

# Appendix C

## 2011 CPT Logs

## CPT ANALYSIS NOTES




### Soil Type

Interpretation using chart of Robertson & Campanella (1983). This is a simple but well proven interpretation using cone tip resistance ( $q_c$ ) and friction ratio ( $f_R$ ) only. No normalisation for overburden stress is applied. Cone tip resistance measured with the piezocone is corrected with measured pore pressure ( $u_c$ ).

	sand (and gravel)
	silt-sand
	silt
	clay-silt
	clay
	peat

### Liquefaction Screening

The purpose of the screening is to highlight susceptible soils, that is sand and silt-sand in a relatively loose condition. This is not a full liquefaction risk assessment which requires knowledge of the particular earthquake risk at a site and additional analysis. The screening is based on the chart of Shibata and Teparaksa (1988).

	high susceptibility
	medium susceptibility
	low susceptibility

High susceptibility is here defined as requiring a shear stress ratio of 0.2 to cause liquefaction with  $D_{50}$  for sands assumed to be 0.25 mm and for silty sands to be 0.05 mm.

Medium susceptibility is here defined as requiring a shear stress ratio of 0.4 to cause liquefaction with  $D_{50}$  for sands assumed to be 0.25 mm and for silty sands to be 0.05 mm.

Low susceptibility is all other cases.

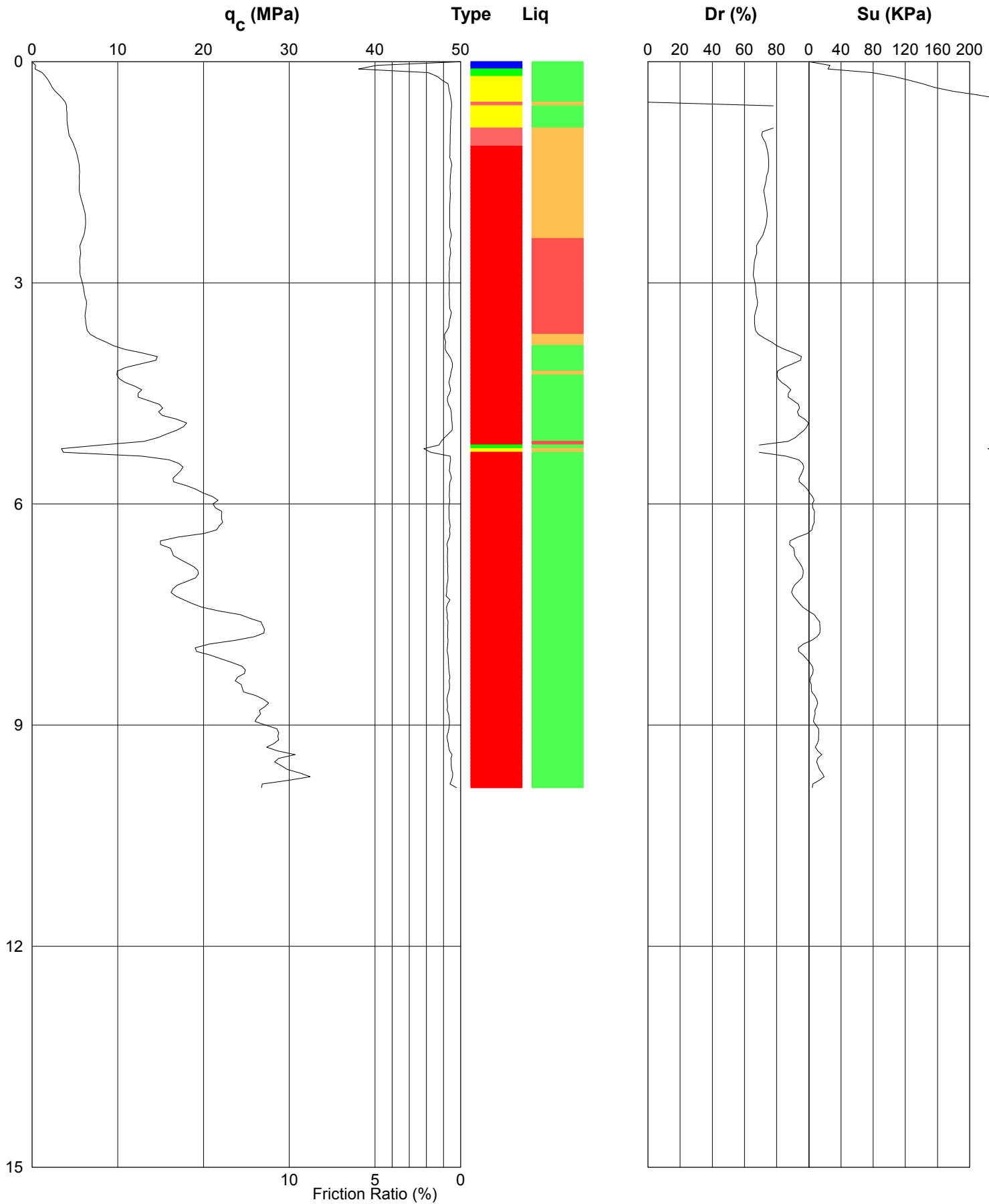
### Relative Density ( $D_R$ )

Based on the method of Baldi et. al. (1986) from data on normally consolidated sand.

### Undrained Shear Strength ( $S_u$ )

Derived from the bearing capacity equation using  $S_u = (q_c - \sigma_{vo})/15$ .

# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

CPT No: CPTu001

Project: Aurecon NZ Ltd

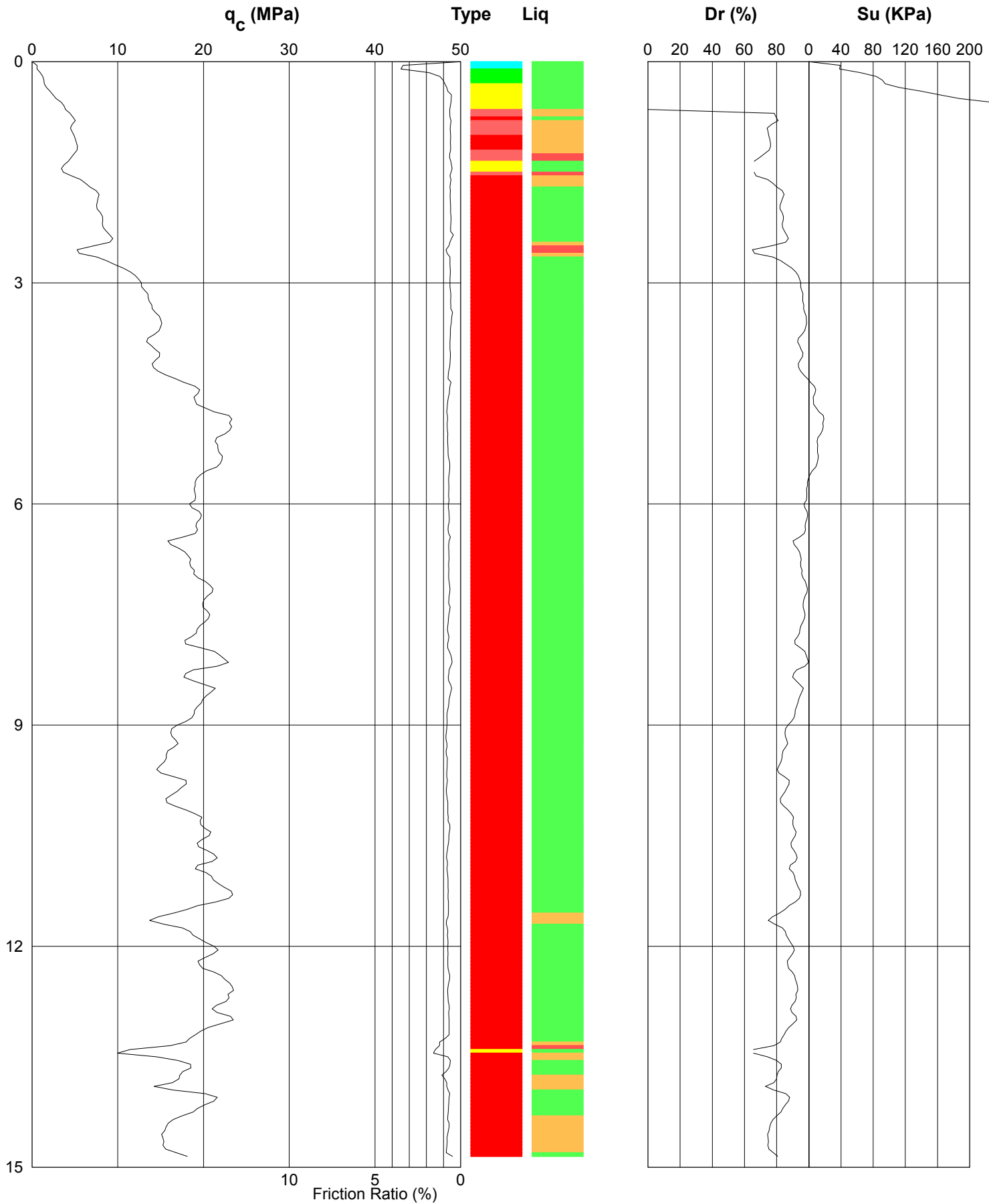
Location: Prestons Road Subdivision

Date: 17-08-2011

Operator: J. Kendrick

Remark: Effective Refusal

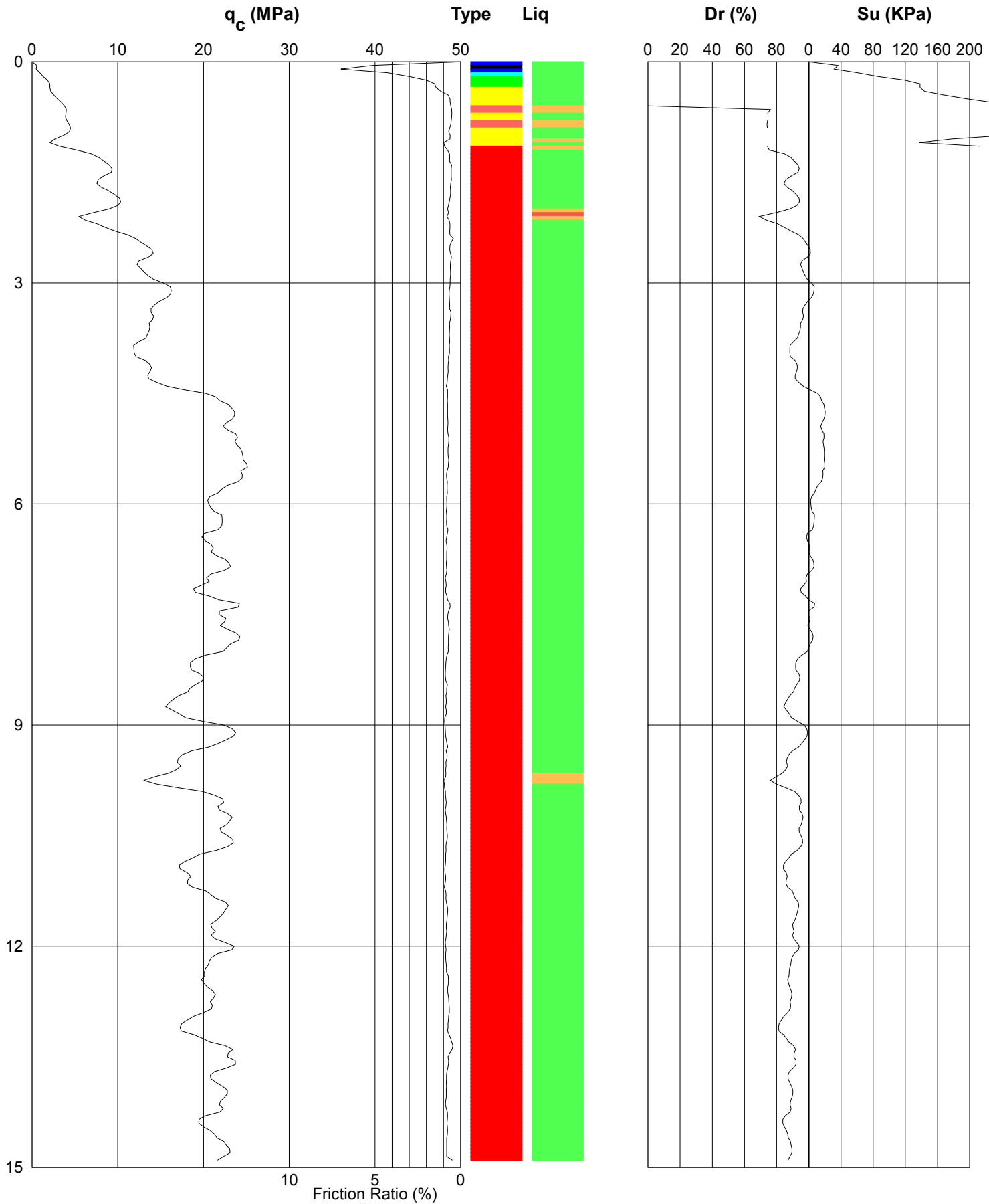
# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215  
 CPT No: CPTu002  
 Project: Aurecon NZ Ltd  
 Location: Prestons Road Subdivision

Date: 17-08-2011  
 Operator: J. Kendrick  
 Remark: Target Depth

# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

CPT No: CPTu003

Project: Aurecon NZ Ltd

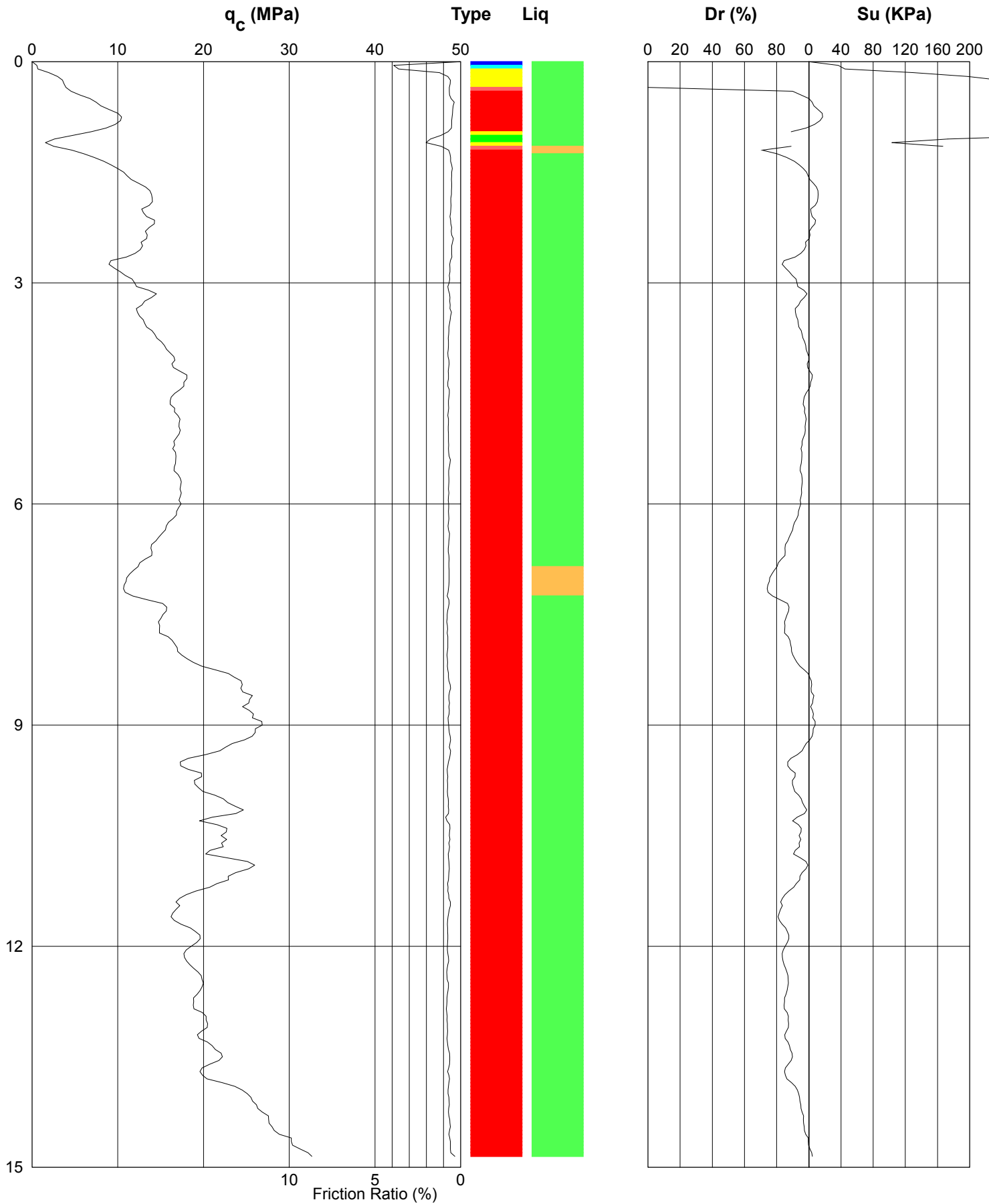
Location: Prestons Road Subdivision

Date: 17-08-2011

Operator: J. Kendrick

Remark: Target Depth

# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

CPT No: CPTu004

Project: Aurecon NZ Ltd

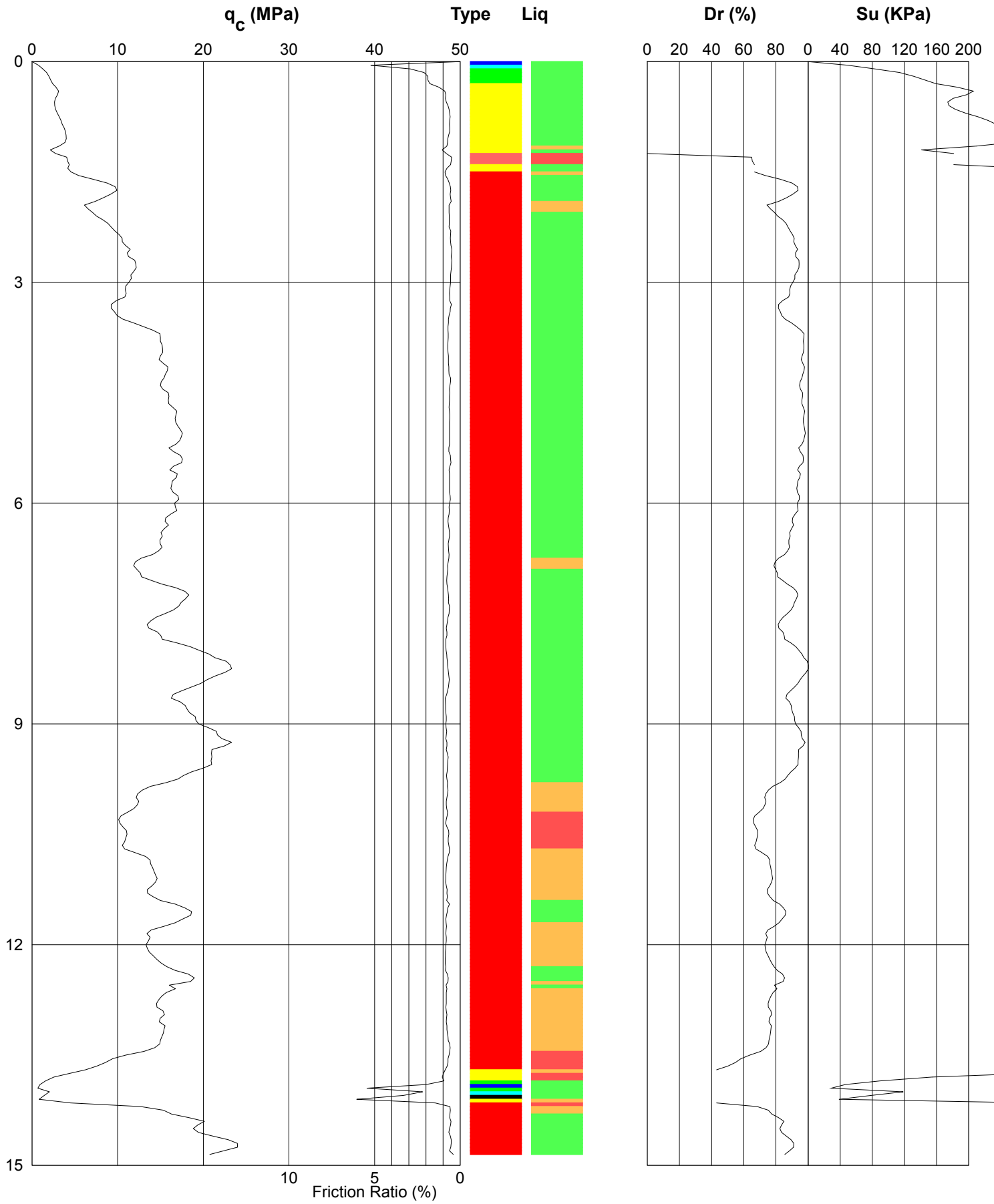
Location: Prestons Road Subdivision

Date: 17-08-2011

Operator: J. Kendrick

Remark: Target Depth

# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

CPT No: CPTu005

Project: Aurecon NZ Ltd

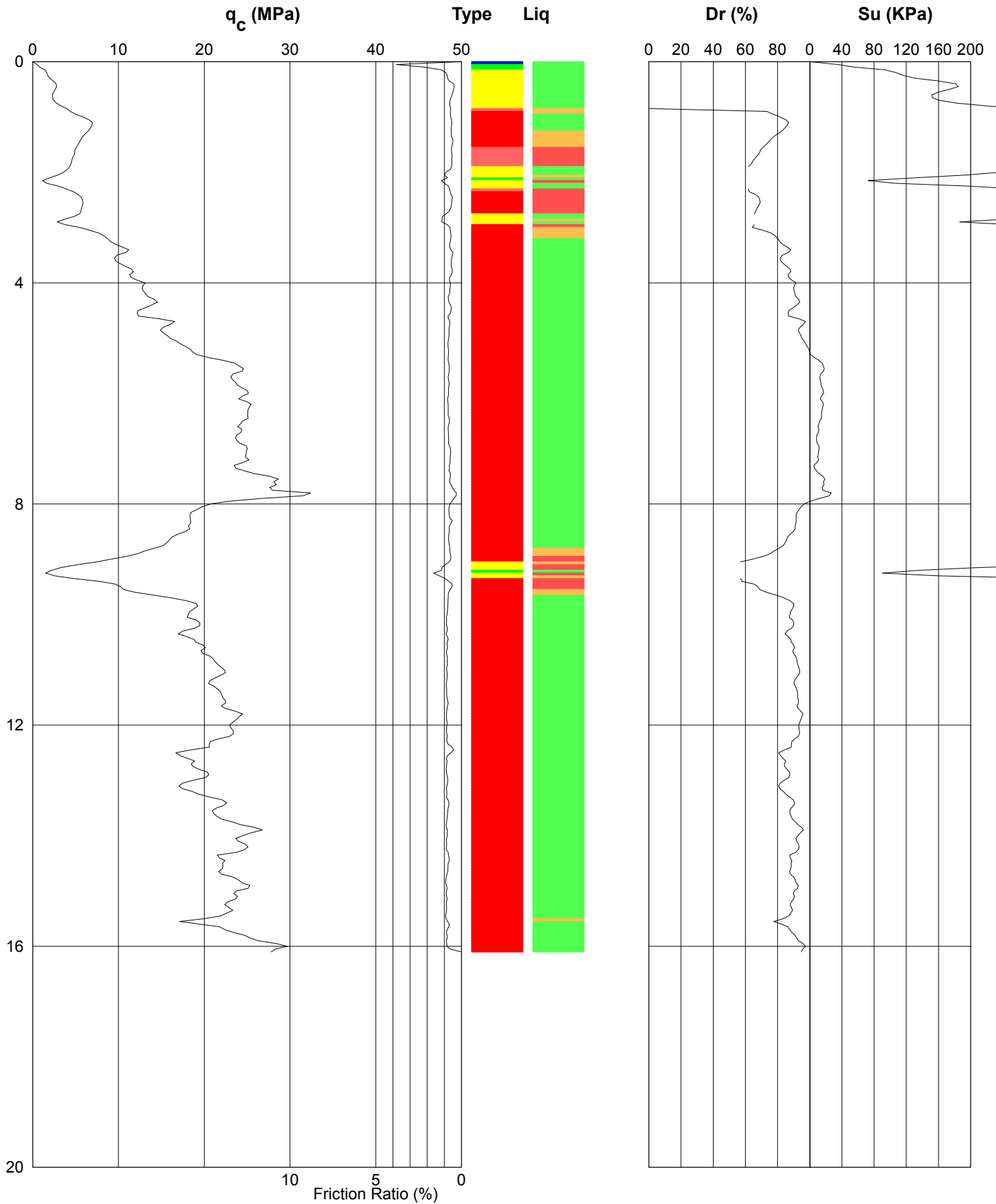
Location: Prestons Road Subdivision

Date: 17-08-2011

Operator: J. Kendrick

Remark: Target Depth

# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

CPT No: CPTu006

Project: Aurecon NZ Ltd

Location: Prestons Road Subdivision

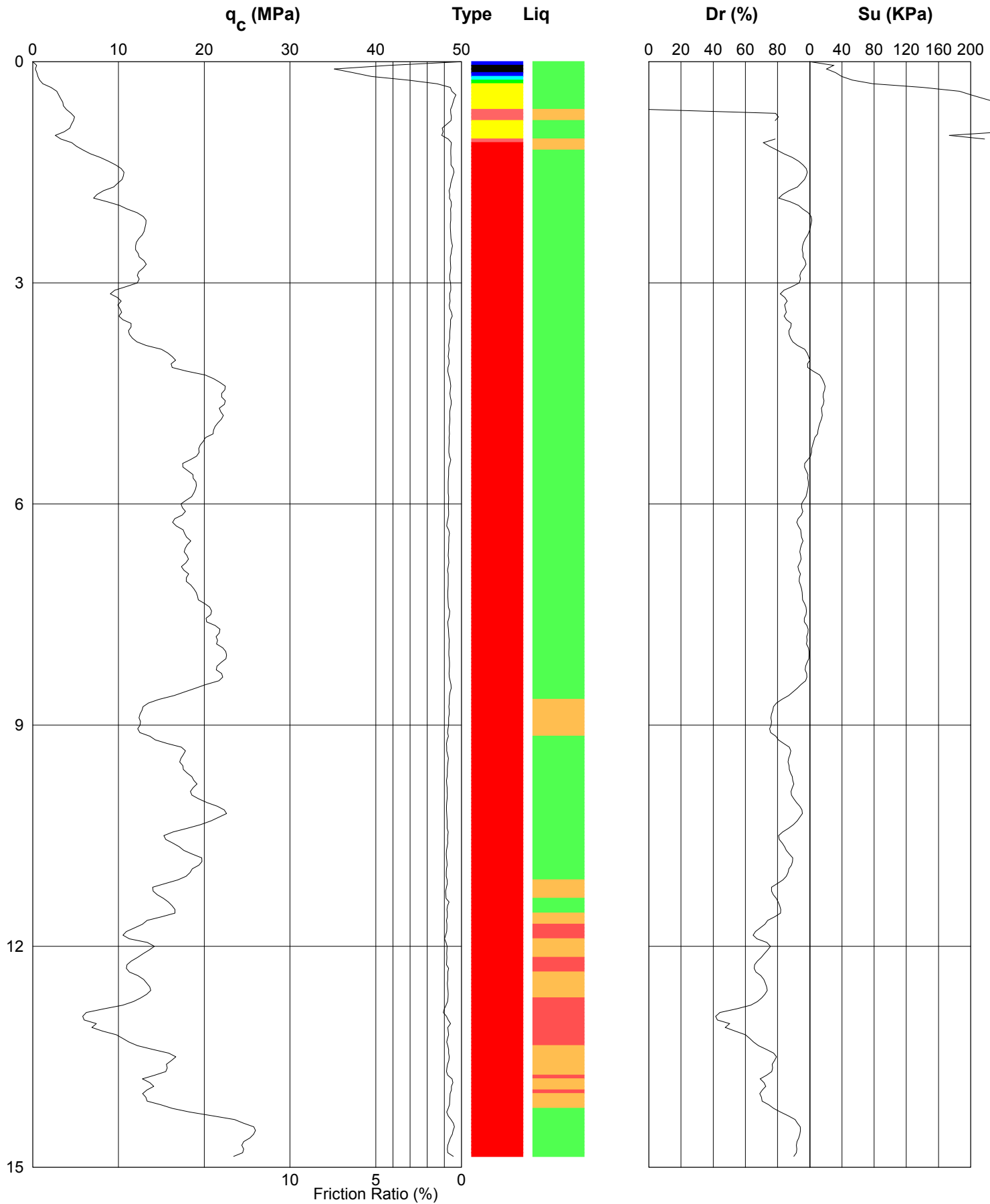
Date: 17-08-2011

Operator: J. Kendrick

Remark: Target Depth



# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

CPT No: CPTu007

Project: Aurecon NZ Ltd

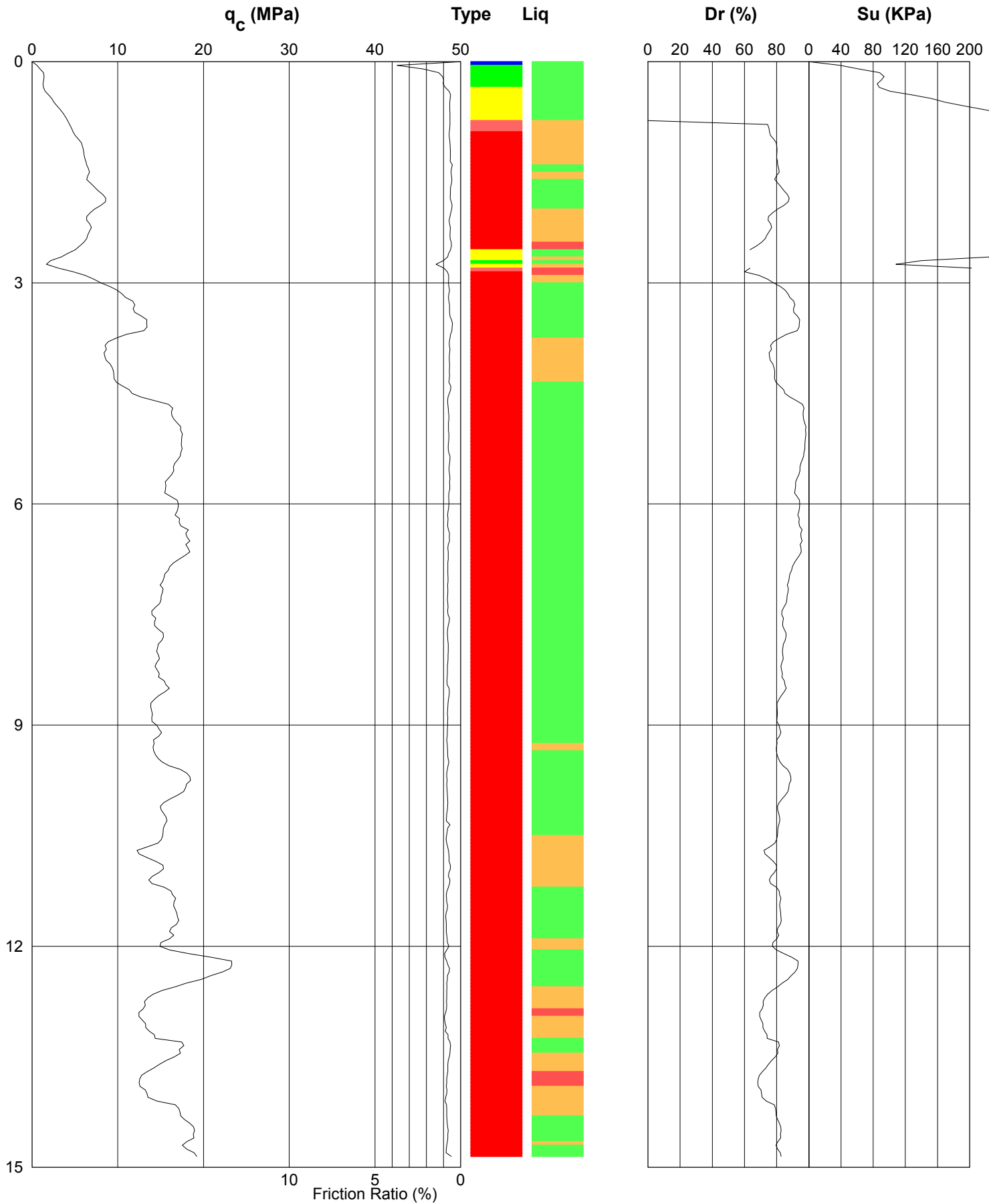
Location: Prestons Road Subdivision

Date: 17-08-2011

Operator: J. Kendrick

Remark: Target Depth

# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

CPT No: CPTu008

Project: Aurecon NZ Ltd

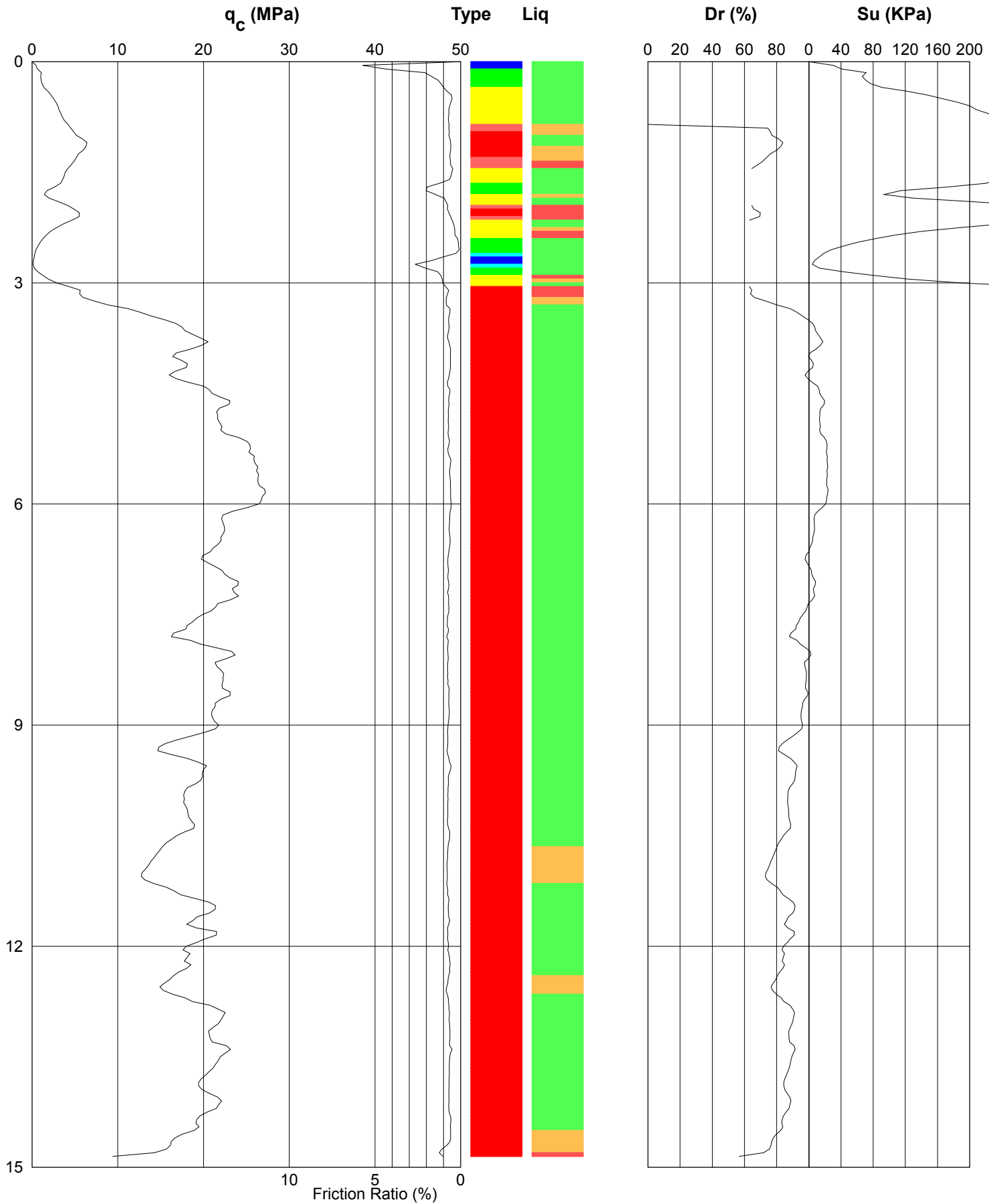
Location: Prestons Road Subdivision

Date: 17-08-2011

Operator: J. Kendrick

Remark: Target Depth

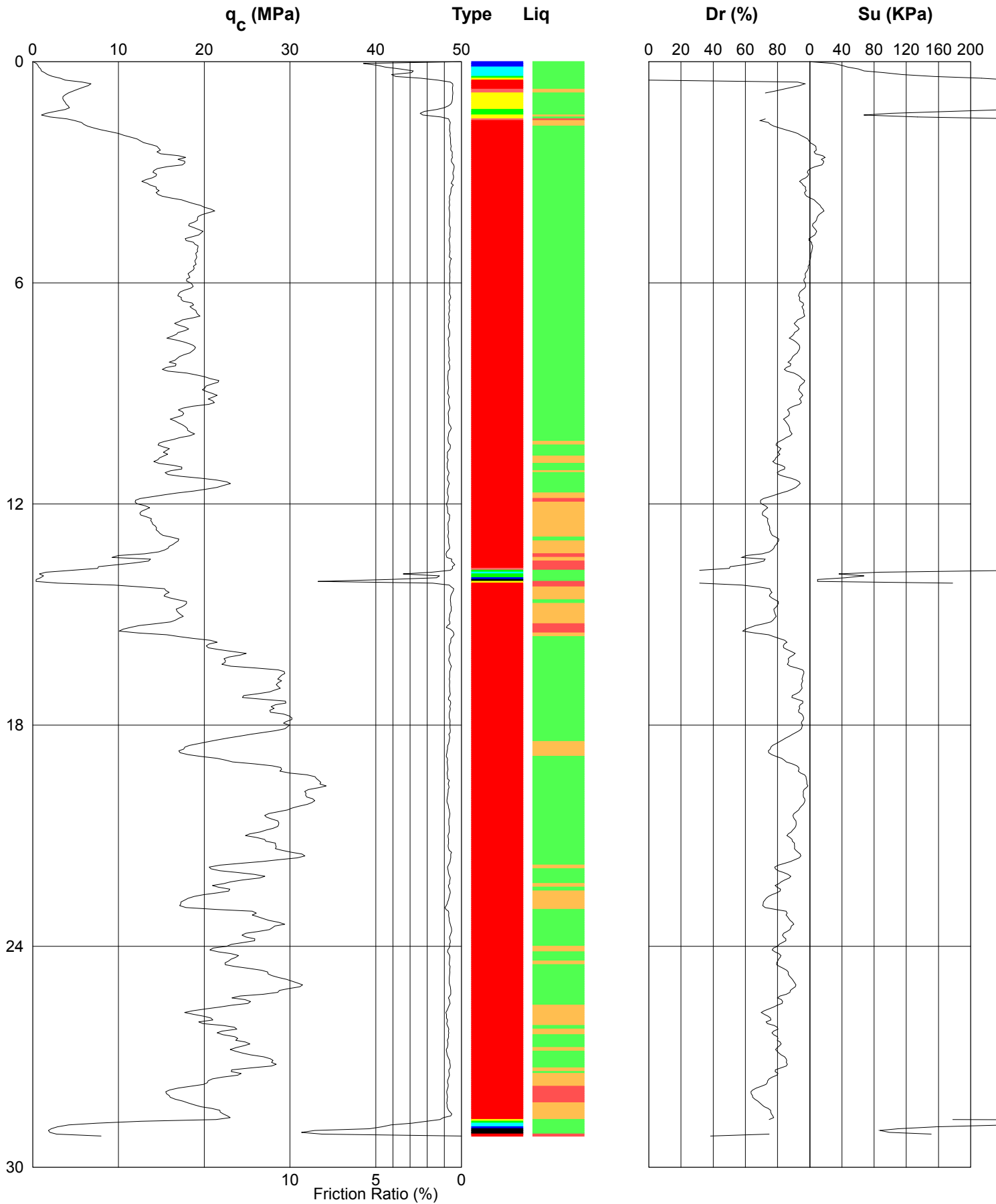
# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215  
 CPT No: CPTu009  
 Project: Aurecon NZ Ltd  
 Location: Prestons Road Subdivision

Date: 17-08-2011  
 Operator: J. Kendrick  
 Remark: Target Depth

# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

Date: 17-08-2011

CPT No: CPTu010

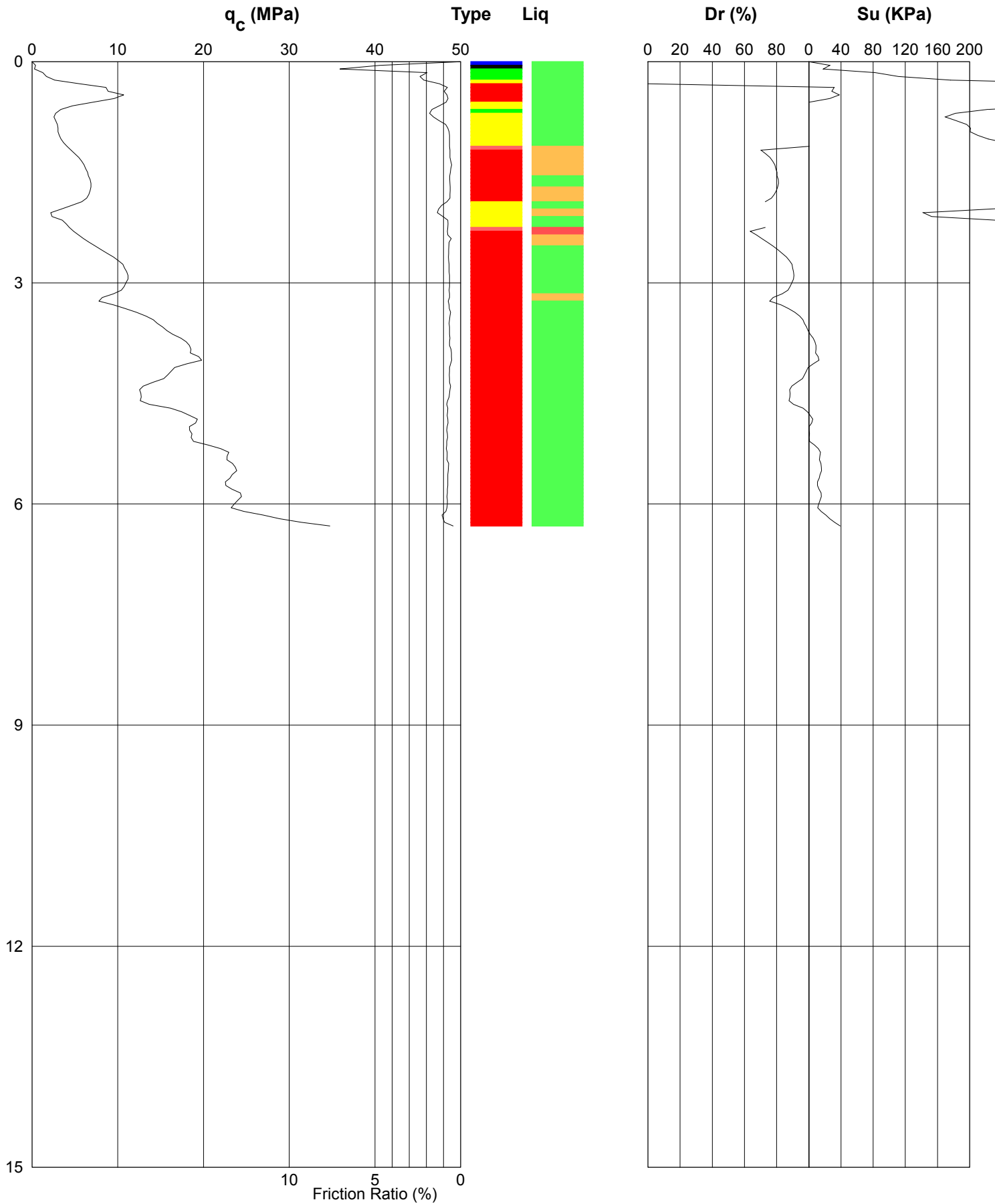
Operator: J. Kendrick

Project: Aurecon NZ Ltd

Remark: Target Depth

Location: Prestons Road Subdivision

# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

CPT No: CPTu011

Project: Aurecon NZ Ltd

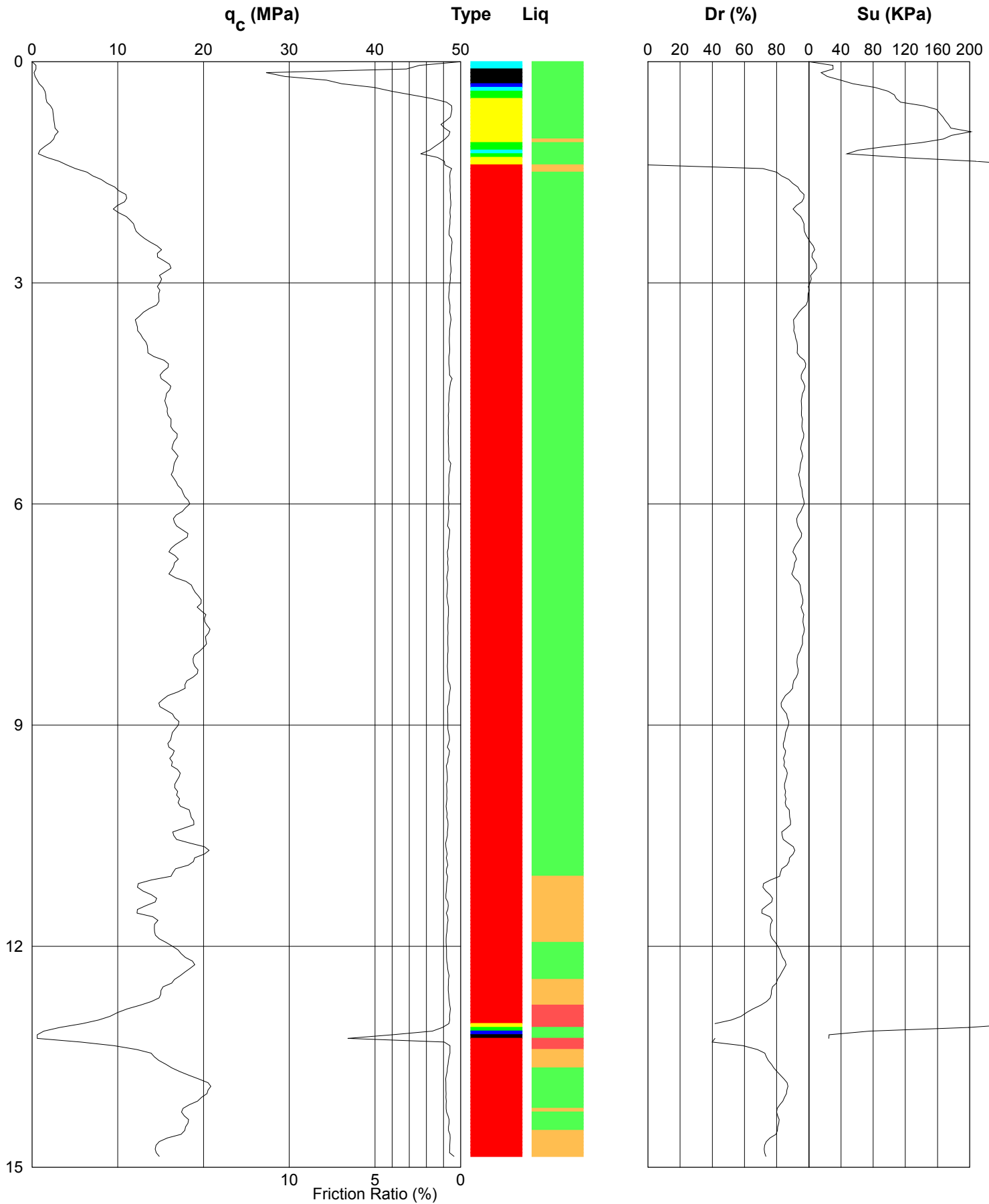
Location: Prestons Road Subdivision

Date: 17-08-2011

Operator: J. Kendrick

Remark: Effective Refusal

# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

CPT No: CPTu012

Project: Aurecon NZ Ltd

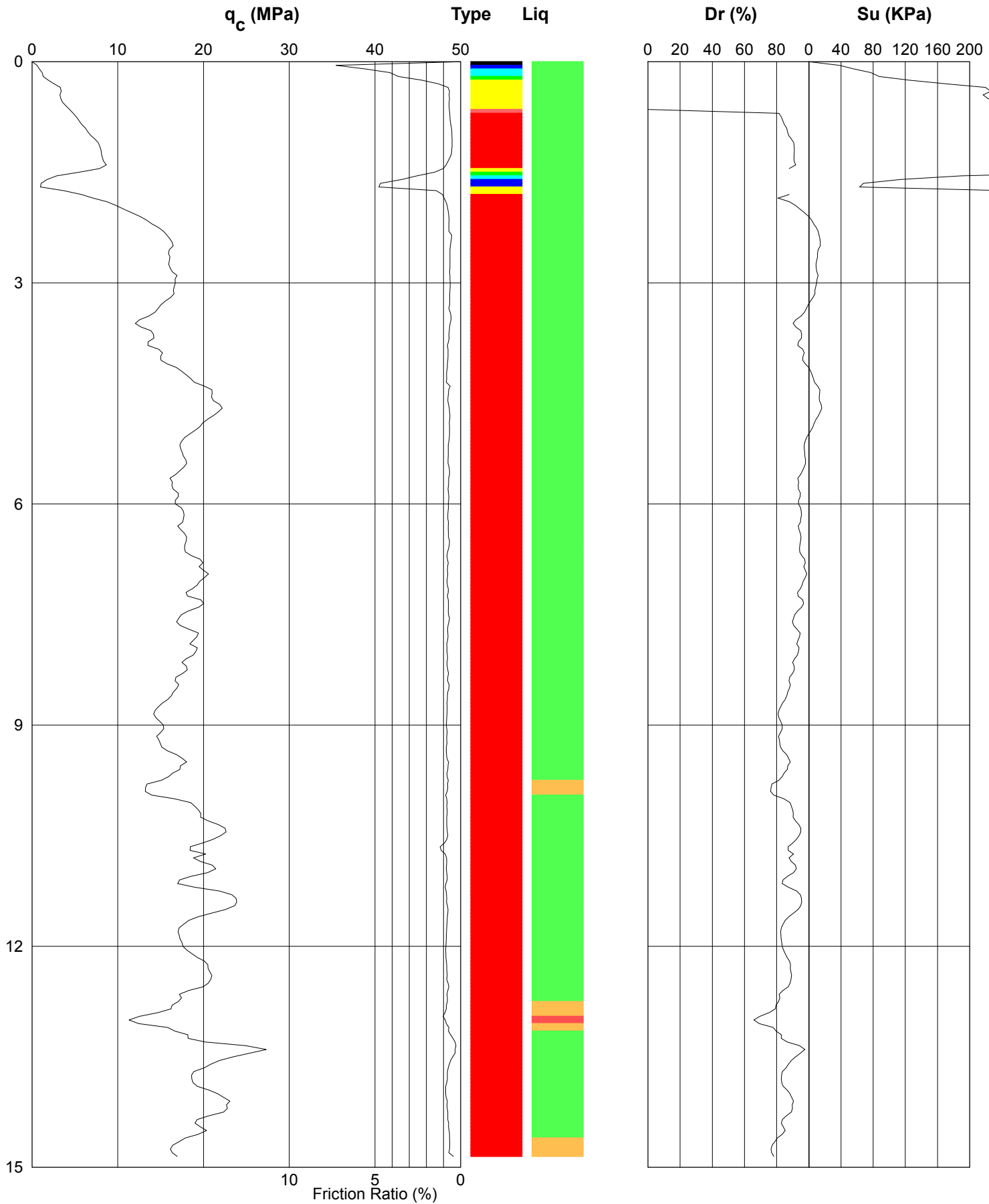
Location: Prestons Road Subdivision

Date: 17-08-2011

Operator: J. Kendrick

Remark: Target Depth

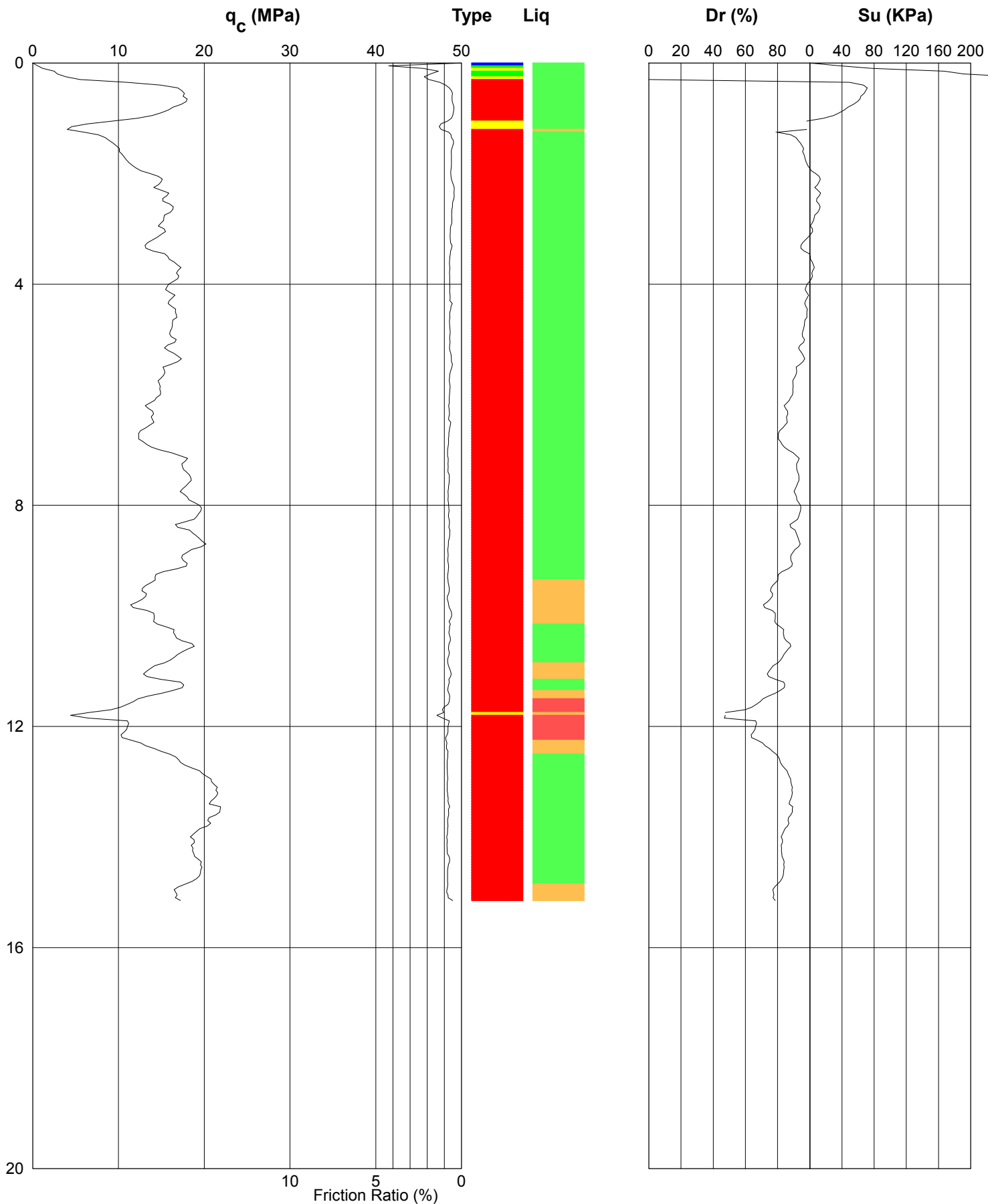
# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



**Job No:** 9215  
**CPT No:** CPTu013  
**Project:** Aurecon NZ Ltd  
**Location:** Prestons Road Subdivision

**Date:** 17-08-2011  
**Operator:** J. Kendrick  
**Remark:** Target Depth

# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

CPT No: CPTu014

Project: Aurecon NZ Ltd

Location: Prestons Road Subdivision

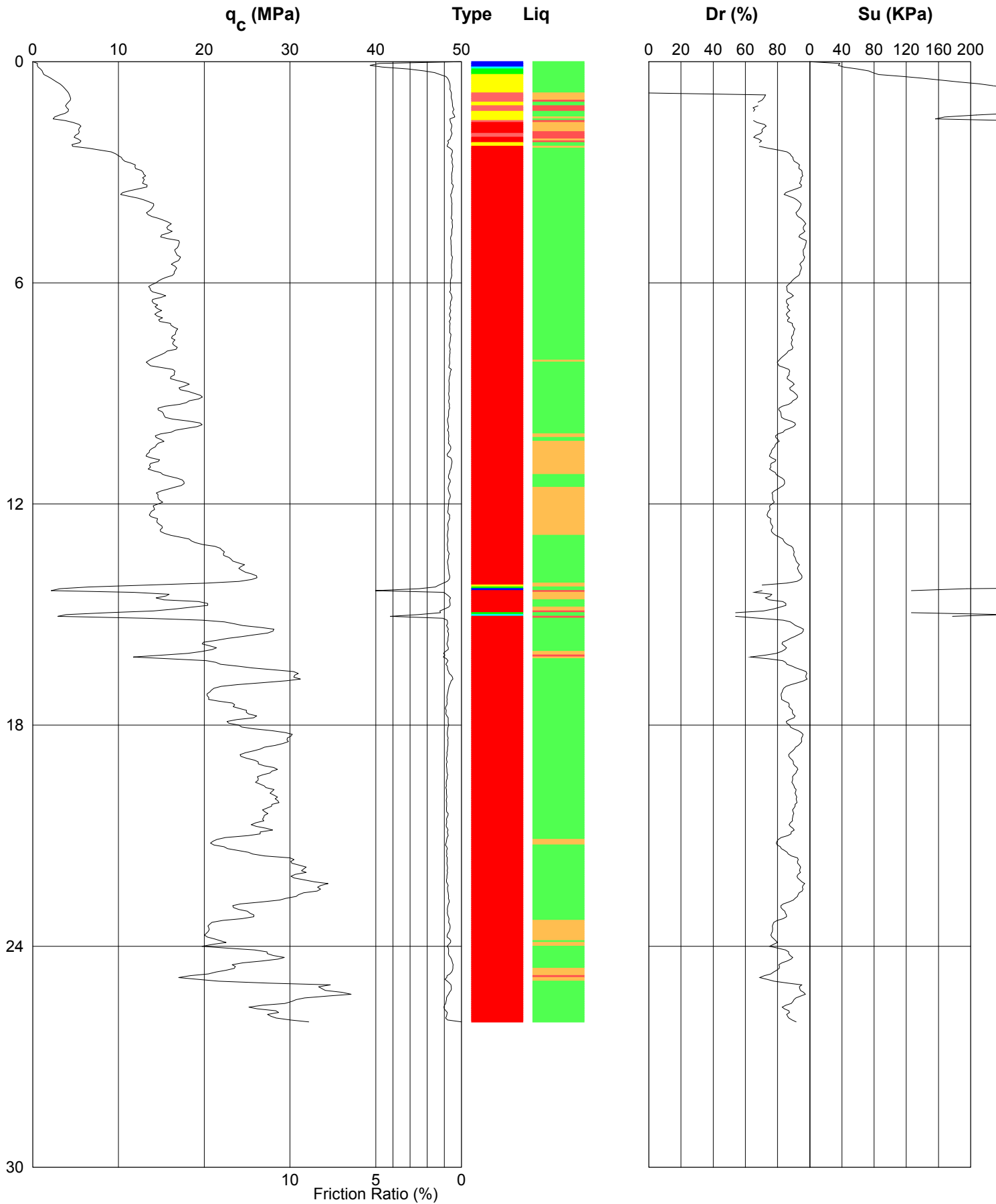
Date: 17-08-2011

Operator: J. Kendrick

Remark: Target Depth



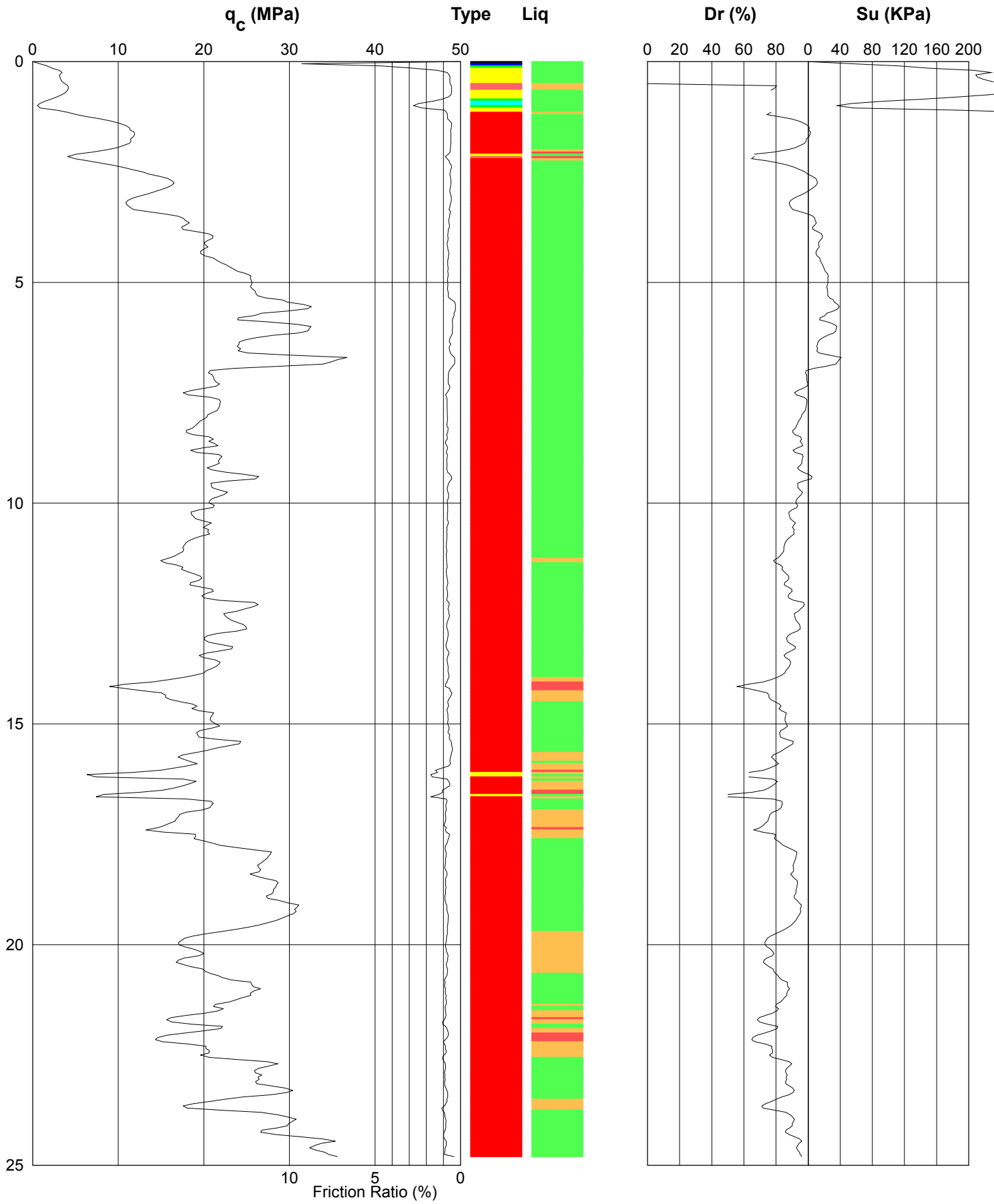
# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215  
 CPT No: CPTu015  
 Project: Aurecon NZ Ltd  
 Location: Prestons Road Subdivision

Date: 17-08-2011  
 Operator: J. Kendrick  
 Remark: Target Depth

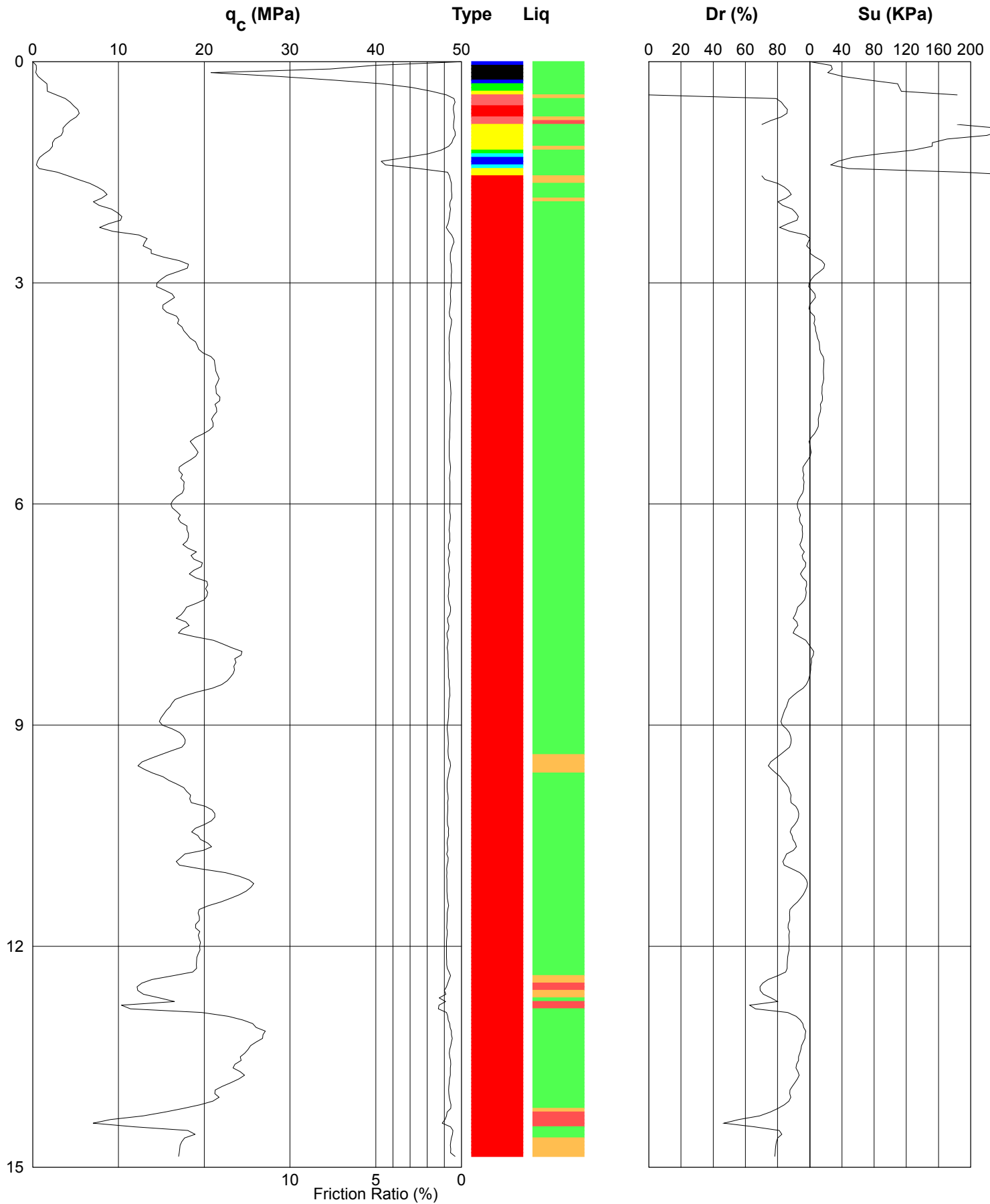
# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215  
 CPT No: CPTu016  
 Project: Aurecon NZ Ltd  
 Location: Prestons Road Subdivision

Date: 17-08-2011  
 Operator: J. Kendrick  
 Remark: Target Depth

# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

CPT No: CPTu017

Project: Aurecon NZ Ltd

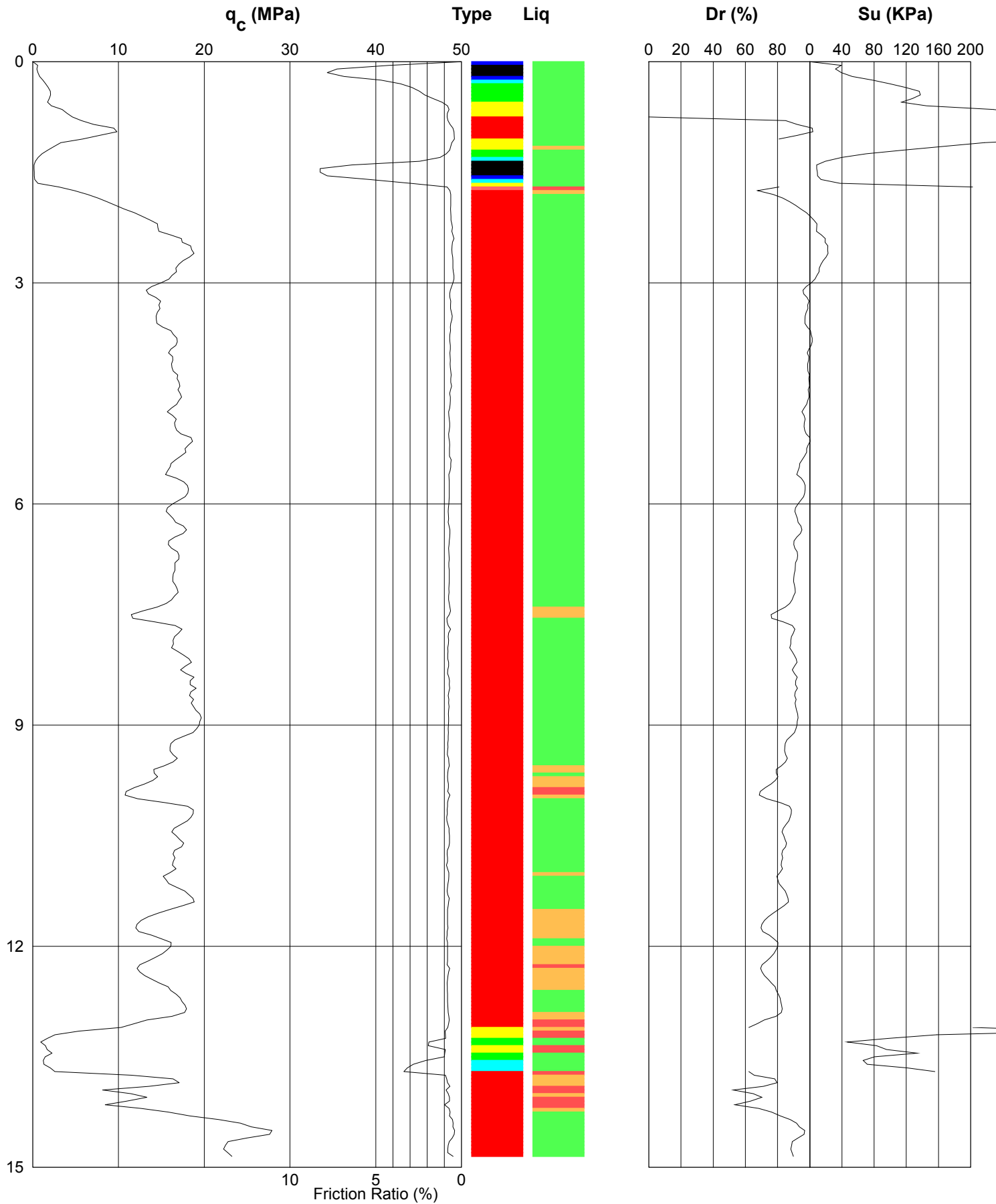
Location: Prestons Road Subdivision

Date: 17-08-2011

Operator: J. Kendrick

Remark: Target Depth

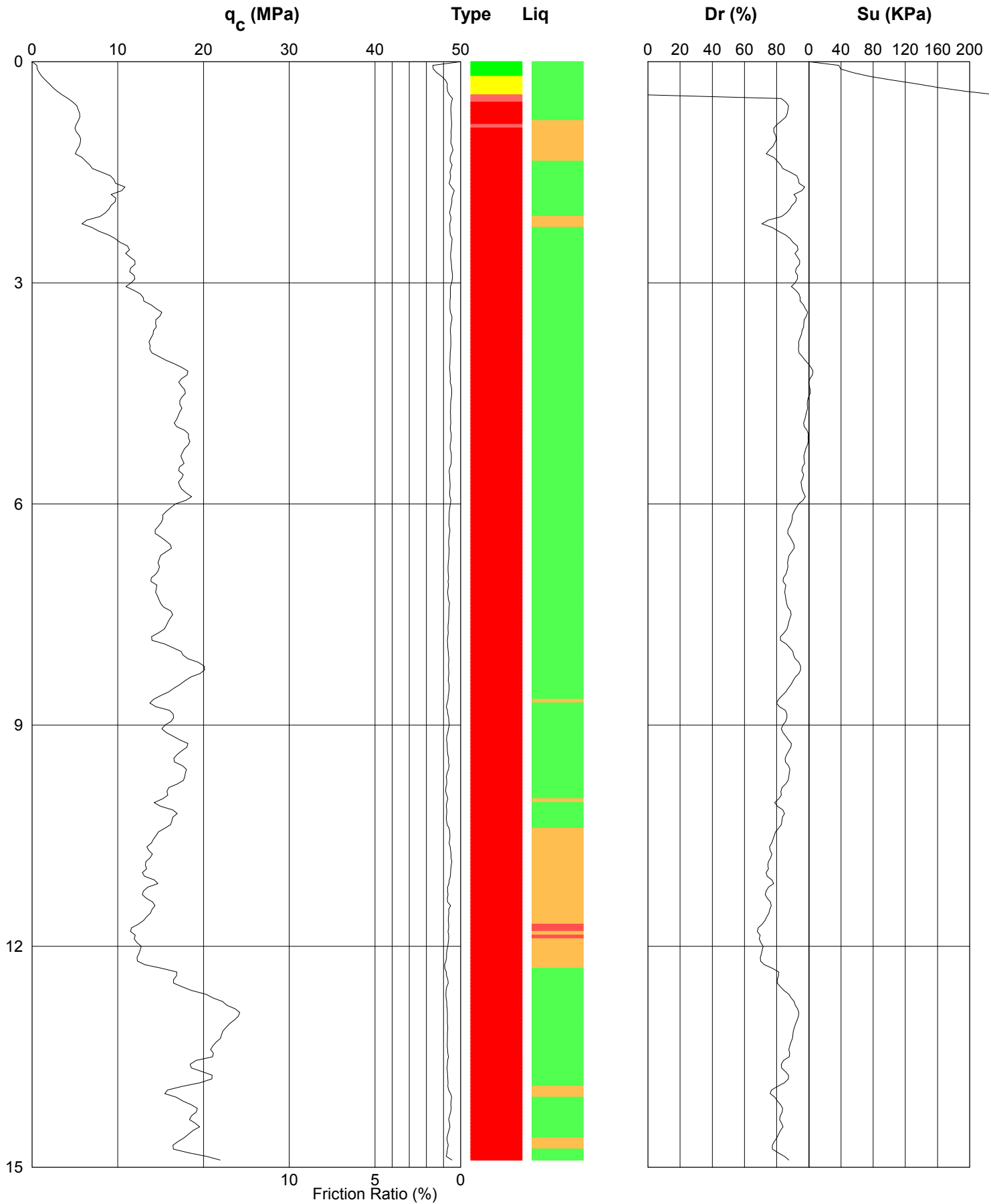
# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215  
 CPT No: CPTu018  
 Project: Aurecon NZ Ltd  
 Location: Prestons Road Subdivision

Date: 17-08-2011  
 Operator: J. Kendrick  
 Remark: Target Depth

# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

CPT No: CPTu019

Project: Aurecon NZ Ltd

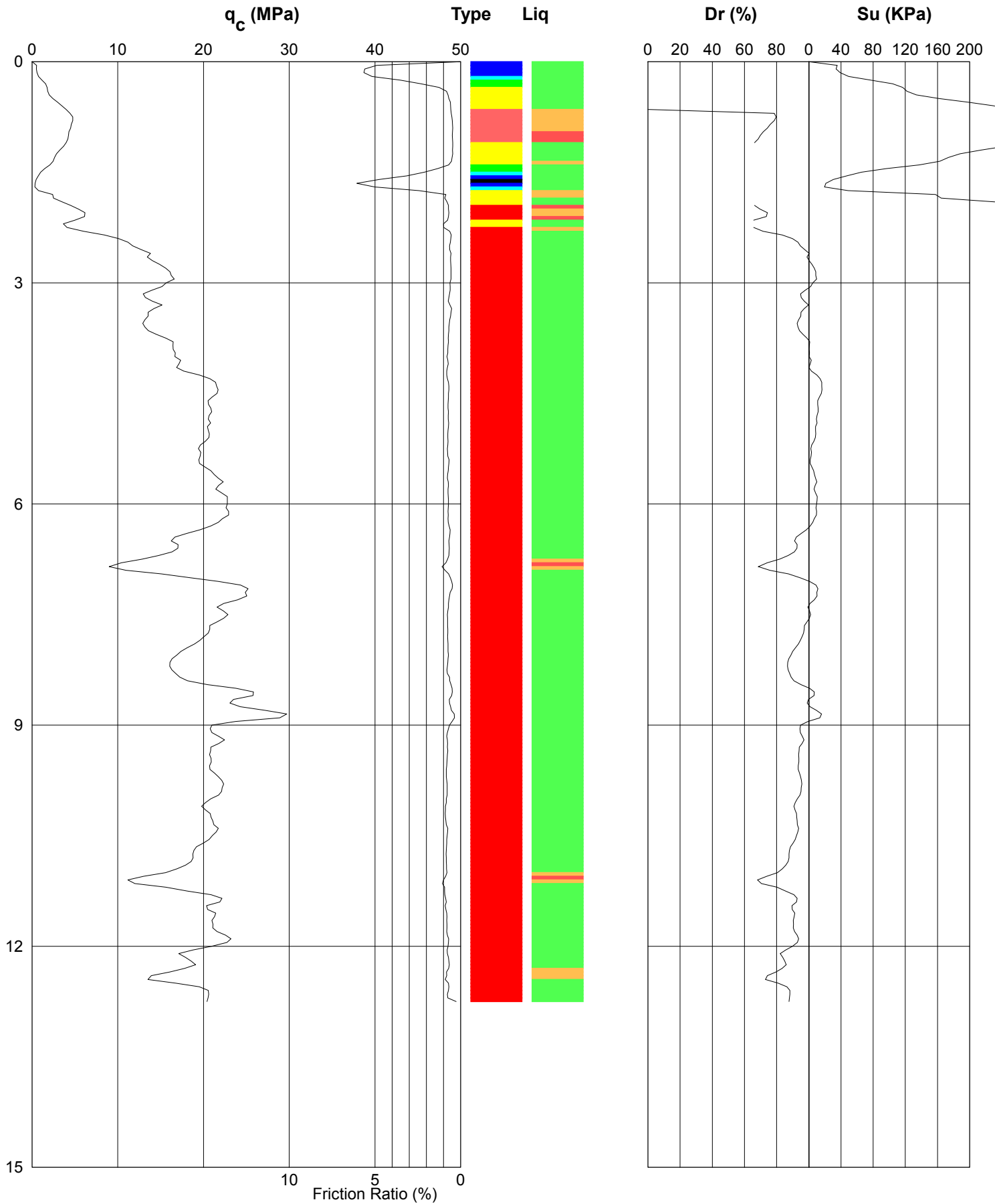
Location: Prestons Road Subdivision

Date: 17-08-2011

Operator: J. Kendrick

Remark: Target Depth

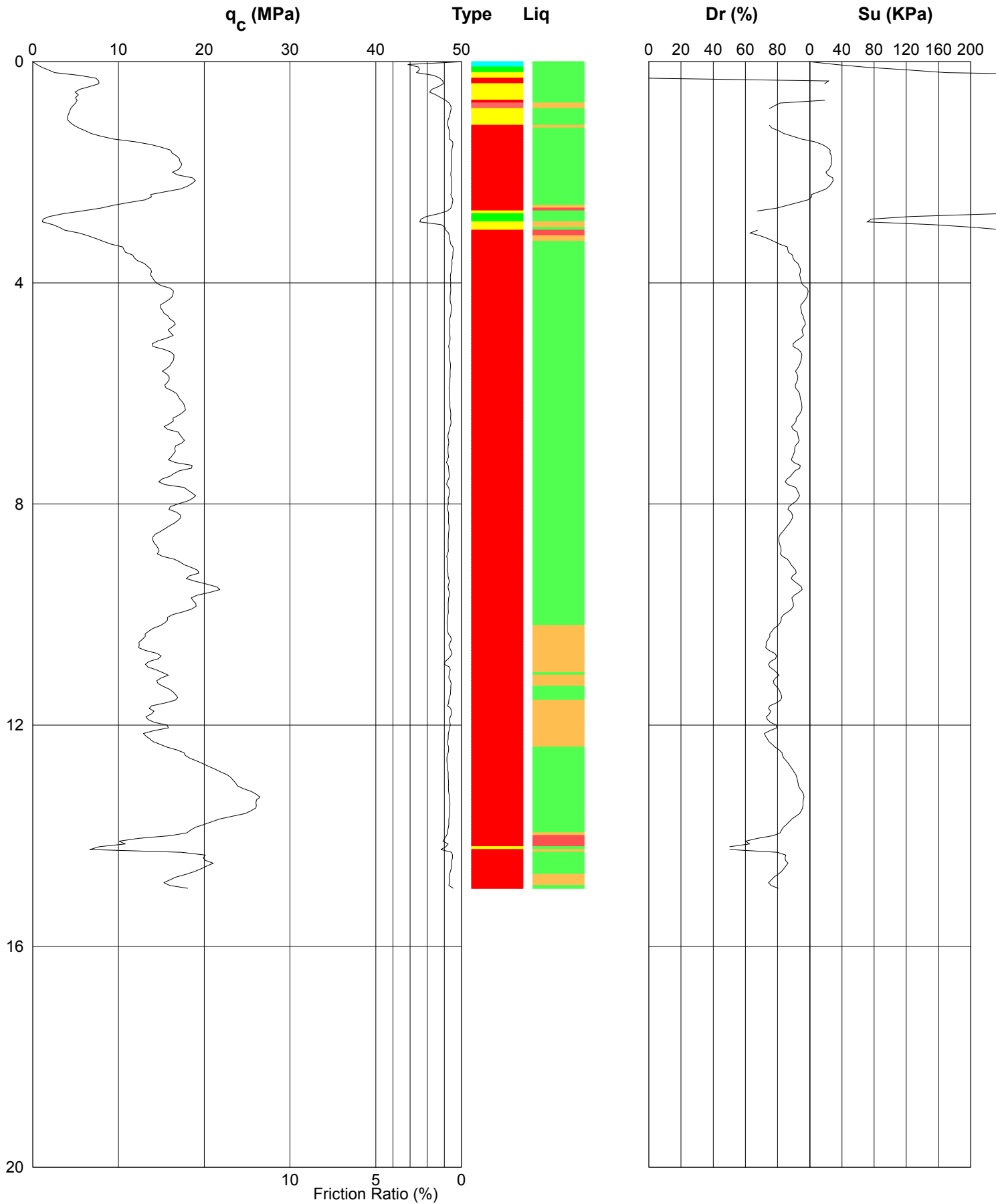
# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215  
 CPT No: CPTu020  
 Project: Aurecon NZ Ltd  
 Location: Prestons Road Subdivision

Date: 17-08-2011  
 Operator: J. Kendrick  
 Remark: Effective Refusal

# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

CPT No: CPTu021

Project: Aurecon NZ Ltd

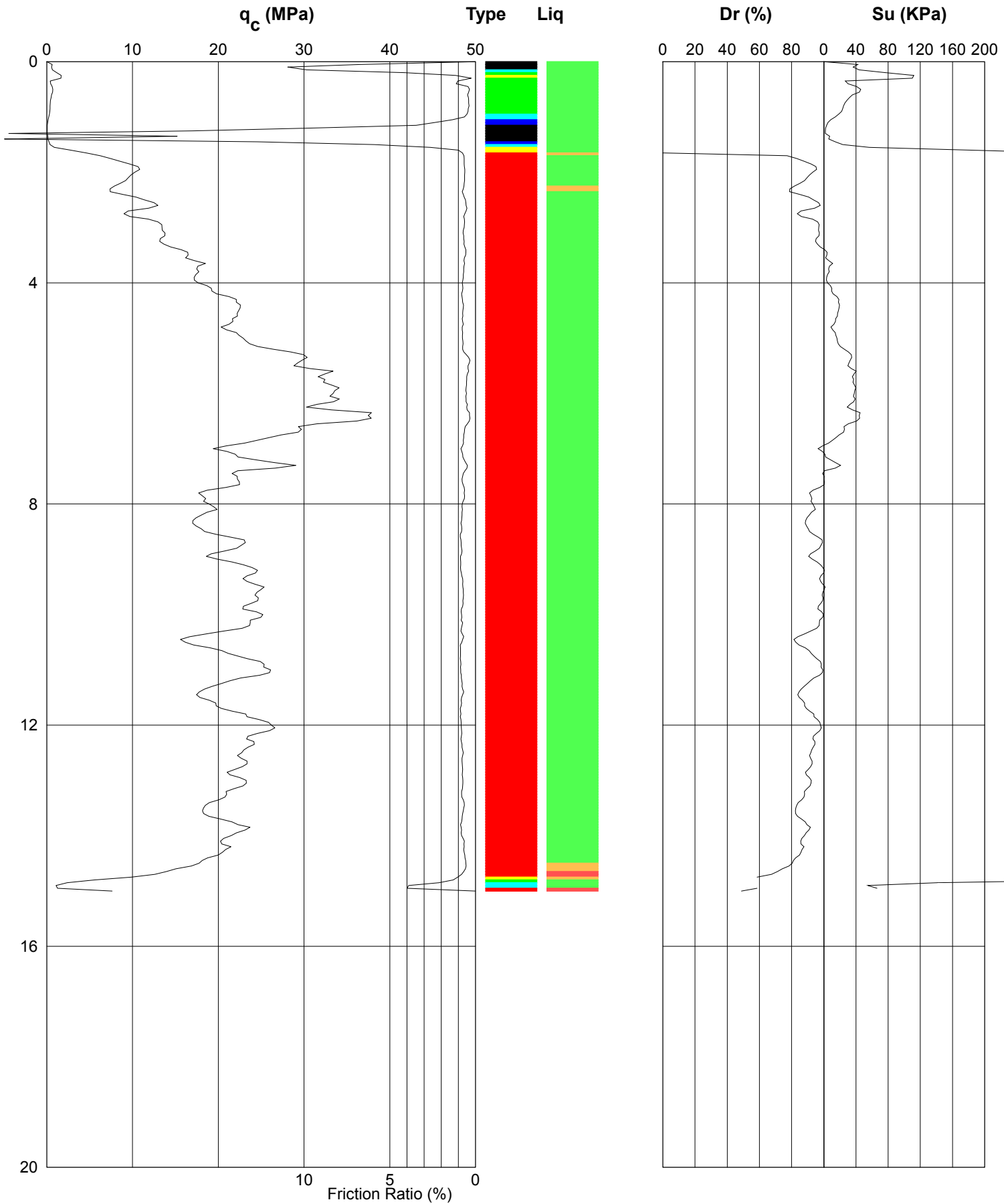
Location: Prestons Road Subdivision

Date: 18-08-2011

Operator: J. Kendrick

Remark: Target Depth

# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

CPT No: CPTu022

Project: Aurecon NZ Ltd

Location: Prestons Road Subdivision

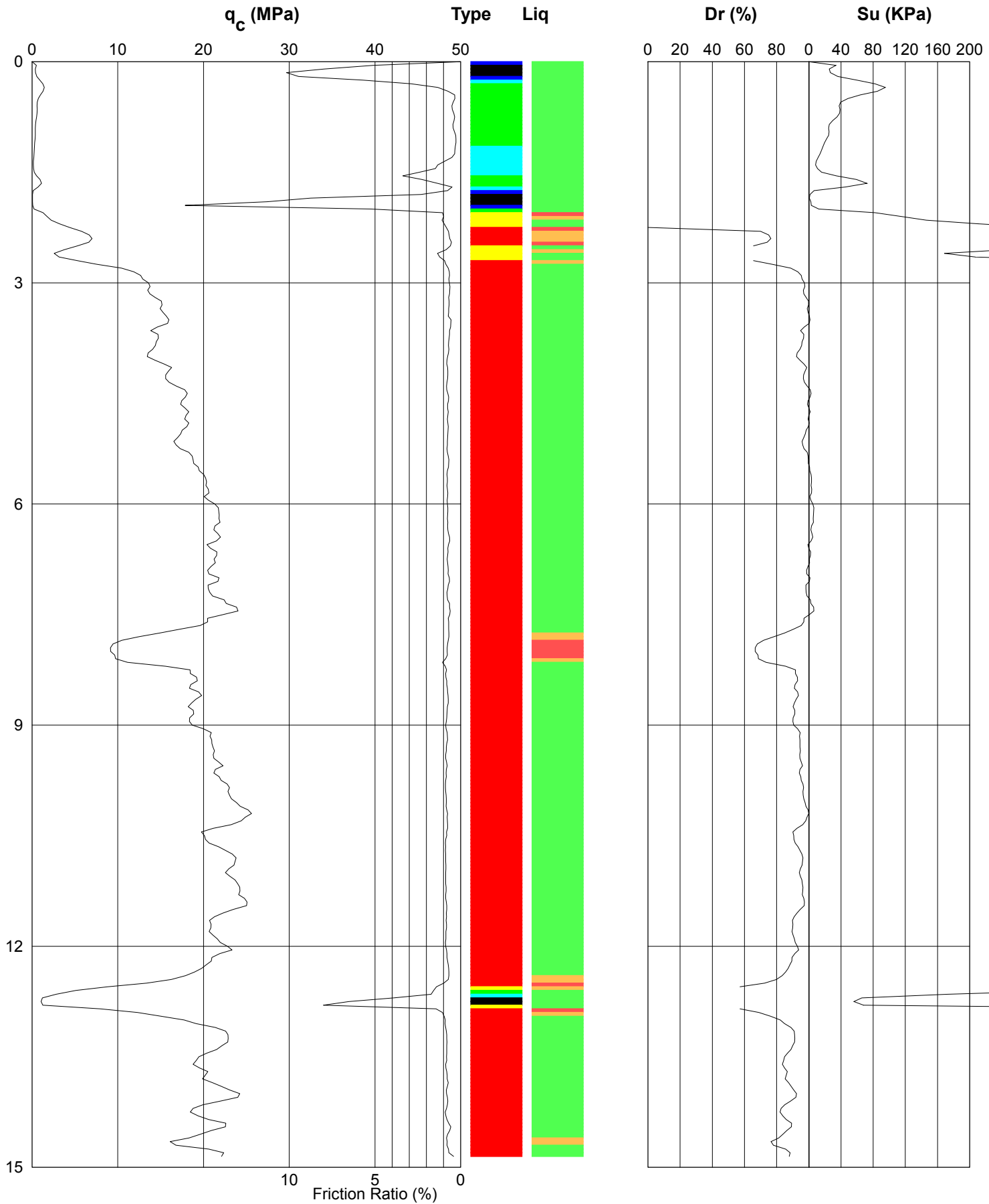
Date: 18-08-2011

Operator: J. Kendrick

Remark: Target Depth



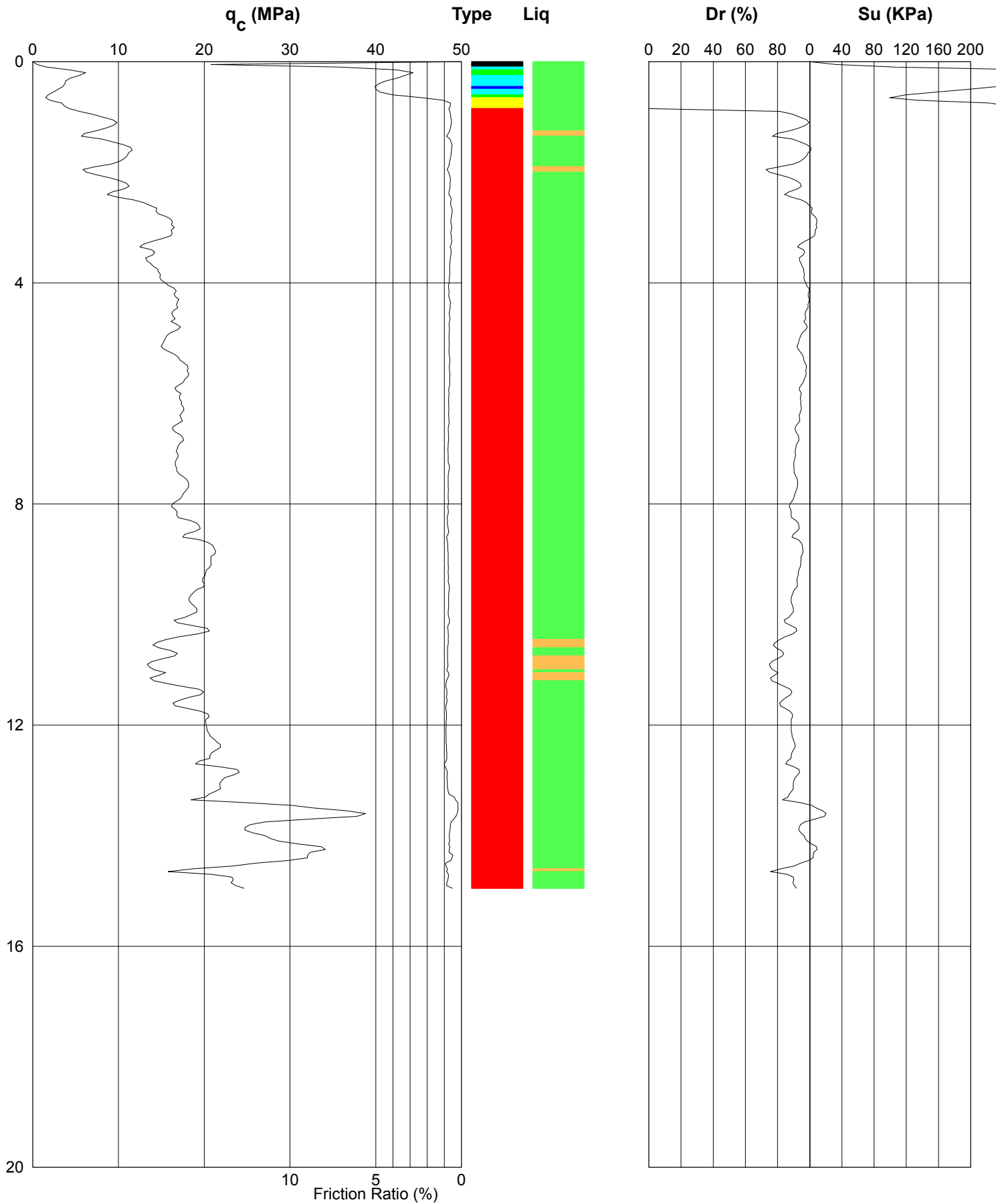
# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215  
 CPT No: CPTu023  
 Project: Aurecon NZ Ltd  
 Location: Prestons Road Subdivision

Date: 18-08-2011  
 Operator: J. Kendrick  
 Remark: Target Depth

# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

CPT No: CPTu024

Project: Aurecon NZ Ltd

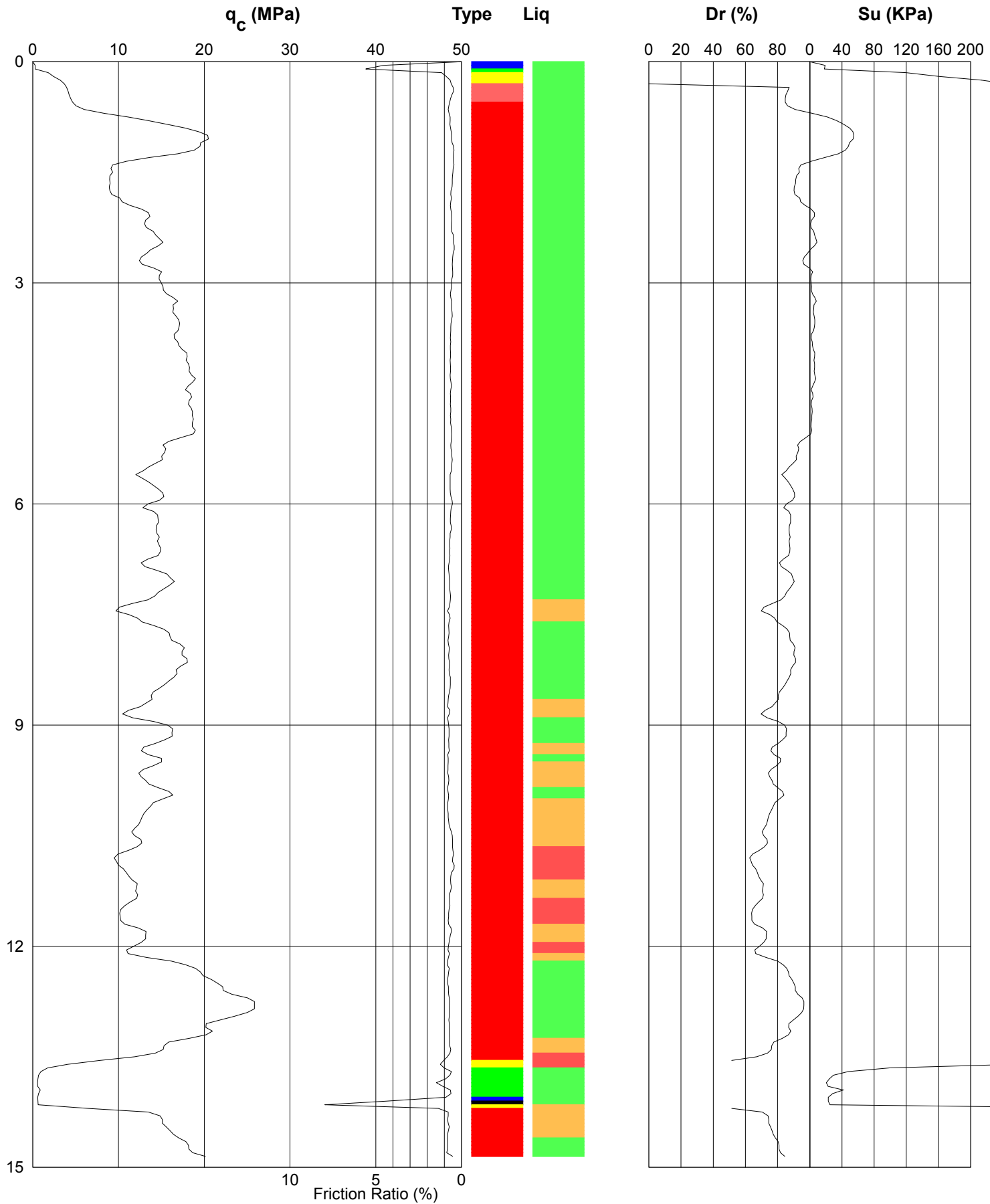
Location: Prestons Road Subdivision

Date: 18-08-2011

Operator: J. Kendrick

Remark: Target Depth

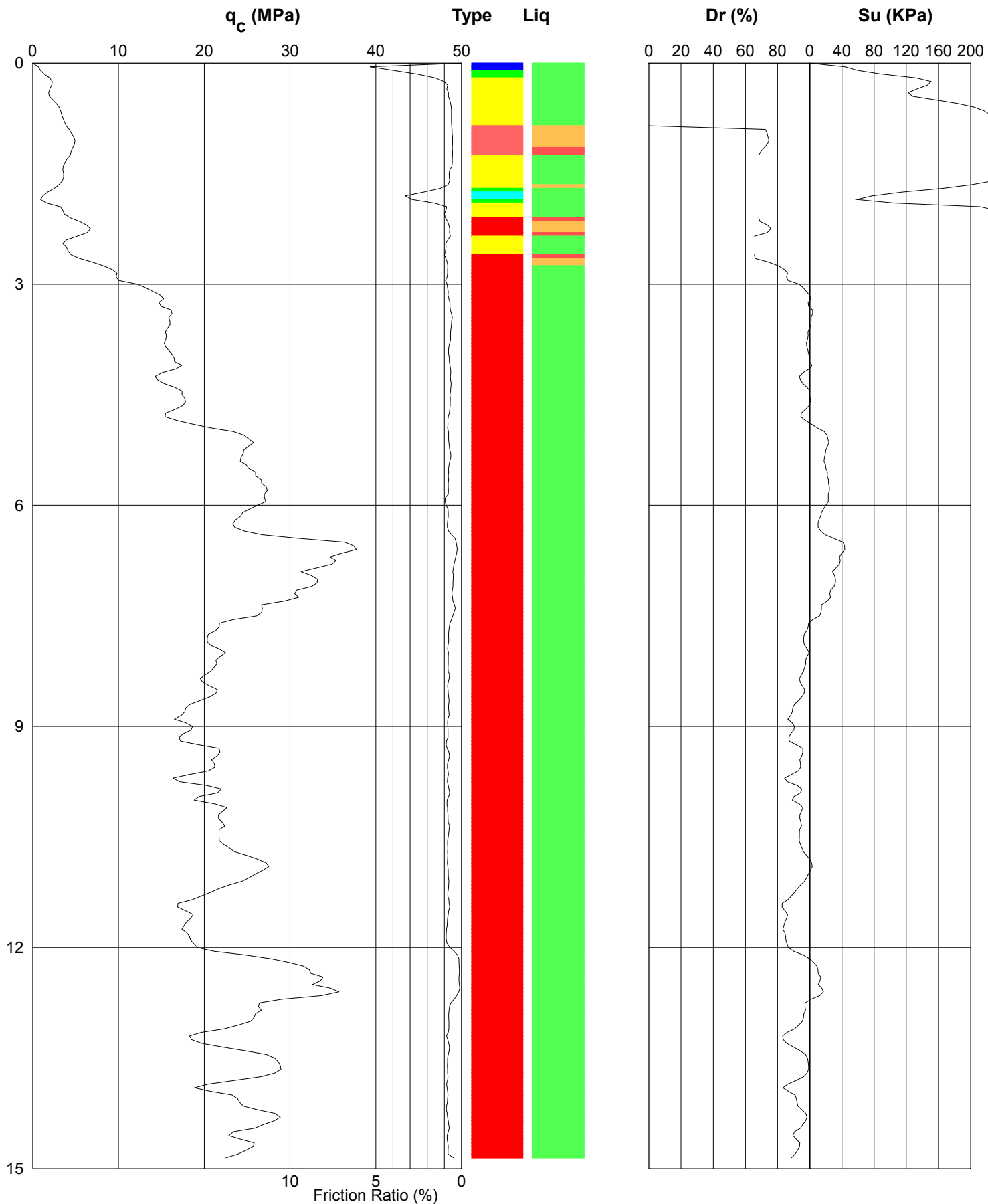
# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215  
 CPT No: CPTu025  
 Project: Aurecon NZ Ltd  
 Location: Prestons Road Subdivision

Date: 18-08-2011  
 Operator: J. Kendrick  
 Remark: Target Depth

# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

CPT No: CPTu026

Project: Aurecon NZ Ltd

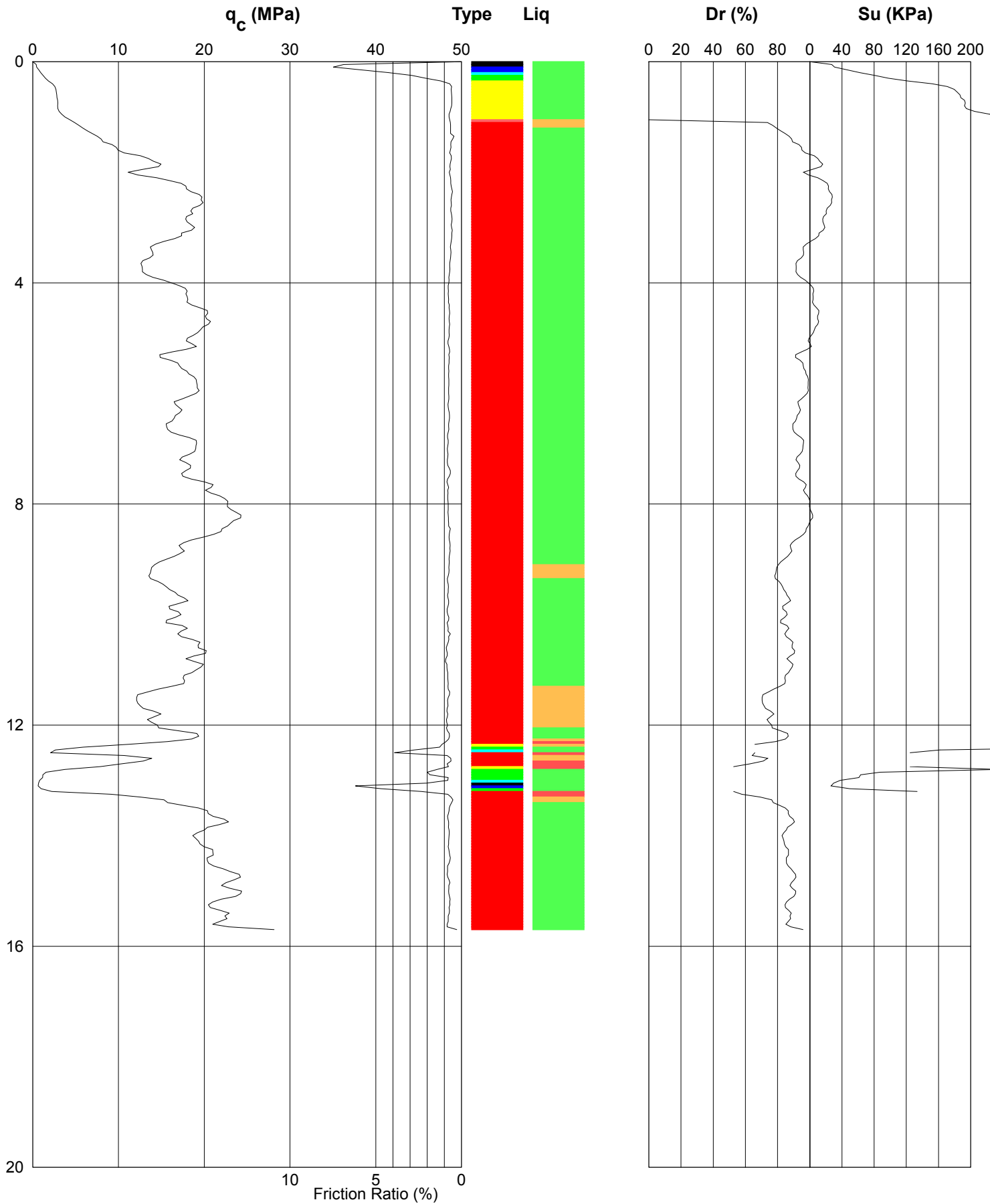
Location: Prestons Road Subdivision

Date: 18-08-2011

Operator: J. Kendrick

Remark: Target Depth

# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

CPT No: CPTu027

Project: Aurecon NZ Ltd

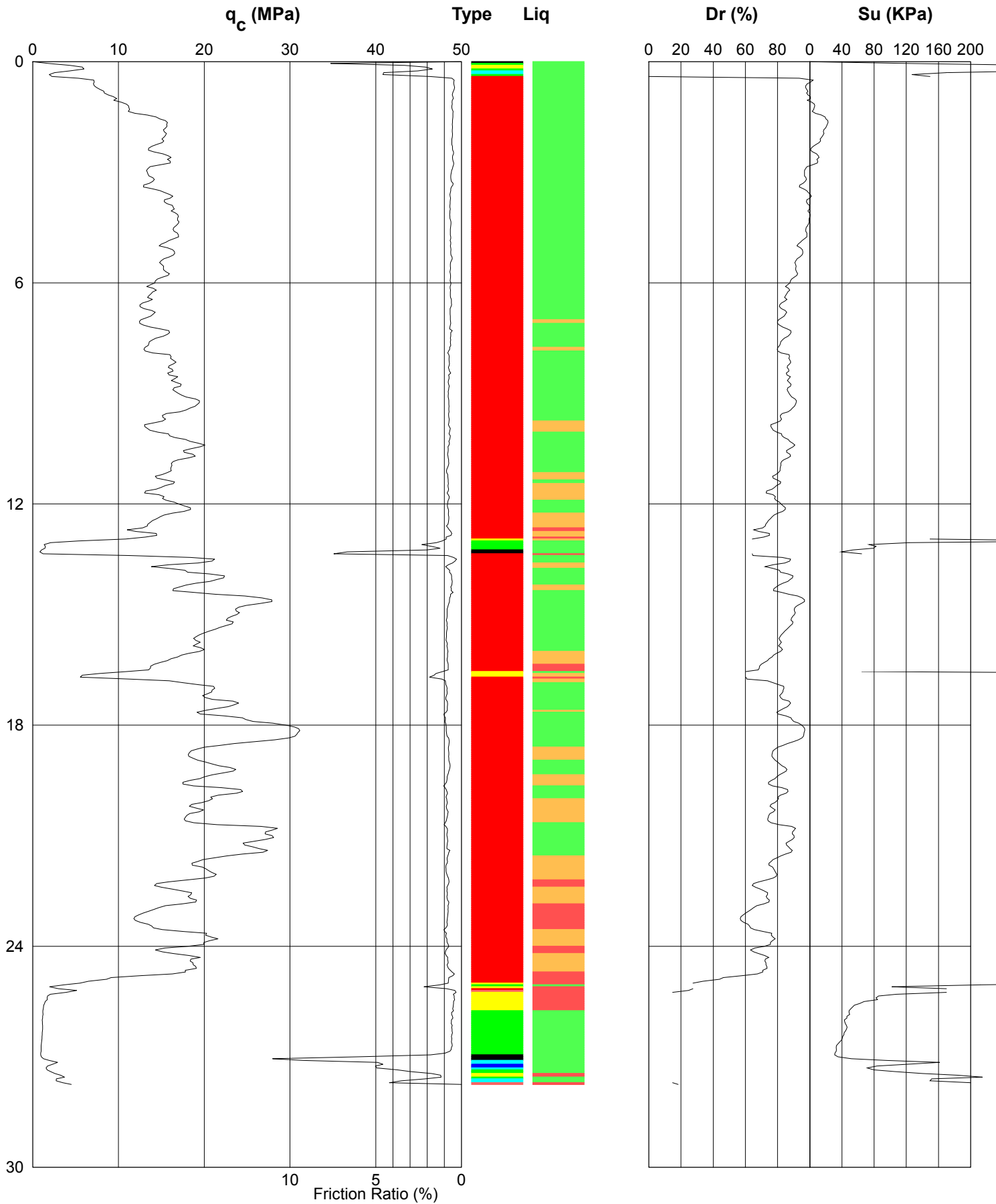
Location: Prestons Road Subdivision

Date: 18-08-2011

Operator: J. Kendrick

Remark: Target Depth

# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

CPT No: CPTu028

Project: Aurecon NZ Ltd

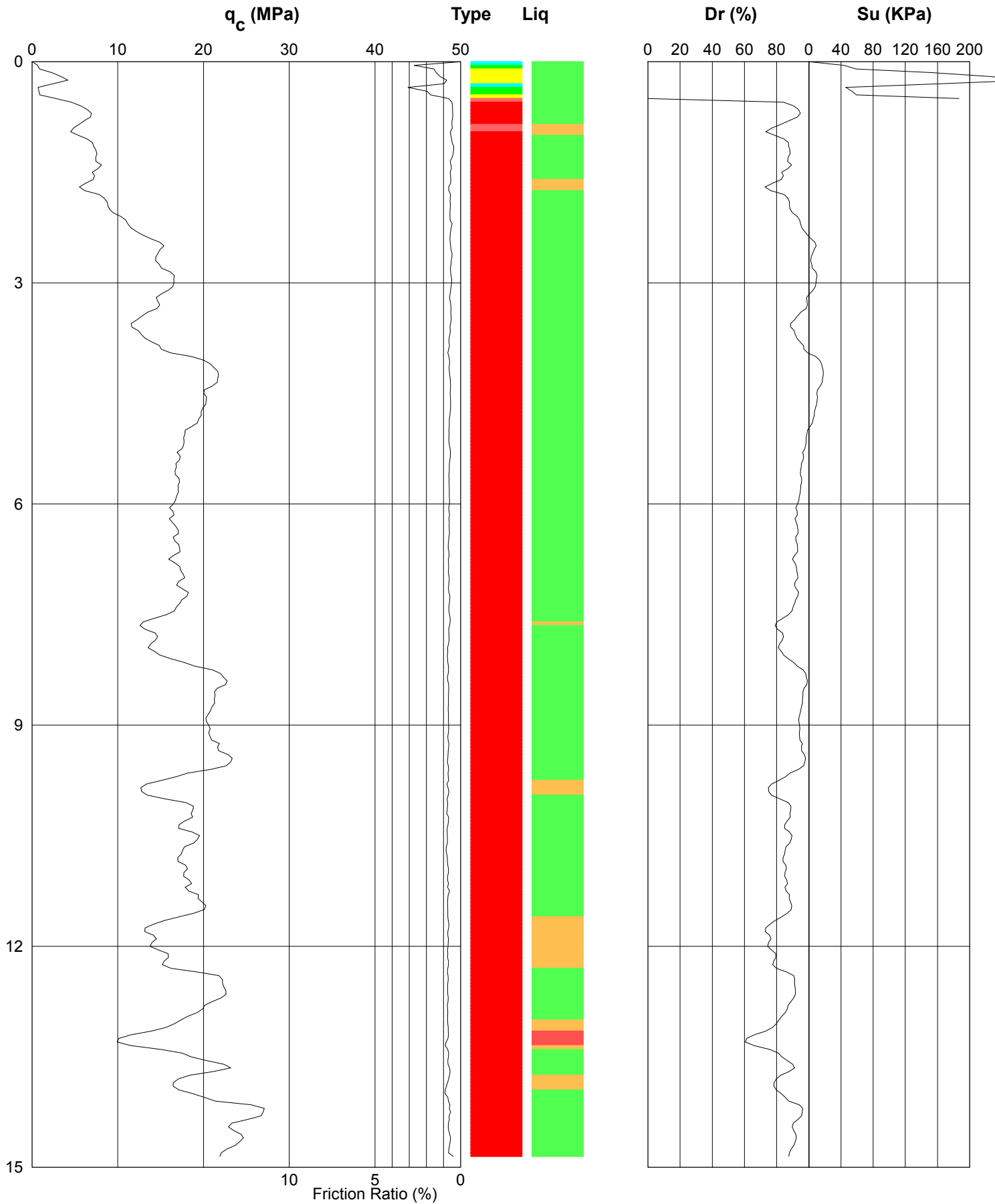
Location: Prestons Road Subdivision

Date: 18-08-2011

Operator: J. Kendrick

Remark: Target Depth

# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

CPT No: CPTu029

Project: Aurecon NZ Ltd

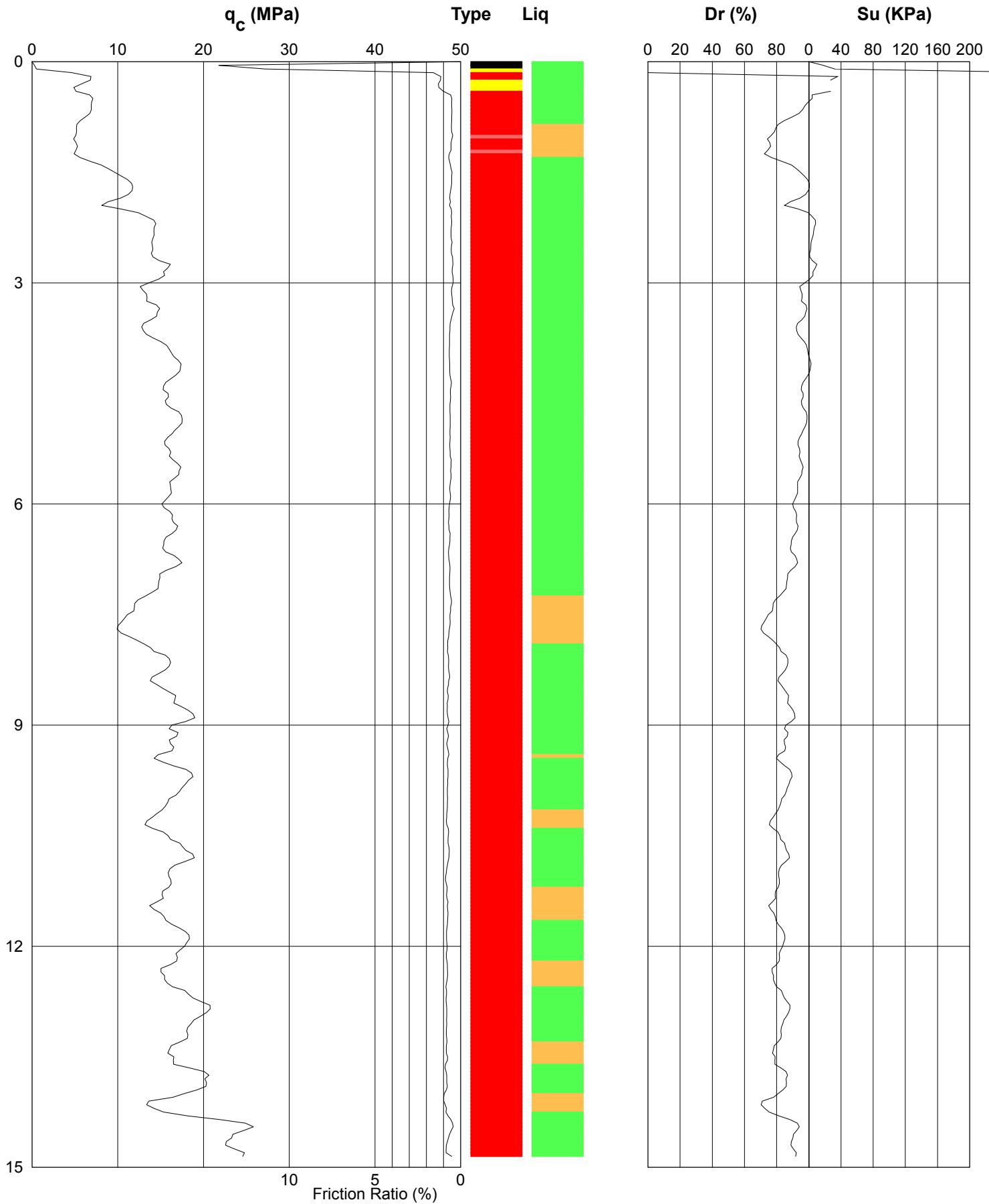
Location: Prestons Road Subdivision

Date: 18-08-2011

Operator: J. Kendrick

Remark: Target Depth

# PIEZOCONE PENETROMETER TEST (CPTU) INTERPRETIVE REPORT



Job No: 9215

CPT No: CPTu030

Project: Aurecon NZ Ltd

Location: Prestons Road Subdivision

Date: 18-08-2011

Operator: J. Kendrick

Remark: Target Depth