



AS "Ceļuprojekts"
 Ģeoloģijas nodaļa
 Murjāņu iela 7a, Rīga
 www.celuprojekts.lv

CPT: CPT-3

Total depth: 12.04 m, Date: 11.12.2015.

Surface Elevation: 4.70 m

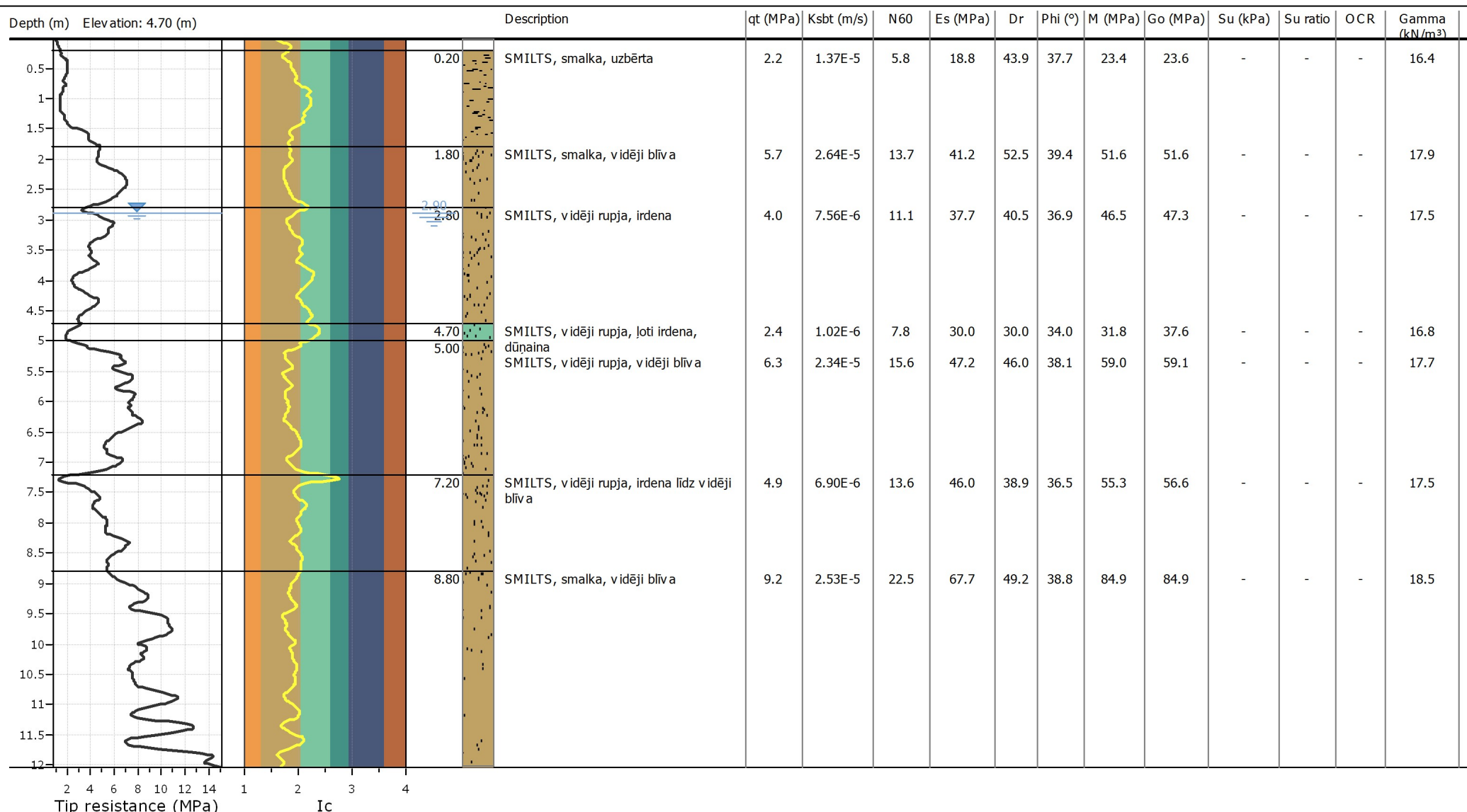
Coords: X:326199.00, Y:519788.00

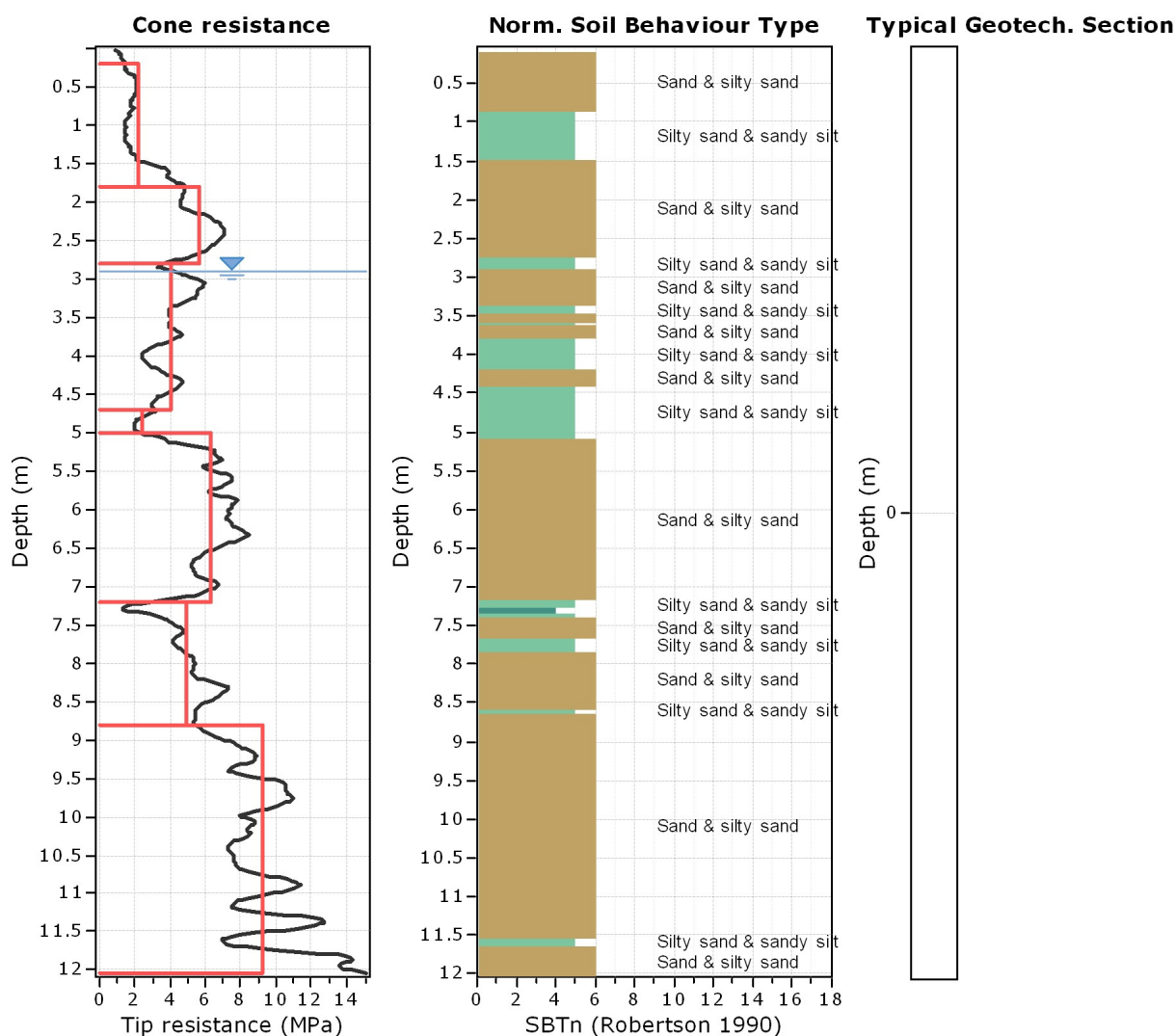
Cone Type: Type II, Nr.3908

Cone Operator: J.Ertners

Project: Ģeotehniskā priekšizpēte

Location: Attekas iela 16, Ādaži





Tabular results

::: Layer No: 1 :::

Code: T7 **Start depth:** 0.20 (m), **End depth:** 1.80 (m)

Description: SMILTS, smalka, uzbērtā

Basic results

Total cone resistance: 2.19 ± 0.94 MPa

Sleeve friction: 16.78 ± 6.56 kPa

SBT_n: 6

SBT_n description: Sand & silty sand

Estimation results

Permeability: $1.37\text{E-}05 \pm 1.31\text{E-}05$ m/s

N₆₀: 5.75 ± 2.09 blows

Es: 18.83 ± 6.23 MPa

Dr (%): 43.93 ± 5.17

ö (degrees): 37.66 ± 1.14 °

Unit weight: 16.42 ± 0.56 kN/m³

Constrained Mod.: 23.38 ± 7.88 MPa

Go: 23.60 ± 7.81 MPa

Su: 0.00 ± 0.00 kPa

Su ratio: 0.00 ± 0.00

O.C.R.: 0.00 ± 0.00

::: Layer No: 2 :::**Code:** 7v **Start depth:** 1.80 (m), **End depth:** 2.80 (m)**Description:** SMILTS, smalka, vidēji blīva**Basic results**

Total cone resistance: 5.67 ±1.03 MPa

Sleeve friction: 40.98 ±6.80 kPa

SBT_n: 6SBT_n description: Sand & silty sand**Estimation results**

Permeability: 2.64E-05 ±1.27E-05 m/s

N60: 13.71 ±1.91 blows

Es: 41.19 ±4.76 MPa

Dr (%): 52.48 ±3.86

ö (degrees): 39.40 ±0.73 °

Unit weight: 17.90 ±0.24 kN/m³

Constrained Mod.: 51.63 ±5.97 MPa

Go: 51.63 ±5.97 MPa

Su: 0.00 ±0.00 kPa

Su ratio: 0.00 ±0.00

O.C.R.: 0.00 ±0.00

::: Layer No: 3 :::**Code:** 8i **Start depth:** 2.80 (m), **End depth:** 4.70 (m)**Description:** SMILTS, vidēji rupja, irdena**Basic results**

Total cone resistance: 4.02 ±0.95 MPa

Sleeve friction: 32.48 ±5.76 kPa

SBT_n: 6SBT_n description: Sand & silty sand**Estimation results**

Permeability: 7.56E-06 ±7.97E-06 m/s

N60: 11.14 ±1.77 blows

Es: 37.73 ±3.44 MPa

Dr (%): 40.52 ±4.97

ö (degrees): 36.88 ±1.19 °

Unit weight: 17.50 ±0.27 kN/m³

Constrained Mod.: 46.48 ±5.45 MPa

Go: 47.29 ±4.31 MPa

Su: 0.00 ±0.00 kPa

Su ratio: 0.00 ±0.00

O.C.R.: 0.00 ±0.00

::: Layer No: 4 :::**Code:** 8o **Start depth:** 4.70 (m), **End depth:** 5.00 (m)**Description:** SMILTS, vidēji rupja, ļoti irdena, dūņaina**Basic results**

Total cone resistance: 2.35 ±0.47 MPa

Sleeve friction: 21.59 ±5.01 kPa

SBT_n: 5SBT_n description: Silty sand & sandy silt**Estimation results**

Permeability: 1.02E-06 ±6.85E-07 m/s

N60: 7.75 ±1.00 blows

Es: 29.98 ±3.20 MPa

Dr (%): 30.02 ±2.91

ö (degrees): 34.05 ±0.90 °

Unit weight: 16.82 ±0.34 kN/m³

Constrained Mod.: 31.82 ±6.63 MPa

Go: 37.58 ±4.02 MPa

Su: 0.00 ±0.00 kPa

Su ratio: 0.00 ±0.00

O.C.R.: 0.00 ±0.00

::: Layer No: 5 :::**Code:** 8v **Start depth:** 5.00 (m), **End depth:** 7.20 (m)**Description:** SMILTS, vidēji rupja, vidēji blīva**Basic results**

Total cone resistance: 6.35 ±1.32 MPa

Sleeve friction: 34.52 ±8.39 kPa

SBT_n: 6SBT_n description: Sand & silty sand**Estimation results**

Permeability: 2.34E-05 ±1.39E-05 m/s

N60: 15.58 ±2.45 blows

Es: 47.15 ±5.69 MPa

Dr (%): 45.96 ±5.11

ö (degrees): 38.09 ±1.16 °

Unit weight: 17.72 ±0.38 kN/m³

Constrained Mod.: 59.02 ±7.38 MPa

Go: 59.10 ±7.13 MPa

Su: 0.00 ±0.00 kPa

Su ratio: 0.00 ±0.00

O.C.R.: 0.00 ±0.00

::: Layer No: 6 :::**Code:** 8i **Start depth:** 7.20 (m), **End depth:** 8.80 (m)**Description:** SMILTS, vidēji rupja, irdena līdz vidēji blīva**Basic results**

Total cone resistance: 4.92 ±1.39 MPa

Sleeve friction: 32.45 ±11.51 kPa

SBT_n: 6SBT_n description: Sand & silty sand**Estimation results**

Permeability: 6.90E-06 ±4.44E-06 m/s

N60: 13.56 ±3.13 blows

Es: 46.05 ±7.76 MPa

Dr (%): 38.86 ±4.47

ö (degrees): 36.49 ±1.19 °

Unit weight: 17.49 ±0.60 kN/m³

Constrained Mod.: 55.30 ±13.56 MPa

Go: 56.62 ±10.64 MPa

Su: 0.00 ±0.00 kPa

Su ratio: 0.00 ±0.00

O.C.R.: 0.00 ±0.00

::: Layer No: 7 :::**Code:** 7v **Start depth:** 8.80 (m), **End depth:** 12.04 (m)**Description:** SMILTS, smalka, vidēji blīva**Basic results**

Total cone resistance: 9.20 ±2.10 MPa

Sleeve friction: 60.13 ±12.56 kPa

SBT_n: 6SBT_n description: Sand & silty sand**Estimation results**

Permeability: 2.53E-05 ±2.17E-05 m/s

N60: 22.46 ±3.65 blows

Es: 67.74 ±7.93 MPa

Dr (%): 49.17 ±5.15

ö (degrees): 38.75 ±0.99 °

Unit weight: 18.52 ±0.29 kN/m³

Constrained Mod.: 84.90 ±9.94 MPa

Go: 84.90 ±9.94 MPa

Su: 0.00 ±0.00 kPa

Su ratio: 0.00 ±0.00

O.C.R.: 0.00 ±0.00



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Summary table of mean values

From depth To depth (m)	Thickness (m)	Permeability (m/s)	SPT _{N60} (blows/30cm)	E _s (MPa)	D _r	Friction angle	Constrained modulus, M (MPa)	Shear modulus, G ₀ (MPa)	Undrained strength, S _u (kPa)	Undrained strength ratio	OCR	Unit weight (kN/m ³)
0.20	1.60	1.37E-05	5.8	18.8	43.9	37.7	23.4	23.6	0.0	0.0	0.0	16.4
1.80		(±1.31E-05)	(±2.1)	(±6.2)	(±5.2)	(±1.1)	(±7.9)	(±7.8)	(±0.0)	(±0.0)	(±0.0)	(±0.6)
1.80	1.00	2.64E-05	13.7	41.2	52.5	39.4	51.6	51.6	0.0	0.0	0.0	17.9
2.80		(±1.27E-05)	(±1.9)	(±4.8)	(±3.9)	(±0.7)	(±6.0)	(±6.0)	(±0.0)	(±0.0)	(±0.0)	(±0.2)
2.80	1.90	7.56E-06	11.1	37.7	40.5	36.9	46.5	47.3	0.0	0.0	0.0	17.5
4.70		(±7.97E-06)	(±1.8)	(±3.4)	(±5.0)	(±1.2)	(±5.4)	(±4.3)	(±0.0)	(±0.0)	(±0.0)	(±0.3)
4.70	0.30	1.02E-06	7.8	30.0	30.0	34.0	31.8	37.6	0.0	0.0	0.0	16.8
5.00		(±6.85E-07)	(±1.0)	(±3.2)	(±2.9)	(±0.9)	(±6.6)	(±4.0)	(±0.0)	(±0.0)	(±0.0)	(±0.3)
5.00	2.20	2.34E-05	15.6	47.2	46.0	38.1	59.0	59.1	0.0	0.0	0.0	17.7
7.20		(±1.39E-05)	(±2.5)	(±5.7)	(±5.1)	(±1.2)	(±7.4)	(±7.1)	(±0.0)	(±0.0)	(±0.0)	(±0.4)
7.20	1.60	6.90E-06	13.6	46.0	38.9	36.5	55.3	56.6	0.0	0.0	0.0	17.5
8.80		(±4.44E-06)	(±3.1)	(±7.8)	(±4.5)	(±1.2)	(±13.6)	(±10.6)	(±0.0)	(±0.0)	(±0.0)	(±0.6)
8.80	3.24	2.53E-05	22.5	67.7	49.2	38.8	84.9	84.9	0.0	0.0	0.0	18.5
12.04		(±2.17E-05)	(±3.7)	(±7.9)	(±5.2)	(±1.0)	(±9.9)	(±9.9)	(±0.0)	(±0.0)	(±0.0)	(±0.3)

Depth values presented in this table are measured from free ground surface