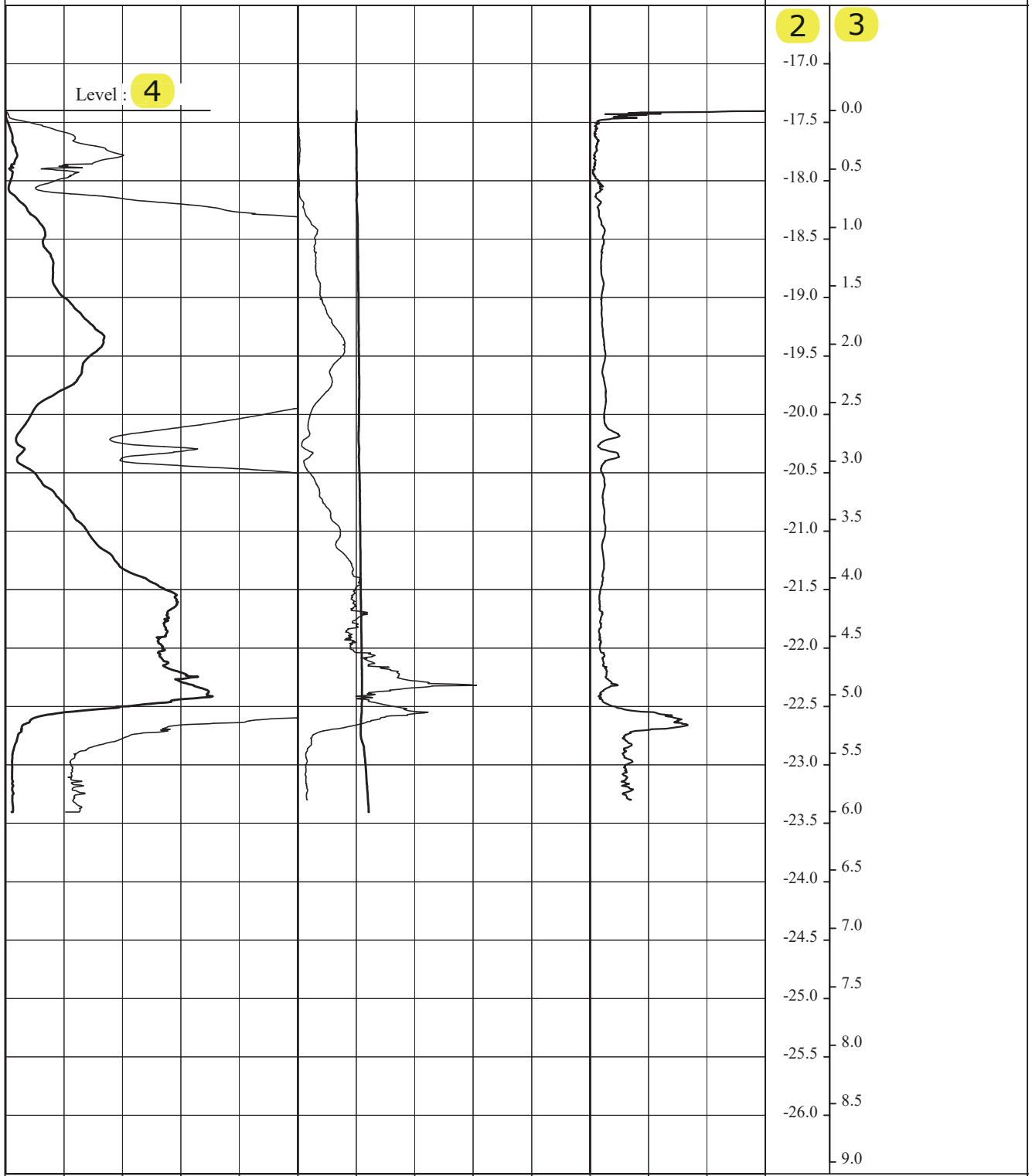


Enclosure C.01

**Legend – CPTU Logs (measured values)**

(2 pages)

CPT name : 1



2 3

Level: 4

1 2 3 4  $q_c$  (MPa) 5

0.1 0.2 0.3 0.4  $f_s$  (MPa) 7

10 20 30 40  $q_c$  (MPa) 6

0.0 0.5 1.0 1.5  $u$  (MPa) 8

2 10 4  $R_f$  (%)

Level (m)  
Depth (m)

E :  
N : 11  
System :

Cone no. :  
Cone type : 12  
Cone area :

Rig :  
Performed by : 13  
Remark :



Project : 14

Prepared :  
Checked : 15  
Approved :  
Date:  
Date: 16  
Date:

Subject: 17  
Report 18 Enclosure: 19

Page 20  
Rev. 21

## Legend – CPTU Log

- 1 CPT ID / test name
- 2 Level Scale
- 3 Depth of CPT below seabed
- 4 Seabed Level
- 5  $q_c$  Tip resistance, small values e.g. 0 - 5 MPa
- 6  $q_c$  Tip resistance, high values e.g. 0 - 50 MPa
- 7  $f_s$  Sleeve friction
- 8  $u$  Pore water pressure relative to initial pressure
- 9 -
- 10  $R_f$  Friction ratio
- 11 Coordinates and positioning system
- 12 Cone informations
- 13 Name of used rig, operators initials, time and date for actual test and remarks
- 14 Project number and name
- 15 Initials of staff member to complete document stage
- 16 Date of document stage completion
- 17 Name of current CPT
- 18 Report No.
- 19 Name of enclosure
- 20 Number of pages (No / No)
- 21 Report revision

Prepared : SBR Date: 2016-09-12 Subject: Legend, CPTU Log  
Checked : ABP Date: 2016-09-12 Rev.: 01  
Approved : LAR Date: 2016-09-12

Enclosure C.02

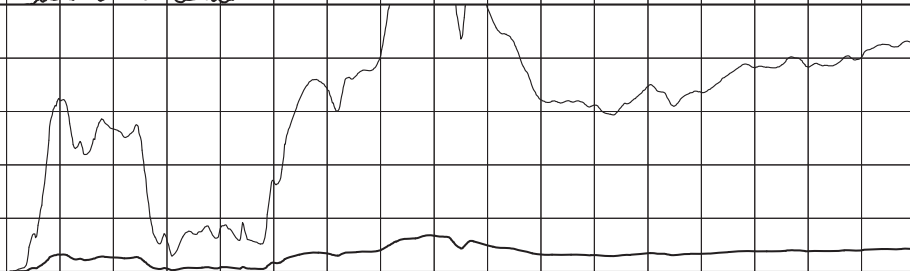
**Legend – CPTU Logs (interpreted values)**

(3 pages)

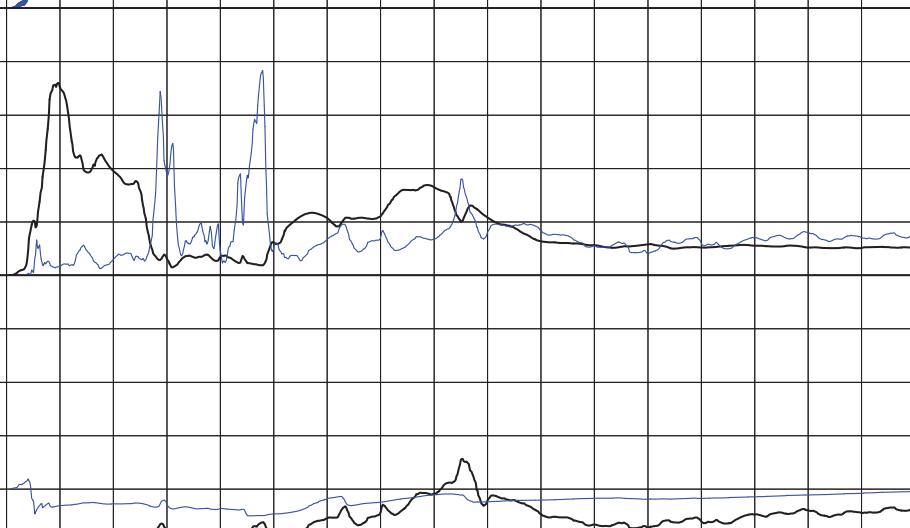
CPT name : 1

5

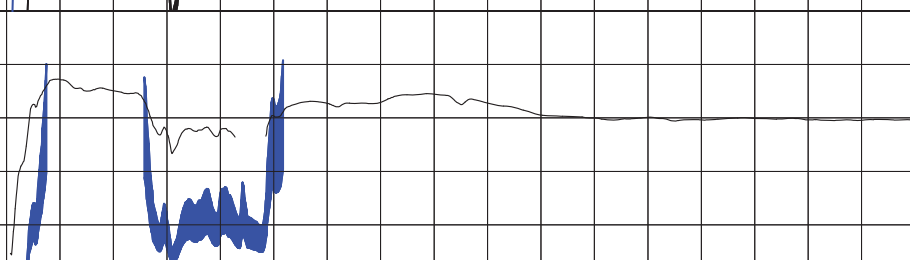
Level: -11.5 m



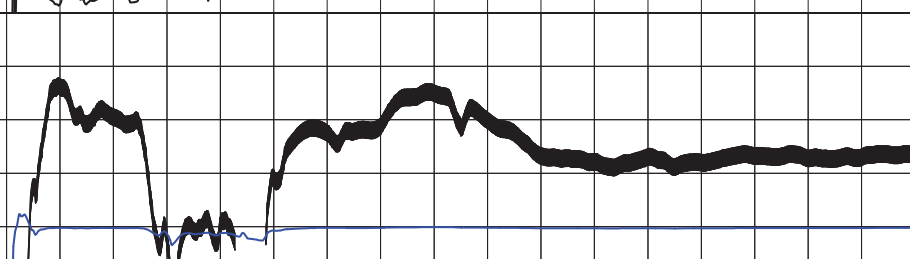
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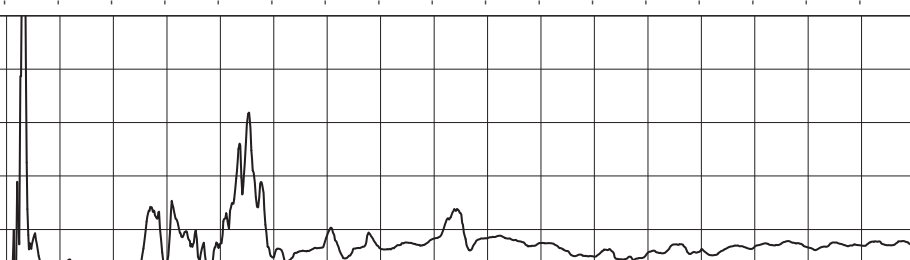
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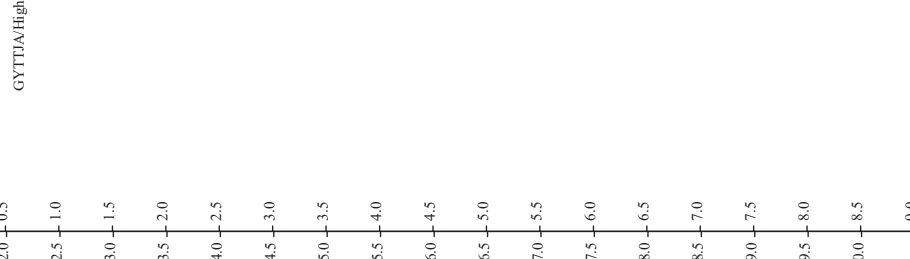
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12



14

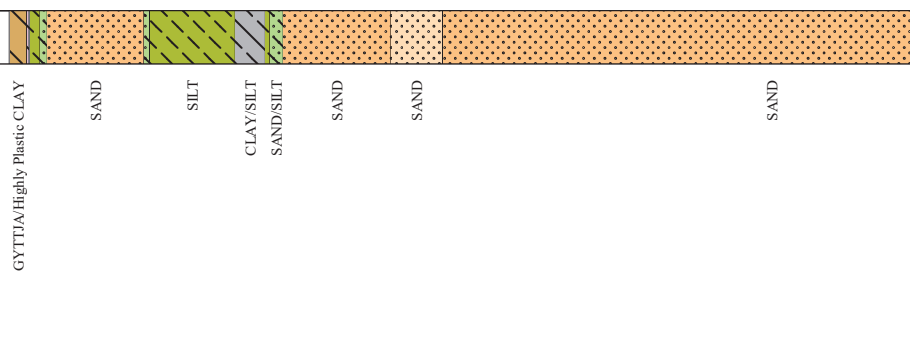


16

3

Level (m)

Depth (m)



4

17

Soil (Auto) (Revisions: 8)

Rig Performed by : 20

Cone no. : 19

E : 18

System : 13

Qt (-) : 11

fs (MPa) : 9

qt (MPa) : 7

Project : 21

Subject : 24

Date : 23

Checked : 22

Approved : 25

Report : 26

Enclosure : 27

Page : 28

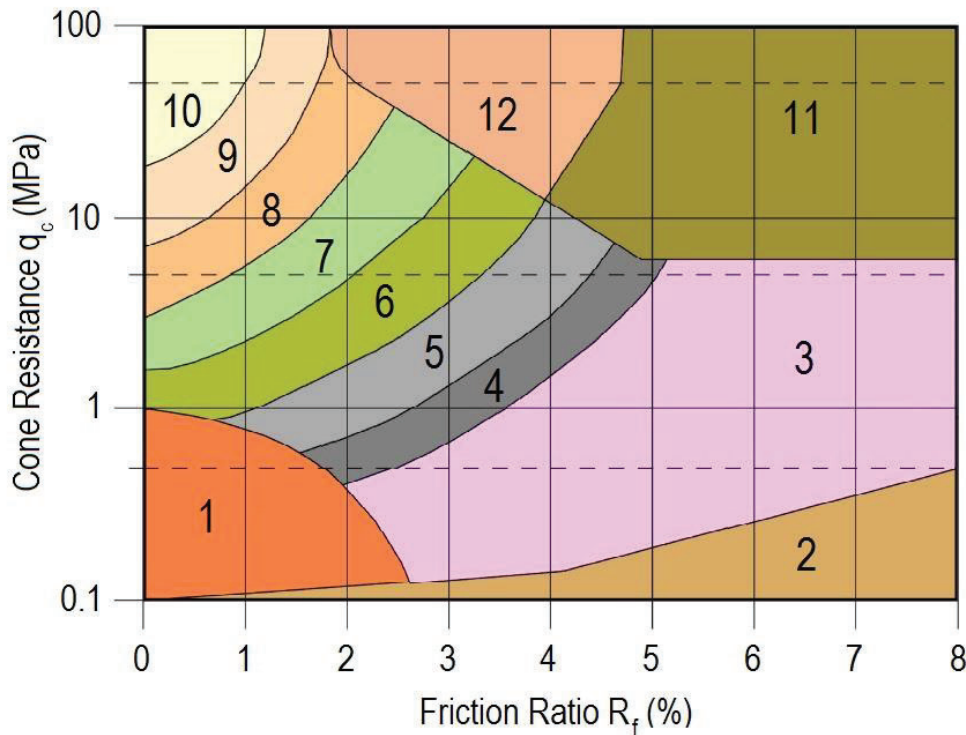
Rev. : 28

## Legend – Interpreted CPTU Logs

|    |   |
|----|---|
| 1  | CPT ID / test name  |
| 2  | Level Scale   |
| 3  | Depth of CPT below seabed   |
| 4  | Soil description and boundaries   |
| 5  | Seabed Level  |
| 6  | $q_t$ Corrected tip resistance, small values e.g. 0 - 10 MPa                    |
| 7  | $q_t$ Corrected tip resistance, high values e.g. 0 - 100 MPa                    |
| 8  | $f_t$ Corrected sleeve friction   |
| 9  | $u$ Pore water pressure relative to level of start test                         |
| 10 | $Q_t$ Normalized cone resistance  |
| 11 | $F_r$ Normalized sleeve friction  |
| 12 | $\phi'$ Angle of internal friction  |
| 13 | $c_u$ Undrained shear strength  |
| 14 | $D_r$ Relative density  |
| 15 | $B_q$ Pore pressure ratio   |
| 16 | $R_{ft}$ Corrected friction ratio   |
| 17 | Method and model for soil interpretation  |
| 18 | Coordinates and positioning system  |
| 19 | Cone information  |
| 20 | Name of used rig, operators initials, time and date for actual test and remarks |
| 21 | Project number and name   |
| 22 | Initials of staff member to complete document stage                             |
| 23 | Date of document stage completion   |
| 24 | Name of current CPT   |
| 25 | Report No.  |
| 26 | Name of enclosure   |
| 27 | Number of pages (No / No)   |
| 28 | Report revision   |

|          |       |                  |  |
|----------|-------|------------------|--|
| Prepared | : SBR | Date: 2017-11-23 | Subject: Legend, Interpreted CPTU logs |
| Checked  | : ABP | Date: 2017-11-23 | Rev.: 03                               |
| Approved | : LAR | Date: 2017-11-23 |  |

## Robertson (1986) CPT Soil Classification



| Zone | Soil Behaviour Type (SBT)                            |
|------|--|
| 1    | Sensitive, fine grained                              |
| 2    | Organic soils: peat, clay                            |
| 3    | CLAY   |
| 4    | CLAY - Clay to silty clay                            |
| 5    | SILT mixtures - Clayey silt to silty clay            |
| 6    | SILT - Sandy silt to clayey silt                     |
| 7    | Fine SAND mixtures - Silty sand to sandy silt        |
| 8    | SAND - Sand to silty sand                            |
| 9    | SAND - Coarse to medium sand                         |
| 10   | Gravel mixtures - Gravel to gravelly sand            |
| 11   | (Very stiff fine grained / Hard clay silt weak rock) |
| 12   | (Very compact sand to clayey sand)                   |

Prepared : SBR Date: 2017-11-23 Subject: Legend, Interpreted CPTU logs  
 Checked : ABP Date: 2017-11-23 Rev.: 03  
 Approved : LAR Date: 2017-11-23

Enclosure C.03
















**Legend – Borehole Logs**

(3 pages)



# Geo Borehole Log

## Standard Legends and Definitions

| Soil types  | Drill Tool   | Sample Types  |                           |
|---|--|---|---------------------------|
|  Sand                  |  Core drilling  |  |                           |
|  Gravel                |  Flush drilling |   | B      Bag sample         |
|  Clay                  |  Bailor         |   | TW     Shelby Tube sample |
|  Gyttja (Organic Clay) |  Closed auger   |   | LB     Hammer sample      |
|  Silt                  |  |   | C      Core sample        |
|  Chalk / Limestone     |  |   |                           |
|  Flint                 |  |   |                           |
|  Shells                |  |   |                           |
|  Brown Coal           |  |   |                           |
|  Mudstone            |  |   |                           |

### Lab Specimen

x.xD      Disturbed sub-sample  
x.xU      Undisturbed sub-sample











### Boundaries

————— Main boundary  
- - - - - Subordinate boundary

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**Prepared By:** LTR      **Date:** 2020-08-19



# Soil Classification

| Formation Code         |      |               |    |  |   |
|------------------------|------|---------------|----|--|---|
| Deposit                |      | Age           |    | Soil Type Color  |   |
| Description            | Code |               |    | Deposit-Age  | Color Code  |
| Marine deposit         | Ma   | Recent        | Re | Ma Pg  |  |
| Brackish water deposit | Br   | Holocene      | Ho | Ti Pg  |  |
| Freshwater deposit     | Fw   | Postglacial   | Pg | Fw/Ma Lg   |  |
| Meltwater deposit      | Mw   | Lateglacial   | Lg | Fw/Mw Gc   |  |
| Glacier deposit        | Gl   | Glacial       | Gc | Gl Gc  |  |
| Aeolian deposit        | Ae   | Interglacial  | Ig |  |   |
| Solifluction soil      | Ss   | Interstadial  | Is | <b>Others</b>  |   |
| Landslide deposit      | Ls   | Tertiary      | Te | Fw Pg  |  |
| Wash down deposit      | Wd   | Miocene       | Mi | Mw Lg  |  |
| Topsoil                | Ts   | Oligocene     | Ol | Fw Lg  |  |
| Tidal deposit          | Ti   | Eocene        | Eo | Mw Gc  |  |
|                        |      | Paleogene     | Pa | Ma Ct  |  |
|                        |      | Paleocene     | Pl |  |   |
|                        |      | Selandian     | Se |  |   |
|                        |      | Danian        | Da | Striped color signature indicate uncertain Deposit-Age determination. No color indicates not determined Deposit-Age. |   |
|                        |      | Cretaceous    | Ct |  |   |
|                        |      | Maastrichtian | Ms |  |   |
|                        |      | Jura          | Ju |  |   |
|                        |      | Ordovician    | Od |  |   |
|                        |      | Neogene       | Ng |  |   |

## Core samples

TCR: Total Core Recovery. Ratio in percentage of core recovered (solid and non intact) to length of core run

SCR: Solid Core Recovery. Ratio in percentage of solid core recovered to length of core run.

RQD: Rock Quality Designation. Ratio in percentage between total length of core pieces with length more than 100 mm, and length of core run.

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**Prepared By:** LTR **Date:** 2020-08-19

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# Soil Testing

## In situ Testing

|     |                              |     |                |
|-----|------------------------------|-----|----------------|
| CPT | Cone Penetration Test, $q_c$ | MPa | Tip resistance |
|-----|------------------------------|-----|----------------|

## Offshore Laboratory Testing

|      |   |                   |   |
|------|---|-------------------|---|
| ⊙    | Moisture content                            | %                 | Ratio between weight of water and weight of grains  |
| Bulk | Bulk Unit Weight                            | kN/m <sup>3</sup> |   |
| Dry  | Dry Unit Weight                             | kN/m <sup>3</sup> |   |
| △    | Pocket penetrometer                         | kPa               | Measured in shelby tube and core samples for determination of compression strength        |
| ▲    | Torvane                                     | kPa               | Measured in shelby tube and core samples for determination of shear strength              |
| ▽    | Geotester                                   | kPa               | Measured in shelby tube and core samples for determination of compression strength        |
| ■    | UU triaxial compression strength, intact    | kPa               | Measured by unconsolidated undrained (UU) triaxial compression tests on intact samples    |
| □    | UU triaxial compression strength, remoulded | kPa               | Measured by unconsolidated undrained (UU) triaxial compression tests on remoulded samples |

## Laboratory Testing

|           |                             |                   |   |
|-----------|-----------------------------|-------------------|---|
| w         | Moisture content            | %                 | Ratio between weight of water and weight of grains  |
| x         | Carbonate content           | %                 |   |
| Bulk      | Bulk Unit Weight            | kN/m <sup>3</sup> |   |
| Dry       | Dry Unit Weight             | kN/m <sup>3</sup> |   |
| *         | Loss on Ignition            | %                 |   |
| ■         | Specific Gravity of Solids  | Mg/m <sup>3</sup> |   |
| ◆         | Thermal Conductivity        | W/mC              |   |
| emin-emax | Relative Density            | -                 |   |
| $W_p$     | Plastic limit               | %                 |   |
| $W_L$     | Liquid limit                | %                 |   |
| $W_s$     | Saturation moisture content | %                 |   |
| •         | Other tests                 |                   | Dots indicate the different other tests (primarily advanced tests) carried out on the samples |

**Project:** 204307 **Project Name:** Thor OWF

**Prepared By:** LTR **Date:** 2020-08-19

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