

# Appendix C

## 2018 CPT Logs

# CPT TEST LOG

**Job Number:** 18150

**Client:** Aurecon  
**Project:** Prestons Law Block

**Test Label:** CPT101

**Site Location:** Marshland, Christchurch

**Test Date:** 2/05/2018

**Coordinates:** CPT101 (WGS84)

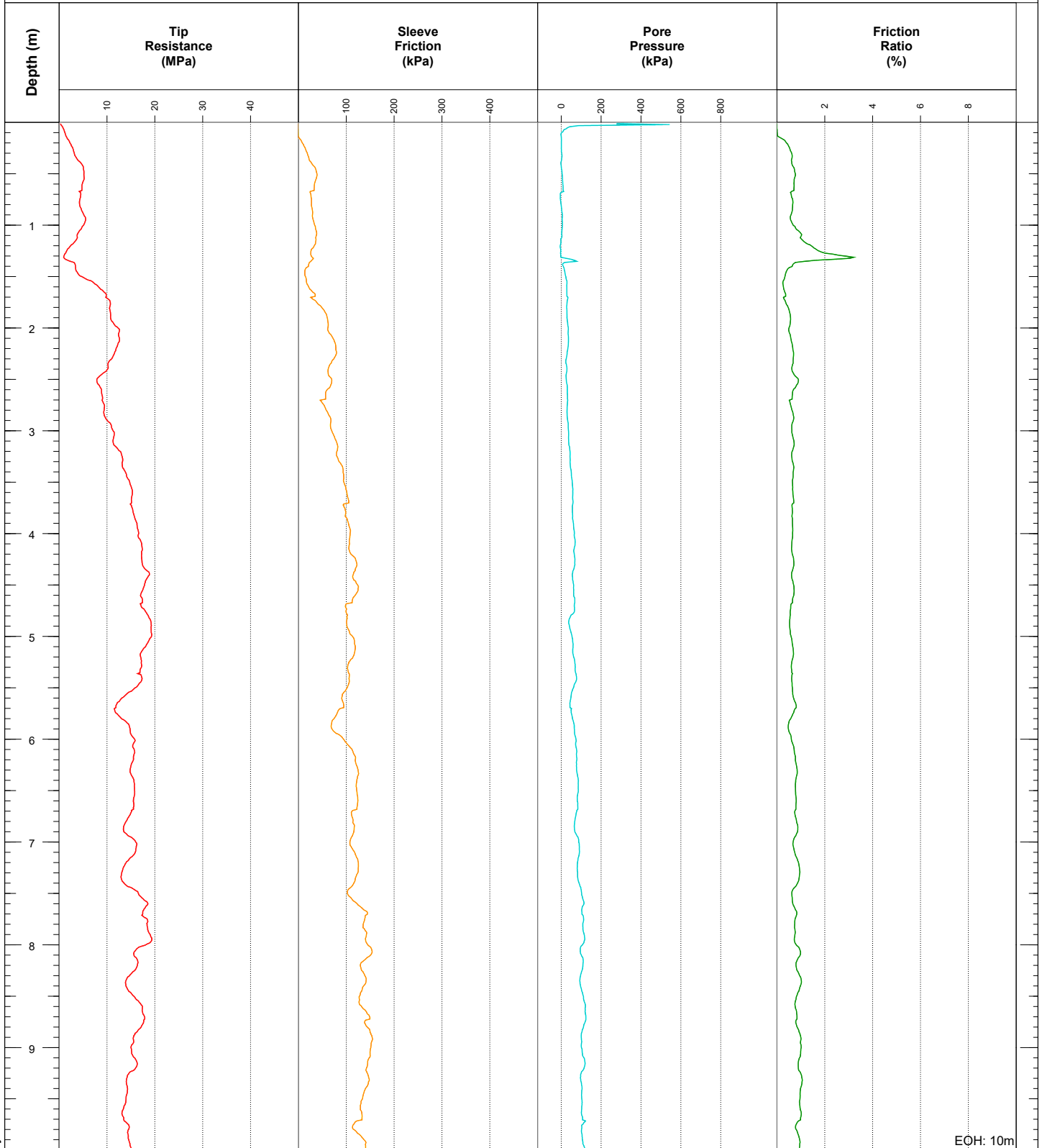
**Supervisor:** Kieran Foote

**Operator:** Gray Lewis

**Piezocone (Rig):** MKJ329 (P001259)

**Hole Depth:** 10m

**EOH Reason:** Target



## Remarks

CPTu testing carried out to ASTM Standard D5778-12  
10cm-sq Pagani piezocone used for each CPTu test  
CPTu refusal at 50MPa on the tip, 500kPa on the friction sleeve or at 2500kPa pore pressure

Average Energy Transfer Ratio for the DPSH-B hammer on each rig:

P 001245: 95%  
P 001249: 90%

Calibration performed on 4th November 2014

# CPT TEST LOG

**Job Number:** 18150

**Client:** Aurecon  
**Project:** Prestons Law Block

**Test Label:** CPT102

**Site Location:** Marshland, Christchurch

**Test Date:** 1/05/2018

**Coordinates:** CPT102 (WGS84)

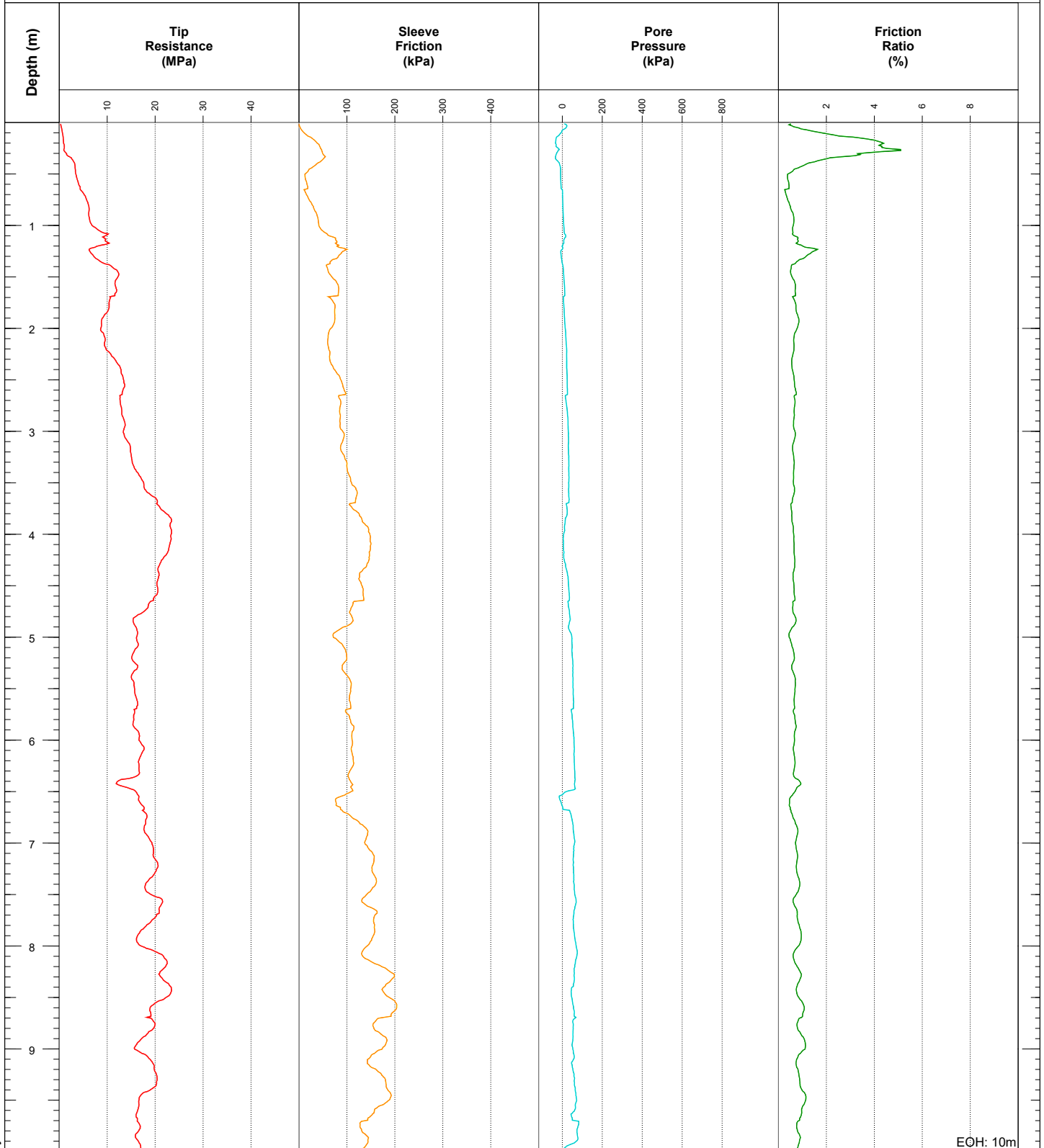
**Supervisor:** Kieran Foote

**Operator:** Gray Lewis

**Piezocone (Rig):** MKJ329 (P001259)

**Hole Depth:** 10m

**EOH Reason:** Target



## Remarks

CPTu testing carried out to ASTM Standard D5778-12  
10cm-sq Pagani piezocone used for each CPTu test  
CPTu refusal at 50MPa on the tip, 500kPa on the friction sleeve or at 2500kPa pore pressure

Average Energy Transfer Ratio for the DPSH-B hammer on each rig:

P 001245: 95%  
P 001249: 90%

Calibration performed on 4th November 2014

# CPT TEST LOG

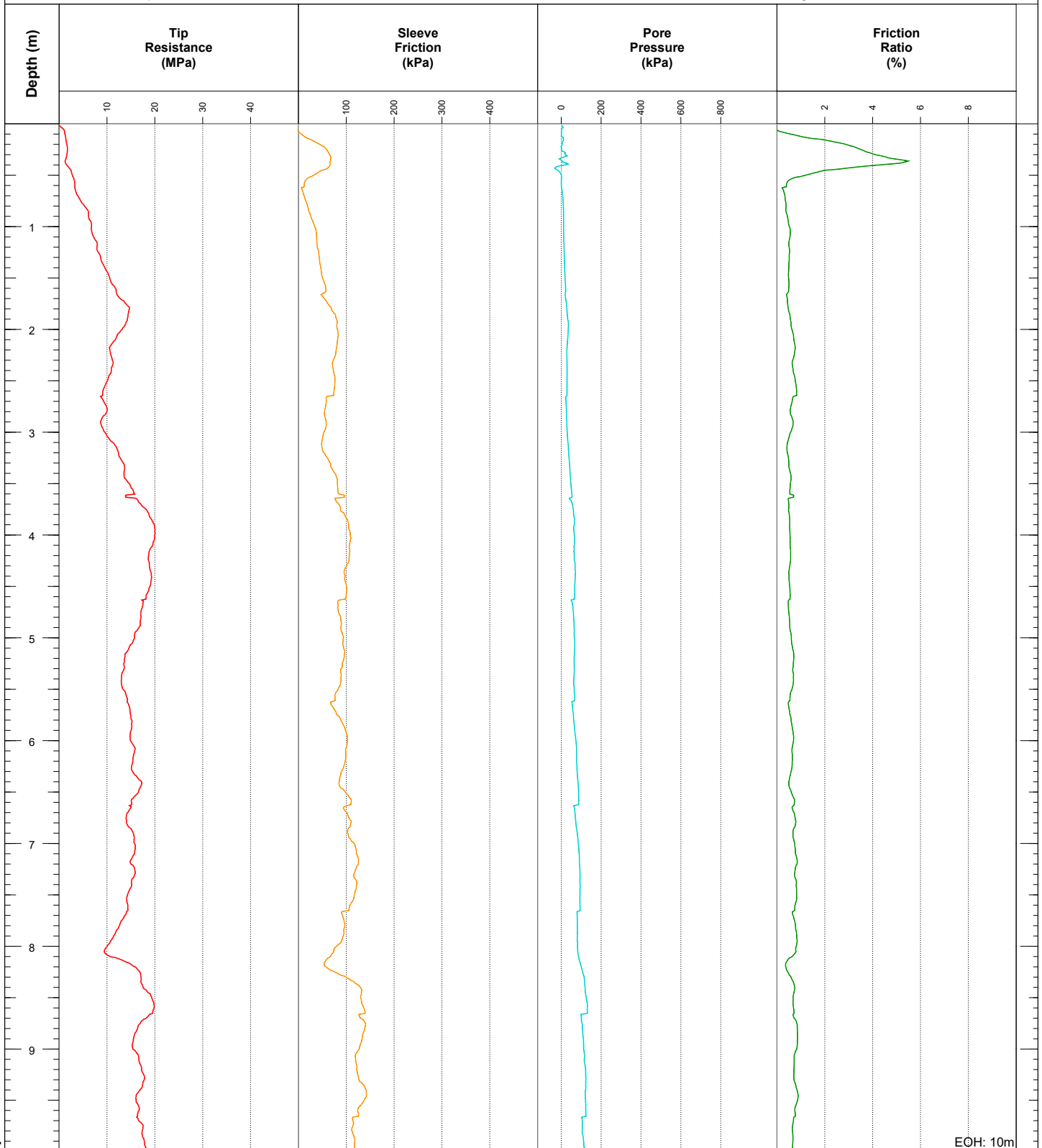
**Job Number:** 18150

**Client:** Aurecon  
**Project:** Prestons Law Block

**Test Label:** CPT103

**Site Location:** Marshland, Christchurch  
**Test Date:** 2/05/2018  
**Coordinates:** CPT103 (WGS84)  
**Supervisor:** Kieran Foote

**Operator:** Gray Lewis  
**Piezocone (Rig):** MKJ329 (P001259)  
**Hole Depth:** 10m  
**EOH Reason:** Target



EOH: 10m

## Remarks

CPTu testing carried out to ASTM Standard D5778-12  
10cm-sq Pagani piezocone used for each CPTu test  
CPTu refusal at 50MPa on the tip, 500kPa on the friction sleeve or at 2500kPa pore pressure

Average Energy Transfer Ratio for the DPSH-B hammer on each rig:

P 001245: 95%  
P 001249: 90%

Calibration performed on 4th November 2014

# CPT TEST LOG

Job Number: 18150

Client: Aurecon  
Project: Prestons Law Block

Test Label: CPT104

Site Location: Marshland, Christchurch

Test Date: 4/05/2018

Coordinates: CPT104 (WGS84)

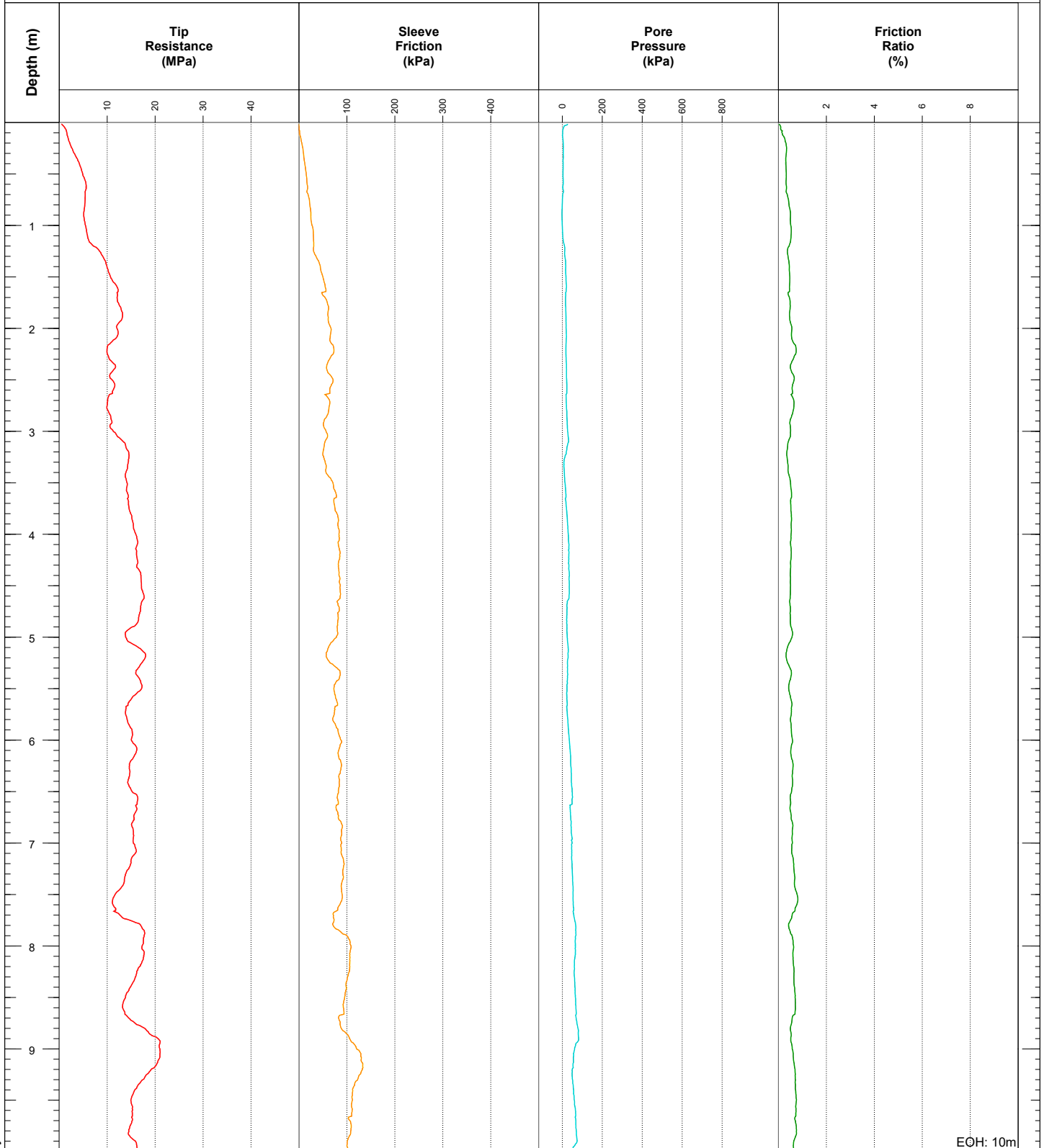
Supervisor: Kieran Foote

Operator: Gray Lewis

Piezocone (Rig): MKJ329 (P001259)

Hole Depth: 10m

EOH Reason: Target



## Remarks

CPTu testing carried out to ASTM Standard D5778-12  
10cm-sq Pagani piezocone used for each CPTu test  
CPTu refusal at 50MPa on the tip, 500kPa on the friction sleeve or at 2500kPa pore pressure

Average Energy Transfer Ratio for the DPSH-B hammer on each rig:

P 001245: 95%  
P 001249: 90%

Calibration performed on 4th November 2014

# CPT TEST LOG

**Job Number:** 18150

**Client:** Aurecon  
**Project:** Prestons Law Block

**Test Label:** CPT105

**Site Location:** Marshland, Christchurch

**Test Date:** 2/05/2018

**Coordinates:** CPT105 (WGS84)

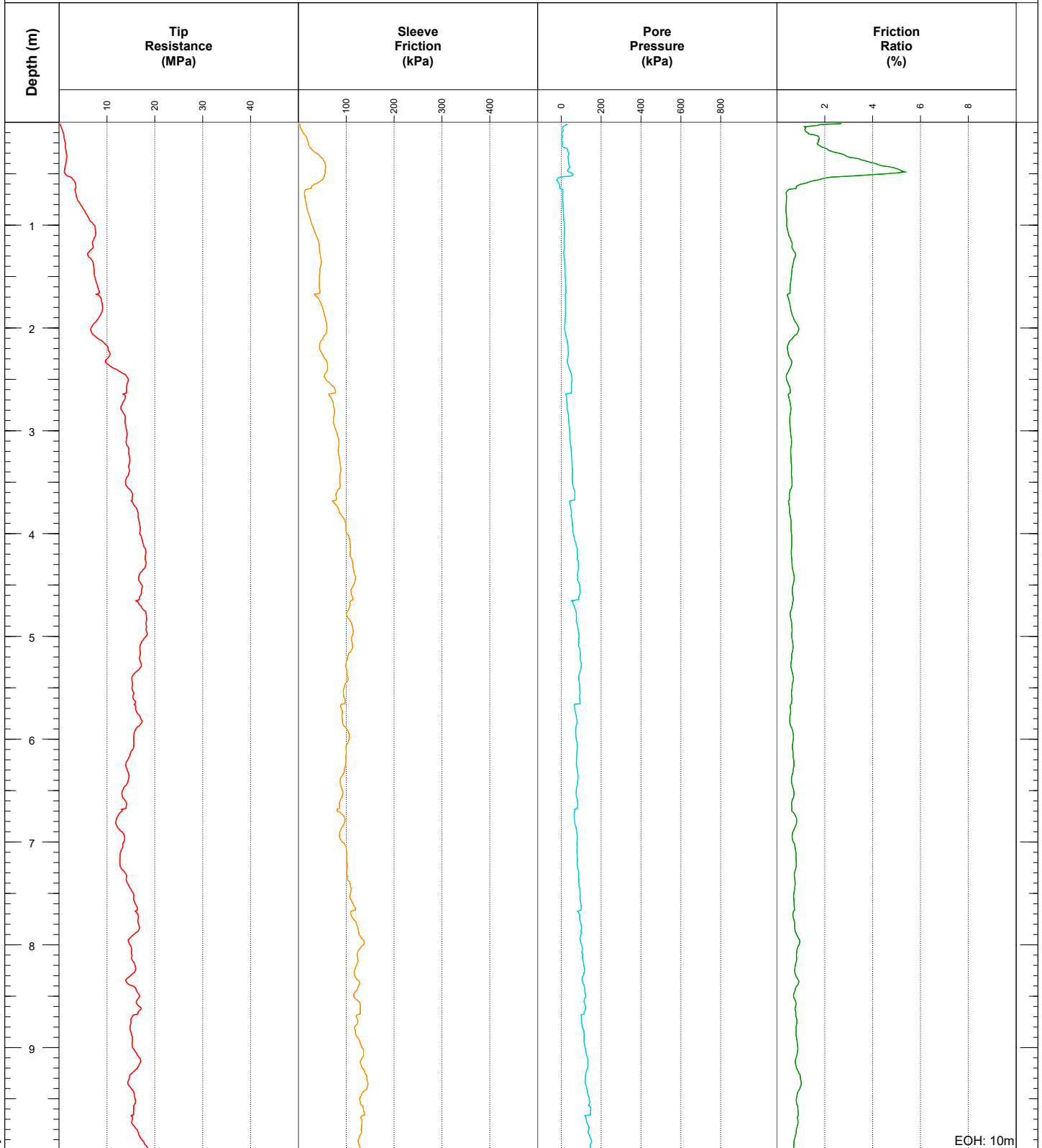
**Supervisor:** Kieran Foote

**Operator:** Gray Lewis

**Piezocone (Rig):** MKJ329 (P001259)

**Hole Depth:** 10m

**EOH Reason:** Target



## Remarks

CPTu testing carried out to ASTM Standard D5778-12  
10cm-sq Pagani piezocone used for each CPTu test  
CPTu refusal at 50MPa on the tip, 500kPa on the friction sleeve or at 2500kPa pore pressure

Average Energy Transfer Ratio for the DPSH-B hammer on each rig:

P 001245: 95%  
P 001249: 90%

Calibration performed on 4th November 2014

# CPT TEST LOG

**Job Number:** 18150

**Client:** Aurecon  
**Project:** Prestons Law Block

**Test Label:** CPT106

**Site Location:** Marshland, Christchurch

**Test Date:** 4/05/2018

**Coordinates:** CPT106 (WGS84)

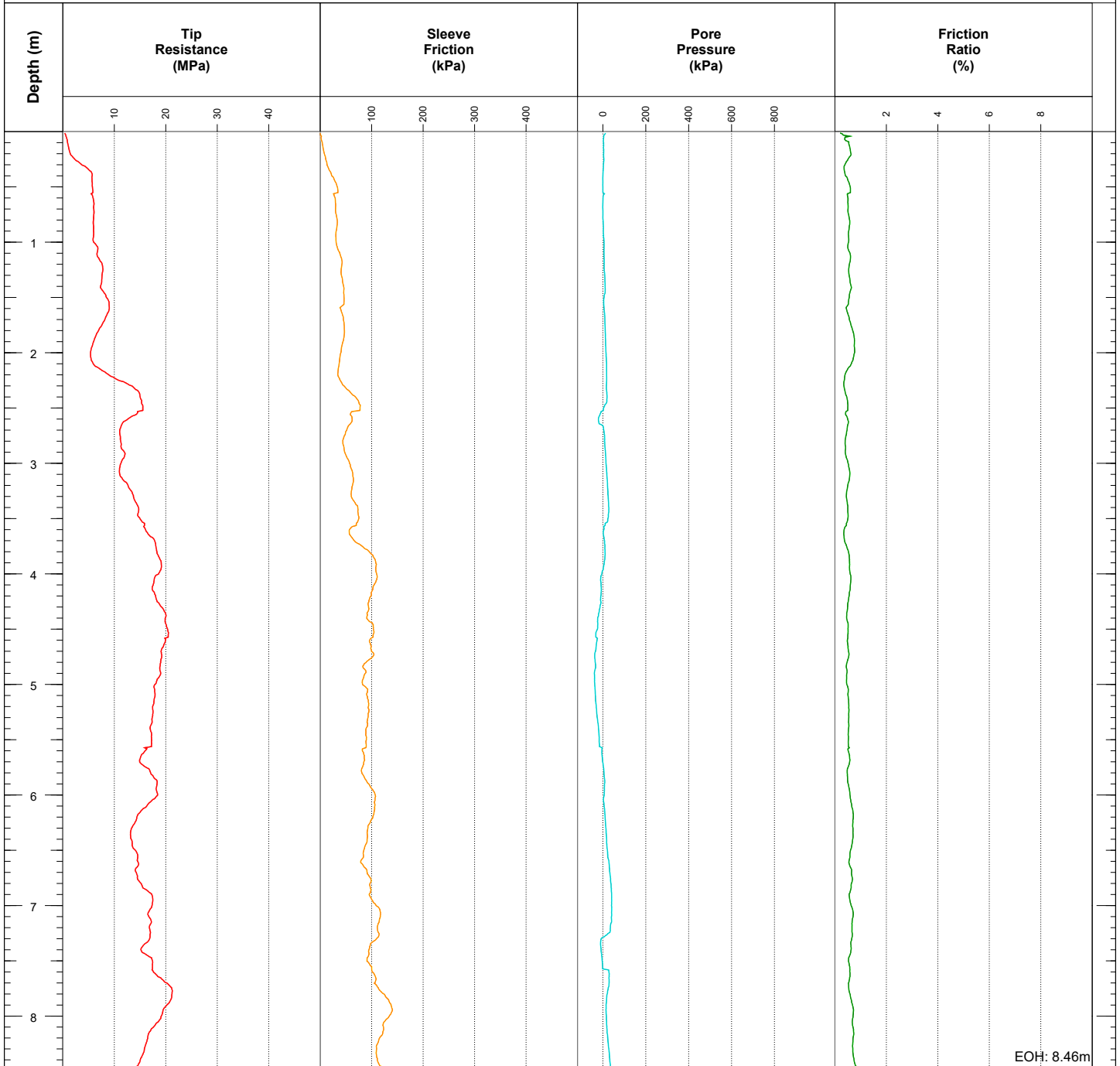
**Supervisor:** Kieran Foote

**Operator:** Gray Lewis

**Piezocone (Rig):** MKJ329 (P001259)

**Hole Depth:** 8.46m

**EOH Reason:** Anchor Refusal



## Remarks

CPTu testing carried out to ASTM Standard D5778-12  
10cm-sq Pagani piezocone used for each CPTu test  
CPTu refusal at 50MPa on the tip, 500kPa on the friction sleeve or at 2500kPa pore pressure

Average Energy Transfer Ratio for the DPSH-B hammer on each rig:

P 001245: 95%  
P 001249: 90%

Calibration performed on 4th November 2014

# CPT TEST LOG

**Job Number:** 18150

**Client:** Aurecon  
**Project:** Prestons Law Block

**Test Label:** CPT107

**Site Location:** Marshland, Christchurch

**Test Date:** 2/05/2018

**Coordinates:** CPT107 (WGS84)

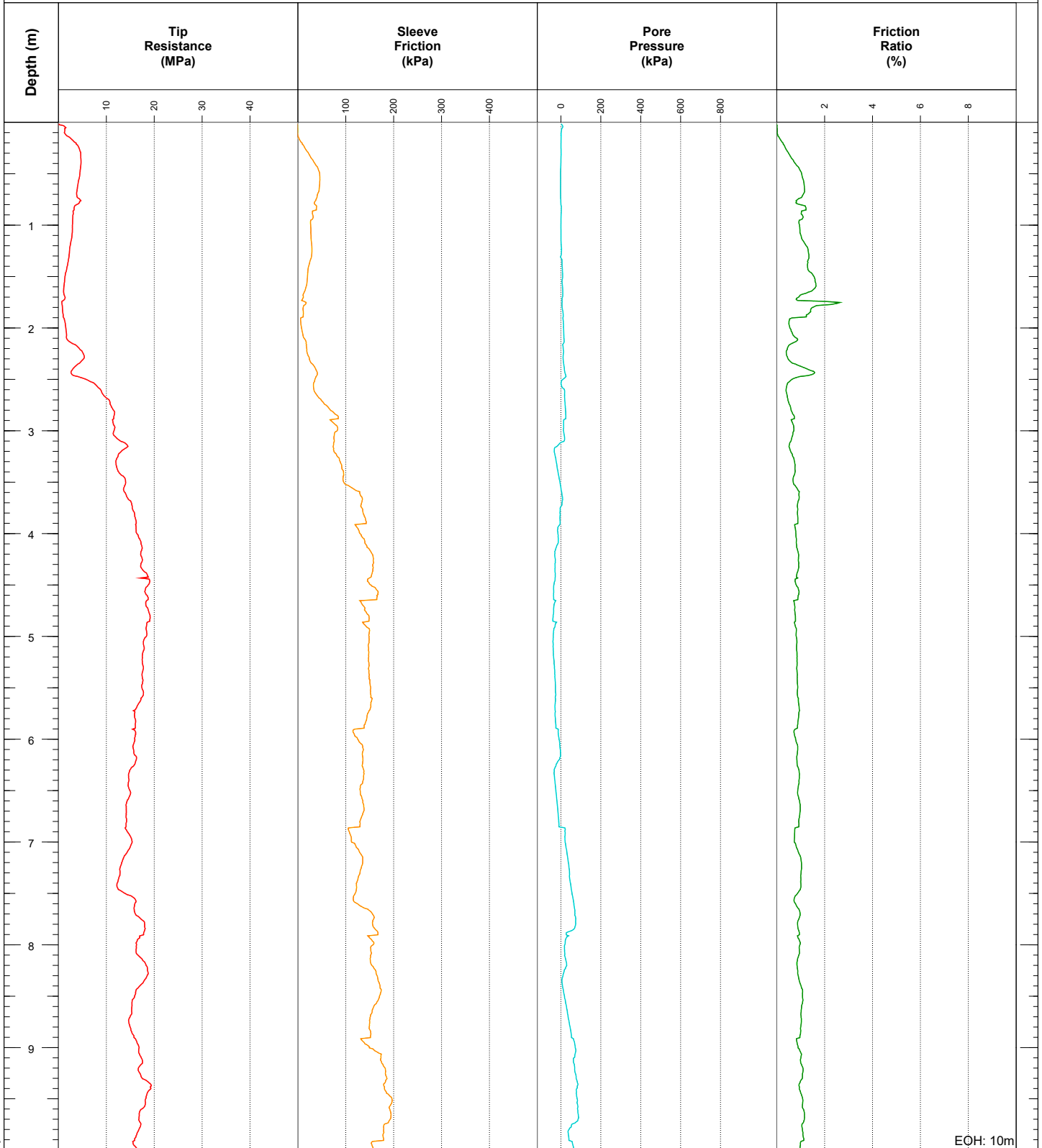
**Supervisor:** Kieran Foote

**Operator:** Mike Wilson

**Piezocone (Rig):** MKJ330 (P001259)

**Hole Depth:** 10m

**EOH Reason:** Target



## Remarks

CPTu testing carried out to ASTM Standard D5778-12  
10cm-sq Pagani piezocone used for each CPTu test  
CPTu refusal at 50MPa on the tip, 500kPa on the friction sleeve or at 2500kPa pore pressure

Average Energy Transfer Ratio for the DPSH-B hammer on each rig:

P 001245: 95%  
P 001249: 90%

Calibration performed on 4th November 2014



# CPT TEST LOG

**Job Number:** 18150

**Client:** Aurecon  
**Project:** Prestons Law Block

**Test Label:** CPT108

**Site Location:** Marshland, Christchurch

**Test Date:** 2/05/2018

**Coordinates:** CPT108 (WGS84)

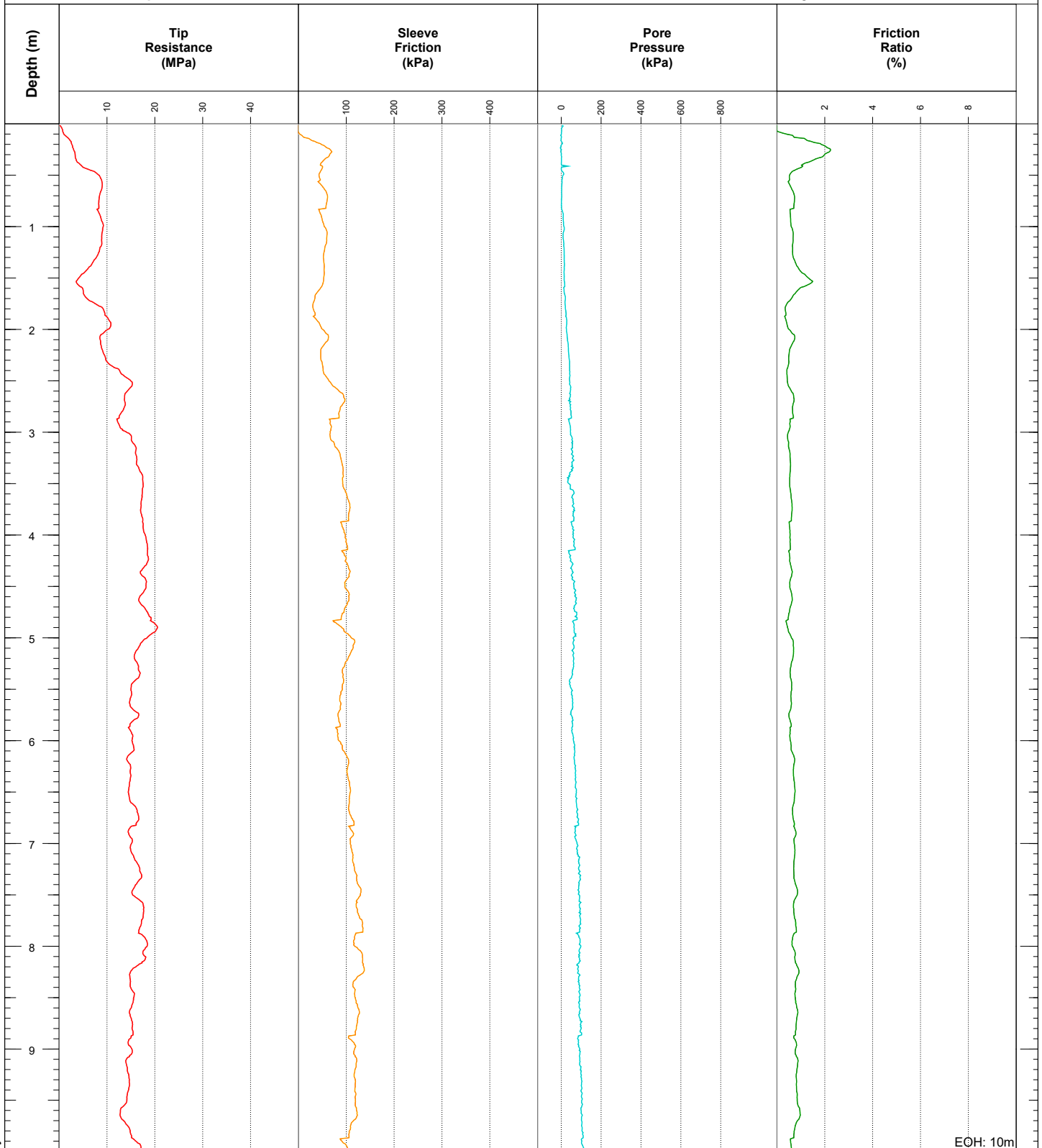
**Supervisor:** Kieran Foote

**Operator:** Mike Wilson

**Piezocone (Rig):** MKJ330 (P001259)

**Hole Depth:** 10m

**EOH Reason:** Target



## Remarks

CPTu testing carried out to ASTM Standard D5778-12  
10cm-sq Pagani piezocone used for each CPTu test  
CPTu refusal at 50MPa on the tip, 500kPa on the friction sleeve or at 2500kPa pore pressure

Average Energy Transfer Ratio for the DPSH-B hammer on each rig:

P 001245: 95%  
P 001249: 90%

Calibration performed on 4th November 2014

# CPT TEST LOG

**Job Number:** 18150

**Client:** Aurecon  
**Project:** Prestons Law Block

**Test Label:** CPT109

**Site Location:** Marshland, Christchurch

**Test Date:** 2/05/2018

**Coordinates:** CPT109 (WGS84)

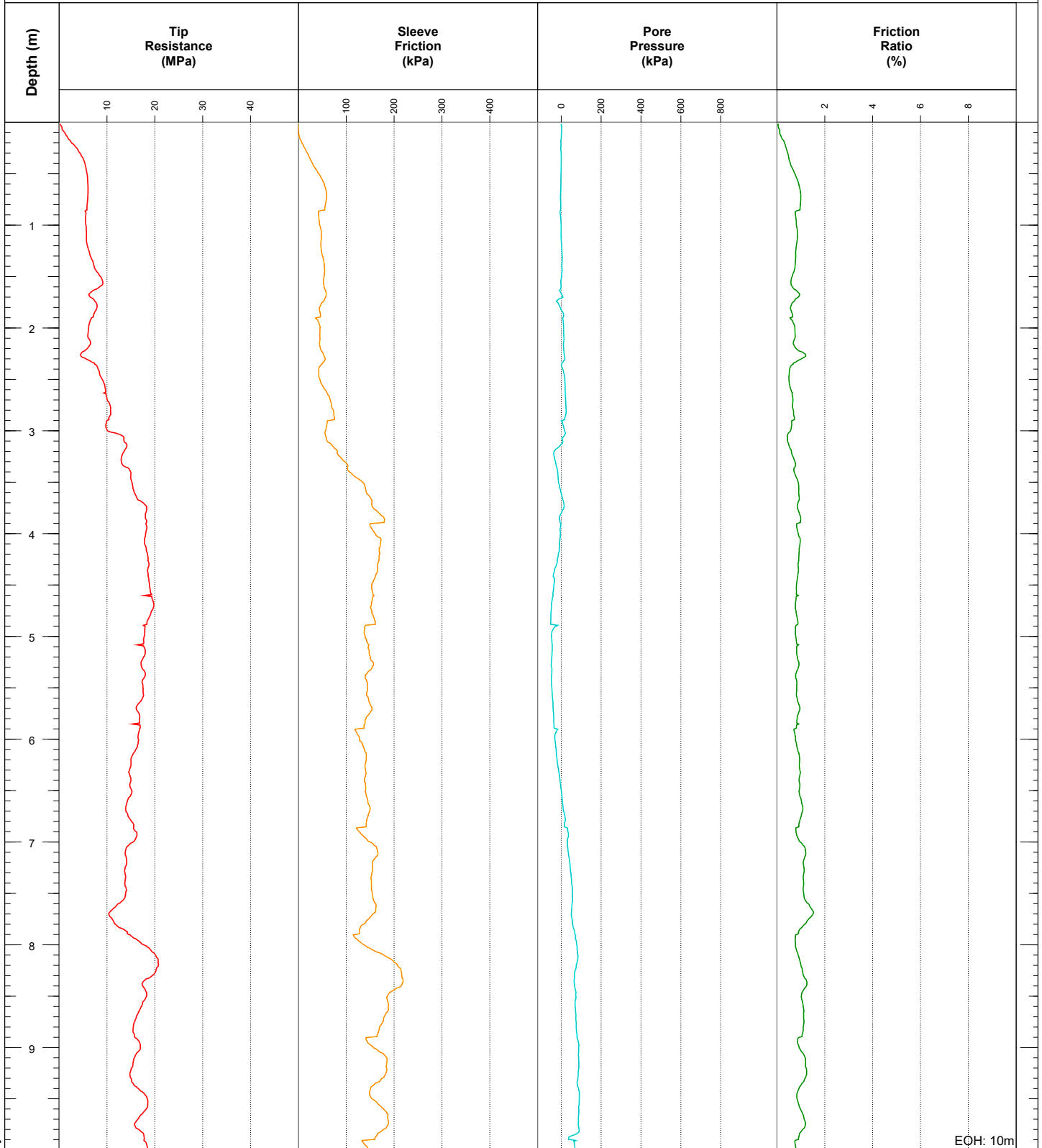
**Supervisor:** Kieran Foote

**Operator:** Mike Wilson

**Piezocone (Rig):** MKJ330 (P001259)

**Hole Depth:** 10m

**EOH Reason:** Target



EOH: 10m

## Remarks

CPTu testing carried out to ASTM Standard D5778-12  
10cm-sq Pagani piezocone used for each CPTu test  
CPTu refusal at 50MPa on the tip, 500kPa on the friction sleeve or at 2500kPa pore pressure

Average Energy Transfer Ratio for the DPSH-B hammer on each rig:

P 001245: 95%  
P 001249: 90%

Calibration performed on 4th November 2014

# CPT TEST LOG

**Job Number:** 18150

**Client:** Aurecon  
**Project:** Prestons Law Block

**Test Label:** CPT110

**Site Location:** Marshland, Christchurch

**Test Date:** 2/05/2018

**Coordinates:** CPT110 (WGS84)

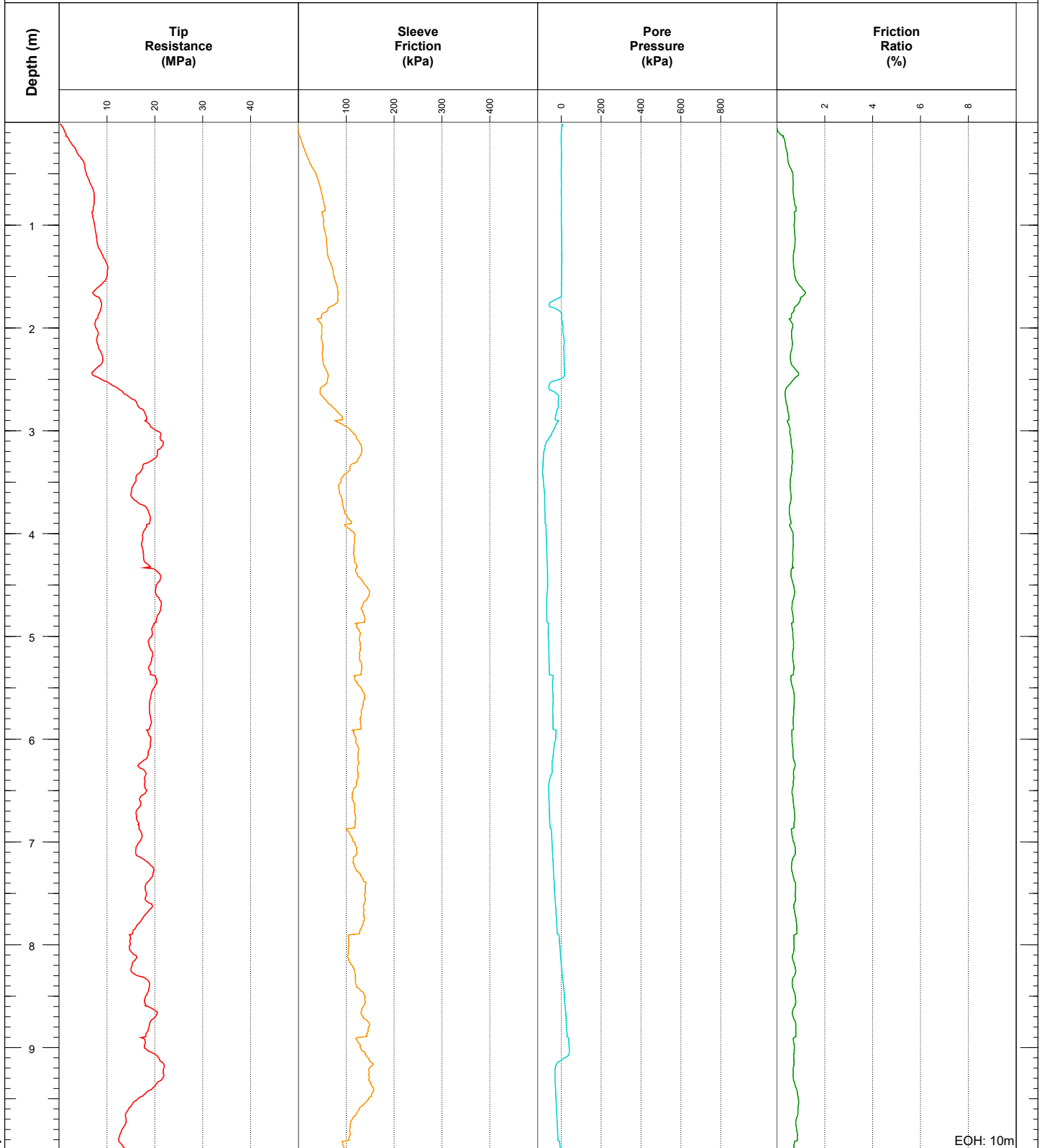
**Supervisor:** Kieran Foote

**Operator:** Mike Wilson

**Piezocone (Rig):** MKJ330 (P001259)

**Hole Depth:** 10m

**EOH Reason:** Target



## Remarks

CPTu testing carried out to ASTM Standard D5778-12  
10cm-sq Pagani piezocone used for each CPTu test  
CPTu refusal at 50MPa on the tip, 500kPa on the friction sleeve or at 2500kPa pore pressure

Average Energy Transfer Ratio for the DPSH-B hammer on each rig:

P 001245: 95%  
P 001249: 90%

Calibration performed on 4th November 2014

# CPT TEST LOG

**Job Number:** 18150

**Client:** Aurecon  
**Project:** Prestons Law Block

**Test Label:** CPT111

**Site Location:** Marshland, Christchurch

**Test Date:** 3/05/2018

**Coordinates:** CPT111 (WGS84)

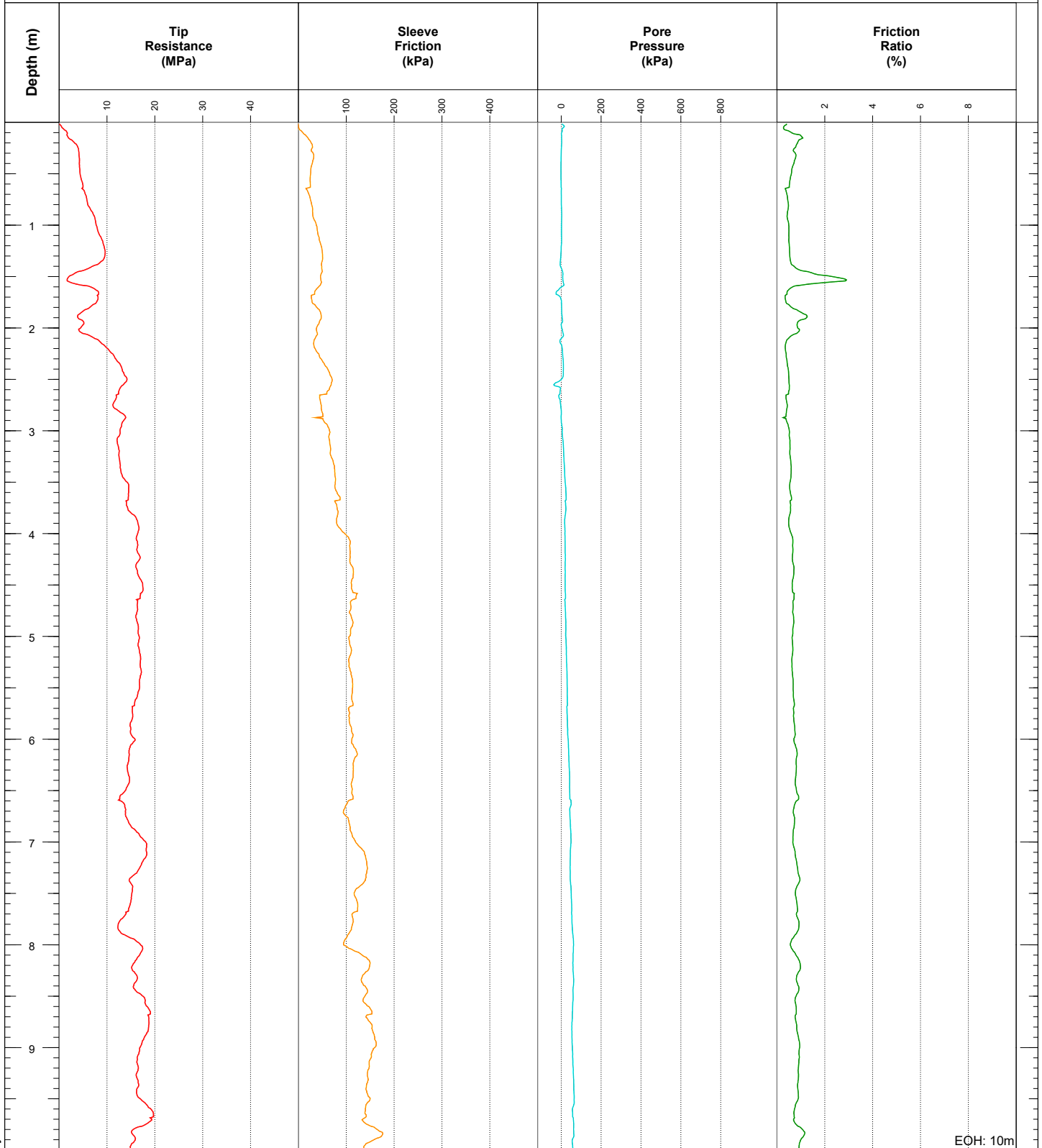
**Supervisor:** Kieran Foote

**Operator:** Edwin Diaz

**Piezocone (Rig):** MKJ329 (P001259)

**Hole Depth:** 10m

**EOH Reason:** Target



EOH: 10m

## Remarks

CPTu testing carried out to ASTM Standard D5778-12  
10cm-sq Pagani piezocone used for each CPTu test  
CPTu refusal at 50MPa on the tip, 500kPa on the friction sleeve or at 2500kPa pore pressure

Average Energy Transfer Ratio for the DPSH-B hammer on each rig:

P 001245: 95%  
P 001249: 90%

Calibration performed on 4th November 2014

# CPT TEST LOG

**Job Number:** 18150

**Client:** Aurecon  
**Project:** Prestons Law Block

**Test Label:** CPT112

**Site Location:** Marshland, Christchurch

**Test Date:** 3/05/2018

**Coordinates:** CPT112 (WGS84)

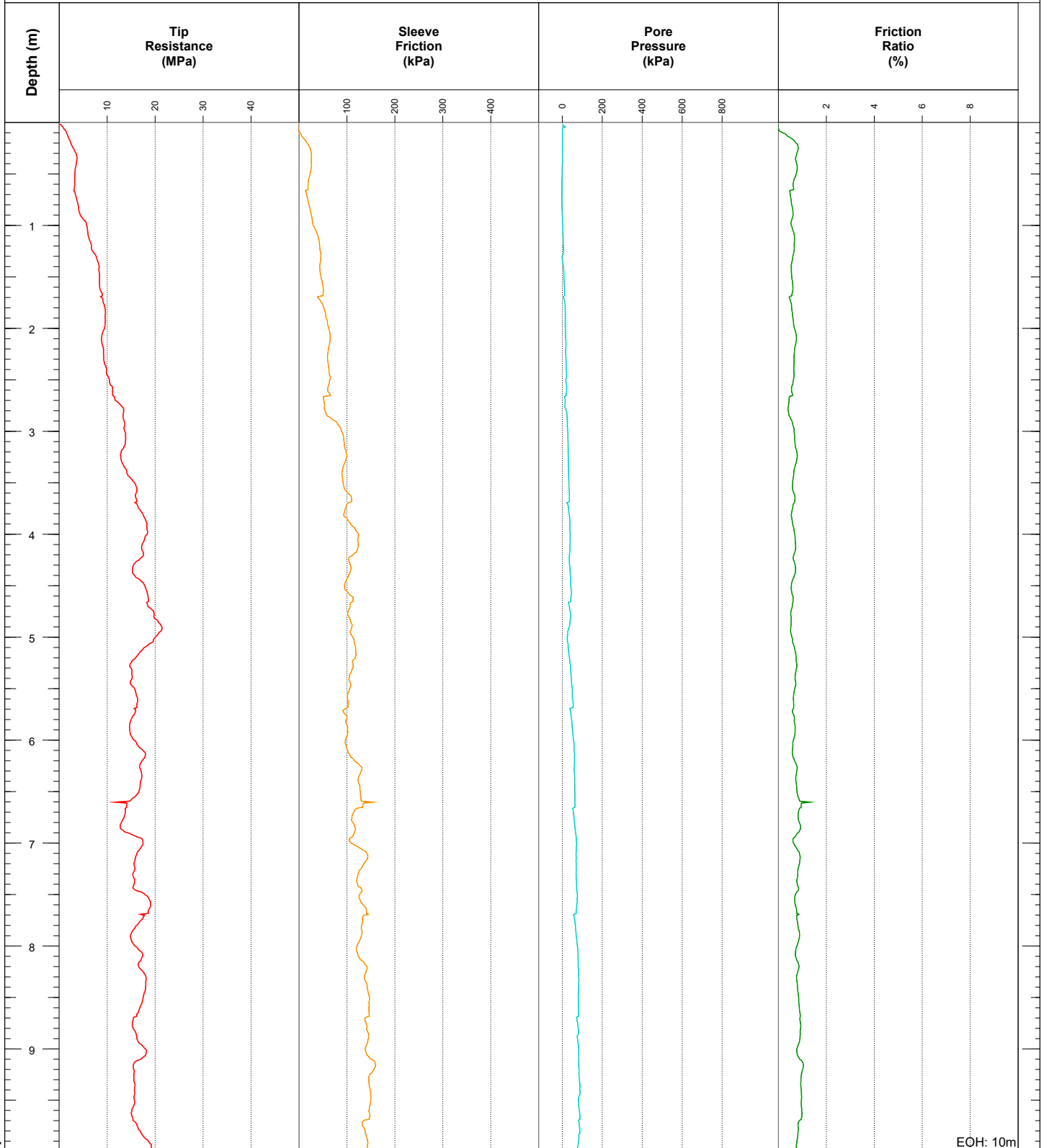
**Supervisor:** Kieran Foote

**Operator:** Edwin Diaz

**Piezocone (Rig):** MKJ329 (P001259)

**Hole Depth:** 10m

**EOH Reason:** Target



## Remarks

CPTu testing carried out to ASTM Standard D5778-12  
10cm-sq Pagani piezocone used for each CPTu test  
CPTu refusal at 50MPa on the tip, 500kPa on the friction sleeve or at 2500kPa pore pressure

Average Energy Transfer Ratio for the DPSH-B hammer on each rig:

P 001245: 95%  
P 001249: 90%

Calibration performed on 4th November 2014

# CPT TEST LOG

Job Number: 18150

Client: Aurecon  
Project: Prestons Law Block

Test Label: CPT113

Site Location: Marshland, Christchurch

Test Date: 3/05/2018

Coordinates: CPT113 (WGS84)

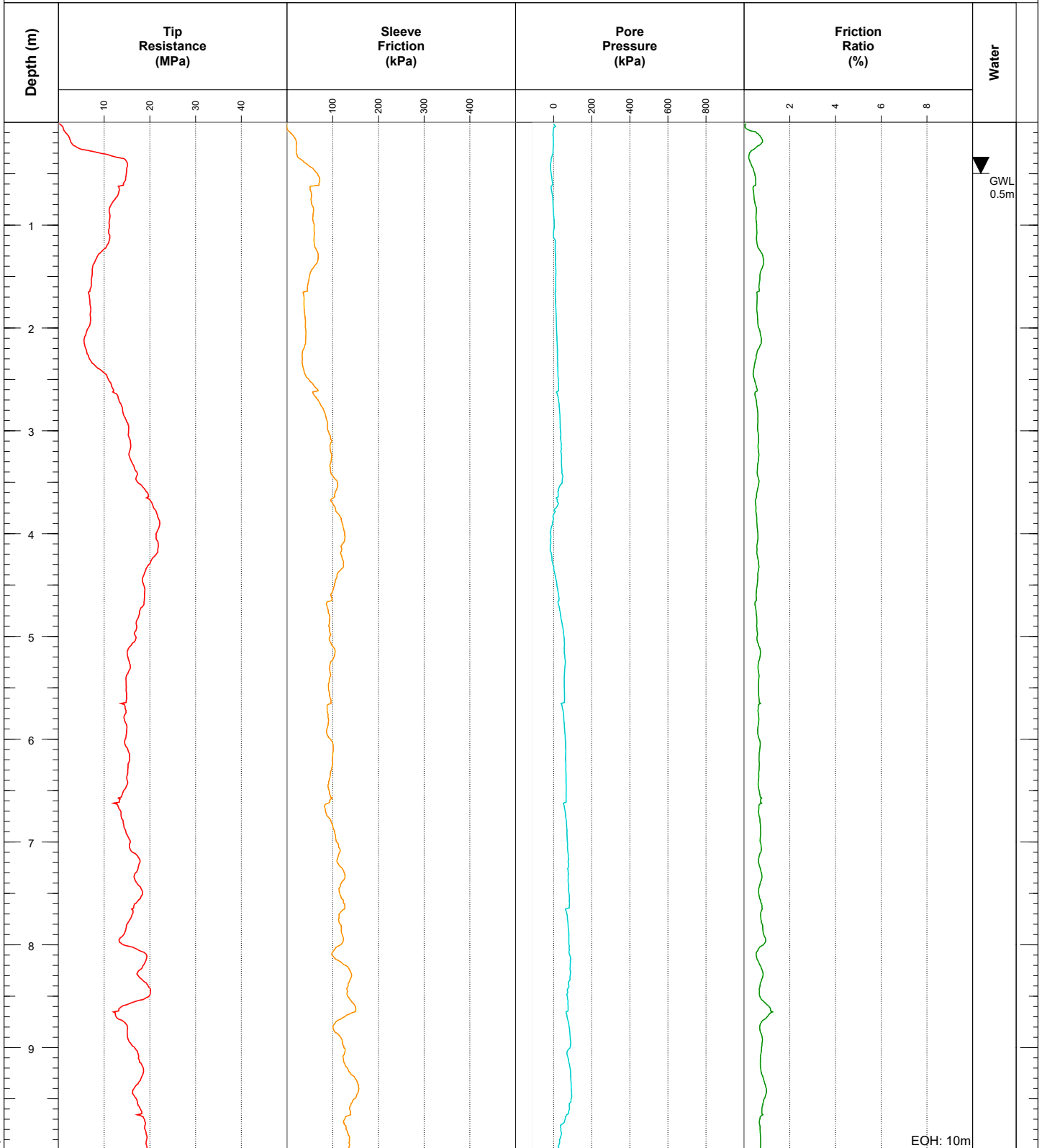
Supervisor: Kieran Foote

Operator: Edwin Diaz

Piezocone (Rig): MKJ329 (P001259)

Hole Depth: 10m

EOH Reason: Target



## Remarks

CPTu testing carried out to ASTM Standard D5778-12  
10cm-sq Pagani piezocone used for each CPTu test  
CPTu refusal at 50MPa on the tip, 500kPa on the friction sleeve or at 2500kPa pore pressure

Average Energy Transfer Ratio for the DPSH-B hammer on each rig:

P 001245: 95%  
P 001249: 90%

Calibration performed on 4th November 2014

# CPT TEST LOG

**Job Number:** 18150

**Client:** Aurecon  
**Project:** Prestons Law Block

**Test Label:** CPT114

**Site Location:** Marshland, Christchurch

**Test Date:** 3/05/2018

**Coordinates:** CPT114 (WGS84)

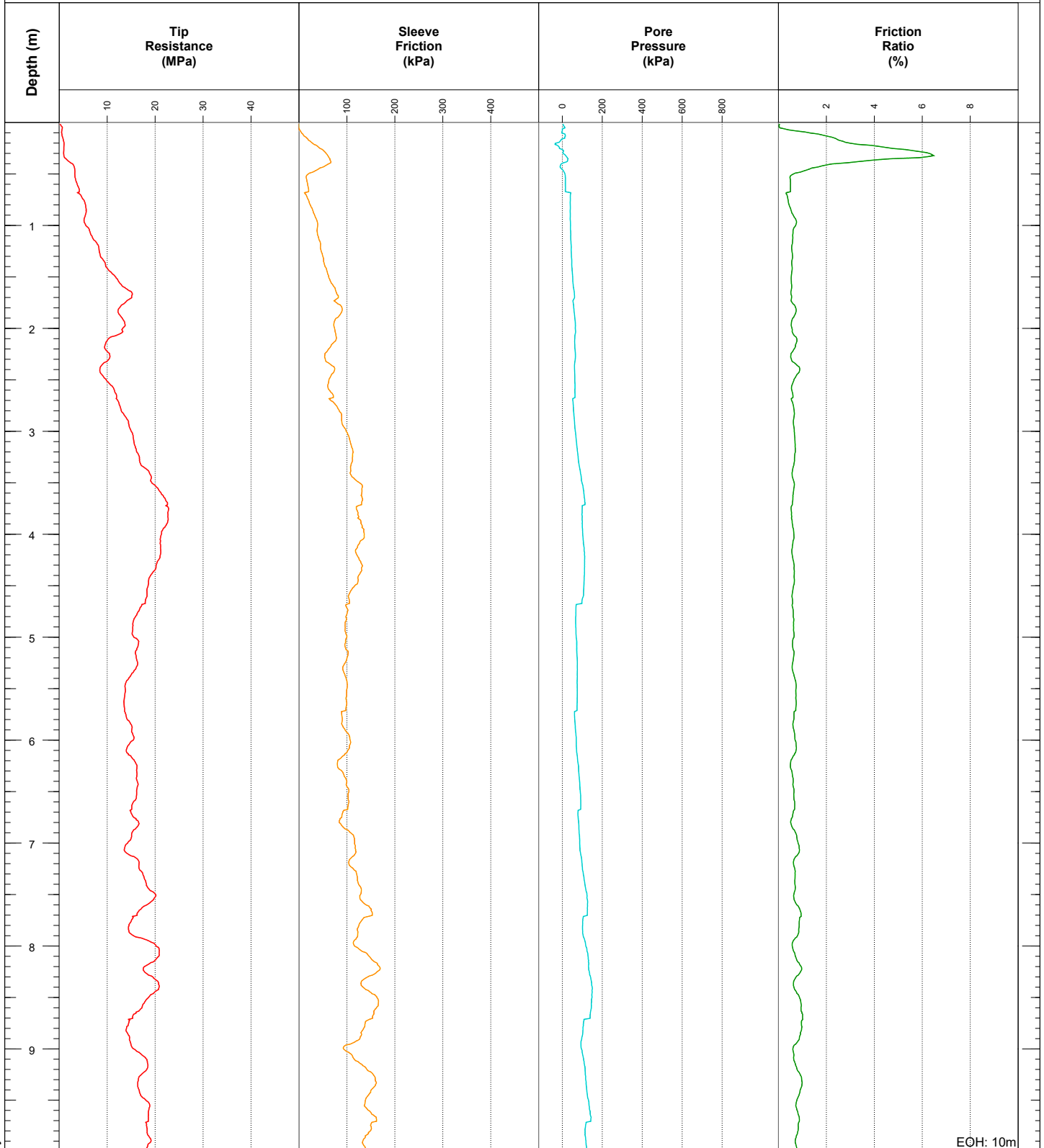
**Supervisor:** Kieran Foote

**Operator:** Edwin Diaz

**Piezocone (Rig):** MKJ329 (P001259)

**Hole Depth:** 10m

**EOH Reason:** Target



## Remarks

CPTu testing carried out to ASTM Standard D5778-12  
10cm-sq Pagani piezocone used for each CPTu test  
CPTu refusal at 50MPa on the tip, 500kPa on the friction sleeve or at 2500kPa pore pressure

Average Energy Transfer Ratio for the DPSH-B hammer on each rig:

P 001245: 95%  
P 001249: 90%

Calibration performed on 4th November 2014

# Appendix D

## 2018 Borehole Logs (Aurecon)



# BOREHOLE RECORD

HOLE NO. **BH101**

PROJECT NO. **235361-070**

PROJECT **Law Block**  
**Prestons South Subdivision**

METHOD **Borehole**

CO-ORDINATES (NZTM)

SHEET **1** of **1**

MACHINE & NO.

**E 1573625**

DATE from **10/05/2018** to **10/05/2018**

**N 5185951**

FLUSHING MEDIUM

ORIENTATION **VERTICAL**

GROUND-LEVEL **+12.92** m RL

Drilling Progress	Casing depth/size	Water level (m) shift start/end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	STRATA DESCRIPTION <small>SUBORDINATE FRACTION, MAJOR FRACTION, MINOR FRACTION, COLOUR, STRUCTURE, STRENGTH, MOISTURE CONDITION, GRADING, BEDDING, PLASTICITY, ETC. (NZ GEOTECHNICAL SOCIETY - FIELD DESCRIPTION OF SOIL AND ROCK)</small>
				80					Type Ref Depth		0.00		
									BH		+12.82		Silty fine to medium SAND; dark brown. Moist; silt, low plasticity. (TOPSOIL)
				100							1.00		Fine to coarse SAND with minor silt; light brown. Moist. 0.50m Becomes with trace silt.
									BH				1.00m Becomes light greyish brown.
				100							2.50		1.50m Becomes grey, wet.
									BH				2.40m - 2.50m Becomes with some organic silt; dark brown. Saturated, low plasticity, slightly odorous.
				100							4.00		
									BH				
				100							5.50		
									BH				
				100							7.00		
									BH				
				100							8.50		
									BH				
											10.00		
											+2.92		End of Borehole at 10.00m, on 10/05/2018 Termination Reason: Target depth reached.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- Thin Wall Undisturbed Sample
- U100 Undisturbed Sample
- Pocket Penetrometer Test
- Piston Sample
- Water Level
- Impression Packer Test
- Standard Penetration Test
- Permeability Test
- Piezometer / Standpipe Tip
- Packer Test
- In-situ Vane Shear Test

LOGGED **C. WILSON**

DATE **10/05/2018**

CHECKED **K. FOOTE**

DATE **25/06/2018**

## REMARKS

Groundwater level not recorded at time of drilling.  
Coordinates taken from site survey, likely accurate to +/-5m.  
Elevation taken from site survey, likely accurate to +/-200mm.

# BOREHOLE RECORD

HOLE NO. **BH102**

PROJECT NO. **235361-070**

PROJECT **Law Block**  
**Prestons South Subdivision**

METHOD **Borehole**

CO-ORDINATES (NZTM)

SHEET **1** of **1**

MACHINE & NO.

**E 1573848**

DATE from **10/05/2018** to **10/05/2018**

**N 5186106**

FLUSHING MEDIUM

ORIENTATION **VERTICAL**

GROUND-LEVEL **+12.03** m RL

## STRATA DESCRIPTION

SUBORDINATE FRACTION, MAJOR FRACTION, MINOR FRACTION, COLOUR, STRUCTURE, STRENGTH, MOISTURE CONDITION, GRADING, BEDDING, PLASTICITY, ETC.  
(NZ GEOTECHNICAL SOCIETY - FIELD DESCRIPTION OF SOIL AND ROCK)

Drilling Progress	Casing depth/size	Water level (m) shift start/end	Water Recovery %	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	STRATA DESCRIPTION
				80					Type Ref Depth		0.00		
									BH	+11.73	0.30		Sandy SILT; dark brown. Moist, low plasticity; sand, fine to medium. (TOPSOIL)
				100									Fine to coarse SAND with trace silt; light brown. Moist.
									BH		1.00		1.00m Becomes light brownish grey.
									BH		1.40m		1.40m Becomes grey, wet.
				100							2.50		2.20m Becomes saturated.
									BH		4.00		
				100							5.50		
									BH		7.00		7.10m - 7.40m Becomes with some silt lenses; grey. Low plasticity.
				100							8.50		7.40m Becomes with minor silt.
									BH		10.00		8.50m Becomes with trace silt.
													End of Borehole at 10.00m, on 10/05/2018
													Termination Reason: Target depth reached.

- Small Disturbed Sample
- Large Disturbed Sample
- SPT Liner Sample
- Thin Wall Undisturbed Sample
- U100 Undisturbed Sample
- Pocket Penetrometer Test
- Piston Sample
- Water Level
- Impression Packer Test
- Standard Penetration Test
- Permeability Test
- Piezometer / Standpipe Tip
- Packer Test
- In-situ Vane Shear Test

LOGGED **C. WILSON**

DATE **10/05/2018**

CHECKED **K. FOOTE**

DATE **25/06/2018**

## REMARKS

Groundwater level not recorded at time of drilling.  
Coordinates taken from site survey, likely accurate to +/-5m.  
Elevation taken from site survey, likely accurate to +/-200mm.

# NZ GEOTECHNICAL SOCIETY INC

# ROCK > field guide sheet



FIELD DESCRIPTION OF ROCK

**SEQUENCE OF TERMS** – weathering – colour – fabric – rock name – strength – discontinuities – additional

## SCALE OF ROCK MASS WEATHERING

Term	Grade	Abbreviation	Description
Unweathered (fresh rock)	I	UW	Rock mass shows no loss of strength, discolouration or other effects due to weathering. There may be slight discolouration on major rock mass defect surfaces or on clasts.
Slightly Weathered	II	SW	The rock mass is not significantly weaker than when fresh. Rock may be discoloured along defects, some of which may have been opened slightly.
Moderately Weathered	III	MW	The rock mass is significantly weaker than the fresh rock and part of the rock mass may have been changed to a soil. Rock material may be discoloured and defect and clast surfaces will have a greater discolouration, which also penetrates slightly into the rock material. Increase in density of defects due to physical disintegration.
Highly Weathered	IV	HW	Most of the original rock mass strength is lost. Material is discoloured and more than half the mass is changed to a soil by chemical decomposition or disintegration (increase in density of defects/fractures). Decomposition adjacent to defects and at the surface of clasts penetrates deeply into the rock material. Lithorelicts or corestones of unweathered or slightly weathered rock may be present.
Completely Weathered	V	CW	Original rock strength is lost and the rock mass changed to a soil either by decomposition (with some rock fabric preserved) or by physical disintegration.
Residual Soil	VI	RS	Rock is completely changed to a soil with the original fabric destroyed (pedological soil).

## ROCK STRENGTH TERMS

Term	Field Identification of Specimen	Unconfined uniaxial compressive strength $q_u$ (MPa)	Point load strength $I_{S(50)}$ (MPa)
Extremely strong	Can only be chipped with geological hammer	> 250	>10
Very strong	Requires many blows of geological hammer to break it	100 – 250	5 – 10
Strong	Requires more than one blow of geological hammer to fracture it	50 – 100	2 – 5
Moderately strong	Cannot be scraped or peeled with a pocket knife. Can be fractured with single firm blow of geological hammer	20 – 50	1 – 2
Weak	Can be peeled by a pocket knife with difficulty. Shallow indentations made by firm blow with point of geological hammer	5 – 20	<1
Very weak	Crumbles under firm blows with point of geological hammer. Can be peeled by a pocket knife	1 – 5	
Extremely weak (soil description required)	Indented by thumb nail or other lesser strength terms used for soils	<1	

Note: • No correlation is implied between  $q_u$  and  $I_{S(50)}$

## SPACING OF DEFECTS/ DISCONTINUITIES

Term	Spacing
Very widely spaced	>2 m
Widely spaced	600 mm – 2 m
Moderately widely spaced	200 mm – 600 mm
Closely spaced	60 mm – 200 mm
Very closely spaced	20 mm – 60 mm
Extremely closely spaced	<20 mm

## APERTURE OF DISCONTINUITY SURFACES

Term	Aperture (mm)	Description
Tight	Nil	Closed
Very Narrow	> 0 – 2	
Narrow	2 – 6	
Moderately Narrow	6 – 20	Gapped
Moderately Wide	20 – 60	
Wide	60 – 200	
Very Wide	> 200	Open

## BEDDING THICKNESS TERMS

Term	Bed Thickness
Thinly laminated	< 2 mm
Laminated	2 mm - 6 mm
Very thin	6 mm - 20 mm
Thin	20 mm - 60 mm
Moderately thin	60 mm - 200 mm
Moderately thick	0.2 m - 0.6 m
Thick	0.6 m - 2 m
Very thick	> 2 m

## BEDDING INCLINATION TERMS

Term	Inclination (from horizontal)
Sub-horizontal	0° – 5°
Gently inclined	6° – 15°
Moderately inclined	16° – 30°
Steeply inclined	31° – 60°
Very steeply inclined	61° – 80°
Sub-vertical	81° – 90°

## ROUGHNESS AND APERTURE

I	rough	STEPPED
II	smooth	
III	slickensided	
IV	rough	UNDULATING
V	smooth	
VI	slickensided	
VII	rough	PLANAR
VIII	smooth	
IX	slickensided	





# SOIL

## > field guide sheet

FIELD DESCRIPTION OF SOIL

SEQUENCE OF TERMS – fraction – colour – structure – strength – moisture – bedding – plasticity – sensitivity – additional

### GRAIN SIZE CRITERIA

TYPE	COARSE								FINE		ORGANIC
	Boulders	Cobbles	Gravel			Sand			Silt	Clay	Organic Soil
			coarse	medium	fine	coarse	medium	fine			
Size Range (mm)	200	60	20	6	2	0.6	0.2	0.06	0.002		
Graphic Symbol											

### PROPORTIONAL TERMS DEFINITION (COARSE SOILS)

Fraction	Term	% of Soil Mass	Example
Major	(...) [UPPER CASE]	≥ 50 [major constituent]	GRAVEL
Subordinate	(...) y [lower case]	20 – 50	Sandy
Minor	with some ... with minor ...	12 – 20 5 – 12	with some sand with minor sand
	with trace of (or slightly)...	< 5	with trace of sand (slightly sandy)

### DENSITY INDEX (RELATIVE DENSITY) TERMS

Descriptive Term	Density Index ( $R_D$ )	SPT "N" value (blows / 300 mm)	Dynamic Cone (blows / 100 mm)
Very dense	> 85	> 50	> 17
Dense	65 – 85	30 – 50	7 – 17
Medium dense	35 – 65	10 – 30	3 – 7
Loose	15 – 35	4 – 10	1 – 3
Very loose	< 15	< 4	0 – 2

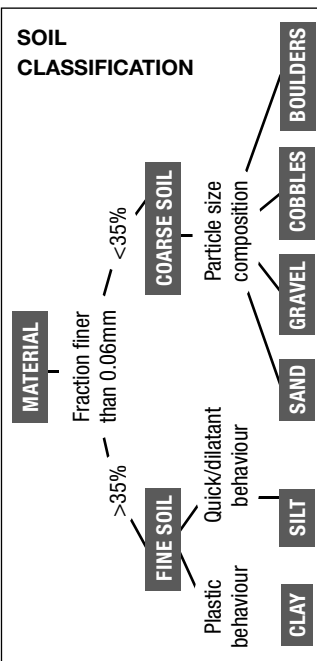
Note: • No correlation is implied between Standard Penetration Test (SPT) and Dynamic Cone Test values.  
• SPT "N" values are uncorrected. • Dynamic Cone Penetrometer (Scala)

### ORGANIC SOILS/ DESCRIPTORS

Term	Description
Topsoil	Surficial organic soil layer that may contain living matter. However topsoil may occur at greater depth, having been buried by geological processes or man-made fill, and should then be termed a buried topsoil.
Organic clay, silt or sand	Contains finely divided organic matter; may have distinctive smell; may stain; may oxidise rapidly. Describe as for inorganic soils.
Peat	Consists predominantly of plant remains. <b>Firm:</b> Fibres already compressed together <b>Spongy:</b> Very compressible and open structure <b>Plastic:</b> Can be moulded in hand and smears in fingers <b>Fibrous:</b> Plant remains recognisable and retain some strength <b>Amorphous:</b> No recognisable plant remains
Roolets	Fine, partly decomposed roots, normally found in the upper part of a soil profile or in a redeposited soil (e.g. colluvium or fill)
Carbonaceous	Discrete particles of hardened (carbonised) plant material.

### PLASTICITY (CLAYS & SILTS)

Term	Description
High plasticity	Can be moulded or deformed over a wide range of moisture contents without cracking or showing any tendency to volume change
Low plasticity	When moulded can be crumbled in the fingers; may show quick or dilatant behaviour



### CONSISTENCY TERMS FOR COHESIVE SOILS

Descriptive Term	Undrained Shear Strength (kPa)	Diagnostic Features
Very soft	< 12	Easily exudes between fingers when squeezed
Soft	12 – 25	Easily indented by fingers
Firm	25 – 50	Indented by strong finger pressure and can be indented by thumb pressure
Stiff	50 – 100	Cannot be indented by thumb pressure
Very stiff	100 – 200	Can be indented by thumb nail
Hard	200 – 500	Difficult to indent by thumb nail

### MOISTURE CONDITION

Condition	Description	Granular Soils	Cohesive Soils
Dry	Looks and feels dry	Run freely through hands	Hard, powdery or friable
Moist	Feels cool, darkened in colour	Tend to cohere	Weakened by moisture, but no free water on hands when remoulding
Wet			Weakened by moisture, free water forms on hands when handling
Saturated	Feels cool, darkened in colour and free water is present on the sample		

### GRADING (GRAVELS & SANDS)

Term	Description
Well graded	Good representation of all particle sizes from largest to smallest
Poorly graded	Limited representation of grain sizes - further divided into:
	Uniformly graded Most particles about the same size
	Gap graded Absence of one or more intermediate sizes

### NZ GEOTECHNICAL SOCIETY INC

This field sheet has been taken from and should be used and read with reference to the document FIELD DESCRIPTION OF SOIL AND ROCK. Guideline For the Field Classification and Description of Soil and Rock for Engineering Purposes. NZ Geotechnical Society Inc, December 2005. [www.nzgeotechsoc.org.nz](http://www.nzgeotechsoc.org.nz)

## Appendix E

### 2017 Test Pit Logs (Aurecon)

# TEST PIT RECORD

 TEST PIT NO. **TP1**

 PROJECT NO. **235361-091**

 PROJECT **Prestons Subdivision - Law Block**  
**Burwood, Christchurch**

 METHOD **TP**

CO-ORDINATES (NZTM)

 LOGGED  
**J. MARTIN**

 CHECKED  
**T. PLUNKET**

 MACHINE & NO. **20T Excavator**
**E 1573764**  
**N 5185933**

 DATE  
**13/07/2017**



 DATE  
**20/07/2017**

 CONTRACTOR **KB Contractors Ltd.**

 GROUND LEVEL **+12.22** m RL

## STRATA

## SAMPLES & TESTS



Depth (m)	Legend	Description	Depth	No	Remarks/Tests
0.30		Fine to coarse SAND with minor silt and trace of rootlets; dark brown. Moist. (TOPSOIL)			
		Fine to coarse SAND; light grey. Moist.			
		1.10 Branch encountered.			
		1.60 Becomes bluish grey and wet. Water seep.			
3.10		End of Trial pit/trench at 3.10m, on 13/07/2017 <i>Termination Reason:</i> Target depth reached.			

## GENERAL REMARKS

 SHORING/SUPPORT: **None**  
 STABILITY:

**Groundwater seep at 1.6m.**  
**Groundwater seep at 3.0m.**  
**Co-ordinates and elevation from site survey.**  
**Elevation based on Christchurch City Council Drainage Datum.**

All dimensions in metres

 CLIENT **CDL Land New Zealand Ltd.**
 **Pocket Penetrometer Test**  
 **Insitu Vane Shear Test**
 **Water Level**

# TEST PIT RECORD

 TEST PIT NO. **TP2**

 PROJECT NO. **235361-091**

 PROJECT **Prestons Subdivision - Law Block**  
**Burwood, Christchurch**

 METHOD **TP**

CO-ORDINATES (NZTM)

**E 1573620**
**N 5185904**

LOGGED

**J. MARTIN**

CHECKED

**T. PLUNKET**

 MACHINE & NO. **20T Excavator**

 CONTRACTOR **KB Contractors Ltd.**

 GROUND LEVEL **+12.81** m RL

DATE

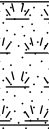





**13/07/2017**

DATE

**20/07/2017**

## STRATA

## SAMPLES & TESTS

Depth (m)	Legend	Description	Depth	No	Remarks/Tests
0.40		Fine to coarse SAND with trace of roots and rootlets; brown. Dry. (TOPSOIL)			
		Fine to coarse SAND; light brown. Moist. 0.50 - 0.90 with minor silt; brown.  1.00 Becomes light grey.  1.50 Becomes light grey mottled light brown.  2.00 Becomes bluish grey and wet.			
2.10		Silty PEAT; dark brown. Wet, firm, fibrous, slightly odorous.			
2.15		PEAT; dark brown. Wet, spongy, amorphous, slightly odorous.			
2.20		Fine to coarse SAND; bluish grey. Wet.			
3.20					
		End of Trial pit/trench at 3.20m, on 13/07/2017 <i>Termination Reason:</i> Target depth reached.			



## GENERAL REMARKS

 SHORING/SUPPORT: **None**

STABILITY:

**Groundwater seep at 2.5m.**
**Groundwater seep at 3.2m.**
**Co-ordinates retrieved from Google Earth and are approximate only.**
**Elevation from site survey and is based on Christchurch City Council Drainage Datum.**

All dimensions in metres

 CLIENT **CDL Land New Zealand Ltd.**
 Pocket Penetrometer Test  
 Insitu Vane Shear Test

 Water Level

# TEST PIT RECORD

TEST PIT NO. **TP3**

PROJECT NO. **235361-091**

PROJECT **Prestons Subdivision - Law Block**  
**Burwood, Christchurch**

METHOD **TP**

CO-ORDINATES (NZTM)

LOGGED  
**J. MARTIN**

CHECKED  
**T. PLUNKET**

MACHINE & NO. **20T Excavator**
**E 1573564**  
**N 5185912**

DATE  
**13/07/2017**





DATE  
**20/07/2017**

CONTRACTOR **KB Contractors Ltd.**

GROUND LEVEL **+13.97** m RL

## STRATA

## SAMPLES & TESTS



Depth (m)	Legend	Description	Depth	No	Remarks/Tests
0.30		Fine to coarse SAND with trace of silt and rootlets; brown. Dry. (TOPSOIL)			
1.80		Fine to coarse SAND with trace of roots and rootlets; light brown. Moist.  0.65 Becomes light grey.			
1.90		Silty PEAT; dark brown. Moist, fibrous, firm, slightly odorous.			
3.20		Fine to coarse SAND; grey. Wet.  2.10 Becomes bluish grey.			
		End of Trial pit/trench at 3.20m, on 13/07/2017 <i>Termination Reason:</i> Target depth reached.			

## GENERAL REMARKS

SHORING/SUPPORT: **None**  
STABILITY:

**Groundwater seep at 2.6m.**  
**Co-ordinates and elevation from site survey.**  
**Elevation based on Christchurch City Council Drainage Datum.**

All dimensions in metres

CLIENT **CDL Land New Zealand Ltd.**
 Pocket Penetrometer Test  
 Insitu Vane Shear Test

 Water Level



# TEST PIT RECORD

TEST PIT NO. **TP4**

PROJECT NO. **235361-091**

PROJECT **Prestons Subdivision - Law Block**  
**Burwood, Christchurch**

METHOD **TP**

CO-ORDINATES (NZTM)

LOGGED  
**J. MARTIN**

CHECKED  
**T. PLUNKET**

MACHINE & NO. **20T Excavator**
**E 1573630**
**N 5186075**

DATE  
**13/07/2017**

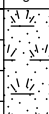




DATE  
**20/07/2017**

CONTRACTOR **KB Contractors Ltd.**

GROUND LEVEL **+12.50** m RL

## STRATA

## SAMPLES & TESTS



Depth (m)	Legend	Description	Depth	No	Remarks/Tests
0.35		Fine to coarse SAND with minor silt and trace of roots and rootlets; dark brown. Moist. (TOPSOIL)			
0.60		SILT with minor sand and trace of roots; light grey mottled orange. Moist, low plasticity; sand, fine to medium.			
1.40 - 1.45		Fine to coarse SAND; light greyish brown. Moist.  1.40 - 1.45 Dark brown. Slightly odorous. 1.45 Becomes bluish grey and wet.			
1.80 - 1.85		SILT with trace of organics; dark brown. Wet, low plasticity, slightly odorous.			
3.10		Fine to coarse SAND; bluish grey. Wet.			
End of Trial pit/trench at 3.10m, on 13/07/2017 Termination Reason: Target depth reached.					

## GENERAL REMARKS

SHORING/SUPPORT: **None**  
STABILITY:

**Groundwater seep at 1.7m.**  
**Groundwater seep at 2.5m.**  
**Scattered rubbish present at ground surface.**  
**Co-ordinates and elevation from site survey.**  
**Elevation based on Christchurch City Council Drainage Datum.**

All dimensions in metres

CLIENT **CDL Land New Zealand Ltd.**
 Pocket Penetrometer Test  
 Insitu Vane Shear Test

 Water Level

# TEST PIT RECORD

TEST PIT NO. **TP5**

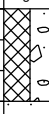

PROJECT NO. **235361-091**

PROJECT **Prestons Subdivision - Law Block**  
**Burwood, Christchurch**

METHOD <b>TP</b>	CO-ORDINATES (NZTM) <b>E 1573693</b> <b>N 5186038</b>	LOGGED <b>J. MARTIN</b>	CHECKED <b>T. PLUNKET</b>
MACHINE & NO. <b>20T Excavator</b>		DATE <b>13/07/2017</b>	DATE <b>20/07/2017</b>
CONTRACTOR <b>KB Contractors Ltd.</b>	GROUND LEVEL <b>+13.03</b> m RL		

## STRATA

## SAMPLES & TESTS

Depth (m)	Legend	Description	Depth	No	Remarks/Tests
0.30		Sandy fine to coarse GRAVEL with trace of roots, rootlets, concrete and brick; dark greyish brown. Moist, subrounded to subangular; sand, fine to coarse. (FILL)			
		Fine to medium SAND; light brown. Moist.			
		1.00 Becomes dark grey.			
		2.50 Becomes wet.			
3.40		3.30 Becomes bluish grey.			
		End of Trial pit/trench at 3.40m, on 13/07/2017 Termination Reason: Target depth reached.			


## GENERAL REMARKS

SHORING/SUPPORT: **None**  
STABILITY:

**Groundwater seep at 2.5m.**  
**Co-ordinates and elevation from site survey.**  
**Elevation based on Christchurch City Council Drainage Datum.**

All dimensions in metres

CLIENT **CDL Land New Zealand Ltd.**

 Pocket Penetrometer Test  
 Insitu Vane Shear Test

 Water Level

# TEST PIT RECORD

TEST PIT NO. **TP6**

PROJECT NO. **235361-091**

PROJECT **Prestons Subdivision - Law Block  
Burwood, Christchurch**

METHOD **TP**

CO-ORDINATES (NZTM)

LOGGED  
**J. MARTIN**

CHECKED  
**T. PLUNKET**

MACHINE & NO. **20T Excavator**

**E 1573781  
N 5186023**

DATE  
**13/07/2017**

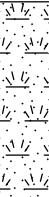



DATE  
**20/07/2017**

CONTRACTOR **KB Contractors Ltd.**

GROUND LEVEL **+12.32** m RL

## STRATA

## SAMPLES & TESTS

Depth (m)	Legend	Description	Depth	No	Remarks/Tests
0.65		Fine to coarse SAND with minor silt and trace of roots and rootlets; dark brown. Moist. (TOPSOIL)			
1.50		Fine to coarse SAND; light greyish brown. Moist.			
2.30		1.50 Becomes light grey.  2.30 Becomes bluish grey and wet.			
3.10		End of Trial pit/trench at 3.10m, on 13/07/2017 <i>Termination Reason:</i> Target depth reached.			



## GENERAL REMARKS

SHORING/SUPPORT: **None**  
STABILITY:

**Groundwater seep at 1.9m.**  
**Groundwater seep at 3.1m.**  
**Co-ordinates and elevation from site survey.**  
**Elevation based on Christchurch City Council Drainage Datum.**

All dimensions in metres

CLIENT **CDL Land New Zealand Ltd.**

 Pocket Penetrometer Test  
 Insitu Vane Shear Test

 Water Level

# TEST PIT RECORD

 TEST PIT NO. **TP7**

 PROJECT NO. **235361-091**

 PROJECT **Prestons Subdivision - Law Block**  
**Burwood, Christchurch**

 METHOD **TP**

CO-ORDINATES (NZTM)

**E 1573855**
**N 5186060**

LOGGED

**J. MARTIN**

CHECKED

**T. PLUNKET**

 MACHINE & NO. **20T Excavator**

 CONTRACTOR **KB Contractors Ltd.**

 GROUND LEVEL **+12.07** m RL

DATE

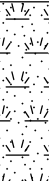


**13/07/2017**

DATE

**20/07/2017**

## STRATA

## SAMPLES & TESTS

Depth (m)	Legend	Description	Depth	No	Remarks/Tests
0.60		Sandy SILT with trace of rootlets; dark brown. Moist, low plasticity; sand, fine. (TOPSOIL)			
		Fine to coarse SAND with occasional roots; light brownish grey. Moist.  1.10 Becomes light grey. 1.20 Becomes without roots.          2.10 Becomes bluish grey and wet.			
3.20		End of Trial pit/trench at 3.20m, on 13/07/2017 <i>Termination Reason:</i> Target depth reached.			



## GENERAL REMARKS

 SHORING/SUPPORT: **None**

STABILITY:

**Groundwater seep at 2.6m.**
**Co-ordinates and elevation from site survey.**
**Elevation based on Christchurch City Council Drainage Datum.**

All dimensions in metres

 CLIENT **CDL Land New Zealand Ltd.**
 **Pocket Penetrometer Test**  
 **Insitu Vane Shear Test**
 **Water Level**

# TEST PIT RECORD

TEST PIT NO. **TP8**

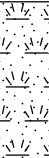

PROJECT NO. **235361-091**

PROJECT **Prestons Subdivision - Law Block  
Burwood, Christchurch**

METHOD <b>TP</b>	CO-ORDINATES (NZTM) <b>E 1573843 N 5186122</b>	LOGGED <b>J. MARTIN</b>	CHECKED <b>T. PLUNKET</b>
MACHINE & NO. <b>20T Excavator</b>		DATE <b>13/07/2017</b>	DATE <b>20/07/2017</b>
CONTRACTOR <b>KB Contractors Ltd.</b>	GROUND LEVEL <b>+11.99</b> m RL		

## STRATA

## SAMPLES & TESTS

Depth (m)	Legend	Description	Depth	No	Remarks/Tests
0.55		SILT with trace of sand, roots and rootlets; dark brown. Moist, low plasticity; sand, fine. (TOPSOIL)			
1.10		Fine to coarse SAND with trace of roots; light greyish brown. Moist.  1.10 Becomes light grey.  1.50 Becomes without roots.  2.20 Becomes bluish grey and wet.			
3.10		End of Trial pit/trench at 3.10m, on 13/07/2017 <i>Termination Reason:</i> Target depth reached.			


## GENERAL REMARKS

SHORING/SUPPORT: **None**  
STABILITY:

**Groundwater not encountered.**  
**Co-ordinates retrieved from Google Earth and are approximate only.**  
**Elevation from site survey and is based on Christchurch City Council Drainage Datum.**

All dimensions in metres

CLIENT **CDL Land New Zealand Ltd.**

 Pocket Penetrometer Test  
 Insitu Vane Shear Test

 Water Level

# TEST PIT RECORD

 TEST PIT NO. **TP9**

 PROJECT NO. **235361-091**

 PROJECT **Prestons Subdivision - Law Block**  
**Burwood, Christchurch**

 METHOD **TP**

CO-ORDINATES (NZTM)

 LOGGED  
**J. MARTIN**

 CHECKED  
**T. PLUNKET**

 MACHINE & NO. **20T Excavator**
**E 1573734**  
**N 5186155**

 DATE  
**13/07/2017**




 DATE  
**20/07/2017**

 CONTRACTOR **KB Contractors Ltd.**

 GROUND LEVEL **+12.83** m RL

## STRATA

## SAMPLES & TESTS



Depth (m)	Legend	Description	Depth	No	Remarks/Tests
0.30		Fine to coarse SAND with minor silt and trace of rootlets; dark brown. Dry. (TOPSOIL)			
1.20		Fine to coarse SAND; light brownish grey. Moist			
3.00		End of Trial pit/trench at 3.00m, on 13/07/2017 Termination Reason: Target depth reached.			

## GENERAL REMARKS

 SHORING/SUPPORT: **None**  
 STABILITY:

Groundwater seep at 2.6m.  
 Co-ordinates retrieved from Google Earth and are approximate only.  
 Elevation from site survey and is based on Christchurch City Council Drainage Datum.

All dimensions in metres

 CLIENT **CDL Land New Zealand Ltd.**
 Pocket Penetrometer Test  
 Insitu Vane Shear Test

 Water Level

# TEST PIT RECORD

TEST PIT NO. **TP10**

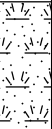


PROJECT NO. **235361-091**

PROJECT **Prestons Subdivision - Law Block  
Burwood, Christchurch**

METHOD <b>TP</b>	CO-ORDINATES (NZTM) <b>E 1573663 N 5186201</b>	LOGGED <b>J. MARTIN</b>	CHECKED <b>T. PLUNKET</b>
MACHINE & NO. <b>20T Excavator</b>		DATE <b>13/07/2017</b>	DATE <b>20/07/2017</b>
CONTRACTOR <b>KB Contractors Ltd.</b>	GROUND LEVEL <b>+12.44</b> m RL		

## STRATA

## SAMPLES & TESTS

Depth (m)	Legend	Description	Depth	No	Remarks/Tests
0.45		Fine to coarse SAND with minor silt and trace of roots and rootlets; dark brown. Moist. (TOPSOIL)			
		Fine to coarse SAND with trace of roots and rootlets; light brownish grey. Moist.  0.70 Becomes light brownish grey mottled orange.  1.10 Becomes grey.  1.40 Becomes with no roots or rootlets.  1.60 Becomes dark grey and wet.  2.60 - 2.65 Brown.			
3.10		End of Trial pit/trench at 3.10m, on 13/07/2017 <i>Termination Reason:</i> Target depth reached.			


## GENERAL REMARKS

SHORING/SUPPORT: **None**  
STABILITY:

**Groundwater seep at 1.8m.**  
**Groundwater seep at 2.4m.**  
**Groundwater seep at 3.1m.**  
**Co-ordinates and elevation from site survey.**  
**Elevation based on Christchurch City Council Drainage Datum.**

All dimensions in metres

CLIENT **CDL Land New Zealand Ltd.**

 Pocket Penetrometer Test  
 Insitu Vane Shear Test

 Water Level

# TEST PIT RECORD

TEST PIT NO. **TP11**

PROJECT NO. **235361-091**

PROJECT **Prestons Subdivision - Law Block  
Burwood, Christchurch**

METHOD **TP**

CO-ORDINATES (NZTM)

LOGGED  
**J. MARTIN**

CHECKED  
**T. PLUNKET**

MACHINE & NO. **20T Excavator**

**E 1573731  
N 5186239**

DATE  
**13/07/2017**



DATE  
**20/07/2017**

CONTRACTOR **KB Contractors Ltd.**

GROUND LEVEL **+12.40** m RL

## STRATA

## SAMPLES & TESTS

Depth (m)	Legend	Description	Depth	No	Remarks/Tests
0.30		Fine to coarse SAND with minor silt and trace of rootlets; dark brown. Moist. (TOPSOIL)			
		Fine to coarse SAND; light greyish brown. Moist.  0.60 Becomes light brownish grey mottled orange.  1.10 Becomes with trace of roots; light grey.  1.30 Becomes without roots.  2.10 Becomes bluish grey and wet.			
3.00		End of Trial pit/trench at 3.00m, on 13/07/2017 <i>Termination Reason:</i> Target depth reached.			


## GENERAL REMARKS

SHORING/SUPPORT: **None**  
STABILITY:

**Groundwater seep at 2.0m.**  
**Groundwater seep at 3.0m.**  
**Co-ordinates and elevation from site survey.**  
**Elevation based on Christchurch City Council Drainage Datum.**

All dimensions in metres

CLIENT **CDL Land New Zealand Ltd.**

 Pocket Penetrometer Test  
 Insitu Vane Shear Test

 Water Level



PROJECT **Prestons Subdivision - Law Block  
Burwood, Christchurch**

**METHOD**      **TP**

TP

CO-ORDINATES (NZTM)

**E 1573811**

**N 5186196**

LOGGED

J. MARTIN

DATE

13/07/2017

CHECKED

T. PLUNKET

DATE \_\_\_\_\_

20/07/2017

## STRATA

## SAMPLES & TESTS

Depth (m)	Legend	Description	Depth	No	Remarks/Tests
0.60		Sandy SILT with trace of rootlets; dark brown. Moist, low plasticity; sand, fine. (TOPSOIL)			
		Fine to coarse SAND; light brownish grey. Moist.			
		0.80 - 0.90 with occasional roots.			
		1.00 Becomes light grey.			
		2.10 Becomes bluish grey and wet.			
3.10		End of Trial pit/trench at 3.10m, on 13/07/2017 <i>Termination Reason:</i> Target depth reached.			

## GENERAL REMARKS

SHORING/SUPPORT: **None**

STABILITY:

**Groundwater not encountered.**

Co-ordinates and elevation from site survey.

**Elevation based on Christchurch City Council Drainage Datum.**

All dimensions in metres

CLIENT **CDL Land New Zealand Ltd.**

▷▷	<b>Pocket Penetrometer Test</b>
×	<b>Insitu Vane Shear Test</b>

▼ Water Level

# Appendix F

## Laboratory Results



# Central Testing Services

18 Ngapara St, P.O. Box 397, Alexandra 9340, Central Otago, New Zealand

P: 03 4487644, W: [www.centraltesting.co.nz](http://www.centraltesting.co.nz), E: [info@centraltesting.co.nz](mailto:info@centraltesting.co.nz)

Page 1 of 1 Page

Reference No: 18/1364

Date: 17 May 2018

## TEST REPORT – PRESTONS DEVELOPMENT

Client Details:	Aurecon New Zealand Ltd, P.O. Box 1061, Christchurch		Attention:	K. Foote
Job Description:	Preston's Development, Christchurch			
Sample Description:	As Below	Client Job No:	Not Stated	
Sample Source:	As Below	Reference No:	Not Stated	
Date & Time Sampled:	Unknown	Sampled By:	Aurecon Staff	
Sample Method:	Borehole	Date Received:	16-May-18	

Sample Source		Sample Description	% Passing 75µm Sieve	% Passing 63µm Sieve	Water Content As Received (%)
Caldwell Block	BH101 @ 6.0m	SAND with trace of silt	3	3	25.4
	BH101 @ 7.0m	SAND with trace of silt	4	4	24.5
	BH101 @ 8.0m	SAND with minor silt	9	8	21.7
	BH101 @ 9.0m	SAND with minor silt & trace of gravel	11	10	24.5
	BH102 @ 6.0m	SAND with trace of silt	3	3	23.1
	BH102 @ 7.0m	SAND with minor silt	7	6	24.9
	BH102 @ 8.0m	SAND with trace of silt	4	3	24.4
	BH102 @ 9.0m	SAND with trace of silt	3	2	25.7
Law Block	BH101 @ 6.0m	SAND with trace of silt	4	4	24.6
	BH101 @ 7.0m	SAND with trace of silt	3	3	25.1
	BH101 @ 8.0m	SAND with trace of silt	3	3	23.6
	BH101 @ 9.0m	SAND with trace of silt	4	3	26.9
	BH102 @ 6.0m	SAND with trace of silt	4	4	19.1
	BH102 @ 7.0m	SAND with minor silt	6	6	22.5
	BH102 @ 8.0m	SAND with minor silt	7	6	20.7
	BH102 @ 9.0m	SAND with trace of silt	3	3	27.7
<b>Test Methods:</b> <ul style="list-style-type: none"> <li>NZS 4402:1986, Test 2.8.1 – Wet Sieve Analysis</li> <li>NZS 4402:1986, Test 2.1 – Water Content</li> </ul>					

**Note:**

- Information contained in this report which is Not IANZ Accredited relates to the sample descriptions based on NZ Geotechnical Society Guidelines 2005, sample method and sampling.
- This report may not be reproduced except in full.

Tested By: L.T. Smith

Date: 17-May-18

Checked By:

Approved Signatory

A.P. Julius  
Laboratory Manager

Tests indicated as  
Not Accredited are  
outside the scope of  
the laboratory's  
accreditation

**IANZ**  
ACCREDITED LABORATORY  
Accreditation No: 434

**Specialist Quality Assurance Service in Aggregate, Concrete and Soils Testing**

"Central Testing Services operates as a trading trust through Central Testing Services Limited as the sole trustee."

# Appendix G

## Liquefaction Assessment Results

			Full Soil Profile			Upper 10m			Ground Damage		Technical Category <sup>3</sup> (pre-treatment)	LSN (Liquefaction Severity Number)		
Test ID	Consultant	Total Depth (mbgl)	Liquefaction Settlements <sup>1</sup>			Liquefaction Settlements			Surface Expression <sup>2</sup>			SLS1	SLS2	ULS
			SLS1 (Mw=7.5, PGA=0.13)	SLS2 (Mw=6.0, PGA=0.19)	ULS (Mw=7.5, PGA=0.35)	SLS1 (Mw=7.5, PGA=0.13)	SLS2 (Mw=6.0, PGA=0.19)	ULS (Mw=7.5, PGA=0.35)	Ishihara Approach SLS	Ishihara Approach ULS				
CPT101	Aurecon	10	0	2	26	0	2	26	No	Yes	TC2	0	1	12
CPT102	Aurecon	10	0	0	4	0	0	4	No	No	TC1	0	0	2
CPT103	Aurecon	10	0	0	24	0	0	24	No	Yes	TC1	0	0	7
CPT104	Aurecon	10	0	0	26	0	0	26	No	Yes	TC2	0	0	7
CPT105	Aurecon	10	0	0	33	0	0	33	No	Yes	TC2	0	0	12
CPT106	Aurecon	8.46	0	0	22	0	0	22	No	Yes	TC1	0	0	12
CPT107	Aurecon	10	4	15	36	4	15	36	No	Yes	TC2	2	8	21
CPT108	Aurecon	10	0	0	26	0	0	26	No	Yes	TC2	0	0	8
CPT109	Aurecon	10	0	0	22	0	0	22	No	Yes	TC1	0	0	11
CPT110	Aurecon	10	0	0	18	0	0	18	No	Yes	TC1	0	0	6
CPT111	Aurecon	10	0	0	22	0	0	22	No	Yes	TC1	0	0	9
CPT112	Aurecon	10	0	0	16	0	0	16	No	Yes	TC1	0	0	9
CPT113	Aurecon	10	0	0	26	0	0	26	No	Yes	TC2	0	0	11
CPT114	Aurecon	10	0	0	10	0	0	10	No	Yes	TC1	0	0	5
CPT001	Aurecon	15	0	0	12	0	0	12	No	Yes	TC1	0	0	6
CPT002	Aurecon	15	1	1	47	0	0	47	No	Yes	TC2	0	0	13
CPT003	Aurecon	15	1	2	35	0	0	35	No	Yes	TC2	0	0	7
CPT004	Aurecon	15	0	0	11	0	0	11	No	Yes	TC1	0	0	3
CPT005	Aurecon	15	0	0	4	0	0	4	No	Yes	TC1	0	0	3
CPT006	Aurecon	15	0	0	17	0	0	17	No	Yes	TC1	0	0	8

Notes:  
<sup>1</sup> Liquefaction Triggering assessed using CPT data and method of Idriss and Boulanger 2014. Settlement estimated using method of Zhang 2002. C<sub>f</sub>(FC)=0.1 adopted.  
<sup>2</sup> Ishihara 1985  
<sup>3</sup> Technical Category presented is based on Vertical Settlement limits Only and does not consider the lateral spread criteria

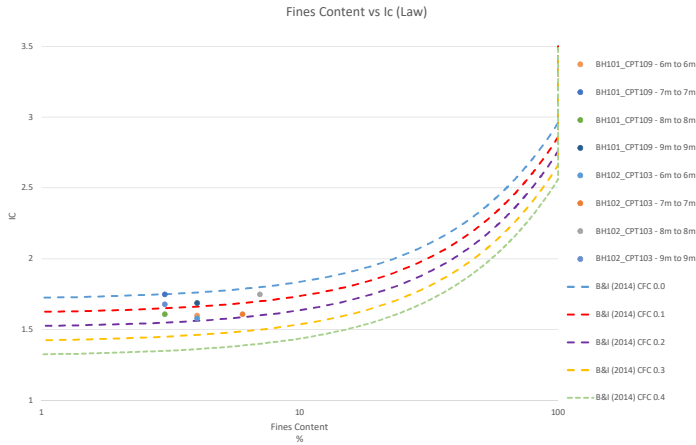


Figure: Plot of Fines Content (FC) against Soil Behaviour Type Index (I<sub>c</sub>)

# Appendix H

## RMA Geotechnical Hazard Assessment

RMA Section 106 (1 & 1A) Assessment – Prestons Park Law Block										
Client	CDL Land New Zealand Limited	Project No.	235361	Risk Rating Matrix						
Prepared by	Marcus Lazzaro	Reviewed by	James Muirson							
					Likelihood of occurrence					
					Most Likely Consequence	5 - Very likely	4 - Good chance	3 - Likely	2 - Unlikely	1 - Very unlikely
					A - Disastrous	Extreme	Extreme	Extreme	Extreme	High
					B - Critical	Extreme	Extreme	Extreme	High	High
					C - Serious	Extreme	High	High	Moderate	Moderate
					D - Significant	High	High	Moderate	Low	Low
				E - Minor	Moderate	Moderate	Low	Low	Low	
IDENTIFY NATURAL HAZARD		ASSESS RISK Section 1A (a) & (b)			Control Measure (Risk Treatment)	RESIDUAL RISK ASSESSMENT Section 1A (a) & (b)			Subsequent use of the land accelerate, worsen, or result in material damage resulting from hazard Section 1A (c)	Comments or Recommendations
Risk Source (Hazard)	Damage	Likelihood	Consequence	Risk Rating		Likelihood	Consequence	Risk Rating		
Earthquake/Seismic										
Liquefaction induced ground damage (settlement, sand boils, cracking)	Due to the expected sandy nature of the soils at Preston's Park, there is the potential for liquefaction induced settlement and ground damage in a major seismic event.	3 - Likely	D - Significant	Moderate	Use of ground improvement to remove the risk of liquefaction, or strengthening of future structures (i.e enhanced foundation solutions or superstructure)	2 - Unlikely	E - Minor	Low	No	Development can proceed provided recommendations in this letter and our previous reports are followed and appropriate engineering measures implemented.
Liquefaction induced lateral spreading	Lateral spreading is possible along the free face of the proposed basin and channels located in the southeast corner of the development and along the existing Snellings Drain along the north and east boundaries.	3 - Likely	D - Significant	Moderate	Use of ground improvement to mitigate lateral spread risk, or construction of sufficiently stiff/strong foundations to resist movement	2 - Unlikely	E - Minor	Low	No	
Seismic Induced Slope Instability (incl Mass Movement)	Lack of significant slopes.	1 - Very unlikely	E - Minor	Low	N/A	1 - Very unlikely	E - Minor	Low	No	
Seismic Induced Rockfall	No rockfall sources above site.	1 - Very unlikely	E - Minor	Low	N/A	1 - Very unlikely	E - Minor	Low	No	
Seismic Induced Cliff Collapse	No cliff above site.	1 - Very unlikely	E - Minor	Low	N/A	1 - Very unlikely	E - Minor	Low	No	
Fault Rupture	No known active faults near the site.	1 - Very unlikely	E - Minor	Low	N/A	1 - Very unlikely	E - Minor	Low	No	
Landslip/Landslide/Land Instability/Subsidence										
Landslide/Landslip	No large faces from which landslides or slips could form.	1 - Very unlikely	E - Minor	Low	N/A	1 - Very unlikely	E - Minor	Low	No	Development can proceed provided recommendations in this letter and our previous reports are followed and appropriate engineering measures implemented.
Deep Seated Landslide	No evidence of deep seated instability.	1 - Very unlikely	E - Minor	Low	N/A	1 - Very unlikely	E - Minor	Low	No	
Earth/Debris flows	No earthflow sources above site nor any evidence of previous earthflows affecting site.	1 - Very unlikely	E - Minor	Low	N/A	1 - Very unlikely	E - Minor	Low	No	
Rockfall or Topple	No rockfall sources above site.	1 - Very unlikely	E - Minor	Low	N/A	1 - Very unlikely	E - Minor	Low	No	
Other										
Soft Ground Settlement	Potential for shallow organic layers which can settle under foundation layers, as has been found in other areas of the Prestons Park development. Although site investigations indicate limited organic layers across the site.	2 - Unlikely	D - Significant	Low	Removal of shallow organic layers and replacement with non-compressible fill to remove potential for soft soil settlement where applicable, or strengthening of future structures (i.e enhanced foundation solutions or superstructure).	1 - Very unlikely	E - Minor	Low	No	As part of the civil design of the subdivision adequate stormwater and erosion control will be required. If subsoil seeps are encountered during site development then these will need to be assessed.
Erosion	Due to silty nature of soil erosion is possible by concentrated stormwater runoff.	3 - Likely	E - Minor	Low	Adequate site stormwater control to be incorporated with site development and exposed soil covered with topsoil/vegetation	2 - Unlikely	E - Minor	Low	No	

**Document prepared by**

**Aurecon New Zealand Limited**

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**aurecon**

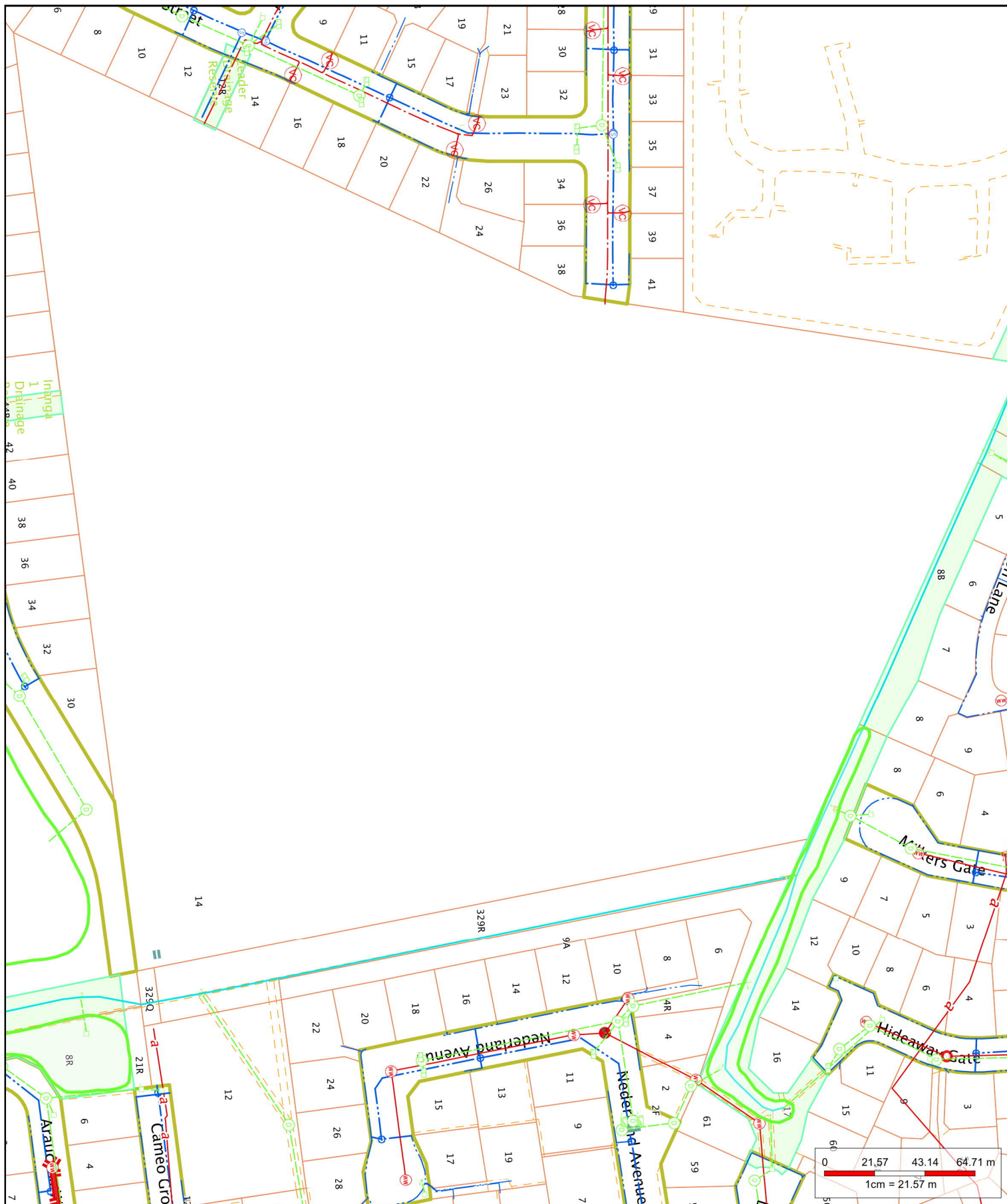
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to life*

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1 : 2,157 on A4  
10/09/2020 8:20:57 AM



ph: 941-8300 fax: 941-8385

Accuracy not guaranteed. Onsite verification required. Display of data scale dependent, full detail available at 1:500.

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## Private Drainage

### Standard Infrastructure

- Bio Gas
- Condensate Trap
- End Cap
- Inlet
- Outlet
- Valve
- Main
- Cable

### Water Intake/Supply

- Connector
- Bellows
- Connector
- Hydrant

### Water Intake/Supply

- Inlet
- Meter
- Outlet
- Pump
- Restrictor
- Valve
- Air Release
- Butterfly
- Flow restriction
- Gate
- Pressure Activated
- Sluice
- Valve
- Reservoir
- Structure
- Lateral
- Main
- Sub Main

### Wastewater

- End Cap
- Valve
- Air Gap Separator
- Vent
- Eye
- Eye (Vertical)
- Outfall
- Pump
- Junction
- Access
- Flush Manhole
- Inspection Point
- Standard Manhole
- Trap
- Vented Manhole
- Lateral
- Main
- Pressure Main

### Wastewater

- Lateral Fitting
- Local Pressure
- Control Panel
- Boundary Kit
- Tank System
- Site
- Vacuum Chamber
- Vacuum Breather
- Bend
- Change
- Eye
- Flow Restriction
- Inlet
- Dome Sump
- Double Sump
- Gross Debris Trap

### Stormwater

- Inlet
- Inlet Headwall
- Pipe End
- Silt Trap
- Single Sump
- Soak Pit
- Triple Sump
- Junction
- Standard Manhole
- Outlet
- Pump
- Structure
- Basin
- Lateral
- Main
- Lateral Fitting
- Double Sump

### Stormwater

- Lateral Fitting
- Single Sump
- Soak Pit
- Inspection point
- Manhole
- Pipe Protection
- Abandoned
- Proposed
- Out of service
- Easement



L45

L45

3-3

Power

9.4



IB45  
21.8

1-90  
100' PVC

100' PVC  
1.80

(H) 46.2

1-160  
150' PVC

(P)





## 12 Cameo Grove Subdivision Consents





## Land Use Resource Consents within 100 metres of 12 Cameo Grove

Note: This list does not include subdivision Consents and Certificates of Compliance issued under the Resource Management Act.

---

### 10 Cameo Grove

RMA/1985/980

I.H.C. Applied to: erect a sign 3.4 High x 1.1m wide for a rural selling Place. Res G/ rural G at back. - Historical Reference RES9218974

Processing complete

Applied 03/04/1985

Decision issued 02/05/1985

Granted 02/05/1985

RMA/1991/1059

To establish a recreation complex and vocational training centre in Res G zone. withdrawn 11/02/92 - Historical Reference RES9218976

Processing complete

Applied 18/12/1991

Decision issued 11/02/1992

Declined 11/02/1992

RMA/1995/4208

To subdivide 23 residential allotments off an entry Road that is 7.6m wide - underwidth in both Proposed and Transitional Plans. - Historical Reference RMA322

Processing complete

Applied 16/11/1995

RMA/1998/2398

To excavate a future Road and fill low lying area. - Historical Reference RES982743

Processing complete

Applied 08/10/1998

Decision issued 08/12/1998

Granted 08/12/1998

RMA/2007/2341

Subdivision of 30 lots zoned Living 1 and Rural 3 (subdivision ref 92007183) - Historical Reference RMA92009659

Processing complete

Applied 23/08/2007

Decision issued 04/03/2008

Granted 04/03/2008

## **14 Cameo Grove**

RMA/2016/2855

Wastewater Capacity Certificate

Processing complete

Applied 10/10/2016

Certificate issued 03/11/2016

## **15 Nederland Avenue**

RMA/1985/980

I.H.C. Applied to: erect a sign 3.4 High x 1.1m wide for a rural selling Place. Res G/ rural G at back. - Historical Reference RES9218974

Processing complete

Applied 03/04/1985

Granted 02/05/1985

Decision issued 02/05/1985

RMA/1991/1059

To establish a recreation complex and vocational training centre in Res G zone. withdrawn 11/02/92 - Historical Reference RES9218976

Processing complete

Applied 18/12/1991

Decision issued 11/02/1992

Declined 11/02/1992

RMA/1995/4208

To subdivide 23 residential allotments off an entry Road that is 7.6m wide - underwidth in both Proposed and Transitional Plans. - Historical Reference RMA322

Processing complete

Applied 16/11/1995

RMA/1998/2398

To excavate a future Road and fill low lying area. - Historical Reference RES982743

Processing complete

Applied 08/10/1998

Decision issued 08/12/1998

Granted 08/12/1998

RMA/2007/2341

Subdivision of 30 lots zoned Living 1 and Rural 3 (subdivision ref 92007183) - Historical Reference RMA92009659

Processing complete

Applied 23/08/2007

Decision issued 04/03/2008

Granted 04/03/2008

## **155R Mairehau Road**

RMA/2020/170

Earthworks within setback from Snellings Drain associated with the installation of new stormwater outfall pipes, culvert and removal of existing bridge

Cancelled

Applied 30/01/2020

Cancelled - fee not paid 04/03/2020

## **16 Nederland Avenue**

RMA/1985/980

I.H.C. Applied to: erect a sign 3.4 High x 1.1m wide for a rural selling Place. Res G/ rural G at back. - Historical Reference RES9218974

Processing complete

Applied 03/04/1985

Decision issued 02/05/1985

Granted 02/05/1985

RMA/1991/1059

To establish a recreation complex and vocational training centre in Res G zone. withdrawn 11/02/92 - Historical Reference RES9218976

Processing complete

Applied 18/12/1991

Decision issued 11/02/1992

Declined 11/02/1992

RMA/1995/4208

To subdivide 23 residential allotments off an entry Road that is 7.6m wide - underwidth in both Proposed and Transitional Plans. - Historical Reference RMA322

Processing complete

Applied 16/11/1995

RMA/1998/2398

To excavate a future Road and fill low lying area. - Historical Reference RES982743

Processing complete

Applied 08/10/1998

Decision issued 08/12/1998

Granted 08/12/1998

RMA/2007/2341

Subdivision of 30 lots zoned Living 1 and Rural 3 (subdivision ref 92007183) - Historical Reference RMA92009659

Processing complete

Applied 23/08/2007

Decision issued 04/03/2008

Granted 04/03/2008



RMA/2018/2079

Establish a dwelling single storey dwelling with attached double garage

Processing complete

Applied 27/08/2018

Decision issued 12/09/2018

Granted 12/09/2018

## **17 Nederland Avenue**

RMA/1985/980

I.H.C. Applied to: erect a sign 3.4 High x 1.1m wide for a rural selling Place. Res G/ rural G at back. - Historical Reference RES9218974

Processing complete

Applied 03/04/1985

Decision issued 02/05/1985

Granted 02/05/1985

RMA/1991/1059

To establish a recreation complex and vocational training centre in Res G zone. withdrawn 11/02/92 - Historical Reference RES9218976

Processing complete

Applied 18/12/1991

Decision issued 11/02/1992

Declined 11/02/1992

RMA/1995/4208

To subdivide 23 residential allotments off an entry Road that is 7.6m wide - underwidth in both Proposed and Transitional Plans. - Historical Reference RMA322

Processing complete

Applied 16/11/1995

RMA/1998/2398

To excavate a future Road and fill low lying area. - Historical Reference RES982743

Processing complete

Applied 08/10/1998

Decision issued 08/12/1998

Granted 08/12/1998

RMA/2007/2341

Subdivision of 30 lots zoned Living 1 and Rural 3 (subdivision ref 92007183) - Historical Reference RMA92009659

Processing complete

Applied 23/08/2007

Decision issued 04/03/2008

Granted 04/03/2008

## 18 Nederland Avenue

RMA/1985/980

I.H.C. Applied to: erect a sign 3.4 High x 1.1m wide for a rural selling Place. Res G/ rural G at back. - Historical Reference RES9218974

Processing complete

Applied 03/04/1985

Decision issued 02/05/1985

Granted 02/05/1985

RMA/1991/1059

To establish a recreation complex and vocational training centre in Res G zone. withdrawn 11/02/92 - Historical Reference RES9218976

Processing complete

Applied 18/12/1991

Decision issued 11/02/1992

Declined 11/02/1992

RMA/1995/4208

To subdivide 23 residential allotments off an entry Road that is 7.6m wide - underwidth in both Proposed and Transitional Plans. - Historical Reference RMA322

Processing complete

Applied 16/11/1995

RMA/1998/2398

To excavate a future Road and fill low lying area. - Historical Reference RES982743

Processing complete

Applied 08/10/1998

Decision issued 08/12/1998

Granted 08/12/1998

RMA/2007/2341

Subdivision of 30 lots zoned Living 1 and Rural 3 (subdivision ref 92007183) - Historical Reference RMA92009659

Processing complete

Applied 23/08/2007

Decision issued 04/03/2008

Granted 04/03/2008

RMA/2018/2749

Establish single storey residential dwelling with attached double garage

Processing complete

Applied 09/11/2018

Decision issued 11/02/2019

Granted 11/02/2019

## 19 Nederland Avenue

RMA/1985/980

I.H.C. Applied to: erect a sign 3.4 High x 1.1m wide for a rural selling Place. Res G/ rural G at back. - Historical Reference RES9218974

Processing complete

Applied 03/04/1985

Decision issued 02/05/1985

Granted 02/05/1985

RMA/1991/1059

To establish a recreation complex and vocational training centre in Res G zone. withdrawn 11/02/92 - Historical Reference RES9218976

Processing complete

Applied 18/12/1991

Decision issued 11/02/1992

Declined 11/02/1992

RMA/1995/4208

To subdivide 23 residential allotments off an entry Road that is 7.6m wide - underwidth in both Proposed and Transitional Plans. - Historical Reference RMA322

Processing complete

Applied 16/11/1995

RMA/1998/2398

To excavate a future Road and fill low lying area. - Historical Reference RES982743

Processing complete

Applied 08/10/1998

Decision issued 08/12/1998

Granted 08/12/1998

RMA/2007/2341

Subdivision of 30 lots zoned Living 1 and Rural 3 (subdivision ref 92007183) - Historical Reference RMA92009659

Processing complete

Applied 23/08/2007

Decision issued 04/03/2008

Granted 04/03/2008

## 2 Araucana Way

RMA/2010/652

Scanned - Lot 34 - Dwelling with attached garage - Historical Reference RMA92016175

Processing complete

Applied 07/05/2010

Decision issued 31/05/2010

Granted 28/05/2010

## 20 Nederland Avenue

RMA/1985/980

I.H.C. Applied to: erect a sign 3.4 High x 1.1m wide for a rural selling Place. Res G/ rural G at back. - Historical Reference RES9218974

Processing complete

Applied 03/04/1985

Decision issued 02/05/1985

Granted 02/05/1985

RMA/1991/1059

To establish a recreation complex and vocational training centre in Res G zone. withdrawn 11/02/92 - Historical Reference RES9218976

Processing complete

Applied 18/12/1991

Decision issued 11/02/1992

Declined 11/02/1992

RMA/1995/4208

To subdivide 23 residential allotments off an entry Road that is 7.6m wide - underwidth in both Proposed and Transitional Plans. - Historical Reference RMA322

Processing complete

Applied 16/11/1995

RMA/1998/2398

To excavate a future Road and fill low lying area. - Historical Reference RES982743

Processing complete

Applied 08/10/1998

Decision issued 08/12/1998

Granted 08/12/1998

RMA/2007/2341

Subdivision of 30 lots zoned Living 1 and Rural 3 (subdivision ref 92007183) - Historical Reference RMA92009659

Processing complete

Applied 23/08/2007

Decision issued 04/03/2008

Granted 04/03/2008

RMA/2019/1944

To Construct a Dwelling with Attached Garage

Processing complete

Applied 28/08/2019

Decision issued 16/10/2019

Granted 16/10/2019

## 22 Nederland Avenue

RMA/1985/980

I.H.C. Applied to: erect a sign 3.4 High x 1.1m wide for a rural selling Place. Res G/ rural G at back. - Historical Reference RES9218974

Processing complete

Applied 03/04/1985

Decision issued 02/05/1985

Granted 02/05/1985

RMA/1991/1059

To establish a recreation complex and vocational training centre in Res G zone. withdrawn 11/02/92 - Historical Reference RES9218976

Processing complete

Applied 18/12/1991

Decision issued 11/02/1992

Declined 11/02/1992

RMA/1995/4208

To subdivide 23 residential allotments off an entry Road that is 7.6m wide - underwidth in both Proposed and Transitional Plans. - Historical Reference RMA322

Processing complete

Applied 16/11/1995

RMA/1998/2398

To excavate a future Road and fill low lying area. - Historical Reference RES982743

Processing complete

Applied 08/10/1998

Decision issued 08/12/1998

Granted 08/12/1998

RMA/2007/2341

Subdivision of 30 lots zoned Living 1 and Rural 3 (subdivision ref 92007183) - Historical Reference RMA92009659

Processing complete

Applied 23/08/2007

Decision issued 04/03/2008

Granted 04/03/2008

## 24 Nederland Avenue

RMA/1985/980

I.H.C. Applied to: erect a sign 3.4 High x 1.1m wide for a rural selling Place. Res G/ rural G at back. - Historical Reference RES9218974

Processing complete

Applied 03/04/1985

Decision issued 02/05/1985

Granted 02/05/1985

RMA/1991/1059

To establish a recreation complex and vocational training centre in Res G zone. withdrawn 11/02/92 - Historical Reference RES9218976

Processing complete

Applied 18/12/1991

Decision issued 11/02/1992

Declined 11/02/1992

RMA/1995/4208

To subdivide 23 residential allotments off an entry Road that is 7.6m wide - underwidth in both Proposed and Transitional Plans. - Historical Reference RMA322

Processing complete

Applied 16/11/1995

RMA/1998/2398

To excavate a future Road and fill low lying area. - Historical Reference RES982743

Processing complete

Applied 08/10/1998

Decision issued 08/12/1998

Granted 08/12/1998

RMA/2007/2341

Subdivision of 30 lots zoned Living 1 and Rural 3 (subdivision ref 92007183) - Historical Reference RMA92009659

Processing complete

Applied 23/08/2007

Decision issued 04/03/2008

Granted 04/03/2008

RMA/2020/1143

Construct dwelling with attached garage

Processing complete

Applied 08/06/2020

Decision issued 02/07/2020

Granted 02/07/2020

## **25 Cameo Grove**

RMA/2017/2545

To construct buildings on Lots 291-294, 312-318 and 377-389 (Stage 2) up to 4 m from the Mairehau Road boundary and with a reduced landscaping strip of 2m in width

Processing complete

Applied 17/10/2017

Decision issued 17/01/2018

Granted 17/01/2018

## 25 Nederland Avenue

RMA/1985/980

I.H.C. Applied to: erect a sign 3.4 High x 1.1m wide for a rural selling Place. Res G/ rural G at back. - Historical Reference RES9218974

Processing complete

Applied 03/04/1985

Decision issued 02/05/1985

Granted 02/05/1985

RMA/1991/1059

To establish a recreation complex and vocational training centre in Res G zone. withdrawn 11/02/92 - Historical Reference RES9218976

Processing complete

Applied 18/12/1991

Decision issued 11/02/1992

Declined 11/02/1992

RMA/1995/4208

To subdivide 23 residential allotments off an entry Road that is 7.6m wide - underwidth in both Proposed and Transitional Plans. - Historical Reference RMA322

Processing complete

Applied 16/11/1995

RMA/1998/2398

To excavate a future Road and fill low lying area. - Historical Reference RES982743

Processing complete

Applied 08/10/1998

Decision issued 08/12/1998

Granted 08/12/1998

RMA/2007/2341

Subdivision of 30 lots zoned Living 1 and Rural 3 (subdivision ref 92007183) - Historical Reference RMA92009659

Processing complete

Applied 23/08/2007

Decision issued 04/03/2008

Granted 04/03/2008

## 26 Nederland Avenue

RMA/1985/980

I.H.C. Applied to: erect a sign 3.4 High x 1.1m wide for a rural selling Place. Res G/ rural G at back. - Historical Reference RES9218974

Processing complete

Applied 03/04/1985

Decision issued 02/05/1985

Granted 02/05/1985

RMA/1991/1059

To establish a recreation complex and vocational training centre in Res G zone. withdrawn 11/02/92 - Historical Reference RES9218976

Processing complete

Applied 18/12/1991

Decision issued 11/02/1992

Declined 11/02/1992

RMA/1995/4208

To subdivide 23 residential allotments off an entry Road that is 7.6m wide - underwidth in both Proposed and Transitional Plans. - Historical Reference RMA322

Processing complete

Applied 16/11/1995

RMA/1998/2398

To excavate a future Road and fill low lying area. - Historical Reference RES982743

Processing complete

Applied 08/10/1998

Decision issued 08/12/1998

Granted 08/12/1998

RMA/2007/2341

Subdivision of 30 lots zoned Living 1 and Rural 3 (subdivision ref 92007183) - Historical Reference RMA92009659

Processing complete

Applied 23/08/2007

Decision issued 04/03/2008

Granted 04/03/2008

## 27 Nederland Avenue

RMA/1985/980

I.H.C. Applied to: erect a sign 3.4 High x 1.1m wide for a rural selling Place. Res G/ rural G at back. - Historical Reference RES9218974

Processing complete

Applied 03/04/1985

Decision issued 02/05/1985

Granted 02/05/1985

RMA/1991/1059

To establish a recreation complex and vocational training centre in Res G zone. withdrawn 11/02/92 - Historical Reference RES9218976

Processing complete

Applied 18/12/1991

Decision issued 11/02/1992

Declined 11/02/1992



RMA/1995/4208

To subdivide 23 residential allotments off an entry Road that is 7.6m wide - underwidth in both Proposed and Transitional Plans. - Historical Reference RMA322

Processing complete

Applied 16/11/1995

RMA/1998/2398

To excavate a future Road and fill low lying area. - Historical Reference RES982743

Processing complete

Applied 08/10/1998

Decision issued 08/12/1998

Granted 08/12/1998

RMA/2007/2341

Subdivision of 30 lots zoned Living 1 and Rural 3 (subdivision ref 92007183) - Historical Reference RMA92009659

Processing complete

Applied 23/08/2007

Decision issued 04/03/2008

Granted 04/03/2008

## **28 Nederland Avenue**

RMA/1985/980

I.H.C. Applied to: erect a sign 3.4 High x 1.1m wide for a rural selling Place. Res G/ rural G at back. - Historical Reference RES9218974

Processing complete

Applied 03/04/1985

Decision issued 02/05/1985

Granted 02/05/1985

RMA/1991/1059

To establish a recreation complex and vocational training centre in Res G zone. withdrawn 11/02/92 - Historical Reference RES9218976

Processing complete

Applied 18/12/1991

Decision issued 11/02/1992

Declined 11/02/1992

RMA/1995/4208

To subdivide 23 residential allotments off an entry Road that is 7.6m wide - underwidth in both Proposed and Transitional Plans. - Historical Reference RMA322

Processing complete

Applied 16/11/1995

RMA/1998/2398

To excavate a future Road and fill low lying area. - Historical Reference RES982743

Processing complete

Applied 08/10/1998

Decision issued 08/12/1998

Granted 08/12/1998

RMA/2007/2341

Subdivision of 30 lots zoned Living 1 and Rural 3 (subdivision ref 92007183) - Historical Reference RMA92009659

Processing complete

Applied 23/08/2007

Decision issued 04/03/2008

Granted 04/03/2008

## **30 Nederland Avenue**

RMA/1985/980

I.H.C. Applied to: erect a sign 3.4 High x 1.1m wide for a rural selling Place. Res G/ rural G at back. - Historical Reference RES9218974

Processing complete

Applied 03/04/1985

Decision issued 02/05/1985

Granted 02/05/1985

RMA/1991/1059

To establish a recreation complex and vocational training centre in Res G zone. withdrawn 11/02/92 - Historical Reference RES9218976

Processing complete

Applied 18/12/1991

Decision issued 11/02/1992

Declined 11/02/1992

RMA/1995/4208

To subdivide 23 residential allotments off an entry Road that is 7.6m wide - underwidth in both Proposed and Transitional Plans. - Historical Reference RMA322

Processing complete

Applied 16/11/1995

RMA/1998/2398

To excavate a future Road and fill low lying area. - Historical Reference RES982743

Processing complete

Applied 08/10/1998

Decision issued 08/12/1998

Granted 08/12/1998

RMA/2007/2341

Subdivision of 30 lots zoned Living 1 and Rural 3 (subdivision ref 92007183) - Historical Reference RMA92009659

Processing complete

Applied 23/08/2007

Decision issued 04/03/2008

Granted 04/03/2008

## **329Q Burwood Road**

RMA/2020/170

Earthworks within setback from Snellings Drain associated with the installation of new stormwater outfall pipes, culvert and removal of existing bridge

Cancelled

Applied 30/01/2020

Cancelled - fee not paid 04/03/2020

RMA/2020/521

Earthworks associated with the installation of underground stormwater outfall pipes and replacement of existing culvert.

Processing complete

Applied 10/03/2020

Decision issued 12/06/2020

Granted 12/06/2020

## **329R Burwood Road**

RMA/2020/170

Earthworks within setback from Snellings Drain associated with the installation of new stormwater outfall pipes, culvert and removal of existing bridge

Cancelled

Applied 30/01/2020

Cancelled - fee not paid 04/03/2020

RMA/2020/521

Earthworks associated with the installation of underground stormwater outfall pipes and replacement of existing culvert.

Processing complete

Applied 10/03/2020

Decision issued 12/06/2020

Granted 12/06/2020

## **339B Burwood Road**

RMA/1985/980

I.H.C. Applied to: erect a sign 3.4 High x 1.1m wide for a rural selling Place. Res G/ rural G at back. - Historical Reference RES9218974

Processing complete

Applied 03/04/1985

Decision issued 02/05/1985

Granted 02/05/1985

RMA/1991/1059

To establish a recreation complex and vocational training centre in Res G zone. withdrawn 11/02/92 - Historical Reference RES9218976

Processing complete

Applied 18/12/1991

Decision issued 11/02/1992

Declined 11/02/1992

RMA/1995/4208

To subdivide 23 residential allotments off an entry Road that is 7.6m wide - underwidth in both Proposed and Transitional Plans. - Historical Reference RMA322

Processing complete

Applied 16/11/1995

RMA/1998/2398

To excavate a future Road and fill low lying area. - Historical Reference RES982743

Processing complete

Applied 08/10/1998

Decision issued 08/12/1998

Granted 08/12/1998

RMA/2007/2341

Subdivision of 30 lots zoned Living 1 and Rural 3 (subdivision ref 92007183) - Historical Reference RMA92009659

Processing complete

Applied 23/08/2007

Decision issued 04/03/2008

Granted 04/03/2008

## **5 Araucana Way**

RMA/2012/517

Single storey dwelling and attached garage - Historical Reference RMA92019853

Processing complete

Applied 11/04/2012

Decision issued 20/04/2012

Granted 20/04/2012

## **9A Nederland Avenue**

RMA/2014/1055

Earthworks for future site development - Historical Reference RMA92025695

Processing complete

Applied 05/05/2014

Decision issued 30/04/2015

Granted 30/04/2015

## Data Quality Statement

### Land Use Consents

All resource consents are shown for sites that have been labelled with an address. For sites that have been labelled with a cross (+) no resource consents have been found. Sites that have no label have not been checked for resource consents. This will be particularly noticeable on the margins of the search radius. If there are such sites and you would like them included in the check, please ask for the LIM spatial query to be rerun accordingly. This will be done free of charge although there may be a short delay. Resource consents which are on land occupied by roads, railways or rivers are not, and currently cannot be displayed, either on the map or in the list. Resource consents that relate to land that has since been subdivided, will be shown in the list, but not on the map. They will be under the address of the land as it was at the time the resource consent was applied for. Resource consents that are listed as Non-notified and are current, may in fact be notified resource consents that have not yet been through the notification process. If in doubt. Please phone (03)941 8999.

The term "resource consents" in this context means land use consents. Subdivision consents and certificates of compliance are excluded.

### Subdivision Consents

All subdivision consents are shown for the sites that have been labelled with consent details. For Sites that have been labelled with a cross (+) no records have been found. Sites that have no label have not been checked for subdivision consents. This will be particularly noticeable on the margins of the search radius. If there are such sites and you would like them included in the check, please ask for the LIM spatial query to be rerun accordingly. This will be done free of charge although there may be a short delay.

The term "subdivision consents" in this context means a resource consent application to subdivide land. Non subdivision land use resource consents and certificates of compliance are excluded.

This report will only record those subdivision applications which have not been completed i.e once a subdivision has been given effect to and the new lots/properties have been established the application which created those lots will not be shown

All subdivision consent information is contained on the map and no separate list is supplied