# PREFEITURA MUNICIPAL DE PRESIDENTE KENNEDY

PROJETOS EXECUTIVOS DE ENGENHARIA CIVIL PARA MELHORIAS OPERACIONAIS E PAVIMENTAÇÃO DE RODOVIAS VICINAIS MUNICIPAIS LOCALIZADAS NOS SEGUINTES TRECHOS INTEGRANTES DO LOTE 4 (EDITAL 006/2014):

- 4.3 - MONTE BELO - MINEIRINHO - CAMPINAS (ES-297)

## VOLUME 3B - ESTUDOS GEOTÉCNICOS

JANEIRO DE 2016

SUMÁRIO

# SUMÁRIO

# 1. APRESENTAÇÃO

# 1. APRESENTAÇÃO

A ENECON S.A. – ENGENHEIROS E ECONOMISTAS CONSULTORES apresenta o VOLUME 3B – ESTUDOS GEOTÉCNICOS referente ao PROJETO EXECUTIVO DE ENGENHARIA CIVIL PARA MELHORIAS OPERACIONAIS E PAVIMENTAÇÃO DE RODOVIA VICINAL MUNICIPAL DO TRECHO 4.3: MONTE BELO – MINEIRINHO – CAMPINAS (ES-297), EXTENSÃO 12,62 km, LOTE 04, em atendimento ao contrato assinado com a PREFEITURA MUNICIPAL DE PRESIDENTE KENNEDY, no estado do Espírito Santo.

Os principais dados contratuais são:

EDITAL: Concorrência – Edital Nº 006/2014

Nº do Processo: 004011/2013

DATA DA LICITAÇÃO: 10 de abril de 2014

DATA DA ASSINATURA DO CONTRATO: 9 de julho de 2014

DATA DA ORDEM DE INÍCIO DOS SERVIÇOS: 18 de agosto de 2014

CONTRATO Nº: 000168/2014

PRAZO CONTRATUAL: 365 DIAS

1º ADITIVO DE PRAZO: 90 DIAS

PRAZO CONTRATUAL + 1º ADITIVO: 455 dias

2º ADITIVO DE PRAZO: 90

PRAZO CONTRATUAL + 1º ADITIVO + 2º ADITIVO: 545 dias

A Impressão Definitiva do trecho 4.3 é composta pelos seguintes volumes:

– VOLUME 1 - RELATÓRIO DO PROJETO E INFORMAÇÕES PARA LICITAÇÃO – formato A4;

– VOLUME 2 - PROJETO DE EXECUÇÃO – formato A3;

– VOLUME 3 - MEMÓRIA JUSTIFICATIVA – formato A4;

– VOLUME 3A – ESTUDOS E PROJETOS AMBIENTAIS – formato A4;

– VOLUME 3B – ESTUDOS GEOTÉCNICOS – formato A4;

– VOLUME 3D – NOTAS DE SERVIÇOS E CÁLCULO DE VOLUMES – formato A4;

– VOLUME 3E – CADASTRO PARA DESAPROPRIAÇÃO – formato A4;

– VOLUME 4 - ORÇAMENTOS E PLANO DE EXECUÇÃO DA OBRA – formato A4.

SECRETARIA DE PLANEJAMENTO DA PRESIDÊNCIA DA REPÚBLICA
IBGE — DIRETORIA DE GEODÉSIA E CARTOGRAFIA
SUPERINTENDÊNCIA DE CARTOGRAFIA
CARTA DO BRASIL -

# PRESIDENTE KENNEDY

FOLHA SF-24-V-C-II-2

PRESIDENTE KENNEDY

3.1
3.2
3.3
3.4
4.1
4.2
4.3
4.4
4.5

| Rodovias Municipais de Presidente Kennedy / ES | | | |
|---|---|---|---|
| Lote | Trecho | Descrição | Ext. (km) |
| 4 | 4.1 | CAMPINAS (ES-297) - FAZENDINHA | 6,42 |
| | 4.2 | CERUDE - SANTA MARIA - SÃO BENTO | 7,65 |
| | 4.3 | MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | 12,62 |
| | 4.4 | MINEIRINHO (SANTA MADALENA) - SEDE | 6,3 |
| | 4.5 | MONTE BELO - CERUDE - CAETÉS (ES-297) | 11,2 |

MAPA DE SITUAÇÃO
LOTE: 4

# 2. ESTUDOS DO SUBLEITO

# 2.1 BOLETINS DE SONDAGENS

| ENECON | BOLETIM DE SONDAGEM | FOLHA Nº |
|---|---|---|
| CONTRATO Nº | RODOVIA/OBRA | TRECHO |
| | MUNICIPAL | LOTE 4 (MONTE BELO - MINEIRINHO - CAMPINA) |
| SUBTRECHO | | |
| LOTE 4 - TRECHO 4-3 | | |
| ESTUDO | IDENTIFICAÇÃO | ENCAR. SONDAGEM / DATA |
| SUBLEITO | | MAURO CESAR RODRIGUES COUTINHO / 6/10/2014 |

| REGISTRO Nº | FURO Nº | ESTACA / KM | ETIQUETA Nº | POSIÇÃO | PROFUNDIDADE (m) DE | PROFUNDIDADE (m) A | TIPO DE ENSAIO | TIPO DE SONDAGEM | CLASSIFICAÇÃO EXPEDITA |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0+00 | | EX | 0,00 | 0,85 | CO | PP | Argila Arenosa Amarela |
| | | | | | 0,85 | 1,50 | CO | PP | Tabatinga |
| | | | | | | | | | |
| | 2 | 26+00 | | EX | 0,00 | 1,50 | CO | PP | Argila Arenosa Amarela |
| | | | | | | | | | |
| | 3 | 39+10 | | LD | 0,00 | 0,05 | - | PP | Camada Vegetal |
| | | | | | 0,05 | 3,00 | CO | PP | Argila Arenosa Amarela |
| | | | | | 3,00 | 4,15 | CO | PP | Argila Siltosa Amarela |
| | | | | | | | | | |
| | 4 | 65+00 | | EX | 0,00 | 1,20 | CO | PP | Argila Arenosa Amarela |
| | | | | | | | | | |
| | 5 | 80+00 | | LD | 0,00 | 0,05 | - | TR | Camada Vegetal |
| | | | | | 0,05 | 3,00 | CO | TR | Argila Arenosa Marrom |
| | | | | | 3,00 | 5,50 | CO | TR | Argila Siltosa Amarela |
| | | | | | | | | | |
| | 6 | 89+00 | | LD | 0,00 | 0,05 | - | - | Camada Vegetal |
| | | | | | | | | | |
| | | | | | 2,40 | 5,40 | CO | RA | Silte Argiloso Rosa |
| | | | | | 5,40 | 7,20 | CO | RA | Silte Rosa |
| | | | | | | | | | |
| | 7 | 115+00 | | EX | 0,00 | 1,20 | CO | PP | Tabatinga |
| | | | | | | | | | |
| | 8 | 139+00 | | LD | 0,00 | 3,05 | CO | TR | Silte Argiloso com Laterita Variegada |
| | | | | | | | | | |
| | 9 | 170+10 | | EX | 0,00 | 1,55 | CO | TR | Argila Siltosa Amarela |
| | | | | | 1,55 | 4,60 | CO | TR | Silte Amarelo |
| | | | | | | | | | |

**Legenda para controle do registro e preparação da amostra:**

**X** Amostra registrada  (**nº**) Amostra preparada

**Legenda para os tipos de ensaios**

CA - Caracterização  CO - Completo

**Legenda para o tipos de sondagem:**

RA - Raspagem  PP - Pá e Picareta  TR - Trado motorizado  PA - Paceta

Observações:

| ENECON | BOLETIM DE SONDAGEM | FOLHA Nº |
|---|---|---|
| CONTRATO Nº | RODOVIA/OBRA | TRECHO |
| | MUNICIPAL | LOTE 4 (MONTE BELO - MINEIRINHO - CAMPINA) |
| SUBTRECHO | | |
| LOTE 4 - TRECHO 4-3 | | |
| ESTUDO | IDENTIFICAÇÃO | ENCAR. SONDAGEM / DATA |
| SUB-LEITO | | MAURO CESAR RODRIGUES COUTINHO / 6/10/2014 |

| REGISTRO Nº | FURO Nº | ESTACA / KM | ETIQUETA Nº | POSIÇÃO | PROFUNDIDADE (m) DE | PROFUNDIDADE (m) A | TIPO DE ENSAIO | TIPO DE SONDAGEM | CLASSIFICAÇÃO EXPEDITA |
|---|---|---|---|---|---|---|---|---|---|
| | 10 | 195+00 | | | 0,00 | 3,00 | CO | TR | Silte Argiloso Marrom |
| | 11 | 207+10 | | LE | 0,00 | 3,15 | CO | TR | Argila Siltosa Amarela |
| | 12 | 222+00 | | LD | 0,00 | 3,00 | CO | TR | Silte Argiloso Marrom |
| | | | | | 3,00 | 4,50 | CO | TR | Argila Siltosa Vermelha |
| | 13 | 247+00 | | LD | 0,00 | 1,50 | CO | PP | Argila Arenosa Amarela |
| | 14 | 263+10 | | EX | 0,00 | 3,55 | CO | TR | Argila Arenosa Amarela |
| | 15 | 270+00 | | LE | 0,00 | 1,50 | CO | PP | Argila Arenosa Amarela |
| | 16 | 295+00 | | LD | 0,00 | 1,50 | CO | PP | Argila Arenosa Amarela |
| | 17 | 306+00 | | LE | 0,00 | 2,50 | CO | PA | Argila Arenosa Amarela |
| | 18 | 320+00 | | EX | 0,00 | 1,50 | CO | PP | Argila Arenosa Amarela |
| | 19 | 345+00 | | LE | 0,00 | 1,50 | CO | PP | Argila Arenosa Amarela |
| | 20 | 370+00 | | LD | 0,00 | 1,50 | CO | PP | Argila Arenosa Amarela |
| | 21 | 395+00 | | EX | 0,00 | 1,50 | CO | PP | Argila Arenosa Amarela |
| | 22 | 410+00 | | LE | 0,00 | 2,50 | CO | TR | Argila Arenosa Amarela |
| | | | | | 2,50 | 5,20 | CO | TR | Argila Arenosa Amarela |

**Legenda para controle do registro e preparação da amostra:**

**X** Amostra registrada  (**nº**) Amostra preparada

**Legenda para os tipos de ensaios**

CA - Caracterização  CO - Completo

**Legenda para o tipos de sondagem:**

RA - Raspagem  PP - Pá e Picareta  TR - Trado motorizado  PA - Paceta

Observações:

| ENECON | BOLETIM DE SONDAGEM | FOLHA Nº |
|---|---|---|
| CONTRATO Nº | RODOVIA/OBRA | TRECHO |
| | MUNICIPAL | LOTE 4 (MONTE BELO - MINEIRINHO - CAMPINA) |
| SUBTRECHO | | |
| LOTE 4 - TRECHO 4-3 | | |
| ESTUDO | IDENTIFICAÇÃO | ENCAR. SONDAGEM / DATA |
| SUB-LEITO | | MAURO CESAR RODRIGUES COUTINHO / 6/10/2014 |

| REGISTRO Nº | FURO Nº | ESTACA / KM | ETIQUETA Nº | POSIÇÃO | PROFUNDIDADE (m) DE | PROFUNDIDADE (m) A | TIPO DE ENSAIO | TIPO DE SONDAGEM | CLASSIFICAÇÃO EXPEDITA |
|---|---|---|---|---|---|---|---|---|---|
| | 23 | 420+00 | | LE | 0,00 | 1,50 | CO | PP | Argila Arenosa Amarela |
| | 24 | 434+10 | | EX | 0,00 | 1,50 | CO | PP | Argila Arenosa Amarela |
| | 25 | 460+00 | | LE | 0,00 | 1,50 | CO | PP | Argila Arenosa Amarela |
| | 26 | 485+00 | | LD | 0,00 | 1,20 | CO | PP | Argila Arenosa Amarela |
| | 27 | 493+00 | | LD | 0,00 | 2,50 | CO | TR | Argila Arenosa Amarela |
| | | | | | 2,50 | 5,10 | CO | TR | Argila Arenosa Amarela |
| | 28 | 494+00 | | LD | 0,00 | 3,00 | CO | TR | Argila Siltosa Marrom |
| | | | | | 3,00 | 6,00 | CO | TR | Argila Siltosa Vermelha |
| | | | | | 6,00 | 6,50 | CO | TR | Argila Siltosa Vermelha |
| | 29 | 510+00 | | LD | 0,00 | 1,20 | CO | PP | Argila Arenosa Amarela |
| | 30 | 535+00 | | LD | 0,00 | 1,20 | CO | PP | Argila Arenosa Amarela |
| | 31 | 542+10 | | LD | 0,00 | 0,05 | - | TR | Camada Vegetal |
| | | | | | 0,05 | 1,50 | CO | TR | Argila Siltosa Amarela |
| | | | | | 1,50 | 2,60 | CO | TR | Silte Argiloso Vermelho |
| | 32 | 543+00 | | LD | 0,00 | 3,00 | CO | TR | Argila Siltosa Vermelha |
| | | | | | 3,00 | 5,00 | CO | TR | Argila Siltosa Vermelha |
| | 33 | 558+00 | | LE | 0,00 | 1,20 | CO | PP | Argila Arenosa Amarela |

**Legenda para controle do registro e preparação da amostra:**

**X** Amostra registrada  (**nº**) Amostra preparada

**Legenda para os tipos de ensaios**

CA - Caracterização  CO - Completo

**Legenda para o tipos de sondagem:**

RA - Raspagem  PP - Pá e Picareta  TR - Trado motorizado  PA - Paceta

Observações:

| ENECON | BOLETIM DE SONDAGEM | FOLHA Nº |
|---|---|---|
| CONTRATO Nº | RODOVIA/OBRA | TRECHO |
| | MUNICIPAL | LOTE 4 (MONTE BELO - MINEIRINHO - CAMPINA) |
| SUBTRECHO | | |
| LOTE 4 - TRECHO 4-3 | | |
| ESTUDO | IDENTIFICAÇÃO | ENCAR. SONDAGEM / DATA |
| SUB-LEITO | | MAURO CESAR RODRIGUES COUTINHO / 6/10/2014 |

| REGISTRO Nº | FURO Nº | ESTACA / KM | ETIQUETA Nº | POSIÇÃO | PROFUNDIDADE (m) DE | PROFUNDIDADE (m) A | TIPO DE ENSAIO | TIPO DE SONDAGEM | CLASSIFICAÇÃO EXPEDITA |
|---|---|---|---|---|---|---|---|---|---|
| | 34 | 583+00 | | EX | 0,00 | 3,80 | CO | TR | Argila Siltosa Amarela |
| | 35 | 598+00 | | EX | 0,00 | 3,00 | CO | TR | Saibro Siltoso Rosa |
| | 36 | 610+00 | | EX | 0,00 | 1,30 | CO | PP | Saibro Siltoso Rosa |
| | 37 | 637+00 | | EX | 0,00 | 1,50 | CO | PP | Argila Arenosa Amarela |

**Legenda para controle do registro e preparação da amostra:**

**X** Amostra registrada  (**nº**) Amostra preparada

**Legenda para os tipos de ensaios**

CA - Caracterização  CO - Completo

**Legenda para o tipos de sondagem:**

RA - Raspagem  PP - Pá e Picareta  TR - Trado motorizado  PA - Paceta

Observações:

## 2.2 QUADRO-RESUMO DE ENSAIOS

ENECON

# QUADRO RESUMO DE ENSAIOS

OBRA: --

MATERIAL: --

ESTUDO: SUBLEITO

TRECHO: LOTE 4 - TRECHO 4.3

LOTE: 4

SUBTRECHO: MONTE BELO - MINEIRINHO - CAMPINAS (ES-297)

DATA: 12/1/2015

| REG. | FURO | ESTACA | POS. | PROF. (m) | | LL | IP | GRANULOMETRIA - % QUE PASSA | | | | | | | IG | CLAS. T.R.B. | COMPACTAÇÃO | | | C.B.R | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nº | Nº | | | DE | A | | | 2" | 1" | 3/8" | Nº 4 | Nº 10 | Nº 40 | Nº200 | | | Nº GOL. | UMID. HOT. | DENS. MAX. | EXP. | I.S.C. |
| 1390-14 | 1 | 0+000 | EX | 0,00 | 0,85 | 58,1 | 21,2 | 100,0 | 100,0 | 100,0 | 99,0 | 95,0 | 77,0 | 61,0 | 12 | A-7-5 | 12 | 21,1 | 1519 | 0,160 | 8,3 |
| | | | | | | | | | | | | | | | | | 26 | 19,6 | 1599 | 0,130 | 14,9 |
| 1391-14 | 1 | 0+000 | EX | 0,85 | 1,50 | 55,4 | 21,0 | 100,0 | 100,0 | 100,0 | 100,0 | 97,0 | 84,0 | 68,0 | 14 | A-7-5 | 12 | 18,1 | 1432 | 0,170 | 4,1 |
| | | | | | | | | | | | | | | | | | 26 | 17,6 | 1455 | 0,150 | 5,7 |
| 1392-14 | 2 | 26+000 | EX | 0,00 | 1,50 | 35,5 | 12,3 | 100,0 | 100,0 | 100,0 | 96,0 | 91,0 | 66,0 | 42,0 | 2 | A-6 | 12 | 28,4 | 1414 | 0,060 | 7,7 |
| | | | | | | | | | | | | | | | | | 26 | 23,8 | 1605 | 0,050 | 13,8 |
| 1393-14 | 3 | 39+10 | LD | 0,05 | 3,00 | 50,6 | 23,1 | 100,0 | 100,0 | 97,5 | 96,6 | 94,3 | 81,1 | 55,6 | 10 | A-7-6 | 12 | 15,9 | 1669 | 1,060 | 13,5 |
| | | | | | | | | | | | | | | | | | 26 | 14,9 | 1764 | 0,720 | 23,2 |
| 1394-14 | 3 | 39+10 | LD | 3,00 | 4,15 | 58,1 | 27,0 | 100,0 | 100,0 | 99,8 | 99,0 | 94,7 | 78,4 | 55,6 | 13 | A-7-5 | 12 | 16,1 | 1599 | 0,800 | 8,0 |
| | | | | | | | | | | | | | | | | | 26 | 15,5 | 1753 | 0,380 | 21,8 |
| 1395-14 | 4 | 65+000 | EX | 0,00 | 1,20 | 52,4 | 22,5 | 100,0 | 100,0 | 100,0 | 100,0 | 79,0 | 72,0 | 55,0 | 10 | A-7-6 | 12 | 19,7 | 1528 | 0,790 | 10,6 |
| | | | | | | | | | | | | | | | | | 26 | 16,6 | 1610 | 0,300 | 16,7 |
| 1500-14 | 5 | 80+000 | LD | 0,05 | 3,00 | 54,4 | 25,1 | 100,0 | 100,0 | 98,7 | 97,8 | 94,5 | 79,8 | 55,6 | 12 | A-7-6 | 12 | 16,0 | 1634 | 0,9 | 10,8 |
| | | | | | | | | | | | | | | | | | 26 | 15,2 | 1759 | 0,6 | 22,5 |
| 1501-14 | 5 | 80+000 | LD | 3,00 | 5,50 | 53,9 | 24,4 | 100,0 | 100,0 | 99,2 | 97,9 | 90,7 | 75,5 | 52,8 | 10 | A-7-6 | 12 | 16,9 | 1607,5 | 20,4 | 10,7 |
| | | | | | | | | | | | | | | | | | 26 | 15,6 | 1721,4 | 0,5 | 21,1 |
| 1502-14 | 6 | 89+000 | LD | 0,05 | 2,40 | 44,8 | 15,8 | 100,0 | 100,0 | 100,0 | 99,0 | 98,0 | 69,0 | 53,0 | 6 | A-7-6 | 12 | 14,9 | 1647 | 1,910 | 5,2 |
| | | | | | | | | | | | | | | | | | 26 | 14,6 | 1730 | 1,680 | 11,1 |
| 1503-14 | 6 | 89+000 | LD | 2,40 | 5,40 | 44,2 | 18,9 | 100,0 | 100,0 | 100,0 | 99,0 | 97,0 | 70,0 | 52,0 | 7 | A-7-6 | 12 | 17,8 | 1652 | 0,610 | 7,7 |
| | | | | | | | | | | | | | | | | | 26 | 17,4 | 1734 | 0,270 | 15,0 |
| | | | | | | | | | | | | | | | | | | | | | |

Controle Tecnológico ( Enecon S. A.)

DATA:

ENECON S. A.
ENGENHEIROS E ECONOMISTAS CONSULTORES

Controle de Qualidade

DATA:

ENECON

# QUADRO RESUMO DE ENSAIOS

OBRA: --

MATERIAL: --

ESTUDO: SUBLEITO

TRECHO: LOTE 4 - TRECHO 4.3

LOTE: 4

SUBTRECHO: MONTE BELO - MINEIRINHO - CAMPINAS (ES-297)

DATA: 12/1/2015

| REG. | FURO | ESTACA | POS. | PROF. (m) | | LL | IP | GRANULOMETRIA - % QUE PASSA | | | | | | | IG | CLAS. T.R.B. | COMPACTAÇÃO | | | C.B.R | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nº | Nº | | | DE | A | | | 2" | 1" | 3/8" | Nº 4 | Nº 10 | Nº 40 | Nº200 | | | Nº GOL. | UMID. HOT. | DENS. MAX. | EXP. | I.S.C. |
| 1504-14 | 6 | 89+000 | LD | 5,40 | 7,20 | 51,3 | NP | 100,0 | 100,0 | 100,0 | 100,0 | 99,0 | 72,0 | 56,0 | 5 | A-5 | 12 | 48,7 | 1602 | 1,970 | 5,6 |
| | | | | | | | | | | | | | | | | | 26 | 18,0 | 1664 | 1,570 | 8,4 |
| 1505-14 | 7 | 115+000 | EX | 0,00 | 1,20 | 38,2 | 13,7 | 100,0 | 100,0 | 100,0 | 100,0 | 83,0 | 71,0 | 59,0 | 6 | A-6 | 12 | 19,9 | 1427 | 0,190 | 3,8 |
| | | | | | | | | | | | | | | | | | 26 | 28,8 | 1470 | 0,160 | 7,8 |
| 1506-14 | 8 | 139+000 | LD | 0,00 | 3,05 | 55,8 | 25,4 | 100,0 | 100,0 | 100,0 | 99,0 | 98,0 | 81,0 | 62,0 | 14 | A-7-5 | 12 | 21,7 | 1534 | 1,860 | 8,2 |
| | | | | | | | | | | | | | | | | | 26 | 21,2 | 1577 | 1,770 | 13,2 |
| 1104-14 | 9 | 170+10 | EX | 0,00 | 1,55 | 21,0 | 8,5 | 100,0 | 100,0 | 99,5 | 97,5 | 93,8 | 80,0 | 38,5 | 1 | A-4 | 12 | 10,5 | 1844 | 0,740 | 9,6 |
| | | | | | | | | | | | | | | | | | 26 | 10,0 | 1942 | 0,120 | 15,3 |
| 1105-14 | 9 | 170+10 | EX | 1,55 | 4,60 | 55,0 | NP | 100,0 | 100,0 | 98,8 | 94,3 | 89,1 | 83,8 | 76,2 | 11 | A-5 | 12 | 20,4 | 1579 | 1,930 | 4,5 |
| | | | | | | | | | | | | | | | | | 26 | 19,8 | 1713 | 1,710 | 5,2 |
| 1507-14 | 10 | 195+000 | LD | 0,00 | 3,00 | 37,2 | 14,4 | 100,0 | 100,0 | 100,0 | 98,0 | 91,0 | 82,0 | 68,0 | 8 | A-6 | 12 | 19,8 | 1501 | 0,090 | 6,8 |
| | | | | | | | | | | | | | | | | | 26 | 19,3 | 1549 | 0,040 | 17,3 |
| 1508-14 | 11 | 207+000 | LE | 0,00 | 3,15 | 51,2 | 21,5 | 100,0 | 100,0 | 100,0 | 99,5 | 98,8 | 86,5 | 65,9 | 13 | A-7-6 | 12 | 16,1 | 1716 | 0,830 | 8,0 |
| | | | | | | | | | | | | | | | | | 26 | 15,5 | 1701 | 0,220 | 21,9 |
| 1509-14 | 12 | 222+000 | LD | 0,00 | 3,00 | 52,0 | 21,2 | 100,0 | 100,0 | 100,0 | 100,0 | 97,0 | 83,0 | 63,0 | 12 | A-7-5 | 12 | 17,9 | 1695 | 0,130 | 6,8 |
| | | | | | | | | | | | | | | | | | 26 | 18,1 | 1704 | 0,080 | 14,3 |
| 1510-14 | 12 | 222+000 | LD | 3,00 | 4,50 | 39,3 | 16,5 | 100,0 | 100,0 | 100,0 | 100,0 | 100,0 | 99,0 | 51,0 | 6 | A-6 | 12 | 20,3 | 1603 | 0,820 | 7,5 |
| | | | | | | | | | | | | | | | | | 26 | 19,5 | 1629 | 0,500 | 13,6 |
| 1511-14 | 13 | 247+000 | LD | 0,00 | 1,50 | 35,3 | 15,0 | 100,0 | 100,0 | 100,0 | 99,0 | 94,0 | 77,0 | 61,0 | 7 | A-6 | 12 | 21,1 | 1519 | 0,160 | 8,3 |
| | | | | | | | | | | | | | | | | | 26 | 19,9 | 1562 | 0,050 | 16,2 |
| | | | | | | | | | | | | | | | | | | | | | |

Controle Tecnológico ( Enecon S. A.)

DATA:

ENECON S. A.
ENGENHEIROS E ECONOMISTAS CONSULTORES

Controle de Qualidade

DATA:

ENECON

# QUADRO RESUMO DE ENSAIOS

OBRA: --

MATERIAL: --

ESTUDO: SUBLEITO

TRECHO: LOTE 4 - TRECHO 4.3

LOTE: 4

SUBTRECHO: MONTE BELO - MINEIRINHO - CAMPINAS (ES-297)

DATA: 12/1/2015

| REG. | FURO | ESTACA | POS. | PROF. (m) | | LL | IP | GRANULOMETRIA - % QUE PASSA | | | | | | | IG | CLAS. T.R.B. | COMPACTAÇÃO | | | C.B.R | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nº | Nº | | | DE | A | | | 2" | 1" | 3/8" | Nº 4 | Nº 10 | Nº 40 | Nº200 | | | Nº GOL. | UMID. HOT. | DENS. MAX. | EXP. | I.S.C. |
| 1107-14 | 14 | 263+10 | EX | 0,00 | 3,55 | 35,5 | 13,6 | 100,0 | 100,0 | 100,0 | 99,6 | 96,3 | 75,8 | 48,1 | 4 | A-6 | 12 | 13,9 | 1760 | 0,700 | 11,0 |
| | | | | | | | | | | | | | | | | | 26 | 13,3 | 1828 | 0,240 | 22,7 |
| 1512-14 | 15 | 270+000 | LE | 0,00 | 1,50 | 50,2 | 19,4 | 100,0 | 100,0 | 100,0 | 97,0 | 89,0 | 56,0 | 46,0 | 6 | A-7-5 | 12 | 20,1 | 1689 | 0,050 | 11,7 |
| | | | | | | | | | | | | | | | | | 26 | 19,4 | 1722 | 0,050 | 14,4 |
| 1513-14 | 16 | 295+000 | LD | 0,00 | 1,50 | 51,2 | 19,0 | 100,0 | 100,0 | 100,0 | 99,0 | 96,0 | 78,0 | 57,0 | 9 | A-7-5 | 12 | 20,1 | 1680 | 0,050 | 12,3 |
| | | | | | | | | | | | | | | | | | 26 | 48,9 | 1738 | 0,030 | 19,4 |
| 1108-14 | 17 | 306+000 | LE | 0,00 | 2,50 | 35,1 | 13,6 | 100,0 | 100,0 | 100,0 | 99,9 | 98,2 | 80,9 | 53,0 | 5 | A-6 | 12 | 16,6 | 1647 | 0,590 | 8,4 |
| | | | | | | | | | | | | | | | | | 26 | 16,1 | 1776 | 0,160 | 13,0 |
| 1514-14 | 18 | 320+000 | EX | 0,00 | 1,50 | 51,7 | 21,0 | 100,0 | 100,0 | 100,0 | 99,0 | 95,0 | 74,0 | 46,0 | 6 | A-7-5 | 12 | 20,1 | 1567 | 0,070 | 11,6 |
| | | | | | | | | | | | | | | | | | 26 | 19,8 | 1583 | 0,060 | 18,8 |
| 1415-14 | 19 | 345+000 | LE | 0,00 | 1,50 | 53,1 | 17,9 | 100,0 | 100,0 | 100,0 | 94,0 | 79,0 | 67,0 | 52,0 | 7 | A-7-5 | 12 | 19,8 | 1568 | 0,900 | 9,3 |
| | | | | | | | | | | | | | | | | | 26 | 19,5 | 1604 | 0,700 | 17,2 |
| 1516-14 | 20 | 370+000 | LD | 0,00 | 1,50 | 41,7 | 15,4 | 100,0 | 100,0 | 100,0 | 98,0 | 93,0 | 58,0 | 44,0 | 3 | A-7-6 | 12 | 18,4 | 1678 | 0,050 | 13,6 |
| | | | | | | | | | | | | | | | | | 26 | 18,2 | 1721 | 0,040 | 18,8 |
| 1517-14 | 21 | 395+000 | EX | 0,00 | 1,50 | 51,4 | 18,7 | 100,0 | 100,0 | 100,0 | 98,0 | 86,0 | 64,0 | 47,0 | 6 | A-7-5 | 12 | 18,5 | 1678 | 0,060 | 13,4 |
| | | | | | | | | | | | | | | | | | 26 | 18,1 | 1708 | 0,060 | 20,1 |
| 1109-14 | 22 | 410+000 | LE | 0,00 | 2,50 | 40,2 | 17,0 | 100,0 | 100,0 | 100,0 | 99,8 | 99,1 | 84,8 | 57,3 | 7 | A-6 | 12 | 17,2 | 1598 | 0,530 | 8,6 |
| | | | | | | | | | | | | | | | | | 26 | 16,6 | 1683 | 0,270 | 20,6 |
| 1110-14 | 22 | 410+000 | LE | 2,50 | 5,20 | 39,7 | 16,4 | 100,0 | 100,0 | 100,0 | 99,9 | 99,5 | 88,8 | 64,8 | 9 | A-6 | 12 | 20,2 | 1506 | 0,810 | 5,8 |
| | | | | | | | | | | | | | | | | | 26 | 19,7 | 1623 | 0,620 | 11,2 |
| | | | | | | | | | | | | | | | | | | | | | |

Controle Tecnológico ( Enecon S. A.)

DATA:

ENECON S. A.
ENGENHEIROS E ECONOMISTAS CONSULTORES

Controle de Qualidade

DATA:

ENECON

# QUADRO RESUMO DE ENSAIOS

OBRA: --

MATERIAL: --

ESTUDO: SUBLEITO

TRECHO: LOTE 4 - TRECHO 4.3

LOTE: 4

SUBTRECHO: MONTE BELO - MINEIRINHO - CAMPINAS (ES-297)

DATA: 12/1/2015

| REG. | FURO | ESTACA | POS. | PROF. (m) | | LL | IP | GRANULOMETRIA - % QUE PASSA | | | | | | | IG | CLAS. T.R.B. | COMPACTAÇÃO | | | C.B.R | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nº | Nº | | | DE | A | | | 2" | 1" | 3/8" | Nº 4 | Nº 10 | Nº 40 | Nº200 | | | Nº GOL. | UMID. HOT. | DENS. MAX. | EXP. | I.S.C. |
| 1518-14 | 23 | 420+000 | LE | 0,00 | 1,50 | 43,7 | 14,0 | 100,0 | 100,0 | 100,0 | 95,0 | 91,0 | 65,0 | 41,0 | 2 | A-7-6 | 12 | 14,1 | 1611 | 0,090 | 9,3 |
| | | | | | | | | | | | | | | | | | 26 | 13,8 | 1630 | 0,100 | 20,0 |
| 1519-14 | 24 | 434+10 | EX | 0,00 | 1,50 | 42,6 | 17,6 | 100,0 | 100,0 | 99,0 | 98,0 | 94,0 | 67,0 | 33,0 | 1 | A-2-7 | 12 | 20,3 | 1553 | 1,100 | 8,2 |
| | | | | | | | | | | | | | | | | | 26 | 19,7 | 1581 | 0,680 | 17,1 |
| 1520-14 | 25 | 460+000 | LE | 0,00 | 1,50 | 40,4 | 18,1 | 100,0 | 100,0 | 100,0 | 100,0 | 86,0 | 70,0 | 55,0 | 7 | A-6 | 12 | 21,9 | 1539 | 0,080 | 8,1 |
| | | | | | | | | | | | | | | | | | 26 | 21,2 | 1584 | 0,070 | 17,7 |
| 1521-14 | 26 | 485+000 | LD | 0,00 | 1,20 | 40,5 | 15,3 | 100,0 | 100,0 | 100,0 | 100,0 | 73,0 | 60,0 | 39,0 | 2 | A-6 | 12 | 19,5 | 1526 | 1,030 | 8,7 |
| | | | | | | | | | | | | | | | | | 26 | 19,1 | 1568 | 0,550 | 15,8 |
| 1111-14 | 27 | 493+000 | LD | 0,00 | 2,50 | 30,0 | 12,5 | 100,0 | 100,0 | 100,0 | 99,8 | 98,9 | 78,6 | 42,2 | 2 | A-6 | 12 | 10,0 | 1779 | 0,780 | 7,7 |
| | | | | | | | | | | | | | | | | | 26 | 9,5 | 1855 | 0,210 | 14,1 |
| 1112-14 | 27 | 493+000 | LD | 2,50 | 5,10 | 45,7 | 21,6 | 100,0 | 100,0 | 100,0 | 99,9 | 99,1 | 81,6 | 56,1 | 9 | A-7-6 | 12 | 15,8 | 1655 | 0,430 | 7,4 |
| | | | | | | | | | | | | | | | | | 26 | 14,9 | 1761 | 0,340 | 24,4 |
| 1540-14 | 28 | 494+000 | LD | 0,00 | 3,00 | 44,6 | 15,4 | 100,0 | 100,0 | 100,0 | 99,8 | 99,3 | 80,4 | 49,5 | 5 | A-7-6 | 12 | 15,9 | 1670 | 0,530 | 8,9 |
| | | | | | | | | | | | | | | | | | 26 | 14,5 | 1750 | 0,425 | 20,1 |
| 1541-14 | 28 | 494+000 | LD | 3,00 | 6,00 | 40,2 | 16,2 | 100,0 | 100,0 | 100,0 | 99,9 | 99,6 | 81,4 | 53,2 | 6 | A-6 | 12 | 16,6 | 1634 | 0,570 | 8,2 |
| | | | | | | | | | | | | | | | | | 26 | 15,8 | 1704 | 0,310 | 18,4 |
| 1542-14 | 28 | 494+000 | LD | 6,00 | 6,50 | 41,0 | 16,3 | 100,0 | 100,0 | 100,0 | 99,9 | 99,7 | 81,7 | 53,5 | 6 | A-7-6 | 12 | 16,8 | 1621 | 0,570 | 8,3 |
| | | | | | | | | | | | | | | | | | 26 | 16,1 | 1679 | 0,336 | 18,5 |
| 1443-14 | 29 | 510+000 | LD | 0,00 | 1,20 | 25,9 | 7,4 | 100,0 | 100,0 | 98,0 | 96,0 | 94,0 | 50,0 | 13,0 | 0 | A-2-4 | 12 | 5,9 | 1802 | 0,050 | 12,9 |
| | | | | | | | | | | | | | | | | | 26 | 5,1 | 1864 | 0,020 | 23,2 |
| | | | | | | | | | | | | | | | | | | | | | |

Controle Tecnológico ( Enecon S. A.)

DATA:

ENECON S. A.
ENGENHEIROS E ECONOMISTAS CONSULTORES

Controle de Qualidade

DATA:

ENECON

# QUADRO RESUMO DE ENSAIOS

OBRA: --

MATERIAL: --

ESTUDO: SUBLEITO

TRECHO: LOTE 4 - TRECHO 4.3

LOTE: 4

SUBTRECHO: MONTE BELO - MINEIRINHO - CAMPINAS (ES-297)

DATA: 12/1/2015

| REG. | FURO | ESTACA | POS. | PROF. (m) | | LL | IP | GRANULOMETRIA - % QUE PASSA | | | | | | | IG | CLAS. T.R.B. | COMPACTAÇÃO | | | C.B.R | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nº | Nº | | | DE | A | | | 2" | 1" | 3/8" | Nº 4 | Nº 10 | Nº 40 | Nº200 | | | Nº GOL. | UMID. HOT. | DENS. MAX. | EXP. | I.S.C. |
| 1544-14 | 30 | 535+000 | LD | 0,00 | 1,30 | 50,1 | 16,8 | 100,0 | 100,0 | 100,0 | 84,0 | 79,0 | 63,0 | 45,0 | 5 | A-7-5 | 12 | 20,2 | 1512 | 0,080 | 10,0 |
| | | | | | | | | | | | | | | | | | 26 | 19,7 | 1569 | 0,060 | 18,4 |
| 1113-14 | 31 | 542+10 | LD | 0,05 | 1,50 | 51,3 | 24,7 | 100,0 | 94,6 | 93,8 | 93,3 | 92,1 | 69,7 | 46,6 | 8 | A-7-6 | 12 | 15,8 | 1672 | 0,620 | 11,1 |
| | | | | | | | | | | | | | | | | | 26 | 15,3 | 1782 | 0,290 | 17,7 |
| 1114-14 | 31 | 542+10 | LD | 1,50 | 2,60 | 50,6 | 25,7 | 100,0 | 100,0 | 100,0 | 99,8 | 97,8 | 72,4 | 43,5 | 7 | A-7-6 | 12 | 14,3 | 1772 | 0,140 | 8,9 |
| | | | | | | | | | | | | | | | | | 26 | 13,8 | 1877 | 0,090 | 22,0 |
| 1545-14 | 32 | 543+000 | LD | 0,00 | 3,00 | 51,5 | 23,2 | 100,0 | 100,0 | 100,0 | 92,9 | 90,1 | 68,9 | 45,5 | 7 | A-7-6 | 12 | 17,3 | 1652,5 | 0,8 | 10,5 |
| | | | | | | | | | | | | | | | | | 26 | 16,8 | 1743,2 | 0,6 | 19,9 |
| 1546-14 | 32 | 543+000 | LD | 3,00 | 5,00 | 51,9 | 25,3 | 100,0 | 100,0 | 100,0 | 95,9 | 93,9 | 70,9 | 45,8 | 8 | A-7-6 | 12 | 16,3 | 1699,3 | 1,0 | 10,7 |
| | | | | | | | | | | | | | | | | | 26 | 15,8 | 1801,2 | 0,8 | 20,4 |
| 1547-14 | 33 | 558+000 | LE | 0,00 | 1,20 | 33,6 | 10,8 | 100,0 | 100,0 | 100,0 | 96,0 | 79,0 | 60,0 | 31,0 | 0 | A-2-6 | 12 | 21,6 | 1533 | 0,870 | 7,2 |
| | | | | | | | | | | | | | | | | | 26 | 19,9 | 1581 | 0,510 | 15,4 |
| 1548-14 | 34 | 583+000 | EX | 0,00 | 3,80 | 46,4 | 16,2 | 100,0 | 100,0 | 100,0 | 100,0 | 88,0 | 69,0 | 30,0 | 1 | A-2-7 | 12 | 22,4 | 1531 | 0,070 | 7,6 |
| | | | | | | | | | | | | | | | | | 26 | 21,8 | 1579 | 0,070 | 18,9 |
| 1115-14 | 35 | 598+000 | EX | 0,00 | 3,00 | NL | NP | 100,0 | 100,0 | 100,0 | 100,0 | 99,6 | 78,2 | 60,6 | 5 | A-4 | 12 | 12,1 | 1731 | 1,600 | 10,2 |
| | | | | | | | | | | | | | | | | | 26 | 11,6 | 1843 | 0,770 | 21,1 |
| 1549-14 | 36 | 610+000 | EX | 0,00 | 1,30 | 49,7 | 18,3 | 100,0 | 100,0 | 100,0 | 100,0 | 71,0 | 56,0 | 37,0 | 2 | A-7-5 | 12 | 20,6 | 1672 | 0,410 | 11,3 |
| | | | | | | | | | | | | | | | | | 26 | 18,7 | 1803 | 0,090 | 20,1 |
| 1550-14 | 37 | 637+000 | EX | 0,00 | 1,50 | 50,3 | 21,8 | 100,0 | 100,0 | 100,0 | 99,0 | 95,0 | 66,0 | 46,0 | 6 | A-7-6 | 12 | 19,2 | 1737 | 0,080 | 14,0 |
| | | | | | | | | | | | | | | | | | 26 | 18,7 | 1782 | 0,050 | 21,4 |
| | | | | | | | | | | | | | | | | | | | | | |

Controle Tecnológico ( Enecon S. A.)

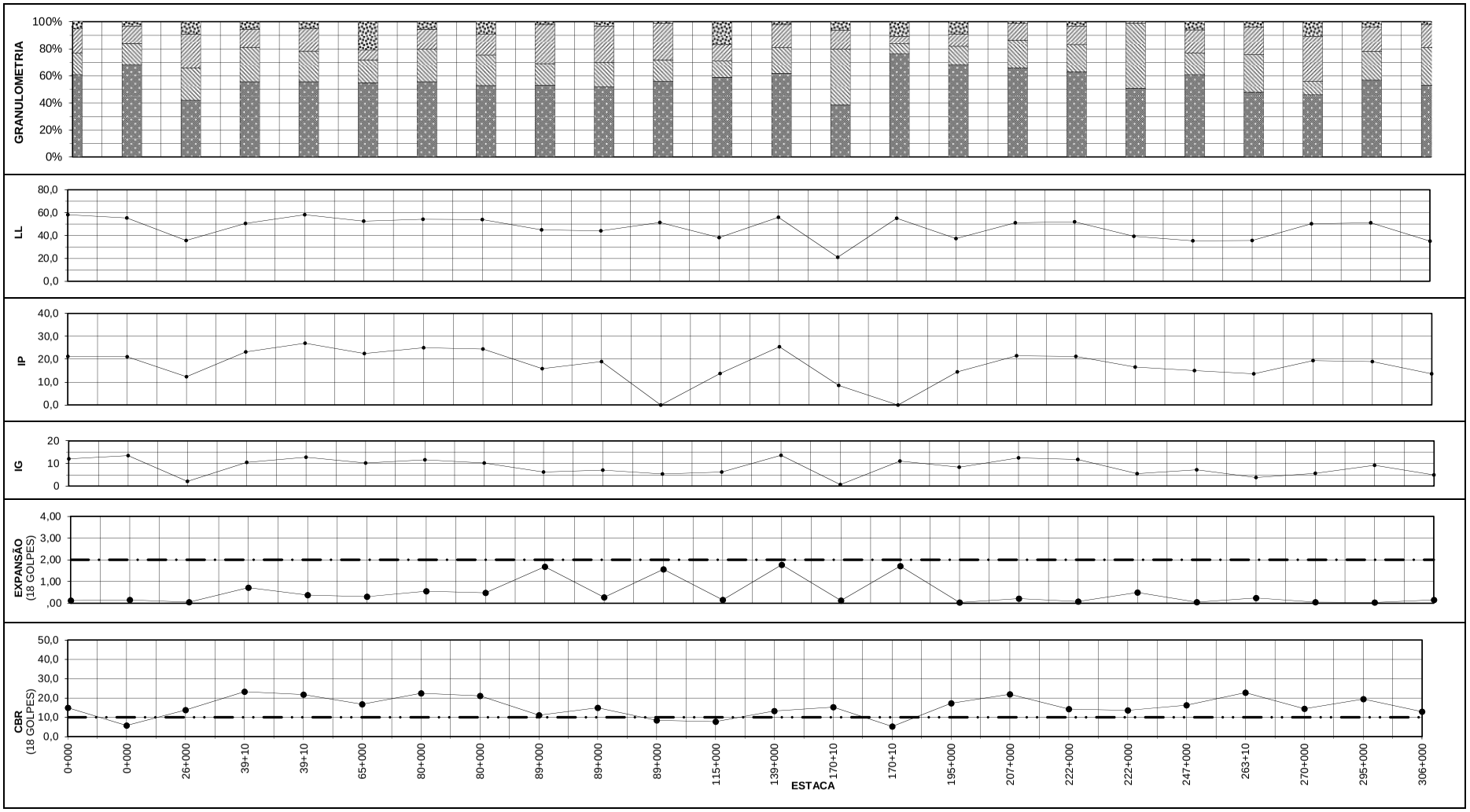
DATA:

ENECON S. A.
ENGENHEIROS E ECONOMISTAS CONSULTORES

Controle de Qualidade

DATA:

## 2.3 GRÁFICO LINEAR DO ESTUDO DO SUBLEITO




PEDREGULHO - RETIDO # 10

AREIA GROSSA - PASSANDO # 10 - RETIDO # 40

AREIA FINA - PASSANDO # 40 - RETIDO # 200

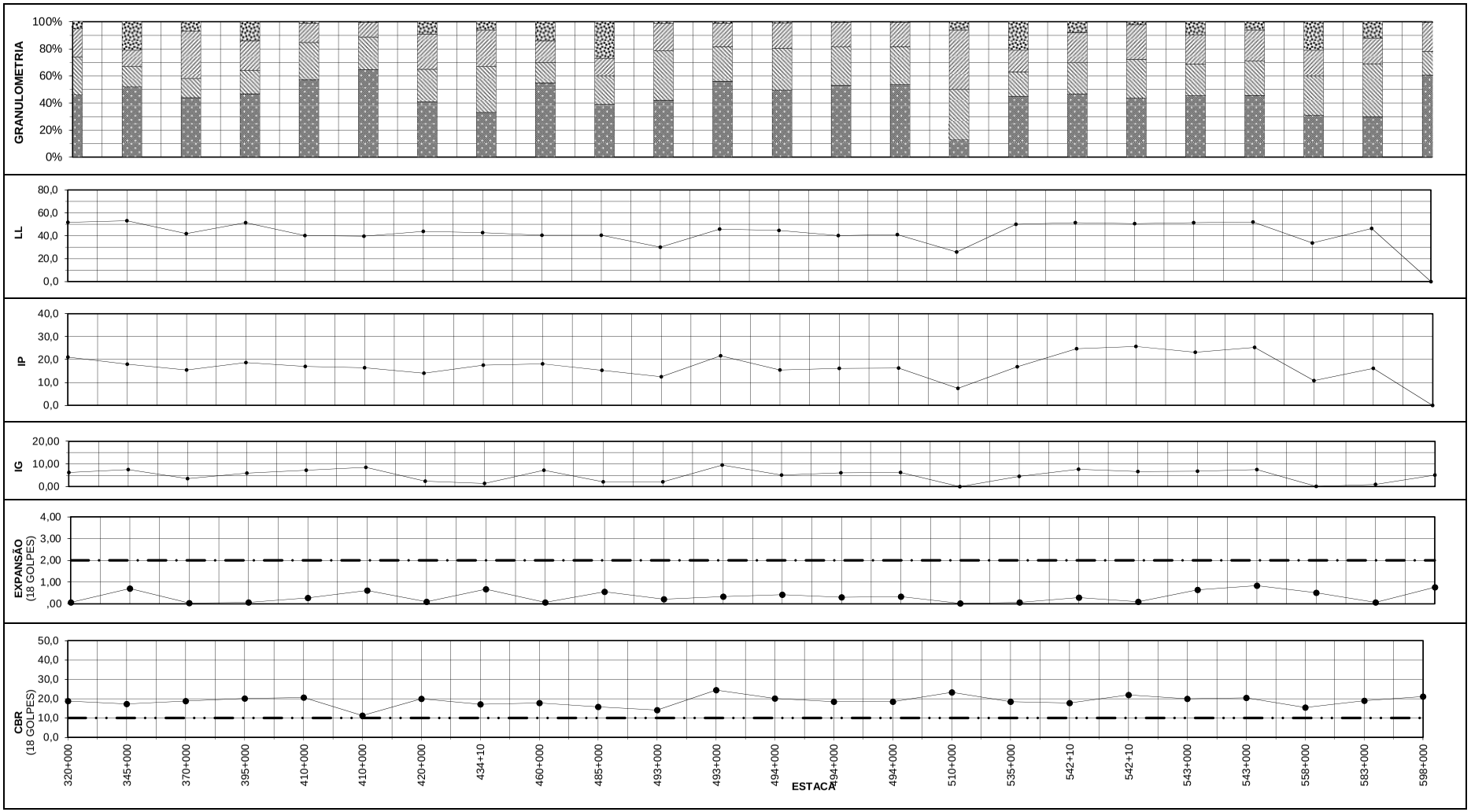
PASSANDO # 200

RODOVIA: MUNICIPAL

MONTE BELO - MINEIRINHO - CAMPINAS (ES-297)

SUBTRECHO: LOTE - 4.3

**GRÁFICO LINEAR DO ESTUDO DO SUBLEITO**
**PROCTOR INTERMEDIÁRIO**




PEDREGULHO - RETIDO # 10

AREIA GROSSA - PASSANDO # 10 - RETIDO # 40

AREIA FINA - PASSANDO # 40 - RETIDO # 200

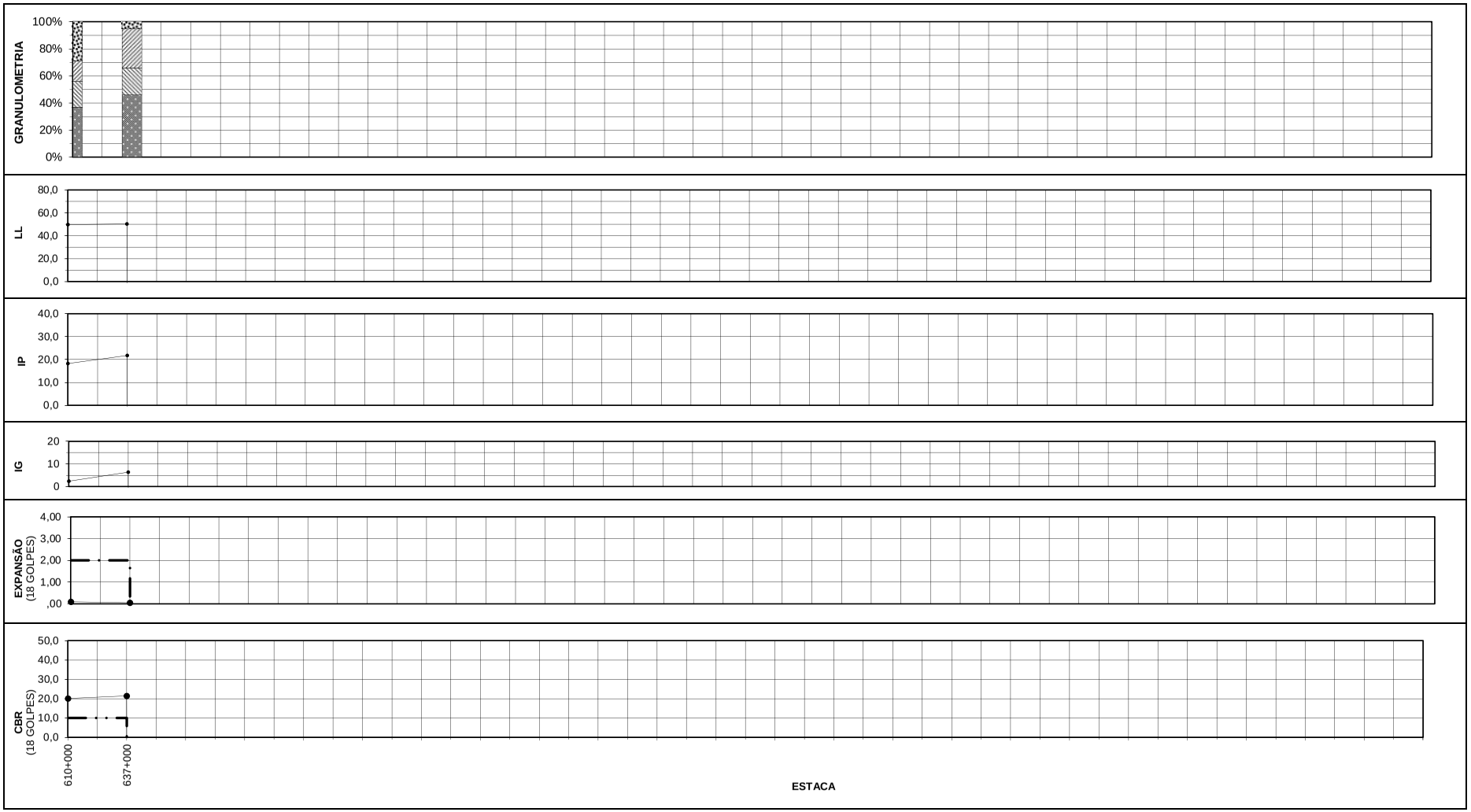
PASSANDO # 200

RODOVIA: MUNICIPAL

MONTE BELO - MINEIRINHO - CAMPINAS (ES-297)

SUBTRECHO: LOTE - 4.3

**GRÁFICO LINEAR DO ESTUDO DO SUBLEITO**
**PROCTOR INTERMEDIÁRIO**




PEDREGULHO - RETIDO # 10

AREIA GROSSA - PASSANDO # 10 - RETIDO # 40

AREIA FINA - PASSANDO # 40 - RETIDO # 200

PASSANDO # 200

RODOVIA: MUNICIPAL

MONTE BELO - MINEIRINHO - CAMPINAS (ES-297)

SUBTRECHO: LOTE - 4.3

**G R Á F I C O L I N E A R D O E S T U D O D O S U B L E I T O**
**PROCTOR INTERMEDIÁRIO**

# 3. ESTUDOS DE EMPRÉSTIMOS

## 3.1 EMPRÉSTIMO EC-03

### 3.1.1 BOLETIM DE SONDAGEM

| ENECON | BOLETIM DE SONDAGEM | FOLHA Nº 1 |
|---|---|---|

| CONTRATO Nº | RODOVIA/OBRA | TRECHO |
|---|---|---|
| | MUNICIPAL | 4.3: MONTE BELO - MINEIRINHO - CAMPINAS |

| SUBTRECHO | LOTE |
|---|---|
| | |

| ESTUDO | IDENTIFICAÇÃO | ENCAR. SONDAGEM | DATA |
|---|---|---|---|
| EC-03 | | | 10/07/2015 |

| REGISTRO Nº | FURO Nº | ESTACA / KM | ETIQUETA Nº | POSIÇÃO | PROFUNDIDADE (m) | | TIPO DE ENSAIO | TIPO DE SONDAGEM | CLASSIFICAÇÃO EXPEDITA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | DE | A | | | |
| | 1 | 278+000 | | LE | 0,00 | 0,30 | | | Camada Vegetal |
| | | | | | 0,30 | 3,60 | CA | PP | Argila Vermelha com Laterita |
| | | | | | | | | | |
| | 2 | 278+000 | | LE | 0,00 | 0,30 | | | Camada Vegetal |
| | | | | | 0,30 | 3,00 | CO | PP | Argila Vermelha com Laterita |
| | | | | | | | | | |
| | 3 | 278+000 | | LE | 0,00 | 0,30 | | | Camada Vegetal |
| | | | | | 0,30 | 3,60 | CA | PP | Argila Vermelha com Laterita |
| | | | | | | | | | |
| | 4 | 278+000 | | LE | 0,00 | 0,30 | | | Camada Vegetal |
| | | | | | 0,30 | 3,80 | CO | PP | Argila Vermelha com Laterita |
| | | | | | | | | | |
| | 5 | 278+000 | | LE | 0,00 | 0,30 | | | Camada Vegetal |
| | | | | | 0,30 | 3,80 | CO | PP | Argila Vermelha com Laterita |
| | | | | | | | | | |
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**Legenda para controle do registro e preparação da amostra:**

**X** Amostra registrada (**nº**) Amostra preparada

**Legenda para os tipos de ensaios**

CA - Caracterização CO - Completo

**Legenda para o tipos de sondagem:**

RA - Raspagem PP - Pá e Picareta TR - Trado motorizado PA - Paceta

Observações:

### 3.1.2 QUADRO RESUMO DE ENSAIOS

ENECON

# QUADRO RESUMO DE ENSAIOS

OBRA: MUNICIPAL | MATERIAL: EMPRÉSTIMO - EC-03 | ESTUDO: Mistura

TRECHO: 4.4 - MINEIRINHO (SANTA MADALENA) - SEDE | LOTE: 4

SUBTRECHO: | DATA: 4/08/2015

| REG. | FURO | AMOSTRA | POS. | PROF. (m) | | LL | IP | GRANULOMETRIA - % QUE PASSA | | | | | | | IG | CLAS. T.R.B. | COMPACTAÇÃO | | | C.B.R | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nº | Nº | Nº | | DE | A | | | 2" | 1" | 3/8" | Nº 4 | Nº 10 | Nº 40 | Nº200 | | | Nº GOL. | UMID. HOT. | DENS. MAX. | EXP. | I.S.C. |
| 300-15 | 1 | | LE | 0,30 | 3,60 | 34,2 | 9,8 | 100,0 | 100,0 | 80,0 | 69,0 | 54,0 | 45,0 | 36,0 | 0 | A-4 | 26 | 18,8 | 1863 | 0,07 | 36,1 |
| 301-15 | 2 | | LE | 0,30 | 3,00 | 34,0 | 9,5 | 100,0 | 100,0 | 76,0 | 63,0 | 60,0 | 41,0 | 34,0 | 0 | A-2-4 | | | | | |
| 302-15 | 3 | | LE | 0,30 | 3,00 | 31,0 | 9,1 | 100,0 | 100,0 | 65,0 | 54,0 | 42,0 | 34,0 | 27,0 | 0 | A-2-4 | 26 | 17,6 | 1893 | 0,04 | 44,0 |
| 303-15 | 4 | | LE | 0,30 | 3,80 | 36,1 | 9,4 | 100,0 | 100,0 | 69,0 | 58,0 | 50,0 | 46,0 | 32,0 | 0 | A-2-4 | | | | | |
| 304-15 | 5 | | LE | 0,30 | 3,80 | 34,5 | 9,2 | 100,0 | 100,0 | 79,0 | 61,0 | 52,0 | 42,0 | 32,0 | 0 | A-2-4 | 26 | 17,7 | 1834 | 0,05 | 43,0 |
| | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | | | |

Controle Tecnológico ( Enecon S. A.)

DATA:

ENECON S. A.
ENGENHEIROS E ECONOMISTAS CONSULTORES

Controle de Qualidade

DATA:

## 3.2 EMPRÉSTIMO ALC-03

### 3.2.1 BOLETIM DE SONDAGEM

| ENECON | BOLETIM DE SONDAGEM | FOLHA Nº 1 |
|---|---|---|

| CONTRATO Nº | RODOVIA/OBRA | TRECHO |
|---|---|---|
| | MUNICIPAL | 4.3: MONTE BELO - MINEIRINHO - CAMPINAS |

| SUBTRECHO | LOTE |
|---|---|
| | |

| ESTUDO | IDENTIFICAÇÃO | ENCAR. SONDAGEM | DATA |
|---|---|---|---|
| ALC-03 | | | 12/11/2014 |

| REGISTRO Nº | FURO Nº | ESTACA / KM | ETIQUETA Nº | POSIÇÃO | PROFUNDIDADE (m) | | TIPO DE ENSAIO | TIPO DE SONDAGEM | CLASSIFICAÇÃO EXPEDITA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | DE | A | | | |
| | 1 | 65 | | D | 0 | 0,20 | CO | TR | Camada Vegetal |
| | | | | | 0,20 | 2,80 | CO | TR | Argila Siltosa Amarela |
| | | | | | | | | | |
| | 2 | 75 | | D | 0 | 0,20 | CO | TR | Camada Vegetal |
| | | | | | 0,20 | 2,60 | CO | TR | Argila Siltosa Amarela |
| | | | | | | | | | |
| | 3 | 85 | | D | 0 | 0,20 | CO | TR | Camada Vegetal |
| | | | | | 0,20 | 2,90 | CO | TR | Argila Siltosa Amarela |
| | | | | | | | | | |
| | 4 | 95 | | D | 0 | 0,20 | CO | TR | Camada Vegetal |
| | | | | | 0,20 | 4,10 | CO | TR | Argila Siltosa Amarela |
| | | | | | | | | | |
| | 5 | 105 | | D | 0 | 0,20 | CO | TR | Camada Vegetal |
| | | | | | 0,20 | 3,50 | CO | TR | Argila Siltosa Amarela |
| | | | | | | | | | |
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**Legenda para controle do registro e preparação da amostra:**

**X** Amostra registrada  **nº** Amostra preparada

**Legenda para os tipos de ensaios**

CA - Caracterização  CO - Completo

**Legenda para o tipos de sondagem:**

RA - Raspagem  PP - Pá e Picareta  TR - Trado motorizado  PA - Paceta

Observações:

## 3.2.2 QUADRO RESUMO DE ENSAIOS

ENECON

# QUADRO RESUMO DE ENSAIOS

OBRA: --

MATERIAL: --

ESTUDO: EMPRÉSTIMO - ALC-03

TRECHO: LOTE 4 - TRECHO 4.3

LOTE: 4

SUBTRECHO: MONTE BELO - MINEIRINHO - CAMPINAS (ES-297)

DATA: 5/1/2015

| REG. | FURO | ESTACA | POS. | PROF. (m) | | LL | IP | GRANULOMETRIA - % QUE PASSA | | | | | | | IG | CLAS. T.R.B. | COMPACTAÇÃO | | | C.B.R | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | Nº | UMID. | DENS. | EXP. | I.S.C. |
| Nº | Nº | | | DE | A | | | 2" | 1" | 3/8" | Nº 4 | Nº 10 | Nº 40 | Nº200 | | | GOL. | HOT. | MAX. | | |
| 1159-14 | 1 | 65 | LD | 0,20 | 2,80 | 52,4 | 22,5 | 100,0 | 100,0 | 100,0 | 100,0 | 79,0 | 72,0 | 55,0 | 10 | A-7-6 | 12 | 19,7 | 1,528 | 0,79 | 10,6 |
| | | | | | | | | | | | | | | | | | 26 | 16,6 | 1,610 | 0,30 | 16,7 |
| 1160-14 | 2 | 75 | LD | 0,20 | 2,60 | 44,8 | 15,8 | 100,0 | 100,0 | 100,0 | 99,0 | 98,0 | 69,0 | 53,0 | 6 | A-7-6 | 12 | 14,9 | 1,647 | 1,91 | 5,2 |
| | | | | | | | | | | | | | | | | | 26 | 14,6 | 1,730 | 1,68 | 11,1 |
| 1161-14 | 3 | 85 | LD | 0,20 | 2,90 | 44,2 | 18,9 | 100,0 | 100,0 | 100,0 | 99,0 | 97,0 | 70,0 | 52,0 | 7 | A-7-6 | 12 | 17,8 | 1,652 | 0,61 | 7,7 |
| | | | | | | | | | | | | | | | | | 26 | 17,4 | 1,734 | 0,27 | 15,0 |
| 1162-14 | 4 | 95 | LD | 0,20 | 4,10 | 51,3 | NP | 100,0 | 100,0 | 100,0 | 100,0 | 99,0 | 72,0 | 56,0 | 5 | A-5 | 12 | 18,7 | 1,602 | 1,97 | 5,6 |
| | | | | | | | | | | | | | | | | | 26 | 18,0 | 1,664 | 1,57 | 8,4 |
| 1163-14 | 5 | 105 | LD | 0,20 | 3,50 | 38,2 | 13,7 | 100,0 | 100,0 | 100,0 | 99,0 | 98,0 | 81,0 | 62,0 | 7 | A-6 | 12 | 21,7 | 1,534 | 1,86 | 8,2 |
| | | | | | | | | | | | | | | | | | 26 | 21,2 | 1,577 | 1,77 | 9,7 |
| | | | | | | | | | | | | | | | | | | | | | |
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Controle Tecnológico ( Enecon S. A.)

DATA:

ENECON S. A.
ENGENHEIROS E ECONOMISTAS CONSULTORES

Controle de Qualidade

DATA:

## 3.3 EMPRÉSTIMO ALC-03A

### 3.3.1 BOLETIM DE SONDAGEM

| ENECON | BOLETIM DE SONDAGEM | FOLHA Nº 1 |
|---|---|---|
| CONTRATO Nº | RODOVIA/OBRA: MUNICIPAL | TRECHO: 4.3: MONTE BELO - MINEIRINHO - CAMPINAS |
| SUBTRECHO | | LOTE |
| ESTUDO: ALC-03 A | IDENTIFICAÇÃO | ENCAR. SONDAGEM / DATA: 10/01/2015 |

| REGISTRO Nº | FURO Nº | ESTACA / KM | ETIQUETA Nº | POSIÇÃO | PROFUNDIDADE (m) DE | PROFUNDIDADE (m) A | TIPO DE ENSAIO | TIPO DE SONDAGEM | CLASSIFICAÇÃO EXPEDITA |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 182 | | E | 0 | 0,20 | CO | TR | Camada Vegetal |
| | | | | | 0,20 | 1,50 | CO | TR | Argila Siltosa Amarela |
| | 2 | 185 | | D | 0 | 0,20 | CO | TR | Camada Vegetal |
| | | | | | 0,20 | 1,60 | CO | TR | Argila Siltosa Amarela |
| | 3 | 190 | | E | 0 | 0,20 | CO | TR | Camada Vegetal |
| | | | | | 0,20 | 1,80 | CO | TR | Argila Siltosa Amarela |
| | 4 | 195 | | D | 0 | 0,20 | CO | TR | Camada Vegetal |
| | | | | | 0,20 | 1,40 | CO | TR | Argila Siltosa Amarela |
| | 5 | 205 | | E | 0 | 0,20 | CO | TR | Camada Vegetal |
| | | | | | 0,20 | 1,40 | CO | TR | Argila Siltosa Amarela |

**Legenda para controle do registro e preparação da amostra:**

**X** Amostra registrada (**nº**) Amostra preparada

**Legenda para os tipos de ensaios**

CA - Caracterização CO - Completo

**Legenda para o tipos de sondagem:**

RA - Raspagem PP - Pá e Picareta TR - Trado motorizado PA - Paceta

Observações:

### 3.3.2 QUADRO RESUMO DE ENSAIOS

ENECON

# QUADRO RESUMO DE ENSAIOS

OBRA: --

MATERIAL: --

ESTUDO: EMPRÉSTIMO ALC - 03A

TRECHO: LOTE 4 - TRECHO 4.3

LOTE: 4

SUBTRECHO: MONTE BELO - MINEIRINHO - CAMPINAS (ES-297)

DATA: 3/3/2015

| REG. | FURO | ESTACA | POS. | PROF. (m) | | LL | IP | GRANULOMETRIA - % QUE PASSA | | | | | | | IG | CLAS. T.R.B. | COMPACTAÇÃO | | | C.B.R | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nº | Nº | | | DE | A | | | 2" | 1" | 3/8" | Nº 4 | Nº 10 | Nº 40 | Nº200 | | | Nº GOL. | UMID. HOT. | DENS. MAX. | EXP. | I.S.C. |
| 311-15 | 1 | 182+000 | E | 0,20 | 1,50 | 44,6 | 17,8 | 100,0 | 100,0 | 100,0 | 100,0 | 73,0 | 57,0 | 47,0 | 5 | A-7-6 | 12 | 19,3 | 1,538 | 0,72 | 8,4 |
| | | | | | | | | | | | | | | | | | 26 | 18,8 | 1,591 | 0,20 | 15,2 |
| 312-15 | 2 | 185+000 | D | 0,20 | 1,60 | 37,2 | 14,4 | 100,0 | 100,0 | 100,0 | 98,0 | 91,0 | 82,0 | 68,0 | 8 | A-6 | 12 | 19,8 | 1,501 | 0,09 | 6,8 |
| | | | | | | | | | | | | | | | | | 26 | 19,1 | 1,583 | 0,07 | 14,4 |
| 313-15 | 3 | 190+000 | E | 0,20 | 1,80 | 46,8 | 15,1 | 100,0 | 100,0 | 100,0 | 97,0 | 75,0 | 62,0 | 41,0 | 3 | A-7-5 | 12 | 20,1 | 1,615 | 0,31 | 9,9 |
| | | | | | | | | | | | | | | | | | 26 | 19,2 | 1,630 | 0,16 | 18,2 |
| 314-15 | 4 | 195+000 | D | 0,20 | 1,40 | 46,8 | 19,4 | 100,0 | 100,0 | 100,0 | 100,0 | 71,0 | 52,0 | 40,0 | 4 | A-7-6 | 12 | 18,6 | 1,583 | 0,28 | 10,3 |
| | | | | | | | | | | | | | | | | | 26 | 18,3 | 1,618 | 0,11 | 18,8 |
| 316-15 | 5 | 205+000 | E | 0,20 | 1,40 | 50,2 | 20,3 | 100,0 | 100,0 | 100,0 | 100,0 | 86,0 | 71,0 | 53,0 | 8 | A-7-6 | 12 | 21,1 | 1,537 | 0,61 | 7,9 |
| | | | | | | | | | | | | | | | | | 26 | 20,6 | 1,594 | 0,20 | 15,0 |
| | | | | | | | | | | | | | | | | | | | | | |
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Controle Tecnológico ( Enecon S. A.)

DATA:

ENECON S. A.
ENGENHEIROS E ECONOMISTAS CONSULTORES

Controle de Qualidade

DATA:

## 3.4 EMPRÉSTIMO ALC-04

### 3.4.1 BOLETIM DE SONDAGEM

# BOLETIM DE SONDAGEM

FOLHA Nº: 1

| CONTRATO Nº | RODOVIA/OBRA | TRECHO |
|---|---|---|
| | MUNICIPAL | 4.3: MONTE BELO - MINEIRINHO - CAMPINAS |

| SUBTRECHO | LOTE |
|---|---|
| | |

| ESTUDO | IDENTIFICAÇÃO | ENCAR. SONDAGEM | DATA |
|---|---|---|---|
| ALC - 04 | | | 10/01/2015 |

| REGISTRO Nº | FURO Nº | ESTACA / KM | ETIQUETA Nº | POSIÇÃO | PROFUNDIDADE (m) DE | PROFUNDIDADE (m) A | TIPO DE ENSAIO | TIPO DE SONDAGEM | CLASSIFICAÇÃO EXPEDITA |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 272 | | D / E | 0 | 0,20 | CO | TR | Camada Vegetal |
| | | | | | 0,20 | 2,60 | CO | TR | Areia Argilosa Amarela |
| | | | | | | | | | |
| | 2 | 275 | | D / E | 0 | 0,20 | CO | PP | Camada Vegetal |
| | | | | | 0,20 | 2,20 | CO | PP | Areia Argilosa Amarela |
| | | | | | | | | | |
| | 3 | 280 | | D / E | 0 | 0,20 | CO | TR | Camada Vegetal |
| | | | | | 0,20 | 2,90 | CO | TR | Argila Arenosa Amarela |

**Legenda para controle do registro e preparação da amostra:**

**X** Amostra registrada (**nº**) Amostra preparada

**Legenda para os tipos de ensaios**

CA - Caracterização CO - Completo

**Legenda para o tipos de sondagem:**

RA - Raspagem PP - Pá e Picareta TR - Trado motorizado PA - Paceta

Observações:

## 3.4.2 QUADRO RESUMO DE ENSAIOS

ENECON

# QUADRO RESUMO DE ENSAIOS

OBRA: --

MATERIAL: --

ESTUDO: EMPRÉSTIMO - ALC -04

TRECHO: LOTE 4 - TRECHO 4.3

LOTE: 4

SUBTRECHO: MONTE BELO - MINEIRINHO - CAMPINAS (ES-297)

DATA: 3/3/2015

| REG. | FURO | ESTACA | POS. | PROF. (m) | | LL | IP | GRANULOMETRIA - % QUE PASSA | | | | | | | IG | CLAS. T.R.B. | COMPACTAÇÃO | | | C.B.R | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nº | Nº | | | DE | A | | | 2" | 1" | 3/8" | Nº 4 | Nº 10 | Nº 40 | Nº200 | | | Nº GOL. | UMID. HOT. | DENS. MAX. | EXP. | I.S.C. |
| 305-15 | 1 | 272+000 | LE | 0,20 | 2,60 | 50,2 | 19,4 | 100,0 | 100,0 | 100,0 | 97,0 | 89,0 | 56,0 | 15,0 | 0 | A-2-7 | 12 | 20,1 | 1,680 | 0,05 | 12,3 |
| | | | | | | | | | | | | | | | | | 26 | 19,4 | 1,722 | 0,05 | 17,4 |
| 306-15 | 2 | 275+000 | LE | 0,20 | 2,20 | 35,3 | 15,0 | 100,0 | 100,0 | 100,0 | 99,0 | 94,0 | 59,0 | 32,0 | 1 | A-2-6 | 12 | 20,1 | 1,513 | 0,07 | 9,8 |
| | | | | | | | | | | | | | | | | | 26 | 19,9 | 1,562 | 0,05 | 16,2 |
| 307-15 | 3 | 280+000 | LE | 0,20 | 2,90 | 51,2 | 19,0 | 100,0 | 100,0 | 100,0 | 99,0 | 96,0 | 78,0 | 57,0 | 9 | A-7-5 | 12 | 20,0 | 1,685 | 0,05 | 12,3 |
| | | | | | | | | | | | | | | | | | 26 | 18,9 | 1,738 | 0,03 | 19,4 |
| | | | | | | | | | | | | | | | | | | | | | |
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Controle Tecnológico ( Enecon S. A.)

DATA:

ENECON S. A.
ENGENHEIROS E ECONOMISTAS CONSULTORES

Controle de Qualidade

DATA:

## 3.5 EMPRÉSTIMO ALC-04A

### 3.5.1 BOLETIM DE SONDAGEM

ENECON

# BOLETIM DE SONDAGEM

FOLHA Nº: 1

| CONTRATO Nº | RODOVIA/OBRA | TRECHO |
|---|---|---|
| | MUNICIPAL | 4.3: MONTE BELO - MINEIRINHO - CAMPINAS |

| SUBTRECHO | LOTE |
|---|---|
| | |

| ESTUDO | IDENTIFICAÇÃO | ENCAR. SONDAGEM | DATA |
|---|---|---|---|
| ALC-04 A | | | 10/01/2015 |

| REGISTRO Nº | FURO Nº | ESTACA / KM | ETIQUETA Nº | POSIÇÃO | PROFUNDIDADE (m) DE | PROFUNDIDADE (m) A | TIPO DE ENSAIO | TIPO DE SONDAGEM | CLASSIFICAÇÃO EXPEDITA |
|---|---|---|---|---|---|---|---|---|---|
| | 2 | 525 | | E | 0 | 0,20 | CO | TR | Camada Vegetal |
| | | | | | 0,20 | 2,70 | CO | TR | Argila Arenosa Amarela |
| | | | | | | | | | |
| | 3 | 535 | | E | 0 | 0,20 | CO | TR | Camada Vegetal |
| | | | | | 0,20 | 3,20 | CO | TR | Argila Arenosa Amarela |
| | | | | | | | | | |
| | 4 | 550 | | E | 0 | 0,20 | CO | TR | Camada Vegetal |
| | | | | | 0,20 | 3,30 | CO | TR | Argila Arenosa Amarela |
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**Legenda para controle do registro e preparação da amostra:**

**X** Amostra registrada (**nº**) Amostra preparada

**Legenda para os tipos de ensaios**

CA - Caracterização CO - Completo

**Legenda para o tipos de sondagem:**

RA - Raspagem PP - Pá e Picareta TR - Trado motorizado PA - Paceta

Observações:

### 3.5.2 QUADRO RESUMO DE ENSAIOS

ENECON

# QUADRO RESUMO DE ENSAIOS

OBRA: --

MATERIAL: --

ESTUDO: EMPRÉSTIMO - ALC-04A

TRECHO: LOTE 4 - TRECHO 4.3

LOTE: 4

SUBTRECHO: MONTE BELO - MINEIRINHO - CAMPINAS (ES-297)

DATA: 3/3/2015

| REG. | FURO | ESTACA | POS. | PROF. (m) | | LL | IP | GRANULOMETRIA - % QUE PASSA | | | | | | | IG | CLAS. T.R.B. | COMPACTAÇÃO | | | C.B.R | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nº | Nº | | | DE | A | | | 2" | 1" | 3/8" | Nº 4 | Nº 10 | Nº 40 | Nº200 | | | Nº GOL. | UMID. HOT. | DENS. MAX. | EXP. | I.S.C. |
| 308-15 | 1 | 525 | D | 0,20 | 2,70 | 50,1 | 16,8 | 100,0 | 100,0 | 100,0 | 84 | 79 | 63 | 45 | 5 | A-7-5 | 12 | 20,2 | 1,512 | 0,08 | 10,0 |
| | | | | | | | | | | | | | | | | | 26 | 19,7 | 1,569 | 0,06 | 18,4 |
| 309-15 | 2 | 535 | D | 0,20 | 3,20 | 33,6 | 10,8 | 100,0 | 100,0 | 100 | 96 | 79 | 60 | 31 | 0 | A-2-6 | 12 | 21,6 | 1,533 | 0,87 | 7,2 |
| | | | | | | | | | | | | | | | | | 26 | 19,9 | 1,581 | 0,51 | 15,4 |
| 310-15 | 3 | 550 | D | 0,20 | 3,30 | 46,4 | 16,2 | 100,0 | 100,0 | 100,0 | 100 | 88 | 69 | 30 | 1 | A-2-7 | 12 | 22,4 | 1,531 | 0,07 | 7,6 |
| | | | | | | | | | | | | | | | | | 26 | 21,8 | 1,579 | 0,07 | 18,9 |
| | | | | | | | | | | | | | | | | | | | | | |
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Controle Tecnológico ( Enecon S. A.)

DATA:

ENECON S. A.
ENGENHEIROS E ECONOMISTAS CONSULTORES

Controle de Qualidade

DATA:

## 3.6 EMPRÉSTIMO ALC-04B

### 3.6.1 BOLETIM DE SONDAGEM

| ENECON | BOLETIM DE SONDAGEM | FOLHA Nº 1 |
|---|---|---|

| CONTRATO Nº | RODOVIA/OBRA | TRECHO |
|---|---|---|
| | MUNICIPAL | 4.3: MONTE BELO - MINEIRINHO - CAMPINAS |

| SUBTRECHO | LOTE |
|---|---|
| | |

| ESTUDO | IDENTIFICAÇÃO | ENCAR. SONDAGEM | DATA |
|---|---|---|---|
| ALC-04 B | | | 10/01/2015 |

| REGISTRO Nº | FURO Nº | ESTACA / KM | ETIQUETA Nº | POSIÇÃO | PROFUNDIDADE (m) | | TIPO DE ENSAIO | TIPO DE SONDAGEM | CLASSIFICAÇÃO EXPEDITA |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | DE | A | | | |
| | 1 | 605 | | E | 0 | 0,20 | CO | TR | Camada Vegetal |
| | | | | | 0,20 | 3,90 | CO | TR | Argila Amarela |
| | | | | | | | | | |
| | 2 | 610 | | E | 0 | 0,20 | CO | TR | Camada Vegetal |
| | | | | | 0,20 | 2,70 | CO | TR | Argila Amarela |
| | | | | | | | | | |
| | 3 | 616 | | E | 0 | 0,20 | CO | TR | Camada Vegetal |
| | | | | | 0,20 | 2,60 | CO | TR | Argila Amarela |
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**Legenda para controle do registro e preparação da amostra:**

**X** Amostra registrada (**nº**) Amostra preparada

**Legenda para os tipos de ensaios**

CA - Caracterização CO - Completo

**Legenda para o tipos de sondagem:**

RA - Raspagem PP - Pá e Picareta TR - Trado motorizado PA - Paceta

Observações:

### 3.6.2 QUADRO RESUMO DE ENSAIOS

ENECON

# QUADRO RESUMO DE ENSAIOS

OBRA: --

MATERIAL: --

ESTUDO: EMPRÉSTIMO - ELC-04B

TRECHO: LOTE 4 - TRECHO 4.3

LOTE: 4

SUBTRECHO: MONTE BELO - MINEIRINHO - CAMPINAS (ES-297)

DATA: 3/3/2015

| REG. | FURO | ESTACA | POS. | PROF. (m) | | LL | IP | GRANULOMETRIA - % QUE PASSA | | | | | | | IG | CLAS. T.R.B. | COMPACTAÇÃO | | | C.B.R | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nº | Nº | | | DE | A | | | 2" | 1" | 3/8" | Nº 4 | Nº 10 | Nº 40 | Nº200 | | | Nº GOL. | UMID. HOT. | DENS. MAX. | EXP. | I.S.C. |
| 322-15 | 1 | 605 | E | | | 51,5 | 20,8 | 100,0 | 100,0 | 100 | 99 | 95 | 62 | 41 | 4 | A-7-5 | 12 | 20,1 | 1,728 | 0,36 | 12,4 |
| | | | | | | | | | | | | | | | | | 26 | 18,7 | 1,803 | 0,09 | 20,1 |
| 323-15 | 2 | 610 | E | | | 50,9 | 20,8 | 100,0 | 100,0 | 100 | 88 | 72 | 63 | 52 | 8 | A-7-5 | 12 | 18,1 | 1,539 | 0,12 | 8,4 |
| | | | | | | | | | | | | | | | | | 26 | 17,4 | 1,588 | 0,05 | 13,6 |
| 324-15 | 3 | 616 | E | | | 49,6 | 17,1 | 100,0 | 100,0 | 97 | 81 | 64 | 51 | 47 | 5 | A-7-5 | 12 | 18,6 | 1,593 | 0,41 | 9,2 |
| | | | | | | | | | | | | | | | | | 26 | 18,0 | 1,638 | 0,11 | 17,2 |
| | | | | | | | | | | | | | | | | | | | | | |
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Controle Tecnológico ( Enecon S. A.)

DATA:

ENECON S. A.
ENGENHEIROS E ECONOMISTAS CONSULTORES

Controle de Qualidade

DATA:

# 4. ESTUDOS DE MISTURAS PARA CAMADA DE SUB-BASE

## 4.1 MISTURA 40%B-1_30%PO_30%ALC-03

### 4.1.1 QUADRO RESUMO DE ENSAIOS

ENECON

# QUADRO RESUMO DE ENSAIOS

OBRA: --

MATERIAL: 40%B-1+30%PÓ+30%ALC-03

ESTUDO: SUB-BASE

TRECHO: LOTE 4 - TRECHO 4.3

LOTE: 4

SUBTRECHO: MONTE BELO - MINEIRINHO - CAMPINAS (ES-297)

DATA: 6/7/2015

| REG. | FURO | ESTACA | POS. | PROF. (m) | | LL | IP | GRANULOMETRIA - % QUE PASSA | | | | | | | IG | CLAS. T.R.B. | COMPACTAÇÃO | | | C.B.R | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nº | Nº | | | DE | A | | | 2" | 1" | 3/8" | Nº 4 | Nº 10 | Nº 40 | Nº200 | | | Nº GOL. | UMID. HOT. | DENS. MAX. | EXP. | I.S.C. |
| 1550-15 | - | AM-1 | - | - | - | 32,9 | 12,6 | 100,0 | 100,0 | 61,2 | 59,7 | 49,7 | 31,0 | 18,7 | 0 | A-2-6 | 26 | 7,6 | 2091 | 0,000 | 30,4 |
| 1550A-15 | - | AM-2 | - | - | - | 33,8 | 12,9 | 100,0 | 100,0 | 60,4 | 59,9 | 45,2 | 30,8 | 18,5 | 0 | A-2-6 | 26 | 7,7 | 2094 | 0,000 | 31,4 |
| 1550B-15 | - | AM-3 | - | - | - | 31,9 | 12,2 | 100,0 | 100,0 | 62,3 | 59,6 | 50,9 | 33,5 | 20,6 | 0 | A-2-6 | 26 | 7,9 | 2087 | 0,000 | 29,5 |
| 1550C-15 | - | AM-4 | - | - | - | 34,8 | 13,3 | 100,0 | 100,0 | 60,8 | 59,6 | 50,6 | 30,2 | 17,6 | 0 | A-2-6 | 26 | 7,9 | 2.099 | 0,000 | 32,5 |
| 1550D-15 | - | AM-5 | - | - | - | 30,9 | 11,8 | 100,0 | 100,0 | 61,9 | 59,8 | 48,4 | 33,8 | 22,4 | 0 | A-2-6 | 26 | 7,3 | 2.083 | 0,000 | 28,3 |
| | | | | | | | | | | | | | | | | | | | | | |
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Controle Tecnológico ( Enecon S. A.)

DATA:

ENECON S. A.
ENGENHEIROS E ECONOMISTAS CONSULTORES

Controle de Qualidade

DATA:

## 4.2 MISTURA 40%B-1_30%PO_30%ALC-03A

### 4.2.1 QUADRO RESUMO DE ENSAIOS

ENECON

# QUADRO RESUMO DE ENSAIOS

OBRA: --

MATERIAL: 40%B-1+30%PÓ+30%ALC-03A

ESTUDO: SUB-BASE

TRECHO: LOTE 4 - TRECHO 4.3

LOTE: 4

SUBTRECHO: MONTE BELO - MINEIRINHO - CAMPINAS (ES-297)

DATA: 6/7/2015

| REG. | FURO | ESTACA | POS. | PROF. (m) | | LL | IP | GRANULOMETRIA - % QUE PASSA | | | | | | | IG | CLAS. T.R.B. | COMPACTAÇÃO | | | C.B.R | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nº | Nº | | | DE | A | | | 2" | 1" | 3/8" | Nº 4 | Nº 10 | Nº 40 | Nº200 | | | Nº GOL. | UMID. HOT. | DENS. MAX. | EXP. | I.S.C. |
| 1552-15 | - | AM-1 | - | - | - | 33,2 | 12,5 | 100,0 | 100,0 | 61,2 | 59,2 | 47,5 | 33,6 | 22,3 | 0 | A-2-6 | 26 | 7,7 | 2091 | 0,000 | 28,0 |
| 1552A-15 | - | AM-2 | - | - | - | 34,5 | 13,2 | 100,0 | 100,0 | 60,4 | 59,3 | 48,8 | 33,8 | 22,4 | 0 | A-2-6 | 26 | 7,9 | 2085 | 0,000 | 30,5 |
| 1552B-15 | - | AM-3 | - | - | - | 31,7 | 12,1 | 100,0 | 100,0 | 60,9 | 59,2 | 46,4 | 30,8 | 18,4 | 0 | A-2-6 | 26 | 7,5 | 2095 | 0,000 | 31,6 |
| 1552C-15 | - | AM-4 | - | - | - | 33,8 | 12,9 | 100,0 | 100,0 | 60,5 | 59,9 | 44,7 | 26,4 | 16,3 | 0 | A-2-6 | 26 | 7,5 | 2100 | 0,0 | 32,3 |
| 1552D-15 | - | AM-5 | - | - | - | 30,7 | 11,7 | 100,0 | 100,0 | 60,8 | 59,5 | 46,7 | 31,9 | 20,0 | 0 | A-2-6 | 26 | 7,3 | 2085 | 0,0 | 29,8 |

Controle Tecnológico ( Enecon S. A.)

DATA:

ENECON S. A.
ENGENHEIROS E ECONOMISTAS CONSULTORES

Controle de Qualidade

DATA:

## 4.3 MISTURA 40%B-1_30%PO_30%ALC-04B

### 4.3.1 QUADRO RESUMO DE ENSAIOS

ENECON

# QUADRO RESUMO DE ENSAIOS

OBRA: --

MATERIAL: 40%B-1+30%PÓ+30%ALC-04B

ESTUDO: SUB-BASE

TRECHO: LOTE 4 - TRECHO 4.3

LOTE: 4

SUBTRECHO: MONTE BELO - MINEIRINHO - CAMPINAS (ES-297)

DATA: 6/7/2015

| REG. | FURO | ESTACA | POS. | PROF. (m) | | LL | IP | GRANULOMETRIA - % QUE PASSA | | | | | | | IG | CLAS. T.R.B. | COMPACTAÇÃO | | | C.B.R | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nº | Nº | | | DE | A | | | 2" | 1" | 3/8" | Nº 4 | Nº 10 | Nº 40 | Nº200 | | | Nº GOL. | UMID. HOT. | DENS. MAX. | EXP. | I.S.C. |
| 1551-15 | | AM-1 | | | | 31,5 | 11,9 | 100,0 | 100,0 | 60,0 | 55,7 | 43,9 | 26,5 | 16,8 | 0 | A-2-6 | 26 | 7,3 | 2110 | 0,000 | 30,2 |
| 1551A-15 | | AM-2 | | | | 31,1 | 10,5 | 100,0 | 100,0 | 60,1 | 56,1 | 44,4 | 27,0 | 17,0 | 0 | A-2-4 | 26 | 7,5 | 2095 | 0,000 | 32,9 |
| 1551B-15 | | AM-3 | | | | 31,7 | 11,7 | 100,0 | 100,0 | 59,9 | 55,4 | 43,4 | 26,1 | 16,6 | 0 | A-2-6 | 26 | 7,1 | 2115 | 0,000 | 34,1 |
| 1551C-15 | | AM-4 | | | | 30,6 | 11,2 | 100,0 | 100,0 | 60,3 | 56,7 | 45,4 | 27,9 | 17,5 | 0 | A-2-6 | 26 | 7,1 | 2110 | 0,000 | 34,9 |
| 1551D-15 | | AM-5 | | | | 30,7 | 11,7 | 100,0 | 100,0 | 60,4 | 56,4 | 44,4 | 28,2 | 17,8 | 0 | A-2-6 | 26 | 6,9 | 2095 | 0,000 | 32,2 |
| | | | | | | | | | | | | | | | | | | | | | |
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Controle Tecnológico ( Enecon S. A.)

DATA:

ENECON S. A.
ENGENHEIROS E ECONOMISTAS CONSULTORES

Controle de Qualidade

DATA:

# 5. ESTUDOS DE MISTURAS PARA CAMADA DE BASE

## 5.1 MISTURA 80%BG_20%EC-03

### 5.5.1 QUADRO RESUMO DE ENSAIOS

ENECON

# QUADRO RESUMO DE ENSAIOS

OBRA: --

MATERIAL: 80% P-1 + 20% EC-03

ESTUDO: BASE

TRECHO: LOTE 4 - TRECHO 4.3

LOTE: 4

SUBTRECHO: MONTE BELO - MINEIRINHO - CAMPINAS (ES-297)

DATA: 9/4/2015

| REG. | FURO | ESTACA | POS. | PROF. (m) | | LL | IP | GRANULOMETRIA - % QUE PASSA | | | | | | | IG | CLAS. T.R.B. | COMPACTAÇÃO | | | C.B.R | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | Nº | UMID. | DENS. | EXP. | I.S.C. |
| Nº | Nº | | | DE | A | | | 2" | 1" | 3/8" | Nº 4 | Nº 10 | Nº 40 | Nº200 | | | GOL. | HOT. | MAX. | | |
| 1115 | - | AM-1 | - | - | - | 28,5 | 6,9 | 100,0 | 100,0 | 71,0 | 69,0 | 56,0 | 41,0 | 15,0 | 0 | A-2-4 | 55 | 5,4 | 2.229 | 0,03 | 143,0 |
| 1115A-15 | - | AM-2 | - | - | - | 27,2 | 7,1 | 100,0 | 100,0 | 72,0 | 65,0 | 61,0 | 46,0 | 16,0 | 0 | A-2-4 | 55 | 6,7 | 2.233 | 0,030 | 140,2 |
| 1115B-15 | - | AM-3 | - | - | - | 27,9 | 6,9 | 100,0 | 100,0 | 78,0 | 69,0 | 62,0 | 46,0 | 21,0 | 0 | A-2-4 | 55 | 6,7 | 2.196 | 0,02 | 131,0 |
| 1115C-15 | - | AM-4 | - | - | - | 26,2 | 6,2 | 100,0 | 100,0 | 68,0 | 60,0 | 54,0 | 36,0 | 17,0 | 0 | A-2-4 | 55 | 6,8 | 2228 | 0,02 | 138,52 |
| 1115D-15 | - | AM-5 | - | - | - | 27,4 | 6,3 | 100,0 | 100,0 | 74,0 | 64,0 | 57,0 | 38,0 | 18,0 | 0 | A-2-4 | 55 | 6,4 | 2.230 | 0,02 | 131,0 |
| | | | | | | | | | | | | | | | | | | | | | |
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Controle Tecnológico ( Enecon S. A.)

DATA:

ENECON S. A.
ENGENHEIROS E ECONOMISTAS CONSULTORES

Controle de Qualidade

DATA:

# 6. ESTUDOS DE OCORRÊNCIAS DE MATERIAIS

# 6.1 ESTUDOS DE PEDREIRAS

### 6.1.1 PEDREIRA P-1

#### 6.1.1.1 ADESIVIDADE

ENECON

# AGREGADO GRAÚDO - ADESIVIDADE A LIGANTE BETUMINOSO
DNER-ME 078/94

| RODOVIA | TRECHO | N° REGISTRO |
|---|---|---|
| MUNICIPAL | 4.3 MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | 0097-15 |

| ESTACA | LADO | SUBTRECHO | LOTE Nº |
|---|---|---|---|
| - | - | | - |

| FURO N° | PROFUNDIDADE - m | | CAMADA | ESTUDO |
|---|---|---|---|---|
| - | - | - | - | PEDREIRA P-1 (ULTRAMAR) |

| MATERIAL | OPERADOR | DATA |
|---|---|---|
| PEDRA DE MÃO (GRANITO) | SAMUEL FÉLIX | 03/02/15 |

| PESO DA AMOSTRA (AGREGADO - g) | PRÉ AQUECIMENTO DO AGREGADO | | PESO DO LIGANTE BETUMINOSO (g) |
|---|---|---|---|
| | HORA INÍCIO | HORA RETIRADA | |
| 500,0 | 9:00 | 10:00 | 17,59 |

| LIGANTE BETUMINOSO | | AGREGADO | Nº DO FRASCO |
|---|---|---|---|
| TIPO | TEMPERATURA (°C) | TEMPERATURA (°C) | |
| CAP50/70+0,5% DOP | 120,0 | 100,0 | 6 |

| FRASCO COM AGREGADO E LIGANTE NA ESTUFA A 40º | | | |
|---|---|---|---|
| INÍCIO | | RETIRADA | |
| DATA | HORA | DATA | HORA |
| 09/02/15 | 17:00 | 11/02/15 | 17:00 |

[X] APÓS 72 HORAS NÃO HOUVE DESLOCAMENTO DA PELÍCULA BETUMINOSA

[ ] APÓS 72 HORAS HOUVE DESLOCAMENTO TOTAL OU PARCIAL DA PELÍCULA BETUMINOSA

Observação:

ENECON

# AGREGADO GRAÚDO - ADESIVIDADE A LIGANTE BETUMINOSO
DNER-ME 078/94

| RODOVIA | TRECHO | N° REGISTRO |
|---|---|---|
| MUNICIPAL | 4.3 MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | 0097-15 |

| ESTACA | LADO | SUBTRECHO | LOTE Nº |
|---|---|---|---|
| - | - | | - |

| FURO N° | PROFUNDIDADE - m | | CAMADA | ESTUDO |
|---|---|---|---|---|
| - | - | - | - | PEDREIRA P-1 (ULTRAMAR) |

| MATERIAL | OPERADOR | DATA |
|---|---|---|
| PEDRA DE MÃO (GRANITO) | SAMUEL FÉLIX | 03/02/15 |

| PESO DA AMOSTRA (AGREGADO - g) | PRÉ AQUECIMENTO DO AGREGADO | | PESO DO LIGANTE BETUMINOSO (g) |
|---|---|---|---|
| | HORA INÍCIO | HORA RETIRADA | |
| 500,0 | 9:30 | 10:30 | 17,50 |

| LIGANTE BETUMINOSO | | AGREGADO | Nº DO FRASCO |
|---|---|---|---|
| TIPO | TEMPERATURA (°C) | TEMPERATURA (°C) | |
| EMULSÃO-RR2C | 22,0 | 22,0 | 6 |

| FRASCO COM AGREGADO E LIGANTE NA ESTUFA A 40º | | | |
|---|---|---|---|
| INÍCIO | | RETIRADA | |
| DATA | HORA | DATA | HORA |
| 09/02/15 | 16:20 | 11/02/15 | 16:20 |

[X] APÓS 72 HORAS NÃO HOUVE DESLOCAMENTO DA PELÍCULA BETUMINOSA

[ ] APÓS 72 HORAS HOUVE DESLOCAMENTO TOTAL OU PARCIAL DA PELÍCULA BETUMINOSA

Observação:

### 6.1.1.2 ÍNDICE DE FORMA

ENECON

# ÍNDICE DE FORMA DE AGREGADOS
DER/MG - MT-01.49

| RODOVIA/OBRA | TRECHO | N° REGISTRO |
|---|---|---|
| MUNICIPAL | 4.3 MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | 0097-15 |

| ESTACA | LADO | SUBTRECHO | LOTE Nº |
|---|---|---|---|
| - | - | | - |

| FURO N° | PROFUNDIDADE - m | | CAMADA | ESTUDO |
|---|---|---|---|---|
| - | - | - | - | PEDREIRA P-1 (ULTRAMAR) |

| MATERIAL | OPERADOR | DATA |
|---|---|---|
| PEDRA DE MÃO (GRANITO) | SAMUEL FÉLIX | |

| PASSANTE | | RETIDO | | FRAÇÃO ENTRE PENEIRAS (Mi) | GABARITO Nºs | PASSANTE GABARITO (Mf) | ÍNDICE DE FORMA (%) |
|---|---|---|---|---|---|---|---|
| 2½ " | 63,0 | 2" | 50,0 | | 1 | | |
| 2" | 50,0 | 1½" | 37,5 | | 2 | | |
| 1½" | 37,5 | 1¼" | 31,5 | | 3 | | |
| 1¼" | 31,5 | 1" | 25,0 | | 4 | | |
| 1" | 25,0 | 3/4" | 19,0 | | 5 | | |
| 3/4" | 19,0 | ½ " | 12,5 | 415,0 | 6 | 47,0 | 11,3 |
| ½ " | 12,5 | 3/8" | 9,5 | 120,0 | 7 | 2,0 | 1,7 |
| 3/8" | 9,5 | ¼" | 6,3 | 141,0 | 8 | 7,0 | 5,0 |
| ÍNDICE DE FORMA MÉDIO - IF | | | | 676,0 | | 56,00 | 8,3 |

$$IF = \frac{\text{Passante gabarito (Mf)}}{\text{Fração entre peneiras (Mi)}} \times 100$$

Observação:

ENECON

# ÍNDICE DE FORMA DE AGREGADOS
DER/MG - MT-01.49

| RODOVIA/OBRA | TRECHO | N° REGISTRO |
|---|---|---|
| MUNICIPAL | 4.3 MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | 0097-15 |

| ESTACA | LADO | SUBTRECHO | LOTE Nº |
|---|---|---|---|
| - | - | | - |

| FURO N° | PROFUNDIDADE - m | | CAMADA | ESTUDO |
|---|---|---|---|---|
| - | - | - | - | PEDREIRA P-1 (ULTRAMAR) |

| MATERIAL | OPERADOR | DATA |
|---|---|---|
| PEDRA DE MÃO (GRANITO) | SAMUEL FÉLIX | |

| PASSANTE | | RETIDO | | FRAÇÃO ENTRE PENEIRAS (Mi) | GABARITO Nºs | PASSANTE GABARITO (Mf) | ÍNDICE DE FORMA (%) |
|---|---|---|---|---|---|---|---|
| 2½ " | 63,0 | 2" | 50,0 | | 1 | | |
| 2" | 50,0 | 1½" | 37,5 | | 2 | | |
| 1½" | 37,5 | 1¼" | 31,5 | | 3 | | |
| 1¼" | 31,5 | 1" | 25,0 | | 4 | | |
| 1" | 25,0 | 3/4" | 19,0 | | 5 | | |
| 3/4" | 19,0 | ½ " | 12,5 | 310,0 | 6 | 28,0 | 9,0 |
| ½ " | 12,5 | 3/8" | 9,5 | 110,0 | 7 | 5,0 | 4,5 |
| 3/8" | 9,5 | ¼" | 6,3 | 106,0 | 8 | 5,0 | 4,7 |
| ÍNDICE DE FORMA MÉDIO - IF | | | | 526,0 | | 38,00 | 7,2 |

$$IF = \frac{\text{Passante gabarito (Mf)}}{\text{Fração entre peneiras (Mi)}} \times 100$$

Observação:

ENECON

# ÍNDICE DE FORMA DE AGREGADOS
DER/MG - MT-01.49

| RODOVIA/OBRA | TRECHO | | N° REGISTRO |
|---|---|---|---|
| MUNICIPAL | 4.3 MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | | 0097-15 |
| ESTACA | LADO | SUBTRECHO | LOTE Nº |
| - | - | | - |

| FURO N° | PROFUNDIDADE - m | | CAMADA | ESTUDO |
|---|---|---|---|---|
| - | - | - | - | PEDREIRA P-1 (ULTRAMAR) |

| MATERIAL | OPERADOR | DATA |
|---|---|---|
| PEDRA DE MÃO (GRANITO) | SAMUEL FÉLIX | |

| PASSANTE | | RETIDO | | FRAÇÃO ENTRE PENEIRAS (Mi) | GABARITO Nºs | PASSANTE GABARITO (Mf) | ÍNDICE DE FORMA (%) |
|---|---|---|---|---|---|---|---|
| 2½ " | 63,0 | 2" | 50,0 | | 1 | | |
| 2" | 50,0 | 1½" | 37,5 | | 2 | | |
| 1½" | 37,5 | 1¼" | 31,5 | | 3 | | |
| 1¼" | 31,5 | 1" | 25,0 | | 4 | | |
| 1" | 25,0 | 3/4" | 19,0 | | 5 | | |
| 3/4" | 19,0 | ½ " | 12,5 | 229,0 | 6 | 21,0 | 9,2 |
| ½ " | 12,5 | 3/8" | 9,5 | 188,0 | 7 | 10,0 | 5,3 |
| 3/8" | 9,5 | ¼" | 6,3 | 98,0 | 8 | 9,0 | 9,2 |
| ÍNDICE DE FORMA MÉDIO - IF | | | | 515,0 | | 40,00 | 7,8 |

$$IF = \frac{\text{Passante gabarito (Mf)}}{\text{Fração entre peneiras (Mi)}} \times 100$$

Observação:

### 6.1.1.3 DESGASTE POR ABRASÃO LOS ANGELES

## LABORLOC- LABORATÓRIO E LOCAÇÃO DE EQUIPAMENTOS LTDA

LABORATÓRIO DE MATERIAIS DE CONSTRUÇÃO

### Agregados - Determinação da Abrasão "Los Angeles" - ABNT NBR NM 51:2001

| | | | | | |
|---|---|---|---|---|---|
| Interessado: | Enecon Engenheiros e Economistas Consultores S/A | | | | |
| Proced: | Pedreira (Ultramar) | Trecho: | Presidente Kennedy ES - BR 101 a (Contrato 632) | | |
| Data: | 03/02/15 | Material: | Fragmentos de rocha (Brita 2) | Registro: | 006/2015 |

| Gradução da Amostra para Ensaio | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Abertura das Peneiras | | Peso das Amostras (g) | | | | | | |
| Passando | Retido | Graduação A | Graduação B | Graduação C | Graduação D | Graduação E | Graduação F | Graduação G |
| 1.1/2 | 1" | 1.250 | | | | 2.500 | | |
| 1" | 3/4" | 1.250 | | | | 2.500 | | |
| 3/4" | 1/2" | 1.250 | 2.500 | | | 5.000 | 5.000 | 5.000 |
| 1/2" | 3/8" | 1.250 | 2.500 | | | | 5.000 | 5.000 |
| 3/8" | 1/4" | | | 2.500 | | | | |
| 1/4" | Nº.4 | | | 2.500 | | | | |
| Nº.4 | Nº.8 | | | | 5.000 | | | |
| Quantidade de Esferas | | 12 | 11 | 8 | 6 | 12 | 12 | 12 |
| Carga | | 5.000 | 5.000 | 5.000 | 5.000 | 10.000 | 10.000 | 10.000 |
| No. De Rotações do tambor | | 500 | 500 | 500 | 500 | 1000 | 1000 | 1000 |

| DADOS DO ENSAIO | | | |
|---|---|---|---|
| ABRASÃO "LOS ANGELES" - FAIXA - B | | | |
| PESAGEM DO MATERIAL | | | |
| Peso Inicial | Peso Retido # 1,7 mm | Peso Passa # 1,7 mm | Abrasão (%) |
| 5.000,00 | 2.486,00 | 2.514,00 | 50,3 |

Belo Horizonte 03 de fevereiro de 2015

Laboratorista responsável: Alysson Santos
alysson@viatest.com.br

Raul Roscoe Ramires
Eng. Civil
CREA-MG 0162808

LABORLOC – LABORATÓRIO E LOCAÇÃO DE EQUIPAMENTOS LTDA.
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Telefone: (031) 3492-9514 – Fac. Símile: (031) 3491-8155 – e-mail: viatest@viatest.com.br – www.viatest.com.br

### 6.1.2 PEDREIRA P-2

### 6.1.2.1 ADESIVIDADE

ENECON

# AGREGADO GRAÚDO - ADESIVIDADE A LIGANTE BETUMINOSO
DNER-ME 078/94

| RODOVIA | TRECHO | N° REGISTRO |
|---|---|---|
| MUNICIPAL | 4.3 MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | 0098-15 |

| ESTACA | LADO | SUBTRECHO | LOTE Nº |
|---|---|---|---|
| - | - | | - |

| FURO N° | PROFUNDIDADE - m | | CAMADA | ESTUDO |
|---|---|---|---|---|
| - | - | - | - | PEDREIRA P-2 (CONCRESUL) |

| MATERIAL | OPERADOR | DATA |
|---|---|---|
| BRITA-2 | SAMUEL FÉLIX | 09/02/15 |

| PESO DA AMOSTRA (AGREGADO - g) | PRÉ AQUECIMENTO DO AGREGADO | | PESO DO LIGANTE BETUMINOSO (g) |
|---|---|---|---|
| | HORA INÍCIO | HORA RETIRADA | |
| 500,0 | 8:00 | 9:00 | 17,59 |

| LIGANTE BETUMINOSO | | AGREGADO | Nº DO FRASCO |
|---|---|---|---|
| TIPO | TEMPERATURA (°C) | TEMPERATURA (°C) | |
| CAP50/70+0,5%DOP | 120,0 | 100,0 | 2 |

| FRASCO COM AGREGADO E LIGANTE NA ESTUFA A 40º | | | |
|---|---|---|---|
| INÍCIO | | RETIRADA | |
| DATA | HORA | DATA | HORA |
| 09/02/15 | 17:05 | 11/02/15 | 17:05 |

[X] APÓS 72 HORAS NÃO HOUVE DESLOCAMENTO DA PELÍCULA BETUMINOSA

[ ] APÓS 72 HORAS HOUVE DESLOCAMENTO TOTAL OU PARCIAL DA PELÍCULA BETUMINOSA

Observação:

ENECON

# AGREGADO GRAÚDO - ADESIVIDADE A LIGANTE BETUMINOSO
DNER-ME 078/94

| RODOVIA | TRECHO | | N° REGISTRO |
|---|---|---|---|
| MUNICIPAL | 4.3 MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | | 0098-15 |
| ESTACA | LADO | SUBTRECHO | LOTE Nº |
| - | - | | - |
| FURO N° | PROFUNDIDADE - m | CAMADA | ESTUDO |
| - | - - | - | PEDREIRA P-2 (CONCRESUL) |
| MATERIAL | | OPERADOR | DATA |
| BRITA-2 | | SAMUEL FÉLIX | 09/02/15 |

| PESO DA AMOSTRA (AGREGADO - g) | PRÉ AQUECIMENTO DO AGREGADO | | PESO DO LIGANTE BETUMINOSO (g) |
|---|---|---|---|
| | HORA INÍCIO | HORA RETIRADA | |
| 500,0 | 9:40 | 10:40 | 17,50 |

| LIGANTE BETUMINOSO | | AGREGADO | Nº DO FRASCO |
|---|---|---|---|
| TIPO | TEMPERATURA (°C) | TEMPERATURA (°C) | |
| EMULSÃO-RR2C | 22,0 | 22,0 | 6 |

| FRASCO COM AGREGADO E LIGANTE NA ESTUFA A 40º | | | |
|---|---|---|---|
| INÍCIO | | RETIRADA | |
| DATA | HORA | DATA | HORA |
| 09/02/15 | 15:00 | 11/02/15 | 15:00 |

[X] APÓS 72 HORAS NÃO HOUVE DESLOCAMENTO DA PELÍCULA BETUMINOSA

[ ] APÓS 72 HORAS HOUVE DESLOCAMENTO TOTAL OU PARCIAL DA PELÍCULA BETUMINOSA

Observação:

## 6.1.2.2 ÍNDICE DE FORMA

ENECON

# ÍNDICE DE FORMA DE AGREGADOS
DER/MG - MT-01.49

| RODOVIA/OBRA | TRECHO | N° REGISTRO |
|---|---|---|
| MUNICIPAL | 4.3 MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | 0098-15 |

| ESTACA | LADO | SUBTRECHO | LOTE Nº |
|---|---|---|---|
| - | - | | - |

| FURO N° | PROFUNDIDADE - m | | CAMADA | ESTUDO |
|---|---|---|---|---|
| - | - | - | - | PEDREIRA P-2 (CONCRESUL) |

| MATERIAL | OPERADOR | DATA |
|---|---|---|
| PEDRA DE MÃO (GRANITO) | SAMUEL FÉLIX | 11/02/15 |

| PASSANTE | | RETIDO | | FRAÇÃO ENTRE PENEIRAS (Mi) | GABARITO Nºs | PASSANTE GABARITO (Mf) | ÍNDICE DE FORMA (%) |
|---|---|---|---|---|---|---|---|
| 2½ " | 63,0 | 2" | 50,0 | | 1 | | |
| 2" | 50,0 | 1½" | 37,5 | | 2 | | |
| 1½" | 37,5 | 1¼" | 31,5 | | 3 | | |
| 1¼" | 31,5 | 1" | 25,0 | | 4 | | |
| 1" | 25,0 | 3/4" | 19,0 | | 5 | | |
| 3/4" | 19,0 | ½ " | 12,5 | 279,0 | 6 | 19,1 | 6,8 |
| ½ " | 12,5 | 3/8" | 9,5 | 280,0 | 7 | 27,2 | 9,7 |
| 3/8" | 9,5 | ¼" | 6,3 | 180,3 | 8 | 13,8 | 7,7 |
| ÍNDICE DE FORMA MÉDIO - IF | | | | 739,3 | | 60,05 | 8,1 |

$$IF = \frac{\text{Passante gabarito (Mf)}}{\text{Fração entre peneiras (Mi)}} \times 100$$

Observação:

ENECON

# ÍNDICE DE FORMA DE AGREGADOS
DER/MG - MT-01.49

| RODOVIA/OBRA | TRECHO | N° REGISTRO |
|---|---|---|
| MUNICIPAL | 4.3 MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | 0098-15 |

| ESTACA | LADO | SUBTRECHO | LOTE Nº |
|---|---|---|---|
| - | - | | - |

| FURO N° | PROFUNDIDADE - m | | CAMADA | ESTUDO |
|---|---|---|---|---|
| - | - | - | - | PEDREIRA P-2 (CONCRESUL) |

| MATERIAL | OPERADOR | DATA |
|---|---|---|
| PEDRA DE MÃO (GRANITO) | SAMUEL FÉLIX | 11/02/15 |

| PASSANTE | | RETIDO | | FRAÇÃO ENTRE PENEIRAS (Mi) | GABARITO Nºs | PASSANTE GABARITO (Mf) | ÍNDICE DE FORMA (%) |
|---|---|---|---|---|---|---|---|
| 2½ " | 63,0 | 2" | 50,0 | | 1 | | |
| 2" | 50,0 | 1½" | 37,5 | | 2 | | |
| 1½" | 37,5 | 1¼" | 31,5 | | 3 | | |
| 1¼" | 31,5 | 1" | 25,0 | | 4 | | |
| 1" | 25,0 | 3/4" | 19,0 | | 5 | | |
| 3/4" | 19,0 | ½ " | 12,5 | 325,0 | 6 | 22,0 | 6,8 |
| ½ " | 12,5 | 3/8" | 9,5 | 165,0 | 7 | 11,0 | 6,7 |
| 3/8" | 9,5 | ¼" | 6,3 | 132,0 | 8 | 19,7 | 14,9 |
| ÍNDICE DE FORMA MÉDIO - IF | | | | 622,0 | | 52,70 | 8,5 |

$$IF = \frac{\text{Passante gabarito (Mf)}}{\text{Fração entre peneiras (Mi)}} \times 100$$

Observação:

ENECON

# ÍNDICE DE FORMA DE AGREGADOS
DER/MG - MT-01.49

| RODOVIA/OBRA | TRECHO | N° REGISTRO |
|---|---|---|
| MUNICIPAL | 4.3 MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | 0098-15 |

| ESTACA | LADO | SUBTRECHO | LOTE Nº |
|---|---|---|---|
| - | - | | - |

| FURO N° | PROFUNDIDADE - m | | CAMADA | ESTUDO |
|---|---|---|---|---|
| - | - | - | - | PEDREIRA P-2 (CONCRESUL) |

| MATERIAL | OPERADOR | DATA |
|---|---|---|
| PEDRA DE MÃO (GRANITO) | SAMUEL FÉLIX | 11/02/15 |

| PASSANTE | | RETIDO | | FRAÇÃO ENTRE PENEIRAS (Mi) | GABARITO Nºs | PASSANTE GABARITO (Mf) | ÍNDICE DE FORMA (%) |
|---|---|---|---|---|---|---|---|
| 2½ " | 63,0 | 2" | 50,0 | | 1 | | |
| 2" | 50,0 | 1½" | 37,5 | | 2 | | |
| 1½" | 37,5 | 1¼" | 31,5 | | 3 | | |
| 1¼" | 31,5 | 1" | 25,0 | | 4 | | |
| 1" | 25,0 | 3/4" | 19,0 | | 5 | | |
| 3/4" | 19,0 | ½ " | 12,5 | 289,1 | 6 | 25,0 | 8,6 |
| ½ " | 12,5 | 3/8" | 9,5 | 154,2 | 7 | 10,0 | 6,5 |
| 3/8" | 9,5 | ¼" | 6,3 | 111,2 | 8 | 14,1 | 12,6 |
| ÍNDICE DE FORMA MÉDIO - IF | | | | 554,5 | | 49,05 | 8,8 |

$$IF = \frac{\text{Passante gabarito (Mf)}}{\text{Fração entre peneiras (Mi)}} \times 100$$

Observação:

### 6.1.2.3 DESGASTE POR ABRASÃO LOS ANGELES

# LABORLOC- LABORATÓRIO E LOCAÇÃO DE EQUIPAMENTOS LTDA

## LABORATÓRIO DE MATERIAIS DE CONSTRUÇÃO

**Agregados - Determinação da Abrasão "Los Angeles" - ABNT NBR NM 51:2001**

Interessado: **Enecon Engenheiros e Economistas Consultores S/A**

Proced: **Ped. Concresul - Cachoeiro Itapemirim** Trecho: **Presidente Kennedy - ES** **Contrato: 635**

Data: **10/02/2015** Material: **Fragmentos de rocha (Brita 2)** Registro: **009/2015**

| Gradução da Amostra para Ensaio | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Abertura das Peneiras | | Peso das Amostras (g) | | | | | | |
| Passando | Retido | Graduação A | Graduação B | Graduação C | Graduação D | Graduação E | Graduação F | Graduação G |
| 1.1/2 | 1" | 1.250 | | | | 2.500 | | |
| 1" | 3/4" | 1.250 | | | | 2.500 | | |
| 3/4" | 1/2" | 1.250 | 2.500 | | | 5.000 | 5.000 | 5.000 |
| 1/2" | 3/8" | 1.250 | 2.500 | | | | 5.000 | 5.000 |
| 3/8" | 1/4" | | | 2.500 | | | | |
| 1/4" | N°.4 | | | 2.500 | | | | |
| N°.4 | N°.8 | | | | 5.000 | | | |
| Quantidade de Esferas | | 12 | 11 | 8 | 6 | 12 | 12 | 12 |
| Carga | | 5.000 | 5.000 | 5.000 | 5.000 | 10.000 | 10.000 | 10.000 |
| No. De Rotações do tambor | | 500 | 500 | 500 | 500 | 1000 | 1000 | 1000 |

| DADOS DO ENSAIO | | | |
|---|---|---|---|
| ABRASÃO "LOS ANGELES" - FAIXA - B | | | |
| PESAGEM DO MATERIAL | | | |
| Peso Inicial | Peso Retido # 1,7 mm | Peso Passa # 1,7 mm | Abrasão (%) |
| 5.000,00 | 1.216,00 | 3.784,00 | 75,7 |

Belo Horizonte 10 de fevereiro de 2015

Laboratorista responsável: Alysson Santos
[illegible]a_sso_@viatest.com.br

Raul Roscoe Ramires
Eng. Civil
CREA-MG 0162808

**LABORLOC – LABORATÓRIO E LOCAÇÃO DE EQUIPAMENTOS LTDA.**
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Telefone: (031) 3492-9514 – Fac. Símile: (031) 3491-8155 – e-mail: viatest@viatest.com.br – www.viatest.com.br

# 6.2 ESTUDOS DE AREAIS

### 6.2.1 AREAL A-1

#### 6.2.1.1 GRANULOMETRIA

ENECON

# ANÁLISE GRANULOMETRIA POR PENEIRAMENTO
DNER - ME 080/94

| RODOVIA | TRECHO | N° REGISTRO |
|---|---|---|
| MINICIPAL | 4.3 MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | 0092-15 |

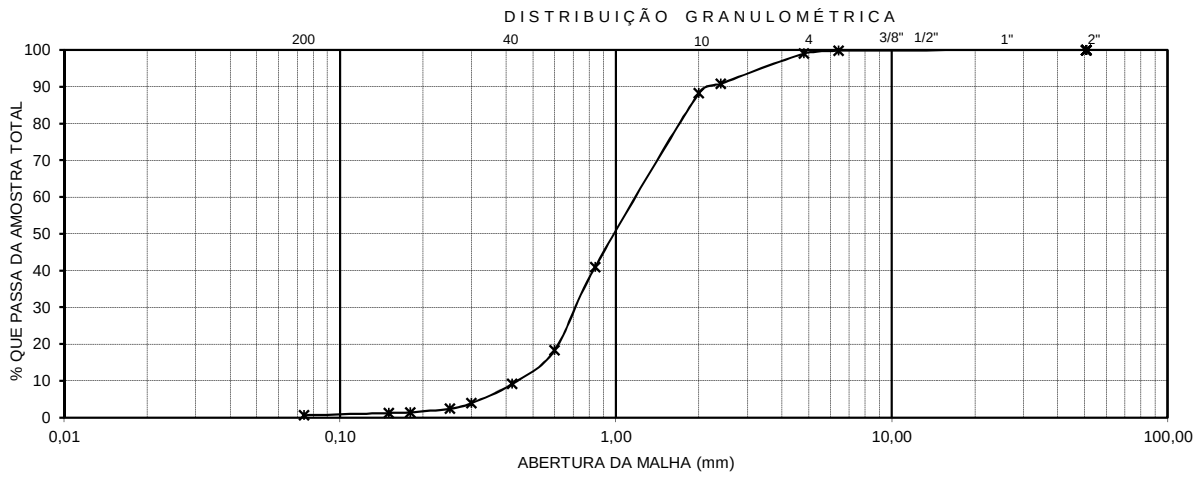
| ESTACA | LADO | SUBTRECHO | LOTE Nº |
|---|---|---|---|
| - | - | | - |

| FURO N° | PROFUNDIDADE - m | | CAMADA | ESTUDO |
|---|---|---|---|---|
| - | - | - | - | AREAL A-1 (AREAL DO HELINHO) |

| MATERIAL | OPERADOR | DATA |
|---|---|---|
| AREIA GROSSA | | |

| AMOSTRA TOTAL SECA (g) | | UMIDADE HIGROSCÓPICA | | RESUMO DO ENSAIO (%) | | AMOSTRA < # Nº 10 |
|---|---|---|---|---|---|---|
| Amostra Total Úmida (g) | 1000,0 | Cápsula Nº | 189 | Pedregulho: > 4,8mm | 1,0 | CÁPSULA Nº |
| Retido # Nº 10 (g) | | Cápsula+Solo Úmido+Água (g) | 37,21 | Areia Grossa: 4,8 - 2,0 mm | 10,7 | B-33 |
| Passando # Nº 10 Úmida (g) | 1000,0 | Cápsula+Solo Seco (g) | 37,21 | Areia Média: 2,0 - 0,42 mm | 79,2 | |
| Peso da Água (g) | | Peso da Água (g) | 0,00 | Areia Fina: 0,42 - 0,074 mm | 8,5 | AMOSTRA > # Nº 10 |
| Passando # Nº 10 Seco (g) | 1000,0 | Peso da Cápsula (g) | 17,47 | Material. < 0,074 mm | 0,6 | CÁPSULA Nº |
| Amostra Total Seca (g) | 1000,0 | Peso do Solo Seco (g) | | Total | 100,0 | |
| Amostra < # Nº 10 Úmida (g) | 100,0 | Umidade (%) | 0,00 | | | - |
| Amostra < # Nº 10 Seca (g) | 100,0 | Fator de Correção | 1,000 | Retido: 2,0 - 0,074 mm | 87,7 | |

| PENEIRAS | | PESO RETIDO | % AMOSTRA | % AMOSTRA TOTAL | % | % | % PASS. AM. |
|---|---|---|---|---|---|---|---|
| POLEGADA | mm | g | < # Nº 10 | < # Nº 10 | AM. TOTAL | ACUMULADA | TOTAL |
| 2" | 50,8 | | | | | | |
| 1½" | 38,1 | | | | | | |
| 1" | 25,40 | | | | | | |
| 3/4" | 19,10 | | | | | | |
| 1/2" | 12,70 | | | | | | |
| 3/8" | 9,50 | | | | | | 100,0 |
| 1/4" | 6,40 | 2,0 | | | 0,2 | 0,2 | 99,8 |
| Nº 4 | 4,80 | 8,1 | | | 0,8 | 1,0 | 99,0 |
| Nº 8 | 2,40 | 82,4 | | | 8,2 | 9,2 | 90,8 |
| Nº 10 | 2,00 | 25,3 | | | 2,5 | 11,7 | 88,3 |
| Nº 20 | 0,84 | 473,7 | | | 47,4 | 59,1 | 40,9 |
| Nº 30 | 0,60 | 226,2 | | | 22,6 | 81,7 | 18,3 |
| Nº 40 | 0,42 | 92,3 | | | 9,2 | 90,9 | 9,1 |
| Nº50 | 0,30 | 52,3 | | | 5,2 | 96,1 | 3,9 |
| Nº60 | 0,25 | 14,8 | | | 1,5 | 97,6 | 2,4 |
| Nº 80 | 0,18 | 9,8 | | | 1,0 | 98,6 | 1,4 |
| Nº 100 | 0,15 | 1,6 | | | 0,2 | 98,8 | 1,2 |
| Nº200 | 0,074 | 6,0 | | | 0,6 | 99,4 | 0,6 |
| FUNDO | PASSANTE | 0,8 | | | 0,1 | 99,5 | 0,5 |




| Controle Tecnológico ( ENECON ) | Controle de Qualidade |
|---|---|
| Responsável: Engº Rodrigo Fidelis | |

ENECON

# ANÁLISE GRANULOMETRIA POR PENEIRAMENTO
## DNER - ME 080/94

| RODOVIA | TRECHO | N° REGISTRO |
|---|---|---|
| MINICIPAL | 4.3 MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | 0093-15 |

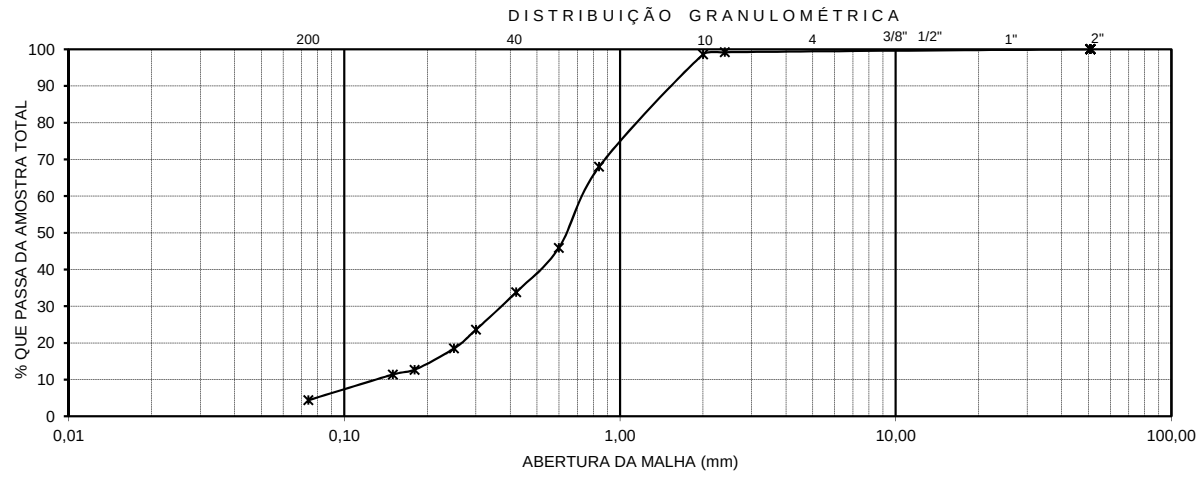
| ESTACA | LADO | SUBTRECHO | LOTE Nº |
|---|---|---|---|
| - | - | | - |

| FURO N° | PROFUNDIDADE - m | | CAMADA | ESTUDO |
|---|---|---|---|---|
| - | - | - | - | AREAL A-1 (AREAL DO HELINHO) |

| MATERIAL | OPERADOR | DATA |
|---|---|---|
| AREIA MÉDIA | WALLACE | 10/02/2015 |

| AMOSTRA TOTAL SECA (g) | | UMIDADE HIGROSCÓPICA | | RESUMO DO ENSAIO (%) | | AMOSTRA < # Nº 10 |
|---|---|---|---|---|---|---|
| Amostra Total Úmida (g) | 1000,0 | Cápsula Nº | 87 | Pedregulho: > 4,8mm | 0,0 | CÁPSULA Nº |
| Retido # Nº 10 (g) | | Cápsula+Solo Úmido+Água (g) | 37,65 | Areia Grossa: 4,8 - 2,0 mm | 1,4 | B-D |
| Passando # Nº 10 Úmida (g) | 1000,0 | Cápsula+Solo Seco (g) | 37,64 | Areia Média: 2,0 - 0,42 mm | 64,8 | |
| Peso da Água (g) | | Peso da Água (g) | 0,01 | Areia Fina: 0,42 - 0,074 mm | 29,4 | AMOSTRA > # Nº 10 |
| Passando # Nº 10 Seco (g) | 1000,0 | Peso da Cápsula (g) | 17,11 | Material. < 0,074 mm | 4,4 | CÁPSULA Nº |
| Amostra Total Seca (g) | 1000,0 | Peso do Solo Seco (g) | | Total | 100,0 | |
| Amostra < # Nº 10 Úmida (g) | 100,0 | Umidade (%) | 0,00 | | | - |
| Amostra < # Nº 10 Seca (g) | 100,0 | Fator de Correção | 1,000 | Retido: 2,0 - 0,074 mm | 94,2 | |

| PENEIRAS | | PESO RETIDO | % AMOSTRA | % AMOSTRA TOTAL | % | % | % PASS. AM. |
|---|---|---|---|---|---|---|---|
| POLEGADA | mm | g | < # Nº 10 | < # Nº 10 | AM. TOTAL | ACUMULADA | TOTAL |
| 2" | 50,8 | | | | | | |
| 1½" | 38,1 | | | | | | |
| 1" | 25,40 | | | | | | |
| 3/4" | 19,10 | | | | | | |
| 1/2" | 12,70 | | | | | | |
| 3/8" | 9,50 | | | | | | |
| 1/4" | 6,40 | | | | | | |
| Nº 4 | 4,80 | | | | | | 100,0 |
| Nº 8 | 2,40 | 8,2 | | | 0,8 | 0,8 | 99,2 |
| Nº 10 | 2,00 | 5,7 | | | 0,6 | 1,4 | 98,6 |
| Nº 20 | 0,84 | 306,2 | | | 30,6 | 32,0 | 68,0 |
| Nº 30 | 0,60 | 221,5 | | | 22,1 | 54,1 | 45,9 |
| Nº 40 | 0,42 | 120,7 | | | 12,1 | 66,2 | 33,8 |
| Nº50 | 0,30 | 102,1 | | | 10,2 | 76,4 | 23,6 |
| Nº60 | 0,25 | 51,5 | | | 5,1 | 81,5 | 18,5 |
| Nº 80 | 0,18 | 57,7 | | | 5,8 | 87,3 | 12,7 |
| Nº 100 | 0,15 | 13,2 | | | 1,3 | 88,6 | 11,4 |
| Nº200 | 0,074 | 70,2 | | | 7,0 | 95,6 | 4,4 |
| FUNDO | PASSANTE | 2,5 | | | 0,2 | 95,8 | 4,2 |




| Controle Tecnológico ( ENECON ) | Controle de Qualidade |
|---|---|
| Responsável: Engº Rodrigo Fidelis | |

## 6.2.1.2 EQUIVALENTE DE AREIA

ENECON

# EQUIVALENTE DE AREIA - DNER - ME 054/97

| RODOVIA/OBRA | TRECHO | | N° REGISTRO |
|---|---|---|---|
| MUNICIPAL | 4.3 MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | | 0092-15 |
| ESTACA | LADO | SUBTRECHO | LOTE Nº |
| - | - | | - |
| FURO N° | PROFUNDIDADE - m | CAMADA | ESTUDO |
| - | - - | - | AREAL A-1 (AREAL DO HELINHO) |
| MATERIAL | | OPERADOR | DATA |
| AREIA GROSSA | | FREDERICO ÂNGELO | 10/02/15 |

| **CARACTERÍSTICAS DO ENSAIO** | **ENSAIOS** | | |
|---|---|---|---|
| | **1** | **2** | **3** |
| INÍCIO DE UMIDECIMENTO | 16:18:00 | 16:27:00 | 16:40:00 |
| FIM DE UMIDECIMENTO | 16:28:00 | 16:37:00 | 16:50:00 |
| INÍCIO DE SEDIMENTAÇÃO | 16:28:30 | 16:37:30 | 16:50:30 |
| FIM DE SEDIMENTAÇÃO | 16:48:30 | 16:57:30 | 17:10:30 |
| ALTURA NO TOPO DA ARGILA (h1) | 11,1 | 11,8 | 11,5 |
| ALTURA NO TOPO DA AREIA (h2) | 10,5 | 10,9 | 10,6 |
| EQUIVALENTE DE AREIA EA = (h2 / h1) 100 | 94,6 | 92,4 | 92,2 |
| MÉDIA DOS RESULTADOS | **93,0** | | |

Cálculo:

$$EA = \frac{\text{Leitura no topo da areia}}{\text{Leitura no topo da argila}} \times 100$$

Ou:

$$EA = \frac{d2 - K}{380 - d1} \times 100$$

Observação:

ENECON

# EQUIVALENTE DE AREIA - DNER - ME 054/97

| RODOVIA/OBRA | TRECHO | | N° REGISTRO |
|---|---|---|---|
| MUNICIPAL | 4.3 MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | | 0093-15 |
| ESTACA | LADO | SUBTRECHO | LOTE Nº |
| - | - | | - |
| FURO N° | PROFUNDIDADE - m | CAMADA | ESTUDO |
| - | - - | - | AREAL A-1 (AREAL DO HELINHO) |
| MATERIAL | | OPERADOR | DATA |
| AREIA MÉDIA | | FREDERICO ÂNGELO | 10/02/15 |

| **CARACTERÍSTICAS DO ENSAIO** | **ENSAIOS** | | |
|---|---|---|---|
| | **1** | **2** | **3** |
| INÍCIO DE UMIDECIMENTO | 16:00:00 | 15:40:00 | 15:15:00 |
| FIM DE UMIDECIMENTO | 16:10:00 | 15:50:00 | 15:25:00 |
| INÍCIO DE SEDIMENTAÇÃO | 16:10:30 | 15:50:30 | 15:25:30 |
| FIM DE SEDIMENTAÇÃO | 16:30:30 | 16:10:30 | 15:45:30 |
| ALTURA NO TOPO DA ARGILA (h1) | 11,1 | 11,4 | 11,8 |
| ALTURA NO TOPO DA AREIA (h2) | 9,6 | 9,8 | 10,4 |
| EQUIVALENTE DE AREIA EA = (h2 / h1) 100 | 86,5 | 86,0 | 88,1 |
| MÉDIA DOS RESULTADOS | **86,9** | | |

Cálculo:

$$EA = \frac{\text{Leitura no topo da areia}}{\text{Leitura no topo da argila}} \times 100$$

Ou:

$$EA = \frac{d2 - K}{380 - d1} \times 100$$

Observação:

### 6.2.1.3 IMPUREZA ORGÂNICA

ENECON

# AREIA - DETERMINAÇÃO DE IMPUREZAS ORGÂNICAS
DNER-ME 055-95

| RODOVIA/OBRA | TRECHO | | N° REGISTRO |
|---|---|---|---|
| MUNICIPAL | 4.3 MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | | 0092-15 |
| ESTACA | LADO | SUBTRECHO | LOTE Nº |
| - | - | | - |

| FURO N° | PROFUNDIDADE - m | | CAMADA | ESTUDO |
|---|---|---|---|---|
| - | - | - | - | AREAL A-1 (AREAL DO HELINHO) |

| MATERIAL | OPERADOR | DATA |
|---|---|---|
| AREIA GROSSA | FREDERICO ÂNGELO | 08/02/15 |

**SOLUÇÃO PADRÃO - 3 ml de solução de ácido tânico a 2% com 97 ml de solução de hidróxido de sódio a 3%.**

**SOLUÇÃO ADICIONADA NA AREIA - Solução de hidróxido de sódio a 3%.**

| Nº PROVETA | PESO DA AREIA (g) |
|---|---|
| 3 | 200 |

**AVALIAÇÃO E INTERPRETAÇÃO DO ÍNDICE DE COR**

- [X] APÓS 24 HORAS FOI CONSTATADO UMA COLORAÇÃO MAIS CLARA QUE A SOLUÇÃO PADRÃO
- [ ] APÓS 24 HORAS FOI CONSTATADO UMA COLORAÇÃO SEMELHANTE (IGUAL) QUE A SOLUÇÃO PADRÃO
- [ ] APÓS 24 HORAS FOI CONSTATADO UMA COLORAÇÃO MAIS ESCURA QUE A SOLUÇÃO PADRÃO, INDICANDO A POSSIBILIDADE DE A AREIA SER PORTADORA DE COMPOSTOS ORGÂNICOS NOCIVOS.

Observação:

ENECON

# AREIA - DETERMINAÇÃO DE IMPUREZAS ORGÂNICAS
DNER-ME 055-95

| RODOVIA/OBRA | TRECHO | | N° REGISTRO |
|---|---|---|---|
| MUNICIPAL | 4.3 MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | | 0093-15 |
| ESTACA | LADO | SUBTRECHO | LOTE Nº |
| - | - | | - |

| FURO N° | PROFUNDIDADE - m | | CAMADA | ESTUDO |
|---|---|---|---|---|
| - | - | - | - | AREAL A-1 (AREAL DO HELINHO) |

| MATERIAL | OPERADOR | DATA |
|---|---|---|
| AREIA MÉDIA | FREDERICO ÂNGELO | 08/02/15 |

**SOLUÇÃO PADRÃO - 3 ml de solução de ácido tânico a 2% com 97 ml de solução de hidróxido de sódio a 3%.**

**SOLUÇÃO ADICIONADA NA AREIA - Solução de hidróxido de sódio a 3%.**

| Nº PROVETA | PESO DA AREIA (g) |
|---|---|
| 2 | 200 |

**AVALIAÇÃO E INTERPRETAÇÃO DO ÍNDICE DE COR**

- [X] APÓS 24 HORAS FOI CONSTATADO UMA COLORAÇÃO MAIS CLARA QUE A SOLUÇÃO PADRÃO
- [ ] APÓS 24 HORAS FOI CONSTATADO UMA COLORAÇÃO SEMELHANTE (IGUAL) QUE A SOLUÇÃO PADRÃO
- [ ] APÓS 24 HORAS FOI CONSTATADO UMA COLORAÇÃO MAIS ESCURA QUE A SOLUÇÃO PADRÃO, INDICANDO A POSSIBILIDADE DE A AREIA SER PORTADORA DE COMPOSTOS ORGÂNICOS NOCIVOS.

Observação:

### 6.2.2 AREAL A-3

## 6.2.2.1 GRANULOMETRIA

# ANÁLISE GRANULOMETRIA POR PENEIRAMENTO
## DNER - ME 080/94

| RODOVIA | TRECHO | N° REGISTRO |
|---|---|---|
| MUNICIPAL | 4.3 MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | 0095-15 |

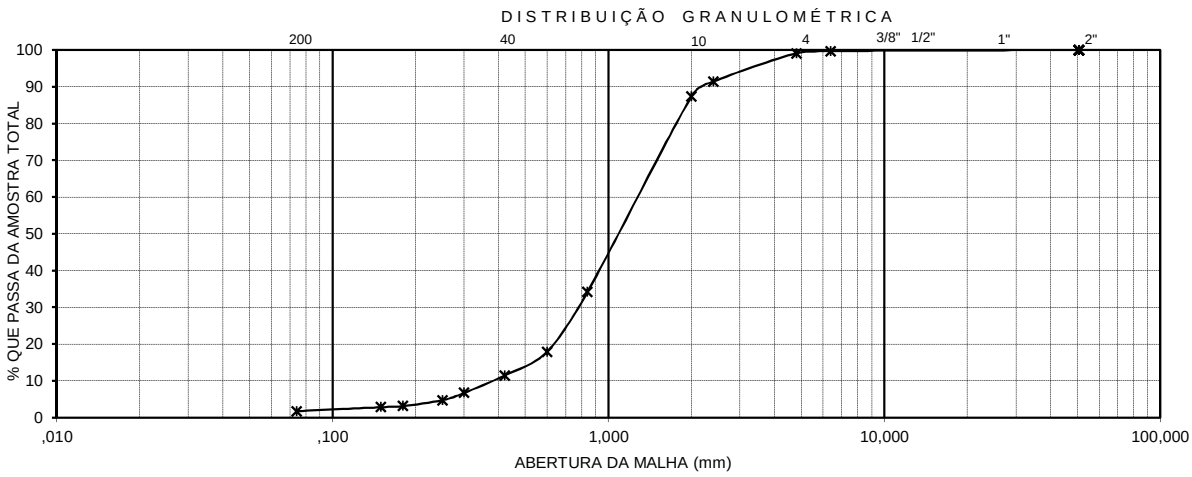
| ESTACA | LADO | SUBTRECHO | LOTE Nº |
|---|---|---|---|
| - | - | | - |

| FURO N° | PROFUNDIDADE - m | | CAMADA | ESTUDO |
|---|---|---|---|---|
| - | - | - | - | AREAL A-3 (VALMIR) |

| MATERIAL | OPERADOR | DATA |
|---|---|---|
| AREIA GROSSA | WALLACE | 10/02/2015 |

| AMOSTRA TOTAL SECA (g) | | UMIDADE HIGROSCÓPICA | | RESUMO DO ENSAIO (%) | | AMOSTRA < # Nº 10 |
|---|---|---|---|---|---|---|
| Amostra Total Úmida (g) | 1000,0 | Cápsula Nº | 180 | Pedregulho: > 4,8mm | 0,9 | CÁPSULA Nº |
| Retido # Nº 10 (g) | | Cápsula+Solo Úmido+Água (g) | 33,98 | Areia Grossa: 4,8 - 2,0 mm | 11,7 | B-08 |
| Passando # Nº 10 Úmida (g) | 1000,0 | Cápsula+Solo Seco (g) | 33,97 | Areia Média: 2,0 - 0,42 mm | 76,0 | |
| Peso da Água (g) | | Peso da Água (g) | 0,01 | Areia Fina: 0,42 - 0,074 mm | 9,7 | AMOSTRA > # Nº 10 |
| Passando # Nº 10 Seco (g) | 1000,0 | Peso da Cápsula (g) | 17,20 | Material. < 0,074 mm | 1,7 | CÁPSULA Nº |
| Amostra Total Seca (g) | 1000,0 | Peso do Solo Seco (g) | | Total | 100,0 | |
| Amostra < # Nº 10 Úmida (g) | 100,0 | Umidade (%) | 0,00 | | | - |
| Amostra < # Nº 10 Seca (g) | 100,0 | Fator de Correção | 1,000 | Retido: 2,0 - 0,074 mm | 85,7 | |

| PENEIRAS | | PESO RETIDO | % AMOSTRA | % AMOSTRA TOTAL | % | % | % PASS. AM. |
|---|---|---|---|---|---|---|---|
| POLEGADA | mm | g | < # Nº 10 | < # Nº 10 | AM. TOTAL | ACUMULADA | TOTAL |
| 2" | 50,8 | | | | | | |
| 1½" | 38,1 | | | | | | |
| 1" | 25,40 | | | | | | |
| 3/4" | 19,10 | | | | | | |
| 1/2" | 12,70 | | | | | | |
| 3/8" | 9,50 | | | | | | 100,0 |
| 1/4" | 6,40 | 3,4 | | | 0,3 | 0,3 | 99,7 |
| Nº 4 | 4,80 | 5,8 | | | 0,6 | 0,9 | 99,1 |
| Nº 8 | 2,40 | 77,3 | | | 7,7 | 8,6 | 91,4 |
| Nº 10 | 2,00 | 39,9 | | | 4,0 | 12,6 | 87,4 |
| Nº 20 | 0,84 | 532,4 | | | 53,2 | 65,8 | 34,2 |
| Nº 30 | 0,60 | 163,5 | | | 16,3 | 82,1 | 17,9 |
| Nº 40 | 0,42 | 65,0 | | | 6,5 | 88,6 | 11,4 |
| Nº50 | 0,30 | 47,5 | | | 4,7 | 93,3 | 6,7 |
| Nº60 | 0,25 | 20,0 | | | 2,0 | 95,3 | 4,7 |
| Nº 80 | 0,18 | 15,9 | | | 1,6 | 96,9 | 3,1 |
| Nº 100 | 0,15 | 2,5 | | | 0,3 | 97,2 | 2,8 |
| Nº200 | 0,074 | 11,0 | | | 1,1 | 98,3 | 1,7 |
| FUNDO | PASSANTE | 1,1 | | | 0,1 | 98,4 | 1,6 |




| Controle Tecnológico ( ENECON ) | Controle de Qualidade |
|---|---|
| Responsável: Engº Rodrigo Fidelis | |

# ANÁLISE GRANULOMETRIA POR PENEIRAMENTO
## DNER - ME 080/94

| RODOVIA | TRECHO | N° REGISTRO |
|---|---|---|
| MUNICIPAL | 4.3 MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | 0096-15 |

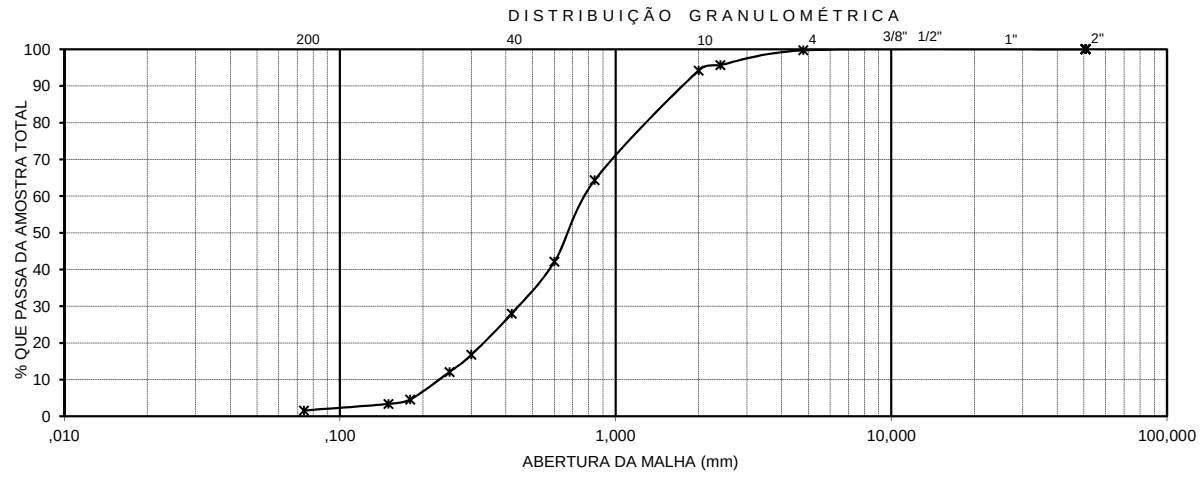
| ESTACA | LADO | SUBTRECHO | LOTE Nº |
|---|---|---|---|
| - | - | | - |

| FURO N° | PROFUNDIDADE - m | | CAMADA | ESTUDO |
|---|---|---|---|---|
| - | - | - | - | AREAL A-3 (VALMIR) |

| MATERIAL | OPERADOR | DATA |
|---|---|---|
| AREIA MÉDIA | WALLACE | 10/02/2015 |

| AMOSTRA TOTAL SECA (g) | | UMIDADE HIGROSCÓPICA | | RESUMO DO ENSAIO (%) | | AMOSTRA < # Nº 10 |
|---|---|---|---|---|---|---|
| Amostra Total Úmida (g) | 1000,0 | Cápsula Nº | 31 | Pedregulho: > 4,8mm | 0,3 | CÁPSULA Nº |
| Retido # Nº 10 (g) | | Cápsula+Solo Úmido+Água (g) | 38,68 | Areia Grossa: 4,8 - 2,0 mm | 5,5 | - |
| Passando # Nº 10 Úmida (g) | 1000,0 | Cápsula+Solo Seco (g) | 38,66 | Areia Média: 2,0 - 0,42 mm | 66,2 | |
| Peso da Água (g) | | Peso da Água (g) | 0,02 | Areia Fina: 0,42 - 0,074 mm | 26,4 | AMOSTRA > # Nº 10 |
| Passando # Nº 10 Seco (g) | 1000,0 | Peso da Cápsula (g) | 16,59 | Material. < 0,074 mm | 1,6 | CÁPSULA Nº |
| Amostra Total Seca (g) | 1000,0 | Peso do Solo Seco (g) | | Total | 100,0 | |
| Amostra < # Nº 10 Úmida (g) | 100,0 | Umidade (%) | 0,00 | | | - |
| Amostra < # Nº 10 Seca (g) | 100,0 | Fator de Correção | 1,000 | Retido: 2,0 - 0,074 mm | 92,6 | |

| PENEIRAS | | PESO RETIDO | % AMOSTRA | % AMOSTRA TOTAL | % | % | % PASS. AM. |
|---|---|---|---|---|---|---|---|
| POLEGADA | mm | g | < # Nº 10 | < # Nº 10 | AM. TOTAL | ACUMULADA | TOTAL |
| 2" | 50,8 | | | | | | |
| 1½" | 38,1 | | | | | | |
| 1" | 25,40 | | | | | | |
| 3/4" | 19,10 | | | | | | |
| 1/2" | 12,70 | | | | | | |
| 3/8" | 9,50 | | | | | | |
| 1/4" | 6,40 | | | | | | 100,0 |
| Nº 4 | 4,80 | 3,3 | | | 0,3 | 0,3 | 99,7 |
| Nº 8 | 2,40 | 39,6 | | | 4,0 | 4,3 | 95,7 |
| Nº 10 | 2,00 | 15,2 | | | 1,5 | 5,8 | 94,2 |
| Nº 20 | 0,84 | 298,9 | | | 29,9 | 35,7 | 64,3 |
| Nº 30 | 0,60 | 222,0 | | | 22,2 | 57,9 | 42,1 |
| Nº 40 | 0,42 | 140,9 | | | 14,1 | 72,0 | 28,0 |
| Nº50 | 0,30 | 111,6 | | | 11,2 | 83,2 | 16,8 |
| Nº60 | 0,25 | 47,1 | | | 4,7 | 87,9 | 12,1 |
| Nº 80 | 0,18 | 74,7 | | | 7,5 | 95,4 | 4,6 |
| Nº 100 | 0,15 | 12,0 | | | 1,2 | 96,6 | 3,4 |
| Nº200 | 0,074 | 18,4 | | | 1,8 | 98,4 | 1,6 |
| FUNDO | PASSANTE | 1,0 | | | 0,1 | 98,5 | 1,5 |




| Controle Tecnológico ( ENECON ) | Controle de Qualidade |
|---|---|
| Responsável: Engº Rodrigo Fidelis | |

## 6.2.2.2 EQUIVALENTE DE AREIA

ENECON

# EQUIVALENTE DE AREIA - DNER - ME 054/97

| RODOVIA/OBRA | TRECHO | | N° REGISTRO |
|---|---|---|---|
| MUNICIPAL | 4.5: MONTE BELO – CERUDE – ES-297 (CAETÉS) | | 0095-15 |
| ESTACA | LADO | SUBTRECHO | LOTE Nº |
| - | - | | - |
| FURO N° | PROFUNDIDADE - m | CAMADA | ESTUDO |
| - | - - | - | AREAL A-3 (VALMIR) |
| MATERIAL | | OPERADOR | DATA |
| AREIA GROSSA | | FREDERICO ÂNGELO | 10/02/15 |

| CARACTERÍSTICAS DO ENSAIO | ENSAIOS | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| INÍCIO DE UMIDECIMENTO | 17:00:00 | | |
| FIM DE UMIDECIMENTO | 17:10:00 | 00:10:00 | 00:10:00 |
| INÍCIO DE SEDIMENTAÇÃO | 17:10:30 | 00:10:30 | 00:10:30 |
| FIM DE SEDIMENTAÇÃO | 17:30:30 | 00:30:30 | 00:30:30 |
| ALTURA NO TOPO DA ARGILA (h1) | 10,0 | 10,8 | 10,3 |
| ALTURA NO TOPO DA AREIA (h2) | 9,5 | 9,9 | 9,6 |
| EQUIVALENTE DE AREIA EA = (h2 / h1) 100 | 95,0 | 91,7 | 93,2 |
| MÉDIA DOS RESULTADOS | **93,3** | | |

Cálculo:

$$EA = \frac{\text{Leitura no topo da areia}}{\text{Leitura no topo da argila}} \times 100$$

Ou:

$$EA = \frac{d2 - K}{380 - d1} \times 100$$

Observação:

ENECON

# EQUIVALENTE DE AREIA - DNER - ME 054/97

| RODOVIA/OBRA | TRECHO | | N° REGISTRO |
|---|---|---|---|
| MUNICIPAL | 4.5: MONTE BELO – CERUDE – ES-297 (CAETÉS) | | 0096-15 |
| ESTACA | LADO | SUBTRECHO | LOTE Nº |
| - | - | | - |
| FURO N° | PROFUNDIDADE - m | CAMADA | ESTUDO |
| - | - - | - | AREAL A-3 (VALMIR) |
| MATERIAL | | OPERADOR | DATA |
| AREIA MÉDIA | | FREDERICO ÂNGELO | 10/02/15 |

| **CARACTERÍSTICAS DO ENSAIO** | **ENSAIOS** | | |
|---|---|---|---|
| | **1** | **2** | **3** |
| INÍCIO DE UMIDECIMENTO | 16:10:00 | 16:35:00 | 16:55:00 |
| FIM DE UMIDECIMENTO | 16:20:00 | 16:45:00 | 17:05:00 |
| INÍCIO DE SEDIMENTAÇÃO | 16:20:30 | 16:45:30 | 17:05:30 |
| FIM DE SEDIMENTAÇÃO | 16:40:30 | 17:05:30 | 17:25:30 |
| ALTURA NO TOPO DA ARGILA (h1) | 9,0 | 10,5 | 9,8 |
| ALTURA NO TOPO DA AREIA (h2) | 8,8 | 10,0 | 9,6 |
| EQUIVALENTE DE AREIA EA = (h2 / h1) 100 | 97,8 | 95,4 | 98,0 |
| MÉDIA DOS RESULTADOS | **97,1** | | |

Cálculo:

$$EA = \frac{\text{Leitura no topo da areia}}{\text{Leitura no topo da argila}} \times 100$$

Ou:

$$EA = \frac{d2 - K}{380 - d1} \times 100$$

Observação:

### 6.2.2.3 IMPUREZA ORGÂNICA

ENECON

# AREIA - DETERMINAÇÃO DE IMPUREZAS ORGÂNICAS
DNER-ME 055-95

| RODOVIA/OBRA | TRECHO | | N° REGISTRO |
|---|---|---|---|
| MUNICIPAL | 4.3 MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | | 0095-15 |
| ESTACA | LADO | SUBTRECHO | LOTE Nº |
| - | - | | - |
| FURO N° | PROFUNDIDADE - m | CAMADA | ESTUDO |
| - | - - | - | AREAL A-3 (VALMIR) |
| MATERIAL | | OPERADOR | DATA |
| AREIA GROSSA | | FREDERICO ÂNGELO | 08/02/15 |

**SOLUÇÃO PADRÃO - 3 ml de solução de ácido tânico a 2% com 97 ml de solução de hidróxido de sódio a 3%.**

**SOLUÇÃO ADICIONADA NA AREIA - Solução de hidróxido de sódio a 3%.**

| Nº PROVETA | PESO DA AREIA (g) |
|---|---|
| 5 | 200 |

**AVALIAÇÃO E INTERPRETAÇÃO DO ÍNDICE DE COR**

- [X] APÓS 24 HORAS FOI CONSTATADO UMA COLORAÇÃO MAIS CLARA QUE A SOLUÇÃO PADRÃO
- [ ] APÓS 24 HORAS FOI CONSTATADO UMA COLORAÇÃO SEMELHANTE (IGUAL) QUE A SOLUÇÃO PADRÃO
- [ ] APÓS 24 HORAS FOI CONSTATADO UMA COLORAÇÃO MAIS ESCURA QUE A SOLUÇÃO PADRÃO, INDICANDO A POSSIBILIDADE DE A AREIA SER PORTADORA DE COMPOSTOS ORGÂNICOS NOCIVOS.

Observação:

ENECON

# AREIA - DETERMINAÇÃO DE IMPUREZAS ORGÂNICAS
DNER-ME 055-95

| RODOVIA/OBRA | TRECHO | | N° REGISTRO |
|---|---|---|---|
| MUNICIPAL | 4.3 MONTE BELO - MINEIRINHO - CAMPINAS (ES-297) | | 0096-15 |
| ESTACA | LADO | SUBTRECHO | LOTE Nº |
| - | - | | - |

| FURO N° | PROFUNDIDADE - m | | CAMADA | ESTUDO |
|---|---|---|---|---|
| - | - | - | - | AREAL A-3 (VALMIR) |

| MATERIAL | OPERADOR | DATA |
|---|---|---|
| AREIA MÉDIA | FREDERICO ÂNGELO | 08/02/15 |

**SOLUÇÃO PADRÃO - 3 ml de solução de ácido tânico a 2% com 97 ml de solução de hidróxido de sódio a 3%.**

**SOLUÇÃO ADICIONADA NA AREIA - Solução de hidróxido de sódio a 3%.**

| Nº PROVETA | PESO DA AREIA (g) |
|---|---|
| 7 | 200 |

**AVALIAÇÃO E INTERPRETAÇÃO DO ÍNDICE DE COR**

- [X] APÓS 24 HORAS FOI CONSTATADO UMA COLORAÇÃO MAIS CLARA QUE A SOLUÇÃO PADRÃO
- [ ] APÓS 24 HORAS FOI CONSTATADO UMA COLORAÇÃO SEMELHANTE (IGUAL) QUE A SOLUÇÃO PADRÃO
- [ ] APÓS 24 HORAS FOI CONSTATADO UMA COLORAÇÃO MAIS ESCURA QUE A SOLUÇÃO PADRÃO, INDICANDO A POSSIBILIDADE DE A AREIA SER PORTADORA DE COMPOSTOS ORGÂNICOS NOCIVOS.

Observação:

# 7. SONDAGENS COM PENETRÔMETRO DINÂMICO EM LOCAIS DE SOLOS COMPRESSÍVEIS

| ENECON | SONDAGEM A PENETRÔMETRO DINÂMICO 10 kg | FOLHA Nº 1/14 |
|---|---|---|

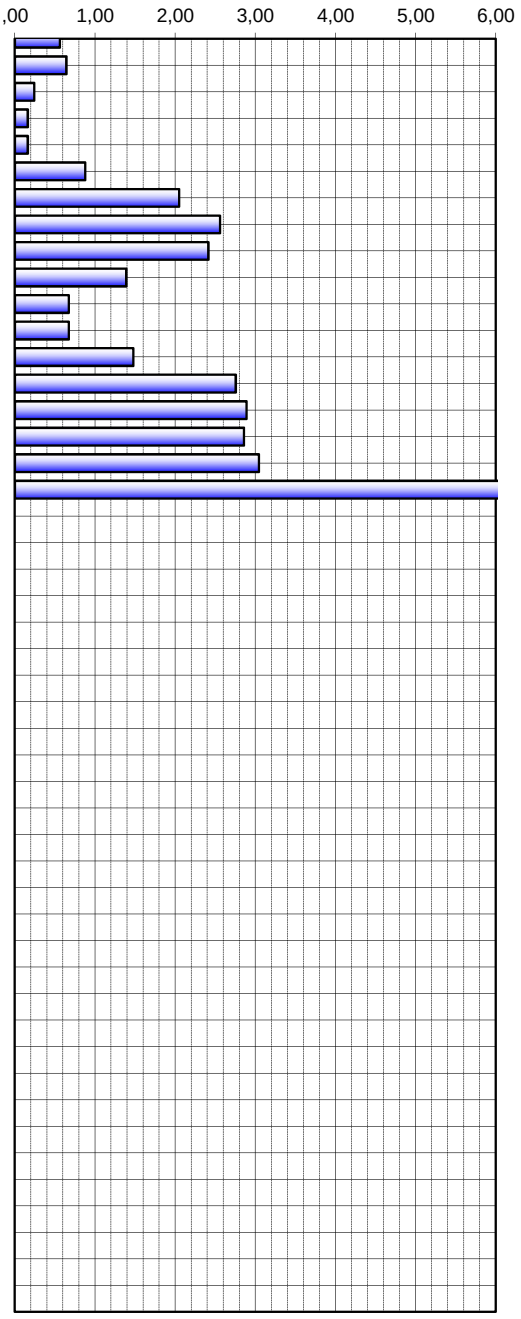
| RODOVIA | TRECHO | |
|---|---|---|
| MUNICIPAL | MONTE BELO - MINEIRINHO - CAMPINAS - LOTE 4 - TRECHO 4.3 | |
| SUBTRECHO | | DATA |
| ÚNICO | | 07/10/2014 |

| ESTACA | FURO N° | POSIÇÃO | N.A. | OPERADOR |
|---|---|---|---|---|
| 115+10 | 1 | LD | | JONATHAN |

DADOS DE ENSAIO

| NÚMERO DE GOLPES | PENETRAÇÃO (cm) DE | PENETRAÇÃO (cm) A | NÚMERO DE HASTE | RD | $\sigma_R$ |
|---|---|---|---|---|---|
| 7 | 0 | 20 | 1 | 11,2 | 0,56 |
| 8 | 20 | 40 | 1 | 12,8 | 0,64 |
| 3 | 40 | 60 | 1 | 4,8 | 0,24 |
| 2 | 60 | 80 | 1 | 3,2 | 0,16 |
| 2 | 80 | 100 | 1 | 3,2 | 0,16 |
| 12 | 100 | 120 | 2 | 17,6 | 0,88 |
| 28 | 120 | 140 | 2 | 41,0 | 2,05 |
| 35 | 140 | 160 | 2 | 51,2 | 2,56 |
| 33 | 160 | 180 | 2 | 48,3 | 2,41 |
| 19 | 180 | 200 | 2 | 27,8 | 1,39 |
| 10 | 200 | 220 | 3 | 13,4 | 0,67 |
| 10 | 220 | 240 | 3 | 13,4 | 0,67 |
| 22 | 240 | 260 | 3 | 29,6 | 1,48 |
| 41 | 260 | 280 | 3 | 55,1 | 2,75 |
| 43 | 280 | 300 | 3 | 57,8 | 2,89 |
| 46 | 300 | 320 | 4 | 57,2 | 2,86 |
| 49 | 320 | 340 | 4 | 60,9 | 3,04 |
| 53 | 340 | 345 | 4 | 263,5 | 13,17 |

RESISTÊNCIA DE PONTA - kg/cm²




OBSERVAÇÕES:

| ENECON | SONDAGEM A PENETRÔMETRO DINÂMICO 10 kg | FOLHA Nº 2/14 |
|---|---|---|

| RODOVIA | TRECHO | |
|---|---|---|
| MUNICIPAL | MONTE BELO - MINEIRINHO - CAMPINAS - LOTE 4 - TRECHO 4.3 | |
| SUBTRECHO | | DATA |
| ÚNICO | | 07/10/2014 |

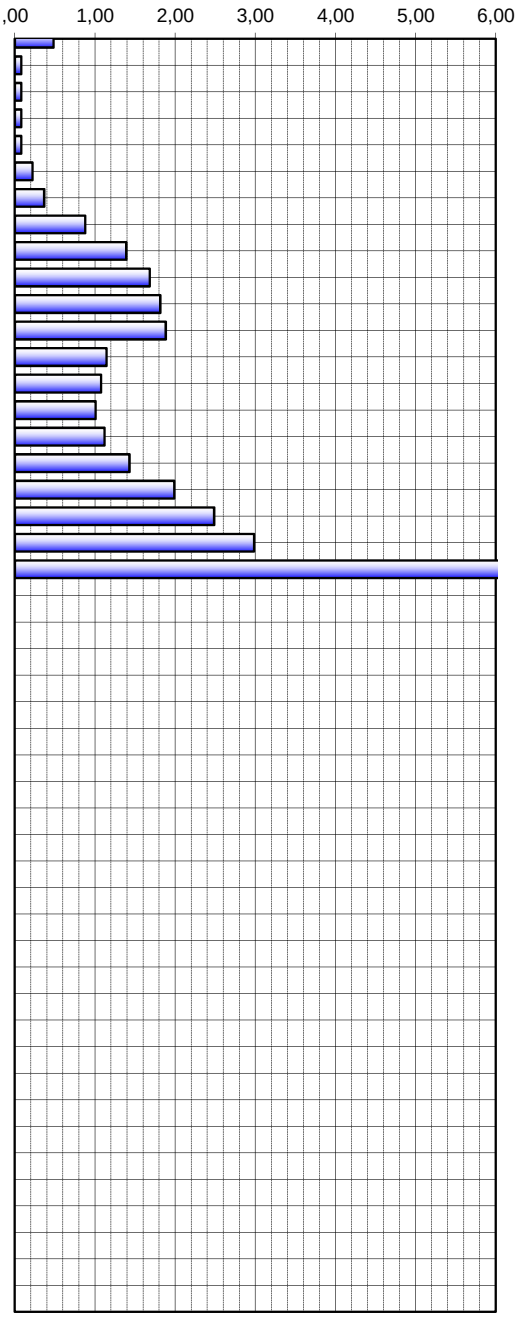
| ESTACA | FURO N° | POSIÇÃO | N.A. | OPERADOR |
|---|---|---|---|---|
| 144+00 | 2 | LE | | JONATHAN |

DADOS DE ENSAIO

| NÚMERO DE GOLPES | PENETRAÇÃO (cm) DE | PENETRAÇÃO (cm) A | NÚMERO DE HASTE | RD | $\sigma_R$ |
|---|---|---|---|---|---|
| 6 | 0 | 20 | 1 | 9,6 | 0,48 |
| 1 | 20 | 40 | 1 | 1,6 | 0,08 |
| 1 | 40 | 60 | 1 | 1,6 | 0,08 |
| 1 | 60 | 80 | 1 | 1,6 | 0,08 |
| 1 | 80 | 100 | 1 | 1,6 | 0,08 |
| 3 | 100 | 120 | 2 | 4,4 | 0,22 |
| 5 | 120 | 140 | 2 | 7,3 | 0,37 |
| 12 | 140 | 160 | 2 | 17,6 | 0,88 |
| 19 | 160 | 180 | 2 | 27,8 | 1,39 |
| 23 | 180 | 200 | 2 | 33,6 | 1,68 |
| 27 | 200 | 220 | 3 | 36,3 | 1,81 |
| 28 | 220 | 240 | 3 | 37,6 | 1,88 |
| 17 | 240 | 260 | 3 | 22,8 | 1,14 |
| 16 | 260 | 280 | 3 | 21,5 | 1,08 |
| 15 | 280 | 300 | 3 | 20,2 | 1,01 |
| 18 | 300 | 320 | 4 | 22,4 | 1,12 |
| 23 | 320 | 340 | 4 | 28,6 | 1,43 |
| 32 | 340 | 360 | 4 | 39,8 | 1,99 |
| 40 | 360 | 380 | 4 | 49,7 | 2,49 |
| 48 | 380 | 400 | 4 | 59,7 | 2,98 |
| 53 | 400 | 410 | 5 | 122,5 | 6,13 |

OBSERVAÇÕES:

RESISTÊNCIA DE PONTA - kg/cm²



| ENECON | SONDAGEM A PENETRÔMETRO DINÂMICO 10 kg | FOLHA Nº 3/14 |
|---|---|---|

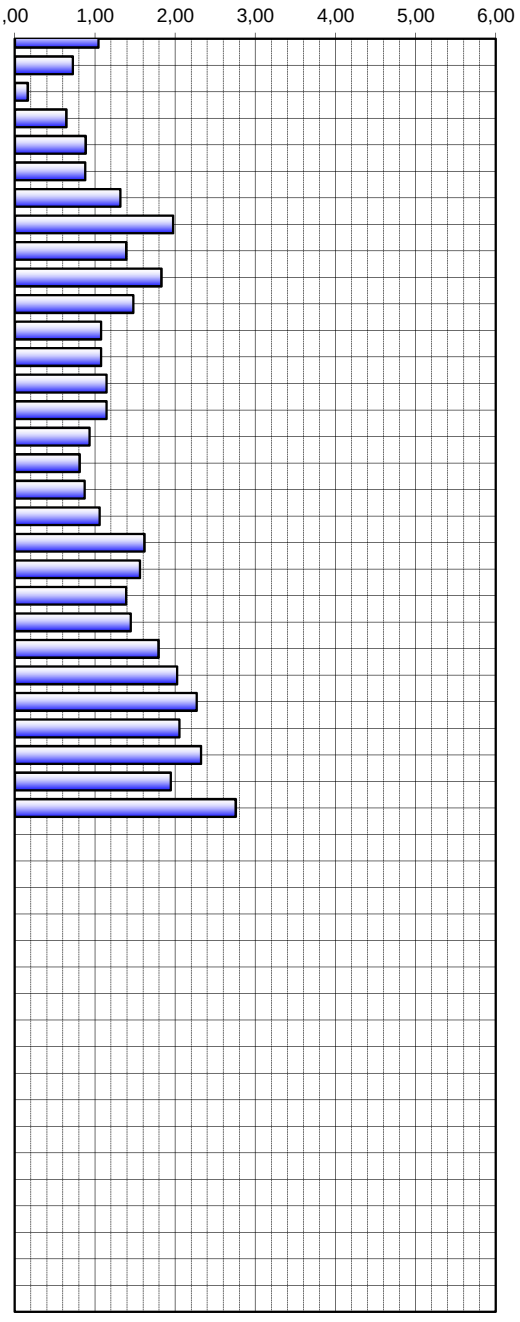
| RODOVIA | TRECHO | |
|---|---|---|
| MUNICIPAL | MONTE BELO - MINEIRINHO - CAMPINAS - LOTE 4 - TRECHO 4.3 | |
| SUBTRECHO | | DATA |
| ÚNICO | | 30/10/2014 |

| ESTACA | FURO N° | POSIÇÃO | N.A. | OPERADOR |
|---|---|---|---|---|
| 430+10 | 3 | | | SAMUEL |

DADOS DE ENSAIO

RESISTÊNCIA DE PONTA - kg/cm²

| NÚMERO DE GOLPES | PENETRAÇÃO (cm) | | NÚMERO DE HASTE | RD | $\sigma_R$ |
|---|---|---|---|---|---|
| | DE | A | | | |
| 13 | 0 | 20 | 1 | 20,9 | 1,04 |
| 9 | 20 | 40 | 1 | 14,4 | 0,72 |
| 2 | 40 | 60 | 1 | 3,2 | 0,16 |
| 8 | 60 | 80 | 1 | 12,8 | 0,64 |
| 11 | 80 | 100 | 1 | 17,7 | 0,88 |
| 12 | 100 | 120 | 2 | 17,6 | 0,88 |
| 18 | 120 | 140 | 2 | 26,3 | 1,32 |
| 27 | 140 | 160 | 2 | 39,5 | 1,97 |
| 19 | 160 | 180 | 2 | 27,8 | 1,39 |
| 25 | 180 | 200 | 2 | 36,6 | 1,83 |
| 22 | 200 | 220 | 3 | 29,6 | 1,48 |
| 16 | 220 | 240 | 3 | 21,5 | 1,08 |
| 16 | 240 | 260 | 3 | 21,5 | 1,08 |
| 17 | 260 | 280 | 3 | 22,8 | 1,14 |
| 17 | 280 | 300 | 3 | 22,8 | 1,14 |
| 15 | 300 | 320 | 4 | 18,6 | 0,93 |
| 13 | 320 | 340 | 4 | 16,2 | 0,81 |
| 14 | 340 | 360 | 4 | 17,4 | 0,87 |
| 17 | 360 | 380 | 4 | 21,1 | 1,06 |
| 26 | 380 | 400 | 4 | 32,3 | 1,62 |
| 27 | 400 | 420 | 5 | 31,2 | 1,56 |
| 24 | 420 | 440 | 5 | 27,7 | 1,39 |
| 25 | 440 | 460 | 5 | 28,9 | 1,44 |
| 31 | 460 | 480 | 5 | 35,8 | 1,79 |
| 35 | 480 | 500 | 5 | 40,5 | 2,02 |
| 42 | 500 | 520 | 6 | 45,4 | 2,27 |
| 38 | 520 | 540 | 6 | 41,1 | 2,05 |
| 43 | 540 | 560 | 6 | 46,5 | 2,32 |
| 36 | 560 | 580 | 6 | 38,9 | 1,94 |
| 51 | 580 | 600 | 6 | 55,1 | 2,75 |




OBSERVAÇÕES:

ENECON

# SONDAGEM A PENETRÔMETRO DINÂMICO 10 kg

FOLHA Nº 4/14

| RODOVIA | TRECHO |
|---|---|
| MUNICIPAL | MONTE BELO - MINEIRINHO - CAMPINAS - LOTE 4 - TRECHO 4.3 |

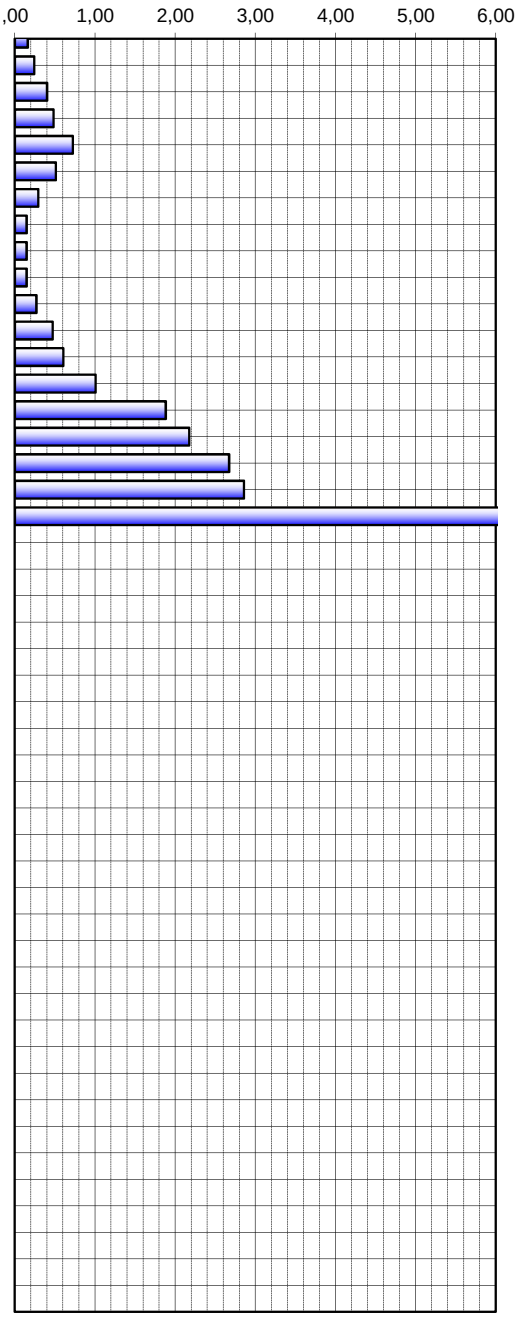
| SUBTRECHO | DATA |
|---|---|
| ÚNICO | 07/10/2014 |

| ESTACA | FURO N° | POSIÇÃO | N.A. | OPERADOR |
|---|---|---|---|---|
| 431+00 | 4 | LE | | SAMUEL |

DADOS DE ENSAIO

| NÚMERO DE GOLPES | PENETRAÇÃO (cm) | | NÚMERO DE HASTE | RD | $\sigma_R$ |
|---|---|---|---|---|---|
| | DE | A | | | |
| 2 | 0 | 20 | 1 | 3,2 | 0,16 |
| 3 | 20 | 40 | 1 | 4,8 | 0,24 |
| 5 | 40 | 60 | 1 | 8,0 | 0,40 |
| 6 | 60 | 80 | 1 | 9,6 | 0,48 |
| 9 | 80 | 100 | 1 | 14,4 | 0,72 |
| 7 | 100 | 120 | 2 | 10,2 | 0,51 |
| 4 | 120 | 140 | 2 | 5,9 | 0,29 |
| 2 | 140 | 160 | 2 | 2,9 | 0,15 |
| 2 | 160 | 180 | 2 | 2,9 | 0,15 |
| 2 | 180 | 200 | 2 | 2,9 | 0,15 |
| 4 | 200 | 220 | 3 | 5,4 | 0,27 |
| 7 | 220 | 240 | 3 | 9,4 | 0,47 |
| 9 | 240 | 260 | 3 | 12,1 | 0,60 |
| 15 | 260 | 280 | 3 | 20,2 | 1,01 |
| 28 | 280 | 300 | 3 | 37,6 | 1,88 |
| 35 | 300 | 320 | 4 | 43,5 | 2,17 |
| 43 | 320 | 340 | 4 | 53,4 | 2,67 |
| 46 | 340 | 360 | 4 | 57,2 | 2,86 |
| 51 | 360 | 365 | 4 | 253,5 | 12,68 |

RESISTÊNCIA DE PONTA - kg/cm²




OBSERVAÇÕES:

| ENECON | SONDAGEM A PENETRÔMETRO DINÂMICO 10 kg | FOLHA Nº 5/14 |
|---|---|---|

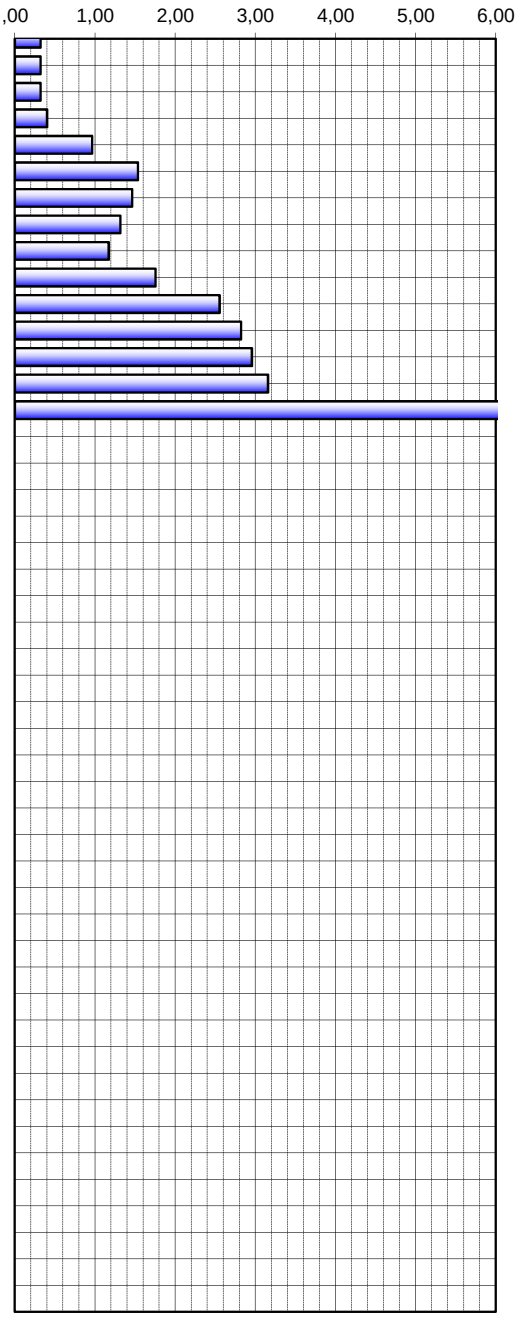
| RODOVIA | TRECHO | |
|---|---|---|
| MUNICIPAL | MONTE BELO - MINEIRINHO - CAMPINAS - LOTE 4 - TRECHO 4.3 | |
| SUBTRECHO | | DATA |
| ÚNICO | | 07/10/2014 |

| ESTACA | FURO N° | POSIÇÃO | N.A. | OPERADOR |
|---|---|---|---|---|
| 468+00 | 5 | LE | | MARCÍLIO |

DADOS DE ENSAIO

| NÚMERO DE GOLPES | PENETRAÇÃO (cm) | | NÚMERO DE HASTE | RD | $\sigma_R$ |
|---|---|---|---|---|---|
| | DE | A | | | |
| 4 | 0 | 20 | 1 | 6,4 | 0,32 |
| 4 | 20 | 40 | 1 | 6,4 | 0,32 |
| 4 | 40 | 60 | 1 | 6,4 | 0,32 |
| 5 | 60 | 80 | 1 | 8,0 | 0,40 |
| 12 | 80 | 100 | 1 | 19,3 | 0,96 |
| 21 | 100 | 120 | 2 | 30,7 | 1,54 |
| 20 | 120 | 140 | 2 | 29,3 | 1,46 |
| 18 | 140 | 160 | 2 | 26,3 | 1,32 |
| 16 | 160 | 180 | 2 | 23,4 | 1,17 |
| 24 | 180 | 200 | 2 | 35,1 | 1,76 |
| 38 | 200 | 220 | 3 | 51,1 | 2,55 |
| 42 | 220 | 240 | 3 | 56,4 | 2,82 |
| 44 | 240 | 260 | 3 | 59,1 | 2,96 |
| 47 | 260 | 280 | 3 | 63,2 | 3,16 |
| 53 | 280 | 285 | 3 | 284,9 | 14,24 |

RESISTÊNCIA DE PONTA - kg/cm²




OBSERVAÇÕES:

| ENECON | SONDAGEM A PENETRÔMETRO DINÂMICO 10 kg | FOLHA Nº 6/14 |
|---|---|---|

| RODOVIA | TRECHO |
|---|---|
| MUNICIPAL | MONTE BELO - MINEIRINHO - CAMPINAS - LOTE 4 - TRECHO 4.3 |

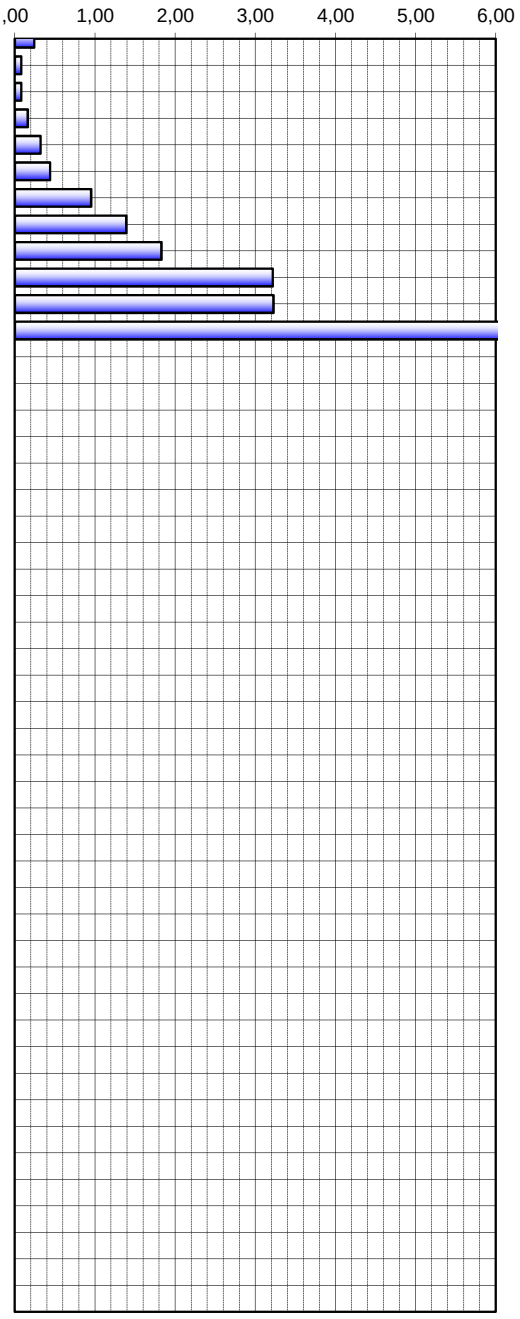
| SUBTRECHO | DATA |
|---|---|
| ÚNICO | 07/10/2014 |

| ESTACA | FURO N° | POSIÇÃO | N.A. | OPERADOR |
|---|---|---|---|---|
| 555+00 | 6 | LD | | SAMUEL |

DADOS DE ENSAIO

| NÚMERO DE GOLPES | PENETRAÇÃO (cm) | | NÚMERO DE HASTE | RD | $\sigma_R$ |
|---|---|---|---|---|---|
| | DE | A | | | |
| 3 | 0 | 20 | 1 | 4,8 | 0,24 |
| 1 | 20 | 40 | 1 | 1,6 | 0,08 |
| 1 | 40 | 60 | 1 | 1,6 | 0,08 |
| 2 | 60 | 80 | 1 | 3,2 | 0,16 |
| 4 | 80 | 100 | 1 | 6,4 | 0,32 |
| 6 | 100 | 120 | 2 | 8,8 | 0,44 |
| 13 | 120 | 140 | 2 | 19,0 | 0,95 |
| 19 | 140 | 160 | 2 | 27,8 | 1,39 |
| 25 | 160 | 180 | 2 | 36,6 | 1,83 |
| 44 | 180 | 200 | 2 | 64,4 | 3,22 |
| 48 | 200 | 220 | 3 | 64,5 | 3,23 |
| 56 | 220 | 230 | 3 | 150,5 | 7,53 |

RESISTÊNCIA DE PONTA - kg/cm²




OBSERVAÇÕES:

| ENECON | SONDAGEM A PENETRÔMETRO DINÂMICO 10 kg | FOLHA Nº 7/14 |
|---|---|---|

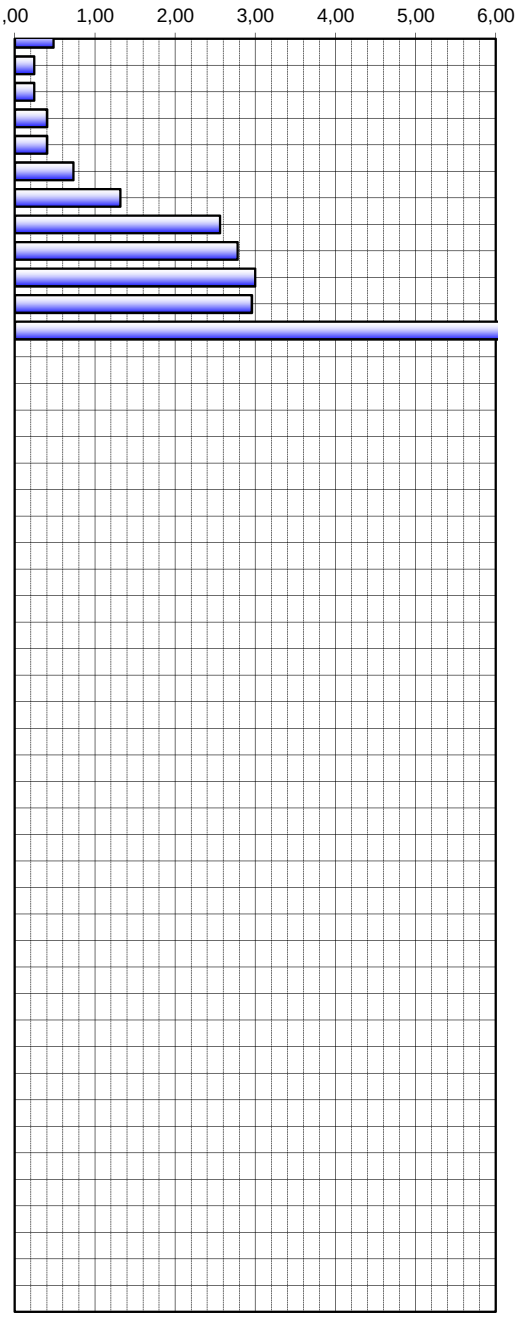
| RODOVIA | TRECHO | |
|---|---|---|
| MUNICIPAL | MONTE BELO - MINEIRINHO - CAMPINAS - LOTE 4 - TRECHO 4.3 | |
| SUBTRECHO | | DATA |
| ÚNICO | | 08/10/2014 |

| ESTACA | FURO N° | POSIÇÃO | N.A. | OPERADOR |
|---|---|---|---|---|
| 575+00 | 7 | LE | | SAMUEL |

DADOS DE ENSAIO

| NÚMERO DE GOLPES | PENETRAÇÃO (cm) | | NÚMERO DE HASTE | RD | $\sigma_R$ |
|---|---|---|---|---|---|
| | DE | A | | | |
| 6 | 0 | 20 | 1 | 9,6 | 0,48 |
| 3 | 20 | 40 | 1 | 4,8 | 0,24 |
| 3 | 40 | 60 | 1 | 4,8 | 0,24 |
| 5 | 60 | 80 | 1 | 8,0 | 0,40 |
| 5 | 80 | 100 | 1 | 8,0 | 0,40 |
| 10 | 100 | 120 | 2 | 14,6 | 0,73 |
| 18 | 120 | 140 | 2 | 26,3 | 1,32 |
| 35 | 140 | 160 | 2 | 51,2 | 2,56 |
| 38 | 160 | 180 | 2 | 55,6 | 2,78 |
| 41 | 180 | 200 | 2 | 60,0 | 3,00 |
| 44 | 200 | 220 | 3 | 59,1 | 2,96 |
| 49 | 220 | 225 | 3 | 263,4 | 13,17 |

RESISTÊNCIA DE PONTA - kg/cm²




OBSERVAÇÕES:

| ENECON | SONDAGEM A PENETRÔMETRO DINÂMICO 10 kg | FOLHA Nº 8/14 |
|---|---|---|

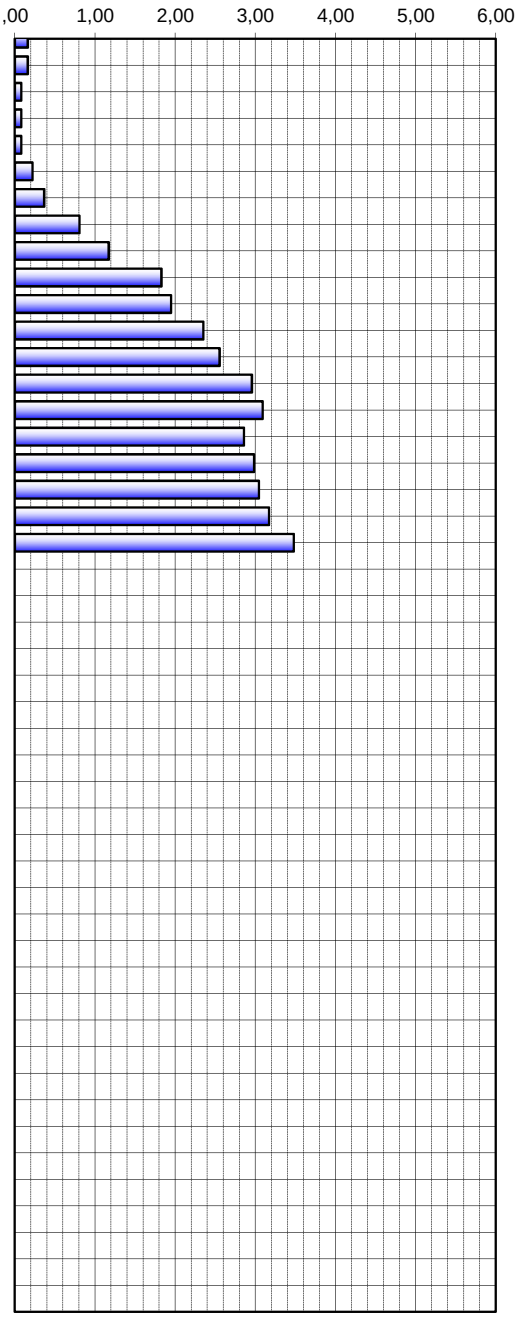
| RODOVIA | TRECHO | |
|---|---|---|
| MUNICIPAL | MONTE BELO - MINEIRINHO - CAMPINAS - LOTE 4 - TRECHO 4.3 | |
| SUBTRECHO | | DATA |
| ÚNICO | | 08/10/2014 |

| ESTACA | FURO N° | POSIÇÃO | N.A. | OPERADOR |
|---|---|---|---|---|
| 578+00 | 8 | LD | | MAURO |

DADOS DE ENSAIO

| NÚMERO DE GOLPES | PENETRAÇÃO (cm) | | NÚMERO DE HASTE | RD | $\sigma_R$ |
|---|---|---|---|---|---|
| | DE | A | | | |
| 2 | 0 | 20 | 1 | 3,2 | 0,16 |
| 2 | 20 | 40 | 1 | 3,2 | 0,16 |
| 1 | 40 | 60 | 1 | 1,6 | 0,08 |
| 1 | 60 | 80 | 1 | 1,6 | 0,08 |
| 1 | 80 | 100 | 1 | 1,6 | 0,08 |
| 3 | 100 | 120 | 2 | 4,4 | 0,22 |
| 5 | 120 | 140 | 2 | 7,3 | 0,37 |
| 11 | 140 | 160 | 2 | 16,1 | 0,80 |
| 16 | 160 | 180 | 2 | 23,4 | 1,17 |
| 25 | 180 | 200 | 2 | 36,6 | 1,83 |
| 29 | 200 | 220 | 3 | 39,0 | 1,95 |
| 35 | 220 | 240 | 3 | 47,0 | 2,35 |
| 38 | 240 | 260 | 3 | 51,1 | 2,55 |
| 44 | 260 | 280 | 3 | 59,1 | 2,96 |
| 46 | 280 | 300 | 3 | 61,8 | 3,09 |
| 46 | 300 | 320 | 4 | 57,2 | 2,86 |
| 48 | 320 | 340 | 4 | 59,7 | 2,98 |
| 49 | 340 | 360 | 4 | 60,9 | 3,04 |
| 51 | 360 | 380 | 4 | 63,4 | 3,17 |
| 56 | 380 | 400 | 4 | 69,6 | 3,48 |

RESISTÊNCIA DE PONTA - kg/cm²




OBSERVAÇÕES:

| ENECON | SONDAGEM A PENETRÔMETRO DINÂMICO 10 kg | FOLHA Nº 9/14 |
|---|---|---|

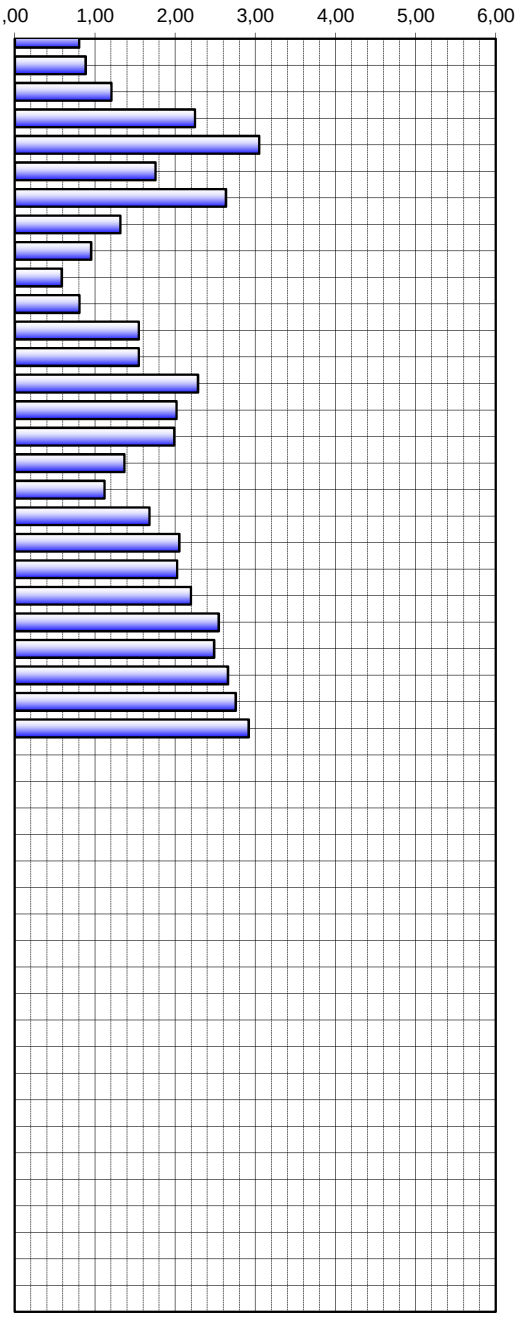
| RODOVIA | TRECHO | |
|---|---|---|
| MUNICIPAL | MONTE BELO - MINEIRINHO - CAMPINAS - LOTE 4 - TRECHO 4.3 | |
| SUBTRECHO | | DATA |
| ÚNICO | | 30/10/2014 |

| ESTACA | FURO N° | POSIÇÃO | N.A. | OPERADOR |
|---|---|---|---|---|
| 614+00 | 9 | | | WALLACE |

DADOS DE ENSAIO

RESISTÊNCIA DE PONTA - kg/cm²

| NÚMERO DE GOLPES | PENETRAÇÃO (cm) | | NÚMERO DE HASTE | RD | $\sigma_R$ |
|---|---|---|---|---|---|
| | DE | A | | | |
| 10 | 0 | 20 | 1 | 16,0 | 0,80 |
| 11 | 20 | 40 | 1 | 17,7 | 0,88 |
| 15 | 40 | 60 | 1 | 24,1 | 1,20 |
| 28 | 60 | 80 | 1 | 44,9 | 2,25 |
| 38 | 80 | 100 | 1 | 61,0 | 3,05 |
| 24 | 100 | 120 | 2 | 35,1 | 1,76 |
| 36 | 120 | 140 | 2 | 52,7 | 2,63 |
| 18 | 140 | 160 | 2 | 26,3 | 1,32 |
| 13 | 160 | 180 | 2 | 19,0 | 0,95 |
| 8 | 180 | 200 | 2 | 11,7 | 0,59 |
| 12 | 200 | 220 | 3 | 16,1 | 0,81 |
| 23 | 220 | 240 | 3 | 30,9 | 1,55 |
| 23 | 240 | 260 | 3 | 30,9 | 1,55 |
| 34 | 260 | 280 | 3 | 45,7 | 2,28 |
| 30 | 280 | 300 | 3 | 40,3 | 2,02 |
| 32 | 300 | 320 | 4 | 39,8 | 1,99 |
| 22 | 320 | 340 | 4 | 27,3 | 1,37 |
| 18 | 340 | 360 | 4 | 22,4 | 1,12 |
| 27 | 360 | 380 | 4 | 33,6 | 1,68 |
| 33 | 380 | 400 | 4 | 41,0 | 2,05 |
| 35 | 400 | 420 | 5 | 40,5 | 2,02 |
| 38 | 420 | 440 | 5 | 43,9 | 2,20 |
| 44 | 440 | 460 | 5 | 50,9 | 2,54 |
| 43 | 460 | 480 | 5 | 49,7 | 2,49 |
| 46 | 480 | 500 | 5 | 53,2 | 2,66 |
| 51 | 500 | 520 | 6 | 55,1 | 2,75 |
| 54 | 520 | 540 | 6 | 58,3 | 2,92 |




OBSERVAÇÕES:

| ENECON | SONDAGEM A PENETRÔMETRO DINÂMICO 10 kg | FOLHA Nº 10/14 |
|---|---|---|

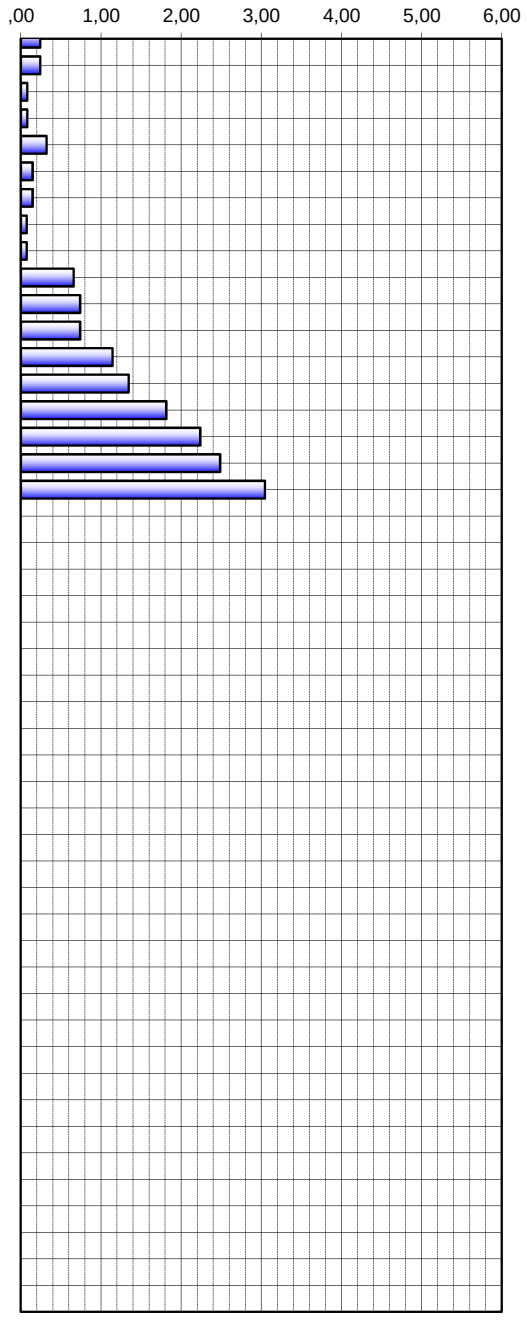
| RODOVIA | TRECHO | |
|---|---|---|
| MUNICIPAL | MONTE BELO - MINEIRINHO - CAMPINAS - LOTE 4 - TRECHO 4.3 | |
| SUBTRECHO | | DATA |
| ÚNICO | | 30/10/2014 |

| ESTACA | FURO N° | POSIÇÃO | N.A. | OPERADOR |
|---|---|---|---|---|
| 616+00 | 10 | | | JONATHAN |

DADOS DE ENSAIO

| NÚMERO DE GOLPES | PENETRAÇÃO (cm) DE | PENETRAÇÃO (cm) A | NÚMERO DE HASTE | RD | $\sigma_R$ |
|---|---|---|---|---|---|
| 3 | 0 | 20 | 1 | 4,8 | 0,24 |
| 3 | 20 | 40 | 1 | 4,8 | 0,24 |
| 1 | 40 | 60 | 1 | 1,6 | 0,08 |
| 1 | 60 | 80 | 1 | 1,6 | 0,08 |
| 4 | 80 | 100 | 1 | 6,4 | 0,32 |
| 2 | 100 | 120 | 2 | 2,9 | 0,15 |
| 2 | 120 | 140 | 2 | 2,9 | 0,15 |
| 1 | 140 | 160 | 2 | 1,5 | 0,07 |
| 1 | 160 | 180 | 2 | 1,5 | 0,07 |
| 9 | 180 | 200 | 2 | 13,2 | 0,66 |
| 11 | 200 | 220 | 3 | 14,8 | 0,74 |
| 11 | 220 | 240 | 3 | 14,8 | 0,74 |
| 17 | 240 | 260 | 3 | 22,8 | 1,14 |
| 20 | 260 | 280 | 3 | 26,9 | 1,34 |
| 27 | 280 | 300 | 3 | 36,3 | 1,81 |
| 36 | 300 | 320 | 4 | 44,7 | 2,24 |
| 40 | 320 | 340 | 4 | 49,7 | 2,49 |
| 49 | 340 | 360 | 4 | 60,9 | 3,04 |

RESISTÊNCIA DE PONTA - kg/cm²




OBSERVAÇÕES:

| ENECON | SONDAGEM A PENETRÔMETRO DINÂMICO 10 kg | FOLHA Nº 11/14 |
|---|---|---|

| RODOVIA | TRECHO |
|---|---|
| MUNICIPAL | MONTE BELO - MINEIRINHO - CAMPINAS - LOTE 4 - TRECHO 4.3 |

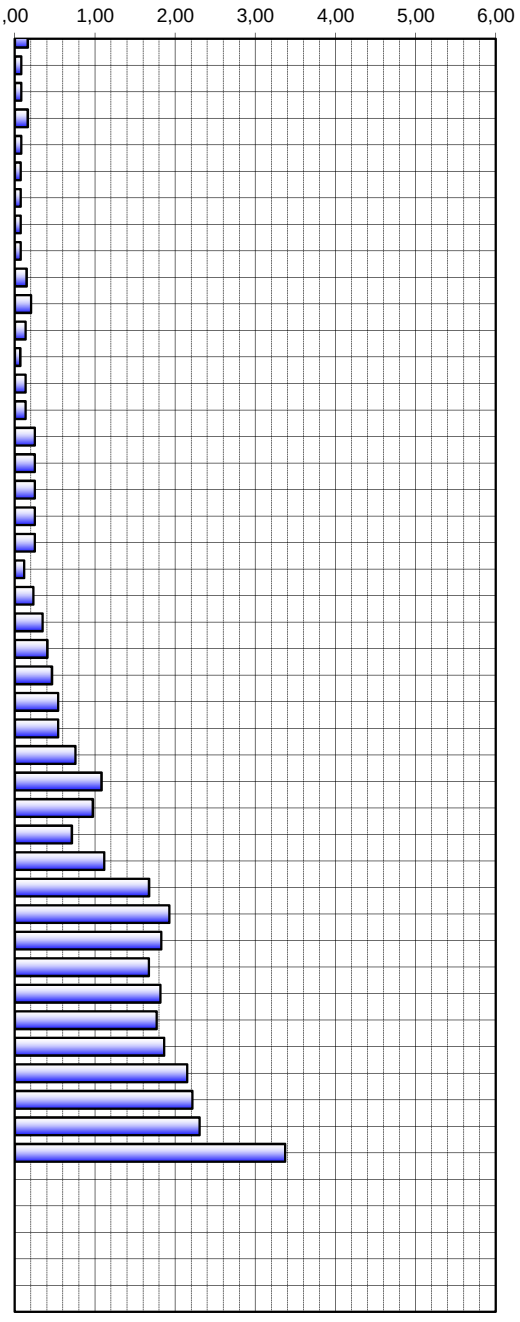
| SUBTRECHO | DATA |
|---|---|
| ÚNICO | 30/10/2014 |

| ESTACA | FURO N° | POSIÇÃO | N.A. | OPERADOR |
|---|---|---|---|---|
| 618+00 | 11 | | | ROBERTO |

DADOS DE ENSAIO

| NÚMERO DE GOLPES | PENETRAÇÃO (cm) DE | PENETRAÇÃO (cm) A | NÚMERO DE HASTE | RD | $\sigma_R$ |
|---|---|---|---|---|---|
| 2 | 0 | 20 | 1 | 3,2 | 0,16 |
| 1 | 20 | 40 | 1 | 1,6 | 0,08 |
| 1 | 40 | 60 | 1 | 1,6 | 0,08 |
| 2 | 60 | 80 | 1 | 3,2 | 0,16 |
| 1 | 80 | 100 | 1 | 1,6 | 0,08 |
| 1 | 100 | 120 | 2 | 1,5 | 0,07 |
| 1 | 120 | 140 | 2 | 1,5 | 0,07 |
| 1 | 140 | 160 | 2 | 1,5 | 0,07 |
| 1 | 160 | 180 | 2 | 1,5 | 0,07 |
| 2 | 180 | 200 | 2 | 2,9 | 0,15 |
| 3 | 200 | 220 | 3 | 4,0 | 0,20 |
| 2 | 220 | 240 | 3 | 2,7 | 0,13 |
| 1 | 240 | 260 | 3 | 1,3 | 0,07 |
| 2 | 260 | 280 | 3 | 2,7 | 0,13 |
| 2 | 280 | 300 | 3 | 2,7 | 0,13 |
| 4 | 300 | 320 | 4 | 5,0 | 0,25 |
| 4 | 320 | 340 | 4 | 5,0 | 0,25 |
| 4 | 340 | 360 | 4 | 5,0 | 0,25 |
| 4 | 360 | 380 | 4 | 5,0 | 0,25 |
| 4 | 380 | 400 | 4 | 5,0 | 0,25 |
| 2 | 400 | 420 | 5 | 2,3 | 0,12 |
| 4 | 420 | 440 | 5 | 4,6 | 0,23 |
| 6 | 440 | 460 | 5 | 6,9 | 0,35 |
| 7 | 460 | 480 | 5 | 8,1 | 0,40 |
| 8 | 480 | 500 | 5 | 9,2 | 0,46 |
| 10 | 500 | 520 | 6 | 10,8 | 0,54 |
| 10 | 520 | 540 | 6 | 10,8 | 0,54 |
| 14 | 540 | 560 | 6 | 15,1 | 0,76 |
| 20 | 560 | 580 | 6 | 21,6 | 1,08 |
| 18 | 580 | 600 | 6 | 19,4 | 0,97 |
| 14 | 600 | 620 | 7 | 14,2 | 0,71 |
| 22 | 620 | 640 | 7 | 22,3 | 1,12 |
| 33 | 640 | 660 | 7 | 33,5 | 1,67 |
| 38 | 660 | 680 | 7 | 38,5 | 1,93 |
| 36 | 680 | 700 | 7 | 36,5 | 1,83 |
| 35 | 700 | 720 | 8 | 33,4 | 1,67 |
| 38 | 720 | 740 | 8 | 36,3 | 1,82 |
| 37 | 740 | 760 | 8 | 35,4 | 1,77 |
| 39 | 760 | 780 | 8 | 37,3 | 1,86 |
| 45 | 780 | 800 | 8 | 43,0 | 2,15 |
| 49 | 800 | 820 | 9 | 44,3 | 2,21 |
| 51 | 820 | 840 | 9 | 46,1 | 2,30 |
| 56 | 840 | 855 | 9 | 67,4 | 3,37 |

RESISTÊNCIA DE PONTA - kg/cm²




OBSERVAÇÕES:

| ENECON | SONDAGEM A PENETRÔMETRO DINÂMICO 10 kg | FOLHA Nº 12/14 |
|---|---|---|

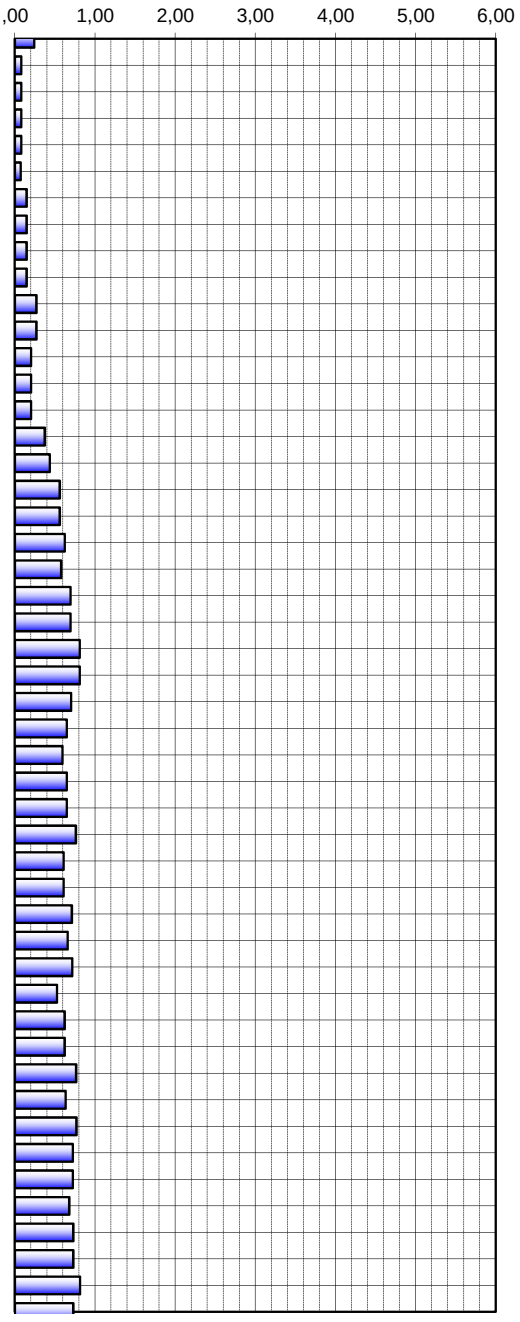
| RODOVIA | TRECHO | |
|---|---|---|
| MUNICIPAL | MONTE BELO - MINEIRINHO - CAMPINAS - LOTE 4 - TRECHO 4.3 | |
| SUBTRECHO | | DATA |
| ÚNICO | | 08/10/2014 |

| ESTACA | FURO N° | POSIÇÃO | N.A. | OPERADOR |
|---|---|---|---|---|
| 619+00 | 12 | LD | | SAMUEL |

DADOS DE ENSAIO

RESISTÊNCIA DE PONTA - kg/cm²

| NÚMERO DE GOLPES | PENETRAÇÃO (cm) | | NÚMERO DE HASTE | RD | $\sigma_R$ |
|---|---|---|---|---|---|
| | DE | A | | | |
| 3 | 0 | 20 | 1 | 4,8 | 0,24 |
| 1 | 20 | 40 | 1 | 1,6 | 0,08 |
| 1 | 40 | 60 | 1 | 1,6 | 0,08 |
| 1 | 60 | 80 | 1 | 1,6 | 0,08 |
| 1 | 80 | 100 | 1 | 1,6 | 0,08 |
| 1 | 100 | 120 | 2 | 1,5 | 0,07 |
| 2 | 120 | 140 | 2 | 2,9 | 0,15 |
| 2 | 140 | 160 | 2 | 2,9 | 0,15 |
| 2 | 160 | 180 | 2 | 2,9 | 0,15 |
| 2 | 180 | 200 | 2 | 2,9 | 0,15 |
| 4 | 200 | 220 | 3 | 5,4 | 0,27 |
| 4 | 220 | 240 | 3 | 5,4 | 0,27 |
| 3 | 240 | 260 | 3 | 4,0 | 0,20 |
| 3 | 260 | 280 | 3 | 4,0 | 0,20 |
| 3 | 280 | 300 | 3 | 4,0 | 0,20 |
| 6 | 300 | 320 | 4 | 7,5 | 0,37 |
| 7 | 320 | 340 | 4 | 8,7 | 0,43 |
| 9 | 340 | 360 | 4 | 11,2 | 0,56 |
| 9 | 360 | 380 | 4 | 11,2 | 0,56 |
| 10 | 380 | 400 | 4 | 12,4 | 0,62 |
| 10 | 400 | 420 | 5 | 11,6 | 0,58 |
| 12 | 420 | 440 | 5 | 13,9 | 0,69 |
| 12 | 440 | 460 | 5 | 13,9 | 0,69 |
| 14 | 460 | 480 | 5 | 16,2 | 0,81 |
| 14 | 480 | 500 | 5 | 16,2 | 0,81 |
| 13 | 500 | 520 | 6 | 14,0 | 0,70 |
| 12 | 520 | 540 | 6 | 13,0 | 0,65 |
| 11 | 540 | 560 | 6 | 11,9 | 0,59 |
| 12 | 560 | 580 | 6 | 13,0 | 0,65 |
| 12 | 580 | 600 | 6 | 13,0 | 0,65 |
| 15 | 600 | 620 | 7 | 15,2 | 0,76 |
| 12 | 620 | 640 | 7 | 12,2 | 0,61 |
| 12 | 640 | 660 | 7 | 12,2 | 0,61 |
| 14 | 660 | 680 | 7 | 14,2 | 0,71 |
| 13 | 680 | 700 | 7 | 13,2 | 0,66 |
| 15 | 700 | 720 | 8 | 14,3 | 0,72 |
| 11 | 720 | 740 | 8 | 10,5 | 0,53 |
| 13 | 740 | 760 | 8 | 12,4 | 0,62 |
| 13 | 760 | 780 | 8 | 12,4 | 0,62 |
| 16 | 780 | 800 | 8 | 15,3 | 0,76 |
| 14 | 800 | 820 | 9 | 12,6 | 0,63 |
| 17 | 820 | 840 | 9 | 15,4 | 0,77 |
| 16 | 840 | 860 | 9 | 14,5 | 0,72 |
| 16 | 860 | 880 | 9 | 14,5 | 0,72 |
| 15 | 880 | 900 | 9 | 13,5 | 0,68 |
| 17 | 900 | 920 | 10 | 14,6 | 0,73 |
| 17 | 920 | 940 | 10 | 14,6 | 0,73 |
| 19 | 940 | 960 | 10 | 16,3 | 0,81 |
| 17 | 960 | 980 | 10 | 14,6 | 0,73 |




OBSERVAÇÕES:

| ENECON | SONDAGEM A PENETRÔMETRO DINÂMICO 10 kg | FOLHA Nº 13/14 |
|---|---|---|

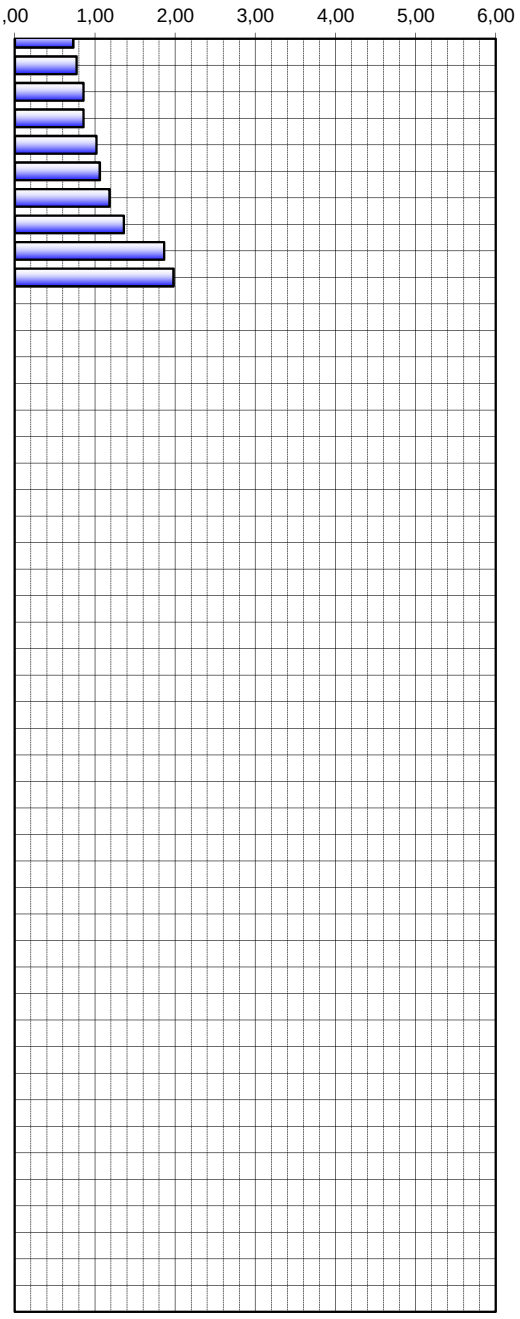
| RODOVIA | TRECHO | |
|---|---|---|
| MUNICIPAL | MONTE BELO - MINEIRINHO - CAMPINAS - LOTE 4 - TRECHO 4.3 | |
| SUBTRECHO | | DATA |
| ÚNICO | | 08/10/2014 |

| ESTACA | FURO N° | POSIÇÃO | N.A. | OPERADOR |
|---|---|---|---|---|
| 619+00 | 12 | LD | | SAMUEL |

DADOS DE ENSAIO

RESISTÊNCIA DE PONTA - kg/cm²

| NÚMERO DE GOLPES | PENETRAÇÃO (cm) DE | PENETRAÇÃO (cm) A | NÚMERO DE HASTE | RD | $\sigma_R$ |
|---|---|---|---|---|---|
| 17 | 960 | 980 | 10 | 14,6 | 0,73 |
| 18 | 980 | 1000 | 10 | 15,4 | 0,77 |
| 21 | 1000 | 1020 | 11 | 17,1 | 0,86 |
| 21 | 1020 | 1040 | 11 | 17,1 | 0,86 |
| 25 | 1040 | 1060 | 11 | 20,4 | 1,02 |
| 26 | 1060 | 1080 | 11 | 21,2 | 1,06 |
| 29 | 1080 | 1100 | 11 | 23,6 | 1,18 |
| 35 | 1100 | 1120 | 12 | 27,2 | 1,36 |
| 48 | 1120 | 1140 | 12 | 37,3 | 1,86 |
| 51 | 1140 | 1160 | 12 | 39,6 | 1,98 |




OBSERVAÇÕES:

| ENECON | SONDAGEM A PENETRÔMETRO DINÂMICO 10 kg | FOLHA Nº 14/14 |
|---|---|---|

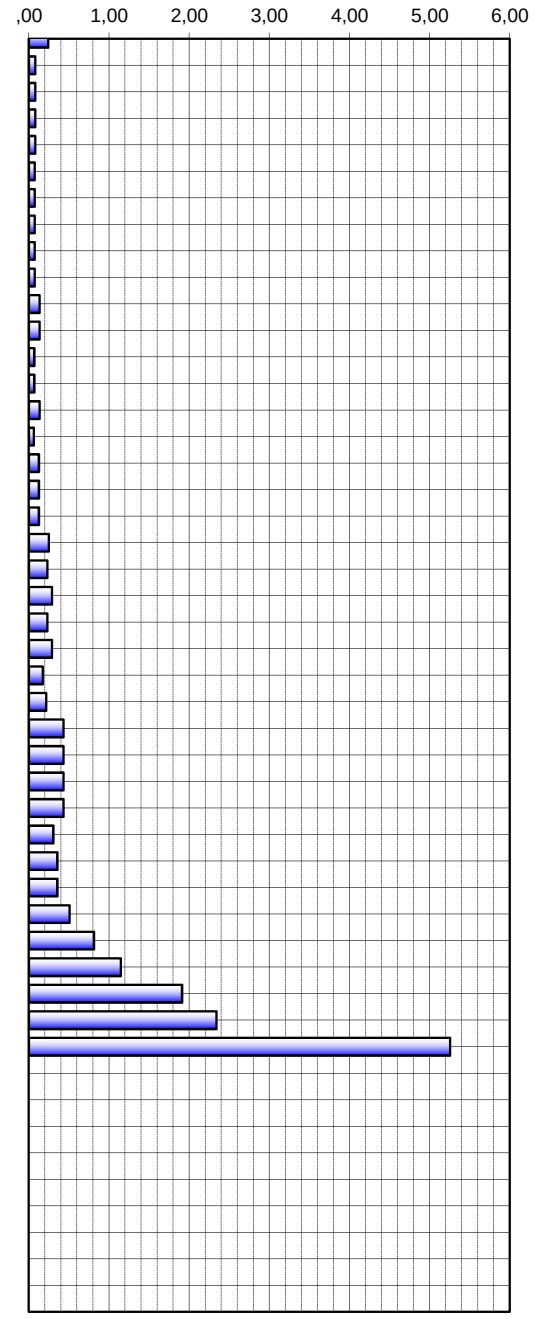
| RODOVIA | TRECHO | |
|---|---|---|
| MUNICIPAL | MONTE BELO - MINEIRINHO - CAMPINAS - LOTE 4 - TRECHO 4.3 | |
| SUBTRECHO | | DATA |
| ÚNICO | | 30/10/2014 |

| ESTACA | FURO N° | POSIÇÃO | N.A. | OPERADOR |
|---|---|---|---|---|
| 620+00 | 13 | | | WALLACE |

DADOS DE ENSAIO

| NÚMERO DE GOLPES | PENETRAÇÃO (cm) DE | PENETRAÇÃO (cm) A | NÚMERO DE HASTE | RD | $\sigma_R$ |
|---|---|---|---|---|---|
| 3 | 0 | 20 | 1 | 4,8 | 0,24 |
| 1 | 20 | 40 | 1 | 1,6 | 0,08 |
| 1 | 40 | 60 | 1 | 1,6 | 0,08 |
| 1 | 60 | 80 | 1 | 1,6 | 0,08 |
| 1 | 80 | 100 | 1 | 1,6 | 0,08 |
| 1 | 100 | 120 | 2 | 1,5 | 0,07 |
| 1 | 120 | 140 | 2 | 1,5 | 0,07 |
| 1 | 140 | 160 | 2 | 1,5 | 0,07 |
| 1 | 160 | 180 | 2 | 1,5 | 0,07 |
| 1 | 180 | 200 | 2 | 1,5 | 0,07 |
| 2 | 200 | 220 | 3 | 2,7 | 0,13 |
| 2 | 220 | 240 | 3 | 2,7 | 0,13 |
| 1 | 240 | 260 | 3 | 1,3 | 0,07 |
| 1 | 260 | 280 | 3 | 1,3 | 0,07 |
| 2 | 280 | 300 | 3 | 2,7 | 0,13 |
| 1 | 300 | 320 | 4 | 1,2 | 0,06 |
| 2 | 320 | 340 | 4 | 2,5 | 0,12 |
| 2 | 340 | 360 | 4 | 2,5 | 0,12 |
| 2 | 360 | 380 | 4 | 2,5 | 0,12 |
| 4 | 380 | 400 | 4 | 5,0 | 0,25 |
| 4 | 400 | 420 | 5 | 4,6 | 0,23 |
| 5 | 420 | 440 | 5 | 5,8 | 0,29 |
| 4 | 440 | 460 | 5 | 4,6 | 0,23 |
| 5 | 460 | 480 | 5 | 5,8 | 0,29 |
| 3 | 480 | 500 | 5 | 3,5 | 0,17 |
| 4 | 500 | 520 | 6 | 4,3 | 0,22 |
| 8 | 520 | 540 | 6 | 8,6 | 0,43 |
| 8 | 540 | 560 | 6 | 8,6 | 0,43 |
| 8 | 560 | 580 | 6 | 8,6 | 0,43 |
| 8 | 580 | 600 | 6 | 8,6 | 0,43 |
| 6 | 600 | 620 | 7 | 6,1 | 0,30 |
| 7 | 620 | 640 | 7 | 7,1 | 0,35 |
| 7 | 640 | 660 | 7 | 7,1 | 0,35 |
| 10 | 660 | 680 | 7 | 10,1 | 0,51 |
| 16 | 680 | 700 | 7 | 16,2 | 0,81 |
| 24 | 700 | 720 | 8 | 22,9 | 1,15 |
| 40 | 720 | 740 | 8 | 38,2 | 1,91 |
| 49 | 740 | 760 | 8 | 46,8 | 2,34 |
| 55 | 760 | 770 | 8 | 105,1 | 5,26 |

RESISTÊNCIA DE PONTA - kg/cm²




OBSERVAÇÕES:

# 8. ENSAIOS DE PENETRAÇÃO DE CONE IN SITU (CPT) EM LOCAIS DE SOLO MOLE

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 0,15 | 3,09576 | 42,3444 | 0,934 | 0 | 3,65382 | 1,21532 | 5 | 2,31553 | 17,84829 | 2,67724 | 0 | 2,67724 | 1363,7692 | 1,21621 | 0,00048 | 5 | 0,63993 | 2 | 2,06979 | 73,02286 |
| 0,2 | 4,76994 | 48,5284 | 3,426 | 0 | 5,60089 | 0,8627 | 5 | 2,07849 | 18,10922 | 3,58271 | 0 | 3,58271 | 1562,3141 | 0,86325 | 0,00068 | 6 | 0,54975 | 2 | 1,8319 | 111,94621 |
| 0,25 | 7,2628 | 47,8993 | 4,623 | 0 | 5,94328 | 0,80742 | 6 | 2,04111 | 18,12406 | 4,48891 | 0 | 4,48891 | 1322,9916 | 0,80803 | 0,00045 | 6 | 0,5357 | 2 | 1,79385 | 118,77576 |
| 0,3 | 5,79709 | 47,5347 | -0,066 | 0 | 5,73538 | 0,81928 | 6 | 2,0575 | 18,08622 | 5,39322 | 0 | 5,39322 | 1062,4428 | 0,82005 | 0,00021 | 6 | 0,5423 | 2 | 1,80997 | 114,59974 |
| 0,35 | 4,14625 | 45,5329 | -0,902 | 0 | 4,38427 | 1,06643 | 5 | 2,21816 | 17,97749 | 6,29209 | 0 | 6,29209 | 695,79087 | 1,06797 | 0,00009 | 6 | 0,60486 | 2 | 1,97301 | 87,55962 |
| 0,4 | 3,20948 | 47,1986 | 2,147 | 0 | 3,26566 | 1,38101 | 5 | 2,38717 | 17,82305 | 7,18325 | 0 | 7,18325 | 453,6213 | 1,38406 | 0,0002 | 5 | 0,6703 | 2 | 2,14358 | 65,16947 |
| 0,45 | 2,44124 | 42,566 | 0,672 | 0 | 2,6008 | 1,58085 | 5 | 2,50187 | 17,62936 | 8,06471 | 0 | 8,06471 | 321,49086 | 1,58577 | 0,00037 | 5 | 0,71427 | 2 | 2,25784 | 51,85464 |
| 0,5 | 2,15167 | 33,5795 | 0,082 | 0 | 2,09849 | 1,51716 | 4 | 2,56939 | 17,25292 | 8,92736 | 0 | 8,92736 | 234,06314 | 1,52364 | 0,00001 | 5 | 0,73873 | 2 | 2,3209 | 41,79132 |
| 0,55 | 1,70257 | 19,367 | -0,721 | 0 | 1,72495 | 1,30622 | 4 | 2,60726 | 16,78007 | 9,76636 | 0 | 9,76636 | 175,62152 | 1,31366 | -0,00021 | 5 | 0,7512 | 2 | 2,35254 | 34,30367 |
| 0,6 | 1,32061 | 14,6486 | -0,443 | 0 | 1,41359 | 1,08853 | 4 | 2,64331 | 16,26503 | 10,57962 | 0 | 10,57962 | 132,6145 | 1,09674 | -0,00039 | 5 | 0,763 | 2 | 2,38243 | 28,06021 |
| 0,65 | 1,21759 | 12,1464 | -0,459 | 0 | 1,25978 | 1,00749 | 4 | 2,67188 | 15,99935 | 11,37958 | 0 | 11,37958 | 109,705 | 1,01667 | -0,00035 | 5 | 0,7734 | 2 | 2,40868 | 24,96794 |
| 0,7 | 1,24113 | 11,2814 | -0,393 | 0 | 1,25875 | 0,89813 | 4 | 2,64972 | 15,86593 | 12,17288 | 0 | 12,17288 | 102,4061 | 0,9069 | -0,00027 | 5 | 0,76451 | 2 | 2,38433 | 24,93154 |
| 0,75 | 1,31753 | 10,4878 | -0,148 | 0 | 1,28799 | 0,81705 | 4 | 2,62279 | 15,79232 | 12,96249 | 0 | 12,96249 | 98,36307 | 0,82536 | -0,00008 | 5 | 0,75404 | 2 | 2,3558 | 25,50062 |
| 0,8 | 1,30532 | 9,8015 | 0,246 | 0 | 1,32011 | 0,76594 | 4 | 2,60111 | 15,75579 | 13,75028 | 0 | 13,75028 | 95,00577 | 0,77401 | 0,00007 | 5 | 0,74582 | 2 | 2,33318 | 26,12713 |
| 0,85 | 1,33747 | 10,0445 | 0,18 | 0 | 1,33296 | 0,74712 | 4 | 2,59273 | 15,74202 | 14,53739 | 0 | 14,53739 | 90,69164 | 0,75536 | 0,00022 | 5 | 0,74296 | 2 | 2,32465 | 26,36839 |
| 0,9 | 1,35608 | 10,0303 | 0,426 | 0 | 1,33311 | 0,74042 | 4 | 2,59103 | 15,73183 | 15,32398 | 0 | 15,32398 | 85,99526 | 0,74903 | 0,00014 | 5 | 0,74277 | 2 | 2,32311 | 26,35579 |
| 0,95 | 1,30579 | 9,537 | -0,033 | 0 | 1,28019 | 0,77177 | 4 | 2,61458 | 15,71741 | 16,10985 | 0 | 16,10985 | 78,46651 | 0,7816 | 0,00009 | 5 | 0,75256 | 2 | 2,34777 | 25,28167 |
| 1 | 1,17871 | 10,0731 | -0,033 | 0 | 1,23799 | 0,80944 | 4 | 2,63657 | 15,72081 | 16,89589 | 0 | 16,89589 | 72,27148 | 0,82064 | 0,00036 | 5 | 0,76182 | 2 | 2,37106 | 24,42182 |
| 1,05 | 1,22946 | 10,4521 | 1,377 | 0 | 1,19796 | 0,85816 | 4 | 2,66038 | 15,73765 | 17,68277 | 0 | 17,68277 | 66,74749 | 0,87102 | 0,00067 | 5 | 0,77189 | 2 | 2,39646 | 23,60561 |
| 1,1 | 1,18572 | 10,3162 | 1,016 | 0 | 1,22794 | 0,83779 | 4 | 2,64619 | 15,74793 | 18,47017 | 0 | 18,47017 | 65,48253 | 0,85059 | 0,00136 | 5 | 0,76685 | 2 | 2,38219 | 24,18946 |
| 1,15 | 1,26865 | 10,0946 | 2,524 | 0 | 1,24477 | 0,81306 | 4 | 2,63525 | 15,73434 | 19,25688 | 0 | 19,25688 | 63,64043 | 0,82584 | 0,00173 | 5 | 0,76298 | 2 | 2,371 | 24,51033 |
| 1,2 | 1,27995 | 9,9516 | 2,82 | 0 | 1,24071 | 0,78826 | 4 | 2,6308 | 15,69369 | 20,04157 | 0 | 20,04157 | 60,907 | 0,8012 | 0,00295 | 5 | 0,76156 | 2 | 2,36623 | 24,41344 |
| 1,25 | 1,17354 | 9,2939 | 5,475 | 0 | 1,21077 | 0,78374 | 4 | 2,63935 | 15,64961 | 20,82405 | 0 | 20,82405 | 57,14271 | 0,79746 | 0,00391 | 5 | 0,7653 | 2 | 2,37502 | 23,79885 |
| 1,3 | 1,17881 | 9,2224 | 5,672 | 0 | 1,2152 | 0,74814 | 4 | 2,62945 | 15,60172 | 21,60413 | 0,0981 | 21,50603 | 55,50035 | 0,76168 | 0,00412 | 5 | 0,76163 | 2 | 2,3645 | 23,87185 |
| 1,35 | 1,29324 | 8,7577 | 3,885 | 0 | 1,32949 | 0,68221 | 5 | 2,57736 | 15,63347 | 22,38581 | 0,5886 | 21,79721 | 59,96644 | 0,69389 | 0,00315 | 5 | 0,74131 | 2 | 2,31079 | 26,14202 |
| 1,4 | 1,51641 | 9,2295 | 4,557 | 0 | 1,64124 | 0,55727 | 5 | 2,45832 | 15,72388 | 23,172 | 1,0791 | 22,0929 | 73,23942 | 0,56525 | 0,00196 | 5 | 0,69462 | 2 | 2,18786 | 32,36143 |
| 1,45 | 2,11408 | 9,4512 | 4,295 | 0 | 2,09865 | 0,44796 | 5 | 2,32332 | 15,84977 | 23,96449 | 1,5696 | 22,39489 | 92,64087 | 0,45314 | 0,0013 | 6 | 0,64181 | 2 | 2,04884 | 41,49364 |

| In situ data | | | | | | | | | Basic output data | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 1,5 | 2,66545 | 9,5227 | 3,918 | 0 | 2,58835 | 0,3819 | 5 | 2,2131 | 15,98791 | 24,76389 | 2,0601 | 22,70379 | 112,91433 | 0,38559 | 0,00095 | 6 | 0,59895 | 2 | 1,93594 | 51,27166 |
| 1,55 | 2,98551 | 10,6808 | 5,311 | 0 | 2,88632 | 0,36997 | 5 | 2,16401 | 16,11852 | 25,56981 | 2,5506 | 23,01921 | 124,27678 | 0,37327 | 0,00066 | 6 | 0,58037 | 2 | 1,88678 | 57,21507 |
| 1,6 | 3,00801 | 11,8318 | 4,082 | 0 | 2,91713 | 0,402 | 5 | 2,17313 | 16,23033 | 26,38133 | 3,0411 | 23,34023 | 123,85263 | 0,40567 | 0,0007 | 6 | 0,58487 | 2 | 1,89816 | 57,81497 |
| 1,65 | 2,75787 | 12,6683 | 5,819 | 0 | 2,81447 | 0,43775 | 5 | 2,20175 | 16,27338 | 27,195 | 3,5316 | 23,6634 | 117,78831 | 0,44202 | 0,00072 | 6 | 0,59672 | 2 | 1,92885 | 55,74543 |
| 1,7 | 2,67752 | 12,461 | 6,737 | 0 | 2,68904 | 0,47084 | 5 | 2,23245 | 16,28728 | 28,00936 | 4,0221 | 23,98726 | 110,93502 | 0,4758 | 0,00104 | 6 | 0,60924 | 2 | 1,96128 | 53,22055 |
| 1,75 | 2,63172 | 12,8542 | 7,852 | 0 | 2,6503 | 0,48186 | 5 | 2,24225 | 16,29163 | 28,82394 | 4,5126 | 24,31134 | 107,8292 | 0,48716 | 0,00129 | 6 | 0,6134 | 2 | 1,97176 | 52,42945 |
| 1,8 | 2,64165 | 12,9971 | 9,114 | 0 | 2,65488 | 0,47654 | 5 | 2,23963 | 16,28151 | 29,63802 | 5,0031 | 24,63492 | 106,56589 | 0,48192 | 0,00153 | 6 | 0,61253 | 2 | 1,96905 | 52,50484 |
| 1,85 | 2,69127 | 12,1035 | 10,114 | 0 | 2,64449 | 0,46381 | 5 | 2,2365 | 16,24436 | 30,45024 | 5,4936 | 24,95664 | 104,7434 | 0,46922 | 0,00165 | 6 | 0,6113 | 2 | 1,96541 | 52,28086 |
| 1,9 | 2,60056 | 11,696 | 10,213 | 0 | 2,58502 | 0,47458 | 5 | 2,24953 | 16,23586 | 31,26203 | 5,9841 | 25,27793 | 101,02731 | 0,48039 | 0,00162 | 6 | 0,61667 | 2 | 1,97908 | 51,07523 |
| 1,95 | 2,46324 | 13,0043 | 10,016 | 0 | 2,65986 | 0,4365 | 5 | 2,22387 | 16,18342 | 32,0712 | 6,4746 | 25,5966 | 102,6615 | 0,44182 | -0,00017 | 6 | 0,60638 | 2 | 1,95166 | 52,55571 |
| 2 | 2,91577 | 10,1303 | -2,147 | 0 | 2,88112 | 0,38842 | 5 | 2,17252 | 16,17174 | 32,87979 | 6,9651 | 25,91469 | 109,90833 | 0,3929 | -0,00114 | 6 | 0,58608 | 2 | 1,89795 | 56,9648 |
| 2,05 | 3,26435 | 10,4378 | 3,262 | 0 | 3,21637 | 0,32237 | 5 | 2,09879 | 16,12617 | 33,6861 | 7,4556 | 26,2305 | 121,33512 | 0,32578 | -0,00207 | 6 | 0,55663 | 2 | 1,82026 | 63,65361 |
| 2,1 | 3,46898 | 10,5378 | 1,443 | 0 | 3,40501 | 0,3106 | 6 | 2,06998 | 16,1708 | 34,49464 | 7,9461 | 26,54854 | 126,95686 | 0,31378 | -0,00153 | 6 | 0,54561 | 2 | 1,7909 | 67,41037 |
| 2,15 | 3,48171 | 10,7523 | 3,623 | 0 | 3,47744 | 0,30852 | 6 | 2,06039 | 16,19533 | 35,3044 | 8,4366 | 26,8678 | 128,1139 | 0,31168 | -0,00139 | 6 | 0,54213 | 2 | 1,78137 | 68,84278 |
| 2,2 | 3,48164 | 10,8953 | 5,885 | 0 | 3,45706 | 0,31854 | 6 | 2,0676 | 16,22309 | 36,11556 | 8,9271 | 27,18846 | 125,82341 | 0,3219 | -0,00102 | 6 | 0,54539 | 2 | 1,78948 | 68,41889 |
| 2,25 | 3,40783 | 11,3886 | 6,836 | 0 | 3,37685 | 0,33309 | 6 | 2,08399 | 16,23848 | 36,92748 | 9,4176 | 27,50988 | 121,40798 | 0,33677 | -0,00097 | 6 | 0,55223 | 2 | 1,80702 | 66,79838 |
| 2,3 | 3,24107 | 11,4601 | 5,819 | 0 | 3,1836 | 0,35503 | 5 | 2,11784 | 16,22147 | 37,73856 | 9,9081 | 27,83046 | 113,03653 | 0,35929 | -0,00094 | 6 | 0,56586 | 2 | 1,84237 | 62,91716 |
| 2,35 | 2,90189 | 11,0597 | 8,163 | 0 | 2,90657 | 0,37223 | 5 | 2,16214 | 16,13625 | 38,54537 | 10,3986 | 28,14677 | 101,89547 | 0,37723 | -0,00112 | 6 | 0,58329 | 2 | 1,8877 | 57,36056 |
| 2,4 | 2,57676 | 9,9373 | 7,573 | 0 | 2,55968 | 0,39828 | 5 | 2,22427 | 16,01914 | 39,34632 | 10,8891 | 28,45722 | 88,56581 | 0,4045 | -0,00079 | 6 | 0,6077 | 2 | 1,95138 | 50,40674 |
| 2,45 | 2,2004 | 9,587 | 10,983 | 0 | 2,25427 | 0,42602 | 5 | 2,28636 | 15,90172 | 40,14141 | 11,3796 | 28,76181 | 76,98143 | 0,43375 | -0,00036 | 6 | 0,63217 | 2 | 2,01519 | 44,28251 |
| 2,5 | 1,98564 | 9,2867 | 13,18 | 0 | 2,06416 | 0,45706 | 5 | 2,33327 | 15,84749 | 40,93378 | 11,8701 | 29,06368 | 69,61355 | 0,46631 | 0,0004 | 6 | 0,65093 | 2 | 2,06403 | 40,46452 |
| 2,55 | 2,00644 | 9,4297 | 13,901 | 0 | 2,09123 | 0,45513 | 5 | 2,32734 | 15,86261 | 41,72692 | 12,3606 | 29,36632 | 69,79084 | 0,4644 | 0,00113 | 6 | 0,64886 | 2 | 2,05821 | 40,99 |
| 2,6 | 2,2816 | 9,8372 | 16,95 | 0 | 2,39087 | 0,43019 | 5 | 2,26425 | 16,00315 | 42,52707 | 12,8511 | 29,67597 | 79,1328 | 0,43798 | 0,00151 | 6 | 0,62452 | 2 | 1,9939 | 46,96686 |
| 2,65 | 2,88457 | 11,5888 | 18,343 | 0 | 2,9445 | 0,39438 | 5 | 2,16624 | 16,22264 | 43,3382 | 13,3416 | 29,9966 | 96,71623 | 0,40027 | 0,00165 | 6 | 0,5867 | 2 | 1,89422 | 58,02317 |
| 2,7 | 3,66732 | 13,4118 | 19,13 | 0 | 3,71453 | 0,36748 | 6 | 2,06124 | 16,49767 | 44,16309 | 13,8321 | 30,33099 | 121,01057 | 0,3719 | 0,00141 | 6 | 0,55266 | 1,93348 | 1,8016 | 70,966 |
| 2,75 | 4,59171 | 15,9497 | 19,573 | 0 | 4,57851 | 0,34586 | 6 | 1,96727 | 16,74868 | 45,00052 | 14,3226 | 30,67792 | 147,77748 | 0,3493 | 0,00111 | 6 | 0,52176 | 1,85247 | 1,72395 | 83,98196 |
| 2,8 | 5,47649 | 18,1445 | 19,376 | 0 | 5,4563 | 0,33394 | 6 | 1,89117 | 16,97734 | 45,84939 | 14,8131 | 31,03629 | 174,3267 | 0,33677 | 0,00087 | 6 | 0,49792 | 1,79064 | 1,66134 | 96,8817 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 2,85 | 6,30071 | 20,5681 | 19,638 | 0 | 6,25575 | 0,3358 | 6 | 1,8377 | 17,19343 | 46,70906 | 15,3036 | 31,40546 | 197,70577 | 0,33832 | 0,00064 | 6 | 0,48172 | 1,74703 | 1,61858 | 108,47395 |
| 2,9 | 6,99005 | 24,3071 | 18,835 | 0 | 6,97238 | 0,3423 | 6 | 1,79823 | 17,38183 | 47,57815 | 15,7941 | 31,78405 | 217,87043 | 0,34465 | 0,00058 | 6 | 0,47014 | 1,71407 | 1,58783 | 118,69625 |
| 2,95 | 7,62639 | 26,7235 | 21,048 | 0 | 7,49717 | 0,34221 | 6 | 1,76963 | 17,49283 | 48,45279 | 16,2846 | 32,16819 | 231,55524 | 0,34443 | 0,00054 | 6 | 0,46184 | 1,68845 | 1,56566 | 125,76799 |
| 3 | 7,87506 | 25,9371 | 21,081 | 0 | 7,95165 | 0,34779 | 6 | 1,74959 | 17,60172 | 49,33288 | 16,7751 | 32,55778 | 242,71671 | 0,34996 | 0,00059 | 6 | 0,45644 | 1,66895 | 1,55103 | 131,88585 |
| 3,05 | 8,3535 | 30,3052 | 22,097 | 0 | 8,32226 | 0,35954 | 6 | 1,73818 | 17,70979 | 50,21837 | 17,2656 | 32,95277 | 251,02731 | 0,36172 | 0,00051 | 6 | 0,45398 | 1,65527 | 1,54406 | 136,92498 |
| 3,1 | 8,73823 | 33,5223 | 21,327 | 0 | 8,75875 | 0,38292 | 6 | 1,73087 | 17,86068 | 51,1114 | 17,7561 | 33,3553 | 261,05699 | 0,38517 | 0,00053 | 6 | 0,45317 | 1,6447 | 1,54133 | 143,21462 |
| 3,15 | 9,18451 | 36,7895 | 23,687 | 0 | 9,14162 | 0,40059 | 6 | 1,7237 | 17,97819 | 52,01031 | 18,2466 | 33,76371 | 269,21239 | 0,40288 | 0,0005 | 6 | 0,45222 | 1,63398 | 1,53827 | 148,5221 |
| 3,2 | 9,50212 | 39,5491 | 23,277 | 0 | 9,42769 | 0,41487 | 6 | 1,71931 | 18,06575 | 52,9136 | 18,7371 | 34,1765 | 274,30485 | 0,41721 | 0,00054 | 6 | 0,45207 | 1,62475 | 1,53728 | 152,31694 |
| 3,25 | 9,59645 | 41,0003 | 24,294 | 0 | 9,63046 | 0,42725 | 6 | 1,71753 | 18,13219 | 53,82021 | 19,2276 | 34,59261 | 276,84053 | 0,42965 | 0,00049 | 6 | 0,45269 | 1,61695 | 1,53832 | 154,84967 |
| 3,3 | 9,7928 | 42,8877 | 24,212 | 0 | 9,75619 | 0,43713 | 6 | 1,7176 | 18,17839 | 54,72913 | 19,7181 | 35,01103 | 277,09718 | 0,43959 | 0,0005 | 6 | 0,45383 | 1,6101 | 1,54072 | 156,20293 |
| 3,35 | 9,87931 | 44,053 | 25,294 | 0 | 9,85184 | 0,44742 | 6 | 1,71903 | 18,22013 | 55,64014 | 20,2086 | 35,43154 | 276,4826 | 0,44996 | 0,00047 | 6 | 0,45541 | 1,60403 | 1,54429 | 157,13396 |
| 3,4 | 9,88342 | 45,297 | 24,949 | 0 | 9,85362 | 0,4575 | 6 | 1,72388 | 18,24603 | 56,55244 | 20,6991 | 35,85334 | 273,25408 | 0,46014 | 0,00048 | 6 | 0,45808 | 1,59979 | 1,55071 | 156,73256 |
| 3,45 | 9,79814 | 45,8903 | 26,064 | 0 | 9,78442 | 0,47203 | 6 | 1,73348 | 18,2712 | 57,466 | 21,1896 | 36,2764 | 268,1346 | 0,47482 | 0,00044 | 6 | 0,4624 | 1,59819 | 1,56143 | 155,45572 |
| 3,5 | 9,67171 | 47,3702 | 25,343 | 0 | 9,67217 | 0,48498 | 6 | 1,74385 | 18,28462 | 58,38023 | 21,6801 | 36,70013 | 261,95511 | 0,48792 | 0,00048 | 6 | 0,46692 | 1,59686 | 1,57269 | 153,51827 |
| 3,55 | 9,54665 | 47,4632 | 27,605 | 0 | 9,59278 | 0,48994 | 6 | 1,7492 | 18,28368 | 59,29441 | 22,1706 | 37,12381 | 256,80235 | 0,49298 | 0,00049 | 6 | 0,46962 | 1,59258 | 1,5792 | 151,82815 |
| 3,6 | 9,55997 | 46,162 | 27,523 | 0 | 9,56117 | 0,49178 | 6 | 1,75128 | 18,28294 | 60,20856 | 22,6611 | 37,54746 | 253,03873 | 0,4949 | 0,00059 | 6 | 0,47118 | 1,58654 | 1,58273 | 150,73642 |
| 3,65 | 9,57689 | 47,4346 | 29,752 | 0 | 9,60527 | 0,48788 | 6 | 1,74777 | 18,28085 | 61,1226 | 23,1516 | 37,971 | 251,35367 | 0,49101 | 0,00058 | 6 | 0,47079 | 1,57758 | 1,58115 | 150,56641 |
| 3,7 | 9,67896 | 46,9913 | 28,916 | 0 | 9,65142 | 0,48281 | 6 | 1,74364 | 18,27617 | 62,03641 | 23,6421 | 38,39431 | 249,76062 | 0,48593 | 0,0006 | 6 | 0,47016 | 1,56842 | 1,57895 | 150,40149 |
| 3,75 | 9,69842 | 45,3685 | 29,474 | 0 | 9,75138 | 0,4688 | 6 | 1,7332 | 18,25809 | 62,94932 | 24,1326 | 38,81672 | 249,59421 | 0,47184 | 0,00053 | 6 | 0,46725 | 1,55608 | 1,5708 | 150,75965 |
| 3,8 | 9,87675 | 44,7822 | 29,523 | 0 | 9,96831 | 0,45116 | 6 | 1,71647 | 18,24772 | 63,8617 | 24,6231 | 39,2386 | 252,41585 | 0,45407 | 0,00056 | 6 | 0,46218 | 1,54091 | 1,55697 | 152,61817 |
| 3,85 | 10,32975 | 44,7679 | 31,457 | 0 | 10,36555 | 0,43702 | 6 | 1,69482 | 18,27103 | 64,77525 | 25,1136 | 39,66165 | 259,71631 | 0,43977 | 0,00052 | 6 | 0,45554 | 1,52391 | 1,53905 | 156,97483 |
| 3,9 | 10,89016 | 46,3479 | 30,539 | 0 | 10,85466 | 0,43658 | 6 | 1,67738 | 18,34059 | 65,69228 | 25,6041 | 40,08818 | 269,1308 | 0,43924 | 0,00052 | 6 | 0,4506 | 1,50967 | 1,5255 | 162,87748 |
| 3,95 | 11,34406 | 51,052 | 31,769 | 0 | 11,17642 | 0,44599 | 6 | 1,6713 | 18,40994 | 66,61278 | 26,0946 | 40,51818 | 274,19307 | 0,44867 | 0,00045 | 6 | 0,44962 | 1,5011 | 1,52232 | 166,76886 |
| 4 | 11,29503 | 52,1387 | 31,064 | 0 | 11,46343 | 0,45857 | 6 | 1,66825 | 18,48081 | 67,53682 | 26,5851 | 40,95172 | 278,27639 | 0,46129 | 0,00044 | 6 | 0,4497 | 1,49404 | 1,52192 | 170,25943 |
| 4,05 | 11,75121 | 54,5122 | 31,965 | 0 | 11,75101 | 0,46708 | 6 | 1,66338 | 18,53996 | 68,46382 | 27,0756 | 41,38822 | 282,26752 | 0,46981 | 0,00041 | 6 | 0,44908 | 1,48612 | 1,51968 | 173,61696 |
| 4,1 | 12,2068 | 58,0081 | 32,473 | 0 | 12,13346 | 0,475 | 6 | 1,65559 | 18,60843 | 69,39424 | 27,5661 | 41,82814 | 288,41993 | 0,47773 | 0,00043 | 6 | 0,44748 | 1,47702 | 1,51486 | 178,18821 |
| 4,15 | 12,44238 | 60,3817 | 33,768 | 0 | 12,33135 | 0,49349 | 6 | 1,65876 | 18,67716 | 70,3281 | 28,0566 | 42,2715 | 290,05404 | 0,49632 | 0,0004 | 6 | 0,44972 | 1,47291 | 1,5201 | 180,59349 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 4,2 | 12,34486 | 64,1707 | 32,473 | 0 | 12,38588 | 0,50274 | 6 | 1,66162 | 18,7053 | 71,26336 | 28,5471 | 42,71626 | 288,28864 | 0,50565 | 0,00041 | 6 | 0,45165 | 1,4684 | 1,52454 | 180,82762 |
| 4,25 | 12,37039 | 62,2547 | 34,654 | 0 | 12,41254 | 0,50448 | 6 | 1,66168 | 18,71258 | 72,19899 | 29,0376 | 43,16139 | 285,91164 | 0,50744 | 0,00037 | 6 | 0,45249 | 1,46256 | 1,52612 | 180,48531 |
| 4,3 | 12,52238 | 61,4326 | 33,67 | 0 | 12,50452 | 0,49012 | 6 | 1,65207 | 18,69068 | 73,13353 | 29,5281 | 43,60543 | 285,08799 | 0,493 | 0,00037 | 6 | 0,44976 | 1,45251 | 1,5184 | 180,56758 |
| 4,35 | 12,62078 | 60,1743 | 34,113 | 0 | 12,64978 | 0,47933 | 6 | 1,64256 | 18,68279 | 74,06766 | 30,0186 | 44,04906 | 285,49329 | 0,48215 | 0,00039 | 6 | 0,44713 | 1,4428 | 1,51093 | 181,4428 |
| 4,4 | 12,80618 | 60,2959 | 36,817 | 0 | 12,80179 | 0,47513 | 6 | 1,63613 | 18,69098 | 75,00221 | 30,5091 | 44,49311 | 286,0395 | 0,47793 | 0,00038 | 6 | 0,44566 | 1,43463 | 1,50646 | 182,58257 |
| 4,45 | 12,97841 | 62,0045 | 35,129 | 0 | 12,80218 | 0,48369 | 6 | 1,64038 | 18,71158 | 75,93779 | 30,9996 | 44,93819 | 283,19442 | 0,48658 | 0,00043 | 6 | 0,44801 | 1,43098 | 1,51203 | 182,10984 |
| 4,5 | 12,62196 | 63,4701 | 37,424 | 0 | 12,52843 | 0,4952 | 6 | 1,65385 | 18,70546 | 76,87307 | 31,4901 | 45,38297 | 274,36639 | 0,49825 | 0,00044 | 6 | 0,4535 | 1,43087 | 1,52581 | 178,16583 |
| 4,55 | 11,98493 | 60,6462 | 38,293 | 0 | 12,02679 | 0,51179 | 6 | 1,67655 | 18,6807 | 77,8071 | 31,9806 | 45,8265 | 260,74388 | 0,51512 | 0,00046 | 6 | 0,46219 | 1,43426 | 1,54798 | 171,37981 |
| 4,6 | 11,47347 | 60,5389 | 36,883 | 0 | 11,4055 | 0,52105 | 6 | 1,70005 | 18,61998 | 78,7381 | 32,4711 | 46,267 | 244,81291 | 0,52467 | 0,00047 | 6 | 0,47101 | 1,43767 | 1,57052 | 162,84192 |
| 4,65 | 10,75809 | 57,1002 | 38,26 | 0 | 10,79806 | 0,52613 | 6 | 1,72223 | 18,54719 | 79,66546 | 32,9616 | 46,70386 | 229,49705 | 0,53004 | 0,00048 | 6 | 0,47932 | 1,44041 | 1,59175 | 154,38911 |
| 4,7 | 10,16263 | 52,7964 | 39,129 | 0 | 10,30272 | 0,51717 | 6 | 1,73532 | 18,45541 | 80,58823 | 33,4521 | 47,13613 | 216,86398 | 0,52125 | 0,00052 | 6 | 0,48434 | 1,43948 | 1,60434 | 147,14574 |
| 4,75 | 9,98743 | 49,9511 | 39,03 | 0 | 10,07796 | 0,50224 | 6 | 1,73663 | 18,38789 | 81,50762 | 33,9426 | 47,56502 | 210,16386 | 0,50634 | 0,00054 | 6 | 0,48527 | 1,43418 | 1,60624 | 143,36664 |
| 4,8 | 10,08381 | 49,1003 | 39,85 | 0 | 10,06805 | 0,48908 | 6 | 1,7309 | 18,35584 | 82,42542 | 34,4331 | 47,99232 | 208,06708 | 0,49312 | 0,00055 | 6 | 0,48385 | 1,42648 | 1,60196 | 142,44268 |
| 4,85 | 10,1329 | 48,6714 | 40,801 | 0 | 10,07211 | 0,49428 | 6 | 1,73317 | 18,36861 | 83,34385 | 34,9236 | 48,42025 | 206,29324 | 0,4984 | 0,00057 | 6 | 0,48546 | 1,42203 | 1,60561 | 142,04289 |
| 4,9 | 9,99963 | 51,5811 | 41,211 | 0 | 9,94863 | 0,51203 | 6 | 1,74583 | 18,39028 | 84,26336 | 35,4141 | 48,84926 | 201,93489 | 0,5164 | 0,00063 | 6 | 0,49082 | 1,4214 | 1,61906 | 140,21183 |
| 4,95 | 9,71337 | 52,5676 | 42,784 | 0 | 9,64625 | 0,52598 | 6 | 1,7634 | 18,37387 | 85,18205 | 35,9046 | 49,27745 | 194,02527 | 0,53067 | 0,00062 | 6 | 0,49778 | 1,42231 | 1,63674 | 135,98825 |
| 5 | 9,22576 | 48,0637 | 41,637 | 0 | 9,37146 | 0,51071 | 6 | 1,76727 | 18,29565 | 86,09684 | 36,3951 | 49,70174 | 186,8217 | 0,51545 | 0,00065 | 6 | 0,49961 | 1,41806 | 1,64098 | 131,67239 |
| 5,05 | 9,17525 | 42,9521 | 42,735 | 0 | 9,23646 | 0,48231 | 6 | 1,75976 | 18,20759 | 87,00722 | 36,8856 | 50,12162 | 182,54498 | 0,4869 | 0,0006 | 6 | 0,49733 | 1,40989 | 1,63446 | 128,99728 |
| 5,1 | 9,30836 | 42,6303 | 42,85 | 0 | 9,2427 | 0,46386 | 6 | 1,75087 | 18,16375 | 87,9154 | 37,3761 | 50,5393 | 181,14188 | 0,46832 | 0,00058 | 6 | 0,49473 | 1,40159 | 1,62707 | 128,31294 |
| 5,15 | 9,24449 | 43,0378 | 42,506 | 0 | 9,1994 | 0,4647 | 6 | 1,75302 | 18,15862 | 88,82333 | 37,8666 | 50,95673 | 178,79043 | 0,46923 | 0,00054 | 6 | 0,49622 | 1,39731 | 1,63041 | 127,30313 |
| 5,2 | 9,04535 | 42,5803 | 42,997 | 0 | 9,20604 | 0,45202 | 6 | 1,7467 | 18,1279 | 89,72973 | 38,3571 | 51,37263 | 177,45455 | 0,45647 | 0,00049 | 6 | 0,49458 | 1,39017 | 1,62553 | 126,73186 |
| 5,25 | 9,32827 | 39,2202 | 43,03 | 0 | 9,48359 | 0,41931 | 6 | 1,71933 | 18,08707 | 90,63408 | 38,8476 | 51,78648 | 181,37846 | 0,42336 | 0,00049 | 6 | 0,48535 | 1,37627 | 1,60076 | 129,2724 |
| 5,3 | 10,07714 | 37,4973 | 44,424 | 0 | 10,13445 | 0,38324 | 6 | 1,67518 | 18,08538 | 91,53835 | 39,3381 | 52,20025 | 192,39202 | 0,38673 | 0,00053 | 6 | 0,47021 | 1,35754 | 1,5605 | 136,33649 |
| 5,35 | 10,99794 | 39,7993 | 46,489 | 0 | 11,21904 | 0,35902 | 6 | 1,62284 | 18,16623 | 92,44666 | 39,8286 | 52,61806 | 211,45958 | 0,362 | 0,00055 | 6 | 0,4524 | 1,33709 | 1,51322 | 148,77206 |
| 5,4 | 12,58204 | 43,5383 | 46,997 | 0 | 12,67246 | 0,34855 | 6 | 1,57028 | 18,31903 | 93,36261 | 40,3191 | 53,04351 | 237,14675 | 0,35114 | 0,00055 | 6 | 0,43475 | 1,31739 | 1,4663 | 165,71637 |
| 5,45 | 14,4374 | 49,1718 | 48,063 | 0 | 14,15107 | 0,3514 | 6 | 1,53032 | 18,49767 | 94,2875 | 40,8096 | 53,4779 | 262,85219 | 0,35376 | 0,00051 | 6 | 0,4217 | 1,30205 | 1,43141 | 183,02629 |
| 5,5 | 15,43377 | 56,4711 | 48,85 | 0 | 15,21433 | 0,36744 | 6 | 1,51313 | 18,66013 | 95,2205 | 41,3001 | 53,9204 | 280,39681 | 0,36976 | 0,00048 | 6 | 0,41675 | 1,29358 | 1,41778 | 195,5777 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 5,55 | 15,77182 | 62,0689 | 48,686 | 0 | 15,57896 | 0,4031 | 6 | 1,52573 | 18,80298 | 96,16065 | 41,7906 | 54,37005 | 284,7671 | 0,4056 | 0,00045 | 6 | 0,42246 | 1,2936 | 1,43206 | 200,28536 |
| 5,6 | 15,5313 | 69,8543 | 48,866 | 0 | 15,40291 | 0,44833 | 6 | 1,55529 | 18,9079 | 97,10605 | 42,2811 | 54,82495 | 279,17583 | 0,45118 | 0,00043 | 6 | 0,43416 | 1,29815 | 1,46207 | 198,69215 |
| 5,65 | 14,9056 | 75,2447 | 48,899 | 0 | 14,86315 | 0,50126 | 6 | 1,59559 | 18,98156 | 98,05513 | 42,7716 | 55,28353 | 267,07953 | 0,50459 | 0,00044 | 6 | 0,44965 | 1,30539 | 1,50203 | 192,74251 |
| 5,7 | 14,15256 | 78,4118 | 50,194 | 0 | 14,31649 | 0,53976 | 6 | 1,62751 | 19,00921 | 99,00559 | 43,2621 | 55,74349 | 255,05194 | 0,54352 | 0,00045 | 6 | 0,46197 | 1,30994 | 1,53371 | 186,2402 |
| 5,75 | 13,89131 | 78,1687 | 50,013 | 0 | 13,94777 | 0,56587 | 6 | 1,64873 | 19,02353 | 99,95676 | 43,7526 | 56,20416 | 246,38412 | 0,56996 | 0,00048 | 6 | 0,4704 | 1,31132 | 1,55518 | 181,58887 |
| 5,8 | 13,79944 | 80,1991 | 50,817 | 0 | 13,86828 | 0,57052 | 6 | 1,65283 | 19,02418 | 100,90797 | 44,2431 | 56,66487 | 242,96125 | 0,57471 | 0,00047 | 6 | 0,47258 | 1,30792 | 1,56029 | 180,06569 |
| 5,85 | 13,91408 | 78,998 | 51,407 | 0 | 13,85024 | 0,57507 | 6 | 1,65532 | 19,03131 | 101,85954 | 44,7336 | 57,12594 | 240,66791 | 0,57933 | 0,00044 | 6 | 0,47421 | 1,3041 | 1,56392 | 179,2933 |
| 5,9 | 13,8372 | 79,7487 | 50,063 | 0 | 13,87768 | 0,57488 | 6 | 1,65455 | 19,03396 | 102,81124 | 45,2241 | 57,58714 | 239,20044 | 0,57917 | 0,00043 | 6 | 0,47464 | 1,29945 | 1,56441 | 178,99687 |
| 5,95 | 13,88176 | 80,5923 | 51,931 | 0 | 13,78786 | 0,5883 | 6 | 1,66277 | 19,05056 | 103,76376 | 45,7146 | 58,04916 | 235,73287 | 0,59276 | 0,00038 | 6 | 0,47837 | 1,29716 | 1,57358 | 177,50447 |
| 6 | 13,64462 | 83,0015 | 50,702 | 0 | 13,75505 | 0,58368 | 6 | 1,66156 | 19,03782 | 104,71566 | 46,2051 | 58,51056 | 233,29689 | 0,58815 | 0,00039 | 6 | 0,47858 | 1,2924 | 1,57351 | 176,41735 |
| 6,05 | 13,73876 | 77,2608 | 52,03 | 0 | 13,77483 | 0,57073 | 6 | 1,65529 | 19,01422 | 105,66637 | 46,6956 | 58,97077 | 231,79559 | 0,57514 | 0,00036 | 6 | 0,47692 | 1,28643 | 1,56852 | 175,84478 |
| 6,1 | 13,94111 | 75,5879 | 51,915 | 0 | 13,84446 | 0,55085 | 6 | 1,64448 | 18,98118 | 106,61543 | 47,1861 | 59,42933 | 231,16272 | 0,55513 | 0,00035 | 6 | 0,47356 | 1,27945 | 1,55911 | 175,76953 |
| 6,15 | 13,85351 | 75,9382 | 51,849 | 0 | 13,81234 | 0,54539 | 6 | 1,64277 | 18,96615 | 107,56373 | 47,6766 | 59,88713 | 228,84347 | 0,54967 | 0,00033 | 6 | 0,47358 | 1,27482 | 1,55852 | 174,71145 |
| 6,2 | 13,64241 | 74,4655 | 52,702 | 0 | 13,59162 | 0,54849 | 6 | 1,6499 | 18,94797 | 108,51113 | 48,1671 | 60,34403 | 223,43738 | 0,55291 | 0,00035 | 6 | 0,47679 | 1,27231 | 1,56635 | 171,5467 |
| 6,25 | 13,27895 | 73,243 | 53,964 | 0 | 13,31289 | 0,55058 | 6 | 1,65818 | 18,92056 | 109,45716 | 48,6576 | 60,79956 | 217,1633 | 0,55514 | 0,00038 | 6 | 0,48041 | 1,27004 | 1,57523 | 167,68856 |
| 6,3 | 13,01731 | 72,1849 | 54,423 | 0 | 13,10828 | 0,55086 | 6 | 1,6638 | 18,8974 | 110,40203 | 49,1481 | 61,25393 | 212,19664 | 0,55554 | 0,0004 | 6 | 0,48307 | 1,26715 | 1,58159 | 164,70307 |
| 6,35 | 13,02858 | 71,1983 | 54,571 | 0 | 13,11481 | 0,54897 | 6 | 1,66276 | 18,89421 | 111,34674 | 49,6386 | 61,70814 | 210,7253 | 0,55367 | 0,00043 | 6 | 0,48336 | 1,26281 | 1,58173 | 164,20962 |
| 6,4 | 13,29855 | 72,6067 | 56,505 | 0 | 13,29029 | 0,53988 | 6 | 1,65386 | 18,89537 | 112,29151 | 50,1291 | 62,16241 | 211,99305 | 0,54448 | 0,00039 | 6 | 0,48078 | 1,2568 | 1,57436 | 165,62161 |
| 6,45 | 13,54374 | 71,4485 | 54,849 | 0 | 13,59103 | 0,52825 | 6 | 1,64047 | 18,90464 | 113,23674 | 50,6196 | 62,61714 | 215,24122 | 0,53268 | 0,0004 | 6 | 0,47657 | 1,24994 | 1,56271 | 168,46492 |
| 6,5 | 13,93079 | 71,327 | 56,521 | 0 | 13,93309 | 0,50927 | 6 | 1,62252 | 18,90069 | 114,18178 | 51,1101 | 63,07168 | 219,09853 | 0,51348 | 0,00034 | 6 | 0,47065 | 1,24225 | 1,54657 | 171,6654 |
| 6,55 | 14,32475 | 70,0973 | 56,128 | 0 | 14,27363 | 0,49429 | 6 | 1,60651 | 18,90336 | 115,12694 | 51,6006 | 63,52634 | 222,87604 | 0,4983 | 0,00036 | 6 | 0,46545 | 1,23514 | 1,53231 | 174,8771 |
| 6,6 | 14,56534 | 70,2332 | 57,587 | 0 | 14,43949 | 0,4931 | 6 | 1,60179 | 18,91831 | 116,07286 | 52,0911 | 63,98176 | 223,86725 | 0,49709 | 0,00036 | 6 | 0,46441 | 1,23047 | 1,52897 | 176,24497 |
| 6,65 | 14,42839 | 73,2716 | 57,931 | 0 | 14,21699 | 0,5092 | 6 | 1,6153 | 18,93145 | 117,01943 | 52,5816 | 64,43783 | 218,81505 | 0,51342 | 0,00036 | 6 | 0,47005 | 1,22946 | 1,54315 | 173,35311 |
| 6,7 | 13,65723 | 73,6719 | 57,521 | 0 | 13,71813 | 0,52603 | 6 | 1,63611 | 18,91408 | 117,96514 | 53,0721 | 64,89304 | 209,57819 | 0,53059 | 0,00035 | 6 | 0,4783 | 1,22977 | 1,56418 | 167,25128 |
| 6,75 | 13,06877 | 69,5397 | 58,111 | 0 | 12,88849 | 0,5433 | 6 | 1,66635 | 18,85557 | 118,90791 | 53,5626 | 65,34531 | 195,4169 | 0,54836 | 0,00034 | 6 | 0,48992 | 1,23177 | 1,59408 | 157,29215 |
| 6,8 | 11,93946 | 66,8588 | 58,062 | 0 | 12,09154 | 0,54198 | 6 | 1,68855 | 18,75487 | 119,84566 | 54,0531 | 65,79256 | 181,96123 | 0,54741 | 0,00033 | 6 | 0,49851 | 1,23208 | 1,61601 | 147,50119 |
| 6,85 | 11,26639 | 60,2029 | 57,833 | 0 | 11,3568 | 0,53206 | 6 | 1,70662 | 18,63746 | 120,77753 | 54,5436 | 66,23393 | 169,64149 | 0,53778 | 0,00035 | 6 | 0,50555 | 1,23155 | 1,63392 | 138,37768 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 6,9 | 10,86455 | 54,2119 | 59,374 | 0 | 10,62914 | 0,51517 | 6 | 1,72301 | 18,49878 | 121,70247 | 55,0341 | 66,66837 | 157,60754 | 0,52113 | 0,00037 | 6 | 0,51196 | 1,23068 | 1,65015 | 129,31302 |
| 6,95 | 9,75648 | 49,8581 | 59,603 | 0 | 9,571 | 0,50432 | 6 | 1,75661 | 18,31348 | 122,61814 | 55,5246 | 67,09354 | 140,82406 | 0,51087 | 0,00043 | 6 | 0,52465 | 1,23291 | 1,6829 | 116,4902 |
| 7 | 8,09198 | 40,7358 | 59,767 | 0 | 8,47003 | 0,49017 | 6 | 1,79569 | 18,09331 | 123,52281 | 56,0151 | 67,50771 | 123,63789 | 0,49742 | 0,00032 | 6 | 0,53935 | 1,23606 | 1,72094 | 103,16771 |
| 7,05 | 7,56164 | 33,9584 | 56,8 | 0 | 7,71581 | 0,45877 | 6 | 1,8166 | 17,87411 | 124,41651 | 56,5056 | 67,91091 | 111,78454 | 0,46629 | -0,00043 | 6 | 0,54738 | 1,23593 | 1,74148 | 93,82413 |
| 7,1 | 7,4938 | 31,4991 | 43,145 | 0 | 7,48249 | 0,39288 | 6 | 1,79677 | 17,64867 | 125,29895 | 56,9961 | 68,30285 | 107,71426 | 0,39957 | -0,00045 | 6 | 0,54031 | 1,22872 | 1,72241 | 90,39954 |
| 7,15 | 7,39203 | 22,7343 | 61,177 | 0 | 7,47572 | 0,33981 | 6 | 1,76945 | 17,48035 | 126,17297 | 57,4866 | 68,68637 | 107,00154 | 0,34564 | -0,00032 | 6 | 0,53054 | 1,22053 | 1,69629 | 89,7032 |
| 7,2 | 7,54133 | 21,9765 | 61,144 | 0 | 7,443 | 0,31175 | 6 | 1,75563 | 17,37449 | 127,04169 | 57,9771 | 69,06459 | 105,92917 | 0,31717 | 0,00048 | 6 | 0,52588 | 1,21488 | 1,68354 | 88,87971 |
| 7,25 | 7,39563 | 24,9005 | 62,16 | 0 | 7,26797 | 0,35825 | 6 | 1,79034 | 17,4979 | 127,91659 | 58,4676 | 69,44899 | 102,81009 | 0,36466 | 0,00048 | 6 | 0,53958 | 1,2174 | 1,71898 | 86,92324 |
| 7,3 | 6,86696 | 31,2346 | 62,308 | 0 | 6,47345 | 0,45154 | 6 | 1,88041 | 17,58658 | 128,79591 | 58,9581 | 69,83781 | 90,84841 | 0,46071 | 0,0006 | 6 | 0,57392 | 1,22879 | 1,80856 | 77,96274 |
| 7,35 | 5,15776 | 31,5563 | 63,832 | 0 | 5,05883 | 0,6406 | 6 | 2,04761 | 17,61071 | 129,67645 | 59,4486 | 70,22785 | 70,18802 | 0,65746 | 0,00203 | 6 | 0,63725 | 1,2526 | 1,97424 | 61,74253 |
| 7,4 | 3,15177 | 34,4303 | 82,257 | 0 | 3,45788 | 1,11307 | 5 | 2,31423 | 17,66266 | 130,55958 | 59,9391 | 70,62048 | 47,11556 | 1,15674 | 0,03096 | 5 | 0,73881 | 1,29304 | 2,24024 | 43,02362 |
| 7,45 | 2,06412 | 49,4792 | 342,816 | 0 | 2,4441 | 1,78975 | 4 | 2,55484 | 17,67682 | 131,44342 | 60,4296 | 71,01382 | 32,56624 | 1,89147 | 0,11582 | 5 | 0,83221 | 1,32958 | 2,48383 | 30,7485 |
| 7,5 | 2,1164 | 47,3202 | 559,77 | 0 | 2,03643 | 2,39963 | 4 | 2,69364 | 17,73426 | 132,33014 | 60,9201 | 71,41004 | 26,66432 | 2,5664 | 0,23691 | 4 | 0,8868 | 1,34799 | 2,62695 | 25,66704 |
| 7,55 | 1,92877 | 49,8009 | 633,503 | 0 | 2,03846 | 2,5408 | 4 | 2,70811 | 17,80155 | 133,22021 | 61,4106 | 71,80961 | 26,53177 | 2,71846 | 0,29901 | 4 | 0,8932 | 1,34418 | 2,64328 | 25,60982 |
| 7,6 | 2,0702 | 58,2584 | 700,04 | 0 | 2,41598 | 2,41779 | 4 | 2,63629 | 18,00506 | 134,12047 | 61,9011 | 72,21937 | 31,59618 | 2,5599 | 0,25283 | 4 | 0,86579 | 1,32549 | 2,57071 | 30,2458 |
| 7,65 | 3,24896 | 67,1805 | 582,95383 | 0 | 2,62548 | 2,54999 | 4 | 2,62199 | 18,19385 | 135,03016 | 62,3916 | 72,63856 | 34,28551 | 2,68824 | 0,23761 | 4 | 0,86088 | 1,31679 | 2,55728 | 32,79411 |
| 7,7 | 2,55728 | 75,4092 | 679,42813 | 0 | 2,54936 | 2,99498 | 4 | 2,67576 | 18,33375 | 135,94685 | 62,8821 | 73,06475 | 33,03116 | 3,16369 | 0,23948 | 4 | 0,88233 | 1,31903 | 2,61316 | 31,83367 |
| 7,75 | 1,84184 | 86,4689 | 660,13327 | 0 | 2,12674 | 3,80035 | 3 | 2,80237 | 18,3297 | 136,86333 | 63,3726 | 73,49073 | 27,07657 | 4,06173 | 0,29739 | 4 | 0,93249 | 1,33271 | 2,74447 | 26,51934 |
| 7,8 | 1,9811 | 80,5923 | 625,864 | 0 | 1,85296 | 4,39479 | 3 | 2,8888 | 18,28551 | 137,77761 | 63,8631 | 73,91451 | 23,2049 | 4,74781 | 0,33797 | 3 | 0,96754 | 1,33971 | 2,83606 | 22,97836 |
| 7,85 | 1,73593 | 77,2393 | 644,617 | 0 | 1,80647 | 4,32136 | 3 | 2,89254 | 18,22716 | 138,68897 | 64,3536 | 74,33537 | 22,43586 | 4,68071 | 0,31952 | 3 | 0,97021 | 1,33342 | 2,84253 | 22,23852 |
| 7,9 | 1,70237 | 76,36 | 521,248 | 0 | 1,66253 | 4,71941 | 3 | 2,94476 | 18,20117 | 139,59902 | 64,8441 | 74,75492 | 20,37236 | 5,15202 | 0,29195 | 3 | 0,99177 | 1,33451 | 2,89944 | 20,32364 |
| 7,95 | 1,5493 | 81,7862 | 362,536 | 0 | 1,61098 | 4,85818 | 3 | 2,96333 | 18,18619 | 140,50833 | 65,3346 | 75,17373 | 19,56093 | 5,32239 | 0,26068 | 3 | 1 | 1,33025 | 2,92125 | 19,56093 |
| 8 | 1,58126 | 76,646 | 462,169 | 0 | 1,58716 | 4,75841 | 3 | 2,9625 | 18,13948 | 141,41531 | 65,8251 | 75,59021 | 19,12608 | 5,22385 | 0,25447 | 3 | 1 | 1,32292 | 2,92315 | 19,12608 |
| 8,05 | 1,63092 | 68,1385 | 476,447 | 0 | 1,56812 | 4,40161 | 3 | 2,94499 | 18,03131 | 142,31687 | 66,3156 | 76,00127 | 18,76025 | 4,84096 | 0,27221 | 3 | 0,99582 | 1,31426 | 2,90804 | 18,73875 |
| 8,1 | 1,49218 | 62,2833 | 424,696 | 0 | 1,48628 | 4,18253 | 3 | 2,94916 | 17,89037 | 143,21139 | 66,8061 | 76,40529 | 17,57821 | 4,62852 | 0,26751 | 3 | 0,99937 | 1,30859 | 2,9165 | 17,57522 |
| 8,15 | 1,33574 | 56,0707 | 377,142 | 0 | 1,3173 | 4,5036 | 3 | 3,01017 | 17,79033 | 144,10091 | 67,2966 | 76,80431 | 15,27517 | 5,05677 | 0,27025 | 3 | 1 | 1,30201 | 2,98783 | 15,27517 |
| 8,2 | 1,12398 | 59,6239 | 351,209 | 0 | 1,13724 | 5,12783 | 3 | 3,09522 | 17,71422 | 144,98662 | 67,7871 | 77,19952 | 12,85306 | 5,8771 | 0,28567 | 3 | 1 | 1,29534 | 3,08724 | 12,85306 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 8,25 | 0,95199 | 59,2521 | 325,374 | 0 | 0,99509 | 5,66374 | 3 | 3,16748 | 17,62376 | 145,86781 | 68,2776 | 77,59021 | 10,94492 | 6,63658 | 0,3081 | 3 | 1 | 1,28882 | 3,17463 | 10,94492 |
| 8,3 | 0,90929 | 50,2013 | 313,195 | 0 | 0,9266 | 5,60809 | 3 | 3,18911 | 17,50304 | 146,74296 | 68,7681 | 77,97486 | 10,00143 | 6,66334 | 0,33168 | 3 | 1 | 1,28246 | 3,20582 | 10,00143 |
| 8,35 | 0,91853 | 46,4408 | 343,734 | 0 | 0,86853 | 5,35639 | 3 | 3,19908 | 17,35095 | 147,61051 | 69,2586 | 78,35191 | 9,20105 | 6,45313 | 0,34934 | 3 | 1 | 1,27629 | 3,22503 | 9,20105 |
| 8,4 | 0,77777 | 42,9235 | 306,39418 | 0 | 0,81211 | 5,46063 | 3 | 3,22733 | 17,2701 | 148,47401 | 69,7491 | 78,72491 | 8,42977 | 6,68233 | 0,36868 | 3 | 1 | 1,27025 | 3,26414 | 8,42977 |
| 8,45 | 0,74002 | 43,6741 | 293,114 | 0 | 0,73814 | 5,7644 | 3 | 3,27458 | 17,1859 | 149,33331 | 70,2396 | 79,09371 | 7,44442 | 7,22637 | 0,39274 | 3 | 1 | 1,26432 | 3,32752 | 7,44442 |
| 8,5 | 0,69663 | 41,0504 | 304,949 | 0 | 0,69279 | 5,80191 | 3 | 3,29824 | 17,0961 | 150,18811 | 70,7301 | 79,45801 | 6,82875 | 7,40785 | 0,44604 | 3 | 1 | 1,25853 | 3,36356 | 6,82875 |
| 8,55 | 0,64171 | 35,8601 | 340,193 | 0 | 0,65695 | 5,64466 | 3 | 3,30958 | 16,98303 | 151,03726 | 71,2206 | 79,81666 | 6,33844 | 7,32984 | 0,49279 | 3 | 1 | 1,25287 | 3,38614 | 6,33844 |
| 8,6 | 0,63251 | 34,3373 | 316,44 | 0 | 0,62996 | 5,39022 | 3 | 3,31239 | 16,86562 | 151,88054 | 71,7111 | 80,16944 | 5,96332 | 7,10264 | 0,5198 | 3 | 1 | 1,24736 | 3,3987 | 5,96332 |
| 8,65 | 0,61565 | 31,6707 | 304,015 | 0 | 0,61589 | 5,15116 | 3 | 3,30878 | 16,7788 | 152,71948 | 72,2016 | 80,51788 | 5,75239 | 6,84964 | 0,50125 | 3 | 1 | 1,24196 | 3,40157 | 5,75239 |
| 8,7 | 0,59951 | 29,1685 | 292,638 | 0 | 0,60067 | 5,00479 | 3 | 3,31033 | 16,70726 | 153,55485 | 72,6921 | 80,86275 | 5,52927 | 6,72363 | 0,51553 | 3 | 1 | 1,23666 | 3,41043 | 5,52927 |
| 8,75 | 0,58684 | 29,3472 | 312,916 | 0 | 0,58263 | 4,96916 | 3 | 3,31934 | 16,65227 | 154,38746 | 73,1826 | 81,20486 | 5,27357 | 6,76062 | 0,54121 | 3 | 1 | 1,23145 | 3,42832 | 5,27357 |
| 8,8 | 0,56153 | 28,3392 | 309,293 | 0 | 0,62774 | 4,54255 | 3 | 3,27041 | 16,66341 | 155,22063 | 73,6731 | 81,54753 | 5,79445 | 6,03474 | 0,55091 | 3 | 1 | 1,22628 | 3,36607 | 5,79445 |
| 8,85 | 0,73486 | 27,8602 | 379,764 | 0 | 0,69612 | 4,03202 | 3 | 3,20397 | 16,68483 | 156,05487 | 74,1636 | 81,89127 | 6,59486 | 5,1971 | 0,50975 | 3 | 1 | 1,22113 | 3,28236 | 6,59486 |
| 8,9 | 0,79196 | 28,0032 | 359,323 | 0 | 0,75539 | 3,78474 | 3 | 3,15914 | 16,73736 | 156,89174 | 74,6541 | 82,23764 | 7,27763 | 4,77689 | 0,4832 | 3 | 1 | 1,21599 | 3,22622 | 7,27763 |
| 8,95 | 0,73934 | 29,9049 | 352,454 | 0 | 0,75712 | 3,81133 | 3 | 3,16006 | 16,74893 | 157,72919 | 75,1446 | 82,58459 | 7,2579 | 4,81428 | 0,49321 | 3 | 1 | 1,21088 | 3,22916 | 7,2579 |
| 9 | 0,74006 | 28,6609 | 400,534 | 0 | 0,70694 | 4,13915 | 3 | 3,20497 | 16,73867 | 158,56612 | 75,6351 | 82,93102 | 6,61245 | 5,336 | 0,53606 | 3 | 1 | 1,20582 | 3,2882 | 6,61245 |
| 9,05 | 0,64143 | 29,2185 | 355,799 | 0 | 0,6572 | 4,41289 | 3 | 3,24688 | 16,70044 | 159,40114 | 76,1256 | 83,27554 | 5,97777 | 5,82594 | 0,58194 | 3 | 1 | 1,20083 | 3,3461 | 5,97777 |
| 9,1 | 0,59012 | 29,1256 | 341,111 | 0 | 0,61891 | 4,61775 | 3 | 3,27954 | 16,66057 | 160,23417 | 76,6161 | 83,61807 | 5,48541 | 6,23091 | 0,58365 | 3 | 1 | 1,19591 | 3,39347 | 5,48541 |
| 9,15 | 0,62519 | 27,3955 | 336,062 | 0 | 0,57717 | 4,69323 | 3 | 3,30843 | 16,57213 | 161,06278 | 77,1066 | 83,95618 | 4,95628 | 6,50983 | 0,58888 | 3 | 1 | 1,1911 | 3,44023 | 4,95628 |
| 9,2 | 0,51621 | 24,7432 | 289,262 | 0 | 0,55361 | 4,69754 | 3 | 3,32352 | 16,50926 | 161,88824 | 77,5971 | 84,29114 | 4,64729 | 6,63889 | 0,59721 | 3 | 1 | 1,18636 | 3,46783 | 4,64729 |
| 9,25 | 0,51944 | 25,8799 | 309,293 | 0 | 0,51871 | 4,89881 | 3 | 3,35715 | 16,45763 | 162,71112 | 78,0876 | 84,62352 | 4,20682 | 7,13785 | 0,6539 | 3 | 1 | 1,1817 | 3,52132 | 4,20682 |
| 9,3 | 0,52047 | 25,6082 | 334,062 | 0 | 0,52602 | 4,79669 | 3 | 3,34694 | 16,45488 | 163,53387 | 78,5781 | 84,95577 | 4,2668 | 6,96067 | 0,71647 | 3 | 1 | 1,17708 | 3,50992 | 4,2668 |
| 9,35 | 0,53816 | 24,207 | 371,519 | 0 | 0,53541 | 4,65651 | 3 | 3,33331 | 16,44789 | 164,35626 | 79,0686 | 85,28766 | 4,35061 | 6,71909 | 0,75937 | 3 | 1 | 1,1725 | 3,49408 | 4,35061 |
| 9,4 | 0,5476 | 24,9791 | 376,928 | 0 | 0,55437 | 4,29605 | 3 | 3,30109 | 16,40859 | 165,17669 | 79,5591 | 85,61759 | 4,54576 | 6,11931 | 0,76031 | 3 | 1 | 1,16798 | 3,45491 | 4,54576 |
| 9,45 | 0,57736 | 22,2624 | 377,961 | 0 | 0,57294 | 4,00252 | 3 | 3,27205 | 16,37771 | 165,99558 | 80,0496 | 85,94598 | 4,73489 | 5,63518 | 0,70245 | 3 | 1 | 1,16352 | 3,41976 | 4,73489 |
| 9,5 | 0,59386 | 21,5547 | 342,832 | 0 | 0,62009 | 3,35152 | 3 | 3,2009 | 16,29482 | 166,81032 | 80,5401 | 86,27022 | 5,25422 | 4,5849 | 0,5834 | 3 | 1 | 1,15915 | 3,33153 | 5,25422 |
| 9,55 | 0,68906 | 18,5306 | 314,162 | 0 | 0,67584 | 3,03382 | 3 | 3,14602 | 16,31229 | 167,62593 | 81,0306 | 86,59533 | 5,86884 | 4,03447 | 0,36211 | 3 | 1 | 1,1548 | 3,26057 | 5,86884 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 9,6 | 0,7446 | 21,426 | 138,189 | 0 | 0,66714 | 2,56615 | 3 | 3,11208 | 16,09984 | 168,43092 | 81,5211 | 86,90982 | 5,73824 | 3,43283 | 0,21436 | 3 | 1 | 1,15062 | 3,23002 | 5,73824 |
| 9,65 | 0,56776 | 11,4029 | 112,928 | 0 | 0,53164 | 2,86787 | 3 | 3,22137 | 15,8795 | 169,2249 | 82,0116 | 87,2133 | 4,1555 | 4,20699 | 0,09924 | 3 | 1 | 1,14661 | 3,39567 | 4,1555 |
| 9,7 | 0,28256 | 12,9114 | 102,814 | 0 | 0,37171 | 3,36006 | 3 | 3,38995 | 15,51283 | 170,00054 | 82,5021 | 87,49844 | 2,30525 | 6,19196 | 0,22558 | 2 | 1 | 1,14288 | 3,70171 | 2,30525 |
| 9,75 | 0,2648 | 13,1544 | 168,269 | 0 | 0,30025 | 4,51847 | 3 | 3,53624 | 15,52613 | 170,77685 | 82,9926 | 87,78425 | 1,4749 | 10,47839 | 0,67805 | 2 | 1 | 1,13916 | 3,98962 | 1,4749 |
| 9,8 | 0,35339 | 14,6343 | 241,264 | 0 | 0,35978 | 3,98142 | 3 | 3,4405 | 15,65801 | 171,55975 | 83,4831 | 88,07665 | 2,13704 | 7,61036 | 0,68856 | 2 | 1 | 1,13537 | 3,77845 | 2,13704 |
| 9,85 | 0,46116 | 15,1848 | 229,724 | 0 | 0,4888 | 3,24454 | 3 | 3,28054 | 15,89259 | 172,35438 | 83,9736 | 88,38078 | 3,58044 | 5,01172 | 0,53645 | 3 | 1 | 1,13147 | 3,49139 | 3,58044 |
| 9,9 | 0,65184 | 17,7585 | 290,196 | 0 | 0,57139 | 3,02495 | 3 | 3,2069 | 16,05143 | 173,15695 | 84,4641 | 88,69285 | 4,49002 | 4,34024 | 0,47169 | 3 | 1 | 1,12749 | 3,37492 | 4,49002 |
| 9,95 | 0,60117 | 18,9095 | 296,999 | 0 | 0,61459 | 3,00386 | 3 | 3,17849 | 16,15518 | 173,96471 | 84,9546 | 89,01011 | 4,95032 | 4,18981 | 0,49905 | 3 | 1 | 1,12347 | 3,33112 | 4,95032 |
| 10 | 0,59077 | 18,7165 | 327,358 | 0 | 0,59758 | 3,34502 | 3 | 3,21392 | 16,23586 | 174,7765 | 85,4451 | 89,3314 | 4,73294 | 4,72777 | 0,55681 | 3 | 1 | 1,11943 | 3,37654 | 4,73294 |
| 10,05 | 0,60079 | 22,3411 | 338,242 | 0 | 0,58604 | 3,51862 | 3 | 3,23299 | 16,26416 | 175,58971 | 85,9356 | 89,65411 | 4,57815 | 5,02388 | 0,5773 | 3 | 1 | 1,1154 | 3,40332 | 4,57815 |
| 10,1 | 0,56656 | 20,804 | 303,064 | 0 | 0,53353 | 3,91894 | 3 | 3,29274 | 16,24414 | 176,40191 | 86,4261 | 89,97581 | 3,96919 | 5,85467 | 0,56517 | 3 | 1 | 1,11141 | 3,49206 | 3,96919 |
| 10,15 | 0,43325 | 19,5815 | 223,495 | 0 | 0,46011 | 4,26152 | 3 | 3,36646 | 16,11346 | 177,20759 | 86,9166 | 90,29099 | 3,13323 | 6,93091 | 0,58014 | 2 | 1 | 1,10753 | 3,61823 | 3,13323 |
| 10,2 | 0,38052 | 18,4376 | 226,56 | 0 | 0,52611 | 3,54484 | 3 | 3,27407 | 16,10724 | 178,01295 | 87,4071 | 90,60585 | 3,84188 | 5,35762 | 0,37524 | 3 | 1 | 1,10368 | 3,482 | 3,84188 |
| 10,25 | 0,76456 | 17,9301 | 204,021 | 0 | 0,75238 | 2,35778 | 3 | 3,04833 | 16,18684 | 178,82229 | 87,8976 | 90,92469 | 6,30802 | 3,09289 | 0,20566 | 3 | 1 | 1,09981 | 3,17093 | 6,30802 |
| 10,3 | 1,11205 | 16,8505 | 186,989 | 0 | 1,16444 | 1,42294 | 4 | 2,77341 | 16,27582 | 179,63608 | 88,3881 | 91,24798 | 10,79261 | 1,6825 | 0,10548 | 4 | 0,97554 | 1,09346 | 2,83441 | 10,76846 |
| 10,35 | 1,61671 | 14,9274 | 185,776 | 0 | 1,25501 | 1,31797 | 4 | 2,7287 | 16,30255 | 180,45121 | 88,8786 | 91,57261 | 11,73454 | 1,5393 | 0,13725 | 4 | 0,95653 | 1,08786 | 2,78408 | 11,68971 |
| 10,4 | 1,03628 | 17,8443 | 336,324 | 0 | 1,34744 | 1,30433 | 4 | 2,69962 | 16,39957 | 181,27119 | 89,3691 | 91,90209 | 12,68925 | 1,50707 | 0,12062 | 4 | 0,94389 | 1,08297 | 2,75048 | 12,62927 |
| 10,45 | 1,38933 | 19,9533 | 167,99 | 0 | 1,09623 | 1,95931 | 4 | 2,86699 | 16,55117 | 182,09875 | 89,8596 | 92,23915 | 9,91041 | 2,34961 | 0,22376 | 3 | 1 | 1,08414 | 2,94134 | 9,91041 |
| 10,5 | 0,86307 | 26,6377 | 378,896 | 0 | 0,99885 | 2,45975 | 3 | 2,95409 | 16,67016 | 182,93226 | 90,3501 | 92,58216 | 8,81291 | 3,01124 | 0,28733 | 3 | 1 | 1,08012 | 3,04315 | 8,81291 |
| 10,55 | 0,74415 | 27,1167 | 427,483 | 0 | 0,9248 | 2,79844 | 3 | 3,01282 | 16,70041 | 183,76728 | 90,8406 | 92,92668 | 7,97435 | 3,49243 | 0,4047 | 3 | 1 | 1,07612 | 3,11525 | 7,97435 |
| 10,6 | 1,16717 | 23,8853 | 365,831 | 0 | 0,8914 | 2,96236 | 3 | 3,03982 | 16,70948 | 184,60275 | 91,3311 | 93,27165 | 7,57787 | 3,73607 | 0,42043 | 3 | 1 | 1,07214 | 3,15011 | 7,57787 |
| 10,65 | 0,76289 | 28,2177 | 372,158 | 0 | 0,87936 | 2,97828 | 3 | 3,04603 | 16,69478 | 185,43749 | 91,8216 | 93,61589 | 7,41241 | 3,77417 | 0,47639 | 3 | 1 | 1,06819 | 3,1605 | 7,41241 |
| 10,7 | 0,70801 | 26,4661 | 529,198 | 0 | 0,75612 | 3,47786 | 3 | 3,13804 | 16,64158 | 186,26957 | 92,3121 | 93,95747 | 6,06502 | 4,61468 | 0,66038 | 3 | 1 | 1,06431 | 3,2819 | 6,06502 |
| 10,75 | 0,79747 | 24,207 | 504,544 | 0 | 0,79841 | 3,10531 | 3 | 3,09098 | 16,59472 | 187,0993 | 92,8026 | 94,2967 | 6,48288 | 4,05573 | 0,69123 | 3 | 1 | 1,06048 | 3,22615 | 6,48288 |
| 10,8 | 0,88976 | 23,7066 | 512,347 | 0 | 0,84131 | 2,79204 | 3 | 3,04658 | 16,55266 | 187,92694 | 93,2931 | 94,63384 | 6,90433 | 3,59509 | 0,63808 | 3 | 1 | 1,0567 | 3,17406 | 6,90433 |
| 10,85 | 0,8367 | 22,5555 | 513,724 | 0 | 0,85841 | 2,72087 | 3 | 3,03314 | 16,55382 | 188,75463 | 93,7836 | 94,97103 | 7,05115 | 3,4878 | 0,66948 | 3 | 1 | 1,05295 | 3,15913 | 7,05115 |
| 10,9 | 0,84877 | 23,8066 | 600,243 | 0 | 0,83345 | 2,82295 | 3 | 3,05261 | 16,55092 | 189,58217 | 94,2741 | 95,30807 | 6,75561 | 3,65415 | 0,72098 | 3 | 1 | 1,04923 | 3,18586 | 6,75561 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 10,95 | 0,81487 | 24,2213 | 561,491 | 0 | 0,79153 | 2,81318 | 3 | 3,07058 | 16,46779 | 190,40556 | 94,7646 | 95,64096 | 6,28522 | 3,70426 | 0,8157 | 3 | 1 | 1,04558 | 3,21517 | 6,28522 |
| 11 | 0,71095 | 18,7737 | 593,571 | 0 | 0,78131 | 2,78806 | 3 | 3,0732 | 16,43754 | 191,22744 | 95,2551 | 95,97234 | 6,1485 | 3,69158 | 0,86171 | 3 | 1 | 1,04197 | 3,22229 | 6,1485 |
| 11,05 | 0,81812 | 22,3554 | 656,158 | 0 | 0,78925 | 2,79566 | 3 | 3,07016 | 16,45617 | 192,05025 | 95,7456 | 96,30465 | 6,20112 | 3,69471 | 0,91632 | 3 | 1 | 1,03837 | 3,21941 | 6,20112 |
| 11,1 | 0,83867 | 25,0649 | 679,173 | 0 | 0,82487 | 2,92973 | 3 | 3,06522 | 16,57777 | 192,87914 | 96,2361 | 96,64304 | 6,53944 | 3,82387 | 0,90628 | 3 | 1 | 1,03474 | 3,20861 | 6,53944 |
| 11,15 | 0,81782 | 25,0792 | 671,665 | 0 | 0,81094 | 3,05235 | 3 | 3,08121 | 16,59881 | 193,70908 | 96,7266 | 96,98248 | 6,36436 | 4,01029 | 0,93859 | 3 | 1 | 1,03111 | 3,22999 | 6,36436 |
| 11,2 | 0,77633 | 24,1141 | 677,32 | 0 | 0,81397 | 2,96428 | 3 | 3,07284 | 16,57085 | 194,53762 | 97,2171 | 97,32052 | 6,36487 | 3,89524 | 0,89981 | 3 | 1 | 1,02753 | 3,22284 | 6,36487 |
| 11,25 | 0,84776 | 23,1918 | 614,783 | 0 | 0,82275 | 2,83069 | 3 | 3,05796 | 16,53426 | 195,36433 | 97,7076 | 97,65673 | 6,4244 | 3,71216 | 0,83049 | 3 | 1 | 1,02399 | 3,20779 | 6,4244 |
| 11,3 | 0,84416 | 22,5627 | 564,13 | 0 | 0,82547 | 2,79798 | 3 | 3,054 | 16,52595 | 196,19063 | 98,1981 | 97,99253 | 6,42171 | 3,67031 | 0,74424 | 3 | 1 | 1,02049 | 3,20519 | 6,42171 |
| 11,35 | 0,78449 | 23,535 | 520,69 | 0 | 0,82065 | 2,96454 | 3 | 3,0699 | 16,58349 | 197,0198 | 98,6886 | 98,3312 | 6,34214 | 3,90112 | 0,78493 | 3 | 1 | 1,01697 | 3,2245 | 6,34214 |
| 11,4 | 0,8333 | 26,8879 | 679,763 | 0 | 0,80035 | 3,25977 | 3 | 3,10183 | 16,65427 | 197,85252 | 99,1791 | 98,67342 | 6,10598 | 4,33024 | 0,85149 | 3 | 1 | 1,01344 | 3,26371 | 6,10598 |
| 11,45 | 0,78326 | 27,8459 | 636,143 | 0 | 0,79982 | 3,37992 | 3 | 3,11088 | 16,69489 | 198,68726 | 99,6696 | 99,01766 | 6,07096 | 4,49705 | 0,91345 | 3 | 1 | 1,00992 | 3,27513 | 6,07096 |
| 11,5 | 0,7829 | 26,366 | 630,422 | 0 | 0,77203 | 3,58803 | 3 | 3,1382 | 16,70938 | 199,52273 | 100,1601 | 99,36263 | 5,76176 | 4,83849 | 0,92792 | 3 | 1 | 1,00641 | 3,31195 | 5,76176 |
| 11,55 | 0,74992 | 28,8897 | 627,635 | 0 | 0,74762 | 3,61687 | 3 | 3,15168 | 16,66932 | 200,3562 | 100,6506 | 99,7056 | 5,4888 | 4,94102 | 0,965 | 3 | 1 | 1,00295 | 3,33443 | 5,4888 |
| 11,6 | 0,71004 | 25,8656 | 628,225 | 0 | 0,71974 | 3,71494 | 3 | 3,17186 | 16,6418 | 201,18829 | 101,1411 | 100,04719 | 5,18304 | 5,15628 | 1,04193 | 3 | 1 | 0,99953 | 3,36545 | 5,18304 |
| 11,65 | 0,69925 | 25,4581 | 668,436 | 0 | 0,76027 | 3,28369 | 3 | 3,12213 | 16,58388 | 202,01748 | 101,6316 | 100,38588 | 5,56103 | 4,47198 | 0,9646 | 3 | 1 | 0,99616 | 3,30508 | 5,56103 |
| 11,7 | 0,87151 | 23,5707 | 623,701 | 0 | 0,82444 | 2,95553 | 3 | 3,0675 | 16,58706 | 202,84683 | 102,1221 | 100,72473 | 6,17124 | 3,92001 | 0,83421 | 3 | 1 | 0,9928 | 3,23549 | 6,17124 |
| 11,75 | 0,90257 | 24,0712 | 569,851 | 0 | 0,88707 | 2,84815 | 3 | 3,03212 | 16,65678 | 203,67967 | 102,6126 | 101,06707 | 6,76175 | 3,69702 | 0,72588 | 3 | 1 | 0,98944 | 3,18837 | 6,76175 |
| 11,8 | 0,88713 | 28,1533 | 602,472 | 0 | 0,88574 | 3,12739 | 3 | 3,05528 | 16,76207 | 204,51778 | 103,1031 | 101,41468 | 6,7172 | 4,0663 | 0,72411 | 3 | 1 | 0,98605 | 3,2141 | 6,7172 |
| 11,85 | 0,86752 | 30,8771 | 616,832 | 0 | 0,88825 | 3,30553 | 3 | 3,06783 | 16,83014 | 205,35928 | 103,5936 | 101,76568 | 6,71046 | 4,29957 | 0,72152 | 3 | 1 | 0,98265 | 3,2283 | 6,71046 |
| 11,9 | 0,91011 | 29,0541 | 569,638 | 0 | 0,90339 | 3,35726 | 3 | 3,06563 | 16,87391 | 206,20298 | 104,0841 | 102,11888 | 6,82718 | 4,35022 | 0,64766 | 3 | 1 | 0,97925 | 3,2251 | 6,82718 |
| 11,95 | 0,93253 | 31,0559 | 480,398 | 0 | 0,91148 | 3,23517 | 3 | 3,0533 | 16,84497 | 207,04523 | 104,5746 | 102,47063 | 6,87447 | 4,18605 | 0,57832 | 3 | 1 | 0,97589 | 3,21305 | 6,87447 |
| 12 | 0,89179 | 28,3535 | 485,856 | 0 | 0,9266 | 3,38015 | 3 | 3,05827 | 16,92064 | 207,89126 | 105,0651 | 102,82616 | 6,98952 | 4,35789 | 0,57735 | 3 | 1 | 0,97252 | 3,21721 | 6,98952 |
| 12,05 | 0,95547 | 34,5518 | 593,768 | 0 | 0,95022 | 3,43106 | 3 | 3,05303 | 16,97644 | 208,74008 | 105,5556 | 103,18448 | 7,18593 | 4,39697 | 0,66415 | 3 | 1 | 0,96914 | 3,20964 | 7,18593 |
| 12,1 | 1,00339 | 34,9021 | 714,4 | 0 | 0,99443 | 3,51958 | 3 | 3,0433 | 17,0755 | 209,59386 | 106,0461 | 103,54776 | 7,57946 | 4,4595 | 0,7486 | 3 | 1 | 0,96574 | 3,1944 | 7,57946 |
| 12,15 | 1,02443 | 35,5455 | 772,561 | 0 | 1,03155 | 3,41534 | 3 | 3,02276 | 17,09712 | 210,44871 | 106,5366 | 103,91211 | 7,90188 | 4,2907 | 0,79874 | 3 | 1 | 0,96235 | 3,16993 | 7,90188 |
| 12,2 | 1,06683 | 35,2453 | 800,198 | 0 | 1,07247 | 3,30526 | 3 | 3,00075 | 17,1191 | 211,30467 | 107,0271 | 104,27757 | 8,25836 | 4,11628 | 0,8068 | 3 | 1 | 0,95898 | 3,14384 | 8,25836 |
| 12,25 | 1,12614 | 35,5527 | 832,688 | 0 | 1,15569 | 3,04045 | 3 | 2,9533 | 17,13765 | 212,16155 | 107,5176 | 104,64395 | 9,01653 | 3,72413 | 0,75749 | 3 | 1 | 0,95562 | 3,08752 | 9,01653 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 12,3 | 1,27409 | 34,6162 | 833,787 | 0 | 1,30481 | 2,69259 | 3 | 2,87984 | 17,18403 | 213,02075 | 108,0081 | 105,01265 | 10,39677 | 3,21795 | 0,64939 | 3 | 1 | 0,95227 | 3,00037 | 10,39677 |
| 12,35 | 1,51421 | 35,231 | 784,544 | 0 | 1,43232 | 2,53059 | 4 | 2,83121 | 17,25566 | 213,88353 | 108,4986 | 105,38493 | 11,56177 | 2,97481 | 0,55716 | 3 | 1 | 0,9489 | 2,94301 | 11,56177 |
| 12,4 | 1,50866 | 38,8913 | 743,74432 | 0 | 1,48214 | 2,63076 | 4 | 2,8288 | 17,35275 | 214,75117 | 108,9891 | 105,76207 | 11,98336 | 3,07653 | 0,52341 | 3 | 1 | 0,94552 | 2,93877 | 11,98336 |
| 12,45 | 1,42354 | 42,852 | 788,76566 | 0 | 1,3753 | 3,11114 | 3 | 2,89778 | 17,43094 | 215,62272 | 109,4796 | 106,14312 | 10,92563 | 3,6896 | 0,56357 | 3 | 1 | 0,94212 | 3,01757 | 10,92563 |
| 12,5 | 1,19371 | 46,6196 | 756,60756 | 0 | 1,29335 | 3,48886 | 3 | 2,94882 | 17,46851 | 216,49614 | 109,9701 | 106,52604 | 10,1088 | 4,19028 | 0,63019 | 3 | 1 | 0,93874 | 3,07759 | 10,1088 |
| 12,55 | 1,26279 | 45,8975 | 820,41 | 0 | 1,2821 | 3,50665 | 3 | 2,95318 | 17,46096 | 217,36919 | 110,4606 | 106,90859 | 9,95923 | 4,22255 | 0,62542 | 3 | 1 | 0,93538 | 3,08477 | 9,95923 |
| 12,6 | 1,38979 | 42,3587 | 752,054 | 0 | 1,361 | 3,20705 | 3 | 2,90925 | 17,44983 | 218,24168 | 110,9511 | 107,29058 | 10,65106 | 3,81952 | 0,5689 | 3 | 1 | 0,93205 | 3,03539 | 10,65106 |
| 12,65 | 1,43042 | 42,6875 | 710,728 | 0 | 1,55479 | 2,77191 | 4 | 2,82519 | 17,48627 | 219,116 | 111,4416 | 107,6744 | 12,40478 | 3,22663 | 0,43692 | 3 | 1 | 0,92873 | 2,93869 | 12,40478 |
| 12,7 | 1,84417 | 44,246 | 622,307 | 0 | 1,74569 | 2,67833 | 4 | 2,77581 | 17,62439 | 219,99722 | 111,9321 | 108,06512 | 14,11827 | 3,06453 | 0,3607 | 3 | 1 | 0,92537 | 2,88012 | 14,11827 |
| 12,75 | 1,96248 | 53,3326 | 653,70165 | 0 | 1,8488 | 3,03759 | 4 | 2,78882 | 17,85719 | 220,89008 | 112,4226 | 108,46748 | 15,00825 | 3,44976 | 0,32739 | 3 | 1 | 0,92194 | 2,88977 | 15,00825 |
| 12,8 | 1,73974 | 70,898 | 660,13327 | 0 | 1,7508 | 3,72457 | 3 | 2,86215 | 18,00819 | 221,79049 | 112,9131 | 108,87739 | 14,04341 | 4,26483 | 0,34415 | 3 | 1 | 0,91846 | 2,96922 | 14,04341 |
| 12,85 | 1,55018 | 71,3985 | 603,538 | 0 | 1,63318 | 4,07992 | 3 | 2,9105 | 18,00635 | 222,6908 | 113,4036 | 109,2872 | 12,90623 | 4,72407 | 0,36208 | 3 | 1 | 0,91502 | 3,0256 | 12,90623 |
| 12,9 | 1,60961 | 57,6006 | 608,68031 | 0 | 1,53269 | 3,86635 | 3 | 2,91747 | 17,84711 | 223,58316 | 113,8941 | 109,68906 | 11,93471 | 4,52669 | 0,3687 | 3 | 1 | 0,91167 | 3,04071 | 11,93471 |
| 12,95 | 1,43828 | 48,7786 | 577,458 | 0 | 1,98667 | 2,51335 | 4 | 2,71424 | 17,74958 | 224,47064 | 114,3846 | 110,08604 | 16,0075 | 2,8335 | 0,25947 | 4 | 0,97766 | 0,91033 | 2,81527 | 16,0419 |
| 13 | 2,91213 | 43,4167 | 528,739 | 0 | 2,33723 | 2,60835 | 4 | 2,66781 | 18,0415 | 225,37271 | 114,8751 | 110,49761 | 19,11221 | 2,88671 | 0,19801 | 4 | 0,956 | 0,90898 | 2,75786 | 19,19634 |
| 13,05 | 2,66127 | 90,694 | 492,91115 | 0 | 2,65047 | 2,69111 | 4 | 2,63336 | 18,27034 | 226,28623 | 115,3656 | 110,92063 | 21,85512 | 2,94231 | 0,15625 | 4 | 0,94044 | 0,90713 | 2,71644 | 21,99046 |
| 13,1 | 2,37801 | 79,8702 | 460,75306 | 0 | 2,59985 | 3,32582 | 4 | 2,69833 | 18,48436 | 227,21045 | 115,8561 | 111,35435 | 21,30714 | 3,64431 | 0,12917 | 4 | 0,96657 | 0,90127 | 2,78449 | 21,38388 |
| 13,15 | 2,76028 | 88,8352 | 313,342 | 0 | 2,56666 | 3,27496 | 4 | 2,69828 | 18,44692 | 228,13279 | 116,3466 | 111,78619 | 20,91964 | 3,59445 | 0,09901 | 4 | 0,96767 | 0,89779 | 2,7868 | 20,99513 |
| 13,2 | 2,56169 | 83,4662 | 269,558 | 0 | 2,55936 | 3,58673 | 4 | 2,72479 | 18,54716 | 229,06015 | 116,8371 | 112,22305 | 20,76489 | 3,93929 | 0,07232 | 3 | 0,97869 | 0,89327 | 2,81516 | 20,81598 |
| 13,25 | 2,35611 | 103,0906 | 273,164 | 0 | 2,44609 | 4,08717 | 3 | 2,77681 | 18,62798 | 229,99155 | 117,3276 | 112,66395 | 19,67002 | 4,51134 | 0,06824 | 3 | 1 | 0,8876 | 2,87208 | 19,67002 |
| 13,3 | 2,42048 | 113,3711 | 262,919 | 0 | 2,47745 | 4,44742 | 3 | 2,79703 | 18,74468 | 230,92879 | 117,8181 | 113,11069 | 19,86126 | 4,90459 | 0,06472 | 3 | 1 | 0,88409 | 2,89274 | 19,86126 |
| 13,35 | 2,65576 | 114,086 | 253,542 | 0 | 2,63393 | 4,32651 | 3 | 2,76925 | 18,80692 | 231,86913 | 118,3086 | 113,56053 | 21,15225 | 4,74415 | 0,05223 | 3 | 0,99746 | 0,88087 | 2,86257 | 21,15909 |
| 13,4 | 2,82555 | 114,4149 | 214,823 | 0 | 2,69972 | 4,18471 | 4 | 2,7516 | 18,80642 | 232,80945 | 118,7991 | 114,01035 | 21,63763 | 4,57963 | 0,03898 | 3 | 0,99101 | 0,87815 | 2,84476 | 21,66316 |
| 13,45 | 2,61786 | 110,4256 | 176,498 | 0 | 2,6923 | 4,06215 | 4 | 2,74387 | 18,76801 | 233,74785 | 119,2896 | 114,45825 | 21,4799 | 4,44836 | 0,03658 | 3 | 0,98878 | 0,87501 | 2,83871 | 21,51247 |
| 13,5 | 2,63349 | 103,2551 | 236,33 | 0 | 2,51297 | 4,1545 | 3 | 2,77272 | 18,68814 | 234,68226 | 119,7801 | 114,90216 | 19,82804 | 4,58245 | 0,05808 | 3 | 1 | 0,87031 | 2,87389 | 19,82804 |
| 13,55 | 2,28755 | 99,5232 | 343,455 | 0 | 2,37786 | 4,20926 | 3 | 2,79448 | 18,61845 | 235,61318 | 120,2706 | 115,34258 | 18,57291 | 4,67222 | 0,08794 | 3 | 1 | 0,86698 | 2,9009 | 18,57291 |
| 13,6 | 2,21254 | 97,4929 | 346,225 | 0 | 2,37413 | 4,19962 | 3 | 2,79434 | 18,6134 | 236,54385 | 120,7611 | 115,78275 | 18,46204 | 4,66434 | 0,09998 | 3 | 1 | 0,86369 | 2,9024 | 18,46204 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 13,65 | 2,6223 | 102,0969 | 313,735 | 0 | 2,49397 | 3,93169 | 4 | 2,75939 | 18,6131 | 237,47451 | 121,2516 | 116,22291 | 19,41527 | 4,34546 | 0,08929 | 3 | 0,99998 | 0,86042 | 2,8658 | 19,41533 |
| 13,7 | 2,64708 | 94,576 | 308,211 | 0 | 2,52179 | 3,75611 | 4 | 2,74273 | 18,57756 | 238,40338 | 121,7421 | 116,66128 | 19,57282 | 4,14828 | 0,08234 | 3 | 0,99421 | 0,85795 | 2,84978 | 19,59029 |
| 13,75 | 2,296 | 87,4912 | 307,293 | 0 | 2,38456 | 3,72014 | 4 | 2,75844 | 18,48067 | 239,32742 | 122,2326 | 117,09482 | 18,32045 | 4,13517 | 0,09014 | 3 | 1 | 0,85401 | 2,87121 | 18,32045 |
| 13,8 | 2,21059 | 84,0596 | 331,275 | 0 | 2,17015 | 3,9256 | 3 | 2,80474 | 18,398 | 240,24732 | 122,7231 | 117,52422 | 16,42135 | 4,41429 | 0,12682 | 3 | 1 | 0,85089 | 2,9259 | 16,42135 |
| 13,85 | 2,00387 | 84,0239 | 463,841 | 0 | 2,11589 | 4,02289 | 3 | 2,82 | 18,38733 | 241,16668 | 123,2136 | 117,95308 | 15,89383 | 4,5404 | 0,16177 | 3 | 1 | 0,84779 | 2,94462 | 15,89383 |
| 13,9 | 2,13322 | 87,2767 | 484,348 | 0 | 2,1342 | 4,04164 | 3 | 2,81846 | 18,40589 | 242,08698 | 123,7041 | 118,38288 | 15,98302 | 4,55875 | 0,17041 | 3 | 1 | 0,84472 | 2,94387 | 15,98302 |
| 13,95 | 2,26552 | 87,4698 | 390,206 | 0 | 2,41673 | 4,07372 | 3 | 2,77981 | 18,60566 | 243,01726 | 124,1946 | 118,82266 | 18,29378 | 4,52915 | 0,10573 | 3 | 1 | 0,84159 | 2,89713 | 18,29378 |
| 14 | 2,85146 | 120,606 | 187,481 | 0 | 2,53162 | 4,16824 | 3 | 2,77127 | 18,70328 | 243,95243 | 124,6851 | 119,26733 | 19,18098 | 4,61273 | 0,07436 | 3 | 1 | 0,83845 | 2,88666 | 19,18098 |
| 14,05 | 2,47787 | 108,4954 | 306,72 | 0 | 2,58045 | 4,32503 | 3 | 2,77577 | 18,77506 | 244,89118 | 125,1756 | 119,71558 | 19,50926 | 4,77852 | 0,07306 | 3 | 1 | 0,83531 | 2,89114 | 19,50926 |
| 14,1 | 2,41203 | 105,7144 | 393,255 | 0 | 2,41811 | 4,35858 | 3 | 2,79904 | 18,68429 | 245,82539 | 125,6661 | 120,15929 | 18,07835 | 4,85181 | 0,1151 | 3 | 1 | 0,83223 | 2,92047 | 18,07835 |
| 14,15 | 2,36442 | 101,9754 | 427,122 | 0 | 2,39249 | 4,32258 | 3 | 2,80011 | 18,65841 | 246,75831 | 126,1566 | 120,60171 | 17,79186 | 4,81968 | 0,1356 | 3 | 1 | 0,82918 | 2,92385 | 17,79186 |
| 14,2 | 2,40101 | 102,5616 | 430,958 | 0 | 2,39745 | 4,21582 | 3 | 2,79225 | 18,63282 | 247,68995 | 126,6471 | 121,04285 | 17,76032 | 4,70156 | 0,14057 | 3 | 1 | 0,82615 | 2,91743 | 17,76032 |
| 14,25 | 2,42692 | 98,6796 | 428,466 | 0 | 2,51481 | 4,01785 | 4 | 2,76287 | 18,65079 | 248,62249 | 127,1376 | 121,48489 | 18,65404 | 4,45865 | 0,11496 | 3 | 1 | 0,82315 | 2,88626 | 18,65404 |
| 14,3 | 2,71649 | 101,8824 | 303,556 | 0 | 2,57535 | 3,78238 | 4 | 2,73783 | 18,61781 | 249,55338 | 127,6281 | 121,92528 | 19,07559 | 4,18822 | 0,11118 | 3 | 1 | 0,82017 | 2,86131 | 19,07559 |
| 14,35 | 2,58264 | 91,6663 | 426,581 | 0 | 2,67491 | 3,76 | 4 | 2,72372 | 18,66916 | 250,48684 | 128,1186 | 122,36824 | 19,81252 | 4,14847 | 0,0977 | 3 | 0,99553 | 0,81794 | 2,84575 | 19,8304 |
| 14,4 | 2,7256 | 108,1808 | 364,814 | 0 | 2,69534 | 3,99268 | 4 | 2,73851 | 18,74989 | 251,42434 | 128,6091 | 122,81524 | 19,8991 | 4,40343 | 0,10018 | 3 | 1 | 0,81423 | 2,86141 | 19,8991 |
| 14,45 | 2,77777 | 123,001 | 328,899 | 0 | 2,75588 | 4,30627 | 4 | 2,75332 | 18,87094 | 252,36788 | 129,0996 | 123,26828 | 20,30949 | 4,74036 | 0,07578 | 3 | 1 | 0,81124 | 2,8757 | 20,30949 |
| 14,5 | 2,76428 | 124,8455 | 262,739 | 0 | 2,78971 | 4,49989 | 3 | 2,76232 | 18,94025 | 253,3149 | 129,5901 | 123,7248 | 20,50032 | 4,94931 | 0,04972 | 3 | 1 | 0,80825 | 2,88504 | 20,50032 |
| 14,55 | 2,82709 | 128,756 | 175,432 | 0 | 2,80842 | 4,60323 | 3 | 2,76689 | 18,97661 | 254,26373 | 130,0806 | 124,18313 | 20,56766 | 5,06147 | 0,02847 | 3 | 1 | 0,80526 | 2,89045 | 20,56766 |
| 14,6 | 2,83389 | 134,2323 | 170,219 | 0 | 2,81548 | 4,61539 | 3 | 2,76687 | 18,9835 | 255,2129 | 130,5711 | 124,6418 | 20,54097 | 5,07546 | 0,01799 | 3 | 1 | 0,8023 | 2,89167 | 20,54097 |
| 14,65 | 2,78545 | 126,8472 | 184,235 | 0 | 2,75302 | 4,69413 | 3 | 2,77901 | 18,96855 | 256,16133 | 131,0616 | 125,09973 | 19,95895 | 5,17571 | 0,01954 | 3 | 1 | 0,79936 | 2,90664 | 19,95895 |
| 14,7 | 2,63972 | 126,6113 | 185,104 | 0 | 2,67755 | 4,72159 | 3 | 2,78959 | 18,93263 | 257,10796 | 131,5521 | 125,55586 | 19,27784 | 5,22313 | 0,02304 | 3 | 1 | 0,79646 | 2,92054 | 19,27784 |
| 14,75 | 2,60749 | 125,8106 | 192,595 | 0 | 2,56133 | 4,93166 | 3 | 2,81657 | 18,91464 | 258,05369 | 132,0426 | 126,01109 | 18,27834 | 5,48419 | 0,0345 | 3 | 1 | 0,79358 | 2,95189 | 18,27834 |
| 14,8 | 2,43677 | 126,5255 | 256,788 | 0 | 2,4841 | 5,16595 | 3 | 2,84003 | 18,92107 | 258,99975 | 132,5331 | 126,46665 | 17,59434 | 5,76726 | 0,03058 | 3 | 1 | 0,79072 | 2,97879 | 17,59434 |
| 14,85 | 2,40803 | 132,6452 | 152,319 | 0 | 2,34901 | 5,41383 | 3 | 2,87167 | 18,88922 | 259,94421 | 133,0236 | 126,92061 | 16,4596 | 6,08748 | 0,03819 | 3 | 1 | 0,78789 | 3,01602 | 16,4596 |
| 14,9 | 2,20222 | 122,3433 | 229,281 | 0 | 2,26681 | 5,593 | 3 | 2,89263 | 18,87204 | 260,88781 | 133,5141 | 127,37371 | 15,74835 | 6,32042 | 0,0469 | 3 | 1 | 0,78509 | 3,0412 | 15,74835 |
| 14,95 | 2,19019 | 125,3602 | 301,162 | 0 | 2,29217 | 5,63105 | 3 | 2,8911 | 18,8969 | 261,83265 | 134,0046 | 127,82805 | 15,88332 | 6,35723 | 0,03469 | 3 | 1 | 0,7823 | 3,04011 | 15,88332 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 15 | 2,48409 | 139,5155 | 82,88 | 0 | 2,33983 | 5,69702 | 3 | 2,88802 | 18,94187 | 262,77975 | 134,4951 | 128,28465 | 16,19092 | 6,41779 | 0,03112 | 3 | 1 | 0,77952 | 3,03664 | 16,19092 |
| 15,05 | 2,3452 | 135,0258 | 213,348 | 0 | 2,3756 | 5,61755 | 3 | 2,87904 | 18,94898 | 263,7272 | 134,9856 | 128,7416 | 16,40399 | 6,31906 | 0,00819 | 3 | 1 | 0,77675 | 3,02792 | 16,40399 |
| 15,1 | 2,29752 | 125,8106 | 160,597 | 0 | 2,36895 | 5,45437 | 3 | 2,87119 | 18,91077 | 264,67273 | 135,4761 | 129,19663 | 16,28737 | 6,14042 | 0,02054 | 3 | 1 | 0,77401 | 3,02194 | 16,28737 |
| 15,15 | 2,46412 | 126,7972 | 162,122 | 0 | 2,48696 | 5,08813 | 3 | 2,83518 | 18,90538 | 265,618 | 135,9666 | 129,6514 | 17,13319 | 5,69655 | 0,00296 | 3 | 1 | 0,7713 | 2,98387 | 17,13319 |
| 15,2 | 2,69924 | 127,0117 | 104,879 | 0 | 2,57728 | 4,91408 | 3 | 2,81354 | 18,92005 | 266,56401 | 136,4571 | 130,10691 | 17,76011 | 5,48097 | 0,00117 | 3 | 1 | 0,7686 | 2,96108 | 17,76011 |
| 15,25 | 2,56847 | 126,1395 | 150,483 | 0 | 2,56589 | 4,92391 | 3 | 2,81554 | 18,91556 | 267,50978 | 136,9476 | 130,56218 | 17,60372 | 5,497 | -0,00219 | 3 | 1 | 0,76592 | 2,9648 | 17,60372 |
| 15,3 | 2,42996 | 125,8749 | 140,352 | 0 | 2,46271 | 5,1216 | 3 | 2,84023 | 18,89789 | 268,45468 | 137,4381 | 131,01658 | 16,7479 | 5,7482 | 0,00625 | 3 | 1 | 0,76326 | 2,99387 | 16,7479 |
| 15,35 | 2,38969 | 126,3754 | 162,597 | 0 | 2,3358 | 5,38936 | 3 | 2,87213 | 18,87536 | 269,39845 | 137,9286 | 131,46985 | 15,71766 | 6,09198 | 0,02051 | 3 | 1 | 0,76063 | 3,03123 | 15,71766 |
| 15,4 | 2,18774 | 125,4031 | 237,953 | 0 | 2,22606 | 5,48429 | 3 | 2,89263 | 18,82164 | 270,33953 | 138,4191 | 131,92043 | 14,825 | 6,24238 | 0,04079 | 3 | 1 | 0,75803 | 3,0573 | 14,825 |
| 15,45 | 2,10075 | 114,4721 | 254,018 | 0 | 2,18389 | 5,46885 | 3 | 2,89792 | 18,78906 | 271,27898 | 138,9096 | 132,36938 | 14,44902 | 6,24454 | 0,06312 | 3 | 1 | 0,75546 | 3,06579 | 14,44902 |
| 15,5 | 2,26317 | 118,4255 | 286,934 | 0 | 2,325 | 5,10947 | 3 | 2,85793 | 18,8069 | 272,21933 | 139,4001 | 132,81923 | 15,45542 | 5,78703 | 0,03799 | 3 | 1 | 0,7529 | 3,02204 | 15,45542 |
| 15,55 | 2,61107 | 123,4871 | 111,174 | 0 | 2,49266 | 4,95346 | 3 | 2,82654 | 18,87803 | 273,16323 | 139,8906 | 133,27263 | 16,65378 | 5,56311 | 0,02208 | 3 | 1 | 0,75034 | 2,98633 | 16,65378 |
| 15,6 | 2,60373 | 128,5058 | 168,58 | 0 | 2,55745 | 4,86952 | 3 | 2,81332 | 18,89773 | 274,10811 | 140,3811 | 133,72701 | 17,07465 | 5,4541 | 0,01941 | 3 | 1 | 0,74779 | 2,97251 | 17,07465 |
| 15,65 | 2,45755 | 121,6141 | 274,377 | 0 | 2,59728 | 4,71942 | 3 | 2,79917 | 18,88542 | 275,05238 | 140,8716 | 134,18078 | 17,30673 | 5,27841 | 0,03727 | 3 | 1 | 0,74526 | 2,95875 | 17,30673 |
| 15,7 | 2,73057 | 117,6105 | 239,33 | 0 | 2,94564 | 4,09892 | 4 | 2,71751 | 18,9163 | 275,9982 | 141,3621 | 134,6361 | 19,8286 | 4,52268 | 0,03728 | 3 | 1 | 0,74274 | 2,87015 | 19,8286 |
| 15,75 | 3,64881 | 122,9938 | 208,988 | 0 | 3,64336 | 3,38068 | 4 | 2,59292 | 19,02074 | 276,94924 | 141,8526 | 135,09664 | 24,91854 | 3,6588 | 0,00952 | 4 | 0,95801 | 0,74962 | 2,73073 | 25,23526 |
| 15,8 | 4,5507 | 128,9062 | 73,389 | 0 | 4,17361 | 3,05868 | 4 | 2,52005 | 19,11401 | 277,90494 | 142,3431 | 135,56184 | 28,7375 | 3,27687 | 0,00338 | 4 | 0,92733 | 0,75416 | 2,64946 | 29,38002 |
| 15,85 | 4,32133 | 131,0724 | 184,202 | 0 | 4,25727 | 3,15705 | 4 | 2,52305 | 19,18086 | 278,86398 | 142,8336 | 136,03038 | 29,24643 | 3,37834 | -0,01249 | 4 | 0,92871 | 0,75144 | 2,65247 | 29,89511 |
| 15,9 | 3,89977 | 143,2331 | 21,786 | 0 | 4,10502 | 3,53955 | 4 | 2,5686 | 19,25655 | 279,82681 | 143,3241 | 136,50271 | 28,02286 | 3,79848 | -0,01663 | 4 | 0,94777 | 0,74459 | 2,70195 | 28,48203 |
| 15,95 | 4,09397 | 161,5921 | 33,162 | 0 | 4,10451 | 3,72769 | 4 | 2,58418 | 19,31594 | 280,7926 | 143,8146 | 136,978 | 27,91483 | 4,00144 | -0,0204 | 4 | 0,95447 | 0,74058 | 2,71893 | 28,31765 |
| 16 | 4,31979 | 154,1855 | 142,533 | 0 | 4,23229 | 3,73891 | 4 | 2,57551 | 19,36641 | 281,76093 | 144,3051 | 137,45583 | 28,74035 | 4,00558 | -0,00938 | 4 | 0,9511 | 0,73891 | 2,70945 | 29,19094 |
| 16,05 | 4,28311 | 158,9469 | 146,057 | 0 | 4,47347 | 3,5075 | 4 | 2,53892 | 19,37792 | 282,72982 | 144,7956 | 137,93422 | 30,38214 | 3,74414 | 0,00384 | 4 | 0,93645 | 0,73995 | 2,67032 | 31,00945 |
| 16,1 | 4,8175 | 157,5885 | 194,136 | 0 | 4,84624 | 3,34186 | 4 | 2,49934 | 19,44503 | 283,70207 | 145,2861 | 138,41597 | 32,96249 | 3,54966 | -0,00756 | 4 | 0,92013 | 0,74147 | 2,62676 | 33,82961 |
| 16,15 | 5,4381 | 169,3274 | -7,852 | 0 | 5,1125 | 3,24169 | 4 | 2,47349 | 19,49206 | 284,67668 | 145,7766 | 138,90008 | 34,75755 | 3,43284 | -0,01907 | 4 | 0,90972 | 0,74162 | 2,59878 | 35,80403 |
| 16,2 | 5,08191 | 170,2783 | -25,179 | 0 | 5,28787 | 3,40647 | 4 | 2,47823 | 19,60083 | 285,65672 | 146,2671 | 139,38962 | 35,88658 | 3,601 | -0,03052 | 4 | 0,91149 | 0,73881 | 2,60277 | 36,95711 |
| 16,25 | 5,34361 | 200,7837 | 13,868 | 0 | 5,258 | 3,55676 | 4 | 2,49325 | 19,6418 | 286,63881 | 146,7576 | 139,88121 | 35,53988 | 3,76184 | -0,02353 | 4 | 0,91807 | 0,73482 | 2,61943 | 36,53067 |
| 16,3 | 5,34848 | 189,9813 | 100,58235 | 0 | 5,42556 | 3,67615 | 4 | 2,49392 | 19,72789 | 287,6252 | 147,2481 | 140,3771 | 36,60095 | 3,88194 | -0,02274 | 4 | 0,91834 | 0,73237 | 2,61949 | 37,62878 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 16,35 | 5,58459 | 207,5896 | -23,228 | 0 | 5,63566 | 3,63978 | 4 | 2,47933 | 19,77473 | 288,61394 | 147,7386 | 140,87534 | 37,95589 | 3,83624 | -0,01871 | 4 | 0,91264 | 0,73142 | 2,60382 | 39,10949 |
| 16,4 | 5,97392 | 217,8058 | 65,685 | 0 | 6,0833 | 3,43462 | 4 | 2,43814 | 19,82522 | 289,6052 | 148,2291 | 141,3761 | 40,98072 | 3,60631 | -0,02042 | 4 | 0,89596 | 0,73328 | 2,55931 | 42,48398 |
| 16,45 | 6,69139 | 201,4199 | 47,325 | 0 | 6,66416 | 3,13719 | 5 | 2,38233 | 19,8609 | 290,59824 | 148,7196 | 141,87864 | 44,92263 | 3,28022 | -0,01902 | 4 | 0,87344 | 0,73673 | 2,49945 | 46,95603 |
| 16,5 | 7,32717 | 207,9757 | -30,441 | 0 | 7,01615 | 2,89591 | 5 | 2,34181 | 19,84778 | 291,59063 | 149,2101 | 142,38053 | 47,22946 | 3,02148 | -0,0237 | 4 | 0,85761 | 0,73858 | 2,45715 | 49,66642 |
| 16,55 | 7,02988 | 200,1474 | -47,407 | 0 | 7,10965 | 2,86771 | 5 | 2,33475 | 19,85683 | 292,58348 | 149,7006 | 142,88288 | 47,71087 | 2,99079 | -0,02768 | 4 | 0,85533 | 0,73695 | 2,45049 | 50,23866 |
| 16,6 | 6,9719 | 203,5289 | -39,227 | 0 | 7,10553 | 2,97374 | 5 | 2,34628 | 19,89771 | 293,57836 | 150,1911 | 143,38726 | 47,50739 | 3,1019 | -0,02747 | 4 | 0,86043 | 0,73339 | 2,46323 | 49,95801 |
| 16,65 | 7,31482 | 230,2238 | -24,179 | 0 | 7,31801 | 3,07513 | 5 | 2,34801 | 19,98147 | 294,57743 | 150,6816 | 143,89583 | 48,80917 | 3,20411 | -0,0266 | 4 | 0,8612 | 0,73095 | 2,46457 | 51,338 |
| 16,7 | 7,66732 | 241,3622 | -44,932 | 0 | 7,59912 | 3,10951 | 5 | 2,34034 | 20,05207 | 295,58004 | 151,1721 | 144,40794 | 50,57577 | 3,23536 | -0,02509 | 4 | 0,85821 | 0,72952 | 2,45605 | 53,28077 |
| 16,75 | 7,81523 | 237,3015 | -27,08 | 0 | 7,89593 | 3,04867 | 5 | 2,32273 | 20,08811 | 296,58444 | 151,6626 | 144,92184 | 52,43754 | 3,16766 | -0,02461 | 4 | 0,85142 | 0,72913 | 2,43751 | 55,40937 |
| 16,8 | 8,20524 | 243,4998 | -34,129 | 0 | 8,1553 | 2,9139 | 5 | 2,29879 | 20,08567 | 297,58873 | 152,1531 | 145,43563 | 54,02882 | 3,02426 | -0,02382 | 5 | 0,84233 | 0,72942 | 2,4129 | 57,31577 |
| 16,85 | 8,44544 | 232,1112 | -43,752 | 0 | 8,47372 | 2,80955 | 5 | 2,27586 | 20,10246 | 298,59385 | 152,6436 | 145,95025 | 56,01312 | 2,91217 | -0,0233 | 5 | 0,83351 | 0,72968 | 2,38903 | 59,6524 |
| 16,9 | 8,77049 | 238,6098 | -35,686 | 0 | 8,82213 | 2,64906 | 5 | 2,24524 | 20,0966 | 299,59868 | 153,1341 | 146,46458 | 58,18832 | 2,74218 | -0,02275 | 5 | 0,82172 | 0,73083 | 2,35732 | 62,28493 |
| 16,95 | 9,25045 | 230,3883 | -42,752 | 0 | 9,07965 | 2,51608 | 5 | 2,22036 | 20,08148 | 300,60275 | 153,6246 | 146,97815 | 59,73026 | 2,60223 | -0,0227 | 5 | 0,81233 | 0,73137 | 2,33195 | 64,20696 |
| 17 | 9,218 | 216,3545 | -58,587 | 0 | 9,11025 | 2,50095 | 5 | 2,21745 | 20,07971 | 301,60674 | 154,1151 | 147,49164 | 59,72302 | 2,58659 | -0,02312 | 5 | 0,81181 | 0,72944 | 2,32989 | 64,25422 |
| 17,05 | 8,86231 | 236,7867 | -47,259 | 0 | 8,86995 | 2,67448 | 5 | 2,24668 | 20,11588 | 302,61253 | 154,6056 | 148,00693 | 57,8847 | 2,76895 | -0,02434 | 5 | 0,82414 | 0,72388 | 2,36162 | 62,01682 |
| 17,1 | 8,52954 | 258,5344 | -55,964 | 0 | 8,67325 | 2,886 | 5 | 2,27759 | 20,16904 | 303,62099 | 155,0961 | 148,52489 | 56,35172 | 2,9907 | -0,02507 | 5 | 0,83705 | 0,71812 | 2,39488 | 60,10387 |
| 17,15 | 8,62791 | 255,6104 | -60,931 | 0 | 8,55899 | 3,05178 | 5 | 2,2994 | 20,21295 | 304,63163 | 155,5866 | 149,04503 | 55,38162 | 3,1644 | -0,02627 | 5 | 0,84631 | 0,71338 | 2,41855 | 58,88478 |
| 17,2 | 8,51951 | 269,4583 | -66,898 | 0 | 8,74169 | 3,03011 | 5 | 2,29096 | 20,23715 | 305,64349 | 156,0771 | 149,56639 | 56,40338 | 3,13989 | -0,02585 | 5 | 0,84334 | 0,71212 | 2,41004 | 60,07516 |
| 17,25 | 9,07766 | 269,5799 | -58,21 | 0 | 9,17208 | 2,99253 | 5 | 2,27299 | 20,2965 | 306,65832 | 156,5676 | 150,09072 | 59,06709 | 3,09604 | -0,02465 | 5 | 0,83621 | 0,71208 | 2,3906 | 63,12919 |
| 17,3 | 9,91907 | 284,3929 | -60,882 | 0 | 10,21694 | 2,79479 | 5 | 2,21969 | 20,38333 | 307,67748 | 157,0581 | 150,61938 | 65,79007 | 2,88156 | -0,02197 | 5 | 0,81449 | 0,71634 | 2,33277 | 70,98384 |
| 17,35 | 11,65408 | 302,6518 | -62,8 | 0 | 11,92439 | 2,3962 | 5 | 2,1252 | 20,44336 | 308,69965 | 157,5486 | 151,15105 | 76,84821 | 2,45988 | -0,01866 | 5 | 0,77578 | 0,7258 | 2,23146 | 84,3064 |
| 17,4 | 14,20001 | 270,1518 | -53,767 | 0 | 13,08334 | 2,10325 | 5 | 2,05606 | 20,43562 | 309,72143 | 158,0391 | 151,68233 | 84,21299 | 2,15425 | -0,01686 | 5 | 0,74833 | 0,73215 | 2,1587 | 93,52217 |
| 17,45 | 13,39594 | 252,7222 | -55,325 | 0 | 13,45902 | 1,92694 | 5 | 2,01946 | 20,37832 | 310,74035 | 158,5296 | 152,21075 | 86,38209 | 1,97248 | -0,0162 | 5 | 0,73443 | 0,73452 | 2,12152 | 96,57725 |
| 17,5 | 12,78112 | 255,1672 | -54,489 | 0 | 13,32784 | 2,05077 | 5 | 2,04251 | 20,43495 | 311,76209 | 159,0201 | 152,74199 | 85,21608 | 2,09989 | -0,01658 | 5 | 0,74405 | 0,72967 | 2,14607 | 94,97415 |
| 17,55 | 13,80645 | 312,0815 | -60,554 | 0 | 13,91282 | 2,16339 | 5 | 2,0478 | 20,56233 | 312,79021 | 159,5106 | 153,27961 | 88,72691 | 2,21315 | -0,0161 | 5 | 0,74598 | 0,72716 | 2,15044 | 98,89433 |
| 17,6 | 15,15088 | 335,7166 | -63,472 | 0 | 14,72985 | 2,27259 | 5 | 2,04818 | 20,7065 | 313,82554 | 160,0011 | 153,82444 | 93,71739 | 2,32206 | -0,01546 | 5 | 0,74581 | 0,72529 | 2,14927 | 104,55867 |
| 17,65 | 15,23222 | 356,4491 | -64,652 | 0 | 14,98989 | 2,34197 | 5 | 2,05343 | 20,76793 | 314,86393 | 160,4916 | 154,37233 | 95,06256 | 2,39222 | -0,01529 | 5 | 0,74815 | 0,72264 | 2,1547 | 106,04734 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 17,7 | 14,58658 | 361,0102 | -63,668 | 0 | 14,78458 | 2,43737 | 5 | 2,07065 | 20,79271 | 315,90357 | 160,9821 | 154,92147 | 93,39364 | 2,49059 | -0,01559 | 5 | 0,75561 | 0,71837 | 2,17354 | 103,93919 |
| 17,75 | 14,53495 | 363,6054 | -65,586 | 0 | 14,60548 | 2,50697 | 5 | 2,08348 | 20,8064 | 316,94389 | 161,4726 | 155,47129 | 91,90468 | 2,56258 | -0,01585 | 5 | 0,76135 | 0,71464 | 2,1879 | 102,11153 |
| 17,8 | 14,69492 | 373,8501 | -65,832 | 0 | 14,85503 | 2,50769 | 5 | 2,07896 | 20,83272 | 317,98552 | 161,9631 | 156,02242 | 93,17279 | 2,56254 | -0,0157 | 5 | 0,75995 | 0,71316 | 2,1835 | 103,67246 |
| 17,85 | 15,33522 | 380,0984 | -67,373 | 0 | 14,75384 | 2,63926 | 5 | 2,09815 | 20,88106 | 319,02958 | 162,4536 | 156,57598 | 92,19043 | 2,69759 | -0,01588 | 5 | 0,76805 | 0,70867 | 2,20403 | 102,2945 |
| 17,9 | 14,23137 | 414,2284 | -66,947 | 0 | 14,38586 | 2,92305 | 5 | 2,13976 | 20,9598 | 320,07757 | 162,9441 | 157,13347 | 89,5149 | 2,98956 | -0,01639 | 5 | 0,78507 | 0,70132 | 2,24798 | 98,64585 |
| 17,95 | 13,591 | 467,1893 | -68,357 | 0 | 12,66737 | 3,36288 | 5 | 2,22176 | 20,92592 | 321,12386 | 163,4346 | 157,68926 | 78,29476 | 3,45035 | -0,01321 | 5 | 0,81984 | 0,68839 | 2,33744 | 84,99034 |
| 18 | 10,17973 | 396,5486 | 136,402 | 0 | 12,13931 | 3,62091 | 8 | 2,25843 | 20,94565 | 322,17114 | 163,9251 | 158,24604 | 74,67575 | 3,71962 | -0,0142 | 4 | 0,8353 | 0,68155 | 2,37738 | 80,53964 |
| 18,05 | 12,64721 | 454,9214 | -79,503 | 0 | 11,15001 | 3,95709 | 9 | 2,31156 | 20,9174 | 323,21701 | 164,4156 | 158,80141 | 68,17821 | 4,07523 | -0,01585 | 4 | 0,8579 | 0,67249 | 2,43609 | 72,80945 |
| 18,1 | 10,6231 | 472,1794 | -78,454 | 0 | 11,08769 | 4,16791 | 9 | 2,33082 | 20,96851 | 324,26544 | 164,9061 | 159,35934 | 67,54185 | 4,29348 | -0,02255 | 4 | 0,86604 | 0,66793 | 2,45676 | 71,89263 |
| 18,15 | 9,99276 | 459,2752 | -75,504 | 0 | 10,29668 | 4,48102 | 9 | 2,37539 | 20,93831 | 325,31236 | 165,3966 | 159,91576 | 62,35386 | 4,62721 | -0,02429 | 4 | 0,88523 | 0,65995 | 2,50652 | 65,80574 |
| 18,2 | 10,27417 | 452,7337 | -76,471 | 0 | 10,31483 | 4,32527 | 9 | 2,36283 | 20,90032 | 326,35737 | 165,8871 | 160,47027 | 62,24498 | 4,4666 | -0,02407 | 4 | 0,88107 | 0,65922 | 2,49483 | 65,84642 |
| 18,25 | 10,67755 | 426,4249 | -71,619 | 0 | 10,70146 | 3,97142 | 9 | 2,32385 | 20,85858 | 327,4003 | 166,3776 | 161,0227 | 64,42607 | 4,09676 | -0,02309 | 4 | 0,86608 | 0,66194 | 2,45465 | 68,67004 |
| 18,3 | 11,15266 | 395,8409 | -71,537 | 0 | 11,30644 | 3,40569 | 5 | 2,25686 | 20,76615 | 328,43861 | 166,8681 | 161,57051 | 67,94558 | 3,50758 | -0,02158 | 5 | 0,84002 | 0,6683 | 2,38531 | 73,36592 |
| 18,35 | 12,08911 | 332,9212 | -67,012 | 0 | 11,78407 | 3,02433 | 5 | 2,20557 | 20,693 | 329,47326 | 167,3586 | 162,11466 | 70,65738 | 3,11132 | -0,02069 | 5 | 0,82024 | 0,67282 | 2,33248 | 77,06828 |
| 18,4 | 12,11044 | 340,4064 | -70,209 | 0 | 11,96939 | 2,83766 | 5 | 2,17996 | 20,64365 | 330,50544 | 167,8491 | 162,65634 | 71,55504 | 2,91824 | -0,02035 | 5 | 0,81078 | 0,67407 | 2,30683 | 78,45448 |
| 18,45 | 11,70861 | 345,6253 | -69,93 | 0 | 11,88782 | 2,90893 | 5 | 2,19013 | 20,66169 | 331,53853 | 168,3396 | 163,19893 | 70,81104 | 2,99239 | -0,02054 | 5 | 0,81544 | 0,67072 | 2,31838 | 77,51037 |
| 18,5 | 11,84442 | 351,3946 | -66,783 | 0 | 11,92211 | 3,00459 | 5 | 2,20016 | 20,70333 | 332,57369 | 168,8301 | 163,74359 | 70,77856 | 3,09081 | -0,0205 | 5 | 0,81985 | 0,66745 | 2,32928 | 77,35394 |
| 18,55 | 12,2133 | 377,6105 | -69,684 | 0 | 11,98564 | 3,07229 | 5 | 2,20617 | 20,73711 | 333,61055 | 169,3206 | 164,28995 | 70,92359 | 3,16025 | -0,02048 | 5 | 0,82269 | 0,66469 | 2,33601 | 77,44999 |
| 18,6 | 11,89921 | 375,6945 | -71,307 | 0 | 11,93764 | 3,16471 | 5 | 2,21725 | 20,76505 | 334,6488 | 169,8111 | 164,8377 | 70,39042 | 3,25598 | -0,02071 | 5 | 0,82764 | 0,66123 | 2,34833 | 76,7228 |
| 18,65 | 11,70042 | 380,0699 | -70,356 | 0 | 11,71869 | 3,1732 | 5 | 2,22323 | 20,73974 | 335,68579 | 170,3016 | 165,38419 | 68,82765 | 3,26678 | -0,02116 | 5 | 0,83095 | 0,65833 | 2,3563 | 74,93734 |
| 18,7 | 11,55644 | 359,8092 | -69,897 | 0 | 11,5472 | 3,19065 | 5 | 2,22913 | 20,72344 | 336,72196 | 170,7921 | 165,92986 | 67,56157 | 3,28649 | -0,02151 | 5 | 0,83416 | 0,65546 | 2,364 | 73,48049 |
| 18,75 | 11,38475 | 365,4141 | -70,734 | 0 | 11,34695 | 3,24112 | 5 | 2,23922 | 20,71466 | 337,75769 | 171,2826 | 166,47509 | 66,13115 | 3,34056 | -0,02193 | 5 | 0,83903 | 0,65205 | 2,37609 | 71,78553 |
| 18,8 | 11,09965 | 378,0824 | -69,897 | 0 | 11,19468 | 3,33962 | 5 | 2,25299 | 20,72838 | 338,79411 | 171,7731 | 167,02101 | 64,99715 | 3,44384 | -0,02229 | 5 | 0,84523 | 0,6482 | 2,39168 | 70,36766 |
| 18,85 | 10,54287 | 375,33 | -71,717 | 0 | 10,72846 | 3,507 | 5 | 2,28113 | 20,71939 | 339,83008 | 172,2636 | 167,56648 | 61,99708 | 3,62172 | -0,02343 | 4 | 0,85755 | 0,64231 | 2,4234 | 66,7277 |

| | In situ data | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 1,5 | 0,25078 | 37,9119 | 28,884 | 0 | 0,22479 | 17,93541 | 2 | 3,98476 | 16,66799 | 25,00198 | 4,4145 | 20,58748 | 9,70418 | 20,17993 | 0,16561 | 2 | 1 | 2 | 3,82138 | 3,99569 |
| 1,55 | 0,1728 | 45,1254 | 54,734 | 0 | 0,15446 | 28,1041 | 2 | 4,23392 | 16,60915 | 25,83244 | 4,905 | 20,92744 | 6,14636 | 33,74829 | 0,42325 | 2 | 1 | 2 | 4,06 | 2,57255 |
| 1,6 | 0,11778 | 39,978 | 68,57 | 0 | 0,1371 | 28,20791 | 2 | 4,27525 | 16,43049 | 26,65397 | 5,3955 | 21,25847 | 5,19523 | 35,01553 | 0,55073 | 2 | 1 | 2 | 4,06 | 2,20885 |
| 1,65 | 0,12071 | 30,9129 | 75,356 | 0 | 0,12626 | 24,90565 | 2 | 4,26988 | 16,16102 | 27,46202 | 5,886 | 21,57602 | 4,57922 | 31,82822 | 0,67105 | 2 | 1 | 2 | 4,06 | 1,97603 |
| 1,7 | 0,1403 | 23,4492 | 72,635 | 0 | 0,15833 | 15,91023 | 2 | 4,07402 | 15,99266 | 28,26165 | 6,3765 | 21,88515 | 5,94338 | 19,36717 | 0,43215 | 2 | 1 | 2 | 3,95185 | 2,60143 |
| 1,75 | 0,21399 | 21,2115 | 39,768 | 0 | 0,18978 | 11,5649 | 2 | 3,92893 | 15,90358 | 29,05683 | 6,867 | 22,18983 | 7,2431 | 13,6557 | 0,28651 | 2 | 1 | 2 | 3,785 | 3,21446 |
| 1,8 | 0,21505 | 21,1829 | 46,342 | 0 | 0,22539 | 9,39094 | 2 | 3,81572 | 15,92781 | 29,85322 | 7,3575 | 22,49572 | 8,69218 | 10,82468 | 0,17193 | 2 | 1 | 2 | 3,65565 | 3,91074 |
| 1,85 | 0,24713 | 21,1043 | 36,817 | 0 | 0,23355 | 8,52613 | 2 | 3,77906 | 15,87122 | 30,64678 | 7,848 | 22,79878 | 8,89974 | 9,81392 | 0,16669 | 2 | 1 | 2 | 3,61683 | 4,05806 |
| 1,9 | 0,23847 | 17,4511 | 41,85 | 0 | 0,25168 | 6,50964 | 2 | 3,68648 | 15,67548 | 31,43055 | 8,3385 | 23,09205 | 9,53789 | 7,4386 | 0,11382 | 3 | 1 | 2 | 3,51581 | 4,40499 |
| 1,95 | 0,26944 | 10,595 | 21,556 | 0 | 0,27278 | 4,31397 | 3 | 3,56113 | 15,32567 | 32,19684 | 8,829 | 23,36784 | 10,29534 | 4,89131 | 0,09683 | 3 | 1 | 2 | 3,37894 | 4,8116 |
| 2 | 0,31042 | 7,2564 | 32,965 | 0 | 0,28249 | 2,7459 | 3 | 3,44966 | 14,85966 | 32,93982 | 9,3195 | 23,62032 | 10,56492 | 3,10835 | 0,08512 | 3 | 1 | 2 | 3,25818 | 4,99094 |
| 2,05 | 0,2676 | 5,419 | 37,162 | 0 | 0,26021 | 2,25288 | 3 | 3,44085 | 14,50605 | 33,66512 | 9,81 | 23,85512 | 9,49684 | 2,58766 | 0,13279 | 3 | 1 | 2 | 3,25329 | 4,53096 |
| 2,1 | 0,20262 | 4,9115 | 49,554 | 0 | 0,25534 | 1,96832 | 3 | 3,42181 | 14,3217 | 34,38121 | 10,3005 | 24,08071 | 9,17562 | 2,27459 | 0,14783 | 3 | 1 | 2 | 3,23502 | 4,41911 |
| 2,15 | 0,29579 | 4,747 | 42,178 | 0 | 0,26229 | 1,93615 | 3 | 3,40819 | 14,34394 | 35,0984 | 10,791 | 24,3074 | 9,34646 | 2,23527 | 0,15458 | 3 | 1 | 2 | 3,22078 | 4,54377 |
| 2,2 | 0,28845 | 5,5763 | 45,997 | 0 | 0,28236 | 1,866 | 3 | 3,37237 | 14,41461 | 35,81914 | 11,2815 | 24,53764 | 10,04759 | 2,1371 | 0,13572 | 3 | 1 | 2 | 3,18027 | 4,93088 |
| 2,25 | 0,26285 | 5,4834 | 46,05256 | 0 | 0,35394 | 1,58764 | 3 | 3,2534 | 14,57529 | 36,5479 | 11,772 | 24,7759 | 12,81038 | 1,77046 | 0,09725 | 3 | 1 | 2 | 3,0447 | 6,34778 |
| 2,3 | 0,51051 | 5,798 | 35,867 | 0 | 0,70271 | 0,82407 | 4 | 2,86387 | 14,87286 | 37,29154 | 12,2625 | 25,02904 | 26,58599 | 0,87025 | 0,03568 | 4 | 0,85953 | 2 | 2,61685 | 13,30844 |
| 2,35 | 1,33478 | 6,0911 | 26,09855 | 0 | 1,43437 | 0,42266 | 5 | 2,46855 | 15,1992 | 38,0515 | 12,753 | 25,2985 | 55,19372 | 0,43418 | 0,00937 | 5 | 0,70017 | 2 | 2,19821 | 27,92637 |
| 2,4 | 2,45782 | 6,2984 | 15,556 | 0 | 2,06121 | 0,30037 | 5 | 2,27139 | 15,36238 | 38,81962 | 13,2435 | 25,57612 | 79,07351 | 0,30613 | 0,00387 | 6 | 0,62187 | 2 | 1,99235 | 40,44787 |
| 2,45 | 2,39104 | 6,184 | 21,572 | 0 | 2,36716 | 0,26517 | 5 | 2,19781 | 15,43127 | 39,59119 | 13,734 | 25,85719 | 90,01633 | 0,26968 | 0,00206 | 6 | 0,59292 | 2 | 1,916 | 46,55138 |
| 2,5 | 2,25262 | 6,3484 | 18,491 | 0 | 2,26967 | 0,28737 | 5 | 2,22568 | 15,45927 | 40,36415 | 14,2245 | 26,13965 | 85,28459 | 0,29257 | 0,00242 | 6 | 0,60443 | 2 | 1,94582 | 44,58618 |
| 2,55 | 2,16536 | 7,0348 | 18,819 | 0 | 2,1673 | 0,31953 | 5 | 2,25913 | 15,5105 | 41,13967 | 14,715 | 26,42467 | 80,46105 | 0,32571 | 0,00198 | 6 | 0,61829 | 2 | 1,98184 | 42,52314 |
| 2,6 | 2,08391 | 7,3922 | 19,474 | 0 | 2,09411 | 0,34925 | 5 | 2,28586 | 15,5601 | 41,91768 | 15,2055 | 26,71218 | 76,82597 | 0,35638 | 0,00208 | 6 | 0,62948 | 2 | 2,01082 | 41,04378 |
| 2,65 | 2,03305 | 7,5137 | 20,114 | 0 | 2,04949 | 0,36115 | 5 | 2,29957 | 15,56563 | 42,69596 | 15,696 | 26,99996 | 74,32582 | 0,36883 | 0,00212 | 6 | 0,63523 | 2 | 2,02554 | 40,13588 |
| 2,7 | 2,03151 | 7,2993 | 20,245 | 0 | 2,04516 | 0,35865 | 5 | 2,29941 | 15,5544 | 43,47368 | 16,1865 | 27,28718 | 73,35641 | 0,36644 | 0,00217 | 6 | 0,63534 | 2 | 2,02546 | 40,03379 |
| 2,75 | 2,07093 | 7,192 | 21,245 | 0 | 2,09641 | 0,36944 | 5 | 2,29368 | 15,62644 | 44,255 | 16,677 | 27,578 | 74,41263 | 0,3774 | 0,00208 | 6 | 0,6336 | 2 | 2,02051 | 41,04303 |
| 2,8 | 2,18678 | 8,7434 | 21,359 | 0 | 2,18479 | 0,40346 | 5 | 2,29036 | 15,79113 | 45,04456 | 17,1675 | 27,87706 | 76,75662 | 0,41196 | 0,00199 | 6 | 0,63328 | 2 | 2,01927 | 42,79498 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 2,85 | 2,29667 | 10,5092 | 21,687 | 0 | 2,2787 | 0,44415 | 5 | 2,28881 | 15,96619 | 45,84287 | 17,658 | 28,18487 | 79,22196 | 0,45327 | 0,00198 | 6 | 0,63375 | 2 | 2,0201 | 44,65721 |
| 2,9 | 2,35266 | 11,1098 | 23,179 | 0 | 2,35798 | 0,4471 | 5 | 2,27617 | 16,02627 | 46,64418 | 18,1485 | 28,49568 | 81,11179 | 0,45613 | 0,00218 | 6 | 0,62921 | 2 | 2,00779 | 46,22672 |
| 2,95 | 2,42461 | 10,0088 | 24,703 | 0 | 2,4542 | 0,41248 | 5 | 2,24689 | 15,99491 | 47,44393 | 18,639 | 28,80493 | 83,55363 | 0,42062 | 0,00243 | 6 | 0,61753 | 2 | 1,97672 | 48,13512 |
| 3 | 2,58533 | 9,251 | 25,572 | 0 | 2,57111 | 0,36036 | 5 | 2,20681 | 15,91089 | 48,23947 | 19,1295 | 29,10997 | 86,66677 | 0,36725 | 0,00253 | 6 | 0,60125 | 2 | 1,93358 | 50,45734 |
| 3,05 | 2,70338 | 8,5361 | 26,244 | 0 | 2,70027 | 0,32371 | 5 | 2,17079 | 15,86268 | 49,0326 | 19,62 | 29,4126 | 90,1395 | 0,3297 | 0,00238 | 6 | 0,58676 | 2 | 1,89517 | 53,02475 |
| 3,1 | 2,8121 | 8,436 | 25,966 | 0 | 2,80641 | 0,31665 | 5 | 2,1518 | 15,89643 | 49,82743 | 20,1105 | 29,71693 | 92,76147 | 0,32237 | 0,00225 | 6 | 0,57953 | 2 | 1,87578 | 55,13172 |
| 3,15 | 2,90376 | 9,6871 | 26,703 | 0 | 2,92577 | 0,32246 | 5 | 2,13745 | 15,98125 | 50,62649 | 20,601 | 30,02549 | 95,75687 | 0,32814 | 0,00206 | 6 | 0,57474 | 1,99666 | 1,86264 | 57,40699 |
| 3,2 | 3,06146 | 10,1804 | 26,867 | 0 | 3,01154 | 0,32412 | 5 | 2,12642 | 16,03146 | 51,42806 | 21,0915 | 30,33656 | 97,57572 | 0,32975 | 0,00198 | 6 | 0,5724 | 1,97935 | 1,85534 | 58,59109 |
| 3,25 | 3,0694 | 9,4154 | 27,31 | 0 | 3,042 | 0,33341 | 5 | 2,12657 | 16,0794 | 52,23203 | 21,582 | 30,65003 | 97,54535 | 0,33923 | 0,00201 | 6 | 0,57372 | 1,97081 | 1,85803 | 58,9227 |
| 3,3 | 2,99514 | 10,831 | 28,638 | 0 | 3,03683 | 0,32707 | 5 | 2,12437 | 16,05472 | 53,03477 | 22,0725 | 30,96227 | 96,36865 | 0,33288 | 0,00209 | 6 | 0,57394 | 1,9599 | 1,85774 | 58,47932 |
| 3,35 | 3,04594 | 9,5513 | 28,998 | 0 | 3,07379 | 0,32508 | 5 | 2,11852 | 16,06623 | 53,83808 | 22,563 | 31,27508 | 96,56086 | 0,33087 | 0,00221 | 6 | 0,57311 | 1,94673 | 1,85458 | 58,79028 |
| 3,4 | 3,18028 | 9,5941 | 30,031 | 0 | 3,1528 | 0,30476 | 5 | 2,09861 | 16,03092 | 54,63963 | 23,0535 | 31,58613 | 98,08612 | 0,31013 | 0,00235 | 6 | 0,56742 | 1,92308 | 1,8382 | 59,58012 |
| 3,45 | 3,23218 | 9,6799 | 31,949 | 0 | 3,16724 | 0,29991 | 5 | 2,09441 | 16,01947 | 55,4406 | 23,544 | 31,8966 | 97,55907 | 0,30525 | 0,00298 | 6 | 0,567 | 1,91152 | 1,8362 | 59,48263 |
| 3,5 | 3,08927 | 9,2224 | 36,473 | 0 | 3,04138 | 0,29931 | 5 | 2,11074 | 15,955 | 56,23835 | 24,0345 | 32,20385 | 92,69518 | 0,30495 | 0,00439 | 6 | 0,57315 | 1,91445 | 1,8521 | 57,14917 |
| 3,55 | 2,80269 | 8,4074 | 42,981 | 0 | 2,76912 | 0,30232 | 5 | 2,15064 | 15,82267 | 57,02948 | 24,525 | 32,50448 | 83,43743 | 0,30868 | 0,00678 | 6 | 0,58688 | 1,93389 | 1,8886 | 52,4489 |
| 3,6 | 2,4154 | 7,4852 | 49,276 | 0 | 2,31828 | 0,3605 | 5 | 2,249 | 15,75256 | 57,81711 | 25,0155 | 32,80161 | 68,91317 | 0,36972 | 0,0126 | 6 | 0,62046 | 1,99695 | 1,97903 | 45,14024 |
| 3,65 | 1,73675 | 9,1795 | 68,242 | 0 | 1,67238 | 0,51312 | 5 | 2,43691 | 15,65777 | 58,6 | 25,506 | 33,094 | 48,76362 | 0,53175 | 0,03445 | 5 | 0,69608 | 2 | 2,17724 | 32,27567 |
| 3,7 | 0,865 | 9,0794 | 125,763 | 0 | 1,04075 | 0,84789 | 4 | 2,71335 | 15,50803 | 59,3754 | 25,9965 | 33,3789 | 29,40105 | 0,89919 | 0,09741 | 5 | 0,80907 | 2 | 2,47343 | 19,62749 |
| 3,75 | 0,5205 | 8,2144 | 170,76515 | 0 | 0,64346 | 1,38806 | 3 | 2,99501 | 15,33755 | 60,14228 | 26,487 | 33,65528 | 17,33223 | 1,53118 | 0,248 | 4 | 0,9274 | 2 | 2,78367 | 11,66642 |
| 3,8 | 0,54489 | 9,5012 | 216,922 | 0 | 0,52835 | 1,83435 | 3 | 3,12707 | 15,35594 | 60,91007 | 26,9775 | 33,93257 | 13,77565 | 2,07338 | 0,39165 | 3 | 0,98477 | 2 | 2,93387 | 9,34887 |
| 3,85 | 0,51967 | 11,36 | 242,461 | 0 | 0,54744 | 2,08903 | 3 | 3,14081 | 15,55993 | 61,68807 | 27,468 | 34,22007 | 14,19504 | 2,35432 | 0,42974 | 3 | 0,99071 | 2 | 2,94909 | 9,71511 |
| 3,9 | 0,57777 | 13,4475 | 249,264 | 0 | 0,65295 | 1,96607 | 3 | 3,06121 | 15,76046 | 62,47609 | 27,9585 | 34,51759 | 17,10646 | 2,1741 | 0,33463 | 4 | 0,95657 | 2 | 2,85909 | 11,80948 |
| 3,95 | 0,86141 | 13,7049 | 184,923 | 0 | 0,8356 | 1,6447 | 4 | 2,92982 | 15,93344 | 63,27277 | 28,449 | 34,82377 | 22,17807 | 1,77944 | 0,2178 | 4 | 0,90142 | 2 | 2,71394 | 15,44648 |
| 4 | 1,06761 | 14,0767 | 155,79964 | 0 | 1,03949 | 1,3331 | 4 | 2,80265 | 16,0267 | 64,0741 | 28,9395 | 35,1346 | 27,76226 | 1,42067 | 0,13101 | 4 | 0,84898 | 2 | 2,57588 | 19,50832 |
| 4,05 | 1,18945 | 13,7907 | 129,468 | 0 | 1,18393 | 1,21595 | 4 | 2,73391 | 16,12045 | 64,88012 | 29,43 | 35,45012 | 31,56688 | 1,28645 | 0,10657 | 5 | 0,82115 | 2 | 2,50244 | 22,381 |
| 4,1 | 1,29473 | 15,3206 | 160,78814 | 0 | 1,24279 | 1,16526 | 4 | 2,70658 | 16,14588 | 65,68742 | 29,9205 | 35,76692 | 32,91037 | 1,23029 | 0,10796 | 5 | 0,8103 | 2 | 2,47354 | 23,54205 |
| 4,15 | 1,24419 | 14,334 | 180,74216 | 0 | 1,31682 | 1,11097 | 4 | 2,67463 | 16,17975 | 66,4964 | 30,411 | 36,0854 | 34,6491 | 1,17005 | 0,10942 | 5 | 0,79759 | 2 | 2,43976 | 25,00654 |

| | In situ data | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 4,2 | 1,41155 | 14,2339 | 160,122 | 0 | 1,36975 | 1,07222 | 4 | 2,65226 | 16,19934 | 67,30637 | 30,9015 | 36,40487 | 35,77654 | 1,12763 | 0,08355 | 5 | 0,78879 | 2 | 2,41624 | 26,04881 |
| 4,25 | 1,4535 | 15,4922 | 78,307 | 0 | 1,52312 | 0,96644 | 4 | 2,59041 | 16,24265 | 68,1185 | 31,392 | 36,7265 | 39,6173 | 1,01169 | 0,04328 | 5 | 0,76393 | 2 | 2,35057 | 29,1001 |
| 4,3 | 1,70432 | 14,4341 | 44,653 | 0 | 1,59856 | 0,94141 | 5 | 2,56652 | 16,2866 | 68,93283 | 31,8825 | 37,05033 | 41,28511 | 0,98383 | 0,01164 | 5 | 0,75462 | 2 | 2,32572 | 30,59254 |
| 4,35 | 1,63786 | 15,2205 | 26,113 | 0 | 1,65881 | 0,92718 | 5 | 2,54922 | 16,32583 | 69,74913 | 32,373 | 37,37613 | 42,5154 | 0,96788 | 0,01564 | 5 | 0,74799 | 2 | 2,30789 | 31,78122 |
| 4,4 | 1,63425 | 16,4859 | 100,9261 | 0 | 1,68188 | 0,96887 | 5 | 2,55288 | 16,39761 | 70,56901 | 32,8635 | 37,70551 | 42,73419 | 1,0113 | 0,03155 | 5 | 0,75002 | 2 | 2,31278 | 32,22629 |
| 4,45 | 1,77354 | 17,1794 | 124,075 | 0 | 1,72847 | 0,99942 | 5 | 2,54886 | 16,47523 | 71,39277 | 33,354 | 38,03877 | 43,56276 | 1,04248 | 0,04918 | 5 | 0,74894 | 2 | 2,30952 | 33,14148 |
| 4,5 | 1,77761 | 18,1588 | 119,567 | 0 | 1,8218 | 0,98419 | 5 | 2,52562 | 16,53823 | 72,21968 | 33,8445 | 38,37518 | 45,59146 | 1,02482 | 0,0482 | 5 | 0,74001 | 2 | 2,28563 | 34,99161 |
| 4,55 | 1,91425 | 18,4519 | 110,90311 | 0 | 1,99171 | 0,93852 | 5 | 2,48174 | 16,62033 | 73,0507 | 34,335 | 38,7157 | 49,55757 | 0,97425 | 0,03968 | 5 | 0,72382 | 1,98745 | 2,24234 | 38,13241 |
| 4,6 | 2,28326 | 19,4671 | 100,9261 | 0 | 2,29406 | 0,84215 | 5 | 2,40533 | 16,71246 | 73,88632 | 34,8255 | 39,06082 | 56,83881 | 0,87017 | 0,01994 | 5 | 0,69846 | 1,92819 | 2,17362 | 42,80915 |
| 4,65 | 2,68466 | 20,0391 | 25,458 | 0 | 2,66573 | 0,75343 | 5 | 2,32499 | 16,8147 | 74,72705 | 35,316 | 39,41105 | 65,74314 | 0,77516 | 0,00422 | 5 | 0,67039 | 1,86679 | 2,10203 | 48,36853 |
| 4,7 | 3,02928 | 20,7468 | 12,393 | 0 | 2,97921 | 0,68655 | 5 | 2,26341 | 16,8783 | 75,57097 | 35,8065 | 39,76447 | 73,02086 | 0,70442 | -0,00709 | 6 | 0,64968 | 1,82054 | 2,04738 | 52,8619 |
| 4,75 | 3,22368 | 20,5752 | 7,77 | 0 | 3,03842 | 0,67858 | 5 | 2,25348 | 16,89505 | 76,41572 | 36,297 | 40,11872 | 73,83089 | 0,69609 | -0,00737 | 6 | 0,64715 | 1,8059 | 2,04031 | 53,49064 |
| 4,8 | 2,86229 | 20,5323 | 23,261 | 0 | 2,91055 | 0,70487 | 5 | 2,27771 | 16,87283 | 77,25936 | 36,7875 | 40,47186 | 70,00651 | 0,72409 | -0,00742 | 6 | 0,65661 | 1,81111 | 2,06464 | 51,31418 |
| 4,85 | 2,64569 | 20,4394 | 16,229 | 0 | 2,71426 | 0,77349 | 5 | 2,32351 | 16,87261 | 78,10299 | 37,278 | 40,82499 | 64,57222 | 0,79641 | -0,00703 | 5 | 0,67389 | 1,82891 | 2,10944 | 48,21295 |
| 4,9 | 2,63481 | 22,0122 | 16,737 | 0 | 2,49502 | 0,84862 | 5 | 2,37493 | 16,85007 | 78,9455 | 37,7685 | 41,177 | 58,67543 | 0,87635 | 0,00179 | 5 | 0,69317 | 1,84974 | 2,1595 | 44,69106 |
| 4,95 | 2,20457 | 21,0685 | 93,306 | 0 | 2,29414 | 0,91026 | 5 | 2,42158 | 16,80198 | 79,7856 | 38,259 | 41,5266 | 53,32384 | 0,94306 | 0,02461 | 5 | 0,71073 | 1,86753 | 2,20507 | 41,3539 |
| 5 | 2,04305 | 19,5672 | 168,187 | 0 | 2,08842 | 0,92747 | 5 | 2,46121 | 16,67942 | 80,61957 | 38,7495 | 41,87007 | 47,9532 | 0,96471 | 0,0494 | 5 | 0,72677 | 1,88274 | 2,24323 | 37,80164 |
| 5,05 | 2,01765 | 17,4725 | 152,302 | 0 | 2,12736 | 0,84552 | 5 | 2,43501 | 16,60135 | 81,44963 | 39,24 | 42,20963 | 48,4703 | 0,87918 | 0,06086 | 5 | 0,71684 | 1,85575 | 2,22023 | 37,96703 |
| 5,1 | 2,32139 | 16,922 | 170,76515 | 0 | 2,37119 | 0,68802 | 5 | 2,35195 | 16,53066 | 82,27617 | 39,7305 | 42,54567 | 53,79891 | 0,71276 | 0,05713 | 5 | 0,68755 | 1,79961 | 2,14311 | 41,19153 |
| 5,15 | 2,77452 | 14,5485 | 188,431 | 0 | 2,6291 | 0,58717 | 5 | 2,28132 | 16,50669 | 83,1015 | 40,221 | 42,8805 | 59,37419 | 0,60634 | 0,03339 | 5 | 0,66293 | 1,75302 | 2,07825 | 44,63183 |
| 5,2 | 2,79138 | 14,8416 | 16,507 | 0 | 2,57251 | 0,58907 | 5 | 2,29044 | 16,47702 | 83,92535 | 40,7115 | 43,21385 | 57,58774 | 0,60893 | 0,01423 | 5 | 0,667 | 1,75 | 2,08848 | 43,55035 |
| 5,25 | 2,15164 | 16,0713 | 23,441 | 0 | 2,22011 | 0,73034 | 5 | 2,38917 | 16,49834 | 84,75027 | 41,202 | 43,54827 | 49,03432 | 0,75932 | 0,00915 | 5 | 0,70363 | 1,79486 | 2,18399 | 38,32678 |
| 5,3 | 1,71731 | 17,7299 | 142,287 | 0 | 1,86796 | 1,06347 | 5 | 2,53248 | 16,66571 | 85,58356 | 41,6925 | 43,89106 | 40,60903 | 1,11453 | 0,05167 | 5 | 0,75725 | 1,86557 | 2,324 | 33,25134 |
| 5,35 | 1,73492 | 25,7941 | 235,6157 | 0 | 1,67605 | 1,57879 | 4 | 2,66094 | 16,95397 | 86,43125 | 42,183 | 44,24825 | 35,925 | 1,66464 | 0,11112 | 5 | 0,80673 | 1,93048 | 2,4515 | 30,68722 |
| 5,4 | 1,57592 | 35,8601 | 278,574 | 0 | 1,6516 | 2,1506 | 4 | 2,7401 | 17,28698 | 87,2956 | 42,6735 | 44,6221 | 35,05679 | 2,27061 | 0,15258 | 4 | 0,83744 | 1,96553 | 2,53246 | 30,747 |
| 5,45 | 1,64397 | 44,9038 | 329,898 | 0 | 1,57667 | 2,63172 | 4 | 2,80705 | 17,448 | 88,168 | 43,164 | 45,004 | 33,07495 | 2,7876 | 0,19242 | 4 | 0,86348 | 1,99255 | 2,60084 | 29,6592 |
| 5,5 | 1,51013 | 43,717 | 380,2823 | 0 | 1,55366 | 2,84893 | 4 | 2,83246 | 17,51668 | 89,04384 | 43,6545 | 45,38934 | 32,26792 | 3,02213 | 0,23182 | 4 | 0,87417 | 1,99471 | 2,62843 | 29,21486 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 5,55 | 1,50689 | 44,1674 | 439,367 | 0 | 1,49966 | 3,16731 | 3 | 2,8722 | 17,58429 | 89,92305 | 44,145 | 45,77805 | 30,79504 | 3,36934 | 0,27432 | 4 | 0,8905 | 2 | 2,67089 | 28,19474 |
| 5,6 | 1,48196 | 54,6123 | 472,956 | 0 | 1,5177 | 3,72083 | 3 | 2,91054 | 17,7879 | 90,81245 | 44,6355 | 46,17695 | 30,90043 | 3,95764 | 0,29591 | 4 | 0,90683 | 2 | 2,71323 | 28,53775 |
| 5,65 | 1,56425 | 70,6335 | 488,266 | 0 | 1,54945 | 4,49863 | 3 | 2,95501 | 18,03802 | 91,71435 | 45,126 | 46,58835 | 31,28978 | 4,78166 | 0,30226 | 3 | 0,92568 | 2 | 2,76217 | 29,15478 |
| 5,7 | 1,60215 | 83,8666 | 496,02 | 0 | 1,84684 | 4,46288 | 3 | 2,8942 | 18,29813 | 92,62925 | 45,6165 | 47,01275 | 37,31358 | 4,69854 | 0,24719 | 4 | 0,90331 | 1,97738 | 2,70255 | 34,68748 |
| 5,75 | 2,37413 | 92,7673 | 453,432 | 0 | 2,40149 | 3,69719 | 4 | 2,75436 | 18,4844 | 93,55347 | 46,107 | 47,44647 | 48,64295 | 3,84706 | 0,11964 | 4 | 0,8538 | 1,88998 | 2,57071 | 43,61965 |
| 5,8 | 3,22819 | 89,7289 | 17,245 | 0 | 3,59769 | 2,50149 | 4 | 2,51073 | 18,65493 | 94,48622 | 46,5975 | 47,88872 | 73,15307 | 2,56895 | 0,03037 | 5 | 0,76578 | 1,7574 | 2,3411 | 61,56523 |
| 5,85 | 5,19076 | 87,4912 | -11,704 | 0 | 4,99637 | 1,78725 | 5 | 2,30766 | 18,7719 | 95,42482 | 47,088 | 48,33682 | 101,39163 | 1,82205 | -0,01096 | 5 | 0,69361 | 1,65573 | 2,15126 | 81,14644 |
| 5,9 | 6,57017 | 90,6726 | -25,376 | 0 | 5,4188 | 1,705 | 5 | 2,26747 | 18,84219 | 96,36693 | 47,5785 | 48,78843 | 109,09219 | 1,73587 | -0,00832 | 5 | 0,68033 | 1,62947 | 2,11583 | 86,72776 |
| 5,95 | 4,49548 | 99,0085 | 46,964 | 0 | 4,59463 | 2,16877 | 5 | 2,38966 | 18,86591 | 97,31022 | 48,069 | 49,24122 | 91,33242 | 2,2157 | 0,00854 | 5 | 0,72564 | 1,67208 | 2,23405 | 75,19883 |
| 6 | 2,71824 | 109,2603 | 237,822 | 0 | 3,69047 | 3,04061 | 4 | 2,55792 | 18,9185 | 98,25615 | 48,5595 | 49,69665 | 72,28289 | 3,12378 | 0,07366 | 5 | 0,78809 | 1,73508 | 2,39725 | 62,32798 |
| 6,05 | 3,8577 | 128,37 | 654,65 | 0 | 5,06577 | 2,57241 | 5 | 2,40722 | 19,21196 | 99,21674 | 49,05 | 50,16674 | 99,00084 | 2,6238 | 0,04742 | 5 | 0,73536 | 1,66074 | 2,2583 | 82,48145 |
| 6,1 | 8,62136 | 153,3062 | -38,752 | 0 | 9,14259 | 1,66657 | 5 | 2,09117 | 19,61822 | 100,19766 | 49,5405 | 50,65716 | 178,50184 | 1,68503 | 0,01599 | 6 | 0,62372 | 1,52835 | 1,96475 | 138,19924 |
| 6,15 | 14,94872 | 175,4256 | -33,621 | 0 | 15,28202 | 1,09057 | 6 | 1,80271 | 19,91835 | 101,19357 | 50,031 | 51,16257 | 296,71748 | 1,09784 | -0,00375 | 6 | 0,52209 | 1,4189 | 1,6974 | 215,40098 |
| 6,2 | 22,27599 | 171,2505 | 51,522 | 0 | 19,83357 | 0,87045 | 6 | 1,65331 | 20,05888 | 102,19652 | 50,5215 | 51,67502 | 381,83577 | 0,87496 | -0,00139 | 6 | 0,4698 | 1,36365 | 1,55952 | 269,06637 |
| 6,25 | 27,27953 | 157,753 | 73,766 | 0 | 25,61168 | 0,63351 | 6 | 1,47752 | 20,08551 | 103,20079 | 51,012 | 52,18879 | 488,77318 | 0,63607 | 0,0006 | 6 | 0,40745 | 1,30339 | 1,39525 | 332,47384 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 0,15 | 2,87976 | 54,3549 | -0,492 | 0 | 2,50408 | 2,29085 | 4 | 2,60971 | 17,99796 | 2,69969 | 0 | 2,69969 | 926,54337 | 2,29332 | -0,00025 | 5 | 0,75566 | 2 | 2,37351 | 50,02767 |
| 0,2 | 1,75273 | 63,3843 | -0,918 | 0 | 1,52477 | 4,25684 | 3 | 2,94529 | 17,94984 | 3,59719 | 0 | 3,59719 | 422,87854 | 4,26691 | -0,00074 | 4 | 0,88615 | 2 | 2,71482 | 30,42346 |
| 0,25 | 1,06885 | 67,9526 | -1,557 | 0 | 1,13515 | 5,81703 | 3 | 3,13028 | 17,85646 | 4,49001 | 0 | 4,49001 | 251,81612 | 5,84013 | -0,01038 | 3 | 0,95792 | 2 | 2,90203 | 22,61313 |
| 0,3 | 0,58386 | 66,7587 | -32,719 | 0 | 0,69382 | 8,82987 | 3 | 3,41054 | 17,58147 | 5,36908 | 0 | 5,36908 | 128,22506 | 8,89873 | 0,00541 | 3 | 1 | 2 | 3,18434 | 13,76902 |
| 0,35 | 0,42875 | 49,0789 | 45,44 | 0 | 0,45477 | 10,67053 | 2 | 3,60487 | 17,15137 | 6,22665 | 0 | 6,22665 | 72,03552 | 10,81866 | 0,04641 | 3 | 1 | 2 | 3,37897 | 8,9708 |
| 0,4 | 0,35169 | 29,7404 | 49,735 | 0 | 0,3671 | 9,14537 | 2 | 3,63747 | 16,64548 | 7,05893 | 0 | 7,05893 | 51,00461 | 9,32468 | 0,11241 | 3 | 1 | 2 | 3,40885 | 7,20075 |
| 0,45 | 0,32085 | 21,8978 | 26,244 | 0 | 0,30259 | 7,94252 | 2 | 3,66926 | 16,18686 | 7,86827 | 0 | 7,86827 | 37,45658 | 8,15456 | 0,16225 | 3 | 1 | 2 | 3,43955 | 5,89437 |
| 0,5 | 0,23522 | 20,4608 | 67,471 | 0 | 0,2448 | 8,38532 | 2 | 3,75814 | 15,92424 | 8,66448 | 0 | 8,66448 | 27,25367 | 8,69299 | 0,22101 | 2 | 1 | 2 | 3,5325 | 4,72278 |
| 0,55 | 0,17834 | 19,224 | 62,849 | 0 | 0,18511 | 10,28734 | 2 | 3,90849 | 15,73071 | 9,45102 | 0 | 9,45102 | 18,58625 | 10,84083 | 0,36936 | 2 | 1 | 2 | 3,69281 | 3,51318 |
| 0,6 | 0,14177 | 17,4439 | 64,324 | 0 | 0,15132 | 11,46641 | 2 | 4,00727 | 15,5464 | 10,22834 | 0 | 10,22834 | 13,7942 | 12,29766 | 0,42062 | 2 | 1 | 2 | 3,80164 | 2,82183 |
| 0,65 | 0,13385 | 15,385 | 50,866 | 0 | 0,13637 | 11,44604 | 2 | 4,04407 | 15,3848 | 10,99758 | 0 | 10,99758 | 11,4 | 12,45008 | 0,42978 | 2 | 1 | 2 | 3,84573 | 2,50745 |
| 0,7 | 0,13349 | 13,998 | 46,456 | 0 | 0,13017 | 11,22965 | 2 | 4,05614 | 15,29148 | 11,76215 | 0 | 11,76215 | 10,06685 | 12,34516 | 0,39566 | 2 | 1 | 2 | 3,86338 | 2,36816 |
| 0,75 | 0,12317 | 14,4699 | 43,227 | 0 | 0,12729 | 11,3168 | 2 | 4,06606 | 15,2661 | 12,52546 | 0 | 12,52546 | 9,16277 | 12,55189 | 0,34741 | 2 | 1 | 2 | 3,87856 | 2,29536 |
| 0,8 | 0,12522 | 14,7487 | 29,933 | 0 | 0,12009 | 12,27309 | 2 | 4,10675 | 15,27011 | 13,28896 | 0 | 13,28896 | 8,03707 | 13,80015 | 0,33408 | 2 | 1 | 2 | 3,92824 | 2,13609 |
| 0,85 | 0,11189 | 14,9989 | 33,883 | 0 | 0,11189 | 12,23402 | 2 | 4,13144 | 15,15788 | 14,04686 | 0 | 14,04686 | 6,96525 | 13,99045 | 0,31504 | 2 | 1 | 2 | 3,96229 | 1,9568 |
| 0,9 | 0,09855 | 11,3171 | 28,654 | 0 | 0,10798 | 10,59738 | 2 | 4,10984 | 14,93822 | 14,79377 | 0 | 14,79377 | 6,29925 | 12,2797 | 0,35515 | 2 | 1 | 2 | 3,94586 | 1,86379 |
| 0,95 | 0,11351 | 8,0142 | 36,752 | 0 | 0,11337 | 7,96428 | 2 | 4,02541 | 14,68435 | 15,52798 | 0 | 15,52798 | 6,30123 | 9,2282 | 0,29749 | 2 | 1 | 2 | 3,85709 | 1,95691 |
| 1 | 0,12806 | 7,7568 | 21,917 | 0 | 0,11702 | 6,99701 | 2 | 3,98429 | 14,584 | 16,25718 | 0 | 16,25718 | 6,19825 | 8,12588 | 0,23643 | 2 | 1 | 2 | 3,81546 | 2,01532 |
| 1,05 | 0,1095 | 8,7934 | 12,803 | 0 | 0,24641 | 3,66726 | 3 | 3,56305 | 14,98292 | 17,00633 | 0 | 17,00633 | 13,48931 | 3,93913 | -0,00724 | 3 | 1 | 2 | 3,34404 | 4,58807 |
| 1,1 | 0,50167 | 10,5593 | -39,703 | 0 | 0,29148 | 3,7649 | 3 | 3,50592 | 15,27078 | 17,76987 | 0 | 17,76987 | 15,40305 | 4,00933 | -0,02338 | 3 | 1 | 2 | 3,28415 | 5,4742 |
| 1,15 | 0,26327 | 13,5691 | 7,704 | 0 | 0,38264 | 3,2236 | 3 | 3,3699 | 15,50958 | 18,54535 | 0 | 18,54535 | 19,63249 | 3,38779 | -0,02013 | 3 | 1 | 2 | 3,14048 | 7,28183 |
| 1,2 | 0,38297 | 12,8756 | 10,016 | 0 | 0,41844 | 3,19665 | 3 | 3,33472 | 15,63712 | 19,3272 | 0 | 19,3272 | 20,65031 | 3,35145 | 0,02074 | 3 | 1 | 2 | 3,10481 | 7,98226 |
| 1,25 | 0,60908 | 13,6835 | 7,114 | 0 | 0,5702 | 2,5381 | 3 | 3,16792 | 15,84638 | 20,11952 | 0,3924 | 19,72712 | 27,88448 | 2,63094 | 0,0137 | 3 | 0,97638 | 2 | 2,93049 | 11,00161 |
| 1,3 | 0,71855 | 16,8577 | 6,655 | 0 | 0,63626 | 2,68096 | 3 | 3,13957 | 16,0775 | 20,9234 | 0,8829 | 20,0405 | 30,70466 | 2,77212 | 0,00857 | 3 | 0,96615 | 2 | 2,90322 | 12,30673 |
| 1,35 | 0,58115 | 20,6324 | 4,705 | 0 | 0,50478 | 4,11901 | 3 | 3,32473 | 16,21646 | 21,73422 | 1,3734 | 20,36082 | 23,72444 | 4,30434 | 0,03832 | 3 | 1 | 2 | 3,10034 | 9,66098 |
| 1,4 | 0,21465 | 24,8862 | 48,292 | 0 | 0,3155 | 7,13789 | 2 | 3,62775 | 16,12807 | 22,54062 | 1,8639 | 20,67672 | 14,1684 | 7,68709 | 0,16301 | 3 | 1 | 2 | 3,42578 | 5,85912 |
| 1,45 | 0,15069 | 22,0408 | 95,863 | 0 | 0,16416 | 12,60359 | 2 | 4,00191 | 15,78006 | 23,32963 | 2,3544 | 20,97523 | 6,71397 | 14,69152 | 0,52323 | 2 | 1 | 2 | 3,8497 | 2,81654 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 1,5 | 0,12713 | 15,1419 | 83,962 | 0 | 0,1279 | 11,70999 | 2 | 4,07266 | 15,31272 | 24,09526 | 2,8449 | 21,25036 | 4,885 | 14,42804 | 0,81016 | 2 | 1 | 2 | 3,94973 | 2,07616 |
| 1,55 | 0,10589 | 7,7497 | 81,012 | 0 | 0,11255 | 8,96689 | 2 | 4,05545 | 14,80957 | 24,83574 | 3,3354 | 21,50034 | 4,07967 | 11,50581 | 0,90263 | 2 | 1 | 2 | 3,95082 | 1,75429 |
| 1,6 | 0,10463 | 7,3851 | 82,552 | 0 | 0,11625 | 5,9795 | 2 | 3,95182 | 14,39311 | 25,5554 | 3,8259 | 21,7295 | 4,17395 | 7,66431 | 0,83626 | 2 | 1 | 2 | 3,83949 | 1,81396 |
| 1,65 | 0,13824 | 5,7193 | 75,455 | 0 | 0,12102 | 5,58463 | 2 | 3,92182 | 14,37611 | 26,2742 | 4,3164 | 21,9578 | 4,31475 | 7,13337 | 0,80767 | 2 | 1 | 2 | 3,80659 | 1,89485 |
| 1,7 | 0,12018 | 7,1706 | 84,503 | 0 | 0,12558 | 5,33424 | 2 | 3,89793 | 14,38011 | 26,99321 | 4,8069 | 22,18631 | 4,44359 | 6,79476 | 0,77281 | 2 | 1 | 2 | 3,78061 | 1,97174 |
| 1,75 | 0,11832 | 7,2063 | 83,028 | 0 | 0,11748 | 5,77911 | 2 | 3,94042 | 14,37 | 27,71171 | 5,2974 | 22,41431 | 4,00495 | 7,56314 | 0,87253 | 2 | 1 | 2 | 3,84008 | 1,79537 |
| 1,8 | 0,11394 | 5,991 | 83,339 | 0 | 0,11366 | 5,77834 | 2 | 3,95281 | 14,31914 | 28,42767 | 5,7879 | 22,63977 | 3,76472 | 7,7056 | 0,90898 | 2 | 1 | 2 | 3,86337 | 1,70465 |
| 1,85 | 0,10872 | 6,5057 | 83,421 | 0 | 0,10726 | 5,8567 | 2 | 3,97754 | 14,2457 | 29,13995 | 6,2784 | 22,86155 | 3,41695 | 8,04143 | 0,9997 | 2 | 1 | 2 | 3,90521 | 1,56233 |
| 1,9 | 0,09911 | 6,3484 | 86,356 | 0 | 0,10181 | 6,15362 | 2 | 4,00788 | 14,22265 | 29,85108 | 6,7689 | 23,08218 | 3,11751 | 8,70636 | 1,0937 | 2 | 1 | 2 | 3,95392 | 1,43918 |
| 1,95 | 0,0976 | 5,9409 | 86,634 | 0 | 0,09669 | 6,53103 | 2 | 4,04023 | 14,21204 | 30,56169 | 7,2594 | 23,30229 | 2,83799 | 9,54924 | 1,20422 | 2 | 1 | 2 | 4,00658 | 1,32263 |
| 2 | 0,09337 | 6,6559 | 87,7 | 0 | 0,09598 | 22,75122 | 2 | 4,34118 | 15,63629 | 31,3435 | 7,7499 | 23,5936 | 2,73944 | 33,78431 | 1,12851 | 2 | 1 | 2 | 4,06 | 1,29266 |
| 2,05 | 0,09696 | 52,9108 | 67,734 | 0 | 0,09122 | 51,98524 | 2 | 4,58027 | 16,50893 | 32,16895 | 8,2404 | 23,92855 | 2,46795 | 80,30338 | 1,26716 | 2 | 1 | 2 | 4,06 | 1,18109 |
| 2,1 | 0,08334 | 82,7013 | 93,781 | 0 | 0,0959 | 75,28107 | 2 | 4,66871 | 17,01149 | 33,01952 | 8,7309 | 24,28862 | 2,58875 | 114,81442 | 1,25592 | 2 | 1 | 2 | 4,06 | 1,25754 |
| 2,15 | 0,10739 | 80,964 | 101,584 | 0 | 0,09528 | 85,70315 | 2 | 4,70834 | 17,15069 | 33,87705 | 9,2214 | 24,65565 | 2,49029 | 132,9896 | 1,44768 | 2 | 1 | 2 | 4,06 | 1,22799 |
| 2,2 | 0,0951 | 81,3 | 98,961 | 0 | 0,09367 | 87,67238 | 2 | 4,72045 | 17,15068 | 34,73459 | 9,7119 | 25,02269 | 2,35515 | 139,34652 | 1,49645 | 2 | 1 | 2 | 4,06 | 1,17864 |
| 2,25 | 0,07851 | 84,0954 | 93,158 | 0 | 0,08146 | 99,64095 | 2 | 4,80271 | 17,08366 | 35,58877 | 10,2024 | 25,38637 | 1,80679 | 176,95209 | 1,84467 | 2 | 1 | 2 | 4,06 | 0,91736 |
| 2,3 | 0,07076 | 78,0972 | 92,322 | 0 | 0,07368 | 115,24083 | 2 | 4,87744 | 17,09701 | 36,44362 | 10,6929 | 25,75072 | 1,4459 | 228,0383 | 2,22144 | 2 | 1 | 2 | 4,06 | 0,74466 |
| 2,35 | 0,07176 | 92,5242 | 94,732 | 0 | 0,07298 | 119,82608 | 2 | 4,89189 | 17,12739 | 37,29999 | 11,1834 | 26,11659 | 1,36631 | 245,08093 | 2,31689 | 2 | 1 | 2 | 4,06 | 0,71367 |
| 2,4 | 0,07643 | 91,7378 | 94,519 | 0 | 0,07724 | 120,25073 | 2 | 4,87477 | 17,2184 | 38,16091 | 11,6739 | 26,48701 | 1,47541 | 237,67614 | 2,10106 | 2 | 1 | 2 | 4,06 | 0,78158 |
| 2,45 | 0,08353 | 94,383 | 92,093 | 0 | 0,08125 | 112,26994 | 2 | 4,8384 | 17,2171 | 39,02177 | 12,1644 | 26,85737 | 1,57244 | 216,00683 | 1,91242 | 2 | 1 | 2 | 4,06 | 0,84463 |
| 2,5 | 0,0838 | 87,5484 | 92,175 | 0 | 0,08271 | 109,19054 | 2 | 4,82453 | 17,21242 | 39,88239 | 12,6549 | 27,22749 | 1,57308 | 210,86421 | 1,86171 | 2 | 1 | 2 | 4,06 | 0,85662 |
| 2,55 | 0,08081 | 89,014 | 92,913 | 0 | 0,08082 | 110,21683 | 2 | 4,83471 | 17,1876 | 40,74177 | 13,1454 | 27,59637 | 1,45218 | 222,26773 | 2,00218 | 2 | 1 | 2 | 4,06 | 0,8015 |
| 2,6 | 0,07784 | 90,6583 | 95,06 | 0 | 0,07772 | 119,70223 | 2 | 4,87144 | 17,22271 | 41,6029 | 13,6359 | 27,967 | 1,29154 | 257,57326 | 2,24986 | 2 | 1 | 2 | 4,06 | 0,72241 |
| 2,65 | 0,07452 | 99,4374 | 96,732 | 0 | 0,07584 | 121,52252 | 2 | 4,8837 | 17,20252 | 42,46303 | 14,1264 | 28,33663 | 1,17799 | 276,11113 | 2,49056 | 2 | 1 | 2 | 4,06 | 0,66761 |
| 2,7 | 0,07517 | 86,4045 | 99,994 | 0 | 0,07704 | 115,8159 | 2 | 4,86456 | 17,17127 | 43,32159 | 14,6169 | 28,70469 | 1,17478 | 264,6021 | 2,49941 | 2 | 1 | 2 | 4,06 | 0,67443 |
| 2,75 | 0,08144 | 81,8434 | 99,978 | 0 | 0,07995 | 107,54263 | 2 | 4,83098 | 17,14281 | 44,17873 | 15,1074 | 29,07133 | 1,23047 | 240,36145 | 2,37136 | 2 | 1 | 2 | 4,06 | 0,71543 |
| 2,8 | 0,08324 | 89,6931 | 99,83 | 0 | 0,08124 | 107,45712 | 2 | 4,82561 | 17,16645 | 45,03706 | 15,5979 | 29,43916 | 1,22975 | 241,13555 | 2,32727 | 2 | 1 | 2 | 4,06 | 0,72406 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 2,85 | 0,07904 | 90,358 | 99,748 | 0 | 0,08032 | 110,8525 | 2 | 4,83838 | 17,1847 | 45,89629 | 16,0884 | 29,80789 | 1,15474 | 258,66375 | 2,47672 | 2 | 1 | 2 | 4,06 | 0,68841 |
| 2,9 | 0,07867 | 87,048 | 104,436 | 0 | 0,07962 | 112,71138 | 2 | 4,84605 | 17,19047 | 46,75581 | 16,5789 | 30,17691 | 1,08905 | 273,06565 | 2,61897 | 2 | 1 | 2 | 4,06 | 0,65728 |
| 2,95 | 0,08115 | 91,8164 | 103,764 | 0 | 0,08331 | 115,47381 | 2 | 4,83868 | 17,28781 | 47,6202 | 17,0694 | 30,5508 | 1,16821 | 269,54829 | 2,45086 | 2 | 1 | 2 | 4,06 | 0,7138 |
| 3 | 0,09011 | 109,7393 | 105,42 | 0 | 0,08851 | 112,94747 | 2 | 4,81285 | 17,35528 | 48,48797 | 17,5599 | 30,92807 | 1,29414 | 249,77553 | 2,24603 | 2 | 1 | 2 | 4,06 | 0,80051 |
| 3,05 | 0,09428 | 98,365 | 113,19 | 0 | 0,09623 | 108,21778 | 2 | 4,77362 | 17,43422 | 49,35968 | 18,0504 | 31,30928 | 1,4969 | 222,1913 | 1,98651 | 2 | 1 | 2 | 4,06 | 0,93734 |
| 3,1 | 0,10429 | 104,2988 | 114,846 | 0 | 0,09804 | 102,69065 | 2 | 4,75217 | 17,40261 | 50,22981 | 18,5409 | 31,68891 | 1,50884 | 210,57083 | 1,94447 | 2 | 1 | 2 | 4,06 | 0,95627 |
| 3,15 | 0,09556 | 99,3802 | 106,502 | 0 | 0,10045 | 101,07486 | 2 | 4,73977 | 17,42156 | 51,10089 | 19,0314 | 32,06949 | 1,53882 | 205,73764 | 1,8707 | 2 | 1 | 2 | 4,06 | 0,98698 |
| 3,2 | 0,1015 | 100,9101 | 112,698 | 0 | 0,09745 | 109,42453 | 2 | 4,7729 | 17,46636 | 51,97421 | 19,5219 | 32,45231 | 1,40131 | 234,48563 | 2,0154 | 2 | 1 | 2 | 4,06 | 0,90952 |
| 3,25 | 0,09529 | 119,6123 | 114,321 | 0 | 0,09668 | 113,31901 | 2 | 4,78578 | 17,49447 | 52,84893 | 20,0124 | 32,83653 | 1,33493 | 249,94203 | 2,13128 | 2 | 1 | 2 | 4,06 | 0,87669 |
| 3,3 | 0,09326 | 108,1594 | 113,288 | 0 | 0,09979 | 110,78113 | 2 | 4,76905 | 17,51687 | 53,72477 | 20,5029 | 33,22187 | 1,38649 | 239,99187 | 2,06098 | 2 | 1 | 2 | 4,06 | 0,92124 |
| 3,35 | 0,11081 | 103,8627 | 118,698 | 0 | 0,11953 | 93,19125 | 2 | 4,6605 | 17,59483 | 54,60451 | 20,9934 | 33,61111 | 1,93157 | 171,57225 | 1,384 | 2 | 1 | 2 | 4,06 | 1,29844 |
| 3,4 | 0,15451 | 122,1431 | 100,551 | 0 | 0,12421 | 91,05743 | 2 | 4,64145 | 17,62709 | 55,48587 | 21,4839 | 34,00197 | 2,02108 | 164,57813 | 1,29209 | 2 | 1 | 2 | 4,06 | 1,37442 |
| 3,45 | 0,1073 | 113,2924 | 111,584 | 0 | 0,12291 | 90,29686 | 2 | 4,64229 | 17,60131 | 56,36593 | 21,9744 | 34,39153 | 1,9348 | 166,78636 | 1,32771 | 2 | 1 | 2 | 4,06 | 1,33081 |
| 3,5 | 0,10691 | 97,5071 | 118,829 | 0 | 0,10683 | 99,52583 | 2 | 4,71561 | 17,49828 | 57,24085 | 22,4649 | 34,77595 | 1,42606 | 214,40097 | 1,89112 | 2 | 1 | 2 | 4,06 | 0,99185 |
| 3,55 | 0,10629 | 108,1808 | 118,337 | 0 | 0,10299 | 102,31207 | 2 | 4,73543 | 17,47385 | 58,11454 | 22,9554 | 35,15914 | 1,27635 | 234,80807 | 2,10745 | 2 | 1 | 2 | 4,06 | 0,89751 |
| 3,6 | 0,09577 | 110,4257 | 115,419 | 0 | 0,09879 | 111,62515 | 2 | 4,77449 | 17,51016 | 58,99005 | 23,4459 | 35,54415 | 1,11964 | 277,08578 | 2,31767 | 2 | 1 | 2 | 4,06 | 0,79593 |
| 3,65 | 0,0943 | 112,2058 | 113,288 | 0 | 0,09802 | 115,33692 | 2 | 4,7867 | 17,53578 | 59,86684 | 23,9364 | 35,93044 | 1,06177 | 296,33004 | 2,44081 | 2 | 1 | 2 | 4,06 | 0,763 |
| 3,7 | 0,10398 | 116,5167 | 122,452 | 0 | 0,11117 | 102,72804 | 2 | 4,71241 | 17,59574 | 60,74663 | 24,4269 | 36,31973 | 1,38832 | 226,48775 | 1,91402 | 2 | 1 | 2 | 4,06 | 1,00847 |
| 3,75 | 0,13523 | 113,8858 | 127,074 | 0 | 0,12655 | 90,02853 | 2 | 4,63216 | 17,64269 | 61,62876 | 24,9174 | 36,71136 | 1,76842 | 175,49126 | 1,46195 | 2 | 1 | 2 | 4,06 | 1,29842 |
| 3,8 | 0,14044 | 111,3908 | 109,961 | 0 | 0,13316 | 88,13523 | 2 | 4,60974 | 17,69629 | 62,51357 | 25,4079 | 37,10567 | 1,90384 | 166,12797 | 1,41564 | 2 | 1 | 2 | 4,06 | 1,41286 |
| 3,85 | 0,1238 | 126,7972 | 139,205 | 0 | 0,13184 | 89,30464 | 2 | 4,61681 | 17,69621 | 63,39838 | 25,8984 | 37,49998 | 1,82511 | 172,02872 | 1,49146 | 2 | 1 | 2 | 4,06 | 1,36883 |
| 3,9 | 0,13128 | 115,0297 | 134,763 | 0 | 0,12971 | 89,24439 | 2 | 4,62176 | 17,67045 | 64,28191 | 26,3889 | 37,89301 | 1,72665 | 176,92538 | 1,62957 | 2 | 1 | 2 | 4,06 | 1,30856 |
| 3,95 | 0,13405 | 105,4498 | 125,058 | 0 | 0,13166 | 80,26449 | 2 | 4,58554 | 17,57135 | 65,16047 | 26,8794 | 38,28107 | 1,73714 | 158,91276 | 1,55247 | 2 | 1 | 2 | 4,06 | 1,32999 |
| 4 | 0,12965 | 96,5492 | 130,533 | 0 | 0,13224 | 78,78958 | 2 | 4,57865 | 17,55679 | 66,03831 | 27,3699 | 38,66841 | 1,71212 | 157,38077 | 1,53686 | 2 | 1 | 2 | 4,06 | 1,3241 |
| 4,05 | 0,13303 | 110,5829 | 131,763 | 0 | 0,1346 | 74,67641 | 2 | 4,55718 | 17,52225 | 66,91443 | 27,8604 | 39,05403 | 1,73321 | 148,49838 | 1,56091 | 2 | 1 | 2 | 4,06 | 1,35378 |
| 4,1 | 0,14113 | 94,4187 | 138,254 | 0 | 0,14151 | 74,60171 | 2 | 4,54095 | 17,59788 | 67,79432 | 28,3509 | 39,44342 | 1,86898 | 143,20779 | 1,46364 | 2 | 1 | 2 | 4,06 | 1,47438 |
| 4,15 | 0,15038 | 111,7125 | 138,729 | 0 | 0,15874 | 67,39898 | 2 | 4,47439 | 17,65724 | 68,67718 | 28,8414 | 39,83578 | 2,26077 | 118,79582 | 1,2246 | 2 | 1 | 2 | 4,06 | 1,80119 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 4,2 | 0,1847 | 114,8295 | 140,402 | 0 | 0,16731 | 64,0523 | 2 | 4,44259 | 17,67936 | 69,56115 | 29,3319 | 40,22925 | 2,42988 | 109,63237 | 1,03579 | 2 | 1 | 2 | 4,06 | 1,95504 |
| 4,25 | 0,16686 | 94,9621 | 112,616 | 0 | 0,16464 | 63,84336 | 2 | 4,44674 | 17,65093 | 70,4437 | 29,8224 | 40,6213 | 2,31897 | 111,58624 | 1,10833 | 2 | 1 | 2 | 4,06 | 1,88399 |
| 4,3 | 0,14237 | 105,5499 | 149,663 | 0 | 0,15105 | 70,17562 | 2 | 4,50212 | 17,62751 | 71,32507 | 30,3129 | 41,01217 | 1,94385 | 132,96013 | 1,29784 | 2 | 1 | 2 | 4,06 | 1,59443 |
| 4,35 | 0,14391 | 117,4818 | 139,057 | 0 | 0,13995 | 75,89299 | 2 | 4,54955 | 17,60062 | 72,2051 | 30,8034 | 41,4017 | 1,63636 | 156,77866 | 1,66611 | 2 | 1 | 2 | 4,06 | 1,35496 |
| 4,4 | 0,13358 | 95,6126 | 142,319 | 0 | 0,13616 | 77,16038 | 2 | 4,56319 | 17,57748 | 73,08398 | 31,2939 | 41,79008 | 1,50927 | 166,56813 | 1,72268 | 2 | 1 | 2 | 4,06 | 1,26145 |
| 4,45 | 0,13098 | 102,0826 | 138,467 | 0 | 0,13128 | 76,63204 | 2 | 4,57277 | 17,51368 | 73,95966 | 31,7844 | 42,17526 | 1,35918 | 175,50359 | 1,93321 | 2 | 1 | 2 | 4,06 | 1,14647 |
| 4,5 | 0,12929 | 104,1201 | 147,024 | 0 | 0,12705 | 79,94674 | 2 | 4,5957 | 17,51216 | 74,83527 | 32,2749 | 42,56037 | 1,22692 | 194,52081 | 2,14204 | 2 | 1 | 2 | 4,06 | 1,04436 |
| 4,55 | 0,12089 | 98,5223 | 146,893 | 0 | 0,1269 | 81,13252 | 2 | 4,60043 | 17,52724 | 75,71163 | 32,7654 | 42,94623 | 1,19192 | 201,13391 | 2,27151 | 2 | 1 | 2 | 4,06 | 1,02377 |
| 4,6 | 0,13052 | 106,2291 | 153,204 | 0 | 0,13034 | 78,01141 | 2 | 4,58034 | 17,5231 | 76,58779 | 33,2559 | 43,33189 | 1,2404 | 189,17132 | 2,1741 | 2 | 1 | 2 | 4,06 | 1,07498 |
| 4,65 | 0,1396 | 100,281 | 150,237 | 0 | 0,14016 | 74,94468 | 2 | 4,54537 | 17,58838 | 77,4672 | 33,7464 | 43,7208 | 1,43386 | 167,55602 | 1,90955 | 2 | 1 | 2 | 4,06 | 1,25379 |
| 4,7 | 0,15035 | 108,6098 | 156,925 | 0 | 0,15339 | 69,06622 | 2 | 4,49252 | 17,63276 | 78,34884 | 34,2369 | 44,11194 | 1,70108 | 141,17996 | 1,59919 | 2 | 1 | 2 | 4,06 | 1,50076 |
| 4,75 | 0,17021 | 108,9243 | 155,548 | 0 | 0,18634 | 59,13135 | 2 | 4,3847 | 17,75263 | 79,23647 | 34,7274 | 44,50907 | 2,40641 | 102,87608 | 1,07146 | 2 | 1 | 2 | 4,06 | 2,14214 |
| 4,8 | 0,23847 | 113,0279 | 135,992 | 0 | 0,19096 | 57,28996 | 2 | 4,36755 | 17,75377 | 80,12416 | 35,2179 | 44,90626 | 2,46816 | 98,70535 | 1,0269 | 2 | 1 | 2 | 4,06 | 2,21672 |
| 4,85 | 0,1642 | 106,2505 | 155,565 | 0 | 0,18524 | 59,98291 | 2 | 4,39082 | 17,75999 | 81,01216 | 35,7084 | 45,30376 | 2,30072 | 106,60375 | 1,09303 | 2 | 1 | 2 | 4,06 | 2,08462 |
| 4,9 | 0,15306 | 114,0646 | 157,351 | 0 | 0,1579 | 69,12491 | 2 | 4,48356 | 17,67819 | 81,89607 | 36,1989 | 45,69717 | 1,66314 | 143,61195 | 1,62595 | 2 | 1 | 2 | 4,06 | 1,52001 |
| 4,95 | 0,15643 | 107,1227 | 166,4 | 0 | 0,16648 | 64,58749 | 2 | 4,44665 | 17,68124 | 82,78013 | 36,6894 | 46,09073 | 1,81591 | 128,46781 | 1,53012 | 2 | 1 | 2 | 4,06 | 1,67393 |
| 5 | 0,18994 | 101,382 | 170,515 | 0 | 0,18911 | 56,69714 | 2 | 4,36758 | 17,72685 | 83,66648 | 37,1799 | 46,48658 | 2,26819 | 101,68615 | 1,20859 | 2 | 1 | 2 | 4,06 | 2,1088 |
| 5,05 | 0,22095 | 113,1495 | 156,925 | 0 | 0,20268 | 54,12063 | 2 | 4,33178 | 17,77966 | 84,55546 | 37,6704 | 46,88506 | 2,51945 | 92,86106 | 0,9814 | 2 | 1 | 2 | 4,06 | 2,36249 |
| 5,1 | 0,19715 | 114,5436 | 133,353 | 0 | 0,18792 | 59,80721 | 2 | 4,38539 | 17,77865 | 85,44439 | 38,1609 | 47,28349 | 2,16733 | 109,67297 | 1,1081 | 2 | 1 | 2 | 4,06 | 2,04958 |
| 5,15 | 0,14567 | 109,482 | 164,875 | 0 | 0,1946 | 56,46426 | 2 | 4,35726 | 17,766 | 86,33269 | 38,6514 | 47,68129 | 2,27058 | 101,49042 | 1,07883 | 2 | 1 | 2 | 4,06 | 2,16528 |
| 5,2 | 0,24097 | 105,6071 | 168,121 | 0 | 0,17682 | 62,25799 | 2 | 4,41663 | 17,73141 | 87,21926 | 39,1419 | 48,07736 | 1,86361 | 122,86349 | 1,40033 | 2 | 1 | 2 | 4,06 | 1,79195 |
| 5,25 | 0,14381 | 115,1584 | 160,827 | 0 | 0,18231 | 57,20672 | 2 | 4,38188 | 17,68097 | 88,10331 | 39,6324 | 48,47091 | 1,9435 | 110,70908 | 1,36366 | 2 | 1 | 2 | 4,06 | 1,88407 |
| 5,3 | 0,16214 | 92,1095 | 175,334 | 0 | 0,15225 | 72,66846 | 2 | 4,50994 | 17,67984 | 88,9873 | 40,1229 | 48,8644 | 1,29466 | 174,88621 | 2,0099 | 2 | 1 | 2 | 4,06 | 1,26525 |
| 5,35 | 0,1508 | 124,6453 | 165,662 | 0 | 0,1583 | 71,27162 | 2 | 4,49183 | 17,71728 | 89,87317 | 40,6134 | 49,25977 | 1,3891 | 164,88117 | 1,86637 | 2 | 1 | 2 | 4,06 | 1,36854 |
| 5,4 | 0,16196 | 121,7141 | 163,974 | 0 | 0,16366 | 72,88639 | 2 | 4,48798 | 17,79409 | 90,76287 | 41,1039 | 49,65897 | 1,46789 | 163,64004 | 1,76581 | 2 | 1 | 2 | 4,06 | 1,45788 |
| 5,45 | 0,17821 | 111,4909 | 179,825 | 0 | 0,2111 | 53,76617 | 2 | 4,31691 | 17,83456 | 91,6546 | 41,5944 | 50,0602 | 2,3861 | 95,02166 | 1,09686 | 2 | 1 | 1,99759 | 4,06 | 2,3861 |
| 5,5 | 0,29314 | 107,3015 | 174,039 | 0 | 0,2488 | 45,35227 | 2 | 4,21431 | 17,89077 | 92,54914 | 42,0849 | 50,46424 | 3,0962 | 72,2155 | 0,69998 | 2 | 1 | 1,9816 | 4,06 | 3,0962 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 5,55 | 0,27504 | 119,7124 | 100,502 | 0 | 0,25785 | 43,85751 | 2 | 4,19304 | 17,90702 | 93,44449 | 42,5754 | 50,86909 | 3,23187 | 68,78567 | 0,64596 | 2 | 1 | 1,96583 | 4,06 | 3,23187 |
| 5,6 | 0,20536 | 112,2415 | 171,777 | 0 | 0,2463 | 46,24481 | 2 | 4,22329 | 17,89774 | 94,33938 | 43,0659 | 51,27348 | 2,96379 | 74,95363 | 0,63692 | 2 | 1 | 1,95033 | 4,06 | 2,96379 |
| 5,65 | 0,25851 | 109,7536 | 147,286 | 0 | 0,24343 | 46,13378 | 2 | 4,2263 | 17,87698 | 95,23322 | 43,5564 | 51,67682 | 2,86776 | 75,77997 | 0,76761 | 2 | 1 | 1,9351 | 4,06 | 2,86776 |
| 5,7 | 0,26642 | 114,9153 | 152,876 | 0 | 0,27426 | 41,46605 | 2 | 4,15683 | 17,93719 | 96,13008 | 44,0469 | 52,08318 | 3,42017 | 63,84331 | 0,59858 | 2 | 1 | 1,92001 | 4,06 | 3,42017 |
| 5,75 | 0,29786 | 116,5096 | 151,86 | 0 | 0,27768 | 42,03718 | 2 | 4,15696 | 17,97191 | 97,02868 | 44,5374 | 52,49128 | 3,44155 | 64,61554 | 0,56387 | 2 | 1 | 1,90508 | 4,06 | 3,44155 |
| 5,8 | 0,26876 | 118,7616 | 134,467 | 0 | 0,26635 | 44,52199 | 2 | 4,18723 | 17,97406 | 97,92738 | 45,0279 | 52,89948 | 3,18376 | 70,4093 | 0,61732 | 2 | 1 | 1,89038 | 4,06 | 3,18376 |
| 5,85 | 0,23242 | 120,4773 | 160,663 | 0 | 0,24052 | 50,98306 | 2 | 4,25983 | 17,9735 | 98,82606 | 45,5184 | 53,30766 | 2,65804 | 86,54178 | 0,75702 | 2 | 1 | 1,8759 | 4,06 | 2,65804 |
| 5,9 | 0,22038 | 128,6345 | 163,22 | 0 | 0,22439 | 53,56758 | 2 | 4,2965 | 17,9239 | 99,72225 | 46,0089 | 53,71335 | 2,32092 | 96,41765 | 0,89117 | 2 | 1 | 1,86173 | 4,06 | 2,32092 |
| 5,95 | 0,22036 | 111,4837 | 147,434 | 0 | 0,22563 | 53,33656 | 2 | 4,29347 | 17,92738 | 100,61862 | 46,4994 | 54,11922 | 2,30986 | 96,267 | 0,85424 | 2 | 1 | 1,84777 | 4,06 | 2,30986 |
| 6 | 0,23614 | 120,9063 | 149,204 | 0 | 0,22162 | 50,12947 | 2 | 4,28072 | 17,82854 | 101,51005 | 46,9899 | 54,52015 | 2,20298 | 92,49721 | 0,88861 | 2 | 1 | 1,83418 | 4,06 | 2,20298 |
| 6,05 | 0,20835 | 100,8958 | 164,515 | 0 | 0,21782 | 50,79209 | 2 | 4,2901 | 17,81714 | 102,4009 | 47,4804 | 54,9205 | 2,10157 | 95,85531 | 1,01267 | 2 | 1 | 1,82081 | 4,06 | 2,10157 |
| 6,1 | 0,20897 | 110,1039 | 179,366 | 0 | 0,21189 | 50,27881 | 2 | 4,29588 | 17,7631 | 103,28906 | 47,9709 | 55,31816 | 1,96315 | 98,09986 | 1,17974 | 2 | 1 | 1,80772 | 4,06 | 1,96315 |
| 6,15 | 0,21834 | 108,6026 | 184,383 | 0 | 0,22905 | 45,96055 | 2 | 4,24456 | 17,77924 | 104,17802 | 48,4614 | 55,71662 | 2,24114 | 84,30547 | 1,12286 | 2 | 1 | 1,7948 | 4,06 | 2,24114 |
| 6,2 | 0,25983 | 97,1068 | 202,267 | 0 | 0,25572 | 42,75395 | 2 | 4,18812 | 17,86502 | 105,07127 | 48,9519 | 56,11937 | 2,68449 | 72,57241 | 0,93926 | 2 | 1 | 1,78192 | 4,06 | 2,68449 |
| 6,25 | 0,289 | 122,2861 | 184,71 | 0 | 0,25971 | 41,52143 | 2 | 4,17455 | 17,8551 | 105,96403 | 49,4424 | 56,52163 | 2,72013 | 70,13862 | 0,95331 | 2 | 1 | 1,76923 | 4,06 | 2,72013 |
| 6,3 | 0,2303 | 104,113 | 201,054 | 0 | 0,27395 | 41,04672 | 2 | 4,15417 | 17,92376 | 106,86022 | 49,9329 | 56,92732 | 2,9352 | 67,29713 | 0,86487 | 2 | 1 | 1,75663 | 4,06 | 2,9352 |
| 6,35 | 0,30256 | 110,9475 | 197,578 | 0 | 0,31841 | 35,07886 | 2 | 4,05988 | 17,97366 | 107,7589 | 50,4234 | 57,3355 | 3,67395 | 53,02379 | 0,64445 | 2 | 1 | 1,74412 | 4,06 | 3,67395 |
| 6,4 | 0,42236 | 120,0198 | 159,892 | 0 | 0,45699 | 25,45085 | 2 | 3,85008 | 18,15877 | 108,66684 | 50,9139 | 57,75294 | 6,03121 | 33,39086 | 0,28322 | 2 | 1 | 1,73151 | 3,84206 | 6,03121 |
| 6,45 | 0,64604 | 117,9537 | 91,224 | 0 | 0,55939 | 21,65698 | 2 | 3,73806 | 18,2832 | 109,581 | 51,4044 | 58,1766 | 7,73179 | 26,93298 | 0,23561 | 2 | 1 | 1,7189 | 3,6999 | 7,73179 |
| 6,5 | 0,60977 | 125,4674 | 221,036 | 0 | 0,67806 | 18,92396 | 2 | 3,63706 | 18,42309 | 110,50215 | 51,8949 | 58,60725 | 9,68403 | 22,60843 | 0,20009 | 3 | 1 | 1,70627 | 3,57727 | 9,68403 |
| 6,55 | 0,77836 | 141,5244 | 184,104 | 0 | 0,78437 | 17,85705 | 2 | 3,57385 | 18,57974 | 111,43114 | 52,3854 | 59,04574 | 11,39696 | 20,81397 | 0,18927 | 3 | 1 | 1,6936 | 3,5024 | 11,39696 |
| 6,6 | 0,96499 | 153,2061 | 134,123 | 0 | 0,98047 | 15,38973 | 2 | 3,45925 | 18,75094 | 112,36869 | 52,8759 | 59,49279 | 14,59176 | 17,38179 | 0,10597 | 3 | 1 | 1,68088 | 3,37183 | 14,59176 |
| 6,65 | 1,19807 | 157,946 | 116,387 | 0 | 1,1147 | 13,79102 | 3 | 3,38609 | 18,82156 | 113,30976 | 53,3664 | 59,94336 | 16,70555 | 15,35151 | 0,09225 | 3 | 1 | 1,66824 | 3,29229 | 16,70555 |
| 6,7 | 1,18103 | 150,0319 | 186,727 | 0 | 1,20183 | 13,45442 | 3 | 3,3552 | 18,90857 | 114,25519 | 53,8569 | 60,39829 | 18,00671 | 14,86788 | 0,04271 | 3 | 1 | 1,65568 | 3,25993 | 18,00671 |
| 6,75 | 1,22639 | 177,12 | -2,197 | 0 | 1,144 | 15,2853 | 3 | 3,40937 | 18,97969 | 115,20418 | 54,3474 | 60,85678 | 16,90514 | 16,99694 | 0,02114 | 3 | 1 | 1,6432 | 3,32126 | 16,90514 |
| 6,8 | 1,02457 | 197,4379 | 43,752 | 0 | 1,10104 | 16,58566 | 3 | 3,44619 | 19,01491 | 116,15492 | 54,8379 | 61,31702 | 16,06223 | 18,54173 | -0,05045 | 3 | 1 | 1,63087 | 3,36414 | 16,06223 |
| 6,85 | 1,05217 | 173,2881 | -26,113 | 0 | 0,93166 | 19,66841 | 2 | 3,54984 | 18,9548 | 117,10266 | 55,3284 | 61,77426 | 13,18598 | 22,496 | -0,04901 | 3 | 1 | 1,6188 | 3,48392 | 13,18598 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 6,9 | 0,71823 | 179,0002 | 28,588 | 0 | 0,80334 | 22,12053 | 2 | 3,63143 | 18,86268 | 118,0458 | 55,8189 | 62,2269 | 11,01288 | 25,9309 | -0,07944 | 3 | 1 | 1,60702 | 3,58227 | 11,01288 |
| 6,95 | 0,63963 | 180,8232 | 1,656 | 0 | 0,61824 | 27,53332 | 2 | 3,77912 | 18,71277 | 118,98143 | 56,3094 | 62,67203 | 7,96616 | 34,095 | -0,08892 | 2 | 1 | 1,59561 | 3,76507 | 7,96616 |
| 7 | 0,49685 | 150,8398 | 5,508 | 0 | 0,55847 | 28,05516 | 2 | 3,8163 | 18,57844 | 119,91036 | 56,7999 | 63,11046 | 6,94913 | 35,72591 | -0,09506 | 2 | 1 | 1,58452 | 3,8205 | 6,94913 |
| 7,05 | 0,53894 | 138,3788 | 38,162 | 0 | 0,56248 | 26,08439 | 2 | 3,79202 | 18,50562 | 120,83564 | 57,2904 | 63,54524 | 6,95008 | 33,22118 | -0,05707 | 2 | 1 | 1,57368 | 3,7976 | 6,95008 |
| 7,1 | 0,65165 | 150,9398 | 52,587 | 0 | 0,59632 | 23,73536 | 2 | 3,74531 | 18,48667 | 121,75997 | 57,7809 | 63,97907 | 7,41743 | 29,82525 | 0,04249 | 2 | 1 | 1,56301 | 3,74426 | 7,41743 |
| 7,15 | 0,59837 | 135,2975 | 143,09 | 0 | 0,79293 | 17,77759 | 2 | 3,56911 | 18,59125 | 122,68953 | 58,2714 | 64,41813 | 10,40458 | 21,03181 | 0,06239 | 3 | 1 | 1,55236 | 3,53303 | 10,40458 |
| 7,2 | 1,12878 | 136,6559 | 104,584 | 0 | 1,1601 | 11,36205 | 3 | 3,31537 | 18,65993 | 123,62253 | 58,7619 | 64,86063 | 15,98007 | 12,71722 | 0,04099 | 3 | 1 | 1,54177 | 3,24645 | 15,98007 |
| 7,25 | 1,75315 | 123,48 | 56,079 | 0 | 1,4443 | 8,64073 | 3 | 3,16462 | 18,68106 | 124,55658 | 59,2524 | 65,30418 | 20,20912 | 9,45624 | 0,01687 | 3 | 1 | 1,5313 | 3,08319 | 20,20912 |
| 7,3 | 1,45096 | 114,2576 | 83,897 | 0 | 1,35308 | 8,6591 | 3 | 3,18604 | 18,58344 | 125,48575 | 59,7429 | 65,74285 | 18,67271 | 9,54424 | 0,02546 | 3 | 1 | 1,52108 | 3,11023 | 18,67271 |
| 7,35 | 0,85514 | 113,7571 | 133,01986 | 0 | 1,12379 | 10,73081 | 3 | 3,30849 | 18,54541 | 126,41303 | 60,2334 | 66,17963 | 15,07076 | 12,09089 | 0,0624 | 3 | 1 | 1,51104 | 3,24869 | 15,07076 |
| 7,4 | 1,06527 | 133,7605 | 150,483 | 0 | 1,04019 | 12,80879 | 3 | 3,38556 | 18,63047 | 127,34455 | 60,7239 | 66,62065 | 13,70219 | 14,59564 | 0,08285 | 3 | 1 | 1,50104 | 3,33592 | 13,70219 |
| 7,45 | 1,20017 | 152,1909 | 125,55 | 0 | 1,24343 | 11,8496 | 3 | 3,30616 | 18,81465 | 128,28528 | 61,2144 | 67,07088 | 16,62636 | 13,21276 | 0,07815 | 3 | 1 | 1,49096 | 3,24641 | 16,62636 |
| 7,5 | 1,46485 | 156,0729 | 169,056 | 0 | 1,54417 | 9,94043 | 3 | 3,18549 | 18,94479 | 129,23252 | 61,7049 | 67,52762 | 20,95341 | 10,84834 | 0,04416 | 3 | 1 | 1,48088 | 3,11509 | 20,95341 |
| 7,55 | 1,96748 | 152,2267 | 77,963 | 0 | 1,7883 | 9,02846 | 3 | 3,11067 | 19,05923 | 130,18548 | 62,1954 | 67,99008 | 24,38764 | 9,73732 | 0,01009 | 3 | 1 | 1,4708 | 3,03569 | 24,38764 |
| 7,6 | 1,93258 | 176,0691 | -10,262 | 0 | 1,94569 | 9,10383 | 3 | 3,08714 | 19,19816 | 131,14539 | 62,6859 | 68,45949 | 26,50533 | 9,7618 | -0,01969 | 3 | 1 | 1,46072 | 3,01179 | 26,50533 |
| 7,65 | 1,937 | 203,1 | 13,147 | 0 | 1,78469 | 11,08461 | 3 | 3,17424 | 19,29214 | 132,11 | 63,1764 | 68,9336 | 23,97355 | 11,97073 | -0,0341 | 3 | 1 | 1,45067 | 3,10654 | 23,97355 |
| 7,7 | 1,4845 | 214,3098 | 17,606 | 0 | 1,55294 | 13,32806 | 3 | 3,27371 | 19,29083 | 133,07454 | 63,6669 | 69,40764 | 20,45695 | 14,57721 | -0,02775 | 3 | 1 | 1,44076 | 3,21619 | 20,45695 |
| 7,75 | 1,23733 | 203,5218 | 42,047 | 0 | 1,41536 | 13,74357 | 3 | 3,31143 | 19,18386 | 134,03373 | 64,1574 | 69,87633 | 18,33706 | 15,18122 | 0,00064 | 3 | 1 | 1,4311 | 3,26124 | 18,33706 |
| 7,8 | 1,52425 | 165,7314 | 135,271 | 0 | 1,63858 | 10,88164 | 3 | 3,19467 | 19,13988 | 134,99073 | 64,6479 | 70,34283 | 21,37516 | 11,85858 | 0,01444 | 3 | 1 | 1,42161 | 3,13729 | 21,37516 |
| 7,85 | 2,15416 | 165,6599 | 81,782 | 0 | 1,90215 | 9,07265 | 3 | 3,09306 | 19,1595 | 135,9487 | 65,1384 | 70,8103 | 24,94272 | 9,771 | 0,01845 | 3 | 1 | 1,41222 | 3,03008 | 24,94272 |
| 7,9 | 2,02804 | 186,3352 | 76,127 | 0 | 2,05545 | 9,28047 | 3 | 3,07623 | 19,30444 | 136,91392 | 65,6289 | 71,28502 | 26,91364 | 9,94276 | 0,01377 | 3 | 1 | 1,40282 | 3,01315 | 26,91364 |
| 7,95 | 1,98416 | 220,2722 | 118,206 | 0 | 2,11841 | 10,00641 | 3 | 3,09045 | 19,43735 | 137,88579 | 66,1194 | 71,76639 | 27,59682 | 10,70307 | 0,04507 | 3 | 1 | 1,39341 | 3,02947 | 27,59682 |
| 8 | 2,34303 | 229,323 | 271,804 | 0 | 2,5094 | 8,79421 | 3 | 2,99902 | 19,54859 | 138,86322 | 66,6099 | 72,25332 | 32,80874 | 9,30936 | 0,07404 | 3 | 1 | 1,38402 | 2,9342 | 32,80874 |
| 8,05 | 3,20102 | 212,4511 | 336,341 | 0 | 3,20383 | 7,2913 | 3 | 2,86691 | 19,7077 | 139,8486 | 67,1004 | 72,7482 | 42,11758 | 7,6241 | 0,06472 | 3 | 0,95383 | 1,35456 | 2,80157 | 41,5034 |
| 8,1 | 4,06743 | 259,0277 | 188,087 | 0 | 3,82565 | 6,43052 | 3 | 2,7744 | 19,83525 | 140,84037 | 67,5909 | 73,24947 | 50,30493 | 6,67631 | 0,02879 | 3 | 0,91936 | 1,33136 | 2,71035 | 49,0579 |
| 8,15 | 4,2085 | 266,5486 | -3,426 | 0 | 3,95613 | 7,12169 | 3 | 2,79717 | 20,00413 | 141,84057 | 68,0814 | 73,75917 | 51,7127 | 7,38652 | 0,00472 | 3 | 0,92895 | 1,32676 | 2,73489 | 50,6064 |
| 8,2 | 3,59245 | 319,6524 | 73,619 | 0 | 3,6604 | 8,30343 | 3 | 2,8693 | 20,06157 | 142,84365 | 68,5719 | 74,27175 | 47,36058 | 8,64063 | -0,00803 | 3 | 0,95744 | 1,32947 | 2,80909 | 46,76485 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 8,25 | 3,18024 | 325,6148 | 50,751 | 0 | 3,28823 | 9,73424 | 3 | 2,95183 | 20,07999 | 143,84765 | 69,0624 | 74,78525 | 42,04544 | 10,17955 | 0,00291 | 3 | 0,99008 | 1,33331 | 2,89416 | 41,92439 |
| 8,3 | 3,09199 | 314,984 | 110,223 | 0 | 3,18765 | 9,98955 | 3 | 2,9692 | 20,06213 | 144,85076 | 69,5529 | 75,29786 | 40,41021 | 10,4651 | -0,00531 | 3 | 0,99773 | 1,32721 | 2,91379 | 40,38424 |
| 8,35 | 3,29073 | 314,6981 | -0,803 | 0 | 3,09132 | 10,23448 | 3 | 2,98592 | 20,04292 | 145,8529 | 70,0434 | 75,8095 | 38,85353 | 10,74127 | -0,0162 | 3 | 1 | 1,3191 | 2,93322 | 38,85353 |
| 8,4 | 2,89124 | 319,4594 | -42,473 | 0 | 3,10689 | 10,14023 | 3 | 2,98146 | 20,03999 | 146,8549 | 70,5339 | 76,321 | 38,78406 | 10,64331 | -0,02223 | 3 | 1 | 1,31026 | 2,93067 | 38,78406 |
| 8,45 | 3,13871 | 310,9805 | 57,472 | 0 | 2,66829 | 11,83206 | 3 | 3,07547 | 19,98407 | 147,85411 | 71,0244 | 76,82971 | 32,80544 | 12,52615 | -0,01288 | 3 | 1 | 1,30158 | 3,0316 | 32,80544 |
| 8,5 | 1,97491 | 316,6998 | 100,683 | 0 | 2,35016 | 13,06794 | 3 | 3,14441 | 19,90364 | 148,84929 | 71,5149 | 77,33439 | 28,46484 | 13,95158 | 0,02264 | 3 | 1 | 1,29309 | 3,10716 | 28,46484 |
| 8,55 | 1,93686 | 293,6725 | 205,922 | 0 | 1,91945 | 14,46202 | 3 | 3,23616 | 19,70974 | 149,83478 | 72,0054 | 77,82938 | 22,73715 | 15,68652 | 0,02625 | 3 | 1 | 1,28486 | 3,20946 | 22,73715 |
| 8,6 | 1,84659 | 222,4026 | 48,751 | 0 | 1,76881 | 13,79538 | 3 | 3,24538 | 19,5301 | 150,81128 | 72,4959 | 78,31538 | 20,66008 | 15,08122 | 0,02454 | 3 | 1 | 1,27689 | 3,22428 | 20,66008 |
| 8,65 | 1,52299 | 215,9684 | 81,913 | 0 | 1,63903 | 13,53456 | 3 | 3,26221 | 19,39126 | 151,78084 | 72,9864 | 78,79444 | 18,87505 | 14,91582 | 0,02371 | 3 | 1 | 1,26913 | 3,2471 | 18,87505 |
| 8,7 | 1,54751 | 227,1354 | 194,087 | 0 | 1,5174 | 14,14529 | 3 | 3,29925 | 19,32377 | 152,74703 | 73,4769 | 79,27013 | 17,21526 | 15,72858 | 0,05726 | 3 | 1 | 1,26151 | 3,29113 | 17,21526 |
| 8,75 | 1,48171 | 200,8194 | 178,842 | 0 | 1,55097 | 13,38343 | 3 | 3,27538 | 19,29365 | 153,71171 | 73,9674 | 79,74431 | 17,52173 | 14,85573 | 0,07972 | 3 | 1 | 1,25401 | 3,26774 | 17,52173 |
| 8,8 | 1,62369 | 194,7641 | 183,16068 | 0 | 1,53432 | 12,50091 | 3 | 3,25751 | 19,19862 | 154,67165 | 74,4579 | 80,21375 | 17,19969 | 13,90237 | 0,07311 | 3 | 1 | 1,24667 | 3,25224 | 17,19969 |
| 8,85 | 1,49757 | 179,8295 | 163,99 | 0 | 1,49684 | 12,4728 | 3 | 3,26438 | 19,1581 | 155,62955 | 74,9484 | 80,68115 | 16,62355 | 13,92011 | 0,07579 | 3 | 1 | 1,23945 | 3,26283 | 16,62355 |
| 8,9 | 1,36925 | 185,4988 | 182,645 | 0 | 1,39909 | 13,82453 | 3 | 3,31677 | 19,17288 | 156,58819 | 75,4389 | 81,14929 | 15,31131 | 15,56679 | 0,09656 | 3 | 1 | 1,2323 | 3,32263 | 15,31131 |
| 8,95 | 1,33045 | 214,9247 | 239,625 | 0 | 1,35288 | 14,57262 | 3 | 3,34331 | 19,18198 | 157,54729 | 75,9294 | 81,61789 | 14,64543 | 16,49332 | 0,11227 | 3 | 1 | 1,22522 | 3,35414 | 14,64543 |
| 9 | 1,35893 | 191,0251 | 208,135 | 0 | 1,35749 | 14,79835 | 3 | 3,34704 | 19,20489 | 158,50754 | 76,4199 | 82,08764 | 14,60613 | 16,75472 | 0,11549 | 3 | 1 | 1,21821 | 3,35991 | 14,60613 |
| 9,05 | 1,38309 | 196,7086 | 196,923 | 0 | 1,35222 | 14,47571 | 3 | 3,3414 | 19,17357 | 159,46622 | 76,9104 | 82,55582 | 14,44785 | 16,41106 | 0,10347 | 3 | 1 | 1,2113 | 3,35662 | 14,44785 |
| 9,1 | 1,31464 | 199,4968 | 195,906 | 0 | 1,32005 | 15,12853 | 3 | 3,36239 | 19,18738 | 160,42559 | 77,4009 | 83,02469 | 13,96722 | 17,22145 | 0,11799 | 3 | 1 | 1,20446 | 3,38192 | 13,96722 |
| 9,15 | 1,26242 | 202,907 | 249,838 | 0 | 1,26553 | 15,04744 | 3 | 3,37358 | 19,1165 | 161,38141 | 77,8914 | 83,49001 | 13,22488 | 17,24676 | 0,11613 | 3 | 1 | 1,19775 | 3,39873 | 13,22488 |
| 9,2 | 1,21952 | 168,8842 | 172,613 | 0 | 1,19911 | 15,72588 | 3 | 3,40367 | 19,08454 | 162,33564 | 78,3819 | 83,95374 | 12,34935 | 18,1882 | 0,11688 | 3 | 1 | 1,19113 | 3,43598 | 12,34935 |
| 9,25 | 1,11539 | 193,9205 | 176,219 | 0 | 1,14368 | 15,61166 | 3 | 3,41594 | 19,00357 | 163,28582 | 78,8724 | 84,41342 | 11,6142 | 18,2118 | 0,09512 | 3 | 1 | 1,18465 | 3,45488 | 11,6142 |
| 9,3 | 1,09613 | 172,8376 | 167,547 | 0 | 1,12199 | 15,76924 | 3 | 3,4249 | 18,98575 | 164,2351 | 79,3629 | 84,8722 | 11,28467 | 18,47334 | 0,08418 | 3 | 1 | 1,17824 | 3,46804 | 11,28467 |
| 9,35 | 1,15445 | 164,0299 | 136,189 | 0 | 1,13041 | 14,93928 | 3 | 3,40606 | 18,93502 | 165,18185 | 79,8534 | 85,32845 | 11,31188 | 17,49589 | 0,04536 | 3 | 1 | 1,17194 | 3,45041 | 11,31188 |
| 9,4 | 1,14064 | 169,7564 | 67,16 | 0 | 1,13453 | 14,73056 | 3 | 3,40064 | 18,92443 | 166,12808 | 80,3439 | 85,78418 | 11,28886 | 17,25756 | 0,021 | 3 | 1 | 1,16572 | 3,44679 | 11,28886 |
| 9,45 | 1,10851 | 167,583 | 98,699 | 0 | 1,09063 | 15,6131 | 3 | 3,43059 | 18,93082 | 167,07462 | 80,8344 | 86,24022 | 10,70906 | 18,43758 | 0,01594 | 3 | 1 | 1,15955 | 3,48332 | 10,70906 |
| 9,5 | 1,02273 | 173,5025 | 120,813 | 0 | 1,02374 | 16,69669 | 3 | 3,47063 | 18,91094 | 168,02016 | 81,3249 | 86,69526 | 9,87047 | 19,97506 | 0,03375 | 3 | 1 | 1,15347 | 3,53295 | 9,87047 |
| 9,55 | 0,93999 | 171,7081 | 111,092 | 0 | 0,98647 | 16,85354 | 2 | 3,48494 | 18,86482 | 168,9634 | 81,8154 | 87,148 | 9,38071 | 20,33684 | 0,09515 | 3 | 1 | 1,14747 | 3,55402 | 9,38071 |

| In situ data | | | | | | | | Basic output data | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 9,6 | 0,9967 | 153,5564 | 246,903 | 0 | 0,979 | 16,36854 | 2 | 3,4784 | 18,81957 | 169,90438 | 82,3059 | 87,59848 | 9,23641 | 19,80582 | 0,14684 | 3 | 1 | 1,14157 | 3,5506 | 9,23641 |
| 9,65 | 1,00031 | 155,4795 | 245,346 | 0 | 1,039 | 14,65993 | 3 | 3,42648 | 18,78399 | 170,84358 | 82,7964 | 88,04718 | 9,86017 | 17,54484 | 0,20378 | 3 | 1 | 1,13575 | 3,49331 | 9,86017 |
| 9,7 | 1,12 | 147,9157 | 286,868 | 0 | 1,07236 | 14,16859 | 3 | 3,40633 | 18,79324 | 171,78324 | 83,2869 | 88,49634 | 10,17643 | 16,87122 | 0,19335 | 3 | 1 | 1,12999 | 3,47159 | 10,17643 |
| 9,75 | 1,09677 | 152,4197 | 240,019 | 0 | 1,11146 | 13,98744 | 3 | 3,39128 | 18,83337 | 172,72491 | 83,7774 | 88,94751 | 10,55385 | 16,56108 | 0,18341 | 3 | 1 | 1,12426 | 3,4547 | 10,55385 |
| 9,8 | 1,11762 | 166,0603 | 240,969 | 0 | 1,10623 | 14,68958 | 3 | 3,40761 | 18,88247 | 173,66904 | 84,2679 | 89,40114 | 10,43116 | 17,4252 | 0,17753 | 3 | 1 | 1,11855 | 3,47391 | 10,43116 |
| 9,85 | 1,10429 | 169,02 | 268,476 | 0 | 1,1064 | 15,11874 | 3 | 3,41634 | 18,91583 | 174,61483 | 84,7584 | 89,85643 | 10,36967 | 17,95197 | 0,19817 | 3 | 1 | 1,11289 | 3,4849 | 10,36967 |
| 9,9 | 1,09728 | 166,7394 | 298,786 | 0 | 1,08563 | 15,15941 | 3 | 3,42302 | 18,88986 | 175,55932 | 85,2489 | 90,31042 | 10,07718 | 18,08376 | 0,21375 | 3 | 1 | 1,10729 | 3,49591 | 10,07718 |
| 9,95 | 1,05533 | 157,9674 | 272,082 | 0 | 1,10517 | 14,78642 | 3 | 3,40991 | 18,88856 | 176,50375 | 85,7394 | 90,76435 | 10,23162 | 17,59675 | 0,17007 | 3 | 1 | 1,10175 | 3,48285 | 10,23162 |
| 10 | 1,1629 | 165,5384 | 160,154 | 0 | 1,08768 | 15,32018 | 3 | 3,42565 | 18,90489 | 177,44899 | 86,2299 | 91,21909 | 9,97851 | 18,30684 | 0,09318 | 3 | 1 | 1,09626 | 3,5027 | 9,97851 |
| 10,05 | 1,04481 | 176,3979 | 80,897 | 0 | 1,02971 | 16,47005 | 3 | 3,46466 | 18,90414 | 178,3942 | 86,7204 | 91,6738 | 9,2864 | 19,92136 | 0,08263 | 3 | 1 | 1,09082 | 3,55074 | 9,2864 |
| 10,1 | 0,88143 | 166,8467 | 230,15 | 0 | 0,96032 | 18,0635 | 2 | 3,51441 | 18,90336 | 179,33937 | 87,2109 | 92,12847 | 8,47705 | 22,2115 | 0,15573 | 3 | 1 | 1,08544 | 3,61218 | 8,47705 |
| 10,15 | 0,95471 | 177,1557 | 315,44 | 0 | 0,93552 | 17,72893 | 2 | 3,51678 | 18,84173 | 180,28146 | 87,7014 | 92,58006 | 8,15768 | 21,96097 | 0,25011 | 3 | 1 | 1,08015 | 3,62045 | 8,15768 |
| 10,2 | 0,97042 | 153,5707 | 284,196 | 0 | 0,93134 | 17,6773 | 2 | 3,51728 | 18,8315 | 181,22303 | 88,1919 | 93,03113 | 8,06304 | 21,94803 | 0,26045 | 3 | 1 | 1,07491 | 3,62385 | 8,06304 |
| 10,25 | 0,86888 | 163,1792 | 251,034 | 0 | 0,90071 | 17,164 | 2 | 3,5187 | 18,74632 | 182,16035 | 88,6824 | 93,47795 | 7,68684 | 21,51526 | 0,26067 | 2 | 1 | 1,06977 | 3,63248 | 7,68684 |
| 10,3 | 0,86283 | 147,0436 | 292,72 | 0 | 0,92227 | 16,25553 | 2 | 3,49488 | 18,72004 | 183,09635 | 89,1729 | 93,92345 | 7,86996 | 20,28209 | 0,21756 | 2 | 1 | 1,0647 | 3,6072 | 7,86996 |
| 10,35 | 1,0351 | 139,5369 | 206,201 | 0 | 1,17198 | 12,24969 | 3 | 3,33468 | 18,76209 | 184,03445 | 89,6634 | 94,37105 | 10,46877 | 14,53155 | 0,17603 | 3 | 1 | 1,05965 | 3,41737 | 10,46877 |
| 10,4 | 1,61802 | 144,1124 | 291,79912 | 0 | 1,63762 | 8,40999 | 3 | 3,11682 | 18,84259 | 184,97658 | 90,1539 | 94,82268 | 15,31954 | 9,48091 | 0,12521 | 3 | 1 | 1,0546 | 3,16958 | 15,31954 |
| 10,45 | 2,25973 | 129,521 | 318,112 | 0 | 2,22045 | 6,54753 | 3 | 2,94609 | 19,02161 | 185,92766 | 90,6444 | 95,28326 | 21,35239 | 7,14589 | 0,09262 | 3 | 1 | 1,0495 | 2,98055 | 21,35239 |
| 10,5 | 2,78361 | 162,5214 | 227,364 | 0 | 2,69262 | 6,47026 | 3 | 2,88251 | 19,30367 | 186,89285 | 91,1349 | 95,75795 | 26,16734 | 6,95285 | 0,05855 | 3 | 1 | 1,0443 | 2,90933 | 26,16734 |
| 10,55 | 3,03453 | 230,617 | 168,056 | 0 | 2,60149 | 7,94061 | 3 | 2,95625 | 19,48641 | 187,86717 | 91,6254 | 96,24177 | 25,07878 | 8,55868 | 0,05849 | 3 | 1 | 1,03905 | 2,98674 | 25,07878 |
| 10,6 | 1,98634 | 226,5849 | 302,949 | 0 | 2,26862 | 10,00335 | 3 | 3,06973 | 19,54206 | 188,84427 | 92,1159 | 96,72837 | 21,50116 | 10,91166 | 0,10132 | 3 | 1 | 1,03382 | 3,1092 | 21,50116 |
| 10,65 | 1,78498 | 223,6109 | 437,482 | 0 | 1,83982 | 11,87364 | 3 | 3,18644 | 19,4179 | 189,81517 | 92,6064 | 97,20877 | 16,97386 | 13,23957 | 0,20776 | 3 | 1 | 1,02871 | 3,24083 | 16,97386 |
| 10,7 | 1,74815 | 205,1661 | 565,786 | 0 | 1,74559 | 11,56989 | 3 | 3,19427 | 19,30746 | 190,78054 | 93,0969 | 97,68364 | 15,91682 | 12,98956 | 0,27394 | 3 | 1 | 1,02371 | 3,25425 | 15,91682 |
| 10,75 | 1,70365 | 177,1128 | 553,803 | 0 | 1,7395 | 10,72339 | 3 | 3,17183 | 19,21469 | 191,74127 | 93,5874 | 98,15387 | 15,76866 | 12,05184 | 0,31599 | 3 | 1 | 1,01881 | 3,23385 | 15,76866 |
| 10,8 | 1,76669 | 177,3202 | 628,422 | 0 | 1,90225 | 9,48435 | 3 | 3,10664 | 19,21063 | 192,7018 | 94,0779 | 98,6239 | 17,33398 | 10,55344 | 0,30857 | 3 | 1 | 1,01395 | 3,16396 | 17,33398 |
| 10,85 | 2,2364 | 186,8142 | 682,566 | 0 | 2,1488 | 8,34808 | 3 | 3,03003 | 19,25076 | 193,66434 | 94,5684 | 99,09594 | 19,72976 | 9,17499 | 0,30007 | 3 | 1 | 1,00912 | 3,08121 | 19,72976 |
| 10,9 | 2,44332 | 174,0173 | 732,743 | 0 | 2,3867 | 7,6909 | 3 | 2,97261 | 19,31749 | 194,63022 | 95,0589 | 99,57132 | 22,01511 | 8,37376 | 0,28422 | 3 | 1 | 1,00431 | 3,01951 | 22,01511 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 10,95 | 2,48039 | 189,8455 | 738,956 | 0 | 2,83035 | 7,13663 | 3 | 2,89749 | 19,49294 | 195,60486 | 95,5494 | 100,05546 | 26,33288 | 7,66646 | 0,21068 | 3 | 1 | 0,99945 | 2,93765 | 26,33288 |
| 11 | 3,56735 | 242,1128 | 480,217 | 0 | 3,22077 | 7,13959 | 3 | 2,8587 | 19,69161 | 196,58944 | 96,0399 | 100,54954 | 30,07652 | 7,6037 | 0,15103 | 3 | 1 | 0,99453 | 2,89508 | 30,07652 |
| 11,05 | 3,61457 | 257,891 | 439,154 | 0 | 3,52172 | 7,31461 | 3 | 2,83985 | 19,85647 | 197,58227 | 96,5304 | 101,05187 | 32,89539 | 7,74938 | 0,10985 | 3 | 0,99571 | 0,98964 | 2,87448 | 32,89687 |
| 11,1 | 3,38325 | 272,797 | 465,726 | 0 | 3,46472 | 7,7627 | 3 | 2,86364 | 19,89984 | 198,57726 | 97,0209 | 101,55636 | 32,16086 | 8,23466 | 0,11898 | 3 | 1 | 0,98467 | 2,90053 | 32,16086 |
| 11,15 | 3,39633 | 276,1785 | 552,016 | 0 | 3,48736 | 7,96029 | 3 | 2,86979 | 19,93874 | 199,5742 | 97,5114 | 102,0628 | 32,21333 | 8,44349 | 0,1314 | 3 | 1 | 0,97979 | 2,90807 | 32,21333 |
| 11,2 | 3,68249 | 283,8352 | 570,868 | 0 | 3,68012 | 7,67005 | 3 | 2,84213 | 19,97853 | 200,57312 | 98,0019 | 102,57122 | 33,92323 | 8,11218 | 0,13587 | 3 | 0,9986 | 0,97497 | 2,88008 | 33,92443 |
| 11,25 | 3,96154 | 286,7878 | 589,457 | 0 | 3,91993 | 7,29013 | 3 | 2,80738 | 20,01692 | 201,57397 | 98,4924 | 103,08157 | 36,07194 | 7,68534 | 0,11042 | 3 | 0,98535 | 0,97054 | 2,84464 | 36,08799 |
| 11,3 | 4,11575 | 286,6806 | 366,945 | 0 | 3,99019 | 7,44132 | 3 | 2,80884 | 20,06778 | 202,57736 | 98,9829 | 103,59446 | 36,56192 | 7,83932 | 0,11152 | 3 | 0,98654 | 0,96576 | 2,84709 | 36,57931 |
| 11,35 | 3,89328 | 317,3004 | 607,718 | 0 | 4,6154 | 6,80175 | 3 | 2,73767 | 20,18766 | 203,58674 | 99,4734 | 104,11334 | 42,37513 | 7,11563 | 0,13123 | 3 | 0,95844 | 0,9621 | 2,77266 | 42,44618 |
| 11,4 | 5,83718 | 337,8041 | 1060,625 | 0 | 5,61928 | 6,01627 | 3 | 2,64131 | 20,34835 | 204,60416 | 99,9639 | 104,64026 | 51,74563 | 6,24361 | 0,10353 | 3 | 0,92042 | 0,95911 | 2,67216 | 51,93275 |
| 11,45 | 7,12738 | 359,1086 | 313,277 | 0 | 6,69731 | 5,25594 | 4 | 2,54716 | 20,46211 | 205,62726 | 100,4544 | 105,17286 | 61,72396 | 5,42243 | 0,07116 | 4 | 0,88371 | 0,95641 | 2,57511 | 62,08705 |
| 11,5 | 7,47517 | 431,4579 | 325,194 | 0 | 7,35924 | 5,5351 | 9 | 2,53818 | 20,6662 | 206,66057 | 100,9449 | 105,71567 | 67,65865 | 5,69503 | 0,0308 | 9 | 0,88031 | 0,95225 | 2,56547 | 68,11027 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 0,1 | 0,40163 | 23,585 | 100,699 | 0 | 0,36648 | 6,62607 | 3 | 3,55591 | 16,27223 | 1,62722 | 0 | 1,62722 | 224,21802 | 6,65563 | 0,28284 | 3 | 1 | 2 | 3,31214 | 7,29706 |
| 0,15 | 0,29618 | 25,6797 | 108,19 | 0 | 0,26979 | 9,28975 | 2 | 3,74934 | 16,19112 | 2,43678 | 0 | 2,43678 | 109,71446 | 9,37442 | 0,36742 | 2 | 1 | 2 | 3,51035 | 5,347 |
| 0,2 | 0,217 | 23,8281 | 78,307 | 0 | 0,21973 | 10,839 | 2 | 3,86081 | 16,05374 | 3,23947 | 0 | 3,23947 | 66,82805 | 11,00119 | 0,38855 | 2 | 1 | 2 | 3,62533 | 4,32974 |
| 0,25 | 0,146 | 21,9407 | 65,849 | 0 | 0,15156 | 14,41999 | 2 | 4,06416 | 15,81247 | 4,03009 | 0 | 4,03009 | 36,6071 | 14,8139 | 0,42208 | 2 | 1 | 2 | 3,83612 | 2,9506 |
| 0,3 | 0,09168 | 19,796 | 42,653 | 0 | 0,10192 | 19,15587 | 2 | 4,27606 | 15,53062 | 4,80662 | 0 | 4,80662 | 20,20478 | 20,10395 | 0,49085 | 2 | 1 | 2 | 4,06 | 1,94233 |
| 0,35 | 0,06809 | 16,8362 | 34,506 | 0 | 0,07198 | 24,38781 | 2 | 4,45994 | 15,27483 | 5,57036 | 0 | 5,57036 | 11,92136 | 26,43353 | 0,55656 | 2 | 1 | 2 | 4,06 | 1,32813 |
| 0,4 | 0,05616 | 16,0284 | 33,719 | 0 | 0,06221 | 26,65127 | 2 | 4,53388 | 15,15318 | 6,32802 | 0 | 6,32802 | 8,83035 | 29,66941 | 0,5827 | 2 | 1 | 2 | 4,06 | 1,11757 |
| 0,45 | 0,06237 | 16,872 | 29,457 | 0 | 0,06196 | 27,12513 | 2 | 4,53973 | 15,16745 | 7,08639 | 0 | 7,08639 | 7,74399 | 30,62786 | 0,48381 | 2 | 1 | 2 | 4,06 | 1,09754 |
| 0,5 | 0,06736 | 17,5225 | 16,474 | 0 | 0,0645 | 26,83788 | 2 | 4,52289 | 15,21674 | 7,84723 | 0 | 7,84723 | 7,21946 | 30,55532 | 0,3695 | 2 | 1 | 2 | 4,06 | 1,13306 |
| 0,55 | 0,06377 | 17,5368 | 16,868 | 0 | 0,0675 | 25,0885 | 2 | 4,48978 | 15,20885 | 8,60767 | 0 | 8,60767 | 6,84145 | 28,75563 | 0,32123 | 2 | 1 | 2 | 4,06 | 1,17778 |
| 0,6 | 0,07136 | 15,7424 | 23,408 | 0 | 0,06751 | 22,78799 | 2 | 4,46545 | 15,0986 | 9,3626 | 0 | 9,3626 | 6,21096 | 26,45699 | 0,45423 | 2 | 1 | 2 | 4,06 | 1,16301 |
| 0,65 | 0,06741 | 12,8756 | 38,965 | 0 | 0,06698 | 20,17299 | 2 | 4,43794 | 14,94622 | 10,10991 | 0 | 10,10991 | 5,62518 | 23,75918 | 0,53248 | 2 | 1 | 2 | 4,06 | 1,1374 |
| 0,7 | 0,06217 | 11,9176 | 28,474 | 0 | 0,05854 | 20,86574 | 2 | 4,49441 | 14,77858 | 10,84884 | 0 | 10,84884 | 4,39627 | 25,61197 | 0,60949 | 2 | 1 | 2 | 4,06 | 0,95389 |
| 0,75 | 0,04605 | 11,8533 | 19,769 | 0 | 0,06143 | 19,06387 | 2 | 4,45507 | 14,74843 | 11,58627 | 0 | 11,58627 | 4,30168 | 23,4956 | 0,41803 | 2 | 1 | 2 | 4,06 | 0,99681 |
| 0,8 | 0,07606 | 11,36 | 14,261 | 0 | 0,06079 | 18,96458 | 2 | 4,45753 | 14,72653 | 12,32259 | 0 | 12,32259 | 3,93349 | 23,7859 | 0,04971 | 2 | 1 | 2 | 4,06 | 0,96941 |
| 0,85 | 0,06027 | 11,3743 | -26,802 | 0 | 0,09031 | 13,20115 | 2 | 4,22713 | 14,91687 | 13,06843 | 0 | 13,06843 | 5,9108 | 15,43455 | -0,00998 | 2 | 1 | 2 | 4,06 | 1,5449 |
| 0,9 | 0,13461 | 13,0329 | 10,229 | 0 | 0,10511 | 13,22044 | 2 | 4,17279 | 15,1512 | 13,826 | 0 | 13,826 | 6,6021 | 15,2229 | 0,18587 | 2 | 1 | 2 | 4,00837 | 1,82561 |
| 0,95 | 0,12044 | 17,2795 | 67,471 | 0 | 0,19237 | 8,33936 | 2 | 3,84325 | 15,54826 | 14,60341 | 0 | 14,60341 | 12,17318 | 9,02442 | 0,29222 | 2 | 1 | 2 | 3,64056 | 3,5554 |
| 1 | 0,32207 | 17,8157 | 78,143 | 0 | 0,2347 | 7,66484 | 2 | 3,75116 | 15,75628 | 15,39122 | 0,1962 | 15,19502 | 14,43316 | 8,20275 | 0,31283 | 2 | 1 | 2 | 3,54272 | 4,38624 |
| 1,05 | 0,2616 | 18,8737 | 60,8 | 0 | 0,23922 | 7,82694 | 2 | 3,74942 | 15,80959 | 16,1817 | 0,6867 | 15,495 | 14,39421 | 8,39479 | 0,32658 | 2 | 1 | 2 | 3,54295 | 4,46077 |
| 1,1 | 0,13399 | 19,4814 | 81,634 | 0 | 0,17963 | 10,02524 | 2 | 3,91283 | 15,65496 | 16,96445 | 1,1772 | 15,78725 | 10,30381 | 11,07075 | 0,44022 | 2 | 1 | 2 | 3,72482 | 3,25338 |
| 1,15 | 0,14331 | 15,6709 | 75,93 | 0 | 0,13693 | 12,11305 | 2 | 4,05653 | 15,45621 | 17,73726 | 1,6677 | 16,06956 | 7,41709 | 13,91567 | 0,64048 | 2 | 1 | 2 | 3,89245 | 2,38379 |
| 1,2 | 0,13348 | 14,6057 | 76,454 | 0 | 0,14029 | 10,43655 | 2 | 4,0114 | 15,32206 | 18,50336 | 2,1582 | 16,34516 | 7,45093 | 12,0222 | 0,53194 | 2 | 1 | 2 | 3,8467 | 2,43573 |
| 1,25 | 0,14408 | 13,6477 | 48,44 | 0 | 0,12369 | 11,24351 | 2 | 4,07482 | 15,21462 | 19,26409 | 2,6487 | 16,61539 | 6,28509 | 13,3176 | 0,58887 | 2 | 1 | 2 | 3,9268 | 2,08858 |
| 1,3 | 0,09352 | 13,469 | 67,537 | 0 | 0,11222 | 12,03452 | 2 | 4,12639 | 15,14349 | 20,02127 | 3,1392 | 16,88207 | 5,46114 | 14,64795 | 0,7059 | 2 | 1 | 2 | 3,9949 | 1,84391 |
| 1,35 | 0,09905 | 13,3975 | 88,683 | 0 | 0,10103 | 13,075 | 2 | 4,18435 | 15,07776 | 20,77516 | 3,6297 | 17,14546 | 4,68063 | 16,45979 | 0,89493 | 2 | 1 | 2 | 4,06 | 1,60503 |
| 1,4 | 0,11051 | 12,7612 | 70,127 | 0 | 0,19483 | 7,96265 | 2 | 3,82751 | 15,51455 | 21,55088 | 4,1202 | 17,43068 | 9,94104 | 8,95297 | 0,38458 | 2 | 1 | 2 | 3,64742 | 3,46558 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 1,45 | 0,37493 | 20,3822 | 53,472 | 0 | 0,23872 | 7,46798 | 2 | 3,73872 | 15,75238 | 22,3385 | 4,6107 | 17,7278 | 12,20577 | 8,23895 | 0,33303 | 2 | 1 | 2 | 3,54853 | 4,32763 |
| 1,5 | 0,23072 | 20,3393 | 106,42 | 0 | 0,37622 | 6,29307 | 3 | 3,53375 | 16,25313 | 23,15116 | 5,1012 | 18,04996 | 19,56046 | 6,70572 | 0,21083 | 3 | 1 | 2 | 3,32538 | 7,06131 |
| 1,55 | 0,523 | 30,3052 | 78,717 | 0 | 0,36894 | 7,14313 | 2 | 3,57238 | 16,36894 | 23,96961 | 5,5917 | 18,37791 | 18,77111 | 7,63945 | 0,28203 | 3 | 1 | 2 | 3,36838 | 6,89947 |
| 1,6 | 0,35311 | 28,4178 | 123,517 | 0 | 0,33424 | 8,07095 | 2 | 3,63815 | 16,35789 | 24,7875 | 6,0822 | 18,7053 | 16,54339 | 8,71745 | 0,26885 | 3 | 1 | 2 | 3,44108 | 6,18898 |
| 1,65 | 0,1266 | 22,2052 | 65,603 | 0 | 0,18556 | 11,72023 | 2 | 3,94026 | 15,88441 | 25,58172 | 6,5727 | 19,00902 | 8,41574 | 13,59442 | 0,49008 | 2 | 1 | 2 | 3,78537 | 3,1995 |
| 1,7 | 0,07696 | 14,62 | 65,799 | 0 | 0,08769 | 18,55563 | 2 | 4,32122 | 15,26331 | 26,34489 | 7,0632 | 19,28169 | 3,18152 | 26,52442 | 0,95124 | 2 | 1 | 2 | 4,06 | 1,2269 |
| 1,75 | 0,05951 | 11,9891 | 64,849 | 0 | 0,06583 | 18,91549 | 2 | 4,42832 | 14,84555 | 27,08716 | 7,5537 | 19,53346 | 1,98324 | 32,14144 | 1,47305 | 2 | 1 | 2 | 4,06 | 0,77479 |
| 1,8 | 0,06101 | 10,7452 | 63,209 | 0 | 0,06401 | 17,94547 | 2 | 4,42556 | 14,74199 | 27,82426 | 8,0442 | 19,78006 | 1,82924 | 31,74554 | 1,5408 | 2 | 1 | 2 | 4,06 | 0,72365 |
| 1,85 | 0,0715 | 11,7246 | 63,324 | 0 | 0,08101 | 14,08472 | 2 | 4,28202 | 14,82466 | 28,5655 | 8,5347 | 20,0308 | 2,61819 | 21,7564 | 1,17067 | 2 | 1 | 2 | 4,06 | 1,04889 |
| 1,9 | 0,11052 | 11,7603 | 83,257 | 0 | 0,09302 | 12,91436 | 2 | 4,21117 | 14,93689 | 29,31234 | 9,0252 | 20,28714 | 3,1403 | 18,85634 | 0,98868 | 2 | 1 | 2 | 4,06 | 1,27415 |
| 1,95 | 0,09704 | 12,5539 | 69,455 | 0 | 0,10913 | 11,26087 | 2 | 4,12046 | 15,02432 | 30,06356 | 9,5157 | 20,54786 | 3,84808 | 15,54243 | 0,79537 | 2 | 1 | 2 | 4,06 | 1,5814 |
| 2 | 0,11984 | 12,5539 | 64,504 | 0 | 0,10796 | 11,48887 | 2 | 4,12917 | 15,03085 | 30,8151 | 10,0062 | 20,8089 | 3,70746 | 16,07784 | 0,65966 | 2 | 1 | 2 | 4,06 | 1,54296 |
| 2,05 | 0,10701 | 12,1035 | 48,735 | 0 | 0,09745 | 12,28614 | 2 | 4,18237 | 14,95084 | 31,56264 | 10,4967 | 21,06594 | 3,12751 | 18,17198 | 0,64159 | 2 | 1 | 2 | 4,06 | 1,31768 |
| 2,1 | 0,06549 | 11,2599 | 45,063 | 0 | 0,06365 | 18,22476 | 2 | 4,43131 | 14,75126 | 32,3002 | 10,9872 | 21,313 | 1,47108 | 37,00003 | 1,0858 | 2 | 1 | 2 | 4,06 | 0,62706 |
| 2,15 | 0,01846 | 11,4386 | 41,293 | 0 | 0,04862 | 23,84683 | 2 | 4,59376 | 14,64722 | 33,03257 | 11,4777 | 21,55487 | 0,723 | 74,39334 | 2,69683 | 2 | 1 | 2 | 4,06 | 0,31168 |
| 2,2 | 0,0619 | 12,0821 | 74,16 | 0 | 0,0616 | 19,21916 | 2 | 4,45604 | 14,76208 | 33,77067 | 11,9682 | 21,80247 | 1,27643 | 42,54145 | 1,61724 | 2 | 1 | 2 | 4,06 | 0,55659 |
| 2,25 | 0,10444 | 11,9963 | 55,472 | 0 | 0,07726 | 15,86578 | 2 | 4,32788 | 14,889 | 34,51512 | 12,4587 | 22,05642 | 1,93813 | 28,6759 | 1,11997 | 2 | 1 | 2 | 4,06 | 0,85496 |
| 2,3 | 0,06545 | 12,6969 | 51,374 | 0 | 0,09055 | 13,8088 | 2 | 4,23704 | 14,97265 | 35,26375 | 12,9492 | 22,31455 | 2,47759 | 22,61659 | 0,71083 | 2 | 1 | 2 | 4,06 | 1,10572 |
| 2,35 | 0,10176 | 12,8184 | 49,899 | 0 | 0,09694 | 13,05141 | 2 | 4,19881 | 15,01229 | 36,01437 | 13,4397 | 22,57467 | 2,6987 | 20,76678 | 0,59621 | 2 | 1 | 2 | 4,06 | 1,21845 |
| 2,4 | 0,1236 | 12,4395 | 48,014 | 0 | 0,11342 | 11,11262 | 2 | 4,10333 | 15,06817 | 36,76778 | 13,9302 | 22,83758 | 3,35641 | 16,44301 | 0,47958 | 2 | 1 | 2 | 4,06 | 1,53304 |
| 2,45 | 0,1149 | 12,5539 | 54,161 | 0 | 0,10498 | 11,87248 | 2 | 4,14721 | 15,0256 | 37,51906 | 14,4207 | 23,09836 | 2,92045 | 18,4758 | 0,54513 | 2 | 1 | 2 | 4,06 | 1,34915 |
| 2,5 | 0,07643 | 12,3966 | 51,407 | 0 | 0,08563 | 14,81926 | 2 | 4,27429 | 14,9682 | 38,26747 | 14,9112 | 23,35627 | 2,02783 | 26,79277 | 0,86747 | 2 | 1 | 2 | 4,06 | 0,94725 |
| 2,55 | 0,06556 | 13,1187 | 62,423 | 0 | 0,07333 | 17,71117 | 2 | 4,3735 | 14,93543 | 39,01424 | 15,4017 | 23,61254 | 1,45329 | 37,84733 | 1,21977 | 2 | 1 | 2 | 4,06 | 0,68632 |
| 2,6 | 0,078 | 13,4475 | 57,947 | 0 | 0,06752 | 19,67736 | 2 | 4,42895 | 14,92985 | 39,76073 | 15,8922 | 23,86853 | 1,16287 | 47,86543 | 1,4951 | 2 | 1 | 2 | 4,06 | 0,55512 |
| 2,65 | 0,05899 | 13,2903 | 51,8 | 0 | 0,0742 | 17,8014 | 2 | 4,3705 | 14,95944 | 40,5087 | 16,3827 | 24,126 | 1,39661 | 39,20278 | 1,26503 | 2 | 1 | 2 | 4,06 | 0,67389 |
| 2,7 | 0,08562 | 12,8899 | 67,275 | 0 | 0,0759 | 18,03377 | 2 | 4,36558 | 15,0091 | 41,25916 | 16,8732 | 24,38596 | 1,42066 | 39,51092 | 1,37329 | 2 | 1 | 2 | 4,06 | 0,69288 |
| 2,75 | 0,0831 | 14,8845 | 74,274 | 0 | 0,10349 | 13,94318 | 2 | 4,19137 | 15,18861 | 42,01859 | 17,3637 | 24,65489 | 2,49314 | 23,47451 | 0,98195 | 2 | 1 | 2 | 4,06 | 1,22936 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 2,8 | 0,14174 | 15,5136 | 91,618 | 0 | 0,14147 | 10,98428 | 2 | 4,02082 | 15,39379 | 42,78828 | 17,8542 | 24,93408 | 3,95784 | 15,7469 | 0,57947 | 2 | 1 | 2 | 3,9902 | 1,9737 |
| 2,85 | 0,19958 | 16,2214 | 59,226 | 0 | 0,16224 | 9,76465 | 2 | 3,94289 | 15,4685 | 43,5617 | 18,3447 | 25,217 | 4,70641 | 13,34874 | 0,45307 | 2 | 1 | 2 | 3,88298 | 2,37363 |
| 2,9 | 0,14541 | 15,7925 | 65,504 | 0 | 0,14901 | 10,59482 | 2 | 3,99336 | 15,4319 | 44,3333 | 18,8352 | 25,4981 | 4,10541 | 15,08186 | 0,43486 | 2 | 1 | 2 | 3,95847 | 2,0936 |
| 2,95 | 0,10205 | 15,3492 | 68,34 | 0 | 0,11146 | 13,73511 | 2 | 4,1611 | 15,28511 | 45,09755 | 19,3257 | 25,77185 | 2,57487 | 23,06948 | 0,81718 | 2 | 1 | 2 | 4,06 | 1,32718 |
| 3 | 0,08691 | 14,7844 | 86,815 | 0 | 0,09536 | 15,65428 | 2 | 4,24912 | 15,19627 | 45,85736 | 19,8162 | 26,04116 | 1,90081 | 30,15679 | 1,0706 | 2 | 1 | 2 | 4,06 | 0,98999 |
| 3,05 | 0,09711 | 14,6486 | 63,275 | 0 | 0,09647 | 15,75277 | 2 | 4,24652 | 15,22129 | 46,61843 | 20,3067 | 26,31173 | 1,89465 | 30,48389 | 0,96397 | 2 | 1 | 2 | 4,06 | 0,99703 |
| 3,1 | 0,10539 | 16,1571 | 54,997 | 0 | 0,12008 | 13,03617 | 2 | 4,12157 | 15,33937 | 47,3854 | 20,7972 | 26,5882 | 2,73422 | 21,5333 | 0,58182 | 2 | 1 | 2 | 4,06 | 1,45396 |
| 3,15 | 0,15775 | 16,1571 | 71,012 | 0 | 0,16471 | 9,73833 | 2 | 3,9368 | 15,48857 | 48,15983 | 21,2877 | 26,87213 | 4,33734 | 13,76221 | 0,37008 | 2 | 1 | 2 | 3,89725 | 2,33107 |
| 3,2 | 0,231 | 15,8068 | 67,258 | 0 | 0,19575 | 8,17616 | 2 | 3,8322 | 15,55219 | 48,93744 | 21,7782 | 27,15924 | 5,4055 | 10,90161 | 0,31444 | 2 | 1 | 2 | 3,75627 | 2,93618 |
| 3,25 | 0,19849 | 16,0498 | 65,553 | 0 | 0,19527 | 8,06662 | 2 | 3,82982 | 15,53296 | 49,71408 | 22,2687 | 27,44538 | 5,3036 | 10,82169 | 0,3125 | 2 | 1 | 2 | 3,75732 | 2,91118 |
| 3,3 | 0,15633 | 15,3993 | 70,455 | 0 | 0,16127 | 9,81176 | 2 | 3,94623 | 15,46481 | 50,48732 | 22,7592 | 27,72812 | 3,99532 | 14,28331 | 0,42535 | 2 | 1 | 2 | 3,92458 | 2,21565 |
| 3,35 | 0,12899 | 16,0212 | 73,635 | 0 | 0,12801 | 12,52306 | 2 | 4,08881 | 15,39122 | 51,25689 | 23,2497 | 28,00719 | 2,74048 | 20,88614 | 0,74588 | 2 | 1 | 2 | 4,06 | 1,53506 |
| 3,4 | 0,09871 | 16,6718 | 97,404 | 0 | 0,13452 | 12,27985 | 2 | 4,06623 | 15,44478 | 52,02912 | 23,7402 | 28,28892 | 2,91613 | 20,02476 | 0,67073 | 2 | 1 | 2 | 4,06 | 1,64988 |
| 3,45 | 0,17587 | 16,8648 | 66,176 | 0 | 0,15816 | 10,78819 | 2 | 3,97643 | 15,54407 | 52,80633 | 24,2307 | 28,57563 | 3,68684 | 16,19554 | 0,49648 | 2 | 1 | 2 | 3,97508 | 2,10707 |
| 3,5 | 0,1999 | 17,6512 | 66,029 | 0 | 0,18197 | 9,80466 | 2 | 3,90272 | 15,64922 | 53,58879 | 24,7212 | 28,86759 | 4,44736 | 13,89721 | 0,33643 | 2 | 1 | 2 | 3,8665 | 2,56769 |
| 3,55 | 0,17015 | 19,0096 | 71,537 | 0 | 0,20358 | 8,96306 | 2 | 3,84049 | 15,71807 | 54,37469 | 25,2117 | 29,16299 | 5,11626 | 12,22946 | 0,29763 | 2 | 1 | 2 | 3,78091 | 2,98411 |
| 3,6 | 0,24069 | 18,0802 | 71,291 | 0 | 0,23041 | 7,77963 | 2 | 3,76141 | 15,74509 | 55,16195 | 25,7022 | 29,45975 | 5,94884 | 10,22834 | 0,26774 | 2 | 1 | 2 | 3,67824 | 3,50503 |
| 3,65 | 0,2804 | 16,6861 | 75,045 | 0 | 0,25265 | 6,84204 | 2 | 3,69707 | 15,73868 | 55,94888 | 26,1927 | 29,75618 | 6,61054 | 8,78813 | 0,24535 | 2 | 1 | 2 | 3,59847 | 3,93409 |
| 3,7 | 0,23687 | 17,0936 | 77,028 | 0 | 0,27066 | 6,12014 | 2 | 3,64537 | 15,716 | 56,73468 | 26,6832 | 30,05148 | 7,11852 | 7,74327 | 0,24686 | 2 | 1 | 2 | 3,53636 | 4,27844 |
| 3,75 | 0,2947 | 15,914 | 86,405 | 0 | 0,28236 | 5,961 | 2 | 3,62373 | 15,75061 | 57,52221 | 27,1737 | 30,34851 | 7,40853 | 7,48605 | 0,24874 | 3 | 1 | 2 | 3,51026 | 4,49676 |
| 3,8 | 0,31551 | 17,4868 | 85,864 | 0 | 0,44102 | 3,8846 | 3 | 3,36003 | 15,94193 | 58,31931 | 27,6642 | 30,65511 | 12,48397 | 4,47657 | 0,13497 | 3 | 1 | 2 | 3,19193 | 7,65395 |
| 3,85 | 0,71284 | 17,9944 | 65,685 | 0 | 0,66939 | 2,70383 | 3 | 3,12277 | 16,16513 | 59,12756 | 28,1547 | 30,97286 | 19,70324 | 2,9658 | 0,06332 | 3 | 0,97917 | 2 | 2,92304 | 12,20532 |
| 3,9 | 0,97983 | 18,8165 | 48,85 | 0 | 0,99388 | 1,88292 | 4 | 2,89429 | 16,35511 | 59,94532 | 28,6452 | 31,30012 | 29,83816 | 2,00378 | 0,02687 | 4 | 0,88443 | 2 | 2,67397 | 18,67876 |
| 3,95 | 1,28898 | 19,3313 | 46,686 | 0 | 1,21904 | 1,58813 | 4 | 2,78021 | 16,47243 | 60,76894 | 29,1357 | 31,63324 | 36,61552 | 1,67145 | 0,01496 | 4 | 0,83824 | 2 | 2,5523 | 23,16535 |
| 4 | 1,3883 | 19,9318 | 43,85 | 0 | 1,33318 | 1,50363 | 4 | 2,73466 | 16,54683 | 61,59628 | 29,6262 | 31,97008 | 39,77428 | 1,57647 | 0,01175 | 5 | 0,8202 | 2 | 2,5045 | 25,43174 |
| 4,05 | 1,32227 | 20,8755 | 43,178 | 0 | 1,29427 | 1,5794 | 4 | 2,75666 | 16,55795 | 62,42418 | 30,1167 | 32,30748 | 38,12891 | 1,65944 | 0,01122 | 4 | 0,82951 | 2 | 2,52849 | 24,63698 |
| 4,1 | 1,17225 | 20,518 | 44,784 | 0 | 1,24401 | 1,65451 | 4 | 2,7818 | 16,55065 | 63,25171 | 30,6072 | 32,64451 | 36,17029 | 1,74314 | 0,01142 | 4 | 0,84008 | 2 | 2,5558 | 23,61523 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 4,15 | 1,23752 | 20,3536 | 44,325 | 0 | 1,28115 | 1,60098 | 4 | 2,76349 | 16,55792 | 64,07961 | 31,0977 | 32,98191 | 36,90105 | 1,68527 | 0,01104 | 4 | 0,83295 | 2 | 2,53663 | 24,34134 |
| 4,2 | 1,43367 | 20,661 | 44,506 | 0 | 1,42955 | 1,45411 | 4 | 2,70118 | 16,61535 | 64,91038 | 31,5882 | 33,32218 | 40,9529 | 1,52328 | 0,0094 | 5 | 0,80803 | 2 | 2,47078 | 27,29279 |
| 4,25 | 1,61746 | 21,3473 | 44,407 | 0 | 1,63305 | 1,30298 | 4 | 2,62716 | 16,69323 | 65,74504 | 32,0787 | 33,66634 | 46,55397 | 1,35763 | 0,0081 | 5 | 0,77853 | 2 | 2,3929 | 31,34603 |
| 4,3 | 1,84801 | 21,8263 | 45,391 | 0 | 1,81868 | 1,20195 | 4 | 2,56908 | 16,76552 | 66,58331 | 32,5692 | 34,01411 | 51,51087 | 1,24763 | 0,00693 | 5 | 0,75559 | 2 | 2,33223 | 35,04193 |
| 4,35 | 1,99057 | 22,4054 | 44,342 | 0 | 1,99593 | 1,12518 | 5 | 2,51975 | 16,83224 | 67,42493 | 33,0597 | 34,36523 | 56,11792 | 1,16452 | 0,0062 | 5 | 0,73622 | 2 | 2,28094 | 38,5701 |
| 4,4 | 2,14921 | 23,1418 | 45,309 | 0 | 2,14025 | 1,09017 | 5 | 2,48664 | 16,90295 | 68,27007 | 33,5502 | 34,71987 | 59,67715 | 1,12609 | 0,00572 | 5 | 0,72346 | 2 | 2,24699 | 41,43967 |
| 4,45 | 2,28098 | 24,4501 | 46,538 | 0 | 2,30306 | 1,05211 | 5 | 2,45137 | 16,97453 | 69,1188 | 34,0407 | 35,0781 | 63,68478 | 1,08467 | 0,00546 | 5 | 0,70987 | 2 | 2,21084 | 44,67882 |
| 4,5 | 2,47899 | 25,1006 | 46,899 | 0 | 2,47604 | 1,01625 | 5 | 2,41663 | 17,0457 | 69,97108 | 34,5312 | 35,43988 | 67,89146 | 1,0458 | 0,00517 | 5 | 0,69651 | 2 | 2,17531 | 48,12131 |
| 4,55 | 2,66814 | 25,9371 | 47,44 | 0 | 2,64909 | 0,9781 | 5 | 2,38291 | 17,10531 | 70,82635 | 35,0217 | 35,80465 | 72,00928 | 1,00497 | 0,00506 | 5 | 0,68354 | 2 | 2,14079 | 51,56534 |
| 4,6 | 2,80015 | 26,6949 | 49,899 | 0 | 2,78064 | 0,965 | 5 | 2,36181 | 17,16413 | 71,68456 | 35,5122 | 36,17236 | 74,8903 | 0,99053 | 0,00534 | 5 | 0,67647 | 1,98951 | 2,12145 | 53,895 |
| 4,65 | 2,87364 | 27,8674 | 52,571 | 0 | 2,87685 | 0,95965 | 5 | 2,34788 | 17,2099 | 72,54505 | 36,0027 | 36,54235 | 76,74114 | 0,98447 | 0,00588 | 5 | 0,67301 | 1,96899 | 2,11131 | 55,21641 |
| 4,7 | 2,95675 | 28,2606 | 54,98 | 0 | 2,95872 | 0,95452 | 5 | 2,33623 | 17,24678 | 73,40739 | 36,4932 | 36,91419 | 78,16269 | 0,9788 | 0,0062 | 5 | 0,67028 | 1,9503 | 2,10313 | 56,27233 |
| 4,75 | 3,04577 | 28,5966 | 55,603 | 0 | 3,10124 | 0,91473 | 5 | 2,3092 | 17,26995 | 74,27089 | 36,9837 | 37,28719 | 81,17978 | 0,93717 | 0,00591 | 5 | 0,66215 | 1,92173 | 2,0805 | 58,17 |
| 4,8 | 3,30119 | 28,2463 | 54,079 | 0 | 3,33428 | 0,85051 | 5 | 2,26602 | 17,29734 | 75,13576 | 37,4742 | 37,66156 | 86,53761 | 0,87012 | 0,00518 | 6 | 0,64842 | 1,88364 | 2,04289 | 61,39039 |
| 4,85 | 3,65587 | 28,232 | 53,423 | 0 | 3,62412 | 0,80129 | 5 | 2,2217 | 17,35662 | 76,00359 | 37,9647 | 38,03889 | 93,27594 | 0,81846 | 0,00456 | 6 | 0,63277 | 1,84339 | 2,00516 | 65,4057 |
| 4,9 | 3,91529 | 30,6412 | 54,931 | 0 | 4,01026 | 0,7589 | 5 | 2,17183 | 17,44938 | 76,87606 | 38,4552 | 38,42086 | 102,37627 | 0,77373 | 0,00381 | 6 | 0,61656 | 1,80359 | 1,96225 | 70,9423 |
| 4,95 | 4,45962 | 32,4285 | 51,997 | 0 | 4,42239 | 0,73759 | 5 | 2,12896 | 17,56666 | 77,75439 | 38,9457 | 38,80869 | 111,95008 | 0,75079 | 0,00319 | 6 | 0,60294 | 1,7695 | 1,92609 | 76,87819 |
| 5 | 4,89226 | 34,7877 | 51,538 | 0 | 4,89948 | 0,70599 | 5 | 2,08101 | 17,67342 | 78,63806 | 39,4362 | 39,20186 | 122,97474 | 0,71751 | 0,00267 | 6 | 0,58747 | 1,73348 | 1,88509 | 83,5685 |
| 5,05 | 5,34655 | 36,5536 | 53,39 | 0 | 5,35905 | 0,68685 | 6 | 2,04149 | 17,77931 | 79,52703 | 39,9267 | 39,60033 | 133,32028 | 0,69719 | 0,00243 | 6 | 0,57496 | 1,70337 | 1,85183 | 89,92988 |
| 5,1 | 5,83835 | 39,0844 | 53,276 | 0 | 5,83833 | 0,67716 | 6 | 2,00651 | 17,89435 | 80,42174 | 40,4172 | 40,00454 | 143,93136 | 0,68662 | 0,00214 | 6 | 0,5641 | 1,67668 | 1,82283 | 96,54152 |
| 5,15 | 6,33009 | 42,9664 | 51,489 | 0 | 6,24767 | 0,67242 | 6 | 1,97989 | 17,99021 | 81,32125 | 40,9077 | 40,41355 | 152,58113 | 0,68129 | 0,00195 | 6 | 0,55607 | 1,655 | 1,80126 | 102,05313 |
| 5,2 | 6,57456 | 43,9815 | 54,079 | 0 | 6,55047 | 0,67088 | 6 | 1,96194 | 18,06015 | 82,22426 | 41,3982 | 40,82606 | 158,43424 | 0,67941 | 0,00187 | 6 | 0,55096 | 1,63817 | 1,78734 | 105,96107 |
| 5,25 | 6,74676 | 44,8895 | 54,849 | 0 | 6,74092 | 0,66713 | 6 | 1,95012 | 18,09766 | 83,12914 | 41,8887 | 41,24044 | 161,43831 | 0,67546 | 0,00188 | 6 | 0,54785 | 1,62459 | 1,77863 | 108,16207 |
| 5,3 | 6,90143 | 46,0405 | 54,21 | 0 | 6,88355 | 0,67009 | 6 | 1,94348 | 18,13488 | 84,03589 | 42,3792 | 41,65669 | 163,22751 | 0,67838 | 0,0018 | 6 | 0,54655 | 1,61385 | 1,77469 | 109,73397 |
| 5,35 | 7,00247 | 47,4489 | 54,8 | 0 | 7,01138 | 0,67028 | 6 | 1,93682 | 18,16342 | 84,94406 | 42,8697 | 42,07436 | 164,62369 | 0,6785 | 0,00173 | 6 | 0,5452 | 1,60319 | 1,77059 | 111,04409 |
| 5,4 | 7,13024 | 47,4989 | 55,62 | 0 | 7,08676 | 0,67425 | 6 | 1,9343 | 18,18661 | 85,85339 | 43,3602 | 42,49319 | 164,75354 | 0,68252 | 0,00176 | 6 | 0,54528 | 1,59467 | 1,77024 | 111,64101 |
| 5,45 | 7,12756 | 48,3997 | 56,603 | 0 | 7,00741 | 0,68818 | 6 | 1,94323 | 18,19286 | 86,76303 | 43,8507 | 42,91233 | 161,27408 | 0,6968 | 0,00175 | 6 | 0,54933 | 1,5916 | 1,78029 | 110,14882 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 5,5 | 6,76443 | 48,7715 | 55,603 | 0 | 6,7812 | 0,72122 | 6 | 1,96629 | 18,19648 | 87,67286 | 44,3412 | 43,33166 | 154,47199 | 0,73067 | 0,00177 | 6 | 0,55839 | 1,59515 | 1,80347 | 106,77206 |
| 5,55 | 6,45161 | 49,5507 | 56,406 | 0 | 6,46929 | 0,75735 | 6 | 1,99505 | 18,18049 | 88,58188 | 44,8317 | 43,75018 | 145,84423 | 0,76787 | 0,00181 | 6 | 0,56939 | 1,60112 | 1,83176 | 102,16264 |
| 5,6 | 6,19184 | 48,6642 | 57,062 | 0 | 6,22931 | 0,78022 | 6 | 2,01587 | 18,15673 | 89,48972 | 45,3222 | 44,16752 | 139,01212 | 0,79159 | 0,00184 | 6 | 0,57756 | 1,60315 | 1,85262 | 98,43056 |
| 5,65 | 6,04448 | 47,5918 | 56,341 | 0 | 6,12169 | 0,7793 | 6 | 2,0219 | 18,12864 | 90,39615 | 45,8127 | 44,58345 | 135,28101 | 0,79098 | 0,00188 | 6 | 0,58045 | 1,59823 | 1,85966 | 96,39373 |
| 5,7 | 6,12875 | 46,8626 | 57,997 | 0 | 6,22303 | 0,75688 | 6 | 2,00899 | 18,12025 | 91,30216 | 46,3032 | 44,99896 | 136,26384 | 0,76815 | 0,00196 | 6 | 0,57667 | 1,58485 | 1,84922 | 97,17889 |
| 5,75 | 6,49587 | 46,8483 | 60,669 | 0 | 6,54353 | 0,72611 | 6 | 1,98087 | 18,14953 | 92,20964 | 46,7937 | 45,41594 | 142,0497 | 0,73649 | 0,00201 | 6 | 0,56762 | 1,56522 | 1,82495 | 100,97749 |
| 5,8 | 7,00597 | 48,8286 | 60,537 | 0 | 7,02321 | 0,69375 | 6 | 1,94432 | 18,2056 | 93,11992 | 47,2842 | 45,83572 | 151,19403 | 0,70308 | 0,0019 | 6 | 0,55566 | 1,54261 | 1,79304 | 106,90416 |
| 5,85 | 7,56778 | 50,4944 | 60,062 | 0 | 7,06443 | 0,71092 | 6 | 1,94801 | 18,2427 | 94,03205 | 47,7747 | 46,25735 | 150,68728 | 0,72051 | 0,00169 | 6 | 0,55797 | 1,53752 | 1,79852 | 107,17097 |
| 5,9 | 6,61953 | 51,3451 | 57,997 | 0 | 7,5173 | 0,6841 | 6 | 1,91629 | 18,29376 | 94,94674 | 48,2652 | 46,68154 | 158,99975 | 0,69286 | 0,00152 | 6 | 0,54768 | 1,51776 | 1,77099 | 112,65376 |
| 5,95 | 8,36459 | 52,439 | 60,57 | 0 | 7,75937 | 0,67664 | 6 | 1,90218 | 18,32976 | 95,86323 | 48,7557 | 47,10753 | 162,68115 | 0,68511 | 0,00143 | 6 | 0,54361 | 1,50561 | 1,75974 | 115,38244 |
| 6 | 8,29399 | 53,7258 | 60,57 | 0 | 8,32479 | 0,64059 | 6 | 1,86359 | 18,37465 | 96,78196 | 49,2462 | 47,53576 | 173,09084 | 0,64813 | 0,00145 | 6 | 0,53081 | 1,48402 | 1,72561 | 122,1056 |
| 6,05 | 8,31578 | 53,8187 | 62,275 | 0 | 8,34117 | 0,65676 | 6 | 1,86886 | 18,40634 | 97,70228 | 49,7367 | 47,96558 | 171,86223 | 0,66454 | 0,00144 | 6 | 0,53363 | 1,48001 | 1,73242 | 122,00442 |
| 6,1 | 8,41375 | 56,7999 | 61,882 | 0 | 8,34971 | 0,67261 | 6 | 1,87426 | 18,43535 | 98,62405 | 50,2272 | 48,39685 | 170,4881 | 0,68065 | 0,00142 | 6 | 0,53648 | 1,47601 | 1,73931 | 121,78719 |
| 6,15 | 8,3196 | 57,8652 | 61,783 | 0 | 8,30107 | 0,69315 | 6 | 1,88369 | 18,46098 | 99,54709 | 50,7177 | 48,82939 | 167,96276 | 0,70156 | 0,00137 | 6 | 0,54077 | 1,4735 | 1,74996 | 120,8497 |
| 6,2 | 8,16985 | 57,9509 | 62,16 | 0 | 8,11234 | 0,70863 | 6 | 1,89735 | 18,45111 | 100,46965 | 51,2082 | 49,26145 | 162,63976 | 0,71751 | 0,00132 | 6 | 0,54643 | 1,47239 | 1,76423 | 117,96605 |
| 6,25 | 7,84757 | 56,6427 | 61,406 | 0 | 7,90012 | 0,7194 | 6 | 1,91055 | 18,42781 | 101,39104 | 51,6987 | 49,69234 | 156,94033 | 0,72875 | 0,00136 | 6 | 0,55188 | 1,471 | 1,77795 | 114,71917 |
| 6,3 | 7,68295 | 55,9063 | 63,275 | 0 | 7,74191 | 0,72533 | 6 | 1,91982 | 18,40622 | 102,31135 | 52,1892 | 50,12215 | 152,41967 | 0,73504 | 0,00142 | 6 | 0,55593 | 1,46813 | 1,788 | 112,159 |
| 6,35 | 7,69522 | 55,9134 | 64,504 | 0 | 7,8707 | 0,71615 | 6 | 1,91078 | 18,41688 | 103,2322 | 52,6797 | 50,5525 | 153,65159 | 0,72567 | 0,0016 | 6 | 0,55353 | 1,45877 | 1,78109 | 113,30954 |
| 6,4 | 8,23394 | 57,2789 | 67,553 | 0 | 8,27444 | 0,69898 | 6 | 1,8869 | 18,46569 | 104,15548 | 53,1702 | 50,98528 | 160,24797 | 0,70789 | 0,00158 | 6 | 0,54591 | 1,44447 | 1,76051 | 118,01733 |
| 6,45 | 8,89417 | 60,3173 | 66,291 | 0 | 8,68465 | 0,6824 | 6 | 1,86367 | 18,51229 | 105,08109 | 53,6607 | 51,42039 | 166,85148 | 0,69076 | 0,00153 | 6 | 0,53851 | 1,43072 | 1,74048 | 122,74976 |
| 6,5 | 8,92584 | 60,1958 | 66,439 | 0 | 8,83108 | 0,67732 | 6 | 1,85584 | 18,52933 | 106,00756 | 54,1512 | 51,85636 | 168,25462 | 0,68555 | 0,0014 | 6 | 0,53653 | 1,42239 | 1,7347 | 124,10428 |
| 6,55 | 8,67323 | 58,9304 | 66,291 | 0 | 8,71209 | 0,67656 | 6 | 1,86043 | 18,50724 | 106,93292 | 54,6417 | 52,29122 | 164,56217 | 0,68496 | 0,00145 | 6 | 0,53888 | 1,41819 | 1,74027 | 122,03729 |
| 6,6 | 8,5372 | 57,7007 | 68,602 | 0 | 8,68826 | 0,67183 | 6 | 1,85969 | 18,49497 | 107,85767 | 55,1322 | 52,72547 | 162,73733 | 0,68028 | 0,00148 | 6 | 0,53935 | 1,4123 | 1,74089 | 121,18124 |
| 6,65 | 8,85435 | 58,48 | 68,537 | 0 | 8,86196 | 0,65546 | 6 | 1,84656 | 18,49696 | 108,78252 | 55,6227 | 53,15982 | 164,65784 | 0,66361 | 0,00144 | 6 | 0,53538 | 1,40255 | 1,72989 | 122,76734 |
| 6,7 | 9,19434 | 58,0796 | 67,586 | 0 | 9,00672 | 0,64564 | 6 | 1,83706 | 18,50444 | 109,70774 | 56,1132 | 53,59454 | 166,00588 | 0,6536 | 0,00131 | 6 | 0,53273 | 1,39414 | 1,72235 | 124,03681 |
| 6,75 | 8,97146 | 57,8938 | 67,078 | 0 | 8,84259 | 0,67987 | 6 | 1,8563 | 18,53565 | 110,63452 | 56,6037 | 54,03082 | 161,61057 | 0,68848 | 0,00117 | 6 | 0,54057 | 1,39485 | 1,7423 | 121,79728 |
| 6,8 | 8,36196 | 64,3801 | 65,717 | 0 | 8,27085 | 0,76577 | 6 | 1,90969 | 18,57 | 111,56302 | 57,0942 | 54,46882 | 149,79732 | 0,77624 | 0,00125 | 6 | 0,56082 | 1,40596 | 1,79478 | 114,71618 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 6,85 | 7,47912 | 67,73228 | 69,094 | 0 | 7,00033 | 1,02553 | 6 | 2,04306 | 18,65019 | 112,49553 | 57,5847 | 54,91083 | 125,43665 | 1,04228 | 0,00152 | 6 | 0,61038 | 1,44181 | 1,92415 | 99,30914 |
| 6,9 | 5,1599 | 83,2589 | 69,324 | 0 | 5,58844 | 1,54469 | 5 | 2,22986 | 18,77588 | 113,43433 | 58,0752 | 55,35913 | 98,89978 | 1,57669 | 0,00952 | 5 | 0,67985 | 1,49484 | 2,10578 | 81,84243 |
| 6,95 | 4,1263 | 107,9806 | 192,202 | 0 | 4,43774 | 2,27165 | 5 | 2,41422 | 18,86593 | 114,37762 | 58,5657 | 55,81192 | 77,46306 | 2,33175 | 0,03545 | 5 | 0,74874 | 1,54752 | 2,28588 | 66,90472 |
| 7 | 4,02702 | 111,1906 | 373,90724 | 0 | 4,09436 | 2,827 | 4 | 2,50321 | 18,99399 | 115,32732 | 59,0562 | 56,27112 | 70,71186 | 2,90894 | 0,08551 | 5 | 0,78287 | 1,56853 | 2,3748 | 62,41236 |
| 7,05 | 4,12977 | 128,07153 | 631,848 | 0 | 4,06041 | 3,18068 | 4 | 2,54034 | 19,11682 | 116,28316 | 59,5467 | 56,73646 | 69,51667 | 3,27446 | 0,12222 | 4 | 0,79787 | 1,57176 | 2,41356 | 61,99237 |
| 7,1 | 4,02445 | 148,18462 | 619,012 | 0 | 4,15285 | 3,59517 | 4 | 2,56963 | 19,29226 | 117,24778 | 60,0372 | 57,21058 | 70,53944 | 3,69962 | 0,13854 | 4 | 0,81013 | 1,57209 | 2,44509 | 63,44316 |
| 7,15 | 4,30433 | 171,64989 | 606,472 | 0 | 4,21698 | 3,96446 | 4 | 2,59441 | 19,42824 | 118,21919 | 60,5277 | 57,69149 | 71,04614 | 4,0788 | 0,12647 | 4 | 0,82064 | 1,57051 | 2,472 | 64,37131 |
| 7,2 | 4,32215 | 181,70643 | 511,248 | 0 | 4,27252 | 4,08736 | 4 | 2,59968 | 19,48342 | 119,19336 | 61,0182 | 58,17516 | 71,39341 | 4,20466 | 0,11465 | 4 | 0,82372 | 1,56239 | 2,47945 | 64,89122 |
| 7,25 | 4,19107 | 170,5428 | 493,823 | 0 | 4,07195 | 4,18838 | 4 | 2,62198 | 19,43776 | 120,16525 | 61,5087 | 58,65655 | 67,37159 | 4,31574 | 0,11902 | 4 | 0,83289 | 1,55943 | 2,50289 | 61,62549 |
| 7,3 | 3,70263 | 159,3973 | 590,506 | 0 | 3,83241 | 4,20881 | 4 | 2,64226 | 19,35037 | 121,13277 | 61,9992 | 59,13357 | 62,76098 | 4,34618 | 0,12739 | 4 | 0,84184 | 1,55625 | 2,52412 | 57,75665 |
| 7,35 | 3,60354 | 153,9568 | 519,969 | 0 | 3,81204 | 4,15966 | 4 | 2,64036 | 19,32869 | 122,0992 | 62,4897 | 59,6095 | 61,90195 | 4,2973 | 0,13433 | 4 | 0,84207 | 1,54597 | 2,52416 | 57,04537 |
| 7,4 | 4,12996 | 162,3499 | 564,01323 | 0 | 3,81121 | 4,32351 | 4 | 2,65214 | 19,37279 | 123,06784 | 62,9802 | 60,08764 | 61,37938 | 4,46778 | 0,13337 | 4 | 0,8475 | 1,53986 | 2,5379 | 56,79213 |
| 7,45 | 3,70013 | 178,0279 | 580,654 | 0 | 3,73151 | 4,67642 | 4 | 2,6826 | 19,43064 | 124,03937 | 63,4707 | 60,56867 | 59,55995 | 4,83722 | 0,1312 | 4 | 0,85992 | 1,53904 | 2,57002 | 55,52028 |
| 7,5 | 3,36443 | 183,1253 | 465,68255 | 0 | 3,48991 | 5,19736 | 3 | 2,73557 | 19,44947 | 125,01185 | 63,9612 | 61,05065 | 55,1165 | 5,39045 | 0,12506 | 4 | 0,88071 | 1,54435 | 2,62419 | 51,9658 |
| 7,55 | 3,40517 | 182,9966 | 407,959 | 0 | 3,2997 | 5,46779 | 3 | 2,76836 | 19,42186 | 125,98294 | 64,4517 | 61,53124 | 51,5789 | 5,68484 | 0,11233 | 3 | 0,89397 | 1,54363 | 2,65848 | 48,99028 |
| 7,6 | 3,12949 | 175,1397 | 389,223 | 0 | 3,15123 | 5,61204 | 3 | 2,7905 | 19,3812 | 126,952 | 64,9422 | 62,0098 | 48,77102 | 5,84762 | 0,10239 | 3 | 0,90327 | 1,5398 | 2,68235 | 46,5678 |
| 7,65 | 2,91904 | 172,4087 | 326,653 | 0 | 2,89343 | 5,93432 | 3 | 2,83389 | 19,31453 | 127,91773 | 65,4327 | 62,48503 | 44,25885 | 6,20881 | 0,09748 | 3 | 0,9206 | 1,54173 | 2,72738 | 42,6369 |
| 7,7 | 2,63177 | 167,5687 | 289,18 | 0 | 2,7787 | 6,0905 | 3 | 2,85432 | 19,28235 | 128,88184 | 65,9232 | 62,95864 | 42,08829 | 6,38673 | 0,09097 | 3 | 0,92936 | 1,53727 | 2,74981 | 40,73485 |
| 7,75 | 2,7853 | 167,7332 | 305,113 | 0 | 2,66082 | 6,25607 | 3 | 2,87591 | 19,24672 | 129,84418 | 66,4137 | 63,43048 | 39,90162 | 6,57702 | 0,08687 | 3 | 0,93859 | 1,53306 | 2,7735 | 38,80155 |
| 7,8 | 2,5654 | 164,0871 | 264,542 | 0 | 2,67225 | 6,06257 | 3 | 2,86503 | 19,21715 | 130,80504 | 66,9042 | 63,90084 | 39,77165 | 6,3746 | 0,08221 | 3 | 0,9355 | 1,52037 | 2,76478 | 38,63931 |
| 7,85 | 2,66604 | 154,1998 | 257,87 | 0 | 2,62676 | 6,05604 | 3 | 2,87004 | 19,18958 | 131,76452 | 67,3947 | 64,36982 | 38,76038 | 6,37587 | 0,10837 | 3 | 0,93846 | 1,51197 | 2,77194 | 37,72364 |
| 7,9 | 2,64885 | 158,9469 | 490,905 | 0 | 2,83776 | 5,70754 | 3 | 2,82804 | 19,23991 | 132,72651 | 67,8852 | 64,84131 | 41,71775 | 5,98759 | 0,12666 | 3 | 0,9235 | 1,49195 | 2,73199 | 40,35783 |
| 7,95 | 3,19839 | 172,7519 | 482,725 | 0 | 3,03099 | 5,5896 | 3 | 2,80128 | 19,31692 | 133,69236 | 68,3757 | 65,31666 | 44,35777 | 5,84753 | 0,11644 | 3 | 0,91435 | 1,47616 | 2,70731 | 42,76871 |
| 8 | 3,24574 | 176,5624 | 243,576 | 0 | 3,2296 | 5,5143 | 3 | 2,77756 | 19,39867 | 134,66229 | 68,8662 | 65,79609 | 47,03837 | 5,75423 | 0,07882 | 3 | 0,90637 | 1,46143 | 2,68571 | 45,23033 |
| 8,05 | 3,24468 | 184,9554 | 212,151 | 0 | 3,11343 | 5,93644 | 3 | 2,81147 | 19,42733 | 135,63366 | 69,3567 | 66,27696 | 44,92959 | 6,20683 | 0,06041 | 3 | 0,92022 | 1,46011 | 2,72155 | 43,4792 |
| 8,1 | 2,84987 | 192,9625 | 291,966 | 0 | 2,94677 | 6,32079 | 3 | 2,84764 | 19,41512 | 136,60441 | 69,8472 | 66,75721 | 42,09526 | 6,62805 | 0,07931 | 3 | 0,93499 | 1,45913 | 2,75978 | 41,00378 |
| 8,15 | 2,74575 | 180,859 | 374,027 | 0 | 2,74357 | 6,71623 | 3 | 2,8882 | 19,37533 | 137,57318 | 70,3377 | 67,23548 | 38,7592 | 7,07079 | 0,10633 | 3 | 0,95152 | 1,45896 | 2,80263 | 38,0204 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 8,2 | 2,63508 | 178,9716 | 376,338 | 0 | 2,64217 | 6,97478 | 3 | 2,91137 | 19,36103 | 138,54123 | 70,8282 | 67,71303 | 36,97415 | 7,36074 | 0,13845 | 3 | 0,96144 | 1,45478 | 2,82809 | 36,42239 |
| 8,25 | 2,54569 | 193,0268 | 501,987 | 0 | 2,42551 | 7,44425 | 3 | 2,95764 | 19,30473 | 139,50647 | 71,3187 | 68,18777 | 33,52513 | 7,89855 | 0,1888 | 3 | 0,98035 | 1,45554 | 2,87721 | 33,27379 |
| 8,3 | 2,09576 | 169,6849 | 630,454 | 0 | 2,17696 | 7,84154 | 3 | 3,00685 | 19,19872 | 140,4664 | 71,8092 | 68,6572 | 29,66176 | 8,38241 | 0,24449 | 3 | 1 | 1,45651 | 2,93006 | 29,66176 |
| 8,35 | 1,88943 | 149,4099 | 576,671 | 0 | 1,95644 | 7,3256 | 3 | 3,01952 | 18,95663 | 141,41424 | 72,2997 | 69,11454 | 26,26118 | 7,89636 | 0,29588 | 3 | 1 | 1,44687 | 2,94768 | 26,26118 |
| 8,4 | 1,88414 | 110,8689 | 620,865 | 0 | 1,85592 | 6,62364 | 3 | 3,00626 | 18,75985 | 142,35223 | 72,7902 | 69,56203 | 24,63367 | 7,17389 | 0,28784 | 3 | 1 | 1,43757 | 2,93748 | 24,63367 |
| 8,45 | 1,79419 | 108,5097 | 500,56 | 0 | 1,72332 | 6,26902 | 3 | 3,01393 | 18,58287 | 143,28137 | 73,2807 | 70,00067 | 22,57181 | 6,83751 | 0,28198 | 3 | 1 | 1,42856 | 2,9499 | 22,57181 |
| 8,5 | 1,49164 | 104,7278 | 435,04 | 0 | 1,69118 | 5,97122 | 3 | 3,00593 | 18,498 | 144,20627 | 73,7712 | 70,43507 | 21,96312 | 6,52784 | 0,23479 | 3 | 1 | 1,41975 | 2,94448 | 21,96312 |
| 8,55 | 1,78771 | 89,7146 | 375,338 | 0 | 1,96891 | 4,51153 | 3 | 2,87611 | 18,40877 | 145,12671 | 74,2617 | 70,86501 | 25,73607 | 4,87053 | 0,12159 | 3 | 0,95685 | 1,39032 | 2,81191 | 25,35643 |
| 8,6 | 2,62739 | 72,0419 | 77,684 | 0 | 2,40427 | 3,06699 | 4 | 2,70199 | 18,27121 | 146,04027 | 74,7522 | 71,28807 | 31,67753 | 3,26533 | 0,04145 | 4 | 0,89015 | 1,35156 | 2,63596 | 30,52144 |
| 8,65 | 2,79771 | 59,4594 | 52,062 | 0 | 2,78925 | 2,1302 | 4 | 2,55332 | 18,07974 | 146,94426 | 75,2427 | 71,70156 | 36,85139 | 2,24866 | -0,00401 | 4 | 0,83381 | 1,31966 | 2,48725 | 34,86936 |
| 8,7 | 2,94264 | 46,7482 | 64,209 | 0 | 2,89957 | 1,70035 | 5 | 2,48149 | 17,87997 | 147,83826 | 75,7332 | 72,10506 | 38,16277 | 1,7917 | -0,0028 | 5 | 0,8072 | 1,30212 | 2,41673 | 35,83069 |
| 8,75 | 2,95835 | 41,7009 | 87,847 | 0 | 3,09356 | 1,39945 | 5 | 2,40979 | 17,75527 | 148,72602 | 76,2237 | 72,50232 | 40,61715 | 1,47013 | 0,00104 | 5 | 0,78054 | 1,28529 | 2,3461 | 37,84963 |
| 8,8 | 3,3797 | 41,4293 | 85,798 | 0 | 3,31464 | 1,28814 | 5 | 2,36472 | 17,7658 | 149,61431 | 76,7142 | 72,90011 | 43,41592 | 1,34903 | 0,00185 | 5 | 0,76356 | 1,27296 | 2,30219 | 40,28961 |
| 8,85 | 3,60587 | 44,961 | 74,045 | 0 | 3,39424 | 1,30616 | 5 | 2,35962 | 17,81818 | 150,50522 | 77,2047 | 73,30052 | 44,25255 | 1,36677 | -0,00006 | 5 | 0,76236 | 1,26718 | 2,29849 | 41,10382 |
| 8,9 | 3,19715 | 46,6124 | 71,209 | 0 | 3,09727 | 1,5602 | 5 | 2,43644 | 17,88218 | 151,39933 | 77,6952 | 73,70413 | 39,96882 | 1,64038 | -0,00782 | 5 | 0,79305 | 1,27375 | 2,37755 | 37,52308 |
| 8,95 | 2,48878 | 53,3969 | 18,72 | 0 | 2,50844 | 2,09439 | 4 | 2,58572 | 17,89749 | 152,2942 | 78,1857 | 74,1085 | 31,79319 | 2,22977 | -0,00127 | 4 | 0,85171 | 1,29073 | 2,5313 | 30,41144 |
| 9 | 1,83939 | 57,6006 | 135,631 | 0 | 2,36726 | 2,40201 | 4 | 2,64159 | 17,96629 | 153,19252 | 78,6762 | 74,51632 | 29,71252 | 2,56821 | -0,00154 | 4 | 0,87425 | 1,29326 | 2,59005 | 28,63358 |
| 9,05 | 2,77361 | 59,5881 | 71,438 | 0 | 2,42972 | 2,5628 | 4 | 2,64981 | 18,08077 | 154,09656 | 79,1667 | 74,92986 | 30,37009 | 2,73635 | 0,00588 | 4 | 0,87806 | 1,28843 | 2,59953 | 29,31983 |
| 9,1 | 2,67617 | 69,6184 | 70,602 | 0 | 2,42324 | 2,7091 | 4 | 2,66561 | 18,14053 | 155,00358 | 79,6572 | 75,34638 | 30,10416 | 2,89424 | 0,00542 | 4 | 0,88497 | 1,28468 | 2,61718 | 29,13972 |
| 9,15 | 1,81995 | 67,7381 | 133,845 | 0 | 1,92492 | 3,44672 | 4 | 2,80897 | 18,06443 | 155,9068 | 80,1477 | 75,7591 | 23,35046 | 3,75048 | 0,06567 | 4 | 0,94278 | 1,29917 | 2,76857 | 22,98244 |
| 9,2 | 1,27863 | 61,6828 | 384,535 | 0 | 1,43312 | 4,49367 | 3 | 2,98101 | 17,91704 | 156,80266 | 80,6382 | 76,16446 | 16,75734 | 5,04574 | 0,22393 | 3 | 1 | 1,31295 | 2,95656 | 16,75734 |
| 9,25 | 1,20077 | 63,7775 | 580,933 | 0 | 1,27206 | 4,86761 | 3 | 3,04311 | 17,82614 | 157,69396 | 81,1287 | 76,56526 | 14,55442 | 5,55643 | 0,43479 | 3 | 1 | 1,30608 | 3,0303 | 14,55442 |
| 9,3 | 1,33677 | 60,2959 | 731,448 | 0 | 1,48991 | 4,58182 | 3 | 2,97323 | 17,99899 | 158,59391 | 81,6192 | 76,97471 | 17,29546 | 5,12763 | 0,40137 | 3 | 1 | 1,29913 | 2,95071 | 17,29546 |
| 9,35 | 1,93218 | 80,721 | 535,526 | 0 | 2,2142 | 3,29292 | 4 | 2,74922 | 18,22665 | 159,50525 | 82,1097 | 77,39555 | 26,54797 | 3,54854 | 0,21171 | 4 | 0,92203 | 1,26651 | 2,71194 | 26,02284 |
| 9,4 | 3,37365 | 77,7183 | 284,377 | 0 | 2,70327 | 2,69135 | 4 | 2,62671 | 18,30069 | 160,42028 | 82,6002 | 77,82008 | 32,67605 | 2,86113 | 0,08217 | 4 | 0,87446 | 1,24519 | 2,5864 | 31,66337 |
| 9,45 | 2,80399 | 59,824 | 54,702 | 0 | 2,56101 | 2,49954 | 4 | 2,62511 | 18,13273 | 161,32692 | 83,0907 | 78,23622 | 30,67224 | 2,66758 | 0,02688 | 4 | 0,87514 | 1,2396 | 2,58766 | 29,74655 |
| 9,5 | 1,50538 | 54,4979 | 103,682 | 0 | 1,83482 | 3,03723 | 4 | 2,7914 | 17,84541 | 162,21919 | 83,5812 | 78,63799 | 21,26959 | 3,3318 | 0,00832 | 4 | 0,94327 | 1,25443 | 2,76614 | 20,9816 |

| In situ data | | | | | | | | | | Basic output data | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 9,55 | 1,19508 | 52,8608 | 134,09 | 0 | 1,16012 | 4,48047 | 3 | 3,05218 | 17,58954 | 163,09866 | 84,0717 | 79,02696 | 12,61626 | 5,21341 | 0,0768 | 3 | 1 | 1,26539 | 3,06022 | 12,61626 |
| 9,6 | 0,77991 | 48,5784 | 244,166 | 0 | 0,96416 | 5,11379 | 3 | 3,15086 | 17,45784 | 163,97156 | 84,5622 | 79,40936 | 10,07679 | 6,16168 | 0,19457 | 3 | 1 | 1,2593 | 3,18173 | 10,07679 |
| 9,65 | 0,9175 | 46,4766 | 342,504 | 0 | 0,79133 | 5,86266 | 3 | 3,25504 | 17,31207 | 164,83716 | 85,0527 | 79,78446 | 7,85236 | 7,40518 | 0,38133 | 3 | 1 | 1,25338 | 3,31614 | 7,85236 |
| 9,7 | 0,67659 | 44,1245 | 385,19 | 0 | 0,81962 | 5,52658 | 3 | 3,22732 | 17,29803 | 165,70206 | 85,5432 | 80,15886 | 8,15777 | 6,92701 | 0,4536 | 3 | 1 | 1,24752 | 3,28503 | 8,15777 |
| 9,75 | 0,86477 | 45,2898 | 418,778 | 0 | 0,75189 | 5,9686 | 3 | 3,27738 | 17,25426 | 166,56477 | 86,0337 | 80,53107 | 7,26836 | 7,66707 | 0,59221 | 3 | 1 | 1,24176 | 3,35173 | 7,26836 |
| 9,8 | 0,71432 | 45,2183 | 494,053 | 0 | 0,76617 | 5,8804 | 3 | 3,26696 | 17,26598 | 167,42807 | 86,5242 | 80,90387 | 7,40066 | 7,52476 | 0,66823 | 3 | 1 | 1,23603 | 3,34052 | 7,40066 |
| 9,85 | 0,71942 | 44,6535 | 547,033 | 0 | 0,69639 | 6,53807 | 3 | 3,32792 | 17,24147 | 168,29015 | 87,0147 | 81,27545 | 6,49766 | 8,62156 | 0,77514 | 3 | 1 | 1,23038 | 3,42162 | 6,49766 |
| 9,9 | 0,65543 | 46,7196 | 448,006 | 0 | 0,69067 | 6,57494 | 3 | 3,33224 | 17,2353 | 169,15191 | 87,5052 | 81,64671 | 6,38754 | 8,70747 | 0,81859 | 3 | 1 | 1,22479 | 3,4301 | 6,38754 |
| 9,95 | 0,69717 | 44,8609 | 548,213 | 0 | 0,68555 | 6,60777 | 3 | 3,33613 | 17,2296 | 170,01339 | 87,9957 | 82,01769 | 6,28564 | 8,78689 | 0,85265 | 3 | 1 | 1,21925 | 3,43801 | 6,28564 |
| 10 | 0,70404 | 44,3175 | 586,473 | 0 | 0,72388 | 6,19725 | 3 | 3,3004 | 17,23927 | 170,87536 | 88,4862 | 82,38916 | 6,71215 | 8,11216 | 0,8916 | 3 | 1 | 1,21375 | 3,39402 | 6,71215 |
| 10,05 | 0,77044 | 45,4042 | 609,964 | 0 | 0,9241 | 4,87464 | 3 | 3,15283 | 17,33766 | 171,74224 | 88,9767 | 82,76554 | 9,09027 | 5,98738 | 0,66063 | 3 | 1 | 1,20823 | 3,20877 | 9,09027 |
| 10,1 | 1,29783 | 45,4185 | 561,59 | 0 | 1,12062 | 4,08061 | 3 | 3,03945 | 17,42887 | 172,61368 | 89,4672 | 83,14648 | 11,40168 | 4,82361 | 0,46528 | 3 | 1 | 1,2027 | 3,07336 | 11,40168 |
| 10,15 | 1,2936 | 46,3622 | 420,123 | 0 | 1,41875 | 3,15075 | 3 | 2,89016 | 17,49319 | 173,48834 | 89,9577 | 83,53064 | 14,9078 | 3,58971 | 0,32845 | 3 | 0,99766 | 1,19666 | 2,90275 | 14,90153 |
| 10,2 | 1,66481 | 42,3229 | 515,183 | 0 | 1,52173 | 3,04386 | 3 | 2,85679 | 17,56096 | 174,36639 | 90,4482 | 83,91819 | 16,05564 | 3,43778 | 0,24321 | 3 | 0,98414 | 1,18833 | 2,86659 | 16,01106 |
| 10,25 | 1,60677 | 50,2728 | 319,112 | 0 | 1,39147 | 3,49373 | 3 | 2,92379 | 17,58227 | 175,2455 | 90,9387 | 84,3068 | 14,42617 | 3,99714 | 0,27315 | 3 | 1 | 1,18614 | 2,94258 | 14,42617 |
| 10,3 | 0,90283 | 53,2468 | 435,171 | 0 | 1,19316 | 4,39316 | 3 | 3,0373 | 17,60997 | 176,126 | 91,4292 | 84,6968 | 12,00798 | 5,15394 | 0,34319 | 3 | 1 | 1,18068 | 3,07373 | 12,00798 |
| 10,35 | 1,06989 | 53,733 | 567,13 | 0 | 1,13167 | 4,95741 | 3 | 3,08776 | 17,66781 | 177,00939 | 91,9197 | 85,08969 | 11,2195 | 5,87659 | 0,39134 | 3 | 1 | 1,17523 | 3,13259 | 11,2195 |
| 10,4 | 1,4223 | 61,3253 | 394,255 | 0 | 1,19553 | 5,02492 | 3 | 3,07277 | 17,76756 | 177,89777 | 92,4102 | 85,48757 | 11,90382 | 5,90335 | 0,31381 | 3 | 1 | 1,16976 | 3,11403 | 11,90382 |
| 10,45 | 1,09439 | 65,1644 | 273,885 | 0 | 1,17721 | 5,2857 | 3 | 3,09176 | 17,80208 | 178,78787 | 92,9007 | 85,88717 | 11,62481 | 6,23221 | 0,26778 | 3 | 1 | 1,16432 | 3,13703 | 11,62481 |
| 10,5 | 1,01494 | 60,1815 | 412,631 | 0 | 0,96842 | 6,1716 | 3 | 3,20001 | 17,68088 | 179,67192 | 93,3912 | 86,28072 | 9,14161 | 7,57746 | 0,35626 | 3 | 1 | 1,15901 | 3,27154 | 9,14161 |
| 10,55 | 0,79592 | 53,9546 | 436,646 | 0 | 0,89024 | 5,96001 | 3 | 3,21912 | 17,51165 | 180,5475 | 93,8817 | 86,6658 | 8,18888 | 7,47624 | 0,49967 | 3 | 1 | 1,15386 | 3,30463 | 8,18888 |
| 10,6 | 0,85987 | 45,0396 | 496,216 | 0 | 0,78777 | 6,02654 | 3 | 3,26392 | 17,33686 | 181,41434 | 94,3722 | 87,04214 | 6,96619 | 7,82962 | 0,66684 | 3 | 1 | 1,14887 | 3,3718 | 6,96619 |
| 10,65 | 0,70751 | 43,431 | 563,278 | 0 | 0,76634 | 5,77029 | 3 | 3,2619 | 17,24457 | 182,27657 | 94,8627 | 87,41387 | 6,68155 | 7,57111 | 0,76018 | 3 | 1 | 1,14398 | 3,37685 | 6,68155 |
| 10,7 | 0,73163 | 44,1889 | 557,065 | 0 | 0,70159 | 6,22499 | 3 | 3,31236 | 17,19644 | 183,13639 | 95,3532 | 87,78319 | 5,90611 | 8,42386 | 0,87994 | 3 | 1 | 1,13917 | 3,44764 | 5,90611 |
| 10,75 | 0,66564 | 43,4024 | 534,345 | 0 | 0,67328 | 6,49529 | 3 | 3,33779 | 17,18215 | 183,9955 | 95,8437 | 88,1518 | 5,55044 | 8,93787 | 0,91904 | 2 | 1 | 1,13441 | 3,48476 | 5,55044 |
| 10,8 | 0,62256 | 43,6026 | 545,132 | 0 | 0,65751 | 6,56736 | 3 | 3,34887 | 17,15849 | 184,85343 | 96,3342 | 88,51923 | 5,33955 | 9,13583 | 0,95686 | 2 | 1 | 1,1297 | 3,50385 | 5,33955 |
| 10,85 | 0,68432 | 42,5374 | 566,311 | 0 | 0,66636 | 6,49581 | 3 | 3,34137 | 17,16641 | 185,71175 | 96,8247 | 88,88705 | 5,40744 | 9,00562 | 0,91419 | 2 | 1 | 1,12502 | 3,49567 | 5,40744 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 10,9 | 0,69221 | 43,717 | 497,249 | 0 | 0,70572 | 6,15716 | 3 | 3,30744 | 17,19284 | 186,57139 | 97,3152 | 89,25619 | 5,81643 | 8,3699 | 0,87115 | 3 | 1 | 1,12037 | 3,45111 | 5,81643 |
| 10,95 | 0,74064 | 44,1031 | 585,162 | 0 | 0,7396 | 6,0027 | 3 | 3,28457 | 17,23554 | 187,43317 | 97,8057 | 89,62747 | 6,16073 | 8,04031 | 0,84319 | 3 | 1 | 1,11573 | 3,4207 | 6,16073 |
| 11 | 0,78596 | 45,3685 | 607,767 | 0 | 0,77421 | 5,81719 | 3 | 3,26051 | 17,26956 | 188,29664 | 98,2962 | 90,00044 | 6,51012 | 7,68667 | 0,88832 | 3 | 1 | 1,11111 | 3,38979 | 6,51012 |
| 11,05 | 0,79603 | 45,6401 | 663,387 | 0 | 0,81874 | 5,62159 | 3 | 3,2322 | 17,31599 | 189,16244 | 98,7867 | 90,37574 | 6,96622 | 7,31065 | 0,893 | 3 | 1 | 1,10649 | 3,35321 | 6,96622 |
| 11,1 | 0,87423 | 47,07 | 711,843 | 0 | 0,85715 | 5,48397 | 3 | 3,20986 | 17,35779 | 190,03033 | 99,2772 | 90,75313 | 7,35089 | 7,04609 | 0,89994 | 3 | 1 | 1,10189 | 3,32497 | 7,35089 |
| 11,15 | 0,90118 | 48,3068 | 723,695 | 0 | 0,91115 | 5,29126 | 3 | 3,17936 | 17,41035 | 190,90085 | 99,7677 | 91,13315 | 7,9033 | 6,69369 | 0,88165 | 3 | 1 | 1,0973 | 3,28647 | 7,9033 |
| 11,2 | 0,95805 | 49,2576 | 768,79 | 0 | 0,98061 | 5,09435 | 3 | 3,14404 | 17,47941 | 191,77482 | 100,2582 | 91,51662 | 8,61962 | 6,33283 | 0,83251 | 3 | 1 | 1,0927 | 3,24201 | 8,61962 |
| 11,25 | 1,08261 | 52,3031 | 778,429 | 0 | 1,07816 | 4,71785 | 3 | 3,09106 | 17,53655 | 192,65165 | 100,7487 | 91,90295 | 9,63529 | 5,74426 | 0,75152 | 3 | 1 | 1,0881 | 3,17777 | 9,63529 |
| 11,3 | 1,19383 | 51,0377 | 751,464 | 0 | 1,11173 | 4,70832 | 3 | 3,08001 | 17,58124 | 193,53071 | 101,2392 | 92,29151 | 9,94887 | 5,7007 | 0,7276 | 3 | 1 | 1,08352 | 3,16484 | 9,94887 |
| 11,35 | 1,05874 | 53,6901 | 778,069 | 0 | 1,10123 | 4,75581 | 3 | 3,08594 | 17,57823 | 194,40962 | 101,7297 | 92,67992 | 9,7844 | 5,77539 | 0,75135 | 3 | 1 | 1,07898 | 3,17402 | 9,7844 |
| 11,4 | 1,05111 | 52,3889 | 819,673 | 0 | 1,06591 | 4,95498 | 3 | 3,10807 | 17,57542 | 195,28839 | 102,2202 | 93,06819 | 9,35463 | 6,06644 | 0,80793 | 3 | 1 | 1,07448 | 3,20259 | 9,35463 |
| 11,45 | 1,08787 | 52,3675 | 819,115 | 0 | 1,06162 | 4,9218 | 3 | 3,10765 | 17,56151 | 196,16647 | 102,7107 | 93,45577 | 9,26053 | 6,0374 | 0,8166 | 3 | 1 | 1,07002 | 3,20472 | 9,26053 |
| 11,5 | 1,04587 | 51,9957 | 789,527 | 0 | 1,05543 | 4,96873 | 3 | 3,11219 | 17,56346 | 197,04464 | 103,2012 | 93,84344 | 9,14696 | 6,10932 | 0,8065 | 3 | 1 | 1,0656 | 3,21212 | 9,14696 |
| 11,55 | 1,03254 | 52,9608 | 777,806 | 0 | 1,0583 | 4,94757 | 3 | 3,11012 | 17,56272 | 197,92278 | 103,6917 | 94,23108 | 9,13054 | 6,08571 | 0,77773 | 3 | 1 | 1,06122 | 3,21168 | 9,13054 |
| 11,6 | 1,0965 | 52,1244 | 751,169 | 0 | 1,05079 | 4,9689 | 3 | 3,11371 | 17,55674 | 198,80061 | 104,1822 | 94,61841 | 9,00444 | 6,12834 | 0,7755 | 3 | 1 | 1,05688 | 3,21829 | 9,00444 |
| 11,65 | 1,02332 | 51,5525 | 765,709 | 0 | 1,06739 | 4,94298 | 3 | 3,10694 | 17,57476 | 199,67935 | 104,6727 | 95,00665 | 9,13312 | 6,08047 | 0,75911 | 3 | 1 | 1,05256 | 3,21135 | 9,13312 |
| 11,7 | 1,08234 | 54,6051 | 773,184 | 0 | 1,28794 | 4,96947 | 3 | 3,04456 | 17,869 | 200,5728 | 105,1632 | 95,4096 | 11,39687 | 5,88612 | 0,61835 | 3 | 1 | 1,04811 | 3,12778 | 11,39687 |
| 11,75 | 1,75817 | 85,8541 | 793,723 | 0 | 2,90237 | 3,07909 | 4 | 2,64021 | 18,56451 | 201,50103 | 105,6537 | 95,84733 | 28,17887 | 3,30881 | 0,17327 | 4 | 0,9141 | 1,03953 | 2,66713 | 28,07639 |
| 11,8 | 5,8666 | 127,6408 | 153,974 | 0 | 4,3817 | 2,43161 | 5 | 2,43777 | 18,92472 | 202,44726 | 106,1442 | 96,30306 | 43,39692 | 2,5494 | 0,06473 | 5 | 0,83246 | 1,03186 | 2,45226 | 43,1239 |
| 11,85 | 5,52034 | 106,1433 | 182,366 | 0 | 5,88274 | 1,9843 | 5 | 2,28343 | 19,14269 | 203,4044 | 106,6347 | 96,7697 | 58,68919 | 2,05537 | 0,0062 | 5 | 0,77185 | 1,02567 | 2,29254 | 58,25115 |
| 11,9 | 6,26128 | 116,4095 | 89,175 | 0 | 6,33211 | 1,83208 | 5 | 2,23651 | 19,16378 | 204,36259 | 107,1252 | 97,23739 | 63,0184 | 1,89318 | 0,00444 | 5 | 0,75416 | 1,02135 | 2,2455 | 62,58586 |
| 11,95 | 7,2147 | 125,4746 | 131,5 | 0 | 5,28068 | 2,24551 | 5 | 2,35417 | 19,11935 | 205,31855 | 107,6157 | 97,70285 | 51,94695 | 2,33635 | 0,006 | 5 | 0,80115 | 1,01879 | 2,36824 | 51,70745 |
| 12 | 2,36607 | 113,8501 | 193,513 | 0 | 3,59612 | 3,20488 | 4 | 2,58155 | 18,9393 | 206,26552 | 108,1062 | 98,15932 | 34,53421 | 3,39989 | 0,04936 | 4 | 0,8928 | 1,01673 | 2,60819 | 34,4655 |
| 12,05 | 1,20759 | 106,4293 | 501,265 | 0 | 1,51556 | 6,06157 | 3 | 3,04599 | 18,34711 | 207,18287 | 108,5967 | 98,58617 | 13,27137 | 7,02143 | 0,23099 | 3 | 1 | 1,01434 | 3,12713 | 13,27137 |
| 12,1 | 0,97301 | 55,3201 | 537,689 | 0 | 1,0528 | 6,85373 | 3 | 3,20092 | 17,92961 | 208,07935 | 109,0872 | 98,99215 | 8,53324 | 8,542 | 0,51229 | 3 | 1 | 1,01018 | 3,32793 | 8,53324 |
| 12,15 | 0,97781 | 54,7195 | 586,539 | 0 | 0,97589 | 5,58905 | 3 | 3,17052 | 17,57862 | 208,95829 | 109,5777 | 99,38059 | 7,71715 | 7,11184 | 0,60031 | 3 | 1 | 1,00623 | 3,31099 | 7,71715 |
| 12,2 | 0,97686 | 53,59 | 585,703 | 0 | 1,10546 | 5,15666 | 3 | 3,10637 | 17,6772 | 209,84215 | 110,0682 | 99,77395 | 8,97647 | 6,36486 | 0,5318 | 3 | 1 | 1,00227 | 3,22963 | 8,97647 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 12,25 | 1,36171 | 62,7051 | 586,834 | 0 | 1,29571 | 4,83649 | 3 | 3,03513 | 17,84702 | 210,7345 | 110,5587 | 100,1758 | 10,83075 | 5,77587 | 0,39711 | 3 | 1 | 0,99825 | 3,1397 | 10,83075 |
| 12,3 | 1,54857 | 71,7059 | 451,695 | 0 | 1,51641 | 4,76684 | 3 | 2,97823 | 18,07158 | 211,63808 | 111,0492 | 100,58888 | 12,97137 | 5,54003 | 0,28114 | 3 | 1 | 0,99415 | 3,06772 | 12,97137 |
| 12,35 | 1,63896 | 82,4439 | 395,091 | 0 | 1,62052 | 5,00925 | 3 | 2,96994 | 18,23048 | 212,5496 | 111,5397 | 101,0099 | 13,93897 | 5,76546 | 0,22071 | 3 | 1 | 0,99 | 3,05498 | 13,93897 |
| 12,4 | 1,67404 | 89,3786 | 420,106 | 0 | 1,68114 | 5,332 | 3 | 2,97546 | 18,35863 | 213,46753 | 112,0302 | 101,43733 | 14,46876 | 6,10752 | 0,19878 | 3 | 1 | 0,98583 | 3,05902 | 14,46876 |
| 12,45 | 1,73042 | 97,0925 | 396,108 | 0 | 1,72155 | 5,56842 | 3 | 2,98007 | 18,44496 | 214,38978 | 112,5207 | 101,86908 | 14,79504 | 6,36051 | 0,20672 | 3 | 1 | 0,98165 | 3,06333 | 14,79504 |
| 12,5 | 1,76018 | 101,1175 | 456,022 | 0 | 1,83137 | 5,51633 | 3 | 2,95722 | 18,529 | 215,31623 | 113,0112 | 102,30503 | 15,79646 | 6,2513 | 0,1855 | 3 | 1 | 0,97747 | 3,03703 | 15,79646 |
| 12,55 | 2,00352 | 104,8636 | 386,256 | 0 | 2,00871 | 5,28332 | 3 | 2,91478 | 18,62112 | 216,24728 | 113,5017 | 102,74558 | 17,44564 | 5,92072 | 0,15109 | 3 | 1 | 0,97328 | 2,98914 | 17,44564 |
| 12,6 | 2,26243 | 112,3988 | 310,703 | 0 | 2,24474 | 5,01272 | 3 | 2,86363 | 18,73104 | 217,18384 | 113,9922 | 103,19164 | 19,64849 | 5,54966 | 0,10606 | 3 | 1 | 0,96907 | 2,93193 | 19,64849 |
| 12,65 | 2,46828 | 120,3058 | 290,13 | 0 | 2,48734 | 4,95457 | 3 | 2,82729 | 18,87501 | 218,12759 | 114,4827 | 103,64489 | 21,89408 | 5,43083 | 0,08291 | 3 | 1 | 0,96483 | 2,89085 | 21,89408 |
| 12,7 | 2,7313 | 137,0062 | 307,031 | 0 | 2,73238 | 5,00013 | 3 | 2,80013 | 19,02965 | 219,07907 | 114,9732 | 104,10587 | 24,14178 | 5,43598 | 0,06608 | 3 | 0,99172 | 0,96088 | 2,8599 | 24,14983 |
| 12,75 | 2,99756 | 152,5555 | 245,969 | 0 | 3,16052 | 4,98126 | 3 | 2,75329 | 19,24856 | 220,0415 | 115,4637 | 104,5778 | 28,11762 | 5,35401 | 0,04509 | 3 | 0,97178 | 0,95743 | 2,80707 | 28,15315 |
| 12,8 | 3,7527 | 182,7392 | 191,12 | 0 | 3,79432 | 4,59053 | 4 | 2,67179 | 19,43492 | 221,01324 | 115,9542 | 105,05904 | 34,01234 | 4,87446 | 0,02146 | 3 | 0,93843 | 0,95474 | 2,71888 | 34,11585 |
| 12,85 | 4,63269 | 187,2432 | 140,795 | 0 | 4,75071 | 3,88524 | 4 | 2,55152 | 19,5878 | 221,99263 | 116,4447 | 105,54793 | 42,9067 | 4,07569 | -0,00001 | 4 | 0,89019 | 0,95307 | 2,59162 | 43,16187 |
| 12,9 | 5,86673 | 183,7472 | 17,343 | 0 | 5,60455 | 3,38067 | 4 | 2,45808 | 19,68129 | 222,9767 | 116,9352 | 106,0415 | 50,74966 | 3,52074 | -0,01131 | 4 | 0,85336 | 0,95117 | 2,4943 | 51,1881 |
| 12,95 | 6,31422 | 197,4236 | 10,081 | 0 | 6,36297 | 3,0873 | 5 | 2,39132 | 19,77153 | 223,96527 | 117,4257 | 106,53957 | 57,62186 | 3,19993 | -0,01618 | 4 | 0,82731 | 0,94894 | 2,42528 | 58,25566 |
| 13 | 6,90797 | 208,1616 | 26,802 | 0 | 6,50451 | 3,19755 | 5 | 2,3956 | 19,84563 | 224,95756 | 117,9162 | 107,04136 | 58,66476 | 3,3121 | -0,01521 | 4 | 0,82948 | 0,94512 | 2,4303 | 59,34944 |
| 13,05 | 6,29135 | 218,3705 | 30,392 | 0 | 6,31563 | 3,49611 | 4 | 2,43246 | 19,90312 | 225,95271 | 118,4067 | 107,54601 | 56,62392 | 3,62583 | -0,01398 | 4 | 0,84459 | 0,94041 | 2,46932 | 57,26772 |
| 13,1 | 5,74757 | 235,8716 | 42,538 | 0 | 5,92813 | 3,96514 | 4 | 2,4911 | 19,95082 | 226,95025 | 118,8972 | 108,05305 | 52,76281 | 4,12299 | -0,01464 | 4 | 0,86842 | 0,93495 | 2,53119 | 53,30328 |
| 13,15 | 5,74548 | 250,9349 | 33,391 | 0 | 5,71629 | 4,42121 | 4 | 2,5365 | 20,02024 | 227,95126 | 119,3877 | 108,56356 | 50,55415 | 4,60484 | -0,01344 | 4 | 0,88694 | 0,92972 | 2,57912 | 51,02598 |
| 13,2 | 5,65582 | 271,3814 | 60,996 | 0 | 5,57046 | 4,65528 | 4 | 2,56059 | 20,03995 | 228,95326 | 119,8782 | 109,07506 | 48,97096 | 4,85482 | -0,01505 | 4 | 0,89722 | 0,92502 | 2,60544 | 49,41013 |
| 13,25 | 5,31009 | 255,6462 | 24,064 | 0 | 5,3253 | 4,85899 | 4 | 2,58751 | 20,02018 | 229,95427 | 120,3687 | 109,58557 | 46,49653 | 5,07828 | -0,01577 | 4 | 0,90884 | 0,92018 | 2,63527 | 46,88615 |
| 13,3 | 5,01 | 249,2405 | 34,949 | 0 | 5,24253 | 4,7162 | 4 | 2,5826 | 19,96185 | 230,95236 | 120,8592 | 110,09316 | 45,52124 | 4,93354 | -0,01611 | 4 | 0,90795 | 0,9164 | 2,63227 | 45,92594 |
| 13,35 | 5,4075 | 236,8582 | 61,39 | 0 | 5,42077 | 4,40001 | 4 | 2,55065 | 19,9333 | 231,94903 | 121,3497 | 110,59933 | 46,91548 | 4,5967 | -0,01355 | 4 | 0,8961 | 0,91368 | 2,60049 | 47,40915 |
| 13,4 | 5,84481 | 229,4445 | 56,8 | 0 | 5,60296 | 4,1481 | 4 | 2,52215 | 19,91618 | 232,94484 | 121,8402 | 111,10464 | 48,33292 | 4,32804 | -0,01316 | 4 | 0,88557 | 0,91096 | 2,57217 | 48,91886 |
| 13,45 | 5,55656 | 230,9459 | 35,326 | 0 | 5,67625 | 4,12073 | 4 | 2,51619 | 19,9285 | 233,94126 | 122,3307 | 111,61056 | 48,76162 | 4,29787 | -0,01444 | 4 | 0,88389 | 0,90747 | 2,56712 | 49,38749 |
| 13,5 | 5,62739 | 241,3193 | 39,096 | 0 | 5,79902 | 4,03769 | 4 | 2,50339 | 19,9379 | 234,93816 | 122,8212 | 112,11696 | 49,62751 | 4,20817 | -0,01652 | 4 | 0,8795 | 0,9043 | 2,5549 | 50,31622 |
| 13,55 | 6,21312 | 230,1738 | 18,343 | 0 | 5,73148 | 4,0851 | 4 | 2,51057 | 19,93336 | 235,93483 | 123,3117 | 112,62313 | 48,79586 | 4,26049 | -0,018 | 4 | 0,88315 | 0,90034 | 2,56383 | 49,4784 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 13,6 | 5,35392 | 230,9173 | 15,737 | 0 | 5,36131 | 4,36013 | 4 | 2,55104 | 19,90591 | 236,93012 | 123,8022 | 113,12792 | 45,29725 | 4,56172 | -0,01558 | 4 | 0,90026 | 0,8949 | 2,60808 | 45,85795 |
| 13,65 | 4,5169 | 240,1897 | 97,863 | 0 | 4,52038 | 5,33241 | 4 | 2,6655 | 19,87579 | 237,92391 | 124,2927 | 113,63121 | 37,68729 | 5,62867 | -0,00191 | 3 | 0,94731 | 0,88599 | 2,73092 | 37,94192 |
| 13,7 | 3,69031 | 252,0287 | 234,773 | 0 | 3,89774 | 6,20845 | 3 | 2,75771 | 19,82346 | 238,91508 | 124,7832 | 114,13188 | 32,05784 | 6,61385 | 0,02576 | 3 | 0,9859 | 0,87781 | 2,83158 | 32,11764 |
| 13,75 | 3,486 | 233,7483 | 324,456 | 0 | 3,5939 | 6,00267 | 3 | 2,77135 | 19,66021 | 239,89809 | 125,2737 | 114,62439 | 29,26083 | 6,43201 | 0,05614 | 3 | 0,9936 | 0,87318 | 2,85088 | 29,2864 |
| 13,8 | 3,6054 | 161,4133 | 381,518 | 0 | 3,31767 | 6,38668 | 3 | 2,81484 | 19,60888 | 240,87854 | 125,7642 | 115,11434 | 26,72811 | 6,88668 | 0,05745 | 3 | 1 | 0,8687 | 2,89989 | 26,72811 |
| 13,85 | 2,8616 | 240,5043 | 201,562 | 0 | 3,37501 | 6,18319 | 3 | 2,79955 | 19,59791 | 241,85843 | 126,2547 | 115,60373 | 27,10254 | 6,66049 | 0,071 | 3 | 1 | 0,86502 | 2,88535 | 27,10254 |
| 13,9 | 3,65804 | 224,1328 | 463,005 | 0 | 3,51461 | 6,41962 | 3 | 2,79912 | 19,70324 | 242,84359 | 126,7452 | 116,09839 | 28,18095 | 6,89612 | 0,07804 | 3 | 1 | 0,86134 | 2,88417 | 28,18095 |
| 13,95 | 4,02418 | 212,2366 | 481,693 | 0 | 4,03374 | 5,33703 | 3 | 2,6998 | 19,70209 | 243,8287 | 127,2357 | 116,593 | 32,50551 | 5,6804 | 0,08349 | 3 | 0,96715 | 0,86202 | 2,77912 | 32,66983 |
| 14 | 4,41901 | 209,477 | 386,305 | 0 | 4,2819 | 4,93139 | 4 | 2,65708 | 19,70273 | 244,81384 | 127,7262 | 117,08764 | 34,47918 | 5,23043 | 0,06576 | 3 | 0,95052 | 0,86075 | 2,73481 | 34,74936 |
| 14,05 | 4,40251 | 211,7576 | 311,654 | 0 | 4,31087 | 5,00588 | 4 | 2,65975 | 19,73031 | 245,80035 | 128,2167 | 117,58365 | 34,5717 | 5,30857 | 0,06544 | 3 | 0,95221 | 0,85707 | 2,73858 | 34,84038 |
| 14,1 | 4,11108 | 226,156 | 484,758 | 0 | 4,17805 | 5,41962 | 3 | 2,69408 | 19,77367 | 246,78903 | 128,7072 | 118,08183 | 33,29271 | 5,75985 | 0,07038 | 3 | 0,9667 | 0,85157 | 2,77597 | 33,4775 |
| 14,15 | 4,02057 | 241,3908 | 419,79489 | 0 | 4,20465 | 5,5365 | 3 | 2,69892 | 19,80794 | 247,77943 | 129,1977 | 118,58173 | 33,36827 | 5,8832 | 0,07394 | 3 | 0,96922 | 0,84774 | 2,78194 | 33,54376 |
| 14,2 | 4,48229 | 230,8244 | 360,79648 | 0 | 4,77784 | 4,96367 | 4 | 2,62634 | 19,87832 | 248,77335 | 129,6882 | 119,08515 | 38,03217 | 5,23631 | 0,04684 | 3 | 0,93997 | 0,84859 | 2,70447 | 38,43305 |
| 14,25 | 5,83066 | 239,2532 | 244,92 | 0 | 5,63574 | 4,2392 | 4 | 2,52731 | 19,95012 | 249,77085 | 130,1787 | 119,59215 | 45,03614 | 4,43579 | 0,02147 | 4 | 0,90021 | 0,85124 | 2,59941 | 45,84743 |
| 14,3 | 6,59427 | 246,6526 | 131,714 | 0 | 6,63921 | 3,79248 | 4 | 2,44346 | 20,07335 | 250,77452 | 130,6692 | 120,10532 | 53,19028 | 3,94135 | 0,00062 | 4 | 0,86655 | 0,85321 | 2,51033 | 54,50673 |
| 14,35 | 7,4927 | 269,4655 | 27,179 | 0 | 6,99941 | 3,74531 | 4 | 2,42397 | 20,13999 | 251,78152 | 131,1597 | 120,62182 | 55,94036 | 3,88506 | -0,01081 | 4 | 0,85911 | 0,85123 | 2,49013 | 57,43769 |
| 14,4 | 6,91126 | 270,3305 | 15,802 | 0 | 7,0198 | 3,99202 | 4 | 2,4437 | 20,21783 | 252,79241 | 131,6502 | 121,14221 | 55,86003 | 4,14115 | -0,01491 | 4 | 0,86735 | 0,84675 | 2,51106 | 57,29946 |
| 14,45 | 6,65544 | 300,9002 | 49,292 | 0 | 6,67864 | 4,58962 | 4 | 2,50339 | 20,30189 | 253,80751 | 132,1407 | 121,66681 | 52,80678 | 4,77093 | -0,00942 | 4 | 0,89159 | 0,83958 | 2,57402 | 53,94155 |
| 14,5 | 6,46922 | 348,3419 | 149,696 | 0 | 7,33402 | 4,61057 | 4 | 2,47827 | 20,4507 | 254,83004 | 132,6312 | 122,19884 | 57,93175 | 4,77653 | -0,00422 | 4 | 0,88144 | 0,83802 | 2,54669 | 59,32516 |
| 14,55 | 8,87741 | 365,1782 | 109,289 | 0 | 8,70417 | 4,09392 | 4 | 2,39082 | 20,57669 | 255,85888 | 133,1217 | 122,73718 | 68,83251 | 4,21791 | -0,00575 | 4 | 0,84657 | 0,84077 | 2,4544 | 71,03053 |
| 14,6 | 10,76587 | 355,5054 | -5,229 | 0 | 10,07711 | 3,46724 | 5 | 2,29466 | 20,61021 | 256,88939 | 133,6122 | 123,27719 | 79,65965 | 3,55794 | -0,01052 | 5 | 0,80882 | 0,84429 | 2,35456 | 82,91117 |
| 14,65 | 10,58804 | 327,5093 | -13,196 | 0 | 10,57886 | 3,20773 | 5 | 2,25521 | 20,59525 | 257,91915 | 134,1027 | 123,81645 | 83,35676 | 3,28789 | -0,01344 | 5 | 0,7939 | 0,844 | 2,31465 | 87,1089 |
| 14,7 | 10,38266 | 335,0088 | 4,492 | 0 | 10,45538 | 3,19244 | 5 | 2,25691 | 20,57174 | 258,94774 | 134,5932 | 124,35454 | 81,99483 | 3,27351 | -0,01373 | 5 | 0,79537 | 0,84083 | 2,31779 | 85,73477 |
| 14,75 | 10,39543 | 338,8264 | -7,475 | 0 | 10,22416 | 3,19385 | 5 | 2,26333 | 20,53795 | 259,97463 | 135,0837 | 124,89093 | 79,78312 | 3,27718 | -0,01405 | 5 | 0,79877 | 0,83732 | 2,32601 | 83,43257 |
| 14,8 | 9,8944 | 305,7974 | -11,671 | 0 | 10,12969 | 3,12669 | 5 | 2,25893 | 20,49926 | 260,9996 | 135,5742 | 125,4254 | 78,68173 | 3,20938 | -0,01401 | 5 | 0,79789 | 0,83464 | 2,32297 | 82,36803 |
| 14,85 | 10,09923 | 305,5472 | 11,065 | 0 | 10,08226 | 3,00677 | 5 | 2,2474 | 20,44708 | 262,02195 | 136,0647 | 125,95725 | 77,96482 | 3,08699 | -0,01472 | 5 | 0,79422 | 0,83253 | 2,31263 | 81,7565 |
| 14,9 | 10,25314 | 298,1049 | -24,736 | 0 | 9,97197 | 3,03015 | 5 | 2,25307 | 20,43912 | 263,04391 | 136,5552 | 126,48871 | 76,75723 | 3,11225 | -0,01549 | 5 | 0,79721 | 0,82917 | 2,31976 | 80,50342 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 14,95 | 9,56353 | 302,8448 | -27,9 | 0 | 9,57596 | 3,1689 | 5 | 2,27929 | 20,42847 | 264,06533 | 137,0457 | 127,01963 | 73,31065 | 3,25876 | -0,01731 | 5 | 0,80842 | 0,82419 | 2,34851 | 76,74784 |
| 15 | 8,9112 | 309,4077 | -19,835 | 0 | 9,17158 | 3,39446 | 5 | 2,31413 | 20,44139 | 265,0874 | 137,5362 | 127,5512 | 69,82683 | 3,49549 | -0,01769 | 5 | 0,82299 | 0,81851 | 2,38606 | 72,90031 |
| 15,05 | 9,04002 | 321,7257 | -12,409 | 0 | 9,2794 | 3,42901 | 5 | 2,31415 | 20,47097 | 266,11095 | 138,0267 | 128,08425 | 70,37 | 3,53025 | -0,01749 | 4 | 0,82354 | 0,81559 | 2,3868 | 73,51161 |
| 15,1 | 9,88698 | 323,4415 | -26,556 | 0 | 9,75253 | 3,23221 | 5 | 2,2806 | 20,47925 | 267,13491 | 138,5172 | 128,61771 | 73,74872 | 3,32324 | -0,01693 | 5 | 0,81077 | 0,81542 | 2,35253 | 77,34601 |
| 15,15 | 10,33058 | 300,4999 | -27,13 | 0 | 10,34961 | 2,97736 | 5 | 2,23673 | 20,47591 | 268,15871 | 139,0077 | 129,15101 | 78,05938 | 3,05655 | -0,01647 | 5 | 0,79392 | 0,8162 | 2,30756 | 82,28489 |
| 15,2 | 10,83126 | 300,4927 | -27,343 | 0 | 10,62995 | 2,86882 | 5 | 2,21694 | 20,47419 | 269,18241 | 139,4982 | 129,68421 | 79,89231 | 2,94335 | -0,01613 | 5 | 0,78669 | 0,81507 | 2,28786 | 84,44706 |
| 15,25 | 10,72802 | 313,8688 | -28,441 | 0 | 10,77843 | 2,8618 | 5 | 2,2122 | 20,49264 | 270,20705 | 139,9887 | 130,21835 | 80,69695 | 2,93539 | -0,01601 | 5 | 0,78538 | 0,81272 | 2,2837 | 85,40198 |
| 15,3 | 10,77601 | 311,0091 | -29,031 | 0 | 10,69314 | 2,90805 | 5 | 2,21973 | 20,4989 | 271,23199 | 140,4792 | 130,75279 | 79,70694 | 2,98373 | -0,01634 | 5 | 0,78904 | 0,80931 | 2,29259 | 84,34574 |
| 15,35 | 10,57538 | 308,0065 | -32,08 | 0 | 10,58949 | 2,93606 | 5 | 2,22564 | 20,49499 | 272,25674 | 140,9697 | 131,28704 | 78,58534 | 3,01354 | -0,01673 | 5 | 0,7921 | 0,80604 | 2,29992 | 83,16108 |
| 15,4 | 10,41709 | 313,7258 | -33,834 | 0 | 10,43314 | 3,04577 | 5 | 2,24194 | 20,51438 | 273,28246 | 141,4602 | 131,82226 | 77,0724 | 3,1277 | -0,01716 | 5 | 0,7992 | 0,80187 | 2,31787 | 81,46897 |
| 15,45 | 10,30695 | 331,5772 | -32,834 | 0 | 10,41257 | 3,15663 | 5 | 2,25432 | 20,55247 | 274,31008 | 141,9507 | 132,35938 | 76,59646 | 3,24204 | -0,0172 | 5 | 0,80464 | 0,79805 | 2,33144 | 80,90859 |
| 15,5 | 10,51367 | 340,7567 | -30,736 | 0 | 10,71587 | 3,16625 | 5 | 2,24729 | 20,60001 | 275,34008 | 142,4412 | 132,89888 | 78,55993 | 3,24975 | -0,01676 | 5 | 0,80225 | 0,79599 | 2,32443 | 83,10515 |
| 15,55 | 11,32698 | 345,5395 | -34,031 | 0 | 11,3099 | 3,01021 | 5 | 2,21541 | 20,62463 | 276,37132 | 142,9317 | 133,43962 | 82,68556 | 3,08561 | -0,01592 | 5 | 0,79002 | 0,7962 | 2,29158 | 87,84909 |
| 15,6 | 12,08905 | 335,0588 | -33,309 | 0 | 12,10063 | 2,80279 | 5 | 2,1728 | 20,64615 | 277,40362 | 143,4222 | 133,98142 | 88,24529 | 2,86855 | -0,01492 | 5 | 0,77351 | 0,7975 | 2,24748 | 94,29005 |
| 15,65 | 12,88587 | 336,8676 | -31,457 | 0 | 12,65542 | 2,65542 | 5 | 2,14232 | 20,65277 | 278,43626 | 143,9127 | 134,52356 | 92,00604 | 2,71516 | -0,01424 | 5 | 0,76194 | 0,79774 | 2,21635 | 98,73663 |
| 15,7 | 12,99133 | 336,2385 | -32,326 | 0 | 12,81491 | 2,63165 | 5 | 2,13583 | 20,66164 | 279,46934 | 144,4032 | 135,06614 | 92,80967 | 2,69032 | -0,01421 | 5 | 0,75995 | 0,79578 | 2,21041 | 99,754 |
| 15,75 | 12,56754 | 338,6263 | -37,26 | 0 | 12,79344 | 2,61903 | 5 | 2,1347 | 20,65353 | 280,50202 | 144,8937 | 135,60832 | 92,27262 | 2,67774 | -0,01432 | 5 | 0,7602 | 0,7933 | 2,21031 | 99,26489 |
| 15,8 | 12,82144 | 330,3261 | -33,309 | 0 | 12,67515 | 2,7001 | 5 | 2,14745 | 20,67436 | 281,53574 | 145,3842 | 136,15154 | 91,02809 | 2,76143 | -0,01415 | 5 | 0,76585 | 0,78951 | 2,22444 | 97,84912 |
| 15,85 | 12,63647 | 357,7717 | -19,41548 | 0 | 12,76219 | 2,79167 | 5 | 2,15672 | 20,72321 | 282,5719 | 145,8747 | 136,6972 | 91,29386 | 2,85488 | -0,01432 | 5 | 0,76996 | 0,78609 | 2,23451 | 98,10061 |
| 15,9 | 12,82865 | 380,7347 | -45,637 | 0 | 12,83302 | 2,92273 | 5 | 2,17063 | 20,78448 | 283,61112 | 146,3652 | 137,24592 | 91,43741 | 2,98879 | -0,01439 | 5 | 0,77587 | 0,7822 | 2,2493 | 98,16176 |
| 15,95 | 13,03395 | 386,7185 | -37,572 | 0 | 12,89361 | 3,01991 | 5 | 2,1804 | 20,82933 | 284,65259 | 146,8557 | 137,79689 | 91,50391 | 3,08809 | -0,0147 | 5 | 0,7802 | 0,77869 | 2,25995 | 98,18491 |
| 16 | 12,81822 | 400,6737 | -32,408 | 0 | 12,92034 | 3,08263 | 5 | 2,1868 | 20,85615 | 285,6954 | 147,3462 | 138,3492 | 91,32431 | 3,15233 | -0,01441 | 5 | 0,78328 | 0,77549 | 2,26732 | 97,98029 |
| 16,05 | 12,90885 | 407,4653 | -34,195 | 0 | 12,95608 | 3,1346 | 5 | 2,19174 | 20,87962 | 286,73938 | 147,8367 | 138,90268 | 91,21017 | 3,20554 | -0,01431 | 5 | 0,78579 | 0,77243 | 2,27317 | 97,86178 |
| 16,1 | 13,14116 | 410,2249 | -33,605 | 0 | 13,2212 | 3,06704 | 5 | 2,17886 | 20,88562 | 287,78366 | 148,3272 | 139,45646 | 92,74163 | 3,13528 | -0,01405 | 5 | 0,78125 | 0,77118 | 2,26049 | 99,74035 |
| 16,15 | 13,6136 | 398,8077 | -32,523 | 0 | 13,52993 | 2,97003 | 5 | 2,16169 | 20,88406 | 288,82786 | 148,8177 | 140,01016 | 94,57246 | 3,03482 | -0,01359 | 5 | 0,77503 | 0,77041 | 2,24339 | 102,01098 |
| 16,2 | 13,83504 | 396,4986 | -27,425 | 0 | 13,81568 | 2,9174 | 5 | 2,14997 | 20,89555 | 289,87264 | 149,3082 | 140,56444 | 96,22496 | 2,97993 | -0,01323 | 5 | 0,77091 | 0,76913 | 2,23183 | 104,03147 |
| 16,25 | 13,9984 | 413,871 | -28,998 | 0 | 13,99164 | 2,89543 | 5 | 2,14398 | 20,90626 | 290,91795 | 149,7987 | 141,11925 | 97,08615 | 2,95691 | -0,01304 | 5 | 0,7691 | 0,76728 | 2,22632 | 105,12287 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 16,3 | 14,14149 | 404,9846 | -30,031 | 0 | 13,97162 | 2,8837 | 5 | 2,14298 | 20,89939 | 291,96292 | 150,2892 | 141,67372 | 96,5575 | 2,94524 | -0,01315 | 5 | 0,76939 | 0,76489 | 2,22634 | 104,63461 |
| 16,35 | 13,77498 | 389,8427 | -29,621 | 0 | 13,82842 | 2,86436 | 5 | 2,14348 | 20,87585 | 293,00672 | 150,7797 | 142,22702 | 95,16769 | 2,92637 | -0,01332 | 5 | 0,77037 | 0,76234 | 2,22817 | 103,18552 |
| 16,4 | 13,5688 | 393,4602 | -29,031 | 0 | 13,56098 | 2,91496 | 5 | 2,15471 | 20,86604 | 294,05002 | 151,2702 | 142,77982 | 92,9188 | 2,97957 | -0,01361 | 5 | 0,7756 | 0,75865 | 2,24116 | 100,64948 |
| 16,45 | 13,33916 | 402,5897 | -29,343 | 0 | 13,41571 | 2,9782 | 5 | 2,16492 | 20,87421 | 295,09373 | 151,7607 | 143,33303 | 91,53936 | 3,04518 | -0,0138 | 5 | 0,78031 | 0,7551 | 2,2528 | 99,07319 |
| 16,5 | 13,72677 | 413,4849 | -30,113 | 0 | 13,59757 | 3,01417 | 5 | 2,16537 | 20,90867 | 296,13916 | 152,2512 | 143,88796 | 92,44295 | 3,08127 | -0,01369 | 5 | 0,78094 | 0,75265 | 2,25371 | 100,11322 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 0,1 | 0,7191 | 30,2623 | 108,748 | 0 | 0,61939 | 4,89044 | 3 | 3,29365 | 16,72775 | 1,67277 | 0 | 1,67277 | 369,27698 | 4,90368 | 0,13794 | 3 | 1 | 2 | 3,05055 | 12,35434 |
| 0,15 | 0,41997 | 30,3481 | 38,129 | 0 | 0,36146 | 7,78087 | 2 | 3,60127 | 16,43588 | 2,49457 | 0 | 2,49457 | 143,89878 | 7,83494 | 0,07188 | 3 | 1 | 2 | 3,3618 | 7,17931 |
| 0,2 | 0,24444 | 23,678 | 1,147 | 0 | 0,30296 | 8,47225 | 2 | 3,68509 | 16,26304 | 3,30772 | 0 | 3,30772 | 90,59278 | 8,56577 | 0,04659 | 3 | 1 | 2 | 3,44719 | 5,99311 |
| 0,25 | 0,24448 | 22,9773 | 2,606 | 0 | 0,2686 | 8,96526 | 2 | 3,74191 | 16,14346 | 4,11489 | 0 | 4,11489 | 64,27508 | 9,10475 | 0,02272 | 2 | 1 | 2 | 3,50612 | 5,2897 |
| 0,3 | 0,31688 | 25,5868 | 14,278 | 0 | 0,28843 | 8,48778 | 2 | 3,70292 | 16,18973 | 4,92438 | 0 | 4,92438 | 57,57116 | 8,63522 | 0,05267 | 2 | 1 | 2 | 3,4682 | 5,67005 |
| 0,35 | 0,30392 | 24,879 | 27,916 | 0 | 0,26981 | 9,06119 | 2 | 3,74301 | 16,16257 | 5,73251 | 0 | 5,73251 | 46,06607 | 9,25789 | 0,09017 | 2 | 1 | 2 | 3,51115 | 5,28148 |
| 0,4 | 0,18862 | 22,8773 | 29,244 | 0 | 0,20318 | 11,20683 | 2 | 3,89689 | 15,97205 | 6,53111 | 0 | 6,53111 | 30,10956 | 11,57903 | 0,1356 | 2 | 1 | 2 | 3,67184 | 3,93298 |
| 0,45 | 0,117 | 20,5538 | 22,835 | 0 | 0,1266 | 15,44317 | 2 | 4,14501 | 15,61529 | 7,31188 | 0 | 7,31188 | 16,31384 | 16,3898 | 0,19913 | 2 | 1 | 2 | 3,93573 | 2,3857 |
| 0,5 | 0,07417 | 15,2205 | 19,179 | 0 | 0,08146 | 18,94287 | 2 | 4,35258 | 15,17397 | 8,07057 | 0 | 8,07057 | 9,09304 | 21,0261 | 0,25308 | 2 | 1 | 2 | 4,06 | 1,46772 |
| 0,55 | 0,0532 | 10,5164 | 13,704 | 0 | 0,05736 | 19,09733 | 2 | 4,48013 | 14,64548 | 8,80285 | 0 | 8,80285 | 5,51645 | 22,55922 | 0,31563 | 2 | 1 | 2 | 4,06 | 0,97121 |
| 0,6 | 0,04472 | 7,1277 | 13,098 | 0 | 0,0484 | 16,81052 | 2 | 4,5113 | 14,23806 | 9,51475 | 0 | 9,51475 | 4,08649 | 20,92421 | 0,36201 | 2 | 1 | 2 | 4,06 | 0,77764 |
| 0,65 | 0,04727 | 6,7631 | 15,425 | 0 | 0,04805 | 15,75527 | 2 | 4,4987 | 14,15257 | 10,22238 | 0 | 10,22238 | 3,7008 | 20,01254 | 0,44154 | 2 | 1 | 2 | 4,06 | 0,75662 |
| 0,7 | 0,05217 | 8,822 | 21,589 | 0 | 0,05828 | 14,55345 | 2 | 4,40957 | 14,35714 | 10,94024 | 0 | 10,94024 | 4,32682 | 17,917 | 0,38347 | 2 | 1 | 2 | 4,06 | 0,94673 |
| 0,75 | 0,07539 | 9,8587 | 17,442 | 0 | 0,06136 | 16,7612 | 2 | 4,42431 | 14,59877 | 11,67018 | 0 | 11,67018 | 4,25813 | 20,69748 | 0,28996 | 2 | 1 | 2 | 4,06 | 0,99386 |
| 0,8 | 0,05653 | 12,175 | 4,196 | 0 | 0,06296 | 18,03659 | 2 | 4,43275 | 14,72244 | 12,4063 | 0 | 12,4063 | 4,07457 | 22,46321 | 0,16679 | 2 | 1 | 2 | 4,06 | 1,01101 |
| 0,85 | 0,05695 | 12,032 | 3,656 | 0 | 0,05949 | 19,44302 | 2 | 4,47137 | 14,72203 | 13,1424 | 0 | 13,1424 | 3,52682 | 24,95592 | 0,1186 | 2 | 1 | 2 | 4,06 | 0,92702 |
| 0,9 | 0,065 | 10,4949 | 8,639 | 0 | 0,06523 | 15,16195 | 2 | 4,37821 | 14,57706 | 13,87125 | 0 | 13,87125 | 3,70229 | 19,25724 | 0,19833 | 2 | 1 | 2 | 4,06 | 1,02711 |
| 0,95 | 0,07373 | 7,142 | 18,261 | 0 | 0,08164 | 9,62344 | 2 | 4,18991 | 14,39846 | 14,59117 | 0 | 14,59117 | 4,59539 | 11,71759 | 0,38187 | 2 | 1 | 2 | 4,05111 | 1,34104 |
| 1 | 0,1062 | 5,9338 | 49,915 | 0 | 0,08539 | 7,1109 | 2 | 4,10548 | 14,11922 | 15,29714 | 0,0981 | 15,19904 | 4,61167 | 8,66279 | 0,53166 | 2 | 1 | 2 | 3,9623 | 1,40186 |
| 1,05 | 0,07624 | 5,1402 | 43,915 | 0 | 0,0776 | 6,9314 | 2 | 4,13588 | 13,94302 | 15,99429 | 0,5886 | 15,40569 | 3,99868 | 8,73105 | 0,57995 | 2 | 1 | 2 | 4,01128 | 1,23205 |
| 1,1 | 0,05035 | 5,0616 | 15,114 | 0 | 0,06411 | 7,49038 | 2 | 4,22459 | 13,73933 | 16,68125 | 1,0791 | 15,60215 | 3,03967 | 10,12502 | 0,59768 | 2 | 1 | 2 | 4,06 | 0,94851 |
| 1,15 | 0,06573 | 4,2037 | 29,244 | 0 | 0,07143 | 6,04214 | 2 | 4,13795 | 13,734 | 17,36795 | 1,5696 | 15,79835 | 3,42179 | 7,98336 | 0,59583 | 2 | 1 | 2 | 4,03862 | 1,08117 |
| 1,2 | 0,0982 | 3,6818 | 56,98 | 0 | 0,0924 | 4,51091 | 2 | 3,97912 | 13,734 | 18,05465 | 2,0601 | 15,99455 | 4,64796 | 5,60643 | 0,66458 | 2 | 1 | 2 | 3,84068 | 1,48684 |
| 1,25 | 0,11326 | 4,6183 | 68,176 | 0 | 0,10621 | 4,12617 | 2 | 3,90751 | 13,82778 | 18,74604 | 2,5506 | 16,19544 | 5,40053 | 5,01052 | 0,74613 | 2 | 1 | 2 | 3,75505 | 1,74928 |
| 1,3 | 0,10717 | 4,8471 | 78,274 | 0 | 0,10815 | 4,82558 | 2 | 3,93303 | 14,03566 | 19,44783 | 3,0411 | 16,40673 | 5,40645 | 5,88358 | 0,81975 | 2 | 1 | 2 | 3,78599 | 1,77404 |
| 1,35 | 0,10402 | 6,1912 | 80,815 | 0 | 0,10297 | 5,13101 | 2 | 3,96462 | 14,03093 | 20,14937 | 3,5316 | 16,61777 | 4,98366 | 6,37938 | 0,8959 | 2 | 1 | 2 | 3,82985 | 1,65635 |
| 1,4 | 0,09771 | 4,8114 | 74,094 | 0 | 0,11182 | 4,91445 | 2 | 3,92421 | 14,10783 | 20,85476 | 4,0221 | 16,83266 | 5,40409 | 6,04114 | 0,82732 | 2 | 1 | 2 | 3,78275 | 1,8193 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 1,45 | 0,13373 | 5,4834 | 82,929 | 0 | 0,10364 | 5,69762 | 2 | 3,98449 | 14,16146 | 21,56284 | 4,5126 | 17,05024 | 4,81404 | 7,1944 | 0,77383 | 2 | 1 | 2 | 3,86098 | 1,64161 |
| 1,5 | 0,07949 | 7,4208 | 47,063 | 0 | 0,09255 | 6,72324 | 2 | 4,06302 | 14,17818 | 22,27174 | 5,0031 | 17,26864 | 4,06951 | 8,85399 | 0,78954 | 2 | 1 | 2 | 3,96652 | 1,4055 |
| 1,55 | 0,06442 | 5,7622 | 51,472 | 0 | 0,06894 | 8,14051 | 2 | 4,21536 | 13,94656 | 22,96907 | 5,4936 | 17,47547 | 2,6306 | 12,20786 | 1,01764 | 2 | 1 | 2 | 4,06 | 0,91942 |
| 1,6 | 0,06291 | 3,6532 | 58,292 | 0 | 0,06225 | 6,25141 | 2 | 4,1974 | 13,734 | 23,65577 | 5,9841 | 17,67167 | 2,18396 | 10,08311 | 1,28128 | 2 | 1 | 2 | 4,06 | 0,77188 |
| 1,65 | 0,05942 | 2,2591 | 56,538 | 0 | 0,06068 | 4,5713 | 2 | 4,14371 | 13,734 | 24,34247 | 6,4746 | 17,86787 | 2,03368 | 7,63361 | 1,39502 | 2 | 1 | 2 | 4,06 | 0,72675 |
| 1,7 | 0,05971 | 2,4093 | 56,669 | 0 | 0,06187 | 3,55514 | 2 | 4,08773 | 13,734 | 25,02917 | 6,9651 | 18,06407 | 2,03945 | 5,97046 | 1,34707 | 2 | 1 | 2 | 4,06 | 0,73682 |
| 1,75 | 0,06648 | 1,9303 | 56,57 | 0 | 0,0629 | 3,65983 | 2 | 4,08675 | 13,734 | 25,71587 | 7,4556 | 18,26027 | 2,03634 | 6,1909 | 1,2609 | 2 | 1 | 2 | 4,06 | 0,74368 |
| 1,8 | 0,06251 | 2,5665 | 49,784 | 0 | 0,06979 | 3,95749 | 2 | 4,06127 | 13,734 | 26,40257 | 7,9461 | 18,45647 | 2,3508 | 6,36575 | 1,11024 | 2 | 1 | 2 | 4,06 | 0,86775 |
| 1,85 | 0,08038 | 3,789 | 61,996 | 0 | 0,06928 | 4,93966 | 2 | 4,10809 | 13,734 | 27,08927 | 8,4366 | 18,65267 | 2,26173 | 8,11151 | 1,17256 | 2 | 1 | 2 | 4,06 | 0,84375 |
| 1,9 | 0,06494 | 3,9106 | 61,931 | 0 | 0,07034 | 4,69562 | 2 | 4,09202 | 13,734 | 27,77597 | 8,9271 | 18,84887 | 2,25817 | 7,75984 | 1,29585 | 2 | 1 | 2 | 4,06 | 0,85128 |
| 1,95 | 0,0657 | 2,2091 | 68,324 | 0 | 0,065 | 4,12799 | 2 | 4,09706 | 13,734 | 28,46267 | 9,4176 | 19,04507 | 1,91864 | 7,34342 | 1,62434 | 2 | 1 | 2 | 4,06 | 0,73081 |
| 2 | 0,06437 | 1,9303 | 76,061 | 0 | 0,06521 | 3,15728 | 2 | 4,04497 | 13,734 | 29,14937 | 9,9081 | 19,24127 | 1,8743 | 5,70921 | 1,7819 | 2 | 1 | 2 | 4,06 | 0,72128 |
| 2,05 | 0,06557 | 2,0375 | 78,126 | 0 | 0,06607 | 2,93225 | 2 | 4,02625 | 13,734 | 29,83607 | 10,3986 | 19,43747 | 1,8643 | 5,34652 | 1,87866 | 2 | 1 | 2 | 4,06 | 0,72475 |
| 2,1 | 0,06828 | 1,8445 | 81,241 | 0 | 0,06818 | 2,77534 | 2 | 4,00392 | 13,734 | 30,52277 | 10,8891 | 19,63367 | 1,91782 | 5,02507 | 1,85431 | 2 | 1 | 2 | 4,06 | 0,75308 |
| 2,15 | 0,07068 | 1,7944 | 82,766 | 0 | 0,06786 | 2,86216 | 2 | 4,01135 | 13,734 | 31,20947 | 11,3796 | 19,82987 | 1,84808 | 5,29963 | 1,90767 | 2 | 1 | 2 | 4,06 | 0,73294 |
| 2,2 | 0,06461 | 2,1876 | 79,864 | 0 | 0,0682 | 3,61313 | 2 | 4,05274 | 13,734 | 31,89617 | 11,8701 | 20,02607 | 1,81266 | 6,78788 | 1,98313 | 2 | 1 | 2 | 4,06 | 0,72601 |
| 2,25 | 0,0693 | 3,4101 | 88,946 | 0 | 0,06777 | 4,24421 | 2 | 4,08632 | 13,734 | 32,58287 | 12,3606 | 20,22227 | 1,74002 | 8,1743 | 1,9341 | 2 | 1 | 2 | 4,06 | 0,70374 |
| 2,3 | 0,0694 | 3,0312 | 72,438 | 0 | 0,06763 | 4,72849 | 2 | 4,10853 | 13,734 | 33,26957 | 12,8511 | 20,41847 | 1,68297 | 9,30641 | 1,94645 | 2 | 1 | 2 | 4,06 | 0,68728 |
| 2,35 | 0,0642 | 3,1528 | 77,831 | 0 | 0,06571 | 4,65292 | 2 | 4,11644 | 13,734 | 33,95627 | 13,3416 | 20,61467 | 1,54035 | 9,62858 | 1,99393 | 2 | 1 | 2 | 4,06 | 0,63507 |
| 2,4 | 0,06353 | 2,9883 | 79,7 | 0 | 0,06338 | 5,0649 | 2 | 4,14737 | 13,734 | 34,64297 | 13,8321 | 20,81087 | 1,38071 | 11,17144 | 2,28114 | 2 | 1 | 2 | 4,06 | 0,57467 |
| 2,45 | 0,0624 | 3,4888 | 80,602 | 0 | 0,07189 | 5,13799 | 2 | 4,10189 | 13,734 | 35,32967 | 14,3226 | 21,00707 | 1,74038 | 10,10303 | 2,02585 | 2 | 1 | 2 | 4,06 | 0,73121 |
| 2,5 | 0,08974 | 4,604 | 104,863 | 0 | 0,08979 | 5,35847 | 2 | 4,02575 | 13,8708 | 36,02321 | 14,8131 | 21,21011 | 2,53496 | 8,94859 | 1,35541 | 2 | 1 | 2 | 4,06 | 1,07534 |
| 2,55 | 0,11723 | 6,3413 | 77,602 | 0 | 0,09922 | 5,60595 | 2 | 3,99749 | 14,07586 | 36,72701 | 15,3036 | 21,42341 | 2,91689 | 8,90073 | 1,08281 | 2 | 1 | 2 | 4,01056 | 1,24979 |
| 2,6 | 0,09068 | 5,7408 | 66,439 | 0 | 0,09549 | 5,95452 | 2 | 4,02489 | 14,08653 | 37,43133 | 15,7941 | 21,63723 | 2,68328 | 9,79348 | 1,05375 | 2 | 1 | 2 | 4,05992 | 1,16117 |
| 2,65 | 0,07856 | 4,9758 | 86,88 | 0 | 0,07956 | 5,77469 | 2 | 4,08743 | 13,77139 | 38,1199 | 16,2846 | 21,8353 | 1,898 | 11,08628 | 1,4777 | 2 | 1 | 2 | 4,06 | 0,82887 |
| 2,7 | 0,06945 | 3,067 | 79,258 | 0 | 0,07198 | 5,13847 | 2 | 4,10144 | 13,734 | 38,8066 | 16,7751 | 22,0315 | 1,50557 | 11,15011 | 2,05404 | 2 | 1 | 2 | 4,06 | 0,6634 |
| 2,75 | 0,06792 | 3,0527 | 88,585 | 0 | 0,06886 | 4,37459 | 2 | 4,08613 | 13,734 | 39,4933 | 17,2656 | 22,2277 | 1,32103 | 10,25836 | 2,3066 | 2 | 1 | 2 | 4,06 | 0,58727 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 2,8 | 0,0692 | 2,9169 | 87,142 | 0 | 0,06719 | 4,90138 | 2 | 4,11826 | 13,734 | 40,18 | 17,7561 | 22,4239 | 1,20467 | 12,19176 | 2,58416 | 2 | 1 | 2 | 4,06 | 0,54027 |
| 2,85 | 0,06446 | 3,9106 | 86,962 | 0 | 0,0653 | 4,94155 | 2 | 4,13092 | 13,734 | 40,8667 | 18,2466 | 22,6201 | 1,08001 | 13,20782 | 2,80604 | 2 | 1 | 2 | 4,06 | 0,4886 |
| 2,9 | 0,06223 | 2,8525 | 86,29 | 0 | 0,0632 | 5,54317 | 2 | 4,16679 | 13,734 | 41,5534 | 18,7371 | 22,8163 | 0,94859 | 16,18564 | 3,1828 | 2 | 1 | 2 | 4,06 | 0,43287 |
| 2,95 | 0,0629 | 3,7462 | 89,618 | 0 | 0,06424 | 5,70941 | 2 | 4,16661 | 13,734 | 42,2401 | 19,2276 | 23,0125 | 0,95585 | 16,67321 | 3,30613 | 2 | 1 | 2 | 4,06 | 0,43993 |
| 3 | 0,06758 | 4,4039 | 99,945 | 0 | 0,07031 | 5,49388 | 2 | 4,12413 | 13,734 | 42,9268 | 19,7181 | 23,2087 | 1,18001 | 14,10523 | 2,85561 | 2 | 1 | 2 | 4,06 | 0,54773 |
| 3,05 | 0,08046 | 3,4387 | 104,207 | 0 | 0,07202 | 5,54922 | 2 | 4,11706 | 13,734 | 43,6135 | 20,2086 | 23,4049 | 1,21356 | 14,07015 | 2,71381 | 2 | 1 | 2 | 4,06 | 0,56806 |
| 3,1 | 0,06801 | 4,1465 | 87,716 | 0 | 0,07367 | 5,22713 | 2 | 4,09603 | 13,734 | 44,3002 | 20,6991 | 23,6011 | 1,24457 | 13,11062 | 2,62256 | 2 | 1 | 2 | 4,06 | 0,58746 |
| 3,15 | 0,07255 | 3,9678 | 101,273 | 0 | 0,06928 | 5,70336 | 2 | 4,13754 | 13,734 | 44,9869 | 21,1896 | 23,7973 | 1,02069 | 16,26652 | 3,08958 | 2 | 1 | 2 | 4,06 | 0,4858 |
| 3,2 | 0,06727 | 3,739 | 99,715 | 0 | 0,06968 | 5,26365 | 2 | 4,11881 | 13,734 | 45,6736 | 21,6801 | 23,9935 | 1,0004 | 15,27944 | 3,29817 | 2 | 1 | 2 | 4,06 | 0,48006 |
| 3,25 | 0,06921 | 3,2958 | 101,551 | 0 | 0,07 | 4,97719 | 2 | 4,10563 | 13,734 | 46,3603 | 22,1706 | 24,1897 | 0,97726 | 14,73806 | 3,41526 | 2 | 1 | 2 | 4,06 | 0,47279 |
| 3,3 | 0,07352 | 3,4173 | 107,453 | 0 | 0,07554 | 4,26848 | 2 | 4,04548 | 13,734 | 47,047 | 22,6611 | 24,3859 | 1,16828 | 11,31732 | 2,99291 | 2 | 1 | 2 | 4,06 | 0,56979 |
| 3,35 | 0,08388 | 2,9597 | 114,78 | 0 | 0,0791 | 4,69057 | 2 | 4,04665 | 13,734 | 47,7337 | 23,1516 | 24,5821 | 1,27612 | 11,828 | 2,77113 | 2 | 1 | 2 | 4,06 | 0,62739 |
| 3,4 | 0,07991 | 4,7542 | 108,01 | 0 | 0,08139 | 4,66693 | 2 | 4,03467 | 13,734 | 48,4204 | 23,6421 | 24,7783 | 1,33072 | 11,52026 | 2,67769 | 2 | 1 | 2 | 4,06 | 0,65946 |
| 3,45 | 0,08039 | 3,6818 | 113,01 | 0 | 0,08175 | 5,2296 | 2 | 4,05639 | 13,734 | 49,1071 | 24,1326 | 24,9745 | 1,30705 | 13,09688 | 2,70413 | 2 | 1 | 2 | 4,06 | 0,65286 |
| 3,5 | 0,08495 | 4,3896 | 116,19 | 0 | 0,08453 | 4,90517 | 2 | 4,03036 | 13,734 | 49,7938 | 24,6231 | 25,1707 | 1,38016 | 11,93597 | 2,61379 | 2 | 1 | 2 | 4,06 | 0,69479 |
| 3,55 | 0,08826 | 4,3681 | 117,075 | 0 | 0,08577 | 5,31511 | 2 | 4,04147 | 13,7912 | 50,48336 | 25,1136 | 25,36976 | 1,39089 | 12,91924 | 2,58646 | 2 | 1 | 2 | 4,06 | 0,70573 |
| 3,6 | 0,0841 | 4,9186 | 115,878 | 0 | 0,08642 | 5,57315 | 2 | 4,04857 | 13,85726 | 51,17622 | 25,6041 | 25,57212 | 1,37808 | 13,6665 | 2,60601 | 2 | 1 | 2 | 4,06 | 0,70481 |
| 3,65 | 0,08689 | 5,1617 | 119,37 | 0 | 0,08562 | 5,74446 | 2 | 4,05847 | 13,87794 | 51,87012 | 26,0946 | 25,77552 | 1,30951 | 14,57224 | 2,7437 | 2 | 1 | 2 | 4,06 | 0,67506 |
| 3,7 | 0,08588 | 4,6755 | 120,862 | 0 | 0,08713 | 5,41264 | 2 | 4,0393 | 13,83625 | 52,56193 | 26,5851 | 25,97683 | 1,33073 | 13,64275 | 2,74419 | 2 | 1 | 2 | 4,06 | 0,69136 |
| 3,75 | 0,08862 | 4,3109 | 124,107 | 0 | 0,08832 | 5,25588 | 2 | 4,02796 | 13,8233 | 53,2531 | 27,0756 | 26,1775 | 1,33971 | 13,23677 | 2,73671 | 2 | 1 | 2 | 4,06 | 0,7014 |
| 3,8 | 0,09047 | 4,9401 | 124,189 | 0 | 0,08772 | 5,23479 | 2 | 4,02972 | 13,80823 | 53,94351 | 27,5661 | 26,37741 | 1,28063 | 13,59431 | 2,82803 | 2 | 1 | 2 | 4,06 | 0,6756 |
| 3,85 | 0,08408 | 4,5254 | 120,993 | 0 | 0,08533 | 5,77842 | 2 | 4,06103 | 13,87939 | 54,63748 | 28,0566 | 26,58088 | 1,15456 | 16,06603 | 3,03275 | 2 | 1 | 2 | 4,06 | 0,61378 |
| 3,9 | 0,08143 | 5,3261 | 118,206 | 0 | 0,08354 | 6,1045 | 2 | 4,08072 | 13,91009 | 55,33298 | 28,5471 | 26,78588 | 1,05306 | 18,07954 | 3,25939 | 2 | 1 | 2 | 4,06 | 0,56414 |
| 3,95 | 0,08511 | 5,4476 | 122,255 | 0 | 0,09738 | 6,13257 | 2 | 4,02387 | 14,15048 | 56,04051 | 29,0376 | 27,00291 | 1,53093 | 14,44599 | 2,35776 | 2 | 1 | 2 | 4,06 | 0,82679 |
| 4 | 0,1256 | 7,142 | 139,057 | 0 | 0,10516 | 6,20894 | 2 | 3,99767 | 14,28265 | 56,75464 | 29,5281 | 27,22654 | 1,778 | 13,48835 | 2,033 | 2 | 1 | 2 | 4,06 | 0,96817 |
| 4,05 | 0,10478 | 6,999 | 122,517 | 0 | 0,11046 | 6,18973 | 2 | 3,97857 | 14,35441 | 57,47236 | 30,0186 | 27,45376 | 1,92995 | 12,90376 | 1,90335 | 2 | 1 | 2 | 4,06 | 1,05969 |
| 4,1 | 0,10099 | 6,3699 | 131,025 | 0 | 0,09649 | 6,61173 | 2 | 4,04372 | 14,22288 | 58,18351 | 30,5091 | 27,67441 | 1,38406 | 16,65511 | 2,46886 | 2 | 1 | 2 | 4,06 | 0,76606 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 4,15 | 0,08369 | 5,7694 | 121,681 | 0 | 0,08667 | 7,42933 | 2 | 4,10955 | 14,19243 | 58,89313 | 30,9996 | 27,89353 | 0,99582 | 23,18116 | 3,34569 | 2 | 1 | 2 | 4,06 | 0,55554 |
| 4,2 | 0,07533 | 7,1777 | 119,091 | 0 | 0,08975 | 6,85575 | 2 | 4,07881 | 14,15357 | 59,60081 | 31,4901 | 28,11071 | 1,07252 | 20,40862 | 3,0281 | 2 | 1 | 2 | 4,06 | 0,60298 |
| 4,25 | 0,11023 | 5,512 | 127,583 | 0 | 0,08847 | 6,92555 | 2 | 4,08642 | 14,14313 | 60,30796 | 31,9806 | 28,32736 | 0,99405 | 21,7581 | 2,95035 | 2 | 1 | 2 | 4,06 | 0,56317 |
| 4,3 | 0,07984 | 5,6907 | 98,502 | 0 | 0,09154 | 6,27653 | 2 | 4,05218 | 14,08232 | 61,01208 | 32,4711 | 28,54098 | 1,06962 | 18,82058 | 2,55228 | 2 | 1 | 2 | 4,06 | 0,61056 |
| 4,35 | 0,08455 | 6,0339 | 105,076 | 0 | 0,08982 | 6,91965 | 2 | 4,08056 | 14,16538 | 61,72035 | 32,9616 | 28,75875 | 0,97697 | 22,12033 | 2,55754 | 2 | 1 | 2 | 4,06 | 0,56193 |
| 4,4 | 0,10506 | 6,9204 | 110,879 | 0 | 0,099 | 6,46534 | 2 | 4,02916 | 14,23662 | 62,43218 | 33,4521 | 28,98008 | 1,26194 | 17,50259 | 1,8134 | 2 | 1 | 2 | 4,06 | 0,73142 |
| 4,45 | 0,1074 | 6,2484 | 83,356 | 0 | 0,09897 | 6,81642 | 2 | 4,0409 | 14,29698 | 63,14703 | 33,9426 | 29,20443 | 1,22674 | 18,83095 | 1,94235 | 2 | 1 | 2 | 4,06 | 0,71653 |
| 4,5 | 0,08446 | 7,0705 | 116,354 | 0 | 0,09857 | 6,83681 | 2 | 4,04307 | 14,29421 | 63,86174 | 34,4331 | 29,42864 | 1,17952 | 19,41503 | 1,92007 | 2 | 1 | 2 | 4,06 | 0,69423 |
| 4,55 | 0,10386 | 6,8989 | 103,535 | 0 | 0,09532 | 7,12987 | 2 | 4,06489 | 14,29107 | 64,57629 | 34,9236 | 29,65269 | 1,03691 | 22,10435 | 2,41702 | 2 | 1 | 2 | 4,06 | 0,61494 |
| 4,6 | 0,09765 | 6,4199 | 107,83 | 0 | 0,09643 | 7,12465 | 2 | 4,06041 | 14,30793 | 65,29169 | 35,4141 | 29,87759 | 1,0422 | 22,06382 | 2,32474 | 2 | 1 | 2 | 4,06 | 0,62277 |
| 4,65 | 0,08778 | 7,2921 | 112,043 | 0 | 0,09934 | 7,03829 | 2 | 4,04661 | 14,3395 | 66,00866 | 35,9046 | 30,10406 | 1,1072 | 20,97676 | 2,08412 | 2 | 1 | 2 | 4,06 | 0,66663 |
| 4,7 | 0,11259 | 7,2635 | 96,24 | 0 | 0,10798 | 6,66915 | 2 | 4,00351 | 14,40549 | 66,72894 | 36,3951 | 30,33384 | 1,36001 | 17,45648 | 1,62057 | 2 | 1 | 2 | 4,06 | 0,82509 |
| 4,75 | 0,12358 | 7,0491 | 101,469 | 0 | 0,1123 | 6,44021 | 2 | 3,98112 | 14,42547 | 67,45021 | 36,8856 | 30,56461 | 1,46749 | 16,125 | 1,46584 | 2 | 1 | 2 | 4,06 | 0,89706 |
| 4,8 | 0,10074 | 7,3851 | 110,19 | 0 | 0,11556 | 6,39914 | 2 | 3,96903 | 14,46191 | 68,17331 | 37,3761 | 30,79721 | 1,53856 | 15,60597 | 1,50868 | 2 | 1 | 2 | 4,06 | 0,94767 |
| 4,85 | 0,12235 | 7,7497 | 114,928 | 0 | 0,13755 | 5,13859 | 2 | 3,85557 | 14,47677 | 68,89714 | 37,8666 | 31,03054 | 2,21243 | 10,29547 | 1,03628 | 2 | 1 | 2 | 4,01111 | 1,37306 |
| 4,9 | 0,18956 | 6,0696 | 101,912 | 0 | 0,14007 | 5,35421 | 2 | 3,85775 | 14,55186 | 69,62474 | 38,3571 | 31,26764 | 2,25287 | 10,64631 | 0,92791 | 2 | 1 | 2 | 4,00997 | 1,40884 |
| 4,95 | 0,10829 | 8,6791 | 94,322 | 0 | 0,16265 | 4,96106 | 2 | 3,785 | 14,69337 | 70,35941 | 38,8476 | 31,51181 | 2,92866 | 8,74335 | 0,65143 | 2 | 1 | 2 | 3,86489 | 1,84575 |
| 5 | 0,19009 | 9,4583 | 100,666 | 0 | 0,15036 | 5,73745 | 2 | 3,84656 | 14,74012 | 71,09641 | 39,3381 | 31,75831 | 2,49573 | 10,88393 | 0,75245 | 2 | 1 | 2 | 3,97309 | 1,58521 |
| 5,05 | 0,15269 | 7,7425 | 101,945 | 0 | 0,16136 | 5,0464 | 2 | 3,79172 | 14,70081 | 71,83145 | 39,8286 | 32,00285 | 2,79752 | 9,09527 | 0,78365 | 2 | 1 | 2 | 3,88541 | 1,79057 |
| 5,1 | 0,1413 | 7,2278 | 127,353 | 0 | 0,14056 | 5,31688 | 2 | 3,8549 | 14,54917 | 72,55891 | 40,3191 | 32,23981 | 2,10912 | 10,99041 | 1,15476 | 2 | 1 | 2 | 4,03042 | 1,35996 |
| 5,15 | 0,12768 | 7,4494 | 127,222 | 0 | 0,1317 | 5,73038 | 2 | 3,89573 | 14,53554 | 73,28569 | 40,8096 | 32,47609 | 1,79879 | 12,91921 | 1,51794 | 2 | 1 | 2 | 4,06 | 1,16835 |
| 5,2 | 0,12613 | 7,9641 | 133,877 | 0 | 0,12231 | 6,32226 | 2 | 3,94514 | 14,53516 | 74,01245 | 41,3001 | 32,71235 | 1,47653 | 16,00999 | 1,91826 | 2 | 1 | 2 | 4,06 | 0,96602 |
| 5,25 | 0,11313 | 7,7854 | 140,762 | 0 | 0,14545 | 5,4164 | 2 | 3,84615 | 14,62303 | 74,7436 | 41,7906 | 32,953 | 2,14578 | 11,14179 | 1,26337 | 2 | 1 | 2 | 4,01971 | 1,41419 |
| 5,3 | 0,1971 | 7,8855 | 118,731 | 0 | 0,14168 | 5,57075 | 2 | 3,86219 | 14,61503 | 75,47435 | 42,2811 | 33,19325 | 1,99455 | 11,92139 | 1,27407 | 2 | 1 | 2 | 4,05989 | 1,32411 |
| 5,35 | 0,11481 | 8,007 | 120,403 | 0 | 0,13571 | 6,00386 | 2 | 3,89489 | 14,63509 | 76,2061 | 42,7716 | 33,4345 | 1,77962 | 13,69337 | 1,45679 | 2 | 1 | 2 | 4,06 | 1,19001 |
| 5,4 | 0,09521 | 8,5504 | 149,221 | 0 | 0,10047 | 8,03626 | 2 | 4,07215 | 14,50933 | 76,93157 | 43,2621 | 33,66947 | 0,699 | 34,30522 | 4,22982 | 2 | 1 | 2 | 4,06 | 0,4707 |
| 5,45 | 0,09138 | 7,6639 | 158,81 | 0 | 0,09761 | 8,12959 | 2 | 4,08544 | 14,47842 | 77,65549 | 43,7526 | 33,90289 | 0,58868 | 39,76165 | 5,66812 | 2 | 1 | 2 | 4,06 | 0,39916 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 5,5 | 0,10625 | 7,5924 | 162,597 | 0 | 0,10319 | 7,33483 | 2 | 4,04165 | 14,44524 | 78,37775 | 44,2431 | 34,13465 | 0,7268 | 30,50745 | 4,78493 | 2 | 1 | 2 | 4,06 | 0,49618 |
| 5,55 | 0,11193 | 7,4494 | 167,449 | 0 | 0,11219 | 6,76511 | 2 | 3,99242 | 14,48058 | 79,10178 | 44,7336 | 34,36818 | 0,96285 | 22,93637 | 3,52442 | 2 | 1 | 2 | 4,06 | 0,66183 |
| 5,6 | 0,1184 | 7,7282 | 154,04 | 0 | 0,11725 | 6,53858 | 2 | 3,9684 | 14,50898 | 79,82723 | 45,2241 | 34,60313 | 1,08139 | 20,48739 | 3,0568 | 2 | 1 | 2 | 4,06 | 0,74839 |
| 5,65 | 0,12141 | 7,8212 | 157,335 | 0 | 0,12347 | 6,45394 | 2 | 3,94622 | 14,57336 | 80,5559 | 45,7146 | 34,8413 | 1,2318 | 18,56798 | 2,73934 | 2 | 1 | 2 | 4,06 | 0,85835 |
| 5,7 | 0,13061 | 8,3573 | 178,465 | 0 | 0,12876 | 6,6202 | 2 | 3,93633 | 14,66691 | 81,28924 | 46,2051 | 35,08414 | 1,35305 | 17,95667 | 2,6373 | 2 | 1 | 2 | 4,06 | 0,94942 |
| 5,75 | 0,13426 | 9,394 | 178,399 | 0 | 0,13131 | 6,929 | 2 | 3,93937 | 14,74944 | 82,02672 | 46,6956 | 35,33112 | 1,3949 | 18,46157 | 2,64743 | 2 | 1 | 2 | 4,06 | 0,98567 |
| 5,8 | 0,12906 | 9,5441 | 174,645 | 0 | 0,12805 | 7,24479 | 2 | 3,9588 | 14,76218 | 82,76483 | 47,1861 | 35,57873 | 1,27291 | 20,48467 | 2,84756 | 2 | 1 | 2 | 4,06 | 0,90577 |
| 5,85 | 0,12084 | 8,8935 | 175,399 | 0 | 0,12423 | 7,24312 | 2 | 3,96995 | 14,71547 | 83,5006 | 47,6766 | 35,824 | 1,13702 | 22,09124 | 3,05983 | 2 | 1 | 2 | 4,06 | 0,81465 |
| 5,9 | 0,1228 | 8,5575 | 166,892 | 0 | 0,12062 | 7,13607 | 2 | 3,9775 | 14,65307 | 84,23325 | 48,1671 | 36,06615 | 1,00889 | 23,65568 | 3,38238 | 2 | 1 | 2 | 4,06 | 0,72773 |
| 5,95 | 0,11822 | 8,3716 | 171,432 | 0 | 0,13286 | 6,62232 | 2 | 3,92478 | 14,71532 | 84,96902 | 48,6576 | 36,31142 | 1,3188 | 18,37259 | 2,56324 | 2 | 1 | 2 | 4,06 | 0,95775 |
| 6 | 0,15755 | 9,4655 | 175,891 | 0 | 0,14473 | 6,12665 | 2 | 3,87545 | 14,75715 | 85,70688 | 49,1481 | 36,55878 | 1,61456 | 15,02259 | 2,19138 | 2 | 1 | 2 | 4,06 | 1,18053 |
| 6,05 | 0,15843 | 8,7648 | 188,169 | 0 | 0,15716 | 5,94384 | 2 | 3,83804 | 14,84868 | 86,44931 | 49,6386 | 36,81071 | 1,92102 | 13,2103 | 1,81375 | 2 | 1 | 2 | 4,06 | 1,41428 |
| 6,1 | 0,15551 | 9,7943 | 169,629 | 0 | 0,15896 | 6,05943 | 2 | 3,83817 | 14,8883 | 87,19373 | 50,1291 | 37,06463 | 1,93634 | 13,42109 | 1,79045 | 2 | 1 | 2 | 4,06 | 1,43539 |
| 6,15 | 0,16295 | 10,3377 | 178,088 | 0 | 0,15615 | 6,57455 | 2 | 3,86336 | 14,95477 | 87,94146 | 50,6196 | 37,32186 | 1,82758 | 15,05115 | 1,86207 | 2 | 1 | 2 | 4,06 | 1,36417 |
| 6,2 | 0,14999 | 10,6665 | 185,169 | 0 | 0,15913 | 6,71664 | 2 | 3,86131 | 15,00832 | 88,69188 | 51,1101 | 37,58178 | 1,87417 | 15,17427 | 1,84668 | 2 | 1 | 2 | 4,06 | 1,4087 |
| 6,25 | 0,16444 | 11,0597 | 180,284 | 0 | 0,16687 | 6,44195 | 2 | 3,8342 | 15,0332 | 89,44354 | 51,6006 | 37,84294 | 2,04608 | 13,88342 | 1,63343 | 2 | 1 | 2 | 4,0423 | 1,5486 |
| 6,3 | 0,18619 | 10,5235 | 168,777 | 0 | 0,18822 | 5,71135 | 2 | 3,76221 | 15,07935 | 90,19751 | 52,0911 | 38,10641 | 2,57234 | 10,96677 | 1,20489 | 2 | 1 | 2 | 3,89941 | 1,96045 |
| 6,35 | 0,21403 | 10,6665 | 161,531 | 0 | 0,18552 | 5,60951 | 2 | 3,76346 | 15,0365 | 90,94933 | 52,5816 | 38,36773 | 2,46485 | 11,00422 | 1,2761 | 2 | 1 | 2 | 3,91296 | 1,89141 |
| 6,4 | 0,15634 | 10,0303 | 189,481 | 0 | 0,17311 | 6,25119 | 2 | 3,81377 | 15,0549 | 91,70208 | 53,0721 | 38,62998 | 2,10738 | 13,29285 | 1,57071 | 2 | 1 | 2 | 4,01361 | 1,62816 |
| 6,45 | 0,14896 | 11,7675 | 191,808 | 0 | 0,17439 | 6,32693 | 2 | 3,81382 | 15,08005 | 92,45608 | 53,5626 | 38,89348 | 2,10662 | 13,46638 | 1,63267 | 2 | 1 | 2 | 4,01464 | 1,63868 |
| 6,5 | 0,21787 | 11,3028 | 180,711 | 0 | 0,21358 | 5,11458 | 2 | 3,69033 | 15,1463 | 93,21339 | 54,0531 | 39,16029 | 3,07378 | 9,07527 | 0,96853 | 2 | 1 | 2 | 3,7791 | 2,4074 |
| 6,55 | 0,27392 | 9,7014 | 139,385 | 0 | 0,22159 | 4,74803 | 2 | 3,65988 | 15,1172 | 93,96925 | 54,5436 | 39,42565 | 3,237 | 8,24409 | 0,89883 | 2 | 1 | 2 | 3,73435 | 2,55241 |
| 6,6 | 0,17298 | 10,5593 | 187,661 | 0 | 0,20736 | 4,92562 | 2 | 3,6928 | 15,05764 | 94,72214 | 55,0341 | 39,68804 | 2,83808 | 9,06779 | 0,99366 | 2 | 1 | 2 | 3,8025 | 2,25276 |
| 6,65 | 0,17518 | 10,3806 | 173,826 | 0 | 0,17666 | 6,1702 | 2 | 3,8033 | 15,071 | 95,47569 | 55,5246 | 39,95109 | 2,03201 | 13,42687 | 1,68792 | 2 | 1 | 2 | 4,01714 | 1,62362 |
| 6,7 | 0,18181 | 11,7603 | 216,168 | 0 | 0,19139 | 6,09729 | 2 | 3,77106 | 15,18022 | 96,2347 | 56,0151 | 40,2196 | 2,36598 | 12,26352 | 1,43989 | 2 | 1 | 2 | 3,93816 | 1,90317 |
| 6,75 | 0,21719 | 12,8685 | 189,104 | 0 | 0,2085 | 5,89543 | 2 | 3,73181 | 15,27277 | 96,99834 | 56,5056 | 40,49274 | 2,75354 | 11,02417 | 1,33876 | 2 | 1 | 2 | 3,85529 | 2,22997 |
| 6,8 | 0,22649 | 12,2465 | 212,053 | 0 | 0,22909 | 5,69107 | 2 | 3,68904 | 15,37665 | 97,76717 | 56,9961 | 40,77107 | 3,22098 | 9,92795 | 1,15373 | 2 | 1 | 2 | 3,77105 | 2,62646 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 6,85 | 0,24359 | 13,998 | 224,364 | 0 | 0,23943 | 5,56879 | 2 | 3,66781 | 15,41935 | 98,53814 | 57,4866 | 41,05154 | 3,43199 | 9,46363 | 1,17892 | 2 | 1 | 2 | 3,73412 | 2,81777 |
| 6,9 | 0,2482 | 13,755 | 234,33 | 0 | 0,24837 | 5,85672 | 2 | 3,6662 | 15,53357 | 99,31481 | 57,9771 | 41,33771 | 3,60571 | 9,75911 | 1,16539 | 2 | 1 | 2 | 3,72227 | 2,98104 |
| 6,95 | 0,25331 | 15,8854 | 236,347 | 0 | 0,25013 | 6,01351 | 2 | 3,66985 | 15,57483 | 100,09356 | 58,4676 | 41,62596 | 3,60448 | 10,02521 | 1,15517 | 2 | 1 | 2 | 3,72691 | 3,0008 |
| 7 | 0,24889 | 15,485 | 224,692 | 0 | 0,24715 | 6,15455 | 2 | 3,67971 | 15,58309 | 100,87271 | 58,9581 | 41,91461 | 3,48989 | 10,39872 | 1,19872 | 2 | 1 | 2 | 3,74524 | 2,92555 |
| 7,05 | 0,23925 | 14,2625 | 241,871 | 0 | 0,23946 | 6,04378 | 2 | 3,68693 | 15,5137 | 101,6484 | 59,4486 | 42,1998 | 3,26561 | 10,50172 | 1,27743 | 2 | 1 | 2 | 3,76859 | 2,75617 |
| 7,1 | 0,23023 | 13,6692 | 239,904 | 0 | 0,23874 | 5,82437 | 2 | 3,67934 | 15,46657 | 102,42172 | 59,9391 | 42,48262 | 3,2088 | 10,20047 | 1,31589 | 2 | 1 | 2 | 3,76489 | 2,72637 |
| 7,15 | 0,24674 | 13,7836 | 236,183 | 0 | 0,23549 | 5,81276 | 2 | 3,68389 | 15,44323 | 103,19388 | 60,4296 | 42,76428 | 3,09353 | 10,34695 | 1,29849 | 2 | 1 | 2 | 3,77905 | 2,64586 |
| 7,2 | 0,22949 | 13,612 | 220,544 | 0 | 0,22952 | 5,93158 | 2 | 3,69801 | 15,42716 | 103,96524 | 60,9201 | 43,04514 | 2,91689 | 10,84308 | 1,32807 | 2 | 1 | 2 | 3,80938 | 2,51116 |
| 7,25 | 0,21234 | 13,4475 | 226,282 | 0 | 0,21789 | 6,12906 | 2 | 3,7247 | 15,38506 | 104,7345 | 61,4106 | 43,3239 | 2,61185 | 11,80199 | 1,45978 | 2 | 1 | 2 | 3,86757 | 2,26311 |
| 7,3 | 0,21184 | 13,0043 | 232,953 | 0 | 0,21096 | 6,18476 | 2 | 3,73865 | 15,34587 | 105,50179 | 61,9011 | 43,60069 | 2,41865 | 12,37227 | 1,57593 | 2 | 1 | 2 | 3,90437 | 2,1091 |
| 7,35 | 0,20869 | 12,6897 | 225,036 | 0 | 0,21083 | 6,16465 | 2 | 3,73811 | 15,34123 | 106,26885 | 62,3916 | 43,87725 | 2,38311 | 12,42978 | 1,56626 | 2 | 1 | 2 | 3,90853 | 2,09129 |
| 7,4 | 0,21197 | 13,2974 | 220,512 | 0 | 0,20955 | 6,45839 | 2 | 3,75125 | 15,38538 | 107,03812 | 62,8821 | 44,15602 | 2,32151 | 13,20215 | 1,52578 | 2 | 1 | 2 | 3,93102 | 2,05017 |
| 7,45 | 0,20798 | 14,6129 | 212,315 | 0 | 0,26399 | 5,58142 | 2 | 3,6326 | 15,57175 | 107,81671 | 63,3726 | 44,44411 | 3,51393 | 9,43465 | 0,85787 | 2 | 1 | 2 | 3,69724 | 3,12347 |
| 7,5 | 0,37202 | 16,2929 | 159,22 | 0 | 0,27477 | 5,65293 | 2 | 3,621 | 15,6478 | 108,5991 | 63,8631 | 44,736 | 3,71455 | 9,34726 | 0,72917 | 2 | 1 | 2 | 3,67317 | 3,32348 |
| 7,55 | 0,24432 | 15,6924 | 183,563 | 0 | 0,28087 | 5,67524 | 2 | 3,61394 | 15,68601 | 109,3834 | 64,3536 | 45,0298 | 3,80837 | 9,29514 | 0,6859 | 2 | 1 | 2 | 3,66075 | 3,4298 |
| 7,6 | 0,22628 | 15,8354 | 203,152 | 0 | 0,22657 | 6,73875 | 2 | 3,73286 | 15,55408 | 110,1611 | 64,8441 | 45,317 | 2,56884 | 13,11563 | 1,1672 | 2 | 1 | 2 | 3,88506 | 2,32824 |
| 7,65 | 0,20912 | 14,2768 | 215,446 | 0 | 0,20868 | 7,0104 | 2 | 3,77214 | 15,47339 | 110,93477 | 65,3346 | 45,60017 | 2,1436 | 14,96649 | 1,49086 | 2 | 1 | 2 | 3,98017 | 1,95497 |
| 7,7 | 0,19065 | 13,7764 | 214,594 | 0 | 0,19491 | 6,77209 | 2 | 3,78883 | 15,32891 | 111,70122 | 65,8251 | 45,87612 | 1,81384 | 15,86271 | 1,78743 | 2 | 1 | 2 | 4,05127 | 1,66424 |
| 7,75 | 0,18497 | 11,5459 | 213,643 | 0 | 0,1916 | 6,44529 | 2 | 3,78354 | 15,24569 | 112,4635 | 66,3156 | 46,1479 | 1,71477 | 15,6053 | 1,93365 | 2 | 1 | 2 | 4,06 | 1,58266 |
| 7,8 | 0,19917 | 11,7246 | 229,757 | 0 | 0,205 | 5,68561 | 2 | 3,72967 | 15,20514 | 113,22376 | 66,8061 | 46,41766 | 1,97718 | 12,69991 | 1,67032 | 2 | 1 | 2 | 3,9598 | 1,83552 |
| 7,85 | 0,23086 | 11,696 | 216,905 | 0 | 0,21861 | 5,33918 | 2 | 3,69153 | 15,23144 | 113,98533 | 67,2966 | 46,68873 | 2,24097 | 11,15587 | 1,35721 | 2 | 1 | 2 | 3,8807 | 2,09256 |
| 7,9 | 0,22581 | 11,5959 | 181,235 | 0 | 0,24273 | 4,99327 | 2 | 3,63758 | 15,31489 | 114,75108 | 67,7871 | 46,96398 | 2,72504 | 9,47044 | 0,97189 | 2 | 1 | 2 | 3,76814 | 2,55958 |
| 7,95 | 0,27152 | 13,0686 | 178,366 | 0 | 0,25859 | 5,09072 | 3 | 3,61872 | 15,43418 | 115,52278 | 68,2776 | 47,24518 | 3,02812 | 9,20144 | 0,81702 | 2 | 1 | 2 | 3,72157 | 2,86128 |
| 8 | 0,27843 | 14,8273 | 195,89 | 0 | 0,28071 | 5,14793 | 3 | 3,5912 | 15,57294 | 116,30143 | 68,7681 | 47,53333 | 3,45881 | 8,78955 | 0,69155 | 2 | 1 | 2 | 3,66104 | 3,28817 |
| 8,05 | 0,29218 | 15,4564 | 173,137 | 0 | 0,25802 | 5,89519 | 2 | 3,65384 | 15,5996 | 117,08141 | 69,2586 | 47,82281 | 2,94717 | 10,79236 | 0,85799 | 2 | 1 | 2 | 3,76783 | 2,81884 |
| 8,1 | 0,20346 | 15,3492 | 201,529 | 0 | 0,2361 | 6,29515 | 2 | 3,7017 | 15,53895 | 117,85836 | 69,7491 | 48,10926 | 2,45784 | 12,56972 | 1,03521 | 2 | 1 | 2 | 3,86855 | 2,3649 |
| 8,15 | 0,21267 | 13,7836 | 201,808 | 0 | 0,21792 | 6,67718 | 2 | 3,74483 | 15,4838 | 118,63255 | 70,2396 | 48,39295 | 2,05169 | 14,65533 | 1,19888 | 2 | 1 | 2 | 3,96926 | 1,98575 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 8,2 | 0,23763 | 14,5199 | 164,482 | 0 | 0,24098 | 5,87316 | 2 | 3,67789 | 15,49046 | 119,40707 | 70,7301 | 48,67697 | 2,49748 | 11,64184 | 0,9627 | 2 | 1 | 2 | 3,83899 | 2,43139 |
| 8,25 | 0,27263 | 14,1553 | 197,005 | 0 | 0,28661 | 5,01448 | 3 | 3,57745 | 15,57465 | 120,1858 | 71,2206 | 48,9652 | 3,39889 | 8,63569 | 0,6024 | 2 | 1 | 2 | 3,65223 | 3,32855 |
| 8,3 | 0,34958 | 14,4413 | 152,942 | 0 | 0,30109 | 4,69982 | 3 | 3,54431 | 15,57566 | 120,96459 | 71,7111 | 49,25349 | 3,65704 | 7,85608 | 0,57341 | 2 | 1 | 2 | 3,60028 | 3,60244 |
| 8,35 | 0,28105 | 13,855 | 175,039 | 0 | 0,29136 | 4,75776 | 3 | 3,55921 | 15,53939 | 121,74156 | 72,2016 | 49,53996 | 3,42387 | 8,17258 | 0,55307 | 2 | 1 | 2 | 3,63147 | 3,39237 |
| 8,4 | 0,24345 | 13,2903 | 170,056 | 0 | 0,25206 | 5,28772 | 2 | 3,6369 | 15,43866 | 122,51349 | 72,6921 | 49,82139 | 2,60029 | 10,28824 | 0,77791 | 2 | 1 | 2 | 3,78494 | 2,591 |
| 8,45 | 0,23169 | 12,8399 | 175,317 | 0 | 0,22924 | 5,59899 | 2 | 3,68502 | 15,35889 | 123,28143 | 73,1826 | 50,09883 | 2,11499 | 12,11335 | 0,93055 | 2 | 1 | 1,99605 | 3,89796 | 2,11499 |
| 8,5 | 0,21258 | 12,3752 | 169,974 | 0 | 0,21388 | 5,94195 | 2 | 3,72427 | 15,32093 | 124,04748 | 73,6731 | 50,37438 | 1,78336 | 14,14673 | 1,07658 | 2 | 1 | 1,98514 | 3,99755 | 1,78336 |
| 8,55 | 0,19738 | 12,9114 | 165,875 | 0 | 0,21737 | 5,70859 | 2 | 3,70904 | 15,29962 | 124,81246 | 74,1636 | 50,64886 | 1,82737 | 13,40681 | 1,03476 | 2 | 1 | 1,97438 | 3,97521 | 1,82737 |
| 8,6 | 0,24214 | 11,9391 | 173,957 | 0 | 0,24197 | 4,96472 | 2 | 3,63743 | 15,30346 | 125,57763 | 74,6541 | 50,92353 | 2,28556 | 10,32139 | 0,80465 | 2 | 1 | 1,96373 | 3,82988 | 2,28556 |
| 8,65 | 0,28638 | 11,1884 | 165,089 | 0 | 0,2888 | 3,95497 | 3 | 3,52036 | 15,31327 | 126,3433 | 75,1446 | 51,1987 | 3,17306 | 7,03078 | 0,57437 | 2 | 1 | 1,95317 | 3,61727 | 3,17306 |
| 8,7 | 0,33788 | 11,1384 | 166,318 | 0 | 0,3089 | 3,6567 | 3 | 3,47778 | 15,32628 | 127,10961 | 75,6351 | 51,47451 | 3,53172 | 6,21345 | 0,50976 | 3 | 1 | 1,94271 | 3,54847 | 3,53172 |
| 8,75 | 0,30245 | 11,5602 | 173,514 | 0 | 0,31469 | 3,61676 | 3 | 3,46842 | 15,3421 | 127,87672 | 76,1256 | 51,75112 | 3,60978 | 6,09254 | 0,51293 | 3 | 1 | 1,93233 | 3,53581 | 3,60978 |
| 8,8 | 0,30373 | 11,4458 | 176,006 | 0 | 0,32115 | 3,54467 | 3 | 3,45635 | 15,35014 | 128,64422 | 76,6161 | 52,02812 | 3,7001 | 5,9134 | 0,507 | 3 | 1 | 1,92204 | 3,51963 | 3,7001 |
| 8,85 | 0,35728 | 11,1455 | 173,137 | 0 | 0,3204 | 3,57081 | 3 | 3,45886 | 15,355 | 129,41197 | 77,1066 | 52,30537 | 3,65147 | 5,99032 | 0,52306 | 3 | 1 | 1,91185 | 3,52754 | 3,65147 |
| 8,9 | 0,3002 | 11,7317 | 181,874 | 0 | 0,32218 | 3,51044 | 3 | 3,45301 | 15,34387 | 130,17917 | 77,5971 | 52,58207 | 3,65145 | 5,89056 | 0,5186 | 3 | 1 | 1,90179 | 3,52342 | 3,65145 |
| 8,95 | 0,30906 | 11,0526 | 176,498 | 0 | 0,28033 | 6,70888 | 2 | 3,65484 | 15,87551 | 130,97294 | 78,0876 | 52,88534 | 2,82417 | 12,59197 | 0,692 | 2 | 1 | 1,89088 | 3,80761 | 2,82417 |
| 9 | 0,23173 | 33,6367 | 185,956 | 0 | 0,30073 | 8,77299 | 2 | 3,69655 | 16,2918 | 131,78753 | 78,5781 | 53,20943 | 3,17498 | 15,61671 | 0,58314 | 2 | 1 | 1,87937 | 3,8257 | 3,17498 |
| 9,05 | 0,36139 | 34,4589 | 168,826 | 0 | 0,32657 | 10,61222 | 2 | 3,71692 | 16,6372 | 132,61939 | 79,0686 | 53,55079 | 3,62187 | 17,8685 | 0,58302 | 2 | 1 | 1,86739 | 3,8191 | 3,62187 |
| 9,1 | 0,3866 | 35,8744 | 221,659 | 0 | 0,4061 | 8,73303 | 2 | 3,59038 | 16,74727 | 133,45676 | 79,5591 | 53,89766 | 5,05847 | 13,00783 | 0,5223 | 2 | 1 | 1,85537 | 3,61928 | 5,05847 |
| 9,15 | 0,4703 | 36,0603 | 275,393 | 0 | 0,47299 | 7,95542 | 2 | 3,51313 | 16,87386 | 134,30045 | 80,0496 | 54,25085 | 6,24303 | 11,10998 | 0,47625 | 2 | 1 | 1,84329 | 3,50528 | 6,24303 |
| 9,2 | 0,56207 | 40,9503 | 227,003 | 0 | 0,52529 | 7,76667 | 3 | 3,47057 | 17,00711 | 135,15081 | 80,5401 | 54,61071 | 7,14407 | 10,45715 | 0,41565 | 2 | 1 | 1,83114 | 3,44365 | 7,14407 |
| 9,25 | 0,54351 | 45,3828 | 225,708 | 0 | 0,58126 | 8,00896 | 3 | 3,44398 | 17,19772 | 136,01069 | 81,0306 | 54,98009 | 8,09837 | 10,45546 | 0,32899 | 3 | 1 | 1,81884 | 3,40242 | 8,09837 |
| 9,3 | 0,6382 | 53,3255 | 229,822 | 0 | 0,60829 | 8,62626 | 3 | 3,44853 | 17,35284 | 136,87833 | 81,5211 | 55,35723 | 8,51575 | 11,13098 | 0,28851 | 3 | 1 | 1,80645 | 3,40406 | 8,51575 |
| 9,35 | 0,64315 | 58,7088 | 197,054 | 0 | 0,64742 | 8,84731 | 3 | 3,43436 | 17,47757 | 137,75221 | 82,0116 | 55,74061 | 9,1435 | 11,23856 | 0,25901 | 3 | 1 | 1,79402 | 3,38388 | 9,1435 |
| 9,4 | 0,6609 | 59,8026 | 215,184 | 0 | 0,66473 | 8,8356 | 3 | 3,42511 | 17,51651 | 138,62804 | 82,5021 | 56,12594 | 9,37354 | 11,1638 | 0,2215 | 3 | 1 | 1,78171 | 3,37394 | 9,37354 |
| 9,45 | 0,69013 | 57,6864 | 184,858 | 0 | 0,65168 | 9,04974 | 3 | 3,43836 | 17,51367 | 139,50372 | 82,9926 | 56,51112 | 9,06334 | 11,51465 | 0,19708 | 3 | 1 | 1,76956 | 3,39379 | 9,06334 |
| 9,5 | 0,60402 | 59,438 | 151,761 | 0 | 0,61477 | 9,33414 | 2 | 3,46647 | 17,45983 | 140,37671 | 83,4831 | 56,89361 | 8,33831 | 12,09617 | 0,20212 | 3 | 1 | 1,75767 | 3,43499 | 8,33831 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 9,55 | 0,55017 | 55,027 | 201,48 | 0 | 0,58491 | 9,55036 | 2 | 3,48952 | 17,4098 | 141,2472 | 83,9736 | 57,2736 | 7,74637 | 12,59088 | 0,23208 | 2 | 1 | 1,74601 | 3,47041 | 7,74637 |
| 9,6 | 0,60054 | 53,1181 | 207,578 | 0 | 0,58756 | 9,38961 | 2 | 3,48335 | 17,39722 | 142,11706 | 84,4641 | 57,65296 | 7,72634 | 12,38532 | 0,24025 | 2 | 1 | 1,73452 | 3,46647 | 7,72634 |
| 9,65 | 0,61198 | 57,3647 | 165,384 | 0 | 0,58721 | 9,45811 | 2 | 3,48554 | 17,40466 | 142,9873 | 84,9546 | 58,0327 | 7,65475 | 12,50249 | 0,20937 | 2 | 1 | 1,72317 | 3,47221 | 7,65475 |
| 9,7 | 0,54912 | 56,1351 | 160,925 | 0 | 0,63645 | 9,13043 | 2 | 3,44875 | 17,4876 | 143,86168 | 85,4451 | 58,41658 | 8,43234 | 11,797 | 0,20454 | 3 | 1 | 1,71184 | 3,42409 | 8,43234 |
| 9,75 | 0,74825 | 60,8321 | 232,281 | 0 | 0,73399 | 8,21741 | 3 | 3,37184 | 17,5851 | 144,74093 | 85,9356 | 58,80533 | 10,02033 | 10,2359 | 0,18579 | 3 | 1 | 1,70053 | 3,32716 | 10,02033 |
| 9,8 | 0,9046 | 63,9777 | 193,038 | 0 | 1,06663 | 5,5524 | 3 | 3,13854 | 17,70741 | 145,6263 | 86,4261 | 59,2002 | 15,55744 | 6,43033 | 0,07744 | 3 | 1 | 1,68918 | 3,05013 | 15,55744 |
| 9,85 | 1,54704 | 52,8608 | 47,915 | 0 | 1,45329 | 3,77129 | 3 | 2,929 | 17,73688 | 146,51315 | 86,9166 | 59,59655 | 21,92706 | 4,19412 | 0,01296 | 3 | 0,95565 | 1,63987 | 2,82322 | 21,42943 |
| 9,9 | 1,90823 | 47,5847 | 70,619 | 0 | 2,04561 | 2,31267 | 4 | 2,68257 | 17,6987 | 147,39808 | 87,4071 | 59,99098 | 31,64162 | 2,49225 | -0,01522 | 4 | 0,86063 | 1,55234 | 2,57217 | 29,46671 |
| 9,95 | 2,68156 | 41,4793 | 56,997 | 0 | 2,4193 | 1,77874 | 4 | 2,55691 | 17,65408 | 148,28079 | 87,8976 | 60,38319 | 37,61018 | 1,89488 | -0,0065 | 5 | 0,8126 | 1,5067 | 2,44742 | 34,21761 |
| 10 | 2,66812 | 40,0352 | 91,781 | 0 | 2,47095 | 1,85681 | 4 | 2,56022 | 17,73589 | 149,16758 | 88,3881 | 60,77948 | 38,20005 | 1,97611 | -0,00328 | 5 | 0,81475 | 1,50032 | 2,45252 | 34,83406 |
| 10,05 | 2,06316 | 56,1279 | 93,519 | 0 | 1,87282 | 2,64489 | 4 | 2,74803 | 17,71775 | 150,05347 | 88,8786 | 61,17487 | 28,16134 | 2,87526 | 0,00198 | 4 | 0,88881 | 1,54774 | 2,64503 | 26,66386 |
| 10,1 | 0,88718 | 52,439 | 91,552 | 0 | 1,16277 | 4,4707 | 3 | 3,05082 | 17,59051 | 150,93299 | 89,3691 | 61,56389 | 16,4355 | 5,13758 | 0,02235 | 3 | 1 | 1,62433 | 2,96805 | 16,4355 |
| 10,15 | 0,53796 | 47,3845 | 150,893 | 0 | 0,60608 | 7,73489 | 3 | 3,42036 | 17,22179 | 151,79408 | 89,8596 | 61,93448 | 7,33489 | 10,31942 | 0,15024 | 2 | 1 | 1,61461 | 3,43121 | 7,33489 |
| 10,2 | 0,39309 | 40,8145 | 231,888 | 0 | 0,47653 | 9,21298 | 2 | 3,54941 | 17,05413 | 152,64679 | 90,3501 | 62,29669 | 5,1991 | 13,55502 | 0,40385 | 2 | 1 | 1,60522 | 3,62178 | 5,1991 |
| 10,25 | 0,49855 | 43,5097 | 280,672 | 0 | 0,54541 | 8,37023 | 2 | 3,47756 | 17,15084 | 153,50433 | 90,8406 | 62,66373 | 6,25411 | 11,64874 | 0,36505 | 2 | 1 | 1,59582 | 3,51802 | 6,25411 |
| 10,3 | 0,74459 | 52,632 | 189,153 | 0 | 0,71054 | 7,3543 | 3 | 3,35256 | 17,40766 | 154,37471 | 91,3311 | 63,04361 | 8,82197 | 9,39562 | 0,20827 | 3 | 1 | 1,5862 | 3,3439 | 8,82197 |
| 10,35 | 0,88849 | 60,6247 | 151,663 | 0 | 0,89408 | 6,73353 | 3 | 3,25078 | 17,65861 | 155,25765 | 91,8216 | 63,43605 | 11,64668 | 8,14854 | 0,14772 | 3 | 1 | 1,57639 | 3,21244 | 11,64668 |
| 10,4 | 1,04915 | 67,3521 | 262,066 | 0 | 1,03257 | 6,41314 | 3 | 3,18896 | 17,82342 | 156,14882 | 92,3121 | 63,83672 | 13,72911 | 7,55574 | 0,15529 | 3 | 1 | 1,5665 | 3,1373 | 13,72911 |
| 10,45 | 1,16007 | 70,6836 | 271,509 | 0 | 1,12145 | 6,19643 | 3 | 3,15181 | 17,91052 | 157,04434 | 92,8026 | 64,24174 | 15,01208 | 7,20547 | 0,19744 | 3 | 1 | 1,55662 | 3,09469 | 15,01208 |
| 10,5 | 1,15512 | 70,4334 | 316,063 | 0 | 1,16268 | 6,09394 | 3 | 3,13512 | 17,94671 | 157,94168 | 93,2931 | 64,64858 | 15,54149 | 7,05189 | 0,24196 | 3 | 1 | 1,54682 | 3,07725 | 15,54149 |
| 10,55 | 1,17284 | 71,4414 | 421,631 | 0 | 1,17422 | 5,95713 | 3 | 3,12552 | 17,93573 | 158,83846 | 93,7836 | 65,05486 | 15,60803 | 6,88902 | 0,31595 | 3 | 1 | 1,53716 | 3,06906 | 15,60803 |
| 10,6 | 1,19469 | 67,974 | 506,068 | 0 | 1,18252 | 5,73939 | 3 | 3,11286 | 17,9037 | 159,73365 | 94,2741 | 65,45955 | 15,62466 | 6,63574 | 0,35163 | 3 | 1 | 1,52766 | 3,05783 | 15,62466 |
| 10,65 | 1,18002 | 64,1922 | 434,04 | 0 | 1,20265 | 5,4067 | 3 | 3,09075 | 17,86091 | 160,62669 | 94,7646 | 65,86209 | 15,82134 | 6,24013 | 0,37605 | 3 | 1 | 1,51832 | 3,03601 | 15,82134 |
| 10,7 | 1,23325 | 62,9053 | 519,74 | 0 | 1,2604 | 5,20302 | 3 | 3,06442 | 17,88868 | 161,52113 | 95,2551 | 66,26603 | 16,58289 | 5,9678 | 0,36787 | 3 | 1 | 1,50907 | 3,00787 | 16,58289 |
| 10,75 | 1,36794 | 69,6398 | 544,738 | 0 | 1,30659 | 5,14259 | 3 | 3,04911 | 17,93043 | 162,41765 | 95,7456 | 66,67205 | 17,16115 | 5,87259 | 0,36617 | 3 | 1 | 1,49988 | 2,99211 | 17,16115 |
| 10,8 | 1,31857 | 69,0321 | 479,644 | 0 | 1,34369 | 5,22405 | 3 | 3,04405 | 17,99146 | 163,31722 | 96,2361 | 67,08112 | 17,5962 | 5,94685 | 0,36513 | 3 | 1 | 1,49073 | 2,98763 | 17,5962 |
| 10,85 | 1,34456 | 71,9132 | 557,278 | 0 | 1,36087 | 5,2553 | 3 | 3,04145 | 18,0178 | 164,21811 | 96,7266 | 67,49151 | 17,73036 | 5,97649 | 0,35213 | 3 | 1 | 1,48167 | 2,98662 | 17,73036 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 10,9 | 1,41947 | 73,6076 | 517,379 | 0 | 1,45877 | 5,31704 | 3 | 3,02154 | 18,13779 | 165,125 | 97,2171 | 67,9079 | 19,04999 | 5,99573 | 0,35206 | 3 | 1 | 1,47258 | 2,96444 | 19,04999 |
| 10,95 | 1,61228 | 87,1695 | 583,31 | 0 | 1,68871 | 5,25603 | 3 | 2,96991 | 18,34901 | 166,04245 | 97,7076 | 68,33485 | 22,2824 | 5,82919 | 0,21956 | 3 | 0,99141 | 1,4586 | 2,90718 | 22,20963 |
| 11 | 2,03437 | 105,4999 | 195,382 | 0 | 1,86564 | 5,58311 | 3 | 2,95468 | 18,57128 | 166,97102 | 98,1981 | 68,77292 | 24,69963 | 6,13191 | 0,16754 | 3 | 0,98572 | 1,44631 | 2,89055 | 24,56792 |
| 11,05 | 1,95026 | 119,8125 | 369,667 | 0 | 2,08637 | 5,60739 | 3 | 2,91989 | 18,74778 | 167,90841 | 98,6886 | 69,21981 | 27,7155 | 6,09817 | 0,11709 | 3 | 0,97226 | 1,43001 | 2,85459 | 27,43412 |
| 11,1 | 2,27448 | 125,6605 | 404,91 | 0 | 2,1202 | 5,86567 | 3 | 2,92798 | 18,82425 | 168,84962 | 99,1791 | 69,67052 | 28,00831 | 6,37322 | 0,10597 | 3 | 0,9762 | 1,42303 | 2,86435 | 27,76843 |
| 11,15 | 2,13587 | 127,6193 | 143,319 | 0 | 2,07956 | 5,86481 | 3 | 2,93411 | 18,79439 | 169,78934 | 99,6696 | 70,11974 | 27,2358 | 6,38622 | 0,10223 | 3 | 0,97977 | 1,41593 | 2,87315 | 27,04088 |
| 11,2 | 1,82832 | 112,6061 | 336,488 | 0 | 1,73143 | 6,71518 | 3 | 3,03249 | 18,66915 | 170,7228 | 100,1601 | 70,5627 | 22,11807 | 7,44974 | 0,15824 | 3 | 1 | 1,41718 | 2,98224 | 22,11807 |
| 11,25 | 1,23011 | 108,5812 | 561,557 | 0 | 1,56515 | 6,96893 | 3 | 3,07577 | 18,55696 | 171,65064 | 100,6506 | 71,00004 | 19,62679 | 7,82736 | 0,23478 | 3 | 1 | 1,40845 | 3,03436 | 19,62679 |
| 11,3 | 1,63703 | 106,0361 | 385,403 | 0 | 1,54309 | 6,92435 | 3 | 3,07848 | 18,5278 | 172,57703 | 101,1411 | 71,43593 | 19,18516 | 7,79628 | 0,2507 | 3 | 1 | 1,39986 | 3,04026 | 19,18516 |
| 11,35 | 1,76212 | 105,9288 | 387,239 | 0 | 1,54932 | 6,6816 | 3 | 3,06682 | 18,49294 | 173,50168 | 101,6316 | 71,87008 | 19,14318 | 7,5242 | 0,18399 | 3 | 1 | 1,3914 | 3,03025 | 19,14318 |
| 11,4 | 1,24882 | 98,5938 | 291,671 | 0 | 1,41908 | 6,85417 | 3 | 3,10267 | 18,3876 | 174,42106 | 102,1221 | 72,29896 | 17,21549 | 7,81468 | 0,19658 | 3 | 1 | 1,38315 | 3,07498 | 17,21549 |
| 11,45 | 1,24631 | 87,2767 | 361,47 | 0 | 1,22379 | 7,38655 | 3 | 3,17241 | 18,24656 | 175,33339 | 102,6126 | 72,72079 | 14,41761 | 8,6218 | 0,20561 | 3 | 1 | 1,37512 | 3,16035 | 14,41761 |
| 11,5 | 1,17625 | 85,3179 | 301,408 | 0 | 1,13434 | 7,38901 | 3 | 3,19739 | 18,13053 | 176,23991 | 103,1031 | 73,13681 | 13,10011 | 8,7482 | 0,24843 | 3 | 1 | 1,3673 | 3,19519 | 13,10011 |
| 11,55 | 0,98046 | 78,855 | 360,503 | 0 | 1,0308 | 7,71857 | 3 | 3,24127 | 18,03391 | 177,14161 | 103,5936 | 73,54801 | 11,60677 | 9,32025 | 0,31605 | 3 | 1 | 1,35966 | 3,25254 | 11,60677 |
| 11,6 | 0,93568 | 74,5155 | 458,251 | 0 | 0,96575 | 7,65585 | 3 | 3,26054 | 17,92455 | 178,03784 | 104,0841 | 73,95374 | 10,65142 | 9,38622 | 0,3976 | 3 | 1 | 1,3522 | 3,28227 | 10,65142 |
| 11,65 | 0,98111 | 68,4387 | 433,073 | 0 | 0,94701 | 7,34909 | 3 | 3,25564 | 17,84746 | 178,93021 | 104,5746 | 74,35561 | 10,32986 | 9,06112 | 0,45082 | 3 | 1 | 1,34489 | 3,28201 | 10,32986 |
| 11,7 | 0,92425 | 65,8365 | 461,202 | 0 | 0,96854 | 6,90231 | 3 | 3,23072 | 17,80979 | 179,8207 | 105,0651 | 74,7556 | 10,55064 | 8,47597 | 0,45165 | 3 | 1 | 1,33769 | 3,25594 | 10,55064 |
| 11,75 | 1,00026 | 66,2797 | 489,594 | 0 | 1,02563 | 6,5383 | 3 | 3,19656 | 17,83531 | 180,71247 | 105,5556 | 75,15687 | 11,2421 | 7,93672 | 0,43498 | 3 | 1 | 1,33055 | 3,21639 | 11,2421 |
| 11,8 | 1,15239 | 69,0607 | 468,431 | 0 | 1,10168 | 6,18453 | 3 | 3,15722 | 17,88103 | 181,60652 | 106,0461 | 75,56042 | 12,17666 | 7,40525 | 0,40153 | 3 | 1 | 1,32344 | 3,17047 | 12,17666 |
| 11,85 | 1,40994 | 71,6773 | 391,305 | 0 | 1,32409 | 5,34745 | 3 | 3,05543 | 17,99578 | 182,50631 | 106,5366 | 75,96971 | 15,02683 | 6,20236 | 0,27197 | 3 | 1 | 1,31631 | 3,05104 | 15,02683 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 0,1 | 0,46169 | 17,1794 | 95,093 | 0 | 0,4465 | 3,99858 | 3 | 3,36229 | 15,99416 | 1,59942 | 0 | 1,59942 | 278,16647 | 4,01296 | 0,20077 | 3 | 1 | 2 | 3,1111 | 8,89808 |
| 0,15 | 0,41613 | 19,2026 | 77,782 | 0 | 0,38058 | 5,11512 | 3 | 3,47895 | 16,03242 | 2,40104 | 0 | 2,40104 | 157,50651 | 5,1476 | 0,14359 | 3 | 1 | 2 | 3,23199 | 7,56358 |
| 0,2 | 0,30948 | 19,9962 | 7,344 | 0 | 0,31834 | 6,31065 | 2 | 3,59422 | 16,00012 | 3,20104 | 0 | 3,20104 | 98,44779 | 6,37475 | 0,11404 | 3 | 1 | 2 | 3,3511 | 6,30271 |
| 0,25 | 0,2294 | 21,0685 | 22,687 | 0 | 0,23565 | 8,63836 | 2 | 3,7791 | 15,89997 | 3,99604 | 0 | 3,99604 | 57,97002 | 8,78737 | 0,09161 | 2 | 1 | 2 | 3,54196 | 4,63301 |
| 0,3 | 0,16806 | 20,0033 | 33,637 | 0 | 0,17592 | 11,26074 | 2 | 3,94911 | 15,75664 | 4,78387 | 0 | 4,78387 | 35,77424 | 11,57551 | 0,12848 | 2 | 1 | 2 | 3,7192 | 3,42279 |
| 0,35 | 0,13031 | 18,359 | 9,639 | 0 | 0,12782 | 14,13571 | 2 | 4,11939 | 15,52828 | 5,56029 | 0 | 5,56029 | 21,98802 | 14,77859 | 0,12666 | 2 | 1 | 2 | 3,89963 | 2,44519 |
| 0,4 | 0,08509 | 15,8425 | 3,18 | 0 | 0,09247 | 16,99344 | 2 | 4,28042 | 15,24355 | 6,32247 | 0 | 6,32247 | 13,62562 | 18,24061 | 0,08576 | 2 | 1 | 2 | 4,06 | 1,72295 |
| 0,45 | 0,06201 | 12,94 | 9,344 | 0 | 0,06592 | 20,47676 | 2 | 4,44735 | 14,93887 | 7,06941 | 0 | 7,06941 | 8,32421 | 22,93667 | 0,12795 | 2 | 1 | 2 | 4,06 | 1,17695 |
| 0,5 | 0,05065 | 11,7103 | 10,065 | 0 | 0,05405 | 22,33448 | 2 | 4,5397 | 14,73444 | 7,80613 | 0 | 7,80613 | 5,92447 | 26,10435 | 0,1992 | 2 | 1 | 2 | 4,06 | 0,92494 |
| 0,55 | 0,0495 | 11,5673 | 8,229 | 0 | 0,04831 | 24,58198 | 2 | 4,60352 | 14,67234 | 8,53975 | 0 | 8,53975 | 4,65669 | 29,86083 | 0,18852 | 2 | 1 | 2 | 4,06 | 0,79534 |
| 0,6 | 0,04477 | 12,3466 | 4,196 | 0 | 0,04654 | 26,24223 | 2 | 4,63296 | 14,69037 | 9,27427 | 0 | 9,27427 | 4,01819 | 32,77309 | 0,15117 | 2 | 1 | 2 | 4,06 | 0,74531 |
| 0,65 | 0,04535 | 12,7255 | 4,475 | 0 | 0,04945 | 25,7709 | 2 | 4,60681 | 14,76265 | 10,0124 | 0 | 10,0124 | 3,93921 | 32,31304 | 0,05929 | 2 | 1 | 2 | 4,06 | 0,78882 |
| 0,7 | 0,05824 | 13,1616 | -1,656 | 0 | 0,0536 | 24,72707 | 2 | 4,56784 | 14,83868 | 10,75433 | 0 | 10,75433 | 3,98435 | 30,93312 | -0,00001 | 2 | 1 | 2 | 4,06 | 0,85698 |
| 0,75 | 0,05722 | 13,8765 | -2,82 | 0 | 0,0714 | 19,14449 | 2 | 4,40219 | 14,98404 | 11,50354 | 0 | 11,50354 | 5,20679 | 22,82132 | -0,05684 | 2 | 1 | 2 | 4,06 | 1,19793 |
| 0,8 | 0,09874 | 13,9694 | -5,737 | 0 | 0,10038 | 14,47255 | 2 | 4,21144 | 15,18467 | 12,26277 | 0 | 12,26277 | 7,18548 | 16,48669 | -0,07094 | 2 | 1 | 2 | 4,04145 | 1,76228 |
| 0,85 | 0,14517 | 15,7353 | -10,196 | 0 | 0,15016 | 10,78346 | 2 | 3,99491 | 15,46399 | 13,03597 | 0 | 13,03597 | 10,51915 | 11,80858 | -0,02901 | 2 | 1 | 2 | 3,80082 | 2,74255 |
| 0,9 | 0,20658 | 18,8737 | 4 | 0 | 0,18527 | 9,91686 | 2 | 3,8991 | 15,68988 | 13,82046 | 0 | 13,82046 | 12,40573 | 10,71624 | -0,0363 | 2 | 1 | 2 | 3,69809 | 3,42906 |
| 0,95 | 0,20407 | 20,5109 | -12,475 | 0 | 0,18978 | 10,0317 | 2 | 3,89337 | 15,73998 | 14,60746 | 0 | 14,60746 | 11,99199 | 10,86824 | 0,04086 | 2 | 1 | 2 | 3,69443 | 3,50345 |
| 1 | 0,15869 | 17,7299 | 29,949 | 0 | 0,17423 | 10,19392 | 2 | 3,92786 | 15,62731 | 15,38883 | 0 | 15,38883 | 10,32185 | 11,18153 | 0,14541 | 2 | 1 | 2 | 3,73566 | 3,17682 |
| 1,05 | 0,15993 | 15,0418 | 51,817 | 0 | 0,15445 | 9,97965 | 2 | 3,9659 | 15,41805 | 16,15973 | 0 | 16,15973 | 8,55771 | 11,14581 | 0,3342 | 2 | 1 | 2 | 3,78281 | 2,76581 |
| 1,1 | 0,14473 | 13,469 | 56,882 | 0 | 0,14615 | 9,26153 | 2 | 3,96784 | 15,24743 | 16,9221 | 0 | 16,9221 | 7,63663 | 10,47431 | 0,47822 | 2 | 1 | 2 | 3,7904 | 2,58456 |
| 1,15 | 0,13379 | 12,0964 | 76,7 | 0 | 0,13884 | 9,0229 | 2 | 3,98024 | 15,13874 | 17,67904 | 0 | 17,67904 | 6,85356 | 10,33943 | 0,57905 | 2 | 1 | 2 | 3,80971 | 2,42329 |
| 1,2 | 0,13801 | 12,0177 | 76,897 | 0 | 0,13615 | 8,84105 | 2 | 3,98256 | 15,08524 | 18,4333 | 0 | 18,4333 | 6,38591 | 10,22552 | 0,64077 | 2 | 1 | 2 | 3,81707 | 2,35427 |
| 1,25 | 0,13664 | 11,9963 | 72,684 | 0 | 0,13418 | 8,80524 | 2 | 3,98689 | 15,05829 | 19,18621 | 0 | 19,18621 | 5,99374 | 10,27432 | 0,64265 | 2 | 1 | 2 | 3,82651 | 2,29994 |
| 1,3 | 0,1279 | 11,4315 | 72,127 | 0 | 0,1248 | 9,141 | 2 | 4,02217 | 14,99011 | 19,93572 | 0 | 19,93572 | 5,25995 | 10,87885 | 0,68518 | 2 | 1 | 2 | 3,87354 | 2,09722 |
| 1,35 | 0,10985 | 10,7952 | 70,734 | 0 | 0,11128 | 9,89611 | 2 | 4,0827 | 14,90554 | 20,681 | 0,2943 | 20,3867 | 4,44386 | 12,15518 | 0,7555 | 2 | 1 | 2 | 3,95322 | 1,81191 |
| 1,4 | 0,09608 | 10,8095 | 63,357 | 0 | 0,10299 | 10,54162 | 2 | 4,12582 | 14,85958 | 21,42398 | 0,7848 | 20,63918 | 3,95216 | 13,31035 | 0,80067 | 2 | 1 | 2 | 4,01325 | 1,63139 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 1,45 | 0,10305 | 10,9668 | 64,193 | 0 | 0,09799 | 11,11147 | 2 | 4,15641 | 14,84376 | 22,16616 | 1,2753 | 20,89086 | 3,62952 | 14,35978 | 0,76637 | 2 | 1 | 2 | 4,05825 | 1,51648 |
| 1,5 | 0,09484 | 10,8881 | 50,604 | 0 | 0,09519 | 11,44873 | 2 | 4,17405 | 14,83364 | 22,90785 | 1,7658 | 21,14205 | 3,41872 | 15,07726 | 0,79627 | 2 | 1 | 2 | 4,06 | 1,44558 |
| 1,55 | 0,08767 | 10,8381 | 63,16 | 0 | 0,0974 | 11,11065 | 2 | 4,1586 | 14,83436 | 23,64956 | 2,2563 | 21,39326 | 3,44721 | 14,67366 | 0,79369 | 2 | 1 | 2 | 4,06 | 1,47494 |
| 1,6 | 0,10968 | 10,738 | 68,602 | 0 | 0,10073 | 10,79976 | 2 | 4,13963 | 14,85333 | 24,39223 | 2,7468 | 21,64543 | 3,52674 | 14,25061 | 0,8017 | 2 | 1 | 2 | 4,05394 | 1,52676 |
| 1,65 | 0,10484 | 11,0597 | 60,078 | 0 | 0,11035 | 10,15166 | 2 | 4,09176 | 14,92209 | 25,13833 | 3,2373 | 21,90103 | 3,89091 | 13,14639 | 0,71955 | 2 | 1 | 2 | 3,9947 | 1,7043 |
| 1,7 | 0,11654 | 11,8104 | 64,98 | 0 | 0,10013 | 11,4333 | 2 | 4,15533 | 14,90974 | 25,88382 | 3,7278 | 22,15602 | 3,35106 | 15,4192 | 0,7706 | 2 | 1 | 2 | 4,06 | 1,48492 |
| 1,75 | 0,07901 | 11,4744 | 57,767 | 0 | 0,08805 | 12,66853 | 2 | 4,22644 | 14,83063 | 26,62535 | 4,2183 | 22,40705 | 2,74146 | 18,15959 | 0,94085 | 2 | 1 | 2 | 4,06 | 1,22856 |
| 1,8 | 0,06861 | 10,1804 | 63,291 | 0 | 0,07415 | 13,96408 | 2 | 4,31204 | 14,67905 | 27,35931 | 4,7088 | 22,65051 | 2,06577 | 22,12912 | 1,17341 | 2 | 1 | 2 | 4,06 | 0,93581 |
| 1,85 | 0,07483 | 9,4083 | 57,783 | 0 | 0,07548 | 12,93504 | 2 | 4,28741 | 14,61826 | 28,09022 | 5,1993 | 22,89092 | 2,07024 | 20,60226 | 1,20553 | 2 | 1 | 2 | 4,06 | 0,9478 |
| 1,9 | 0,083 | 9,7014 | 65,914 | 0 | 0,08147 | 11,91428 | 2 | 4,2402 | 14,64077 | 28,82226 | 5,6898 | 23,13246 | 2,27578 | 18,43722 | 1,0897 | 2 | 1 | 2 | 4,06 | 1,05289 |
| 1,95 | 0,08657 | 10,0088 | 65,472 | 0 | 0,08241 | 12,14562 | 2 | 4,24054 | 14,68049 | 29,55628 | 6,1803 | 23,37598 | 2,26088 | 18,93799 | 1,1319 | 2 | 1 | 2 | 4,06 | 1,05701 |
| 2 | 0,07765 | 10,3162 | 66,619 | 0 | 0,08076 | 12,50244 | 2 | 4,25474 | 14,68284 | 30,29042 | 6,6708 | 23,61962 | 2,13676 | 20,00605 | 1,26295 | 2 | 1 | 2 | 4,06 | 1,00939 |
| 2,05 | 0,07806 | 9,9659 | 79,143 | 0 | 0,0789 | 12,83892 | 2 | 4,26949 | 14,67771 | 31,02431 | 7,1613 | 23,86301 | 2,00641 | 21,15819 | 1,37296 | 2 | 1 | 2 | 4,06 | 0,95758 |
| 2,1 | 0,081 | 10,1089 | 72,93 | 0 | 0,07762 | 12,75701 | 2 | 4,27397 | 14,64513 | 31,75657 | 7,6518 | 24,10477 | 1,90253 | 21,59081 | 1,41544 | 2 | 1 | 2 | 4,06 | 0,9172 |
| 2,15 | 0,07379 | 9,6299 | 65,619 | 0 | 0,07563 | 13,01591 | 2 | 4,28815 | 14,62854 | 32,48799 | 8,1423 | 24,34569 | 1,7722 | 22,81676 | 1,435 | 2 | 1 | 2 | 4,06 | 0,86291 |
| 2,2 | 0,07211 | 9,7943 | 71,619 | 0 | 0,07325 | 13,10167 | 2 | 4,30138 | 14,58692 | 33,21734 | 8,6328 | 24,58454 | 1,62823 | 23,97376 | 1,57377 | 2 | 1 | 2 | 4,06 | 0,80059 |
| 2,25 | 0,07384 | 9,3654 | 77,651 | 0 | 0,07269 | 13,05177 | 2 | 4,30328 | 14,57076 | 33,94588 | 9,1233 | 24,82258 | 1,56071 | 24,48814 | 1,72149 | 2 | 1 | 2 | 4,06 | 0,77482 |
| 2,3 | 0,07211 | 9,301 | 78,176 | 0 | 0,07228 | 12,64716 | 2 | 4,29792 | 14,52593 | 34,67217 | 9,6138 | 25,05837 | 1,50081 | 24,30709 | 1,82235 | 2 | 1 | 2 | 4,06 | 0,75216 |
| 2,35 | 0,07089 | 8,7577 | 78,618 | 0 | 0,07052 | 12,52349 | 2 | 4,30464 | 14,47682 | 35,39601 | 10,1043 | 25,29171 | 1,38875 | 25,14398 | 1,94737 | 2 | 1 | 2 | 4,06 | 0,70248 |
| 2,4 | 0,06856 | 8,436 | 78,717 | 0 | 0,07006 | 12,09496 | 2 | 4,2989 | 14,4268 | 36,11735 | 10,5948 | 25,52255 | 1,33004 | 24,96358 | 1,98424 | 2 | 1 | 2 | 4,06 | 0,67892 |
| 2,45 | 0,07074 | 8,2287 | 76,52 | 0 | 0,07633 | 11,089 | 2 | 4,24728 | 14,45837 | 36,84027 | 11,0853 | 25,75497 | 1,53341 | 21,43313 | 1,68108 | 2 | 1 | 2 | 4,06 | 0,78986 |
| 2,5 | 0,0897 | 8,7291 | 77,192 | 0 | 0,08693 | 10,21463 | 2 | 4,18052 | 14,56321 | 37,56843 | 11,5758 | 25,99263 | 1,89893 | 17,98937 | 1,26928 | 2 | 1 | 2 | 4,06 | 0,98716 |
| 2,55 | 0,10034 | 9,6799 | 68,963 | 0 | 0,09166 | 10,34269 | 2 | 4,16397 | 14,65881 | 38,30137 | 12,0663 | 26,23507 | 2,03374 | 17,76725 | 1,05306 | 2 | 1 | 2 | 4,06 | 1,06711 |
| 2,6 | 0,08493 | 10,0303 | 58,603 | 0 | 0,08571 | 11,23777 | 2 | 4,20791 | 14,65146 | 39,03395 | 12,5568 | 26,47715 | 1,76301 | 20,63495 | 1,22886 | 2 | 1 | 2 | 4,06 | 0,93359 |
| 2,65 | 0,07187 | 9,1866 | 82,192 | 0 | 0,07661 | 12,10965 | 2 | 4,26647 | 14,5652 | 39,76221 | 13,0473 | 26,71491 | 1,3793 | 25,17708 | 1,71574 | 2 | 1 | 2 | 4,06 | 0,73696 |
| 2,7 | 0,07303 | 8,6147 | 88,011 | 0 | 0,07575 | 11,36937 | 2 | 4,25589 | 14,47533 | 40,48597 | 13,5378 | 26,94817 | 1,30859 | 24,42234 | 2,05222 | 2 | 1 | 2 | 4,06 | 0,70528 |
| 2,75 | 0,08235 | 8,0356 | 87,519 | 0 | 0,07591 | 10,83639 | 2 | 4,24398 | 14,4234 | 41,20714 | 14,0283 | 27,17884 | 1,27696 | 23,70259 | 2,09469 | 2 | 1 | 2 | 4,06 | 0,69412 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 2,8 | 0,07236 | 8,0285 | 84,651 | 0 | 0,07238 | 11,08935 | 2 | 4,26686 | 14,37677 | 41,92598 | 14,5188 | 27,40718 | 1,11105 | 26,3577 | 2,36289 | 2 | 1 | 2 | 4,06 | 0,60901 |
| 2,85 | 0,06242 | 8,0142 | 87,241 | 0 | 0,06582 | 12,14332 | 2 | 4,32276 | 14,33557 | 42,64276 | 15,0093 | 27,63346 | 0,83874 | 34,48527 | 3,17284 | 2 | 1 | 2 | 4,06 | 0,46354 |
| 2,9 | 0,06268 | 7,9355 | 93,749 | 0 | 0,06944 | 11,54745 | 2 | 4,29142 | 14,35988 | 43,36075 | 15,4998 | 27,86095 | 0,93617 | 30,7444 | 3,04404 | 2 | 1 | 2 | 4,06 | 0,52165 |
| 2,95 | 0,08323 | 8,1071 | 103,699 | 0 | 0,07307 | 11,06615 | 2 | 4,26289 | 14,38892 | 44,0802 | 15,9903 | 28,0899 | 1,03192 | 27,89463 | 2,70049 | 2 | 1 | 2 | 4,06 | 0,57973 |
| 3 | 0,07329 | 8,2144 | 85,356 | 0 | 0,07664 | 10,67818 | 2 | 4,2371 | 14,42103 | 44,80125 | 16,4808 | 28,32045 | 1,12411 | 25,70533 | 2,4568 | 2 | 1 | 2 | 4,06 | 0,63671 |
| 3,05 | 0,07339 | 8,2287 | 95,027 | 0 | 0,07053 | 11,54866 | 2 | 4,28574 | 14,38382 | 45,52044 | 16,9713 | 28,54914 | 0,87602 | 32,56862 | 3,01923 | 2 | 1 | 2 | 4,06 | 0,50019 |
| 3,1 | 0,06491 | 7,9927 | 97,06 | 0 | 0,06929 | 11,35237 | 2 | 4,28829 | 14,33696 | 46,23729 | 17,4618 | 28,77549 | 0,80124 | 34,11875 | 3,45806 | 2 | 1 | 2 | 4,06 | 0,46112 |
| 3,15 | 0,06958 | 7,3779 | 99,486 | 0 | 0,07047 | 11,16281 | 2 | 4,27821 | 14,34342 | 46,95446 | 17,9523 | 29,00216 | 0,81082 | 33,45207 | 3,36057 | 2 | 1 | 2 | 4,06 | 0,47031 |
| 3,2 | 0,07692 | 8,2287 | 94,388 | 0 | 0,07327 | 10,97743 | 2 | 4,26003 | 14,38385 | 47,67365 | 18,4428 | 29,23085 | 0,87555 | 31,42577 | 3,07012 | 2 | 1 | 2 | 4,06 | 0,51186 |
| 3,25 | 0,0733 | 8,5218 | 97,175 | 0 | 0,0759 | 11,02719 | 2 | 4,2481 | 14,44314 | 48,39581 | 18,9333 | 29,46251 | 0,93342 | 30,43275 | 2,77869 | 2 | 1 | 2 | 4,06 | 0,55002 |
| 3,3 | 0,07747 | 8,3573 | 94,486 | 0 | 0,07491 | 11,70953 | 2 | 4,26682 | 14,4922 | 49,12042 | 19,4238 | 29,69662 | 0,86855 | 34,00934 | 3,02291 | 2 | 1 | 2 | 4,06 | 0,51586 |
| 3,35 | 0,07397 | 9,4369 | 100,519 | 0 | 0,07348 | 12,28764 | 2 | 4,28513 | 14,51808 | 49,84633 | 19,9143 | 29,93203 | 0,78969 | 38,20013 | 3,34398 | 2 | 1 | 2 | 4,06 | 0,47274 |
| 3,4 | 0,06901 | 9,2939 | 101,863 | 0 | 0,07322 | 12,59281 | 2 | 4,29221 | 14,54072 | 50,57336 | 20,4048 | 30,16856 | 0,75056 | 40,71858 | 3,62183 | 2 | 1 | 2 | 4,06 | 0,45287 |
| 3,45 | 0,07667 | 8,9293 | 104,863 | 0 | 0,07574 | 11,899 | 2 | 4,26653 | 14,52757 | 51,29974 | 20,8953 | 30,40444 | 0,80395 | 36,87142 | 3,44231 | 2 | 1 | 2 | 4,06 | 0,48887 |
| 3,5 | 0,08155 | 8,8149 | 108,387 | 0 | 0,0786 | 11,47212 | 2 | 4,24443 | 14,54239 | 52,02686 | 21,3858 | 30,64106 | 0,86735 | 33,93026 | 3,16136 | 2 | 1 | 2 | 4,06 | 0,53153 |
| 3,55 | 0,07759 | 9,3082 | 102,961 | 0 | 0,07827 | 11,66407 | 2 | 4,24986 | 14,55496 | 52,75461 | 21,8763 | 30,87831 | 0,82632 | 35,78023 | 3,2599 | 2 | 1 | 2 | 4,06 | 0,51031 |
| 3,6 | 0,07567 | 9,2653 | 103,814 | 0 | 0,0781 | 11,70216 | 2 | 4,25143 | 14,55531 | 53,48237 | 22,3668 | 31,11557 | 0,79106 | 37,12883 | 3,3591 | 2 | 1 | 2 | 4,06 | 0,49229 |
| 3,65 | 0,08103 | 8,8435 | 108,371 | 0 | 0,07976 | 11,22853 | 2 | 4,23409 | 14,54004 | 54,20937 | 22,8573 | 31,35207 | 0,81485 | 35,0546 | 3,20097 | 2 | 1 | 2 | 4,06 | 0,51095 |
| 3,7 | 0,08257 | 8,7577 | 101,715 | 0 | 0,08403 | 10,41603 | 2 | 4,19747 | 14,53375 | 54,93606 | 23,3478 | 31,58826 | 0,92114 | 30,08163 | 2,88428 | 2 | 1 | 2 | 4,06 | 0,58195 |
| 3,75 | 0,0885 | 8,6576 | 111,731 | 0 | 0,08857 | 9,77988 | 2 | 4,16357 | 14,54196 | 55,66316 | 23,8383 | 31,82486 | 1,0341 | 26,32124 | 2,54965 | 2 | 1 | 2 | 4,06 | 0,6582 |
| 3,8 | 0,09465 | 8,5718 | 109,797 | 0 | 0,09251 | 9,44322 | 2 | 4,13947 | 14,56842 | 56,39158 | 24,3288 | 32,06278 | 1,12659 | 24,18552 | 2,38427 | 2 | 1 | 2 | 4,06 | 0,72244 |
| 3,85 | 0,09439 | 8,9793 | 109,83 | 0 | 0,09671 | 9,01158 | 2 | 4,11238 | 14,58259 | 57,12071 | 24,8193 | 32,30141 | 1,22552 | 22,01488 | 2,2085 | 2 | 1 | 2 | 4,06 | 0,79172 |
| 3,9 | 0,10108 | 8,5933 | 117,108 | 0 | 0,10075 | 8,35635 | 2 | 4,07997 | 14,55863 | 57,84864 | 25,3098 | 32,53884 | 1,31857 | 19,62326 | 2,02051 | 2 | 1 | 2 | 4,06 | 0,85809 |
| 3,95 | 0,10679 | 7,6853 | 109,059 | 0 | 0,11074 | 7,28835 | 2 | 4,01396 | 14,54633 | 58,57596 | 25,8003 | 32,77566 | 1,59165 | 15,47206 | 1,68262 | 2 | 1 | 2 | 4,06 | 1,04335 |
| 4 | 0,12436 | 7,9355 | 114,567 | 0 | 0,11346 | 6,81327 | 2 | 3,98981 | 14,50601 | 59,30126 | 26,2908 | 33,01046 | 1,64075 | 14,27303 | 1,58123 | 2 | 1 | 2 | 4,06 | 1,08324 |
| 4,05 | 0,10924 | 7,5709 | 112,174 | 0 | 0,11558 | 6,82232 | 2 | 3,98321 | 14,53593 | 60,02806 | 26,7813 | 33,24676 | 1,671 | 14,19391 | 1,58232 | 2 | 1 | 2 | 4,06 | 1,11111 |
| 4,1 | 0,11315 | 8,15 | 117,321 | 0 | 0,10787 | 7,266 | 2 | 4,02303 | 14,50248 | 60,75318 | 27,2718 | 33,48138 | 1,40725 | 16,63489 | 1,88753 | 2 | 1 | 2 | 4,06 | 0,94234 |

| In situ data | | | | | | | | Basic output data | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 4,15 | 0,10122 | 7,7926 | 119,124 | 0 | 0,10331 | 7,53114 | 2 | 4,04713 | 14,47751 | 61,47705 | 27,7623 | 33,71475 | 1,24089 | 18,59789 | 2,18379 | 2 | 1 | 2 | 4,06 | 0,83673 |
| 4,2 | 0,09557 | 7,3994 | 120,927 | 0 | 0,09766 | 7,66478 | 2 | 4,072 | 14,41138 | 62,19762 | 28,2528 | 33,94482 | 1,04461 | 21,10933 | 2,6131 | 2 | 1 | 2 | 4,06 | 0,70918 |
| 4,25 | 0,09618 | 7,2635 | 122,681 | 0 | 0,10041 | 7,43347 | 2 | 4,0548 | 14,41872 | 62,91856 | 28,7433 | 34,17526 | 1,09694 | 19,90951 | 2,4768 | 2 | 1 | 2 | 4,06 | 0,74976 |
| 4,3 | 0,10947 | 7,7282 | 121,173 | 0 | 0,10799 | 7,19635 | 2 | 4,02047 | 14,49305 | 63,64321 | 29,2338 | 34,40941 | 1,2887 | 17,5248 | 2,09232 | 2 | 1 | 2 | 4,06 | 0,88687 |
| 4,35 | 0,11831 | 8,3216 | 122,19 | 0 | 0,11923 | 6,99762 | 2 | 3,97738 | 14,61271 | 64,37385 | 29,7243 | 34,64955 | 1,58307 | 15,20985 | 1,65034 | 2 | 1 | 2 | 4,06 | 1,09706 |
| 4,4 | 0,1299 | 8,9793 | 117,387 | 0 | 0,11833 | 7,43713 | 2 | 3,99396 | 14,67125 | 65,10741 | 30,2148 | 34,89261 | 1,52542 | 16,53442 | 1,67289 | 2 | 1 | 2 | 4,06 | 1,06452 |
| 4,45 | 0,10679 | 9,1009 | 118,19 | 0 | 0,11417 | 7,96505 | 2 | 4,02285 | 14,6952 | 65,84217 | 30,7053 | 35,13687 | 1,37542 | 18,81669 | 1,81646 | 2 | 1 | 2 | 4,06 | 0,96656 |
| 4,5 | 0,10582 | 9,2009 | 119,895 | 0 | 0,11112 | 8,20941 | 2 | 4,03976 | 14,68843 | 66,57659 | 31,1958 | 35,38079 | 1,25897 | 20,47957 | 1,95032 | 2 | 1 | 2 | 4,06 | 0,89087 |
| 4,55 | 0,12075 | 9,0651 | 116,124 | 0 | 0,11133 | 8,19417 | 2 | 4,03865 | 14,68914 | 67,31105 | 31,6863 | 35,62475 | 1,23553 | 20,72514 | 1,93662 | 2 | 1 | 2 | 4,06 | 0,88031 |
| 4,6 | 0,10741 | 9,1009 | 114,764 | 0 | 0,11103 | 8,08944 | 2 | 4,03669 | 14,67025 | 68,04456 | 32,1768 | 35,86776 | 1,19844 | 20,89475 | 2,02844 | 2 | 1 | 2 | 4,06 | 0,85971 |
| 4,65 | 0,10493 | 8,7791 | 127,222 | 0 | 0,10471 | 8,07701 | 2 | 4,05799 | 14,5786 | 68,77349 | 32,6673 | 36,10619 | 0,9953 | 23,53438 | 2,46694 | 2 | 1 | 2 | 4,06 | 0,71873 |
| 4,7 | 0,10179 | 7,4923 | 121,976 | 0 | 0,09962 | 7,9921 | 2 | 4,07404 | 14,49001 | 69,49799 | 33,1578 | 36,34019 | 0,82889 | 26,43162 | 3,00776 | 2 | 1 | 2 | 4,06 | 0,60244 |
| 4,75 | 0,09214 | 7,6138 | 122,075 | 0 | 0,09456 | 7,83736 | 2 | 4,08897 | 14,38762 | 70,21737 | 33,6483 | 36,56907 | 0,66575 | 30,44146 | 3,61098 | 2 | 1 | 2 | 4,06 | 0,48692 |
| 4,8 | 0,08976 | 7,1277 | 120,632 | 0 | 0,09712 | 7,75838 | 2 | 4,07677 | 14,41694 | 70,93822 | 34,1388 | 36,79942 | 0,71156 | 28,77666 | 3,16146 | 2 | 1 | 2 | 4,06 | 0,5237 |
| 4,85 | 0,10947 | 7,8641 | 108,059 | 0 | 0,09454 | 7,96058 | 2 | 4,09258 | 14,40513 | 71,65848 | 34,6293 | 37,02918 | 0,61784 | 32,8945 | 3,41284 | 2 | 1 | 2 | 4,06 | 0,45756 |
| 4,9 | 0,08438 | 7,5852 | 109,436 | 0 | 0,10198 | 7,79106 | 2 | 4,05961 | 14,49656 | 72,3833 | 35,1198 | 37,2635 | 0,79416 | 26,84746 | 2,65711 | 2 | 1 | 2 | 4,06 | 0,59187 |
| 4,95 | 0,11208 | 8,3859 | 123,763 | 0 | 0,09569 | 8,42026 | 2 | 4,10079 | 14,48826 | 73,10772 | 35,6103 | 37,49742 | 0,60215 | 35,68398 | 3,51555 | 2 | 1 | 2 | 4,06 | 0,45158 |
| 5 | 0,0906 | 8,2001 | 111,764 | 0 | 0,09874 | 8,28085 | 2 | 4,08539 | 14,51718 | 73,83358 | 36,1008 | 37,73278 | 0,65999 | 32,8322 | 3,46528 | 2 | 1 | 2 | 4,06 | 0,49806 |
| 5,05 | 0,09353 | 7,9427 | 131,664 | 0 | 0,09356 | 8,4767 | 2 | 4,11063 | 14,46147 | 74,55665 | 36,5913 | 37,96535 | 0,50054 | 41,73369 | 4,66683 | 2 | 1 | 2 | 4,06 | 0,38007 |
| 5,1 | 0,09655 | 7,6496 | 132,402 | 0 | 0,09541 | 8,2421 | 2 | 4,097 | 14,45927 | 75,27961 | 37,0818 | 38,19781 | 0,52709 | 39,05918 | 4,75416 | 2 | 1 | 2 | 4,06 | 0,40267 |
| 5,15 | 0,09616 | 7,9999 | 134,336 | 0 | 0,09582 | 8,14245 | 2 | 4,09267 | 14,4518 | 76,0022 | 37,5723 | 38,4299 | 0,51569 | 39,36916 | 4,86337 | 2 | 1 | 2 | 4,06 | 0,39636 |
| 5,2 | 0,09475 | 7,7568 | 135,123 | 0 | 0,10205 | 7,82776 | 2 | 4,06042 | 14,50302 | 76,72735 | 38,0628 | 38,66455 | 0,65485 | 31,54891 | 3,93207 | 2 | 1 | 2 | 4,06 | 0,50639 |
| 5,25 | 0,11523 | 8,2072 | 143,401 | 0 | 0,10493 | 7,6808 | 2 | 4,0458 | 14,52396 | 77,45355 | 38,5533 | 38,90025 | 0,70633 | 29,33227 | 3,67015 | 2 | 1 | 2 | 4,06 | 0,54953 |
| 5,3 | 0,10481 | 8,2144 | 139,664 | 0 | 0,10993 | 7,63084 | 2 | 4,02708 | 14,5878 | 78,18294 | 39,0438 | 39,13914 | 0,81105 | 26,42517 | 3,26203 | 2 | 1 | 2 | 4,06 | 0,63487 |
| 5,35 | 0,10974 | 8,7434 | 144,713 | 0 | 0,1065 | 7,92585 | 2 | 4,04743 | 14,58281 | 78,91208 | 39,5343 | 39,37778 | 0,70051 | 30,59958 | 3,76204 | 2 | 1 | 2 | 4,06 | 0,55169 |
| 5,4 | 0,10494 | 8,3645 | 145,549 | 0 | 0,10628 | 7,86128 | 2 | 4,04632 | 14,57028 | 79,6406 | 40,0248 | 39,6158 | 0,67244 | 31,36319 | 3,96776 | 2 | 1 | 2 | 4,06 | 0,53279 |
| 5,45 | 0,10416 | 7,957 | 146,909 | 0 | 0,10578 | 7,80831 | 2 | 4,04654 | 14,55527 | 80,36836 | 40,5153 | 39,85306 | 0,63763 | 32,50335 | 4,12748 | 2 | 1 | 2 | 4,06 | 0,50823 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 5,5 | 0,10824 | 8,4574 | 143,746 | 0 | 0,10733 | 7,69331 | 2 | 4,03778 | 14,56051 | 81,09639 | 41,0058 | 40,09059 | 0,65436 | 31,47578 | 3,99279 | 2 | 1 | 2 | 4,06 | 0,52467 |
| 5,55 | 0,10959 | 8,3573 | 146,598 | 0 | 0,121 | 7,10757 | 2 | 3,97542 | 14,65333 | 81,82905 | 41,4963 | 40,33275 | 0,97128 | 21,9542 | 2,60426 | 2 | 1 | 2 | 4,06 | 0,78349 |
| 5,6 | 0,14518 | 8,9865 | 140,205 | 0 | 0,13563 | 6,3462 | 2 | 3,9075 | 14,69806 | 82,56396 | 41,9868 | 40,57716 | 1,30786 | 16,21946 | 1,70681 | 2 | 1 | 2 | 4,06 | 1,06139 |
| 5,65 | 0,15213 | 8,4789 | 110,895 | 0 | 0,14569 | 6,00956 | 2 | 3,86867 | 14,74506 | 83,30121 | 42,4773 | 40,82391 | 1,52824 | 14,0335 | 1,46072 | 2 | 1 | 2 | 4,06 | 1,24778 |
| 5,7 | 0,13976 | 8,8006 | 149,729 | 0 | 0,21209 | 4,11688 | 3 | 3,6446 | 14,88592 | 84,0455 | 42,9678 | 41,0777 | 3,11713 | 6,81911 | 0,66309 | 2 | 1 | 2 | 3,68663 | 2,56089 |
| 5,75 | 0,34438 | 8,915 | 122,993 | 0 | 0,23006 | 4,05629 | 3 | 3,61085 | 14,99362 | 84,79519 | 43,4583 | 41,33689 | 3,51425 | 6,42401 | 0,51278 | 2 | 1 | 2 | 3,62668 | 2,90536 |
| 5,8 | 0,20605 | 10,2805 | 81,126 | 0 | 0,2647 | 3,71632 | 3 | 3,53908 | 15,10805 | 85,55059 | 43,9488 | 41,60179 | 4,30637 | 5,49098 | 0,39711 | 3 | 1 | 2 | 3,51309 | 3,58305 |
| 5,85 | 0,24368 | 10,3162 | 141,156 | 0 | 0,19866 | 5,11262 | 2 | 3,71711 | 15,03474 | 86,30232 | 44,4393 | 41,86302 | 2,68386 | 9,03976 | 0,61809 | 2 | 1 | 2 | 3,80262 | 2,24709 |
| 5,9 | 0,14624 | 9,873 | 119,37 | 0 | 0,17546 | 5,6757 | 2 | 3,78676 | 14,96451 | 87,05055 | 44,9298 | 42,12075 | 2,09903 | 11,26394 | 1,05036 | 2 | 1 | 2 | 3,94269 | 1,76826 |
| 5,95 | 0,13647 | 9,6871 | 152,86 | 0 | 0,13909 | 18,69569 | 2 | 4,16099 | 15,9795 | 87,84953 | 45,4203 | 42,42923 | 1,20767 | 50,74862 | 1,92732 | 2 | 1 | 2 | 4,06 | 1,02481 |
| 6 | 0,13456 | 58,4514 | 160,302 | 0 | 0,14044 | 29,02112 | 2 | 4,27481 | 16,50014 | 88,67453 | 45,9108 | 42,76373 | 1,2105 | 78,73447 | 2,07923 | 2 | 1 | 2 | 4,06 | 1,03531 |
| 6,05 | 0,15029 | 54,1333 | 147,467 | 0 | 0,14465 | 38,70119 | 2 | 4,34455 | 16,87659 | 89,51836 | 46,4013 | 43,11706 | 1,27873 | 101,53731 | 2,05654 | 2 | 1 | 2 | 4,06 | 1,1027 |
| 6,1 | 0,14911 | 55,363 | 171,596 | 0 | 0,1499 | 36,21232 | 2 | 4,31411 | 16,85474 | 90,3611 | 46,8918 | 43,4693 | 1,3696 | 91,17418 | 1,94888 | 2 | 1 | 2 | 4,06 | 1,19071 |
| 6,15 | 0,15029 | 53,3469 | 169,695 | 0 | 0,15223 | 35,7191 | 2 | 4,30515 | 16,86262 | 91,20423 | 47,3823 | 43,82193 | 1,39251 | 89,10493 | 2,04119 | 2 | 1 | 2 | 4,06 | 1,22045 |
| 6,2 | 0,15728 | 54,4121 | 174,531 | 0 | 0,15545 | 34,99605 | 2 | 4,29248 | 16,8712 | 92,04779 | 47,8728 | 44,17499 | 1,43518 | 85,80625 | 1,96358 | 2 | 1 | 2 | 4,06 | 1,26798 |
| 6,25 | 0,15877 | 55,4416 | 172,859 | 0 | 0,17548 | 31,07336 | 2 | 4,21896 | 16,92035 | 92,89381 | 48,3633 | 44,53051 | 1,85452 | 66,02641 | 1,4266 | 2 | 1 | 2 | 4,06 | 1,65166 |
| 6,3 | 0,21038 | 53,7258 | 151,139 | 0 | 0,19796 | 28,04546 | 2 | 4,15024 | 16,98729 | 93,74317 | 48,8538 | 44,88937 | 2,32156 | 53,2732 | 0,98747 | 2 | 1 | 2 | 4,06 | 2,08427 |
| 6,35 | 0,22472 | 57,3862 | 131,287 | 0 | 0,2343 | 24,14476 | 2 | 4,05235 | 17,07354 | 94,59685 | 49,3443 | 45,25255 | 3,08719 | 40,49384 | 0,79228 | 2 | 1 | 2 | 4,06 | 2,79406 |
| 6,4 | 0,2678 | 58,6015 | 197,66 | 0 | 0,25553 | 22,98958 | 2 | 4,00982 | 17,15016 | 95,45436 | 49,8348 | 45,61956 | 3,50885 | 36,69873 | 0,64631 | 2 | 1 | 2 | 4,06 | 3,20145 |
| 6,45 | 0,27406 | 60,2458 | 130,927 | 0 | 0,24765 | 23,92285 | 2 | 4,03135 | 17,14791 | 96,31175 | 50,3253 | 45,98645 | 3,29093 | 39,14736 | 0,75713 | 2 | 1 | 2 | 4,06 | 3,02676 |
| 6,5 | 0,20109 | 58,8875 | 166,138 | 0 | 0,22293 | 26,55673 | 2 | 4,09552 | 17,10675 | 97,16709 | 50,8158 | 46,35129 | 2,71318 | 47,07557 | 0,86686 | 2 | 1 | 2 | 4,06 | 2,51519 |
| 6,55 | 0,19363 | 58,4728 | 182,432 | 0 | 0,1955 | 29,36988 | 2 | 4,1673 | 17,02119 | 98,01815 | 51,3063 | 46,71185 | 2,0868 | 58,90235 | 1,27998 | 2 | 1 | 2 | 4,06 | 1,94957 |
| 6,6 | 0,19177 | 54,8911 | 179,662 | 0 | 0,18858 | 29,43741 | 2 | 4,1799 | 16,96859 | 98,86658 | 51,7968 | 47,06978 | 1,90597 | 61,87822 | 1,44183 | 2 | 1 | 2 | 4,06 | 1,79427 |
| 6,65 | 0,18034 | 53,1753 | 181,35 | 0 | 0,18172 | 29,75192 | 2 | 4,19521 | 16,92395 | 99,71278 | 52,2873 | 47,42548 | 1,72911 | 65,92882 | 1,5728 | 2 | 1 | 2 | 4,06 | 1,64008 |
| 6,7 | 0,17304 | 54,1262 | 182,776 | 0 | 0,17482 | 31,045 | 2 | 4,21995 | 16,91357 | 100,55846 | 52,7778 | 47,78066 | 1,55429 | 73,08152 | 1,74127 | 2 | 1 | 2 | 4,06 | 1,4853 |
| 6,75 | 0,17109 | 55,5202 | 182,153 | 0 | 0,17103 | 32,39756 | 2 | 4,23915 | 16,92901 | 101,40491 | 53,2683 | 48,13661 | 1,44648 | 79,58048 | 1,84092 | 2 | 1 | 2 | 4,06 | 1,39257 |
| 6,8 | 0,16897 | 56,5855 | 179,416 | 0 | 0,16812 | 32,80589 | 2 | 4,24836 | 16,91707 | 102,25076 | 53,7588 | 48,49196 | 1,35835 | 83,73144 | 1,90244 | 2 | 1 | 2 | 4,06 | 1,31738 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 6,85 | 0,1643 | 53,3541 | 175,645 | 0 | 0,16551 | 32,82859 | 2 | 4,25376 | 16,89384 | 103,09545 | 54,2493 | 48,84615 | 1,27771 | 87,05727 | 1,95815 | 2 | 1 | 2 | 4,06 | 1,24822 |
| 6,9 | 0,16325 | 53,0609 | 174,318 | 0 | 0,16209 | 32,95227 | 2 | 4,26176 | 16,86614 | 103,93876 | 54,7398 | 49,19896 | 1,18189 | 91,85409 | 2,03896 | 2 | 1 | 2 | 4,06 | 1,16296 |
| 6,95 | 0,15871 | 53,8187 | 169,941 | 0 | 0,16029 | 33,84424 | 2 | 4,27292 | 16,8798 | 104,78275 | 55,2303 | 49,55245 | 1,12024 | 97,72923 | 2,1462 | 2 | 1 | 2 | 4,06 | 1,11021 |
| 7 | 0,15892 | 55,8706 | 178,842 | 0 | 0,1616 | 33,57718 | 2 | 4,26801 | 16,8831 | 105,6269 | 55,7208 | 49,9061 | 1,1215 | 96,94449 | 2,15077 | 2 | 1 | 2 | 4,06 | 1,1194 |
| 7,05 | 0,16716 | 53,0895 | 179,514 | 0 | 0,1639 | 33,08721 | 2 | 4,25919 | 16,88793 | 106,4713 | 56,2113 | 50,26 | 1,1427 | 94,42646 | 2,12144 | 2 | 1 | 1,98965 | 4,06 | 1,1427 |
| 7,1 | 0,16563 | 53,733 | 175,793 | 0 | 0,16695 | 32,04169 | 2 | 4,24409 | 16,87928 | 107,31526 | 56,7018 | 50,61346 | 1,1783 | 89,69886 | 2,00551 | 2 | 1 | 1,97576 | 4,06 | 1,1783 |
| 7,15 | 0,16807 | 53,6615 | 173,613 | 0 | 0,16539 | 32,30999 | 2 | 4,24955 | 16,87444 | 108,15899 | 57,1923 | 50,96669 | 1,12291 | 93,37158 | 2,0664 | 2 | 1 | 1,96207 | 4,06 | 1,12291 |
| 7,2 | 0,16247 | 52,918 | 176,957 | 0 | 0,16158 | 33,09624 | 2 | 4,26401 | 16,86638 | 109,00231 | 57,6828 | 51,31951 | 1,02458 | 101,70588 | 2,26714 | 2 | 1 | 1,94858 | 4,06 | 1,02458 |
| 7,25 | 0,15421 | 53,8545 | 180,104 | 0 | 0,15703 | 33,94432 | 2 | 4,28059 | 16,85161 | 109,84489 | 58,1733 | 51,67159 | 0,91311 | 112,9708 | 2,61508 | 2 | 1 | 1,9353 | 4,06 | 0,91311 |
| 7,3 | 0,1544 | 53,1324 | 187,612 | 0 | 0,15151 | 35,53808 | 2 | 4,3053 | 16,84951 | 110,68736 | 58,6638 | 52,02356 | 0,78463 | 131,90466 | 3,05003 | 2 | 1 | 1,92221 | 4,06 | 0,78463 |
| 7,35 | 0,14591 | 54,5408 | 181,776 | 0 | 0,14653 | 36,03437 | 2 | 4,32029 | 16,81423 | 111,52807 | 59,1543 | 52,37377 | 0,66831 | 150,85217 | 3,55449 | 2 | 1 | 1,90935 | 4,06 | 0,66831 |
| 7,4 | 0,13928 | 50,7303 | 181,317 | 0 | 0,15454 | 34,22372 | 2 | 4,28819 | 16,83656 | 112,3699 | 59,6448 | 52,7251 | 0,79981 | 125,41904 | 2,78265 | 2 | 1 | 1,89663 | 4,06 | 0,79981 |
| 7,45 | 0,17843 | 53,3969 | 167,875 | 0 | 0,18645 | 28,75964 | 2 | 4,17718 | 16,9244 | 113,21612 | 60,1353 | 53,08082 | 1,37973 | 73,21865 | 1,36442 | 2 | 1 | 1,88392 | 4,06 | 1,37973 |
| 7,5 | 0,24165 | 56,7427 | 130,992 | 0 | 0,23239 | 24,62724 | 2 | 4,0606 | 17,08375 | 114,07031 | 60,6258 | 53,44451 | 2,21388 | 48,37 | 0,60852 | 2 | 1 | 1,8711 | 4,06 | 2,21388 |
| 7,55 | 0,27709 | 61,5541 | 99,011 | 0 | 0,26158 | 23,37405 | 2 | 4,00669 | 17,20515 | 114,93057 | 61,1163 | 53,81427 | 2,7251 | 41,69251 | 0,35364 | 2 | 1 | 1,85824 | 4,06 | 2,7251 |
| 7,6 | 0,266 | 65,1287 | 108,928 | 0 | 0,27536 | 23,15226 | 2 | 3,98702 | 17,27291 | 115,79421 | 61,6068 | 54,18741 | 2,94464 | 39,95382 | 0,29205 | 2 | 1 | 1,84545 | 4,06 | 2,94464 |
| 7,65 | 0,28298 | 64,5711 | 116,682 | 0 | 0,28635 | 22,44708 | 2 | 3,96536 | 17,29738 | 116,65908 | 62,0973 | 54,56178 | 3,11013 | 37,87869 | 0,32099 | 2 | 1 | 1,83278 | 4,06 | 3,11013 |
| 7,7 | 0,31008 | 63,1341 | 124,091 | 0 | 0,29406 | 21,22321 | 2 | 3,94081 | 17,27364 | 117,52276 | 62,5878 | 54,93496 | 3,21363 | 35,35146 | 0,29208 | 2 | 1 | 1,82033 | 4,05506 | 3,21363 |
| 7,75 | 0,28913 | 59,5238 | 101,683 | 0 | 0,32752 | 18,72251 | 2 | 3,86992 | 17,29471 | 118,3875 | 63,0783 | 55,3092 | 3,78121 | 29,32094 | 0,21696 | 2 | 1 | 1,80802 | 3,948 | 3,78121 |
| 7,8 | 0,38336 | 61,3039 | 99,584 | 0 | 0,5496 | 11,01083 | 2 | 3,54961 | 17,47798 | 119,2614 | 63,5688 | 55,6926 | 7,72697 | 14,06232 | 0,0931 | 2 | 1 | 1,79557 | 3,50348 | 7,72697 |
| 7,85 | 0,9763 | 60,7177 | 109,633 | 0 | 0,73658 | 8,10828 | 3 | 3,36699 | 17,57512 | 120,14015 | 64,0593 | 56,08085 | 10,99198 | 9,68853 | 0,06021 | 3 | 1 | 1,78314 | 3,28135 | 10,99198 |
| 7,9 | 0,85008 | 57,1503 | 94,306 | 0 | 0,80145 | 7,28937 | 3 | 3,30938 | 17,5821 | 121,01926 | 64,5498 | 56,46946 | 12,04948 | 8,58584 | 0,09304 | 3 | 1 | 1,77087 | 3,21656 | 12,04948 |
| 7,95 | 0,57796 | 57,3933 | 179,629 | 0 | 0,66741 | 8,7808 | 3 | 3,42205 | 17,51554 | 121,89503 | 65,0403 | 56,85473 | 9,59489 | 10,74286 | 0,17756 | 3 | 1 | 1,75887 | 3,35522 | 9,59489 |
| 8 | 0,57419 | 61,2682 | 211,774 | 0 | 0,67767 | 9,04909 | 3 | 3,42521 | 17,57355 | 122,77371 | 65,5308 | 57,24291 | 9,69371 | 11,05125 | 0,24805 | 3 | 1 | 1,74694 | 3,36019 | 9,69371 |
| 8,05 | 0,88086 | 65,3074 | 218,118 | 0 | 0,67372 | 9,3268 | 2 | 3,43552 | 17,59935 | 123,65368 | 66,0213 | 57,63238 | 9,54434 | 11,42346 | 0,25619 | 3 | 1 | 1,73514 | 3,37487 | 9,54434 |
| 8,1 | 0,5661 | 61,933 | 190,94 | 0 | 0,61899 | 10,25959 | 2 | 3,49027 | 17,57906 | 124,53263 | 66,5118 | 58,02083 | 8,52207 | 12,84354 | 0,31669 | 3 | 1 | 1,72352 | 3,44552 | 8,52207 |
| 8,15 | 0,41001 | 63,2771 | 260,247 | 0 | 0,47459 | 13,14278 | 2 | 3,64775 | 17,45651 | 125,40546 | 67,0023 | 58,40316 | 5,97881 | 17,8629 | 0,51717 | 2 | 1 | 1,71224 | 3,6558 | 5,97881 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 8,2 | 0,44765 | 61,9116 | 291,573 | 0 | 0,46604 | 13,57822 | 2 | 3,66289 | 17,46612 | 126,27876 | 67,4928 | 58,78596 | 5,77958 | 18,62487 | 0,62741 | 2 | 1 | 1,70109 | 3,67891 | 5,77958 |
| 8,25 | 0,54045 | 64,6497 | 290,163 | 0 | 0,52609 | 12,37153 | 2 | 3,59658 | 17,54498 | 127,15601 | 67,9833 | 59,17271 | 6,74191 | 16,31479 | 0,53211 | 2 | 1 | 1,68997 | 3,59075 | 6,74191 |
| 8,3 | 0,59018 | 68,6961 | 259,05 | 0 | 0,61436 | 11,33805 | 2 | 3,52066 | 17,68252 | 128,04014 | 68,4738 | 59,56634 | 8,16434 | 14,32318 | 0,41017 | 3 | 1 | 1,6788 | 3,49132 | 8,16434 |
| 8,35 | 0,71245 | 75,6236 | 254,624 | 0 | 0,70701 | 10,58166 | 2 | 3,45477 | 17,81854 | 128,93107 | 68,9643 | 59,96677 | 9,63999 | 12,94172 | 0,28467 | 3 | 1 | 1,66759 | 3,40852 | 9,63999 |
| 8,4 | 0,8184 | 80,1204 | 186,907 | 0 | 0,76657 | 10,4018 | 2 | 3,42327 | 17,92286 | 129,82721 | 69,4548 | 60,37241 | 10,54686 | 12,52266 | 0,20931 | 3 | 1 | 1,65639 | 3,3703 | 10,54686 |
| 8,45 | 0,76885 | 83,4662 | 166,662 | 0 | 0,79513 | 10,39592 | 2 | 3,4111 | 17,97832 | 130,72613 | 69,9453 | 60,78083 | 10,93109 | 12,4414 | 0,17014 | 3 | 1 | 1,64526 | 3,35708 | 10,93109 |
| 8,5 | 0,79813 | 84,3956 | 195,382 | 0 | 0,80825 | 10,27927 | 2 | 3,40252 | 17,99045 | 131,62565 | 70,4358 | 61,18985 | 11,05784 | 12,27891 | 0,18155 | 3 | 1 | 1,63426 | 3,34952 | 11,05784 |
| 8,55 | 0,85778 | 81,3858 | 217,79 | 0 | 0,83837 | 9,97742 | 3 | 3,38204 | 18,01227 | 132,52626 | 70,9263 | 61,59996 | 11,45846 | 11,85074 | 0,18722 | 3 | 1 | 1,62338 | 3,3277 | 11,45846 |
| 8,6 | 0,85919 | 85,1606 | 196,054 | 0 | 0,83738 | 10,06975 | 2 | 3,38505 | 18,02105 | 133,42731 | 71,4168 | 62,01051 | 11,3521 | 11,97838 | 0,1936 | 3 | 1 | 1,61263 | 3,33384 | 11,3521 |
| 8,65 | 0,79516 | 86,4188 | 209,266 | 0 | 0,80155 | 10,76011 | 2 | 3,4183 | 18,03026 | 134,32883 | 71,9073 | 62,42153 | 10,68891 | 12,9264 | 0,21194 | 3 | 1 | 1,60201 | 3,37559 | 10,68891 |
| 8,7 | 0,75029 | 87,1624 | 234,625 | 0 | 0,76014 | 11,40951 | 2 | 3,4524 | 18,01632 | 135,22964 | 72,3978 | 62,83184 | 9,94581 | 13,8785 | 0,25615 | 3 | 1 | 1,59155 | 3,41954 | 9,94581 |
| 8,75 | 0,73498 | 86,6047 | 253,51 | 0 | 0,77343 | 11,30158 | 2 | 3,44402 | 18,03198 | 136,13124 | 72,8883 | 63,24294 | 10,07705 | 13,71566 | 0,26577 | 3 | 1 | 1,5812 | 3,41188 | 10,07705 |
| 8,8 | 0,83503 | 88,4635 | 238,658 | 0 | 0,79046 | 11,22068 | 2 | 3,43486 | 18,0571 | 137,0341 | 73,3788 | 63,6553 | 10,26501 | 13,57386 | 0,22668 | 3 | 1 | 1,57096 | 3,40296 | 10,26501 |
| 8,85 | 0,80136 | 91,0157 | 172,318 | 0 | 0,80607 | 11,12076 | 2 | 3,42592 | 18,07681 | 137,93794 | 73,8693 | 64,06864 | 10,42833 | 13,41668 | 0,16298 | 3 | 1 | 1,56083 | 3,39451 | 10,42833 |
| 8,9 | 0,78181 | 89,4429 | 137,303 | 0 | 0,79232 | 11,48123 | 2 | 3,44069 | 18,08712 | 138,84229 | 74,3598 | 64,48249 | 10,13419 | 13,92061 | 0,10472 | 3 | 1 | 1,55081 | 3,41456 | 10,13419 |
| 8,95 | 0,79379 | 92,4456 | 118,763 | 0 | 0,86319 | 10,75453 | 2 | 3,39401 | 18,14329 | 139,74946 | 74,8503 | 64,89916 | 11,1471 | 12,83202 | 0,04938 | 3 | 1 | 1,54085 | 3,36022 | 11,1471 |
| 9 | 1,01396 | 96,6064 | 75,651 | 0 | 0,91567 | 10,35256 | 2 | 3,36386 | 18,19001 | 140,65896 | 75,3408 | 65,31816 | 11,86517 | 12,23147 | 0,05343 | 3 | 1 | 1,53097 | 3,32625 | 11,86517 |
| 9,05 | 0,93926 | 95,3338 | 155,843 | 0 | 0,93133 | 10,22099 | 2 | 3,35466 | 18,2013 | 141,56902 | 75,8313 | 65,73772 | 12,01377 | 12,05317 | 0,05494 | 3 | 1 | 1,5212 | 3,31794 | 12,01377 |
| 9,1 | 0,84076 | 93,6323 | 126,156 | 0 | 0,82974 | 11,22197 | 2 | 3,41911 | 18,13162 | 142,4756 | 76,3218 | 66,1538 | 10,38884 | 13,54839 | 0,09756 | 3 | 1 | 1,51163 | 3,39863 | 10,38884 |
| 9,15 | 0,70919 | 90,3723 | 148,106 | 0 | 0,74955 | 12,06837 | 2 | 3,47309 | 18,05937 | 143,37857 | 76,8123 | 66,56627 | 9,10623 | 14,92294 | 0,13635 | 3 | 1 | 1,50226 | 3,469 | 9,10623 |
| 9,2 | 0,69869 | 87,3697 | 204,135 | 0 | 0,70543 | 12,38733 | 2 | 3,50034 | 17,99634 | 144,27839 | 77,3028 | 66,97559 | 8,37845 | 15,57226 | 0,19754 | 3 | 1 | 1,49308 | 3,50796 | 8,37845 |
| 9,25 | 0,70841 | 84,4099 | 212,217 | 0 | 0,68741 | 12,36268 | 2 | 3,50821 | 17,95435 | 145,17611 | 77,7933 | 67,38281 | 8,04702 | 15,67264 | 0,24548 | 3 | 1 | 1,48406 | 3,52262 | 8,04702 |
| 9,3 | 0,65512 | 83,166 | 216,348 | 0 | 0,68436 | 12,29694 | 2 | 3,50814 | 17,9414 | 146,07318 | 78,2838 | 67,78938 | 7,94053 | 15,63394 | 0,25367 | 2 | 1 | 1,47516 | 3,5261 | 7,94053 |
| 9,35 | 0,68954 | 84,8889 | 215,922 | 0 | 0,67466 | 12,40339 | 2 | 3,51527 | 17,92943 | 146,96965 | 78,7743 | 68,19535 | 7,73792 | 15,85792 | 0,26091 | 2 | 1 | 1,46638 | 3,53852 | 7,73792 |
| 9,4 | 0,67932 | 82,9872 | 217,085 | 0 | 0,72013 | 11,63053 | 2 | 3,47556 | 17,95545 | 147,86742 | 79,2648 | 68,60262 | 8,34165 | 14,63577 | 0,25242 | 3 | 1 | 1,45767 | 3,49089 | 8,34165 |
| 9,45 | 0,79152 | 83,3876 | 238,133 | 0 | 0,76472 | 11,02119 | 2 | 3,44053 | 17,9857 | 148,76671 | 79,7553 | 69,01141 | 8,92538 | 13,68306 | 0,22778 | 3 | 1 | 1,44904 | 3,44947 | 8,92538 |
| 9,5 | 0,82332 | 86,4689 | 204,955 | 0 | 0,79164 | 10,71294 | 2 | 3,42111 | 18,00613 | 149,66701 | 80,2458 | 69,42121 | 9,2475 | 13,21051 | 0,21498 | 3 | 1 | 1,44048 | 3,4278 | 9,2475 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 9,55 | 0,76008 | 84,5672 | 211,676 | 0 | 0,80589 | 10,67018 | 2 | 3,41413 | 18,02889 | 150,56846 | 80,7363 | 69,83216 | 9,38424 | 13,12179 | 0,22548 | 3 | 1 | 1,43201 | 3,42114 | 9,38424 |
| 9,6 | 0,83427 | 86,9336 | 268,869 | 0 | 0,82152 | 10,69513 | 2 | 3,40853 | 18,06105 | 151,47151 | 81,2268 | 70,24471 | 9,53882 | 13,11286 | 0,20119 | 3 | 1 | 1,42359 | 3,41576 | 9,53882 |
| 9,65 | 0,87022 | 92,0881 | 167,564 | 0 | 0,86064 | 10,6659 | 2 | 3,39259 | 18,12924 | 152,37797 | 81,7173 | 70,66067 | 10,02343 | 12,9606 | 0,18892 | 3 | 1 | 1,41521 | 3,39662 | 10,02343 |
| 9,7 | 0,87743 | 96,3633 | 210,135 | 0 | 0,89867 | 10,57328 | 2 | 3,37602 | 18,18554 | 153,28725 | 82,2078 | 71,07945 | 10,48666 | 12,74766 | 0,18199 | 3 | 1 | 1,40688 | 3,37743 | 10,48666 |
| 9,75 | 0,94837 | 96,6064 | 275,885 | 0 | 1,04908 | 9,59873 | 3 | 3,29793 | 18,31164 | 154,20283 | 82,6983 | 71,50453 | 12,51492 | 11,25277 | 0,15622 | 3 | 1 | 1,39851 | 3,28447 | 12,51492 |
| 9,8 | 1,32143 | 109,1245 | 181,465 | 0 | 1,22621 | 8,96888 | 3 | 3,22789 | 18,47287 | 155,12648 | 83,1888 | 71,93768 | 14,88909 | 10,26785 | 0,09156 | 3 | 1 | 1,39009 | 3,20255 | 14,88909 |
| 9,85 | 1,40884 | 124,202 | 86,421 | 0 | 1,42153 | 8,55783 | 3 | 3,16683 | 18,6456 | 156,05876 | 83,6793 | 72,37946 | 17,48385 | 9,61319 | 0,02441 | 3 | 1 | 1,38161 | 3,13269 | 17,48385 |
| 9,9 | 1,53432 | 131,63 | 75,815 | 0 | 1,5743 | 8,46458 | 3 | 3,13119 | 18,78955 | 156,99823 | 84,1698 | 72,82843 | 19,46078 | 9,40223 | -0,01521 | 3 | 1 | 1,37309 | 3,09295 | 19,46078 |
| 9,95 | 1,77973 | 143,9408 | 25,589 | 0 | 1,6283 | 8,65188 | 3 | 3,1271 | 18,86646 | 157,94156 | 84,6603 | 73,28126 | 20,06459 | 9,58124 | -0,0157 | 3 | 1 | 1,36461 | 3,08944 | 20,06459 |
| 10 | 1,57085 | 147,065 | 83,307 | 0 | 1,72159 | 8,54528 | 3 | 3,10589 | 18,93765 | 158,88844 | 85,1508 | 73,73764 | 21,19277 | 9,41413 | -0,02669 | 3 | 1 | 1,35616 | 3,06734 | 21,19277 |
| 10,05 | 1,8142 | 150,3393 | 21,441 | 0 | 1,79254 | 8,4368 | 3 | 3,08941 | 18,98489 | 159,83768 | 85,6413 | 74,19638 | 22,00515 | 9,26274 | -0,02611 | 3 | 1 | 1,34777 | 3,0509 | 22,00515 |
| 10,1 | 1,99257 | 156,2945 | 24,294 | 0 | 1,88934 | 8,17177 | 3 | 3,06336 | 19,02884 | 160,78912 | 86,1318 | 74,65732 | 23,15318 | 8,93191 | -0,04268 | 3 | 1 | 1,33945 | 3,02418 | 23,15318 |
| 10,15 | 1,86126 | 156,5448 | -8,639 | 0 | 1,89599 | 8,23301 | 3 | 3,06452 | 19,04281 | 161,74127 | 86,6223 | 75,11897 | 23,08665 | 9,00084 | -0,04754 | 3 | 1 | 1,33122 | 3,02745 | 23,08665 |
| 10,2 | 1,83413 | 155,4509 | -3,131 | 0 | 1,82277 | 8,53666 | 3 | 3,08775 | 19,02407 | 162,69247 | 87,1128 | 75,57967 | 21,96456 | 9,37328 | -0,05497 | 3 | 1 | 1,32311 | 3,05515 | 21,96456 |
| 10,25 | 1,77291 | 154,8147 | -0,672 | 0 | 1,7354 | 8,98936 | 3 | 3,11869 | 19,00818 | 163,64288 | 87,6033 | 76,03958 | 20,67025 | 9,92529 | -0,04823 | 3 | 1 | 1,3151 | 3,09136 | 20,67025 |
| 10,3 | 1,59916 | 157,7387 | 39,211 | 0 | 1,66575 | 9,47225 | 3 | 3,14729 | 19,00554 | 164,59315 | 88,0938 | 76,49935 | 19,62313 | 10,51082 | -0,02879 | 3 | 1 | 1,3072 | 3,12494 | 19,62313 |
| 10,35 | 1,62518 | 160,7985 | 96,093 | 0 | 1,58558 | 10,05506 | 3 | 3,18073 | 18,99857 | 165,54308 | 88,5843 | 76,95878 | 18,45187 | 11,22724 | -0,01263 | 3 | 1 | 1,2994 | 3,16411 | 18,45187 |
| 10,4 | 1,53239 | 159,7547 | 76,651 | 0 | 1,52382 | 10,45021 | 3 | 3,20477 | 18,98198 | 166,49218 | 89,0748 | 77,41738 | 17,5326 | 11,73205 | 0,0193 | 3 | 1 | 1,2917 | 3,19327 | 17,5326 |
| 10,45 | 1,41389 | 157,1739 | 173,088 | 0 | 1,47748 | 10,61622 | 3 | 3,21915 | 18,95274 | 167,43982 | 89,5653 | 77,87452 | 16,82241 | 11,97311 | 0,04533 | 3 | 1 | 1,28412 | 3,21213 | 16,82241 |
| 10,5 | 1,48615 | 153,6279 | 197,119 | 0 | 1,46495 | 10,64681 | 3 | 3,22267 | 18,94299 | 168,38697 | 90,0558 | 78,33117 | 16,55233 | 12,02953 | 0,07341 | 3 | 1 | 1,27663 | 3,21851 | 16,55233 |
| 10,55 | 1,49481 | 157,1095 | 185,497 | 0 | 1,49821 | 10,43018 | 3 | 3,20946 | 18,95377 | 169,33466 | 90,5463 | 78,78836 | 16,86639 | 11,75926 | 0,06687 | 3 | 1 | 1,26922 | 3,20574 | 16,86639 |
| 10,6 | 1,51367 | 158,0604 | 155,614 | 0 | 1,52093 | 10,2523 | 3 | 3,19956 | 18,95707 | 170,28251 | 91,0368 | 79,24571 | 17,04375 | 11,54486 | 0,05112 | 3 | 1 | 1,2619 | 3,19686 | 17,04375 |
| 10,65 | 1,5543 | 152,6199 | 139,123 | 0 | 1,50865 | 10,16969 | 3 | 3,19964 | 18,93533 | 171,22928 | 91,5273 | 79,70198 | 16,78031 | 11,47171 | 0,0549 | 3 | 1 | 1,25467 | 3,19963 | 16,78031 |
| 10,7 | 1,45799 | 149,5958 | 200,119 | 0 | 1,57366 | 9,72218 | 3 | 3,17288 | 18,94827 | 172,17669 | 92,0178 | 80,15889 | 17,48382 | 10,91658 | 0,07749 | 3 | 1 | 1,24752 | 3,17177 | 17,48382 |
| 10,75 | 1,70869 | 156,7664 | 262,624 | 0 | 1,68972 | 9,31082 | 3 | 3,13763 | 19,00768 | 173,12707 | 92,5083 | 80,61877 | 18,81187 | 10,3737 | 0,09444 | 3 | 1 | 1,24041 | 3,13367 | 18,81187 |
| 10,8 | 1,90247 | 165,617 | 244,445 | 0 | 1,91734 | 8,72198 | 3 | 3,07857 | 19,12636 | 174,08339 | 92,9988 | 81,08459 | 21,49927 | 9,59297 | 0,09104 | 3 | 1 | 1,23328 | 3,06885 | 21,49927 |
| 10,85 | 2,14087 | 179,3076 | 248,067 | 0 | 2,0422 | 9,01875 | 3 | 3,06939 | 19,26161 | 175,04647 | 93,4893 | 81,55717 | 22,8938 | 9,86426 | 0,08206 | 3 | 1 | 1,22613 | 3,05866 | 22,8938 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 10,9 | 2,08326 | 207,6182 | 247,625 | 0 | 2,34089 | 8,6932 | 3 | 3,01641 | 19,42868 | 176,01791 | 93,9798 | 82,03811 | 26,38858 | 9,40001 | 0,05525 | 3 | 1 | 1,21895 | 3,00108 | 26,38858 |
| 10,95 | 2,79853 | 223,568 | 145,057 | 0 | 2,57357 | 8,58588 | 3 | 2,98392 | 19,55973 | 176,99589 | 94,4703 | 82,52559 | 29,04033 | 9,21998 | 0,04691 | 3 | 1 | 1,21175 | 2,96666 | 29,04033 |
| 11 | 2,83891 | 231,7037 | 228,019 | 0 | 2,65939 | 8,53361 | 3 | 2,97215 | 19,60303 | 177,97604 | 94,9608 | 83,01524 | 29,8911 | 9,14568 | 0,04067 | 3 | 1 | 1,2046 | 2,9556 | 29,8911 |
| 11,05 | 2,34074 | 225,5554 | 214,577 | 0 | 2,51252 | 8,75892 | 3 | 2,99739 | 19,54587 | 178,95334 | 95,4513 | 83,50204 | 27,94622 | 9,43061 | 0,07121 | 3 | 1 | 1,19758 | 2,98518 | 27,94622 |
| 11,1 | 2,35791 | 202,9498 | 342,291 | 0 | 2,32353 | 8,87125 | 3 | 3,02497 | 19,44059 | 179,92537 | 95,9418 | 83,98357 | 25,52414 | 9,61586 | 0,08698 | 3 | 1 | 1,19071 | 3,01817 | 25,52414 |
| 11,15 | 2,27195 | 189,8741 | 290,327 | 0 | 2,22011 | 8,68116 | 3 | 3,03209 | 19,34584 | 180,89266 | 96,4323 | 84,46036 | 24,14408 | 9,45124 | 0,09171 | 3 | 1 | 1,18399 | 3,02928 | 24,14408 |
| 11,2 | 2,03047 | 185,3701 | 217,725 | 0 | 2,09293 | 8,70096 | 3 | 3,05083 | 19,25798 | 181,85556 | 96,9228 | 84,93276 | 22,50107 | 9,52893 | 0,10896 | 3 | 1 | 1,1774 | 3,05301 | 22,50107 |
| 11,25 | 1,97638 | 171,0718 | 407,418 | 0 | 1,96634 | 8,79878 | 3 | 3,07345 | 19,17515 | 182,81432 | 97,4133 | 85,40102 | 20,88413 | 9,70067 | 0,13152 | 3 | 1 | 1,17095 | 3,08111 | 20,88413 |
| 11,3 | 1,89217 | 162,6001 | 370,781 | 0 | 1,96325 | 8,33232 | 3 | 3,05733 | 19,11008 | 183,76982 | 97,9038 | 85,86602 | 20,72392 | 9,19281 | 0,15518 | 3 | 1 | 1,16461 | 3,06678 | 20,72392 |
| 11,35 | 2,0212 | 157,0809 | 343,914 | 0 | 1,91175 | 8,28878 | 3 | 3,06399 | 19,06328 | 184,72298 | 98,3943 | 86,32868 | 20,00525 | 9,17535 | 0,1334 | 3 | 1 | 1,15836 | 3,07698 | 20,00525 |
| 11,4 | 1,82188 | 155,7012 | 271,623 | 0 | 1,89159 | 8,23159 | 3 | 3,06519 | 19,03906 | 185,67494 | 98,8848 | 86,79014 | 19,65567 | 9,12754 | 0,12549 | 3 | 1 | 1,1522 | 3,08077 | 19,65567 |
| 11,45 | 1,8317 | 154,3428 | 323,341 | 0 | 1,78377 | 8,70726 | 3 | 3,10047 | 19,01366 | 186,62562 | 99,3753 | 87,25032 | 18,30531 | 9,7247 | 0,1307 | 3 | 1 | 1,14613 | 3,12209 | 18,30531 |
| 11,5 | 1,69773 | 155,9085 | 329,407 | 0 | 1,74246 | 8,78129 | 3 | 3,11034 | 18,98747 | 187,57499 | 99,8658 | 87,70919 | 17,72777 | 9,84062 | 0,13424 | 3 | 1 | 1,14013 | 3,13558 | 17,72777 |
| 11,55 | 1,69796 | 148,7808 | 273,049 | 0 | 1,72149 | 8,7057 | 3 | 3,11151 | 18,95895 | 188,52294 | 100,3563 | 88,16664 | 17,38712 | 9,77632 | 0,15044 | 3 | 1 | 1,13422 | 3,13955 | 17,38712 |
| 11,6 | 1,76877 | 144,9131 | 390,452 | 0 | 1,78943 | 7,96751 | 3 | 3,07274 | 18,91639 | 189,46876 | 100,8468 | 88,62196 | 18,05378 | 8,91103 | 0,16659 | 3 | 1 | 1,12839 | 3,09966 | 18,05378 |
| 11,65 | 1,90156 | 134,025 | 438,646 | 0 | 1,88329 | 7,54965 | 3 | 3,04053 | 18,93284 | 190,4154 | 101,3373 | 89,0781 | 19,00442 | 8,39884 | 0,13551 | 3 | 1 | 1,12261 | 3,06575 | 19,00442 |
| 11,7 | 1,97955 | 147,6083 | 163,138 | 0 | 1,86444 | 7,6347 | 3 | 3,04705 | 18,93029 | 191,36192 | 101,8278 | 89,53412 | 18,68645 | 8,50794 | 0,12163 | 3 | 1 | 1,11689 | 3,0749 | 18,68645 |
| 11,75 | 1,7122 | 145,3992 | 314,178 | 0 | 1,81473 | 7,96501 | 3 | 3,06824 | 18,93757 | 192,30879 | 102,3183 | 89,99049 | 18,02884 | 8,90912 | 0,11376 | 3 | 1 | 1,11123 | 3,10002 | 18,02884 |
| 11,8 | 1,75245 | 140,6236 | 383,354 | 0 | 1,76374 | 8,03733 | 3 | 3,0799 | 18,90425 | 193,25401 | 102,8088 | 90,44521 | 17,36399 | 9,02635 | 0,17297 | 3 | 1 | 1,10564 | 3,11566 | 17,36399 |
| 11,85 | 1,82658 | 139,251 | 425,844 | 0 | 1,84007 | 7,62728 | 3 | 3,05089 | 18,90899 | 194,19946 | 103,2993 | 90,90016 | 18,10636 | 8,52723 | 0,17474 | 3 | 1 | 1,10011 | 3,0854 | 18,10636 |
| 11,9 | 1,94118 | 141,167 | 363,503 | 0 | 1,90823 | 7,3773 | 3 | 3,02947 | 18,92645 | 195,14578 | 103,7898 | 91,35598 | 18,75178 | 8,21769 | 0,16406 | 3 | 1 | 1,09462 | 3,0633 | 18,75178 |
| 11,95 | 1,95694 | 141,9105 | 365,159 | 0 | 1,9804 | 7,1614 | 3 | 3,0089 | 18,94922 | 196,09324 | 104,2803 | 91,81294 | 19,43419 | 7,94843 | 0,1399 | 3 | 1 | 1,08917 | 3,04208 | 19,43419 |
| 12 | 2,04309 | 142,3966 | 333,079 | 0 | 1,93953 | 7,27362 | 3 | 3,02012 | 18,93512 | 197,04 | 104,7708 | 92,2692 | 18,88485 | 8,09612 | 0,16649 | 3 | 1 | 1,08379 | 3,05658 | 18,88485 |
| 12,05 | 1,81856 | 138,915 | 486,414 | 0 | 1,90709 | 7,16454 | 3 | 3,02092 | 18,89187 | 197,98459 | 105,2613 | 92,72329 | 18,43236 | 7,99448 | 0,20638 | 3 | 1 | 1,07848 | 3,06034 | 18,43236 |
| 12,1 | 1,85963 | 128,5916 | 554,492 | 0 | 1,91212 | 6,94554 | 3 | 3,01084 | 18,8602 | 198,9276 | 105,7518 | 93,1758 | 18,3867 | 7,75202 | 0,25539 | 3 | 1 | 1,07324 | 3,05186 | 18,3867 |
| 12,15 | 2,05818 | 130,9151 | 588,949 | 0 | 1,97461 | 6,65394 | 3 | 2,98791 | 18,86018 | 199,87061 | 106,2423 | 93,62831 | 18,95516 | 7,4033 | 0,26442 | 3 | 1 | 1,06805 | 3,02849 | 18,95516 |
| 12,2 | 2,00602 | 134,6612 | 583,113 | 0 | 1,9899 | 6,74234 | 3 | 2,98939 | 18,88719 | 200,81497 | 106,7328 | 94,08217 | 19,01616 | 7,49913 | 0,25287 | 3 | 1 | 1,0629 | 3,03134 | 19,01616 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 12,25 | 1,90549 | 136,9204 | 505,347 | 0 | 1,98312 | 6,8411 | 3 | 2,9948 | 18,89868 | 201,7599 | 107,2233 | 94,5366 | 18,84304 | 7,61593 | 0,24738 | 3 | 1 | 1,05779 | 3,03885 | 18,84304 |
| 12,3 | 2,03784 | 135,4191 | 555,246 | 0 | 2,01224 | 6,74302 | 3 | 2,98589 | 18,90444 | 202,70512 | 107,7138 | 94,99132 | 19,04951 | 7,49838 | 0,23126 | 3 | 1 | 1,05273 | 3,03076 | 19,04951 |
| 12,35 | 2,0934 | 134,7184 | 517,953 | 0 | 2,22055 | 6,42866 | 3 | 2,94058 | 19,0006 | 203,65515 | 108,2043 | 95,45085 | 21,13019 | 7,0778 | 0,14695 | 3 | 1 | 1,04766 | 2,98093 | 21,13019 |
| 12,4 | 2,53041 | 158,1176 | 140,565 | 0 | 2,16397 | 6,93834 | 3 | 2,97159 | 19,04878 | 204,60759 | 108,6948 | 95,91279 | 20,42862 | 7,66288 | 0,12029 | 3 | 1 | 1,04261 | 3,01547 | 20,42862 |
| 12,45 | 1,86811 | 157,5957 | 374,666 | 0 | 2,07116 | 7,35155 | 3 | 3,00274 | 19,04809 | 205,56 | 109,1853 | 96,3747 | 19,35778 | 8,16158 | 0,11279 | 3 | 1 | 1,03762 | 3,05132 | 19,35778 |
| 12,5 | 1,81496 | 141,074 | 443,597 | 0 | 1,88961 | 7,43839 | 3 | 3,03503 | 18,9209 | 206,50604 | 109,6758 | 96,83024 | 17,38204 | 8,35104 | 0,18092 | 3 | 1 | 1,03274 | 3,09184 | 17,38204 |
| 12,55 | 1,98577 | 123,001 | 424,303 | 0 | 1,93769 | 6,73274 | 3 | 2,99739 | 18,84478 | 207,44828 | 110,1663 | 97,28198 | 17,78587 | 7,53997 | 0,14514 | 3 | 1 | 1,02794 | 3,05402 | 17,78587 |
| 12,6 | 2,01235 | 127,3048 | 215,987 | 0 | 1,91925 | 6,62237 | 3 | 2,99552 | 18,8111 | 208,38884 | 110,6568 | 97,73204 | 17,50563 | 7,429 | 0,10992 | 3 | 1 | 1,02321 | 3,05462 | 17,50563 |
| 12,65 | 1,75963 | 130,9937 | 255,837 | 0 | 1,85264 | 7,00801 | 3 | 3,02351 | 18,82203 | 209,32994 | 111,1473 | 98,18264 | 16,73728 | 7,90071 | 0,10798 | 3 | 1 | 1,01851 | 3,08714 | 16,73728 |
| 12,7 | 1,78594 | 131,201 | 393,944 | 0 | 1,84235 | 7,11583 | 3 | 3,02981 | 18,83105 | 210,27149 | 111,6378 | 98,63369 | 16,54687 | 8,03261 | 0,14766 | 3 | 1 | 1,01385 | 3,09569 | 16,54687 |
| 12,75 | 1,98148 | 131,101 | 408,091 | 0 | 1,91358 | 6,93876 | 3 | 3,01031 | 18,86024 | 211,2145 | 112,1283 | 99,0862 | 17,18065 | 7,79965 | 0,15542 | 3 | 1 | 1,00922 | 3,07505 | 17,18065 |
| 12,8 | 1,97332 | 136,0339 | 328,079 | 0 | 1,94004 | 7,00686 | 3 | 3,00887 | 18,89254 | 212,15913 | 112,6188 | 99,54033 | 17,35863 | 7,86721 | 0,16384 | 3 | 1 | 1,00462 | 3,07437 | 17,35863 |
| 12,85 | 1,86533 | 140,6737 | 450,973 | 0 | 2,16333 | 6,59739 | 3 | 2,95655 | 18,99036 | 213,10865 | 113,1093 | 99,99935 | 19,50231 | 7,31832 | 0,15583 | 3 | 1 | 1,00001 | 3,01609 | 19,50231 |
| 12,9 | 2,65133 | 151,4617 | 471,956 | 0 | 2,47388 | 6,20914 | 3 | 2,89628 | 19,12633 | 214,06496 | 113,5998 | 100,46516 | 22,49349 | 6,79731 | 0,12406 | 3 | 1 | 0,99537 | 2,9492 | 22,49349 |
| 12,95 | 2,90497 | 168,684 | 258,903 | 0 | 2,80522 | 6,32795 | 3 | 2,86309 | 19,34092 | 215,03201 | 114,0903 | 100,94171 | 25,66027 | 6,85329 | 0,05668 | 3 | 1 | 0,99067 | 2,9109 | 25,66027 |
| 13 | 2,85937 | 212,3939 | 51,849 | 0 | 2,7499 | 7,11629 | 3 | 2,90537 | 19,44543 | 216,00428 | 114,5808 | 101,42348 | 24,98336 | 7,72292 | 0,04868 | 3 | 1 | 0,98596 | 2,95591 | 24,98336 |
| 13,05 | 2,48537 | 205,9954 | 403,042 | 0 | 2,60065 | 7,70054 | 3 | 2,9468 | 19,4506 | 216,97681 | 115,0713 | 101,90551 | 23,39101 | 8,40149 | 0,05676 | 3 | 1 | 0,9813 | 3,00204 | 23,39101 |
| 13,1 | 2,45721 | 182,4032 | 296,212 | 0 | 2,38039 | 7,7946 | 3 | 2,97754 | 19,32883 | 217,94325 | 115,5618 | 102,38145 | 21,12144 | 8,58019 | 0,08547 | 3 | 1 | 0,97674 | 3,0397 | 21,12144 |
| 13,15 | 2,19858 | 168,2265 | 201,922 | 0 | 2,2533 | 7,50395 | 3 | 2,98277 | 19,20097 | 218,9033 | 116,0523 | 102,851 | 19,78007 | 8,31138 | 0,09723 | 3 | 1 | 0,97228 | 3,05016 | 19,78007 |
| 13,2 | 2,10412 | 156,6306 | 443,433 | 0 | 2,11747 | 7,38276 | 3 | 2,99712 | 19,08688 | 219,85765 | 116,5428 | 103,31485 | 18,36731 | 8,23812 | 0,12753 | 3 | 1 | 0,96792 | 3,0705 | 18,36731 |
| 13,25 | 2,04972 | 144,1267 | 430,286 | 0 | 2,04563 | 7,29733 | 3 | 3,00438 | 19,02055 | 220,80867 | 117,0333 | 103,77537 | 17,58434 | 8,18033 | 0,1755 | 3 | 1 | 0,96362 | 3,08201 | 17,58434 |
| 13,3 | 1,98305 | 147,0721 | 438,154 | 0 | 1,93291 | 7,61154 | 3 | 3,03482 | 18,98212 | 221,75778 | 117,5238 | 104,23398 | 16,41648 | 8,59797 | 0,19343 | 3 | 1 | 0,95938 | 3,11852 | 16,41648 |
| 13,35 | 1,76597 | 150,1749 | 477,103 | 0 | 2,01606 | 7,33201 | 3 | 3,01037 | 19,00367 | 222,70796 | 118,0143 | 104,69366 | 17,12955 | 8,24254 | 0,1911 | 3 | 1 | 0,95517 | 3,09251 | 17,12955 |
| 13,4 | 2,29917 | 146,2071 | 466,923 | 0 | 2,03261 | 7,2442 | 3 | 3,00418 | 19,00235 | 223,65808 | 118,5048 | 105,15328 | 17,20297 | 8,13987 | 0,19685 | 3 | 1 | 0,95099 | 3,0874 | 17,20297 |
| 13,45 | 2,03268 | 145,3564 | 479,742 | 0 | 2,11323 | 6,87999 | 3 | 2,97649 | 19,00267 | 224,60821 | 118,9953 | 105,61291 | 17,88246 | 7,69821 | 0,19013 | 3 | 1 | 0,94685 | 3,05851 | 17,88246 |
| 13,5 | 2,00783 | 144,6057 | 487,545 | 0 | 2,03435 | 6,95826 | 3 | 2,99183 | 18,95734 | 225,55608 | 119,4858 | 106,07028 | 17,05279 | 7,82596 | 0,20572 | 3 | 1 | 0,94277 | 3,07841 | 17,05279 |
| 13,55 | 2,06254 | 134,7041 | 507,494 | 0 | 2,01718 | 6,88129 | 3 | 2,99117 | 18,93154 | 226,50266 | 119,9763 | 106,52636 | 16,80968 | 7,7517 | 0,21483 | 3 | 1 | 0,93873 | 3,08011 | 16,80968 |

| In situ data | | | | | Basic output data | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depth (m) | qc (MPa) | fs (kPa) | u (kPa) | Other | qt (MPa) | Rf (%) | SBT | Ic SBT | ã (kN/m³) | ó,v (kPa) | u0 (kPa) | ó',vo (kPa) | Qt1 | Fr (%) | Bq | SBTn | n | Cn | Ic | Qtn |
| 13,6 | 1,98116 | 137,1134 | 518,953 | 0 | 2,00461 | 6,72306 | 3 | 2,98621 | 18,89519 | 227,44742 | 120,4668 | 106,98062 | 16,61197 | 7,5835 | 0,22986 | 3 | 1 | 0,93475 | 3,07735 | 16,61197 |
| 13,65 | 1,97012 | 132,4951 | 560,459 | 0 | 1,94377 | 6,91912 | 3 | 3,00451 | 18,881 | 228,39147 | 120,9573 | 107,43417 | 15,96682 | 7,84036 | 0,25412 | 3 | 1 | 0,9308 | 3,09979 | 15,96682 |
| 13,7 | 1,88004 | 133,8677 | 591,178 | 0 | 1,89564 | 6,98958 | 3 | 3,01546 | 18,85419 | 229,33418 | 121,4478 | 107,88638 | 15,44504 | 7,95155 | 0,2806 | 3 | 1 | 0,9269 | 3,11452 | 15,44504 |
| 13,75 | 1,83677 | 131,1296 | 615,406 | 0 | 1,82645 | 7,20009 | 3 | 3,03605 | 18,8313 | 230,27574 | 121,9383 | 108,33744 | 14,73336 | 8,23883 | 0,30385 | 3 | 1 | 0,92304 | 3,14002 | 14,73336 |
| 13,8 | 1,76254 | 129,521 | 614,209 | 0 | 1,78536 | 7,28199 | 3 | 3,04662 | 18,80941 | 231,21621 | 122,4288 | 108,78741 | 14,28603 | 8,36537 | 0,32227 | 3 | 1 | 0,91922 | 3,15434 | 14,28603 |
| 13,85 | 1,75676 | 129,378 | 640,224 | 0 | 1,79006 | 7,34313 | 3 | 3,04827 | 18,82306 | 232,15737 | 122,9193 | 109,23807 | 14,26154 | 8,4374 | 0,33347 | 3 | 1 | 0,91543 | 3,15742 | 14,26154 |
| 13,9 | 1,85088 | 135,4405 | 672,862 | 0 | 1,95407 | 7,10706 | 3 | 3,01084 | 18,91993 | 233,10336 | 123,4098 | 109,69356 | 15,68886 | 8,0697 | 0,30685 | 3 | 1 | 0,91163 | 3,11391 | 15,68886 |
| 13,95 | 2,25457 | 151,812 | 641,355 | 0 | 2,28992 | 6,76486 | 3 | 2,94628 | 19,10642 | 234,05868 | 123,9003 | 110,15838 | 18,66278 | 7,53504 | 0,2637 | 3 | 1 | 0,90778 | 3,03866 | 18,66278 |
| 14 | 2,76431 | 177,4774 | 683,861 | 0 | 3,10904 | 5,85959 | 3 | 2,80789 | 19,41018 | 235,02919 | 124,3908 | 110,63839 | 25,97658 | 6,33877 | 0,17362 | 3 | 1 | 0,90385 | 2,88327 | 25,97658 |
| 14,05 | 4,30823 | 217,241 | 544,918 | 0 | 5,04085 | 4,71409 | 4 | 2,59408 | 19,90116 | 236,02425 | 124,8813 | 111,14295 | 43,23104 | 4,94566 | 0,07578 | 4 | 0,91464 | 0,90789 | 2,64843 | 43,62268 |
| 14,1 | 8,05001 | 318,1725 | 238,199 | 0 | 6,80275 | 4,18255 | 4 | 2,46789 | 20,22329 | 237,03541 | 125,3718 | 111,66361 | 58,79905 | 4,33355 | 0,03276 | 4 | 0,86351 | 0,90913 | 2,51353 | 59,69116 |
| 14,15 | 7,83719 | 417,9817 | 257,903 | 0 | 7,90813 | 4,86477 | 9 | 2,47504 | 20,62803 | 238,06682 | 125,8623 | 112,20452 | 68,35788 | 5,01576 | 0,01636 | 4 | 0,86543 | 0,90515 | 2,51787 | 69,42542 |

# RELATÓRIO PAT-RT-SOND- 1233.14-002

# SONDAGEM CPTU – PRESIDENTE KENNEDY/ES

# TRECHO: 4.3

# CLIENTE: ENECON – ENGENHEIROS E ECONOMISTAS CONSULTORES

| REVISÕES | DESCRIÇÃO | DATA | PREP. | VERIF | APROV |
|---|---|---|---|---|---|
| 0 | Emissão Inicial | 19/02/2015 | CR | KB | AM |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

# Sumário

## 1. APRESENTAÇÃO

A Patrol – Investigações Geotécnicas Ltda. é uma empresa de consultoria na área de tecnologia de materiais aplicados as obras de construção. Nosso laboratório está preparado para ensaiar os mais diversos materiais procurando obter os parâmetros técnicos que caracterizam o seu comportamento quando aplicados às mais diversas obras de infra-estrutura. Neste contexto, oferecemos aos nossos clientes a mais avançada tecnologia de ensaios especiais em geotécnica, garantindo a mais elevada qualidade dos resultados aliando-se a rapidez na execução dos ensaios.

## 2. INTRODUÇÃO

O presente relatório apresenta os ensaios de CPTU realizados na cidade de Presidente Kennedy/ES.

## 3. REFERÊNCIAS NORMATIVAS

- ✓ NBR 12069/91 - Solo - Ensaio de penetração de cone in situ (CPT);
- ✓ ASTM D-5778-07 Standart test method for performing eletronic friction cone and piezocone testing of soils e as recomendações da ISSMGE International reference test procedure for cone penetration test;

## 4. SERVIÇOS DE CAMPO

### 4.1. Ensaios CPTU

Os **Ensaios CPTU,** ensaios de cone com medida de poropressão, são utilizados para a determinação estratigráfica de perfis de solos, avaliação de propriedades dos materiais investigados e previsão da capacidade de carga de fundações.

No Brasil sua metodologia é normatizada pela NBR 12069/91 - Solo - Ensaio de penetração de cone in situ (CPT). Em nível internacional, tem-se, por exemplo, a ASTM D-5778-07 Standart test method for performing eletronic friction cone and piezocone

testing of soils e as recomendações da ISSMGE International reference test procedure for cone penetration test.

O ensaio de cone consiste na cravação no terreno de uma ponteira cônica (60° de ápice) a uma velocidade constante de 20 mm/s. A seção transversal do cone é de 10 $cm^2$ e a área da luva de atrito lateral é de 150 $cm^2$. O equipamento de cravação possui uma estrutura de reação e um sistema de aplicação de carga. A penetração é obtida através do acionamento contínuo de hastes com comprimento de 1 m, mediante a operação de um pistão hidráulico.

À medida que se procede à introdução das hastes no solo, efetua-se a cada 2 cm de profundidade a aquisição automática das seguintes informações:

- - Resistência à penetração da ponta (qc);
- - Resistência por atrito lateral (fs);
- - Poro-pressão (u2),
- - Ângulo de inclinação da ponteira cônica em relação à vertical.

Essas grandezas são medidas através de instrumentação de precisão, devidamente calibrada, instalada na extremidade inferior do conjunto. Os dados são transmitidos à superfície por um sistema de ondas acústicas ou cabo, eliminando-se qualquer influência do operador no ensaio. Um computador coleta transfere e armazena as informações, podendo-se visualizar os resultados em tempo real.

4.3.1. Furos e Localização

| TRECHO 4.3 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Furos | Prof.(m) | Prof. N.A (Nível d'água) | Dissipação (Ensaio / Profundidade | Coordenadas (m) | | | Estaca |
| | | | | N | E | Cota | |
| CPTU - 01 | 18,85 | 1,29 | Não teve * | 7.654.830,00 | 286.367,00 | 14,00 | 618 |
| CPTU - 02 | 6,25 | 1,05 | 1 / 2,00 m | 7.654.808,00 | 286.373,00 | 14,00 | 619 |
| CPTU - 03 | 11,50 | 1,21 | 1 / 2,00 m | 7.654.796,00 | 286.382,00 | 14,00 | 620 |
| CPTU - 04 | 16,50 | 0,98 | 1 / 8,00 m | 7.654.810,00 | 286.361,00 | 15,00 | 618 direita |
| CPTU - 05 | 11,85 | 0,99 | 1 / 9,00 m | 7.654.806,00 | 286.360,00 | 15,00 | 619 direita |
| CPTU - 06 | 14,15 | 1,32 | 1 / 6,00 m | 7.654.784,00 | 286.371,00 | 15,00 | 620 direita |

*Não foi possível visualizar a dissipação da poropressão nos trechos ensaiados.

Os LOG'S dos ensaios de CPTU estão em anexo.

## 5. ANEXOS

Segue abaixo relação dos anexos deste documento:

- ✓ Ensaios de CPTU – Trecho 4.3;

Atenciosamente,

Almir Antonio Monteiro
Engenheiro Civil
Patrol Investigações Geotécnicas Ltda.
Telefone (31) 3462.0722

## 5.3. Ensaios de CPTU – Trecho 4.3

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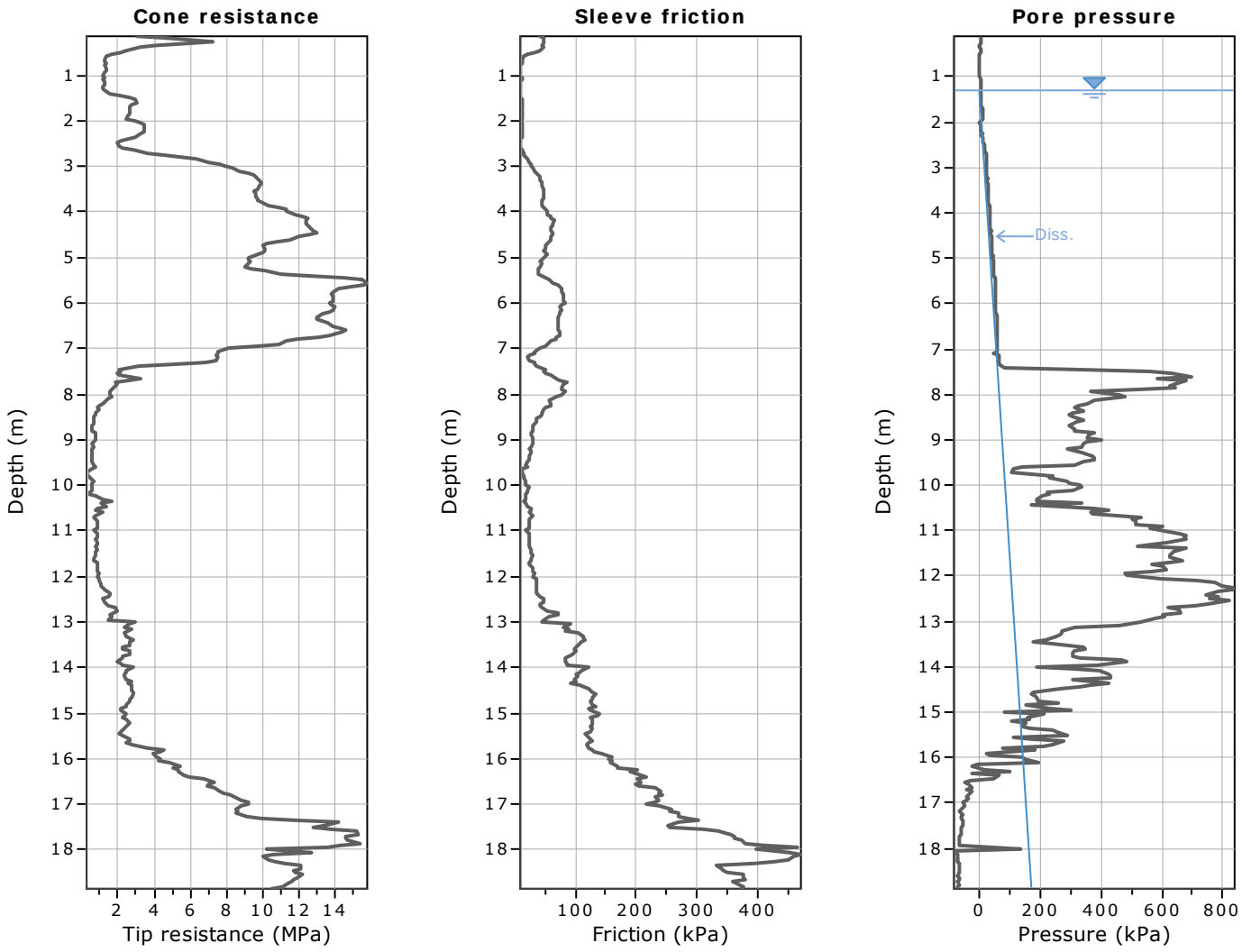
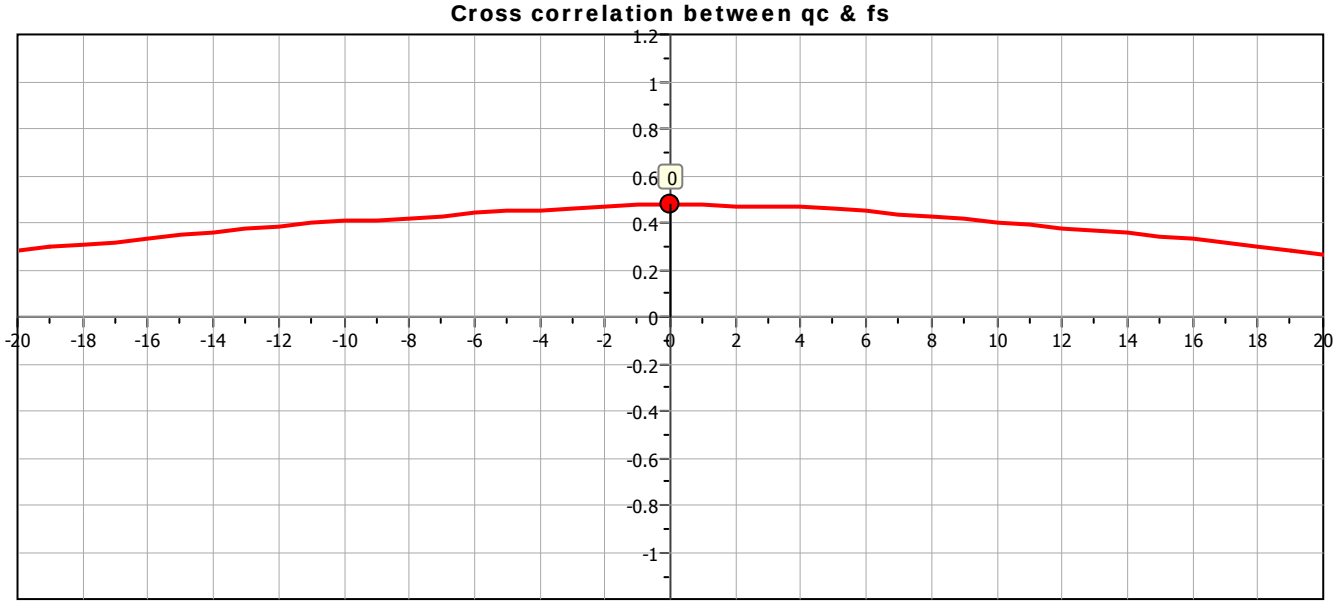
(31) 3462-0722

**Project:** **ENECON**
**Location:** **PRESIDENTE KENNEDY/ES - TRECHO 3.3**

**CPT: CPTU 01**
Total depth: 18.85 m, Date: 03/02/2015
Surface Elevation: 14.00 m
Coords: X:7654830.00, Y:286367.00
Cone Type: 100 kn
Cone Operator: Gelmo Batista




The plot below presents the cross correlation coeficient between the raw qc and fs values (as measured on the field). X axes presents the lag distance (one lag is the distance between two sucessive CPT measurements).



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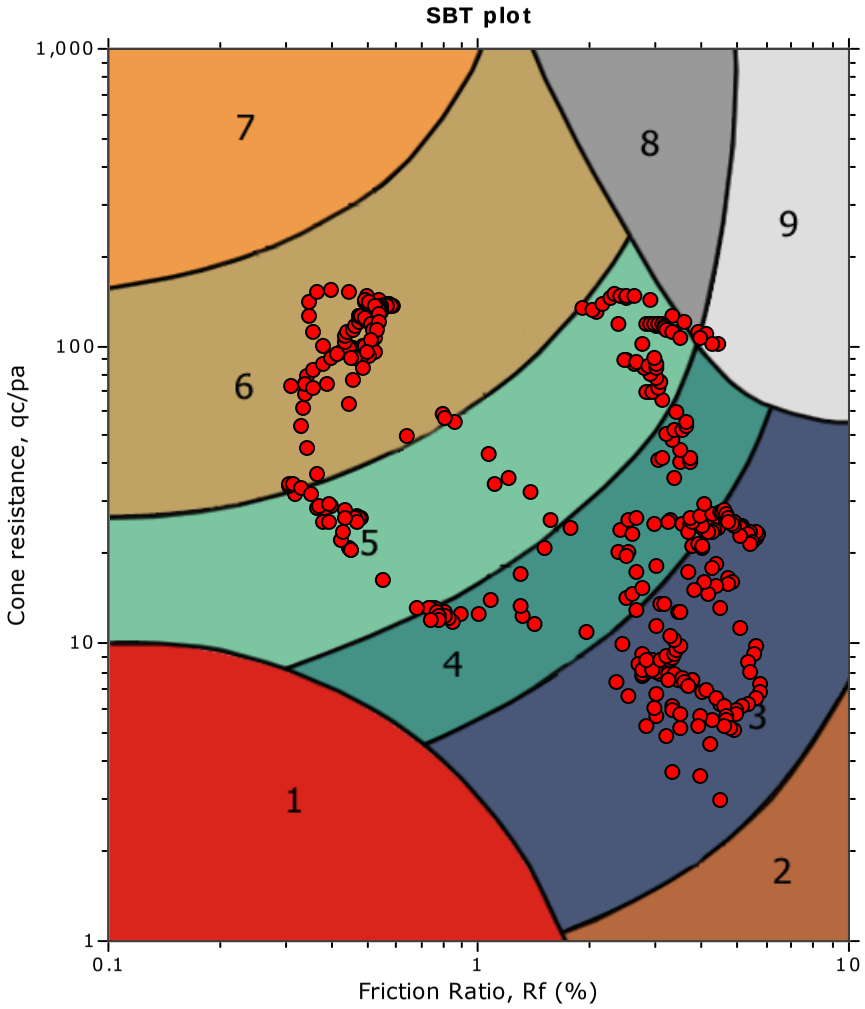
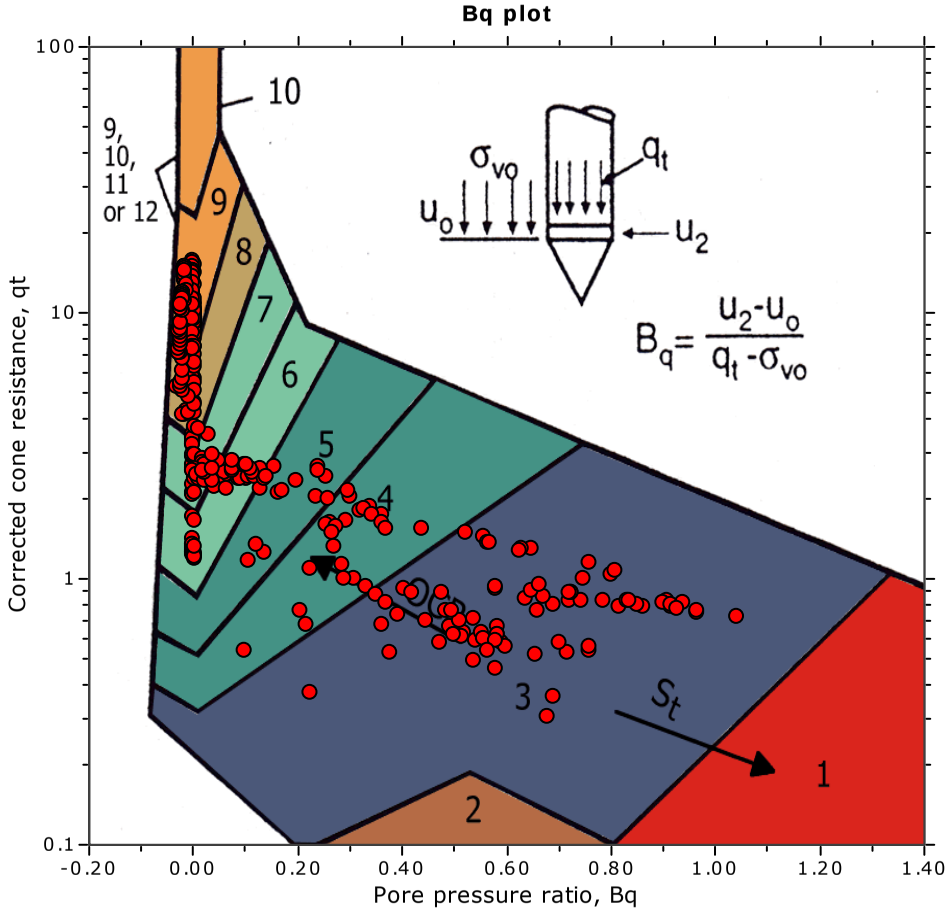
## SBT - Bq plots




**SBT legend**

| | | |
|---|---|---|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
| 3. Clay to silty clay | 6. Clean sand to silty sand | 9. Very stiff fine grained |

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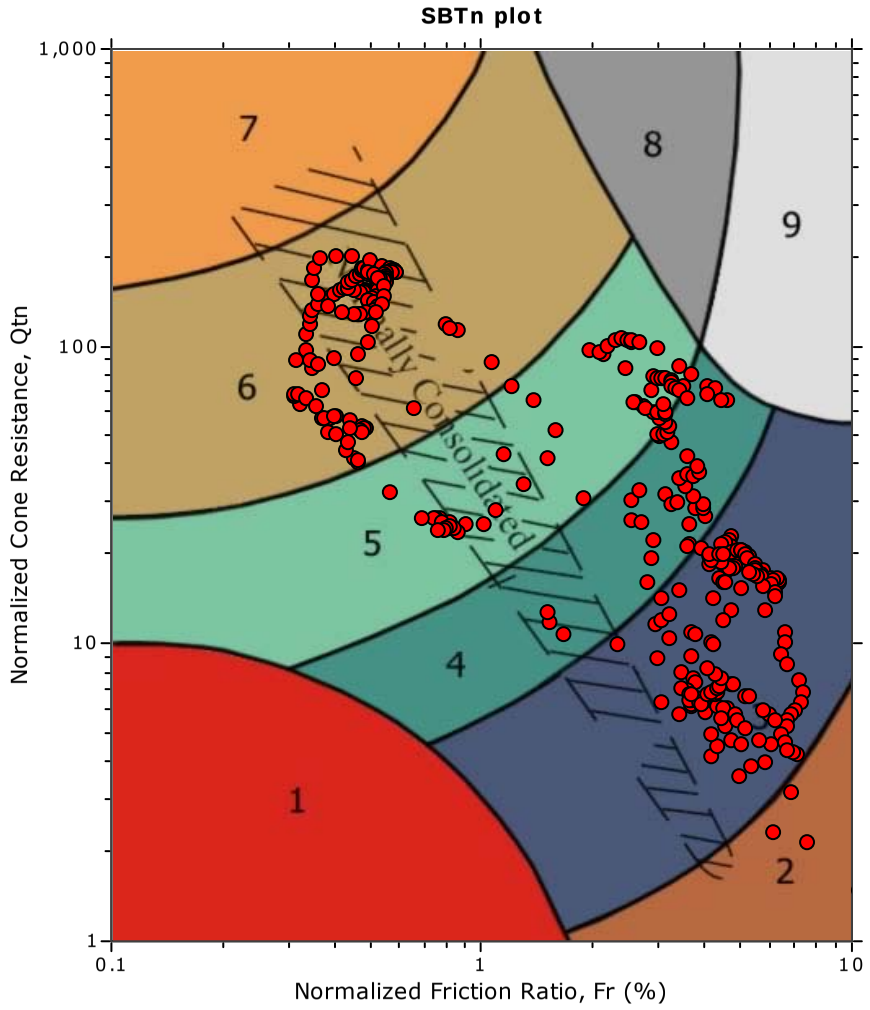
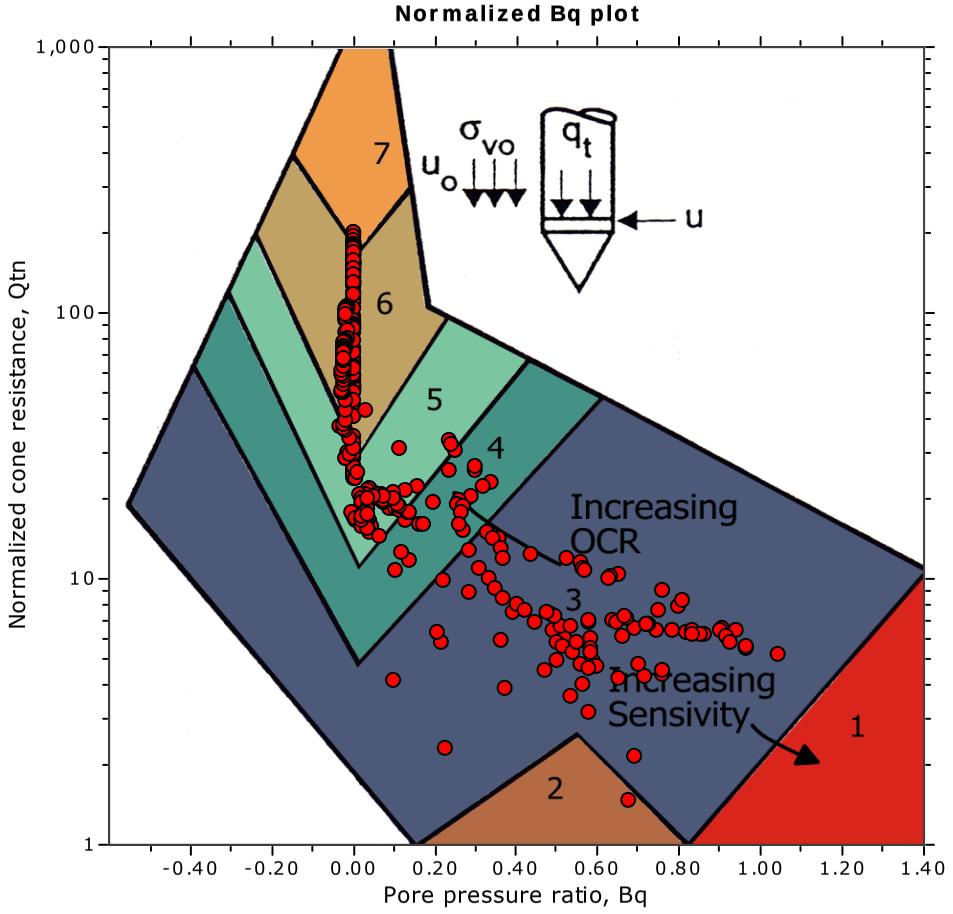
## SBT - Bq plots (normalized)




**SBTn legend**

| | | |
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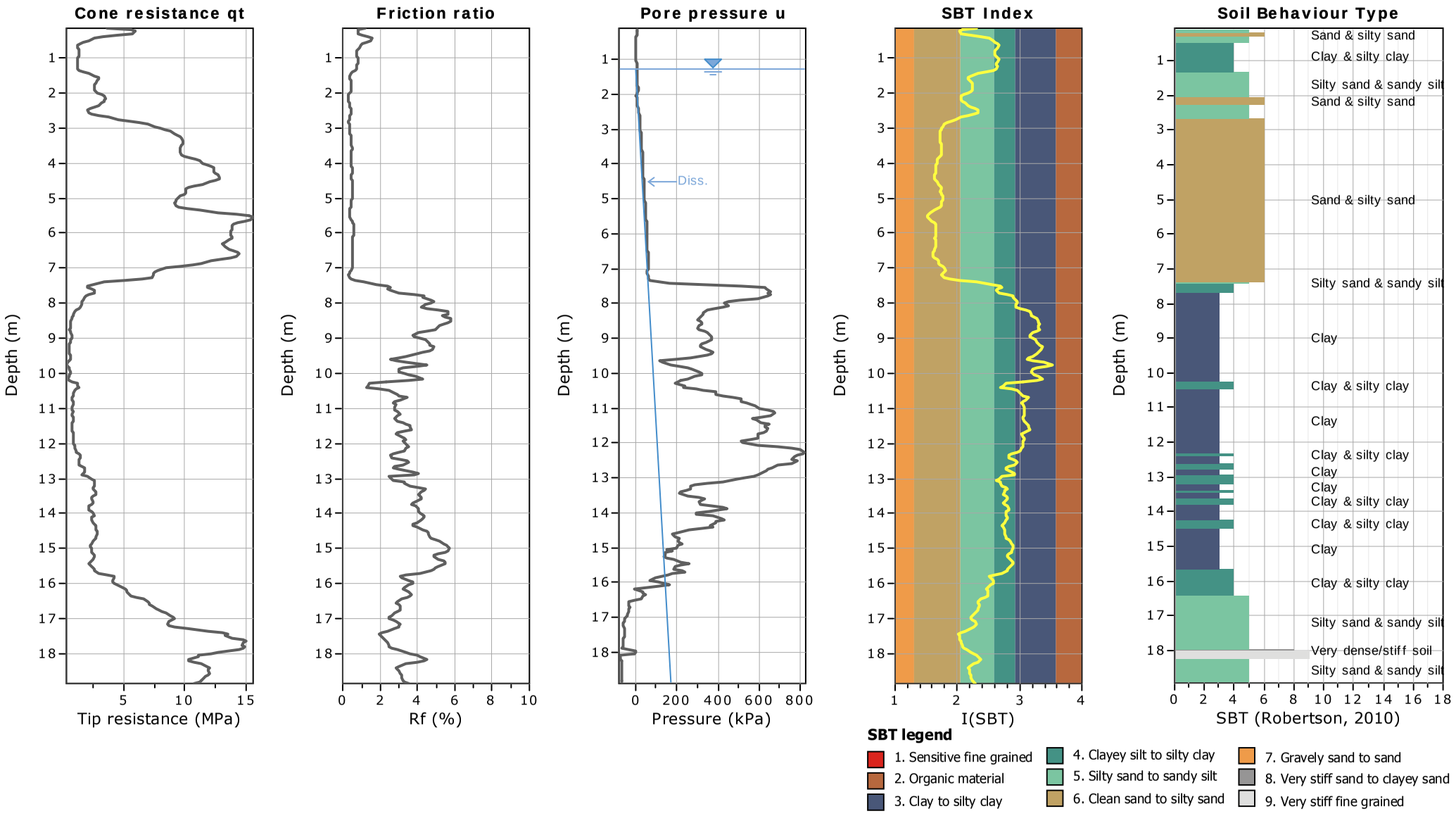

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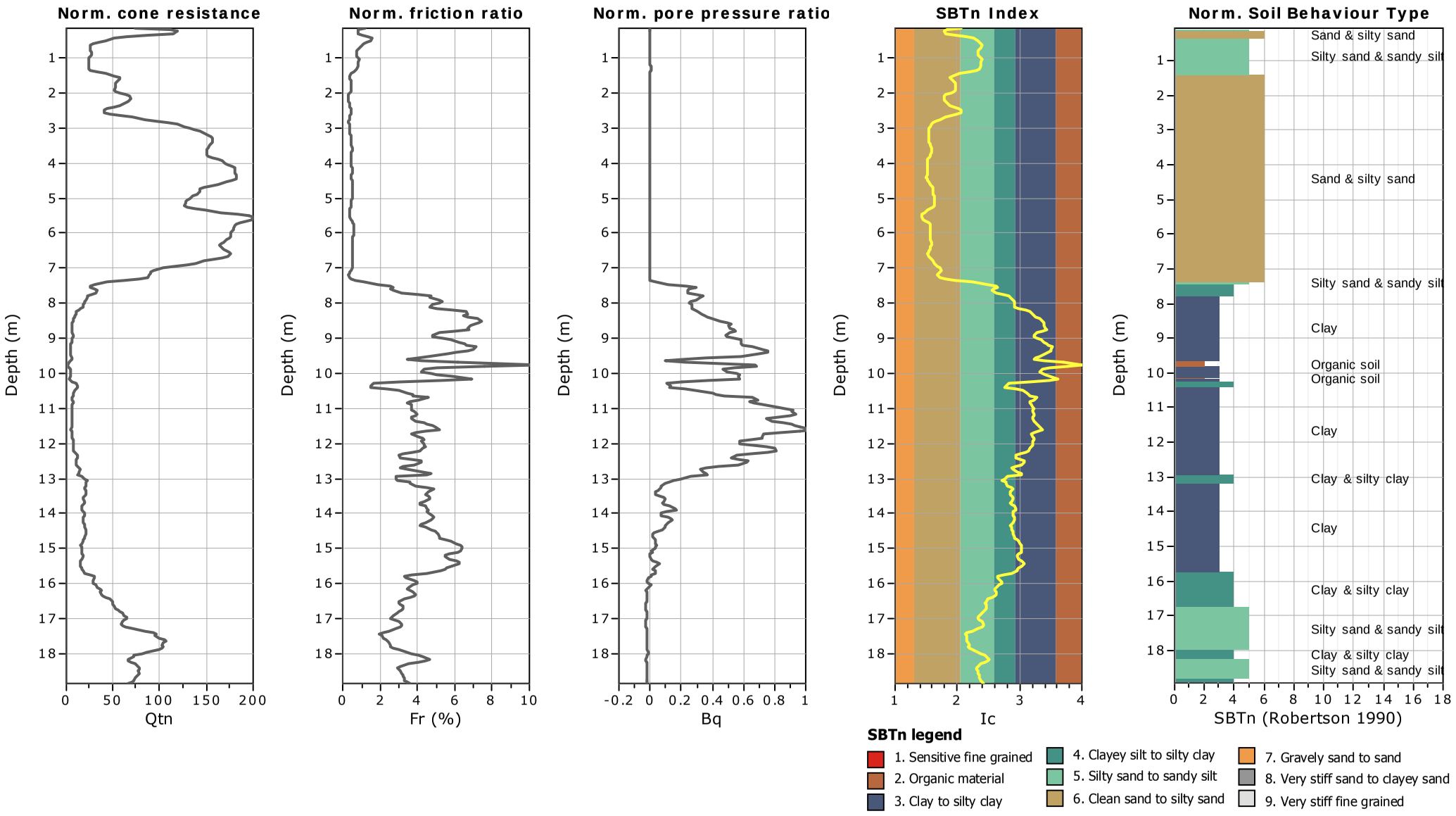

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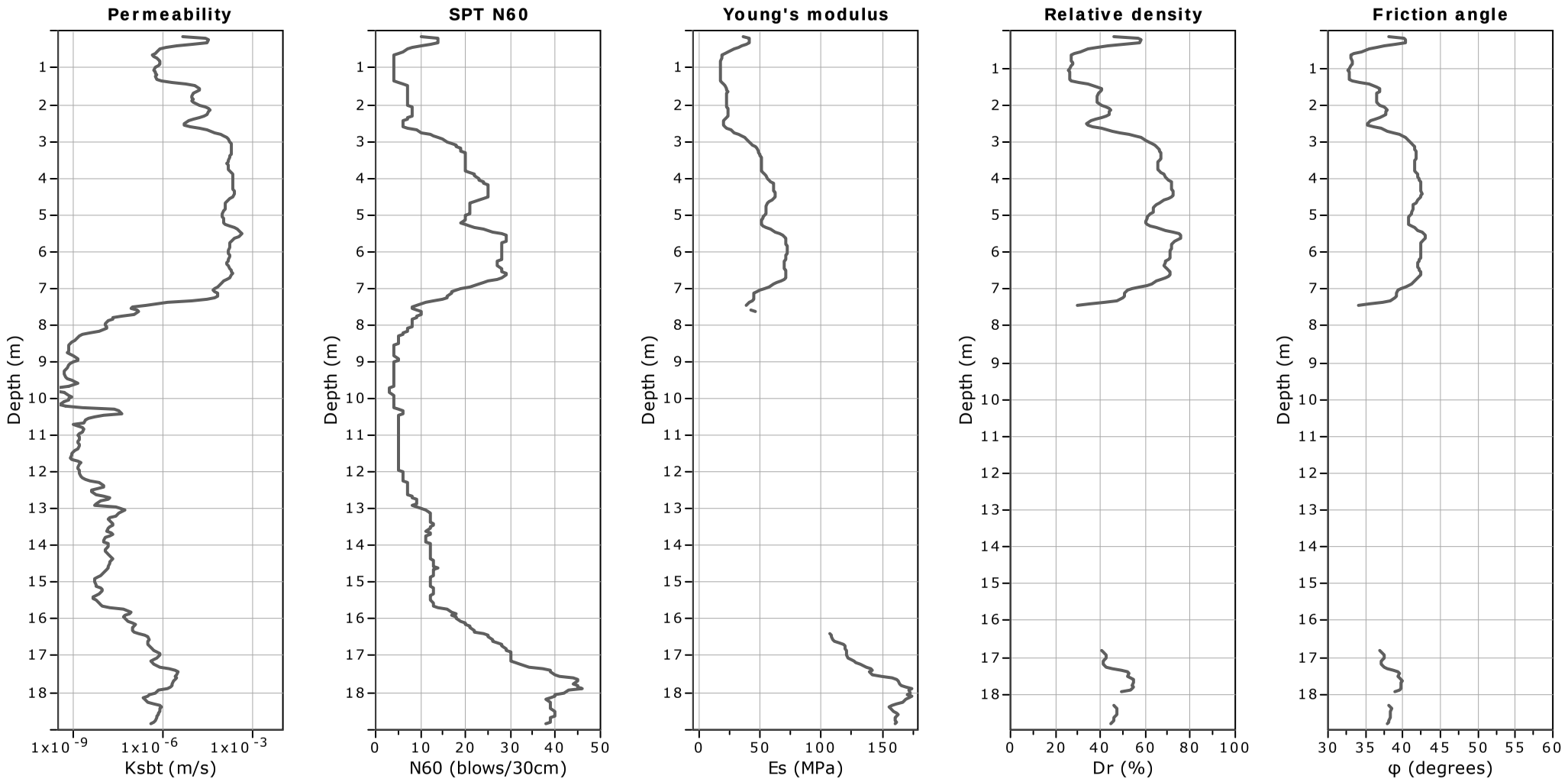


**Calculation parameters**

Permeability: Based on $SBT_n$
SPT $N_{60}$: Based on $I_c$ and $q_t$
Young's modulus: Based on variable alpha using $I_c$ (Robertson, 2009)
Relative desnisty constant, $C_{Dr}$: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

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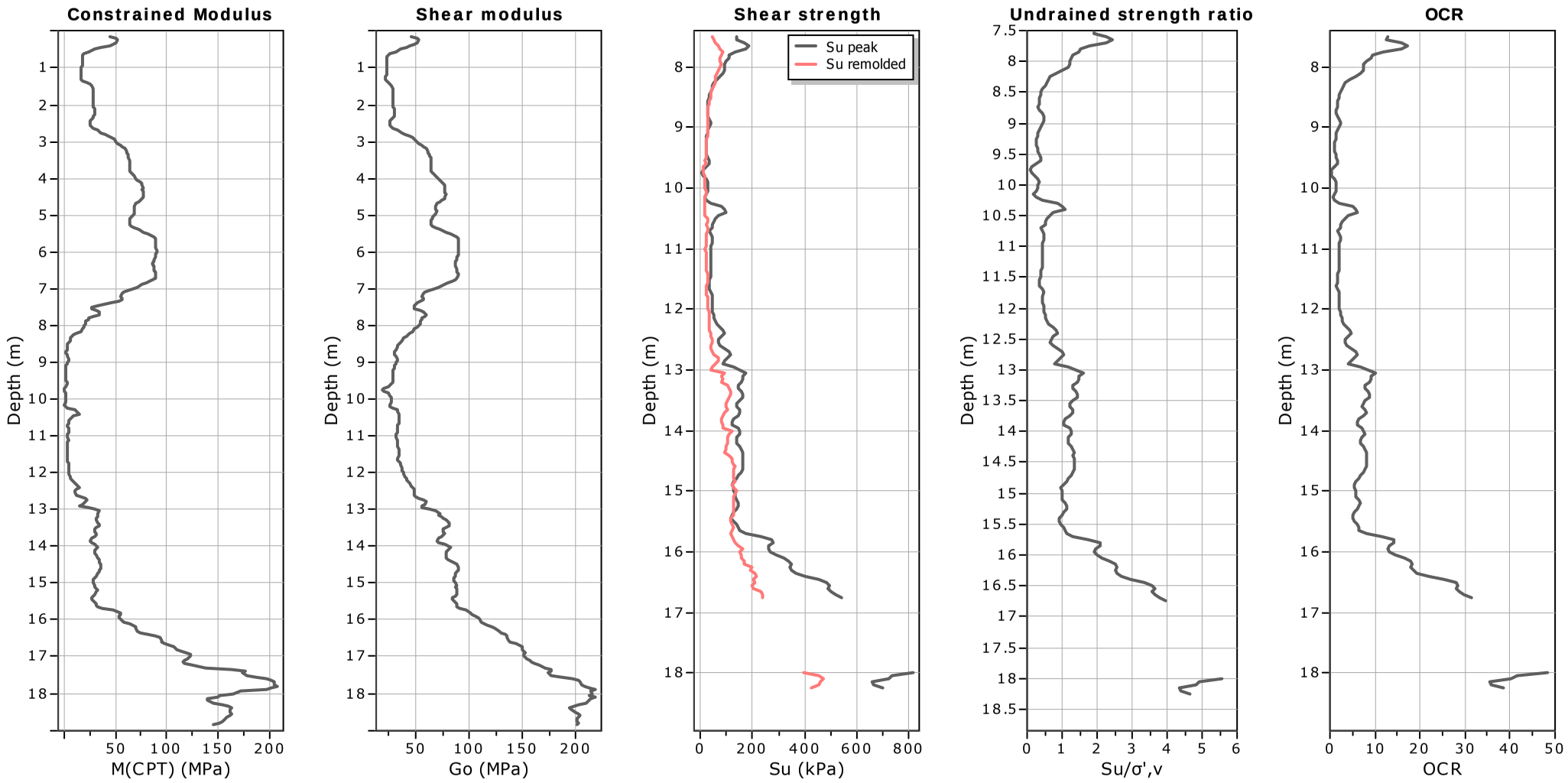


**Calculation parameters**

Constrained modulus: Based on variable *alpha* using $I_c$ and $Q_{tn}$ (Robertson, 2009)
Go: Based on variable *alpha* using $I_c$ (Robertson, 2009)
Undrained shear strength cone factor for clays, $N_{kt}$: Auto
OCR factor for clays, $N_{kt}$: Auto
User defined estimation data

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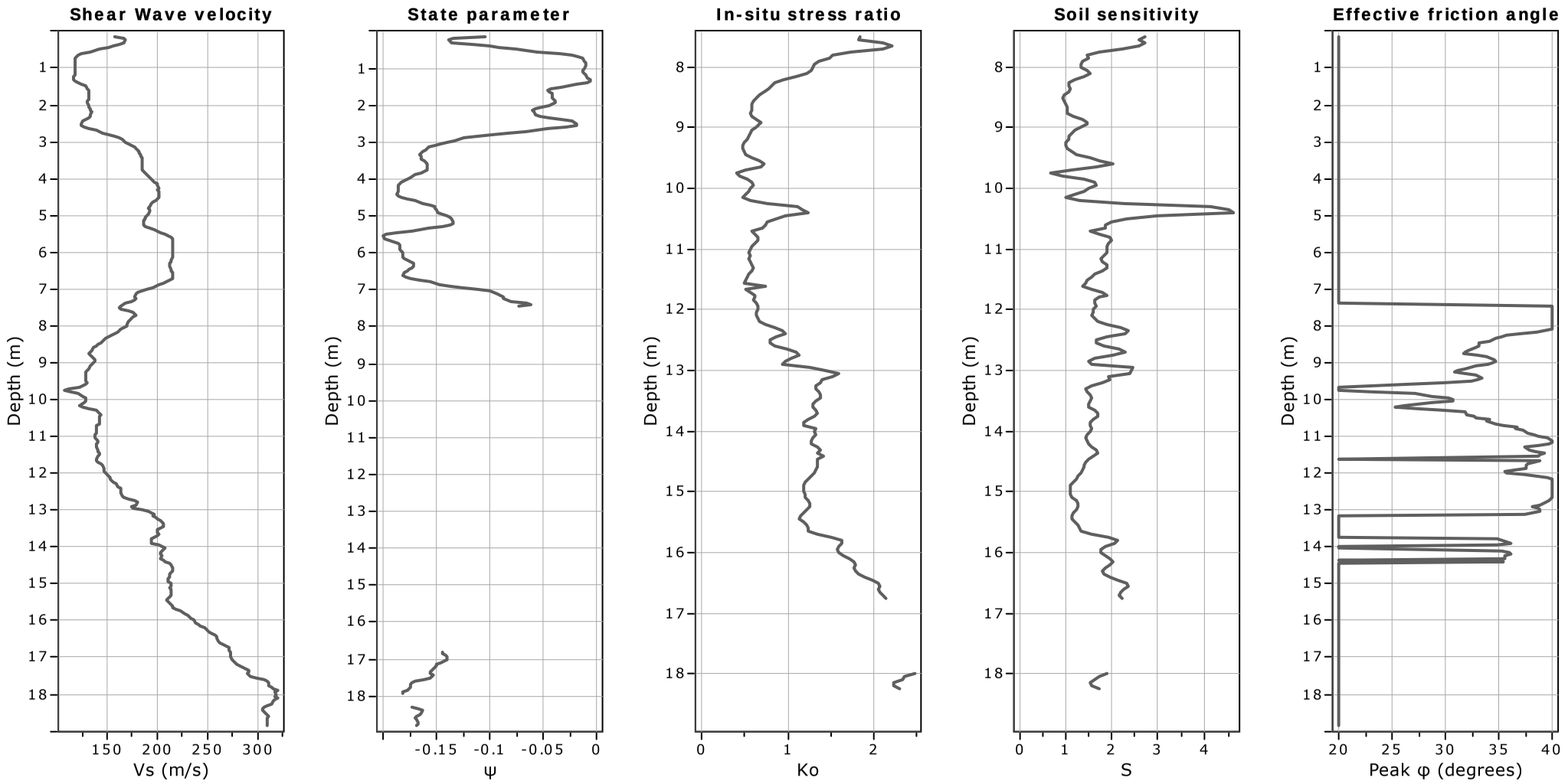


**Calculation parameters**

Soil Sensitivity factor, $N_S$: 7.00
User defined estimation data

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# Dissipation Tests Results

## Dissipation tests

Dissipation tests consists of stopping the piezocone penetration and observing porepressures (u) with elapsed time (t). The data are automatic recorded by the field computer and should take place until a minimum of 50% dissipation.

The porepressures are plotted as a function of square root of (t). The graphical technique suggested by Robertson and Campanella (1989), yields a value for $t_{50}$, which corresponds to the time for 50% consolidation.

The value of the coefficient of consolidation in the radial or horizontal direction $c_h$ was then calculated by Houlsby and Teh's (1988) theory using the following equation:

$$c_h = \frac{T \times r^2 \times I_r^{0.5}}{t_{50}}$$

where:

T: time factor given by Houlsby and Teh's (1988) theory corresponding to the porepressure position
r: piezocone radius
$I_r$: stiffness index, equal to shear modulus G divided by the undrained strength of clay ($S_u$).
$t_{50}$: time corresponding to 50% consolidation

## Permeability estimates based on dissipation test

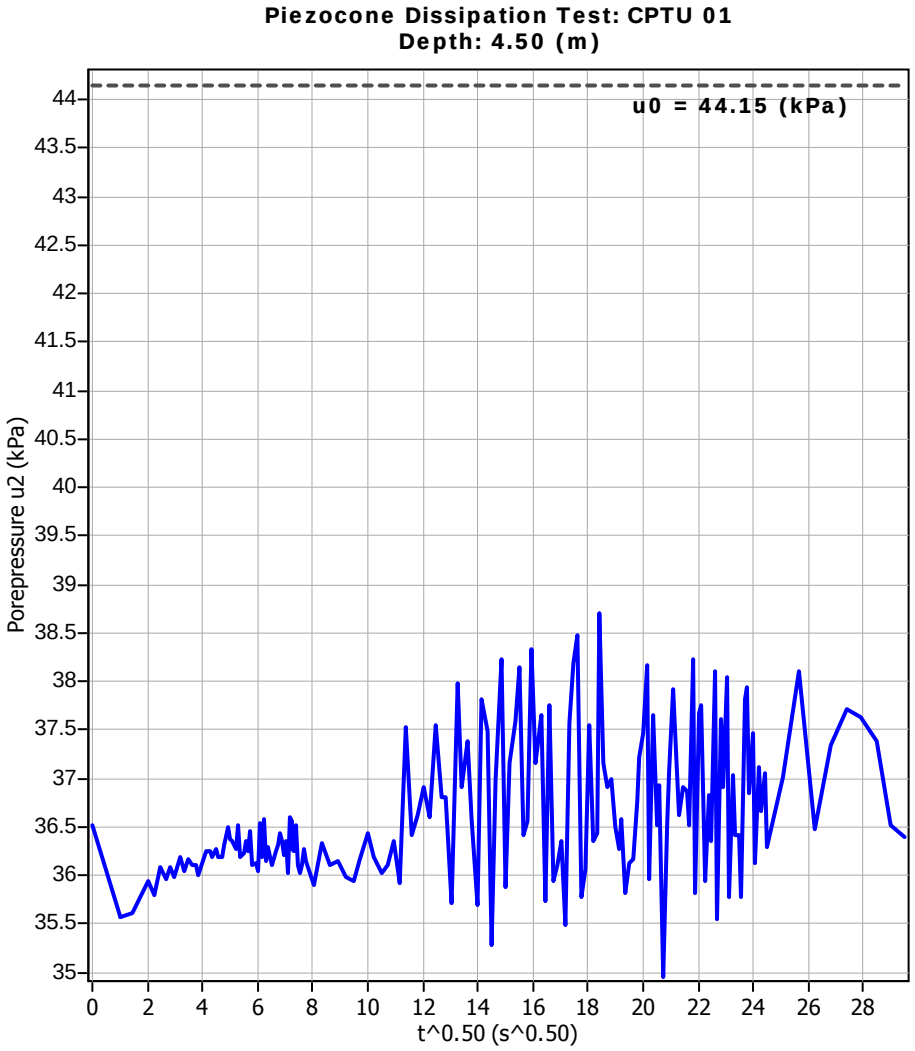
The dissipation of pore pressures during a CPTu dissipation test is controlled by the coefficient of consolidation in the horizontal direction ($c_h$) which is influenced by a combination of the soil permeability ($k_h$) and compressibility (M), as defined by the following:

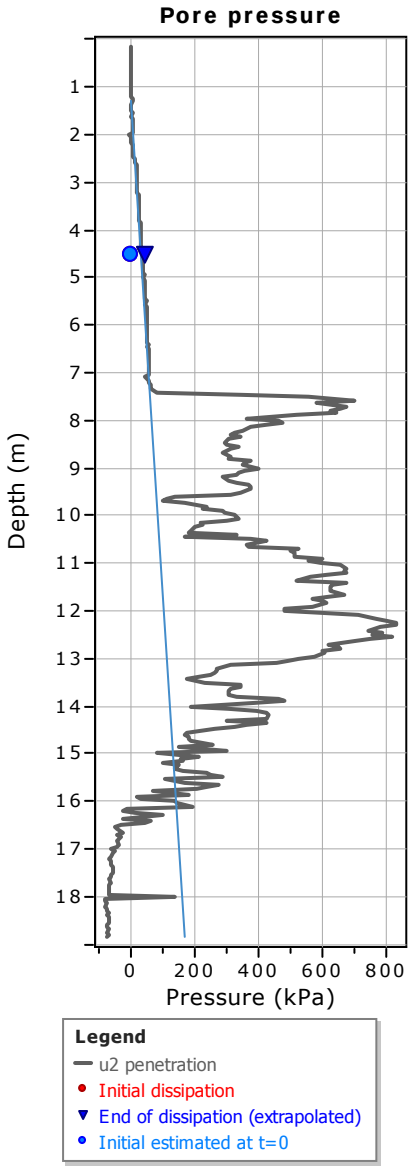
$$k_h = c_h \times \gamma_w / M$$

where: M is the 1-D constrained modulus and $\gamma_w$ is the unit weight of water, in compatible units.

**Tabular results**

| CPTU Borehole | Depth (m) | $(t_{50})^{0.50}$ | $t_{50}$ (s) | $t_{50}$ (years) | $G/S_u$ | $c_h$ ($m^2/s$) | $c_h$ ($m^2$/year) | M (MPa) | $k_h$ (m/s) |
|---|---|---|---|---|---|---|---|---|---|
| CPTU 01 | 4.50 | 0.0 | 0 | 0.00E+000 | 100.00 | 0.00E+000 | 0 | 75.17 | -1.00E+004 |


Piezocone Dissipation Test: CPTU 01
Depth: 4.50 (m)
u0 = 44.15 (kPa)
Porepressure u2 (kPa)
t^0.50 (s^0.50)


Pore pressure
Depth (m)
Pressure (kPa)
Legend
u2 penetration
Initial dissipation
End of dissipation (extrapolated)
Initial estimated at t=0

Presented below is a list of formulas used for the estimation of various soil properties. The formulas are presented in SI unit system and assume that all components are expressed in the same units.

**:: Unit Weight, g (kN/m³) ::**

$$g = g_w \cdot \left( 0.27 \cdot \log(R_f) + 0.36 \cdot \log(\frac{q_t}{p_a}) + 1.236 \right)$$

where $g_w$ = water unit weight

**:: Permeability, k (m/s) ::**

$I_c < 3.27$ and $I_c > 1.00$ then $k = 10^{0.952-3.04 \cdot I_c}$

$I_c \leq 4.00$ and $I_c > 3.27$ then $k = 10^{-4.52-1.37 \cdot I_c}$

**:: $N_{SPT}$ (blows per 30 cm) ::**

$$N_{60} = \left( \frac{q_c}{P_a} \right) \cdot \frac{1}{10^{1.1268-0.2817 \cdot I_c}}$$

$$N_{1(60)} = Q_{tn} \cdot \frac{1}{10^{1.1268-0.2817 \cdot I_c}}$$

**:: Young's Modulus, Es (MPa) ::**

$$(q_t - \sigma_v) \cdot 0.015 \cdot 10^{0.55 \cdot I_c + 1.68}$$

(applicable only to $I_c < I_{c\_cutoff}$)

**:: Relative Density, Dr (%) ::**

$$100 \cdot \sqrt{\frac{Q_{tn}}{k_{DR}}}$$ (applicable only to $SBT_n$: 5, 6, 7 and 8 or $I_c < I_{c\_cutoff}$)

**:: State Parameter, ψ ::**

$$\psi = 0.56 - 0.33 \cdot \log(Q_{tn,cs})$$

**:: Peak drained friction angle, φ (°) ::**

$$\varphi = 17.60 + 11 \cdot \log(Q_{tn})$$

(applicable only to $SBT_n$: 5, 6, 7 and 8)

**:: 1-D constrained modulus, M (MPa) ::**

If $I_c > 2.20$

$\alpha = 14$ for $Q_{tn} > 14$

$\alpha = Q_{tn}$ for $Q_{tn} \leq 14$

$$M_{CPT} = \alpha \cdot (q_t - \sigma_v)$$

**:: Small strain shear Modulus, Go (MPa) ::**

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

**:: Shear Wave Velocity, Vs (m/s) ::**

$$V_s = \left( \frac{G_0}{\rho} \right)^{0.50}$$

**:: Undrained peak shear strength, Su (kPa) ::**

$N_{kt} = 10.50 + 7 \cdot \log(F_r)$ or user defined

$$S_u = \frac{(q_t - \sigma_v)}{N_{kt}}$$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: Remolded undrained shear strength, Su(rem) (kPa) ::**

$S_{u(rem)} = f_s$ (applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: Overconsolidation Ratio, OCR ::**

$$k_{OCR} = \left[ \frac{Q_{tn}^{0.20}}{0.25 \cdot (10.50 \cdot +7 \cdot \log(F_r))} \right]^{1.25}$$ or user defined

$OCR = k_{OCR} \cdot Q_{tn}$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: In situ Stress Ratio, Ko ::**

$$K_O = (1 - \sin\varphi') \cdot OCR^{\sin\varphi'}$$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: Soil Sensitivity, $S_t$ ::**

$$S_t = \frac{N_S}{F_r}$$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: Effective Stress Friction Angle, φ' (°) ::**

$$\varphi' = 29.5° \cdot B_q^{0.121} \cdot (0.256 + 0.336 \cdot B_q + \log Q_t)$$

(applicable for $0.10 < B_q < 1.00$)

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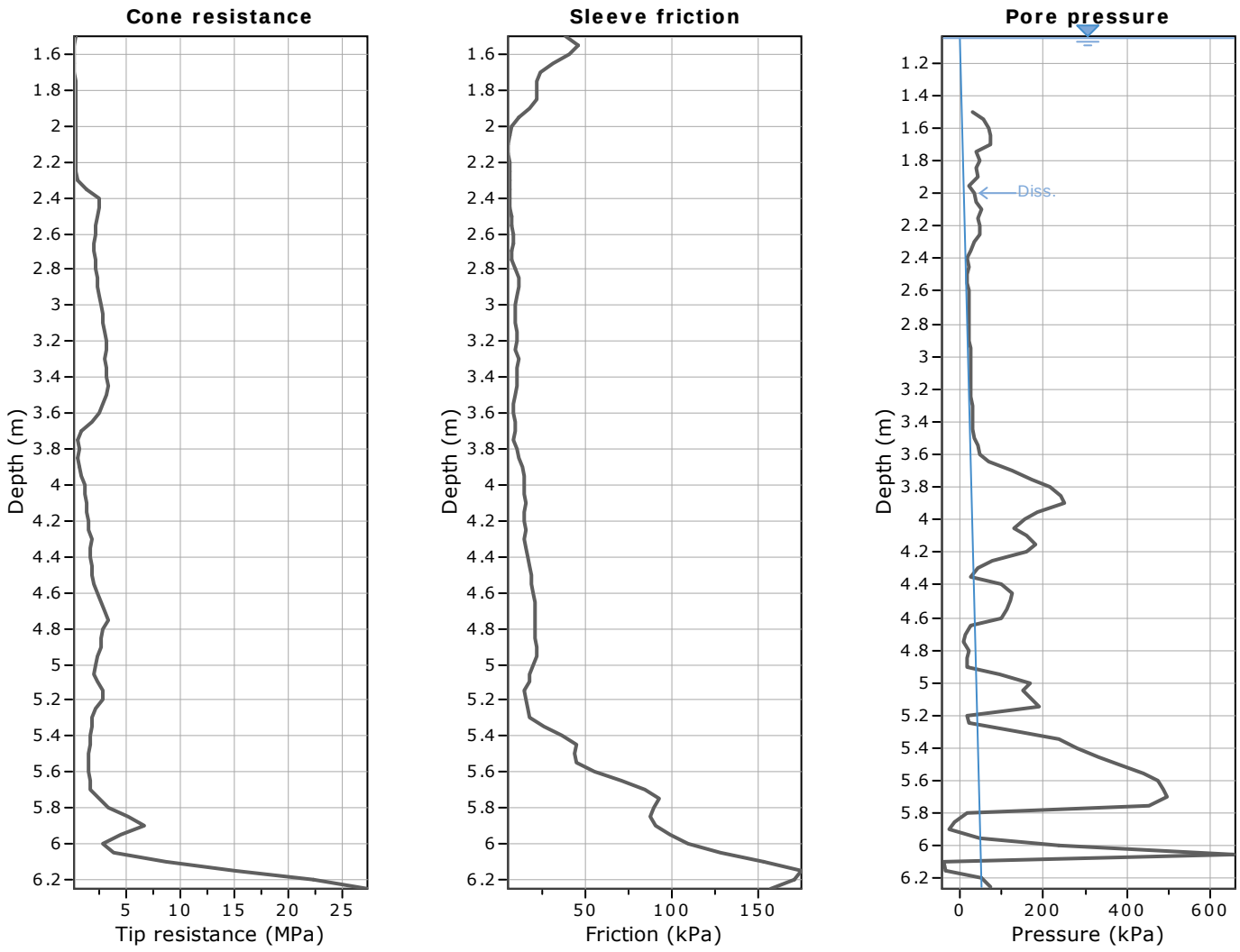


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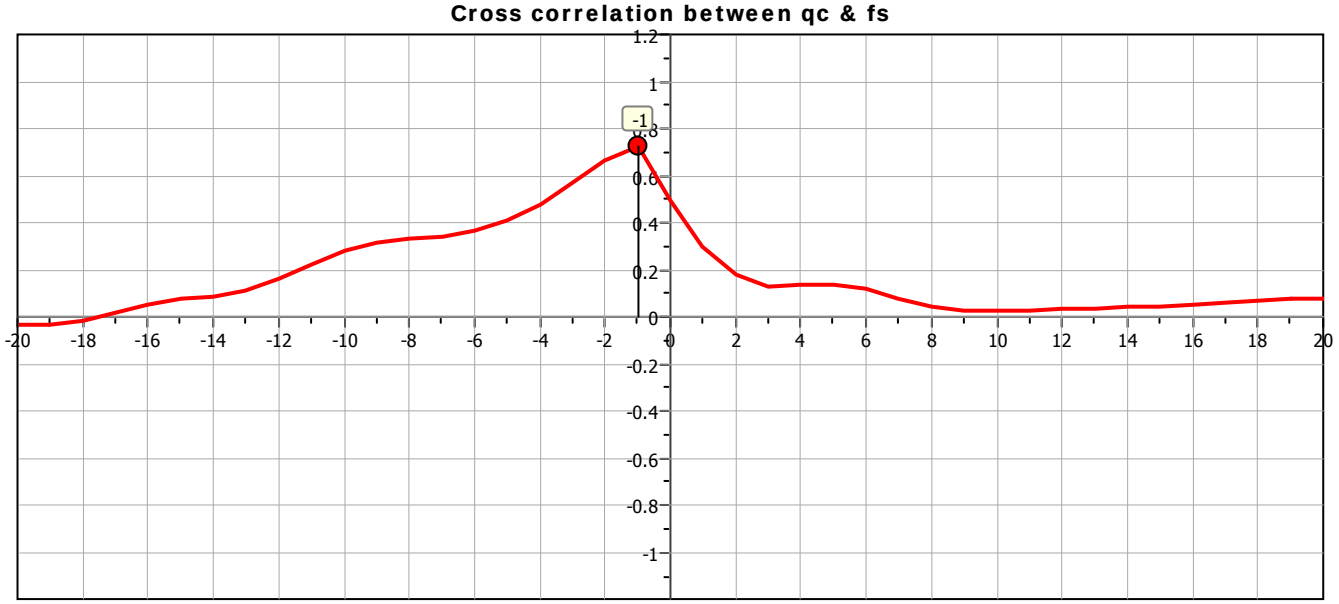

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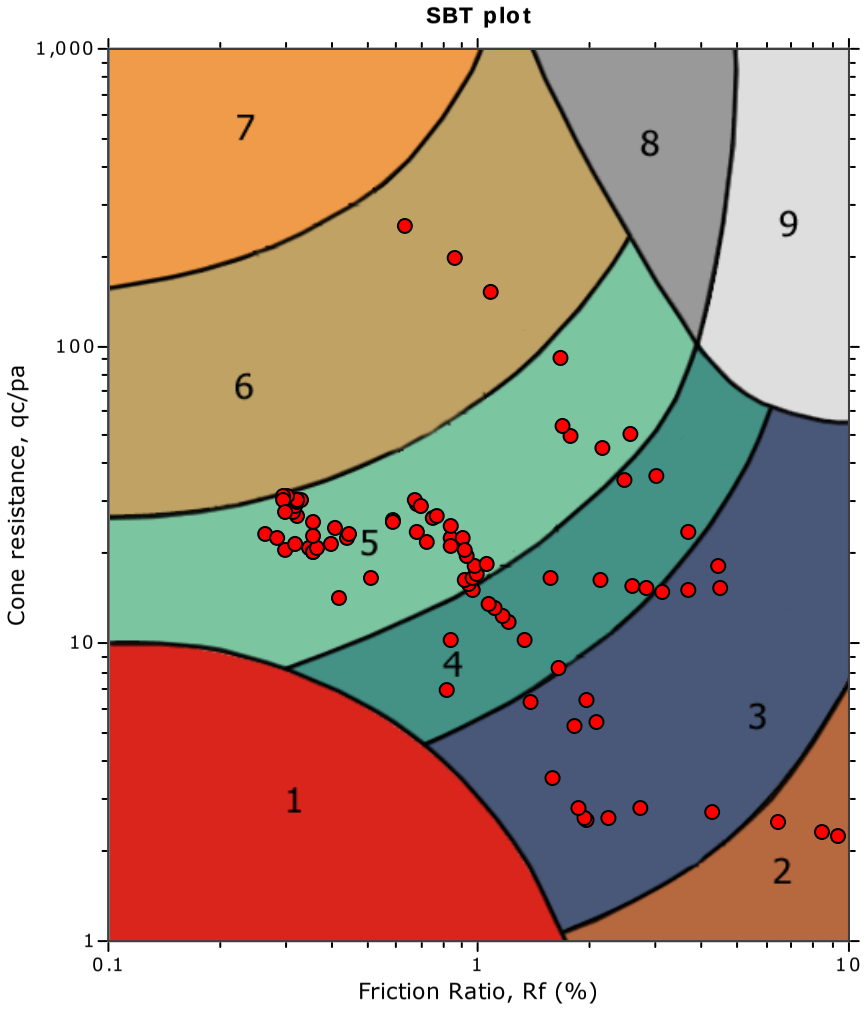


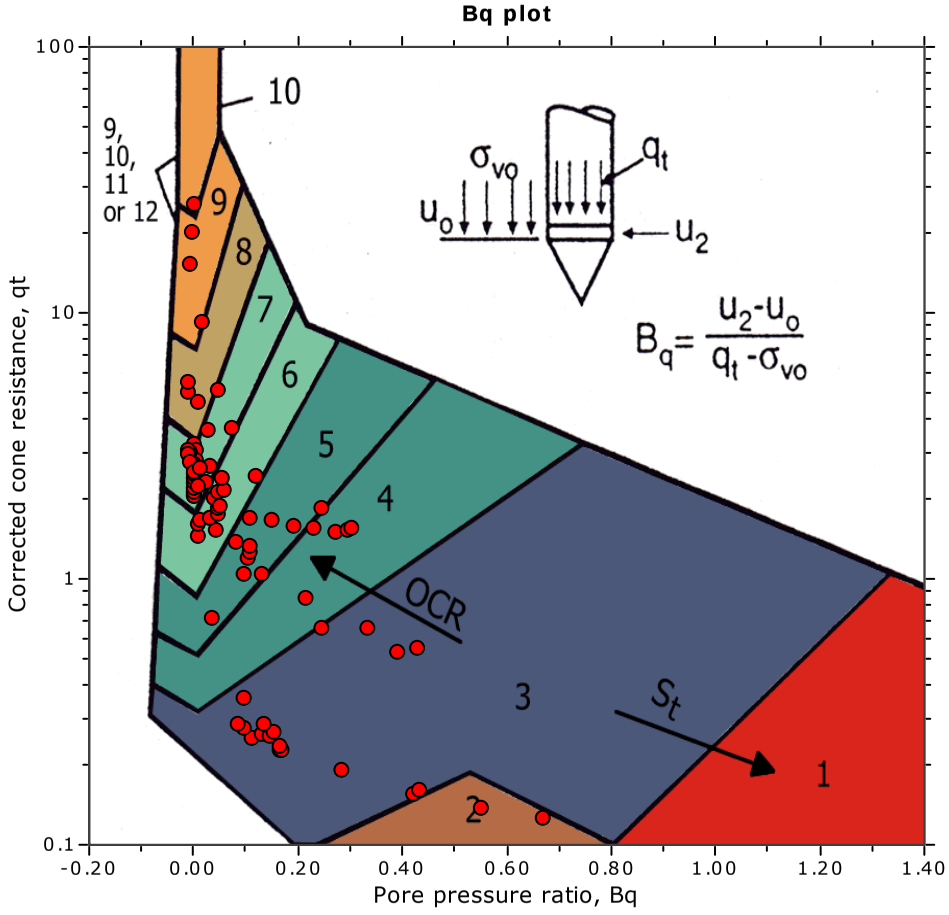


**SBT legend**

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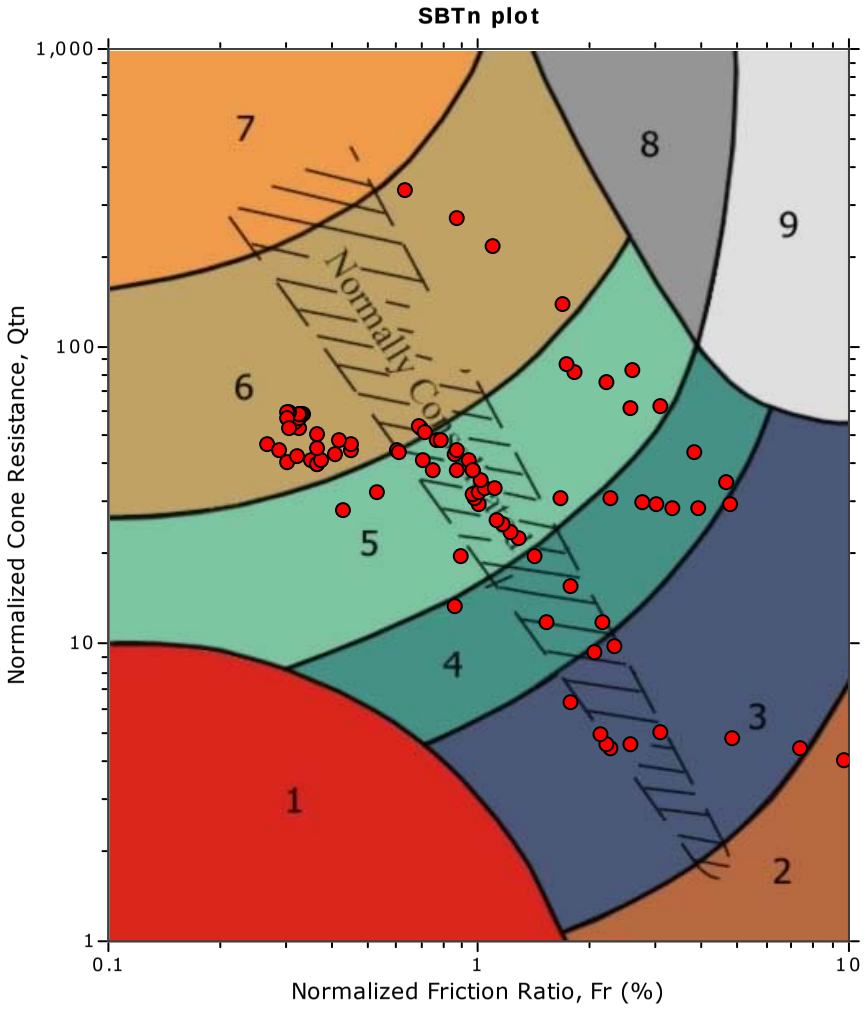


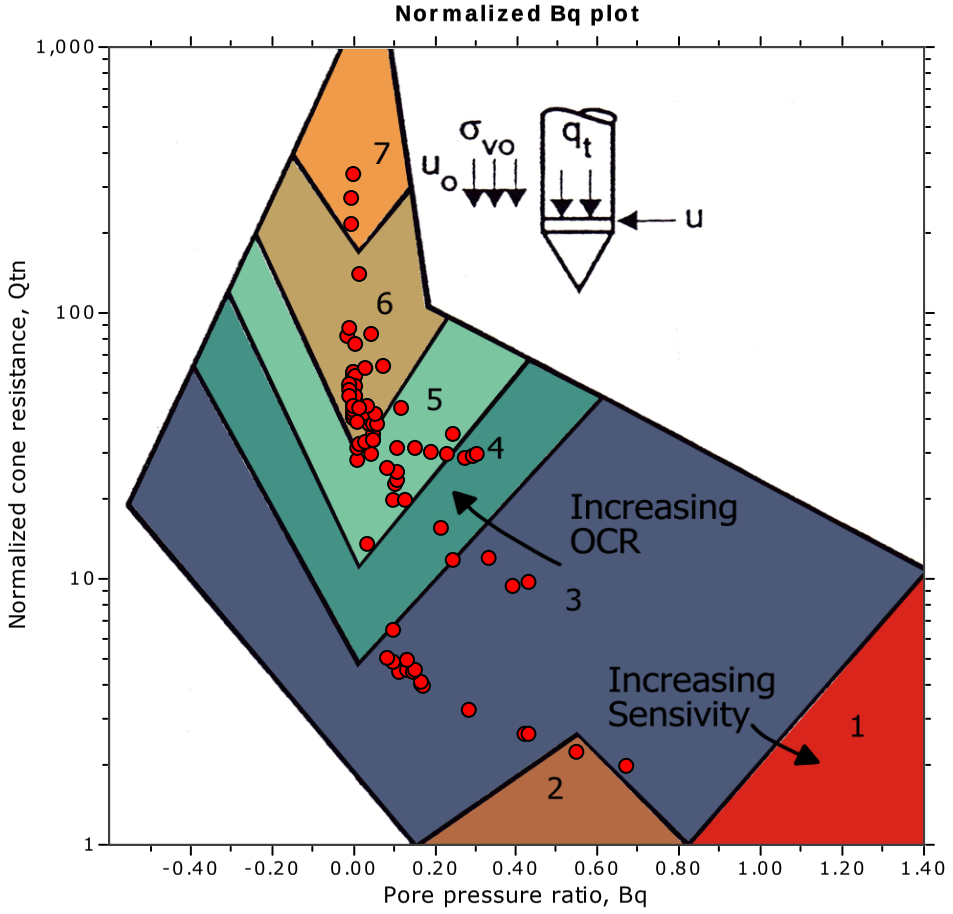


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| | | |
|---|---|---|
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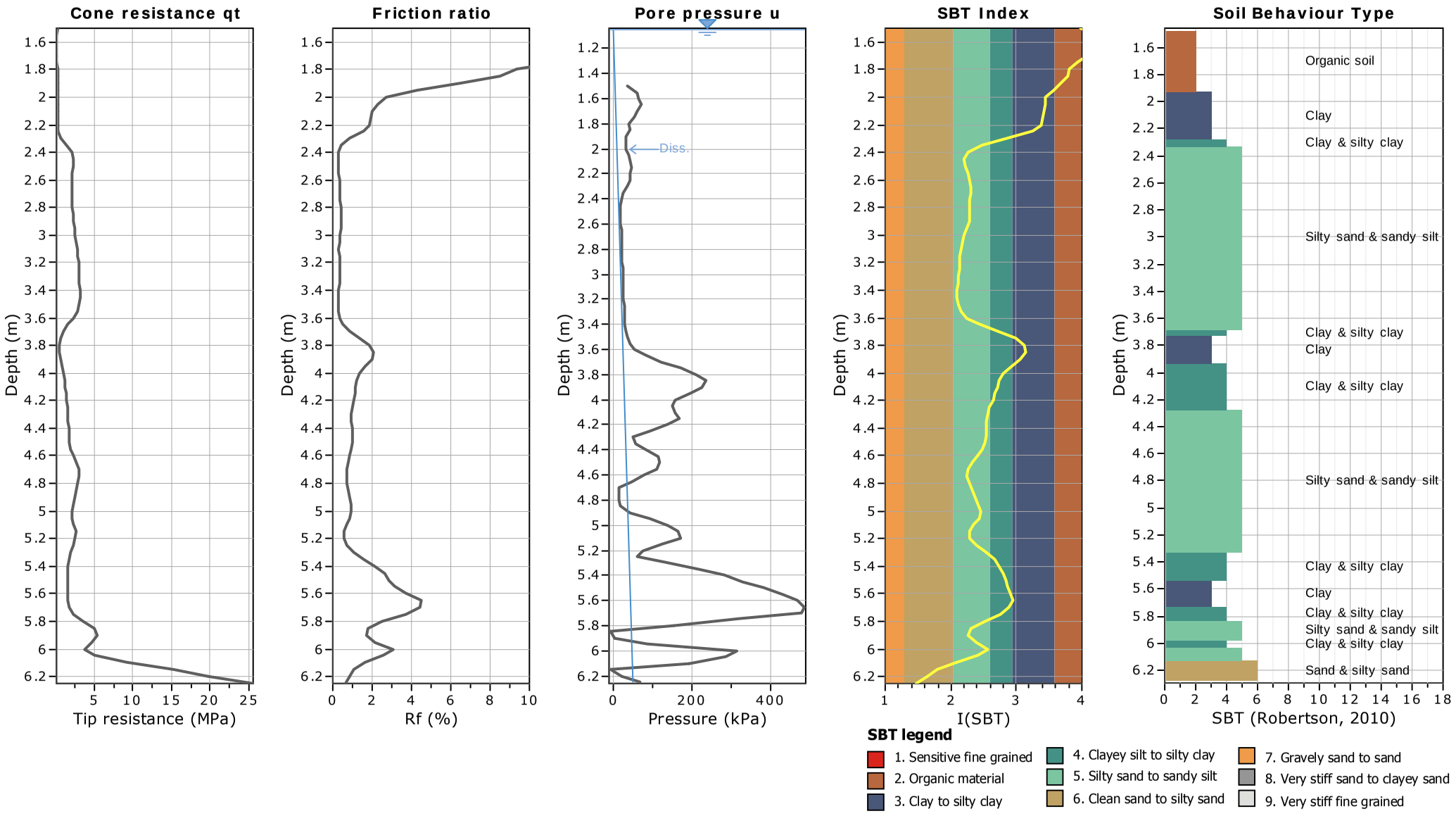

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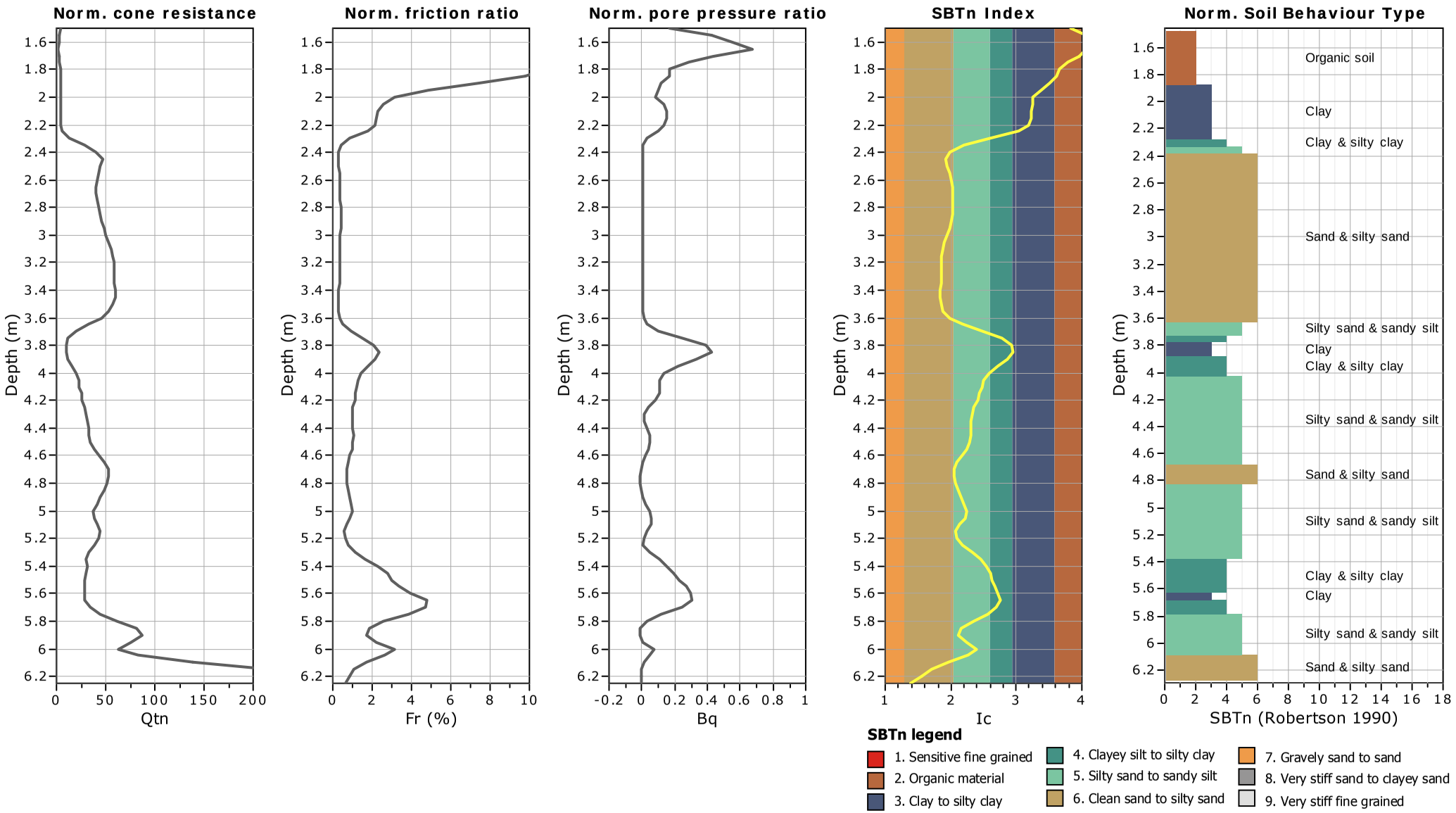

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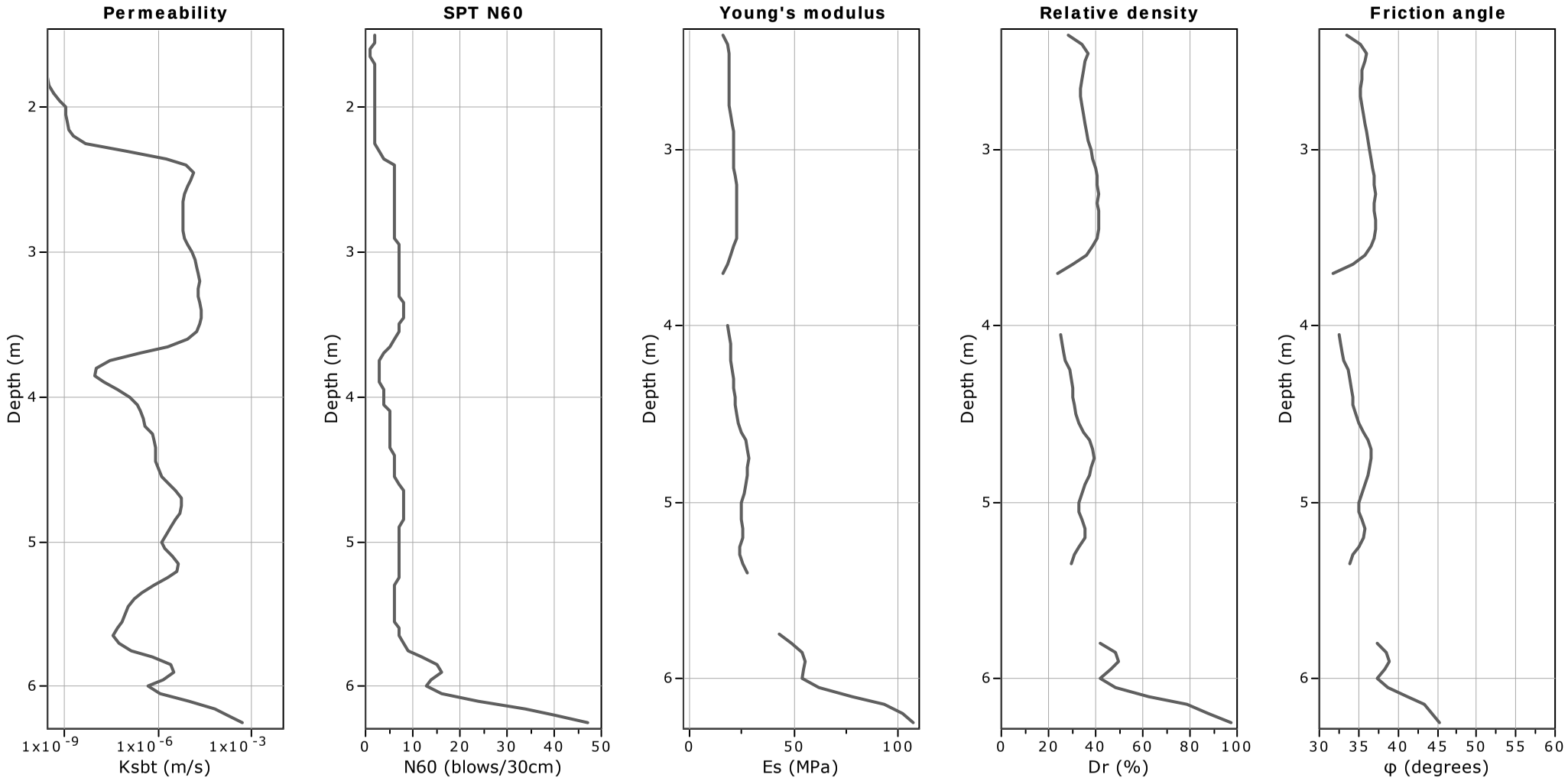
**Project:** **ENECON**
**Location:** **PRESIDENTE KENNEDY/ES - TRECHO 3.3**

**CPT: CPTU 02**
Total depth: 6.25 m, Date: 03/02/2015
Surface Elevation: 14.00 m
Coords: X:7654808.00, Y:286373.00
Cone Type: 100 kn
Cone Operator: Gelmo Batista




**Calculation parameters**

Permeability: Based on $SBT_n$
SPT $N_{60}$: Based on $I_c$ and $q_t$
Young's modulus: Based on variable alpha using $I_c$ (Robertson, 2009)
Relative desnisty constant, $C_{Dr}$: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

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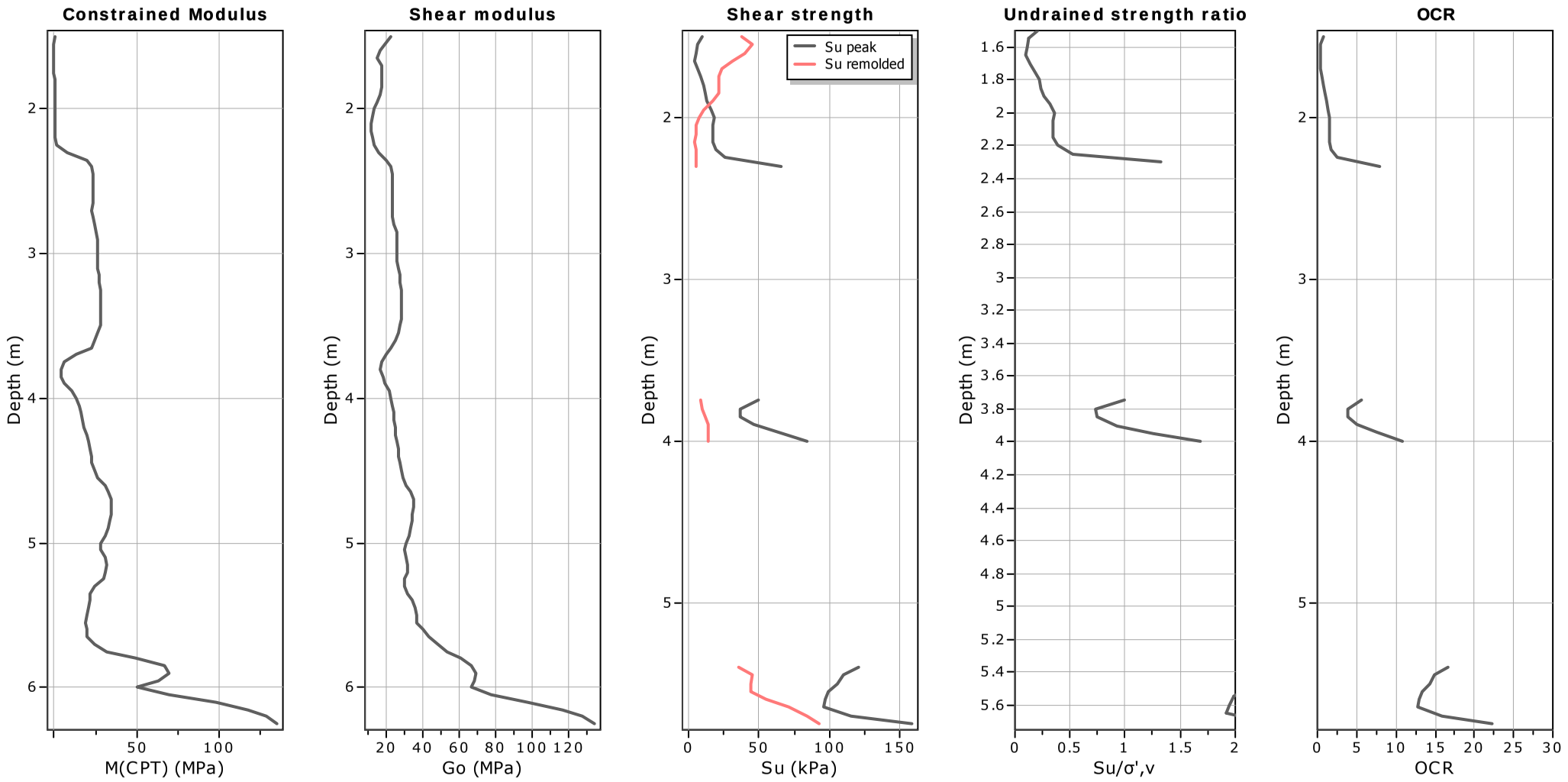


**Calculation parameters**
Constrained modulus: Based on variable *alpha* using $I_c$ and $Q_{tn}$ (Robertson, 2009)
Go: Based on variable *alpha* using $I_c$ (Robertson, 2009)
Undrained shear strength cone factor for clays, $N_{kt}$: Auto
OCR factor for clays, $N_{kt}$: Auto
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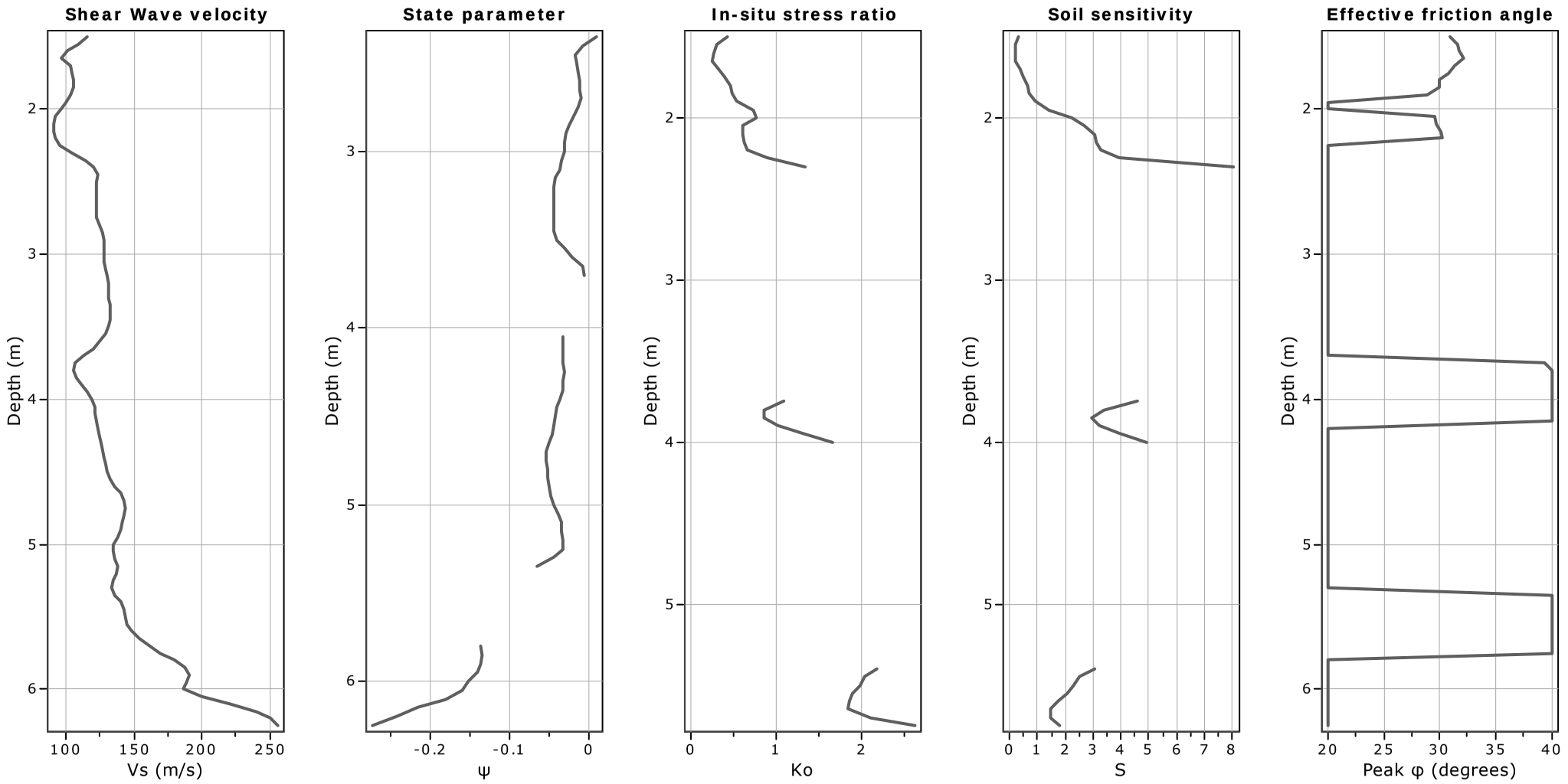


**Calculation parameters**

Soil Sensitivity factor, $N_S$: 7.00
User defined estimation data

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# Dissipation Tests Results

## Dissipation tests

Dissipation tests consists of stopping the piezocone penetration and observing porepressures (u) with elapsed time (t). The data are automatic recorded by the field computer and should take place until a minimum of 50% dissipation.

The porepressures are plotted as a function of square root of (t). The graphical technique suggested by Robertson and Campanella (1989), yields a value for $t_{50}$, which corresponds to the time for 50% consolidation.

The value of the coefficient of consolidation in the radial or horizontal direction $c_h$ was then calculated by Houlsby and Teh's (1988) theory using the following equation:

$$c_h = \frac{T \times r^2 \times I_r^{0.5}}{t_{50}}$$

where:

T: time factor given by Houlsby and Teh's (1988) theory corresponding to the porepressure position
r: piezocone radius
$I_r$: stiffness index, equal to shear modulus G divided by the undrained strength of clay ($S_u$).
$t_{50}$: time corresponding to 50% consolidation

## Permeability estimates based on dissipation test

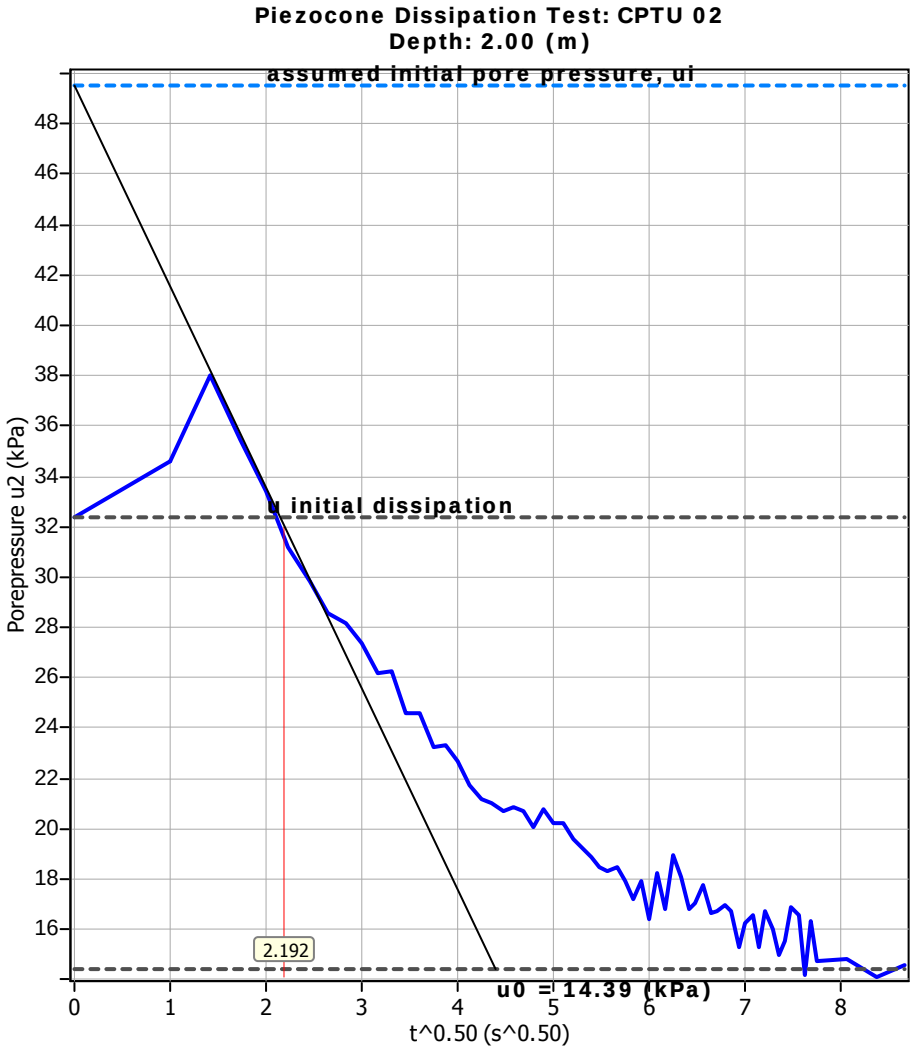
The dissipation of pore pressures during a CPTu dissipation test is controlled by the coefficient of consolidation in the horizontal direction ($c_h$) which is influenced by a combination of the soil permeability ($k_h$) and compressibility (M), as defined by the following:

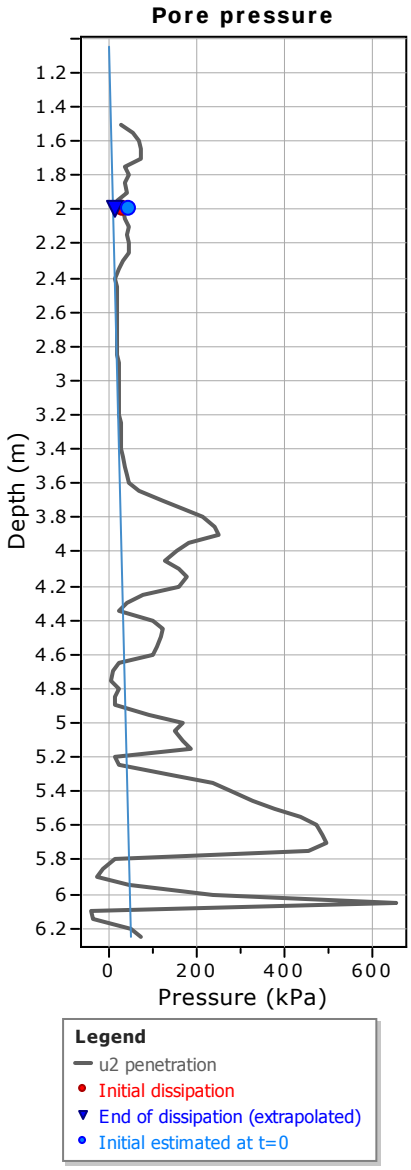
$$k_h = c_h \times \gamma_w / M$$

where: M is the 1-D constrained modulus and $\gamma_w$ is the unit weight of water, in compatible units.

**Tabular results**

| CPTU Borehole | Depth (m) | $(t_{50})^{0.50}$ | $t_{50}$ (s) | $t_{50}$ (years) | $G/S_u$ | $c_h$ ($m^2/s$) | $c_h$ ($m^2$/year) | M (MPa) | $k_h$ (m/s) |
|---|---|---|---|---|---|---|---|---|---|
| CPTU 02 | 2.00 | 2.2 | 5 | 1.52E-007 | 841.31 | 4.95E-004 | 15619 | 1.20 | 4.06E-006 |


Piezocone Dissipation Test: CPTU 02
Depth: 2.00 (m)
assumed initial pore pressure, ui
u initial dissipation
u0 = 14.39 (kPa)
2.192
Porepressure u2 (kPa)
t^0.50 (s^0.50)


Pore pressure
Depth (m)
Pressure (kPa)
Legend
u2 penetration
Initial dissipation
End of dissipation (extrapolated)
Initial estimated at t=0

Presented below is a list of formulas used for the estimation of various soil properties. The formulas are presented in SI unit system and assume that all components are expressed in the same units.

**:: Unit Weight, g (kN/m³) ::**

$$g = g_w \cdot \left( 0.27 \cdot \log(R_f) + 0.36 \cdot \log(\frac{q_t}{p_a}) + 1.236 \right)$$

where $g_w$ = water unit weight

**:: Permeability, k (m/s) ::**

$I_c < 3.27$ and $I_c > 1.00$ then $k = 10^{0.952-3.04 \cdot I_c}$

$I_c \leq 4.00$ and $I_c > 3.27$ then $k = 10^{-4.52-1.37 \cdot I_c}$

**:: $N_{SPT}$ (blows per 30 cm) ::**

$$N_{60} = \left( \frac{q_c}{P_a} \right) \cdot \frac{1}{10^{1.1268-0.2817 \cdot I_c}}$$

$$N_{1(60)} = Q_{tn} \cdot \frac{1}{10^{1.1268-0.2817 \cdot I_c}}$$

**:: Young's Modulus, Es (MPa) ::**

$$(q_t - \sigma_v) \cdot 0.015 \cdot 10^{0.55 \cdot I_c + 1.68}$$

(applicable only to $I_c < I_{c\_cutoff}$)

**:: Relative Density, Dr (%) ::**

$$100 \cdot \sqrt{\frac{Q_{tn}}{k_{DR}}}$$ (applicable only to $SBT_n$: 5, 6, 7 and 8 or $I_c < I_{c\_cutoff}$)

**:: State Parameter, ψ ::**

$$\psi = 0.56 - 0.33 \cdot \log(Q_{tn,cs})$$

**:: Peak drained friction angle, φ (°) ::**

$$\varphi = 17.60 + 11 \cdot \log(Q_{tn})$$

(applicable only to $SBT_n$: 5, 6, 7 and 8)

**:: 1-D constrained modulus, M (MPa) ::**

If $I_c > 2.20$

$\alpha = 14$ for $Q_{tn} > 14$

$\alpha = Q_{tn}$ for $Q_{tn} \leq 14$

$$M_{CPT} = \alpha \cdot (q_t - \sigma_v)$$

**:: Small strain shear Modulus, Go (MPa) ::**

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

**:: Shear Wave Velocity, Vs (m/s) ::**

$$V_s = \left( \frac{G_0}{\rho} \right)^{0.50}$$

**:: Undrained peak shear strength, Su (kPa) ::**

$N_{kt} = 10.50 + 7 \cdot \log(F_r)$ or user defined

$$S_u = \frac{(q_t - \sigma_v)}{N_{kt}}$$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: Remolded undrained shear strength, Su(rem) (kPa) ::**

$S_{u(rem)} = f_s$ (applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: Overconsolidation Ratio, OCR ::**

$$k_{OCR} = \left[ \frac{Q_{tn}^{0.20}}{0.25 \cdot (10.50 \cdot + 7 \cdot \log(F_r))} \right]^{1.25}$$ or user defined

$OCR = k_{OCR} \cdot Q_{tn}$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: In situ Stress Ratio, Ko ::**

$$K_O = (1 - \sin\varphi') \cdot OCR^{\sin\varphi'}$$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: Soil Sensitivity, $S_t$ ::**

$$S_t = \frac{N_S}{F_r}$$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: Effective Stress Friction Angle, φ' (°) ::**

$$\varphi' = 29.5° \cdot B_q^{0.121} \cdot (0.256 + 0.336 \cdot B_q + \log Q_t)$$

(applicable for $0.10 < B_q < 1.00$)

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Coords: X:7654796.00, Y:286382.00
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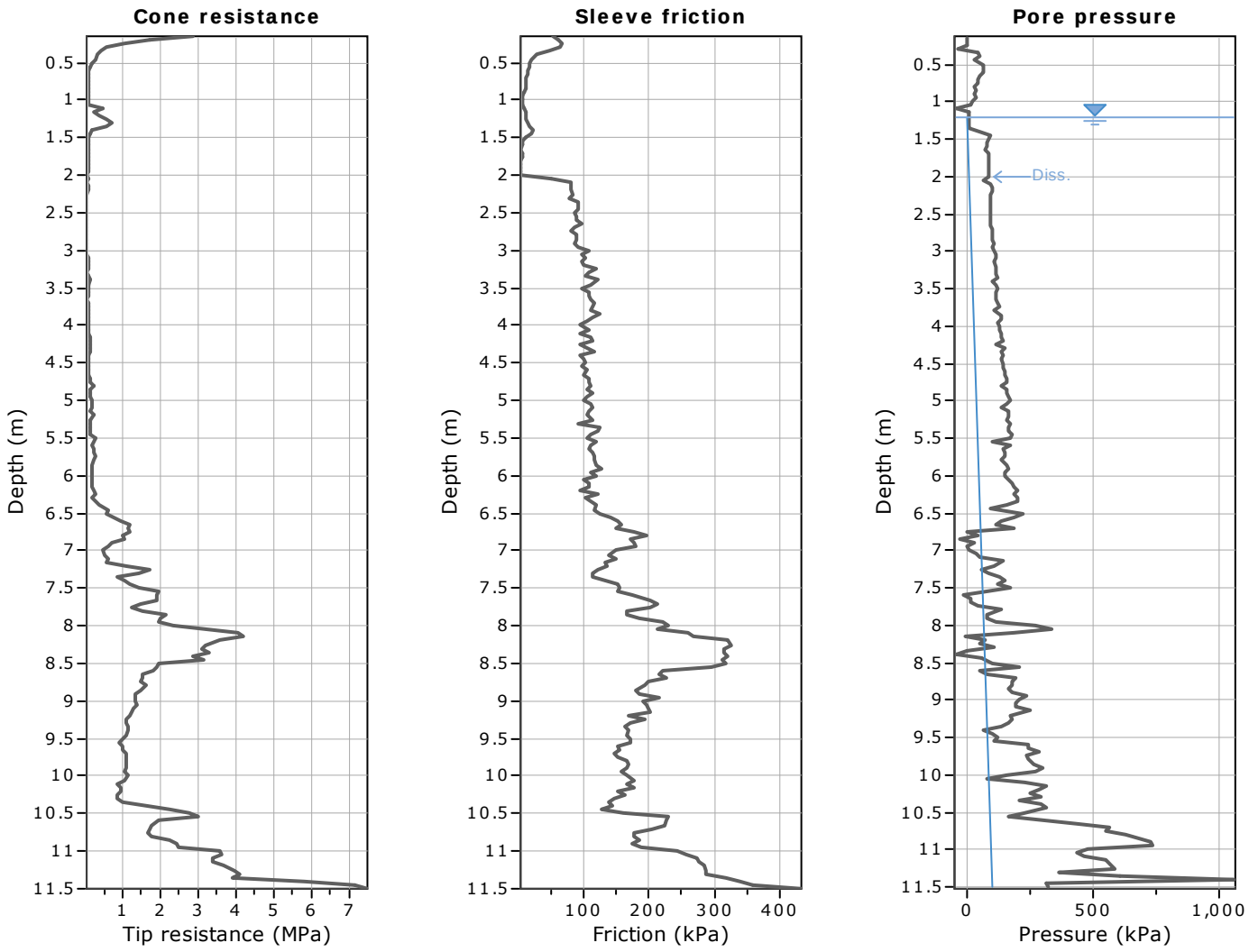
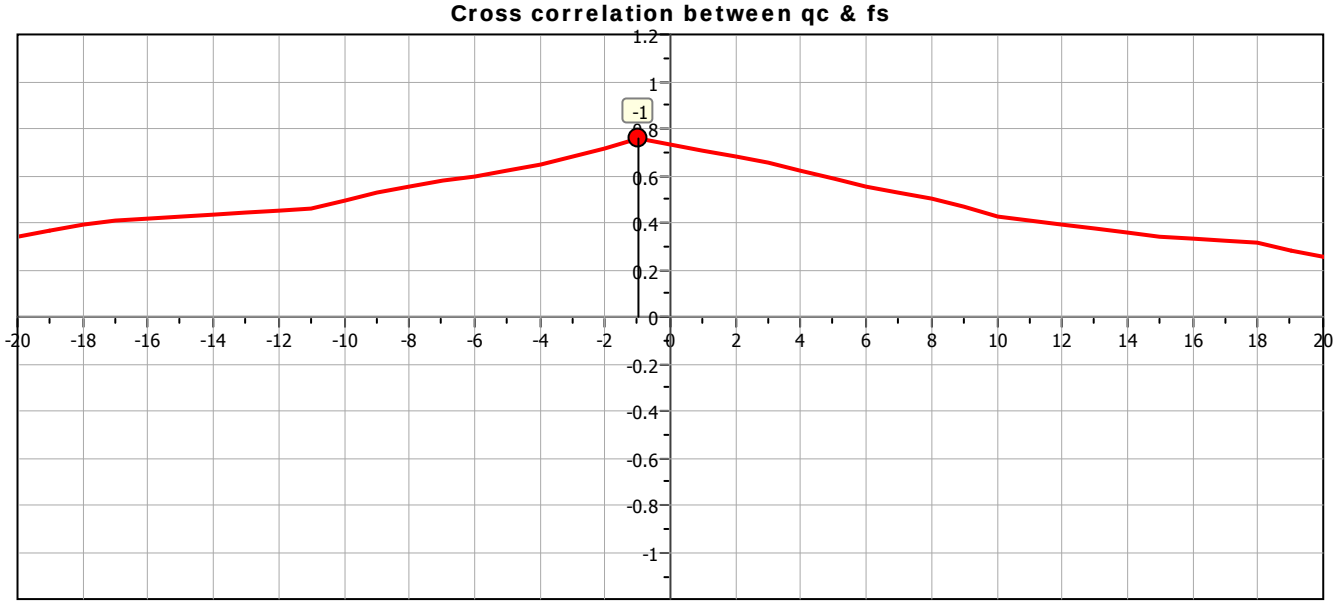



The plot below presents the cross correlation coeficient between the raw qc and fs values (as measured on the field). X axes presents the lag distance (one lag is the distance between two sucessive CPT measurements).



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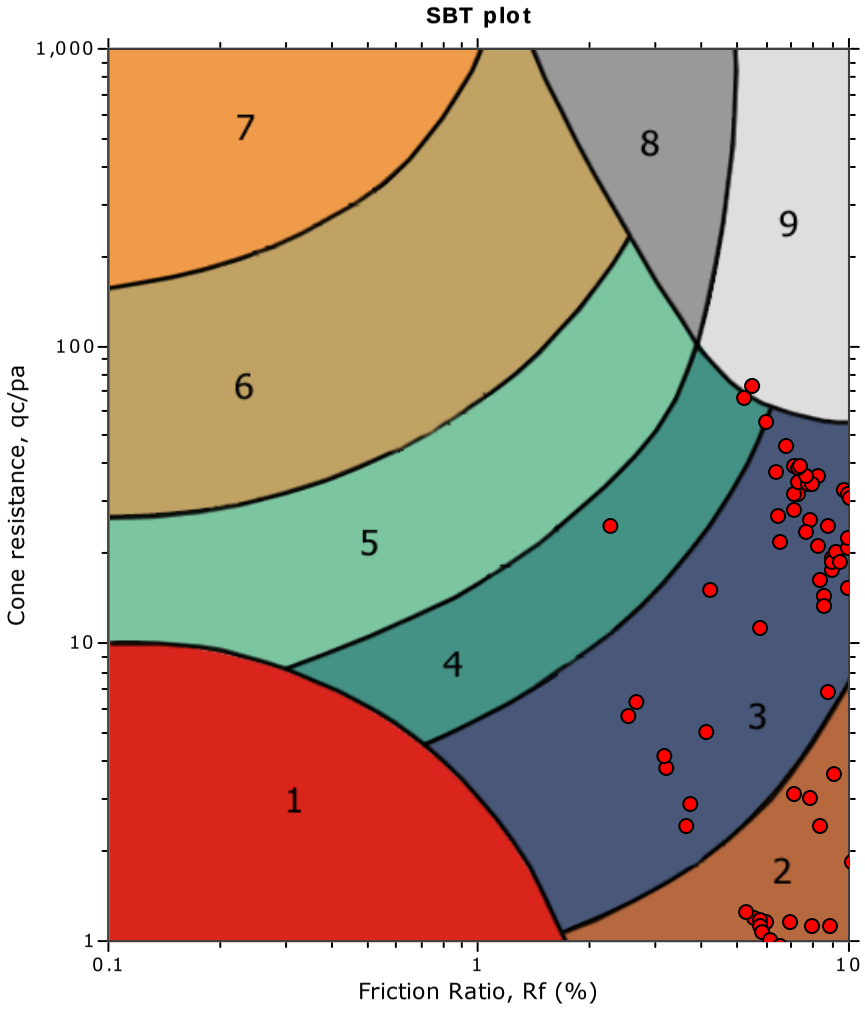
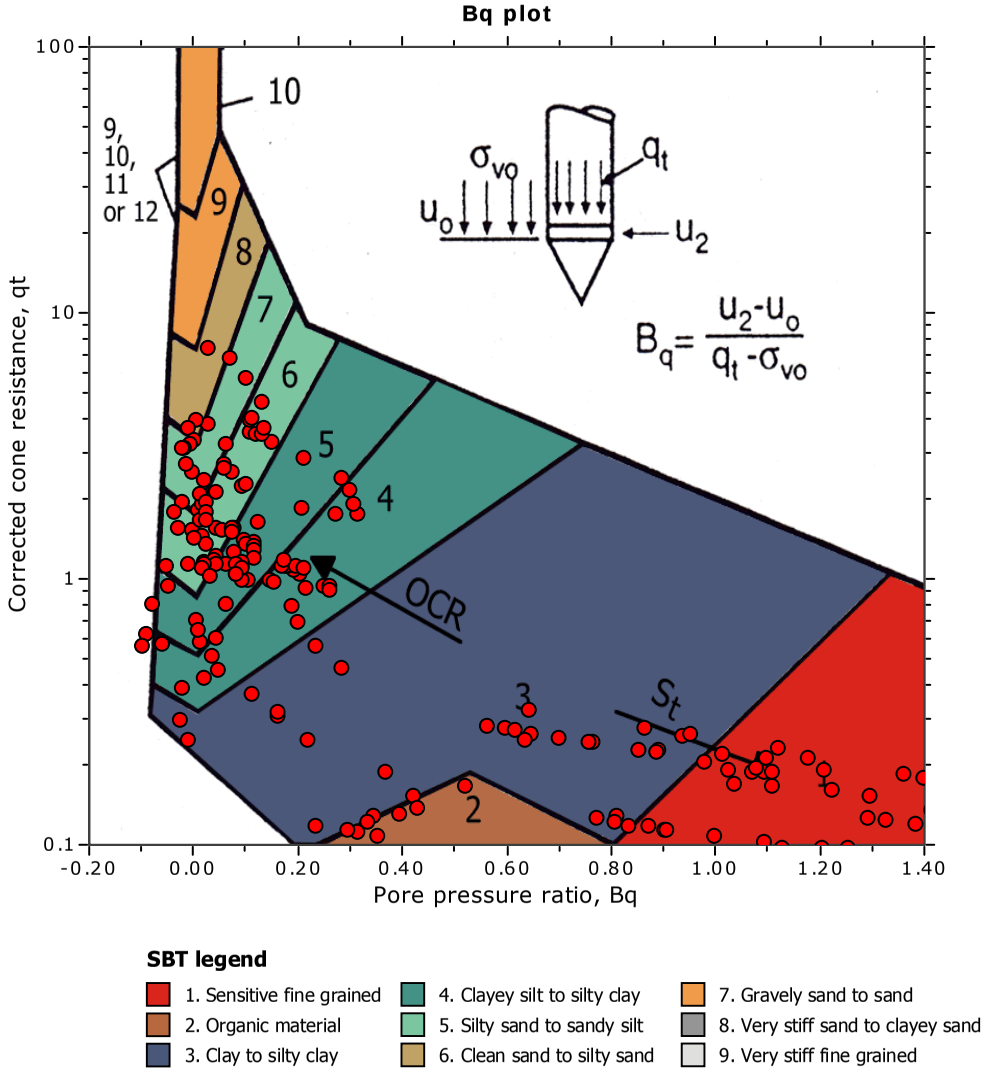
## SBT - Bq plots




**SBT legend**

| | | |
|---|---|---|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
| 3. Clay to silty clay | 6. Clean sand to silty sand | 9. Very stiff fine grained |

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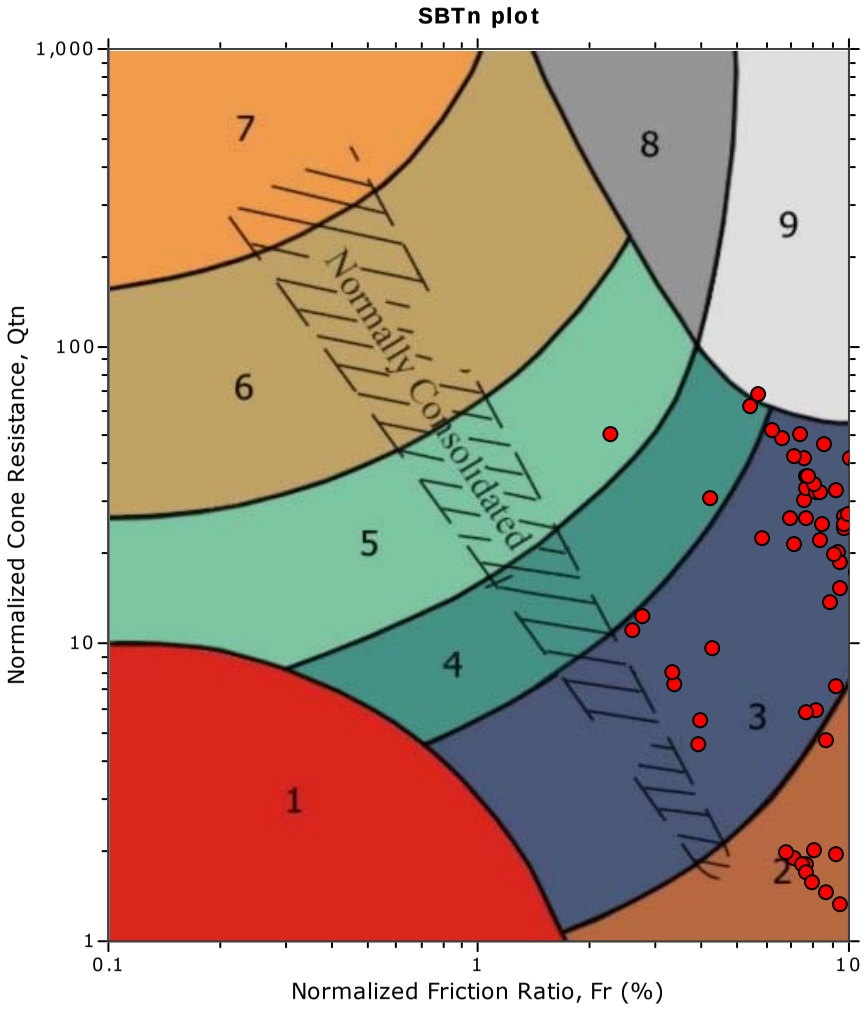
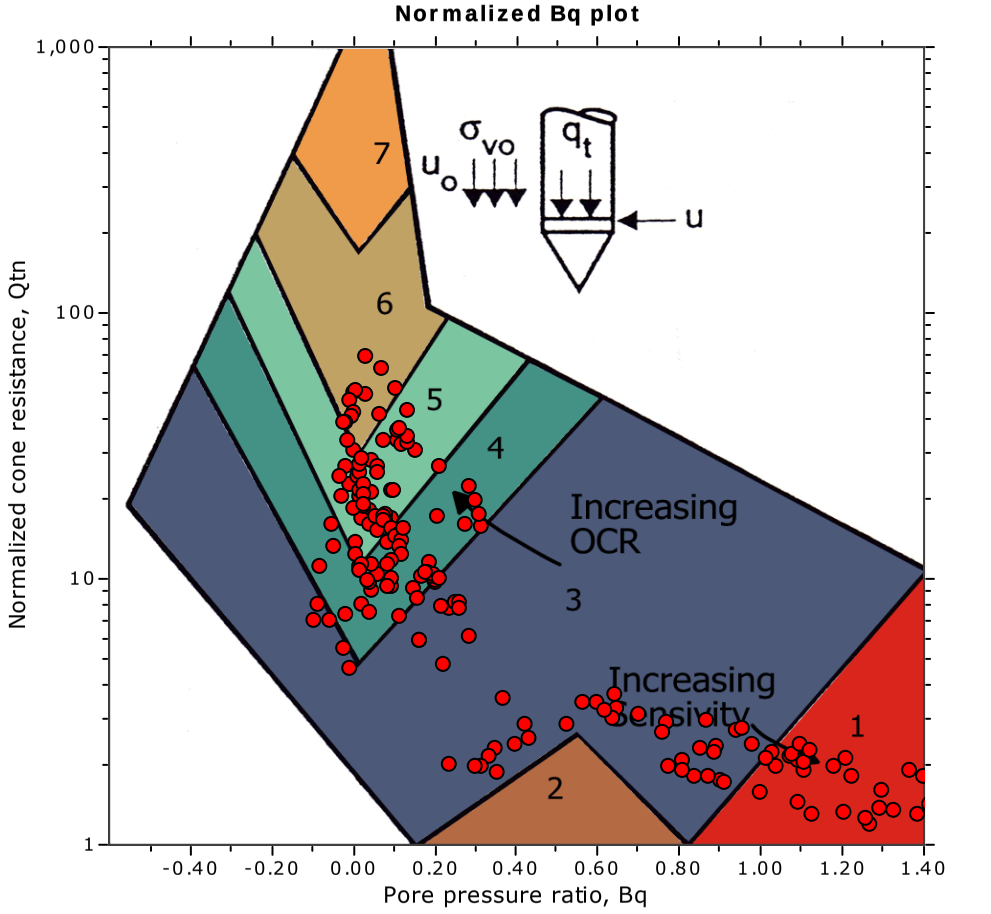
## SBT - Bq plots (normalized)




**SBTn legend**

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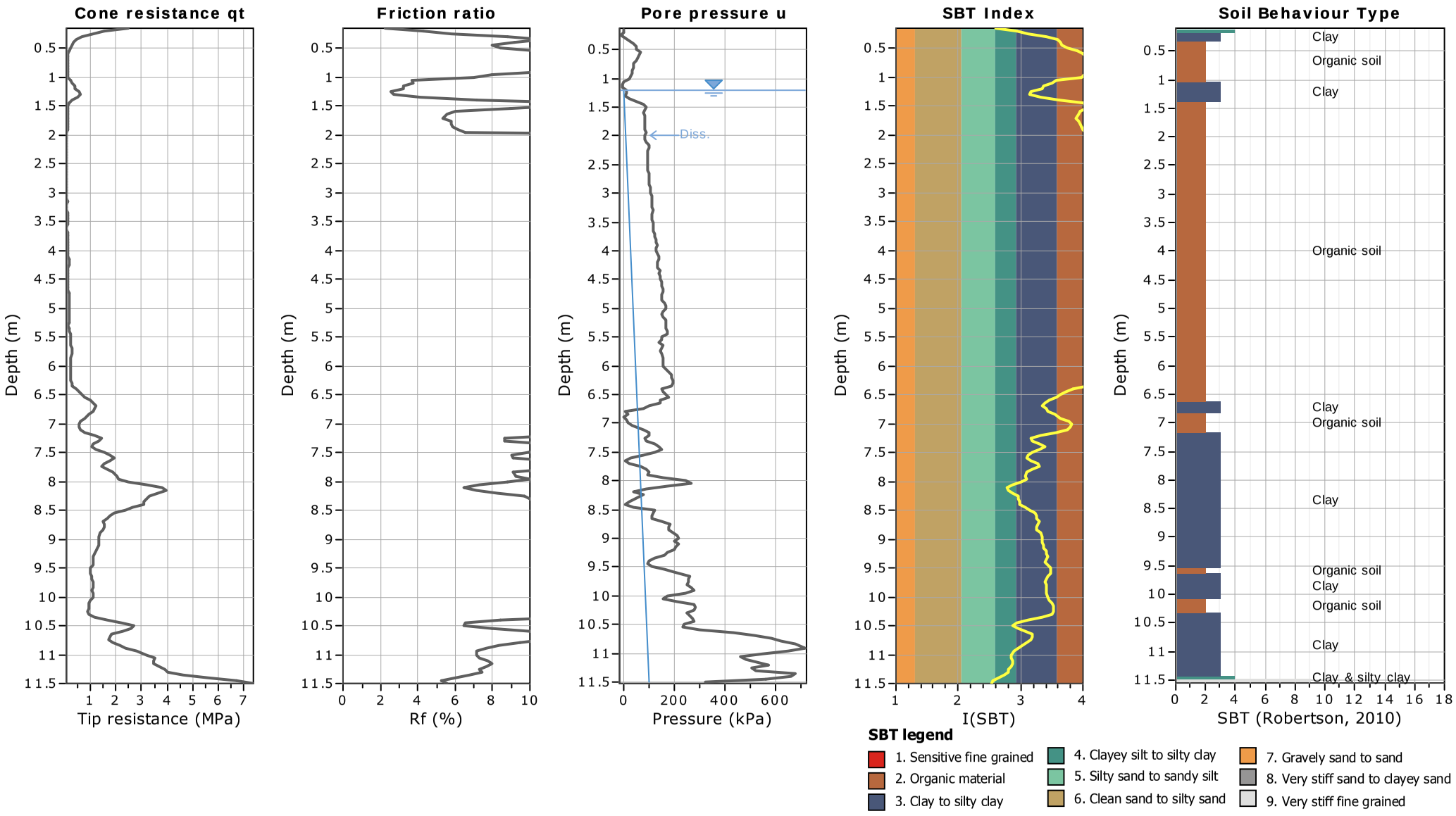

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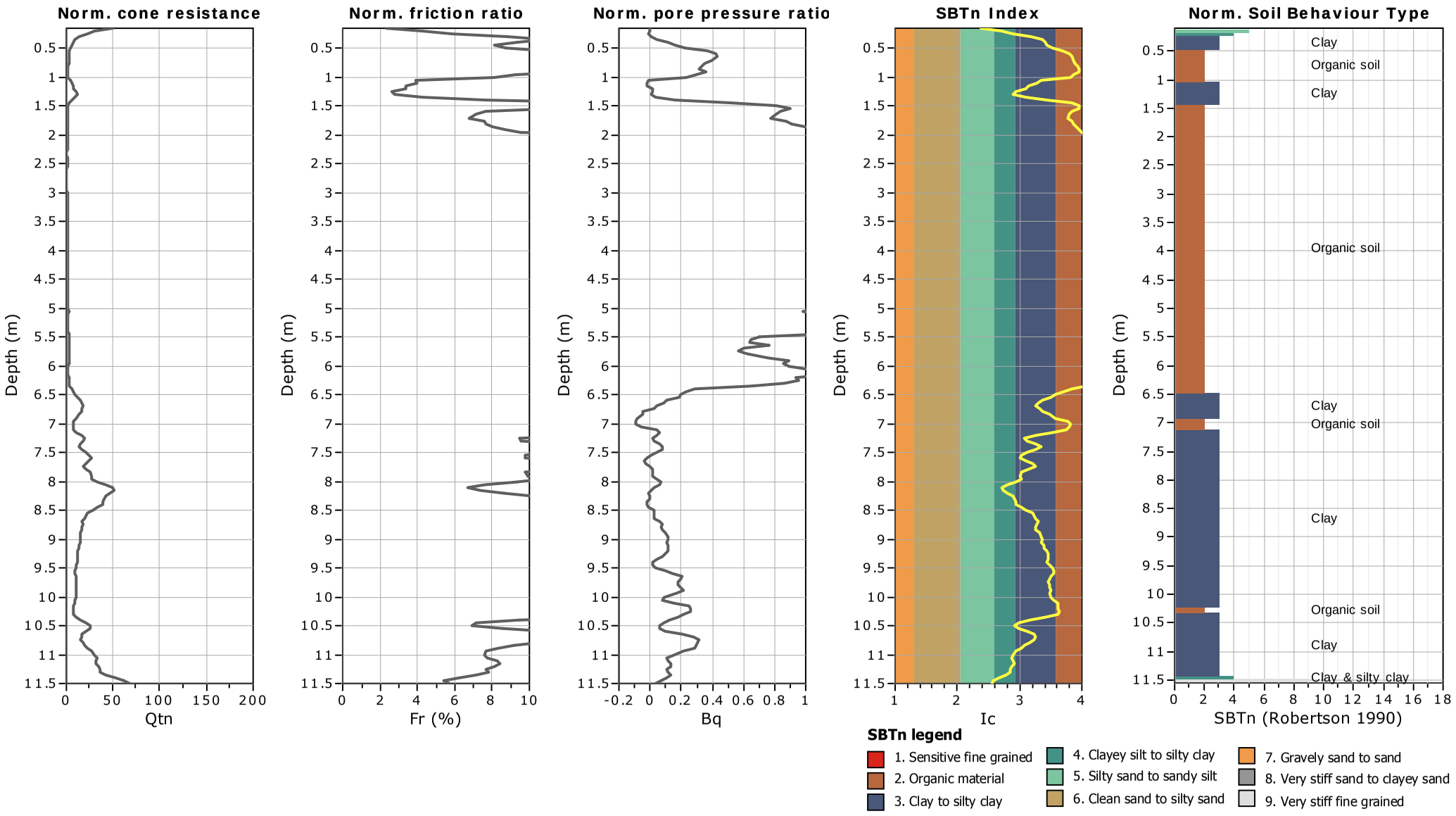

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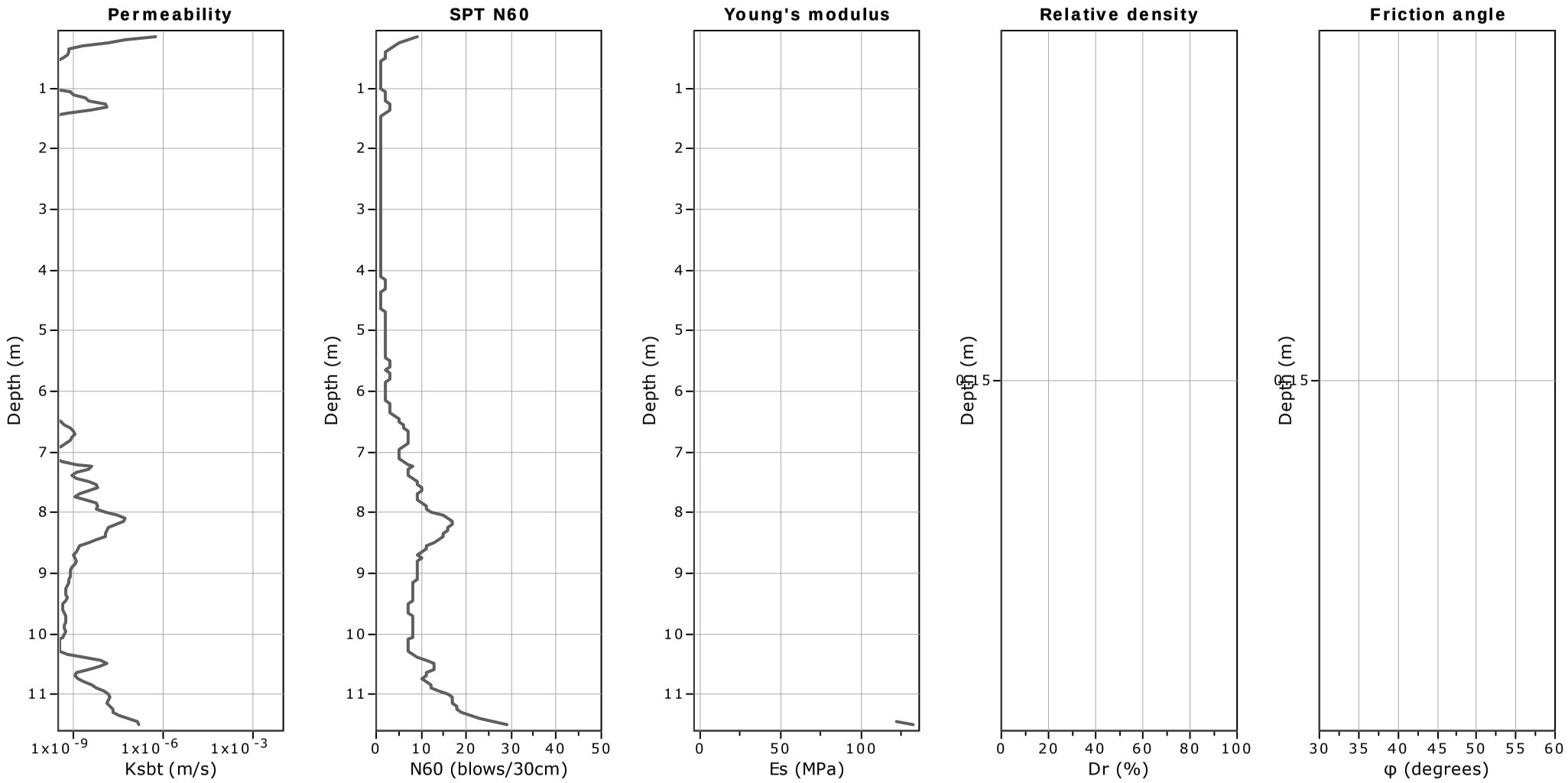


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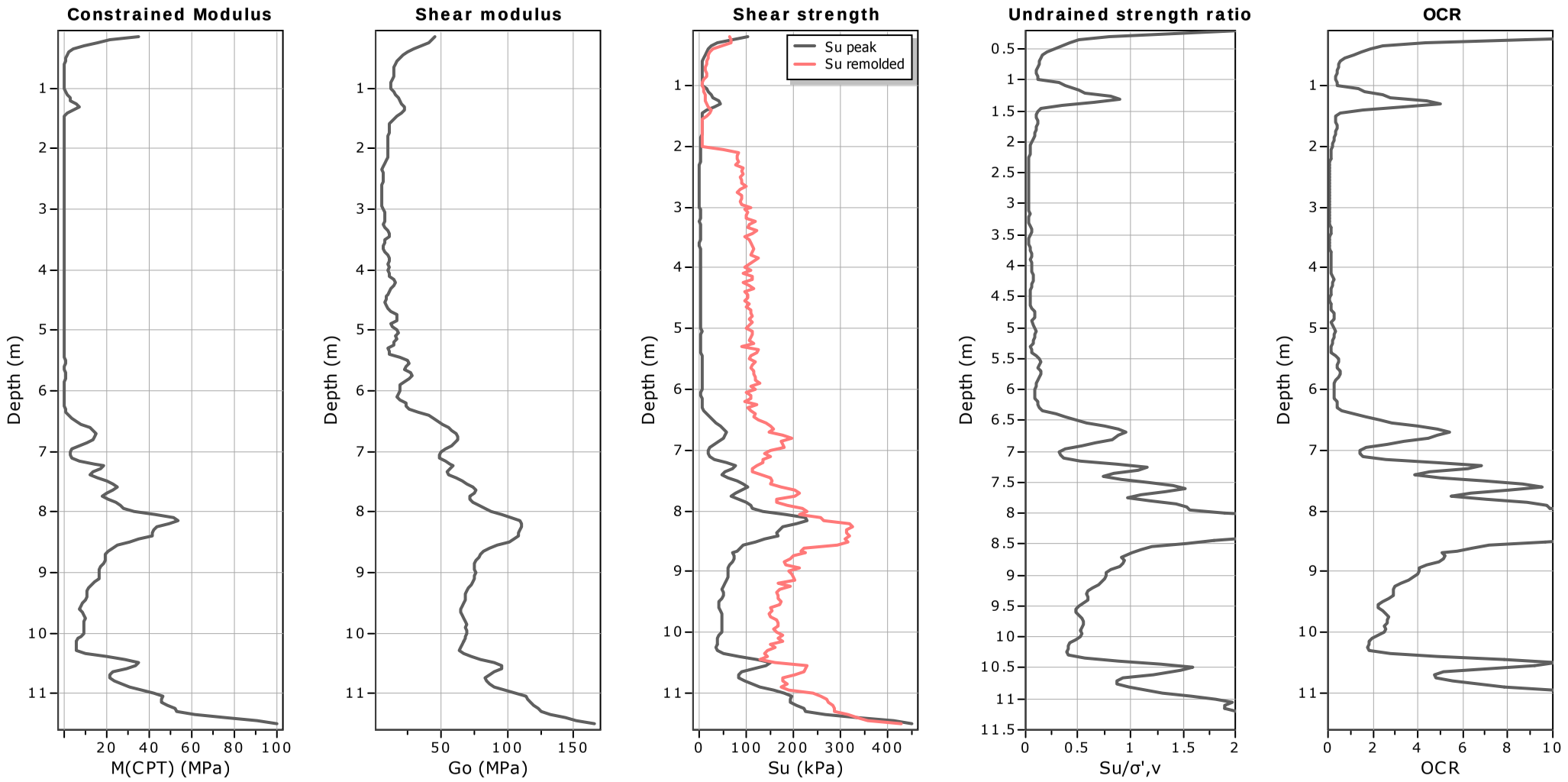


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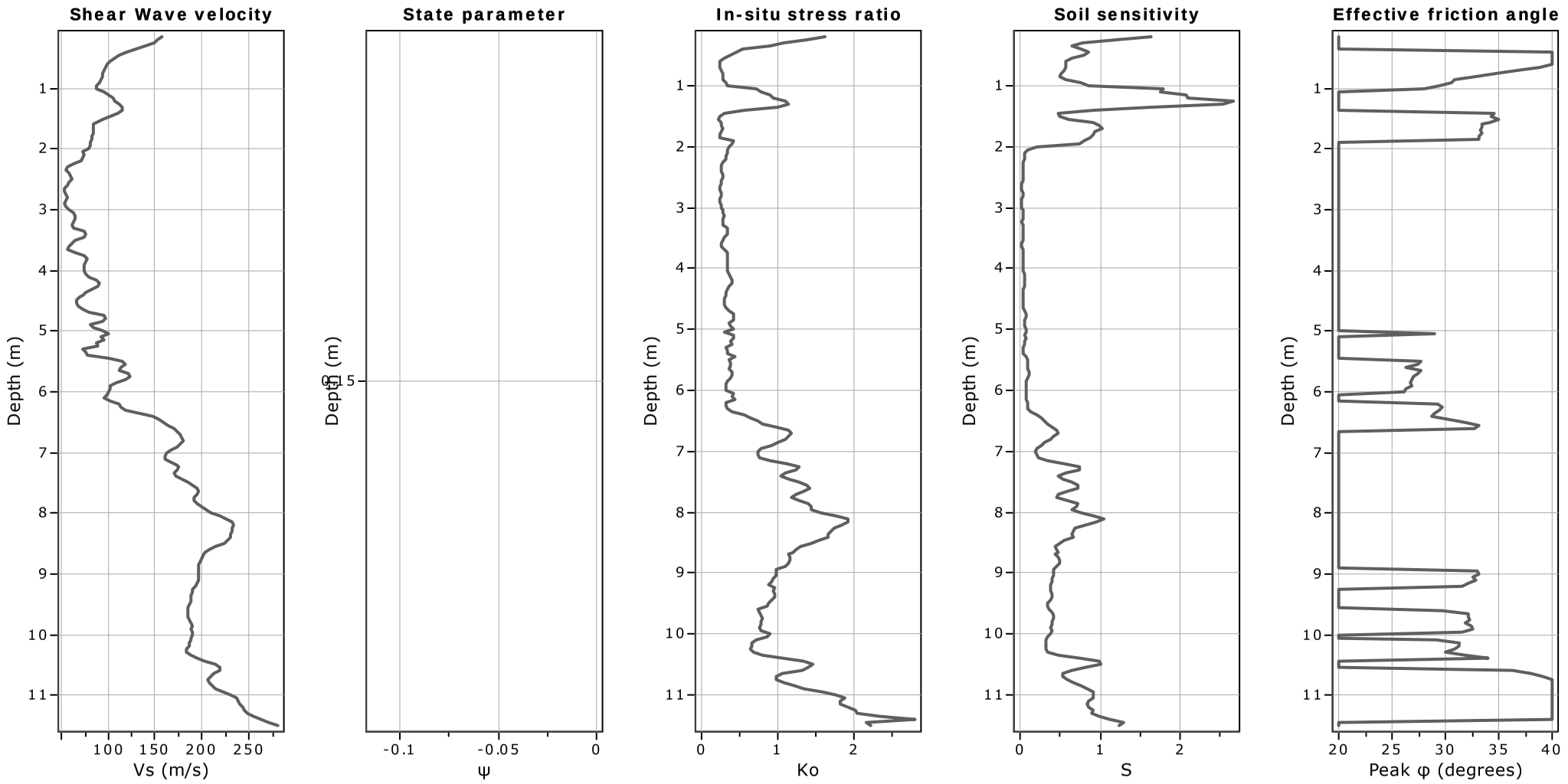


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**Tabular results**

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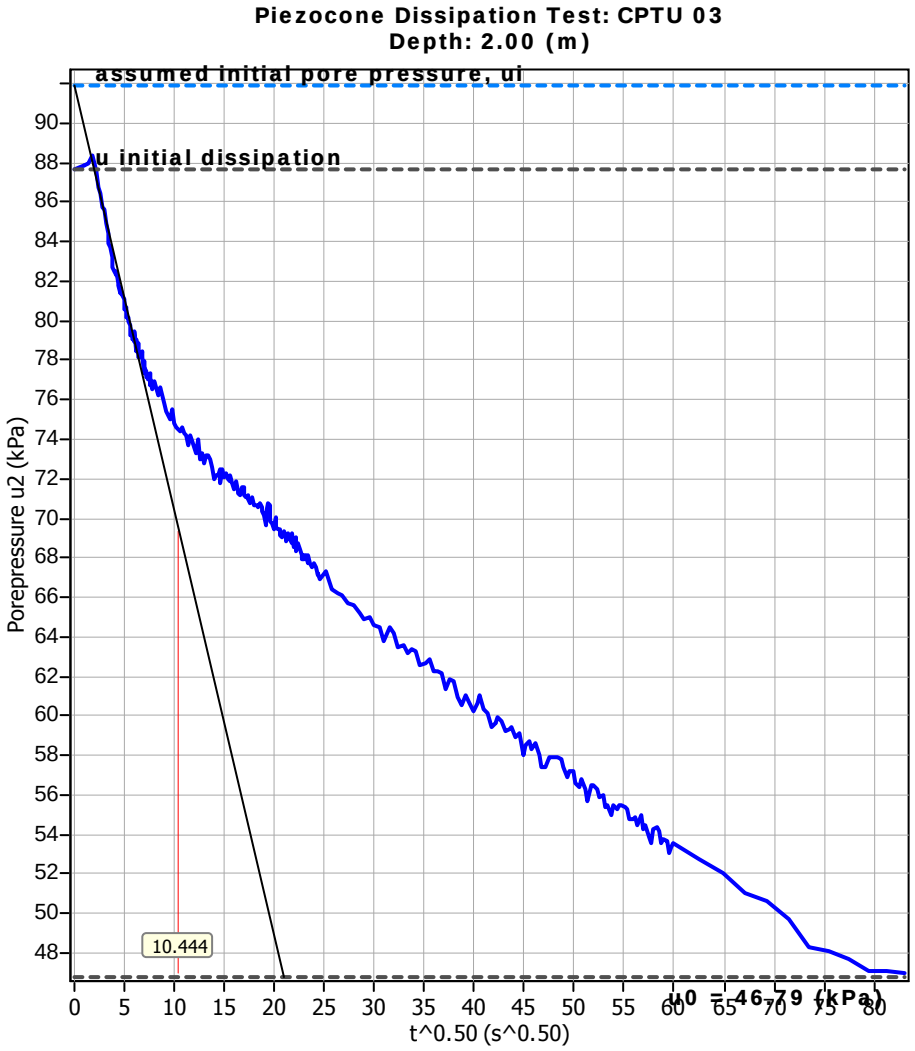
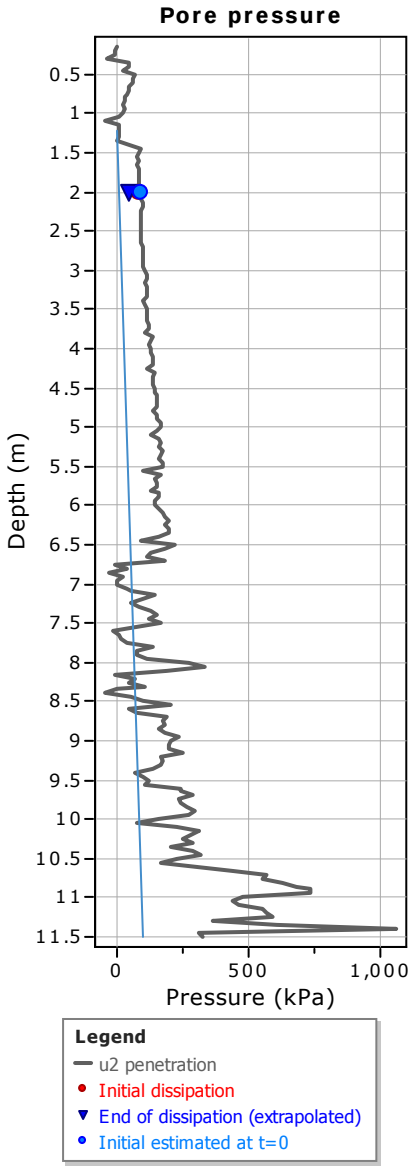
|---|---|---|---|---|---|---|---|---|---|
| CPTU 03 | 2.00 | 10.4 | 109 | 3.46E-006 | 2154.20 | 3.49E-005 | 1101 | 0.07 | 4.66E-006 |


Piezocone Dissipation Test: CPTU 03
Depth: 2.00 (m)
assumed initial pore pressure, ui
u initial dissipation
10.444
u0 = 46.79 (kPa)
Porepressure u2 (kPa)
t^0.50 (s^0.50)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(applicable only to $I_c < I_{c\_cutoff}$)

**:: Relative Density, Dr (%) ::**

$$100 \cdot \sqrt{\frac{Q_{tn}}{k_{DR}}}$$ (applicable only to $SBT_n$: 5, 6, 7 and 8 or $I_c < I_{c\_cutoff}$)

**:: State Parameter, ψ ::**

$$\psi = 0.56 - 0.33 \cdot \log(Q_{tn,cs})$$

**:: Peak drained friction angle, φ (°) ::**

$$\varphi = 17.60 + 11 \cdot \log(Q_{tn})$$

(applicable only to $SBT_n$: 5, 6, 7 and 8)

**:: 1-D constrained modulus, M (MPa) ::**

If $I_c > 2.20$

$\alpha = 14$ for $Q_{tn} > 14$

$\alpha = Q_{tn}$ for $Q_{tn} \leq 14$

$$M_{CPT} = \alpha \cdot (q_t - \sigma_v)$$

**:: Small strain shear Modulus, Go (MPa) ::**

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

**:: Shear Wave Velocity, Vs (m/s) ::**

$$V_s = \left( \frac{G_0}{\rho} \right)^{0.50}$$

**:: Undrained peak shear strength, Su (kPa) ::**

$N_{kt} = 10.50 + 7 \cdot \log(F_r)$ or user defined

$$S_u = \frac{(q_t - \sigma_v)}{N_{kt}}$$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: Remolded undrained shear strength, Su(rem) (kPa) ::**

$S_{u(rem)} = f_s$ (applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: Overconsolidation Ratio, OCR ::**

$$k_{OCR} = \left[ \frac{Q_{tn}^{0.20}}{0.25 \cdot (10.50 \cdot +7 \cdot \log(F_r))} \right]^{1.25}$$ or user defined

$OCR = k_{OCR} \cdot Q_{tn}$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: In situ Stress Ratio, Ko ::**

$$K_O = (1 - \sin\varphi') \cdot OCR^{\sin\varphi'}$$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: Soil Sensitivity, $S_t$ ::**

$$S_t = \frac{N_S}{F_r}$$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: Effective Stress Friction Angle, φ' (°) ::**

$$\varphi' = 29.5° \cdot B_q^{0.121} \cdot (0.256 + 0.336 \cdot B_q + \log Q_t)$$

(applicable for $0.10 < B_q < 1.00$)

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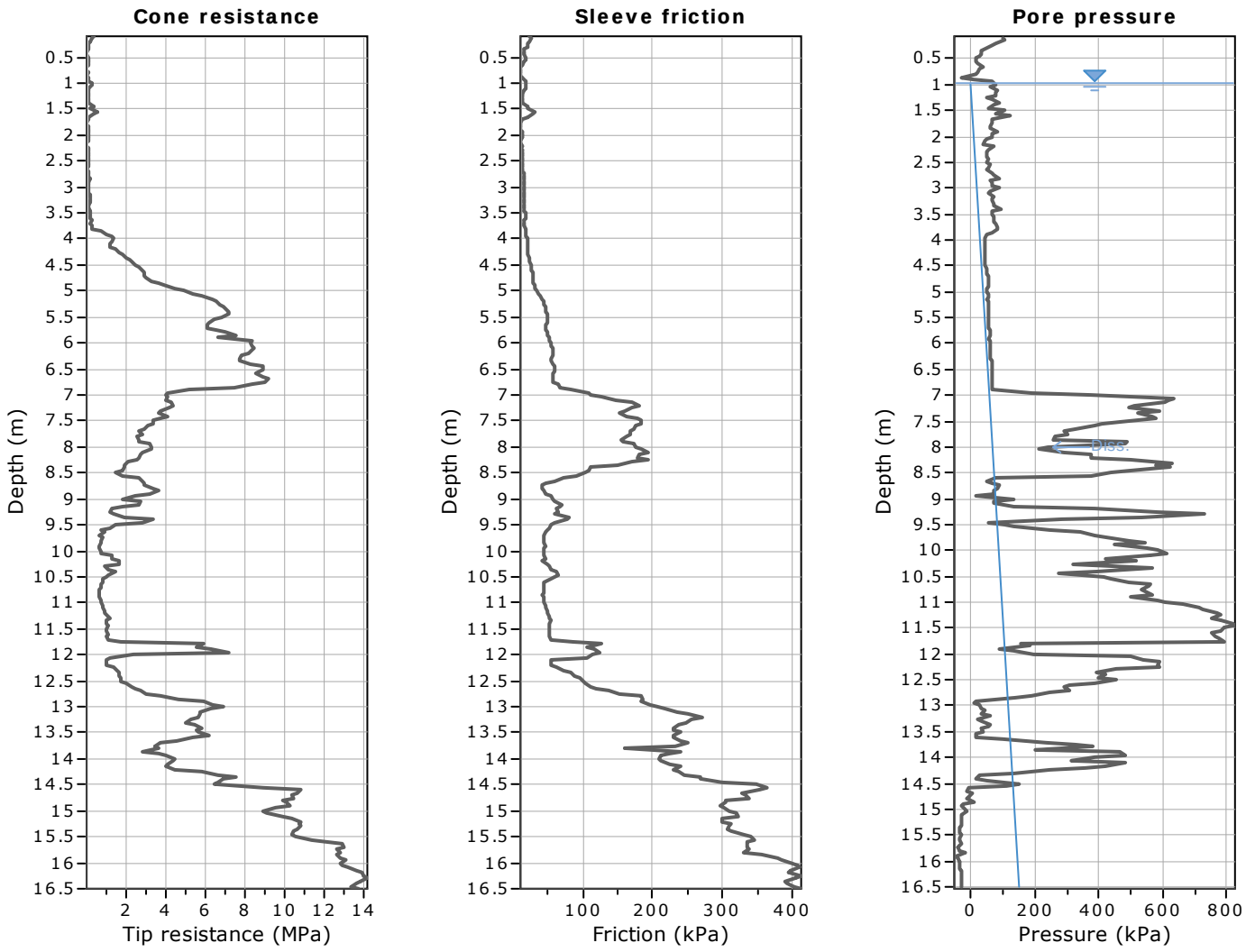
**CPT: CPTU 04**
Total depth: 16.50 m, Date: 03/02/2015
Surface Elevation: 15.00 m
Coords: X:7654810.00, Y:286361.00
Cone Type: 100 kn
Cone Operator: Gelmo Batista

**Project:** **ENECON**
**Location:** **PRESIDENTE KENNEDY/ES - TRECHO 3.3**

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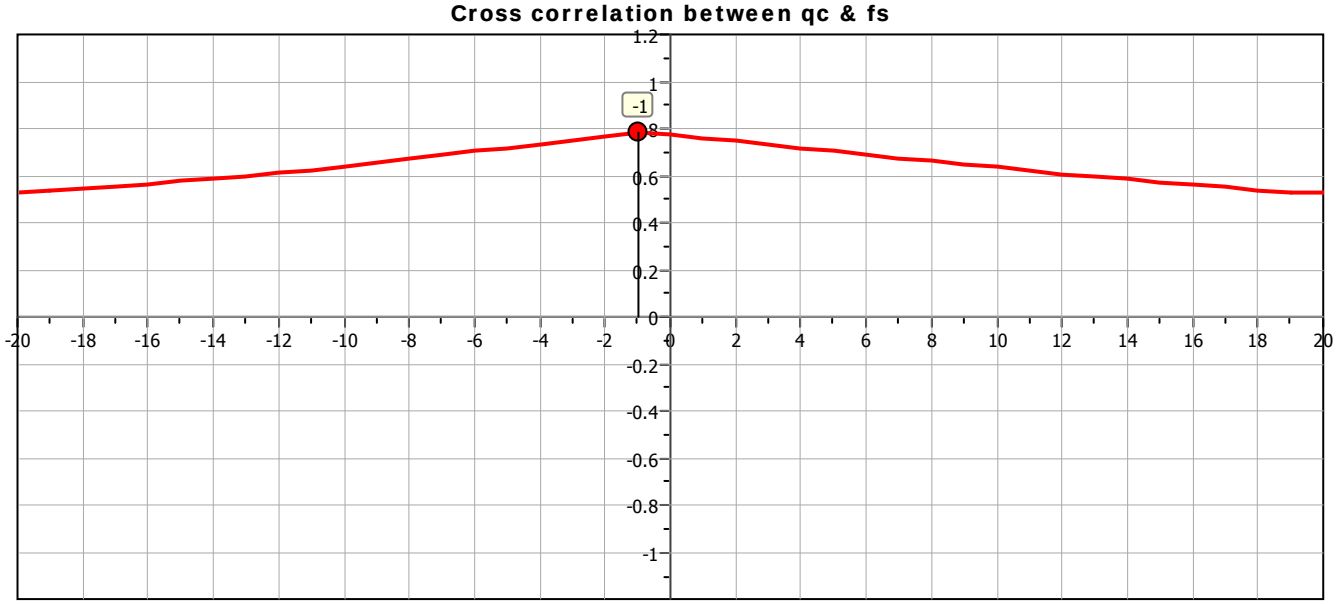

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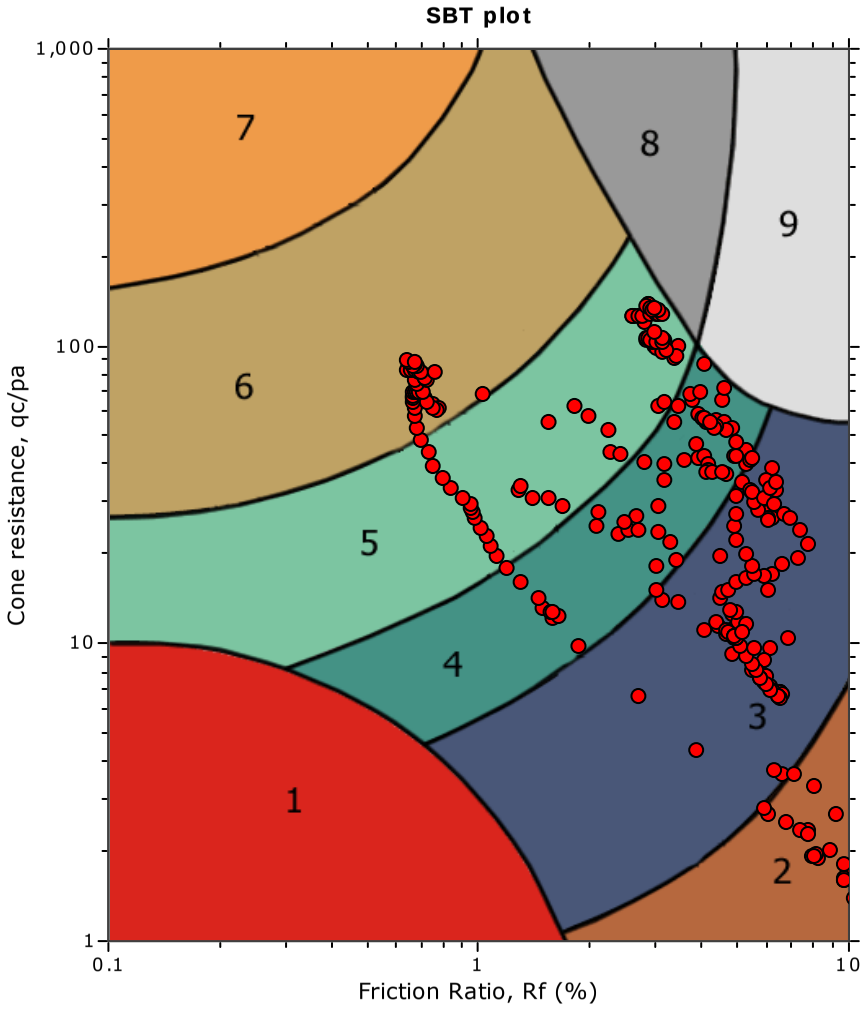
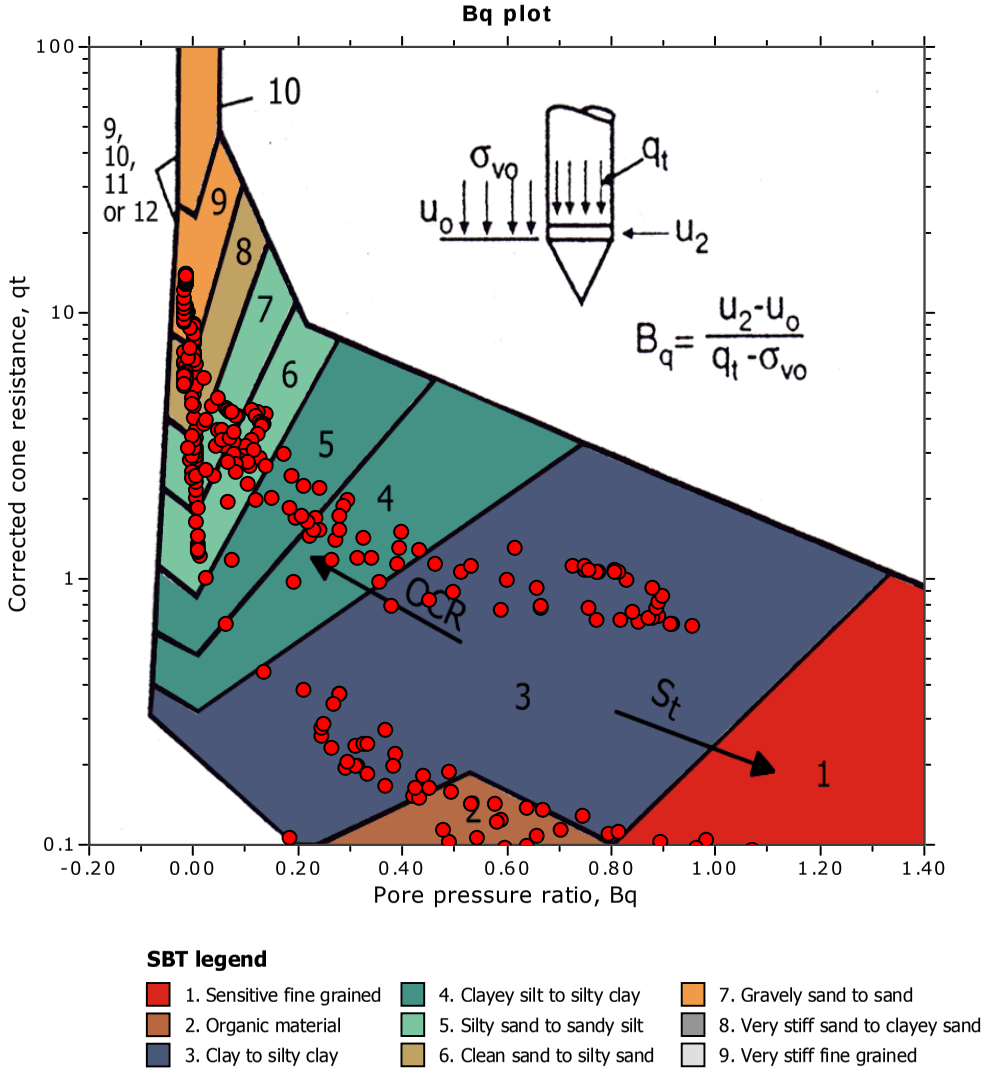
## SBT - Bq plots



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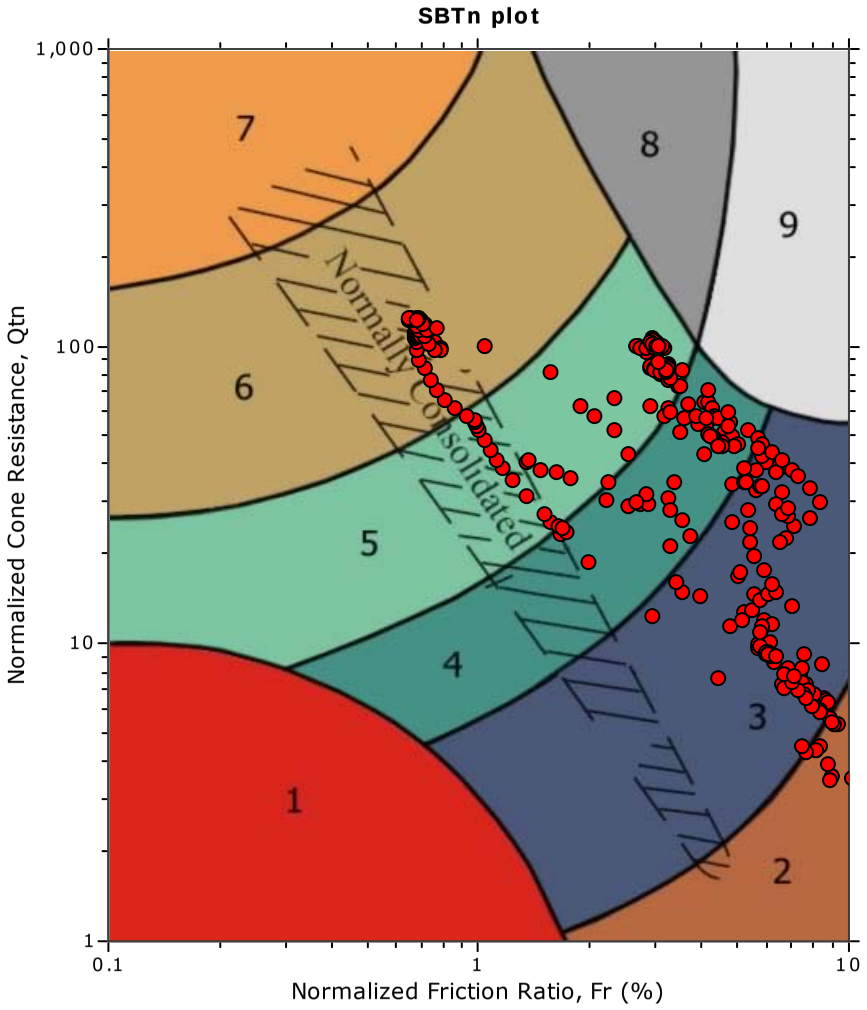
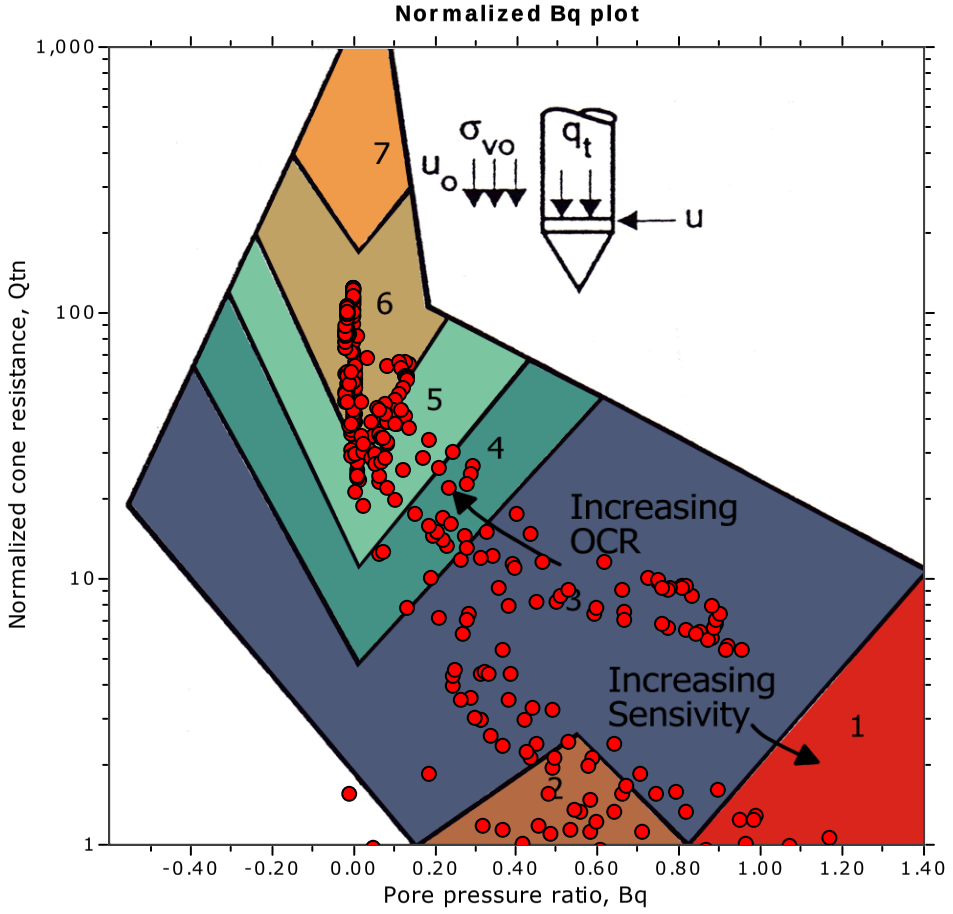
## SBT - Bq plots (normalized)




**SBTn legend**

| | | |
|---|---|---|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
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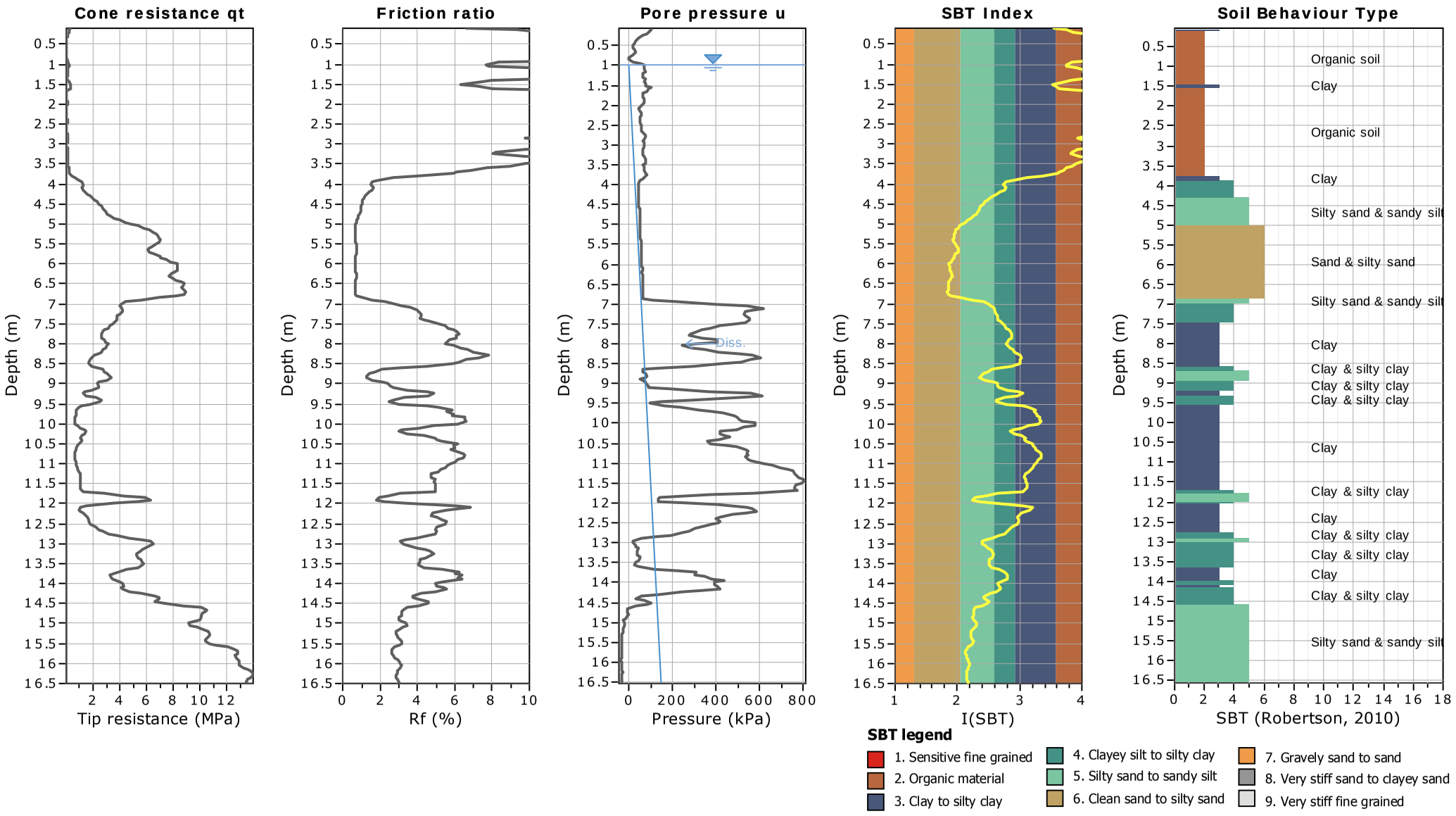

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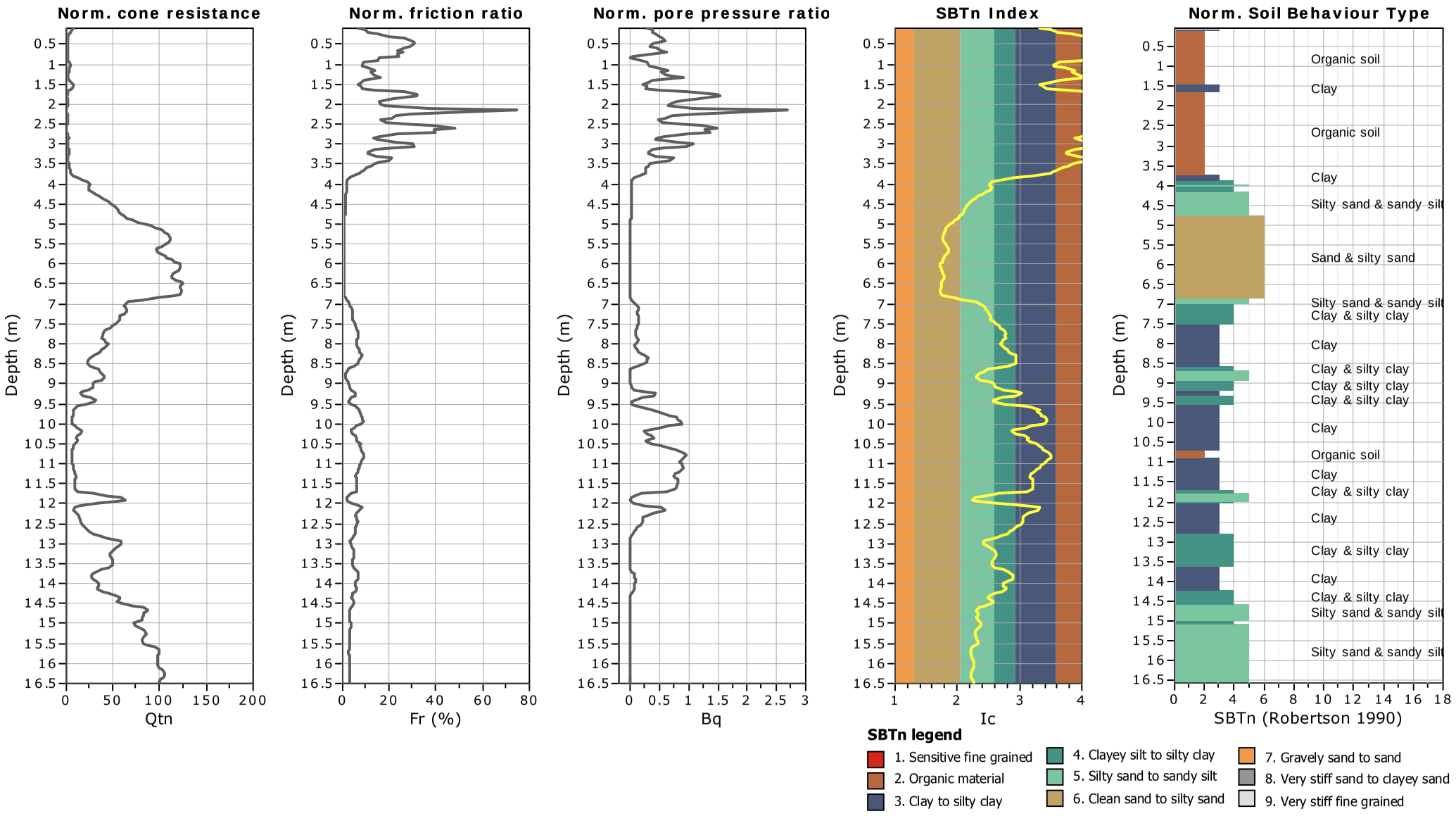

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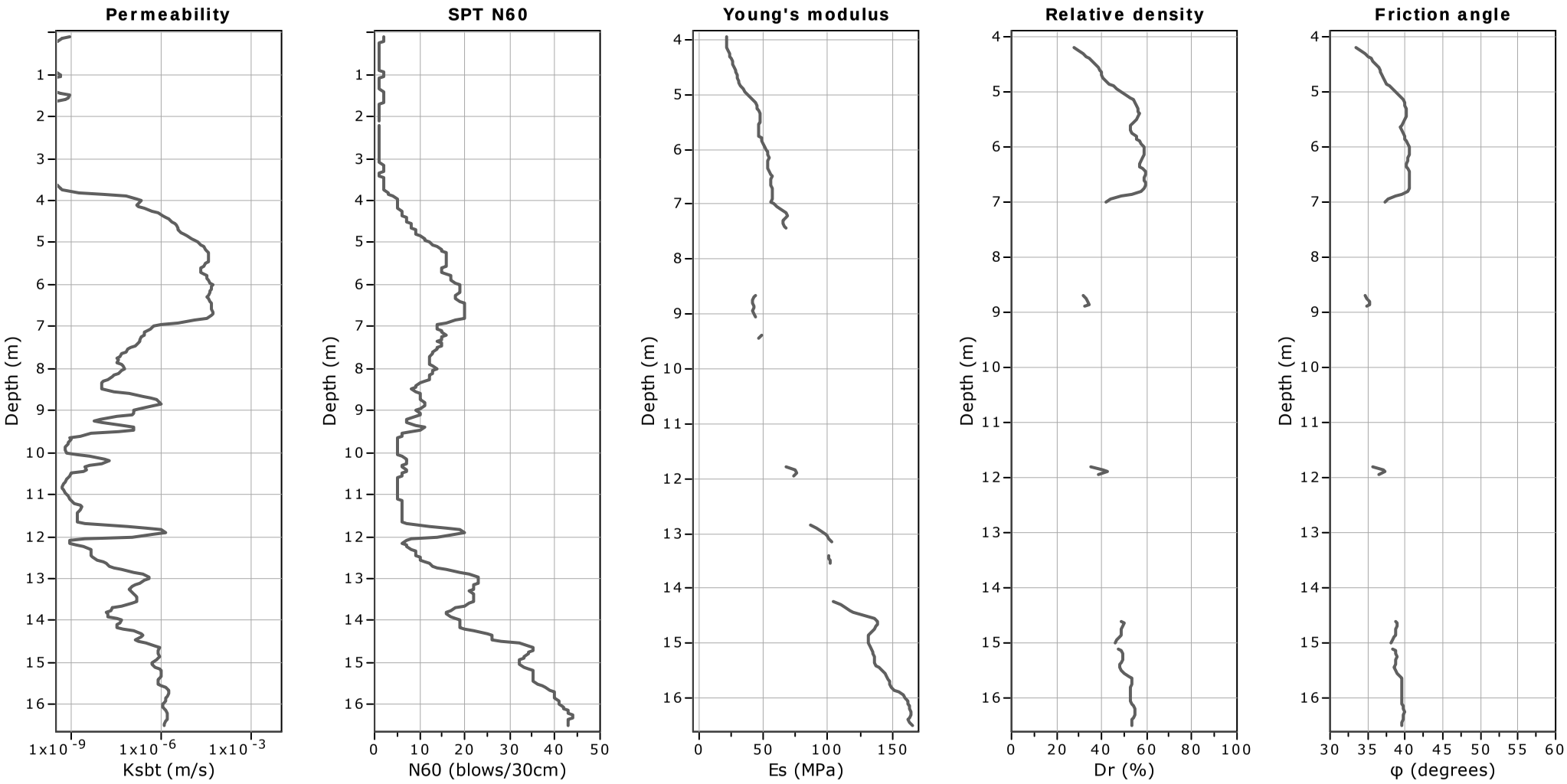


**Calculation parameters**

Permeability: Based on $SBT_n$
SPT $N_{60}$: Based on $I_c$ and $q_t$
Young's modulus: Based on variable alpha using $I_c$ (Robertson, 2009)
Relative desnisty constant, $C_{Dr}$: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

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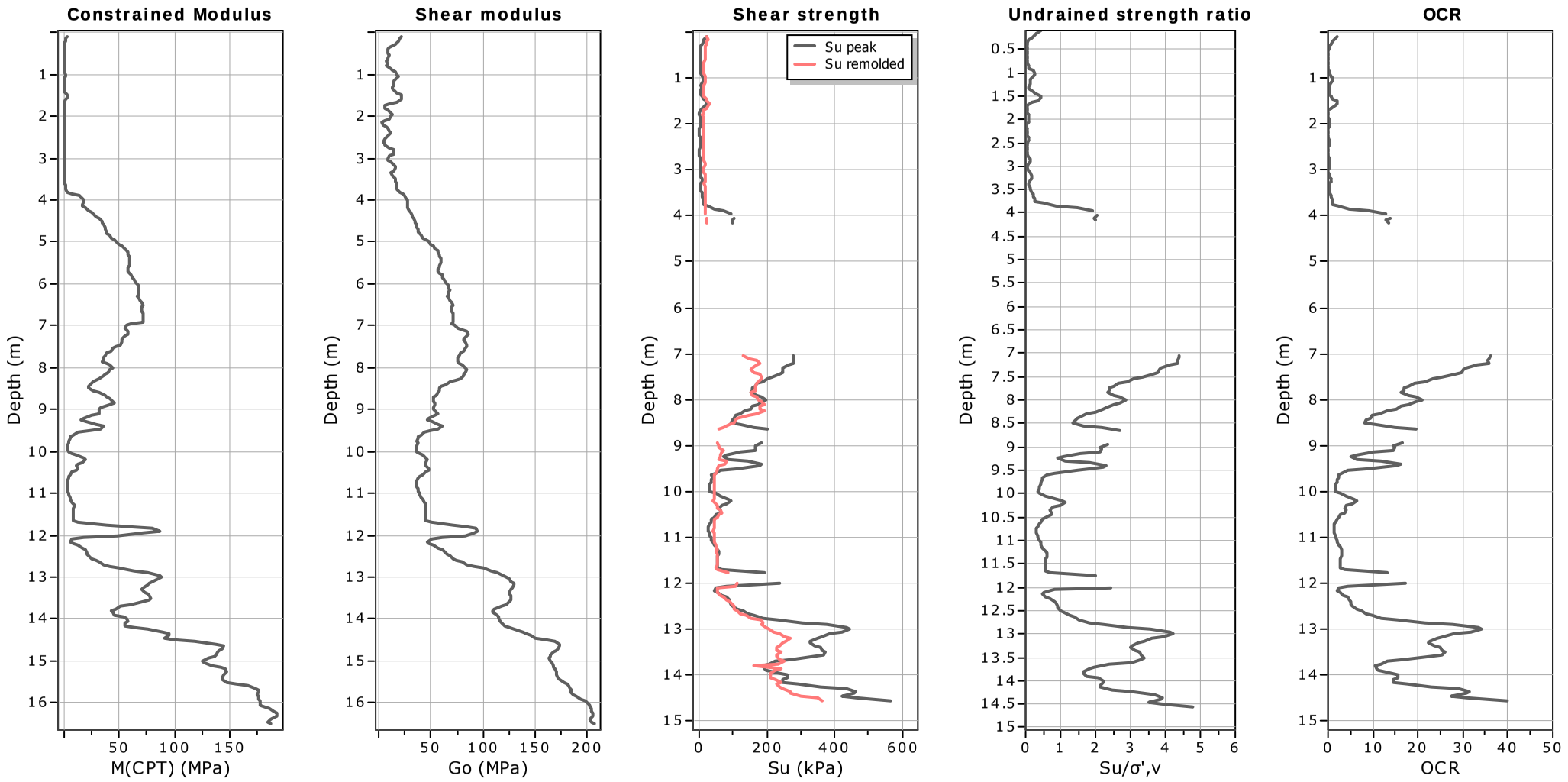


**Calculation parameters**

Constrained modulus: Based on variable *alpha* using $I_c$ and $Q_{tn}$ (Robertson, 2009)
Go: Based on variable *alpha* using $I_c$ (Robertson, 2009)
Undrained shear strength cone factor for clays, $N_{kt}$: Auto
OCR factor for clays, $N_{kt}$: Auto
User defined estimation data

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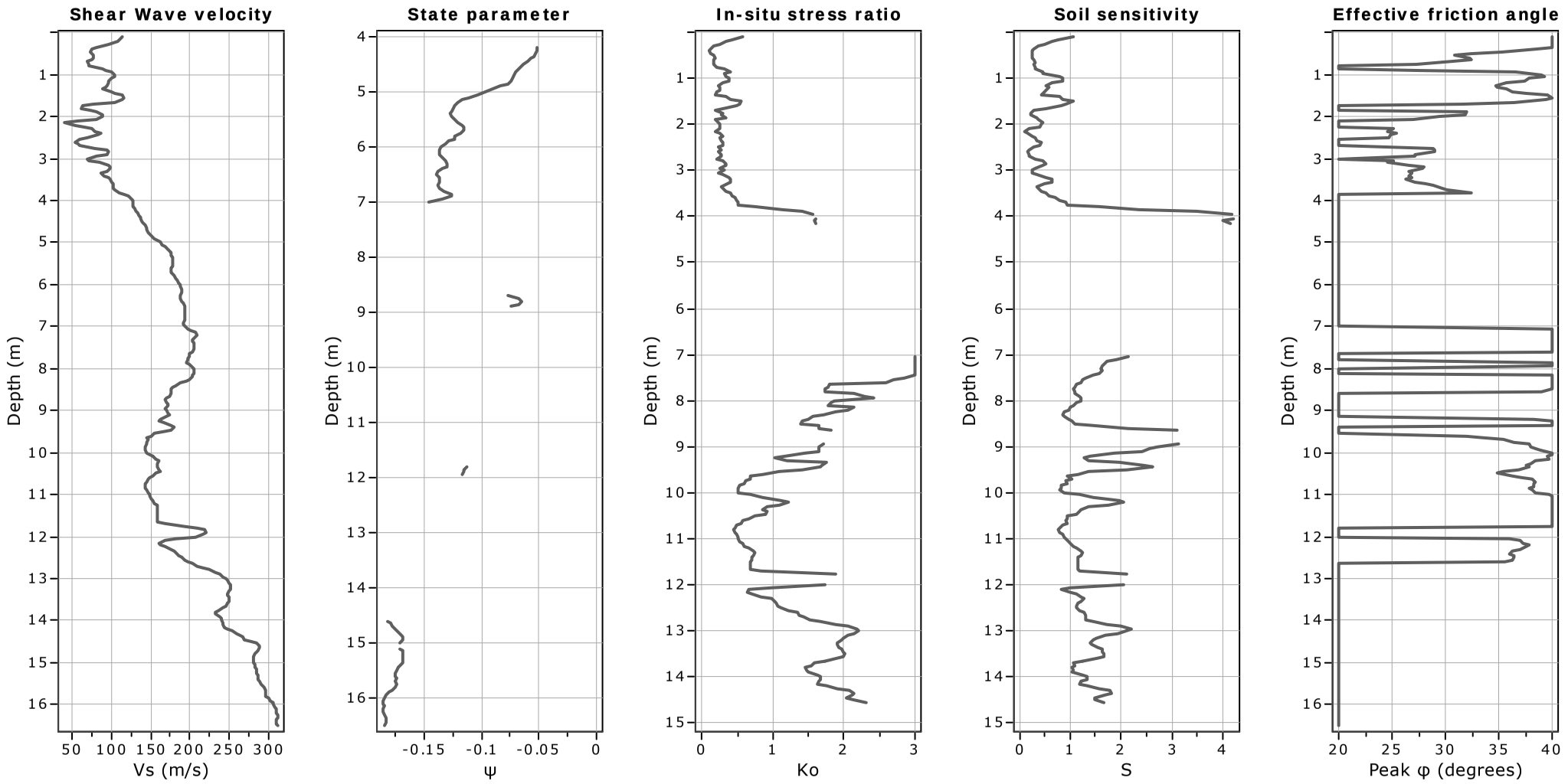



**Calculation parameters**

Soil Sensitivity factor, $N_S$: 7.00
User defined estimation data

# Dissipation Tests Results

## Dissipation tests

Dissipation tests consists of stopping the piezocone penetration and observing porepressures (u) with elapsed time (t). The data are automatic recorded by the field computer and should take place until a minimum of 50% dissipation.

The porepressures are plotted as a function of square root of (t). The graphical technique suggested by Robertson and Campanella (1989), yields a value for $t_{50}$, which corresponds to the time for 50% consolidation.

The value of the coefficient of consolidation in the radial or horizontal direction $c_h$ was then calculated by Houlsby and Teh's (1988) theory using the following equation:

$$c_h = \frac{T \times r^2 \times I_r^{0.5}}{t_{50}}$$

where:

T: time factor given by Houlsby and Teh's (1988) theory corresponding to the porepressure position
r: piezocone radius
$I_r$: stiffness index, equal to shear modulus G divided by the undrained strength of clay ($S_u$).
$t_{50}$: time corresponding to 50% consolidation

## Permeability estimates based on dissipation test

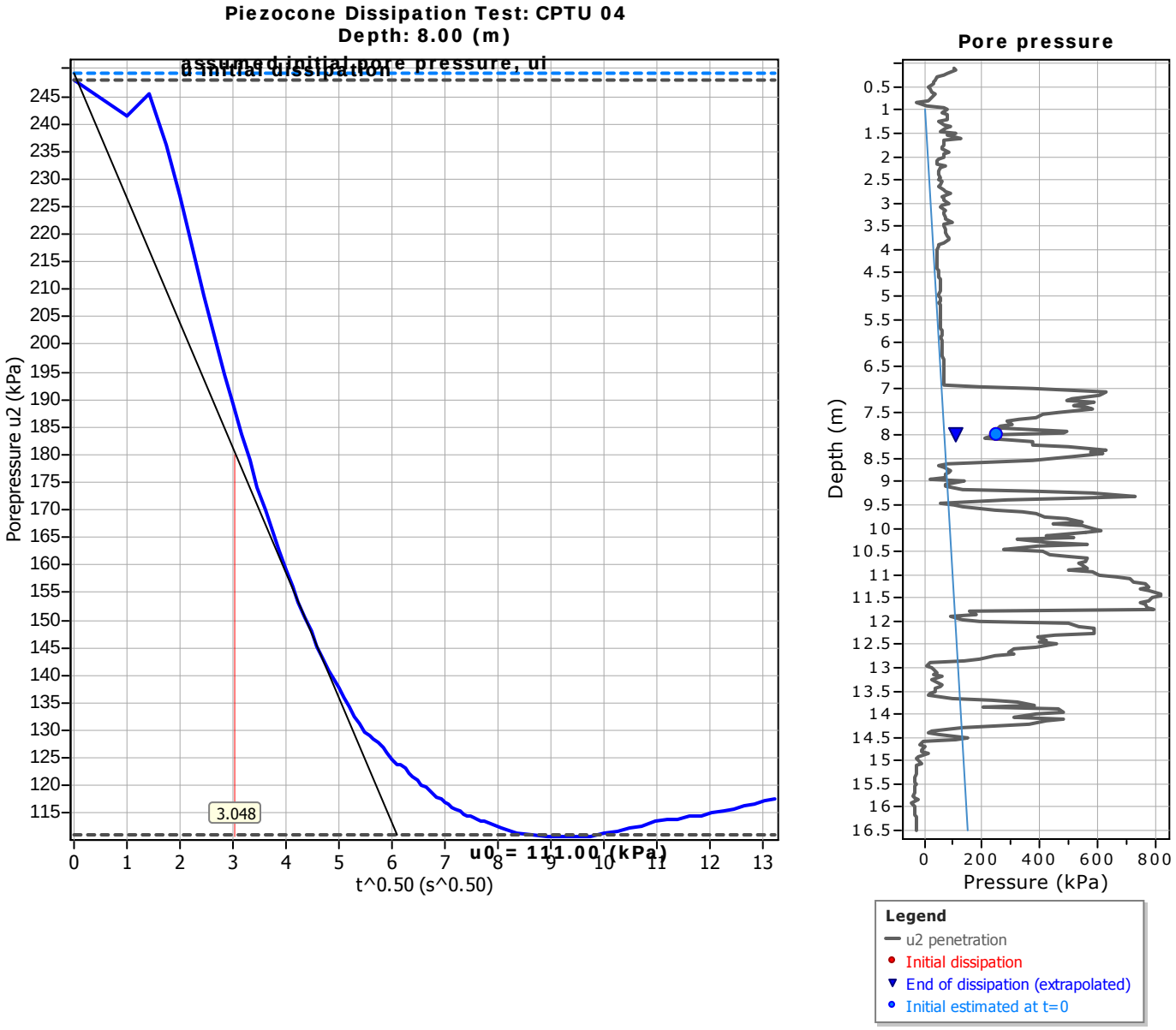
The dissipation of pore pressures during a CPTu dissipation test is controlled by the coefficient of consolidation in the horizontal direction ($c_h$) which is influenced by a combination of the soil permeability ($k_h$) and compressibility (M), as defined by the following:

$$k_h = c_h \times \gamma_w / M$$

where: M is the 1-D constrained modulus and $\gamma_w$ is the unit weight of water, in compatible units.

**Tabular results**

| CPTU Borehole | Depth (m) | $(t_{50})^{0.50}$ | $t_{50}$ (s) | $t_{50}$ (years) | $G/S_u$ | $c_h$ ($m^2/s$) | $c_h$ ($m^2$/year) | M (MPa) | $k_h$ (m/s) |
|---|---|---|---|---|---|---|---|---|---|
| CPTU 04 | 8.00 | 3.0 | 9 | 2.95E-007 | 399.15 | 1.76E-004 | 5563 | 43.09 | 4.02E-008 |


Piezocone Dissipation Test: CPTU 04
Depth: 8.00 (m)
assumed initial pore pressure, ui
u initial dissipation
Porepressure u2 (kPa)
t^0.50 (s^0.50)
3.048
u0 = 111.00 (kPa)
Pore pressure
Depth (m)
Pressure (kPa)
Legend
u2 penetration
Initial dissipation
End of dissipation (extrapolated)
Initial estimated at t=0

Presented below is a list of formulas used for the estimation of various soil properties. The formulas are presented in SI unit system and assume that all components are expressed in the same units.

**:: Unit Weight, g (kN/m³) ::**

$$g = g_w \cdot \left( 0.27 \cdot \log(R_f) + 0.36 \cdot \log(\frac{q_t}{p_a}) + 1.236 \right)$$

where $g_w$ = water unit weight

**:: Permeability, k (m/s) ::**

$I_c < 3.27$ and $I_c > 1.00$ then $k = 10^{0.952-3.04 \cdot I_c}$

$I_c \leq 4.00$ and $I_c > 3.27$ then $k = 10^{-4.52-1.37 \cdot I_c}$

**:: $N_{SPT}$ (blows per 30 cm) ::**

$$N_{60} = \left( \frac{q_c}{P_a} \right) \cdot \frac{1}{10^{1.1268-0.2817 \cdot I_c}}$$

$$N_{1(60)} = Q_{tn} \cdot \frac{1}{10^{1.1268-0.2817 \cdot I_c}}$$

**:: Young's Modulus, Es (MPa) ::**

$$(q_t - \sigma_v) \cdot 0.015 \cdot 10^{0.55 \cdot I_c + 1.68}$$

(applicable only to $I_c < I_{c\_cutoff}$)

**:: Relative Density, Dr (%) ::**

$$100 \cdot \sqrt{\frac{Q_{tn}}{k_{DR}}}$$ (applicable only to $SBT_n$: 5, 6, 7 and 8 or $I_c < I_{c\_cutoff}$)

**:: State Parameter, ψ ::**

$$\psi = 0.56 - 0.33 \cdot \log(Q_{tn,cs})$$

**:: Peak drained friction angle, φ (°) ::**

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If $I_c > 2.20$

$\alpha = 14$ for $Q_{tn} > 14$

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

**:: Shear Wave Velocity, Vs (m/s) ::**

$$V_s = \left( \frac{G_0}{\rho} \right)^{0.50}$$

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$N_{kt} = 10.50 + 7 \cdot \log(F_r)$ or user defined

$$S_u = \frac{(q_t - \sigma_v)}{N_{kt}}$$

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**:: Remolded undrained shear strength, Su(rem) (kPa) ::**

$S_{u(rem)} = f_s$ (applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

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$$k_{OCR} = \left[ \frac{Q_{tn}^{0.20}}{0.25 \cdot (10.50 \cdot +7 \cdot \log(F_r))} \right]^{1.25}$$ or user defined

$OCR = k_{OCR} \cdot Q_{tn}$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: In situ Stress Ratio, Ko ::**

$$K_O = (1 - \sin\varphi') \cdot OCR^{\sin\varphi'}$$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

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$$S_t = \frac{N_S}{F_r}$$

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**:: Effective Stress Friction Angle, φ' (°) ::**

$$\varphi' = 29.5° \cdot B_q^{0.121} \cdot (0.256 + 0.336 \cdot B_q + \log Q_t)$$

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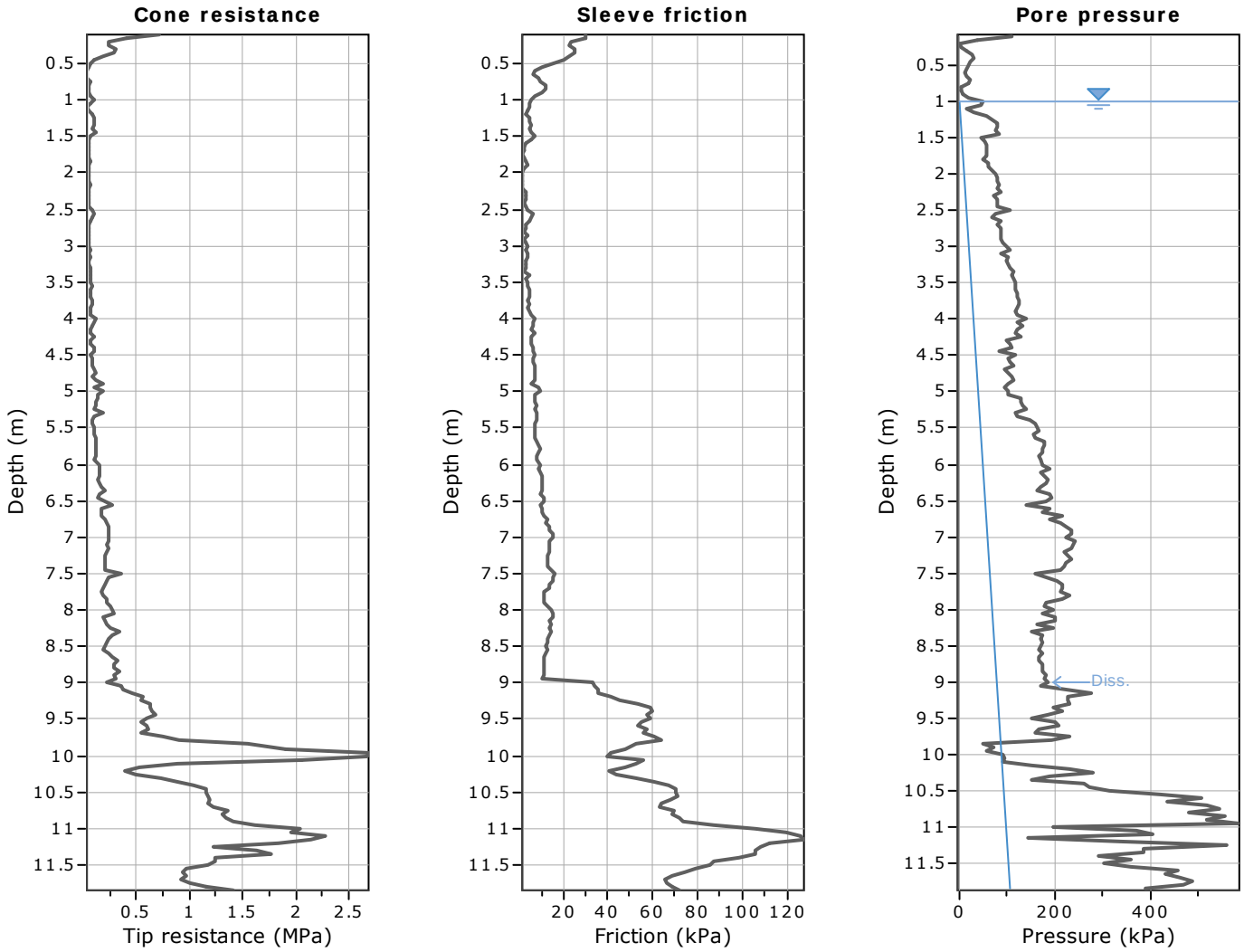


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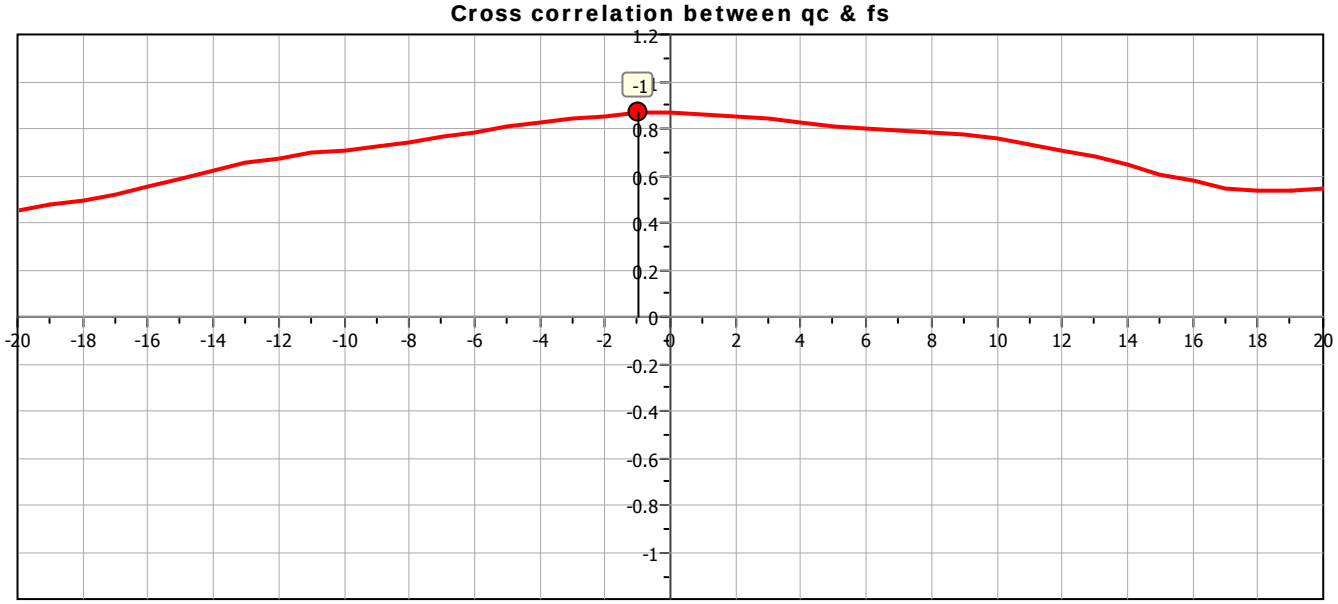

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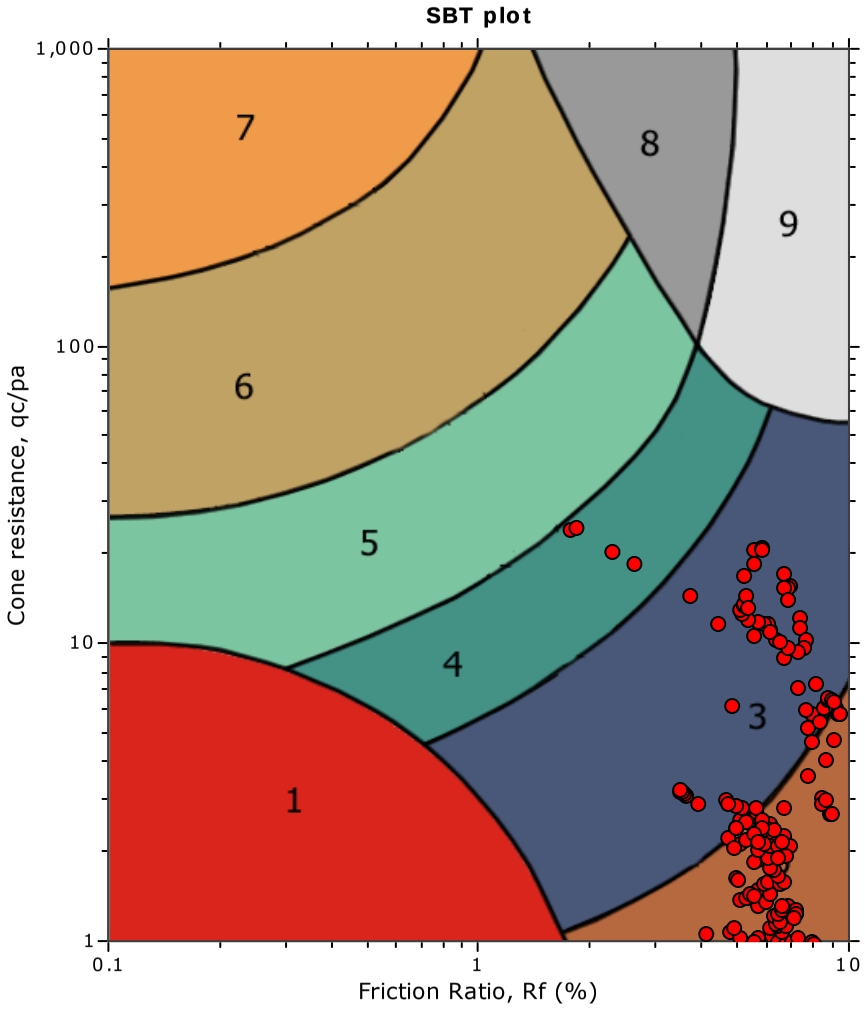


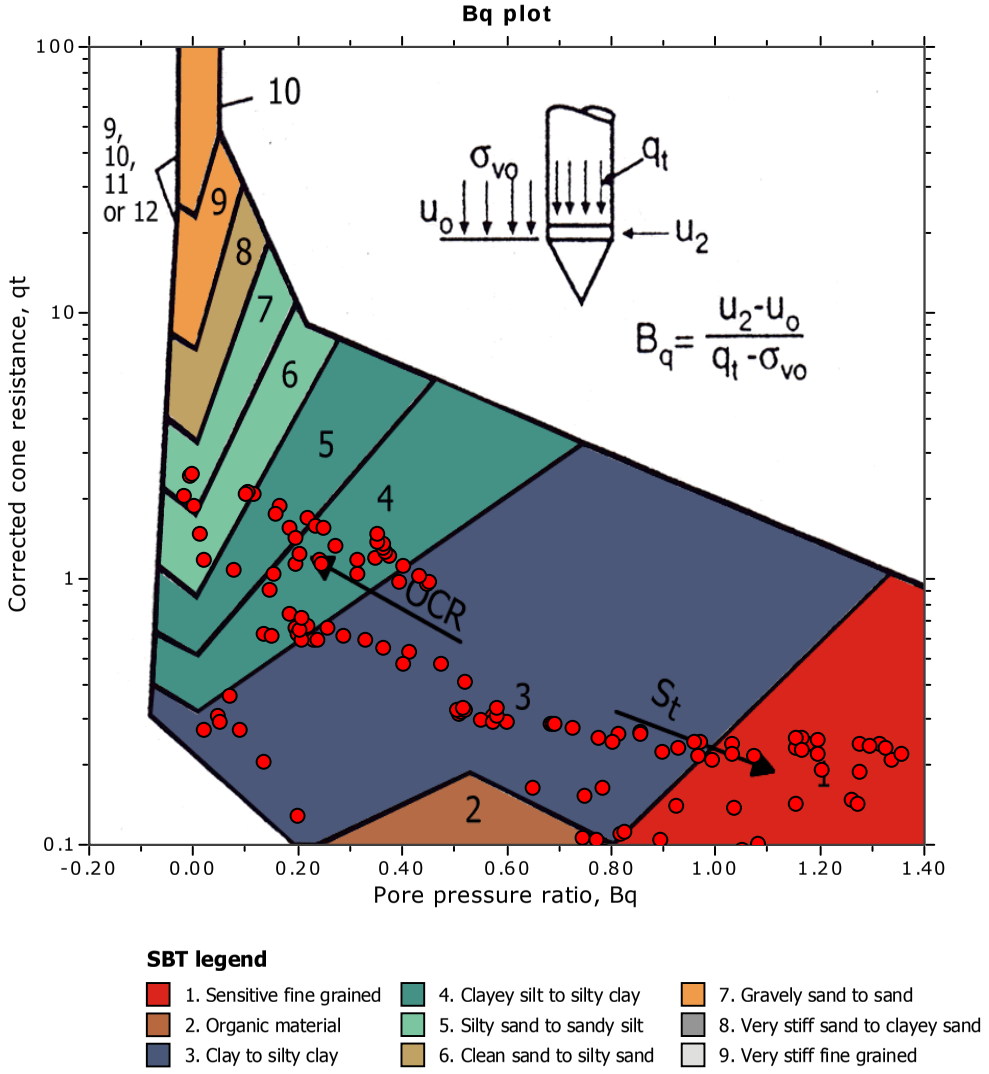


**SBT legend**

| | | |
|---|---|---|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
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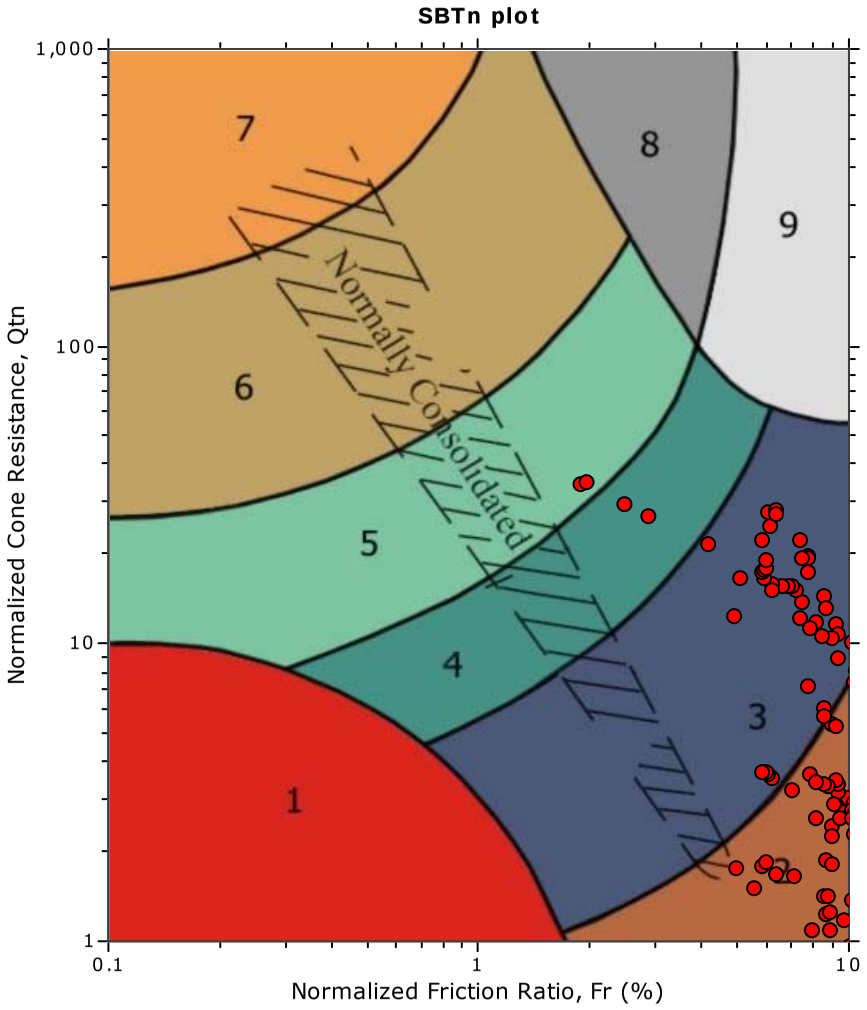


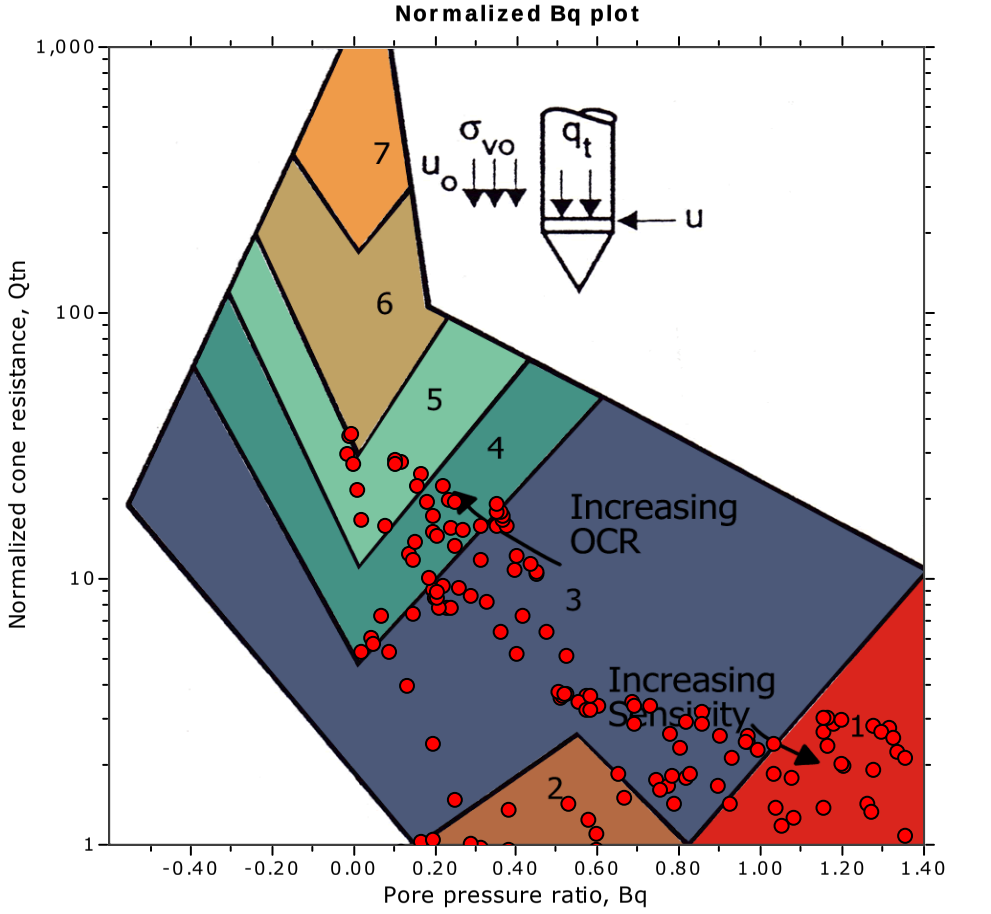


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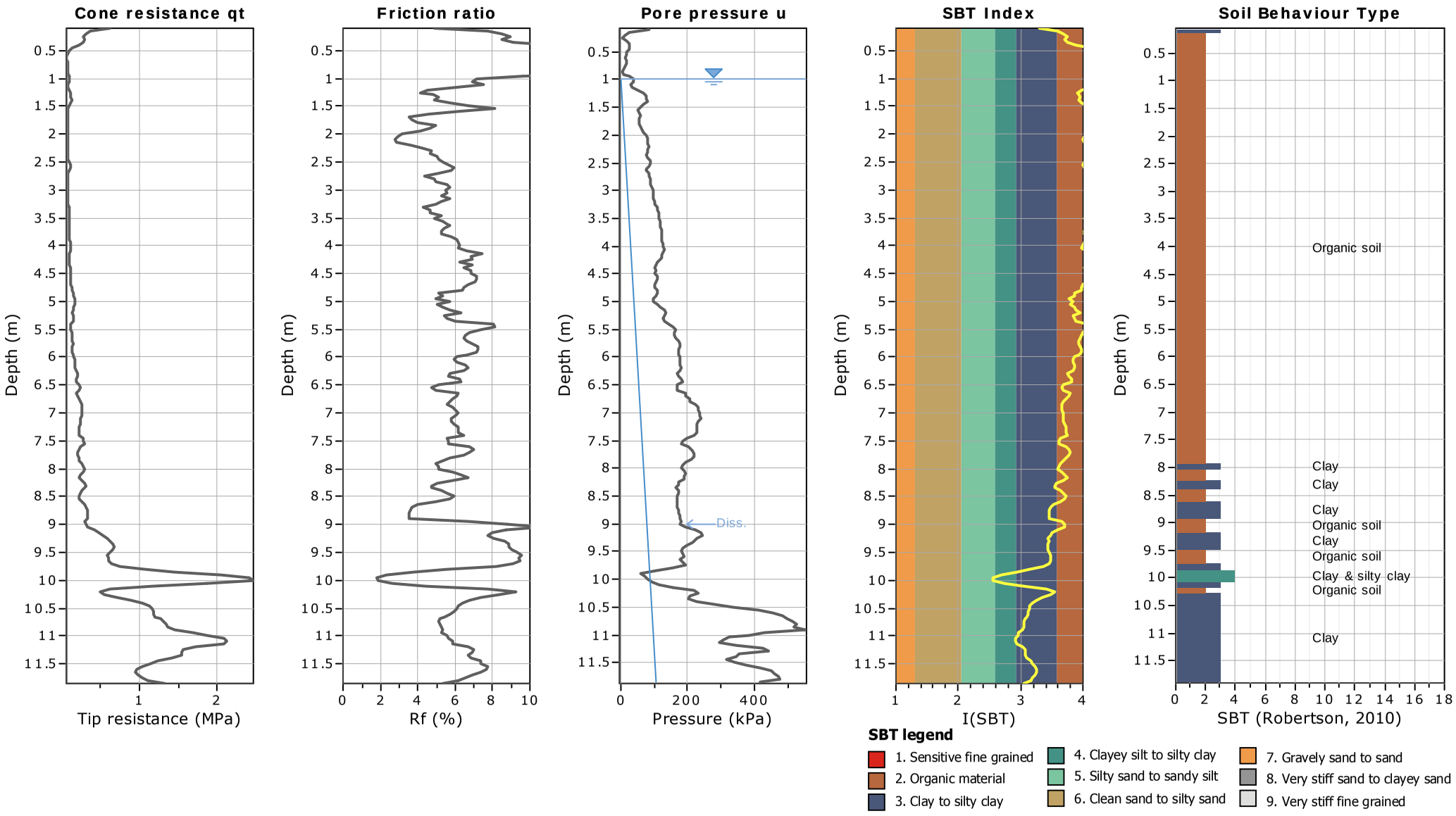

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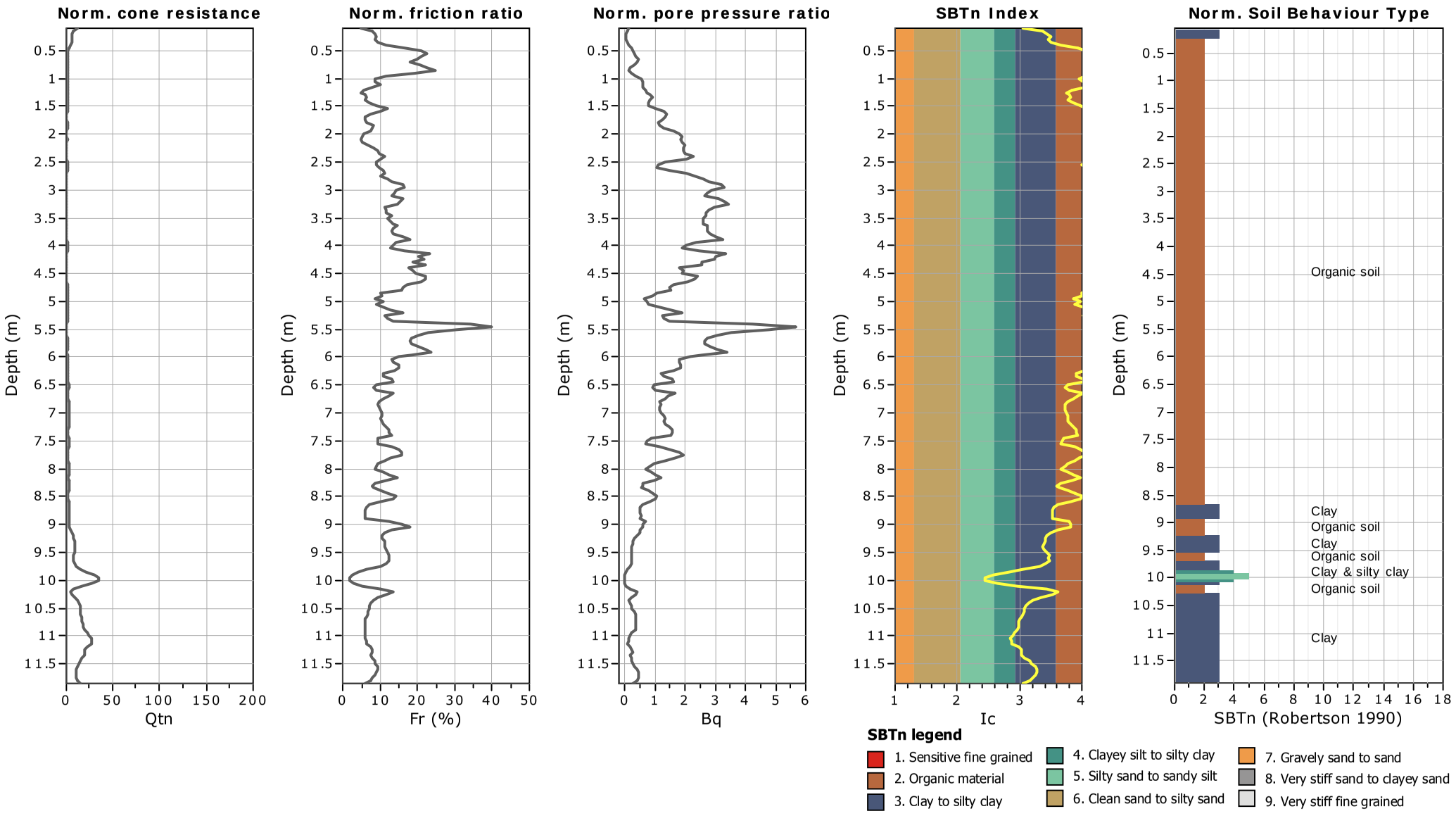
**Location:** **PRESIDENTE KENNEDY/ES - TRECHO 3.3**

**CPT: CPTU 05**
Total depth: 11.85 m, Date: 03/02/2015
Surface Elevation: 15.00 m
Coords: X:7654806.00, Y:286360.00
Cone Type: 100 kn
Cone Operator: Gelmo Batista



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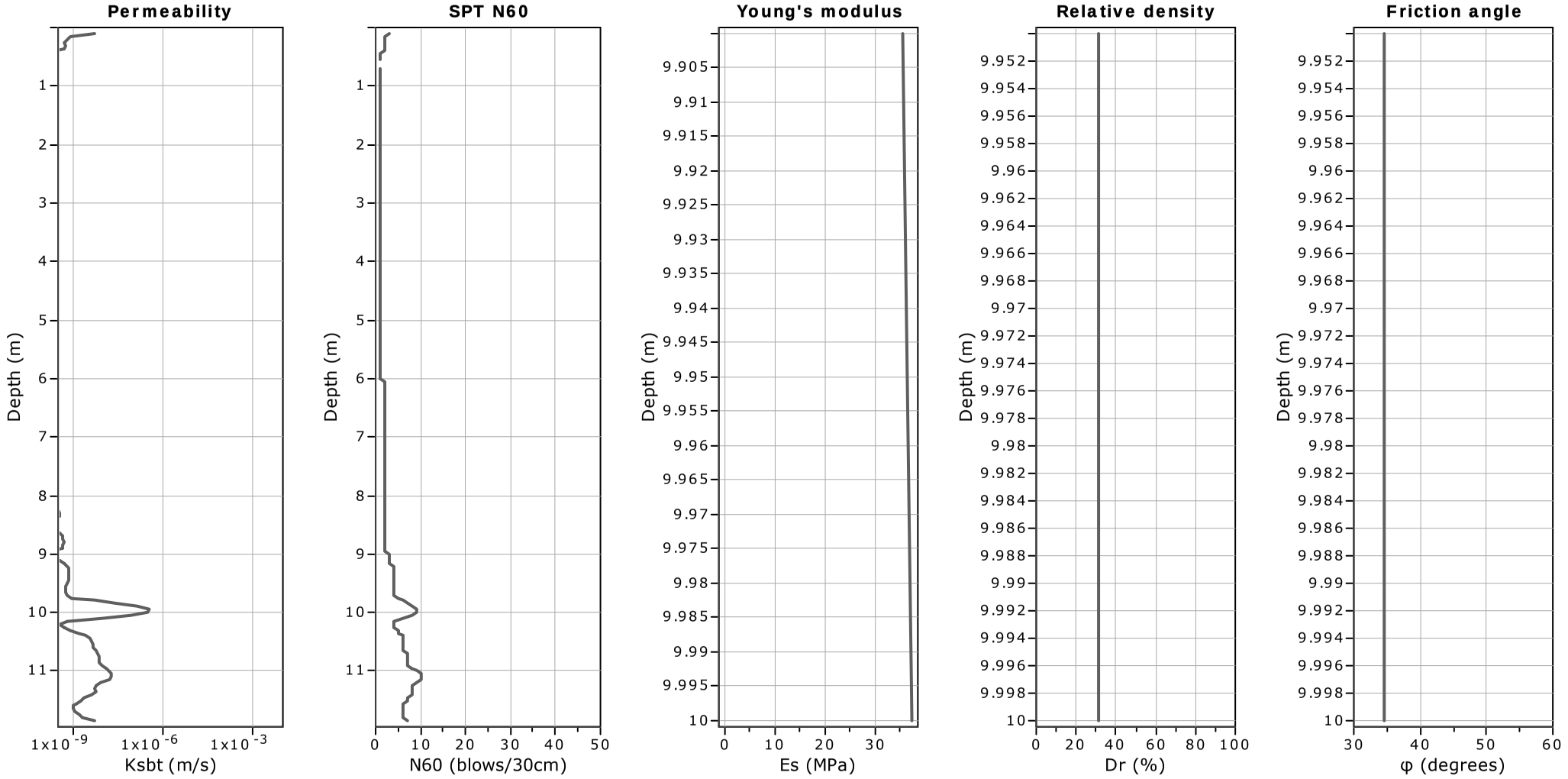


**Calculation parameters**
Permeability: Based on $SBT_n$
SPT $N_{60}$: Based on $I_c$ and $q_t$
Young's modulus: Based on variable alpha using $I_c$ (Robertson, 2009)
Relative desnisty constant, $C_{Dr}$: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

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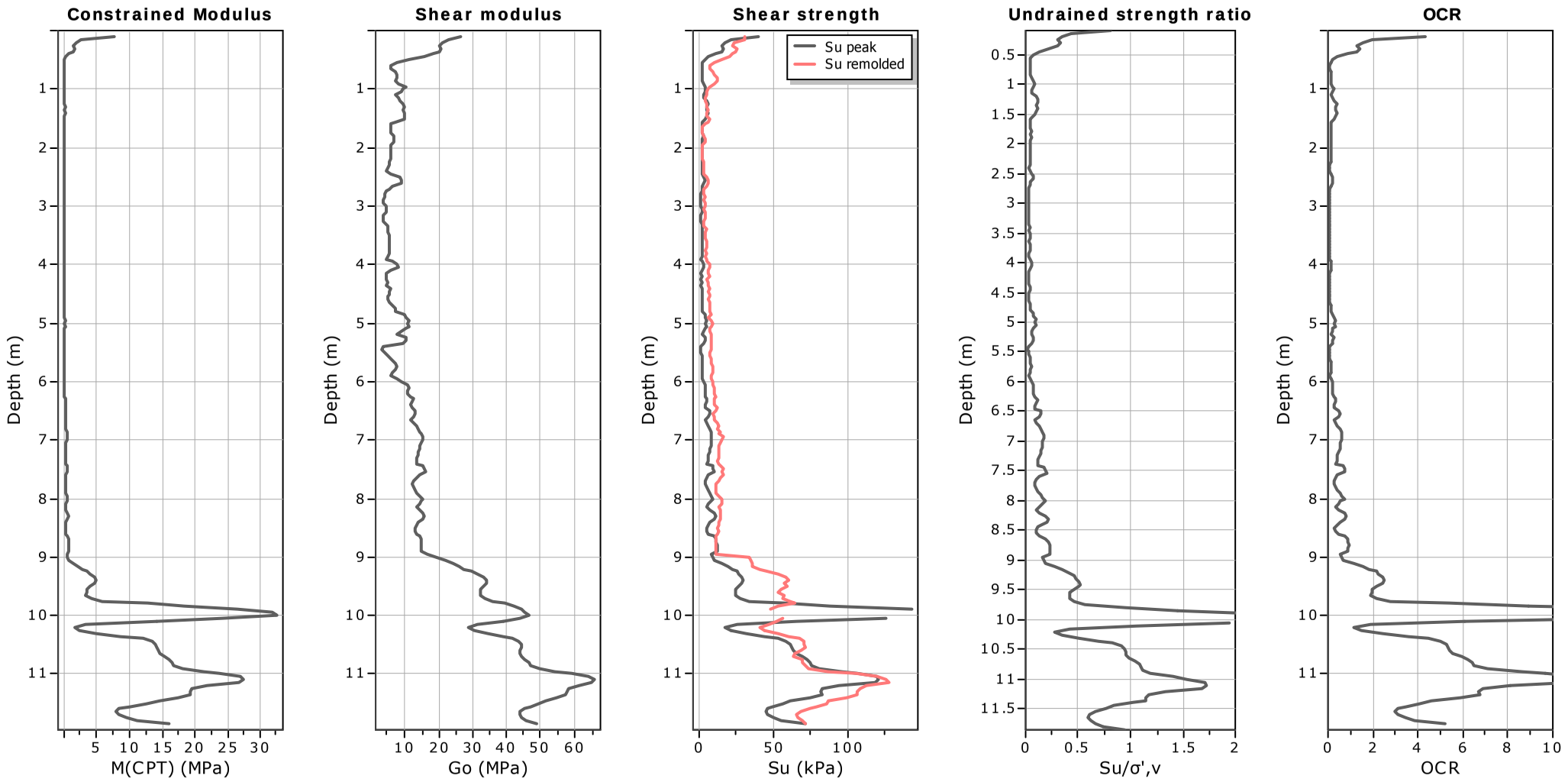


**Calculation parameters**

Constrained modulus: Based on variable *alpha* using $I_c$ and $Q_{tn}$ (Robertson, 2009)
Go: Based on variable *alpha* using $I_c$ (Robertson, 2009)
Undrained shear strength cone factor for clays, $N_{kt}$: Auto
OCR factor for clays, $N_{kt}$: Auto
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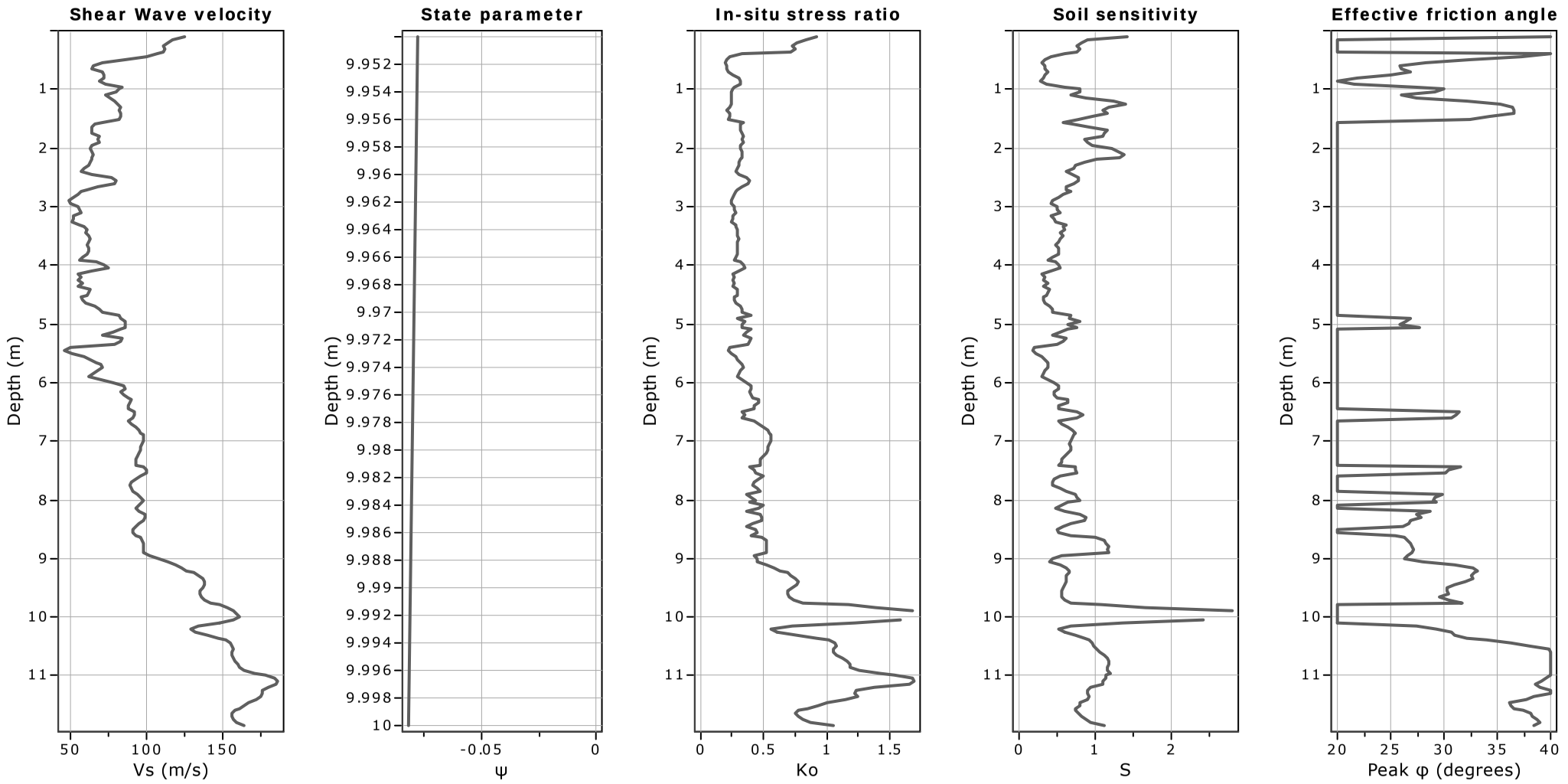


**Calculation parameters**

Soil Sensitivity factor, $N_S$: 7.00
User defined estimation data

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# Dissipation Tests Results

## Dissipation tests

Dissipation tests consists of stopping the piezocone penetration and observing porepressures (u) with elapsed time (t). The data are automatic recorded by the field computer and should take place until a minimum of 50% dissipation.

The porepressures are plotted as a function of square root of (t). The graphical technique suggested by Robertson and Campanella (1989), yields a value for $t_{50}$, which corresponds to the time for 50% consolidation.

The value of the coefficient of consolidation in the radial or horizontal direction $c_h$ was then calculated by Houlsby and Teh's (1988) theory using the following equation:

$$c_h = \frac{T \times r^2 \times I_r^{0.5}}{t_{50}}$$

where:

T: time factor given by Houlsby and Teh's (1988) theory corresponding to the porepressure position
r: piezocone radius
$I_r$: stiffness index, equal to shear modulus G divided by the undrained strength of clay ($S_u$).
$t_{50}$: time corresponding to 50% consolidation

## Permeability estimates based on dissipation test

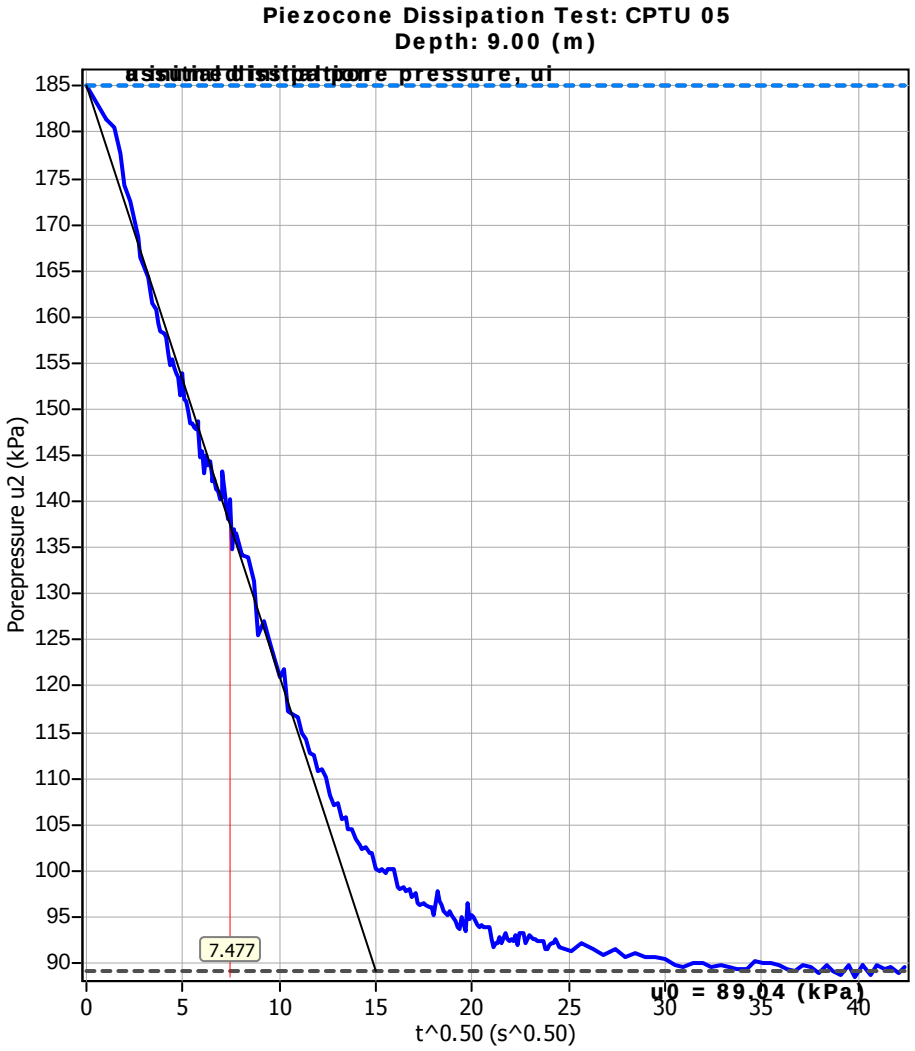
The dissipation of pore pressures during a CPTu dissipation test is controlled by the coefficient of consolidation in the horizontal direction ($c_h$) which is influenced by a combination of the soil permeability ($k_h$) and compressibility (M), as defined by the following:

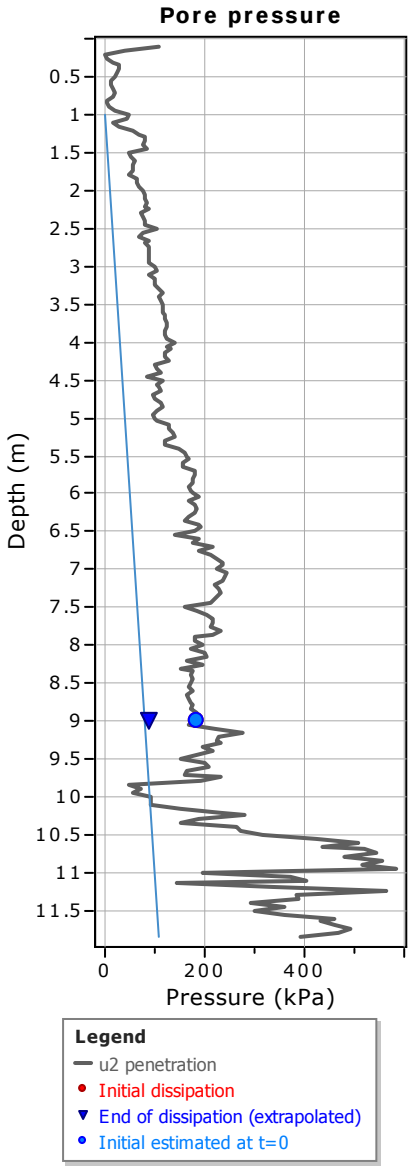
$$k_h = c_h \times \gamma_w / M$$

where: M is the 1-D constrained modulus and $\gamma_w$ is the unit weight of water, in compatible units.

**Tabular results**

| CPTU Borehole | Depth (m) | $(t_{50})^{0.50}$ | $t_{50}$ (s) | $t_{50}$ (years) | $G/S_u$ | $c_h$ ($m^2/s$) | $c_h$ ($m^2$/year) | M (MPa) | $k_h$ (m/s) |
|---|---|---|---|---|---|---|---|---|---|
| CPTU 05 | 9.00 | 7.5 | 56 | 1.77E-006 | 2154.20 | 6.81E-005 | 2148 | 0.33 | 2.02E-006 |


Piezocone Dissipation Test: CPTU 05
Depth: 9.00 (m)
Porepressure u2 (kPa)
t^0.50 (s^0.50)
7.477
u0 = 89.04 (kPa)


Pore pressure
Depth (m)
Pressure (kPa)
Legend
u2 penetration
Initial dissipation
End of dissipation (extrapolated)
Initial estimated at t=0

Presented below is a list of formulas used for the estimation of various soil properties. The formulas are presented in SI unit system and assume that all components are expressed in the same units.

**:: Unit Weight, g (kN/m³) ::**

$$g = g_w \cdot \left( 0.27 \cdot \log(R_f) + 0.36 \cdot \log(\frac{q_t}{p_a}) + 1.236 \right)$$

where $g_w$ = water unit weight

**:: Permeability, k (m/s) ::**

$I_c < 3.27$ and $I_c > 1.00$ then $k = 10^{0.952-3.04 \cdot I_c}$

$I_c \leq 4.00$ and $I_c > 3.27$ then $k = 10^{-4.52-1.37 \cdot I_c}$

**:: $N_{SPT}$ (blows per 30 cm) ::**

$$N_{60} = \left( \frac{q_c}{P_a} \right) \cdot \frac{1}{10^{1.1268-0.2817 \cdot I_c}}$$

$$N_{1(60)} = Q_{tn} \cdot \frac{1}{10^{1.1268-0.2817 \cdot I_c}}$$

**:: Young's Modulus, Es (MPa) ::**

$$(q_t - \sigma_v) \cdot 0.015 \cdot 10^{0.55 \cdot I_c + 1.68}$$

(applicable only to $I_c < I_{c\_cutoff}$)

**:: Relative Density, Dr (%) ::**

$$100 \cdot \sqrt{\frac{Q_{tn}}{k_{DR}}}$$ (applicable only to $SBT_n$: 5, 6, 7 and 8 or $I_c < I_{c\_cutoff}$)

**:: State Parameter, ψ ::**

$$\psi = 0.56 - 0.33 \cdot \log(Q_{tn,cs})$$

**:: Peak drained friction angle, φ (°) ::**

$$\varphi = 17.60 + 11 \cdot \log(Q_{tn})$$

(applicable only to $SBT_n$: 5, 6, 7 and 8)

**:: 1-D constrained modulus, M (MPa) ::**

If $I_c > 2.20$

$\alpha = 14$ for $Q_{tn} > 14$

$\alpha = Q_{tn}$ for $Q_{tn} \leq 14$

$$M_{CPT} = \alpha \cdot (q_t - \sigma_v)$$

**:: Small strain shear Modulus, Go (MPa) ::**

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

**:: Shear Wave Velocity, Vs (m/s) ::**

$$V_s = \left( \frac{G_0}{\rho} \right)^{0.50}$$

**:: Undrained peak shear strength, Su (kPa) ::**

$N_{kt} = 10.50 + 7 \cdot \log(F_r)$ or user defined

$$S_u = \frac{(q_t - \sigma_v)}{N_{kt}}$$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: Remolded undrained shear strength, Su(rem) (kPa) ::**

$S_{u(rem)} = f_s$ (applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: Overconsolidation Ratio, OCR ::**

$$k_{OCR} = \left[ \frac{Q_{tn}^{0.20}}{0.25 \cdot (10.50 \cdot +7 \cdot \log(F_r))} \right]^{1.25}$$ or user defined

$OCR = k_{OCR} \cdot Q_{tn}$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: In situ Stress Ratio, Ko ::**

$$K_O = (1 - \sin\varphi') \cdot OCR^{\sin\varphi'}$$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: Soil Sensitivity, $S_t$ ::**

$$S_t = \frac{N_S}{F_r}$$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: Effective Stress Friction Angle, φ' (°) ::**

$$\varphi' = 29.5° \cdot B_q^{0.121} \cdot (0.256 + 0.336 \cdot B_q + \log Q_t)$$

(applicable for $0.10 < B_q < 1.00$)

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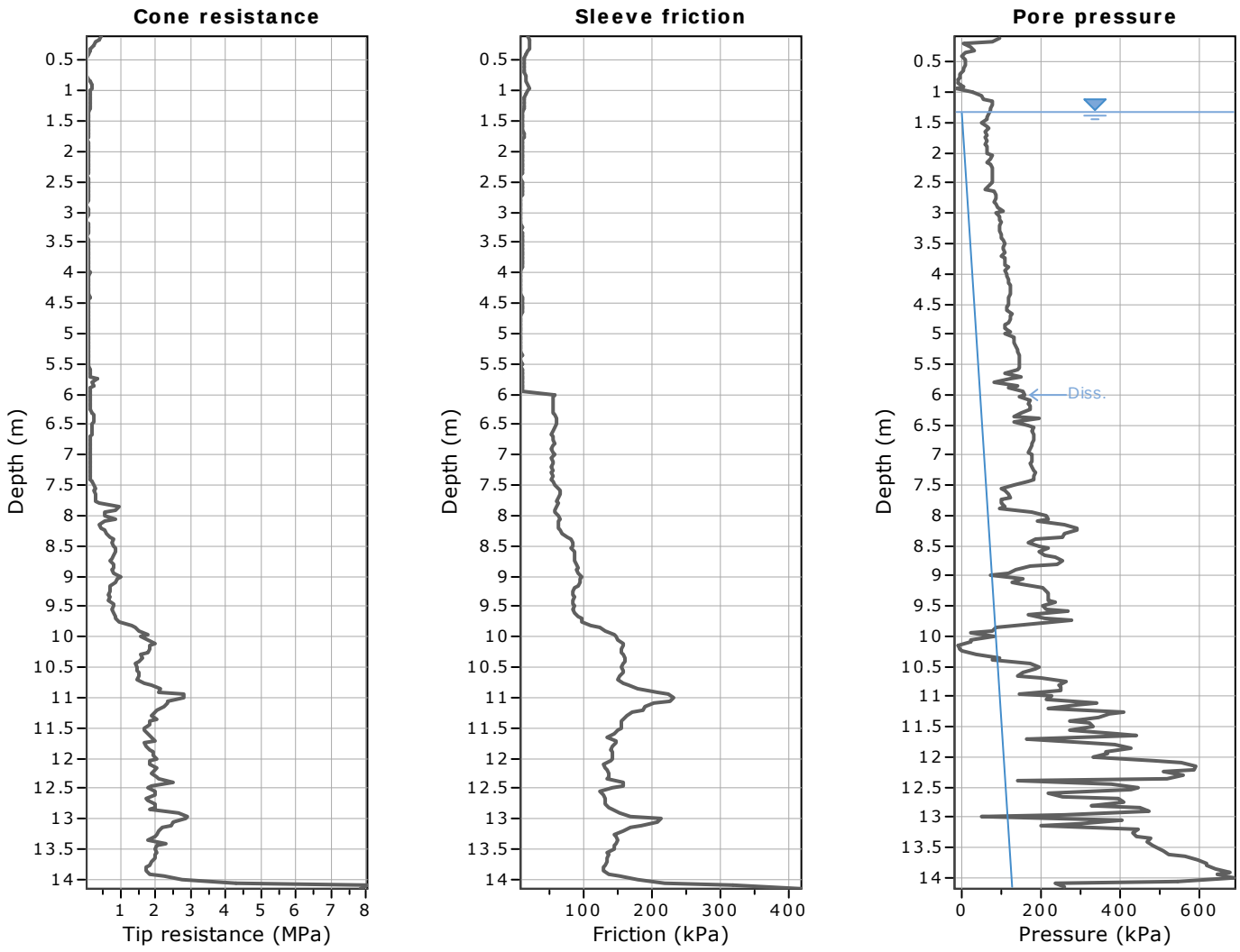
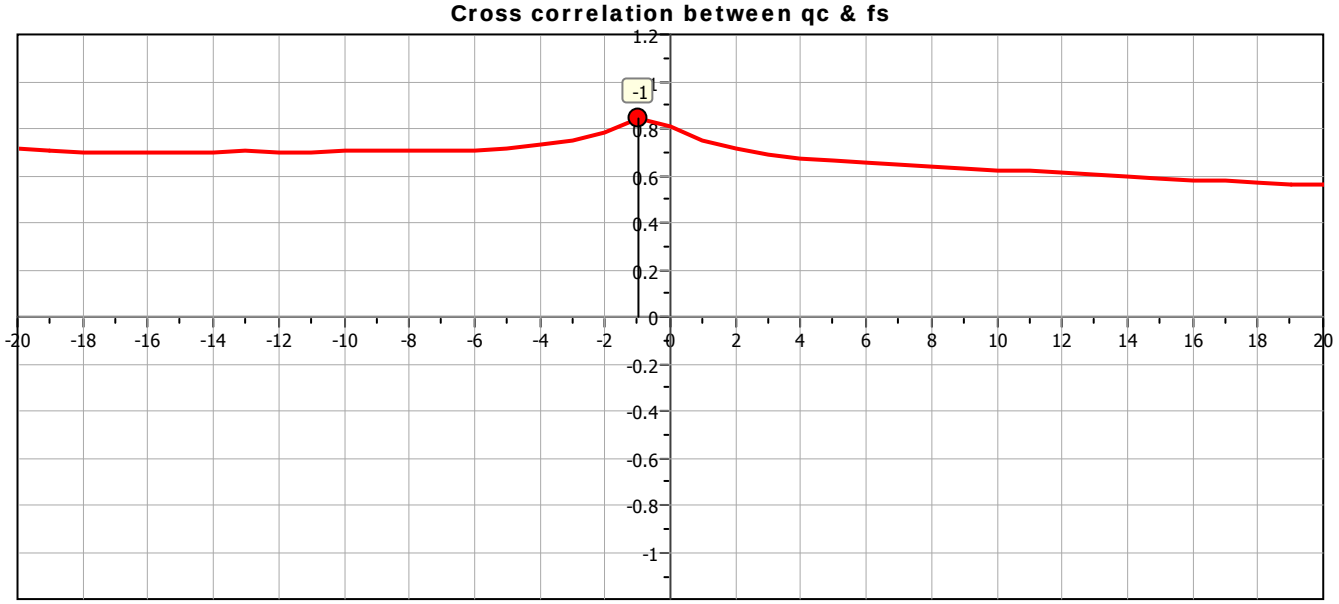



The plot below presents the cross correlation coeficient between the raw qc and fs values (as measured on the field). X axes presents the lag distance (one lag is the distance between two sucessive CPT measurements).



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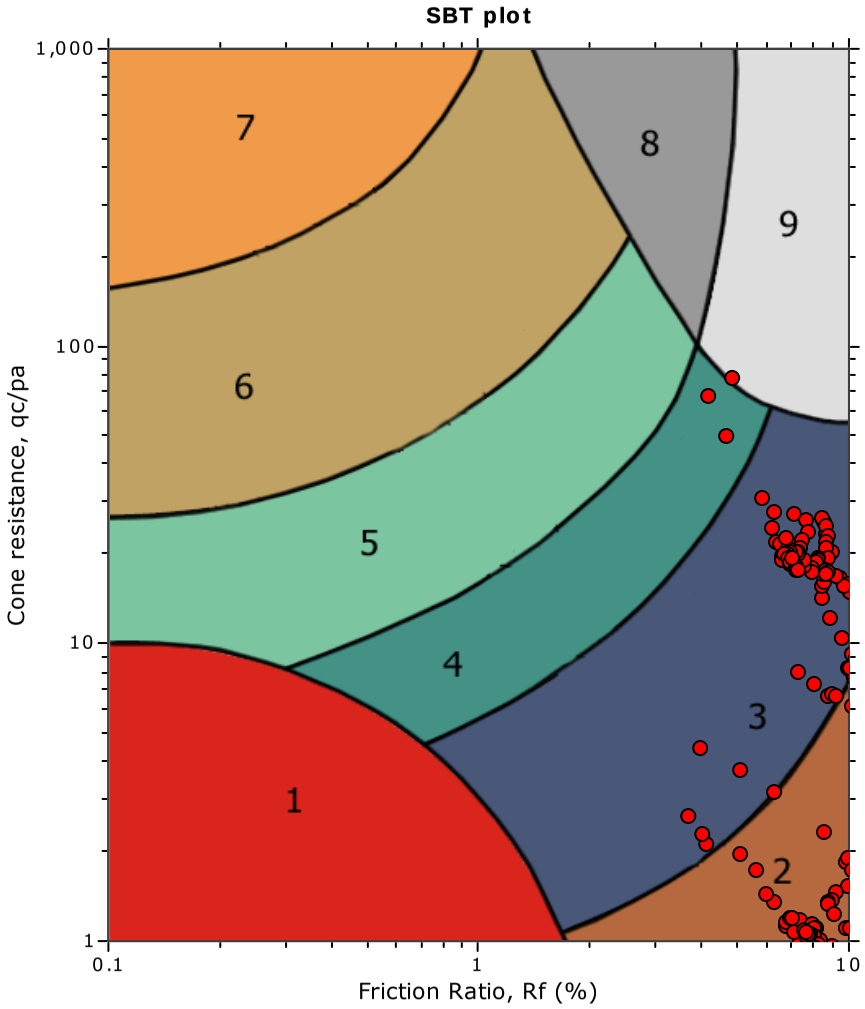
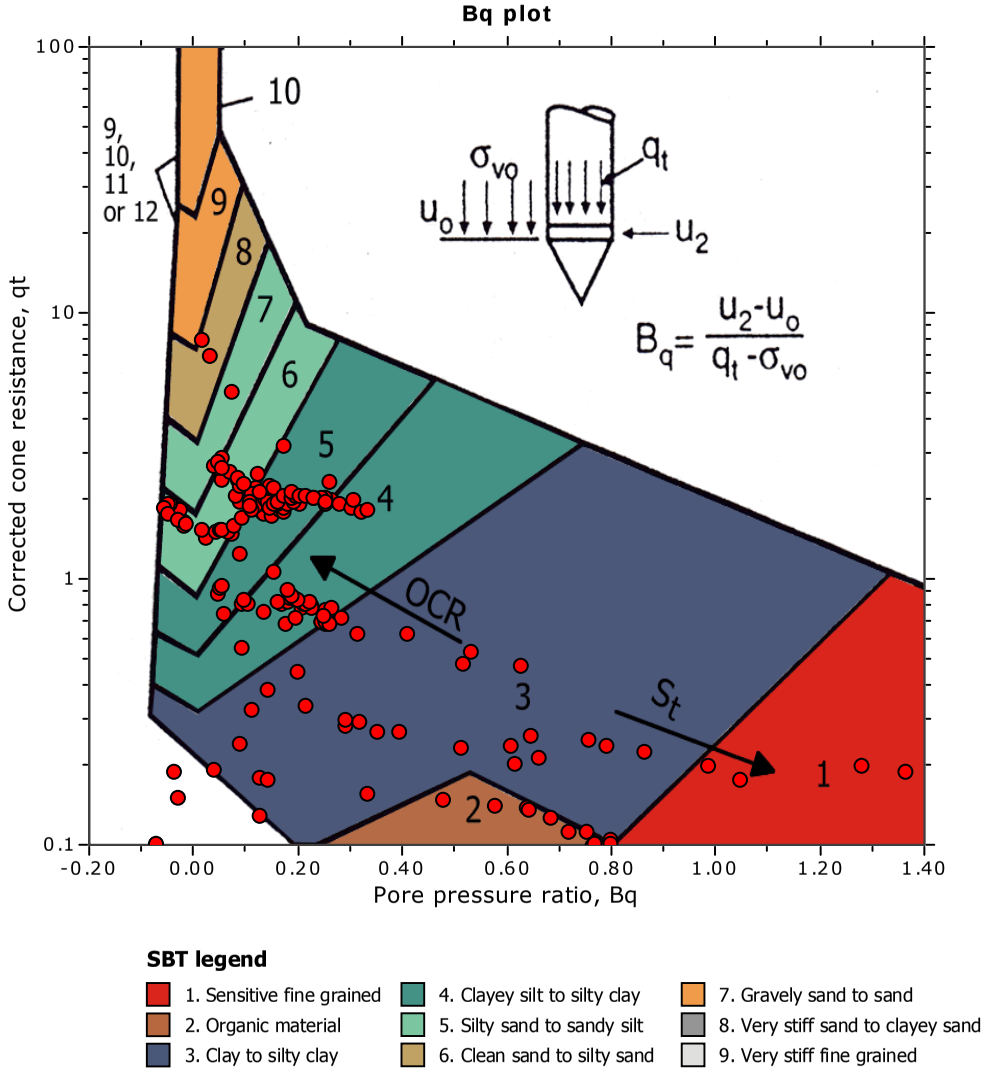
## SBT - Bq plots




**SBT legend**

| | | |
|---|---|---|
| 1. Sensitive fine grained | 4. Clayey silt to silty clay | 7. Gravely sand to sand |
| 2. Organic material | 5. Silty sand to sandy silt | 8. Very stiff sand to clayey sand |
| 3. Clay to silty clay | 6. Clean sand to silty sand | 9. Very stiff fine grained |

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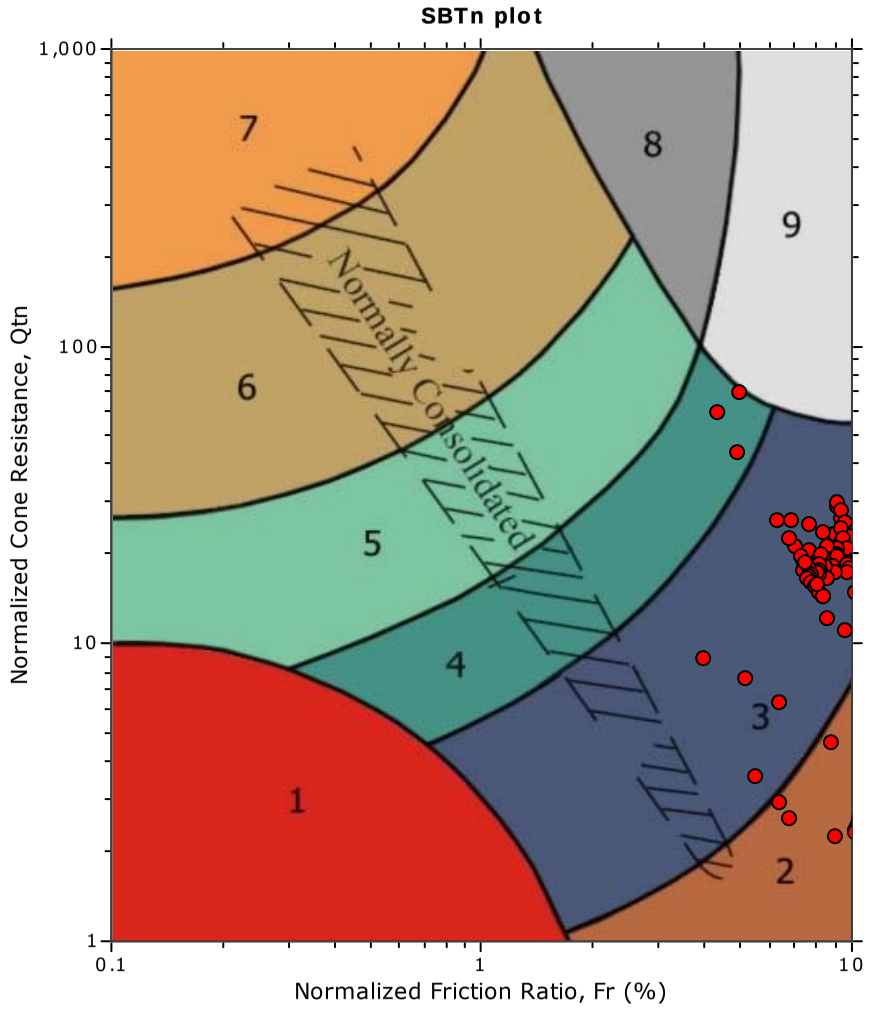
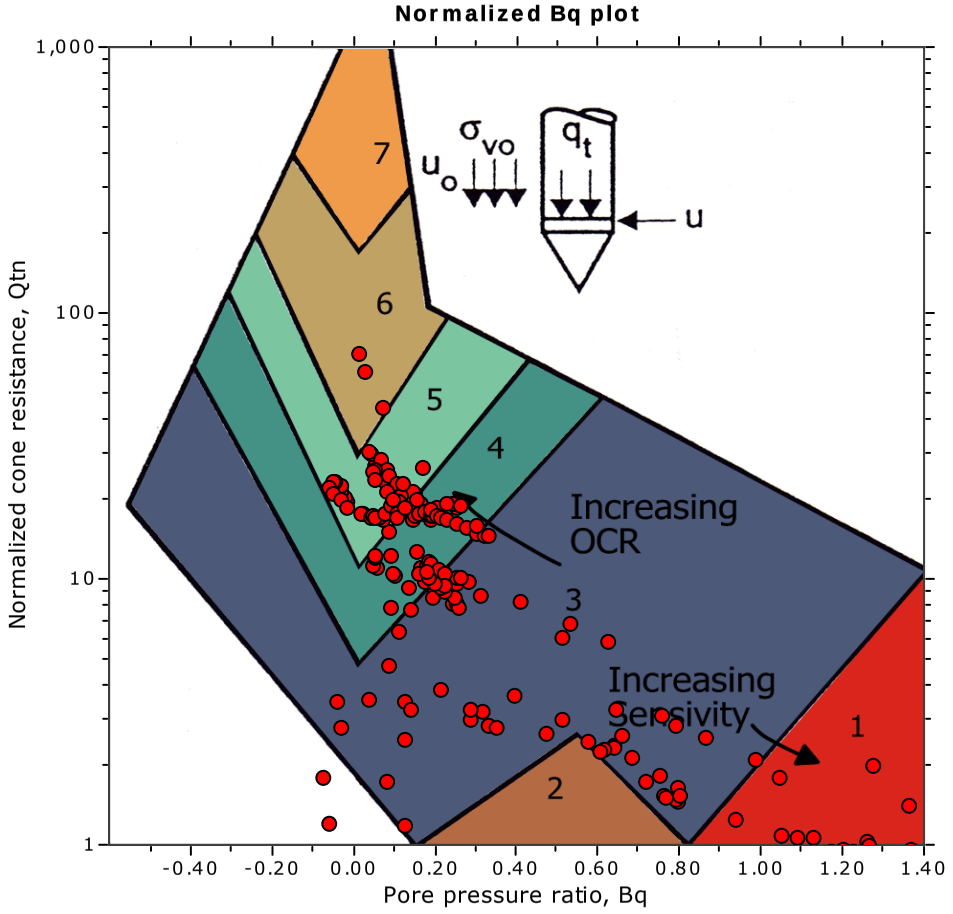
## SBT - Bq plots (normalized)




**SBTn legend**

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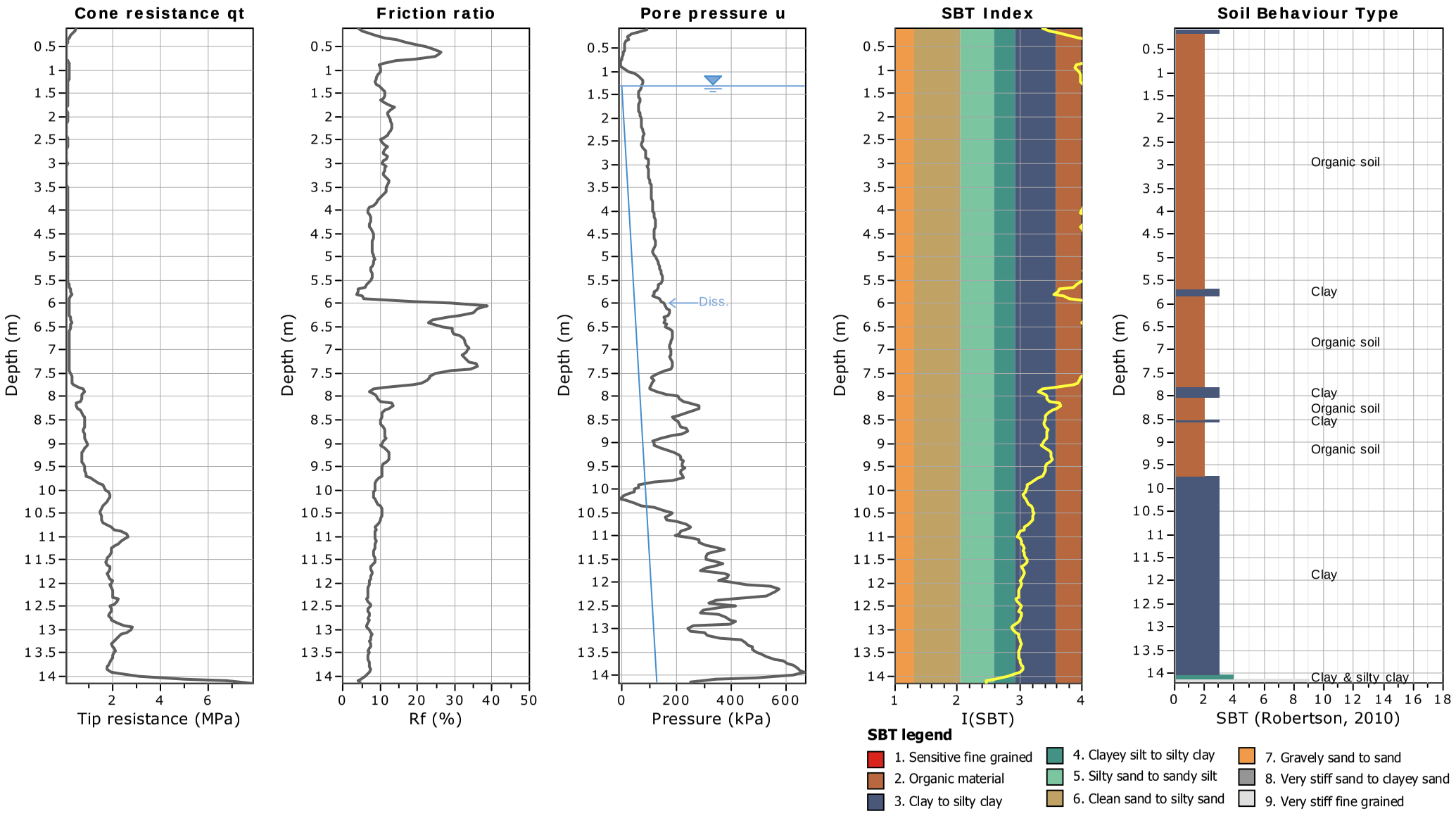

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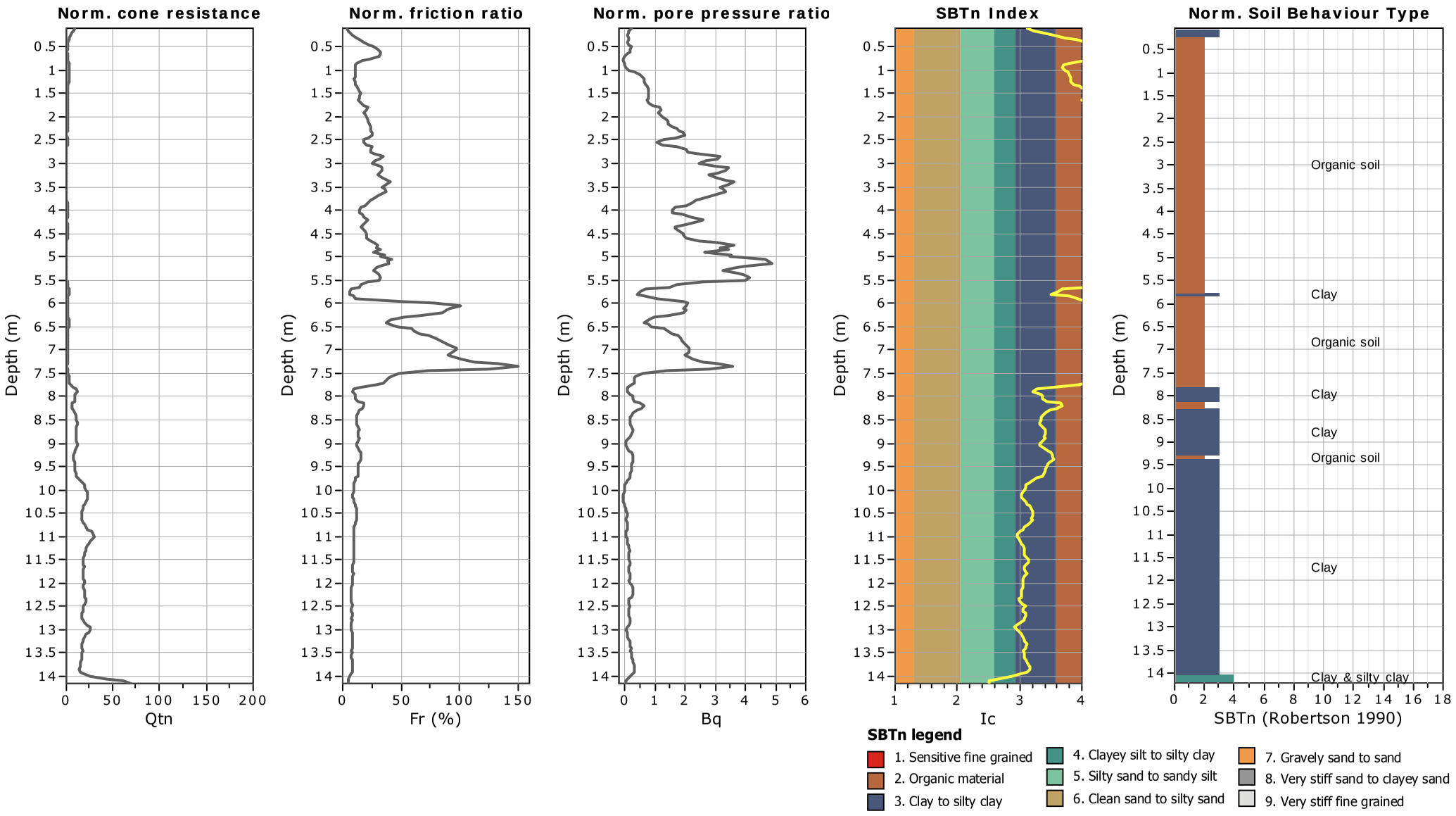

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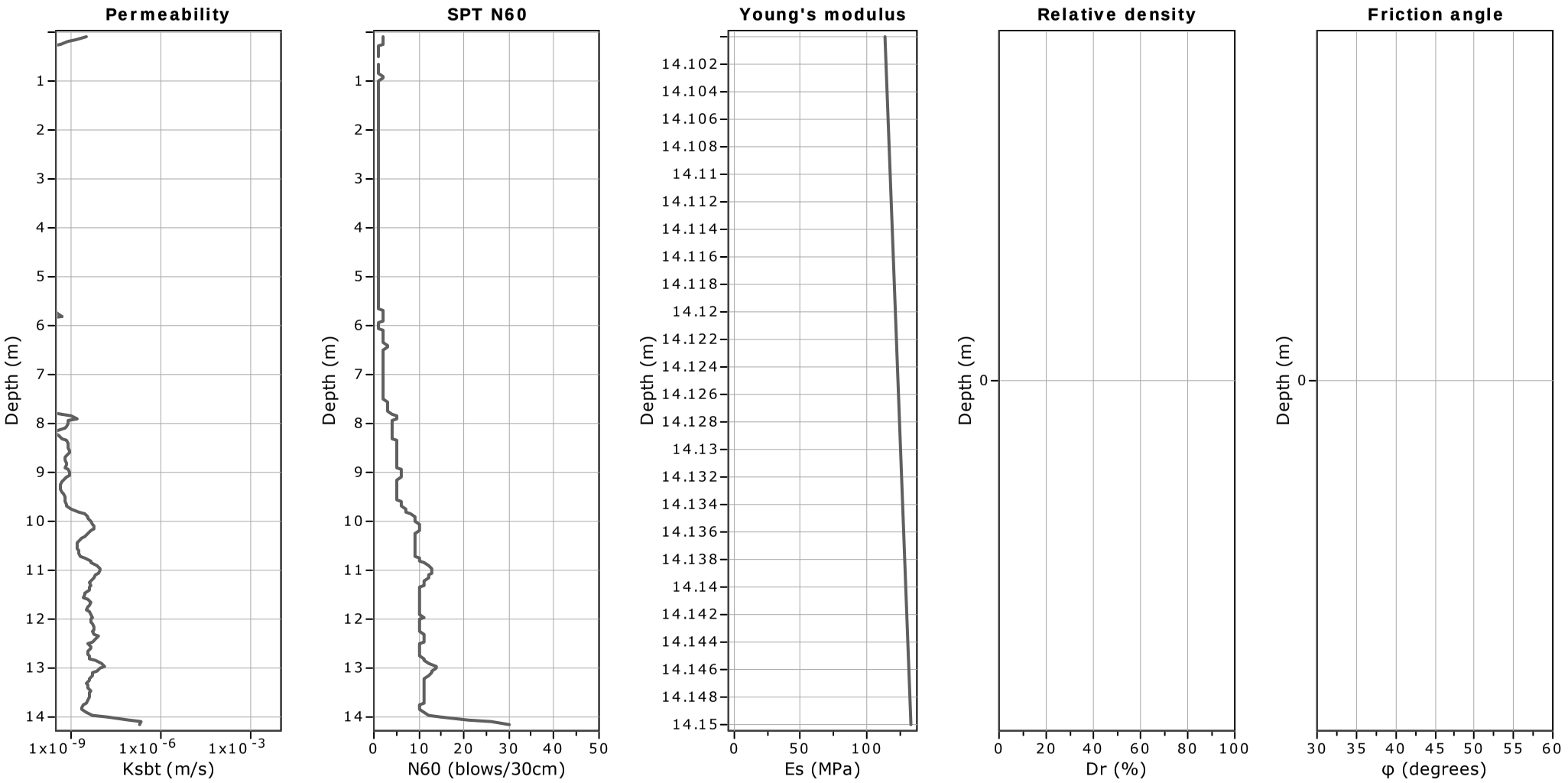


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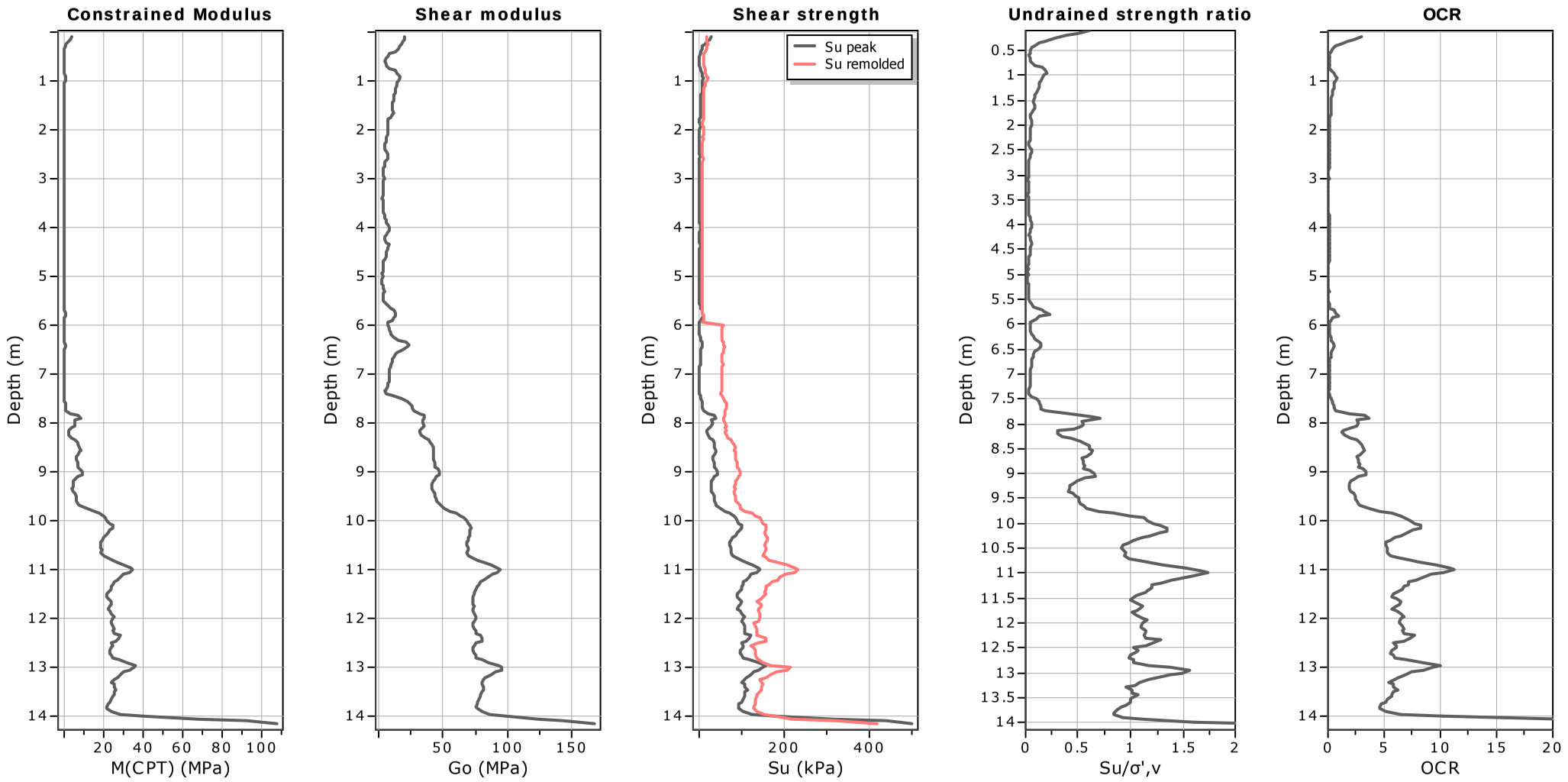


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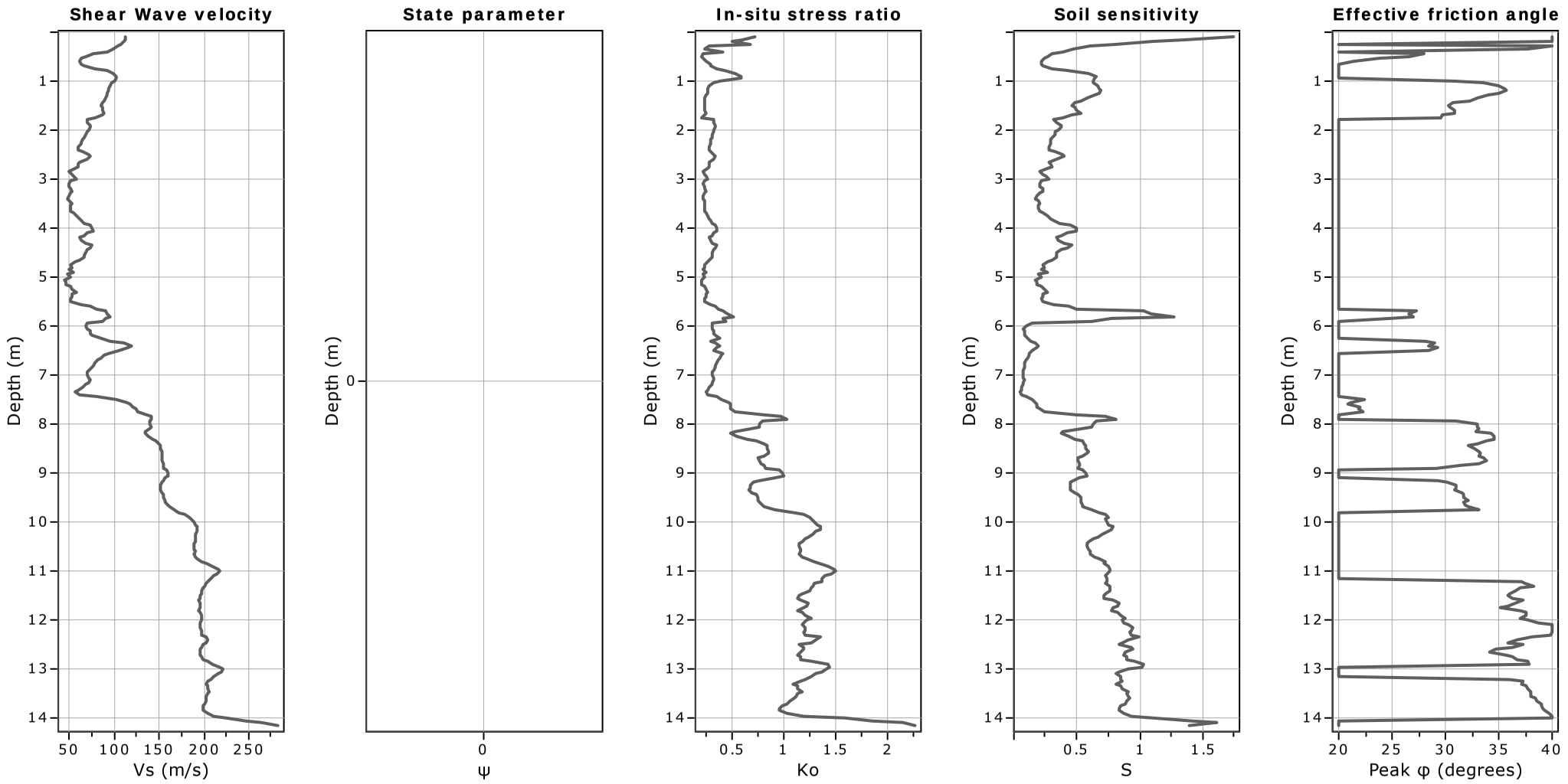


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User defined estimation data

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where:

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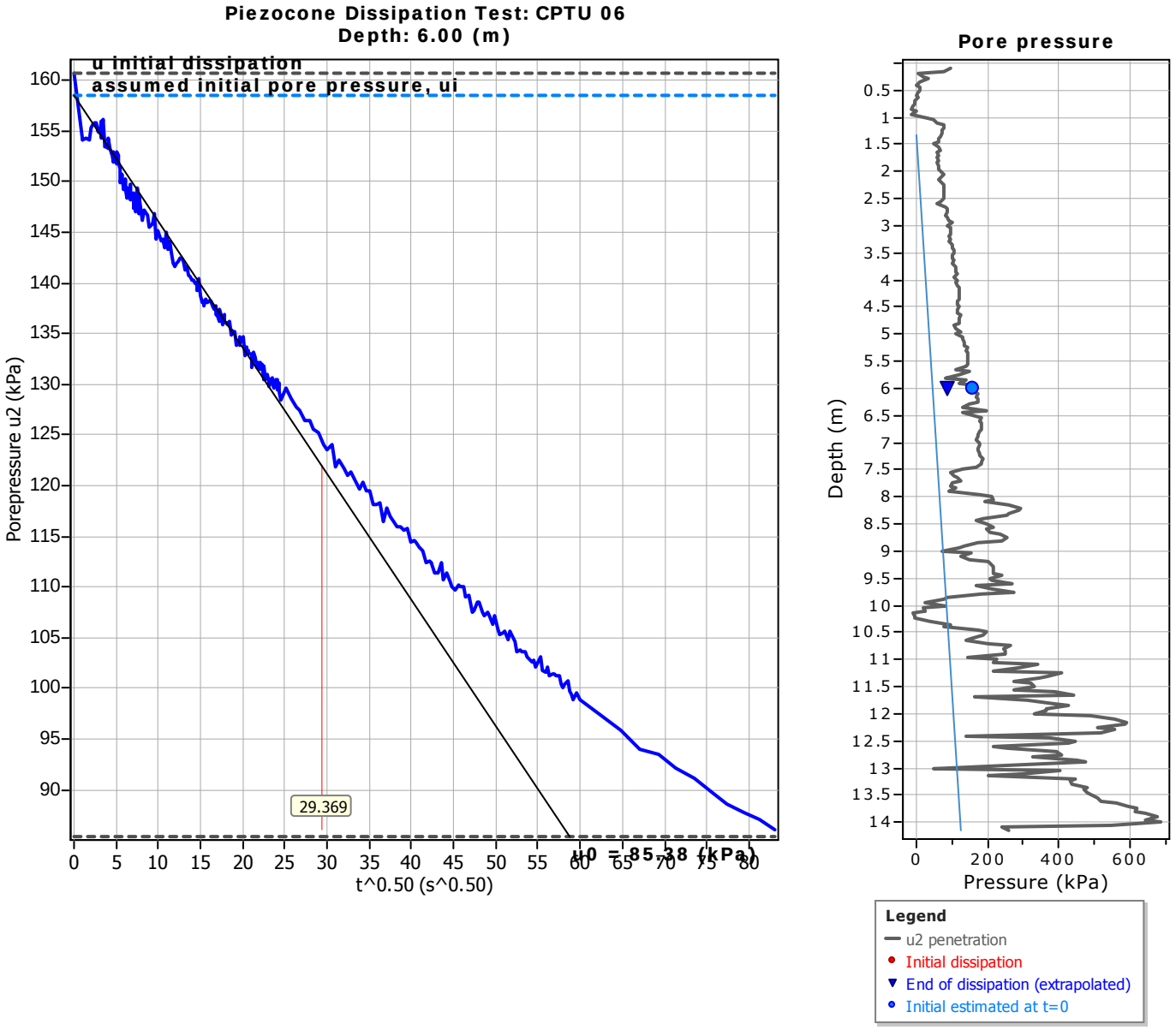
where: M is the 1-D constrained modulus and $\gamma_w$ is the unit weight of water, in compatible units.

**Tabular results**

| CPTU Borehole | Depth (m) | $(t_{50})^{0.50}$ | $t_{50}$ (s) | $t_{50}$ (years) | $G/S_u$ | $c_h$ ($m^2/s$) | $c_h$ ($m^2$/year) | M (MPa) | $k_h$ (m/s) |
|---|---|---|---|---|---|---|---|---|---|
| CPTU 06 | 6.00 | 29.4 | 863 | 2.74E-005 | 2154.20 | 4.42E-006 | 139 | 0.22 | 1.96E-007 |


Piezocone Dissipation Test: CPTU 06
Depth: 6.00 (m)
u initial dissipation
assumed initial pore pressure, ui
Porepressure u2 (kPa)
t^0.50 (s^0.50)
29.369
u0 = 85.38 (kPa)
Pore pressure
Depth (m)
Pressure (kPa)
Legend
u2 penetration
Initial dissipation
End of dissipation (extrapolated)
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Presented below is a list of formulas used for the estimation of various soil properties. The formulas are presented in SI unit system and assume that all components are expressed in the same units.

**:: Unit Weight, g (kN/m³) ::**

$$g = g_w \cdot \left( 0.27 \cdot \log(R_f) + 0.36 \cdot \log(\frac{q_t}{p_a}) + 1.236 \right)$$

where $g_w$ = water unit weight

**:: Permeability, k (m/s) ::**

$I_c < 3.27$ and $I_c > 1.00$ then $k = 10^{0.952-3.04 \cdot I_c}$

$I_c \leq 4.00$ and $I_c > 3.27$ then $k = 10^{-4.52-1.37 \cdot I_c}$

**:: $N_{SPT}$ (blows per 30 cm) ::**

$$N_{60} = \left( \frac{q_c}{P_a} \right) \cdot \frac{1}{10^{1.1268-0.2817 \cdot I_c}}$$

$$N_{1(60)} = Q_{tn} \cdot \frac{1}{10^{1.1268-0.2817 \cdot I_c}}$$

**:: Young's Modulus, Es (MPa) ::**

$$(q_t - \sigma_v) \cdot 0.015 \cdot 10^{0.55 \cdot I_c + 1.68}$$

(applicable only to $I_c < I_{c\_cutoff}$)

**:: Relative Density, Dr (%) ::**

$$100 \cdot \sqrt{\frac{Q_{tn}}{k_{DR}}}$$

(applicable only to $SBT_n$: 5, 6, 7 and 8 or $I_c < I_{c\_cutoff}$)

**:: State Parameter, ψ ::**

$$\psi = 0.56 - 0.33 \cdot \log(Q_{tn,cs})$$

**:: Peak drained friction angle, φ (°) ::**

$$\varphi = 17.60 + 11 \cdot \log(Q_{tn})$$

(applicable only to $SBT_n$: 5, 6, 7 and 8)

**:: 1-D constrained modulus, M (MPa) ::**

If $I_c > 2.20$

$\alpha = 14$ for $Q_{tn} > 14$

$\alpha = Q_{tn}$ for $Q_{tn} \leq 14$

$$M_{CPT} = \alpha \cdot (q_t - \sigma_v)$$

**:: Small strain shear Modulus, Go (MPa) ::**

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

**:: Shear Wave Velocity, Vs (m/s) ::**

$$V_s = \left( \frac{G_0}{\rho} \right)^{0.50}$$

**:: Undrained peak shear strength, Su (kPa) ::**

$N_{kt} = 10.50 + 7 \cdot \log(F_r)$ or user defined

$$S_u = \frac{(q_t - \sigma_v)}{N_{kt}}$$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: Remolded undrained shear strength, Su(rem) (kPa) ::**

$S_{u(rem)} = f_s$ (applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: Overconsolidation Ratio, OCR ::**

$$k_{OCR} = \left[ \frac{Q_{tn}^{0.20}}{0.25 \cdot (10.50 \cdot +7 \cdot \log(F_r))} \right]^{1.25}$$ or user defined

$OCR = k_{OCR} \cdot Q_{tn}$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: In situ Stress Ratio, Ko ::**

$$K_O = (1 - \sin\varphi') \cdot OCR^{\sin\varphi'}$$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: Soil Sensitivity, $S_t$ ::**

$$S_t = \frac{N_S}{F_r}$$

(applicable only to $SBT_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

**:: Effective Stress Friction Angle, φ' (°) ::**

$$\varphi' = 29.5° \cdot B_q^{0.121} \cdot (0.256 + 0.336 \cdot B_q + \log Q_t)$$

(applicable for $0.10 < B_q < 1.00$)

# 9. TERMO DE ENCERRAMENTO

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Este VOLUME ANEXO 3B – ESTUDOS GEOTÉCNICOS referente ao LOTE 4, TRECHO 4.3 MONTE BELO – MINEIRINHO – CAMPINAS (ES-297), possui 257 (duzentas e cinquenta e sete) folhas, incluindo esta, numericamente ordenadas.

Belo Horizonte, 31 de janeiro de 2016.