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Phone (604) 439-0922 / Fax (604) 439-9189

Onni Group
300 - 550 Robson Street
Vancouver, BC
V6B 2B7

June 17, 2015
File:11219

Attention: Giulio De Cotiis

**Re: Geotechnical Investigation Report: Proposed Golden Ears Business Park Phase III and IV
Airport Way East of Harris Road, Pitt Meadows, B.C.**

1.0 INTRODUCTION

We understand that you are planning the development at Phase III and IV of Golden Ears Business Park, which was acquired recently. Phase III and IV is located on a large acreage in south Pitt Meadows, east of Phases I and II. The development would be industrial/business park, with tilt up concrete buildings surrounded by paved parking and access ways. This report presents the results of an updated investigation of the soil conditions at the south half of the proposed development phase IV and makes recommendations for the construction of the new buildings, roads and utilities. The soil classification used herein is based on the "Unified Soil Classification System" which describes soils according to their engineering properties.

The report has been prepared for the Onni Group, for their design and construction team and the City of Pitt Meadows, for permitting purposes, however it remains the property of GeoPacific Consultants Ltd. The report should not be relied upon or used by third parties without the expressed consent of GeoPacific Consultants Ltd.

2.0 SITE DESCRIPTION

The Phase III and IV areas are located east of Harris Road and north and south of Airport Way, and just north of the Fraser River. The Phase III and IV site is rectangular in shape, though somewhat irregular, with just about 400 m of frontage at Airport Way (east - west) and a depth of about 1000 m (north south). The site was previously used for agricultural purposes and contains a number of smaller buildings. The northeast corner of the site was recently cleared of trees and peat removal has been on-going on the east side of Phase III. The site rises gently towards the north, from an elevation of about 1.6 to 2 m to about 2.7 m on the west side of Phase III and rather steeply to 6 m in the northeast corner. As indicated above, our recent investigation focussed on the southern half of the property.

The location of the proposed development site is shown on our Drawing No. 11219-01 and 11219-02A located following the text of this report.

3.0 FIELD INVESTIGATION

The site was initially investigated on April 15, 18 and 19, 2013. At that time a total of 20 auger test holes and 10 Cone Penetration Test (CPT) soundings were conducted using a subcontracted, truck mounted auger drill rig. Geopacific was subsequently on site on April 24, 2015 to conduct additional testing in the Phase IV area, at which time 10 solid stem auger test holes and 4 CPTs were completed. The test holes were

conducted using a subcontracted, truck mounted auger drill rig supplied and operated by Uniwide Drilling Ltd. of Burnaby, B.C. All test holes were logged in the field by a technician from our office and backfilled immediately upon completion of testing and logging.

The additional testing performed was necessary to clarify the distribution of peat and organic deposits which would impact the site preparation requirements in Phase IV.

The auger holes were drilled to a depth of between 3.1 and 9.1 m below current local grades. The test hole results are presented on Figures A-01 through A-20 in Appendix A1 and Figures A.1 to A.10 of Appendix A2, following this report.

The CPT's were advanced to depths of between 11 and 29 m below current grades. The CPT results are presented on Figure B.01 through B.10 in Appendix B1 and Figures B.01 through B.04 in Appendix B2. Interpreted strength indices are computed from the CPT data and are presented in Appendices C1 and C2.

The updated approximate locations of the auger test holes and CPT's are shown on our Drawings 11219-01 and 11219-02A.

4.0 SUBSURFACE CONDITION

The subsurface soil profile at this site consists of peaty/organic silt deposits over and within, soft to firm silt to clay over interbedded compact to dense sand layers and then clayey silt. Refusal on dense soils was realized at all of the southern and recent CPT locations. This dense layer occurred at depths of 8 to 22 m below current site grades in Phase IV.

Some fills should be expected in the vicinity of the existing site buildings and roads.

The additional auger tests refined our understanding of the organic soil deposits in the south half of the site. The zone defined by TH15-05 to TH15-08 on the attached Drawing 11219-02 contains thicker, buried organic silt deposits of thicknesses ranging from 2 to 6 m covered and underlain by firm silt and clay.

TH15-02 and TH13-08 defined a zone of shallow surficial peat in the northeast corner of Phase IV. This surficial peat is underlain by a firm silty clay and/or sand.

Groundwater is near the surface in Phase III where peat occurs at the ground surface. The water table is somewhat deeper in Phase IV, 1 to 1.5 m below existing grades, however it is expected to rise to within 0.5 metres of ground surface during the wetter winter months, and in relation to the Fraser River.

5.0 RECOMMENDATIONS FOR DEVELOPMENT

5.1 General

The proposed Phase III and IV developments include tilt-up concrete industrial buildings, either multi-tenant or single user surrounded by paved parking and access ways. Superstructure and floor loading is expected to be moderately heavy to heavy and pavements would need to accommodate a range of traffic condition including heavy truck traffic. The subsurface conditions are variable. However, in general the site is underlain by fluvial silts and sands overlying post glacial stiff clay to clay silt overlying dense granular deposits of sand to sand and gravel. Locally peat/organic silt has been identified as a surface layer as well

as a deeper buried layer at specific locations on site.

Filling will be required to achieve flood proofing levels with proposed slab grades of 5.33 m. It will be necessary to raise grades by 2.5 to 3.5 m to achieve flood proofing elevation. This should be completed using compacted engineered fill.

Site preparation is underway in the east side of the Phase III area, with peat removal and replacement with engineered fill. The west half of Phase III would have the peat and organic silt left in place, with filling to design grade followed by preload treatment. Topsoil can be left in place.

The north end of Phase IV shows surficial peat, which is generally not thick (less than 2m). The proposed building locations shown on Drawing 11219-02A mostly avoids this peat area. The organic silts and surficial peats and topsoil in Phase IV can be left in place, filled to design grade with compacted structural fill, and then preloaded.

5.2 Seismic Considerations

It is generally accepted that the loose to compact and saturated non plastic silts and sands are prone to liquefaction or strain softening during cyclic loading caused by large earthquakes. The strength reduction caused by soil liquefaction can cause foundations to punch. Furthermore, once liquefaction has been triggered, experience has shown that significant, permanent vertical and horizontal movements may be experienced.

Our analyses of ground liquefaction, presented in Appendix D, show that some zones of silty sand to sand present between 5 and 20 m below site grades could be prone to ground liquefaction during the $\frac{1}{2}$ 475 design earthquake recommended in the 2012 B.C. Building Code. Since the site is partially underlain by some liquefiable soils, it should be assumed to be Class F, in accordance with BCBC 2012. A Class E spectrum can be assumed for design of structures having a period of less than 0.5 seconds.

Since new buildings are expected to be underlain by at least 6 m of non-liquefiable soil, foundations should not punch into the soil once liquefaction is triggered. Therefore, the effects of liquefaction should have little impact on the new buildings. Our analyses indicate that post-liquefaction ground settlement would be in the order of 20 to 120 mm. Post liquefaction differential settlements should be less than 100 mm between columns.

5.3 Earthworks

To prepare the subsurface to adequately support the required bearing pressures, the site grading fills should consist of engineered fill, placed in controlled lifts in a phased manner, to achieve the desired flood proofing elevations and grade reinstatement. It is expected that the locally available mineral fills would be used for engineered fills. However, as the fills are likely to have significant silt content, moisture conditioning may be required to achieve adequate compaction. For Phase III west and Phase IV where there is no planned peat removal, fill can be placed directly over the existing topsoil as these areas will be preloaded.

We understand that there will be a development set back of 20 m along the north and east property lines and 7.5 m at the west and south property lines (against City property). Thus peat removal should not have an impact on neighbouring sites. The filling should be completed in a controlled manner in 0.5 m lifts and

compacted to 98 percent ASTM D698 (Standard Proctor) maximum dry density for buildings, roads and services. Monitoring of fill settlement as well as perimeter fixtures by BCCLS is recommended to assist in determining when it is safe to add each 1.5 m thickness of fill.

5.4 Preload

For the east side of Phase III, peat removal is in progress. After removal and replacement with compacted structural fill, preloading will likely not be required. However, at least 20 settlement gauges should be installed in this area to evaluate soil behaviour under the influence of replacement and site grading fill.

For the west side of Phase III and all of Phase IV, due to the presence of peat and/or organic silt, preload will be required. Preload design is governed by the weight of the proposed buildings and floor loading however it also depends on available preload time. For the thickness of compressible materials identified, preload duration for most of the primary consolidation and a portion of the secondary consolidation would be in the range of 9 to 12 months. For most buildings where floor loading is restricted to 25 kPa (500psf) or less, preload heights would be in the range of 4 to 6 m. The minimum preload height that should be considered is 4 m, left in place for about 12 months. This preload thickness is measured from the finished floor slab elevation to the top of preload after completion. Preloads may need to be staged at the margins of the site to avoid off site impacts or shear failure.

Higher preloads can be used to compensate for reduced preload duration. For example a 6 m preload for 6 months can achieve what a 4 m preload would achieve in 12 months. So there is some flexibility in preload duration provided that additional preload height can be accommodated. Care must be taken at the margins of the sites to avoid preload impacts beyond the site border and shear failure. Staged perimeter filling will be required.

For yard pavement areas we recommend 1 m of preload be left in place for 6 to 12 months.

5.5 Building Foundations

Once site grading and preload treatment (where applicable) has been completed, the new structures, pavements and utilities can be supported on conventional spread foundations. Settlement of engineered fills and any preload fills should be monitored during placement using settlement gauges, spaced at about 30 m centres.

We recommend that foundations be designed on the basis of serviceability limit state (SLS) bearing pressures of 100 kPa. Post-construction settlements should be in the range of 50 to 100 mm total with 1 in 300 differential. Minimum footing widths are 450 mm for strip footings and 600 mm for pad footings. Frost depth is 450 mm.

After filling and preload treatments, where applicable, factored ultimate bearing capacity under seismic conditions can be taken as 1.5 x the SLS bearing pressure.

5.6 Slabs and Sidewalks

Floor slabs-on-grade and sidewalks can be constructed using standard procedures. Prior to construction, we recommend that the area be stripped of any loose and disturbed soils. A minimum of 150 mm of compacted clean sand to sand and gravel fill should be placed beneath floor slabs-on-grade and sidewalks. The fill

should be compacted to a minimum of 98 percent of the ASTM D698 (Standard Proctor) maximum dry density. Under sidewalks at least 100 mm of crushed road base should underlie the concrete.

5.7 Methane

As the peat will be removed from the east half of Phase III methane generation would not be an issue.

Methane control will be required for the remaining areas. Typically these systems consist of perforated pipe placed beneath the slab with the perforated pipe ventilated by passive means through the roof.

5.8 Perimeter Drainage

Normal perimeter drain tile is not required for the type of development currently contemplated, except at loading bays and other areas that are depressed relative to general site grades.

5.9 Pavement Design

Following the recommended site preparation the minimum asphalt pavement structure, provided in Table 1 below, should be used for parking and driveway areas.

Table 1: Recommended Minimum Pavement Structure For On-Site Roads

Material	Thickness (mm)
Asphaltic Concrete	75
19 mm Minus Crushed Gravel Base Course	150
River Sand	300

All base and subbase fills should be compacted to a minimum of 95% Modified Proctor dry density with a moisture content within 2% of optimum for compaction. Density testing should be conducted on the base and subbase materials to confirm that they have been compacted to the required standard.

5.10 Municipal Road Standards

For municipal roads constructed on the property, the minimum pavement section required by the Municipality should be used since roads will be underlain by at least 3 m of compacted mineral fill. In all areas at least 1 m of preload should be placed over roads.

5.11 Utilities

Utilities will be underlain by mineral fill with the possible exception of deep utilities such as storm and sanitary. No special measures will be required for utilities except for deep sumps constructed on the fluvial silt in the south half of the site. For this case, we recommend a minimum of 300 mm of clear crushed gravel. Groundwater control will be required for excavations that penetrate the groundwater table.

We recommend that any trenches be sloped or shored in conformance with Work Safe BC regulations. We recommend that all service trenches be backfilled with clean granular material, which conforms to municipal

standards, compacted to 98% Standard Proctor dry density, with a moisture content within 2% of optimum for compaction. Wet fill should be removed and replaced with dry fill.

Utility gradients should be at least 0.5% where feasible to minimize the potential for eventual reverse slopes due to adverse ground settlement. This only applies to gravity services.

6.0 DESIGN REVIEWS AND CONSTRUCTION INSPECTIONS

The preceding sections provide recommendations for the design and construction of the proposed buildings including site graded requirements for the proposed Golden Ears Business Park III and IV developments.

We recommend reviews and inspections be completed for the following construction activities.

1. Peat removal
2. Engineered fill placement and compaction
3. Compaction of slab-on-grade fill, engineered fill, on-site road and parking sub-base and base fills
4. Proposed lot grading plan and building designs
5. Preload settlement gauge monitoring, review and plotting of data (where preload is necessary)

These reviews are required to ensure that our recommendations and procedures are being adequately followed. It is important that any contractors working on the site review this document prior to commencing their work.

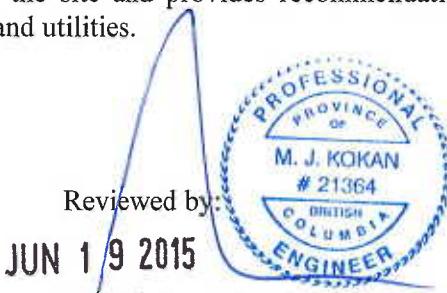
7.0 CLOSURE

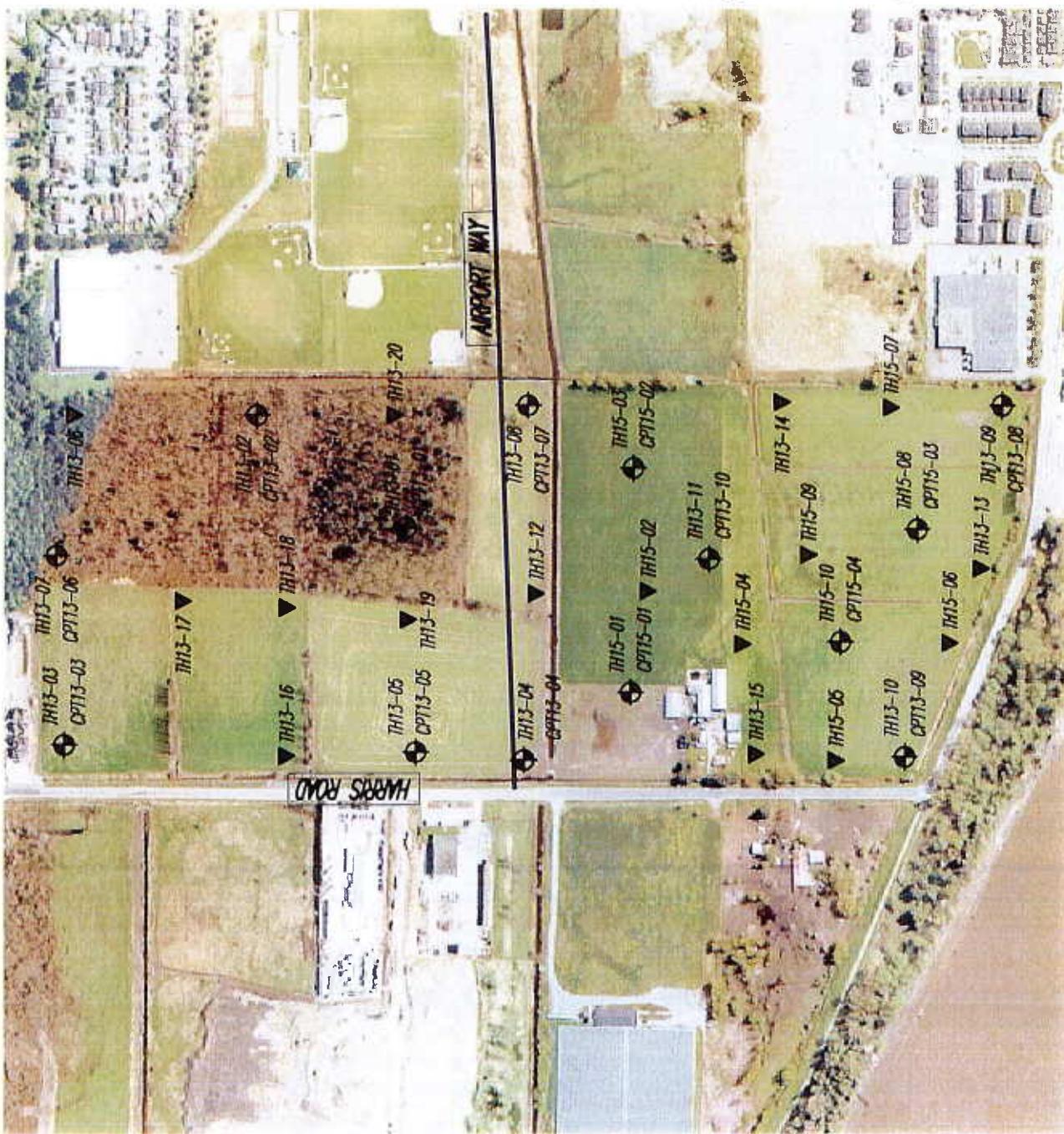
This report summarizes the subsurface soil conditions at the site and provides recommendations for construction of new industrial buildings, pavements, roads and utilities.

If you require further details or clarification, please call.

For:
GeoPacific Consultants Ltd.

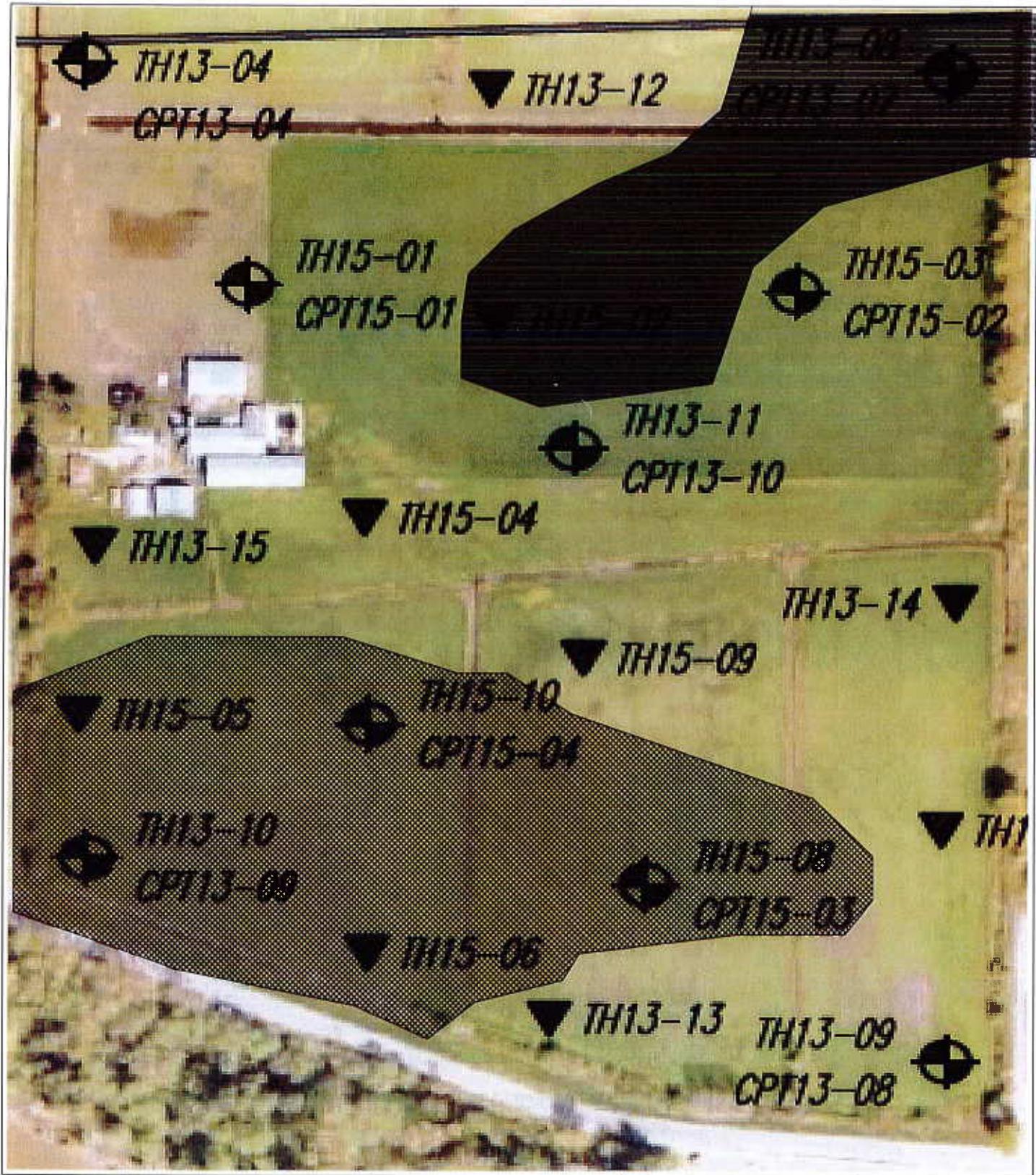
Daniel Kokan
Technician



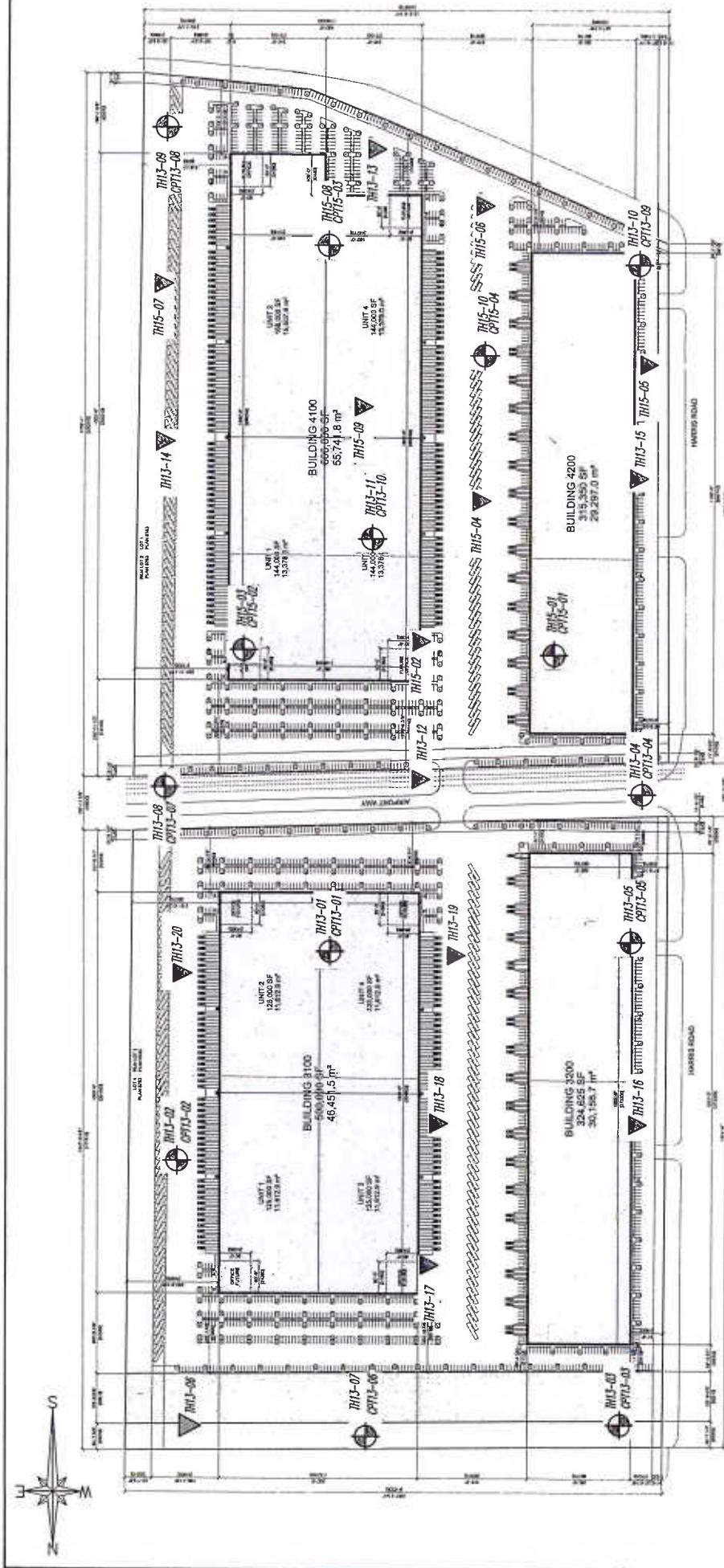


REFERENCE:	215-1200 1st 75th Avenue Vancouver, BC	DATE:	April 23, 2013	FILE NO.:	11219	REVISIONS:	
PROJ. NO.:	M.G.	DRN. BY:	APPO. T.C.M.	AIRPORT WAY EAST OF HARRIS ROAD, PIT MEADOWS, B.C.		REV. A 24-Apr-2015 (Z.H.)	
DATE:	APRIL 2015	SCALE:	NOT TO SCALE	TEST HOLE LOCATION PLAN		REV. B	
	APRIL 2015				DWG. NO.: 11219-01	REV. C	

**GeoPacific
Consultants Ltd.**



Surficial Peat Containing Areas	Buried Peat Containing Areas	REVISIONS: A. B. C.	FILE NO.: 11219 DWG. NO.: 11219-02
/215-1200 West 73-nd Ave. Vancouver, B.C. Canada V6P 0C5 Ph. (604) 439-0322 Fax (604) 439-9189		DATE: May 6, 2015 DRN. BY: D.K. APP'D. M.J.K. SCALE: NOT TO SCALE	INDUSTRIAL DEVELOPMENT AIRPORT WAY EAST OF HARRIS ROAD, PITT MEADOWS, B.C. PEAT LOCATION PLAN



SITE PLAN
SCALE = 1:3000

LEGEND:

- TH13-# - 2013 TEST HOLE (TH) LOCATION
- CPT13-# - 2013 CONE PENETRATION TEST (CPT) LOCATION
- TH13-# ▼ - 2013 TEST HOLE (TH) LOCATION
- *ALL TEST HOLE LOCATIONS ARE APPROXIMATE

INDUSTRIAL DEVELOPMENT		FILE NO.: 11219	REF. NO.:
DESIGNED BY: GeoPacific Consultants Ltd.	APPROVED BY: C.I. S.M.L. AS SHOWN	AIRPORT WAY EAST OF HARRIS ROAD, FITT MEADOWS, B.C.	11219-024
TEST HOLE LOCATIONS (2 OF 3)			

APPENDIX A1 – 2013 TEST HOLE LOGS

Test Hole Log: TH13-01

File: 11219

Project: Proposed Industrial Development

Client: Omni

Site Location: Airport Way and Harris Road, Pitt Meadows



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Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE			Depth/Elev (ft)	Moisture Content (%)	DCPT (blows per foot)	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION					
0 ft m 0		Ground Surface	0.0				
1		Peat Soft woody PEAT, coarse fibrous, saturated					
2							
3				211.9			
4							
5		Silty Clay Very soft silty CLAY, trace to some peat, brown @6' become grey @7' soft	4.0				
6							
7							
8							
9							
10			10.0				
11		Clayey Silt Stiff to very stiff clayey SILT, grey					
12							
13							
14							
15							
16							
17							
18							
19							
20		End of Borehole	20.0				
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

Logged: TCM

Method: Soild Stem Auger

Date:

Datum: Ground Surface

Figure Number: A-01

Page: 1 of 1

Test Hole Log: TH13-02

File: 11219

Project: Proposed Industrial Development

Client: Omni

Site Location: Airport Way and Harris Road, Pitt Meadows



215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE			Depth/Elev (ft)	Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION					
0		Ground Surface	0.0				
1		Topsoil Very loose TOPSOIL, wood bits, leaves, grass, saturated	1.0				
2		Peat Soft to firm woody PEAT, coarse fibrous, saturated, some rootlets		320.8			
3							
4							
5							
6							
7		Silty Clay Very soft silty CLAY, trace to some peat, brown @7' become grey, no peat @8' soft	6.5	72.1			
8							
9							
10							
11							
12		@11' soft to firm					
13							
14		Clayey Silt Firm clayey SILT, grey	13.5	45.3			
15							
16		Sandy Silt Firm sandy SILT, grey	15.5	37.6			LL-33/ PL-28/ PI-6
17							
18							
19		Silt Firm SILT, olive grey	18.0				
20			20.0				
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

Logged: TCM

Method: Soild Stem Auger

Date: April 18, 2013

Datum: Ground Surface

Figure Number: A-02

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Test Hole Log: TH13-03

File: 11219

Project: Proposed Industrial Development

Client: Omni

Site Location: Airport Way and Harris Road, Pitt Meadows



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INFERRED PROFILE			Depth/Elev (ft)	Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION					
0 ft m 0		Ground Surface	0.0				
1		Topsoil Compact TOPSOIL, wood bits, leaves, grass, saturated	0.8				
2		Peat Soft to firm woody PEAT, coarse fibrous, saturated, some rootlets	2.5	225.0			
3		Silt Very soft silt, trace to some peat, brown @3' become grey, no peat @3.5' soft @4.5' firm	5.0	60.1			LL-61/ PL-40/ PI-21
4				54.7			
5		Clayey Silt Firm clayey SILT, grey @6.5-7.5' brown, soft @7.5' grey		43.6			
6		@14-15' brown		40.2			
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17		Sandy Silt Firm sandy SILT, grey	16.0				
18		@18-19' soft		40.2			
19							
20		End of Borehole	20.0				
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

Logged: TCM

Method: Soild Stem Auger

Date: April 18, 2013

Datum: Ground Surface

Figure Number: A-03

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Test Hole Log: TH13-04

File: 11219

Project: Proposed Industrial Development

Client: Omni

Site Location: Airport Way and Harris Road, Pitt Meadows



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Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE			Depth/Elev (ft)	Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION					
0		Ground Surface	0.0				
1		Topsoil Stiff TOPSOIL, wood bits, leaves, grass, saturated	0.8				
3		Silty Clay Stiff silty CLAY, trace peat, brown @2.5' firm @4' grey	5.0	61.0			
6		Clayey Silt Soft clayey SILT, grey @6' olive grey	11.0	44.0			
12		Sandy Silt Firm sandy SILT, grey	20.0	72.3			
21		End of Borehole		35.3			
23				33.1			
25							
26							
27							
28							
29							
30							
31							

Logged: TCM

Method: Soild Stem Auger

Date: April 18, 2013

Datum: Ground Surface

Figure Number: A-04

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Test Hole Log: TH13-05

File: 11219

Project: Proposed Industrial Development

Client: Omni

Site Location: Airport Way and Harris Road, Pitt Meadows



215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE			Depth/Elev (ft)	Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION					
0 ft m 0		Ground Surface	0.0				
1		<i>Topsoil</i> Firm TOPSOIL, wood bits, leaves, grass, saturated	1.5				
2							
3		<i>Silty Clay</i> Soft silty CLAY, brown	3.5	54.0			
4							
5		<i>Clayey Silt</i> Soft clayey SILT, grey					
6							
7		@7-8' trace peat @8' firm					
8							
9							
10							
11							
12							
13							
14							
15		<i>Sandy Silt</i> Firm sandy SILT, grey	14.0				
16							
17		<i>Silty Clay</i> Soft silty CLAY, grey	17.0				
18							
19							
20		End of Borehole	20.0				
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

Logged: TCM

Method: Soild Stem Auger

Date: April 19, 2013

Datum: Ground Surface

Figure Number: A-05

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Test Hole Log: TH13-06

File: 11219

Project: Proposed Industrial Development

Client: Omni

Site Location: Airport Way and Harris Road, Pitt Meadows



215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE			Depth/Elev (ft)	Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION					
0 ft 0 m		Ground Surface	0.0				
1		Peat Very soft, coarse grained, woody PEAT, black, smelly, fibrous					
2		@3.5' reddish brown, soft, more granular					
3				511.4			
4							
5							
6							
7							
8		@8.5-10' some silt					
9							
10							
11							
12							
13							
14							
15		Sand Compact fine SAND, brown	15.0				
16		@17' coarse grained					
17							
18		Gravel Compact GRAVEL, trace silt, trace sand, tan	18.0	12.4			
19			19.0				
20			20.0				
21		Sand Compact medium to coarse grained SAND, brown					
22							
23		End of Borehole					
24							
25							
26							
27							
28							
29							
30							
31							

Logged: TCM

Method: Soild Stem Auger

Date: April 19, 2013

Datum: Ground Surface

Figure Number: A-06

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Test Hole Log: TH13-07

File: 11219

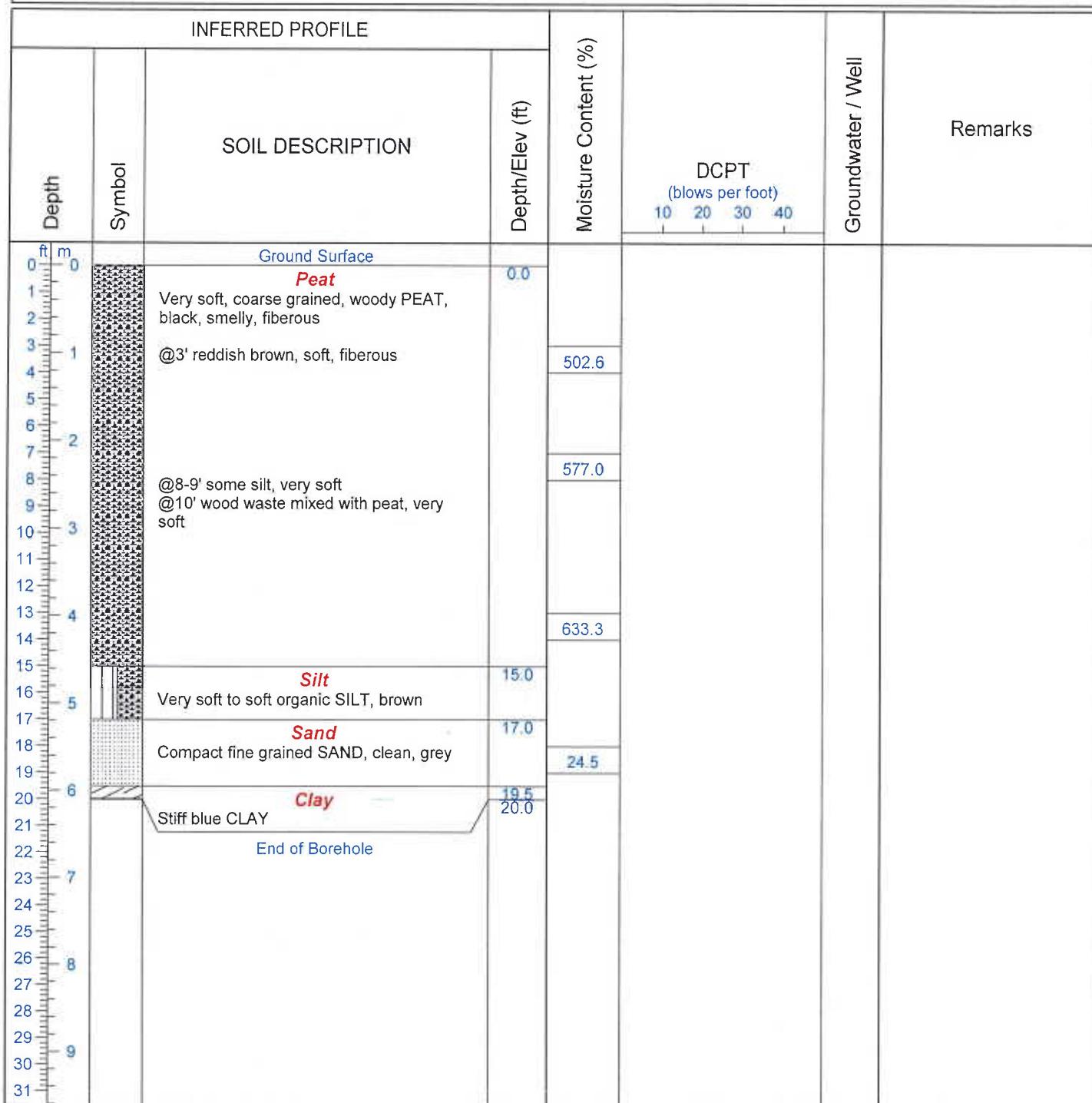
Project: Proposed Industrial Development

Client: Omni

Site Location: Airport Way and Harris Road, Pitt Meadows



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Logged: TCM

Method: Soild Stem Auger

Date: April 19, 2013

Datum: Ground Surface

Figure Number: A-07

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Test Hole Log: TH13-08

File: 11219

Project: Proposed Industrial Development

Client: Omni

Site Location: Airport Way and Harris Road, Pitt Meadows



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INFERRED PROFILE			Depth/Elev (ft)	Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION					
0		Ground Surface	0.0				
1		<i>Topsoil</i>	1.0				
2		<i>Silt</i>					
3		Firm organic SILT, brown					
4		<i>Peat</i>					
5		Firm PEAT, woody, fibrous, black to brown @3.5' become soft					
6		<i>Silty Clay</i>	5.5				
7		Soft silty CLAY, olive grey, trace peat	7.0				
8							
9		<i>Clayey Silt</i>					
10		Firm clayey SILT, grey					
11		@11-12' brown, soft					
12							
13							
14		<i>Clay</i>	14.0				
15		Stiff to very stiff blue CLAY					
16							
17		@17-18' become grey					
18							
19							
20		End of Borehole	20.0				
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

Logged: TCM

Method: Soild Stem Auger

Date: April 19, 2013

Datum: Ground Surface

Figure Number: A-08

Page: 1 of 1

Test Hole Log: TH13-09

File: 11219

Project: Proposed Industrial Development

Client: Omni

Site Location: Airport Way and Harris Road, Pitt Meadows



215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE			Depth/Elev (ft)	Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION					
0 ft m 0		Ground Surface	0.0				
1		<i>Topsoil</i> Firm black TOPSOIL, roots, grass	1.0				
2		<i>Silt</i> Firm SILT, orange with some grey @3.5' very soft @4-5' some sand		71.4			
3		@5-6' some peat, trace sand					
4							
5							
6							
7							
8							
9							
10			10.0	63.4			LL-76/ PL-43/ PI-33
11		End of Borehole					
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

Logged: TCM

Method: Soild Stem Auger

Date: April 19, 2013

Datum: Ground Surface

Figure Number: A-09

Page: 1 of 1

Test Hole Log: TH13-10

File: 11219

Project: Proposed Industrial Development

Client: Omni

Site Location: Airport Way and Harris Road, Pitt Meadows

GeoPacific

Consultants Ltd.

215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE			Depth/Elev (ft)	Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION					
0 ft 0 m		Ground Surface	0.0				
1		<i>Topsoil</i>					
2		<i>Silty Clay</i>					
3		Firm silty CLAY, grey with mottled orange @1.5' become firm @3' soft, trace peat inclusions @4' very soft					
4				86.4			
5							
6		<i>Silt</i>	6.0				
7		Firm organic SILT, brown					
8				118.5			
9							
10		<i>Clayey Silt</i>	9.0				
11		Very soft clayey SILT, olive grey @11' some sand					
12		<i>Peat</i>	11.5				
13		Soft fibrous PEAT, trace wood waste, brown to black					
14			13.5	81.8			
15		<i>Clayey Silt</i>	14.5				
16		Soft to firm clayey SILT, trace wood waste					
17		<i>Sand</i>					
18		Compact fine SAND, saturated, grey					
19							
20		End of Borehole	20.0				
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

Logged: TCM

Method: Soild Stem Auger

Date: April 19, 2013

Datum: Ground Surface

Figure Number: A-10

Page: 1 of 1

Test Hole Log: TH13-11

File: 11219

Project: Proposed Industrial Development

Client: Omni

Site Location: Airport Way and Harris Road, Pitt Meadows

GeoPacific

Consultants Ltd.

215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE			Depth/Elev (ft)	Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION					
0 ft m 0		Ground Surface	0.0				
1		<i>Topsoil</i>					
2		<i>Clayey Silt</i>					
3		Firm clayey SILT, brown with mottled orange @1.5' become firm @4.5' grey					
4				40.2			
5				42.1			
6		<i>Sandy Silt</i>	5.0				
7		Firm sandy SILT, grey, wet					
8				37.4			
9							
10		<i>Clayey Silt</i>	9.0				
11		Firm clayey SILT, grey					
12							
13		@12' olive grey @13' some peat					
14				26.6			
15		@14.5' grey					
16		<i>Sand</i>	16.0				
17		Compact fine SAND, saturated, grey					
18		<i>Clayey Silt</i>	18.0				
19		Soft clayey SILT, grey					
20							
21		@20' olive grey					
22							
23		@23' trace peat inclusions @23.5' trace wood waste to 27'		66.9			
24							
25							
26							
27		<i>Clay</i>	27.0				
28		Stiff blue CLAY					LL-74/ PL-30/ PI-45
29							
30		End of Borehole	30.0				
31							

Logged: TCM

Method: Soild Stem Auger

Date: April 19, 2013

Datum: Ground Surface

Figure Number: A-11

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Test Hole Log: TH13-12

File: 11219

Project: Proposed Industrial Development

Client: Omni

Site Location: Airport Way and Harris Road, Pitt Meadows

GeoPacific

Consultants Ltd.

215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE			Depth/Elev (ft)	Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION					
0 ft m 0		Ground Surface <i>Topsoil</i>	0.0				
1		<i>Peat</i>	1.5				
2		Soft fibrous PEAT, black	2.5				
3		<i>Clayey Silt</i>		160.6			
4		Firm clayey organic SILT, brown					
5							
6							
7		<i>Clayey Silt</i>	6.5				
8		Soft to very soft clayey SILT					
9		@8-10' firm					
10							
11							
12		@12-13' very soft					
13		<i>Clay</i>	13.0				
14		Stiff blue CLAY		43.7			
15			15.0				
16		End of Borehole		40.0			
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

Logged: TCM

Method: Soild Stem Auger

Date: April 19, 2013

Datum: Ground Surface

Figure Number: A-12

Page: 1 of 1

Test Hole Log: TH13-13

File: 11219

Project: Proposed Industrial Development

Client: Omni

Site Location: Airport Way and Harris Road, Pitt Meadows



215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE			Depth/Elev (ft)	Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION					
0 ft 0 m		Ground Surface	0.0				
1		<i>Topsoil</i>					
2		<i>Silty Clay</i>					
3		Firm to stiff silty CLAY, grey with mottled orange @1.5' become firm					
4		@4' very soft, some peat					
5		@5.5' trace peat, firm					
6		@7-12' some peat inclusions, soft					
7							
8							
9							
10							
11							
12		@12' grey					
13							
14							
15							
16		<i>Wood Waste and Peat</i>	16.0				
17		<i>Clayey Silt</i>	17.0				
18		Very soft clayey SILT, olive grey @18' some sand					
19							
20		<i>Sandy Silt</i>	19.0				
21		Soft sandy SILT, grey	20.0				
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

Logged: TCM

Method: Soild Stem Auger

Date: April 19, 2013

Datum: Ground Surface

Figure Number: A-13

Page: 1 of 1

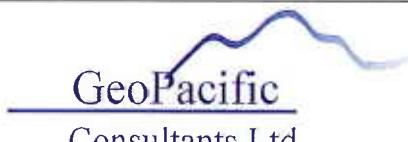
Test Hole Log: TH13-14

File: 11219

Project: Proposed Industrial Development

Client: Omni

Site Location: Airport Way and Harris Road, Pitt Meadows



215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE			Depth/Elev (ft)	Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION					
0 ft 0 m		Ground Surface	0.0				
1		<i>Topsoil</i>	1.0				
2		<i>Silty Clay</i>					
3		Firm to stiff silty CLAY, grey with mottled orange @1.5' become firm, some wood waste @4' trace peat, no wood, grey					
4				109.0			
5							
6		<i>Silt</i>	5.5				
7		Soft to firm SILT, grey					
8				45.6			
9							
10							
11							
12		@12-13' brown					
13							
14							
15		<i>Sandy Silt</i>	14.5				
16		Firm sandy SILT, grey					
17				34.3			
18		<i>Silt</i>	17.0				
19		Firm to soft SILT, grey @17.5' firm					
20		@18' soft					
21		End of Borehole	20.0				
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

Logged: TCM

Method: Soild Stem Auger

Date: April 19, 2013

Datum: Ground Surface

Figure Number: A-14

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Test Hole Log: TH13-15

File: 11219

Project: Proposed Industrial Development

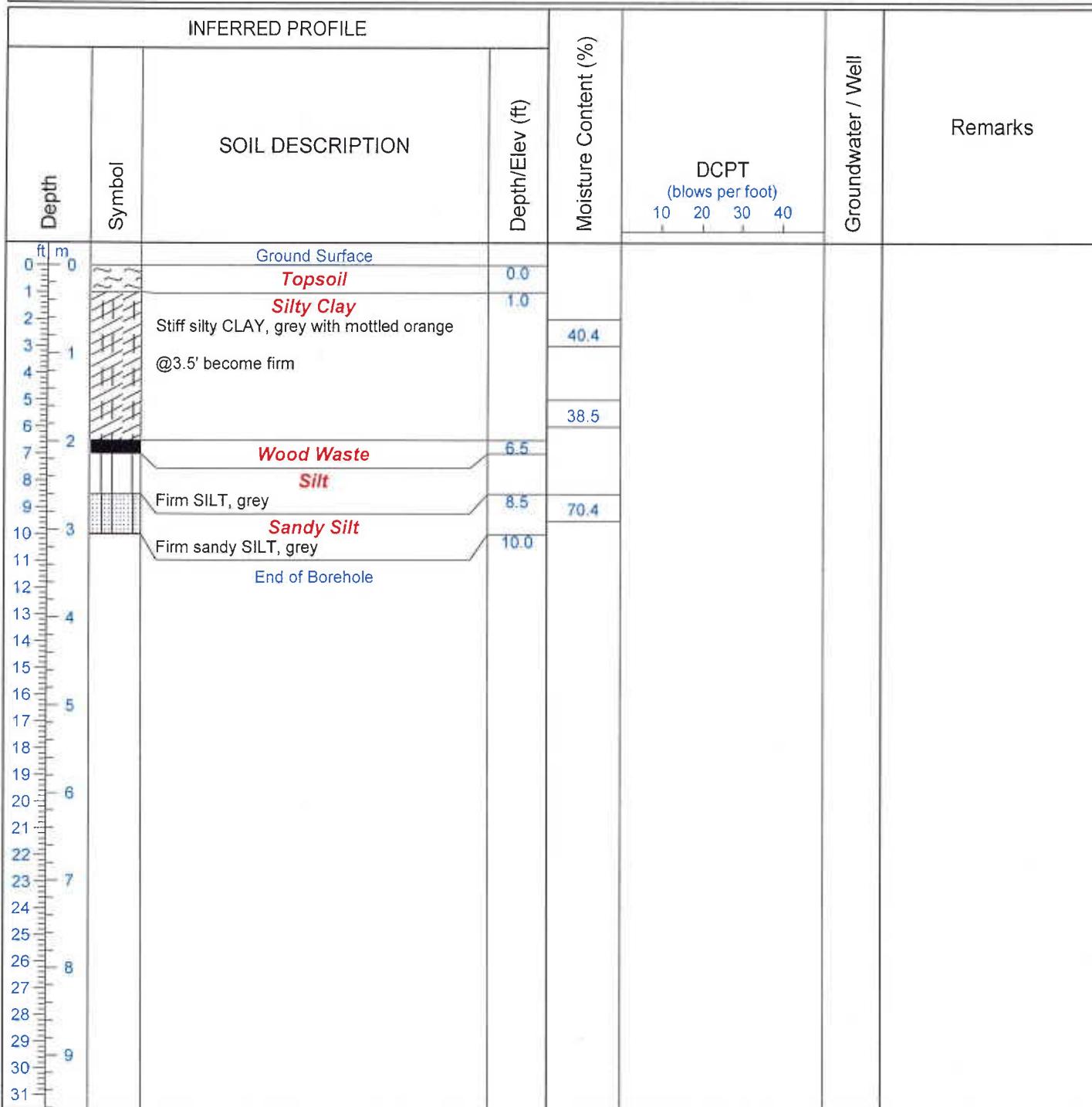
Client: Omni

Site Location: Airport Way and Harris Road, Pitt Meadows

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Logged: TCM

Method: Soild Stem Auger

Date: April 19, 2013

Datum: Ground Surface

Figure Number: A-15

Page: 1 of 1

Test Hole Log: TH13-16

File: 11219

Project: Proposed Industrial Development

Client: Omni

Site Location: Airport Way and Harris Road, Pitt Meadows



INFERRED PROFILE			Depth/Elev (ft)	Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION					
0 ft m 0		Ground Surface	0.0				
1		Topsoil Firm TOPSOIL with grass, roots, black	2.0				
2		Peat Firm PEAT, fibrous, woody	3.0				
3		Silt Firm SILT, grey with mottled orange		43.2			
4							
5							
6							
7							
8							
9		Sand Compact fine SAND, trace interbedded silt	8.0	46.4			
10			10.0				
11		End of Borehole					
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

Logged: TCM

Method: Soild Stem Auger

Date: April 19, 2013

Datum: Ground Surface

Figure Number: A-16

Page: 1 of 1

Test Hole Log: TH13-17

File: 11219

Project: Proposed Industrial Development

Client: Omni

Site Location: Airport Way and Harris Road, Pitt Meadows



215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE			Depth/Elev (ft)	Moisture Content (%)	DCPT (blows per foot)	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION					
0		Ground Surface	0.0				
1		Peat Firm PEAT, fibrous, woody, saturated	0.0	594.9			
2							
3							
4							
5							
6							
7							
8		Silt Very soft organic SILT, brown	7.5	303.5			
9							
10		End of Borehole	10.0				
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

Logged: TCM

Method: Soil Stem Auger

Date: April 19, 2013

Datum: Ground Surface

Figure Number: A-17

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Test Hole Log: TH13-18

File: 11219

Project: Proposed Industrial Development

Client: Omni

Site Location: Airport Way and Harris Road, Pitt Meadows



215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE			Depth/Elev (ft)	Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION					
0 ft 0 m		Ground Surface	0.0				
1		Peat Firm PEAT, fibrous, woody	0.0				
2							
3							
4							
5							
6		Silt Firm to soft organic SILT, brown	5.5				
7							
8		Silt Very soft SILT, grey	7.0				
9							
10		End of Borehole	10.0				
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

Logged: TCM

Method: Soild Stem Auger

Date: April 19, 2013

Datum: Ground Surface

Figure Number: A-18

Page: 1 of 1

Test Hole Log: TH13-19

File: 11219

Project: Proposed Industrial Development

Client: Omni

Site Location: Airport Way and Harris Road, Pitt Meadows



215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE			Depth/Elev (ft)	Moisture Content (%)	DCPT (blows per foot) 10 20 30 40	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION					
0 ft m 0		Ground Surface	0.0				
1		Peat Firm PEAT, fibrous, woody	0.0				
2							
3		Silt Firm to soft organic SILT, brown	2.5	277.2			
4							
5							
6		Silt Very soft SILT, grey	6.0	98.1			
7							
8							
9							
10		End of Borehole	10.0				
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							

Logged: TCM

Method: Soild Stem Auger

Date: April 19, 2013

Datum: Ground Surface

Figure Number: A-19

Page: 1 of 1

Test Hole Log: TH13-20

File: 11219

Project: Proposed Industrial Development

Client: Omni

Site Location: Airport Way and Harris Road, Pitt Meadows



215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE			Depth/Elev (ft)	Moisture Content (%)	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION				
0 ft m 0		Ground Surface	0.0			
1		Peat Firm PEAT, fibrous, woody				
2						
3						
4		Silt Firm organic SILT, brown	3.5	361.2		
5						
6		Silt Firm SILT, grey @6-6.5' become stiff	5.0			
7						
8						
9						
10						
11		End of Borehole	10.0			
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

Logged: TCM

Method: Soild Stem Auger

Date: April 19, 2013

Datum: Ground Surface

Figure Number: A-20

Page: 1 of 1

APPENDIX A2 – 2015 TEST HOLE LOGS (PHASE IV)

Test Hole Log: TH15-01 (CPT15-01)

File: 11219

Project: INDUSTRIAL DEVELOPMENT

Client: ONNI GROUP OF COMPANIES

Site Location: AIRPORT WAY EAST OF HARRIS ROAD, PITTS MEADOWS



215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE			Depth (m)	Moisture Content (%)	DCPT (blows per foot)	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION					
0		Ground Surface	0.0				
0.3		Topsoil	0.3				
1.2		Silt firm clayey SILT, high plasticity, grey to greyish brown, slightly moist					
4.0		Silt firm SILT, medium plasticity, grey to blue-grey, moist					
4.2		some peat inclusions @ 4.0 m becomes greyish brown @ 4.2 m					
5.3				44.0			
6.1				90.0			
18.0		Silt firm sandy SILT, low plasticity, grey, moist					
20.0		End of Borehole	6.1	49.8			

Logged: ZH

Datum: Ground elevation

Method: Solid Stem Auger

Figure Number: A.01

Date: 24-Apr-2015

Page: 1 of 1

Test Hole Log: TH15-02

File: 11219

Project: INDUSTRIAL DEVELOPMENT

Client: ONNI GROUP OF COMPANIES

Site Location: AIRPORT WAY EAST OF HARRIS ROAD, PIT MEADOWS 215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189



INFERRED PROFILE			Depth (m)	Moisture Content (%)	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION				
0 ft m 0		Ground Surface	0.0			
1		<i>Topsoil</i>	0.6			
2			0.9			
3		<i>Silt</i> firm SILT, medium plasticity, grey, moist	1.0			
4		<i>Peat</i> firm fibrous PEAT, dark brown to black, some silt, some wood waste, moist	2.0	315.4		
5						
6		<i>Silt</i> firm clayey SILT, blue-grey, high plasticity, moist	4.3	48.1		
7						
8						
9						
10						
11						
12						
13						
14						
15		<i>Silt</i> firm SILT, high plasticity, some organics, grey to dark grey, moist	5.2	174.6		
16						
17		<i>Sand</i> compact silty SAND, grey, moist	6.1			
18						
19						
20		End of Borehole				
21						
22						
23						
24						
25						
26						

Logged: ZH

Datum: Ground elevation

Method: Solid Stem Auger

Figure Number: A.02

Date: 24-Apr-2015

Page: 1 of 1

Test Hole Log: TH15-03 (CPT15-02)

File: 11219

Project: INDUSTRIAL DEVELOPMENT

Client: ONNI GROUP OF COMPANIES

Site Location: AIRPORT WAY EAST OF HARRIS ROAD, PIT MEADOWS 215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189


GeoPacific
Consultants Ltd.

INFERRED PROFILE			Depth (m)	Moisture Content (%)	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION				
ft m		Ground Surface	0.0			
0		<i>Topsoil</i>	0.3			
1		<i>Silt</i>				
2		firm organic SILT, medium plasticity, some wood fibers, dark brown, moist	0.9	104.4		
3		<i>Silt</i>				
4		firm clayey SILT, medium plasticity, grey-blue, moist to wet				
5						
6						
7		<i>Clay</i>				
8		stiff silty CLAY, high plasticity, grey-blue, moist	2.1			
9						
10				32.2		
11						
12						
13						
14						
15						
16						
17						
18						
19				58.3		
20			6.1			
21		End of Borehole				
22						
23						
24						
25						
26						

Logged: ZH

Method: Solid Stem Auger

Date: 24-Apr-2015

Datum: Ground elevation

Figure Number: A.03

Page: 1 of 1

Test Hole Log: TH15-04

File: 11219

Project: INDUSTRIAL DEVELOPMENT

Client: ONNI GROUP OF COMPANIES

Site Location: AIRPORT WAY EAST OF HARRIS ROAD, PIT MEADOWS



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215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE			Depth (m)	Moisture Content (%)	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION				
0		Ground Surface	0.0			
0.3		Topsoil	0.3			
1.2		Clay firm silty CLAY, grey-brown, medium plasticity, moist	1.2	42.9		
4.9		Sand compact silty SAND, grey, moist	4.9			1.8 m estimated ground water table
6.1		Silt firm SILT, trace sand, grey-brown, medium plasticity, moist	6.1	33.0		
20		End of Borehole		63.0		

Logged: ZH

Datum: Ground elevation

Method: Solid Stem Auger

Figure Number: A.04

Date: 24-Apr-2015

Page: 1 of 1

Test Hole Log: TH15-05

File: 11219

Project: INDUSTRIAL DEVELOPMENT

Client: ONNI GROUP OF COMPANIES

Site Location: AIRPORT WAY EAST OF HARRIS ROAD, PITT MEADOWS 215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189



INFERRED PROFILE			Depth (m)	Moisture Content (%)	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION				
0		Ground Surface	0.0			
0.3		<i>Topsoil</i>	0.3			
1.5		<i>Clay</i> firm to stiff silty CLAY, grey-blue, medium plasticity, moist	1.5	74.5		
2.1		<i>Peat</i> firm fibrous PEAT, some wood waste, dark brown, moist	2.1	135.7		
3.6		<i>Silt</i> firm sandy SILT, blue-grey, medium plasticity, moist				
3.6		some organics @ 3.6 m				
5.0		compact silty SAND lense @ 5.0 m				
6.1		End of Borehole				

Logged: ZH

Datum: Ground elevation

Method: Solid Stem Auger

Figure Number: A.05

Date: 24-Apr-2015

Page: 1 of 1

Test Hole Log: TH15-06

File: 11219

Project: INDUSTRIAL DEVELOPMENT

Client: ONNI GROUP OF COMPANIES

Site Location: AIRPORT WAY EAST OF HARRIS ROAD, PITTS MEADOWS 215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189



INFERRED PROFILE			Depth (m)	Moisture Content (%)	DCPT (blows per foot)	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION					
0 ft 0 m		Ground Surface	0.0				
1	{}	<i>Topsoil</i>	0.5				
2	{}	<i>Silt</i> firm clayey SILT, grey-brown, medium plasticity, slightly moist	1.2				
3	{}						
4	{}	<i>Silt and peat</i> firm SILT and fibrous PEAT, some wood waste, grey to dark brown, moist		120.9			
5							
6							
7							
8							
9							
10							
11							
12		<i>Silt</i> firm SILT, medium plasticity, grey, moist					
13							
14							
15		<i>Silt</i> firm to stiff organic SILT, brown to dark brown, some wood waste, moist	4.3	71.4			
16							
17		<i>Silt</i> firm sandy SILT, low plasticity, grey, moist					
18							
19							
20							
21		End of Borehole	6.1				
22							
23							
24							
25							
26							

Logged: ZH

Method: Solid Stem Auger

Date: 24-Apr-2015

Datum: Ground elevation

Figure Number: A.06

Page: 1 of 1

Test Hole Log: TH15-07

File: 11219

Project: INDUSTRIAL DEVELOPMENT

Client: ONNI GROUP OF COMPANIES

Site Location: AIRPORT WAY EAST OF HARRIS ROAD, PITT MEADOWS



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215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE			Depth (m)	Moisture Content (%)	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION				
0 ft m 0		Ground Surface	0.0			
1		<i>Topsoil</i>	0.3			
2		<i>Clay</i> firm silty CLAY, grey-brown, medium plasticity, moist	0.9			
3		<i>Silt</i> firm sandy SILT, low plasticity, grey-brown, moist becomes grey @ 1.6 m		45.1		0.75 m estimated ground water table
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14		<i>Peat</i> firm fibrous PEAT, some wood waste, trace silt, dark brown, moist	4.1	101.7		
15			4.7			
16		<i>Clay and gravel</i> firm silty CLAY and GRAVEL, subangular gravel <30 mm, grey, wet				
17						
18						
19						
20		End of Borehole	6.1			
21						
22						
23						
24						
25						
26						

Logged: ZH

Datum: Ground elevation

Method: Solid Stem Auger

Figure Number: A.07

Date: 24-Apr-2015

Page: 1 of 1

Test Hole Log: TH15-08 (CPT15-03)

File: 11219

Project: INDUSTRIAL DEVELOPMENT

Client: ONNI GROUP OF COMPANIES

Site Location: AIRPORT WAY EAST OF HARRIS ROAD, PITT MEADOWS

GeoPacific

Consultants Ltd.

215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189

INFERRED PROFILE			Depth (m)	Moisture Content (%)	DCPT (blows per foot)	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION					
0 ft m 0		Ground Surface	0.0				
1		<i>Topsoil</i>	0.3				
2		<i>Clay</i>					
3		firm silty CLAY, grey-brown, medium plasticity, moist	1.1				
4		<i>Silt and peat</i>		92.0			
5		firm SILT and fibrous PEAT, trace wood waste, dark brown, moist					
6							
7							
8		<i>Silt</i>	2.4	153.4			
9		firm SILT, trace sand, grey-blue, medium plasticity, moist					
10							
11							
12							
13		becomes light brown @ 3.4 m		70.1			
14							
15							
16			4.9				
17		<i>Clay</i>					
18		firm silty CLAY, high plasticity, grey-blue, moist					
19							
20		End of Borehole	6.1				
21							
22							
23							
24							
25							
26							

Logged: ZH

Datum: Ground elevation

Method: Solid Stem Auger

Figure Number: A.08

Date: 24-Apr-2015

Page: 1 of 1

Test Hole Log: TH15-09

File: 11219

Project: INDUSTRIAL DEVELOPMENT

Client: ONNI GROUP OF COMPANIES

Site Location: AIRPORT WAY EAST OF HARRIS ROAD, PIT MEADOWS 215 - 1200 West 73rd Avenue, Vancouver, BC, V6P 6G5
Tel: 604-439-0922 Fax: 604-439-9189



INFERRED PROFILE			Depth (m)	Moisture Content (%)	Groundwater / Well	Remarks
Depth	Symbol	SOIL DESCRIPTION				
0		Ground Surface	0.0			
0.3		Topsoil	0.3			
1.2		Clay firm silty CLAY, trace wood fibers, medium plasticity, grey-brown, moist				0.8 m estimated ground water table
4.3		Silt firm clayey SILT, high plasticity, grey-blue, moist	1.2	125.2		
5.5				142.3		
6.1		becomes light brown @ 3.6 m	4.3			
12.7.7		Silt firm sandy SILT, grey, moist				
18.6		Silt firm SILT, grey, medium plasticity, moist	5.5			
20.1		End of Borehole	6.1			

Logged: ZH

Method: Solid Stem Auger

Date: 24-Apr-2015

Datum: Ground elevation

Figure Number: A.09

Page: 1 of 1

Test Hole Log: TH15-10 (CPT15-04)

File: 11219

Project: INDUSTRIAL DEVELOPMENT

Client: ONNI GROUP OF COMPANIES

Site Location: AIRPORT WAY EAST OF HARRIS ROAD, PITT MEADOWS



INFERRRED PROFILE

Depth ft m	Symbol	SOIL DESCRIPTION	Depth (m)	Moisture Content (%)	DCPT (blows per foot)				Groundwater / Well	Remarks
					10	20	30	40		
0		Ground Surface	0.0							
0.3		Topsoil	0.3							
1		Clay								
2		firm silty CLAY, trace wood fibers, high plasticity, grey-brown, moist	0.9							
3										
4		Silt and peat								
5		firm SILT and fibrous PEAT, some wood waste, grey to dark brown, moist								
6										
7		Silt								
8		firm SILT, trace sand, medium plasticity, grey, moist								
9										
10										
11										
12										
13		some peat inclusions @ 4.0 m								
14		becomes light brown @ 4.2 m								
15										
16										
17		Silt								
18		firm sandy SILT, medium plasticity, grey, moist								
19										
20		End of Borehole								
21										
22										
23										
24										
25										
26										

Logged: ZH

Method: Solid Stem Auger

Date: 24-Apr-2015

Datum: Ground elevation

Figure Number: A.10

Page: 1 of 1

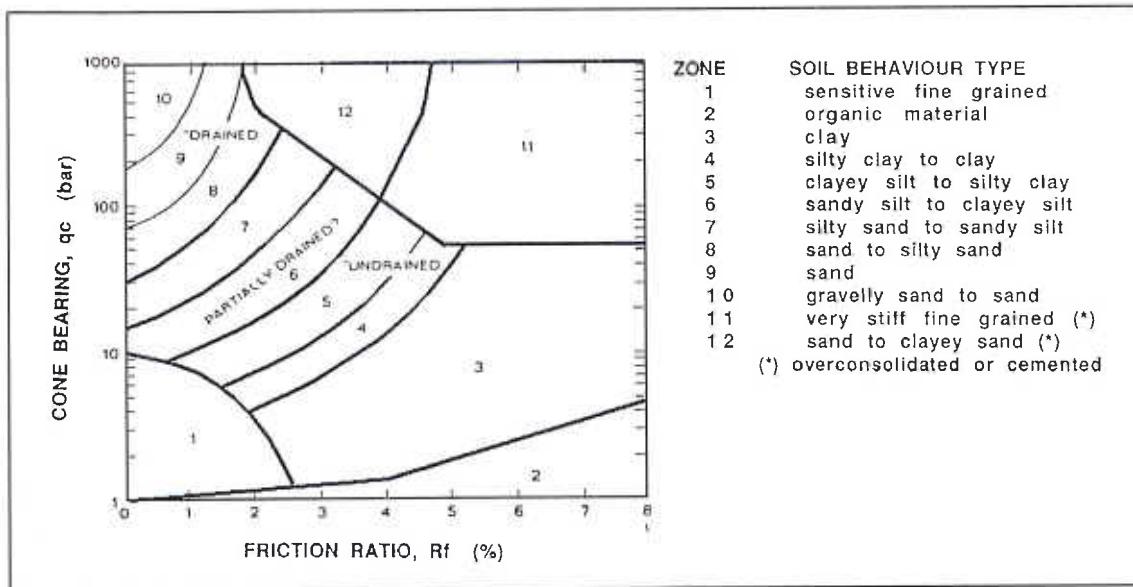
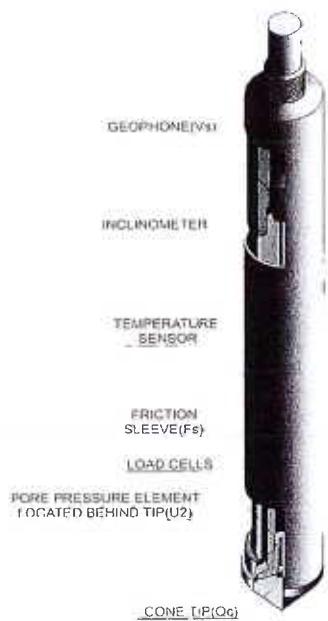
APPENDIX B - ELECTRONIC CONE PENETRATION RESULTS

The system used is owned and operated by GeoPacific and employs a 35.7 mm diameter cone that records tip resistance, sleeve friction, dynamic pore pressure, inclination and temperature at 5 cm intervals on a digital computer system. The system is a Hogentogler electronic cone system and the cone used was a 10 ton cone with pore pressure element located behind the tip and in front of the sleeve as shown on the adjacent figure.

In addition to the capabilities described above, the cone can be stopped at specified depths and dissipation tests carried out. These dissipation tests can be used to determine the groundwater pressures at the specified depth. This is very useful for identifying artesian pressures within specific layers below the ground surface.

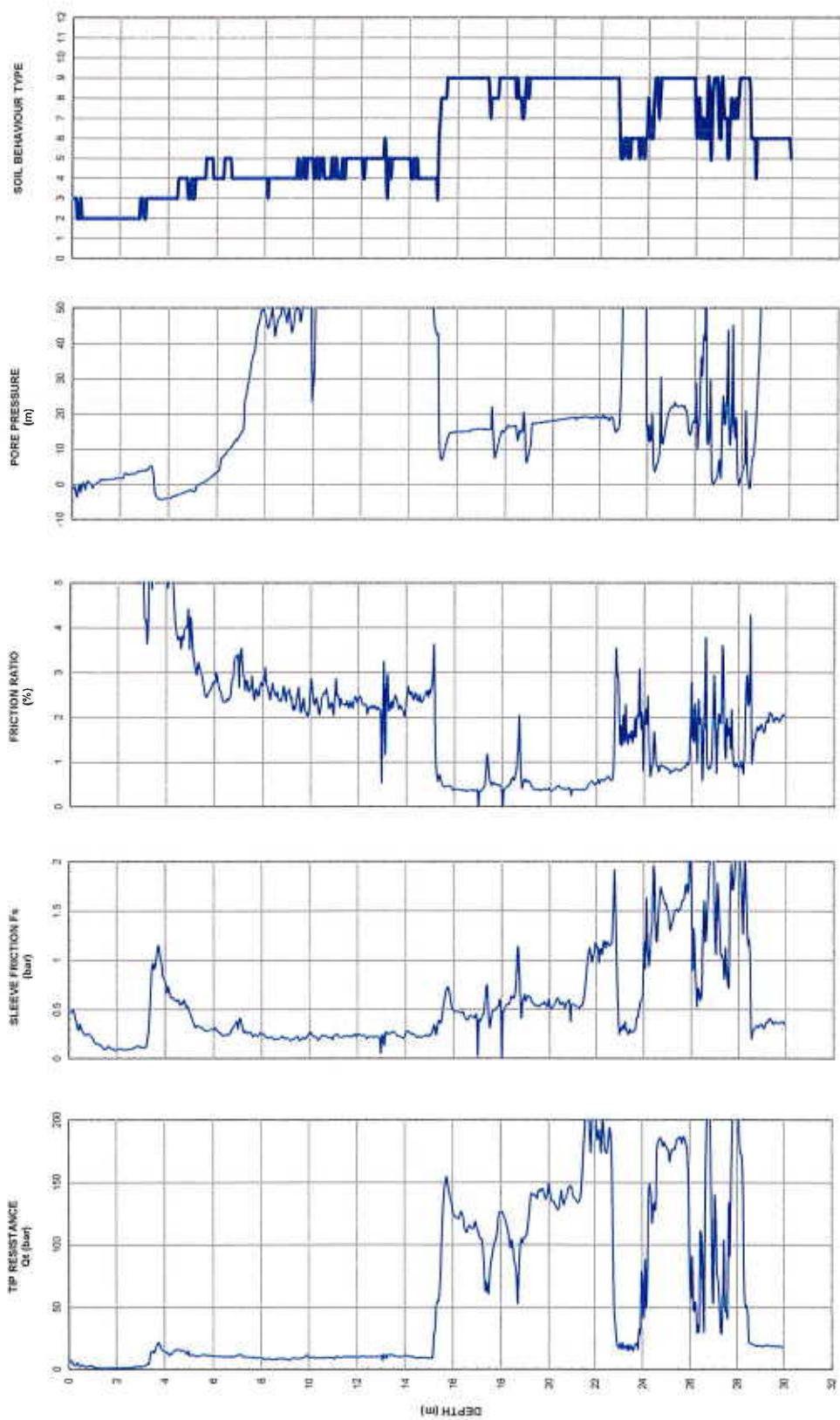
Interpretation of the cone penetration test results are carried out by computer using the interpretation chart presented below by Robertson¹. Raw data collected by the field computer includes tip resistance, sleeve friction and pore pressure. The tip resistance is corrected for water pressure and the friction ratio is calculated as the ratio of the sleeve friction on the side of the cone to the corrected tip resistance expressed as a percent. These two parameters are used to determine the soil behaviour type as shown in the chart below. The interpreted soil type may be different from other classification systems such as the Unified Soil Classification that is based upon grain size and plasticity.

Electronic Cone Penetrometer



¹ Robertson, P.K., 1990, "Soil Classification using the cone penetration test", 1990 Canadian Geotechnical Colloquium, Canadian Geotechnical Journal, Vol. 27, No. 1, 1990

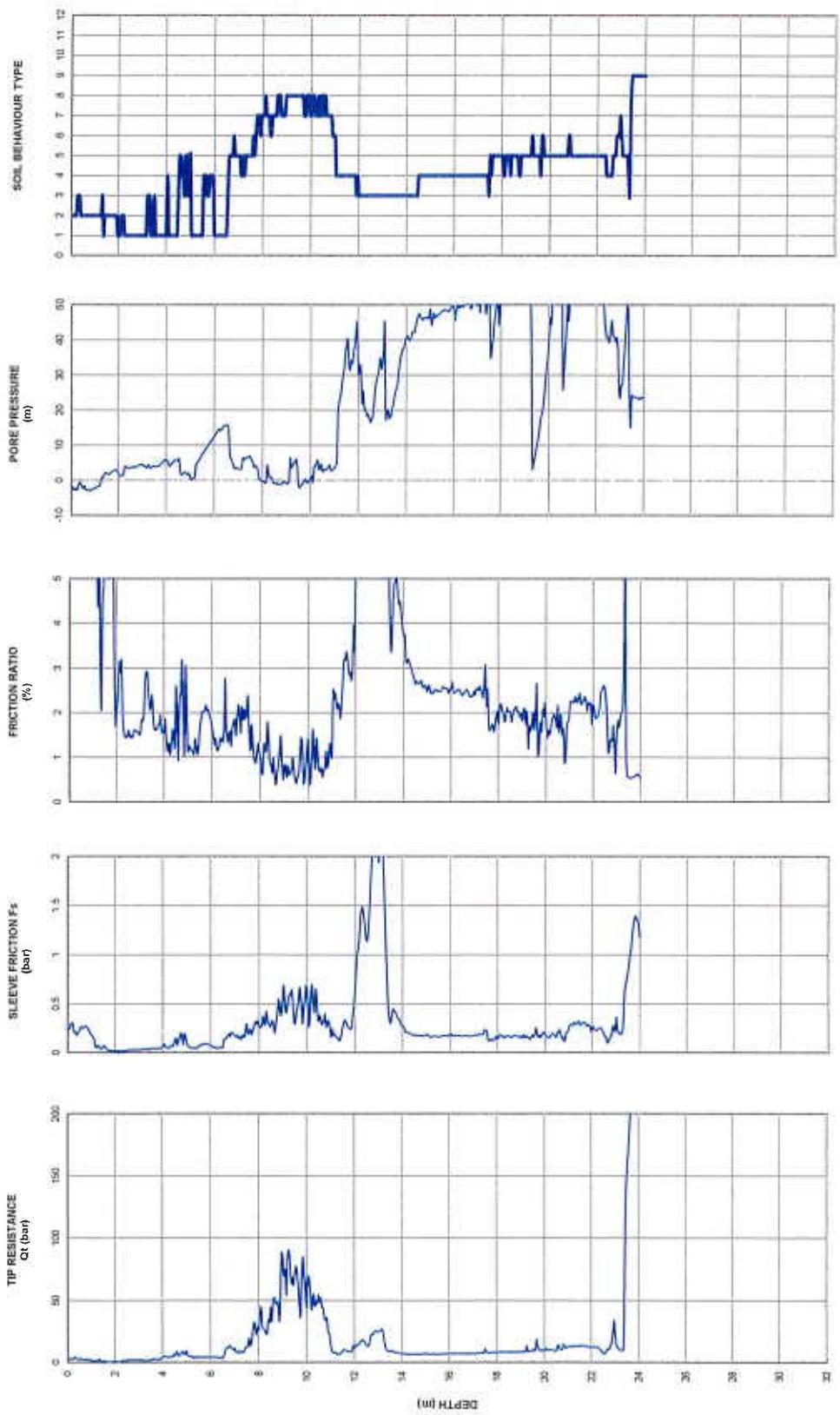
APPENDIX B1 – 2013 CPT SOUNDING LOG



** Based on Robertson et. al 1986
 1 Sensitive Fine Grained
 2 Organic Material
 3 Clay
 4 Silty Clay to Clay
 5 Clayey Silt to Silty Clay
 6 Sandy Silt to Clayey Silt
 7 Silty Sand to Sandy Silt
 8 Sand to Silty Sand
 9 Sand
 10 Gravelly Sand to Sand
 11 Very Stiff Fine Grained
 12 Sand to Clayey Sand

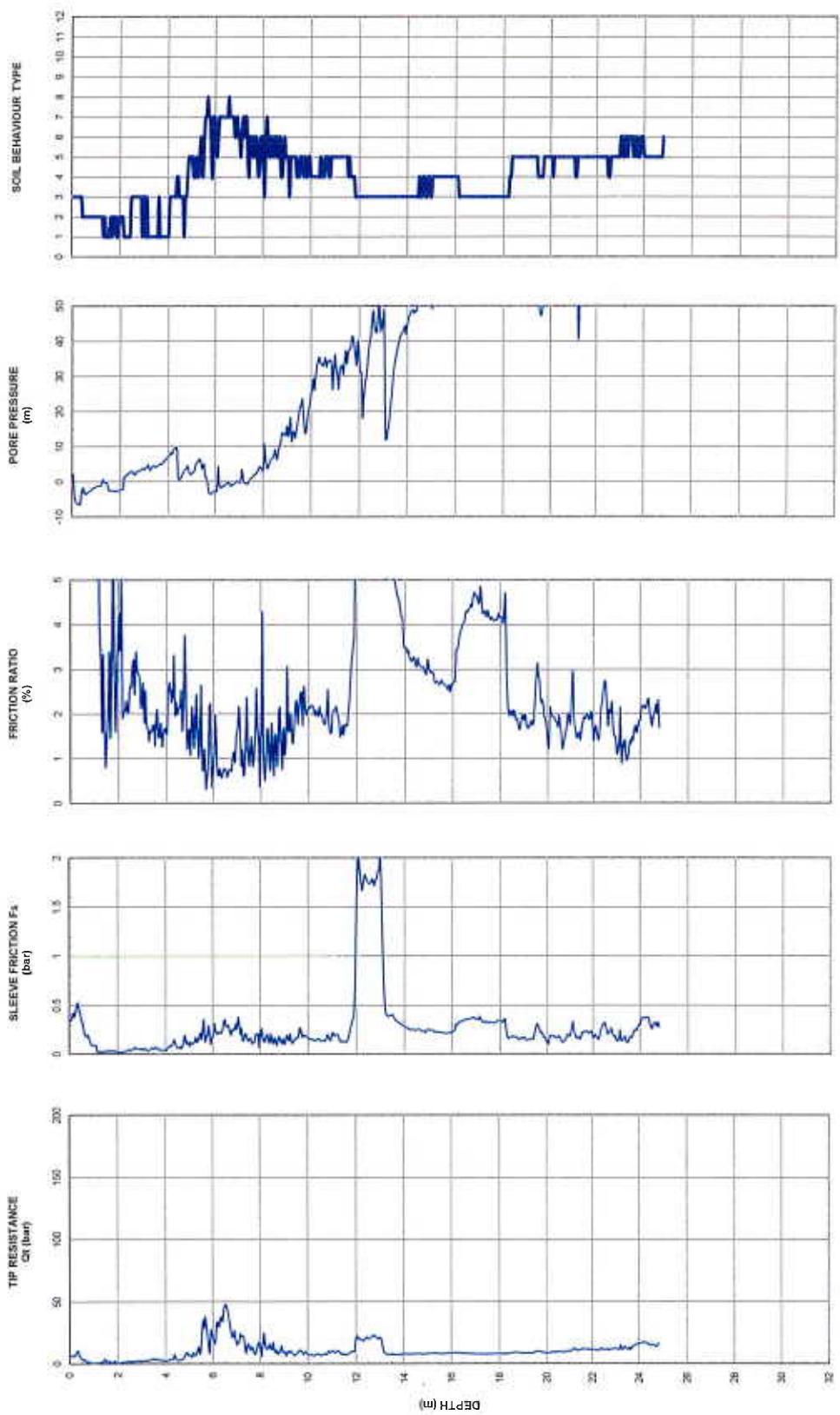


	15-Apr-13	Onni Group of Companies	GeoPacific Project #: 11219
GeoPacific Consultants Ltd.	Sounding: CPT13-02	Airport Way East of Harris Road, Pitt Meadows, B.C.	Figure: B.02



** Based on Robertson et. al 1986
1 Sensitive Fine Grained
2 Organic Material
3 Clay
4 Silty Clay to Clay
5 Clayey Silt to Silty Clay
6 Sandy Silt to Clayey Silt
7 Silty Sand to Sandy Silt
8 Sand to Silty Sand
9 Sand
10 Gravelly Sand to Sand
11 Very Stiff Fine Grained
12 Sand to Clayey Sand

	15-Apr-13	Onni Group of Companies	GeoPacific Project #: 11219
	Sounding: CPT13-03	Airport Way East of Harris Road, Pitt Meadows, B.C.	Figure: B.03



** Based on Robertson et. al 1996
 1 Sensitive Fine Grained
 2 Organic Material
 3 Clay
 4 Silty Clay to Clay
 5 Clayey Silt to Silty Clay
 6 Sandy Silt to Clayey Silt
 7 Silty Sand to Sandy Silt
 8 Sand to Silty Sand
 9 Sand

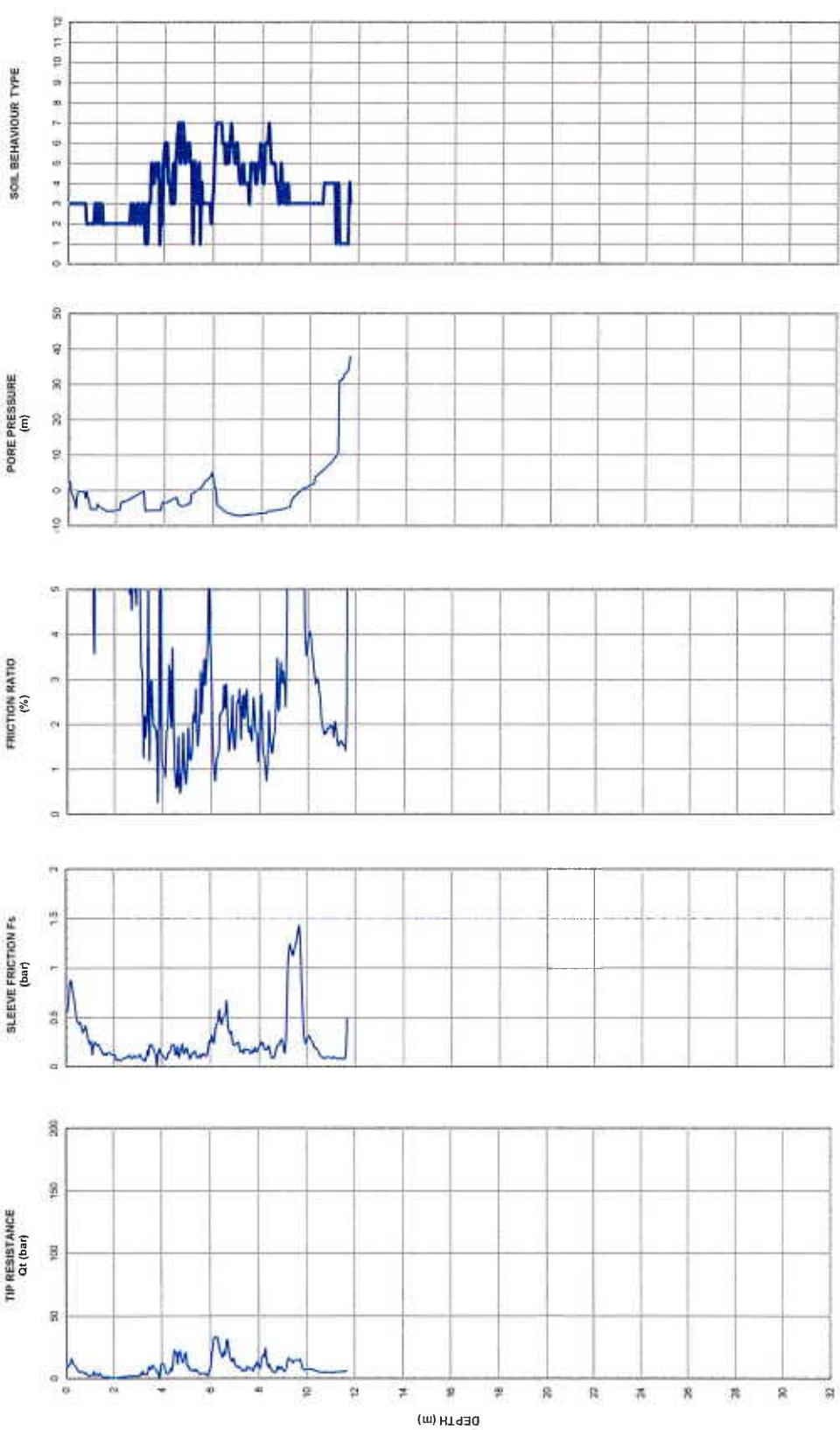
10 Gravelly Sand to Sand
 11 Very Stiff Fine Grained
 12 Sand to Clayey Sand

GeoPacific
Consultants Ltd.

15-Apr-13

Onni Group of Companies
Sounding: CPT13-04
Airport Way East of Harris Road, Pitt
Meadows, B.C.

Figure: B.04

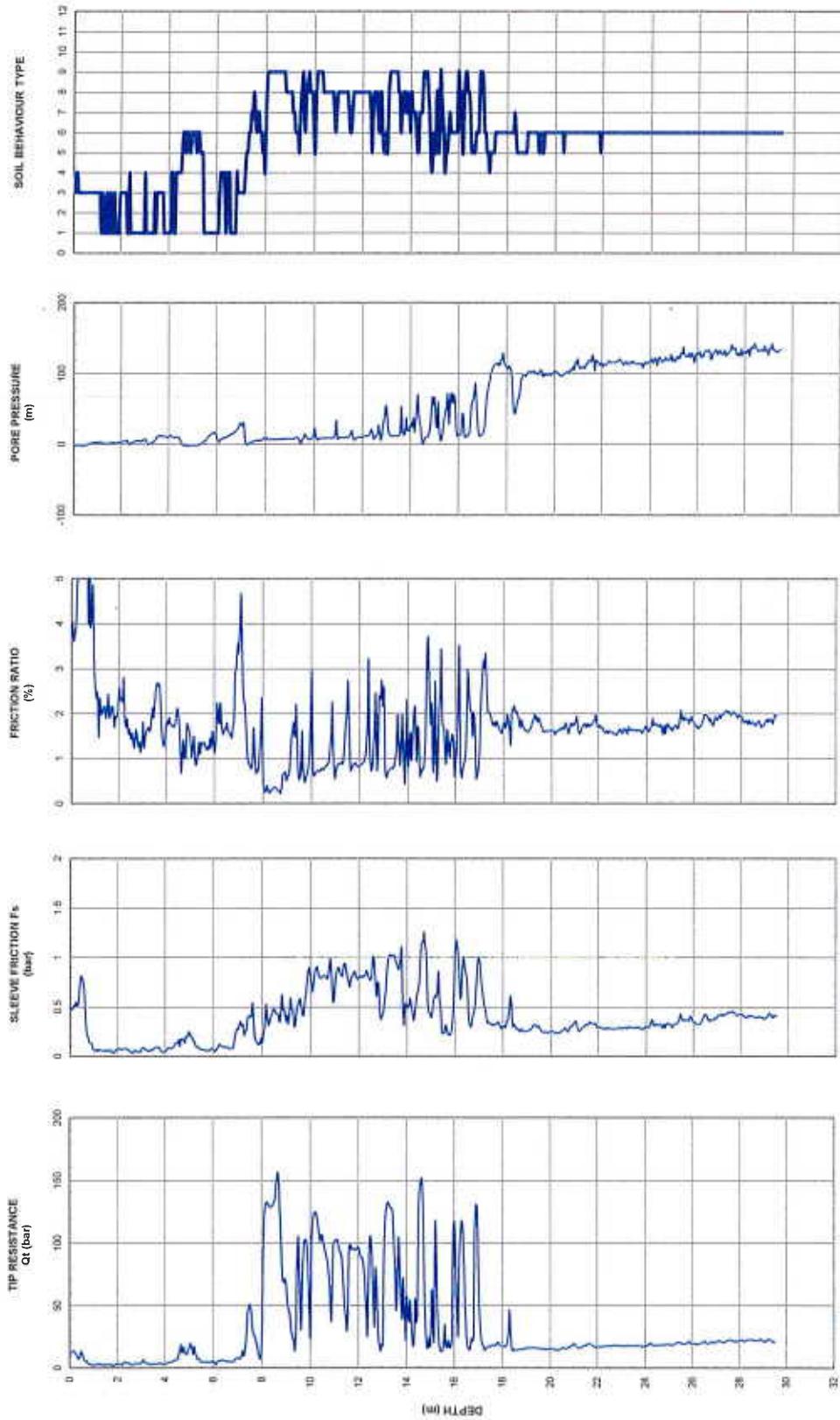


- ** Based on Robertson et. al 1986
- 1 Sensitive Fine Grained
 - 2 Organic Material
 - 3 Clay
 - 4 Silty Clay to Clay
 - 5 Clayey Silt to Silty Clay
 - 6 Sandy Silt to Clayey Silt
 - 7 Silty Sand to Sandy Silt
 - 8 Sand to Silty Sand
 - 9 Sand
 - 10 Gravelly Sand to Sand
 - 11 Very Stiff Fine Grained
 - 12 Sand to Clayey Sand

10 Gravelly Sand to Sand
11 Very Stiff Fine Grained
12 Sand to Clayey Sand

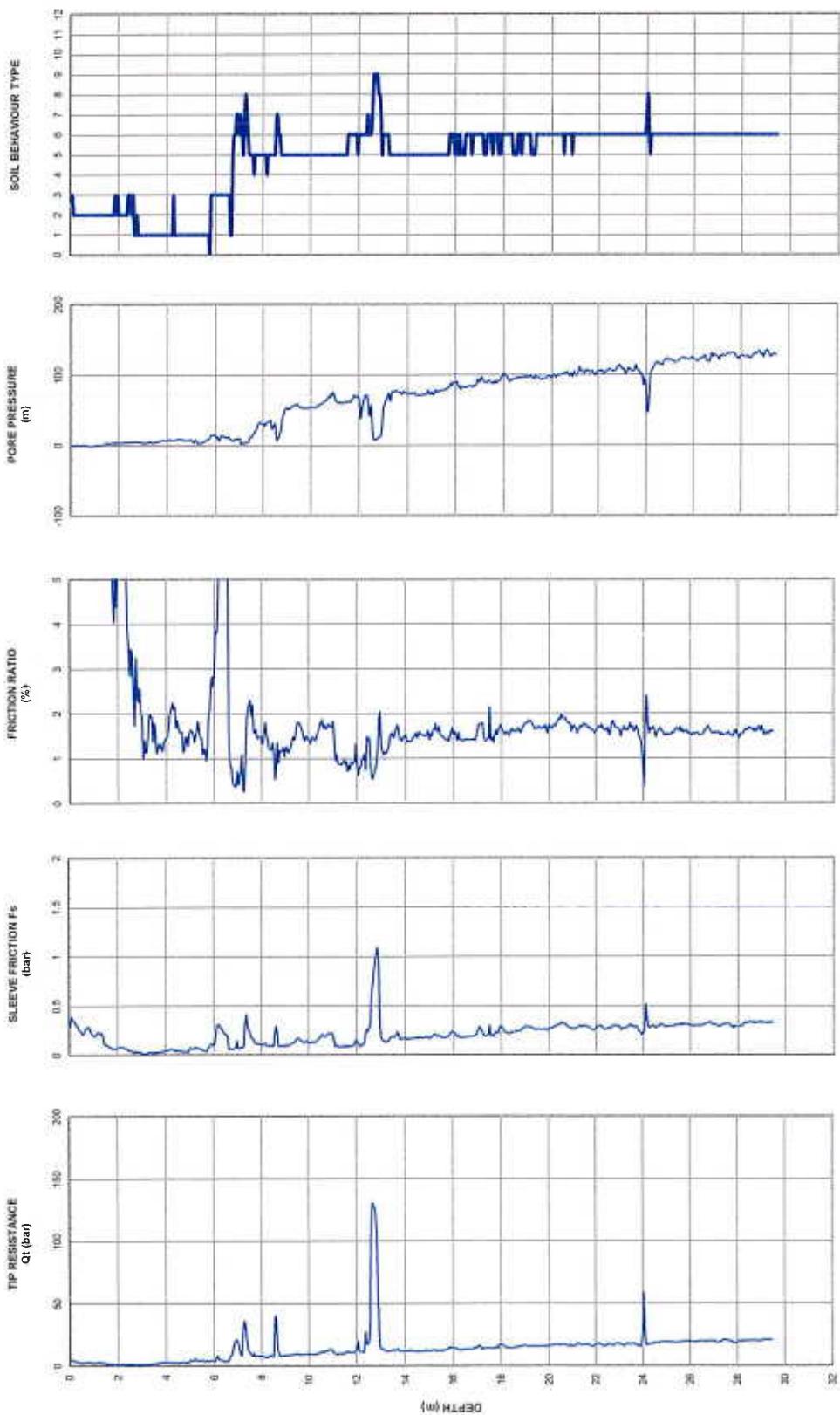
7 Silty Sand to Sandy Silt
8 Sand to Silty Sand
9 Sand

	18-Apr-13	Omni Group	GeoPacific Project #: 11219
Sounding: CPT13-05	Airport Way and Harris Road, Pitt Meadows	Figure: B.05	



** Based on Robertson et. al 1996
 1 Sensitive Fine Grained
 2 Organic Material
 3 Clay
 4 Silty Clay to Clay
 5 Clayey Silt to Silty Clay
 6 Sandy Silt to Clayey Silt
 7 Silty Sand to Sandy Silt
 8 Sand to Silty Sand
 9 Sand

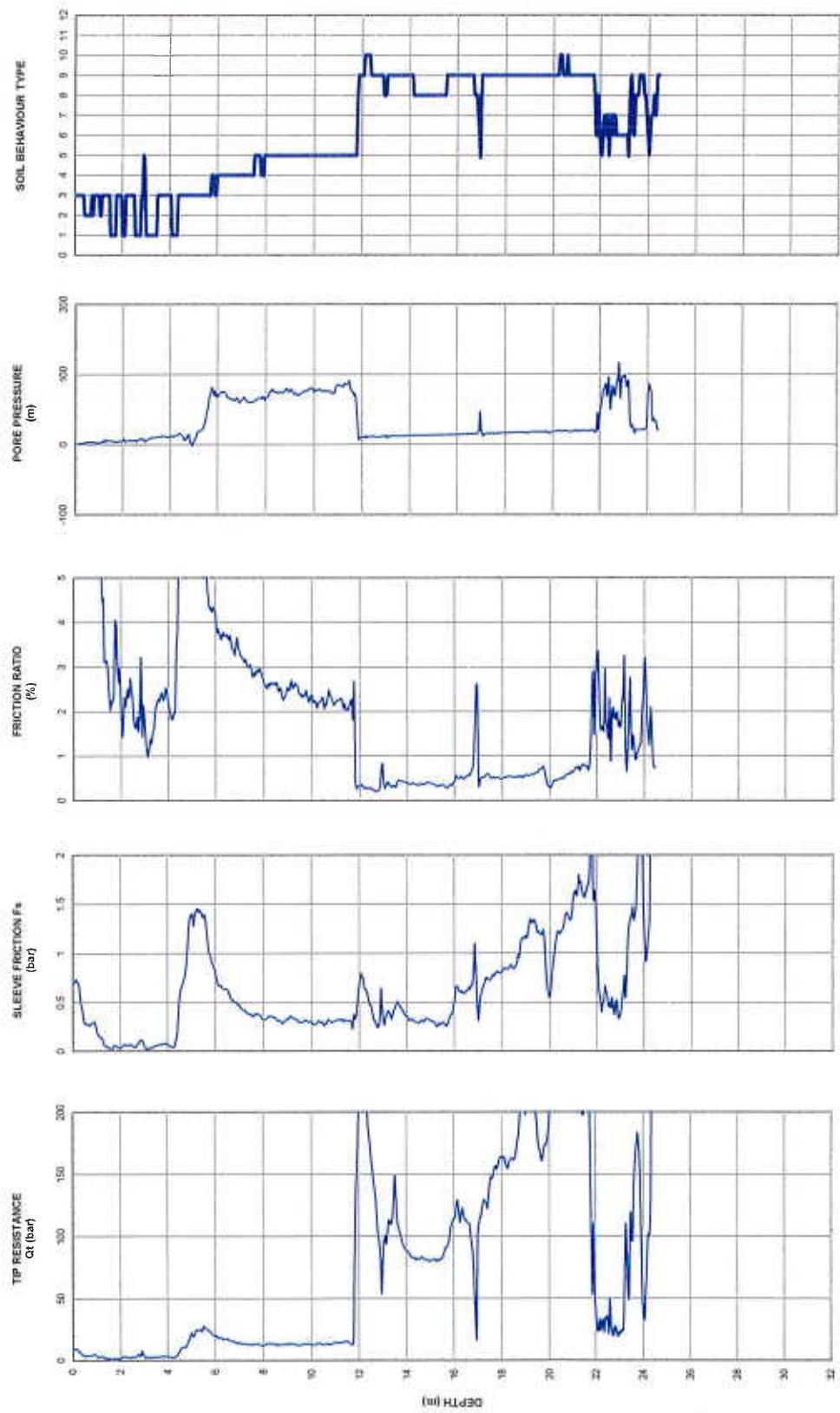
10 Gravelly Sand to Sand
 11 Very Stiff Fine Grained
 12 Sand to Clayey Sand



** Based on Robertson et. al 1986

- 1 Sensitive Fine Grained
- 2 Organic Material
- 3 Clay
- 4 Silty Clay to Clay
- 5 Clayey Silt to Silty Clay
- 6 Sandy Silt to Clayey Silt
- 7 Silty Sand to Sandy Silt
- 8 Sand to Silty Sand
- 9 Sand
- 10 Gravelly Sand to Sand
- 11 Very Stiff Fine Grained
- 12 Sand to Clayey Sand

	18-Apr-13	Omni Group	GeoPacific Project #: 11219
Sounding: CPT13-07	Airport Way and Harris Road, Pitt Meadows		Figure: B.07

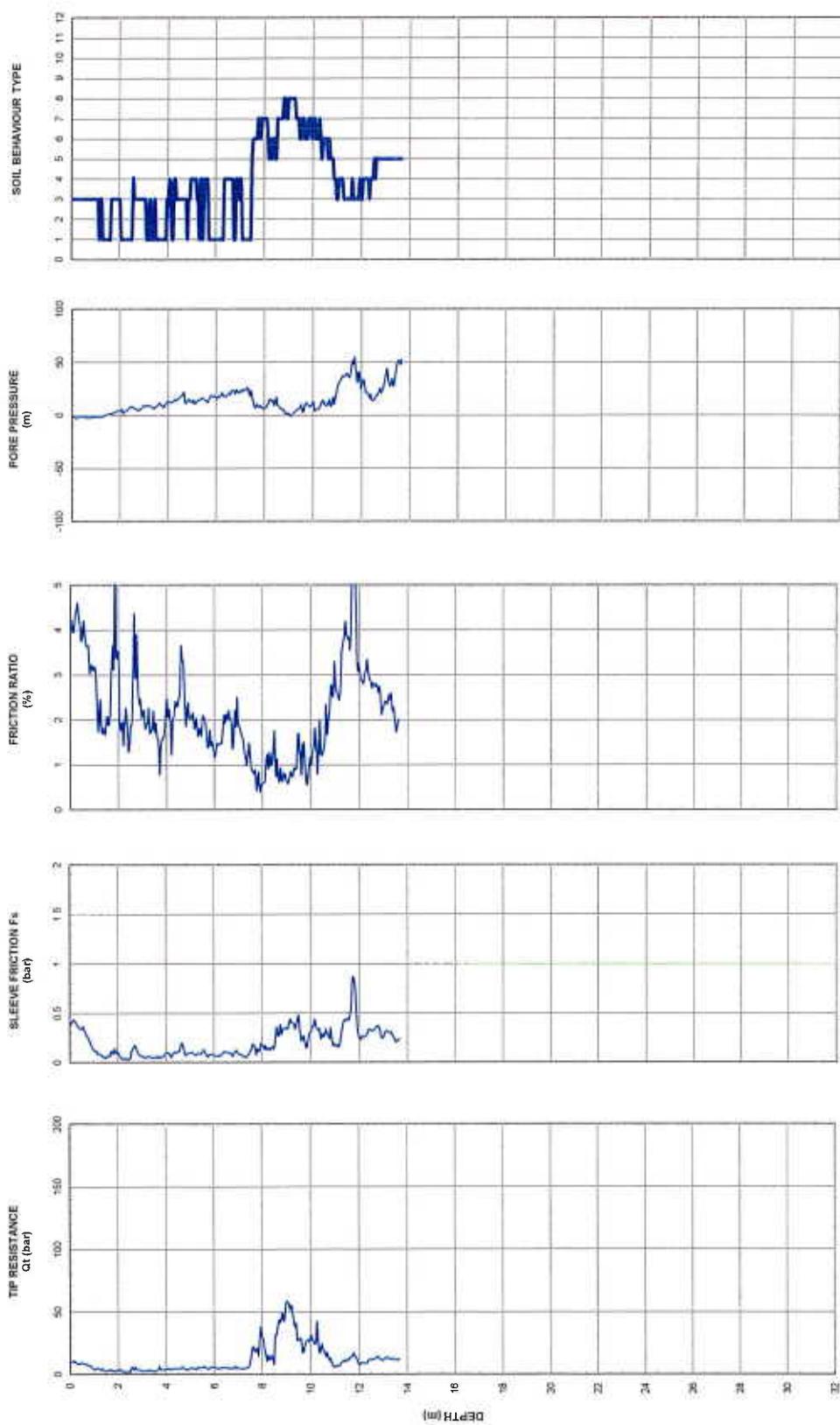


** Based on Robertson et al 1986

- 1 Sensitive Fine Grained
- 2 Organic Material
- 3 Clay
- 4 Silty Clay to Clay
- 5 Clayey Silt to Silty Clay
- 6 Sandy Silt to Clayey Silt
- 7 Silty Sand to Sandy Silt
- 8 Sand to Silty Sand
- 9 Sand

- 10 Gravelly Sand to Sand
- 11 Very Stiff Fine Grained
- 12 Sand to Clayey Sand

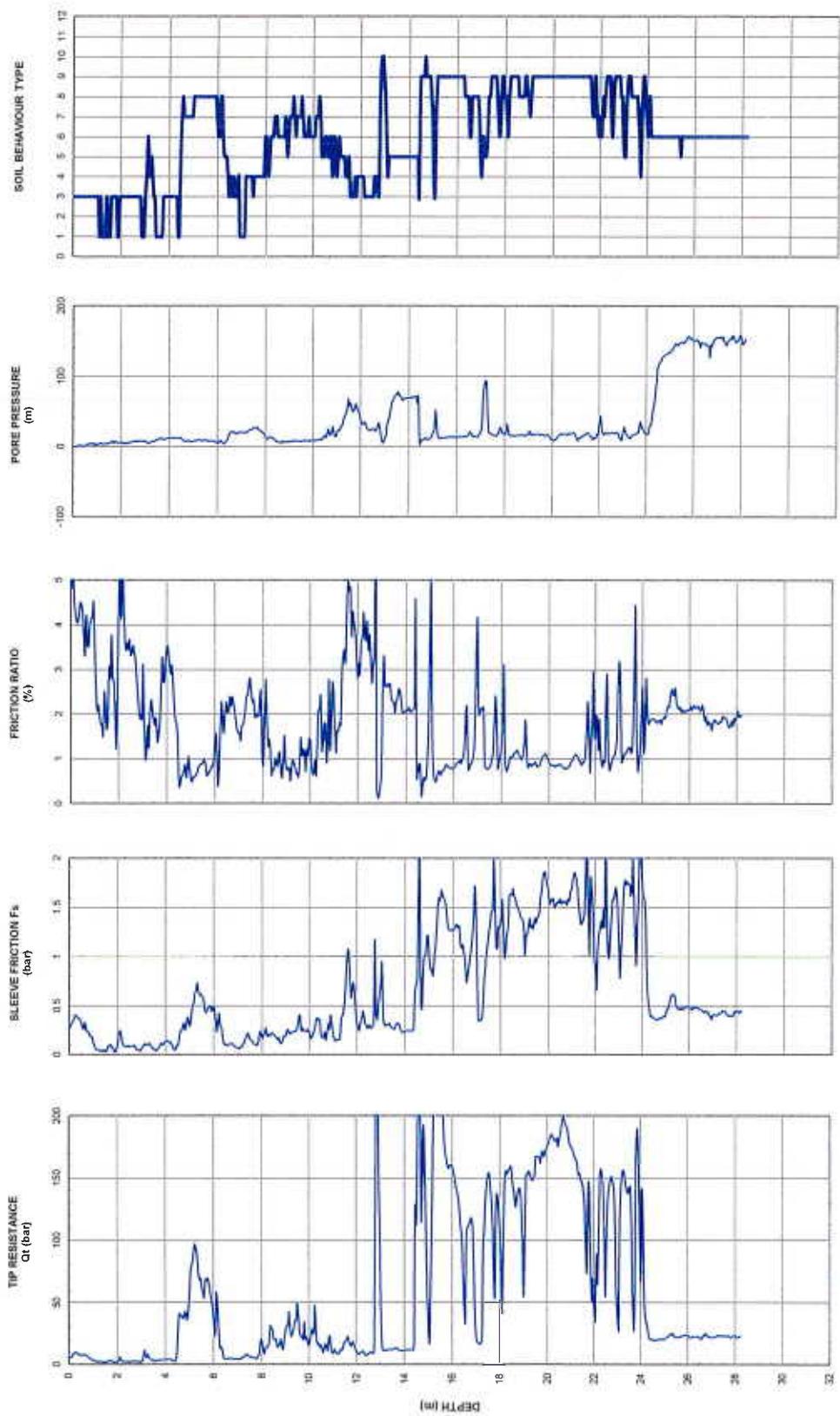
	18-Apr-13	Omni Group	GeoPacific Project #: 111219
Sounding: CPT13-08	Airport Way and Harris Road, Pitt Meadows	Figure: B.08	



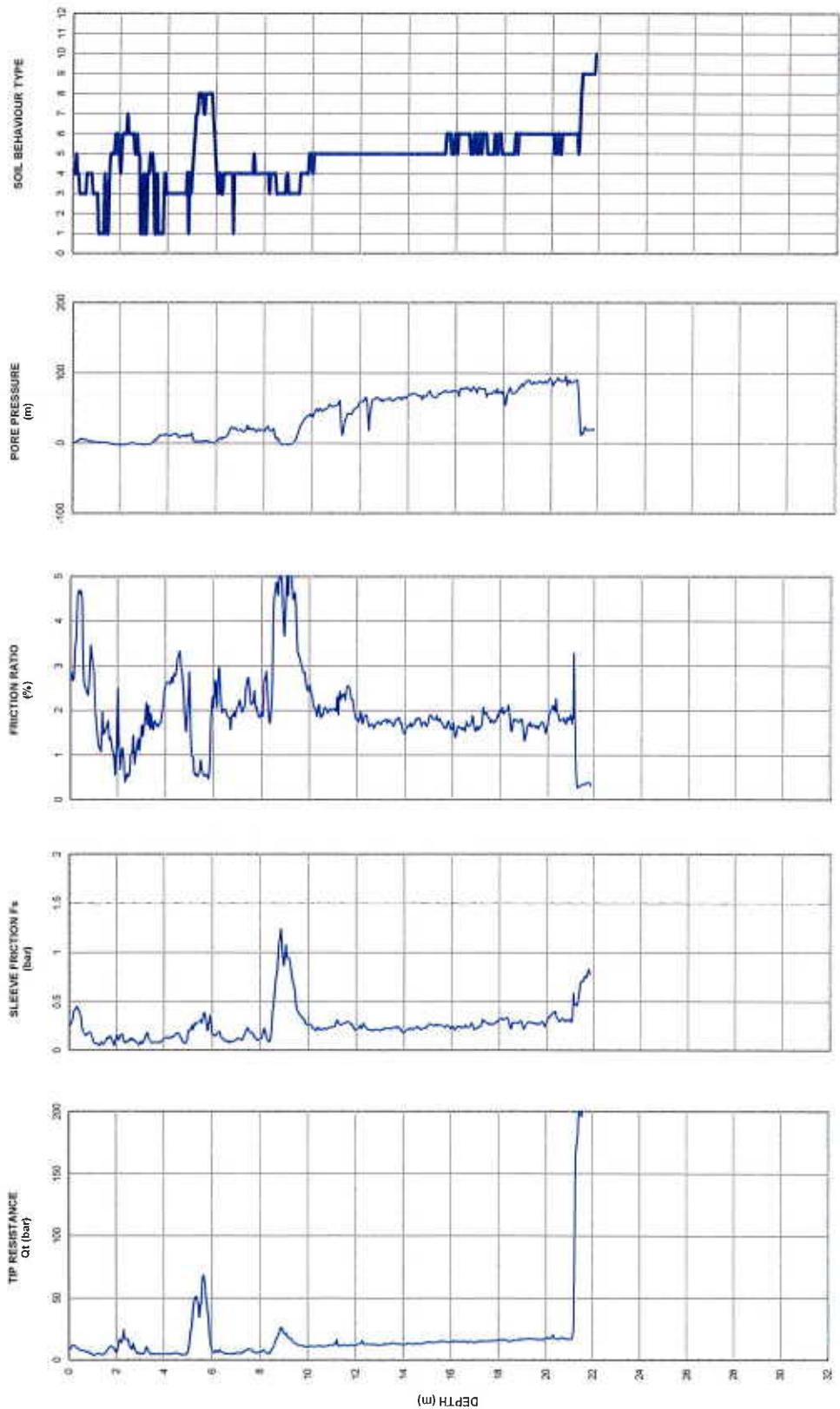
** Based on Robertson et. al 1986
 1 Sensitive Fine Grained
 2 Organic Material
 3 Clay
 4 Silty Clay to Clay
 5 Clayey Silt to Silty Clay
 6 Sandy Silt to Clayey Silt
 7 Silty Sand to Sandy Silt
 8 Sand to Silty Sand
 9 Sand
 10 Gravelly Sand to Sand
 11 Very Stiff Fine Grained
 12 Sand to Clayey Sand

GeoPacific
Consultants Ltd.

	18-Apr-13	Omni Group	GeoPacific Project #: 11219
Sounding: CPT13-09	Airport Way and Harris Road, Pitt Meadows		Figure: B.09



** Based on Robertson et. al 1996
 1 Sensitive Fine Grained
 2 Organic Material
 3 Clay
 4 Silty Clay to Clay
 5 Clayey Silt to Silty Clay
 6 Sandy Silt to Clayey Silt
 7 Silty Sand to Sandy Silt
 8 Sand to Silty Sand
 9 Sand
 10 Gravelly Sand to Sand
 11 Very Stiff Fine Grained
 12 Sand to Clayey Sand



** Based on Robertson et. al 1986
 1 Sensitive Fine Grained
 2 Organic Material
 3 Clay
 4 Silty Clay to Clay
 5 Clayey Silt to Silty Clay
 6 Sandy Silt to Clayey Silt
 7 Silty Sand to Sandy Silt
 8 Sand to Silty Sand
 9 Sand

10 Gravelly Sand to Sand
 11 Very Stiff Fine Grained
 12 Sand to Clayey Sand

APPENDIX B2 – 2015 CPT SOUNDING LOG (PHASE IV)

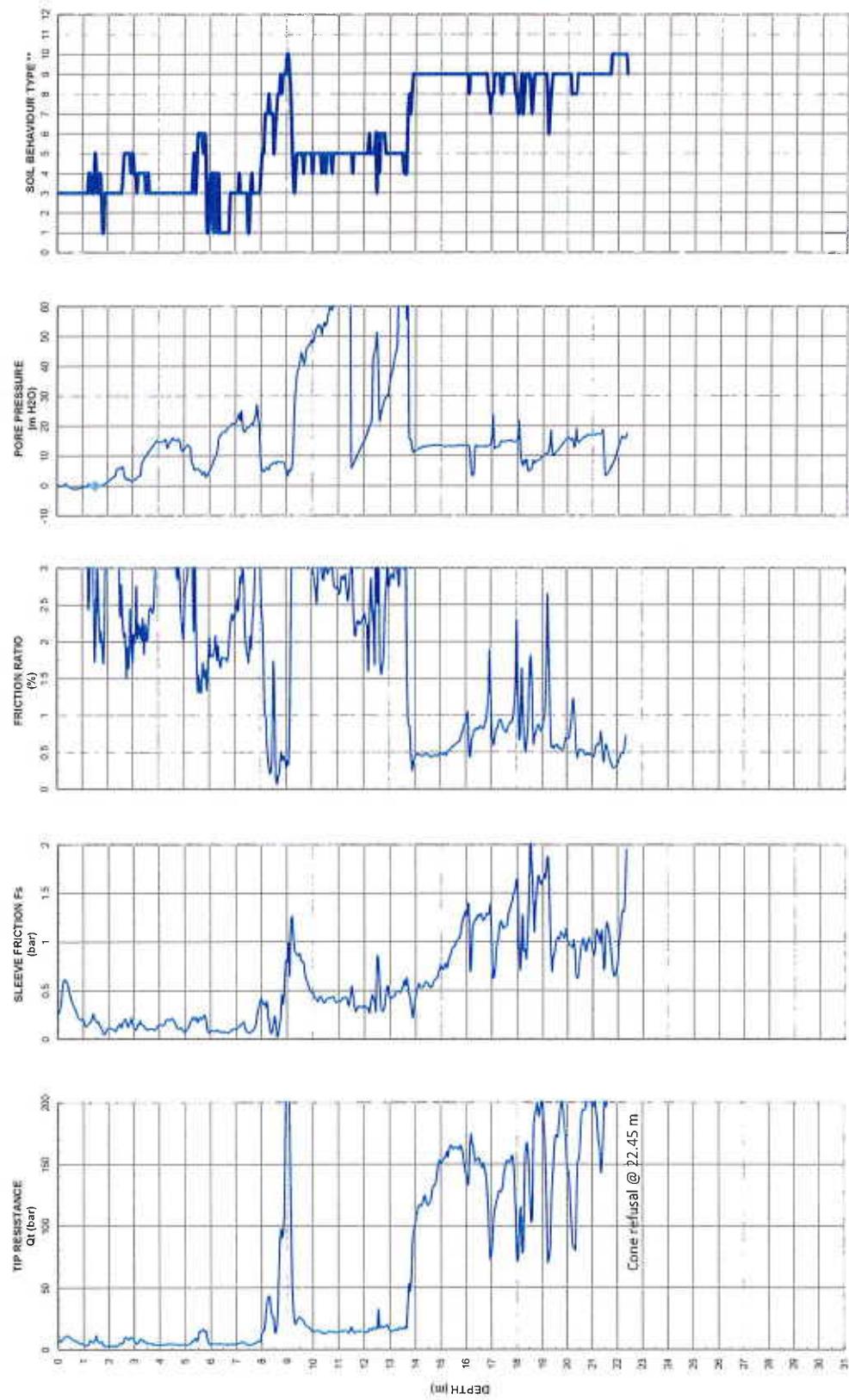


GeoPacific Project #: 111219

ONNI CONTRACTING LTD

Sounding: CPT15-01
AIRPORT WAY EAST OF HARRIS ROAD,
PITT MEADOWS

Figure: B.01



** Based on Robertson et. al 1986

- 1 Sensitive Fine Grained
- 2 Organic Material
- 3 Clay
- 4 Silty Clay to Clay
- 5 Clayey Silt to Silty Clay
- 6 Sandy Silt to Clayey Silt
- 7 Silty Sand to Sandy Silt
- 8 Sand to Silty Sand
- 9 Sand

= estimated water table depth

- 10 Gravelly Sand to Sand
- 11 Very Stiff Fine Grained
- 12 Sand to Clayey Sand

24-Apr-15

Soundings: CPT15-02

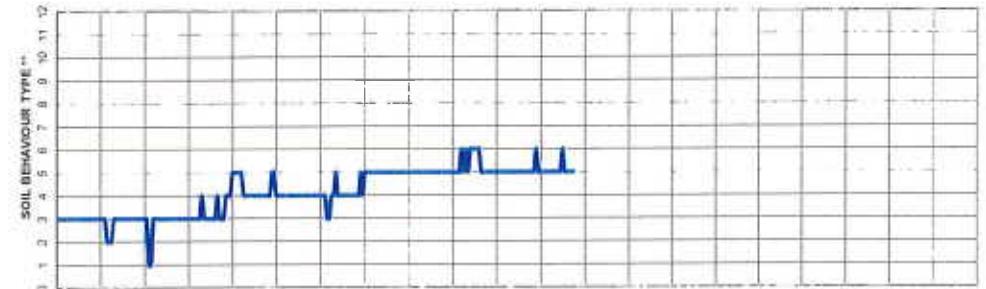
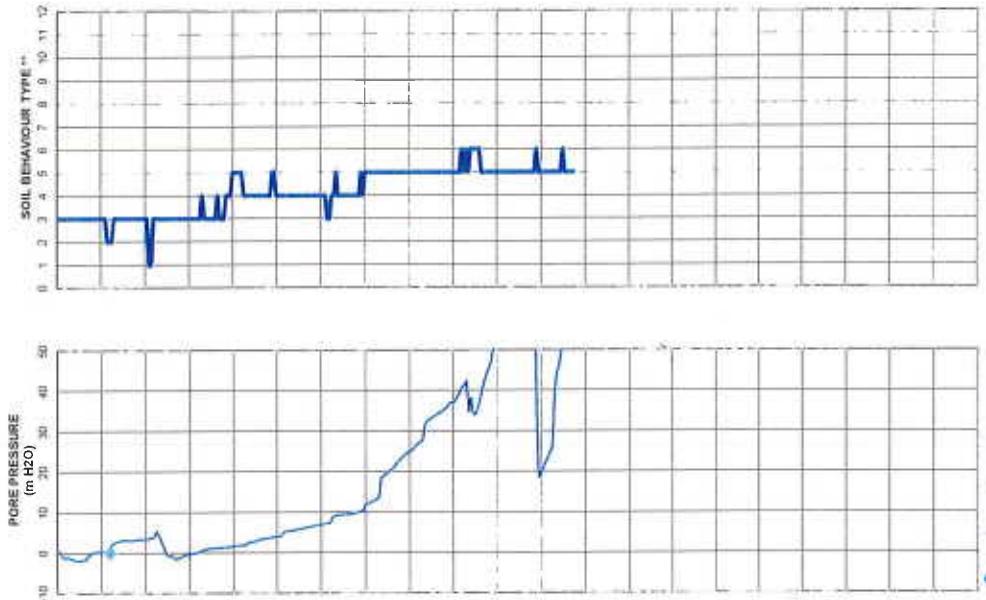
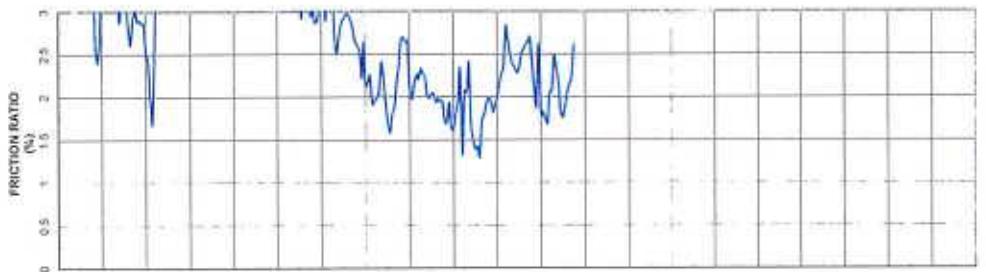
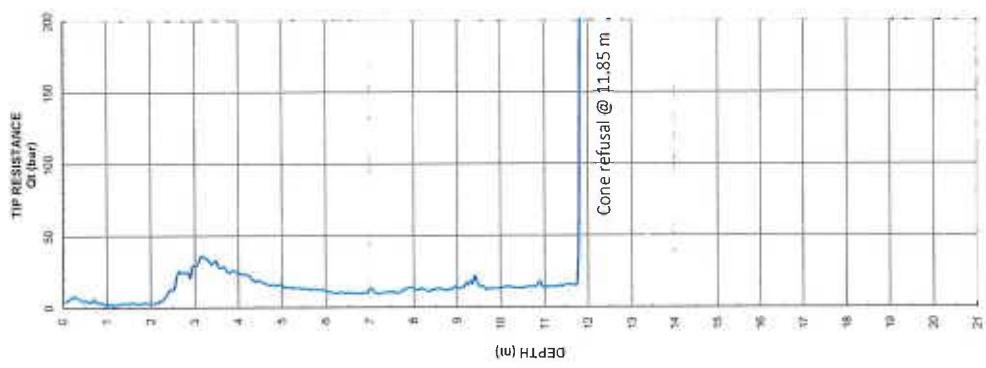
ONNI CONTRACTING LTD

AIRPORT WAY EAST OF HARRIS ROAD,
PITT MEADOWS

Figure: B.02

GeoPacific Project #: 11219

Figure: B.02



- ** Based on Robertson et. al 1986
- 1 Sensitive Fine Grained
 - 2 Organic Material
 - 3 Clay

- 4 Silty Clay to Clay
- 5 Clayey Silt to Silty Clay
- 6 Sandy Silt to Clayey Silt
- 7 Silty Sand to Sandy Silt
- 8 Sand to Silty Sand
- 9 Sand

- 10 Gravelly Sand to Sand
- 11 Very Stiff Fine Grained
- 12 Sand to Clayey Sand



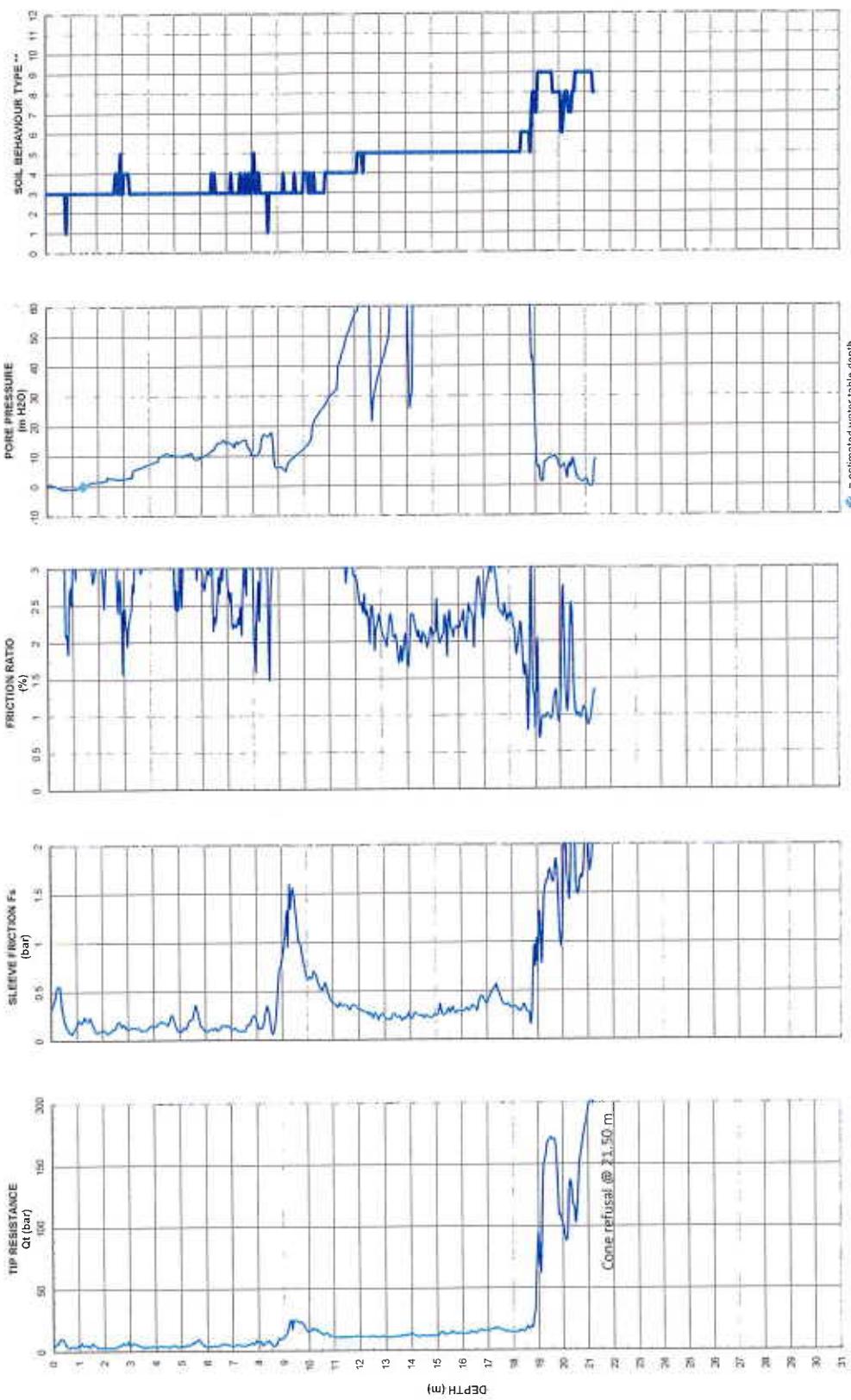
GeoPacific Project #: 11219

24-Apr-15

Sounding: CPT15-03

ONNI CONTRACTING LTD
AIRPORT WAY EAST OF HARRIS ROAD,
PITT MEADOWS

Figure: B.03



** Based on Robertson et. al 1986

1 Sensitive Fine Grained

2 Organic Material

3 Clay

4 Silty Clay to Clay

5 Clayey Silt to Silty Clay

6 Sandy Silt to Clayey Silt

7 Silty Sand to Sandy Silt

8 Sand to Silty Sand

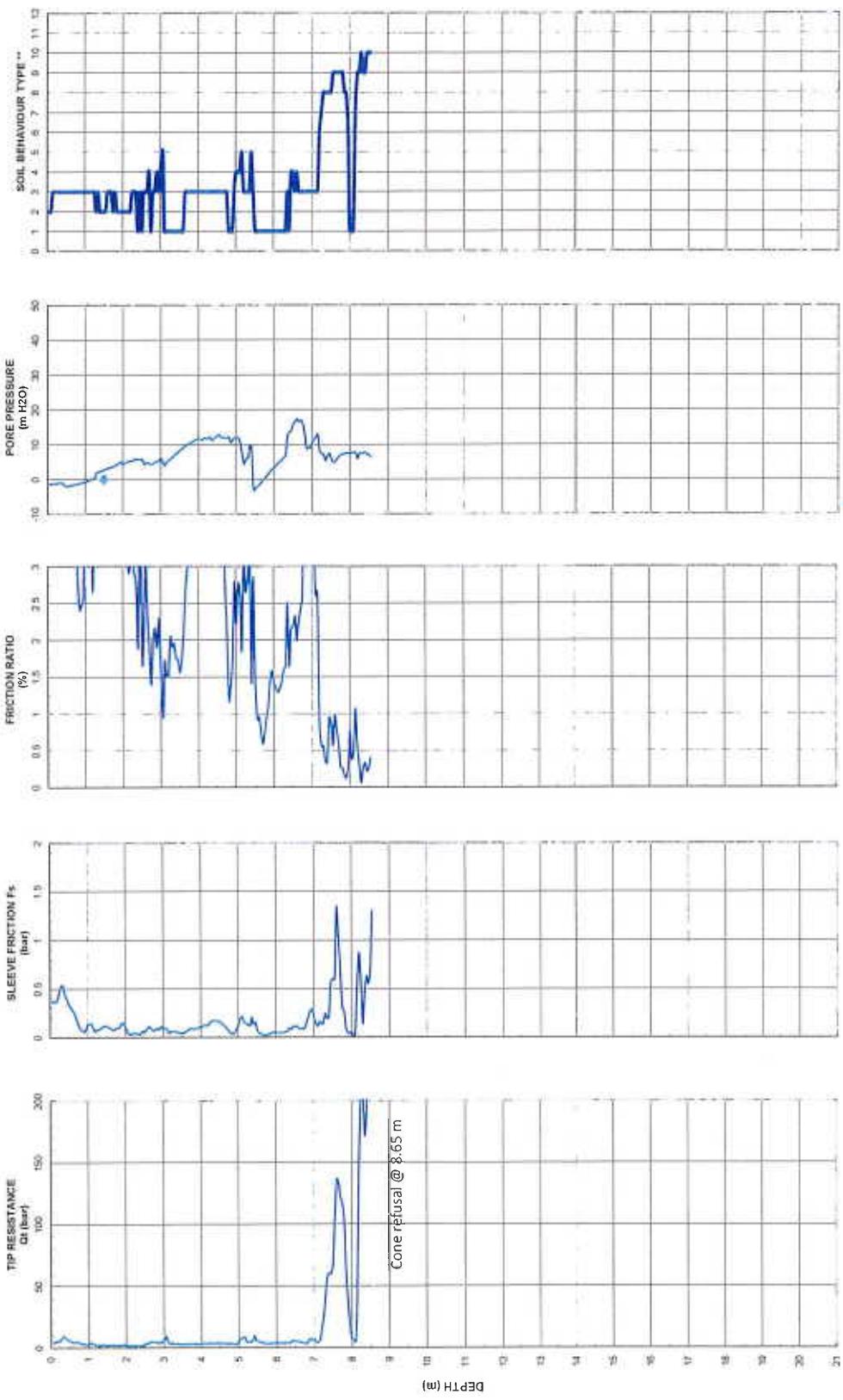
9 Sand

10 Gravelly Sand to Sand

11 Very Stiff Fine Grained

12 Sand to Clayey Sand

 GeoPacific Consultants Ltd.	24-Apr-15	ONNI CONTRACTING LTD	GeoPacific Project #: 11219
	Sounding: CPT15-04	AIRPORT WAY EAST OF HARRIS ROAD, PITT MEADOWS	Figure: B.04



** Based on Robertson et. al 1986

- 1 Sensitive Fine Grained
- 2 Organic Material
- 3 Clay
- 4 Silty Clay to Clay
- 5 Clayey Silt to Silty Clay
- 6 Sandy Silt to Clayey Silt
- 7 Silty Sand to Sandy Silt
- 8 Sand to Silty Sand
- 9 Sand
- 10 Gravelly Sand to Sand
- 11 Very Stiff Fine Grained
- 12 Sand to Clayey Sand

◆ = estimated water table depth

APPENDIX C - INTERPRETED PARAMETERS

The following charts plot the Standard Penetration Test (SPT) values and the undrained strength of fine grained soils based upon generally accepted correlations. The methods of correlation are presented below.

STANDARD PENETRATION TEST CORRELATION

The Standard Penetration Test $N_{(60)}$ value is related to the cone tip resistance through a Q_c/N ratio that depends upon the mean grain size of the soil particles. The soil type is determined from the interpretation described in Appendix B and the data of Table C.1 below is used to calculate the value of $N_{(60)}$.

Table C.1. Tabulated $Q_c/N_{(60)}$ Ratios for Interpreted Soil Types

Soil Type	Qc/N Ratio
Organic soil - Peat	1.0
Sensitive Fine Grained	2.0
Clay	1.0
Silty Clay to Clay	1.5
Clayey Silt to Silty Clay	2.0
Silt	2.5
Silty Sand to Sandy Silt	3.0
Clean Sand to Silty Sand	4.0
Clean Sand	5.0
Gravelly Sand to Sand	6.0
Very Stiff Fine Grained	1.0
Sand to Clayey Sand	2.0

The $Q_c/N_{(60)}$ ratio is based upon the published work of Robertson (1985)². The values of N are corrected for overburden pressure in accordance with the correction suggested by Liao and Whitman using a factor of 0.5. Where the correction is of the form:

$$N_f = \sigma^{0.5} * N$$

All calculations are carried out by computer using the software program CPTint.exe developed by UBC Civil Engineering Department. The results of the interpretation are presented on the following Figures.

UNDRAINED SHEAR STRENGTH CORRELATION

It is generally accepted that there is a correlation between undrained shear strength of clay and the tip resistance as determined from the cone penetration testing. Generally the correlation is of the form:

$$S_u = \frac{(q_c - \sigma_v)}{N_k}$$

where q_c = cone tip resistance, σ = in situ total stress, N_k = cone constant

The undrained shear strength of the clay has been calculated using the cone tip resistance and an N_k factor of 12.5. All calculations have been carried out automatically using the program CPTint.exe. The results are presented on the Figures following.

²

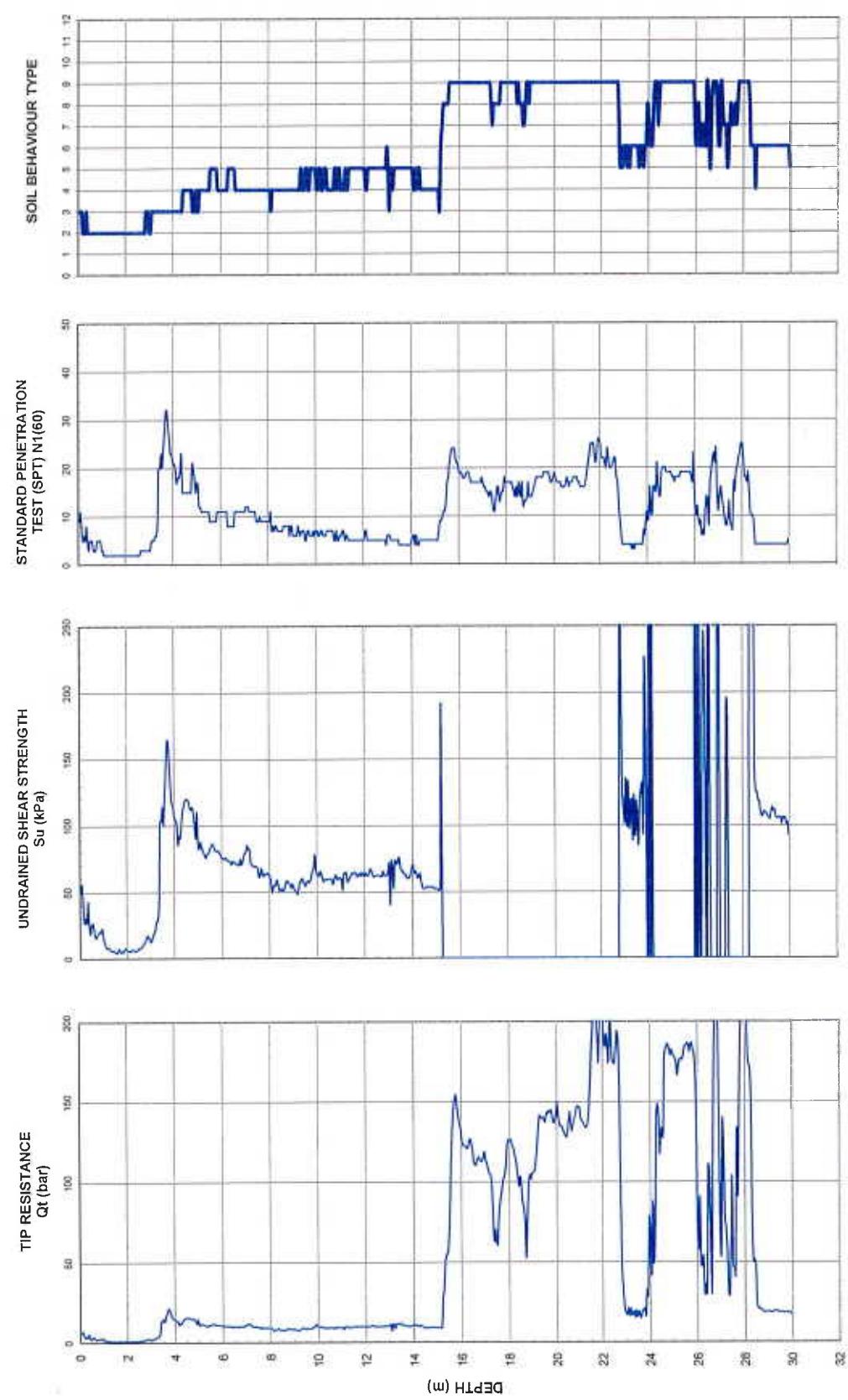
Robertson, P.K., 1985, "In-Situ Testing and Its Application to Foundation Engineering", 1985 Canadian Geotechnical Colloquium, Canadian Geotechnical Journal, Vol. 23, No. 23, 1986

**APPENDIX C1 – INTERPRETED SHEAR STRENGTH PARAMETERS 2013
INVESTIGATION**



15-Apr-13 Onni Group of Companies
Sounding: CPT13-01 GeoPacific Project #: 11219

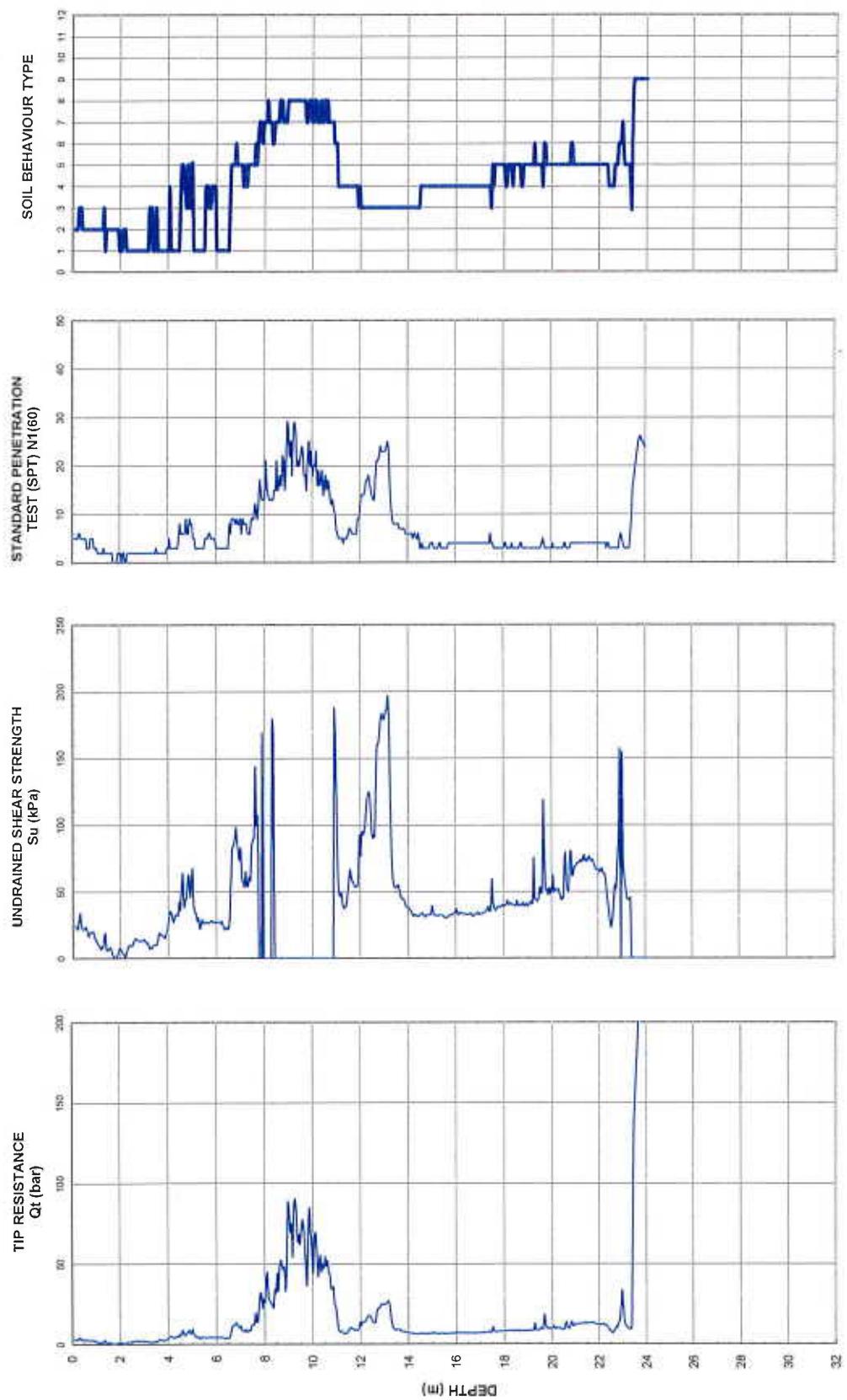
Airport Way East of Harris Road, Pitt
Meadows, B.C.



- ** Based on Robertson et. al 1986
- 1 Sensitive Fine Grained
 - 2 Organic Material
 - 3 Clay
 - 4 Silty Clay to Clay
 - 5 Clayey Silt to Silty Clay
 - 6 Sandy Silt to Clayey Silt
 - 7 Silty Sand to Sandy Silt
 - 8 Sand to Silty Sand
 - 9 Sand

- 10 Gravelly Sand to Sand
- 11 Very Stiff Fine Grained
- 12 Sand to Clayey Sand

 GeoPacific Consultants Ltd.	15-Apr-13	Onni Group of Companies	GeoPacific Project #: 11219
	Sounding: CPT13-02	Airport Way East of Harris Road, Pitt Meadows, B.C.	Figure: C.02



** Based on Robertson et. al 1986

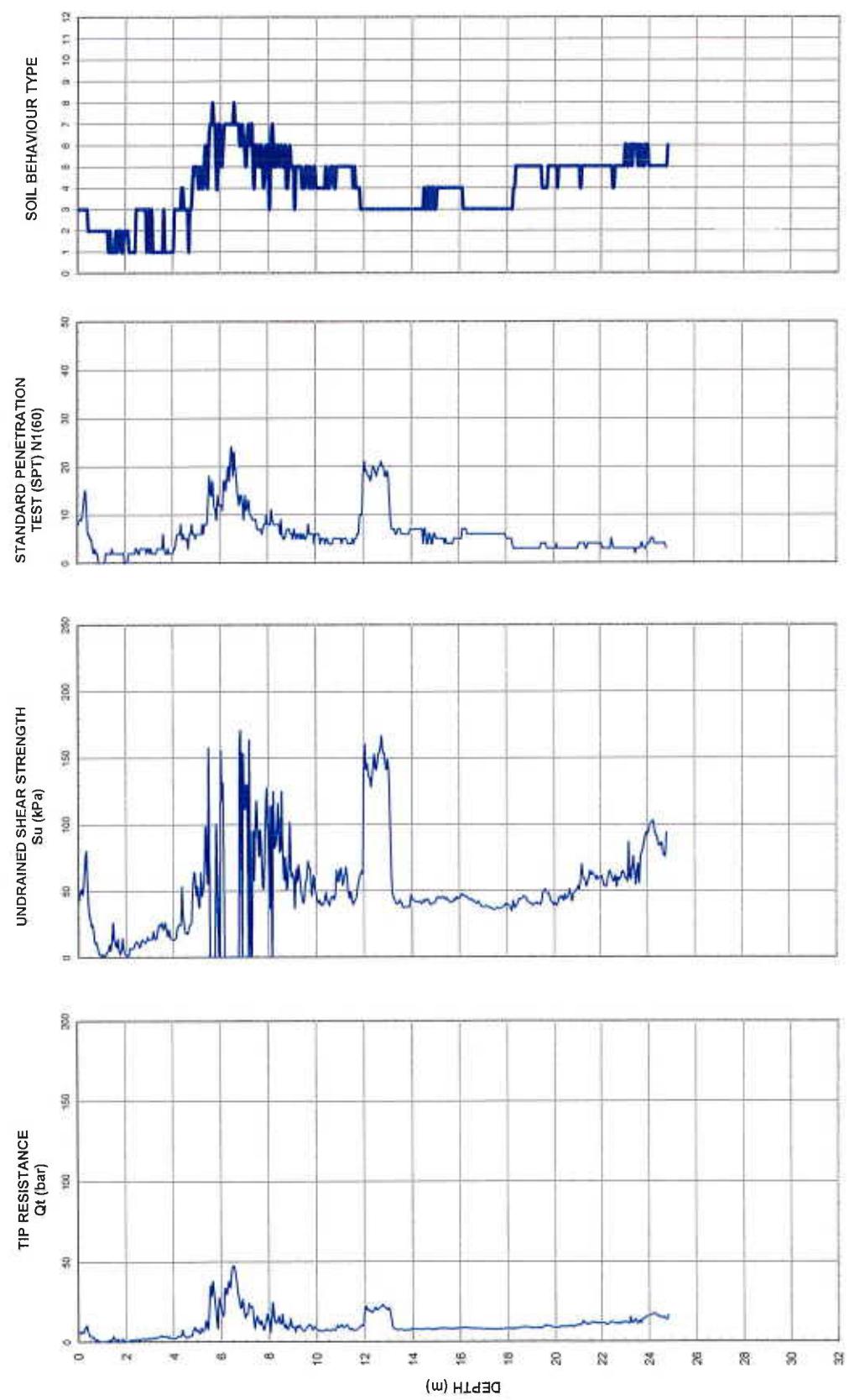
- 1 Sensitive Fine Grained
- 2 Organic Material
- 3 Clay
- 4 Silty Clay to Clay
- 5 Clayey Silt to Silty Clay
- 6 Sandy Silt to Clayey Silt
- 7 Silty Sand to Sandy Silt
- 8 Sand to Silty Sand
- 9 Sand

- 10 Gravelly Sand to Sand
- 11 Very Stiff Fine Grained
- 12 Sand to Clayey Sand

- 10 Gravelly Sand to Sand
- 11 Very Stiff Fine Grained
- 12 Sand to Clayey Sand



15-Apr-13 Onni Group of Companies GeoPacific Project #: 11219
Sounding: CPT13-03 Airport Way East of Harris Road, Pitt
Meadows, B.C.



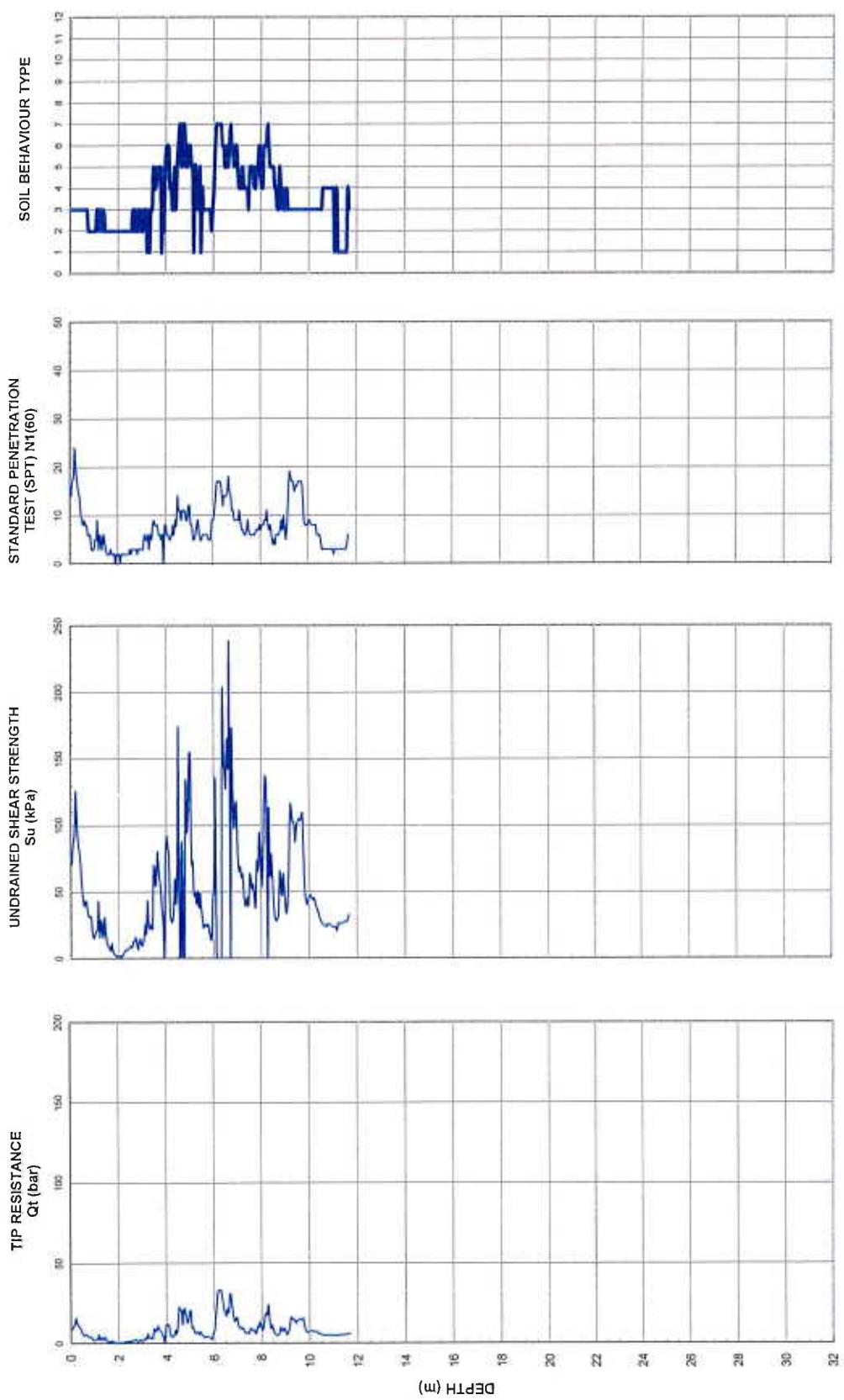
** Based on Robertson et. al 1986
1 Sensitive Fine Grained
2 Organic Material
3 Clay
4 Silty Clay to Clay
5 Clayey Silt to Silty Clay
6 Sandy Silt to Clayey Silt
7 Silty Sand to Sandy Silt
8 Sand to Silty Sand
9 Sand

10 Gravelly Sand to Sand
11 Very Stiff Fine Grained
12 Sand to Clayey Sand



15-Apr-13
Sounding: CPT13-04

Onni Group of Companies
Airport Way East of Harris Road, Pitt
Meadows, B.C.



** Based on Robertson et. al 1986
1 Sensitive Fine Grained
2 Organic Material
3 Clay
4 Silty Clay to Clay
5 Clayey Silt to Silty Clay
6 Sandy Silt to Clayey Silt
7 Silty Sand to Sandy Silt
8 Sand to Silty Sand
9 Sand

10 Gravelly Sand to Sand
11 Very Stiff Fine Grained
12 Sand to Clayey Sand

Figure: C.04

18-Apr-13

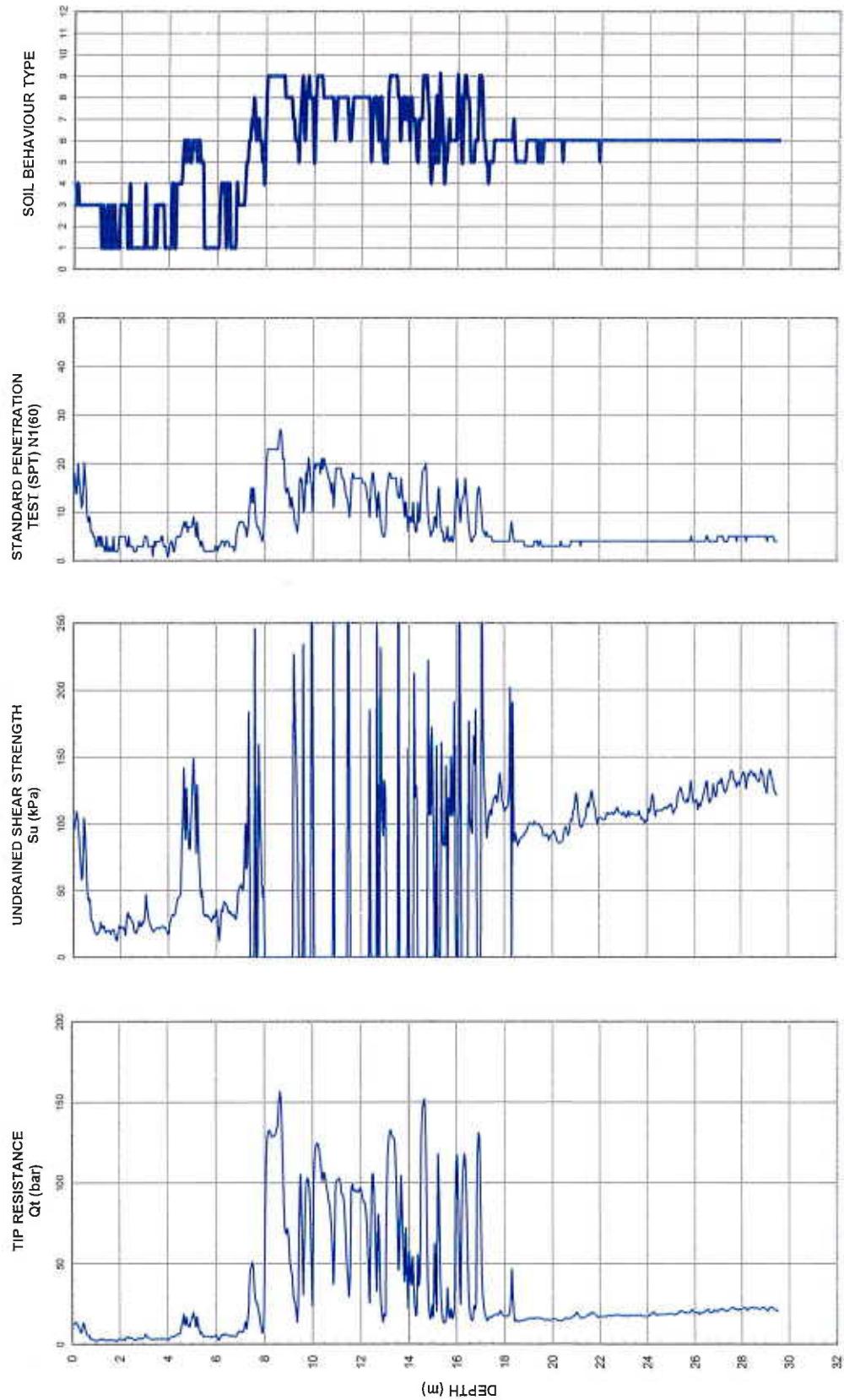
Sounding: CPT13-05

Omni Group

GeoPacific Project #: 11219

Airport Way and Harris Road, Pitt Meadows

Figure: C.05



** Based on Robertson et. al 1986

- 1 Sensitive Fine Grained
- 2 Organic Material
- 3 Clay
- 4 Silty Clay to Clay
- 5 Clayey Silt to Silty Clay
- 6 Sandy Silt to Clayey Silt
- 7 Silty Sand to Sandy Silt
- 8 Sand to Silty Sand
- 9 Sand

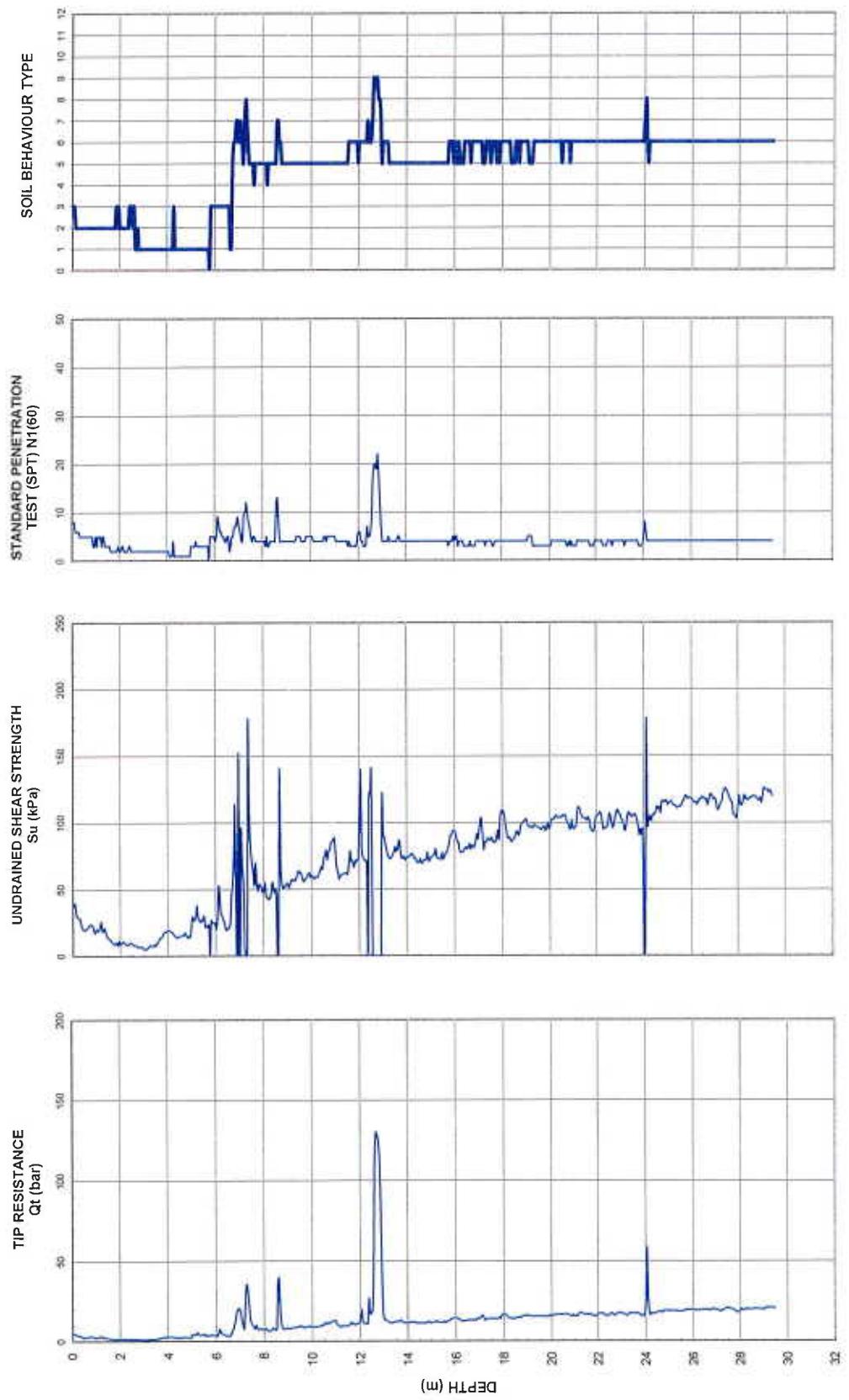
- 10 Gravelly Sand to Sand
- 11 Very Stiff Fine Grained
- 12 Sand to Clayey Sand

10 Gravelly Sand to Sand
11 Very Stiff Fine Grained
12 Sand to Clayey Sand

18-Apr-13
Sounding: CPT13-06

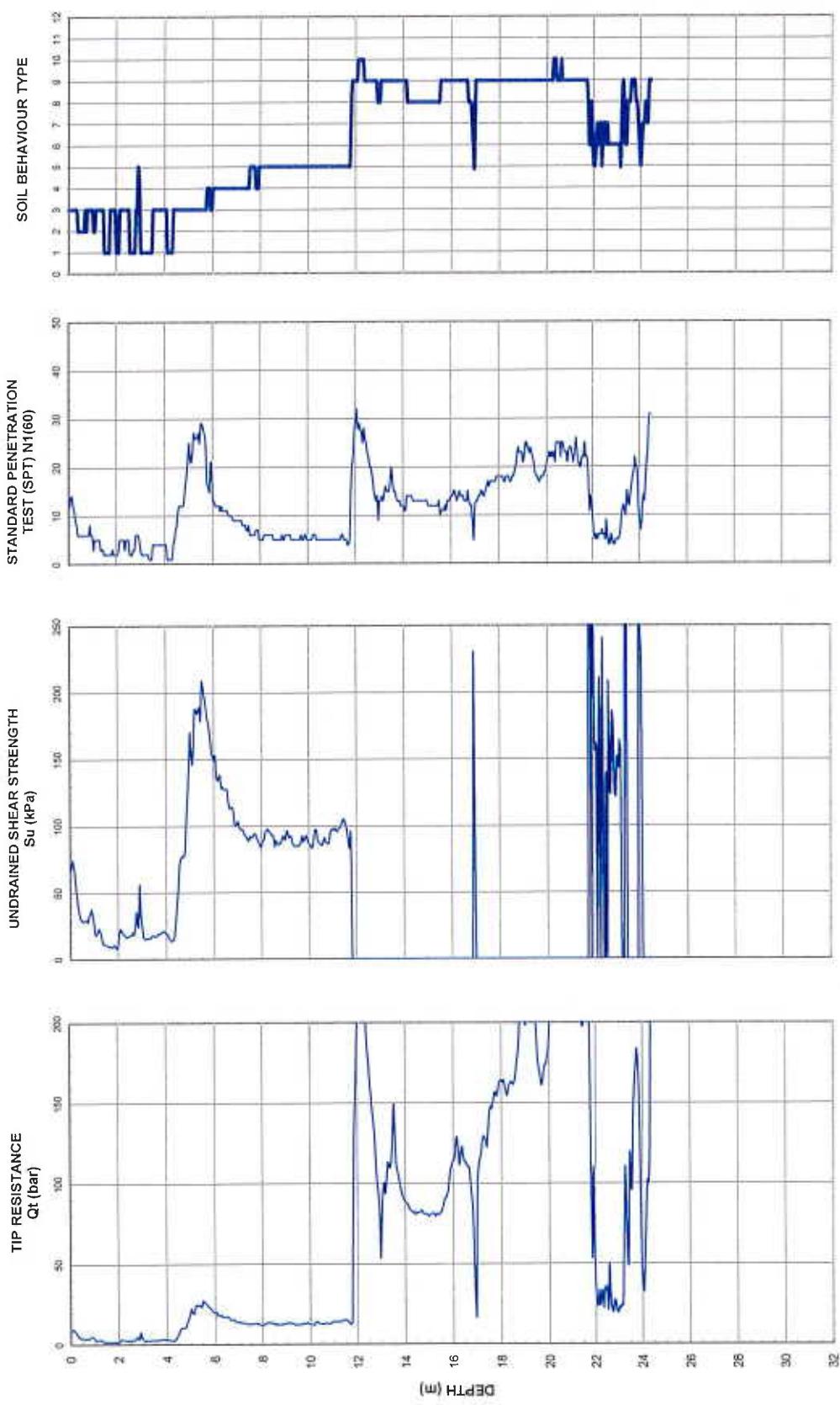
Omni Group
Airport Way and Harris Road, Pitt Meadows

GeoPacific Project #: 11219
Figure: C.06



** Based on Robertson et. al 1986
 1 Sensitive Fine Grained
 2 Organic Material
 3 Clay
 4 Silty Clay to Clay
 5 Clayey Silt to Silty Clay
 6 Sandy Silt to Clayey Silt
 7 Silty Sand to Sandy Silt
 8 Sand to Silty Sand
 9 Sand
 10 Gravelly Sand to Sand
 11 Very Stiff Fine Grained
 12 Sand to Clayey Sand

GeoPacific Consultants Ltd.	18-Apr-13	Omni Group	GeoPacific Project #: 11219
	Sounding: CPT13-07	Airport Way and Harris Road, Pitt Meadows	Figure: C.07



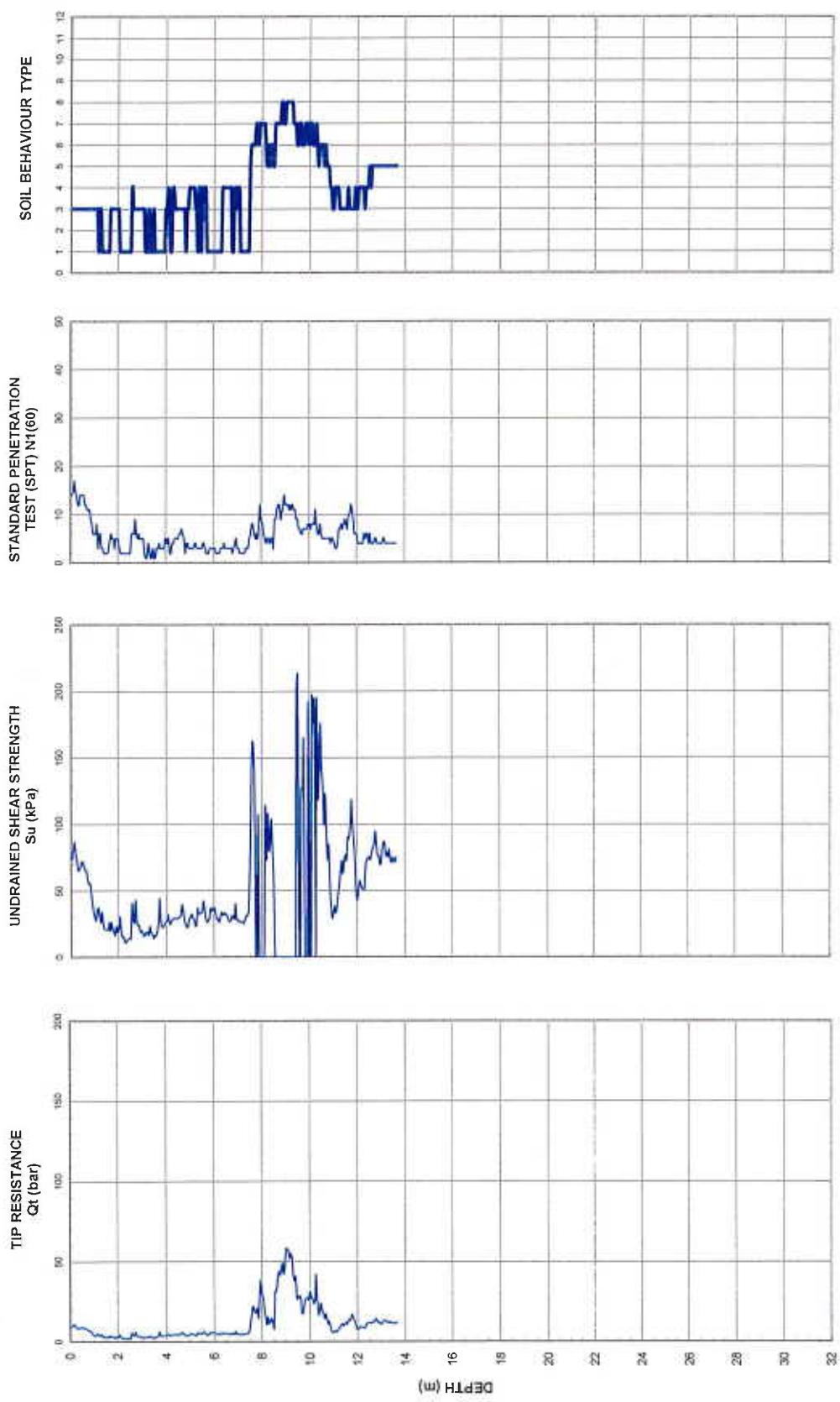
** Based on Robertson et. al 1986

- 1 Sensitive Fine Grained
- 2 Organic Material
- 3 Clay
- 4 Silty Clay to Clay
- 5 Clayey Silt to Silty Clay
- 6 Sandy Silt to Clayey Silt
- 7 Silty Sand to Sandy Silt
- 8 Sand to Silty Sand
- 9 Sand

- 10 Gravelly Sand to Sand
- 11 Very Stiff Fine Grained
- 12 Sand to Clayey Sand

- 10 Gravelly Sand to Sand
- 11 Very Stiff Fine Grained
- 12 Sand to Clayey Sand

	18-Apr-13	Omni Group	GeoPacific Project #: 11219
Sounding: CPT13-08	Airport Way and Harris Road, Pitt Meadows		Figure: C.08



** Based on Robertson et. al 1986

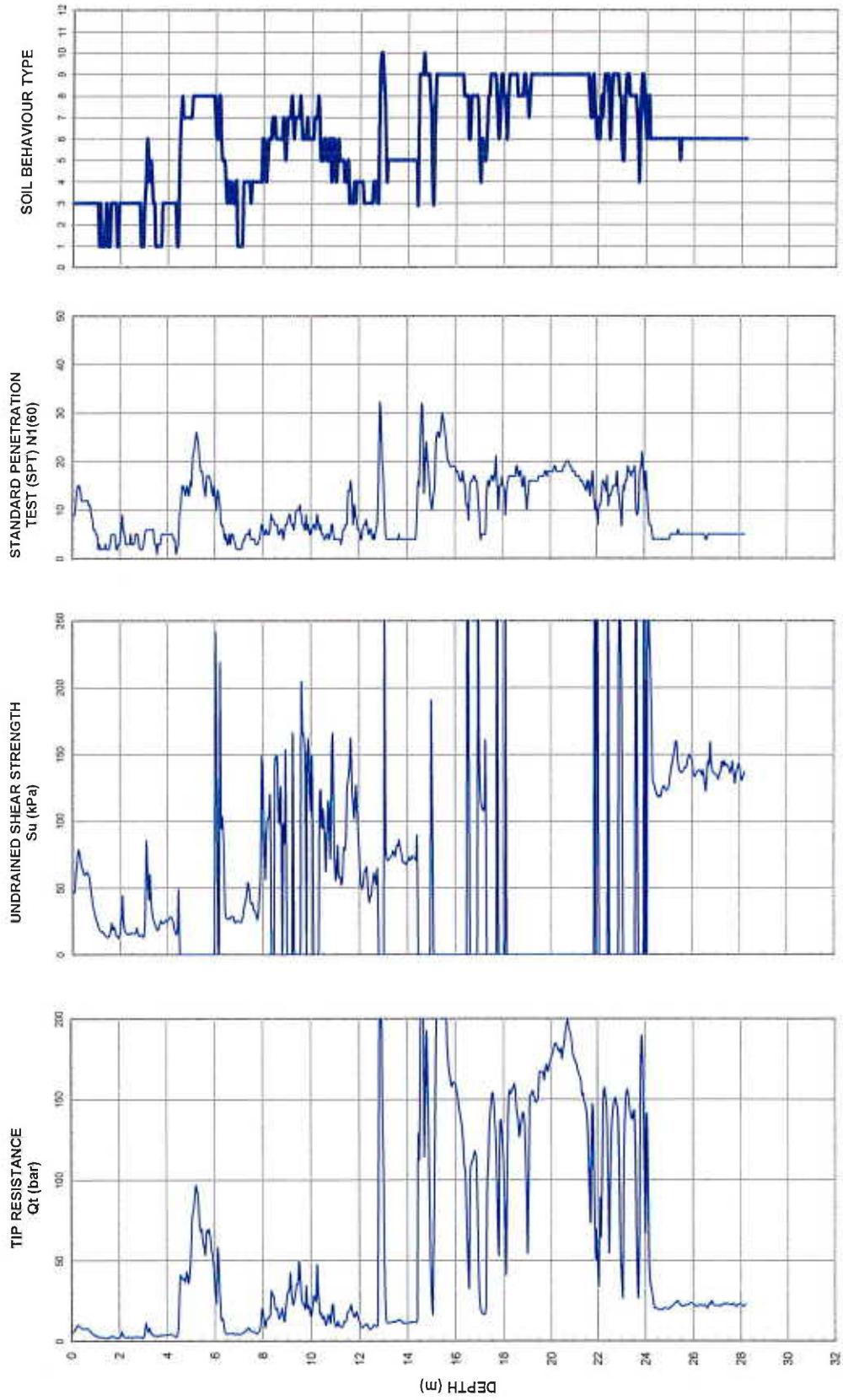
- 1 Sensitive Fine Grained
- 2 Organic Material
- 3 Clay
- 4 Silty Clay to Clay
- 5 Clayey Silt to Silty Clay
- 6 Sandy Silt to Clayey Silt
- 7 Silty Sand to Sandy Silt
- 8 Sand to Silty Sand
- 9 Sand

- 10 Gravelly Sand to Sand
- 11 Very Stiff Fine Grained
- 12 Sand to Clayey Sand

- 10 Gravelly Sand to Sand
- 11 Very Stiff Fine Grained
- 12 Sand to Clayey Sand



	18-Apr-13	Omni Group	GeoPacific Project #: 11219
Sounding: CPT13-09	Airport Way and Harris Road, Pitt Meadows		Figure: C.09



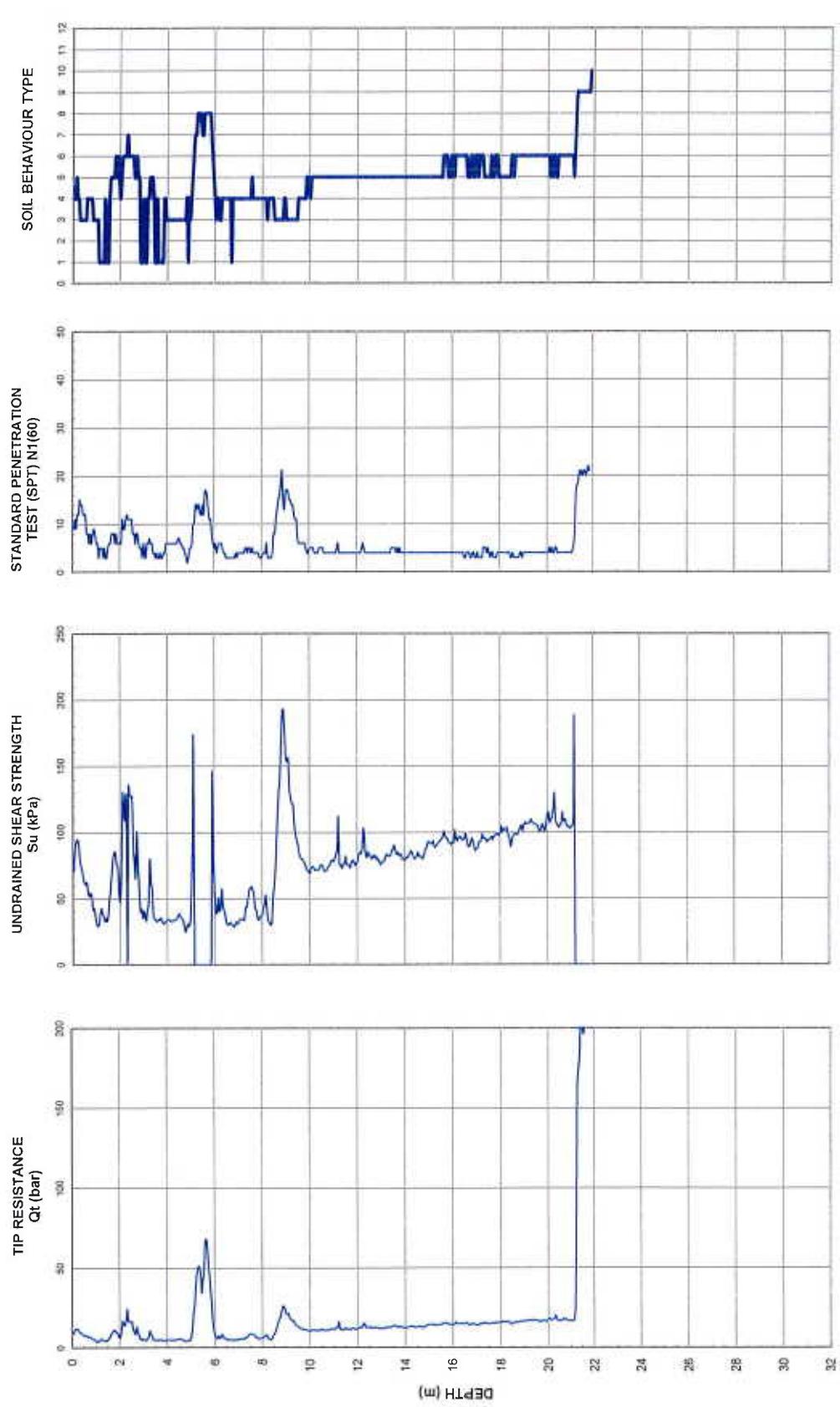
** Based on Robertson et. al 1986

- 1 Sensitive Fine Grained
- 2 Organic Material
- 3 Clay
- 4 Silty Clay to Clay
- 5 Clayey Silt to Silty Clay
- 6 Sandy Silt to Clayey Silt
- 7 Silty Sand to Sandy Silt
- 8 Sand to Silty Sand
- 9 Sand

- 10 Gravelly Sand to Sand
- 11 Very Stiff Fine Grained
- 12 Sand to Clayey Sand

- 10 Gravelly Sand to Sand
- 11 Very Stiff Fine Grained
- 12 Sand to Clayey Sand

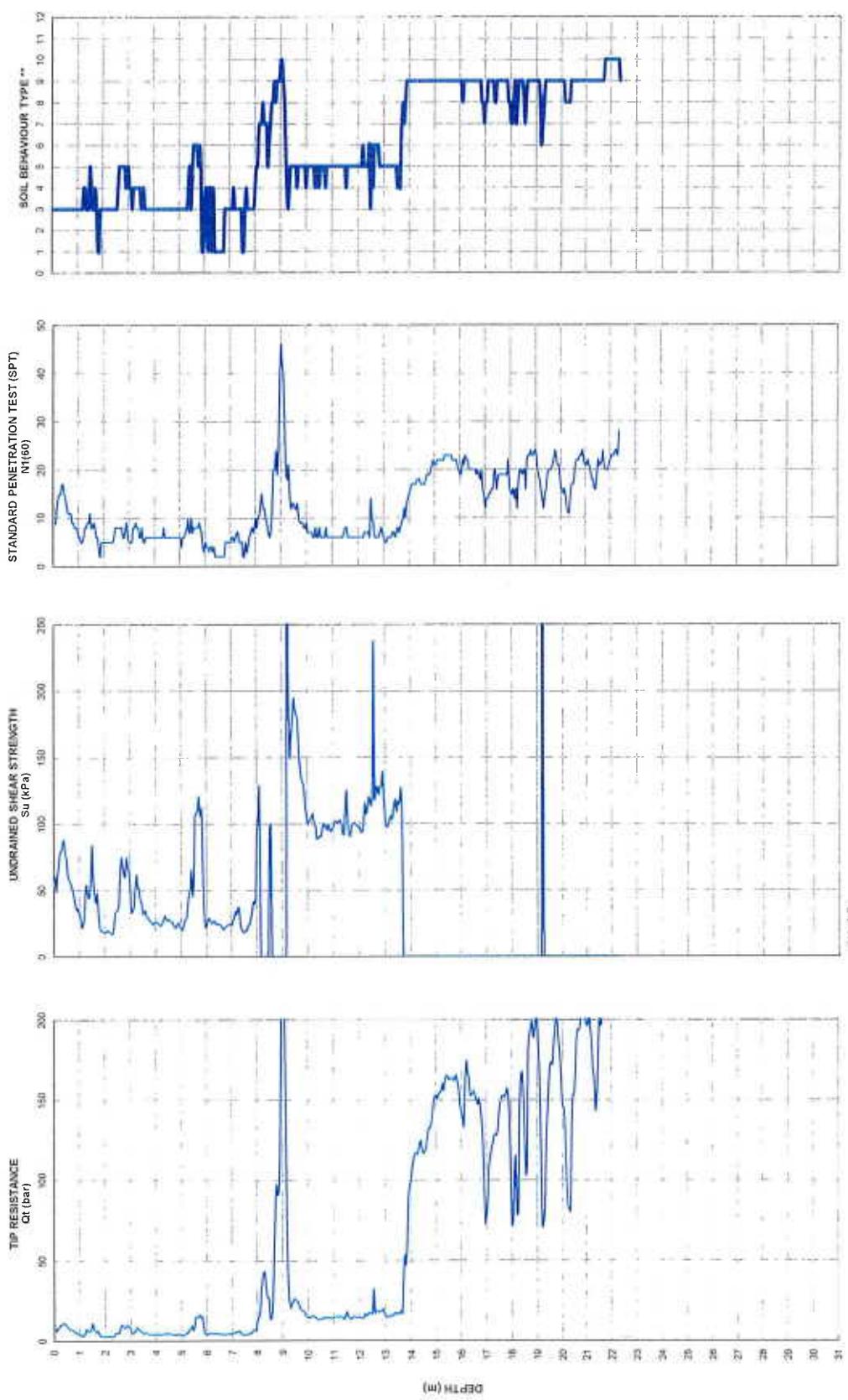
	18-Apr-13	Omni Group	GeoPacific Project #: 11219
	Sounding: CPT13-10	Airport Way and Harris Road, Pitt Meadows	Figure: C.10



** Based on Robertson et. al 1986
 1 Sensitive Fine Grained
 2 Organic Material
 3 Clay
 4 Silty Clay to Clay
 5 Clayey Silt to Silty Clay
 6 Sandy Silt to Clayey Silt
 7 Silty Sand to Sandy Silt
 8 Sand to Silty Sand
 9 Sand
 10 Gravelly Sand to Sand
 11 Very Stiff Fine Grained
 12 Sand to Clayey Sand

**APPENDIX C2 – INTERPRETED SHEAR STRENGTH PARAMETERS 2015
INVESTIGATION (PHASE IV)**

GeoPacific Consultants Ltd.	24-Apr-15	ONNI CONTRACTING LTD	GeoPacific Project #: 11219
	Sounding: CPT15-01	AIRPORT WAY EAST OF HARRIS ROAD, PITT MEADOWS	Figure: C.01

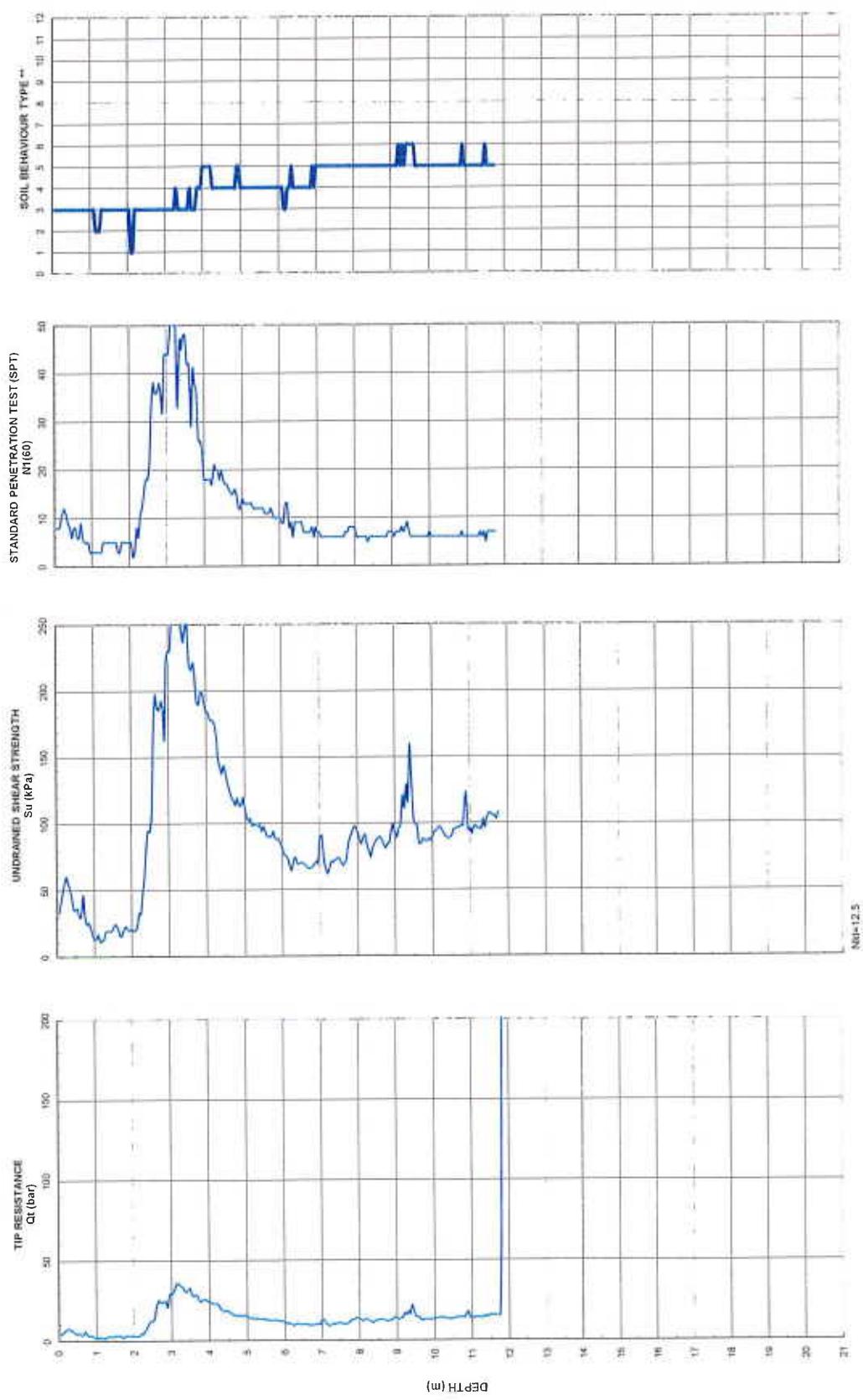


- ** Based on Robertson et. al 1986
 1 Sensitive Fine Grained
 2 Organic Material
 3 Clay
 4 Silty Clay to Clay
 5 Clayey Silt to Silty Clay
 6 Sandy Silt to Clayey Silt
 7 Silty Sand to Sandy Silt
 8 Sand to Silty Sand
 9 Sand

- 10 Gravelly Sand to Sand
 11 Very Stiff Fine Grained
 12 Sand to Clayey Sand

- 10 Gravelly Sand to Sand
 11 Very Stiff Fine Grained
 12 Sand to Clayey Sand

	24-Apr-15	ONNI CONTRACTING LTD	GeoPacific Project #: 11219
Sounding: CPT15-02	AIRPORT WAY EAST OF HARRIS ROAD, PITT MEADOWS		Figure: C.02



** Based on Robertson et. al 1986

1 Sensitive Fine Grained

2 Organic Material

3 Clay

7 Silty Sand to Sandy Silt

8 Sand to Silty Sand

9 Sand

10 Gravelly Sand to Sand

11 Very Stiff Fine Grained

12 Sand to Clayey Sand



GeoPacific

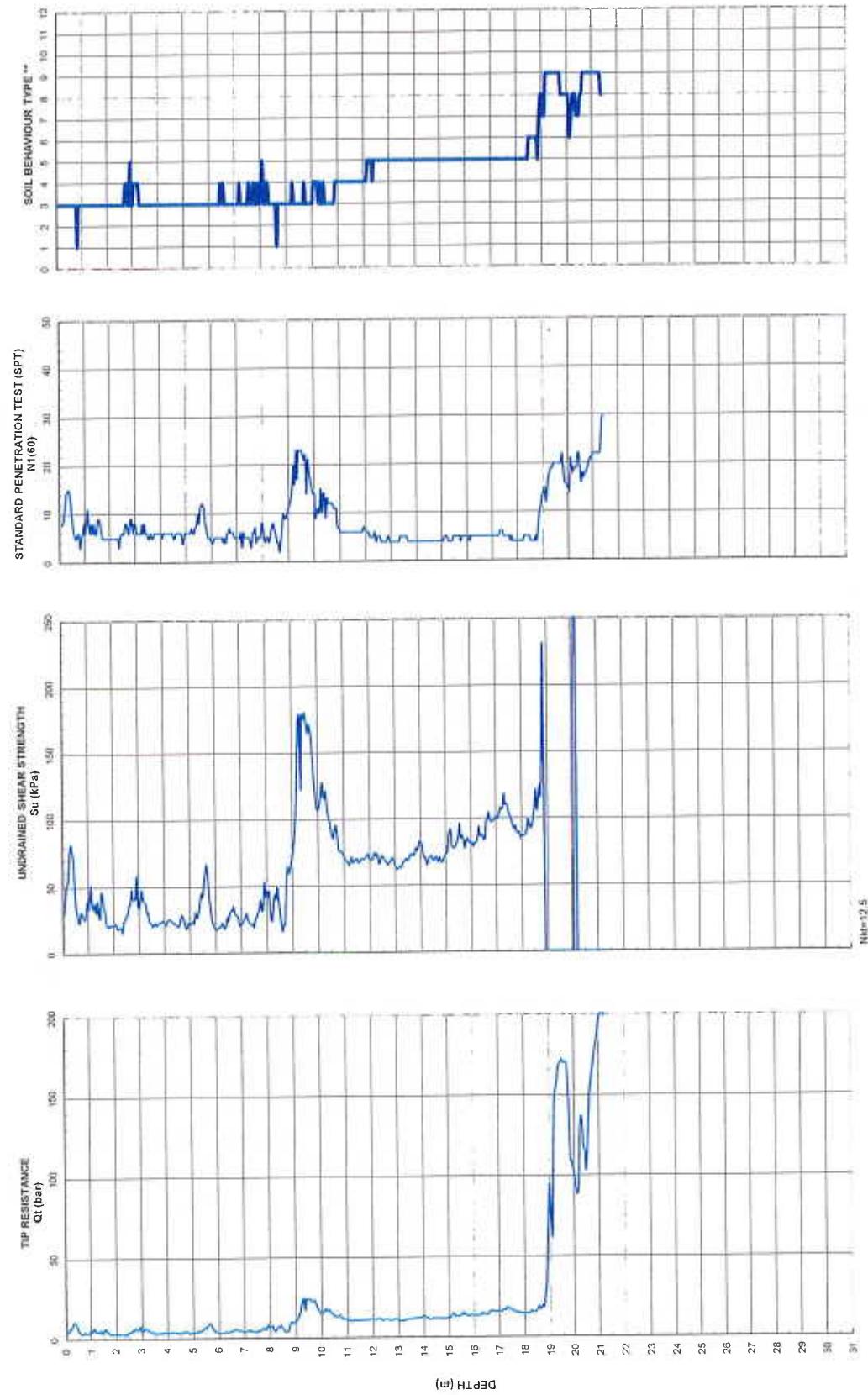
Consultants Ltd.

24-Apr-15

Sounding: CPT15-03

ONNI CONTRACTING LTD
AIRPORT WAY EAST OF HARRIS ROAD,
PITT MEADOWS

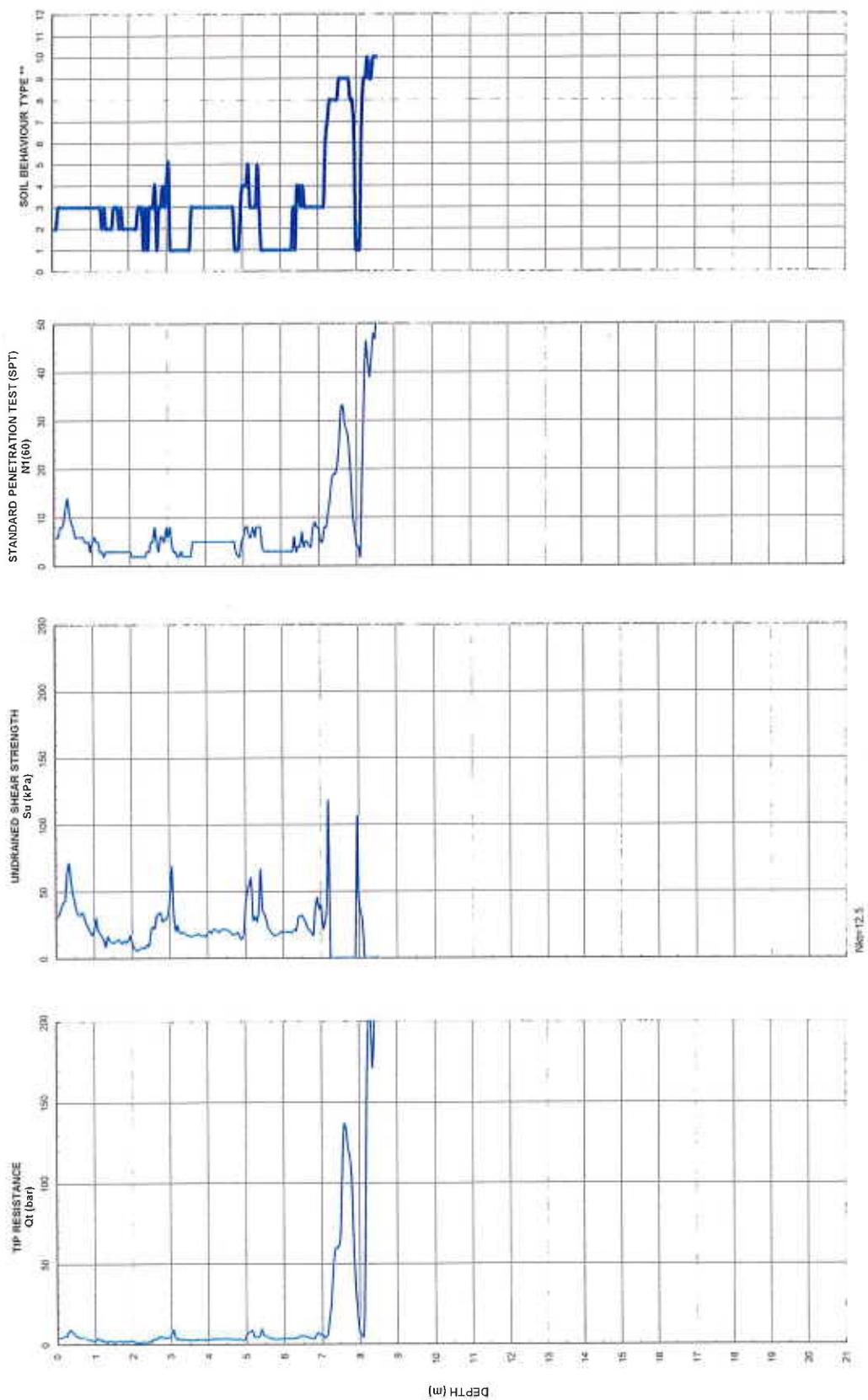
GeoPacific Project #: 111219



** Based on Robertson et. al 1986
1 Sensitive Fine Grained
2 Organic Material
3 Clay
4 Silty Clay to Clay
5 Clayey Silt to Silty Clay
6 Sandy Silt to Clayey Silt
7 Silty Sand to Sandy Silt
8 Sand to Silty Sand
9 Sand

10 Gravelly Sand to Sand
11 Very Stiff Fine Grained
12 Sand to Clayey Sand

GeoPacific Consultants Ltd.	24-Apr-15	ONNI CONTRACTING LTD	GeoPacific Project #: 11219
	Sounding: CPT15-04	AIRPORT WAY EAST OF HARRIS ROAD, PITT MEADOWS	Figure: C.04



** Based on Robertson et. al 1986

1 Sensitive Fine Grained

2 Organic Material

3 Clay

7 Silty Sand to Sandy Silt
8 Sand to Silty Sand
9 Sand

10 Gravelly Sand to Sand
11 Very Stiff Fine Grained
12 Sand to Clayey Sand