| | |
|---|---|
| **From:** | Official Information |
| **To:** | S 7(2)(a) @bcdgroup.nz |
| **Cc:** | Official Information |
| **Subject:** | Final response - LGOIMA 344195 - S 7(2)(a) - Geotechnical investigations or reports relating Sonning carpark |
| **Date:** | Tuesday, 5 September 2023 12:54:01 pm |
| **Attachments:** | image004.png<br>image005.jpg<br>image006.jpg<br>Sonning Carpark - Geotechnical Assessment Report To Issue_Optimized.pdf |

---

Kia ora,

We refer to your information request below. Hamilton City Council provides the following response.

**Your request:**

> *Request for any geotechnical investigations or reports relating to the Sonning Carpark at 201 River Road, Hamilton to be made available either to myself or to be published on the New Zealand Geotechnical Database (ideally both). I have obtained a copy of a recent WSP report, however investigations and analyses were not appended to the report and are not yet publicly available.*

**Our response:**

Please see the Geotechincal assessment report for Sonning Carpark attached.

You have the right to seek an investigation and review by the Ombudsman of this decision. Information about how to make a complaint is available at www.ombudsman.parliament.nz or freephone 0800 802 602.

**Ngaa mihi**
**Keeley Faulkner**
**Official Information Coordinator**
Governance & Assurance Team | Business Services
Email: officialinformation@hcc.govt.nz

**From:** noreply@hamilton.govt.nz <noreply@hamilton.govt.nz>
**Sent:** Friday, 18 August 2023 1:59 pm
**To:** Official Information <officialinformation@hcc.govt.nz>
**Subject:** CM: OIA Request - HCC-OIA-230818-BYZMR

# We've received a request for you.

This request was received on 18 August 2023 @ 1:59PM.

Here's your reference number and the request details:

**UUID**

HCC-OIA-230818-BYZMR

S 7(2)(a)

**Detailed description of request**

Request for any geotechnical investigations or reports relating to the Sonning Carpark at 201 River Road, Hamilton to be made available either to myself or to be published on the New Zealand Geotechnical Database (ideally both). I have obtained a copy of a recent WSP report, however investigations and analyses were not appended to the report and are not yet publicly available.

**Organisation**

BCD Group Ltd.

**Attachments**

**Created**

18 August 2023 @ 1:59PM

If you have any questions in the meantime, feel free to call us on (07) 838 6699 or email our customer service team.

Hamilton City Council
260 Anglesea Street
Hamilton 3204

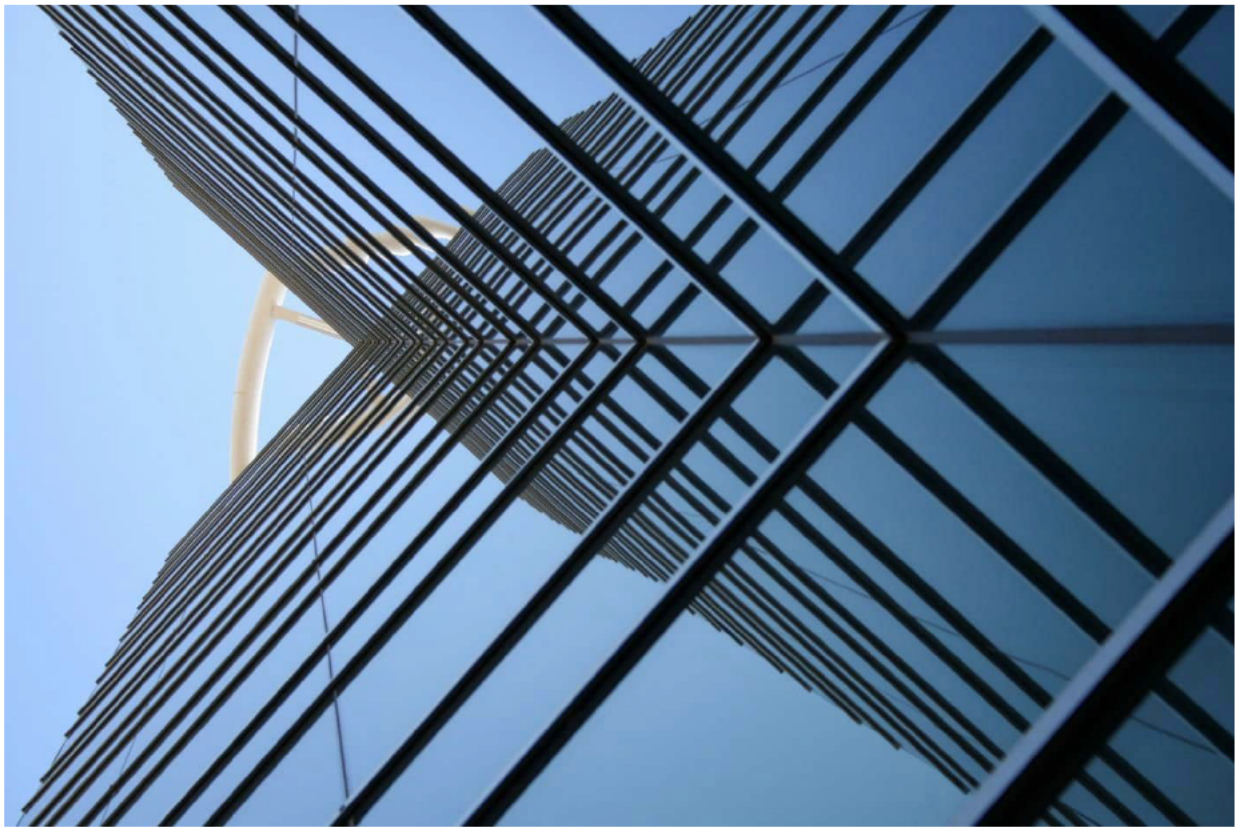
Project Number: 2-WLASS.BN

# Sonning Carpark Development

## Preliminary Geotechnical Assessment Report

1 December 2020

CONFIDENTIAL



## Contact Details

*Tram Dinh*

WSP

Opus House, Princes Street, Hamilton 3204
Private Bag 3057, Waikato Mail Centre,
Hamilton 3240

+64 7 838 9344
+64 27 612 6346
tram.dinh@wsp.com

*Document Details:*

Date: 1st December 2020
Reference: HA 2020/41
Status: Issue

*Prepared by*

Tram Dinh

*Reviewed by*

John Warrington

*Approved for release by*

Thomas de Malmanche

## Document History and Status

| Revision | Date | Author | Reviewed by | Approved by | Status |
|---|---|---|---|---|---|
| 0 | 1/12/2020 | Tram Dinh | John Warrington | Thomas de Malmanche | Issue |
| | | | | | |
| | | | | | |

## Revision Details

| Revision | Details |
|---|---|
| | |
| | |
| | |

# Contents



## List of Figures



## List of Tables

## List of Appendices

# Disclaimers and Limitations

This report has been prepared by WSP New Zealand Ltd (WSP) for the Hamilton City Council (the Client) in respect of the proposed development at Sonning Carpark, 191 River Road, Hamilton. The report purpose is to provide preliminary geotechnical assessment for the proposed development agreed between the Client and WSP (Purpose). WSP accepts no responsibility for the validity, appropriateness, sufficiency or consequences of the Client using the report for purposes other than for the defined Purposes and the report is not to be reproduced without WSP' prior written permission.

This report is not intended for general publication or circulation and is not intended for, and may not be used, by third parties. WSP disclaims all risk and all responsibility to any third party.

This report is subject to the following limitations:

- WSP has provided the report based on the various assumptions contained in this report.
- Where we have obtained information from a government register or database, we have assumed that the information is accurate. Where an assumption has been made, we have not made any independent investigations with respect to the matters the subject of that assumption. We are not aware of any reason why any of the assumptions are incorrect.
- No calculations, other than those noted within, have been undertaken in support of the conclusions of this report.
- A change in circumstances, facts, information after the report has been provided may affect the adequacy or accuracy of the report. WSP is not responsible for the adequacy or accuracy of the report as a result of a change.
- This report specifically excludes assessment or advice relating to hazardous materials, such as asbestos or contaminated land.
- WSP's professional services are performed using a degree of care and skill normally exercised, under similar circumstances, by reputable consultants practicing in this field at this time.

Subsurface conditions are formed through a variety of natural processes and can be altered by human activities. The behaviour of the ground, groundwater and contaminants are complex and conditions can vary across a particular site. As a result, subsurface conditions cannot be exhaustively defined by investigations at discrete locations. Therefore, it is unlikely that the results and assessments expressed in this report will represent conditions at any location removed from the specific points of sampling. The precision with which conditions can be inferred depends largely on the uniformity of subsurface conditions and on the frequency and method of sampling as constrained by factors such as project budget and time limitations and physical constraints.

Furthermore, subsurface conditions can change over time, which should be considered when interpreting or using the data within this report.

The opinions and recommendations in this report apply to the proposed development and the site existing at the time of study using available information and cannot necessarily apply to changes in the proposed development or site changes of which WSP is not aware and has not had the opportunity to evaluate. The results of our study should be considered to be preliminary and subject to verification during future design phases of the project. If conditions encountered at the site during implementation are subsequently found to differ significantly from those anticipated, WSP must be notified and be provided with an opportunity to review the recommendations.

# 1 Introduction

Hamilton City Council (HCC) has engaged WSP NZ Ltd (WSP) to produce a preliminary geotechnical assessment report for future development of the Sonning Road Carpark, 191 River Road, Hamilton. No plans have been received detailing the nature of the development however it is understood this will potentially be a commercial or residential development.

# 2 Scope of Works

In order to provide a preliminary geotechnical assessment of the subject site and to assist in making recommendations for development of the site, the following works have been undertaken, as detailed in our offer of service letter dated 9th November 2020.

- A desktop study (review of underlying geology, available online maps, WSP geotechnical report database, NZ Geotechnical Database (NZGD) and Client supplied information);
- A site walkover to identify any specific geotechnical constraints to the proposed development and finalise the proposed investigation scope; and,
- Preparation of a Preliminary Geotechnical Assessment Report (PGAR) to covers the following:
    - Findings from the desk study;
    - An assessment of the soil geotechnical characteristic (soil profile, the key geotechnical findings and soil parameters);
    - Consideration of ground and surface water conditions;
    - An assessment of the stability of the adjacent riverbank slope and its potential impact on development options;
    - A liquefaction risk assessment and its potential impact on development options; and,
    - Preliminary foundation and earthworks recommendations.

# 3 Site Description

The site is situated on the eastern bank of the Waikato River to the north of Claudelands Road and adjacent railaway. It is currently occupied by a flat asphaltic surfaced carpark with sporadic grassed areas and large mature trees. The site is bounded to the west by the Waikato River, to the east by River Road and to the north by an existing residential area. The riverbank slopes downwards from car park level at gradients of up to 40˚with a height of between 20m up to 23m above river level..

At the time of the site walk over, a previous shallow seated slip was identified within the slope to the south west corner of the carpark, located approximately 27m north of the railway boundary. The slope was observed to be heavily vegetated at the time of inspection. Reviewing the Retro lens database (Waikato Regional Council, 2020), the slip was identified as having occurred around 1953. A crib wall is present along the sites southern boundary supporting the railway and Claudelands Road with a second crib wall to the south-east corner of the site of supporting the approach to River Road overbridge. A masonry block wall is present at the northern boundary providing support to the properties within the residential area. The car park area was observed to be relatively flat with several trees present.

The site location is presented in Figure 1 and Appendix A

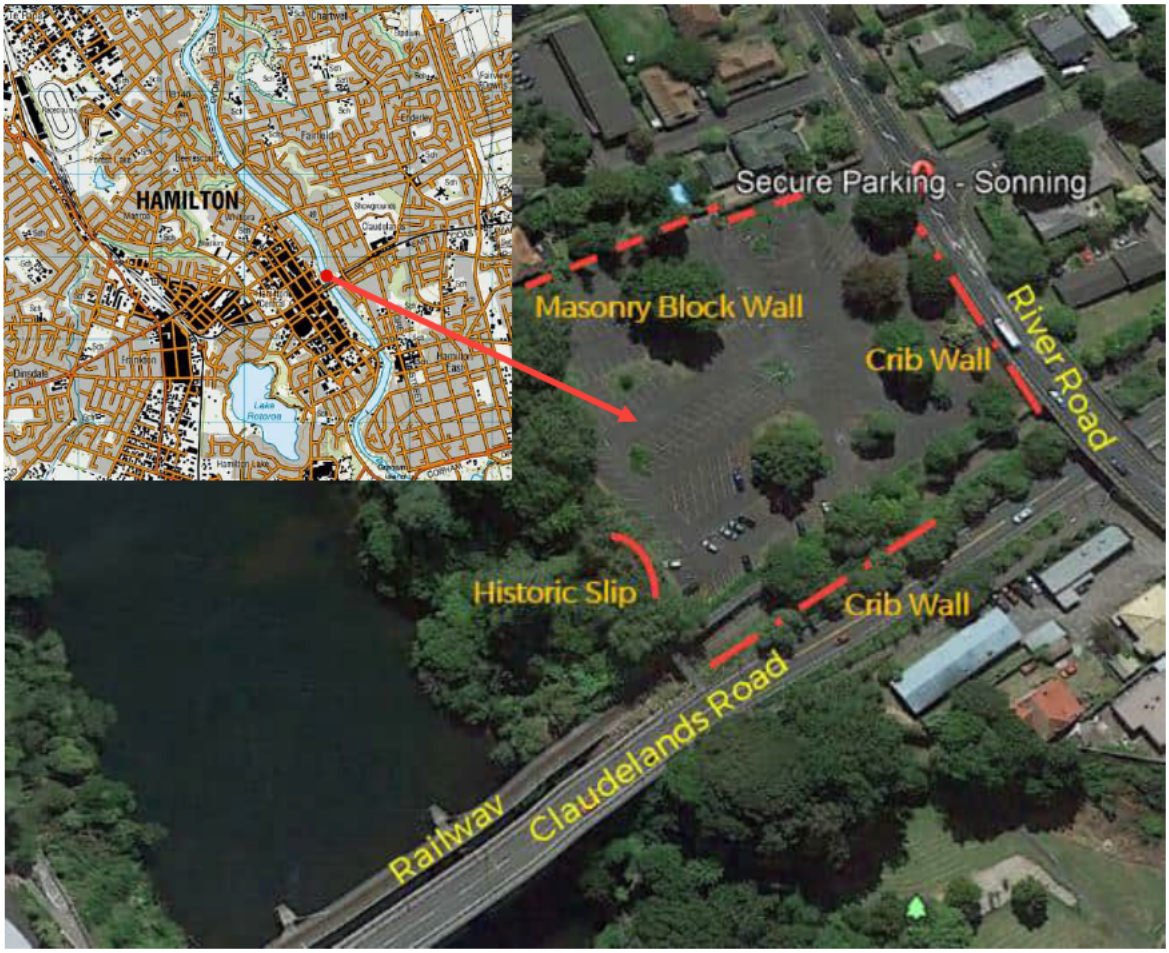



*Figure 1: Site Location*

# 4 Desk Study

## 4.1 Previous Investigations

A desktop study of nearby geotechnical reports and ground investigation data in the vicinity of the subject site has been undertaken with the objective of determining the an outline of the likely strata and soils properties beneath the site. The following sources were referred to:

- Claudelands Bridge East Abutment – Factual Report HA16/033 (WSP - OPUS, 2017)
- Claudelands Bridge East Abutment – Geotechnical Design Requirements HA 17/037 (WSP - OPUS, 2017)
- Claudelands Bridge East Abutment – Preliminary Geotechnical Assessment HA16/021 (WSP-OPUS, 2016)

# 5 Geological Setting

## 5.1 Published geology

With reference to the 1:250,000 scale geological map of the region (Edbrooke, 2005), the site is underlain by soils of the Hinuera Formation (Q3a). It was deposited by braided river systems of the ancestral Waikato River, on a large, low angle fan surface, which passed northward into an extensive braided river plain. Dating from between 50,000-17,000 years ago, this formation reaches up to 90m thick. Cross bedded sands, silts and gravels dominate this highly variable unit

(Figure 2). The Hinuera Formation was deposited in channels and depressions eroded into the surface of the Walton Subgroup which is dominated by primary and reworked, non-welded ignimbrite and tephra.

The older, but more detailed 1: 25,000 scale geological map (Kear, 1965) also indicates the site to be underlain by deposits of the Hinuera Formation.

An extract of the geological map is presented in Appendix A. Overlying the Hinuera formation, topsoil is present at this site.

*Figure 2: Hinuera Formation showing lensed nature of the soils (McCraw, 2011)*

The GNS active faults database indicates that the nearest active fault is the Kerepehi Fault which is situated approximately 43km east of the subject site.

## 5.2 Seismicity

A design earthquake magnitude and ground acceleration for the site have been determined based on MBIE Guidelines Module 1 (NZGS/MBIE, 2016) and the Bridge Manual (Waka Kotahi, May 2016). The following design parameters have been adopted:

- Site Soil Class of "D" (Deep soil site) based on NZS1170.5 (NZS, 2004);
- Importance Level 2 (for residential buildings) and Importance Level 3 (for multi storey high occupancy buildings) based on Table 3 2 of New Zealand Structural Design Standard for earthquake (NZS, 2004).
- Design life of 50 years

The design earthquake ground motion parameters are summarised in Table 1

*Table 1: Summary of Seismic Design Parameters*

| Limit State | Return Period | Design Earthquake Magnitude | Design Earthquake PGA |
|---|---|---|---|
| SLS (Serviceability Limit State) | 25 Years | 5.9 | 0.05g |
| ULS-IL2 (Ultimate Limit State for IL2) | 500 years | 5.9 | 0.22g |
| ULS-IL3 (Ultimate Limit State for IL3) | 1000 years | 5.9 | 0.28g |

## 5.3 Intermediate Seismicity

The Earthquake Geotechnical Engineering Practice Module 4 (MBIE & NZGS, 2016) advises that "..with liquefaction triggering at a site, however, there may be a pronounced degradation in foundation performance and this is likely to happen at a shaking level which is Intermediate

between SLS and ULS earthquakes. Where liquefaction triggering is likely at a modest, intermediate return period, the resulting level of damage may be excessive and inappropriate for such a high likelihood of occurrence".

WSP has consequently assessed the intermediate seismic event that has the potential to trigger damage to buildings due to settlement or lateral spread of foundations based on the parameters detailed in Table 1

*Table 2: Intermediate Seismic Event Design Parameters*

| Limit State | Return Period | Design Earthquake Magnitude | Design Earthquake PGA |
|---|---|---|---|
| Intermediate Seismic Event for IL2 | 100 years | 5.9 | 0.11g |
| Intermediate Seismic Event for IL3 | 500 years | 5.9 | 0.22g |

## 5.4 Geotechnical Investigations

Geotechnical investigations were undertaken at the south-western corner of Sonning carpark in June 2016 in relation to the assessment of the stability of the riverbank adjacent to the Claudelands Bridge eastern abutment (WSP - OPUS, 2017).

The ground investigation (GI) works, comprised the following:

- 2 Cone Penetration Tests (CPTs).
- 2 Boreholes (BHs).

The assessment has been undertaken based on a ground model developed from the findings from BH01 and CPT01, these being in close proximity to the subject site.

The relevant borehole log, photographs and CPT log are presented in Appendix B.

## 5.5 Rotary Cored Borehole

The BH was drilled using the HQ triple tube coring method, this providing undisturbed soil samples for laboratory testing, with Standard Penetration Tests at approximately 1.5m intervals to a target depth of 30m below ground level (bgl). A hand-held shear vane was used to measure the strength of soils at selected depths. The BH was logged, sampled and photographed on site by a WSP Geotechnical Engineer in general accordance with the New Zealand Geotechnical Society's guidelines[1].

## 5.6 Cone Penetrometer Tests

The CPT was undertaken by WSP using a track mounted piezocone enabled rig, measuring end bearing pressure ($q_c$), sleeve friction and porewater pressure (u) with depth. This provides valuable information for assessing the strength and engineering properties of the soil. However, no samples are recovered for visual inspection.

# 6 Ground water conditions

BH01 was dipped at completion to measure the ground water level which was recorded at 10.7m bgl in Winter. It is considered that this likely represents a perched water table rather that the

regional water table. This is based on previous experience in the area. Groundwater was not encountered in the CPT.

For liquefaction analysis purpose, a ground water level at 10mbgl has been inferred for this site. For the slope stability analysis, a regional static groundwater level has been inferred to be co-incident with the river level, reducing in depth as measured from the car park level with a ratio of 1V:10H from the river towards the east.

# 7 Ground Conditions

Based on the BH and CPT logs a ground model for the site is presented in Table 3. The subsoils are variable across the whole site with interbedded sandy SILTS, SILTS and CLAYS present.

*Table 3: Soil profile*

| Unit Description | Depth to Top of Layer [m] | Unit Thickness [m] | Range of SPT N Values | Range of Cone Resistance [MPa] |
|---|---|---|---|---|
| Firm to stiff SILT/CLAY | - | 12 | 3 - 17 | 1 - 4 |
| Very soft to soft SILT/CLAY | ~12 | 8 | 0 - 4 | 0.5 - 3 |
| Medium dense to dense SAND and silty SAND | ~18 | 10 | 12 - 40 | 8 - 16 |
| Cemented SAND and SILT | ~20 | Unknown. Unit exceeds investigation depth | 50+ | Refusal |

## 7.1 Soil Parameters

The geotechnical soil parameters have been estimated based on the investigation data from the BH and CPT undertaken within the carpark and our experience with similar geological conditions in the vicinity. Preliminary soil parameters are summarised in Table 4

*Table 4: Soil properties used for the stability assessment of the riverbank*

| Unit Description | Depth to Top of Layer [m] | Unit Weight, $\gamma$ (kN/m$^3$) | Friction Angle, $\varphi'$ (°) | Effective Cohesion, c' (kPa) |
|---|---|---|---|---|
| Firm to Stiff SILT/CLAY with traces of SAND | - | 17 | 28 | 15 |
| Very soft to soft SILT/CLAY | ~12 | 16 | 25 | 6 |
| Medium dense to dense SAND and silty SAND | ~18 | 18 | 38 | 5 |
| Very dense SAND and stiff SILT | ~20 | 19 | 40 | 10 |

# 8 Geotechnical Assessment

## 8.1 Liquefaction Susceptibility and Damage

### *8.1.1 Liquefaction Definition*

During an earthquake, the shear waves from the seismic event propagate upwards through the soils from the underlying bedrock. The cyclic loading caused by the shear waves induces shear stress in the soil deposits, which causes the build-up of the excess pore water pressure in soils. When the excess pore water pressure approaches the level of the overburden confining pressure, the effective strength between the soil grains of cohesionless soils, typically silts and sands, reduces significantly to almost nil. At this point liquefaction occurs when the soils lose strength and behaves as liquid.

Effects of liquefaction can include:

- Flow failure (large deformations) or lateral spreading of slopes and embankments;
- Sand boils and disruption to ground surface;
- Reduced bearing capacity for structure foundations;
- Buoyancy of buried structures and services; and,
- Subsidence of ground surface.

The definition of the Factor of Safety ($FoS_{liq}$) against liquefaction is a ratio of the Cyclic Resistance Ratio (CRR) to the Cyclic Stress Ratio (CSR), as detailed below:

$$FoS_{liq} = CRR/CSR$$

The CSR is the predicted cyclic shear stress induced in the soil during an earthquake ($\tau_h$), divided by the effective overburden pressure ($\sigma'_v$). The CRR is defined as the critical CSR that may result in liquefaction in a soil.

### *8.1.2 Liquefaction Assessment Methodology*

An assessment of liquefaction potential below the subject site area has been undertaken for both the SLS and ULS seismic events using the CPT data.

The CPT data was analysed using the 'CLiq' CPT liquefaction assessment software. The methods of Idriss & Boulanger (Boulanger & Idriss, CPT and SPT Based Liquefaction Triggering Procedures, 2014) were adopted for analysis of CPT data. Fines content was inferred from the CPT data using the Robertson & Wride method (Robertson & Wride, 1998). Liquefaction settlement was calculated using Zhang et al method (Zhang, Robertson, & Brachman, Estimating liquefaction - induced ground settlements from CPT for level ground, 2002).

### *8.1.3 Liquefaction Assessment, Liquefaction Induced Settlement and Lateral Spreading Results*

The liquefiable layer thicknesses consider layers of significant thickness and excludes thin (<300mm), potentially liquefiable lenses surrounded by non-liquefiable denser sands that, from experience and previous work, are typically discontinuous and as such will not substantially contribute to liquefaction induced settlements.

The liquefaction assessments for vertical settlement indicates that the site could experience a maximum settlement of up to 20mm and lateral spread of up to 30mm for the ULS (IL3) seismic event. The values of settlement and lateral spread for the ULS (IL2), intermediate (for both IL2 and IL3) and SLS1 (for both IL2 and IL3) seismic events have all been assessed as being negligible. Liquefaction analysis results are summarised in Table 5. Liquefaction potential interpretations are presented in Appendix C.

*Table 5: Liquefaction Effects and Analysis Results*

| Seismic Limit State | Indicated Thickness of Liquefiable Layers | Geotechnical Parameter Characteristic indices | |
|---|---|---|---|
| SLS1 (IL2 & IL3) | 0m | Factor of Safety against Liquefaction<br>Liquefaction Potential Index<br>Liquefaction Severity Number | FL > 1.5*<br>LPI = 0<br>LSN = 0 |
| Intermediate 2 (IL2) | 0m | Factor of Safety against Liquefaction<br>Liquefaction Potential Index<br>Liquefaction Severity Number | FL > 1.5*<br>LPI = 0<br>LSN = 0 |
| Intermediate 3 (IL3) and ULS 2 (IL2) | 0m | Factor of Safety against Liquefaction<br>Liquefaction Potential Index<br>Liquefaction Severity Number | FL > 1.2*<br>LPI = 0<br>LSN = 0 |
| ULS (IL3) | 10.2m – 11.5m | Factor of Safety against Liquefaction<br>Liquefaction Potential Index<br>Liquefaction Severity Number | FL > 1.0*<br>LPI = 0<br>LSN= 0 |

*FL - Approximate average liquefaction triggering factor (Factor of Safety) of the liquefiable layers

Based on the assessed vertical settlement, lateral spreading and geotechnical parameter characteristic indices as presented above, the characteristics of liquefaction and its consequences have been assessed in accordance with MBIE Guidelines Module 3 – Table 5.1 General Performance Levels for Liquefied Deposits (NZGS/MBIE, 2016). The results are summarised in Table 6 The results also suggested a liquefaction resistance type foundation to mitigate liquefaction induced vertical settlement and lateral spreading risks.

*Table 6: Liquefaction Characteristics & Consequences*

| Limit State | Performance Level | Effects from Excess Pore Pressure and Liquefaction | Characteristics of Liquefaction and Its Consequences |
|---|---|---|---|
| SLS1 (IL2 & IL3) | L0 | Insignificant | No significant excess pore water pressures (no liquefaction) |
| Intermediate 2 (IL2) | L0 | Insignificant | No significant excess pore water pressures (no liquefaction) |
| Intermediate 3 (IL3) and ULS 2 (IL2) | L1 | Mild | Limited excess pore water pressure; negligible deformation of the ground and small settlement. |
| ULS (IL3) | L2 | Moderate | Liquefaction occurs in layers of limited thickness (small proportion of the deposit, say 10 percent or less) and lateral extent; ground deformation results relatively small in differential settlements. |

## 8.2 Slope stability analysis

Slope stability was modelled using SLOPE/W (GeoStudio 2021) – a computer-based model which allows for the assessment of slope stability under various conditions (seismic loading, elevated groundwater and static conditions). The slope was modelled using cross sections generated from LiDAR contours for the Hamilton City area obtained from LINZ.

Surcharges were initially modelled as being setback 7.5m from the crest of the slope simulating either a multi-storey importance level 3 (IL3) structure (e.g., a hotel) or a double storey importance level 2 (IL2) structure (e.g., residential development). Surcharges of 100kPa (approximately equivalent to a load imposed by a 7 storey building), 25kPa (approximately equivalent to a load imposed by a

2 storey building) and 15kPa (approximately equivalent to a standard 1 storey residential house) have been modelled.

For seismic analysis, a PGA of 0.28g, 0.22g, 0.11g and 0.05g were used which consistent with the ULS (IL3), ULS(IL2), Intermediate for IL3, Intermediate for IL2 and SLS1 seismic event loading conditions respectively.

A summary of the results is presented in Table 7. Output from the SLOPE/W slope stability analyses are included in Appendix D.

*Table 7: Slope Analysis for Building Locates at the Slope crest*

| Analysis Case | Factor of Safety (FOS) | | | Target Factor of Safety (FOS) |
|---|---|---|---|---|
| | 100kPa | 25kPa | 15kPa | |
| Case 1 – Static, normal basin water level (10mbgl) | 0.9 | 0.9 | 0.9 | 1.50 |
| Case 2 – Static, elevated basin water level (8.0mbgl) | 0.9 | 0.9 | 0.9 | 1.25 |
| Case 3 – Seismic ULS IL3 – 0.28g | 0.7 | 0.7 | 0.7 | 1.0 or displacement within acceptable levels when FOS < 1.0 |
| Case 4 – Seismic ULS-IL2 and Intermediate event (IL3) – 0.22g | 0.7 | 0.8 | 0.8 | 1.0 or displacement within acceptable levels when FOS < 1.0 |
| Case 5 – Intermediate event (IL2) – 0.11g | 0.8 | 0.9 | 0.9 | 1.0 or displacement within acceptable levels when FOS < 1.0 |
| Case 6 – Seismic SLS1 – 0.05g | 0.8 | 0.9 | 0.9 | 1.0 or displacement within acceptable levels when FOS < 1.0 |

The results show that for a building located close to the slope's crest, the slope is unstable for both static and seismic load cases. An assessment of the slope lateral displacement has been undertaken based on a block analysis (W.Jibson, 2007). The predicted seismic induced lateral displacements at the slope crest for a range of seismic load cases are presented in Table 8

*Table 8: Predicted Lateral Displacement*

| Seismic Load Cases | Surcharges (kPa) | Predicted Lateral Displacement |
|---|---|---|
| ULS-IL3 PGA - 0.28g | 100 | More than 30m |
| | 25 | 2.5m |
| | 15 | 1.0m |
| ULS-IL2 and Intermediate of IL3 PGA - 0.22g | 100 | 20m |
| | 25 | 2.0m |
| | 15 | 0.5m |
| Intermediate of IL2 PGA – 0.11g | 100 | 6.5m |
| | 25 | 0.6m |
| | 15 | 0.5m |
| SLS – PGA 0.05 | 100 | 2.0 |

| Seismic Load Cases | Surcharges (kPa) | Predicted Lateral Displacement |
|---|---|---|
| | 25 | 0.15m |
| | 15 | 0.05m |

The results show that the lateral displacement is significant for some load cases. Thus, an additional slope stability analysis has therefore been undertaken to determine an appropriate setback distance from the slope crest for the proposed building developments in order to achieve compliance with the required FOS. Table 9 details the results from the slope analysis and has identified that a minimum setback distance of 25m away from the slope crest will be required. Any development located closer than 25m from the slope crest will require specific engineered foundations to prevent lateral displacement from adversely affecting buildings. This could comprise the use of piled foundations or benching of the slope in combination with retaining walls supporting the development footprint

*Table 9: Slope analysis for building at 25m setback from the slope crest*

| Analysis Case | Factor of Safety (FOS) | | | Target Factor of Safety (FOS) |
|---|---|---|---|---|
| | 100kPa | 25kPa | 15kPa | |
| Case 1 – Static, normal basin water level (10mbgl) | 1.5 | 1.5 | 1.5 | 1.50 |
| Case 2 – Static, elevated basin water level (8.0mbgl) | 1.5 | 1.5 | 1.5 | 1.25 |
| Case 3 – Seismic ULS IL3 – 0.28g | 0.9 | 0.9 | 0.9 | 1.0 or displacement within acceptable levels when FOS < 1.0 |
| Case 4 – Seismic ULS-IL2 and Intermediate event (IL3) – 0.22g | 1 | 1 | 1 | 1.0 or displacement within acceptable levels when FOS < 1.0 |
| Case 5 – Intermediate event (IL2) – 0.11g | 1.2 | 1.2 | 1.2 | 1.0 or displacement within acceptable levels when FOS < 1.0 |
| Case 6 – Seismic SLS – 0.05g | 1.3 | 1.3 | 0.9 | 1.0 or displacement within acceptable levels when FOS < 1.0 |

The predicted maximum lateral displacement for building locates at 25m away from the slope crest is less than 1m, which is reasonable for the foundation design of the proposed development.

## 8.3 Static vertical settlement

Imposed structural loadings of 100kPa, 25kPa and 15kPa have been considered for the static settlement assessment. The assessment has been undertaken using CPe-IT software programme with the logs from CPT01. CPTu data can be used to directly estimate induced settlements due to an external load. CPeT-IT uses the following simple formula (based on 1-D consolidation) to estimate vertical settlements:

$$s = q \times \sum h \times \frac{Iz}{Mcpt}$$

Where:
q: applied footing pressure
h: calculation layer thickness
Iz: stress reduction factor according to Boussinesq
$M_{cpt}$: Constrained modulus of soil layer

The results indicate that the total static settlement could range up to 350mm for a loading of 100kPa, 45mm for a loading of 25kPa and 25mm for 15kPa loading. A building footing of 25m x 25m square was assumed for the analysis.

The detailed settlement assessment is presented in Appendix E

# 9 Conclusions and Recommendations

Based on the conducted ground investigation and assessments, the site requires additional engineering design for foundation of the proposed development.

- Even though, the site has been assessed as having an "Insignificant to moderate vulnerability" (NZGS/MBIE, 2016), there is a slope instability risk for both static and seismic loading events.
- The predicted lateral displacement under a ULS seismic event is more than 30m, 2.5m and 1.0m for 100kPa, 25kPa and 10kPa importance level 3 buildings located at the river bank slope crest under ULS seismic loading The predicted lateral displacement is reduced for others seismic cases, but the pattern is the same with higher lateral displacement for higher surcharge and lesser displacement for smaller surcharge loading.
- Static settlements may potentially range from 25mm to 350mm for structure loadings of 10kPa to 100kPa respectively.

Further engineering assessment and design will be required to reduce or mitigate the identified risks for the development of the site. Foundation options for the development may include the following::

- Shallow foundations will be suitable for buildings located at least 25m east of the crest of the river bank slope.;
- The adoption of geogrid reinforced gravel rafts, strengthened floor slabs or 'waffle' slabs to reduce the risk of damage due to differential settlements.;
- Benching of the river bank slope incorporating a retaining wall to support the development footprint to the east;
- The use of a piled shear wall (or similar) within the slope;
- Piled foundation options for buildings located less than 25m from the slope crest could include the use of ground anchors or soil nails for the stabilisation of the slope in combination with piled foundations for the buildings;
- For larger multi storey buildings, piled foundations may be required extending through the very soft to soft cohesive soils into the underlying dense and weakly cemented cohesionless soils at depth.

Due to the variability of the subsoils across the whole of the site, further geotechnical investigations are recommended in advance of the detailed design of foundations

# 10 Risk Summary Table

| Item No. | Geo – Hazard | Likelihood | Risk Description | Mitigation Measures |
|---|---|---|---|---|
| 1 | Liquefaction | Yes<br>- "Insignificant" for SLS seismic event.<br>- "Mild" for ULS (IL2) seismic event.<br>- "Moderate" for ULS (IL3) seismic event | - Liquefaction is not a high risk at this site. Under ULS (IL3) seismic loading, liquefaction only occurs in a thin layer with negligible liquefaction induced settlement. The predicted liquefaction induced lateral spread in accordance with Cliq is 35mm. | - Even though liquefaction and liquefaction induced risk for this site is "Insignificant to Moderate", replacement and/or compaction of loose subsoils will be required for the development. |
| 2 | Slope Stability | Yes<br>- Slope instability for both static, SLS, ULS (IL2) and ULS (IL3) seismic case. | - The site is next to the Waikato River. The slope angle is between 35° to 40° with a height of approximately 21m above the river level. Development near to slope crest may potentially experience instability.<br>- Lateral displacement caused by slope instability in seismic case for development in proximity to the slope crest ranges between 0.5m to 6m for SLS and ULS seismic events respectively. | - Engineering foundation design is highly recommended.<br>- Any development less than 25m away from the crest is recommended to have either pile foundation, sheet pile wall or anchor at the slope face to mitigate the slope instability risk |

| Item No. | Geo – Hazard | Likelihood | Risk Description | Mitigation Measures |
|---|---|---|---|---|
| 3 | Lateral Variability | Yes | - The soils of the Hinuera formation are extremely variable in grading both laterally and vertically as is common with braided fan deposits. This can cause differential settlement for the building structure. | - Foundations should be designed by a suitably qualified and experienced practitioner to relevant codes and practices. Consider variability during foundation design, vigilance for additional variability during construction. |
| 4 | Underground Services | Possibly | - Given the proposed development is located on an existing carpark site, contaminated land and redundant buried services maybe present. Risk of live services strike during excavation or any earthwork activities. | - Vigilance during excavation, due diligence and consider services scanning prior to excavation or any earthwork activities. |
| 5 | Uncontrolled Fill | Yes | - Given the proposed development is located on an existing carpark site with undetermined historical usage, there is the potential for the presence of uncontrolled fill of variable thickness beneath the site. Fill materials have been noted to be present within the nearby CPT and borehole located adjacent to Claudelands Bridge | - Foundations should be designed by a suitably qualified and experienced practitioner to relevant codes and practices. Consider potential for variable ground during foundation design. Vigilance for identification of unknown ground conditions during construction. |

| Item No. | Geo – Hazard | Likelihood | Risk Description | Mitigation Measures |
|---|---|---|---|---|
| 6 | Soft Compressible/ Expansive Soil | Yes | - The subsoil layers contain silts, clays and minor sands to a depth of up to 18m below ground level (bgl). A very soft to soft SILT/CLAY layer is present at depths between 12m bgl and 18mbgl. There is therefore the potential for static settlement of up to 350mm for c100kPa applied loadings (multi-storey structures) whilst for residential structures with imposed loads of c 25kPa settlements may extend up to 35mm. | - Foundation should be designed by a suitably qualified and experienced practitioner to relevant codes and practices. Consider piled foundations for high applied foundation loads (multi-storey structures).<br>- Adopt foundation type or ground improvement method that can mitigate the vertical/ differential static settlement risk (e.g. Geogrid reinforced gravel raft/ strengthened ground floor slabs/ waffle slabs) |
| 7 | Groundwater depth and seasonal variation | Yes | - Although groundwater levels could not be ascertained by the CPT testing, perched water has been identified within the adjacent boreholes at a depth of approximately 10m below ground level. The river level is located some at 20m below the level of the car park. The regional ground water level may therefore be expected to be at a considerable depth below the current car park level. | - Need to confirm potential seasonal variations in both perched and regional groundwater levels for detail design<br>- For the purpose of liquefaction and slope stability analysis, consideration should be given to the presence of a perched ground water level at a depth of 10mbgl. |

| Item No. | Geo – Hazard | Likelihood | Risk Description | Mitigation Measures |
|---|---|---|---|---|
| 8 | Active Faults | Yes | - The nearest active fault is the Kerepehi fault which is situated approximately 43km east of the subject site. | - Refer to Liquefaction Risk detailed in Item No. 1.<br>- Foundation should be designed by a suitably qualified and experienced practitioner to relevant codes and practices. |
| 9 | Available/Related Reports | - | WSP – Opus reports prepared for Claudelands Bridge East Abutment<br>- Factual Report HA16/033<br>- Geotechnical Design Requirements HA17/037<br>- Preliminary Geotechnical Assessment HA16/021 | - |

# 11 References

Boulanger, R., & Idriss, I. M. (2014). *CPT and SPT Based Liquefaction Triggering Procedures.* California: University of California at Davis.

Boulanger, R., Idriss, I., & Mejia, L. (1995). *Investigation and evaluation of liquefaction related ground displacement at Moss Landing during the 1989 Loma Prieta earthquake.* Davis, California: Dept. of Civil & Environmental Engineering, University of California.

Edbrooke, S. (2005). *Geology of the Waikato area. Insitute of Geological and Nuclear Sciences 1:250 000 geological map4. 1 sheet + 68p.* Lower Hutt New Zealand: Institute of Geological & Nuclear Sciences Limited.

Ishihara, K. (1985). *Stability of natural deposits during earthquakes.* Tokyo.

Kear, D. S. (1965). *Geological Map of New Zealand Sheet N65 - Hamilton 1:63,360 Scale.* Wellington: DSIR.

MBIE & NZGS. (2016). Module 4: Earthquake Resistance Foundation Design. In MBIE, *Earthquake Geotechnical Engineering Practice* (p. 16). Wellington: MBIE .

McCraw, J. (2011). The Wandering River, GSNZ Guidebook No. 16. Geoscience Society of New Zealand.

NZGS/MBIE. (2016). *Earthquake Geotechnical Engineering Practice - Module 1: Overview of the Guidelines.* Wellington: New Zealand Geotechnical Society and Ministry of Business, Innovation & Employment (MBIE).

NZGS/MBIE. (2016). *Earthquake Geotechnical Engineering Practice - Module 2: Geotechnical investigations for earthquake engineering.* Wellington: New Zealand Geotechnical Society and Ministry of Business, Innovation & Employment (MBIE).

NZGS/MBIE. (2016). *Earthquake Geotechnical Engineering Practice - Module 3: Identification, assessment and mitigation of liquefaction hazards.* Wellington: New Zealand Geotchnical Society and Ministry of Business, Innovation & Employment (MBIE).

NZGS/MBIE. (2016). *Earthquake Geotechnical Engineering Practice - Module 3: Identification, assessment and mitigation of liquefaction hazards.* Wellington: New Zealand Geotechnical Society and Ministry of Business, Innovation & Employment (MBIE).

NZS. (2004). *NZS1170.5.*

Robertson, P., & Wride, C. (1998). Evaluating cyclic liquefaction potential using hte cone penetration test. *Canadian Geotechnical Journal 35*, 442-459.

W.Jibson, R. (2007). Regression models for estimating coseismic landslide displacement. In *Engineering Geology* (p. Volume 91).

Waikato Regional Council. (2020, 11). *Retrolens Historical Image Resource*. Retrieved from Retrolens Historical Image Resource: http://retrolens.nz/

Waikato Regional Council. (2020, 07 15). *Waikato Regional Hazards Portal*. Retrieved from https://waikatoregion.maps.arcgis.com/apps/MapSeries/index.html?appid=f2b48398f93146e8a5cf0aa3fddce92c

Waka Kotahi. (May 2016). *The NZ Transport Agency's Bridge mannual SP/M/022.* Wellington: NZ Transport Agency.

WSP - OPUS. (2017). *Claudelands Bridge East Abutment - Factual Report HA 16/033.* Hamilton: Opus.

WSP - OPUS. (2017). *Claudelands Bridge East Abutment - Geotechnical Design Requirements.* Hamilton: Opus.

WSP-OPUS. (2016). *Claudelands Bridge East Abutment - Preliminary Geotechnical Assessment HA16/021.* hamilton: Opus.

Zhang, G., & Robertson, P. (2004). Estimate Liquefaction-Induced Lateral Displacements USing the Standard Penetrometer Test or Cone Penetration Test. . *Journal of Geotechnical and Geoenvironmental Engineering*, 130.

Zhang, G., Robertson, P., & Brachman, R. (2002). Estimating liquefaction - induced ground settlements from CPT for level ground. *Canadian Geotechnical Journal 39*, 1168 - 1180.

# Appendix A
# Site Location, Ground Investigation Location and Geological Map


wsp

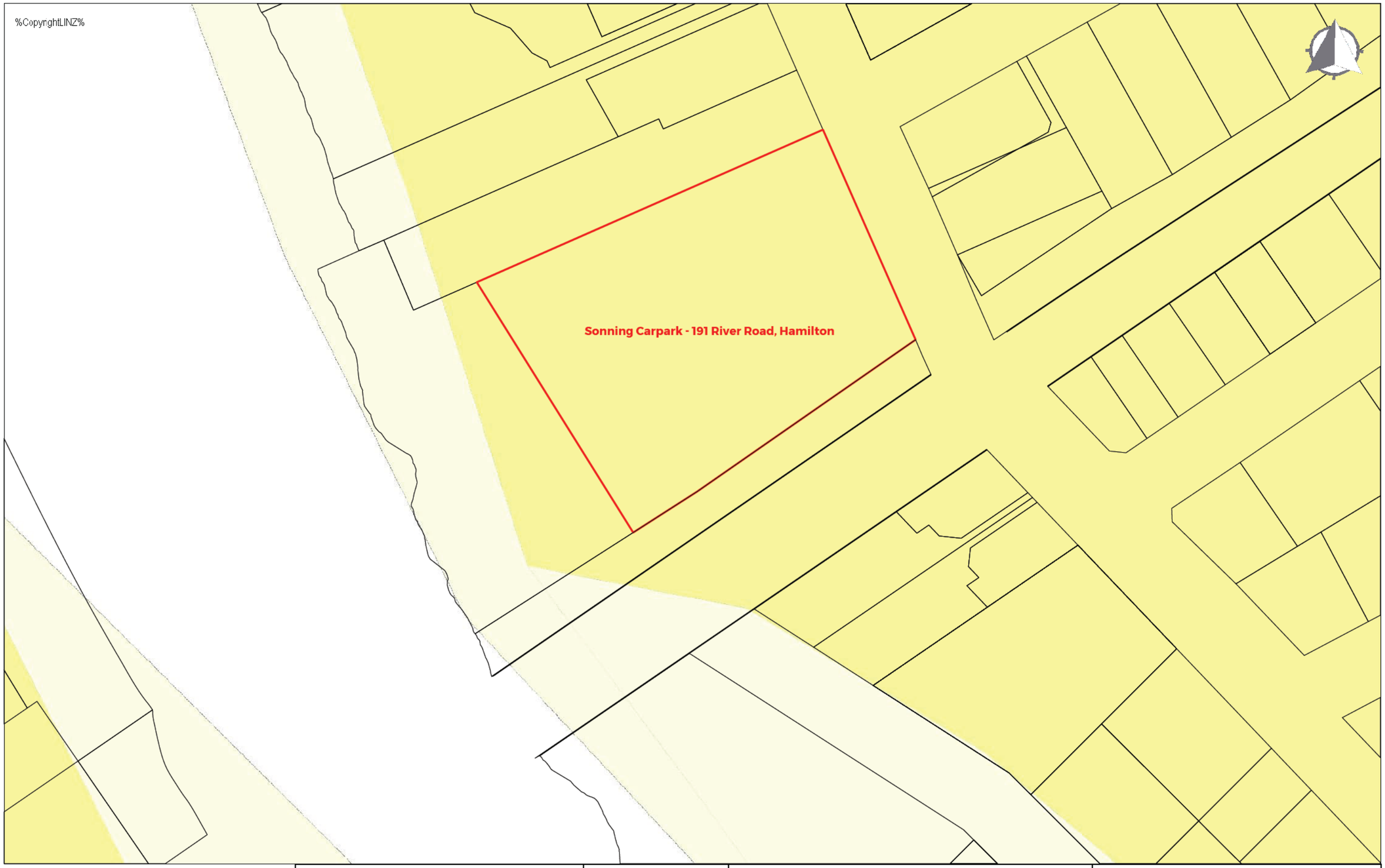
Project: Sonning Carpark Development

Scale 1:1000 Datum:NZGD2000
Projection: New Zealand Transverse Mercator 2000

0 m 15 m 30 m

Add Legend Here

Site Location Plan




Project: Sonning Car park development

Scale 1:1000 Datum:NZGD2000
Projection: New Zealand Transverse Mercator 2000

0 m 15 m 30 m

Add Legend Here

Site Location Plan

# Appendix B
# Ground Investigation Logs

# CPT
# TEST REPORT

| | |
|---|---|
| Client : | **Hamilton City Council** |
| Project : | **Claudelands Bridge** |
| Location : | **Claudelands Rd - Hamilton** |
| Hole Number: | **1** |
| Tested by : | **J Kavanaugh/ J Bergman** |
| Date tested : | **27/06/16** |
| Coordinates : | **E: 1801115** |
| | **N: 5815716** |
| | **EL: 44** |
| Water level : | **EOH - Dipped - Collapsed dry @ 1.4m** |

| | |
|---|---|
| Project No : | **2-32499.05** |
| Lab Ref No : | **HA227** |
| Client Ref No : | |

## Test Results

| | |
|---|---|
| Start Time | **10:18:00** |
| Time at penetration | **10:43:01** |
| End Time | **00:25:01** |
| Reference level | **0** |
| Ground level | **0** |
| Predrill | **2.8** |
| Penetration Depth | **28.04** |
| Remarks | **Refusal 10t.** |
| GPS Type | **Garmin eTrex 20** |
| GPS Accuracy | **+ / - 3m** |
| GPS Reference Grid | **NZTM** |
| GPS Datum | **MSL** |
| Rig Type | **GeoMil Panther 100/ Flex 200** |
| Rig ID | **CPT03** |
| Reaction Force | **Dead weight 10/22 tonnes** |
| Data Acquisition ( Digitizer ) | **GeoMil GME500** |
| Acquisition Program | **GeoMil CPTest** |
| Reporting Program | **GeoMil CPTask** |
| Cone Type | **C10 ( 10 Tonne Compression )** |
| Cross Sectional Area | **10cm2** |
| Cone Area Ratio | **0.8** |
| Fluid Type | **Silicone Fluid** |
| Friction Reducer | **0.55m behind base of cone** |
| Application Class ( ISO 22476-1 ) | **1** |
| Test Type ( ISO 22476-1 ) | **TE2 ( Measured Cone and Sleeve )** |
| Back Fill Method | **Bentonite** |
| Observations During Testing | **None** |

Date tested : 27/06/16
Date reported : 27/06/16

This report may only be reproduced in full, including corresponding calibration data, daily logs, and CPT graphs.

**IANZ Approved Signatory**

Designation : *CPT North Island Manager*
Date : 27/06/16

IANZ ACCREDITED LABORATORY

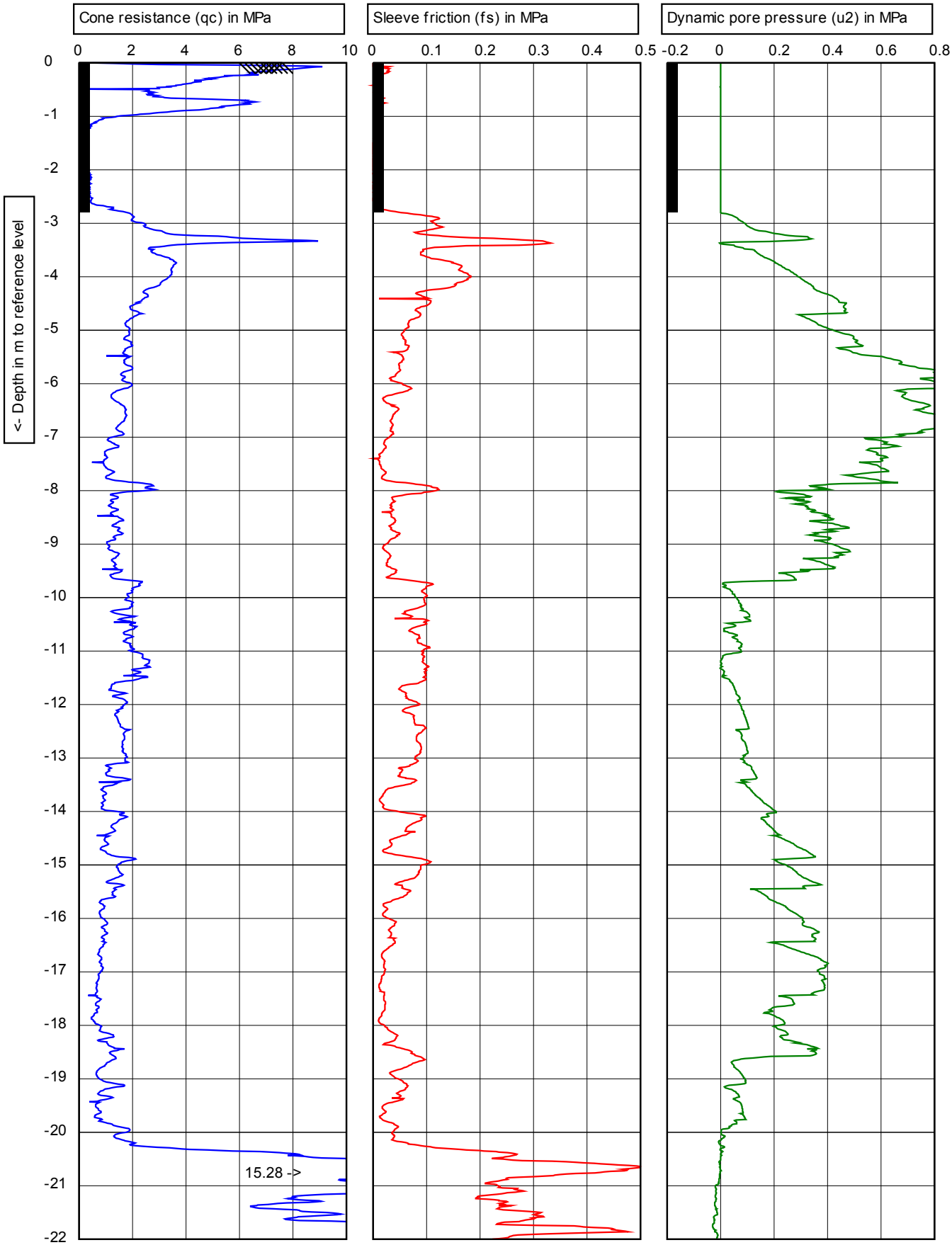
Tests indicated as not accredited are outside the scope of the laboratory's accreditation



Opus International Consultants Ltd
Hamilton Laboratory
Quality Management Systems Certified to ISO 9001

Fox Street
Private Bag 3057, Waikato Mail Centre,
Hamilton 3240, New Zealand

Telephone +64 7 856 2870
Facsimile +64 7 856 2873
Website www.opus.co nz

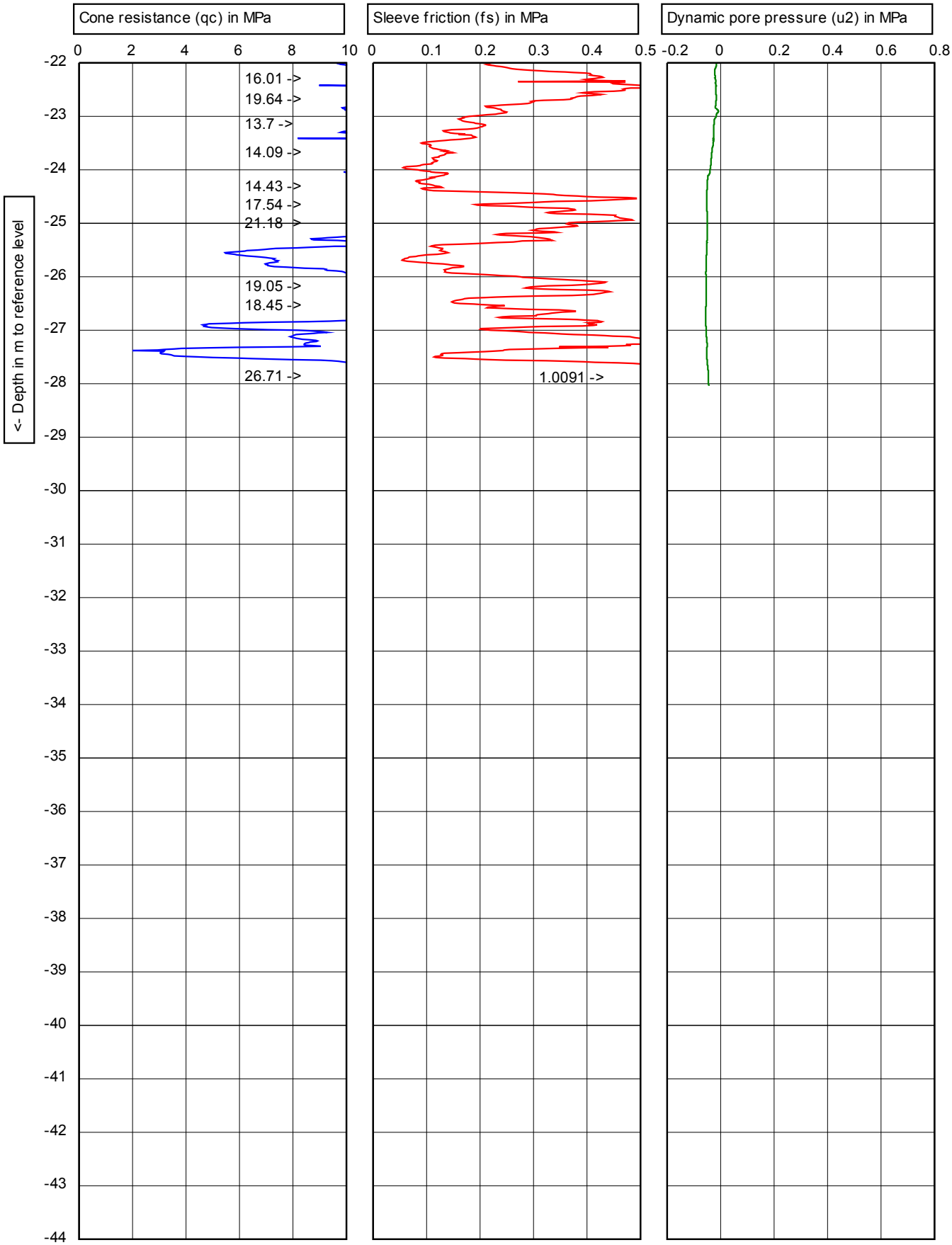



OPUS

Graphs on this page are not IANZ accredited

| | | | |
|---|---|---|---|
| u2 150 cm² 10 cm² | Test according ASTM D5778-12 & ISO 22476-1:2012 | Predrill: | **2.80 m Predrilled** |
| | G.L.: **0.00 m MSL** W.L.: **-1.40 m** | Date: | **27/06/2016** |
| Project: | **Claudelands Bridge** | Cone no.: | **C10CFIIP.C15211** |
| Location: | **Claudelands Rd - Hamilton** | Project no.: | **2-32499.05_HA227** |
| Position: | **1801115, 5815716 NZTM** | CPT no.: | **01** 1/12 |

1.45




Refusal 10t.

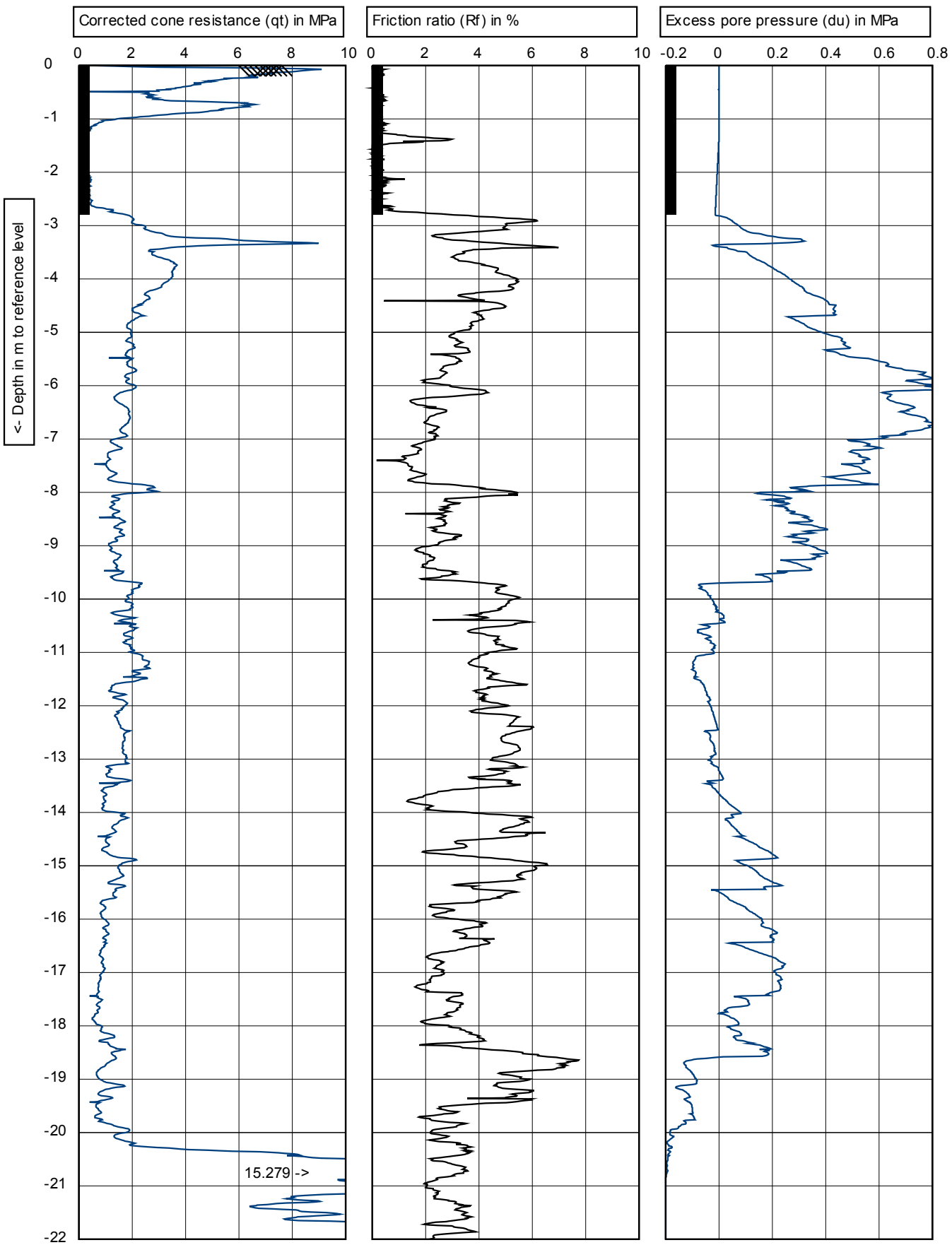
EOH - Dipped - Collapsed dry @ 1.4m

OPUS

Graphs on this page are not IANZ accredited

| | | | |
|---|---|---|---|
| Test according ASTM D5778-12 & ISO 22476-1:2012 | | Predrill: | **2.80 m Predrilled** |
| G.L.: **0.00 m MSL** | W.L.: **-1.40 m** | Date: | **27/06/2016** |
| Project: **Claudelands Bridge** | | Cone no.: | **C10CFIIP.C15211** |
| Location: **Claudelands Rd - Hamilton** | | Project no.: | **2-32499.05_HA227** |
| Position: **1801115, 5815716 NZTM** | | CPT no.: | **01** 2/12 |

1.45



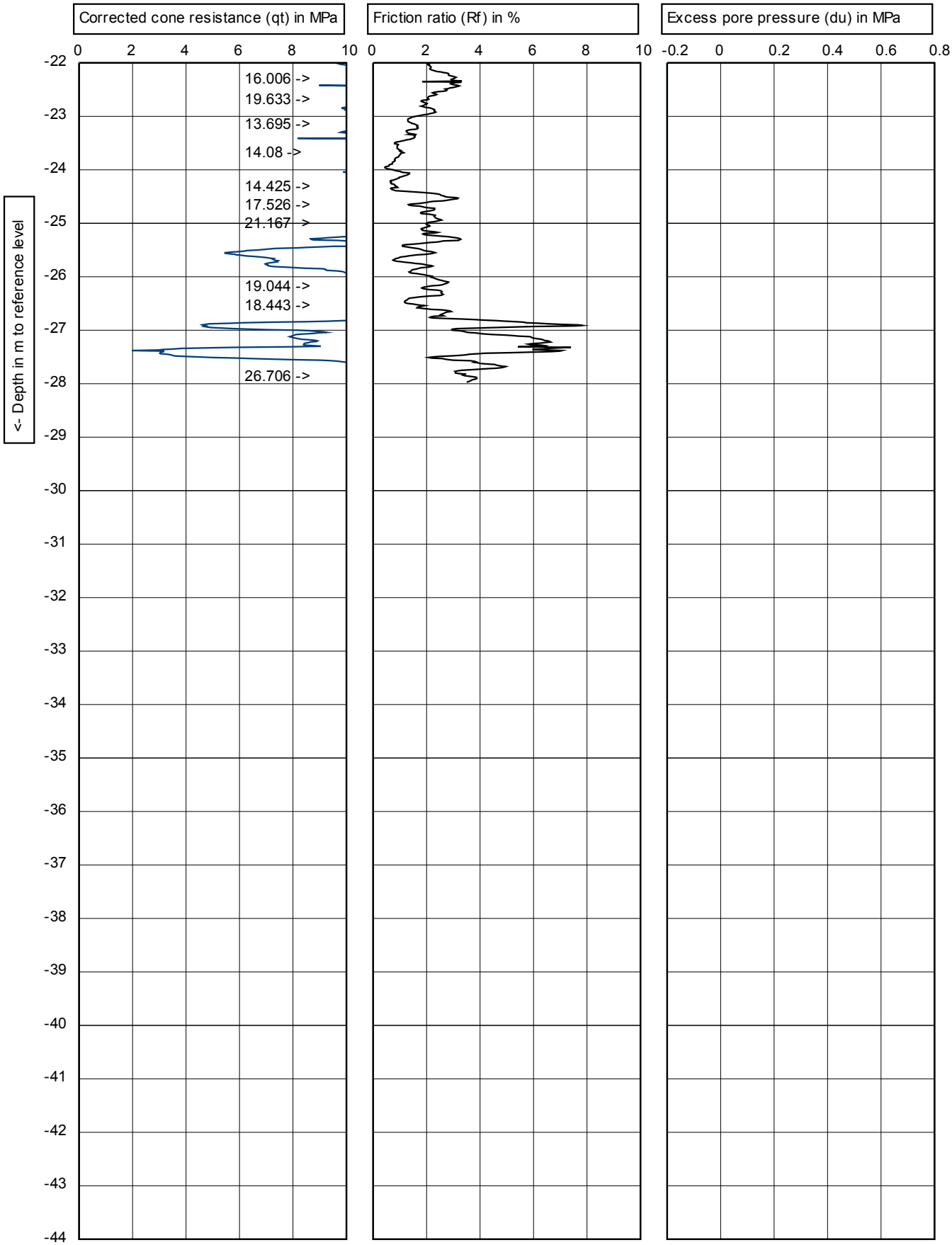

OPUS

Graphs on this page are not IANZ accredited

| | | | |
|---|---|---|---|
| u2 150 cm² 10 cm² | Test according ASTM D5778-12 & ISO 22476-1:2012 | Predrill: | 2.80 m Predrilled |
| | G.L.: 0.00 m MSL / W.L.: -1.40 m | Date: | 27/06/2016 |
| Project: | Claudelands Bridge | Cone no.: | C10CFIIP.C15211 |
| Location: | Claudelands Rd - Hamilton | Project no.: | 2-32499.05_HA227 |
| Position: | 1801115, 5815716 NZTM | CPT no.: | 01 |



1.45




Refusal 10t.

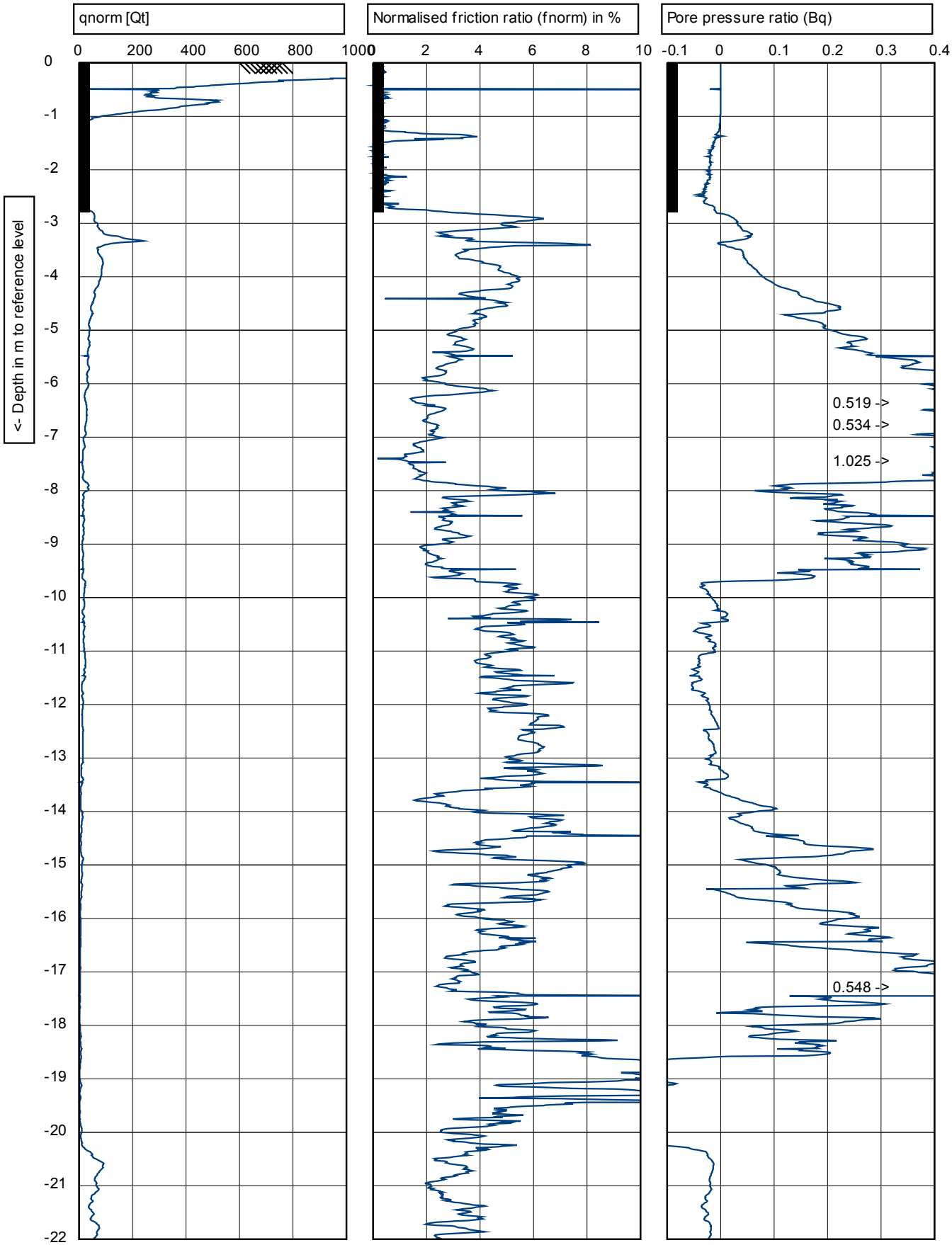
EOH - Dipped - Collapsed dry @ 1.4m

OPUS

Graphs on this page are not IANZ accredited

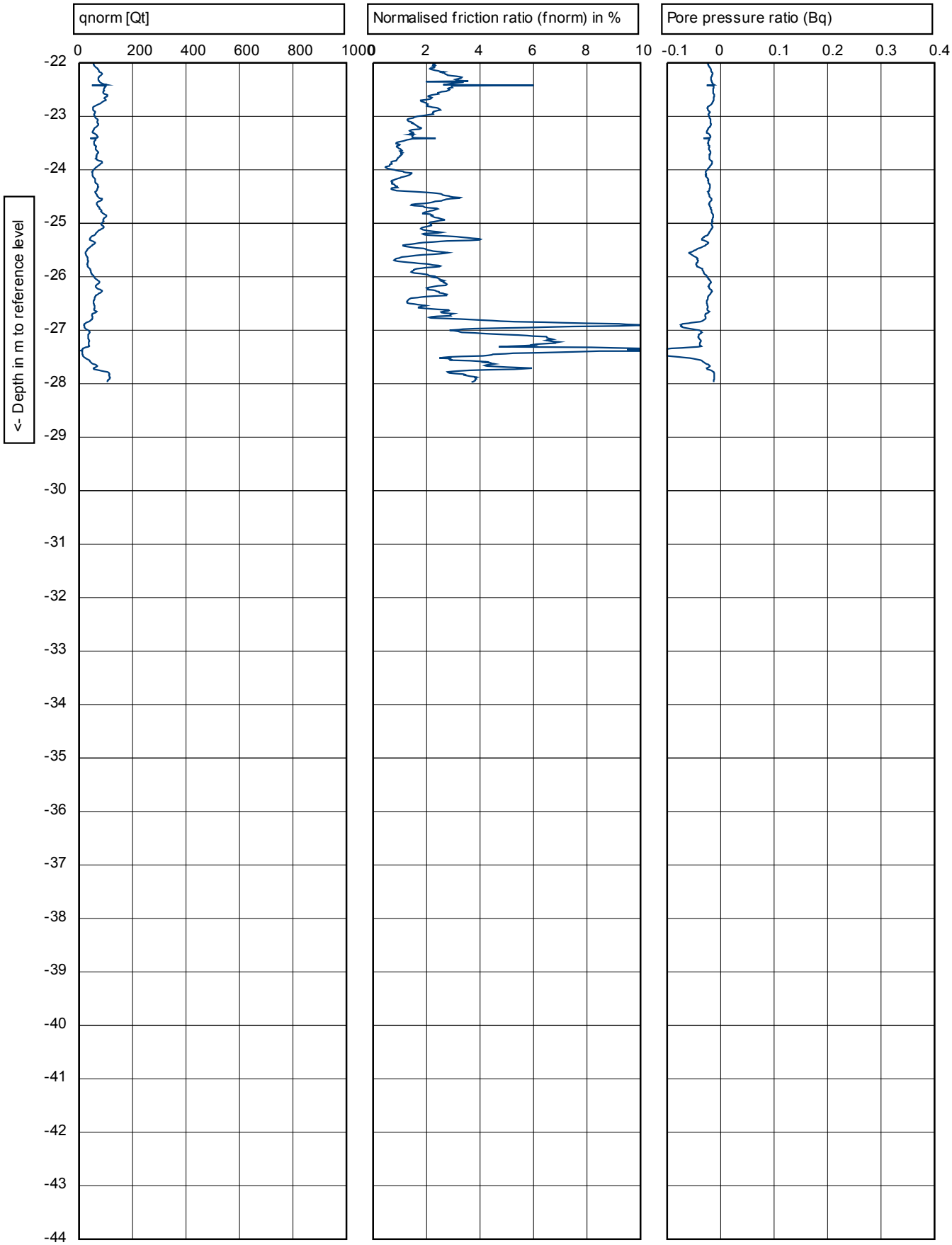
1.45

| | | | |
|---|---|---|---|
| Test according ASTM D5778-12 & ISO 22476-1:2012 | | Predrill: | **2.80 m Predrilled** |
| G.L.: **0.00 m MSL** | W.L.: **-1.40 m** | Date: | **27/06/2016** |
| Project: **Claudelands Bridge** | | Cone no.: | **C10CFIIP.C15211** |
| Location: **Claudelands Rd - Hamilton** | | Project no.: | **2-32499.05_HA227** |
| Position: **1801115, 5815716 NZTM** | | CPT no.: | **01** 4/12 |




| | | | |
|---|---|---|---|
| OPUS<br>Graphs on this page are not IANZ accredited | r u2<br>150 cm²<br>10 cm² | Test according ASTM D5778-12 & ISO 22476-1:2012 | Predrill: **2.80 m Predrilled** |
| | | G.L.: **0.00 m MSL** W.L.: **-1.40 m** | Date: **27/06/2016** |
| Project: **Claudelands Bridge** | | | Cone no.: **C10CFIIP.C15211** |
| Location: **Claudelands Rd - Hamilton** | | | Project no.: **2-32499.05_HA227** |
| Position: **1801115, 5815716 NZTM** | | | CPT no.: **01** **5/12** |

1.45




Refusal 10t.

EOH - Dipped - Collapsed dry @ 1.4m

OPUS

Graphs on this page are not IANZ accredited

u2 150 cm² 10 cm²

Test according ASTM D5778-12 & ISO 22476-1:2012

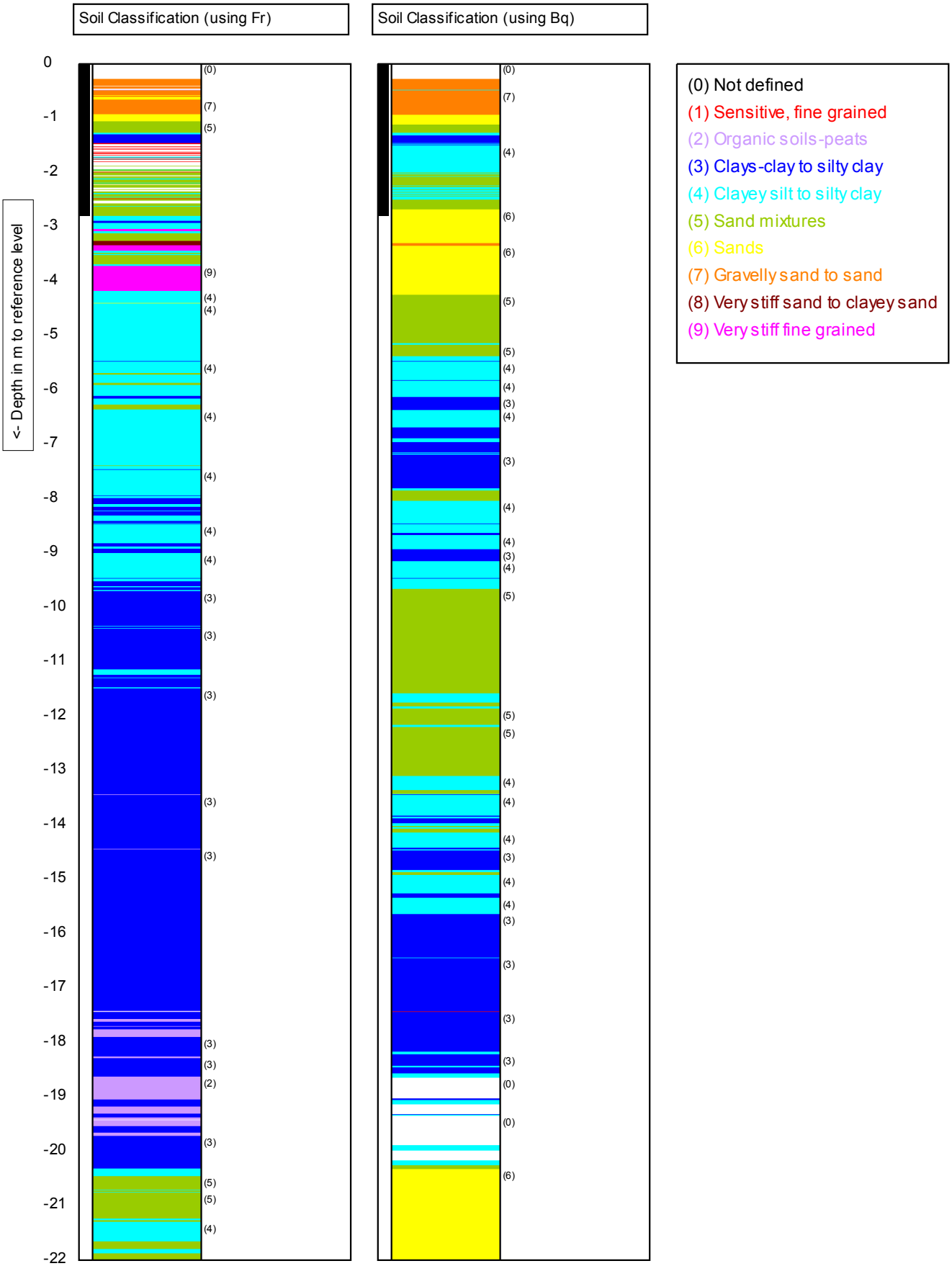
G.L.: **0.00 m MSL** W.L.: **-1.40 m**

Project: **Claudelands Bridge**
Location: **Claudelands Rd - Hamilton**
Position: **1801115, 5815716 NZTM**

| | |
|---|---|
| Predrill: | **2.80 m Predrilled** |
| Date: | **27/06/2016** |
| Cone no.: | **C10CFIIP.C15211** |
| Project no.: | **2-32499.05_HA227** |
| CPT no.: | **01** |



1.45

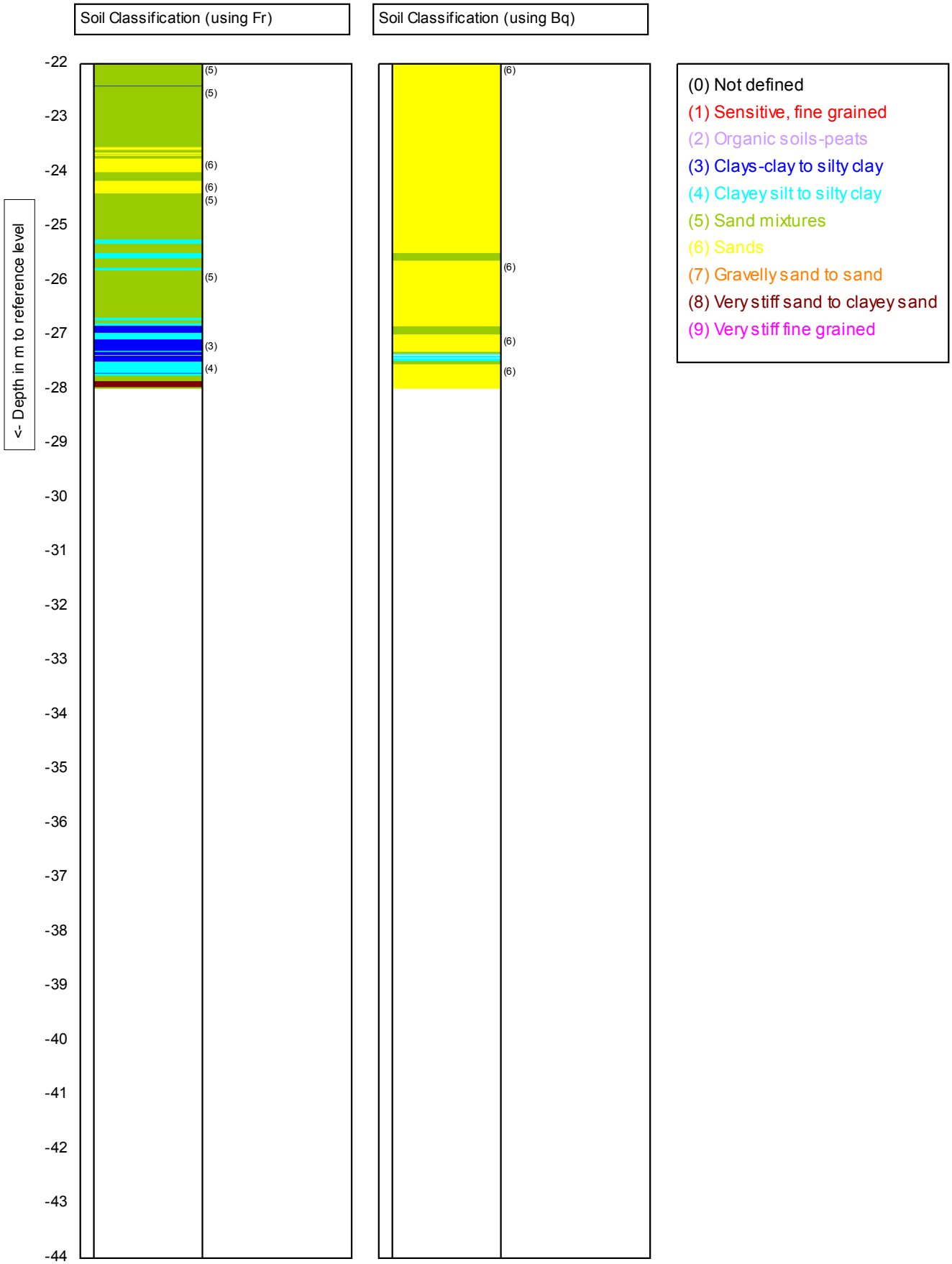



OPUS

Graphs on this page are not IANZ accredited

| | | | |
|---|---|---|---|
| Test according ASTM D5778-12 & ISO 22476-1:2012 | | Predrill: | **2.80 m Predrilled** |
| G.L.: **0.00 m MSL** | W.L.: **-1.40 m** | Date: | **27/06/2016** |
| Project: **Claudelands Bridge** | | Cone no.: | **C10CFIIP.C15211** |
| Location: **Claudelands Rd - Hamilton** | | Project no.: | **2-32499.05_HA227** |
| Position: **1801115, 5815716 NZTM** | | CPT no.: | **01** 7/12 |

1.45

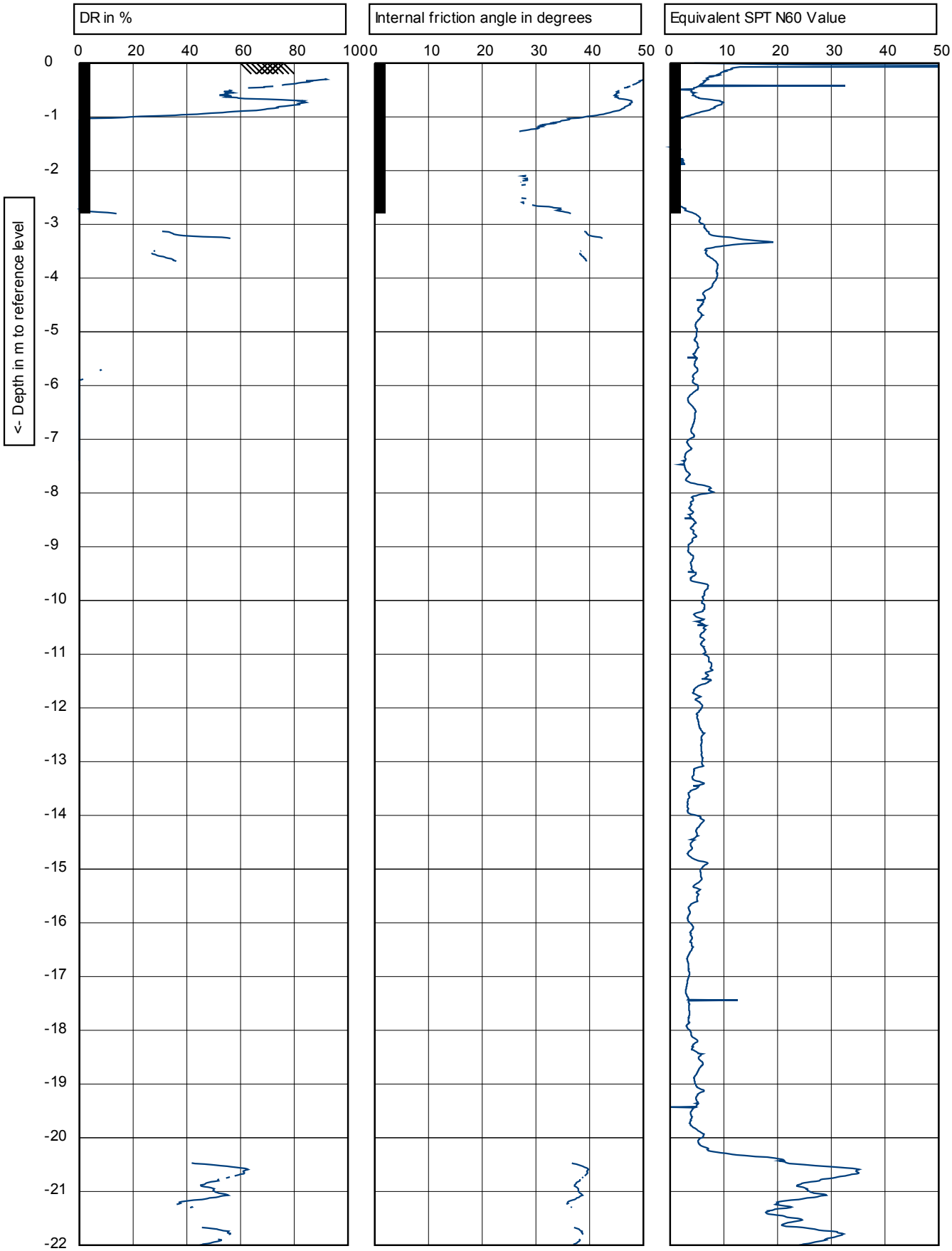



OPUS

Graphs on this page are not IANZ accredited

| | | | |
|---|---|---|---|
| u2 150 cm² 10 cm² | Test according ASTM D5778-12 & ISO 22476-1:2012 | Predrill: | **2.80 m Predrilled** |
| | G.L.: **0.00 m MSL** W.L.: **-1.40 m** | Date: | **27/06/2016** |
| Project: | **Claudelands Bridge** | Cone no.: | **C10CFIIP.C15211** |
| Location: | **Claudelands Rd - Hamilton** | Project no.: | **2-32499.05_HA227** |
| Position: | **1801115, 5815716 NZTM** | CPT no.: | **01** 8/12 |

1.45

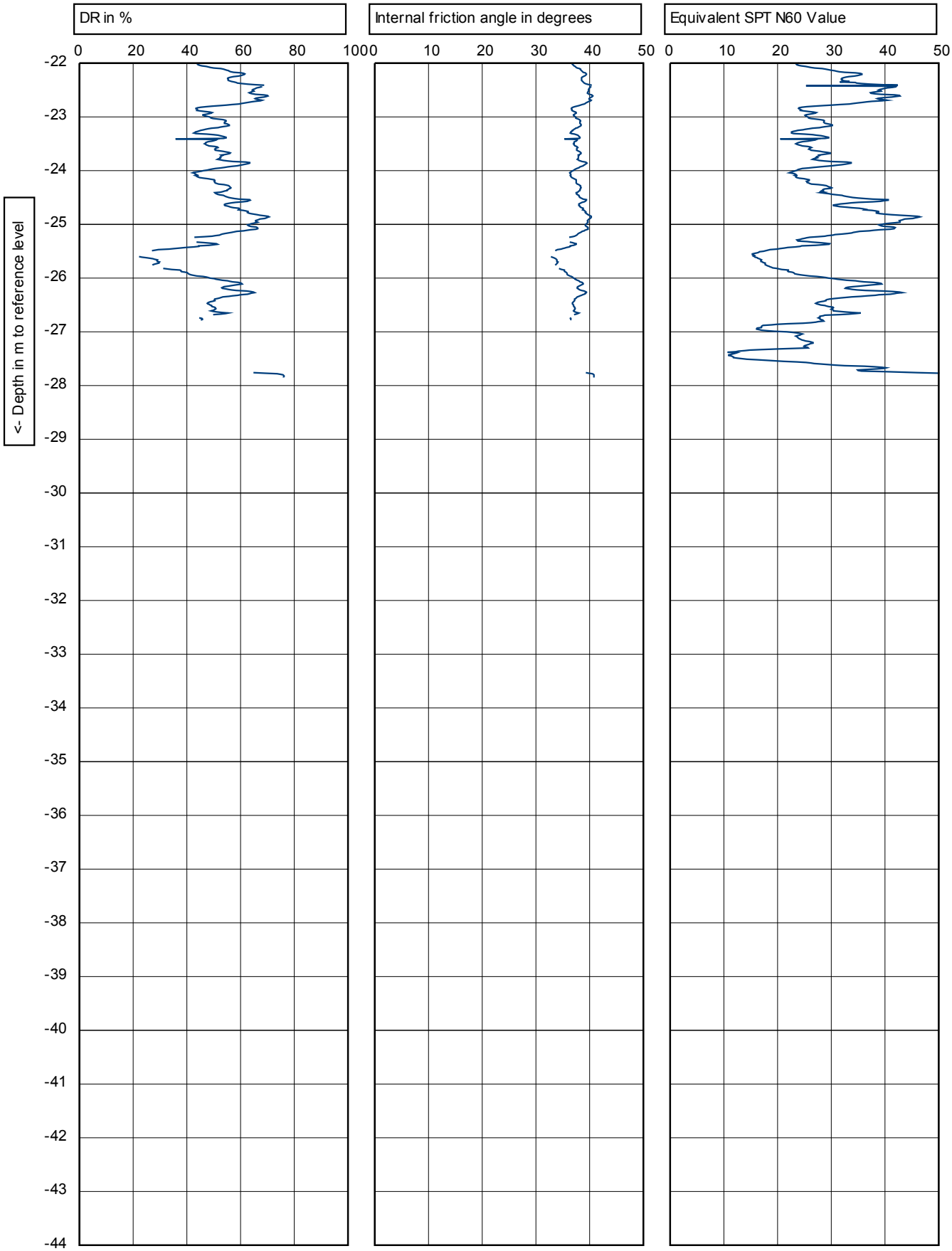



OPUS

Graphs on this page are not IANZ accredited

| | | | |
|---|---|---|---|
| u2 150 cm² 10 cm² | Test according ASTM D5778-12 & ISO 22476-1:2012 | Predrill: | **2.80 m Predrilled** |
| | G.L.: **0.00 m MSL** W.L.: **-1.40 m** | Date: | **27/06/2016** |
| Project: | **Claudelands Bridge** | Cone no.: | **C10CFIIP.C15211** |
| Location: | **Claudelands Rd - Hamilton** | Project no.: | **2-32499.05_HA227** |
| Position: | **1801115, 5815716 NZTM** | CPT no.: | **01** 9/12 |

1.45




Refusal 10t.

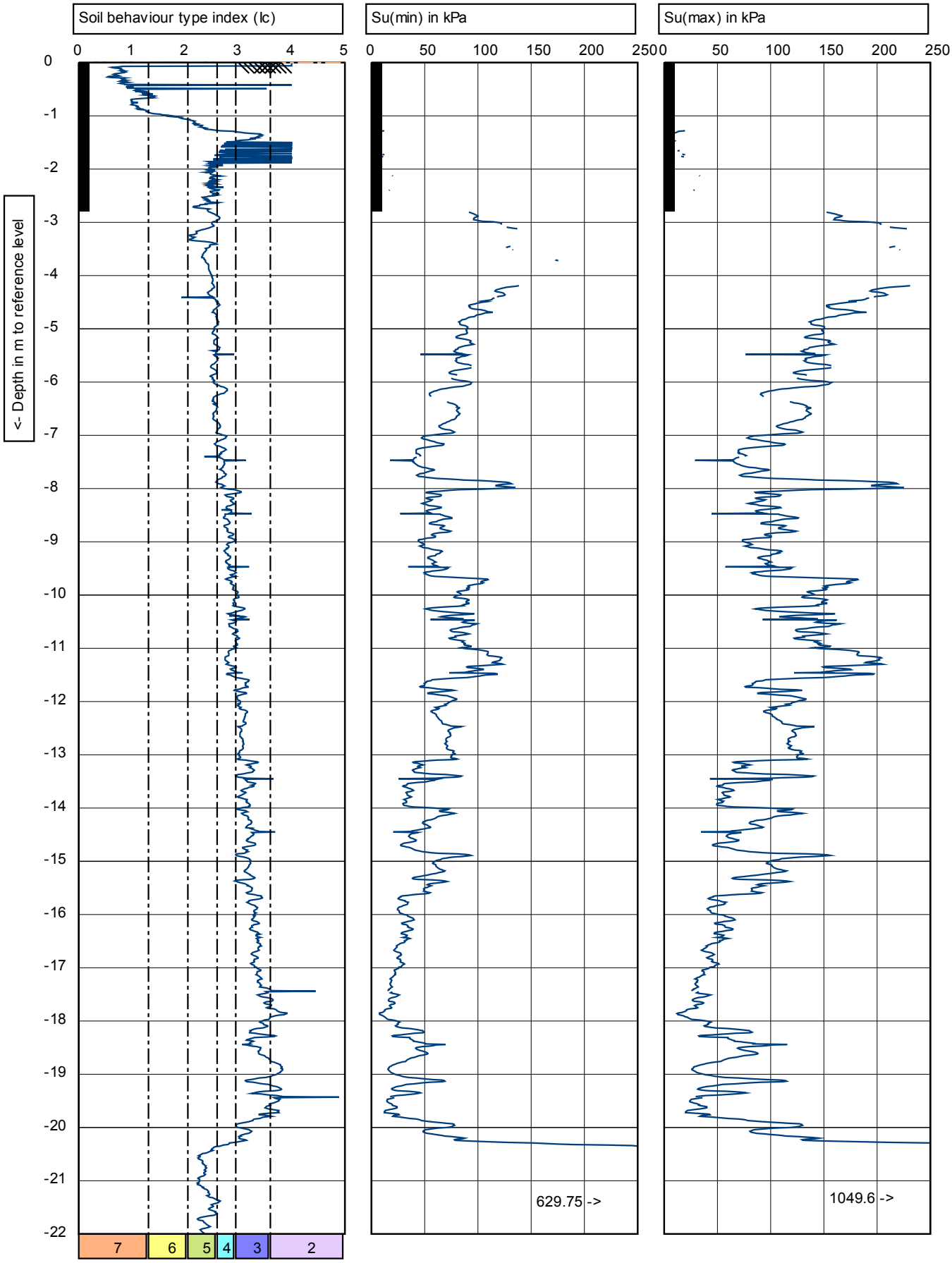
EOH - Dipped - Collapsed dry @ 1.4m

OPUS

Graphs on this page are not IANZ accredited

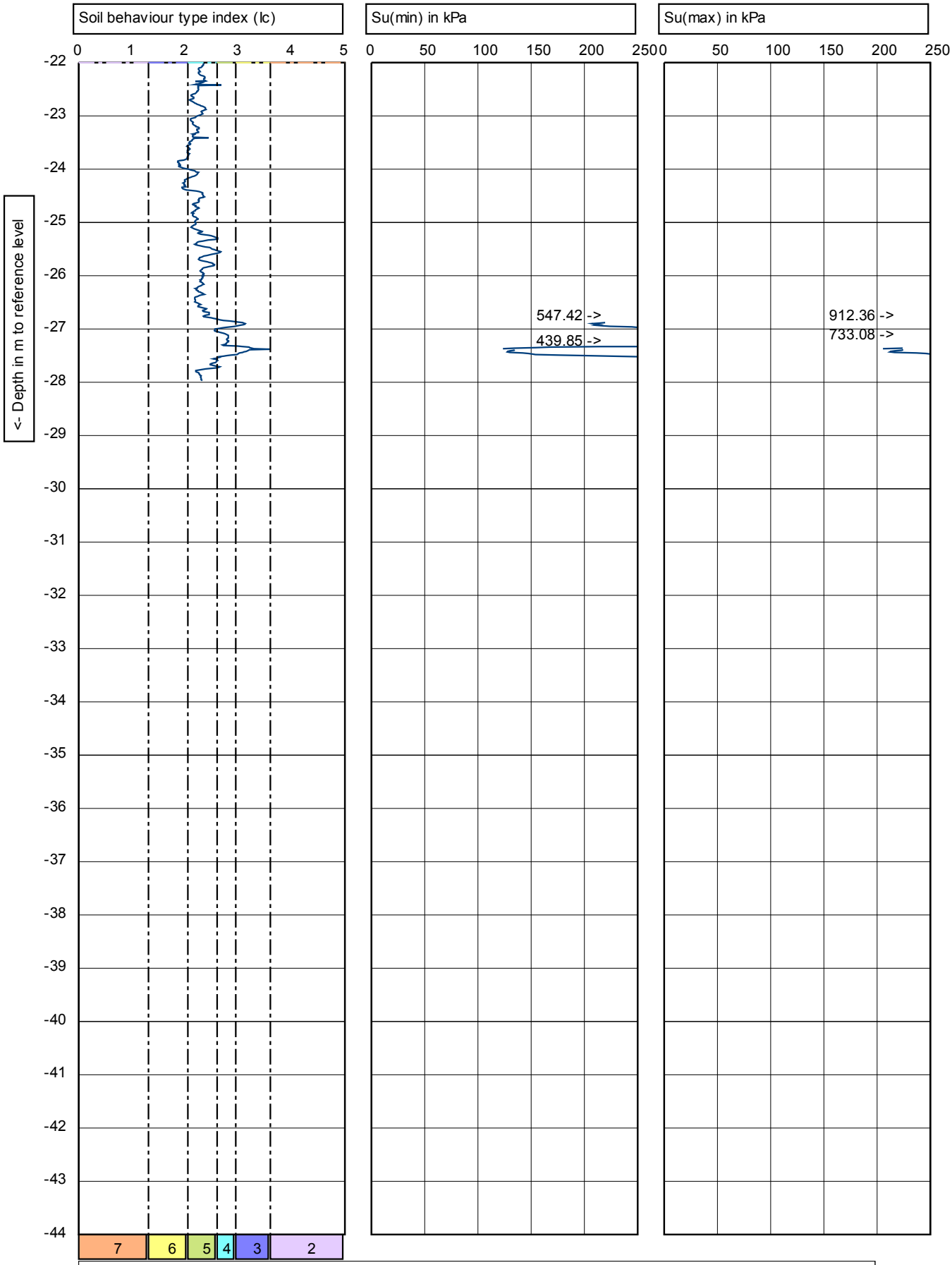
1.45

| | | | |
|---|---|---|---|
| u2 150 cm² 10 cm² | Test according ASTM D5778-12 & ISO 22476-1:2012 | Predrill: | **2.80 m Predrilled** |
| | G.L.: **0.00 m MSL** W.L.: **-1.40 m** | Date: | **27/06/2016** |
| Project: | **Claudelands Bridge** | Cone no.: | **C10CFIIP.C15211** |
| Location: | **Claudelands Rd - Hamilton** | Project no.: | **2-32499.05_HA227** |
| Position: | **1801115, 5815716 NZTM** | CPT no.: | **01** 10/12 |




| | | | | |
|---|---|---|---|---|
| OPUS<br>Graphs on this page are not IANZ accredited | r u2<br>150 cm²<br>10 cm² | Test according ASTM D5778-12 & ISO 22476-1:2012 | Predrill: | **2.80 m Predrilled** |
| | | G.L.: **0.00 m MSL** W.L.: **-1.40 m** | Date: | **27/06/2016** |
| Project: **Claudelands Bridge** | | | Cone no.: | **C10CFIIP.C15211** |
| Location: **Claudelands Rd - Hamilton** | | | Project no.: | **2-32499.05_HA227** |
| Position: **1801115, 5815716 NZTM** | | | CPT no.: | **01** 11/12 |

1.45




Refusal 10t.

EOH - Dipped - Collapsed dry @ 1.4m

OPUS

Graphs on this page are not IANZ accredited

1.45

| | | | |
|---|---|---|---|
| Test according ASTM D5778-12 & ISO 22476-1:2012 | | Predrill: | 2.80 m Predrilled |
| G.L.: 0.00 m MSL | W.L.: -1.40 m | Date: | 27/06/2016 |
| Project: Claudelands Bridge | | Cone no.: | C10CFIIP.C15211 |
| Location: Claudelands Rd - Hamilton | | Project no.: | 2-32499.05_HA227 |
| Position: 1801115, 5815716 NZTM | | CPT no.: | 01 |

# CPT
# TEST REPORT

| | |
|---|---|
| Client : | **Hamilton City Council** |
| Project : | **Claudelands Bridge** |
| Location : | **Claudelands Rd - Hamilton** |
| Hole Number: | **2** |
| Tested by : | **J Kavanaugh/ J Bergman** |
| Date tested : | **27/06/16** |
| Coordinates : | **E: 1801125** |
| | **N: 5815687** |
| | **EL: 42** |
| Water level : | **EOH - Dipped - Collapsed dry @ 1.9m** |

| | |
|---|---|
| Project No : | **2-32499.05** |
| Lab Ref No : | **HA227** |
| Client Ref No : | |

## Test Results

| | |
|---|---|
| Start Time | **09:15:00** |
| Time at penetration | **09:33:45** |
| End Time | **00:18:45** |
| Reference level | **0** |
| Ground level | **0** |
| Predrill | **2.6** |
| Penetration Depth | **20.76** |
| Remarks | **Refusal 10t.** |
| GPS Type | **Garmin eTrex 20** |
| GPS Accuracy | **+ / - 3m** |
| GPS Reference Grid | **NZTM** |
| GPS Datum | **MSL** |
| Rig Type | **GeoMil Panther 100/ Flex 200** |
| Rig ID | **CPT03** |
| Reaction Force | **Dead weight 10/22 tonnes** |
| Data Acquisition ( Digitizer ) | **GeoMil GME500** |
| Acquisition Program | **GeoMil CPTest** |
| Reporting Program | **GeoMil CPTask** |
| Cone Type | **C10 ( 10 Tonne Compression )** |
| Cross Sectional Area | **10cm2** |
| Cone Area Ratio | **0.8** |
| Fluid Type | **Silicone Fluid** |
| Friction Reducer | **0.55m behind base of cone** |
| Application Class ( ISO 22476-1 ) | **1** |
| Test Type ( ISO 22476-1 ) | **TE2 ( Measured Cone and Sleeve )** |
| Back Fill Method | **Bentonite** |
| Observations During Testing | **None** |

Date tested : 27/06/16
Date reported : 27/06/16

This report may only be reproduced in full, including corresponding calibration data, daily logs, and CPT graphs.

**IANZ Approved Signatory**

Designation : *CPT North Island Manager*
Date : 27/06/16

IANZ ACCREDITED LABORATORY

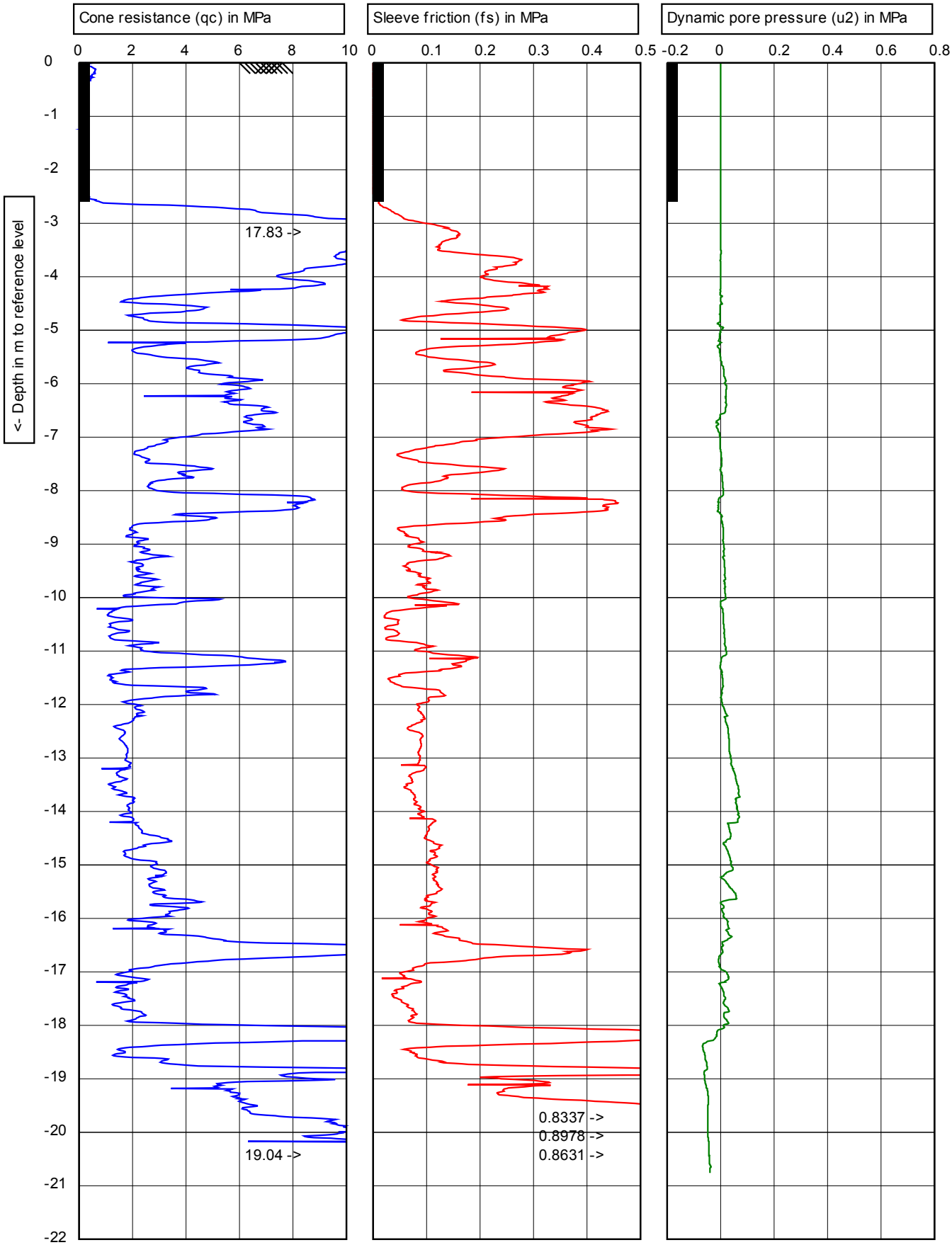
Tests indicated as not accredited are outside the scope of the laboratory's accreditation



Opus International Consultants Ltd
Hamilton Laboratory
Quality Management Systems Certified to ISO 9001

Fox Street
Private Bag 3057, Waikato Mail Centre,
Hamilton 3240, New Zealand

Telephone +64 7 856 2870
Facsimile +64 7 856 2873
Website www.opus.co nz




Refusal 10t.

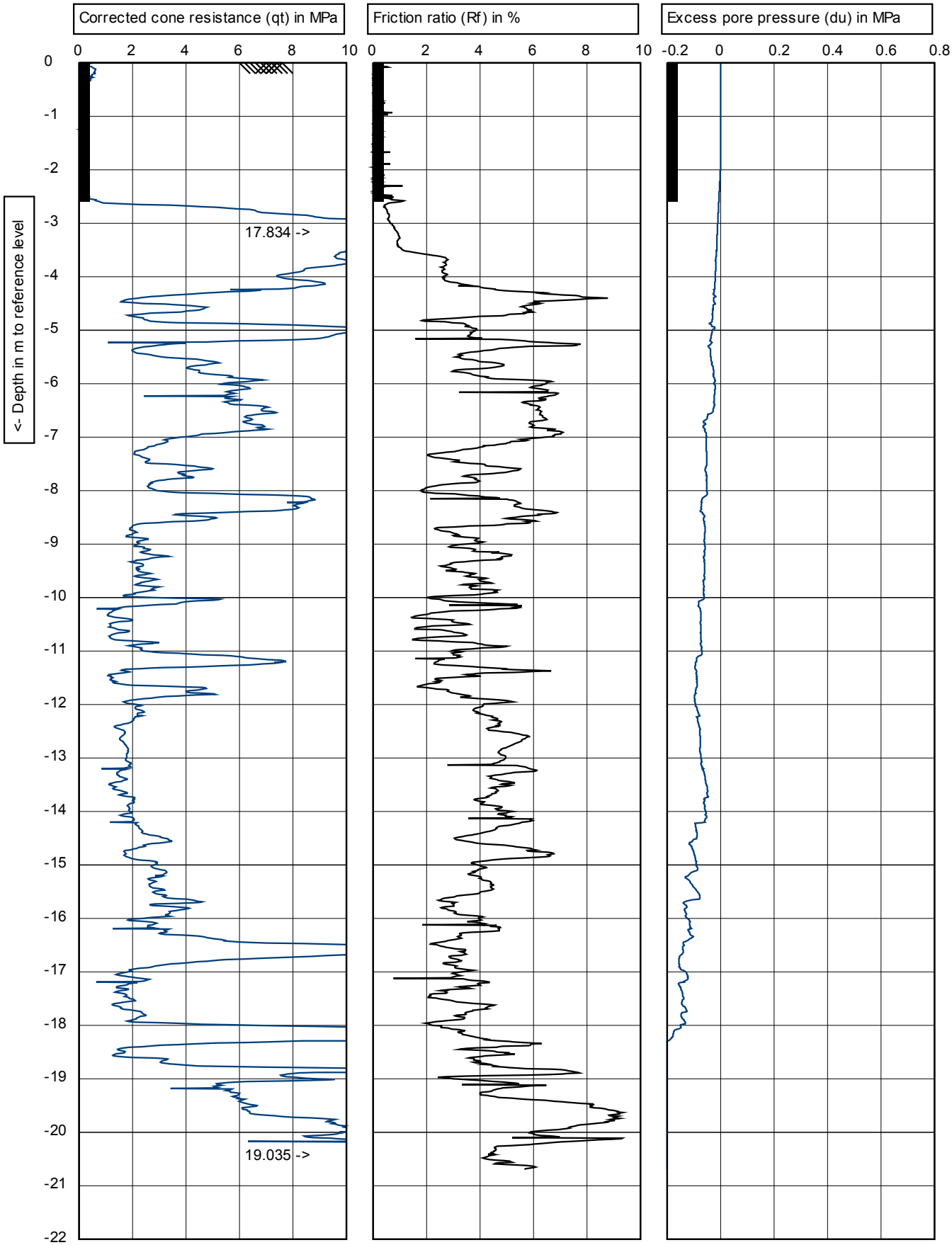
EOH - Dipped - Colapsed dry @ 1.9m

OPUS

Graphs on this page are not IANZ accredited

| | | | |
|---|---|---|---|
| u2 150 cm² 10 cm² | Test according ASTM D5778-12 & ISO 22476-1:2012 | Predrill: | 2.60 m Predrilled |
| | G.L.: 0.00 m MSL / W.L.: -1.90 m | Date: | 27/06/2016 |
| Project: | Claudelands Bridge | Cone no.: | C10CFIIP.C15211 |
| Location: | Claudelands Rd - Hamilton | Project no.: | 2-32499.05_HA227 |
| Position: | 1801125, 5815687 NZTM | CPT no.: | 02 — 1/6 |

1.45




Refusal 10t.

EOH - Dipped - Colapsed dry @ 1.9m

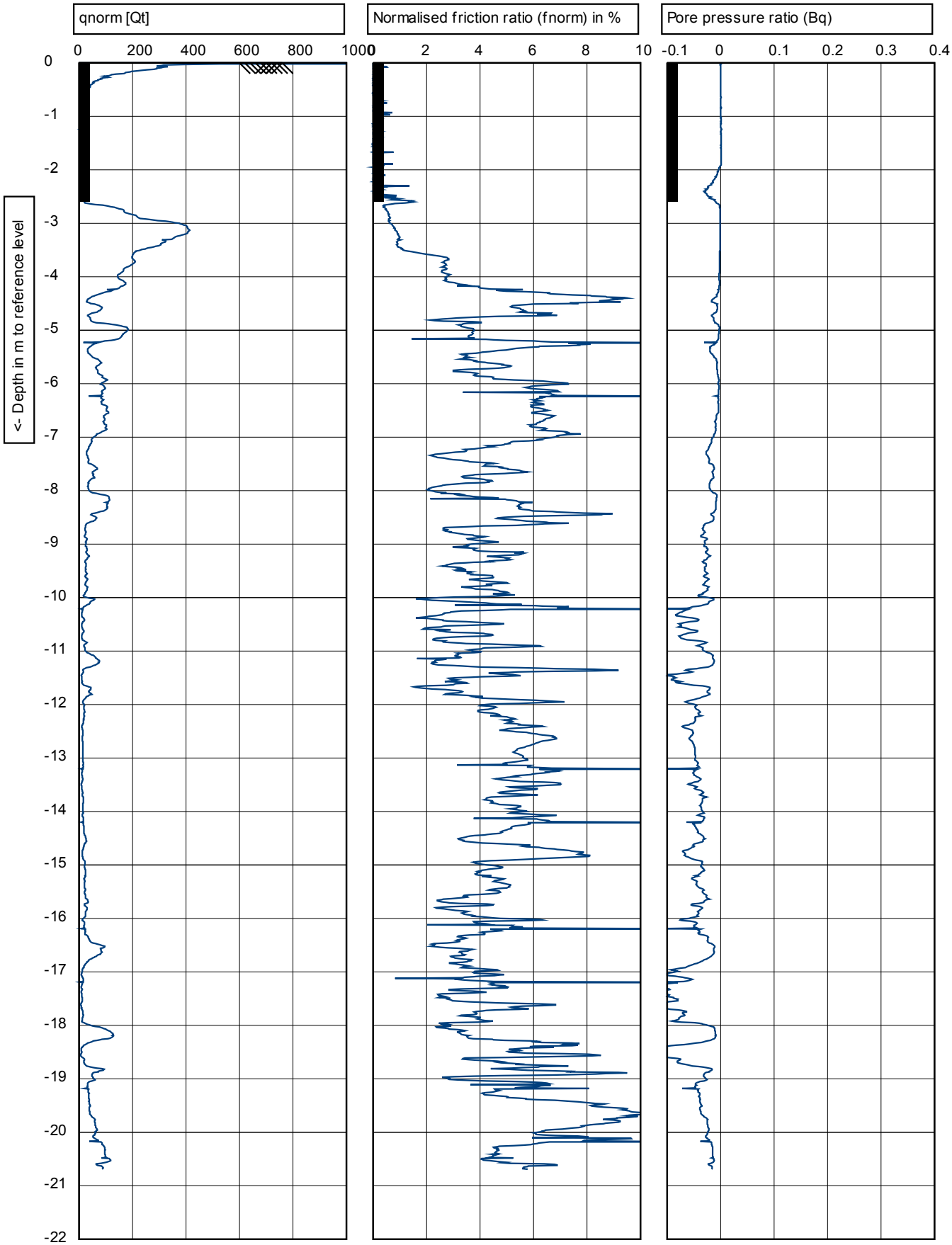
OPUS

Graphs on this page are not IANZ accredited

| | | | |
|---|---|---|---|
| Test according ASTM D5778-12 & ISO 22476-1:2012 | | Predrill: | 2.60 m Predrilled |
| G.L.: 0.00 m MSL | W.L.: -1.90 m | Date: | 27/06/2016 |
| Project: Claudelands Bridge | | Cone no.: | C10CFIIP.C15211 |
| Location: Claudelands Rd - Hamilton | | Project no.: | 2-32499.05_HA227 |
| Position: 1801125, 5815687 NZTM | | CPT no.: | 02 |



1.45




Refusal 10t.

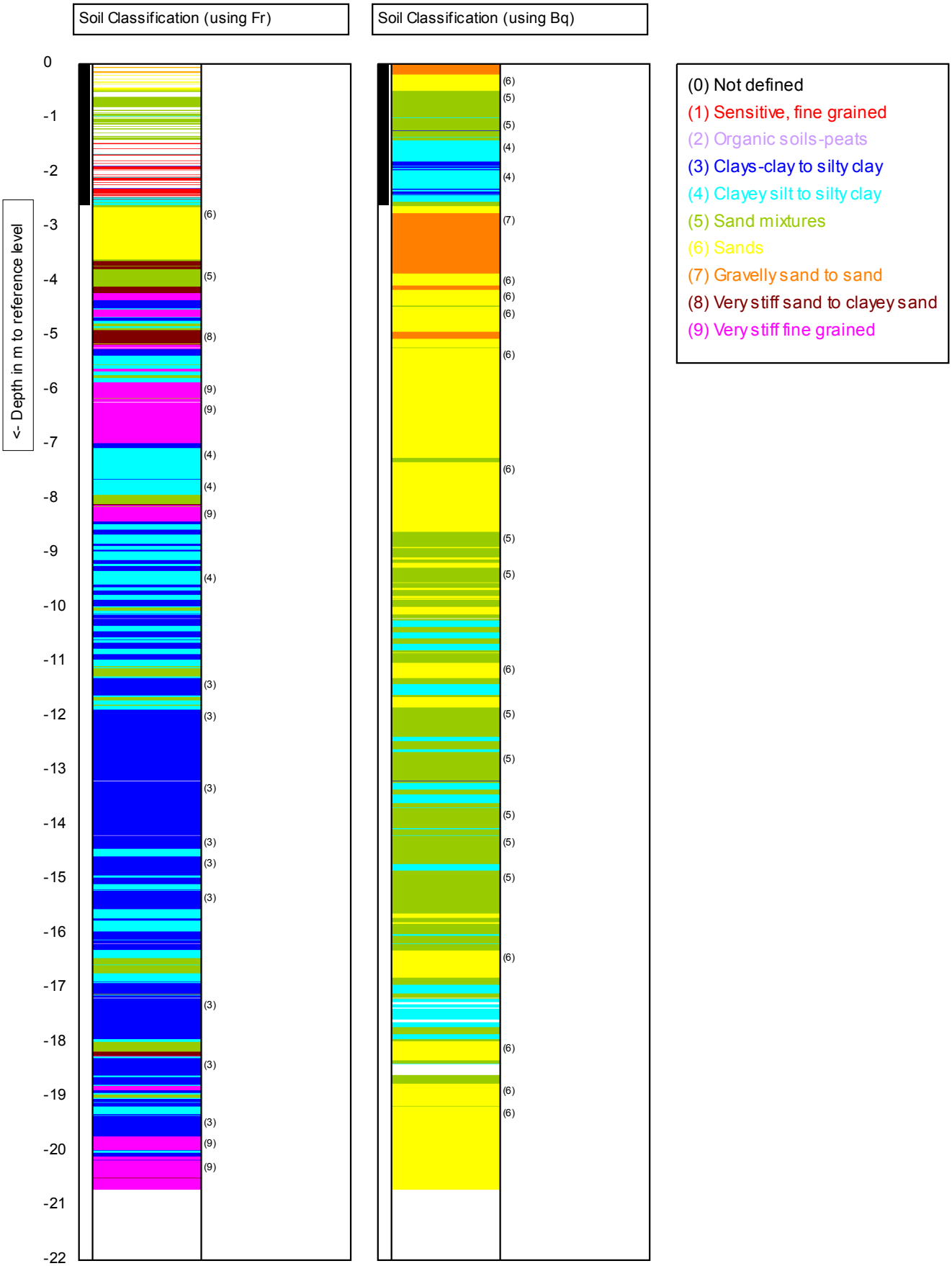
EOH - Dipped - Colapsed dry @ 1.9m

OPUS

Graphs on this page are not IANZ accredited

| | | | |
|---|---|---|---|
| u2 150 cm² 10 cm² | Test according ASTM D5778-12 & ISO 22476-1:2012 | Predrill: | **2.60 m Predrilled** |
| | G.L.: **0.00 m MSL** W.L.: **-1.90 m** | Date: | **27/06/2016** |
| Project: | **Claudelands Bridge** | Cone no.: | **C10CFIIP.C15211** |
| Location: | **Claudelands Rd - Hamilton** | Project no.: | **2-32499.05_HA227** |
| Position: | **1801125, 5815687 NZTM** | CPT no.: | **02** 3/6 |

1.45

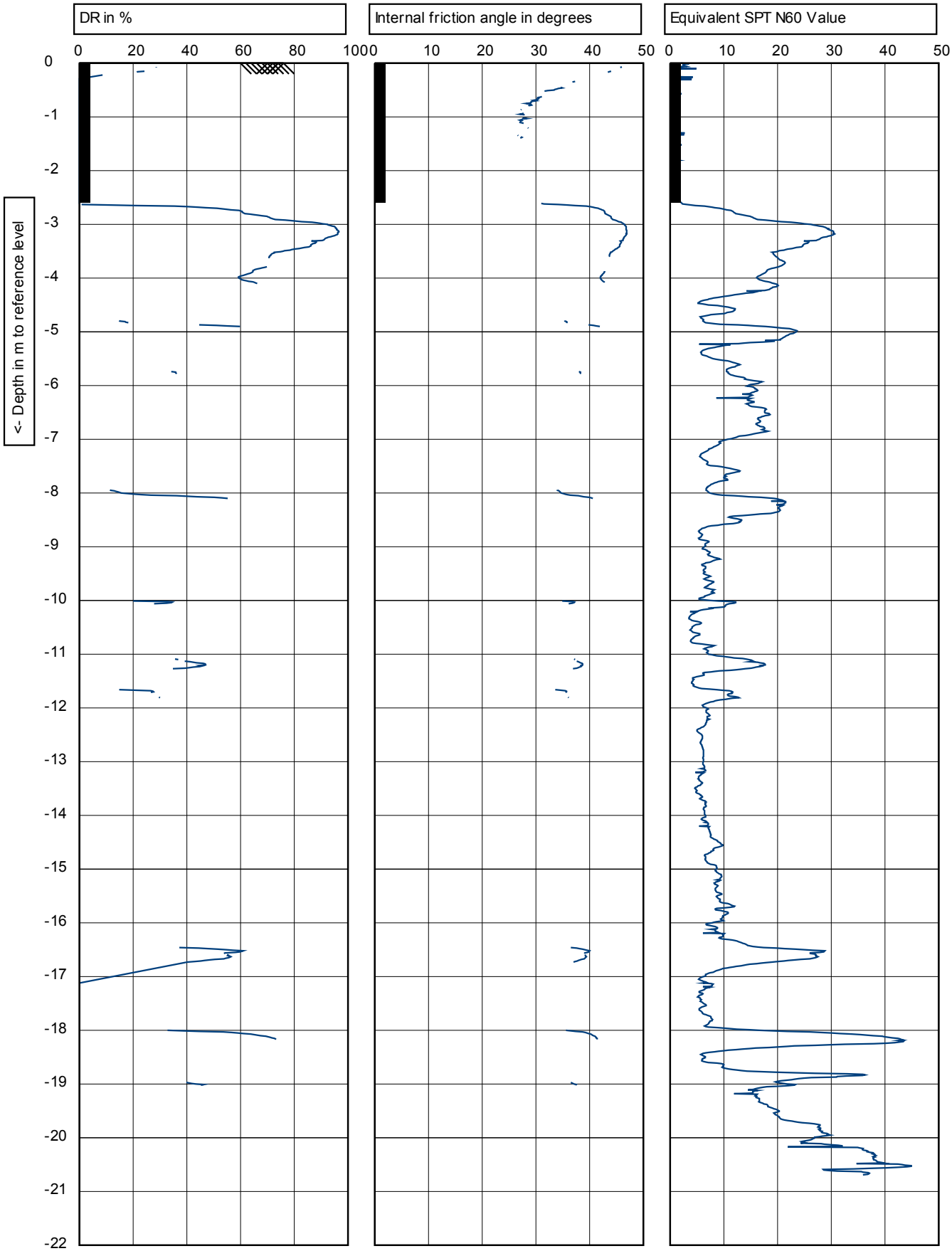



OPUS

Graphs on this page are not IANZ accredited

| | | | |
|---|---|---|---|
| r u2 / 150 cm² / 10 cm² | Test according ASTM D5778-12 & ISO 22476-1:2012 | Predrill: | **2.60 m Predrilled** |
| | G.L.: **0.00 m MSL** W.L.: **-1.90 m** | Date: | **27/06/2016** |
| Project: | **Claudelands Bridge** | Cone no.: | **C10CFIIP.C15211** |
| Location: | **Claudelands Rd - Hamilton** | Project no.: | **2-32499.05_HA227** |
| Position: | **1801125, 5815687 NZTM** | CPT no.: | **02** 4/6 |

1.45




Refusal 10t.

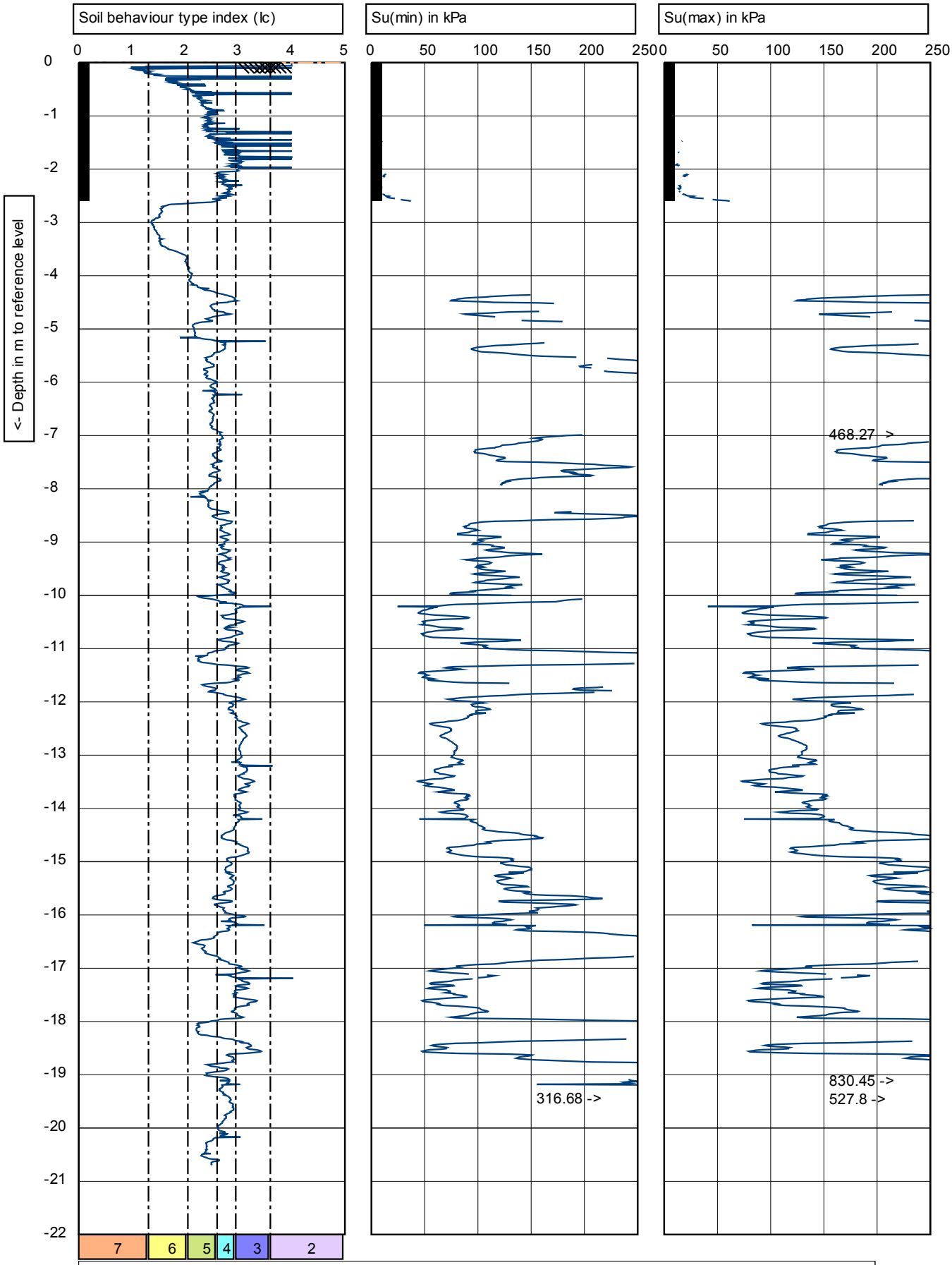
EOH - Dipped - Colapsed dry @ 1.9m

OPUS

Graphs on this page are not IANZ accredited

1.45

| | | | |
|---|---|---|---|
| r u2 / L 150 cm² / 10 cm² | Test according ASTM D5778-12 & ISO 22476-1:2012 | Predrill: | **2.60 m Predrilled** |
| | G.L.: **0.00 m MSL** W.L.: **-1.90 m** | Date: | **27/06/2016** |
| Project: | **Claudelands Bridge** | Cone no.: | **C10CFIIP.C15211** |
| Location: | **Claudelands Rd - Hamilton** | Project no.: | **2-32499.05_HA227** |
| Position: | **1801125, 5815687 NZTM** | CPT no.: | **02** 5/6 |




Refusal 10t.

EOH - Dipped - Colapsed dry @ 1.9m

OPUS

Graphs on this page are not IANZ accredited

| | | | |
|---|---|---|---|
| Test according ASTM D5778-12 & ISO 22476-1:2012 | | Predrill: | 2.60 m Predrilled |
| G.L.: 0.00 m MSL | W.L.: -1.90 m | Date: | 27/06/2016 |
| Project: Claudelands Bridge | | Cone no.: | C10CFIIP.C15211 |
| Location: Claudelands Rd - Hamilton | | Project no.: | 2-32499.05_HA227 |
| Position: 1801125, 5815687 NZTM | | CPT no.: | 02 |



1.45

# Borehole No. BH1

| | | | |
|---|---|---|---|
| *Project:* | Claudelands Bridge Life Plan | *Coordinates:* | 1801115 E 5815716 N |
| *Client:* | Hamilton City Council | *Ref. Grid:* | NZTM — *Depth:* 30.2 m |
| *Project No.:* | 2-32499.05 | *R.L.:* | Approx. 38 m — *Inclination:* Vertical |
| *Location:* | East abutment, north side. Claudelands Bridge, Hamilton | *Datum:* | |

| GEOLOGY | MAIN DESCRIPTION / DETAIL DESCRIPTION | R.L. (m) | DEPTH (m) | GRAPHIC LOG | TESTS: SPT 'N' VALUE | TESTS: SPT BLOW COUNTS OR SHEAR VALUE | CORE: CORE TYPE | CORE: TOTAL CORE RECOVERY (%) | DRILLING: DRILLING METHOD | DRILLING: CASING | DRILLING: BASE OF HOLE & WATER LEVEL | NOTES / OTHER TESTS | INSTALLATION DETAILS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Vacuum cleared to 2.8m - no recovery | | 1, 2 | | | | VC | 0 | HQ Size, Triple Tube, Wireline Rotary Coring | HW casing installed to 3.0m | | | Coldmix |
| | Clayey SILT with minor sand; light brown. Stiff; moist. Pumiceous. From 2.86m, mottled white. | 36 | 3 | | 17 | 3// 3/3/6/5 | HQ / SPT | 133 / 111 | | | | | |
| | From 3.10m, dark brown organic inclusions. | | | | | | | | | | | | |
| | Silty CLAY with minor sand; dark brown. Stiff. | | | | | | | | | | | | |
| | Silty CLAY with some gravel, minor sand; dark brown. Gravel, medium, subangular. From 3.47m, minor gravel. | | | | | | | | | | | | |
| | SILT with minor sand; light brown, mottled red. Firm; sand, quartz. | 34 | 4 | | | | HQ | 79 | | Casing exended to 4.5m | | | |
| | From 4.06m, some medium gravels, subangular. | | | | 9 | 4// 2/2/3/2 | SPT | 84 | | | | | Backfilled with sand |
| | SILT with some sand and trace gravel; light brown. Firm to stiff; moist; moderately plastic; sand, pumiceous; gravel, fine to medium, weathered. | | 5 | | | | HQ | 110 | | | | | |
| | From 5.83m, trace to minor sand. | 32 | 6 | | 4 | 1// 1/1/1/1 | SPT | 78 | | | | | |
| | SILT with minor sand; light brown. Firm. | | | | | | HQ | 97 | | | | | |
| | From 6.90m, trace sand. | | 7 | | 3 | 1// 0/1/1/1 | SPT | 98 | | | | | |
| | SILT with minor sand; light brown. Very soft. | 30 | 8 | | | | HQ | 74 | | | | | |
| | At 7.98m, becoming soft to firm with trace gravel; gravel fine, weathered, pumiceous. | | | | | | | | | | | | |
| | From 8.32m, some sand. | | | | | | | | | | | | |
| | Sandy SILT with minor gravel; light brown, black speckled. Firm; gravel, fine, highly weathered. | | 9 | | 2 | 1// 0/1/1/0 | SPT | 80 | | | | | |
| | From 9.42m to 9.50m, saturated ('sloppy'). | | | | | | HQ | 114 | | | | | |
| | | 28 | | | | | | | | | | | |

*Notes:*
SV: Shear Vane - Perry's SV261, Const. 1.494.
Groundwater level dipped at 10.7m

| | | | |
|---|---|---|---|
| *Started:* | 20/06/2016 | *Finished:* | 20/06/2016 |
| *Drilling Co.:* | Perry Geotech | *Drilling Rig:* | Tractor |
| *Logged by:* | E Jacobs | *Checked by:* | S Cooke |

*Logged in accordance with NZ Geotechnical Society Guidelines (2005). See attached key sheet for explanation of symbols.*

Scale 1:50 @ A4

# Borehole No. BH1

| | | | | | |
|---|---|---|---|---|---|
| *Project:* | Claudelands Bridge Life Plan | *Coordinates:* | 1801115 E 5815716 N | | |
| *Client:* | Hamilton City Council | *Ref. Grid:* | NZTM | *Depth:* | 30.2 m |
| *Project No.:* | 2-32499.05 | *R.L.:* | Approx. 38 m | *Inclination:* | Vertical |
| *Location:* | East abutment, north side. Claudelands Bridge, Hamilton | *Datum:* | | | |

| GEOLOGY | MAIN DESCRIPTION / DETAIL DESCRIPTION | R.L. (m) | DEPTH (m) | GRAPHIC LOG | TESTS: SPT 'N' VALUE | TESTS: SPT BLOW COUNTS OR SHEAR VALUE | CORE: CORE TYPE | CORE: TOTAL CORE RECOVERY (%) | DRILLING: DRILLING METHOD | DRILLING: CASING | DRILLING: BASE OF HOLE & WATER LEVEL | NOTES / OTHER TESTS | INSTALLATION DETAILS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SILT with trace sand; light brown. Firm; wet; slightly plastic; black organic streaks, very closely spaced. *(continued)* From 10.02m, brownish white. From 10.20, light brownish white, sensitive. | | | | | SV: 25/0 kPa | HQ | 114 | HQ Size, Triple Tube, Wireline Rotary Coring | | | | Backfilled with sand |
| | From 10.70m, trace to minor organic streaks and blobs. | | | | | | PT | 54 | | | | | |
| | | | 11 | | 4 | 3// 1/2/0/1 | SPT | 58 | | | | | |
| | | | | | | | HQ | 113 | | | | | |
| | | 26 | 12 | | 2 | 0// 1/0/0/1 | SPT | 80 | | | | | |
| | From 12.31m to 12.41m, very soft, saturated. | | | | | | HQ | 100 | | | | | |
| | | | 13 | | | SV: 57/6 kPa | | | | | | | |
| | | | | | 1 | 0// 0/1/0/0 | SPT | 138 | | | | | |
| | SILT with some sand; brownish white. Very soft, wet to saturated, slightly plastic. | 24 | 14 | | | | HQ | 87 | | | | | |
| | SILT with trace sand; light brownish white. Very soft; saturated; slightly plastic; sensitive. | | | | | | | | | | | | |
| | | | 15 | | 0 | 1// 0/0/0/0 | SPT | 127 | | | | | |
| | From 15.53m to 15.58m, 'sloppy'. | | | | | | HQ | 92 | | | | | |
| | | 22 | 16 | | | | | | | | | SPT:SWP: Rods and hammer. Overpenetrated | |
| | | | | | 0 | 0// 0/0/0/0 | SPT | 100 | | | | | |
| | | | 17 | | | | HQ | 24 | | | | | |
| | | 20 | 18 | | | | PT | 100 | | | | | |
| | SILT; light orange. Soft to firm. | | | | | | | | | | | | |
| | At 18.74, black thin lamination, tephra? | | | | | | HQ | 108 | | | | | |
| | SILT with trace sand; light brownish white. Firm. | | 19 | | | SV: 12/0 kPa | | | | | | SPT:SWP: Rods only. | |
| | | | | | 0 | 0// 0/0/0/0 | SPT | 100 | | | | | |
| | | 18 | | | | | HQ | 73 | | | | | |

*Notes:*
SV: Shear Vane - Perry's SV261, Const. 1.494.
Groundwater level dipped at 10.7m

| | | | |
|---|---|---|---|
| *Started:* | 20/06/2016 | *Finished:* | 20/06/2016 |
| *Drilling Co.:* | Perry Geotech | *Drilling Rig:* | Tractor |
| *Logged by:* | E Jacobs | *Checked by:* | S Cooke |

*Logged in accordance with NZ Geotechnical Society Guidelines (2005). See attached key sheet for explanation of symbols.*

Scale 1:50 @ A4

# Borehole No. BH1

| | | | |
|---|---|---|---|
| *Project:* | Claudelands Bridge Life Plan | *Coordinates:* | 1801115 E 5815716 N |
| *Client:* | Hamilton City Council | *Ref. Grid:* | NZTM — *Depth:* 30.2 m |
| *Project No.:* | 2-32499.05 | *R.L.:* | Approx. 38 m — *Inclination:* Vertical |
| *Location:* | East abutment, north side. Claudelands Bridge, Hamilton | *Datum:* | |

| GEOLOGY | MAIN DESCRIPTION / DETAIL DESCRIPTION | R.L. (m) | DEPTH (m) | GRAPHIC LOG | TESTS: SPT 'N' VALUE | TESTS: SPT BLOW COUNTS OR SHEAR VALUE | CORE: CORE TYPE | CORE: TOTAL CORE RECOVERY (%) | DRILLING: DRILLING METHOD | DRILLING: CASING | DRILLING: BASE OF HOLE & WATER LEVEL | NOTES / OTHER TESTS | INSTALLATION DETAILS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SILT with trace sand; light brownish white. Firm.*(continued)* At 20.02m, some fine to medium pumiceous sand; minor weathered gravel, black. At 20.11m, orange staining, possible fracture/joint. Sandy SILT with minor gravel; greyish white. Firm; sand, fine to coarse, pumiceous, breaks down to silt; gravel, fine, pumiceous, subrounded. | | | | | | HQ | 73 | HQ Size, Triple Tube, Wireline Rotary Coring | | | | Backfilled with sand |
| | Silty fine to coarse SAND with some gravel, light grey. Medium dense; gravel, fine to medium, subrounded, pumice. From 20.86m, trace coarse gravel. | | 21 | | 16 | 4// 3/3/5/5 | SPT | 89 | | | | | |
| | SILT with minor sand; grey. Soft; wet; moderately plastic; sand, fine, pumiceous. Sandy SILT with trace gravel; grey. Firm; moist; moderately plastic; sand, fine to coarse, pumiceous; gravel, fine to medium, sub-rounded. | | | | | | HQ | 91 | | | | | |
| | Gravelly SAND with some silt; grey, iron staining on fissures. Well graded; non plastic; gravel, fine to medium, subrounded. | 16 | 22 | | | | | | | | | | |
| | Silty SAND; grey. Medium dense; moist; non plastic; well graded; pumiceous. Fissure, iron stained. At 22.70m, fissure, iron stained. | | | | 32 | 6// 6/10/8/8 | SPT | 71 | | | | | |
| | Sandy SILT; brown, mottled black/white. Soft to very soft; wet to saturated; sand, fine to medium; joint, iron staining. SILT with minor sand; brownish grey. Soft; wet; plastic; sand, fine. Sandy SILT with some gravel; brownish grey. Sand, fine to coarse, well graded, pumiceous; gravel, fine. Silty fine to coarse SAND with some gravel; grey. Well graded; gravel, fine to medium. Fine to coarse SAND, minor to some silt, some gravel; grey. Well graded; gravel, fine to medium. | | 23 | | | | HQ | 93 | | | | | |
| | | 14 | 24 | | 26 | 8// 5/8/6/7 | SPT | 78 | | | | | |
| | Sandy SILT with minor gravel. Soft; wet; sand, fine to coarse, pumiceous; gravel, fine. Gravelly sandy SILT; light brownish grey. Soft; non plastic; sand, fine to coarse; gravel, fine to medium. | | | | | | HQ | 95 | | | | | |
| | Gravelly SAND with some silt; grey. Non plastic; well graded; pumiceous; gravel, fine to medium, pumiceous. From 24.96m, very thinly to thinly bedded; orange staining. Silty fine SAND; grey, orange and brown colour bedding. Medium dense; moist; non plastic. Bedding thin; dark brown inclusions. Silty fine SAND with minor to medium coarse sand and trace gravel; grey. Gravel, fine to medium; pumiceous. | | 25 | | 17 | 10// 5/4/4/4 | SPT | 60 | | | | | |
| | | 12 | 26 | | | | | | | | | | |
| | Gravelly SAND with minor silt; grey. Gravel, fine to medium, pumiceous. Silty fine SAND; grey, orange mottled. Moist; non plastic; poorly graded. Silty fine to coarse SAND with minor to some gravel; grey, orange mottled. Well graded; gravel, pumiceous. | | | | | | HQ | 103 | | | | | |
| | Silty sandy fine to coarse GRAVEL; grey. Highly to completely weathered. Silty fine SAND; grey. Moist; non plastic; poorly graded. | | 27 | | 32 | 6// 7/5/10/10 | SPT | 100 | | | | | |
| | SILT with minor sand; light brownish orange. Soft to firm; moist to wet; moderately plastic; sand, fine. Silty fine SAND with trace gravel; grey, brown mottled. Moist; non plastic; gravel, fine, weathered. Silty fine to coarse SAND with minor to some gravel; grey, mottled orange. Moist; non plastic; well graded; gravel, fine to medium, subrounded. | 10 | 28 | | | | HQ | 104 | | | | | |
| | Silty fine to medium SAND with trace coarse sand and trace gravel; grey. Moist; non plastic; gravel, fine. | | | | 40 | 17// 12/7/10/11 | SPT | 71 | | | | | |
| | SILT with some sand; grey. Soft; moist; moderately plastic; sand, fine. Silty fine SAND; grey. Moist; non plastic. At 29.47m, thin silty fine to coarse SAND bed. At 29.55m, reddish brown inclusions, then thinly dark grey and greyish orange colour bedded. | | 29 | | | | HQ | 111 | | | | | |
| | | 8 | | | Ref | | SPT | 26 | | | SWL | | |

*Notes:*
SV: Shear Vane - Perry's SV261, Const. 1.494.
Groundwater level dipped at 10.7m

| | | | |
|---|---|---|---|
| *Started:* | 20/06/2016 | *Finished:* | 20/06/2016 |
| *Drilling Co.:* | Perry Geotech | *Drilling Rig:* | Tractor |
| *Logged by:* | E Jacobs | *Checked by:* | S Cooke |

*Logged in accordance with NZ Geotechnical Society Guidelines (2005). See attached key sheet for explanation of symbols.*

Scale 1:50 @ A4

# Borehole No. BH1

| | | | | | |
|---|---|---|---|---|---|
| *Project:* | Claudelands Bridge Life Plan | *Coordinates:* | 1801115 E 5815716 N | | |
| *Client:* | Hamilton City Council | *Ref. Grid:* | NZTM | *Depth:* | 30.2 m |
| *Project No.:* | 2-32499.05 | *R.L.:* | Approx. 38 m | *Inclination:* | Vertical |
| *Location:* | East abutment, north side. Claudelands Bridge, Hamilton | *Datum:* | | | |

| GEOLOGY | MAIN DESCRIPTION / DETAIL DESCRIPTION | R.L. (m) | DEPTH (m) | GRAPHIC LOG | TESTS: SPT 'N' VALUE | TESTS: SPT BLOW COUNTS OR SHEAR VALUE | CORE: CORE TYPE | CORE: TOTAL CORE RECOVERY (%) | DRILLING: DRILLING METHOD | DRILLING: CASING | DRILLING: BASE OF HOLE & WATER LEVEL | NOTES / OTHER TESTS | INSTALLATION DETAILS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Silty fine SAND; grey. Moist; non plastic.*(continued)* | | | | Ref | 18// 11/27/12 for 40mm | SPT | 26 | | | 10.70m | | |
| | END OF BOREHOLE AT 30.2m - Target Depth Reached | | | | | | | | | | | | |
| | | | 31 | | | | | | | | | | |
| | | 6 | 32 | | | | | | | | | | |
| | | | 33 | | | | | | | | | | |
| | | 4 | 34 | | | | | | | | | | |
| | | | 35 | | | | | | | | | | |
| | | 2 | 36 | | | | | | | | | | |
| | | | 37 | | | | | | | | | | |
| | | 0 | 38 | | | | | | | | | | |
| | | | 39 | | | | | | | | | | |
| | | -2 | | | | | | | | | | | |

*Notes:*
SV: Shear Vane - Perry's SV261, Const. 1.494.
Groundwater level dipped at 10.7m

| | | | |
|---|---|---|---|
| *Started:* | 20/06/2016 | *Finished:* | 20/06/2016 |
| *Drilling Co.:* | Perry Geotech | *Drilling Rig:* | Tractor |
| *Logged by:* | E Jacobs | *Checked by:* | S Cooke |

*Logged in accordance with NZ Geotechnical Society Guidelines (2005). See attached key sheet for explanation of symbols.*
Scale 1:50 @ A4

# Borehole No. BH1

| | | | | | |
|---|---|---|---|---|---|
| *Project:* | Claudelands Bridge Life Plan | *Coordinates:* | 1801115 E 5815716 N | | |
| *Client:* | Hamilton City Council | *Ref. Grid:* | NZTM | *Depth:* | 30.2 m |
| *Project No.:* | 2-32499.05 | *R.L.:* | Approx. 38 m | *Inclination:* | Vertical |
| *Location:* | East abutment, north side. Claudelands Bridge, Hamilton | *Datum:* | | | |

## PHOTOGRAPHS

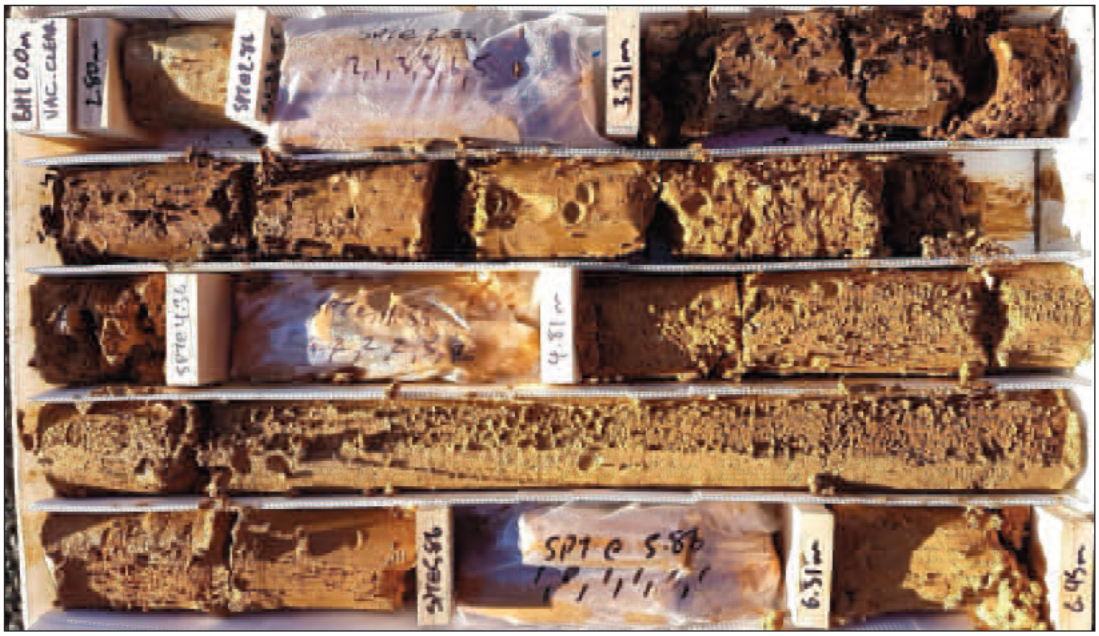



Photo BH1.1
Box 1: 0.00m to 6.45m

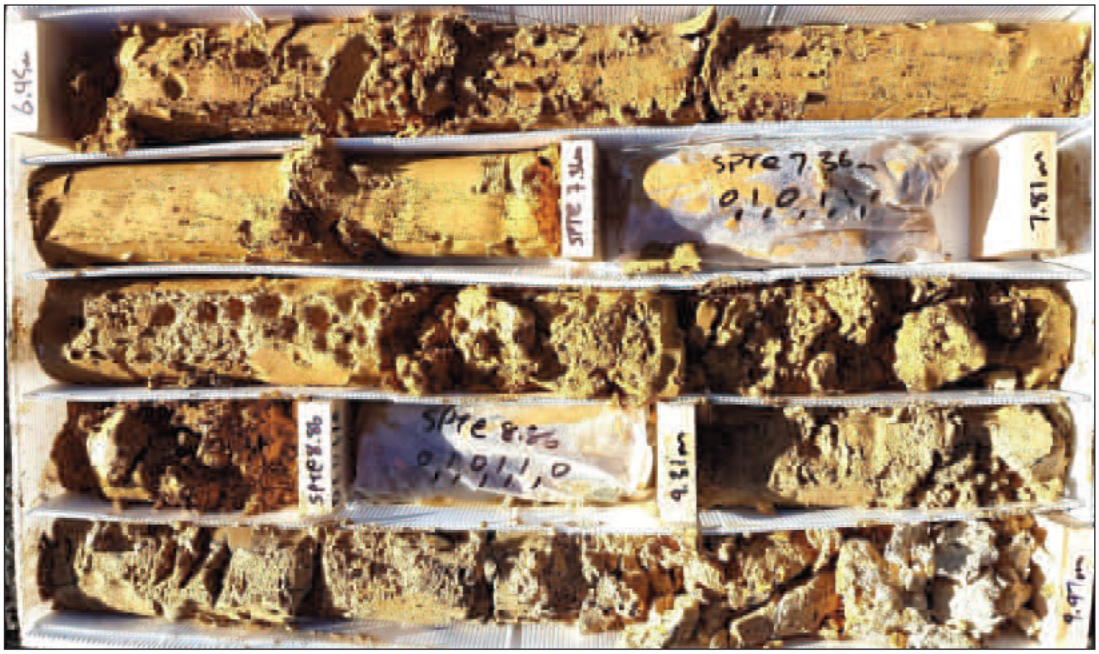



Photo BH1.2
Box 2: 6.45m to 9.97m

*Notes:*
SV: Shear Vane - Perry's SV261, Const. 1.494.
Groundwater level dipped at 10.7m

| | | | |
|---|---|---|---|
| *Started:* | 20/06/2016 | *Finished:* | 20/06/2016 |
| *Drilling Co.:* | Perry Geotech | *Drilling Rig:* | Tractor |
| *Logged by:* | E Jacobs | *Checked by:* | S Cooke |

*Logged in accordance with NZ Geotechnical Society Guidelines (2005). See attached key sheet for explanation of symbols.*
Scale 1:50 @ A4

# Borehole No. BH1

| | | | | | |
|---|---|---|---|---|---|
| *Project:* | Claudelands Bridge Life Plan | *Coordinates:* | 1801115 E 5815716 N | | |
| *Client:* | Hamilton City Council | *Ref. Grid:* | NZTM | *Depth:* | 30.2 m |
| *Project No.:* | 2-32499.05 | *R.L.:* | Approx. 38 m | *Inclination:* | Vertical |
| *Location:* | East abutment, north side. Claudelands Bridge, Hamilton | *Datum:* | | | |

## PHOTOGRAPHS


Photo BH1.3
Box 3: 9.97m to 14.03m


Photo BH1.4
Box 4: 14.03m to 18.77m

*Notes:*
SV: Shear Vane - Perry's SV261, Const. 1.494.
Groundwater level dipped at 10.7m

| | | | |
|---|---|---|---|
| *Started:* | 20/06/2016 | *Finished:* | 20/06/2016 |
| *Drilling Co.:* | Perry Geotech | *Drilling Rig:* | Tractor |
| *Logged by:* | E Jacobs | *Checked by:* | S Cooke |

*Logged in accordance with NZ Geotechnical Society Guidelines (2005). See attached key sheet for explanation of symbols.*
Scale 1:50 @ A4

# Borehole No. BH1

| | | | | | |
|---|---|---|---|---|---|
| *Project:* | Claudelands Bridge Life Plan | *Coordinates:* | 1801115 E 5815716 N | | |
| *Client:* | Hamilton City Council | *Ref. Grid:* | NZTM | *Depth:* | 30.2 m |
| *Project No.:* | 2-32499.05 | *R.L.:* | Approx. 38 m | *Inclination:* | Vertical |
| *Location:* | East abutment, north side. Claudelands Bridge, Hamilton | *Datum:* | | | |

## PHOTOGRAPHS

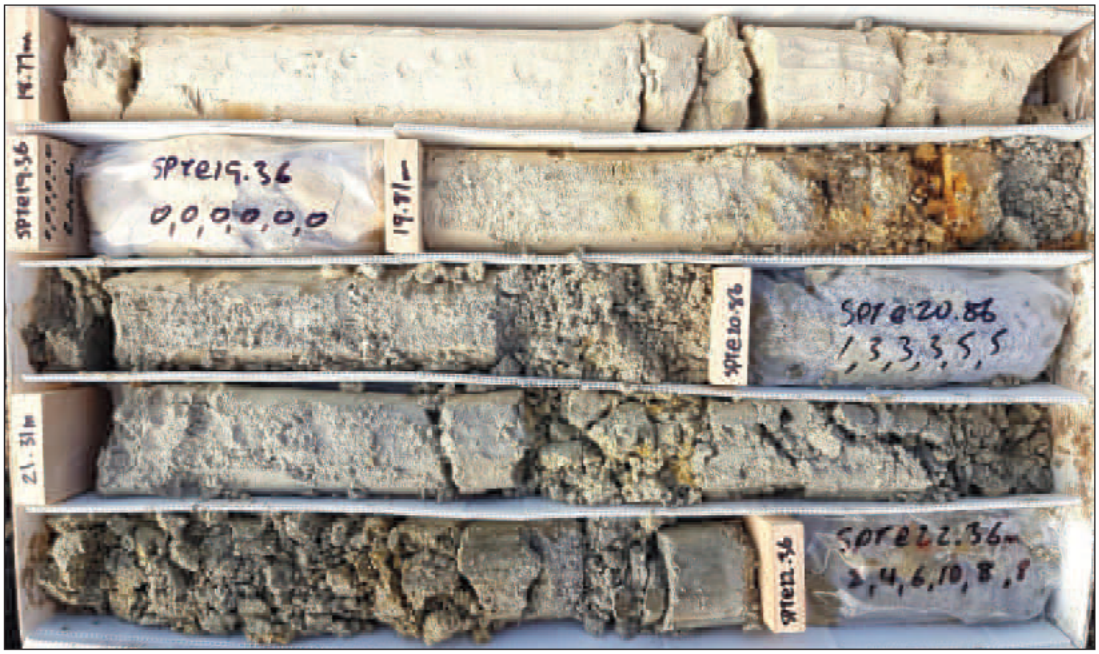



Photo BH1.5
Box 5: 18.77m to 22.81m

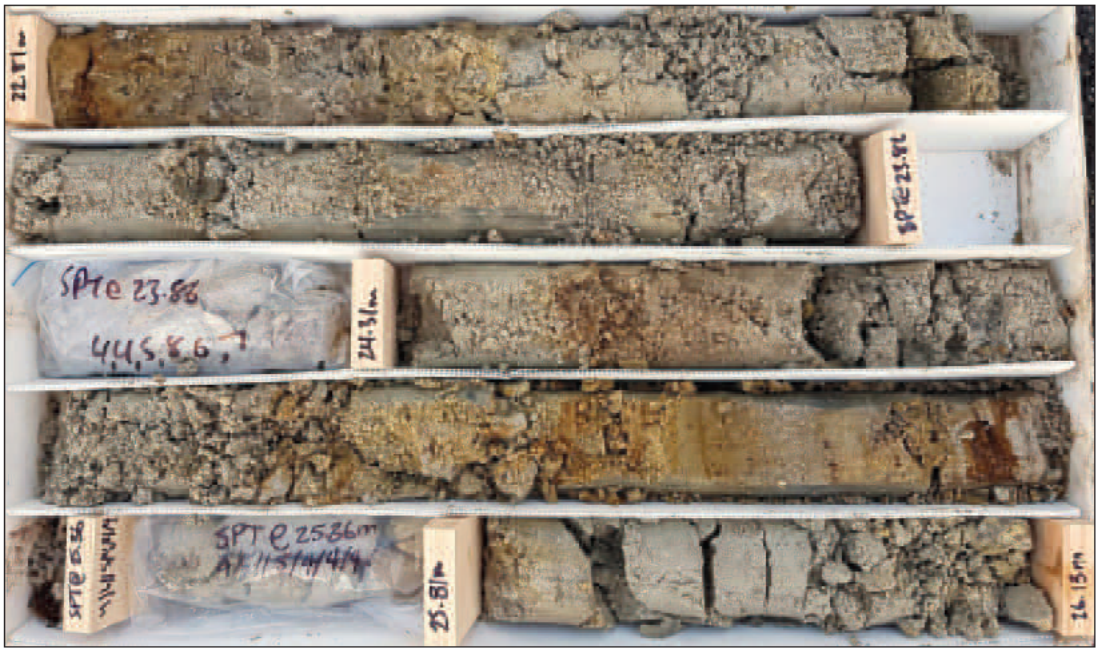



Photo BH1.6
Box 6: 22.81m to 26.13m

| | | | |
|---|---|---|---|
| *Notes:* SV: Shear Vane - Perry's SV261, Const. 1.494. Groundwater level dipped at 10.7m | | | |
| *Started:* | 20/06/2016 | *Finished:* | 20/06/2016 |
| *Drilling Co.:* | Perry Geotech | *Drilling Rig:* | Tractor |
| *Logged by:* | E Jacobs | *Checked by:* | S Cooke |

*Logged in accordance with NZ Geotechnical Society Guidelines (2005). See attached key sheet for explanation of symbols.*

Scale 1:50 @ A4

# Borehole No. BH1

| | | | | | |
|---|---|---|---|---|---|
| *Project:* | Claudelands Bridge Life Plan | *Coordinates:* | 1801115 E 5815716 N | | |
| *Client:* | Hamilton City Council | *Ref. Grid:* | NZTM | *Depth:* | 30.2 m |
| *Project No.:* | 2-32499.05 | *R.L.:* | Approx. 38 m | *Inclination:* | Vertical |
| *Location:* | East abutment, north side. Claudelands Bridge, Hamilton | *Datum:* | | | |

## PHOTOGRAPHS


Photo BH1.7
Box 7: 26.13m to 29.33m

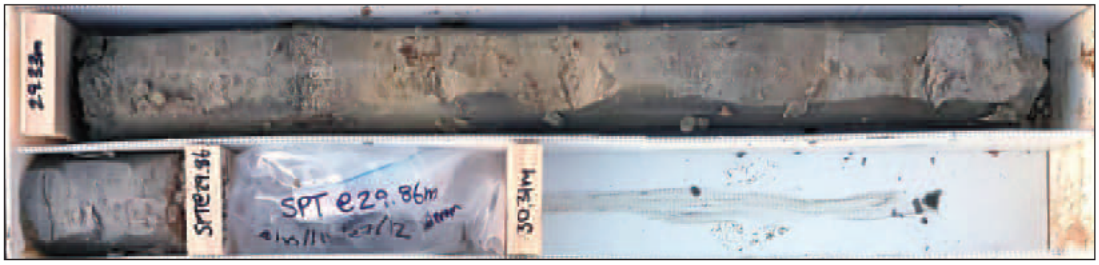



Photo BH1.8
Box 8: 29.33m to 30.20m EoBH

*Notes:*
SV: Shear Vane - Perry's SV261, Const. 1.494.
Groundwater level dipped at 10.7m

| | | | |
|---|---|---|---|
| *Started:* | 20/06/2016 | *Finished:* | 20/06/2016 |
| *Drilling Co.:* | Perry Geotech | *Drilling Rig:* | Tractor |
| *Logged by:* | E Jacobs | *Checked by:* | S Cooke |

*Logged in accordance with NZ Geotechnical Society Guidelines (2005). See attached key sheet for explanation of symbols.*
Scale 1:50 @ A4

# Borehole No. BH1

| | | | | | |
|---|---|---|---|---|---|
| *Project:* | Claudelands Bridge Life Plan | *Coordinates:* | 1801115 E 5815716 N | | |
| *Client:* | Hamilton City Council | *Ref. Grid:* | NZTM | *Depth:* | 30.2 m |
| *Project No.:* | 2-32499.05 | *R.L.:* | Approx. 38 m | *Inclination:* | Vertical |
| *Location:* | East abutment, north side. Claudelands Bridge, Hamilton | *Datum:* | | | |

## PHOTOGRAPHS


Photo BH1.9
Site looking westward towards Claudelands Bridge

Photo BH1.10
Site view from footbridge over carpark

BOREHOLE SO L LOG A4 2-32499-05_CLAUDELANDS BR DGE GPJ OPUS2016_TEM GDT 1/8/16

*Notes:*
SV: Shear Vane - Perry's SV261, Const. 1.494.
Groundwater level dipped at 10.7m

| | | | |
|---|---|---|---|
| *Started:* | 20/06/2016 | *Finished:* | 20/06/2016 |
| *Drilling Co.:* | Perry Geotech | *Drilling Rig:* | Tractor |
| *Logged by:* | E Jacobs | *Checked by:* | S Cooke |

*Logged in accordance with NZ Geotechnical Society Guidelines (2005). See attached key sheet for explanation of symbols.*
Scale 1:50 @ A4

# Borehole No. BH2

| | | | |
|---|---|---|---|
| *Project:* | Claudelands Bridge Life Plan | *Coordinates:* | 1801125 E 5815687 N |
| *Client:* | Hamilton City Council | *Ref. Grid:* | NZTM — *Depth:* 30.315 m |
| *Project No.:* | 2-32499.05 | *R.L.:* | Approx. 37 m — *Inclination:* Vertical |
| *Location:* | East abutment, south side. Claudelands Bridge, Hamilton | *Datum:* | |

| GEOLOGY | MAIN DESCRIPTION / DETAIL DESCRIPTION | R.L. (m) | DEPTH (m) | GRAPHIC LOG | TESTS: SPT 'N' VALUE | TESTS: SPT BLOW COUNTS OR SHEAR VALUE | CORE: CORE TYPE | CORE: TOTAL CORE RECOVERY (%) | DRILLING: DRILLING METHOD | DRILLING: CASING | DRILLING: BASE OF HOLE & WATER LEVEL | NOTES / OTHER TESTS | INSTALLATION DETAILS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hand cleared to 1.5m. Mixture of fill and backfill material, not logged or retained. | 36 | 1 | | | | HA | 0 | HQ Size, Triple Tube, Wireline Rotary Coring | HW casing installed to 1.5m | | | Coldmix |
| | Organic SILT with some sand and minor gravel; dark brown. Very soft; saturated; moderately plastic; sand, fine to coarse; gravel, fine to coarse. SILT with some sand and minor gravel; brown. Soft; moist; plastic; sand, fine to coarse; gravel, fine. Fine SAND with some silt; brownish grey. Non plastic; poorly graded; thin to moderately thin bedding, organic fibres in joints. From 2.16m, orange staining, dark brown specs. Fine to medium SAND with minor coarse sand and minor silt; grey, orange speckled. Medium dense; poorly graded: very thin to thin bedding. | | 2 | | | | HQ | 73 | | | | | |
| | | 34 | 3 | | 27 | 5// 4/9/7/7 | SPT | 76 | | | | | |
| | Silty fine SAND; grey. Moist; moderately plastic; poorly graded. Sandy SILT with minor gravel; grey. Sand, fine to coarse; gravel, fine, quartz. Fine SAND with minor to some silt; brownish grey, mottled orange. Moist; non plastic; thin to moderately thin bedding. | | 4 | | | | HQ | 69 | | | | | |
| | SILT with trace sand; light brownish orange. Very soft; wet. Fine SAND with some silt; grey, mottled orange. Medium dense; non plastic; poorly graded; thin to moderately thin bedding. | | | | 10 | 5// 3/2/2/3 | SPT | 89 | | | | | Backfilled with sand |
| | Sandy SILT; dark grey. Firm; moist; moderately plastic; sand, fine to medium. At 5.04m, becomes silty fine to medium SAND. SILT with minor to trace sand and minor clay; dark reddish brown. Firm to stiff; moist; plastic; sand, quartz. From 5.40m to 5.73m, some clay; red, mottled black; thinly bedded. | 32 | 5 | | | | HQ | 109 | | | | | |
| | SILT with minor to some clay and minor sand; reddish light brown, mottled red/brown. Very stiff to hard; sand, fine to medium. SILT with some sand, minor to some clay, trace gravel; grey, mottled reddish orange. Sand, fine to medium; gravel, weathered, pumiceous. | | 6 | | 21 | 7// 5/7/4/5 | SPT | 71 | | | | | |
| | | 30 | 7 | | | | HQ | 103 | | | | | |
| | At 7.06m, thin bed of black sand, possible tephra. CLAY with minor silt; grey and pink banded. Firm to stiff; moist; plastic; laminated. From 7.20m, grey with pink mottles. Sandy SILT; light grey, orange mottled. Moist; plastic; sand, fine to coarse. SILT with some sand and minor gravel; reddish black. Gravel, medium to coarse, weathered. | | | | 13 | 7// 3/3/4/3 | SPT | 80 | | | | | |
| | Silty fine to coarse SAND; orange, mottled white light brown dark brown yellow. Moderately plastic; well graded. SILT with trace sand; grey. Stiff to very stiff; moist; plastic; sensitive; sand, fine. Sandy SILT ; orange, mottled white. Very stiff; moist; moderately plastic. Sand fine to coarse. Sandy SILT; grey/orange brown/light brown thinly bedded. Stiff; moderately plastic; sand, fine to coarse. | | 8 | | | | HQ | 110 | | | | | |
| | CLAY with minor silt; brownish grey. Firm; moist; plastic; thinly bedded with fine to medium black sand. Sandy silty CLAY; brownish grey, mottled orange,white, light brown. Moist; plastic; sand, fine to medium, black quartz. | 28 | 9 | | 13 | 4// 3/2/5/3 | SPT | 67 | | | | | |
| | SILT with some sand; light brownish grey. Moist; plastic; sand, fine to medium, quartz. SILT with some sand; light brown, orange, grey and black colour bedding. Moist; plastic; sand, fine to medium, quartz. Bedding very thin. | | | | | | HQ | 99 | | | | | |

*Notes:*
SV: Shear Vane - Perry's SV261, Const. 1.494.
Groundwater level dipped at 8.7m

| | | | |
|---|---|---|---|
| *Started:* | 21/06/2016 | *Finished:* | 21/06/2016 |
| *Drilling Co.:* | Perry Geotech | *Drilling Rig:* | Tractor |
| *Logged by:* | E Jacobs | *Checked by:* | S Cooke |

*Logged in accordance with NZ Geotechnical Society Guidelines (2005). See attached key sheet for explanation of symbols.*

Scale 1:50 @ A4

# Borehole No. BH2

| | | | | | |
|---|---|---|---|---|---|
| *Project:* | Claudelands Bridge Life Plan | *Coordinates:* | 1801125 E 5815687 N | | |
| *Client:* | Hamilton City Council | *Ref. Grid:* | NZTM | *Depth:* | 30.315 m |
| *Project No.:* | 2-32499.05 | *R.L.:* | Approx. 37 m | *Inclination:* | Vertical |
| *Location:* | East abutment, south side. Claudelands Bridge, Hamilton | *Datum:* | | | |

| GEOLOGY | MAIN DESCRIPTION / DETAIL DESCRIPTION | R.L. (m) | DEPTH (m) | GRAPHIC LOG | TESTS: SPT 'N' VALUE | TESTS: SPT BLOW COUNTS OR SHEAR VALUE | CORE: CORE TYPE | CORE: TOTAL CORE RECOVERY (%) | DRILLING: DRILLING METHOD | DRILLING: CASING | DRILLING: BASE OF HOLE & WATER LEVEL | NOTES / OTHER TESTS | INSTALLATION DETAILS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | From 9.62m, sandy SILT. | | | | | | | | | | | | |
| | Silty fine to coarse SAND; light brown, mottled orange black. 'Medium dense'; non plastic; pumiceous. At 9.62m, very thin bed of Clayey SILT; grey. Moist; plastic. | | | | | | HQ | 99 | | | | | |
| | SILT and sandy SILT; multicoloured, laminated to thinly bedded. Moderately plastic; moist; sand, fine to medium. *(continued)* | | | | | | | | | | | | |
| | SILT with minor sand; brownish brey mottled yellow and orange. Very soft; moist to wet; plastic; sand, fine to coarse, pumiceous. | | | | 1 | 1// 0/1/0/0 | SPT | 53 | | | | | |
| | | 26 | 11 | | | | | | | | | | |
| | From 11.19m, minor to some sand; trace weathered pumice fine gravel. At 11.34m, thin bed of black orange fine/medium sand. | | | | | | HQ | 104 | | | | | |
| | SILT with some sand and trace gravel; brownish grey, orange and brownish yellow mottled. Firm; moist; plastic; sand, fine to coarse; gravel, fine, weathered, pumiceous. | | 12 | | | | | | | | | | |
| | Sandy SILT; light brown mottled white, dark brown, brownish orange. Firm; moist; plastic; sand, fine to medium, pumiceous. SILT; yellowish brown, minor dark reddish brown modules. Firm. | | | | 4 | 4// 1/1/1/1 | SPT | 69 | | | | | |
| | Silty fine to coarse SAND; light brown mottled dark brown and brownish orange. Loose; moist to wet; non plastic; pumiceous. | | | | | | | | | | | | |
| | Sandy SILT with minor gravel; brownish white with multicoloured mottles. Sand, fine to coarse, pumiceous; gravel, fine, pumiceous. | | | | | | | | | | | | |
| | SILT; white, orange mottles. Very soft to soft; wet; plastic; very sensitive. At 12.89m, reddish staining. | 24 | 13 | | | | HQ | 93 | | | | | |
| | From 13.29m to 13.36m, dark brown organic mottles. From 13.36m, yellowish white with omage mottles. | | | | | SV: 9/0 kPa | | | | | | | |
| | | | | | | | PT | 70 | | | | | |
| | SILT with trace organic fibres; white, mottled light orange, with dark brown organic mottles. Very soft; wet; plastic; very sensitive. From 14.10m, trace fine to coarse pumiceous sand. | | 14 | | | | | | | | | | |
| | At 14.36m, very thin fine to medium pumice gravel bed. From 14.74m, white, soft. | | | | | | HQ | 108 | | | | | |
| | Organic SILT; dark brown. Firm to stiff; dry to moist; moderately plastic. | | | | | | | | | | | | |
| | SILT; dark brown, white mottled. Soft; moist to wet; plastic; very sensitive. | 22 | 15 | | | | | | | | | | |
| | SILT; light brown dark brown mottled; interbedded with white SILT with minor organic fibres, minor gravel. Gravel, fine, pumiceous; very thinly bedded. | | | | 1 | 1// 0/0/1/0 | SPT | 87 | | | | | |
| | SILT with minor to some sand; dark brown, white mottled. Very soft to soft; wet; very sensitive; sand, fine to medium, black, pumiceous. | | | | | | | | | | | | |
| | SILT with some sand and trace gravel; brownish white, mottled dark brown. Firm; moist; plastic; sand, fine to coarse, pumiceour; gravel, fine pumiceous. | | 16 | | | | HQ | 81 | HQ Size, Triple Tube, Wireline Rotary Coring | | | | Backfilled with sand |
| | Sandy SILT; brownish white, orange, dark brown and grey bedded. Moist; moderately plastic; sand, fine to coarse, pumiceous. Bedding very thinly to thinly. Trace dark brown nodules. At 16.00m, thin bed of highly weathered pumice. | | | | | | | | | | | | |
| | SILT with minor to some sand; grey, white, orange mottled. Soft; wet; plastic; sand, fine to coarse, pumiceous. Highly weathered pumice beds. | | | | | | PT | 68 | | | | | |
| | SILT with minor sand and trace gravel; brownish white. Very soft; wet; plastic; sand, fine to medium; gravel, medium to coarse, pumiceous, tephra. | 20 | 17 | | | | | | | | | 17.00-18.00m - Recovered run on second attempt | |
| | From17.61m, trace fine to coarse sand. | | | | | | HQ | 65 | | | | | |
| | | | 18 | | | | | | | | | | |
| | SILT with some sand; brownish grey, orange and brownish white bedded. Soft; wet; moderately plastic; sand, fine to medium, pumiceous. Bedding moderately thin to thin. At 18.57m, moderately thin fine sandy SILT bed. Firm. | | | | 3 | 0// 0/1/1/1 | SPT | 120 | | | | | |
| | Sandy SILT. Firm. Sand fine to coarse. | | | | | | | | | | | | |
| | Silty fine to coarse SAND; orange. wet; non plastic; well graded. | 18 | 19 | | | | HQ | 105 | | | | | |
| | SILT with minor sand; brownish grey. Very soft; sand, fine, pumiceous. | | | | | | | | | | | | |
| | Silty fine to medium SAND; light brown. Uniformly graded. | | | | | | | | | | | | |
| | Sandy SILT with trace gravel; grey. Firm to stiff; moist; non plastic; sand, fine to medium, pumiceous; gravel, fine, pumiceous. From 19.13m, sand is fine At 19.20m, yellow bed. | | | | 7 | 3// 2/1/2/2 | SPT | 76 | | | | | |
| | SILT with some sand; dark greyish brown. Firm; moist; moderately | | | | | | | | | | | | |

*Notes:*
SV: Shear Vane - Perry's SV261, Const. 1.494.
Groundwater level dipped at 8.7m

| | | | |
|---|---|---|---|
| *Started:* | 21/06/2016 | *Finished:* | 21/06/2016 |
| *Drilling Co.:* | Perry Geotech | *Drilling Rig:* | Tractor |
| *Logged by:* | E Jacobs | *Checked by:* | S Cooke |

*Logged in accordance with NZ Geotechnical Society Guidelines (2005). See attached key sheet for explanation of symbols.*

Scale 1:50 @ A4

# Borehole No. BH2

| | | | | | |
|---|---|---|---|---|---|
| *Project:* | Claudelands Bridge Life Plan | *Coordinates:* | 1801125 E 5815687 N | | |
| *Client:* | Hamilton City Council | *Ref. Grid:* | NZTM | *Depth:* | 30.315 m |
| *Project No.:* | 2-32499.05 | *R.L.:* | Approx. 37 m | *Inclination:* | Vertical |
| *Location:* | East abutment, south side. Claudelands Bridge, Hamilton | *Datum:* | | | |

| GEOLOGY | MAIN DESCRIPTION / DETAIL DESCRIPTION | R.L. (m) | DEPTH (m) | GRAPHIC LOG | TESTS: SPT 'N' VALUE | TESTS: SPT BLOW COUNTS OR SHEAR VALUE | CORE: CORE TYPE | CORE: TOTAL CORE RECOVERY (%) | DRILLING: DRILLING METHOD | DRILLING: CASING | DRILLING: BASE OF HOLE & WATER LEVEL | NOTES / OTHER TESTS | INSTALLATION DETAILS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | plastic. Sand fine. | | | | | | HQ | 92 | HQ Size, Triple Tube, Wireline Rotary Coring | | | | Backfilled with sand |
| | SILT with minor sand; brownish white. Firm to stiff; sand, fine to medium. | | | | | | | | | | | | |
| | Sandy SILT; greyish white. Moist; non plastic; sand, fine to coarse, pumiceous. | | | | | | HQ | 92 | | | | | |
| | Silty fine to coarse pumice SAND with minor to some gravel; grey. Well graded; gravel, fine to medium, pumiceous. *(continued)* | | | | | | | | | | | | |
| | Silty fine SAND; grey with white and brown laminations. Moist; non plastic; uniformly graded; pumiceous. | 16 | 21 | | | SV: UTP | | | | | | | |
| | Silty fine to coarse SAND with some gravel; multicoloured. Moist; non plastic; pumiceous; gravel, fine to medium, pumiceous. At 20.80m, thin bed of orange grey fine sandy SILT. | | | | 12 | 6// 3/3/3/3 | SPT | 80 | | | | | |
| | Sandy SILT; grey. Moist; non plastic to moderately plastic; sand, fine to coarse. | | | | | | | | | | | | |
| | Silty fine to coarse SAND with some gravel; multicoloured. Medium dense, moist; non plastic; pumiceous; gravel, fine to medium, pumiceous. At 21.30m, some medium gravel and sand is well graded. At 21.53m thin grey fine sandy SILT bed. At 21.67m thin grey fine sandy SILT bed. At 21.99m,thin grey fine silty SAND bed. | | 22 | | | | HQ | 106 | | | | | |
| | Sandy SILT; grey, orange mottled. Very stiff to hard; moist; moderately plastic; sand, fine. From 22.10m to 22.13m, bed of grey gravelly silty SAND. | | | | | | | | | | | | |
| | Gravelly silty SAND; grey. Moist to wet; non plastic; well graded; pumiceous; gravel, fine to coarse, pumiceous. | | | | 20 | 9// 3/7/4/6 | SPT | 53 | | | | | |
| | Sandy SILT with some gravel; grey, white nodules. Medium dense; wet; moderately plastic; sand, well graded; gravel, fine to medium, pumiceous. | 14 | 23 | | | | | | | | | | |
| | Gravelly silty SAND; grey. Moist to wet; non plastic; well graded; pumiceous; gravel, fine to coarse, pumiceous. From 23.19m, minor to some gravel. | | | | | | HQ | 94 | | | | | |
| | At 23.61m, moderately thin bed of silty fine to medium SAND; grey. Wet; moderately plastic. At 23.68m, moderately thin bed of silty fine to coarse SAND; grey, mottled brown. Wet; non plastic; well graded. From 23.77m, gravel fine to medium. | | 24 | | | | | | | | | | |
| | Silty fine to coarse SAND; dark grey and greyish orange laminated. Medium dense; wet; non plastic; pumiceous. | | | | 23 | 12// 5/5/7/6 | SPT | 11 | | | | | |
| | Silty fine SAND; grey. Medium dense; moist; non plastic; uniformly graded. From 24.58m, minor gravel, medium, weathered, pumice. From 24.70m, thinly spaced joints, iron staining, no gravel. | | | | | | | | | | | | |
| | Silty fine to coarse SAND with trace gravel; grey. Moist to wet; non plastic; gravel, medium to fine, weathered, pumice, subrounded, pumiceous. At 25.11m, very thin bed of gravelly fine to coarse SAND with some silt; grey. Moist to wet; non plastic. | 12 | 25 | | | | HQ | 90 | | | | | |
| | Fine to coarse SAND with some silt and trace gravel; grey. Moist to wet; non plastic; well graded; gravel, fine. At 25.36m, thin bed of brownish grey silty fine to medium SAND. From 25.39 to 25.40m, bed of grey gravelly silty SAND. Pumiceous. | | | | 13 | 15// 4/3/3/3 | SPT | 67 | | | | | |
| | Silty fine to coarse SAND with minor gravel; grey. Medium dense, moist to wet; non plastic; gravel, fine, pumice. Iron staining at 25.45m. | | 26 | | | | | | | | | | |
| | Fine gravel. Gravelly silty SAND; grey, white mottled. Moist to wet; non plastic; well graded; gravel, fine to coarse, pumice, subrounded. From 26.04m, gravel fine to medium. At 26.12m, moderately thin bed of silty fine SAND with minor medium to coarse sand; thinly bedded grey and greyish orange. | | | | | | HQ | 114 | | | | | |
| | Sandy fine to coarse GRAVEL with some silt; multicoloured. Moist; well graded; pumice. | 10 | 27 | | | | | | | | | | |
| | Silty fine SAND with minor medium to coarse sand; thinly bedded grey and greyish orange. | | | | 15 | 10// 4/5/3/3 | SPT | 18 | | | | | |
| | Silty SAND with some gravel; grey, mottled, greyish orange. Wet; non plastic; well graded; gravel, fine to medium, pumice, subrounded to sub angular. Silty fine SAND with minor medium to coarse sand; thinly bedded grey and greyish orange. | | | | | | | | | | | | |
| | Gravelly silty SAND; grey, mottled greyish orange. Medium dense; moist to wet; non plastic; well graded; gravel, fine to coarse, pumice, subrounded. | | 28 | | | | HQ | 110 | | | | | |
| | Silty fine SAND; grey. Dense; wet; non plastic; uniformly graded. Sandy SILT with trace gravel; grey. Hard; wet; moderately plastic; sand, fine to coarse; gravel, fine, weathered, pumice. | | | | Ref | 14// 14/29/7 for 5mm | SPT | 33 | | | | | |
| | Silty fine to medium SAND; grey. Very dense. Pumice. Interbedded with Sandy SILT; grey. Sand, uniformly graded, fine, pumiceous | 8 | 29 | | | | | | | | | | |
| | SAND with some silt and minor gravel; multicoloured. Well graded; gravel, fine to medium, predominately quartz. With closely spaced grey SILT beds. | | | | | | | | | | | | |
| | Sandy SILT; grey, dark grey, whitish grey laminated. Hard; wet; moderately plastic; sand, fine, uniformly graded. | | | | | | HQ | 118 | | | | | |

*Notes:*
SV: Shear Vane - Perry's SV261, Const. 1.494.
Groundwater level dipped at 8.7m

| | | | |
|---|---|---|---|
| *Started:* | 21/06/2016 | *Finished:* | 21/06/2016 |
| *Drilling Co.:* | Perry Geotech | *Drilling Rig:* | Tractor |
| *Logged by:* | E Jacobs | *Checked by:* | S Cooke |

*Logged in accordance with NZ Geotechnical Society Guidelines (2005). See attached key sheet for explanation of symbols.*

Scale 1:50 @ A4

# Borehole No. BH2

| | | | | | |
|---|---|---|---|---|---|
| *Project:* | Claudelands Bridge Life Plan | *Coordinates:* | 1801125 E 5815687 N | | |
| *Client:* | Hamilton City Council | *Ref. Grid:* | NZTM | *Depth:* | 30.315 m |
| *Project No.:* | 2-32499.05 | *R.L.:* | Approx. 37 m | *Inclination:* | Vertical |
| *Location:* | East abutment, south side. Claudelands Bridge, Hamilton | *Datum:* | | | |

| GEOLOGY | MAIN DESCRIPTION / DETAIL DESCRIPTION | R.L. (m) | DEPTH (m) | GRAPHIC LOG | TESTS: SPT 'N' VALUE | TESTS: SPT BLOW COUNTS OR SHEAR VALUE | CORE: CORE TYPE | CORE: TOTAL CORE RECOVERY (%) | DRILLING: DRILLING METHOD | DRILLING: CASING | DRILLING: BASE OF HOLE & WATER LEVEL | NOTES / OTHER TESTS | INSTALLATION DETAILS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sandy SILT; grey, dark grey, whitish grey laminated. Hard; wet; moderately plastic; sand, fine, uniformly graded.*(continued)* | | | | Ref | 18// 19/21/10 for 15mm | SPT | 0 | | | SWL 8.70m | | |
| | END OF BOREHOLE AT 30.315m - Target Depth Reached | 6 | 31 | | | | | | | | | | |
| | | | 32 | | | | | | | | | | |
| | | 4 | 33 | | | | | | | | | | |
| | | | 34 | | | | | | | | | | |
| | | 2 | 35 | | | | | | | | | | |
| | | | 36 | | | | | | | | | | |
| | | 0 | 37 | | | | | | | | | | |
| | | | 38 | | | | | | | | | | |
| | | -2 | 39 | | | | | | | | | | |

BOREHOLE SO L LOG A4 2-32499-05_CLAUDELANDS BR DGE GPJ OPUS2016_TEM GDT 1/8/16

*Notes:*
SV: Shear Vane - Perry's SV261, Const. 1.494.
Groundwater level dipped at 8.7m

| | | | |
|---|---|---|---|
| *Started:* | 21/06/2016 | *Finished:* | 21/06/2016 |
| *Drilling Co.:* | Perry Geotech | *Drilling Rig:* | Tractor |
| *Logged by:* | E Jacobs | *Checked by:* | S Cooke |

*Logged in accordance with NZ Geotechnical Society Guidelines (2005). See attached key sheet for explanation of symbols.*
Scale 1:50 @ A4

# Borehole No. BH2

| | | | | | |
|---|---|---|---|---|---|
| *Project:* | Claudelands Bridge Life Plan | *Coordinates:* | 1801125 E 5815687 N | | |
| *Client:* | Hamilton City Council | *Ref. Grid:* | NZTM | *Depth:* | 30.315 m |
| *Project No.:* | 2-32499.05 | *R.L.:* | Approx. 37 m | *Inclination:* | Vertical |
| *Location:* | East abutment, south side. Claudelands Bridge, Hamilton | *Datum:* | | | |

## PHOTOGRAPHS


Photo BH2.1
Box 1: 0.00m to 5.54m

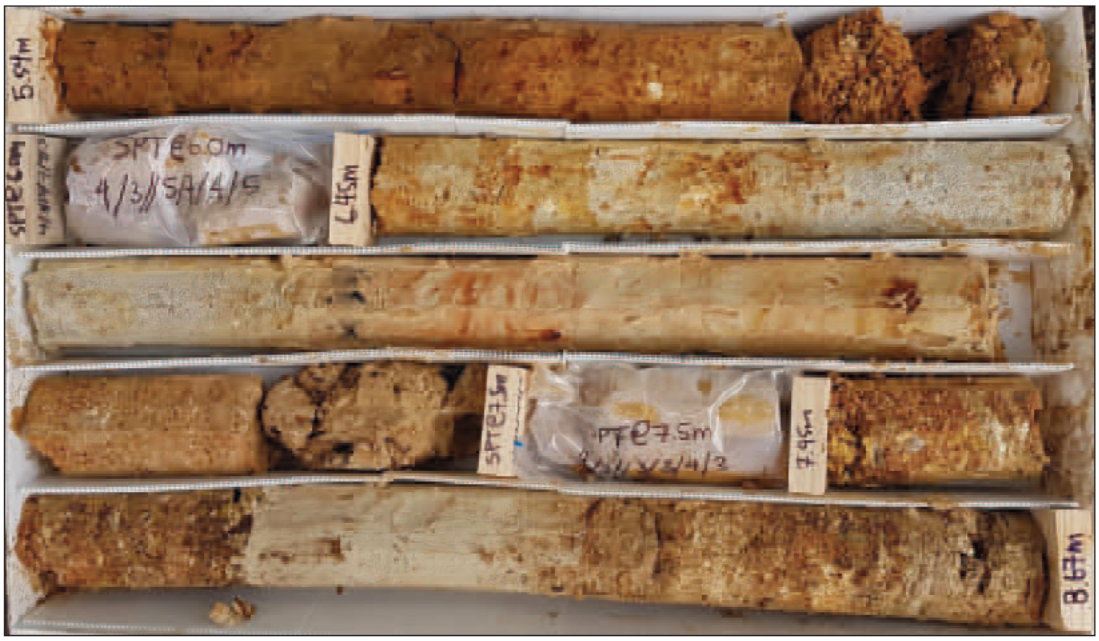



Photo BH2.2
Box 2: 5.54m to 8.67m

*Notes:*
SV: Shear Vane - Perry's SV261, Const. 1.494.
Groundwater level dipped at 8.7m

| | | | |
|---|---|---|---|
| *Started:* | 21/06/2016 | *Finished:* | 21/06/2016 |
| *Drilling Co.:* | Perry Geotech | *Drilling Rig:* | Tractor |
| *Logged by:* | E Jacobs | *Checked by:* | S Cooke |

*Logged in accordance with NZ Geotechnical Society Guidelines (2005). See attached key sheet for explanation of symbols.*
Scale 1:50 @ A4

# Borehole No. BH2

| | | | | | |
|---|---|---|---|---|---|
| *Project:* | Claudelands Bridge Life Plan | *Coordinates:* | 1801125 E 5815687 N | | |
| *Client:* | Hamilton City Council | *Ref. Grid:* | NZTM | *Depth:* | 30.315 m |
| *Project No.:* | 2-32499.05 | *R.L.:* | Approx. 37 m | *Inclination:* | Vertical |
| *Location:* | East abutment, south side. Claudelands Bridge, Hamilton | *Datum:* | | | |

## PHOTOGRAPHS


Photo BH2.3
Box 3: 8.67m to 11.83m


Photo BH2.4
Box 4: 11.83m to 15.60m

BOREHOLE SOIL LOG A4 2-32499-05_CLAUDELANDS BR DGE.GPJ OPUS2016_TEM.GDT 1/8/16

*Notes:*
SV: Shear Vane - Perry's SV261, Const. 1.494.
Groundwater level dipped at 8.7m

| | | | |
|---|---|---|---|
| *Started:* | 21/06/2016 | *Finished:* | 21/06/2016 |
| *Drilling Co.:* | Perry Geotech | *Drilling Rig:* | Tractor |
| *Logged by:* | E Jacobs | *Checked by:* | S Cooke |

*Logged in accordance with NZ Geotechnical Society Guidelines (2005). See attached key sheet for explanation of symbols.*
Scale 1:50 @ A4

# Borehole No. BH2

| | | | | | |
|---|---|---|---|---|---|
| *Project:* | Claudelands Bridge Life Plan | *Coordinates:* | 1801125 E 5815687 N | | |
| *Client:* | Hamilton City Council | *Ref. Grid:* | NZTM | *Depth:* | 30.315 m |
| *Project No.:* | 2-32499.05 | *R.L.:* | Approx. 37 m | *Inclination:* | Vertical |
| *Location:* | East abutment, south side. Claudelands Bridge, Hamilton | *Datum:* | | | |

## PHOTOGRAPHS


Photo BH2.5
Box 5: 15.60m to 19.95m


Photo BH2.6
Box 6: 19.95m to 23.34m

*Notes:*
SV: Shear Vane - Perry's SV261, Const. 1.494.
Groundwater level dipped at 8.7m

| | | | |
|---|---|---|---|
| *Started:* | 21/06/2016 | *Finished:* | 21/06/2016 |
| *Drilling Co.:* | Perry Geotech | *Drilling Rig:* | Tractor |
| *Logged by:* | E Jacobs | *Checked by:* | S Cooke |

*Logged in accordance with NZ Geotechnical Society Guidelines (2005). See attached key sheet for explanation of symbols.*
Scale 1:50 @ A4

# Borehole No. BH2

| | | | | | |
|---|---|---|---|---|---|
| *Project:* | Claudelands Bridge Life Plan | *Coordinates:* | 1801125 E 5815687 N | | |
| *Client:* | Hamilton City Council | *Ref. Grid:* | NZTM | *Depth:* | 30.315 m |
| *Project No.:* | 2-32499.05 | *R.L.:* | Approx. 37 m | *Inclination:* | Vertical |
| *Location:* | East abutment, south side. Claudelands Bridge, Hamilton | *Datum:* | | | |

## PHOTOGRAPHS


Photo BH2.7
Box 7: 23.34m to 26.90m


Photo BH2.8
Box 8: 26390m to 30.315m EoBH

*Notes:*
SV: Shear Vane - Perry's SV261, Const. 1.494.
Groundwater level dipped at 8.7m

| | | | |
|---|---|---|---|
| *Started:* | 21/06/2016 | *Finished:* | 21/06/2016 |
| *Drilling Co.:* | Perry Geotech | *Drilling Rig:* | Tractor |
| *Logged by:* | E Jacobs | *Checked by:* | S Cooke |

*Logged in accordance with NZ Geotechnical Society Guidelines (2005). See attached key sheet for explanation of symbols.*
Scale 1:50 @ A4

# Borehole No. BH2

| | | | | | |
|---|---|---|---|---|---|
| *Project:* | Claudelands Bridge Life Plan | *Coordinates:* | 1801125 E 5815687 N | | |
| *Client:* | Hamilton City Council | *Ref. Grid:* | NZTM | *Depth:* | 30.315 m |
| *Project No.:* | 2-32499.05 | *R.L.:* | Approx. 37 m | *Inclination:* | Vertical |
| *Location:* | East abutment, south side. Claudelands Bridge, Hamilton | *Datum:* | | | |

## PHOTOGRAPHS

Photo BH2.9
View north towards site from base of path, pre-drilling.

Photo BH2.10
View westwards over site, post-drilling.

BOREHOLE SO L LOG A4 2-32499-05_CLAUDELANDS BR DGE GPJ OPUS2016_TEM GDT 1/8/16

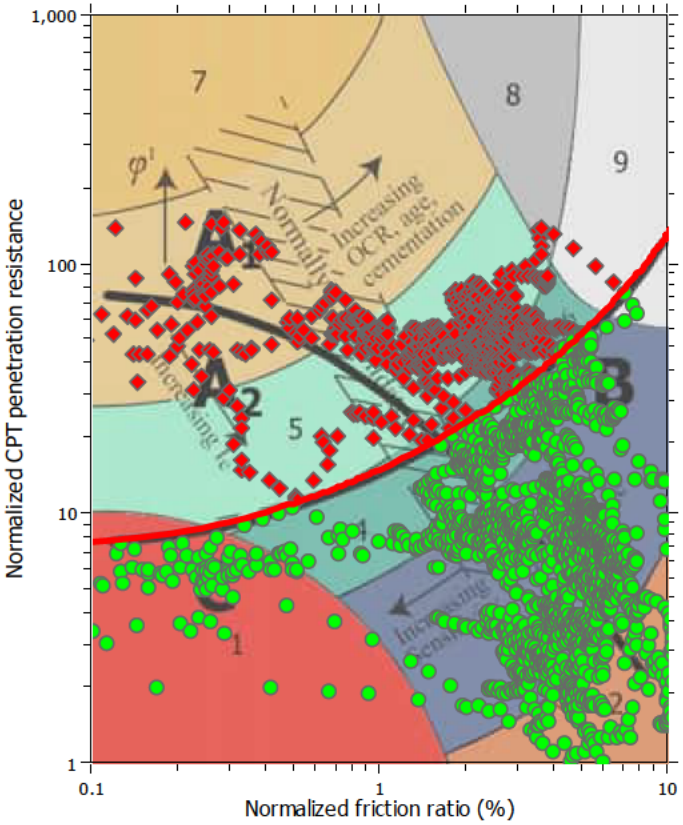
*Notes:*
SV: Shear Vane - Perry's SV261, Const. 1.494.
Groundwater level dipped at 8.7m

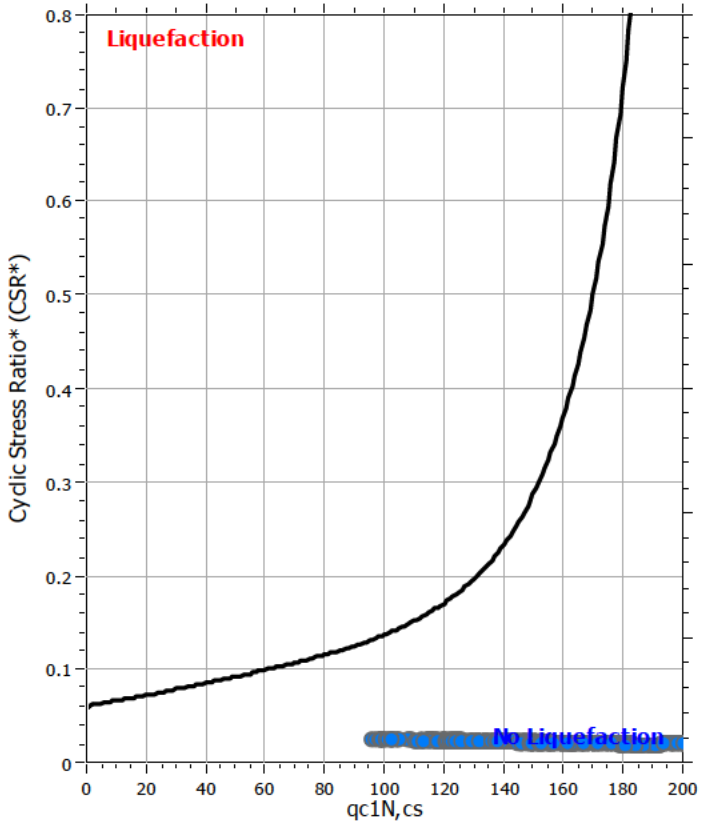
| | | | |
|---|---|---|---|
| *Started:* | 21/06/2016 | *Finished:* | 21/06/2016 |
| *Drilling Co.:* | Perry Geotech | *Drilling Rig:* | Tractor |
| *Logged by:* | E Jacobs | *Checked by:* | S Cooke |

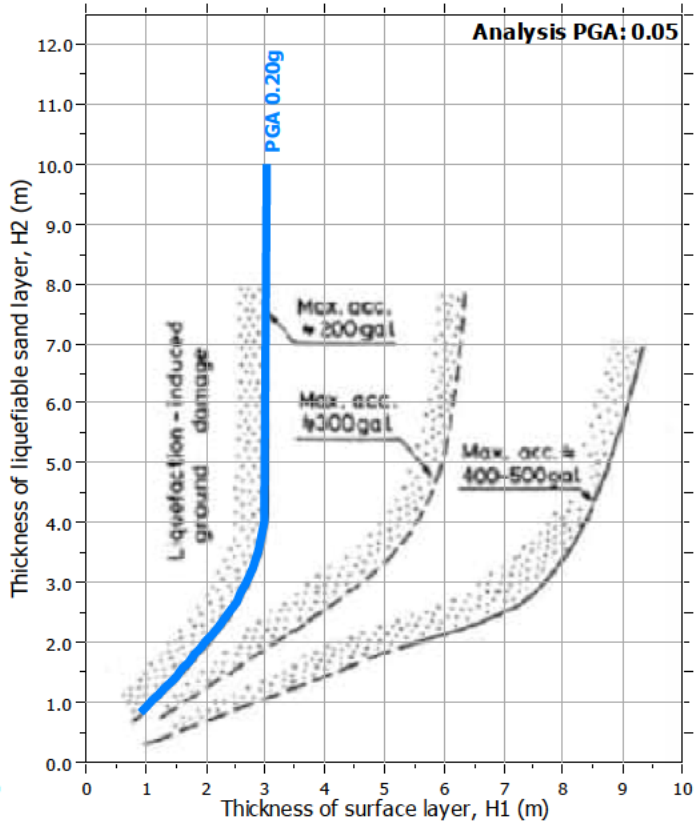
*Logged in accordance with NZ Geotechnical Society Guidelines (2005). See attached key sheet for explanation of symbols.*
Scale 1:50 @ A4

# Appendix C
# Liquefaction Analysis Results

# Liquefaction analysis summary plots



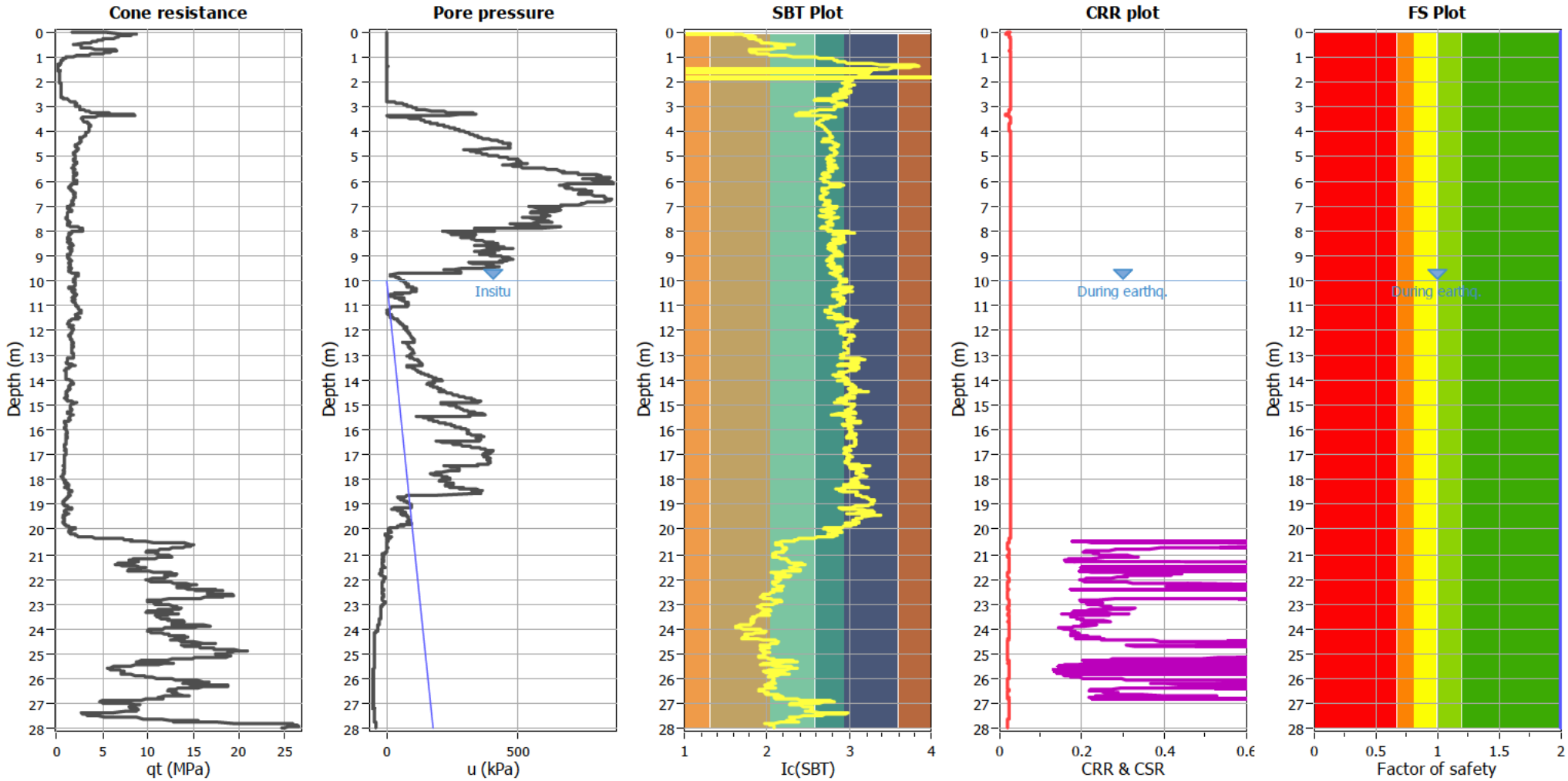

## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 10.00 m | Fill weight: | N/A |
| Fines correction method: | B&I (2014) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 5.90 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.05 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 m | Fill height: | N/A | Limit depth: | N/A |

**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

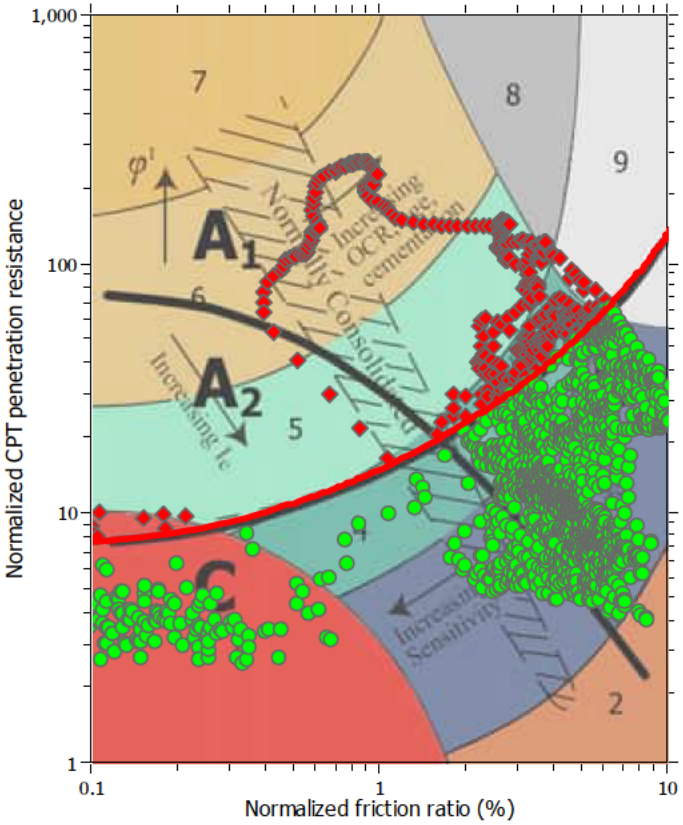
**Project:** **2-WLASS.BN Geotechnical and Risk Assessment Sonning Carpark SLS**
**Location:** **Sonning Carpark - 191 River Road**

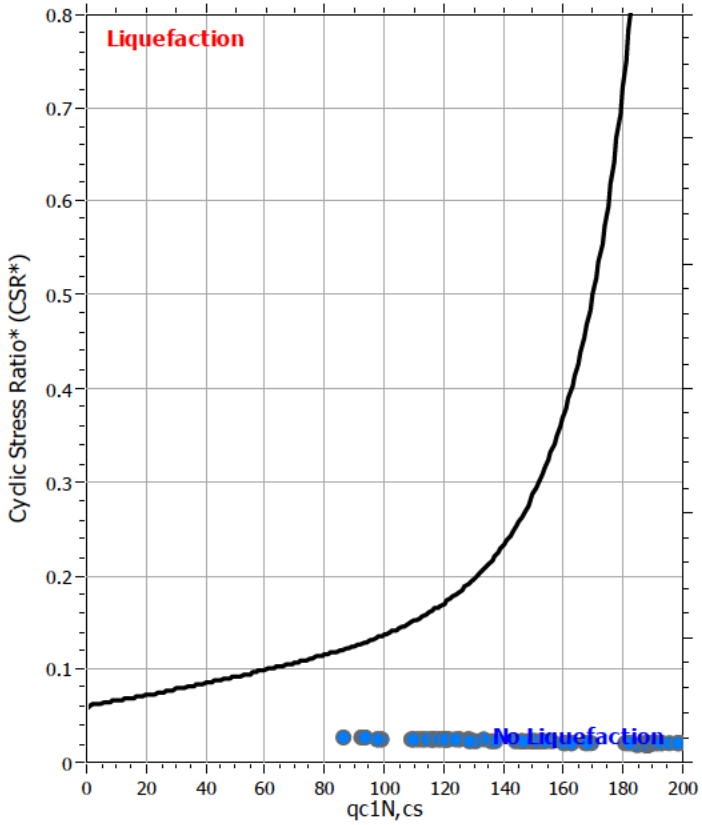
**CPT: CPT01**
Total depth: 27.97 m

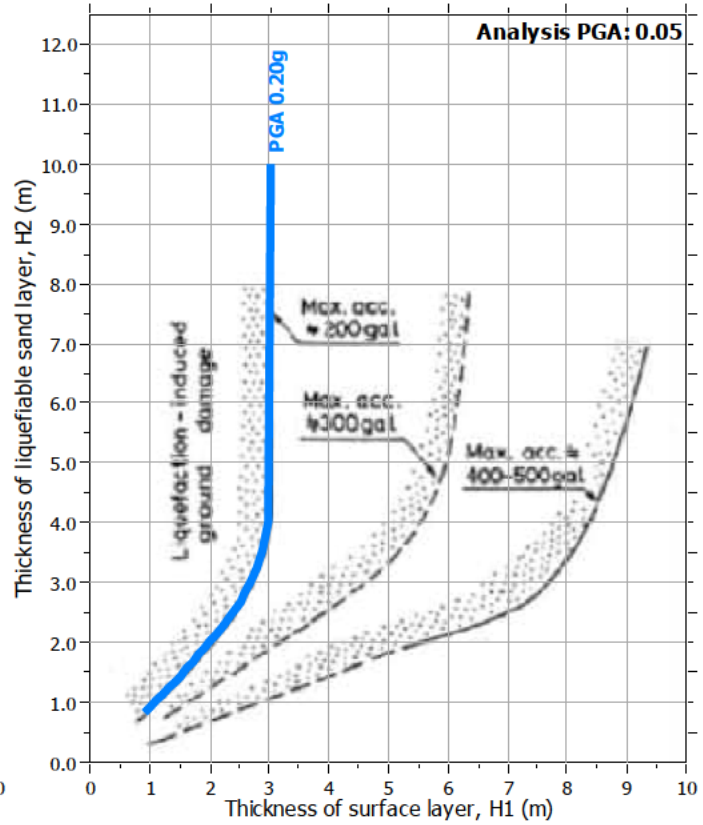



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | G.W.T. (in-situ): | 10.00 m | Use fill: | No | Clay like behavior applied: | . |
| Fines correction method: | B&I (2014) | G.W.T. (earthq.): | 10.00 m | Fill height: | N/A | Limit depth applied: | No |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth: | N/A |
| Earthquake magnitude $M_w$: | 5.90 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method based |
| Peak ground acceleration: | 0.05 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |

# Liquefaction analysis summary plots



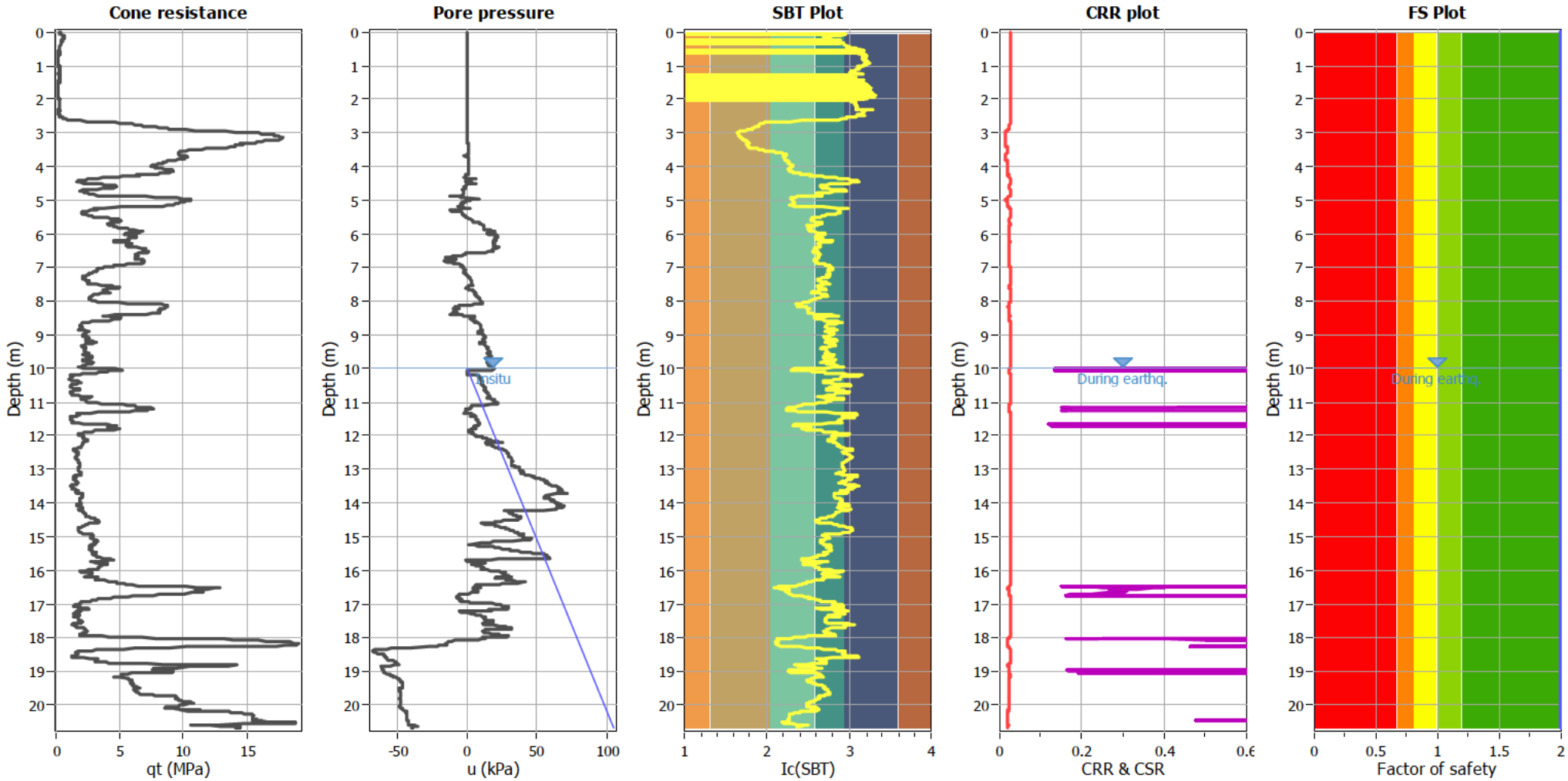

## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 10.00 m | Fill weight: | N/A |
| Fines correction method: | B&I (2014) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 5.90 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.05 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 m | Fill height: | N/A | Limit depth: | N/A |

**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

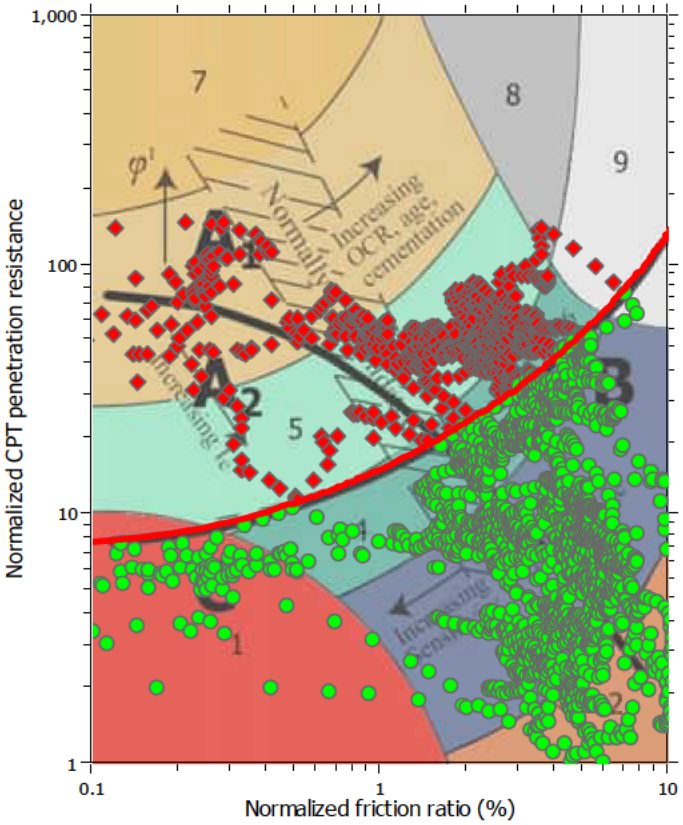
**Project:** **2-WLASS.BN Geotechnical and Risk Assessment Sonning Carpark SLS**
**Location:** **Sonning Carpark - 191 River Road**

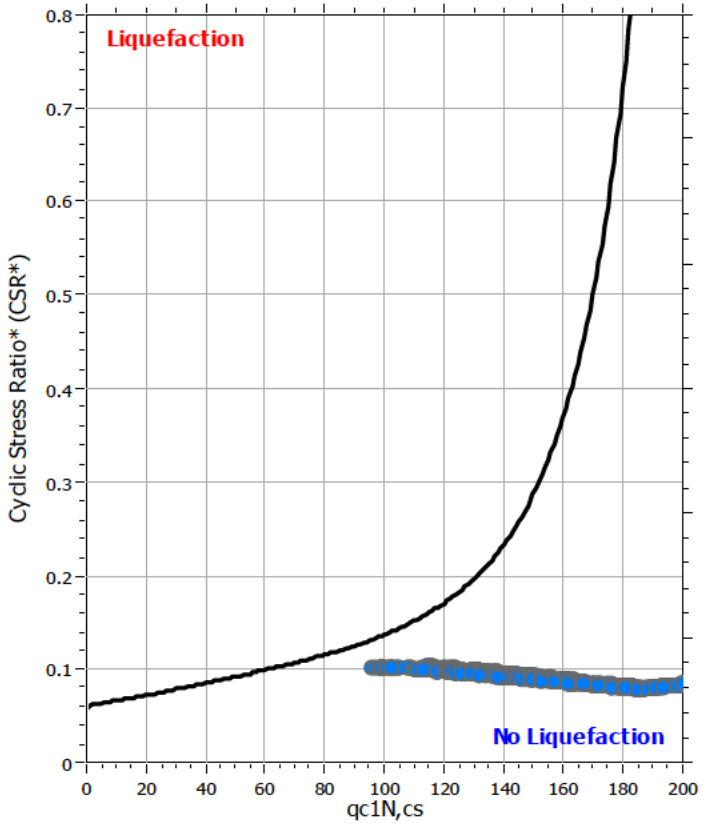
**CPT: CPT02**
Total depth: 20.69 m

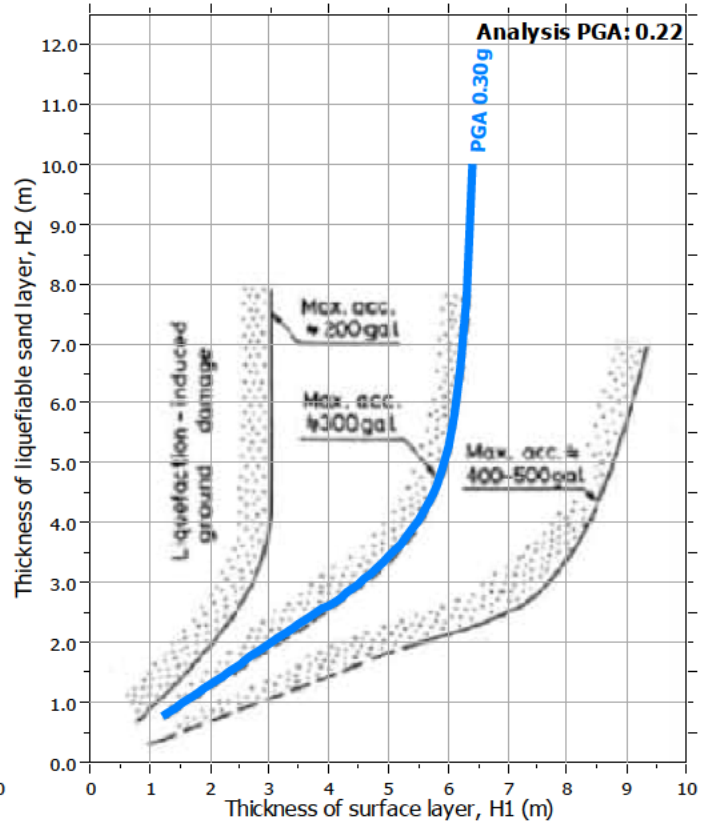



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | G.W.T. (in-situ): | 10.00 m | Use fill: | No | Clay like behavior applied: | . |
| Fines correction method: | B&I (2014) | G.W.T. (earthq.): | 10.00 m | Fill height: | N/A | Limit depth applied: | No |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth: | N/A |
| Earthquake magnitude $M_w$: | 5.90 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method based |
| Peak ground acceleration: | 0.05 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |

# Liquefaction analysis summary plots



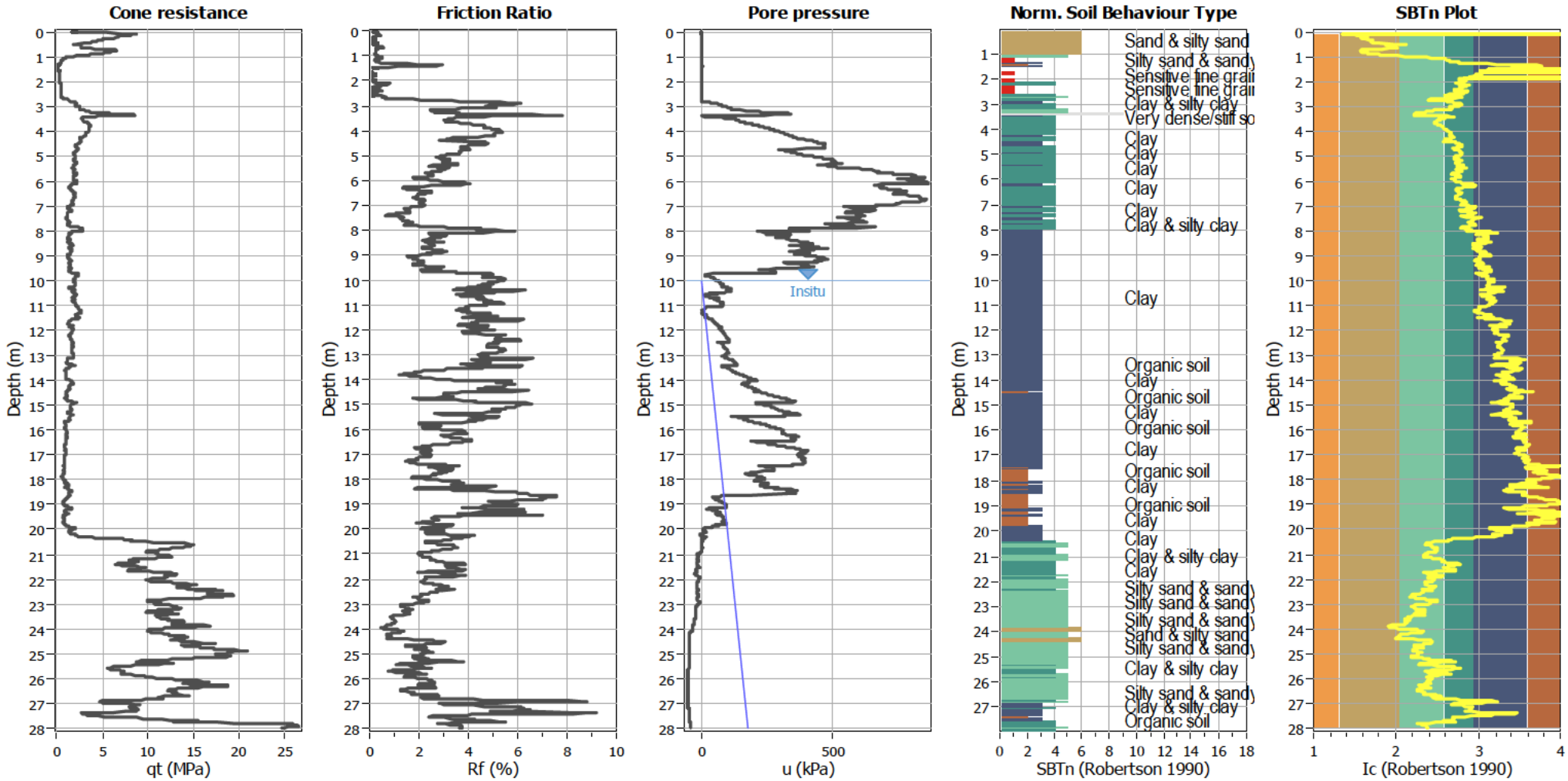

## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 10.00 m | Fill weight: | N/A |
| Fines correction method: | B&I (2014) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 5.90 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.22 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 m | Fill height: | N/A | Limit depth: | N/A |

**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

**Project:** **2-WLASS Geotech and Risk Assessment - Intermediate IL3 and ULS for IL2**
**Location:** **Sonning Carpark**

**CPT: CPT01**
Total depth: 27.97 m

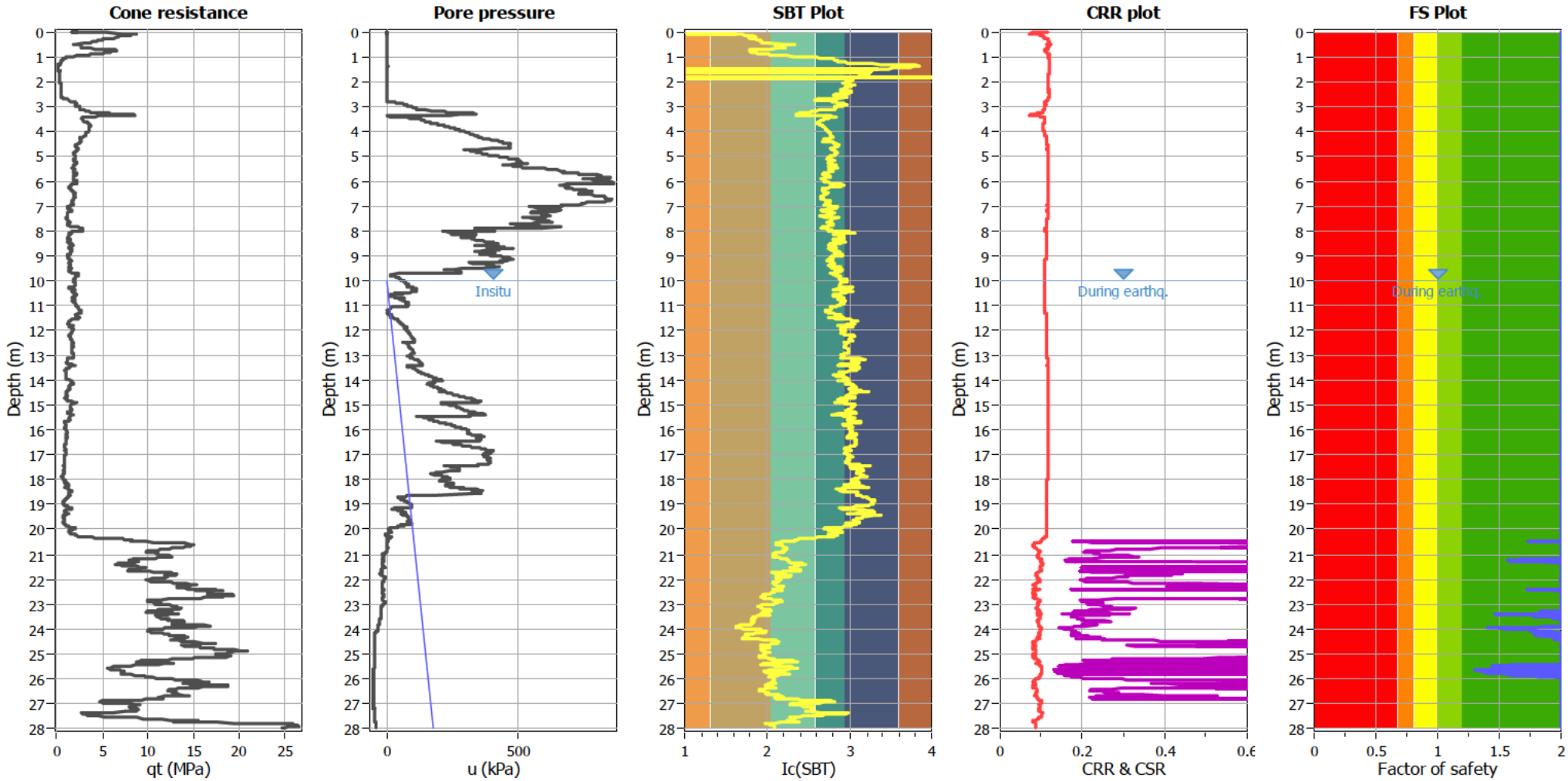



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | G.W.T. (in-situ): | 10.00 m | Use fill: | No | Clay like behavior applied: | . |
| Fines correction method: | B&I (2014) | G.W.T. (earthq.): | 10.00 m | Fill height: | N/A | Limit depth applied: | No |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth: | N/A |
| Earthquake magnitude $M_w$: | 5.90 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method based |
| Peak ground acceleration: | 0.22 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |

**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

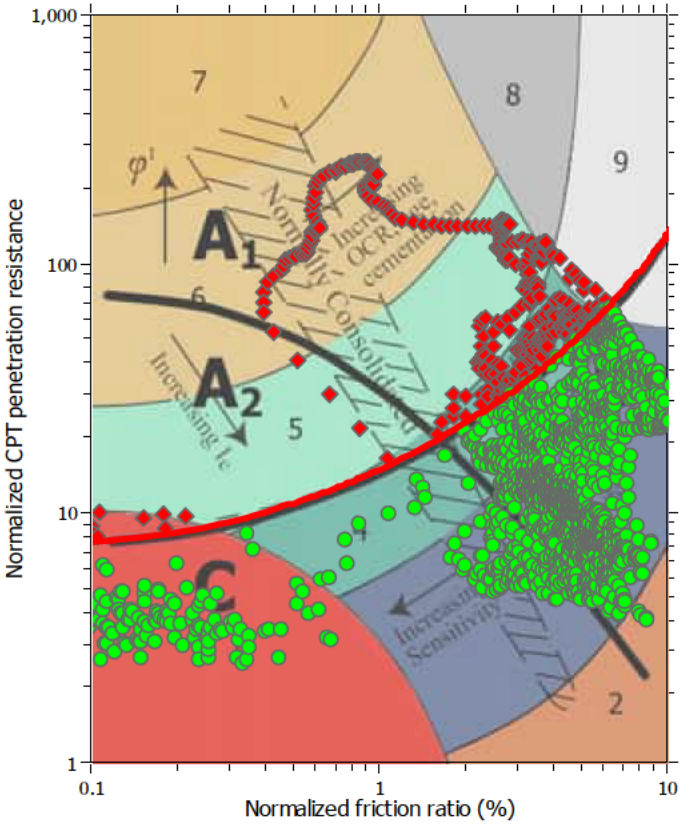
**Project:** **2-WLASS Geotech and Risk Assessment - Intermediate IL3 and ULS for IL2**
**Location:** **Sonning Carpark**

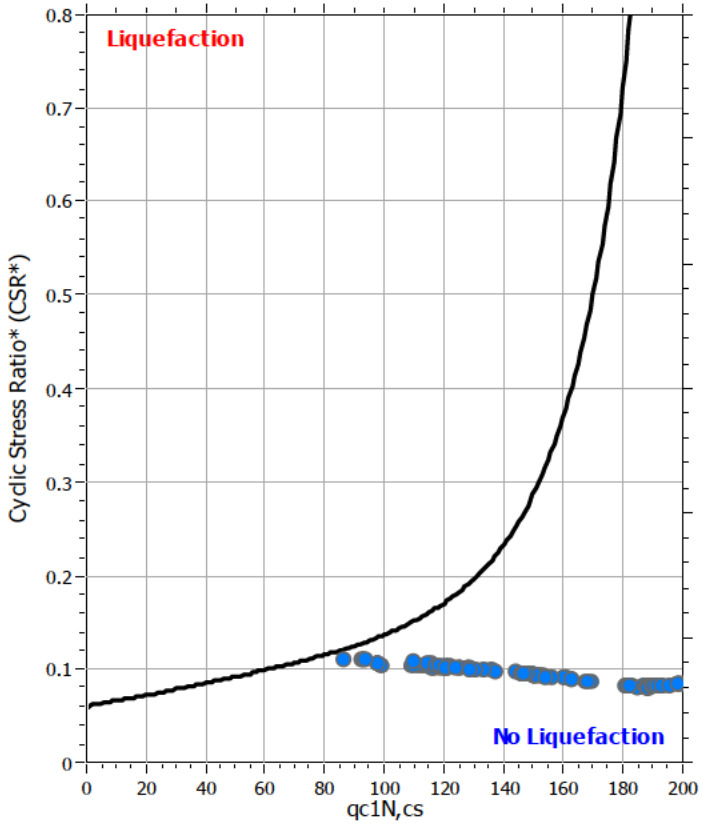
**CPT: CPT01**
Total depth: 27.97 m

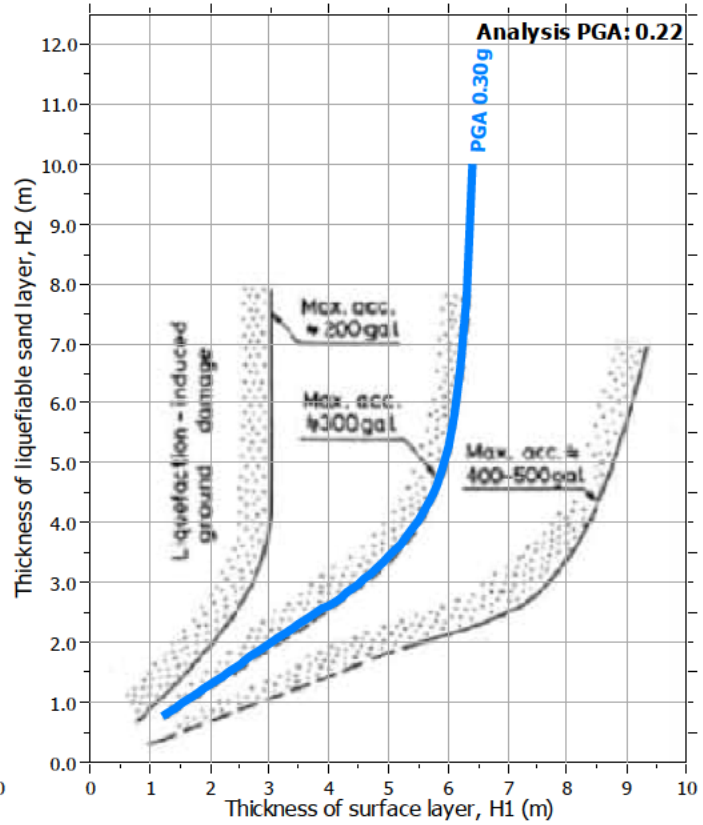



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | G.W.T. (in-situ): | 10.00 m | Use fill: | No | Clay like behavior | |
| Fines correction method: | B&I (2014) | G.W.T. (earthq.): | 10.00 m | Fill height: | N/A | applied: | . |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth applied: | No |
| Earthquake magnitude $M_w$: | 5.90 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | Limit depth: | N/A |
| Peak ground acceleration: | 0.22 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | MSF method: | Method based |

# Liquefaction analysis summary plots



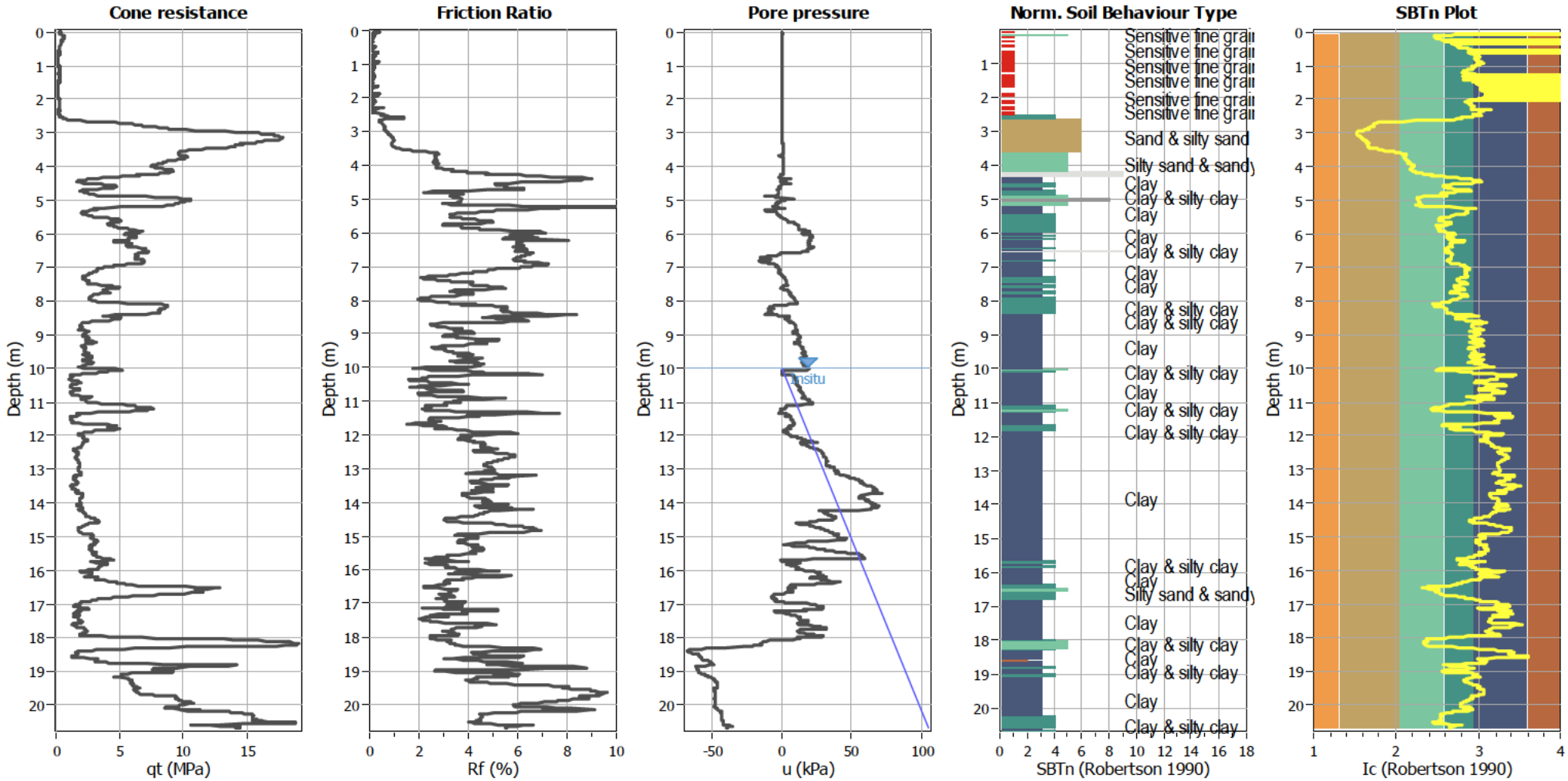

## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 10.00 m | Fill weight: | N/A |
| Fines correction method: | B&I (2014) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 5.90 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.22 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 m | Fill height: | N/A | Limit depth: | N/A |

**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

**Project:** **2-WLASS Geotech and Risk Assessment - Intermediate IL3 and ULS for IL2**
**Location:** **Sonning Carpark**

**CPT: CPT02**
Total depth: 20.69 m

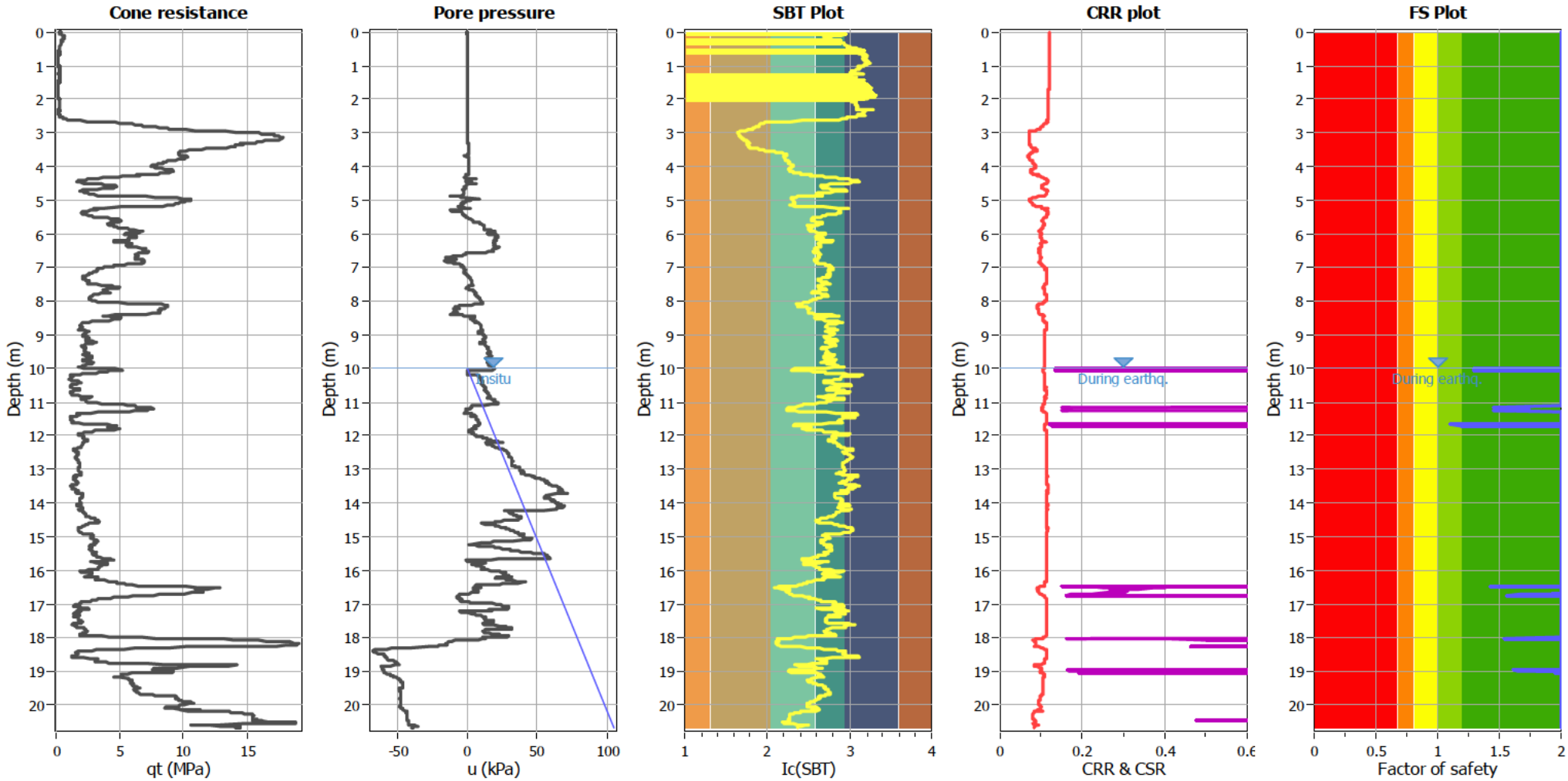



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | G.W.T. (in-situ): | 10.00 m | Use fill: | No | Clay like behavior applied: | . |
| Fines correction method: | B&I (2014) | G.W.T. (earthq.): | 10.00 m | Fill height: | N/A | | |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth applied: | No |
| Earthquake magnitude $M_w$: | 5.90 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | Limit depth: | N/A |
| Peak ground acceleration: | 0.22 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | MSF method: | Method based |

**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

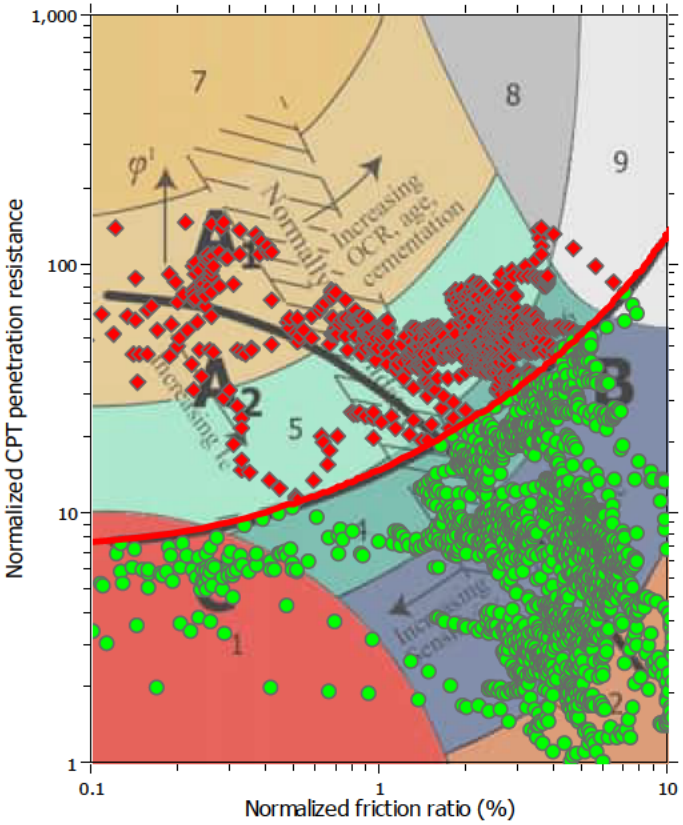
**Project:** **2-WLASS Geotech and Risk Assessment - Intermediate IL3 and ULS for IL2**
**Location:** **Sonning Carpark**

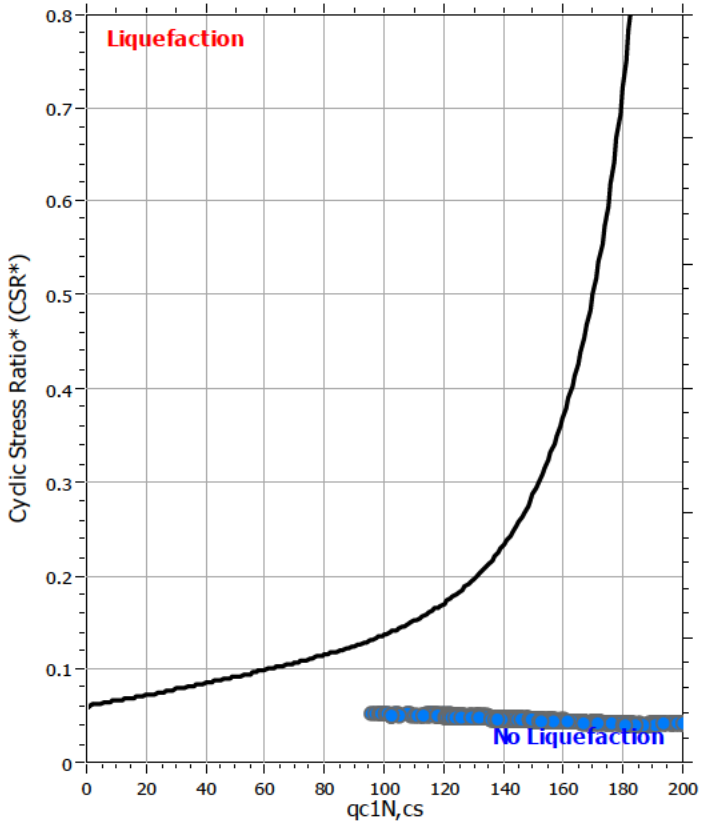
**CPT: CPT02**
Total depth: 20.69 m

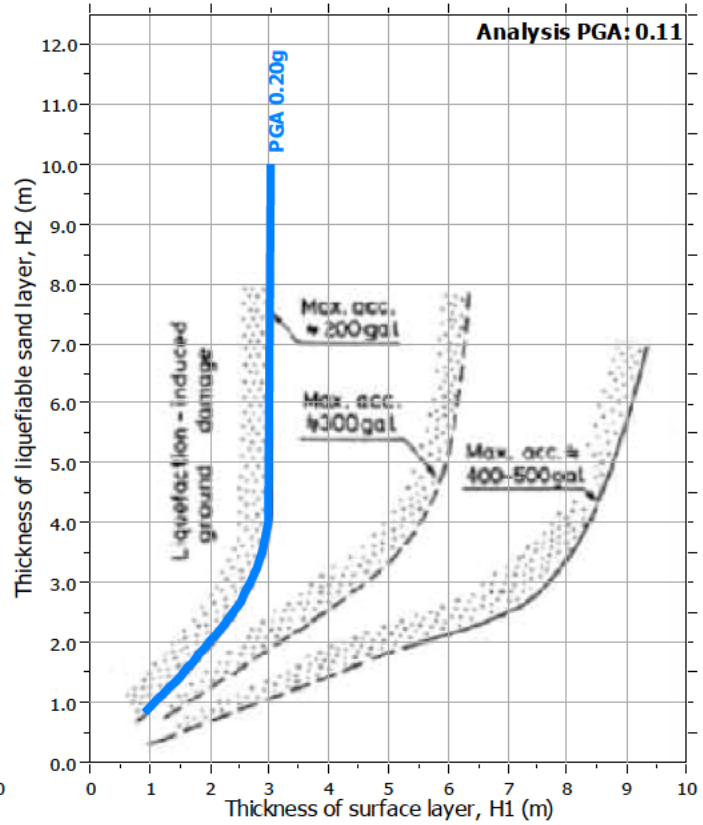



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | G.W.T. (in-situ): | 10.00 m | Use fill: | No | Clay like behavior applied: | . |
| Fines correction method: | B&I (2014) | G.W.T. (earthq.): | 10.00 m | Fill height: | N/A | Limit depth applied: | No |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth: | N/A |
| Earthquake magnitude $M_w$: | 5.90 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method based |
| Peak ground acceleration: | 0.22 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |

# Liquefaction analysis summary plots



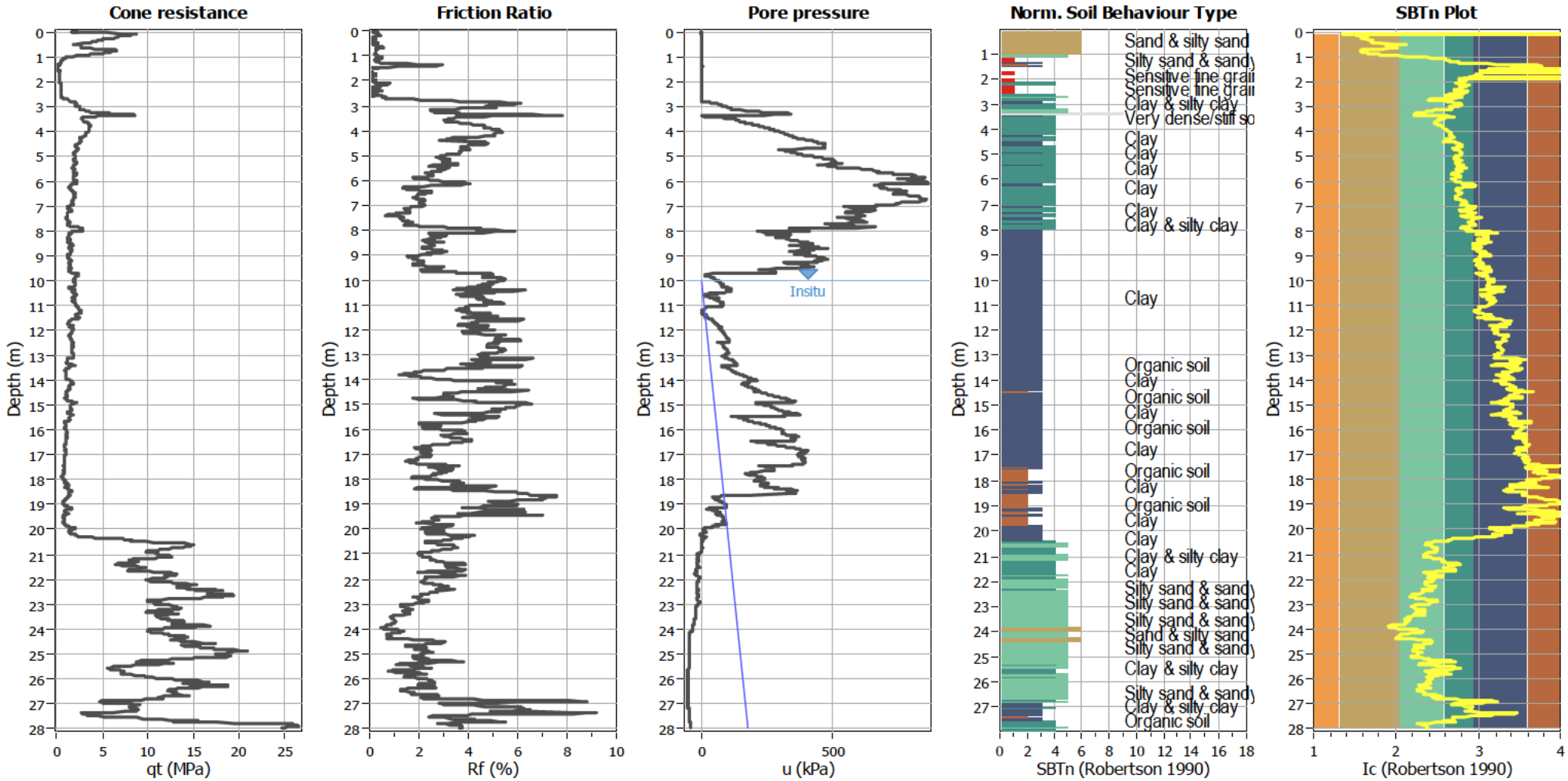

## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 10.00 m | Fill weight: | N/A |
| Fines correction method: | B&I (2014) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 5.90 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.11 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 m | Fill height: | N/A | Limit depth: | N/A |

**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

**Project:** 2-WLASS.BN Geotech and Risk Assessment Sonning Carpark - Intermeadiate IL2
**Location:** Sonning Carpark 191 River Road, Hamilton

**CPT: CPT01**
Total depth: 27.97 m

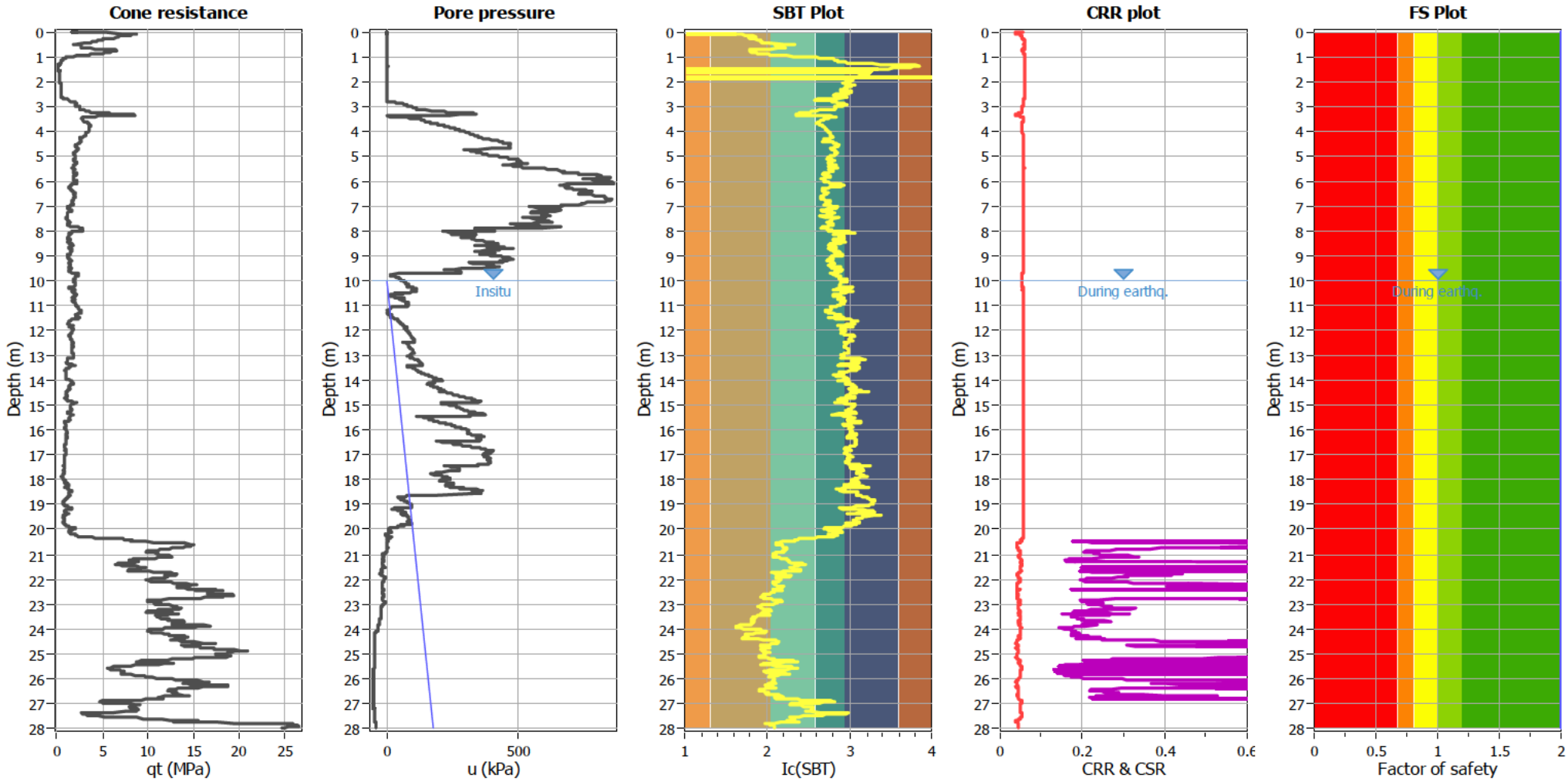



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | G.W.T. (in-situ): | 10.00 m | Use fill: | No | Clay like behavior applied: | . |
| Fines correction method: | B&I (2014) | G.W.T. (earthq.): | 10.00 m | Fill height: | N/A | Limit depth applied: | No |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth: | N/A |
| Earthquake magnitude $M_w$: | 5.90 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method based |
| Peak ground acceleration: | 0.11 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |

**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

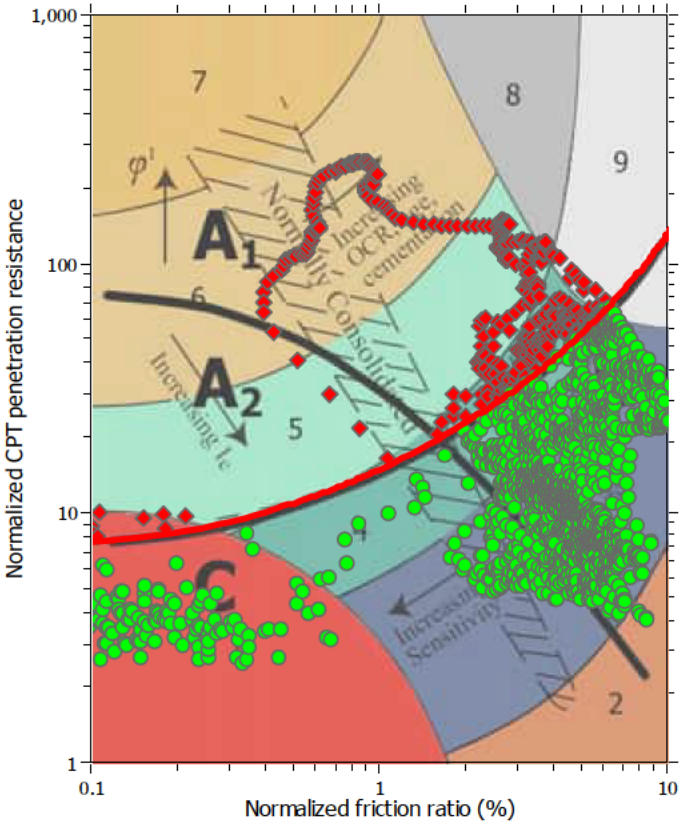
**Project:** 2-WLASS.BN Geotech and Risk Assessment Sonning Carpark - Intermeadiate IL2
**Location:** Sonning Carpark 191 River Road, Hamilton

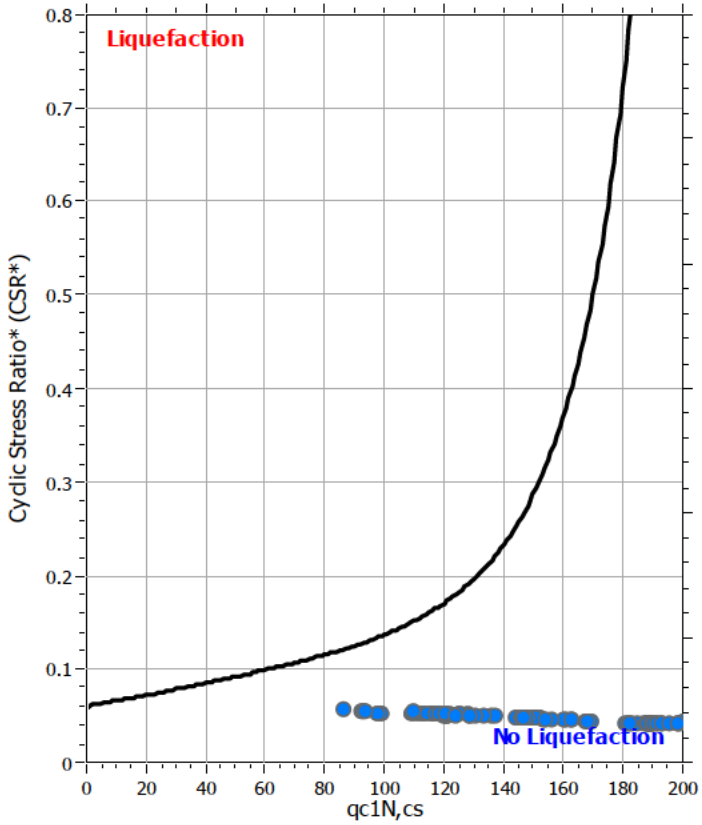
**CPT: CPT01**
Total depth: 27.97 m

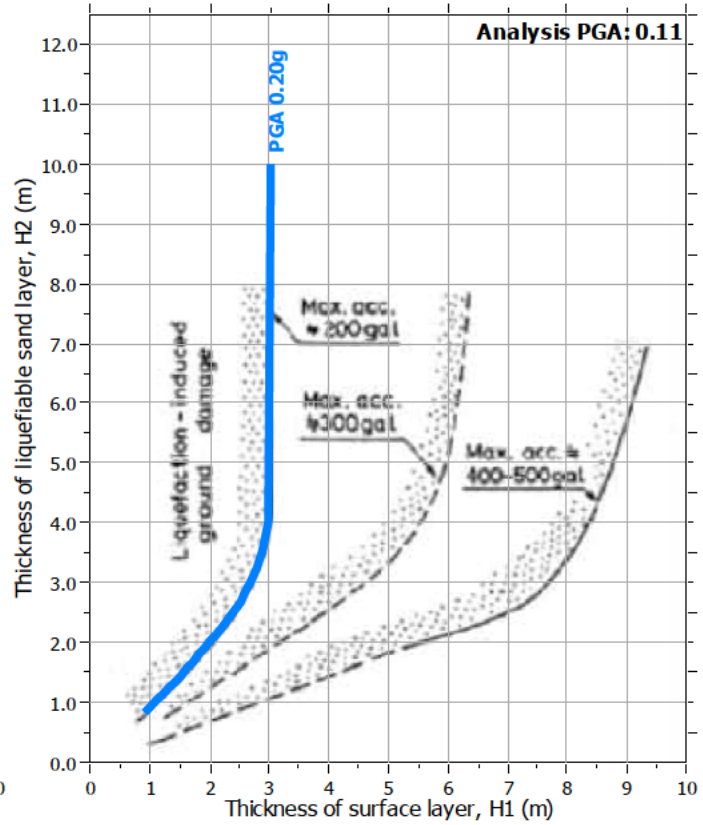



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | G.W.T. (in-situ): | 10.00 m | Use fill: | No | Clay like behavior | |
| Fines correction method: | B&I (2014) | G.W.T. (earthq.): | 10.00 m | Fill height: | N/A | applied: | . |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth applied: | No |
| Earthquake magnitude $M_w$: | 5.90 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | Limit depth: | N/A |
| Peak ground acceleration: | 0.11 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | MSF method: | Method based |

# Liquefaction analysis summary plots



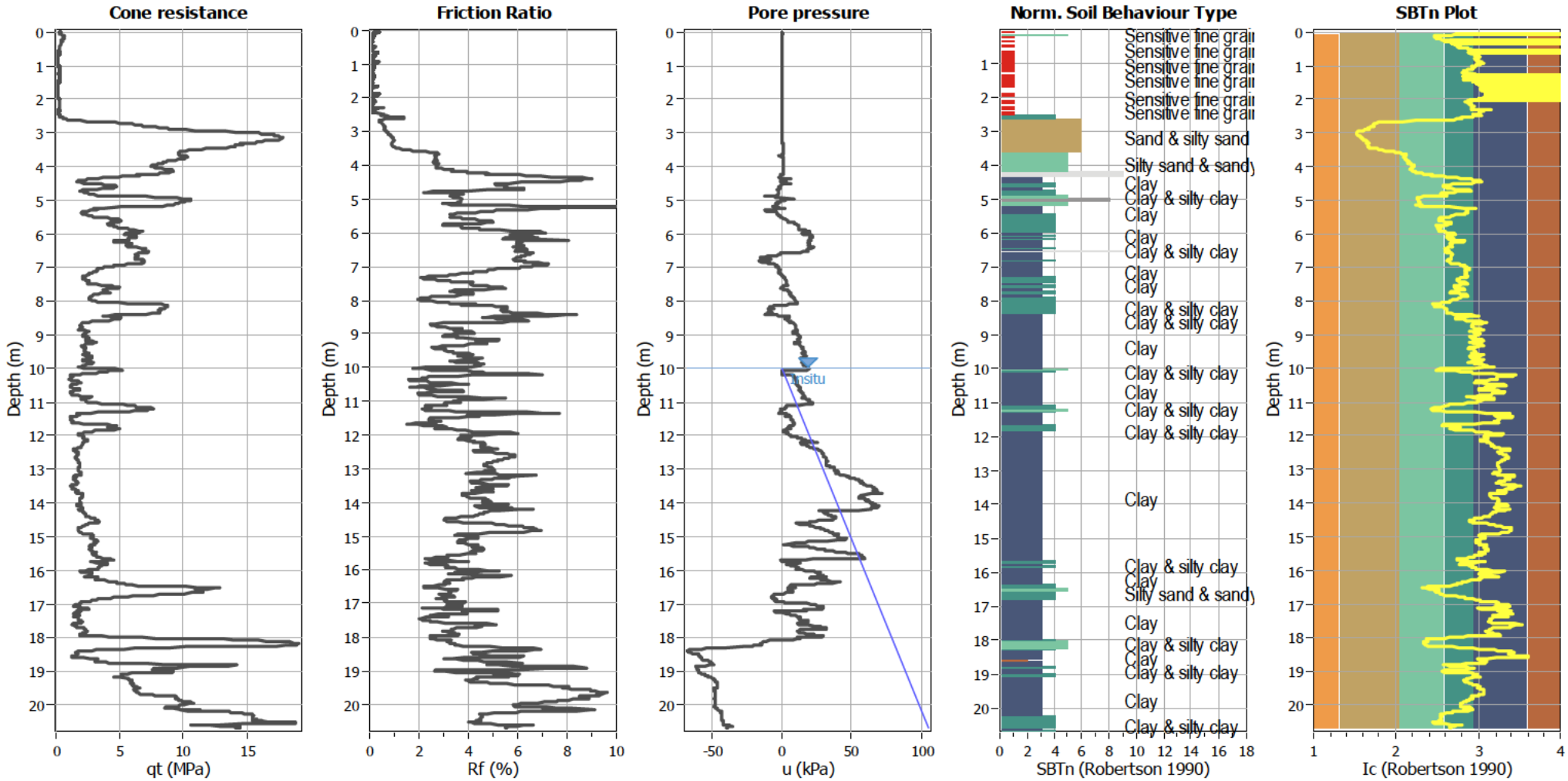

## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 10.00 m | Fill weight: | N/A |
| Fines correction method: | B&I (2014) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 5.90 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.11 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 m | Fill height: | N/A | Limit depth: | N/A |

**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

**Project:** **2-WLASS.BN Geotech and Risk Assessment Sonning Carpark - Intermeadiate IL2**
**Location:** **Sonning Carpark 191 River Road, Hamilton**

**CPT: CPT02**
Total depth: 20.69 m

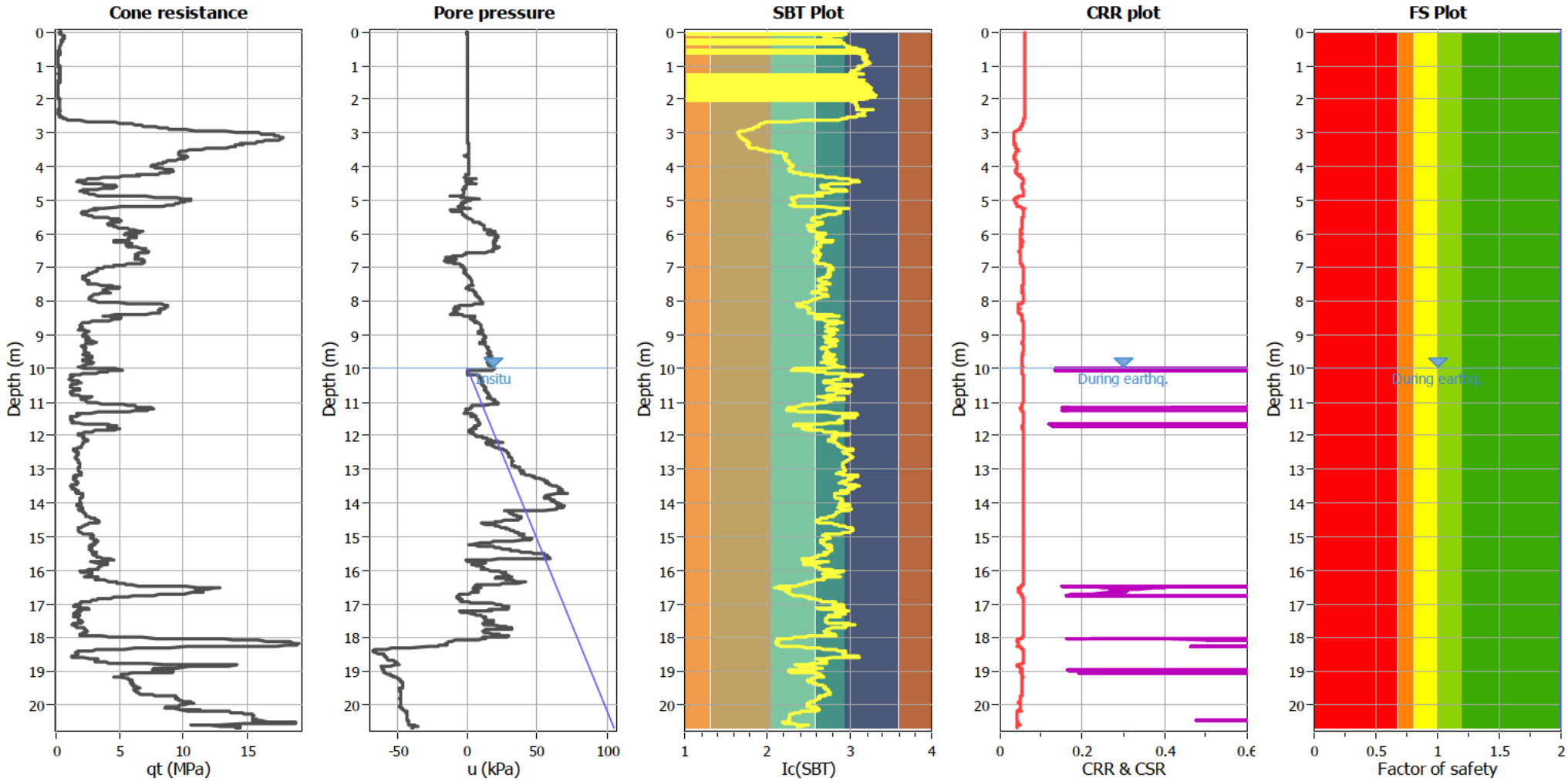



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | G.W.T. (in-situ): | 10.00 m | Use fill: | No | Clay like behavior applied: | . |
| Fines correction method: | B&I (2014) | G.W.T. (earthq.): | 10.00 m | Fill height: | N/A | | |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth applied: | No |
| Earthquake magnitude $M_w$: | 5.90 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | Limit depth: | N/A |
| Peak ground acceleration: | 0.11 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | MSF method: | Method based |

**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

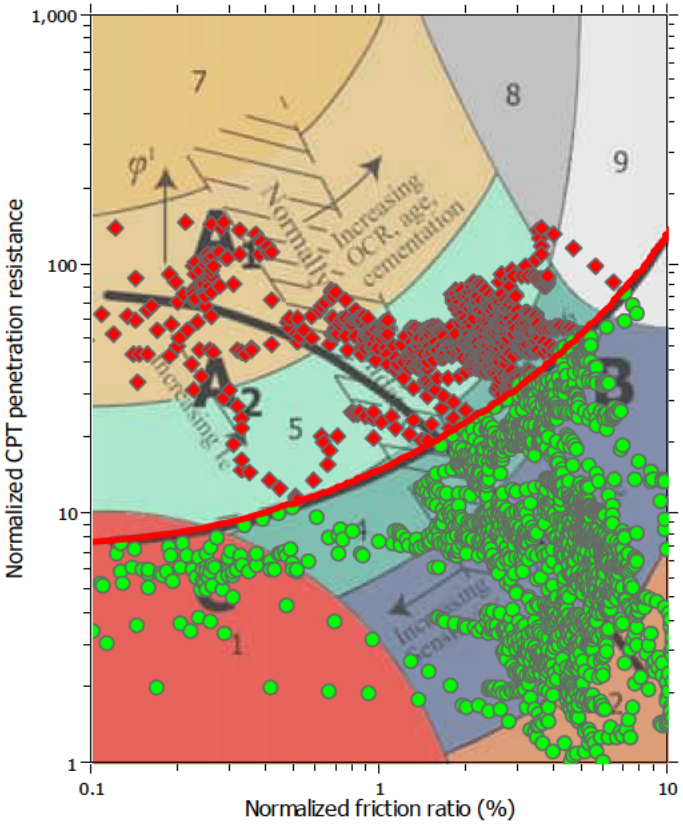
**Project:** 2-WLASS.BN Geotech and Risk Assessment Sonning Carpark - Intermeadiate IL2
**Location:** Sonning Carpark 191 River Road, Hamilton

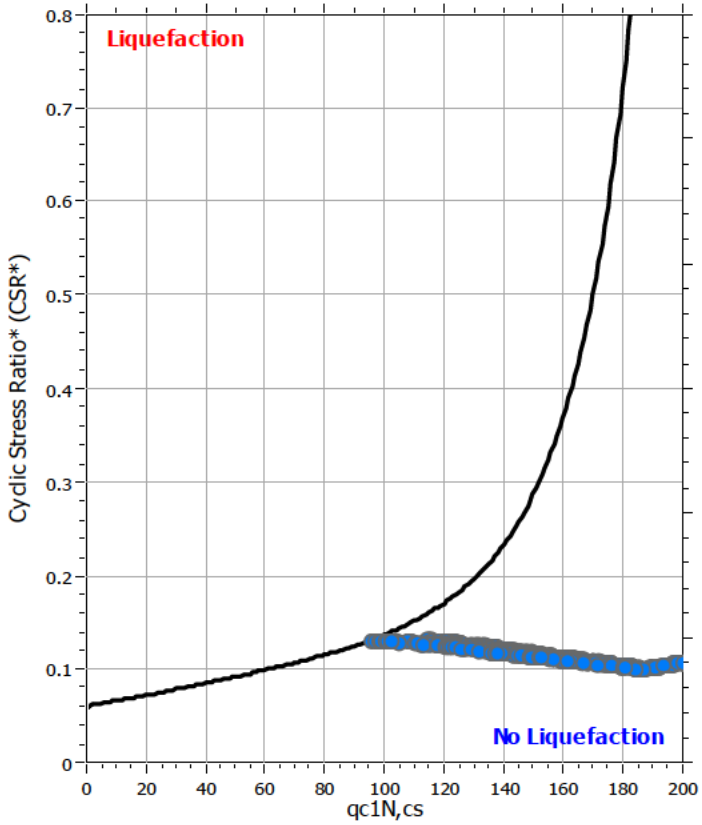
**CPT: CPT02**
Total depth: 20.69 m

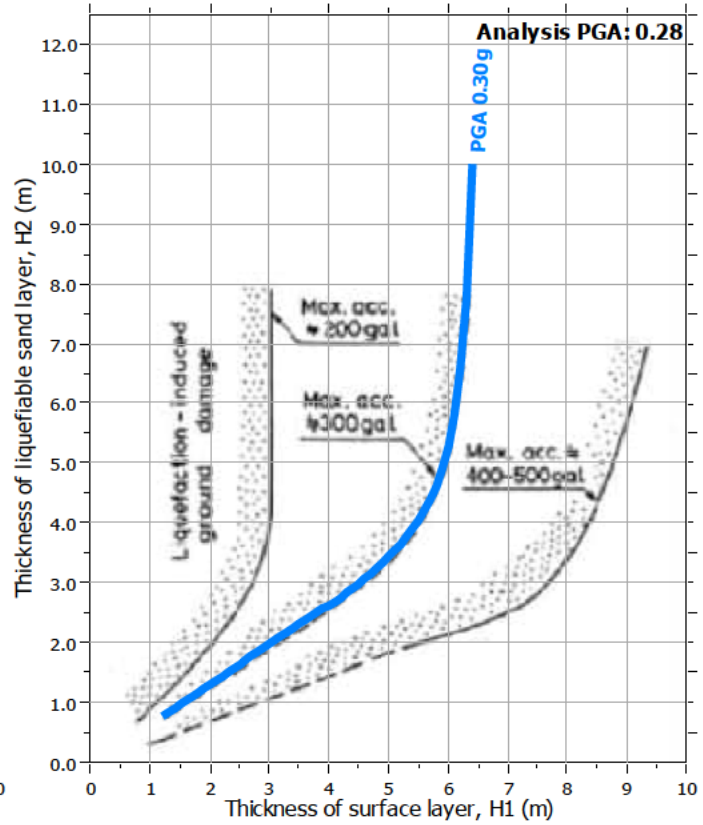



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | G.W.T. (in-situ): | 10.00 m | Use fill: | No | Clay like behavior applied: | . |
| Fines correction method: | B&I (2014) | G.W.T. (earthq.): | 10.00 m | Fill height: | N/A | Limit depth applied: | No |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth: | N/A |
| Earthquake magnitude $M_w$: | 5.90 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method based |
| Peak ground acceleration: | 0.11 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |

# Liquefaction analysis summary plots



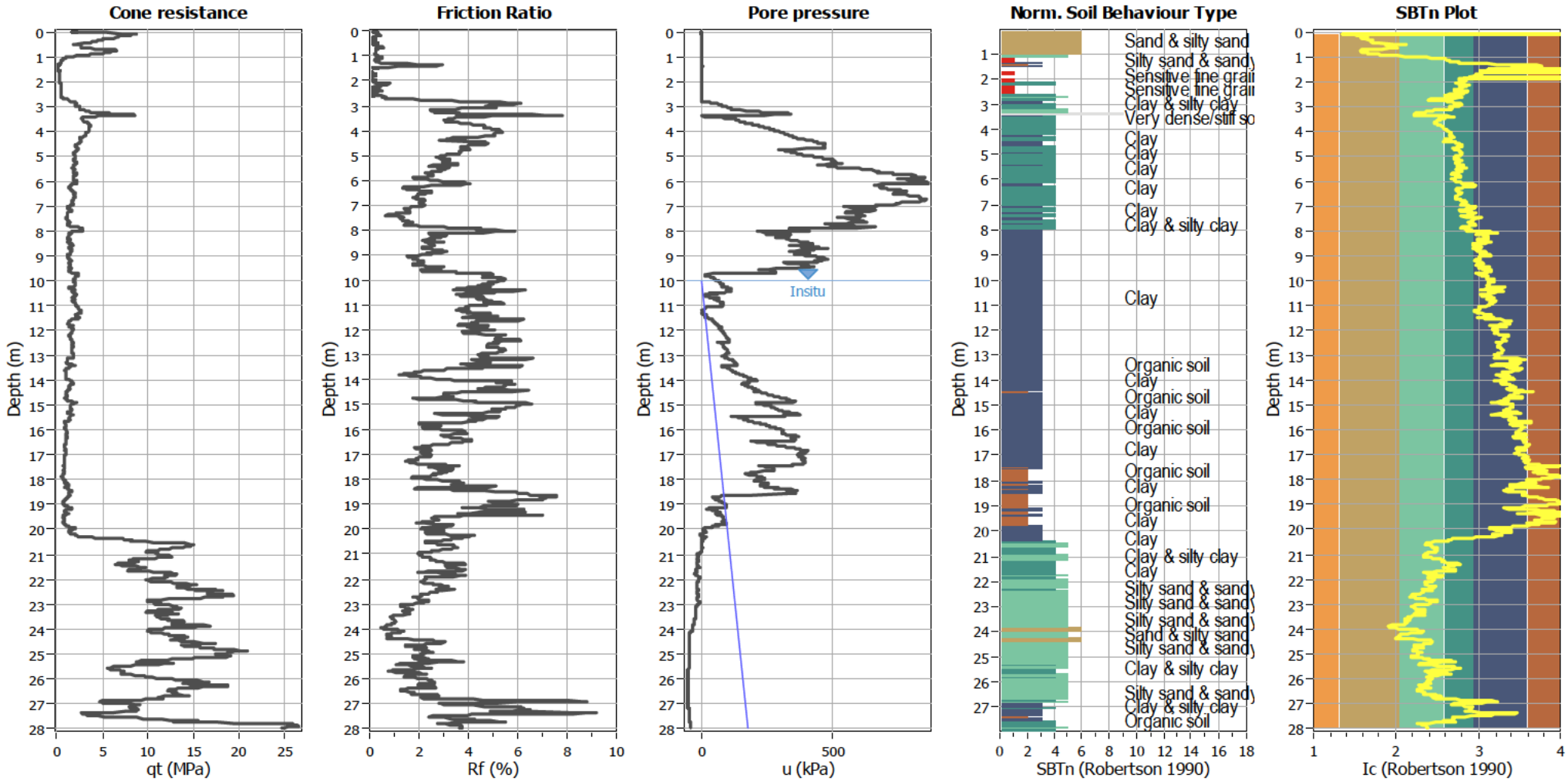

## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 10.00 m | Fill weight: | N/A |
| Fines correction method: | B&I (2014) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 5.90 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.28 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 m | Fill height: | N/A | Limit depth: | N/A |

**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

**Project:** 2-WLASS.BN Geotech and Risk Assessment Sonning Carpark - ULS for IL3
**Location:** Sonning Carpark 191 River Road, Hamilton

**CPT: CPT01**
Total depth: 27.97 m

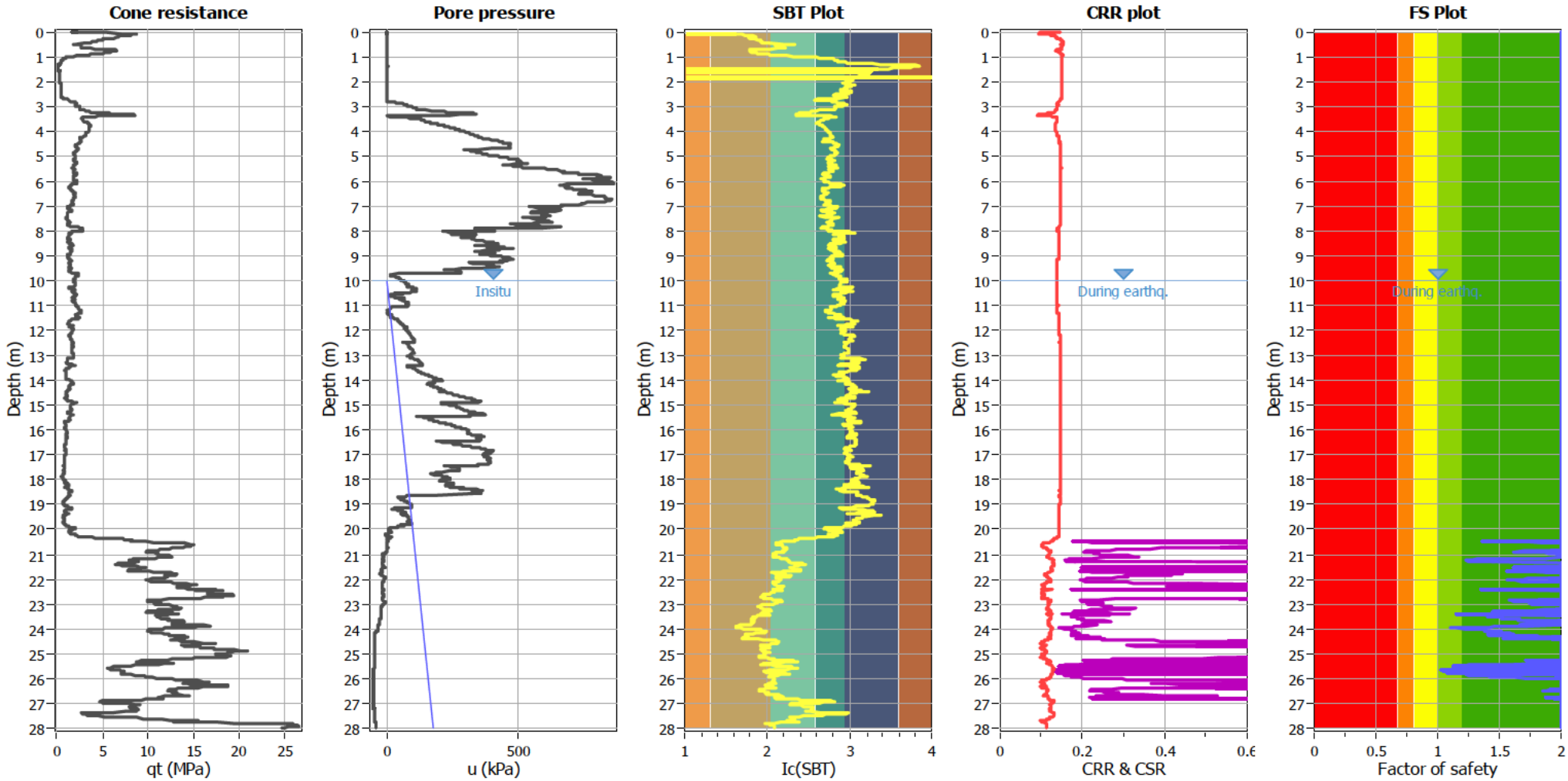



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | G.W.T. (in-situ): | 10.00 m | Use fill: | No | Clay like behavior | |
| Fines correction method: | B&I (2014) | G.W.T. (earthq.): | 10.00 m | Fill height: | N/A | applied: | . |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth applied: | No |
| Earthquake magnitude $M_w$: | 5.90 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | Limit depth: | N/A |
| Peak ground acceleration: | 0.28 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | MSF method: | Method based |

**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

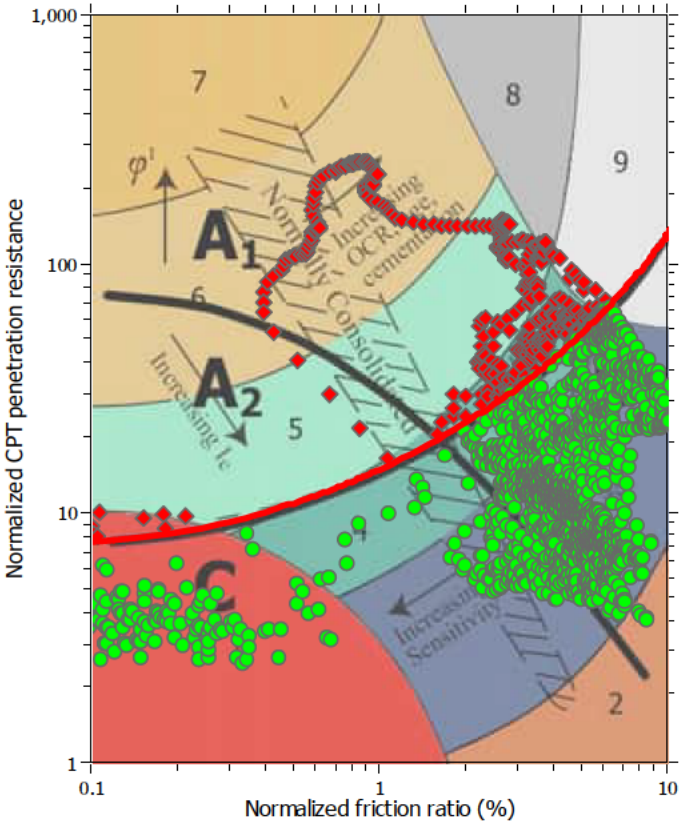
**Project:** 2-WLASS.BN Geotech and Risk Assessment Sonning Carpark - ULS for IL3
**Location:** Sonning Carpark 191 River Road, Hamilton

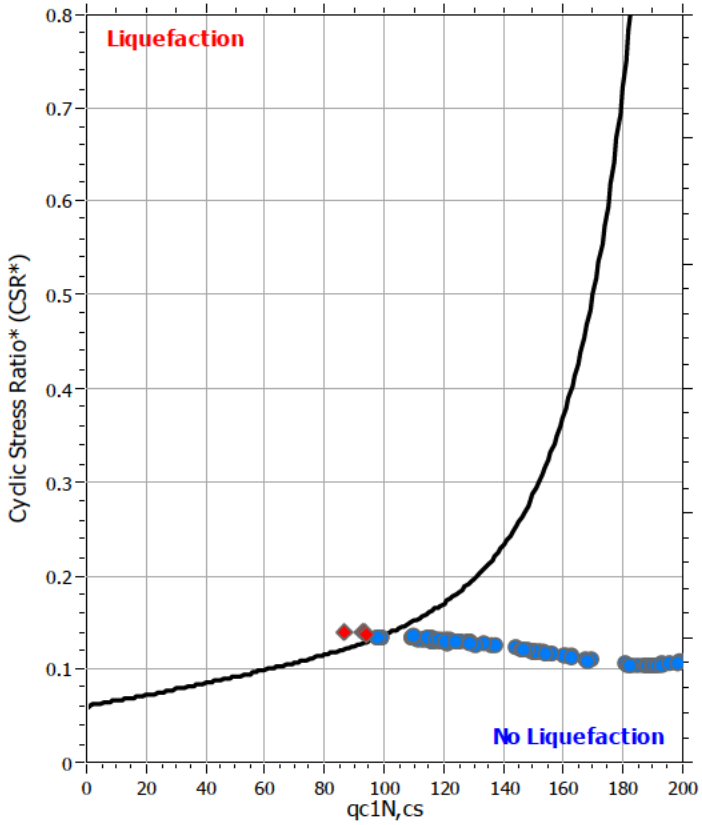
**CPT: CPT01**
Total depth: 27.97 m

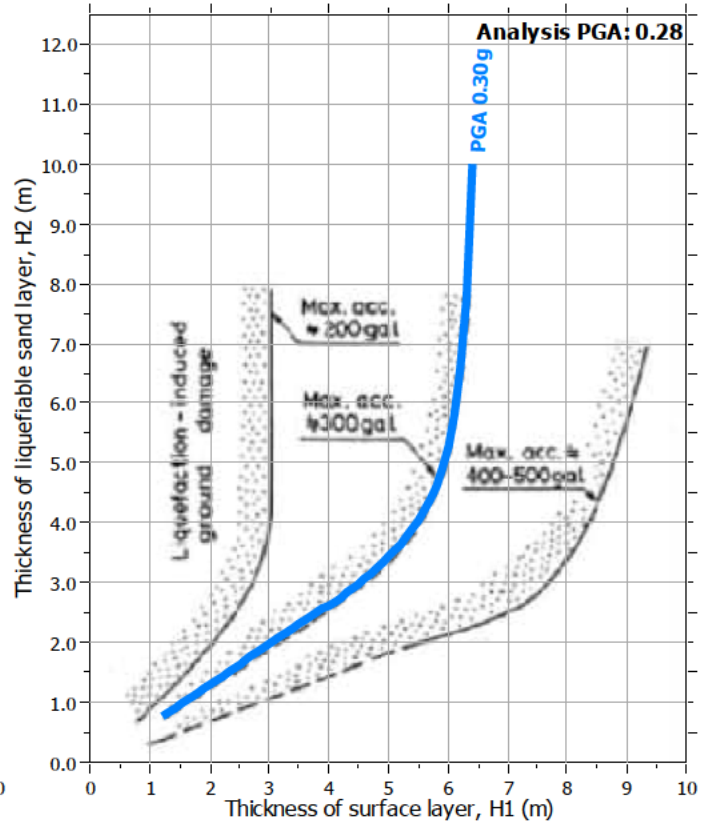



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | G.W.T. (in-situ): | 10.00 m | Use fill: | No | Clay like behavior applied: | . |
| Fines correction method: | B&I (2014) | G.W.T. (earthq.): | 10.00 m | Fill height: | N/A | Limit depth applied: | No |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth: | N/A |
| Earthquake magnitude $M_w$: | 5.90 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method based |
| Peak ground acceleration: | 0.28 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |

# Liquefaction analysis summary plots



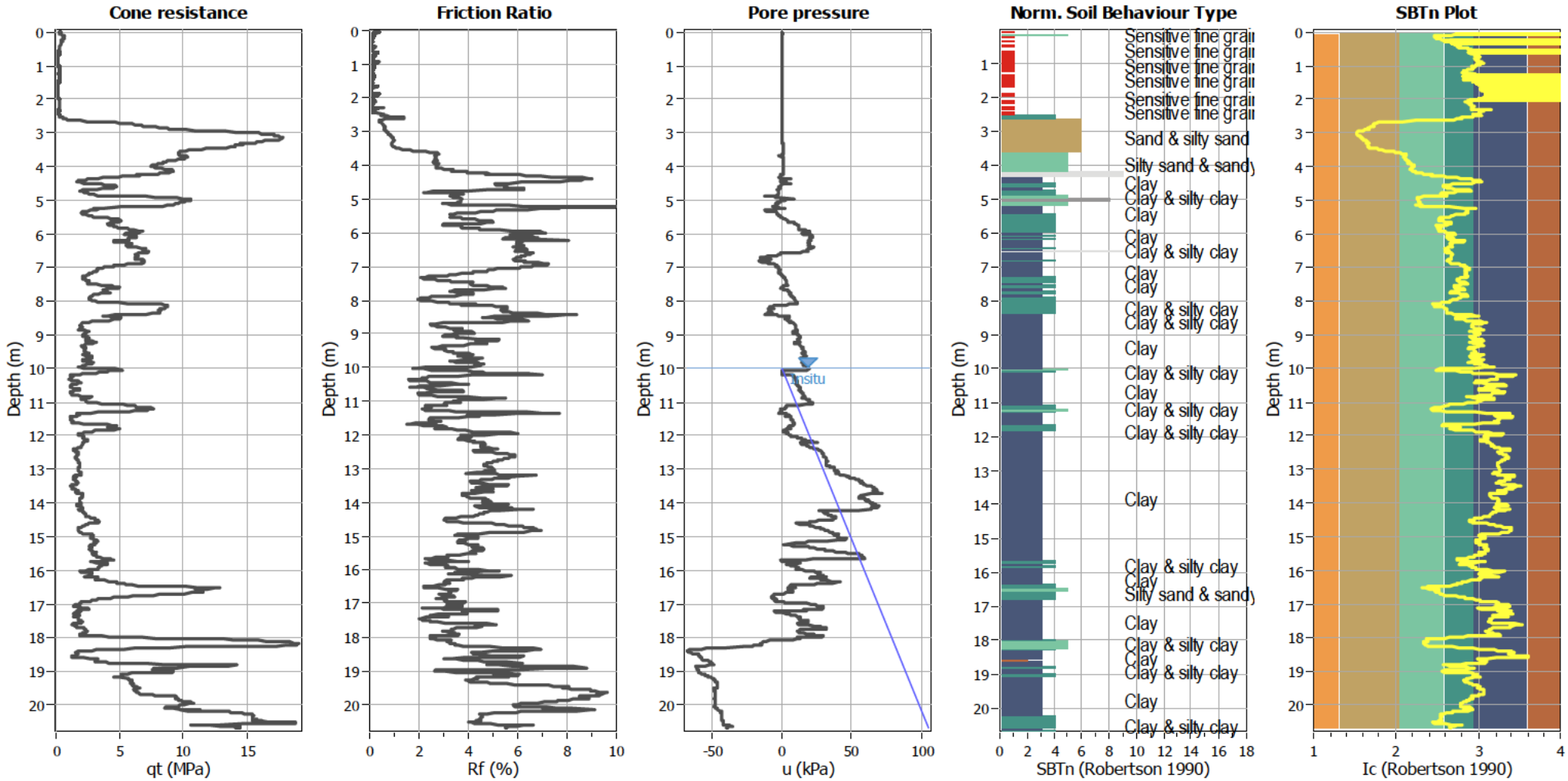

## Input parameters and analysis data

| | | | | | |
|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | Depth to GWT (erthq.): | 10.00 m | Fill weight: | N/A |
| Fines correction method: | B&I (2014) | Average results interval: | 3 | Transition detect. applied: | No |
| Points to test: | Based on Ic value | Ic cut-off value: | 2.60 | $K_\sigma$ applied: | Yes |
| Earthquake magnitude $M_w$: | 5.90 | Unit weight calculation: | Based on SBT | Clay like behavior applied: | Sands only |
| Peak ground acceleration: | 0.28 | Use fill: | No | Limit depth applied: | No |
| Depth to water table (insitu): | 10.00 m | Fill height: | N/A | Limit depth: | N/A |

**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

**Project:** 2-WLASS.BN Geotech and Risk Assessment Sonning Carpark - ULS for IL3
**Location:** Sonning Carpark 191 River Road, Hamilton

**CPT: CPT02**
Total depth: 20.69 m

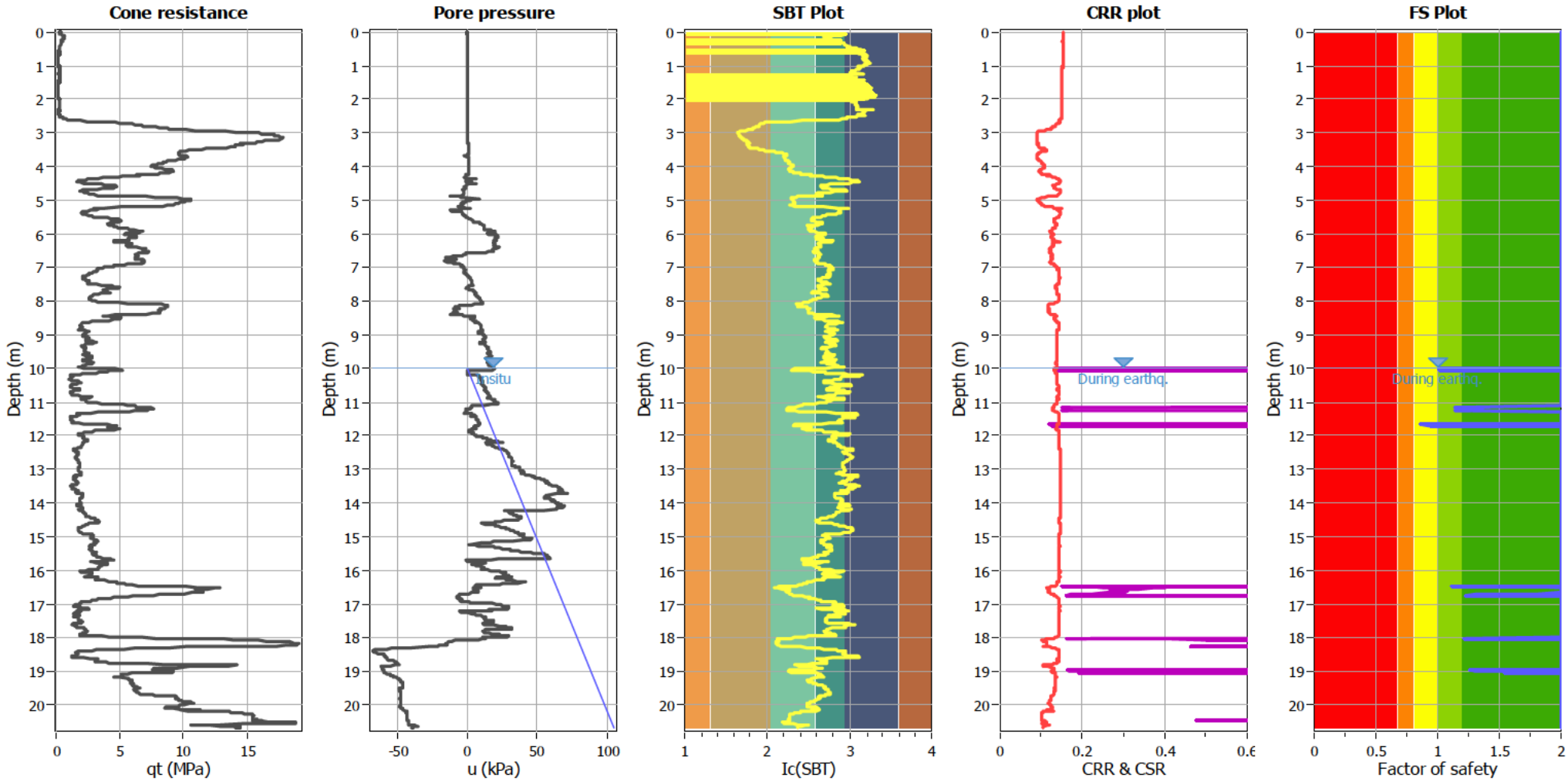



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | G.W.T. (in-situ): | 10.00 m | Use fill: | No | Clay like behavior applied: | . |
| Fines correction method: | B&I (2014) | G.W.T. (earthq.): | 10.00 m | Fill height: | N/A | Limit depth applied: | No |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth: | N/A |
| Earthquake magnitude $M_w$: | 5.90 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method based |
| Peak ground acceleration: | 0.28 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |

**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

**Project:** 2-WLASS.BN Geotech and Risk Assessment Sonning Carpark - ULS for IL3
**Location:** Sonning Carpark 191 River Road, Hamilton

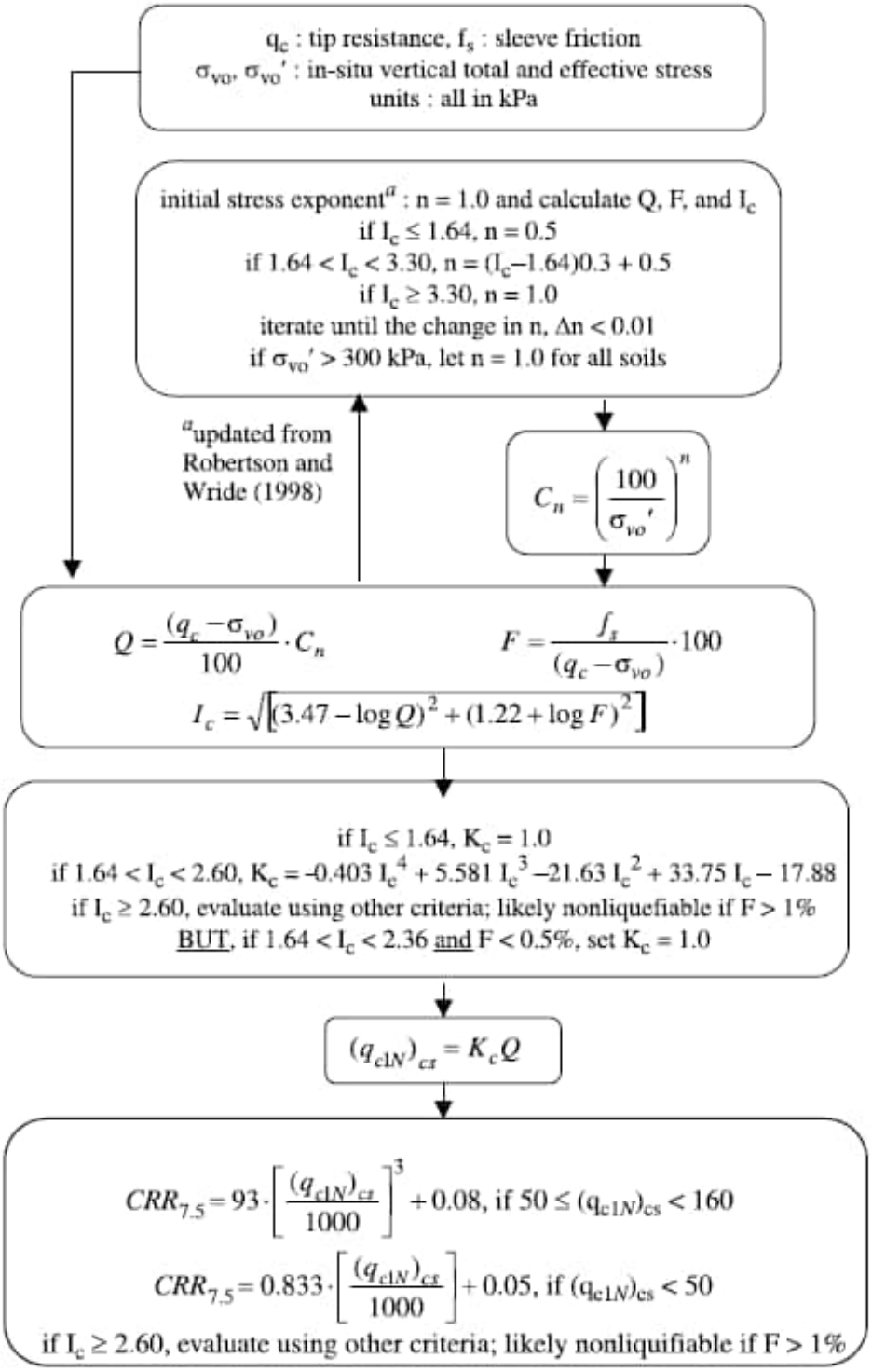
**CPT: CPT02**
Total depth: 20.69 m




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analysis method: | B&I (2014) | G.W.T. (in-situ): | 10.00 m | Use fill: | No | Clay like behavior applied: | . |
| Fines correction method: | B&I (2014) | G.W.T. (earthq.): | 10.00 m | Fill height: | N/A | Limit depth applied: | No |
| Points to test: | Based on Ic value | Average results interval: | 3 | Fill weight: | N/A | Limit depth: | N/A |
| Earthquake magnitude $M_w$: | 5.90 | Ic cut-off value: | 2.60 | Trans. detect. applied: | No | MSF method: | Method based |
| Peak ground acceleration: | 0.28 | Unit weight calculation: | Based on SBT | $K_\sigma$ applied: | Yes | | |

## Procedure for the evaluation of soil liquefaction resistance, NCEER (1998)

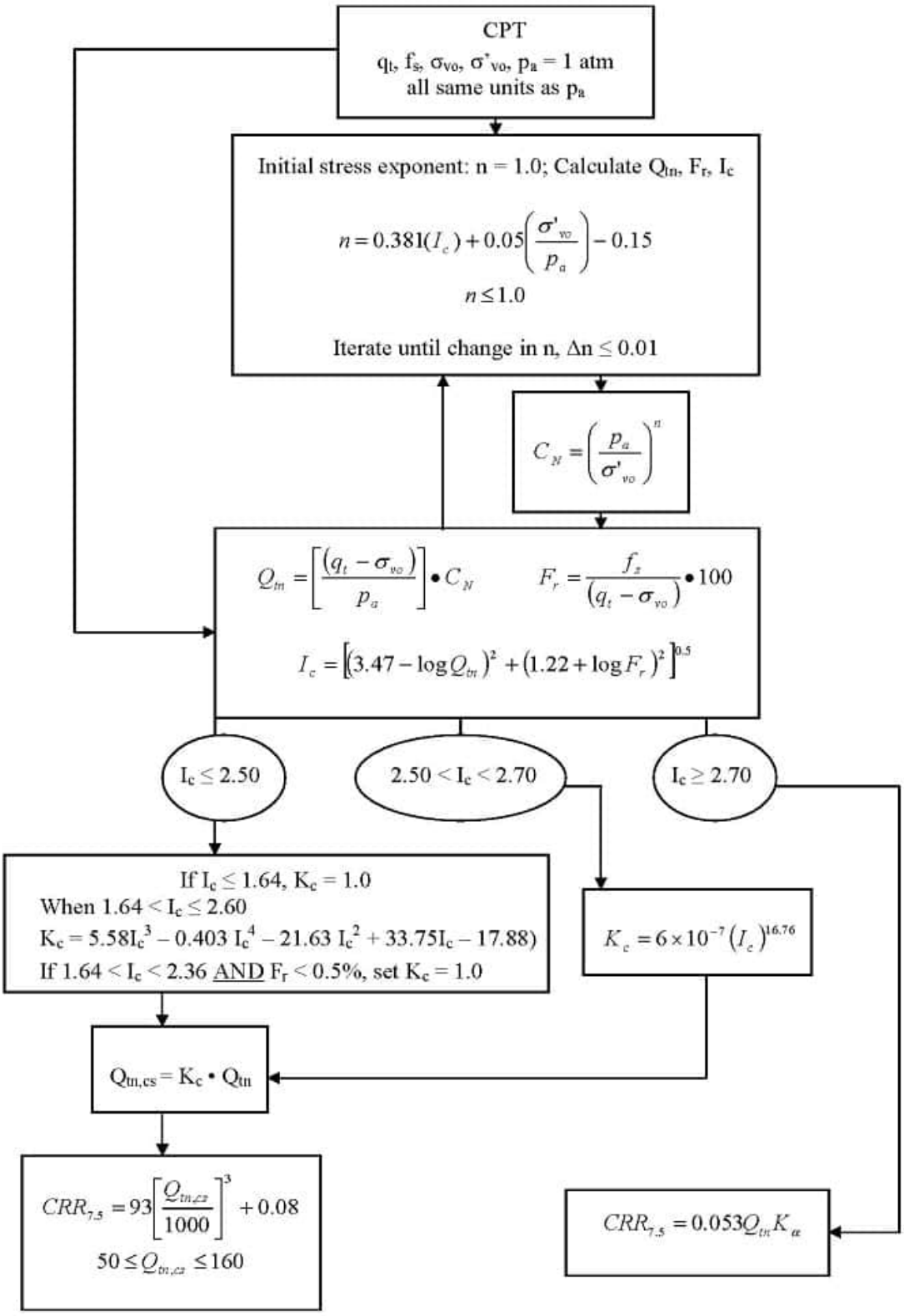
Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. The procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart[1]:




[1] "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

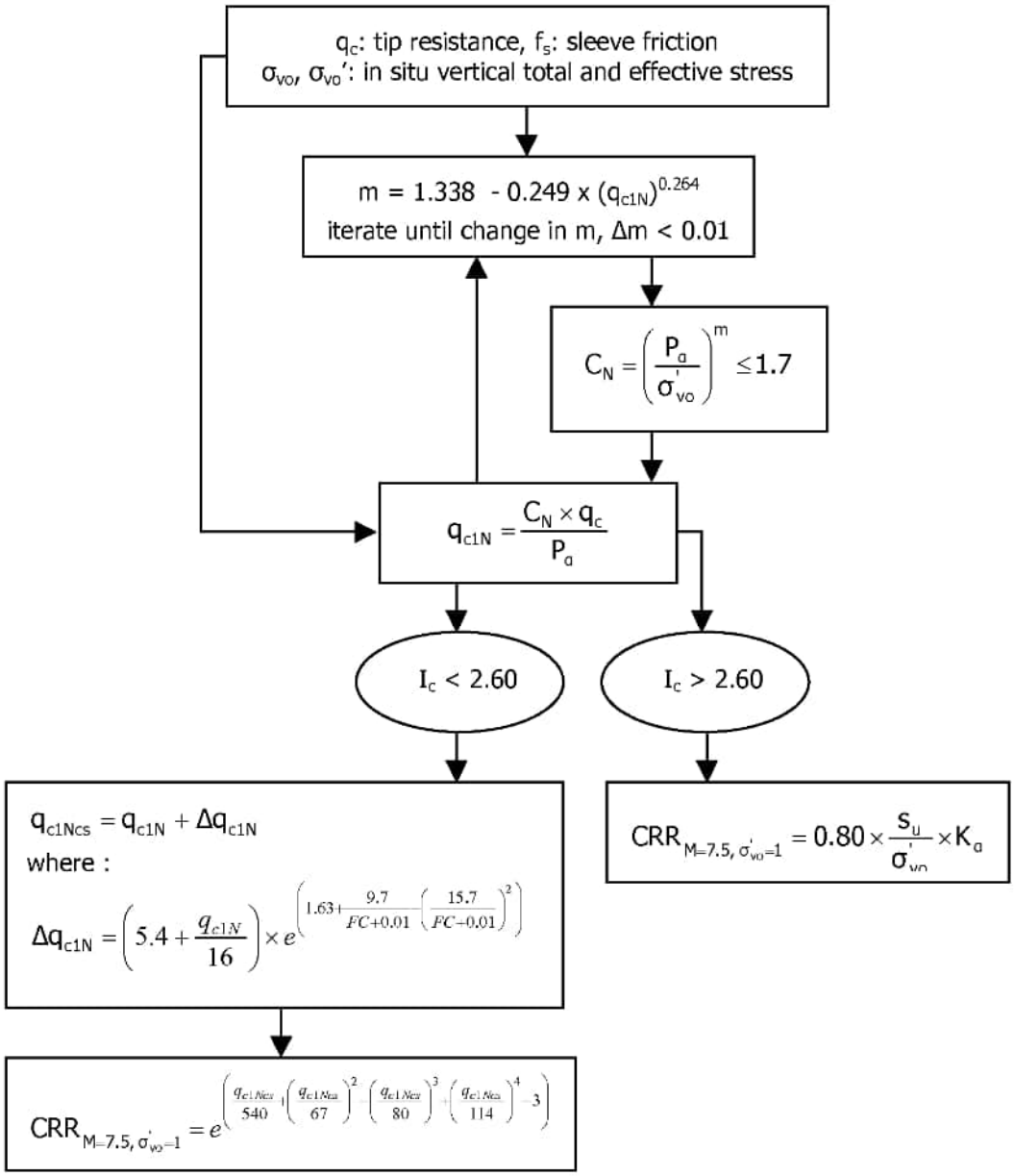
## Procedure for the evaluation of soil liquefaction resistance (all soils), Robertson (2010)

Calculation of soil resistance against liquefaction is performed according to the Robertson & Wride (1998) procedure. This procedure used in the software, slightly differs from the one originally published in NCEER-97-0022 (Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils). The revised procedure is presented below in the form of a flowchart[1]:

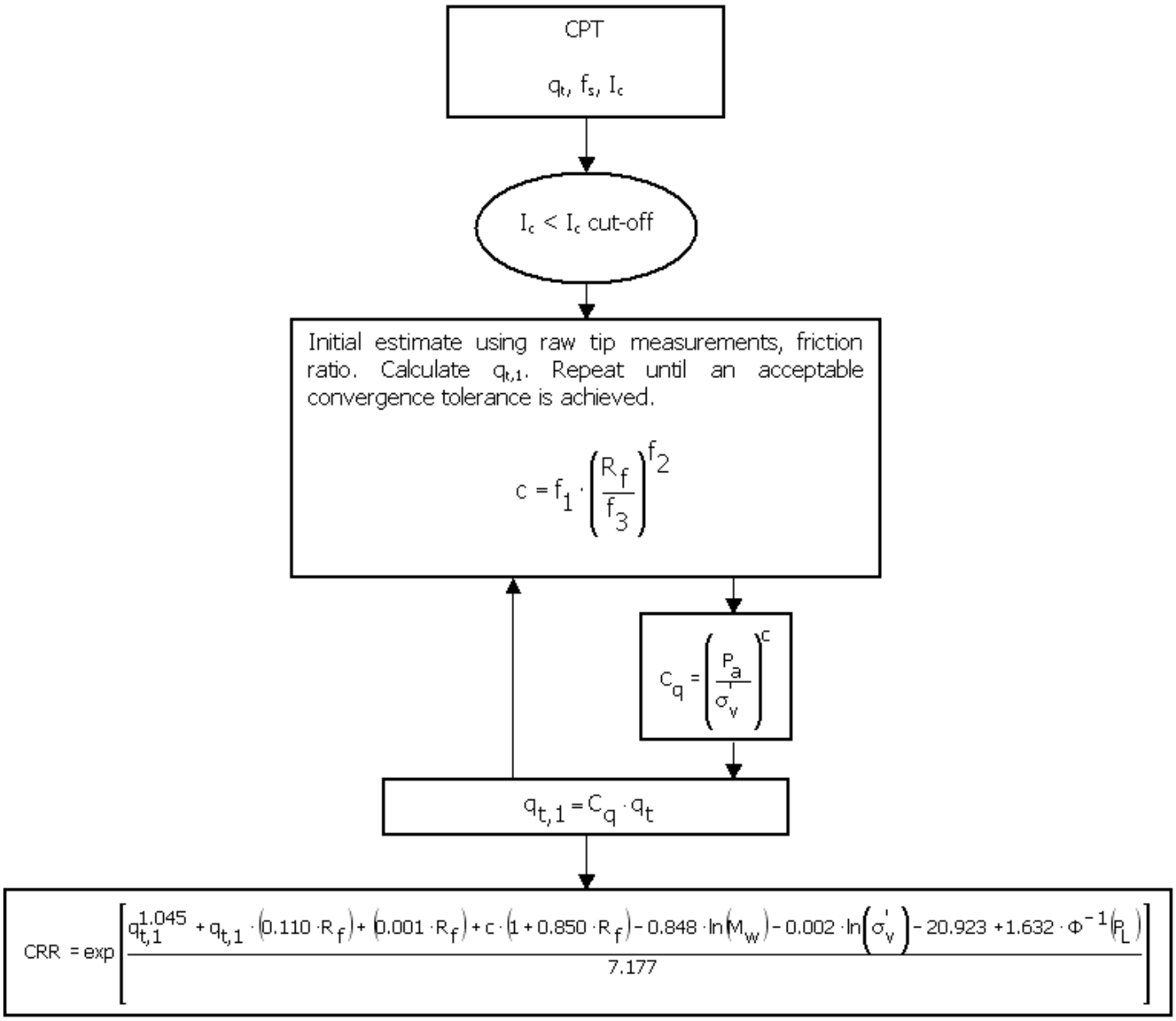



[1] P.K. Robertson, 2009. "Performance based earthquake design using the CPT", Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering – from case history to practice, IS-Tokyo, June 2009

**Procedure for the evaluation of soil liquefaction resistance, Idriss & Boulanger (2008)**



**Procedure for the evaluation of soil liquefaction resistance (sandy soils), Moss et al. (2006)**



**Procedure for the evaluation of soil liquefaction resistance, Boulanger & Idriss(2014)**

$$FS_{liq} = \frac{CRR_{M=7.5,\sigma'_v=1atm}}{CSR_{M=7.5,\sigma'_v=1atm}}$$

$$CSR_{M=7.5,\sigma'_v=1atm} = 0.65\frac{\sigma_v}{\sigma'_v}\frac{a_{max}}{g}r_d\frac{1}{MSF}\frac{1}{K_\sigma}$$

$$r_d = \exp\left[\alpha(z)+\beta(z)\cdot M\right]$$

$$\alpha(z) = -1.012-1.126\sin\left(\frac{z}{11.73}+5.133\right)$$

$$\beta(z) = 0.106+0.118\sin\left(\frac{z}{11.28}+5.142\right)$$

$$K_\sigma = 1-C_\sigma\ln\left(\frac{\sigma'_v}{P_a}\right)\le 1.1$$

$$C_\sigma = \frac{1}{37.3-8.27\left(q_{c1Ncs}\right)^{0.264}}\le 0.3$$

$$MSF = 1+\left(MSF_{max}-1\right)\left(8.64\exp\left(\frac{-M}{4}\right)-1.325\right)$$

$$MSF_{max} = 1.09+\left(\frac{q_{C1Ncs}}{180}\right)^3\le 2.2$$

$\sigma'_v$ *and* $\sigma_v$ *at start of earthquake shaking*

$$CRR_{M=7.5,\sigma'_v=1atm} = \exp\left(\frac{q_{c1Ncs}}{113}+\left(\frac{q_{c1Ncs}}{1000}\right)^2-\left(\frac{q_{c1Ncs}}{140}\right)^3+\left(\frac{q_{c1Ncs}}{137}\right)^4-2.80\right)$$

$$q_{c1Ncs} = q_{c1N}+\Delta q_{c1N}$$

$$\Delta q_{c1N} = \left(11.9+\frac{q_{c1N}}{14.6}\right)\exp\left(1.63-\frac{9.7}{FC+2}-\left(\frac{15.7}{FC+2}\right)^2\right)$$

$$q_{c1N} = C_{Ne}\frac{q_c}{P_a}$$

$$C_{Ne} = \left(\frac{P_a}{\sigma'_v}\right)^m\le 1.7$$

$$m = 1.338-0.249\left(q_{c1Ncs}\right)^{0.264} \quad with \quad 0.264\le m\le 0.782$$

$$FC = 80\left(I_C+C_{FC}\right)-137 \quad with \quad 0\%\le FC\le 100\%$$

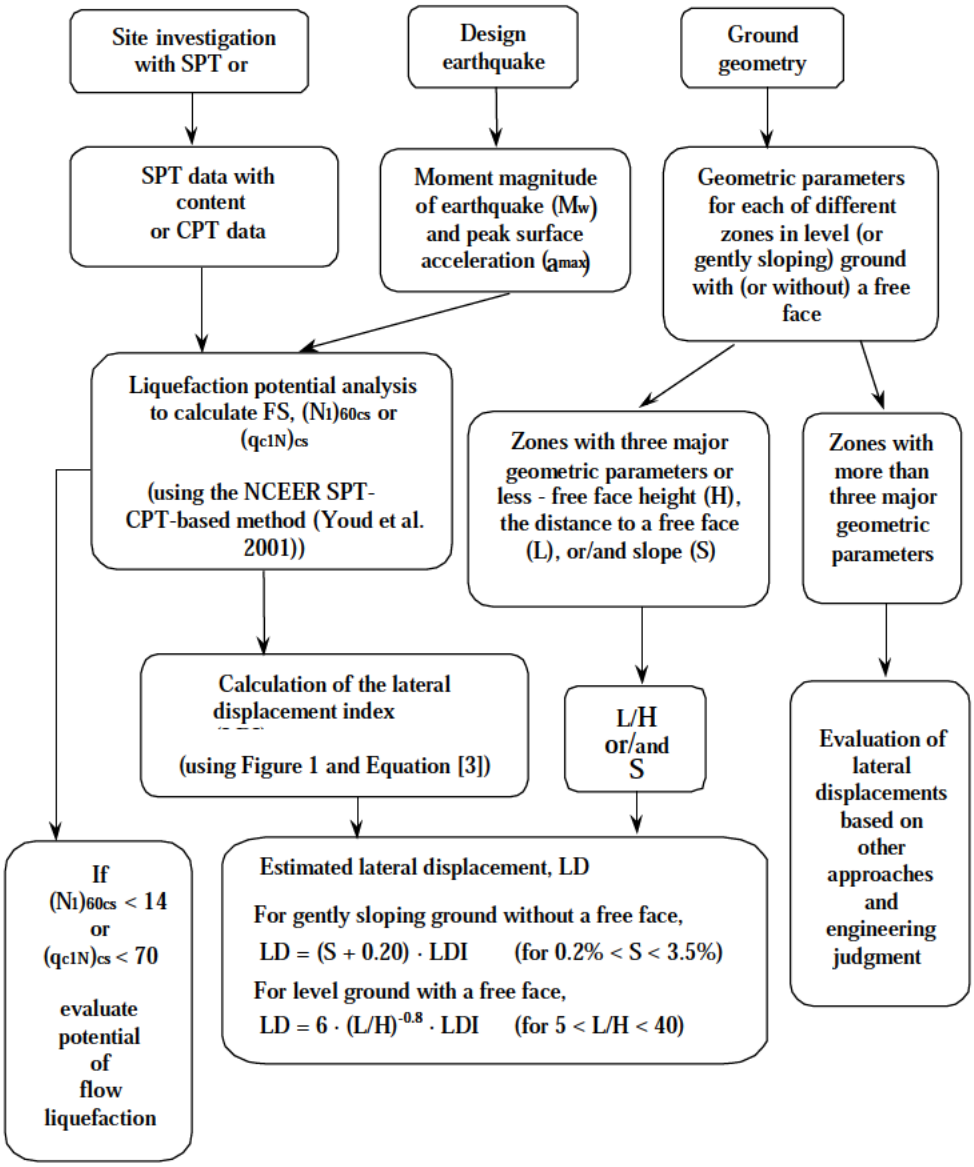
$$I_c = \left[\left(3.47-\log(Q)\right)^2+\left(1.22+\log(F)\right)^2\right]^{0.5}$$

$$Q = \left(\frac{q_c-\sigma_{vc}}{P_a}\right)\left(\frac{P_a}{\sigma'_{vc}}\right)^n \; with\; 0.5\le n\le 1.0 \; per\; Robertson\;\&\;Wride\,(1998)$$

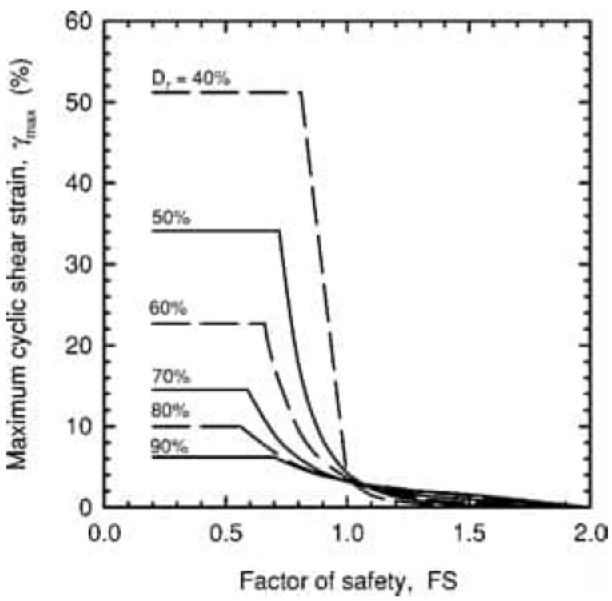
$$F = \left(\frac{f_s}{q_c-\sigma_{vc}}\right)\cdot 100\%$$

$\sigma'_v$ *at time of CPT sounding*

## Procedure for the evaluation of liquefaction-induced lateral spreading displacements




[1] Flow chart illustrating major steps in estimating liquefaction-induced lateral spreading displacements using the proposed approach




[1] **Figure 1**

$$LDI = \int_0^{z_{max}} \gamma_{max} dz$$

[1] **Equation [3]**

[1] "Estimating liquefaction-induced ground settlements from CPT for level ground", G. Zhang, P.K. Robertson, and R.W.I. Brachman

**Procedure for the estimation of seismic induced settlements in dry sands**

**Average shear stress, $\tau_{av}$**

$$\tau_{av} = CSR^{*} \cdot \sigma_{v0}' = 0.65 \cdot \frac{a_{max}}{g} \cdot \sigma_{v0} \cdot r_a$$

**Estimate small shear strain modulus, $G_0$**

$$G_0 = 0.0188 \cdot \left[10^{(0.55 I_c + 1.68)}\right] \cdot (q_t - \sigma_v)$$

**Estimate shear strain amplitude, $\gamma$**

**(based on Pradel (1998))**

$$\gamma = \left[\frac{1 + \alpha \cdot e^{bR}}{1 + \alpha}\right] \cdot R \cdot 100 \ (\%)$$

$$R = \frac{\tau_{av}}{G_0} \text{ (Note } \tau_{av} \text{ and } G_0 \text{ same units)}$$

$$\alpha = 0.0389 \cdot \left(\frac{\sigma_v}{p_a}\right) + 0.124$$

$$b = 6400 \cdot \left(\frac{\sigma_v}{p_a}\right)$$

**Estimate volumetric strain in 15 cycles**

$$\varepsilon_{vol(15)} = \gamma \cdot \left[\frac{(N_1)_{60,cs}}{20}\right]^{-1.20}$$

$$(N_1)_{60,cs} = \frac{Q_{tn,cs}}{8.5 \cdot \left[1 - \frac{I_c}{4.6}\right]}$$

**Volumetric strain in design earthquake**

$$\Sigma_{vol} = \varepsilon_{vol(15)} \cdot \left[\frac{N_c}{15}\right]^{0.45}$$

$$N_c = (M - 4)^{2.17}$$

**Seismic settlement, s**

$$s = 2 \cdot \int_0^{GWT} \Sigma_{vol} \cdot dz$$

Robertson, P.K. and Lisheng, S., 2010, "Estimation of seismic compression in dry soils using the CPT" FIFTH INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN GEOTECHNICAL EARTHQUAKE ENGINEERING AND SOIL DYNAMICS, Symposium in honor of professor I. M. Idriss, San Diego, CA

## Liquefaction Potential Index (LPI) calculation procedure

Calculation of the Liquefaction Potential Index (LPI) is used to interpret the liquefaction assessment calculations in terms of severity over depth. The calculation procedure is based on the methology developed by Iwasaki (1982) and is adopted by AFPS.

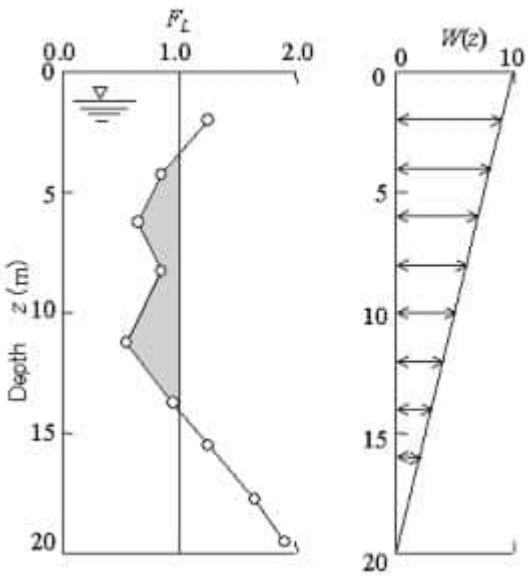
To estimate the severity of liquefaction extent at a given site, LPI is calculated based on the following equation:

$$\textbf{LPI} = \int_0^{20} (10 - 0{,}5_z) \times F_L \times d_z$$

where:
$F_L$ = 1 - F.S. when F.S. less than 1
$F_L$ = 0 when F.S. greater than 1
z depth of measurment in meters

Values of LPI range between zero (0) when no test point is characterized as liquefiable and 100 when all points are characterized as susceptible to liquefaction. Iwasaki proposed four (4) discrete categories based on the numeric value of LPI:

- LPI = 0 : Liquefaction risk is very low
- 0 < LPI <= 5 : Liquefaction risk is low
- 5 < LPI <= 15 : Liquefaction risk is high
- LPI > 15 : Liquefaction risk is very high




**Graphical presentation of the LPI calculation procedure**

## Shear-Induced Building Settlement (Ds) calculation procedure

The shear-induced building settlement (Ds) due to liquefaction below the building can be estimated using the relationship developed by Bray and Macedo (2017):

$$Ln(Ds) = c1 + c2 * LBS + 0.58 * Ln\left(Tanh\left(\frac{HL}{6}\right)\right) + 4.59 * Ln(Q) - 0.42 * Ln(Q)^2 - 0.02 * B + 0.84 * Ln(CAVdp) + 0.41 * Ln(Sa1) + \varepsilon$$

where Ds is in the units of mm, c1= -8.35 and c2= 0.072 for LBS ≤ 16, and c1= -7.48 and c2= 0.014 otherwise. Q is the building contact pressure in units of kPa, HL is the cumulative thickness of the liquefiable layers in the units of m, B is the building width in the units of m, CAVdp is a standardized version of the cumulative absolute velocity in the units of g-s, Sa1 is 5%-damped pseudo-acceleration response spectral value at a period of 1 s in the units of g, and ε is a normal random variable with zero mean and 0.50 standard deviation in Ln units. The liquefaction-induced building settlement index (LBS) is:

$$LBS = \sum W * \frac{\varepsilon_{shear}}{z} dz$$

where z (m) is the depth measured from the ground surface > 0, W is a foundation-weighting factor wherein W = 0.0 for z less than Df, which is the embedment depth of the foundation, and W = 1.0 otherwise. The shear strain parameter (ε_shear) is the liquefaction-induced free-field shear strain (in %) estimated using Zhang et al. (2004). It is calculated based on the estimated Dr of the liquefied soil layer and the calculated safety factor against liquefaction triggering (FSL).

## References


- Lunne, T., Robertson, P.K., and Powell, J.J.M 1997. Cone penetration testing in geotechnical practice, E & FN Spon Routledge, 352 p, ISBN 0-7514-0393-8.

- Boulanger, R.W. and Idriss, I. M., 2007. Evaluation of Cyclic Softening in Silts and Clays. ASCE Journal of Geotechnical and Geoenvironmental Engineering June, Vol. 133, No. 6 pp 641-652

- Boulanger, R.W. and Idriss, I. M., 2014. CPT AND SPT BASED LIQUEFACTION TRIGGERING PROCEDURES. DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING COLLEGE OF ENGINEERING UNIVERSITY OF CALIFORNIA AT DAVIS

- Robertson, P.K. and Cabal, K.L., 2007, Guide to Cone Penetration Testing for Geotechnical Engineering. Available at no cost at http://www.geologismiki.gr/

- Robertson, P.K. 1990. Soil classification using the cone penetration test. Canadian Geotechnical Journal, 27 (1), 151-8.

- Robertson, P.K. and Wride, C.E., 1998. Cyclic Liquefaction and its Evaluation based on the CPT Canadian Geotechnical Journal, 1998, Vol. 35, August.

- Youd, T.L., Idriss, I.M., Andrus, R.D., Arango, I., Castro, G., Christian, J.T., Dobry, R., Finn, W.D.L., Harder, L.F., Hynes, M.E., Ishihara, K., Koester, J., Liao, S., Marcuson III, W.F., Martin, G.R., Mitchell, J.K., Moriwaki, Y., Power, M.S., Robertson, P.K., Seed, R., and Stokoe, K.H., Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER and 1998 NCEER/NSF Workshop on Evaluation of Liquefaction Resistance of Soils, ASCE, Journal of Geotechnical & Geoenvironmental Engineering, Vol. 127, October, pp 817-833

- Zhang, G., Robertson. P.K., Brachman, R., 2002, Estimating Liquefaction Induced Ground Settlements from the CPT, Canadian Geotechnical Journal, 39: pp 1168-1180

- Zhang, G., Robertson. P.K., Brachman, R., 2004, Estimating Liquefaction Induced Lateral Displacements using the SPT and CPT, ASCE, Journal of Geotechnical & Geoenvironmental Engineering, Vol. 130, No. 8, 861-871

- Pradel, D., 1998, Procedure to Evaluate Earthquake-Induced Settlements in Dry Sandy Soils, ASCE, Journal of Geotechnical & Geoenvironmental Engineering, Vol. 124, No. 4, 364-368

- Iwasaki, T., 1986, Soil liquefaction studies in Japan: state-of-the-art, Soil Dynamics and Earthquake Engineering, Vol. 5, No. 1, 2-70

- Papathanassiou G., 2008, LPI-based approach for calibrating the severity of liquefaction-induced failures and for assessing the probability of liquefaction surface evidence, Eng. Geol. 96:94–104

- P.K. Robertson, 2009, Interpretation of Cone Penetration Tests - a unified approach., Canadian Geotechnical Journal, Vol. 46, No. 11, pp 1337-1355

- P.K. Robertson, 2009. "Performance based earthquake design using the CPT", Keynote Lecture, International Conference on Performance-based Design in Earthquake Geotechnical Engineering - from case history to practice, IS-Tokyo, June 2009

- Robertson, P.K. and Lisheng, S., 2010, "Estimation of seismic compression in dry soils using the CPT" FIFTH INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN GEOTECHNICAL EARTHQUAKE ENGINEERING AND SOIL DYNAMICS, *Symposium in honor of professor I. M. Idriss,* SAN diego, CA

- R. E. S. Moss, R. B. Seed, R. E. Kayen, J. P. Stewart, A. Der Kiureghian, K. O. Cetin, CPT-Based Probabilistic and Deterministic Assessment of In Situ Seismic Soil Liquefaction Potential, Journal of Geotechnical and Geoenvironmental Engineering, Vol. 132, No. 8, August 1, 2006

- I. M. Idriss and R. W. Boulanger, 2008. Soil liquefaction during earthquakes, Earthquake Engineering Research Institute MNO-12

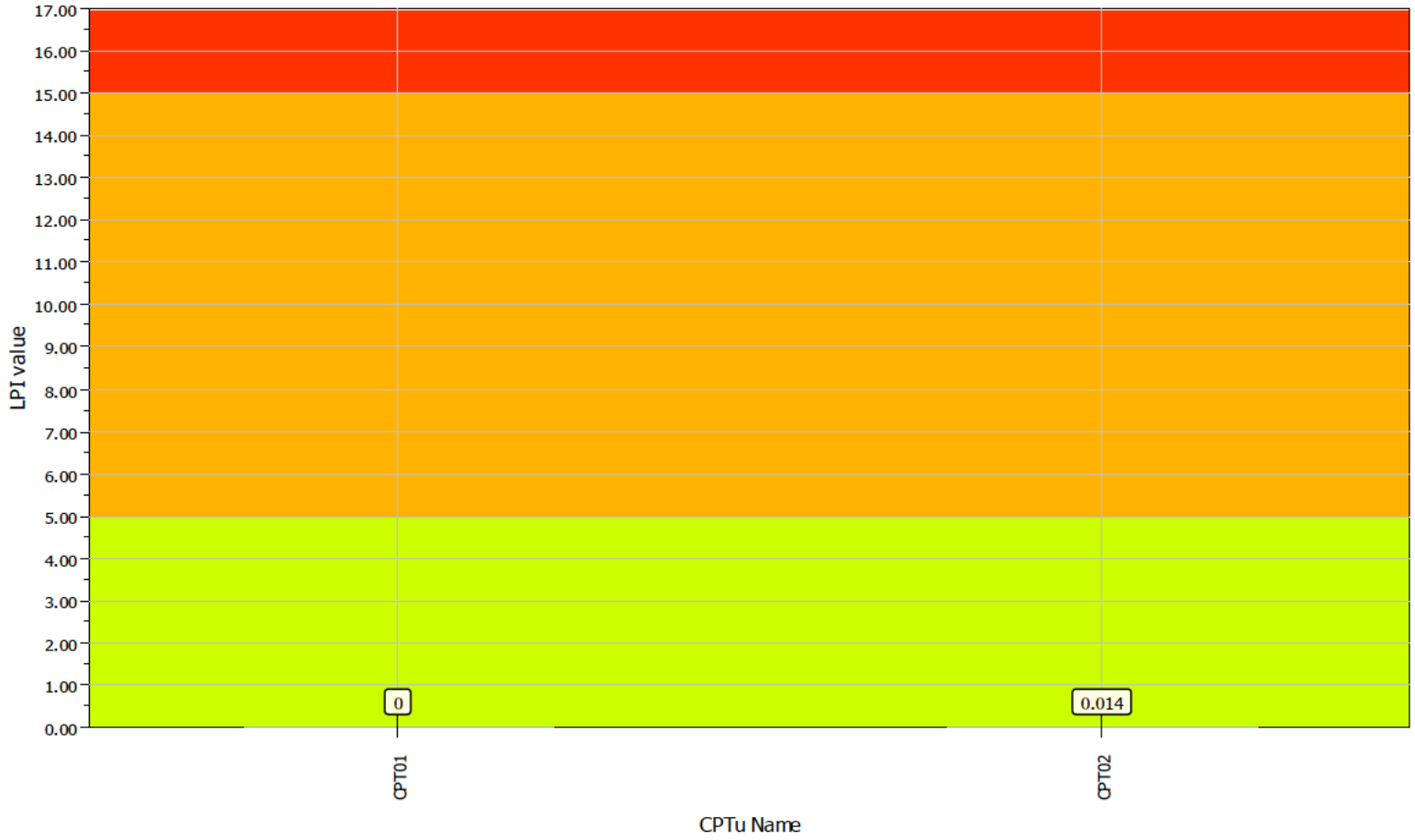
- Jonathan D. Bray & Jorge Macedo, Department of Civil & Environmental Engineering, Univ. of California, Berkeley, CA, USA, Simplified procedure for estimating liquefaction-induced building settlement, *Proceedings of the 19th International Conference*

**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

**Project title : 2-WLASS.BN Geotech and Risk Assessment Sonning Carpark - ULS for IL3**

**Location : Sonning Carpark 191 River Road, Hamilton**

## Overall Liquefaction Potential Index report




**LPI color scheme**

- Very high risk
- High risk
- Low risk

**Basic statistics**

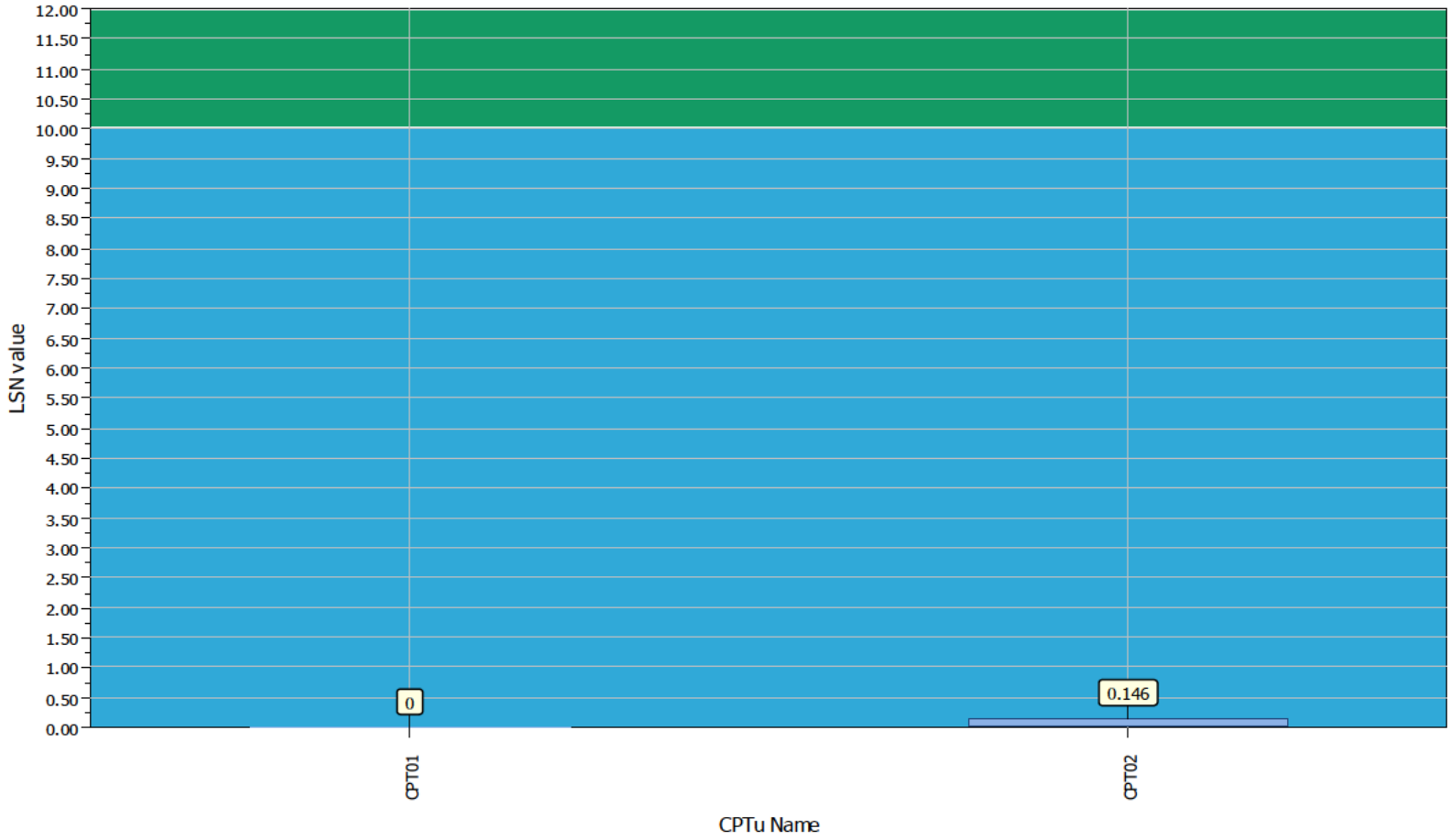
Total CPT number: 2
100% low risk
0% high risk
0% very high risk

**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

**Project title : 2-WLASS.BN Geotech and Risk Assessment Sonning Carpark - ULS for IL3**

**Location : Sonning Carpark 191 River Road, Hamilton**

## Overall Liquefaction Severity Number report




**LSN color scheme**

- Severe damage
- Major expression of liquefaction
- Moderate to severe exp. of liquefaction
- Moderate expression of liquefaction
- Minor expression of liquefaction
- Little to no expression of liquefaction

**Basic statistics**

Total CPT number: 2

100% little liquefaction

0% minor liquefaction

0% moderate liquefaction

0% moderate to major liquefaction

0% major liquefaction

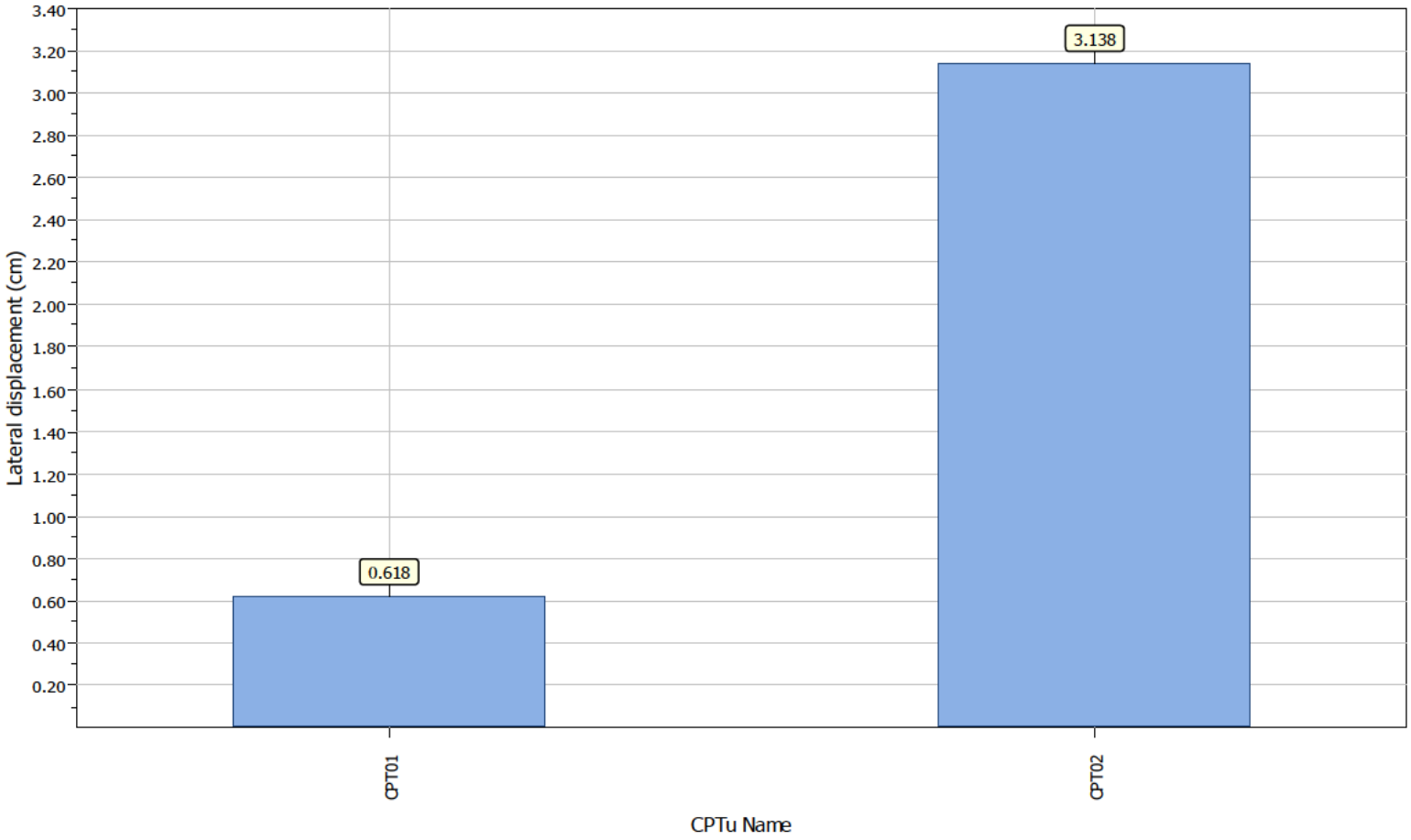
0% severe liquefaction

**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

**Project title : 2-WLASS.BN Geotech and Risk Assessment Sonning Carpark - ULS for IL3**

**Location : Sonning Carpark 191 River Road, Hamilton**

## Overall lateral displacements report

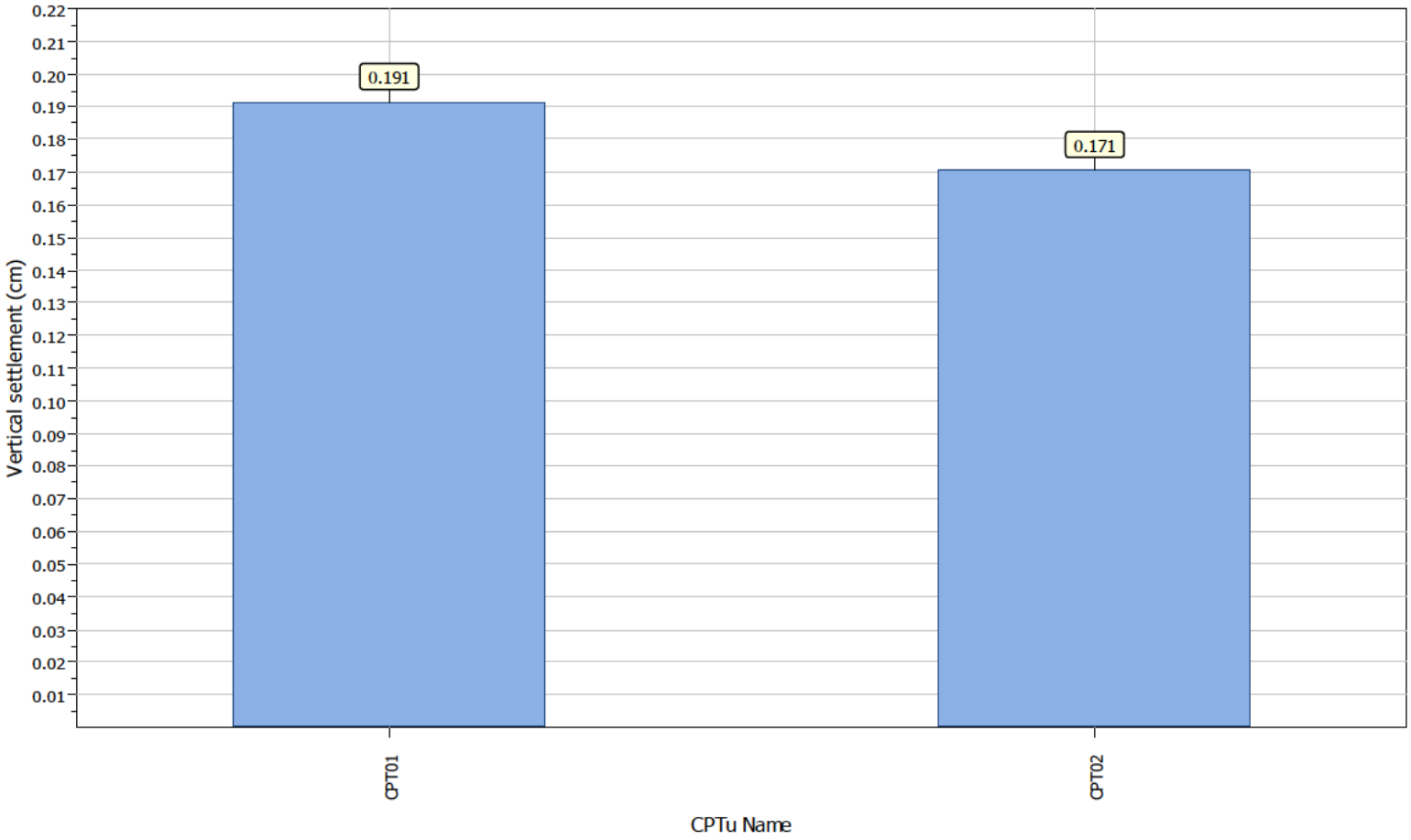


**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

**Project title : 2-WLASS.BN Geotech and Risk Assessment Sonning Carpark - ULS for IL3**

**Location : Sonning Carpark 191 River Road, Hamilton**

## Overall vertical settlements report

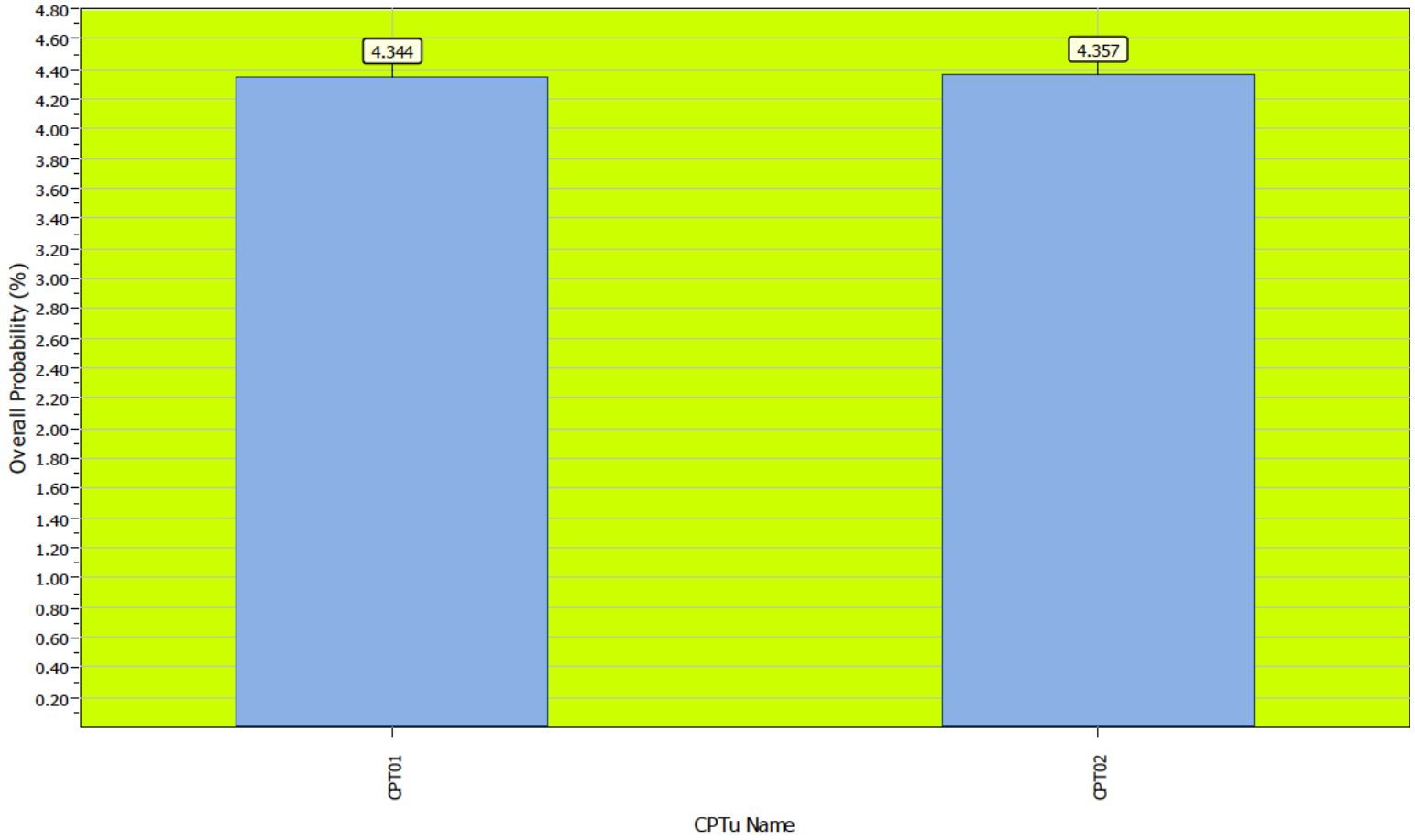


**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

**Project title : 2-WLASS.BN Geotech and Risk Assessment Sonning Carpark - ULS for IL3**

**Location : Sonning Carpark 191 River Road, Hamilton**

## Overall Probability for Liquefaction report




**Probability color scheme**

- Very High Probability
- High Probability
- Low Probability

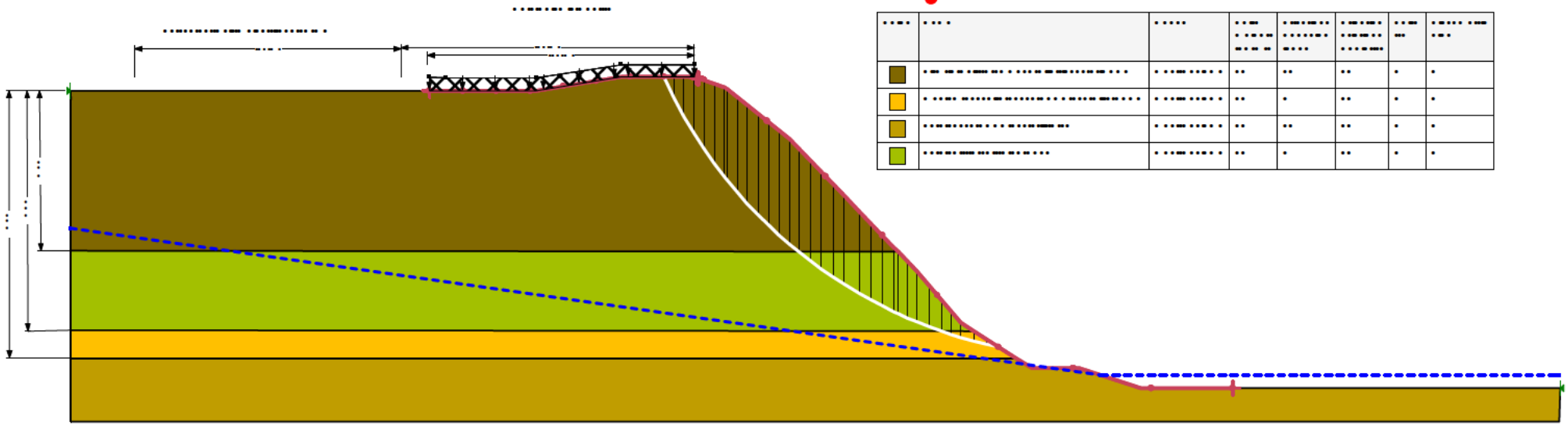
**Basic statistics**

Total CPT number: 2
100% low probability
0% high probability
0% very high probability

# Appendix D
# Predicted Lateral Displacement and Slope Stability Analysis Results

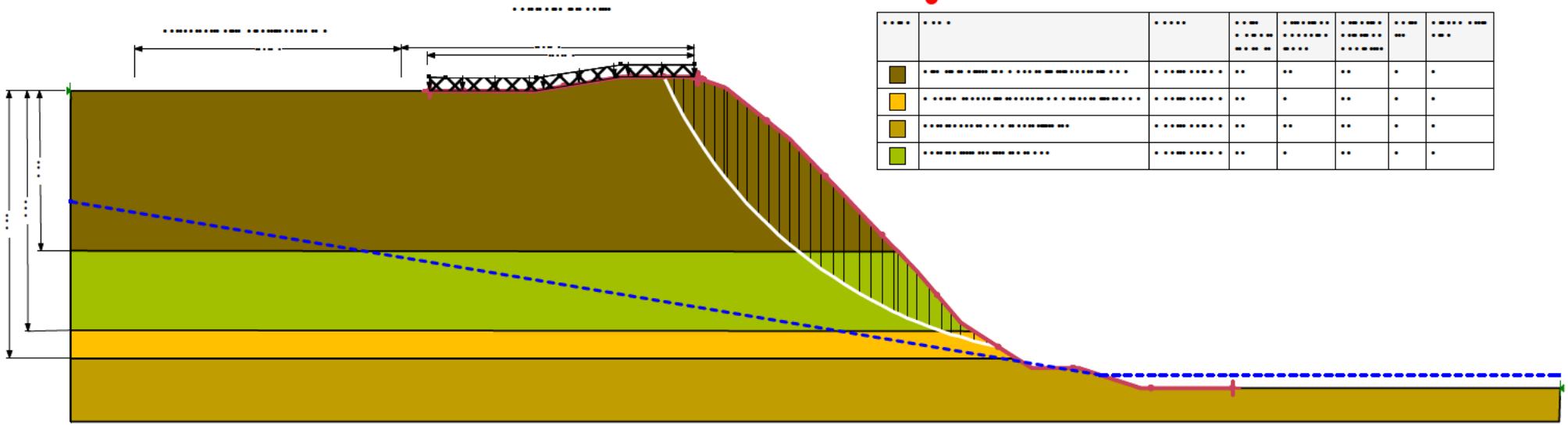
| Section | Loading Case | critical acceleration (kc) | design acceleration (km) | kc/km value | Ambrasseys & Srbulov* Required Inputs Ms | rqd prob. of exceddance | Jibson, 2007 (mm) |
|---|---|---|---|---|---|---|---|
| ULS for IL3 0.28g | 100kPa | 0.001 | 0.28 | 0.00 | 5.9 | 0.50 | 25,402.20 |
| | 25kPa | 0.005 | 0.28 | 0.02 | 5.9 | 0.50 | 2,275.88 |
| | 15kPa | 0.010 | 0.28 | 0.04 | 5.9 | 0.50 | 782.74 |
| ULS for IL2 and Intermediate for IL3 0.22g | 100kPa | 0.001 | 0.22 | 0.00 | 5.9 | 0.50 | 17,745.19 |
| | 25kPa | 0.005 | 0.22 | 0.02 | 5.9 | 0.50 | 1,575.11 |
| | 15kPa | 0.010 | 0.22 | 0.05 | 5.9 | 0.50 | 535.21 |
| Intermediate for IL2 0.11g | 100kPa | 0.001 | 0.11 | 0.01 | 5.9 | 0.50 | 6,302.57 |
| | 25kPa | 0.005 | 0.11 | 0.05 | 5.9 | 0.50 | 535.21 |
| | 15kPa | 0.010 | 0.11 | 0.09 | 5.9 | 0.50 | 171.45 |
| SLS 0.05g | 100kPa | 0.001 | 0.05 | 0.02 | 5.9 | 0.50 | 1,915.10 |
| | 25kPa | 0.005 | 0.05 | 0.10 | 5.9 | 0.50 | 145.46 |
| | 15kPa | 0.010 | 0.05 | 0.20 | 5.9 | 0.50 | 39.66 |
| | | | | | std dev | 0.58 | 0.454 |

From Ambraseys, N and Srbulov, M (1995). Earthquake Induced Displacements of Slopes. Soil Dynamics and Earthquake Engineering. 14 (1995). 59-71. Great Britain
Jibson (2007) displacement, based on regression models for estimating coseismic landslide displacement, Engineering Geology 91 (2007) 209-218



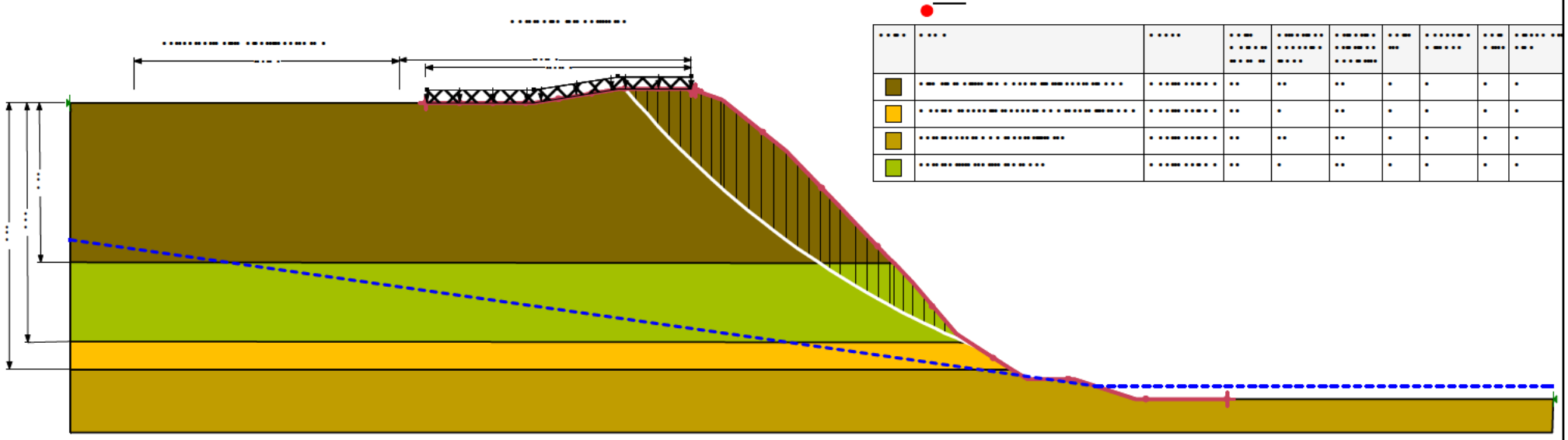
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |



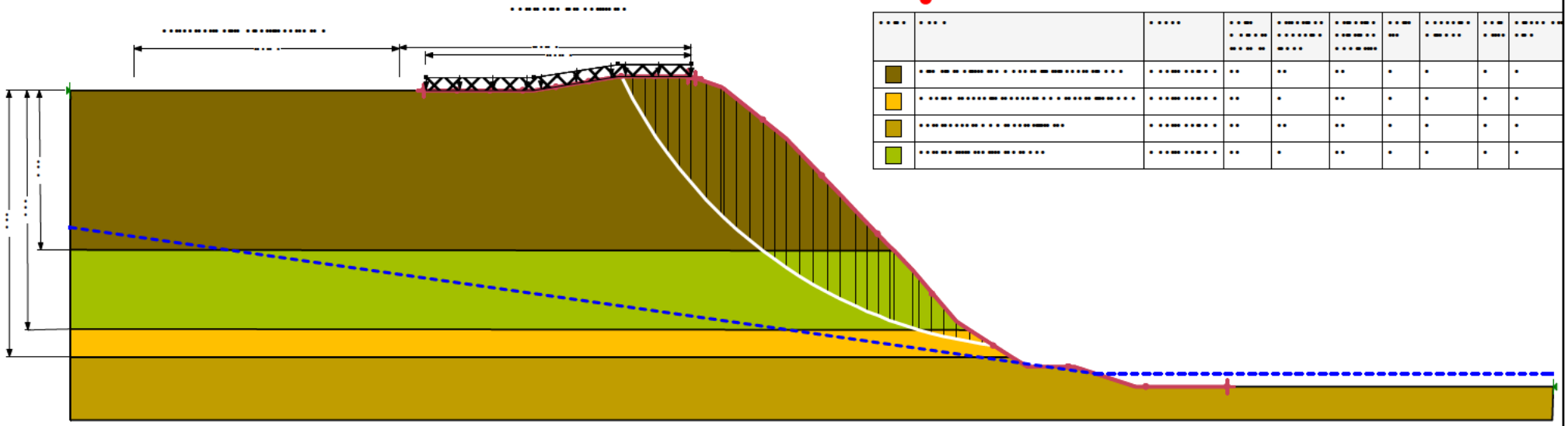
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |



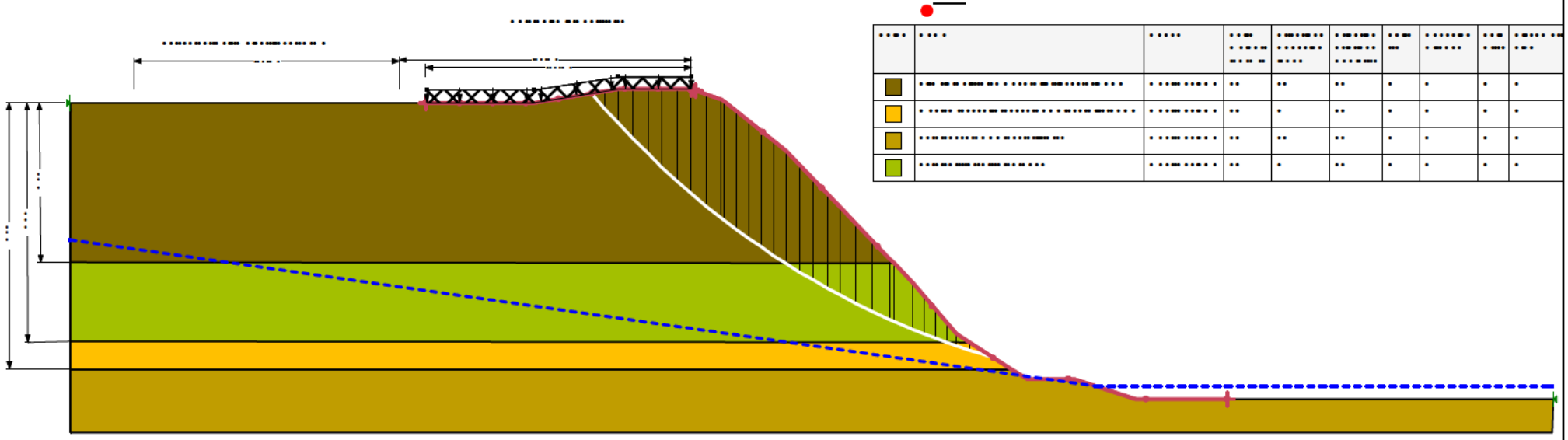
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

| | | | | |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |



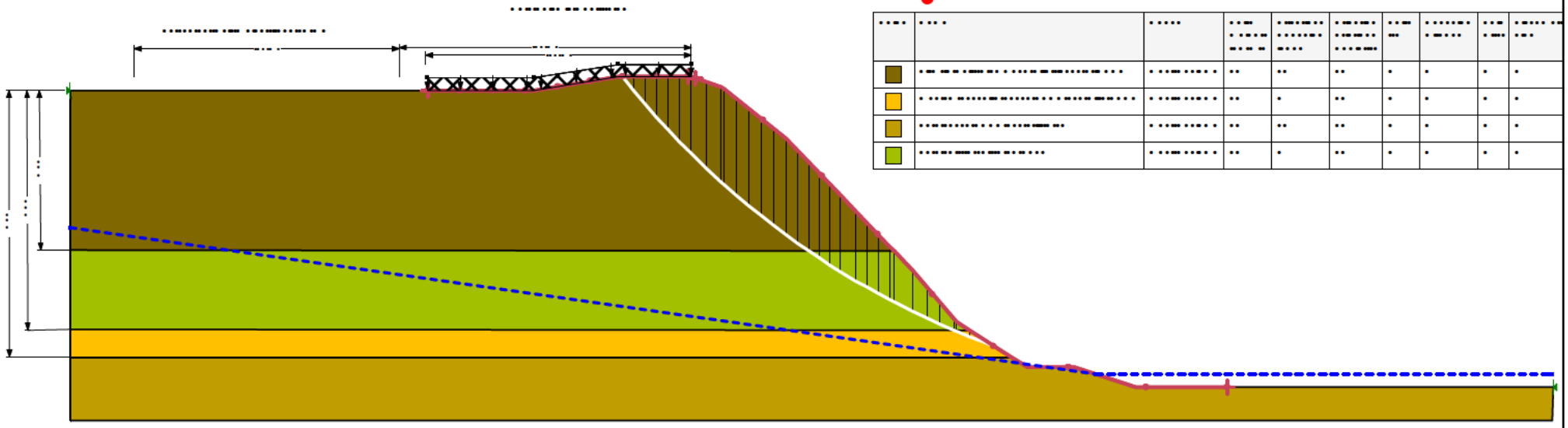
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |



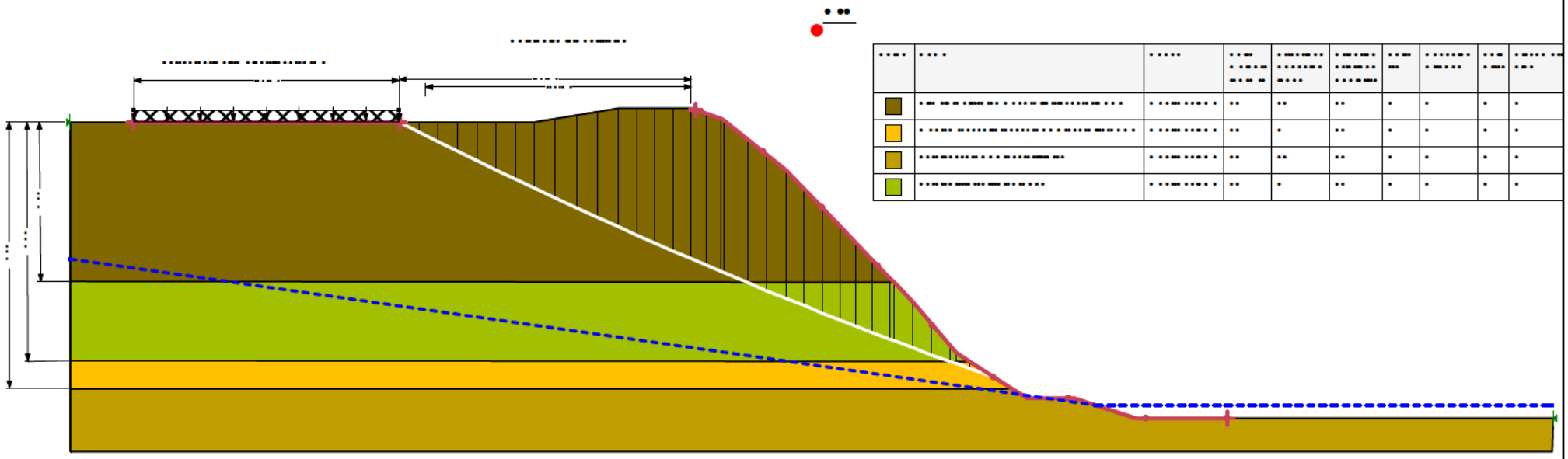
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

| | | | | |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |



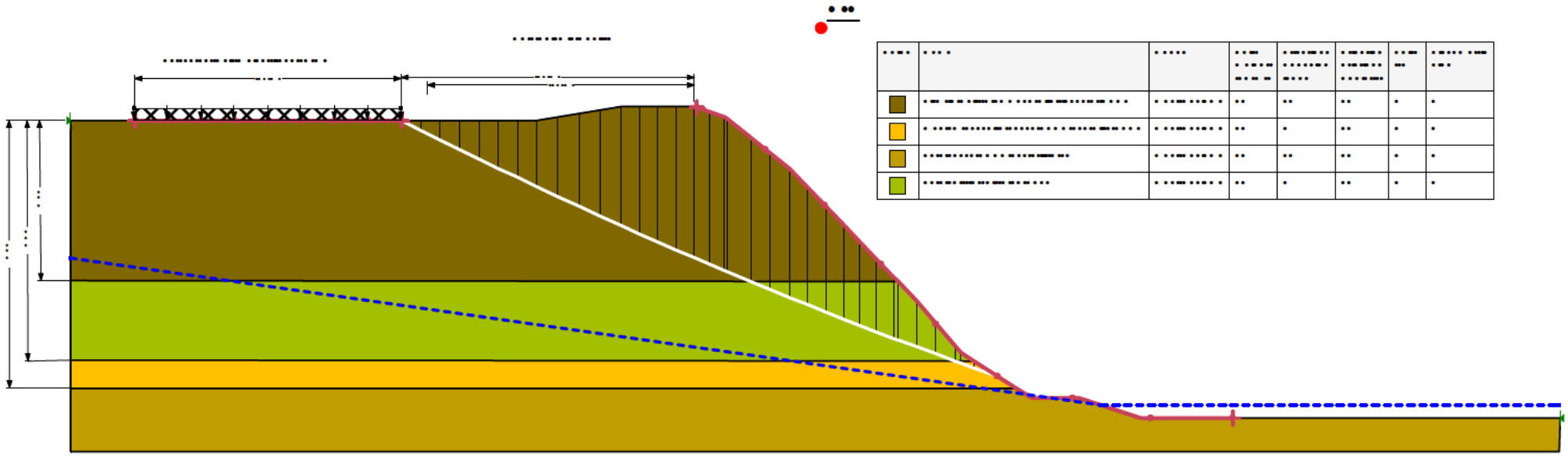
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |



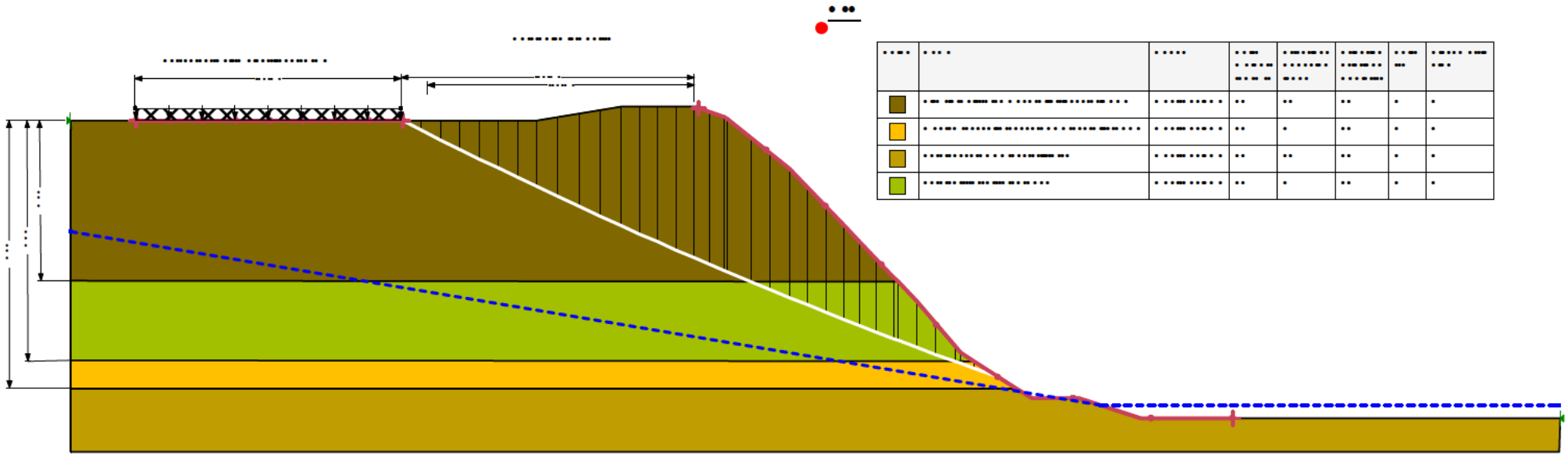
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |



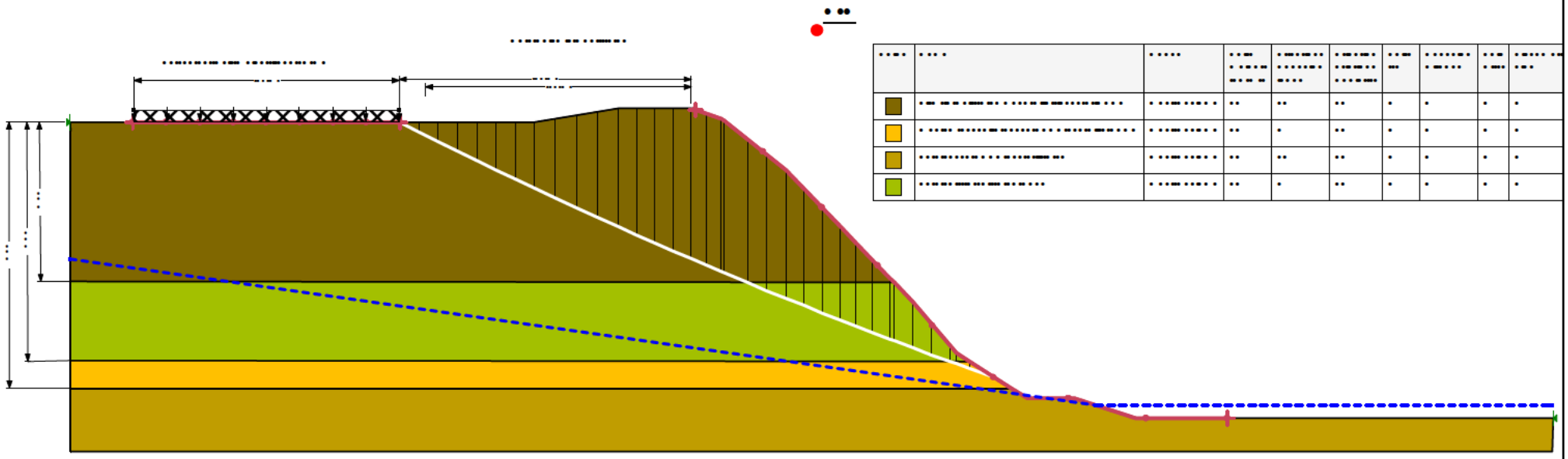
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |



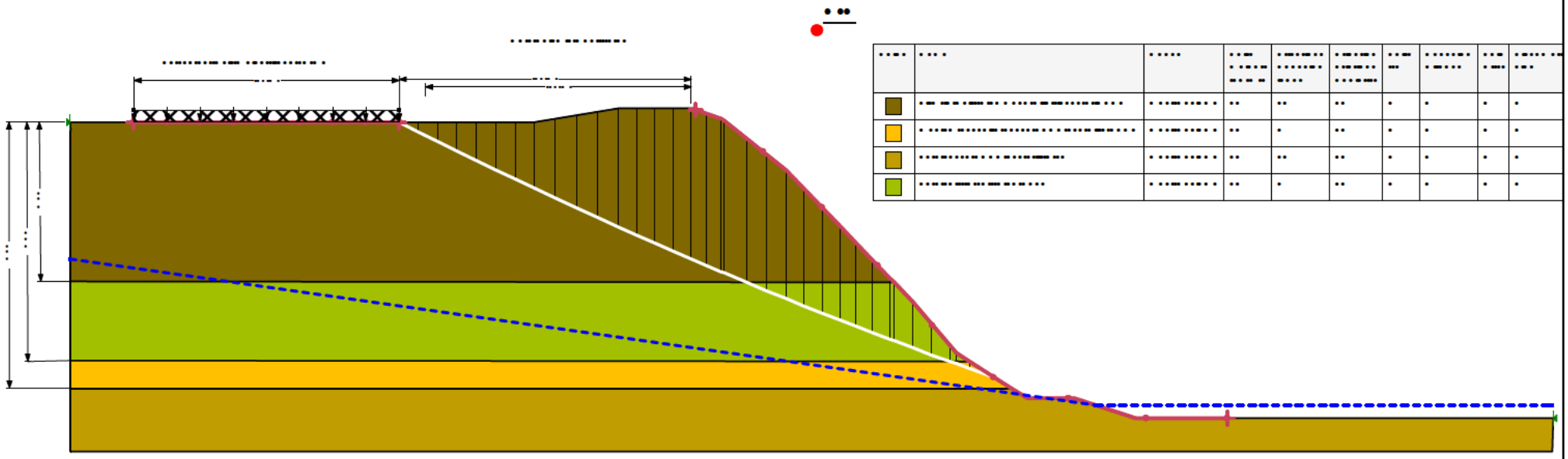
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |



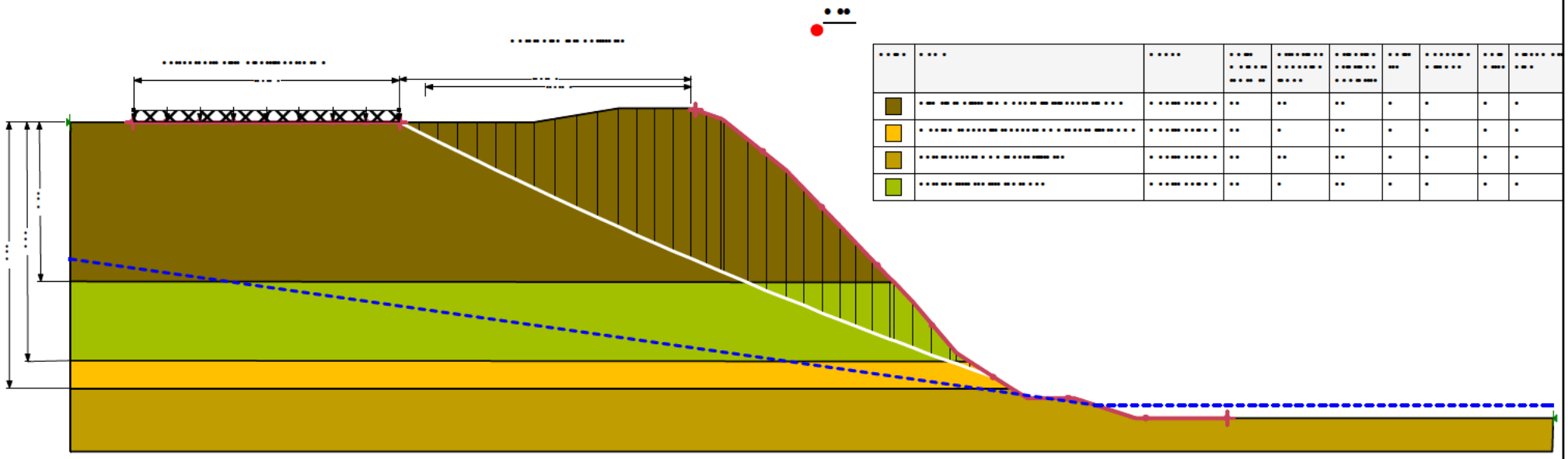
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |



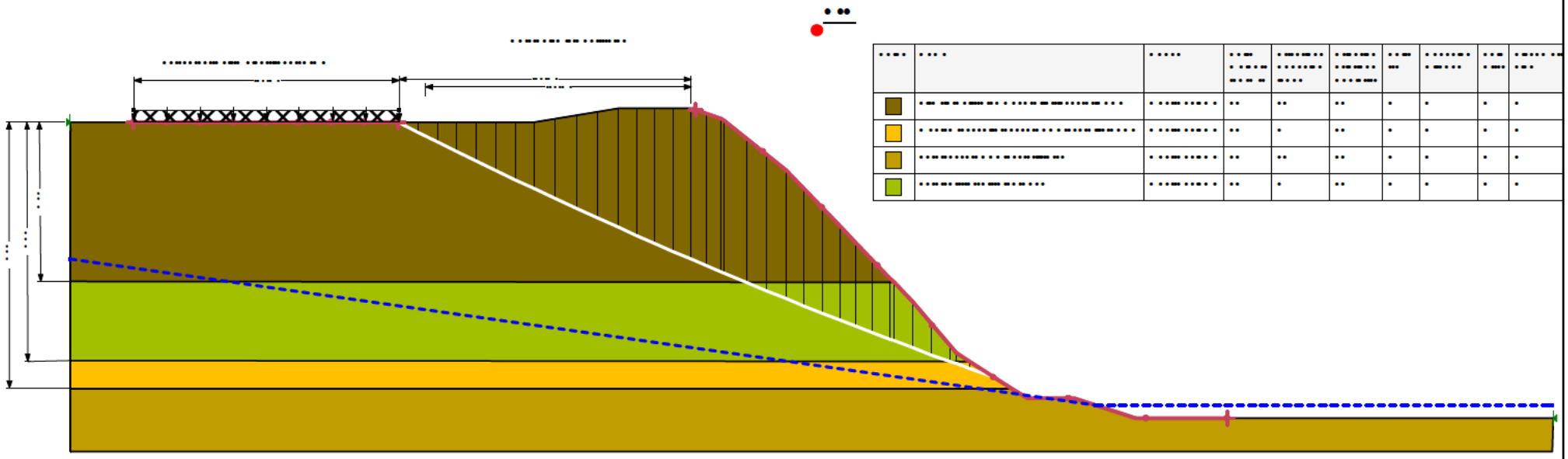
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

| | | | | |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |



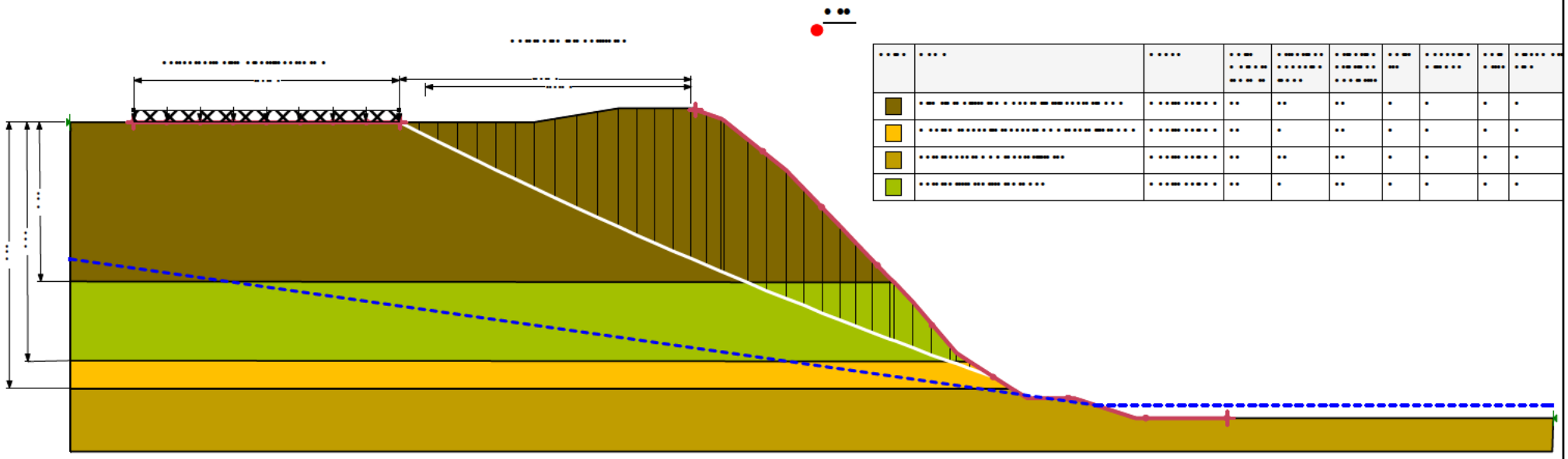
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |



| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |



| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

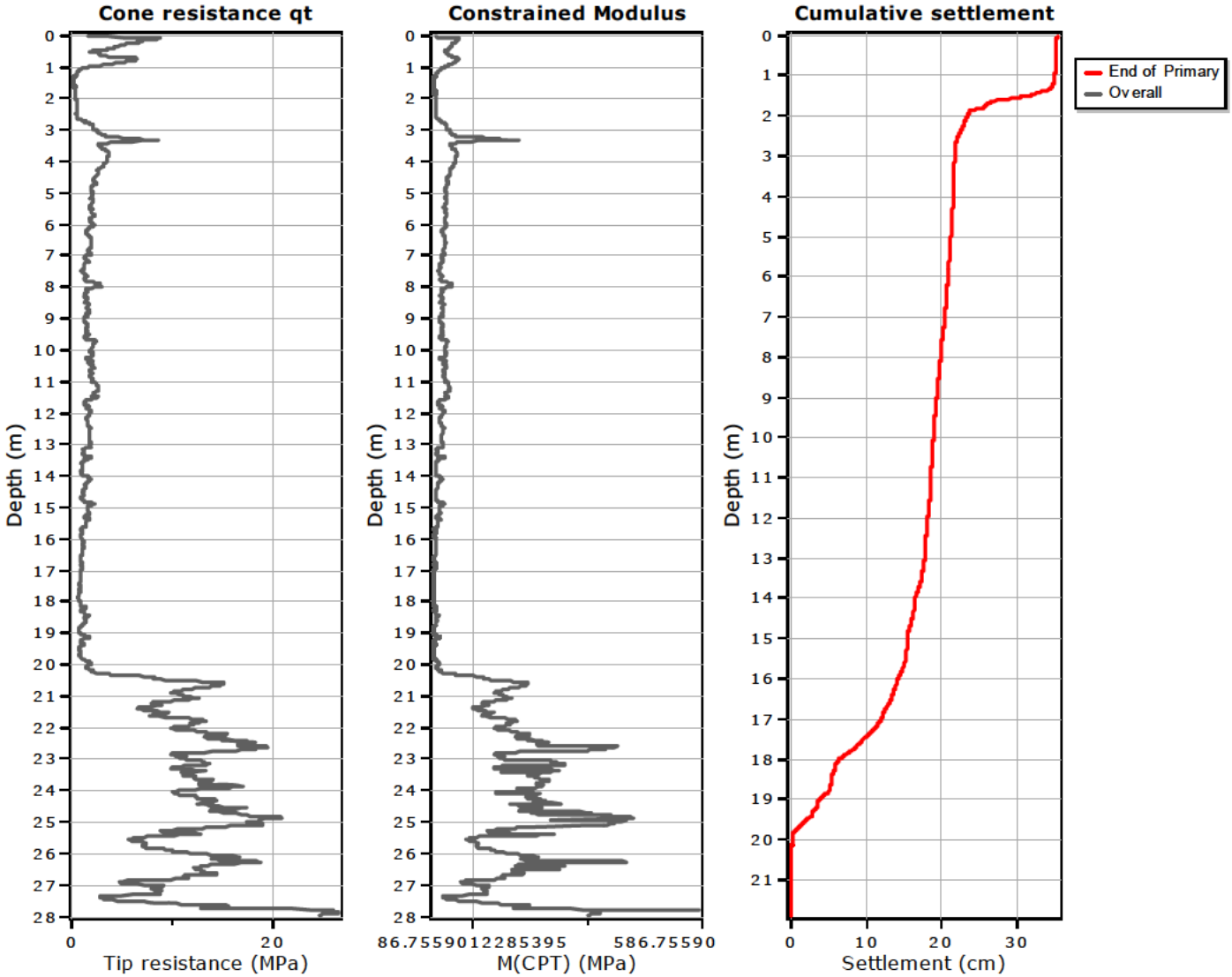
# Appendix E
# Static Vertical Settlement Results

**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

**CPT: CPT01 - 100kPa**
Total depth: 27.97 m, Date: 25/11/2020
Surface Elevation: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

**Project:** **2-WLASS.BN Geotechnical and Risk Assessment Sonning Carpark**
**Location:** **Sonning Carpark - River Road**

## Settlements calculation according to theory of elasticity*




### Calculation properties

Footing type: Rectangular
Footing width: 25.00 (m)
L/B: 1.0
Footing pressure: 100.00 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: No
Time period for primary consolidation: N/A
Time period for second. settlements: N/A

* Primary settlements calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlements calculation is performed according to the following formula:

$$S = C_\alpha \cdot \Delta z \cdot \log(t/t_p)$$

where $t_p$ is the duration of primary consolidation

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.01 | 0.02 | 0.01 | 0.02 | 100.00 | 2.29 | 1.00 | 0.044 | 0.000 | 0.044 |
| 2 | 0.02 | 0.03 | 0.01 | 0.03 | 100.00 | 3.05 | 1.00 | 0.033 | 0.000 | 0.033 |
| 3 | 0.03 | 0.04 | 0.01 | 0.04 | 100.00 | 5.08 | 1.00 | 0.020 | 0.000 | 0.020 |
| 4 | 0.04 | 0.05 | 0.01 | 0.05 | 100.00 | 7.60 | 1.00 | 0.013 | 0.000 | 0.013 |
| 5 | 0.05 | 0.06 | 0.01 | 0.06 | 100.00 | 10.24 | 1.00 | 0.010 | 0.000 | 0.010 |
| 6 | 0.06 | 0.07 | 0.01 | 0.07 | 100.00 | 44.05 | 1.00 | 0.002 | 0.000 | 0.002 |
| 7 | 0.07 | 0.08 | 0.01 | 0.08 | 100.00 | 50.73 | 1.00 | 0.002 | 0.000 | 0.002 |
| 8 | 0.08 | 0.09 | 0.01 | 0.09 | 100.00 | 53.97 | 1.00 | 0.002 | 0.000 | 0.002 |
| 9 | 0.09 | 0.10 | 0.01 | 0.09 | 100.00 | 51.72 | 1.00 | 0.002 | 0.000 | 0.002 |
| 10 | 0.10 | 0.11 | 0.01 | 0.10 | 100.00 | 52.69 | 1.00 | 0.002 | 0.000 | 0.002 |
| 11 | 0.11 | 0.12 | 0.01 | 0.12 | 100.00 | 53.55 | 1.00 | 0.002 | 0.000 | 0.002 |
| 12 | 0.12 | 0.13 | 0.01 | 0.13 | 100.00 | 53.29 | 1.00 | 0.002 | 0.000 | 0.002 |
| 13 | 0.13 | 0.14 | 0.01 | 0.14 | 100.00 | 52.37 | 1.00 | 0.002 | 0.000 | 0.002 |
| 14 | 0.14 | 0.15 | 0.01 | 0.15 | 100.00 | 51.86 | 1.00 | 0.002 | 0.000 | 0.002 |
| 15 | 0.15 | 0.16 | 0.01 | 0.16 | 100.00 | 51.66 | 1.00 | 0.002 | 0.000 | 0.002 |
| 16 | 0.16 | 0.17 | 0.01 | 0.17 | 100.00 | 51.20 | 1.00 | 0.002 | 0.000 | 0.002 |
| 17 | 0.17 | 0.18 | 0.01 | 0.18 | 100.00 | 50.57 | 1.00 | 0.002 | 0.000 | 0.002 |
| 18 | 0.18 | 0.19 | 0.01 | 0.19 | 100.00 | 49.92 | 1.00 | 0.002 | 0.000 | 0.002 |
| 19 | 0.19 | 0.20 | 0.01 | 0.20 | 100.00 | 49.24 | 1.00 | 0.002 | 0.000 | 0.002 |
| 20 | 0.20 | 0.21 | 0.01 | 0.21 | 100.00 | 47.74 | 1.00 | 0.002 | 0.000 | 0.002 |
| 21 | 0.21 | 0.22 | 0.01 | 0.22 | 100.00 | 47.21 | 1.00 | 0.002 | 0.000 | 0.002 |
| 22 | 0.22 | 0.23 | 0.01 | 0.23 | 100.00 | 46.45 | 1.00 | 0.002 | 0.000 | 0.002 |
| 23 | 0.23 | 0.24 | 0.01 | 0.24 | 100.00 | 44.97 | 1.00 | 0.002 | 0.000 | 0.002 |
| 24 | 0.24 | 0.25 | 0.01 | 0.25 | 100.00 | 43.51 | 1.00 | 0.002 | 0.000 | 0.002 |
| 25 | 0.25 | 0.26 | 0.01 | 0.26 | 100.00 | 40.91 | 1.00 | 0.002 | 0.000 | 0.002 |
| 26 | 0.26 | 0.27 | 0.01 | 0.27 | 100.00 | 39.60 | 1.00 | 0.003 | 0.000 | 0.003 |
| 27 | 0.27 | 0.28 | 0.01 | 0.28 | 100.00 | 37.27 | 1.00 | 0.003 | 0.000 | 0.003 |
| 28 | 0.28 | 0.29 | 0.01 | 0.28 | 100.00 | 38.40 | 1.00 | 0.003 | 0.000 | 0.003 |
| 29 | 0.29 | 0.30 | 0.01 | 0.30 | 100.00 | 39.26 | 1.00 | 0.003 | 0.000 | 0.003 |
| 30 | 0.30 | 0.31 | 0.01 | 0.31 | 100.00 | 39.53 | 1.00 | 0.003 | 0.000 | 0.003 |
| 31 | 0.31 | 0.32 | 0.01 | 0.32 | 100.00 | 38.75 | 1.00 | 0.003 | 0.000 | 0.003 |
| 32 | 0.32 | 0.33 | 0.01 | 0.33 | 100.00 | 37.78 | 1.00 | 0.003 | 0.000 | 0.003 |
| 33 | 0.33 | 0.34 | 0.01 | 0.34 | 100.00 | 37.16 | 1.00 | 0.003 | 0.000 | 0.003 |
| 34 | 0.34 | 0.35 | 0.01 | 0.35 | 100.00 | 36.66 | 1.00 | 0.003 | 0.000 | 0.003 |
| 35 | 0.35 | 0.36 | 0.01 | 0.36 | 100.00 | 36.39 | 1.00 | 0.003 | 0.000 | 0.003 |
| 36 | 0.36 | 0.37 | 0.01 | 0.36 | 100.00 | 36.45 | 1.00 | 0.003 | 0.000 | 0.003 |
| 37 | 0.37 | 0.38 | 0.01 | 0.37 | 100.00 | 35.86 | 1.00 | 0.003 | 0.000 | 0.003 |
| 38 | 0.38 | 0.39 | 0.01 | 0.38 | 100.00 | 34.77 | 1.00 | 0.003 | 0.000 | 0.003 |
| 39 | 0.39 | 0.40 | 0.01 | 0.39 | 100.00 | 33.29 | 1.00 | 0.003 | 0.000 | 0.003 |
| 40 | 0.40 | 0.41 | 0.01 | 0.40 | 100.00 | 32.58 | 1.00 | 0.003 | 0.000 | 0.003 |
| 41 | 0.41 | 0.42 | 0.01 | 0.41 | 100.00 | 31.21 | 1.00 | 0.003 | 0.000 | 0.003 |
| 42 | 0.42 | 0.43 | 0.01 | 0.42 | 100.00 | 31.02 | 1.00 | 0.003 | 0.000 | 0.003 |
| 43 | 0.43 | 0.44 | 0.01 | 0.43 | 100.00 | 30.45 | 1.00 | 0.003 | 0.000 | 0.003 |
| 44 | 0.44 | 0.45 | 0.01 | 0.44 | 100.00 | 31.13 | 1.00 | 0.003 | 0.000 | 0.003 |
| 45 | 0.45 | 0.46 | 0.01 | 0.45 | 100.00 | 29.42 | 1.00 | 0.003 | 0.000 | 0.003 |
| 46 | 0.46 | 0.47 | 0.01 | 0.46 | 100.00 | 27.85 | 1.00 | 0.004 | 0.000 | 0.004 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 47 | 0.47 | 0.48 | 0.01 | 0.47 | 100.00 | 26.76 | 1.00 | 0.004 | 0.000 | 0.004 |
| 48 | 0.48 | 0.49 | 0.01 | 0.48 | 100.00 | 21.51 | 1.00 | 0.005 | 0.000 | 0.005 |
| 49 | 0.49 | 0.50 | 0.01 | 0.49 | 100.00 | 21.76 | 1.00 | 0.005 | 0.000 | 0.005 |
| 50 | 0.50 | 0.51 | 0.01 | 0.50 | 100.00 | 21.57 | 1.00 | 0.005 | 0.000 | 0.005 |
| 51 | 0.51 | 0.52 | 0.01 | 0.51 | 99.99 | 25.89 | 1.00 | 0.004 | 0.000 | 0.004 |
| 52 | 0.52 | 0.53 | 0.01 | 0.52 | 99.99 | 25.73 | 1.00 | 0.004 | 0.000 | 0.004 |
| 53 | 0.53 | 0.54 | 0.01 | 0.53 | 99.99 | 25.89 | 1.00 | 0.004 | 0.000 | 0.004 |
| 54 | 0.54 | 0.55 | 0.01 | 0.54 | 99.99 | 28.15 | 1.00 | 0.004 | 0.000 | 0.004 |
| 55 | 0.55 | 0.56 | 0.01 | 0.55 | 99.99 | 28.83 | 1.00 | 0.003 | 0.000 | 0.003 |
| 56 | 0.56 | 0.57 | 0.01 | 0.56 | 99.99 | 29.76 | 1.00 | 0.003 | 0.000 | 0.003 |
| 57 | 0.57 | 0.58 | 0.01 | 0.57 | 99.99 | 28.67 | 1.00 | 0.003 | 0.000 | 0.003 |
| 58 | 0.58 | 0.59 | 0.01 | 0.58 | 99.99 | 29.65 | 1.00 | 0.003 | 0.000 | 0.003 |
| 59 | 0.59 | 0.60 | 0.01 | 0.59 | 99.99 | 29.72 | 1.00 | 0.003 | 0.000 | 0.003 |
| 60 | 0.60 | 0.61 | 0.01 | 0.60 | 99.99 | 30.44 | 1.00 | 0.003 | 0.000 | 0.003 |
| 61 | 0.61 | 0.62 | 0.01 | 0.61 | 99.99 | 31.09 | 1.00 | 0.003 | 0.000 | 0.003 |
| 62 | 0.62 | 0.63 | 0.01 | 0.62 | 99.99 | 32.77 | 1.00 | 0.003 | 0.000 | 0.003 |
| 63 | 0.63 | 0.64 | 0.01 | 0.63 | 99.99 | 34.94 | 1.00 | 0.003 | 0.000 | 0.003 |
| 64 | 0.64 | 0.65 | 0.01 | 0.64 | 99.99 | 36.24 | 1.00 | 0.003 | 0.000 | 0.003 |
| 65 | 0.65 | 0.66 | 0.01 | 0.65 | 99.99 | 38.32 | 1.00 | 0.003 | 0.000 | 0.003 |
| 66 | 0.66 | 0.67 | 0.01 | 0.66 | 99.99 | 40.42 | 1.00 | 0.002 | 0.000 | 0.002 |
| 67 | 0.67 | 0.68 | 0.01 | 0.67 | 99.99 | 43.37 | 1.00 | 0.002 | 0.000 | 0.002 |
| 68 | 0.68 | 0.69 | 0.01 | 0.68 | 99.99 | 45.21 | 1.00 | 0.002 | 0.000 | 0.002 |
| 69 | 0.69 | 0.70 | 0.01 | 0.69 | 99.99 | 47.56 | 1.00 | 0.002 | 0.000 | 0.002 |
| 70 | 0.70 | 0.71 | 0.01 | 0.70 | 99.99 | 49.39 | 1.00 | 0.002 | 0.000 | 0.002 |
| 71 | 0.71 | 0.72 | 0.01 | 0.71 | 99.99 | 51.57 | 1.00 | 0.002 | 0.000 | 0.002 |
| 72 | 0.72 | 0.73 | 0.01 | 0.72 | 99.99 | 52.51 | 1.00 | 0.002 | 0.000 | 0.002 |
| 73 | 0.73 | 0.74 | 0.01 | 0.73 | 99.98 | 53.05 | 1.00 | 0.002 | 0.000 | 0.002 |
| 74 | 0.74 | 0.75 | 0.01 | 0.74 | 99.98 | 53.84 | 1.00 | 0.002 | 0.000 | 0.002 |
| 75 | 0.75 | 0.76 | 0.01 | 0.75 | 99.98 | 53.56 | 1.00 | 0.002 | 0.000 | 0.002 |
| 76 | 0.76 | 0.77 | 0.01 | 0.76 | 99.98 | 53.42 | 1.00 | 0.002 | 0.000 | 0.002 |
| 77 | 0.77 | 0.78 | 0.01 | 0.77 | 99.98 | 51.70 | 1.00 | 0.002 | 0.000 | 0.002 |
| 78 | 0.78 | 0.79 | 0.01 | 0.78 | 99.98 | 50.08 | 1.00 | 0.002 | 0.000 | 0.002 |
| 79 | 0.79 | 0.80 | 0.01 | 0.79 | 99.98 | 48.85 | 1.00 | 0.002 | 0.000 | 0.002 |
| 80 | 0.80 | 0.81 | 0.01 | 0.80 | 99.98 | 47.97 | 1.00 | 0.002 | 0.000 | 0.002 |
| 81 | 0.81 | 0.82 | 0.01 | 0.81 | 99.98 | 47.80 | 1.00 | 0.002 | 0.000 | 0.002 |
| 82 | 0.82 | 0.83 | 0.01 | 0.82 | 99.98 | 47.37 | 1.00 | 0.002 | 0.000 | 0.002 |
| 83 | 0.83 | 0.84 | 0.01 | 0.83 | 99.98 | 47.15 | 1.00 | 0.002 | 0.000 | 0.002 |
| 84 | 0.84 | 0.85 | 0.01 | 0.84 | 99.98 | 46.36 | 1.00 | 0.002 | 0.000 | 0.002 |
| 85 | 0.85 | 0.86 | 0.01 | 0.85 | 99.98 | 45.02 | 1.00 | 0.002 | 0.000 | 0.002 |
| 86 | 0.86 | 0.87 | 0.01 | 0.86 | 99.98 | 44.02 | 1.00 | 0.002 | 0.000 | 0.002 |
| 87 | 0.87 | 0.88 | 0.01 | 0.87 | 99.97 | 42.78 | 1.00 | 0.002 | 0.000 | 0.002 |
| 88 | 0.88 | 0.89 | 0.01 | 0.88 | 99.97 | 41.89 | 1.00 | 0.002 | 0.000 | 0.002 |
| 89 | 0.89 | 0.90 | 0.01 | 0.89 | 99.97 | 39.91 | 1.00 | 0.003 | 0.000 | 0.003 |
| 90 | 0.90 | 0.91 | 0.01 | 0.90 | 99.97 | 38.06 | 1.00 | 0.003 | 0.000 | 0.003 |
| 91 | 0.91 | 0.92 | 0.01 | 0.91 | 99.97 | 35.96 | 1.00 | 0.003 | 0.000 | 0.003 |
| 92 | 0.92 | 0.93 | 0.01 | 0.92 | 99.97 | 34.06 | 1.00 | 0.003 | 0.000 | 0.003 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 93 | 0.93 | 0.94 | 0.01 | 0.93 | 99.97 | 32.31 | 1.00 | 0.003 | 0.000 | 0.003 |
| 94 | 0.94 | 0.95 | 0.01 | 0.94 | 99.97 | 30.78 | 1.00 | 0.003 | 0.000 | 0.003 |
| 95 | 0.95 | 0.96 | 0.01 | 0.95 | 99.97 | 29.01 | 1.00 | 0.003 | 0.000 | 0.003 |
| 96 | 0.96 | 0.97 | 0.01 | 0.96 | 99.97 | 28.16 | 1.00 | 0.004 | 0.000 | 0.004 |
| 97 | 0.97 | 0.98 | 0.01 | 0.97 | 99.96 | 26.59 | 1.00 | 0.004 | 0.000 | 0.004 |
| 98 | 0.98 | 0.99 | 0.01 | 0.98 | 99.96 | 25.48 | 1.00 | 0.004 | 0.000 | 0.004 |
| 99 | 0.99 | 1.00 | 0.01 | 0.99 | 99.96 | 23.58 | 1.00 | 0.004 | 0.000 | 0.004 |
| 100 | 1.00 | 1.01 | 0.01 | 1.00 | 99.96 | 22.10 | 1.00 | 0.005 | 0.000 | 0.005 |
| 101 | 1.01 | 1.02 | 0.01 | 1.01 | 99.96 | 21.02 | 1.00 | 0.005 | 0.000 | 0.005 |
| 102 | 1.02 | 1.03 | 0.01 | 1.02 | 99.96 | 18.98 | 1.00 | 0.005 | 0.000 | 0.005 |
| 103 | 1.03 | 1.04 | 0.01 | 1.03 | 99.96 | 17.61 | 1.00 | 0.006 | 0.000 | 0.006 |
| 104 | 1.04 | 1.05 | 0.01 | 1.04 | 99.96 | 16.52 | 1.00 | 0.006 | 0.000 | 0.006 |
| 105 | 1.05 | 1.06 | 0.01 | 1.05 | 99.96 | 16.53 | 1.00 | 0.006 | 0.000 | 0.006 |
| 106 | 1.06 | 1.07 | 0.01 | 1.06 | 99.95 | 16.23 | 1.00 | 0.006 | 0.000 | 0.006 |
| 107 | 1.07 | 1.08 | 0.01 | 1.07 | 99.95 | 15.65 | 1.00 | 0.006 | 0.000 | 0.006 |
| 108 | 1.08 | 1.09 | 0.01 | 1.08 | 99.95 | 15.45 | 1.00 | 0.006 | 0.000 | 0.006 |
| 109 | 1.09 | 1.10 | 0.01 | 1.09 | 99.95 | 15.02 | 1.00 | 0.007 | 0.000 | 0.007 |
| 110 | 1.10 | 1.11 | 0.01 | 1.10 | 99.95 | 14.32 | 1.00 | 0.007 | 0.000 | 0.007 |
| 111 | 1.11 | 1.12 | 0.01 | 1.11 | 99.95 | 8.20 | 1.00 | 0.012 | 0.000 | 0.012 |
| 112 | 1.12 | 1.13 | 0.01 | 1.12 | 99.95 | 7.82 | 1.00 | 0.013 | 0.000 | 0.013 |
| 113 | 1.13 | 1.14 | 0.01 | 1.13 | 99.94 | 7.33 | 1.00 | 0.014 | 0.000 | 0.014 |
| 114 | 1.14 | 1.15 | 0.01 | 1.14 | 99.94 | 6.55 | 1.00 | 0.015 | 0.000 | 0.015 |
| 115 | 1.15 | 1.16 | 0.01 | 1.15 | 99.94 | 6.17 | 1.00 | 0.016 | 0.000 | 0.016 |
| 116 | 1.16 | 1.17 | 0.01 | 1.16 | 99.94 | 5.97 | 1.00 | 0.017 | 0.000 | 0.017 |
| 117 | 1.17 | 1.18 | 0.01 | 1.17 | 99.94 | 6.00 | 1.00 | 0.017 | 0.000 | 0.017 |
| 118 | 1.18 | 1.19 | 0.01 | 1.18 | 99.94 | 5.71 | 1.00 | 0.017 | 0.000 | 0.017 |
| 119 | 1.19 | 1.20 | 0.01 | 1.19 | 99.94 | 5.60 | 1.00 | 0.018 | 0.000 | 0.018 |
| 120 | 1.20 | 1.21 | 0.01 | 1.20 | 99.93 | 5.48 | 1.00 | 0.018 | 0.000 | 0.018 |
| 121 | 1.21 | 1.22 | 0.01 | 1.21 | 99.93 | 5.53 | 1.00 | 0.018 | 0.000 | 0.018 |
| 122 | 1.22 | 1.23 | 0.01 | 1.22 | 99.93 | 5.26 | 1.00 | 0.019 | 0.000 | 0.019 |
| 123 | 1.23 | 1.24 | 0.01 | 1.23 | 99.93 | 4.84 | 1.00 | 0.021 | 0.000 | 0.021 |
| 124 | 1.24 | 1.25 | 0.01 | 1.24 | 99.93 | 4.36 | 1.00 | 0.023 | 0.000 | 0.023 |
| 125 | 1.25 | 1.26 | 0.01 | 1.25 | 99.93 | 4.04 | 1.00 | 0.025 | 0.000 | 0.025 |
| 126 | 1.26 | 1.27 | 0.01 | 1.26 | 99.92 | 3.71 | 1.00 | 0.027 | 0.000 | 0.027 |
| 127 | 1.27 | 1.28 | 0.01 | 1.27 | 99.92 | 3.43 | 1.00 | 0.029 | 0.000 | 0.029 |
| 128 | 1.28 | 1.29 | 0.01 | 1.28 | 99.92 | 2.75 | 1.00 | 0.036 | 0.000 | 0.036 |
| 129 | 1.29 | 1.30 | 0.01 | 1.29 | 99.92 | 2.13 | 1.00 | 0.047 | 0.000 | 0.047 |
| 130 | 1.30 | 1.31 | 0.01 | 1.30 | 99.92 | 1.52 | 1.00 | 0.066 | 0.000 | 0.066 |
| 131 | 1.31 | 1.32 | 0.01 | 1.31 | 99.91 | 1.29 | 1.00 | 0.077 | 0.000 | 0.077 |
| 132 | 1.32 | 1.33 | 0.01 | 1.32 | 99.91 | 1.02 | 1.00 | 0.098 | 0.000 | 0.098 |
| 133 | 1.33 | 1.34 | 0.01 | 1.33 | 99.91 | 0.75 | 1.00 | 0.134 | 0.000 | 0.134 |
| 134 | 1.34 | 1.35 | 0.01 | 1.34 | 99.91 | 0.54 | 1.00 | 0.186 | 0.000 | 0.186 |
| 135 | 1.35 | 1.36 | 0.01 | 1.35 | 99.91 | 0.45 | 1.00 | 0.221 | 0.000 | 0.221 |
| 136 | 1.36 | 1.37 | 0.01 | 1.36 | 99.90 | 0.49 | 1.00 | 0.202 | 0.000 | 0.202 |
| 137 | 1.37 | 1.38 | 0.01 | 1.37 | 99.90 | 0.54 | 1.00 | 0.186 | 0.000 | 0.186 |
| 138 | 1.38 | 1.39 | 0.01 | 1.38 | 99.90 | 0.62 | 1.00 | 0.162 | 0.000 | 0.162 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 139 | 1.39 | 1.40 | 0.01 | 1.39 | 99.90 | 0.66 | 1.00 | 0.151 | 0.000 | 0.151 |
| 140 | 1.40 | 1.41 | 0.01 | 1.40 | 99.90 | 0.67 | 1.00 | 0.149 | 0.000 | 0.149 |
| 141 | 1.41 | 1.42 | 0.01 | 1.41 | 99.89 | 0.65 | 1.00 | 0.155 | 0.000 | 0.155 |
| 142 | 1.42 | 1.43 | 0.01 | 1.42 | 99.89 | 0.60 | 1.00 | 0.165 | 0.000 | 0.165 |
| 143 | 1.43 | 1.44 | 0.01 | 1.43 | 99.89 | 0.65 | 1.00 | 0.154 | 0.000 | 0.154 |
| 144 | 1.44 | 1.45 | 0.01 | 1.44 | 99.89 | 0.68 | 1.00 | 0.147 | 0.000 | 0.147 |
| 145 | 1.45 | 1.46 | 0.01 | 1.45 | 99.88 | 0.74 | 1.00 | 0.135 | 0.000 | 0.135 |
| 146 | 1.46 | 1.47 | 0.01 | 1.46 | 99.88 | 0.76 | 1.00 | 0.132 | 0.000 | 0.132 |
| 147 | 1.47 | 1.48 | 0.01 | 1.47 | 99.88 | 0.76 | 1.00 | 0.132 | 0.000 | 0.132 |
| 148 | 1.48 | 1.49 | 0.01 | 1.48 | 99.88 | 0.79 | 1.00 | 0.127 | 0.000 | 0.127 |
| 149 | 1.49 | 1.50 | 0.01 | 1.49 | 99.87 | 0.74 | 1.00 | 0.135 | 0.000 | 0.135 |
| 150 | 1.50 | 1.51 | 0.01 | 1.50 | 99.87 | 0.17 | 1.00 | 0.578 | 0.000 | 0.578 |
| 151 | 1.51 | 1.52 | 0.01 | 1.51 | 99.87 | 0.18 | 1.00 | 0.561 | 0.000 | 0.561 |
| 152 | 1.52 | 1.53 | 0.01 | 1.52 | 99.87 | 0.92 | 1.00 | 0.109 | 0.000 | 0.109 |
| 153 | 1.53 | 1.54 | 0.01 | 1.53 | 99.86 | 0.94 | 1.00 | 0.106 | 0.000 | 0.106 |
| 154 | 1.54 | 1.55 | 0.01 | 1.54 | 99.86 | 0.19 | 1.00 | 0.530 | 0.000 | 0.530 |
| 155 | 1.55 | 1.56 | 0.01 | 1.55 | 99.86 | 0.20 | 1.00 | 0.493 | 0.000 | 0.493 |
| 156 | 1.56 | 1.57 | 0.01 | 1.56 | 99.86 | 0.21 | 1.00 | 0.476 | 0.000 | 0.476 |
| 157 | 1.57 | 1.58 | 0.01 | 1.57 | 99.85 | 1.27 | 1.00 | 0.079 | 0.000 | 0.079 |
| 158 | 1.58 | 1.59 | 0.01 | 1.58 | 99.85 | 0.22 | 1.00 | 0.450 | 0.000 | 0.450 |
| 159 | 1.59 | 1.60 | 0.01 | 1.59 | 99.85 | 0.24 | 1.00 | 0.422 | 0.000 | 0.422 |
| 160 | 1.60 | 1.61 | 0.01 | 1.60 | 99.84 | 0.24 | 1.00 | 0.410 | 0.000 | 0.410 |
| 161 | 1.61 | 1.62 | 0.01 | 1.61 | 99.84 | 0.25 | 1.00 | 0.396 | 0.000 | 0.396 |
| 162 | 1.62 | 1.63 | 0.01 | 1.62 | 99.84 | 0.23 | 1.00 | 0.427 | 0.000 | 0.427 |
| 163 | 1.63 | 1.64 | 0.01 | 1.63 | 99.84 | 1.25 | 1.00 | 0.080 | 0.000 | 0.080 |
| 164 | 1.64 | 1.65 | 0.01 | 1.64 | 99.83 | 1.24 | 1.00 | 0.081 | 0.000 | 0.081 |
| 165 | 1.65 | 1.66 | 0.01 | 1.65 | 99.83 | 1.28 | 1.00 | 0.078 | 0.000 | 0.078 |
| 166 | 1.66 | 1.67 | 0.01 | 1.66 | 99.83 | 1.29 | 1.00 | 0.077 | 0.000 | 0.077 |
| 167 | 1.67 | 1.68 | 0.01 | 1.67 | 99.82 | 1.35 | 1.00 | 0.074 | 0.000 | 0.074 |
| 168 | 1.68 | 1.69 | 0.01 | 1.68 | 99.82 | 1.33 | 1.00 | 0.075 | 0.000 | 0.075 |
| 169 | 1.69 | 1.70 | 0.01 | 1.69 | 99.82 | 1.39 | 1.00 | 0.072 | 0.000 | 0.072 |
| 170 | 1.70 | 1.71 | 0.01 | 1.70 | 99.81 | 1.42 | 1.00 | 0.070 | 0.000 | 0.070 |
| 171 | 1.71 | 1.72 | 0.01 | 1.71 | 99.81 | 1.67 | 1.00 | 0.060 | 0.000 | 0.060 |
| 172 | 1.72 | 1.73 | 0.01 | 1.72 | 99.81 | 1.95 | 1.00 | 0.051 | 0.000 | 0.051 |
| 173 | 1.73 | 1.74 | 0.01 | 1.73 | 99.80 | 2.16 | 1.00 | 0.046 | 0.000 | 0.046 |
| 174 | 1.74 | 1.75 | 0.01 | 1.74 | 99.80 | 1.84 | 1.00 | 0.054 | 0.000 | 0.054 |
| 175 | 1.75 | 1.76 | 0.01 | 1.75 | 99.80 | 1.68 | 1.00 | 0.059 | 0.000 | 0.059 |
| 176 | 1.76 | 1.77 | 0.01 | 1.76 | 99.79 | 1.66 | 1.00 | 0.060 | 0.000 | 0.060 |
| 177 | 1.77 | 1.78 | 0.01 | 1.77 | 99.79 | 2.01 | 1.00 | 0.050 | 0.000 | 0.050 |
| 178 | 1.78 | 1.79 | 0.01 | 1.78 | 99.79 | 2.08 | 1.00 | 0.048 | 0.000 | 0.048 |
| 179 | 1.79 | 1.80 | 0.01 | 1.79 | 99.78 | 0.32 | 1.00 | 0.311 | 0.000 | 0.311 |
| 180 | 1.80 | 1.81 | 0.01 | 1.80 | 99.78 | 0.33 | 1.00 | 0.306 | 0.000 | 0.306 |
| 181 | 1.81 | 1.82 | 0.01 | 1.81 | 99.78 | 0.34 | 1.00 | 0.297 | 0.000 | 0.297 |
| 182 | 1.82 | 1.83 | 0.01 | 1.82 | 99.77 | 3.37 | 1.00 | 0.030 | 0.000 | 0.030 |
| 183 | 1.83 | 1.84 | 0.01 | 1.83 | 99.77 | 0.36 | 1.00 | 0.280 | 0.000 | 0.280 |
| 184 | 1.84 | 1.85 | 0.01 | 1.84 | 99.77 | 0.36 | 1.00 | 0.275 | 0.000 | 0.275 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 185 | 1.85 | 1.86 | 0.01 | 1.85 | 99.76 | 0.39 | 1.00 | 0.258 | 0.000 | 0.258 |
| 186 | 1.86 | 1.87 | 0.01 | 1.86 | 99.76 | 3.03 | 1.00 | 0.033 | 0.000 | 0.033 |
| 187 | 1.87 | 1.88 | 0.01 | 1.87 | 99.75 | 3.12 | 1.00 | 0.032 | 0.000 | 0.032 |
| 188 | 1.88 | 1.89 | 0.01 | 1.88 | 99.75 | 3.00 | 1.00 | 0.033 | 0.000 | 0.033 |
| 189 | 1.89 | 1.90 | 0.01 | 1.89 | 99.75 | 3.17 | 1.00 | 0.032 | 0.000 | 0.032 |
| 190 | 1.90 | 1.91 | 0.01 | 1.90 | 99.74 | 3.33 | 1.00 | 0.030 | 0.000 | 0.030 |
| 191 | 1.91 | 1.92 | 0.01 | 1.91 | 99.74 | 3.50 | 1.00 | 0.029 | 0.000 | 0.029 |
| 192 | 1.92 | 1.93 | 0.01 | 1.92 | 99.73 | 3.69 | 1.00 | 0.027 | 0.000 | 0.027 |
| 193 | 1.93 | 1.94 | 0.01 | 1.93 | 99.73 | 3.36 | 1.00 | 0.030 | 0.000 | 0.030 |
| 194 | 1.94 | 1.95 | 0.01 | 1.94 | 99.73 | 3.15 | 1.00 | 0.032 | 0.000 | 0.032 |
| 195 | 1.95 | 1.96 | 0.01 | 1.95 | 99.72 | 3.19 | 1.00 | 0.031 | 0.000 | 0.031 |
| 196 | 1.96 | 1.97 | 0.01 | 1.96 | 99.72 | 3.25 | 1.00 | 0.031 | 0.000 | 0.031 |
| 197 | 1.97 | 1.98 | 0.01 | 1.97 | 99.71 | 3.46 | 1.00 | 0.029 | 0.000 | 0.029 |
| 198 | 1.98 | 1.99 | 0.01 | 1.98 | 99.71 | 3.46 | 1.00 | 0.029 | 0.000 | 0.029 |
| 199 | 1.99 | 2.00 | 0.01 | 1.99 | 99.70 | 3.31 | 1.00 | 0.030 | 0.000 | 0.030 |
| 200 | 2.00 | 2.01 | 0.01 | 2.00 | 99.70 | 3.37 | 1.00 | 0.030 | 0.000 | 0.030 |
| 201 | 2.01 | 2.02 | 0.01 | 2.01 | 99.70 | 3.16 | 1.00 | 0.032 | 0.000 | 0.032 |
| 202 | 2.02 | 2.03 | 0.01 | 2.02 | 99.69 | 3.54 | 1.00 | 0.028 | 0.000 | 0.028 |
| 203 | 2.03 | 2.04 | 0.01 | 2.03 | 99.69 | 3.49 | 1.00 | 0.029 | 0.000 | 0.029 |
| 204 | 2.04 | 2.05 | 0.01 | 2.04 | 99.68 | 3.84 | 1.00 | 0.026 | 0.000 | 0.026 |
| 205 | 2.05 | 2.06 | 0.01 | 2.05 | 99.68 | 3.97 | 1.00 | 0.025 | 0.000 | 0.025 |
| 206 | 2.06 | 2.07 | 0.01 | 2.06 | 99.67 | 4.21 | 1.00 | 0.024 | 0.000 | 0.024 |
| 207 | 2.07 | 2.08 | 0.01 | 2.07 | 99.67 | 4.05 | 1.00 | 0.025 | 0.000 | 0.025 |
| 208 | 2.08 | 2.09 | 0.01 | 2.08 | 99.66 | 4.41 | 1.00 | 0.023 | 0.000 | 0.023 |
| 209 | 2.09 | 2.10 | 0.01 | 2.09 | 99.66 | 4.46 | 1.00 | 0.022 | 0.000 | 0.022 |
| 210 | 2.10 | 2.11 | 0.01 | 2.10 | 99.65 | 5.18 | 1.00 | 0.019 | 0.000 | 0.019 |
| 211 | 2.11 | 2.12 | 0.01 | 2.11 | 99.65 | 5.22 | 1.00 | 0.019 | 0.000 | 0.019 |
| 212 | 2.12 | 2.13 | 0.01 | 2.12 | 99.64 | 5.47 | 1.00 | 0.018 | 0.000 | 0.018 |
| 213 | 2.13 | 2.14 | 0.01 | 2.13 | 99.64 | 5.61 | 1.00 | 0.018 | 0.000 | 0.018 |
| 214 | 2.14 | 2.15 | 0.01 | 2.14 | 99.63 | 5.57 | 1.00 | 0.018 | 0.000 | 0.018 |
| 215 | 2.15 | 2.16 | 0.01 | 2.15 | 99.63 | 5.60 | 1.00 | 0.018 | 0.000 | 0.018 |
| 216 | 2.16 | 2.17 | 0.01 | 2.16 | 99.62 | 5.56 | 1.00 | 0.018 | 0.000 | 0.018 |
| 217 | 2.17 | 2.18 | 0.01 | 2.17 | 99.62 | 5.68 | 1.00 | 0.018 | 0.000 | 0.018 |
| 218 | 2.18 | 2.19 | 0.01 | 2.18 | 99.61 | 5.43 | 1.00 | 0.018 | 0.000 | 0.018 |
| 219 | 2.19 | 2.20 | 0.01 | 2.19 | 99.61 | 4.94 | 1.00 | 0.020 | 0.000 | 0.020 |
| 220 | 2.20 | 2.21 | 0.01 | 2.20 | 99.60 | 4.41 | 1.00 | 0.023 | 0.000 | 0.023 |
| 221 | 2.21 | 2.22 | 0.01 | 2.21 | 99.60 | 4.25 | 1.00 | 0.023 | 0.000 | 0.023 |
| 222 | 2.22 | 2.23 | 0.01 | 2.22 | 99.59 | 4.16 | 1.00 | 0.024 | 0.000 | 0.024 |
| 223 | 2.23 | 2.24 | 0.01 | 2.23 | 99.59 | 4.35 | 1.00 | 0.023 | 0.000 | 0.023 |
| 224 | 2.24 | 2.25 | 0.01 | 2.24 | 99.58 | 4.27 | 1.00 | 0.023 | 0.000 | 0.023 |
| 225 | 2.25 | 2.26 | 0.01 | 2.25 | 99.58 | 4.70 | 1.00 | 0.021 | 0.000 | 0.021 |
| 226 | 2.26 | 2.27 | 0.01 | 2.26 | 99.57 | 4.53 | 1.00 | 0.022 | 0.000 | 0.022 |
| 227 | 2.27 | 2.28 | 0.01 | 2.27 | 99.57 | 4.43 | 1.00 | 0.022 | 0.000 | 0.022 |
| 228 | 2.28 | 2.29 | 0.01 | 2.28 | 99.56 | 3.96 | 1.00 | 0.025 | 0.000 | 0.025 |
| 229 | 2.29 | 2.30 | 0.01 | 2.29 | 99.56 | 3.72 | 1.00 | 0.027 | 0.000 | 0.027 |
| 230 | 2.30 | 2.31 | 0.01 | 2.30 | 99.55 | 3.81 | 1.00 | 0.026 | 0.000 | 0.026 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 231 | 2.31 | 2.32 | 0.01 | 2.31 | 99.54 | 4.00 | 1.00 | 0.025 | 0.000 | 0.025 |
| 232 | 2.32 | 2.33 | 0.01 | 2.32 | 99.54 | 4.02 | 1.00 | 0.025 | 0.000 | 0.025 |
| 233 | 2.33 | 2.34 | 0.01 | 2.33 | 99.53 | 4.07 | 1.00 | 0.024 | 0.000 | 0.024 |
| 234 | 2.34 | 2.35 | 0.01 | 2.34 | 99.53 | 3.74 | 1.00 | 0.027 | 0.000 | 0.027 |
| 235 | 2.35 | 2.36 | 0.01 | 2.35 | 99.52 | 3.60 | 1.00 | 0.028 | 0.000 | 0.028 |
| 236 | 2.36 | 2.37 | 0.01 | 2.36 | 99.51 | 3.72 | 1.00 | 0.027 | 0.000 | 0.027 |
| 237 | 2.37 | 2.38 | 0.01 | 2.37 | 99.51 | 3.85 | 1.00 | 0.026 | 0.000 | 0.026 |
| 238 | 2.38 | 2.39 | 0.01 | 2.38 | 99.50 | 4.12 | 1.00 | 0.024 | 0.000 | 0.024 |
| 239 | 2.39 | 2.40 | 0.01 | 2.39 | 99.50 | 3.94 | 0.99 | 0.025 | 0.000 | 0.025 |
| 240 | 2.40 | 2.41 | 0.01 | 2.40 | 99.49 | 4.12 | 0.99 | 0.024 | 0.000 | 0.024 |
| 241 | 2.41 | 2.42 | 0.01 | 2.41 | 99.48 | 3.92 | 0.99 | 0.025 | 0.000 | 0.025 |
| 242 | 2.42 | 2.43 | 0.01 | 2.42 | 99.48 | 3.98 | 0.99 | 0.025 | 0.000 | 0.025 |
| 243 | 2.43 | 2.44 | 0.01 | 2.43 | 99.47 | 3.96 | 0.99 | 0.025 | 0.000 | 0.025 |
| 244 | 2.44 | 2.45 | 0.01 | 2.44 | 99.47 | 4.21 | 0.99 | 0.024 | 0.000 | 0.024 |
| 245 | 2.45 | 2.46 | 0.01 | 2.45 | 99.46 | 3.75 | 0.99 | 0.027 | 0.000 | 0.027 |
| 246 | 2.46 | 2.47 | 0.01 | 2.46 | 99.45 | 3.47 | 0.99 | 0.029 | 0.000 | 0.029 |
| 247 | 2.47 | 2.48 | 0.01 | 2.47 | 99.45 | 3.38 | 0.99 | 0.029 | 0.000 | 0.029 |
| 248 | 2.48 | 2.49 | 0.01 | 2.48 | 99.44 | 3.32 | 0.99 | 0.030 | 0.000 | 0.030 |
| 249 | 2.49 | 2.50 | 0.01 | 2.49 | 99.43 | 3.54 | 0.99 | 0.028 | 0.000 | 0.028 |
| 250 | 2.50 | 2.51 | 0.01 | 2.50 | 99.43 | 3.64 | 0.99 | 0.027 | 0.000 | 0.027 |
| 251 | 2.51 | 2.52 | 0.01 | 2.51 | 99.42 | 4.66 | 0.99 | 0.021 | 0.000 | 0.021 |
| 252 | 2.52 | 2.53 | 0.01 | 2.52 | 99.41 | 5.26 | 0.99 | 0.019 | 0.000 | 0.019 |
| 253 | 2.53 | 2.54 | 0.01 | 2.53 | 99.41 | 5.79 | 0.99 | 0.017 | 0.000 | 0.017 |
| 254 | 2.54 | 2.55 | 0.01 | 2.54 | 99.40 | 5.72 | 0.99 | 0.017 | 0.000 | 0.017 |
| 255 | 2.55 | 2.56 | 0.01 | 2.55 | 99.39 | 5.43 | 0.99 | 0.018 | 0.000 | 0.018 |
| 256 | 2.56 | 2.57 | 0.01 | 2.56 | 99.39 | 5.16 | 0.99 | 0.019 | 0.000 | 0.019 |
| 257 | 2.57 | 2.58 | 0.01 | 2.57 | 99.38 | 4.96 | 0.99 | 0.020 | 0.000 | 0.020 |
| 258 | 2.58 | 2.59 | 0.01 | 2.58 | 99.37 | 4.74 | 0.99 | 0.021 | 0.000 | 0.021 |
| 259 | 2.59 | 2.60 | 0.01 | 2.59 | 99.36 | 4.74 | 0.99 | 0.021 | 0.000 | 0.021 |
| 260 | 2.60 | 2.61 | 0.01 | 2.60 | 99.36 | 4.75 | 0.99 | 0.021 | 0.000 | 0.021 |
| 261 | 2.61 | 2.62 | 0.01 | 2.61 | 99.35 | 4.94 | 0.99 | 0.020 | 0.000 | 0.020 |
| 262 | 2.62 | 2.63 | 0.01 | 2.62 | 99.34 | 5.43 | 0.99 | 0.018 | 0.000 | 0.018 |
| 263 | 2.63 | 2.64 | 0.01 | 2.63 | 99.34 | 6.28 | 0.99 | 0.016 | 0.000 | 0.016 |
| 264 | 2.64 | 2.65 | 0.01 | 2.64 | 99.33 | 7.00 | 0.99 | 0.014 | 0.000 | 0.014 |
| 265 | 2.65 | 2.66 | 0.01 | 2.65 | 99.32 | 7.81 | 0.99 | 0.013 | 0.000 | 0.013 |
| 266 | 2.66 | 2.67 | 0.01 | 2.66 | 99.31 | 9.36 | 0.99 | 0.011 | 0.000 | 0.011 |
| 267 | 2.67 | 2.68 | 0.01 | 2.67 | 99.31 | 11.10 | 0.99 | 0.009 | 0.000 | 0.009 |
| 268 | 2.68 | 2.69 | 0.01 | 2.68 | 99.30 | 12.94 | 0.99 | 0.008 | 0.000 | 0.008 |
| 269 | 2.69 | 2.70 | 0.01 | 2.69 | 99.29 | 14.61 | 0.99 | 0.007 | 0.000 | 0.007 |
| 270 | 2.70 | 2.71 | 0.01 | 2.70 | 99.28 | 15.82 | 0.99 | 0.006 | 0.000 | 0.006 |
| 271 | 2.71 | 2.72 | 0.01 | 2.71 | 99.28 | 16.93 | 0.99 | 0.006 | 0.000 | 0.006 |
| 272 | 2.72 | 2.73 | 0.01 | 2.72 | 99.27 | 16.91 | 0.99 | 0.006 | 0.000 | 0.006 |
| 273 | 2.73 | 2.74 | 0.01 | 2.73 | 99.26 | 16.51 | 0.99 | 0.006 | 0.000 | 0.006 |
| 274 | 2.74 | 2.75 | 0.01 | 2.74 | 99.25 | 16.29 | 0.99 | 0.006 | 0.000 | 0.006 |
| 275 | 2.75 | 2.76 | 0.01 | 2.75 | 99.24 | 16.92 | 0.99 | 0.006 | 0.000 | 0.006 |
| 276 | 2.76 | 2.77 | 0.01 | 2.76 | 99.24 | 18.45 | 0.99 | 0.005 | 0.000 | 0.005 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 277 | 2.77 | 2.78 | 0.01 | 2.77 | 99.23 | 20.34 | 0.99 | 0.005 | 0.000 | 0.005 |
| 278 | 2.78 | 2.79 | 0.01 | 2.78 | 99.22 | 21.94 | 0.99 | 0.005 | 0.000 | 0.005 |
| 279 | 2.79 | 2.80 | 0.01 | 2.79 | 99.21 | 23.37 | 0.99 | 0.004 | 0.000 | 0.004 |
| 280 | 2.80 | 2.81 | 0.01 | 2.80 | 99.20 | 24.47 | 0.99 | 0.004 | 0.000 | 0.004 |
| 281 | 2.81 | 2.82 | 0.01 | 2.81 | 99.20 | 25.34 | 0.99 | 0.004 | 0.000 | 0.004 |
| 282 | 2.82 | 2.83 | 0.01 | 2.82 | 99.19 | 26.03 | 0.99 | 0.004 | 0.000 | 0.004 |
| 283 | 2.83 | 2.84 | 0.01 | 2.83 | 99.18 | 26.48 | 0.99 | 0.004 | 0.000 | 0.004 |
| 284 | 2.84 | 2.85 | 0.01 | 2.84 | 99.17 | 26.86 | 0.99 | 0.004 | 0.000 | 0.004 |
| 285 | 2.85 | 2.86 | 0.01 | 2.85 | 99.16 | 27.20 | 0.99 | 0.004 | 0.000 | 0.004 |
| 286 | 2.86 | 2.87 | 0.01 | 2.86 | 99.15 | 27.49 | 0.99 | 0.004 | 0.000 | 0.004 |
| 287 | 2.87 | 2.88 | 0.01 | 2.87 | 99.15 | 27.79 | 0.99 | 0.004 | 0.000 | 0.004 |
| 288 | 2.88 | 2.89 | 0.01 | 2.88 | 99.14 | 27.99 | 0.99 | 0.004 | 0.000 | 0.004 |
| 289 | 2.89 | 2.90 | 0.01 | 2.89 | 99.13 | 27.96 | 0.99 | 0.004 | 0.000 | 0.004 |
| 290 | 2.90 | 2.91 | 0.01 | 2.90 | 99.12 | 27.70 | 0.99 | 0.004 | 0.000 | 0.004 |
| 291 | 2.91 | 2.92 | 0.01 | 2.91 | 99.11 | 27.39 | 0.99 | 0.004 | 0.000 | 0.004 |
| 292 | 2.92 | 2.93 | 0.01 | 2.92 | 99.10 | 27.12 | 0.99 | 0.004 | 0.000 | 0.004 |
| 293 | 2.93 | 2.94 | 0.01 | 2.93 | 99.09 | 27.00 | 0.99 | 0.004 | 0.000 | 0.004 |
| 294 | 2.94 | 2.95 | 0.01 | 2.94 | 99.09 | 26.95 | 0.99 | 0.004 | 0.000 | 0.004 |
| 295 | 2.95 | 2.96 | 0.01 | 2.95 | 99.08 | 27.26 | 0.99 | 0.004 | 0.000 | 0.004 |
| 296 | 2.96 | 2.97 | 0.01 | 2.96 | 99.07 | 27.73 | 0.99 | 0.004 | 0.000 | 0.004 |
| 297 | 2.97 | 2.98 | 0.01 | 2.97 | 99.06 | 28.51 | 0.99 | 0.003 | 0.000 | 0.003 |
| 298 | 2.98 | 2.99 | 0.01 | 2.98 | 99.05 | 29.94 | 0.99 | 0.003 | 0.000 | 0.003 |
| 299 | 2.99 | 3.00 | 0.01 | 2.99 | 99.04 | 31.57 | 0.99 | 0.003 | 0.000 | 0.003 |
| 300 | 3.00 | 3.01 | 0.01 | 3.00 | 99.03 | 33.15 | 0.99 | 0.003 | 0.000 | 0.003 |
| 301 | 3.01 | 3.02 | 0.01 | 3.01 | 99.02 | 33.85 | 0.99 | 0.003 | 0.000 | 0.003 |
| 302 | 3.02 | 3.03 | 0.01 | 3.02 | 99.01 | 34.21 | 0.99 | 0.003 | 0.000 | 0.003 |
| 303 | 3.03 | 3.04 | 0.01 | 3.03 | 99.00 | 34.26 | 0.99 | 0.003 | 0.000 | 0.003 |
| 304 | 3.04 | 3.05 | 0.01 | 3.04 | 98.99 | 33.98 | 0.99 | 0.003 | 0.000 | 0.003 |
| 305 | 3.05 | 3.06 | 0.01 | 3.05 | 98.98 | 33.74 | 0.99 | 0.003 | 0.000 | 0.003 |
| 306 | 3.06 | 3.07 | 0.01 | 3.06 | 98.97 | 33.64 | 0.99 | 0.003 | 0.000 | 0.003 |
| 307 | 3.07 | 3.08 | 0.01 | 3.07 | 98.96 | 34.18 | 0.99 | 0.003 | 0.000 | 0.003 |
| 308 | 3.08 | 3.09 | 0.01 | 3.08 | 98.96 | 34.92 | 0.99 | 0.003 | 0.000 | 0.003 |
| 309 | 3.09 | 3.10 | 0.01 | 3.09 | 98.95 | 35.80 | 0.99 | 0.003 | 0.000 | 0.003 |
| 310 | 3.10 | 3.11 | 0.01 | 3.10 | 98.94 | 36.63 | 0.99 | 0.003 | 0.000 | 0.003 |
| 311 | 3.11 | 3.12 | 0.01 | 3.11 | 98.93 | 37.55 | 0.99 | 0.003 | 0.000 | 0.003 |
| 312 | 3.12 | 3.13 | 0.01 | 3.12 | 98.92 | 38.63 | 0.99 | 0.003 | 0.000 | 0.003 |
| 313 | 3.13 | 3.14 | 0.01 | 3.13 | 98.91 | 40.24 | 0.99 | 0.002 | 0.000 | 0.002 |
| 314 | 3.14 | 3.15 | 0.01 | 3.14 | 98.90 | 41.77 | 0.99 | 0.002 | 0.000 | 0.002 |
| 315 | 3.15 | 3.16 | 0.01 | 3.15 | 98.89 | 43.09 | 0.99 | 0.002 | 0.000 | 0.002 |
| 316 | 3.16 | 3.17 | 0.01 | 3.16 | 98.88 | 43.77 | 0.99 | 0.002 | 0.000 | 0.002 |
| 317 | 3.17 | 3.18 | 0.01 | 3.17 | 98.87 | 44.34 | 0.99 | 0.002 | 0.000 | 0.002 |
| 318 | 3.18 | 3.19 | 0.01 | 3.18 | 98.86 | 45.06 | 0.99 | 0.002 | 0.000 | 0.002 |
| 319 | 3.19 | 3.20 | 0.01 | 3.19 | 98.85 | 46.03 | 0.99 | 0.002 | 0.000 | 0.002 |
| 320 | 3.20 | 3.21 | 0.01 | 3.20 | 98.84 | 47.65 | 0.99 | 0.002 | 0.000 | 0.002 |
| 321 | 3.21 | 3.22 | 0.01 | 3.21 | 98.82 | 50.58 | 0.99 | 0.002 | 0.000 | 0.002 |
| 322 | 3.22 | 3.23 | 0.01 | 3.22 | 98.81 | 54.98 | 0.99 | 0.002 | 0.000 | 0.002 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 323 | 3.23 | 3.24 | 0.01 | 3.23 | 98.80 | 103.56 | 0.99 | 0.001 | 0.000 | 0.001 |
| 324 | 3.24 | 3.25 | 0.01 | 3.24 | 98.79 | 111.40 | 0.99 | 0.001 | 0.000 | 0.001 |
| 325 | 3.25 | 3.26 | 0.01 | 3.25 | 98.78 | 118.60 | 0.99 | 0.001 | 0.000 | 0.001 |
| 326 | 3.26 | 3.27 | 0.01 | 3.26 | 98.77 | 125.49 | 0.99 | 0.001 | 0.000 | 0.001 |
| 327 | 3.27 | 3.28 | 0.01 | 3.27 | 98.76 | 134.65 | 0.99 | 0.001 | 0.000 | 0.001 |
| 328 | 3.28 | 3.29 | 0.01 | 3.28 | 98.75 | 144.37 | 0.99 | 0.001 | 0.000 | 0.001 |
| 329 | 3.29 | 3.30 | 0.01 | 3.29 | 98.74 | 92.63 | 0.99 | 0.001 | 0.000 | 0.001 |
| 330 | 3.30 | 3.31 | 0.01 | 3.30 | 98.73 | 162.91 | 0.99 | 0.001 | 0.000 | 0.001 |
| 331 | 3.31 | 3.32 | 0.01 | 3.31 | 98.72 | 171.98 | 0.99 | 0.001 | 0.000 | 0.001 |
| 332 | 3.32 | 3.33 | 0.01 | 3.32 | 98.71 | 180.61 | 0.99 | 0.001 | 0.000 | 0.001 |
| 333 | 3.33 | 3.34 | 0.01 | 3.33 | 98.70 | 185.03 | 0.99 | 0.001 | 0.000 | 0.001 |
| 334 | 3.34 | 3.35 | 0.01 | 3.34 | 98.69 | 183.42 | 0.99 | 0.001 | 0.000 | 0.001 |
| 335 | 3.35 | 3.36 | 0.01 | 3.35 | 98.67 | 96.80 | 0.99 | 0.001 | 0.000 | 0.001 |
| 336 | 3.36 | 3.37 | 0.01 | 3.36 | 98.66 | 81.70 | 0.99 | 0.001 | 0.000 | 0.001 |
| 337 | 3.37 | 3.38 | 0.01 | 3.37 | 98.65 | 70.08 | 0.99 | 0.001 | 0.000 | 0.001 |
| 338 | 3.38 | 3.39 | 0.01 | 3.38 | 98.64 | 62.53 | 0.99 | 0.002 | 0.000 | 0.002 |
| 339 | 3.39 | 3.40 | 0.01 | 3.39 | 98.63 | 56.45 | 0.99 | 0.002 | 0.000 | 0.002 |
| 340 | 3.40 | 3.41 | 0.01 | 3.40 | 98.62 | 51.79 | 0.99 | 0.002 | 0.000 | 0.002 |
| 341 | 3.41 | 3.42 | 0.01 | 3.41 | 98.61 | 47.99 | 0.99 | 0.002 | 0.000 | 0.002 |
| 342 | 3.42 | 3.43 | 0.01 | 3.42 | 98.59 | 45.64 | 0.99 | 0.002 | 0.000 | 0.002 |
| 343 | 3.43 | 3.44 | 0.01 | 3.43 | 98.58 | 43.52 | 0.99 | 0.002 | 0.000 | 0.002 |
| 344 | 3.44 | 3.45 | 0.01 | 3.44 | 98.57 | 40.54 | 0.99 | 0.002 | 0.000 | 0.002 |
| 345 | 3.45 | 3.46 | 0.01 | 3.45 | 98.56 | 37.98 | 0.99 | 0.003 | 0.000 | 0.003 |
| 346 | 3.46 | 3.47 | 0.01 | 3.46 | 98.55 | 36.12 | 0.99 | 0.003 | 0.000 | 0.003 |
| 347 | 3.47 | 3.48 | 0.01 | 3.47 | 98.54 | 35.85 | 0.99 | 0.003 | 0.000 | 0.003 |
| 348 | 3.48 | 3.49 | 0.01 | 3.48 | 98.52 | 36.61 | 0.99 | 0.003 | 0.000 | 0.003 |
| 349 | 3.49 | 3.50 | 0.01 | 3.49 | 98.51 | 37.29 | 0.99 | 0.003 | 0.000 | 0.003 |
| 350 | 3.50 | 3.51 | 0.01 | 3.50 | 98.50 | 37.82 | 0.99 | 0.003 | 0.000 | 0.003 |
| 351 | 3.51 | 3.52 | 0.01 | 3.51 | 98.49 | 37.54 | 0.98 | 0.003 | 0.000 | 0.003 |
| 352 | 3.52 | 3.53 | 0.01 | 3.52 | 98.48 | 37.40 | 0.98 | 0.003 | 0.000 | 0.003 |
| 353 | 3.53 | 3.54 | 0.01 | 3.53 | 98.46 | 37.46 | 0.98 | 0.003 | 0.000 | 0.003 |
| 354 | 3.54 | 3.55 | 0.01 | 3.54 | 98.45 | 37.55 | 0.98 | 0.003 | 0.000 | 0.003 |
| 355 | 3.55 | 3.56 | 0.01 | 3.55 | 98.44 | 38.04 | 0.98 | 0.003 | 0.000 | 0.003 |
| 356 | 3.56 | 3.57 | 0.01 | 3.56 | 98.43 | 38.67 | 0.98 | 0.003 | 0.000 | 0.003 |
| 357 | 3.57 | 3.58 | 0.01 | 3.57 | 98.41 | 39.35 | 0.98 | 0.003 | 0.000 | 0.003 |
| 358 | 3.58 | 3.59 | 0.01 | 3.58 | 98.40 | 39.96 | 0.98 | 0.002 | 0.000 | 0.002 |
| 359 | 3.59 | 3.60 | 0.01 | 3.59 | 98.39 | 40.93 | 0.98 | 0.002 | 0.000 | 0.002 |
| 360 | 3.60 | 3.61 | 0.01 | 3.60 | 98.38 | 41.97 | 0.98 | 0.002 | 0.000 | 0.002 |
| 361 | 3.61 | 3.62 | 0.01 | 3.61 | 98.36 | 42.96 | 0.98 | 0.002 | 0.000 | 0.002 |
| 362 | 3.62 | 3.63 | 0.01 | 3.62 | 98.35 | 43.72 | 0.98 | 0.002 | 0.000 | 0.002 |
| 363 | 3.63 | 3.64 | 0.01 | 3.63 | 98.34 | 44.73 | 0.98 | 0.002 | 0.000 | 0.002 |
| 364 | 3.64 | 3.65 | 0.01 | 3.64 | 98.33 | 45.75 | 0.98 | 0.002 | 0.000 | 0.002 |
| 365 | 3.65 | 3.66 | 0.01 | 3.65 | 98.31 | 46.64 | 0.98 | 0.002 | 0.000 | 0.002 |
| 366 | 3.66 | 3.67 | 0.01 | 3.66 | 98.30 | 47.06 | 0.98 | 0.002 | 0.000 | 0.002 |
| 367 | 3.67 | 3.68 | 0.01 | 3.67 | 98.29 | 47.61 | 0.98 | 0.002 | 0.000 | 0.002 |
| 368 | 3.68 | 3.69 | 0.01 | 3.68 | 98.27 | 48.12 | 0.98 | 0.002 | 0.000 | 0.002 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 369 | 3.69 | 3.70 | 0.01 | 3.69 | 98.26 | 48.74 | 0.98 | 0.002 | 0.000 | 0.002 |
| 370 | 3.70 | 3.71 | 0.01 | 3.70 | 98.25 | 48.96 | 0.98 | 0.002 | 0.000 | 0.002 |
| 371 | 3.71 | 3.72 | 0.01 | 3.71 | 98.23 | 49.23 | 0.98 | 0.002 | 0.000 | 0.002 |
| 372 | 3.72 | 3.73 | 0.01 | 3.72 | 98.22 | 49.65 | 0.98 | 0.002 | 0.000 | 0.002 |
| 373 | 3.73 | 3.74 | 0.01 | 3.73 | 98.21 | 50.14 | 0.98 | 0.002 | 0.000 | 0.002 |
| 374 | 3.74 | 3.75 | 0.01 | 3.74 | 98.19 | 50.39 | 0.98 | 0.002 | 0.000 | 0.002 |
| 375 | 3.75 | 3.76 | 0.01 | 3.75 | 98.18 | 50.27 | 0.98 | 0.002 | 0.000 | 0.002 |
| 376 | 3.76 | 3.77 | 0.01 | 3.76 | 98.17 | 49.98 | 0.98 | 0.002 | 0.000 | 0.002 |
| 377 | 3.77 | 3.78 | 0.01 | 3.77 | 98.15 | 49.54 | 0.98 | 0.002 | 0.000 | 0.002 |
| 378 | 3.78 | 3.79 | 0.01 | 3.78 | 98.14 | 49.21 | 0.98 | 0.002 | 0.000 | 0.002 |
| 379 | 3.79 | 3.80 | 0.01 | 3.79 | 98.13 | 48.95 | 0.98 | 0.002 | 0.000 | 0.002 |
| 380 | 3.80 | 3.81 | 0.01 | 3.80 | 98.11 | 48.94 | 0.98 | 0.002 | 0.000 | 0.002 |
| 381 | 3.81 | 3.82 | 0.01 | 3.81 | 98.10 | 48.78 | 0.98 | 0.002 | 0.000 | 0.002 |
| 382 | 3.82 | 3.83 | 0.01 | 3.82 | 98.09 | 48.66 | 0.98 | 0.002 | 0.000 | 0.002 |
| 383 | 3.83 | 3.84 | 0.01 | 3.83 | 98.07 | 48.40 | 0.98 | 0.002 | 0.000 | 0.002 |
| 384 | 3.84 | 3.85 | 0.01 | 3.84 | 98.06 | 48.25 | 0.98 | 0.002 | 0.000 | 0.002 |
| 385 | 3.85 | 3.86 | 0.01 | 3.85 | 98.04 | 48.07 | 0.98 | 0.002 | 0.000 | 0.002 |
| 386 | 3.86 | 3.87 | 0.01 | 3.86 | 98.03 | 47.94 | 0.98 | 0.002 | 0.000 | 0.002 |
| 387 | 3.87 | 3.88 | 0.01 | 3.87 | 98.02 | 47.88 | 0.98 | 0.002 | 0.000 | 0.002 |
| 388 | 3.88 | 3.89 | 0.01 | 3.88 | 98.00 | 47.94 | 0.98 | 0.002 | 0.000 | 0.002 |
| 389 | 3.89 | 3.90 | 0.01 | 3.89 | 97.99 | 48.04 | 0.98 | 0.002 | 0.000 | 0.002 |
| 390 | 3.90 | 3.91 | 0.01 | 3.90 | 97.97 | 48.20 | 0.98 | 0.002 | 0.000 | 0.002 |
| 391 | 3.91 | 3.92 | 0.01 | 3.91 | 97.96 | 48.21 | 0.98 | 0.002 | 0.000 | 0.002 |
| 392 | 3.92 | 3.93 | 0.01 | 3.92 | 97.94 | 48.20 | 0.98 | 0.002 | 0.000 | 0.002 |
| 393 | 3.93 | 3.94 | 0.01 | 3.93 | 97.93 | 48.12 | 0.98 | 0.002 | 0.000 | 0.002 |
| 394 | 3.94 | 3.95 | 0.01 | 3.94 | 97.91 | 48.14 | 0.98 | 0.002 | 0.000 | 0.002 |
| 395 | 3.95 | 3.96 | 0.01 | 3.95 | 97.90 | 48.13 | 0.98 | 0.002 | 0.000 | 0.002 |
| 396 | 3.96 | 3.97 | 0.01 | 3.96 | 97.89 | 47.95 | 0.98 | 0.002 | 0.000 | 0.002 |
| 397 | 3.97 | 3.98 | 0.01 | 3.97 | 97.87 | 47.67 | 0.98 | 0.002 | 0.000 | 0.002 |
| 398 | 3.98 | 3.99 | 0.01 | 3.98 | 97.86 | 47.43 | 0.98 | 0.002 | 0.000 | 0.002 |
| 399 | 3.99 | 4.00 | 0.01 | 3.99 | 97.84 | 47.20 | 0.98 | 0.002 | 0.000 | 0.002 |
| 400 | 4.00 | 4.01 | 0.01 | 4.00 | 97.83 | 46.88 | 0.98 | 0.002 | 0.000 | 0.002 |
| 401 | 4.01 | 4.02 | 0.01 | 4.01 | 97.81 | 46.55 | 0.98 | 0.002 | 0.000 | 0.002 |
| 402 | 4.02 | 4.03 | 0.01 | 4.02 | 97.80 | 46.27 | 0.98 | 0.002 | 0.000 | 0.002 |
| 403 | 4.03 | 4.04 | 0.01 | 4.03 | 97.78 | 46.01 | 0.98 | 0.002 | 0.000 | 0.002 |
| 404 | 4.04 | 4.05 | 0.01 | 4.04 | 97.77 | 45.64 | 0.98 | 0.002 | 0.000 | 0.002 |
| 405 | 4.05 | 4.06 | 0.01 | 4.05 | 97.75 | 45.16 | 0.98 | 0.002 | 0.000 | 0.002 |
| 406 | 4.06 | 4.07 | 0.01 | 4.06 | 97.73 | 44.63 | 0.98 | 0.002 | 0.000 | 0.002 |
| 407 | 4.07 | 4.08 | 0.01 | 4.07 | 97.72 | 44.07 | 0.98 | 0.002 | 0.000 | 0.002 |
| 408 | 4.08 | 4.09 | 0.01 | 4.08 | 97.70 | 43.55 | 0.98 | 0.002 | 0.000 | 0.002 |
| 409 | 4.09 | 4.10 | 0.01 | 4.09 | 97.69 | 43.20 | 0.98 | 0.002 | 0.000 | 0.002 |
| 410 | 4.10 | 4.11 | 0.01 | 4.10 | 97.67 | 42.94 | 0.98 | 0.002 | 0.000 | 0.002 |
| 411 | 4.11 | 4.12 | 0.01 | 4.11 | 97.66 | 42.68 | 0.98 | 0.002 | 0.000 | 0.002 |
| 412 | 4.12 | 4.13 | 0.01 | 4.12 | 97.64 | 42.49 | 0.98 | 0.002 | 0.000 | 0.002 |
| 413 | 4.13 | 4.14 | 0.01 | 4.14 | 97.63 | 42.41 | 0.98 | 0.002 | 0.000 | 0.002 |
| 414 | 4.14 | 4.15 | 0.01 | 4.14 | 97.61 | 42.36 | 0.98 | 0.002 | 0.000 | 0.002 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 415 | 4.15 | 4.16 | 0.01 | 4.16 | 97.59 | 42.14 | 0.98 | 0.002 | 0.000 | 0.002 |
| 416 | 4.16 | 4.17 | 0.01 | 4.17 | 97.58 | 41.66 | 0.98 | 0.002 | 0.000 | 0.002 |
| 417 | 4.17 | 4.18 | 0.01 | 4.18 | 97.56 | 41.04 | 0.98 | 0.002 | 0.000 | 0.002 |
| 418 | 4.18 | 4.19 | 0.01 | 4.19 | 97.55 | 40.33 | 0.98 | 0.002 | 0.000 | 0.002 |
| 419 | 4.19 | 4.20 | 0.01 | 4.20 | 97.53 | 39.56 | 0.98 | 0.002 | 0.000 | 0.002 |
| 420 | 4.20 | 4.21 | 0.01 | 4.21 | 97.51 | 38.60 | 0.98 | 0.003 | 0.000 | 0.003 |
| 421 | 4.21 | 4.22 | 0.01 | 4.22 | 97.50 | 37.49 | 0.97 | 0.003 | 0.000 | 0.003 |
| 422 | 4.22 | 4.23 | 0.01 | 4.23 | 97.48 | 36.48 | 0.97 | 0.003 | 0.000 | 0.003 |
| 423 | 4.23 | 4.24 | 0.01 | 4.24 | 97.47 | 35.66 | 0.97 | 0.003 | 0.000 | 0.003 |
| 424 | 4.24 | 4.25 | 0.01 | 4.25 | 97.45 | 35.09 | 0.97 | 0.003 | 0.000 | 0.003 |
| 425 | 4.25 | 4.26 | 0.01 | 4.26 | 97.43 | 34.56 | 0.97 | 0.003 | 0.000 | 0.003 |
| 426 | 4.26 | 4.27 | 0.01 | 4.27 | 97.42 | 34.11 | 0.97 | 0.003 | 0.000 | 0.003 |
| 427 | 4.27 | 4.28 | 0.01 | 4.28 | 97.40 | 33.77 | 0.97 | 0.003 | 0.000 | 0.003 |
| 428 | 4.28 | 4.29 | 0.01 | 4.29 | 97.38 | 33.55 | 0.97 | 0.003 | 0.000 | 0.003 |
| 429 | 4.29 | 4.30 | 0.01 | 4.30 | 97.37 | 33.55 | 0.97 | 0.003 | 0.000 | 0.003 |
| 430 | 4.30 | 4.31 | 0.01 | 4.31 | 97.35 | 33.90 | 0.97 | 0.003 | 0.000 | 0.003 |
| 431 | 4.31 | 4.32 | 0.01 | 4.32 | 97.33 | 34.49 | 0.97 | 0.003 | 0.000 | 0.003 |
| 432 | 4.32 | 4.33 | 0.01 | 4.33 | 97.32 | 35.17 | 0.97 | 0.003 | 0.000 | 0.003 |
| 433 | 4.33 | 4.34 | 0.01 | 4.34 | 97.30 | 35.58 | 0.97 | 0.003 | 0.000 | 0.003 |
| 434 | 4.34 | 4.35 | 0.01 | 4.35 | 97.28 | 35.84 | 0.97 | 0.003 | 0.000 | 0.003 |
| 435 | 4.35 | 4.36 | 0.01 | 4.36 | 97.27 | 36.01 | 0.97 | 0.003 | 0.000 | 0.003 |
| 436 | 4.36 | 4.37 | 0.01 | 4.37 | 97.25 | 36.09 | 0.97 | 0.003 | 0.000 | 0.003 |
| 437 | 4.37 | 4.38 | 0.01 | 4.38 | 97.23 | 35.96 | 0.97 | 0.003 | 0.000 | 0.003 |
| 438 | 4.38 | 4.39 | 0.01 | 4.39 | 97.21 | 35.41 | 0.97 | 0.003 | 0.000 | 0.003 |
| 439 | 4.39 | 4.40 | 0.01 | 4.40 | 97.20 | 34.77 | 0.97 | 0.003 | 0.000 | 0.003 |
| 440 | 4.40 | 4.41 | 0.01 | 4.41 | 97.18 | 34.17 | 0.97 | 0.003 | 0.000 | 0.003 |
| 441 | 4.41 | 4.42 | 0.01 | 4.42 | 97.16 | 33.79 | 0.97 | 0.003 | 0.000 | 0.003 |
| 442 | 4.42 | 4.43 | 0.01 | 4.43 | 97.14 | 33.40 | 0.97 | 0.003 | 0.000 | 0.003 |
| 443 | 4.43 | 4.44 | 0.01 | 4.44 | 97.13 | 33.10 | 0.97 | 0.003 | 0.000 | 0.003 |
| 444 | 4.44 | 4.45 | 0.01 | 4.45 | 97.11 | 32.85 | 0.97 | 0.003 | 0.000 | 0.003 |
| 445 | 4.45 | 4.46 | 0.01 | 4.46 | 97.09 | 32.60 | 0.97 | 0.003 | 0.000 | 0.003 |
| 446 | 4.46 | 4.47 | 0.01 | 4.47 | 97.07 | 32.03 | 0.97 | 0.003 | 0.000 | 0.003 |
| 447 | 4.47 | 4.48 | 0.01 | 4.48 | 97.06 | 31.19 | 0.97 | 0.003 | 0.000 | 0.003 |
| 448 | 4.48 | 4.49 | 0.01 | 4.49 | 97.04 | 30.93 | 0.97 | 0.003 | 0.000 | 0.003 |
| 449 | 4.49 | 4.50 | 0.01 | 4.50 | 97.02 | 30.63 | 0.97 | 0.003 | 0.000 | 0.003 |
| 450 | 4.50 | 4.51 | 0.01 | 4.51 | 97.00 | 30.45 | 0.97 | 0.003 | 0.000 | 0.003 |
| 451 | 4.51 | 4.52 | 0.01 | 4.52 | 96.98 | 29.59 | 0.97 | 0.003 | 0.000 | 0.003 |
| 452 | 4.52 | 4.53 | 0.01 | 4.53 | 96.97 | 28.96 | 0.97 | 0.003 | 0.000 | 0.003 |
| 453 | 4.53 | 4.54 | 0.01 | 4.54 | 96.95 | 28.33 | 0.97 | 0.003 | 0.000 | 0.003 |
| 454 | 4.54 | 4.55 | 0.01 | 4.55 | 96.93 | 27.70 | 0.97 | 0.003 | 0.000 | 0.003 |
| 455 | 4.55 | 4.56 | 0.01 | 4.56 | 96.91 | 27.15 | 0.97 | 0.004 | 0.000 | 0.004 |
| 456 | 4.56 | 4.57 | 0.01 | 4.57 | 96.89 | 26.83 | 0.97 | 0.004 | 0.000 | 0.004 |
| 457 | 4.57 | 4.58 | 0.01 | 4.58 | 96.87 | 26.86 | 0.97 | 0.004 | 0.000 | 0.004 |
| 458 | 4.58 | 4.59 | 0.01 | 4.59 | 96.86 | 26.93 | 0.97 | 0.004 | 0.000 | 0.004 |
| 459 | 4.59 | 4.60 | 0.01 | 4.60 | 96.84 | 27.04 | 0.97 | 0.004 | 0.000 | 0.004 |
| 460 | 4.60 | 4.61 | 0.01 | 4.61 | 96.82 | 27.10 | 0.97 | 0.004 | 0.000 | 0.004 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 461 | 4.61 | 4.62 | 0.01 | 4.62 | 96.80 | 27.33 | 0.97 | 0.004 | 0.000 | 0.004 |
| 462 | 4.62 | 4.63 | 0.01 | 4.63 | 96.78 | 27.74 | 0.97 | 0.003 | 0.000 | 0.003 |
| 463 | 4.63 | 4.64 | 0.01 | 4.64 | 96.76 | 28.59 | 0.97 | 0.003 | 0.000 | 0.003 |
| 464 | 4.64 | 4.65 | 0.01 | 4.65 | 96.74 | 29.53 | 0.97 | 0.003 | 0.000 | 0.003 |
| 465 | 4.65 | 4.66 | 0.01 | 4.66 | 96.73 | 30.45 | 0.97 | 0.003 | 0.000 | 0.003 |
| 466 | 4.66 | 4.67 | 0.01 | 4.67 | 96.71 | 30.98 | 0.97 | 0.003 | 0.000 | 0.003 |
| 467 | 4.67 | 4.68 | 0.01 | 4.68 | 96.69 | 31.48 | 0.97 | 0.003 | 0.000 | 0.003 |
| 468 | 4.68 | 4.69 | 0.01 | 4.69 | 96.67 | 32.07 | 0.97 | 0.003 | 0.000 | 0.003 |
| 469 | 4.69 | 4.70 | 0.01 | 4.70 | 96.65 | 31.86 | 0.97 | 0.003 | 0.000 | 0.003 |
| 470 | 4.70 | 4.71 | 0.01 | 4.71 | 96.63 | 31.29 | 0.97 | 0.003 | 0.000 | 0.003 |
| 471 | 4.71 | 4.72 | 0.01 | 4.72 | 96.61 | 30.26 | 0.97 | 0.003 | 0.000 | 0.003 |
| 472 | 4.72 | 4.73 | 0.01 | 4.73 | 96.59 | 29.77 | 0.97 | 0.003 | 0.000 | 0.003 |
| 473 | 4.73 | 4.74 | 0.01 | 4.74 | 96.57 | 29.18 | 0.97 | 0.003 | 0.000 | 0.003 |
| 474 | 4.74 | 4.75 | 0.01 | 4.75 | 96.55 | 28.65 | 0.97 | 0.003 | 0.000 | 0.003 |
| 475 | 4.75 | 4.76 | 0.01 | 4.76 | 96.53 | 28.24 | 0.97 | 0.003 | 0.000 | 0.003 |
| 476 | 4.76 | 4.77 | 0.01 | 4.77 | 96.51 | 27.98 | 0.97 | 0.003 | 0.000 | 0.003 |
| 477 | 4.77 | 4.78 | 0.01 | 4.78 | 96.50 | 27.43 | 0.96 | 0.004 | 0.000 | 0.004 |
| 478 | 4.78 | 4.79 | 0.01 | 4.79 | 96.48 | 26.85 | 0.96 | 0.004 | 0.000 | 0.004 |
| 479 | 4.79 | 4.80 | 0.01 | 4.80 | 96.46 | 26.28 | 0.96 | 0.004 | 0.000 | 0.004 |
| 480 | 4.80 | 4.81 | 0.01 | 4.81 | 96.44 | 26.00 | 0.96 | 0.004 | 0.000 | 0.004 |
| 481 | 4.81 | 4.82 | 0.01 | 4.82 | 96.42 | 25.70 | 0.96 | 0.004 | 0.000 | 0.004 |
| 482 | 4.82 | 4.83 | 0.01 | 4.83 | 96.40 | 25.27 | 0.96 | 0.004 | 0.000 | 0.004 |
| 483 | 4.83 | 4.84 | 0.01 | 4.84 | 96.38 | 24.85 | 0.96 | 0.004 | 0.000 | 0.004 |
| 484 | 4.84 | 4.85 | 0.01 | 4.85 | 96.36 | 24.48 | 0.96 | 0.004 | 0.000 | 0.004 |
| 485 | 4.85 | 4.86 | 0.01 | 4.86 | 96.34 | 24.28 | 0.96 | 0.004 | 0.000 | 0.004 |
| 486 | 4.86 | 4.87 | 0.01 | 4.87 | 96.32 | 24.05 | 0.96 | 0.004 | 0.000 | 0.004 |
| 487 | 4.87 | 4.88 | 0.01 | 4.88 | 96.30 | 23.93 | 0.96 | 0.004 | 0.000 | 0.004 |
| 488 | 4.88 | 4.89 | 0.01 | 4.89 | 96.28 | 23.93 | 0.96 | 0.004 | 0.000 | 0.004 |
| 489 | 4.89 | 4.90 | 0.01 | 4.90 | 96.26 | 24.01 | 0.96 | 0.004 | 0.000 | 0.004 |
| 490 | 4.90 | 4.91 | 0.01 | 4.91 | 96.24 | 24.05 | 0.96 | 0.004 | 0.000 | 0.004 |
| 491 | 4.91 | 4.92 | 0.01 | 4.92 | 96.22 | 24.15 | 0.96 | 0.004 | 0.000 | 0.004 |
| 492 | 4.92 | 4.93 | 0.01 | 4.93 | 96.19 | 24.36 | 0.96 | 0.004 | 0.000 | 0.004 |
| 493 | 4.93 | 4.94 | 0.01 | 4.94 | 96.17 | 24.85 | 0.96 | 0.004 | 0.000 | 0.004 |
| 494 | 4.94 | 4.95 | 0.01 | 4.95 | 96.15 | 25.38 | 0.96 | 0.004 | 0.000 | 0.004 |
| 495 | 4.95 | 4.96 | 0.01 | 4.96 | 96.13 | 25.89 | 0.96 | 0.004 | 0.000 | 0.004 |
| 496 | 4.96 | 4.97 | 0.01 | 4.97 | 96.11 | 26.14 | 0.96 | 0.004 | 0.000 | 0.004 |
| 497 | 4.97 | 4.98 | 0.01 | 4.98 | 96.09 | 26.24 | 0.96 | 0.004 | 0.000 | 0.004 |
| 498 | 4.98 | 4.99 | 0.01 | 4.99 | 96.07 | 26.23 | 0.96 | 0.004 | 0.000 | 0.004 |
| 499 | 4.99 | 5.00 | 0.01 | 5.00 | 96.05 | 26.18 | 0.96 | 0.004 | 0.000 | 0.004 |
| 500 | 5.00 | 5.01 | 0.01 | 5.01 | 96.03 | 26.12 | 0.96 | 0.004 | 0.000 | 0.004 |
| 501 | 5.01 | 5.02 | 0.01 | 5.02 | 96.01 | 26.03 | 0.96 | 0.004 | 0.000 | 0.004 |
| 502 | 5.02 | 5.03 | 0.01 | 5.03 | 95.99 | 25.97 | 0.96 | 0.004 | 0.000 | 0.004 |
| 503 | 5.03 | 5.04 | 0.01 | 5.04 | 95.97 | 25.98 | 0.96 | 0.004 | 0.000 | 0.004 |
| 504 | 5.04 | 5.05 | 0.01 | 5.05 | 95.95 | 26.07 | 0.96 | 0.004 | 0.000 | 0.004 |
| 505 | 5.05 | 5.06 | 0.01 | 5.06 | 95.92 | 26.18 | 0.96 | 0.004 | 0.000 | 0.004 |
| 506 | 5.06 | 5.07 | 0.01 | 5.07 | 95.90 | 26.24 | 0.96 | 0.004 | 0.000 | 0.004 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 507 | 5.07 | 5.08 | 0.01 | 5.08 | 95.88 | 26.32 | 0.96 | 0.004 | 0.000 | 0.004 |
| 508 | 5.08 | 5.09 | 0.01 | 5.09 | 95.86 | 26.31 | 0.96 | 0.004 | 0.000 | 0.004 |
| 509 | 5.09 | 5.10 | 0.01 | 5.10 | 95.84 | 26.17 | 0.96 | 0.004 | 0.000 | 0.004 |
| 510 | 5.10 | 5.11 | 0.01 | 5.11 | 95.82 | 25.66 | 0.96 | 0.004 | 0.000 | 0.004 |
| 511 | 5.11 | 5.12 | 0.01 | 5.12 | 95.80 | 25.10 | 0.96 | 0.004 | 0.000 | 0.004 |
| 512 | 5.12 | 5.13 | 0.01 | 5.13 | 95.77 | 24.50 | 0.96 | 0.004 | 0.000 | 0.004 |
| 513 | 5.13 | 5.14 | 0.01 | 5.14 | 95.75 | 24.14 | 0.96 | 0.004 | 0.000 | 0.004 |
| 514 | 5.14 | 5.15 | 0.01 | 5.15 | 95.73 | 23.80 | 0.96 | 0.004 | 0.000 | 0.004 |
| 515 | 5.15 | 5.16 | 0.01 | 5.16 | 95.71 | 23.58 | 0.96 | 0.004 | 0.000 | 0.004 |
| 516 | 5.16 | 5.17 | 0.01 | 5.17 | 95.69 | 23.51 | 0.96 | 0.004 | 0.000 | 0.004 |
| 517 | 5.17 | 5.18 | 0.01 | 5.18 | 95.66 | 23.91 | 0.96 | 0.004 | 0.000 | 0.004 |
| 518 | 5.18 | 5.19 | 0.01 | 5.19 | 95.64 | 24.59 | 0.96 | 0.004 | 0.000 | 0.004 |
| 519 | 5.19 | 5.20 | 0.01 | 5.20 | 95.62 | 25.46 | 0.96 | 0.004 | 0.000 | 0.004 |
| 520 | 5.20 | 5.21 | 0.01 | 5.21 | 95.60 | 26.14 | 0.96 | 0.004 | 0.000 | 0.004 |
| 521 | 5.21 | 5.22 | 0.01 | 5.22 | 95.58 | 26.75 | 0.96 | 0.004 | 0.000 | 0.004 |
| 522 | 5.22 | 5.23 | 0.01 | 5.23 | 95.55 | 27.19 | 0.96 | 0.004 | 0.000 | 0.004 |
| 523 | 5.23 | 5.24 | 0.01 | 5.24 | 95.53 | 27.37 | 0.96 | 0.003 | 0.000 | 0.003 |
| 524 | 5.24 | 5.25 | 0.01 | 5.25 | 95.51 | 27.30 | 0.96 | 0.003 | 0.000 | 0.003 |
| 525 | 5.25 | 5.26 | 0.01 | 5.26 | 95.49 | 27.20 | 0.95 | 0.004 | 0.000 | 0.004 |
| 526 | 5.26 | 5.27 | 0.01 | 5.27 | 95.47 | 27.30 | 0.95 | 0.003 | 0.000 | 0.003 |
| 527 | 5.27 | 5.28 | 0.01 | 5.28 | 95.44 | 27.58 | 0.95 | 0.003 | 0.000 | 0.003 |
| 528 | 5.28 | 5.29 | 0.01 | 5.29 | 95.42 | 27.91 | 0.95 | 0.003 | 0.000 | 0.003 |
| 529 | 5.29 | 5.30 | 0.01 | 5.30 | 95.40 | 27.88 | 0.95 | 0.003 | 0.000 | 0.003 |
| 530 | 5.30 | 5.31 | 0.01 | 5.31 | 95.37 | 27.42 | 0.95 | 0.003 | 0.000 | 0.003 |
| 531 | 5.31 | 5.32 | 0.01 | 5.32 | 95.35 | 26.59 | 0.95 | 0.004 | 0.000 | 0.004 |
| 532 | 5.32 | 5.33 | 0.01 | 5.33 | 95.33 | 25.78 | 0.95 | 0.004 | 0.000 | 0.004 |
| 533 | 5.33 | 5.34 | 0.01 | 5.34 | 95.31 | 25.12 | 0.95 | 0.004 | 0.000 | 0.004 |
| 534 | 5.34 | 5.35 | 0.01 | 5.35 | 95.28 | 24.55 | 0.95 | 0.004 | 0.000 | 0.004 |
| 535 | 5.35 | 5.36 | 0.01 | 5.36 | 95.26 | 24.20 | 0.95 | 0.004 | 0.000 | 0.004 |
| 536 | 5.36 | 5.37 | 0.01 | 5.37 | 95.24 | 23.96 | 0.95 | 0.004 | 0.000 | 0.004 |
| 537 | 5.37 | 5.38 | 0.01 | 5.38 | 95.21 | 23.92 | 0.95 | 0.004 | 0.000 | 0.004 |
| 538 | 5.38 | 5.39 | 0.01 | 5.39 | 95.19 | 23.70 | 0.95 | 0.004 | 0.000 | 0.004 |
| 539 | 5.39 | 5.40 | 0.01 | 5.40 | 95.17 | 23.52 | 0.95 | 0.004 | 0.000 | 0.004 |
| 540 | 5.40 | 5.41 | 0.01 | 5.41 | 95.15 | 23.29 | 0.95 | 0.004 | 0.000 | 0.004 |
| 541 | 5.41 | 5.42 | 0.01 | 5.42 | 95.12 | 23.14 | 0.95 | 0.004 | 0.000 | 0.004 |
| 542 | 5.42 | 5.43 | 0.01 | 5.43 | 95.10 | 23.05 | 0.95 | 0.004 | 0.000 | 0.004 |
| 543 | 5.43 | 5.44 | 0.01 | 5.44 | 95.08 | 23.17 | 0.95 | 0.004 | 0.000 | 0.004 |
| 544 | 5.44 | 5.45 | 0.01 | 5.45 | 95.05 | 23.48 | 0.95 | 0.004 | 0.000 | 0.004 |
| 545 | 5.45 | 5.46 | 0.01 | 5.46 | 95.03 | 23.99 | 0.95 | 0.004 | 0.000 | 0.004 |
| 546 | 5.46 | 5.47 | 0.01 | 5.47 | 95.00 | 24.56 | 0.95 | 0.004 | 0.000 | 0.004 |
| 547 | 5.47 | 5.48 | 0.01 | 5.48 | 94.98 | 21.39 | 0.95 | 0.004 | 0.000 | 0.004 |
| 548 | 5.48 | 5.49 | 0.01 | 5.49 | 94.96 | 22.19 | 0.95 | 0.004 | 0.000 | 0.004 |
| 549 | 5.49 | 5.50 | 0.01 | 5.50 | 94.93 | 22.65 | 0.95 | 0.004 | 0.000 | 0.004 |
| 550 | 5.50 | 5.51 | 0.01 | 5.51 | 94.91 | 26.65 | 0.95 | 0.004 | 0.000 | 0.004 |
| 551 | 5.51 | 5.52 | 0.01 | 5.52 | 94.89 | 26.08 | 0.95 | 0.004 | 0.000 | 0.004 |
| 552 | 5.52 | 5.53 | 0.01 | 5.53 | 94.86 | 25.53 | 0.95 | 0.004 | 0.000 | 0.004 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 553 | 5.53 | 5.54 | 0.01 | 5.54 | 94.84 | 24.98 | 0.95 | 0.004 | 0.000 | 0.004 |
| 554 | 5.54 | 5.55 | 0.01 | 5.55 | 94.81 | 24.59 | 0.95 | 0.004 | 0.000 | 0.004 |
| 555 | 5.55 | 5.56 | 0.01 | 5.56 | 94.79 | 24.24 | 0.95 | 0.004 | 0.000 | 0.004 |
| 556 | 5.56 | 5.57 | 0.01 | 5.57 | 94.77 | 24.01 | 0.95 | 0.004 | 0.000 | 0.004 |
| 557 | 5.57 | 5.58 | 0.01 | 5.58 | 94.74 | 24.04 | 0.95 | 0.004 | 0.000 | 0.004 |
| 558 | 5.58 | 5.59 | 0.01 | 5.59 | 94.72 | 24.08 | 0.95 | 0.004 | 0.000 | 0.004 |
| 559 | 5.59 | 5.60 | 0.01 | 5.60 | 94.69 | 24.05 | 0.95 | 0.004 | 0.000 | 0.004 |
| 560 | 5.60 | 5.61 | 0.01 | 5.61 | 94.67 | 23.98 | 0.95 | 0.004 | 0.000 | 0.004 |
| 561 | 5.61 | 5.62 | 0.01 | 5.62 | 94.64 | 23.97 | 0.95 | 0.004 | 0.000 | 0.004 |
| 562 | 5.62 | 5.63 | 0.01 | 5.63 | 94.62 | 24.12 | 0.95 | 0.004 | 0.000 | 0.004 |
| 563 | 5.63 | 5.64 | 0.01 | 5.64 | 94.60 | 24.37 | 0.95 | 0.004 | 0.000 | 0.004 |
| 564 | 5.64 | 5.65 | 0.01 | 5.65 | 94.57 | 24.81 | 0.95 | 0.004 | 0.000 | 0.004 |
| 565 | 5.65 | 5.66 | 0.01 | 5.66 | 94.55 | 25.39 | 0.95 | 0.004 | 0.000 | 0.004 |
| 566 | 5.66 | 5.67 | 0.01 | 5.67 | 94.52 | 26.26 | 0.95 | 0.004 | 0.000 | 0.004 |
| 567 | 5.67 | 5.68 | 0.01 | 5.68 | 94.50 | 27.07 | 0.94 | 0.003 | 0.000 | 0.003 |
| 568 | 5.68 | 5.69 | 0.01 | 5.69 | 94.47 | 27.82 | 0.94 | 0.003 | 0.000 | 0.003 |
| 569 | 5.69 | 5.70 | 0.01 | 5.70 | 94.45 | 28.25 | 0.94 | 0.003 | 0.000 | 0.003 |
| 570 | 5.70 | 5.71 | 0.01 | 5.71 | 94.42 | 28.53 | 0.94 | 0.003 | 0.000 | 0.003 |
| 571 | 5.71 | 5.72 | 0.01 | 5.72 | 94.40 | 28.62 | 0.94 | 0.003 | 0.000 | 0.003 |
| 572 | 5.72 | 5.73 | 0.01 | 5.73 | 94.37 | 28.56 | 0.94 | 0.003 | 0.000 | 0.003 |
| 573 | 5.73 | 5.74 | 0.01 | 5.74 | 94.35 | 28.25 | 0.94 | 0.003 | 0.000 | 0.003 |
| 574 | 5.74 | 5.75 | 0.01 | 5.75 | 94.32 | 27.74 | 0.94 | 0.003 | 0.000 | 0.003 |
| 575 | 5.75 | 5.76 | 0.01 | 5.76 | 94.30 | 26.94 | 0.94 | 0.004 | 0.000 | 0.004 |
| 576 | 5.76 | 5.77 | 0.01 | 5.77 | 94.27 | 26.07 | 0.94 | 0.004 | 0.000 | 0.004 |
| 577 | 5.77 | 5.78 | 0.01 | 5.78 | 94.25 | 25.10 | 0.94 | 0.004 | 0.000 | 0.004 |
| 578 | 5.78 | 5.79 | 0.01 | 5.79 | 94.22 | 24.26 | 0.94 | 0.004 | 0.000 | 0.004 |
| 579 | 5.79 | 5.80 | 0.01 | 5.80 | 94.20 | 23.59 | 0.94 | 0.004 | 0.000 | 0.004 |
| 580 | 5.80 | 5.81 | 0.01 | 5.81 | 94.17 | 23.18 | 0.94 | 0.004 | 0.000 | 0.004 |
| 581 | 5.81 | 5.82 | 0.01 | 5.82 | 94.15 | 22.86 | 0.94 | 0.004 | 0.000 | 0.004 |
| 582 | 5.82 | 5.83 | 0.01 | 5.83 | 94.12 | 22.66 | 0.94 | 0.004 | 0.000 | 0.004 |
| 583 | 5.83 | 5.84 | 0.01 | 5.84 | 94.09 | 22.68 | 0.94 | 0.004 | 0.000 | 0.004 |
| 584 | 5.84 | 5.85 | 0.01 | 5.85 | 94.07 | 23.00 | 0.94 | 0.004 | 0.000 | 0.004 |
| 585 | 5.85 | 5.86 | 0.01 | 5.86 | 94.04 | 23.64 | 0.94 | 0.004 | 0.000 | 0.004 |
| 586 | 5.86 | 5.87 | 0.01 | 5.87 | 94.02 | 24.26 | 0.94 | 0.004 | 0.000 | 0.004 |
| 587 | 5.87 | 5.88 | 0.01 | 5.88 | 93.99 | 24.68 | 0.94 | 0.004 | 0.000 | 0.004 |
| 588 | 5.88 | 5.89 | 0.01 | 5.89 | 93.97 | 24.64 | 0.94 | 0.004 | 0.000 | 0.004 |
| 589 | 5.89 | 5.90 | 0.01 | 5.90 | 93.94 | 24.23 | 0.94 | 0.004 | 0.000 | 0.004 |
| 590 | 5.90 | 5.91 | 0.01 | 5.91 | 93.91 | 23.75 | 0.94 | 0.004 | 0.000 | 0.004 |
| 591 | 5.91 | 5.92 | 0.01 | 5.92 | 93.89 | 23.34 | 0.94 | 0.004 | 0.000 | 0.004 |
| 592 | 5.92 | 5.93 | 0.01 | 5.93 | 93.86 | 23.21 | 0.94 | 0.004 | 0.000 | 0.004 |
| 593 | 5.93 | 5.94 | 0.01 | 5.94 | 93.84 | 23.23 | 0.94 | 0.004 | 0.000 | 0.004 |
| 594 | 5.94 | 5.95 | 0.01 | 5.95 | 93.81 | 23.47 | 0.94 | 0.004 | 0.000 | 0.004 |
| 595 | 5.95 | 5.96 | 0.01 | 5.96 | 93.78 | 23.97 | 0.94 | 0.004 | 0.000 | 0.004 |
| 596 | 5.96 | 5.97 | 0.01 | 5.97 | 93.76 | 24.61 | 0.94 | 0.004 | 0.000 | 0.004 |
| 597 | 5.97 | 5.98 | 0.01 | 5.98 | 93.73 | 25.66 | 0.94 | 0.004 | 0.000 | 0.004 |
| 598 | 5.98 | 5.99 | 0.01 | 5.99 | 93.70 | 26.69 | 0.94 | 0.004 | 0.000 | 0.004 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 599 | 5.99 | 6.00 | 0.01 | 6.00 | 93.68 | 27.62 | 0.94 | 0.003 | 0.000 | 0.003 |
| 600 | 6.00 | 6.01 | 0.01 | 6.01 | 93.65 | 28.11 | 0.94 | 0.003 | 0.000 | 0.003 |
| 601 | 6.01 | 6.02 | 0.01 | 6.02 | 93.62 | 28.36 | 0.94 | 0.003 | 0.000 | 0.003 |
| 602 | 6.02 | 6.03 | 0.01 | 6.03 | 93.60 | 28.44 | 0.94 | 0.003 | 0.000 | 0.003 |
| 603 | 6.03 | 6.04 | 0.01 | 6.04 | 93.57 | 28.34 | 0.94 | 0.003 | 0.000 | 0.003 |
| 604 | 6.04 | 6.05 | 0.01 | 6.05 | 93.54 | 28.09 | 0.94 | 0.003 | 0.000 | 0.003 |
| 605 | 6.05 | 6.06 | 0.01 | 6.06 | 93.52 | 27.69 | 0.94 | 0.003 | 0.000 | 0.003 |
| 606 | 6.06 | 6.07 | 0.01 | 6.07 | 93.49 | 27.18 | 0.93 | 0.003 | 0.000 | 0.003 |
| 607 | 6.07 | 6.08 | 0.01 | 6.08 | 93.46 | 26.66 | 0.93 | 0.004 | 0.000 | 0.004 |
| 608 | 6.08 | 6.09 | 0.01 | 6.09 | 93.44 | 25.65 | 0.93 | 0.004 | 0.000 | 0.004 |
| 609 | 6.09 | 6.10 | 0.01 | 6.10 | 93.41 | 24.42 | 0.93 | 0.004 | 0.000 | 0.004 |
| 610 | 6.10 | 6.11 | 0.01 | 6.11 | 93.38 | 23.08 | 0.93 | 0.004 | 0.000 | 0.004 |
| 611 | 6.11 | 6.12 | 0.01 | 6.12 | 93.36 | 22.16 | 0.93 | 0.004 | 0.000 | 0.004 |
| 612 | 6.12 | 6.13 | 0.01 | 6.13 | 93.33 | 21.20 | 0.93 | 0.004 | 0.000 | 0.004 |
| 613 | 6.13 | 6.14 | 0.01 | 6.14 | 93.30 | 20.40 | 0.93 | 0.005 | 0.000 | 0.005 |
| 614 | 6.14 | 6.15 | 0.01 | 6.15 | 93.28 | 19.70 | 0.93 | 0.005 | 0.000 | 0.005 |
| 615 | 6.15 | 6.16 | 0.01 | 6.16 | 93.25 | 19.30 | 0.93 | 0.005 | 0.000 | 0.005 |
| 616 | 6.16 | 6.17 | 0.01 | 6.17 | 93.22 | 18.82 | 0.93 | 0.005 | 0.000 | 0.005 |
| 617 | 6.17 | 6.18 | 0.01 | 6.18 | 93.19 | 18.39 | 0.93 | 0.005 | 0.000 | 0.005 |
| 618 | 6.18 | 6.19 | 0.01 | 6.19 | 93.17 | 17.96 | 0.93 | 0.005 | 0.000 | 0.005 |
| 619 | 6.19 | 6.20 | 0.01 | 6.20 | 93.14 | 17.68 | 0.93 | 0.005 | 0.000 | 0.005 |
| 620 | 6.20 | 6.21 | 0.01 | 6.21 | 93.11 | 17.37 | 0.93 | 0.005 | 0.000 | 0.005 |
| 621 | 6.21 | 6.22 | 0.01 | 6.22 | 93.08 | 17.16 | 0.93 | 0.005 | 0.000 | 0.005 |
| 622 | 6.22 | 6.23 | 0.01 | 6.23 | 93.06 | 17.01 | 0.93 | 0.005 | 0.000 | 0.005 |
| 623 | 6.23 | 6.24 | 0.01 | 6.24 | 93.03 | 17.02 | 0.93 | 0.005 | 0.000 | 0.005 |
| 624 | 6.24 | 6.25 | 0.01 | 6.25 | 93.00 | 17.07 | 0.93 | 0.005 | 0.000 | 0.005 |
| 625 | 6.25 | 6.26 | 0.01 | 6.26 | 92.97 | 17.18 | 0.93 | 0.005 | 0.000 | 0.005 |
| 626 | 6.26 | 6.27 | 0.01 | 6.27 | 92.94 | 17.31 | 0.93 | 0.005 | 0.000 | 0.005 |
| 627 | 6.27 | 6.28 | 0.01 | 6.28 | 92.92 | 17.59 | 0.93 | 0.005 | 0.000 | 0.005 |
| 628 | 6.28 | 6.29 | 0.01 | 6.29 | 92.89 | 17.90 | 0.93 | 0.005 | 0.000 | 0.005 |
| 629 | 6.29 | 6.30 | 0.01 | 6.30 | 92.86 | 18.23 | 0.93 | 0.005 | 0.000 | 0.005 |
| 630 | 6.30 | 6.31 | 0.01 | 6.31 | 92.83 | 18.48 | 0.93 | 0.005 | 0.000 | 0.005 |
| 631 | 6.31 | 6.32 | 0.01 | 6.32 | 92.80 | 18.87 | 0.93 | 0.005 | 0.000 | 0.005 |
| 632 | 6.32 | 6.33 | 0.01 | 6.33 | 92.78 | 19.30 | 0.93 | 0.005 | 0.000 | 0.005 |
| 633 | 6.33 | 6.34 | 0.01 | 6.34 | 92.75 | 19.77 | 0.93 | 0.005 | 0.000 | 0.005 |
| 634 | 6.34 | 6.35 | 0.01 | 6.35 | 92.72 | 20.33 | 0.93 | 0.005 | 0.000 | 0.005 |
| 635 | 6.35 | 6.36 | 0.01 | 6.36 | 92.69 | 20.90 | 0.93 | 0.004 | 0.000 | 0.004 |
| 636 | 6.36 | 6.37 | 0.01 | 6.37 | 92.66 | 21.46 | 0.93 | 0.004 | 0.000 | 0.004 |
| 637 | 6.37 | 6.38 | 0.01 | 6.38 | 92.64 | 21.84 | 0.93 | 0.004 | 0.000 | 0.004 |
| 638 | 6.38 | 6.39 | 0.01 | 6.39 | 92.61 | 22.16 | 0.93 | 0.004 | 0.000 | 0.004 |
| 639 | 6.39 | 6.40 | 0.01 | 6.40 | 92.58 | 22.62 | 0.93 | 0.004 | 0.000 | 0.004 |
| 640 | 6.40 | 6.41 | 0.01 | 6.41 | 92.55 | 23.08 | 0.93 | 0.004 | 0.000 | 0.004 |
| 641 | 6.41 | 6.42 | 0.01 | 6.42 | 92.52 | 23.58 | 0.93 | 0.004 | 0.000 | 0.004 |
| 642 | 6.42 | 6.43 | 0.01 | 6.43 | 92.49 | 23.89 | 0.92 | 0.004 | 0.000 | 0.004 |
| 643 | 6.43 | 6.44 | 0.01 | 6.44 | 92.46 | 24.14 | 0.92 | 0.004 | 0.000 | 0.004 |
| 644 | 6.44 | 6.45 | 0.01 | 6.45 | 92.44 | 24.33 | 0.92 | 0.004 | 0.000 | 0.004 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 645 | 6.45 | 6.46 | 0.01 | 6.46 | 92.41 | 24.45 | 0.92 | 0.004 | 0.000 | 0.004 |
| 646 | 6.46 | 6.47 | 0.01 | 6.47 | 92.38 | 24.48 | 0.92 | 0.004 | 0.000 | 0.004 |
| 647 | 6.47 | 6.48 | 0.01 | 6.48 | 92.35 | 24.65 | 0.92 | 0.004 | 0.000 | 0.004 |
| 648 | 6.48 | 6.49 | 0.01 | 6.49 | 92.32 | 24.80 | 0.92 | 0.004 | 0.000 | 0.004 |
| 649 | 6.49 | 6.50 | 0.01 | 6.50 | 92.29 | 24.90 | 0.92 | 0.004 | 0.000 | 0.004 |
| 650 | 6.50 | 6.51 | 0.01 | 6.51 | 92.26 | 24.72 | 0.92 | 0.004 | 0.000 | 0.004 |
| 651 | 6.51 | 6.52 | 0.01 | 6.52 | 92.23 | 24.56 | 0.92 | 0.004 | 0.000 | 0.004 |
| 652 | 6.52 | 6.53 | 0.01 | 6.53 | 92.20 | 24.45 | 0.92 | 0.004 | 0.000 | 0.004 |
| 653 | 6.53 | 6.54 | 0.01 | 6.54 | 92.18 | 24.43 | 0.92 | 0.004 | 0.000 | 0.004 |
| 654 | 6.54 | 6.55 | 0.01 | 6.55 | 92.15 | 24.46 | 0.92 | 0.004 | 0.000 | 0.004 |
| 655 | 6.55 | 6.56 | 0.01 | 6.56 | 92.12 | 24.62 | 0.92 | 0.004 | 0.000 | 0.004 |
| 656 | 6.56 | 6.57 | 0.01 | 6.57 | 92.09 | 24.79 | 0.92 | 0.004 | 0.000 | 0.004 |
| 657 | 6.57 | 6.58 | 0.01 | 6.58 | 92.06 | 24.94 | 0.92 | 0.004 | 0.000 | 0.004 |
| 658 | 6.58 | 6.59 | 0.01 | 6.59 | 92.03 | 25.10 | 0.92 | 0.004 | 0.000 | 0.004 |
| 659 | 6.59 | 6.60 | 0.01 | 6.60 | 92.00 | 25.23 | 0.92 | 0.004 | 0.000 | 0.004 |
| 660 | 6.60 | 6.61 | 0.01 | 6.61 | 91.97 | 25.28 | 0.92 | 0.004 | 0.000 | 0.004 |
| 661 | 6.61 | 6.62 | 0.01 | 6.62 | 91.94 | 25.15 | 0.92 | 0.004 | 0.000 | 0.004 |
| 662 | 6.62 | 6.63 | 0.01 | 6.63 | 91.91 | 24.99 | 0.92 | 0.004 | 0.000 | 0.004 |
| 663 | 6.63 | 6.64 | 0.01 | 6.64 | 91.88 | 24.79 | 0.92 | 0.004 | 0.000 | 0.004 |
| 664 | 6.64 | 6.65 | 0.01 | 6.65 | 91.85 | 24.67 | 0.92 | 0.004 | 0.000 | 0.004 |
| 665 | 6.65 | 6.66 | 0.01 | 6.66 | 91.82 | 24.54 | 0.92 | 0.004 | 0.000 | 0.004 |
| 666 | 6.66 | 6.67 | 0.01 | 6.67 | 91.79 | 24.47 | 0.92 | 0.004 | 0.000 | 0.004 |
| 667 | 6.67 | 6.68 | 0.01 | 6.68 | 91.76 | 24.38 | 0.92 | 0.004 | 0.000 | 0.004 |
| 668 | 6.68 | 6.69 | 0.01 | 6.69 | 91.73 | 24.28 | 0.92 | 0.004 | 0.000 | 0.004 |
| 669 | 6.69 | 6.70 | 0.01 | 6.70 | 91.70 | 24.18 | 0.92 | 0.004 | 0.000 | 0.004 |
| 670 | 6.70 | 6.71 | 0.01 | 6.71 | 91.67 | 23.90 | 0.92 | 0.004 | 0.000 | 0.004 |
| 671 | 6.71 | 6.72 | 0.01 | 6.72 | 91.64 | 23.55 | 0.92 | 0.004 | 0.000 | 0.004 |
| 672 | 6.72 | 6.73 | 0.01 | 6.73 | 91.61 | 23.12 | 0.92 | 0.004 | 0.000 | 0.004 |
| 673 | 6.73 | 6.74 | 0.01 | 6.74 | 91.58 | 22.82 | 0.92 | 0.004 | 0.000 | 0.004 |
| 674 | 6.74 | 6.75 | 0.01 | 6.75 | 91.55 | 22.46 | 0.92 | 0.004 | 0.000 | 0.004 |
| 675 | 6.75 | 6.76 | 0.01 | 6.76 | 91.52 | 22.14 | 0.92 | 0.004 | 0.000 | 0.004 |
| 676 | 6.76 | 6.77 | 0.01 | 6.77 | 91.49 | 21.83 | 0.91 | 0.004 | 0.000 | 0.004 |
| 677 | 6.77 | 6.78 | 0.01 | 6.78 | 91.46 | 21.51 | 0.91 | 0.004 | 0.000 | 0.004 |
| 678 | 6.78 | 6.79 | 0.01 | 6.79 | 91.43 | 21.18 | 0.91 | 0.004 | 0.000 | 0.004 |
| 679 | 6.79 | 6.80 | 0.01 | 6.80 | 91.40 | 20.85 | 0.91 | 0.004 | 0.000 | 0.004 |
| 680 | 6.80 | 6.81 | 0.01 | 6.81 | 91.37 | 20.59 | 0.91 | 0.004 | 0.000 | 0.004 |
| 681 | 6.81 | 6.82 | 0.01 | 6.82 | 91.34 | 20.30 | 0.91 | 0.004 | 0.000 | 0.004 |
| 682 | 6.82 | 6.83 | 0.01 | 6.83 | 91.31 | 20.05 | 0.91 | 0.005 | 0.000 | 0.005 |
| 683 | 6.83 | 6.84 | 0.01 | 6.84 | 91.28 | 19.90 | 0.91 | 0.005 | 0.000 | 0.005 |
| 684 | 6.84 | 6.85 | 0.01 | 6.85 | 91.25 | 19.92 | 0.91 | 0.005 | 0.000 | 0.005 |
| 685 | 6.85 | 6.86 | 0.01 | 6.86 | 91.22 | 20.03 | 0.91 | 0.005 | 0.000 | 0.005 |
| 686 | 6.86 | 6.87 | 0.01 | 6.87 | 91.19 | 20.23 | 0.91 | 0.005 | 0.000 | 0.005 |
| 687 | 6.87 | 6.88 | 0.01 | 6.88 | 91.16 | 20.52 | 0.91 | 0.004 | 0.000 | 0.004 |
| 688 | 6.88 | 6.89 | 0.01 | 6.89 | 91.13 | 20.92 | 0.91 | 0.004 | 0.000 | 0.004 |
| 689 | 6.89 | 6.90 | 0.01 | 6.90 | 91.10 | 21.62 | 0.91 | 0.004 | 0.000 | 0.004 |
| 690 | 6.90 | 6.91 | 0.01 | 6.91 | 91.06 | 22.32 | 0.91 | 0.004 | 0.000 | 0.004 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 691 | 6.91 | 6.92 | 0.01 | 6.92 | 91.03 | 22.92 | 0.91 | 0.004 | 0.000 | 0.004 |
| 692 | 6.92 | 6.93 | 0.01 | 6.93 | 91.00 | 23.21 | 0.91 | 0.004 | 0.000 | 0.004 |
| 693 | 6.93 | 6.94 | 0.01 | 6.94 | 90.97 | 23.41 | 0.91 | 0.004 | 0.000 | 0.004 |
| 694 | 6.94 | 6.95 | 0.01 | 6.95 | 90.94 | 23.44 | 0.91 | 0.004 | 0.000 | 0.004 |
| 695 | 6.95 | 6.96 | 0.01 | 6.96 | 90.91 | 23.19 | 0.91 | 0.004 | 0.000 | 0.004 |
| 696 | 6.96 | 6.97 | 0.01 | 6.97 | 90.88 | 22.24 | 0.91 | 0.004 | 0.000 | 0.004 |
| 697 | 6.97 | 6.98 | 0.01 | 6.98 | 90.85 | 20.99 | 0.91 | 0.004 | 0.000 | 0.004 |
| 698 | 6.98 | 6.99 | 0.01 | 6.99 | 90.82 | 19.57 | 0.91 | 0.005 | 0.000 | 0.005 |
| 699 | 6.99 | 7.00 | 0.01 | 7.00 | 90.79 | 18.42 | 0.91 | 0.005 | 0.000 | 0.005 |
| 700 | 7.00 | 7.01 | 0.01 | 7.01 | 90.75 | 17.14 | 0.91 | 0.005 | 0.000 | 0.005 |
| 701 | 7.01 | 7.02 | 0.01 | 7.02 | 90.72 | 16.06 | 0.91 | 0.006 | 0.000 | 0.006 |
| 702 | 7.02 | 7.03 | 0.01 | 7.03 | 90.69 | 15.24 | 0.91 | 0.006 | 0.000 | 0.006 |
| 703 | 7.03 | 7.04 | 0.01 | 7.04 | 90.66 | 14.90 | 0.91 | 0.006 | 0.000 | 0.006 |
| 704 | 7.04 | 7.05 | 0.01 | 7.05 | 90.63 | 14.70 | 0.91 | 0.006 | 0.000 | 0.006 |
| 705 | 7.05 | 7.06 | 0.01 | 7.06 | 90.60 | 14.73 | 0.91 | 0.006 | 0.000 | 0.006 |
| 706 | 7.06 | 7.07 | 0.01 | 7.07 | 90.57 | 14.92 | 0.91 | 0.006 | 0.000 | 0.006 |
| 707 | 7.07 | 7.08 | 0.01 | 7.08 | 90.53 | 15.41 | 0.91 | 0.006 | 0.000 | 0.006 |
| 708 | 7.08 | 7.09 | 0.01 | 7.09 | 90.50 | 15.94 | 0.91 | 0.006 | 0.000 | 0.006 |
| 709 | 7.09 | 7.10 | 0.01 | 7.10 | 90.47 | 16.50 | 0.90 | 0.005 | 0.000 | 0.005 |
| 710 | 7.10 | 7.11 | 0.01 | 7.11 | 90.44 | 16.97 | 0.90 | 0.005 | 0.000 | 0.005 |
| 711 | 7.11 | 7.12 | 0.01 | 7.12 | 90.41 | 17.54 | 0.90 | 0.005 | 0.000 | 0.005 |
| 712 | 7.12 | 7.13 | 0.01 | 7.13 | 90.38 | 18.04 | 0.90 | 0.005 | 0.000 | 0.005 |
| 713 | 7.13 | 7.14 | 0.01 | 7.14 | 90.34 | 18.55 | 0.90 | 0.005 | 0.000 | 0.005 |
| 714 | 7.14 | 7.15 | 0.01 | 7.15 | 90.31 | 19.05 | 0.90 | 0.005 | 0.000 | 0.005 |
| 715 | 7.15 | 7.16 | 0.01 | 7.16 | 90.28 | 19.81 | 0.90 | 0.005 | 0.000 | 0.005 |
| 716 | 7.16 | 7.17 | 0.01 | 7.17 | 90.25 | 20.41 | 0.90 | 0.004 | 0.000 | 0.004 |
| 717 | 7.17 | 7.18 | 0.01 | 7.18 | 90.22 | 20.68 | 0.90 | 0.004 | 0.000 | 0.004 |
| 718 | 7.18 | 7.19 | 0.01 | 7.19 | 90.18 | 20.51 | 0.90 | 0.004 | 0.000 | 0.004 |
| 719 | 7.19 | 7.20 | 0.01 | 7.20 | 90.15 | 19.79 | 0.90 | 0.005 | 0.000 | 0.005 |
| 720 | 7.20 | 7.21 | 0.01 | 7.21 | 90.12 | 18.73 | 0.90 | 0.005 | 0.000 | 0.005 |
| 721 | 7.21 | 7.22 | 0.01 | 7.22 | 90.09 | 17.46 | 0.90 | 0.005 | 0.000 | 0.005 |
| 722 | 7.22 | 7.23 | 0.01 | 7.23 | 90.06 | 16.39 | 0.90 | 0.005 | 0.000 | 0.005 |
| 723 | 7.23 | 7.24 | 0.01 | 7.24 | 90.02 | 15.45 | 0.90 | 0.006 | 0.000 | 0.006 |
| 724 | 7.24 | 7.25 | 0.01 | 7.25 | 89.99 | 14.63 | 0.90 | 0.006 | 0.000 | 0.006 |
| 725 | 7.25 | 7.26 | 0.01 | 7.26 | 89.96 | 14.00 | 0.90 | 0.006 | 0.000 | 0.006 |
| 726 | 7.26 | 7.27 | 0.01 | 7.27 | 89.93 | 13.53 | 0.90 | 0.007 | 0.000 | 0.007 |
| 727 | 7.27 | 7.28 | 0.01 | 7.28 | 89.89 | 13.19 | 0.90 | 0.007 | 0.000 | 0.007 |
| 728 | 7.28 | 7.29 | 0.01 | 7.29 | 89.86 | 12.95 | 0.90 | 0.007 | 0.000 | 0.007 |
| 729 | 7.29 | 7.30 | 0.01 | 7.30 | 89.83 | 12.92 | 0.90 | 0.007 | 0.000 | 0.007 |
| 730 | 7.30 | 7.31 | 0.01 | 7.31 | 89.80 | 12.88 | 0.90 | 0.007 | 0.000 | 0.007 |
| 731 | 7.31 | 7.32 | 0.01 | 7.32 | 89.76 | 12.89 | 0.90 | 0.007 | 0.000 | 0.007 |
| 732 | 7.32 | 7.33 | 0.01 | 7.33 | 89.73 | 12.83 | 0.90 | 0.007 | 0.000 | 0.007 |
| 733 | 7.33 | 7.34 | 0.01 | 7.34 | 89.70 | 12.80 | 0.90 | 0.007 | 0.000 | 0.007 |
| 734 | 7.34 | 7.35 | 0.01 | 7.35 | 89.67 | 13.17 | 0.90 | 0.007 | 0.000 | 0.007 |
| 735 | 7.35 | 7.36 | 0.01 | 7.36 | 89.63 | 13.76 | 0.90 | 0.007 | 0.000 | 0.007 |
| 736 | 7.36 | 7.37 | 0.01 | 7.37 | 89.60 | 14.14 | 0.90 | 0.006 | 0.000 | 0.006 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 737 | 7.37 | 7.38 | 0.01 | 7.38 | 89.57 | 14.34 | 0.90 | 0.006 | 0.000 | 0.006 |
| 738 | 7.38 | 7.39 | 0.01 | 7.39 | 89.54 | 14.36 | 0.90 | 0.006 | 0.000 | 0.006 |
| 739 | 7.39 | 7.40 | 0.01 | 7.40 | 89.50 | 14.20 | 0.90 | 0.006 | 0.000 | 0.006 |
| 740 | 7.40 | 7.41 | 0.01 | 7.41 | 89.47 | 13.56 | 0.89 | 0.007 | 0.000 | 0.007 |
| 741 | 7.41 | 7.42 | 0.01 | 7.42 | 89.44 | 12.77 | 0.89 | 0.007 | 0.000 | 0.007 |
| 742 | 7.42 | 7.43 | 0.01 | 7.43 | 89.40 | 12.24 | 0.89 | 0.007 | 0.000 | 0.007 |
| 743 | 7.43 | 7.44 | 0.01 | 7.44 | 89.37 | 11.86 | 0.89 | 0.008 | 0.000 | 0.008 |
| 744 | 7.44 | 7.45 | 0.01 | 7.45 | 89.34 | 11.60 | 0.89 | 0.008 | 0.000 | 0.008 |
| 745 | 7.45 | 7.46 | 0.01 | 7.46 | 89.31 | 11.37 | 0.89 | 0.008 | 0.000 | 0.008 |
| 746 | 7.46 | 7.47 | 0.01 | 7.47 | 89.27 | 7.89 | 0.89 | 0.011 | 0.000 | 0.011 |
| 747 | 7.47 | 7.48 | 0.01 | 7.48 | 89.24 | 7.69 | 0.89 | 0.012 | 0.000 | 0.012 |
| 748 | 7.48 | 7.49 | 0.01 | 7.49 | 89.21 | 7.70 | 0.89 | 0.012 | 0.000 | 0.012 |
| 749 | 7.49 | 7.50 | 0.01 | 7.50 | 89.17 | 10.95 | 0.89 | 0.008 | 0.000 | 0.008 |
| 750 | 7.50 | 7.51 | 0.01 | 7.51 | 89.14 | 11.17 | 0.89 | 0.008 | 0.000 | 0.008 |
| 751 | 7.51 | 7.52 | 0.01 | 7.52 | 89.11 | 11.37 | 0.89 | 0.008 | 0.000 | 0.008 |
| 752 | 7.52 | 7.53 | 0.01 | 7.53 | 89.07 | 11.69 | 0.89 | 0.008 | 0.000 | 0.008 |
| 753 | 7.53 | 7.54 | 0.01 | 7.54 | 89.04 | 12.01 | 0.89 | 0.007 | 0.000 | 0.007 |
| 754 | 7.54 | 7.55 | 0.01 | 7.55 | 89.01 | 12.40 | 0.89 | 0.007 | 0.000 | 0.007 |
| 755 | 7.55 | 7.56 | 0.01 | 7.56 | 88.97 | 12.76 | 0.89 | 0.007 | 0.000 | 0.007 |
| 756 | 7.56 | 7.57 | 0.01 | 7.57 | 88.94 | 13.15 | 0.89 | 0.007 | 0.000 | 0.007 |
| 757 | 7.57 | 7.58 | 0.01 | 7.58 | 88.91 | 13.58 | 0.89 | 0.007 | 0.000 | 0.007 |
| 758 | 7.58 | 7.59 | 0.01 | 7.59 | 88.87 | 14.14 | 0.89 | 0.006 | 0.000 | 0.006 |
| 759 | 7.59 | 7.60 | 0.01 | 7.60 | 88.84 | 14.54 | 0.89 | 0.006 | 0.000 | 0.006 |
| 760 | 7.60 | 7.61 | 0.01 | 7.61 | 88.80 | 15.16 | 0.89 | 0.006 | 0.000 | 0.006 |
| 761 | 7.61 | 7.62 | 0.01 | 7.62 | 88.77 | 15.81 | 0.89 | 0.006 | 0.000 | 0.006 |
| 762 | 7.62 | 7.63 | 0.01 | 7.63 | 88.74 | 16.50 | 0.89 | 0.005 | 0.000 | 0.005 |
| 763 | 7.63 | 7.64 | 0.01 | 7.64 | 88.70 | 17.16 | 0.89 | 0.005 | 0.000 | 0.005 |
| 764 | 7.64 | 7.65 | 0.01 | 7.65 | 88.67 | 17.68 | 0.89 | 0.005 | 0.000 | 0.005 |
| 765 | 7.65 | 7.66 | 0.01 | 7.66 | 88.64 | 17.93 | 0.89 | 0.005 | 0.000 | 0.005 |
| 766 | 7.66 | 7.67 | 0.01 | 7.67 | 88.60 | 17.53 | 0.89 | 0.005 | 0.000 | 0.005 |
| 767 | 7.67 | 7.68 | 0.01 | 7.68 | 88.57 | 16.99 | 0.89 | 0.005 | 0.000 | 0.005 |
| 768 | 7.68 | 7.69 | 0.01 | 7.69 | 88.53 | 16.38 | 0.89 | 0.005 | 0.000 | 0.005 |
| 769 | 7.69 | 7.70 | 0.01 | 7.70 | 88.50 | 15.92 | 0.89 | 0.006 | 0.000 | 0.006 |
| 770 | 7.70 | 7.71 | 0.01 | 7.71 | 88.47 | 15.43 | 0.88 | 0.006 | 0.000 | 0.006 |
| 771 | 7.71 | 7.72 | 0.01 | 7.72 | 88.43 | 14.79 | 0.88 | 0.006 | 0.000 | 0.006 |
| 772 | 7.72 | 7.73 | 0.01 | 7.73 | 88.40 | 14.18 | 0.88 | 0.006 | 0.000 | 0.006 |
| 773 | 7.73 | 7.74 | 0.01 | 7.74 | 88.36 | 13.19 | 0.88 | 0.007 | 0.000 | 0.007 |
| 774 | 7.74 | 7.75 | 0.01 | 7.75 | 88.33 | 12.72 | 0.88 | 0.007 | 0.000 | 0.007 |
| 775 | 7.75 | 7.76 | 0.01 | 7.76 | 88.30 | 12.56 | 0.88 | 0.007 | 0.000 | 0.007 |
| 776 | 7.76 | 7.77 | 0.01 | 7.77 | 88.26 | 12.75 | 0.88 | 0.007 | 0.000 | 0.007 |
| 777 | 7.77 | 7.78 | 0.01 | 7.78 | 88.23 | 13.88 | 0.88 | 0.006 | 0.000 | 0.006 |
| 778 | 7.78 | 7.79 | 0.01 | 7.79 | 88.19 | 14.97 | 0.88 | 0.006 | 0.000 | 0.006 |
| 779 | 7.79 | 7.80 | 0.01 | 7.80 | 88.16 | 16.15 | 0.88 | 0.005 | 0.000 | 0.005 |
| 780 | 7.80 | 7.81 | 0.01 | 7.81 | 88.13 | 17.36 | 0.88 | 0.005 | 0.000 | 0.005 |
| 781 | 7.81 | 7.82 | 0.01 | 7.82 | 88.09 | 19.23 | 0.88 | 0.005 | 0.000 | 0.005 |
| 782 | 7.82 | 7.83 | 0.01 | 7.83 | 88.06 | 21.49 | 0.88 | 0.004 | 0.000 | 0.004 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 783 | 7.83 | 7.84 | 0.01 | 7.84 | 88.02 | 23.86 | 0.88 | 0.004 | 0.000 | 0.004 |
| 784 | 7.84 | 7.85 | 0.01 | 7.85 | 87.99 | 26.79 | 0.88 | 0.003 | 0.000 | 0.003 |
| 785 | 7.85 | 7.86 | 0.01 | 7.86 | 87.95 | 29.69 | 0.88 | 0.003 | 0.000 | 0.003 |
| 786 | 7.86 | 7.87 | 0.01 | 7.87 | 87.92 | 32.45 | 0.88 | 0.003 | 0.000 | 0.003 |
| 787 | 7.87 | 7.88 | 0.01 | 7.88 | 87.88 | 34.43 | 0.88 | 0.003 | 0.000 | 0.003 |
| 788 | 7.88 | 7.89 | 0.01 | 7.89 | 87.85 | 35.90 | 0.88 | 0.002 | 0.000 | 0.002 |
| 789 | 7.89 | 7.90 | 0.01 | 7.90 | 87.81 | 37.03 | 0.88 | 0.002 | 0.000 | 0.002 |
| 790 | 7.90 | 7.91 | 0.01 | 7.91 | 87.78 | 37.42 | 0.88 | 0.002 | 0.000 | 0.002 |
| 791 | 7.91 | 7.92 | 0.01 | 7.92 | 87.75 | 36.81 | 0.88 | 0.002 | 0.000 | 0.002 |
| 792 | 7.92 | 7.93 | 0.01 | 7.93 | 87.71 | 35.76 | 0.88 | 0.002 | 0.000 | 0.002 |
| 793 | 7.93 | 7.94 | 0.01 | 7.94 | 87.68 | 34.44 | 0.88 | 0.003 | 0.000 | 0.003 |
| 794 | 7.94 | 7.95 | 0.01 | 7.95 | 87.64 | 33.89 | 0.88 | 0.003 | 0.000 | 0.003 |
| 795 | 7.95 | 7.96 | 0.01 | 7.96 | 87.61 | 34.39 | 0.88 | 0.003 | 0.000 | 0.003 |
| 796 | 7.96 | 7.97 | 0.01 | 7.97 | 87.57 | 35.60 | 0.88 | 0.002 | 0.000 | 0.002 |
| 797 | 7.97 | 7.98 | 0.01 | 7.98 | 87.54 | 37.30 | 0.88 | 0.002 | 0.000 | 0.002 |
| 798 | 7.98 | 7.99 | 0.01 | 7.99 | 87.50 | 37.63 | 0.88 | 0.002 | 0.000 | 0.002 |
| 799 | 7.99 | 8.00 | 0.01 | 8.00 | 87.47 | 36.33 | 0.87 | 0.002 | 0.000 | 0.002 |
| 800 | 8.00 | 8.01 | 0.01 | 8.01 | 87.43 | 33.27 | 0.87 | 0.003 | 0.000 | 0.003 |
| 801 | 8.01 | 8.02 | 0.01 | 8.02 | 87.40 | 28.88 | 0.87 | 0.003 | 0.000 | 0.003 |
| 802 | 8.02 | 8.03 | 0.01 | 8.03 | 87.36 | 24.90 | 0.87 | 0.004 | 0.000 | 0.004 |
| 803 | 8.03 | 8.04 | 0.01 | 8.04 | 87.33 | 21.62 | 0.87 | 0.004 | 0.000 | 0.004 |
| 804 | 8.04 | 8.05 | 0.01 | 8.05 | 87.29 | 19.88 | 0.87 | 0.004 | 0.000 | 0.004 |
| 805 | 8.05 | 8.06 | 0.01 | 8.06 | 87.26 | 18.03 | 0.87 | 0.005 | 0.000 | 0.005 |
| 806 | 8.06 | 8.07 | 0.01 | 8.07 | 87.22 | 16.47 | 0.87 | 0.005 | 0.000 | 0.005 |
| 807 | 8.07 | 8.08 | 0.01 | 8.08 | 87.19 | 15.41 | 0.87 | 0.006 | 0.000 | 0.006 |
| 808 | 8.08 | 8.09 | 0.01 | 8.09 | 87.15 | 15.63 | 0.87 | 0.006 | 0.000 | 0.006 |
| 809 | 8.09 | 8.10 | 0.01 | 8.10 | 87.12 | 16.45 | 0.87 | 0.005 | 0.000 | 0.005 |
| 810 | 8.10 | 8.11 | 0.01 | 8.11 | 87.08 | 17.63 | 0.87 | 0.005 | 0.000 | 0.005 |
| 811 | 8.11 | 8.12 | 0.01 | 8.12 | 87.05 | 18.48 | 0.87 | 0.005 | 0.000 | 0.005 |
| 812 | 8.12 | 8.13 | 0.01 | 8.13 | 87.01 | 18.92 | 0.87 | 0.005 | 0.000 | 0.005 |
| 813 | 8.13 | 8.14 | 0.01 | 8.14 | 86.97 | 18.94 | 0.87 | 0.005 | 0.000 | 0.005 |
| 814 | 8.14 | 8.15 | 0.01 | 8.15 | 86.94 | 18.63 | 0.87 | 0.005 | 0.000 | 0.005 |
| 815 | 8.15 | 8.16 | 0.01 | 8.16 | 86.90 | 17.75 | 0.87 | 0.005 | 0.000 | 0.005 |
| 816 | 8.16 | 8.17 | 0.01 | 8.17 | 86.87 | 16.69 | 0.87 | 0.005 | 0.000 | 0.005 |
| 817 | 8.17 | 8.18 | 0.01 | 8.18 | 86.83 | 15.65 | 0.87 | 0.006 | 0.000 | 0.006 |
| 818 | 8.18 | 8.19 | 0.01 | 8.19 | 86.80 | 15.29 | 0.87 | 0.006 | 0.000 | 0.006 |
| 819 | 8.19 | 8.20 | 0.01 | 8.20 | 86.76 | 15.41 | 0.87 | 0.006 | 0.000 | 0.006 |
| 820 | 8.20 | 8.21 | 0.01 | 8.21 | 86.73 | 15.94 | 0.87 | 0.005 | 0.000 | 0.005 |
| 821 | 8.21 | 8.22 | 0.01 | 8.22 | 86.69 | 16.40 | 0.87 | 0.005 | 0.000 | 0.005 |
| 822 | 8.22 | 8.23 | 0.01 | 8.23 | 86.65 | 16.52 | 0.87 | 0.005 | 0.000 | 0.005 |
| 823 | 8.23 | 8.24 | 0.01 | 8.24 | 86.62 | 16.20 | 0.87 | 0.005 | 0.000 | 0.005 |
| 824 | 8.24 | 8.25 | 0.01 | 8.25 | 86.58 | 15.74 | 0.87 | 0.006 | 0.000 | 0.006 |
| 825 | 8.25 | 8.26 | 0.01 | 8.26 | 86.55 | 15.30 | 0.87 | 0.006 | 0.000 | 0.006 |
| 826 | 8.26 | 8.27 | 0.01 | 8.27 | 86.51 | 14.80 | 0.87 | 0.006 | 0.000 | 0.006 |
| 827 | 8.27 | 8.28 | 0.01 | 8.28 | 86.48 | 14.03 | 0.86 | 0.006 | 0.000 | 0.006 |
| 828 | 8.28 | 8.29 | 0.01 | 8.29 | 86.44 | 13.68 | 0.86 | 0.006 | 0.000 | 0.006 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 829 | 8.29 | 8.30 | 0.01 | 8.30 | 86.40 | 14.25 | 0.86 | 0.006 | 0.000 | 0.006 |
| 830 | 8.30 | 8.31 | 0.01 | 8.31 | 86.37 | 15.09 | 0.86 | 0.006 | 0.000 | 0.006 |
| 831 | 8.31 | 8.32 | 0.01 | 8.32 | 86.33 | 15.60 | 0.86 | 0.006 | 0.000 | 0.006 |
| 832 | 8.32 | 8.33 | 0.01 | 8.33 | 86.30 | 16.30 | 0.86 | 0.005 | 0.000 | 0.005 |
| 833 | 8.33 | 8.34 | 0.01 | 8.34 | 86.26 | 17.23 | 0.86 | 0.005 | 0.000 | 0.005 |
| 834 | 8.34 | 8.35 | 0.01 | 8.35 | 86.23 | 18.29 | 0.86 | 0.005 | 0.000 | 0.005 |
| 835 | 8.35 | 8.36 | 0.01 | 8.36 | 86.19 | 18.88 | 0.86 | 0.005 | 0.000 | 0.005 |
| 836 | 8.36 | 8.37 | 0.01 | 8.37 | 86.15 | 18.99 | 0.86 | 0.005 | 0.000 | 0.005 |
| 837 | 8.37 | 8.38 | 0.01 | 8.38 | 86.12 | 18.55 | 0.86 | 0.005 | 0.000 | 0.005 |
| 838 | 8.38 | 8.39 | 0.01 | 8.39 | 86.08 | 17.80 | 0.86 | 0.005 | 0.000 | 0.005 |
| 839 | 8.39 | 8.40 | 0.01 | 8.40 | 86.04 | 16.91 | 0.86 | 0.005 | 0.000 | 0.005 |
| 840 | 8.40 | 8.41 | 0.01 | 8.41 | 86.01 | 16.19 | 0.86 | 0.005 | 0.000 | 0.005 |
| 841 | 8.41 | 8.42 | 0.01 | 8.42 | 85.97 | 15.63 | 0.86 | 0.005 | 0.000 | 0.005 |
| 842 | 8.42 | 8.43 | 0.01 | 8.43 | 85.94 | 15.46 | 0.86 | 0.006 | 0.000 | 0.006 |
| 843 | 8.43 | 8.44 | 0.01 | 8.44 | 85.90 | 15.50 | 0.86 | 0.006 | 0.000 | 0.006 |
| 844 | 8.44 | 8.45 | 0.01 | 8.45 | 85.86 | 15.79 | 0.86 | 0.005 | 0.000 | 0.005 |
| 845 | 8.45 | 8.46 | 0.01 | 8.46 | 85.83 | 16.16 | 0.86 | 0.005 | 0.000 | 0.005 |
| 846 | 8.46 | 8.47 | 0.01 | 8.47 | 85.79 | 12.36 | 0.86 | 0.007 | 0.000 | 0.007 |
| 847 | 8.47 | 8.48 | 0.01 | 8.48 | 85.75 | 14.12 | 0.86 | 0.006 | 0.000 | 0.006 |
| 848 | 8.48 | 8.49 | 0.01 | 8.49 | 85.72 | 15.55 | 0.86 | 0.006 | 0.000 | 0.006 |
| 849 | 8.49 | 8.50 | 0.01 | 8.50 | 85.68 | 19.32 | 0.86 | 0.004 | 0.000 | 0.004 |
| 850 | 8.50 | 8.51 | 0.01 | 8.51 | 85.65 | 19.66 | 0.86 | 0.004 | 0.000 | 0.004 |
| 851 | 8.51 | 8.52 | 0.01 | 8.52 | 85.61 | 20.14 | 0.86 | 0.004 | 0.000 | 0.004 |
| 852 | 8.52 | 8.53 | 0.01 | 8.53 | 85.57 | 20.66 | 0.86 | 0.004 | 0.000 | 0.004 |
| 853 | 8.53 | 8.54 | 0.01 | 8.54 | 85.54 | 21.26 | 0.86 | 0.004 | 0.000 | 0.004 |
| 854 | 8.54 | 8.55 | 0.01 | 8.55 | 85.50 | 21.79 | 0.85 | 0.004 | 0.000 | 0.004 |
| 855 | 8.55 | 8.56 | 0.01 | 8.56 | 85.46 | 21.99 | 0.85 | 0.004 | 0.000 | 0.004 |
| 856 | 8.56 | 8.57 | 0.01 | 8.57 | 85.43 | 21.37 | 0.85 | 0.004 | 0.000 | 0.004 |
| 857 | 8.57 | 8.58 | 0.01 | 8.58 | 85.39 | 20.45 | 0.85 | 0.004 | 0.000 | 0.004 |
| 858 | 8.58 | 8.59 | 0.01 | 8.59 | 85.35 | 19.52 | 0.85 | 0.004 | 0.000 | 0.004 |
| 859 | 8.59 | 8.60 | 0.01 | 8.60 | 85.32 | 19.05 | 0.85 | 0.004 | 0.000 | 0.004 |
| 860 | 8.60 | 8.61 | 0.01 | 8.61 | 85.28 | 18.68 | 0.85 | 0.005 | 0.000 | 0.005 |
| 861 | 8.61 | 8.62 | 0.01 | 8.62 | 85.24 | 18.37 | 0.85 | 0.005 | 0.000 | 0.005 |
| 862 | 8.62 | 8.63 | 0.01 | 8.63 | 85.21 | 17.90 | 0.85 | 0.005 | 0.000 | 0.005 |
| 863 | 8.63 | 8.64 | 0.01 | 8.64 | 85.17 | 17.31 | 0.85 | 0.005 | 0.000 | 0.005 |
| 864 | 8.64 | 8.65 | 0.01 | 8.65 | 85.13 | 16.70 | 0.85 | 0.005 | 0.000 | 0.005 |
| 865 | 8.65 | 8.66 | 0.01 | 8.66 | 85.10 | 16.43 | 0.85 | 0.005 | 0.000 | 0.005 |
| 866 | 8.66 | 8.67 | 0.01 | 8.67 | 85.06 | 16.63 | 0.85 | 0.005 | 0.000 | 0.005 |
| 867 | 8.67 | 8.68 | 0.01 | 8.68 | 85.02 | 17.24 | 0.85 | 0.005 | 0.000 | 0.005 |
| 868 | 8.68 | 8.69 | 0.01 | 8.69 | 84.99 | 18.43 | 0.85 | 0.005 | 0.000 | 0.005 |
| 869 | 8.69 | 8.70 | 0.01 | 8.70 | 84.95 | 19.49 | 0.85 | 0.004 | 0.000 | 0.004 |
| 870 | 8.70 | 8.71 | 0.01 | 8.71 | 84.91 | 20.13 | 0.85 | 0.004 | 0.000 | 0.004 |
| 871 | 8.71 | 8.72 | 0.01 | 8.72 | 84.88 | 20.03 | 0.85 | 0.004 | 0.000 | 0.004 |
| 872 | 8.72 | 8.73 | 0.01 | 8.73 | 84.84 | 19.64 | 0.85 | 0.004 | 0.000 | 0.004 |
| 873 | 8.73 | 8.74 | 0.01 | 8.74 | 84.80 | 19.30 | 0.85 | 0.004 | 0.000 | 0.004 |
| 874 | 8.74 | 8.75 | 0.01 | 8.75 | 84.76 | 19.12 | 0.85 | 0.004 | 0.000 | 0.004 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 875 | 8.75 | 8.76 | 0.01 | 8.76 | 84.73 | 19.22 | 0.85 | 0.004 | 0.000 | 0.004 |
| 876 | 8.76 | 8.77 | 0.01 | 8.77 | 84.69 | 19.57 | 0.85 | 0.004 | 0.000 | 0.004 |
| 877 | 8.77 | 8.78 | 0.01 | 8.78 | 84.65 | 20.04 | 0.85 | 0.004 | 0.000 | 0.004 |
| 878 | 8.78 | 8.79 | 0.01 | 8.79 | 84.62 | 20.59 | 0.85 | 0.004 | 0.000 | 0.004 |
| 879 | 8.79 | 8.80 | 0.01 | 8.80 | 84.58 | 21.11 | 0.85 | 0.004 | 0.000 | 0.004 |
| 880 | 8.80 | 8.81 | 0.01 | 8.81 | 84.54 | 21.40 | 0.85 | 0.004 | 0.000 | 0.004 |
| 881 | 8.81 | 8.82 | 0.01 | 8.82 | 84.50 | 21.23 | 0.85 | 0.004 | 0.000 | 0.004 |
| 882 | 8.82 | 8.83 | 0.01 | 8.83 | 84.47 | 20.18 | 0.84 | 0.004 | 0.000 | 0.004 |
| 883 | 8.83 | 8.84 | 0.01 | 8.84 | 84.43 | 18.99 | 0.84 | 0.004 | 0.000 | 0.004 |
| 884 | 8.84 | 8.85 | 0.01 | 8.85 | 84.39 | 17.82 | 0.84 | 0.005 | 0.000 | 0.005 |
| 885 | 8.85 | 8.86 | 0.01 | 8.86 | 84.36 | 17.26 | 0.84 | 0.005 | 0.000 | 0.005 |
| 886 | 8.86 | 8.87 | 0.01 | 8.87 | 84.32 | 16.93 | 0.84 | 0.005 | 0.000 | 0.005 |
| 887 | 8.87 | 8.88 | 0.01 | 8.88 | 84.28 | 16.92 | 0.84 | 0.005 | 0.000 | 0.005 |
| 888 | 8.88 | 8.89 | 0.01 | 8.89 | 84.24 | 17.27 | 0.84 | 0.005 | 0.000 | 0.005 |
| 889 | 8.89 | 8.90 | 0.01 | 8.90 | 84.21 | 17.61 | 0.84 | 0.005 | 0.000 | 0.005 |
| 890 | 8.90 | 8.91 | 0.01 | 8.91 | 84.17 | 17.85 | 0.84 | 0.005 | 0.000 | 0.005 |
| 891 | 8.91 | 8.92 | 0.01 | 8.92 | 84.13 | 17.70 | 0.84 | 0.005 | 0.000 | 0.005 |
| 892 | 8.92 | 8.93 | 0.01 | 8.93 | 84.09 | 16.91 | 0.84 | 0.005 | 0.000 | 0.005 |
| 893 | 8.93 | 8.94 | 0.01 | 8.94 | 84.06 | 15.67 | 0.84 | 0.005 | 0.000 | 0.005 |
| 894 | 8.94 | 8.95 | 0.01 | 8.95 | 84.02 | 13.80 | 0.84 | 0.006 | 0.000 | 0.006 |
| 895 | 8.95 | 8.96 | 0.01 | 8.96 | 83.98 | 12.54 | 0.84 | 0.007 | 0.000 | 0.007 |
| 896 | 8.96 | 8.97 | 0.01 | 8.97 | 83.94 | 11.64 | 0.84 | 0.007 | 0.000 | 0.007 |
| 897 | 8.97 | 8.98 | 0.01 | 8.98 | 83.91 | 11.00 | 0.84 | 0.008 | 0.000 | 0.008 |
| 898 | 8.98 | 8.99 | 0.01 | 8.99 | 83.87 | 10.98 | 0.84 | 0.008 | 0.000 | 0.008 |
| 899 | 8.99 | 9.00 | 0.01 | 9.00 | 83.83 | 11.15 | 0.84 | 0.008 | 0.000 | 0.008 |
| 900 | 9.00 | 9.01 | 0.01 | 9.01 | 83.79 | 11.48 | 0.84 | 0.007 | 0.000 | 0.007 |
| 901 | 9.01 | 9.02 | 0.01 | 9.02 | 83.76 | 11.93 | 0.84 | 0.007 | 0.000 | 0.007 |
| 902 | 9.02 | 9.03 | 0.01 | 9.03 | 83.72 | 12.50 | 0.84 | 0.007 | 0.000 | 0.007 |
| 903 | 9.03 | 9.04 | 0.01 | 9.04 | 83.68 | 12.95 | 0.84 | 0.006 | 0.000 | 0.006 |
| 904 | 9.04 | 9.05 | 0.01 | 9.05 | 83.64 | 13.33 | 0.84 | 0.006 | 0.000 | 0.006 |
| 905 | 9.05 | 9.06 | 0.01 | 9.06 | 83.61 | 13.29 | 0.84 | 0.006 | 0.000 | 0.006 |
| 906 | 9.06 | 9.07 | 0.01 | 9.07 | 83.57 | 12.94 | 0.84 | 0.006 | 0.000 | 0.006 |
| 907 | 9.07 | 9.08 | 0.01 | 9.08 | 83.53 | 12.36 | 0.84 | 0.007 | 0.000 | 0.007 |
| 908 | 9.08 | 9.09 | 0.01 | 9.09 | 83.49 | 12.17 | 0.83 | 0.007 | 0.000 | 0.007 |
| 909 | 9.09 | 9.10 | 0.01 | 9.10 | 83.46 | 12.31 | 0.83 | 0.007 | 0.000 | 0.007 |
| 910 | 9.10 | 9.11 | 0.01 | 9.11 | 83.42 | 12.89 | 0.83 | 0.006 | 0.000 | 0.006 |
| 911 | 9.11 | 9.12 | 0.01 | 9.12 | 83.38 | 13.98 | 0.83 | 0.006 | 0.000 | 0.006 |
| 912 | 9.12 | 9.13 | 0.01 | 9.13 | 83.34 | 15.27 | 0.83 | 0.005 | 0.000 | 0.005 |
| 913 | 9.13 | 9.14 | 0.01 | 9.14 | 83.30 | 16.61 | 0.83 | 0.005 | 0.000 | 0.005 |
| 914 | 9.14 | 9.15 | 0.01 | 9.15 | 83.27 | 17.10 | 0.83 | 0.005 | 0.000 | 0.005 |
| 915 | 9.15 | 9.16 | 0.01 | 9.16 | 83.23 | 17.85 | 0.83 | 0.005 | 0.000 | 0.005 |
| 916 | 9.16 | 9.17 | 0.01 | 9.17 | 83.19 | 18.68 | 0.83 | 0.004 | 0.000 | 0.004 |
| 917 | 9.17 | 9.18 | 0.01 | 9.18 | 83.15 | 19.37 | 0.83 | 0.004 | 0.000 | 0.004 |
| 918 | 9.18 | 9.19 | 0.01 | 9.19 | 83.12 | 19.56 | 0.83 | 0.004 | 0.000 | 0.004 |
| 919 | 9.19 | 9.20 | 0.01 | 9.20 | 83.08 | 19.44 | 0.83 | 0.004 | 0.000 | 0.004 |
| 920 | 9.20 | 9.21 | 0.01 | 9.21 | 83.04 | 19.27 | 0.83 | 0.004 | 0.000 | 0.004 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 921 | 9.21 | 9.22 | 0.01 | 9.22 | 83.00 | 19.09 | 0.83 | 0.004 | 0.000 | 0.004 |
| 922 | 9.22 | 9.23 | 0.01 | 9.23 | 82.96 | 18.82 | 0.83 | 0.004 | 0.000 | 0.004 |
| 923 | 9.23 | 9.24 | 0.01 | 9.24 | 82.93 | 18.40 | 0.83 | 0.005 | 0.000 | 0.005 |
| 924 | 9.24 | 9.25 | 0.01 | 9.25 | 82.89 | 18.09 | 0.83 | 0.005 | 0.000 | 0.005 |
| 925 | 9.25 | 9.26 | 0.01 | 9.26 | 82.85 | 17.90 | 0.83 | 0.005 | 0.000 | 0.005 |
| 926 | 9.26 | 9.27 | 0.01 | 9.27 | 82.81 | 17.40 | 0.83 | 0.005 | 0.000 | 0.005 |
| 927 | 9.27 | 9.28 | 0.01 | 9.28 | 82.77 | 16.74 | 0.83 | 0.005 | 0.000 | 0.005 |
| 928 | 9.28 | 9.29 | 0.01 | 9.29 | 82.73 | 15.39 | 0.83 | 0.005 | 0.000 | 0.005 |
| 929 | 9.29 | 9.30 | 0.01 | 9.30 | 82.70 | 14.86 | 0.83 | 0.006 | 0.000 | 0.006 |
| 930 | 9.30 | 9.31 | 0.01 | 9.31 | 82.66 | 14.62 | 0.83 | 0.006 | 0.000 | 0.006 |
| 931 | 9.31 | 9.32 | 0.01 | 9.32 | 82.62 | 14.93 | 0.83 | 0.006 | 0.000 | 0.006 |
| 932 | 9.32 | 9.33 | 0.01 | 9.33 | 82.58 | 15.42 | 0.83 | 0.005 | 0.000 | 0.005 |
| 933 | 9.33 | 9.34 | 0.01 | 9.34 | 82.54 | 16.15 | 0.83 | 0.005 | 0.000 | 0.005 |
| 934 | 9.34 | 9.35 | 0.01 | 9.35 | 82.51 | 16.78 | 0.83 | 0.005 | 0.000 | 0.005 |
| 935 | 9.35 | 9.36 | 0.01 | 9.36 | 82.47 | 17.14 | 0.82 | 0.005 | 0.000 | 0.005 |
| 936 | 9.36 | 9.37 | 0.01 | 9.37 | 82.43 | 17.38 | 0.82 | 0.005 | 0.000 | 0.005 |
| 937 | 9.37 | 9.38 | 0.01 | 9.38 | 82.39 | 17.58 | 0.82 | 0.005 | 0.000 | 0.005 |
| 938 | 9.38 | 9.39 | 0.01 | 9.39 | 82.35 | 17.63 | 0.82 | 0.005 | 0.000 | 0.005 |
| 939 | 9.39 | 9.40 | 0.01 | 9.40 | 82.31 | 17.54 | 0.82 | 0.005 | 0.000 | 0.005 |
| 940 | 9.40 | 9.41 | 0.01 | 9.41 | 82.28 | 17.25 | 0.82 | 0.005 | 0.000 | 0.005 |
| 941 | 9.41 | 9.42 | 0.01 | 9.42 | 82.24 | 17.14 | 0.82 | 0.005 | 0.000 | 0.005 |
| 942 | 9.42 | 9.43 | 0.01 | 9.43 | 82.20 | 17.14 | 0.82 | 0.005 | 0.000 | 0.005 |
| 943 | 9.43 | 9.44 | 0.01 | 9.44 | 82.16 | 17.38 | 0.82 | 0.005 | 0.000 | 0.005 |
| 944 | 9.44 | 9.45 | 0.01 | 9.45 | 82.12 | 17.77 | 0.82 | 0.005 | 0.000 | 0.005 |
| 945 | 9.45 | 9.46 | 0.01 | 9.46 | 82.08 | 18.18 | 0.82 | 0.005 | 0.000 | 0.005 |
| 946 | 9.46 | 9.47 | 0.01 | 9.47 | 82.05 | 14.65 | 0.82 | 0.006 | 0.000 | 0.006 |
| 947 | 9.47 | 9.48 | 0.01 | 9.48 | 82.01 | 16.16 | 0.82 | 0.005 | 0.000 | 0.005 |
| 948 | 9.48 | 9.49 | 0.01 | 9.49 | 81.97 | 17.22 | 0.82 | 0.005 | 0.000 | 0.005 |
| 949 | 9.49 | 9.50 | 0.01 | 9.50 | 81.93 | 20.63 | 0.82 | 0.004 | 0.000 | 0.004 |
| 950 | 9.50 | 9.51 | 0.01 | 9.51 | 81.89 | 20.59 | 0.82 | 0.004 | 0.000 | 0.004 |
| 951 | 9.51 | 9.52 | 0.01 | 9.52 | 81.85 | 20.39 | 0.82 | 0.004 | 0.000 | 0.004 |
| 952 | 9.52 | 9.53 | 0.01 | 9.53 | 81.82 | 19.85 | 0.82 | 0.004 | 0.000 | 0.004 |
| 953 | 9.53 | 9.54 | 0.01 | 9.54 | 81.78 | 18.93 | 0.82 | 0.004 | 0.000 | 0.004 |
| 954 | 9.54 | 9.55 | 0.01 | 9.55 | 81.74 | 17.79 | 0.82 | 0.005 | 0.000 | 0.005 |
| 955 | 9.55 | 9.56 | 0.01 | 9.56 | 81.70 | 16.24 | 0.82 | 0.005 | 0.000 | 0.005 |
| 956 | 9.56 | 9.57 | 0.01 | 9.57 | 81.66 | 14.29 | 0.82 | 0.006 | 0.000 | 0.006 |
| 957 | 9.57 | 9.58 | 0.01 | 9.58 | 81.62 | 13.09 | 0.82 | 0.006 | 0.000 | 0.006 |
| 958 | 9.58 | 9.59 | 0.01 | 9.59 | 81.58 | 12.39 | 0.82 | 0.007 | 0.000 | 0.007 |
| 959 | 9.59 | 9.60 | 0.01 | 9.60 | 81.55 | 12.34 | 0.82 | 0.007 | 0.000 | 0.007 |
| 960 | 9.60 | 9.61 | 0.01 | 9.61 | 81.51 | 12.68 | 0.82 | 0.006 | 0.000 | 0.006 |
| 961 | 9.61 | 9.62 | 0.01 | 9.62 | 81.47 | 13.04 | 0.81 | 0.006 | 0.000 | 0.006 |
| 962 | 9.62 | 9.63 | 0.01 | 9.63 | 81.43 | 13.61 | 0.81 | 0.006 | 0.000 | 0.006 |
| 963 | 9.63 | 9.64 | 0.01 | 9.64 | 81.39 | 14.34 | 0.81 | 0.006 | 0.000 | 0.006 |
| 964 | 9.64 | 9.65 | 0.01 | 9.65 | 81.35 | 15.61 | 0.81 | 0.005 | 0.000 | 0.005 |
| 965 | 9.65 | 9.66 | 0.01 | 9.66 | 81.31 | 17.99 | 0.81 | 0.005 | 0.000 | 0.005 |
| 966 | 9.66 | 9.67 | 0.01 | 9.67 | 81.28 | 20.22 | 0.81 | 0.004 | 0.000 | 0.004 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 967 | 9.67 | 9.68 | 0.01 | 9.68 | 81.24 | 22.96 | 0.81 | 0.004 | 0.000 | 0.004 |
| 968 | 9.68 | 9.69 | 0.01 | 9.69 | 81.20 | 25.64 | 0.81 | 0.003 | 0.000 | 0.003 |
| 969 | 9.69 | 9.70 | 0.01 | 9.70 | 81.16 | 28.19 | 0.81 | 0.003 | 0.000 | 0.003 |
| 970 | 9.70 | 9.71 | 0.01 | 9.71 | 81.12 | 29.82 | 0.81 | 0.003 | 0.000 | 0.003 |
| 971 | 9.71 | 9.72 | 0.01 | 9.72 | 81.08 | 30.44 | 0.81 | 0.003 | 0.000 | 0.003 |
| 972 | 9.72 | 9.73 | 0.01 | 9.73 | 81.04 | 30.03 | 0.81 | 0.003 | 0.000 | 0.003 |
| 973 | 9.73 | 9.74 | 0.01 | 9.74 | 81.00 | 29.45 | 0.81 | 0.003 | 0.000 | 0.003 |
| 974 | 9.74 | 9.75 | 0.01 | 9.75 | 80.97 | 28.97 | 0.81 | 0.003 | 0.000 | 0.003 |
| 975 | 9.75 | 9.76 | 0.01 | 9.76 | 80.93 | 28.74 | 0.81 | 0.003 | 0.000 | 0.003 |
| 976 | 9.76 | 9.77 | 0.01 | 9.77 | 80.89 | 28.87 | 0.81 | 0.003 | 0.000 | 0.003 |
| 977 | 9.77 | 9.78 | 0.01 | 9.78 | 80.85 | 29.00 | 0.81 | 0.003 | 0.000 | 0.003 |
| 978 | 9.78 | 9.79 | 0.01 | 9.79 | 80.81 | 28.84 | 0.81 | 0.003 | 0.000 | 0.003 |
| 979 | 9.79 | 9.80 | 0.01 | 9.80 | 80.77 | 28.11 | 0.81 | 0.003 | 0.000 | 0.003 |
| 980 | 9.80 | 9.81 | 0.01 | 9.81 | 80.73 | 27.20 | 0.81 | 0.003 | 0.000 | 0.003 |
| 981 | 9.81 | 9.82 | 0.01 | 9.82 | 80.69 | 26.33 | 0.81 | 0.003 | 0.000 | 0.003 |
| 982 | 9.82 | 9.83 | 0.01 | 9.83 | 80.65 | 25.69 | 0.81 | 0.003 | 0.000 | 0.003 |
| 983 | 9.83 | 9.84 | 0.01 | 9.84 | 80.62 | 25.40 | 0.81 | 0.003 | 0.000 | 0.003 |
| 984 | 9.84 | 9.85 | 0.01 | 9.85 | 80.58 | 25.47 | 0.81 | 0.003 | 0.000 | 0.003 |
| 985 | 9.85 | 9.86 | 0.01 | 9.86 | 80.54 | 25.58 | 0.81 | 0.003 | 0.000 | 0.003 |
| 986 | 9.86 | 9.87 | 0.01 | 9.87 | 80.50 | 25.44 | 0.80 | 0.003 | 0.000 | 0.003 |
| 987 | 9.87 | 9.88 | 0.01 | 9.88 | 80.46 | 25.21 | 0.80 | 0.003 | 0.000 | 0.003 |
| 988 | 9.88 | 9.89 | 0.01 | 9.89 | 80.42 | 25.24 | 0.80 | 0.003 | 0.000 | 0.003 |
| 989 | 9.89 | 9.90 | 0.01 | 9.90 | 80.38 | 25.40 | 0.80 | 0.003 | 0.000 | 0.003 |
| 990 | 9.90 | 9.91 | 0.01 | 9.91 | 80.34 | 25.33 | 0.80 | 0.003 | 0.000 | 0.003 |
| 991 | 9.91 | 9.92 | 0.01 | 9.92 | 80.30 | 24.77 | 0.80 | 0.003 | 0.000 | 0.003 |
| 992 | 9.92 | 9.93 | 0.01 | 9.93 | 80.26 | 23.86 | 0.80 | 0.003 | 0.000 | 0.003 |
| 993 | 9.93 | 9.94 | 0.01 | 9.94 | 80.23 | 23.10 | 0.80 | 0.003 | 0.000 | 0.003 |
| 994 | 9.94 | 9.95 | 0.01 | 9.95 | 80.19 | 22.68 | 0.80 | 0.004 | 0.000 | 0.004 |
| 995 | 9.95 | 9.96 | 0.01 | 9.96 | 80.15 | 22.77 | 0.80 | 0.004 | 0.000 | 0.004 |
| 996 | 9.96 | 9.97 | 0.01 | 9.97 | 80.11 | 23.02 | 0.80 | 0.003 | 0.000 | 0.003 |
| 997 | 9.97 | 9.98 | 0.01 | 9.98 | 80.07 | 23.28 | 0.80 | 0.003 | 0.000 | 0.003 |
| 998 | 9.98 | 9.99 | 0.01 | 9.99 | 80.03 | 23.48 | 0.80 | 0.003 | 0.000 | 0.003 |
| 999 | 9.99 | 10.00 | 0.01 | 10.00 | 79.99 | 23.45 | 0.80 | 0.003 | 0.000 | 0.003 |
| 1000 | 10.00 | 10.01 | 0.01 | 10.01 | 79.95 | 23.13 | 0.80 | 0.003 | 0.000 | 0.003 |
| 1001 | 10.01 | 10.02 | 0.01 | 10.02 | 79.91 | 22.61 | 0.80 | 0.004 | 0.000 | 0.004 |
| 1002 | 10.02 | 10.03 | 0.01 | 10.03 | 79.87 | 22.15 | 0.80 | 0.004 | 0.000 | 0.004 |
| 1003 | 10.03 | 10.04 | 0.01 | 10.04 | 79.83 | 21.89 | 0.80 | 0.004 | 0.000 | 0.004 |
| 1004 | 10.04 | 10.05 | 0.01 | 10.05 | 79.80 | 21.87 | 0.80 | 0.004 | 0.000 | 0.004 |
| 1005 | 10.05 | 10.06 | 0.01 | 10.06 | 79.76 | 22.55 | 0.80 | 0.004 | 0.000 | 0.004 |
| 1006 | 10.06 | 10.07 | 0.01 | 10.07 | 79.72 | 23.55 | 0.80 | 0.003 | 0.000 | 0.003 |
| 1007 | 10.07 | 10.08 | 0.01 | 10.08 | 79.68 | 24.65 | 0.80 | 0.003 | 0.000 | 0.003 |
| 1008 | 10.08 | 10.09 | 0.01 | 10.09 | 79.64 | 25.26 | 0.80 | 0.003 | 0.000 | 0.003 |
| 1009 | 10.09 | 10.10 | 0.01 | 10.10 | 79.60 | 25.54 | 0.80 | 0.003 | 0.000 | 0.003 |
| 1010 | 10.10 | 10.11 | 0.01 | 10.11 | 79.56 | 25.46 | 0.80 | 0.003 | 0.000 | 0.003 |
| 1011 | 10.11 | 10.12 | 0.01 | 10.12 | 79.52 | 25.21 | 0.80 | 0.003 | 0.000 | 0.003 |
| 1012 | 10.12 | 10.13 | 0.01 | 10.13 | 79.48 | 24.98 | 0.79 | 0.003 | 0.000 | 0.003 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1013 | 10.13 | 10.14 | 0.01 | 10.14 | 79.44 | 24.91 | 0.79 | 0.003 | 0.000 | 0.003 |
| 1014 | 10.14 | 10.15 | 0.01 | 10.15 | 79.40 | 25.14 | 0.79 | 0.003 | 0.000 | 0.003 |
| 1015 | 10.15 | 10.16 | 0.01 | 10.16 | 79.36 | 25.39 | 0.79 | 0.003 | 0.000 | 0.003 |
| 1016 | 10.16 | 10.17 | 0.01 | 10.17 | 79.33 | 25.39 | 0.79 | 0.003 | 0.000 | 0.003 |
| 1017 | 10.17 | 10.18 | 0.01 | 10.18 | 79.29 | 24.92 | 0.79 | 0.003 | 0.000 | 0.003 |
| 1018 | 10.18 | 10.19 | 0.01 | 10.19 | 79.25 | 24.38 | 0.79 | 0.003 | 0.000 | 0.003 |
| 1019 | 10.19 | 10.20 | 0.01 | 10.20 | 79.21 | 24.17 | 0.79 | 0.003 | 0.000 | 0.003 |
| 1020 | 10.20 | 10.21 | 0.01 | 10.21 | 79.17 | 23.69 | 0.79 | 0.003 | 0.000 | 0.003 |
| 1021 | 10.21 | 10.22 | 0.01 | 10.22 | 79.13 | 22.39 | 0.79 | 0.004 | 0.000 | 0.004 |
| 1022 | 10.22 | 10.23 | 0.01 | 10.23 | 79.09 | 20.25 | 0.79 | 0.004 | 0.000 | 0.004 |
| 1023 | 10.23 | 10.24 | 0.01 | 10.24 | 79.05 | 17.56 | 0.79 | 0.005 | 0.000 | 0.005 |
| 1024 | 10.24 | 10.25 | 0.01 | 10.25 | 79.01 | 14.30 | 0.79 | 0.006 | 0.000 | 0.006 |
| 1025 | 10.25 | 10.26 | 0.01 | 10.26 | 78.97 | 12.36 | 0.79 | 0.006 | 0.000 | 0.006 |
| 1026 | 10.26 | 10.27 | 0.01 | 10.27 | 78.93 | 11.80 | 0.79 | 0.007 | 0.000 | 0.007 |
| 1027 | 10.27 | 10.28 | 0.01 | 10.28 | 78.89 | 12.15 | 0.79 | 0.006 | 0.000 | 0.006 |
| 1028 | 10.28 | 10.29 | 0.01 | 10.29 | 78.85 | 13.15 | 0.79 | 0.006 | 0.000 | 0.006 |
| 1029 | 10.29 | 10.30 | 0.01 | 10.30 | 78.81 | 14.53 | 0.79 | 0.005 | 0.000 | 0.005 |
| 1030 | 10.30 | 10.31 | 0.01 | 10.31 | 78.77 | 16.48 | 0.79 | 0.005 | 0.000 | 0.005 |
| 1031 | 10.31 | 10.32 | 0.01 | 10.32 | 78.74 | 18.90 | 0.79 | 0.004 | 0.000 | 0.004 |
| 1032 | 10.32 | 10.33 | 0.01 | 10.33 | 78.70 | 20.49 | 0.79 | 0.004 | 0.000 | 0.004 |
| 1033 | 10.33 | 10.34 | 0.01 | 10.34 | 78.66 | 22.25 | 0.79 | 0.004 | 0.000 | 0.004 |
| 1034 | 10.34 | 10.35 | 0.01 | 10.35 | 78.62 | 24.45 | 0.79 | 0.003 | 0.000 | 0.003 |
| 1035 | 10.35 | 10.36 | 0.01 | 10.36 | 78.58 | 25.75 | 0.79 | 0.003 | 0.000 | 0.003 |
| 1036 | 10.36 | 10.37 | 0.01 | 10.37 | 78.54 | 25.60 | 0.79 | 0.003 | 0.000 | 0.003 |
| 1037 | 10.37 | 10.38 | 0.01 | 10.38 | 78.50 | 23.64 | 0.78 | 0.003 | 0.000 | 0.003 |
| 1038 | 10.38 | 10.39 | 0.01 | 10.39 | 78.46 | 21.53 | 0.78 | 0.004 | 0.000 | 0.004 |
| 1039 | 10.39 | 10.40 | 0.01 | 10.40 | 78.42 | 19.95 | 0.78 | 0.004 | 0.000 | 0.004 |
| 1040 | 10.40 | 10.41 | 0.01 | 10.41 | 78.38 | 18.98 | 0.78 | 0.004 | 0.000 | 0.004 |
| 1041 | 10.41 | 10.42 | 0.01 | 10.42 | 78.34 | 18.85 | 0.78 | 0.004 | 0.000 | 0.004 |
| 1042 | 10.42 | 10.43 | 0.01 | 10.43 | 78.30 | 19.79 | 0.78 | 0.004 | 0.000 | 0.004 |
| 1043 | 10.43 | 10.44 | 0.01 | 10.44 | 78.26 | 21.40 | 0.78 | 0.004 | 0.000 | 0.004 |
| 1044 | 10.44 | 10.45 | 0.01 | 10.45 | 78.22 | 23.04 | 0.78 | 0.003 | 0.000 | 0.003 |
| 1045 | 10.45 | 10.46 | 0.01 | 10.46 | 78.18 | 21.01 | 0.78 | 0.004 | 0.000 | 0.004 |
| 1046 | 10.46 | 10.47 | 0.01 | 10.47 | 78.14 | 22.36 | 0.78 | 0.003 | 0.000 | 0.003 |
| 1047 | 10.47 | 10.48 | 0.01 | 10.48 | 78.10 | 22.72 | 0.78 | 0.003 | 0.000 | 0.003 |
| 1048 | 10.48 | 10.49 | 0.01 | 10.49 | 78.06 | 25.73 | 0.78 | 0.003 | 0.000 | 0.003 |
| 1049 | 10.49 | 10.50 | 0.01 | 10.50 | 78.03 | 24.72 | 0.78 | 0.003 | 0.000 | 0.003 |
| 1050 | 10.50 | 10.51 | 0.01 | 10.51 | 77.99 | 24.21 | 0.78 | 0.003 | 0.000 | 0.003 |
| 1051 | 10.51 | 10.52 | 0.01 | 10.52 | 77.95 | 24.15 | 0.78 | 0.003 | 0.000 | 0.003 |
| 1052 | 10.52 | 10.53 | 0.01 | 10.53 | 77.91 | 24.64 | 0.78 | 0.003 | 0.000 | 0.003 |
| 1053 | 10.53 | 10.54 | 0.01 | 10.54 | 77.87 | 25.92 | 0.78 | 0.003 | 0.000 | 0.003 |
| 1054 | 10.54 | 10.55 | 0.01 | 10.55 | 77.83 | 26.86 | 0.78 | 0.003 | 0.000 | 0.003 |
| 1055 | 10.55 | 10.56 | 0.01 | 10.56 | 77.79 | 27.13 | 0.78 | 0.003 | 0.000 | 0.003 |
| 1056 | 10.56 | 10.57 | 0.01 | 10.57 | 77.75 | 26.64 | 0.78 | 0.003 | 0.000 | 0.003 |
| 1057 | 10.57 | 10.58 | 0.01 | 10.58 | 77.71 | 26.21 | 0.78 | 0.003 | 0.000 | 0.003 |
| 1058 | 10.58 | 10.59 | 0.01 | 10.59 | 77.67 | 25.96 | 0.78 | 0.003 | 0.000 | 0.003 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1059 | 10.59 | 10.60 | 0.01 | 10.60 | 77.63 | 25.25 | 0.78 | 0.003 | 0.000 | 0.003 |
| 1060 | 10.60 | 10.61 | 0.01 | 10.61 | 77.59 | 24.34 | 0.78 | 0.003 | 0.000 | 0.003 |
| 1061 | 10.61 | 10.62 | 0.01 | 10.62 | 77.55 | 23.36 | 0.78 | 0.003 | 0.000 | 0.003 |
| 1062 | 10.62 | 10.63 | 0.01 | 10.63 | 77.51 | 22.73 | 0.78 | 0.003 | 0.000 | 0.003 |
| 1063 | 10.63 | 10.64 | 0.01 | 10.64 | 77.47 | 22.01 | 0.77 | 0.004 | 0.000 | 0.004 |
| 1064 | 10.64 | 10.65 | 0.01 | 10.65 | 77.43 | 21.34 | 0.77 | 0.004 | 0.000 | 0.004 |
| 1065 | 10.65 | 10.66 | 0.01 | 10.66 | 77.39 | 20.80 | 0.77 | 0.004 | 0.000 | 0.004 |
| 1066 | 10.66 | 10.67 | 0.01 | 10.67 | 77.35 | 20.69 | 0.77 | 0.004 | 0.000 | 0.004 |
| 1067 | 10.67 | 10.68 | 0.01 | 10.68 | 77.31 | 20.75 | 0.77 | 0.004 | 0.000 | 0.004 |
| 1068 | 10.68 | 10.69 | 0.01 | 10.69 | 77.27 | 21.05 | 0.77 | 0.004 | 0.000 | 0.004 |
| 1069 | 10.69 | 10.70 | 0.01 | 10.70 | 77.23 | 21.99 | 0.77 | 0.004 | 0.000 | 0.004 |
| 1070 | 10.70 | 10.71 | 0.01 | 10.71 | 77.19 | 23.18 | 0.77 | 0.003 | 0.000 | 0.003 |
| 1071 | 10.71 | 10.72 | 0.01 | 10.72 | 77.15 | 24.36 | 0.77 | 0.003 | 0.000 | 0.003 |
| 1072 | 10.72 | 10.73 | 0.01 | 10.73 | 77.12 | 25.00 | 0.77 | 0.003 | 0.000 | 0.003 |
| 1073 | 10.73 | 10.74 | 0.01 | 10.74 | 77.08 | 25.14 | 0.77 | 0.003 | 0.000 | 0.003 |
| 1074 | 10.74 | 10.75 | 0.01 | 10.75 | 77.04 | 24.75 | 0.77 | 0.003 | 0.000 | 0.003 |
| 1075 | 10.75 | 10.76 | 0.01 | 10.76 | 77.00 | 23.88 | 0.77 | 0.003 | 0.000 | 0.003 |
| 1076 | 10.76 | 10.77 | 0.01 | 10.77 | 76.96 | 22.89 | 0.77 | 0.003 | 0.000 | 0.003 |
| 1077 | 10.77 | 10.78 | 0.01 | 10.78 | 76.92 | 22.26 | 0.77 | 0.003 | 0.000 | 0.003 |
| 1078 | 10.78 | 10.79 | 0.01 | 10.79 | 76.88 | 21.98 | 0.77 | 0.003 | 0.000 | 0.003 |
| 1079 | 10.79 | 10.80 | 0.01 | 10.80 | 76.84 | 21.68 | 0.77 | 0.004 | 0.000 | 0.004 |
| 1080 | 10.80 | 10.81 | 0.01 | 10.81 | 76.80 | 21.16 | 0.77 | 0.004 | 0.000 | 0.004 |
| 1081 | 10.81 | 10.82 | 0.01 | 10.82 | 76.76 | 20.66 | 0.77 | 0.004 | 0.000 | 0.004 |
| 1082 | 10.82 | 10.83 | 0.01 | 10.83 | 76.72 | 20.75 | 0.77 | 0.004 | 0.000 | 0.004 |
| 1083 | 10.83 | 10.84 | 0.01 | 10.84 | 76.68 | 21.31 | 0.77 | 0.004 | 0.000 | 0.004 |
| 1084 | 10.84 | 10.85 | 0.01 | 10.85 | 76.64 | 22.18 | 0.77 | 0.003 | 0.000 | 0.003 |
| 1085 | 10.85 | 10.86 | 0.01 | 10.86 | 76.60 | 23.19 | 0.77 | 0.003 | 0.000 | 0.003 |
| 1086 | 10.86 | 10.87 | 0.01 | 10.87 | 76.56 | 23.79 | 0.77 | 0.003 | 0.000 | 0.003 |
| 1087 | 10.87 | 10.88 | 0.01 | 10.88 | 76.52 | 24.01 | 0.77 | 0.003 | 0.000 | 0.003 |
| 1088 | 10.88 | 10.89 | 0.01 | 10.89 | 76.48 | 23.93 | 0.76 | 0.003 | 0.000 | 0.003 |
| 1089 | 10.89 | 10.90 | 0.01 | 10.90 | 76.44 | 24.12 | 0.76 | 0.003 | 0.000 | 0.003 |
| 1090 | 10.90 | 10.91 | 0.01 | 10.91 | 76.40 | 24.42 | 0.76 | 0.003 | 0.000 | 0.003 |
| 1091 | 10.91 | 10.92 | 0.01 | 10.92 | 76.36 | 24.51 | 0.76 | 0.003 | 0.000 | 0.003 |
| 1092 | 10.92 | 10.93 | 0.01 | 10.93 | 76.32 | 24.45 | 0.76 | 0.003 | 0.000 | 0.003 |
| 1093 | 10.93 | 10.94 | 0.01 | 10.94 | 76.28 | 24.39 | 0.76 | 0.003 | 0.000 | 0.003 |
| 1094 | 10.94 | 10.95 | 0.01 | 10.95 | 76.24 | 24.80 | 0.76 | 0.003 | 0.000 | 0.003 |
| 1095 | 10.95 | 10.96 | 0.01 | 10.96 | 76.20 | 25.43 | 0.76 | 0.003 | 0.000 | 0.003 |
| 1096 | 10.96 | 10.97 | 0.01 | 10.97 | 76.16 | 25.96 | 0.76 | 0.003 | 0.000 | 0.003 |
| 1097 | 10.97 | 10.98 | 0.01 | 10.98 | 76.12 | 25.83 | 0.76 | 0.003 | 0.000 | 0.003 |
| 1098 | 10.98 | 10.99 | 0.01 | 10.99 | 76.08 | 24.97 | 0.76 | 0.003 | 0.000 | 0.003 |
| 1099 | 10.99 | 11.00 | 0.01 | 11.00 | 76.04 | 24.33 | 0.76 | 0.003 | 0.000 | 0.003 |
| 1100 | 11.00 | 11.01 | 0.01 | 11.01 | 76.00 | 24.38 | 0.76 | 0.003 | 0.000 | 0.003 |
| 1101 | 11.01 | 11.02 | 0.01 | 11.02 | 75.96 | 25.55 | 0.76 | 0.003 | 0.000 | 0.003 |
| 1102 | 11.02 | 11.03 | 0.01 | 11.03 | 75.92 | 26.95 | 0.76 | 0.003 | 0.000 | 0.003 |
| 1103 | 11.03 | 11.04 | 0.01 | 11.04 | 75.89 | 28.26 | 0.76 | 0.003 | 0.000 | 0.003 |
| 1104 | 11.04 | 11.05 | 0.01 | 11.05 | 75.85 | 29.13 | 0.76 | 0.003 | 0.000 | 0.003 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1105 | 11.05 | 11.06 | 0.01 | 11.06 | 75.81 | 29.82 | 0.76 | 0.003 | 0.000 | 0.003 |
| 1106 | 11.06 | 11.07 | 0.01 | 11.07 | 75.77 | 30.25 | 0.76 | 0.003 | 0.000 | 0.003 |
| 1107 | 11.07 | 11.08 | 0.01 | 11.08 | 75.73 | 30.49 | 0.76 | 0.002 | 0.000 | 0.002 |
| 1108 | 11.08 | 11.09 | 0.01 | 11.09 | 75.69 | 30.48 | 0.76 | 0.002 | 0.000 | 0.002 |
| 1109 | 11.09 | 11.10 | 0.01 | 11.10 | 75.65 | 30.40 | 0.76 | 0.002 | 0.000 | 0.002 |
| 1110 | 11.10 | 11.11 | 0.01 | 11.11 | 75.61 | 30.32 | 0.76 | 0.002 | 0.000 | 0.002 |
| 1111 | 11.11 | 11.12 | 0.01 | 11.12 | 75.57 | 30.26 | 0.76 | 0.002 | 0.000 | 0.002 |
| 1112 | 11.12 | 11.13 | 0.01 | 11.13 | 75.53 | 30.26 | 0.76 | 0.002 | 0.000 | 0.002 |
| 1113 | 11.13 | 11.14 | 0.01 | 11.14 | 75.49 | 30.36 | 0.75 | 0.002 | 0.000 | 0.002 |
| 1114 | 11.14 | 11.15 | 0.01 | 11.15 | 75.45 | 31.01 | 0.75 | 0.002 | 0.000 | 0.002 |
| 1115 | 11.15 | 11.16 | 0.01 | 11.16 | 75.41 | 31.97 | 0.75 | 0.002 | 0.000 | 0.002 |
| 1116 | 11.16 | 11.17 | 0.01 | 11.17 | 75.37 | 33.07 | 0.75 | 0.002 | 0.000 | 0.002 |
| 1117 | 11.17 | 11.18 | 0.01 | 11.18 | 75.33 | 33.69 | 0.75 | 0.002 | 0.000 | 0.002 |
| 1118 | 11.18 | 11.19 | 0.01 | 11.19 | 75.29 | 33.92 | 0.75 | 0.002 | 0.000 | 0.002 |
| 1119 | 11.19 | 11.20 | 0.01 | 11.20 | 75.25 | 33.84 | 0.75 | 0.002 | 0.000 | 0.002 |
| 1120 | 11.20 | 11.21 | 0.01 | 11.21 | 75.21 | 33.71 | 0.75 | 0.002 | 0.000 | 0.002 |
| 1121 | 11.21 | 11.22 | 0.01 | 11.22 | 75.17 | 33.68 | 0.75 | 0.002 | 0.000 | 0.002 |
| 1122 | 11.22 | 11.23 | 0.01 | 11.23 | 75.13 | 33.59 | 0.75 | 0.002 | 0.000 | 0.002 |
| 1123 | 11.23 | 11.24 | 0.01 | 11.24 | 75.09 | 33.36 | 0.75 | 0.002 | 0.000 | 0.002 |
| 1124 | 11.24 | 11.25 | 0.01 | 11.25 | 75.05 | 32.87 | 0.75 | 0.002 | 0.000 | 0.002 |
| 1125 | 11.25 | 11.26 | 0.01 | 11.26 | 75.01 | 32.31 | 0.75 | 0.002 | 0.000 | 0.002 |
| 1126 | 11.26 | 11.27 | 0.01 | 11.27 | 74.97 | 31.82 | 0.75 | 0.002 | 0.000 | 0.002 |
| 1127 | 11.27 | 11.28 | 0.01 | 11.28 | 74.93 | 32.05 | 0.75 | 0.002 | 0.000 | 0.002 |
| 1128 | 11.28 | 11.29 | 0.01 | 11.29 | 74.89 | 32.81 | 0.75 | 0.002 | 0.000 | 0.002 |
| 1129 | 11.29 | 11.30 | 0.01 | 11.30 | 74.85 | 33.75 | 0.75 | 0.002 | 0.000 | 0.002 |
| 1130 | 11.30 | 11.31 | 0.01 | 11.31 | 74.81 | 33.50 | 0.75 | 0.002 | 0.000 | 0.002 |
| 1131 | 11.31 | 11.32 | 0.01 | 11.32 | 74.77 | 32.20 | 0.75 | 0.002 | 0.000 | 0.002 |
| 1132 | 11.32 | 11.33 | 0.01 | 11.33 | 74.73 | 30.11 | 0.75 | 0.002 | 0.000 | 0.002 |
| 1133 | 11.33 | 11.34 | 0.01 | 11.34 | 74.69 | 27.77 | 0.75 | 0.003 | 0.000 | 0.003 |
| 1134 | 11.34 | 11.35 | 0.01 | 11.35 | 74.65 | 26.03 | 0.75 | 0.003 | 0.000 | 0.003 |
| 1135 | 11.35 | 11.36 | 0.01 | 11.36 | 74.61 | 25.02 | 0.75 | 0.003 | 0.000 | 0.003 |
| 1136 | 11.36 | 11.37 | 0.01 | 11.37 | 74.57 | 25.47 | 0.75 | 0.003 | 0.000 | 0.003 |
| 1137 | 11.37 | 11.38 | 0.01 | 11.38 | 74.53 | 26.51 | 0.75 | 0.003 | 0.000 | 0.003 |
| 1138 | 11.38 | 11.39 | 0.01 | 11.39 | 74.49 | 27.88 | 0.74 | 0.003 | 0.000 | 0.003 |
| 1139 | 11.39 | 11.40 | 0.01 | 11.40 | 74.46 | 28.79 | 0.74 | 0.003 | 0.000 | 0.003 |
| 1140 | 11.40 | 11.41 | 0.01 | 11.41 | 74.42 | 28.88 | 0.74 | 0.003 | 0.000 | 0.003 |
| 1141 | 11.41 | 11.42 | 0.01 | 11.42 | 74.38 | 28.12 | 0.74 | 0.003 | 0.000 | 0.003 |
| 1142 | 11.42 | 11.43 | 0.01 | 11.43 | 74.34 | 27.07 | 0.74 | 0.003 | 0.000 | 0.003 |
| 1143 | 11.43 | 11.44 | 0.01 | 11.44 | 74.30 | 26.10 | 0.74 | 0.003 | 0.000 | 0.003 |
| 1144 | 11.44 | 11.45 | 0.01 | 11.45 | 74.26 | 25.72 | 0.74 | 0.003 | 0.000 | 0.003 |
| 1145 | 11.45 | 11.46 | 0.01 | 11.46 | 74.22 | 23.79 | 0.74 | 0.003 | 0.000 | 0.003 |
| 1146 | 11.46 | 11.47 | 0.01 | 11.47 | 74.18 | 26.05 | 0.74 | 0.003 | 0.000 | 0.003 |
| 1147 | 11.47 | 11.48 | 0.01 | 11.48 | 74.14 | 28.42 | 0.74 | 0.003 | 0.000 | 0.003 |
| 1148 | 11.48 | 11.49 | 0.01 | 11.49 | 74.10 | 32.59 | 0.74 | 0.002 | 0.000 | 0.002 |
| 1149 | 11.49 | 11.50 | 0.01 | 11.50 | 74.06 | 31.90 | 0.74 | 0.002 | 0.000 | 0.002 |
| 1150 | 11.50 | 11.51 | 0.01 | 11.51 | 74.02 | 30.59 | 0.74 | 0.002 | 0.000 | 0.002 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1151 | 11.51 | 11.52 | 0.01 | 11.52 | 73.98 | 29.12 | 0.74 | 0.003 | 0.000 | 0.003 |
| 1152 | 11.52 | 11.53 | 0.01 | 11.53 | 73.94 | 28.17 | 0.74 | 0.003 | 0.000 | 0.003 |
| 1153 | 11.53 | 11.54 | 0.01 | 11.54 | 73.90 | 27.27 | 0.74 | 0.003 | 0.000 | 0.003 |
| 1154 | 11.54 | 11.55 | 0.01 | 11.55 | 73.86 | 26.11 | 0.74 | 0.003 | 0.000 | 0.003 |
| 1155 | 11.55 | 11.56 | 0.01 | 11.56 | 73.82 | 24.22 | 0.74 | 0.003 | 0.000 | 0.003 |
| 1156 | 11.56 | 11.57 | 0.01 | 11.57 | 73.78 | 22.03 | 0.74 | 0.003 | 0.000 | 0.003 |
| 1157 | 11.57 | 11.58 | 0.01 | 11.58 | 73.74 | 18.53 | 0.74 | 0.004 | 0.000 | 0.004 |
| 1158 | 11.58 | 11.59 | 0.01 | 11.59 | 73.70 | 15.16 | 0.74 | 0.005 | 0.000 | 0.005 |
| 1159 | 11.59 | 11.60 | 0.01 | 11.60 | 73.66 | 12.99 | 0.74 | 0.006 | 0.000 | 0.006 |
| 1160 | 11.60 | 11.61 | 0.01 | 11.61 | 73.62 | 11.74 | 0.74 | 0.006 | 0.000 | 0.006 |
| 1161 | 11.61 | 11.62 | 0.01 | 11.62 | 73.58 | 11.00 | 0.74 | 0.007 | 0.000 | 0.007 |
| 1162 | 11.62 | 11.63 | 0.01 | 11.63 | 73.54 | 10.30 | 0.74 | 0.007 | 0.000 | 0.007 |
| 1163 | 11.63 | 11.64 | 0.01 | 11.64 | 73.50 | 9.75 | 0.74 | 0.008 | 0.000 | 0.008 |
| 1164 | 11.64 | 11.65 | 0.01 | 11.65 | 73.46 | 9.60 | 0.73 | 0.008 | 0.000 | 0.008 |
| 1165 | 11.65 | 11.66 | 0.01 | 11.66 | 73.42 | 9.40 | 0.73 | 0.008 | 0.000 | 0.008 |
| 1166 | 11.66 | 11.67 | 0.01 | 11.67 | 73.38 | 9.24 | 0.73 | 0.008 | 0.000 | 0.008 |
| 1167 | 11.67 | 11.68 | 0.01 | 11.68 | 73.34 | 9.14 | 0.73 | 0.008 | 0.000 | 0.008 |
| 1168 | 11.68 | 11.69 | 0.01 | 11.69 | 73.30 | 9.16 | 0.73 | 0.008 | 0.000 | 0.008 |
| 1169 | 11.69 | 11.70 | 0.01 | 11.70 | 73.26 | 9.05 | 0.73 | 0.008 | 0.000 | 0.008 |
| 1170 | 11.70 | 11.71 | 0.01 | 11.71 | 73.22 | 8.63 | 0.73 | 0.008 | 0.000 | 0.008 |
| 1171 | 11.71 | 11.72 | 0.01 | 11.72 | 73.19 | 8.10 | 0.73 | 0.009 | 0.000 | 0.009 |
| 1172 | 11.72 | 11.73 | 0.01 | 11.73 | 73.15 | 7.73 | 0.73 | 0.009 | 0.000 | 0.009 |
| 1173 | 11.73 | 11.74 | 0.01 | 11.74 | 73.11 | 8.54 | 0.73 | 0.009 | 0.000 | 0.009 |
| 1174 | 11.74 | 11.75 | 0.01 | 11.75 | 73.07 | 10.07 | 0.73 | 0.007 | 0.000 | 0.007 |
| 1175 | 11.75 | 11.76 | 0.01 | 11.76 | 73.03 | 12.10 | 0.73 | 0.006 | 0.000 | 0.006 |
| 1176 | 11.76 | 11.77 | 0.01 | 11.77 | 72.99 | 13.84 | 0.73 | 0.005 | 0.000 | 0.005 |
| 1177 | 11.77 | 11.78 | 0.01 | 11.78 | 72.95 | 16.52 | 0.73 | 0.004 | 0.000 | 0.004 |
| 1178 | 11.78 | 11.79 | 0.01 | 11.79 | 72.91 | 19.32 | 0.73 | 0.004 | 0.000 | 0.004 |
| 1179 | 11.79 | 11.80 | 0.01 | 11.80 | 72.87 | 20.61 | 0.73 | 0.004 | 0.000 | 0.004 |
| 1180 | 11.80 | 11.81 | 0.01 | 11.81 | 72.83 | 19.35 | 0.73 | 0.004 | 0.000 | 0.004 |
| 1181 | 11.81 | 11.82 | 0.01 | 11.82 | 72.79 | 16.80 | 0.73 | 0.004 | 0.000 | 0.004 |
| 1182 | 11.82 | 11.83 | 0.01 | 11.83 | 72.75 | 13.95 | 0.73 | 0.005 | 0.000 | 0.005 |
| 1183 | 11.83 | 11.84 | 0.01 | 11.84 | 72.71 | 11.75 | 0.73 | 0.006 | 0.000 | 0.006 |
| 1184 | 11.84 | 11.85 | 0.01 | 11.85 | 72.67 | 10.41 | 0.73 | 0.007 | 0.000 | 0.007 |
| 1185 | 11.85 | 11.86 | 0.01 | 11.86 | 72.63 | 10.81 | 0.73 | 0.007 | 0.000 | 0.007 |
| 1186 | 11.86 | 11.87 | 0.01 | 11.87 | 72.59 | 11.97 | 0.73 | 0.006 | 0.000 | 0.006 |
| 1187 | 11.87 | 11.88 | 0.01 | 11.88 | 72.55 | 13.73 | 0.73 | 0.005 | 0.000 | 0.005 |
| 1188 | 11.88 | 11.89 | 0.01 | 11.89 | 72.51 | 15.76 | 0.73 | 0.005 | 0.000 | 0.005 |
| 1189 | 11.89 | 11.90 | 0.01 | 11.90 | 72.47 | 17.57 | 0.72 | 0.004 | 0.000 | 0.004 |
| 1190 | 11.90 | 11.91 | 0.01 | 11.91 | 72.43 | 19.13 | 0.72 | 0.004 | 0.000 | 0.004 |
| 1191 | 11.91 | 11.92 | 0.01 | 11.92 | 72.39 | 19.94 | 0.72 | 0.004 | 0.000 | 0.004 |
| 1192 | 11.92 | 11.93 | 0.01 | 11.93 | 72.35 | 20.71 | 0.72 | 0.003 | 0.000 | 0.003 |
| 1193 | 11.93 | 11.94 | 0.01 | 11.94 | 72.31 | 21.39 | 0.72 | 0.003 | 0.000 | 0.003 |
| 1194 | 11.94 | 11.95 | 0.01 | 11.95 | 72.27 | 21.83 | 0.72 | 0.003 | 0.000 | 0.003 |
| 1195 | 11.95 | 11.96 | 0.01 | 11.96 | 72.23 | 22.12 | 0.72 | 0.003 | 0.000 | 0.003 |
| 1196 | 11.96 | 11.97 | 0.01 | 11.97 | 72.20 | 22.23 | 0.72 | 0.003 | 0.000 | 0.003 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1197 | 11.97 | 11.98 | 0.01 | 11.98 | 72.16 | 21.91 | 0.72 | 0.003 | 0.000 | 0.003 |
| 1198 | 11.98 | 11.99 | 0.01 | 11.99 | 72.12 | 21.45 | 0.72 | 0.003 | 0.000 | 0.003 |
| 1199 | 11.99 | 12.00 | 0.01 | 12.00 | 72.08 | 20.62 | 0.72 | 0.003 | 0.000 | 0.003 |
| 1200 | 12.00 | 12.01 | 0.01 | 12.01 | 72.04 | 20.05 | 0.72 | 0.004 | 0.000 | 0.004 |
| 1201 | 12.01 | 12.02 | 0.01 | 12.02 | 72.00 | 19.39 | 0.72 | 0.004 | 0.000 | 0.004 |
| 1202 | 12.02 | 12.03 | 0.01 | 12.03 | 71.96 | 18.87 | 0.72 | 0.004 | 0.000 | 0.004 |
| 1203 | 12.03 | 12.04 | 0.01 | 12.04 | 71.92 | 18.56 | 0.72 | 0.004 | 0.000 | 0.004 |
| 1204 | 12.04 | 12.05 | 0.01 | 12.05 | 71.88 | 17.98 | 0.72 | 0.004 | 0.000 | 0.004 |
| 1205 | 12.05 | 12.06 | 0.01 | 12.06 | 71.84 | 17.55 | 0.72 | 0.004 | 0.000 | 0.004 |
| 1206 | 12.06 | 12.07 | 0.01 | 12.07 | 71.80 | 17.28 | 0.72 | 0.004 | 0.000 | 0.004 |
| 1207 | 12.07 | 12.08 | 0.01 | 12.08 | 71.76 | 17.07 | 0.72 | 0.004 | 0.000 | 0.004 |
| 1208 | 12.08 | 12.09 | 0.01 | 12.09 | 71.72 | 16.33 | 0.72 | 0.004 | 0.000 | 0.004 |
| 1209 | 12.09 | 12.10 | 0.01 | 12.10 | 71.68 | 15.17 | 0.72 | 0.005 | 0.000 | 0.005 |
| 1210 | 12.10 | 12.11 | 0.01 | 12.11 | 71.64 | 13.99 | 0.72 | 0.005 | 0.000 | 0.005 |
| 1211 | 12.11 | 12.12 | 0.01 | 12.12 | 71.60 | 13.39 | 0.72 | 0.005 | 0.000 | 0.005 |
| 1212 | 12.12 | 12.13 | 0.01 | 12.13 | 71.56 | 13.46 | 0.72 | 0.005 | 0.000 | 0.005 |
| 1213 | 12.13 | 12.14 | 0.01 | 12.14 | 71.52 | 13.90 | 0.72 | 0.005 | 0.000 | 0.005 |
| 1214 | 12.14 | 12.15 | 0.01 | 12.15 | 71.48 | 14.00 | 0.71 | 0.005 | 0.000 | 0.005 |
| 1215 | 12.15 | 12.16 | 0.01 | 12.16 | 71.44 | 13.28 | 0.71 | 0.005 | 0.000 | 0.005 |
| 1216 | 12.16 | 12.17 | 0.01 | 12.17 | 71.41 | 12.42 | 0.71 | 0.006 | 0.000 | 0.006 |
| 1217 | 12.17 | 12.18 | 0.01 | 12.18 | 71.37 | 11.67 | 0.71 | 0.006 | 0.000 | 0.006 |
| 1218 | 12.18 | 12.19 | 0.01 | 12.19 | 71.33 | 11.32 | 0.71 | 0.006 | 0.000 | 0.006 |
| 1219 | 12.19 | 12.20 | 0.01 | 12.20 | 71.29 | 11.29 | 0.71 | 0.006 | 0.000 | 0.006 |
| 1220 | 12.20 | 12.21 | 0.01 | 12.21 | 71.25 | 11.46 | 0.71 | 0.006 | 0.000 | 0.006 |
| 1221 | 12.21 | 12.22 | 0.01 | 12.22 | 71.21 | 11.86 | 0.71 | 0.006 | 0.000 | 0.006 |
| 1222 | 12.22 | 12.23 | 0.01 | 12.23 | 71.17 | 12.27 | 0.71 | 0.006 | 0.000 | 0.006 |
| 1223 | 12.23 | 12.24 | 0.01 | 12.24 | 71.13 | 12.69 | 0.71 | 0.006 | 0.000 | 0.006 |
| 1224 | 12.24 | 12.25 | 0.01 | 12.25 | 71.09 | 12.93 | 0.71 | 0.006 | 0.000 | 0.006 |
| 1225 | 12.25 | 12.26 | 0.01 | 12.26 | 71.05 | 13.08 | 0.71 | 0.005 | 0.000 | 0.005 |
| 1226 | 12.26 | 12.27 | 0.01 | 12.27 | 71.01 | 13.12 | 0.71 | 0.005 | 0.000 | 0.005 |
| 1227 | 12.27 | 12.28 | 0.01 | 12.28 | 70.97 | 13.19 | 0.71 | 0.005 | 0.000 | 0.005 |
| 1228 | 12.28 | 12.29 | 0.01 | 12.29 | 70.93 | 13.35 | 0.71 | 0.005 | 0.000 | 0.005 |
| 1229 | 12.29 | 12.30 | 0.01 | 12.30 | 70.89 | 13.53 | 0.71 | 0.005 | 0.000 | 0.005 |
| 1230 | 12.30 | 12.31 | 0.01 | 12.31 | 70.85 | 13.71 | 0.71 | 0.005 | 0.000 | 0.005 |
| 1231 | 12.31 | 12.32 | 0.01 | 12.32 | 70.81 | 13.87 | 0.71 | 0.005 | 0.000 | 0.005 |
| 1232 | 12.32 | 12.33 | 0.01 | 12.33 | 70.78 | 14.03 | 0.71 | 0.005 | 0.000 | 0.005 |
| 1233 | 12.33 | 12.34 | 0.01 | 12.34 | 70.74 | 14.19 | 0.71 | 0.005 | 0.000 | 0.005 |
| 1234 | 12.34 | 12.35 | 0.01 | 12.35 | 70.70 | 14.40 | 0.71 | 0.005 | 0.000 | 0.005 |
| 1235 | 12.35 | 12.36 | 0.01 | 12.36 | 70.66 | 14.68 | 0.71 | 0.005 | 0.000 | 0.005 |
| 1236 | 12.36 | 12.37 | 0.01 | 12.37 | 70.62 | 14.99 | 0.71 | 0.005 | 0.000 | 0.005 |
| 1237 | 12.37 | 12.38 | 0.01 | 12.38 | 70.58 | 15.21 | 0.71 | 0.005 | 0.000 | 0.005 |
| 1238 | 12.38 | 12.39 | 0.01 | 12.39 | 70.54 | 15.34 | 0.71 | 0.005 | 0.000 | 0.005 |
| 1239 | 12.39 | 12.40 | 0.01 | 12.40 | 70.50 | 15.42 | 0.70 | 0.005 | 0.000 | 0.005 |
| 1240 | 12.40 | 12.41 | 0.01 | 12.41 | 70.46 | 15.46 | 0.70 | 0.005 | 0.000 | 0.005 |
| 1241 | 12.41 | 12.42 | 0.01 | 12.42 | 70.42 | 15.60 | 0.70 | 0.005 | 0.000 | 0.005 |
| 1242 | 12.42 | 12.43 | 0.01 | 12.43 | 70.38 | 16.15 | 0.70 | 0.004 | 0.000 | 0.004 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1243 | 12.43 | 12.44 | 0.01 | 12.44 | 70.34 | 16.97 | 0.70 | 0.004 | 0.000 | 0.004 |
| 1244 | 12.44 | 12.45 | 0.01 | 12.45 | 70.30 | 18.02 | 0.70 | 0.004 | 0.000 | 0.004 |
| 1245 | 12.45 | 12.46 | 0.01 | 12.46 | 70.26 | 18.74 | 0.70 | 0.004 | 0.000 | 0.004 |
| 1246 | 12.46 | 12.47 | 0.01 | 12.47 | 70.23 | 20.91 | 0.70 | 0.003 | 0.000 | 0.003 |
| 1247 | 12.47 | 12.48 | 0.01 | 12.48 | 70.19 | 22.45 | 0.70 | 0.003 | 0.000 | 0.003 |
| 1248 | 12.48 | 12.49 | 0.01 | 12.49 | 70.15 | 22.79 | 0.70 | 0.003 | 0.000 | 0.003 |
| 1249 | 12.49 | 12.50 | 0.01 | 12.50 | 70.11 | 21.62 | 0.70 | 0.003 | 0.000 | 0.003 |
| 1250 | 12.50 | 12.51 | 0.01 | 12.51 | 70.07 | 20.38 | 0.70 | 0.003 | 0.000 | 0.003 |
| 1251 | 12.51 | 12.52 | 0.01 | 12.52 | 70.03 | 19.57 | 0.70 | 0.004 | 0.000 | 0.004 |
| 1252 | 12.52 | 12.53 | 0.01 | 12.53 | 69.99 | 18.94 | 0.70 | 0.004 | 0.000 | 0.004 |
| 1253 | 12.53 | 12.54 | 0.01 | 12.54 | 69.95 | 18.34 | 0.70 | 0.004 | 0.000 | 0.004 |
| 1254 | 12.54 | 12.55 | 0.01 | 12.55 | 69.91 | 18.04 | 0.70 | 0.004 | 0.000 | 0.004 |
| 1255 | 12.55 | 12.56 | 0.01 | 12.56 | 69.87 | 17.90 | 0.70 | 0.004 | 0.000 | 0.004 |
| 1256 | 12.56 | 12.57 | 0.01 | 12.57 | 69.83 | 17.98 | 0.70 | 0.004 | 0.000 | 0.004 |
| 1257 | 12.57 | 12.58 | 0.01 | 12.58 | 69.79 | 18.19 | 0.70 | 0.004 | 0.000 | 0.004 |
| 1258 | 12.58 | 12.59 | 0.01 | 12.59 | 69.75 | 18.46 | 0.70 | 0.004 | 0.000 | 0.004 |
| 1259 | 12.59 | 12.60 | 0.01 | 12.60 | 69.72 | 18.60 | 0.70 | 0.004 | 0.000 | 0.004 |
| 1260 | 12.60 | 12.61 | 0.01 | 12.61 | 69.68 | 18.70 | 0.70 | 0.004 | 0.000 | 0.004 |
| 1261 | 12.61 | 12.62 | 0.01 | 12.62 | 69.64 | 18.71 | 0.70 | 0.004 | 0.000 | 0.004 |
| 1262 | 12.62 | 12.63 | 0.01 | 12.63 | 69.60 | 18.79 | 0.70 | 0.004 | 0.000 | 0.004 |
| 1263 | 12.63 | 12.64 | 0.01 | 12.64 | 69.56 | 18.80 | 0.70 | 0.004 | 0.000 | 0.004 |
| 1264 | 12.64 | 12.65 | 0.01 | 12.65 | 69.52 | 18.76 | 0.70 | 0.004 | 0.000 | 0.004 |
| 1265 | 12.65 | 12.66 | 0.01 | 12.66 | 69.48 | 18.61 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1266 | 12.66 | 12.67 | 0.01 | 12.67 | 69.44 | 18.19 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1267 | 12.67 | 12.68 | 0.01 | 12.68 | 69.40 | 17.73 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1268 | 12.68 | 12.69 | 0.01 | 12.69 | 69.36 | 17.23 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1269 | 12.69 | 12.70 | 0.01 | 12.70 | 69.32 | 16.91 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1270 | 12.70 | 12.71 | 0.01 | 12.71 | 69.29 | 16.68 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1271 | 12.71 | 12.72 | 0.01 | 12.72 | 69.25 | 16.58 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1272 | 12.72 | 12.73 | 0.01 | 12.73 | 69.21 | 16.60 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1273 | 12.73 | 12.74 | 0.01 | 12.74 | 69.17 | 16.68 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1274 | 12.74 | 12.75 | 0.01 | 12.75 | 69.13 | 16.82 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1275 | 12.75 | 12.76 | 0.01 | 12.76 | 69.09 | 16.80 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1276 | 12.76 | 12.77 | 0.01 | 12.77 | 69.05 | 16.73 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1277 | 12.77 | 12.78 | 0.01 | 12.78 | 69.01 | 16.56 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1278 | 12.78 | 12.79 | 0.01 | 12.79 | 68.97 | 16.42 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1279 | 12.79 | 12.80 | 0.01 | 12.80 | 68.93 | 16.35 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1280 | 12.80 | 12.81 | 0.01 | 12.81 | 68.90 | 16.39 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1281 | 12.81 | 12.82 | 0.01 | 12.82 | 68.86 | 16.65 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1282 | 12.82 | 12.83 | 0.01 | 12.83 | 68.82 | 16.97 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1283 | 12.83 | 12.84 | 0.01 | 12.84 | 68.78 | 17.16 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1284 | 12.84 | 12.85 | 0.01 | 12.85 | 68.74 | 17.18 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1285 | 12.85 | 12.86 | 0.01 | 12.86 | 68.70 | 16.95 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1286 | 12.86 | 12.87 | 0.01 | 12.87 | 68.66 | 16.78 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1287 | 12.87 | 12.88 | 0.01 | 12.88 | 68.62 | 16.65 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1288 | 12.88 | 12.89 | 0.01 | 12.89 | 68.58 | 16.76 | 0.69 | 0.004 | 0.000 | 0.004 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1289 | 12.89 | 12.90 | 0.01 | 12.90 | 68.55 | 16.99 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1290 | 12.90 | 12.91 | 0.01 | 12.91 | 68.51 | 17.46 | 0.69 | 0.004 | 0.000 | 0.004 |
| 1291 | 12.91 | 12.92 | 0.01 | 12.92 | 68.47 | 18.31 | 0.68 | 0.004 | 0.000 | 0.004 |
| 1292 | 12.92 | 12.93 | 0.01 | 12.93 | 68.43 | 19.18 | 0.68 | 0.004 | 0.000 | 0.004 |
| 1293 | 12.93 | 12.94 | 0.01 | 12.94 | 68.39 | 19.79 | 0.68 | 0.003 | 0.000 | 0.003 |
| 1294 | 12.94 | 12.95 | 0.01 | 12.95 | 68.35 | 19.75 | 0.68 | 0.003 | 0.000 | 0.003 |
| 1295 | 12.95 | 12.96 | 0.01 | 12.96 | 68.31 | 19.59 | 0.68 | 0.003 | 0.000 | 0.003 |
| 1296 | 12.96 | 12.97 | 0.01 | 12.97 | 68.27 | 19.66 | 0.68 | 0.003 | 0.000 | 0.003 |
| 1297 | 12.97 | 12.98 | 0.01 | 12.98 | 68.24 | 20.01 | 0.68 | 0.003 | 0.000 | 0.003 |
| 1298 | 12.98 | 12.99 | 0.01 | 12.99 | 68.20 | 20.21 | 0.68 | 0.003 | 0.000 | 0.003 |
| 1299 | 12.99 | 13.00 | 0.01 | 13.00 | 68.16 | 19.73 | 0.68 | 0.003 | 0.000 | 0.003 |
| 1300 | 13.00 | 13.01 | 0.01 | 13.01 | 68.12 | 19.14 | 0.68 | 0.004 | 0.000 | 0.004 |
| 1301 | 13.01 | 13.02 | 0.01 | 13.02 | 68.08 | 18.69 | 0.68 | 0.004 | 0.000 | 0.004 |
| 1302 | 13.02 | 13.03 | 0.01 | 13.03 | 68.04 | 18.63 | 0.68 | 0.004 | 0.000 | 0.004 |
| 1303 | 13.03 | 13.04 | 0.01 | 13.04 | 68.00 | 18.53 | 0.68 | 0.004 | 0.000 | 0.004 |
| 1304 | 13.04 | 13.05 | 0.01 | 13.05 | 67.96 | 18.41 | 0.68 | 0.004 | 0.000 | 0.004 |
| 1305 | 13.05 | 13.06 | 0.01 | 13.06 | 67.93 | 18.46 | 0.68 | 0.004 | 0.000 | 0.004 |
| 1306 | 13.06 | 13.07 | 0.01 | 13.07 | 67.89 | 19.18 | 0.68 | 0.004 | 0.000 | 0.004 |
| 1307 | 13.07 | 13.08 | 0.01 | 13.08 | 67.85 | 20.21 | 0.68 | 0.003 | 0.000 | 0.003 |
| 1308 | 13.08 | 13.09 | 0.01 | 13.09 | 67.81 | 20.62 | 0.68 | 0.003 | 0.000 | 0.003 |
| 1309 | 13.09 | 13.10 | 0.01 | 13.10 | 67.77 | 17.62 | 0.68 | 0.004 | 0.000 | 0.004 |
| 1310 | 13.10 | 13.11 | 0.01 | 13.11 | 67.73 | 13.59 | 0.68 | 0.005 | 0.000 | 0.005 |
| 1311 | 13.11 | 13.12 | 0.01 | 13.12 | 67.69 | 9.76 | 0.68 | 0.007 | 0.000 | 0.007 |
| 1312 | 13.12 | 13.13 | 0.01 | 13.13 | 67.65 | 7.48 | 0.68 | 0.009 | 0.000 | 0.009 |
| 1313 | 13.13 | 13.14 | 0.01 | 13.14 | 67.62 | 6.00 | 0.68 | 0.011 | 0.000 | 0.011 |
| 1314 | 13.14 | 13.15 | 0.01 | 13.15 | 67.58 | 5.22 | 0.68 | 0.013 | 0.000 | 0.013 |
| 1315 | 13.15 | 13.16 | 0.01 | 13.16 | 67.54 | 5.45 | 0.68 | 0.012 | 0.000 | 0.012 |
| 1316 | 13.16 | 13.17 | 0.01 | 13.17 | 67.50 | 6.01 | 0.68 | 0.011 | 0.000 | 0.011 |
| 1317 | 13.17 | 13.18 | 0.01 | 13.18 | 67.46 | 6.69 | 0.67 | 0.010 | 0.000 | 0.010 |
| 1318 | 13.18 | 13.19 | 0.01 | 13.19 | 67.42 | 7.18 | 0.67 | 0.009 | 0.000 | 0.009 |
| 1319 | 13.19 | 13.20 | 0.01 | 13.20 | 67.38 | 7.29 | 0.67 | 0.009 | 0.000 | 0.009 |
| 1320 | 13.20 | 13.21 | 0.01 | 13.21 | 67.35 | 6.99 | 0.67 | 0.010 | 0.000 | 0.010 |
| 1321 | 13.21 | 13.22 | 0.01 | 13.22 | 67.31 | 6.53 | 0.67 | 0.010 | 0.000 | 0.010 |
| 1322 | 13.22 | 13.23 | 0.01 | 13.23 | 67.27 | 6.39 | 0.67 | 0.011 | 0.000 | 0.011 |
| 1323 | 13.23 | 13.24 | 0.01 | 13.24 | 67.23 | 6.58 | 0.67 | 0.010 | 0.000 | 0.010 |
| 1324 | 13.24 | 13.25 | 0.01 | 13.25 | 67.19 | 6.57 | 0.67 | 0.010 | 0.000 | 0.010 |
| 1325 | 13.25 | 13.26 | 0.01 | 13.26 | 67.15 | 6.29 | 0.67 | 0.011 | 0.000 | 0.011 |
| 1326 | 13.26 | 13.27 | 0.01 | 13.27 | 67.12 | 5.80 | 0.67 | 0.012 | 0.000 | 0.012 |
| 1327 | 13.27 | 13.28 | 0.01 | 13.28 | 67.08 | 5.37 | 0.67 | 0.012 | 0.000 | 0.012 |
| 1328 | 13.28 | 13.29 | 0.01 | 13.29 | 67.04 | 5.03 | 0.67 | 0.013 | 0.000 | 0.013 |
| 1329 | 13.29 | 13.30 | 0.01 | 13.30 | 67.00 | 4.90 | 0.67 | 0.014 | 0.000 | 0.014 |
| 1330 | 13.30 | 13.31 | 0.01 | 13.31 | 66.96 | 4.98 | 0.67 | 0.013 | 0.000 | 0.013 |
| 1331 | 13.31 | 13.32 | 0.01 | 13.32 | 66.92 | 5.14 | 0.67 | 0.013 | 0.000 | 0.013 |
| 1332 | 13.32 | 13.33 | 0.01 | 13.33 | 66.88 | 5.28 | 0.67 | 0.013 | 0.000 | 0.013 |
| 1333 | 13.33 | 13.34 | 0.01 | 13.34 | 66.85 | 5.88 | 0.67 | 0.011 | 0.000 | 0.011 |
| 1334 | 13.34 | 13.35 | 0.01 | 13.35 | 66.81 | 6.89 | 0.67 | 0.010 | 0.000 | 0.010 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1335 | 13.35 | 13.36 | 0.01 | 13.36 | 66.77 | 8.58 | 0.67 | 0.008 | 0.000 | 0.008 |
| 1336 | 13.36 | 13.37 | 0.01 | 13.37 | 66.73 | 11.35 | 0.67 | 0.006 | 0.000 | 0.006 |
| 1337 | 13.37 | 13.38 | 0.01 | 13.38 | 66.69 | 14.66 | 0.67 | 0.005 | 0.000 | 0.005 |
| 1338 | 13.38 | 13.39 | 0.01 | 13.39 | 66.65 | 18.23 | 0.67 | 0.004 | 0.000 | 0.004 |
| 1339 | 13.39 | 13.40 | 0.01 | 13.40 | 66.62 | 20.68 | 0.67 | 0.003 | 0.000 | 0.003 |
| 1340 | 13.40 | 13.41 | 0.01 | 13.41 | 66.58 | 22.03 | 0.67 | 0.003 | 0.000 | 0.003 |
| 1341 | 13.41 | 13.42 | 0.01 | 13.42 | 66.54 | 21.74 | 0.67 | 0.003 | 0.000 | 0.003 |
| 1342 | 13.42 | 13.43 | 0.01 | 13.43 | 66.50 | 18.67 | 0.67 | 0.004 | 0.000 | 0.004 |
| 1343 | 13.43 | 13.44 | 0.01 | 13.44 | 66.46 | 15.13 | 0.66 | 0.004 | 0.000 | 0.004 |
| 1344 | 13.44 | 13.45 | 0.01 | 13.45 | 66.42 | 8.29 | 0.66 | 0.008 | 0.000 | 0.008 |
| 1345 | 13.45 | 13.46 | 0.01 | 13.46 | 66.39 | 7.68 | 0.66 | 0.009 | 0.000 | 0.009 |
| 1346 | 13.46 | 13.47 | 0.01 | 13.47 | 66.35 | 7.48 | 0.66 | 0.009 | 0.000 | 0.009 |
| 1347 | 13.47 | 13.48 | 0.01 | 13.48 | 66.31 | 11.30 | 0.66 | 0.006 | 0.000 | 0.006 |
| 1348 | 13.48 | 13.49 | 0.01 | 13.49 | 66.27 | 10.55 | 0.66 | 0.006 | 0.000 | 0.006 |
| 1349 | 13.49 | 13.50 | 0.01 | 13.50 | 66.23 | 9.88 | 0.66 | 0.007 | 0.000 | 0.007 |
| 1350 | 13.50 | 13.51 | 0.01 | 13.51 | 66.20 | 8.90 | 0.66 | 0.007 | 0.000 | 0.007 |
| 1351 | 13.51 | 13.52 | 0.01 | 13.52 | 66.16 | 7.57 | 0.66 | 0.009 | 0.000 | 0.009 |
| 1352 | 13.52 | 13.53 | 0.01 | 13.53 | 66.12 | 6.09 | 0.66 | 0.011 | 0.000 | 0.011 |
| 1353 | 13.53 | 13.54 | 0.01 | 13.54 | 66.08 | 4.65 | 0.66 | 0.014 | 0.000 | 0.014 |
| 1354 | 13.54 | 13.55 | 0.01 | 13.55 | 66.04 | 3.90 | 0.66 | 0.017 | 0.000 | 0.017 |
| 1355 | 13.55 | 13.56 | 0.01 | 13.56 | 66.00 | 3.55 | 0.66 | 0.019 | 0.000 | 0.019 |
| 1356 | 13.56 | 13.57 | 0.01 | 13.57 | 65.97 | 3.48 | 0.66 | 0.019 | 0.000 | 0.019 |
| 1357 | 13.57 | 13.58 | 0.01 | 13.58 | 65.93 | 3.25 | 0.66 | 0.020 | 0.000 | 0.020 |
| 1358 | 13.58 | 13.59 | 0.01 | 13.59 | 65.89 | 3.01 | 0.66 | 0.022 | 0.000 | 0.022 |
| 1359 | 13.59 | 13.60 | 0.01 | 13.60 | 65.85 | 2.84 | 0.66 | 0.023 | 0.000 | 0.023 |
| 1360 | 13.60 | 13.61 | 0.01 | 13.61 | 65.81 | 3.01 | 0.66 | 0.022 | 0.000 | 0.022 |
| 1361 | 13.61 | 13.62 | 0.01 | 13.62 | 65.78 | 3.29 | 0.66 | 0.020 | 0.000 | 0.020 |
| 1362 | 13.62 | 13.63 | 0.01 | 13.63 | 65.74 | 3.61 | 0.66 | 0.018 | 0.000 | 0.018 |
| 1363 | 13.63 | 13.64 | 0.01 | 13.64 | 65.70 | 3.93 | 0.66 | 0.017 | 0.000 | 0.017 |
| 1364 | 13.64 | 13.65 | 0.01 | 13.65 | 65.66 | 4.26 | 0.66 | 0.015 | 0.000 | 0.015 |
| 1365 | 13.65 | 13.66 | 0.01 | 13.66 | 65.62 | 4.58 | 0.66 | 0.014 | 0.000 | 0.014 |
| 1366 | 13.66 | 13.67 | 0.01 | 13.67 | 65.59 | 4.77 | 0.66 | 0.014 | 0.000 | 0.014 |
| 1367 | 13.67 | 13.68 | 0.01 | 13.68 | 65.55 | 4.77 | 0.66 | 0.014 | 0.000 | 0.014 |
| 1368 | 13.68 | 13.69 | 0.01 | 13.69 | 65.51 | 4.56 | 0.66 | 0.014 | 0.000 | 0.014 |
| 1369 | 13.69 | 13.70 | 0.01 | 13.70 | 65.47 | 4.10 | 0.65 | 0.016 | 0.000 | 0.016 |
| 1370 | 13.70 | 13.71 | 0.01 | 13.71 | 65.43 | 3.70 | 0.65 | 0.018 | 0.000 | 0.018 |
| 1371 | 13.71 | 13.72 | 0.01 | 13.72 | 65.40 | 3.46 | 0.65 | 0.019 | 0.000 | 0.019 |
| 1372 | 13.72 | 13.73 | 0.01 | 13.73 | 65.36 | 3.46 | 0.65 | 0.019 | 0.000 | 0.019 |
| 1373 | 13.73 | 13.74 | 0.01 | 13.74 | 65.32 | 3.52 | 0.65 | 0.019 | 0.000 | 0.019 |
| 1374 | 13.74 | 13.75 | 0.01 | 13.75 | 65.28 | 3.58 | 0.65 | 0.018 | 0.000 | 0.018 |
| 1375 | 13.75 | 13.76 | 0.01 | 13.76 | 65.24 | 3.63 | 0.65 | 0.018 | 0.000 | 0.018 |
| 1376 | 13.76 | 13.77 | 0.01 | 13.77 | 65.21 | 3.73 | 0.65 | 0.017 | 0.000 | 0.017 |
| 1377 | 13.77 | 13.78 | 0.01 | 13.78 | 65.17 | 3.94 | 0.65 | 0.017 | 0.000 | 0.017 |
| 1378 | 13.78 | 13.79 | 0.01 | 13.79 | 65.13 | 4.19 | 0.65 | 0.016 | 0.000 | 0.016 |
| 1379 | 13.79 | 13.80 | 0.01 | 13.80 | 65.09 | 4.30 | 0.65 | 0.015 | 0.000 | 0.015 |
| 1380 | 13.80 | 13.81 | 0.01 | 13.81 | 65.06 | 4.16 | 0.65 | 0.016 | 0.000 | 0.016 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1381 | 13.81 | 13.82 | 0.01 | 13.82 | 65.02 | 3.87 | 0.65 | 0.017 | 0.000 | 0.017 |
| 1382 | 13.82 | 13.83 | 0.01 | 13.83 | 64.98 | 3.55 | 0.65 | 0.018 | 0.000 | 0.018 |
| 1383 | 13.83 | 13.84 | 0.01 | 13.84 | 64.94 | 3.26 | 0.65 | 0.020 | 0.000 | 0.020 |
| 1384 | 13.84 | 13.85 | 0.01 | 13.85 | 64.90 | 3.12 | 0.65 | 0.021 | 0.000 | 0.021 |
| 1385 | 13.85 | 13.86 | 0.01 | 13.86 | 64.87 | 3.13 | 0.65 | 0.021 | 0.000 | 0.021 |
| 1386 | 13.86 | 13.87 | 0.01 | 13.87 | 64.83 | 3.33 | 0.65 | 0.019 | 0.000 | 0.019 |
| 1387 | 13.87 | 13.88 | 0.01 | 13.88 | 64.79 | 3.44 | 0.65 | 0.019 | 0.000 | 0.019 |
| 1388 | 13.88 | 13.89 | 0.01 | 13.89 | 64.75 | 3.49 | 0.65 | 0.019 | 0.000 | 0.019 |
| 1389 | 13.89 | 13.90 | 0.01 | 13.90 | 64.72 | 3.44 | 0.65 | 0.019 | 0.000 | 0.019 |
| 1390 | 13.90 | 13.91 | 0.01 | 13.91 | 64.68 | 3.26 | 0.65 | 0.020 | 0.000 | 0.020 |
| 1391 | 13.91 | 13.92 | 0.01 | 13.92 | 64.64 | 3.04 | 0.65 | 0.021 | 0.000 | 0.021 |
| 1392 | 13.92 | 13.93 | 0.01 | 13.93 | 64.60 | 2.90 | 0.65 | 0.022 | 0.000 | 0.022 |
| 1393 | 13.93 | 13.94 | 0.01 | 13.94 | 64.57 | 2.89 | 0.65 | 0.022 | 0.000 | 0.022 |
| 1394 | 13.94 | 13.95 | 0.01 | 13.95 | 64.53 | 2.94 | 0.65 | 0.022 | 0.000 | 0.022 |
| 1395 | 13.95 | 13.96 | 0.01 | 13.96 | 64.49 | 3.17 | 0.64 | 0.020 | 0.000 | 0.020 |
| 1396 | 13.96 | 13.97 | 0.01 | 13.97 | 64.45 | 3.57 | 0.64 | 0.018 | 0.000 | 0.018 |
| 1397 | 13.97 | 13.98 | 0.01 | 13.98 | 64.42 | 4.23 | 0.64 | 0.015 | 0.000 | 0.015 |
| 1398 | 13.98 | 13.99 | 0.01 | 13.99 | 64.38 | 5.68 | 0.64 | 0.011 | 0.000 | 0.011 |
| 1399 | 13.99 | 14.00 | 0.01 | 14.00 | 64.34 | 7.94 | 0.64 | 0.008 | 0.000 | 0.008 |
| 1400 | 14.00 | 14.01 | 0.01 | 14.01 | 64.30 | 10.92 | 0.64 | 0.006 | 0.000 | 0.006 |
| 1401 | 14.01 | 14.02 | 0.01 | 14.02 | 64.27 | 13.67 | 0.64 | 0.005 | 0.000 | 0.005 |
| 1402 | 14.02 | 14.03 | 0.01 | 14.03 | 64.23 | 15.45 | 0.64 | 0.004 | 0.000 | 0.004 |
| 1403 | 14.03 | 14.04 | 0.01 | 14.04 | 64.19 | 15.86 | 0.64 | 0.004 | 0.000 | 0.004 |
| 1404 | 14.04 | 14.05 | 0.01 | 14.05 | 64.15 | 14.57 | 0.64 | 0.004 | 0.000 | 0.004 |
| 1405 | 14.05 | 14.06 | 0.01 | 14.06 | 64.12 | 13.47 | 0.64 | 0.005 | 0.000 | 0.005 |
| 1406 | 14.06 | 14.07 | 0.01 | 14.07 | 64.08 | 13.00 | 0.64 | 0.005 | 0.000 | 0.005 |
| 1407 | 14.07 | 14.08 | 0.01 | 14.08 | 64.04 | 14.09 | 0.64 | 0.005 | 0.000 | 0.005 |
| 1408 | 14.08 | 14.09 | 0.01 | 14.09 | 64.00 | 15.76 | 0.64 | 0.004 | 0.000 | 0.004 |
| 1409 | 14.09 | 14.10 | 0.01 | 14.10 | 63.97 | 17.68 | 0.64 | 0.004 | 0.000 | 0.004 |
| 1410 | 14.10 | 14.11 | 0.01 | 14.11 | 63.93 | 18.20 | 0.64 | 0.004 | 0.000 | 0.004 |
| 1411 | 14.11 | 14.12 | 0.01 | 14.12 | 63.89 | 17.75 | 0.64 | 0.004 | 0.000 | 0.004 |
| 1412 | 14.12 | 14.13 | 0.01 | 14.13 | 63.85 | 16.61 | 0.64 | 0.004 | 0.000 | 0.004 |
| 1413 | 14.13 | 14.14 | 0.01 | 14.14 | 63.82 | 15.28 | 0.64 | 0.004 | 0.000 | 0.004 |
| 1414 | 14.14 | 14.15 | 0.01 | 14.15 | 63.78 | 14.03 | 0.64 | 0.005 | 0.000 | 0.005 |
| 1415 | 14.15 | 14.16 | 0.01 | 14.16 | 63.74 | 12.87 | 0.64 | 0.005 | 0.000 | 0.005 |
| 1416 | 14.16 | 14.17 | 0.01 | 14.17 | 63.70 | 12.19 | 0.64 | 0.005 | 0.000 | 0.005 |
| 1417 | 14.17 | 14.18 | 0.01 | 14.18 | 63.67 | 11.75 | 0.64 | 0.005 | 0.000 | 0.005 |
| 1418 | 14.18 | 14.19 | 0.01 | 14.19 | 63.63 | 11.48 | 0.64 | 0.006 | 0.000 | 0.006 |
| 1419 | 14.19 | 14.20 | 0.01 | 14.20 | 63.59 | 11.14 | 0.64 | 0.006 | 0.000 | 0.006 |
| 1420 | 14.20 | 14.21 | 0.01 | 14.21 | 63.56 | 10.76 | 0.64 | 0.006 | 0.000 | 0.006 |
| 1421 | 14.21 | 14.22 | 0.01 | 14.22 | 63.52 | 10.28 | 0.64 | 0.006 | 0.000 | 0.006 |
| 1422 | 14.22 | 14.23 | 0.01 | 14.23 | 63.48 | 9.54 | 0.63 | 0.007 | 0.000 | 0.007 |
| 1423 | 14.23 | 14.24 | 0.01 | 14.24 | 63.44 | 8.79 | 0.63 | 0.007 | 0.000 | 0.007 |
| 1424 | 14.24 | 14.25 | 0.01 | 14.25 | 63.41 | 8.15 | 0.63 | 0.008 | 0.000 | 0.008 |
| 1425 | 14.25 | 14.26 | 0.01 | 14.26 | 63.37 | 7.75 | 0.63 | 0.008 | 0.000 | 0.008 |
| 1426 | 14.26 | 14.27 | 0.01 | 14.27 | 63.33 | 7.48 | 0.63 | 0.008 | 0.000 | 0.008 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1427 | 14.27 | 14.28 | 0.01 | 14.28 | 63.29 | 7.27 | 0.63 | 0.009 | 0.000 | 0.009 |
| 1428 | 14.28 | 14.29 | 0.01 | 14.29 | 63.26 | 7.23 | 0.63 | 0.009 | 0.000 | 0.009 |
| 1429 | 14.29 | 14.30 | 0.01 | 14.30 | 63.22 | 7.28 | 0.63 | 0.009 | 0.000 | 0.009 |
| 1430 | 14.30 | 14.31 | 0.01 | 14.31 | 63.18 | 7.59 | 0.63 | 0.008 | 0.000 | 0.008 |
| 1431 | 14.31 | 14.32 | 0.01 | 14.32 | 63.15 | 8.00 | 0.63 | 0.008 | 0.000 | 0.008 |
| 1432 | 14.32 | 14.33 | 0.01 | 14.33 | 63.11 | 8.44 | 0.63 | 0.007 | 0.000 | 0.007 |
| 1433 | 14.33 | 14.34 | 0.01 | 14.34 | 63.07 | 8.71 | 0.63 | 0.007 | 0.000 | 0.007 |
| 1434 | 14.34 | 14.35 | 0.01 | 14.35 | 63.04 | 8.97 | 0.63 | 0.007 | 0.000 | 0.007 |
| 1435 | 14.35 | 14.36 | 0.01 | 14.36 | 63.00 | 9.27 | 0.63 | 0.007 | 0.000 | 0.007 |
| 1436 | 14.36 | 14.37 | 0.01 | 14.37 | 62.96 | 9.44 | 0.63 | 0.007 | 0.000 | 0.007 |
| 1437 | 14.37 | 14.38 | 0.01 | 14.38 | 62.92 | 9.09 | 0.63 | 0.007 | 0.000 | 0.007 |
| 1438 | 14.38 | 14.39 | 0.01 | 14.39 | 62.89 | 8.44 | 0.63 | 0.007 | 0.000 | 0.007 |
| 1439 | 14.39 | 14.40 | 0.01 | 14.40 | 62.85 | 7.57 | 0.63 | 0.008 | 0.000 | 0.008 |
| 1440 | 14.40 | 14.41 | 0.01 | 14.41 | 62.81 | 6.83 | 0.63 | 0.009 | 0.000 | 0.009 |
| 1441 | 14.41 | 14.42 | 0.01 | 14.42 | 62.78 | 6.09 | 0.63 | 0.010 | 0.000 | 0.010 |
| 1442 | 14.42 | 14.43 | 0.01 | 14.43 | 62.74 | 5.34 | 0.63 | 0.012 | 0.000 | 0.012 |
| 1443 | 14.43 | 14.44 | 0.01 | 14.44 | 62.70 | 4.73 | 0.63 | 0.013 | 0.000 | 0.013 |
| 1444 | 14.44 | 14.45 | 0.01 | 14.45 | 62.67 | 3.18 | 0.63 | 0.020 | 0.000 | 0.020 |
| 1445 | 14.45 | 14.46 | 0.01 | 14.46 | 62.63 | 3.53 | 0.63 | 0.018 | 0.000 | 0.018 |
| 1446 | 14.46 | 14.47 | 0.01 | 14.47 | 62.59 | 3.86 | 0.63 | 0.016 | 0.000 | 0.016 |
| 1447 | 14.47 | 14.48 | 0.01 | 14.48 | 62.56 | 5.22 | 0.63 | 0.012 | 0.000 | 0.012 |
| 1448 | 14.48 | 14.49 | 0.01 | 14.49 | 62.52 | 4.70 | 0.63 | 0.013 | 0.000 | 0.013 |
| 1449 | 14.49 | 14.50 | 0.01 | 14.50 | 62.48 | 4.29 | 0.62 | 0.015 | 0.000 | 0.015 |
| 1450 | 14.50 | 14.51 | 0.01 | 14.51 | 62.44 | 4.10 | 0.62 | 0.015 | 0.000 | 0.015 |
| 1451 | 14.51 | 14.52 | 0.01 | 14.52 | 62.41 | 3.99 | 0.62 | 0.016 | 0.000 | 0.016 |
| 1452 | 14.52 | 14.53 | 0.01 | 14.53 | 62.37 | 3.92 | 0.62 | 0.016 | 0.000 | 0.016 |
| 1453 | 14.53 | 14.54 | 0.01 | 14.54 | 62.33 | 3.96 | 0.62 | 0.016 | 0.000 | 0.016 |
| 1454 | 14.54 | 14.55 | 0.01 | 14.55 | 62.30 | 4.02 | 0.62 | 0.016 | 0.000 | 0.016 |
| 1455 | 14.55 | 14.56 | 0.01 | 14.56 | 62.26 | 4.13 | 0.62 | 0.015 | 0.000 | 0.015 |
| 1456 | 14.56 | 14.57 | 0.01 | 14.57 | 62.22 | 4.34 | 0.62 | 0.014 | 0.000 | 0.014 |
| 1457 | 14.57 | 14.58 | 0.01 | 14.58 | 62.19 | 4.59 | 0.62 | 0.014 | 0.000 | 0.014 |
| 1458 | 14.58 | 14.59 | 0.01 | 14.59 | 62.15 | 4.89 | 0.62 | 0.013 | 0.000 | 0.013 |
| 1459 | 14.59 | 14.60 | 0.01 | 14.60 | 62.11 | 5.19 | 0.62 | 0.012 | 0.000 | 0.012 |
| 1460 | 14.60 | 14.61 | 0.01 | 14.61 | 62.08 | 5.43 | 0.62 | 0.011 | 0.000 | 0.011 |
| 1461 | 14.61 | 14.62 | 0.01 | 14.62 | 62.04 | 5.53 | 0.62 | 0.011 | 0.000 | 0.011 |
| 1462 | 14.62 | 14.63 | 0.01 | 14.63 | 62.00 | 5.34 | 0.62 | 0.012 | 0.000 | 0.012 |
| 1463 | 14.63 | 14.64 | 0.01 | 14.64 | 61.97 | 4.91 | 0.62 | 0.013 | 0.000 | 0.013 |
| 1464 | 14.64 | 14.65 | 0.01 | 14.65 | 61.93 | 4.35 | 0.62 | 0.014 | 0.000 | 0.014 |
| 1465 | 14.65 | 14.66 | 0.01 | 14.66 | 61.89 | 3.69 | 0.62 | 0.017 | 0.000 | 0.017 |
| 1466 | 14.66 | 14.67 | 0.01 | 14.67 | 61.86 | 3.18 | 0.62 | 0.019 | 0.000 | 0.019 |
| 1467 | 14.67 | 14.68 | 0.01 | 14.68 | 61.82 | 2.82 | 0.62 | 0.022 | 0.000 | 0.022 |
| 1468 | 14.68 | 14.69 | 0.01 | 14.69 | 61.79 | 2.63 | 0.62 | 0.023 | 0.000 | 0.023 |
| 1469 | 14.69 | 14.70 | 0.01 | 14.70 | 61.75 | 2.53 | 0.62 | 0.024 | 0.000 | 0.024 |
| 1470 | 14.70 | 14.71 | 0.01 | 14.71 | 61.71 | 2.51 | 0.62 | 0.025 | 0.000 | 0.025 |
| 1471 | 14.71 | 14.72 | 0.01 | 14.72 | 61.68 | 2.72 | 0.62 | 0.023 | 0.000 | 0.023 |
| 1472 | 14.72 | 14.73 | 0.01 | 14.73 | 61.64 | 3.04 | 0.62 | 0.020 | 0.000 | 0.020 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1473 | 14.73 | 14.74 | 0.01 | 14.74 | 61.60 | 3.56 | 0.62 | 0.017 | 0.000 | 0.017 |
| 1474 | 14.74 | 14.75 | 0.01 | 14.75 | 61.57 | 4.01 | 0.62 | 0.015 | 0.000 | 0.015 |
| 1475 | 14.75 | 14.76 | 0.01 | 14.76 | 61.53 | 4.41 | 0.62 | 0.014 | 0.000 | 0.014 |
| 1476 | 14.76 | 14.77 | 0.01 | 14.77 | 61.49 | 4.66 | 0.61 | 0.013 | 0.000 | 0.013 |
| 1477 | 14.77 | 14.78 | 0.01 | 14.78 | 61.46 | 4.88 | 0.61 | 0.013 | 0.000 | 0.013 |
| 1478 | 14.78 | 14.79 | 0.01 | 14.79 | 61.42 | 5.13 | 0.61 | 0.012 | 0.000 | 0.012 |
| 1479 | 14.79 | 14.80 | 0.01 | 14.80 | 61.38 | 5.52 | 0.61 | 0.011 | 0.000 | 0.011 |
| 1480 | 14.80 | 14.81 | 0.01 | 14.81 | 61.35 | 6.07 | 0.61 | 0.010 | 0.000 | 0.010 |
| 1481 | 14.81 | 14.82 | 0.01 | 14.82 | 61.31 | 6.72 | 0.61 | 0.009 | 0.000 | 0.009 |
| 1482 | 14.82 | 14.83 | 0.01 | 14.83 | 61.28 | 7.61 | 0.61 | 0.008 | 0.000 | 0.008 |
| 1483 | 14.83 | 14.84 | 0.01 | 14.84 | 61.24 | 8.65 | 0.61 | 0.007 | 0.000 | 0.007 |
| 1484 | 14.84 | 14.85 | 0.01 | 14.85 | 61.20 | 10.35 | 0.61 | 0.006 | 0.000 | 0.006 |
| 1485 | 14.85 | 14.86 | 0.01 | 14.86 | 61.17 | 13.82 | 0.61 | 0.004 | 0.000 | 0.004 |
| 1486 | 14.86 | 14.87 | 0.01 | 14.87 | 61.13 | 18.28 | 0.61 | 0.003 | 0.000 | 0.003 |
| 1487 | 14.87 | 14.88 | 0.01 | 14.88 | 61.09 | 22.88 | 0.61 | 0.003 | 0.000 | 0.003 |
| 1488 | 14.88 | 14.89 | 0.01 | 14.89 | 61.06 | 24.97 | 0.61 | 0.002 | 0.000 | 0.002 |
| 1489 | 14.89 | 14.90 | 0.01 | 14.90 | 61.02 | 25.12 | 0.61 | 0.002 | 0.000 | 0.002 |
| 1490 | 14.90 | 14.91 | 0.01 | 14.91 | 60.99 | 23.68 | 0.61 | 0.003 | 0.000 | 0.003 |
| 1491 | 14.91 | 14.92 | 0.01 | 14.92 | 60.95 | 20.85 | 0.61 | 0.003 | 0.000 | 0.003 |
| 1492 | 14.92 | 14.93 | 0.01 | 14.93 | 60.91 | 18.23 | 0.61 | 0.003 | 0.000 | 0.003 |
| 1493 | 14.93 | 14.94 | 0.01 | 14.94 | 60.88 | 16.00 | 0.61 | 0.004 | 0.000 | 0.004 |
| 1494 | 14.94 | 14.95 | 0.01 | 14.95 | 60.84 | 14.47 | 0.61 | 0.004 | 0.000 | 0.004 |
| 1495 | 14.95 | 14.96 | 0.01 | 14.96 | 60.81 | 13.42 | 0.61 | 0.005 | 0.000 | 0.005 |
| 1496 | 14.96 | 14.97 | 0.01 | 14.97 | 60.77 | 12.75 | 0.61 | 0.005 | 0.000 | 0.005 |
| 1497 | 14.97 | 14.98 | 0.01 | 14.98 | 60.73 | 12.20 | 0.61 | 0.005 | 0.000 | 0.005 |
| 1498 | 14.98 | 14.99 | 0.01 | 14.99 | 60.70 | 11.59 | 0.61 | 0.005 | 0.000 | 0.005 |
| 1499 | 14.99 | 15.00 | 0.01 | 15.00 | 60.66 | 11.00 | 0.61 | 0.006 | 0.000 | 0.006 |
| 1500 | 15.00 | 15.01 | 0.01 | 15.01 | 60.63 | 10.68 | 0.61 | 0.006 | 0.000 | 0.006 |
| 1501 | 15.01 | 15.02 | 0.01 | 15.02 | 60.59 | 10.45 | 0.61 | 0.006 | 0.000 | 0.006 |
| 1502 | 15.02 | 15.03 | 0.01 | 15.03 | 60.55 | 10.21 | 0.61 | 0.006 | 0.000 | 0.006 |
| 1503 | 15.03 | 15.04 | 0.01 | 15.04 | 60.52 | 10.06 | 0.61 | 0.006 | 0.000 | 0.006 |
| 1504 | 15.04 | 15.05 | 0.01 | 15.05 | 60.48 | 10.07 | 0.60 | 0.006 | 0.000 | 0.006 |
| 1505 | 15.05 | 15.06 | 0.01 | 15.06 | 60.45 | 10.33 | 0.60 | 0.006 | 0.000 | 0.006 |
| 1506 | 15.06 | 15.07 | 0.01 | 15.07 | 60.41 | 10.67 | 0.60 | 0.006 | 0.000 | 0.006 |
| 1507 | 15.07 | 15.08 | 0.01 | 15.08 | 60.37 | 10.91 | 0.60 | 0.006 | 0.000 | 0.006 |
| 1508 | 15.08 | 15.09 | 0.01 | 15.09 | 60.34 | 11.00 | 0.60 | 0.005 | 0.000 | 0.005 |
| 1509 | 15.09 | 15.10 | 0.01 | 15.10 | 60.30 | 11.07 | 0.60 | 0.005 | 0.000 | 0.005 |
| 1510 | 15.10 | 15.11 | 0.01 | 15.11 | 60.27 | 11.18 | 0.60 | 0.005 | 0.000 | 0.005 |
| 1511 | 15.11 | 15.12 | 0.01 | 15.12 | 60.23 | 11.32 | 0.60 | 0.005 | 0.000 | 0.005 |
| 1512 | 15.12 | 15.13 | 0.01 | 15.13 | 60.19 | 11.52 | 0.60 | 0.005 | 0.000 | 0.005 |
| 1513 | 15.13 | 15.14 | 0.01 | 15.14 | 60.16 | 11.75 | 0.60 | 0.005 | 0.000 | 0.005 |
| 1514 | 15.14 | 15.15 | 0.01 | 15.15 | 60.12 | 12.08 | 0.60 | 0.005 | 0.000 | 0.005 |
| 1515 | 15.15 | 15.16 | 0.01 | 15.16 | 60.09 | 12.53 | 0.60 | 0.005 | 0.000 | 0.005 |
| 1516 | 15.16 | 15.17 | 0.01 | 15.17 | 60.05 | 12.96 | 0.60 | 0.005 | 0.000 | 0.005 |
| 1517 | 15.17 | 15.18 | 0.01 | 15.18 | 60.02 | 13.53 | 0.60 | 0.004 | 0.000 | 0.004 |
| 1518 | 15.18 | 15.19 | 0.01 | 15.19 | 59.98 | 13.80 | 0.60 | 0.004 | 0.000 | 0.004 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1519 | 15.19 | 15.20 | 0.01 | 15.20 | 59.94 | 13.80 | 0.60 | 0.004 | 0.000 | 0.004 |
| 1520 | 15.20 | 15.21 | 0.01 | 15.21 | 59.91 | 13.10 | 0.60 | 0.005 | 0.000 | 0.005 |
| 1521 | 15.21 | 15.22 | 0.01 | 15.22 | 59.87 | 12.28 | 0.60 | 0.005 | 0.000 | 0.005 |
| 1522 | 15.22 | 15.23 | 0.01 | 15.23 | 59.84 | 11.43 | 0.60 | 0.005 | 0.000 | 0.005 |
| 1523 | 15.23 | 15.24 | 0.01 | 15.24 | 59.80 | 10.62 | 0.60 | 0.006 | 0.000 | 0.006 |
| 1524 | 15.24 | 15.25 | 0.01 | 15.25 | 59.77 | 9.77 | 0.60 | 0.006 | 0.000 | 0.006 |
| 1525 | 15.25 | 15.26 | 0.01 | 15.26 | 59.73 | 8.97 | 0.60 | 0.007 | 0.000 | 0.007 |
| 1526 | 15.26 | 15.27 | 0.01 | 15.27 | 59.70 | 8.20 | 0.60 | 0.007 | 0.000 | 0.007 |
| 1527 | 15.27 | 15.28 | 0.01 | 15.28 | 59.66 | 7.44 | 0.60 | 0.008 | 0.000 | 0.008 |
| 1528 | 15.28 | 15.29 | 0.01 | 15.29 | 59.62 | 6.66 | 0.60 | 0.009 | 0.000 | 0.009 |
| 1529 | 15.29 | 15.30 | 0.01 | 15.30 | 59.59 | 5.92 | 0.60 | 0.010 | 0.000 | 0.010 |
| 1530 | 15.30 | 15.31 | 0.01 | 15.31 | 59.55 | 5.28 | 0.60 | 0.011 | 0.000 | 0.011 |
| 1531 | 15.31 | 15.32 | 0.01 | 15.32 | 59.52 | 4.84 | 0.60 | 0.012 | 0.000 | 0.012 |
| 1532 | 15.32 | 15.33 | 0.01 | 15.33 | 59.48 | 4.73 | 0.59 | 0.013 | 0.000 | 0.013 |
| 1533 | 15.33 | 15.34 | 0.01 | 15.34 | 59.45 | 5.04 | 0.59 | 0.012 | 0.000 | 0.012 |
| 1534 | 15.34 | 15.35 | 0.01 | 15.35 | 59.41 | 6.69 | 0.59 | 0.009 | 0.000 | 0.009 |
| 1535 | 15.35 | 15.36 | 0.01 | 15.36 | 59.38 | 9.30 | 0.59 | 0.006 | 0.000 | 0.006 |
| 1536 | 15.36 | 15.37 | 0.01 | 15.37 | 59.34 | 12.36 | 0.59 | 0.005 | 0.000 | 0.005 |
| 1537 | 15.37 | 15.38 | 0.01 | 15.38 | 59.31 | 14.04 | 0.59 | 0.004 | 0.000 | 0.004 |
| 1538 | 15.38 | 15.39 | 0.01 | 15.39 | 59.27 | 14.44 | 0.59 | 0.004 | 0.000 | 0.004 |
| 1539 | 15.39 | 15.40 | 0.01 | 15.40 | 59.24 | 13.80 | 0.59 | 0.004 | 0.000 | 0.004 |
| 1540 | 15.40 | 15.41 | 0.01 | 15.41 | 59.20 | 12.37 | 0.59 | 0.005 | 0.000 | 0.005 |
| 1541 | 15.41 | 15.42 | 0.01 | 15.42 | 59.16 | 10.77 | 0.59 | 0.005 | 0.000 | 0.005 |
| 1542 | 15.42 | 15.43 | 0.01 | 15.43 | 59.13 | 9.45 | 0.59 | 0.006 | 0.000 | 0.006 |
| 1543 | 15.43 | 15.44 | 0.01 | 15.44 | 59.09 | 8.62 | 0.59 | 0.007 | 0.000 | 0.007 |
| 1544 | 15.44 | 15.45 | 0.01 | 15.45 | 59.06 | 8.24 | 0.59 | 0.007 | 0.000 | 0.007 |
| 1545 | 15.45 | 15.46 | 0.01 | 15.46 | 59.02 | 8.32 | 0.59 | 0.007 | 0.000 | 0.007 |
| 1546 | 15.46 | 15.47 | 0.01 | 15.47 | 58.99 | 8.32 | 0.59 | 0.007 | 0.000 | 0.007 |
| 1547 | 15.47 | 15.48 | 0.01 | 15.48 | 58.95 | 8.28 | 0.59 | 0.007 | 0.000 | 0.007 |
| 1548 | 15.48 | 15.49 | 0.01 | 15.49 | 58.92 | 7.92 | 0.59 | 0.007 | 0.000 | 0.007 |
| 1549 | 15.49 | 15.50 | 0.01 | 15.50 | 58.88 | 7.53 | 0.59 | 0.008 | 0.000 | 0.008 |
| 1550 | 15.50 | 15.51 | 0.01 | 15.51 | 58.85 | 7.15 | 0.59 | 0.008 | 0.000 | 0.008 |
| 1551 | 15.51 | 15.52 | 0.01 | 15.52 | 58.81 | 6.85 | 0.59 | 0.009 | 0.000 | 0.009 |
| 1552 | 15.52 | 15.53 | 0.01 | 15.53 | 58.78 | 6.78 | 0.59 | 0.009 | 0.000 | 0.009 |
| 1553 | 15.53 | 15.54 | 0.01 | 15.54 | 58.74 | 6.80 | 0.59 | 0.009 | 0.000 | 0.009 |
| 1554 | 15.54 | 15.55 | 0.01 | 15.55 | 58.71 | 6.84 | 0.59 | 0.009 | 0.000 | 0.009 |
| 1555 | 15.55 | 15.56 | 0.01 | 15.56 | 58.67 | 6.82 | 0.59 | 0.009 | 0.000 | 0.009 |
| 1556 | 15.56 | 15.57 | 0.01 | 15.57 | 58.64 | 6.96 | 0.59 | 0.008 | 0.000 | 0.008 |
| 1557 | 15.57 | 15.58 | 0.01 | 15.58 | 58.60 | 7.25 | 0.59 | 0.008 | 0.000 | 0.008 |
| 1558 | 15.58 | 15.59 | 0.01 | 15.59 | 58.57 | 7.83 | 0.59 | 0.007 | 0.000 | 0.007 |
| 1559 | 15.59 | 15.60 | 0.01 | 15.60 | 58.53 | 8.15 | 0.59 | 0.007 | 0.000 | 0.007 |
| 1560 | 15.60 | 15.61 | 0.01 | 15.61 | 58.50 | 7.94 | 0.58 | 0.007 | 0.000 | 0.007 |
| 1561 | 15.61 | 15.62 | 0.01 | 15.62 | 58.46 | 6.73 | 0.58 | 0.009 | 0.000 | 0.009 |
| 1562 | 15.62 | 15.63 | 0.01 | 15.63 | 58.43 | 5.33 | 0.58 | 0.011 | 0.000 | 0.011 |
| 1563 | 15.63 | 15.64 | 0.01 | 15.64 | 58.39 | 4.10 | 0.58 | 0.014 | 0.000 | 0.014 |
| 1564 | 15.64 | 15.65 | 0.01 | 15.65 | 58.36 | 3.19 | 0.58 | 0.018 | 0.000 | 0.018 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1565 | 15.65 | 15.66 | 0.01 | 15.66 | 58.32 | 2.59 | 0.58 | 0.023 | 0.000 | 0.023 |
| 1566 | 15.66 | 15.67 | 0.01 | 15.67 | 58.29 | 2.23 | 0.58 | 0.026 | 0.000 | 0.026 |
| 1567 | 15.67 | 15.68 | 0.01 | 15.68 | 58.25 | 2.09 | 0.58 | 0.028 | 0.000 | 0.028 |
| 1568 | 15.68 | 15.69 | 0.01 | 15.69 | 58.22 | 1.98 | 0.58 | 0.029 | 0.000 | 0.029 |
| 1569 | 15.69 | 15.70 | 0.01 | 15.70 | 58.18 | 1.85 | 0.58 | 0.031 | 0.000 | 0.031 |
| 1570 | 15.70 | 15.71 | 0.01 | 15.71 | 58.15 | 1.83 | 0.58 | 0.032 | 0.000 | 0.032 |
| 1571 | 15.71 | 15.72 | 0.01 | 15.72 | 58.11 | 1.92 | 0.58 | 0.030 | 0.000 | 0.030 |
| 1572 | 15.72 | 15.73 | 0.01 | 15.73 | 58.08 | 2.15 | 0.58 | 0.027 | 0.000 | 0.027 |
| 1573 | 15.73 | 15.74 | 0.01 | 15.74 | 58.04 | 2.46 | 0.58 | 0.024 | 0.000 | 0.024 |
| 1574 | 15.74 | 15.75 | 0.01 | 15.75 | 58.01 | 2.72 | 0.58 | 0.021 | 0.000 | 0.021 |
| 1575 | 15.75 | 15.76 | 0.01 | 15.76 | 57.97 | 2.93 | 0.58 | 0.020 | 0.000 | 0.020 |
| 1576 | 15.76 | 15.77 | 0.01 | 15.77 | 57.94 | 3.14 | 0.58 | 0.018 | 0.000 | 0.018 |
| 1577 | 15.77 | 15.78 | 0.01 | 15.78 | 57.91 | 3.30 | 0.58 | 0.018 | 0.000 | 0.018 |
| 1578 | 15.78 | 15.79 | 0.01 | 15.79 | 57.87 | 3.39 | 0.58 | 0.017 | 0.000 | 0.017 |
| 1579 | 15.79 | 15.80 | 0.01 | 15.80 | 57.84 | 3.35 | 0.58 | 0.017 | 0.000 | 0.017 |
| 1580 | 15.80 | 15.81 | 0.01 | 15.81 | 57.80 | 3.31 | 0.58 | 0.017 | 0.000 | 0.017 |
| 1581 | 15.81 | 15.82 | 0.01 | 15.82 | 57.77 | 3.21 | 0.58 | 0.018 | 0.000 | 0.018 |
| 1582 | 15.82 | 15.83 | 0.01 | 15.83 | 57.73 | 2.95 | 0.58 | 0.020 | 0.000 | 0.020 |
| 1583 | 15.83 | 15.84 | 0.01 | 15.84 | 57.70 | 2.68 | 0.58 | 0.022 | 0.000 | 0.022 |
| 1584 | 15.84 | 15.85 | 0.01 | 15.85 | 57.66 | 2.45 | 0.58 | 0.024 | 0.000 | 0.024 |
| 1585 | 15.85 | 15.86 | 0.01 | 15.86 | 57.63 | 2.23 | 0.58 | 0.026 | 0.000 | 0.026 |
| 1586 | 15.86 | 15.87 | 0.01 | 15.87 | 57.59 | 2.06 | 0.58 | 0.028 | 0.000 | 0.028 |
| 1587 | 15.87 | 15.88 | 0.01 | 15.88 | 57.56 | 1.91 | 0.58 | 0.030 | 0.000 | 0.030 |
| 1588 | 15.88 | 15.89 | 0.01 | 15.89 | 57.53 | 1.84 | 0.58 | 0.031 | 0.000 | 0.031 |
| 1589 | 15.89 | 15.90 | 0.01 | 15.90 | 57.49 | 1.80 | 0.57 | 0.032 | 0.000 | 0.032 |
| 1590 | 15.90 | 15.91 | 0.01 | 15.91 | 57.46 | 1.79 | 0.57 | 0.032 | 0.000 | 0.032 |
| 1591 | 15.91 | 15.92 | 0.01 | 15.92 | 57.42 | 1.86 | 0.57 | 0.031 | 0.000 | 0.031 |
| 1592 | 15.92 | 15.93 | 0.01 | 15.93 | 57.39 | 1.93 | 0.57 | 0.030 | 0.000 | 0.030 |
| 1593 | 15.93 | 15.94 | 0.01 | 15.94 | 57.35 | 2.01 | 0.57 | 0.029 | 0.000 | 0.029 |
| 1594 | 15.94 | 15.95 | 0.01 | 15.95 | 57.32 | 2.04 | 0.57 | 0.028 | 0.000 | 0.028 |
| 1595 | 15.95 | 15.96 | 0.01 | 15.96 | 57.28 | 2.06 | 0.57 | 0.028 | 0.000 | 0.028 |
| 1596 | 15.96 | 15.97 | 0.01 | 15.97 | 57.25 | 2.09 | 0.57 | 0.027 | 0.000 | 0.027 |
| 1597 | 15.97 | 15.98 | 0.01 | 15.98 | 57.22 | 2.20 | 0.57 | 0.026 | 0.000 | 0.026 |
| 1598 | 15.98 | 15.99 | 0.01 | 15.99 | 57.18 | 2.36 | 0.57 | 0.024 | 0.000 | 0.024 |
| 1599 | 15.99 | 16.00 | 0.01 | 16.00 | 57.15 | 2.59 | 0.57 | 0.022 | 0.000 | 0.022 |
| 1600 | 16.00 | 16.01 | 0.01 | 16.01 | 57.11 | 2.88 | 0.57 | 0.020 | 0.000 | 0.020 |
| 1601 | 16.01 | 16.02 | 0.01 | 16.02 | 57.08 | 3.17 | 0.57 | 0.018 | 0.000 | 0.018 |
| 1602 | 16.02 | 16.03 | 0.01 | 16.03 | 57.04 | 3.38 | 0.57 | 0.017 | 0.000 | 0.017 |
| 1603 | 16.03 | 16.04 | 0.01 | 16.04 | 57.01 | 3.51 | 0.57 | 0.016 | 0.000 | 0.016 |
| 1604 | 16.04 | 16.05 | 0.01 | 16.05 | 56.98 | 3.66 | 0.57 | 0.016 | 0.000 | 0.016 |
| 1605 | 16.05 | 16.06 | 0.01 | 16.06 | 56.94 | 3.92 | 0.57 | 0.015 | 0.000 | 0.015 |
| 1606 | 16.06 | 16.07 | 0.01 | 16.07 | 56.91 | 4.16 | 0.57 | 0.014 | 0.000 | 0.014 |
| 1607 | 16.07 | 16.08 | 0.01 | 16.08 | 56.87 | 4.37 | 0.57 | 0.013 | 0.000 | 0.013 |
| 1608 | 16.08 | 16.09 | 0.01 | 16.09 | 56.84 | 4.49 | 0.57 | 0.013 | 0.000 | 0.013 |
| 1609 | 16.09 | 16.10 | 0.01 | 16.10 | 56.81 | 4.55 | 0.57 | 0.012 | 0.000 | 0.012 |
| 1610 | 16.10 | 16.11 | 0.01 | 16.11 | 56.77 | 4.48 | 0.57 | 0.013 | 0.000 | 0.013 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1611 | 16.11 | 16.12 | 0.01 | 16.12 | 56.74 | 4.30 | 0.57 | 0.013 | 0.000 | 0.013 |
| 1612 | 16.12 | 16.13 | 0.01 | 16.13 | 56.70 | 3.88 | 0.57 | 0.015 | 0.000 | 0.015 |
| 1613 | 16.13 | 16.14 | 0.01 | 16.14 | 56.67 | 3.46 | 0.57 | 0.016 | 0.000 | 0.016 |
| 1614 | 16.14 | 16.15 | 0.01 | 16.15 | 56.64 | 3.07 | 0.57 | 0.018 | 0.000 | 0.018 |
| 1615 | 16.15 | 16.16 | 0.01 | 16.16 | 56.60 | 2.77 | 0.57 | 0.020 | 0.000 | 0.020 |
| 1616 | 16.16 | 16.17 | 0.01 | 16.17 | 56.57 | 2.57 | 0.57 | 0.022 | 0.000 | 0.022 |
| 1617 | 16.17 | 16.18 | 0.01 | 16.18 | 56.53 | 2.50 | 0.57 | 0.023 | 0.000 | 0.023 |
| 1618 | 16.18 | 16.19 | 0.01 | 16.19 | 56.50 | 2.73 | 0.56 | 0.021 | 0.000 | 0.021 |
| 1619 | 16.19 | 16.20 | 0.01 | 16.20 | 56.47 | 3.02 | 0.56 | 0.019 | 0.000 | 0.019 |
| 1620 | 16.20 | 16.21 | 0.01 | 16.21 | 56.43 | 3.33 | 0.56 | 0.017 | 0.000 | 0.017 |
| 1621 | 16.21 | 16.22 | 0.01 | 16.22 | 56.40 | 3.44 | 0.56 | 0.016 | 0.000 | 0.016 |
| 1622 | 16.22 | 16.23 | 0.01 | 16.23 | 56.36 | 3.49 | 0.56 | 0.016 | 0.000 | 0.016 |
| 1623 | 16.23 | 16.24 | 0.01 | 16.24 | 56.33 | 3.53 | 0.56 | 0.016 | 0.000 | 0.016 |
| 1624 | 16.24 | 16.25 | 0.01 | 16.25 | 56.30 | 3.68 | 0.56 | 0.015 | 0.000 | 0.015 |
| 1625 | 16.25 | 16.26 | 0.01 | 16.26 | 56.26 | 3.93 | 0.56 | 0.014 | 0.000 | 0.014 |
| 1626 | 16.26 | 16.27 | 0.01 | 16.27 | 56.23 | 4.22 | 0.56 | 0.013 | 0.000 | 0.013 |
| 1627 | 16.27 | 16.28 | 0.01 | 16.28 | 56.20 | 4.37 | 0.56 | 0.013 | 0.000 | 0.013 |
| 1628 | 16.28 | 16.29 | 0.01 | 16.29 | 56.16 | 4.39 | 0.56 | 0.013 | 0.000 | 0.013 |
| 1629 | 16.29 | 16.30 | 0.01 | 16.30 | 56.13 | 4.13 | 0.56 | 0.014 | 0.000 | 0.014 |
| 1630 | 16.30 | 16.31 | 0.01 | 16.31 | 56.09 | 3.79 | 0.56 | 0.015 | 0.000 | 0.015 |
| 1631 | 16.31 | 16.32 | 0.01 | 16.32 | 56.06 | 3.38 | 0.56 | 0.017 | 0.000 | 0.017 |
| 1632 | 16.32 | 16.33 | 0.01 | 16.33 | 56.03 | 3.04 | 0.56 | 0.018 | 0.000 | 0.018 |
| 1633 | 16.33 | 16.34 | 0.01 | 16.34 | 55.99 | 2.72 | 0.56 | 0.021 | 0.000 | 0.021 |
| 1634 | 16.34 | 16.35 | 0.01 | 16.35 | 55.96 | 2.50 | 0.56 | 0.022 | 0.000 | 0.022 |
| 1635 | 16.35 | 16.36 | 0.01 | 16.36 | 55.93 | 2.42 | 0.56 | 0.023 | 0.000 | 0.023 |
| 1636 | 16.36 | 16.37 | 0.01 | 16.37 | 55.89 | 2.52 | 0.56 | 0.022 | 0.000 | 0.022 |
| 1637 | 16.37 | 16.38 | 0.01 | 16.38 | 55.86 | 2.76 | 0.56 | 0.020 | 0.000 | 0.020 |
| 1638 | 16.38 | 16.39 | 0.01 | 16.39 | 55.83 | 3.07 | 0.56 | 0.018 | 0.000 | 0.018 |
| 1639 | 16.39 | 16.40 | 0.01 | 16.40 | 55.79 | 3.24 | 0.56 | 0.017 | 0.000 | 0.017 |
| 1640 | 16.40 | 16.41 | 0.01 | 16.41 | 55.76 | 3.25 | 0.56 | 0.017 | 0.000 | 0.017 |
| 1641 | 16.41 | 16.42 | 0.01 | 16.42 | 55.72 | 3.15 | 0.56 | 0.018 | 0.000 | 0.018 |
| 1642 | 16.42 | 16.43 | 0.01 | 16.43 | 55.69 | 2.95 | 0.56 | 0.019 | 0.000 | 0.019 |
| 1643 | 16.43 | 16.44 | 0.01 | 16.44 | 55.66 | 2.97 | 0.56 | 0.019 | 0.000 | 0.019 |
| 1644 | 16.44 | 16.45 | 0.01 | 16.45 | 55.62 | 3.11 | 0.56 | 0.018 | 0.000 | 0.018 |
| 1645 | 16.45 | 16.46 | 0.01 | 16.46 | 55.59 | 3.24 | 0.56 | 0.017 | 0.000 | 0.017 |
| 1646 | 16.46 | 16.47 | 0.01 | 16.47 | 55.56 | 3.18 | 0.56 | 0.017 | 0.000 | 0.017 |
| 1647 | 16.47 | 16.48 | 0.01 | 16.48 | 55.52 | 3.01 | 0.56 | 0.018 | 0.000 | 0.018 |
| 1648 | 16.48 | 16.49 | 0.01 | 16.49 | 55.49 | 2.86 | 0.55 | 0.019 | 0.000 | 0.019 |
| 1649 | 16.49 | 16.50 | 0.01 | 16.50 | 55.46 | 2.76 | 0.55 | 0.020 | 0.000 | 0.020 |
| 1650 | 16.50 | 16.51 | 0.01 | 16.51 | 55.42 | 2.69 | 0.55 | 0.021 | 0.000 | 0.021 |
| 1651 | 16.51 | 16.52 | 0.01 | 16.52 | 55.39 | 2.67 | 0.55 | 0.021 | 0.000 | 0.021 |
| 1652 | 16.52 | 16.53 | 0.01 | 16.53 | 55.36 | 2.61 | 0.55 | 0.021 | 0.000 | 0.021 |
| 1653 | 16.53 | 16.54 | 0.01 | 16.54 | 55.32 | 2.42 | 0.55 | 0.023 | 0.000 | 0.023 |
| 1654 | 16.54 | 16.55 | 0.01 | 16.55 | 55.29 | 2.20 | 0.55 | 0.025 | 0.000 | 0.025 |
| 1655 | 16.55 | 16.56 | 0.01 | 16.56 | 55.26 | 2.01 | 0.55 | 0.028 | 0.000 | 0.028 |
| 1656 | 16.56 | 16.57 | 0.01 | 16.57 | 55.22 | 1.89 | 0.55 | 0.029 | 0.000 | 0.029 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1657 | 16.57 | 16.58 | 0.01 | 16.58 | 55.19 | 1.79 | 0.55 | 0.031 | 0.000 | 0.031 |
| 1658 | 16.58 | 16.59 | 0.01 | 16.59 | 55.16 | 1.69 | 0.55 | 0.033 | 0.000 | 0.033 |
| 1659 | 16.59 | 16.60 | 0.01 | 16.60 | 55.12 | 1.66 | 0.55 | 0.033 | 0.000 | 0.033 |
| 1660 | 16.60 | 16.61 | 0.01 | 16.61 | 55.09 | 1.66 | 0.55 | 0.033 | 0.000 | 0.033 |
| 1661 | 16.61 | 16.62 | 0.01 | 16.62 | 55.06 | 1.66 | 0.55 | 0.033 | 0.000 | 0.033 |
| 1662 | 16.62 | 16.63 | 0.01 | 16.63 | 55.03 | 1.63 | 0.55 | 0.034 | 0.000 | 0.034 |
| 1663 | 16.63 | 16.64 | 0.01 | 16.64 | 54.99 | 1.57 | 0.55 | 0.035 | 0.000 | 0.035 |
| 1664 | 16.64 | 16.65 | 0.01 | 16.65 | 54.96 | 1.51 | 0.55 | 0.036 | 0.000 | 0.036 |
| 1665 | 16.65 | 16.66 | 0.01 | 16.66 | 54.93 | 1.46 | 0.55 | 0.038 | 0.000 | 0.038 |
| 1666 | 16.66 | 16.67 | 0.01 | 16.67 | 54.89 | 1.39 | 0.55 | 0.039 | 0.000 | 0.039 |
| 1667 | 16.67 | 16.68 | 0.01 | 16.68 | 54.86 | 1.38 | 0.55 | 0.040 | 0.000 | 0.040 |
| 1668 | 16.68 | 16.69 | 0.01 | 16.69 | 54.83 | 1.42 | 0.55 | 0.039 | 0.000 | 0.039 |
| 1669 | 16.69 | 16.70 | 0.01 | 16.70 | 54.79 | 1.54 | 0.55 | 0.036 | 0.000 | 0.036 |
| 1670 | 16.70 | 16.71 | 0.01 | 16.71 | 54.76 | 1.71 | 0.55 | 0.032 | 0.000 | 0.032 |
| 1671 | 16.71 | 16.72 | 0.01 | 16.72 | 54.73 | 1.92 | 0.55 | 0.028 | 0.000 | 0.028 |
| 1672 | 16.72 | 16.73 | 0.01 | 16.73 | 54.70 | 2.10 | 0.55 | 0.026 | 0.000 | 0.026 |
| 1673 | 16.73 | 16.74 | 0.01 | 16.74 | 54.66 | 2.22 | 0.55 | 0.025 | 0.000 | 0.025 |
| 1674 | 16.74 | 16.75 | 0.01 | 16.75 | 54.63 | 2.29 | 0.55 | 0.024 | 0.000 | 0.024 |
| 1675 | 16.75 | 16.76 | 0.01 | 16.76 | 54.60 | 2.32 | 0.55 | 0.024 | 0.000 | 0.024 |
| 1676 | 16.76 | 16.77 | 0.01 | 16.77 | 54.56 | 2.30 | 0.55 | 0.024 | 0.000 | 0.024 |
| 1677 | 16.77 | 16.78 | 0.01 | 16.78 | 54.53 | 2.20 | 0.55 | 0.025 | 0.000 | 0.025 |
| 1678 | 16.78 | 16.79 | 0.01 | 16.79 | 54.50 | 2.10 | 0.54 | 0.026 | 0.000 | 0.026 |
| 1679 | 16.79 | 16.80 | 0.01 | 16.80 | 54.47 | 1.98 | 0.54 | 0.028 | 0.000 | 0.028 |
| 1680 | 16.80 | 16.81 | 0.01 | 16.81 | 54.43 | 1.88 | 0.54 | 0.029 | 0.000 | 0.029 |
| 1681 | 16.81 | 16.82 | 0.01 | 16.82 | 54.40 | 1.82 | 0.54 | 0.030 | 0.000 | 0.030 |
| 1682 | 16.82 | 16.83 | 0.01 | 16.83 | 54.37 | 1.84 | 0.54 | 0.029 | 0.000 | 0.029 |
| 1683 | 16.83 | 16.84 | 0.01 | 16.84 | 54.33 | 1.99 | 0.54 | 0.027 | 0.000 | 0.027 |
| 1684 | 16.84 | 16.85 | 0.01 | 16.85 | 54.30 | 2.14 | 0.54 | 0.025 | 0.000 | 0.025 |
| 1685 | 16.85 | 16.86 | 0.01 | 16.86 | 54.27 | 2.26 | 0.54 | 0.024 | 0.000 | 0.024 |
| 1686 | 16.86 | 16.87 | 0.01 | 16.87 | 54.24 | 2.27 | 0.54 | 0.024 | 0.000 | 0.024 |
| 1687 | 16.87 | 16.88 | 0.01 | 16.88 | 54.20 | 2.24 | 0.54 | 0.024 | 0.000 | 0.024 |
| 1688 | 16.88 | 16.89 | 0.01 | 16.89 | 54.17 | 2.22 | 0.54 | 0.024 | 0.000 | 0.024 |
| 1689 | 16.89 | 16.90 | 0.01 | 16.90 | 54.14 | 2.25 | 0.54 | 0.024 | 0.000 | 0.024 |
| 1690 | 16.90 | 16.91 | 0.01 | 16.91 | 54.11 | 2.40 | 0.54 | 0.023 | 0.000 | 0.023 |
| 1691 | 16.91 | 16.92 | 0.01 | 16.92 | 54.07 | 2.59 | 0.54 | 0.021 | 0.000 | 0.021 |
| 1692 | 16.92 | 16.93 | 0.01 | 16.93 | 54.04 | 2.73 | 0.54 | 0.020 | 0.000 | 0.020 |
| 1693 | 16.93 | 16.94 | 0.01 | 16.94 | 54.01 | 2.74 | 0.54 | 0.020 | 0.000 | 0.020 |
| 1694 | 16.94 | 16.95 | 0.01 | 16.95 | 53.98 | 2.65 | 0.54 | 0.020 | 0.000 | 0.020 |
| 1695 | 16.95 | 16.96 | 0.01 | 16.96 | 53.94 | 2.52 | 0.54 | 0.021 | 0.000 | 0.021 |
| 1696 | 16.96 | 16.97 | 0.01 | 16.97 | 53.91 | 2.43 | 0.54 | 0.022 | 0.000 | 0.022 |
| 1697 | 16.97 | 16.98 | 0.01 | 16.98 | 53.88 | 2.36 | 0.54 | 0.023 | 0.000 | 0.023 |
| 1698 | 16.98 | 16.99 | 0.01 | 16.99 | 53.85 | 2.21 | 0.54 | 0.024 | 0.000 | 0.024 |
| 1699 | 16.99 | 17.00 | 0.01 | 17.00 | 53.81 | 2.07 | 0.54 | 0.026 | 0.000 | 0.026 |
| 1700 | 17.00 | 17.01 | 0.01 | 17.01 | 53.78 | 1.94 | 0.54 | 0.028 | 0.000 | 0.028 |
| 1701 | 17.01 | 17.02 | 0.01 | 17.02 | 53.75 | 1.87 | 0.54 | 0.029 | 0.000 | 0.029 |
| 1702 | 17.02 | 17.03 | 0.01 | 17.03 | 53.72 | 1.77 | 0.54 | 0.030 | 0.000 | 0.030 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1703 | 17.03 | 17.04 | 0.01 | 17.04 | 53.68 | 1.61 | 0.54 | 0.033 | 0.000 | 0.033 |
| 1704 | 17.04 | 17.05 | 0.01 | 17.05 | 53.65 | 1.49 | 0.54 | 0.036 | 0.000 | 0.036 |
| 1705 | 17.05 | 17.06 | 0.01 | 17.06 | 53.62 | 1.41 | 0.54 | 0.038 | 0.000 | 0.038 |
| 1706 | 17.06 | 17.07 | 0.01 | 17.07 | 53.59 | 1.44 | 0.54 | 0.037 | 0.000 | 0.037 |
| 1707 | 17.07 | 17.08 | 0.01 | 17.08 | 53.55 | 1.49 | 0.54 | 0.036 | 0.000 | 0.036 |
| 1708 | 17.08 | 17.09 | 0.01 | 17.09 | 53.52 | 1.54 | 0.54 | 0.035 | 0.000 | 0.035 |
| 1709 | 17.09 | 17.10 | 0.01 | 17.10 | 53.49 | 1.54 | 0.53 | 0.035 | 0.000 | 0.035 |
| 1710 | 17.10 | 17.11 | 0.01 | 17.11 | 53.46 | 1.53 | 0.53 | 0.035 | 0.000 | 0.035 |
| 1711 | 17.11 | 17.12 | 0.01 | 17.12 | 53.43 | 1.54 | 0.53 | 0.035 | 0.000 | 0.035 |
| 1712 | 17.12 | 17.13 | 0.01 | 17.13 | 53.39 | 1.56 | 0.53 | 0.034 | 0.000 | 0.034 |
| 1713 | 17.13 | 17.14 | 0.01 | 17.14 | 53.36 | 1.52 | 0.53 | 0.035 | 0.000 | 0.035 |
| 1714 | 17.14 | 17.15 | 0.01 | 17.15 | 53.33 | 1.45 | 0.53 | 0.037 | 0.000 | 0.037 |
| 1715 | 17.15 | 17.16 | 0.01 | 17.16 | 53.30 | 1.35 | 0.53 | 0.039 | 0.000 | 0.039 |
| 1716 | 17.16 | 17.17 | 0.01 | 17.17 | 53.26 | 1.30 | 0.53 | 0.041 | 0.000 | 0.041 |
| 1717 | 17.17 | 17.18 | 0.01 | 17.18 | 53.23 | 1.23 | 0.53 | 0.043 | 0.000 | 0.043 |
| 1718 | 17.18 | 17.19 | 0.01 | 17.19 | 53.20 | 1.15 | 0.53 | 0.046 | 0.000 | 0.046 |
| 1719 | 17.19 | 17.20 | 0.01 | 17.20 | 53.17 | 1.08 | 0.53 | 0.049 | 0.000 | 0.049 |
| 1720 | 17.20 | 17.21 | 0.01 | 17.21 | 53.14 | 1.02 | 0.53 | 0.052 | 0.000 | 0.052 |
| 1721 | 17.21 | 17.22 | 0.01 | 17.22 | 53.10 | 1.02 | 0.53 | 0.052 | 0.000 | 0.052 |
| 1722 | 17.22 | 17.23 | 0.01 | 17.23 | 53.07 | 1.06 | 0.53 | 0.050 | 0.000 | 0.050 |
| 1723 | 17.23 | 17.24 | 0.01 | 17.24 | 53.04 | 1.10 | 0.53 | 0.048 | 0.000 | 0.048 |
| 1724 | 17.24 | 17.25 | 0.01 | 17.25 | 53.01 | 1.11 | 0.53 | 0.048 | 0.000 | 0.048 |
| 1725 | 17.25 | 17.26 | 0.01 | 17.26 | 52.98 | 1.10 | 0.53 | 0.048 | 0.000 | 0.048 |
| 1726 | 17.26 | 17.27 | 0.01 | 17.27 | 52.94 | 1.09 | 0.53 | 0.049 | 0.000 | 0.049 |
| 1727 | 17.27 | 17.28 | 0.01 | 17.28 | 52.91 | 1.06 | 0.53 | 0.050 | 0.000 | 0.050 |
| 1728 | 17.28 | 17.29 | 0.01 | 17.29 | 52.88 | 1.04 | 0.53 | 0.051 | 0.000 | 0.051 |
| 1729 | 17.29 | 17.30 | 0.01 | 17.30 | 52.85 | 1.00 | 0.53 | 0.053 | 0.000 | 0.053 |
| 1730 | 17.30 | 17.31 | 0.01 | 17.31 | 52.82 | 0.98 | 0.53 | 0.054 | 0.000 | 0.054 |
| 1731 | 17.31 | 17.32 | 0.01 | 17.32 | 52.79 | 0.99 | 0.53 | 0.053 | 0.000 | 0.053 |
| 1732 | 17.32 | 17.33 | 0.01 | 17.33 | 52.75 | 1.00 | 0.53 | 0.053 | 0.000 | 0.053 |
| 1733 | 17.33 | 17.34 | 0.01 | 17.34 | 52.72 | 1.03 | 0.53 | 0.051 | 0.000 | 0.051 |
| 1734 | 17.34 | 17.35 | 0.01 | 17.35 | 52.69 | 1.07 | 0.53 | 0.049 | 0.000 | 0.049 |
| 1735 | 17.35 | 17.36 | 0.01 | 17.36 | 52.66 | 1.10 | 0.53 | 0.048 | 0.000 | 0.048 |
| 1736 | 17.36 | 17.37 | 0.01 | 17.37 | 52.63 | 1.10 | 0.53 | 0.048 | 0.000 | 0.048 |
| 1737 | 17.37 | 17.38 | 0.01 | 17.38 | 52.59 | 1.06 | 0.53 | 0.049 | 0.000 | 0.049 |
| 1738 | 17.38 | 17.39 | 0.01 | 17.39 | 52.56 | 0.99 | 0.53 | 0.053 | 0.000 | 0.053 |
| 1739 | 17.39 | 17.40 | 0.01 | 17.40 | 52.53 | 0.91 | 0.53 | 0.058 | 0.000 | 0.058 |
| 1740 | 17.40 | 17.41 | 0.01 | 17.41 | 52.50 | 0.85 | 0.52 | 0.062 | 0.000 | 0.062 |
| 1741 | 17.41 | 17.42 | 0.01 | 17.42 | 52.47 | 0.80 | 0.52 | 0.065 | 0.000 | 0.065 |
| 1742 | 17.42 | 17.43 | 0.01 | 17.43 | 52.44 | 0.77 | 0.52 | 0.068 | 0.000 | 0.068 |
| 1743 | 17.43 | 17.44 | 0.01 | 17.44 | 52.41 | 0.64 | 0.52 | 0.082 | 0.000 | 0.082 |
| 1744 | 17.44 | 17.45 | 0.01 | 17.45 | 52.37 | 0.64 | 0.52 | 0.082 | 0.000 | 0.082 |
| 1745 | 17.45 | 17.46 | 0.01 | 17.46 | 52.34 | 0.64 | 0.52 | 0.082 | 0.000 | 0.082 |
| 1746 | 17.46 | 17.47 | 0.01 | 17.47 | 52.31 | 0.94 | 0.52 | 0.056 | 0.000 | 0.056 |
| 1747 | 17.47 | 17.48 | 0.01 | 17.48 | 52.28 | 0.96 | 0.52 | 0.055 | 0.000 | 0.055 |
| 1748 | 17.48 | 17.49 | 0.01 | 17.49 | 52.25 | 1.07 | 0.52 | 0.049 | 0.000 | 0.049 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1749 | 17.49 | 17.50 | 0.01 | 17.50 | 52.22 | 1.29 | 0.52 | 0.040 | 0.000 | 0.040 |
| 1750 | 17.50 | 17.51 | 0.01 | 17.51 | 52.18 | 1.56 | 0.52 | 0.034 | 0.000 | 0.034 |
| 1751 | 17.51 | 17.52 | 0.01 | 17.52 | 52.15 | 1.70 | 0.52 | 0.031 | 0.000 | 0.031 |
| 1752 | 17.52 | 17.53 | 0.01 | 17.53 | 52.12 | 1.70 | 0.52 | 0.031 | 0.000 | 0.031 |
| 1753 | 17.53 | 17.54 | 0.01 | 17.54 | 52.09 | 1.60 | 0.52 | 0.033 | 0.000 | 0.033 |
| 1754 | 17.54 | 17.55 | 0.01 | 17.55 | 52.06 | 1.46 | 0.52 | 0.036 | 0.000 | 0.036 |
| 1755 | 17.55 | 17.56 | 0.01 | 17.56 | 52.03 | 1.27 | 0.52 | 0.041 | 0.000 | 0.041 |
| 1756 | 17.56 | 17.57 | 0.01 | 17.57 | 52.00 | 1.08 | 0.52 | 0.048 | 0.000 | 0.048 |
| 1757 | 17.57 | 17.58 | 0.01 | 17.58 | 51.96 | 0.92 | 0.52 | 0.057 | 0.000 | 0.057 |
| 1758 | 17.58 | 17.59 | 0.01 | 17.59 | 51.93 | 0.83 | 0.52 | 0.063 | 0.000 | 0.063 |
| 1759 | 17.59 | 17.60 | 0.01 | 17.60 | 51.90 | 0.76 | 0.52 | 0.068 | 0.000 | 0.068 |
| 1760 | 17.60 | 17.61 | 0.01 | 17.61 | 51.87 | 0.72 | 0.52 | 0.072 | 0.000 | 0.072 |
| 1761 | 17.61 | 17.62 | 0.01 | 17.62 | 51.84 | 0.71 | 0.52 | 0.073 | 0.000 | 0.073 |
| 1762 | 17.62 | 17.63 | 0.01 | 17.63 | 51.81 | 0.74 | 0.52 | 0.070 | 0.000 | 0.070 |
| 1763 | 17.63 | 17.64 | 0.01 | 17.64 | 51.78 | 0.87 | 0.52 | 0.059 | 0.000 | 0.059 |
| 1764 | 17.64 | 17.65 | 0.01 | 17.65 | 51.75 | 1.03 | 0.52 | 0.050 | 0.000 | 0.050 |
| 1765 | 17.65 | 17.66 | 0.01 | 17.66 | 51.71 | 1.19 | 0.52 | 0.043 | 0.000 | 0.043 |
| 1766 | 17.66 | 17.67 | 0.01 | 17.67 | 51.68 | 1.22 | 0.52 | 0.042 | 0.000 | 0.042 |
| 1767 | 17.67 | 17.68 | 0.01 | 17.68 | 51.65 | 1.19 | 0.52 | 0.044 | 0.000 | 0.044 |
| 1768 | 17.68 | 17.69 | 0.01 | 17.69 | 51.62 | 1.05 | 0.52 | 0.049 | 0.000 | 0.049 |
| 1769 | 17.69 | 17.70 | 0.01 | 17.70 | 51.59 | 0.91 | 0.52 | 0.057 | 0.000 | 0.057 |
| 1770 | 17.70 | 17.71 | 0.01 | 17.71 | 51.56 | 0.80 | 0.52 | 0.065 | 0.000 | 0.065 |
| 1771 | 17.71 | 17.72 | 0.01 | 17.72 | 51.53 | 0.77 | 0.52 | 0.067 | 0.000 | 0.067 |
| 1772 | 17.72 | 17.73 | 0.01 | 17.73 | 51.50 | 0.77 | 0.51 | 0.067 | 0.000 | 0.067 |
| 1773 | 17.73 | 17.74 | 0.01 | 17.74 | 51.47 | 0.81 | 0.51 | 0.063 | 0.000 | 0.063 |
| 1774 | 17.74 | 17.75 | 0.01 | 17.75 | 51.44 | 0.85 | 0.51 | 0.061 | 0.000 | 0.061 |
| 1775 | 17.75 | 17.76 | 0.01 | 17.76 | 51.40 | 0.86 | 0.51 | 0.060 | 0.000 | 0.060 |
| 1776 | 17.76 | 17.77 | 0.01 | 17.77 | 51.37 | 0.74 | 0.51 | 0.070 | 0.000 | 0.070 |
| 1777 | 17.77 | 17.78 | 0.01 | 17.78 | 51.34 | 0.65 | 0.51 | 0.079 | 0.000 | 0.079 |
| 1778 | 17.78 | 17.79 | 0.01 | 17.79 | 51.31 | 0.65 | 0.51 | 0.079 | 0.000 | 0.079 |
| 1779 | 17.79 | 17.80 | 0.01 | 17.80 | 51.28 | 0.65 | 0.51 | 0.078 | 0.000 | 0.078 |
| 1780 | 17.80 | 17.81 | 0.01 | 17.81 | 51.25 | 0.65 | 0.51 | 0.078 | 0.000 | 0.078 |
| 1781 | 17.81 | 17.82 | 0.01 | 17.82 | 51.22 | 0.65 | 0.51 | 0.078 | 0.000 | 0.078 |
| 1782 | 17.82 | 17.83 | 0.01 | 17.83 | 51.19 | 0.66 | 0.51 | 0.078 | 0.000 | 0.078 |
| 1783 | 17.83 | 17.84 | 0.01 | 17.84 | 51.16 | 0.66 | 0.51 | 0.078 | 0.000 | 0.078 |
| 1784 | 17.84 | 17.85 | 0.01 | 17.85 | 51.13 | 0.66 | 0.51 | 0.078 | 0.000 | 0.078 |
| 1785 | 17.85 | 17.86 | 0.01 | 17.86 | 51.10 | 0.66 | 0.51 | 0.078 | 0.000 | 0.078 |
| 1786 | 17.86 | 17.87 | 0.01 | 17.87 | 51.06 | 0.66 | 0.51 | 0.078 | 0.000 | 0.078 |
| 1787 | 17.87 | 17.88 | 0.01 | 17.88 | 51.03 | 0.66 | 0.51 | 0.078 | 0.000 | 0.078 |
| 1788 | 17.88 | 17.89 | 0.01 | 17.89 | 51.00 | 0.66 | 0.51 | 0.078 | 0.000 | 0.078 |
| 1789 | 17.89 | 17.90 | 0.01 | 17.90 | 50.97 | 0.66 | 0.51 | 0.078 | 0.000 | 0.078 |
| 1790 | 17.90 | 17.91 | 0.01 | 17.91 | 50.94 | 0.66 | 0.51 | 0.077 | 0.000 | 0.077 |
| 1791 | 17.91 | 17.92 | 0.01 | 17.92 | 50.91 | 0.66 | 0.51 | 0.077 | 0.000 | 0.077 |
| 1792 | 17.92 | 17.93 | 0.01 | 17.93 | 50.88 | 0.66 | 0.51 | 0.077 | 0.000 | 0.077 |
| 1793 | 17.93 | 17.94 | 0.01 | 17.94 | 50.85 | 0.66 | 0.51 | 0.077 | 0.000 | 0.077 |
| 1794 | 17.94 | 17.95 | 0.01 | 17.95 | 50.82 | 0.66 | 0.51 | 0.077 | 0.000 | 0.077 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1795 | 17.95 | 17.96 | 0.01 | 17.96 | 50.79 | 0.66 | 0.51 | 0.077 | 0.000 | 0.077 |
| 1796 | 17.96 | 17.97 | 0.01 | 17.97 | 50.76 | 0.66 | 0.51 | 0.077 | 0.000 | 0.077 |
| 1797 | 17.97 | 17.98 | 0.01 | 17.98 | 50.73 | 0.73 | 0.51 | 0.070 | 0.000 | 0.070 |
| 1798 | 17.98 | 17.99 | 0.01 | 17.99 | 50.70 | 0.94 | 0.51 | 0.054 | 0.000 | 0.054 |
| 1799 | 17.99 | 18.00 | 0.01 | 18.00 | 50.67 | 1.21 | 0.51 | 0.042 | 0.000 | 0.042 |
| 1800 | 18.00 | 18.01 | 0.01 | 18.01 | 50.64 | 1.43 | 0.51 | 0.035 | 0.000 | 0.035 |
| 1801 | 18.01 | 18.02 | 0.01 | 18.02 | 50.61 | 1.60 | 0.51 | 0.032 | 0.000 | 0.032 |
| 1802 | 18.02 | 18.03 | 0.01 | 18.03 | 50.57 | 1.67 | 0.51 | 0.030 | 0.000 | 0.030 |
| 1803 | 18.03 | 18.04 | 0.01 | 18.04 | 50.54 | 1.64 | 0.51 | 0.031 | 0.000 | 0.031 |
| 1804 | 18.04 | 18.05 | 0.01 | 18.05 | 50.51 | 1.57 | 0.51 | 0.032 | 0.000 | 0.032 |
| 1805 | 18.05 | 18.06 | 0.01 | 18.06 | 50.48 | 1.54 | 0.50 | 0.033 | 0.000 | 0.033 |
| 1806 | 18.06 | 18.07 | 0.01 | 18.07 | 50.45 | 1.53 | 0.50 | 0.033 | 0.000 | 0.033 |
| 1807 | 18.07 | 18.08 | 0.01 | 18.08 | 50.42 | 1.49 | 0.50 | 0.034 | 0.000 | 0.034 |
| 1808 | 18.08 | 18.09 | 0.01 | 18.09 | 50.39 | 1.40 | 0.50 | 0.036 | 0.000 | 0.036 |
| 1809 | 18.09 | 18.10 | 0.01 | 18.10 | 50.36 | 1.35 | 0.50 | 0.037 | 0.000 | 0.037 |
| 1810 | 18.10 | 18.11 | 0.01 | 18.11 | 50.33 | 1.39 | 0.50 | 0.036 | 0.000 | 0.036 |
| 1811 | 18.11 | 18.12 | 0.01 | 18.12 | 50.30 | 1.56 | 0.50 | 0.032 | 0.000 | 0.032 |
| 1812 | 18.12 | 18.13 | 0.01 | 18.13 | 50.27 | 1.82 | 0.50 | 0.028 | 0.000 | 0.028 |
| 1813 | 18.13 | 18.14 | 0.01 | 18.14 | 50.24 | 2.34 | 0.50 | 0.022 | 0.000 | 0.022 |
| 1814 | 18.14 | 18.15 | 0.01 | 18.15 | 50.21 | 3.00 | 0.50 | 0.017 | 0.000 | 0.017 |
| 1815 | 18.15 | 18.16 | 0.01 | 18.16 | 50.18 | 3.80 | 0.50 | 0.013 | 0.000 | 0.013 |
| 1816 | 18.16 | 18.17 | 0.01 | 18.17 | 50.15 | 4.43 | 0.50 | 0.011 | 0.000 | 0.011 |
| 1817 | 18.17 | 18.18 | 0.01 | 18.18 | 50.12 | 5.07 | 0.50 | 0.010 | 0.000 | 0.010 |
| 1818 | 18.18 | 18.19 | 0.01 | 18.19 | 50.09 | 5.49 | 0.50 | 0.009 | 0.000 | 0.009 |
| 1819 | 18.19 | 18.20 | 0.01 | 18.20 | 50.06 | 5.77 | 0.50 | 0.009 | 0.000 | 0.009 |
| 1820 | 18.20 | 18.21 | 0.01 | 18.21 | 50.03 | 5.85 | 0.50 | 0.009 | 0.000 | 0.009 |
| 1821 | 18.21 | 18.22 | 0.01 | 18.22 | 50.00 | 5.86 | 0.50 | 0.009 | 0.000 | 0.009 |
| 1822 | 18.22 | 18.23 | 0.01 | 18.23 | 49.97 | 5.17 | 0.50 | 0.010 | 0.000 | 0.010 |
| 1823 | 18.23 | 18.24 | 0.01 | 18.24 | 49.94 | 4.25 | 0.50 | 0.012 | 0.000 | 0.012 |
| 1824 | 18.24 | 18.25 | 0.01 | 18.25 | 49.91 | 3.20 | 0.50 | 0.016 | 0.000 | 0.016 |
| 1825 | 18.25 | 18.26 | 0.01 | 18.26 | 49.88 | 2.51 | 0.50 | 0.020 | 0.000 | 0.020 |
| 1826 | 18.26 | 18.27 | 0.01 | 18.27 | 49.85 | 1.79 | 0.50 | 0.028 | 0.000 | 0.028 |
| 1827 | 18.27 | 18.28 | 0.01 | 18.28 | 49.82 | 1.31 | 0.50 | 0.038 | 0.000 | 0.038 |
| 1828 | 18.28 | 18.29 | 0.01 | 18.29 | 49.79 | 1.06 | 0.50 | 0.047 | 0.000 | 0.047 |
| 1829 | 18.29 | 18.30 | 0.01 | 18.30 | 49.76 | 1.20 | 0.50 | 0.041 | 0.000 | 0.041 |
| 1830 | 18.30 | 18.31 | 0.01 | 18.31 | 49.73 | 1.87 | 0.50 | 0.027 | 0.000 | 0.027 |
| 1831 | 18.31 | 18.32 | 0.01 | 18.32 | 49.70 | 2.68 | 0.50 | 0.019 | 0.000 | 0.019 |
| 1832 | 18.32 | 18.33 | 0.01 | 18.33 | 49.67 | 3.30 | 0.50 | 0.015 | 0.000 | 0.015 |
| 1833 | 18.33 | 18.34 | 0.01 | 18.34 | 49.64 | 3.36 | 0.50 | 0.015 | 0.000 | 0.015 |
| 1834 | 18.34 | 18.35 | 0.01 | 18.35 | 49.61 | 3.46 | 0.50 | 0.014 | 0.000 | 0.014 |
| 1835 | 18.35 | 18.36 | 0.01 | 18.36 | 49.58 | 3.63 | 0.50 | 0.014 | 0.000 | 0.014 |
| 1836 | 18.36 | 18.37 | 0.01 | 18.37 | 49.55 | 3.81 | 0.50 | 0.013 | 0.000 | 0.013 |
| 1837 | 18.37 | 18.38 | 0.01 | 18.38 | 49.52 | 3.95 | 0.50 | 0.013 | 0.000 | 0.013 |
| 1838 | 18.38 | 18.39 | 0.01 | 18.39 | 49.49 | 4.27 | 0.49 | 0.012 | 0.000 | 0.012 |
| 1839 | 18.39 | 18.40 | 0.01 | 18.40 | 49.46 | 4.69 | 0.49 | 0.011 | 0.000 | 0.011 |
| 1840 | 18.40 | 18.41 | 0.01 | 18.41 | 49.43 | 5.32 | 0.49 | 0.009 | 0.000 | 0.009 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1841 | 18.41 | 18.42 | 0.01 | 18.42 | 49.40 | 5.91 | 0.49 | 0.008 | 0.000 | 0.008 |
| 1842 | 18.42 | 18.43 | 0.01 | 18.43 | 49.37 | 6.31 | 0.49 | 0.008 | 0.000 | 0.008 |
| 1843 | 18.43 | 18.44 | 0.01 | 18.44 | 49.34 | 8.10 | 0.49 | 0.006 | 0.000 | 0.006 |
| 1844 | 18.44 | 18.45 | 0.01 | 18.45 | 49.31 | 9.04 | 0.49 | 0.005 | 0.000 | 0.005 |
| 1845 | 18.45 | 18.46 | 0.01 | 18.46 | 49.28 | 9.84 | 0.49 | 0.005 | 0.000 | 0.005 |
| 1846 | 18.46 | 18.47 | 0.01 | 18.47 | 49.25 | 8.45 | 0.49 | 0.006 | 0.000 | 0.006 |
| 1847 | 18.47 | 18.48 | 0.01 | 18.48 | 49.22 | 7.28 | 0.49 | 0.007 | 0.000 | 0.007 |
| 1848 | 18.48 | 18.49 | 0.01 | 18.49 | 49.19 | 6.10 | 0.49 | 0.008 | 0.000 | 0.008 |
| 1849 | 18.49 | 18.50 | 0.01 | 18.50 | 49.16 | 5.12 | 0.49 | 0.010 | 0.000 | 0.010 |
| 1850 | 18.50 | 18.51 | 0.01 | 18.51 | 49.13 | 4.68 | 0.49 | 0.011 | 0.000 | 0.011 |
| 1851 | 18.51 | 18.52 | 0.01 | 18.52 | 49.10 | 4.49 | 0.49 | 0.011 | 0.000 | 0.011 |
| 1852 | 18.52 | 18.53 | 0.01 | 18.53 | 49.08 | 4.52 | 0.49 | 0.011 | 0.000 | 0.011 |
| 1853 | 18.53 | 18.54 | 0.01 | 18.54 | 49.05 | 4.67 | 0.49 | 0.010 | 0.000 | 0.010 |
| 1854 | 18.54 | 18.55 | 0.01 | 18.55 | 49.02 | 4.89 | 0.49 | 0.010 | 0.000 | 0.010 |
| 1855 | 18.55 | 18.56 | 0.01 | 18.56 | 48.99 | 5.20 | 0.49 | 0.009 | 0.000 | 0.009 |
| 1856 | 18.56 | 18.57 | 0.01 | 18.57 | 48.96 | 5.56 | 0.49 | 0.009 | 0.000 | 0.009 |
| 1857 | 18.57 | 18.58 | 0.01 | 18.58 | 48.93 | 5.83 | 0.49 | 0.008 | 0.000 | 0.008 |
| 1858 | 18.58 | 18.59 | 0.01 | 18.59 | 48.90 | 6.06 | 0.49 | 0.008 | 0.000 | 0.008 |
| 1859 | 18.59 | 18.60 | 0.01 | 18.60 | 48.87 | 6.17 | 0.49 | 0.008 | 0.000 | 0.008 |
| 1860 | 18.60 | 18.61 | 0.01 | 18.61 | 48.84 | 6.33 | 0.49 | 0.008 | 0.000 | 0.008 |
| 1861 | 18.61 | 18.62 | 0.01 | 18.62 | 48.81 | 6.34 | 0.49 | 0.008 | 0.000 | 0.008 |
| 1862 | 18.62 | 18.63 | 0.01 | 18.63 | 48.78 | 6.15 | 0.49 | 0.008 | 0.000 | 0.008 |
| 1863 | 18.63 | 18.64 | 0.01 | 18.64 | 48.75 | 5.74 | 0.49 | 0.008 | 0.000 | 0.008 |
| 1864 | 18.64 | 18.65 | 0.01 | 18.65 | 48.72 | 5.14 | 0.49 | 0.009 | 0.000 | 0.009 |
| 1865 | 18.65 | 18.66 | 0.01 | 18.66 | 48.69 | 4.61 | 0.49 | 0.011 | 0.000 | 0.011 |
| 1866 | 18.66 | 18.67 | 0.01 | 18.67 | 48.66 | 4.16 | 0.49 | 0.012 | 0.000 | 0.012 |
| 1867 | 18.67 | 18.68 | 0.01 | 18.68 | 48.63 | 3.89 | 0.49 | 0.013 | 0.000 | 0.013 |
| 1868 | 18.68 | 18.69 | 0.01 | 18.69 | 48.61 | 3.55 | 0.49 | 0.014 | 0.000 | 0.014 |
| 1869 | 18.69 | 18.70 | 0.01 | 18.70 | 48.58 | 3.21 | 0.49 | 0.015 | 0.000 | 0.015 |
| 1870 | 18.70 | 18.71 | 0.01 | 18.71 | 48.55 | 2.91 | 0.49 | 0.017 | 0.000 | 0.017 |
| 1871 | 18.71 | 18.72 | 0.01 | 18.72 | 48.52 | 2.71 | 0.49 | 0.018 | 0.000 | 0.018 |
| 1872 | 18.72 | 18.73 | 0.01 | 18.73 | 48.49 | 2.56 | 0.48 | 0.019 | 0.000 | 0.019 |
| 1873 | 18.73 | 18.74 | 0.01 | 18.74 | 48.46 | 2.45 | 0.48 | 0.020 | 0.000 | 0.020 |
| 1874 | 18.74 | 18.75 | 0.01 | 18.75 | 48.43 | 2.34 | 0.48 | 0.021 | 0.000 | 0.021 |
| 1875 | 18.75 | 18.76 | 0.01 | 18.76 | 48.40 | 2.26 | 0.48 | 0.021 | 0.000 | 0.021 |
| 1876 | 18.76 | 18.77 | 0.01 | 18.77 | 48.37 | 2.05 | 0.48 | 0.024 | 0.000 | 0.024 |
| 1877 | 18.77 | 18.78 | 0.01 | 18.78 | 48.34 | 1.80 | 0.48 | 0.027 | 0.000 | 0.027 |
| 1878 | 18.78 | 18.79 | 0.01 | 18.79 | 48.31 | 1.51 | 0.48 | 0.032 | 0.000 | 0.032 |
| 1879 | 18.79 | 18.80 | 0.01 | 18.80 | 48.28 | 1.31 | 0.48 | 0.037 | 0.000 | 0.037 |
| 1880 | 18.80 | 18.81 | 0.01 | 18.81 | 48.26 | 1.16 | 0.48 | 0.042 | 0.000 | 0.042 |
| 1881 | 18.81 | 18.82 | 0.01 | 18.82 | 48.23 | 1.02 | 0.48 | 0.047 | 0.000 | 0.047 |
| 1882 | 18.82 | 18.83 | 0.01 | 18.83 | 48.20 | 0.91 | 0.48 | 0.053 | 0.000 | 0.053 |
| 1883 | 18.83 | 18.84 | 0.01 | 18.84 | 48.17 | 0.81 | 0.48 | 0.060 | 0.000 | 0.060 |
| 1884 | 18.84 | 18.85 | 0.01 | 18.85 | 48.14 | 0.73 | 0.48 | 0.066 | 0.000 | 0.066 |
| 1885 | 18.85 | 18.86 | 0.01 | 18.86 | 48.11 | 0.69 | 0.48 | 0.069 | 0.000 | 0.069 |
| 1886 | 18.86 | 18.87 | 0.01 | 18.87 | 48.08 | 0.69 | 0.48 | 0.069 | 0.000 | 0.069 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1887 | 18.87 | 18.88 | 0.01 | 18.88 | 48.05 | 0.69 | 0.48 | 0.069 | 0.000 | 0.069 |
| 1888 | 18.88 | 18.89 | 0.01 | 18.89 | 48.02 | 0.69 | 0.48 | 0.069 | 0.000 | 0.069 |
| 1889 | 18.89 | 18.90 | 0.01 | 18.90 | 48.00 | 0.69 | 0.48 | 0.069 | 0.000 | 0.069 |
| 1890 | 18.90 | 18.91 | 0.01 | 18.91 | 47.97 | 0.69 | 0.48 | 0.069 | 0.000 | 0.069 |
| 1891 | 18.91 | 18.92 | 0.01 | 18.92 | 47.94 | 0.70 | 0.48 | 0.069 | 0.000 | 0.069 |
| 1892 | 18.92 | 18.93 | 0.01 | 18.93 | 47.91 | 0.70 | 0.48 | 0.069 | 0.000 | 0.069 |
| 1893 | 18.93 | 18.94 | 0.01 | 18.94 | 47.88 | 0.70 | 0.48 | 0.069 | 0.000 | 0.069 |
| 1894 | 18.94 | 18.95 | 0.01 | 18.95 | 47.85 | 0.70 | 0.48 | 0.069 | 0.000 | 0.069 |
| 1895 | 18.95 | 18.96 | 0.01 | 18.96 | 47.82 | 0.70 | 0.48 | 0.069 | 0.000 | 0.069 |
| 1896 | 18.96 | 18.97 | 0.01 | 18.97 | 47.79 | 0.70 | 0.48 | 0.069 | 0.000 | 0.069 |
| 1897 | 18.97 | 18.98 | 0.01 | 18.98 | 47.77 | 0.73 | 0.48 | 0.065 | 0.000 | 0.065 |
| 1898 | 18.98 | 18.99 | 0.01 | 18.99 | 47.74 | 0.81 | 0.48 | 0.059 | 0.000 | 0.059 |
| 1899 | 18.99 | 19.00 | 0.01 | 19.00 | 47.71 | 0.92 | 0.48 | 0.052 | 0.000 | 0.052 |
| 1900 | 19.00 | 19.01 | 0.01 | 19.01 | 47.68 | 1.03 | 0.48 | 0.046 | 0.000 | 0.046 |
| 1901 | 19.01 | 19.02 | 0.01 | 19.02 | 47.65 | 1.21 | 0.48 | 0.040 | 0.000 | 0.040 |
| 1902 | 19.02 | 19.03 | 0.01 | 19.03 | 47.62 | 1.40 | 0.48 | 0.034 | 0.000 | 0.034 |
| 1903 | 19.03 | 19.04 | 0.01 | 19.04 | 47.59 | 1.62 | 0.48 | 0.029 | 0.000 | 0.029 |
| 1904 | 19.04 | 19.05 | 0.01 | 19.05 | 47.57 | 1.84 | 0.48 | 0.026 | 0.000 | 0.026 |
| 1905 | 19.05 | 19.06 | 0.01 | 19.06 | 47.54 | 2.15 | 0.48 | 0.022 | 0.000 | 0.022 |
| 1906 | 19.06 | 19.07 | 0.01 | 19.07 | 47.51 | 2.79 | 0.48 | 0.017 | 0.000 | 0.017 |
| 1907 | 19.07 | 19.08 | 0.01 | 19.08 | 47.48 | 3.65 | 0.47 | 0.013 | 0.000 | 0.013 |
| 1908 | 19.08 | 19.09 | 0.01 | 19.09 | 47.45 | 4.79 | 0.47 | 0.010 | 0.000 | 0.010 |
| 1909 | 19.09 | 19.10 | 0.01 | 19.10 | 47.42 | 5.93 | 0.47 | 0.008 | 0.000 | 0.008 |
| 1910 | 19.10 | 19.11 | 0.01 | 19.11 | 47.39 | 7.53 | 0.47 | 0.006 | 0.000 | 0.006 |
| 1911 | 19.11 | 19.12 | 0.01 | 19.12 | 47.37 | 8.99 | 0.47 | 0.005 | 0.000 | 0.005 |
| 1912 | 19.12 | 19.13 | 0.01 | 19.13 | 47.34 | 10.06 | 0.47 | 0.005 | 0.000 | 0.005 |
| 1913 | 19.13 | 19.14 | 0.01 | 19.14 | 47.31 | 10.03 | 0.47 | 0.005 | 0.000 | 0.005 |
| 1914 | 19.14 | 19.15 | 0.01 | 19.15 | 47.28 | 8.63 | 0.47 | 0.005 | 0.000 | 0.005 |
| 1915 | 19.15 | 19.16 | 0.01 | 19.16 | 47.25 | 6.81 | 0.47 | 0.007 | 0.000 | 0.007 |
| 1916 | 19.16 | 19.17 | 0.01 | 19.17 | 47.22 | 5.07 | 0.47 | 0.009 | 0.000 | 0.009 |
| 1917 | 19.17 | 19.18 | 0.01 | 19.18 | 47.20 | 4.11 | 0.47 | 0.011 | 0.000 | 0.011 |
| 1918 | 19.18 | 19.19 | 0.01 | 19.19 | 47.17 | 3.18 | 0.47 | 0.015 | 0.000 | 0.015 |
| 1919 | 19.19 | 19.20 | 0.01 | 19.20 | 47.14 | 2.50 | 0.47 | 0.019 | 0.000 | 0.019 |
| 1920 | 19.20 | 19.21 | 0.01 | 19.21 | 47.11 | 2.00 | 0.47 | 0.024 | 0.000 | 0.024 |
| 1921 | 19.21 | 19.22 | 0.01 | 19.22 | 47.08 | 1.75 | 0.47 | 0.027 | 0.000 | 0.027 |
| 1922 | 19.22 | 19.23 | 0.01 | 19.23 | 47.05 | 1.47 | 0.47 | 0.032 | 0.000 | 0.032 |
| 1923 | 19.23 | 19.24 | 0.01 | 19.24 | 47.03 | 1.22 | 0.47 | 0.039 | 0.000 | 0.039 |
| 1924 | 19.24 | 19.25 | 0.01 | 19.25 | 47.00 | 1.02 | 0.47 | 0.046 | 0.000 | 0.046 |
| 1925 | 19.25 | 19.26 | 0.01 | 19.26 | 46.97 | 0.91 | 0.47 | 0.052 | 0.000 | 0.052 |
| 1926 | 19.26 | 19.27 | 0.01 | 19.27 | 46.94 | 0.81 | 0.47 | 0.058 | 0.000 | 0.058 |
| 1927 | 19.27 | 19.28 | 0.01 | 19.28 | 46.91 | 0.75 | 0.47 | 0.063 | 0.000 | 0.063 |
| 1928 | 19.28 | 19.29 | 0.01 | 19.29 | 46.89 | 0.74 | 0.47 | 0.064 | 0.000 | 0.064 |
| 1929 | 19.29 | 19.30 | 0.01 | 19.30 | 46.86 | 0.80 | 0.47 | 0.058 | 0.000 | 0.058 |
| 1930 | 19.30 | 19.31 | 0.01 | 19.31 | 46.83 | 0.98 | 0.47 | 0.048 | 0.000 | 0.048 |
| 1931 | 19.31 | 19.32 | 0.01 | 19.32 | 46.80 | 1.51 | 0.47 | 0.031 | 0.000 | 0.031 |
| 1932 | 19.32 | 19.33 | 0.01 | 19.33 | 46.77 | 2.34 | 0.47 | 0.020 | 0.000 | 0.020 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1933 | 19.33 | 19.34 | 0.01 | 19.34 | 46.75 | 3.38 | 0.47 | 0.014 | 0.000 | 0.014 |
| 1934 | 19.34 | 19.35 | 0.01 | 19.35 | 46.72 | 4.04 | 0.47 | 0.012 | 0.000 | 0.012 |
| 1935 | 19.35 | 19.36 | 0.01 | 19.36 | 46.69 | 4.24 | 0.47 | 0.011 | 0.000 | 0.011 |
| 1936 | 19.36 | 19.37 | 0.01 | 19.37 | 46.66 | 3.93 | 0.47 | 0.012 | 0.000 | 0.012 |
| 1937 | 19.37 | 19.38 | 0.01 | 19.38 | 46.63 | 3.27 | 0.47 | 0.014 | 0.000 | 0.014 |
| 1938 | 19.38 | 19.39 | 0.01 | 19.39 | 46.61 | 2.56 | 0.47 | 0.018 | 0.000 | 0.018 |
| 1939 | 19.39 | 19.40 | 0.01 | 19.40 | 46.58 | 1.81 | 0.47 | 0.026 | 0.000 | 0.026 |
| 1940 | 19.40 | 19.41 | 0.01 | 19.41 | 46.55 | 1.24 | 0.47 | 0.038 | 0.000 | 0.038 |
| 1941 | 19.41 | 19.42 | 0.01 | 19.42 | 46.52 | 0.83 | 0.47 | 0.056 | 0.000 | 0.056 |
| 1942 | 19.42 | 19.43 | 0.01 | 19.43 | 46.49 | 0.71 | 0.46 | 0.065 | 0.000 | 0.065 |
| 1943 | 19.43 | 19.44 | 0.01 | 19.44 | 46.47 | 0.71 | 0.46 | 0.065 | 0.000 | 0.065 |
| 1944 | 19.44 | 19.45 | 0.01 | 19.45 | 46.44 | 0.71 | 0.46 | 0.065 | 0.000 | 0.065 |
| 1945 | 19.45 | 19.46 | 0.01 | 19.46 | 46.41 | 0.74 | 0.46 | 0.063 | 0.000 | 0.063 |
| 1946 | 19.46 | 19.47 | 0.01 | 19.47 | 46.38 | 0.72 | 0.46 | 0.065 | 0.000 | 0.065 |
| 1947 | 19.47 | 19.48 | 0.01 | 19.48 | 46.35 | 0.72 | 0.46 | 0.065 | 0.000 | 0.065 |
| 1948 | 19.48 | 19.49 | 0.01 | 19.49 | 46.33 | 0.72 | 0.46 | 0.065 | 0.000 | 0.065 |
| 1949 | 19.49 | 19.50 | 0.01 | 19.50 | 46.30 | 0.72 | 0.46 | 0.065 | 0.000 | 0.065 |
| 1950 | 19.50 | 19.51 | 0.01 | 19.51 | 46.27 | 0.72 | 0.46 | 0.065 | 0.000 | 0.065 |
| 1951 | 19.51 | 19.52 | 0.01 | 19.52 | 46.24 | 0.72 | 0.46 | 0.064 | 0.000 | 0.064 |
| 1952 | 19.52 | 19.53 | 0.01 | 19.53 | 46.22 | 0.72 | 0.46 | 0.064 | 0.000 | 0.064 |
| 1953 | 19.53 | 19.54 | 0.01 | 19.54 | 46.19 | 0.72 | 0.46 | 0.064 | 0.000 | 0.064 |
| 1954 | 19.54 | 19.55 | 0.01 | 19.55 | 46.16 | 0.72 | 0.46 | 0.064 | 0.000 | 0.064 |
| 1955 | 19.55 | 19.56 | 0.01 | 19.56 | 46.13 | 0.72 | 0.46 | 0.064 | 0.000 | 0.064 |
| 1956 | 19.56 | 19.57 | 0.01 | 19.57 | 46.11 | 0.72 | 0.46 | 0.064 | 0.000 | 0.064 |
| 1957 | 19.57 | 19.58 | 0.01 | 19.58 | 46.08 | 0.74 | 0.46 | 0.062 | 0.000 | 0.062 |
| 1958 | 19.58 | 19.59 | 0.01 | 19.59 | 46.05 | 0.78 | 0.46 | 0.059 | 0.000 | 0.059 |
| 1959 | 19.59 | 19.60 | 0.01 | 19.60 | 46.02 | 0.86 | 0.46 | 0.053 | 0.000 | 0.053 |
| 1960 | 19.60 | 19.61 | 0.01 | 19.61 | 46.00 | 0.99 | 0.46 | 0.046 | 0.000 | 0.046 |
| 1961 | 19.61 | 19.62 | 0.01 | 19.62 | 45.97 | 1.11 | 0.46 | 0.041 | 0.000 | 0.041 |
| 1962 | 19.62 | 19.63 | 0.01 | 19.63 | 45.94 | 1.16 | 0.46 | 0.039 | 0.000 | 0.039 |
| 1963 | 19.63 | 19.64 | 0.01 | 19.64 | 45.91 | 1.11 | 0.46 | 0.041 | 0.000 | 0.041 |
| 1964 | 19.64 | 19.65 | 0.01 | 19.65 | 45.89 | 0.99 | 0.46 | 0.046 | 0.000 | 0.046 |
| 1965 | 19.65 | 19.66 | 0.01 | 19.66 | 45.86 | 0.80 | 0.46 | 0.057 | 0.000 | 0.057 |
| 1966 | 19.66 | 19.67 | 0.01 | 19.67 | 45.83 | 0.72 | 0.46 | 0.063 | 0.000 | 0.063 |
| 1967 | 19.67 | 19.68 | 0.01 | 19.68 | 45.80 | 0.72 | 0.46 | 0.063 | 0.000 | 0.063 |
| 1968 | 19.68 | 19.69 | 0.01 | 19.69 | 45.78 | 0.72 | 0.46 | 0.063 | 0.000 | 0.063 |
| 1969 | 19.69 | 19.70 | 0.01 | 19.70 | 45.75 | 0.72 | 0.46 | 0.063 | 0.000 | 0.063 |
| 1970 | 19.70 | 19.71 | 0.01 | 19.71 | 45.72 | 0.72 | 0.46 | 0.063 | 0.000 | 0.063 |
| 1971 | 19.71 | 19.72 | 0.01 | 19.72 | 45.69 | 0.72 | 0.46 | 0.063 | 0.000 | 0.063 |
| 1972 | 19.72 | 19.73 | 0.01 | 19.73 | 45.67 | 0.72 | 0.46 | 0.063 | 0.000 | 0.063 |
| 1973 | 19.73 | 19.74 | 0.01 | 19.74 | 45.64 | 0.73 | 0.46 | 0.063 | 0.000 | 0.063 |
| 1974 | 19.74 | 19.75 | 0.01 | 19.75 | 45.61 | 0.90 | 0.46 | 0.051 | 0.000 | 0.051 |
| 1975 | 19.75 | 19.76 | 0.01 | 19.76 | 45.59 | 1.20 | 0.46 | 0.038 | 0.000 | 0.038 |
| 1976 | 19.76 | 19.77 | 0.01 | 19.77 | 45.56 | 1.19 | 0.46 | 0.038 | 0.000 | 0.038 |
| 1977 | 19.77 | 19.78 | 0.01 | 19.78 | 45.53 | 1.02 | 0.46 | 0.045 | 0.000 | 0.045 |
| 1978 | 19.78 | 19.79 | 0.01 | 19.79 | 45.50 | 0.84 | 0.46 | 0.054 | 0.000 | 0.054 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1979 | 19.79 | 19.80 | 0.01 | 19.80 | 45.48 | 0.94 | 0.45 | 0.049 | 0.000 | 0.049 |
| 1980 | 19.80 | 19.81 | 0.01 | 19.81 | 45.45 | 1.21 | 0.45 | 0.038 | 0.000 | 0.038 |
| 1981 | 19.81 | 19.82 | 0.01 | 19.82 | 45.42 | 1.68 | 0.45 | 0.027 | 0.000 | 0.027 |
| 1982 | 19.82 | 19.83 | 0.01 | 19.83 | 45.39 | 2.14 | 0.45 | 0.021 | 0.000 | 0.021 |
| 1983 | 19.83 | 19.84 | 0.01 | 19.84 | 45.37 | 2.76 | 0.45 | 0.016 | 0.000 | 0.016 |
| 1984 | 19.84 | 19.85 | 0.01 | 19.85 | 45.34 | 3.41 | 0.45 | 0.013 | 0.000 | 0.013 |
| 1985 | 19.85 | 19.86 | 0.01 | 19.86 | 45.31 | 4.02 | 0.45 | 0.011 | 0.000 | 0.011 |
| 1986 | 19.86 | 19.87 | 0.01 | 19.87 | 45.29 | 4.35 | 0.45 | 0.010 | 0.000 | 0.010 |
| 1987 | 19.87 | 19.88 | 0.01 | 19.88 | 45.26 | 4.77 | 0.45 | 0.009 | 0.000 | 0.009 |
| 1988 | 19.88 | 19.89 | 0.01 | 19.89 | 45.23 | 5.38 | 0.45 | 0.008 | 0.000 | 0.008 |
| 1989 | 19.89 | 19.90 | 0.01 | 19.90 | 45.21 | 6.33 | 0.45 | 0.007 | 0.000 | 0.007 |
| 1990 | 19.90 | 19.91 | 0.01 | 19.91 | 45.18 | 7.48 | 0.45 | 0.006 | 0.000 | 0.006 |
| 1991 | 19.91 | 19.92 | 0.01 | 19.92 | 45.15 | 8.80 | 0.45 | 0.005 | 0.000 | 0.005 |
| 1992 | 19.92 | 19.93 | 0.01 | 19.93 | 45.12 | 10.35 | 0.45 | 0.004 | 0.000 | 0.004 |
| 1993 | 19.93 | 19.94 | 0.01 | 19.94 | 45.10 | 11.56 | 0.45 | 0.004 | 0.000 | 0.004 |
| 1994 | 19.94 | 19.95 | 0.01 | 19.95 | 45.07 | 12.36 | 0.45 | 0.004 | 0.000 | 0.004 |
| 1995 | 19.95 | 19.96 | 0.01 | 19.96 | 45.04 | 12.52 | 0.45 | 0.004 | 0.000 | 0.004 |
| 1996 | 19.96 | 19.97 | 0.01 | 19.97 | 45.02 | 12.44 | 0.45 | 0.004 | 0.000 | 0.004 |
| 1997 | 19.97 | 19.98 | 0.01 | 19.98 | 44.99 | 12.22 | 0.45 | 0.004 | 0.000 | 0.004 |
| 1998 | 19.98 | 19.99 | 0.01 | 19.99 | 44.96 | 11.80 | 0.45 | 0.004 | 0.000 | 0.004 |
| 1999 | 19.99 | 20.00 | 0.01 | 20.00 | 44.94 | 11.20 | 0.45 | 0.004 | 0.000 | 0.004 |
| 2000 | 20.00 | 20.01 | 0.01 | 20.01 | 44.91 | 9.86 | 0.45 | 0.005 | 0.000 | 0.005 |
| 2001 | 20.01 | 20.02 | 0.01 | 20.02 | 44.88 | 8.38 | 0.45 | 0.005 | 0.000 | 0.005 |
| 2002 | 20.02 | 20.03 | 0.01 | 20.03 | 44.86 | 6.98 | 0.45 | 0.006 | 0.000 | 0.006 |
| 2003 | 20.03 | 20.04 | 0.01 | 20.04 | 44.83 | 6.06 | 0.45 | 0.007 | 0.000 | 0.007 |
| 2004 | 20.04 | 20.05 | 0.01 | 20.05 | 44.80 | 5.43 | 0.45 | 0.008 | 0.000 | 0.008 |
| 2005 | 20.05 | 20.06 | 0.01 | 20.06 | 44.78 | 5.03 | 0.45 | 0.009 | 0.000 | 0.009 |
| 2006 | 20.06 | 20.07 | 0.01 | 20.07 | 44.75 | 4.85 | 0.45 | 0.009 | 0.000 | 0.009 |
| 2007 | 20.07 | 20.08 | 0.01 | 20.08 | 44.72 | 4.76 | 0.45 | 0.009 | 0.000 | 0.009 |
| 2008 | 20.08 | 20.09 | 0.01 | 20.09 | 44.70 | 4.77 | 0.45 | 0.009 | 0.000 | 0.009 |
| 2009 | 20.09 | 20.10 | 0.01 | 20.10 | 44.67 | 4.92 | 0.45 | 0.009 | 0.000 | 0.009 |
| 2010 | 20.10 | 20.11 | 0.01 | 20.11 | 44.64 | 5.18 | 0.45 | 0.009 | 0.000 | 0.009 |
| 2011 | 20.11 | 20.12 | 0.01 | 20.12 | 44.62 | 5.71 | 0.45 | 0.008 | 0.000 | 0.008 |
| 2012 | 20.12 | 20.13 | 0.01 | 20.13 | 44.59 | 6.36 | 0.45 | 0.007 | 0.000 | 0.007 |
| 2013 | 20.13 | 20.14 | 0.01 | 20.14 | 44.56 | 7.23 | 0.45 | 0.006 | 0.000 | 0.006 |
| 2014 | 20.14 | 20.15 | 0.01 | 20.15 | 44.54 | 8.08 | 0.45 | 0.006 | 0.000 | 0.006 |
| 2015 | 20.15 | 20.16 | 0.01 | 20.16 | 44.51 | 8.89 | 0.45 | 0.005 | 0.000 | 0.005 |
| 2016 | 20.16 | 20.17 | 0.01 | 20.17 | 44.48 | 10.02 | 0.44 | 0.004 | 0.000 | 0.004 |
| 2017 | 20.17 | 20.18 | 0.01 | 20.18 | 44.46 | 11.30 | 0.44 | 0.004 | 0.000 | 0.004 |
| 2018 | 20.18 | 20.19 | 0.01 | 20.19 | 44.43 | 12.98 | 0.44 | 0.003 | 0.000 | 0.003 |
| 2019 | 20.19 | 20.20 | 0.01 | 20.20 | 44.40 | 14.37 | 0.44 | 0.003 | 0.000 | 0.003 |
| 2020 | 20.20 | 20.21 | 0.01 | 20.21 | 44.38 | 15.06 | 0.44 | 0.003 | 0.000 | 0.003 |
| 2021 | 20.21 | 20.22 | 0.01 | 20.22 | 44.35 | 14.58 | 0.44 | 0.003 | 0.000 | 0.003 |
| 2022 | 20.22 | 20.23 | 0.01 | 20.23 | 44.32 | 13.47 | 0.44 | 0.003 | 0.000 | 0.003 |
| 2023 | 20.23 | 20.24 | 0.01 | 20.24 | 44.30 | 12.69 | 0.44 | 0.003 | 0.000 | 0.003 |
| 2024 | 20.24 | 20.25 | 0.01 | 20.25 | 44.27 | 13.50 | 0.44 | 0.003 | 0.000 | 0.003 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2025 | 20.25 | 20.26 | 0.01 | 20.26 | 44.25 | 16.12 | 0.44 | 0.003 | 0.000 | 0.003 |
| 2026 | 20.26 | 20.27 | 0.01 | 20.27 | 44.22 | 20.81 | 0.44 | 0.002 | 0.000 | 0.002 |
| 2027 | 20.27 | 20.28 | 0.01 | 20.28 | 44.19 | 26.98 | 0.44 | 0.002 | 0.000 | 0.002 |
| 2028 | 20.28 | 20.29 | 0.01 | 20.29 | 44.17 | 35.95 | 0.44 | 0.001 | 0.000 | 0.001 |
| 2029 | 20.29 | 20.30 | 0.01 | 20.30 | 44.14 | 40.76 | 0.44 | 0.001 | 0.000 | 0.001 |
| 2030 | 20.30 | 20.31 | 0.01 | 20.31 | 44.11 | 44.95 | 0.44 | 0.001 | 0.000 | 0.001 |
| 2031 | 20.31 | 20.32 | 0.01 | 20.32 | 44.09 | 48.38 | 0.44 | 0.001 | 0.000 | 0.001 |
| 2032 | 20.32 | 20.33 | 0.01 | 20.33 | 44.06 | 54.14 | 0.44 | 0.001 | 0.000 | 0.001 |
| 2033 | 20.33 | 20.34 | 0.01 | 20.34 | 44.04 | 60.89 | 0.44 | 0.001 | 0.000 | 0.001 |
| 2034 | 20.34 | 20.35 | 0.01 | 20.35 | 44.01 | 68.50 | 0.44 | 0.001 | 0.000 | 0.001 |
| 2035 | 20.35 | 20.36 | 0.01 | 20.36 | 43.98 | 77.64 | 0.44 | 0.001 | 0.000 | 0.001 |
| 2036 | 20.36 | 20.37 | 0.01 | 20.37 | 43.96 | 86.49 | 0.44 | 0.001 | 0.000 | 0.001 |
| 2037 | 20.37 | 20.38 | 0.01 | 20.38 | 43.93 | 94.66 | 0.44 | 0.000 | 0.000 | 0.000 |
| 2038 | 20.38 | 20.39 | 0.01 | 20.39 | 43.91 | 99.01 | 0.44 | 0.000 | 0.000 | 0.000 |
| 2039 | 20.39 | 20.40 | 0.01 | 20.40 | 43.88 | 103.23 | 0.44 | 0.000 | 0.000 | 0.000 |
| 2040 | 20.40 | 20.41 | 0.01 | 20.41 | 43.85 | 106.46 | 0.44 | 0.000 | 0.000 | 0.000 |
| 2041 | 20.41 | 20.42 | 0.01 | 20.42 | 43.83 | 108.93 | 0.44 | 0.000 | 0.000 | 0.000 |
| 2042 | 20.42 | 20.43 | 0.01 | 20.43 | 43.80 | 107.68 | 0.44 | 0.000 | 0.000 | 0.000 |
| 2043 | 20.43 | 20.44 | 0.01 | 20.44 | 43.77 | 107.40 | 0.44 | 0.000 | 0.000 | 0.000 |
| 2044 | 20.44 | 20.45 | 0.01 | 20.45 | 43.75 | 108.29 | 0.44 | 0.000 | 0.000 | 0.000 |
| 2045 | 20.45 | 20.46 | 0.01 | 20.46 | 43.72 | 111.94 | 0.44 | 0.000 | 0.000 | 0.000 |
| 2046 | 20.46 | 20.47 | 0.01 | 20.47 | 43.70 | 114.90 | 0.44 | 0.000 | 0.000 | 0.000 |
| 2047 | 20.47 | 20.48 | 0.01 | 20.48 | 43.67 | 117.89 | 0.44 | 0.000 | 0.000 | 0.000 |
| 2048 | 20.48 | 20.49 | 0.01 | 20.49 | 43.64 | 124.37 | 0.44 | 0.000 | 0.000 | 0.000 |
| 2049 | 20.49 | 20.50 | 0.01 | 20.50 | 43.62 | 132.61 | 0.44 | 0.000 | 0.000 | 0.000 |
| 2050 | 20.50 | 20.51 | 0.01 | 20.51 | 43.59 | 142.17 | 0.44 | 0.000 | 0.000 | 0.000 |
| 2051 | 20.51 | 20.52 | 0.01 | 20.52 | 43.57 | 150.18 | 0.44 | 0.000 | 0.000 | 0.000 |
| 2052 | 20.52 | 20.53 | 0.01 | 20.53 | 43.54 | 158.98 | 0.44 | 0.000 | 0.000 | 0.000 |
| 2053 | 20.53 | 20.54 | 0.01 | 20.54 | 43.52 | 167.13 | 0.44 | 0.000 | 0.000 | 0.000 |
| 2054 | 20.54 | 20.55 | 0.01 | 20.55 | 43.49 | 175.51 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2055 | 20.55 | 20.56 | 0.01 | 20.56 | 43.46 | 183.22 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2056 | 20.56 | 20.57 | 0.01 | 20.57 | 43.44 | 192.05 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2057 | 20.57 | 20.58 | 0.01 | 20.58 | 43.41 | 199.40 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2058 | 20.58 | 20.59 | 0.01 | 20.59 | 43.39 | 205.04 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2059 | 20.59 | 20.60 | 0.01 | 20.60 | 43.36 | 205.93 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2060 | 20.60 | 20.61 | 0.01 | 20.61 | 43.34 | 204.68 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2061 | 20.61 | 20.62 | 0.01 | 20.62 | 43.31 | 201.36 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2062 | 20.62 | 20.63 | 0.01 | 20.63 | 43.28 | 199.41 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2063 | 20.63 | 20.64 | 0.01 | 20.64 | 43.26 | 198.67 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2064 | 20.64 | 20.65 | 0.01 | 20.65 | 43.23 | 199.33 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2065 | 20.65 | 20.66 | 0.01 | 20.66 | 43.21 | 200.36 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2066 | 20.66 | 20.67 | 0.01 | 20.67 | 43.18 | 200.34 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2067 | 20.67 | 20.68 | 0.01 | 20.68 | 43.16 | 197.65 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2068 | 20.68 | 20.69 | 0.01 | 20.69 | 43.13 | 193.97 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2069 | 20.69 | 20.70 | 0.01 | 20.70 | 43.10 | 189.54 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2070 | 20.70 | 20.71 | 0.01 | 20.71 | 43.08 | 186.42 | 0.43 | 0.000 | 0.000 | 0.000 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2071 | 20.71 | 20.72 | 0.01 | 20.72 | 43.05 | 181.60 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2072 | 20.72 | 20.73 | 0.01 | 20.73 | 43.03 | 177.62 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2073 | 20.73 | 20.74 | 0.01 | 20.74 | 43.00 | 173.86 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2074 | 20.74 | 20.75 | 0.01 | 20.75 | 42.98 | 171.27 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2075 | 20.75 | 20.76 | 0.01 | 20.76 | 42.95 | 167.45 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2076 | 20.76 | 20.77 | 0.01 | 20.77 | 42.93 | 162.45 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2077 | 20.77 | 20.78 | 0.01 | 20.78 | 42.90 | 158.11 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2078 | 20.78 | 20.79 | 0.01 | 20.79 | 42.88 | 155.60 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2079 | 20.79 | 20.80 | 0.01 | 20.80 | 42.85 | 155.15 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2080 | 20.80 | 20.81 | 0.01 | 20.81 | 42.82 | 153.86 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2081 | 20.81 | 20.82 | 0.01 | 20.82 | 42.80 | 150.38 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2082 | 20.82 | 20.83 | 0.01 | 20.83 | 42.77 | 145.77 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2083 | 20.83 | 20.84 | 0.01 | 20.84 | 42.75 | 141.65 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2084 | 20.84 | 20.85 | 0.01 | 20.85 | 42.72 | 139.13 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2085 | 20.85 | 20.86 | 0.01 | 20.86 | 42.70 | 137.45 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2086 | 20.86 | 20.87 | 0.01 | 20.87 | 42.67 | 136.03 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2087 | 20.87 | 20.88 | 0.01 | 20.88 | 42.65 | 133.89 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2088 | 20.88 | 20.89 | 0.01 | 20.89 | 42.62 | 131.91 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2089 | 20.89 | 20.90 | 0.01 | 20.90 | 42.60 | 130.83 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2090 | 20.90 | 20.91 | 0.01 | 20.91 | 42.57 | 132.40 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2091 | 20.91 | 20.92 | 0.01 | 20.92 | 42.55 | 135.91 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2092 | 20.92 | 20.93 | 0.01 | 20.93 | 42.52 | 140.37 | 0.43 | 0.000 | 0.000 | 0.000 |
| 2093 | 20.93 | 20.94 | 0.01 | 20.94 | 42.50 | 144.31 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2094 | 20.94 | 20.95 | 0.01 | 20.95 | 42.47 | 147.22 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2095 | 20.95 | 20.96 | 0.01 | 20.96 | 42.45 | 148.73 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2096 | 20.96 | 20.97 | 0.01 | 20.97 | 42.42 | 149.35 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2097 | 20.97 | 20.98 | 0.01 | 20.98 | 42.40 | 148.89 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2098 | 20.98 | 20.99 | 0.01 | 20.99 | 42.37 | 148.95 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2099 | 20.99 | 21.00 | 0.01 | 21.00 | 42.35 | 149.67 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2100 | 21.00 | 21.01 | 0.01 | 21.01 | 42.32 | 150.88 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2101 | 21.01 | 21.02 | 0.01 | 21.02 | 42.30 | 152.73 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2102 | 21.02 | 21.03 | 0.01 | 21.03 | 42.27 | 154.73 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2103 | 21.03 | 21.04 | 0.01 | 21.04 | 42.25 | 158.45 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2104 | 21.04 | 21.05 | 0.01 | 21.05 | 42.22 | 162.93 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2105 | 21.05 | 21.06 | 0.01 | 21.06 | 42.20 | 167.74 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2106 | 21.06 | 21.07 | 0.01 | 21.07 | 42.17 | 170.91 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2107 | 21.07 | 21.08 | 0.01 | 21.08 | 42.15 | 169.50 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2108 | 21.08 | 21.09 | 0.01 | 21.09 | 42.12 | 165.59 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2109 | 21.09 | 21.10 | 0.01 | 21.10 | 42.10 | 160.44 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2110 | 21.10 | 21.11 | 0.01 | 21.11 | 42.07 | 156.76 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2111 | 21.11 | 21.12 | 0.01 | 21.12 | 42.05 | 151.17 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2112 | 21.12 | 21.13 | 0.01 | 21.13 | 42.02 | 145.69 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2113 | 21.13 | 21.14 | 0.01 | 21.14 | 42.00 | 140.34 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2114 | 21.14 | 21.15 | 0.01 | 21.15 | 41.97 | 136.94 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2115 | 21.15 | 21.16 | 0.01 | 21.16 | 41.95 | 130.94 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2116 | 21.16 | 21.17 | 0.01 | 21.17 | 41.92 | 124.44 | 0.42 | 0.000 | 0.000 | 0.000 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2117 | 21.17 | 21.18 | 0.01 | 21.18 | 41.90 | 117.60 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2118 | 21.18 | 21.19 | 0.01 | 21.19 | 41.87 | 112.78 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2119 | 21.19 | 21.20 | 0.01 | 21.20 | 41.85 | 108.90 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2120 | 21.20 | 21.21 | 0.01 | 21.21 | 41.82 | 106.74 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2121 | 21.21 | 21.22 | 0.01 | 21.22 | 41.80 | 106.28 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2122 | 21.22 | 21.23 | 0.01 | 21.23 | 41.77 | 106.03 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2123 | 21.23 | 21.24 | 0.01 | 21.24 | 41.75 | 105.19 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2124 | 21.24 | 21.25 | 0.01 | 21.25 | 41.73 | 104.67 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2125 | 21.25 | 21.26 | 0.01 | 21.26 | 41.70 | 105.81 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2126 | 21.26 | 21.27 | 0.01 | 21.27 | 41.68 | 109.00 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2127 | 21.27 | 21.28 | 0.01 | 21.28 | 41.65 | 113.87 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2128 | 21.28 | 21.29 | 0.01 | 21.29 | 41.63 | 118.02 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2129 | 21.29 | 21.30 | 0.01 | 21.30 | 41.60 | 119.94 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2130 | 21.30 | 21.31 | 0.01 | 21.31 | 41.58 | 117.97 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2131 | 21.31 | 21.32 | 0.01 | 21.32 | 41.55 | 112.06 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2132 | 21.32 | 21.33 | 0.01 | 21.33 | 41.53 | 105.26 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2133 | 21.33 | 21.34 | 0.01 | 21.34 | 41.50 | 99.13 | 0.42 | 0.000 | 0.000 | 0.000 |
| 2134 | 21.34 | 21.35 | 0.01 | 21.35 | 41.48 | 95.76 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2135 | 21.35 | 21.36 | 0.01 | 21.36 | 41.46 | 92.26 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2136 | 21.36 | 21.37 | 0.01 | 21.37 | 41.43 | 89.38 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2137 | 21.37 | 21.38 | 0.01 | 21.38 | 41.41 | 86.38 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2138 | 21.38 | 21.39 | 0.01 | 21.39 | 41.38 | 85.15 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2139 | 21.39 | 21.40 | 0.01 | 21.40 | 41.36 | 84.65 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2140 | 21.40 | 21.41 | 0.01 | 21.41 | 41.33 | 85.45 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2141 | 21.41 | 21.42 | 0.01 | 21.42 | 41.31 | 86.99 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2142 | 21.42 | 21.43 | 0.01 | 21.43 | 41.29 | 90.40 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2143 | 21.43 | 21.44 | 0.01 | 21.44 | 41.26 | 95.27 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2144 | 21.44 | 21.45 | 0.01 | 21.45 | 41.24 | 101.74 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2145 | 21.45 | 21.46 | 0.01 | 21.46 | 41.21 | 106.31 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2146 | 21.46 | 21.47 | 0.01 | 21.47 | 41.19 | 109.23 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2147 | 21.47 | 21.48 | 0.01 | 21.48 | 41.16 | 110.25 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2148 | 21.48 | 21.49 | 0.01 | 21.49 | 41.14 | 112.37 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2149 | 21.49 | 21.50 | 0.01 | 21.50 | 41.12 | 117.05 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2150 | 21.50 | 21.51 | 0.01 | 21.51 | 41.09 | 122.46 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2151 | 21.51 | 21.52 | 0.01 | 21.52 | 41.07 | 127.19 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2152 | 21.52 | 21.53 | 0.01 | 21.53 | 41.04 | 129.67 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2153 | 21.53 | 21.54 | 0.01 | 21.54 | 41.02 | 130.32 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2154 | 21.54 | 21.55 | 0.01 | 21.55 | 40.99 | 128.48 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2155 | 21.55 | 21.56 | 0.01 | 21.56 | 40.97 | 124.41 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2156 | 21.56 | 21.57 | 0.01 | 21.57 | 40.95 | 119.58 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2157 | 21.57 | 21.58 | 0.01 | 21.58 | 40.92 | 114.41 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2158 | 21.58 | 21.59 | 0.01 | 21.59 | 40.90 | 110.69 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2159 | 21.59 | 21.60 | 0.01 | 21.60 | 40.87 | 107.67 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2160 | 21.60 | 21.61 | 0.01 | 21.61 | 40.85 | 105.90 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2161 | 21.61 | 21.62 | 0.01 | 21.62 | 40.83 | 103.87 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2162 | 21.62 | 21.63 | 0.01 | 21.63 | 40.80 | 102.78 | 0.41 | 0.000 | 0.000 | 0.000 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2163 | 21.63 | 21.64 | 0.01 | 21.64 | 40.78 | 103.51 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2164 | 21.64 | 21.65 | 0.01 | 21.65 | 40.75 | 106.01 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2165 | 21.65 | 21.66 | 0.01 | 21.66 | 40.73 | 113.86 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2166 | 21.66 | 21.67 | 0.01 | 21.67 | 40.71 | 123.65 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2167 | 21.67 | 21.68 | 0.01 | 21.68 | 40.68 | 134.96 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2168 | 21.68 | 21.69 | 0.01 | 21.69 | 40.66 | 142.99 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2169 | 21.69 | 21.70 | 0.01 | 21.70 | 40.64 | 150.27 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2170 | 21.70 | 21.71 | 0.01 | 21.71 | 40.61 | 155.94 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2171 | 21.71 | 21.72 | 0.01 | 21.72 | 40.59 | 160.61 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2172 | 21.72 | 21.73 | 0.01 | 21.73 | 40.56 | 164.35 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2173 | 21.73 | 21.74 | 0.01 | 21.74 | 40.54 | 169.97 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2174 | 21.74 | 21.75 | 0.01 | 21.75 | 40.52 | 174.23 | 0.41 | 0.000 | 0.000 | 0.000 |
| 2175 | 21.75 | 21.76 | 0.01 | 21.76 | 40.49 | 176.58 | 0.40 | 0.000 | 0.000 | 0.000 |
| 2176 | 21.76 | 21.77 | 0.01 | 21.77 | 40.47 | 176.24 | 0.40 | 0.000 | 0.000 | 0.000 |
| 2177 | 21.77 | 21.78 | 0.01 | 21.78 | 40.45 | 177.50 | 0.40 | 0.000 | 0.000 | 0.000 |
| 2178 | 21.78 | 21.79 | 0.01 | 21.79 | 40.42 | 179.25 | 0.40 | 0.000 | 0.000 | 0.000 |
| 2179 | 21.79 | 21.80 | 0.01 | 21.80 | 40.40 | 179.81 | 0.40 | 0.000 | 0.000 | 0.000 |
| 2180 | 21.80 | 21.81 | 0.01 | 21.81 | 40.37 | 178.59 | 0.40 | 0.000 | 0.000 | 0.000 |
| 2181 | 21.81 | 21.82 | 0.01 | 21.82 | 40.35 | 176.42 | 0.40 | 0.000 | 0.000 | 0.000 |
| 2182 | 21.82 | 21.83 | 0.01 | 21.83 | 40.33 | 173.94 | 0.40 | 0.000 | 0.000 | 0.000 |
| 2183 | 21.83 | 21.84 | 0.01 | 21.84 | 40.30 | 170.57 | 0.40 | 0.000 | 0.000 | 0.000 |
| 2184 | 21.84 | 21.85 | 0.01 | 21.85 | 40.28 | 167.27 | 0.40 | 0.000 | 0.000 | 0.000 |
| 2185 | 21.85 | 21.86 | 0.01 | 21.86 | 40.26 | 163.67 | 0.40 | 0.000 | 0.000 | 0.000 |
| 2186 | 21.86 | 21.87 | 0.01 | 21.87 | 40.23 | 160.54 | 0.40 | 0.000 | 0.000 | 0.000 |
| 2187 | 21.87 | 21.88 | 0.01 | 21.88 | 40.21 | 158.59 | 0.40 | 0.000 | 0.000 | 0.000 |
| 2188 | 21.88 | 21.89 | 0.01 | 21.89 | 40.19 | 158.81 | 0.40 | 0.000 | 0.000 | 0.000 |

**Total primary settlement: 35.41**
**Total secondary settlement: 0.00**

**Total calculated settlement: 35.41**

**Abbreviations**

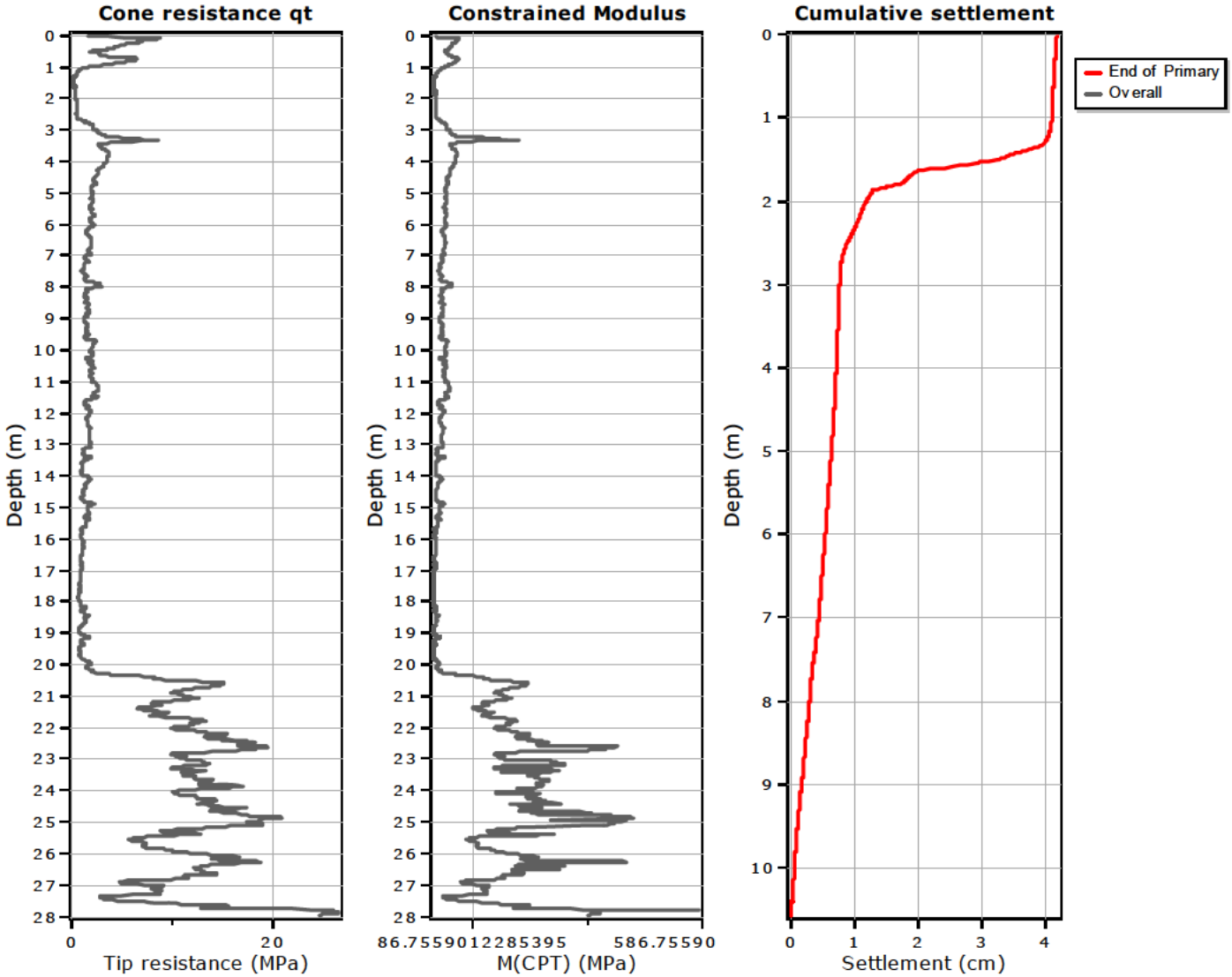
| | |
|---|---|
| Start depth: | Start depth of soil layer (penetration depth measured from ground free surface) |
| End depth: | End depth of soil layer (penetration depth measured from ground free surface) |
| Thickness: | Thickness of soil layer |
| Relative depth: | Depth of calculation relative to footing |
| Iz: | Stress influence factor |
| Delta P: | Footing impossed stress: |
| Eff. stress: | Effective stress |
| $M_{(CPT)}$: | Constrained modulus from CPT |
| Settlement: | Primary settlement |
| Second. settlement: | Secondary settlemends due to creep |

**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

**CPT: CPT01 - 25kPa**
Total depth: 27.97 m, Date: 25/11/2020
Surface Elevation: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

**Project:** **2-WLASS.BN Geotechnical and Risk Assessment Sonning Carpark**
**Location:** **Sonning Carpark - River Road**

## Settlements calculation according to theory of elasticity*




### Calculation properties

Footing type: Rectangular
Footing width: 25.00 (m)
L/B: 1.0
Footing pressure: 25.00 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: No
Time period for primary consolidation: N/A
Time period for second. settlements: N/A

* Primary settlements calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlements calculation is performed according to the following formula:

$$S = C_\alpha \cdot \Delta z \cdot \log(t/t_p)$$

where $t_p$ is the duration of primary consolidation

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.01 | 0.02 | 0.01 | 0.02 | 25.00 | 2.29 | 1.00 | 0.011 | 0.000 | 0.011 |
| 2 | 0.02 | 0.03 | 0.01 | 0.03 | 25.00 | 3.05 | 1.00 | 0.008 | 0.000 | 0.008 |
| 3 | 0.03 | 0.04 | 0.01 | 0.04 | 25.00 | 5.08 | 1.00 | 0.005 | 0.000 | 0.005 |
| 4 | 0.04 | 0.05 | 0.01 | 0.05 | 25.00 | 7.60 | 1.00 | 0.003 | 0.000 | 0.003 |
| 5 | 0.05 | 0.06 | 0.01 | 0.06 | 25.00 | 10.24 | 1.00 | 0.002 | 0.000 | 0.002 |
| 6 | 0.06 | 0.07 | 0.01 | 0.07 | 25.00 | 44.05 | 1.00 | 0.001 | 0.000 | 0.001 |
| 7 | 0.07 | 0.08 | 0.01 | 0.08 | 25.00 | 50.73 | 1.00 | 0.000 | 0.000 | 0.000 |
| 8 | 0.08 | 0.09 | 0.01 | 0.09 | 25.00 | 53.97 | 1.00 | 0.000 | 0.000 | 0.000 |
| 9 | 0.09 | 0.10 | 0.01 | 0.09 | 25.00 | 51.72 | 1.00 | 0.000 | 0.000 | 0.000 |
| 10 | 0.10 | 0.11 | 0.01 | 0.10 | 25.00 | 52.69 | 1.00 | 0.000 | 0.000 | 0.000 |
| 11 | 0.11 | 0.12 | 0.01 | 0.12 | 25.00 | 53.55 | 1.00 | 0.000 | 0.000 | 0.000 |
| 12 | 0.12 | 0.13 | 0.01 | 0.13 | 25.00 | 53.29 | 1.00 | 0.000 | 0.000 | 0.000 |
| 13 | 0.13 | 0.14 | 0.01 | 0.14 | 25.00 | 52.37 | 1.00 | 0.000 | 0.000 | 0.000 |
| 14 | 0.14 | 0.15 | 0.01 | 0.15 | 25.00 | 51.86 | 1.00 | 0.000 | 0.000 | 0.000 |
| 15 | 0.15 | 0.16 | 0.01 | 0.16 | 25.00 | 51.66 | 1.00 | 0.000 | 0.000 | 0.000 |
| 16 | 0.16 | 0.17 | 0.01 | 0.17 | 25.00 | 51.20 | 1.00 | 0.000 | 0.000 | 0.000 |
| 17 | 0.17 | 0.18 | 0.01 | 0.18 | 25.00 | 50.57 | 1.00 | 0.000 | 0.000 | 0.000 |
| 18 | 0.18 | 0.19 | 0.01 | 0.19 | 25.00 | 49.92 | 1.00 | 0.001 | 0.000 | 0.001 |
| 19 | 0.19 | 0.20 | 0.01 | 0.20 | 25.00 | 49.24 | 1.00 | 0.001 | 0.000 | 0.001 |
| 20 | 0.20 | 0.21 | 0.01 | 0.21 | 25.00 | 47.74 | 1.00 | 0.001 | 0.000 | 0.001 |
| 21 | 0.21 | 0.22 | 0.01 | 0.22 | 25.00 | 47.21 | 1.00 | 0.001 | 0.000 | 0.001 |
| 22 | 0.22 | 0.23 | 0.01 | 0.23 | 25.00 | 46.45 | 1.00 | 0.001 | 0.000 | 0.001 |
| 23 | 0.23 | 0.24 | 0.01 | 0.24 | 25.00 | 44.97 | 1.00 | 0.001 | 0.000 | 0.001 |
| 24 | 0.24 | 0.25 | 0.01 | 0.25 | 25.00 | 43.51 | 1.00 | 0.001 | 0.000 | 0.001 |
| 25 | 0.25 | 0.26 | 0.01 | 0.26 | 25.00 | 40.91 | 1.00 | 0.001 | 0.000 | 0.001 |
| 26 | 0.26 | 0.27 | 0.01 | 0.27 | 25.00 | 39.60 | 1.00 | 0.001 | 0.000 | 0.001 |
| 27 | 0.27 | 0.28 | 0.01 | 0.28 | 25.00 | 37.27 | 1.00 | 0.001 | 0.000 | 0.001 |
| 28 | 0.28 | 0.29 | 0.01 | 0.28 | 25.00 | 38.40 | 1.00 | 0.001 | 0.000 | 0.001 |
| 29 | 0.29 | 0.30 | 0.01 | 0.30 | 25.00 | 39.26 | 1.00 | 0.001 | 0.000 | 0.001 |
| 30 | 0.30 | 0.31 | 0.01 | 0.31 | 25.00 | 39.53 | 1.00 | 0.001 | 0.000 | 0.001 |
| 31 | 0.31 | 0.32 | 0.01 | 0.32 | 25.00 | 38.75 | 1.00 | 0.001 | 0.000 | 0.001 |
| 32 | 0.32 | 0.33 | 0.01 | 0.33 | 25.00 | 37.78 | 1.00 | 0.001 | 0.000 | 0.001 |
| 33 | 0.33 | 0.34 | 0.01 | 0.34 | 25.00 | 37.16 | 1.00 | 0.001 | 0.000 | 0.001 |
| 34 | 0.34 | 0.35 | 0.01 | 0.35 | 25.00 | 36.66 | 1.00 | 0.001 | 0.000 | 0.001 |
| 35 | 0.35 | 0.36 | 0.01 | 0.36 | 25.00 | 36.39 | 1.00 | 0.001 | 0.000 | 0.001 |
| 36 | 0.36 | 0.37 | 0.01 | 0.36 | 25.00 | 36.45 | 1.00 | 0.001 | 0.000 | 0.001 |
| 37 | 0.37 | 0.38 | 0.01 | 0.37 | 25.00 | 35.86 | 1.00 | 0.001 | 0.000 | 0.001 |
| 38 | 0.38 | 0.39 | 0.01 | 0.38 | 25.00 | 34.77 | 1.00 | 0.001 | 0.000 | 0.001 |
| 39 | 0.39 | 0.40 | 0.01 | 0.39 | 25.00 | 33.29 | 1.00 | 0.001 | 0.000 | 0.001 |
| 40 | 0.40 | 0.41 | 0.01 | 0.40 | 25.00 | 32.58 | 1.00 | 0.001 | 0.000 | 0.001 |
| 41 | 0.41 | 0.42 | 0.01 | 0.41 | 25.00 | 31.21 | 1.00 | 0.001 | 0.000 | 0.001 |
| 42 | 0.42 | 0.43 | 0.01 | 0.42 | 25.00 | 31.02 | 1.00 | 0.001 | 0.000 | 0.001 |
| 43 | 0.43 | 0.44 | 0.01 | 0.43 | 25.00 | 30.45 | 1.00 | 0.001 | 0.000 | 0.001 |
| 44 | 0.44 | 0.45 | 0.01 | 0.44 | 25.00 | 31.13 | 1.00 | 0.001 | 0.000 | 0.001 |
| 45 | 0.45 | 0.46 | 0.01 | 0.45 | 25.00 | 29.42 | 1.00 | 0.001 | 0.000 | 0.001 |
| 46 | 0.46 | 0.47 | 0.01 | 0.46 | 25.00 | 27.85 | 1.00 | 0.001 | 0.000 | 0.001 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 47 | 0.47 | 0.48 | 0.01 | 0.47 | 25.00 | 26.76 | 1.00 | 0.001 | 0.000 | 0.001 |
| 48 | 0.48 | 0.49 | 0.01 | 0.48 | 25.00 | 21.51 | 1.00 | 0.001 | 0.000 | 0.001 |
| 49 | 0.49 | 0.50 | 0.01 | 0.49 | 25.00 | 21.76 | 1.00 | 0.001 | 0.000 | 0.001 |
| 50 | 0.50 | 0.51 | 0.01 | 0.50 | 25.00 | 21.57 | 1.00 | 0.001 | 0.000 | 0.001 |
| 51 | 0.51 | 0.52 | 0.01 | 0.51 | 25.00 | 25.89 | 1.00 | 0.001 | 0.000 | 0.001 |
| 52 | 0.52 | 0.53 | 0.01 | 0.52 | 25.00 | 25.73 | 1.00 | 0.001 | 0.000 | 0.001 |
| 53 | 0.53 | 0.54 | 0.01 | 0.53 | 25.00 | 25.89 | 1.00 | 0.001 | 0.000 | 0.001 |
| 54 | 0.54 | 0.55 | 0.01 | 0.54 | 25.00 | 28.15 | 1.00 | 0.001 | 0.000 | 0.001 |
| 55 | 0.55 | 0.56 | 0.01 | 0.55 | 25.00 | 28.83 | 1.00 | 0.001 | 0.000 | 0.001 |
| 56 | 0.56 | 0.57 | 0.01 | 0.56 | 25.00 | 29.76 | 1.00 | 0.001 | 0.000 | 0.001 |
| 57 | 0.57 | 0.58 | 0.01 | 0.57 | 25.00 | 28.67 | 1.00 | 0.001 | 0.000 | 0.001 |
| 58 | 0.58 | 0.59 | 0.01 | 0.58 | 25.00 | 29.65 | 1.00 | 0.001 | 0.000 | 0.001 |
| 59 | 0.59 | 0.60 | 0.01 | 0.59 | 25.00 | 29.72 | 1.00 | 0.001 | 0.000 | 0.001 |
| 60 | 0.60 | 0.61 | 0.01 | 0.60 | 25.00 | 30.44 | 1.00 | 0.001 | 0.000 | 0.001 |
| 61 | 0.61 | 0.62 | 0.01 | 0.61 | 25.00 | 31.09 | 1.00 | 0.001 | 0.000 | 0.001 |
| 62 | 0.62 | 0.63 | 0.01 | 0.62 | 25.00 | 32.77 | 1.00 | 0.001 | 0.000 | 0.001 |
| 63 | 0.63 | 0.64 | 0.01 | 0.63 | 25.00 | 34.94 | 1.00 | 0.001 | 0.000 | 0.001 |
| 64 | 0.64 | 0.65 | 0.01 | 0.64 | 25.00 | 36.24 | 1.00 | 0.001 | 0.000 | 0.001 |
| 65 | 0.65 | 0.66 | 0.01 | 0.65 | 25.00 | 38.32 | 1.00 | 0.001 | 0.000 | 0.001 |
| 66 | 0.66 | 0.67 | 0.01 | 0.66 | 25.00 | 40.42 | 1.00 | 0.001 | 0.000 | 0.001 |
| 67 | 0.67 | 0.68 | 0.01 | 0.67 | 25.00 | 43.37 | 1.00 | 0.001 | 0.000 | 0.001 |
| 68 | 0.68 | 0.69 | 0.01 | 0.68 | 25.00 | 45.21 | 1.00 | 0.001 | 0.000 | 0.001 |
| 69 | 0.69 | 0.70 | 0.01 | 0.69 | 25.00 | 47.56 | 1.00 | 0.001 | 0.000 | 0.001 |
| 70 | 0.70 | 0.71 | 0.01 | 0.70 | 25.00 | 49.39 | 1.00 | 0.001 | 0.000 | 0.001 |
| 71 | 0.71 | 0.72 | 0.01 | 0.71 | 25.00 | 51.57 | 1.00 | 0.000 | 0.000 | 0.000 |
| 72 | 0.72 | 0.73 | 0.01 | 0.72 | 25.00 | 52.51 | 1.00 | 0.000 | 0.000 | 0.000 |
| 73 | 0.73 | 0.74 | 0.01 | 0.73 | 25.00 | 53.05 | 1.00 | 0.000 | 0.000 | 0.000 |
| 74 | 0.74 | 0.75 | 0.01 | 0.74 | 25.00 | 53.84 | 1.00 | 0.000 | 0.000 | 0.000 |
| 75 | 0.75 | 0.76 | 0.01 | 0.75 | 25.00 | 53.56 | 1.00 | 0.000 | 0.000 | 0.000 |
| 76 | 0.76 | 0.77 | 0.01 | 0.76 | 25.00 | 53.42 | 1.00 | 0.000 | 0.000 | 0.000 |
| 77 | 0.77 | 0.78 | 0.01 | 0.77 | 25.00 | 51.70 | 1.00 | 0.000 | 0.000 | 0.000 |
| 78 | 0.78 | 0.79 | 0.01 | 0.78 | 25.00 | 50.08 | 1.00 | 0.000 | 0.000 | 0.000 |
| 79 | 0.79 | 0.80 | 0.01 | 0.79 | 25.00 | 48.85 | 1.00 | 0.001 | 0.000 | 0.001 |
| 80 | 0.80 | 0.81 | 0.01 | 0.80 | 25.00 | 47.97 | 1.00 | 0.001 | 0.000 | 0.001 |
| 81 | 0.81 | 0.82 | 0.01 | 0.81 | 24.99 | 47.80 | 1.00 | 0.001 | 0.000 | 0.001 |
| 82 | 0.82 | 0.83 | 0.01 | 0.82 | 24.99 | 47.37 | 1.00 | 0.001 | 0.000 | 0.001 |
| 83 | 0.83 | 0.84 | 0.01 | 0.83 | 24.99 | 47.15 | 1.00 | 0.001 | 0.000 | 0.001 |
| 84 | 0.84 | 0.85 | 0.01 | 0.84 | 24.99 | 46.36 | 1.00 | 0.001 | 0.000 | 0.001 |
| 85 | 0.85 | 0.86 | 0.01 | 0.85 | 24.99 | 45.02 | 1.00 | 0.001 | 0.000 | 0.001 |
| 86 | 0.86 | 0.87 | 0.01 | 0.86 | 24.99 | 44.02 | 1.00 | 0.001 | 0.000 | 0.001 |
| 87 | 0.87 | 0.88 | 0.01 | 0.87 | 24.99 | 42.78 | 1.00 | 0.001 | 0.000 | 0.001 |
| 88 | 0.88 | 0.89 | 0.01 | 0.88 | 24.99 | 41.89 | 1.00 | 0.001 | 0.000 | 0.001 |
| 89 | 0.89 | 0.90 | 0.01 | 0.89 | 24.99 | 39.91 | 1.00 | 0.001 | 0.000 | 0.001 |
| 90 | 0.90 | 0.91 | 0.01 | 0.90 | 24.99 | 38.06 | 1.00 | 0.001 | 0.000 | 0.001 |
| 91 | 0.91 | 0.92 | 0.01 | 0.91 | 24.99 | 35.96 | 1.00 | 0.001 | 0.000 | 0.001 |
| 92 | 0.92 | 0.93 | 0.01 | 0.92 | 24.99 | 34.06 | 1.00 | 0.001 | 0.000 | 0.001 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 93 | 0.93 | 0.94 | 0.01 | 0.93 | 24.99 | 32.31 | 1.00 | 0.001 | 0.000 | 0.001 |
| 94 | 0.94 | 0.95 | 0.01 | 0.94 | 24.99 | 30.78 | 1.00 | 0.001 | 0.000 | 0.001 |
| 95 | 0.95 | 0.96 | 0.01 | 0.95 | 24.99 | 29.01 | 1.00 | 0.001 | 0.000 | 0.001 |
| 96 | 0.96 | 0.97 | 0.01 | 0.96 | 24.99 | 28.16 | 1.00 | 0.001 | 0.000 | 0.001 |
| 97 | 0.97 | 0.98 | 0.01 | 0.97 | 24.99 | 26.59 | 1.00 | 0.001 | 0.000 | 0.001 |
| 98 | 0.98 | 0.99 | 0.01 | 0.98 | 24.99 | 25.48 | 1.00 | 0.001 | 0.000 | 0.001 |
| 99 | 0.99 | 1.00 | 0.01 | 0.99 | 24.99 | 23.58 | 1.00 | 0.001 | 0.000 | 0.001 |
| 100 | 1.00 | 1.01 | 0.01 | 1.00 | 24.99 | 22.10 | 1.00 | 0.001 | 0.000 | 0.001 |
| 101 | 1.01 | 1.02 | 0.01 | 1.01 | 24.99 | 21.02 | 1.00 | 0.001 | 0.000 | 0.001 |
| 102 | 1.02 | 1.03 | 0.01 | 1.02 | 24.99 | 18.98 | 1.00 | 0.001 | 0.000 | 0.001 |
| 103 | 1.03 | 1.04 | 0.01 | 1.03 | 24.99 | 17.61 | 1.00 | 0.001 | 0.000 | 0.001 |
| 104 | 1.04 | 1.05 | 0.01 | 1.04 | 24.99 | 16.52 | 1.00 | 0.002 | 0.000 | 0.002 |
| 105 | 1.05 | 1.06 | 0.01 | 1.05 | 24.99 | 16.53 | 1.00 | 0.002 | 0.000 | 0.002 |
| 106 | 1.06 | 1.07 | 0.01 | 1.06 | 24.99 | 16.23 | 1.00 | 0.002 | 0.000 | 0.002 |
| 107 | 1.07 | 1.08 | 0.01 | 1.07 | 24.99 | 15.65 | 1.00 | 0.002 | 0.000 | 0.002 |
| 108 | 1.08 | 1.09 | 0.01 | 1.08 | 24.99 | 15.45 | 1.00 | 0.002 | 0.000 | 0.002 |
| 109 | 1.09 | 1.10 | 0.01 | 1.09 | 24.99 | 15.02 | 1.00 | 0.002 | 0.000 | 0.002 |
| 110 | 1.10 | 1.11 | 0.01 | 1.10 | 24.99 | 14.32 | 1.00 | 0.002 | 0.000 | 0.002 |
| 111 | 1.11 | 1.12 | 0.01 | 1.11 | 24.99 | 8.20 | 1.00 | 0.003 | 0.000 | 0.003 |
| 112 | 1.12 | 1.13 | 0.01 | 1.12 | 24.99 | 7.82 | 1.00 | 0.003 | 0.000 | 0.003 |
| 113 | 1.13 | 1.14 | 0.01 | 1.13 | 24.99 | 7.33 | 1.00 | 0.003 | 0.000 | 0.003 |
| 114 | 1.14 | 1.15 | 0.01 | 1.14 | 24.99 | 6.55 | 1.00 | 0.004 | 0.000 | 0.004 |
| 115 | 1.15 | 1.16 | 0.01 | 1.15 | 24.99 | 6.17 | 1.00 | 0.004 | 0.000 | 0.004 |
| 116 | 1.16 | 1.17 | 0.01 | 1.16 | 24.98 | 5.97 | 1.00 | 0.004 | 0.000 | 0.004 |
| 117 | 1.17 | 1.18 | 0.01 | 1.17 | 24.98 | 6.00 | 1.00 | 0.004 | 0.000 | 0.004 |
| 118 | 1.18 | 1.19 | 0.01 | 1.18 | 24.98 | 5.71 | 1.00 | 0.004 | 0.000 | 0.004 |
| 119 | 1.19 | 1.20 | 0.01 | 1.19 | 24.98 | 5.60 | 1.00 | 0.004 | 0.000 | 0.004 |
| 120 | 1.20 | 1.21 | 0.01 | 1.20 | 24.98 | 5.48 | 1.00 | 0.005 | 0.000 | 0.005 |
| 121 | 1.21 | 1.22 | 0.01 | 1.21 | 24.98 | 5.53 | 1.00 | 0.005 | 0.000 | 0.005 |
| 122 | 1.22 | 1.23 | 0.01 | 1.22 | 24.98 | 5.26 | 1.00 | 0.005 | 0.000 | 0.005 |
| 123 | 1.23 | 1.24 | 0.01 | 1.23 | 24.98 | 4.84 | 1.00 | 0.005 | 0.000 | 0.005 |
| 124 | 1.24 | 1.25 | 0.01 | 1.24 | 24.98 | 4.36 | 1.00 | 0.006 | 0.000 | 0.006 |
| 125 | 1.25 | 1.26 | 0.01 | 1.25 | 24.98 | 4.04 | 1.00 | 0.006 | 0.000 | 0.006 |
| 126 | 1.26 | 1.27 | 0.01 | 1.26 | 24.98 | 3.71 | 1.00 | 0.007 | 0.000 | 0.007 |
| 127 | 1.27 | 1.28 | 0.01 | 1.27 | 24.98 | 3.43 | 1.00 | 0.007 | 0.000 | 0.007 |
| 128 | 1.28 | 1.29 | 0.01 | 1.28 | 24.98 | 2.75 | 1.00 | 0.009 | 0.000 | 0.009 |
| 129 | 1.29 | 1.30 | 0.01 | 1.29 | 24.98 | 2.13 | 1.00 | 0.012 | 0.000 | 0.012 |
| 130 | 1.30 | 1.31 | 0.01 | 1.30 | 24.98 | 1.52 | 1.00 | 0.016 | 0.000 | 0.016 |
| 131 | 1.31 | 1.32 | 0.01 | 1.31 | 24.98 | 1.29 | 1.00 | 0.019 | 0.000 | 0.019 |
| 132 | 1.32 | 1.33 | 0.01 | 1.32 | 24.98 | 1.02 | 1.00 | 0.024 | 0.000 | 0.024 |
| 133 | 1.33 | 1.34 | 0.01 | 1.33 | 24.98 | 0.75 | 1.00 | 0.033 | 0.000 | 0.033 |
| 134 | 1.34 | 1.35 | 0.01 | 1.34 | 24.98 | 0.54 | 1.00 | 0.046 | 0.000 | 0.046 |
| 135 | 1.35 | 1.36 | 0.01 | 1.35 | 24.98 | 0.45 | 1.00 | 0.055 | 0.000 | 0.055 |
| 136 | 1.36 | 1.37 | 0.01 | 1.36 | 24.98 | 0.49 | 1.00 | 0.051 | 0.000 | 0.051 |
| 137 | 1.37 | 1.38 | 0.01 | 1.37 | 24.98 | 0.54 | 1.00 | 0.047 | 0.000 | 0.047 |
| 138 | 1.38 | 1.39 | 0.01 | 1.38 | 24.97 | 0.62 | 1.00 | 0.041 | 0.000 | 0.041 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 139 | 1.39 | 1.40 | 0.01 | 1.39 | 24.97 | 0.66 | 1.00 | 0.038 | 0.000 | 0.038 |
| 140 | 1.40 | 1.41 | 0.01 | 1.40 | 24.97 | 0.67 | 1.00 | 0.037 | 0.000 | 0.037 |
| 141 | 1.41 | 1.42 | 0.01 | 1.41 | 24.97 | 0.65 | 1.00 | 0.039 | 0.000 | 0.039 |
| 142 | 1.42 | 1.43 | 0.01 | 1.42 | 24.97 | 0.60 | 1.00 | 0.041 | 0.000 | 0.041 |
| 143 | 1.43 | 1.44 | 0.01 | 1.43 | 24.97 | 0.65 | 1.00 | 0.038 | 0.000 | 0.038 |
| 144 | 1.44 | 1.45 | 0.01 | 1.44 | 24.97 | 0.68 | 1.00 | 0.037 | 0.000 | 0.037 |
| 145 | 1.45 | 1.46 | 0.01 | 1.45 | 24.97 | 0.74 | 1.00 | 0.034 | 0.000 | 0.034 |
| 146 | 1.46 | 1.47 | 0.01 | 1.46 | 24.97 | 0.76 | 1.00 | 0.033 | 0.000 | 0.033 |
| 147 | 1.47 | 1.48 | 0.01 | 1.47 | 24.97 | 0.76 | 1.00 | 0.033 | 0.000 | 0.033 |
| 148 | 1.48 | 1.49 | 0.01 | 1.48 | 24.97 | 0.79 | 1.00 | 0.032 | 0.000 | 0.032 |
| 149 | 1.49 | 1.50 | 0.01 | 1.49 | 24.97 | 0.74 | 1.00 | 0.034 | 0.000 | 0.034 |
| 150 | 1.50 | 1.51 | 0.01 | 1.50 | 24.97 | 0.17 | 1.00 | 0.144 | 0.000 | 0.144 |
| 151 | 1.51 | 1.52 | 0.01 | 1.51 | 24.97 | 0.18 | 1.00 | 0.140 | 0.000 | 0.140 |
| 152 | 1.52 | 1.53 | 0.01 | 1.52 | 24.97 | 0.92 | 1.00 | 0.027 | 0.000 | 0.027 |
| 153 | 1.53 | 1.54 | 0.01 | 1.53 | 24.97 | 0.94 | 1.00 | 0.026 | 0.000 | 0.026 |
| 154 | 1.54 | 1.55 | 0.01 | 1.54 | 24.97 | 0.19 | 1.00 | 0.133 | 0.000 | 0.133 |
| 155 | 1.55 | 1.56 | 0.01 | 1.55 | 24.96 | 0.20 | 1.00 | 0.123 | 0.000 | 0.123 |
| 156 | 1.56 | 1.57 | 0.01 | 1.56 | 24.96 | 0.21 | 1.00 | 0.119 | 0.000 | 0.119 |
| 157 | 1.57 | 1.58 | 0.01 | 1.57 | 24.96 | 1.27 | 1.00 | 0.020 | 0.000 | 0.020 |
| 158 | 1.58 | 1.59 | 0.01 | 1.58 | 24.96 | 0.22 | 1.00 | 0.112 | 0.000 | 0.112 |
| 159 | 1.59 | 1.60 | 0.01 | 1.59 | 24.96 | 0.24 | 1.00 | 0.106 | 0.000 | 0.106 |
| 160 | 1.60 | 1.61 | 0.01 | 1.60 | 24.96 | 0.24 | 1.00 | 0.103 | 0.000 | 0.103 |
| 161 | 1.61 | 1.62 | 0.01 | 1.61 | 24.96 | 0.25 | 1.00 | 0.099 | 0.000 | 0.099 |
| 162 | 1.62 | 1.63 | 0.01 | 1.62 | 24.96 | 0.23 | 1.00 | 0.107 | 0.000 | 0.107 |
| 163 | 1.63 | 1.64 | 0.01 | 1.63 | 24.96 | 1.25 | 1.00 | 0.020 | 0.000 | 0.020 |
| 164 | 1.64 | 1.65 | 0.01 | 1.64 | 24.96 | 1.24 | 1.00 | 0.020 | 0.000 | 0.020 |
| 165 | 1.65 | 1.66 | 0.01 | 1.65 | 24.96 | 1.28 | 1.00 | 0.019 | 0.000 | 0.019 |
| 166 | 1.66 | 1.67 | 0.01 | 1.66 | 24.96 | 1.29 | 1.00 | 0.019 | 0.000 | 0.019 |
| 167 | 1.67 | 1.68 | 0.01 | 1.67 | 24.96 | 1.35 | 1.00 | 0.018 | 0.000 | 0.018 |
| 168 | 1.68 | 1.69 | 0.01 | 1.68 | 24.96 | 1.33 | 1.00 | 0.019 | 0.000 | 0.019 |
| 169 | 1.69 | 1.70 | 0.01 | 1.69 | 24.95 | 1.39 | 1.00 | 0.018 | 0.000 | 0.018 |
| 170 | 1.70 | 1.71 | 0.01 | 1.70 | 24.95 | 1.42 | 1.00 | 0.018 | 0.000 | 0.018 |
| 171 | 1.71 | 1.72 | 0.01 | 1.71 | 24.95 | 1.67 | 1.00 | 0.015 | 0.000 | 0.015 |
| 172 | 1.72 | 1.73 | 0.01 | 1.72 | 24.95 | 1.95 | 1.00 | 0.013 | 0.000 | 0.013 |
| 173 | 1.73 | 1.74 | 0.01 | 1.73 | 24.95 | 2.16 | 1.00 | 0.012 | 0.000 | 0.012 |
| 174 | 1.74 | 1.75 | 0.01 | 1.74 | 24.95 | 1.84 | 1.00 | 0.014 | 0.000 | 0.014 |
| 175 | 1.75 | 1.76 | 0.01 | 1.75 | 24.95 | 1.68 | 1.00 | 0.015 | 0.000 | 0.015 |
| 176 | 1.76 | 1.77 | 0.01 | 1.76 | 24.95 | 1.66 | 1.00 | 0.015 | 0.000 | 0.015 |
| 177 | 1.77 | 1.78 | 0.01 | 1.77 | 24.95 | 2.01 | 1.00 | 0.012 | 0.000 | 0.012 |
| 178 | 1.78 | 1.79 | 0.01 | 1.78 | 24.95 | 2.08 | 1.00 | 0.012 | 0.000 | 0.012 |
| 179 | 1.79 | 1.80 | 0.01 | 1.79 | 24.95 | 0.32 | 1.00 | 0.078 | 0.000 | 0.078 |
| 180 | 1.80 | 1.81 | 0.01 | 1.80 | 24.95 | 0.33 | 1.00 | 0.077 | 0.000 | 0.077 |
| 181 | 1.81 | 1.82 | 0.01 | 1.81 | 24.94 | 0.34 | 1.00 | 0.074 | 0.000 | 0.074 |
| 182 | 1.82 | 1.83 | 0.01 | 1.82 | 24.94 | 3.37 | 1.00 | 0.007 | 0.000 | 0.007 |
| 183 | 1.83 | 1.84 | 0.01 | 1.83 | 24.94 | 0.36 | 1.00 | 0.070 | 0.000 | 0.070 |
| 184 | 1.84 | 1.85 | 0.01 | 1.84 | 24.94 | 0.36 | 1.00 | 0.069 | 0.000 | 0.069 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 185 | 1.85 | 1.86 | 0.01 | 1.85 | 24.94 | 0.39 | 1.00 | 0.065 | 0.000 | 0.065 |
| 186 | 1.86 | 1.87 | 0.01 | 1.86 | 24.94 | 3.03 | 1.00 | 0.008 | 0.000 | 0.008 |
| 187 | 1.87 | 1.88 | 0.01 | 1.87 | 24.94 | 3.12 | 1.00 | 0.008 | 0.000 | 0.008 |
| 188 | 1.88 | 1.89 | 0.01 | 1.88 | 24.94 | 3.00 | 1.00 | 0.008 | 0.000 | 0.008 |
| 189 | 1.89 | 1.90 | 0.01 | 1.89 | 24.94 | 3.17 | 1.00 | 0.008 | 0.000 | 0.008 |
| 190 | 1.90 | 1.91 | 0.01 | 1.90 | 24.94 | 3.33 | 1.00 | 0.007 | 0.000 | 0.007 |
| 191 | 1.91 | 1.92 | 0.01 | 1.91 | 24.93 | 3.50 | 1.00 | 0.007 | 0.000 | 0.007 |
| 192 | 1.92 | 1.93 | 0.01 | 1.92 | 24.93 | 3.69 | 1.00 | 0.007 | 0.000 | 0.007 |
| 193 | 1.93 | 1.94 | 0.01 | 1.93 | 24.93 | 3.36 | 1.00 | 0.007 | 0.000 | 0.007 |
| 194 | 1.94 | 1.95 | 0.01 | 1.94 | 24.93 | 3.15 | 1.00 | 0.008 | 0.000 | 0.008 |
| 195 | 1.95 | 1.96 | 0.01 | 1.95 | 24.93 | 3.19 | 1.00 | 0.008 | 0.000 | 0.008 |
| 196 | 1.96 | 1.97 | 0.01 | 1.96 | 24.93 | 3.25 | 1.00 | 0.008 | 0.000 | 0.008 |
| 197 | 1.97 | 1.98 | 0.01 | 1.97 | 24.93 | 3.46 | 1.00 | 0.007 | 0.000 | 0.007 |
| 198 | 1.98 | 1.99 | 0.01 | 1.98 | 24.93 | 3.46 | 1.00 | 0.007 | 0.000 | 0.007 |
| 199 | 1.99 | 2.00 | 0.01 | 1.99 | 24.93 | 3.31 | 1.00 | 0.008 | 0.000 | 0.008 |
| 200 | 2.00 | 2.01 | 0.01 | 2.00 | 24.93 | 3.37 | 1.00 | 0.007 | 0.000 | 0.007 |
| 201 | 2.01 | 2.02 | 0.01 | 2.01 | 24.92 | 3.16 | 1.00 | 0.008 | 0.000 | 0.008 |
| 202 | 2.02 | 2.03 | 0.01 | 2.02 | 24.92 | 3.54 | 1.00 | 0.007 | 0.000 | 0.007 |
| 203 | 2.03 | 2.04 | 0.01 | 2.03 | 24.92 | 3.49 | 1.00 | 0.007 | 0.000 | 0.007 |
| 204 | 2.04 | 2.05 | 0.01 | 2.04 | 24.92 | 3.84 | 1.00 | 0.006 | 0.000 | 0.006 |
| 205 | 2.05 | 2.06 | 0.01 | 2.05 | 24.92 | 3.97 | 1.00 | 0.006 | 0.000 | 0.006 |
| 206 | 2.06 | 2.07 | 0.01 | 2.06 | 24.92 | 4.21 | 1.00 | 0.006 | 0.000 | 0.006 |
| 207 | 2.07 | 2.08 | 0.01 | 2.07 | 24.92 | 4.05 | 1.00 | 0.006 | 0.000 | 0.006 |
| 208 | 2.08 | 2.09 | 0.01 | 2.08 | 24.92 | 4.41 | 1.00 | 0.006 | 0.000 | 0.006 |
| 209 | 2.09 | 2.10 | 0.01 | 2.09 | 24.91 | 4.46 | 1.00 | 0.006 | 0.000 | 0.006 |
| 210 | 2.10 | 2.11 | 0.01 | 2.10 | 24.91 | 5.18 | 1.00 | 0.005 | 0.000 | 0.005 |
| 211 | 2.11 | 2.12 | 0.01 | 2.11 | 24.91 | 5.22 | 1.00 | 0.005 | 0.000 | 0.005 |
| 212 | 2.12 | 2.13 | 0.01 | 2.12 | 24.91 | 5.47 | 1.00 | 0.005 | 0.000 | 0.005 |
| 213 | 2.13 | 2.14 | 0.01 | 2.13 | 24.91 | 5.61 | 1.00 | 0.004 | 0.000 | 0.004 |
| 214 | 2.14 | 2.15 | 0.01 | 2.14 | 24.91 | 5.57 | 1.00 | 0.004 | 0.000 | 0.004 |
| 215 | 2.15 | 2.16 | 0.01 | 2.15 | 24.91 | 5.60 | 1.00 | 0.004 | 0.000 | 0.004 |
| 216 | 2.16 | 2.17 | 0.01 | 2.16 | 24.91 | 5.56 | 1.00 | 0.004 | 0.000 | 0.004 |
| 217 | 2.17 | 2.18 | 0.01 | 2.17 | 24.90 | 5.68 | 1.00 | 0.004 | 0.000 | 0.004 |
| 218 | 2.18 | 2.19 | 0.01 | 2.18 | 24.90 | 5.43 | 1.00 | 0.005 | 0.000 | 0.005 |
| 219 | 2.19 | 2.20 | 0.01 | 2.19 | 24.90 | 4.94 | 1.00 | 0.005 | 0.000 | 0.005 |
| 220 | 2.20 | 2.21 | 0.01 | 2.20 | 24.90 | 4.41 | 1.00 | 0.006 | 0.000 | 0.006 |
| 221 | 2.21 | 2.22 | 0.01 | 2.21 | 24.90 | 4.25 | 1.00 | 0.006 | 0.000 | 0.006 |
| 222 | 2.22 | 2.23 | 0.01 | 2.22 | 24.90 | 4.16 | 1.00 | 0.006 | 0.000 | 0.006 |
| 223 | 2.23 | 2.24 | 0.01 | 2.23 | 24.90 | 4.35 | 1.00 | 0.006 | 0.000 | 0.006 |
| 224 | 2.24 | 2.25 | 0.01 | 2.24 | 24.90 | 4.27 | 1.00 | 0.006 | 0.000 | 0.006 |
| 225 | 2.25 | 2.26 | 0.01 | 2.25 | 24.89 | 4.70 | 1.00 | 0.005 | 0.000 | 0.005 |
| 226 | 2.26 | 2.27 | 0.01 | 2.26 | 24.89 | 4.53 | 1.00 | 0.005 | 0.000 | 0.005 |
| 227 | 2.27 | 2.28 | 0.01 | 2.27 | 24.89 | 4.43 | 1.00 | 0.006 | 0.000 | 0.006 |
| 228 | 2.28 | 2.29 | 0.01 | 2.28 | 24.89 | 3.96 | 1.00 | 0.006 | 0.000 | 0.006 |
| 229 | 2.29 | 2.30 | 0.01 | 2.29 | 24.89 | 3.72 | 1.00 | 0.007 | 0.000 | 0.007 |
| 230 | 2.30 | 2.31 | 0.01 | 2.30 | 24.89 | 3.81 | 1.00 | 0.007 | 0.000 | 0.007 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 231 | 2.31 | 2.32 | 0.01 | 2.31 | 24.89 | 4.00 | 1.00 | 0.006 | 0.000 | 0.006 |
| 232 | 2.32 | 2.33 | 0.01 | 2.32 | 24.88 | 4.02 | 1.00 | 0.006 | 0.000 | 0.006 |
| 233 | 2.33 | 2.34 | 0.01 | 2.33 | 24.88 | 4.07 | 1.00 | 0.006 | 0.000 | 0.006 |
| 234 | 2.34 | 2.35 | 0.01 | 2.34 | 24.88 | 3.74 | 1.00 | 0.007 | 0.000 | 0.007 |
| 235 | 2.35 | 2.36 | 0.01 | 2.35 | 24.88 | 3.60 | 1.00 | 0.007 | 0.000 | 0.007 |
| 236 | 2.36 | 2.37 | 0.01 | 2.36 | 24.88 | 3.72 | 1.00 | 0.007 | 0.000 | 0.007 |
| 237 | 2.37 | 2.38 | 0.01 | 2.37 | 24.88 | 3.85 | 1.00 | 0.006 | 0.000 | 0.006 |
| 238 | 2.38 | 2.39 | 0.01 | 2.38 | 24.88 | 4.12 | 1.00 | 0.006 | 0.000 | 0.006 |
| 239 | 2.39 | 2.40 | 0.01 | 2.39 | 24.87 | 3.94 | 0.99 | 0.006 | 0.000 | 0.006 |
| 240 | 2.40 | 2.41 | 0.01 | 2.40 | 24.87 | 4.12 | 0.99 | 0.006 | 0.000 | 0.006 |
| 241 | 2.41 | 2.42 | 0.01 | 2.41 | 24.87 | 3.92 | 0.99 | 0.006 | 0.000 | 0.006 |
| 242 | 2.42 | 2.43 | 0.01 | 2.42 | 24.87 | 3.98 | 0.99 | 0.006 | 0.000 | 0.006 |
| 243 | 2.43 | 2.44 | 0.01 | 2.43 | 24.87 | 3.96 | 0.99 | 0.006 | 0.000 | 0.006 |
| 244 | 2.44 | 2.45 | 0.01 | 2.44 | 24.87 | 4.21 | 0.99 | 0.006 | 0.000 | 0.006 |
| 245 | 2.45 | 2.46 | 0.01 | 2.45 | 24.86 | 3.75 | 0.99 | 0.007 | 0.000 | 0.007 |
| 246 | 2.46 | 2.47 | 0.01 | 2.46 | 24.86 | 3.47 | 0.99 | 0.007 | 0.000 | 0.007 |
| 247 | 2.47 | 2.48 | 0.01 | 2.47 | 24.86 | 3.38 | 0.99 | 0.007 | 0.000 | 0.007 |
| 248 | 2.48 | 2.49 | 0.01 | 2.48 | 24.86 | 3.32 | 0.99 | 0.007 | 0.000 | 0.007 |
| 249 | 2.49 | 2.50 | 0.01 | 2.49 | 24.86 | 3.54 | 0.99 | 0.007 | 0.000 | 0.007 |
| 250 | 2.50 | 2.51 | 0.01 | 2.50 | 24.86 | 3.64 | 0.99 | 0.007 | 0.000 | 0.007 |
| 251 | 2.51 | 2.52 | 0.01 | 2.51 | 24.85 | 4.66 | 0.99 | 0.005 | 0.000 | 0.005 |
| 252 | 2.52 | 2.53 | 0.01 | 2.52 | 24.85 | 5.26 | 0.99 | 0.005 | 0.000 | 0.005 |
| 253 | 2.53 | 2.54 | 0.01 | 2.53 | 24.85 | 5.79 | 0.99 | 0.004 | 0.000 | 0.004 |
| 254 | 2.54 | 2.55 | 0.01 | 2.54 | 24.85 | 5.72 | 0.99 | 0.004 | 0.000 | 0.004 |
| 255 | 2.55 | 2.56 | 0.01 | 2.55 | 24.85 | 5.43 | 0.99 | 0.005 | 0.000 | 0.005 |
| 256 | 2.56 | 2.57 | 0.01 | 2.56 | 24.85 | 5.16 | 0.99 | 0.005 | 0.000 | 0.005 |
| 257 | 2.57 | 2.58 | 0.01 | 2.57 | 24.84 | 4.96 | 0.99 | 0.005 | 0.000 | 0.005 |
| 258 | 2.58 | 2.59 | 0.01 | 2.58 | 24.84 | 4.74 | 0.99 | 0.005 | 0.000 | 0.005 |
| 259 | 2.59 | 2.60 | 0.01 | 2.59 | 24.84 | 4.74 | 0.99 | 0.005 | 0.000 | 0.005 |
| 260 | 2.60 | 2.61 | 0.01 | 2.60 | 24.84 | 4.75 | 0.99 | 0.005 | 0.000 | 0.005 |
| 261 | 2.61 | 2.62 | 0.01 | 2.61 | 24.84 | 4.94 | 0.99 | 0.005 | 0.000 | 0.005 |
| 262 | 2.62 | 2.63 | 0.01 | 2.62 | 24.84 | 5.43 | 0.99 | 0.005 | 0.000 | 0.005 |
| 263 | 2.63 | 2.64 | 0.01 | 2.63 | 24.83 | 6.28 | 0.99 | 0.004 | 0.000 | 0.004 |
| 264 | 2.64 | 2.65 | 0.01 | 2.64 | 24.83 | 7.00 | 0.99 | 0.004 | 0.000 | 0.004 |
| 265 | 2.65 | 2.66 | 0.01 | 2.65 | 24.83 | 7.81 | 0.99 | 0.003 | 0.000 | 0.003 |
| 266 | 2.66 | 2.67 | 0.01 | 2.66 | 24.83 | 9.36 | 0.99 | 0.003 | 0.000 | 0.003 |
| 267 | 2.67 | 2.68 | 0.01 | 2.67 | 24.83 | 11.10 | 0.99 | 0.002 | 0.000 | 0.002 |
| 268 | 2.68 | 2.69 | 0.01 | 2.68 | 24.82 | 12.94 | 0.99 | 0.002 | 0.000 | 0.002 |
| 269 | 2.69 | 2.70 | 0.01 | 2.69 | 24.82 | 14.61 | 0.99 | 0.002 | 0.000 | 0.002 |
| 270 | 2.70 | 2.71 | 0.01 | 2.70 | 24.82 | 15.82 | 0.99 | 0.002 | 0.000 | 0.002 |
| 271 | 2.71 | 2.72 | 0.01 | 2.71 | 24.82 | 16.93 | 0.99 | 0.001 | 0.000 | 0.001 |
| 272 | 2.72 | 2.73 | 0.01 | 2.72 | 24.82 | 16.91 | 0.99 | 0.001 | 0.000 | 0.001 |
| 273 | 2.73 | 2.74 | 0.01 | 2.73 | 24.82 | 16.51 | 0.99 | 0.002 | 0.000 | 0.002 |
| 274 | 2.74 | 2.75 | 0.01 | 2.74 | 24.81 | 16.29 | 0.99 | 0.002 | 0.000 | 0.002 |
| 275 | 2.75 | 2.76 | 0.01 | 2.75 | 24.81 | 16.92 | 0.99 | 0.001 | 0.000 | 0.001 |
| 276 | 2.76 | 2.77 | 0.01 | 2.76 | 24.81 | 18.45 | 0.99 | 0.001 | 0.000 | 0.001 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 277 | 2.77 | 2.78 | 0.01 | 2.77 | 24.81 | 20.34 | 0.99 | 0.001 | 0.000 | 0.001 |
| 278 | 2.78 | 2.79 | 0.01 | 2.78 | 24.81 | 21.94 | 0.99 | 0.001 | 0.000 | 0.001 |
| 279 | 2.79 | 2.80 | 0.01 | 2.79 | 24.80 | 23.37 | 0.99 | 0.001 | 0.000 | 0.001 |
| 280 | 2.80 | 2.81 | 0.01 | 2.80 | 24.80 | 24.47 | 0.99 | 0.001 | 0.000 | 0.001 |
| 281 | 2.81 | 2.82 | 0.01 | 2.81 | 24.80 | 25.34 | 0.99 | 0.001 | 0.000 | 0.001 |
| 282 | 2.82 | 2.83 | 0.01 | 2.82 | 24.80 | 26.03 | 0.99 | 0.001 | 0.000 | 0.001 |
| 283 | 2.83 | 2.84 | 0.01 | 2.83 | 24.79 | 26.48 | 0.99 | 0.001 | 0.000 | 0.001 |
| 284 | 2.84 | 2.85 | 0.01 | 2.84 | 24.79 | 26.86 | 0.99 | 0.001 | 0.000 | 0.001 |
| 285 | 2.85 | 2.86 | 0.01 | 2.85 | 24.79 | 27.20 | 0.99 | 0.001 | 0.000 | 0.001 |
| 286 | 2.86 | 2.87 | 0.01 | 2.86 | 24.79 | 27.49 | 0.99 | 0.001 | 0.000 | 0.001 |
| 287 | 2.87 | 2.88 | 0.01 | 2.87 | 24.79 | 27.79 | 0.99 | 0.001 | 0.000 | 0.001 |
| 288 | 2.88 | 2.89 | 0.01 | 2.88 | 24.78 | 27.99 | 0.99 | 0.001 | 0.000 | 0.001 |
| 289 | 2.89 | 2.90 | 0.01 | 2.89 | 24.78 | 27.96 | 0.99 | 0.001 | 0.000 | 0.001 |
| 290 | 2.90 | 2.91 | 0.01 | 2.90 | 24.78 | 27.70 | 0.99 | 0.001 | 0.000 | 0.001 |
| 291 | 2.91 | 2.92 | 0.01 | 2.91 | 24.78 | 27.39 | 0.99 | 0.001 | 0.000 | 0.001 |
| 292 | 2.92 | 2.93 | 0.01 | 2.92 | 24.78 | 27.12 | 0.99 | 0.001 | 0.000 | 0.001 |
| 293 | 2.93 | 2.94 | 0.01 | 2.93 | 24.77 | 27.00 | 0.99 | 0.001 | 0.000 | 0.001 |
| 294 | 2.94 | 2.95 | 0.01 | 2.94 | 24.77 | 26.95 | 0.99 | 0.001 | 0.000 | 0.001 |
| 295 | 2.95 | 2.96 | 0.01 | 2.95 | 24.77 | 27.26 | 0.99 | 0.001 | 0.000 | 0.001 |
| 296 | 2.96 | 2.97 | 0.01 | 2.96 | 24.77 | 27.73 | 0.99 | 0.001 | 0.000 | 0.001 |
| 297 | 2.97 | 2.98 | 0.01 | 2.97 | 24.76 | 28.51 | 0.99 | 0.001 | 0.000 | 0.001 |
| 298 | 2.98 | 2.99 | 0.01 | 2.98 | 24.76 | 29.94 | 0.99 | 0.001 | 0.000 | 0.001 |
| 299 | 2.99 | 3.00 | 0.01 | 2.99 | 24.76 | 31.57 | 0.99 | 0.001 | 0.000 | 0.001 |
| 300 | 3.00 | 3.01 | 0.01 | 3.00 | 24.76 | 33.15 | 0.99 | 0.001 | 0.000 | 0.001 |
| 301 | 3.01 | 3.02 | 0.01 | 3.01 | 24.76 | 33.85 | 0.99 | 0.001 | 0.000 | 0.001 |
| 302 | 3.02 | 3.03 | 0.01 | 3.02 | 24.75 | 34.21 | 0.99 | 0.001 | 0.000 | 0.001 |
| 303 | 3.03 | 3.04 | 0.01 | 3.03 | 24.75 | 34.26 | 0.99 | 0.001 | 0.000 | 0.001 |
| 304 | 3.04 | 3.05 | 0.01 | 3.04 | 24.75 | 33.98 | 0.99 | 0.001 | 0.000 | 0.001 |
| 305 | 3.05 | 3.06 | 0.01 | 3.05 | 24.75 | 33.74 | 0.99 | 0.001 | 0.000 | 0.001 |
| 306 | 3.06 | 3.07 | 0.01 | 3.06 | 24.74 | 33.64 | 0.99 | 0.001 | 0.000 | 0.001 |
| 307 | 3.07 | 3.08 | 0.01 | 3.07 | 24.74 | 34.18 | 0.99 | 0.001 | 0.000 | 0.001 |
| 308 | 3.08 | 3.09 | 0.01 | 3.08 | 24.74 | 34.92 | 0.99 | 0.001 | 0.000 | 0.001 |
| 309 | 3.09 | 3.10 | 0.01 | 3.09 | 24.74 | 35.80 | 0.99 | 0.001 | 0.000 | 0.001 |
| 310 | 3.10 | 3.11 | 0.01 | 3.10 | 24.73 | 36.63 | 0.99 | 0.001 | 0.000 | 0.001 |
| 311 | 3.11 | 3.12 | 0.01 | 3.11 | 24.73 | 37.55 | 0.99 | 0.001 | 0.000 | 0.001 |
| 312 | 3.12 | 3.13 | 0.01 | 3.12 | 24.73 | 38.63 | 0.99 | 0.001 | 0.000 | 0.001 |
| 313 | 3.13 | 3.14 | 0.01 | 3.13 | 24.73 | 40.24 | 0.99 | 0.001 | 0.000 | 0.001 |
| 314 | 3.14 | 3.15 | 0.01 | 3.14 | 24.72 | 41.77 | 0.99 | 0.001 | 0.000 | 0.001 |
| 315 | 3.15 | 3.16 | 0.01 | 3.15 | 24.72 | 43.09 | 0.99 | 0.001 | 0.000 | 0.001 |
| 316 | 3.16 | 3.17 | 0.01 | 3.16 | 24.72 | 43.77 | 0.99 | 0.001 | 0.000 | 0.001 |
| 317 | 3.17 | 3.18 | 0.01 | 3.17 | 24.72 | 44.34 | 0.99 | 0.001 | 0.000 | 0.001 |
| 318 | 3.18 | 3.19 | 0.01 | 3.18 | 24.71 | 45.06 | 0.99 | 0.001 | 0.000 | 0.001 |
| 319 | 3.19 | 3.20 | 0.01 | 3.19 | 24.71 | 46.03 | 0.99 | 0.001 | 0.000 | 0.001 |
| 320 | 3.20 | 3.21 | 0.01 | 3.20 | 24.71 | 47.65 | 0.99 | 0.001 | 0.000 | 0.001 |
| 321 | 3.21 | 3.22 | 0.01 | 3.21 | 24.71 | 50.58 | 0.99 | 0.000 | 0.000 | 0.000 |
| 322 | 3.22 | 3.23 | 0.01 | 3.22 | 24.70 | 54.98 | 0.99 | 0.000 | 0.000 | 0.000 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 323 | 3.23 | 3.24 | 0.01 | 3.23 | 24.70 | 103.56 | 0.99 | 0.000 | 0.000 | 0.000 |
| 324 | 3.24 | 3.25 | 0.01 | 3.24 | 24.70 | 111.40 | 0.99 | 0.000 | 0.000 | 0.000 |
| 325 | 3.25 | 3.26 | 0.01 | 3.25 | 24.70 | 118.60 | 0.99 | 0.000 | 0.000 | 0.000 |
| 326 | 3.26 | 3.27 | 0.01 | 3.26 | 24.69 | 125.49 | 0.99 | 0.000 | 0.000 | 0.000 |
| 327 | 3.27 | 3.28 | 0.01 | 3.27 | 24.69 | 134.65 | 0.99 | 0.000 | 0.000 | 0.000 |
| 328 | 3.28 | 3.29 | 0.01 | 3.28 | 24.69 | 144.37 | 0.99 | 0.000 | 0.000 | 0.000 |
| 329 | 3.29 | 3.30 | 0.01 | 3.29 | 24.69 | 92.63 | 0.99 | 0.000 | 0.000 | 0.000 |
| 330 | 3.30 | 3.31 | 0.01 | 3.30 | 24.68 | 162.91 | 0.99 | 0.000 | 0.000 | 0.000 |
| 331 | 3.31 | 3.32 | 0.01 | 3.31 | 24.68 | 171.98 | 0.99 | 0.000 | 0.000 | 0.000 |
| 332 | 3.32 | 3.33 | 0.01 | 3.32 | 24.68 | 180.61 | 0.99 | 0.000 | 0.000 | 0.000 |
| 333 | 3.33 | 3.34 | 0.01 | 3.33 | 24.67 | 185.03 | 0.99 | 0.000 | 0.000 | 0.000 |
| 334 | 3.34 | 3.35 | 0.01 | 3.34 | 24.67 | 183.42 | 0.99 | 0.000 | 0.000 | 0.000 |
| 335 | 3.35 | 3.36 | 0.01 | 3.35 | 24.67 | 96.80 | 0.99 | 0.000 | 0.000 | 0.000 |
| 336 | 3.36 | 3.37 | 0.01 | 3.36 | 24.67 | 81.70 | 0.99 | 0.000 | 0.000 | 0.000 |
| 337 | 3.37 | 3.38 | 0.01 | 3.37 | 24.66 | 70.08 | 0.99 | 0.000 | 0.000 | 0.000 |
| 338 | 3.38 | 3.39 | 0.01 | 3.38 | 24.66 | 62.53 | 0.99 | 0.000 | 0.000 | 0.000 |
| 339 | 3.39 | 3.40 | 0.01 | 3.39 | 24.66 | 56.45 | 0.99 | 0.000 | 0.000 | 0.000 |
| 340 | 3.40 | 3.41 | 0.01 | 3.40 | 24.65 | 51.79 | 0.99 | 0.000 | 0.000 | 0.000 |
| 341 | 3.41 | 3.42 | 0.01 | 3.41 | 24.65 | 47.99 | 0.99 | 0.001 | 0.000 | 0.001 |
| 342 | 3.42 | 3.43 | 0.01 | 3.42 | 24.65 | 45.64 | 0.99 | 0.001 | 0.000 | 0.001 |
| 343 | 3.43 | 3.44 | 0.01 | 3.43 | 24.65 | 43.52 | 0.99 | 0.001 | 0.000 | 0.001 |
| 344 | 3.44 | 3.45 | 0.01 | 3.44 | 24.64 | 40.54 | 0.99 | 0.001 | 0.000 | 0.001 |
| 345 | 3.45 | 3.46 | 0.01 | 3.45 | 24.64 | 37.98 | 0.99 | 0.001 | 0.000 | 0.001 |
| 346 | 3.46 | 3.47 | 0.01 | 3.46 | 24.64 | 36.12 | 0.99 | 0.001 | 0.000 | 0.001 |
| 347 | 3.47 | 3.48 | 0.01 | 3.47 | 24.63 | 35.85 | 0.99 | 0.001 | 0.000 | 0.001 |
| 348 | 3.48 | 3.49 | 0.01 | 3.48 | 24.63 | 36.61 | 0.99 | 0.001 | 0.000 | 0.001 |
| 349 | 3.49 | 3.50 | 0.01 | 3.49 | 24.63 | 37.29 | 0.99 | 0.001 | 0.000 | 0.001 |
| 350 | 3.50 | 3.51 | 0.01 | 3.50 | 24.63 | 37.82 | 0.99 | 0.001 | 0.000 | 0.001 |
| 351 | 3.51 | 3.52 | 0.01 | 3.51 | 24.62 | 37.54 | 0.98 | 0.001 | 0.000 | 0.001 |
| 352 | 3.52 | 3.53 | 0.01 | 3.52 | 24.62 | 37.40 | 0.98 | 0.001 | 0.000 | 0.001 |
| 353 | 3.53 | 3.54 | 0.01 | 3.53 | 24.62 | 37.46 | 0.98 | 0.001 | 0.000 | 0.001 |
| 354 | 3.54 | 3.55 | 0.01 | 3.54 | 24.61 | 37.55 | 0.98 | 0.001 | 0.000 | 0.001 |
| 355 | 3.55 | 3.56 | 0.01 | 3.55 | 24.61 | 38.04 | 0.98 | 0.001 | 0.000 | 0.001 |
| 356 | 3.56 | 3.57 | 0.01 | 3.56 | 24.61 | 38.67 | 0.98 | 0.001 | 0.000 | 0.001 |
| 357 | 3.57 | 3.58 | 0.01 | 3.57 | 24.60 | 39.35 | 0.98 | 0.001 | 0.000 | 0.001 |
| 358 | 3.58 | 3.59 | 0.01 | 3.58 | 24.60 | 39.96 | 0.98 | 0.001 | 0.000 | 0.001 |
| 359 | 3.59 | 3.60 | 0.01 | 3.59 | 24.60 | 40.93 | 0.98 | 0.001 | 0.000 | 0.001 |
| 360 | 3.60 | 3.61 | 0.01 | 3.60 | 24.59 | 41.97 | 0.98 | 0.001 | 0.000 | 0.001 |
| 361 | 3.61 | 3.62 | 0.01 | 3.61 | 24.59 | 42.96 | 0.98 | 0.001 | 0.000 | 0.001 |
| 362 | 3.62 | 3.63 | 0.01 | 3.62 | 24.59 | 43.72 | 0.98 | 0.001 | 0.000 | 0.001 |
| 363 | 3.63 | 3.64 | 0.01 | 3.63 | 24.58 | 44.73 | 0.98 | 0.001 | 0.000 | 0.001 |
| 364 | 3.64 | 3.65 | 0.01 | 3.64 | 24.58 | 45.75 | 0.98 | 0.001 | 0.000 | 0.001 |
| 365 | 3.65 | 3.66 | 0.01 | 3.65 | 24.58 | 46.64 | 0.98 | 0.001 | 0.000 | 0.001 |
| 366 | 3.66 | 3.67 | 0.01 | 3.66 | 24.58 | 47.06 | 0.98 | 0.001 | 0.000 | 0.001 |
| 367 | 3.67 | 3.68 | 0.01 | 3.67 | 24.57 | 47.61 | 0.98 | 0.001 | 0.000 | 0.001 |
| 368 | 3.68 | 3.69 | 0.01 | 3.68 | 24.57 | 48.12 | 0.98 | 0.001 | 0.000 | 0.001 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 369 | 3.69 | 3.70 | 0.01 | 3.69 | 24.57 | 48.74 | 0.98 | 0.001 | 0.000 | 0.001 |
| 370 | 3.70 | 3.71 | 0.01 | 3.70 | 24.56 | 48.96 | 0.98 | 0.001 | 0.000 | 0.001 |
| 371 | 3.71 | 3.72 | 0.01 | 3.71 | 24.56 | 49.23 | 0.98 | 0.000 | 0.000 | 0.000 |
| 372 | 3.72 | 3.73 | 0.01 | 3.72 | 24.56 | 49.65 | 0.98 | 0.000 | 0.000 | 0.000 |
| 373 | 3.73 | 3.74 | 0.01 | 3.73 | 24.55 | 50.14 | 0.98 | 0.000 | 0.000 | 0.000 |
| 374 | 3.74 | 3.75 | 0.01 | 3.74 | 24.55 | 50.39 | 0.98 | 0.000 | 0.000 | 0.000 |
| 375 | 3.75 | 3.76 | 0.01 | 3.75 | 24.55 | 50.27 | 0.98 | 0.000 | 0.000 | 0.000 |
| 376 | 3.76 | 3.77 | 0.01 | 3.76 | 24.54 | 49.98 | 0.98 | 0.000 | 0.000 | 0.000 |
| 377 | 3.77 | 3.78 | 0.01 | 3.77 | 24.54 | 49.54 | 0.98 | 0.000 | 0.000 | 0.000 |
| 378 | 3.78 | 3.79 | 0.01 | 3.78 | 24.54 | 49.21 | 0.98 | 0.000 | 0.000 | 0.000 |
| 379 | 3.79 | 3.80 | 0.01 | 3.79 | 24.53 | 48.95 | 0.98 | 0.001 | 0.000 | 0.001 |
| 380 | 3.80 | 3.81 | 0.01 | 3.80 | 24.53 | 48.94 | 0.98 | 0.001 | 0.000 | 0.001 |
| 381 | 3.81 | 3.82 | 0.01 | 3.81 | 24.52 | 48.78 | 0.98 | 0.001 | 0.000 | 0.001 |
| 382 | 3.82 | 3.83 | 0.01 | 3.82 | 24.52 | 48.66 | 0.98 | 0.001 | 0.000 | 0.001 |
| 383 | 3.83 | 3.84 | 0.01 | 3.83 | 24.52 | 48.40 | 0.98 | 0.001 | 0.000 | 0.001 |
| 384 | 3.84 | 3.85 | 0.01 | 3.84 | 24.51 | 48.25 | 0.98 | 0.001 | 0.000 | 0.001 |
| 385 | 3.85 | 3.86 | 0.01 | 3.85 | 24.51 | 48.07 | 0.98 | 0.001 | 0.000 | 0.001 |
| 386 | 3.86 | 3.87 | 0.01 | 3.86 | 24.51 | 47.94 | 0.98 | 0.001 | 0.000 | 0.001 |
| 387 | 3.87 | 3.88 | 0.01 | 3.87 | 24.50 | 47.88 | 0.98 | 0.001 | 0.000 | 0.001 |
| 388 | 3.88 | 3.89 | 0.01 | 3.88 | 24.50 | 47.94 | 0.98 | 0.001 | 0.000 | 0.001 |
| 389 | 3.89 | 3.90 | 0.01 | 3.89 | 24.50 | 48.04 | 0.98 | 0.001 | 0.000 | 0.001 |
| 390 | 3.90 | 3.91 | 0.01 | 3.90 | 24.49 | 48.20 | 0.98 | 0.001 | 0.000 | 0.001 |
| 391 | 3.91 | 3.92 | 0.01 | 3.91 | 24.49 | 48.21 | 0.98 | 0.001 | 0.000 | 0.001 |
| 392 | 3.92 | 3.93 | 0.01 | 3.92 | 24.49 | 48.20 | 0.98 | 0.001 | 0.000 | 0.001 |
| 393 | 3.93 | 3.94 | 0.01 | 3.93 | 24.48 | 48.12 | 0.98 | 0.001 | 0.000 | 0.001 |
| 394 | 3.94 | 3.95 | 0.01 | 3.94 | 24.48 | 48.14 | 0.98 | 0.001 | 0.000 | 0.001 |
| 395 | 3.95 | 3.96 | 0.01 | 3.95 | 24.47 | 48.13 | 0.98 | 0.001 | 0.000 | 0.001 |
| 396 | 3.96 | 3.97 | 0.01 | 3.96 | 24.47 | 47.95 | 0.98 | 0.001 | 0.000 | 0.001 |
| 397 | 3.97 | 3.98 | 0.01 | 3.97 | 24.47 | 47.67 | 0.98 | 0.001 | 0.000 | 0.001 |
| 398 | 3.98 | 3.99 | 0.01 | 3.98 | 24.46 | 47.43 | 0.98 | 0.001 | 0.000 | 0.001 |
| 399 | 3.99 | 4.00 | 0.01 | 3.99 | 24.46 | 47.20 | 0.98 | 0.001 | 0.000 | 0.001 |
| 400 | 4.00 | 4.01 | 0.01 | 4.00 | 24.46 | 46.88 | 0.98 | 0.001 | 0.000 | 0.001 |
| 401 | 4.01 | 4.02 | 0.01 | 4.01 | 24.45 | 46.55 | 0.98 | 0.001 | 0.000 | 0.001 |
| 402 | 4.02 | 4.03 | 0.01 | 4.02 | 24.45 | 46.27 | 0.98 | 0.001 | 0.000 | 0.001 |
| 403 | 4.03 | 4.04 | 0.01 | 4.03 | 24.45 | 46.01 | 0.98 | 0.001 | 0.000 | 0.001 |
| 404 | 4.04 | 4.05 | 0.01 | 4.04 | 24.44 | 45.64 | 0.98 | 0.001 | 0.000 | 0.001 |
| 405 | 4.05 | 4.06 | 0.01 | 4.05 | 24.44 | 45.16 | 0.98 | 0.001 | 0.000 | 0.001 |
| 406 | 4.06 | 4.07 | 0.01 | 4.06 | 24.43 | 44.63 | 0.98 | 0.001 | 0.000 | 0.001 |
| 407 | 4.07 | 4.08 | 0.01 | 4.07 | 24.43 | 44.07 | 0.98 | 0.001 | 0.000 | 0.001 |
| 408 | 4.08 | 4.09 | 0.01 | 4.08 | 24.43 | 43.55 | 0.98 | 0.001 | 0.000 | 0.001 |
| 409 | 4.09 | 4.10 | 0.01 | 4.09 | 24.42 | 43.20 | 0.98 | 0.001 | 0.000 | 0.001 |
| 410 | 4.10 | 4.11 | 0.01 | 4.10 | 24.42 | 42.94 | 0.98 | 0.001 | 0.000 | 0.001 |
| 411 | 4.11 | 4.12 | 0.01 | 4.11 | 24.41 | 42.68 | 0.98 | 0.001 | 0.000 | 0.001 |
| 412 | 4.12 | 4.13 | 0.01 | 4.12 | 24.41 | 42.49 | 0.98 | 0.001 | 0.000 | 0.001 |
| 413 | 4.13 | 4.14 | 0.01 | 4.14 | 24.41 | 42.41 | 0.98 | 0.001 | 0.000 | 0.001 |
| 414 | 4.14 | 4.15 | 0.01 | 4.14 | 24.40 | 42.36 | 0.98 | 0.001 | 0.000 | 0.001 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 415 | 4.15 | 4.16 | 0.01 | 4.16 | 24.40 | 42.14 | 0.98 | 0.001 | 0.000 | 0.001 |
| 416 | 4.16 | 4.17 | 0.01 | 4.17 | 24.39 | 41.66 | 0.98 | 0.001 | 0.000 | 0.001 |
| 417 | 4.17 | 4.18 | 0.01 | 4.18 | 24.39 | 41.04 | 0.98 | 0.001 | 0.000 | 0.001 |
| 418 | 4.18 | 4.19 | 0.01 | 4.19 | 24.39 | 40.33 | 0.98 | 0.001 | 0.000 | 0.001 |
| 419 | 4.19 | 4.20 | 0.01 | 4.20 | 24.38 | 39.56 | 0.98 | 0.001 | 0.000 | 0.001 |
| 420 | 4.20 | 4.21 | 0.01 | 4.21 | 24.38 | 38.60 | 0.98 | 0.001 | 0.000 | 0.001 |
| 421 | 4.21 | 4.22 | 0.01 | 4.22 | 24.37 | 37.49 | 0.97 | 0.001 | 0.000 | 0.001 |
| 422 | 4.22 | 4.23 | 0.01 | 4.23 | 24.37 | 36.48 | 0.97 | 0.001 | 0.000 | 0.001 |
| 423 | 4.23 | 4.24 | 0.01 | 4.24 | 24.37 | 35.66 | 0.97 | 0.001 | 0.000 | 0.001 |
| 424 | 4.24 | 4.25 | 0.01 | 4.25 | 24.36 | 35.09 | 0.97 | 0.001 | 0.000 | 0.001 |
| 425 | 4.25 | 4.26 | 0.01 | 4.26 | 24.36 | 34.56 | 0.97 | 0.001 | 0.000 | 0.001 |
| 426 | 4.26 | 4.27 | 0.01 | 4.27 | 24.35 | 34.11 | 0.97 | 0.001 | 0.000 | 0.001 |
| 427 | 4.27 | 4.28 | 0.01 | 4.28 | 24.35 | 33.77 | 0.97 | 0.001 | 0.000 | 0.001 |
| 428 | 4.28 | 4.29 | 0.01 | 4.29 | 24.35 | 33.55 | 0.97 | 0.001 | 0.000 | 0.001 |
| 429 | 4.29 | 4.30 | 0.01 | 4.30 | 24.34 | 33.55 | 0.97 | 0.001 | 0.000 | 0.001 |
| 430 | 4.30 | 4.31 | 0.01 | 4.31 | 24.34 | 33.90 | 0.97 | 0.001 | 0.000 | 0.001 |
| 431 | 4.31 | 4.32 | 0.01 | 4.32 | 24.33 | 34.49 | 0.97 | 0.001 | 0.000 | 0.001 |
| 432 | 4.32 | 4.33 | 0.01 | 4.33 | 24.33 | 35.17 | 0.97 | 0.001 | 0.000 | 0.001 |
| 433 | 4.33 | 4.34 | 0.01 | 4.34 | 24.32 | 35.58 | 0.97 | 0.001 | 0.000 | 0.001 |
| 434 | 4.34 | 4.35 | 0.01 | 4.35 | 24.32 | 35.84 | 0.97 | 0.001 | 0.000 | 0.001 |
| 435 | 4.35 | 4.36 | 0.01 | 4.36 | 24.32 | 36.01 | 0.97 | 0.001 | 0.000 | 0.001 |
| 436 | 4.36 | 4.37 | 0.01 | 4.37 | 24.31 | 36.09 | 0.97 | 0.001 | 0.000 | 0.001 |
| 437 | 4.37 | 4.38 | 0.01 | 4.38 | 24.31 | 35.96 | 0.97 | 0.001 | 0.000 | 0.001 |
| 438 | 4.38 | 4.39 | 0.01 | 4.39 | 24.30 | 35.41 | 0.97 | 0.001 | 0.000 | 0.001 |
| 439 | 4.39 | 4.40 | 0.01 | 4.40 | 24.30 | 34.77 | 0.97 | 0.001 | 0.000 | 0.001 |
| 440 | 4.40 | 4.41 | 0.01 | 4.41 | 24.29 | 34.17 | 0.97 | 0.001 | 0.000 | 0.001 |
| 441 | 4.41 | 4.42 | 0.01 | 4.42 | 24.29 | 33.79 | 0.97 | 0.001 | 0.000 | 0.001 |
| 442 | 4.42 | 4.43 | 0.01 | 4.43 | 24.29 | 33.40 | 0.97 | 0.001 | 0.000 | 0.001 |
| 443 | 4.43 | 4.44 | 0.01 | 4.44 | 24.28 | 33.10 | 0.97 | 0.001 | 0.000 | 0.001 |
| 444 | 4.44 | 4.45 | 0.01 | 4.45 | 24.28 | 32.85 | 0.97 | 0.001 | 0.000 | 0.001 |
| 445 | 4.45 | 4.46 | 0.01 | 4.46 | 24.27 | 32.60 | 0.97 | 0.001 | 0.000 | 0.001 |
| 446 | 4.46 | 4.47 | 0.01 | 4.47 | 24.27 | 32.03 | 0.97 | 0.001 | 0.000 | 0.001 |
| 447 | 4.47 | 4.48 | 0.01 | 4.48 | 24.26 | 31.19 | 0.97 | 0.001 | 0.000 | 0.001 |
| 448 | 4.48 | 4.49 | 0.01 | 4.49 | 24.26 | 30.93 | 0.97 | 0.001 | 0.000 | 0.001 |
| 449 | 4.49 | 4.50 | 0.01 | 4.50 | 24.26 | 30.63 | 0.97 | 0.001 | 0.000 | 0.001 |
| 450 | 4.50 | 4.51 | 0.01 | 4.51 | 24.25 | 30.45 | 0.97 | 0.001 | 0.000 | 0.001 |
| 451 | 4.51 | 4.52 | 0.01 | 4.52 | 24.25 | 29.59 | 0.97 | 0.001 | 0.000 | 0.001 |
| 452 | 4.52 | 4.53 | 0.01 | 4.53 | 24.24 | 28.96 | 0.97 | 0.001 | 0.000 | 0.001 |
| 453 | 4.53 | 4.54 | 0.01 | 4.54 | 24.24 | 28.33 | 0.97 | 0.001 | 0.000 | 0.001 |
| 454 | 4.54 | 4.55 | 0.01 | 4.55 | 24.23 | 27.70 | 0.97 | 0.001 | 0.000 | 0.001 |
| 455 | 4.55 | 4.56 | 0.01 | 4.56 | 24.23 | 27.15 | 0.97 | 0.001 | 0.000 | 0.001 |
| 456 | 4.56 | 4.57 | 0.01 | 4.57 | 24.22 | 26.83 | 0.97 | 0.001 | 0.000 | 0.001 |
| 457 | 4.57 | 4.58 | 0.01 | 4.58 | 24.22 | 26.86 | 0.97 | 0.001 | 0.000 | 0.001 |
| 458 | 4.58 | 4.59 | 0.01 | 4.59 | 24.21 | 26.93 | 0.97 | 0.001 | 0.000 | 0.001 |
| 459 | 4.59 | 4.60 | 0.01 | 4.60 | 24.21 | 27.04 | 0.97 | 0.001 | 0.000 | 0.001 |
| 460 | 4.60 | 4.61 | 0.01 | 4.61 | 24.20 | 27.10 | 0.97 | 0.001 | 0.000 | 0.001 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 461 | 4.61 | 4.62 | 0.01 | 4.62 | 24.20 | 27.33 | 0.97 | 0.001 | 0.000 | 0.001 |
| 462 | 4.62 | 4.63 | 0.01 | 4.63 | 24.20 | 27.74 | 0.97 | 0.001 | 0.000 | 0.001 |
| 463 | 4.63 | 4.64 | 0.01 | 4.64 | 24.19 | 28.59 | 0.97 | 0.001 | 0.000 | 0.001 |
| 464 | 4.64 | 4.65 | 0.01 | 4.65 | 24.19 | 29.53 | 0.97 | 0.001 | 0.000 | 0.001 |
| 465 | 4.65 | 4.66 | 0.01 | 4.66 | 24.18 | 30.45 | 0.97 | 0.001 | 0.000 | 0.001 |
| 466 | 4.66 | 4.67 | 0.01 | 4.67 | 24.18 | 30.98 | 0.97 | 0.001 | 0.000 | 0.001 |
| 467 | 4.67 | 4.68 | 0.01 | 4.68 | 24.17 | 31.48 | 0.97 | 0.001 | 0.000 | 0.001 |
| 468 | 4.68 | 4.69 | 0.01 | 4.69 | 24.17 | 32.07 | 0.97 | 0.001 | 0.000 | 0.001 |
| 469 | 4.69 | 4.70 | 0.01 | 4.70 | 24.16 | 31.86 | 0.97 | 0.001 | 0.000 | 0.001 |
| 470 | 4.70 | 4.71 | 0.01 | 4.71 | 24.16 | 31.29 | 0.97 | 0.001 | 0.000 | 0.001 |
| 471 | 4.71 | 4.72 | 0.01 | 4.72 | 24.15 | 30.26 | 0.97 | 0.001 | 0.000 | 0.001 |
| 472 | 4.72 | 4.73 | 0.01 | 4.73 | 24.15 | 29.77 | 0.97 | 0.001 | 0.000 | 0.001 |
| 473 | 4.73 | 4.74 | 0.01 | 4.74 | 24.14 | 29.18 | 0.97 | 0.001 | 0.000 | 0.001 |
| 474 | 4.74 | 4.75 | 0.01 | 4.75 | 24.14 | 28.65 | 0.97 | 0.001 | 0.000 | 0.001 |
| 475 | 4.75 | 4.76 | 0.01 | 4.76 | 24.13 | 28.24 | 0.97 | 0.001 | 0.000 | 0.001 |
| 476 | 4.76 | 4.77 | 0.01 | 4.77 | 24.13 | 27.98 | 0.97 | 0.001 | 0.000 | 0.001 |
| 477 | 4.77 | 4.78 | 0.01 | 4.78 | 24.12 | 27.43 | 0.96 | 0.001 | 0.000 | 0.001 |
| 478 | 4.78 | 4.79 | 0.01 | 4.79 | 24.12 | 26.85 | 0.96 | 0.001 | 0.000 | 0.001 |
| 479 | 4.79 | 4.80 | 0.01 | 4.80 | 24.11 | 26.28 | 0.96 | 0.001 | 0.000 | 0.001 |
| 480 | 4.80 | 4.81 | 0.01 | 4.81 | 24.11 | 26.00 | 0.96 | 0.001 | 0.000 | 0.001 |
| 481 | 4.81 | 4.82 | 0.01 | 4.82 | 24.10 | 25.70 | 0.96 | 0.001 | 0.000 | 0.001 |
| 482 | 4.82 | 4.83 | 0.01 | 4.83 | 24.10 | 25.27 | 0.96 | 0.001 | 0.000 | 0.001 |
| 483 | 4.83 | 4.84 | 0.01 | 4.84 | 24.09 | 24.85 | 0.96 | 0.001 | 0.000 | 0.001 |
| 484 | 4.84 | 4.85 | 0.01 | 4.85 | 24.09 | 24.48 | 0.96 | 0.001 | 0.000 | 0.001 |
| 485 | 4.85 | 4.86 | 0.01 | 4.86 | 24.08 | 24.28 | 0.96 | 0.001 | 0.000 | 0.001 |
| 486 | 4.86 | 4.87 | 0.01 | 4.87 | 24.08 | 24.05 | 0.96 | 0.001 | 0.000 | 0.001 |
| 487 | 4.87 | 4.88 | 0.01 | 4.88 | 24.07 | 23.93 | 0.96 | 0.001 | 0.000 | 0.001 |
| 488 | 4.88 | 4.89 | 0.01 | 4.89 | 24.07 | 23.93 | 0.96 | 0.001 | 0.000 | 0.001 |
| 489 | 4.89 | 4.90 | 0.01 | 4.90 | 24.06 | 24.01 | 0.96 | 0.001 | 0.000 | 0.001 |
| 490 | 4.90 | 4.91 | 0.01 | 4.91 | 24.06 | 24.05 | 0.96 | 0.001 | 0.000 | 0.001 |
| 491 | 4.91 | 4.92 | 0.01 | 4.92 | 24.05 | 24.15 | 0.96 | 0.001 | 0.000 | 0.001 |
| 492 | 4.92 | 4.93 | 0.01 | 4.93 | 24.05 | 24.36 | 0.96 | 0.001 | 0.000 | 0.001 |
| 493 | 4.93 | 4.94 | 0.01 | 4.94 | 24.04 | 24.85 | 0.96 | 0.001 | 0.000 | 0.001 |
| 494 | 4.94 | 4.95 | 0.01 | 4.95 | 24.04 | 25.38 | 0.96 | 0.001 | 0.000 | 0.001 |
| 495 | 4.95 | 4.96 | 0.01 | 4.96 | 24.03 | 25.89 | 0.96 | 0.001 | 0.000 | 0.001 |
| 496 | 4.96 | 4.97 | 0.01 | 4.97 | 24.03 | 26.14 | 0.96 | 0.001 | 0.000 | 0.001 |
| 497 | 4.97 | 4.98 | 0.01 | 4.98 | 24.02 | 26.24 | 0.96 | 0.001 | 0.000 | 0.001 |
| 498 | 4.98 | 4.99 | 0.01 | 4.99 | 24.02 | 26.23 | 0.96 | 0.001 | 0.000 | 0.001 |
| 499 | 4.99 | 5.00 | 0.01 | 5.00 | 24.01 | 26.18 | 0.96 | 0.001 | 0.000 | 0.001 |
| 500 | 5.00 | 5.01 | 0.01 | 5.01 | 24.01 | 26.12 | 0.96 | 0.001 | 0.000 | 0.001 |
| 501 | 5.01 | 5.02 | 0.01 | 5.02 | 24.00 | 26.03 | 0.96 | 0.001 | 0.000 | 0.001 |
| 502 | 5.02 | 5.03 | 0.01 | 5.03 | 24.00 | 25.97 | 0.96 | 0.001 | 0.000 | 0.001 |
| 503 | 5.03 | 5.04 | 0.01 | 5.04 | 23.99 | 25.98 | 0.96 | 0.001 | 0.000 | 0.001 |
| 504 | 5.04 | 5.05 | 0.01 | 5.05 | 23.99 | 26.07 | 0.96 | 0.001 | 0.000 | 0.001 |
| 505 | 5.05 | 5.06 | 0.01 | 5.06 | 23.98 | 26.18 | 0.96 | 0.001 | 0.000 | 0.001 |
| 506 | 5.06 | 5.07 | 0.01 | 5.07 | 23.98 | 26.24 | 0.96 | 0.001 | 0.000 | 0.001 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 507 | 5.07 | 5.08 | 0.01 | 5.08 | 23.97 | 26.32 | 0.96 | 0.001 | 0.000 | 0.001 |
| 508 | 5.08 | 5.09 | 0.01 | 5.09 | 23.96 | 26.31 | 0.96 | 0.001 | 0.000 | 0.001 |
| 509 | 5.09 | 5.10 | 0.01 | 5.10 | 23.96 | 26.17 | 0.96 | 0.001 | 0.000 | 0.001 |
| 510 | 5.10 | 5.11 | 0.01 | 5.11 | 23.95 | 25.66 | 0.96 | 0.001 | 0.000 | 0.001 |
| 511 | 5.11 | 5.12 | 0.01 | 5.12 | 23.95 | 25.10 | 0.96 | 0.001 | 0.000 | 0.001 |
| 512 | 5.12 | 5.13 | 0.01 | 5.13 | 23.94 | 24.50 | 0.96 | 0.001 | 0.000 | 0.001 |
| 513 | 5.13 | 5.14 | 0.01 | 5.14 | 23.94 | 24.14 | 0.96 | 0.001 | 0.000 | 0.001 |
| 514 | 5.14 | 5.15 | 0.01 | 5.15 | 23.93 | 23.80 | 0.96 | 0.001 | 0.000 | 0.001 |
| 515 | 5.15 | 5.16 | 0.01 | 5.16 | 23.93 | 23.58 | 0.96 | 0.001 | 0.000 | 0.001 |
| 516 | 5.16 | 5.17 | 0.01 | 5.17 | 23.92 | 23.51 | 0.96 | 0.001 | 0.000 | 0.001 |
| 517 | 5.17 | 5.18 | 0.01 | 5.18 | 23.92 | 23.91 | 0.96 | 0.001 | 0.000 | 0.001 |
| 518 | 5.18 | 5.19 | 0.01 | 5.19 | 23.91 | 24.59 | 0.96 | 0.001 | 0.000 | 0.001 |
| 519 | 5.19 | 5.20 | 0.01 | 5.20 | 23.91 | 25.46 | 0.96 | 0.001 | 0.000 | 0.001 |
| 520 | 5.20 | 5.21 | 0.01 | 5.21 | 23.90 | 26.14 | 0.96 | 0.001 | 0.000 | 0.001 |
| 521 | 5.21 | 5.22 | 0.01 | 5.22 | 23.89 | 26.75 | 0.96 | 0.001 | 0.000 | 0.001 |
| 522 | 5.22 | 5.23 | 0.01 | 5.23 | 23.89 | 27.19 | 0.96 | 0.001 | 0.000 | 0.001 |
| 523 | 5.23 | 5.24 | 0.01 | 5.24 | 23.88 | 27.37 | 0.96 | 0.001 | 0.000 | 0.001 |
| 524 | 5.24 | 5.25 | 0.01 | 5.25 | 23.88 | 27.30 | 0.96 | 0.001 | 0.000 | 0.001 |
| 525 | 5.25 | 5.26 | 0.01 | 5.26 | 23.87 | 27.20 | 0.95 | 0.001 | 0.000 | 0.001 |
| 526 | 5.26 | 5.27 | 0.01 | 5.27 | 23.87 | 27.30 | 0.95 | 0.001 | 0.000 | 0.001 |
| 527 | 5.27 | 5.28 | 0.01 | 5.28 | 23.86 | 27.58 | 0.95 | 0.001 | 0.000 | 0.001 |
| 528 | 5.28 | 5.29 | 0.01 | 5.29 | 23.86 | 27.91 | 0.95 | 0.001 | 0.000 | 0.001 |
| 529 | 5.29 | 5.30 | 0.01 | 5.30 | 23.85 | 27.88 | 0.95 | 0.001 | 0.000 | 0.001 |
| 530 | 5.30 | 5.31 | 0.01 | 5.31 | 23.84 | 27.42 | 0.95 | 0.001 | 0.000 | 0.001 |
| 531 | 5.31 | 5.32 | 0.01 | 5.32 | 23.84 | 26.59 | 0.95 | 0.001 | 0.000 | 0.001 |
| 532 | 5.32 | 5.33 | 0.01 | 5.33 | 23.83 | 25.78 | 0.95 | 0.001 | 0.000 | 0.001 |
| 533 | 5.33 | 5.34 | 0.01 | 5.34 | 23.83 | 25.12 | 0.95 | 0.001 | 0.000 | 0.001 |
| 534 | 5.34 | 5.35 | 0.01 | 5.35 | 23.82 | 24.55 | 0.95 | 0.001 | 0.000 | 0.001 |
| 535 | 5.35 | 5.36 | 0.01 | 5.36 | 23.82 | 24.20 | 0.95 | 0.001 | 0.000 | 0.001 |
| 536 | 5.36 | 5.37 | 0.01 | 5.37 | 23.81 | 23.96 | 0.95 | 0.001 | 0.000 | 0.001 |
| 537 | 5.37 | 5.38 | 0.01 | 5.38 | 23.80 | 23.92 | 0.95 | 0.001 | 0.000 | 0.001 |
| 538 | 5.38 | 5.39 | 0.01 | 5.39 | 23.80 | 23.70 | 0.95 | 0.001 | 0.000 | 0.001 |
| 539 | 5.39 | 5.40 | 0.01 | 5.40 | 23.79 | 23.52 | 0.95 | 0.001 | 0.000 | 0.001 |
| 540 | 5.40 | 5.41 | 0.01 | 5.41 | 23.79 | 23.29 | 0.95 | 0.001 | 0.000 | 0.001 |
| 541 | 5.41 | 5.42 | 0.01 | 5.42 | 23.78 | 23.14 | 0.95 | 0.001 | 0.000 | 0.001 |
| 542 | 5.42 | 5.43 | 0.01 | 5.43 | 23.77 | 23.05 | 0.95 | 0.001 | 0.000 | 0.001 |
| 543 | 5.43 | 5.44 | 0.01 | 5.44 | 23.77 | 23.17 | 0.95 | 0.001 | 0.000 | 0.001 |
| 544 | 5.44 | 5.45 | 0.01 | 5.45 | 23.76 | 23.48 | 0.95 | 0.001 | 0.000 | 0.001 |
| 545 | 5.45 | 5.46 | 0.01 | 5.46 | 23.76 | 23.99 | 0.95 | 0.001 | 0.000 | 0.001 |
| 546 | 5.46 | 5.47 | 0.01 | 5.47 | 23.75 | 24.56 | 0.95 | 0.001 | 0.000 | 0.001 |
| 547 | 5.47 | 5.48 | 0.01 | 5.48 | 23.75 | 21.39 | 0.95 | 0.001 | 0.000 | 0.001 |
| 548 | 5.48 | 5.49 | 0.01 | 5.49 | 23.74 | 22.19 | 0.95 | 0.001 | 0.000 | 0.001 |
| 549 | 5.49 | 5.50 | 0.01 | 5.50 | 23.73 | 22.65 | 0.95 | 0.001 | 0.000 | 0.001 |
| 550 | 5.50 | 5.51 | 0.01 | 5.51 | 23.73 | 26.65 | 0.95 | 0.001 | 0.000 | 0.001 |
| 551 | 5.51 | 5.52 | 0.01 | 5.52 | 23.72 | 26.08 | 0.95 | 0.001 | 0.000 | 0.001 |
| 552 | 5.52 | 5.53 | 0.01 | 5.53 | 23.72 | 25.53 | 0.95 | 0.001 | 0.000 | 0.001 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 553 | 5.53 | 5.54 | 0.01 | 5.54 | 23.71 | 24.98 | 0.95 | 0.001 | 0.000 | 0.001 |
| 554 | 5.54 | 5.55 | 0.01 | 5.55 | 23.70 | 24.59 | 0.95 | 0.001 | 0.000 | 0.001 |
| 555 | 5.55 | 5.56 | 0.01 | 5.56 | 23.70 | 24.24 | 0.95 | 0.001 | 0.000 | 0.001 |
| 556 | 5.56 | 5.57 | 0.01 | 5.57 | 23.69 | 24.01 | 0.95 | 0.001 | 0.000 | 0.001 |
| 557 | 5.57 | 5.58 | 0.01 | 5.58 | 23.69 | 24.04 | 0.95 | 0.001 | 0.000 | 0.001 |
| 558 | 5.58 | 5.59 | 0.01 | 5.59 | 23.68 | 24.08 | 0.95 | 0.001 | 0.000 | 0.001 |
| 559 | 5.59 | 5.60 | 0.01 | 5.60 | 23.67 | 24.05 | 0.95 | 0.001 | 0.000 | 0.001 |
| 560 | 5.60 | 5.61 | 0.01 | 5.61 | 23.67 | 23.98 | 0.95 | 0.001 | 0.000 | 0.001 |
| 561 | 5.61 | 5.62 | 0.01 | 5.62 | 23.66 | 23.97 | 0.95 | 0.001 | 0.000 | 0.001 |
| 562 | 5.62 | 5.63 | 0.01 | 5.63 | 23.66 | 24.12 | 0.95 | 0.001 | 0.000 | 0.001 |
| 563 | 5.63 | 5.64 | 0.01 | 5.64 | 23.65 | 24.37 | 0.95 | 0.001 | 0.000 | 0.001 |
| 564 | 5.64 | 5.65 | 0.01 | 5.65 | 23.64 | 24.81 | 0.95 | 0.001 | 0.000 | 0.001 |
| 565 | 5.65 | 5.66 | 0.01 | 5.66 | 23.64 | 25.39 | 0.95 | 0.001 | 0.000 | 0.001 |
| 566 | 5.66 | 5.67 | 0.01 | 5.67 | 23.63 | 26.26 | 0.95 | 0.001 | 0.000 | 0.001 |
| 567 | 5.67 | 5.68 | 0.01 | 5.68 | 23.62 | 27.07 | 0.94 | 0.001 | 0.000 | 0.001 |
| 568 | 5.68 | 5.69 | 0.01 | 5.69 | 23.62 | 27.82 | 0.94 | 0.001 | 0.000 | 0.001 |
| 569 | 5.69 | 5.70 | 0.01 | 5.70 | 23.61 | 28.25 | 0.94 | 0.001 | 0.000 | 0.001 |
| 570 | 5.70 | 5.71 | 0.01 | 5.71 | 23.61 | 28.53 | 0.94 | 0.001 | 0.000 | 0.001 |
| 571 | 5.71 | 5.72 | 0.01 | 5.72 | 23.60 | 28.62 | 0.94 | 0.001 | 0.000 | 0.001 |
| 572 | 5.72 | 5.73 | 0.01 | 5.73 | 23.59 | 28.56 | 0.94 | 0.001 | 0.000 | 0.001 |
| 573 | 5.73 | 5.74 | 0.01 | 5.74 | 23.59 | 28.25 | 0.94 | 0.001 | 0.000 | 0.001 |
| 574 | 5.74 | 5.75 | 0.01 | 5.75 | 23.58 | 27.74 | 0.94 | 0.001 | 0.000 | 0.001 |
| 575 | 5.75 | 5.76 | 0.01 | 5.76 | 23.57 | 26.94 | 0.94 | 0.001 | 0.000 | 0.001 |
| 576 | 5.76 | 5.77 | 0.01 | 5.77 | 23.57 | 26.07 | 0.94 | 0.001 | 0.000 | 0.001 |
| 577 | 5.77 | 5.78 | 0.01 | 5.78 | 23.56 | 25.10 | 0.94 | 0.001 | 0.000 | 0.001 |
| 578 | 5.78 | 5.79 | 0.01 | 5.79 | 23.56 | 24.26 | 0.94 | 0.001 | 0.000 | 0.001 |
| 579 | 5.79 | 5.80 | 0.01 | 5.80 | 23.55 | 23.59 | 0.94 | 0.001 | 0.000 | 0.001 |
| 580 | 5.80 | 5.81 | 0.01 | 5.81 | 23.54 | 23.18 | 0.94 | 0.001 | 0.000 | 0.001 |
| 581 | 5.81 | 5.82 | 0.01 | 5.82 | 23.54 | 22.86 | 0.94 | 0.001 | 0.000 | 0.001 |
| 582 | 5.82 | 5.83 | 0.01 | 5.83 | 23.53 | 22.66 | 0.94 | 0.001 | 0.000 | 0.001 |
| 583 | 5.83 | 5.84 | 0.01 | 5.84 | 23.52 | 22.68 | 0.94 | 0.001 | 0.000 | 0.001 |
| 584 | 5.84 | 5.85 | 0.01 | 5.85 | 23.52 | 23.00 | 0.94 | 0.001 | 0.000 | 0.001 |
| 585 | 5.85 | 5.86 | 0.01 | 5.86 | 23.51 | 23.64 | 0.94 | 0.001 | 0.000 | 0.001 |
| 586 | 5.86 | 5.87 | 0.01 | 5.87 | 23.50 | 24.26 | 0.94 | 0.001 | 0.000 | 0.001 |
| 587 | 5.87 | 5.88 | 0.01 | 5.88 | 23.50 | 24.68 | 0.94 | 0.001 | 0.000 | 0.001 |
| 588 | 5.88 | 5.89 | 0.01 | 5.89 | 23.49 | 24.64 | 0.94 | 0.001 | 0.000 | 0.001 |
| 589 | 5.89 | 5.90 | 0.01 | 5.90 | 23.48 | 24.23 | 0.94 | 0.001 | 0.000 | 0.001 |
| 590 | 5.90 | 5.91 | 0.01 | 5.91 | 23.48 | 23.75 | 0.94 | 0.001 | 0.000 | 0.001 |
| 591 | 5.91 | 5.92 | 0.01 | 5.92 | 23.47 | 23.34 | 0.94 | 0.001 | 0.000 | 0.001 |
| 592 | 5.92 | 5.93 | 0.01 | 5.93 | 23.47 | 23.21 | 0.94 | 0.001 | 0.000 | 0.001 |
| 593 | 5.93 | 5.94 | 0.01 | 5.94 | 23.46 | 23.23 | 0.94 | 0.001 | 0.000 | 0.001 |
| 594 | 5.94 | 5.95 | 0.01 | 5.95 | 23.45 | 23.47 | 0.94 | 0.001 | 0.000 | 0.001 |
| 595 | 5.95 | 5.96 | 0.01 | 5.96 | 23.45 | 23.97 | 0.94 | 0.001 | 0.000 | 0.001 |
| 596 | 5.96 | 5.97 | 0.01 | 5.97 | 23.44 | 24.61 | 0.94 | 0.001 | 0.000 | 0.001 |
| 597 | 5.97 | 5.98 | 0.01 | 5.98 | 23.43 | 25.66 | 0.94 | 0.001 | 0.000 | 0.001 |
| 598 | 5.98 | 5.99 | 0.01 | 5.99 | 23.43 | 26.69 | 0.94 | 0.001 | 0.000 | 0.001 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 599 | 5.99 | 6.00 | 0.01 | 6.00 | 23.42 | 27.62 | 0.94 | 0.001 | 0.000 | 0.001 |
| 600 | 6.00 | 6.01 | 0.01 | 6.01 | 23.41 | 28.11 | 0.94 | 0.001 | 0.000 | 0.001 |
| 601 | 6.01 | 6.02 | 0.01 | 6.02 | 23.41 | 28.36 | 0.94 | 0.001 | 0.000 | 0.001 |
| 602 | 6.02 | 6.03 | 0.01 | 6.03 | 23.40 | 28.44 | 0.94 | 0.001 | 0.000 | 0.001 |
| 603 | 6.03 | 6.04 | 0.01 | 6.04 | 23.39 | 28.34 | 0.94 | 0.001 | 0.000 | 0.001 |
| 604 | 6.04 | 6.05 | 0.01 | 6.05 | 23.39 | 28.09 | 0.94 | 0.001 | 0.000 | 0.001 |
| 605 | 6.05 | 6.06 | 0.01 | 6.06 | 23.38 | 27.69 | 0.94 | 0.001 | 0.000 | 0.001 |
| 606 | 6.06 | 6.07 | 0.01 | 6.07 | 23.37 | 27.18 | 0.93 | 0.001 | 0.000 | 0.001 |
| 607 | 6.07 | 6.08 | 0.01 | 6.08 | 23.37 | 26.66 | 0.93 | 0.001 | 0.000 | 0.001 |
| 608 | 6.08 | 6.09 | 0.01 | 6.09 | 23.36 | 25.65 | 0.93 | 0.001 | 0.000 | 0.001 |
| 609 | 6.09 | 6.10 | 0.01 | 6.10 | 23.35 | 24.42 | 0.93 | 0.001 | 0.000 | 0.001 |
| 610 | 6.10 | 6.11 | 0.01 | 6.11 | 23.35 | 23.08 | 0.93 | 0.001 | 0.000 | 0.001 |
| 611 | 6.11 | 6.12 | 0.01 | 6.12 | 23.34 | 22.16 | 0.93 | 0.001 | 0.000 | 0.001 |
| 612 | 6.12 | 6.13 | 0.01 | 6.13 | 23.33 | 21.20 | 0.93 | 0.001 | 0.000 | 0.001 |
| 613 | 6.13 | 6.14 | 0.01 | 6.14 | 23.33 | 20.40 | 0.93 | 0.001 | 0.000 | 0.001 |
| 614 | 6.14 | 6.15 | 0.01 | 6.15 | 23.32 | 19.70 | 0.93 | 0.001 | 0.000 | 0.001 |
| 615 | 6.15 | 6.16 | 0.01 | 6.16 | 23.31 | 19.30 | 0.93 | 0.001 | 0.000 | 0.001 |
| 616 | 6.16 | 6.17 | 0.01 | 6.17 | 23.31 | 18.82 | 0.93 | 0.001 | 0.000 | 0.001 |
| 617 | 6.17 | 6.18 | 0.01 | 6.18 | 23.30 | 18.39 | 0.93 | 0.001 | 0.000 | 0.001 |
| 618 | 6.18 | 6.19 | 0.01 | 6.19 | 23.29 | 17.96 | 0.93 | 0.001 | 0.000 | 0.001 |
| 619 | 6.19 | 6.20 | 0.01 | 6.20 | 23.28 | 17.68 | 0.93 | 0.001 | 0.000 | 0.001 |
| 620 | 6.20 | 6.21 | 0.01 | 6.21 | 23.28 | 17.37 | 0.93 | 0.001 | 0.000 | 0.001 |
| 621 | 6.21 | 6.22 | 0.01 | 6.22 | 23.27 | 17.16 | 0.93 | 0.001 | 0.000 | 0.001 |
| 622 | 6.22 | 6.23 | 0.01 | 6.23 | 23.26 | 17.01 | 0.93 | 0.001 | 0.000 | 0.001 |
| 623 | 6.23 | 6.24 | 0.01 | 6.24 | 23.26 | 17.02 | 0.93 | 0.001 | 0.000 | 0.001 |
| 624 | 6.24 | 6.25 | 0.01 | 6.25 | 23.25 | 17.07 | 0.93 | 0.001 | 0.000 | 0.001 |
| 625 | 6.25 | 6.26 | 0.01 | 6.26 | 23.24 | 17.18 | 0.93 | 0.001 | 0.000 | 0.001 |
| 626 | 6.26 | 6.27 | 0.01 | 6.27 | 23.24 | 17.31 | 0.93 | 0.001 | 0.000 | 0.001 |
| 627 | 6.27 | 6.28 | 0.01 | 6.28 | 23.23 | 17.59 | 0.93 | 0.001 | 0.000 | 0.001 |
| 628 | 6.28 | 6.29 | 0.01 | 6.29 | 23.22 | 17.90 | 0.93 | 0.001 | 0.000 | 0.001 |
| 629 | 6.29 | 6.30 | 0.01 | 6.30 | 23.22 | 18.23 | 0.93 | 0.001 | 0.000 | 0.001 |
| 630 | 6.30 | 6.31 | 0.01 | 6.31 | 23.21 | 18.48 | 0.93 | 0.001 | 0.000 | 0.001 |
| 631 | 6.31 | 6.32 | 0.01 | 6.32 | 23.20 | 18.87 | 0.93 | 0.001 | 0.000 | 0.001 |
| 632 | 6.32 | 6.33 | 0.01 | 6.33 | 23.19 | 19.30 | 0.93 | 0.001 | 0.000 | 0.001 |
| 633 | 6.33 | 6.34 | 0.01 | 6.34 | 23.19 | 19.77 | 0.93 | 0.001 | 0.000 | 0.001 |
| 634 | 6.34 | 6.35 | 0.01 | 6.35 | 23.18 | 20.33 | 0.93 | 0.001 | 0.000 | 0.001 |
| 635 | 6.35 | 6.36 | 0.01 | 6.36 | 23.17 | 20.90 | 0.93 | 0.001 | 0.000 | 0.001 |
| 636 | 6.36 | 6.37 | 0.01 | 6.37 | 23.17 | 21.46 | 0.93 | 0.001 | 0.000 | 0.001 |
| 637 | 6.37 | 6.38 | 0.01 | 6.38 | 23.16 | 21.84 | 0.93 | 0.001 | 0.000 | 0.001 |
| 638 | 6.38 | 6.39 | 0.01 | 6.39 | 23.15 | 22.16 | 0.93 | 0.001 | 0.000 | 0.001 |
| 639 | 6.39 | 6.40 | 0.01 | 6.40 | 23.14 | 22.62 | 0.93 | 0.001 | 0.000 | 0.001 |
| 640 | 6.40 | 6.41 | 0.01 | 6.41 | 23.14 | 23.08 | 0.93 | 0.001 | 0.000 | 0.001 |
| 641 | 6.41 | 6.42 | 0.01 | 6.42 | 23.13 | 23.58 | 0.93 | 0.001 | 0.000 | 0.001 |
| 642 | 6.42 | 6.43 | 0.01 | 6.43 | 23.12 | 23.89 | 0.92 | 0.001 | 0.000 | 0.001 |
| 643 | 6.43 | 6.44 | 0.01 | 6.44 | 23.12 | 24.14 | 0.92 | 0.001 | 0.000 | 0.001 |
| 644 | 6.44 | 6.45 | 0.01 | 6.45 | 23.11 | 24.33 | 0.92 | 0.001 | 0.000 | 0.001 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 645 | 6.45 | 6.46 | 0.01 | 6.46 | 23.10 | 24.45 | 0.92 | 0.001 | 0.000 | 0.001 |
| 646 | 6.46 | 6.47 | 0.01 | 6.47 | 23.09 | 24.48 | 0.92 | 0.001 | 0.000 | 0.001 |
| 647 | 6.47 | 6.48 | 0.01 | 6.48 | 23.09 | 24.65 | 0.92 | 0.001 | 0.000 | 0.001 |
| 648 | 6.48 | 6.49 | 0.01 | 6.49 | 23.08 | 24.80 | 0.92 | 0.001 | 0.000 | 0.001 |
| 649 | 6.49 | 6.50 | 0.01 | 6.50 | 23.07 | 24.90 | 0.92 | 0.001 | 0.000 | 0.001 |
| 650 | 6.50 | 6.51 | 0.01 | 6.51 | 23.07 | 24.72 | 0.92 | 0.001 | 0.000 | 0.001 |
| 651 | 6.51 | 6.52 | 0.01 | 6.52 | 23.06 | 24.56 | 0.92 | 0.001 | 0.000 | 0.001 |
| 652 | 6.52 | 6.53 | 0.01 | 6.53 | 23.05 | 24.45 | 0.92 | 0.001 | 0.000 | 0.001 |
| 653 | 6.53 | 6.54 | 0.01 | 6.54 | 23.04 | 24.43 | 0.92 | 0.001 | 0.000 | 0.001 |
| 654 | 6.54 | 6.55 | 0.01 | 6.55 | 23.04 | 24.46 | 0.92 | 0.001 | 0.000 | 0.001 |
| 655 | 6.55 | 6.56 | 0.01 | 6.56 | 23.03 | 24.62 | 0.92 | 0.001 | 0.000 | 0.001 |
| 656 | 6.56 | 6.57 | 0.01 | 6.57 | 23.02 | 24.79 | 0.92 | 0.001 | 0.000 | 0.001 |
| 657 | 6.57 | 6.58 | 0.01 | 6.58 | 23.01 | 24.94 | 0.92 | 0.001 | 0.000 | 0.001 |
| 658 | 6.58 | 6.59 | 0.01 | 6.59 | 23.01 | 25.10 | 0.92 | 0.001 | 0.000 | 0.001 |
| 659 | 6.59 | 6.60 | 0.01 | 6.60 | 23.00 | 25.23 | 0.92 | 0.001 | 0.000 | 0.001 |
| 660 | 6.60 | 6.61 | 0.01 | 6.61 | 22.99 | 25.28 | 0.92 | 0.001 | 0.000 | 0.001 |
| 661 | 6.61 | 6.62 | 0.01 | 6.62 | 22.99 | 25.15 | 0.92 | 0.001 | 0.000 | 0.001 |
| 662 | 6.62 | 6.63 | 0.01 | 6.63 | 22.98 | 24.99 | 0.92 | 0.001 | 0.000 | 0.001 |
| 663 | 6.63 | 6.64 | 0.01 | 6.64 | 22.97 | 24.79 | 0.92 | 0.001 | 0.000 | 0.001 |
| 664 | 6.64 | 6.65 | 0.01 | 6.65 | 22.96 | 24.67 | 0.92 | 0.001 | 0.000 | 0.001 |
| 665 | 6.65 | 6.66 | 0.01 | 6.66 | 22.96 | 24.54 | 0.92 | 0.001 | 0.000 | 0.001 |
| 666 | 6.66 | 6.67 | 0.01 | 6.67 | 22.95 | 24.47 | 0.92 | 0.001 | 0.000 | 0.001 |
| 667 | 6.67 | 6.68 | 0.01 | 6.68 | 22.94 | 24.38 | 0.92 | 0.001 | 0.000 | 0.001 |
| 668 | 6.68 | 6.69 | 0.01 | 6.69 | 22.93 | 24.28 | 0.92 | 0.001 | 0.000 | 0.001 |
| 669 | 6.69 | 6.70 | 0.01 | 6.70 | 22.93 | 24.18 | 0.92 | 0.001 | 0.000 | 0.001 |
| 670 | 6.70 | 6.71 | 0.01 | 6.71 | 22.92 | 23.90 | 0.92 | 0.001 | 0.000 | 0.001 |
| 671 | 6.71 | 6.72 | 0.01 | 6.72 | 22.91 | 23.55 | 0.92 | 0.001 | 0.000 | 0.001 |
| 672 | 6.72 | 6.73 | 0.01 | 6.73 | 22.90 | 23.12 | 0.92 | 0.001 | 0.000 | 0.001 |
| 673 | 6.73 | 6.74 | 0.01 | 6.74 | 22.90 | 22.82 | 0.92 | 0.001 | 0.000 | 0.001 |
| 674 | 6.74 | 6.75 | 0.01 | 6.75 | 22.89 | 22.46 | 0.92 | 0.001 | 0.000 | 0.001 |
| 675 | 6.75 | 6.76 | 0.01 | 6.76 | 22.88 | 22.14 | 0.92 | 0.001 | 0.000 | 0.001 |
| 676 | 6.76 | 6.77 | 0.01 | 6.77 | 22.87 | 21.83 | 0.91 | 0.001 | 0.000 | 0.001 |
| 677 | 6.77 | 6.78 | 0.01 | 6.78 | 22.87 | 21.51 | 0.91 | 0.001 | 0.000 | 0.001 |
| 678 | 6.78 | 6.79 | 0.01 | 6.79 | 22.86 | 21.18 | 0.91 | 0.001 | 0.000 | 0.001 |
| 679 | 6.79 | 6.80 | 0.01 | 6.80 | 22.85 | 20.85 | 0.91 | 0.001 | 0.000 | 0.001 |
| 680 | 6.80 | 6.81 | 0.01 | 6.81 | 22.84 | 20.59 | 0.91 | 0.001 | 0.000 | 0.001 |
| 681 | 6.81 | 6.82 | 0.01 | 6.82 | 22.84 | 20.30 | 0.91 | 0.001 | 0.000 | 0.001 |
| 682 | 6.82 | 6.83 | 0.01 | 6.83 | 22.83 | 20.05 | 0.91 | 0.001 | 0.000 | 0.001 |
| 683 | 6.83 | 6.84 | 0.01 | 6.84 | 22.82 | 19.90 | 0.91 | 0.001 | 0.000 | 0.001 |
| 684 | 6.84 | 6.85 | 0.01 | 6.85 | 22.81 | 19.92 | 0.91 | 0.001 | 0.000 | 0.001 |
| 685 | 6.85 | 6.86 | 0.01 | 6.86 | 22.80 | 20.03 | 0.91 | 0.001 | 0.000 | 0.001 |
| 686 | 6.86 | 6.87 | 0.01 | 6.87 | 22.80 | 20.23 | 0.91 | 0.001 | 0.000 | 0.001 |
| 687 | 6.87 | 6.88 | 0.01 | 6.88 | 22.79 | 20.52 | 0.91 | 0.001 | 0.000 | 0.001 |
| 688 | 6.88 | 6.89 | 0.01 | 6.89 | 22.78 | 20.92 | 0.91 | 0.001 | 0.000 | 0.001 |
| 689 | 6.89 | 6.90 | 0.01 | 6.90 | 22.77 | 21.62 | 0.91 | 0.001 | 0.000 | 0.001 |
| 690 | 6.90 | 6.91 | 0.01 | 6.91 | 22.77 | 22.32 | 0.91 | 0.001 | 0.000 | 0.001 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 691 | 6.91 | 6.92 | 0.01 | 6.92 | 22.76 | 22.92 | 0.91 | 0.001 | 0.000 | 0.001 |
| 692 | 6.92 | 6.93 | 0.01 | 6.93 | 22.75 | 23.21 | 0.91 | 0.001 | 0.000 | 0.001 |
| 693 | 6.93 | 6.94 | 0.01 | 6.94 | 22.74 | 23.41 | 0.91 | 0.001 | 0.000 | 0.001 |
| 694 | 6.94 | 6.95 | 0.01 | 6.95 | 22.74 | 23.44 | 0.91 | 0.001 | 0.000 | 0.001 |
| 695 | 6.95 | 6.96 | 0.01 | 6.96 | 22.73 | 23.19 | 0.91 | 0.001 | 0.000 | 0.001 |
| 696 | 6.96 | 6.97 | 0.01 | 6.97 | 22.72 | 22.24 | 0.91 | 0.001 | 0.000 | 0.001 |
| 697 | 6.97 | 6.98 | 0.01 | 6.98 | 22.71 | 20.99 | 0.91 | 0.001 | 0.000 | 0.001 |
| 698 | 6.98 | 6.99 | 0.01 | 6.99 | 22.70 | 19.57 | 0.91 | 0.001 | 0.000 | 0.001 |
| 699 | 6.99 | 7.00 | 0.01 | 7.00 | 22.70 | 18.42 | 0.91 | 0.001 | 0.000 | 0.001 |
| 700 | 7.00 | 7.01 | 0.01 | 7.01 | 22.69 | 17.14 | 0.91 | 0.001 | 0.000 | 0.001 |
| 701 | 7.01 | 7.02 | 0.01 | 7.02 | 22.68 | 16.06 | 0.91 | 0.001 | 0.000 | 0.001 |
| 702 | 7.02 | 7.03 | 0.01 | 7.03 | 22.67 | 15.24 | 0.91 | 0.001 | 0.000 | 0.001 |
| 703 | 7.03 | 7.04 | 0.01 | 7.04 | 22.67 | 14.90 | 0.91 | 0.002 | 0.000 | 0.002 |
| 704 | 7.04 | 7.05 | 0.01 | 7.05 | 22.66 | 14.70 | 0.91 | 0.002 | 0.000 | 0.002 |
| 705 | 7.05 | 7.06 | 0.01 | 7.06 | 22.65 | 14.73 | 0.91 | 0.002 | 0.000 | 0.002 |
| 706 | 7.06 | 7.07 | 0.01 | 7.07 | 22.64 | 14.92 | 0.91 | 0.002 | 0.000 | 0.002 |
| 707 | 7.07 | 7.08 | 0.01 | 7.08 | 22.63 | 15.41 | 0.91 | 0.001 | 0.000 | 0.001 |
| 708 | 7.08 | 7.09 | 0.01 | 7.09 | 22.63 | 15.94 | 0.91 | 0.001 | 0.000 | 0.001 |
| 709 | 7.09 | 7.10 | 0.01 | 7.10 | 22.62 | 16.50 | 0.90 | 0.001 | 0.000 | 0.001 |
| 710 | 7.10 | 7.11 | 0.01 | 7.11 | 22.61 | 16.97 | 0.90 | 0.001 | 0.000 | 0.001 |
| 711 | 7.11 | 7.12 | 0.01 | 7.12 | 22.60 | 17.54 | 0.90 | 0.001 | 0.000 | 0.001 |
| 712 | 7.12 | 7.13 | 0.01 | 7.13 | 22.59 | 18.04 | 0.90 | 0.001 | 0.000 | 0.001 |
| 713 | 7.13 | 7.14 | 0.01 | 7.14 | 22.59 | 18.55 | 0.90 | 0.001 | 0.000 | 0.001 |
| 714 | 7.14 | 7.15 | 0.01 | 7.15 | 22.58 | 19.05 | 0.90 | 0.001 | 0.000 | 0.001 |
| 715 | 7.15 | 7.16 | 0.01 | 7.16 | 22.57 | 19.81 | 0.90 | 0.001 | 0.000 | 0.001 |
| 716 | 7.16 | 7.17 | 0.01 | 7.17 | 22.56 | 20.41 | 0.90 | 0.001 | 0.000 | 0.001 |
| 717 | 7.17 | 7.18 | 0.01 | 7.18 | 22.55 | 20.68 | 0.90 | 0.001 | 0.000 | 0.001 |
| 718 | 7.18 | 7.19 | 0.01 | 7.19 | 22.55 | 20.51 | 0.90 | 0.001 | 0.000 | 0.001 |
| 719 | 7.19 | 7.20 | 0.01 | 7.20 | 22.54 | 19.79 | 0.90 | 0.001 | 0.000 | 0.001 |
| 720 | 7.20 | 7.21 | 0.01 | 7.21 | 22.53 | 18.73 | 0.90 | 0.001 | 0.000 | 0.001 |
| 721 | 7.21 | 7.22 | 0.01 | 7.22 | 22.52 | 17.46 | 0.90 | 0.001 | 0.000 | 0.001 |
| 722 | 7.22 | 7.23 | 0.01 | 7.23 | 22.51 | 16.39 | 0.90 | 0.001 | 0.000 | 0.001 |
| 723 | 7.23 | 7.24 | 0.01 | 7.24 | 22.51 | 15.45 | 0.90 | 0.001 | 0.000 | 0.001 |
| 724 | 7.24 | 7.25 | 0.01 | 7.25 | 22.50 | 14.63 | 0.90 | 0.002 | 0.000 | 0.002 |
| 725 | 7.25 | 7.26 | 0.01 | 7.26 | 22.49 | 14.00 | 0.90 | 0.002 | 0.000 | 0.002 |
| 726 | 7.26 | 7.27 | 0.01 | 7.27 | 22.48 | 13.53 | 0.90 | 0.002 | 0.000 | 0.002 |
| 727 | 7.27 | 7.28 | 0.01 | 7.28 | 22.47 | 13.19 | 0.90 | 0.002 | 0.000 | 0.002 |
| 728 | 7.28 | 7.29 | 0.01 | 7.29 | 22.47 | 12.95 | 0.90 | 0.002 | 0.000 | 0.002 |
| 729 | 7.29 | 7.30 | 0.01 | 7.30 | 22.46 | 12.92 | 0.90 | 0.002 | 0.000 | 0.002 |
| 730 | 7.30 | 7.31 | 0.01 | 7.31 | 22.45 | 12.88 | 0.90 | 0.002 | 0.000 | 0.002 |
| 731 | 7.31 | 7.32 | 0.01 | 7.32 | 22.44 | 12.89 | 0.90 | 0.002 | 0.000 | 0.002 |
| 732 | 7.32 | 7.33 | 0.01 | 7.33 | 22.43 | 12.83 | 0.90 | 0.002 | 0.000 | 0.002 |
| 733 | 7.33 | 7.34 | 0.01 | 7.34 | 22.42 | 12.80 | 0.90 | 0.002 | 0.000 | 0.002 |
| 734 | 7.34 | 7.35 | 0.01 | 7.35 | 22.42 | 13.17 | 0.90 | 0.002 | 0.000 | 0.002 |
| 735 | 7.35 | 7.36 | 0.01 | 7.36 | 22.41 | 13.76 | 0.90 | 0.002 | 0.000 | 0.002 |
| 736 | 7.36 | 7.37 | 0.01 | 7.37 | 22.40 | 14.14 | 0.90 | 0.002 | 0.000 | 0.002 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 737 | 7.37 | 7.38 | 0.01 | 7.38 | 22.39 | 14.34 | 0.90 | 0.002 | 0.000 | 0.002 |
| 738 | 7.38 | 7.39 | 0.01 | 7.39 | 22.38 | 14.36 | 0.90 | 0.002 | 0.000 | 0.002 |
| 739 | 7.39 | 7.40 | 0.01 | 7.40 | 22.38 | 14.20 | 0.90 | 0.002 | 0.000 | 0.002 |
| 740 | 7.40 | 7.41 | 0.01 | 7.41 | 22.37 | 13.56 | 0.89 | 0.002 | 0.000 | 0.002 |
| 741 | 7.41 | 7.42 | 0.01 | 7.42 | 22.36 | 12.77 | 0.89 | 0.002 | 0.000 | 0.002 |
| 742 | 7.42 | 7.43 | 0.01 | 7.43 | 22.35 | 12.24 | 0.89 | 0.002 | 0.000 | 0.002 |
| 743 | 7.43 | 7.44 | 0.01 | 7.44 | 22.34 | 11.86 | 0.89 | 0.002 | 0.000 | 0.002 |
| 744 | 7.44 | 7.45 | 0.01 | 7.45 | 22.33 | 11.60 | 0.89 | 0.002 | 0.000 | 0.002 |
| 745 | 7.45 | 7.46 | 0.01 | 7.46 | 22.33 | 11.37 | 0.89 | 0.002 | 0.000 | 0.002 |
| 746 | 7.46 | 7.47 | 0.01 | 7.47 | 22.32 | 7.89 | 0.89 | 0.003 | 0.000 | 0.003 |
| 747 | 7.47 | 7.48 | 0.01 | 7.48 | 22.31 | 7.69 | 0.89 | 0.003 | 0.000 | 0.003 |
| 748 | 7.48 | 7.49 | 0.01 | 7.49 | 22.30 | 7.70 | 0.89 | 0.003 | 0.000 | 0.003 |
| 749 | 7.49 | 7.50 | 0.01 | 7.50 | 22.29 | 10.95 | 0.89 | 0.002 | 0.000 | 0.002 |
| 750 | 7.50 | 7.51 | 0.01 | 7.51 | 22.28 | 11.17 | 0.89 | 0.002 | 0.000 | 0.002 |
| 751 | 7.51 | 7.52 | 0.01 | 7.52 | 22.28 | 11.37 | 0.89 | 0.002 | 0.000 | 0.002 |
| 752 | 7.52 | 7.53 | 0.01 | 7.53 | 22.27 | 11.69 | 0.89 | 0.002 | 0.000 | 0.002 |
| 753 | 7.53 | 7.54 | 0.01 | 7.54 | 22.26 | 12.01 | 0.89 | 0.002 | 0.000 | 0.002 |
| 754 | 7.54 | 7.55 | 0.01 | 7.55 | 22.25 | 12.40 | 0.89 | 0.002 | 0.000 | 0.002 |
| 755 | 7.55 | 7.56 | 0.01 | 7.56 | 22.24 | 12.76 | 0.89 | 0.002 | 0.000 | 0.002 |
| 756 | 7.56 | 7.57 | 0.01 | 7.57 | 22.23 | 13.15 | 0.89 | 0.002 | 0.000 | 0.002 |
| 757 | 7.57 | 7.58 | 0.01 | 7.58 | 22.23 | 13.58 | 0.89 | 0.002 | 0.000 | 0.002 |
| 758 | 7.58 | 7.59 | 0.01 | 7.59 | 22.22 | 14.14 | 0.89 | 0.002 | 0.000 | 0.002 |
| 759 | 7.59 | 7.60 | 0.01 | 7.60 | 22.21 | 14.54 | 0.89 | 0.002 | 0.000 | 0.002 |
| 760 | 7.60 | 7.61 | 0.01 | 7.61 | 22.20 | 15.16 | 0.89 | 0.001 | 0.000 | 0.001 |
| 761 | 7.61 | 7.62 | 0.01 | 7.62 | 22.19 | 15.81 | 0.89 | 0.001 | 0.000 | 0.001 |
| 762 | 7.62 | 7.63 | 0.01 | 7.63 | 22.18 | 16.50 | 0.89 | 0.001 | 0.000 | 0.001 |
| 763 | 7.63 | 7.64 | 0.01 | 7.64 | 22.18 | 17.16 | 0.89 | 0.001 | 0.000 | 0.001 |
| 764 | 7.64 | 7.65 | 0.01 | 7.65 | 22.17 | 17.68 | 0.89 | 0.001 | 0.000 | 0.001 |
| 765 | 7.65 | 7.66 | 0.01 | 7.66 | 22.16 | 17.93 | 0.89 | 0.001 | 0.000 | 0.001 |
| 766 | 7.66 | 7.67 | 0.01 | 7.67 | 22.15 | 17.53 | 0.89 | 0.001 | 0.000 | 0.001 |
| 767 | 7.67 | 7.68 | 0.01 | 7.68 | 22.14 | 16.99 | 0.89 | 0.001 | 0.000 | 0.001 |
| 768 | 7.68 | 7.69 | 0.01 | 7.69 | 22.13 | 16.38 | 0.89 | 0.001 | 0.000 | 0.001 |
| 769 | 7.69 | 7.70 | 0.01 | 7.70 | 22.13 | 15.92 | 0.89 | 0.001 | 0.000 | 0.001 |
| 770 | 7.70 | 7.71 | 0.01 | 7.71 | 22.12 | 15.43 | 0.88 | 0.001 | 0.000 | 0.001 |
| 771 | 7.71 | 7.72 | 0.01 | 7.72 | 22.11 | 14.79 | 0.88 | 0.001 | 0.000 | 0.001 |
| 772 | 7.72 | 7.73 | 0.01 | 7.73 | 22.10 | 14.18 | 0.88 | 0.002 | 0.000 | 0.002 |
| 773 | 7.73 | 7.74 | 0.01 | 7.74 | 22.09 | 13.19 | 0.88 | 0.002 | 0.000 | 0.002 |
| 774 | 7.74 | 7.75 | 0.01 | 7.75 | 22.08 | 12.72 | 0.88 | 0.002 | 0.000 | 0.002 |
| 775 | 7.75 | 7.76 | 0.01 | 7.76 | 22.07 | 12.56 | 0.88 | 0.002 | 0.000 | 0.002 |
| 776 | 7.76 | 7.77 | 0.01 | 7.77 | 22.07 | 12.75 | 0.88 | 0.002 | 0.000 | 0.002 |
| 777 | 7.77 | 7.78 | 0.01 | 7.78 | 22.06 | 13.88 | 0.88 | 0.002 | 0.000 | 0.002 |
| 778 | 7.78 | 7.79 | 0.01 | 7.79 | 22.05 | 14.97 | 0.88 | 0.001 | 0.000 | 0.001 |
| 779 | 7.79 | 7.80 | 0.01 | 7.80 | 22.04 | 16.15 | 0.88 | 0.001 | 0.000 | 0.001 |
| 780 | 7.80 | 7.81 | 0.01 | 7.81 | 22.03 | 17.36 | 0.88 | 0.001 | 0.000 | 0.001 |
| 781 | 7.81 | 7.82 | 0.01 | 7.82 | 22.02 | 19.23 | 0.88 | 0.001 | 0.000 | 0.001 |
| 782 | 7.82 | 7.83 | 0.01 | 7.83 | 22.01 | 21.49 | 0.88 | 0.001 | 0.000 | 0.001 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 783 | 7.83 | 7.84 | 0.01 | 7.84 | 22.01 | 23.86 | 0.88 | 0.001 | 0.000 | 0.001 |
| 784 | 7.84 | 7.85 | 0.01 | 7.85 | 22.00 | 26.79 | 0.88 | 0.001 | 0.000 | 0.001 |
| 785 | 7.85 | 7.86 | 0.01 | 7.86 | 21.99 | 29.69 | 0.88 | 0.001 | 0.000 | 0.001 |
| 786 | 7.86 | 7.87 | 0.01 | 7.87 | 21.98 | 32.45 | 0.88 | 0.001 | 0.000 | 0.001 |
| 787 | 7.87 | 7.88 | 0.01 | 7.88 | 21.97 | 34.43 | 0.88 | 0.001 | 0.000 | 0.001 |
| 788 | 7.88 | 7.89 | 0.01 | 7.89 | 21.96 | 35.90 | 0.88 | 0.001 | 0.000 | 0.001 |
| 789 | 7.89 | 7.90 | 0.01 | 7.90 | 21.95 | 37.03 | 0.88 | 0.001 | 0.000 | 0.001 |
| 790 | 7.90 | 7.91 | 0.01 | 7.91 | 21.95 | 37.42 | 0.88 | 0.001 | 0.000 | 0.001 |
| 791 | 7.91 | 7.92 | 0.01 | 7.92 | 21.94 | 36.81 | 0.88 | 0.001 | 0.000 | 0.001 |
| 792 | 7.92 | 7.93 | 0.01 | 7.93 | 21.93 | 35.76 | 0.88 | 0.001 | 0.000 | 0.001 |
| 793 | 7.93 | 7.94 | 0.01 | 7.94 | 21.92 | 34.44 | 0.88 | 0.001 | 0.000 | 0.001 |
| 794 | 7.94 | 7.95 | 0.01 | 7.95 | 21.91 | 33.89 | 0.88 | 0.001 | 0.000 | 0.001 |
| 795 | 7.95 | 7.96 | 0.01 | 7.96 | 21.90 | 34.39 | 0.88 | 0.001 | 0.000 | 0.001 |
| 796 | 7.96 | 7.97 | 0.01 | 7.97 | 21.89 | 35.60 | 0.88 | 0.001 | 0.000 | 0.001 |
| 797 | 7.97 | 7.98 | 0.01 | 7.98 | 21.88 | 37.30 | 0.88 | 0.001 | 0.000 | 0.001 |
| 798 | 7.98 | 7.99 | 0.01 | 7.99 | 21.88 | 37.63 | 0.88 | 0.001 | 0.000 | 0.001 |
| 799 | 7.99 | 8.00 | 0.01 | 8.00 | 21.87 | 36.33 | 0.87 | 0.001 | 0.000 | 0.001 |
| 800 | 8.00 | 8.01 | 0.01 | 8.01 | 21.86 | 33.27 | 0.87 | 0.001 | 0.000 | 0.001 |
| 801 | 8.01 | 8.02 | 0.01 | 8.02 | 21.85 | 28.88 | 0.87 | 0.001 | 0.000 | 0.001 |
| 802 | 8.02 | 8.03 | 0.01 | 8.03 | 21.84 | 24.90 | 0.87 | 0.001 | 0.000 | 0.001 |
| 803 | 8.03 | 8.04 | 0.01 | 8.04 | 21.83 | 21.62 | 0.87 | 0.001 | 0.000 | 0.001 |
| 804 | 8.04 | 8.05 | 0.01 | 8.05 | 21.82 | 19.88 | 0.87 | 0.001 | 0.000 | 0.001 |
| 805 | 8.05 | 8.06 | 0.01 | 8.06 | 21.81 | 18.03 | 0.87 | 0.001 | 0.000 | 0.001 |
| 806 | 8.06 | 8.07 | 0.01 | 8.07 | 21.81 | 16.47 | 0.87 | 0.001 | 0.000 | 0.001 |
| 807 | 8.07 | 8.08 | 0.01 | 8.08 | 21.80 | 15.41 | 0.87 | 0.001 | 0.000 | 0.001 |
| 808 | 8.08 | 8.09 | 0.01 | 8.09 | 21.79 | 15.63 | 0.87 | 0.001 | 0.000 | 0.001 |
| 809 | 8.09 | 8.10 | 0.01 | 8.10 | 21.78 | 16.45 | 0.87 | 0.001 | 0.000 | 0.001 |
| 810 | 8.10 | 8.11 | 0.01 | 8.11 | 21.77 | 17.63 | 0.87 | 0.001 | 0.000 | 0.001 |
| 811 | 8.11 | 8.12 | 0.01 | 8.12 | 21.76 | 18.48 | 0.87 | 0.001 | 0.000 | 0.001 |
| 812 | 8.12 | 8.13 | 0.01 | 8.13 | 21.75 | 18.92 | 0.87 | 0.001 | 0.000 | 0.001 |
| 813 | 8.13 | 8.14 | 0.01 | 8.14 | 21.74 | 18.94 | 0.87 | 0.001 | 0.000 | 0.001 |
| 814 | 8.14 | 8.15 | 0.01 | 8.15 | 21.73 | 18.63 | 0.87 | 0.001 | 0.000 | 0.001 |
| 815 | 8.15 | 8.16 | 0.01 | 8.16 | 21.73 | 17.75 | 0.87 | 0.001 | 0.000 | 0.001 |
| 816 | 8.16 | 8.17 | 0.01 | 8.17 | 21.72 | 16.69 | 0.87 | 0.001 | 0.000 | 0.001 |
| 817 | 8.17 | 8.18 | 0.01 | 8.18 | 21.71 | 15.65 | 0.87 | 0.001 | 0.000 | 0.001 |
| 818 | 8.18 | 8.19 | 0.01 | 8.19 | 21.70 | 15.29 | 0.87 | 0.001 | 0.000 | 0.001 |
| 819 | 8.19 | 8.20 | 0.01 | 8.20 | 21.69 | 15.41 | 0.87 | 0.001 | 0.000 | 0.001 |
| 820 | 8.20 | 8.21 | 0.01 | 8.21 | 21.68 | 15.94 | 0.87 | 0.001 | 0.000 | 0.001 |
| 821 | 8.21 | 8.22 | 0.01 | 8.22 | 21.67 | 16.40 | 0.87 | 0.001 | 0.000 | 0.001 |
| 822 | 8.22 | 8.23 | 0.01 | 8.23 | 21.66 | 16.52 | 0.87 | 0.001 | 0.000 | 0.001 |
| 823 | 8.23 | 8.24 | 0.01 | 8.24 | 21.65 | 16.20 | 0.87 | 0.001 | 0.000 | 0.001 |
| 824 | 8.24 | 8.25 | 0.01 | 8.25 | 21.65 | 15.74 | 0.87 | 0.001 | 0.000 | 0.001 |
| 825 | 8.25 | 8.26 | 0.01 | 8.26 | 21.64 | 15.30 | 0.87 | 0.001 | 0.000 | 0.001 |
| 826 | 8.26 | 8.27 | 0.01 | 8.27 | 21.63 | 14.80 | 0.87 | 0.001 | 0.000 | 0.001 |
| 827 | 8.27 | 8.28 | 0.01 | 8.28 | 21.62 | 14.03 | 0.86 | 0.002 | 0.000 | 0.002 |
| 828 | 8.28 | 8.29 | 0.01 | 8.29 | 21.61 | 13.68 | 0.86 | 0.002 | 0.000 | 0.002 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 829 | 8.29 | 8.30 | 0.01 | 8.30 | 21.60 | 14.25 | 0.86 | 0.002 | 0.000 | 0.002 |
| 830 | 8.30 | 8.31 | 0.01 | 8.31 | 21.59 | 15.09 | 0.86 | 0.001 | 0.000 | 0.001 |
| 831 | 8.31 | 8.32 | 0.01 | 8.32 | 21.58 | 15.60 | 0.86 | 0.001 | 0.000 | 0.001 |
| 832 | 8.32 | 8.33 | 0.01 | 8.33 | 21.57 | 16.30 | 0.86 | 0.001 | 0.000 | 0.001 |
| 833 | 8.33 | 8.34 | 0.01 | 8.34 | 21.57 | 17.23 | 0.86 | 0.001 | 0.000 | 0.001 |
| 834 | 8.34 | 8.35 | 0.01 | 8.35 | 21.56 | 18.29 | 0.86 | 0.001 | 0.000 | 0.001 |
| 835 | 8.35 | 8.36 | 0.01 | 8.36 | 21.55 | 18.88 | 0.86 | 0.001 | 0.000 | 0.001 |
| 836 | 8.36 | 8.37 | 0.01 | 8.37 | 21.54 | 18.99 | 0.86 | 0.001 | 0.000 | 0.001 |
| 837 | 8.37 | 8.38 | 0.01 | 8.38 | 21.53 | 18.55 | 0.86 | 0.001 | 0.000 | 0.001 |
| 838 | 8.38 | 8.39 | 0.01 | 8.39 | 21.52 | 17.80 | 0.86 | 0.001 | 0.000 | 0.001 |
| 839 | 8.39 | 8.40 | 0.01 | 8.40 | 21.51 | 16.91 | 0.86 | 0.001 | 0.000 | 0.001 |
| 840 | 8.40 | 8.41 | 0.01 | 8.41 | 21.50 | 16.19 | 0.86 | 0.001 | 0.000 | 0.001 |
| 841 | 8.41 | 8.42 | 0.01 | 8.42 | 21.49 | 15.63 | 0.86 | 0.001 | 0.000 | 0.001 |
| 842 | 8.42 | 8.43 | 0.01 | 8.43 | 21.48 | 15.46 | 0.86 | 0.001 | 0.000 | 0.001 |
| 843 | 8.43 | 8.44 | 0.01 | 8.44 | 21.48 | 15.50 | 0.86 | 0.001 | 0.000 | 0.001 |
| 844 | 8.44 | 8.45 | 0.01 | 8.45 | 21.47 | 15.79 | 0.86 | 0.001 | 0.000 | 0.001 |
| 845 | 8.45 | 8.46 | 0.01 | 8.46 | 21.46 | 16.16 | 0.86 | 0.001 | 0.000 | 0.001 |
| 846 | 8.46 | 8.47 | 0.01 | 8.47 | 21.45 | 12.36 | 0.86 | 0.002 | 0.000 | 0.002 |
| 847 | 8.47 | 8.48 | 0.01 | 8.48 | 21.44 | 14.12 | 0.86 | 0.002 | 0.000 | 0.002 |
| 848 | 8.48 | 8.49 | 0.01 | 8.49 | 21.43 | 15.55 | 0.86 | 0.001 | 0.000 | 0.001 |
| 849 | 8.49 | 8.50 | 0.01 | 8.50 | 21.42 | 19.32 | 0.86 | 0.001 | 0.000 | 0.001 |
| 850 | 8.50 | 8.51 | 0.01 | 8.51 | 21.41 | 19.66 | 0.86 | 0.001 | 0.000 | 0.001 |
| 851 | 8.51 | 8.52 | 0.01 | 8.52 | 21.40 | 20.14 | 0.86 | 0.001 | 0.000 | 0.001 |
| 852 | 8.52 | 8.53 | 0.01 | 8.53 | 21.39 | 20.66 | 0.86 | 0.001 | 0.000 | 0.001 |
| 853 | 8.53 | 8.54 | 0.01 | 8.54 | 21.38 | 21.26 | 0.86 | 0.001 | 0.000 | 0.001 |
| 854 | 8.54 | 8.55 | 0.01 | 8.55 | 21.37 | 21.79 | 0.85 | 0.001 | 0.000 | 0.001 |
| 855 | 8.55 | 8.56 | 0.01 | 8.56 | 21.37 | 21.99 | 0.85 | 0.001 | 0.000 | 0.001 |
| 856 | 8.56 | 8.57 | 0.01 | 8.57 | 21.36 | 21.37 | 0.85 | 0.001 | 0.000 | 0.001 |
| 857 | 8.57 | 8.58 | 0.01 | 8.58 | 21.35 | 20.45 | 0.85 | 0.001 | 0.000 | 0.001 |
| 858 | 8.58 | 8.59 | 0.01 | 8.59 | 21.34 | 19.52 | 0.85 | 0.001 | 0.000 | 0.001 |
| 859 | 8.59 | 8.60 | 0.01 | 8.60 | 21.33 | 19.05 | 0.85 | 0.001 | 0.000 | 0.001 |
| 860 | 8.60 | 8.61 | 0.01 | 8.61 | 21.32 | 18.68 | 0.85 | 0.001 | 0.000 | 0.001 |
| 861 | 8.61 | 8.62 | 0.01 | 8.62 | 21.31 | 18.37 | 0.85 | 0.001 | 0.000 | 0.001 |
| 862 | 8.62 | 8.63 | 0.01 | 8.63 | 21.30 | 17.90 | 0.85 | 0.001 | 0.000 | 0.001 |
| 863 | 8.63 | 8.64 | 0.01 | 8.64 | 21.29 | 17.31 | 0.85 | 0.001 | 0.000 | 0.001 |
| 864 | 8.64 | 8.65 | 0.01 | 8.65 | 21.28 | 16.70 | 0.85 | 0.001 | 0.000 | 0.001 |
| 865 | 8.65 | 8.66 | 0.01 | 8.66 | 21.27 | 16.43 | 0.85 | 0.001 | 0.000 | 0.001 |
| 866 | 8.66 | 8.67 | 0.01 | 8.67 | 21.26 | 16.63 | 0.85 | 0.001 | 0.000 | 0.001 |
| 867 | 8.67 | 8.68 | 0.01 | 8.68 | 21.26 | 17.24 | 0.85 | 0.001 | 0.000 | 0.001 |
| 868 | 8.68 | 8.69 | 0.01 | 8.69 | 21.25 | 18.43 | 0.85 | 0.001 | 0.000 | 0.001 |
| 869 | 8.69 | 8.70 | 0.01 | 8.70 | 21.24 | 19.49 | 0.85 | 0.001 | 0.000 | 0.001 |
| 870 | 8.70 | 8.71 | 0.01 | 8.71 | 21.23 | 20.13 | 0.85 | 0.001 | 0.000 | 0.001 |
| 871 | 8.71 | 8.72 | 0.01 | 8.72 | 21.22 | 20.03 | 0.85 | 0.001 | 0.000 | 0.001 |
| 872 | 8.72 | 8.73 | 0.01 | 8.73 | 21.21 | 19.64 | 0.85 | 0.001 | 0.000 | 0.001 |
| 873 | 8.73 | 8.74 | 0.01 | 8.74 | 21.20 | 19.30 | 0.85 | 0.001 | 0.000 | 0.001 |
| 874 | 8.74 | 8.75 | 0.01 | 8.75 | 21.19 | 19.12 | 0.85 | 0.001 | 0.000 | 0.001 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 875 | 8.75 | 8.76 | 0.01 | 8.76 | 21.18 | 19.22 | 0.85 | 0.001 | 0.000 | 0.001 |
| 876 | 8.76 | 8.77 | 0.01 | 8.77 | 21.17 | 19.57 | 0.85 | 0.001 | 0.000 | 0.001 |
| 877 | 8.77 | 8.78 | 0.01 | 8.78 | 21.16 | 20.04 | 0.85 | 0.001 | 0.000 | 0.001 |
| 878 | 8.78 | 8.79 | 0.01 | 8.79 | 21.15 | 20.59 | 0.85 | 0.001 | 0.000 | 0.001 |
| 879 | 8.79 | 8.80 | 0.01 | 8.80 | 21.14 | 21.11 | 0.85 | 0.001 | 0.000 | 0.001 |
| 880 | 8.80 | 8.81 | 0.01 | 8.81 | 21.14 | 21.40 | 0.85 | 0.001 | 0.000 | 0.001 |
| 881 | 8.81 | 8.82 | 0.01 | 8.82 | 21.13 | 21.23 | 0.85 | 0.001 | 0.000 | 0.001 |
| 882 | 8.82 | 8.83 | 0.01 | 8.83 | 21.12 | 20.18 | 0.84 | 0.001 | 0.000 | 0.001 |
| 883 | 8.83 | 8.84 | 0.01 | 8.84 | 21.11 | 18.99 | 0.84 | 0.001 | 0.000 | 0.001 |
| 884 | 8.84 | 8.85 | 0.01 | 8.85 | 21.10 | 17.82 | 0.84 | 0.001 | 0.000 | 0.001 |
| 885 | 8.85 | 8.86 | 0.01 | 8.86 | 21.09 | 17.26 | 0.84 | 0.001 | 0.000 | 0.001 |
| 886 | 8.86 | 8.87 | 0.01 | 8.87 | 21.08 | 16.93 | 0.84 | 0.001 | 0.000 | 0.001 |
| 887 | 8.87 | 8.88 | 0.01 | 8.88 | 21.07 | 16.92 | 0.84 | 0.001 | 0.000 | 0.001 |
| 888 | 8.88 | 8.89 | 0.01 | 8.89 | 21.06 | 17.27 | 0.84 | 0.001 | 0.000 | 0.001 |
| 889 | 8.89 | 8.90 | 0.01 | 8.90 | 21.05 | 17.61 | 0.84 | 0.001 | 0.000 | 0.001 |
| 890 | 8.90 | 8.91 | 0.01 | 8.91 | 21.04 | 17.85 | 0.84 | 0.001 | 0.000 | 0.001 |
| 891 | 8.91 | 8.92 | 0.01 | 8.92 | 21.03 | 17.70 | 0.84 | 0.001 | 0.000 | 0.001 |
| 892 | 8.92 | 8.93 | 0.01 | 8.93 | 21.02 | 16.91 | 0.84 | 0.001 | 0.000 | 0.001 |
| 893 | 8.93 | 8.94 | 0.01 | 8.94 | 21.01 | 15.67 | 0.84 | 0.001 | 0.000 | 0.001 |
| 894 | 8.94 | 8.95 | 0.01 | 8.95 | 21.00 | 13.80 | 0.84 | 0.002 | 0.000 | 0.002 |
| 895 | 8.95 | 8.96 | 0.01 | 8.96 | 21.00 | 12.54 | 0.84 | 0.002 | 0.000 | 0.002 |
| 896 | 8.96 | 8.97 | 0.01 | 8.97 | 20.99 | 11.64 | 0.84 | 0.002 | 0.000 | 0.002 |
| 897 | 8.97 | 8.98 | 0.01 | 8.98 | 20.98 | 11.00 | 0.84 | 0.002 | 0.000 | 0.002 |
| 898 | 8.98 | 8.99 | 0.01 | 8.99 | 20.97 | 10.98 | 0.84 | 0.002 | 0.000 | 0.002 |
| 899 | 8.99 | 9.00 | 0.01 | 9.00 | 20.96 | 11.15 | 0.84 | 0.002 | 0.000 | 0.002 |
| 900 | 9.00 | 9.01 | 0.01 | 9.01 | 20.95 | 11.48 | 0.84 | 0.002 | 0.000 | 0.002 |
| 901 | 9.01 | 9.02 | 0.01 | 9.02 | 20.94 | 11.93 | 0.84 | 0.002 | 0.000 | 0.002 |
| 902 | 9.02 | 9.03 | 0.01 | 9.03 | 20.93 | 12.50 | 0.84 | 0.002 | 0.000 | 0.002 |
| 903 | 9.03 | 9.04 | 0.01 | 9.04 | 20.92 | 12.95 | 0.84 | 0.002 | 0.000 | 0.002 |
| 904 | 9.04 | 9.05 | 0.01 | 9.05 | 20.91 | 13.33 | 0.84 | 0.002 | 0.000 | 0.002 |
| 905 | 9.05 | 9.06 | 0.01 | 9.06 | 20.90 | 13.29 | 0.84 | 0.002 | 0.000 | 0.002 |
| 906 | 9.06 | 9.07 | 0.01 | 9.07 | 20.89 | 12.94 | 0.84 | 0.002 | 0.000 | 0.002 |
| 907 | 9.07 | 9.08 | 0.01 | 9.08 | 20.88 | 12.36 | 0.84 | 0.002 | 0.000 | 0.002 |
| 908 | 9.08 | 9.09 | 0.01 | 9.09 | 20.87 | 12.17 | 0.83 | 0.002 | 0.000 | 0.002 |
| 909 | 9.09 | 9.10 | 0.01 | 9.10 | 20.86 | 12.31 | 0.83 | 0.002 | 0.000 | 0.002 |
| 910 | 9.10 | 9.11 | 0.01 | 9.11 | 20.85 | 12.89 | 0.83 | 0.002 | 0.000 | 0.002 |
| 911 | 9.11 | 9.12 | 0.01 | 9.12 | 20.85 | 13.98 | 0.83 | 0.001 | 0.000 | 0.001 |
| 912 | 9.12 | 9.13 | 0.01 | 9.13 | 20.84 | 15.27 | 0.83 | 0.001 | 0.000 | 0.001 |
| 913 | 9.13 | 9.14 | 0.01 | 9.14 | 20.83 | 16.61 | 0.83 | 0.001 | 0.000 | 0.001 |
| 914 | 9.14 | 9.15 | 0.01 | 9.15 | 20.82 | 17.10 | 0.83 | 0.001 | 0.000 | 0.001 |
| 915 | 9.15 | 9.16 | 0.01 | 9.16 | 20.81 | 17.85 | 0.83 | 0.001 | 0.000 | 0.001 |
| 916 | 9.16 | 9.17 | 0.01 | 9.17 | 20.80 | 18.68 | 0.83 | 0.001 | 0.000 | 0.001 |
| 917 | 9.17 | 9.18 | 0.01 | 9.18 | 20.79 | 19.37 | 0.83 | 0.001 | 0.000 | 0.001 |
| 918 | 9.18 | 9.19 | 0.01 | 9.19 | 20.78 | 19.56 | 0.83 | 0.001 | 0.000 | 0.001 |
| 919 | 9.19 | 9.20 | 0.01 | 9.20 | 20.77 | 19.44 | 0.83 | 0.001 | 0.000 | 0.001 |
| 920 | 9.20 | 9.21 | 0.01 | 9.21 | 20.76 | 19.27 | 0.83 | 0.001 | 0.000 | 0.001 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 921 | 9.21 | 9.22 | 0.01 | 9.22 | 20.75 | 19.09 | 0.83 | 0.001 | 0.000 | 0.001 |
| 922 | 9.22 | 9.23 | 0.01 | 9.23 | 20.74 | 18.82 | 0.83 | 0.001 | 0.000 | 0.001 |
| 923 | 9.23 | 9.24 | 0.01 | 9.24 | 20.73 | 18.40 | 0.83 | 0.001 | 0.000 | 0.001 |
| 924 | 9.24 | 9.25 | 0.01 | 9.25 | 20.72 | 18.09 | 0.83 | 0.001 | 0.000 | 0.001 |
| 925 | 9.25 | 9.26 | 0.01 | 9.26 | 20.71 | 17.90 | 0.83 | 0.001 | 0.000 | 0.001 |
| 926 | 9.26 | 9.27 | 0.01 | 9.27 | 20.70 | 17.40 | 0.83 | 0.001 | 0.000 | 0.001 |
| 927 | 9.27 | 9.28 | 0.01 | 9.28 | 20.69 | 16.74 | 0.83 | 0.001 | 0.000 | 0.001 |
| 928 | 9.28 | 9.29 | 0.01 | 9.29 | 20.68 | 15.39 | 0.83 | 0.001 | 0.000 | 0.001 |
| 929 | 9.29 | 9.30 | 0.01 | 9.30 | 20.67 | 14.86 | 0.83 | 0.001 | 0.000 | 0.001 |
| 930 | 9.30 | 9.31 | 0.01 | 9.31 | 20.66 | 14.62 | 0.83 | 0.001 | 0.000 | 0.001 |
| 931 | 9.31 | 9.32 | 0.01 | 9.32 | 20.66 | 14.93 | 0.83 | 0.001 | 0.000 | 0.001 |
| 932 | 9.32 | 9.33 | 0.01 | 9.33 | 20.65 | 15.42 | 0.83 | 0.001 | 0.000 | 0.001 |
| 933 | 9.33 | 9.34 | 0.01 | 9.34 | 20.64 | 16.15 | 0.83 | 0.001 | 0.000 | 0.001 |
| 934 | 9.34 | 9.35 | 0.01 | 9.35 | 20.63 | 16.78 | 0.83 | 0.001 | 0.000 | 0.001 |
| 935 | 9.35 | 9.36 | 0.01 | 9.36 | 20.62 | 17.14 | 0.82 | 0.001 | 0.000 | 0.001 |
| 936 | 9.36 | 9.37 | 0.01 | 9.37 | 20.61 | 17.38 | 0.82 | 0.001 | 0.000 | 0.001 |
| 937 | 9.37 | 9.38 | 0.01 | 9.38 | 20.60 | 17.58 | 0.82 | 0.001 | 0.000 | 0.001 |
| 938 | 9.38 | 9.39 | 0.01 | 9.39 | 20.59 | 17.63 | 0.82 | 0.001 | 0.000 | 0.001 |
| 939 | 9.39 | 9.40 | 0.01 | 9.40 | 20.58 | 17.54 | 0.82 | 0.001 | 0.000 | 0.001 |
| 940 | 9.40 | 9.41 | 0.01 | 9.41 | 20.57 | 17.25 | 0.82 | 0.001 | 0.000 | 0.001 |
| 941 | 9.41 | 9.42 | 0.01 | 9.42 | 20.56 | 17.14 | 0.82 | 0.001 | 0.000 | 0.001 |
| 942 | 9.42 | 9.43 | 0.01 | 9.43 | 20.55 | 17.14 | 0.82 | 0.001 | 0.000 | 0.001 |
| 943 | 9.43 | 9.44 | 0.01 | 9.44 | 20.54 | 17.38 | 0.82 | 0.001 | 0.000 | 0.001 |
| 944 | 9.44 | 9.45 | 0.01 | 9.45 | 20.53 | 17.77 | 0.82 | 0.001 | 0.000 | 0.001 |
| 945 | 9.45 | 9.46 | 0.01 | 9.46 | 20.52 | 18.18 | 0.82 | 0.001 | 0.000 | 0.001 |
| 946 | 9.46 | 9.47 | 0.01 | 9.47 | 20.51 | 14.65 | 0.82 | 0.001 | 0.000 | 0.001 |
| 947 | 9.47 | 9.48 | 0.01 | 9.48 | 20.50 | 16.16 | 0.82 | 0.001 | 0.000 | 0.001 |
| 948 | 9.48 | 9.49 | 0.01 | 9.49 | 20.49 | 17.22 | 0.82 | 0.001 | 0.000 | 0.001 |
| 949 | 9.49 | 9.50 | 0.01 | 9.50 | 20.48 | 20.63 | 0.82 | 0.001 | 0.000 | 0.001 |
| 950 | 9.50 | 9.51 | 0.01 | 9.51 | 20.47 | 20.59 | 0.82 | 0.001 | 0.000 | 0.001 |
| 951 | 9.51 | 9.52 | 0.01 | 9.52 | 20.46 | 20.39 | 0.82 | 0.001 | 0.000 | 0.001 |
| 952 | 9.52 | 9.53 | 0.01 | 9.53 | 20.45 | 19.85 | 0.82 | 0.001 | 0.000 | 0.001 |
| 953 | 9.53 | 9.54 | 0.01 | 9.54 | 20.44 | 18.93 | 0.82 | 0.001 | 0.000 | 0.001 |
| 954 | 9.54 | 9.55 | 0.01 | 9.55 | 20.43 | 17.79 | 0.82 | 0.001 | 0.000 | 0.001 |
| 955 | 9.55 | 9.56 | 0.01 | 9.56 | 20.42 | 16.24 | 0.82 | 0.001 | 0.000 | 0.001 |
| 956 | 9.56 | 9.57 | 0.01 | 9.57 | 20.42 | 14.29 | 0.82 | 0.001 | 0.000 | 0.001 |
| 957 | 9.57 | 9.58 | 0.01 | 9.58 | 20.41 | 13.09 | 0.82 | 0.002 | 0.000 | 0.002 |
| 958 | 9.58 | 9.59 | 0.01 | 9.59 | 20.40 | 12.39 | 0.82 | 0.002 | 0.000 | 0.002 |
| 959 | 9.59 | 9.60 | 0.01 | 9.60 | 20.39 | 12.34 | 0.82 | 0.002 | 0.000 | 0.002 |
| 960 | 9.60 | 9.61 | 0.01 | 9.61 | 20.38 | 12.68 | 0.82 | 0.002 | 0.000 | 0.002 |
| 961 | 9.61 | 9.62 | 0.01 | 9.62 | 20.37 | 13.04 | 0.81 | 0.002 | 0.000 | 0.002 |
| 962 | 9.62 | 9.63 | 0.01 | 9.63 | 20.36 | 13.61 | 0.81 | 0.001 | 0.000 | 0.001 |
| 963 | 9.63 | 9.64 | 0.01 | 9.64 | 20.35 | 14.34 | 0.81 | 0.001 | 0.000 | 0.001 |
| 964 | 9.64 | 9.65 | 0.01 | 9.65 | 20.34 | 15.61 | 0.81 | 0.001 | 0.000 | 0.001 |
| 965 | 9.65 | 9.66 | 0.01 | 9.66 | 20.33 | 17.99 | 0.81 | 0.001 | 0.000 | 0.001 |
| 966 | 9.66 | 9.67 | 0.01 | 9.67 | 20.32 | 20.22 | 0.81 | 0.001 | 0.000 | 0.001 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 967 | 9.67 | 9.68 | 0.01 | 9.68 | 20.31 | 22.96 | 0.81 | 0.001 | 0.000 | 0.001 |
| 968 | 9.68 | 9.69 | 0.01 | 9.69 | 20.30 | 25.64 | 0.81 | 0.001 | 0.000 | 0.001 |
| 969 | 9.69 | 9.70 | 0.01 | 9.70 | 20.29 | 28.19 | 0.81 | 0.001 | 0.000 | 0.001 |
| 970 | 9.70 | 9.71 | 0.01 | 9.71 | 20.28 | 29.82 | 0.81 | 0.001 | 0.000 | 0.001 |
| 971 | 9.71 | 9.72 | 0.01 | 9.72 | 20.27 | 30.44 | 0.81 | 0.001 | 0.000 | 0.001 |
| 972 | 9.72 | 9.73 | 0.01 | 9.73 | 20.26 | 30.03 | 0.81 | 0.001 | 0.000 | 0.001 |
| 973 | 9.73 | 9.74 | 0.01 | 9.74 | 20.25 | 29.45 | 0.81 | 0.001 | 0.000 | 0.001 |
| 974 | 9.74 | 9.75 | 0.01 | 9.75 | 20.24 | 28.97 | 0.81 | 0.001 | 0.000 | 0.001 |
| 975 | 9.75 | 9.76 | 0.01 | 9.76 | 20.23 | 28.74 | 0.81 | 0.001 | 0.000 | 0.001 |
| 976 | 9.76 | 9.77 | 0.01 | 9.77 | 20.22 | 28.87 | 0.81 | 0.001 | 0.000 | 0.001 |
| 977 | 9.77 | 9.78 | 0.01 | 9.78 | 20.21 | 29.00 | 0.81 | 0.001 | 0.000 | 0.001 |
| 978 | 9.78 | 9.79 | 0.01 | 9.79 | 20.20 | 28.84 | 0.81 | 0.001 | 0.000 | 0.001 |
| 979 | 9.79 | 9.80 | 0.01 | 9.80 | 20.19 | 28.11 | 0.81 | 0.001 | 0.000 | 0.001 |
| 980 | 9.80 | 9.81 | 0.01 | 9.81 | 20.18 | 27.20 | 0.81 | 0.001 | 0.000 | 0.001 |
| 981 | 9.81 | 9.82 | 0.01 | 9.82 | 20.17 | 26.33 | 0.81 | 0.001 | 0.000 | 0.001 |
| 982 | 9.82 | 9.83 | 0.01 | 9.83 | 20.16 | 25.69 | 0.81 | 0.001 | 0.000 | 0.001 |
| 983 | 9.83 | 9.84 | 0.01 | 9.84 | 20.15 | 25.40 | 0.81 | 0.001 | 0.000 | 0.001 |
| 984 | 9.84 | 9.85 | 0.01 | 9.85 | 20.14 | 25.47 | 0.81 | 0.001 | 0.000 | 0.001 |
| 985 | 9.85 | 9.86 | 0.01 | 9.86 | 20.13 | 25.58 | 0.81 | 0.001 | 0.000 | 0.001 |
| 986 | 9.86 | 9.87 | 0.01 | 9.87 | 20.12 | 25.44 | 0.80 | 0.001 | 0.000 | 0.001 |
| 987 | 9.87 | 9.88 | 0.01 | 9.88 | 20.11 | 25.21 | 0.80 | 0.001 | 0.000 | 0.001 |
| 988 | 9.88 | 9.89 | 0.01 | 9.89 | 20.11 | 25.24 | 0.80 | 0.001 | 0.000 | 0.001 |
| 989 | 9.89 | 9.90 | 0.01 | 9.90 | 20.10 | 25.40 | 0.80 | 0.001 | 0.000 | 0.001 |
| 990 | 9.90 | 9.91 | 0.01 | 9.91 | 20.09 | 25.33 | 0.80 | 0.001 | 0.000 | 0.001 |
| 991 | 9.91 | 9.92 | 0.01 | 9.92 | 20.08 | 24.77 | 0.80 | 0.001 | 0.000 | 0.001 |
| 992 | 9.92 | 9.93 | 0.01 | 9.93 | 20.07 | 23.86 | 0.80 | 0.001 | 0.000 | 0.001 |
| 993 | 9.93 | 9.94 | 0.01 | 9.94 | 20.06 | 23.10 | 0.80 | 0.001 | 0.000 | 0.001 |
| 994 | 9.94 | 9.95 | 0.01 | 9.95 | 20.05 | 22.68 | 0.80 | 0.001 | 0.000 | 0.001 |
| 995 | 9.95 | 9.96 | 0.01 | 9.96 | 20.04 | 22.77 | 0.80 | 0.001 | 0.000 | 0.001 |
| 996 | 9.96 | 9.97 | 0.01 | 9.97 | 20.03 | 23.02 | 0.80 | 0.001 | 0.000 | 0.001 |
| 997 | 9.97 | 9.98 | 0.01 | 9.98 | 20.02 | 23.28 | 0.80 | 0.001 | 0.000 | 0.001 |
| 998 | 9.98 | 9.99 | 0.01 | 9.99 | 20.01 | 23.48 | 0.80 | 0.001 | 0.000 | 0.001 |
| 999 | 9.99 | 10.00 | 0.01 | 10.00 | 20.00 | 23.45 | 0.80 | 0.001 | 0.000 | 0.001 |
| 1000 | 10.00 | 10.01 | 0.01 | 10.01 | 19.99 | 23.13 | 0.80 | 0.001 | 0.000 | 0.001 |
| 1001 | 10.01 | 10.02 | 0.01 | 10.02 | 19.98 | 22.61 | 0.80 | 0.001 | 0.000 | 0.001 |
| 1002 | 10.02 | 10.03 | 0.01 | 10.03 | 19.97 | 22.15 | 0.80 | 0.001 | 0.000 | 0.001 |
| 1003 | 10.03 | 10.04 | 0.01 | 10.04 | 19.96 | 21.89 | 0.80 | 0.001 | 0.000 | 0.001 |
| 1004 | 10.04 | 10.05 | 0.01 | 10.05 | 19.95 | 21.87 | 0.80 | 0.001 | 0.000 | 0.001 |
| 1005 | 10.05 | 10.06 | 0.01 | 10.06 | 19.94 | 22.55 | 0.80 | 0.001 | 0.000 | 0.001 |
| 1006 | 10.06 | 10.07 | 0.01 | 10.07 | 19.93 | 23.55 | 0.80 | 0.001 | 0.000 | 0.001 |
| 1007 | 10.07 | 10.08 | 0.01 | 10.08 | 19.92 | 24.65 | 0.80 | 0.001 | 0.000 | 0.001 |
| 1008 | 10.08 | 10.09 | 0.01 | 10.09 | 19.91 | 25.26 | 0.80 | 0.001 | 0.000 | 0.001 |
| 1009 | 10.09 | 10.10 | 0.01 | 10.10 | 19.90 | 25.54 | 0.80 | 0.001 | 0.000 | 0.001 |
| 1010 | 10.10 | 10.11 | 0.01 | 10.11 | 19.89 | 25.46 | 0.80 | 0.001 | 0.000 | 0.001 |
| 1011 | 10.11 | 10.12 | 0.01 | 10.12 | 19.88 | 25.21 | 0.80 | 0.001 | 0.000 | 0.001 |
| 1012 | 10.12 | 10.13 | 0.01 | 10.13 | 19.87 | 24.98 | 0.79 | 0.001 | 0.000 | 0.001 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1013 | 10.13 | 10.14 | 0.01 | 10.14 | 19.86 | 24.91 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1014 | 10.14 | 10.15 | 0.01 | 10.15 | 19.85 | 25.14 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1015 | 10.15 | 10.16 | 0.01 | 10.16 | 19.84 | 25.39 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1016 | 10.16 | 10.17 | 0.01 | 10.17 | 19.83 | 25.39 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1017 | 10.17 | 10.18 | 0.01 | 10.18 | 19.82 | 24.92 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1018 | 10.18 | 10.19 | 0.01 | 10.19 | 19.81 | 24.38 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1019 | 10.19 | 10.20 | 0.01 | 10.20 | 19.80 | 24.17 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1020 | 10.20 | 10.21 | 0.01 | 10.21 | 19.79 | 23.69 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1021 | 10.21 | 10.22 | 0.01 | 10.22 | 19.78 | 22.39 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1022 | 10.22 | 10.23 | 0.01 | 10.23 | 19.77 | 20.25 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1023 | 10.23 | 10.24 | 0.01 | 10.24 | 19.76 | 17.56 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1024 | 10.24 | 10.25 | 0.01 | 10.25 | 19.75 | 14.30 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1025 | 10.25 | 10.26 | 0.01 | 10.26 | 19.74 | 12.36 | 0.79 | 0.002 | 0.000 | 0.002 |
| 1026 | 10.26 | 10.27 | 0.01 | 10.27 | 19.73 | 11.80 | 0.79 | 0.002 | 0.000 | 0.002 |
| 1027 | 10.27 | 10.28 | 0.01 | 10.28 | 19.72 | 12.15 | 0.79 | 0.002 | 0.000 | 0.002 |
| 1028 | 10.28 | 10.29 | 0.01 | 10.29 | 19.71 | 13.15 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1029 | 10.29 | 10.30 | 0.01 | 10.30 | 19.70 | 14.53 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1030 | 10.30 | 10.31 | 0.01 | 10.31 | 19.69 | 16.48 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1031 | 10.31 | 10.32 | 0.01 | 10.32 | 19.68 | 18.90 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1032 | 10.32 | 10.33 | 0.01 | 10.33 | 19.67 | 20.49 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1033 | 10.33 | 10.34 | 0.01 | 10.34 | 19.66 | 22.25 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1034 | 10.34 | 10.35 | 0.01 | 10.35 | 19.65 | 24.45 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1035 | 10.35 | 10.36 | 0.01 | 10.36 | 19.64 | 25.75 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1036 | 10.36 | 10.37 | 0.01 | 10.37 | 19.63 | 25.60 | 0.79 | 0.001 | 0.000 | 0.001 |
| 1037 | 10.37 | 10.38 | 0.01 | 10.38 | 19.62 | 23.64 | 0.78 | 0.001 | 0.000 | 0.001 |
| 1038 | 10.38 | 10.39 | 0.01 | 10.39 | 19.61 | 21.53 | 0.78 | 0.001 | 0.000 | 0.001 |
| 1039 | 10.39 | 10.40 | 0.01 | 10.40 | 19.60 | 19.95 | 0.78 | 0.001 | 0.000 | 0.001 |
| 1040 | 10.40 | 10.41 | 0.01 | 10.41 | 19.60 | 18.98 | 0.78 | 0.001 | 0.000 | 0.001 |
| 1041 | 10.41 | 10.42 | 0.01 | 10.42 | 19.59 | 18.85 | 0.78 | 0.001 | 0.000 | 0.001 |
| 1042 | 10.42 | 10.43 | 0.01 | 10.43 | 19.58 | 19.79 | 0.78 | 0.001 | 0.000 | 0.001 |
| 1043 | 10.43 | 10.44 | 0.01 | 10.44 | 19.57 | 21.40 | 0.78 | 0.001 | 0.000 | 0.001 |
| 1044 | 10.44 | 10.45 | 0.01 | 10.45 | 19.56 | 23.04 | 0.78 | 0.001 | 0.000 | 0.001 |
| 1045 | 10.45 | 10.46 | 0.01 | 10.46 | 19.55 | 21.01 | 0.78 | 0.001 | 0.000 | 0.001 |
| 1046 | 10.46 | 10.47 | 0.01 | 10.47 | 19.54 | 22.36 | 0.78 | 0.001 | 0.000 | 0.001 |
| 1047 | 10.47 | 10.48 | 0.01 | 10.48 | 19.53 | 22.72 | 0.78 | 0.001 | 0.000 | 0.001 |
| 1048 | 10.48 | 10.49 | 0.01 | 10.49 | 19.52 | 25.73 | 0.78 | 0.001 | 0.000 | 0.001 |
| 1049 | 10.49 | 10.50 | 0.01 | 10.50 | 19.51 | 24.72 | 0.78 | 0.001 | 0.000 | 0.001 |
| 1050 | 10.50 | 10.51 | 0.01 | 10.51 | 19.50 | 24.21 | 0.78 | 0.001 | 0.000 | 0.001 |
| 1051 | 10.51 | 10.52 | 0.01 | 10.52 | 19.49 | 24.15 | 0.78 | 0.001 | 0.000 | 0.001 |
| 1052 | 10.52 | 10.53 | 0.01 | 10.53 | 19.48 | 24.64 | 0.78 | 0.001 | 0.000 | 0.001 |
| 1053 | 10.53 | 10.54 | 0.01 | 10.54 | 19.47 | 25.92 | 0.78 | 0.001 | 0.000 | 0.001 |
| 1054 | 10.54 | 10.55 | 0.01 | 10.55 | 19.46 | 26.86 | 0.78 | 0.001 | 0.000 | 0.001 |
| 1055 | 10.55 | 10.56 | 0.01 | 10.56 | 19.45 | 27.13 | 0.78 | 0.001 | 0.000 | 0.001 |
| 1056 | 10.56 | 10.57 | 0.01 | 10.57 | 19.44 | 26.64 | 0.78 | 0.001 | 0.000 | 0.001 |
| 1057 | 10.57 | 10.58 | 0.01 | 10.58 | 19.43 | 26.21 | 0.78 | 0.001 | 0.000 | 0.001 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|

**Total primary settlement: 4.18**
**Total secondary settlement: 0.00**

**Total calculated settlement: 4.18**

**Abbreviations**

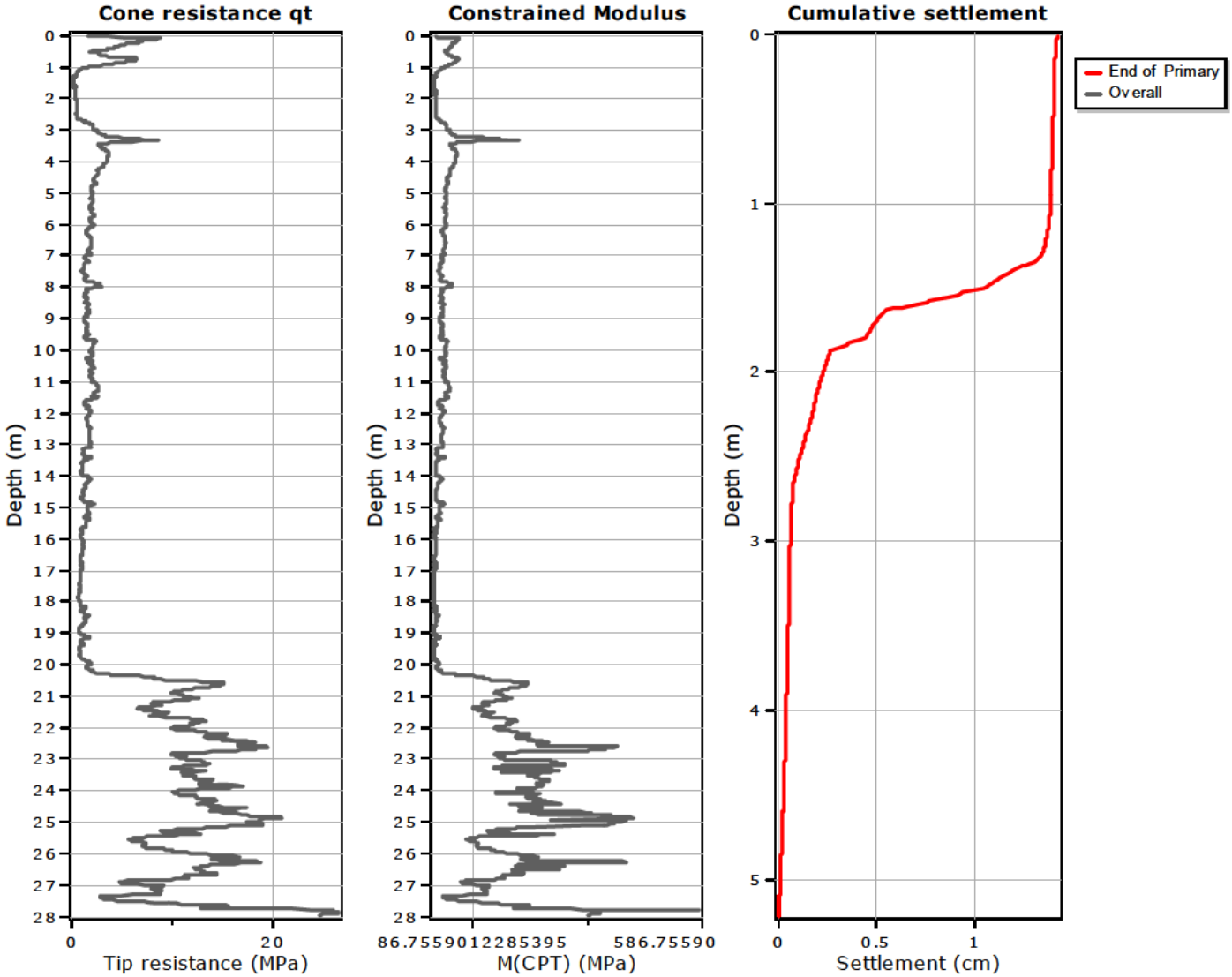
| | |
|---|---|
| Start depth: | Start depth of soil layer (penetration depth measured from ground free surface) |
| End depth: | End depth of soil layer (penetration depth measured from ground free surface) |
| Thickness: | Thickness of soil layer |
| Relative depth: | Depth of calculation relative to footing |
| Iz: | Stress influence factor |
| Delta P: | Footing impossed stress: |
| Eff. stress: | Effective stress |
| $M_{(CPT)}$: | Constrained modulus from CPT |
| Settlement: | Primary settlement |
| Second. settlement: | Secondary settlemends due to creep |

**Tram Dinh**
Geotechnical Engineer
Hamilton
www.wsp.com/nz

**CPT: CPT01 - 15kPa**
Total depth: 27.97 m, Date: 25/11/2020
Surface Elevation: 0.00 m
Coords: X:0.00, Y:0.00
Cone Type:
Cone Operator:

**Project:** **2-WLASS.BN Geotechnical and Risk Assessment Sonning Carpark**
**Location:** **Sonning Carpark - River Road**

## Settlements calculation according to theory of elasticity*




### Calculation properties

Footing type: Rectangular
Footing width: 25.00 (m)
L/B: 1.0
Footing pressure: 10.00 (kPa)
Embedment depth: 0.00 (m)
Footing is rigid: No
Remove excavation load: No
Apply 20% rule: Yes
Calculate secondary settlements: No
Time period for primary consolidation: N/A
Time period for second. settlements: N/A

* Primary settlements calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

* Secondary (creep) settlements calculation is performed according to the following formula:

$$S = C_\alpha \cdot \Delta z \cdot \log(t/t_p)$$

where $t_p$ is the duration of primary consolidation

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.01 | 0.02 | 0.01 | 0.02 | 10.00 | 2.29 | 1.00 | 0.004 | 0.000 | 0.004 |
| 2 | 0.02 | 0.03 | 0.01 | 0.03 | 10.00 | 3.05 | 1.00 | 0.003 | 0.000 | 0.003 |
| 3 | 0.03 | 0.04 | 0.01 | 0.04 | 10.00 | 5.08 | 1.00 | 0.002 | 0.000 | 0.002 |
| 4 | 0.04 | 0.05 | 0.01 | 0.05 | 10.00 | 7.60 | 1.00 | 0.001 | 0.000 | 0.001 |
| 5 | 0.05 | 0.06 | 0.01 | 0.06 | 10.00 | 10.24 | 1.00 | 0.001 | 0.000 | 0.001 |
| 6 | 0.06 | 0.07 | 0.01 | 0.07 | 10.00 | 44.05 | 1.00 | 0.000 | 0.000 | 0.000 |
| 7 | 0.07 | 0.08 | 0.01 | 0.08 | 10.00 | 50.73 | 1.00 | 0.000 | 0.000 | 0.000 |
| 8 | 0.08 | 0.09 | 0.01 | 0.09 | 10.00 | 53.97 | 1.00 | 0.000 | 0.000 | 0.000 |
| 9 | 0.09 | 0.10 | 0.01 | 0.09 | 10.00 | 51.72 | 1.00 | 0.000 | 0.000 | 0.000 |
| 10 | 0.10 | 0.11 | 0.01 | 0.10 | 10.00 | 52.69 | 1.00 | 0.000 | 0.000 | 0.000 |
| 11 | 0.11 | 0.12 | 0.01 | 0.12 | 10.00 | 53.55 | 1.00 | 0.000 | 0.000 | 0.000 |
| 12 | 0.12 | 0.13 | 0.01 | 0.13 | 10.00 | 53.29 | 1.00 | 0.000 | 0.000 | 0.000 |
| 13 | 0.13 | 0.14 | 0.01 | 0.14 | 10.00 | 52.37 | 1.00 | 0.000 | 0.000 | 0.000 |
| 14 | 0.14 | 0.15 | 0.01 | 0.15 | 10.00 | 51.86 | 1.00 | 0.000 | 0.000 | 0.000 |
| 15 | 0.15 | 0.16 | 0.01 | 0.16 | 10.00 | 51.66 | 1.00 | 0.000 | 0.000 | 0.000 |
| 16 | 0.16 | 0.17 | 0.01 | 0.17 | 10.00 | 51.20 | 1.00 | 0.000 | 0.000 | 0.000 |
| 17 | 0.17 | 0.18 | 0.01 | 0.18 | 10.00 | 50.57 | 1.00 | 0.000 | 0.000 | 0.000 |
| 18 | 0.18 | 0.19 | 0.01 | 0.19 | 10.00 | 49.92 | 1.00 | 0.000 | 0.000 | 0.000 |
| 19 | 0.19 | 0.20 | 0.01 | 0.20 | 10.00 | 49.24 | 1.00 | 0.000 | 0.000 | 0.000 |
| 20 | 0.20 | 0.21 | 0.01 | 0.21 | 10.00 | 47.74 | 1.00 | 0.000 | 0.000 | 0.000 |
| 21 | 0.21 | 0.22 | 0.01 | 0.22 | 10.00 | 47.21 | 1.00 | 0.000 | 0.000 | 0.000 |
| 22 | 0.22 | 0.23 | 0.01 | 0.23 | 10.00 | 46.45 | 1.00 | 0.000 | 0.000 | 0.000 |
| 23 | 0.23 | 0.24 | 0.01 | 0.24 | 10.00 | 44.97 | 1.00 | 0.000 | 0.000 | 0.000 |
| 24 | 0.24 | 0.25 | 0.01 | 0.25 | 10.00 | 43.51 | 1.00 | 0.000 | 0.000 | 0.000 |
| 25 | 0.25 | 0.26 | 0.01 | 0.26 | 10.00 | 40.91 | 1.00 | 0.000 | 0.000 | 0.000 |
| 26 | 0.26 | 0.27 | 0.01 | 0.27 | 10.00 | 39.60 | 1.00 | 0.000 | 0.000 | 0.000 |
| 27 | 0.27 | 0.28 | 0.01 | 0.28 | 10.00 | 37.27 | 1.00 | 0.000 | 0.000 | 0.000 |
| 28 | 0.28 | 0.29 | 0.01 | 0.28 | 10.00 | 38.40 | 1.00 | 0.000 | 0.000 | 0.000 |
| 29 | 0.29 | 0.30 | 0.01 | 0.30 | 10.00 | 39.26 | 1.00 | 0.000 | 0.000 | 0.000 |
| 30 | 0.30 | 0.31 | 0.01 | 0.31 | 10.00 | 39.53 | 1.00 | 0.000 | 0.000 | 0.000 |
| 31 | 0.31 | 0.32 | 0.01 | 0.32 | 10.00 | 38.75 | 1.00 | 0.000 | 0.000 | 0.000 |
| 32 | 0.32 | 0.33 | 0.01 | 0.33 | 10.00 | 37.78 | 1.00 | 0.000 | 0.000 | 0.000 |
| 33 | 0.33 | 0.34 | 0.01 | 0.34 | 10.00 | 37.16 | 1.00 | 0.000 | 0.000 | 0.000 |
| 34 | 0.34 | 0.35 | 0.01 | 0.35 | 10.00 | 36.66 | 1.00 | 0.000 | 0.000 | 0.000 |
| 35 | 0.35 | 0.36 | 0.01 | 0.36 | 10.00 | 36.39 | 1.00 | 0.000 | 0.000 | 0.000 |
| 36 | 0.36 | 0.37 | 0.01 | 0.36 | 10.00 | 36.45 | 1.00 | 0.000 | 0.000 | 0.000 |
| 37 | 0.37 | 0.38 | 0.01 | 0.37 | 10.00 | 35.86 | 1.00 | 0.000 | 0.000 | 0.000 |
| 38 | 0.38 | 0.39 | 0.01 | 0.38 | 10.00 | 34.77 | 1.00 | 0.000 | 0.000 | 0.000 |
| 39 | 0.39 | 0.40 | 0.01 | 0.39 | 10.00 | 33.29 | 1.00 | 0.000 | 0.000 | 0.000 |
| 40 | 0.40 | 0.41 | 0.01 | 0.40 | 10.00 | 32.58 | 1.00 | 0.000 | 0.000 | 0.000 |
| 41 | 0.41 | 0.42 | 0.01 | 0.41 | 10.00 | 31.21 | 1.00 | 0.000 | 0.000 | 0.000 |
| 42 | 0.42 | 0.43 | 0.01 | 0.42 | 10.00 | 31.02 | 1.00 | 0.000 | 0.000 | 0.000 |
| 43 | 0.43 | 0.44 | 0.01 | 0.43 | 10.00 | 30.45 | 1.00 | 0.000 | 0.000 | 0.000 |
| 44 | 0.44 | 0.45 | 0.01 | 0.44 | 10.00 | 31.13 | 1.00 | 0.000 | 0.000 | 0.000 |
| 45 | 0.45 | 0.46 | 0.01 | 0.45 | 10.00 | 29.42 | 1.00 | 0.000 | 0.000 | 0.000 |
| 46 | 0.46 | 0.47 | 0.01 | 0.46 | 10.00 | 27.85 | 1.00 | 0.000 | 0.000 | 0.000 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 47 | 0.47 | 0.48 | 0.01 | 0.47 | 10.00 | 26.76 | 1.00 | 0.000 | 0.000 | 0.000 |
| 48 | 0.48 | 0.49 | 0.01 | 0.48 | 10.00 | 21.51 | 1.00 | 0.000 | 0.000 | 0.000 |
| 49 | 0.49 | 0.50 | 0.01 | 0.49 | 10.00 | 21.76 | 1.00 | 0.000 | 0.000 | 0.000 |
| 50 | 0.50 | 0.51 | 0.01 | 0.50 | 10.00 | 21.57 | 1.00 | 0.000 | 0.000 | 0.000 |
| 51 | 0.51 | 0.52 | 0.01 | 0.51 | 10.00 | 25.89 | 1.00 | 0.000 | 0.000 | 0.000 |
| 52 | 0.52 | 0.53 | 0.01 | 0.52 | 10.00 | 25.73 | 1.00 | 0.000 | 0.000 | 0.000 |
| 53 | 0.53 | 0.54 | 0.01 | 0.53 | 10.00 | 25.89 | 1.00 | 0.000 | 0.000 | 0.000 |
| 54 | 0.54 | 0.55 | 0.01 | 0.54 | 10.00 | 28.15 | 1.00 | 0.000 | 0.000 | 0.000 |
| 55 | 0.55 | 0.56 | 0.01 | 0.55 | 10.00 | 28.83 | 1.00 | 0.000 | 0.000 | 0.000 |
| 56 | 0.56 | 0.57 | 0.01 | 0.56 | 10.00 | 29.76 | 1.00 | 0.000 | 0.000 | 0.000 |
| 57 | 0.57 | 0.58 | 0.01 | 0.57 | 10.00 | 28.67 | 1.00 | 0.000 | 0.000 | 0.000 |
| 58 | 0.58 | 0.59 | 0.01 | 0.58 | 10.00 | 29.65 | 1.00 | 0.000 | 0.000 | 0.000 |
| 59 | 0.59 | 0.60 | 0.01 | 0.59 | 10.00 | 29.72 | 1.00 | 0.000 | 0.000 | 0.000 |
| 60 | 0.60 | 0.61 | 0.01 | 0.60 | 10.00 | 30.44 | 1.00 | 0.000 | 0.000 | 0.000 |
| 61 | 0.61 | 0.62 | 0.01 | 0.61 | 10.00 | 31.09 | 1.00 | 0.000 | 0.000 | 0.000 |
| 62 | 0.62 | 0.63 | 0.01 | 0.62 | 10.00 | 32.77 | 1.00 | 0.000 | 0.000 | 0.000 |
| 63 | 0.63 | 0.64 | 0.01 | 0.63 | 10.00 | 34.94 | 1.00 | 0.000 | 0.000 | 0.000 |
| 64 | 0.64 | 0.65 | 0.01 | 0.64 | 10.00 | 36.24 | 1.00 | 0.000 | 0.000 | 0.000 |
| 65 | 0.65 | 0.66 | 0.01 | 0.65 | 10.00 | 38.32 | 1.00 | 0.000 | 0.000 | 0.000 |
| 66 | 0.66 | 0.67 | 0.01 | 0.66 | 10.00 | 40.42 | 1.00 | 0.000 | 0.000 | 0.000 |
| 67 | 0.67 | 0.68 | 0.01 | 0.67 | 10.00 | 43.37 | 1.00 | 0.000 | 0.000 | 0.000 |
| 68 | 0.68 | 0.69 | 0.01 | 0.68 | 10.00 | 45.21 | 1.00 | 0.000 | 0.000 | 0.000 |
| 69 | 0.69 | 0.70 | 0.01 | 0.69 | 10.00 | 47.56 | 1.00 | 0.000 | 0.000 | 0.000 |
| 70 | 0.70 | 0.71 | 0.01 | 0.70 | 10.00 | 49.39 | 1.00 | 0.000 | 0.000 | 0.000 |
| 71 | 0.71 | 0.72 | 0.01 | 0.71 | 10.00 | 51.57 | 1.00 | 0.000 | 0.000 | 0.000 |
| 72 | 0.72 | 0.73 | 0.01 | 0.72 | 10.00 | 52.51 | 1.00 | 0.000 | 0.000 | 0.000 |
| 73 | 0.73 | 0.74 | 0.01 | 0.73 | 10.00 | 53.05 | 1.00 | 0.000 | 0.000 | 0.000 |
| 74 | 0.74 | 0.75 | 0.01 | 0.74 | 10.00 | 53.84 | 1.00 | 0.000 | 0.000 | 0.000 |
| 75 | 0.75 | 0.76 | 0.01 | 0.75 | 10.00 | 53.56 | 1.00 | 0.000 | 0.000 | 0.000 |
| 76 | 0.76 | 0.77 | 0.01 | 0.76 | 10.00 | 53.42 | 1.00 | 0.000 | 0.000 | 0.000 |
| 77 | 0.77 | 0.78 | 0.01 | 0.77 | 10.00 | 51.70 | 1.00 | 0.000 | 0.000 | 0.000 |
| 78 | 0.78 | 0.79 | 0.01 | 0.78 | 10.00 | 50.08 | 1.00 | 0.000 | 0.000 | 0.000 |
| 79 | 0.79 | 0.80 | 0.01 | 0.79 | 10.00 | 48.85 | 1.00 | 0.000 | 0.000 | 0.000 |
| 80 | 0.80 | 0.81 | 0.01 | 0.80 | 10.00 | 47.97 | 1.00 | 0.000 | 0.000 | 0.000 |
| 81 | 0.81 | 0.82 | 0.01 | 0.81 | 10.00 | 47.80 | 1.00 | 0.000 | 0.000 | 0.000 |
| 82 | 0.82 | 0.83 | 0.01 | 0.82 | 10.00 | 47.37 | 1.00 | 0.000 | 0.000 | 0.000 |
| 83 | 0.83 | 0.84 | 0.01 | 0.83 | 10.00 | 47.15 | 1.00 | 0.000 | 0.000 | 0.000 |
| 84 | 0.84 | 0.85 | 0.01 | 0.84 | 10.00 | 46.36 | 1.00 | 0.000 | 0.000 | 0.000 |
| 85 | 0.85 | 0.86 | 0.01 | 0.85 | 10.00 | 45.02 | 1.00 | 0.000 | 0.000 | 0.000 |
| 86 | 0.86 | 0.87 | 0.01 | 0.86 | 10.00 | 44.02 | 1.00 | 0.000 | 0.000 | 0.000 |
| 87 | 0.87 | 0.88 | 0.01 | 0.87 | 10.00 | 42.78 | 1.00 | 0.000 | 0.000 | 0.000 |
| 88 | 0.88 | 0.89 | 0.01 | 0.88 | 10.00 | 41.89 | 1.00 | 0.000 | 0.000 | 0.000 |
| 89 | 0.89 | 0.90 | 0.01 | 0.89 | 10.00 | 39.91 | 1.00 | 0.000 | 0.000 | 0.000 |
| 90 | 0.90 | 0.91 | 0.01 | 0.90 | 10.00 | 38.06 | 1.00 | 0.000 | 0.000 | 0.000 |
| 91 | 0.91 | 0.92 | 0.01 | 0.91 | 10.00 | 35.96 | 1.00 | 0.000 | 0.000 | 0.000 |
| 92 | 0.92 | 0.93 | 0.01 | 0.92 | 10.00 | 34.06 | 1.00 | 0.000 | 0.000 | 0.000 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 93 | 0.93 | 0.94 | 0.01 | 0.93 | 10.00 | 32.31 | 1.00 | 0.000 | 0.000 | 0.000 |
| 94 | 0.94 | 0.95 | 0.01 | 0.94 | 10.00 | 30.78 | 1.00 | 0.000 | 0.000 | 0.000 |
| 95 | 0.95 | 0.96 | 0.01 | 0.95 | 10.00 | 29.01 | 1.00 | 0.000 | 0.000 | 0.000 |
| 96 | 0.96 | 0.97 | 0.01 | 0.96 | 10.00 | 28.16 | 1.00 | 0.000 | 0.000 | 0.000 |
| 97 | 0.97 | 0.98 | 0.01 | 0.97 | 10.00 | 26.59 | 1.00 | 0.000 | 0.000 | 0.000 |
| 98 | 0.98 | 0.99 | 0.01 | 0.98 | 10.00 | 25.48 | 1.00 | 0.000 | 0.000 | 0.000 |
| 99 | 0.99 | 1.00 | 0.01 | 0.99 | 10.00 | 23.58 | 1.00 | 0.000 | 0.000 | 0.000 |
| 100 | 1.00 | 1.01 | 0.01 | 1.00 | 10.00 | 22.10 | 1.00 | 0.000 | 0.000 | 0.000 |
| 101 | 1.01 | 1.02 | 0.01 | 1.01 | 10.00 | 21.02 | 1.00 | 0.000 | 0.000 | 0.000 |
| 102 | 1.02 | 1.03 | 0.01 | 1.02 | 10.00 | 18.98 | 1.00 | 0.001 | 0.000 | 0.001 |
| 103 | 1.03 | 1.04 | 0.01 | 1.03 | 10.00 | 17.61 | 1.00 | 0.001 | 0.000 | 0.001 |
| 104 | 1.04 | 1.05 | 0.01 | 1.04 | 10.00 | 16.52 | 1.00 | 0.001 | 0.000 | 0.001 |
| 105 | 1.05 | 1.06 | 0.01 | 1.05 | 10.00 | 16.53 | 1.00 | 0.001 | 0.000 | 0.001 |
| 106 | 1.06 | 1.07 | 0.01 | 1.06 | 10.00 | 16.23 | 1.00 | 0.001 | 0.000 | 0.001 |
| 107 | 1.07 | 1.08 | 0.01 | 1.07 | 10.00 | 15.65 | 1.00 | 0.001 | 0.000 | 0.001 |
| 108 | 1.08 | 1.09 | 0.01 | 1.08 | 10.00 | 15.45 | 1.00 | 0.001 | 0.000 | 0.001 |
| 109 | 1.09 | 1.10 | 0.01 | 1.09 | 10.00 | 15.02 | 1.00 | 0.001 | 0.000 | 0.001 |
| 110 | 1.10 | 1.11 | 0.01 | 1.10 | 9.99 | 14.32 | 1.00 | 0.001 | 0.000 | 0.001 |
| 111 | 1.11 | 1.12 | 0.01 | 1.11 | 9.99 | 8.20 | 1.00 | 0.001 | 0.000 | 0.001 |
| 112 | 1.12 | 1.13 | 0.01 | 1.12 | 9.99 | 7.82 | 1.00 | 0.001 | 0.000 | 0.001 |
| 113 | 1.13 | 1.14 | 0.01 | 1.13 | 9.99 | 7.33 | 1.00 | 0.001 | 0.000 | 0.001 |
| 114 | 1.14 | 1.15 | 0.01 | 1.14 | 9.99 | 6.55 | 1.00 | 0.002 | 0.000 | 0.002 |
| 115 | 1.15 | 1.16 | 0.01 | 1.15 | 9.99 | 6.17 | 1.00 | 0.002 | 0.000 | 0.002 |
| 116 | 1.16 | 1.17 | 0.01 | 1.16 | 9.99 | 5.97 | 1.00 | 0.002 | 0.000 | 0.002 |
| 117 | 1.17 | 1.18 | 0.01 | 1.17 | 9.99 | 6.00 | 1.00 | 0.002 | 0.000 | 0.002 |
| 118 | 1.18 | 1.19 | 0.01 | 1.18 | 9.99 | 5.71 | 1.00 | 0.002 | 0.000 | 0.002 |
| 119 | 1.19 | 1.20 | 0.01 | 1.19 | 9.99 | 5.60 | 1.00 | 0.002 | 0.000 | 0.002 |
| 120 | 1.20 | 1.21 | 0.01 | 1.20 | 9.99 | 5.48 | 1.00 | 0.002 | 0.000 | 0.002 |
| 121 | 1.21 | 1.22 | 0.01 | 1.21 | 9.99 | 5.53 | 1.00 | 0.002 | 0.000 | 0.002 |
| 122 | 1.22 | 1.23 | 0.01 | 1.22 | 9.99 | 5.26 | 1.00 | 0.002 | 0.000 | 0.002 |
| 123 | 1.23 | 1.24 | 0.01 | 1.23 | 9.99 | 4.84 | 1.00 | 0.002 | 0.000 | 0.002 |
| 124 | 1.24 | 1.25 | 0.01 | 1.24 | 9.99 | 4.36 | 1.00 | 0.002 | 0.000 | 0.002 |
| 125 | 1.25 | 1.26 | 0.01 | 1.25 | 9.99 | 4.04 | 1.00 | 0.002 | 0.000 | 0.002 |
| 126 | 1.26 | 1.27 | 0.01 | 1.26 | 9.99 | 3.71 | 1.00 | 0.003 | 0.000 | 0.003 |
| 127 | 1.27 | 1.28 | 0.01 | 1.27 | 9.99 | 3.43 | 1.00 | 0.003 | 0.000 | 0.003 |
| 128 | 1.28 | 1.29 | 0.01 | 1.28 | 9.99 | 2.75 | 1.00 | 0.004 | 0.000 | 0.004 |
| 129 | 1.29 | 1.30 | 0.01 | 1.29 | 9.99 | 2.13 | 1.00 | 0.005 | 0.000 | 0.005 |
| 130 | 1.30 | 1.31 | 0.01 | 1.30 | 9.99 | 1.52 | 1.00 | 0.007 | 0.000 | 0.007 |
| 131 | 1.31 | 1.32 | 0.01 | 1.31 | 9.99 | 1.29 | 1.00 | 0.008 | 0.000 | 0.008 |
| 132 | 1.32 | 1.33 | 0.01 | 1.32 | 9.99 | 1.02 | 1.00 | 0.010 | 0.000 | 0.010 |
| 133 | 1.33 | 1.34 | 0.01 | 1.33 | 9.99 | 0.75 | 1.00 | 0.013 | 0.000 | 0.013 |
| 134 | 1.34 | 1.35 | 0.01 | 1.34 | 9.99 | 0.54 | 1.00 | 0.019 | 0.000 | 0.019 |
| 135 | 1.35 | 1.36 | 0.01 | 1.35 | 9.99 | 0.45 | 1.00 | 0.022 | 0.000 | 0.022 |
| 136 | 1.36 | 1.37 | 0.01 | 1.36 | 9.99 | 0.49 | 1.00 | 0.020 | 0.000 | 0.020 |
| 137 | 1.37 | 1.38 | 0.01 | 1.37 | 9.99 | 0.54 | 1.00 | 0.019 | 0.000 | 0.019 |
| 138 | 1.38 | 1.39 | 0.01 | 1.38 | 9.99 | 0.62 | 1.00 | 0.016 | 0.000 | 0.016 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 139 | 1.39 | 1.40 | 0.01 | 1.39 | 9.99 | 0.66 | 1.00 | 0.015 | 0.000 | 0.015 |
| 140 | 1.40 | 1.41 | 0.01 | 1.40 | 9.99 | 0.67 | 1.00 | 0.015 | 0.000 | 0.015 |
| 141 | 1.41 | 1.42 | 0.01 | 1.41 | 9.99 | 0.65 | 1.00 | 0.015 | 0.000 | 0.015 |
| 142 | 1.42 | 1.43 | 0.01 | 1.42 | 9.99 | 0.60 | 1.00 | 0.017 | 0.000 | 0.017 |
| 143 | 1.43 | 1.44 | 0.01 | 1.43 | 9.99 | 0.65 | 1.00 | 0.015 | 0.000 | 0.015 |
| 144 | 1.44 | 1.45 | 0.01 | 1.44 | 9.99 | 0.68 | 1.00 | 0.015 | 0.000 | 0.015 |
| 145 | 1.45 | 1.46 | 0.01 | 1.45 | 9.99 | 0.74 | 1.00 | 0.014 | 0.000 | 0.014 |
| 146 | 1.46 | 1.47 | 0.01 | 1.46 | 9.99 | 0.76 | 1.00 | 0.013 | 0.000 | 0.013 |
| 147 | 1.47 | 1.48 | 0.01 | 1.47 | 9.99 | 0.76 | 1.00 | 0.013 | 0.000 | 0.013 |
| 148 | 1.48 | 1.49 | 0.01 | 1.48 | 9.99 | 0.79 | 1.00 | 0.013 | 0.000 | 0.013 |
| 149 | 1.49 | 1.50 | 0.01 | 1.49 | 9.99 | 0.74 | 1.00 | 0.013 | 0.000 | 0.013 |
| 150 | 1.50 | 1.51 | 0.01 | 1.50 | 9.99 | 0.17 | 1.00 | 0.058 | 0.000 | 0.058 |
| 151 | 1.51 | 1.52 | 0.01 | 1.51 | 9.99 | 0.18 | 1.00 | 0.056 | 0.000 | 0.056 |
| 152 | 1.52 | 1.53 | 0.01 | 1.52 | 9.99 | 0.92 | 1.00 | 0.011 | 0.000 | 0.011 |
| 153 | 1.53 | 1.54 | 0.01 | 1.53 | 9.99 | 0.94 | 1.00 | 0.011 | 0.000 | 0.011 |
| 154 | 1.54 | 1.55 | 0.01 | 1.54 | 9.99 | 0.19 | 1.00 | 0.053 | 0.000 | 0.053 |
| 155 | 1.55 | 1.56 | 0.01 | 1.55 | 9.99 | 0.20 | 1.00 | 0.049 | 0.000 | 0.049 |
| 156 | 1.56 | 1.57 | 0.01 | 1.56 | 9.99 | 0.21 | 1.00 | 0.048 | 0.000 | 0.048 |
| 157 | 1.57 | 1.58 | 0.01 | 1.57 | 9.99 | 1.27 | 1.00 | 0.008 | 0.000 | 0.008 |
| 158 | 1.58 | 1.59 | 0.01 | 1.58 | 9.99 | 0.22 | 1.00 | 0.045 | 0.000 | 0.045 |
| 159 | 1.59 | 1.60 | 0.01 | 1.59 | 9.98 | 0.24 | 1.00 | 0.042 | 0.000 | 0.042 |
| 160 | 1.60 | 1.61 | 0.01 | 1.60 | 9.98 | 0.24 | 1.00 | 0.041 | 0.000 | 0.041 |
| 161 | 1.61 | 1.62 | 0.01 | 1.61 | 9.98 | 0.25 | 1.00 | 0.040 | 0.000 | 0.040 |
| 162 | 1.62 | 1.63 | 0.01 | 1.62 | 9.98 | 0.23 | 1.00 | 0.043 | 0.000 | 0.043 |
| 163 | 1.63 | 1.64 | 0.01 | 1.63 | 9.98 | 1.25 | 1.00 | 0.008 | 0.000 | 0.008 |
| 164 | 1.64 | 1.65 | 0.01 | 1.64 | 9.98 | 1.24 | 1.00 | 0.008 | 0.000 | 0.008 |
| 165 | 1.65 | 1.66 | 0.01 | 1.65 | 9.98 | 1.28 | 1.00 | 0.008 | 0.000 | 0.008 |
| 166 | 1.66 | 1.67 | 0.01 | 1.66 | 9.98 | 1.29 | 1.00 | 0.008 | 0.000 | 0.008 |
| 167 | 1.67 | 1.68 | 0.01 | 1.67 | 9.98 | 1.35 | 1.00 | 0.007 | 0.000 | 0.007 |
| 168 | 1.68 | 1.69 | 0.01 | 1.68 | 9.98 | 1.33 | 1.00 | 0.008 | 0.000 | 0.008 |
| 169 | 1.69 | 1.70 | 0.01 | 1.69 | 9.98 | 1.39 | 1.00 | 0.007 | 0.000 | 0.007 |
| 170 | 1.70 | 1.71 | 0.01 | 1.70 | 9.98 | 1.42 | 1.00 | 0.007 | 0.000 | 0.007 |
| 171 | 1.71 | 1.72 | 0.01 | 1.71 | 9.98 | 1.67 | 1.00 | 0.006 | 0.000 | 0.006 |
| 172 | 1.72 | 1.73 | 0.01 | 1.72 | 9.98 | 1.95 | 1.00 | 0.005 | 0.000 | 0.005 |
| 173 | 1.73 | 1.74 | 0.01 | 1.73 | 9.98 | 2.16 | 1.00 | 0.005 | 0.000 | 0.005 |
| 174 | 1.74 | 1.75 | 0.01 | 1.74 | 9.98 | 1.84 | 1.00 | 0.005 | 0.000 | 0.005 |
| 175 | 1.75 | 1.76 | 0.01 | 1.75 | 9.98 | 1.68 | 1.00 | 0.006 | 0.000 | 0.006 |
| 176 | 1.76 | 1.77 | 0.01 | 1.76 | 9.98 | 1.66 | 1.00 | 0.006 | 0.000 | 0.006 |
| 177 | 1.77 | 1.78 | 0.01 | 1.77 | 9.98 | 2.01 | 1.00 | 0.005 | 0.000 | 0.005 |
| 178 | 1.78 | 1.79 | 0.01 | 1.78 | 9.98 | 2.08 | 1.00 | 0.005 | 0.000 | 0.005 |
| 179 | 1.79 | 1.80 | 0.01 | 1.79 | 9.98 | 0.32 | 1.00 | 0.031 | 0.000 | 0.031 |
| 180 | 1.80 | 1.81 | 0.01 | 1.80 | 9.98 | 0.33 | 1.00 | 0.031 | 0.000 | 0.031 |
| 181 | 1.81 | 1.82 | 0.01 | 1.81 | 9.98 | 0.34 | 1.00 | 0.030 | 0.000 | 0.030 |
| 182 | 1.82 | 1.83 | 0.01 | 1.82 | 9.98 | 3.37 | 1.00 | 0.003 | 0.000 | 0.003 |
| 183 | 1.83 | 1.84 | 0.01 | 1.83 | 9.98 | 0.36 | 1.00 | 0.028 | 0.000 | 0.028 |
| 184 | 1.84 | 1.85 | 0.01 | 1.84 | 9.98 | 0.36 | 1.00 | 0.027 | 0.000 | 0.027 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 185 | 1.85 | 1.86 | 0.01 | 1.85 | 9.98 | 0.39 | 1.00 | 0.026 | 0.000 | 0.026 |
| 186 | 1.86 | 1.87 | 0.01 | 1.86 | 9.98 | 3.03 | 1.00 | 0.003 | 0.000 | 0.003 |
| 187 | 1.87 | 1.88 | 0.01 | 1.87 | 9.98 | 3.12 | 1.00 | 0.003 | 0.000 | 0.003 |
| 188 | 1.88 | 1.89 | 0.01 | 1.88 | 9.98 | 3.00 | 1.00 | 0.003 | 0.000 | 0.003 |
| 189 | 1.89 | 1.90 | 0.01 | 1.89 | 9.97 | 3.17 | 1.00 | 0.003 | 0.000 | 0.003 |
| 190 | 1.90 | 1.91 | 0.01 | 1.90 | 9.97 | 3.33 | 1.00 | 0.003 | 0.000 | 0.003 |
| 191 | 1.91 | 1.92 | 0.01 | 1.91 | 9.97 | 3.50 | 1.00 | 0.003 | 0.000 | 0.003 |
| 192 | 1.92 | 1.93 | 0.01 | 1.92 | 9.97 | 3.69 | 1.00 | 0.003 | 0.000 | 0.003 |
| 193 | 1.93 | 1.94 | 0.01 | 1.93 | 9.97 | 3.36 | 1.00 | 0.003 | 0.000 | 0.003 |
| 194 | 1.94 | 1.95 | 0.01 | 1.94 | 9.97 | 3.15 | 1.00 | 0.003 | 0.000 | 0.003 |
| 195 | 1.95 | 1.96 | 0.01 | 1.95 | 9.97 | 3.19 | 1.00 | 0.003 | 0.000 | 0.003 |
| 196 | 1.96 | 1.97 | 0.01 | 1.96 | 9.97 | 3.25 | 1.00 | 0.003 | 0.000 | 0.003 |
| 197 | 1.97 | 1.98 | 0.01 | 1.97 | 9.97 | 3.46 | 1.00 | 0.003 | 0.000 | 0.003 |
| 198 | 1.98 | 1.99 | 0.01 | 1.98 | 9.97 | 3.46 | 1.00 | 0.003 | 0.000 | 0.003 |
| 199 | 1.99 | 2.00 | 0.01 | 1.99 | 9.97 | 3.31 | 1.00 | 0.003 | 0.000 | 0.003 |
| 200 | 2.00 | 2.01 | 0.01 | 2.00 | 9.97 | 3.37 | 1.00 | 0.003 | 0.000 | 0.003 |
| 201 | 2.01 | 2.02 | 0.01 | 2.01 | 9.97 | 3.16 | 1.00 | 0.003 | 0.000 | 0.003 |
| 202 | 2.02 | 2.03 | 0.01 | 2.02 | 9.97 | 3.54 | 1.00 | 0.003 | 0.000 | 0.003 |
| 203 | 2.03 | 2.04 | 0.01 | 2.03 | 9.97 | 3.49 | 1.00 | 0.003 | 0.000 | 0.003 |
| 204 | 2.04 | 2.05 | 0.01 | 2.04 | 9.97 | 3.84 | 1.00 | 0.003 | 0.000 | 0.003 |
| 205 | 2.05 | 2.06 | 0.01 | 2.05 | 9.97 | 3.97 | 1.00 | 0.003 | 0.000 | 0.003 |
| 206 | 2.06 | 2.07 | 0.01 | 2.06 | 9.97 | 4.21 | 1.00 | 0.002 | 0.000 | 0.002 |
| 207 | 2.07 | 2.08 | 0.01 | 2.07 | 9.97 | 4.05 | 1.00 | 0.002 | 0.000 | 0.002 |
| 208 | 2.08 | 2.09 | 0.01 | 2.08 | 9.97 | 4.41 | 1.00 | 0.002 | 0.000 | 0.002 |
| 209 | 2.09 | 2.10 | 0.01 | 2.09 | 9.97 | 4.46 | 1.00 | 0.002 | 0.000 | 0.002 |
| 210 | 2.10 | 2.11 | 0.01 | 2.10 | 9.97 | 5.18 | 1.00 | 0.002 | 0.000 | 0.002 |
| 211 | 2.11 | 2.12 | 0.01 | 2.11 | 9.96 | 5.22 | 1.00 | 0.002 | 0.000 | 0.002 |
| 212 | 2.12 | 2.13 | 0.01 | 2.12 | 9.96 | 5.47 | 1.00 | 0.002 | 0.000 | 0.002 |
| 213 | 2.13 | 2.14 | 0.01 | 2.13 | 9.96 | 5.61 | 1.00 | 0.002 | 0.000 | 0.002 |
| 214 | 2.14 | 2.15 | 0.01 | 2.14 | 9.96 | 5.57 | 1.00 | 0.002 | 0.000 | 0.002 |
| 215 | 2.15 | 2.16 | 0.01 | 2.15 | 9.96 | 5.60 | 1.00 | 0.002 | 0.000 | 0.002 |
| 216 | 2.16 | 2.17 | 0.01 | 2.16 | 9.96 | 5.56 | 1.00 | 0.002 | 0.000 | 0.002 |
| 217 | 2.17 | 2.18 | 0.01 | 2.17 | 9.96 | 5.68 | 1.00 | 0.002 | 0.000 | 0.002 |
| 218 | 2.18 | 2.19 | 0.01 | 2.18 | 9.96 | 5.43 | 1.00 | 0.002 | 0.000 | 0.002 |
| 219 | 2.19 | 2.20 | 0.01 | 2.19 | 9.96 | 4.94 | 1.00 | 0.002 | 0.000 | 0.002 |
| 220 | 2.20 | 2.21 | 0.01 | 2.20 | 9.96 | 4.41 | 1.00 | 0.002 | 0.000 | 0.002 |
| 221 | 2.21 | 2.22 | 0.01 | 2.21 | 9.96 | 4.25 | 1.00 | 0.002 | 0.000 | 0.002 |
| 222 | 2.22 | 2.23 | 0.01 | 2.22 | 9.96 | 4.16 | 1.00 | 0.002 | 0.000 | 0.002 |
| 223 | 2.23 | 2.24 | 0.01 | 2.23 | 9.96 | 4.35 | 1.00 | 0.002 | 0.000 | 0.002 |
| 224 | 2.24 | 2.25 | 0.01 | 2.24 | 9.96 | 4.27 | 1.00 | 0.002 | 0.000 | 0.002 |
| 225 | 2.25 | 2.26 | 0.01 | 2.25 | 9.96 | 4.70 | 1.00 | 0.002 | 0.000 | 0.002 |
| 226 | 2.26 | 2.27 | 0.01 | 2.26 | 9.96 | 4.53 | 1.00 | 0.002 | 0.000 | 0.002 |
| 227 | 2.27 | 2.28 | 0.01 | 2.27 | 9.96 | 4.43 | 1.00 | 0.002 | 0.000 | 0.002 |
| 228 | 2.28 | 2.29 | 0.01 | 2.28 | 9.96 | 3.96 | 1.00 | 0.003 | 0.000 | 0.003 |
| 229 | 2.29 | 2.30 | 0.01 | 2.29 | 9.96 | 3.72 | 1.00 | 0.003 | 0.000 | 0.003 |
| 230 | 2.30 | 2.31 | 0.01 | 2.30 | 9.95 | 3.81 | 1.00 | 0.003 | 0.000 | 0.003 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 231 | 2.31 | 2.32 | 0.01 | 2.31 | 9.95 | 4.00 | 1.00 | 0.002 | 0.000 | 0.002 |
| 232 | 2.32 | 2.33 | 0.01 | 2.32 | 9.95 | 4.02 | 1.00 | 0.002 | 0.000 | 0.002 |
| 233 | 2.33 | 2.34 | 0.01 | 2.33 | 9.95 | 4.07 | 1.00 | 0.002 | 0.000 | 0.002 |
| 234 | 2.34 | 2.35 | 0.01 | 2.34 | 9.95 | 3.74 | 1.00 | 0.003 | 0.000 | 0.003 |
| 235 | 2.35 | 2.36 | 0.01 | 2.35 | 9.95 | 3.60 | 1.00 | 0.003 | 0.000 | 0.003 |
| 236 | 2.36 | 2.37 | 0.01 | 2.36 | 9.95 | 3.72 | 1.00 | 0.003 | 0.000 | 0.003 |
| 237 | 2.37 | 2.38 | 0.01 | 2.37 | 9.95 | 3.85 | 1.00 | 0.003 | 0.000 | 0.003 |
| 238 | 2.38 | 2.39 | 0.01 | 2.38 | 9.95 | 4.12 | 1.00 | 0.002 | 0.000 | 0.002 |
| 239 | 2.39 | 2.40 | 0.01 | 2.39 | 9.95 | 3.94 | 0.99 | 0.003 | 0.000 | 0.003 |
| 240 | 2.40 | 2.41 | 0.01 | 2.40 | 9.95 | 4.12 | 0.99 | 0.002 | 0.000 | 0.002 |
| 241 | 2.41 | 2.42 | 0.01 | 2.41 | 9.95 | 3.92 | 0.99 | 0.003 | 0.000 | 0.003 |
| 242 | 2.42 | 2.43 | 0.01 | 2.42 | 9.95 | 3.98 | 0.99 | 0.003 | 0.000 | 0.003 |
| 243 | 2.43 | 2.44 | 0.01 | 2.43 | 9.95 | 3.96 | 0.99 | 0.003 | 0.000 | 0.003 |
| 244 | 2.44 | 2.45 | 0.01 | 2.44 | 9.95 | 4.21 | 0.99 | 0.002 | 0.000 | 0.002 |
| 245 | 2.45 | 2.46 | 0.01 | 2.45 | 9.95 | 3.75 | 0.99 | 0.003 | 0.000 | 0.003 |
| 246 | 2.46 | 2.47 | 0.01 | 2.46 | 9.95 | 3.47 | 0.99 | 0.003 | 0.000 | 0.003 |
| 247 | 2.47 | 2.48 | 0.01 | 2.47 | 9.94 | 3.38 | 0.99 | 0.003 | 0.000 | 0.003 |
| 248 | 2.48 | 2.49 | 0.01 | 2.48 | 9.94 | 3.32 | 0.99 | 0.003 | 0.000 | 0.003 |
| 249 | 2.49 | 2.50 | 0.01 | 2.49 | 9.94 | 3.54 | 0.99 | 0.003 | 0.000 | 0.003 |
| 250 | 2.50 | 2.51 | 0.01 | 2.50 | 9.94 | 3.64 | 0.99 | 0.003 | 0.000 | 0.003 |
| 251 | 2.51 | 2.52 | 0.01 | 2.51 | 9.94 | 4.66 | 0.99 | 0.002 | 0.000 | 0.002 |
| 252 | 2.52 | 2.53 | 0.01 | 2.52 | 9.94 | 5.26 | 0.99 | 0.002 | 0.000 | 0.002 |
| 253 | 2.53 | 2.54 | 0.01 | 2.53 | 9.94 | 5.79 | 0.99 | 0.002 | 0.000 | 0.002 |
| 254 | 2.54 | 2.55 | 0.01 | 2.54 | 9.94 | 5.72 | 0.99 | 0.002 | 0.000 | 0.002 |
| 255 | 2.55 | 2.56 | 0.01 | 2.55 | 9.94 | 5.43 | 0.99 | 0.002 | 0.000 | 0.002 |
| 256 | 2.56 | 2.57 | 0.01 | 2.56 | 9.94 | 5.16 | 0.99 | 0.002 | 0.000 | 0.002 |
| 257 | 2.57 | 2.58 | 0.01 | 2.57 | 9.94 | 4.96 | 0.99 | 0.002 | 0.000 | 0.002 |
| 258 | 2.58 | 2.59 | 0.01 | 2.58 | 9.94 | 4.74 | 0.99 | 0.002 | 0.000 | 0.002 |
| 259 | 2.59 | 2.60 | 0.01 | 2.59 | 9.94 | 4.74 | 0.99 | 0.002 | 0.000 | 0.002 |
| 260 | 2.60 | 2.61 | 0.01 | 2.60 | 9.94 | 4.75 | 0.99 | 0.002 | 0.000 | 0.002 |
| 261 | 2.61 | 2.62 | 0.01 | 2.61 | 9.94 | 4.94 | 0.99 | 0.002 | 0.000 | 0.002 |
| 262 | 2.62 | 2.63 | 0.01 | 2.62 | 9.93 | 5.43 | 0.99 | 0.002 | 0.000 | 0.002 |
| 263 | 2.63 | 2.64 | 0.01 | 2.63 | 9.93 | 6.28 | 0.99 | 0.002 | 0.000 | 0.002 |
| 264 | 2.64 | 2.65 | 0.01 | 2.64 | 9.93 | 7.00 | 0.99 | 0.001 | 0.000 | 0.001 |
| 265 | 2.65 | 2.66 | 0.01 | 2.65 | 9.93 | 7.81 | 0.99 | 0.001 | 0.000 | 0.001 |
| 266 | 2.66 | 2.67 | 0.01 | 2.66 | 9.93 | 9.36 | 0.99 | 0.001 | 0.000 | 0.001 |
| 267 | 2.67 | 2.68 | 0.01 | 2.67 | 9.93 | 11.10 | 0.99 | 0.001 | 0.000 | 0.001 |
| 268 | 2.68 | 2.69 | 0.01 | 2.68 | 9.93 | 12.94 | 0.99 | 0.001 | 0.000 | 0.001 |
| 269 | 2.69 | 2.70 | 0.01 | 2.69 | 9.93 | 14.61 | 0.99 | 0.001 | 0.000 | 0.001 |
| 270 | 2.70 | 2.71 | 0.01 | 2.70 | 9.93 | 15.82 | 0.99 | 0.001 | 0.000 | 0.001 |
| 271 | 2.71 | 2.72 | 0.01 | 2.71 | 9.93 | 16.93 | 0.99 | 0.001 | 0.000 | 0.001 |
| 272 | 2.72 | 2.73 | 0.01 | 2.72 | 9.93 | 16.91 | 0.99 | 0.001 | 0.000 | 0.001 |
| 273 | 2.73 | 2.74 | 0.01 | 2.73 | 9.93 | 16.51 | 0.99 | 0.001 | 0.000 | 0.001 |
| 274 | 2.74 | 2.75 | 0.01 | 2.74 | 9.93 | 16.29 | 0.99 | 0.001 | 0.000 | 0.001 |
| 275 | 2.75 | 2.76 | 0.01 | 2.75 | 9.92 | 16.92 | 0.99 | 0.001 | 0.000 | 0.001 |
| 276 | 2.76 | 2.77 | 0.01 | 2.76 | 9.92 | 18.45 | 0.99 | 0.001 | 0.000 | 0.001 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 277 | 2.77 | 2.78 | 0.01 | 2.77 | 9.92 | 20.34 | 0.99 | 0.000 | 0.000 | 0.000 |
| 278 | 2.78 | 2.79 | 0.01 | 2.78 | 9.92 | 21.94 | 0.99 | 0.000 | 0.000 | 0.000 |
| 279 | 2.79 | 2.80 | 0.01 | 2.79 | 9.92 | 23.37 | 0.99 | 0.000 | 0.000 | 0.000 |
| 280 | 2.80 | 2.81 | 0.01 | 2.80 | 9.92 | 24.47 | 0.99 | 0.000 | 0.000 | 0.000 |
| 281 | 2.81 | 2.82 | 0.01 | 2.81 | 9.92 | 25.34 | 0.99 | 0.000 | 0.000 | 0.000 |
| 282 | 2.82 | 2.83 | 0.01 | 2.82 | 9.92 | 26.03 | 0.99 | 0.000 | 0.000 | 0.000 |
| 283 | 2.83 | 2.84 | 0.01 | 2.83 | 9.92 | 26.48 | 0.99 | 0.000 | 0.000 | 0.000 |
| 284 | 2.84 | 2.85 | 0.01 | 2.84 | 9.92 | 26.86 | 0.99 | 0.000 | 0.000 | 0.000 |
| 285 | 2.85 | 2.86 | 0.01 | 2.85 | 9.92 | 27.20 | 0.99 | 0.000 | 0.000 | 0.000 |
| 286 | 2.86 | 2.87 | 0.01 | 2.86 | 9.92 | 27.49 | 0.99 | 0.000 | 0.000 | 0.000 |
| 287 | 2.87 | 2.88 | 0.01 | 2.87 | 9.91 | 27.79 | 0.99 | 0.000 | 0.000 | 0.000 |
| 288 | 2.88 | 2.89 | 0.01 | 2.88 | 9.91 | 27.99 | 0.99 | 0.000 | 0.000 | 0.000 |
| 289 | 2.89 | 2.90 | 0.01 | 2.89 | 9.91 | 27.96 | 0.99 | 0.000 | 0.000 | 0.000 |
| 290 | 2.90 | 2.91 | 0.01 | 2.90 | 9.91 | 27.70 | 0.99 | 0.000 | 0.000 | 0.000 |
| 291 | 2.91 | 2.92 | 0.01 | 2.91 | 9.91 | 27.39 | 0.99 | 0.000 | 0.000 | 0.000 |
| 292 | 2.92 | 2.93 | 0.01 | 2.92 | 9.91 | 27.12 | 0.99 | 0.000 | 0.000 | 0.000 |
| 293 | 2.93 | 2.94 | 0.01 | 2.93 | 9.91 | 27.00 | 0.99 | 0.000 | 0.000 | 0.000 |
| 294 | 2.94 | 2.95 | 0.01 | 2.94 | 9.91 | 26.95 | 0.99 | 0.000 | 0.000 | 0.000 |
| 295 | 2.95 | 2.96 | 0.01 | 2.95 | 9.91 | 27.26 | 0.99 | 0.000 | 0.000 | 0.000 |
| 296 | 2.96 | 2.97 | 0.01 | 2.96 | 9.91 | 27.73 | 0.99 | 0.000 | 0.000 | 0.000 |
| 297 | 2.97 | 2.98 | 0.01 | 2.97 | 9.91 | 28.51 | 0.99 | 0.000 | 0.000 | 0.000 |
| 298 | 2.98 | 2.99 | 0.01 | 2.98 | 9.90 | 29.94 | 0.99 | 0.000 | 0.000 | 0.000 |
| 299 | 2.99 | 3.00 | 0.01 | 2.99 | 9.90 | 31.57 | 0.99 | 0.000 | 0.000 | 0.000 |
| 300 | 3.00 | 3.01 | 0.01 | 3.00 | 9.90 | 33.15 | 0.99 | 0.000 | 0.000 | 0.000 |
| 301 | 3.01 | 3.02 | 0.01 | 3.01 | 9.90 | 33.85 | 0.99 | 0.000 | 0.000 | 0.000 |
| 302 | 3.02 | 3.03 | 0.01 | 3.02 | 9.90 | 34.21 | 0.99 | 0.000 | 0.000 | 0.000 |
| 303 | 3.03 | 3.04 | 0.01 | 3.03 | 9.90 | 34.26 | 0.99 | 0.000 | 0.000 | 0.000 |
| 304 | 3.04 | 3.05 | 0.01 | 3.04 | 9.90 | 33.98 | 0.99 | 0.000 | 0.000 | 0.000 |
| 305 | 3.05 | 3.06 | 0.01 | 3.05 | 9.90 | 33.74 | 0.99 | 0.000 | 0.000 | 0.000 |
| 306 | 3.06 | 3.07 | 0.01 | 3.06 | 9.90 | 33.64 | 0.99 | 0.000 | 0.000 | 0.000 |
| 307 | 3.07 | 3.08 | 0.01 | 3.07 | 9.90 | 34.18 | 0.99 | 0.000 | 0.000 | 0.000 |
| 308 | 3.08 | 3.09 | 0.01 | 3.08 | 9.90 | 34.92 | 0.99 | 0.000 | 0.000 | 0.000 |
| 309 | 3.09 | 3.10 | 0.01 | 3.09 | 9.89 | 35.80 | 0.99 | 0.000 | 0.000 | 0.000 |
| 310 | 3.10 | 3.11 | 0.01 | 3.10 | 9.89 | 36.63 | 0.99 | 0.000 | 0.000 | 0.000 |
| 311 | 3.11 | 3.12 | 0.01 | 3.11 | 9.89 | 37.55 | 0.99 | 0.000 | 0.000 | 0.000 |
| 312 | 3.12 | 3.13 | 0.01 | 3.12 | 9.89 | 38.63 | 0.99 | 0.000 | 0.000 | 0.000 |
| 313 | 3.13 | 3.14 | 0.01 | 3.13 | 9.89 | 40.24 | 0.99 | 0.000 | 0.000 | 0.000 |
| 314 | 3.14 | 3.15 | 0.01 | 3.14 | 9.89 | 41.77 | 0.99 | 0.000 | 0.000 | 0.000 |
| 315 | 3.15 | 3.16 | 0.01 | 3.15 | 9.89 | 43.09 | 0.99 | 0.000 | 0.000 | 0.000 |
| 316 | 3.16 | 3.17 | 0.01 | 3.16 | 9.89 | 43.77 | 0.99 | 0.000 | 0.000 | 0.000 |
| 317 | 3.17 | 3.18 | 0.01 | 3.17 | 9.89 | 44.34 | 0.99 | 0.000 | 0.000 | 0.000 |
| 318 | 3.18 | 3.19 | 0.01 | 3.18 | 9.89 | 45.06 | 0.99 | 0.000 | 0.000 | 0.000 |
| 319 | 3.19 | 3.20 | 0.01 | 3.19 | 9.88 | 46.03 | 0.99 | 0.000 | 0.000 | 0.000 |
| 320 | 3.20 | 3.21 | 0.01 | 3.20 | 9.88 | 47.65 | 0.99 | 0.000 | 0.000 | 0.000 |
| 321 | 3.21 | 3.22 | 0.01 | 3.21 | 9.88 | 50.58 | 0.99 | 0.000 | 0.000 | 0.000 |
| 322 | 3.22 | 3.23 | 0.01 | 3.22 | 9.88 | 54.98 | 0.99 | 0.000 | 0.000 | 0.000 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 323 | 3.23 | 3.24 | 0.01 | 3.23 | 9.88 | 103.56 | 0.99 | 0.000 | 0.000 | 0.000 |
| 324 | 3.24 | 3.25 | 0.01 | 3.24 | 9.88 | 111.40 | 0.99 | 0.000 | 0.000 | 0.000 |
| 325 | 3.25 | 3.26 | 0.01 | 3.25 | 9.88 | 118.60 | 0.99 | 0.000 | 0.000 | 0.000 |
| 326 | 3.26 | 3.27 | 0.01 | 3.26 | 9.88 | 125.49 | 0.99 | 0.000 | 0.000 | 0.000 |
| 327 | 3.27 | 3.28 | 0.01 | 3.27 | 9.88 | 134.65 | 0.99 | 0.000 | 0.000 | 0.000 |
| 328 | 3.28 | 3.29 | 0.01 | 3.28 | 9.88 | 144.37 | 0.99 | 0.000 | 0.000 | 0.000 |
| 329 | 3.29 | 3.30 | 0.01 | 3.29 | 9.87 | 92.63 | 0.99 | 0.000 | 0.000 | 0.000 |
| 330 | 3.30 | 3.31 | 0.01 | 3.30 | 9.87 | 162.91 | 0.99 | 0.000 | 0.000 | 0.000 |
| 331 | 3.31 | 3.32 | 0.01 | 3.31 | 9.87 | 171.98 | 0.99 | 0.000 | 0.000 | 0.000 |
| 332 | 3.32 | 3.33 | 0.01 | 3.32 | 9.87 | 180.61 | 0.99 | 0.000 | 0.000 | 0.000 |
| 333 | 3.33 | 3.34 | 0.01 | 3.33 | 9.87 | 185.03 | 0.99 | 0.000 | 0.000 | 0.000 |
| 334 | 3.34 | 3.35 | 0.01 | 3.34 | 9.87 | 183.42 | 0.99 | 0.000 | 0.000 | 0.000 |
| 335 | 3.35 | 3.36 | 0.01 | 3.35 | 9.87 | 96.80 | 0.99 | 0.000 | 0.000 | 0.000 |
| 336 | 3.36 | 3.37 | 0.01 | 3.36 | 9.87 | 81.70 | 0.99 | 0.000 | 0.000 | 0.000 |
| 337 | 3.37 | 3.38 | 0.01 | 3.37 | 9.87 | 70.08 | 0.99 | 0.000 | 0.000 | 0.000 |
| 338 | 3.38 | 3.39 | 0.01 | 3.38 | 9.86 | 62.53 | 0.99 | 0.000 | 0.000 | 0.000 |
| 339 | 3.39 | 3.40 | 0.01 | 3.39 | 9.86 | 56.45 | 0.99 | 0.000 | 0.000 | 0.000 |
| 340 | 3.40 | 3.41 | 0.01 | 3.40 | 9.86 | 51.79 | 0.99 | 0.000 | 0.000 | 0.000 |
| 341 | 3.41 | 3.42 | 0.01 | 3.41 | 9.86 | 47.99 | 0.99 | 0.000 | 0.000 | 0.000 |
| 342 | 3.42 | 3.43 | 0.01 | 3.42 | 9.86 | 45.64 | 0.99 | 0.000 | 0.000 | 0.000 |
| 343 | 3.43 | 3.44 | 0.01 | 3.43 | 9.86 | 43.52 | 0.99 | 0.000 | 0.000 | 0.000 |
| 344 | 3.44 | 3.45 | 0.01 | 3.44 | 9.86 | 40.54 | 0.99 | 0.000 | 0.000 | 0.000 |
| 345 | 3.45 | 3.46 | 0.01 | 3.45 | 9.86 | 37.98 | 0.99 | 0.000 | 0.000 | 0.000 |
| 346 | 3.46 | 3.47 | 0.01 | 3.46 | 9.85 | 36.12 | 0.99 | 0.000 | 0.000 | 0.000 |
| 347 | 3.47 | 3.48 | 0.01 | 3.47 | 9.85 | 35.85 | 0.99 | 0.000 | 0.000 | 0.000 |
| 348 | 3.48 | 3.49 | 0.01 | 3.48 | 9.85 | 36.61 | 0.99 | 0.000 | 0.000 | 0.000 |
| 349 | 3.49 | 3.50 | 0.01 | 3.49 | 9.85 | 37.29 | 0.99 | 0.000 | 0.000 | 0.000 |
| 350 | 3.50 | 3.51 | 0.01 | 3.50 | 9.85 | 37.82 | 0.99 | 0.000 | 0.000 | 0.000 |
| 351 | 3.51 | 3.52 | 0.01 | 3.51 | 9.85 | 37.54 | 0.98 | 0.000 | 0.000 | 0.000 |
| 352 | 3.52 | 3.53 | 0.01 | 3.52 | 9.85 | 37.40 | 0.98 | 0.000 | 0.000 | 0.000 |
| 353 | 3.53 | 3.54 | 0.01 | 3.53 | 9.85 | 37.46 | 0.98 | 0.000 | 0.000 | 0.000 |
| 354 | 3.54 | 3.55 | 0.01 | 3.54 | 9.85 | 37.55 | 0.98 | 0.000 | 0.000 | 0.000 |
| 355 | 3.55 | 3.56 | 0.01 | 3.55 | 9.84 | 38.04 | 0.98 | 0.000 | 0.000 | 0.000 |
| 356 | 3.56 | 3.57 | 0.01 | 3.56 | 9.84 | 38.67 | 0.98 | 0.000 | 0.000 | 0.000 |
| 357 | 3.57 | 3.58 | 0.01 | 3.57 | 9.84 | 39.35 | 0.98 | 0.000 | 0.000 | 0.000 |
| 358 | 3.58 | 3.59 | 0.01 | 3.58 | 9.84 | 39.96 | 0.98 | 0.000 | 0.000 | 0.000 |
| 359 | 3.59 | 3.60 | 0.01 | 3.59 | 9.84 | 40.93 | 0.98 | 0.000 | 0.000 | 0.000 |
| 360 | 3.60 | 3.61 | 0.01 | 3.60 | 9.84 | 41.97 | 0.98 | 0.000 | 0.000 | 0.000 |
| 361 | 3.61 | 3.62 | 0.01 | 3.61 | 9.84 | 42.96 | 0.98 | 0.000 | 0.000 | 0.000 |
| 362 | 3.62 | 3.63 | 0.01 | 3.62 | 9.84 | 43.72 | 0.98 | 0.000 | 0.000 | 0.000 |
| 363 | 3.63 | 3.64 | 0.01 | 3.63 | 9.83 | 44.73 | 0.98 | 0.000 | 0.000 | 0.000 |
| 364 | 3.64 | 3.65 | 0.01 | 3.64 | 9.83 | 45.75 | 0.98 | 0.000 | 0.000 | 0.000 |
| 365 | 3.65 | 3.66 | 0.01 | 3.65 | 9.83 | 46.64 | 0.98 | 0.000 | 0.000 | 0.000 |
| 366 | 3.66 | 3.67 | 0.01 | 3.66 | 9.83 | 47.06 | 0.98 | 0.000 | 0.000 | 0.000 |
| 367 | 3.67 | 3.68 | 0.01 | 3.67 | 9.83 | 47.61 | 0.98 | 0.000 | 0.000 | 0.000 |
| 368 | 3.68 | 3.69 | 0.01 | 3.68 | 9.83 | 48.12 | 0.98 | 0.000 | 0.000 | 0.000 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 369 | 3.69 | 3.70 | 0.01 | 3.69 | 9.83 | 48.74 | 0.98 | 0.000 | 0.000 | 0.000 |
| 370 | 3.70 | 3.71 | 0.01 | 3.70 | 9.82 | 48.96 | 0.98 | 0.000 | 0.000 | 0.000 |
| 371 | 3.71 | 3.72 | 0.01 | 3.71 | 9.82 | 49.23 | 0.98 | 0.000 | 0.000 | 0.000 |
| 372 | 3.72 | 3.73 | 0.01 | 3.72 | 9.82 | 49.65 | 0.98 | 0.000 | 0.000 | 0.000 |
| 373 | 3.73 | 3.74 | 0.01 | 3.73 | 9.82 | 50.14 | 0.98 | 0.000 | 0.000 | 0.000 |
| 374 | 3.74 | 3.75 | 0.01 | 3.74 | 9.82 | 50.39 | 0.98 | 0.000 | 0.000 | 0.000 |
| 375 | 3.75 | 3.76 | 0.01 | 3.75 | 9.82 | 50.27 | 0.98 | 0.000 | 0.000 | 0.000 |
| 376 | 3.76 | 3.77 | 0.01 | 3.76 | 9.82 | 49.98 | 0.98 | 0.000 | 0.000 | 0.000 |
| 377 | 3.77 | 3.78 | 0.01 | 3.77 | 9.82 | 49.54 | 0.98 | 0.000 | 0.000 | 0.000 |
| 378 | 3.78 | 3.79 | 0.01 | 3.78 | 9.81 | 49.21 | 0.98 | 0.000 | 0.000 | 0.000 |
| 379 | 3.79 | 3.80 | 0.01 | 3.79 | 9.81 | 48.95 | 0.98 | 0.000 | 0.000 | 0.000 |
| 380 | 3.80 | 3.81 | 0.01 | 3.80 | 9.81 | 48.94 | 0.98 | 0.000 | 0.000 | 0.000 |
| 381 | 3.81 | 3.82 | 0.01 | 3.81 | 9.81 | 48.78 | 0.98 | 0.000 | 0.000 | 0.000 |
| 382 | 3.82 | 3.83 | 0.01 | 3.82 | 9.81 | 48.66 | 0.98 | 0.000 | 0.000 | 0.000 |
| 383 | 3.83 | 3.84 | 0.01 | 3.83 | 9.81 | 48.40 | 0.98 | 0.000 | 0.000 | 0.000 |
| 384 | 3.84 | 3.85 | 0.01 | 3.84 | 9.81 | 48.25 | 0.98 | 0.000 | 0.000 | 0.000 |
| 385 | 3.85 | 3.86 | 0.01 | 3.85 | 9.80 | 48.07 | 0.98 | 0.000 | 0.000 | 0.000 |
| 386 | 3.86 | 3.87 | 0.01 | 3.86 | 9.80 | 47.94 | 0.98 | 0.000 | 0.000 | 0.000 |
| 387 | 3.87 | 3.88 | 0.01 | 3.87 | 9.80 | 47.88 | 0.98 | 0.000 | 0.000 | 0.000 |
| 388 | 3.88 | 3.89 | 0.01 | 3.88 | 9.80 | 47.94 | 0.98 | 0.000 | 0.000 | 0.000 |
| 389 | 3.89 | 3.90 | 0.01 | 3.89 | 9.80 | 48.04 | 0.98 | 0.000 | 0.000 | 0.000 |
| 390 | 3.90 | 3.91 | 0.01 | 3.90 | 9.80 | 48.20 | 0.98 | 0.000 | 0.000 | 0.000 |
| 391 | 3.91 | 3.92 | 0.01 | 3.91 | 9.80 | 48.21 | 0.98 | 0.000 | 0.000 | 0.000 |
| 392 | 3.92 | 3.93 | 0.01 | 3.92 | 9.79 | 48.20 | 0.98 | 0.000 | 0.000 | 0.000 |
| 393 | 3.93 | 3.94 | 0.01 | 3.93 | 9.79 | 48.12 | 0.98 | 0.000 | 0.000 | 0.000 |
| 394 | 3.94 | 3.95 | 0.01 | 3.94 | 9.79 | 48.14 | 0.98 | 0.000 | 0.000 | 0.000 |
| 395 | 3.95 | 3.96 | 0.01 | 3.95 | 9.79 | 48.13 | 0.98 | 0.000 | 0.000 | 0.000 |
| 396 | 3.96 | 3.97 | 0.01 | 3.96 | 9.79 | 47.95 | 0.98 | 0.000 | 0.000 | 0.000 |
| 397 | 3.97 | 3.98 | 0.01 | 3.97 | 9.79 | 47.67 | 0.98 | 0.000 | 0.000 | 0.000 |
| 398 | 3.98 | 3.99 | 0.01 | 3.98 | 9.79 | 47.43 | 0.98 | 0.000 | 0.000 | 0.000 |
| 399 | 3.99 | 4.00 | 0.01 | 3.99 | 9.78 | 47.20 | 0.98 | 0.000 | 0.000 | 0.000 |
| 400 | 4.00 | 4.01 | 0.01 | 4.00 | 9.78 | 46.88 | 0.98 | 0.000 | 0.000 | 0.000 |
| 401 | 4.01 | 4.02 | 0.01 | 4.01 | 9.78 | 46.55 | 0.98 | 0.000 | 0.000 | 0.000 |
| 402 | 4.02 | 4.03 | 0.01 | 4.02 | 9.78 | 46.27 | 0.98 | 0.000 | 0.000 | 0.000 |
| 403 | 4.03 | 4.04 | 0.01 | 4.03 | 9.78 | 46.01 | 0.98 | 0.000 | 0.000 | 0.000 |
| 404 | 4.04 | 4.05 | 0.01 | 4.04 | 9.78 | 45.64 | 0.98 | 0.000 | 0.000 | 0.000 |
| 405 | 4.05 | 4.06 | 0.01 | 4.05 | 9.78 | 45.16 | 0.98 | 0.000 | 0.000 | 0.000 |
| 406 | 4.06 | 4.07 | 0.01 | 4.06 | 9.77 | 44.63 | 0.98 | 0.000 | 0.000 | 0.000 |
| 407 | 4.07 | 4.08 | 0.01 | 4.07 | 9.77 | 44.07 | 0.98 | 0.000 | 0.000 | 0.000 |
| 408 | 4.08 | 4.09 | 0.01 | 4.08 | 9.77 | 43.55 | 0.98 | 0.000 | 0.000 | 0.000 |
| 409 | 4.09 | 4.10 | 0.01 | 4.09 | 9.77 | 43.20 | 0.98 | 0.000 | 0.000 | 0.000 |
| 410 | 4.10 | 4.11 | 0.01 | 4.10 | 9.77 | 42.94 | 0.98 | 0.000 | 0.000 | 0.000 |
| 411 | 4.11 | 4.12 | 0.01 | 4.11 | 9.77 | 42.68 | 0.98 | 0.000 | 0.000 | 0.000 |
| 412 | 4.12 | 4.13 | 0.01 | 4.12 | 9.76 | 42.49 | 0.98 | 0.000 | 0.000 | 0.000 |
| 413 | 4.13 | 4.14 | 0.01 | 4.14 | 9.76 | 42.41 | 0.98 | 0.000 | 0.000 | 0.000 |
| 414 | 4.14 | 4.15 | 0.01 | 4.14 | 9.76 | 42.36 | 0.98 | 0.000 | 0.000 | 0.000 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 415 | 4.15 | 4.16 | 0.01 | 4.16 | 9.76 | 42.14 | 0.98 | 0.000 | 0.000 | 0.000 |
| 416 | 4.16 | 4.17 | 0.01 | 4.17 | 9.76 | 41.66 | 0.98 | 0.000 | 0.000 | 0.000 |
| 417 | 4.17 | 4.18 | 0.01 | 4.18 | 9.76 | 41.04 | 0.98 | 0.000 | 0.000 | 0.000 |
| 418 | 4.18 | 4.19 | 0.01 | 4.19 | 9.75 | 40.33 | 0.98 | 0.000 | 0.000 | 0.000 |
| 419 | 4.19 | 4.20 | 0.01 | 4.20 | 9.75 | 39.56 | 0.98 | 0.000 | 0.000 | 0.000 |
| 420 | 4.20 | 4.21 | 0.01 | 4.21 | 9.75 | 38.60 | 0.98 | 0.000 | 0.000 | 0.000 |
| 421 | 4.21 | 4.22 | 0.01 | 4.22 | 9.75 | 37.49 | 0.97 | 0.000 | 0.000 | 0.000 |
| 422 | 4.22 | 4.23 | 0.01 | 4.23 | 9.75 | 36.48 | 0.97 | 0.000 | 0.000 | 0.000 |
| 423 | 4.23 | 4.24 | 0.01 | 4.24 | 9.75 | 35.66 | 0.97 | 0.000 | 0.000 | 0.000 |
| 424 | 4.24 | 4.25 | 0.01 | 4.25 | 9.74 | 35.09 | 0.97 | 0.000 | 0.000 | 0.000 |
| 425 | 4.25 | 4.26 | 0.01 | 4.26 | 9.74 | 34.56 | 0.97 | 0.000 | 0.000 | 0.000 |
| 426 | 4.26 | 4.27 | 0.01 | 4.27 | 9.74 | 34.11 | 0.97 | 0.000 | 0.000 | 0.000 |
| 427 | 4.27 | 4.28 | 0.01 | 4.28 | 9.74 | 33.77 | 0.97 | 0.000 | 0.000 | 0.000 |
| 428 | 4.28 | 4.29 | 0.01 | 4.29 | 9.74 | 33.55 | 0.97 | 0.000 | 0.000 | 0.000 |
| 429 | 4.29 | 4.30 | 0.01 | 4.30 | 9.74 | 33.55 | 0.97 | 0.000 | 0.000 | 0.000 |
| 430 | 4.30 | 4.31 | 0.01 | 4.31 | 9.73 | 33.90 | 0.97 | 0.000 | 0.000 | 0.000 |
| 431 | 4.31 | 4.32 | 0.01 | 4.32 | 9.73 | 34.49 | 0.97 | 0.000 | 0.000 | 0.000 |
| 432 | 4.32 | 4.33 | 0.01 | 4.33 | 9.73 | 35.17 | 0.97 | 0.000 | 0.000 | 0.000 |
| 433 | 4.33 | 4.34 | 0.01 | 4.34 | 9.73 | 35.58 | 0.97 | 0.000 | 0.000 | 0.000 |
| 434 | 4.34 | 4.35 | 0.01 | 4.35 | 9.73 | 35.84 | 0.97 | 0.000 | 0.000 | 0.000 |
| 435 | 4.35 | 4.36 | 0.01 | 4.36 | 9.73 | 36.01 | 0.97 | 0.000 | 0.000 | 0.000 |
| 436 | 4.36 | 4.37 | 0.01 | 4.37 | 9.72 | 36.09 | 0.97 | 0.000 | 0.000 | 0.000 |
| 437 | 4.37 | 4.38 | 0.01 | 4.38 | 9.72 | 35.96 | 0.97 | 0.000 | 0.000 | 0.000 |
| 438 | 4.38 | 4.39 | 0.01 | 4.39 | 9.72 | 35.41 | 0.97 | 0.000 | 0.000 | 0.000 |
| 439 | 4.39 | 4.40 | 0.01 | 4.40 | 9.72 | 34.77 | 0.97 | 0.000 | 0.000 | 0.000 |
| 440 | 4.40 | 4.41 | 0.01 | 4.41 | 9.72 | 34.17 | 0.97 | 0.000 | 0.000 | 0.000 |
| 441 | 4.41 | 4.42 | 0.01 | 4.42 | 9.72 | 33.79 | 0.97 | 0.000 | 0.000 | 0.000 |
| 442 | 4.42 | 4.43 | 0.01 | 4.43 | 9.71 | 33.40 | 0.97 | 0.000 | 0.000 | 0.000 |
| 443 | 4.43 | 4.44 | 0.01 | 4.44 | 9.71 | 33.10 | 0.97 | 0.000 | 0.000 | 0.000 |
| 444 | 4.44 | 4.45 | 0.01 | 4.45 | 9.71 | 32.85 | 0.97 | 0.000 | 0.000 | 0.000 |
| 445 | 4.45 | 4.46 | 0.01 | 4.46 | 9.71 | 32.60 | 0.97 | 0.000 | 0.000 | 0.000 |
| 446 | 4.46 | 4.47 | 0.01 | 4.47 | 9.71 | 32.03 | 0.97 | 0.000 | 0.000 | 0.000 |
| 447 | 4.47 | 4.48 | 0.01 | 4.48 | 9.71 | 31.19 | 0.97 | 0.000 | 0.000 | 0.000 |
| 448 | 4.48 | 4.49 | 0.01 | 4.49 | 9.70 | 30.93 | 0.97 | 0.000 | 0.000 | 0.000 |
| 449 | 4.49 | 4.50 | 0.01 | 4.50 | 9.70 | 30.63 | 0.97 | 0.000 | 0.000 | 0.000 |
| 450 | 4.50 | 4.51 | 0.01 | 4.51 | 9.70 | 30.45 | 0.97 | 0.000 | 0.000 | 0.000 |
| 451 | 4.51 | 4.52 | 0.01 | 4.52 | 9.70 | 29.59 | 0.97 | 0.000 | 0.000 | 0.000 |
| 452 | 4.52 | 4.53 | 0.01 | 4.53 | 9.70 | 28.96 | 0.97 | 0.000 | 0.000 | 0.000 |
| 453 | 4.53 | 4.54 | 0.01 | 4.54 | 9.69 | 28.33 | 0.97 | 0.000 | 0.000 | 0.000 |
| 454 | 4.54 | 4.55 | 0.01 | 4.55 | 9.69 | 27.70 | 0.97 | 0.000 | 0.000 | 0.000 |
| 455 | 4.55 | 4.56 | 0.01 | 4.56 | 9.69 | 27.15 | 0.97 | 0.000 | 0.000 | 0.000 |
| 456 | 4.56 | 4.57 | 0.01 | 4.57 | 9.69 | 26.83 | 0.97 | 0.000 | 0.000 | 0.000 |
| 457 | 4.57 | 4.58 | 0.01 | 4.58 | 9.69 | 26.86 | 0.97 | 0.000 | 0.000 | 0.000 |
| 458 | 4.58 | 4.59 | 0.01 | 4.59 | 9.69 | 26.93 | 0.97 | 0.000 | 0.000 | 0.000 |
| 459 | 4.59 | 4.60 | 0.01 | 4.60 | 9.68 | 27.04 | 0.97 | 0.000 | 0.000 | 0.000 |
| 460 | 4.60 | 4.61 | 0.01 | 4.61 | 9.68 | 27.10 | 0.97 | 0.000 | 0.000 | 0.000 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 461 | 4.61 | 4.62 | 0.01 | 4.62 | 9.68 | 27.33 | 0.97 | 0.000 | 0.000 | 0.000 |
| 462 | 4.62 | 4.63 | 0.01 | 4.63 | 9.68 | 27.74 | 0.97 | 0.000 | 0.000 | 0.000 |
| 463 | 4.63 | 4.64 | 0.01 | 4.64 | 9.68 | 28.59 | 0.97 | 0.000 | 0.000 | 0.000 |
| 464 | 4.64 | 4.65 | 0.01 | 4.65 | 9.67 | 29.53 | 0.97 | 0.000 | 0.000 | 0.000 |
| 465 | 4.65 | 4.66 | 0.01 | 4.66 | 9.67 | 30.45 | 0.97 | 0.000 | 0.000 | 0.000 |
| 466 | 4.66 | 4.67 | 0.01 | 4.67 | 9.67 | 30.98 | 0.97 | 0.000 | 0.000 | 0.000 |
| 467 | 4.67 | 4.68 | 0.01 | 4.68 | 9.67 | 31.48 | 0.97 | 0.000 | 0.000 | 0.000 |
| 468 | 4.68 | 4.69 | 0.01 | 4.69 | 9.67 | 32.07 | 0.97 | 0.000 | 0.000 | 0.000 |
| 469 | 4.69 | 4.70 | 0.01 | 4.70 | 9.66 | 31.86 | 0.97 | 0.000 | 0.000 | 0.000 |
| 470 | 4.70 | 4.71 | 0.01 | 4.71 | 9.66 | 31.29 | 0.97 | 0.000 | 0.000 | 0.000 |
| 471 | 4.71 | 4.72 | 0.01 | 4.72 | 9.66 | 30.26 | 0.97 | 0.000 | 0.000 | 0.000 |
| 472 | 4.72 | 4.73 | 0.01 | 4.73 | 9.66 | 29.77 | 0.97 | 0.000 | 0.000 | 0.000 |
| 473 | 4.73 | 4.74 | 0.01 | 4.74 | 9.66 | 29.18 | 0.97 | 0.000 | 0.000 | 0.000 |
| 474 | 4.74 | 4.75 | 0.01 | 4.75 | 9.66 | 28.65 | 0.97 | 0.000 | 0.000 | 0.000 |
| 475 | 4.75 | 4.76 | 0.01 | 4.76 | 9.65 | 28.24 | 0.97 | 0.000 | 0.000 | 0.000 |
| 476 | 4.76 | 4.77 | 0.01 | 4.77 | 9.65 | 27.98 | 0.97 | 0.000 | 0.000 | 0.000 |
| 477 | 4.77 | 4.78 | 0.01 | 4.78 | 9.65 | 27.43 | 0.96 | 0.000 | 0.000 | 0.000 |
| 478 | 4.78 | 4.79 | 0.01 | 4.79 | 9.65 | 26.85 | 0.96 | 0.000 | 0.000 | 0.000 |
| 479 | 4.79 | 4.80 | 0.01 | 4.80 | 9.65 | 26.28 | 0.96 | 0.000 | 0.000 | 0.000 |
| 480 | 4.80 | 4.81 | 0.01 | 4.81 | 9.64 | 26.00 | 0.96 | 0.000 | 0.000 | 0.000 |
| 481 | 4.81 | 4.82 | 0.01 | 4.82 | 9.64 | 25.70 | 0.96 | 0.000 | 0.000 | 0.000 |
| 482 | 4.82 | 4.83 | 0.01 | 4.83 | 9.64 | 25.27 | 0.96 | 0.000 | 0.000 | 0.000 |
| 483 | 4.83 | 4.84 | 0.01 | 4.84 | 9.64 | 24.85 | 0.96 | 0.000 | 0.000 | 0.000 |
| 484 | 4.84 | 4.85 | 0.01 | 4.85 | 9.64 | 24.48 | 0.96 | 0.000 | 0.000 | 0.000 |
| 485 | 4.85 | 4.86 | 0.01 | 4.86 | 9.63 | 24.28 | 0.96 | 0.000 | 0.000 | 0.000 |
| 486 | 4.86 | 4.87 | 0.01 | 4.87 | 9.63 | 24.05 | 0.96 | 0.000 | 0.000 | 0.000 |
| 487 | 4.87 | 4.88 | 0.01 | 4.88 | 9.63 | 23.93 | 0.96 | 0.000 | 0.000 | 0.000 |
| 488 | 4.88 | 4.89 | 0.01 | 4.89 | 9.63 | 23.93 | 0.96 | 0.000 | 0.000 | 0.000 |
| 489 | 4.89 | 4.90 | 0.01 | 4.90 | 9.63 | 24.01 | 0.96 | 0.000 | 0.000 | 0.000 |
| 490 | 4.90 | 4.91 | 0.01 | 4.91 | 9.62 | 24.05 | 0.96 | 0.000 | 0.000 | 0.000 |
| 491 | 4.91 | 4.92 | 0.01 | 4.92 | 9.62 | 24.15 | 0.96 | 0.000 | 0.000 | 0.000 |
| 492 | 4.92 | 4.93 | 0.01 | 4.93 | 9.62 | 24.36 | 0.96 | 0.000 | 0.000 | 0.000 |
| 493 | 4.93 | 4.94 | 0.01 | 4.94 | 9.62 | 24.85 | 0.96 | 0.000 | 0.000 | 0.000 |
| 494 | 4.94 | 4.95 | 0.01 | 4.95 | 9.62 | 25.38 | 0.96 | 0.000 | 0.000 | 0.000 |
| 495 | 4.95 | 4.96 | 0.01 | 4.96 | 9.61 | 25.89 | 0.96 | 0.000 | 0.000 | 0.000 |
| 496 | 4.96 | 4.97 | 0.01 | 4.97 | 9.61 | 26.14 | 0.96 | 0.000 | 0.000 | 0.000 |
| 497 | 4.97 | 4.98 | 0.01 | 4.98 | 9.61 | 26.24 | 0.96 | 0.000 | 0.000 | 0.000 |
| 498 | 4.98 | 4.99 | 0.01 | 4.99 | 9.61 | 26.23 | 0.96 | 0.000 | 0.000 | 0.000 |
| 499 | 4.99 | 5.00 | 0.01 | 5.00 | 9.61 | 26.18 | 0.96 | 0.000 | 0.000 | 0.000 |
| 500 | 5.00 | 5.01 | 0.01 | 5.01 | 9.60 | 26.12 | 0.96 | 0.000 | 0.000 | 0.000 |
| 501 | 5.01 | 5.02 | 0.01 | 5.02 | 9.60 | 26.03 | 0.96 | 0.000 | 0.000 | 0.000 |
| 502 | 5.02 | 5.03 | 0.01 | 5.03 | 9.60 | 25.97 | 0.96 | 0.000 | 0.000 | 0.000 |
| 503 | 5.03 | 5.04 | 0.01 | 5.04 | 9.60 | 25.98 | 0.96 | 0.000 | 0.000 | 0.000 |
| 504 | 5.04 | 5.05 | 0.01 | 5.05 | 9.59 | 26.07 | 0.96 | 0.000 | 0.000 | 0.000 |
| 505 | 5.05 | 5.06 | 0.01 | 5.06 | 9.59 | 26.18 | 0.96 | 0.000 | 0.000 | 0.000 |
| 506 | 5.06 | 5.07 | 0.01 | 5.07 | 9.59 | 26.24 | 0.96 | 0.000 | 0.000 | 0.000 |

**:: Tabular results ::**

| Point No | Start depth (m) | End depth (m) | Thickness (m) | Relative depth (m) | Delta P (kPa) | $M_{(CPT)}$ (MPa) | Iz | Settlement (cm) | Second. settlement (cm) | Overall settlement (cm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 507 | 5.07 | 5.08 | 0.01 | 5.08 | 9.59 | 26.32 | 0.96 | 0.000 | 0.000 | 0.000 |
| 508 | 5.08 | 5.09 | 0.01 | 5.09 | 9.59 | 26.31 | 0.96 | 0.000 | 0.000 | 0.000 |
| 509 | 5.09 | 5.10 | 0.01 | 5.10 | 9.58 | 26.17 | 0.96 | 0.000 | 0.000 | 0.000 |
| 510 | 5.10 | 5.11 | 0.01 | 5.11 | 9.58 | 25.66 | 0.96 | 0.000 | 0.000 | 0.000 |
| 511 | 5.11 | 5.12 | 0.01 | 5.12 | 9.58 | 25.10 | 0.96 | 0.000 | 0.000 | 0.000 |
| 512 | 5.12 | 5.13 | 0.01 | 5.13 | 9.58 | 24.50 | 0.96 | 0.000 | 0.000 | 0.000 |
| 513 | 5.13 | 5.14 | 0.01 | 5.14 | 9.58 | 24.14 | 0.96 | 0.000 | 0.000 | 0.000 |
| 514 | 5.14 | 5.15 | 0.01 | 5.15 | 9.57 | 23.80 | 0.96 | 0.000 | 0.000 | 0.000 |
| 515 | 5.15 | 5.16 | 0.01 | 5.16 | 9.57 | 23.58 | 0.96 | 0.000 | 0.000 | 0.000 |
| 516 | 5.16 | 5.17 | 0.01 | 5.17 | 9.57 | 23.51 | 0.96 | 0.000 | 0.000 | 0.000 |
| 517 | 5.17 | 5.18 | 0.01 | 5.18 | 9.57 | 23.91 | 0.96 | 0.000 | 0.000 | 0.000 |
| 518 | 5.18 | 5.19 | 0.01 | 5.19 | 9.56 | 24.59 | 0.96 | 0.000 | 0.000 | 0.000 |
| 519 | 5.19 | 5.20 | 0.01 | 5.20 | 9.56 | 25.46 | 0.96 | 0.000 | 0.000 | 0.000 |
| 520 | 5.20 | 5.21 | 0.01 | 5.21 | 9.56 | 26.14 | 0.96 | 0.000 | 0.000 | 0.000 |

**Total primary settlement: 1.43**
**Total secondary settlement: 0.00**

**Total calculated settlement: 1.43**

**Abbreviations**

| | |
|---|---|
| Start depth: | Start depth of soil layer (penetration depth measured from ground free surface) |
| End depth: | End depth of soil layer (penetration depth measured from ground free surface) |
| Thickness: | Thickness of soil layer |
| Relative depth: | Depth of calculation relative to footing |
| Iz: | Stress influence factor |
| Delta P: | Footing impossed stress: |
| Eff. stress: | Effective stress |
| $M_{(CPT)}$: | Constrained modulus from CPT |
| Settlement: | Primary settlement |
| Second. settlement: | Secondary settlemends due to creep |

wsp.com/nz