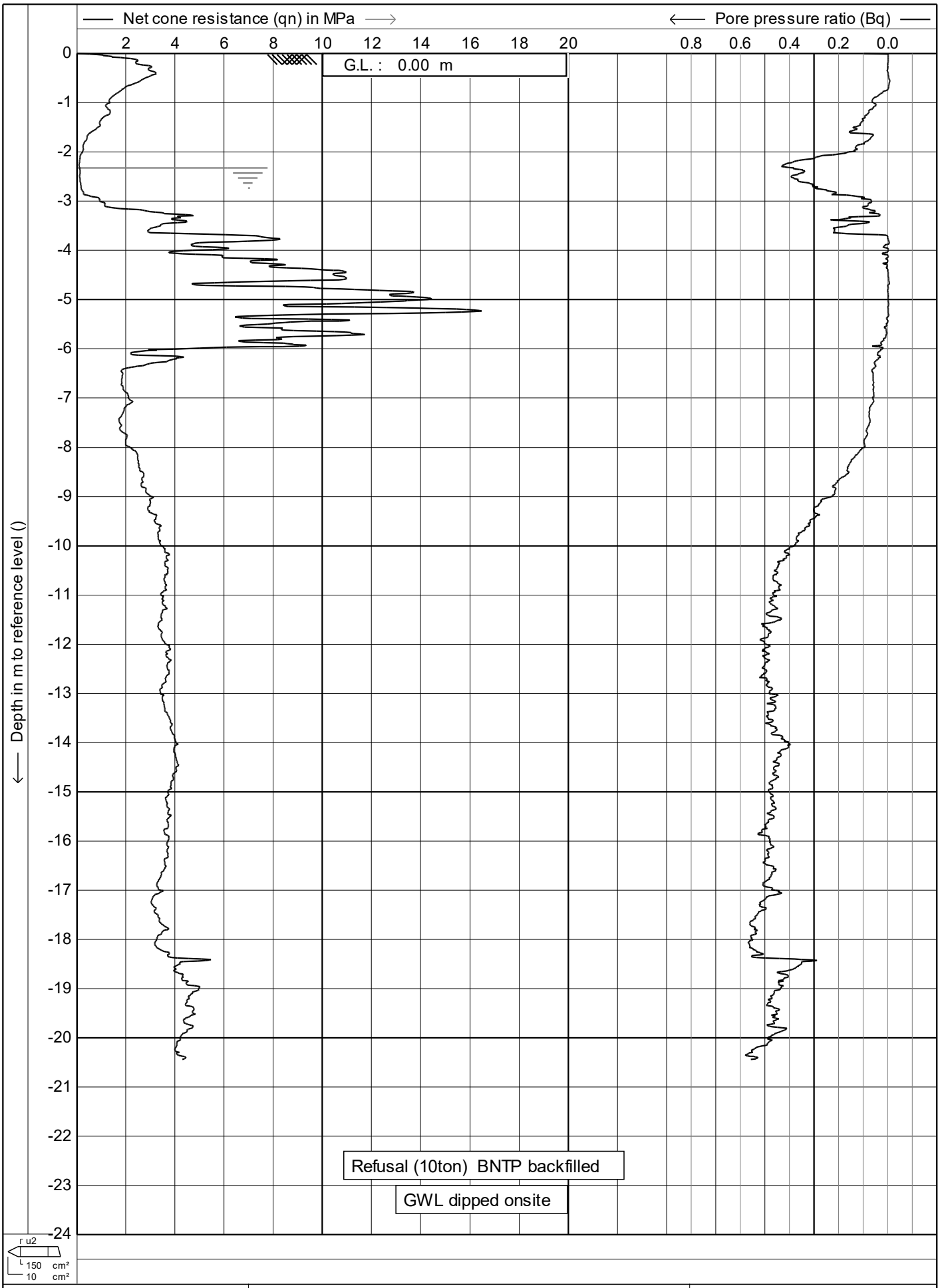
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **033**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

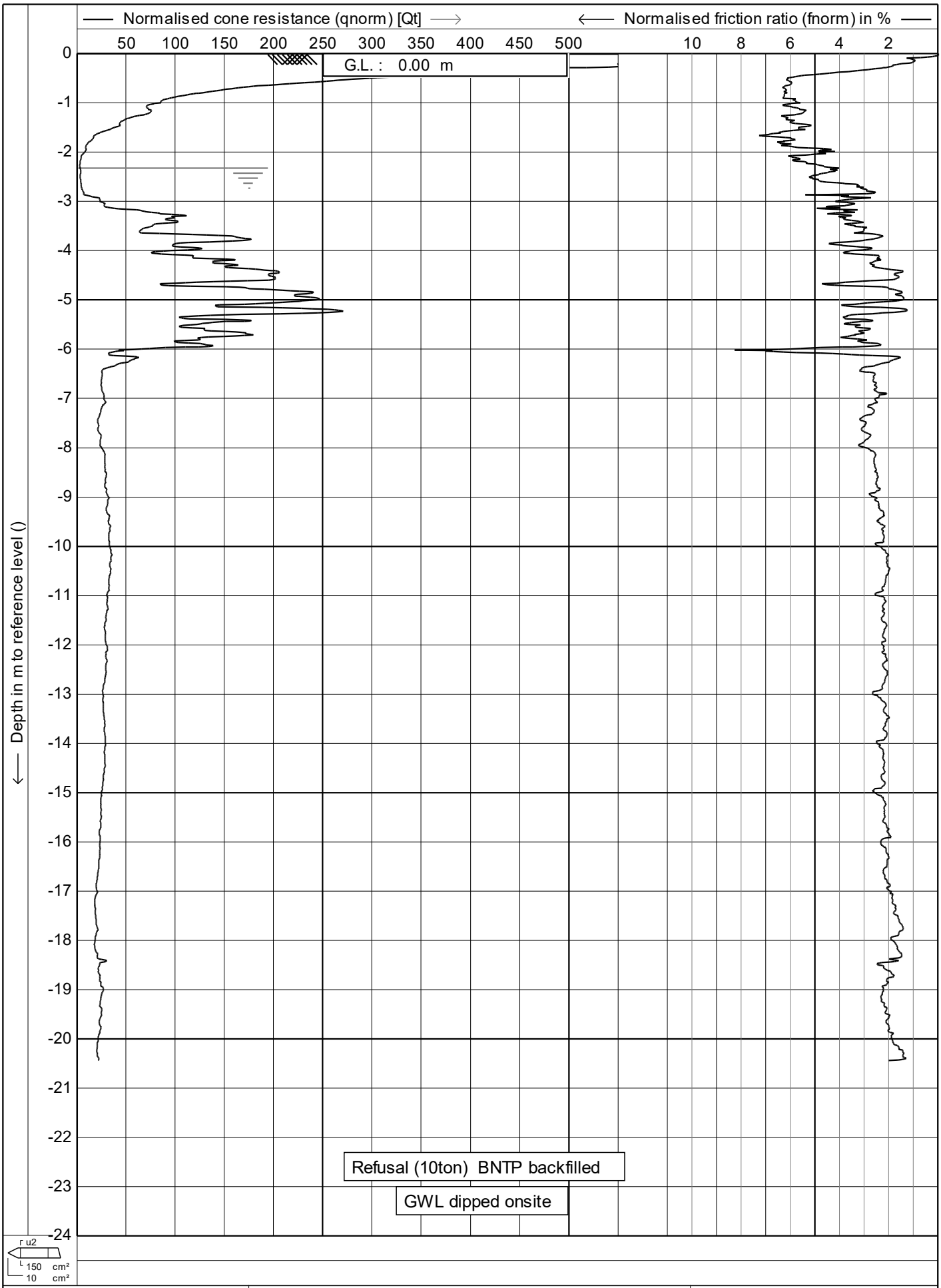
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **033** **7/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

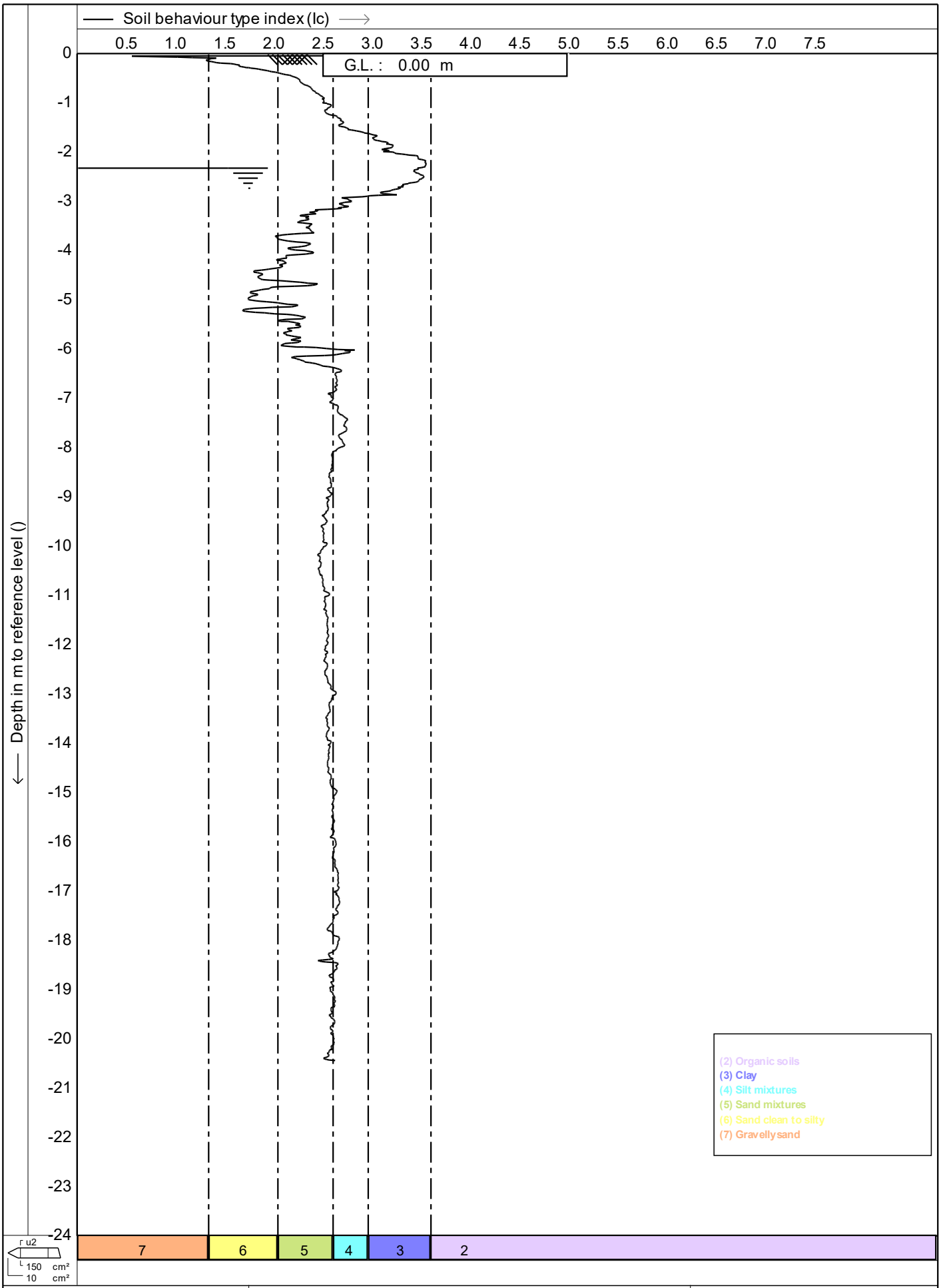
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **033**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

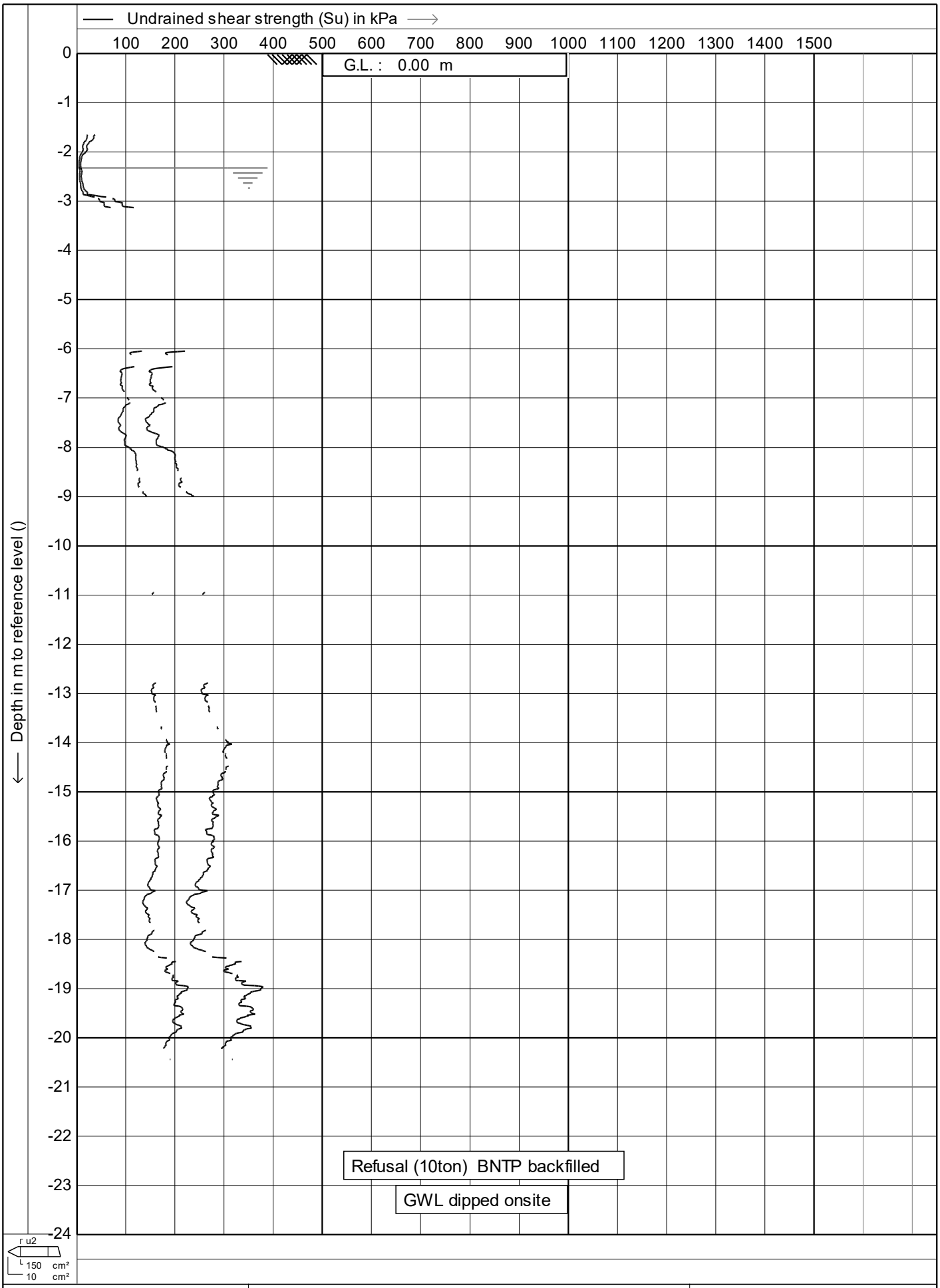
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **033** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

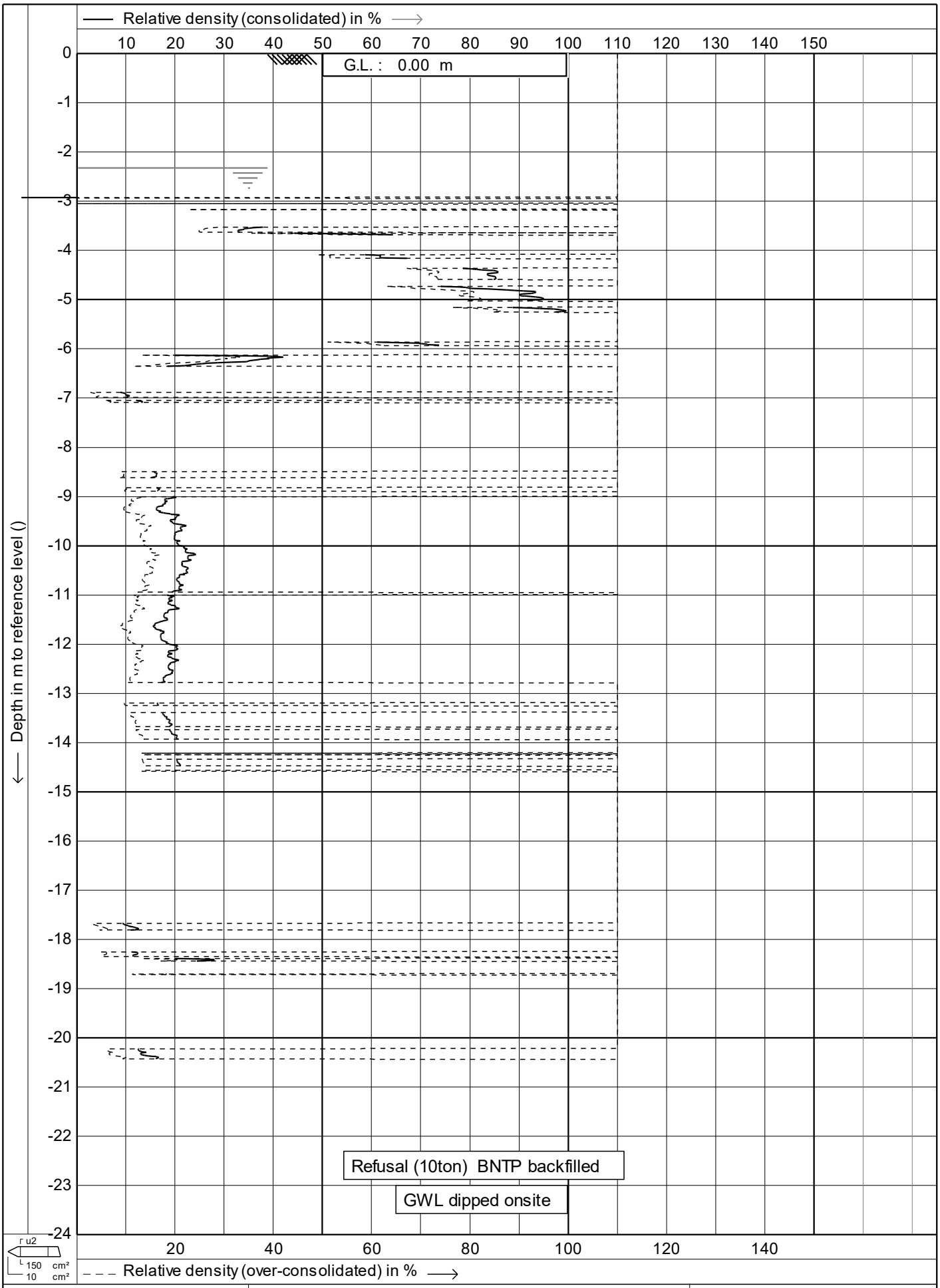
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **033**

10/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **27/11/2020**

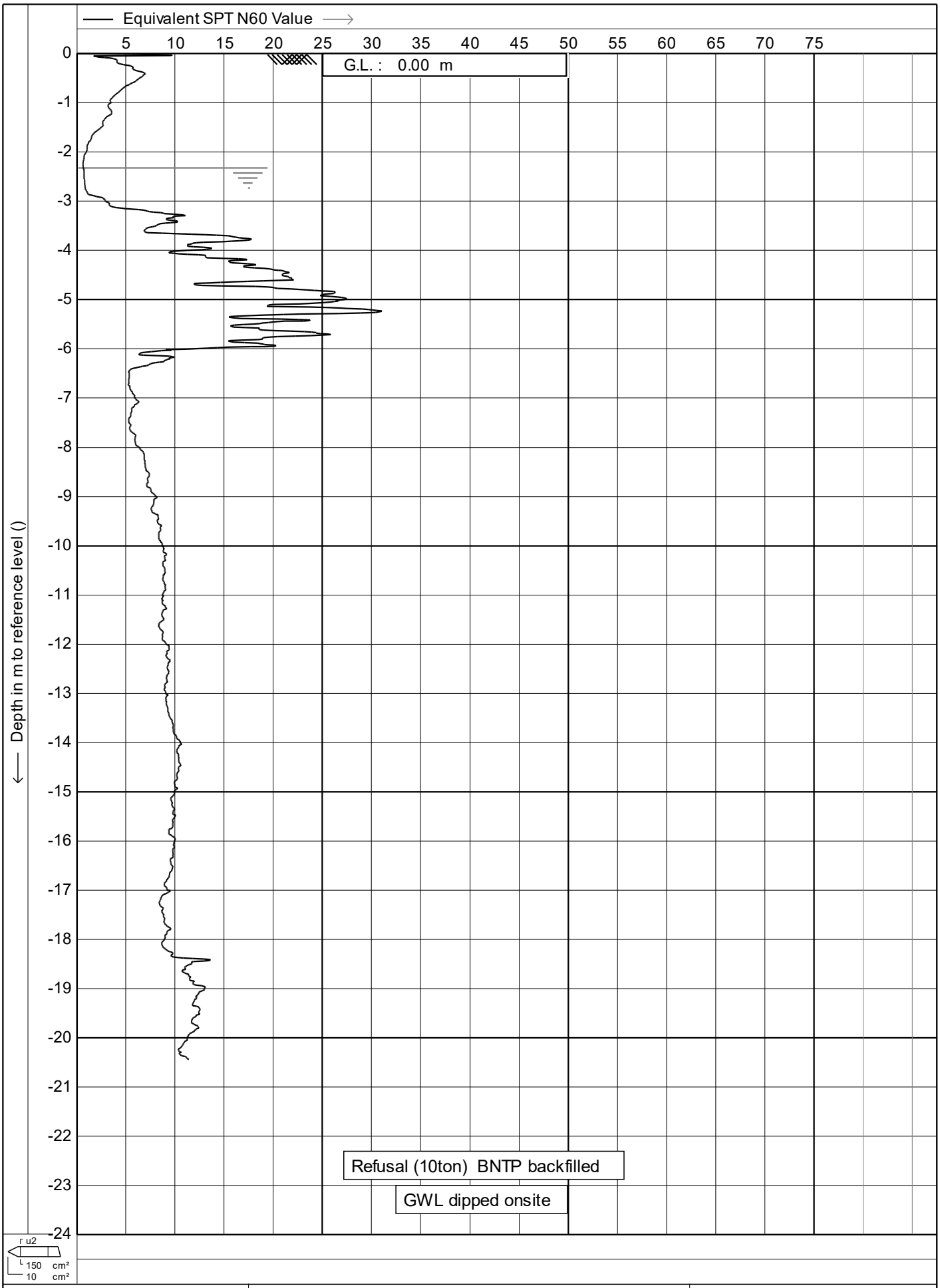
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **033**

11/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

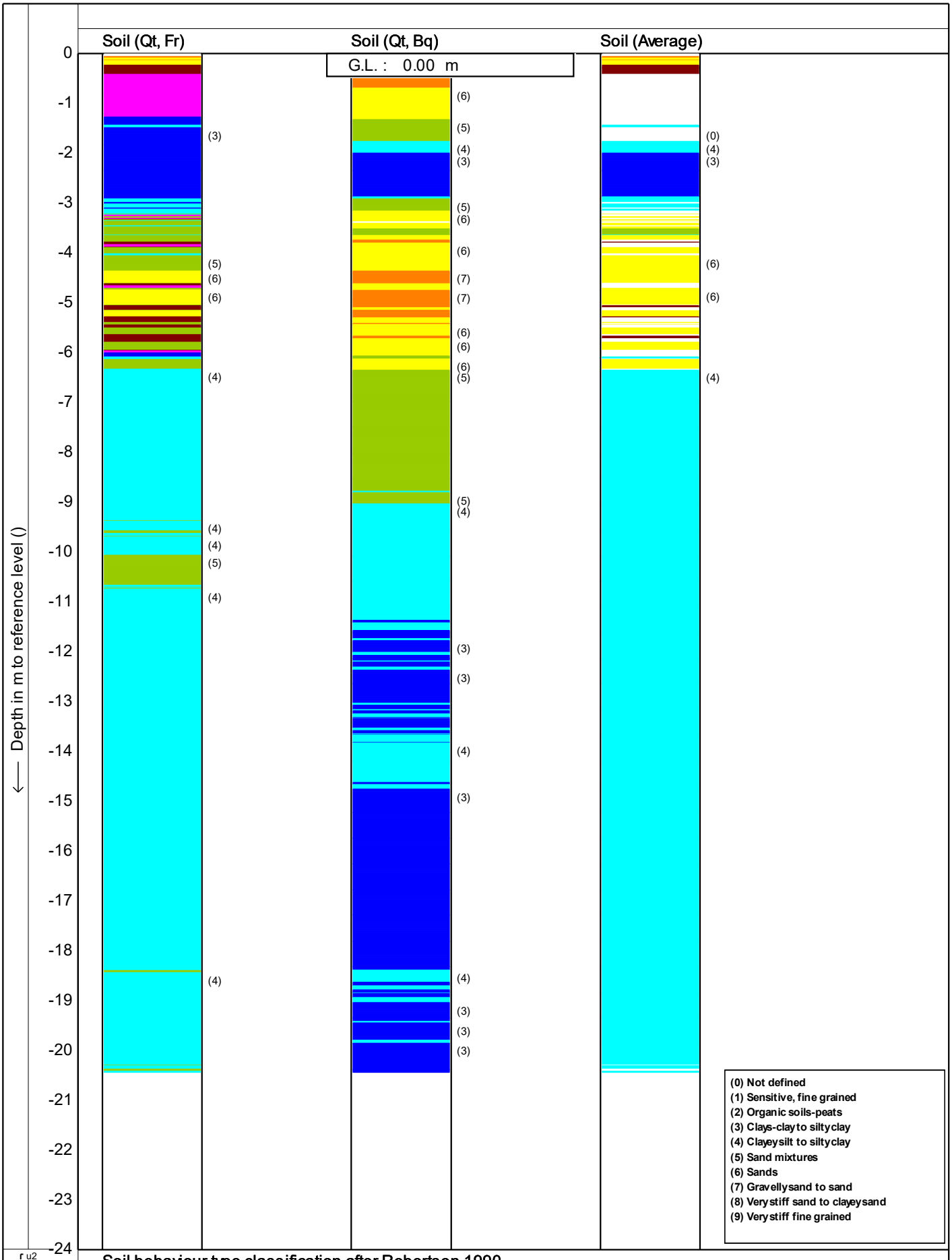
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **033**

1.48



Soil behaviour type classification after Robertson 1990

r u2
150 cm²
10 cm²

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

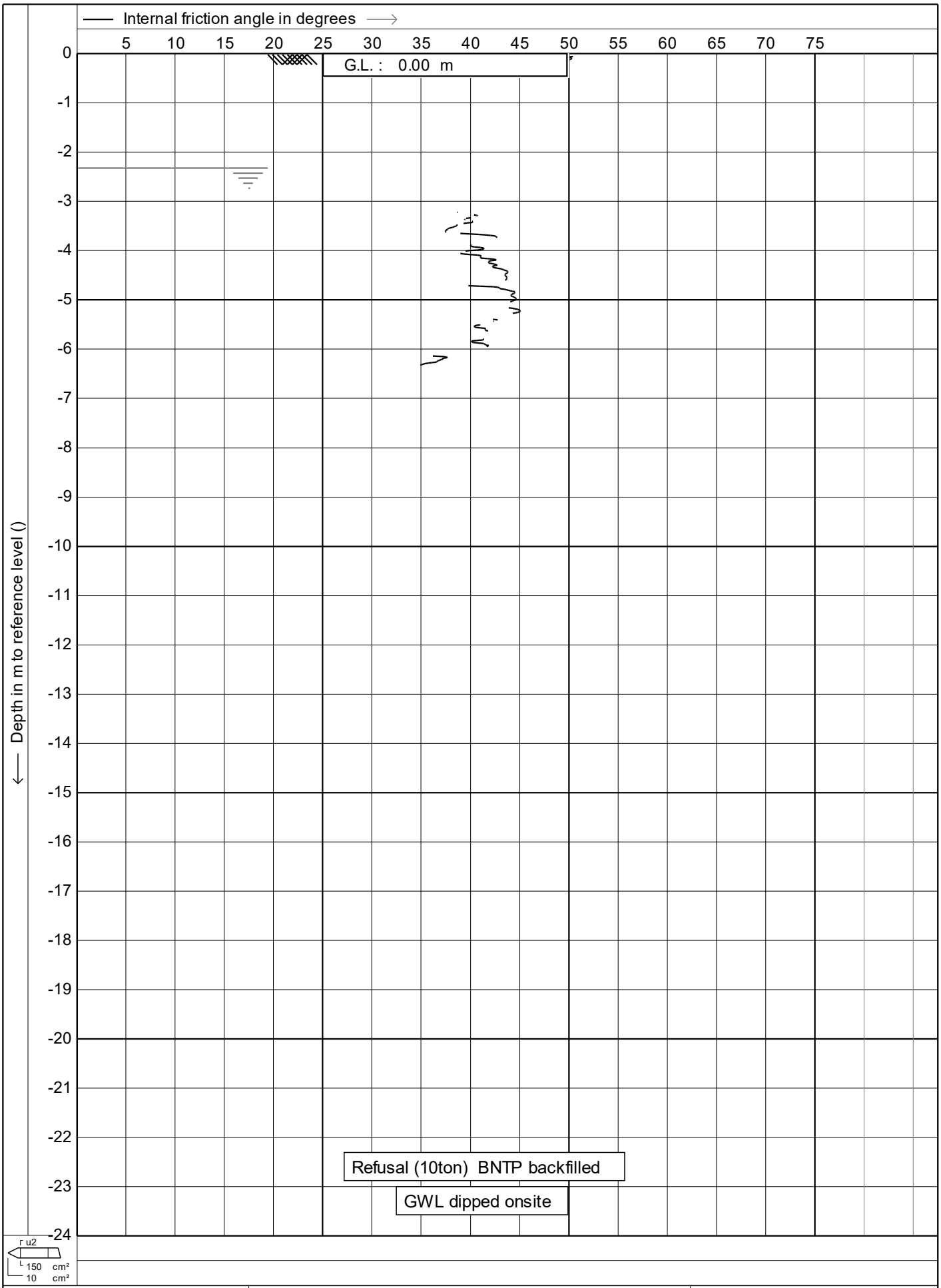
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **033**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

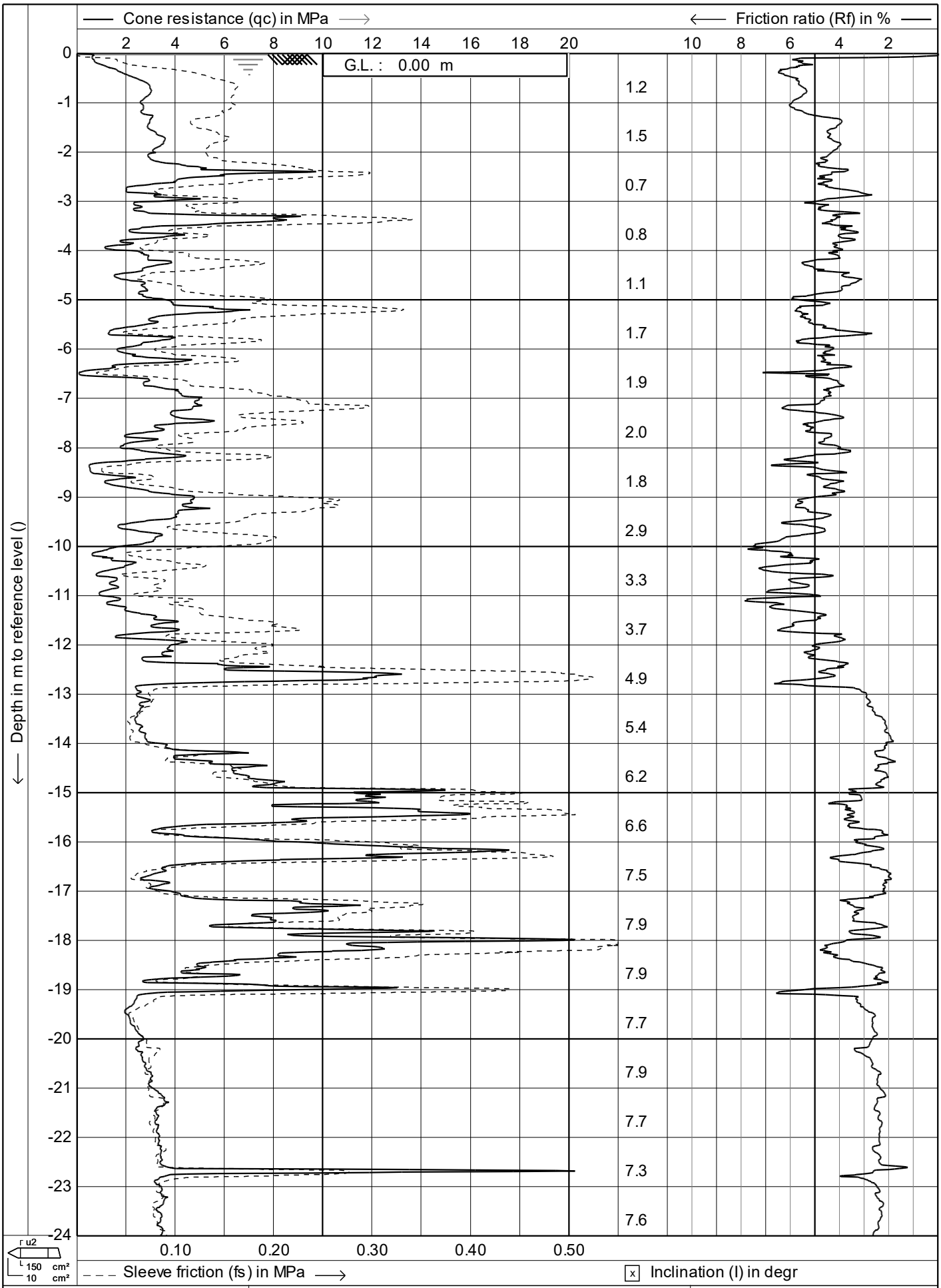
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **033**

14/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **26/11/2020**

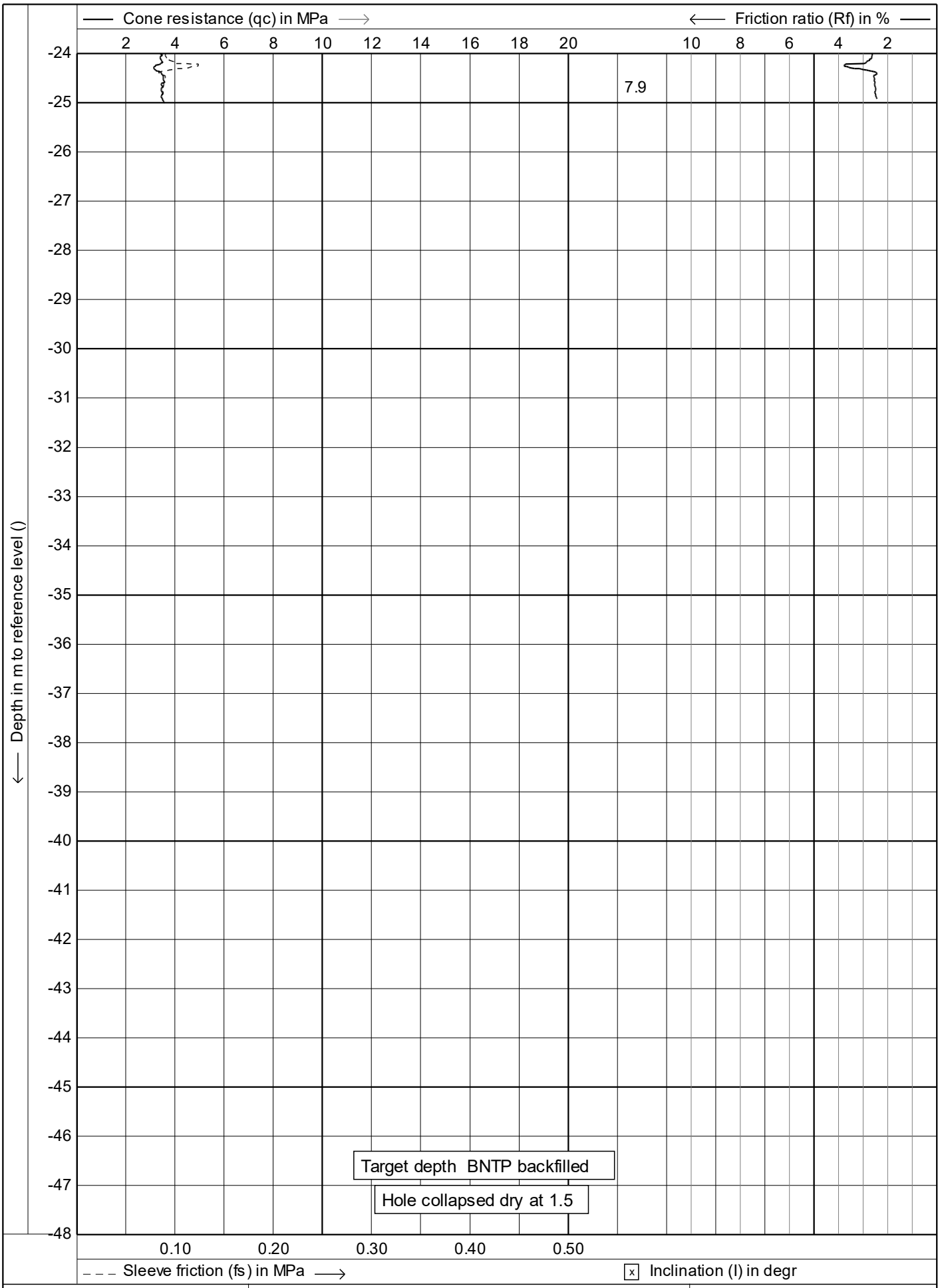
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **034**

1/28

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

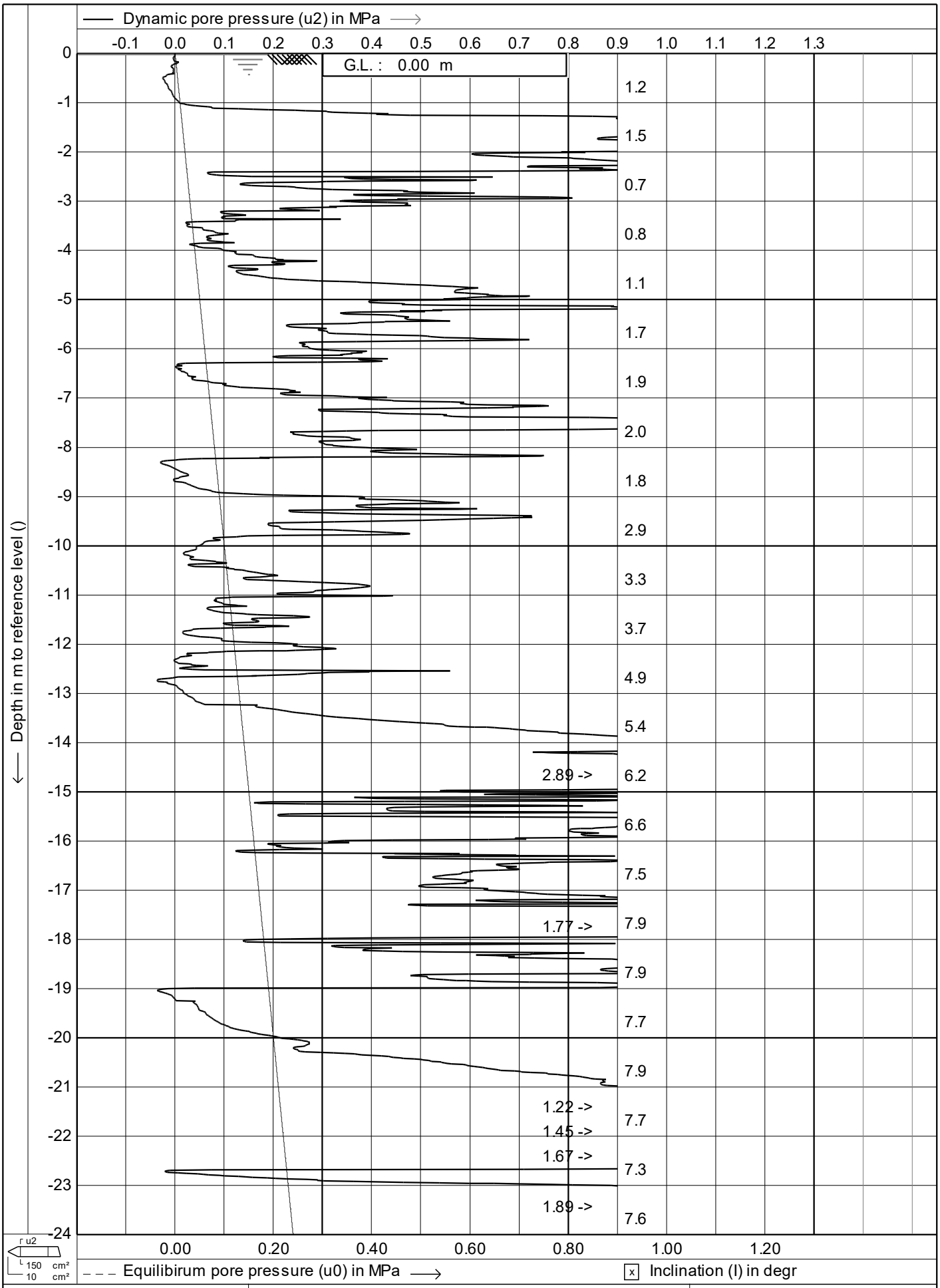
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **034**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

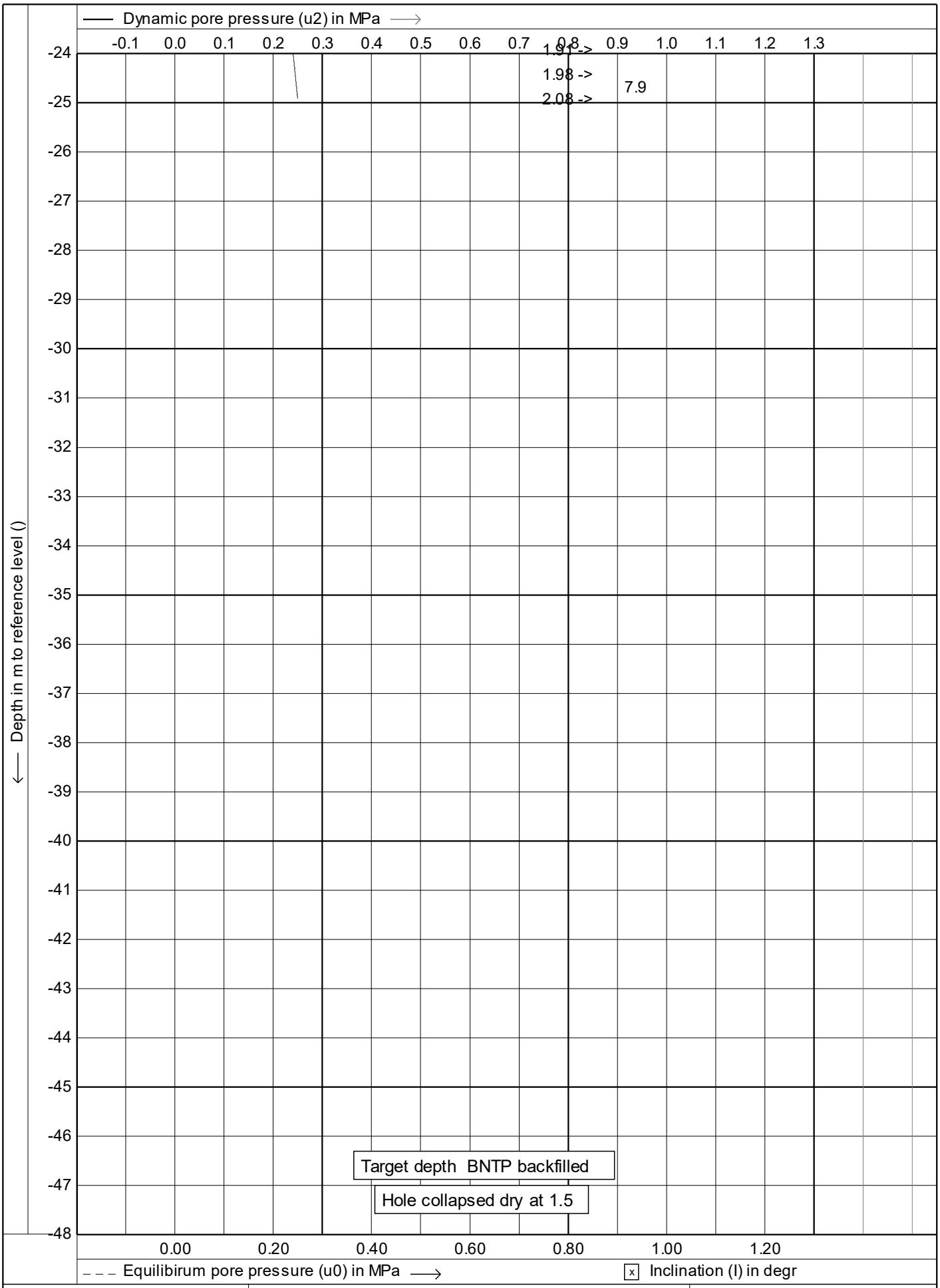
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **034**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

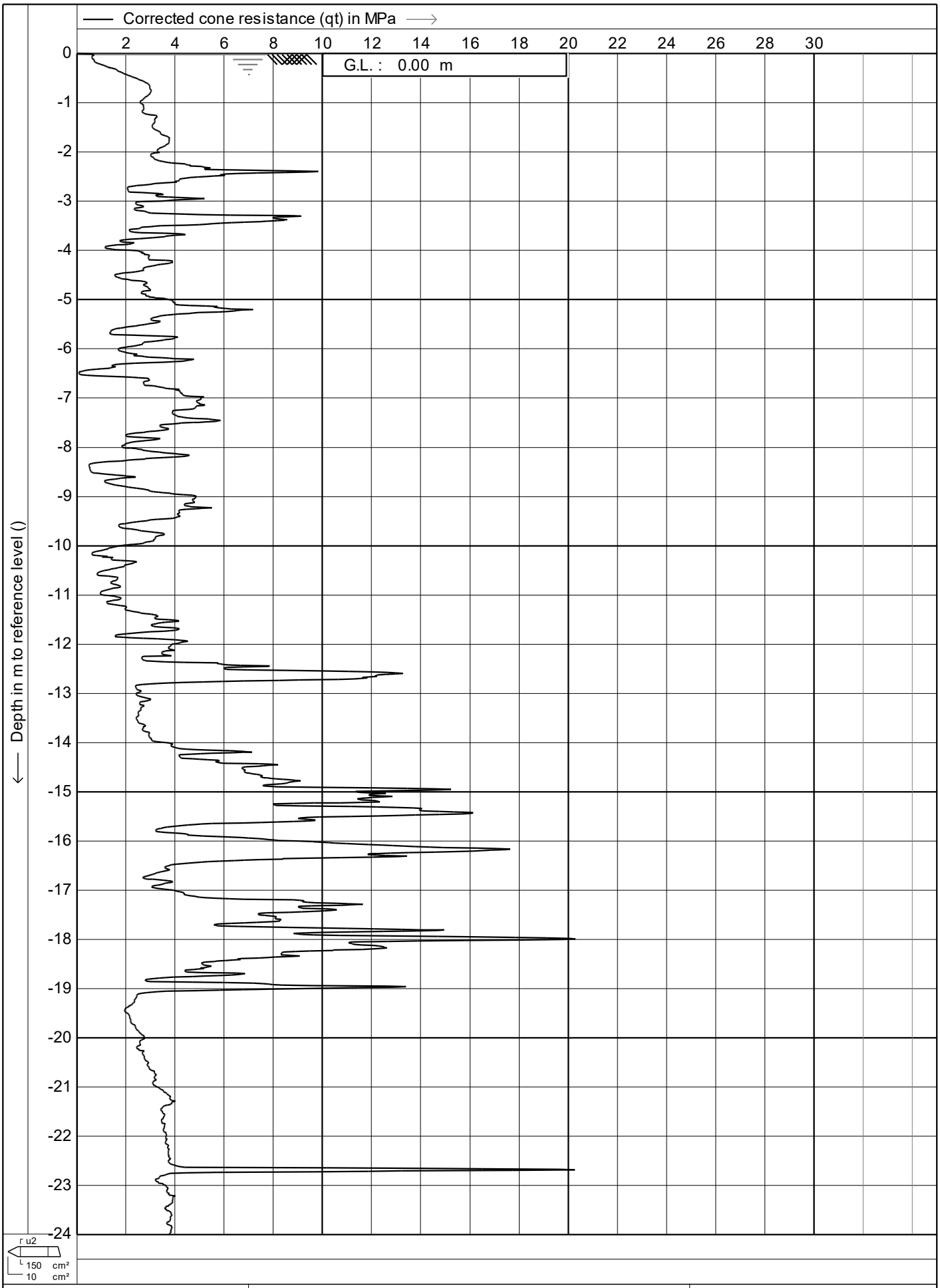
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **034**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

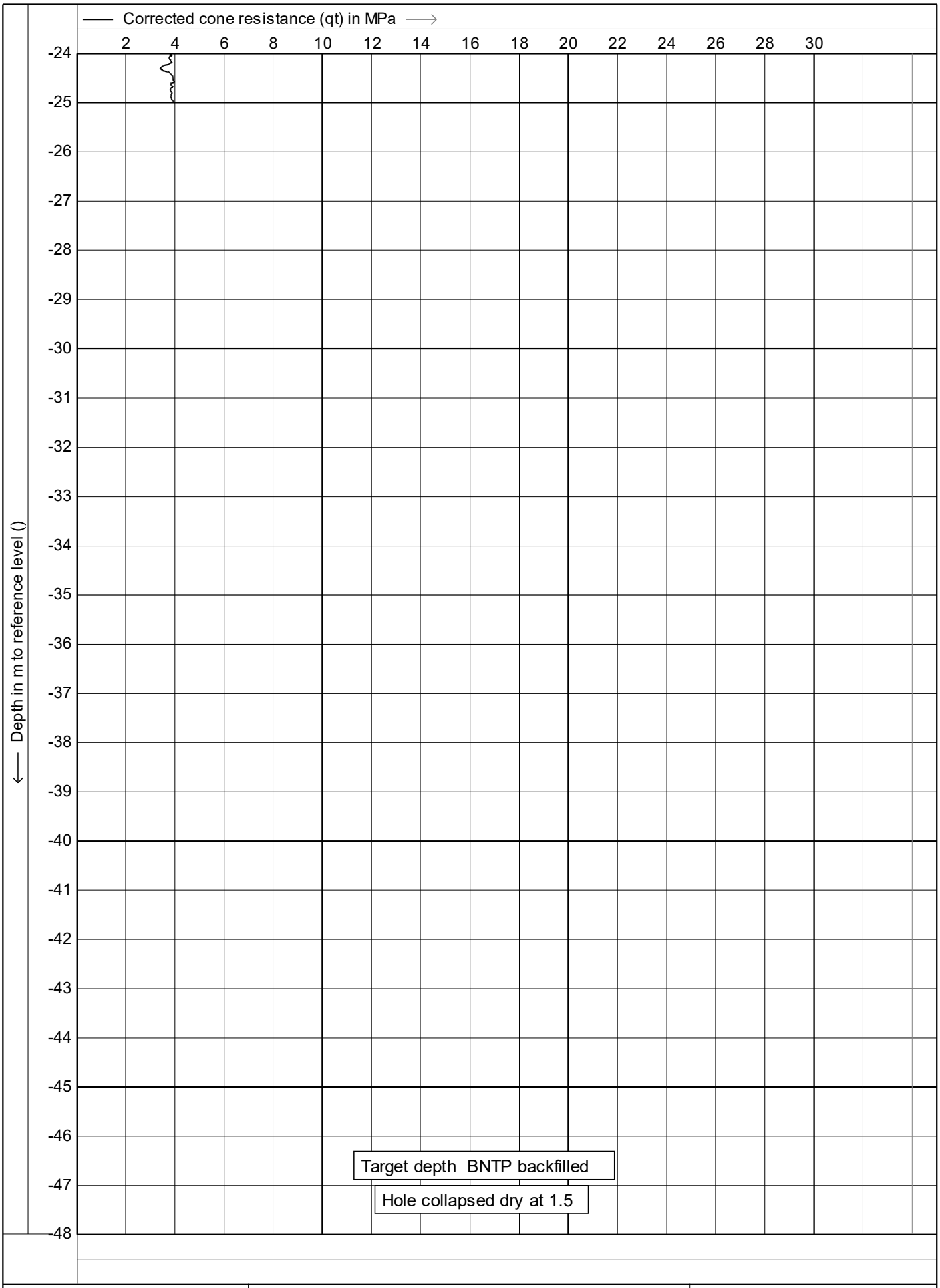
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **034**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

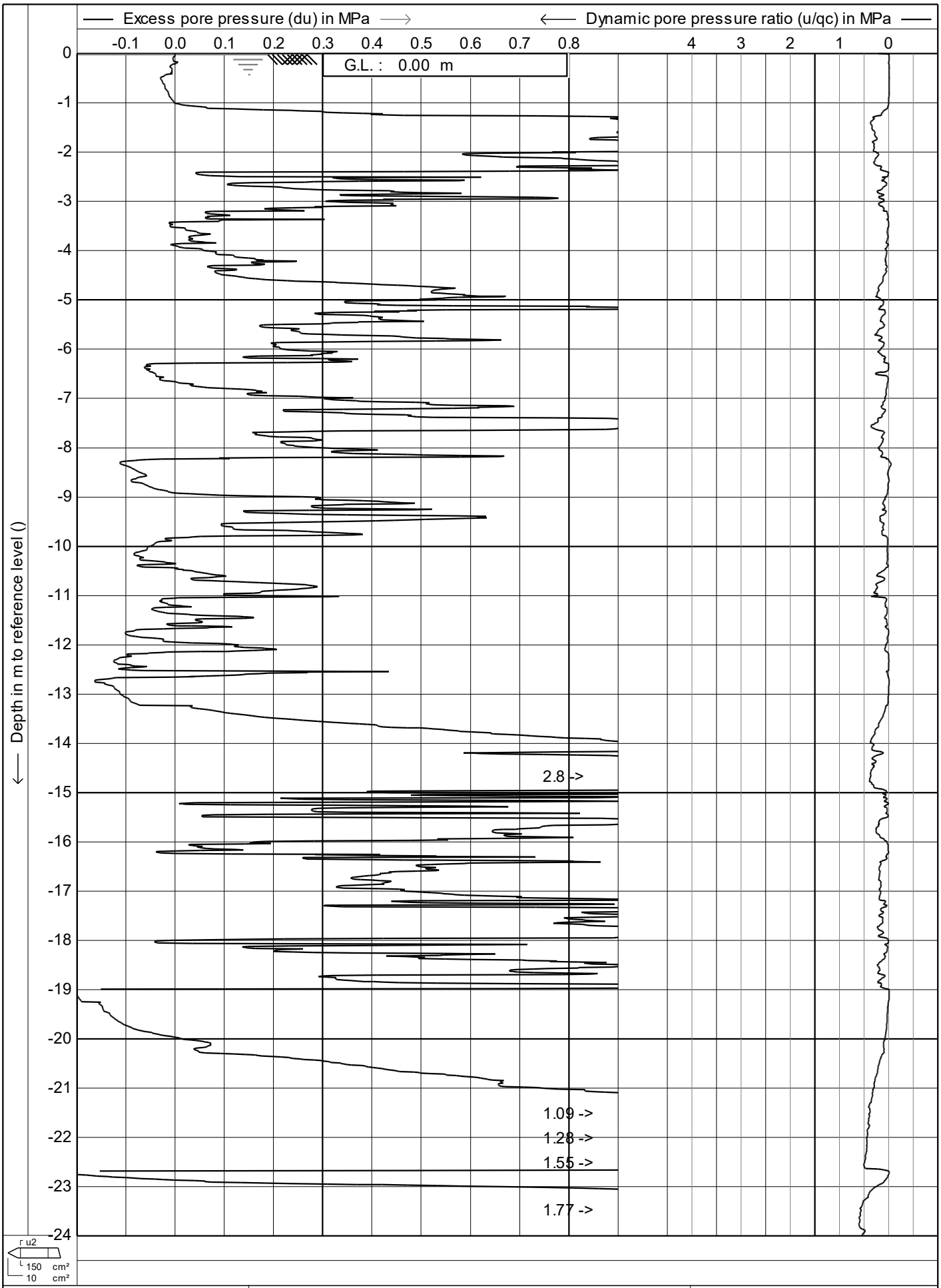
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **034**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

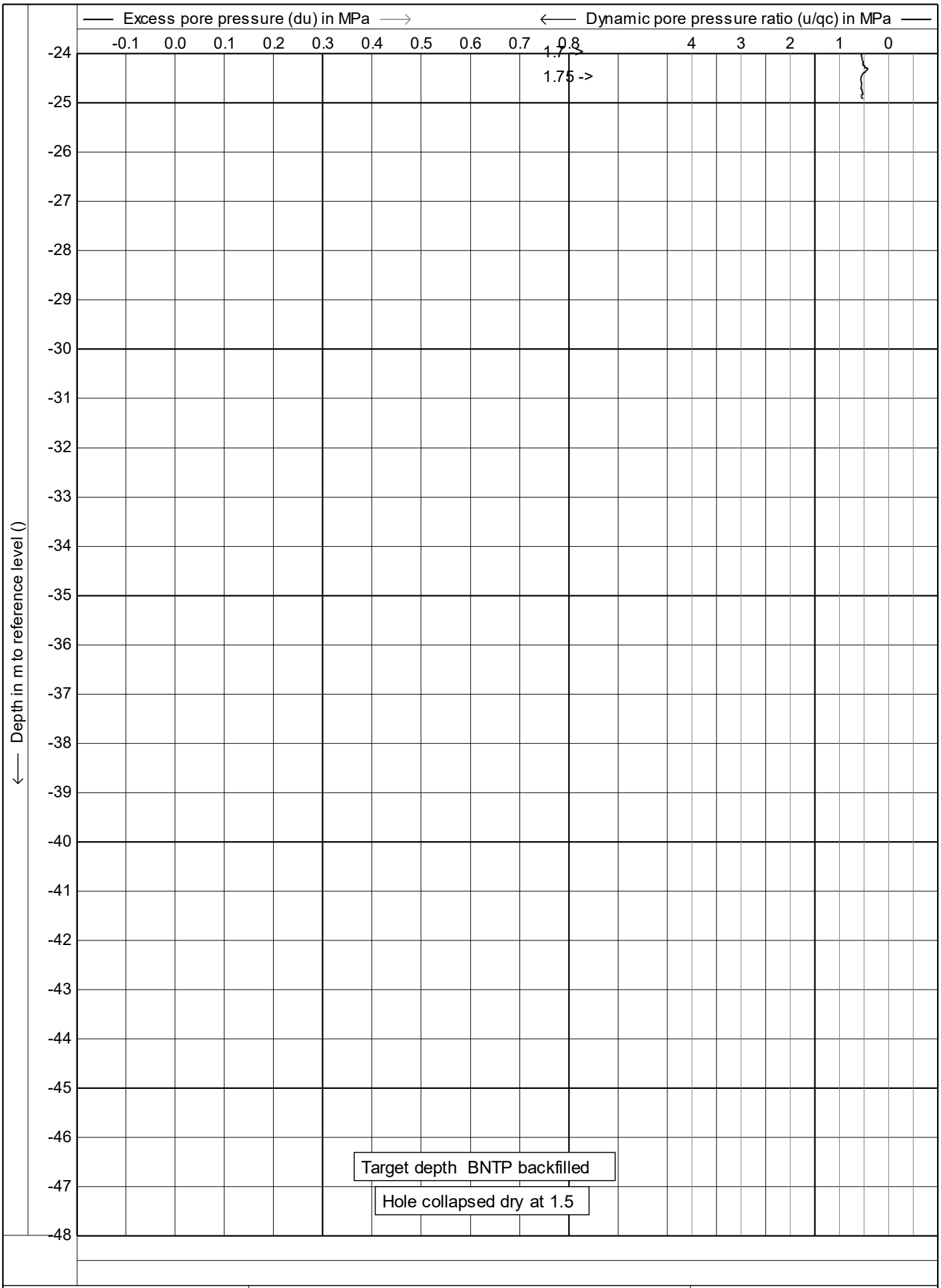
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **034**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

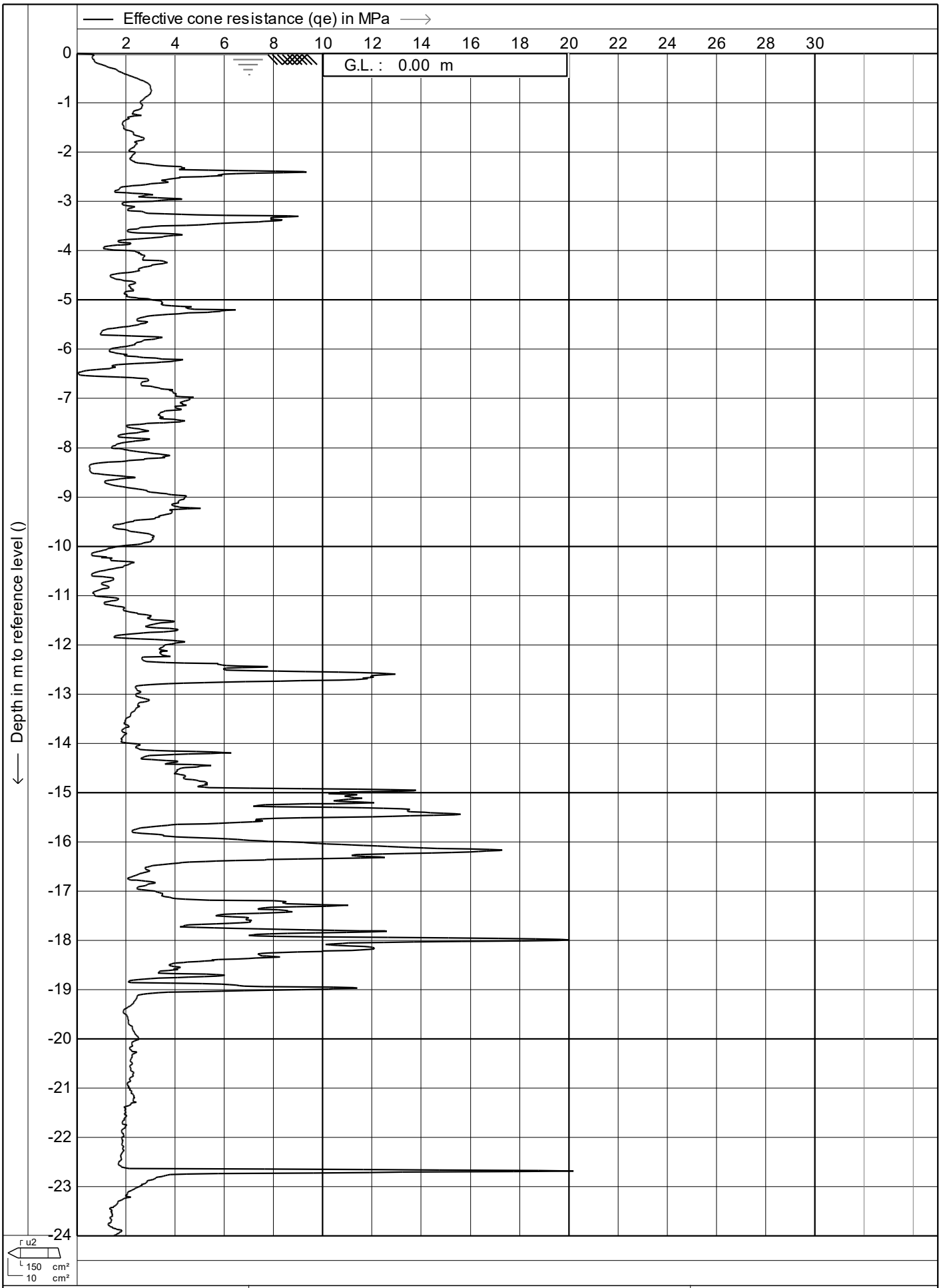
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **034**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

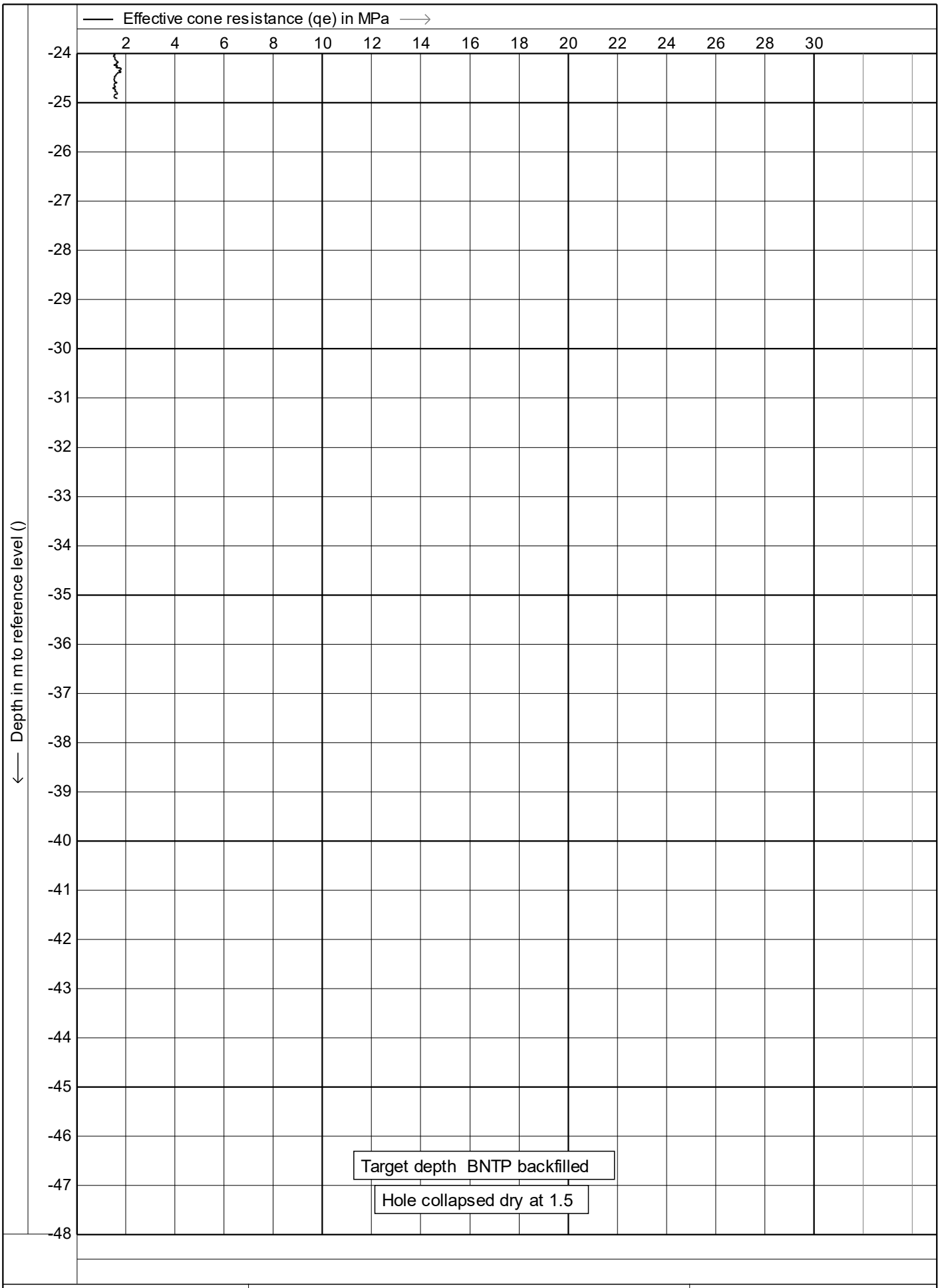
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **034** **9/28**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

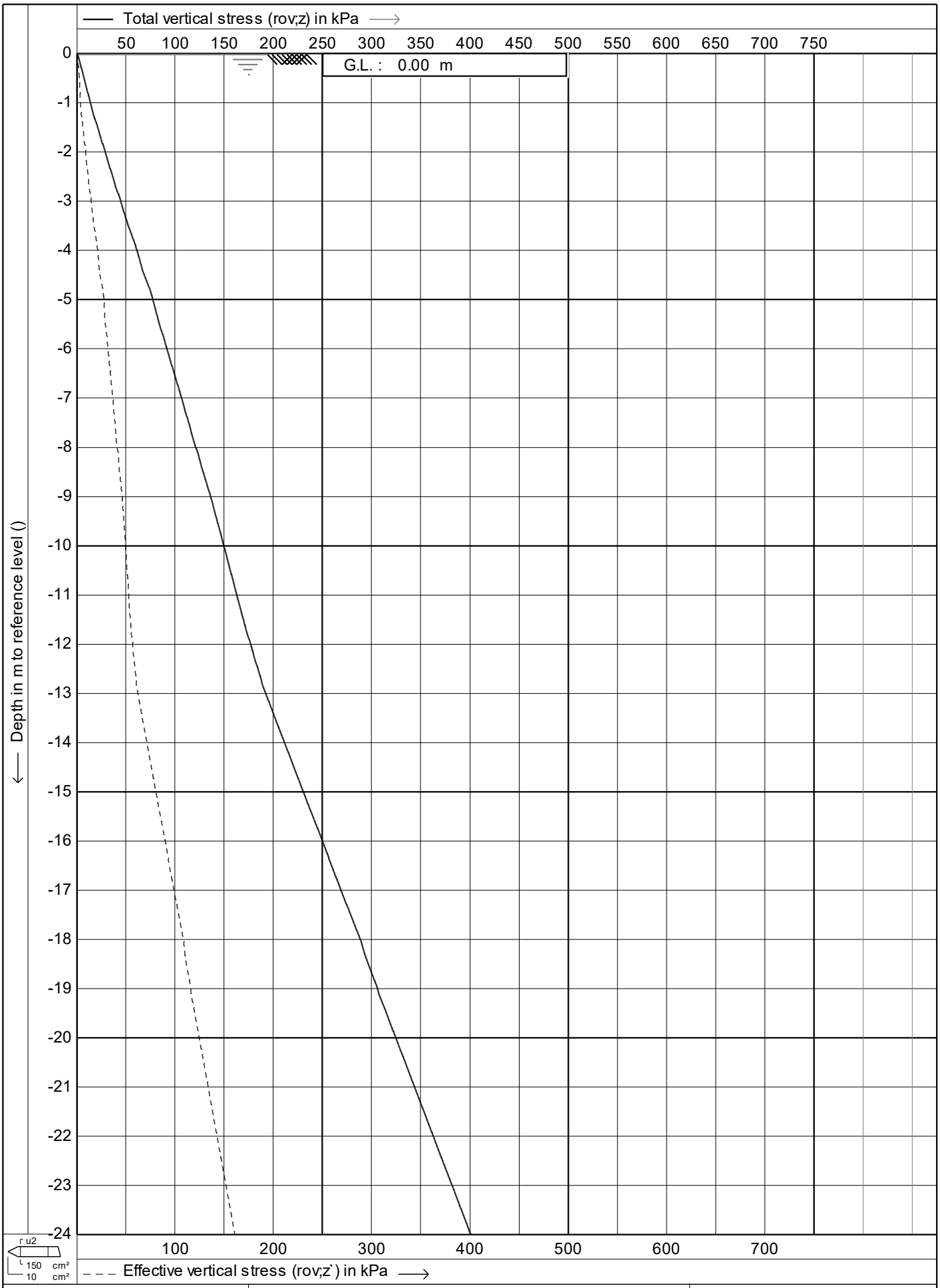
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **034**

10/28

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

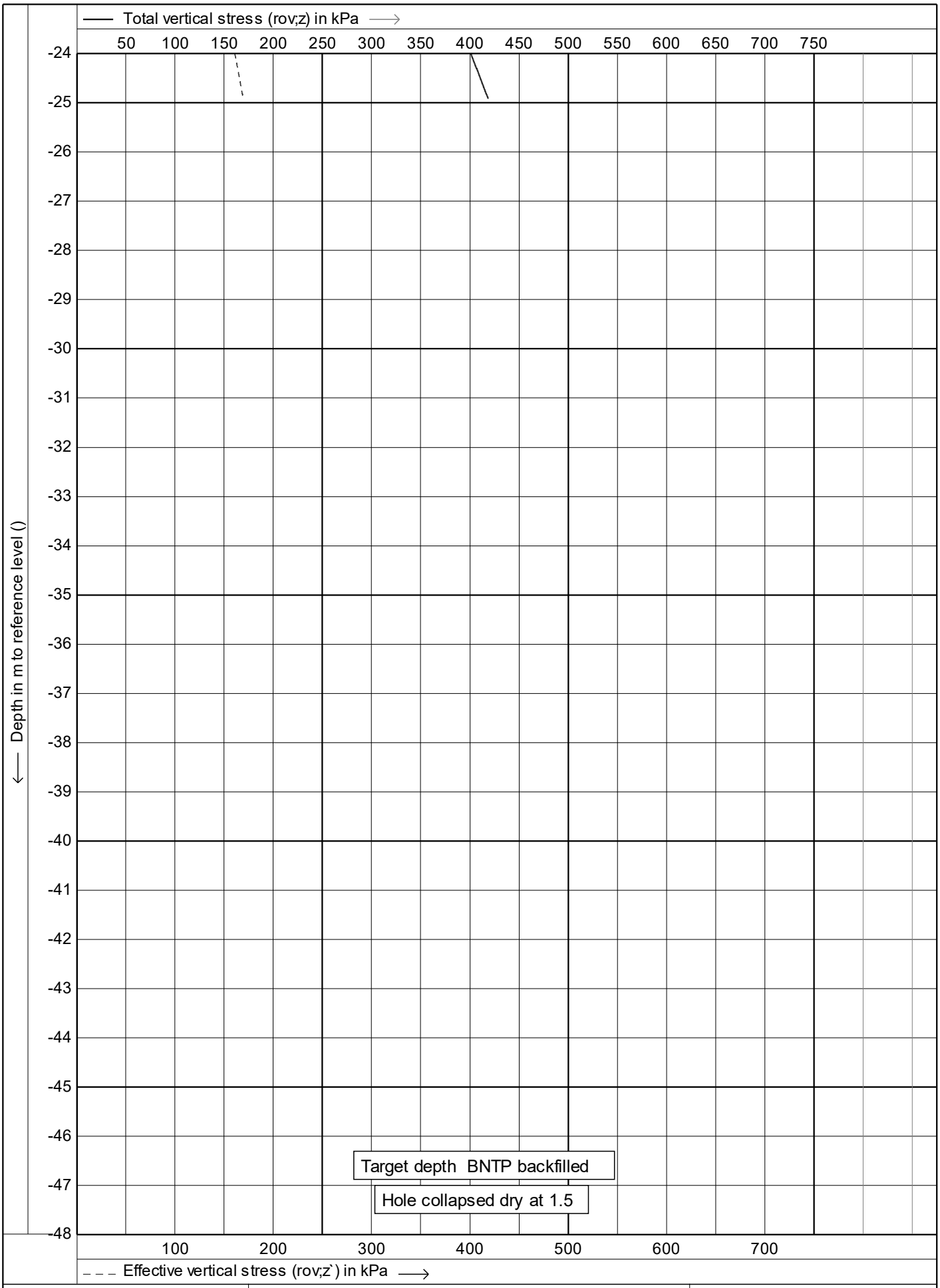
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **034**

11/28

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

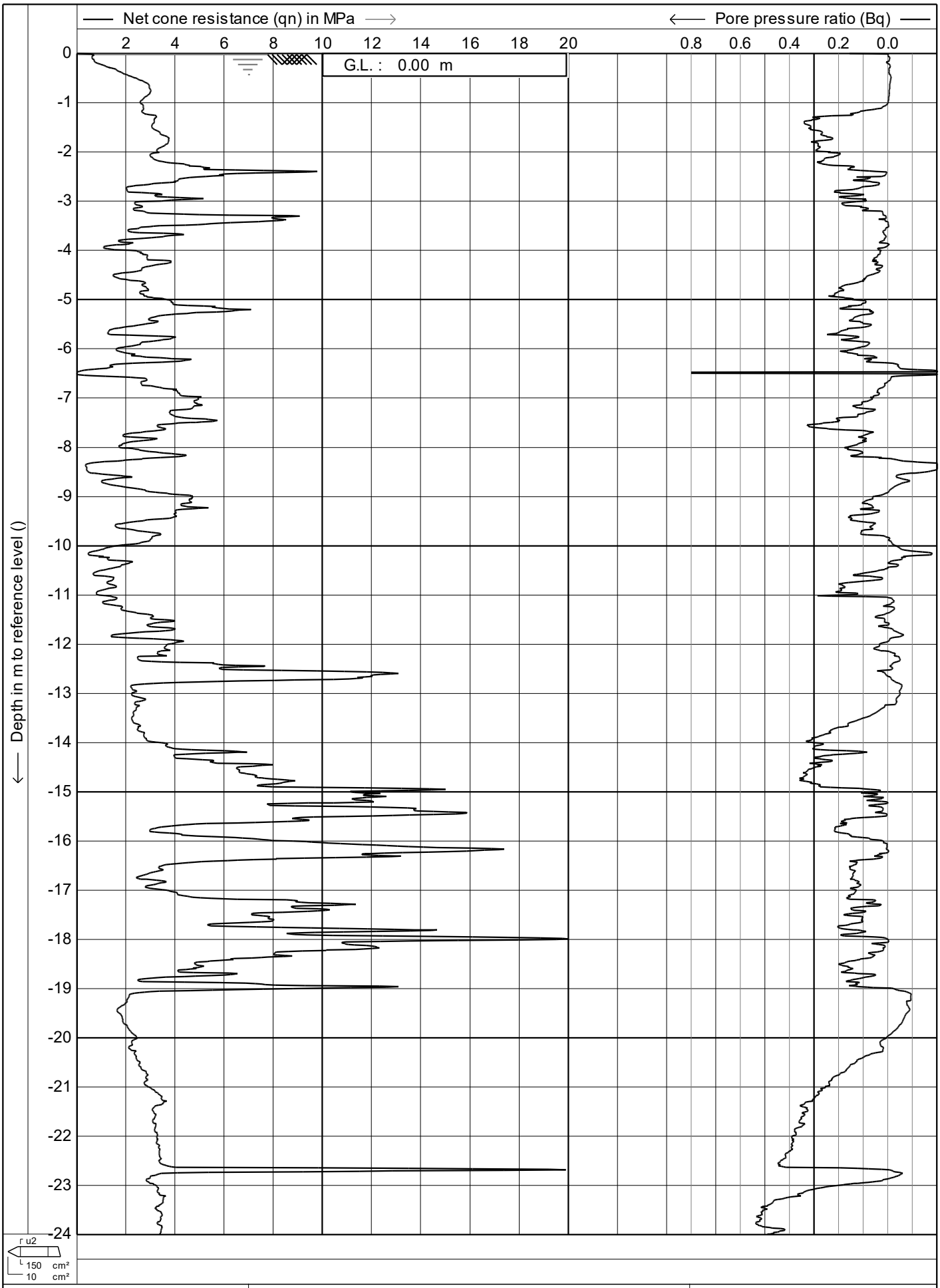
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **034**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

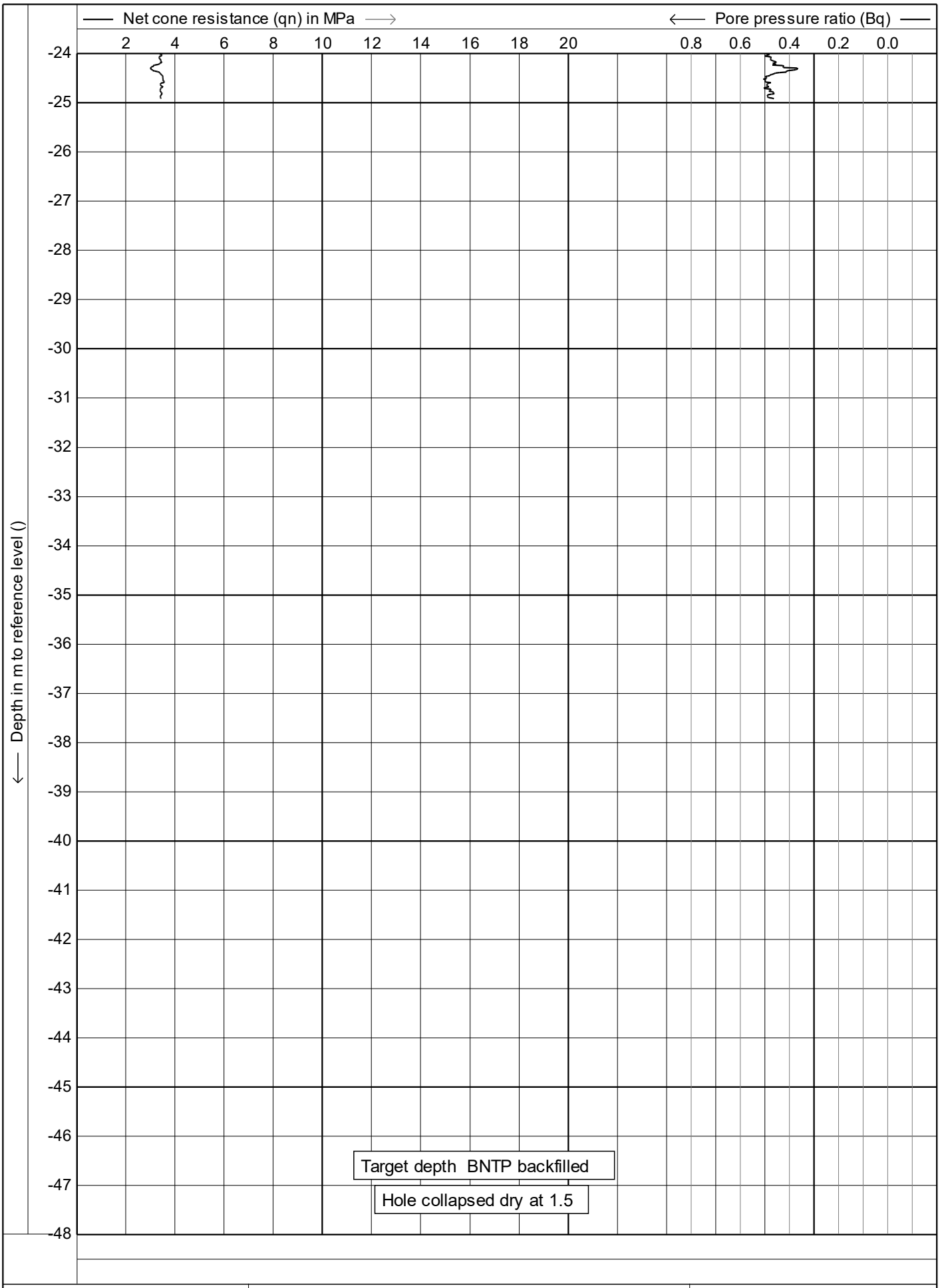
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **034**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

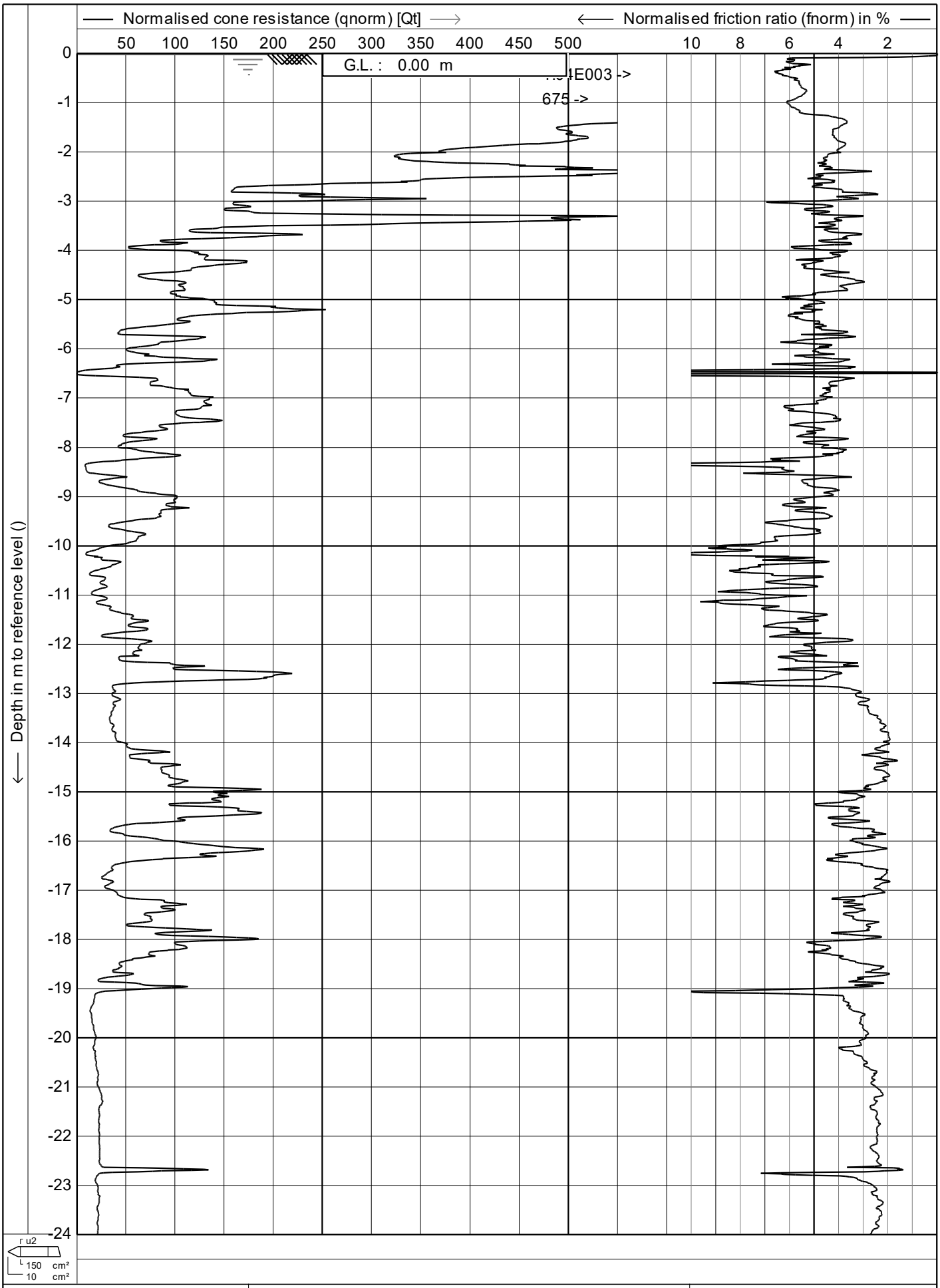
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **034**

1.48



Test according A.S.T.M Standard D 5778-12

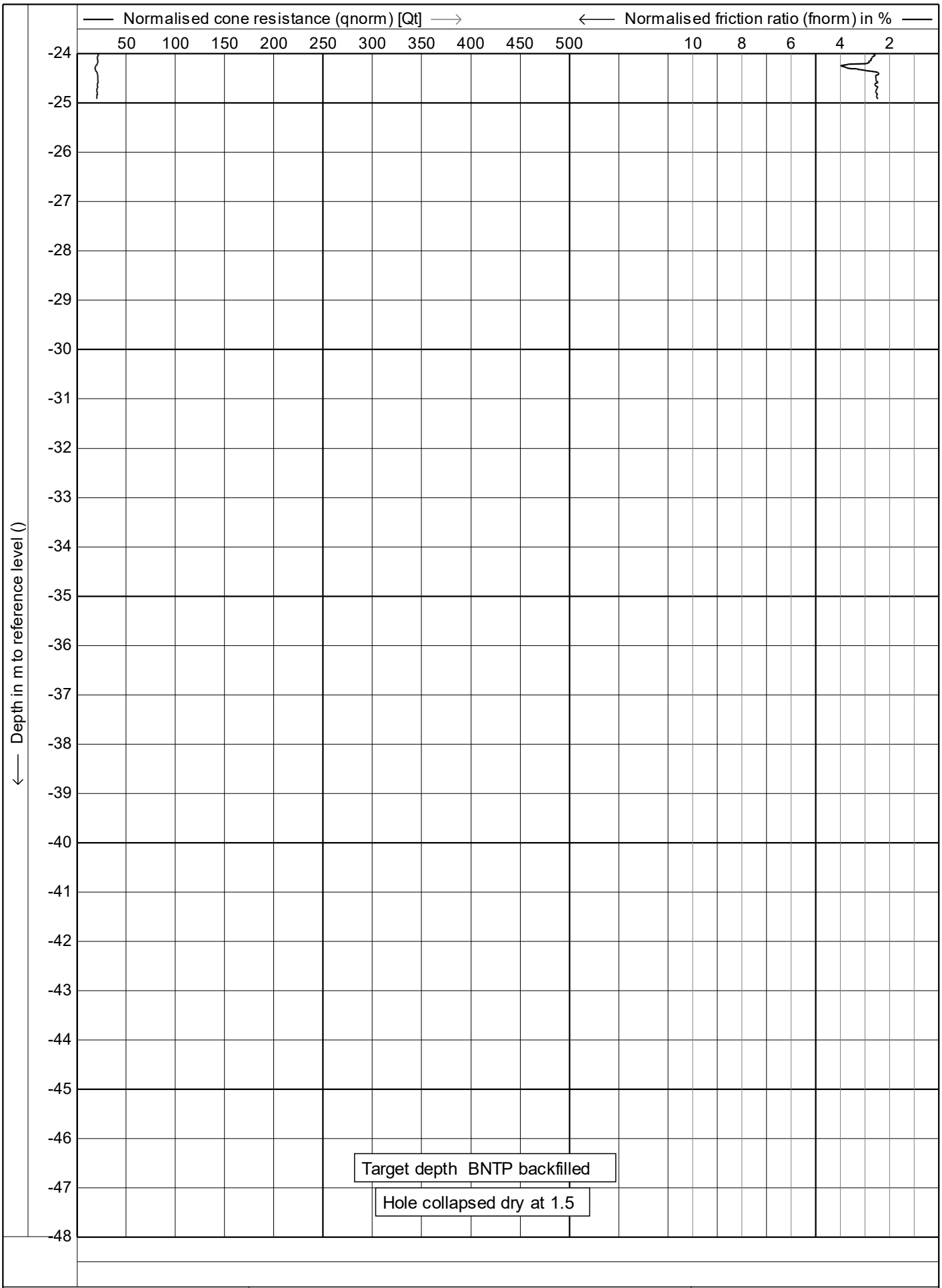
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **034**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

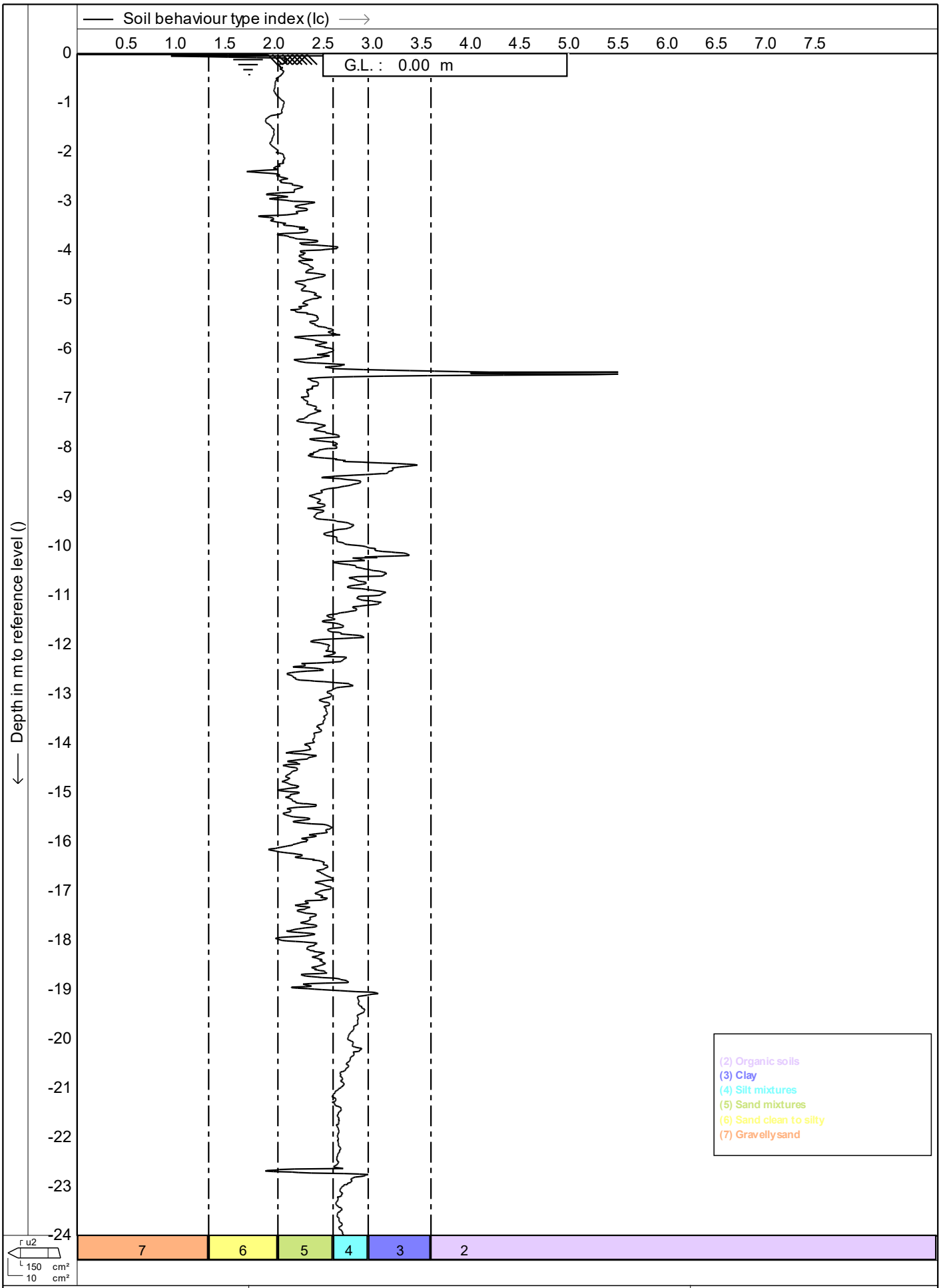
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **034**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

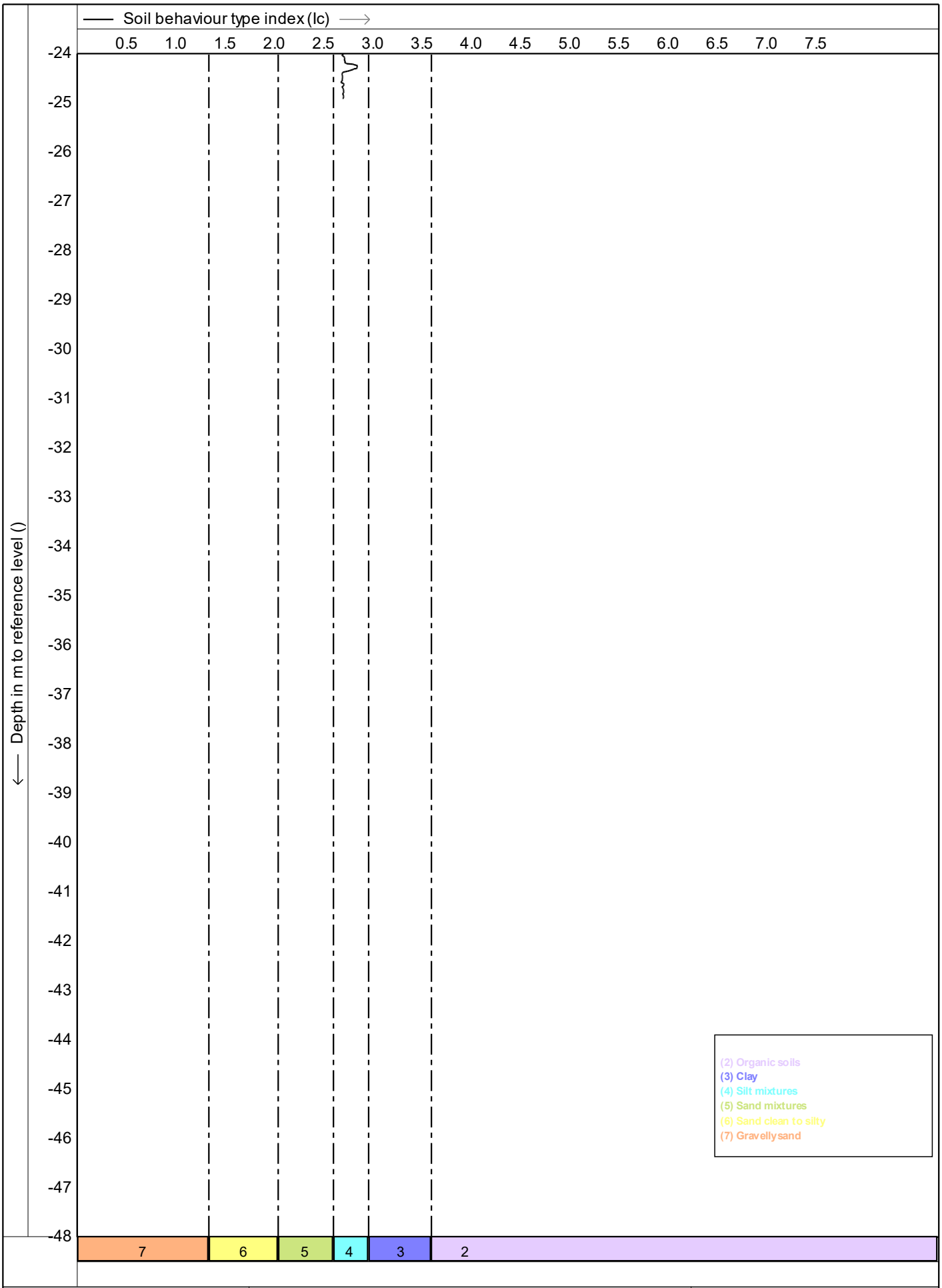
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **034**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

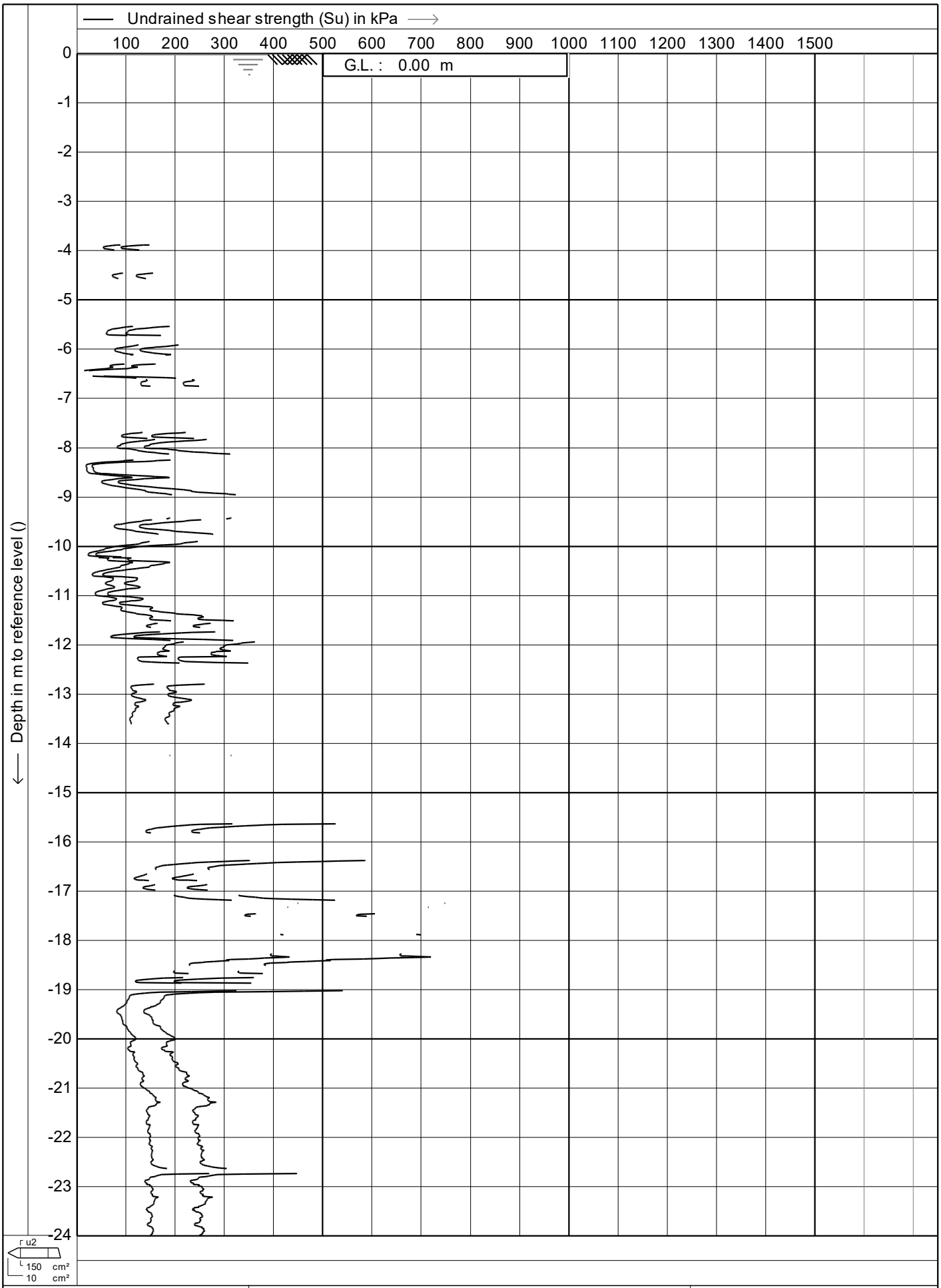
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **034**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

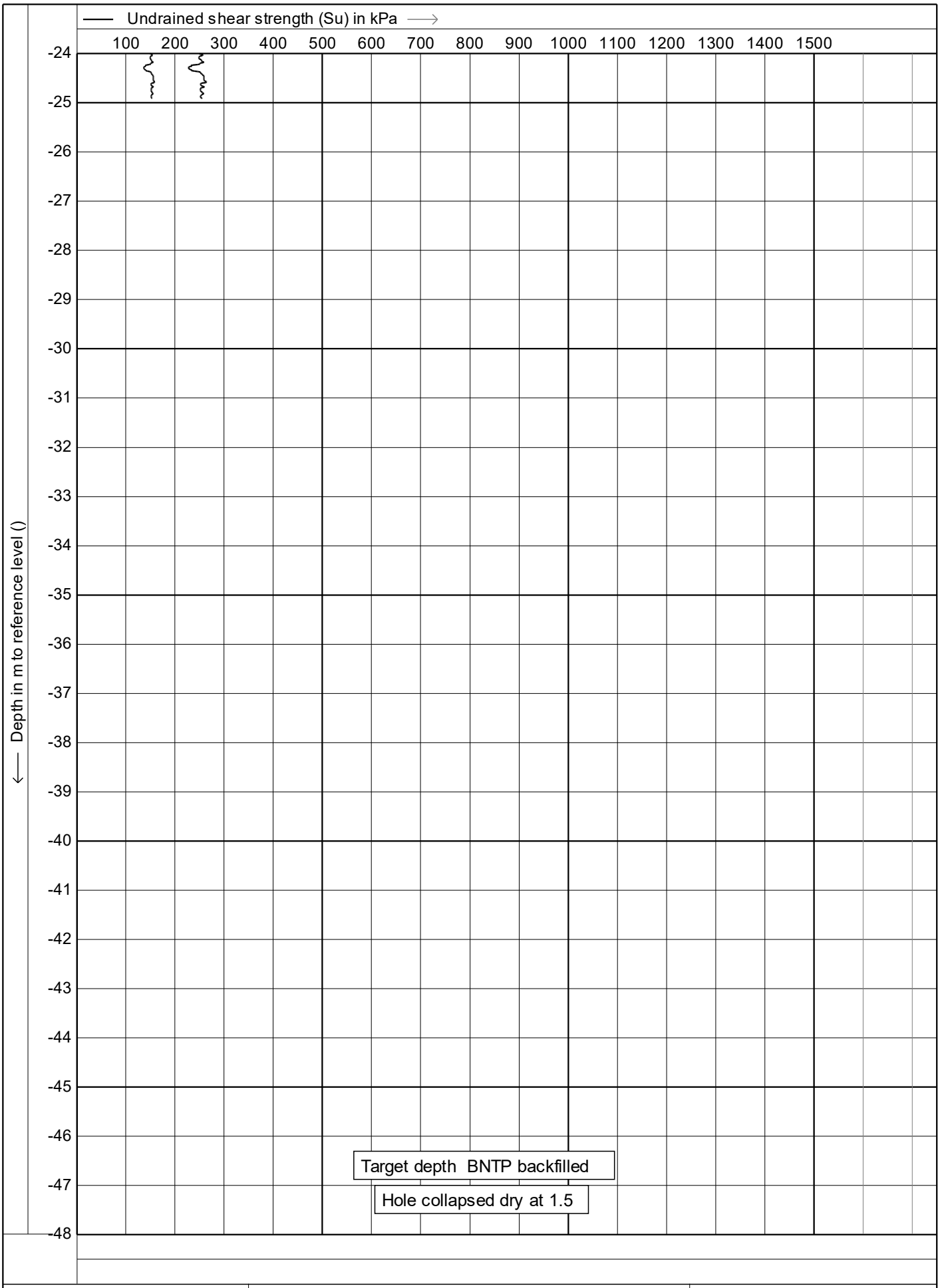
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **034**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

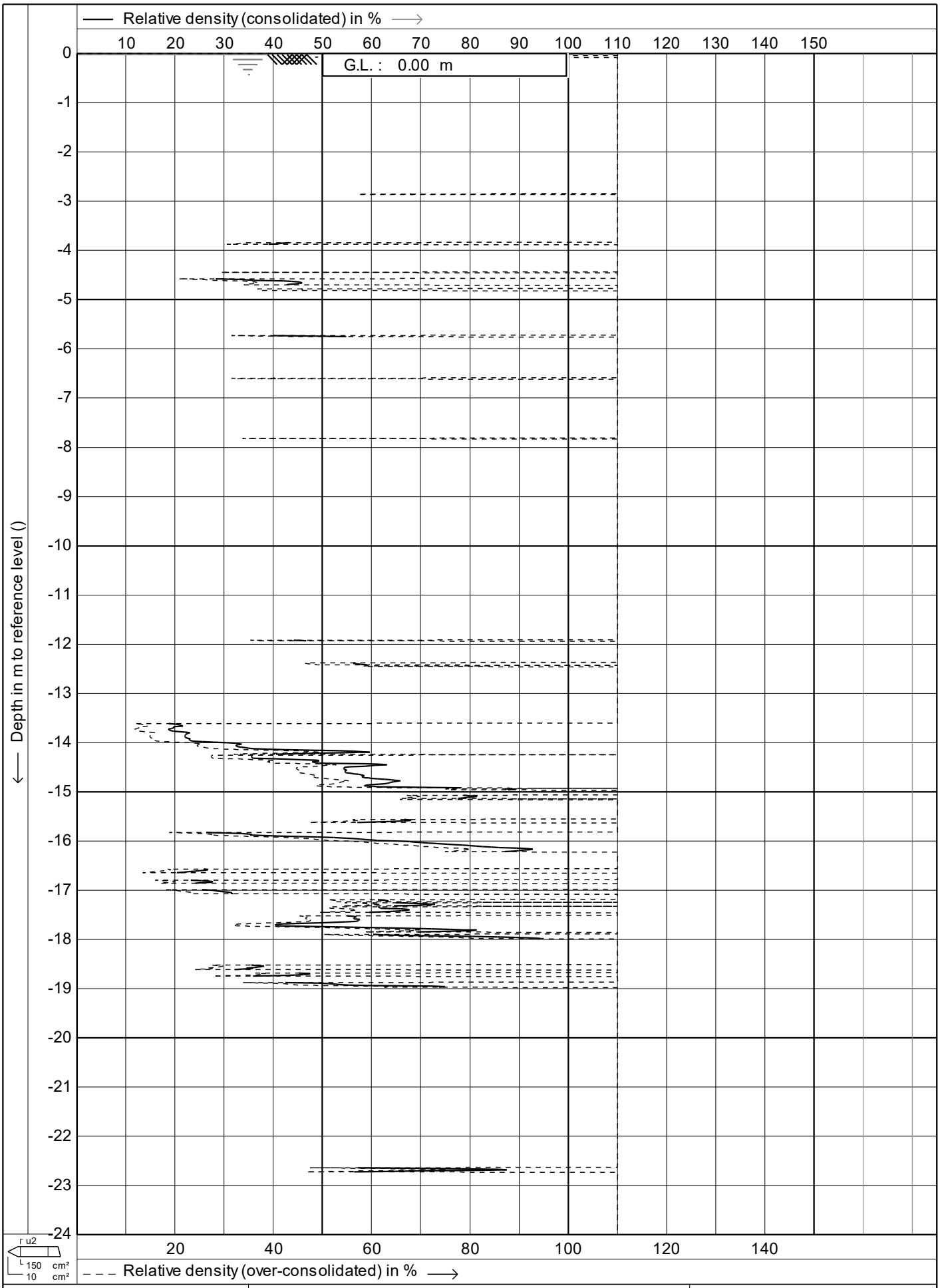
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **034**

1.48



Test according A.S.T.M Standard D 5778-12

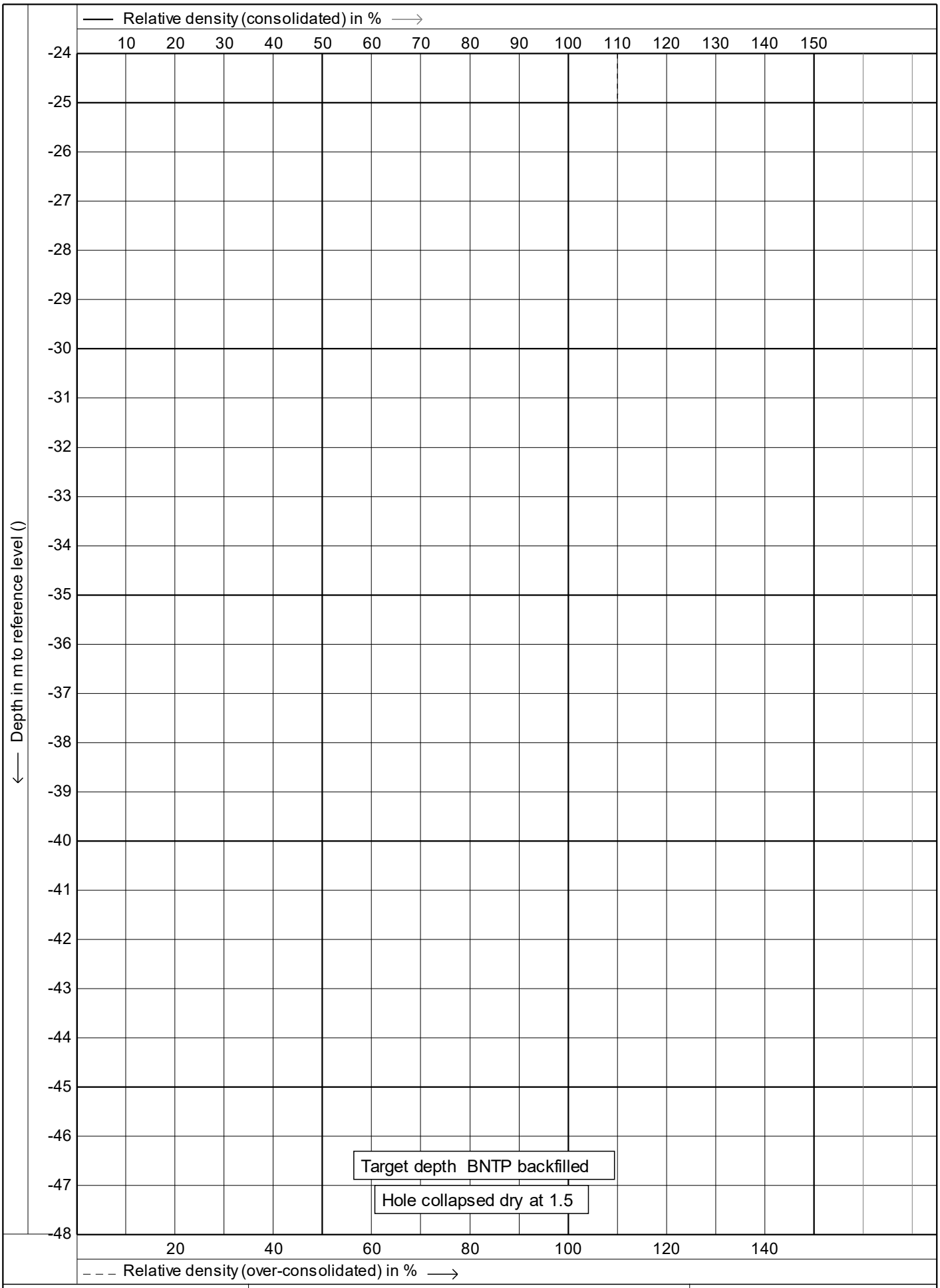
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **034**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

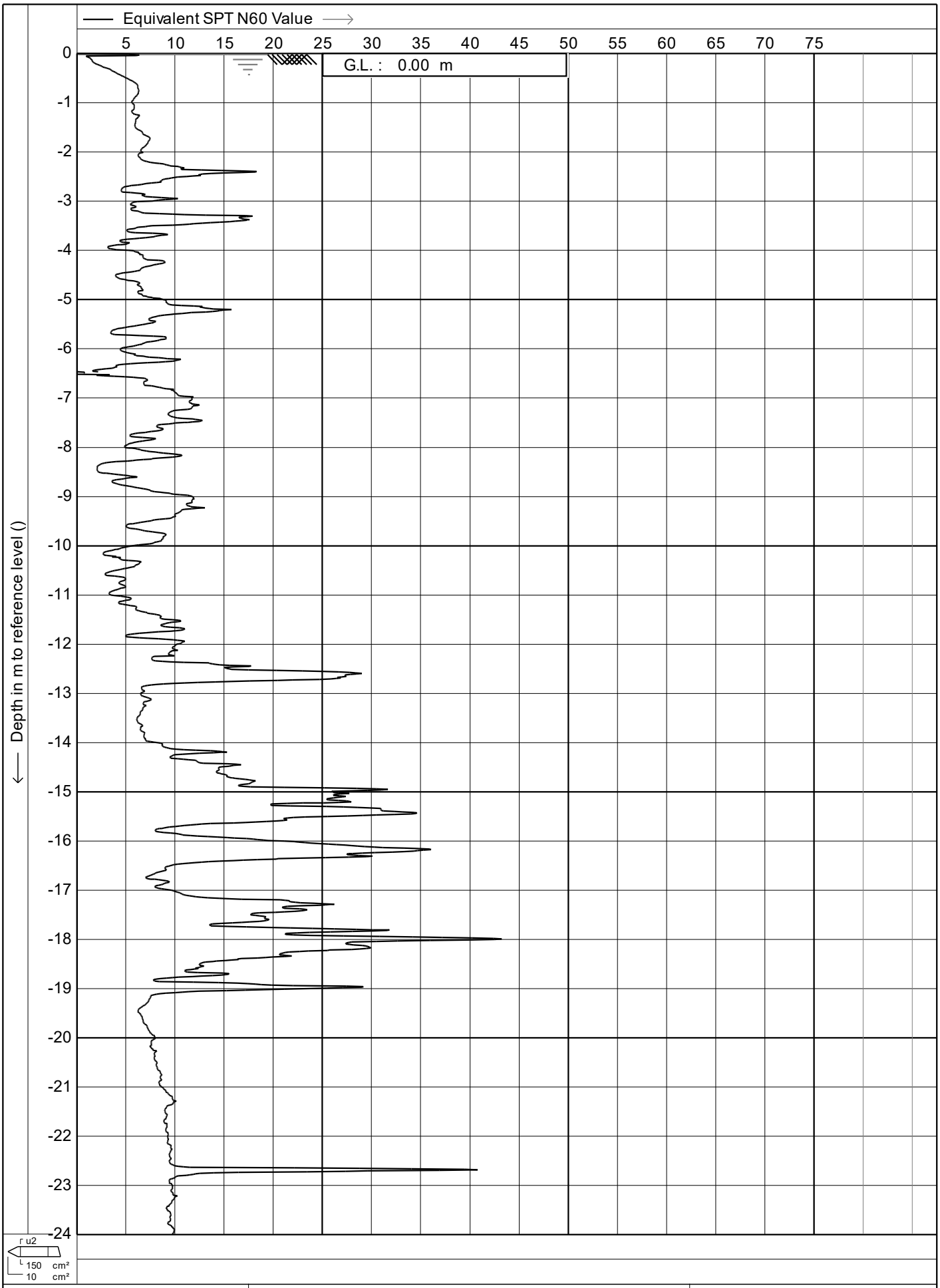
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **034**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

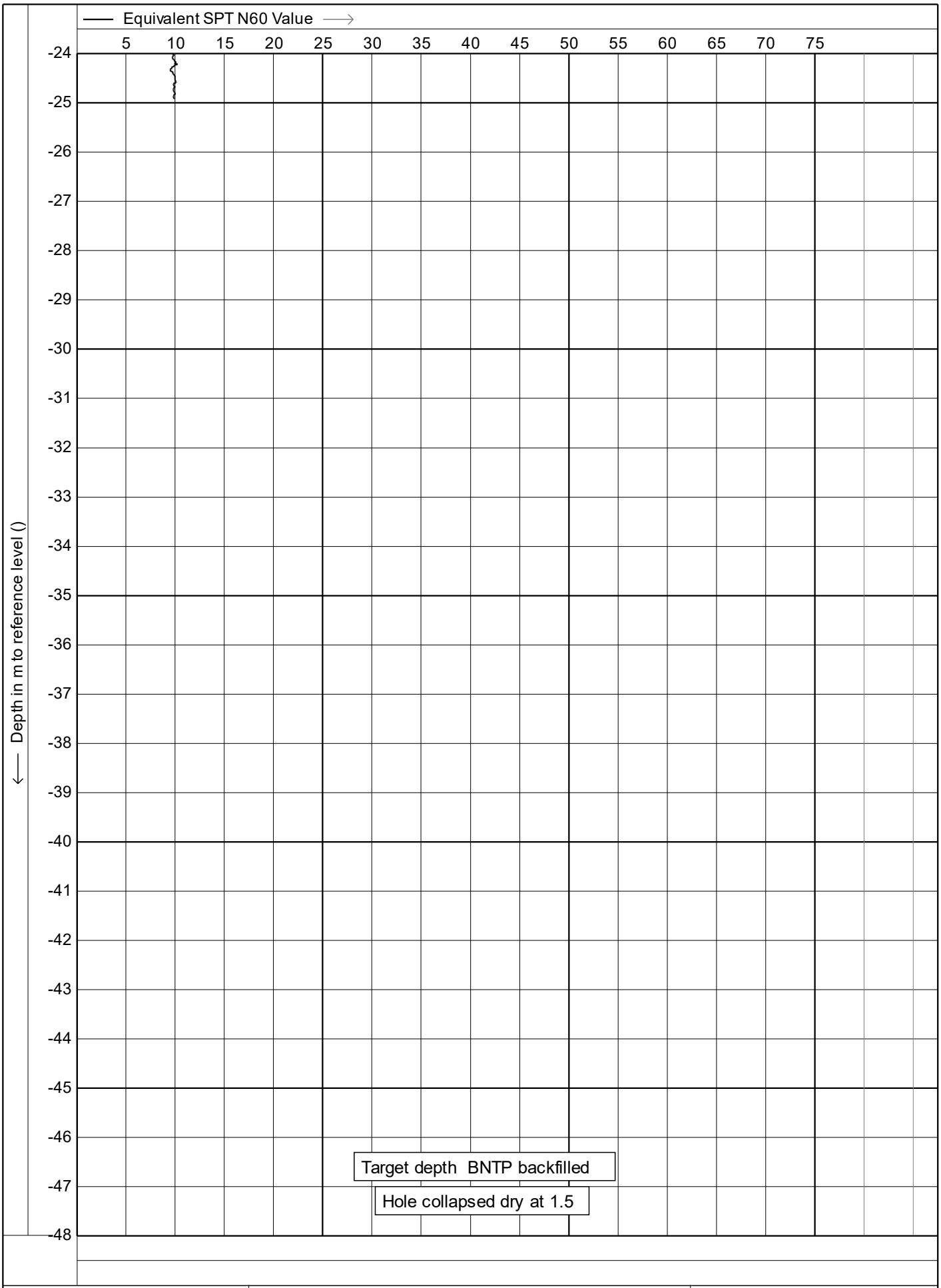
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **034**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

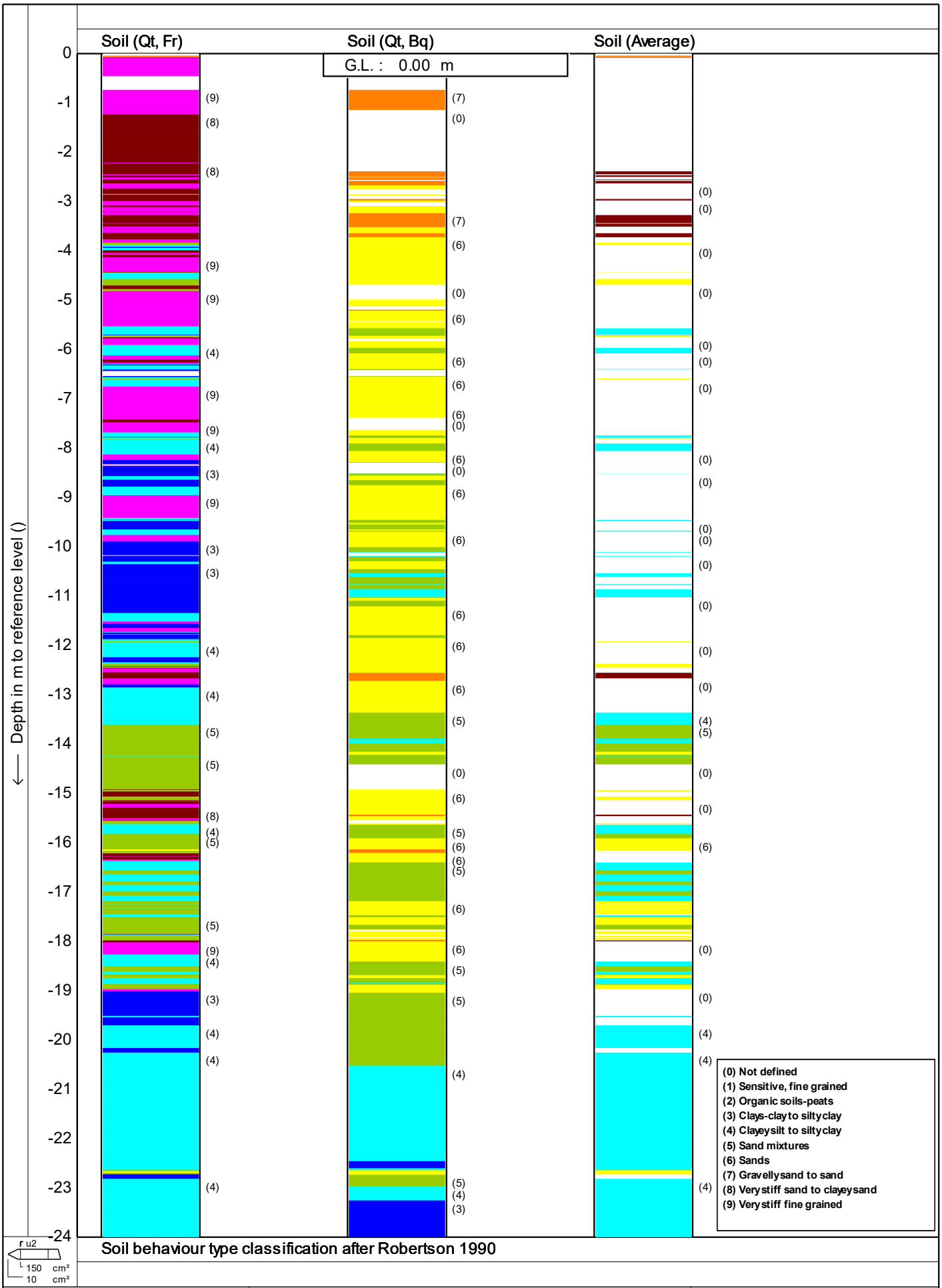
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **034**

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1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

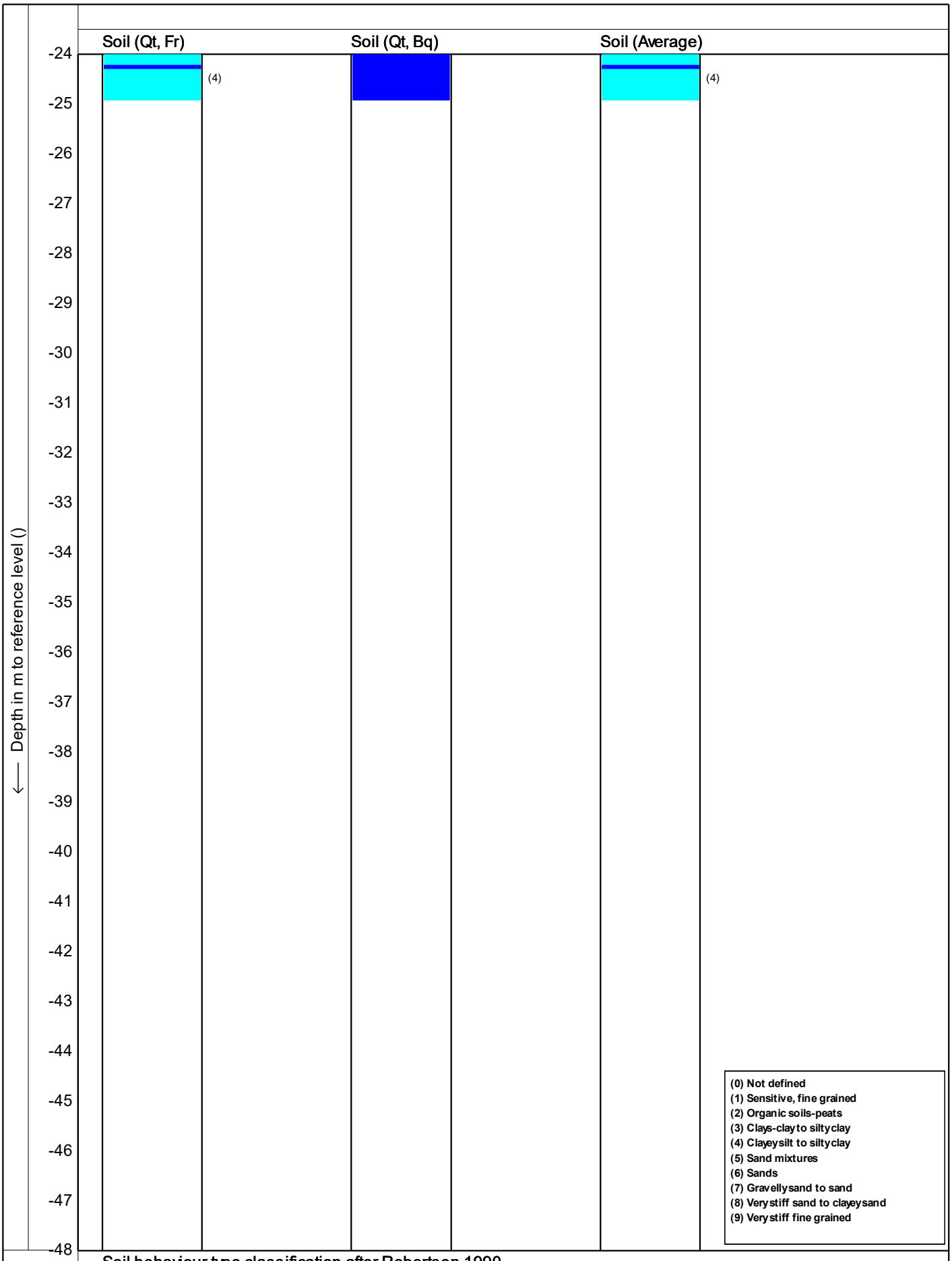
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **034**

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

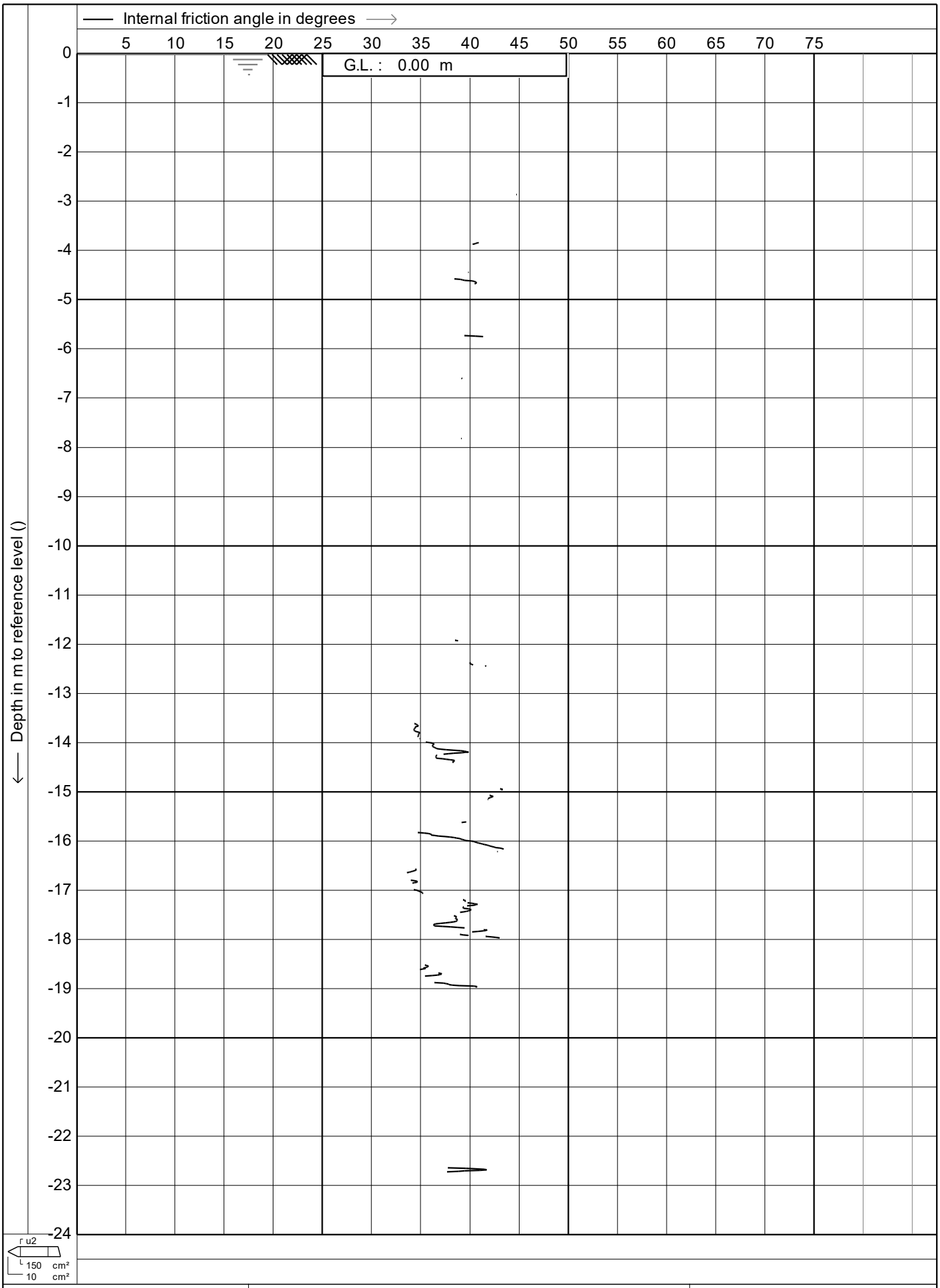
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **034**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

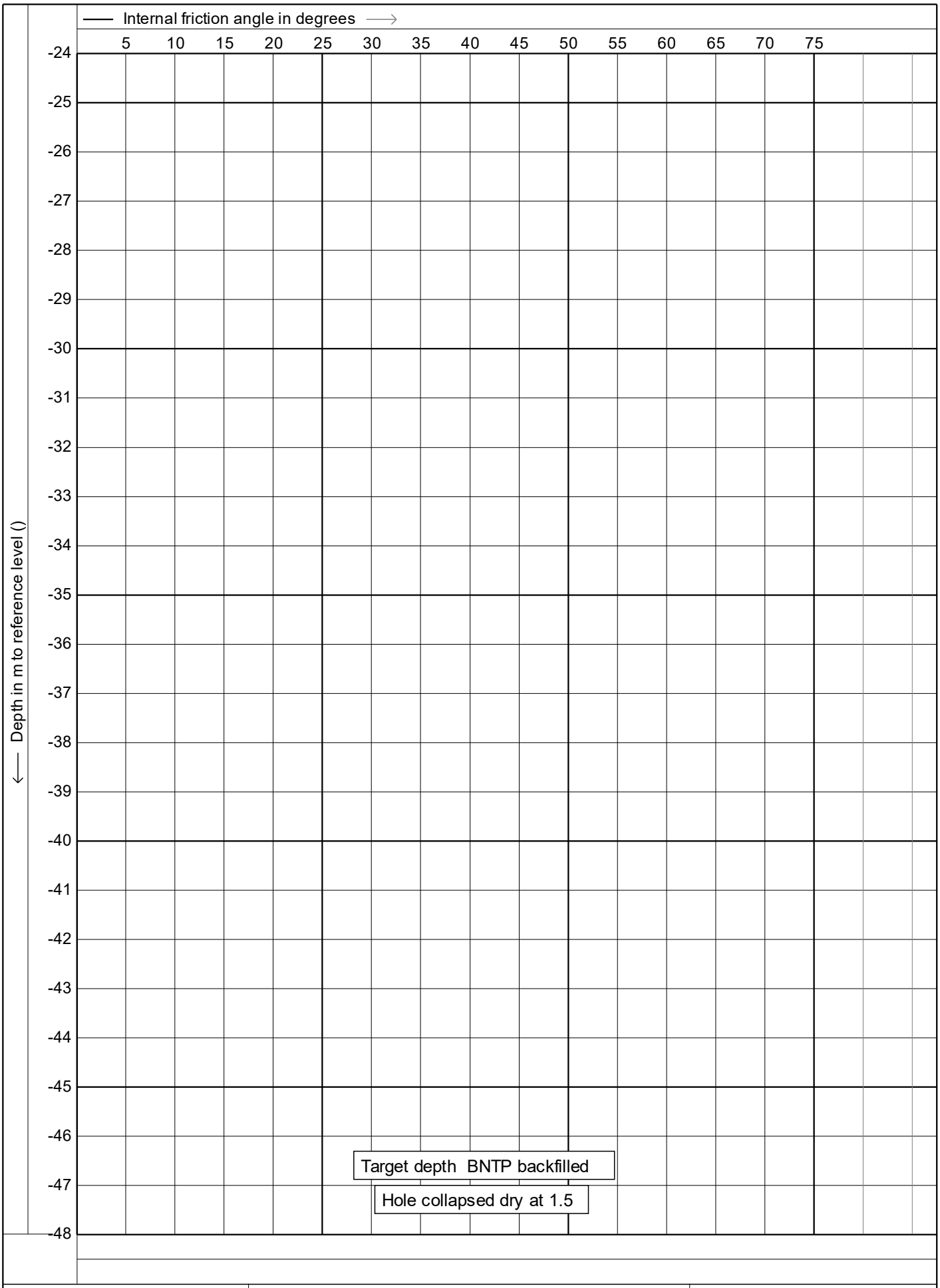
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **034**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

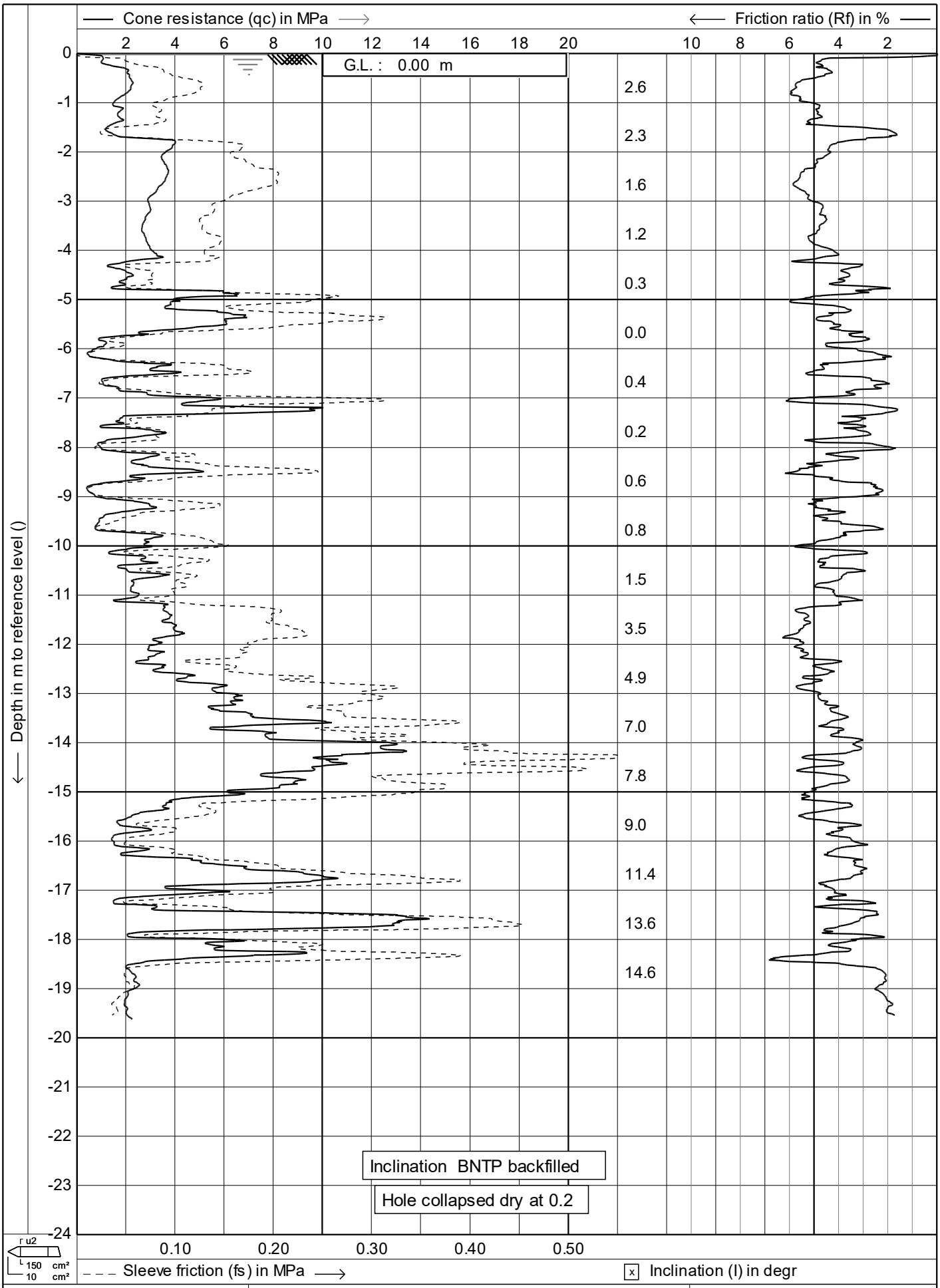
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **034**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

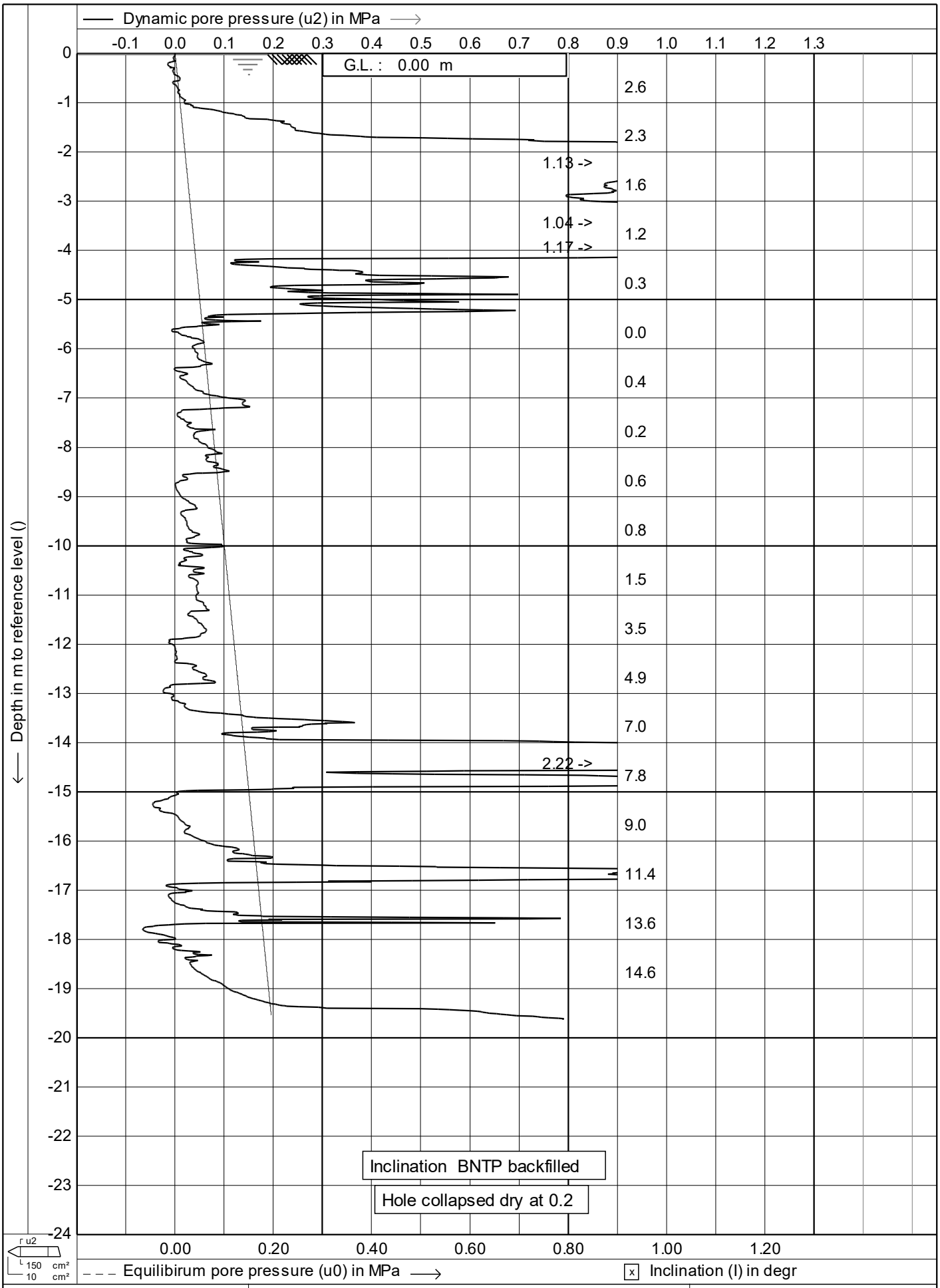
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **035**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

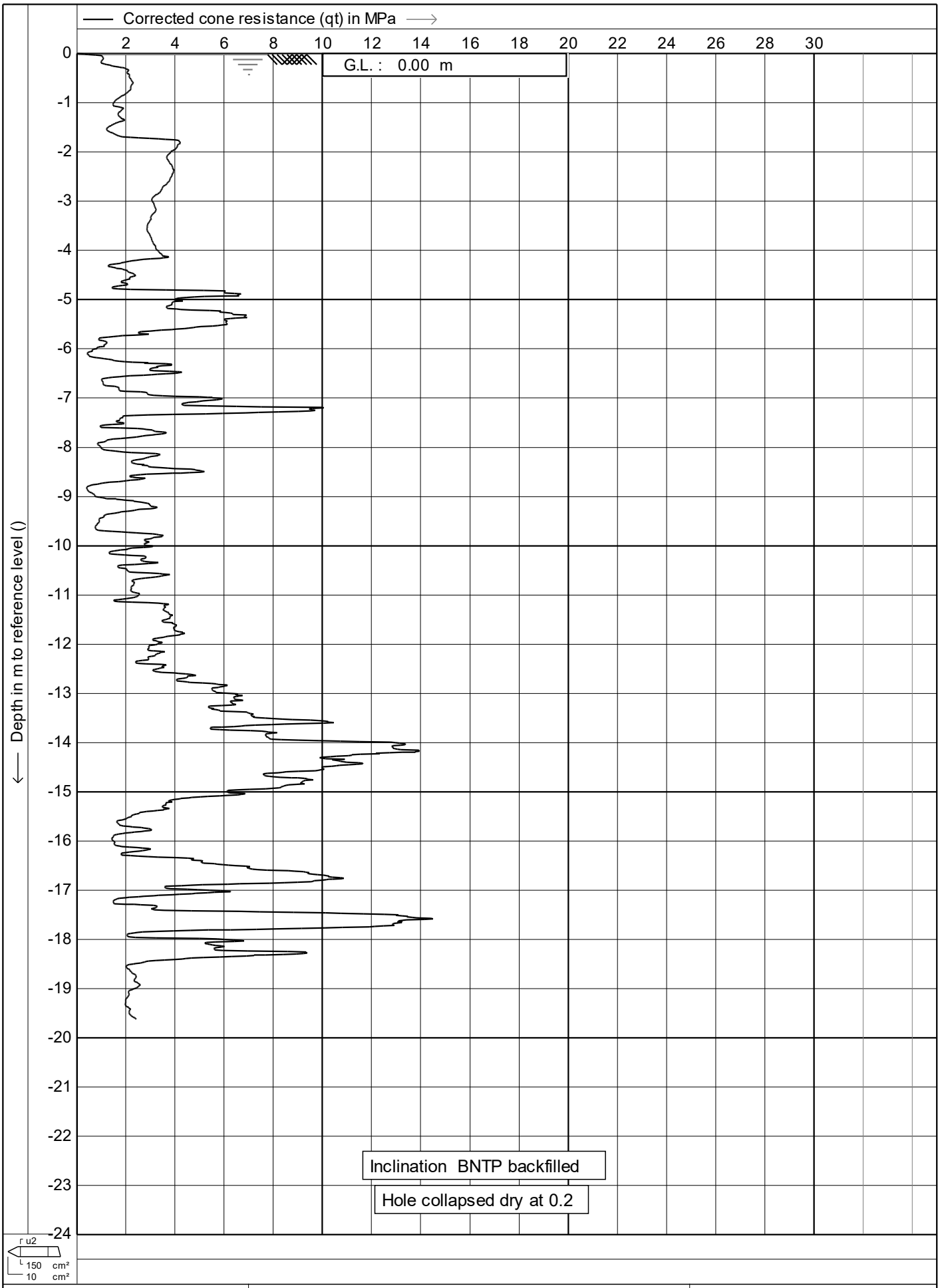
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **035**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

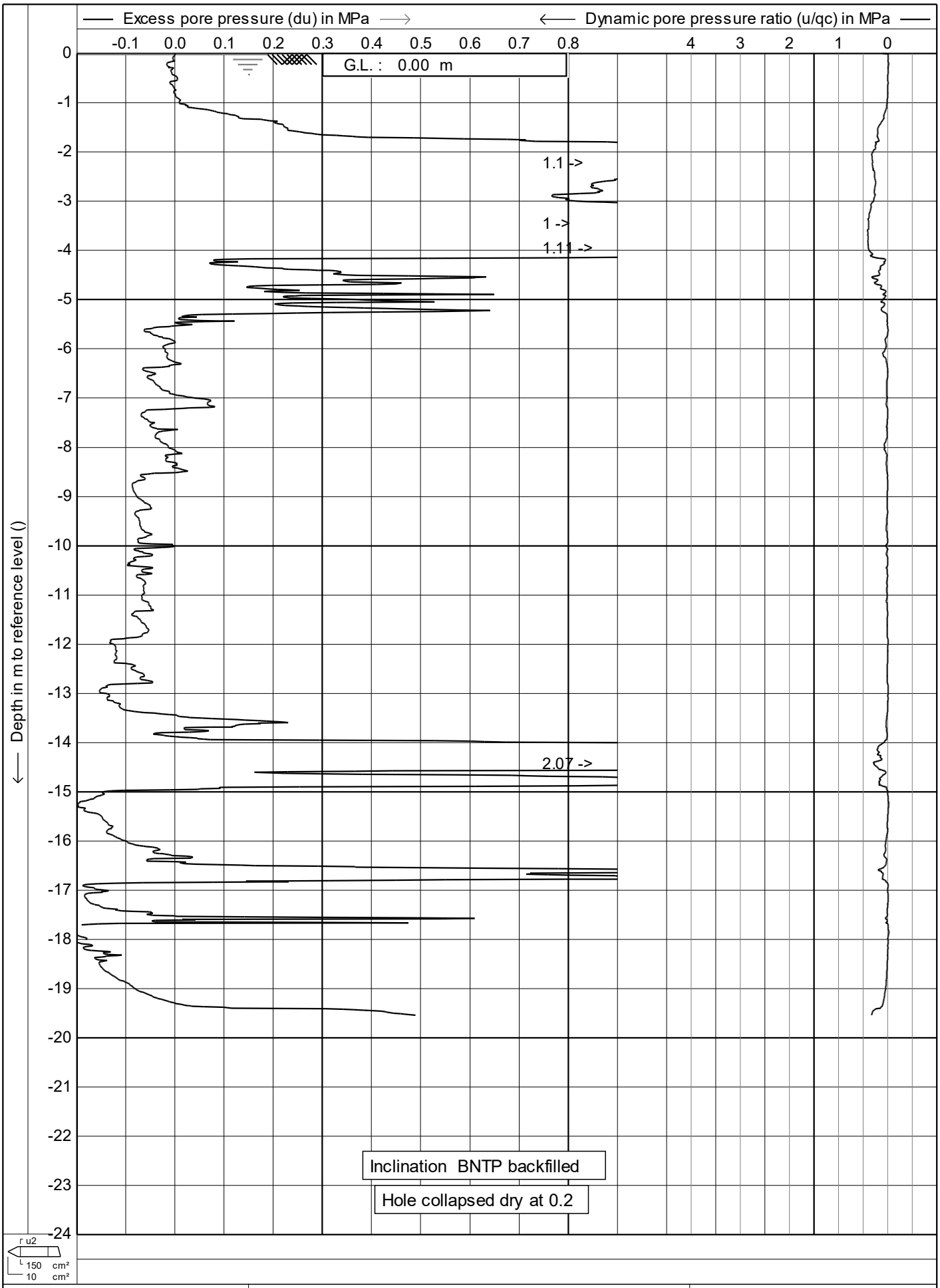
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **035** **3/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

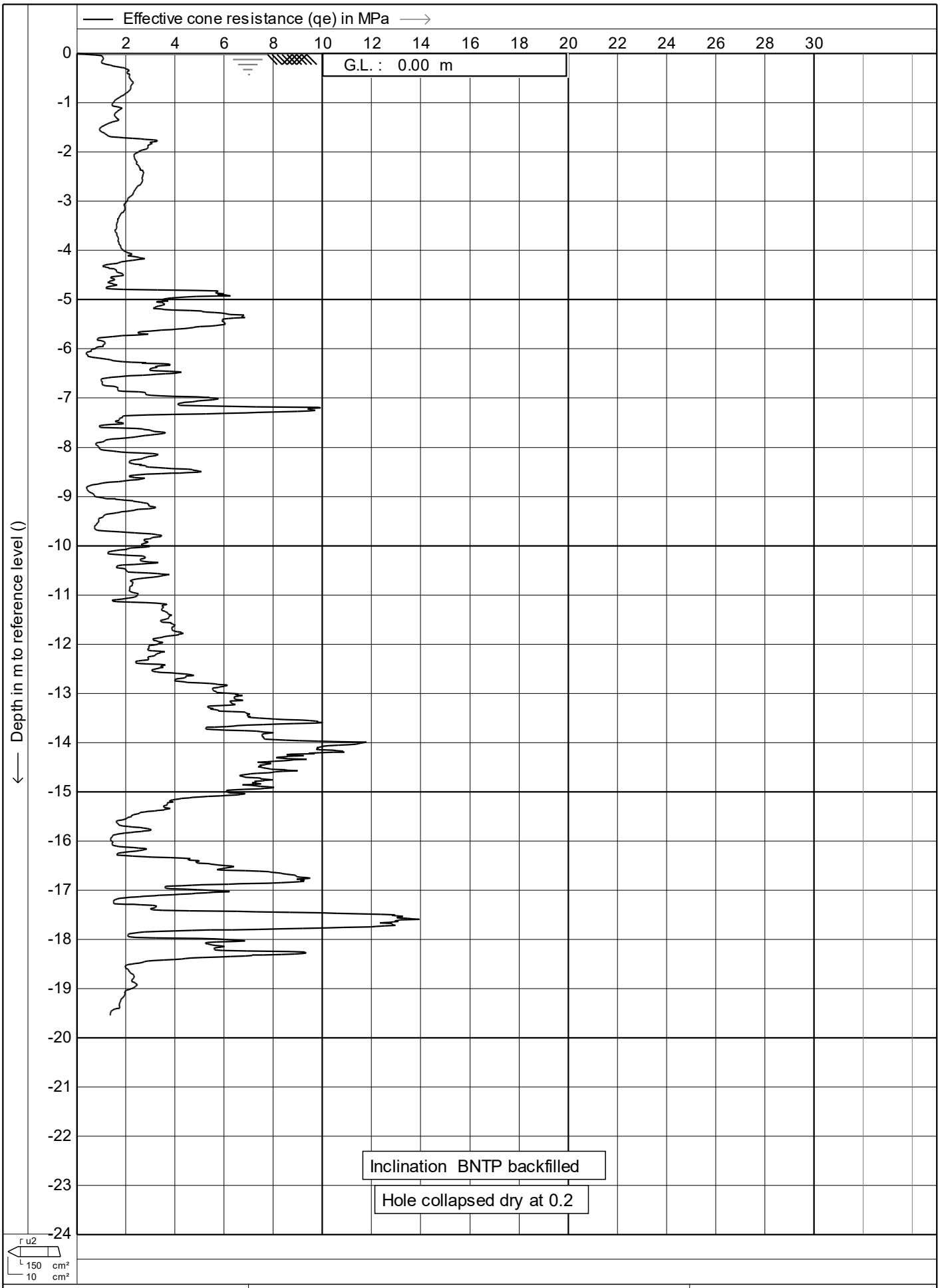
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **035**

4/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

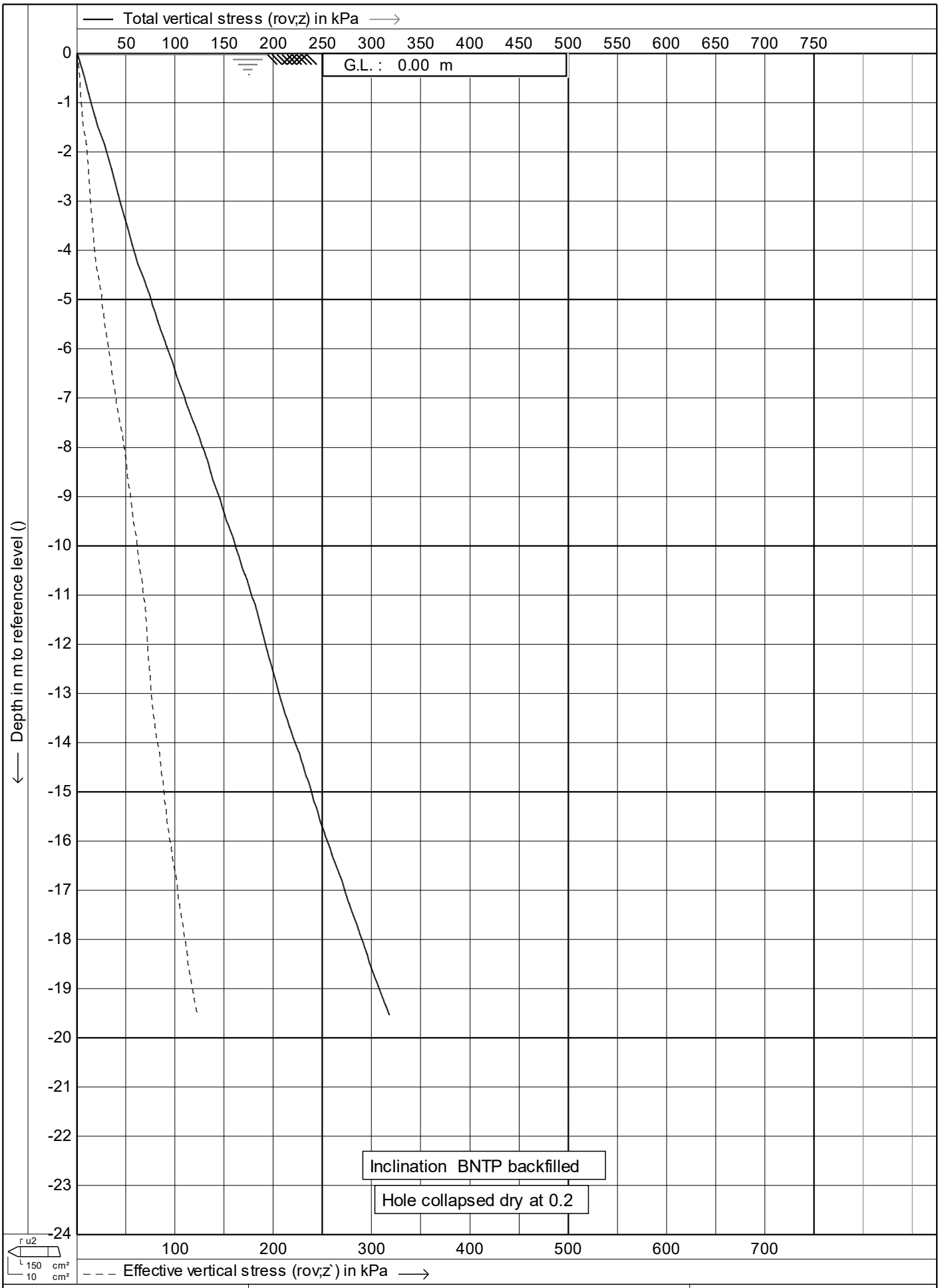
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **035**

1.48



Test according A.S.T.M Standard D 5778-12

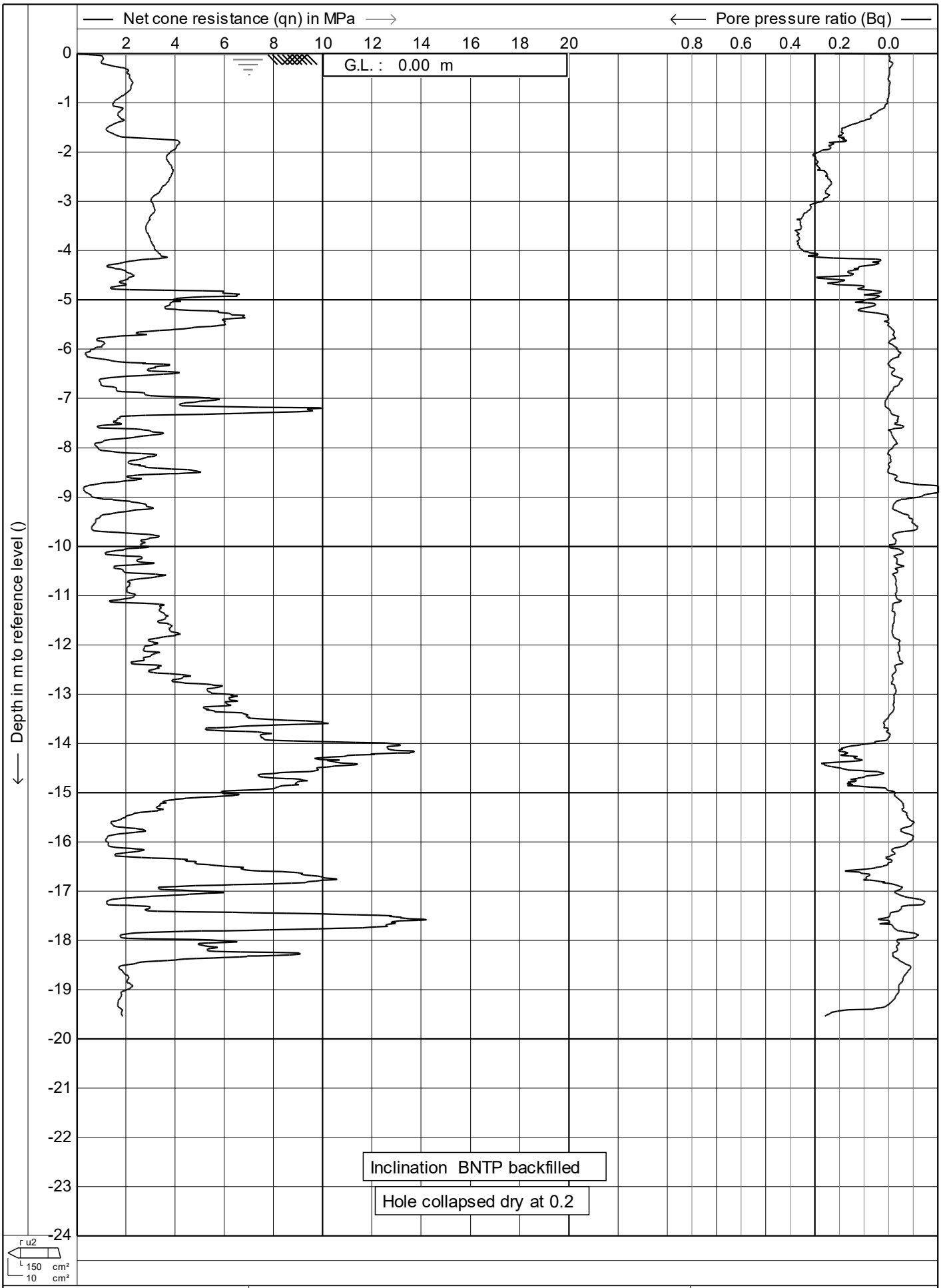
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **035**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

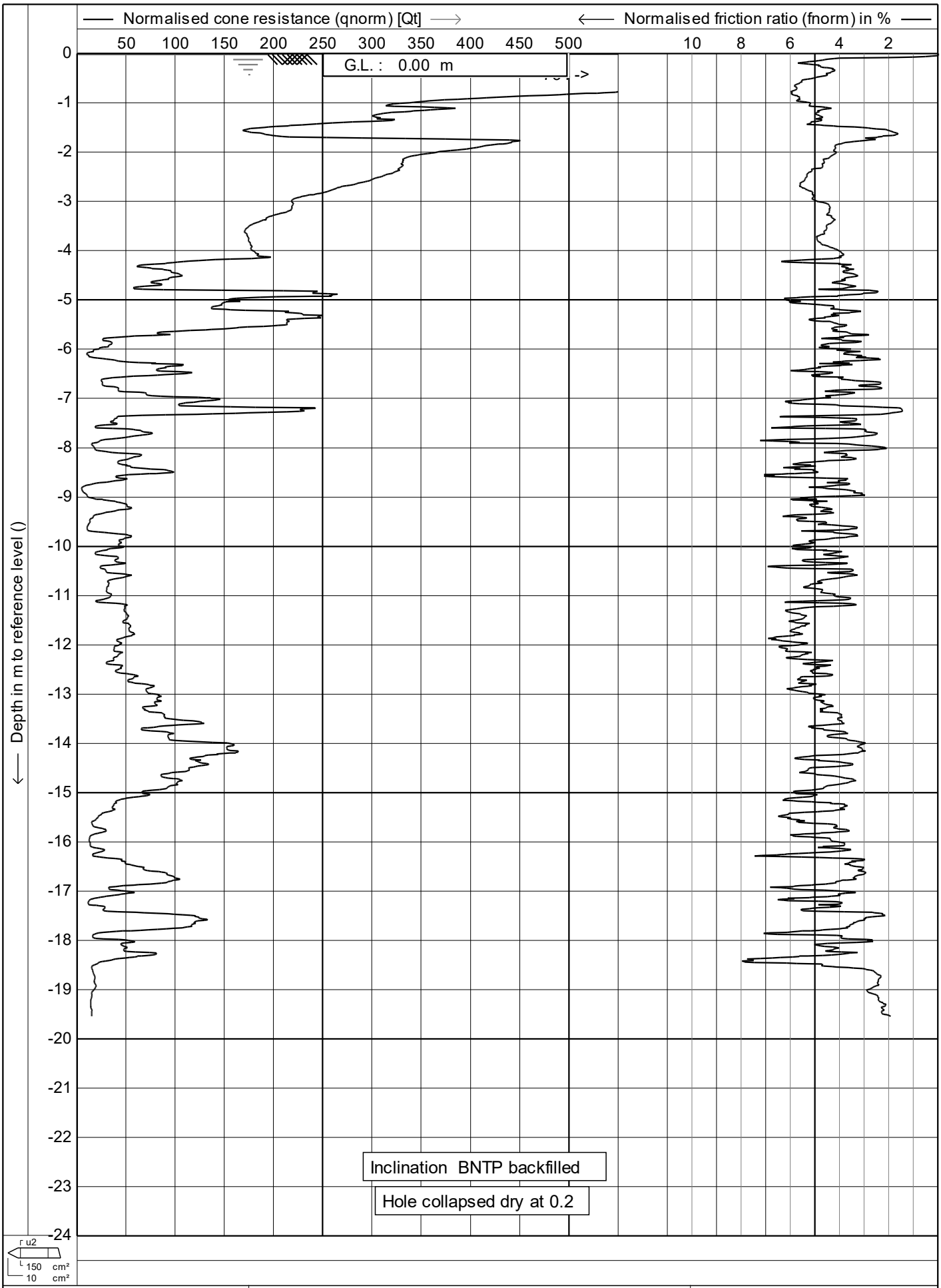
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **035**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

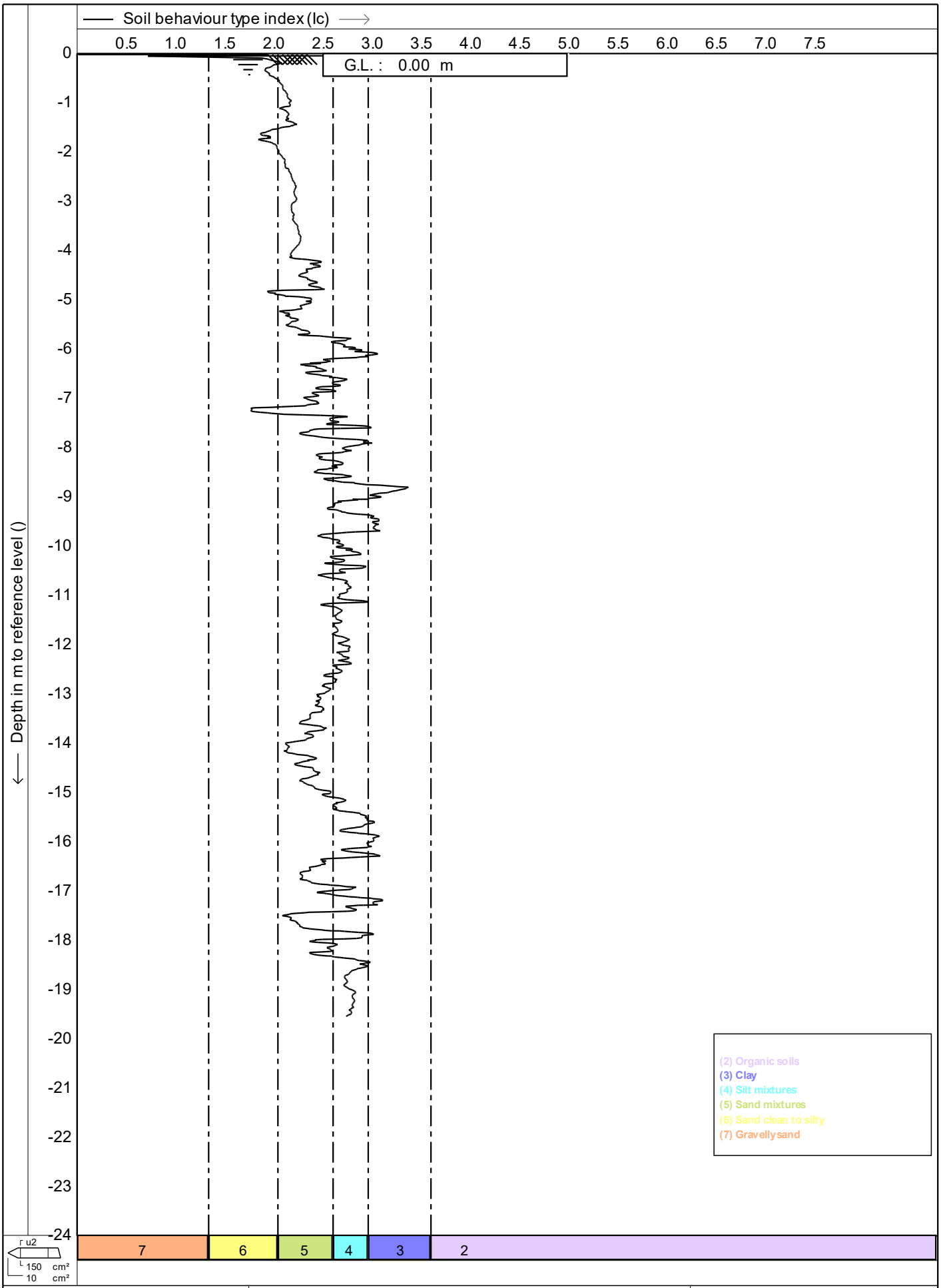
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **035** **8/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

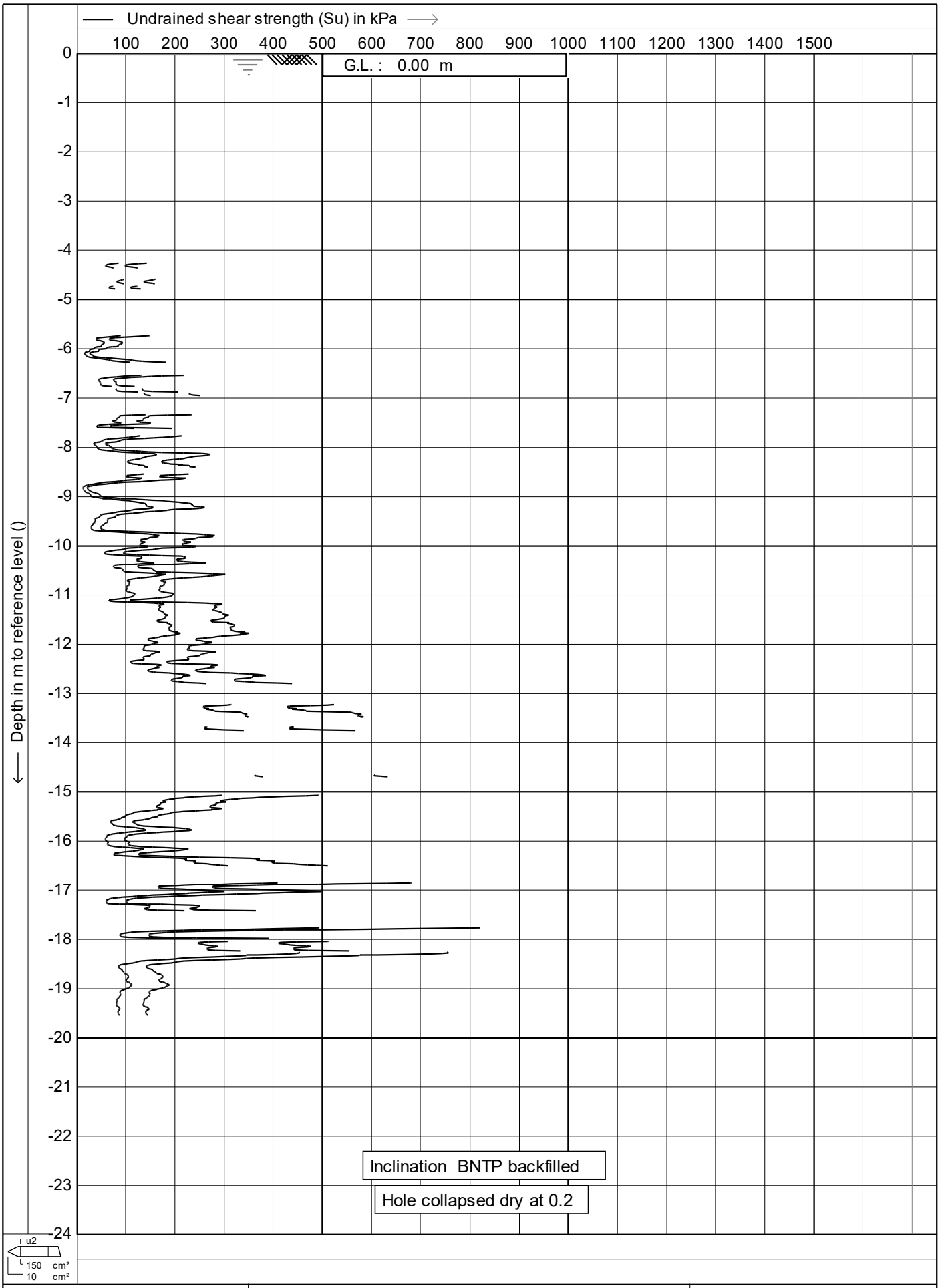
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **035** **9/14**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

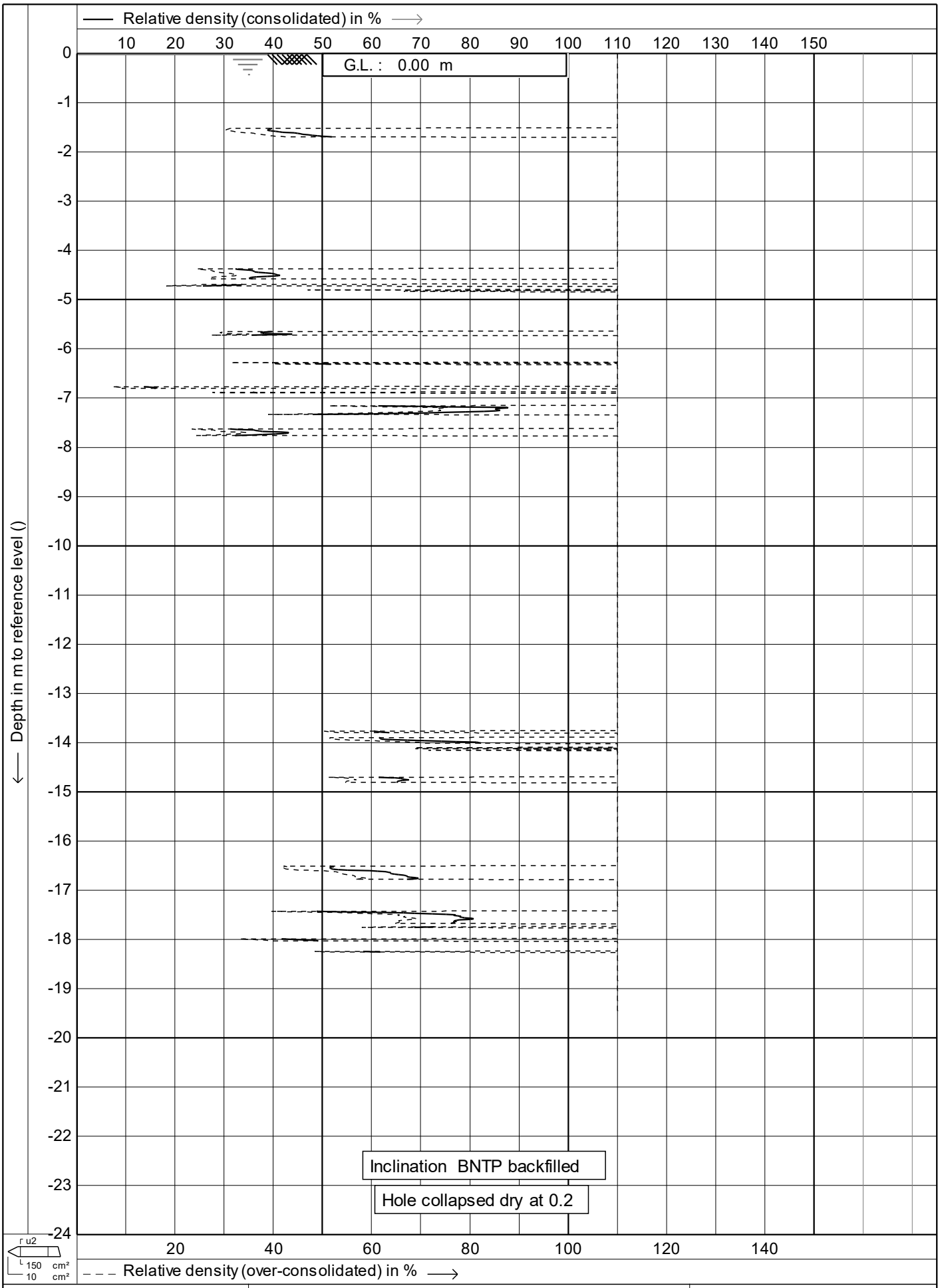
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **035**

10/14

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

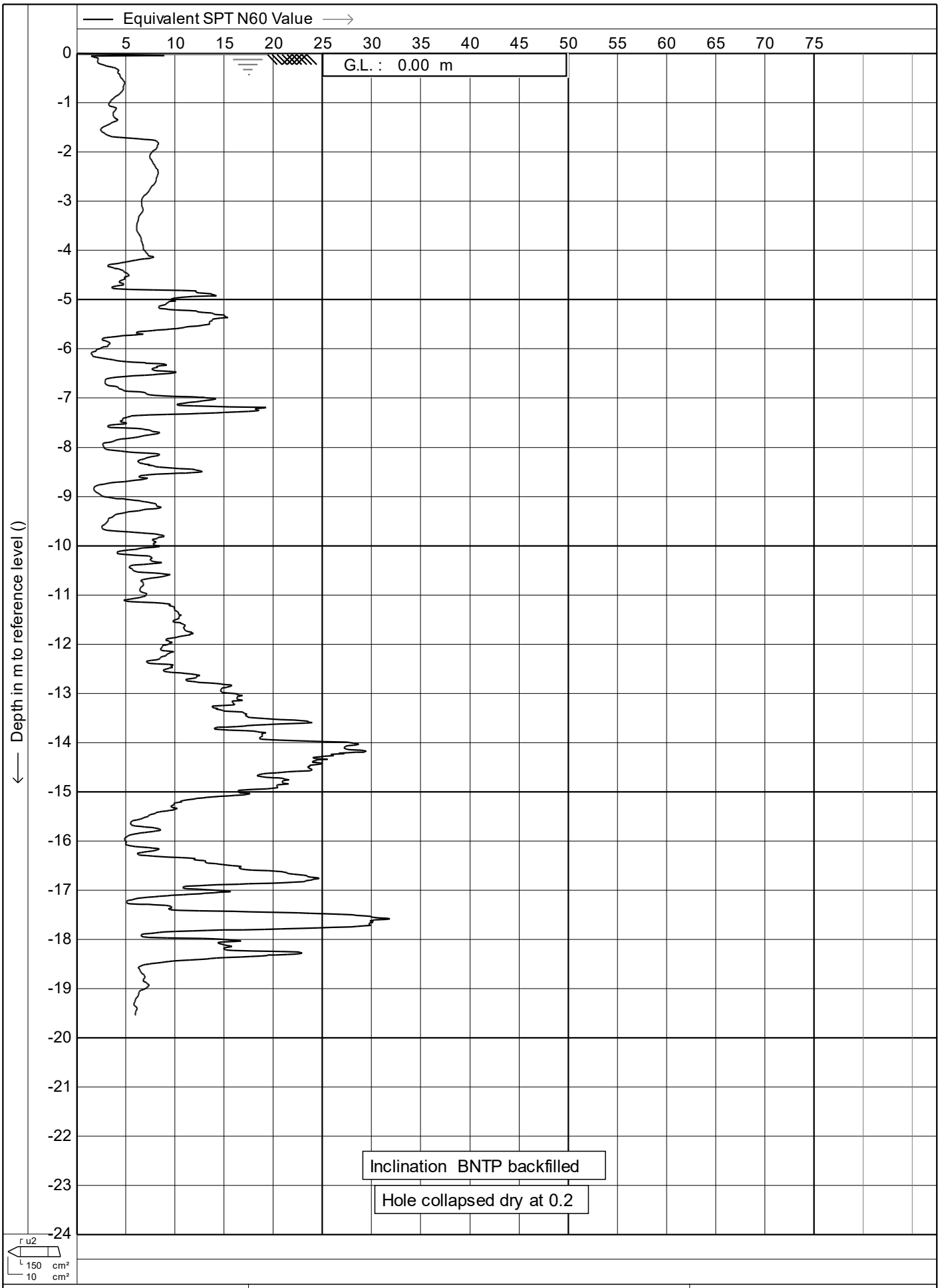
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **035**

11/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

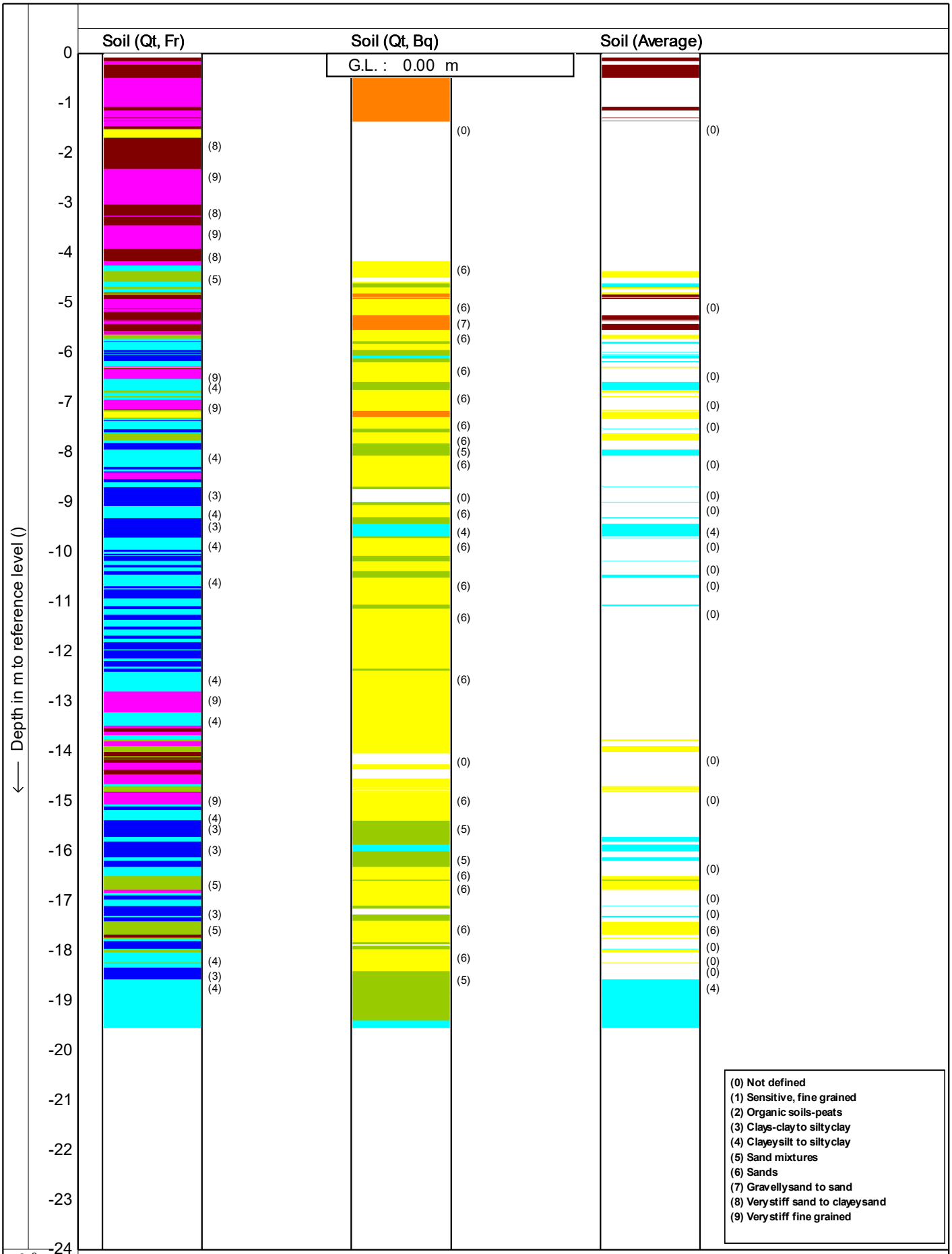
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **035**

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

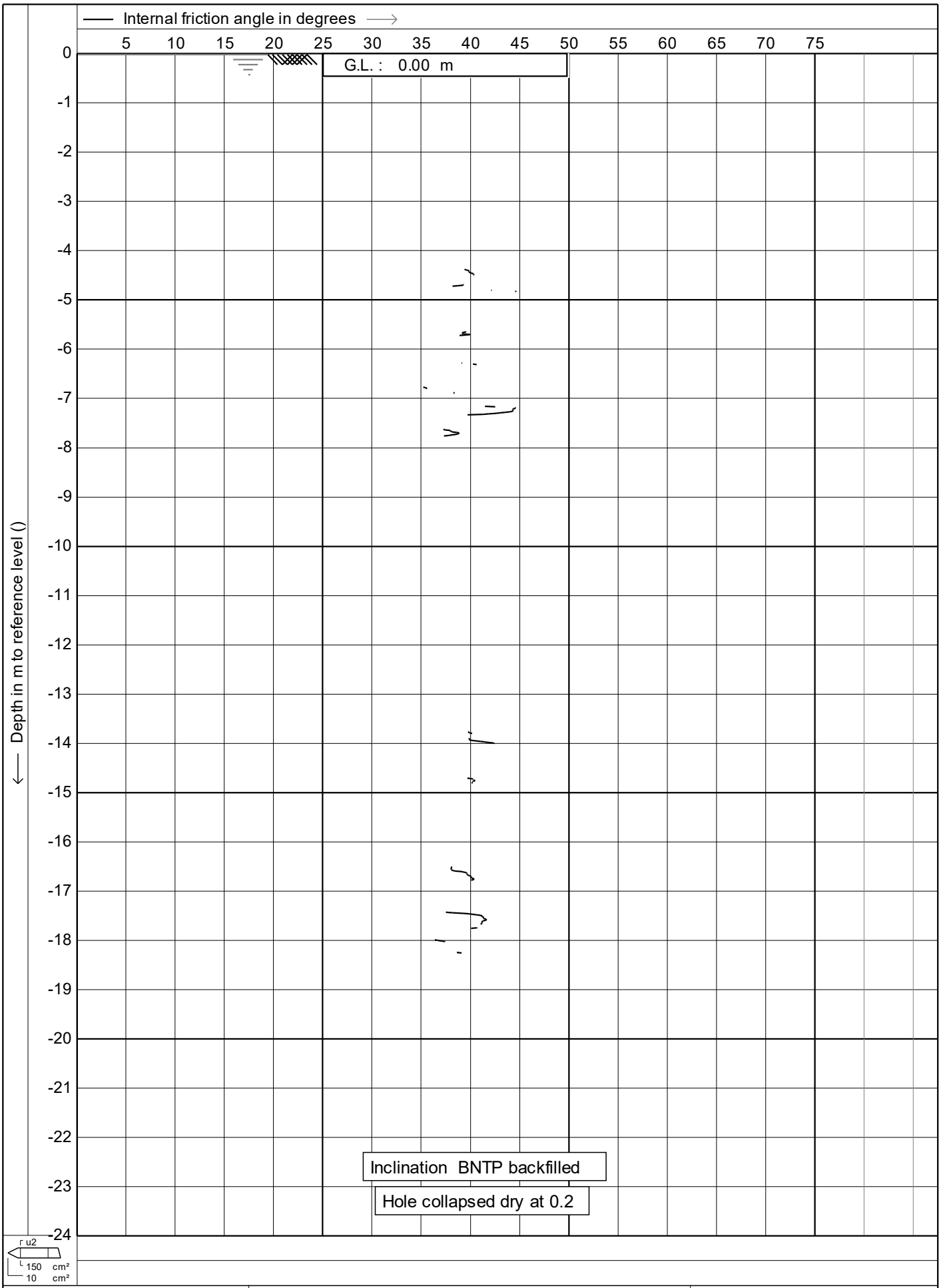
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **035**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

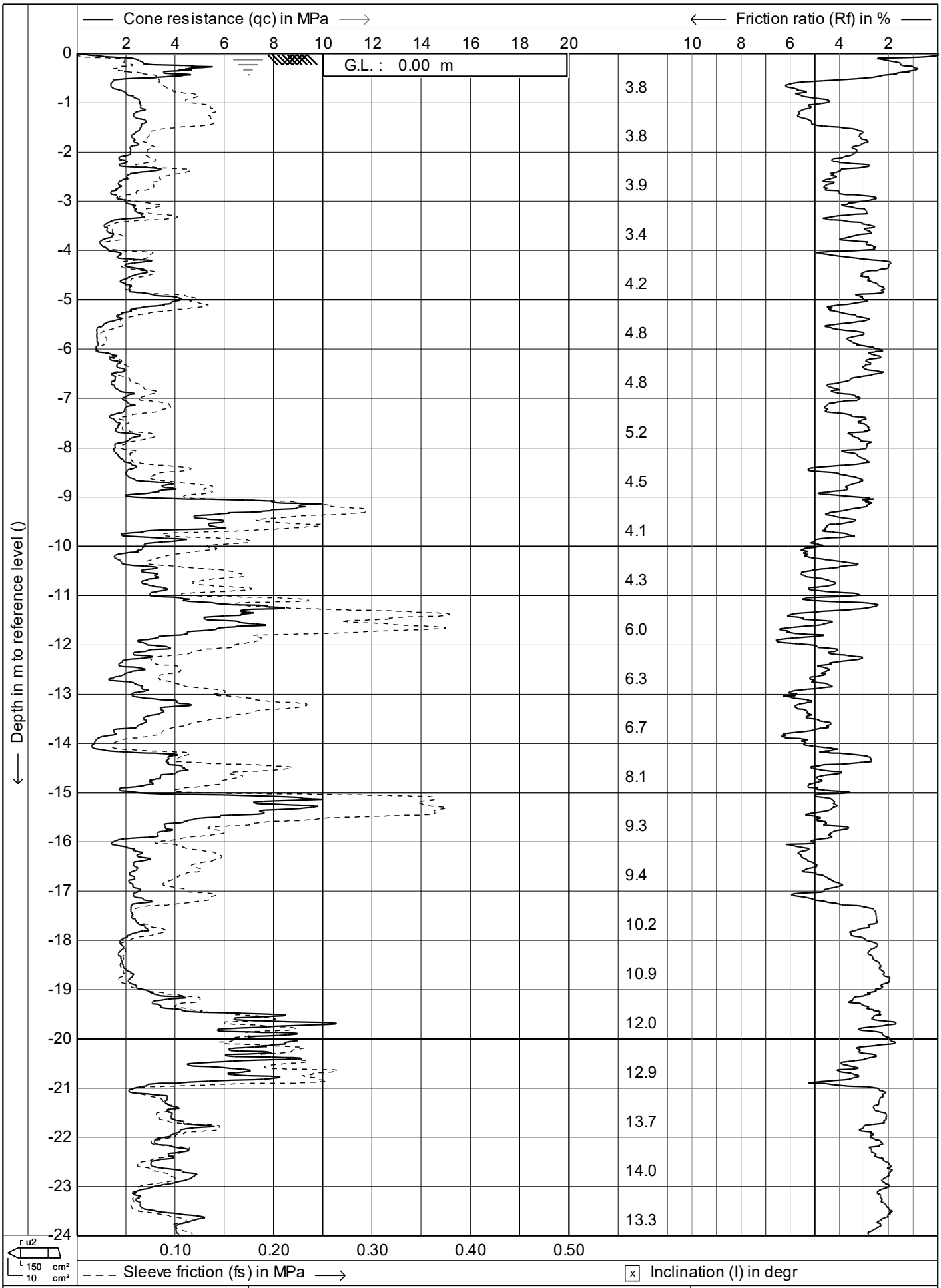
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

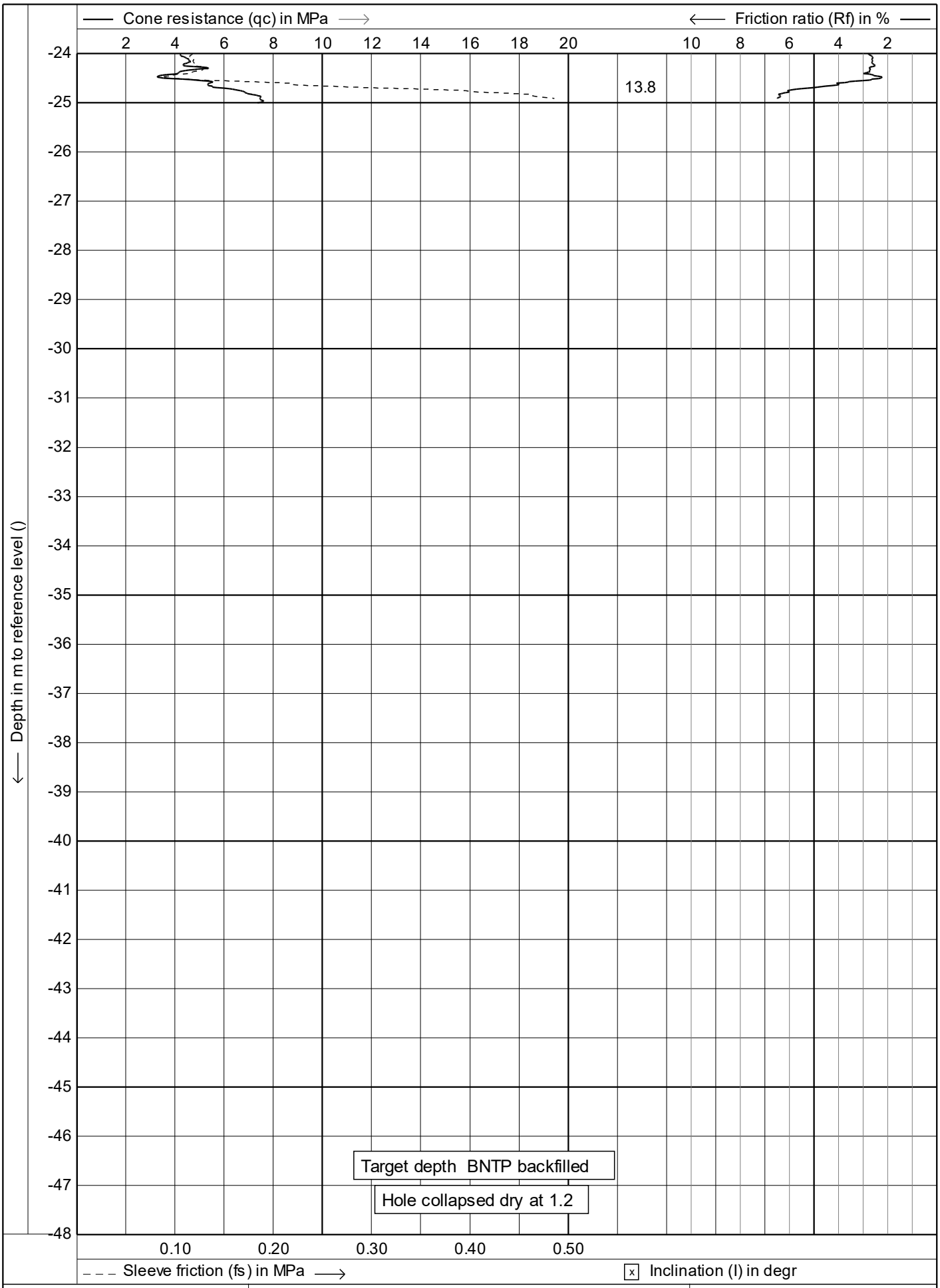
CPT no. : **035** **14/14**

1.48



PERRY GEOTECH	Test according A.S.T.M Standard D 5778-12	Date : **27/11/2020**
	Project : **Site Investigations**	Cone no. : **C10CFIIP.C14426**
	Location: **Fitzgerald Rd - Drury**	Project no. : **05AU7**
	Position: **0, 0**	CPT no. : **036** **1/28**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

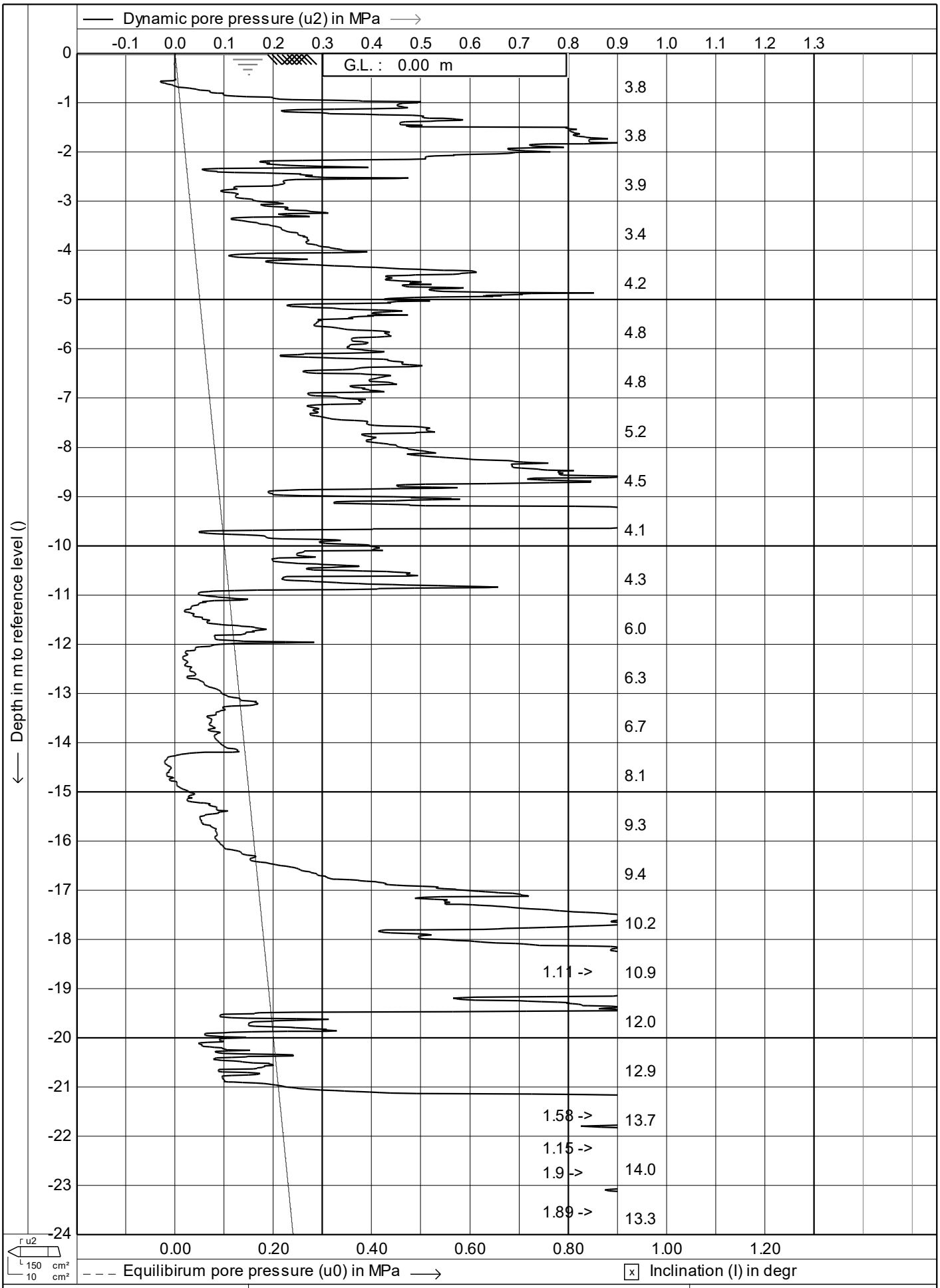
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **036**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

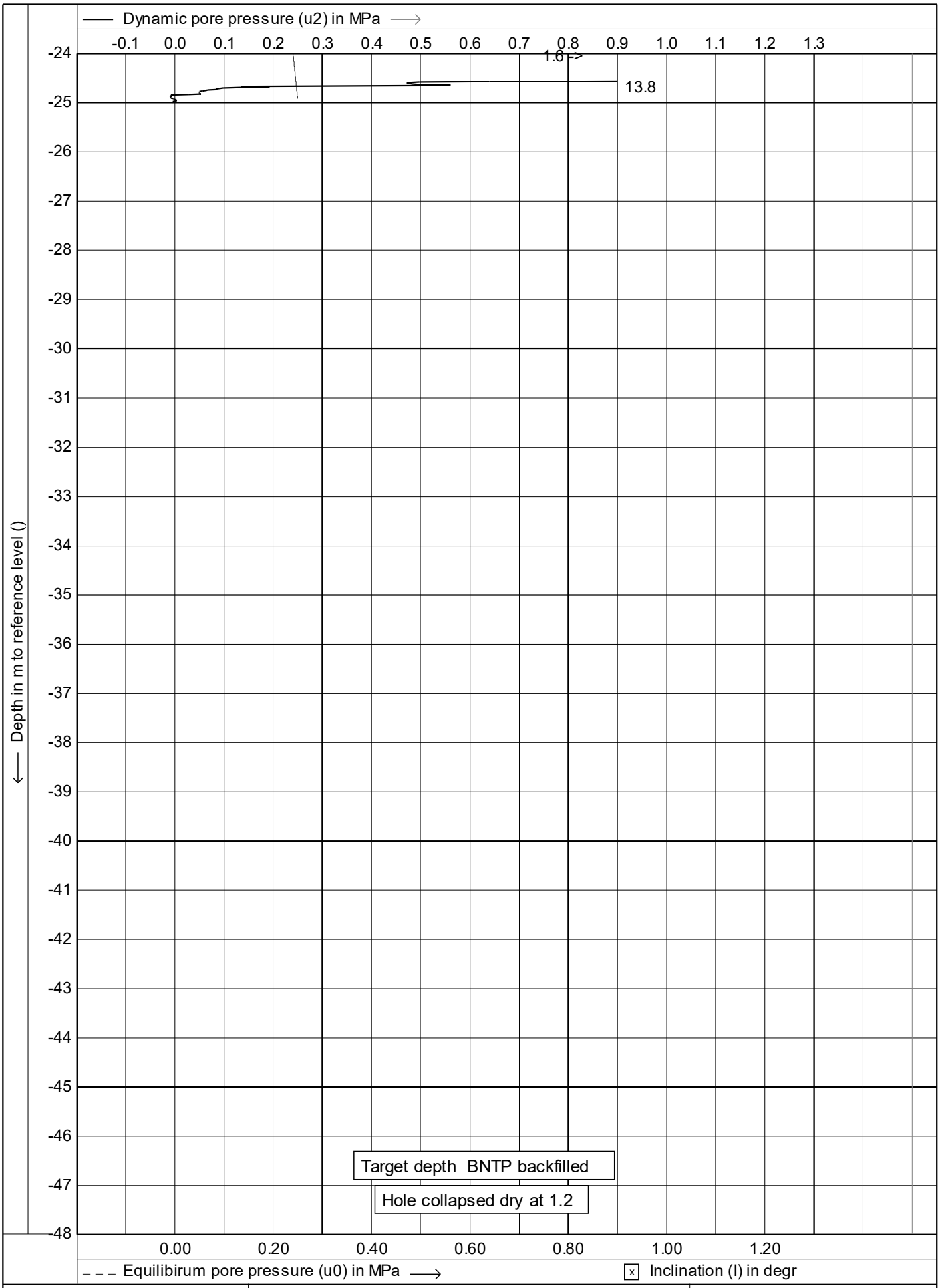
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **036**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

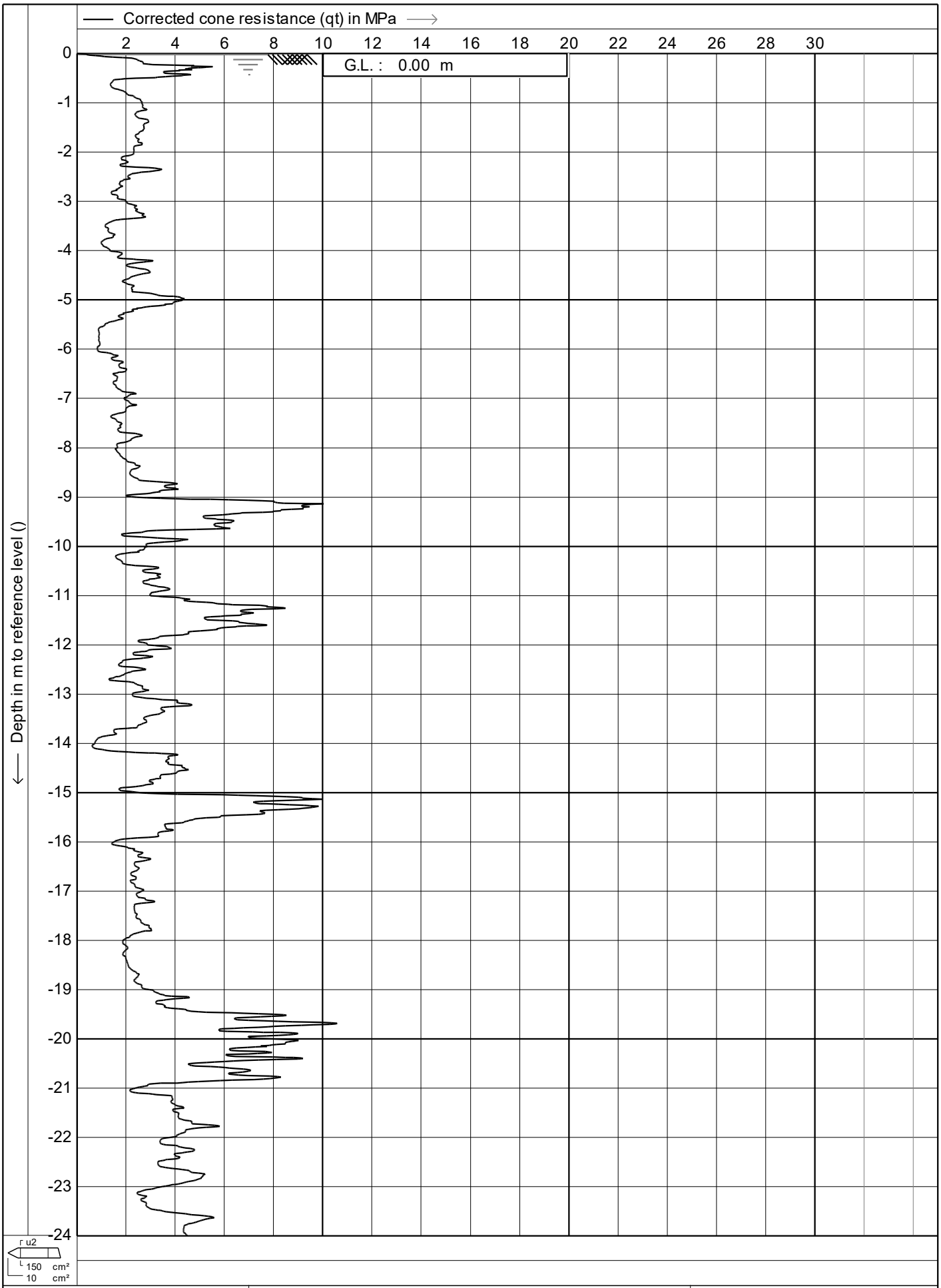
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **036**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

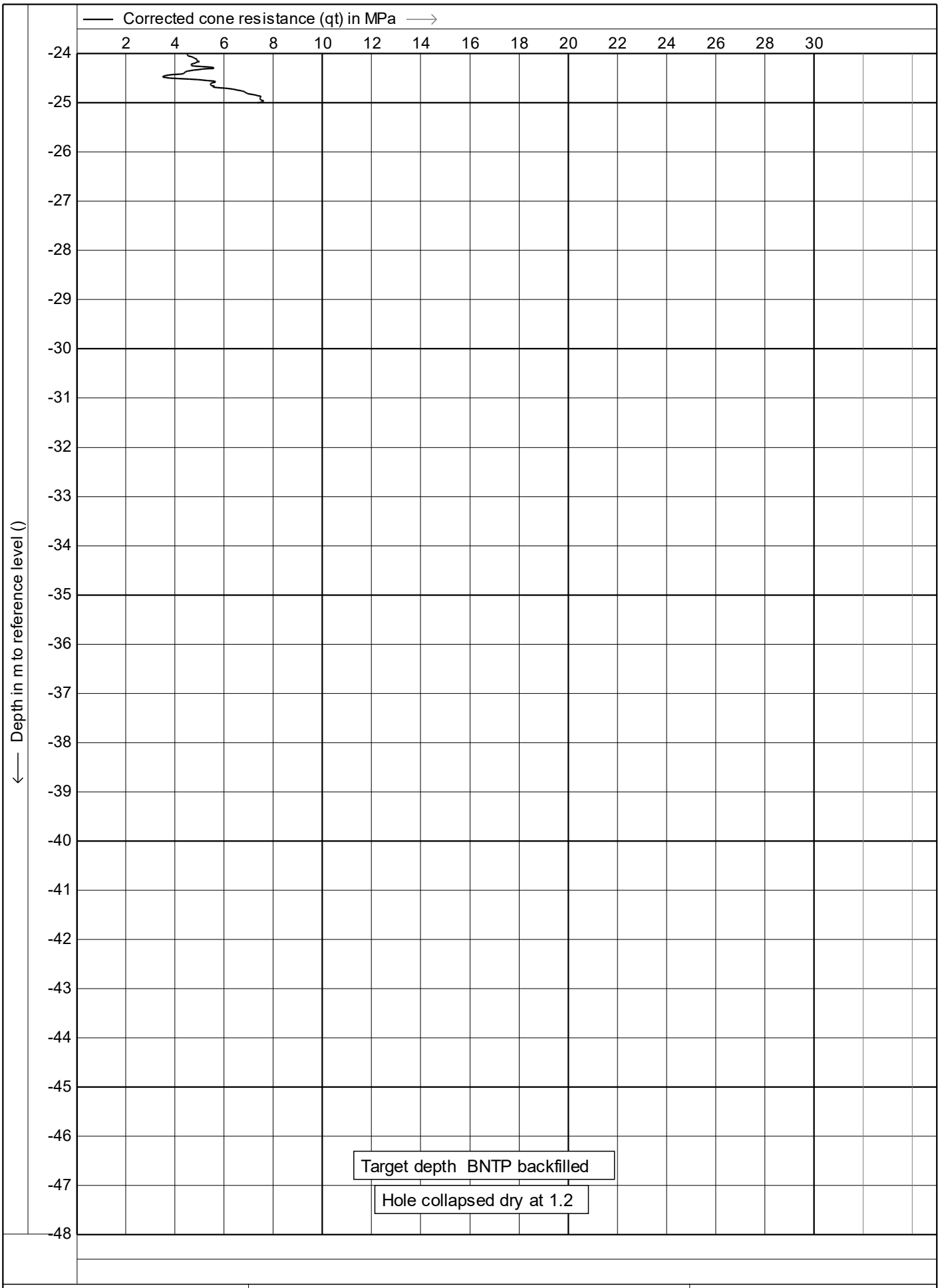
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **036**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

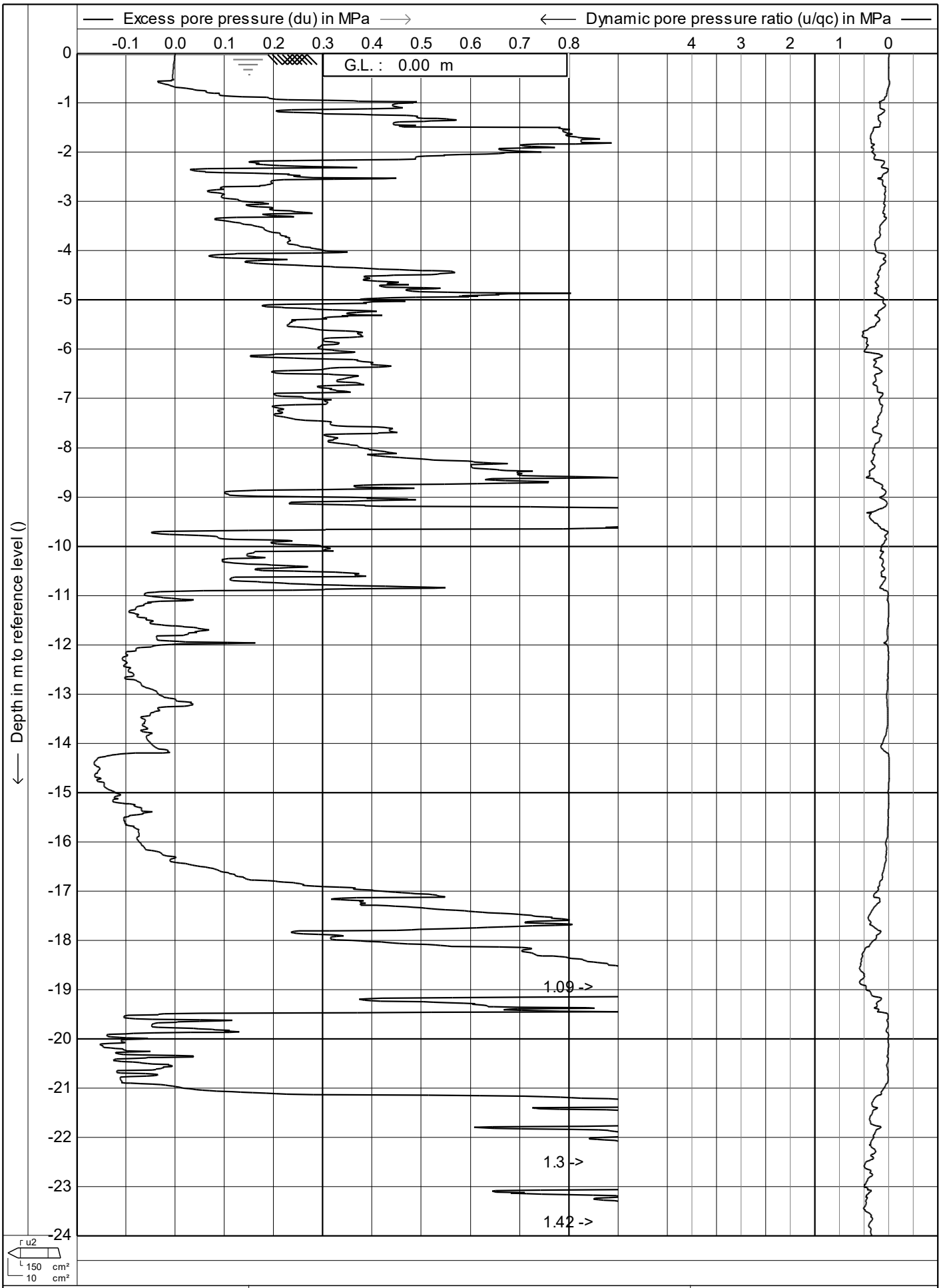
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **036**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

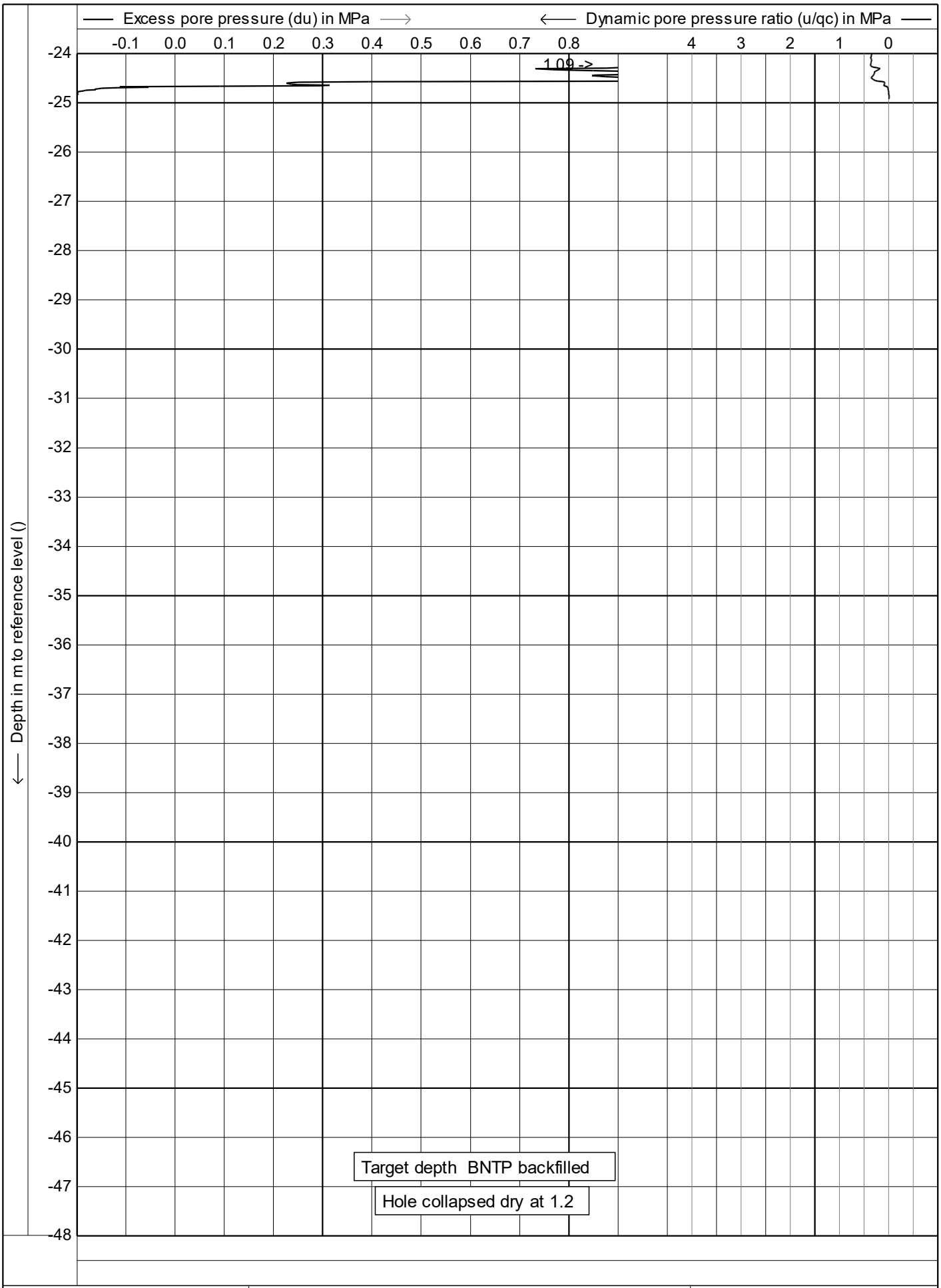
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **036**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

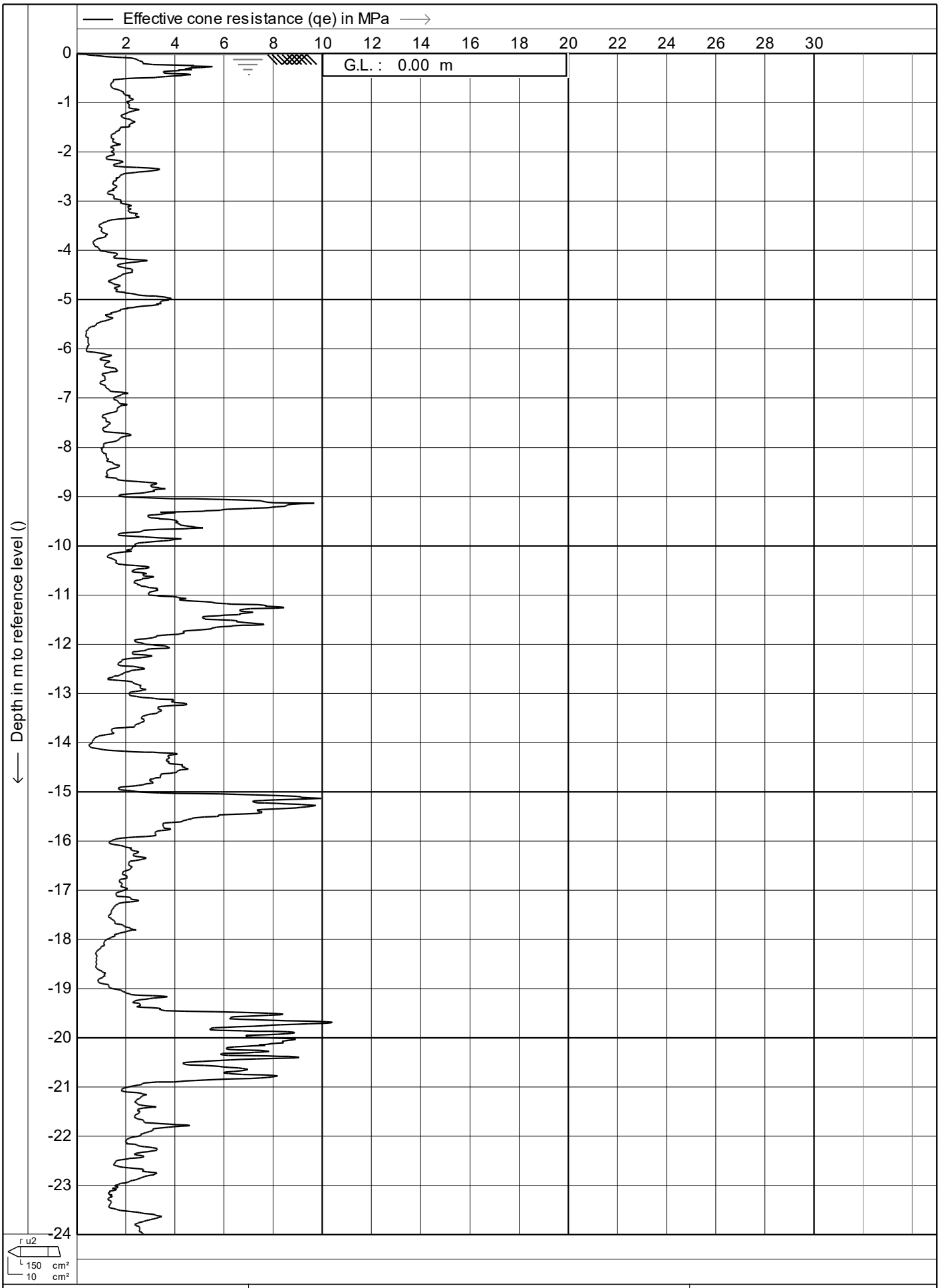
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **036**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

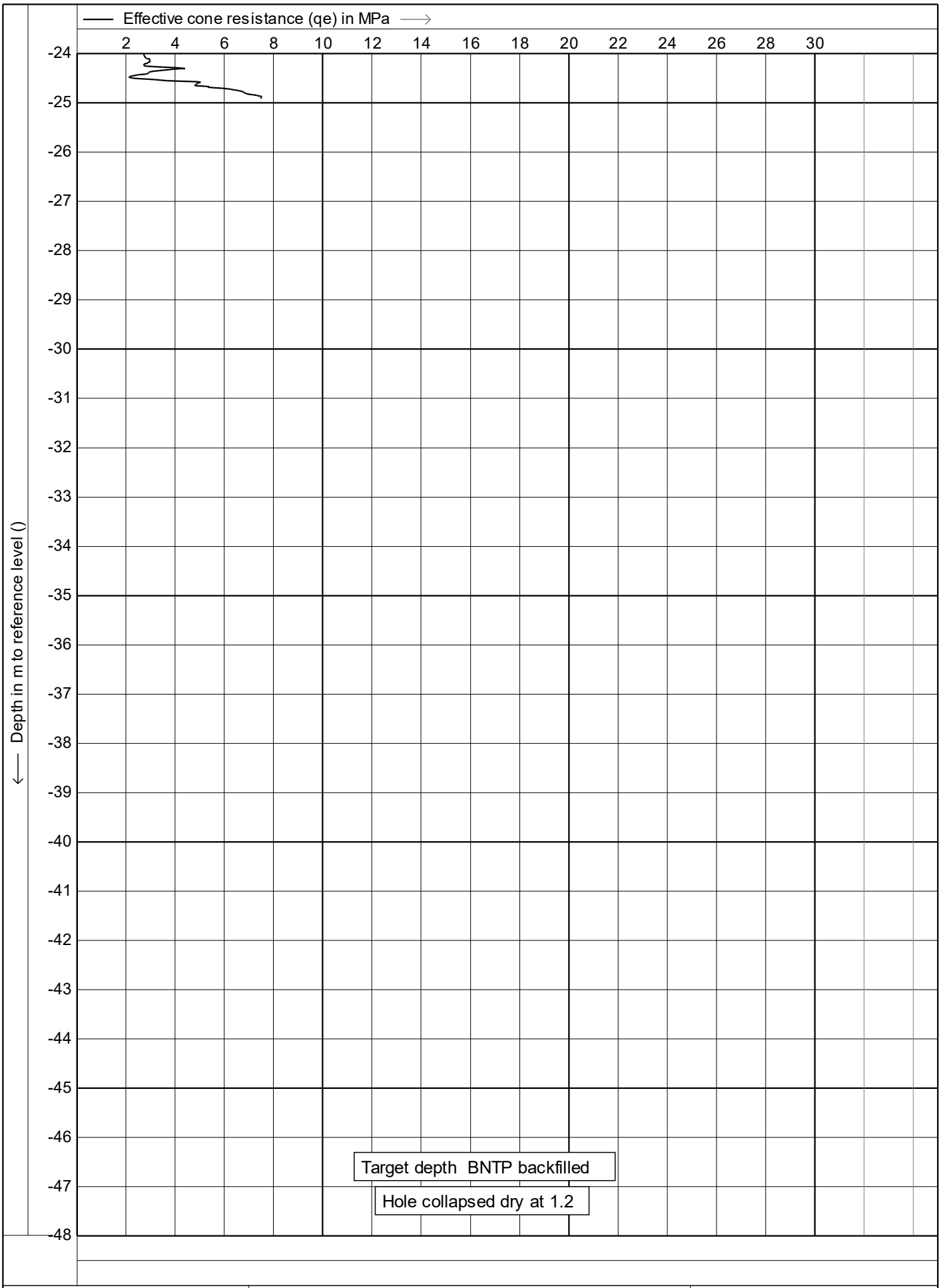
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **036** **9/28**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

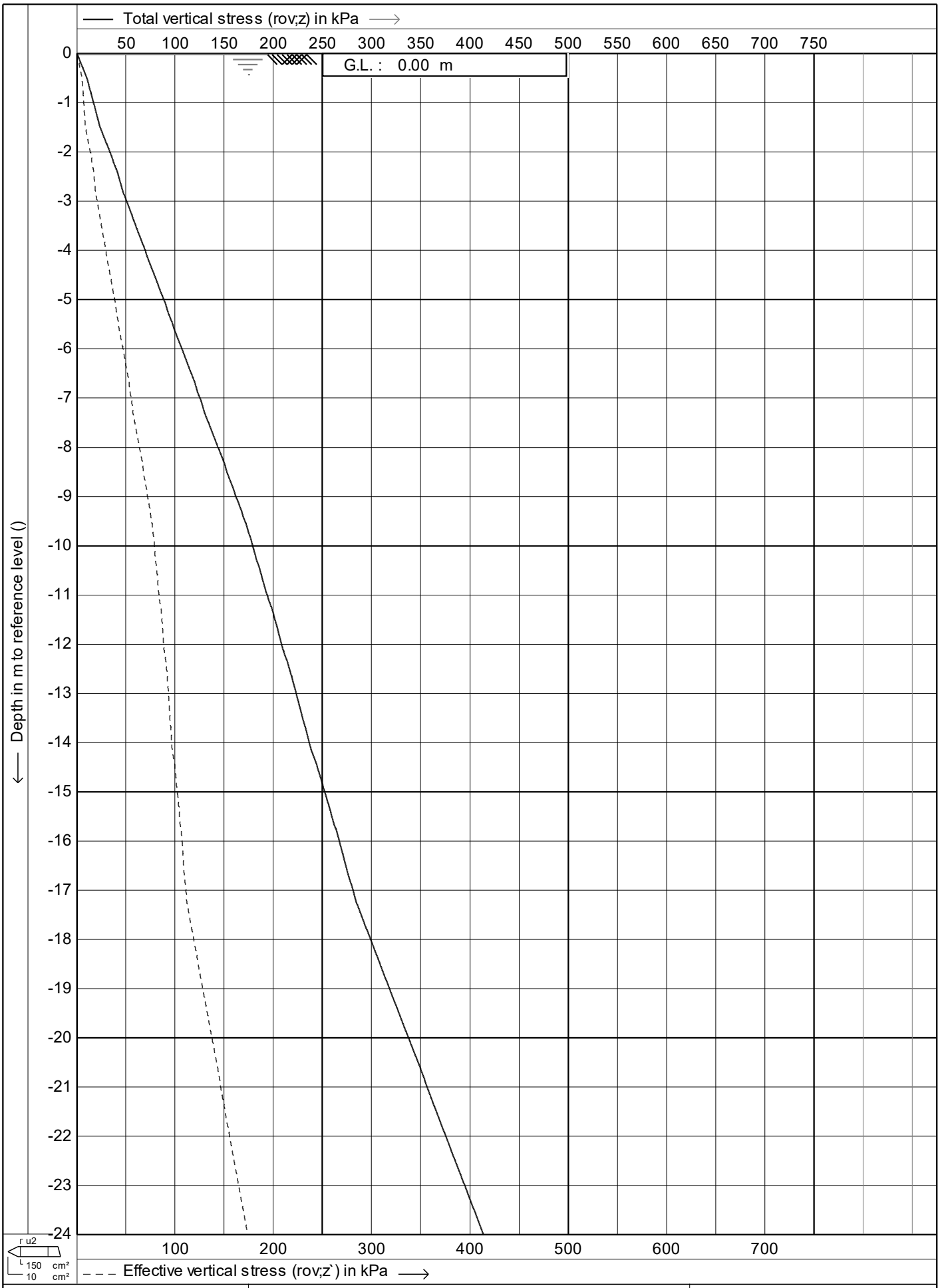
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Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **036** **10/28**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

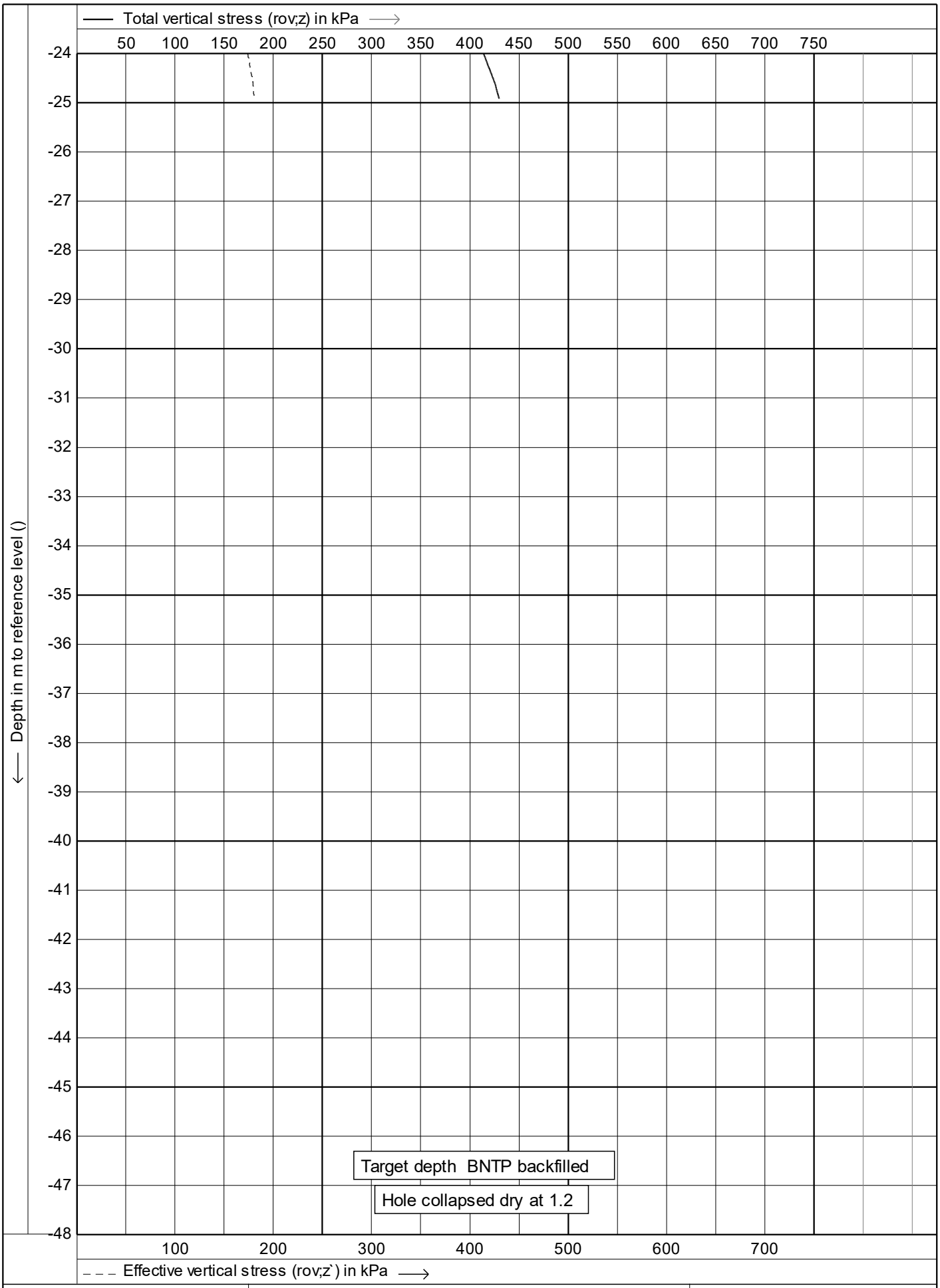
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

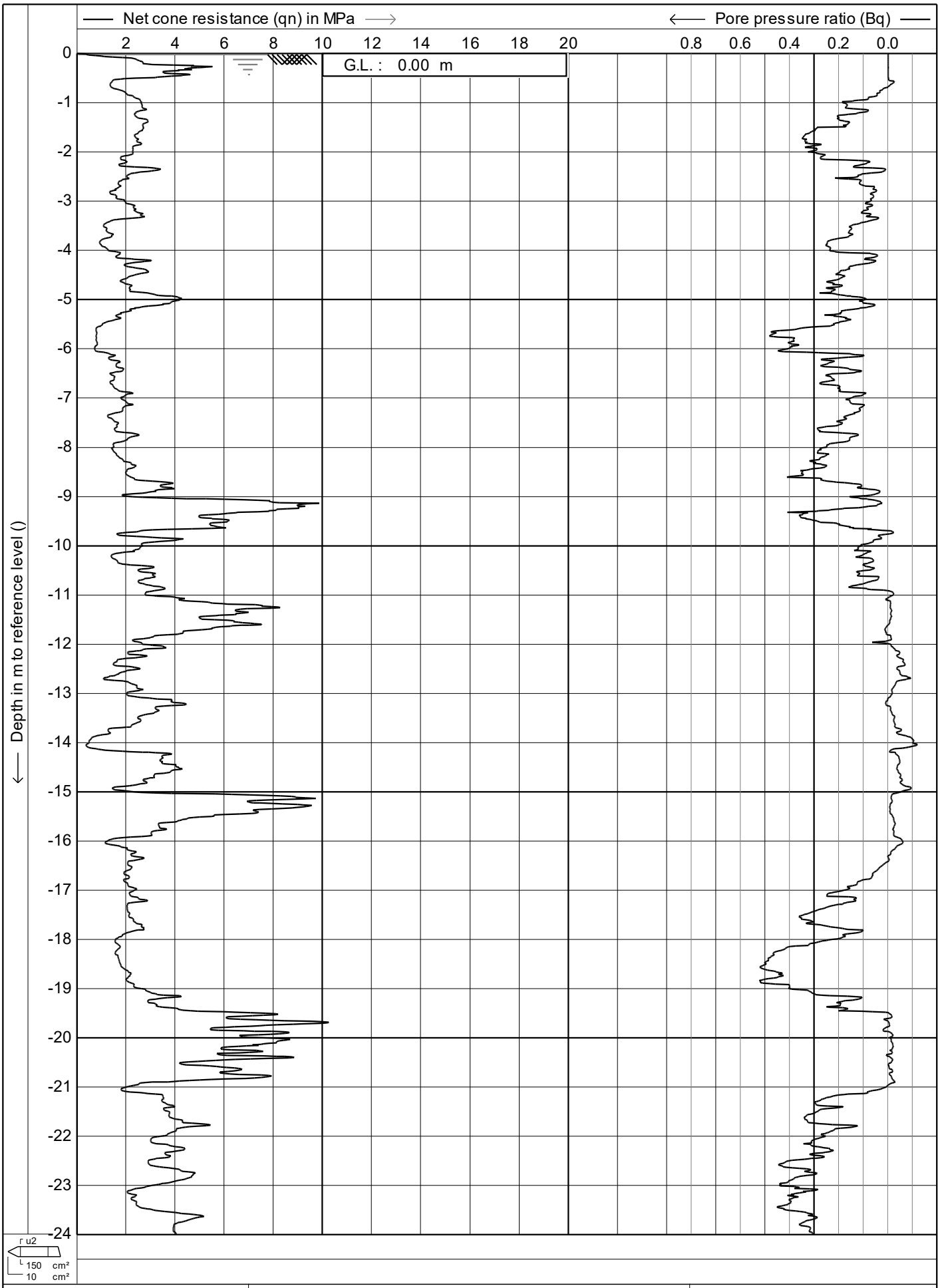
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **036**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

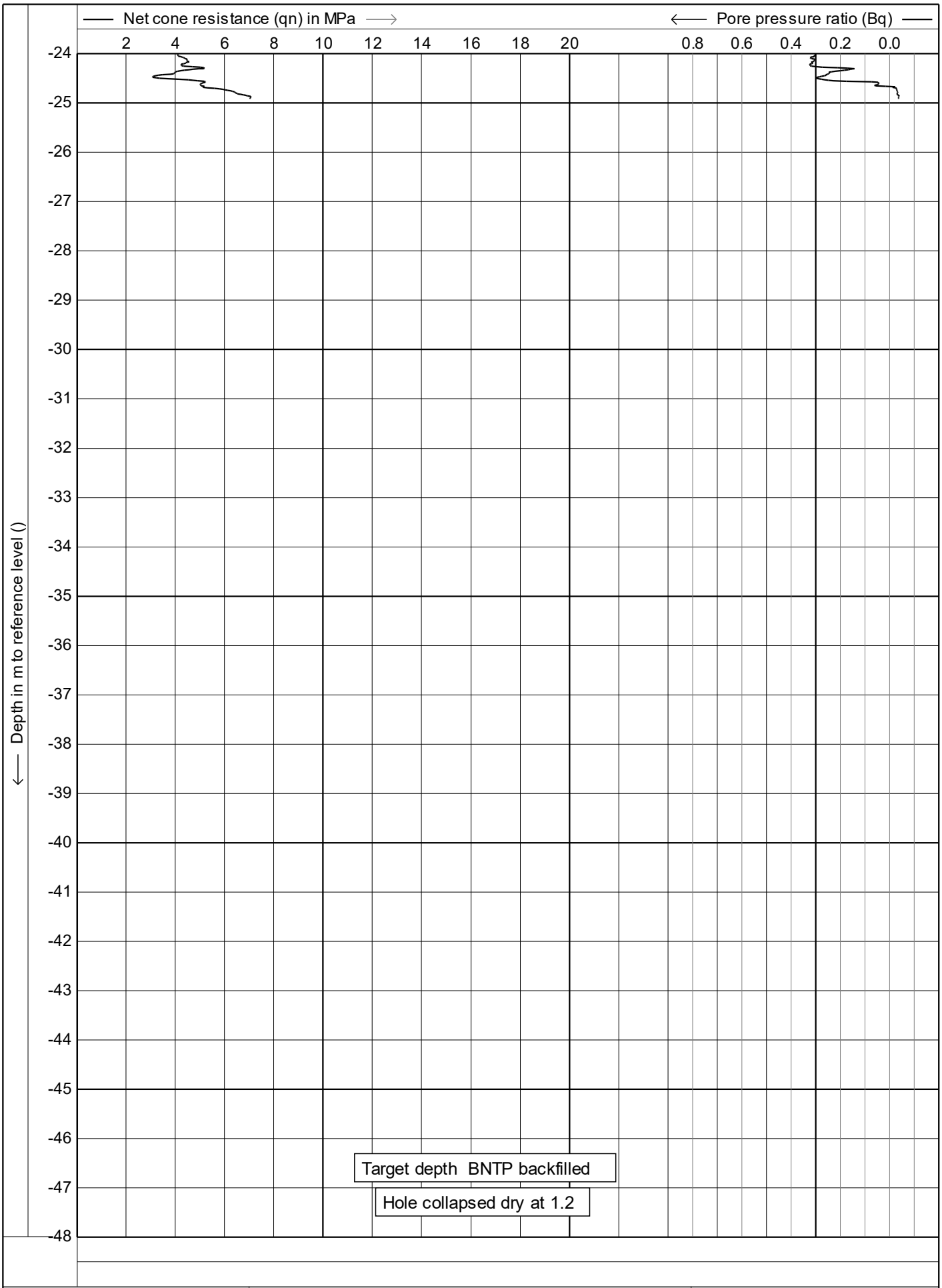
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **036**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **27/11/2020**

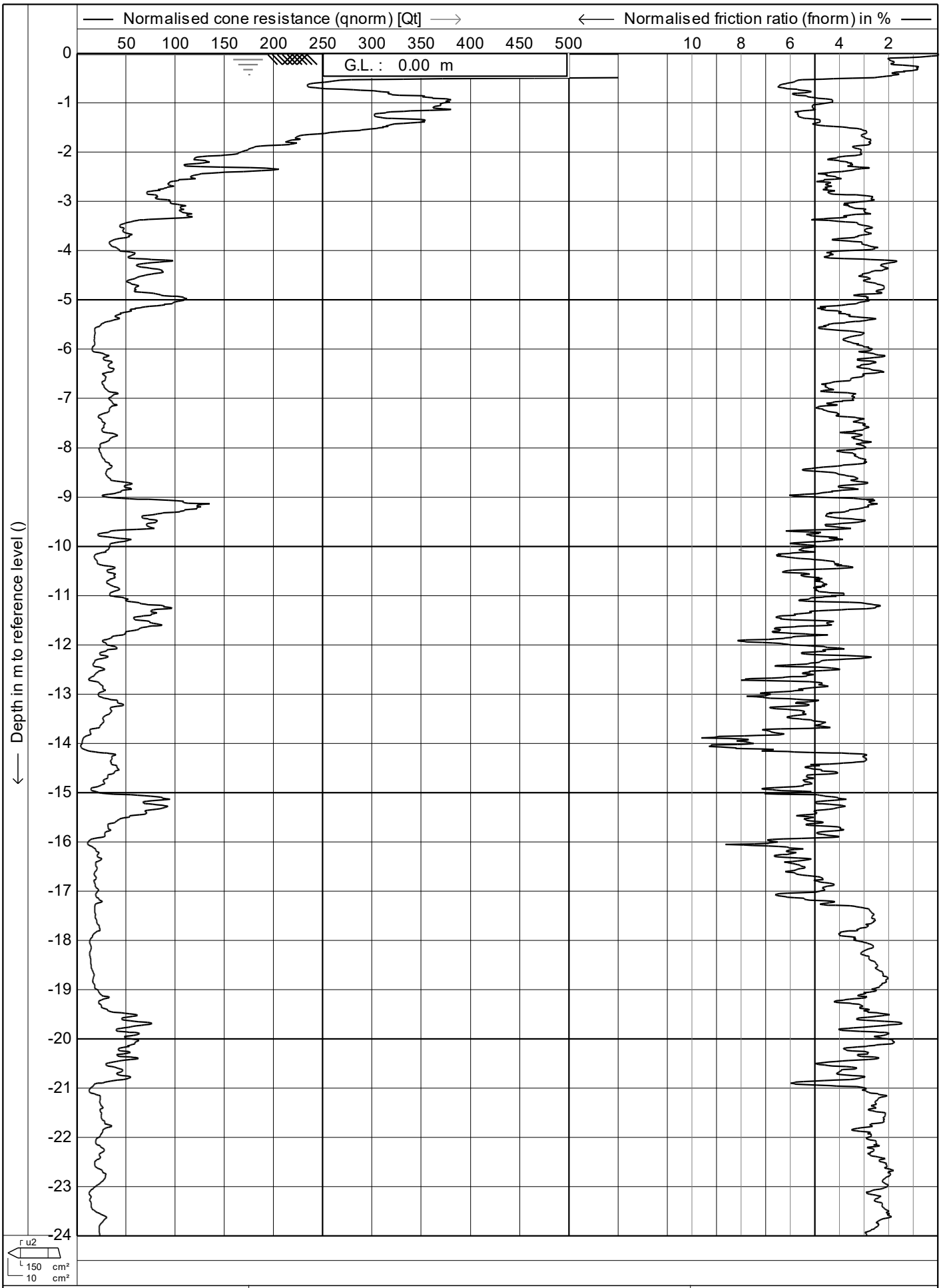
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Project no. : **05AU7**

CPT no. : **036**

14/28

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

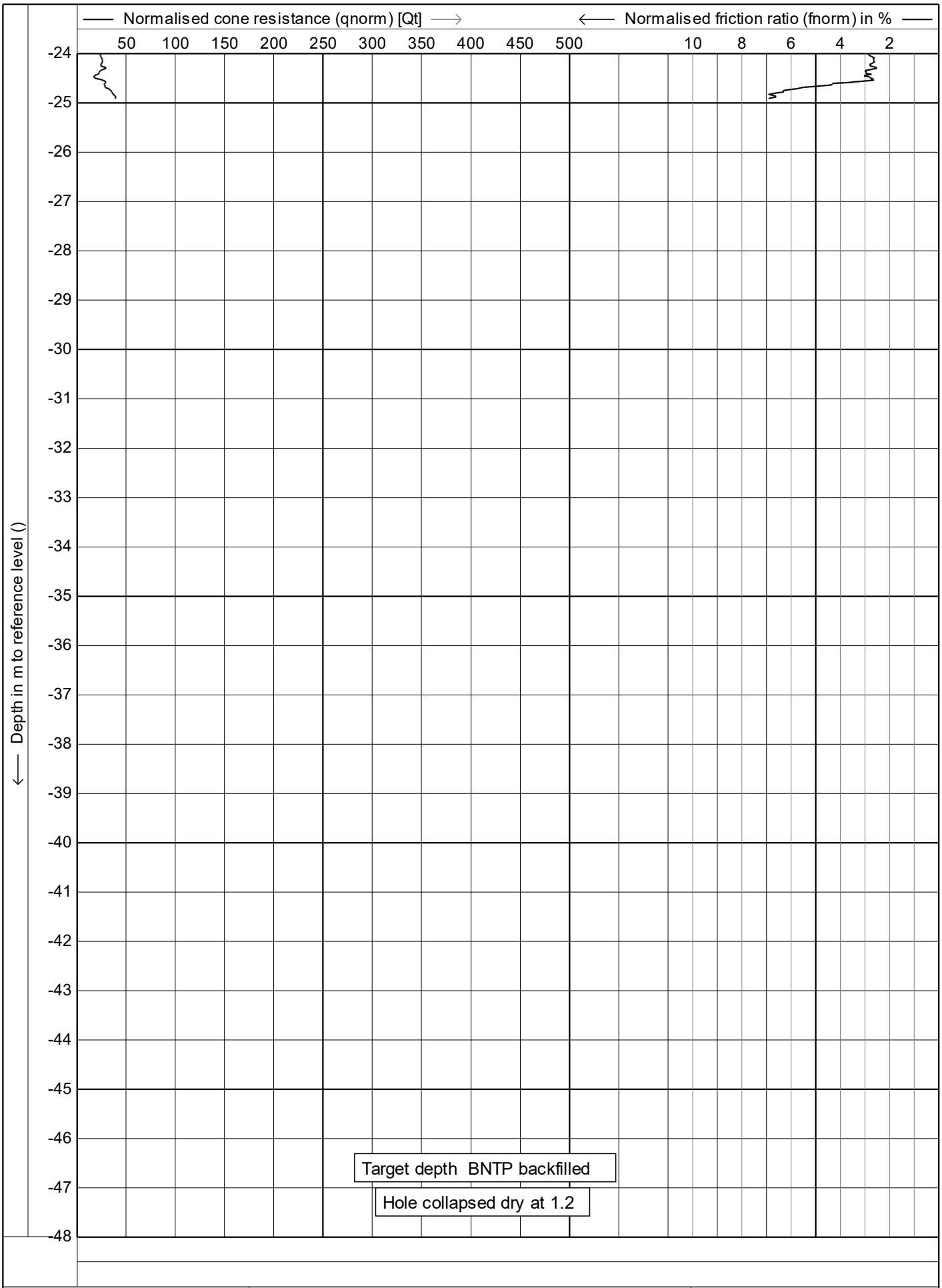
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **036**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

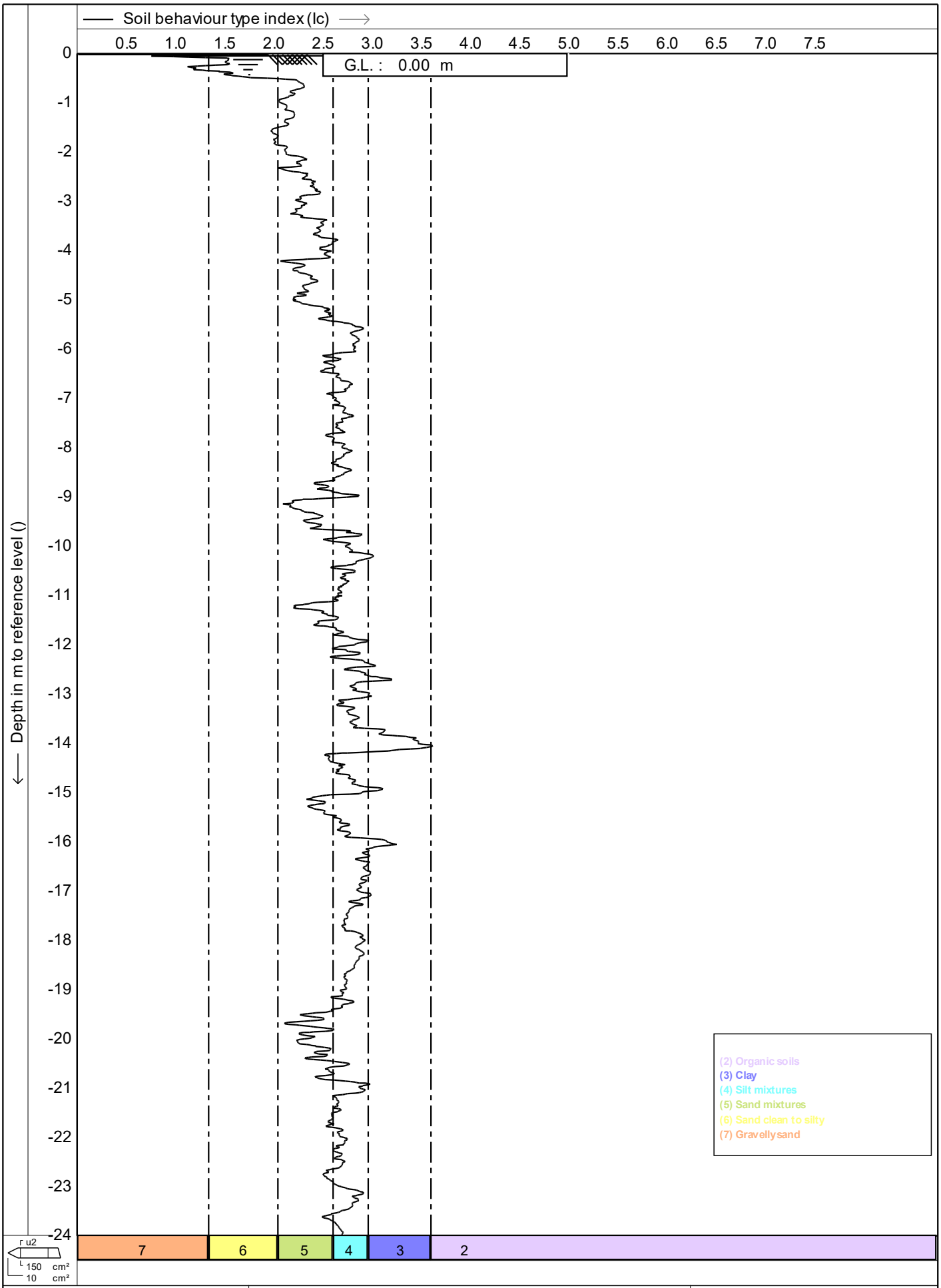
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
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Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

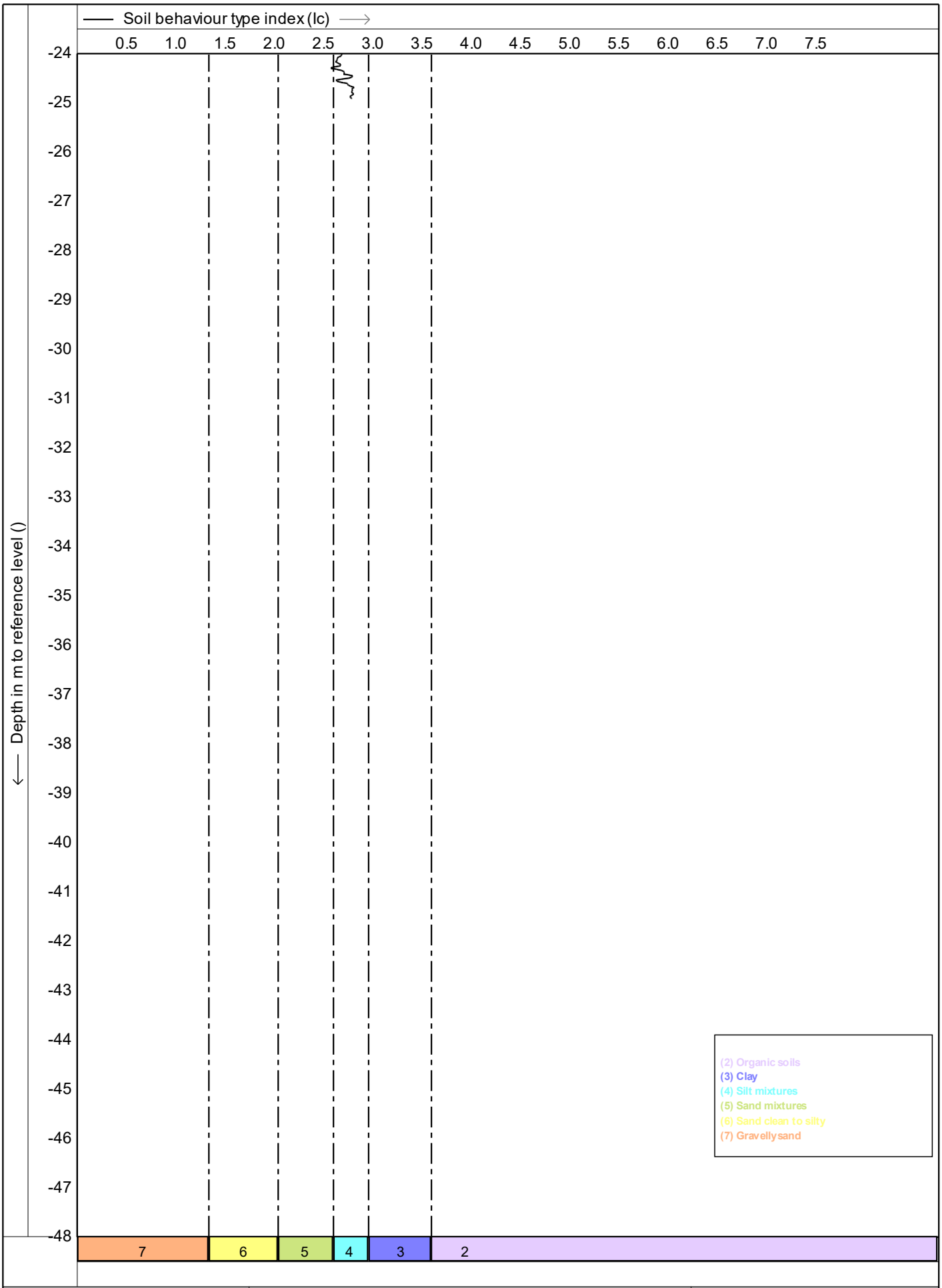
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **036**

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PERRY GEOTECH

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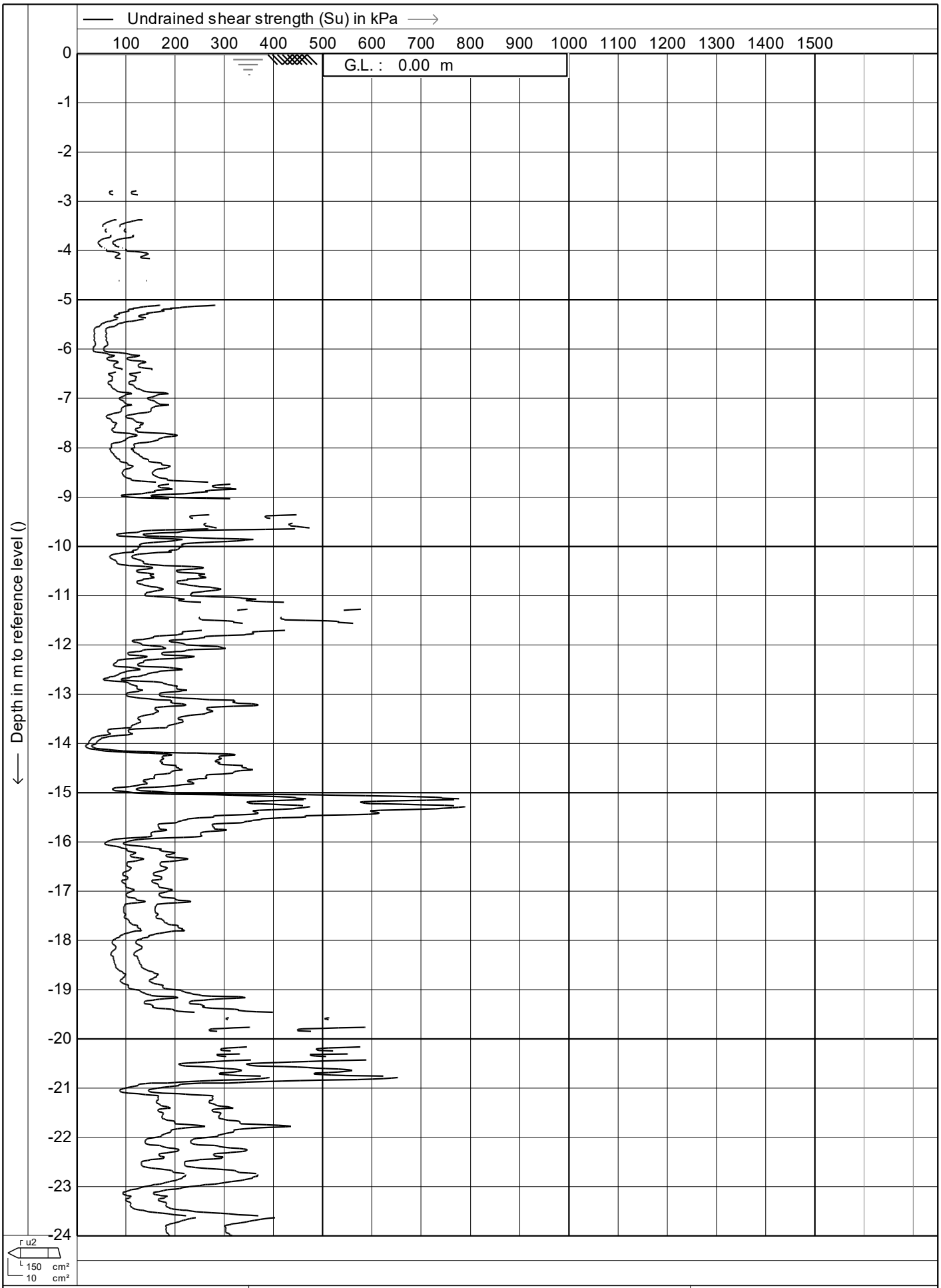
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Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

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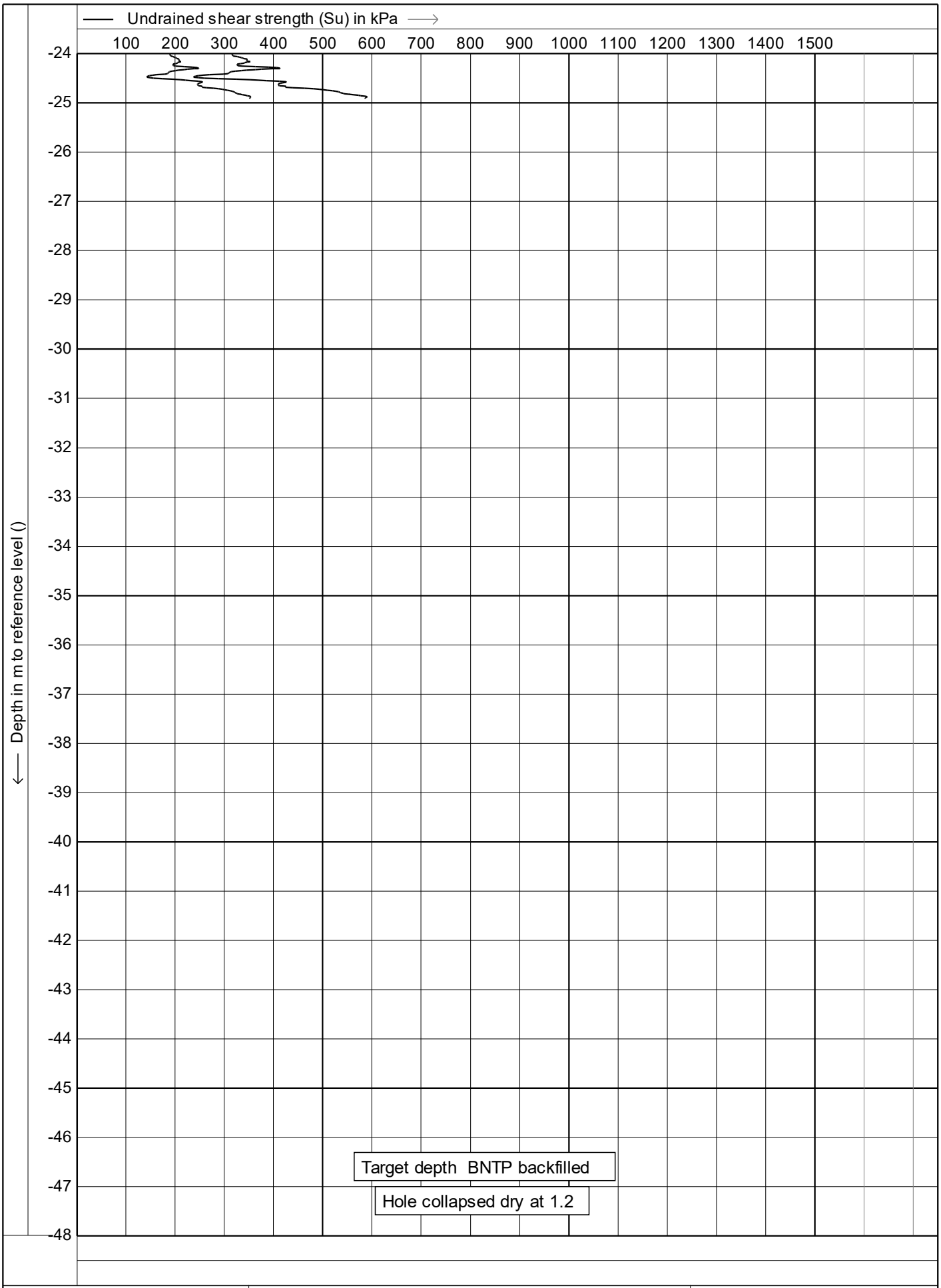
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Position: **0, 0**

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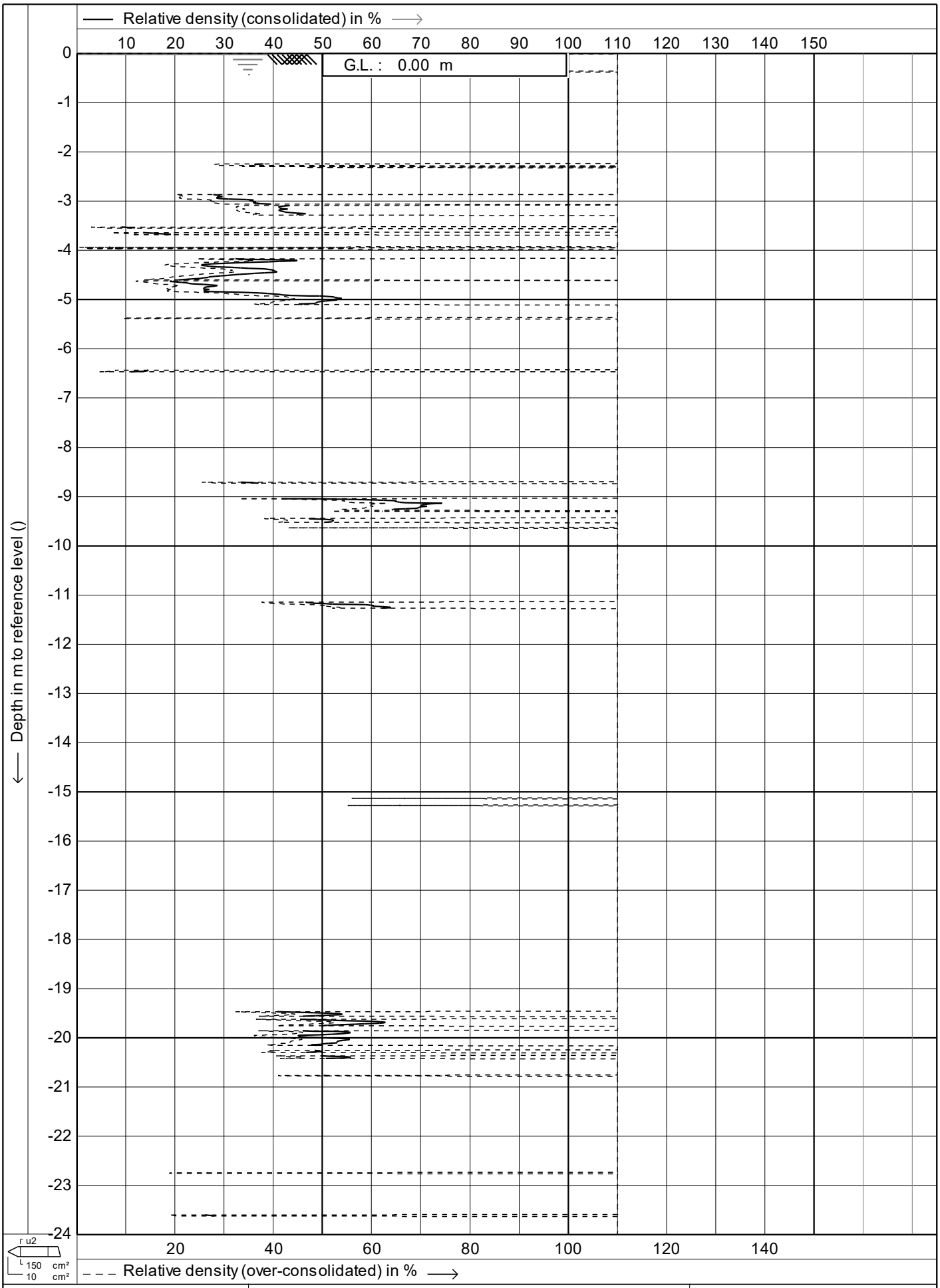
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Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

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Cone no.	: **C10CFIIP.C14426**
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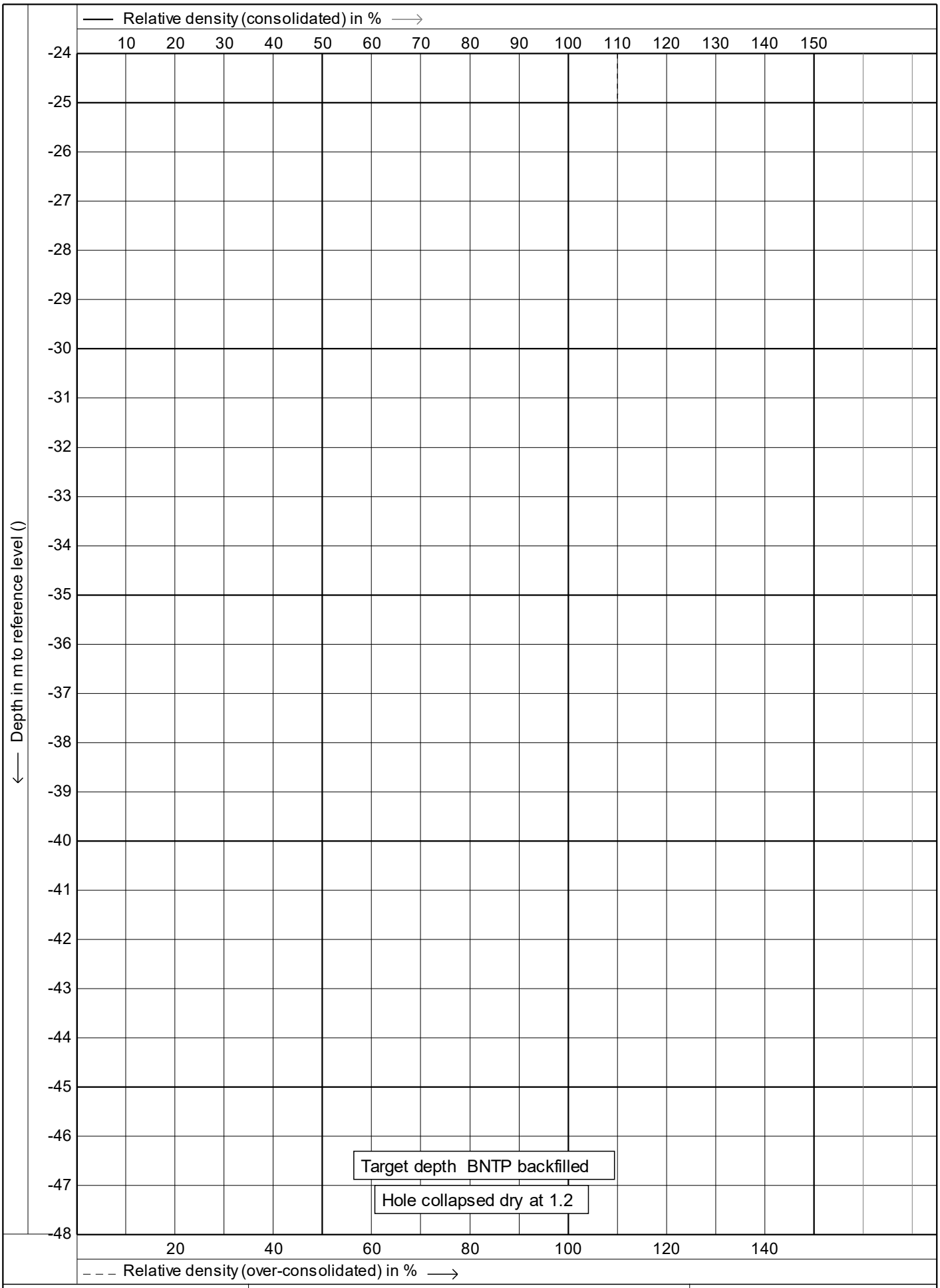
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Location: **Fitzgerald Rd - Drury**

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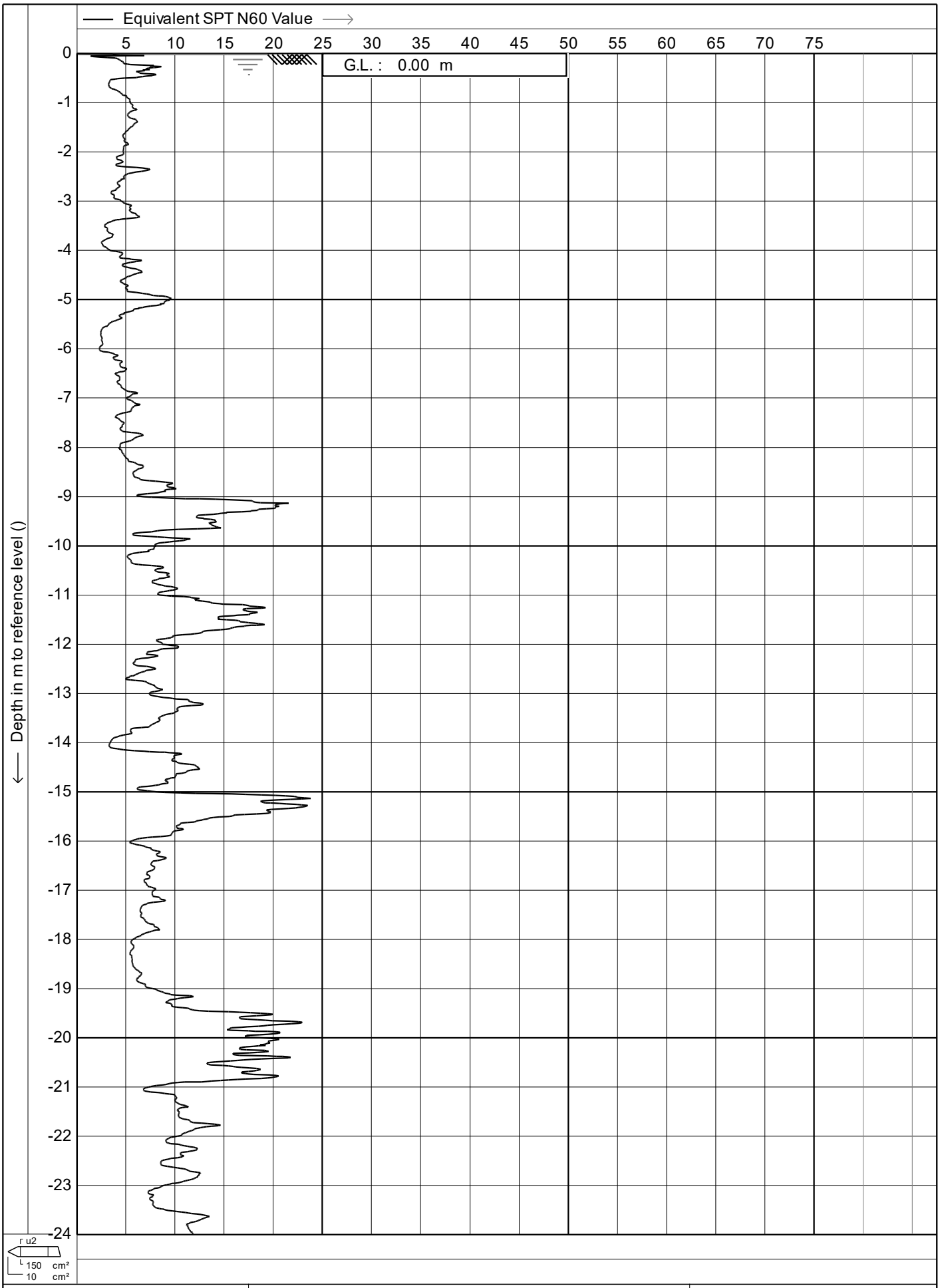
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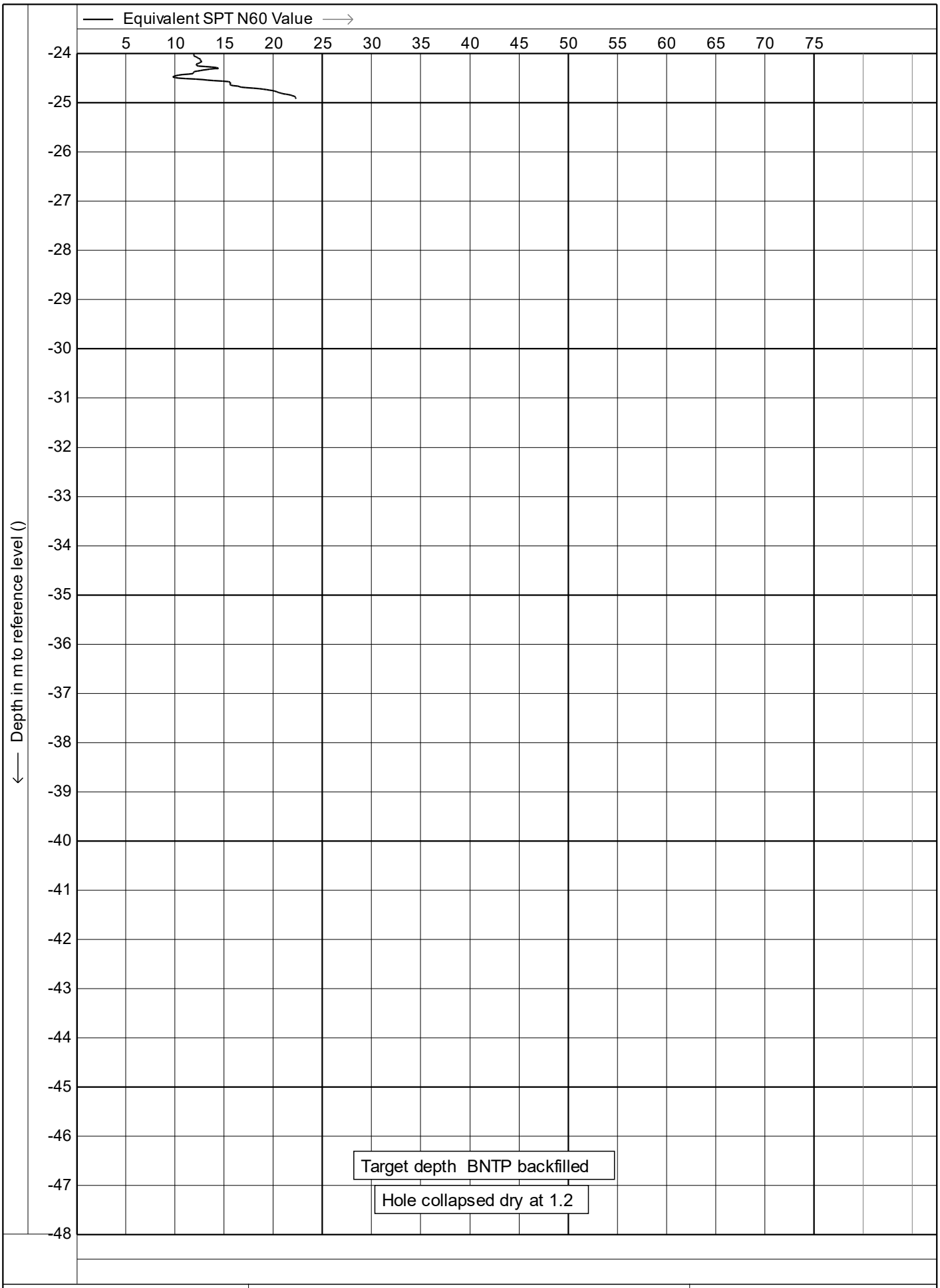
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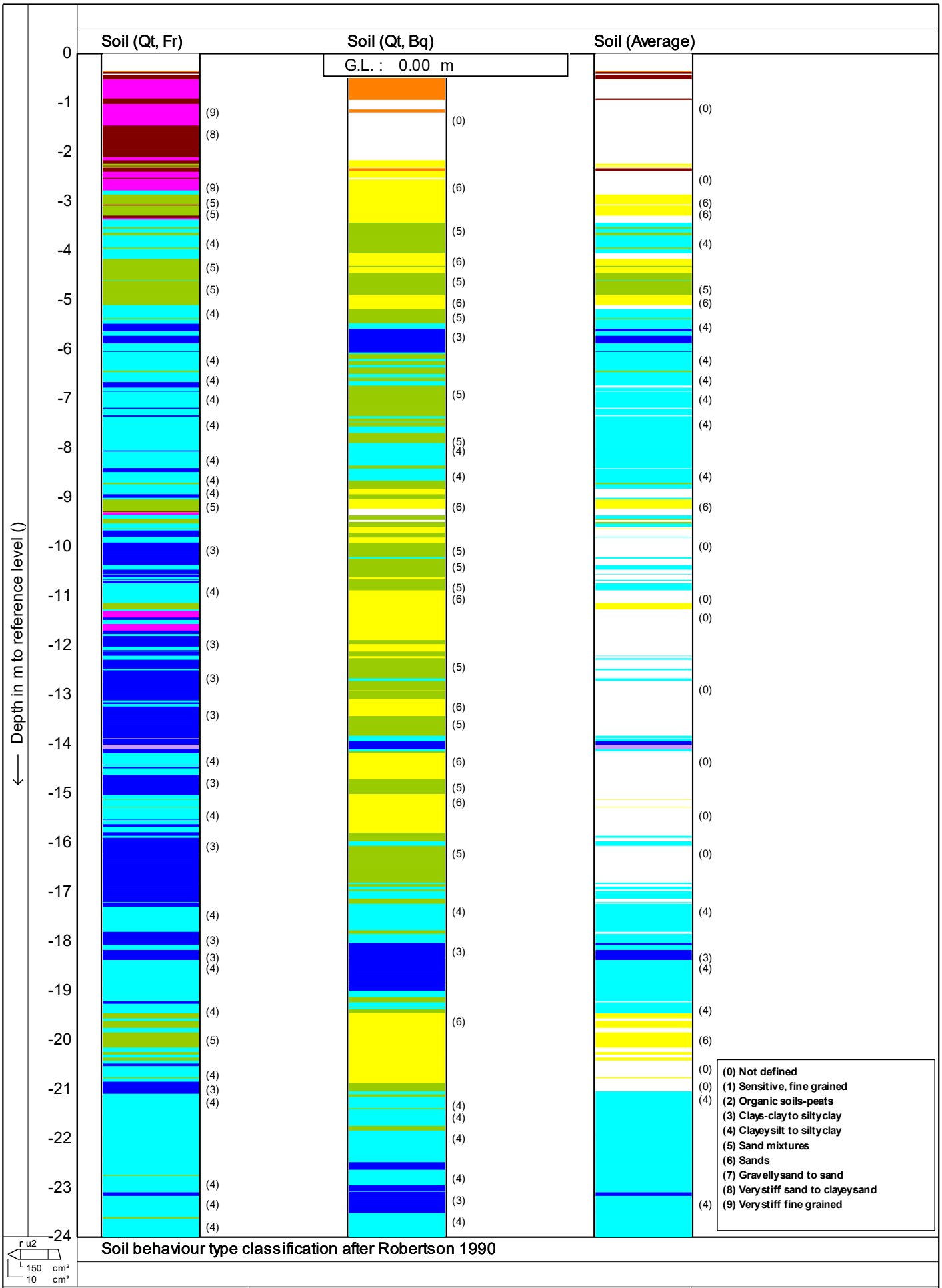
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Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

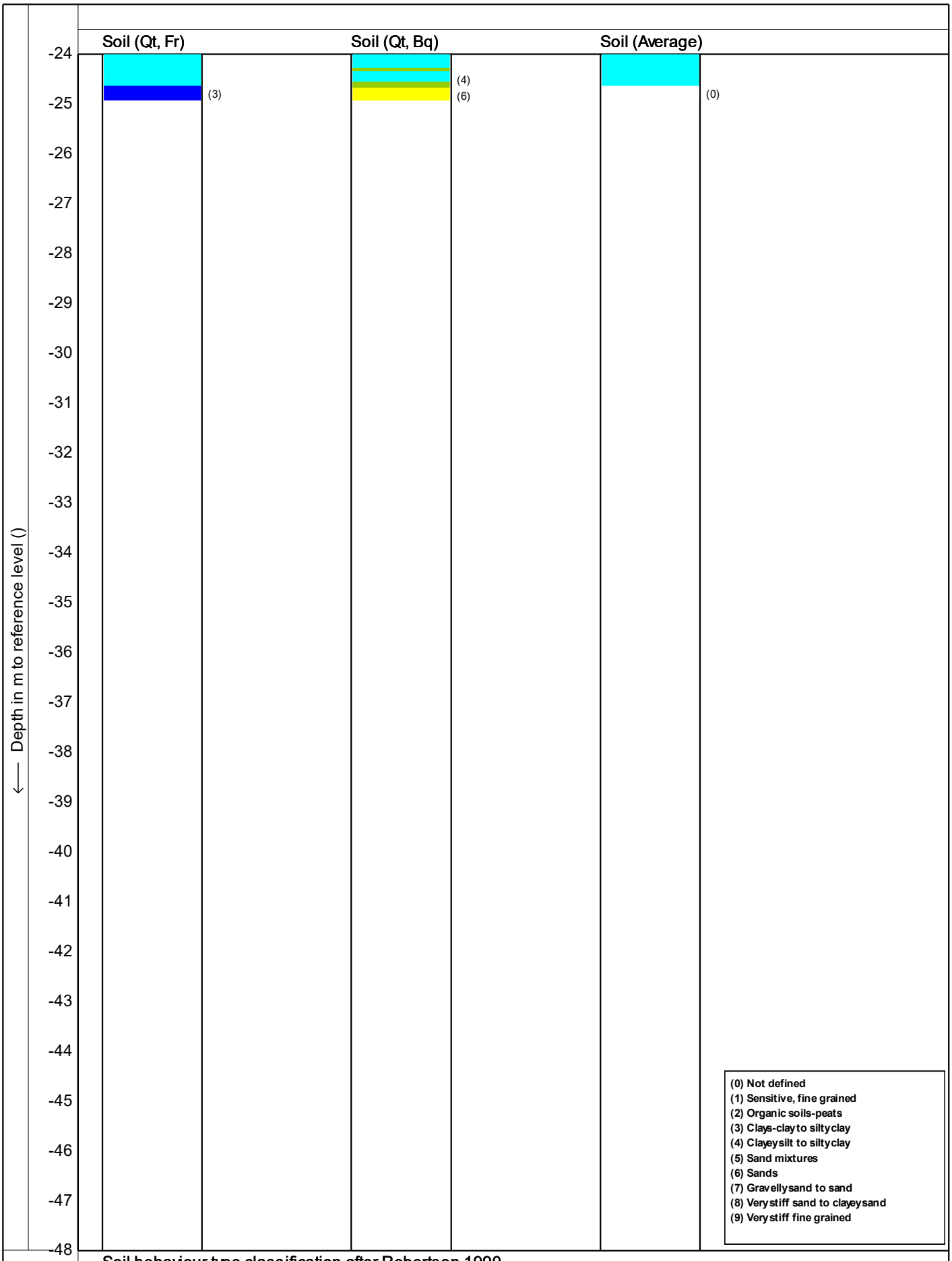
Date : **27/11/2020**

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Project no. : **05AU7**

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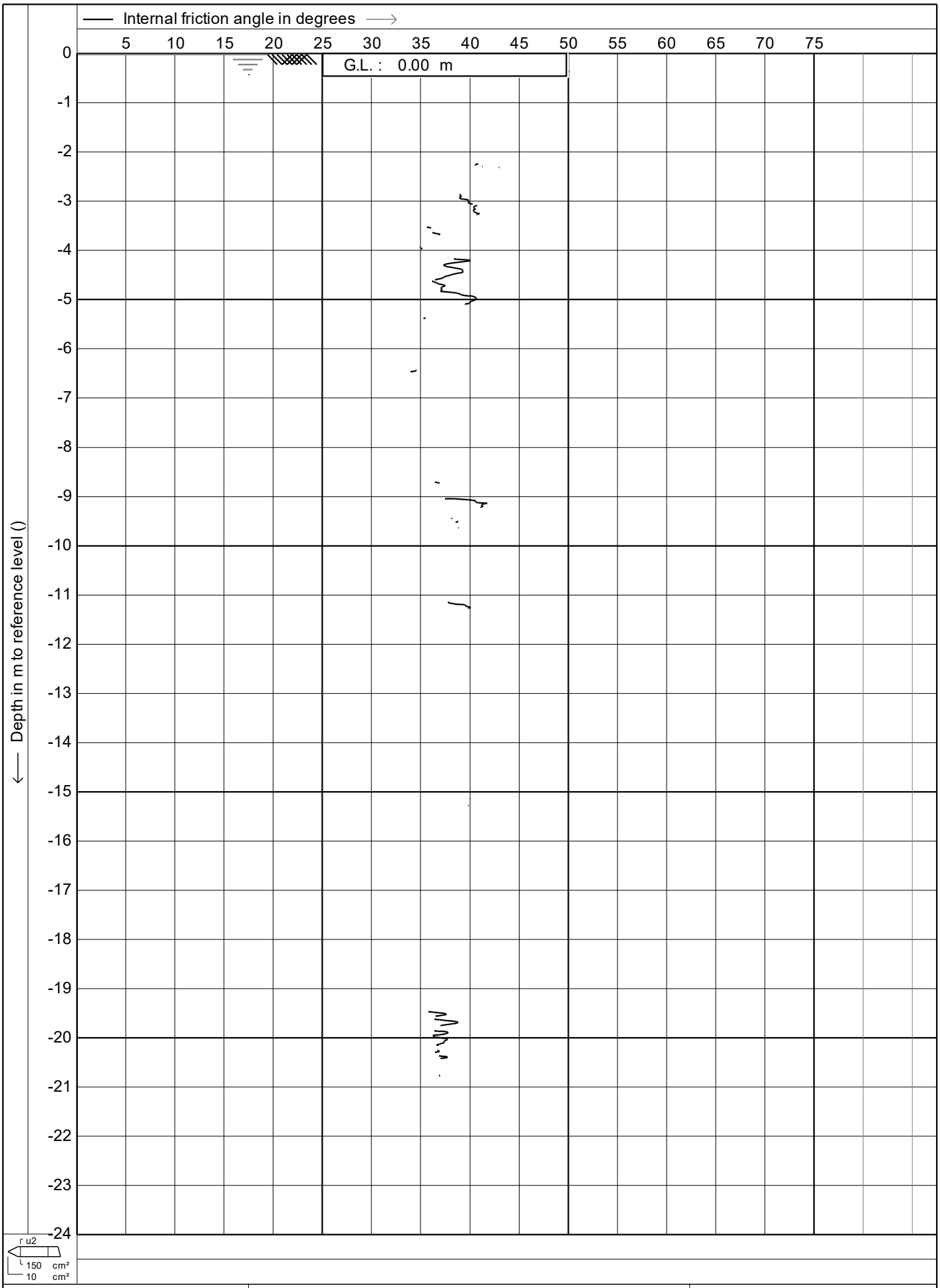
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

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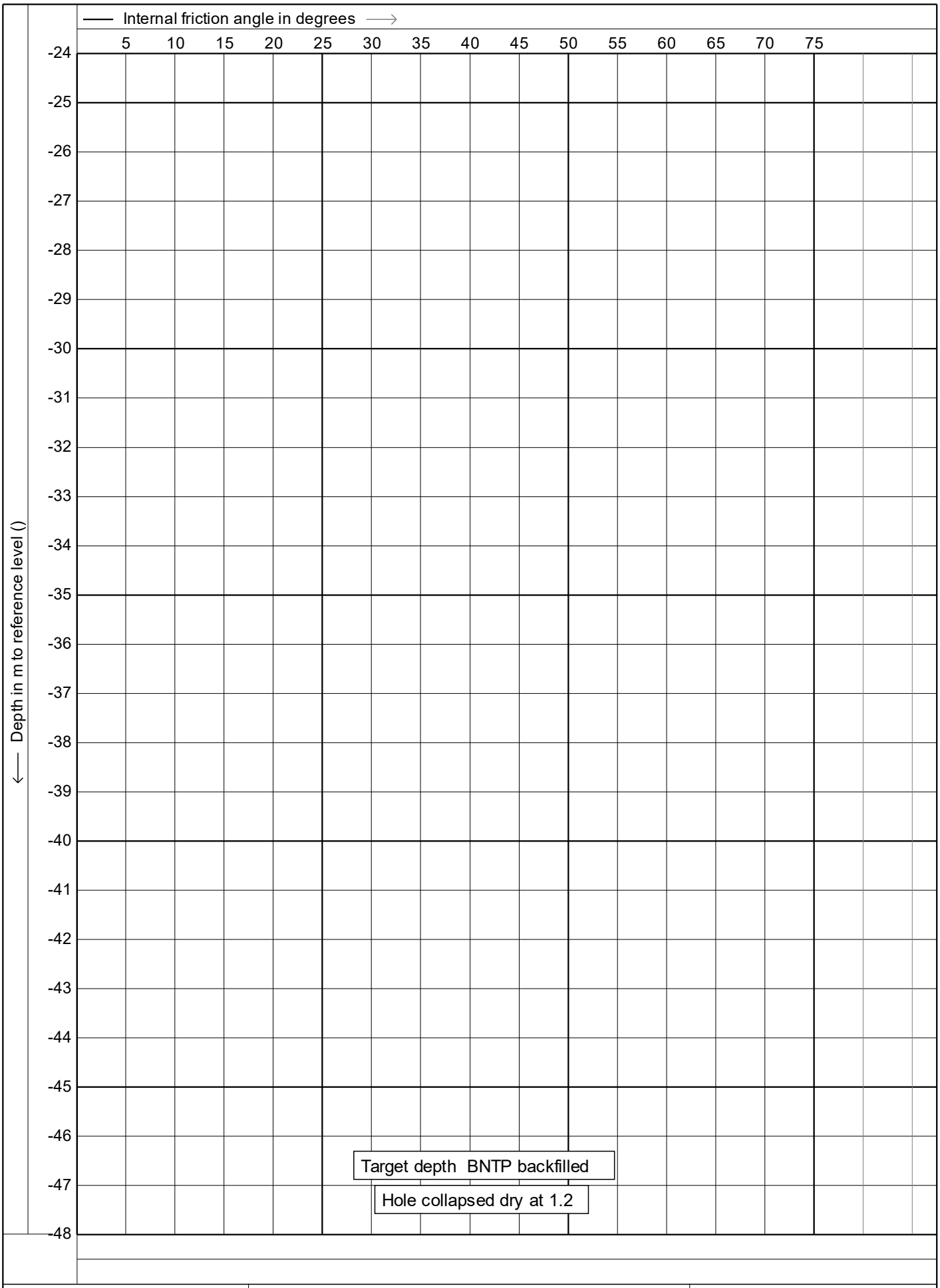
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
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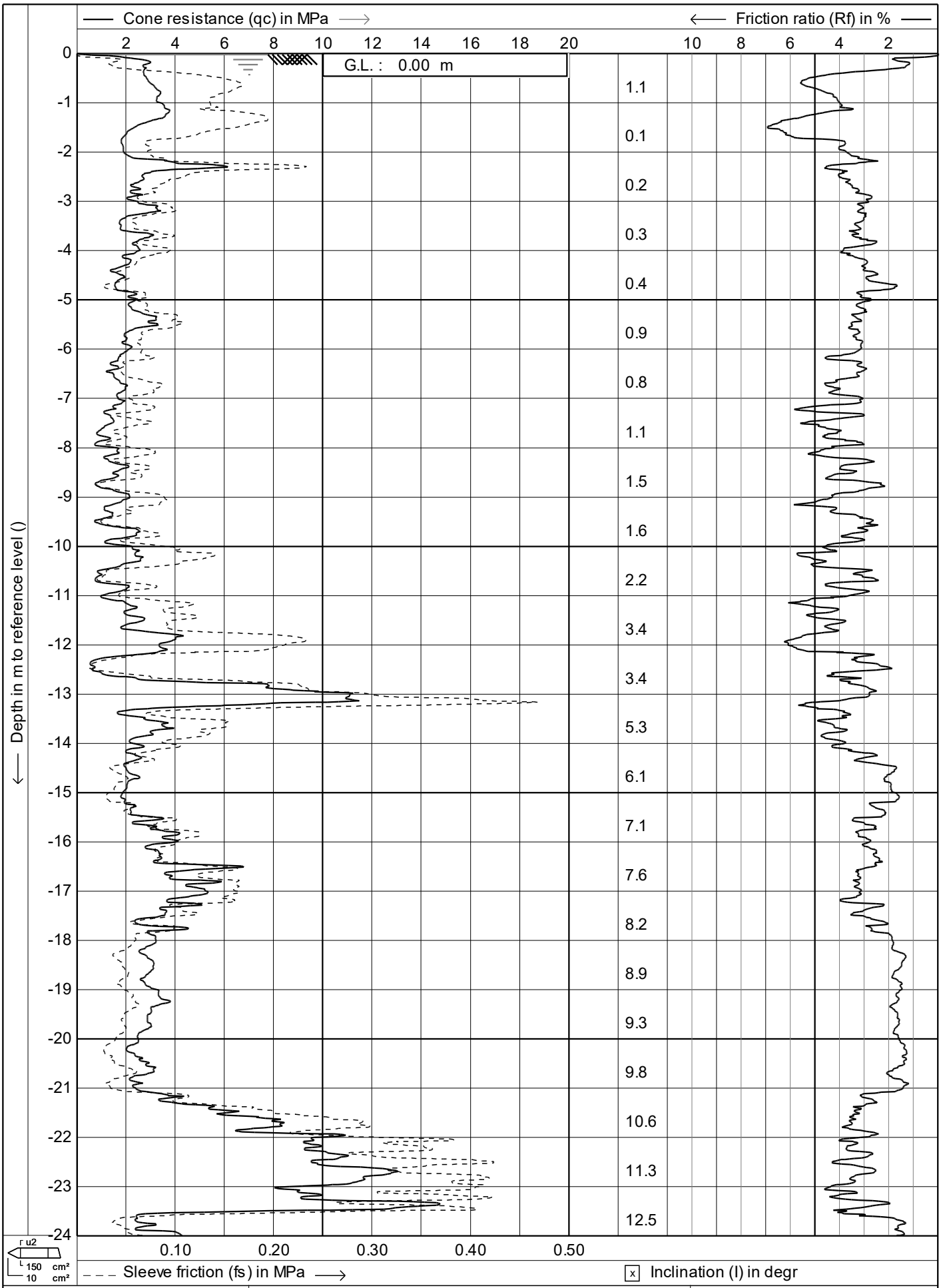
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Location: **Fitzgerald Rd - Drury**

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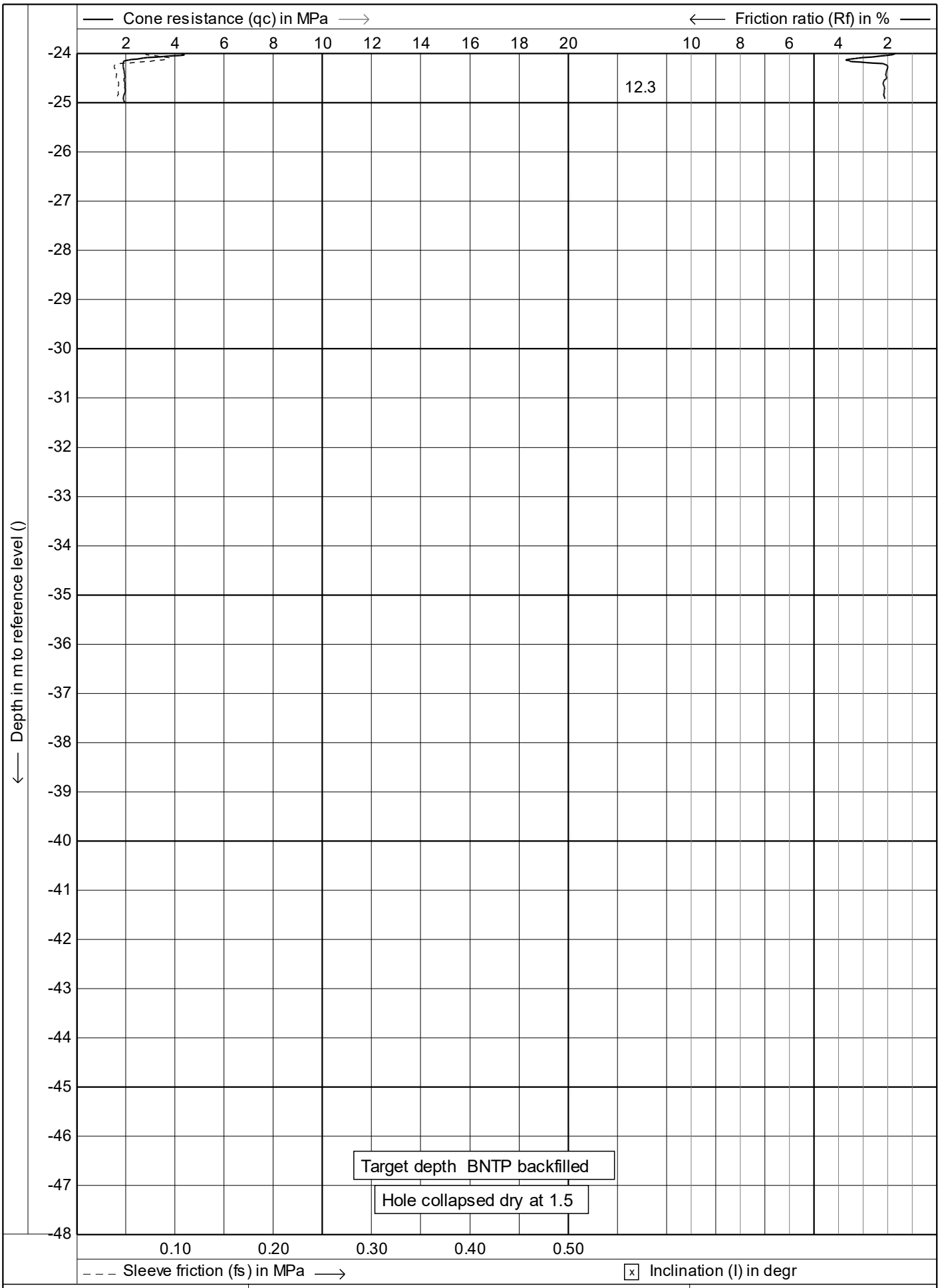
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **037**

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Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

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Position: **0, 0**

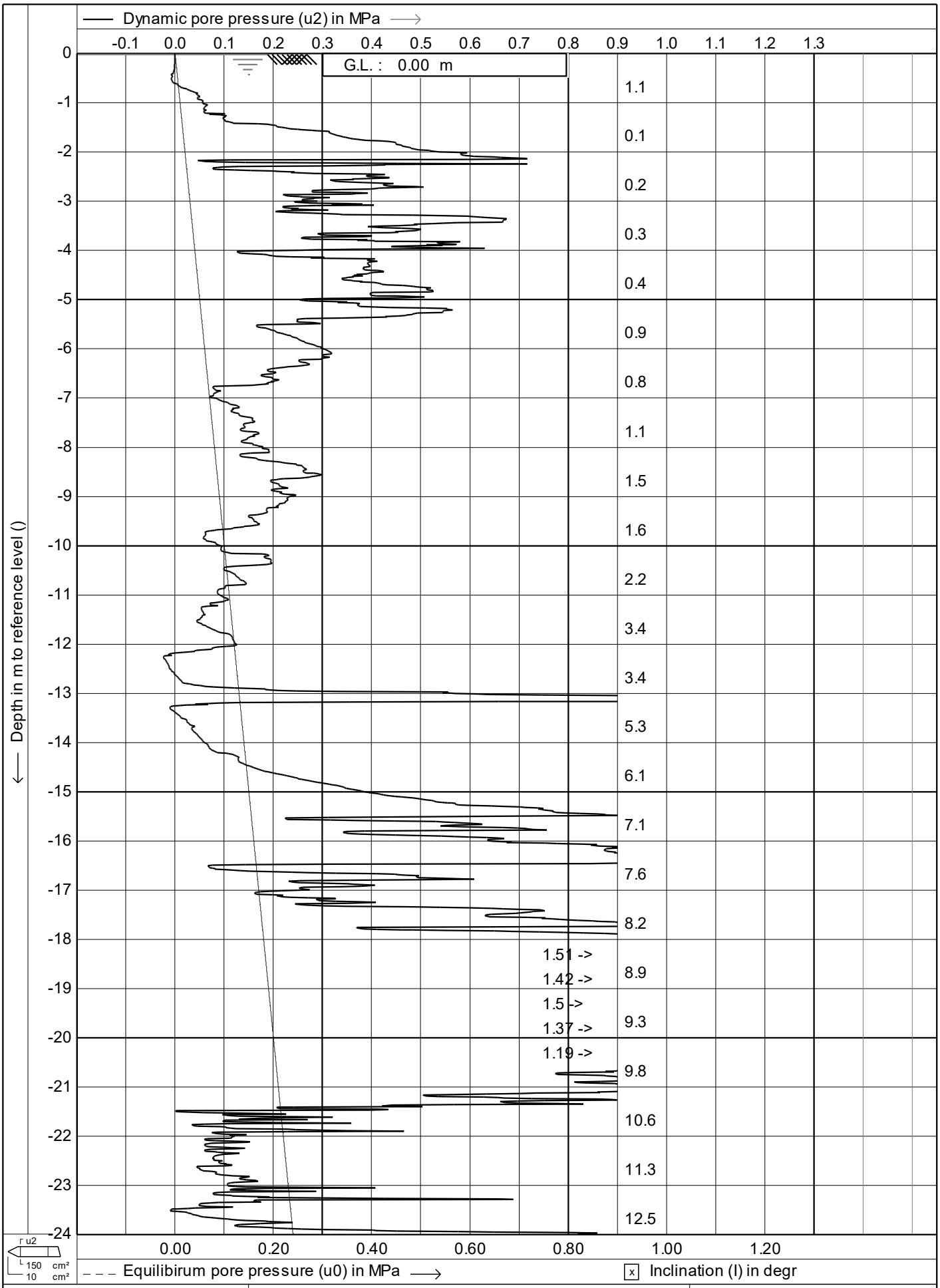
Date : **27/11/2020**

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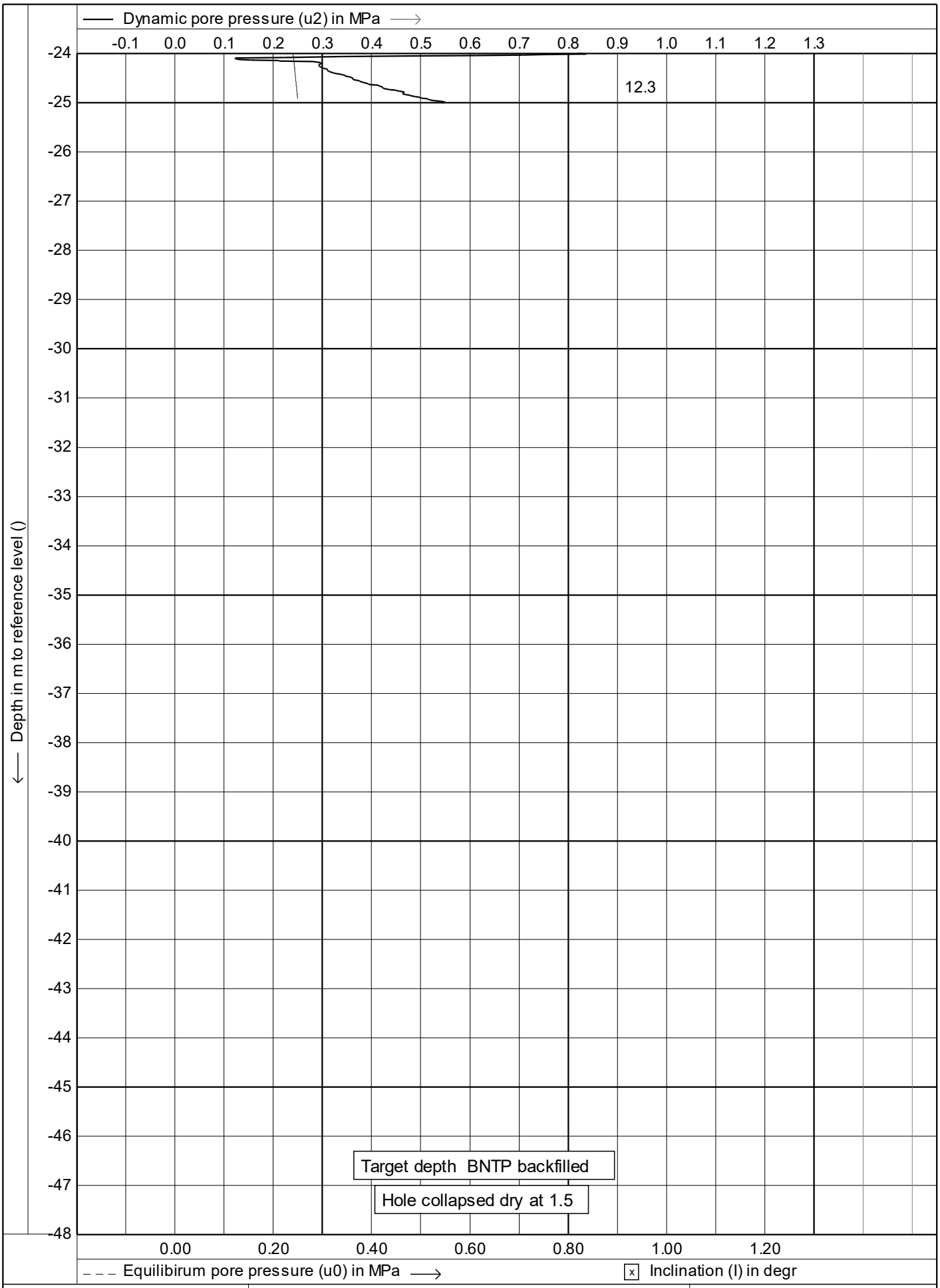
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

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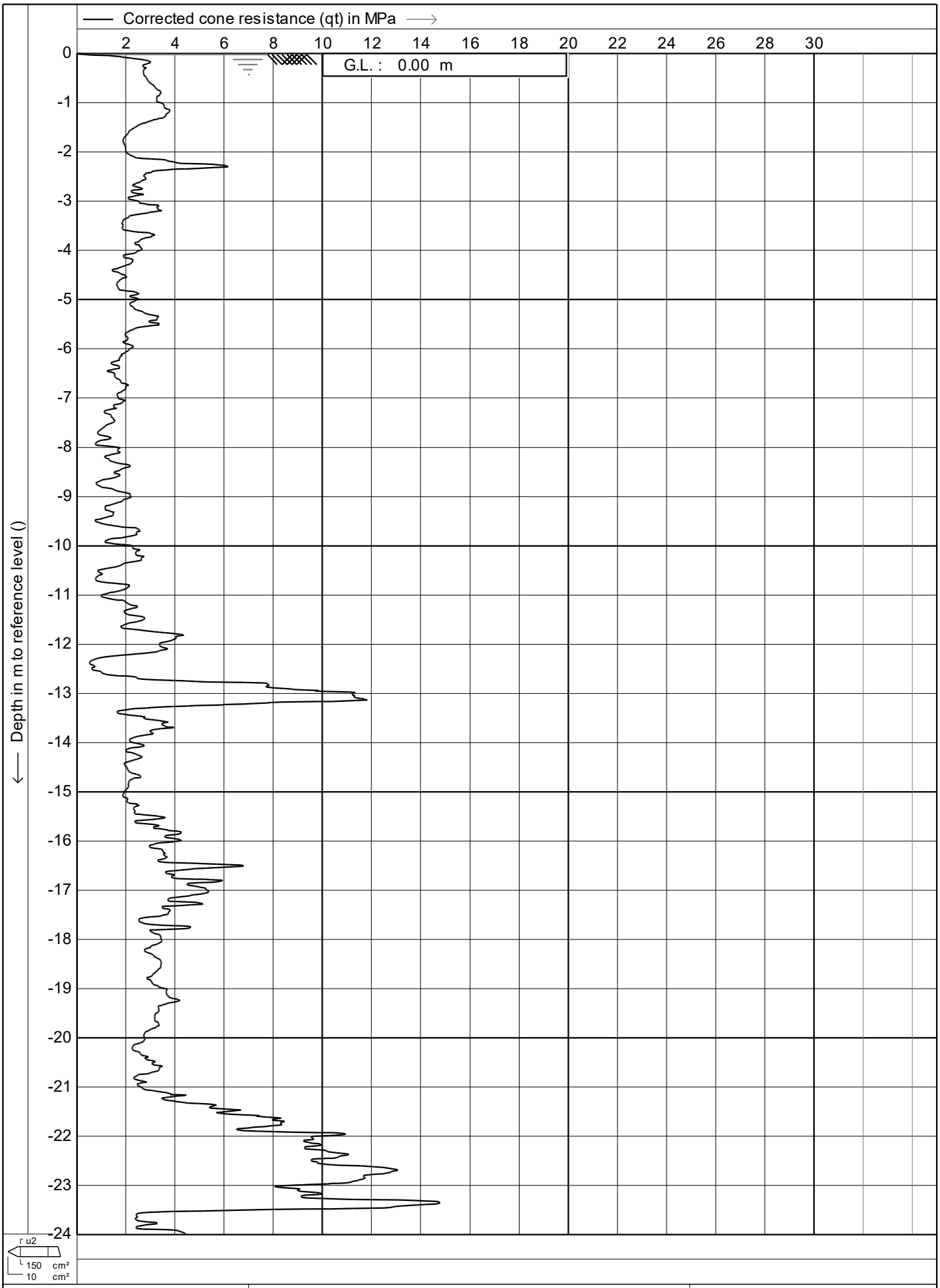
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Date	: **27/11/2020**
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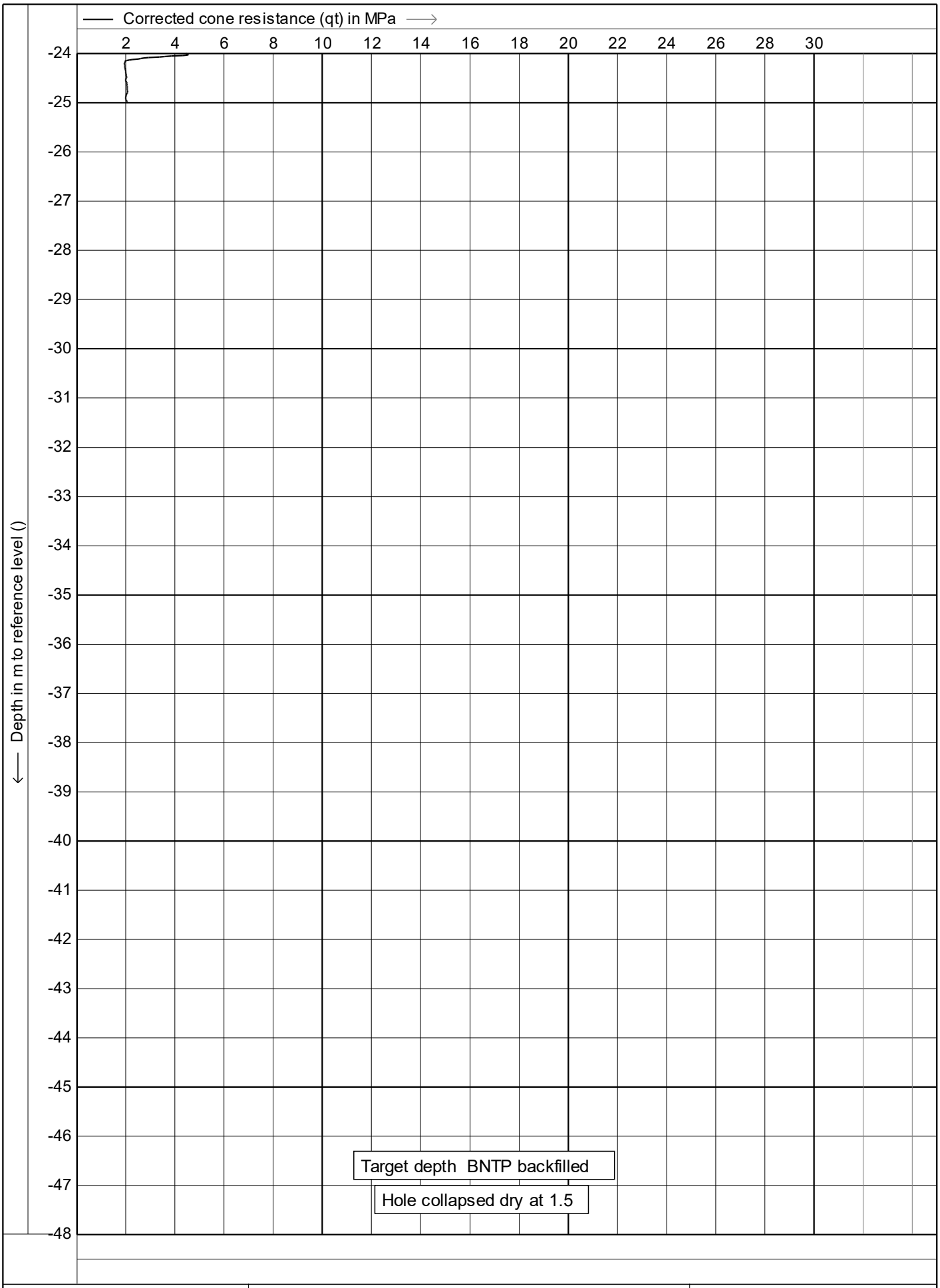
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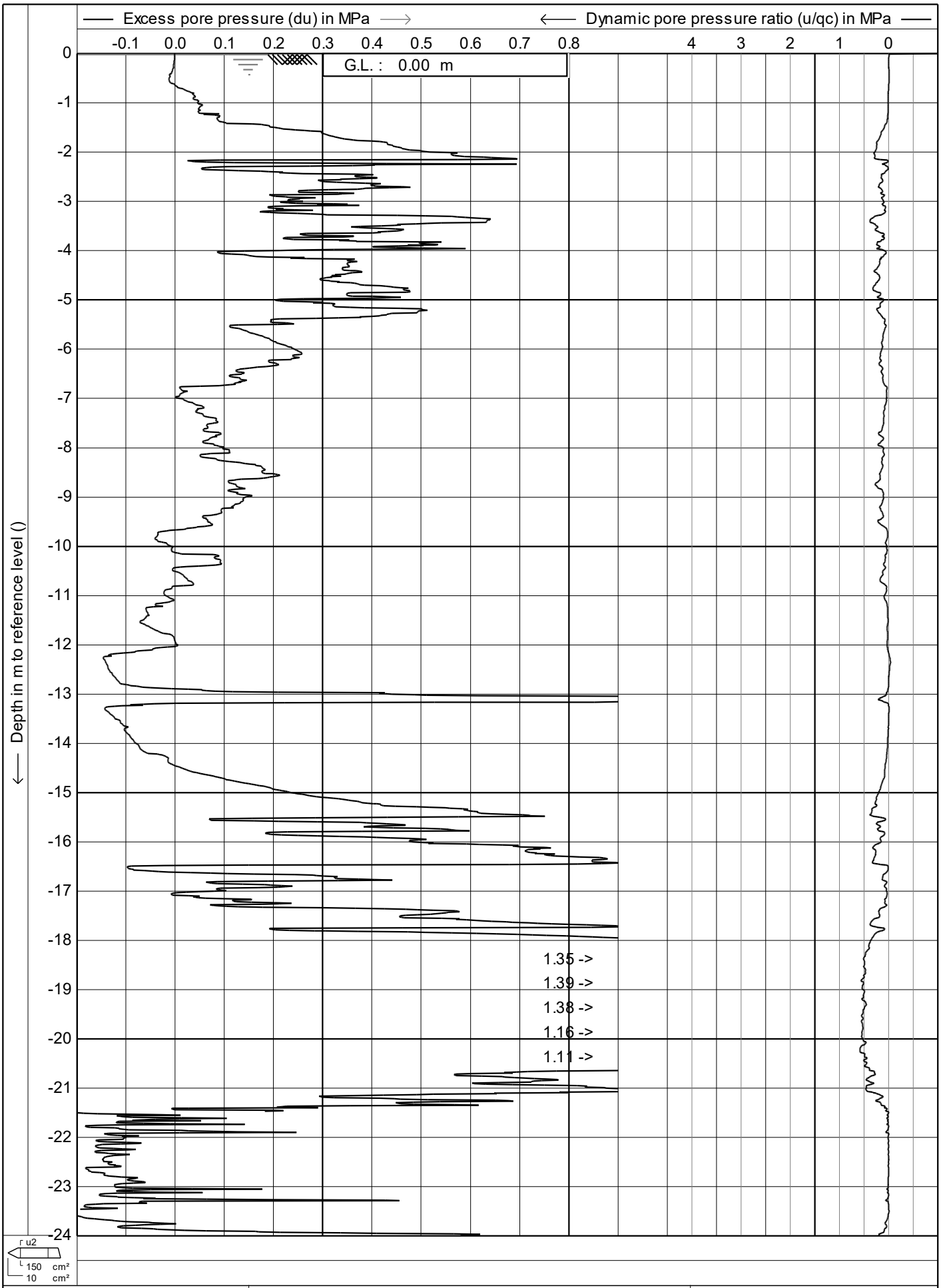
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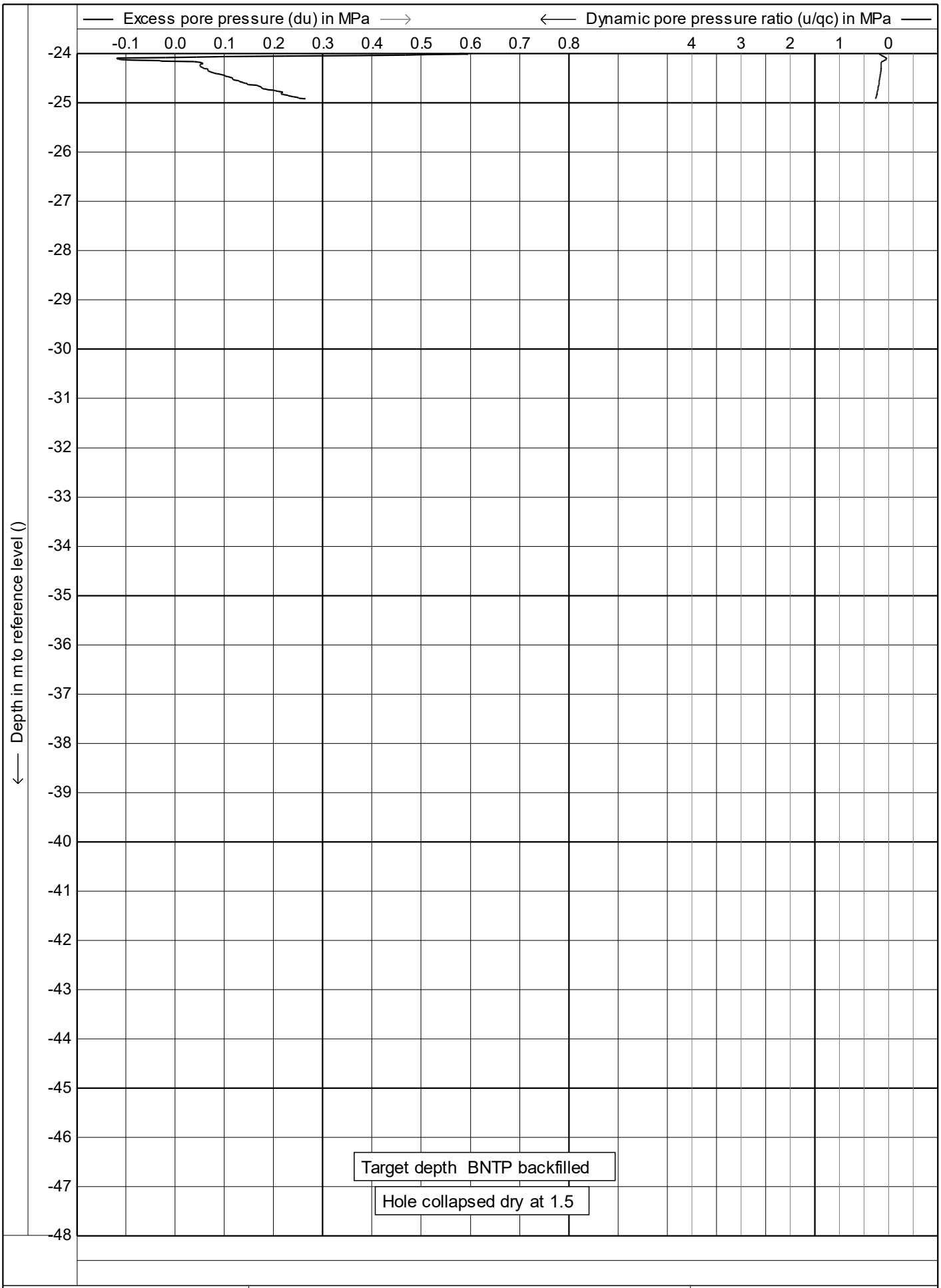
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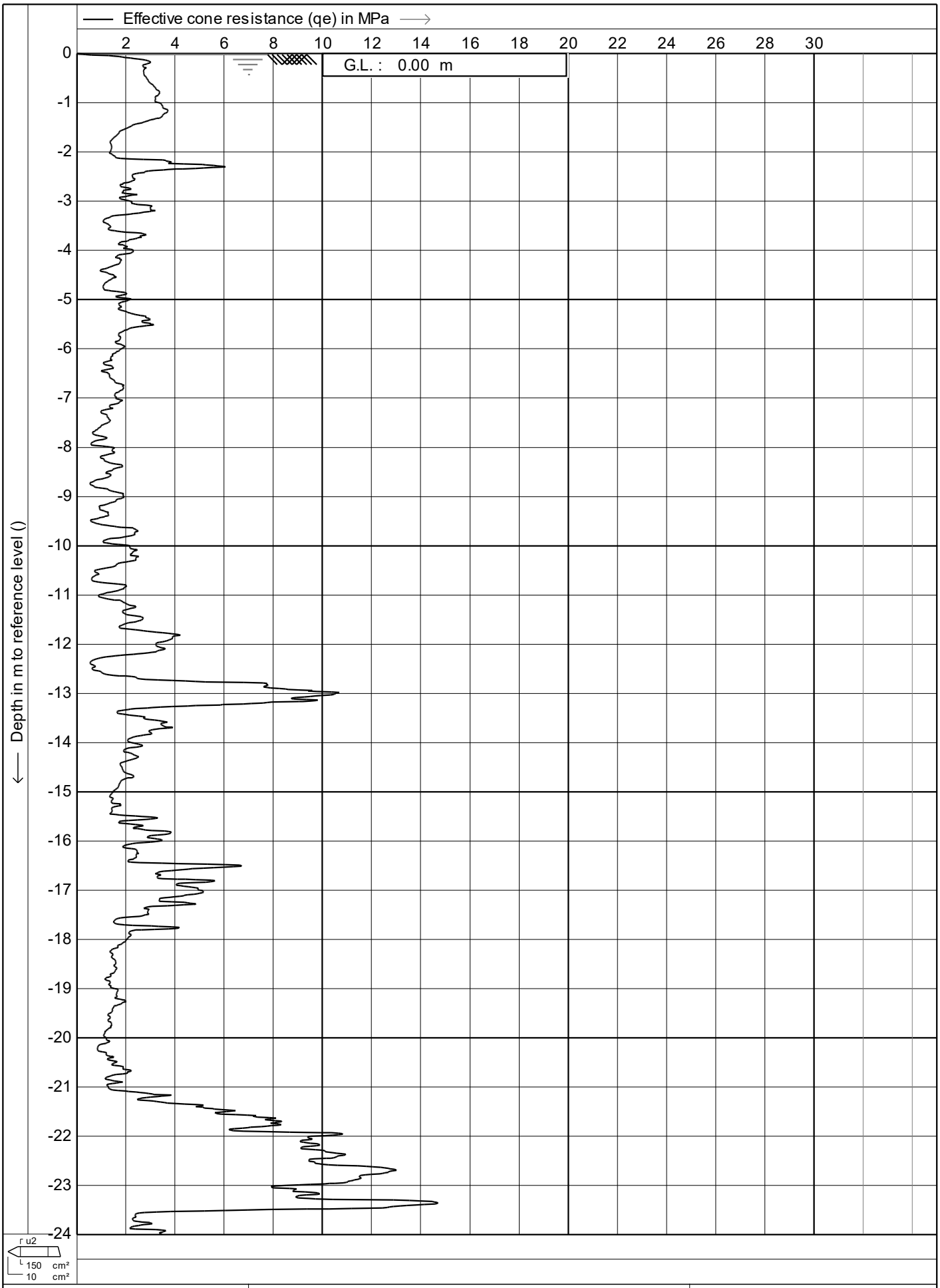
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

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Date	: **27/11/2020**
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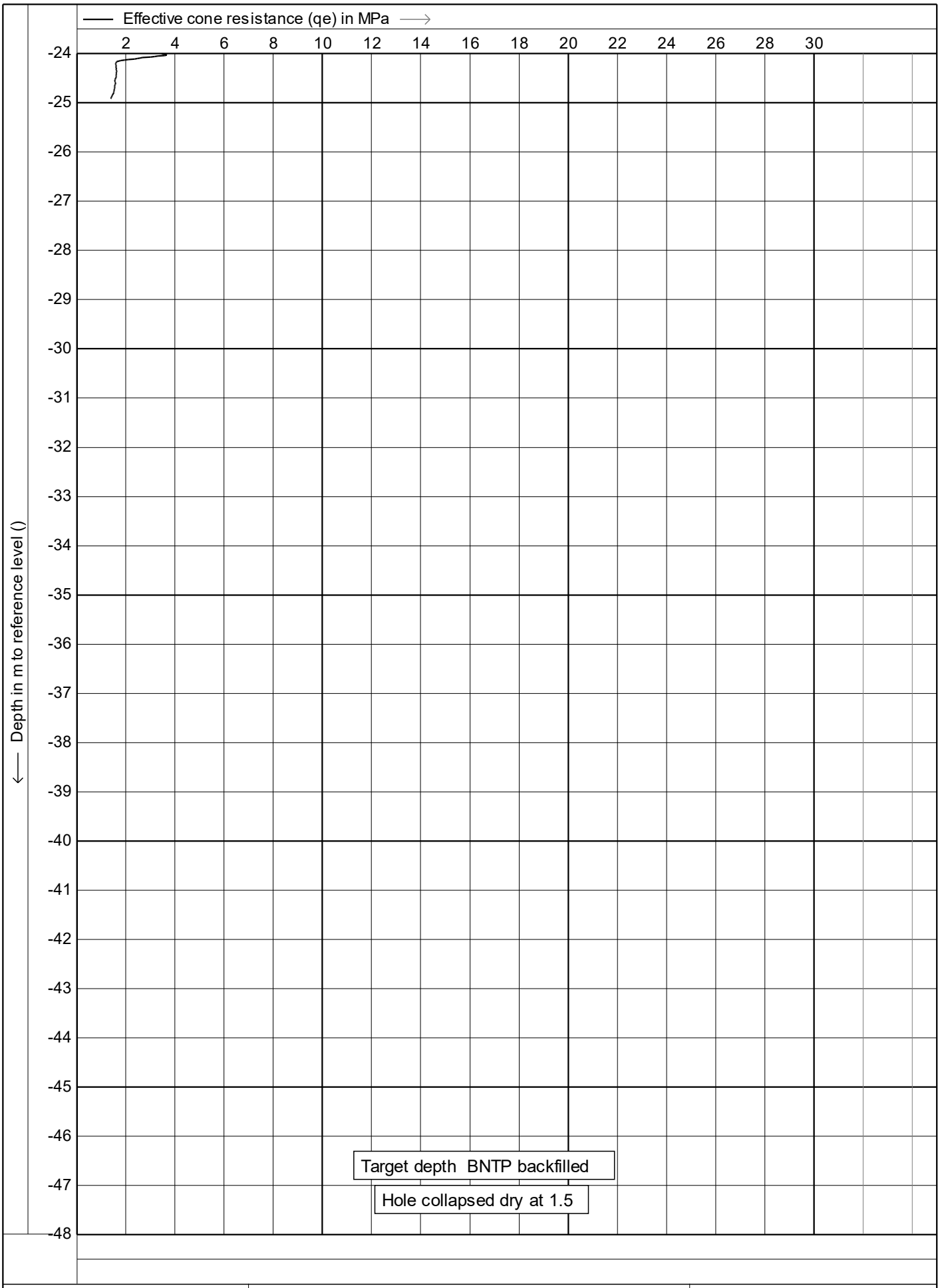
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **037** **9/28**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

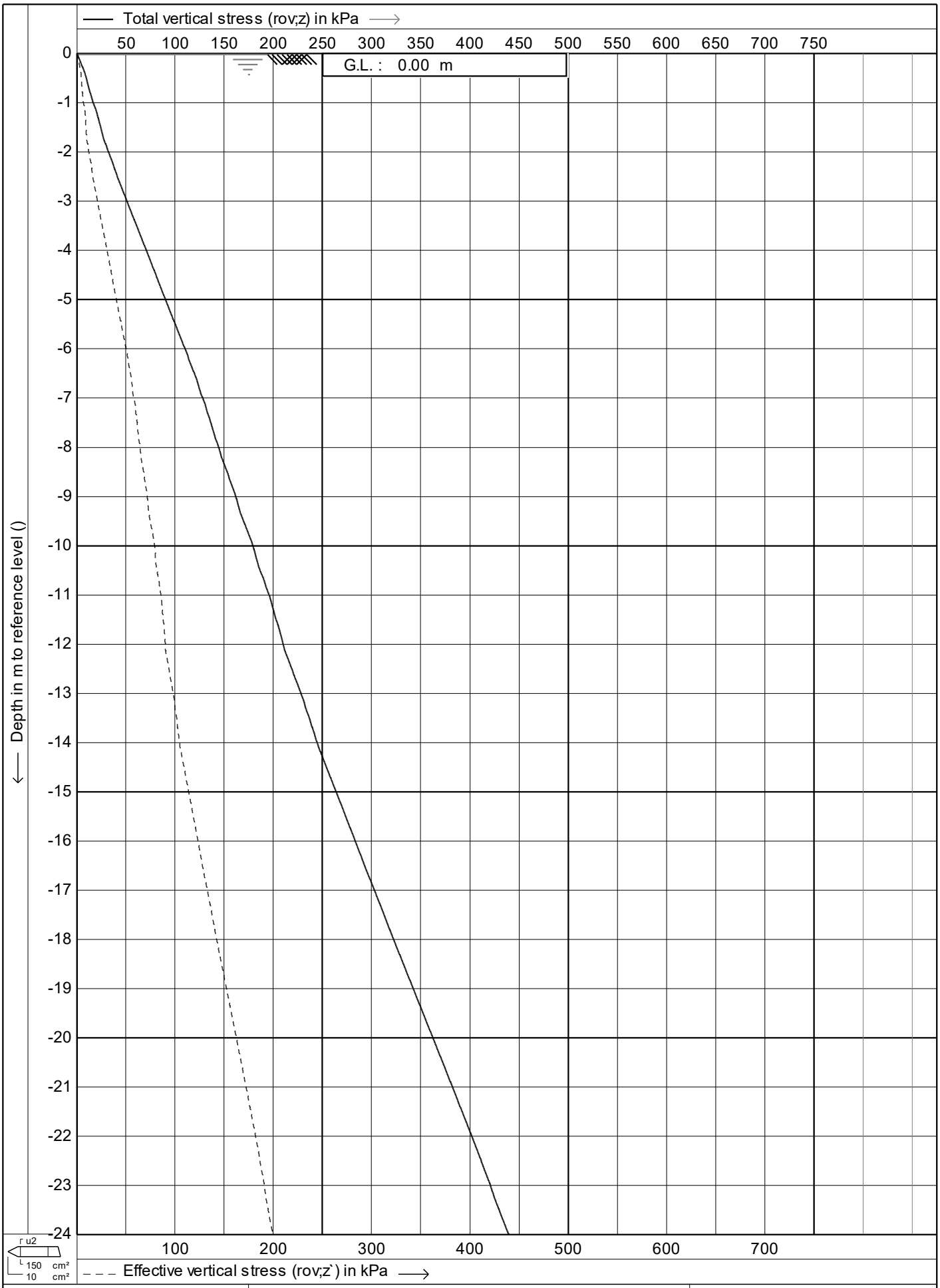
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
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PERRY GEOTECH

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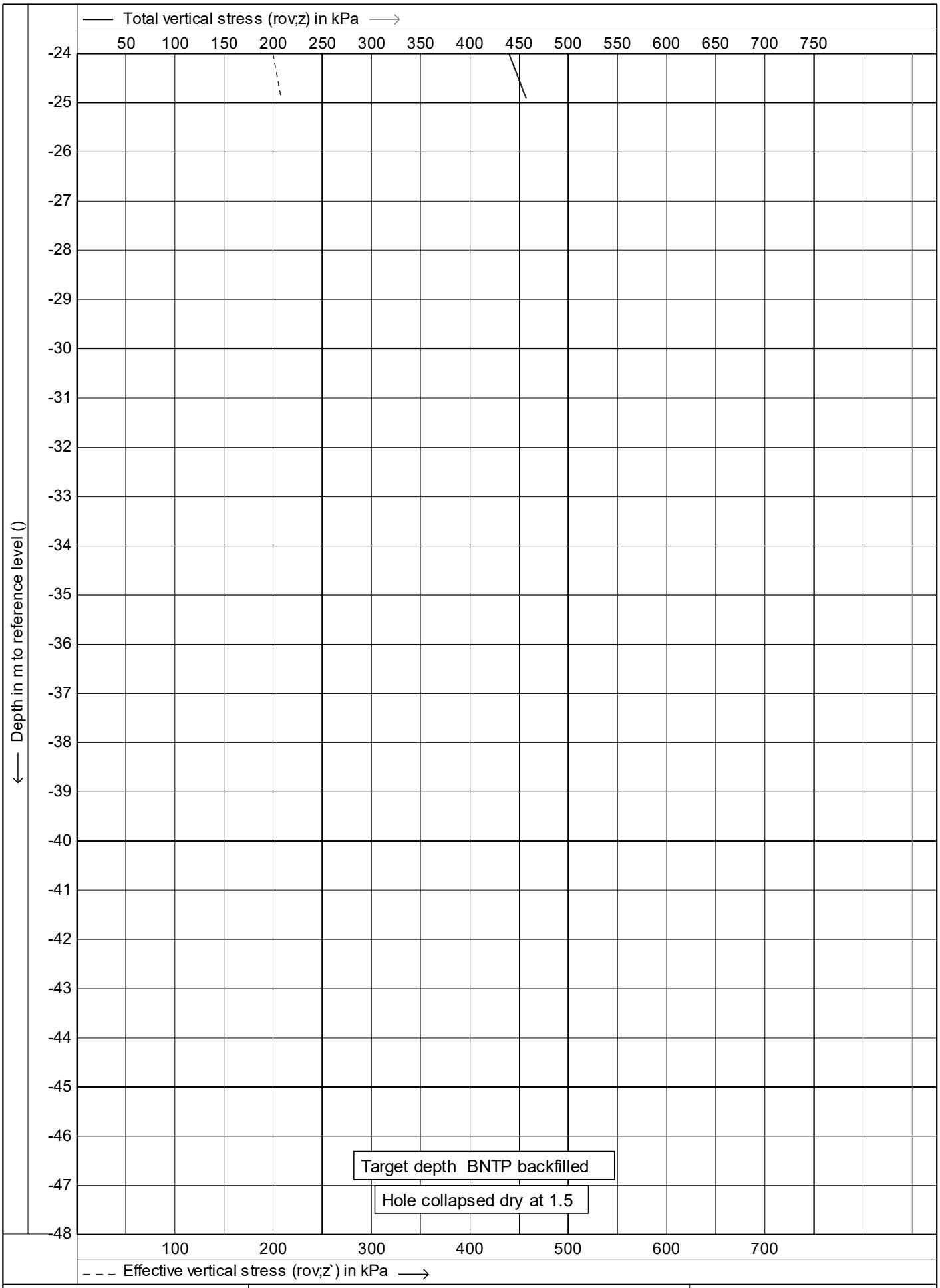
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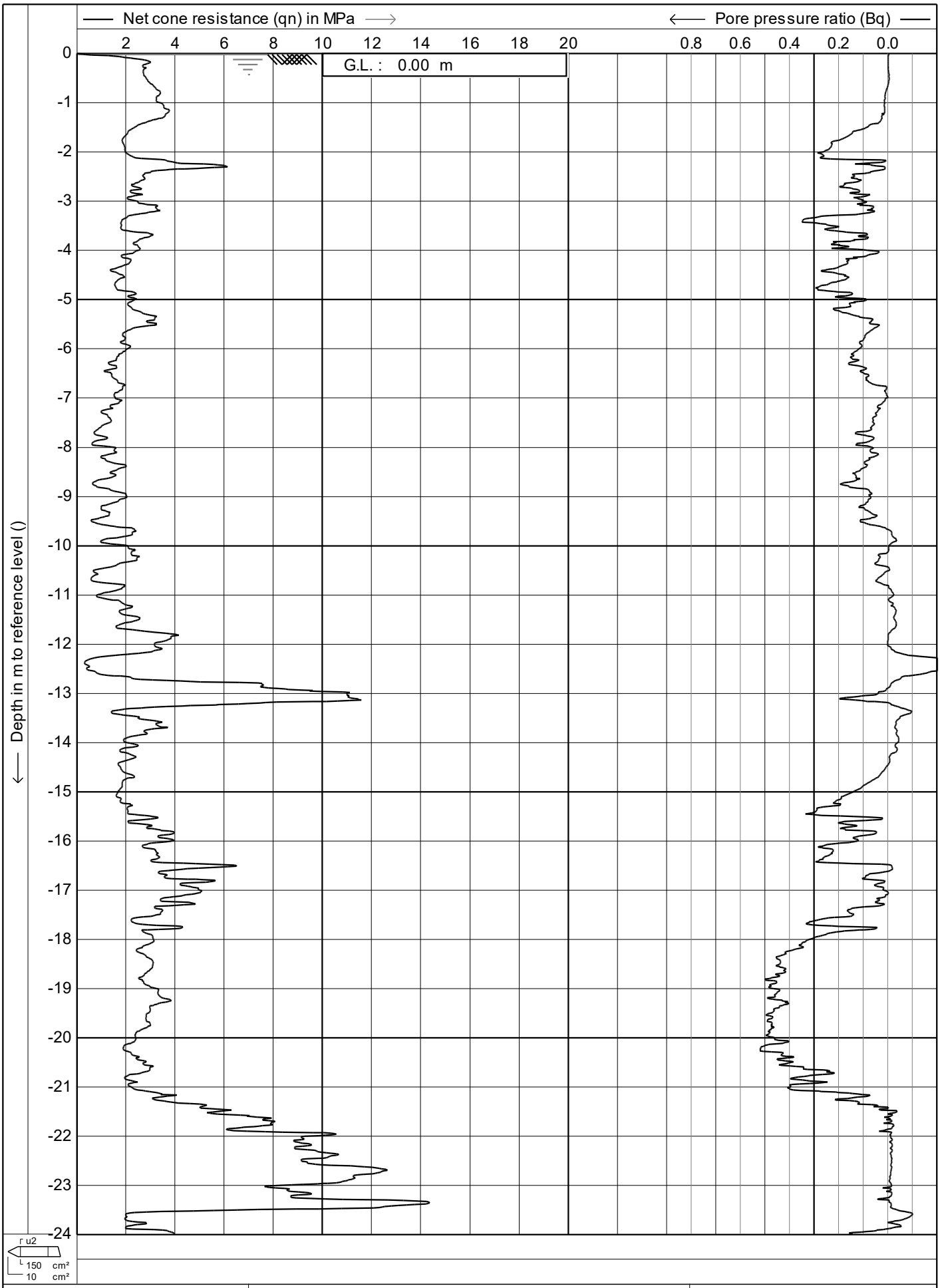
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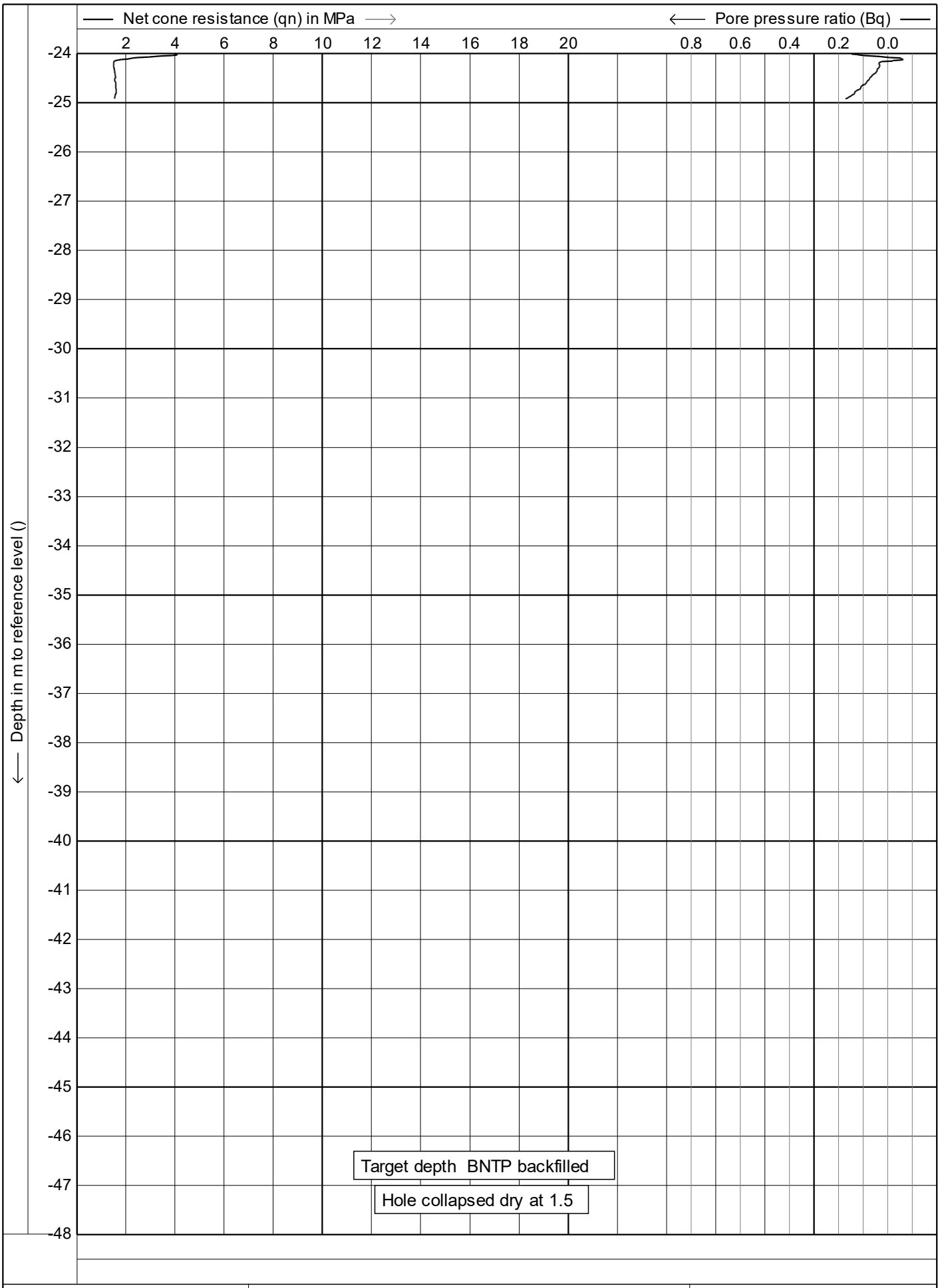
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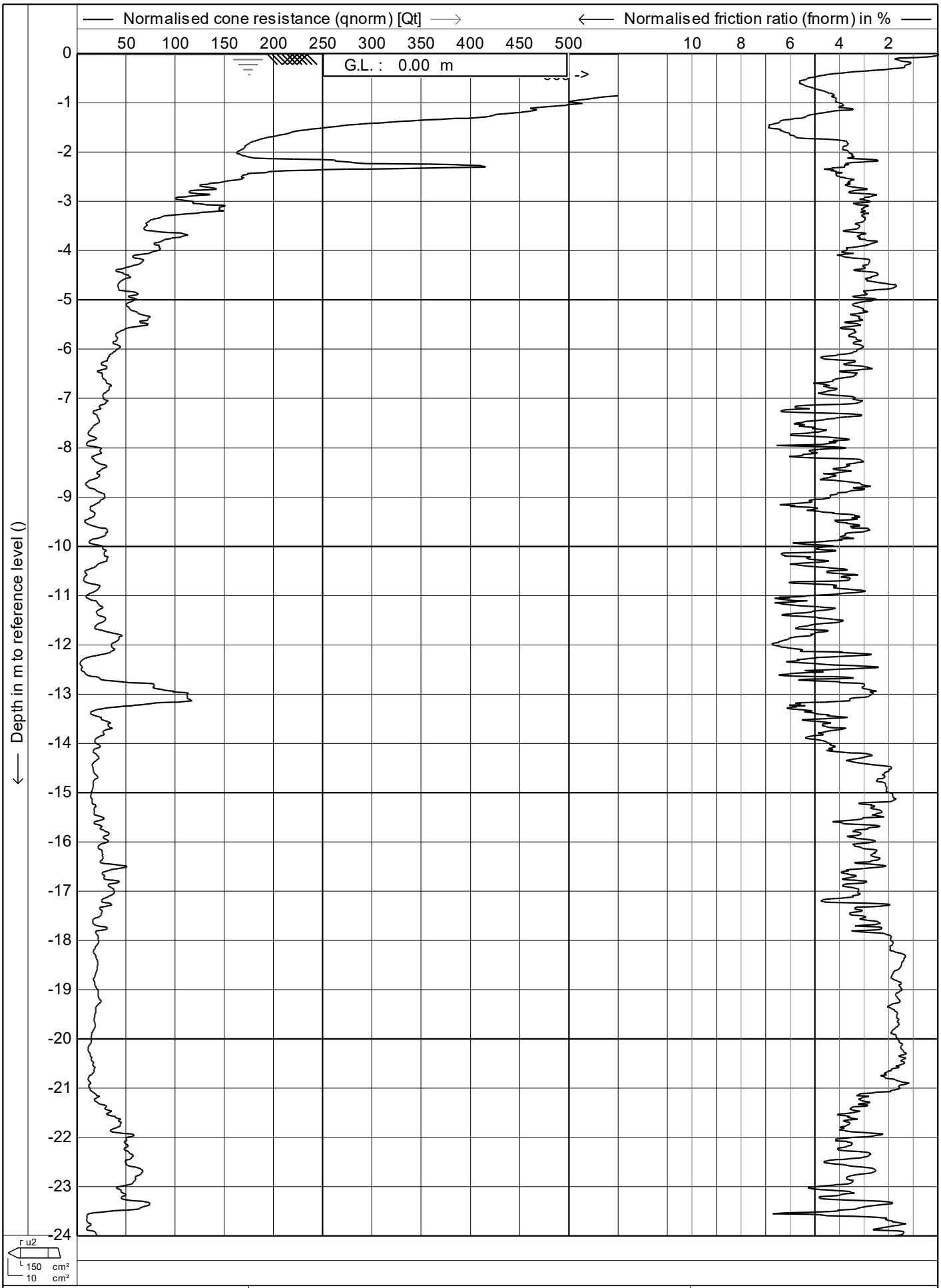
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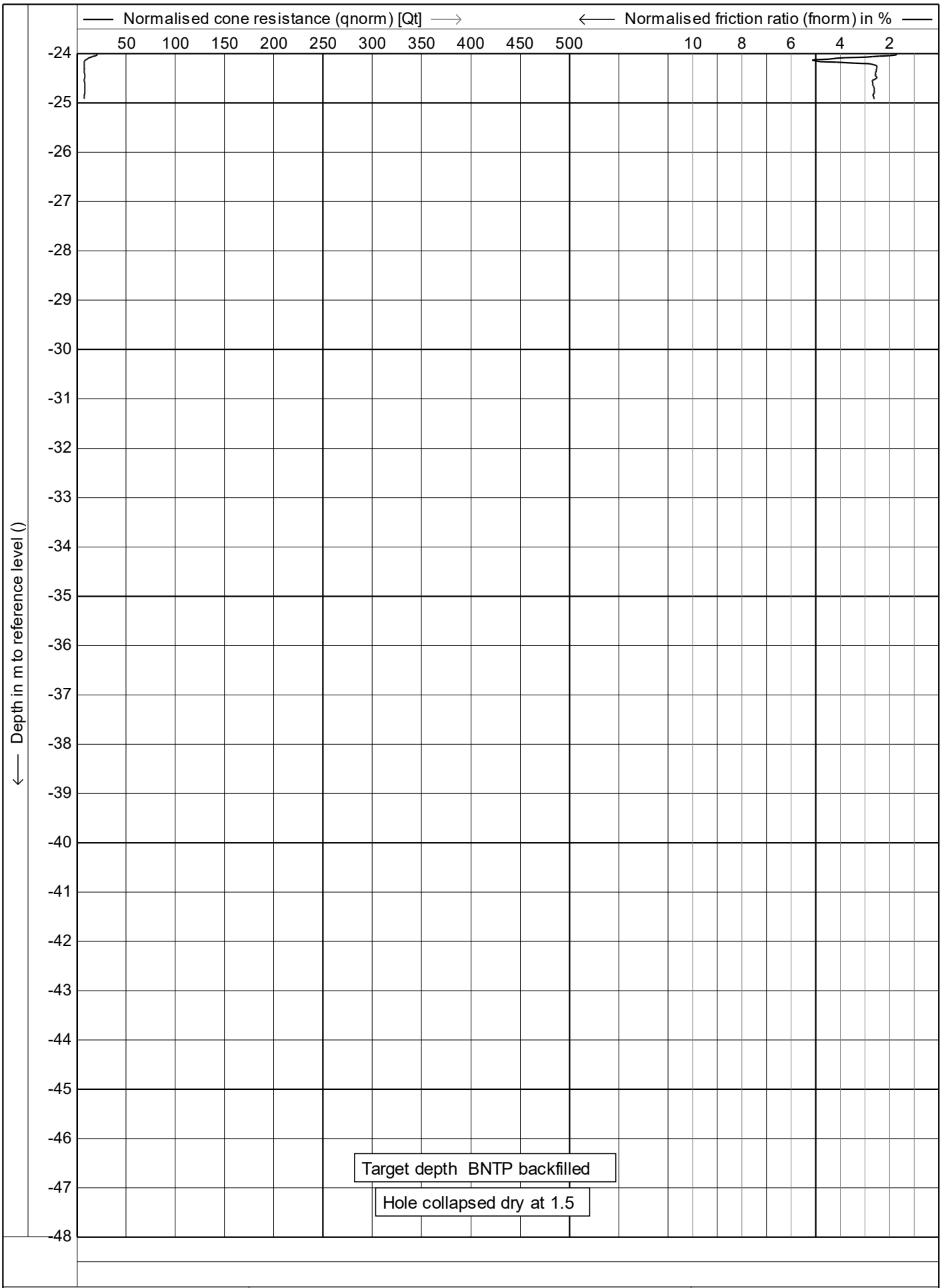
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Project : **Site Investigations**

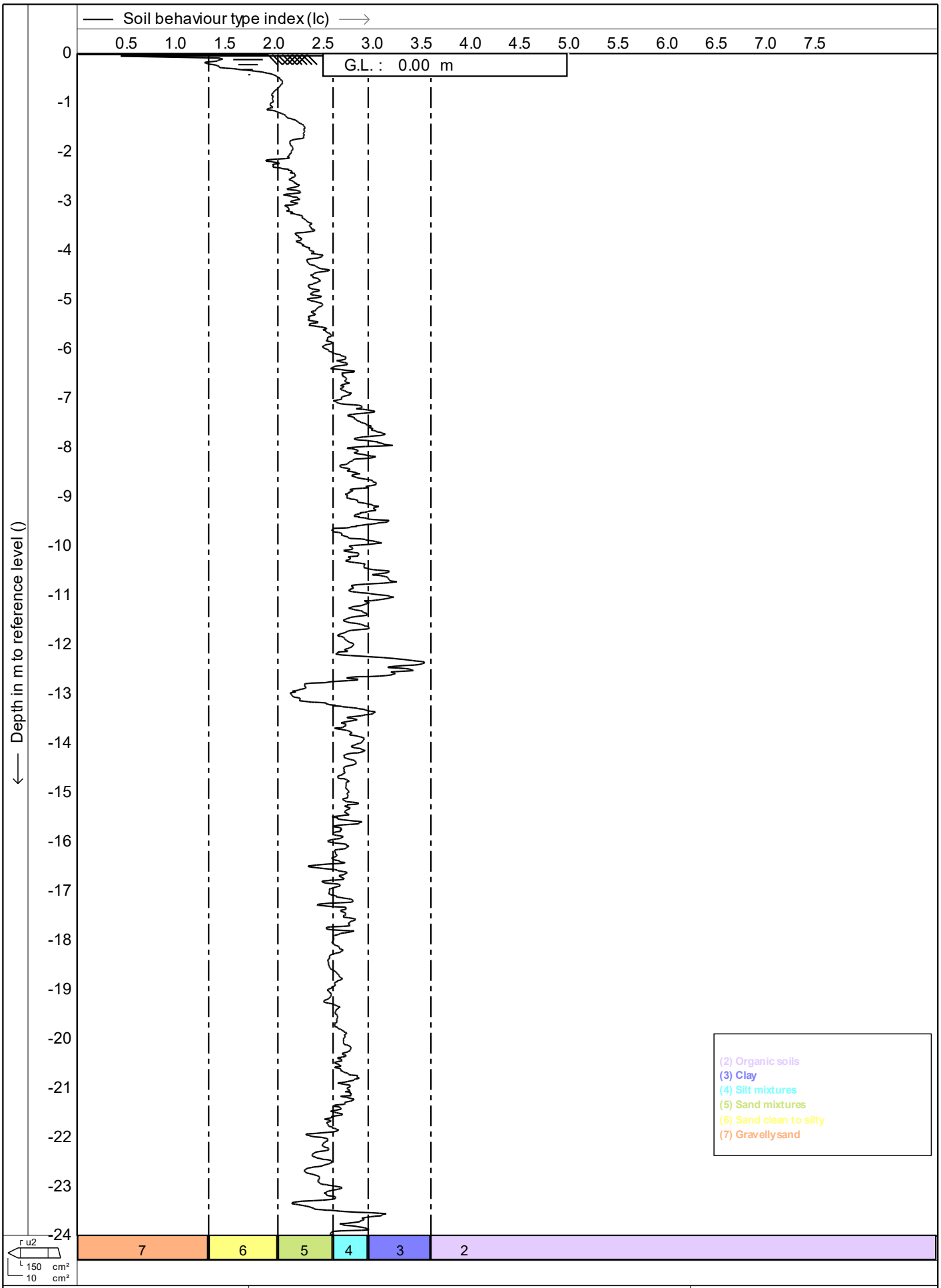
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Date	: **27/11/2020**
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Location: **Fitzgerald Rd - Drury**

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Date : **27/11/2020**

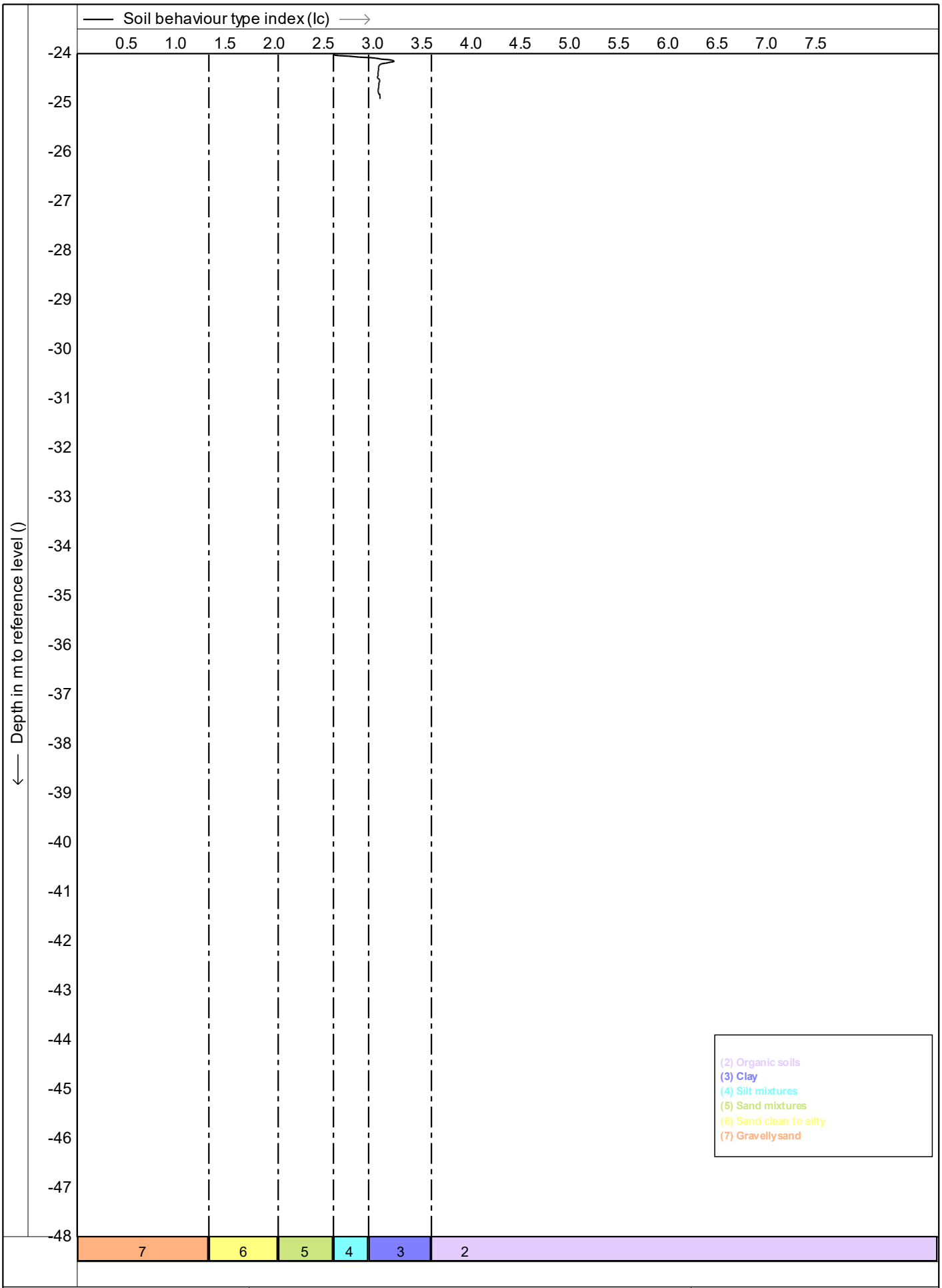
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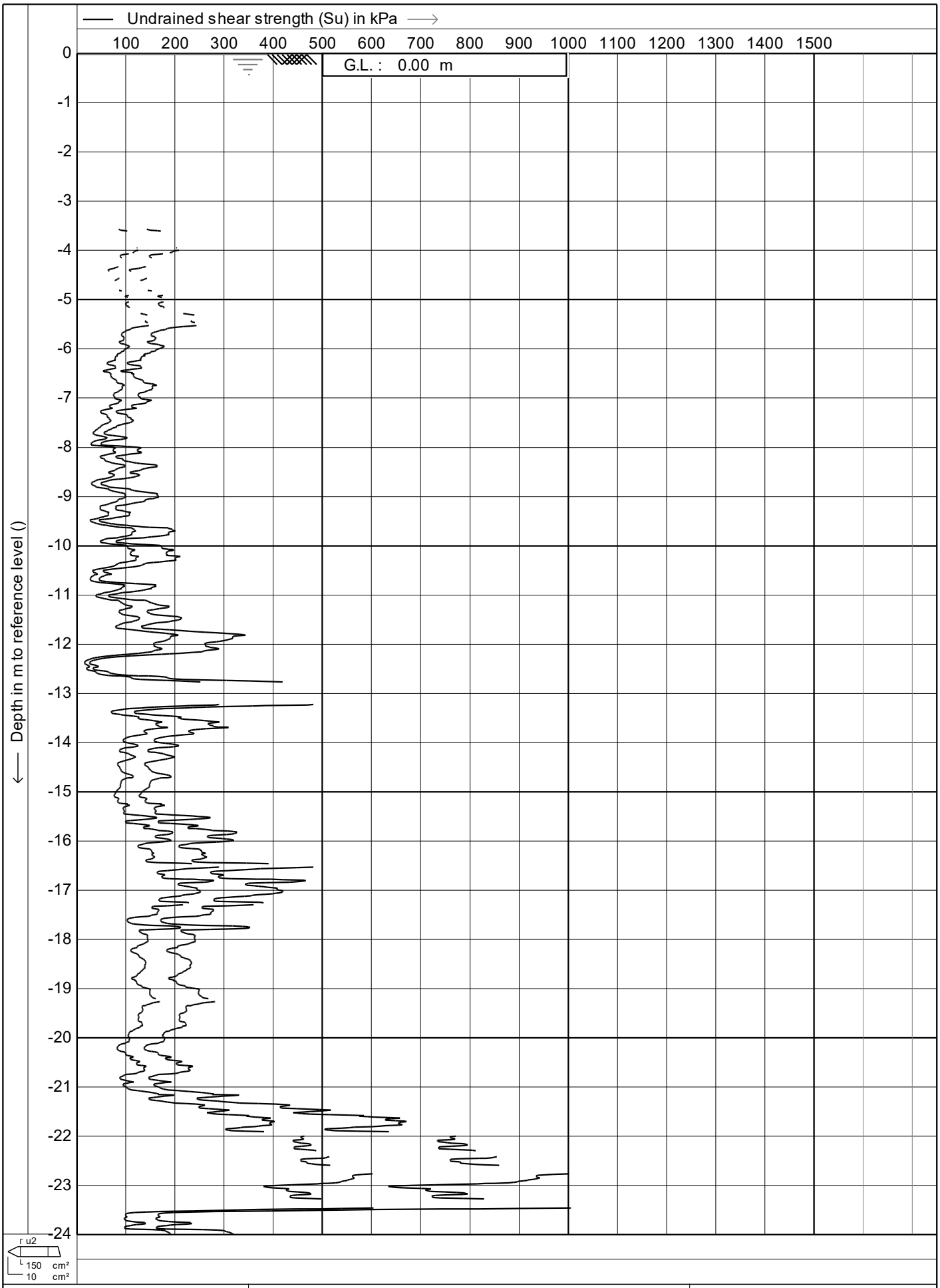
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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

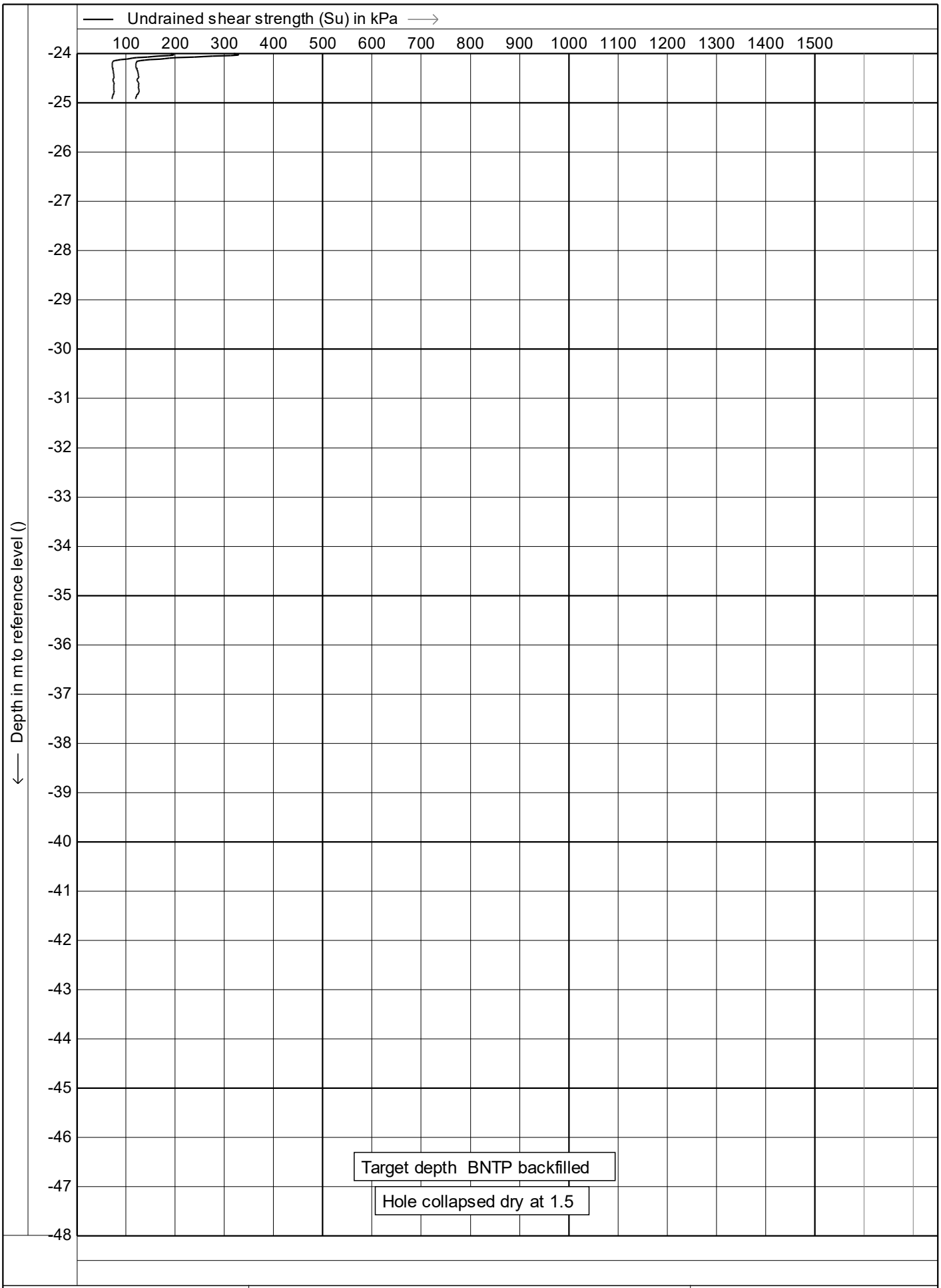
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **037**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

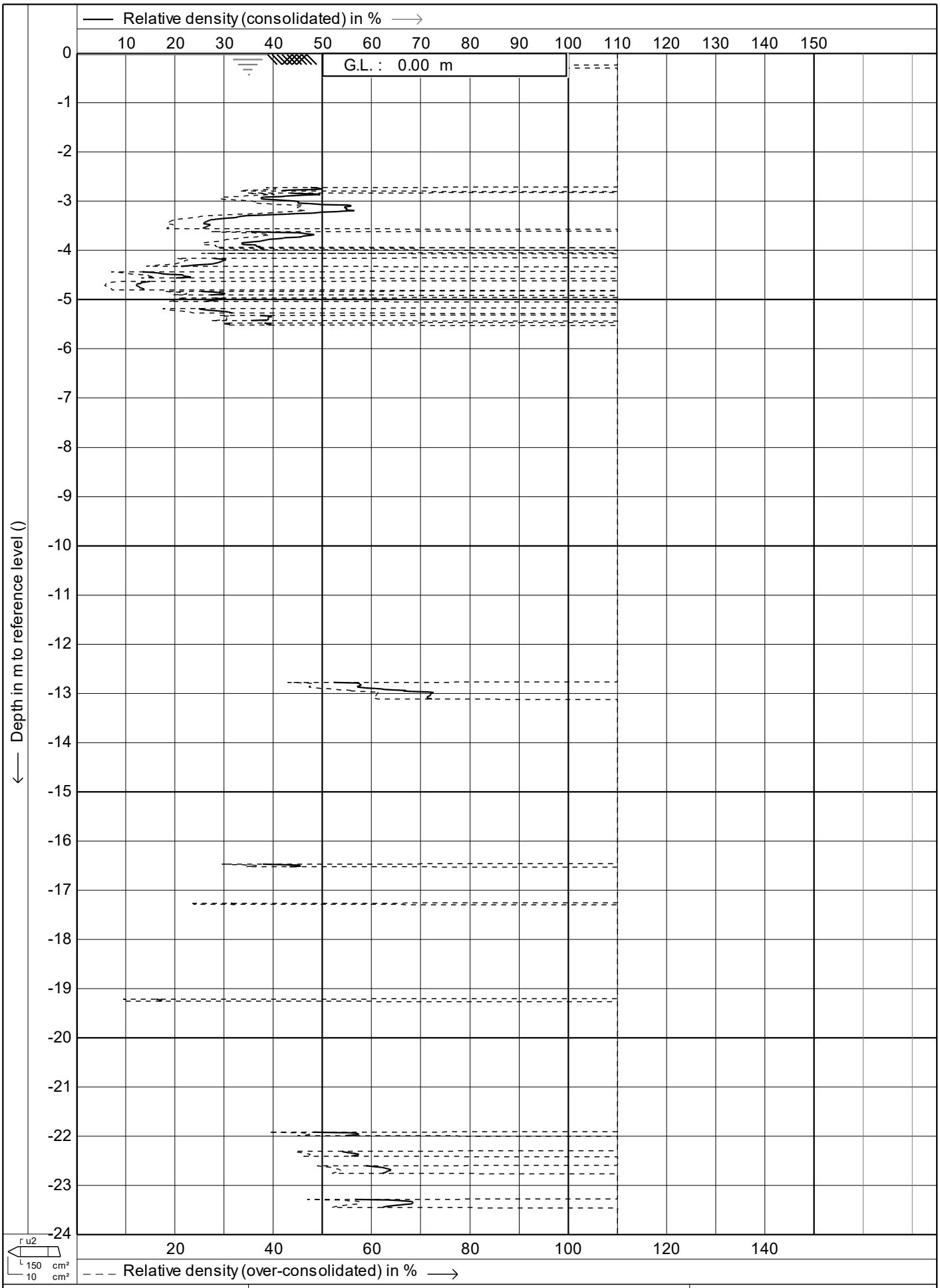
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **037**

1.48



Test according A.S.T.M Standard D 5778-12

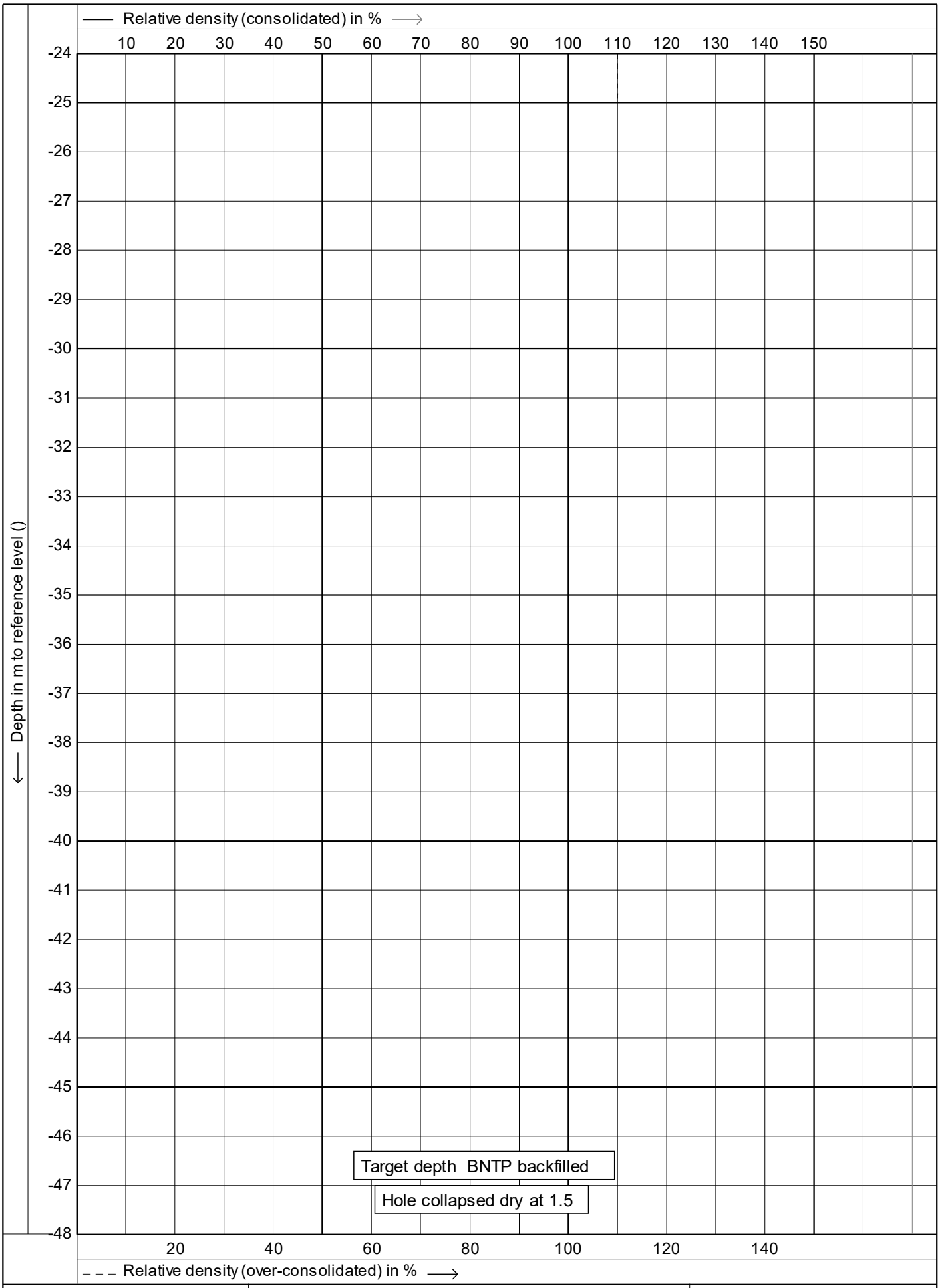
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **037**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

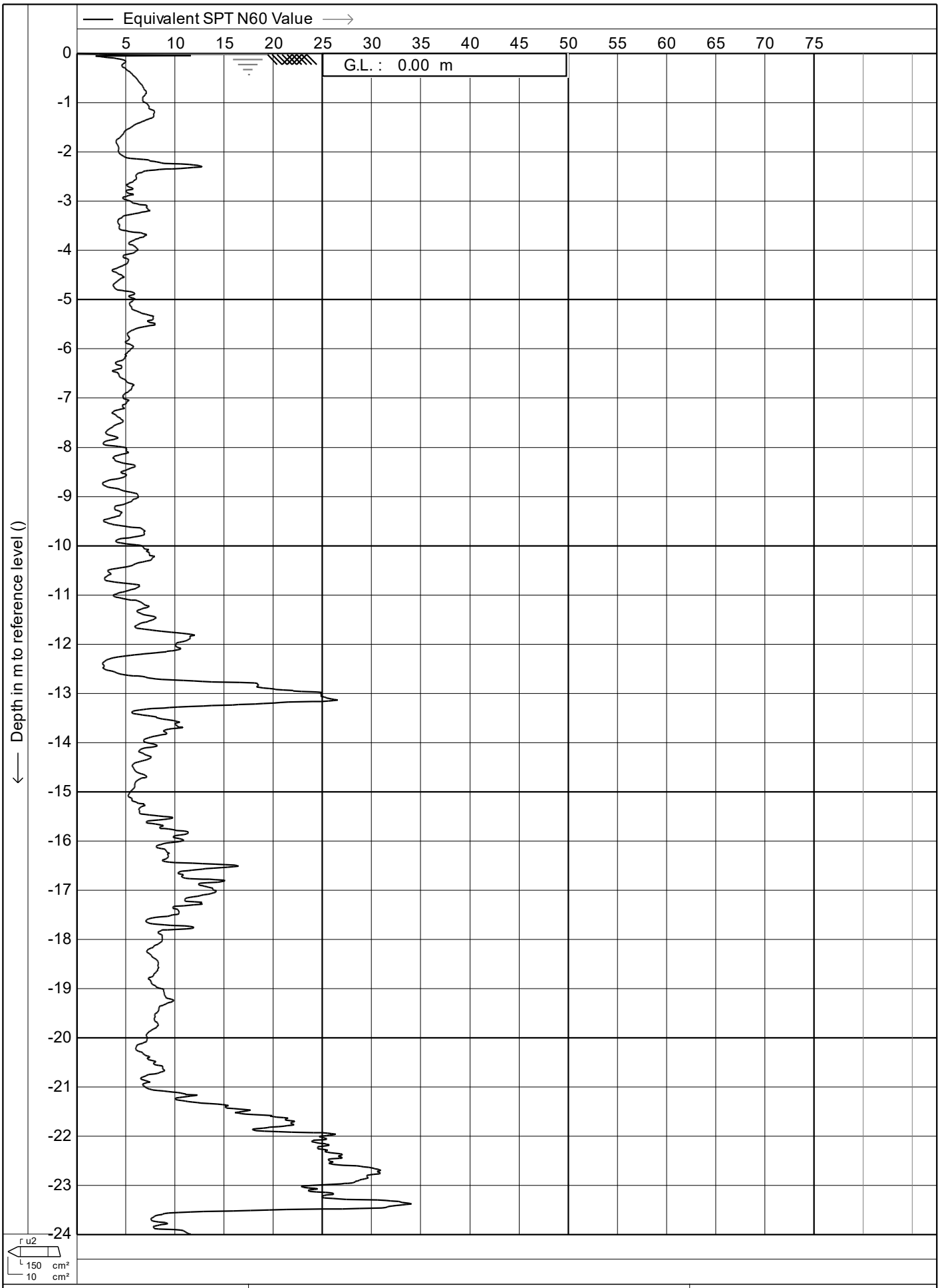
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

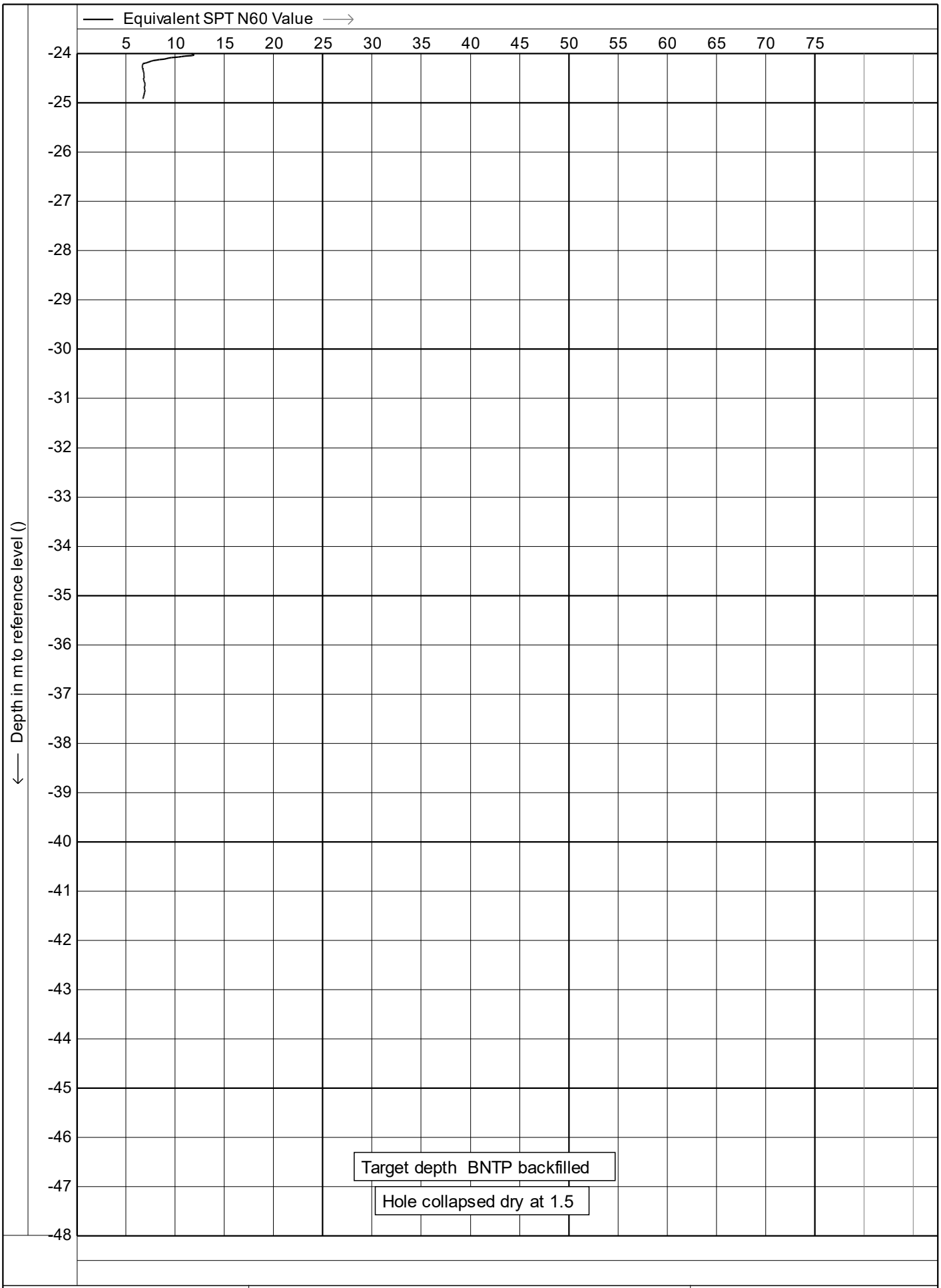
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

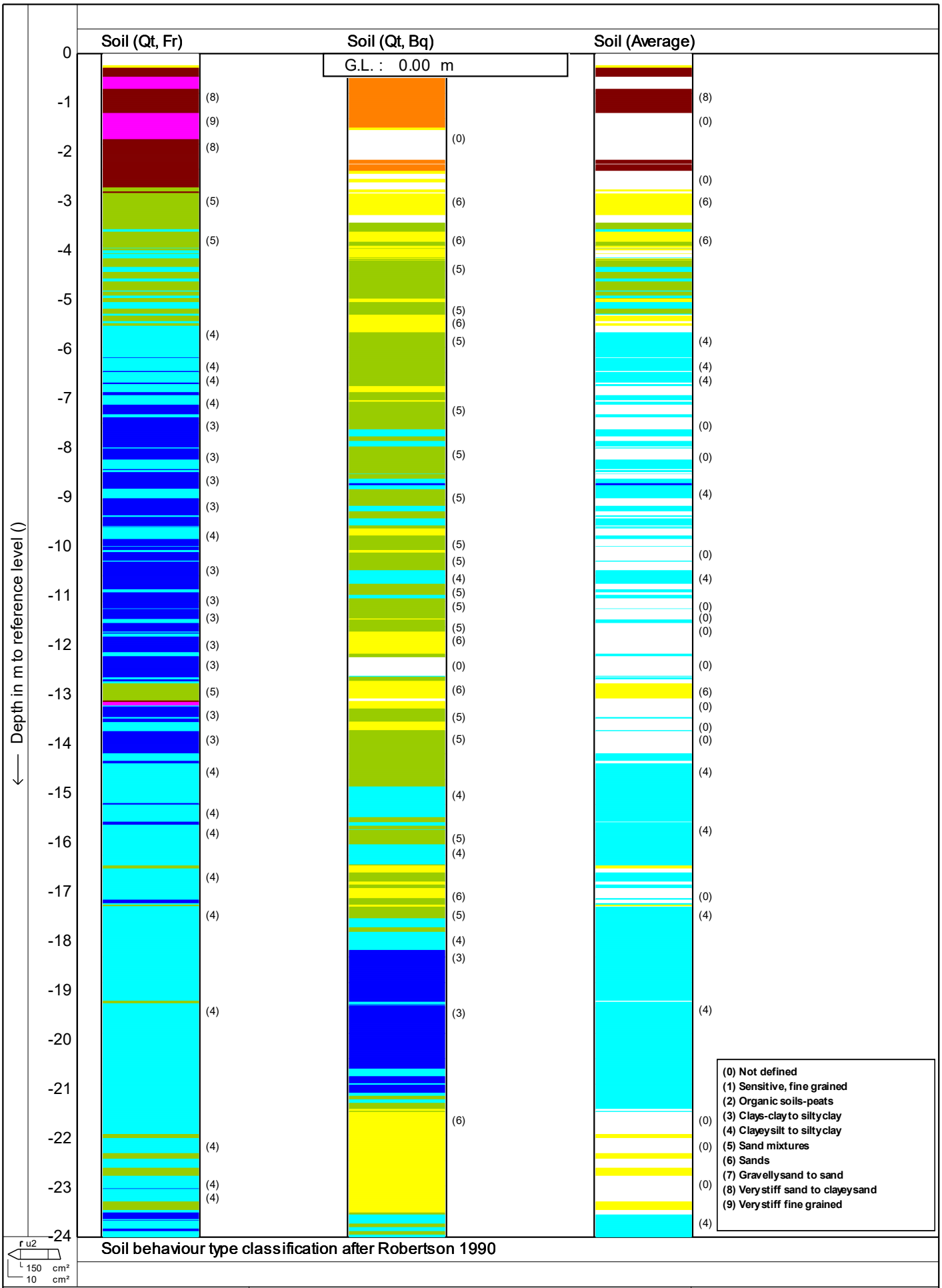
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **037**

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

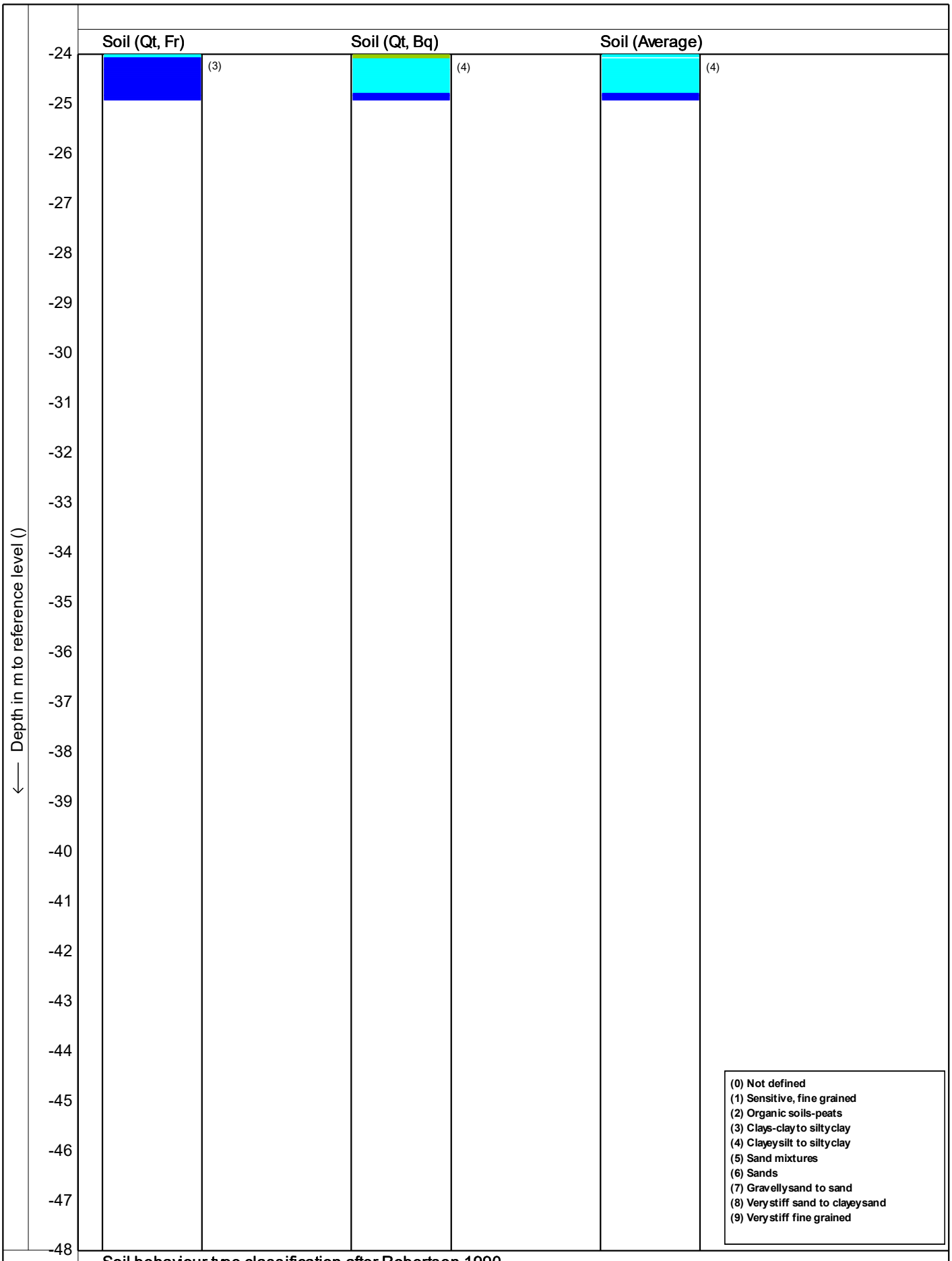
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **037**

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

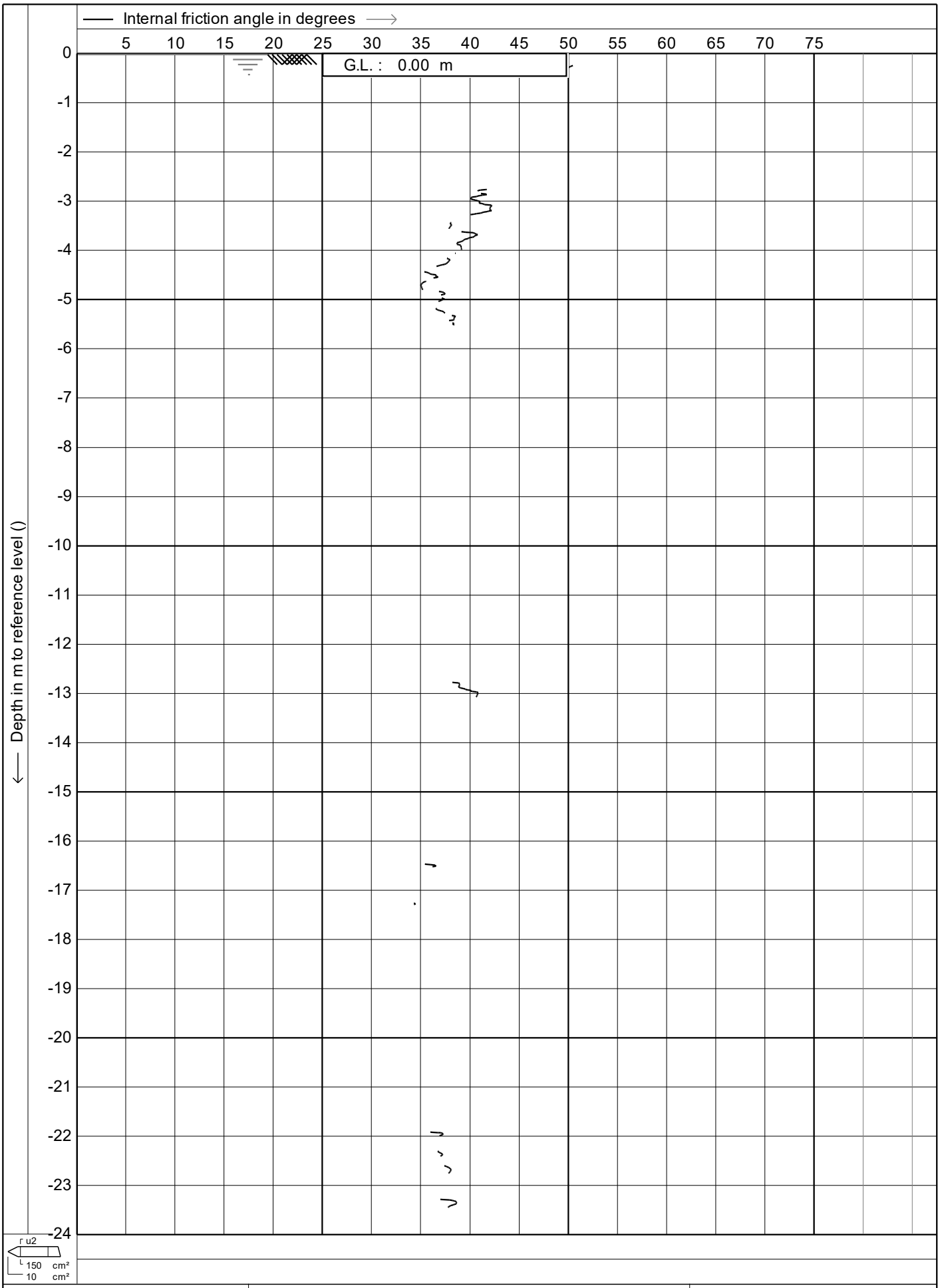
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **037**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

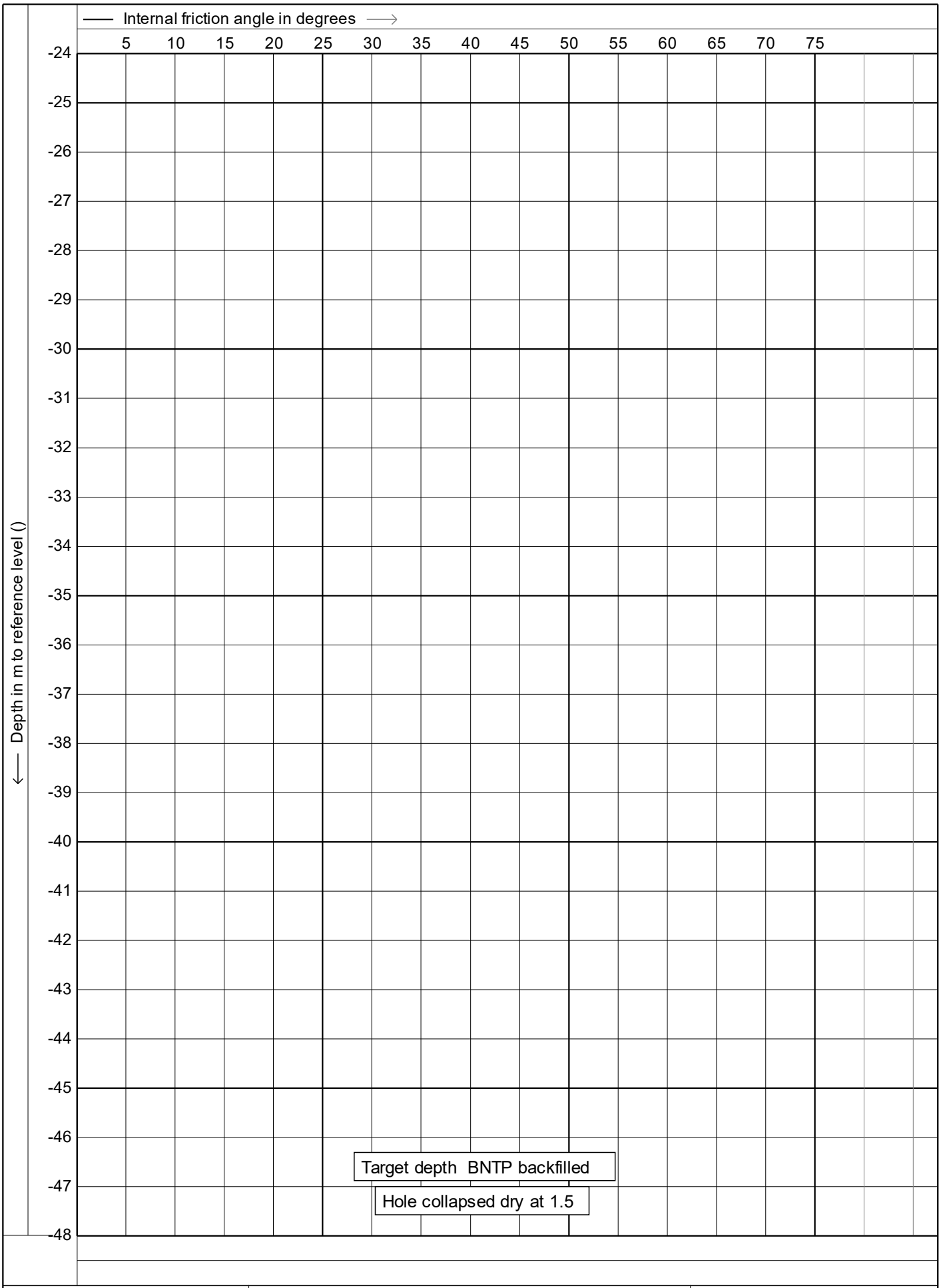
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

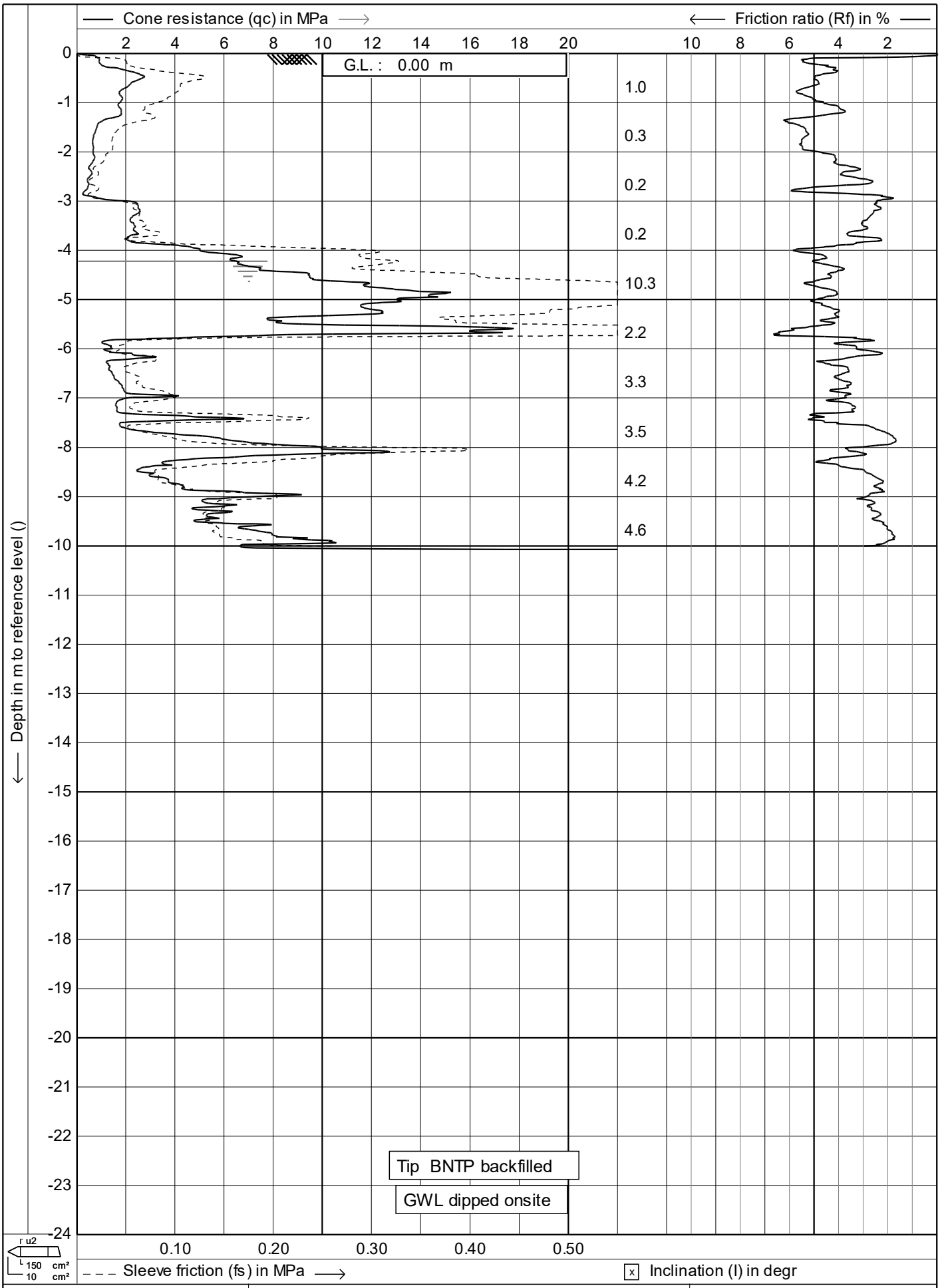
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **27/11/2020**

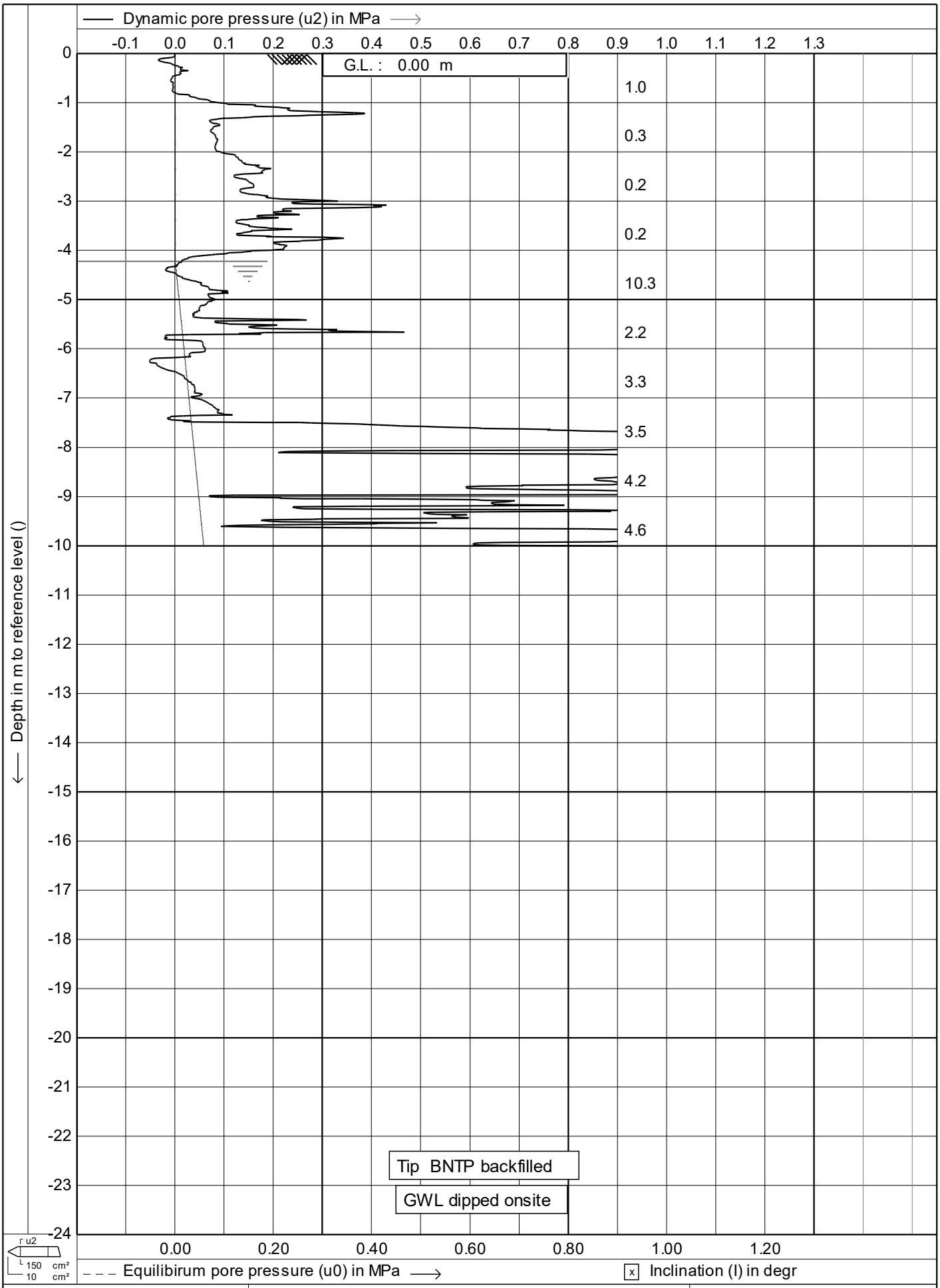
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **038**

1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **27/11/2020**

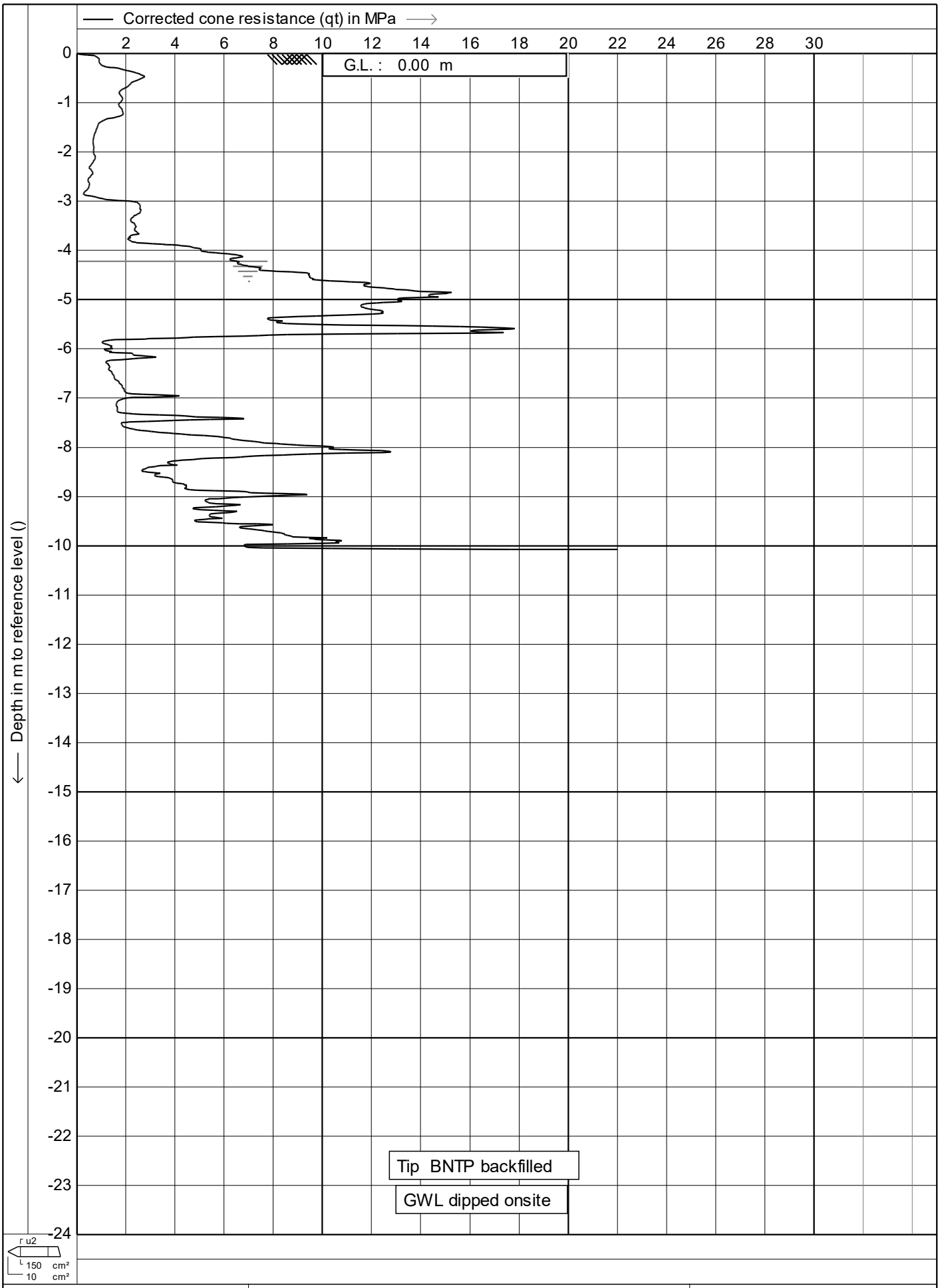
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Project no. : **05AU7**

CPT no. : **038**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

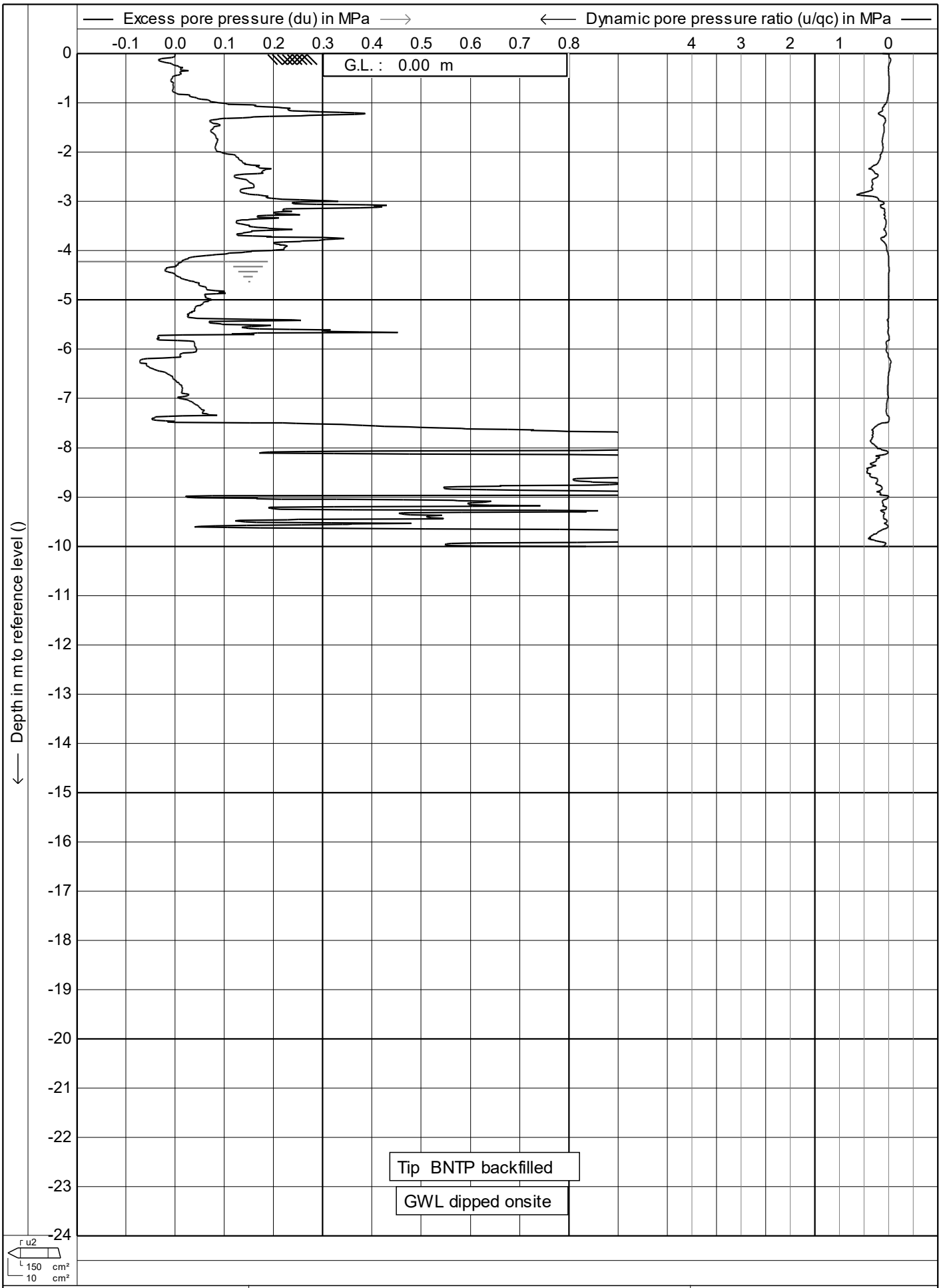
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **038** **3/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

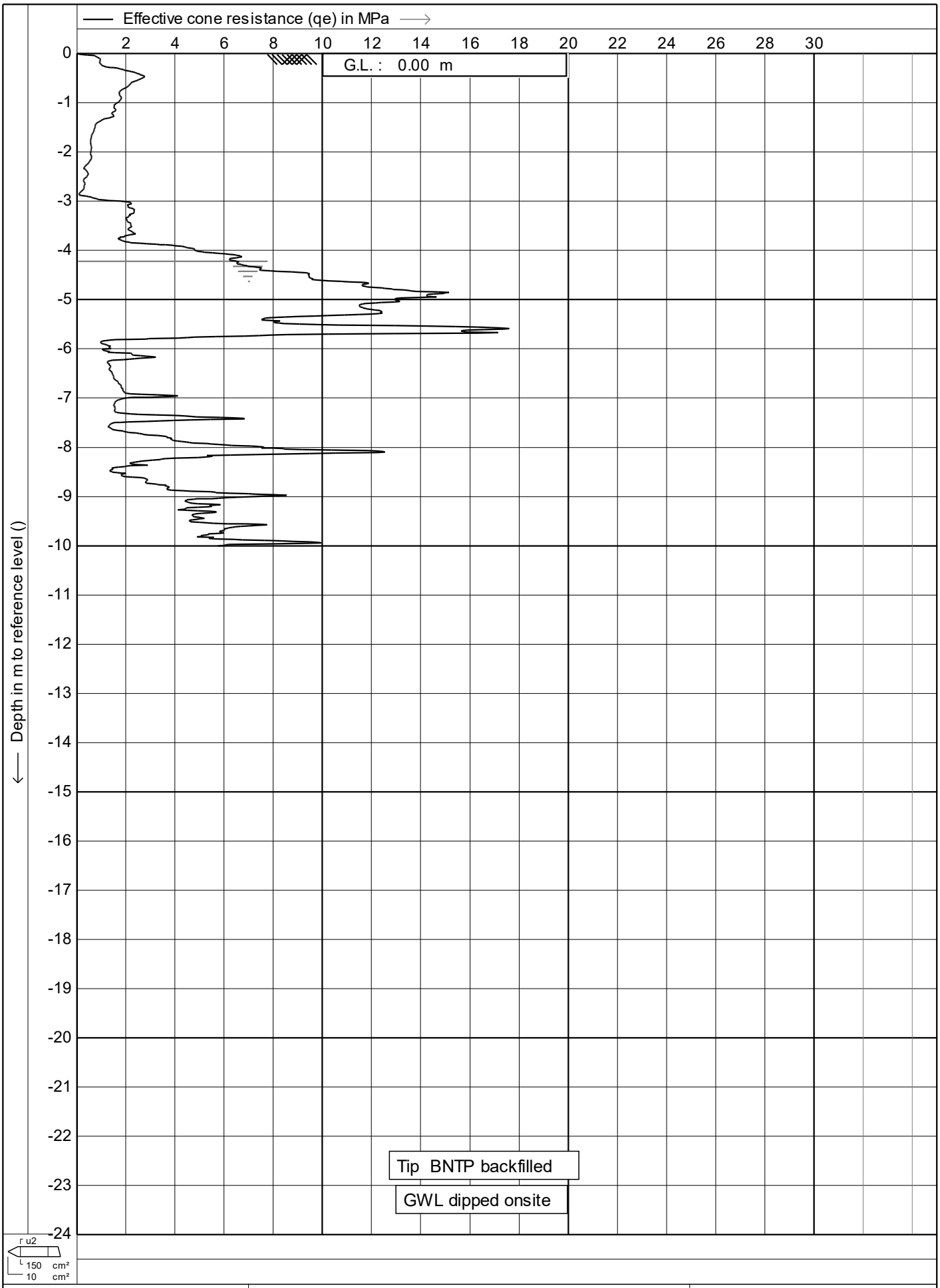
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **038** **4/14**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

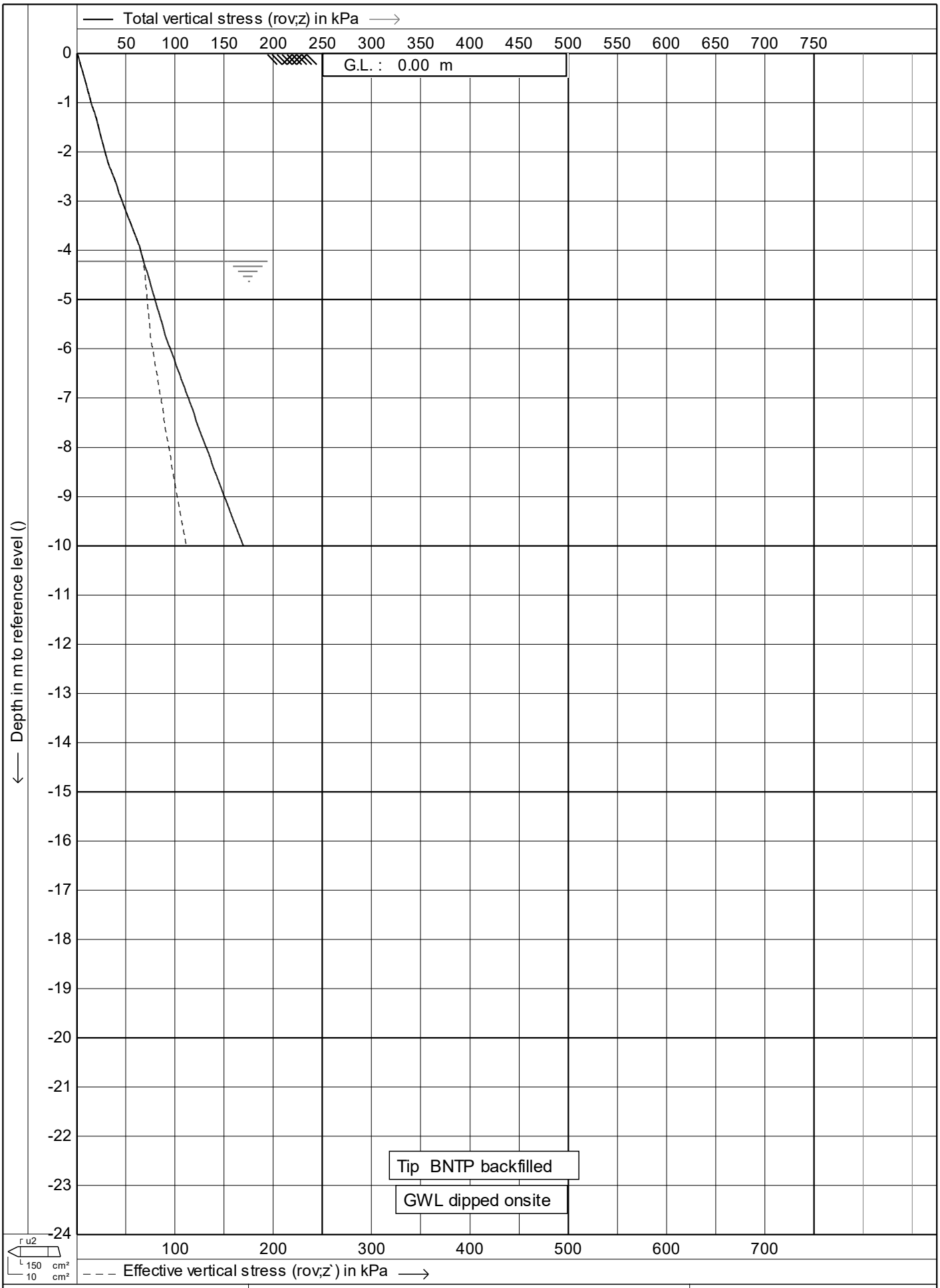
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Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

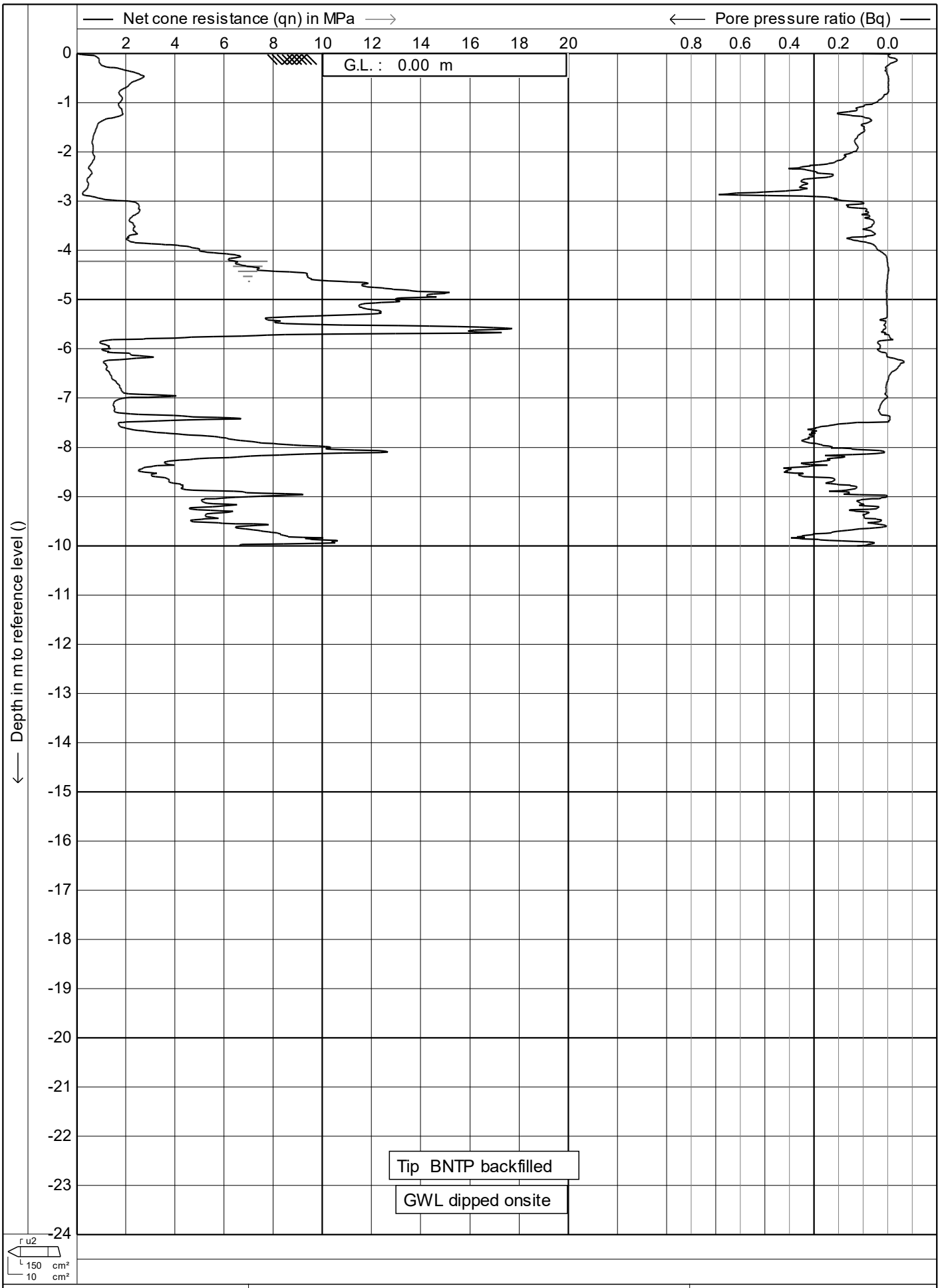
Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **038**

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PERRY GEOTECH	Test according A.S.T.M Standard D 5778-12	Date : **27/11/2020**	
	Project : **Site Investigations**	Cone no. : **C10CFIIP.C14426**	
	Location: **Fitzgerald Rd - Drury**	Project no. : **05AU7**	
	Position: **0, 0**	CPT no. : **038**	**6/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

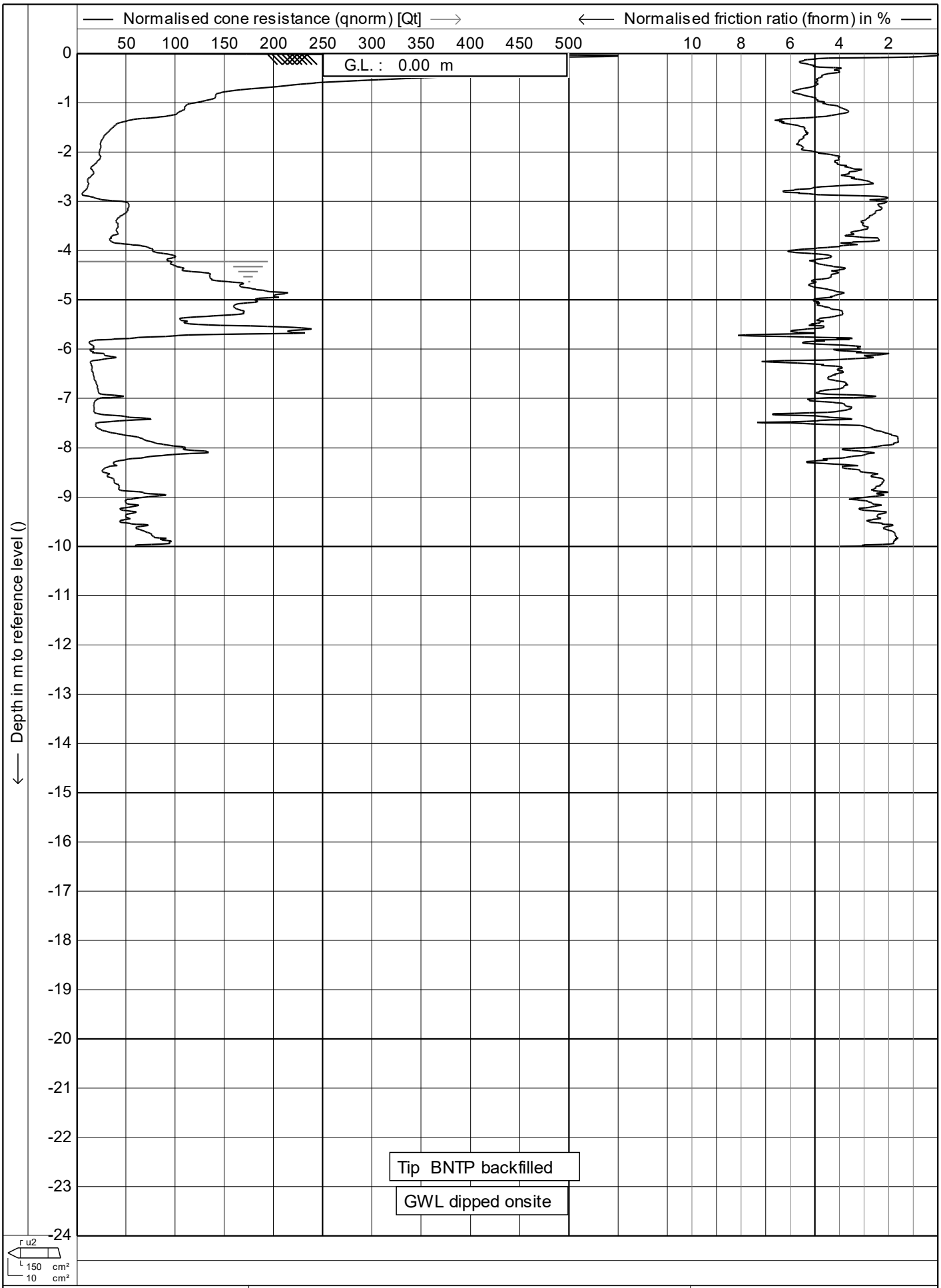
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **038** **7/14**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

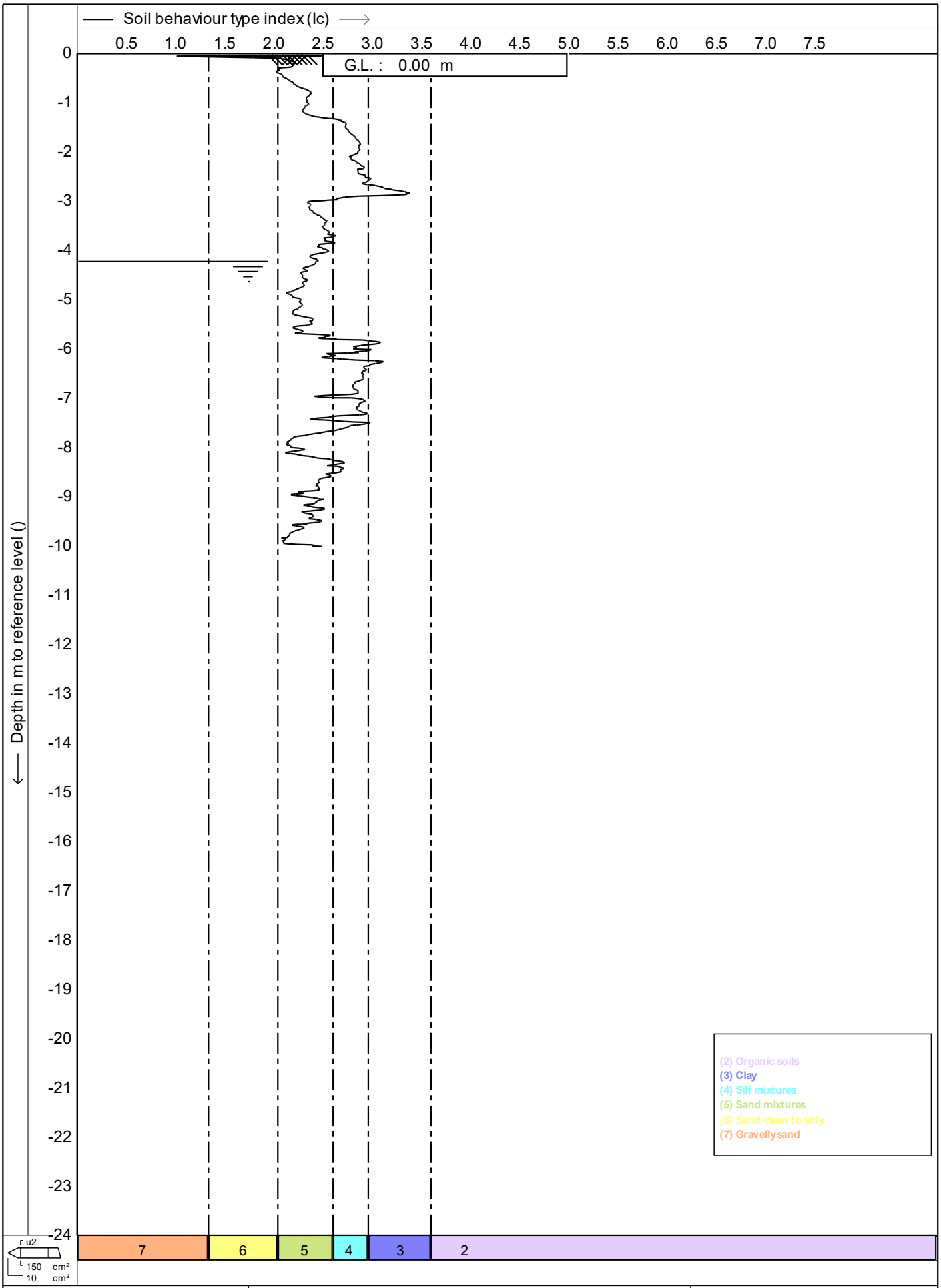
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **038** **8/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

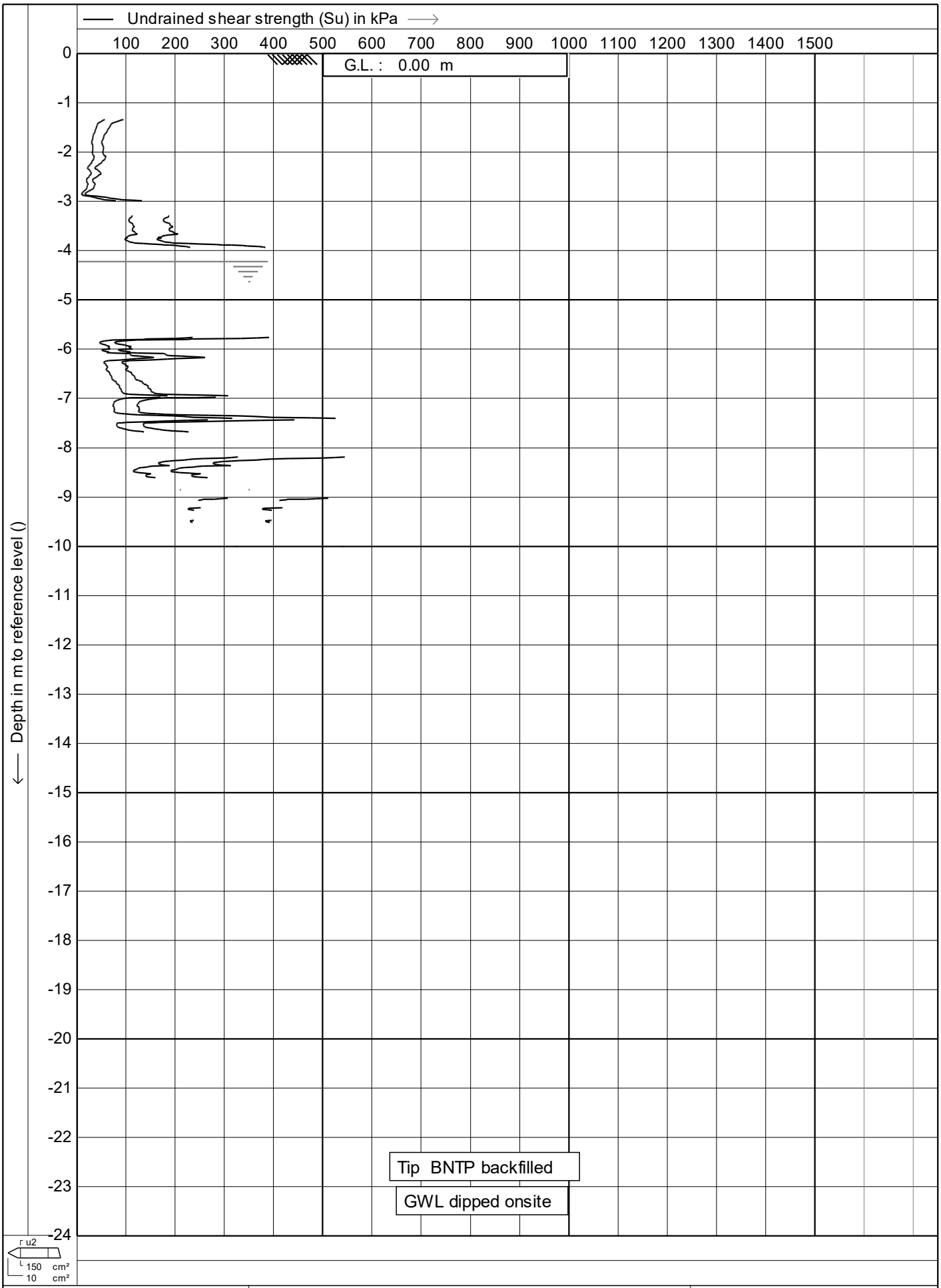
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **038** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

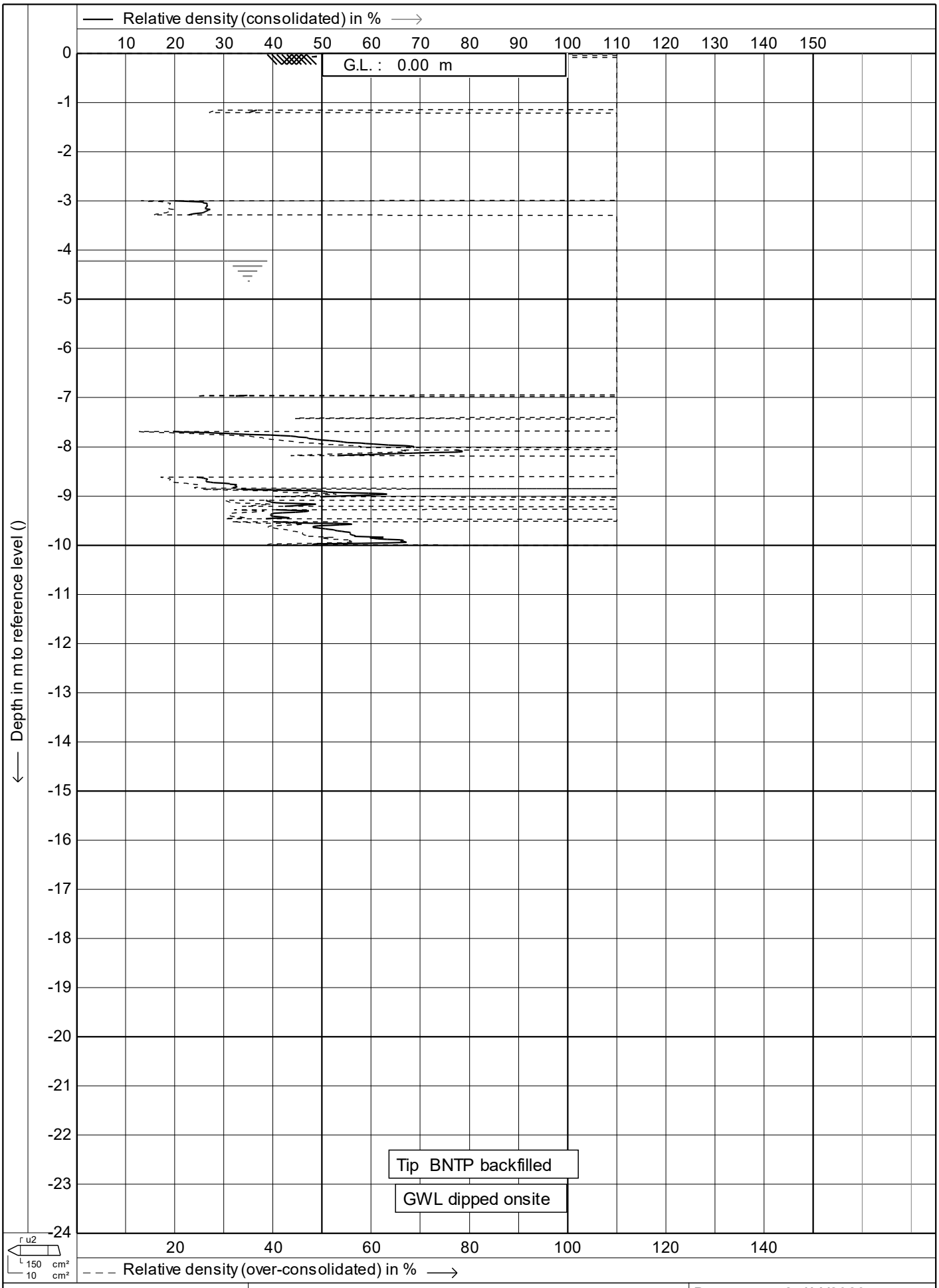
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **038**

10/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

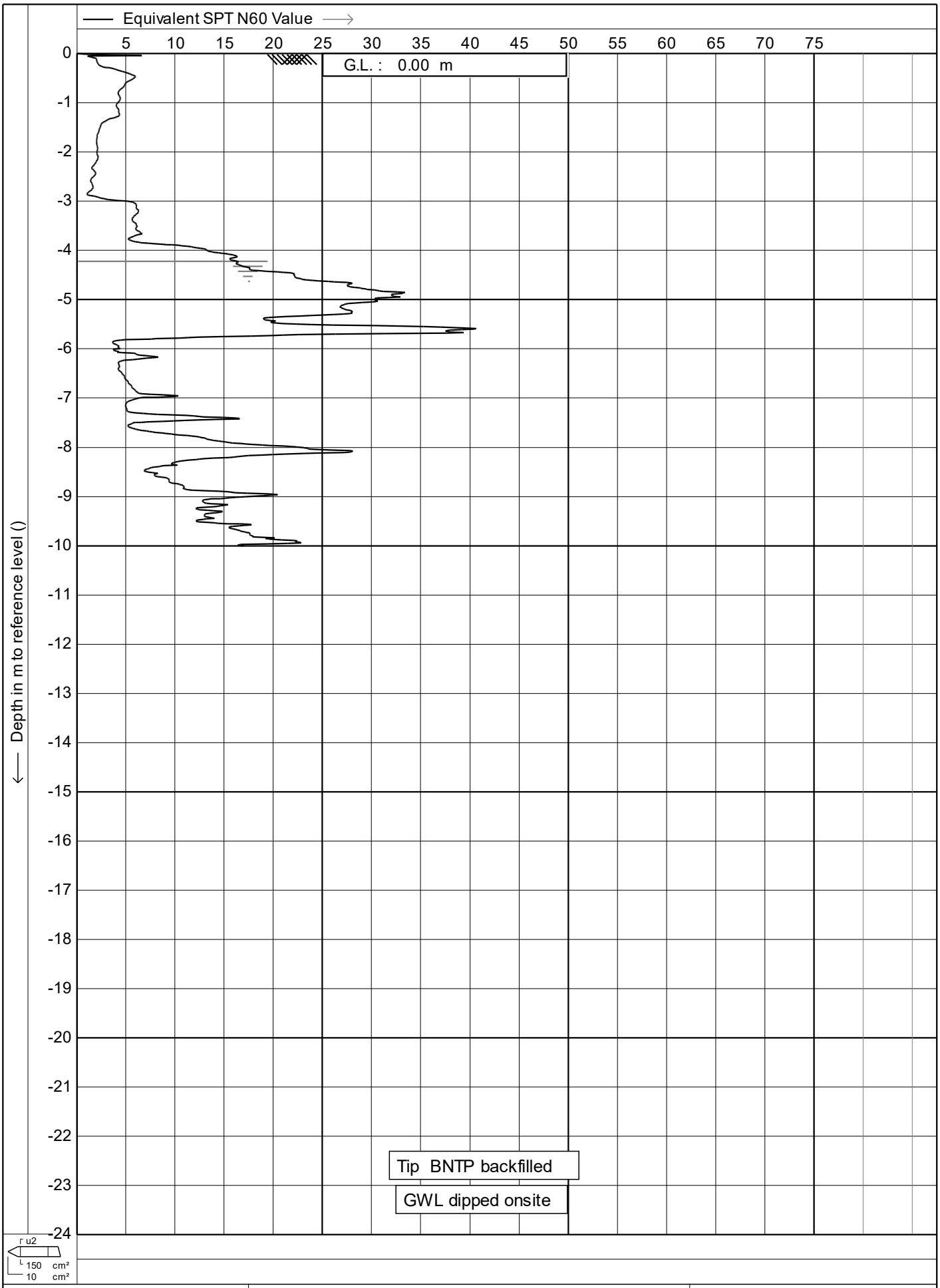
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **038** **11/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **27/11/2020**

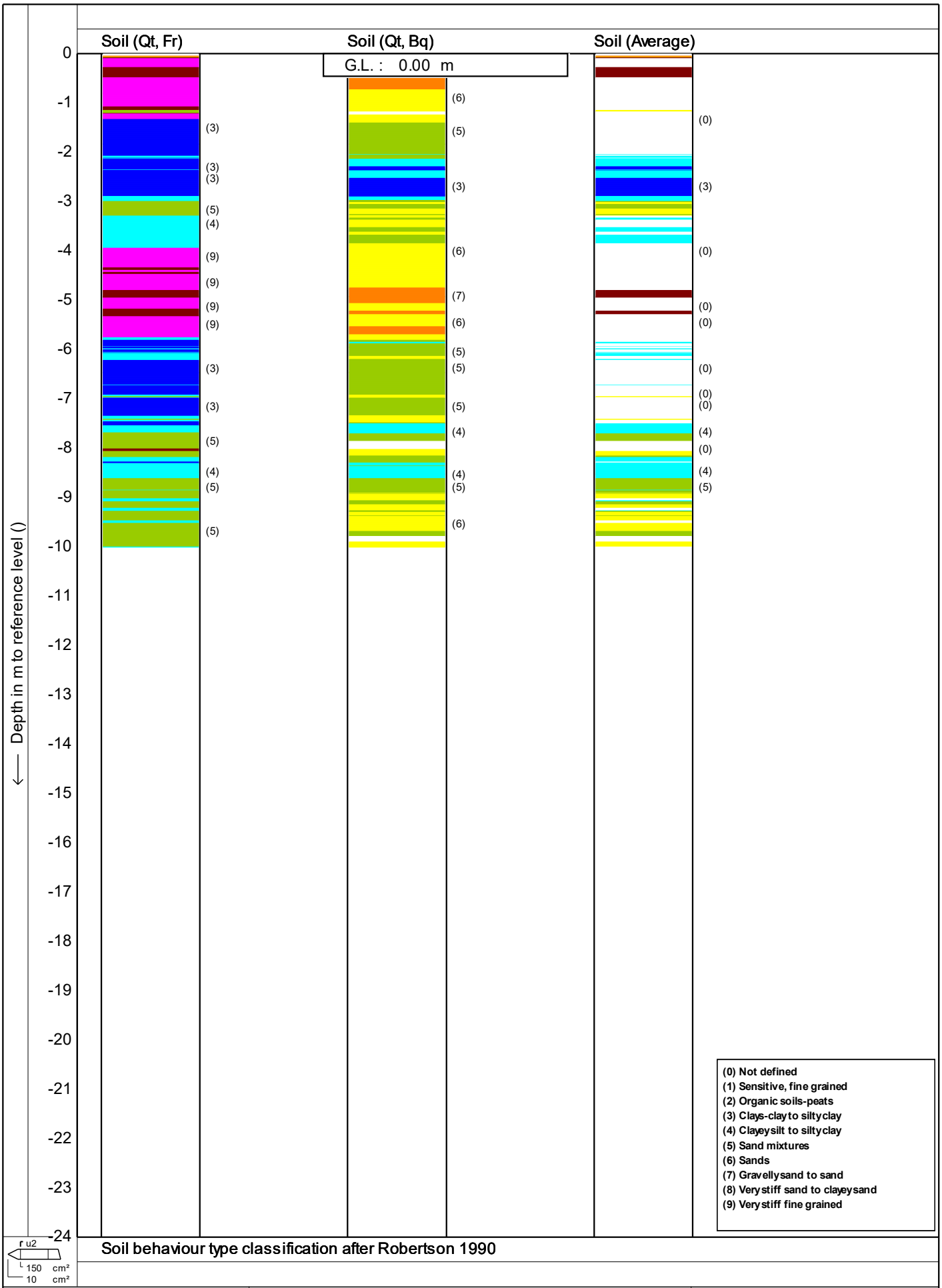
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **038**

12/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

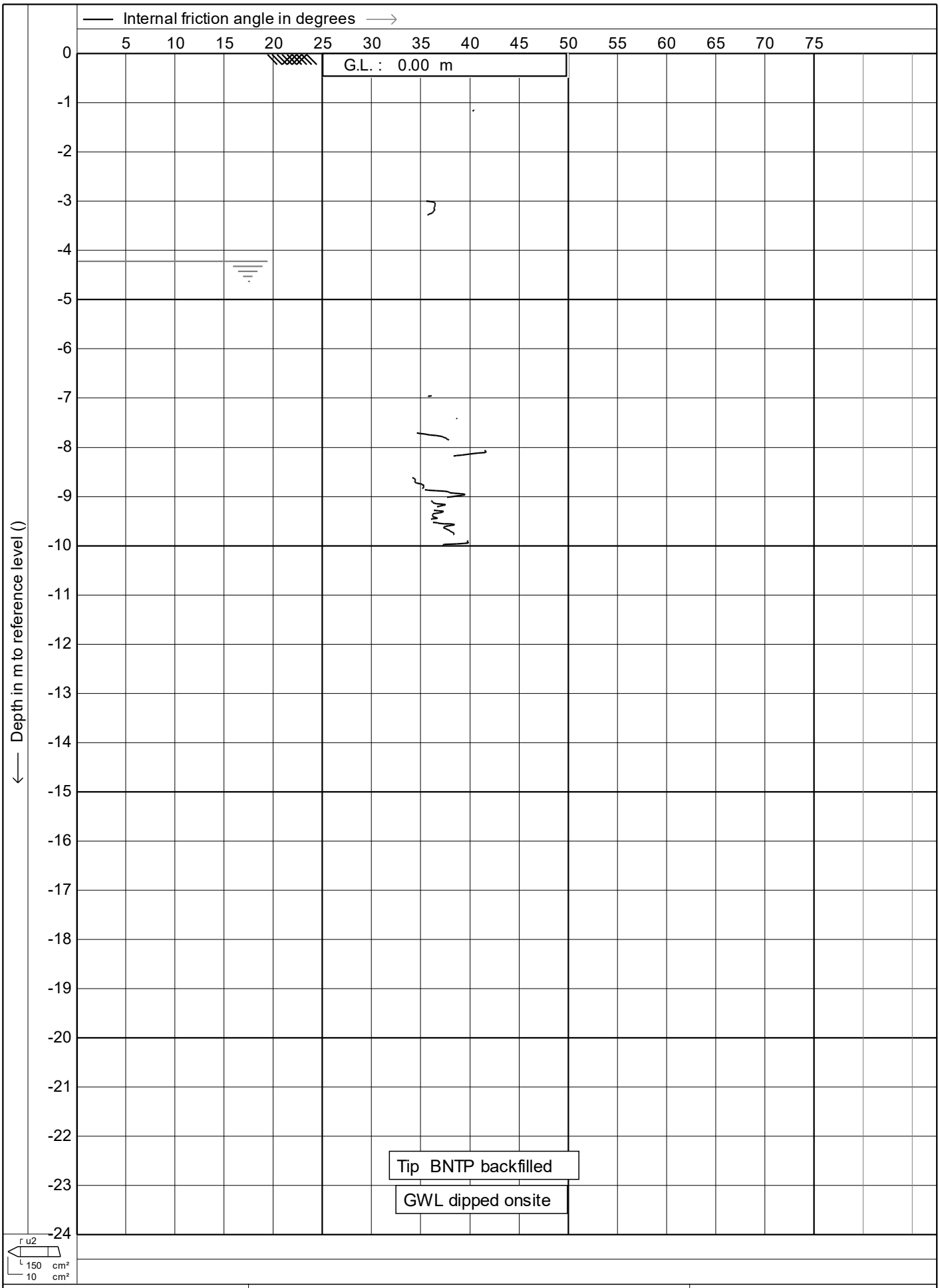
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **038**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

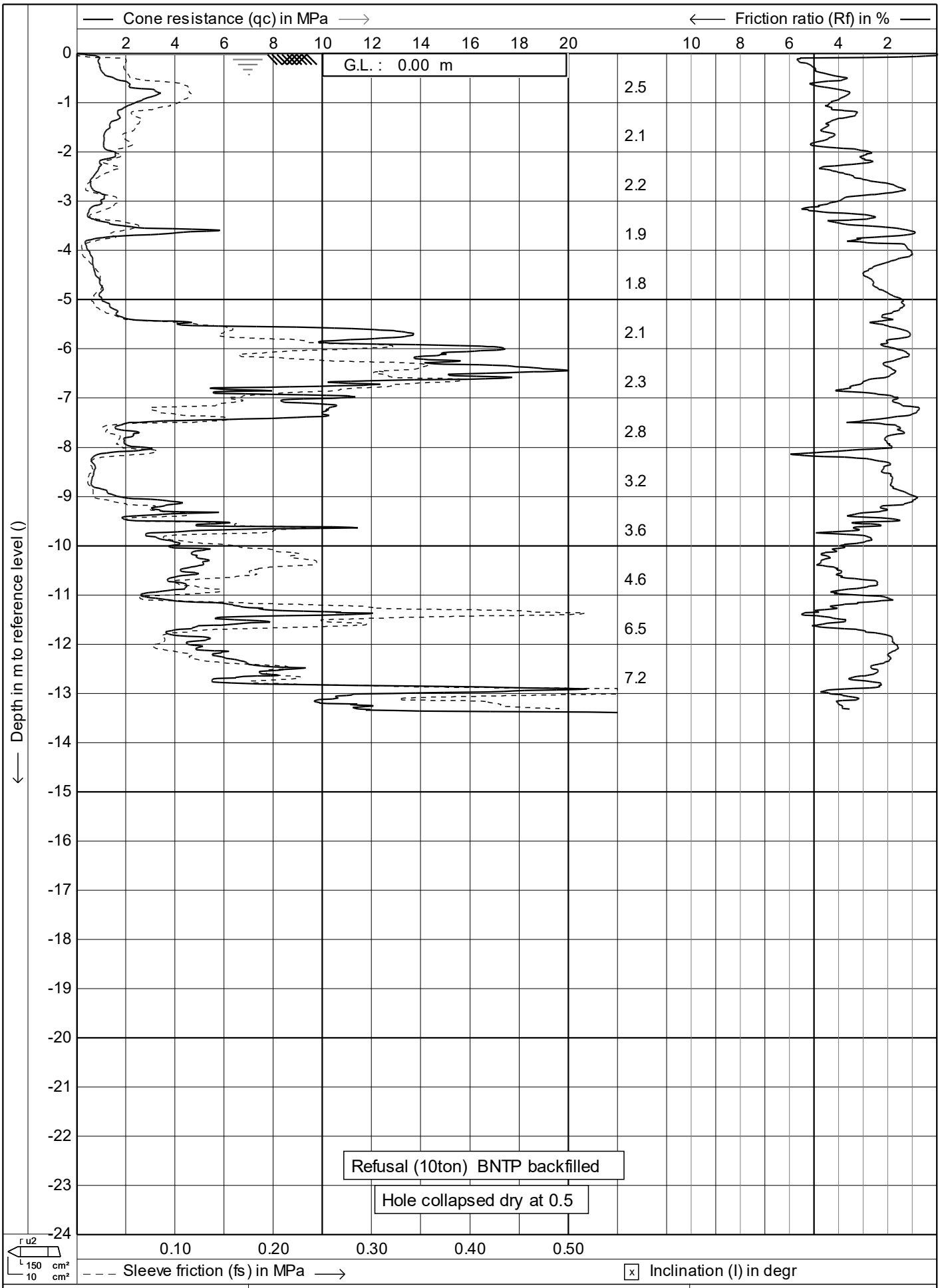
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **038** **14/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **27/11/2020**

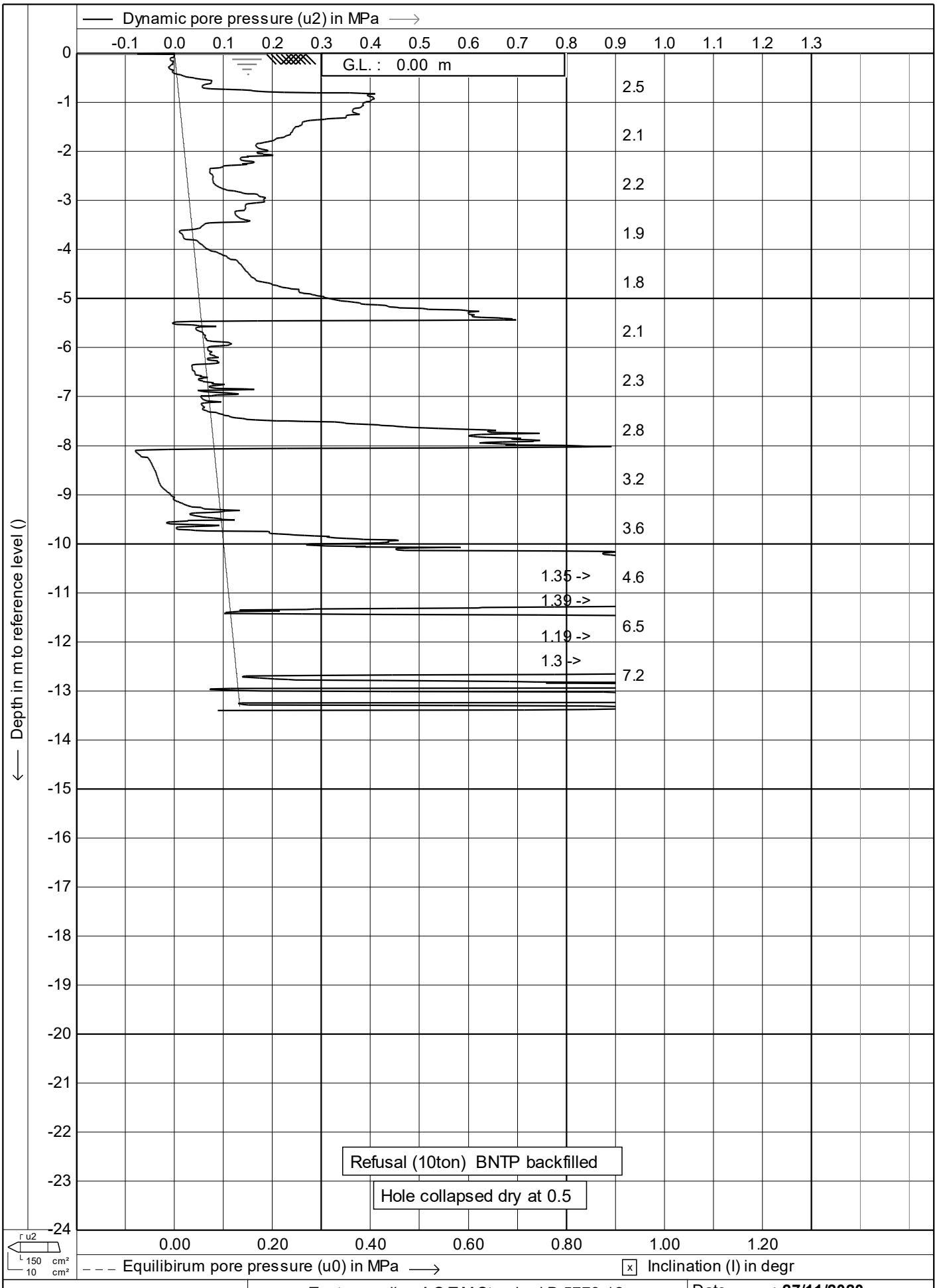
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

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1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

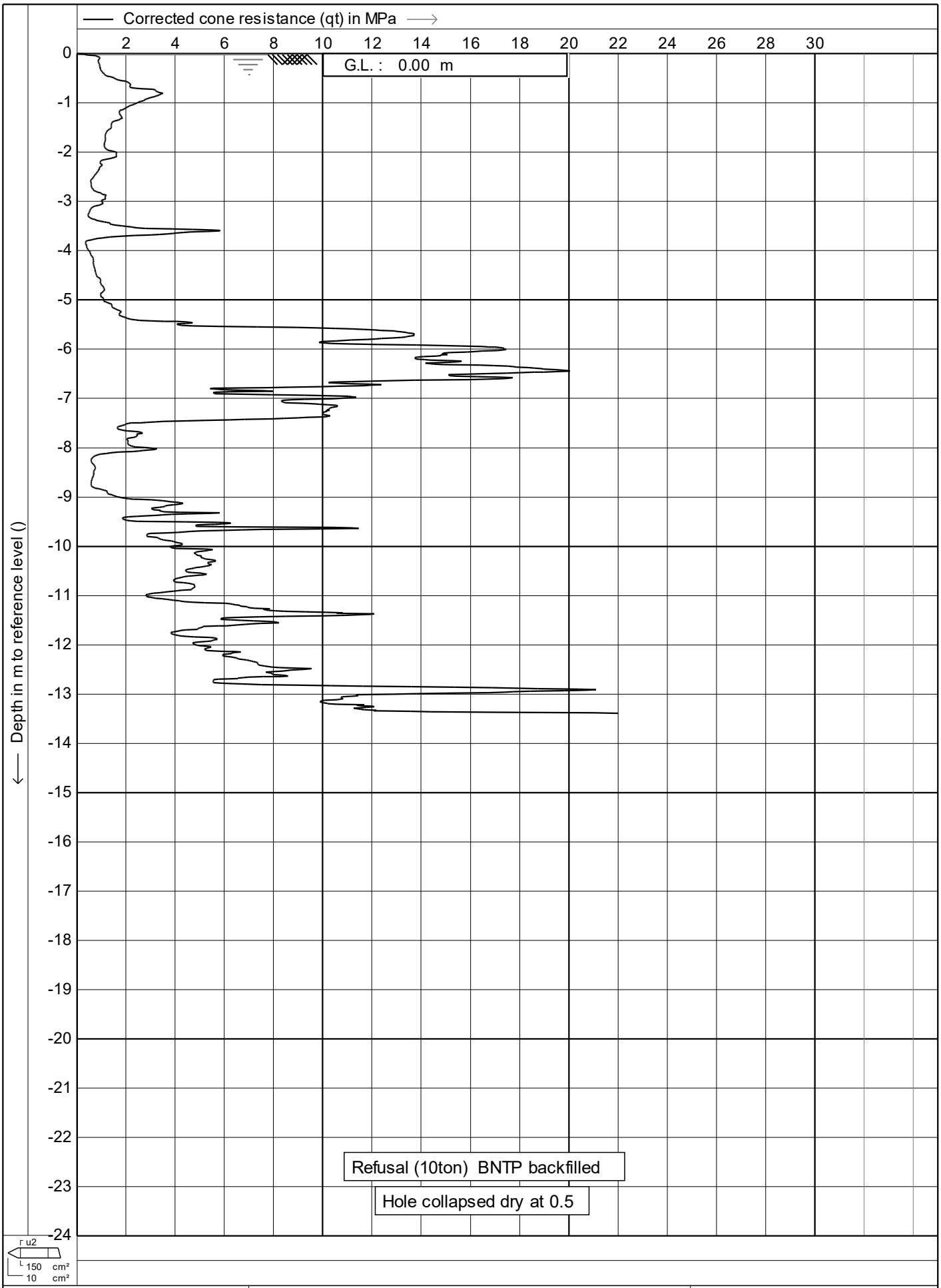
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

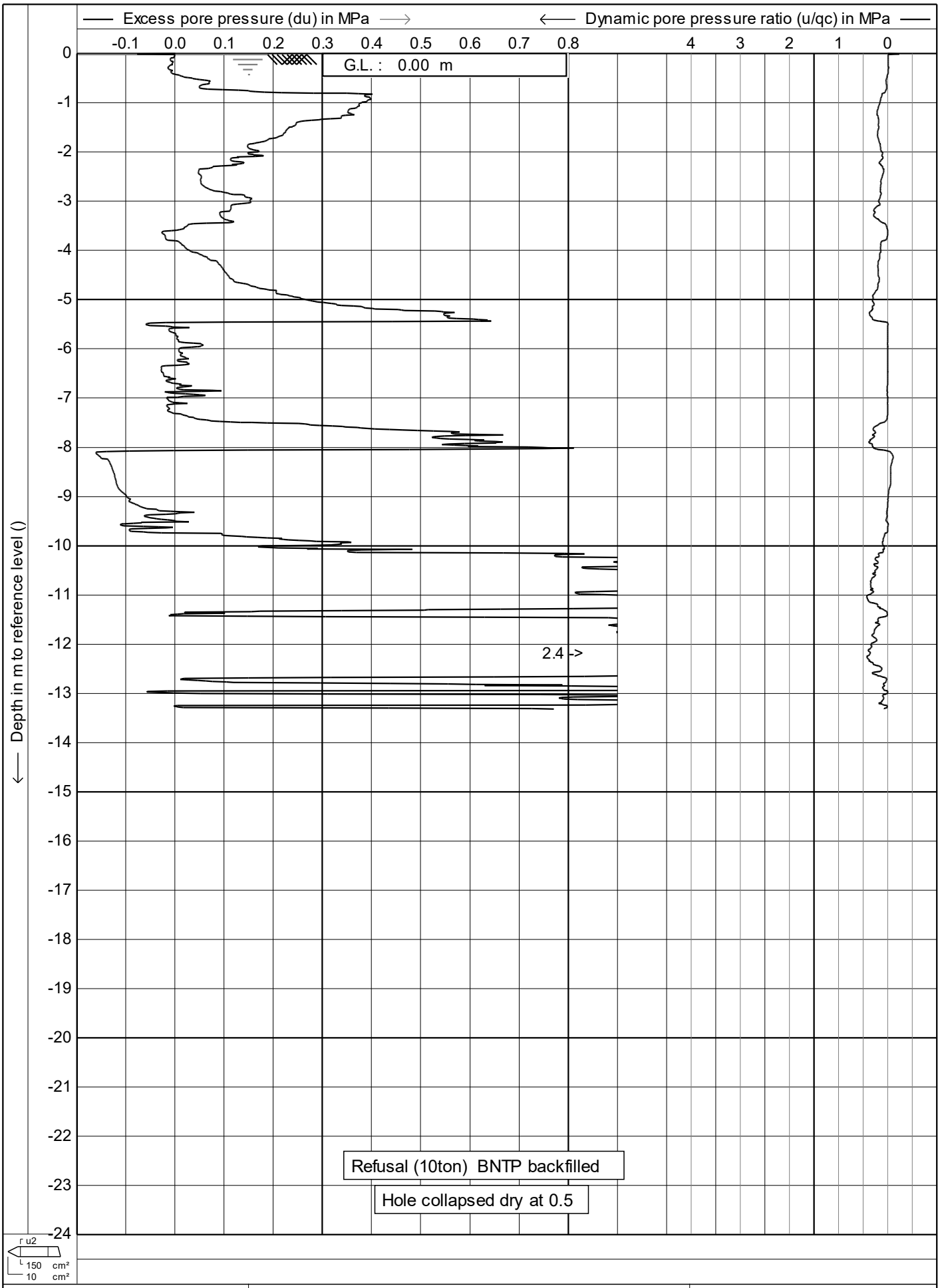
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
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Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

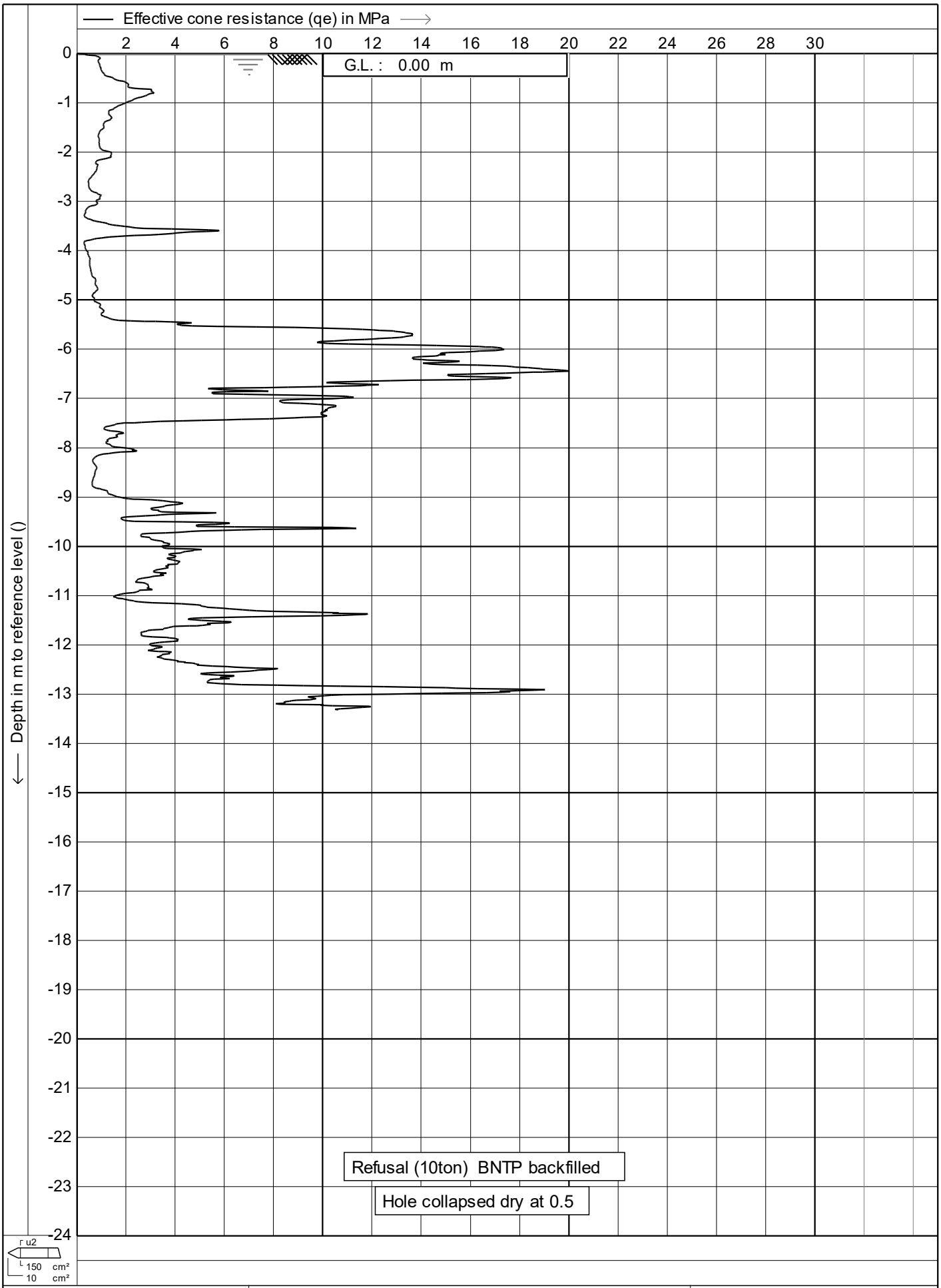
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **039**

4/14

1.48



PERRY GEOTECH

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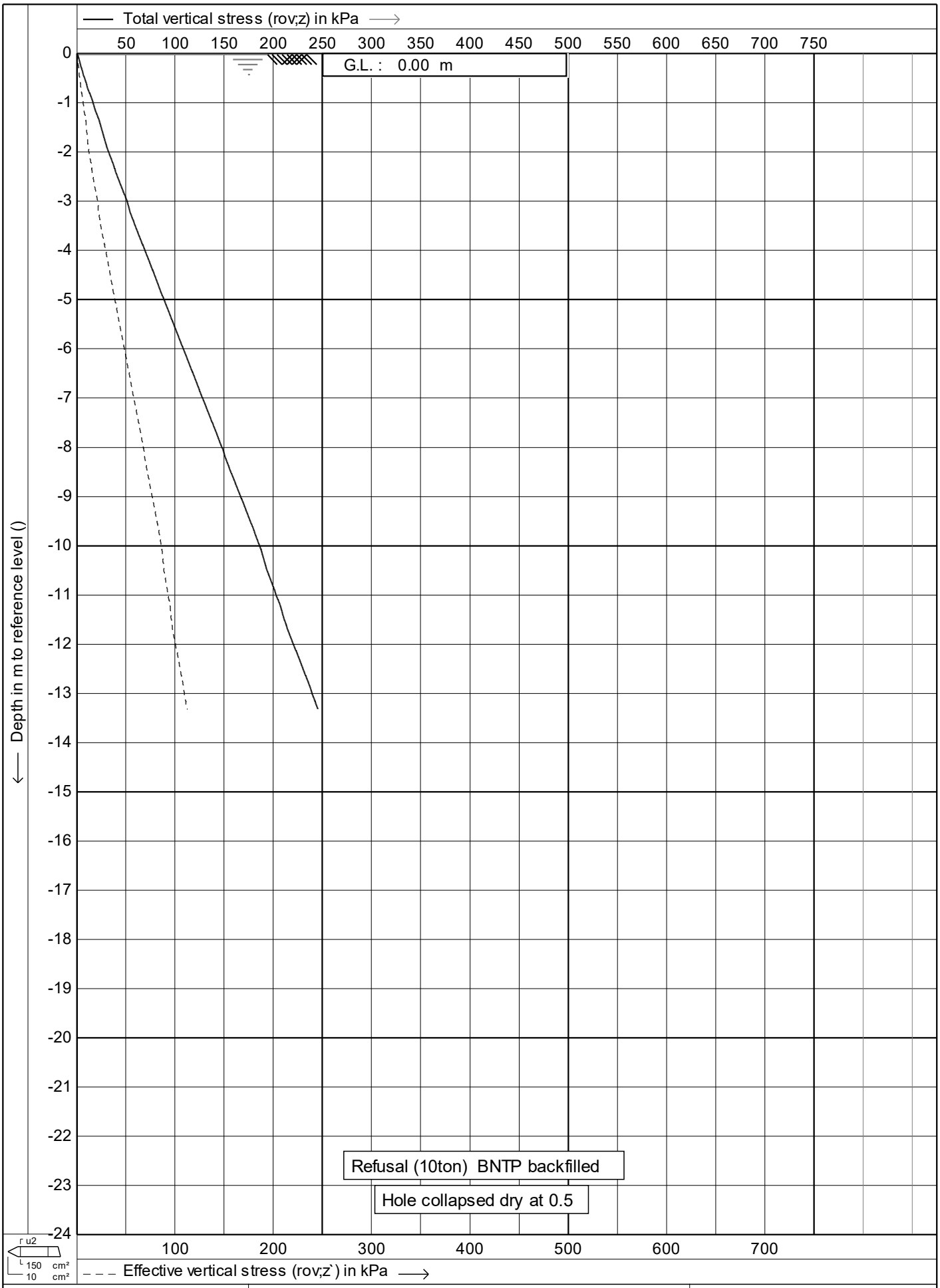
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
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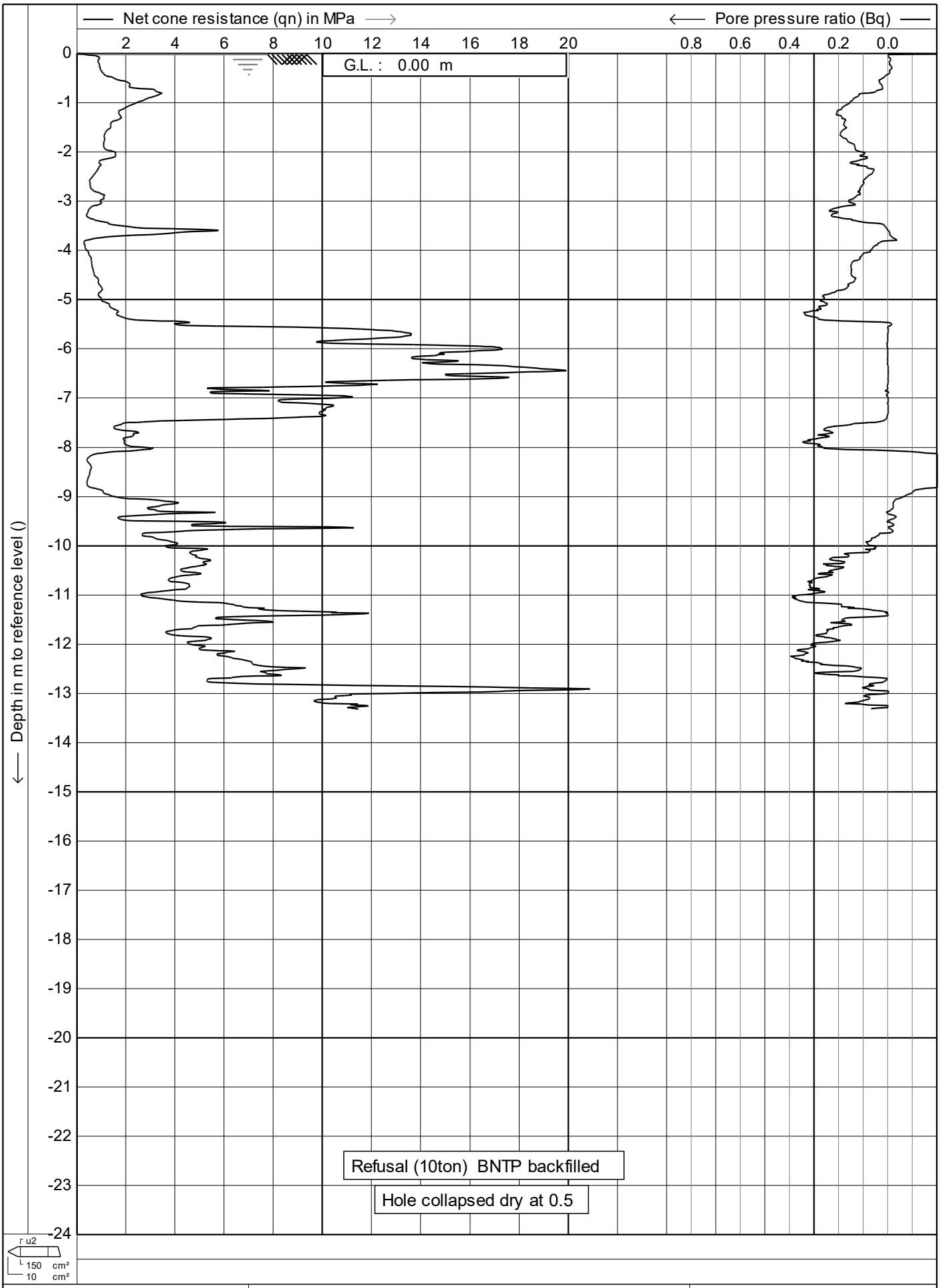
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

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Date	: **27/11/2020**
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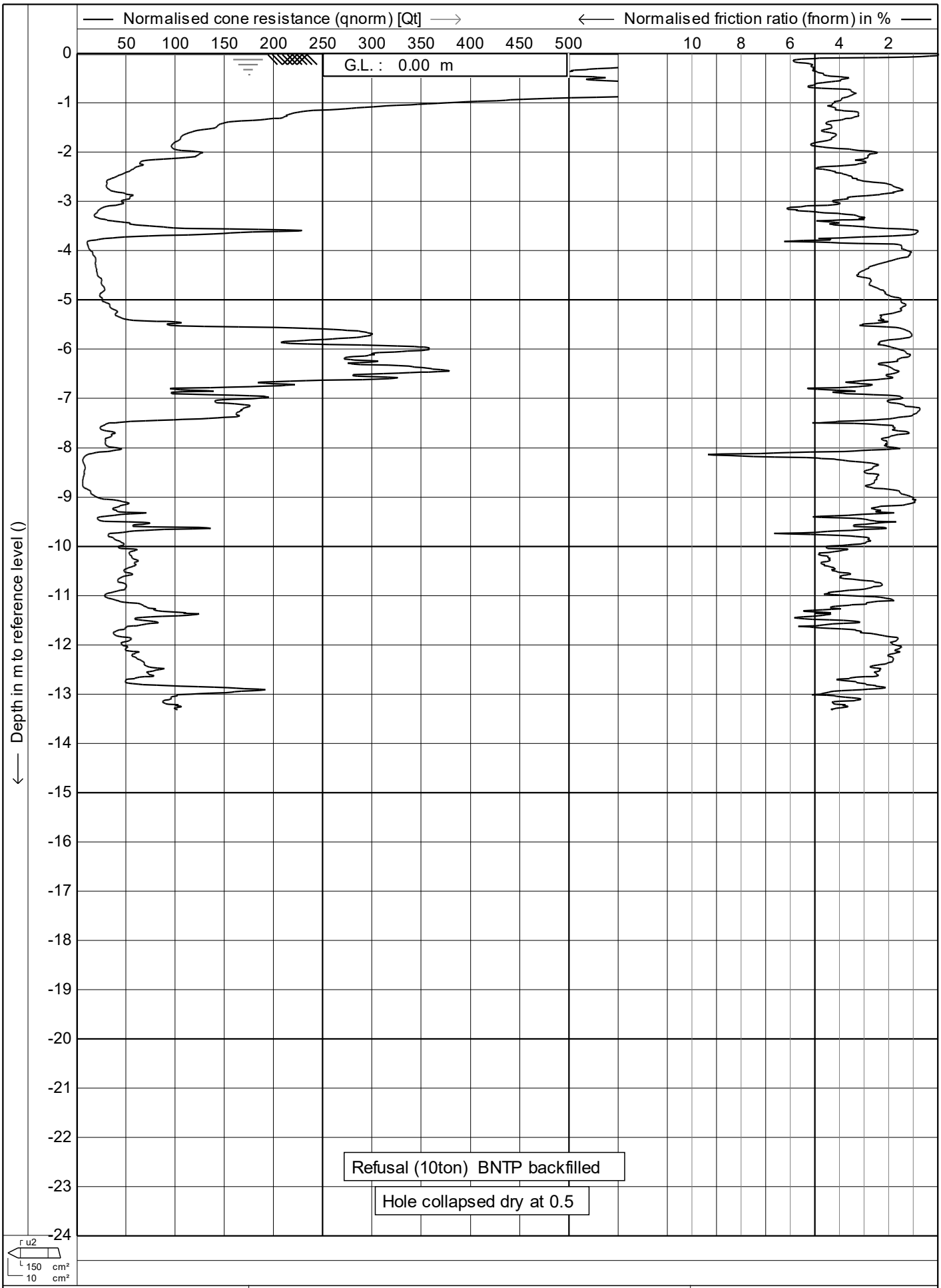
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
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Test according A.S.T.M Standard D 5778-12

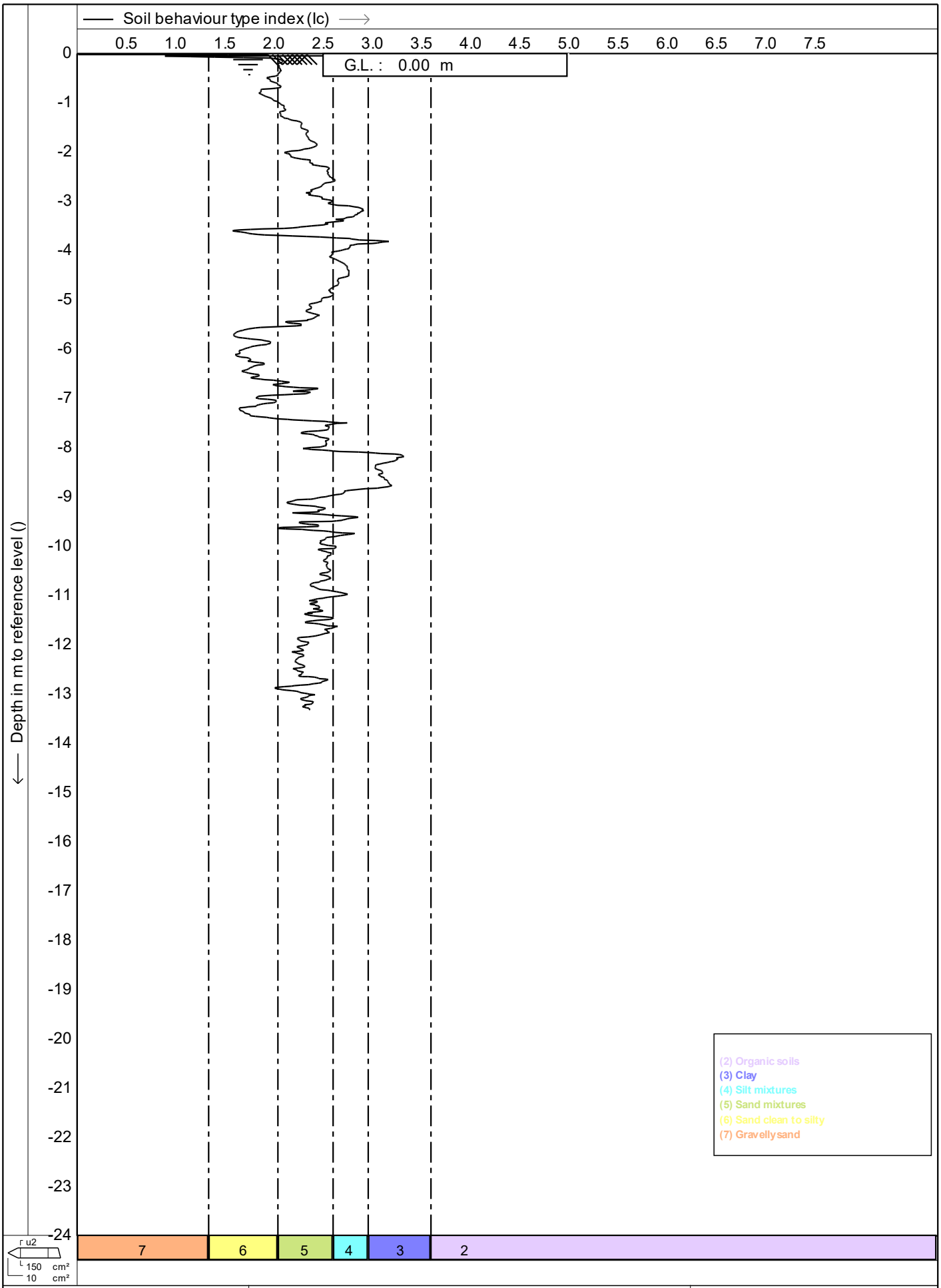
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
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Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

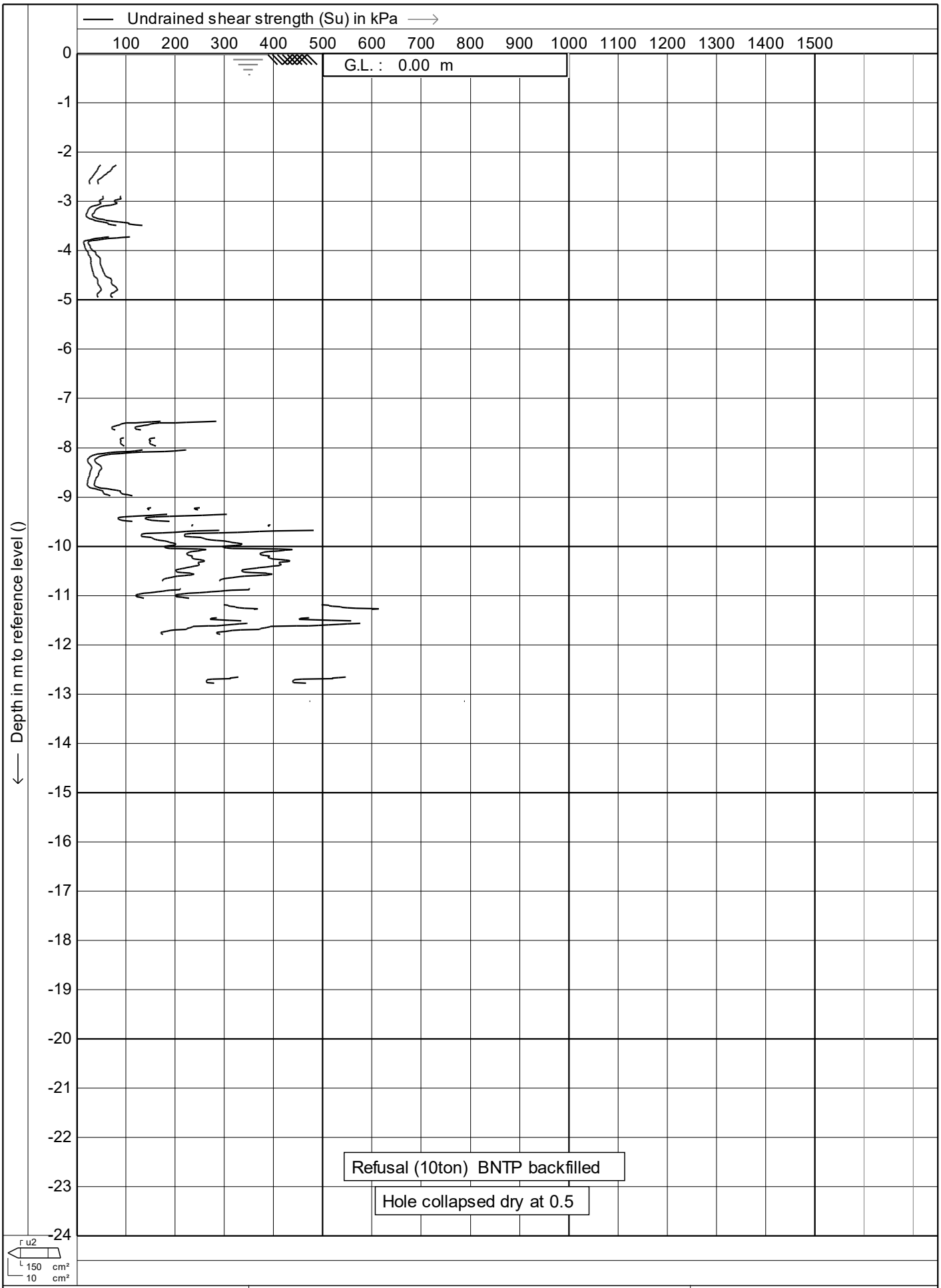
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **039** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

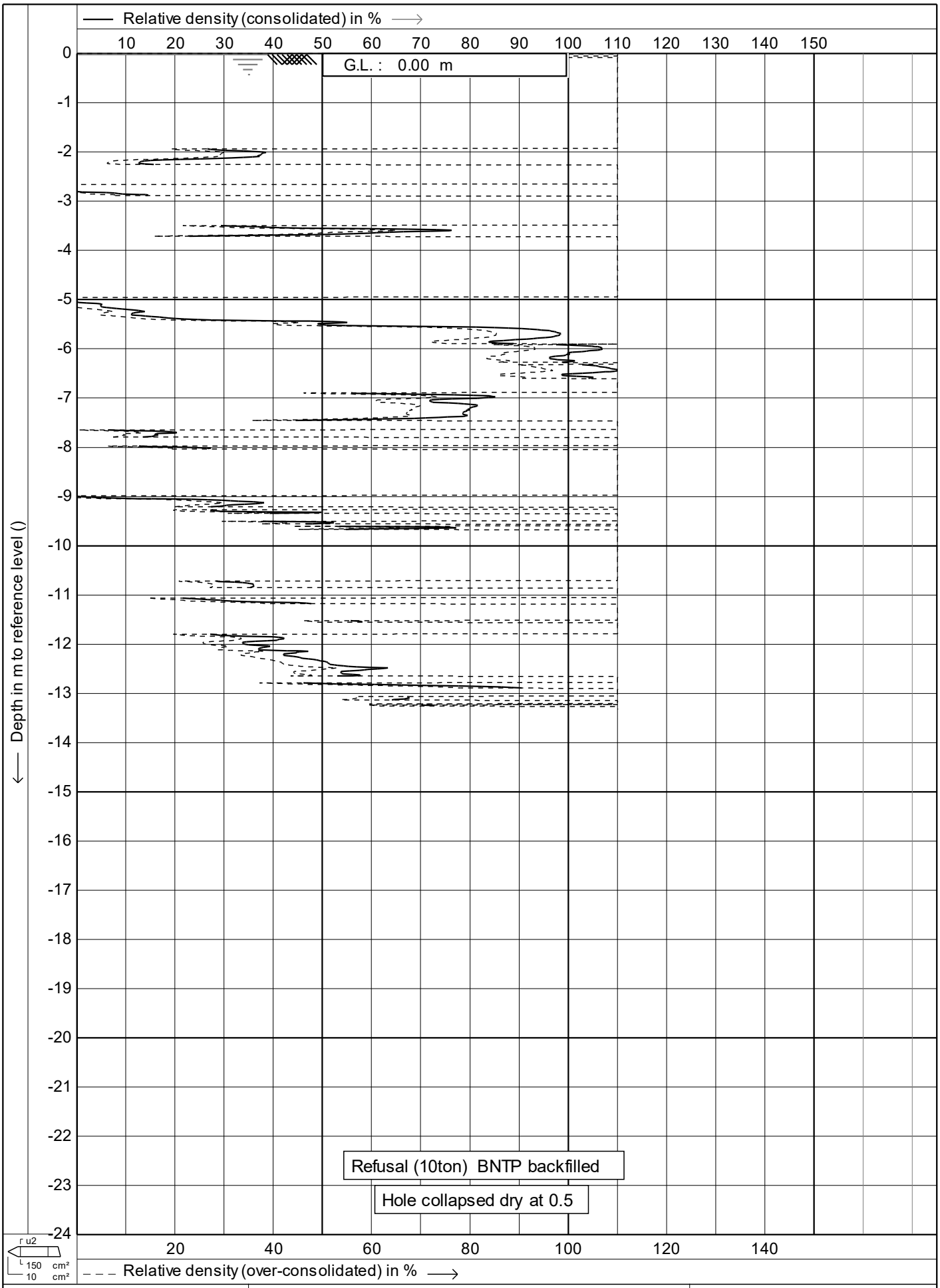
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **039**

10/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

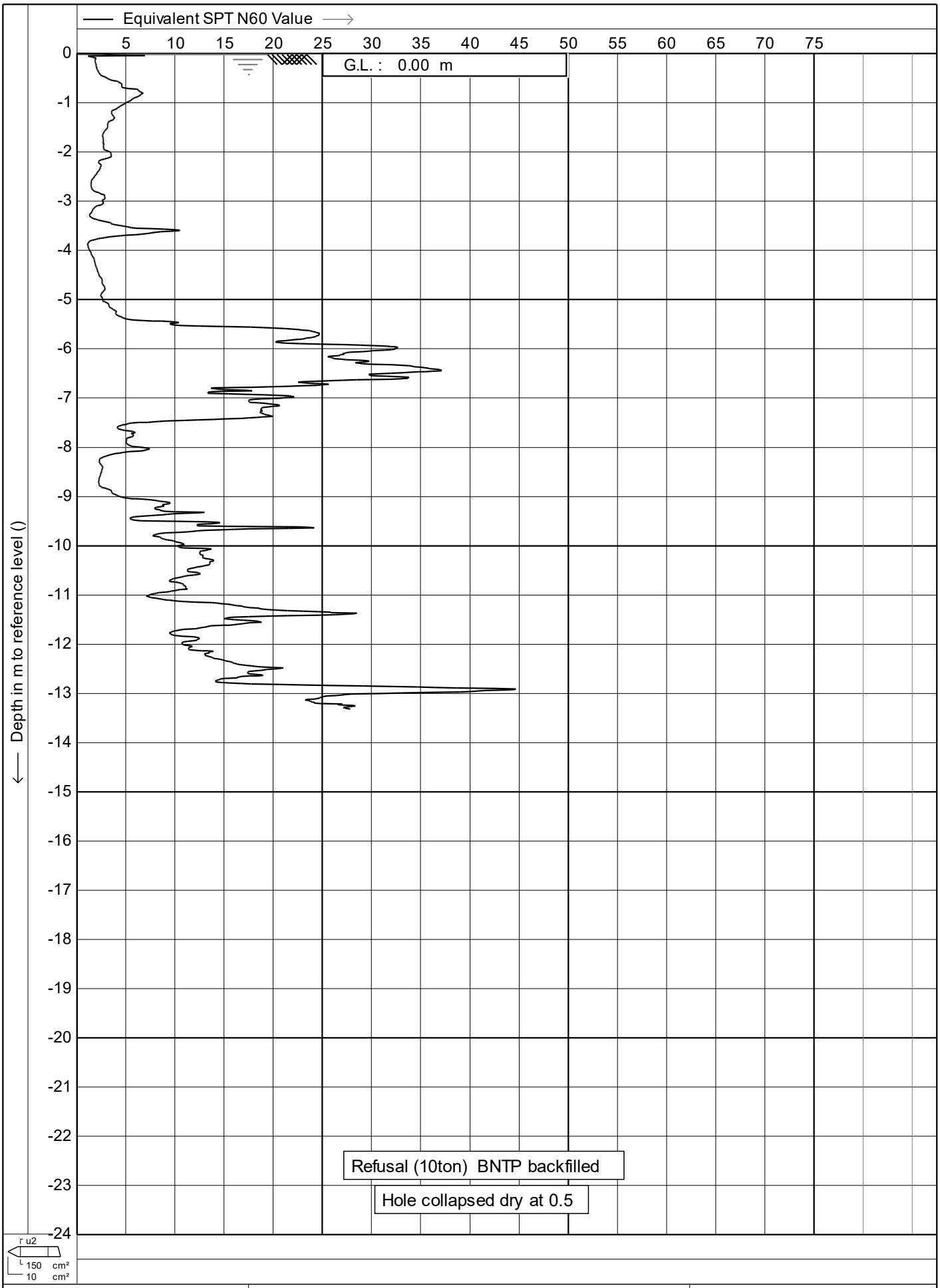
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **039** **11/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

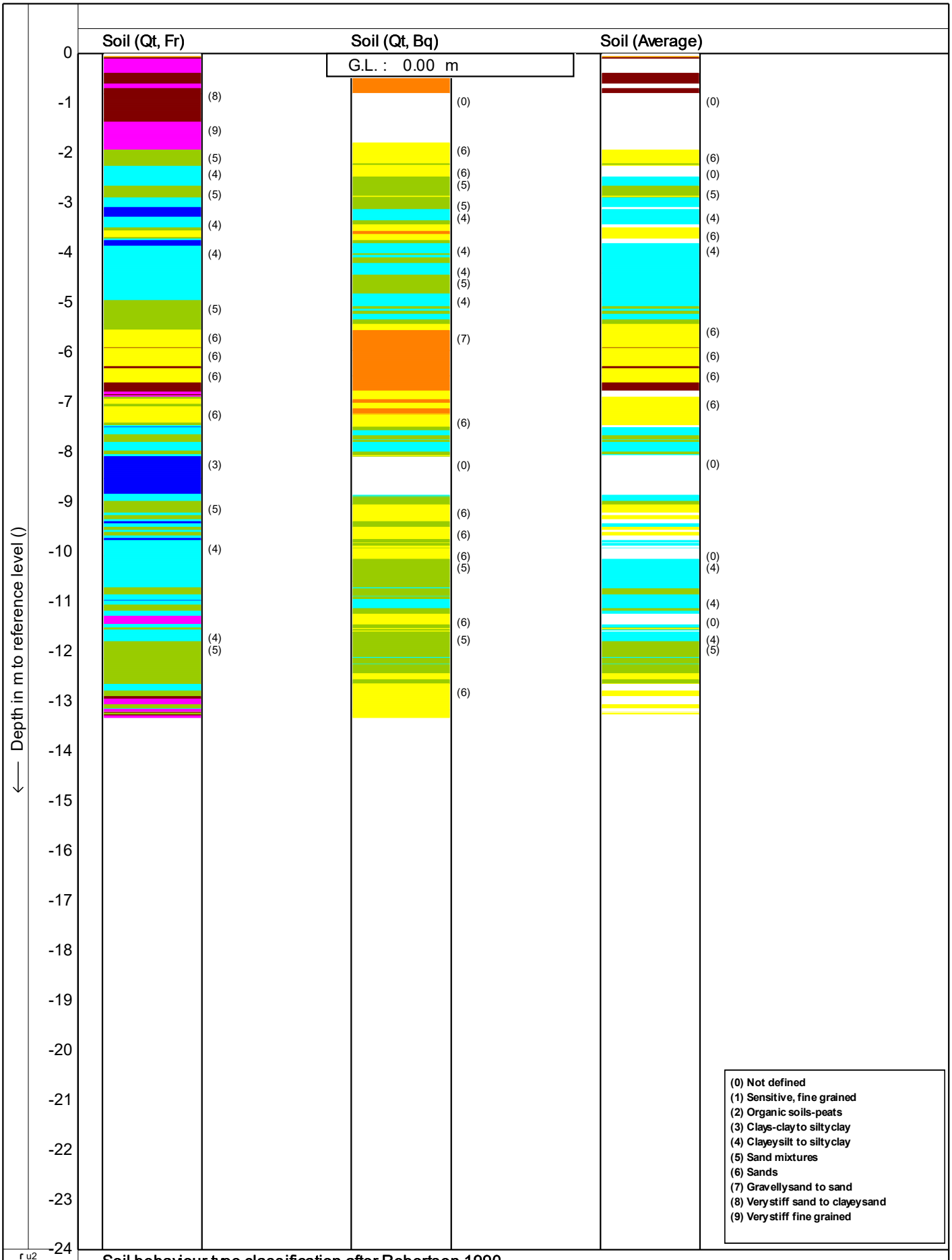
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **039**

12/14

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

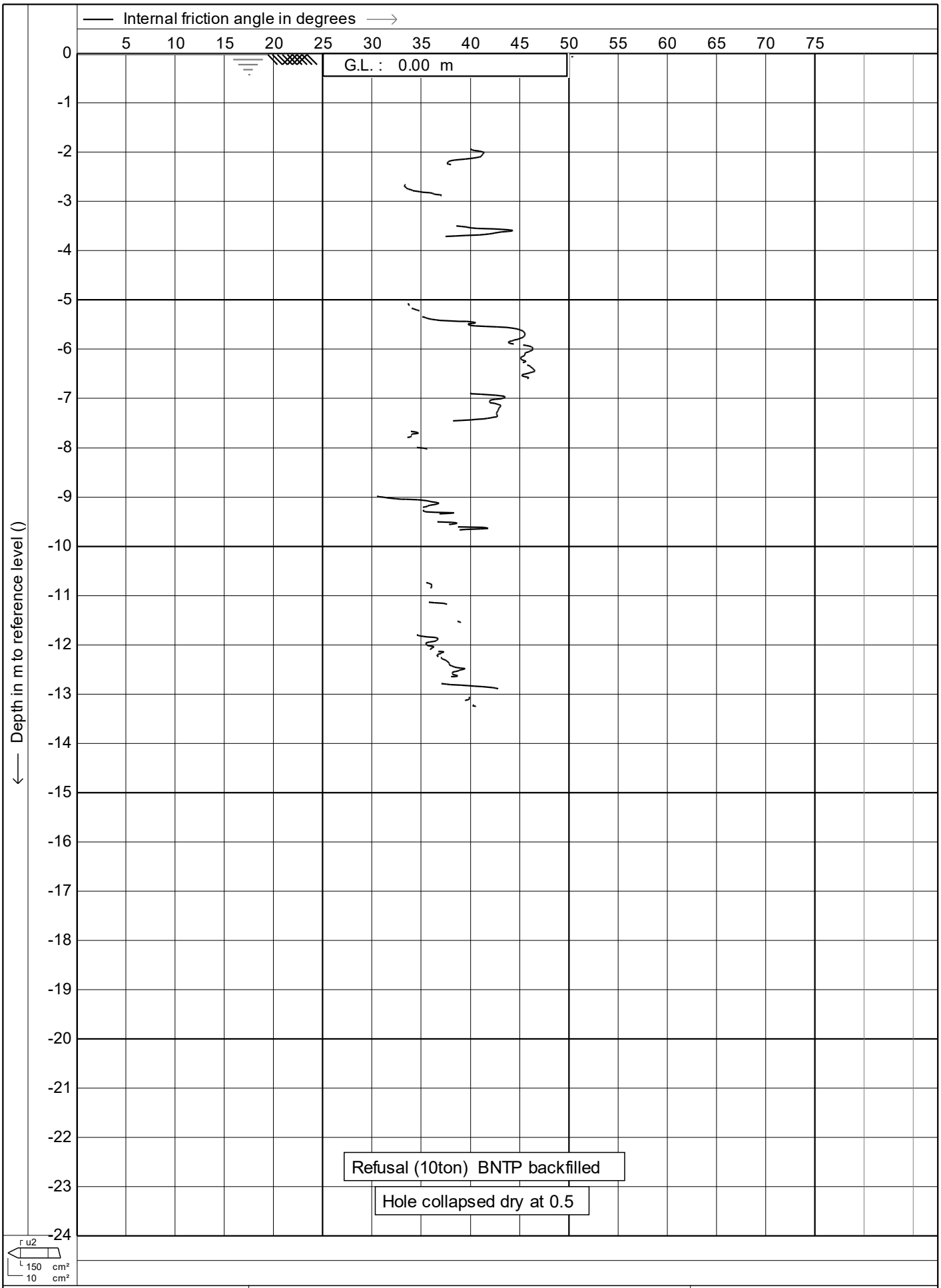
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **039**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

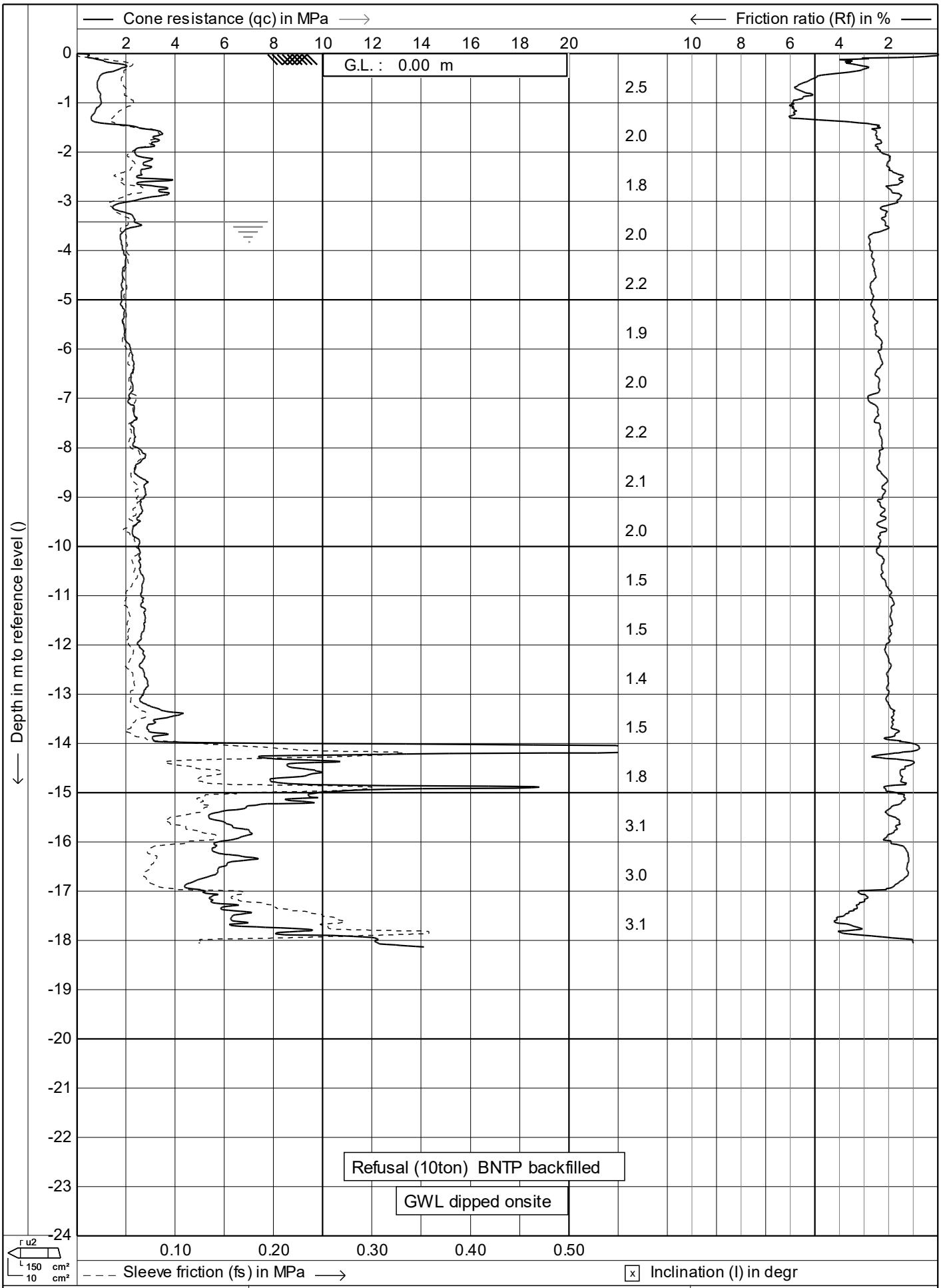
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **039** **14/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **26/11/2020**

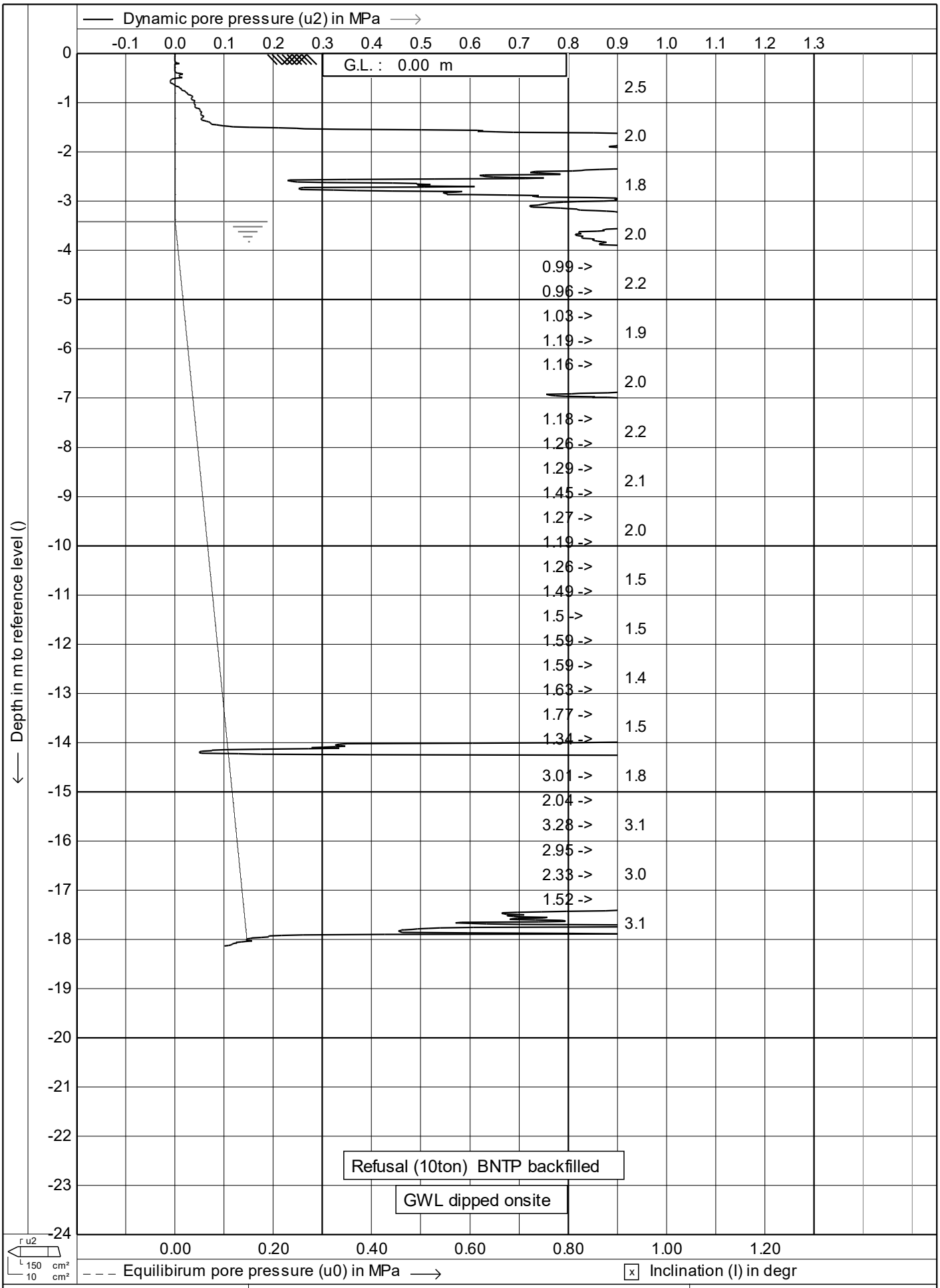
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **040**

1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

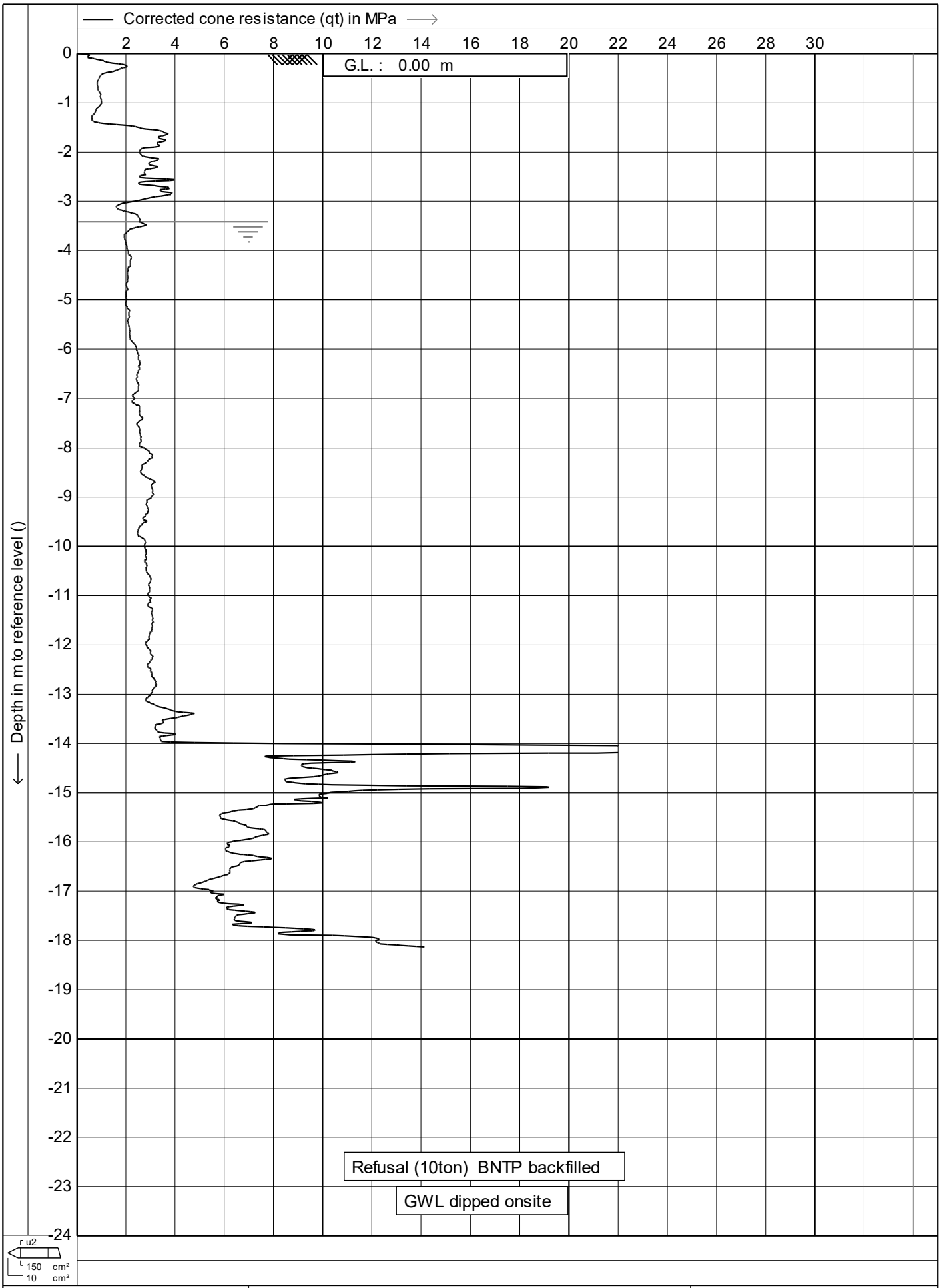
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **040**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

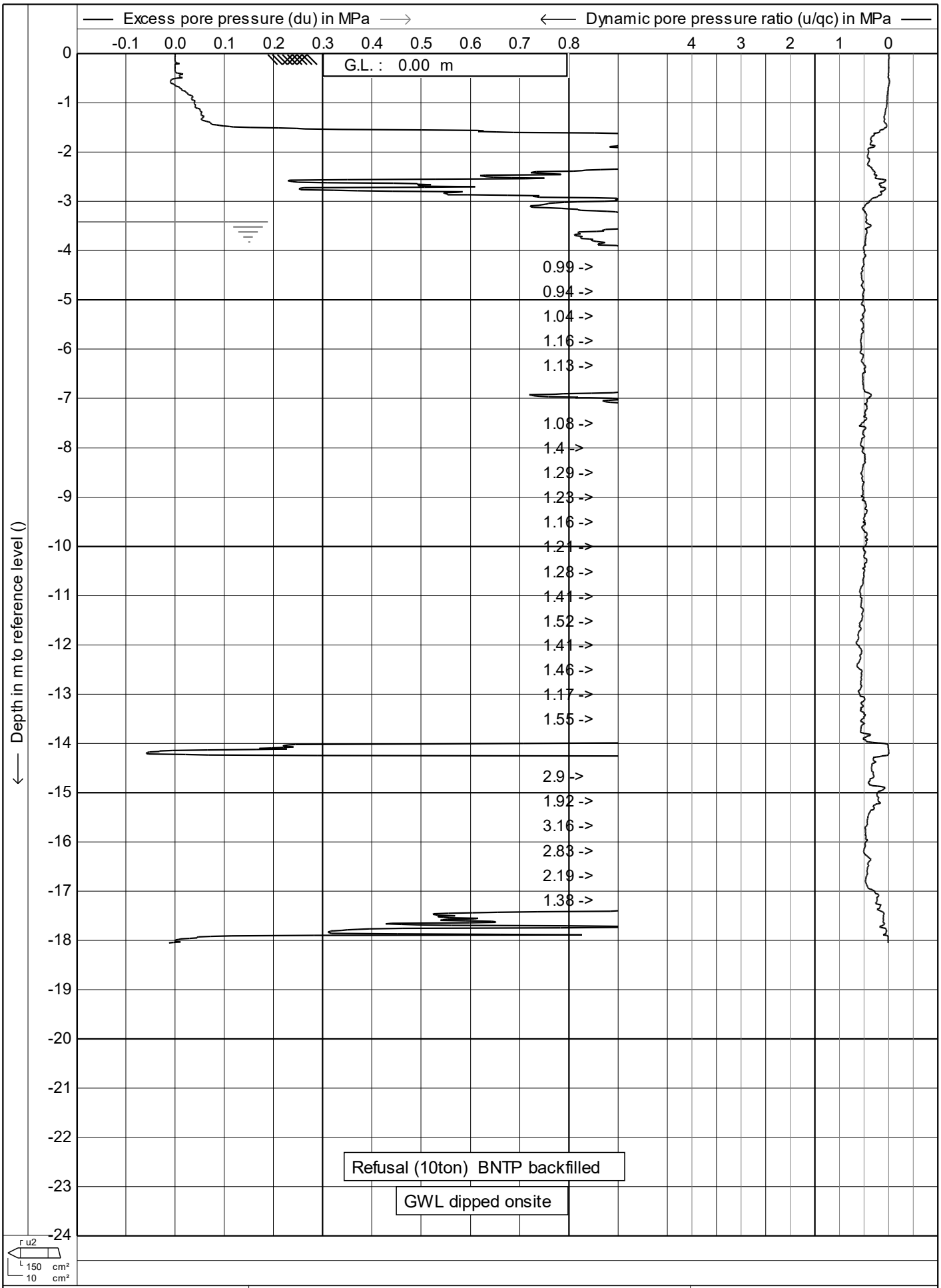
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Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **040**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

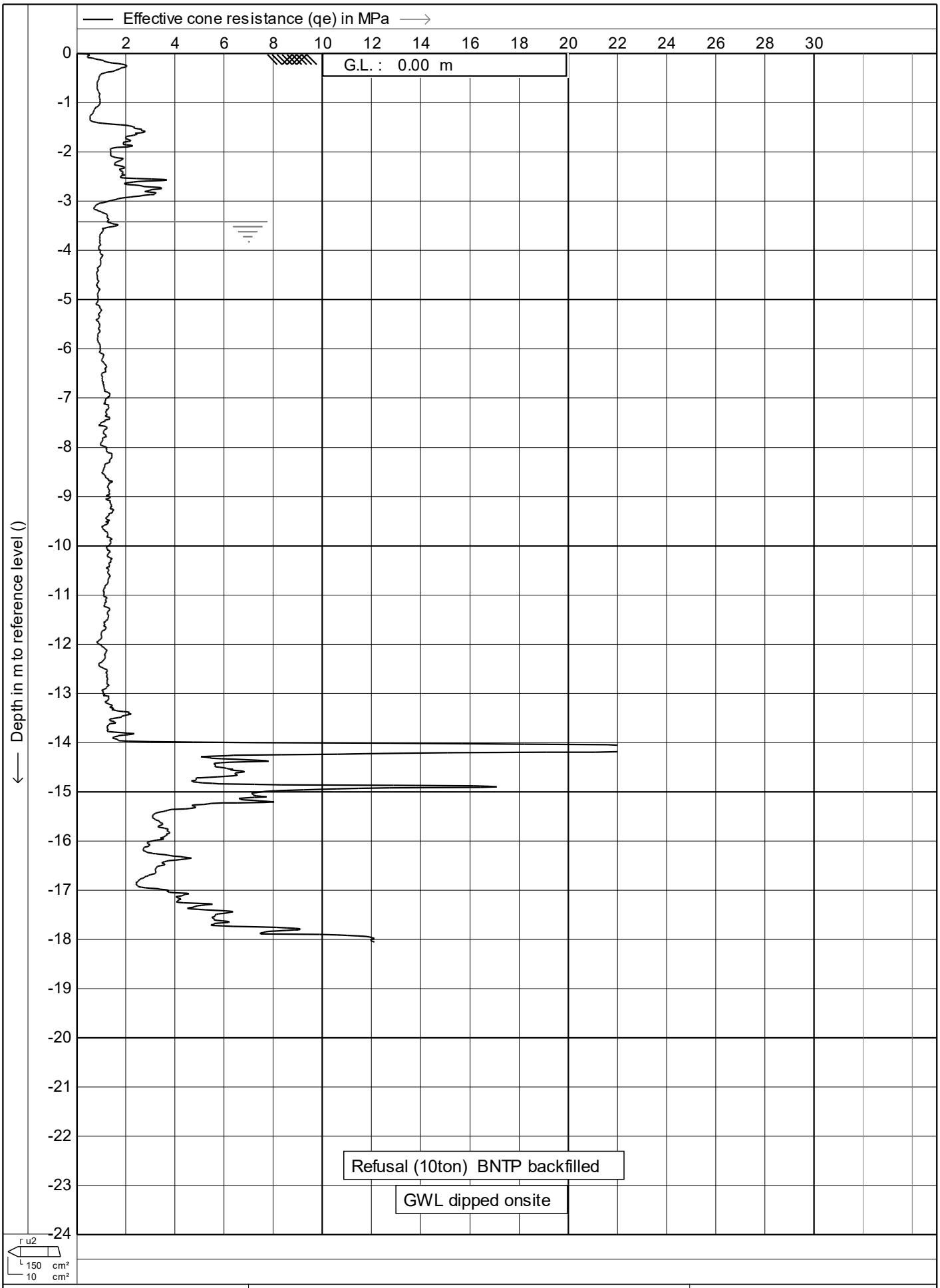
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **040** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

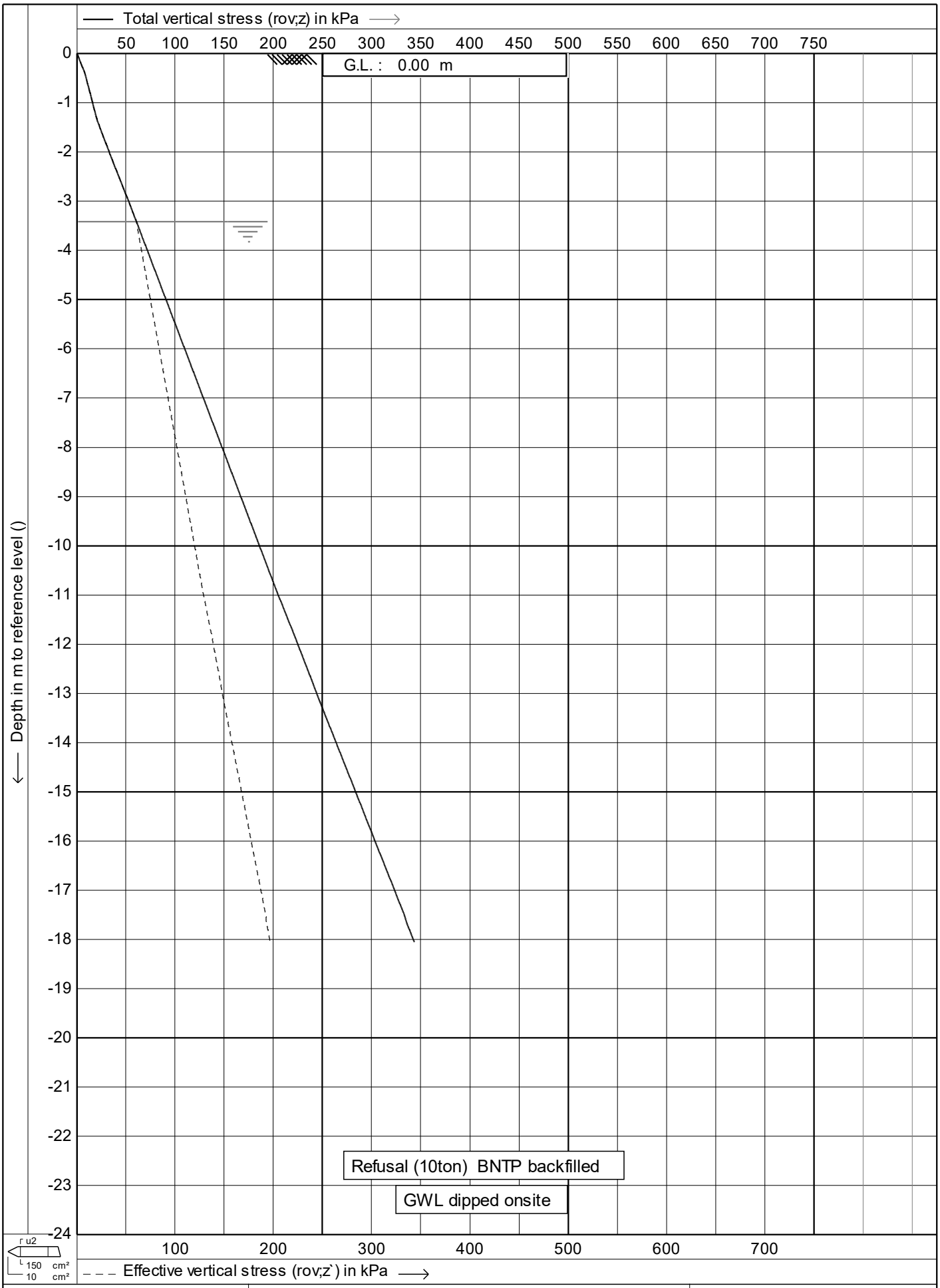
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Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

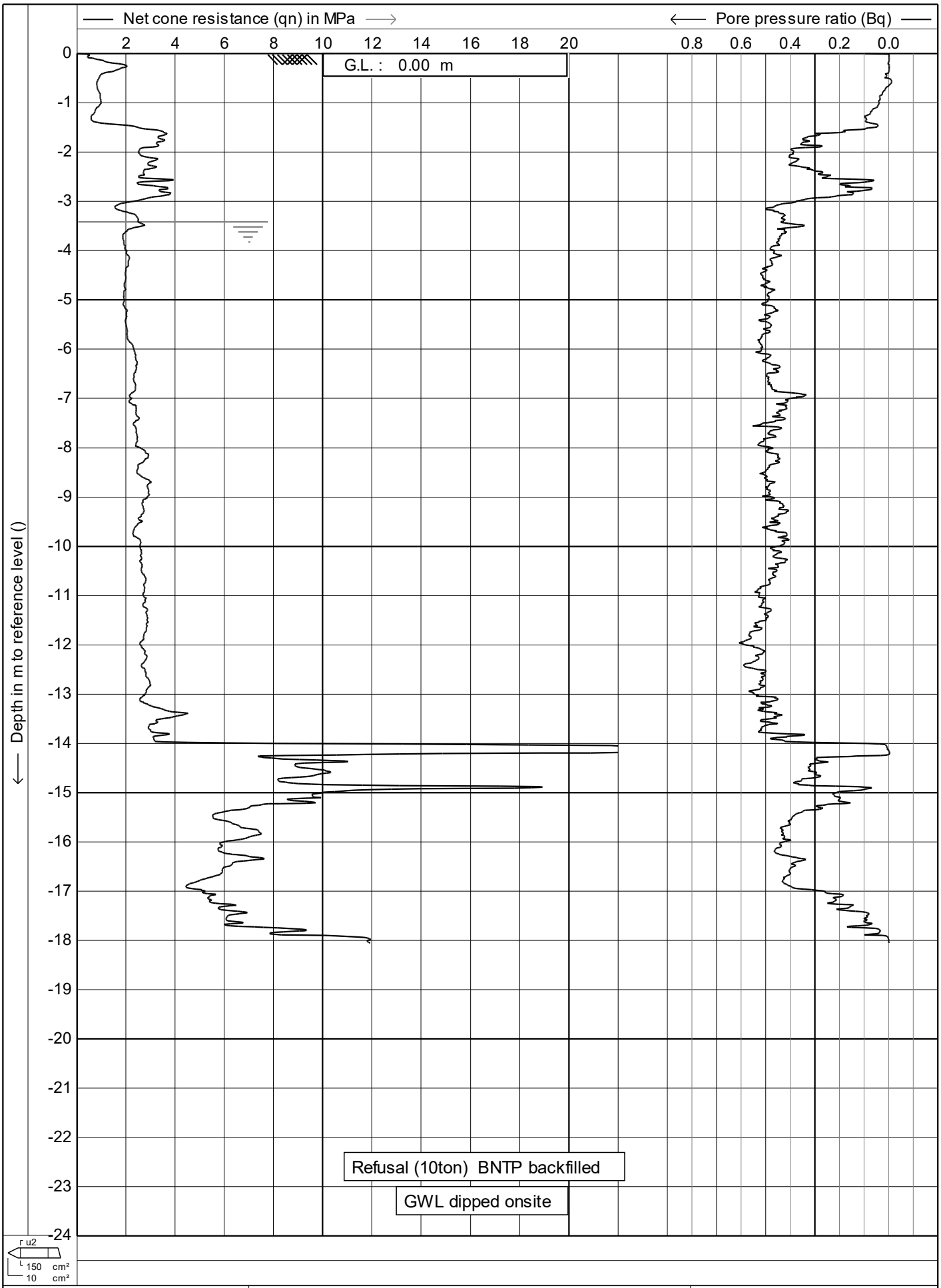
Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **040**

1.48



PERRY GEOTECH	Test according A.S.T.M Standard D 5778-12	Date : **26/11/2020**
	Project : **Site Investigations**	Cone no. : **C10CFIIP.C14426**
	Location: **Fitzgerald Rd - Drury**	Project no. : **05AU7**
	Position: **0, 0**	CPT no. : **040** **6/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

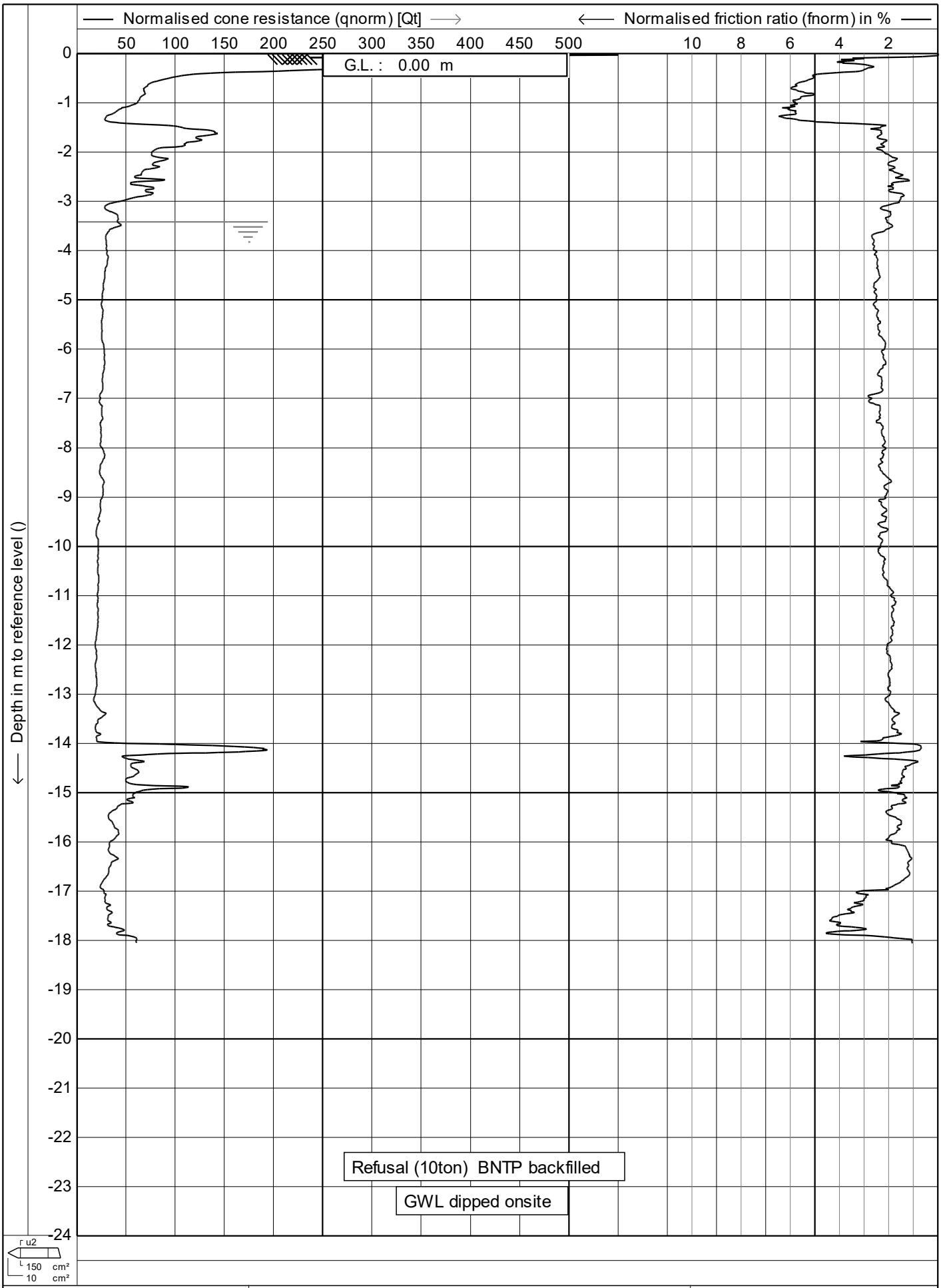
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **040**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

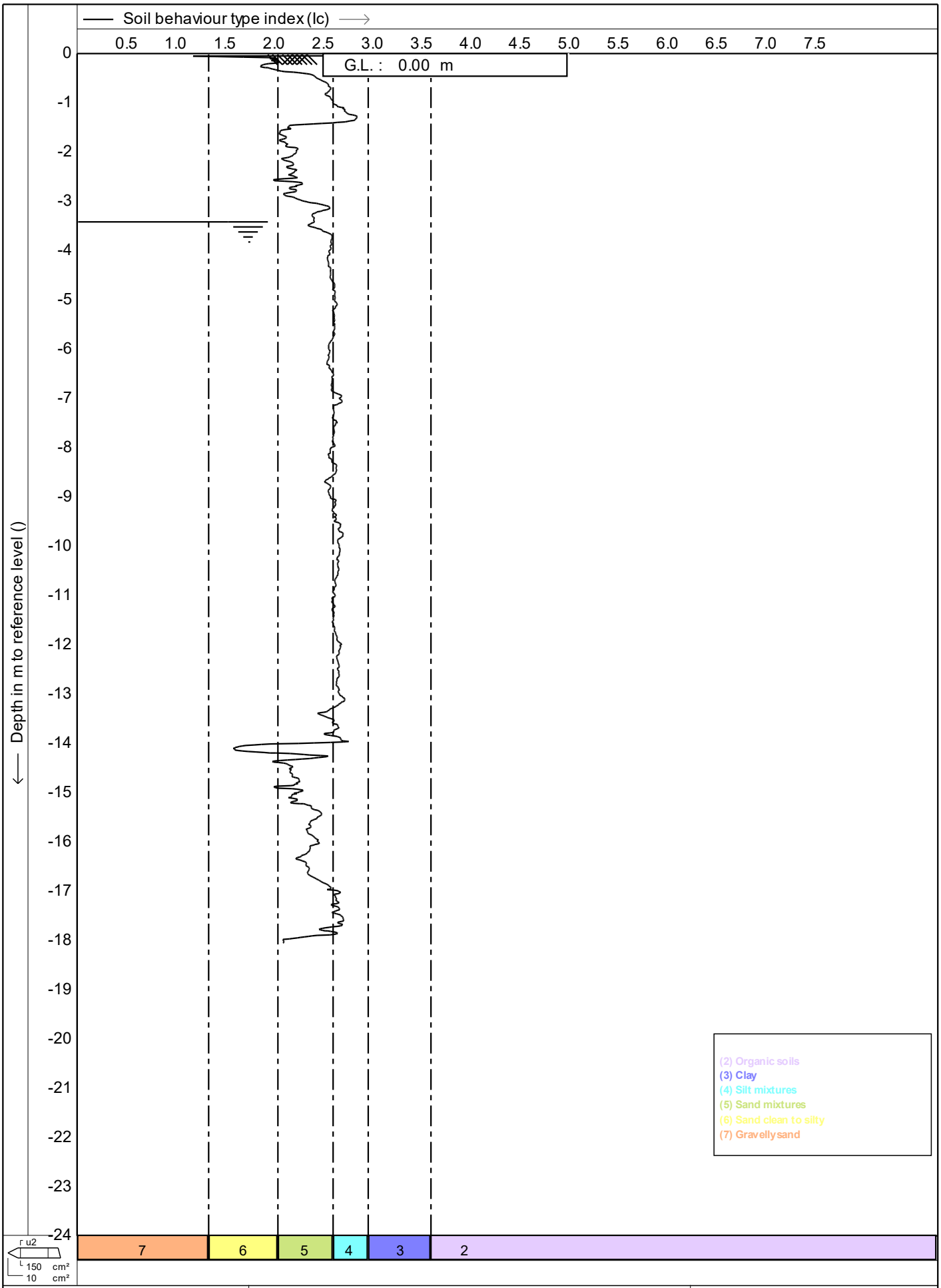
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **040**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

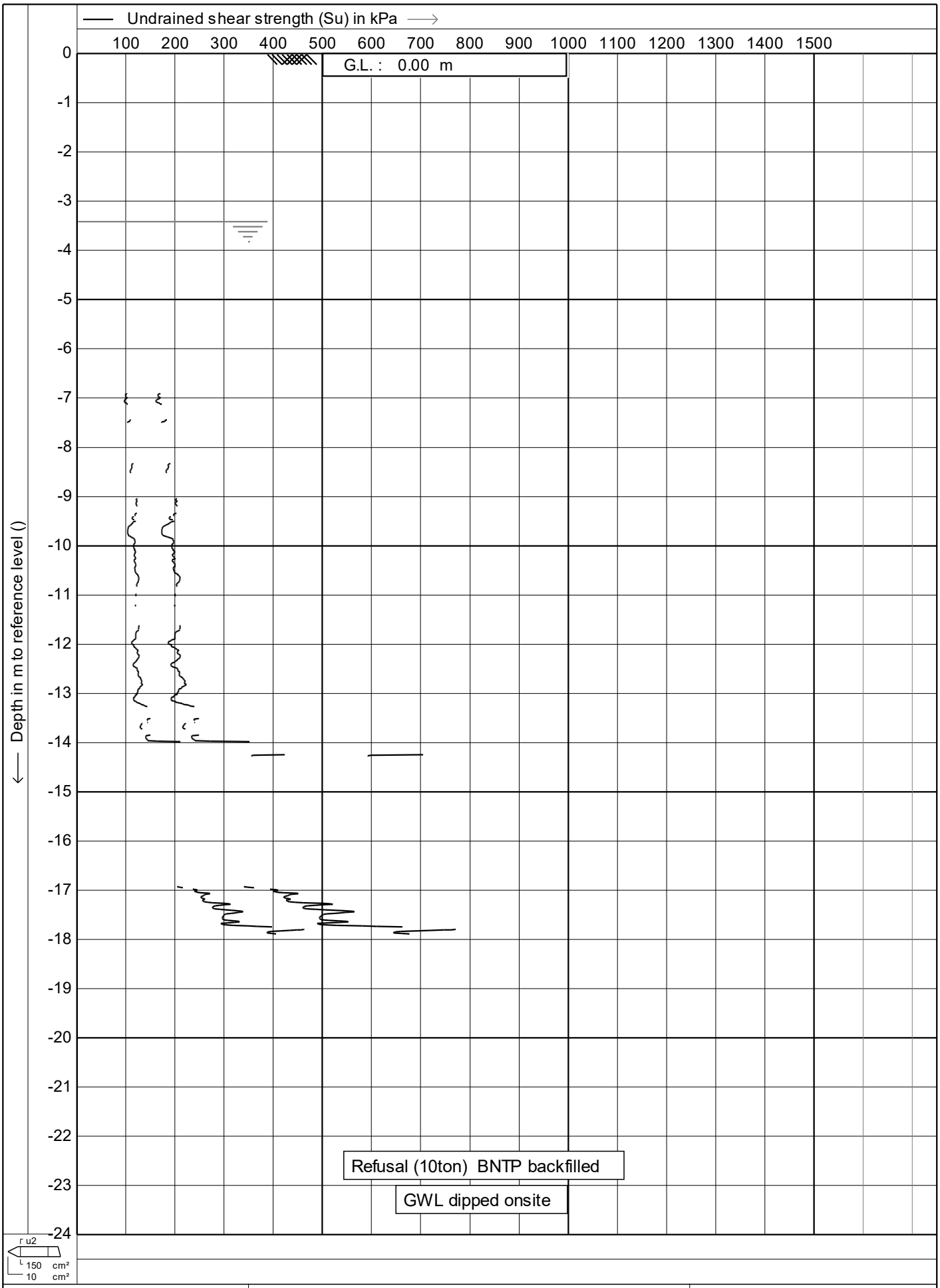
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **040** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

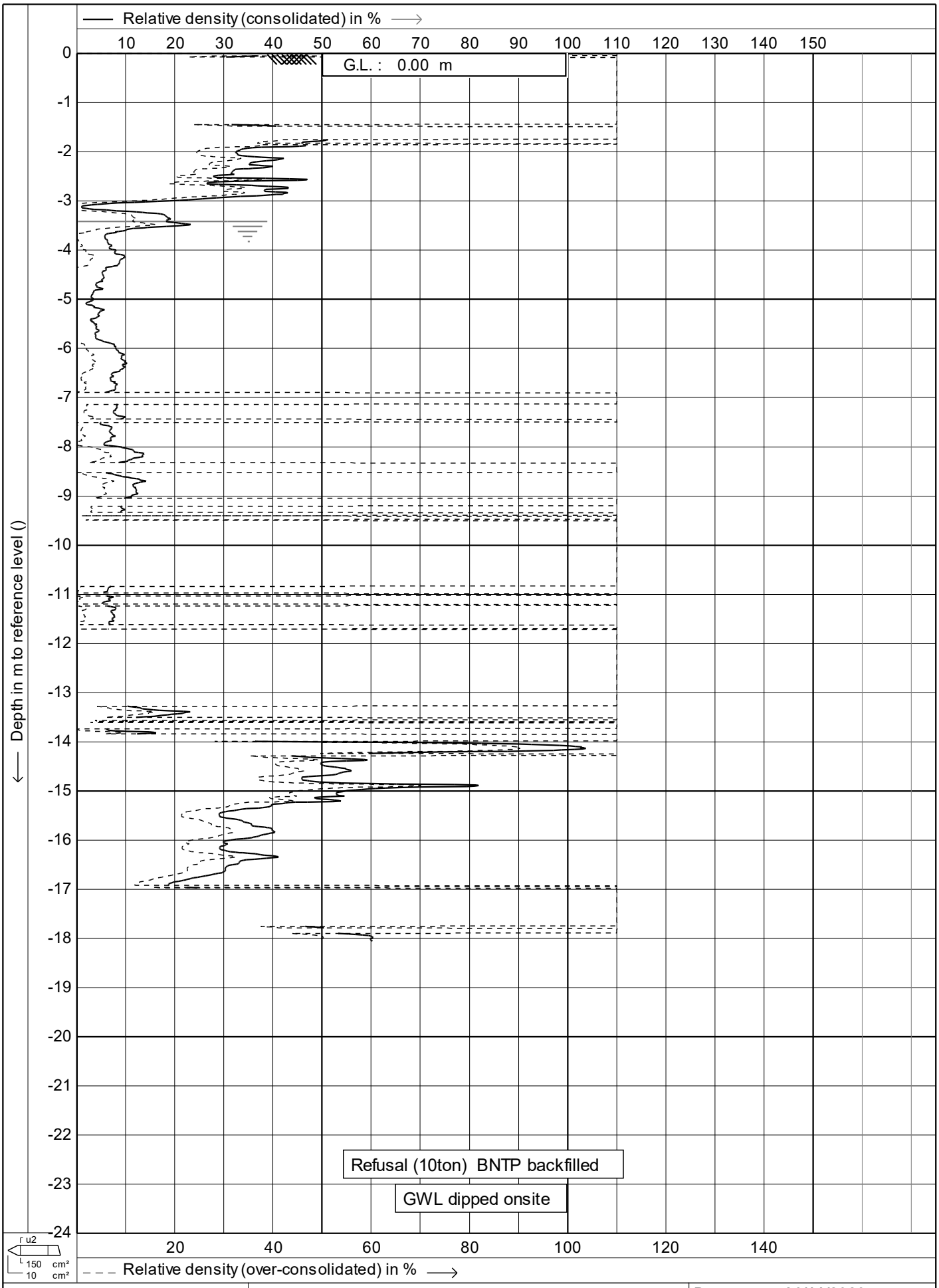
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Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **040**

10/14

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

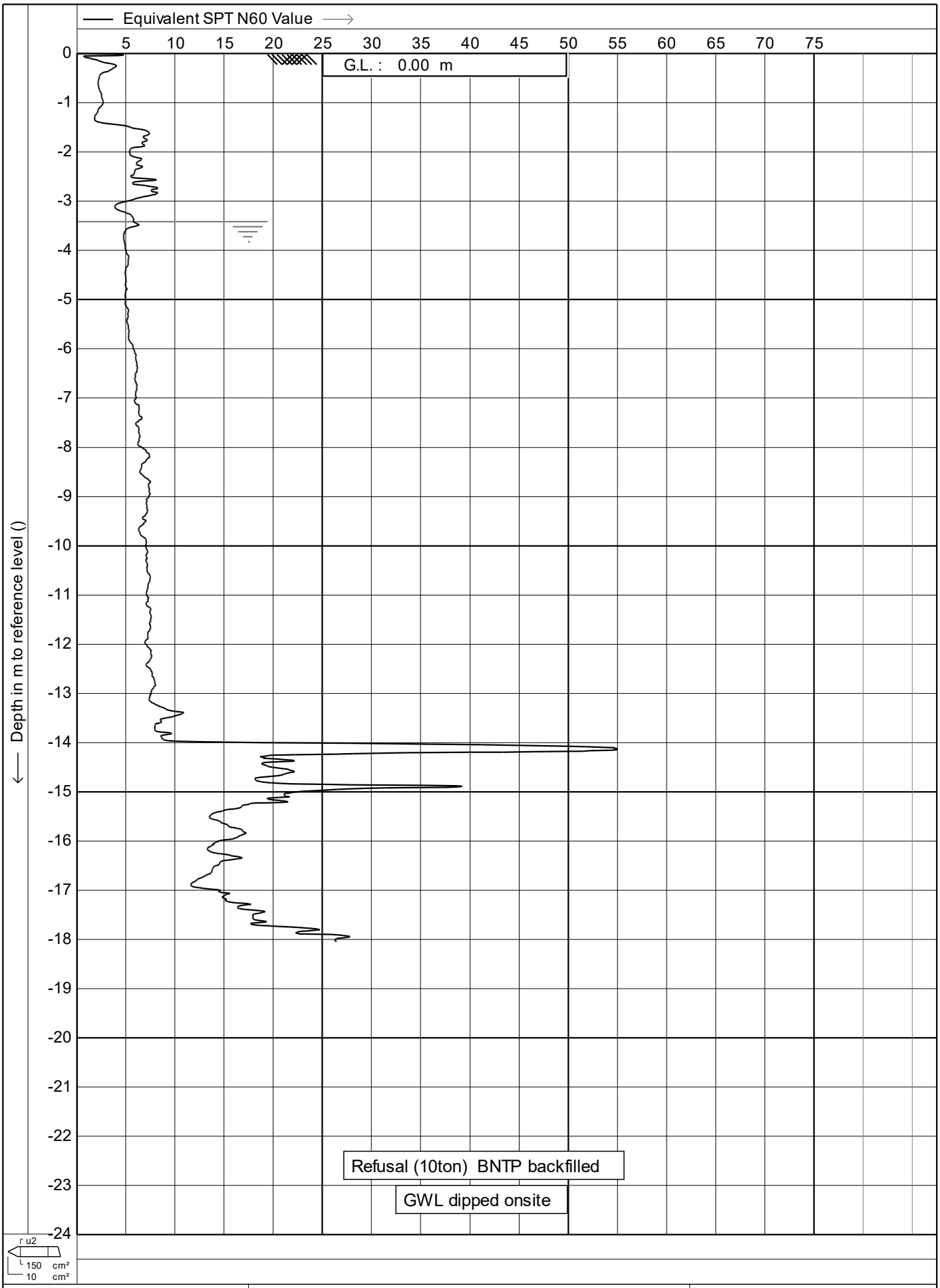
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Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **040**

11/14

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

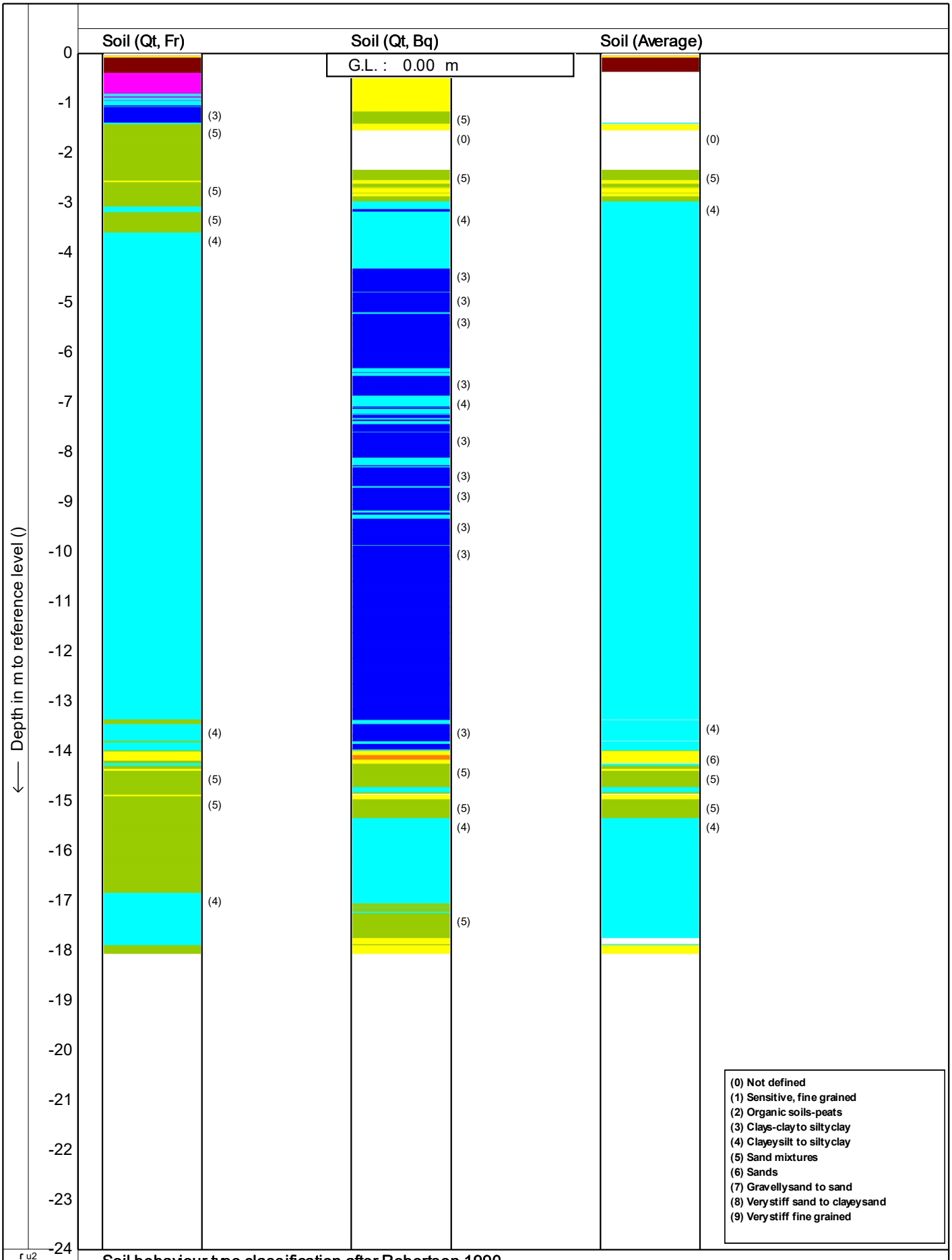
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **040**

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1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

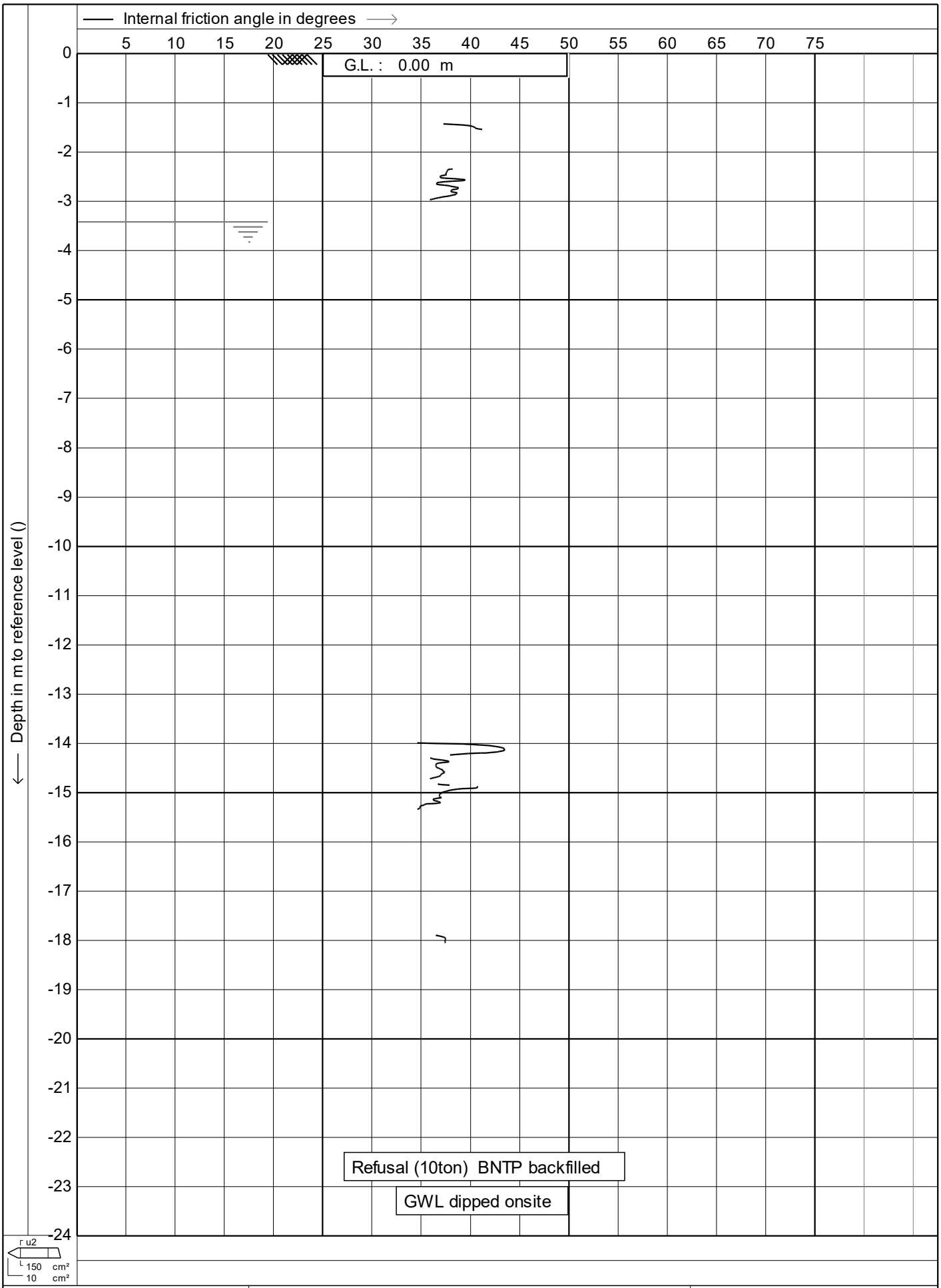
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **040**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

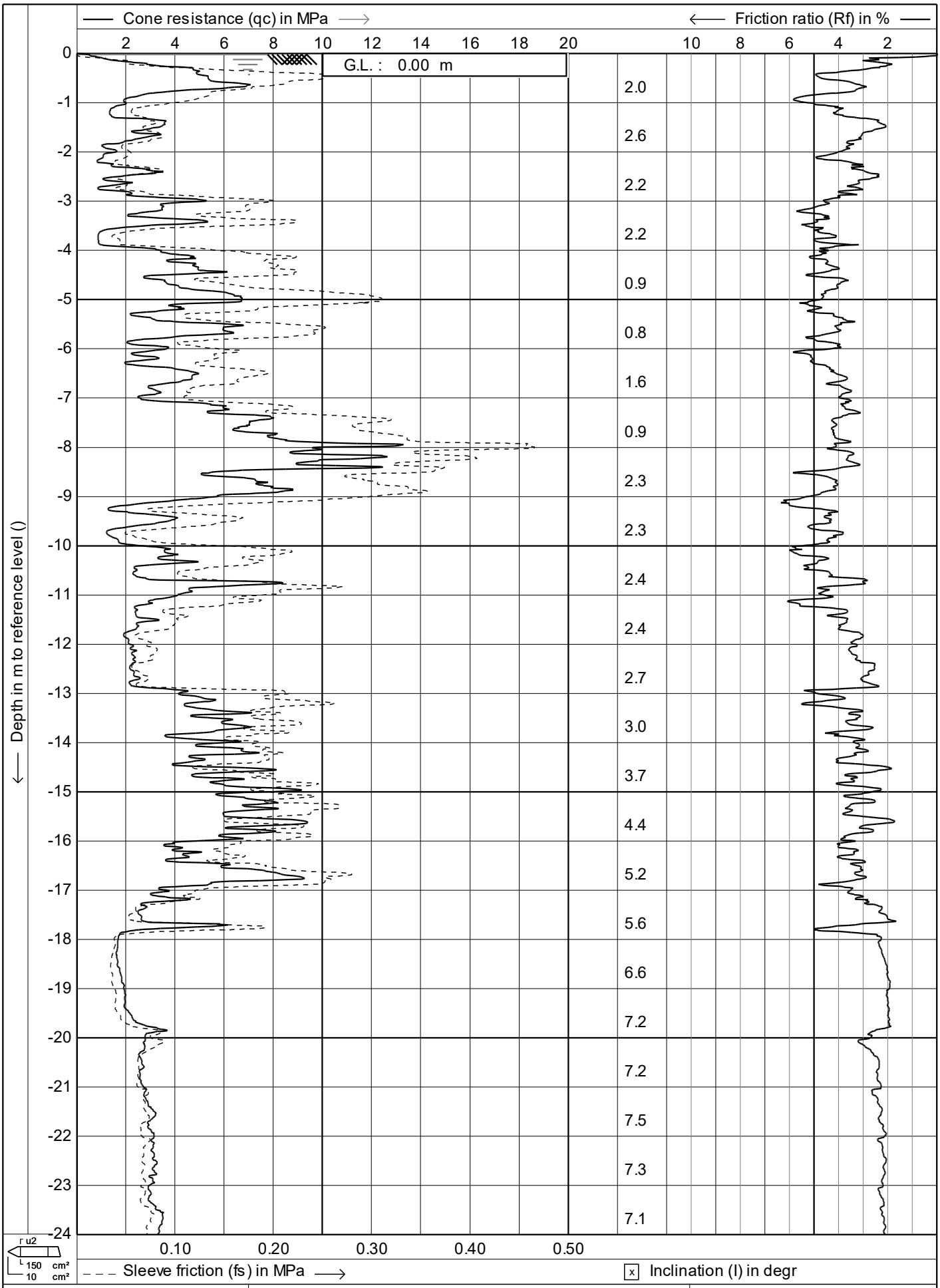
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

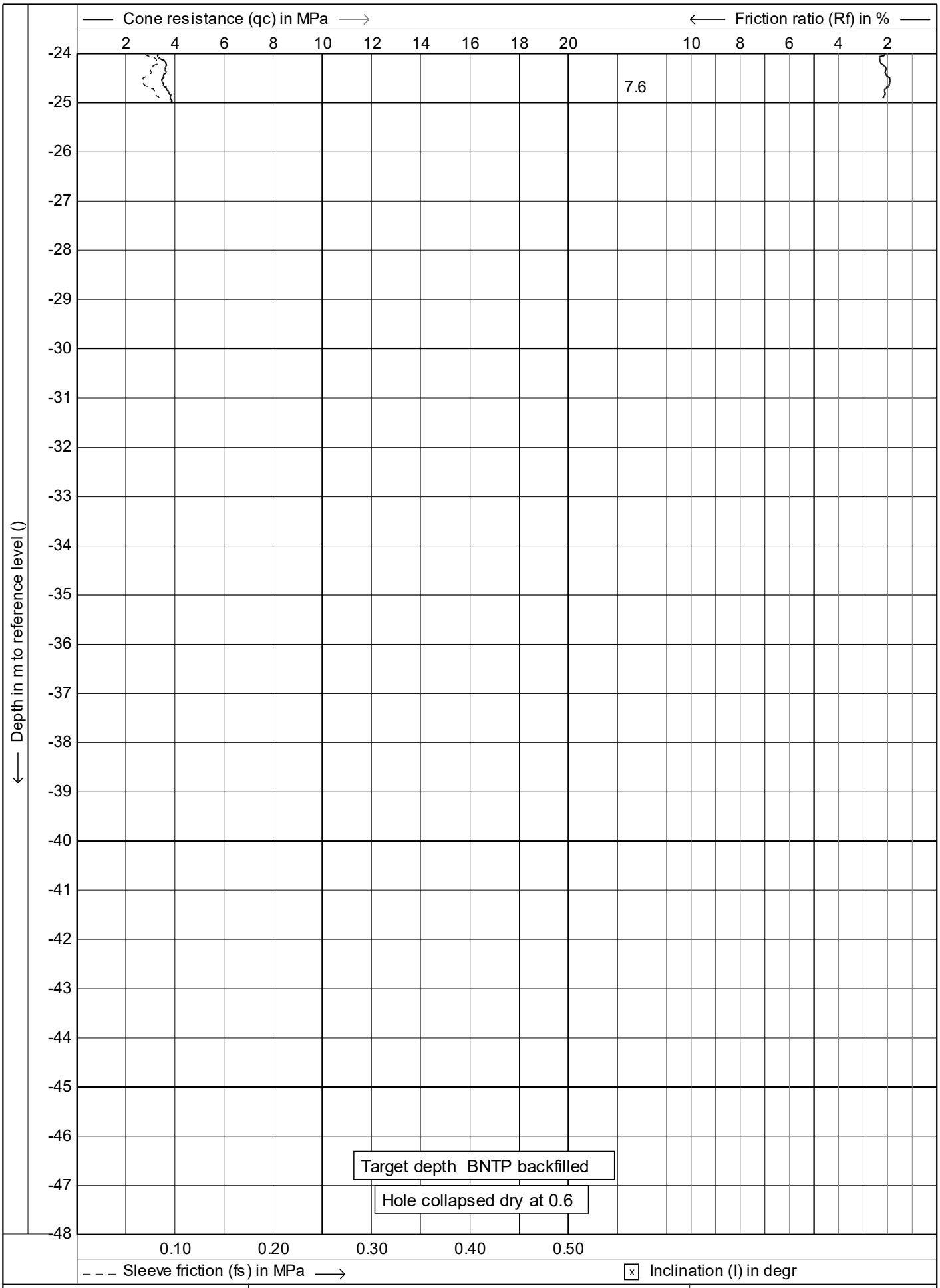
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **041**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

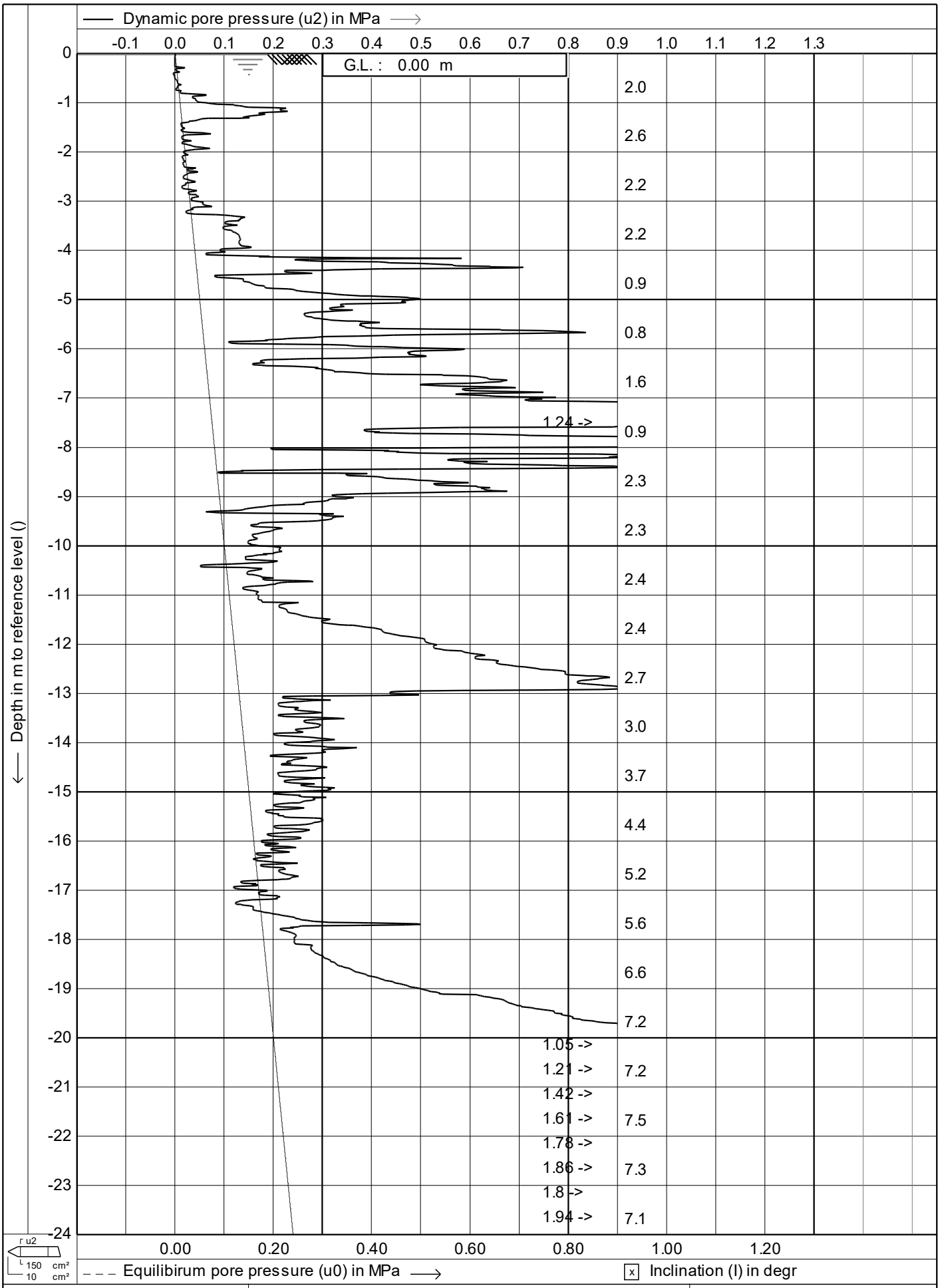
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **041**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

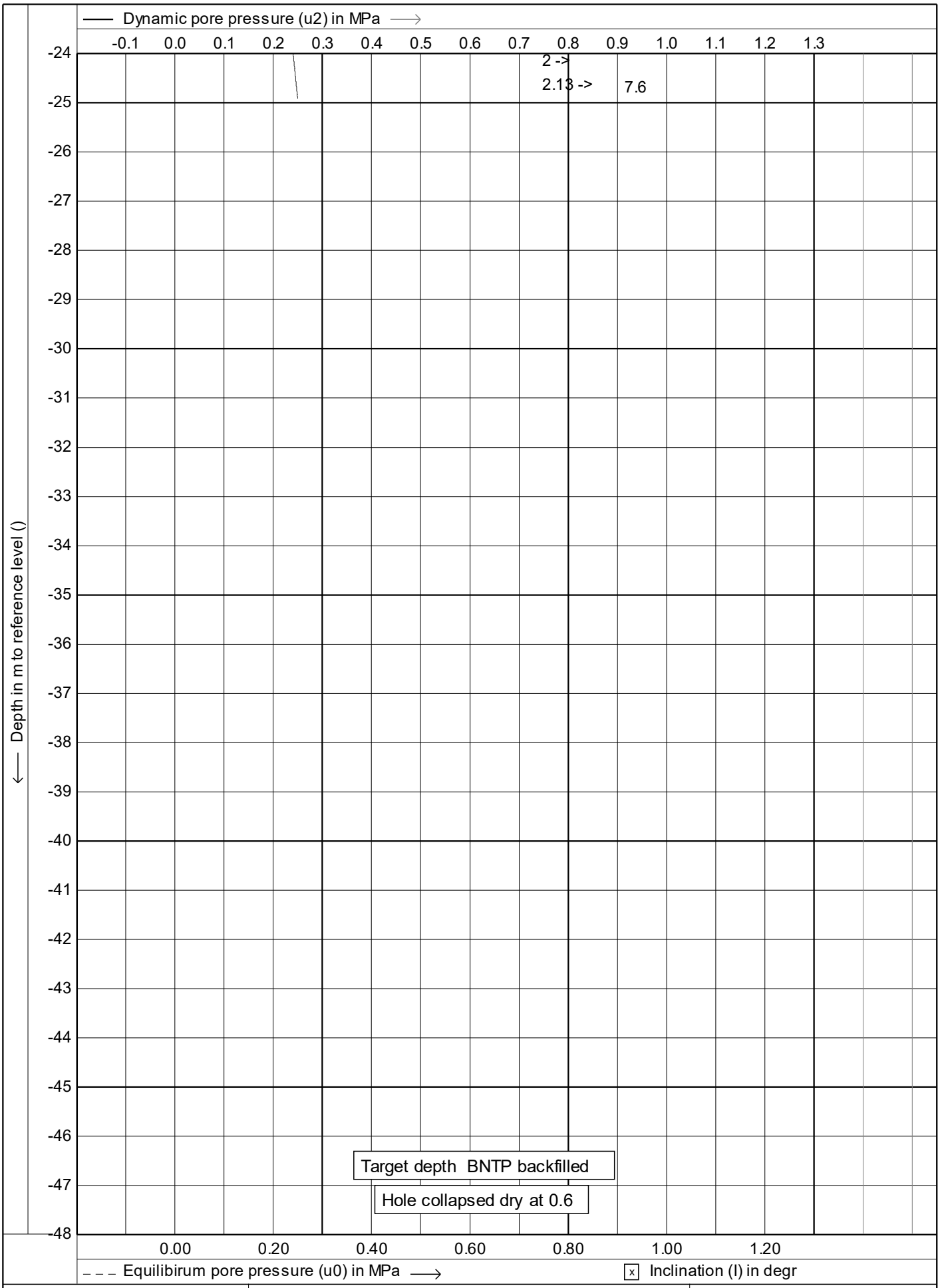
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **041**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

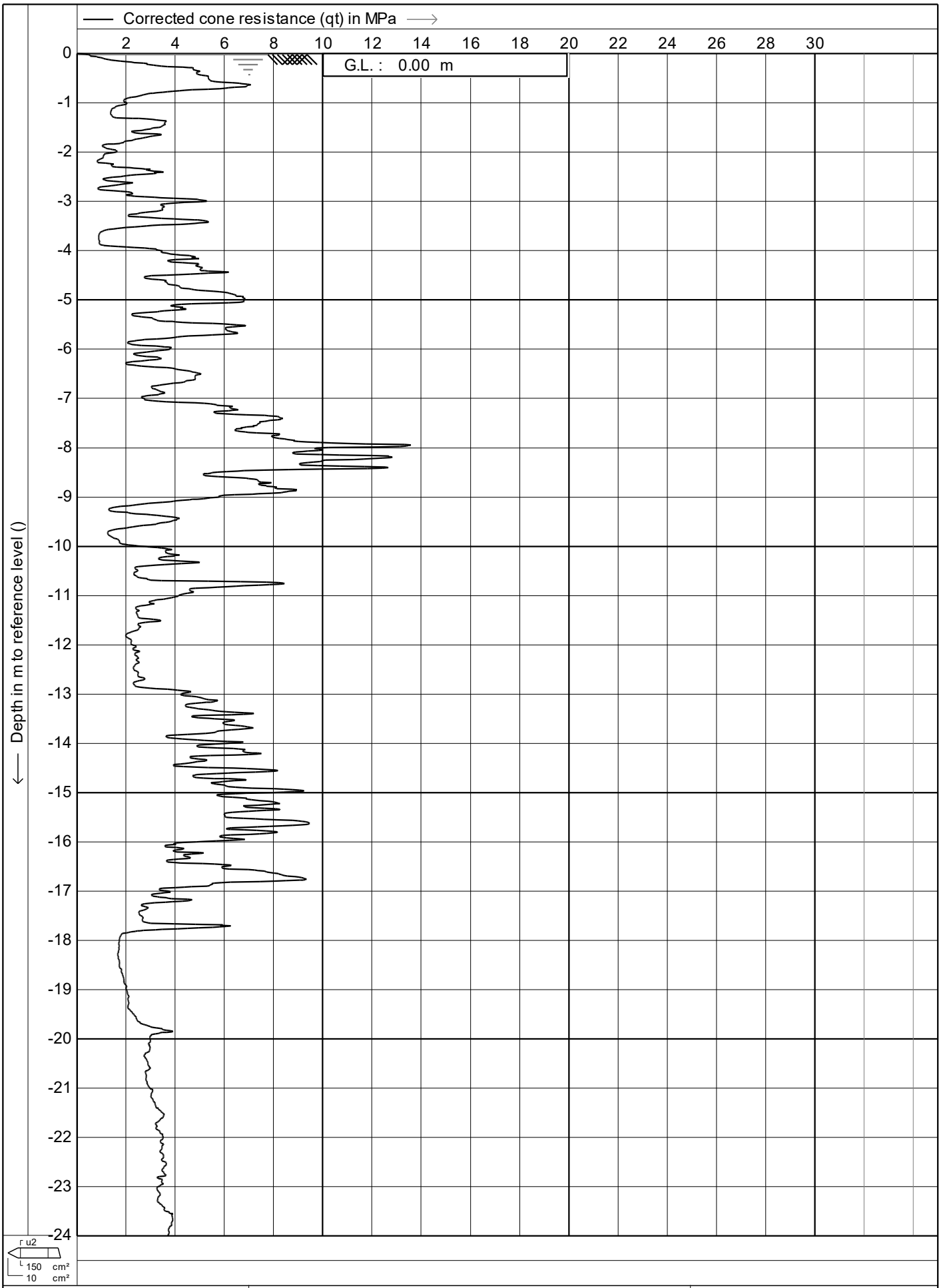
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **041**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

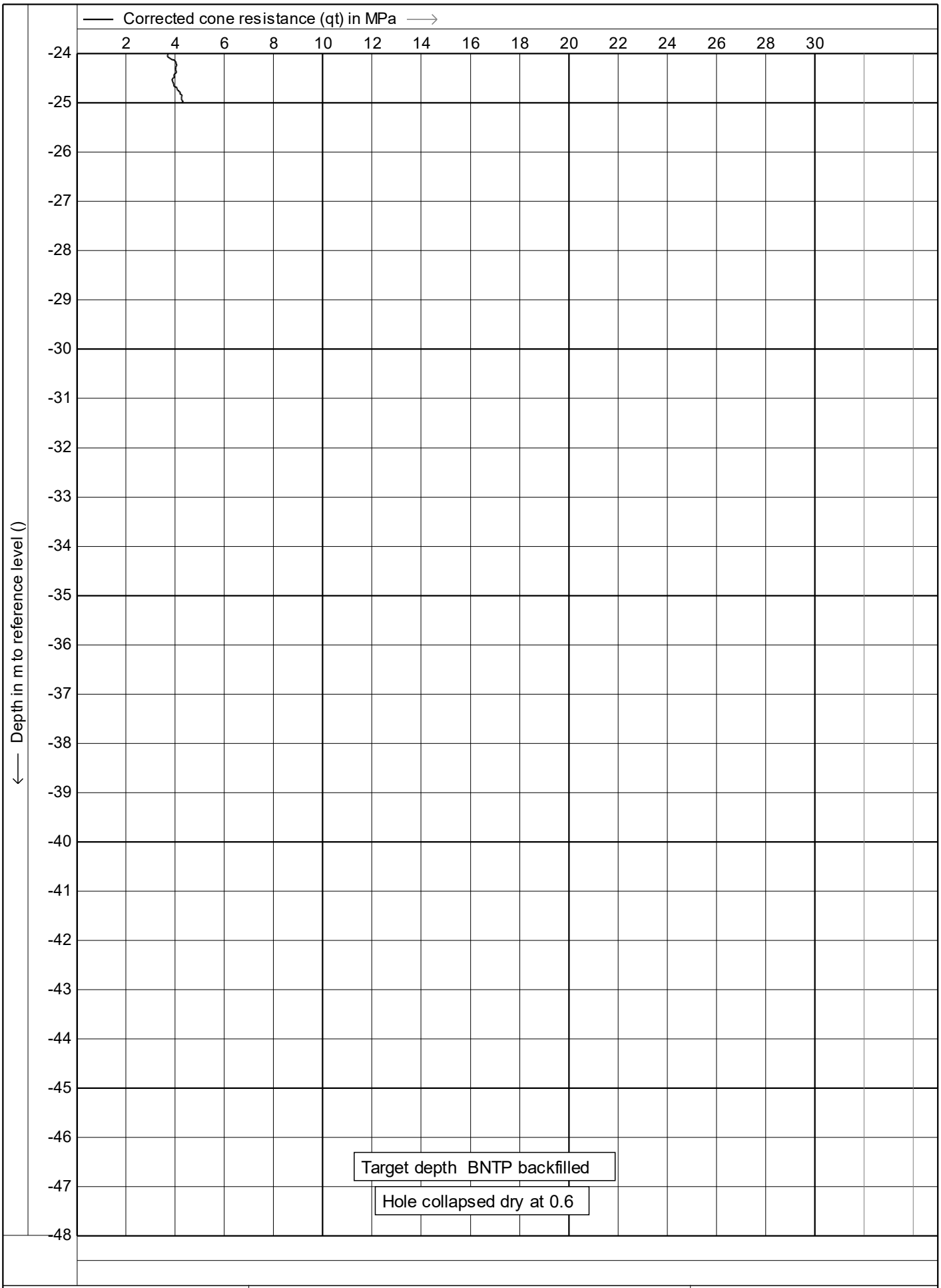
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

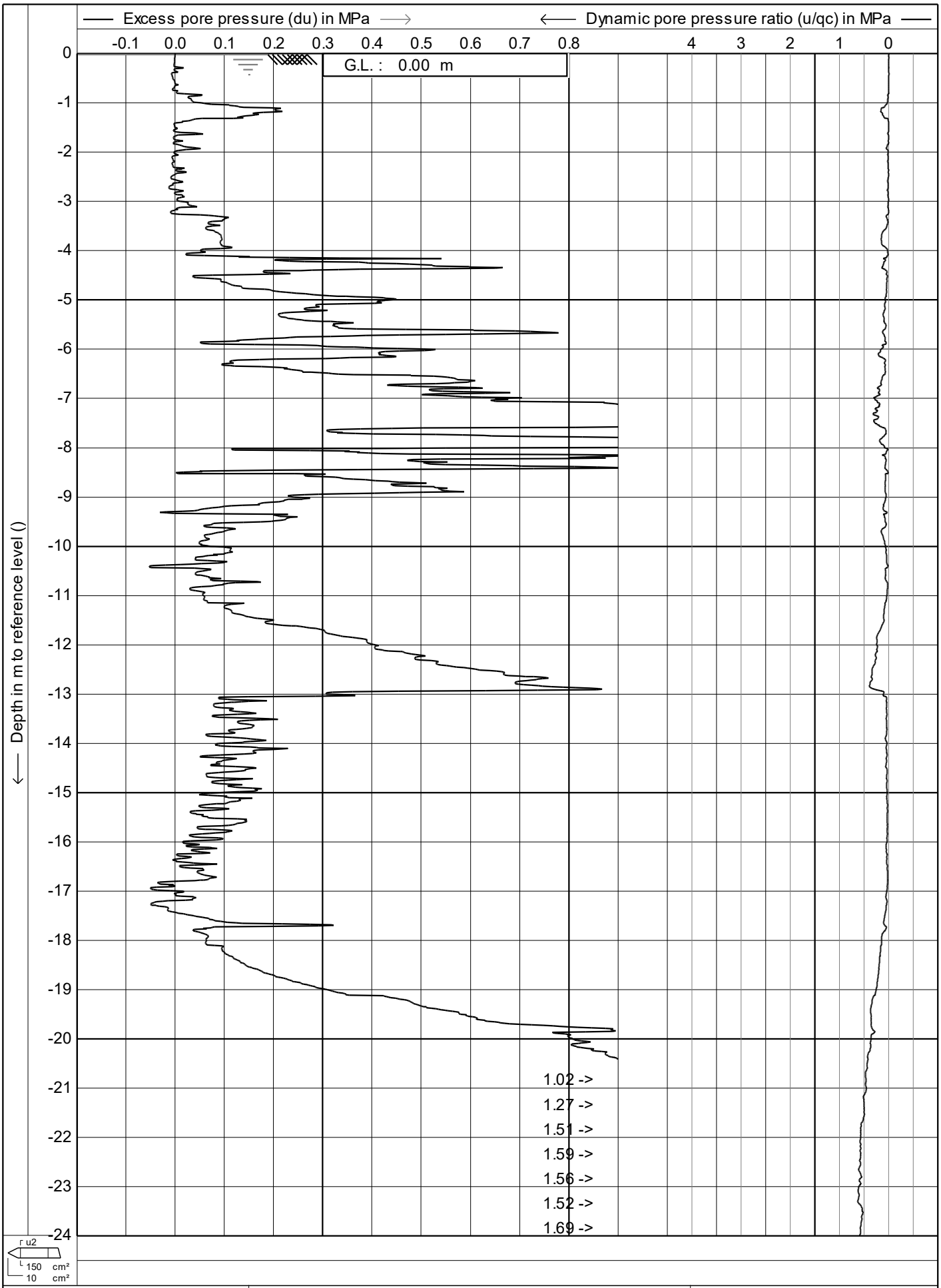
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

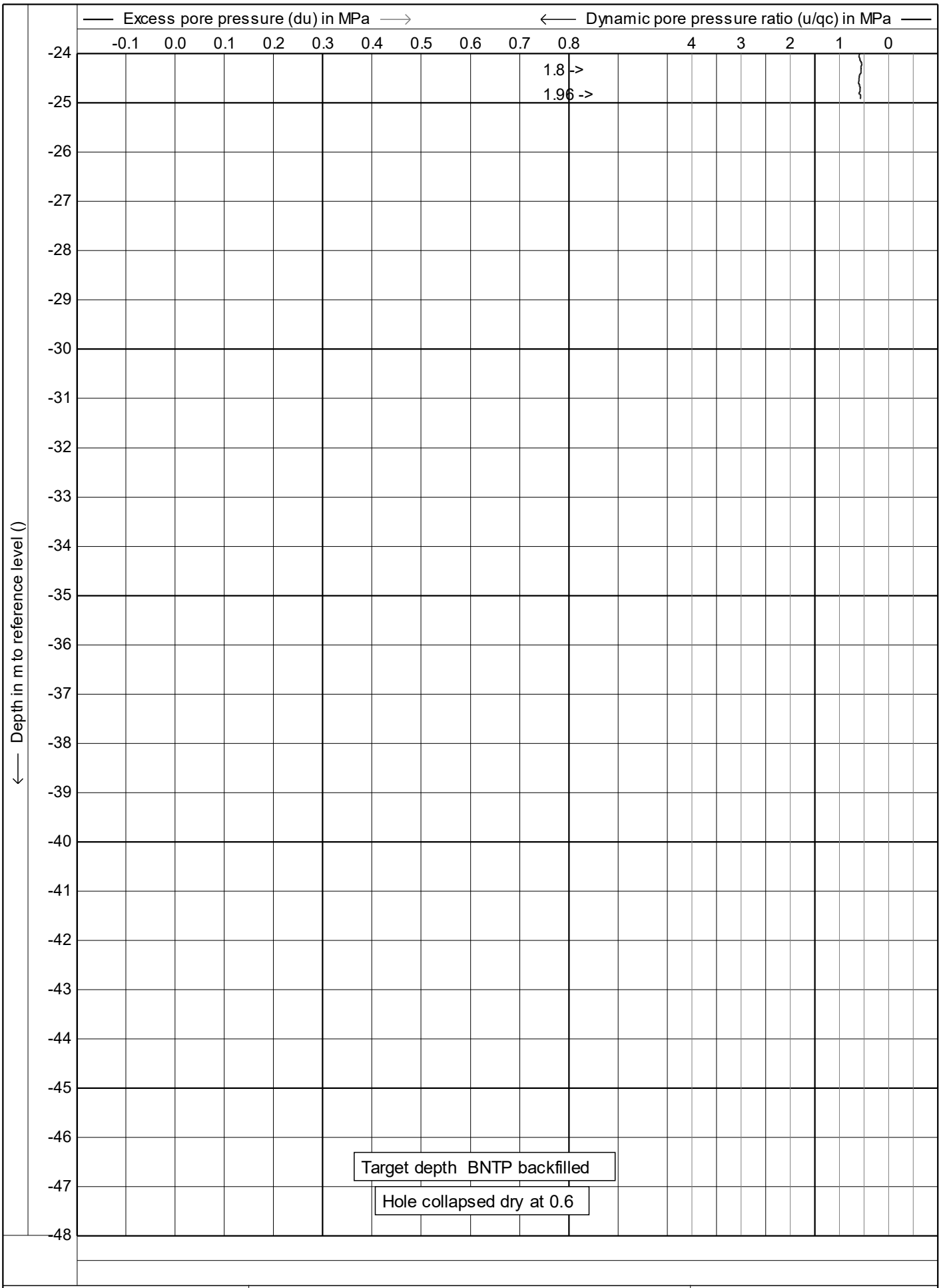
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

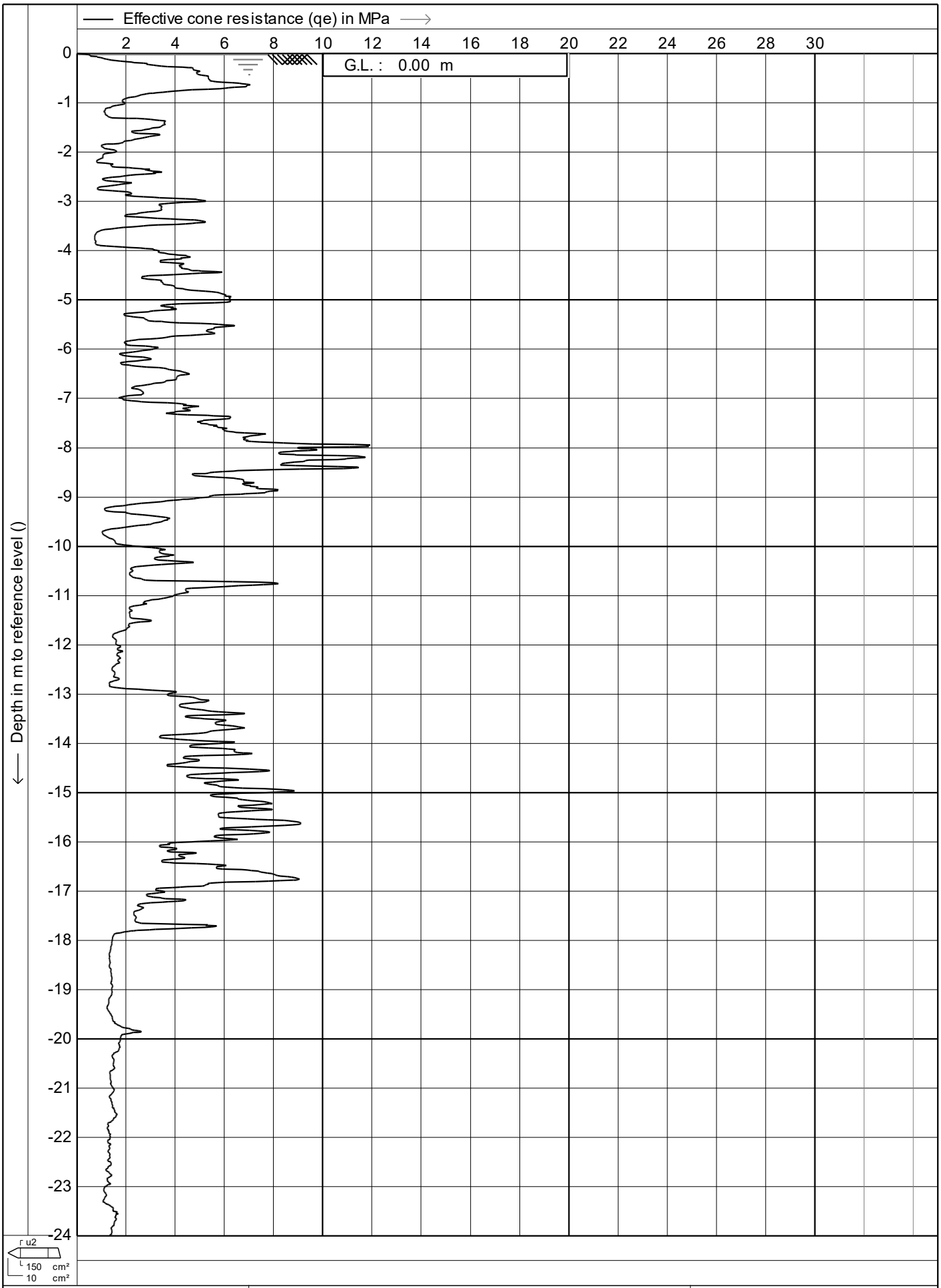
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **041**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

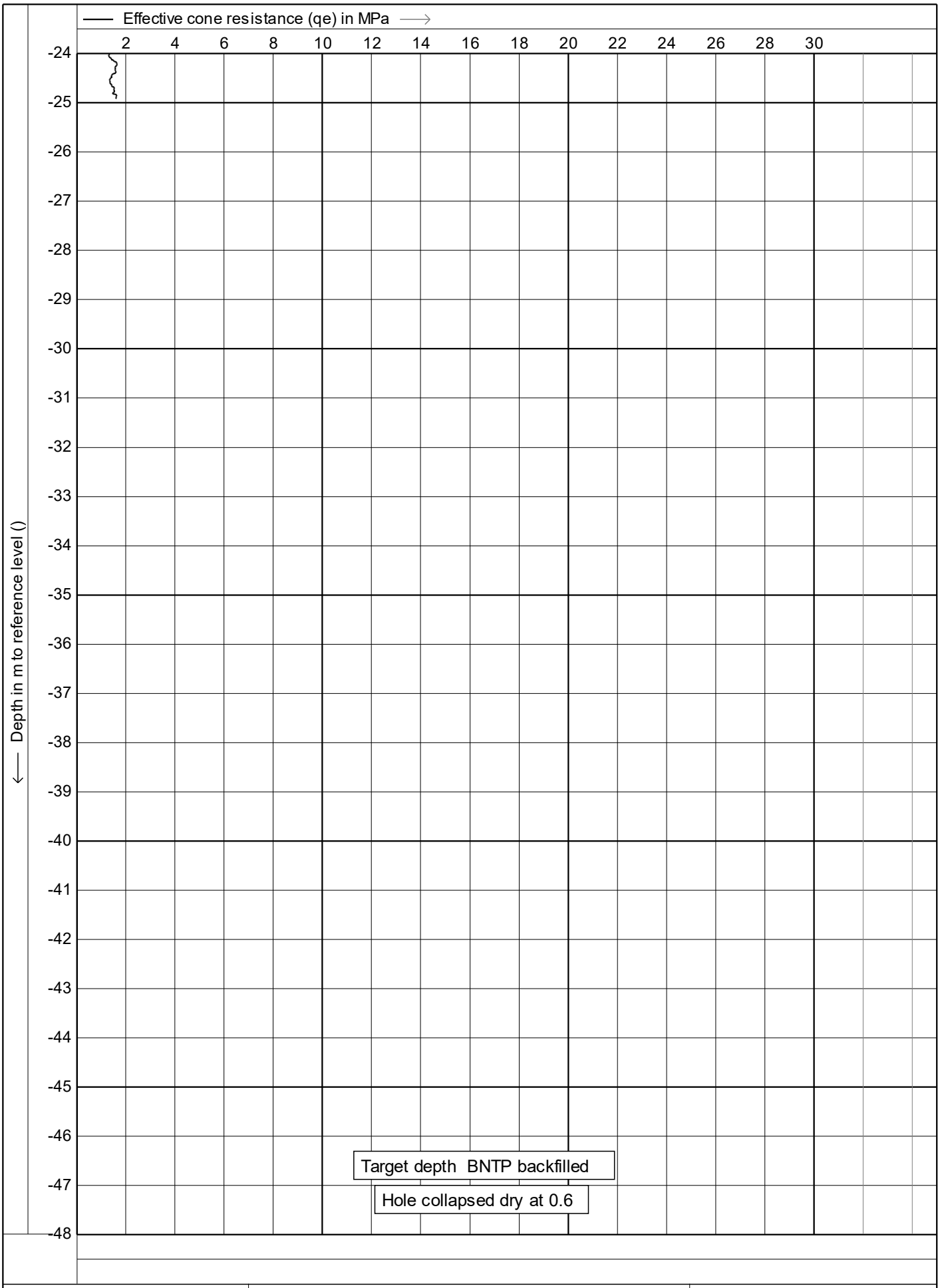
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **041** **9/28**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

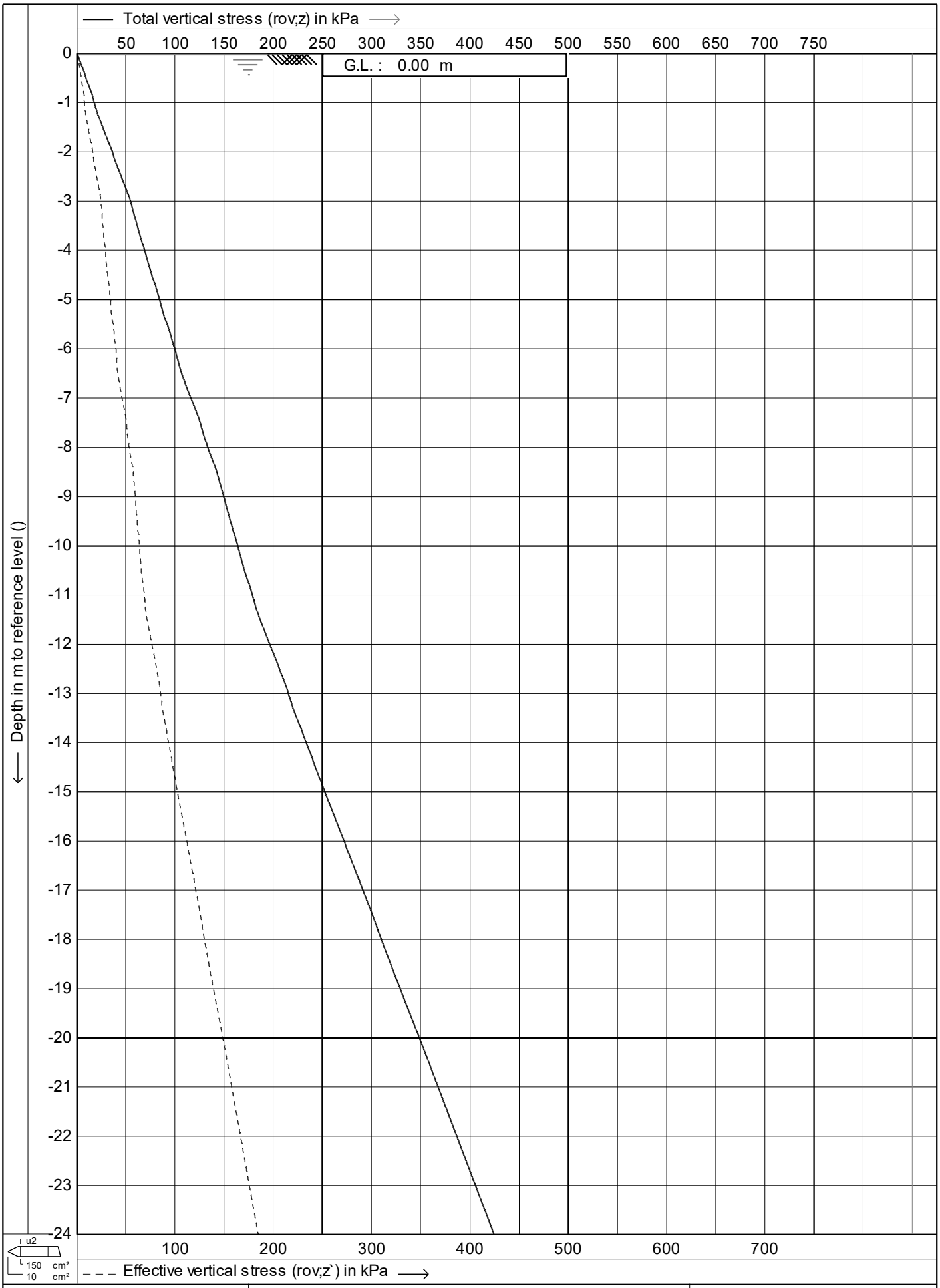
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **041** **10/28**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

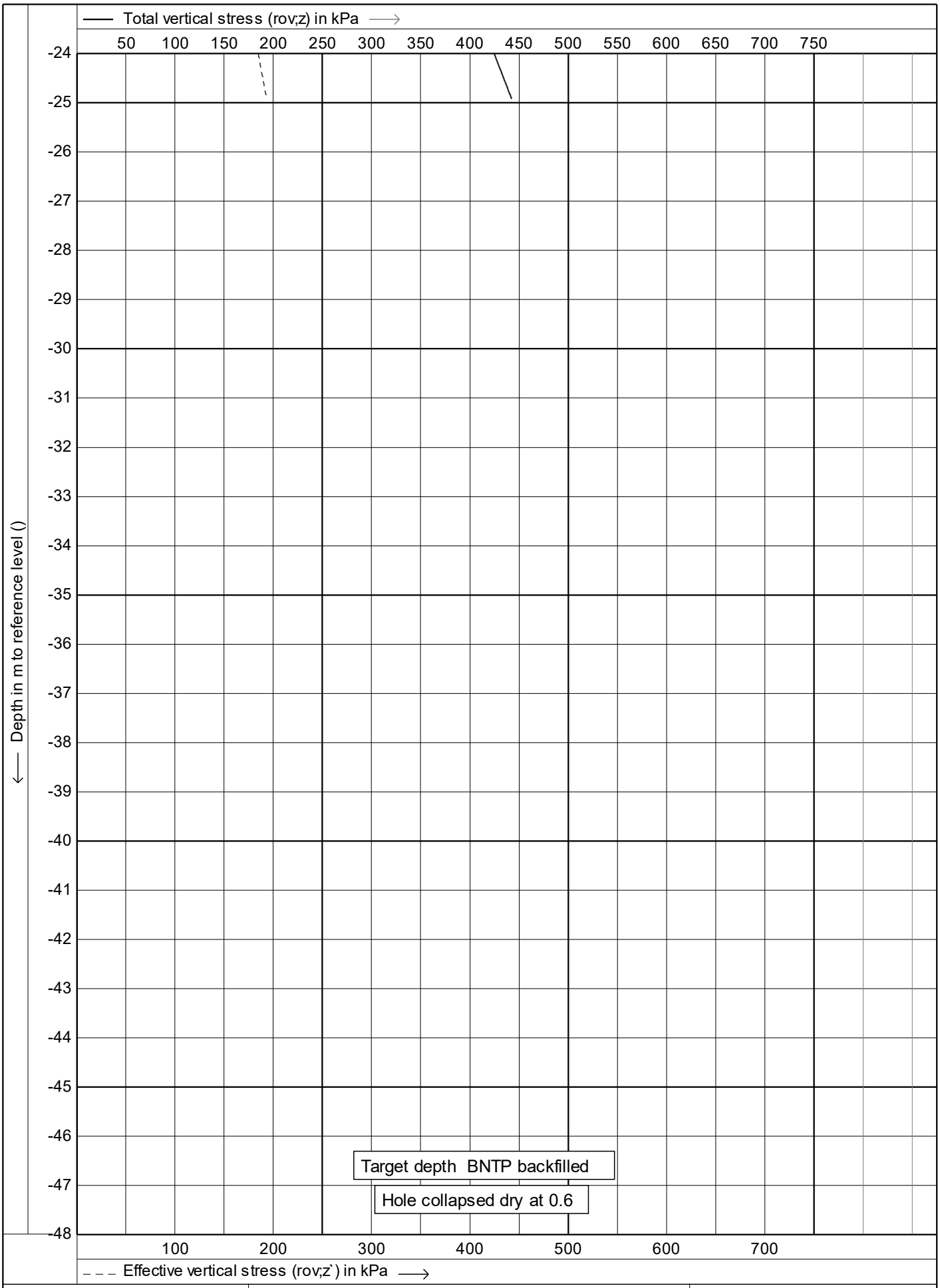
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **041**

11/28

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

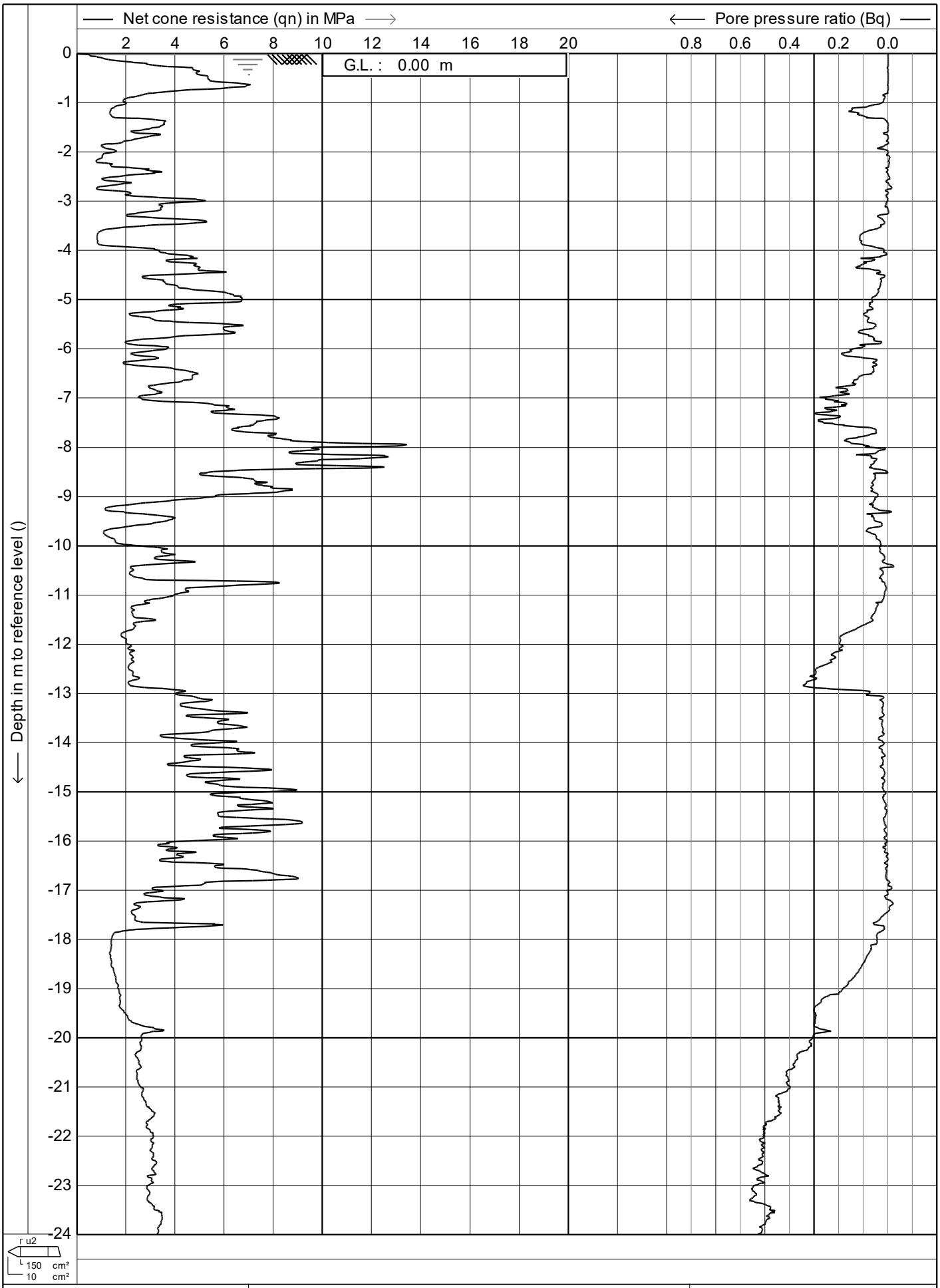
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **041**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

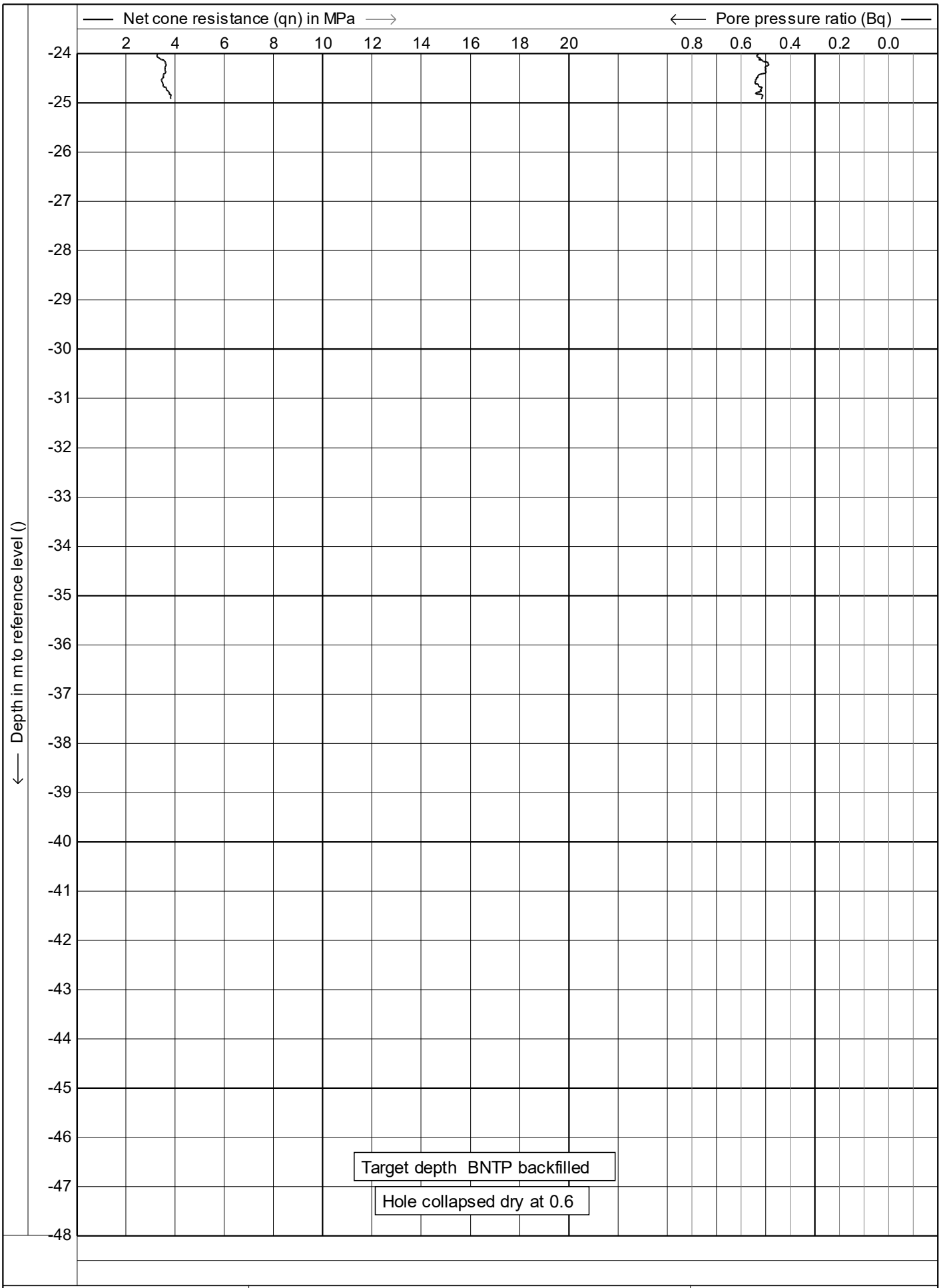
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **041**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

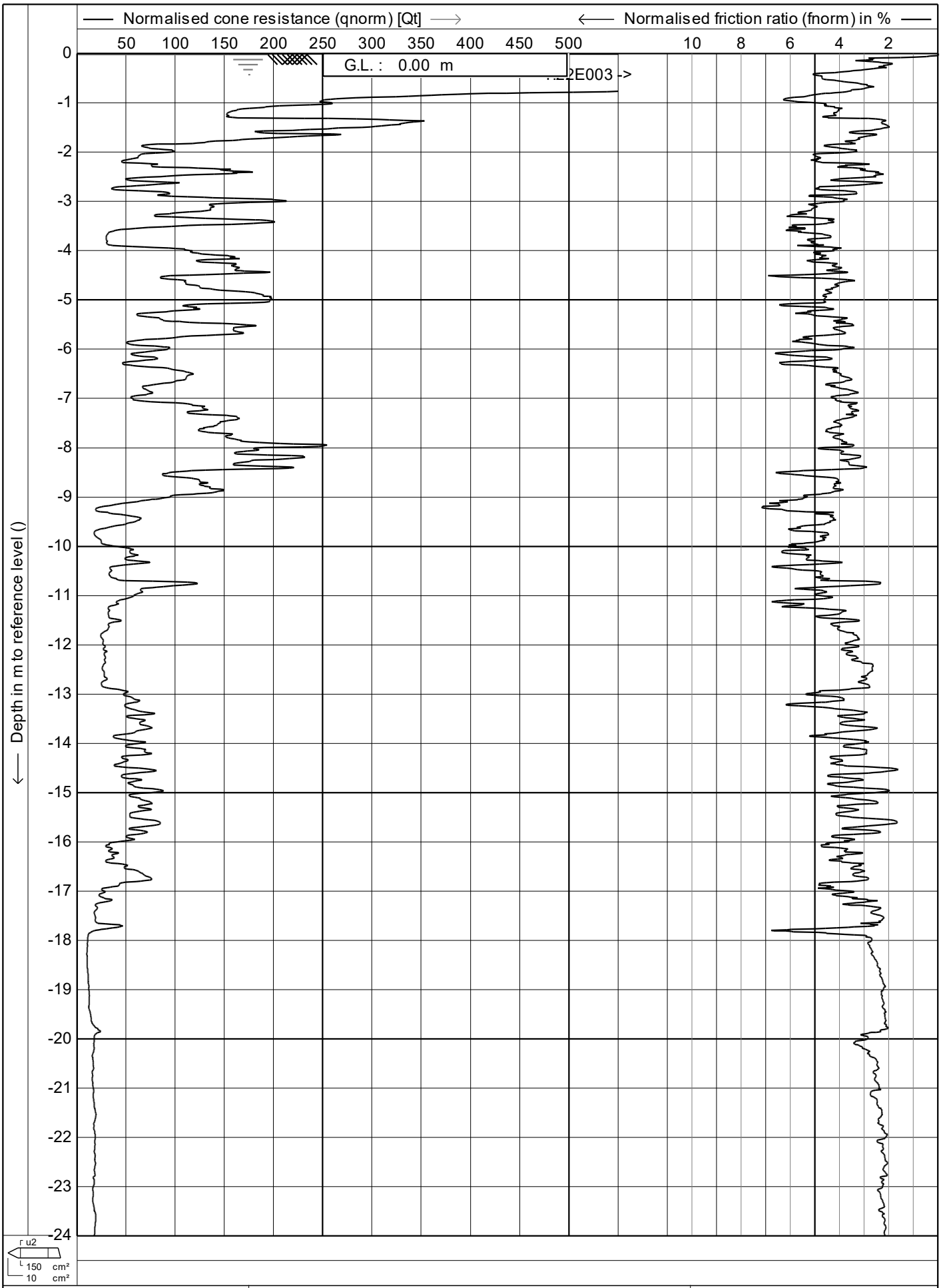
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **041**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

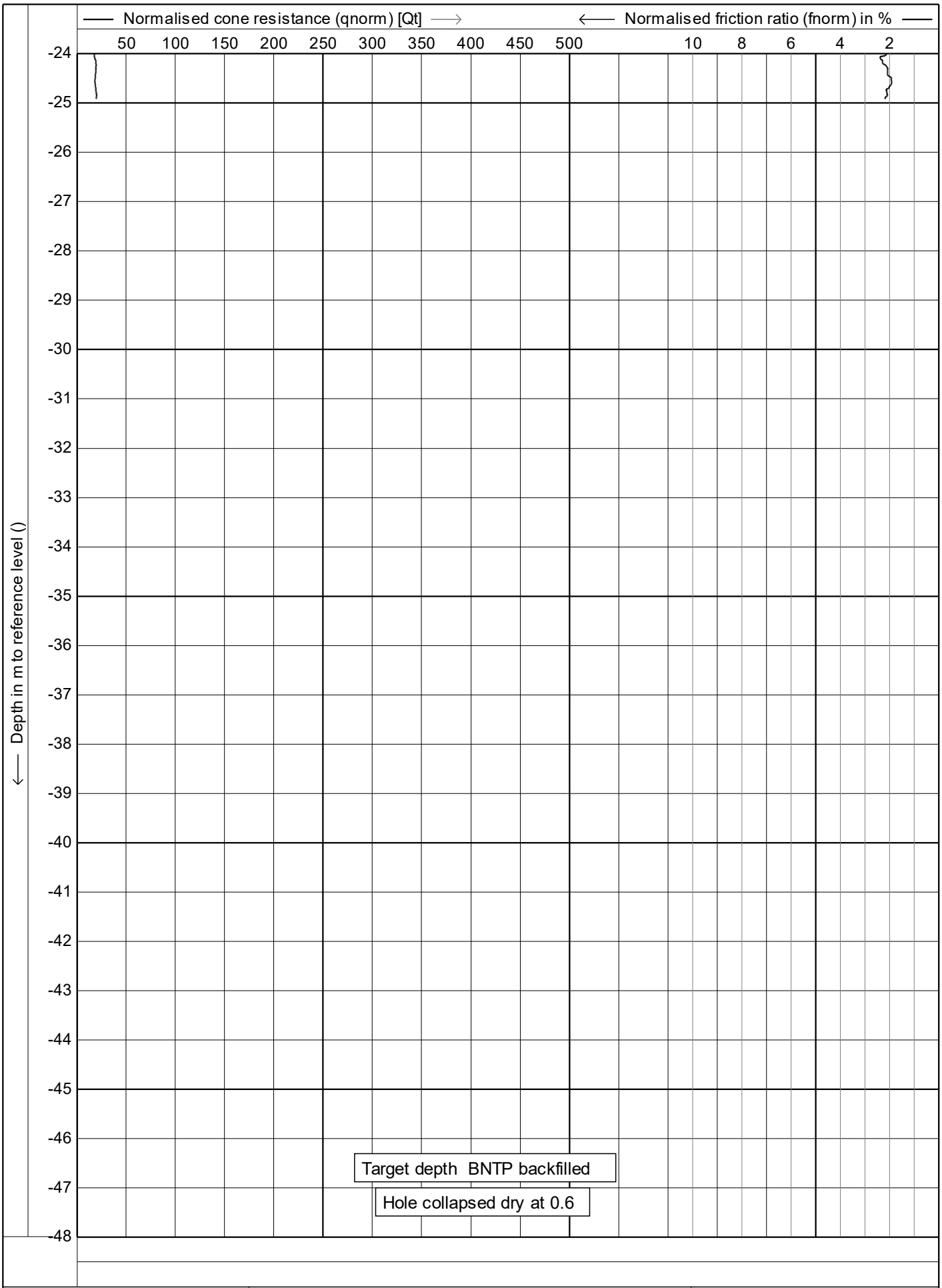
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **041**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

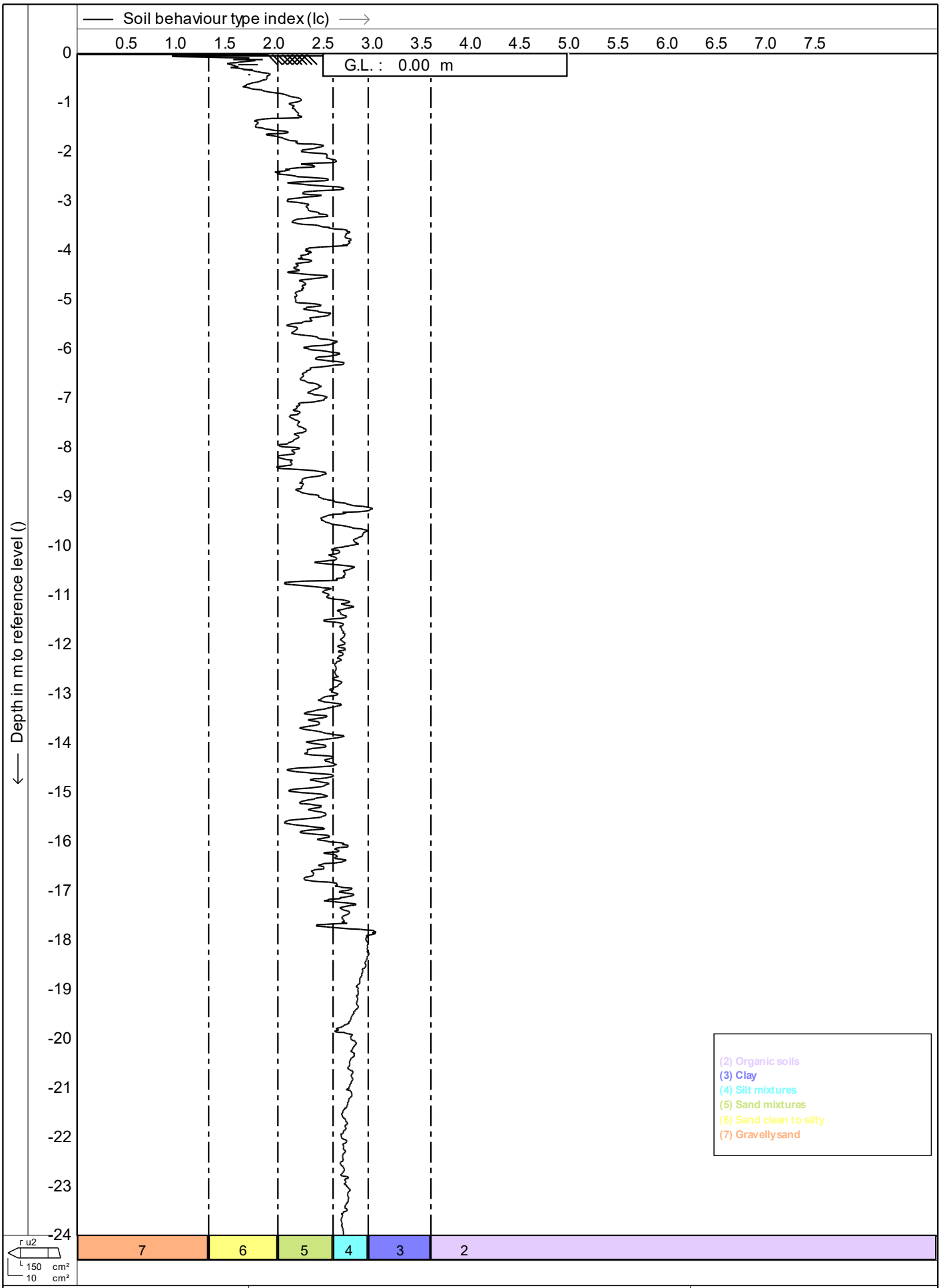
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **041**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

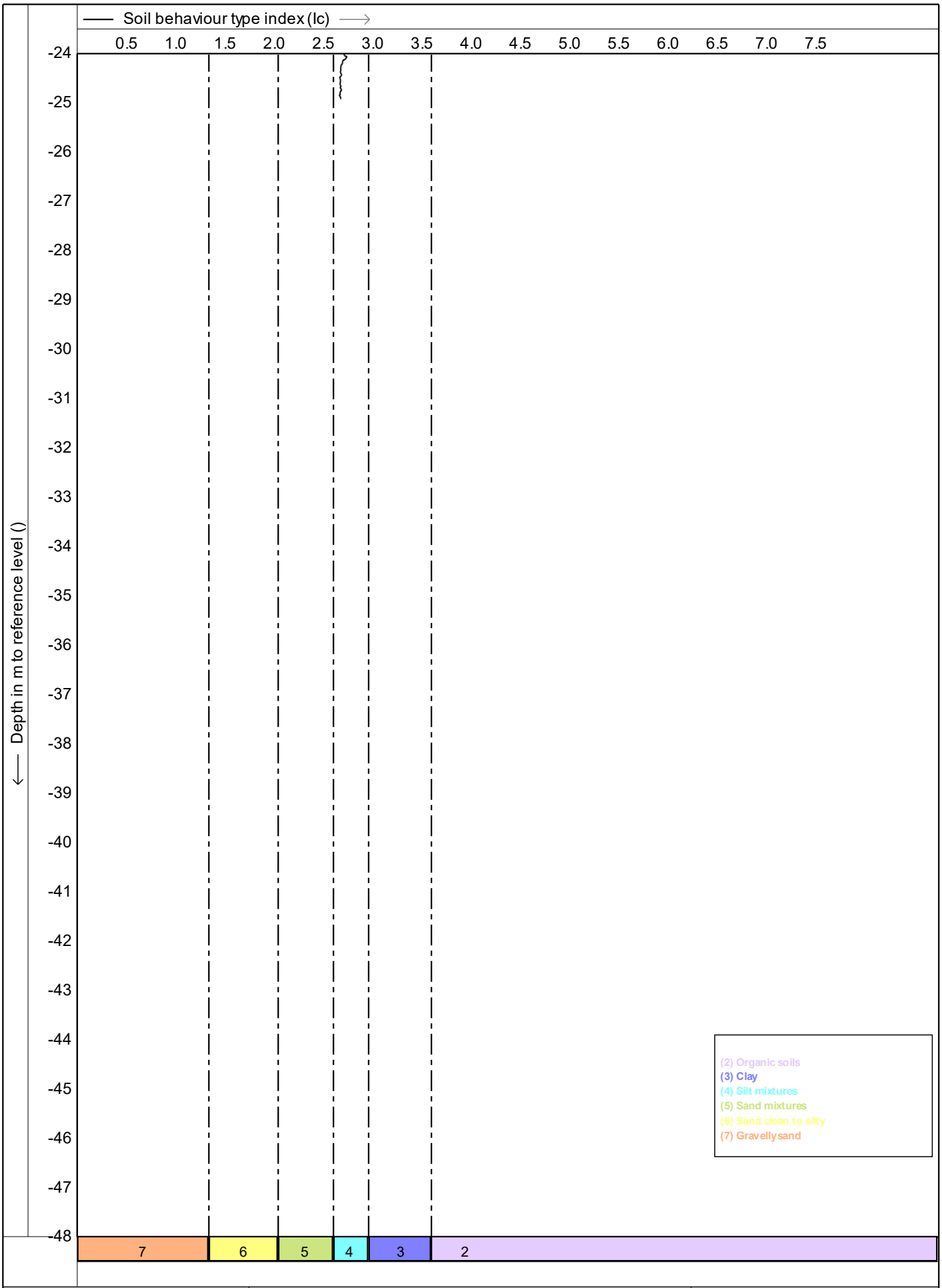
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

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PERRY GEOTECH

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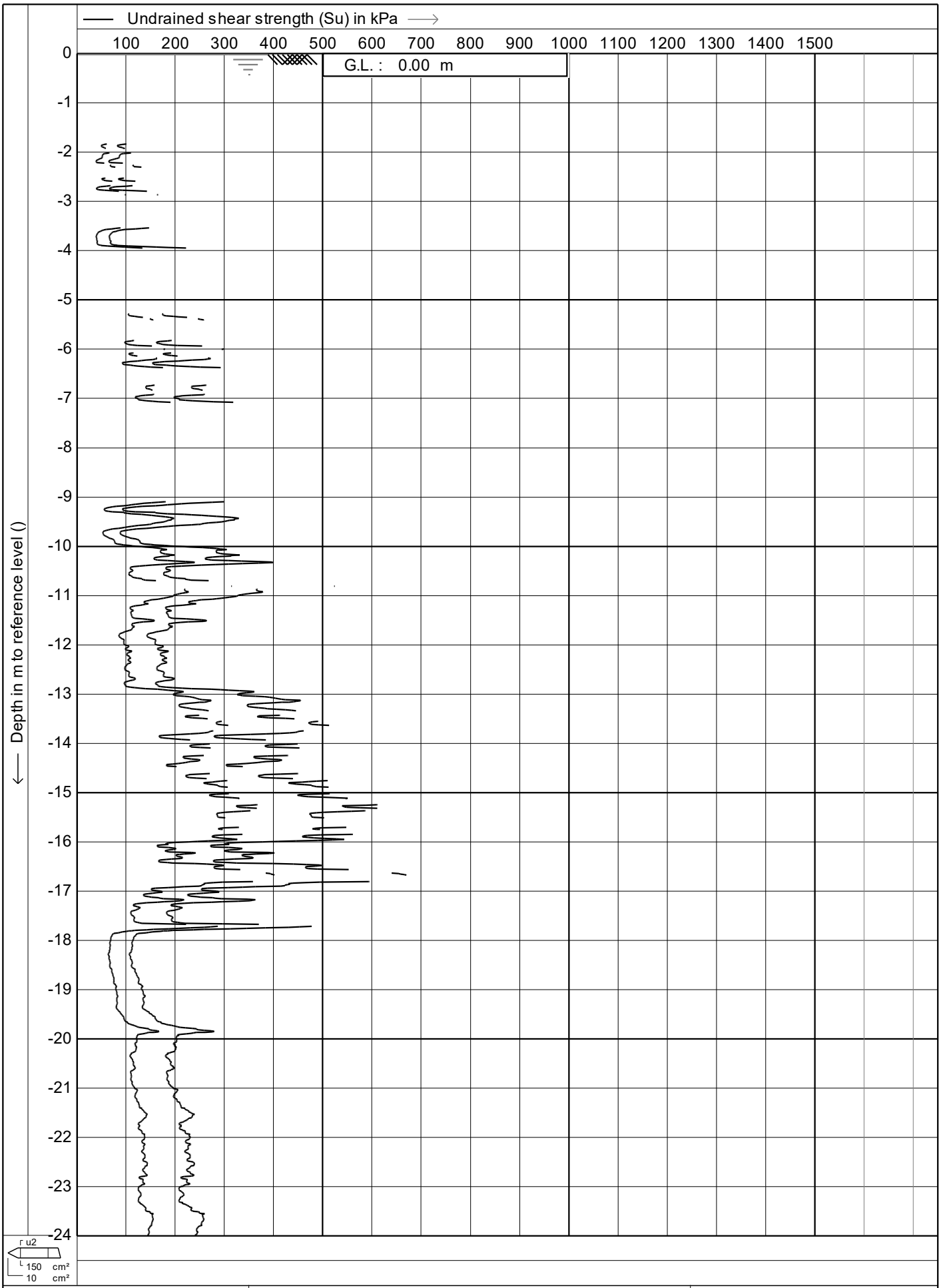
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
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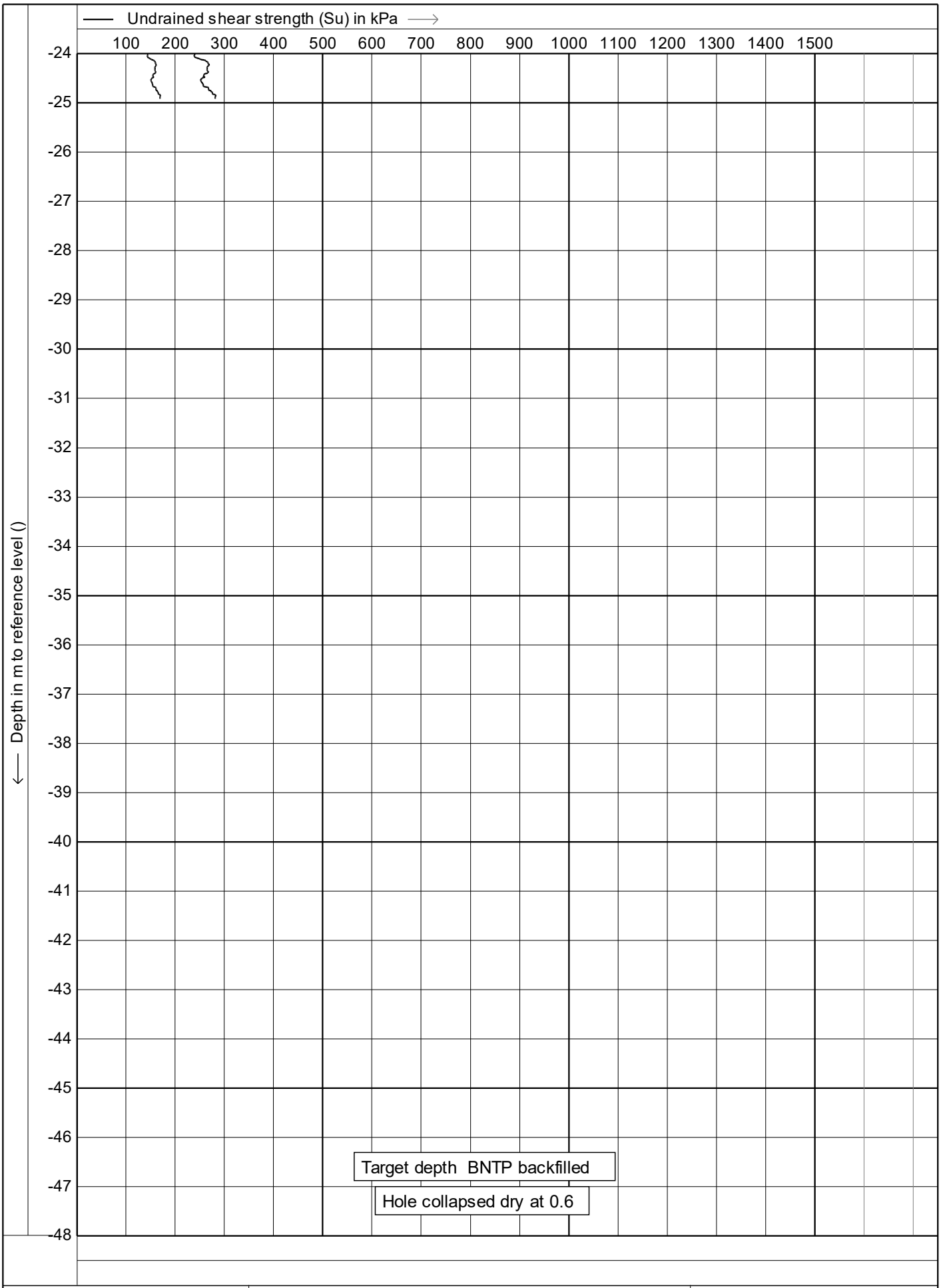
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Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
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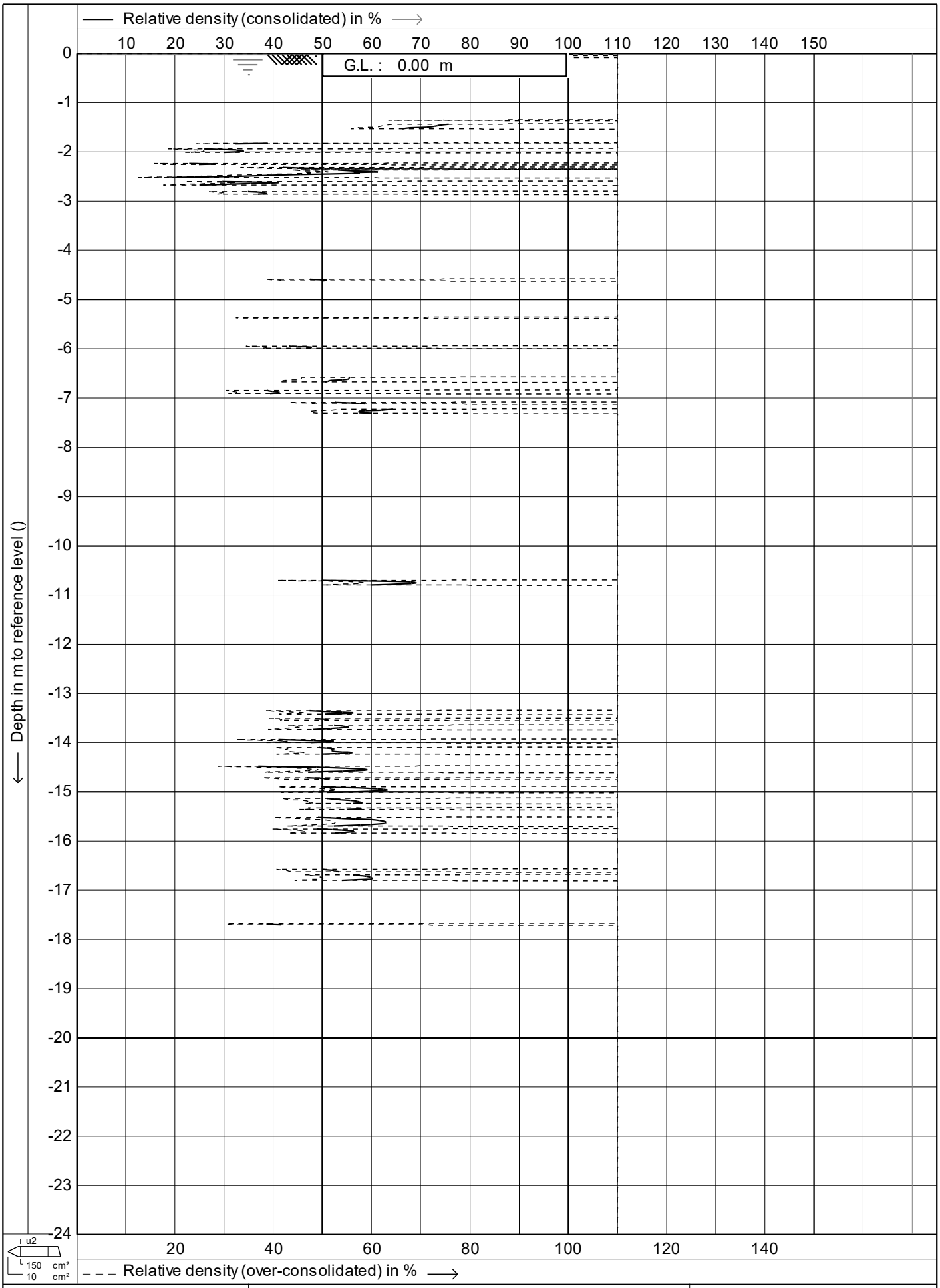
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Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
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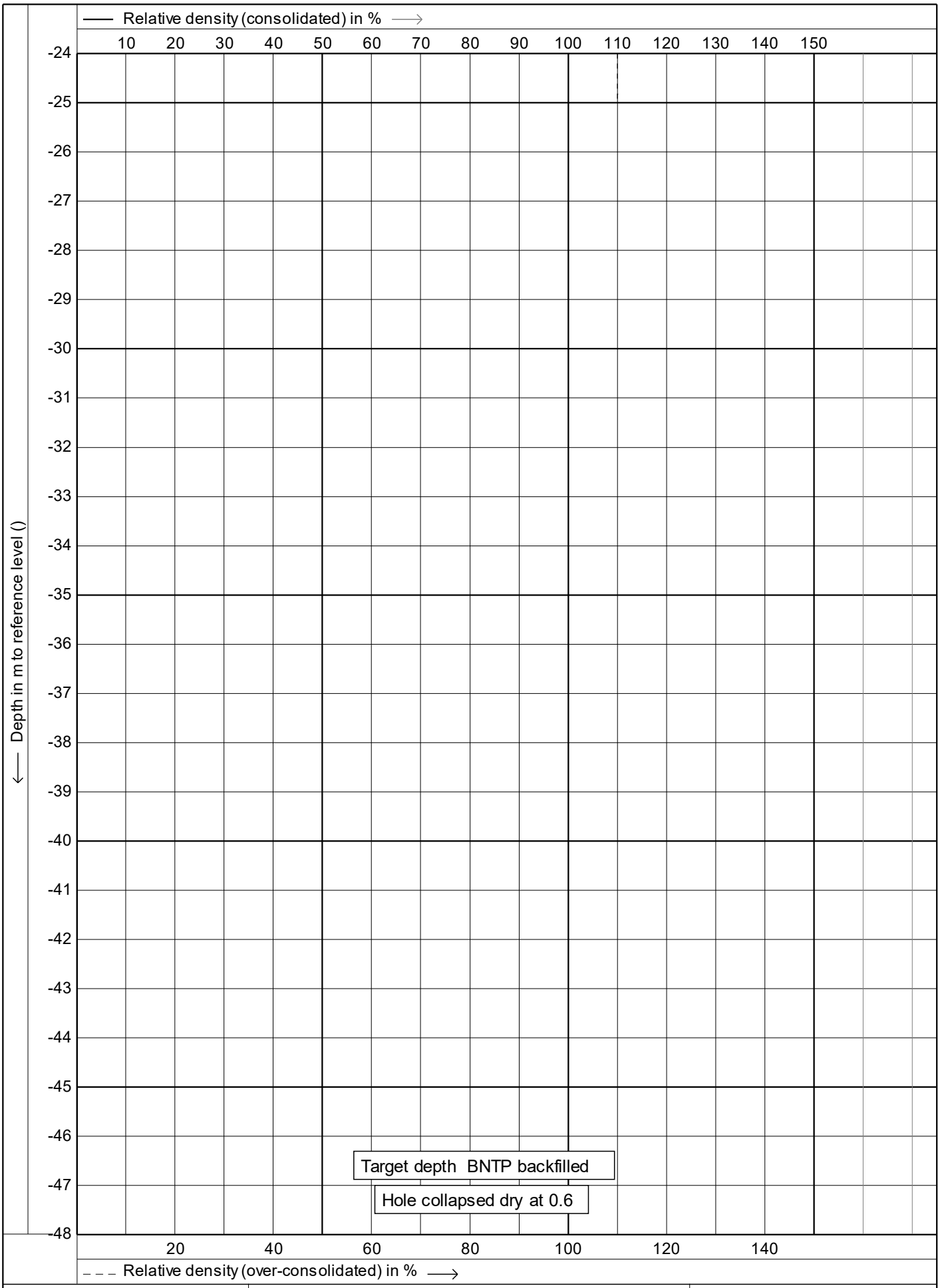
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
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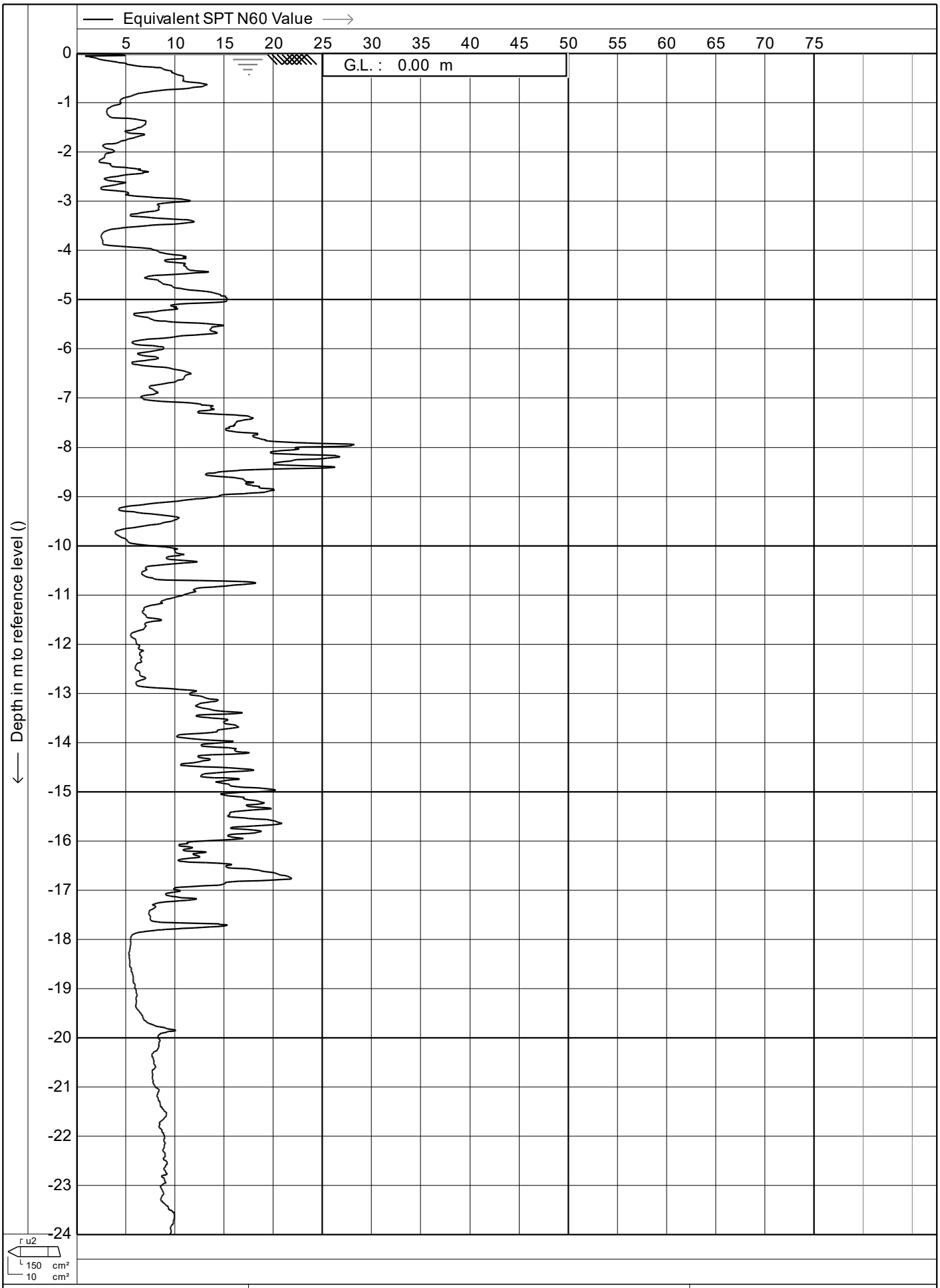
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
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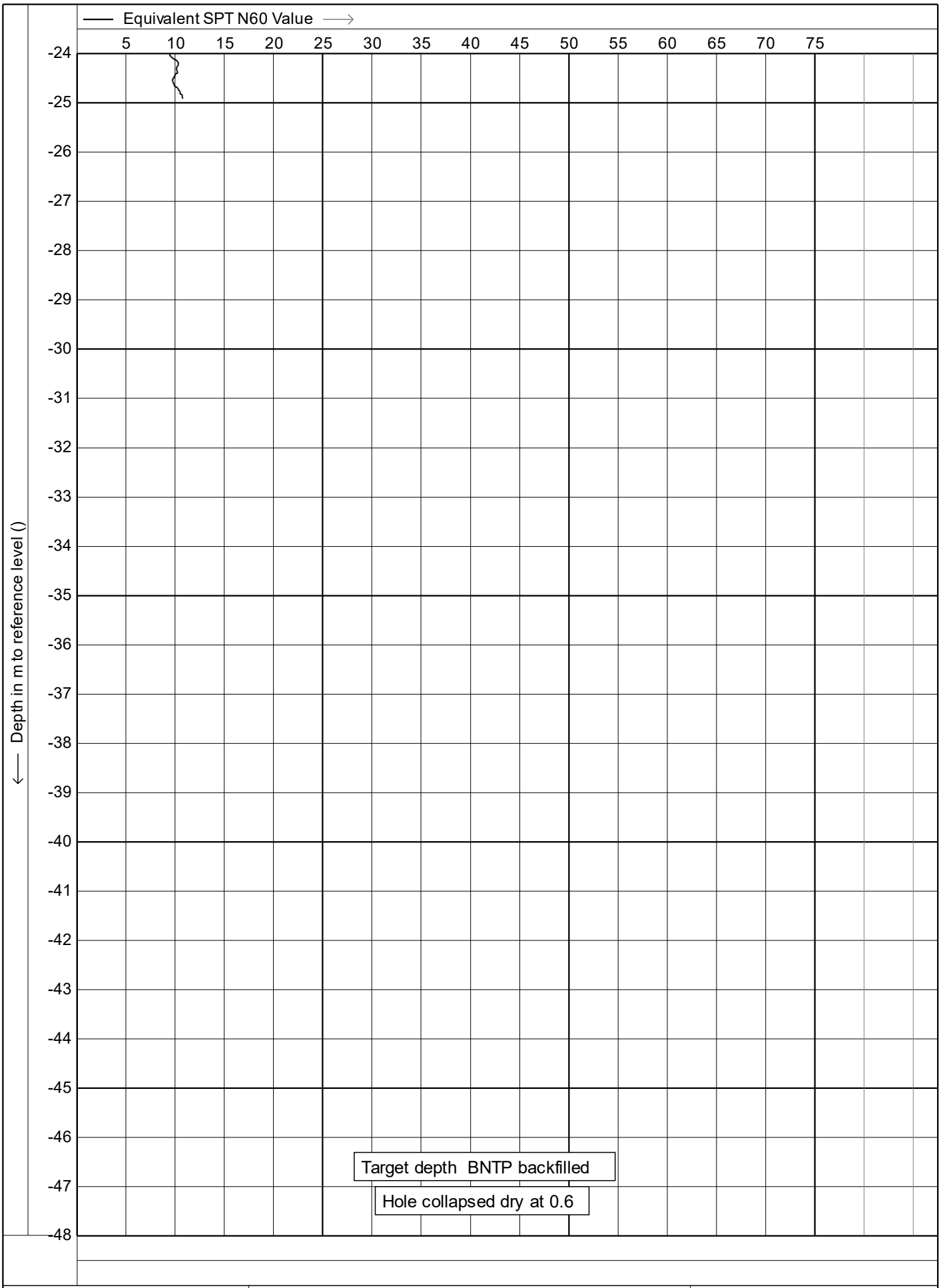
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
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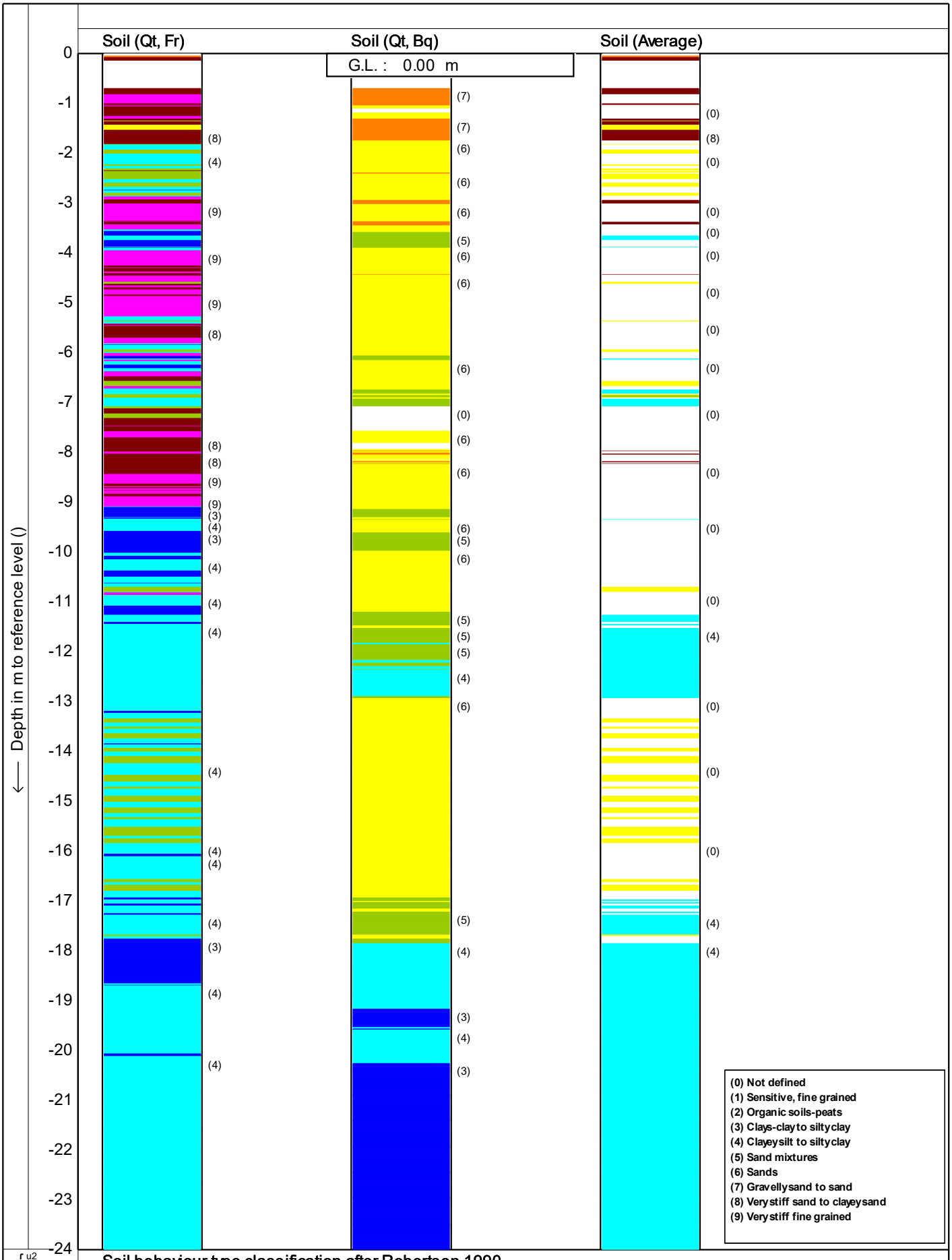
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
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Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

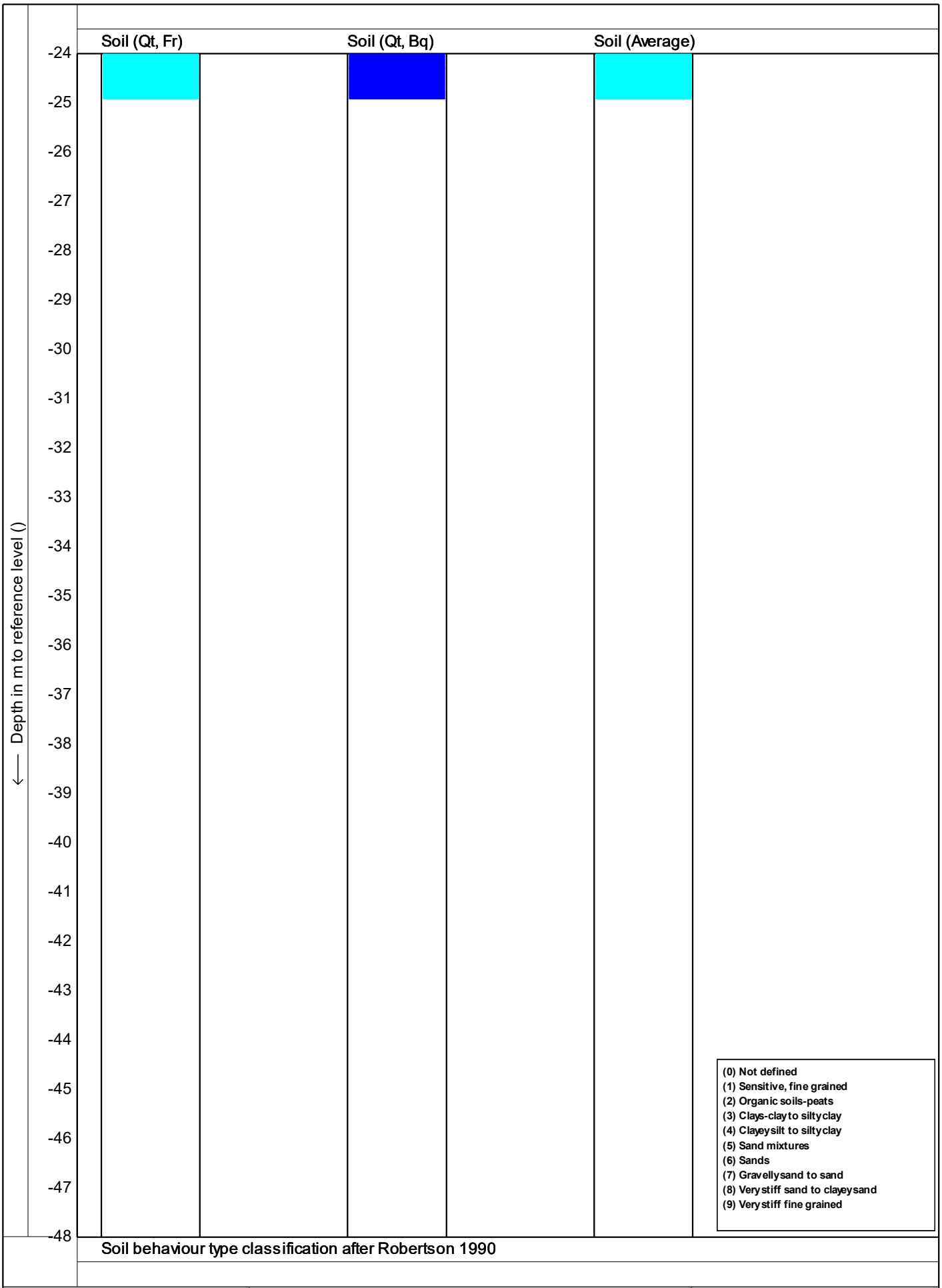
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **041**

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Soil behaviour type classification after Robertson 1990

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Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

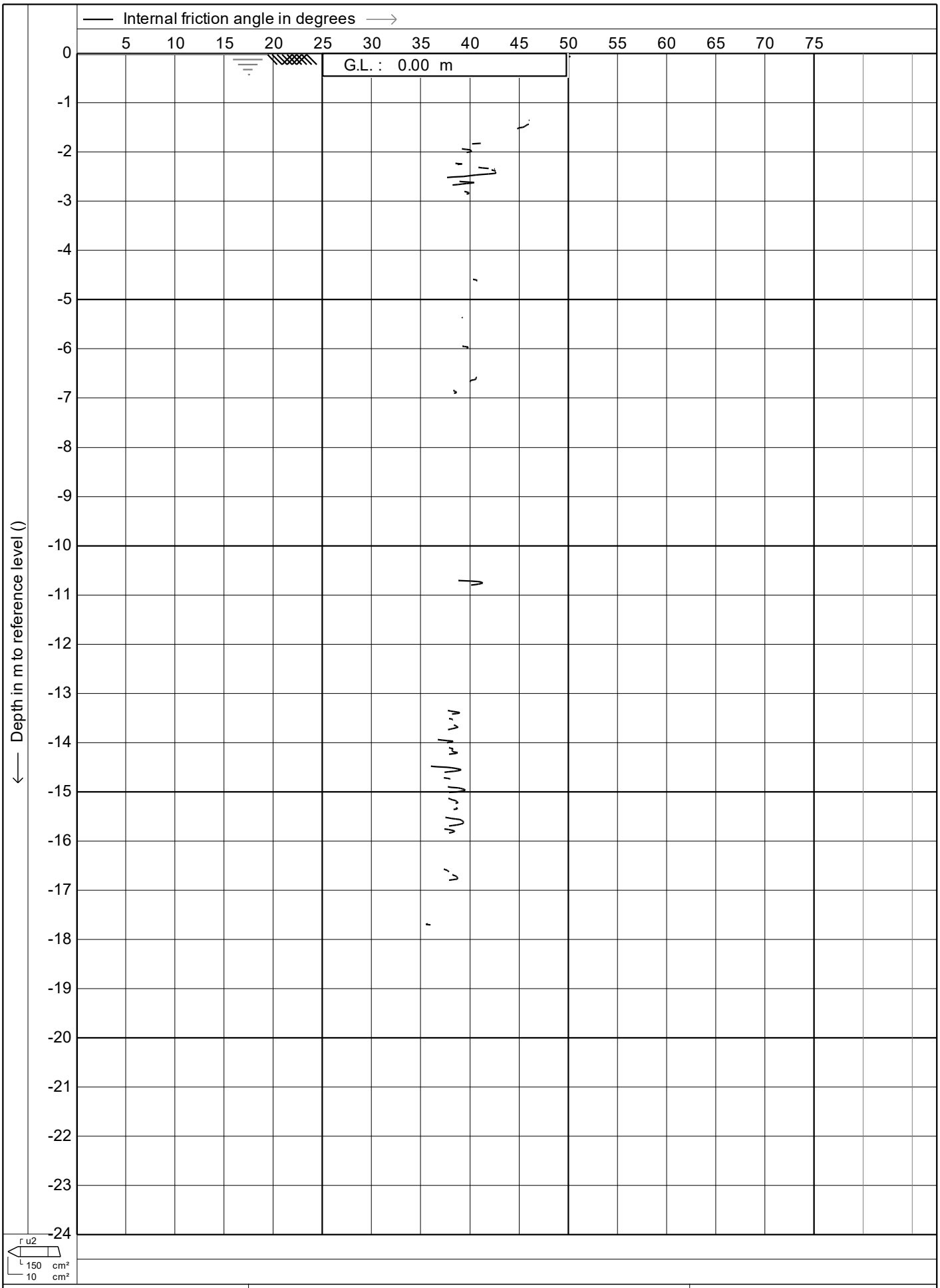
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

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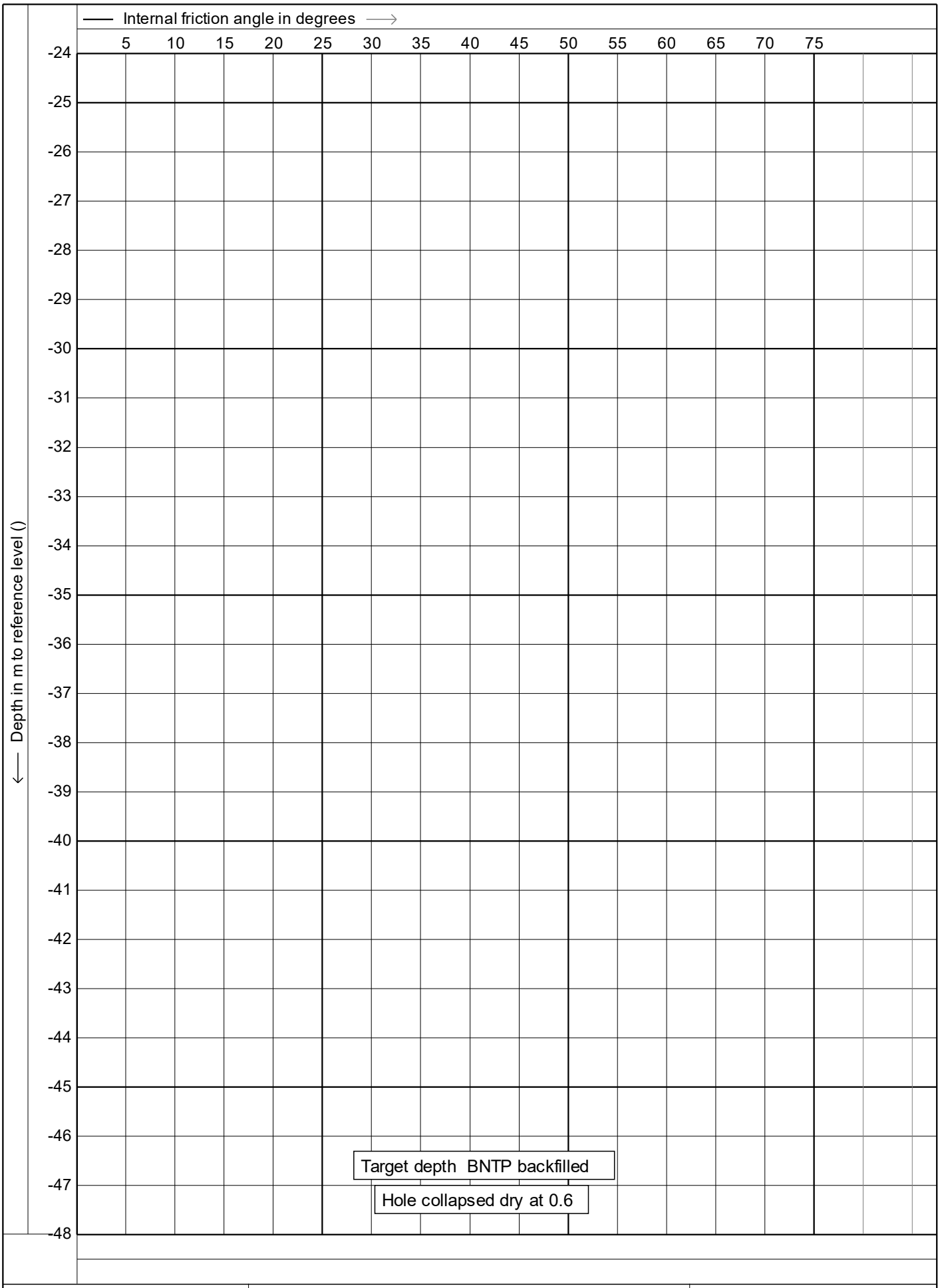
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
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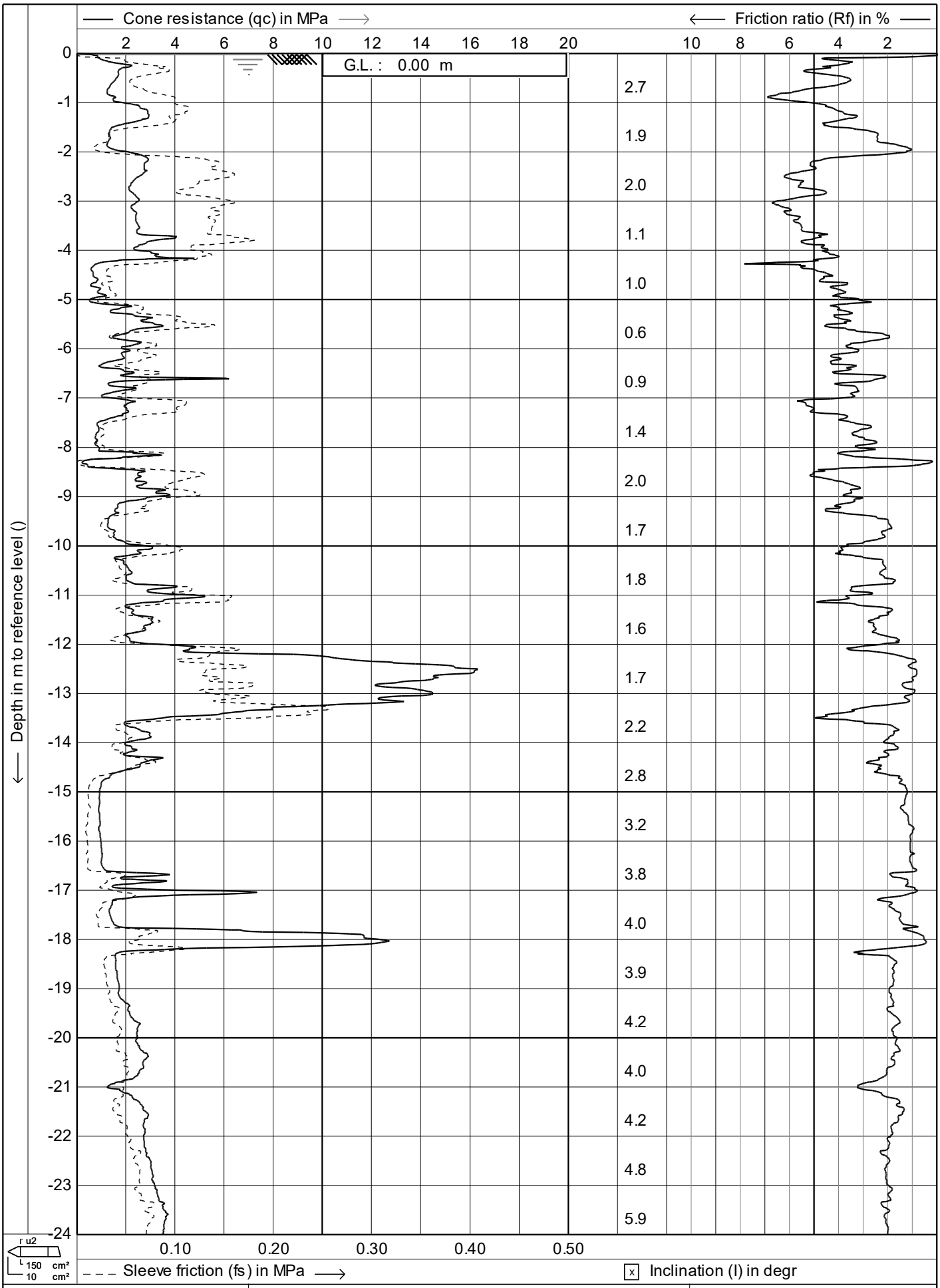
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
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Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

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Date : **27/11/2020**

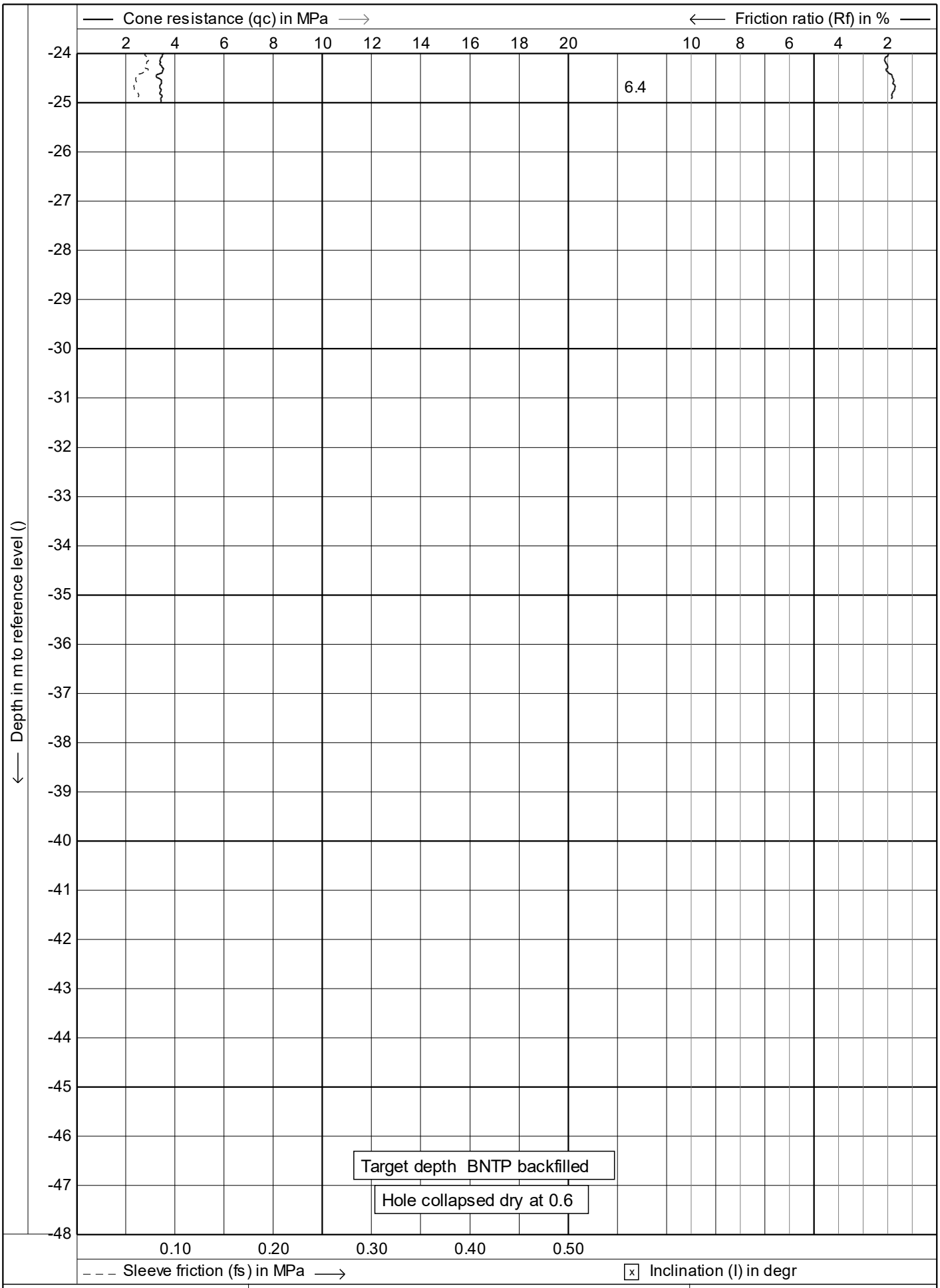
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **042**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

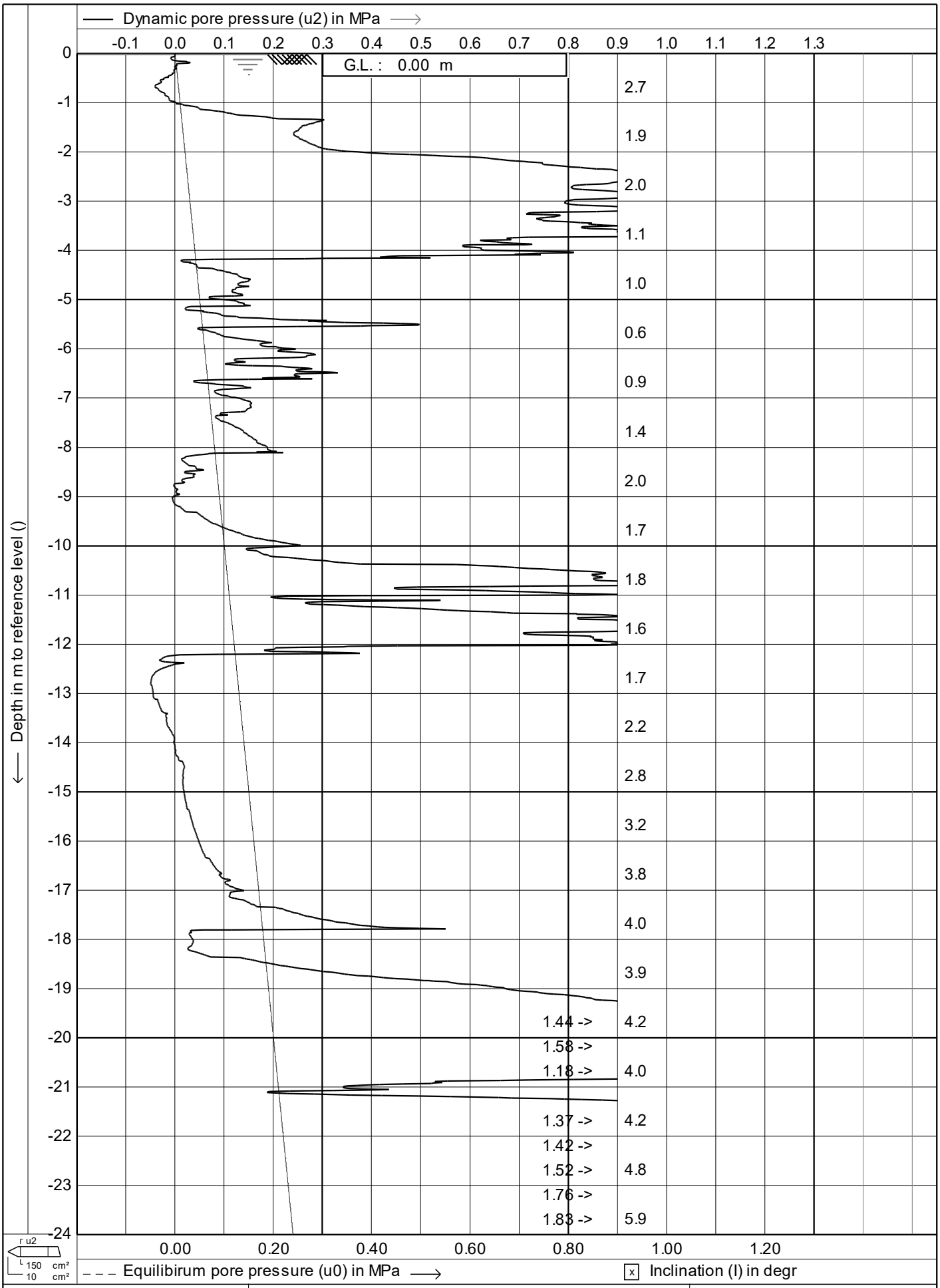
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

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Project : **Site Investigations**

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Position: **0, 0**

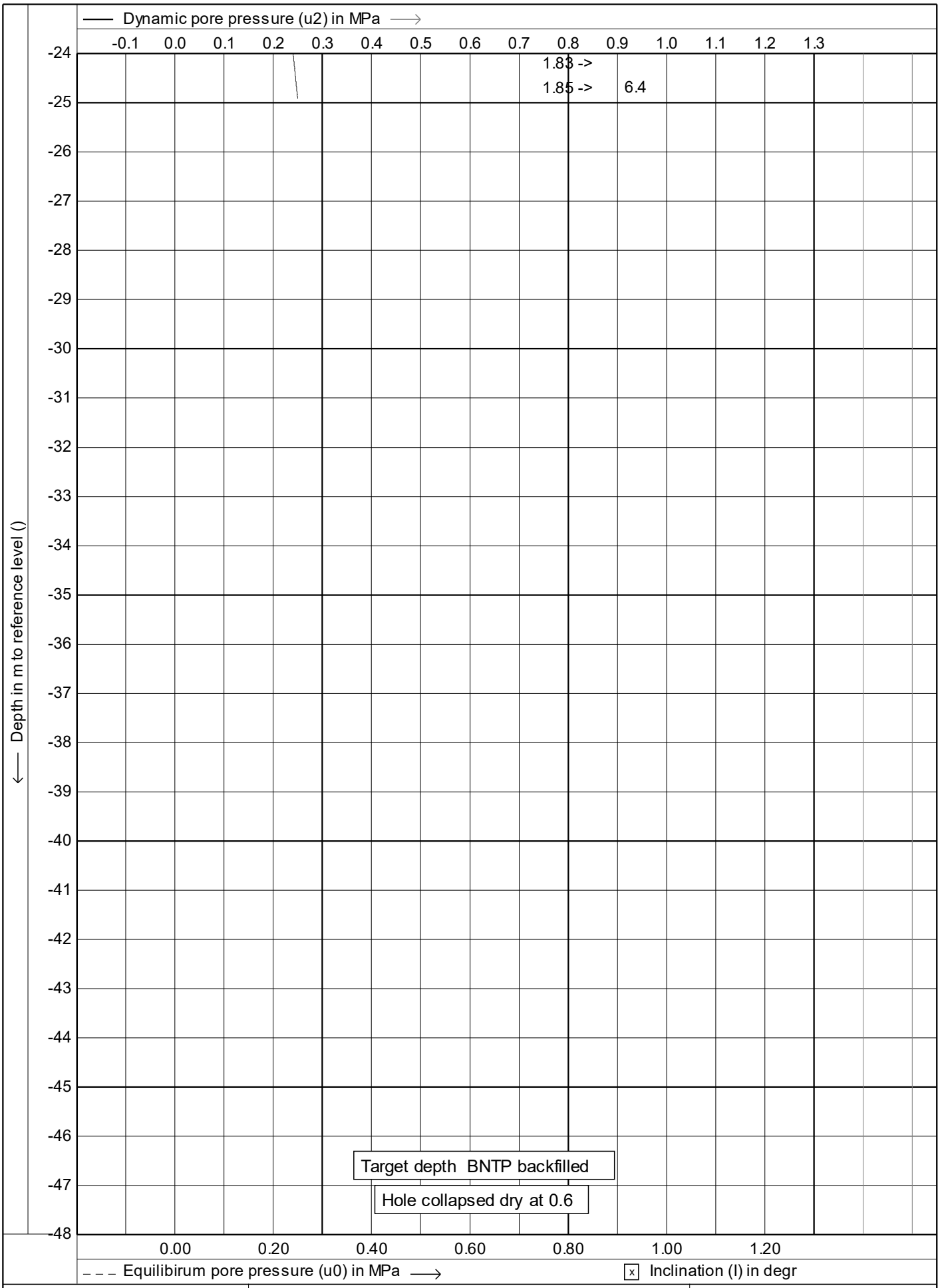
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **042**

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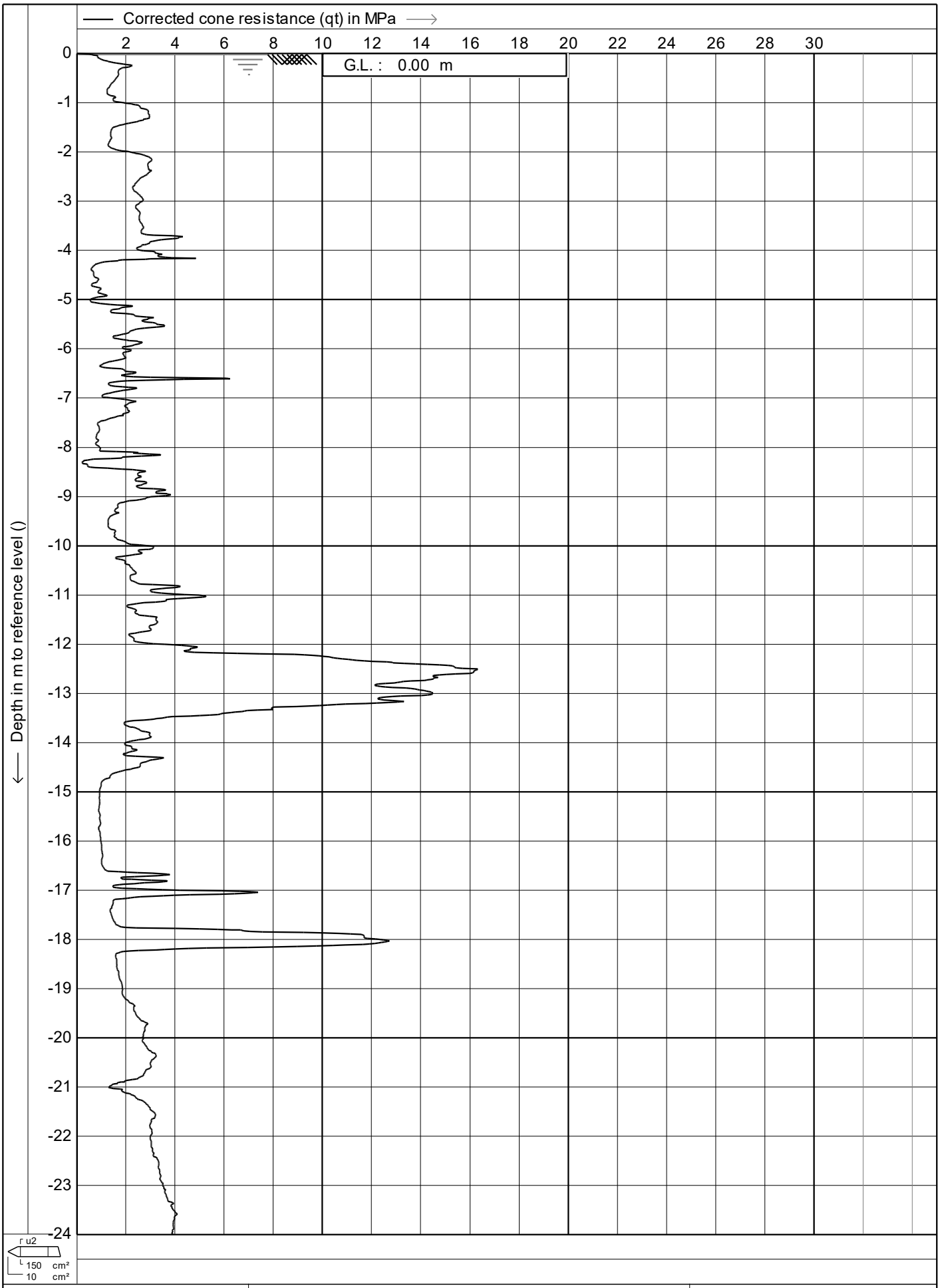
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
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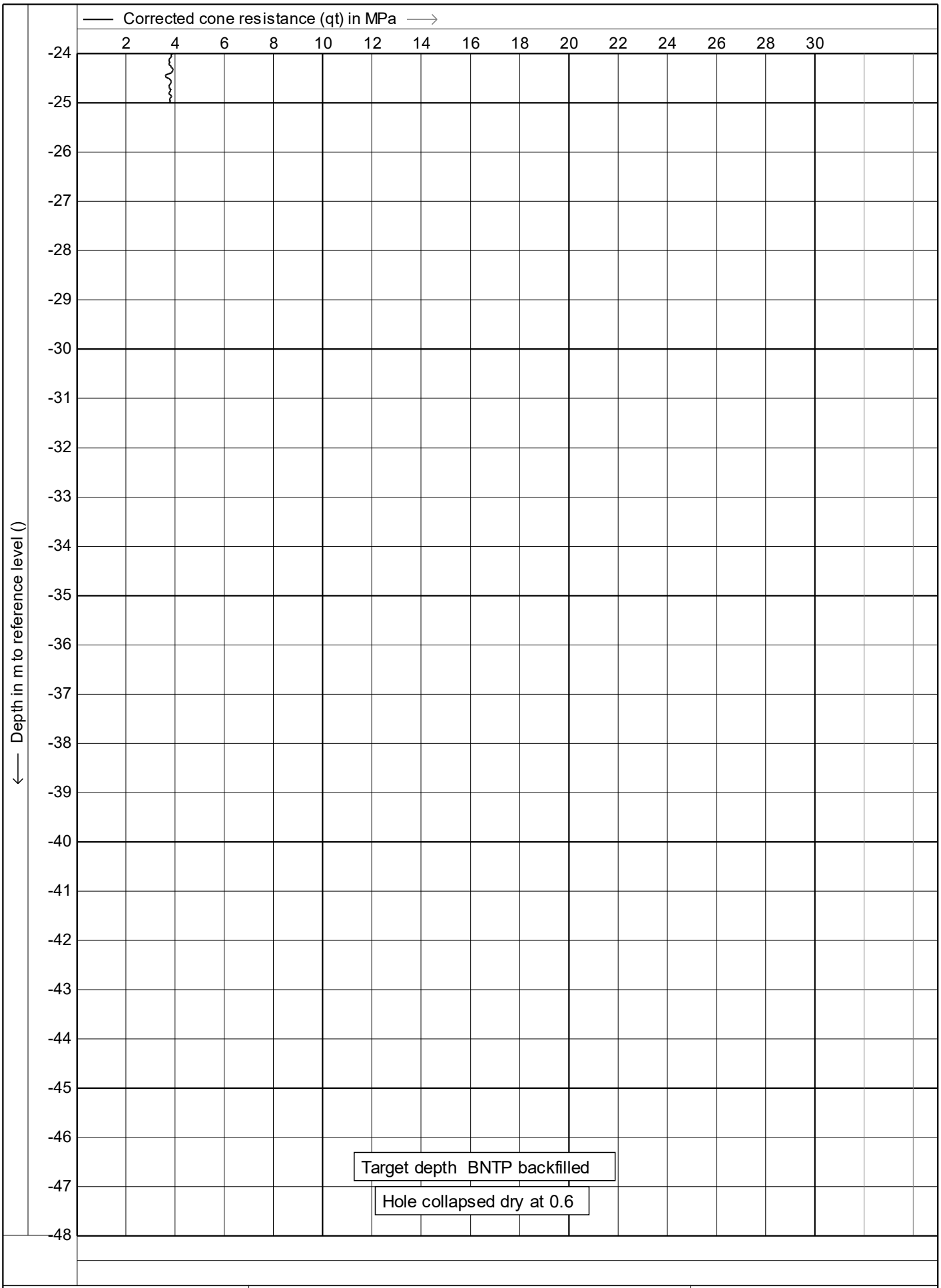
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
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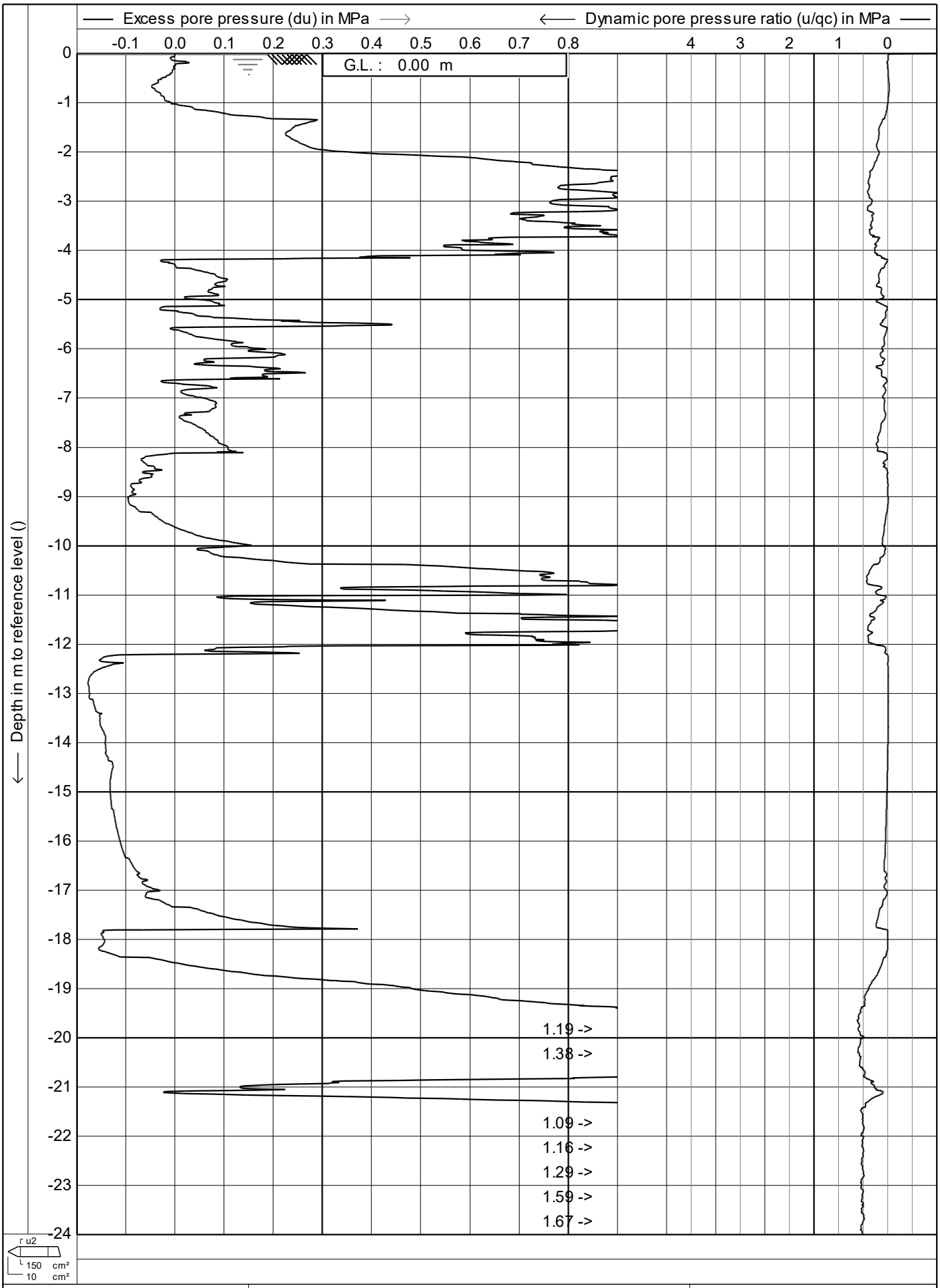
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
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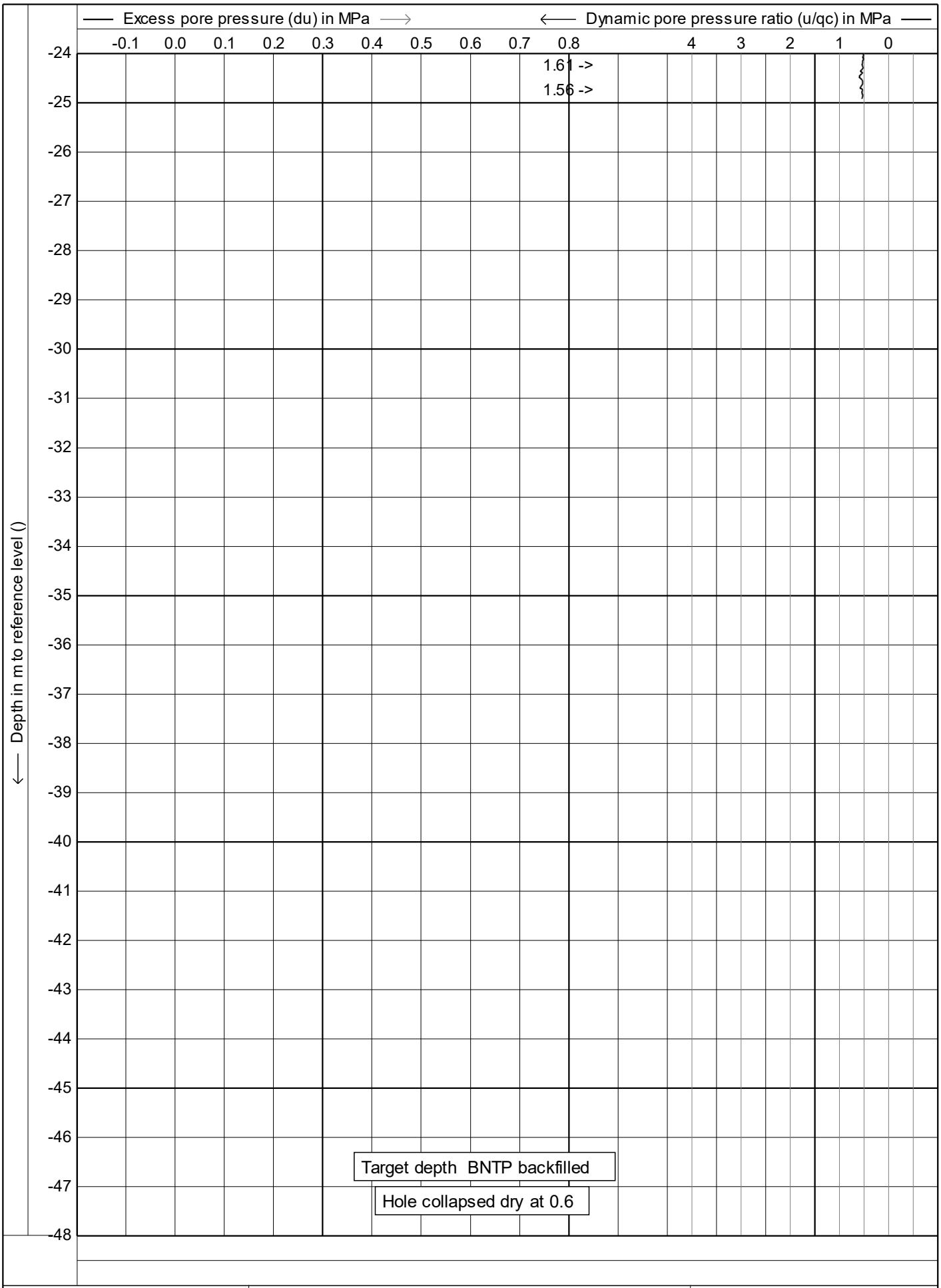
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
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PERRY GEOTECH

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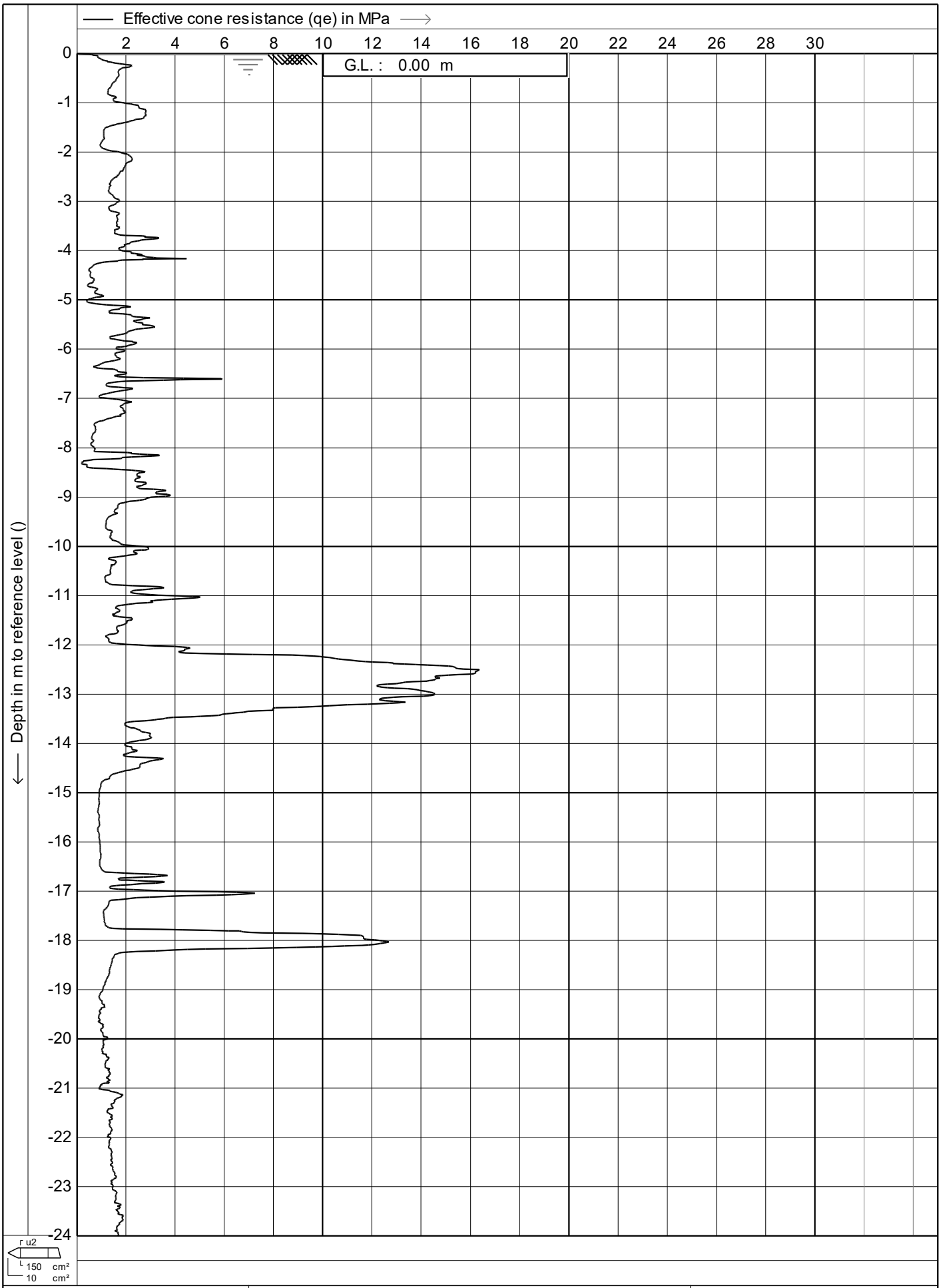
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
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PERRY GEOTECH

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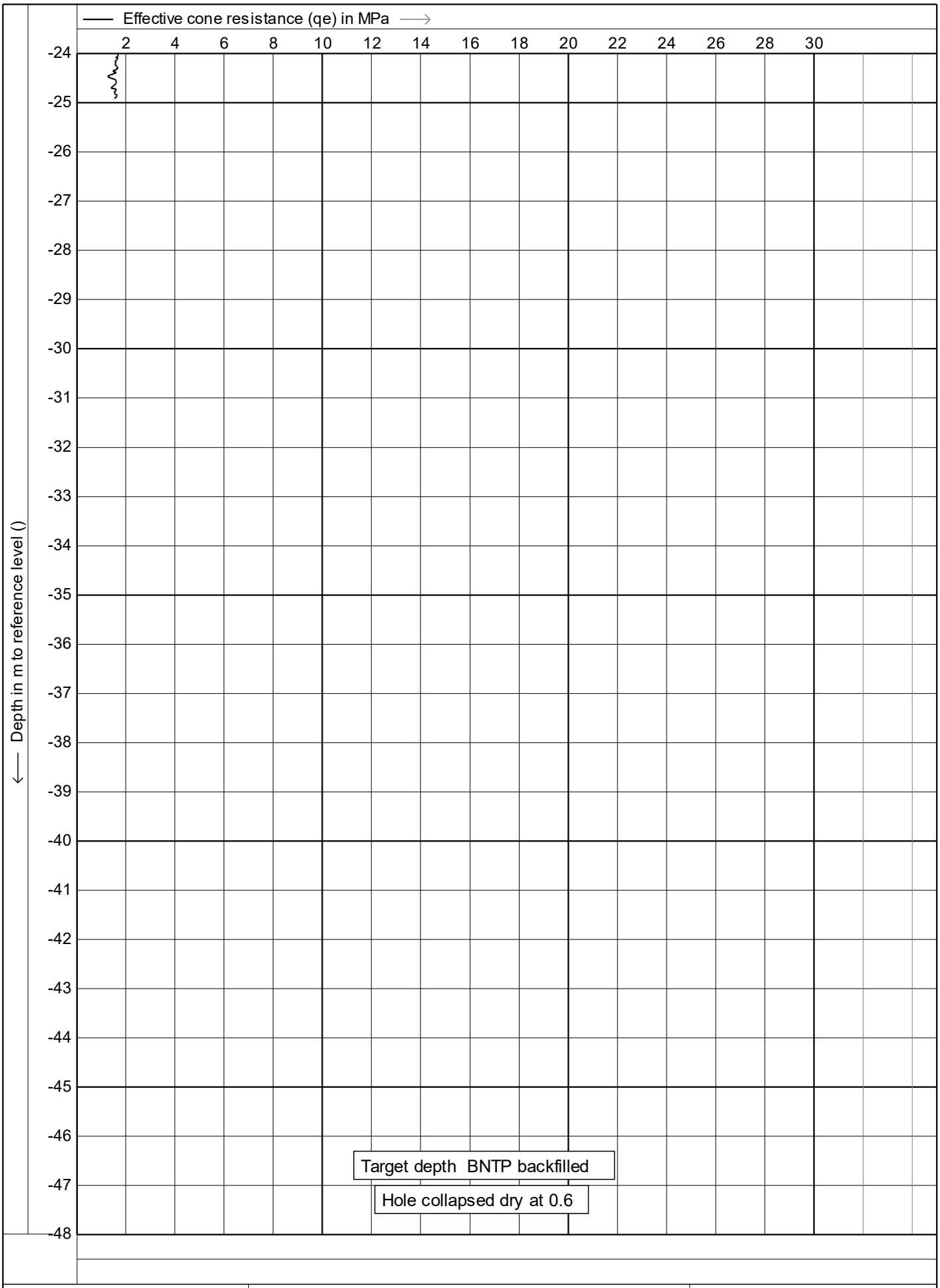
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **042** **9/28**

1.48



PERRY GEOTECH

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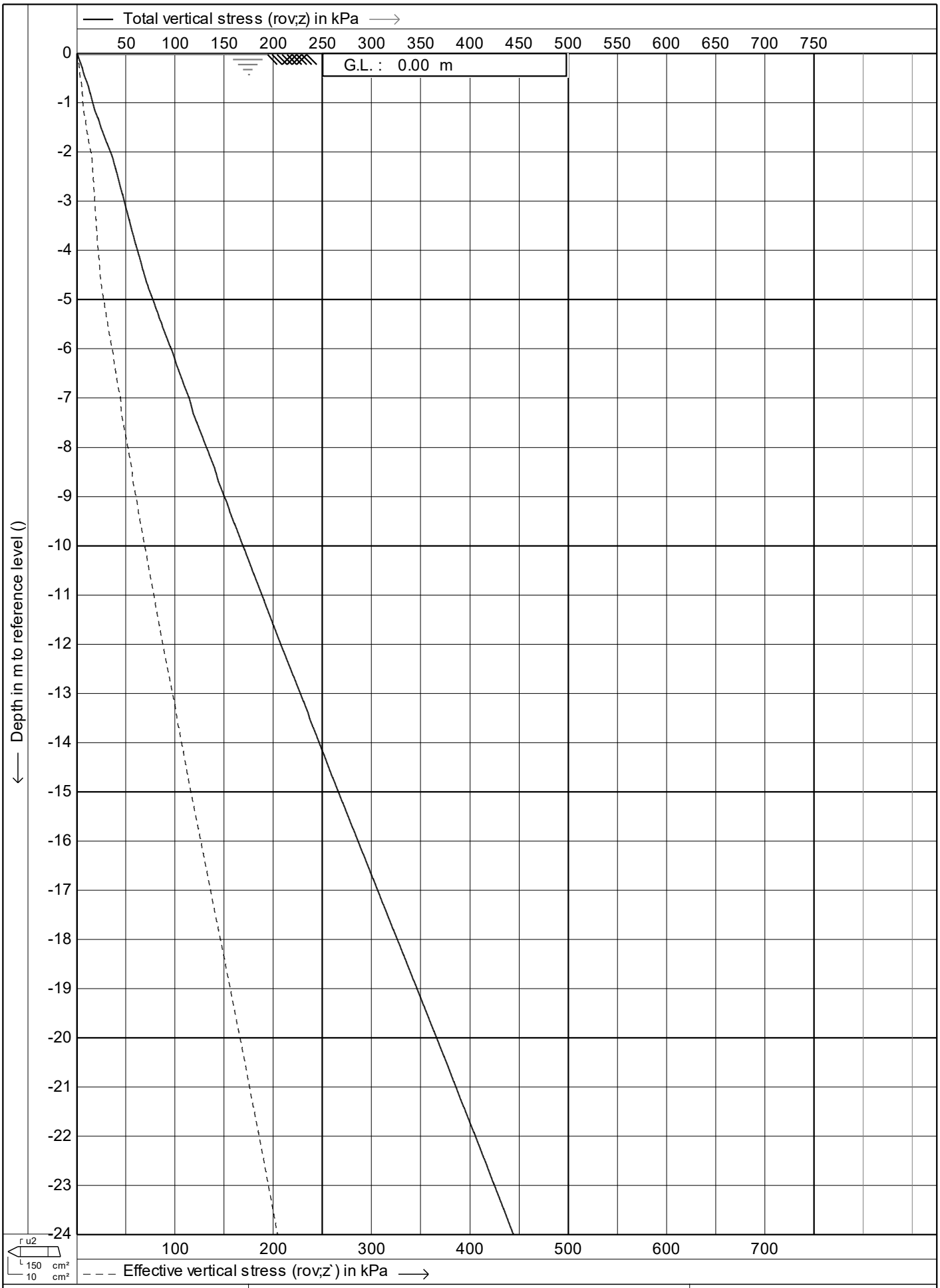
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
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Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

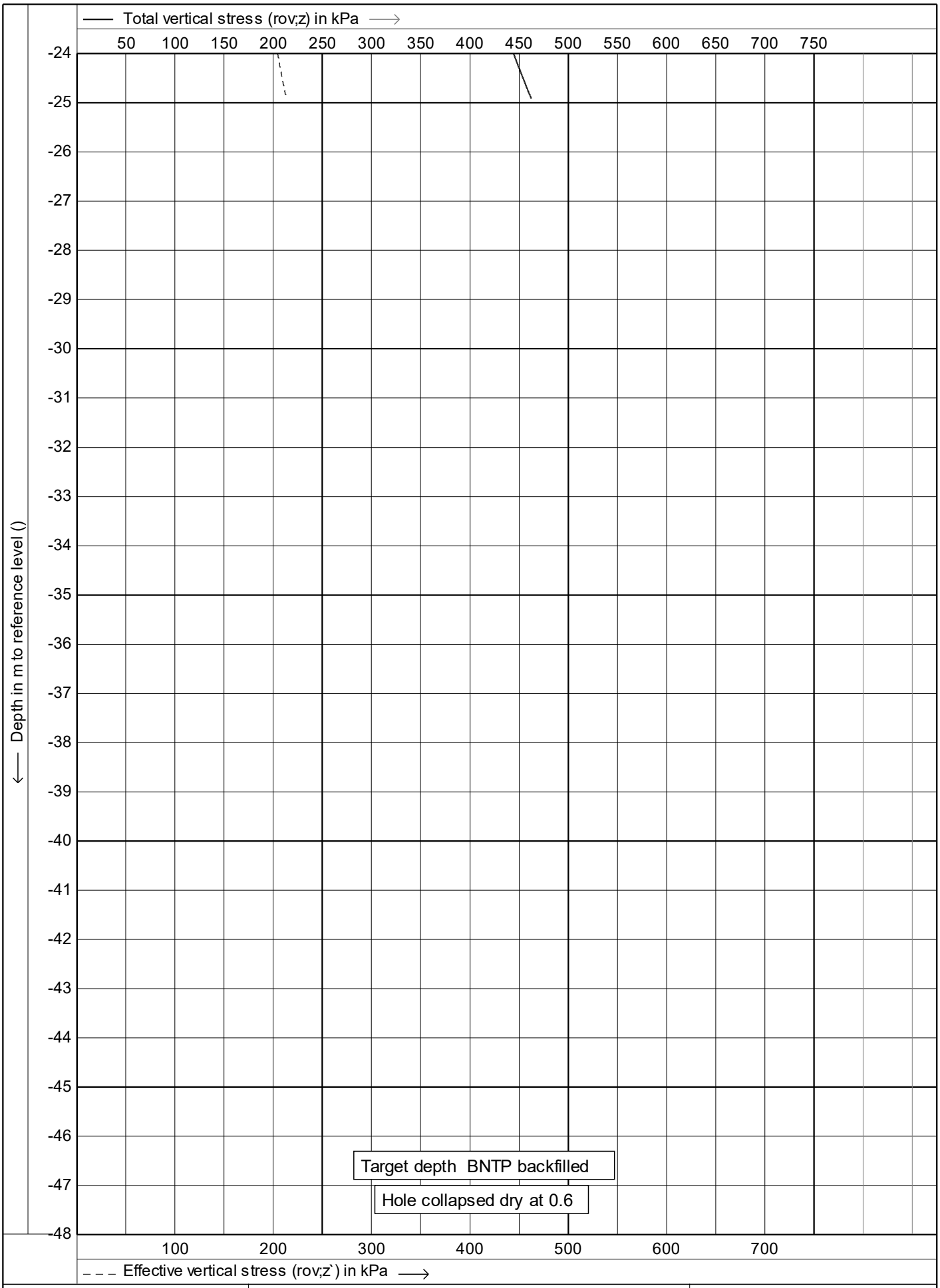
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
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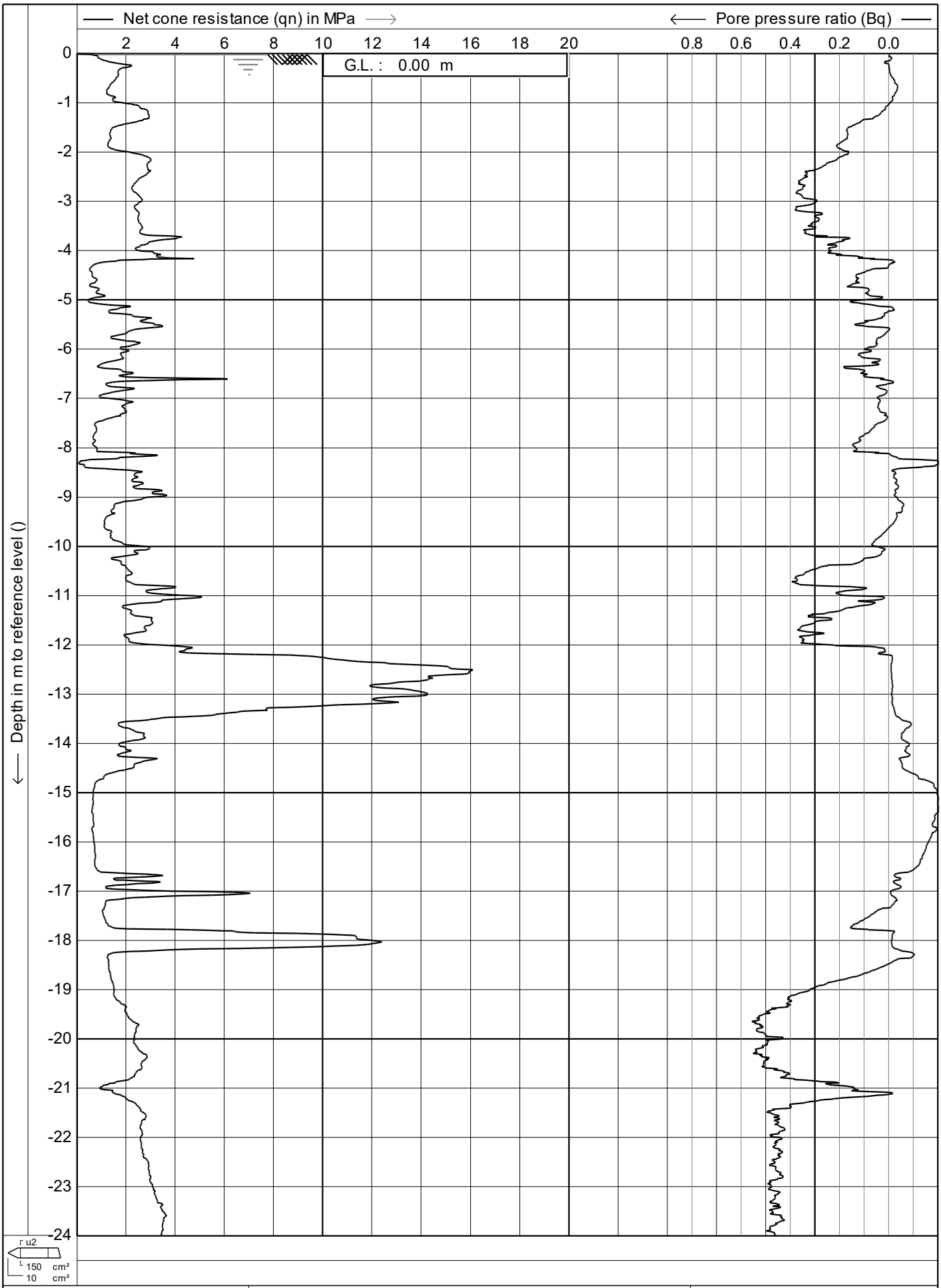
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

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Date	: **27/11/2020**
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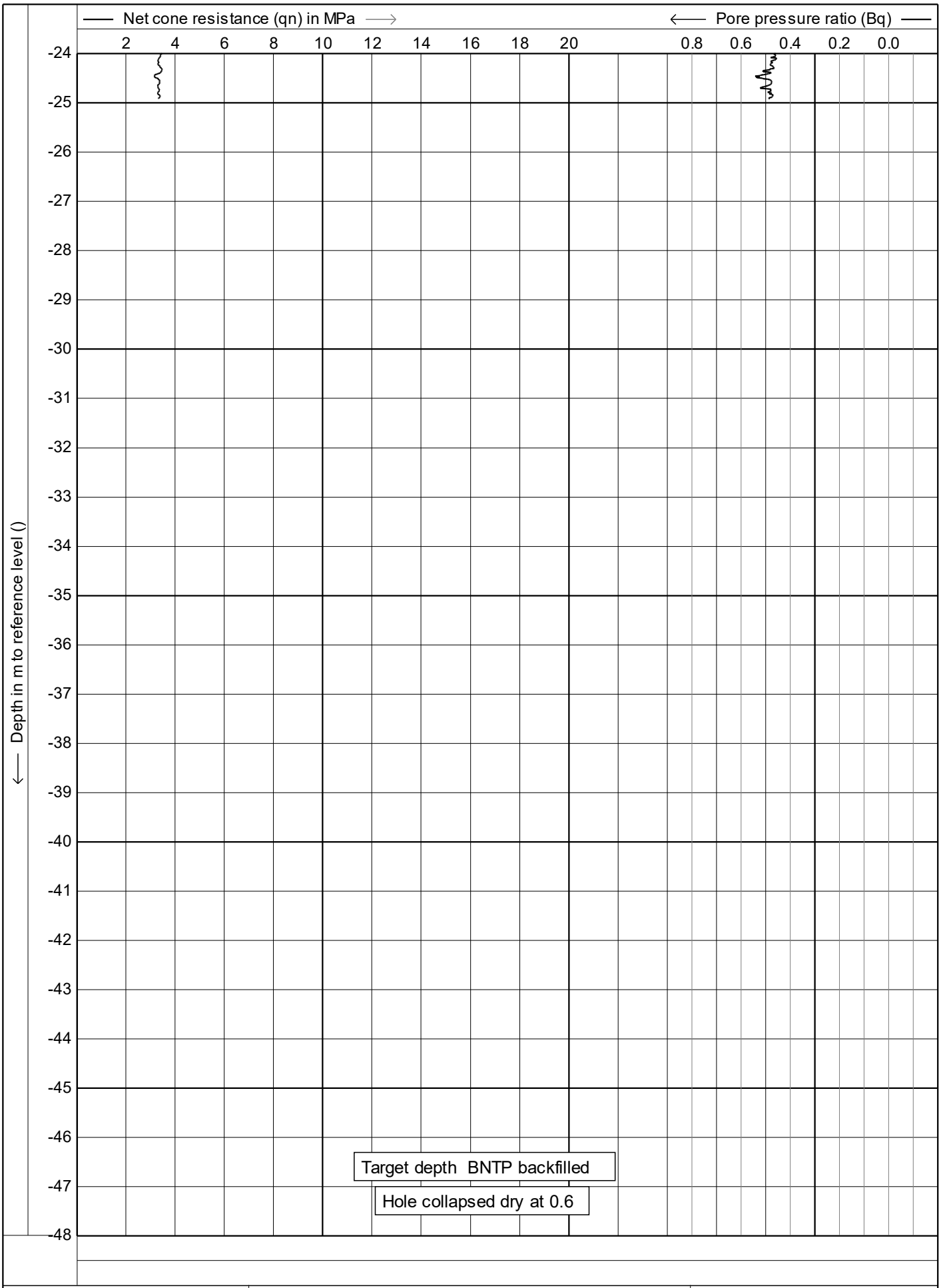
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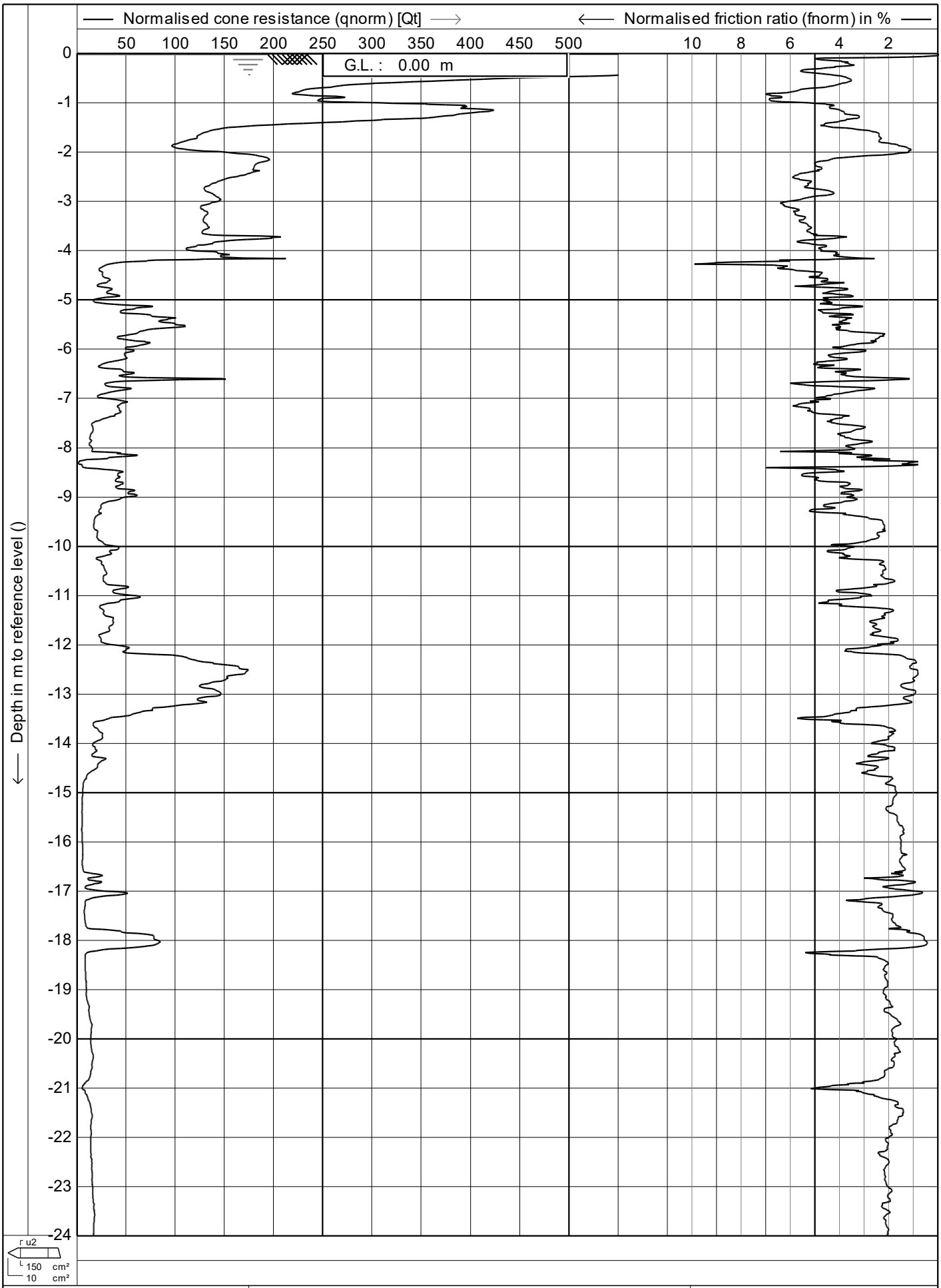
Cone no. : **C10CFIIP.C14426**

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CPT no. : **042**

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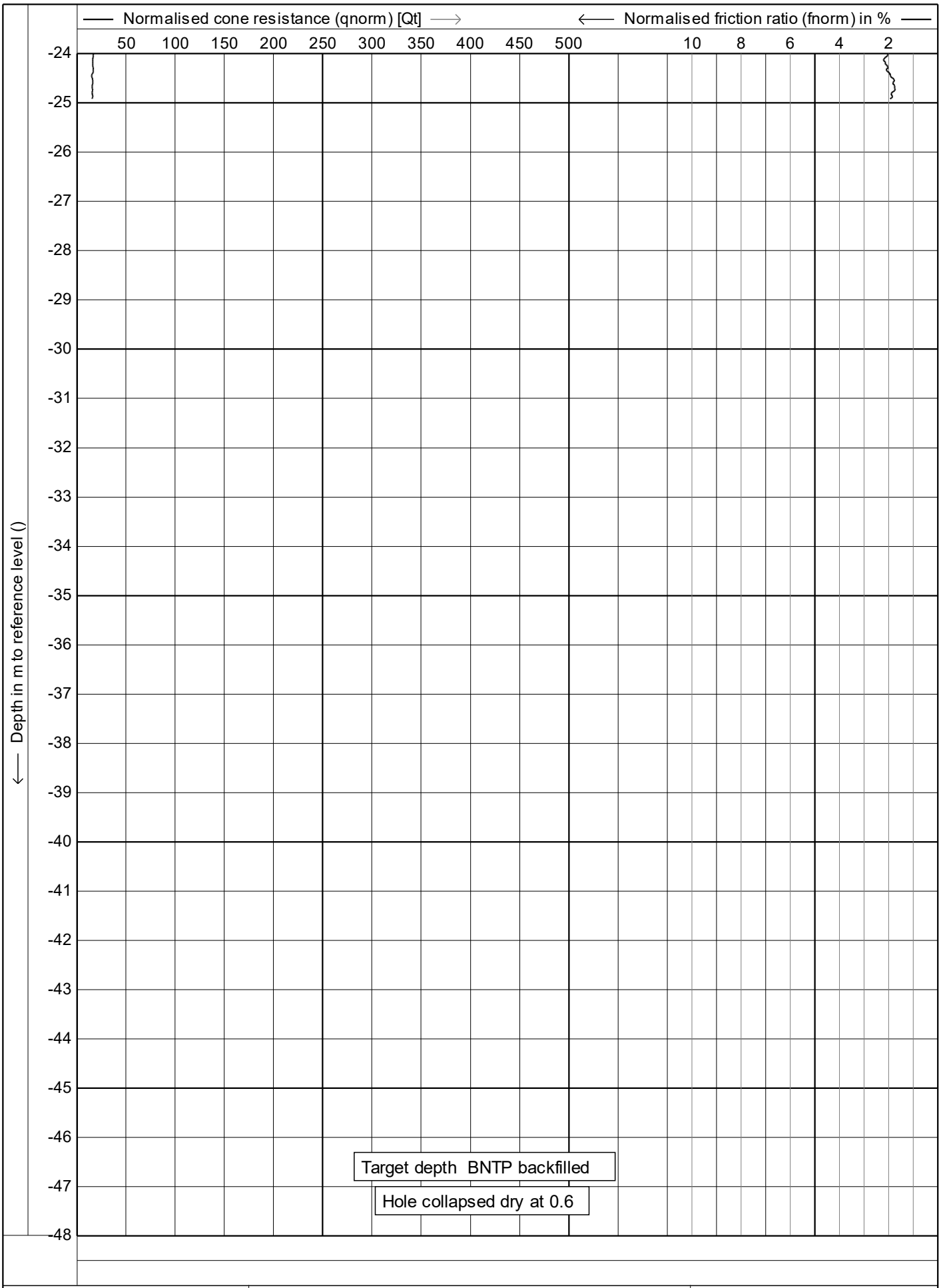
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Position: **0, 0**

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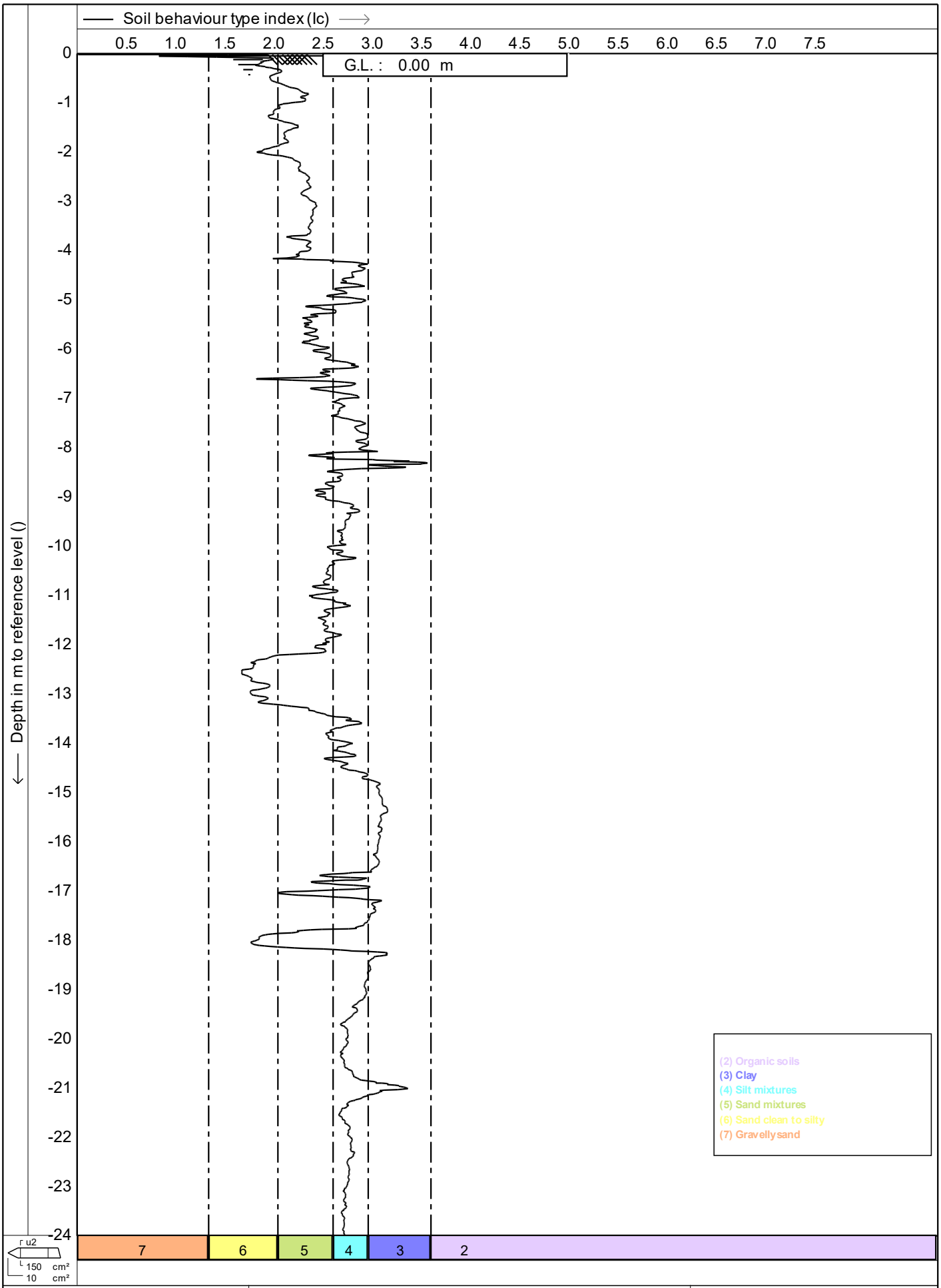
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Location: **Fitzgerald Rd - Drury**

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Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

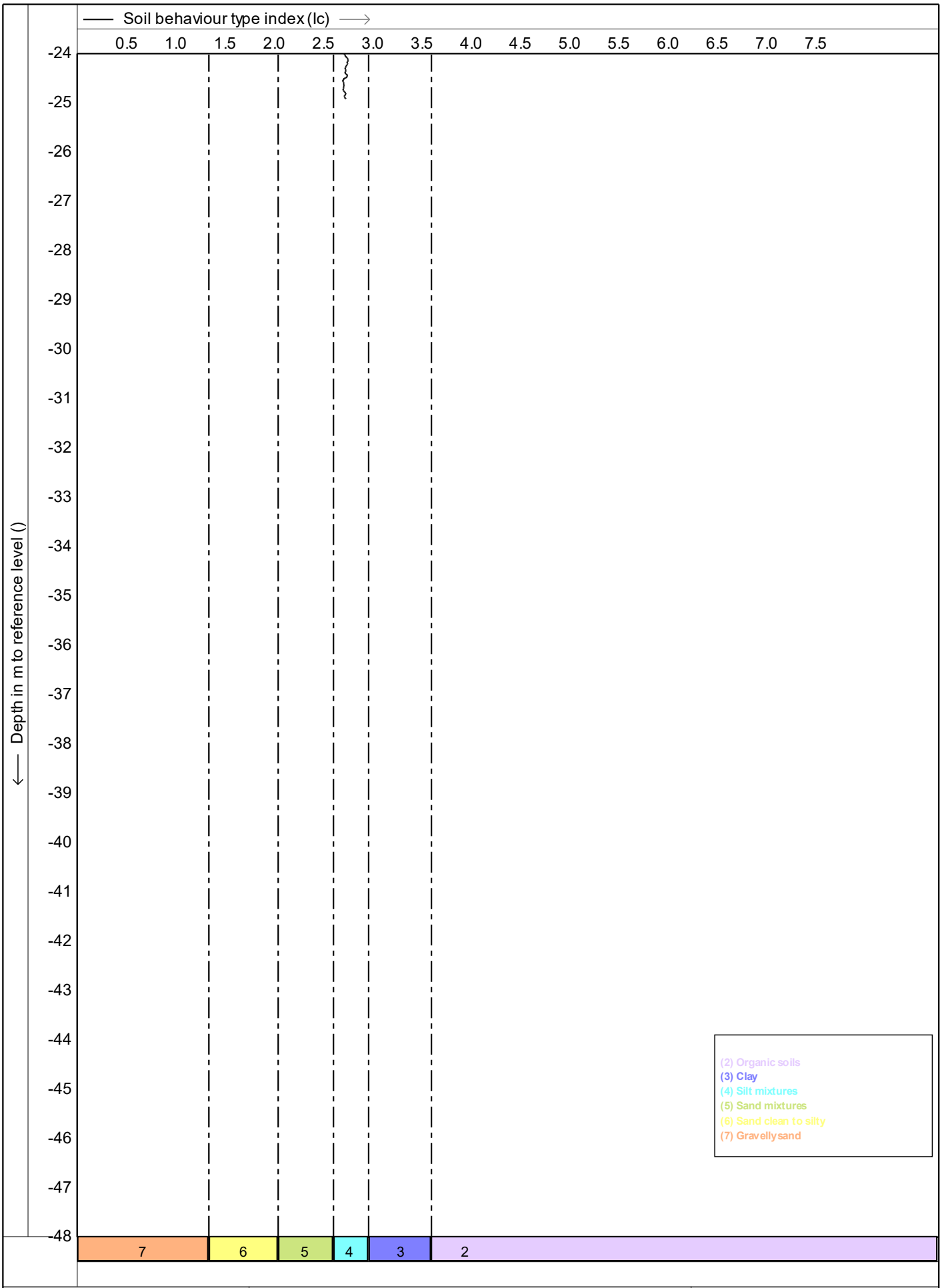
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **042**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

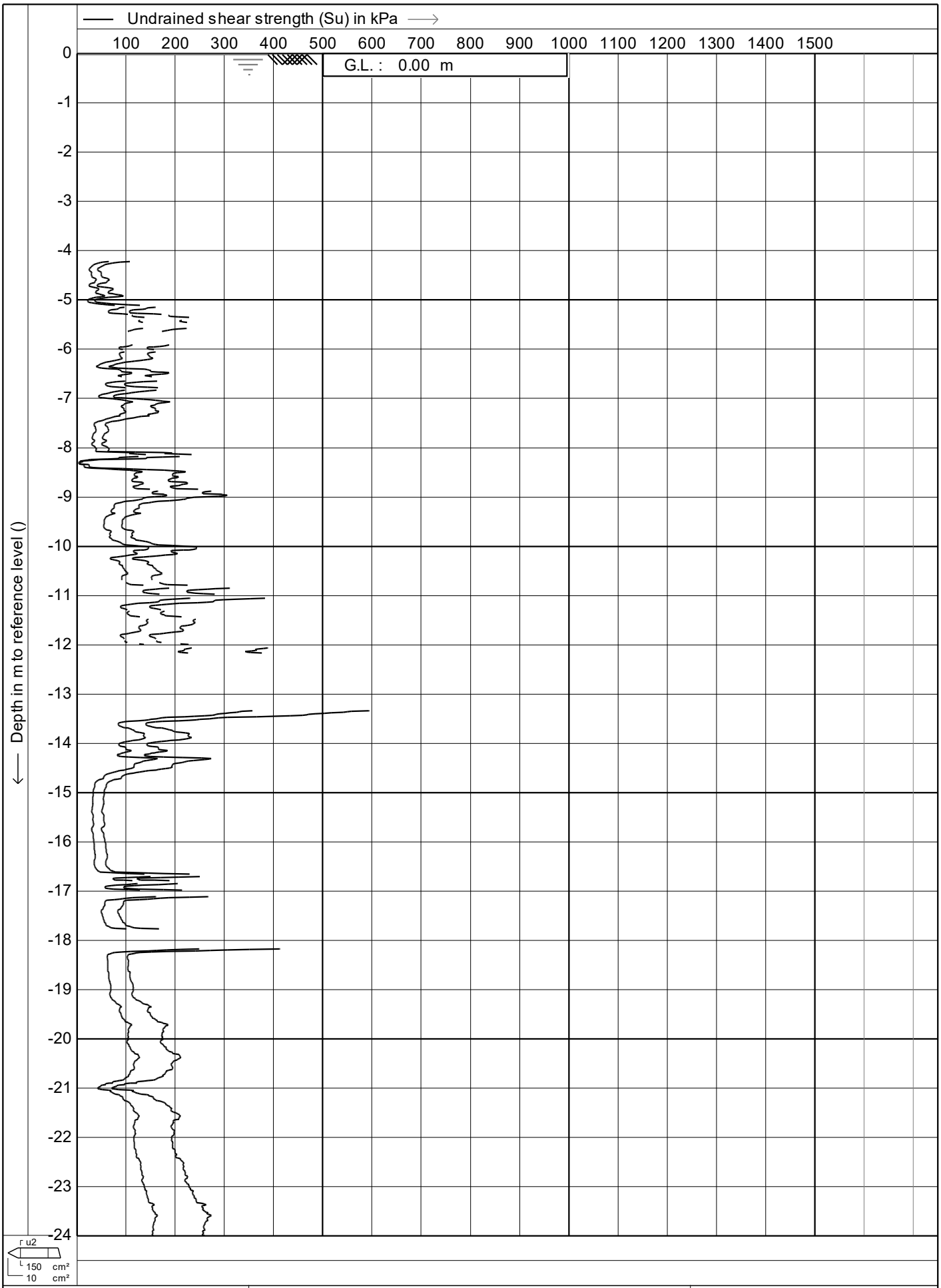
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **042**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

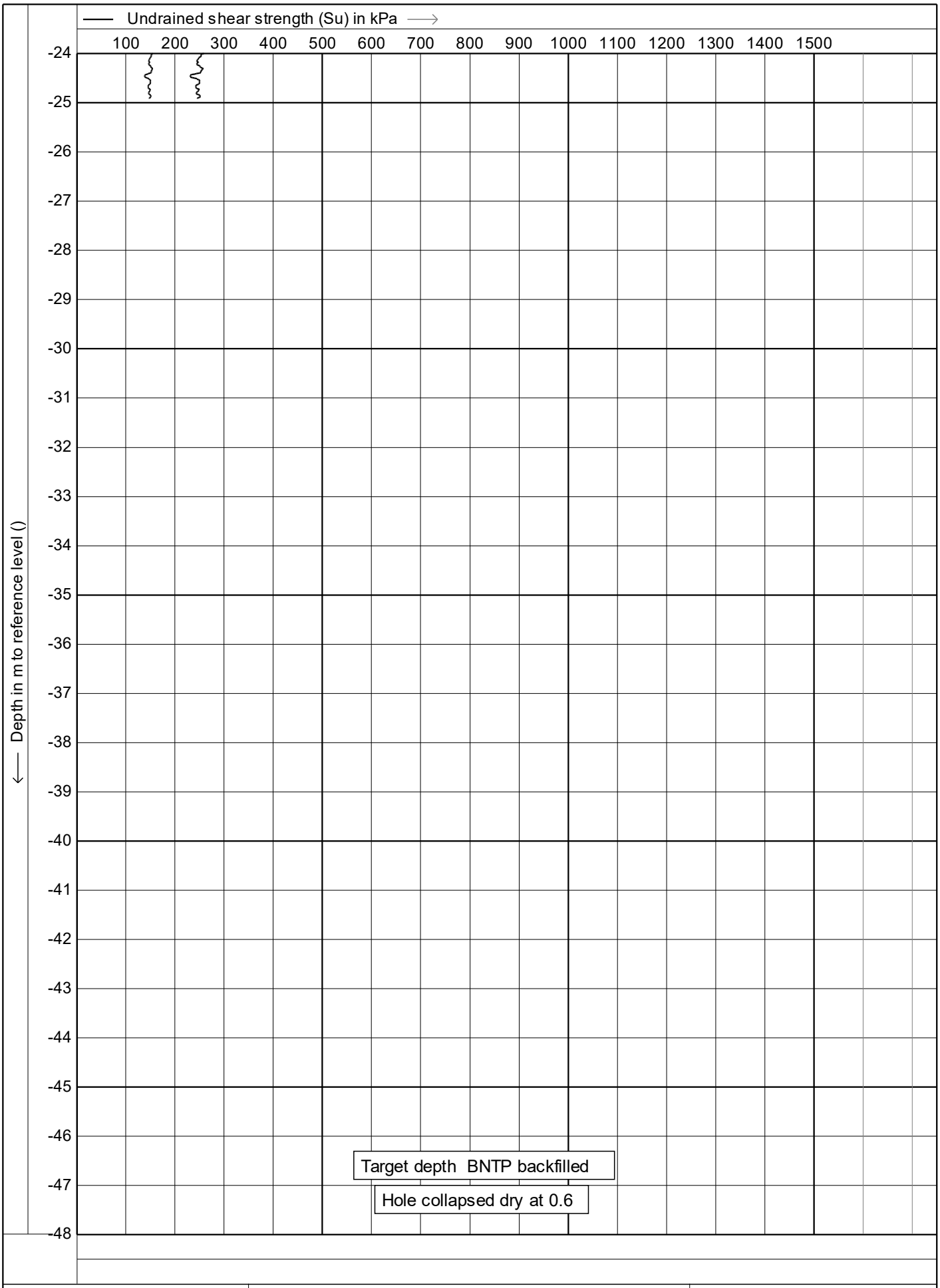
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **042**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

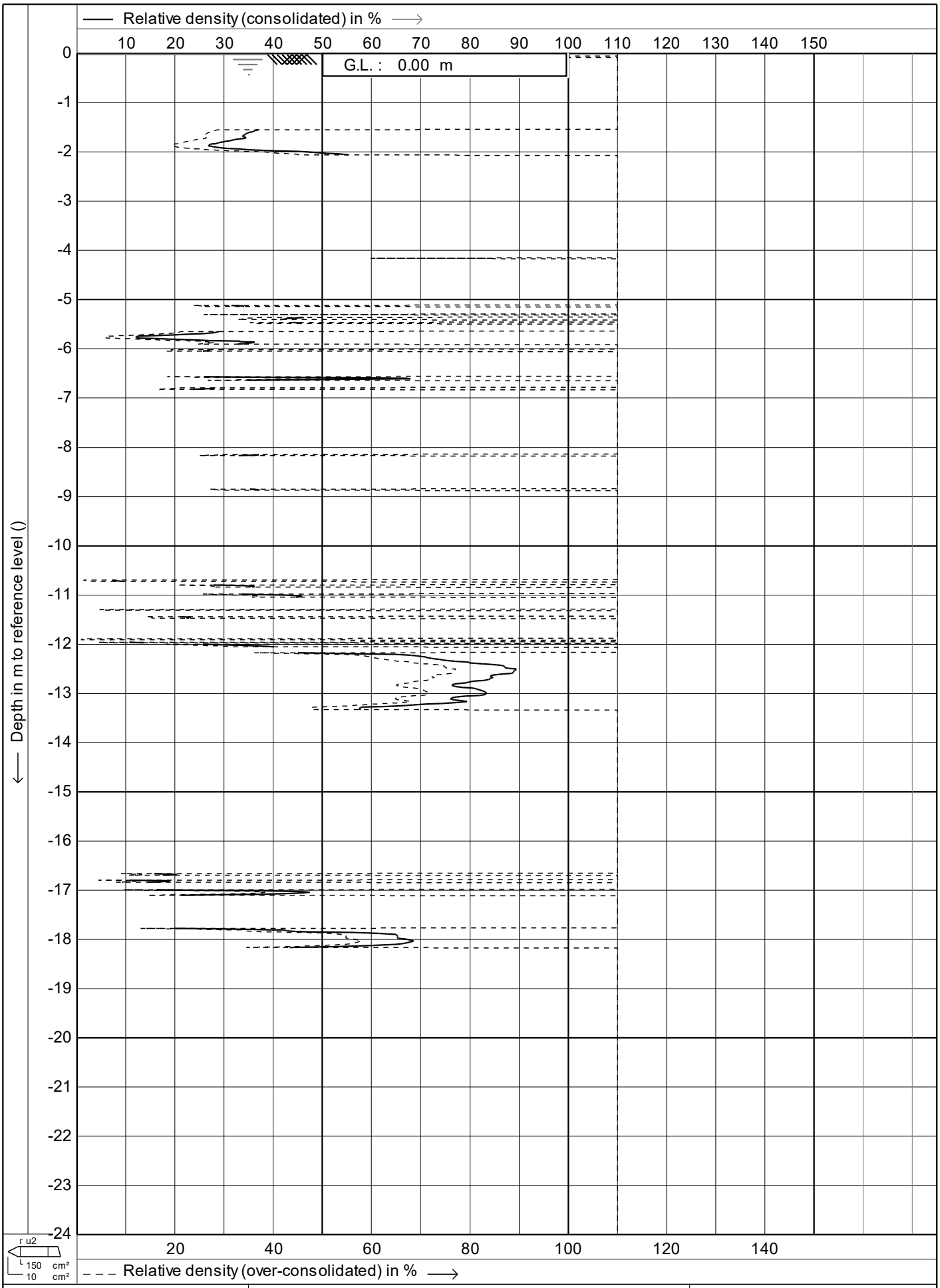
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

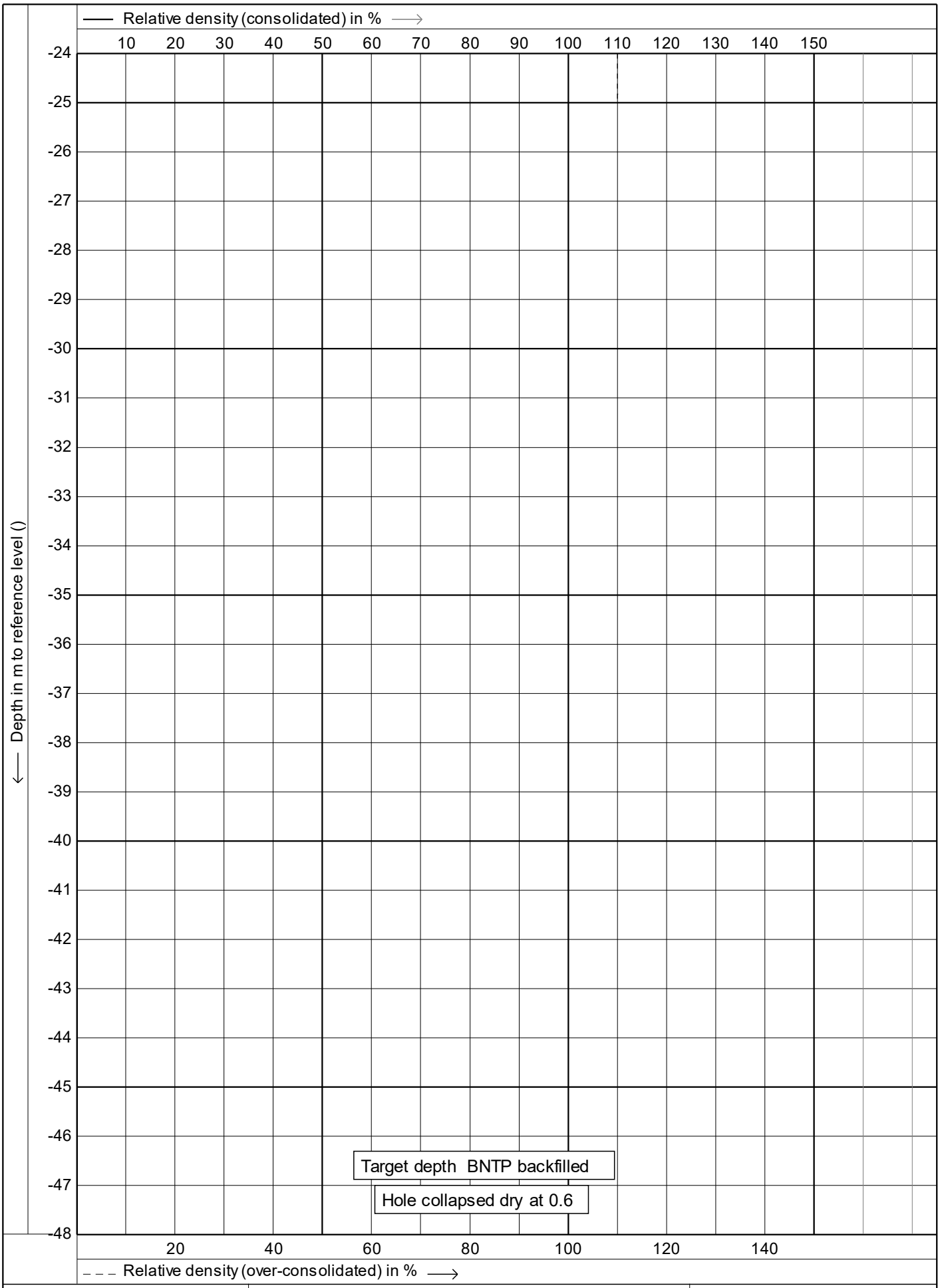
Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **042**

1.48



PERRY GEOTECH	Test according A.S.T.M Standard D 5778-12	Date : **27/11/2020**
	Project : **Site Investigations**	Cone no. : **C10CFIIP.C14426**
	Location: **Fitzgerald Rd - Drury**	Project no. : **05AU7**
	Position: **0, 0**	CPT no. : **042** **21/28**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

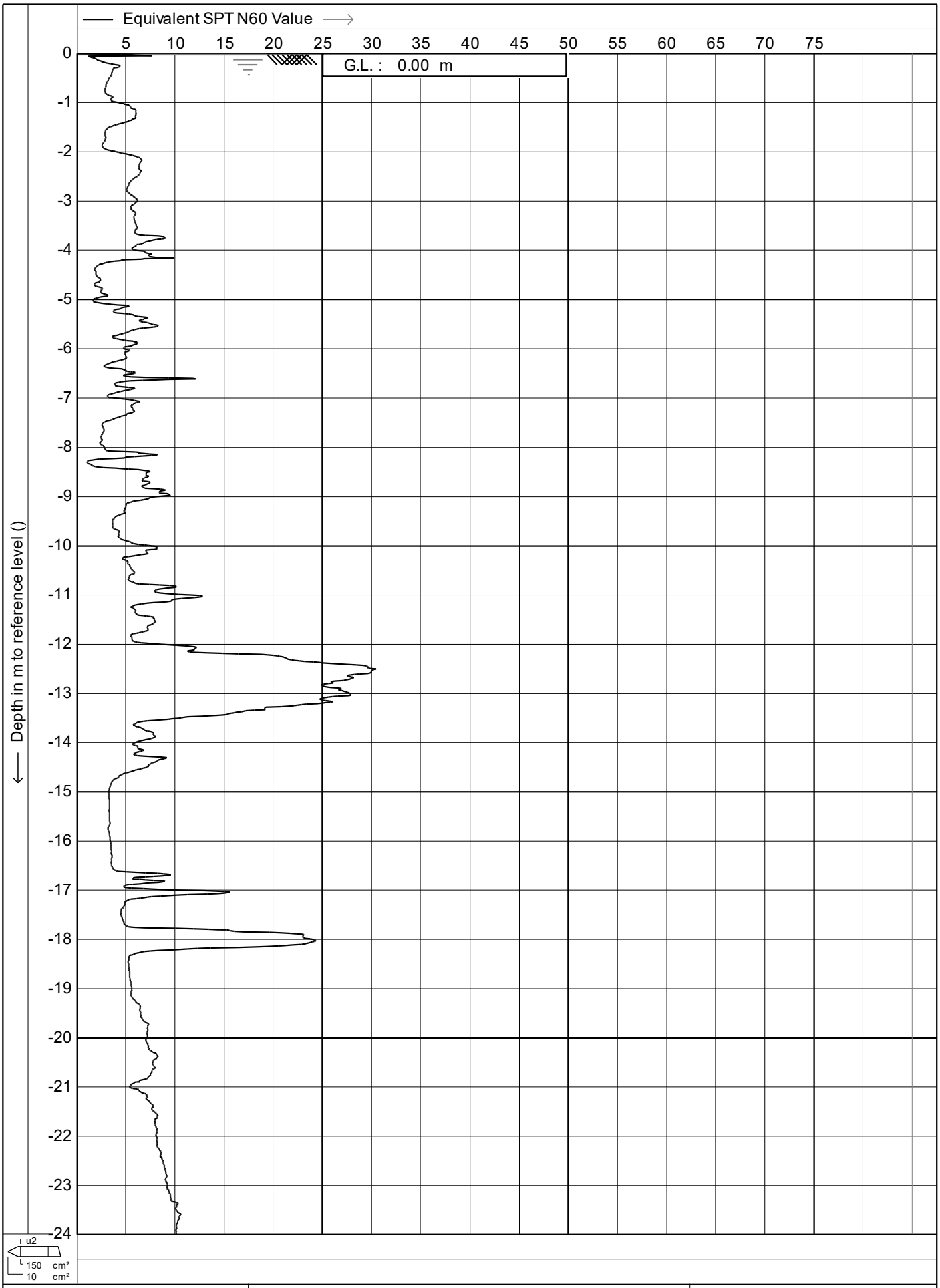
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **042**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

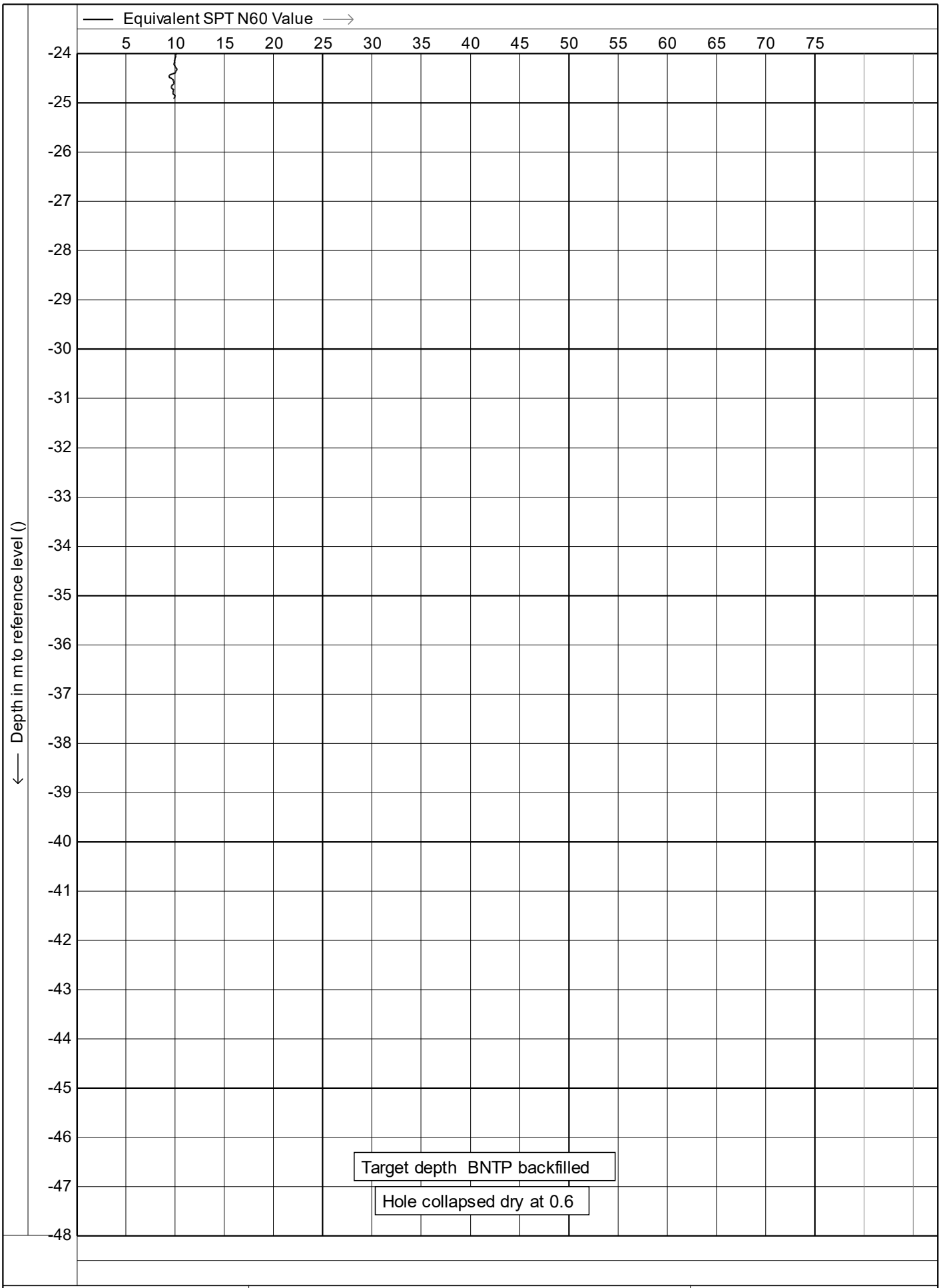
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **042**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

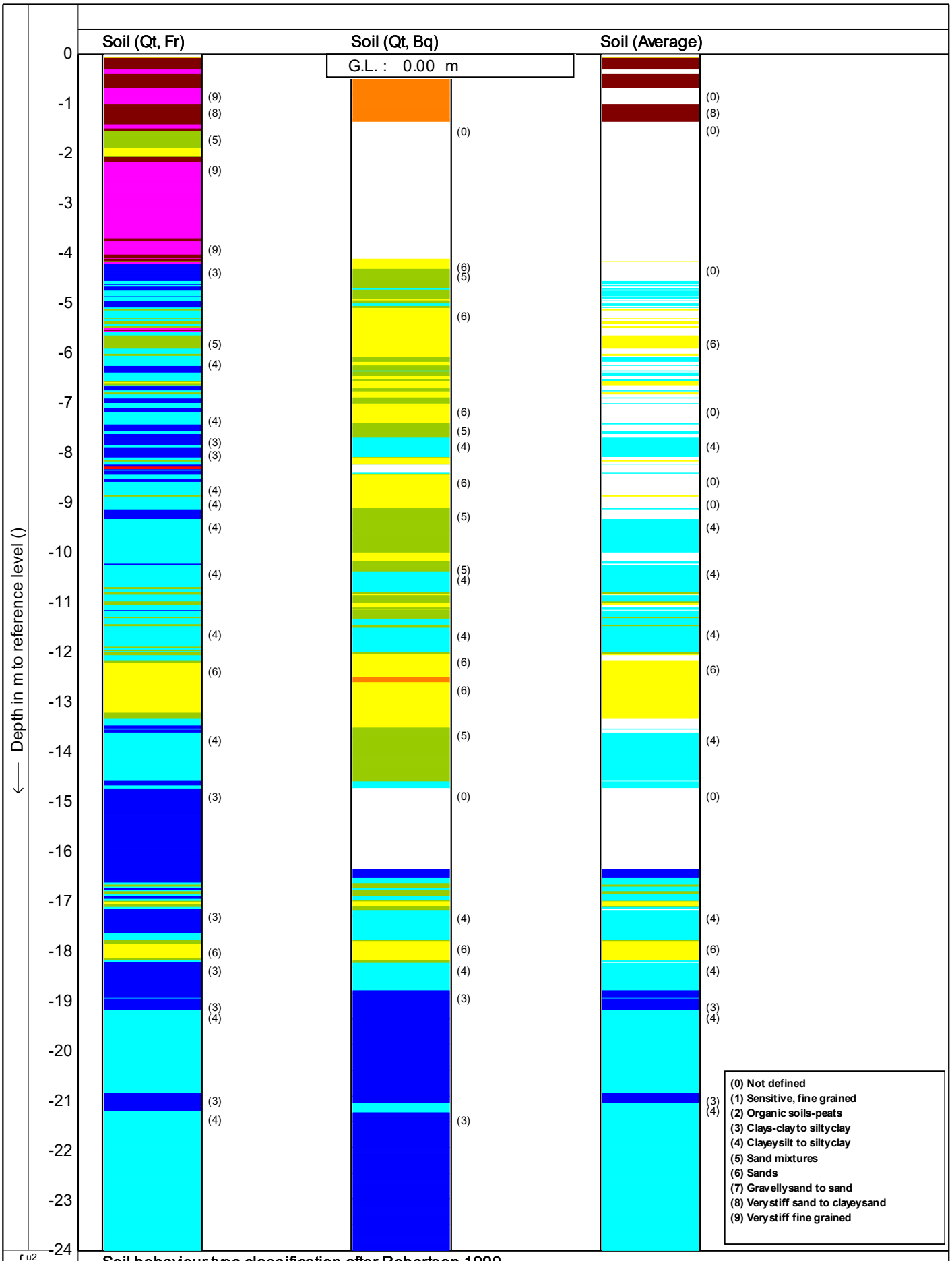
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **042**

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

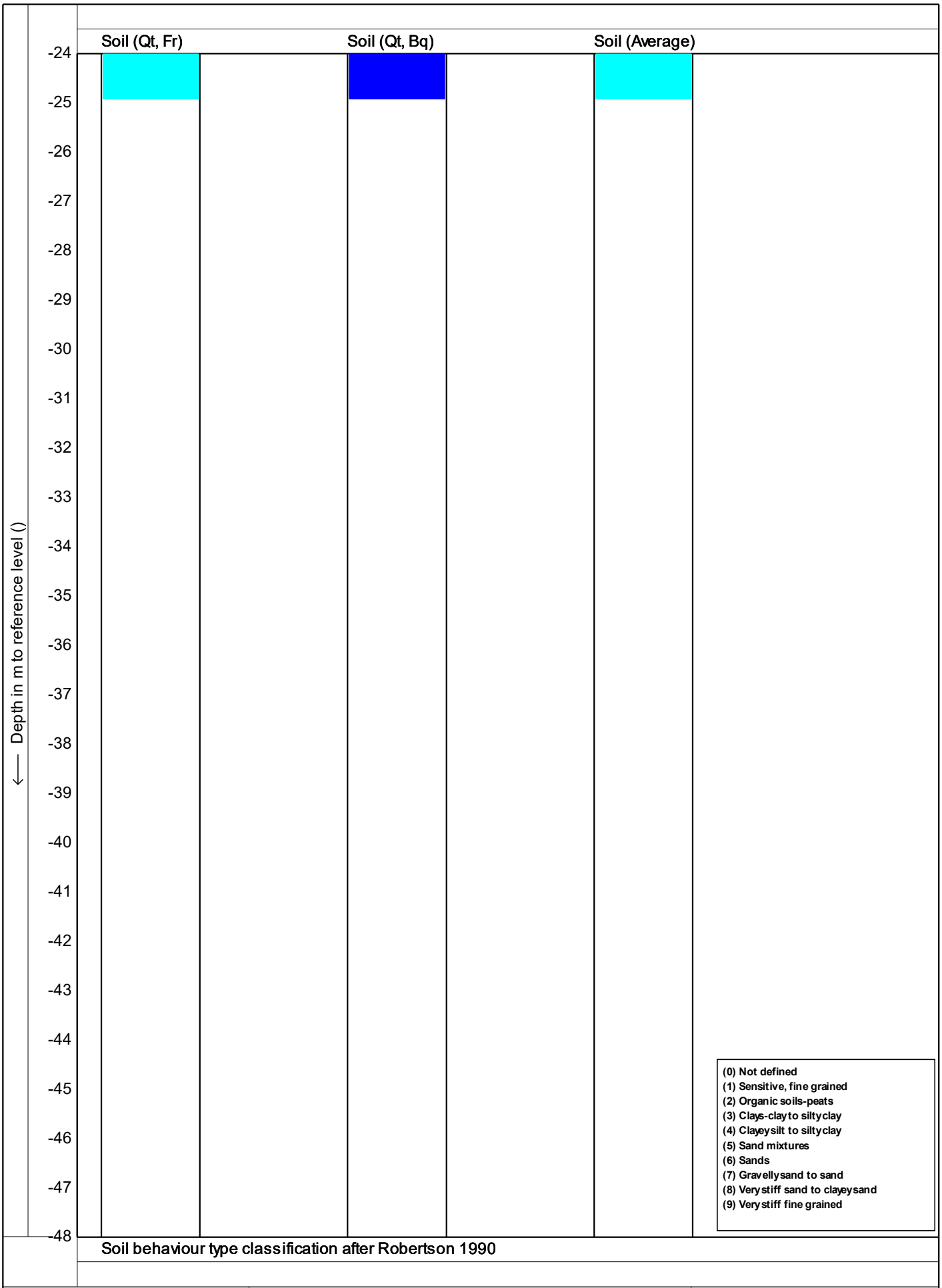
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **042**

1.48



Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

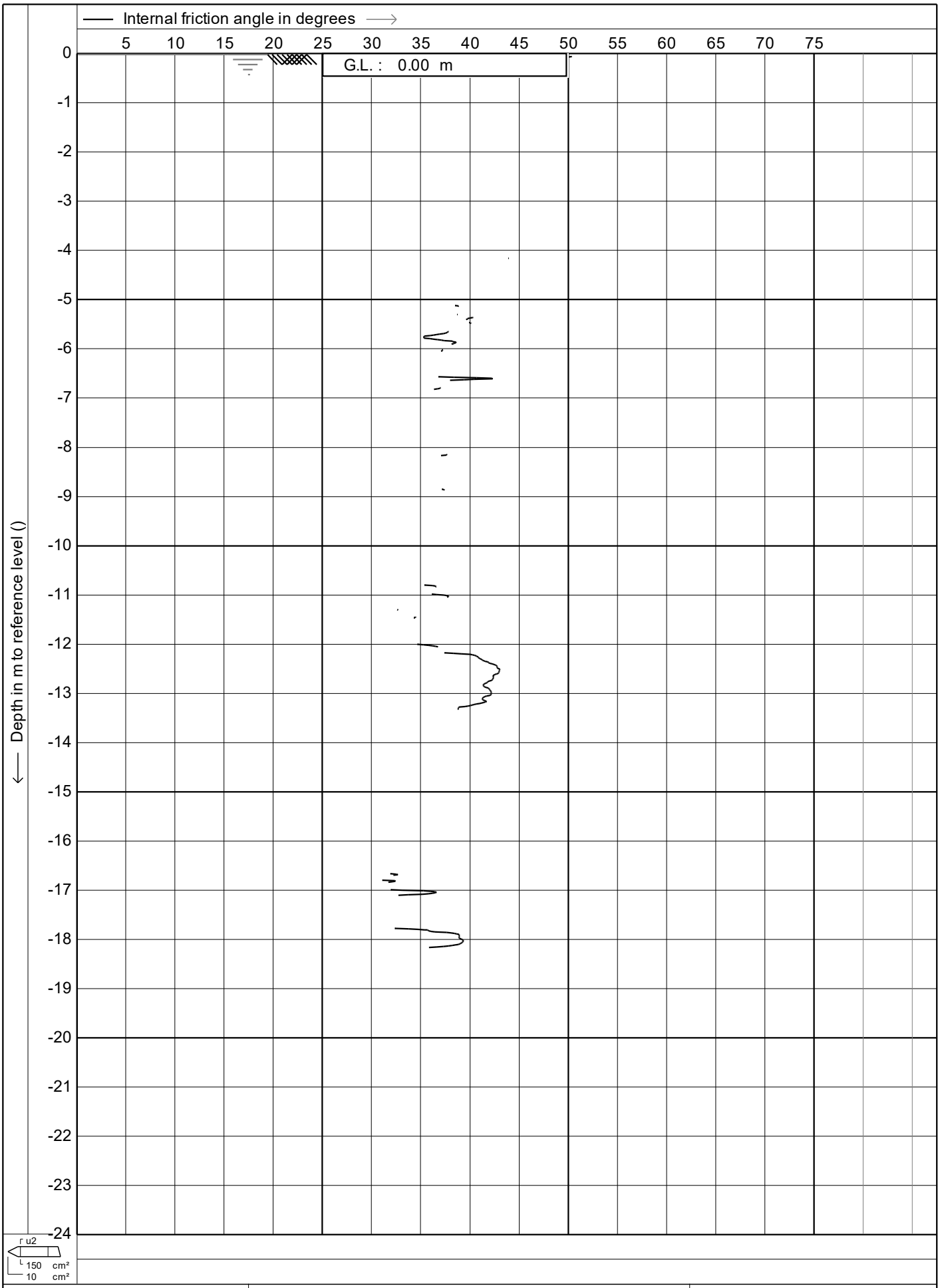
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **042**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

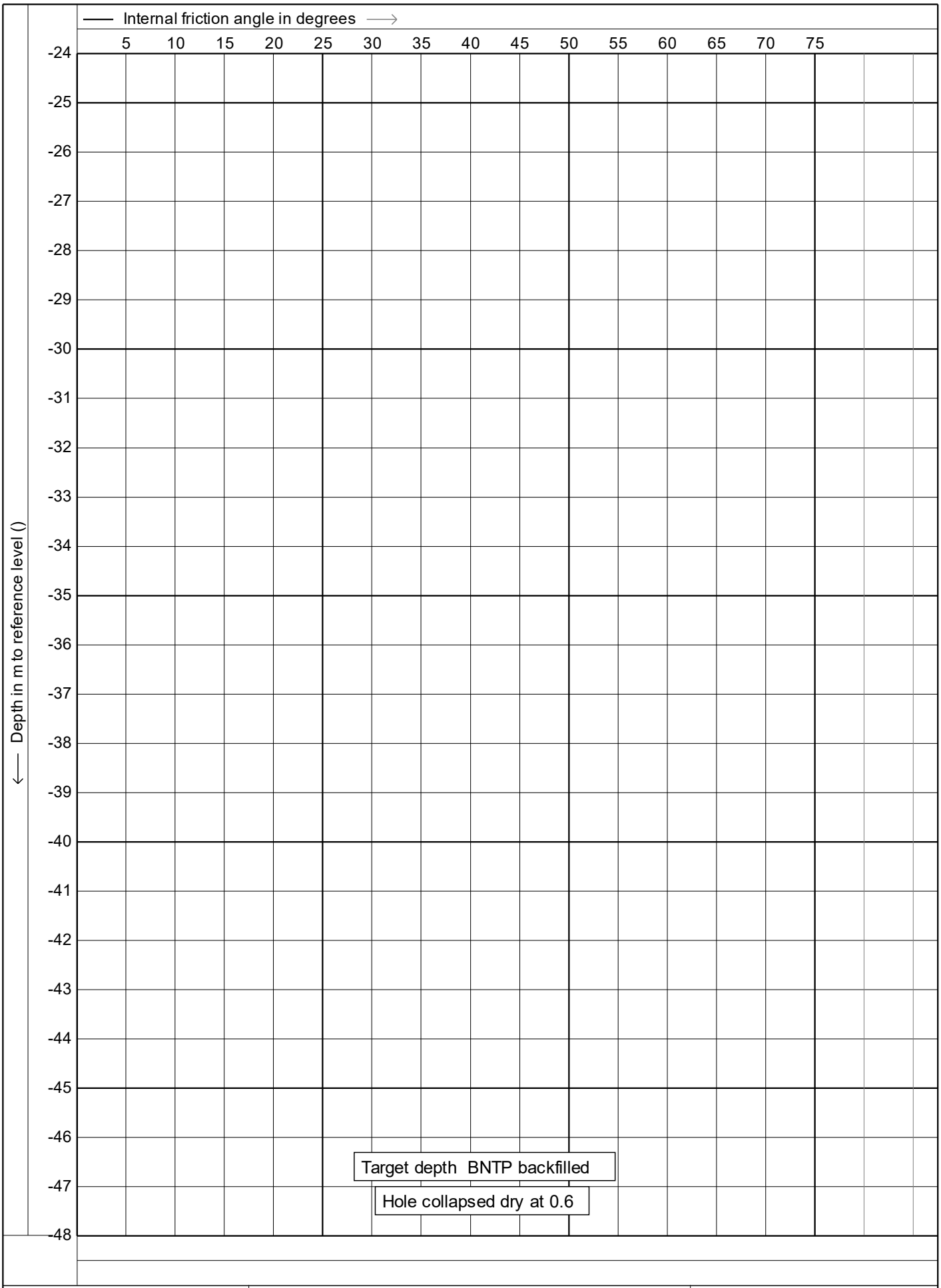
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **042**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

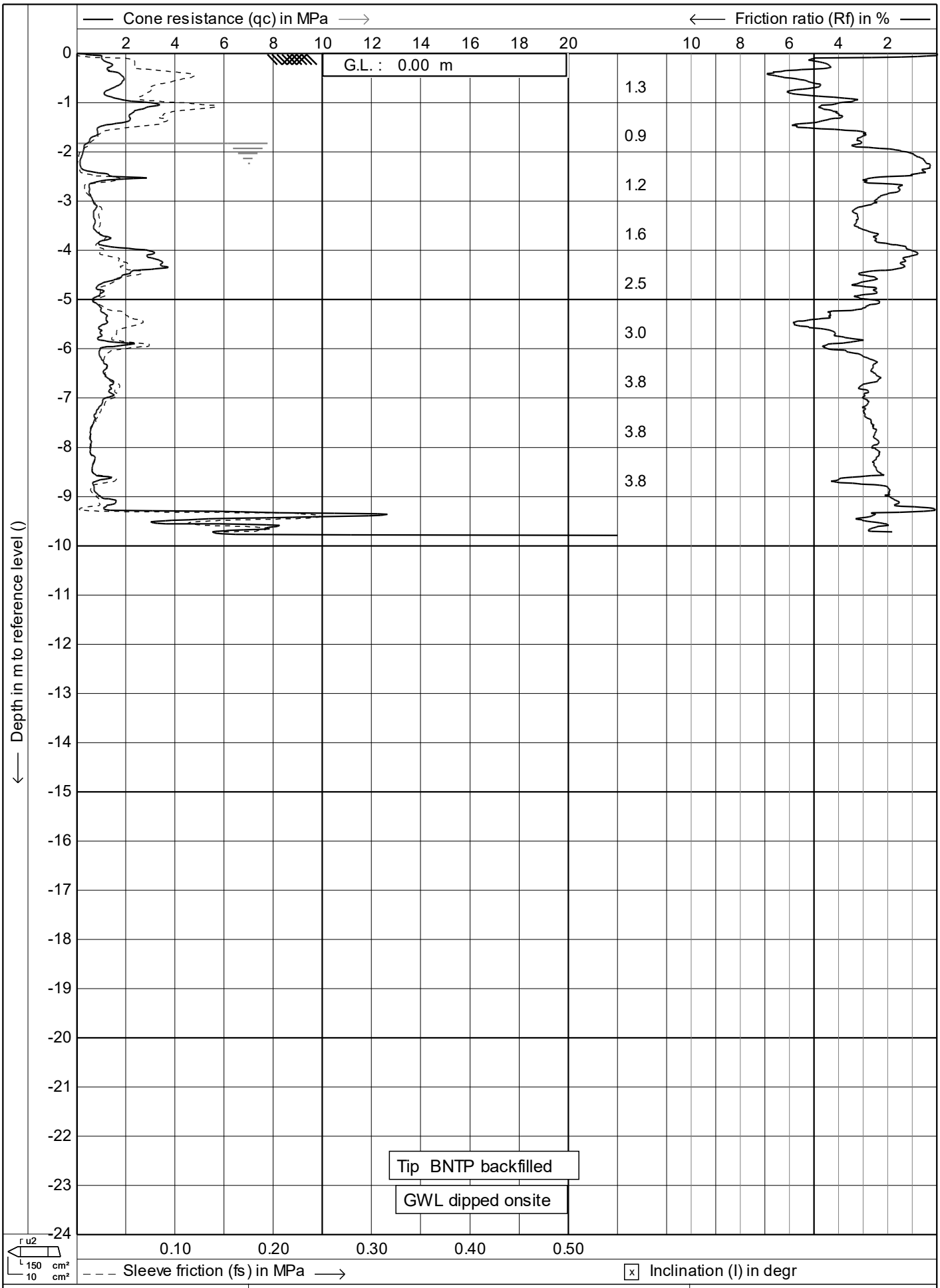
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **042**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

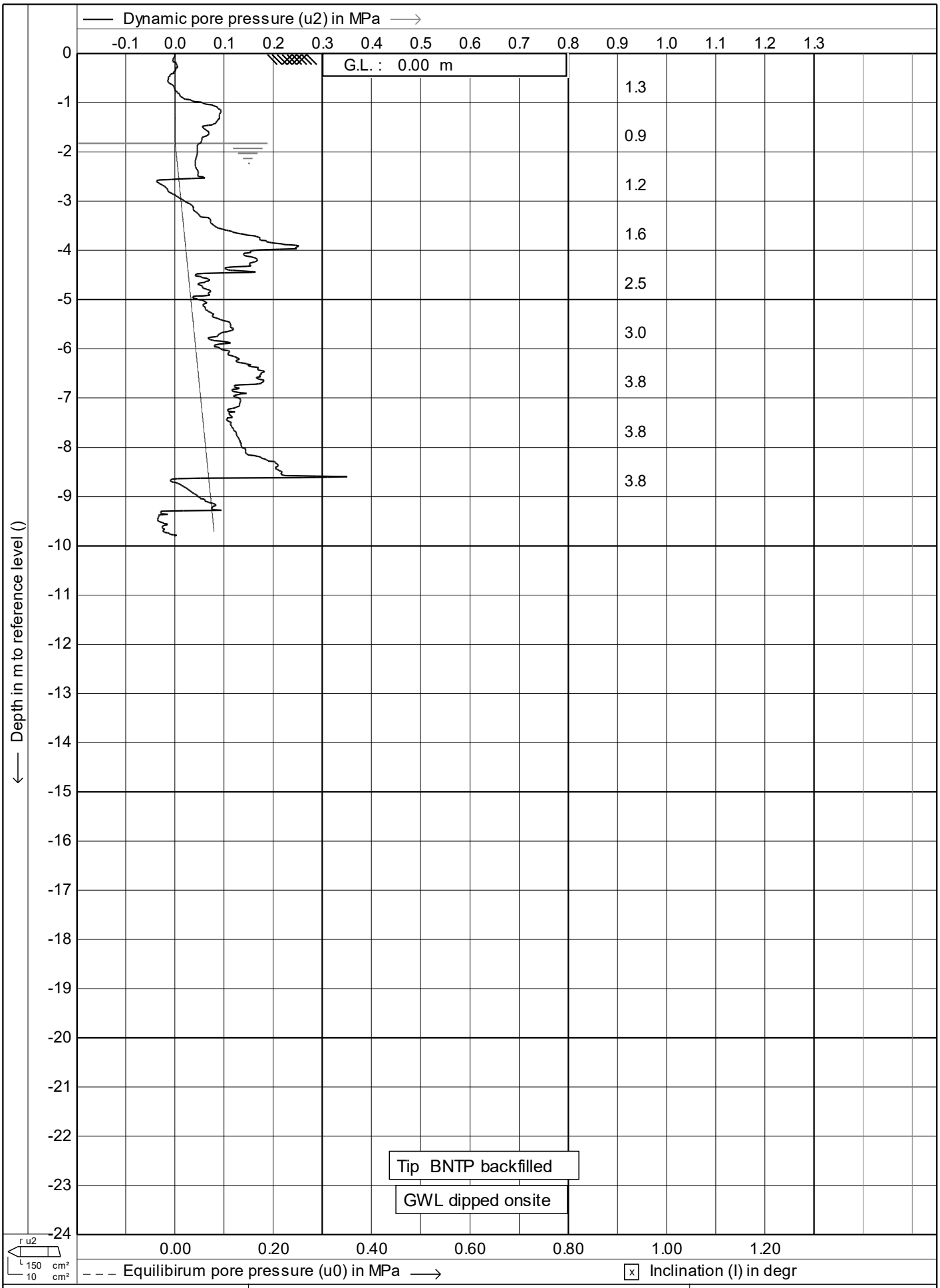
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **043** **1/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

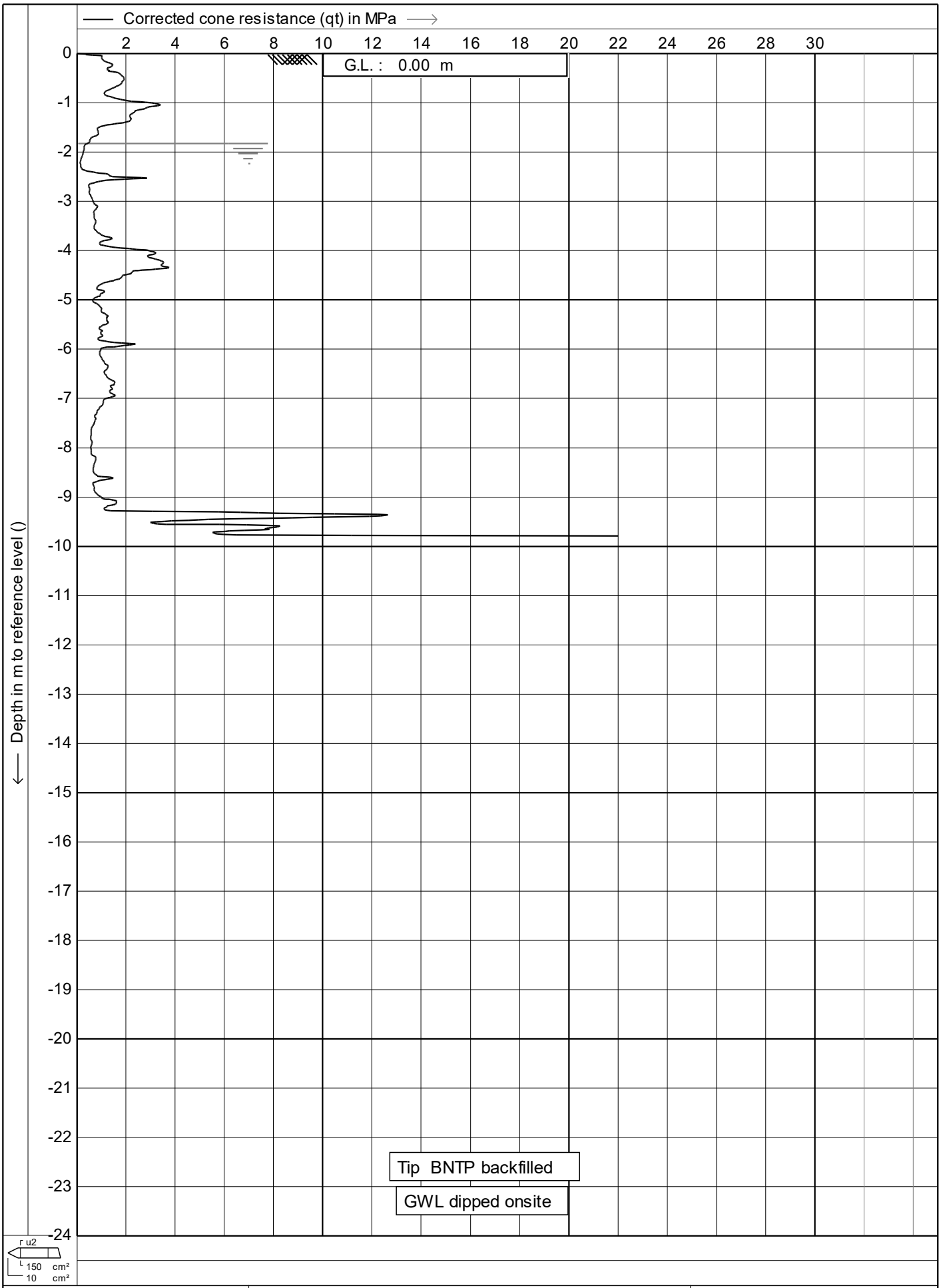
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **043**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

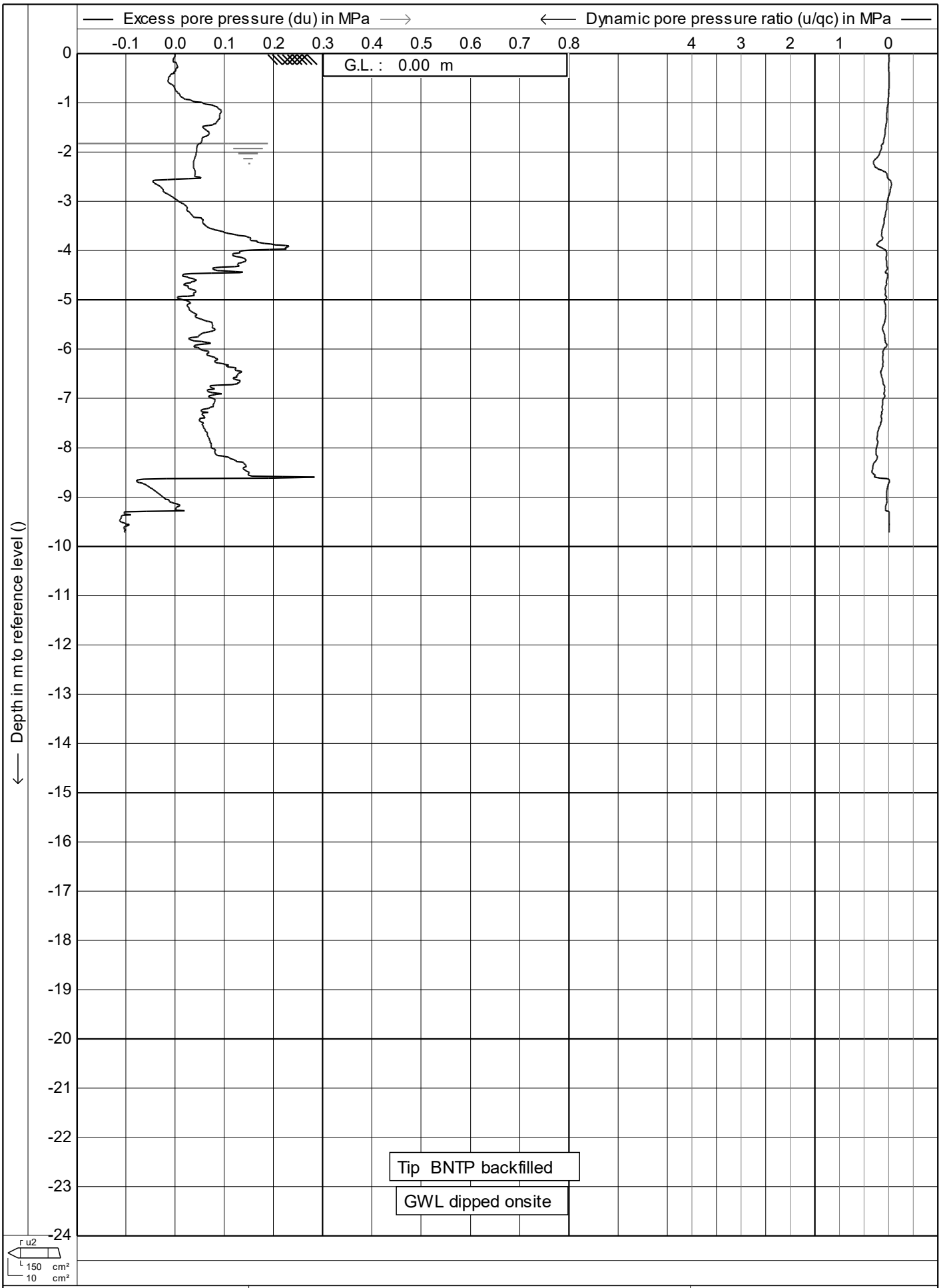
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **043**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

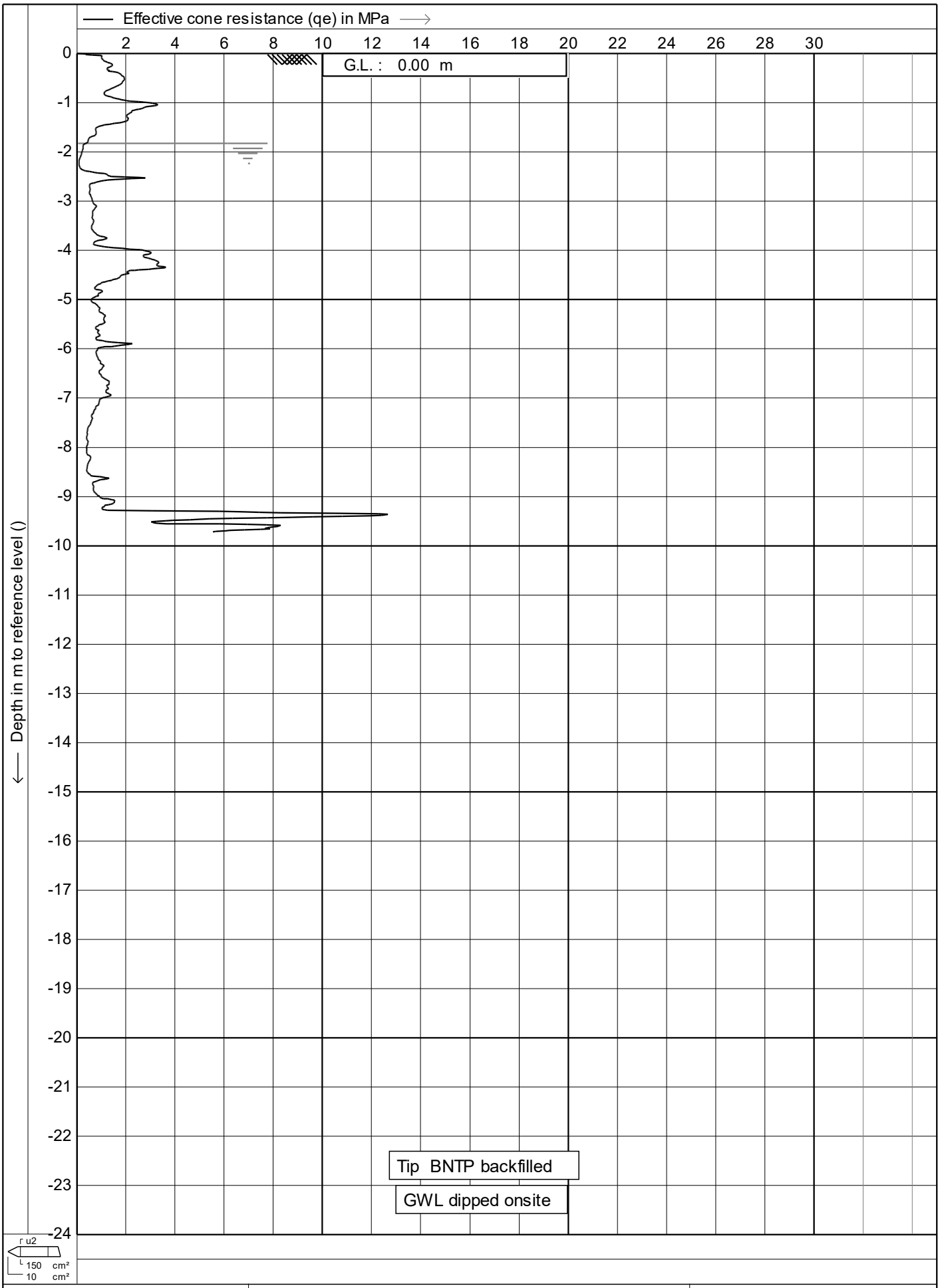
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **043** **4/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **27/11/2020**

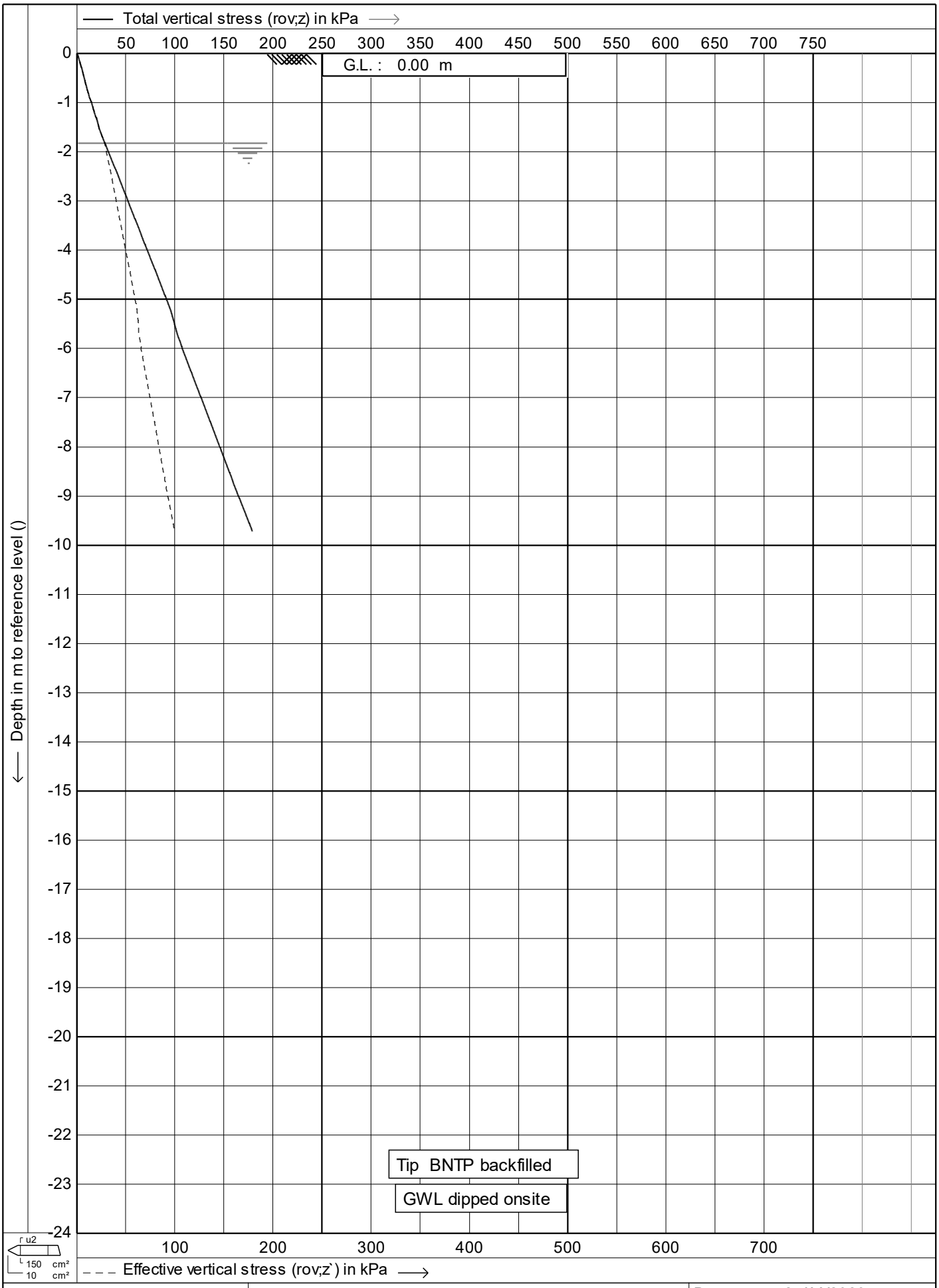
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **043**

5/14

1.48



Test according A.S.T.M Standard D 5778-12

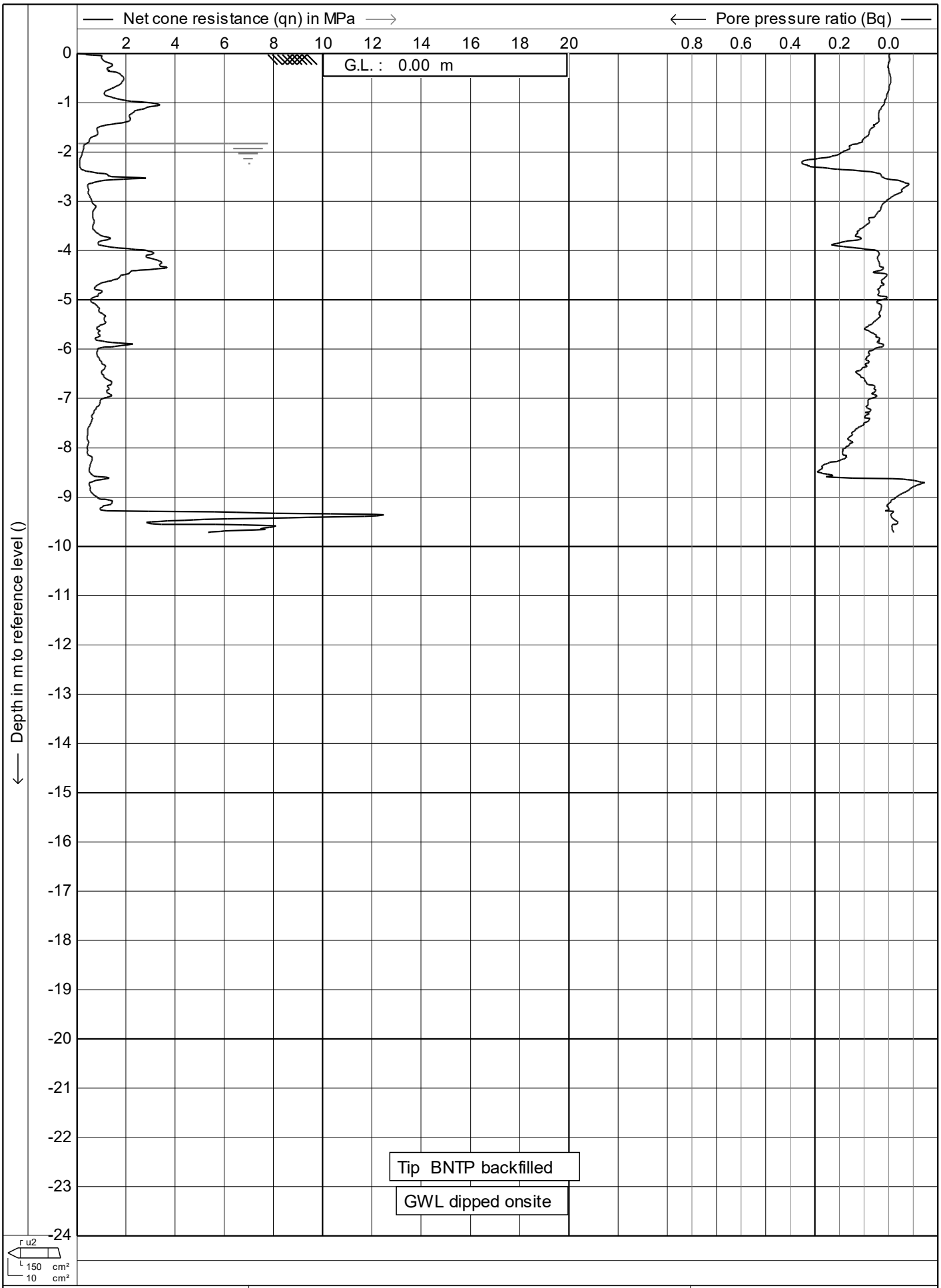
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **043**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

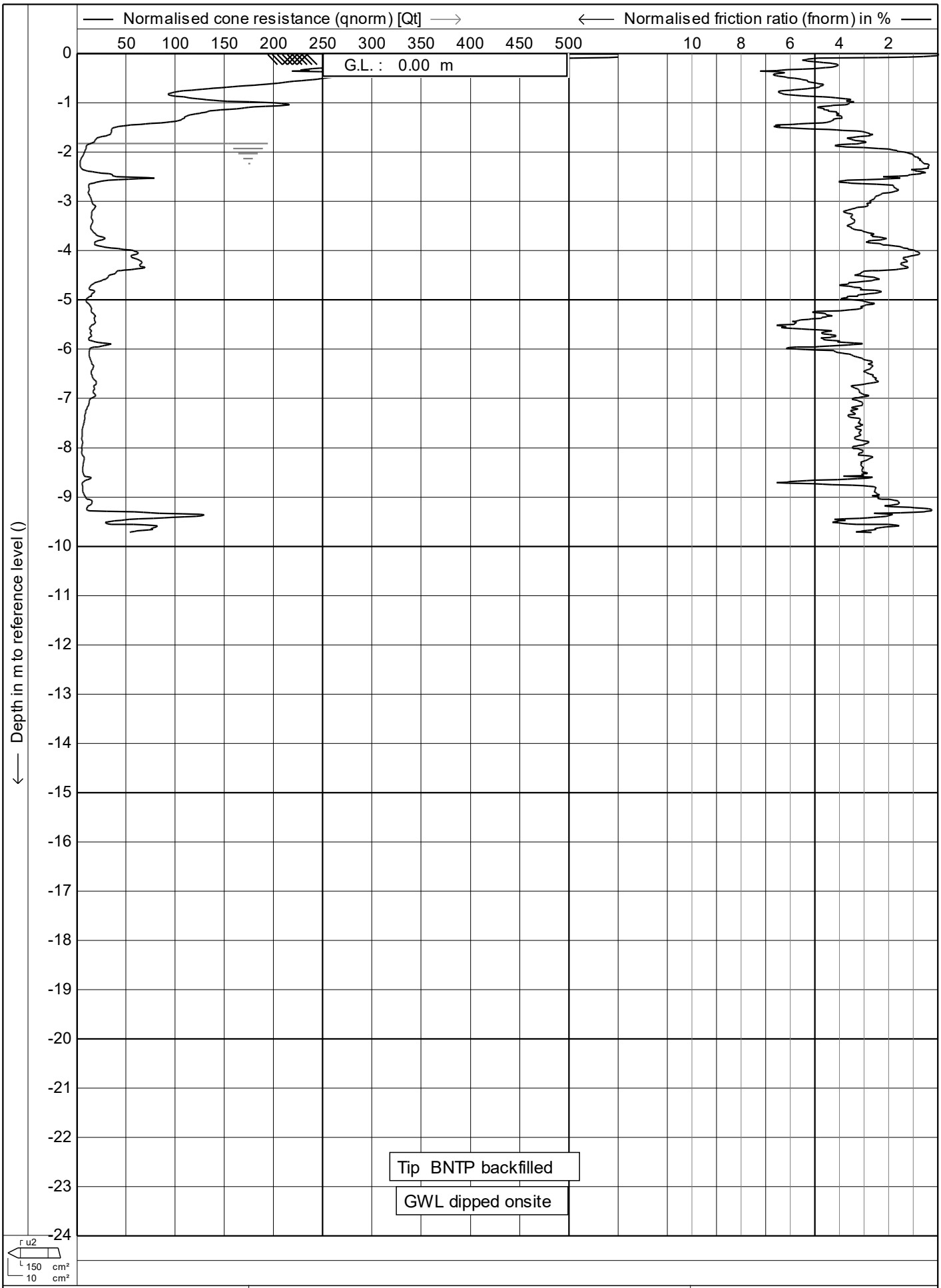
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **043** **7/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **27/11/2020**

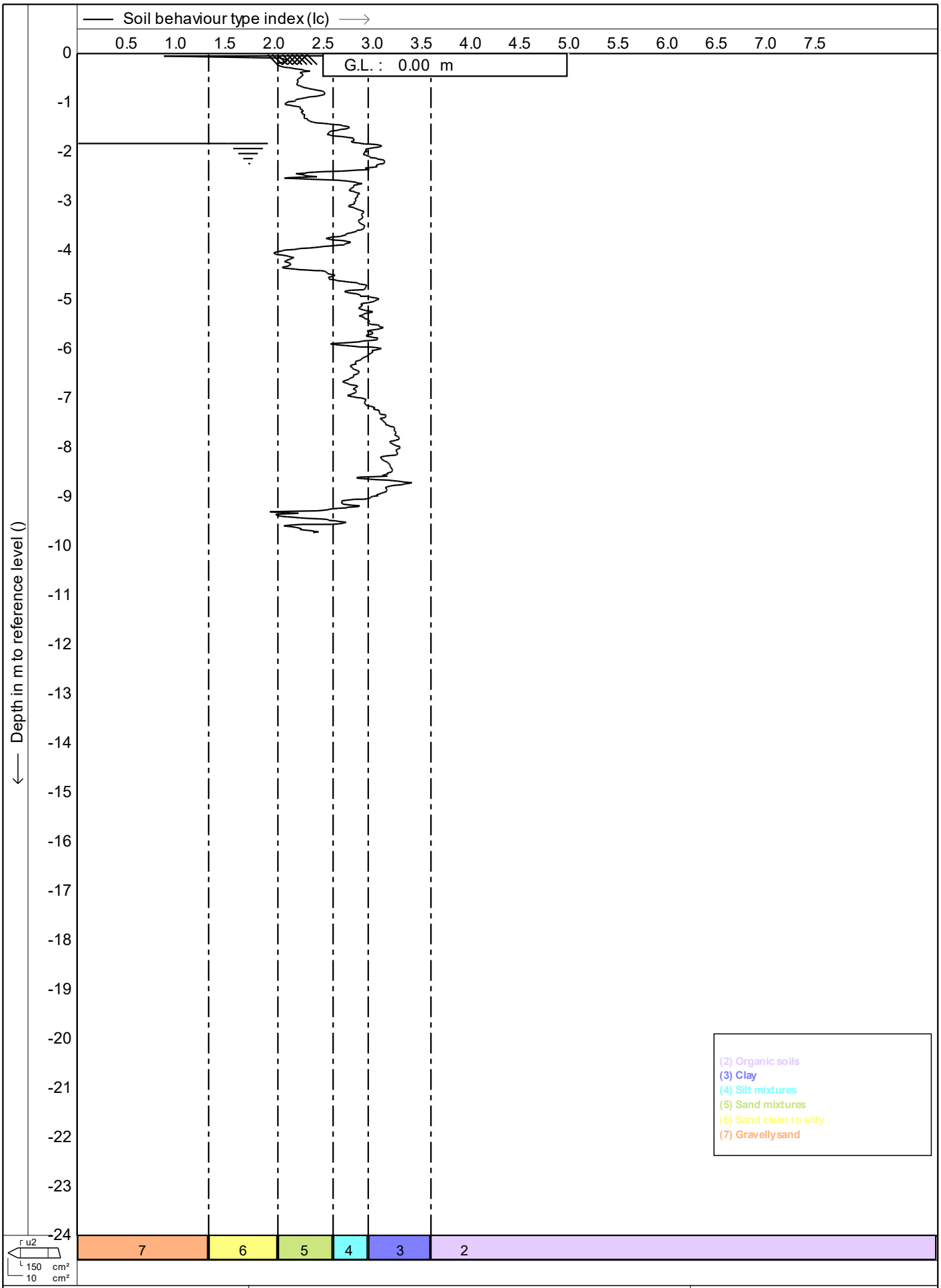
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **043**

8/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

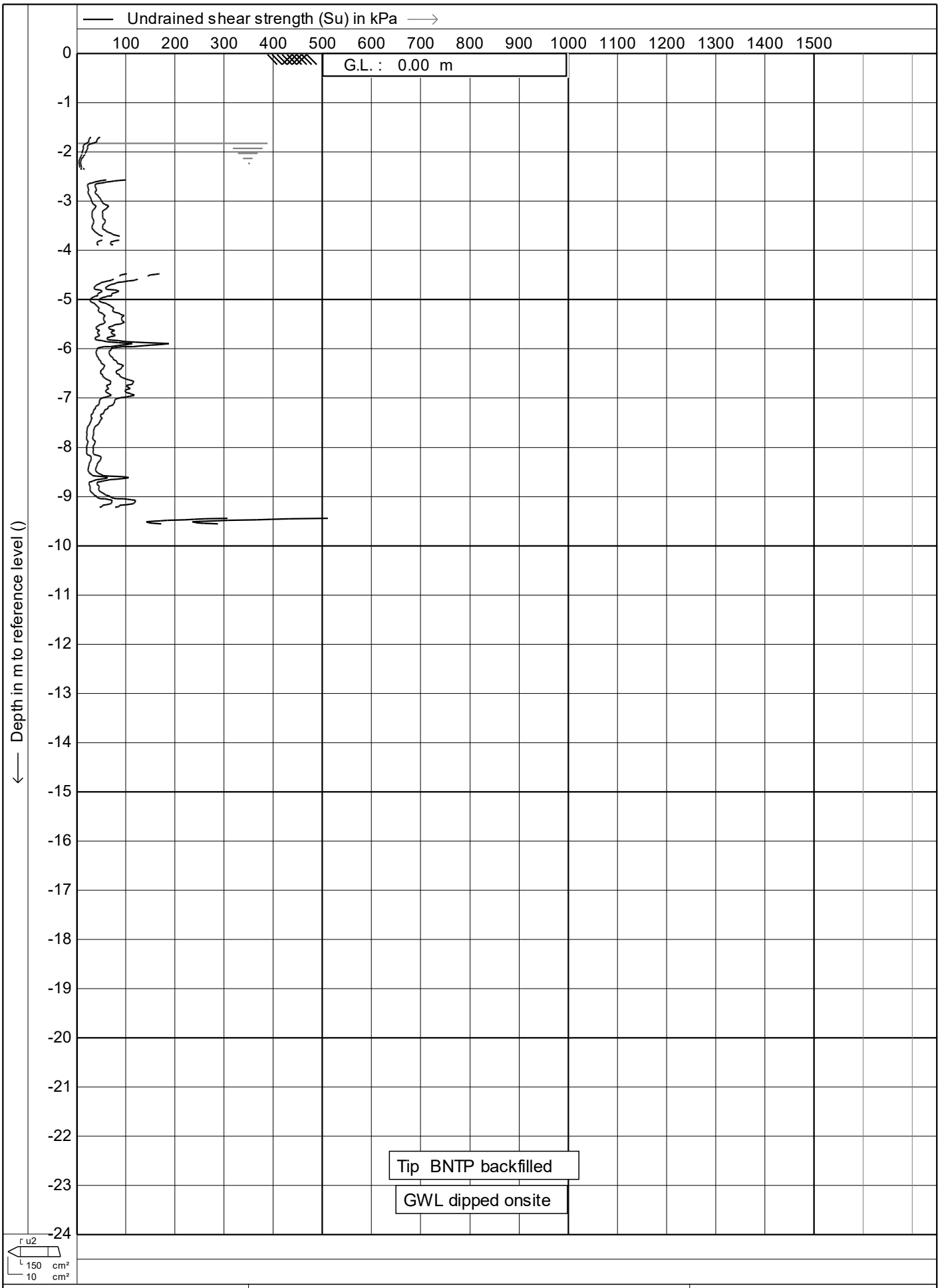
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **043** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

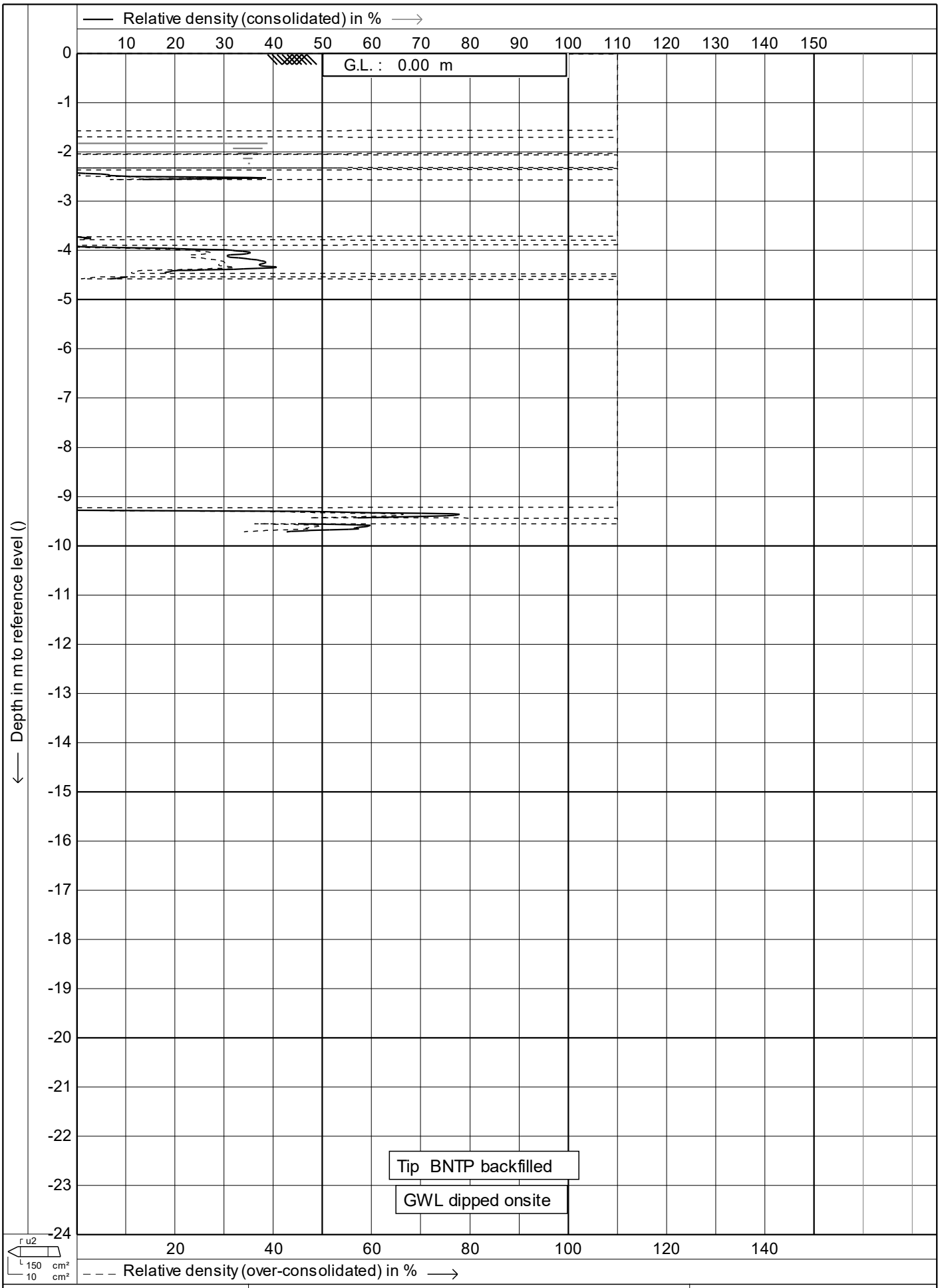
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **043**

10/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

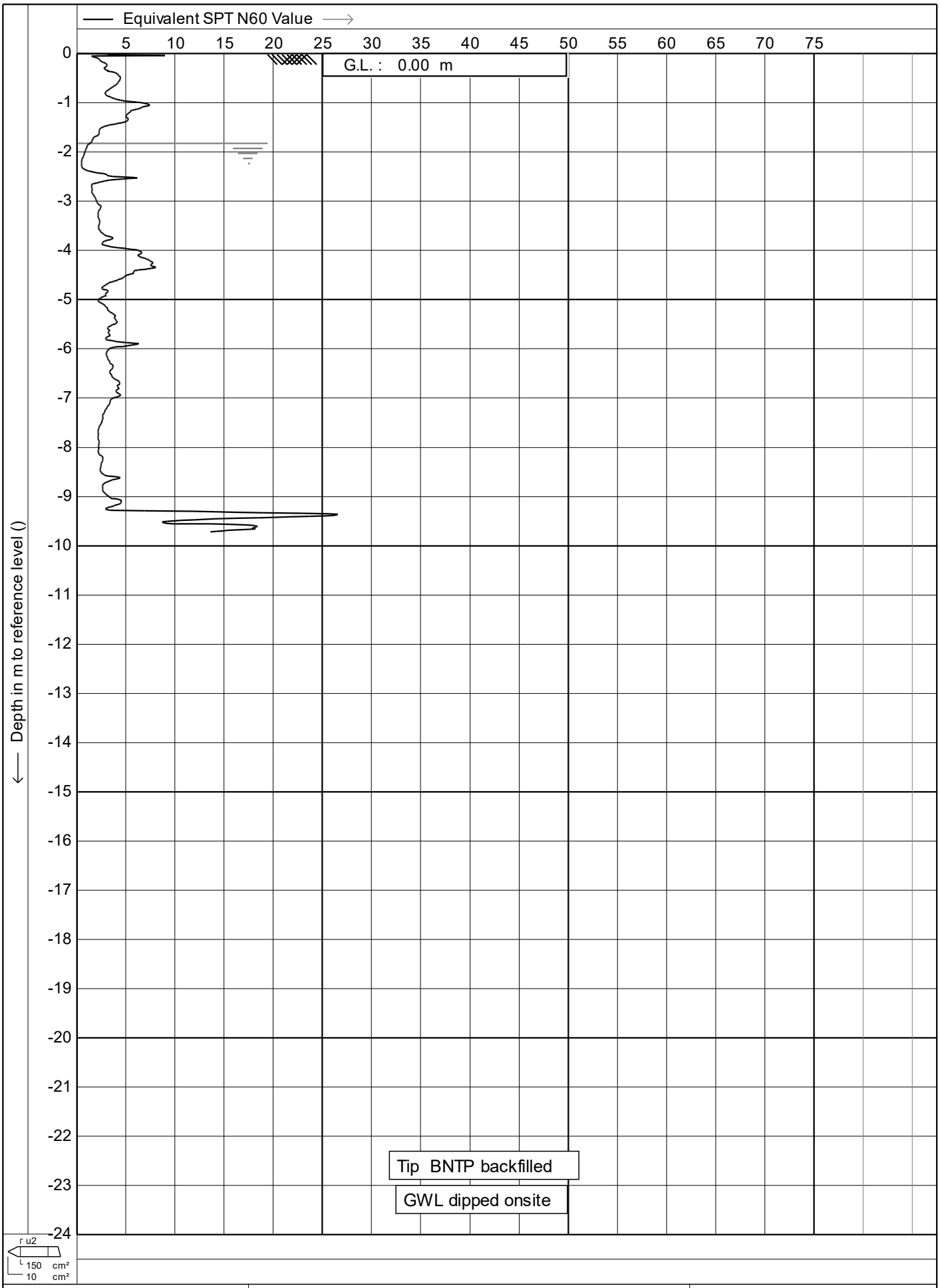
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **27/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **043**

11/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **27/11/2020**

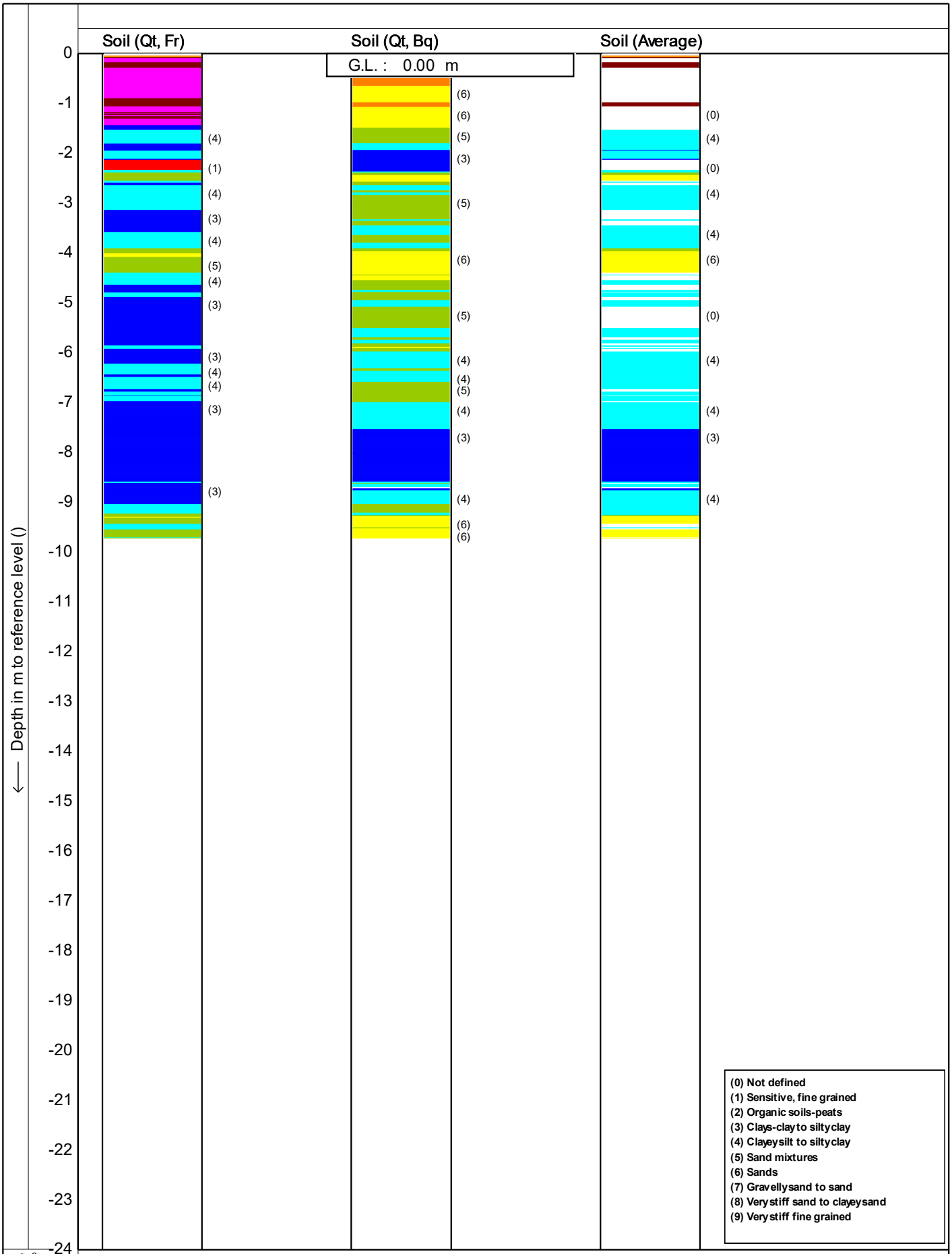
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **043**

12/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

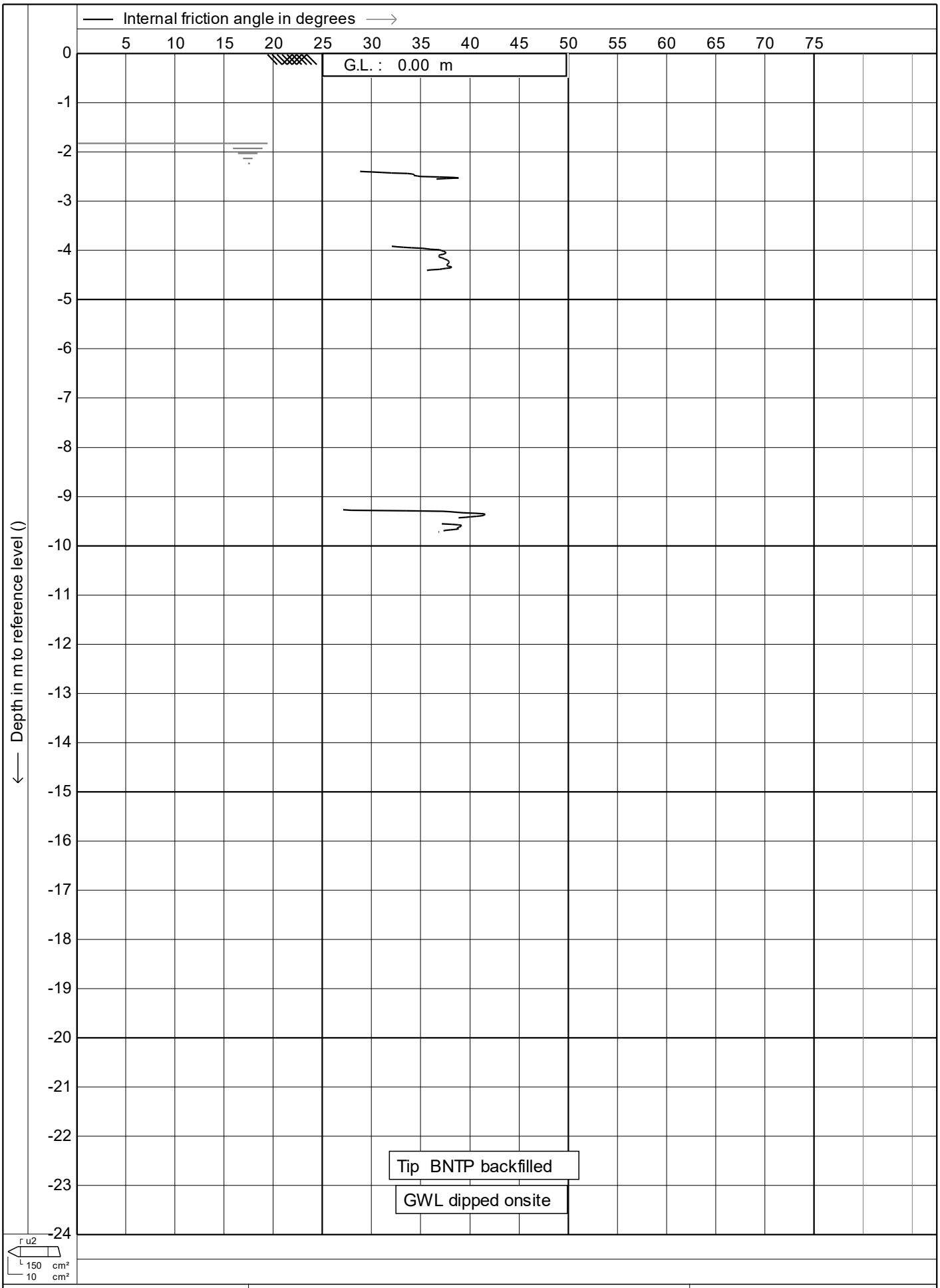
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **043**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

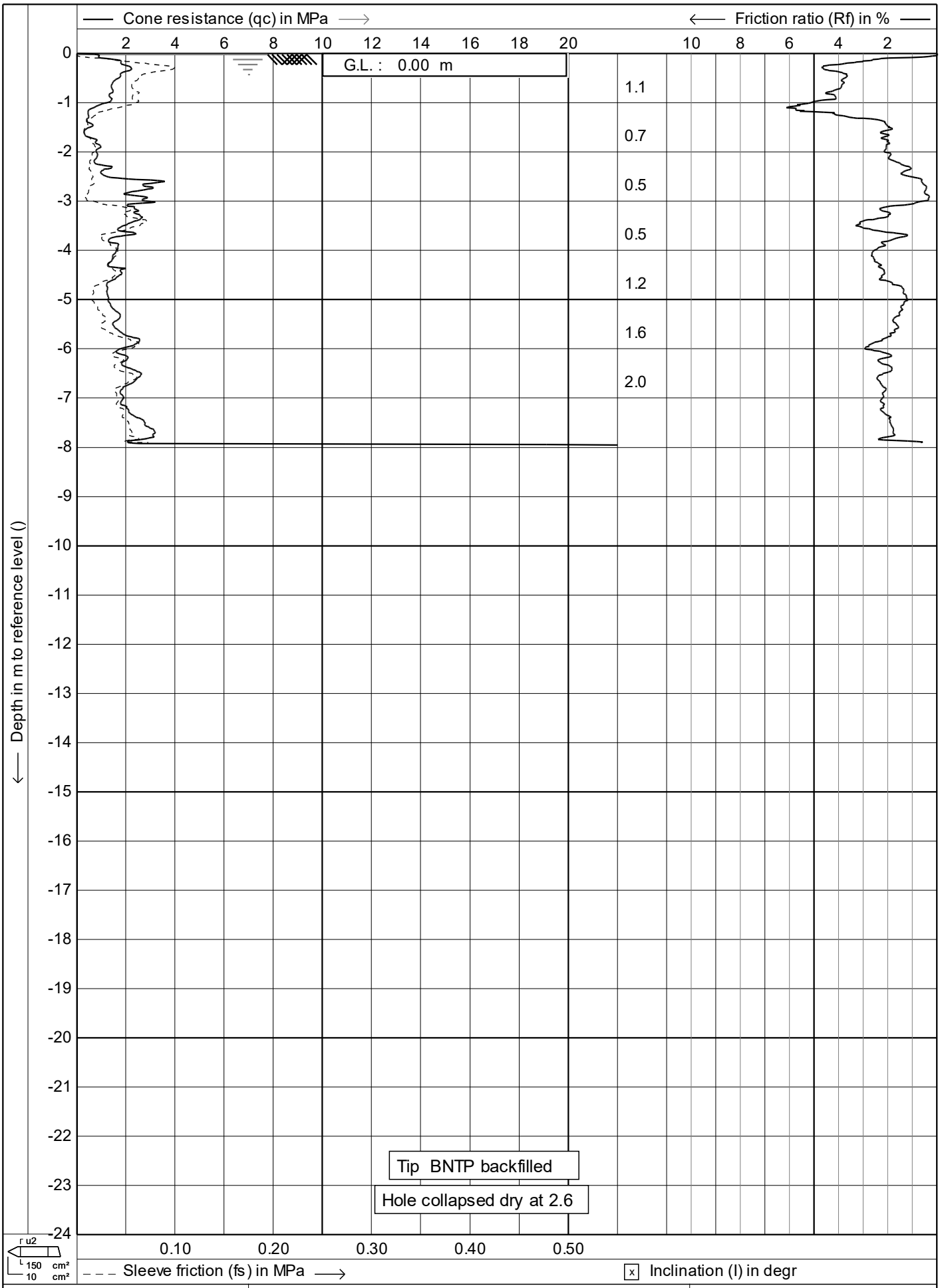
Date : **27/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **043** **14/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **23/11/2020**

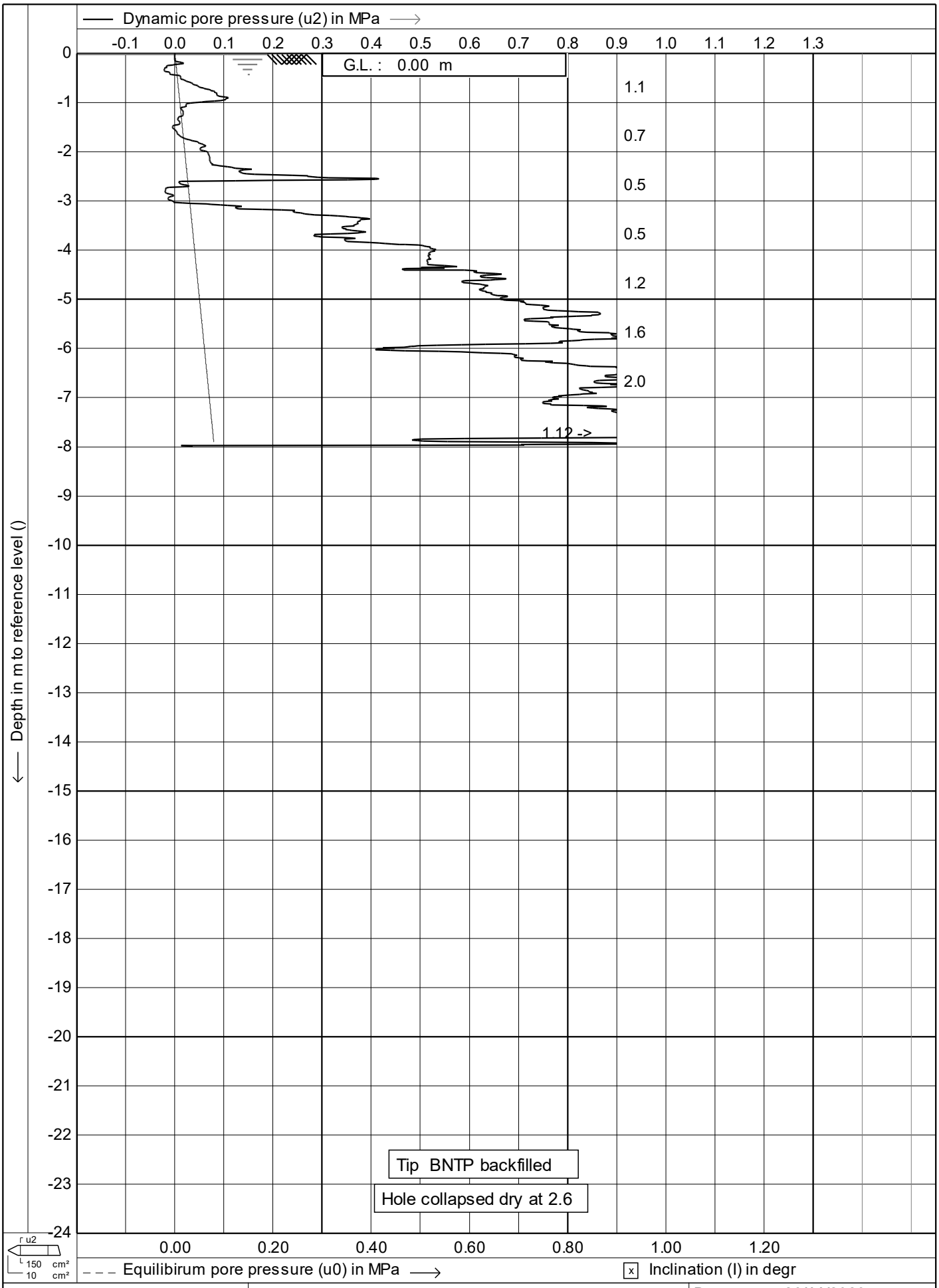
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **044**

1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

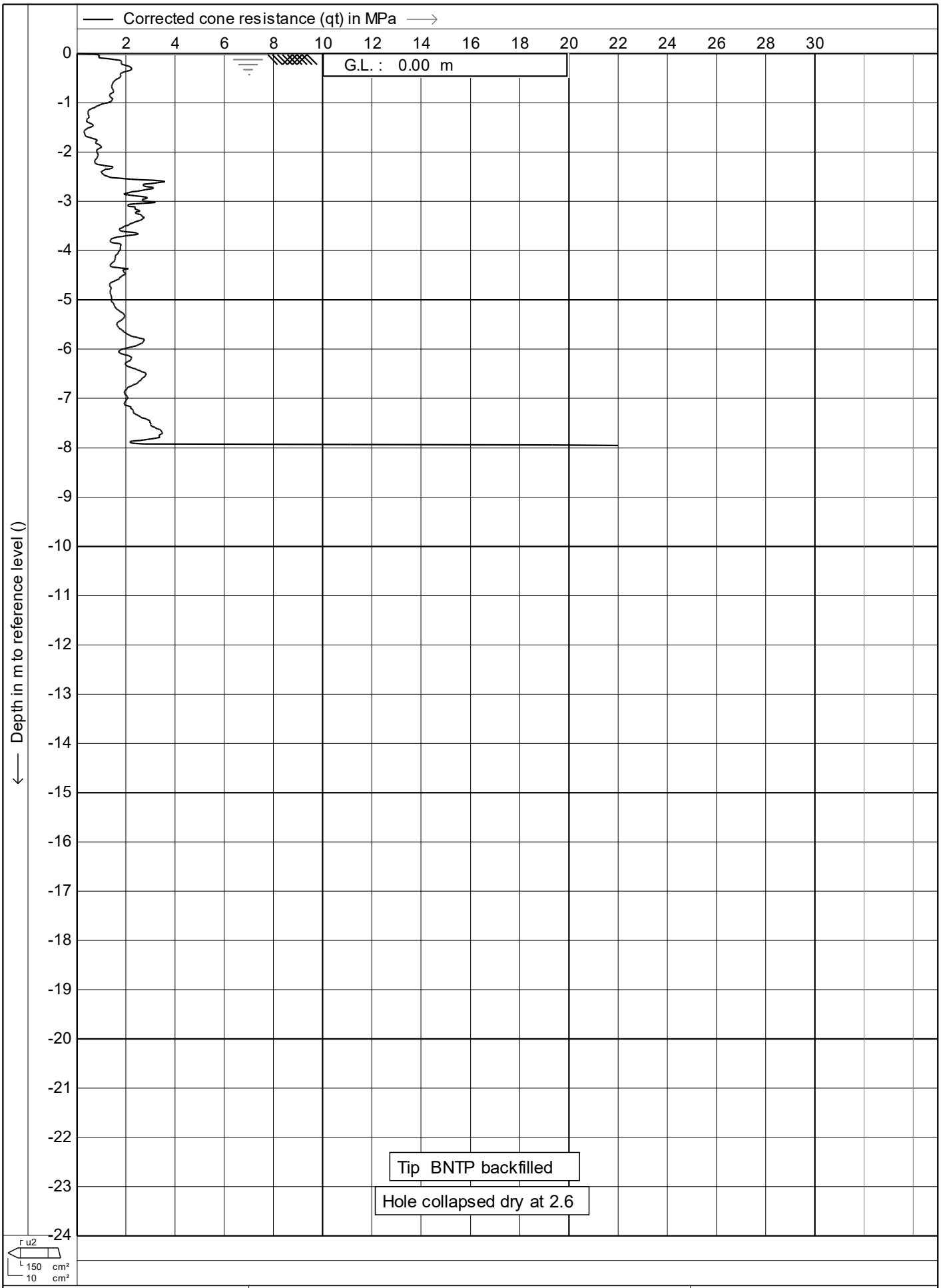
Date : **23/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **044**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

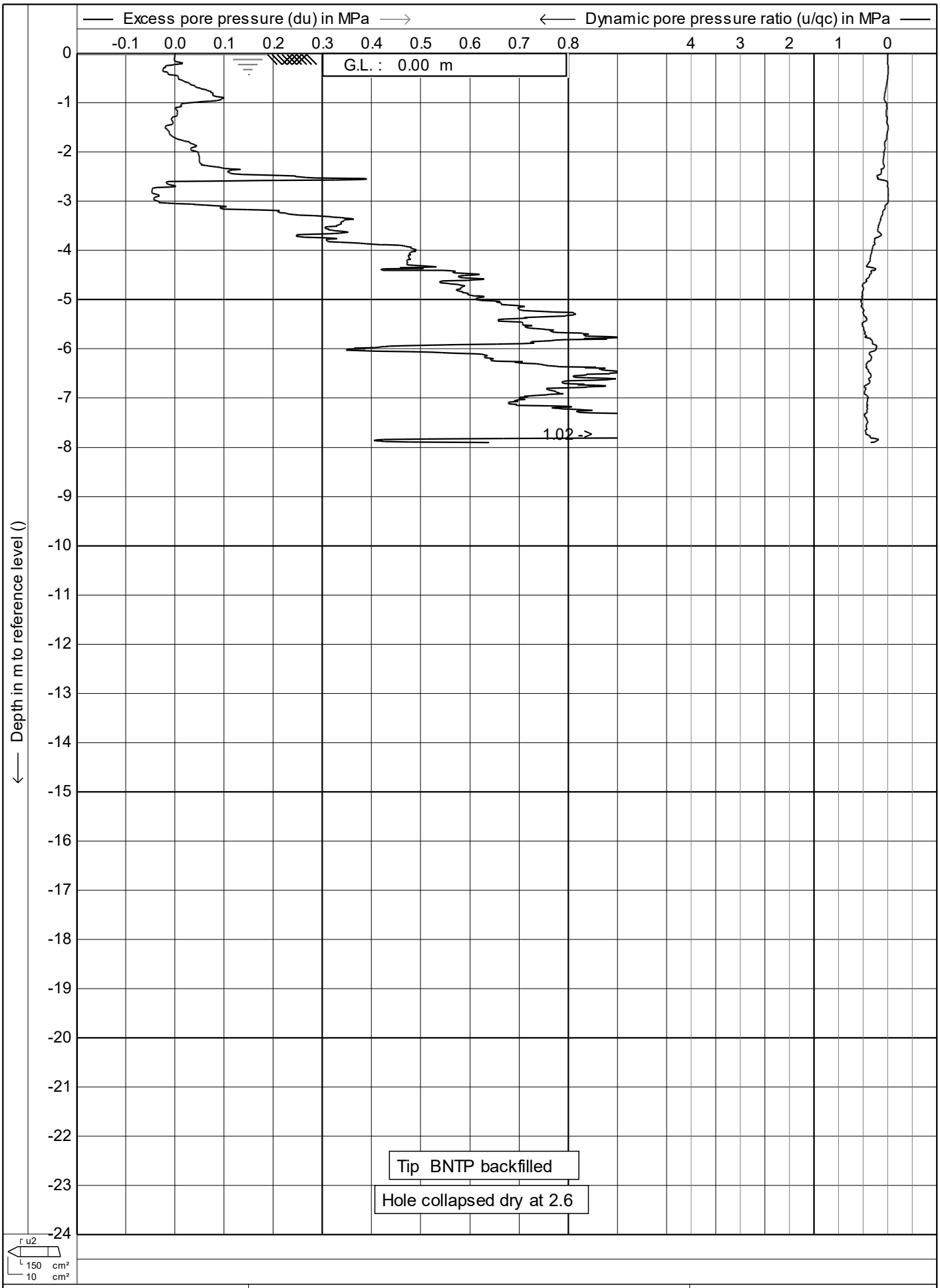
Date : **23/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **044** **3/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

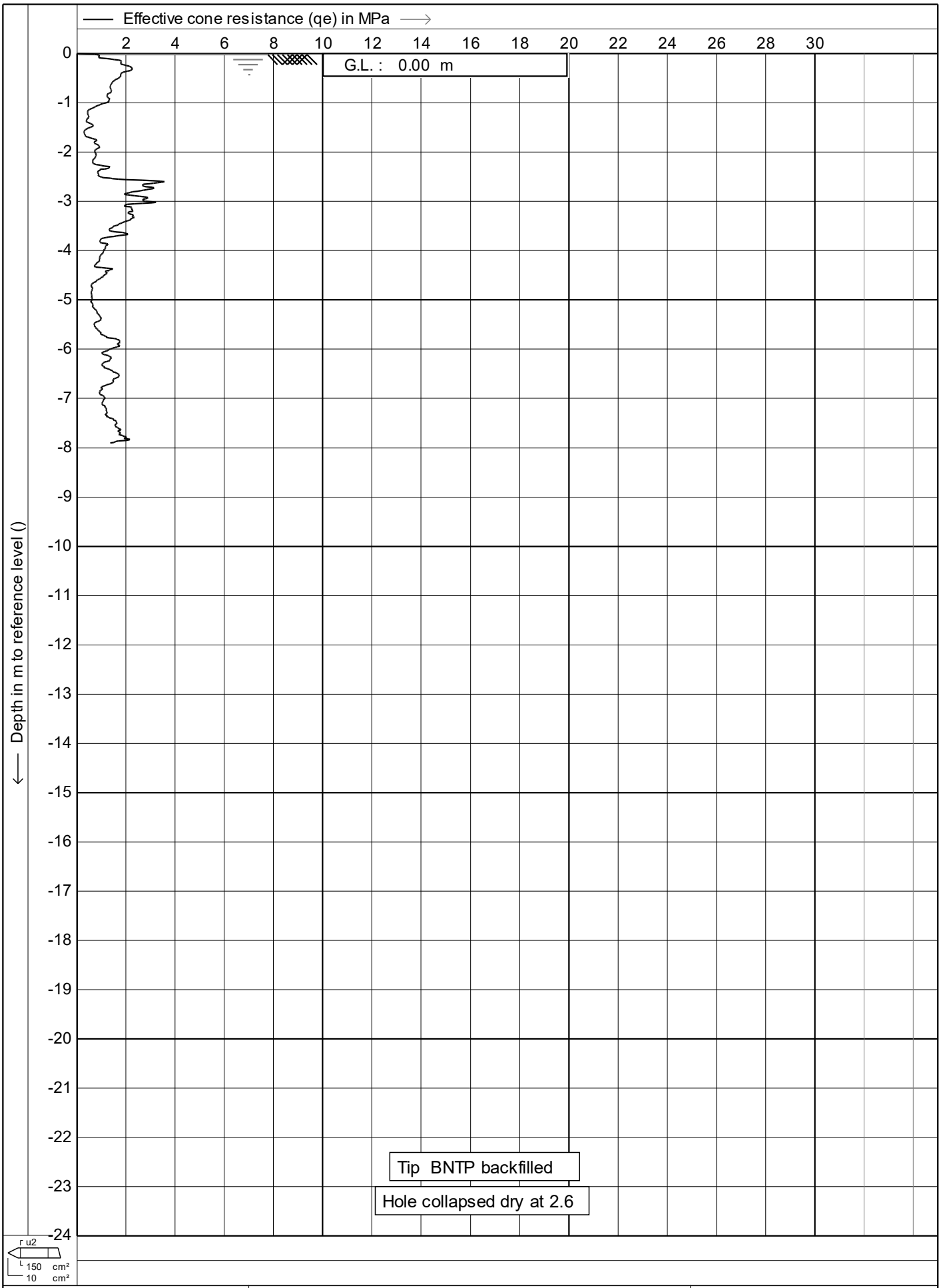
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **23/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **044**

4/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

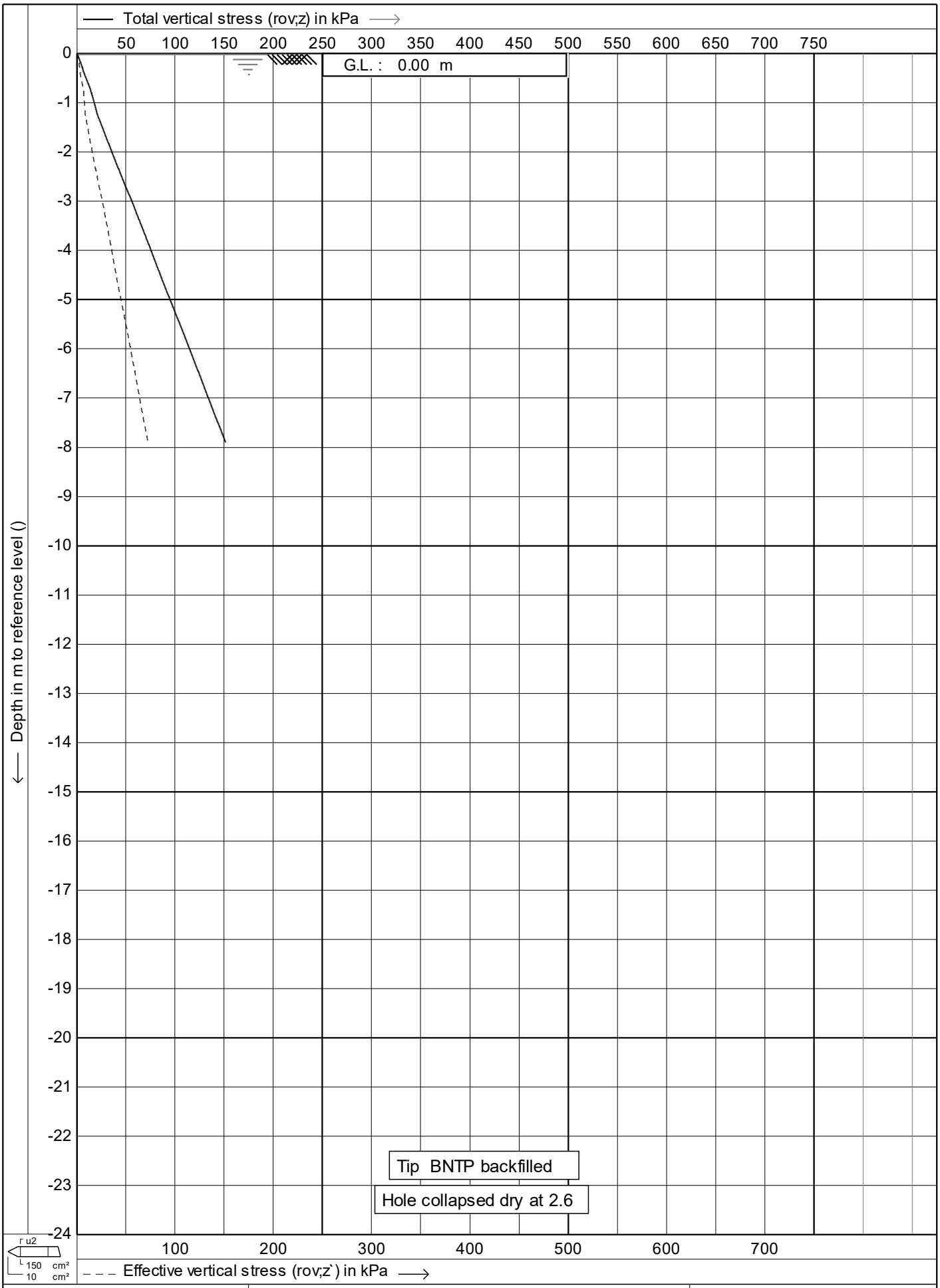
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **23/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **044**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

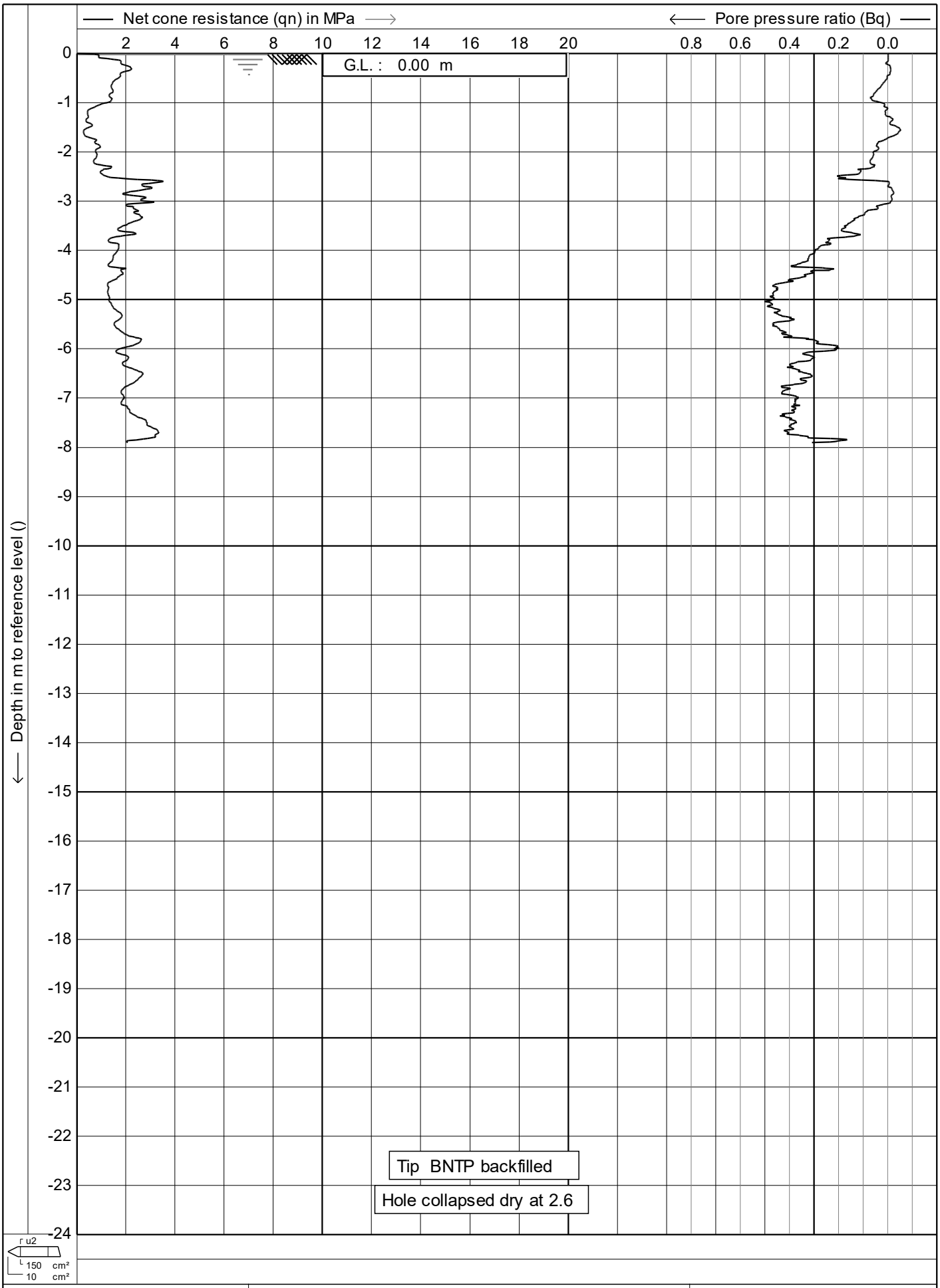
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **23/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **044**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

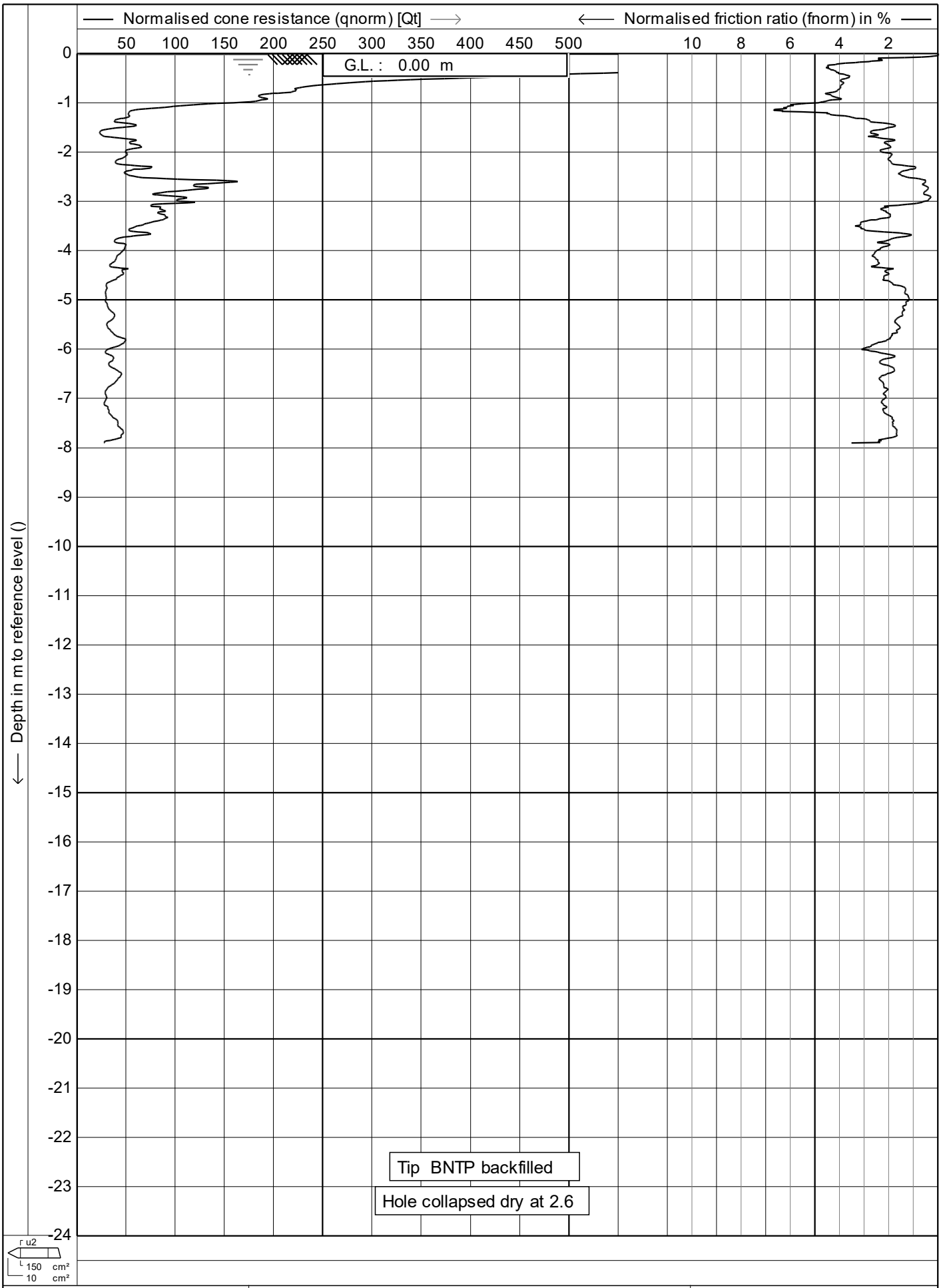
Date : **23/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **044** **7/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

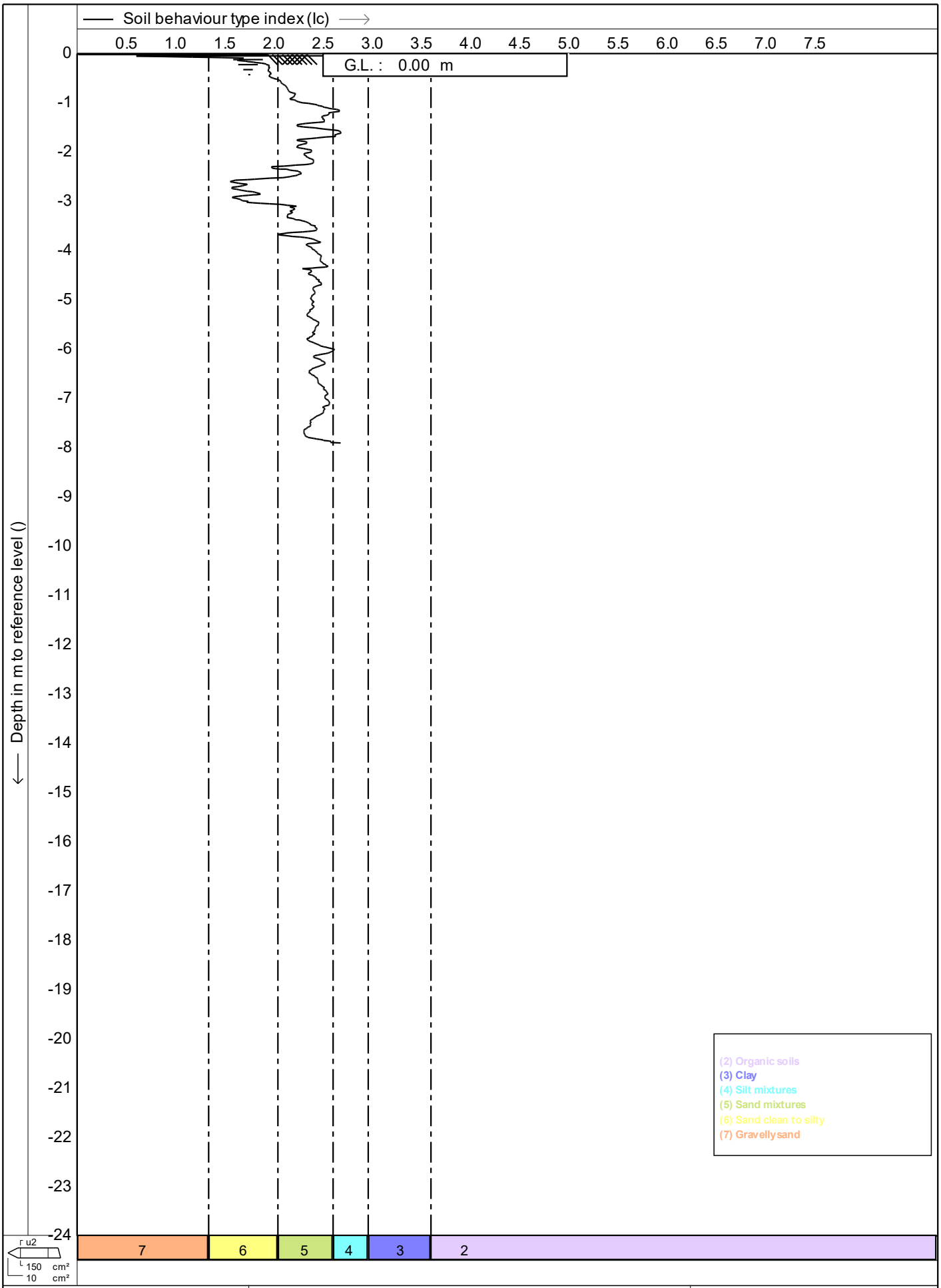
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **23/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **044**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

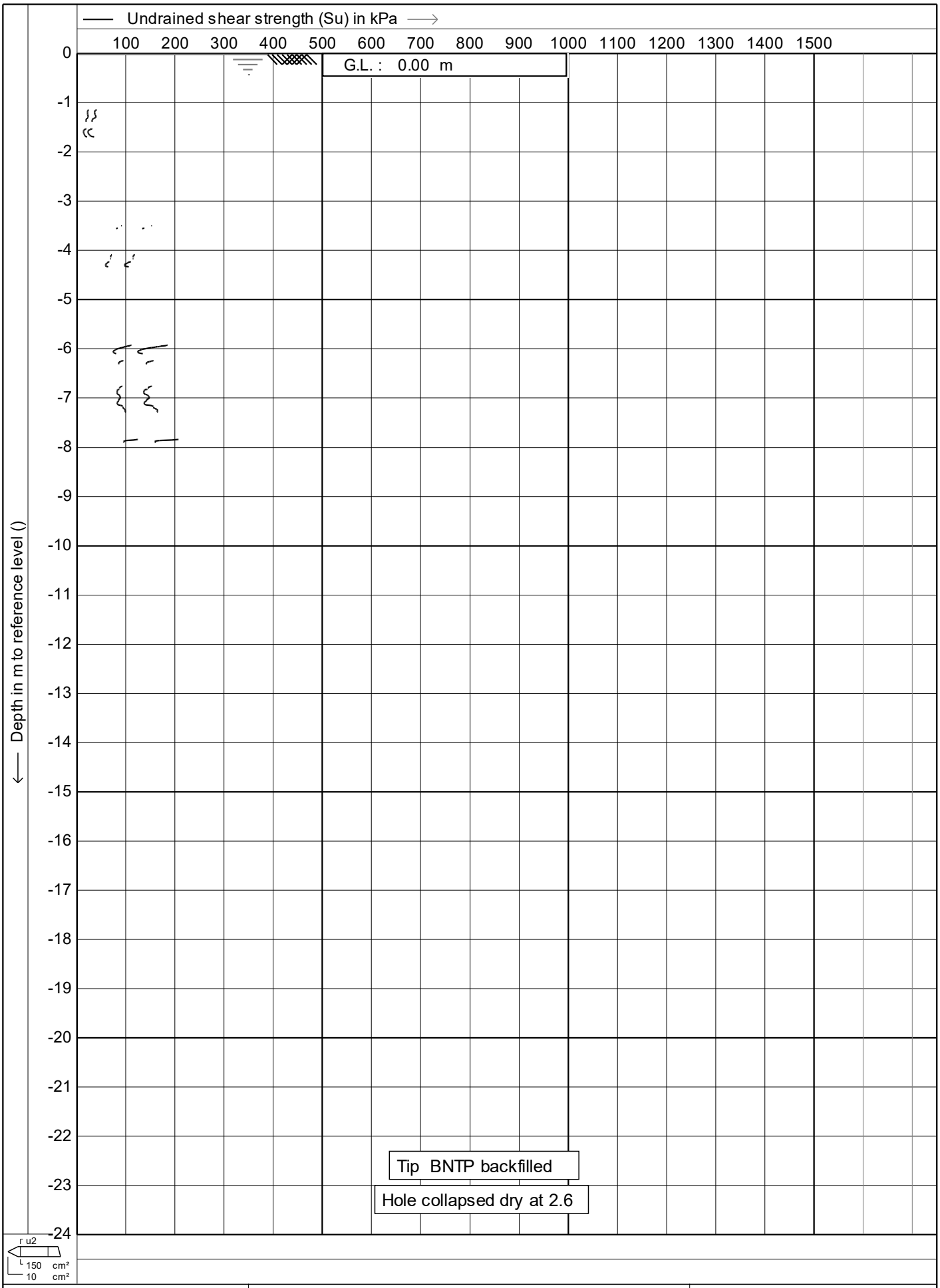
Date : **23/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **044** **9/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **23/11/2020**

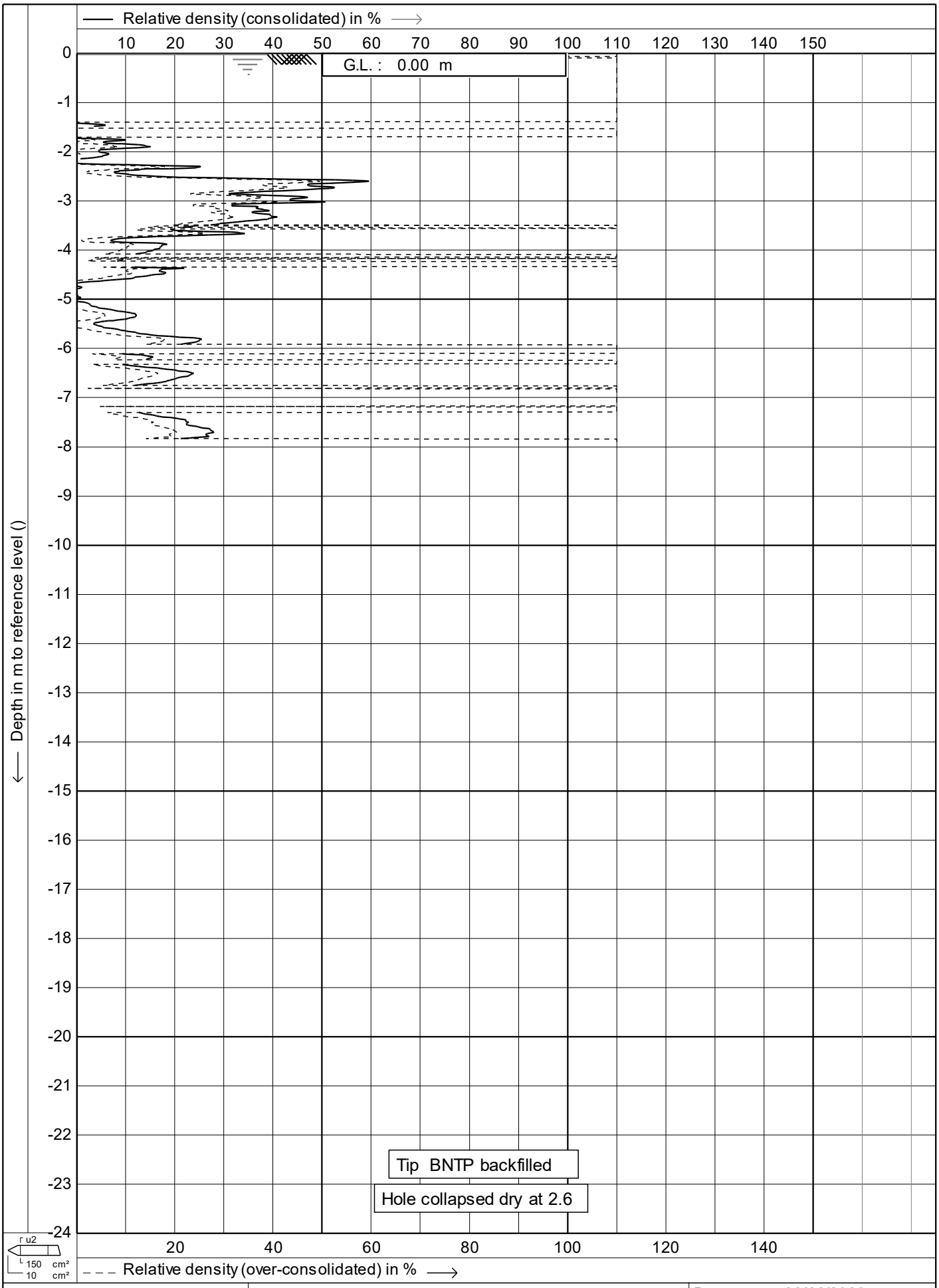
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **044**

10/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

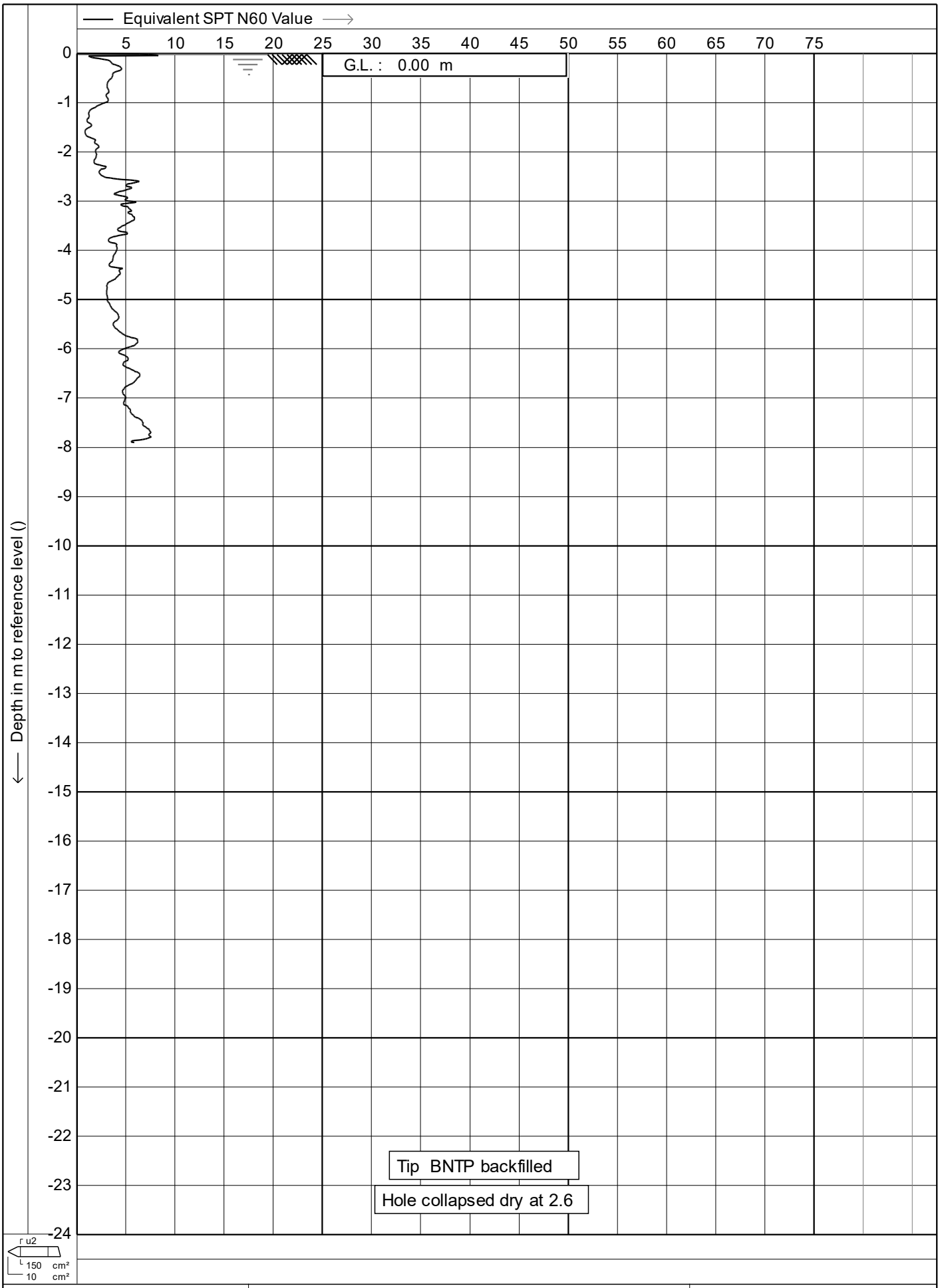
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Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **044** **11/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

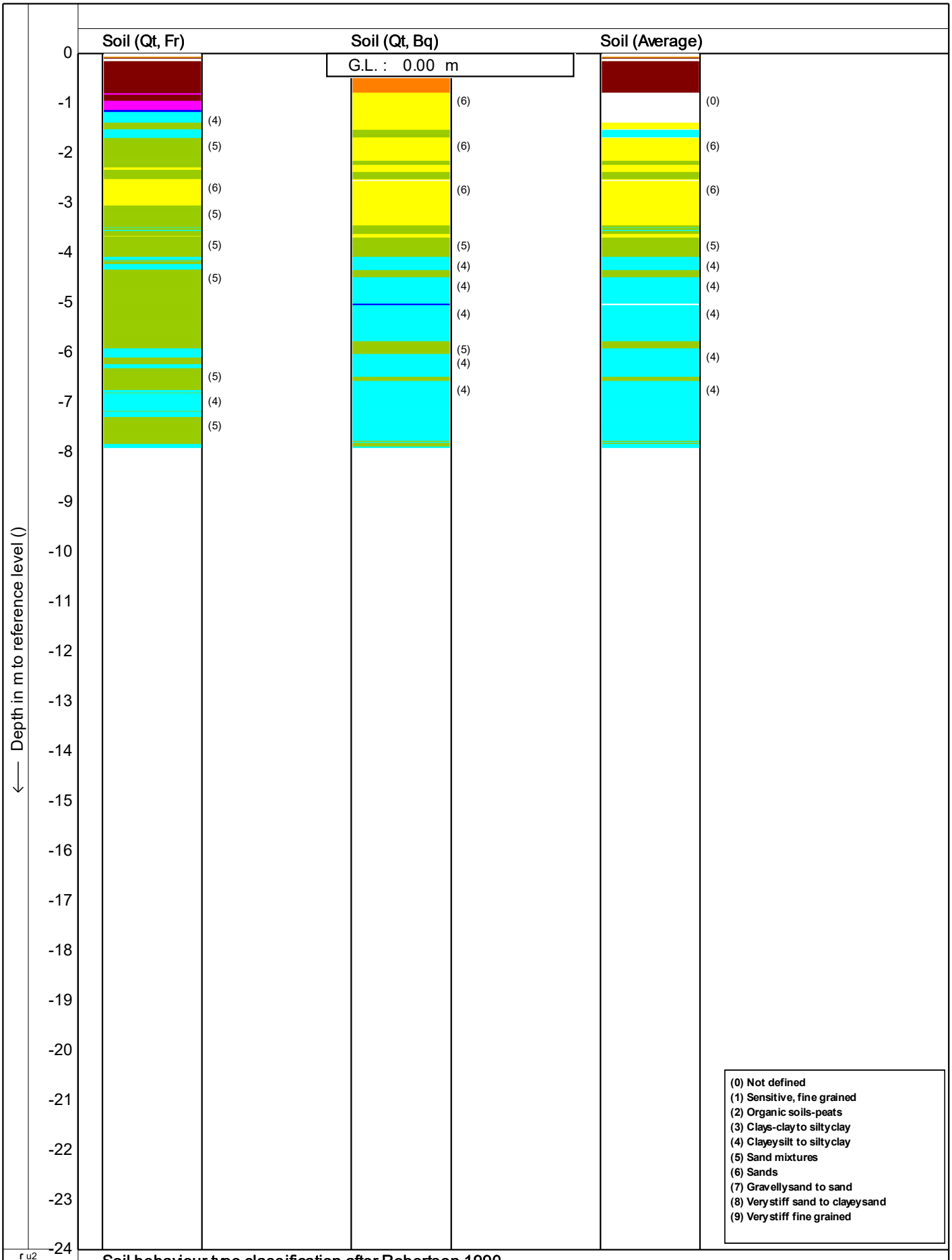
Date : **23/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **044** **12/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

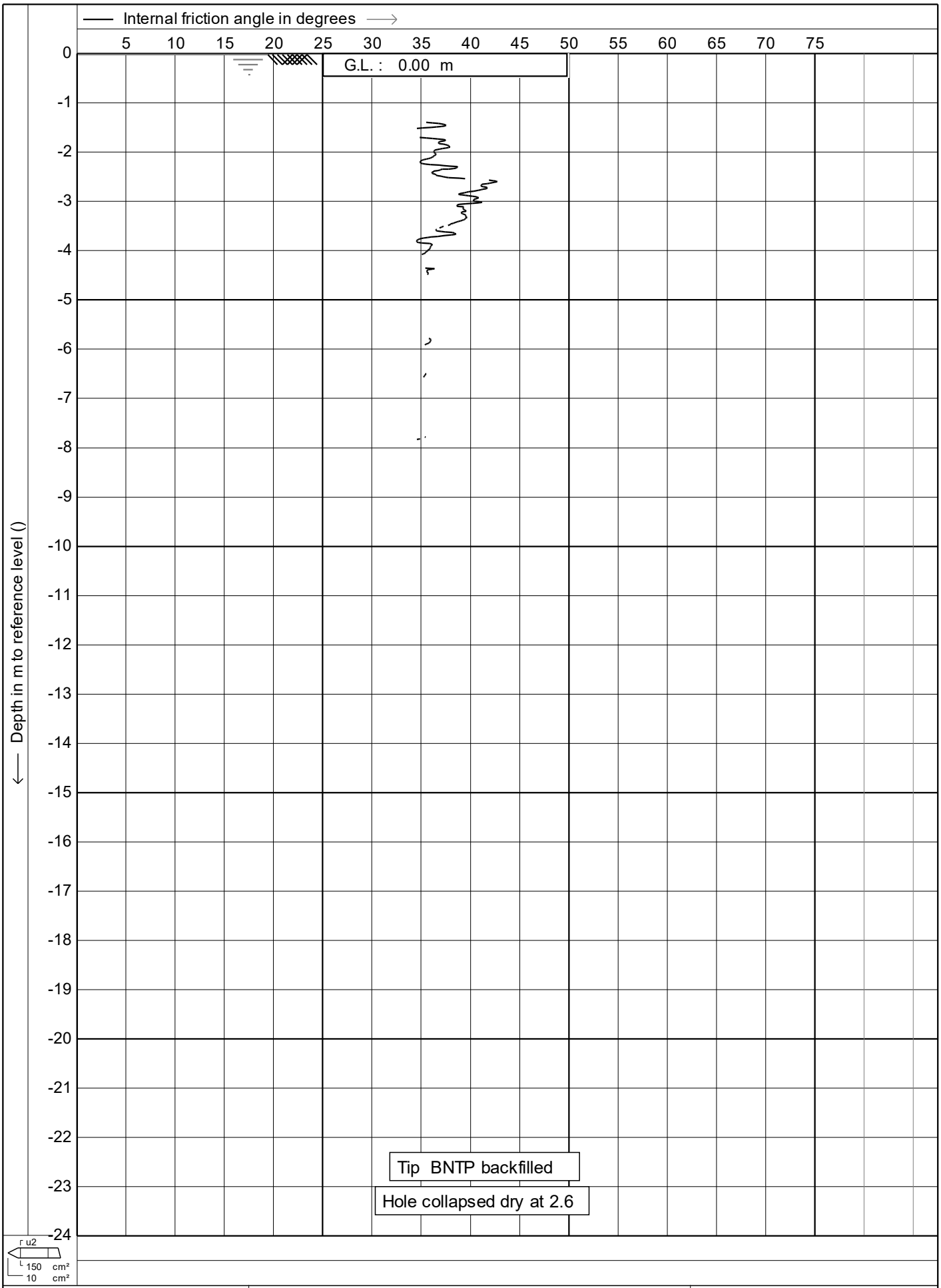
Date : **23/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **044**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

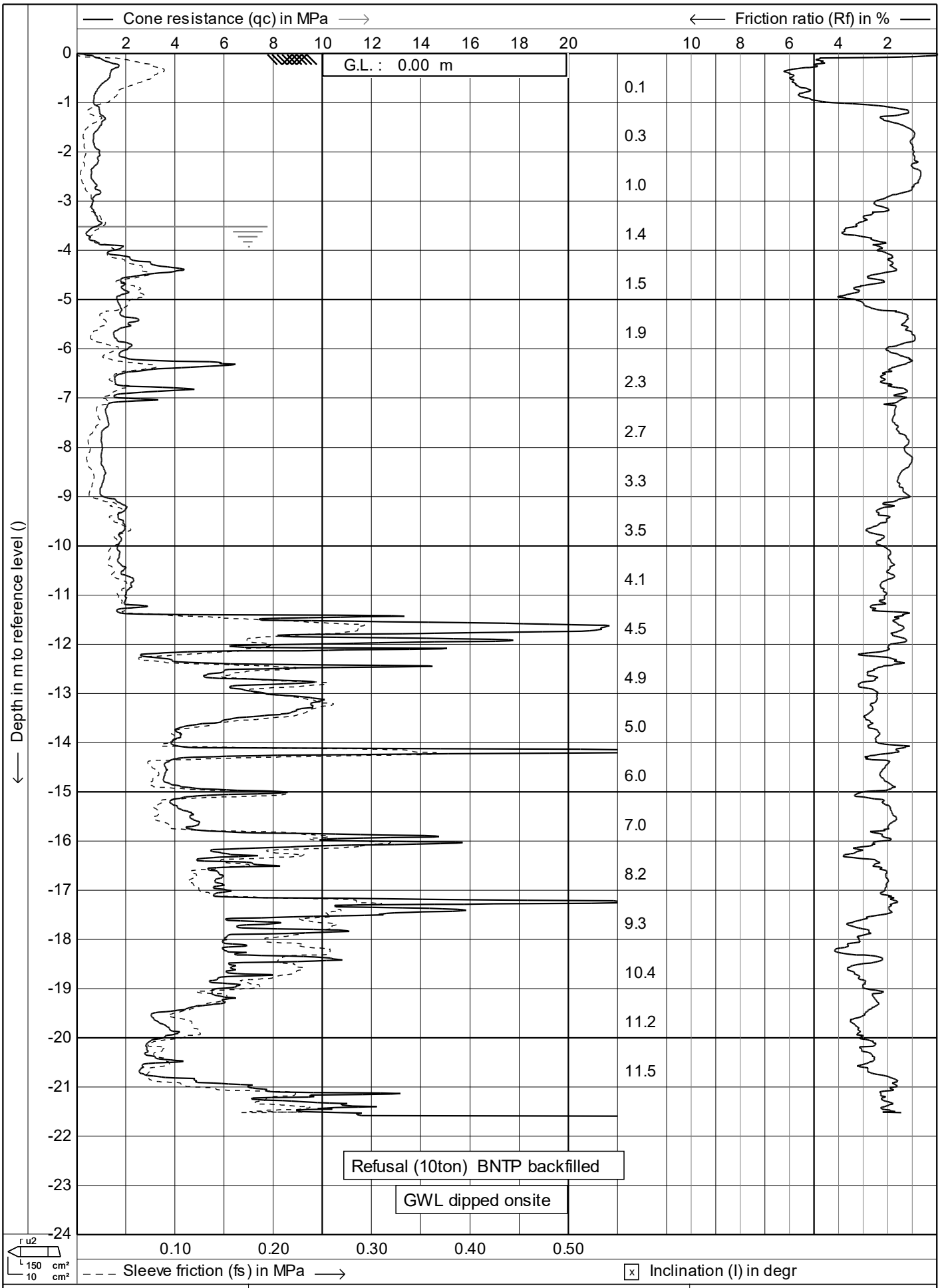
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **23/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **044**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **25/11/2020**

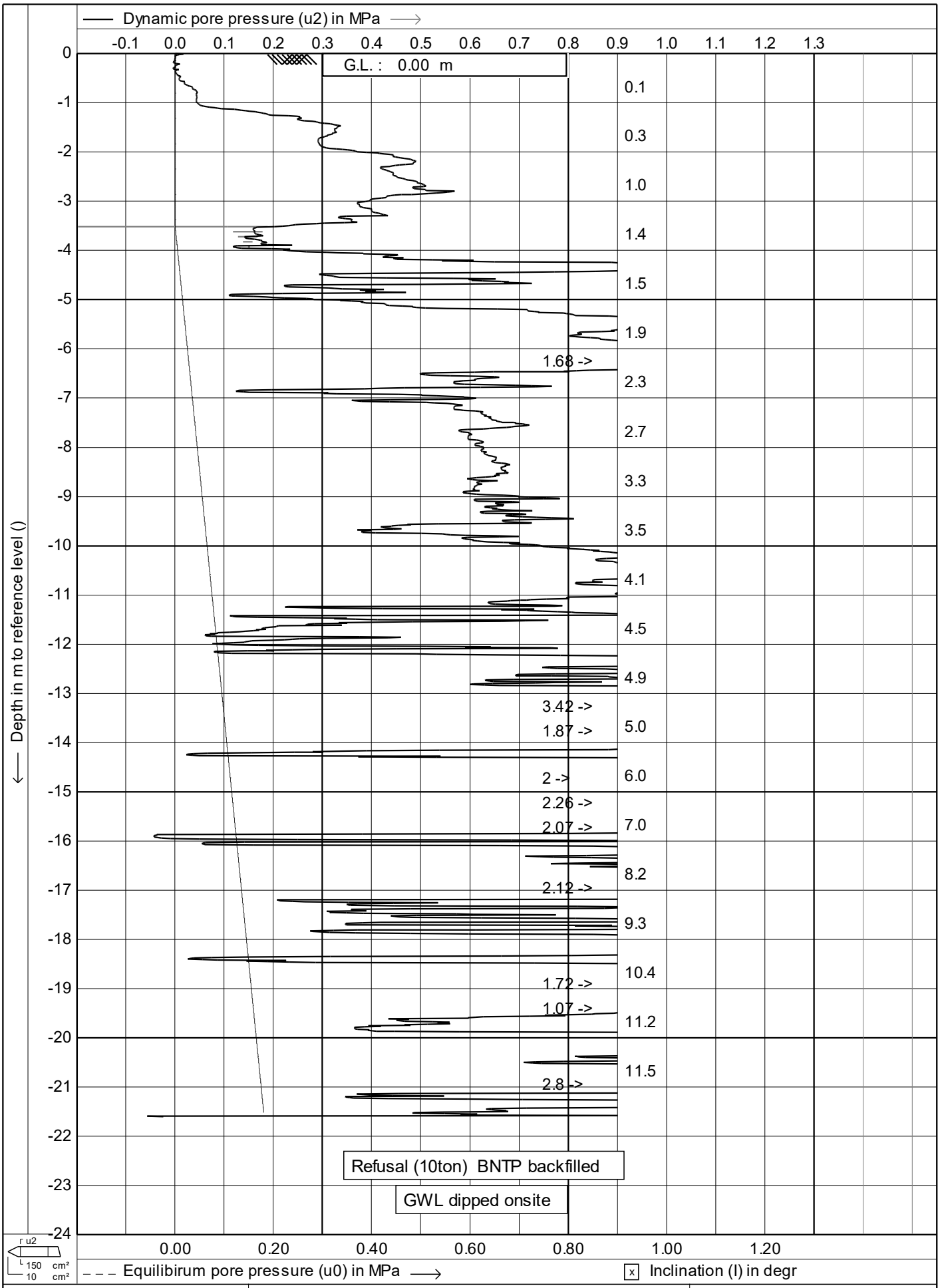
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Project no. : **05AU7**

CPT no. : **045**

1/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **25/11/2020**

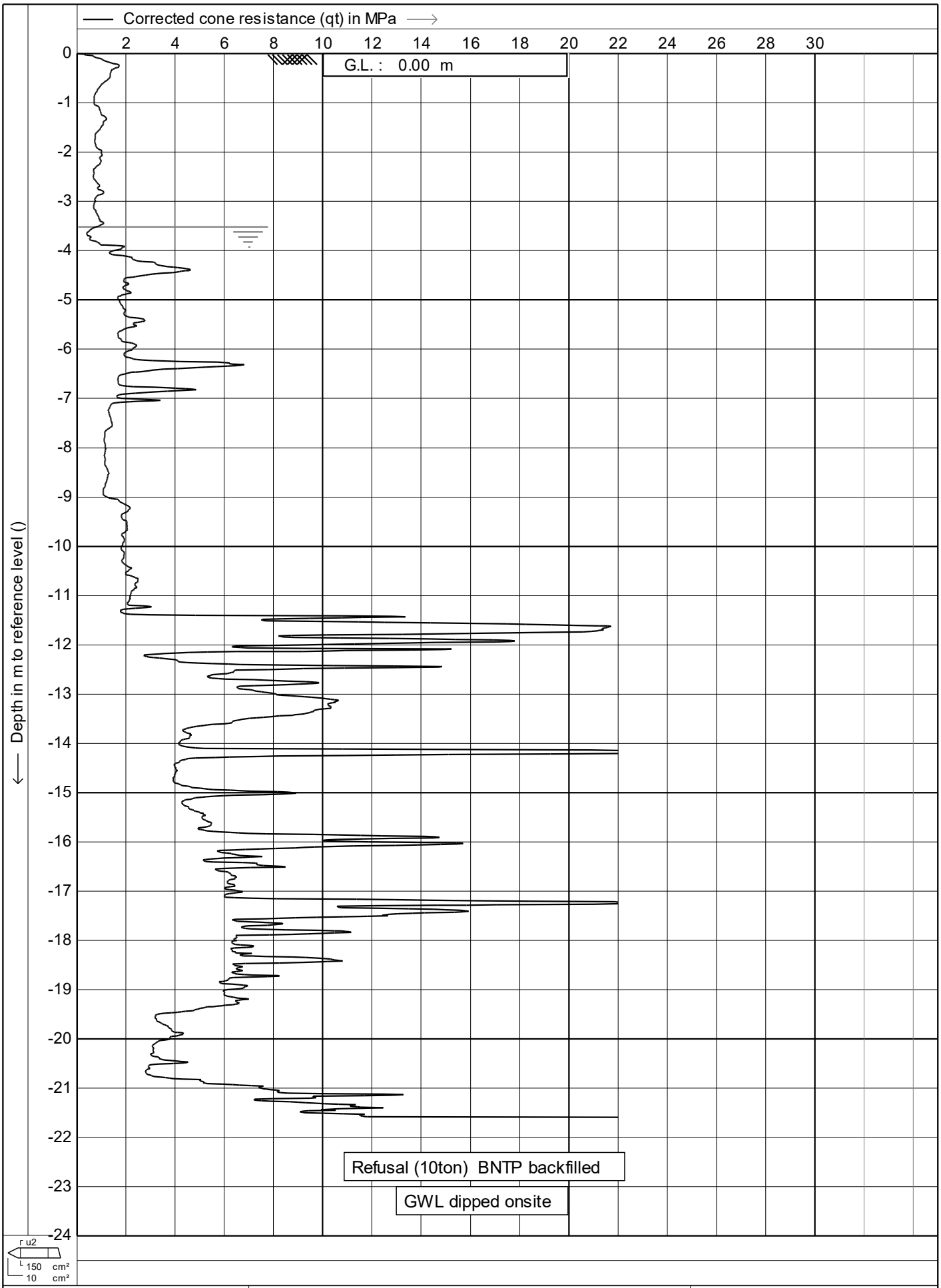
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **045**

2/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

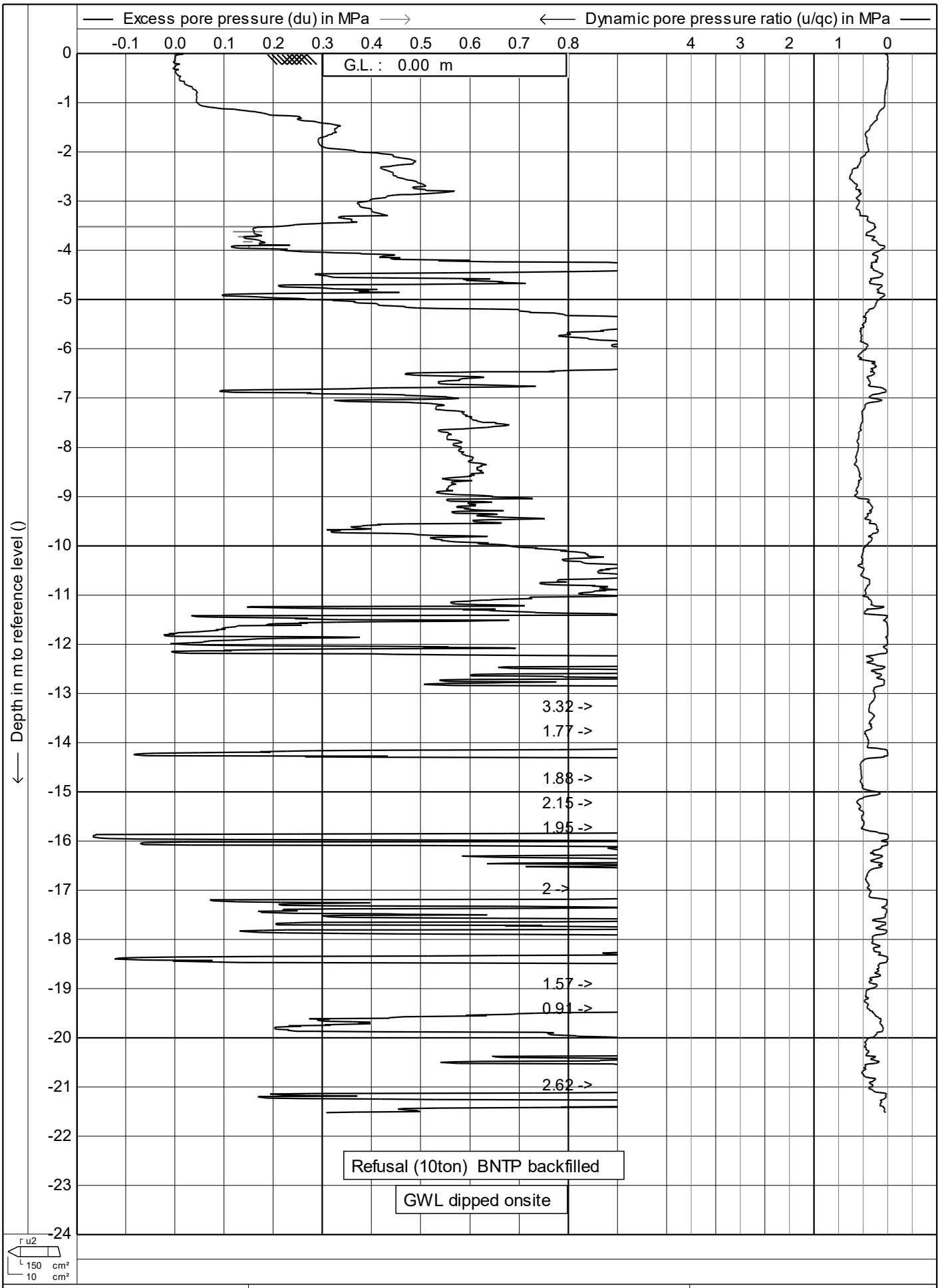
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **25/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **045**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **25/11/2020**

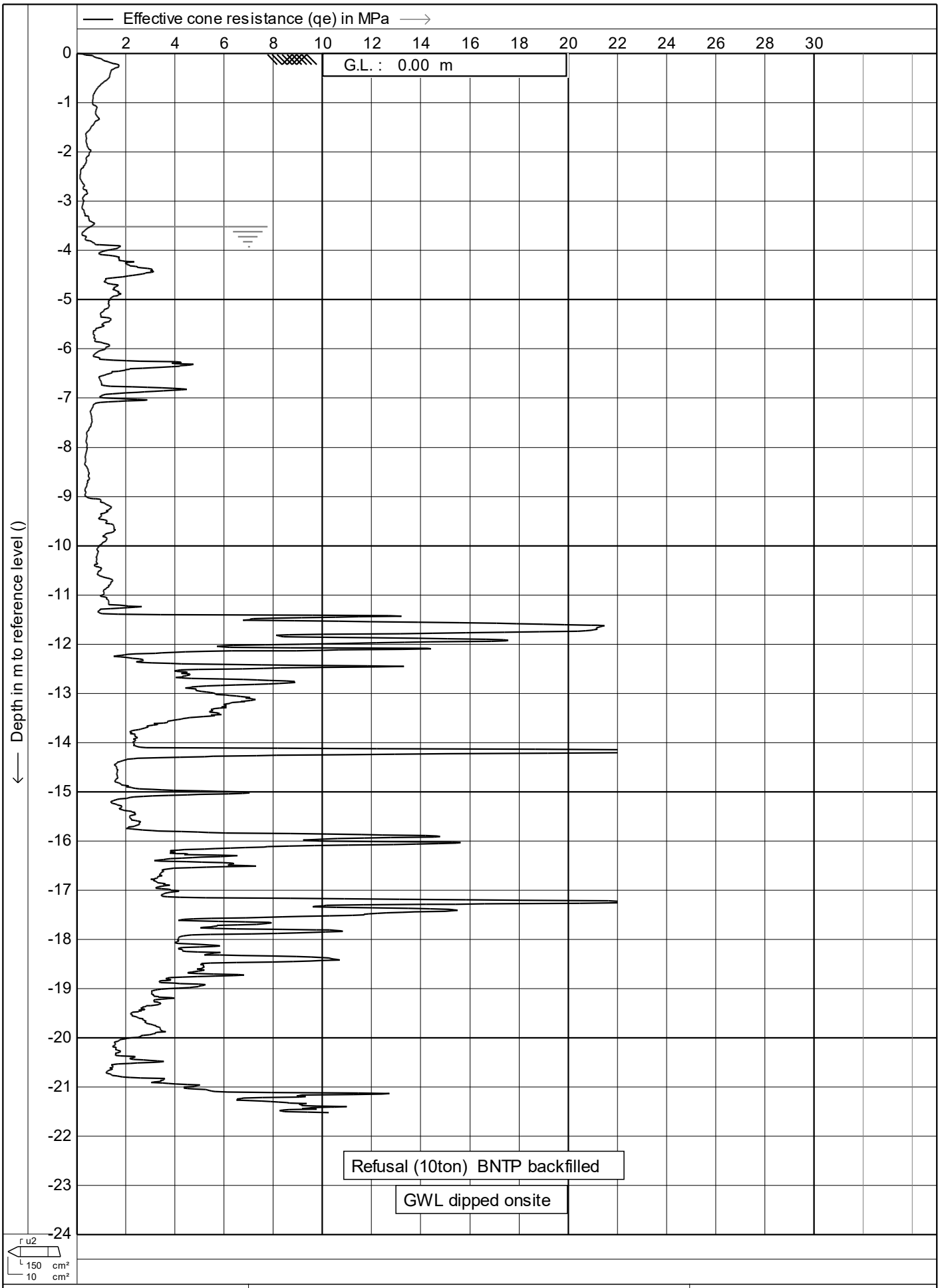
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Project no. : **05AU7**

CPT no. : **045**

4/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

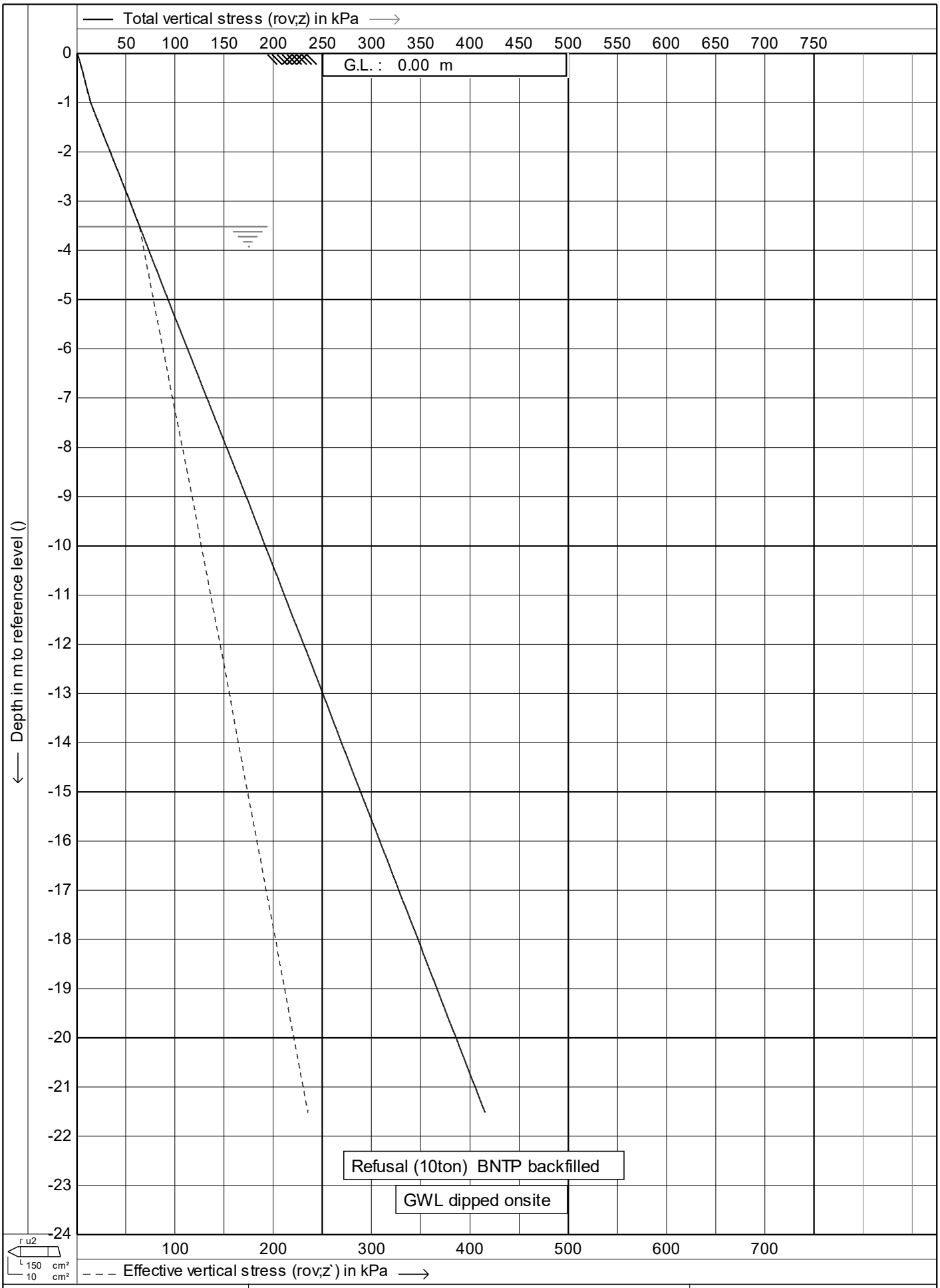
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Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

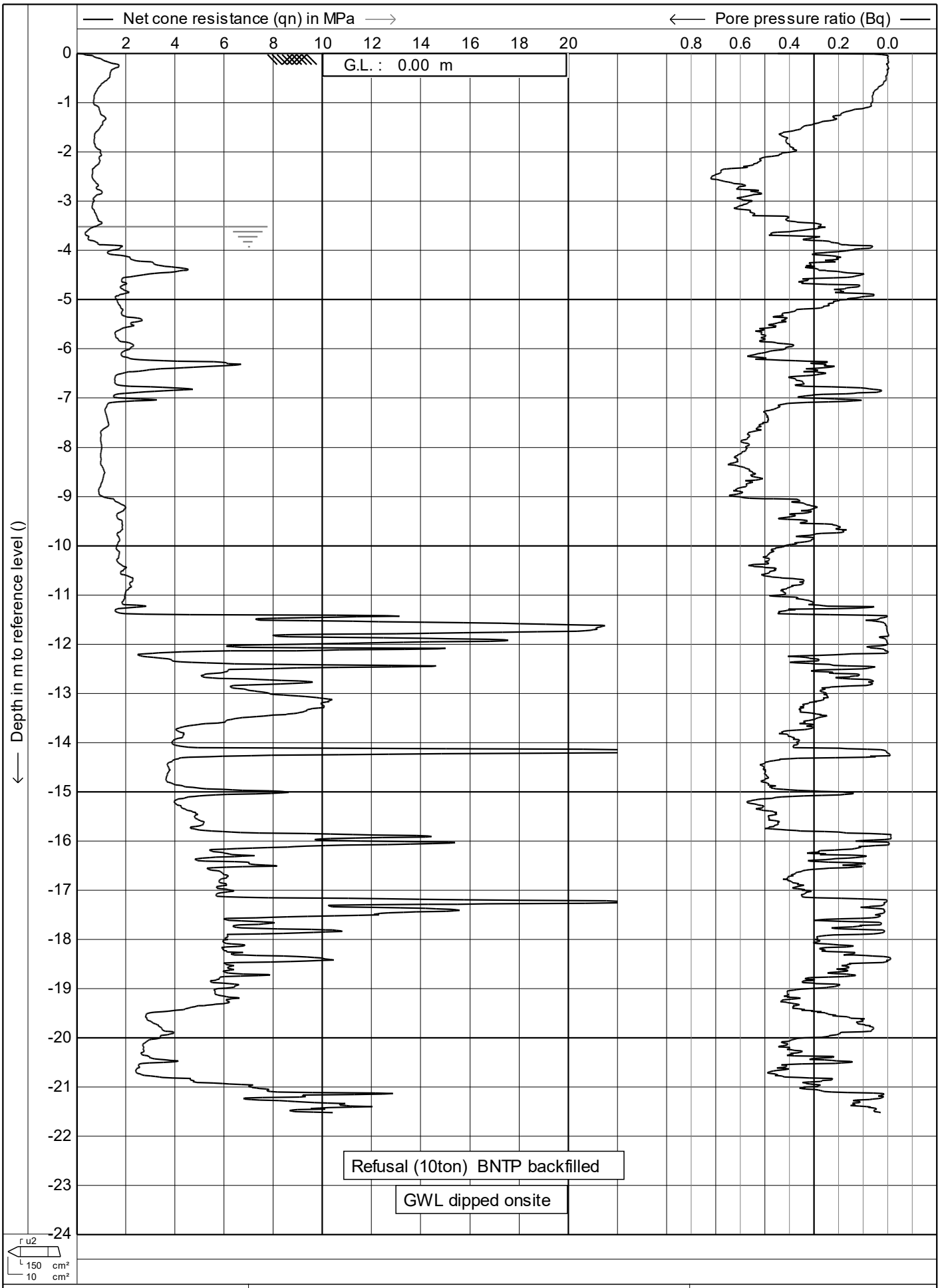
Date	: **25/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **045**

1.48



PERRY GEOTECH	Test according A.S.T.M Standard D 5778-12	Date : **25/11/2020**
	Project : **Site Investigations**	Cone no. : **C10CFIIP.C14426**
	Location: **Fitzgerald Rd - Drury**	Project no. : **05AU7**
	Position: **0, 0**	CPT no. : **045** **6/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

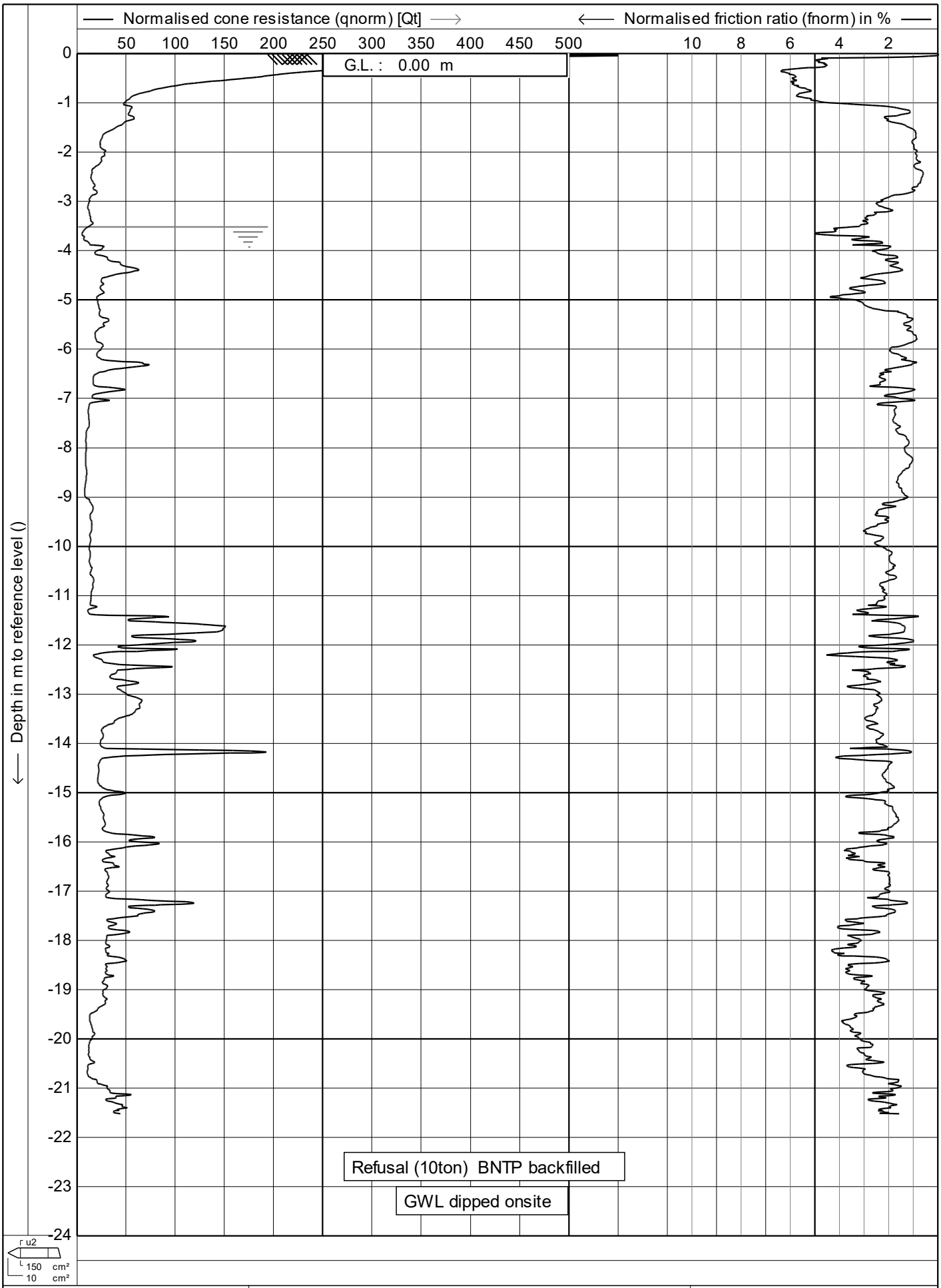
Date : **25/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **045** **7/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

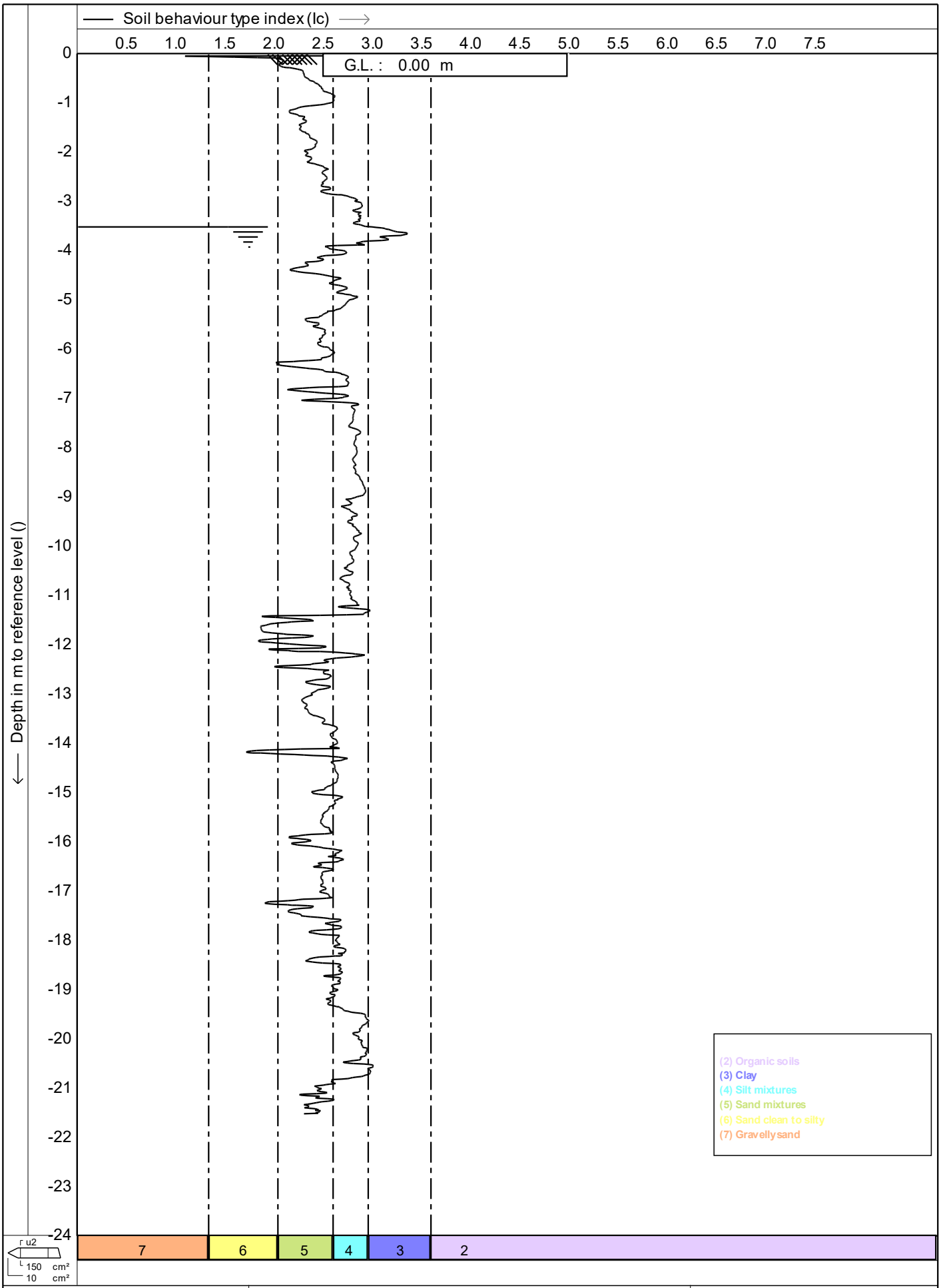
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **25/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **045**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

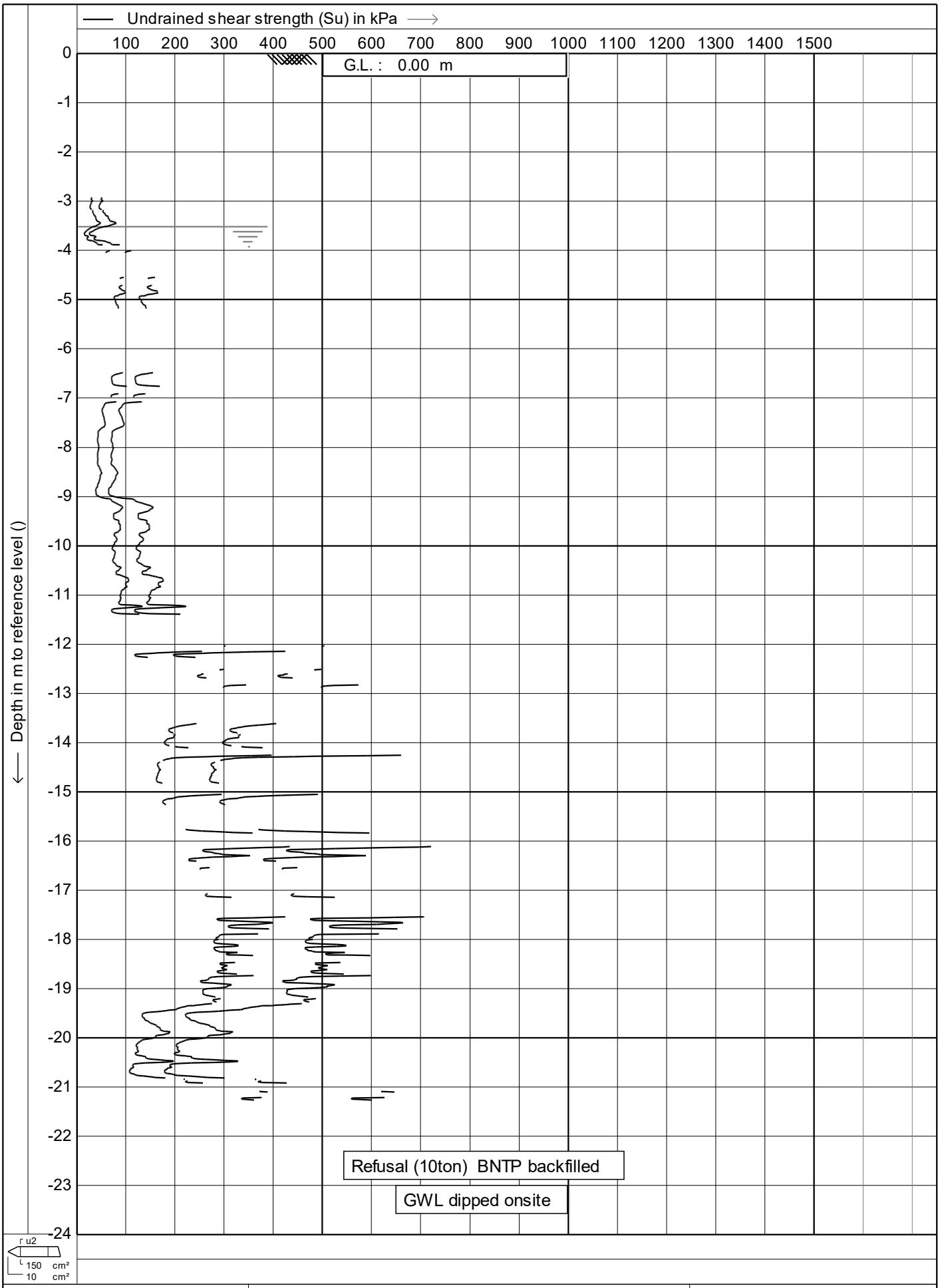
Date : **25/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **045** **9/14**

1.48



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Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

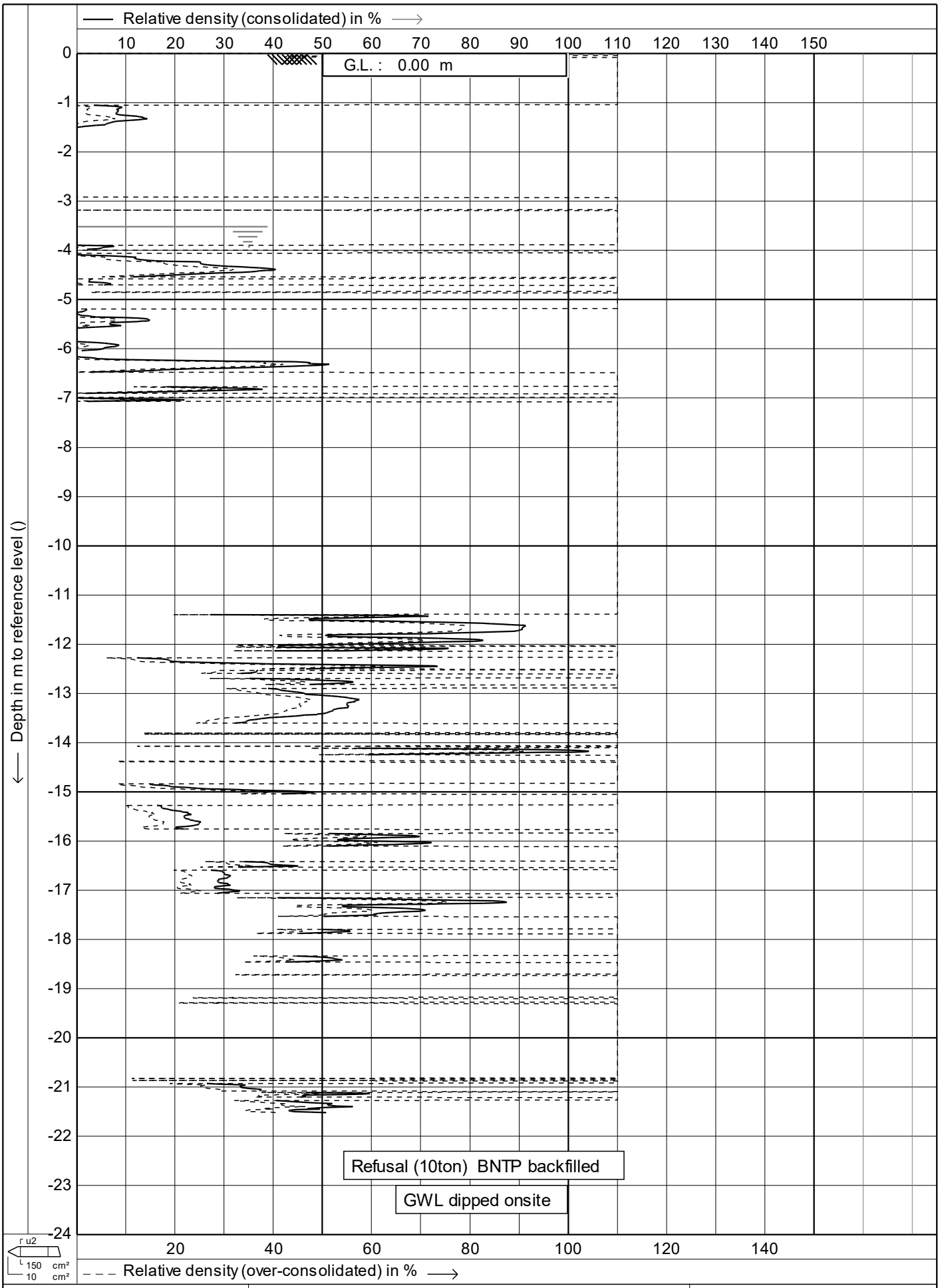
Date : **25/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **045** **10/14**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **25/11/2020**

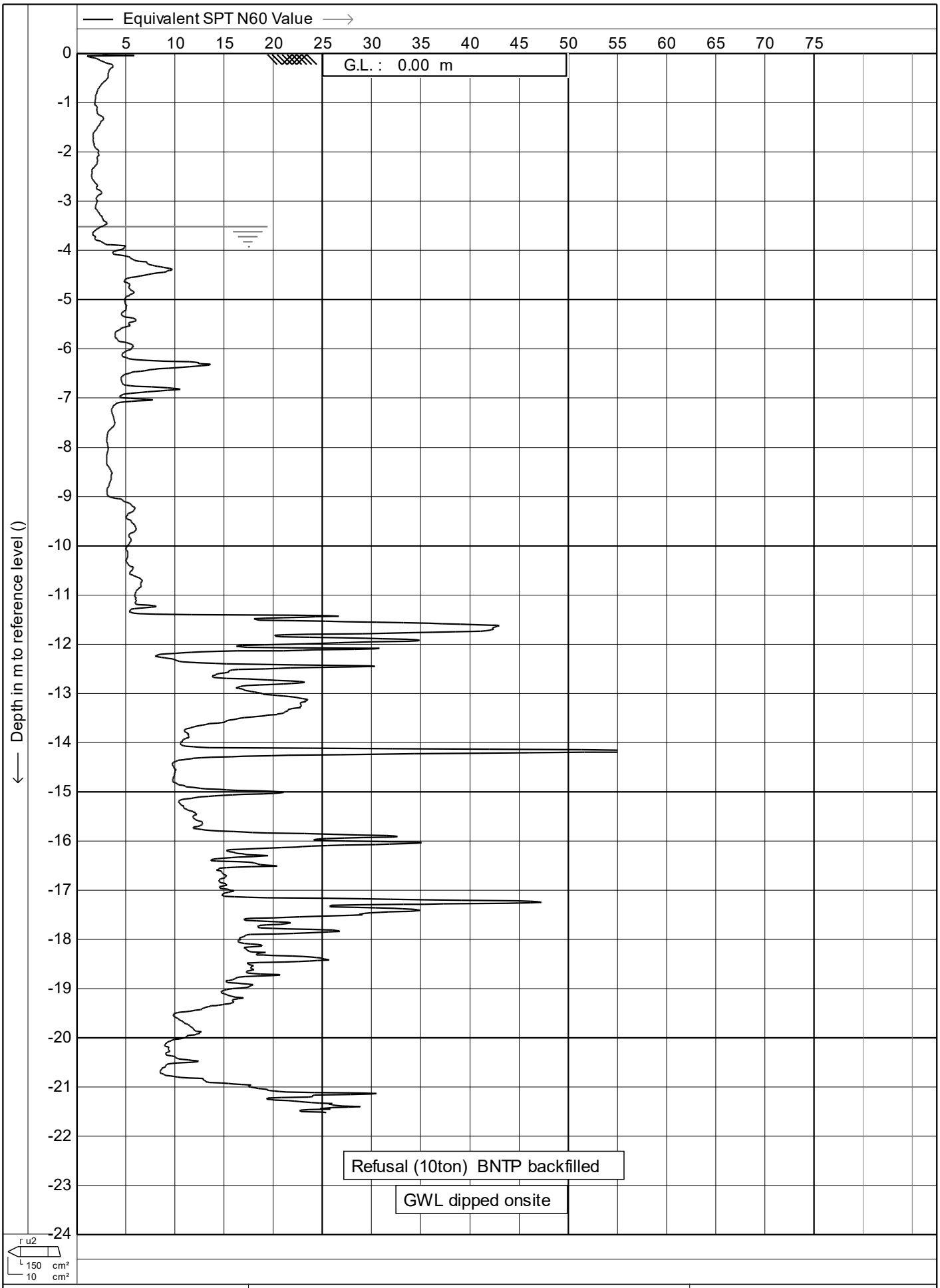
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **045**

11/14

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date : **25/11/2020**

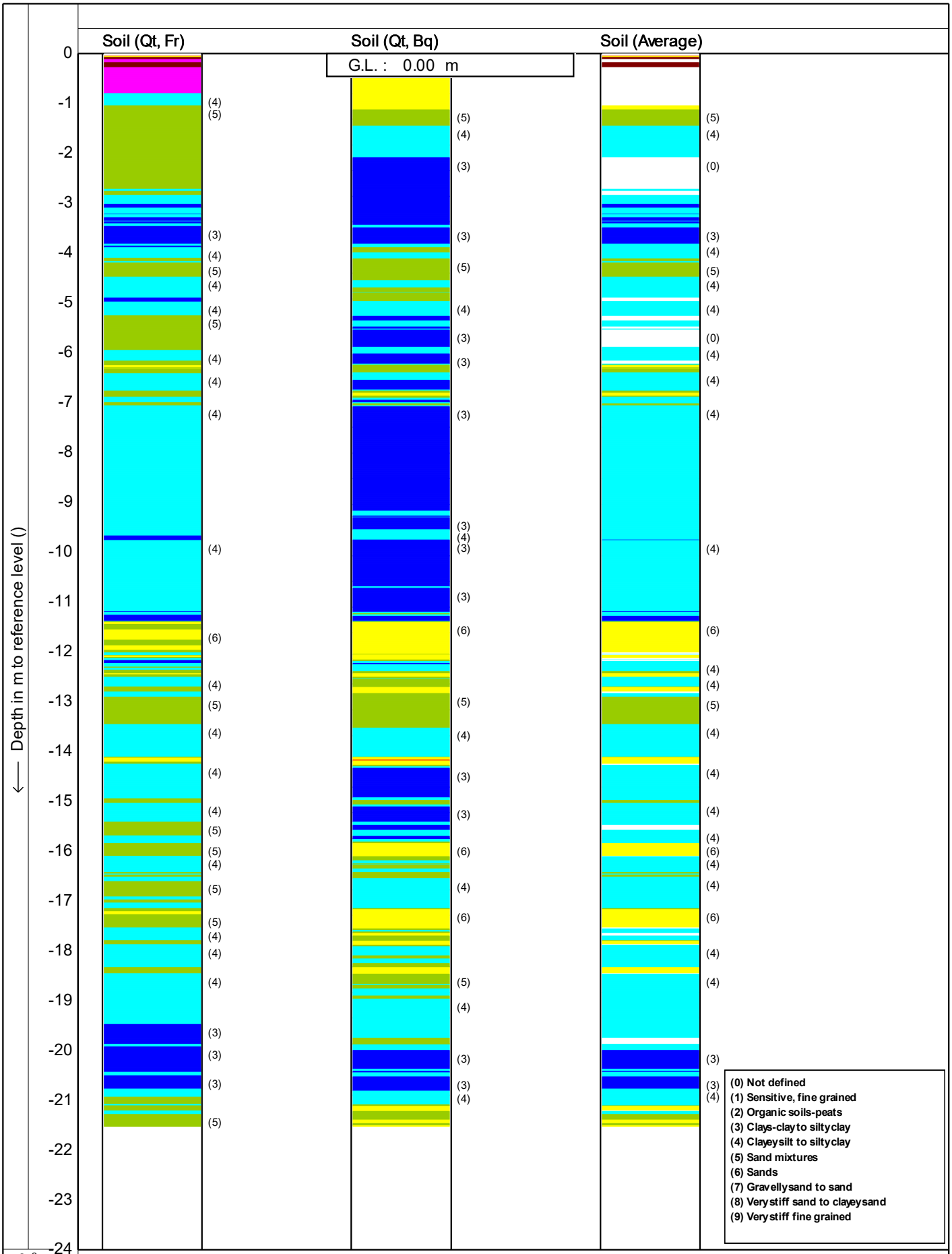
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **045**

12/14

1.48



Soil behaviour type classification after Robertson 1990

r u2
150 cm²
10 cm²

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

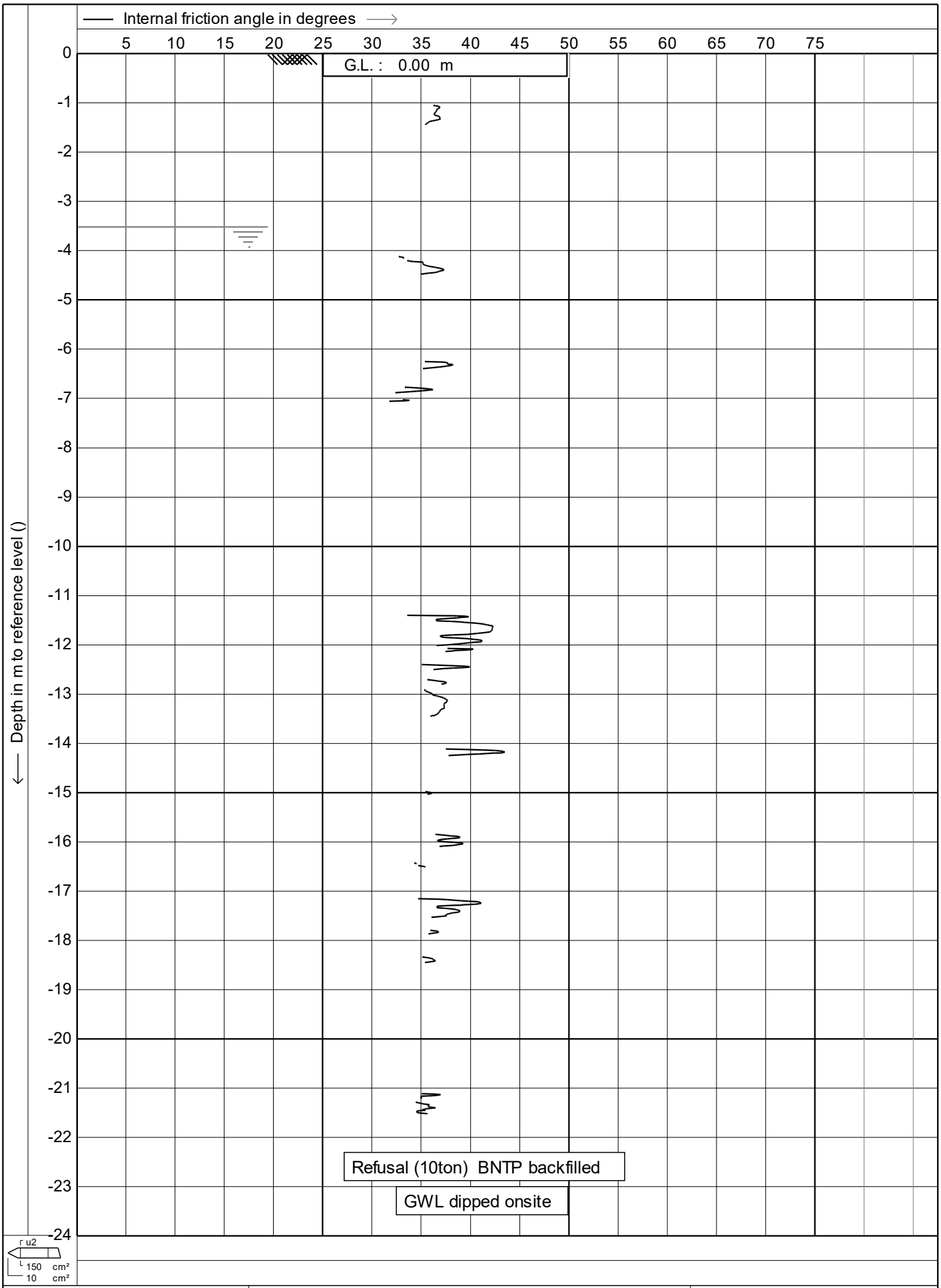
Date : **25/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

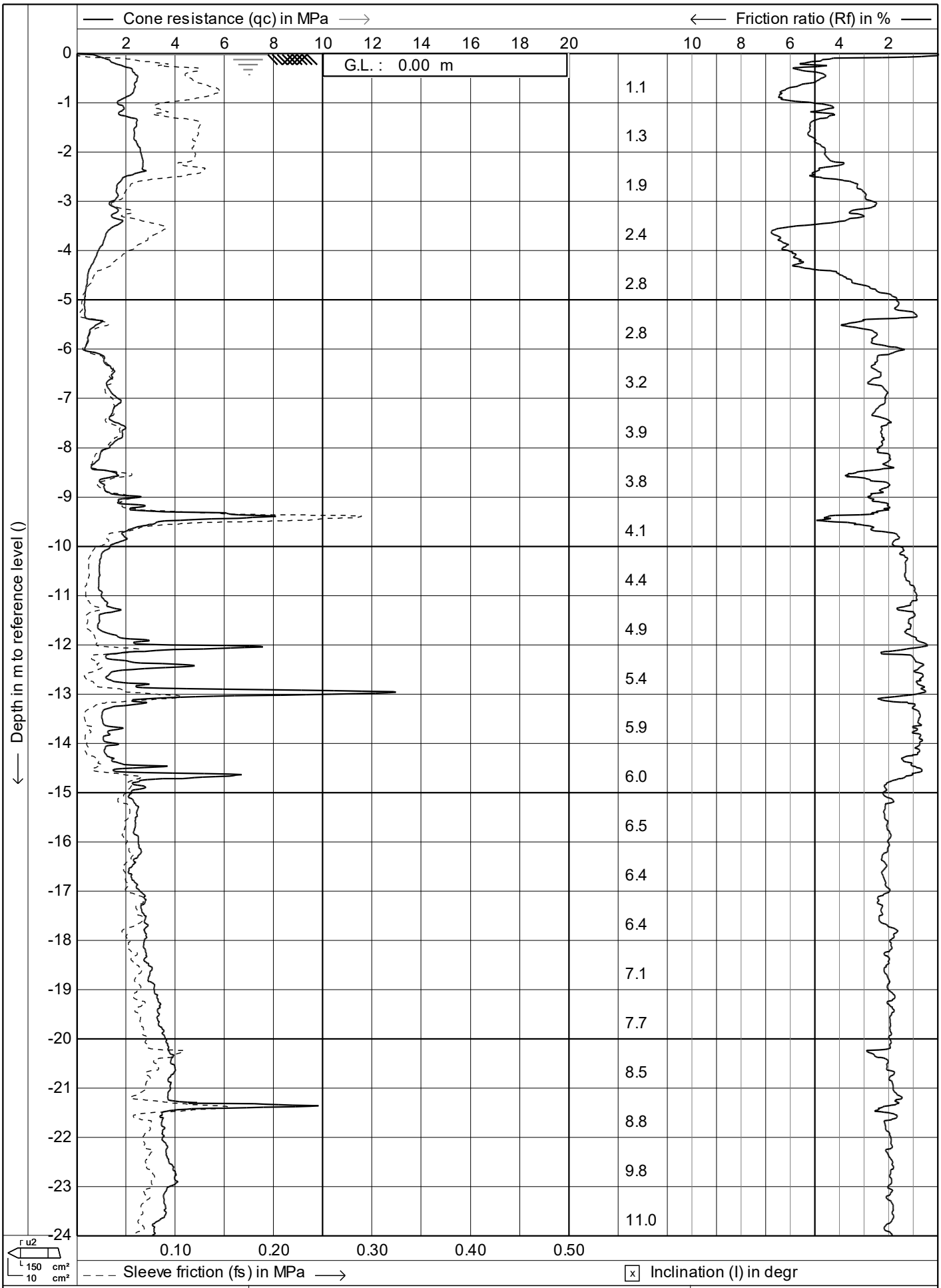
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **25/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **045**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

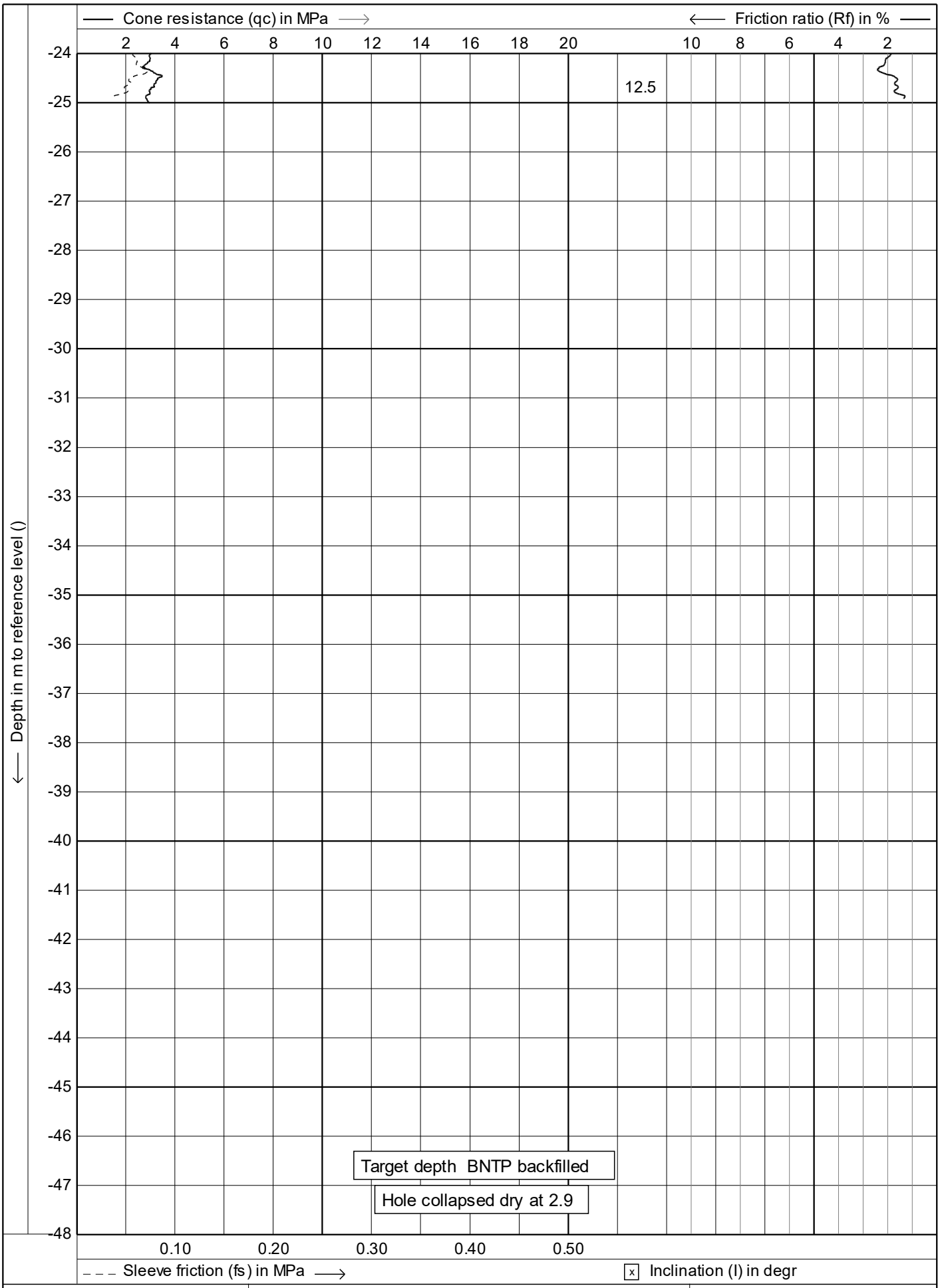
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **046**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

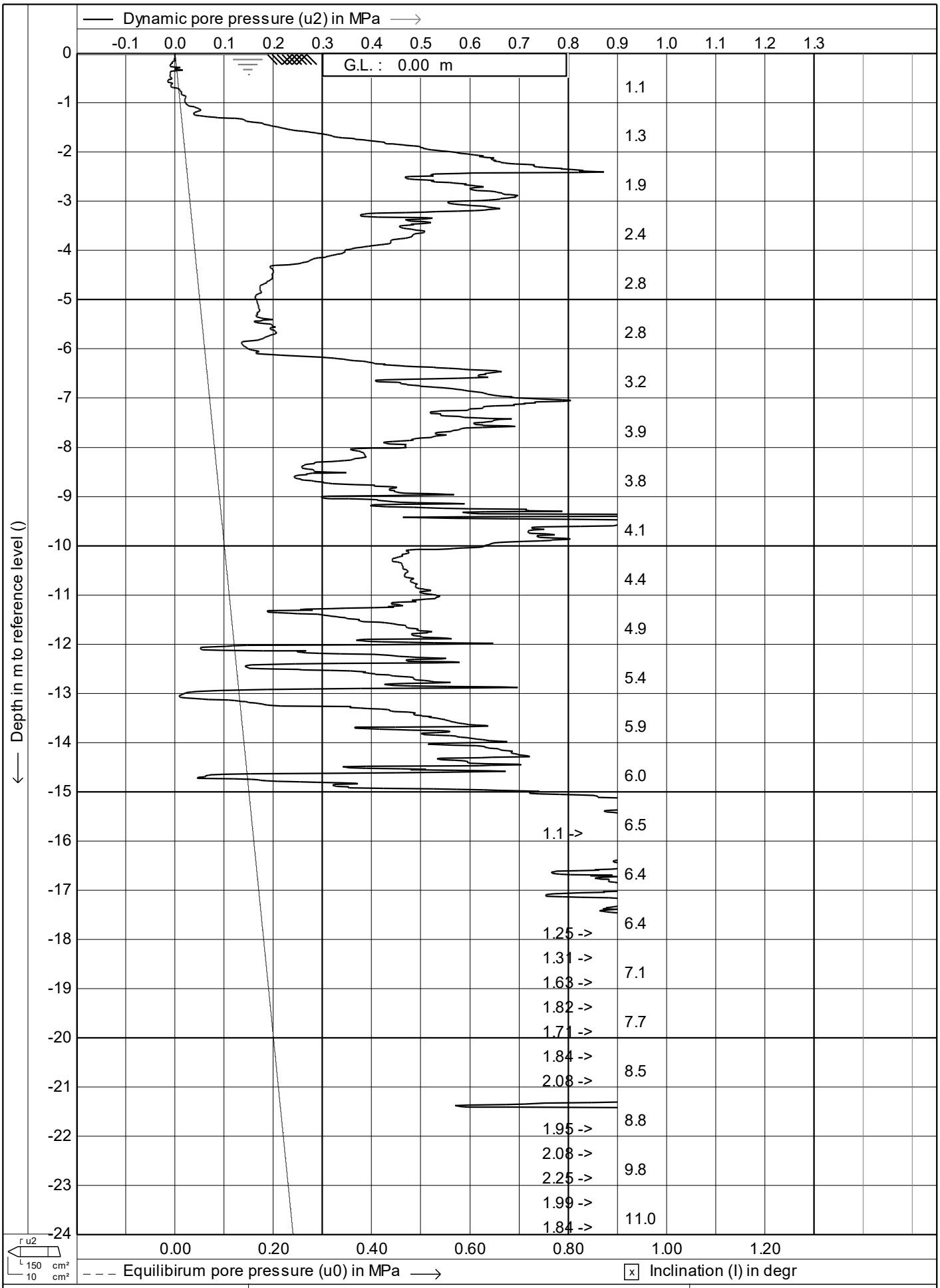
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **046**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

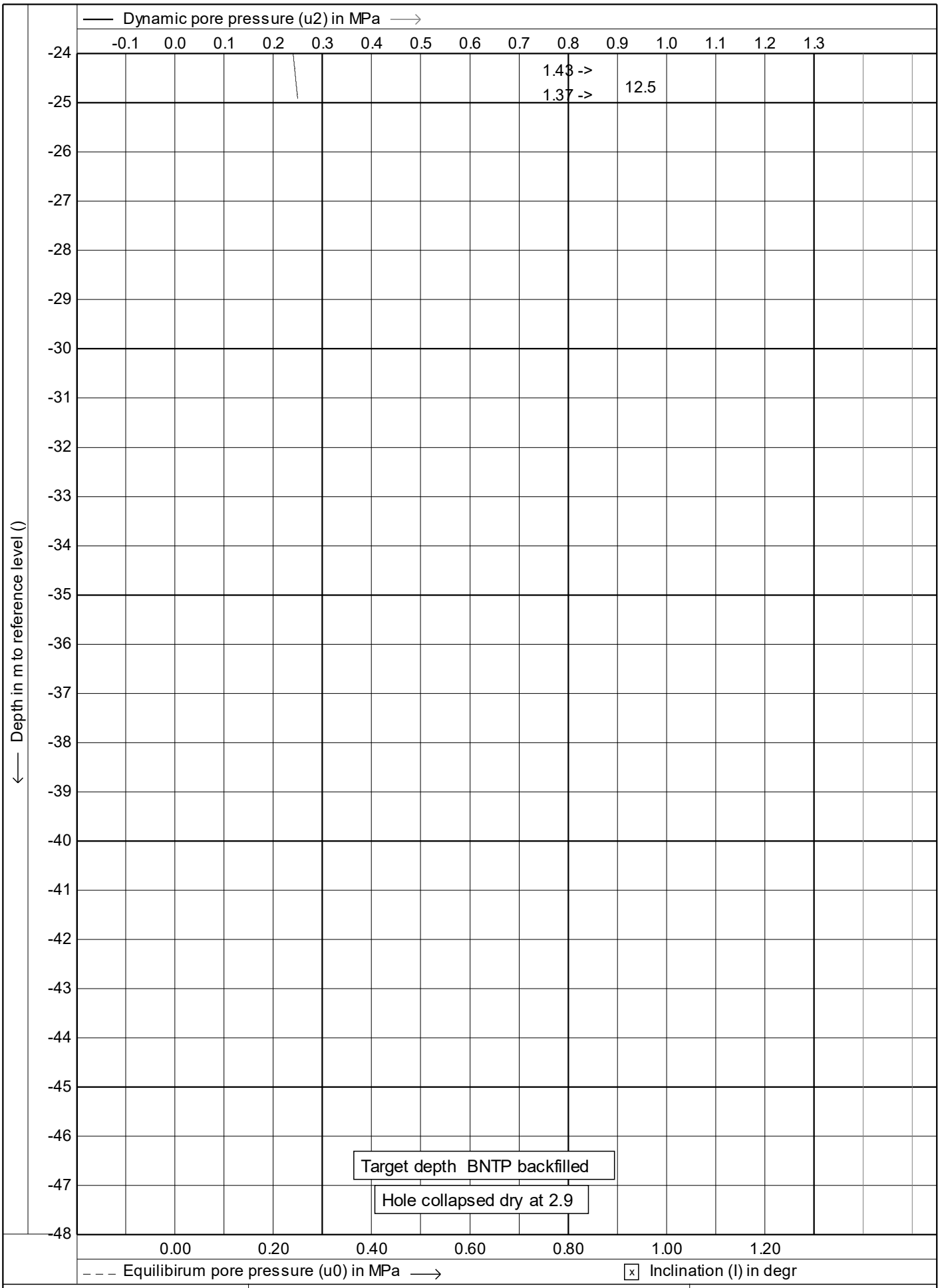
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **046**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

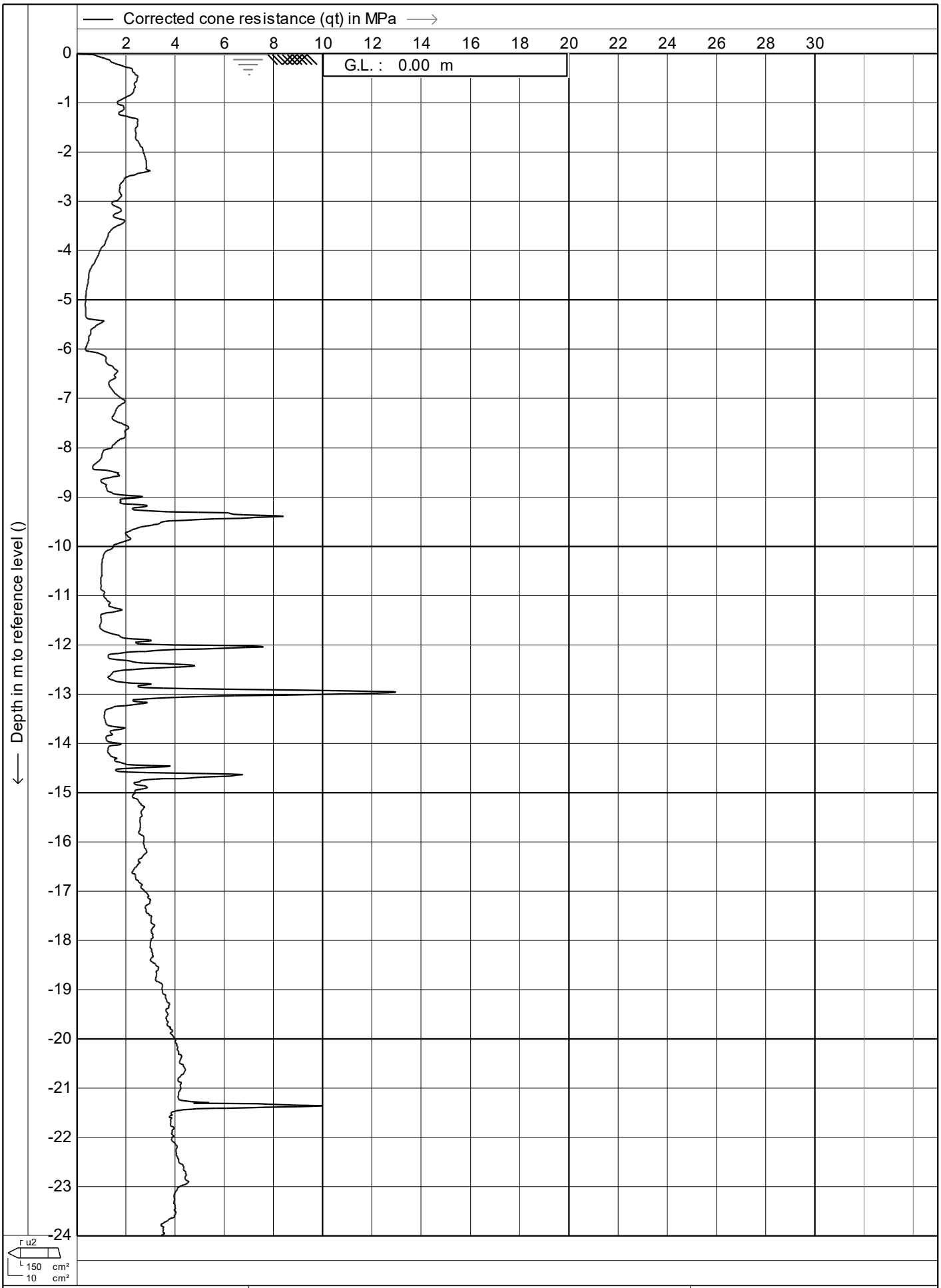
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **046**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

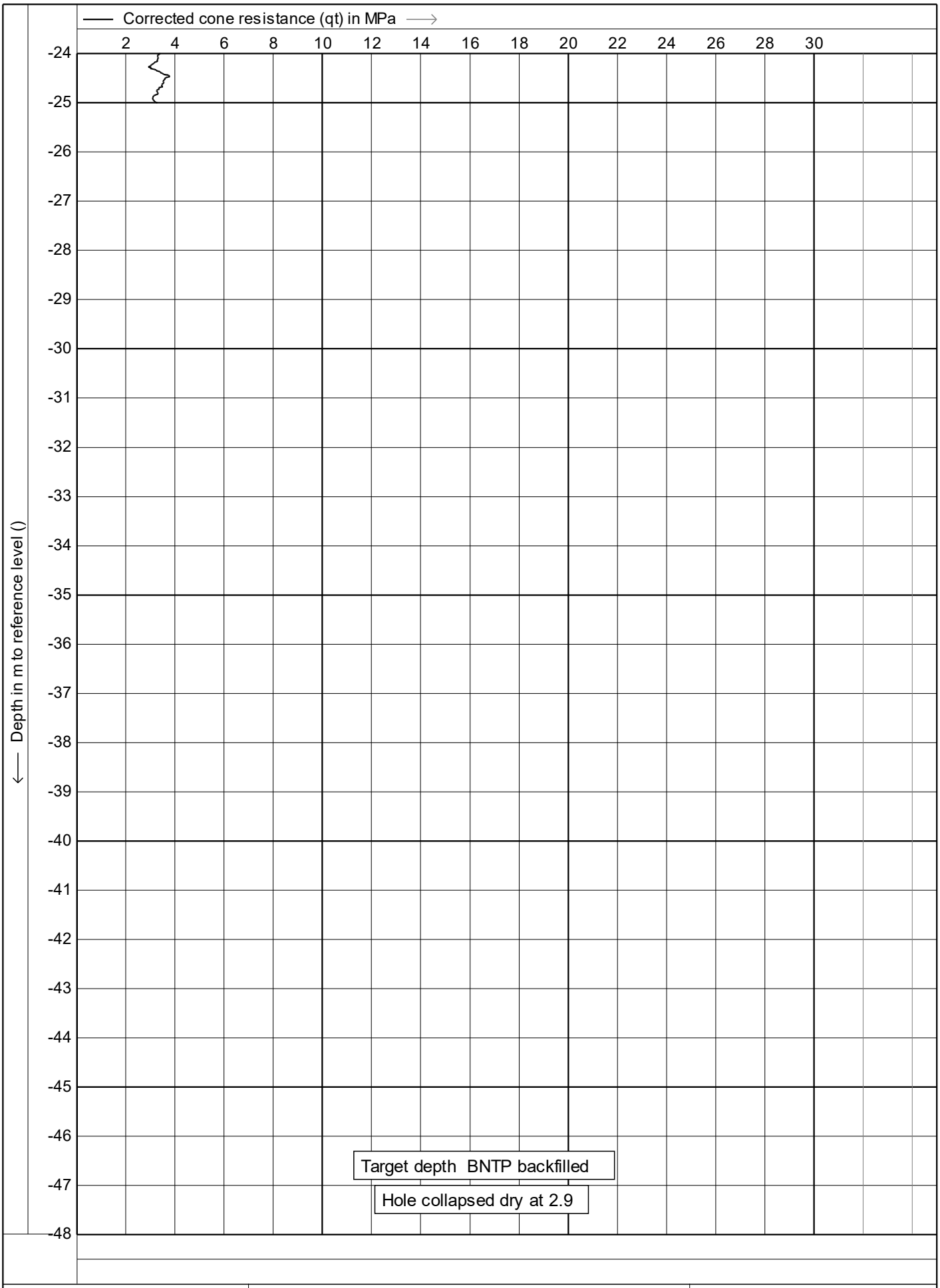
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

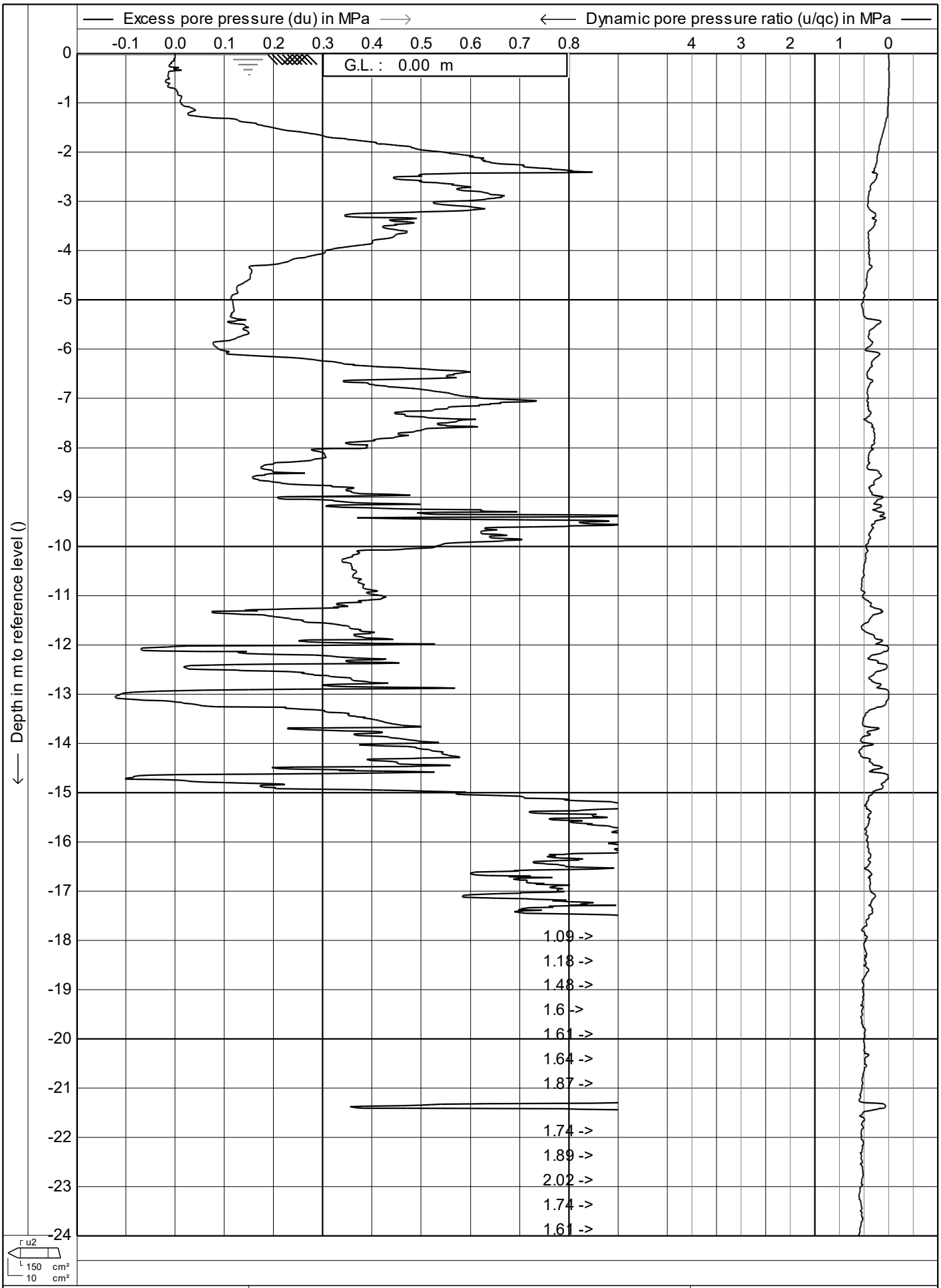
Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **046**

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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

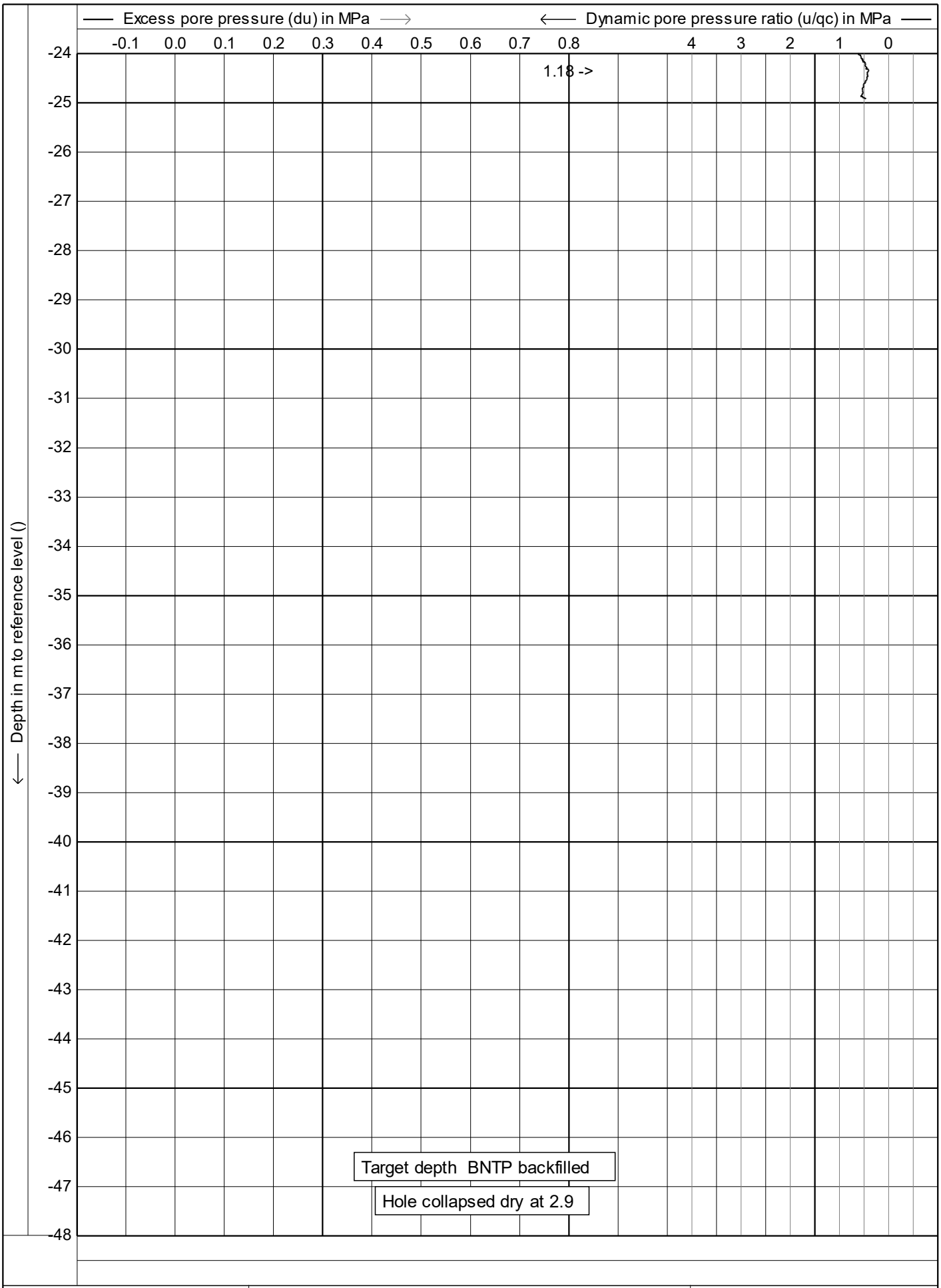
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
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1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

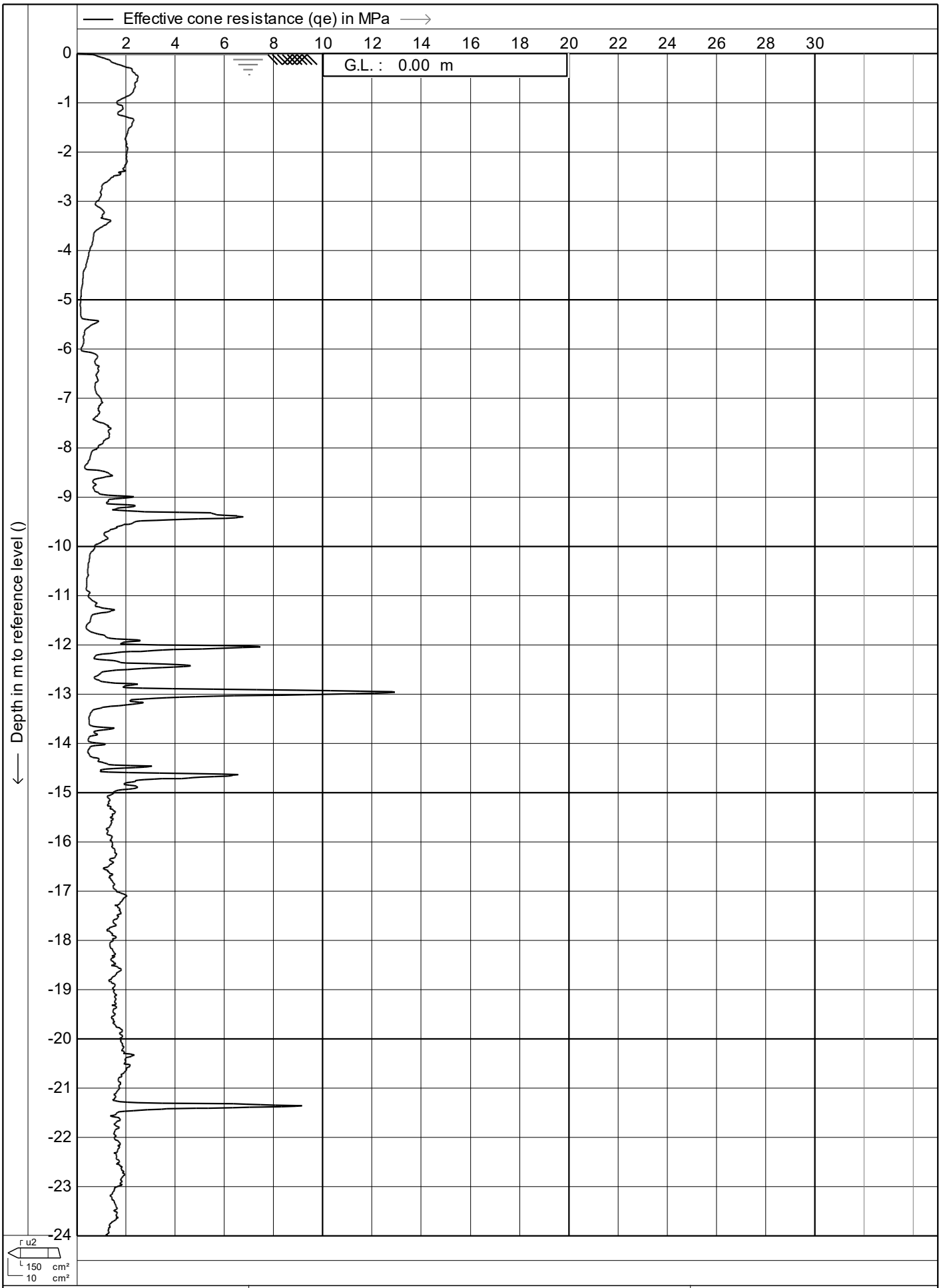
Date : **26/11/2020**

Cone no. : **C10CFIIP.C14426**

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PERRY GEOTECH

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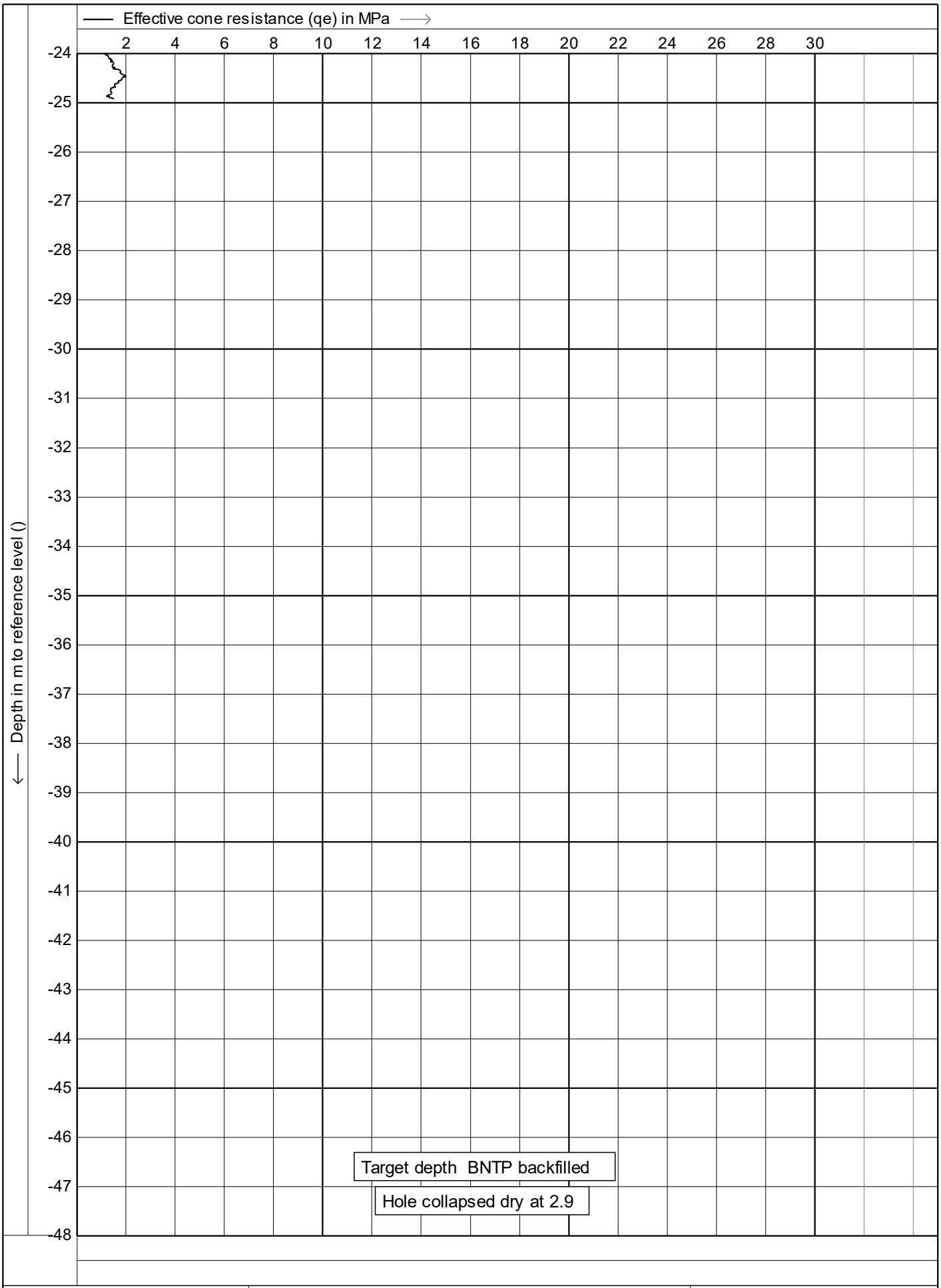
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **046** **9/28**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

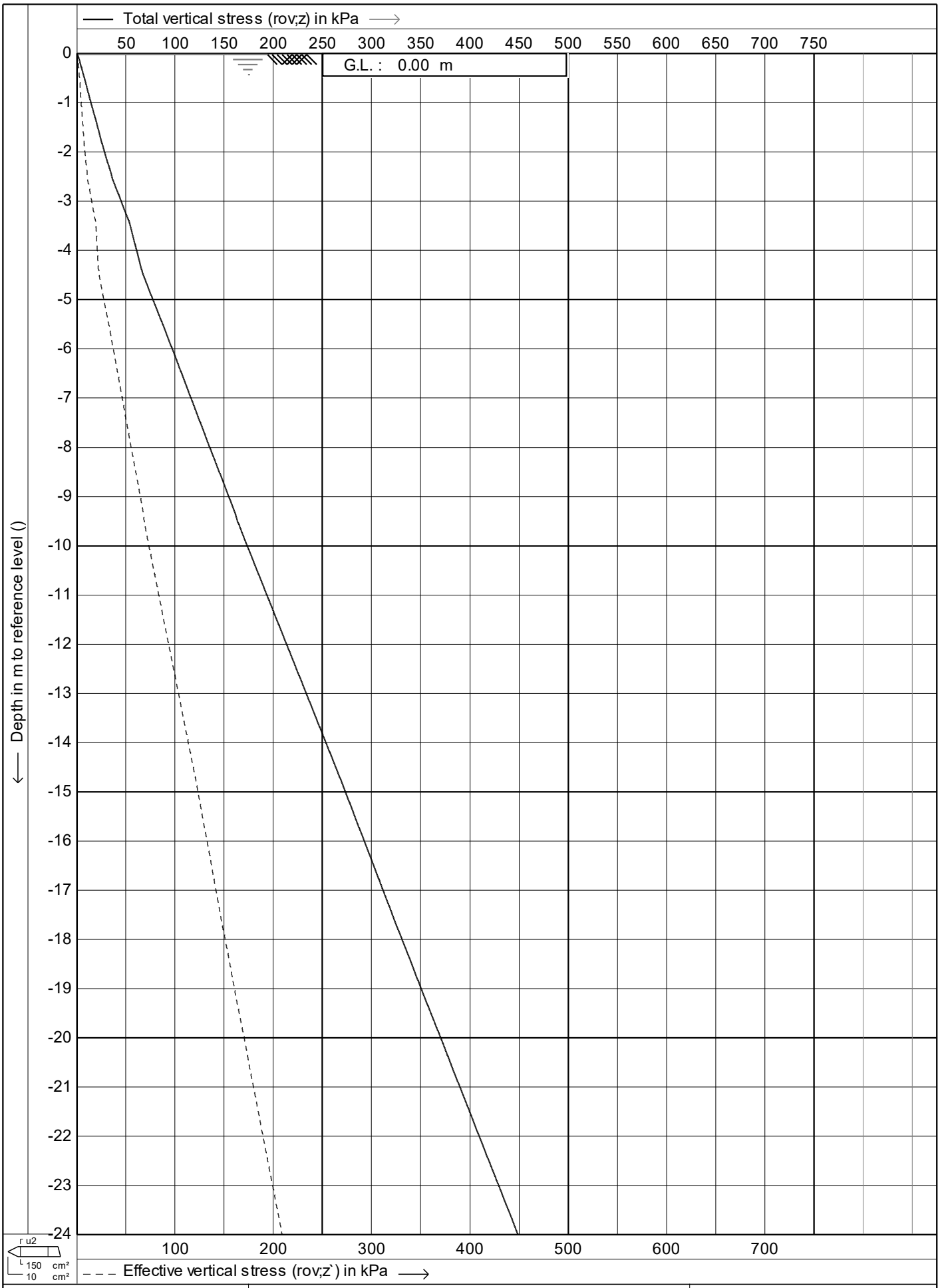
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **046** **10/28**

1.48



PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

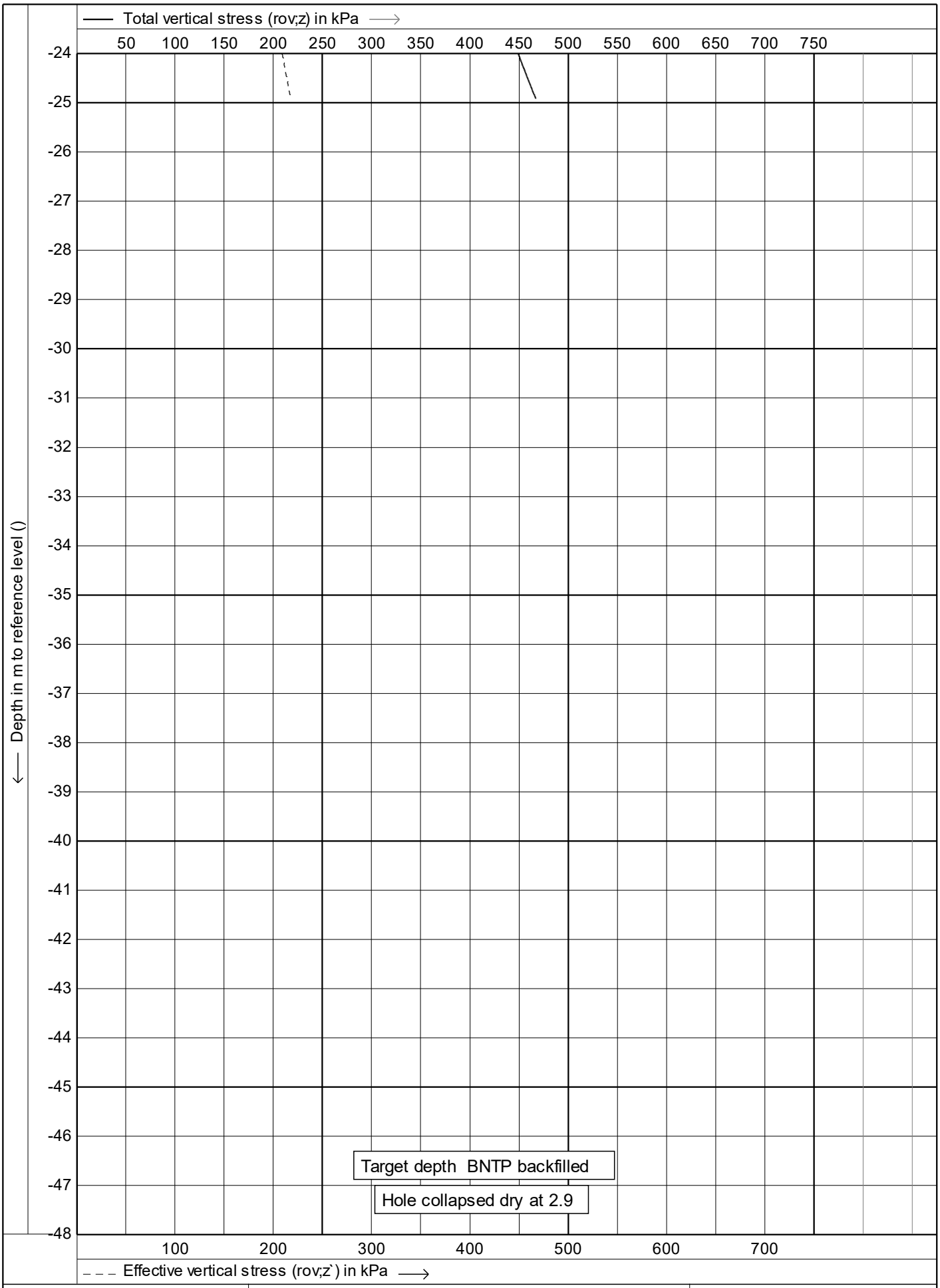
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **046**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

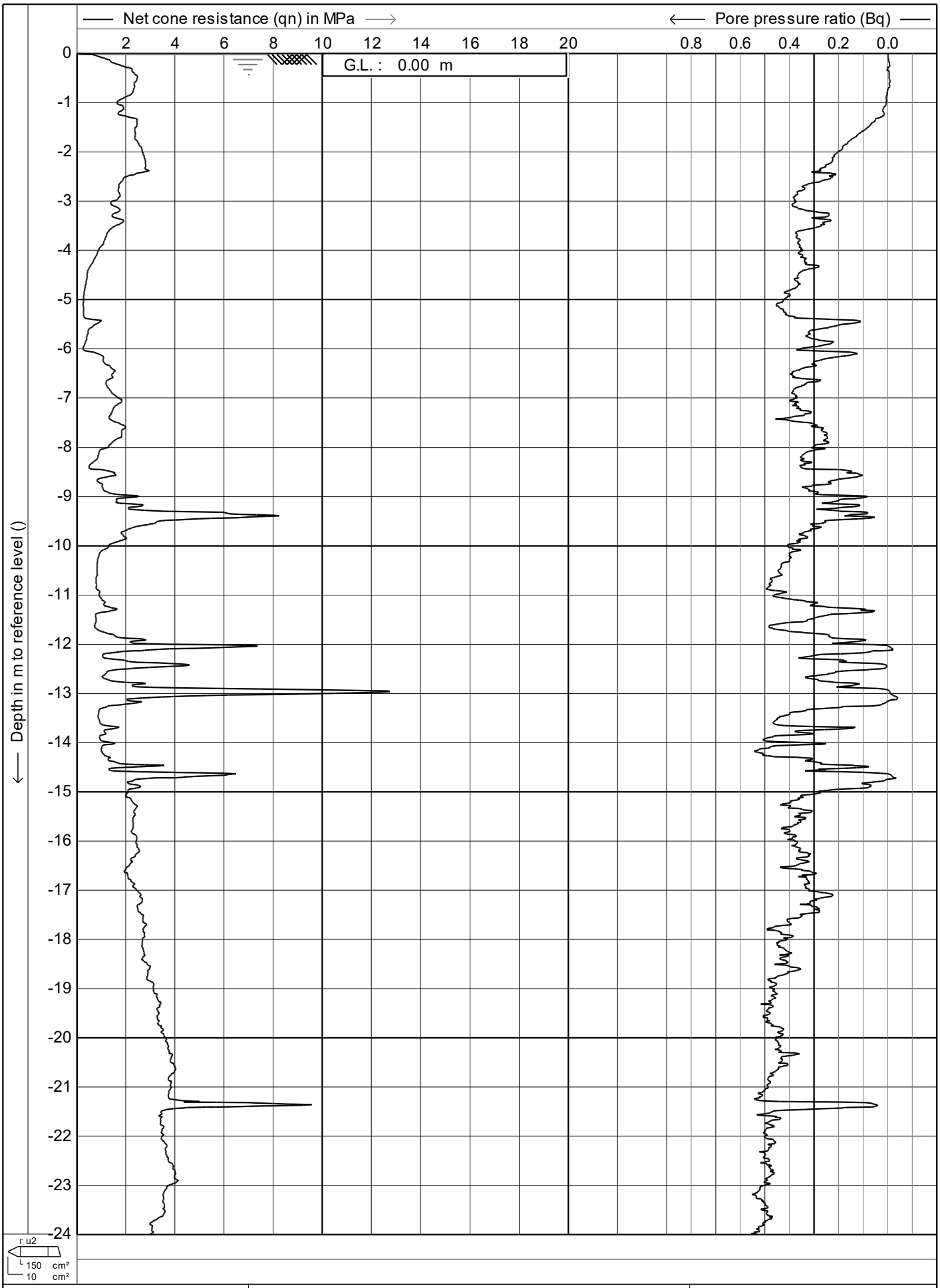
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
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Position: **0, 0**

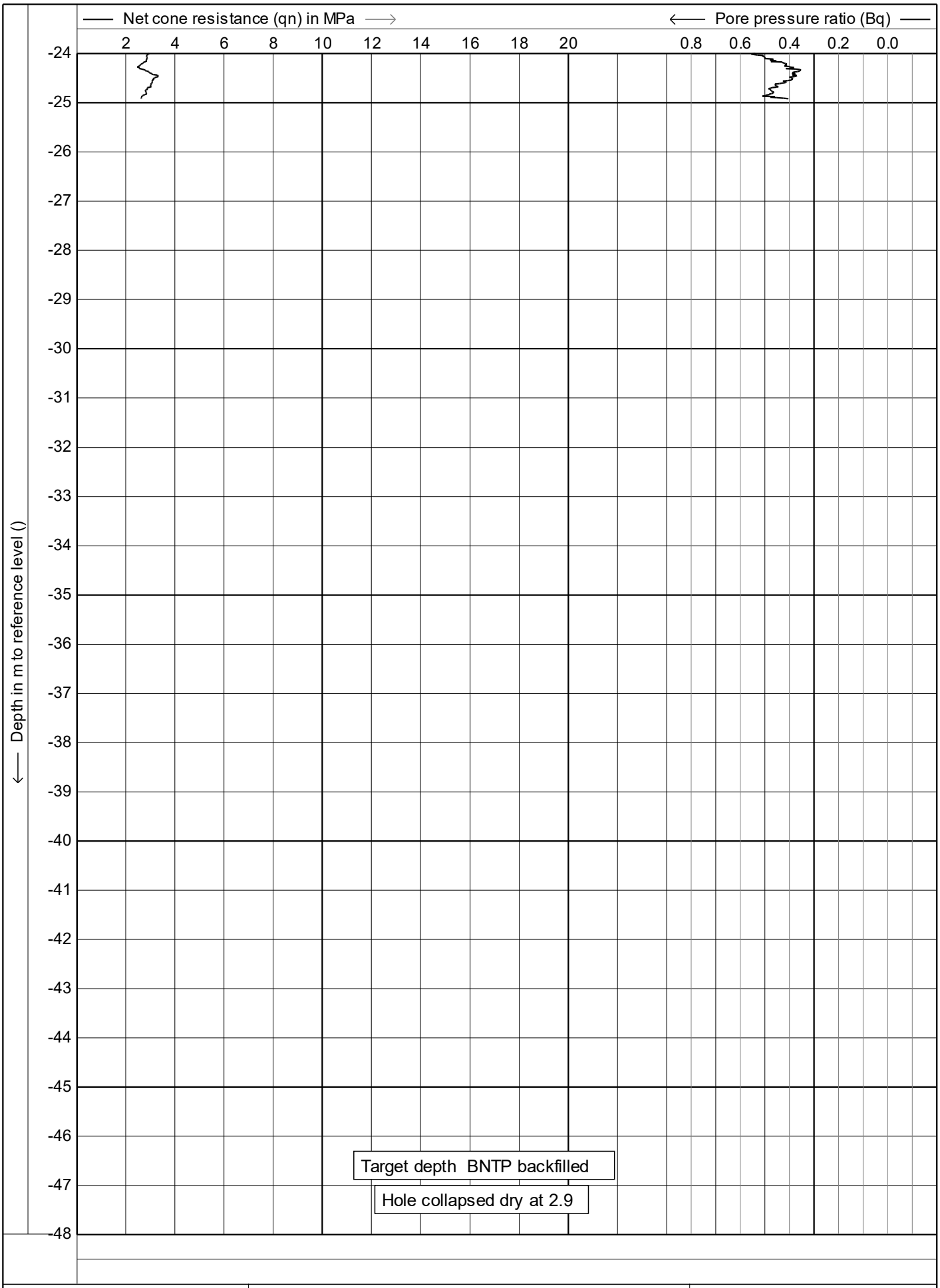
Date : **26/11/2020**

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Position: **0, 0**

Date : **26/11/2020**

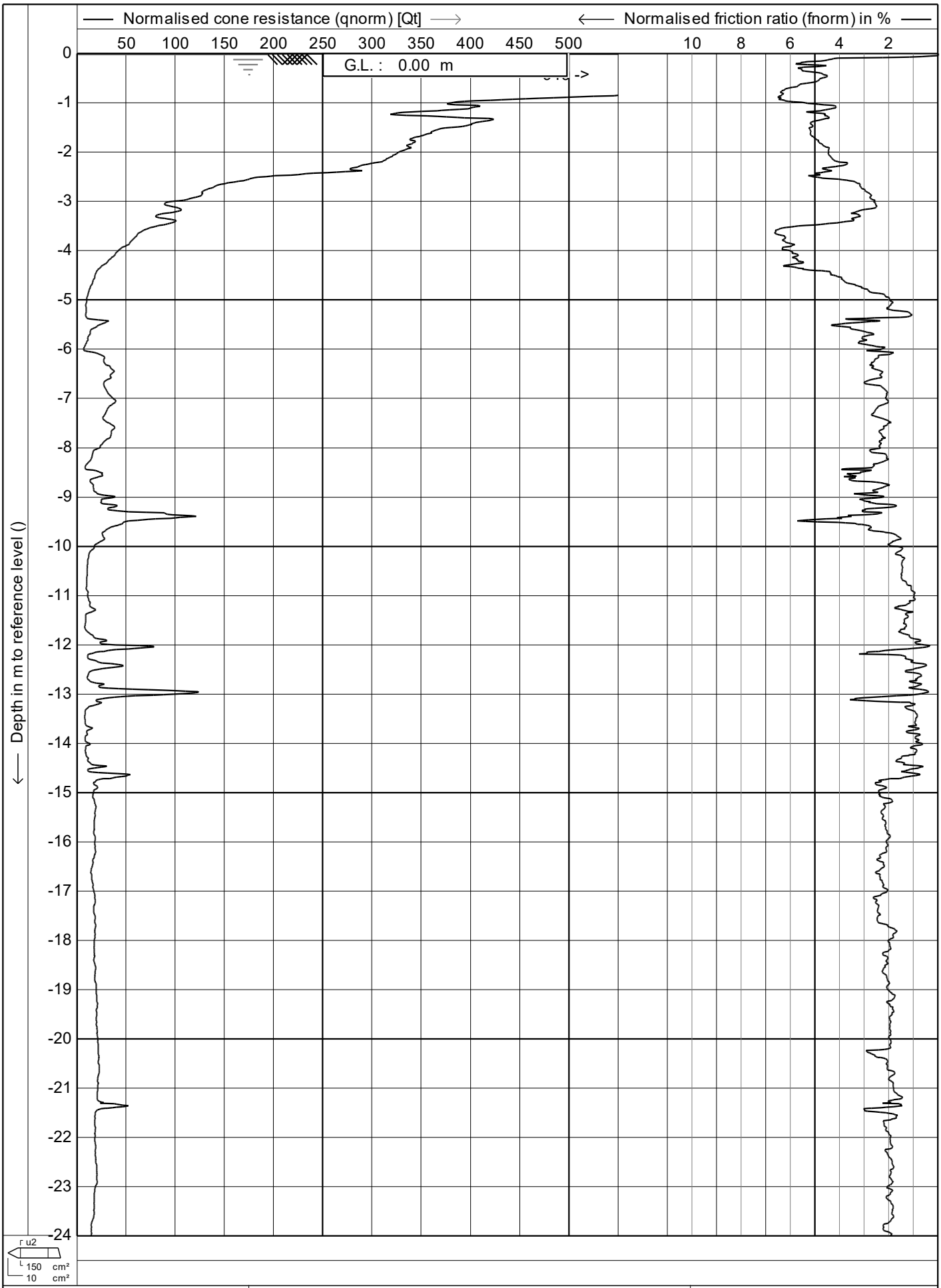
Cone no. : **C10CFIIP.C14426**

Project no. : **05AU7**

CPT no. : **046**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

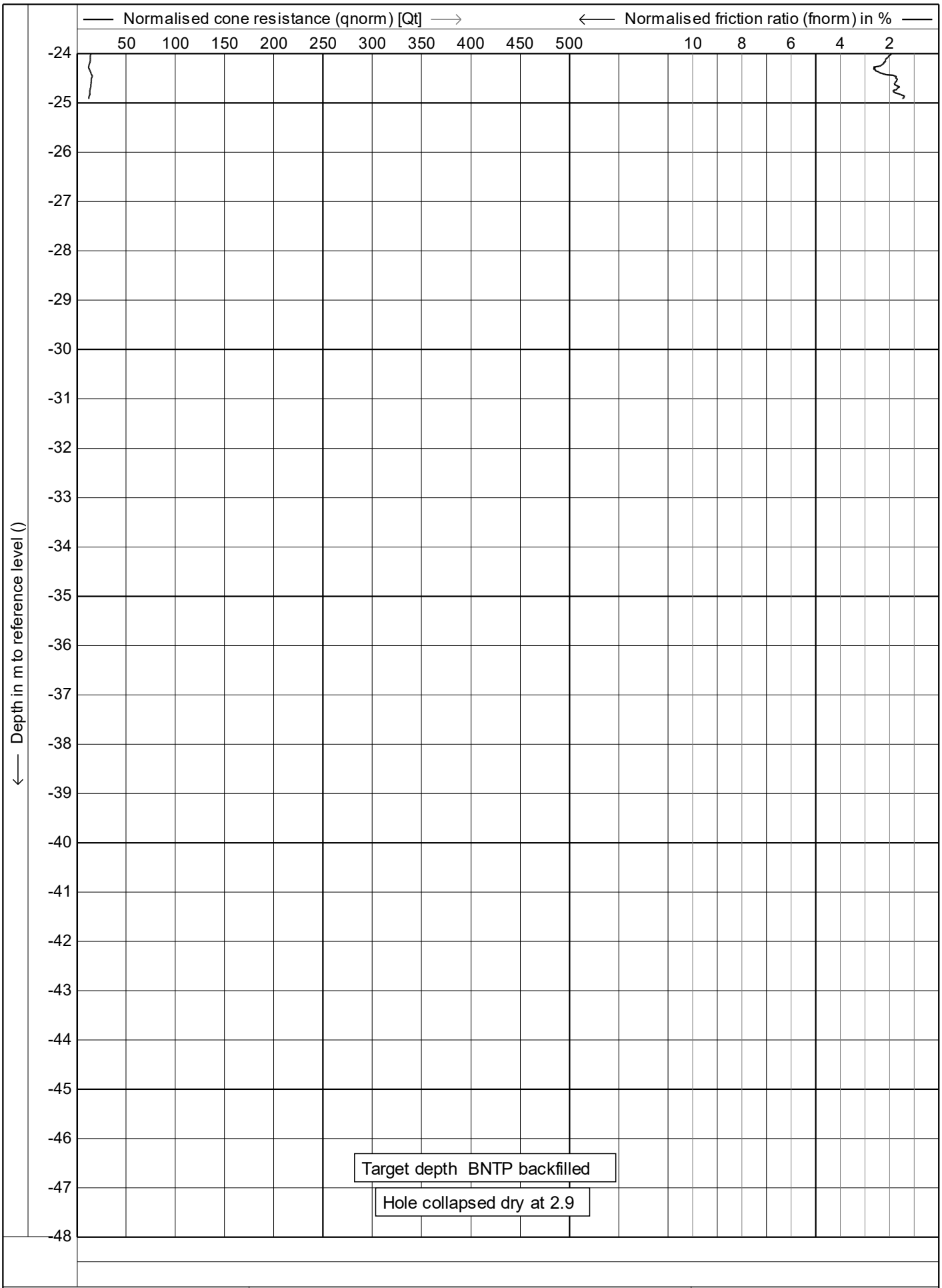
Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
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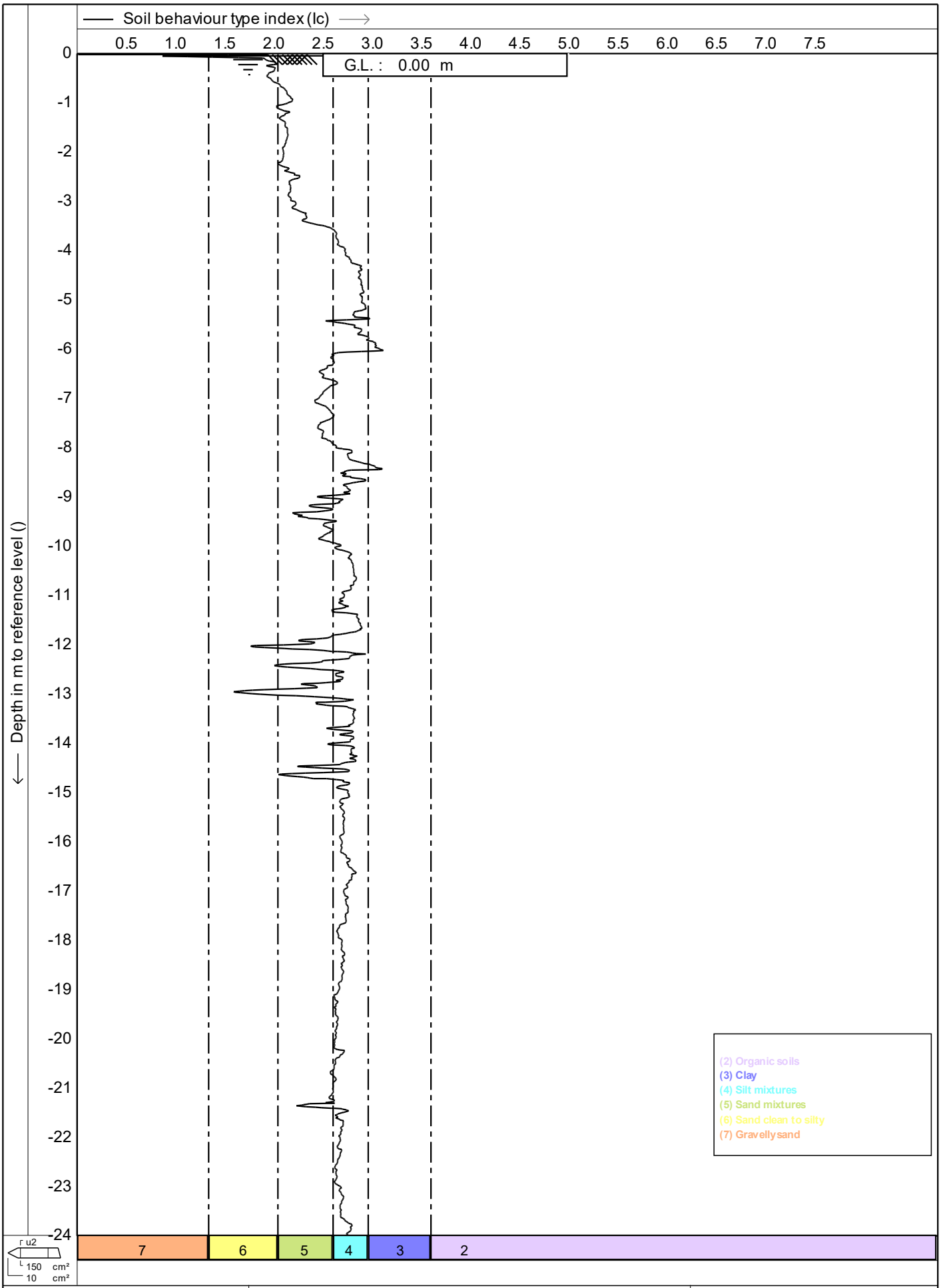
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Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

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Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

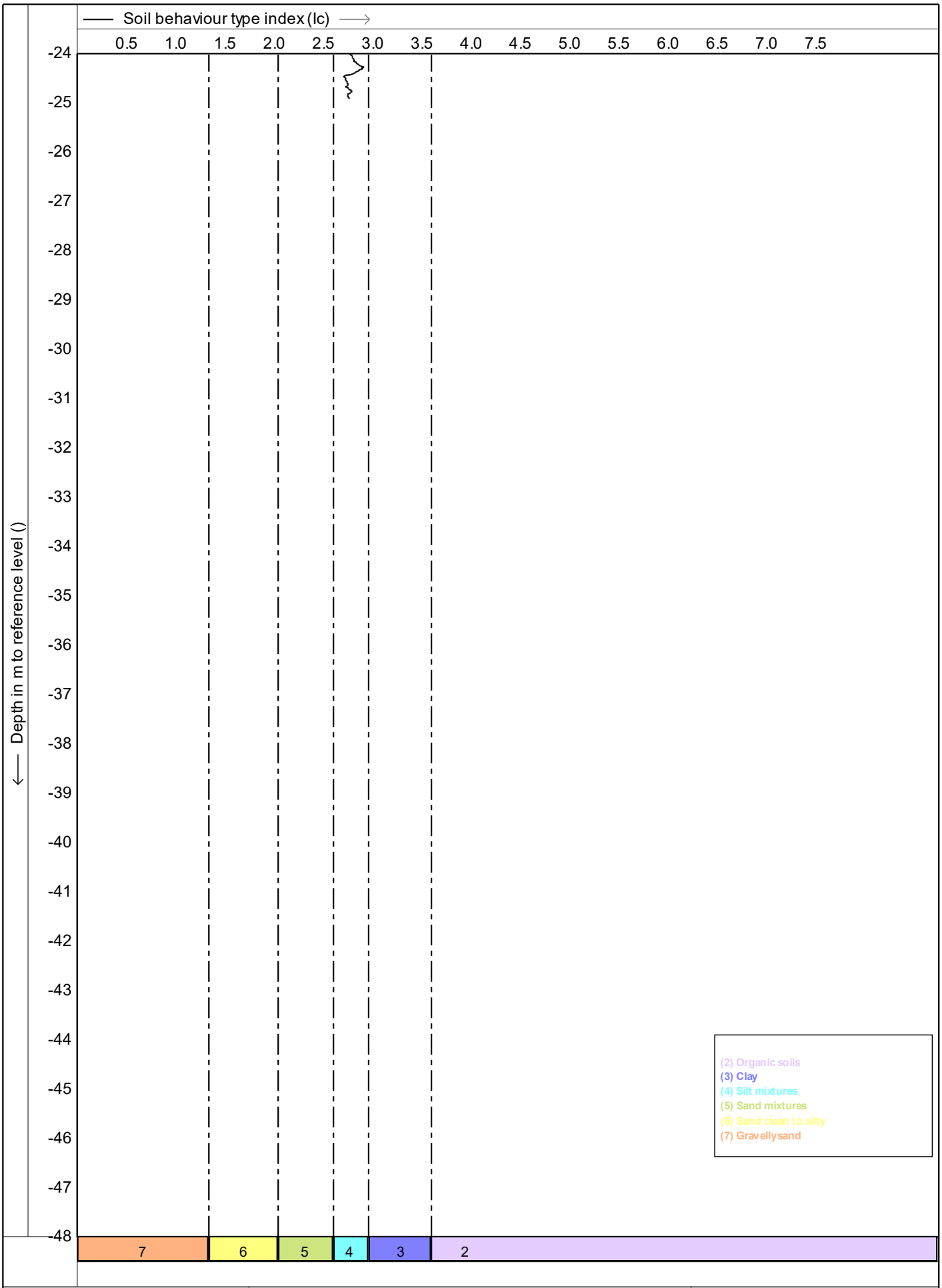
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Cone no. : **C10CFIIP.C14426**

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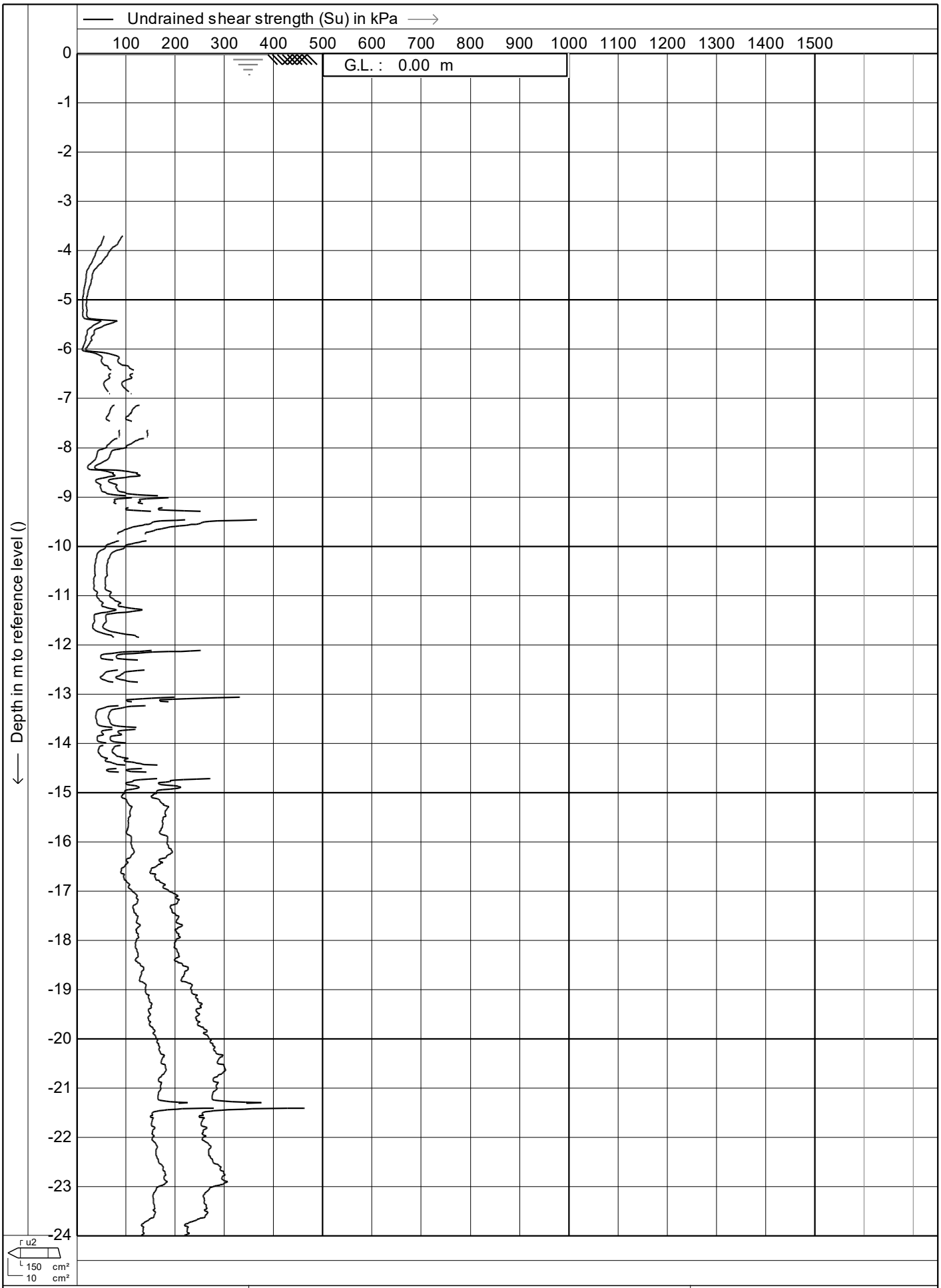
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Cone no. : **C10CFIIP.C14426**

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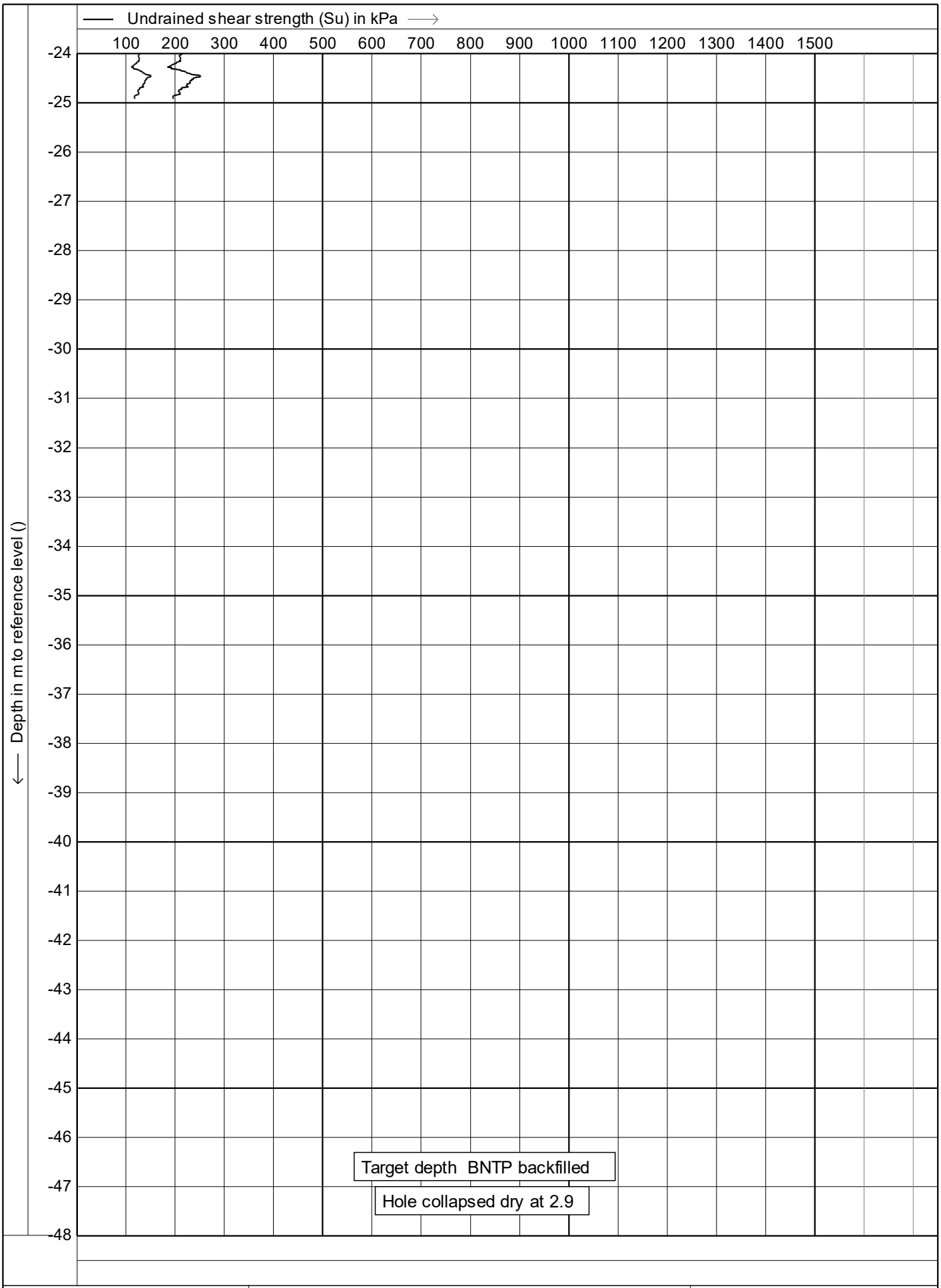
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Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
Project no.	: **05AU7**
CPT no.	: **046**

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PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

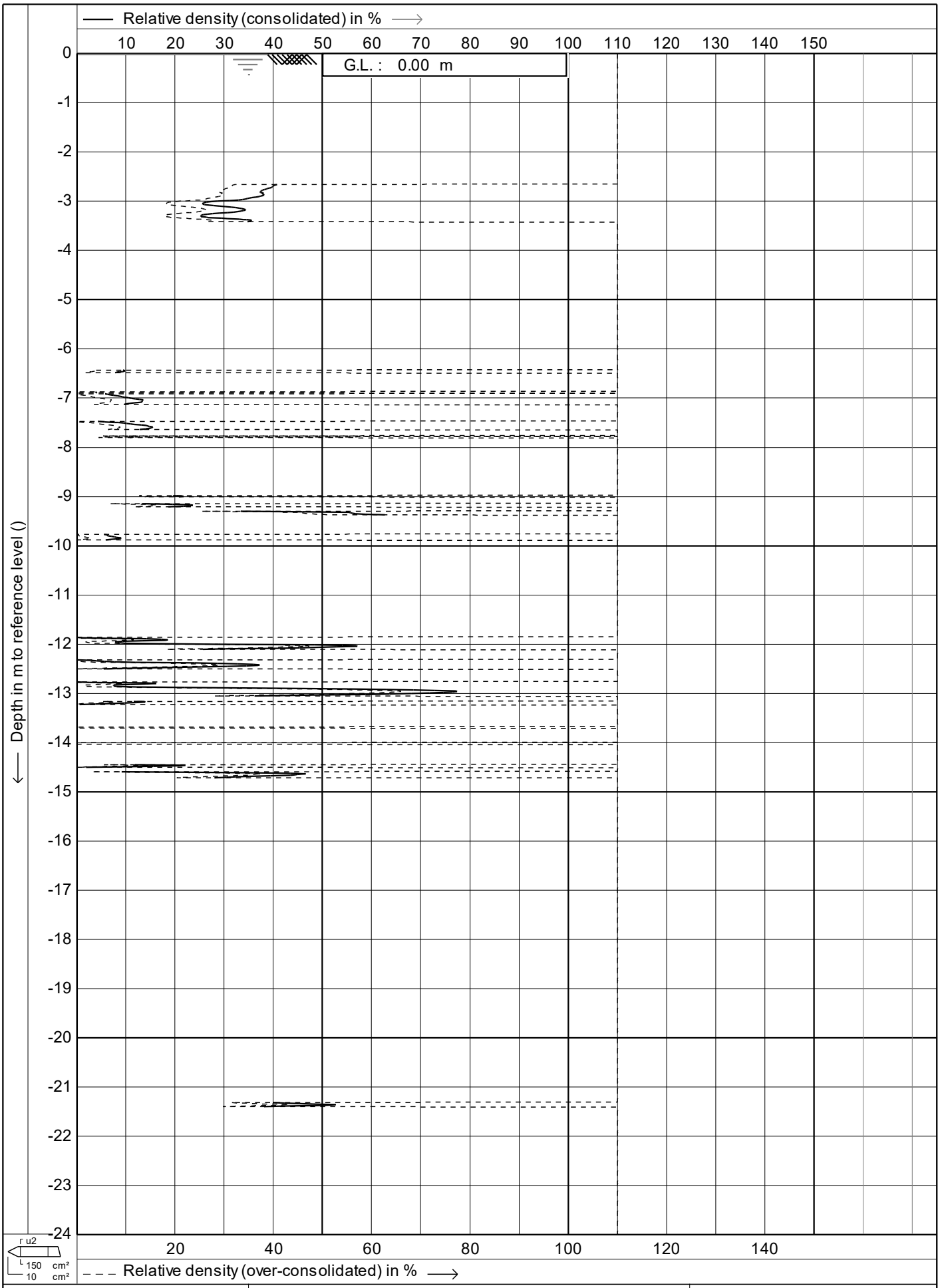
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Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

Date	: **26/11/2020**
Cone no.	: **C10CFIIP.C14426**
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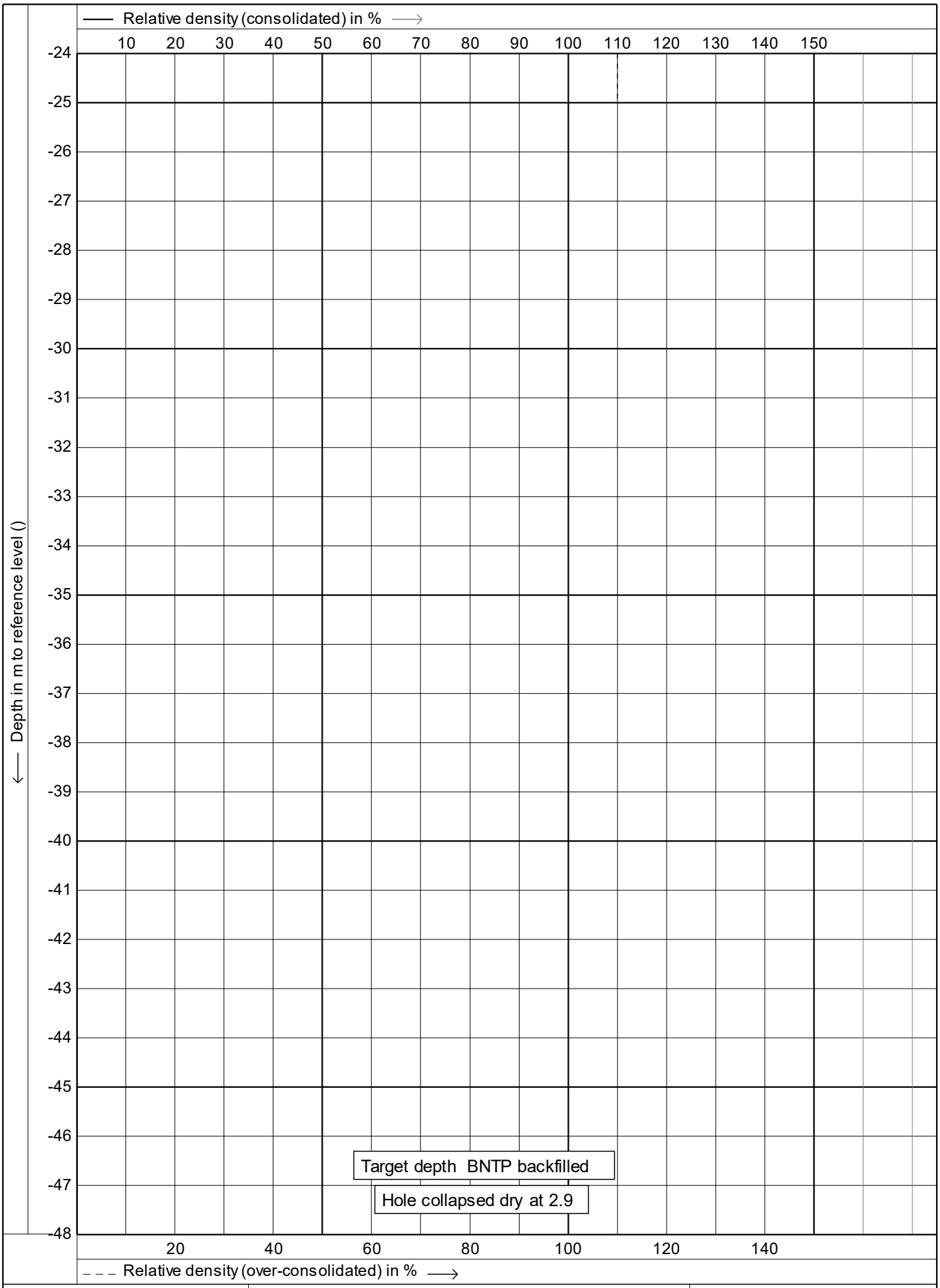
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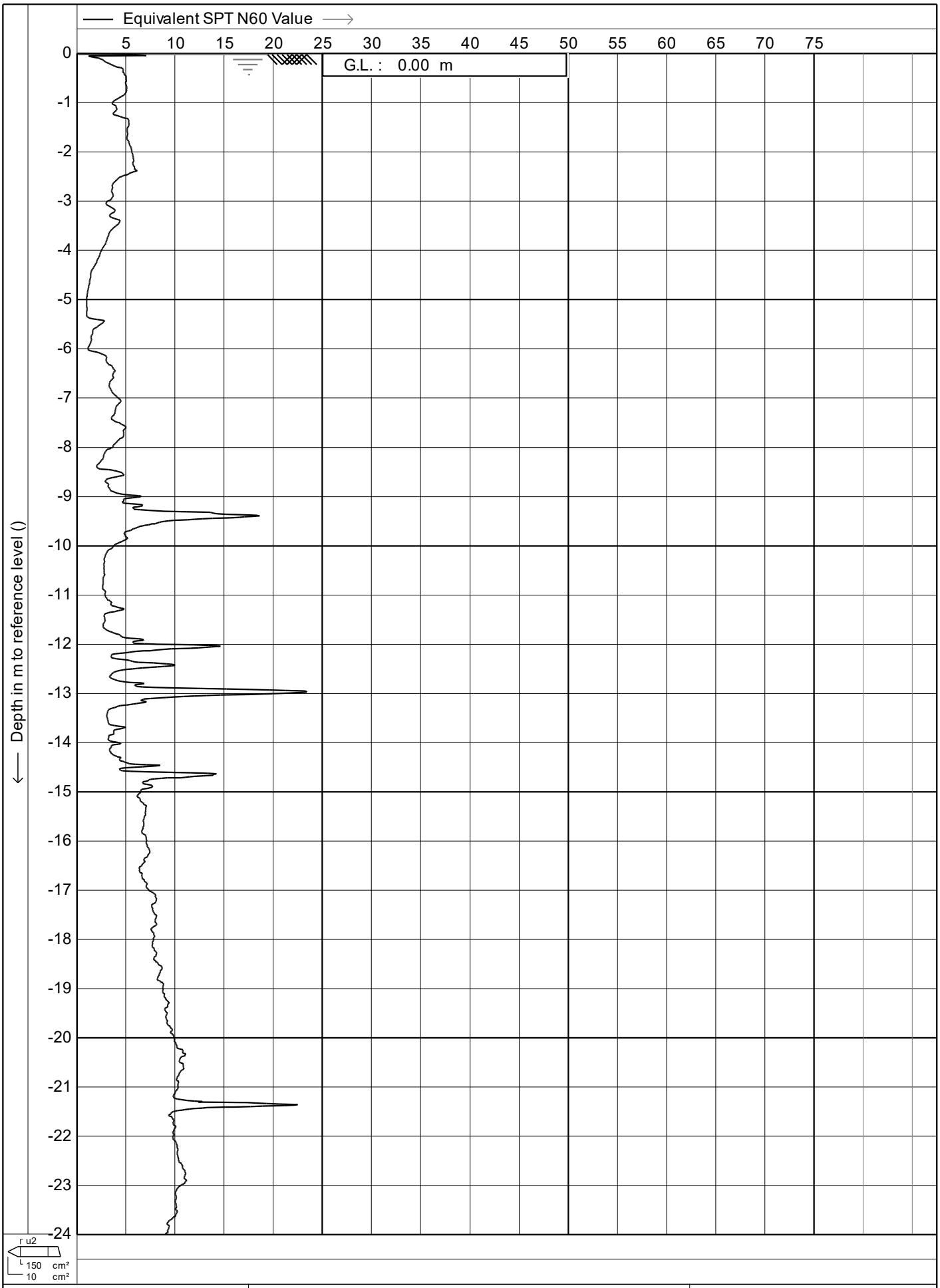
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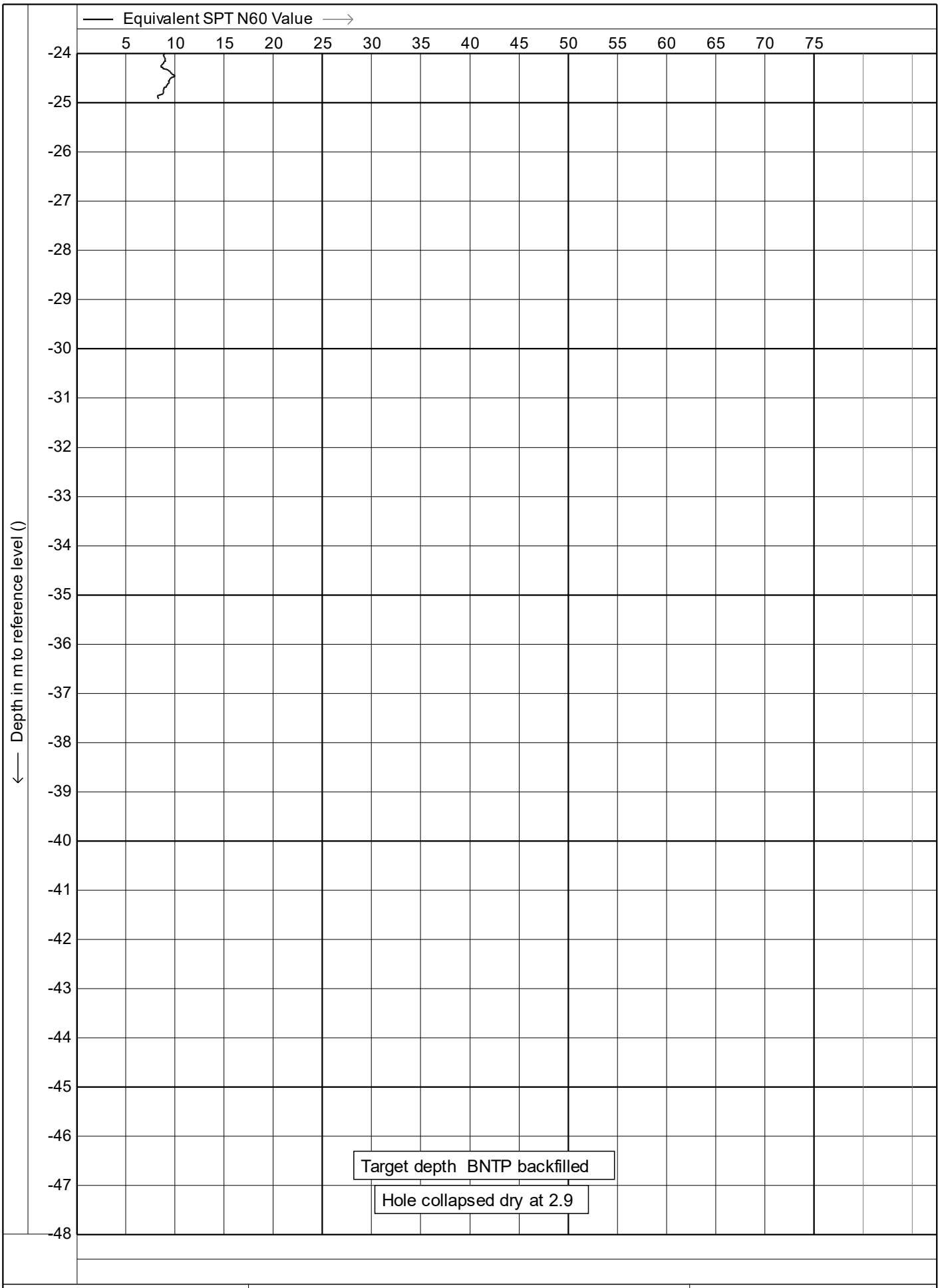
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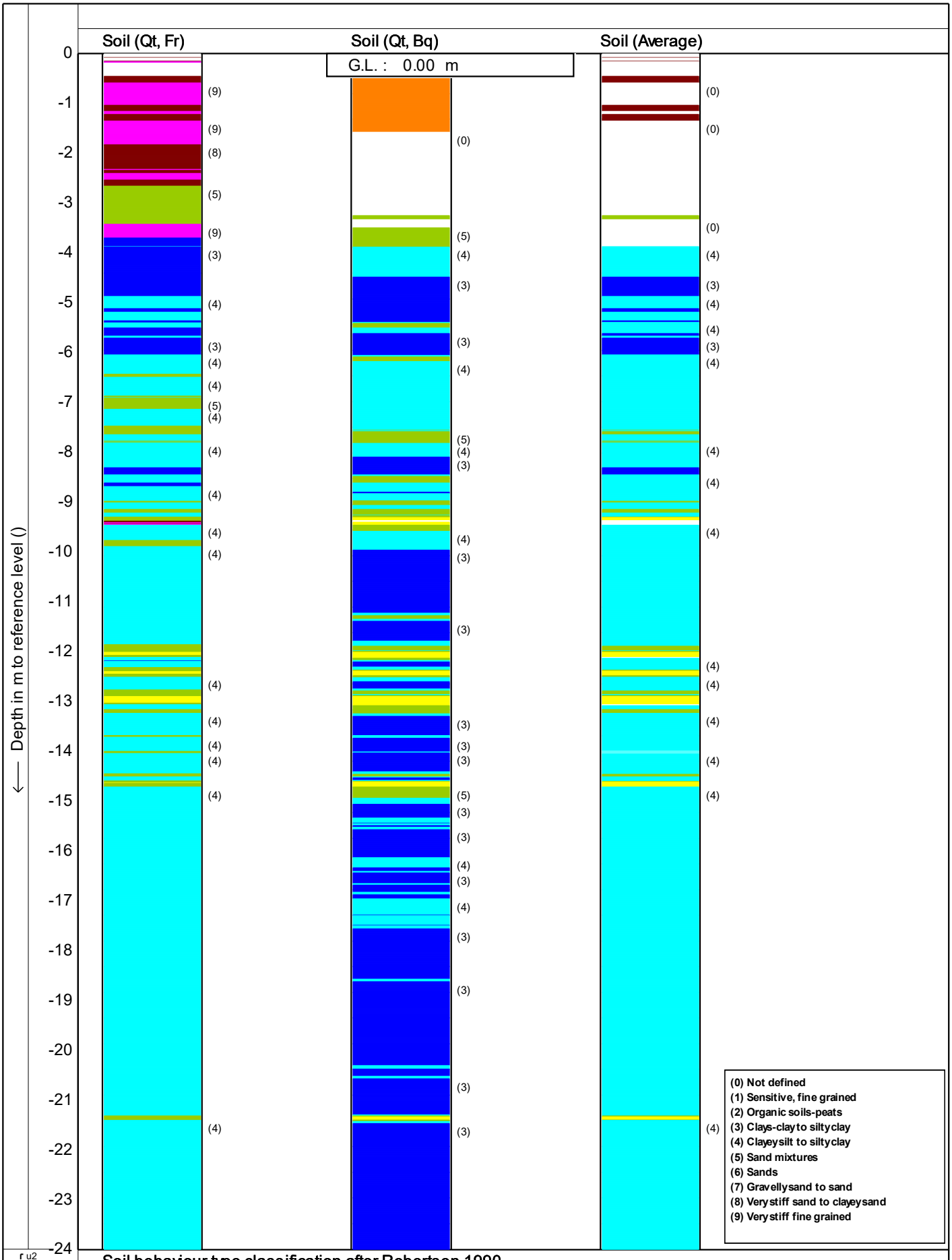
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Position: **0, 0**

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Soil behaviour type classification after Robertson 1990

PERRY GEOTECH

Test according A.S.T.M Standard D 5778-12

Project : **Site Investigations**

Location: **Fitzgerald Rd - Drury**

Position: **0, 0**

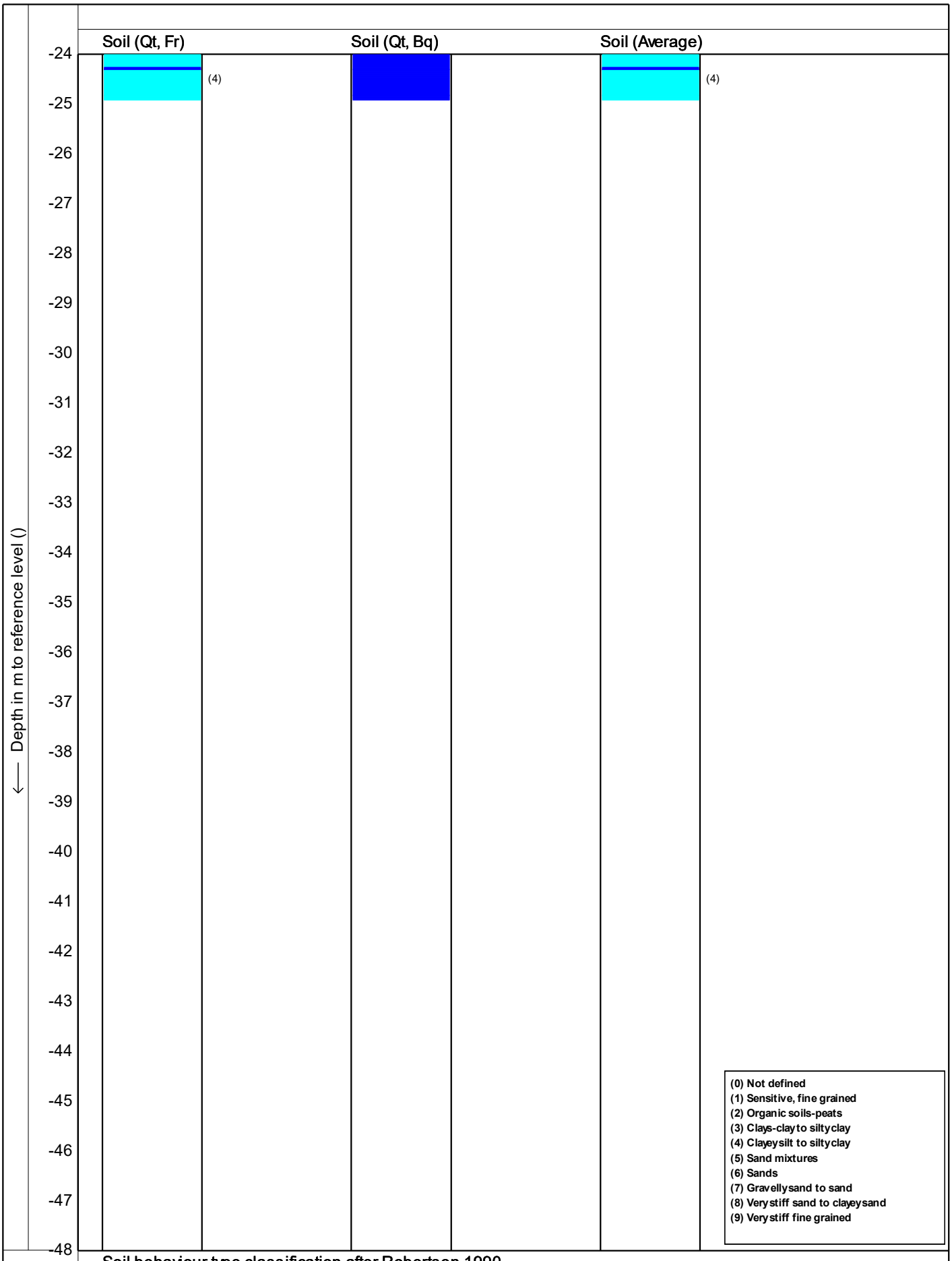
Date : **26/11/2020**

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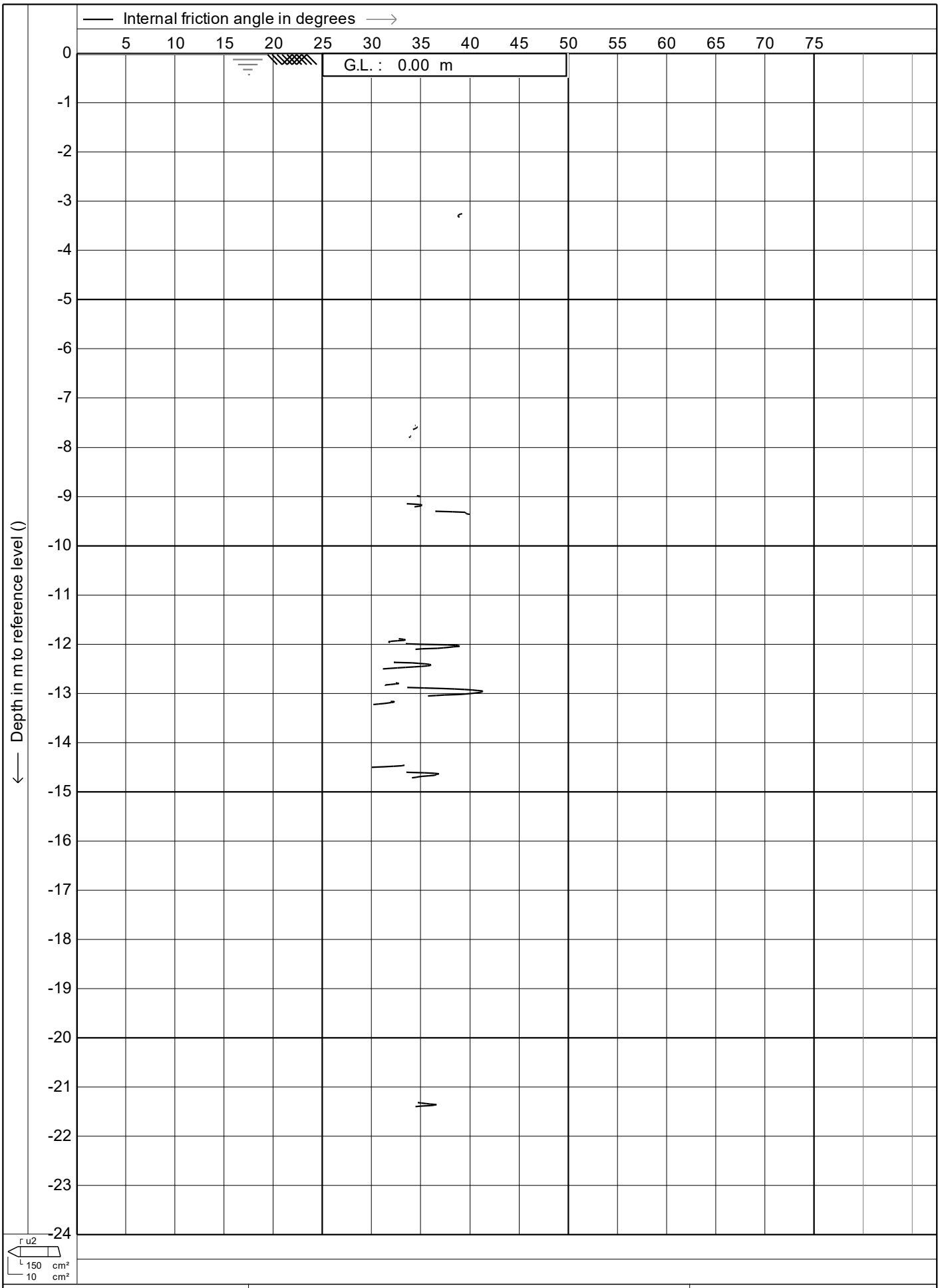
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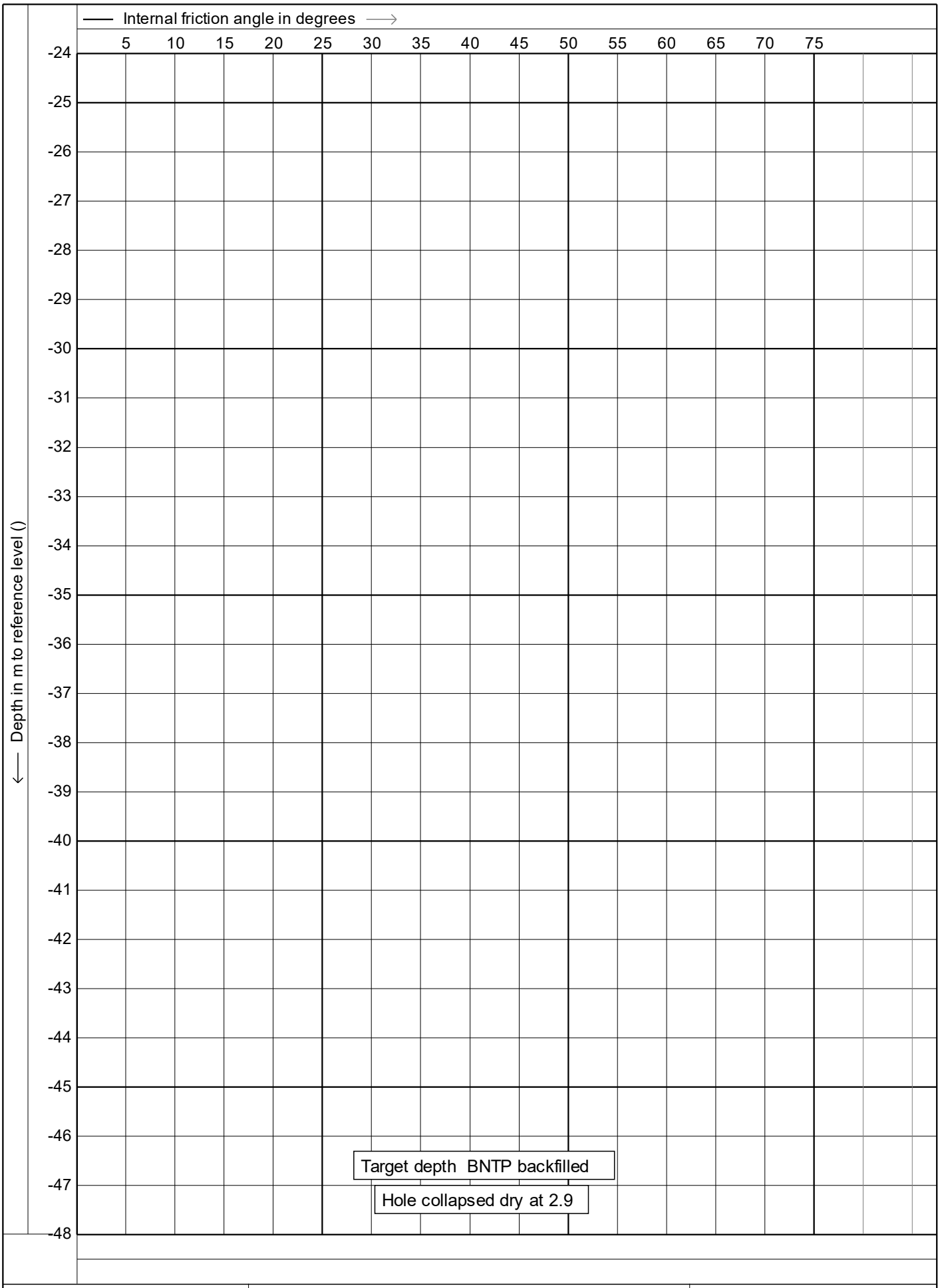
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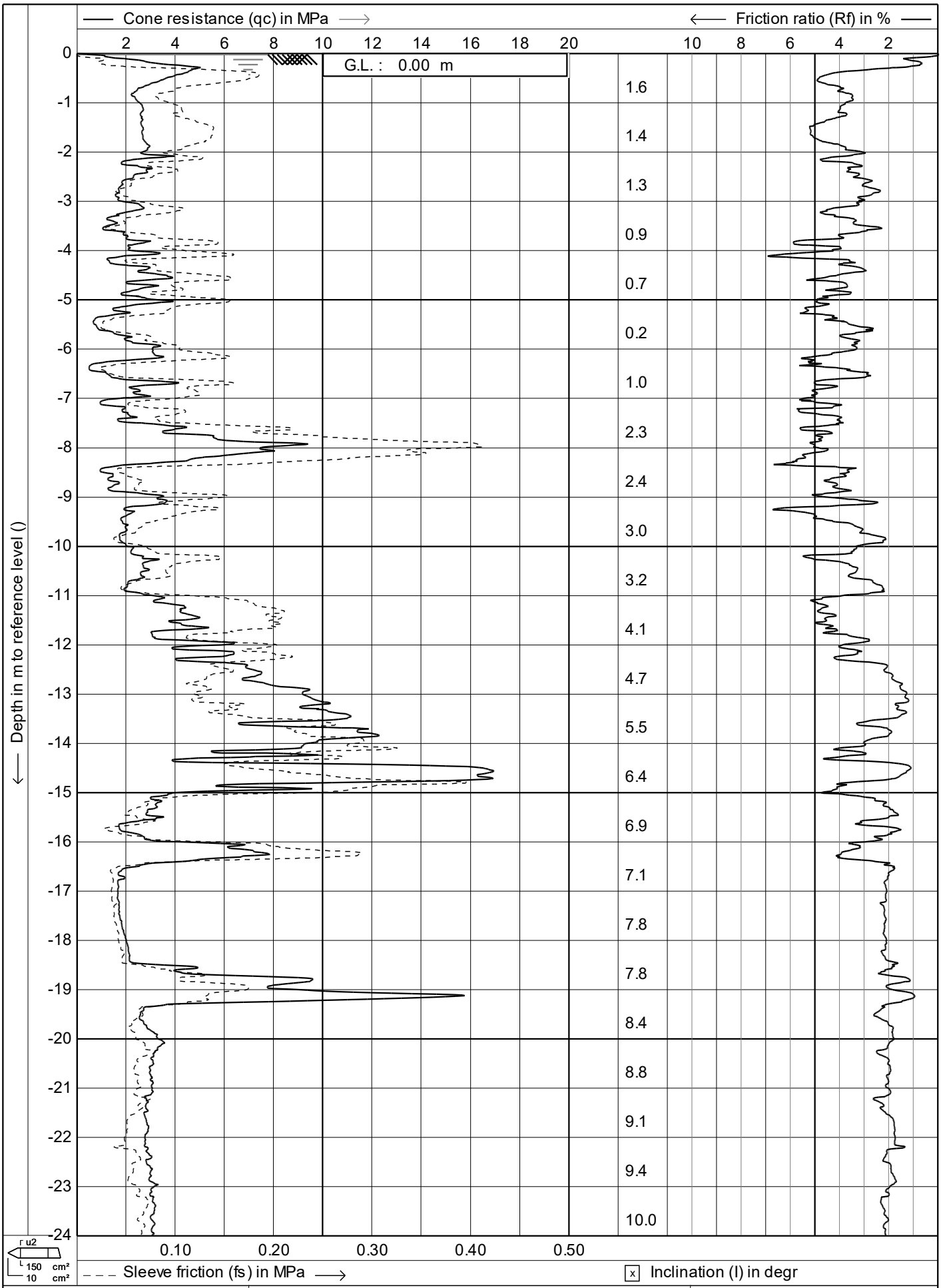
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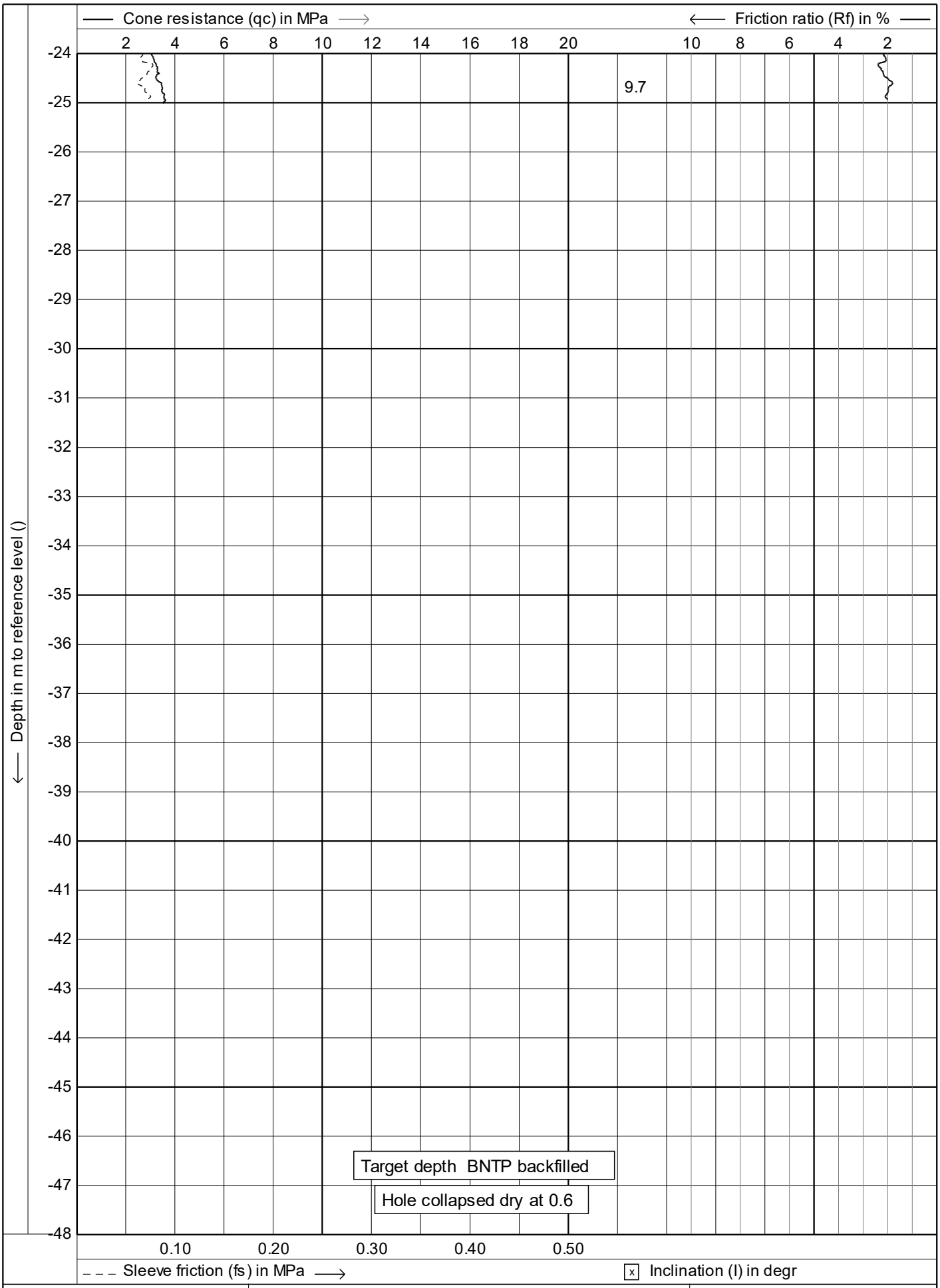
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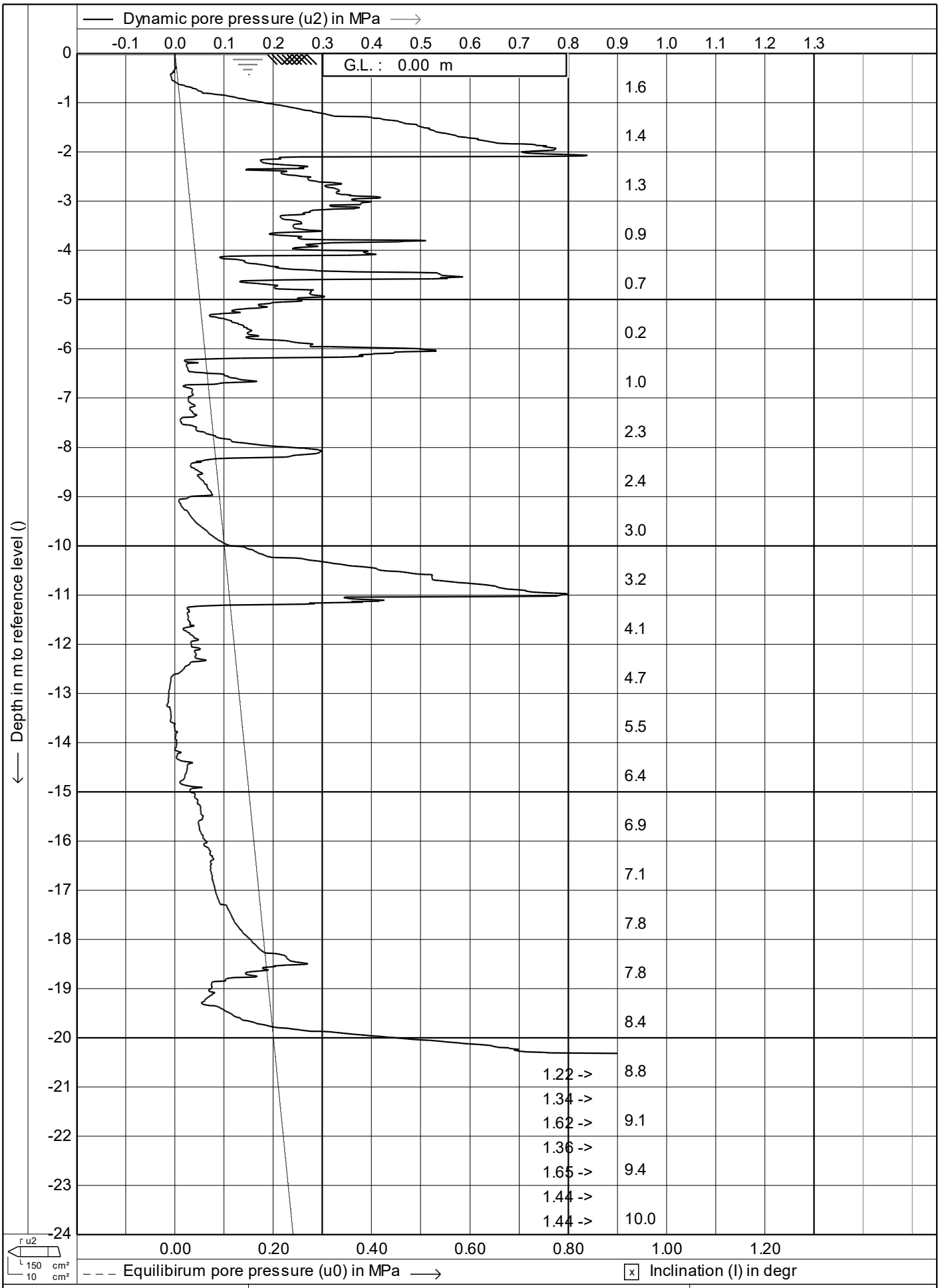
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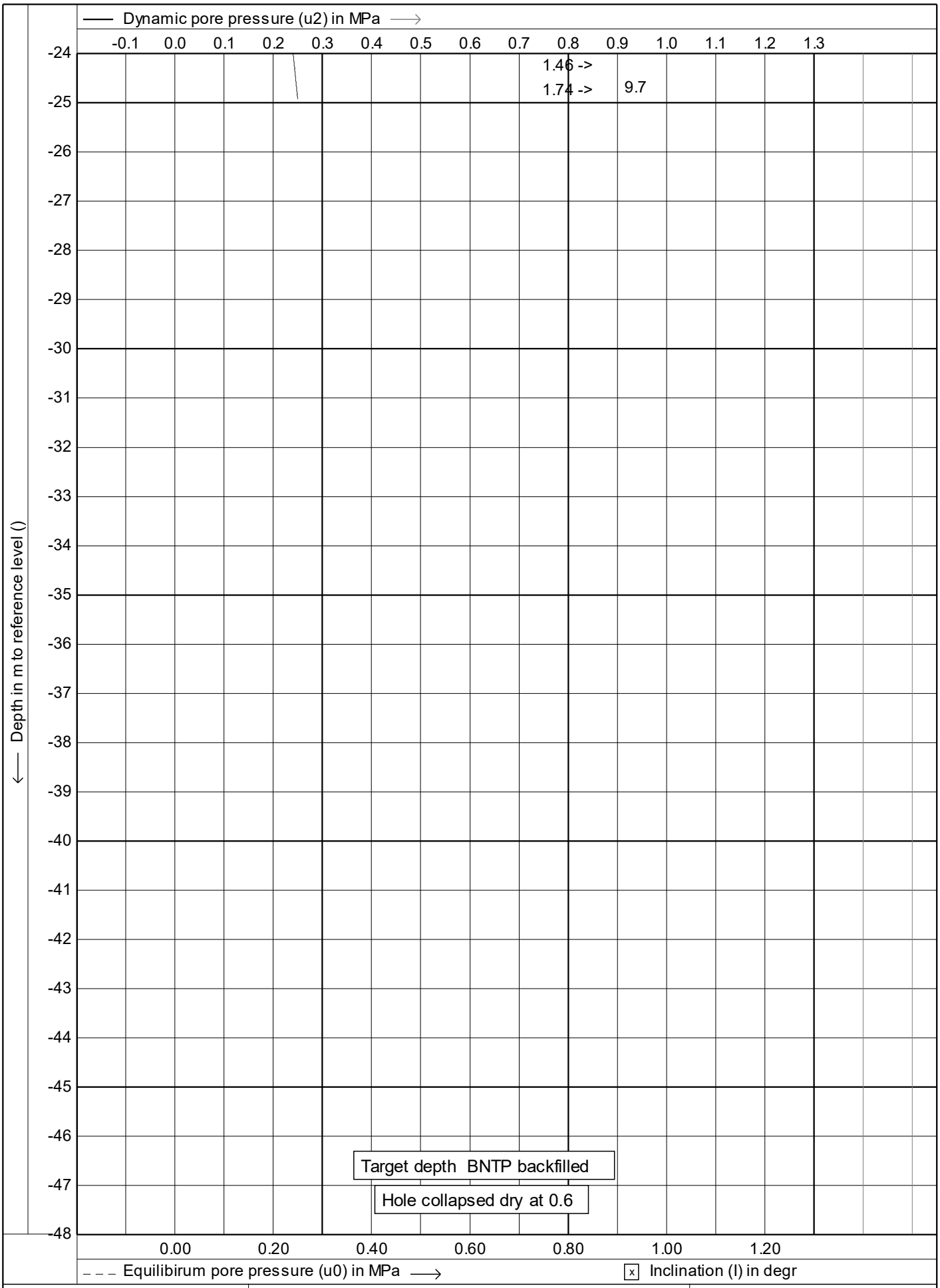
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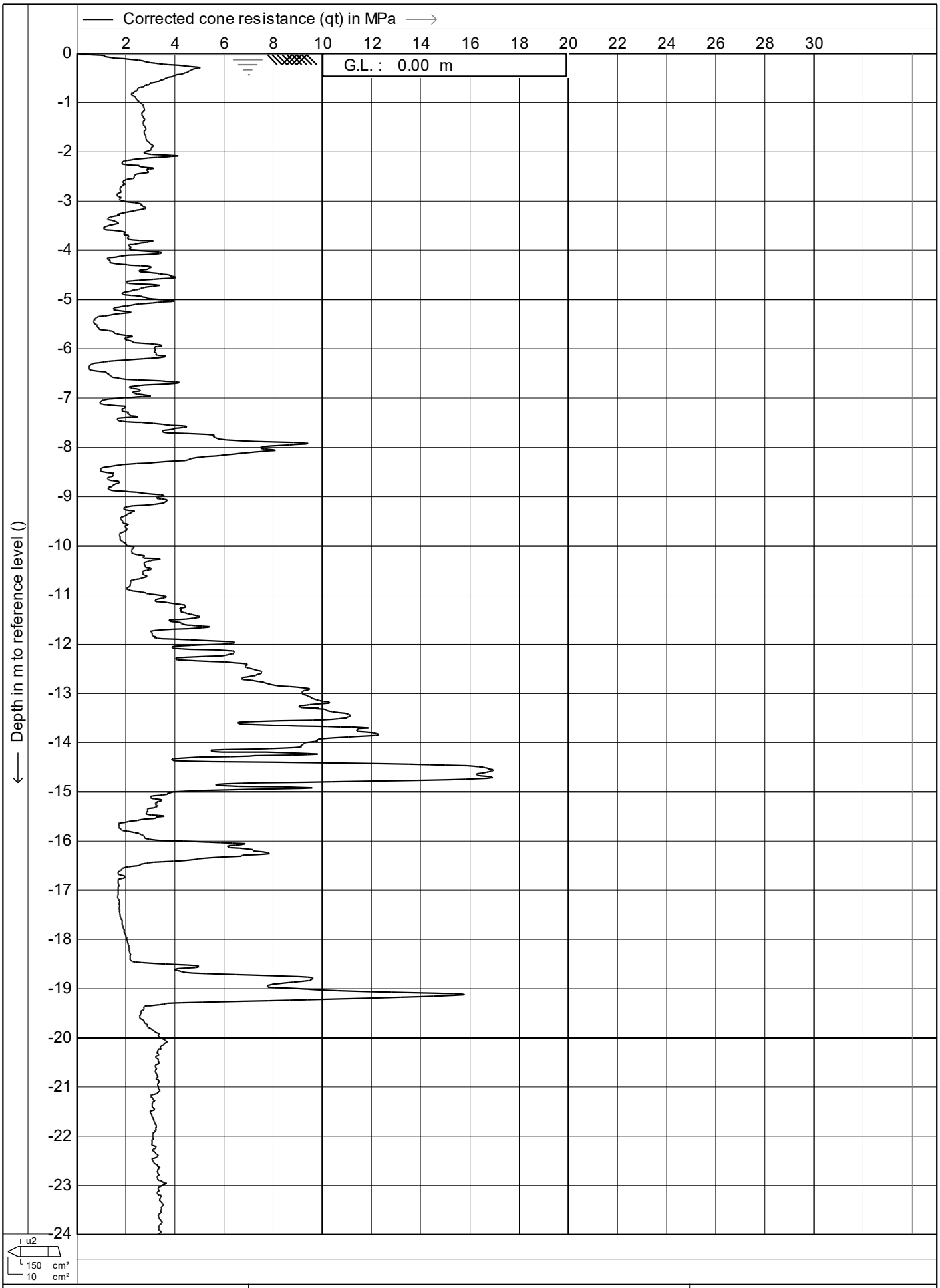
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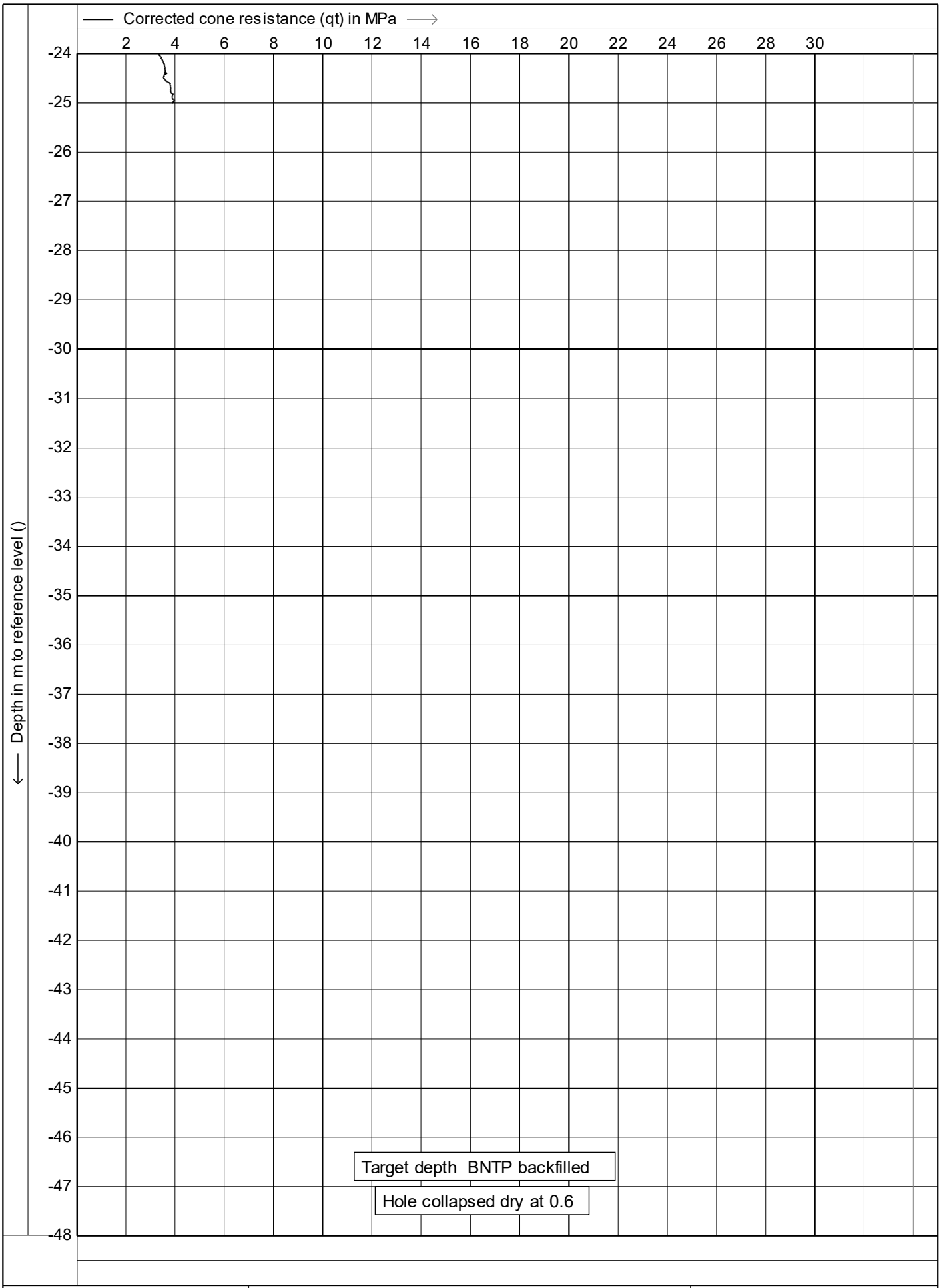
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