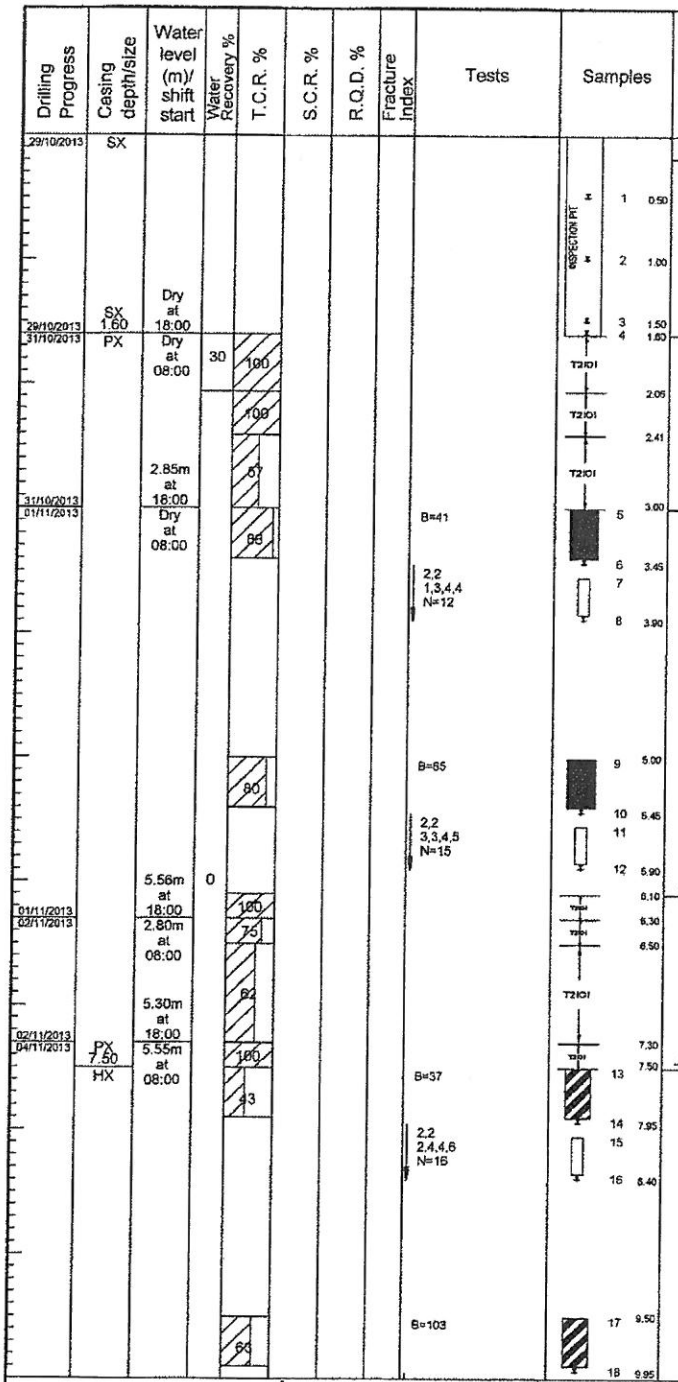
# Appendix 10.7
# Drillhole Records for T2 Expansion Works and APM Depot

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P282-DH 2<br>SHEET 1 of 3 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| | | |
|---|---|---|
| METHOD : **RCG** | CO-ORDINATES<br>E **811586.58**<br>N **819984.67** | JOB NO. : **SI1304** |
| MACHINE & NO. : **ZA026** | | DATE from **29/10/2013** to **07/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 7.10** mPD |




- Disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Pressuremeter Test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test
- Televiewer test

LOGGED T.TANG
DATE 08/11/2013
CHECKED D.AU
DATE 09/11/2013

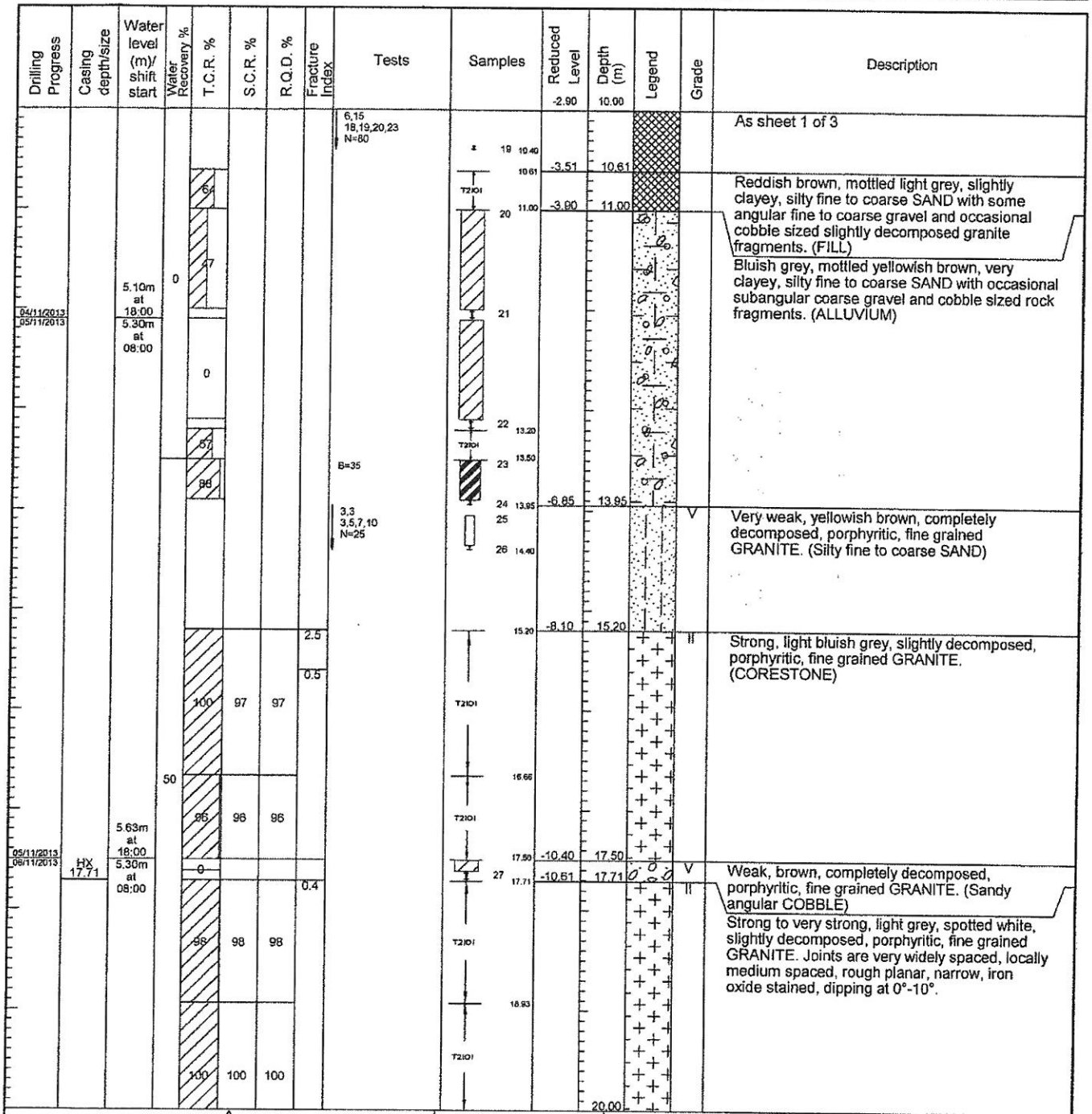
REMARKS
1. The environmental hole of P282-DH 2.
2. Inspection pit excavated to 1.60m.

AMENDMENT

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P282-DH 2<br>SHEET 2 of 3 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| | | |
|---|---|---|
| METHOD : **RCG** | CO-ORDINATES<br>E **811586.58**<br>N **819984.67** | JOB NO. : **SI1304** |
| MACHINE & NO. : **ZA026** | | DATE from **29/10/2013** to **07/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 7.10** mPD |




- Disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
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- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Pressuremeter Test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test
- Televiewer test

LOGGED T.TANG
DATE 08/11/2013
CHECKED D.AU
DATE 09/11/2013

REMARKS

AMENDMENT

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P282-DH 2<br>SHEET 3 of 3 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| | | |
|---|---|---|
| METHOD : **RCG** | CO-ORDINATES<br>E 811586.58<br>N 819984.67 | JOB NO. : **SI1304** |
| MACHINE & NO. : **ZA026** | | DATE from **29/10/2013** to **07/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 7.10** mPD |

| Drilling Progress | Casing depth/size | Water level (m)/ shift start | Water Recovery % | T.C.R. % | S.C.R. % | R.Q.D. % | Fracture Index | Tests | Samples | Reduced Level | Depth (m) | Legend | Grade | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06/11/2013 | | 6.10m at 18:00 | 50 | 100<br>100 | 100<br>100 | 100<br>100 | 4.2<br>0.0 | | T2101 20.36<br>T2101 21.69<br>T2101 22.82 | -12.90<br>-15.82 | 20.00<br>22.92 | | | As sheet 2 of 3<br>End of hole at 22.92m. |

30.00

Disturbed sample
Water sample
SPT liner sample
U76 undisturbed sample
U100 undisturbed sample
Mazier sample
Piston sample

Standpipe tip
Piezometer tip
Standard penetration test
Pressuremeter Test
Packer test
Permeability test
Impression packer test
In-situ vane shear test
Televiewer test

LOGGED T.TANG
DATE 08/11/2013
CHECKED D.AU
DATE 09/11/2013

REMARKS

AMENDMENT

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P282-DH 3<br>SHEET 1 of 4 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| METHOD : **RCG** | CO-ORDINATES<br>E **811644.29**<br>N **819908.09** | JOB NO. : **SI1304** |
|---|---|---|
| MACHINE & NO. : **ZA019** | | DATE from **31/10/2013** to **08/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 6.99** mPD |

| Drilling Progress | Casing depth/size | Water level (m)/ shift start | Water Recovery % | T.C.R. % | S.C.R. % | R.Q.D. % | Fracture Index | Tests | Samples | Reduced Level | Depth (m) | Legend | Grade | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | 6.99 | 0.00 | | | |
| 01/11/2013 | SX | | | | | | | | | 6.81 | 0.18 | | | ASPHALT surface. |
| | | | | | | | | | | 6.69 | 0.30 | | | CONCRETE. |
| 01/11/2013 | SX 0.90 | Dry at 18:00 | | | | | | | INSPECTION PIT 1 0.50 | | | | | Reddish brown, slightly silty, fine to coarse SAND with some angular fine to coarse gravel sized rock fragments. (FILL) |
| 04/11/2013 | PX | Dry at 08:00 | | 80 | | | | | 2 0.90 | 6.09 | 0.90 | | | Light grey, spotted dark grey, angular COBBLE with some medium to coarse gravel and occasional boulder sized rock fragments. (FILL) |
| | | | | 79 | | | | | T2/01 1.40 | | | | | |
| | | | | 71 | | | | | T2/01 1.69 | | | | | |
| | | | | 64 | | | | | T2/01 2.25 | | | | | |
| | | | | 86 | | | | | T2/01 2.80 | | | | | |
| | | | | 98 | | | | B=30 | T2/01 3.60 | | | | | |
| | | 4.02m at 18:00 | | | | | | 4,5 6,6,7,9 N=28 | 3 3.60<br>4 4.05<br>5<br>6 4.50 | 3.39 | 3.60 | | | Medium dense, reddish brown, mottled pink, slightly clayey, silty fine to coarse SAND with some angular fine to coarse gravel rock fragments. (FILL) |
| 04/11/2013 | | | | | | | | | | | | | | |
| 05/11/2013 | | Dry at 08:00 | 0 | | | | | | | | | | | |
| | | | | 83 | | | | | | 1.49 | 5.50 | | | |
| | | | | 100 | | | | B=47 | T2/01 5.50<br>7 6.10 | 0.89 | 6.10 | | | Reddish brown, sandy angular fine to coarse GRAVEL with some cobble sized rock fragments. (FILL) |
| | | | | | | | | 3,8 43,57/65mm 100blS/140mm | 8 6.55<br>9<br>10 6.84 | | | | | Very dense, yellowish brown, sandy angular fine to coares GRAVEL sized rock fragments. (FILL) |
| | | | | 82 | | | | | 7.72 | -0.73 | 7.72 | | | |
| | | | | 77 | | | | | T2/01 8.17 | | | | | Light grey, mottled light yellow, spotted dark grey, angular BOULDER with some cobble and coarse gravel sized rock fragments. (FILL) |
| | | | | 76 | | | | | T2/01 8.60 | | | | | |
| | | | | 95 | | | | B=56 | T2/01 9.40<br>11 | -2.41 | 9.40 | | | |
| | | | | | | | | 8,7 | 12 9.85 | | 10.00 | | | Medium dense to dense, yellowish brown, slightly clayey fine to coarse SAND with some fine gravel. (FILL) |

- Disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Pressuremeter Test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test
- Televiewer test

LOGGED T.TANG

DATE 09/11/2013

CHECKED D.AU

DATE 11/11/2013

REMARKS

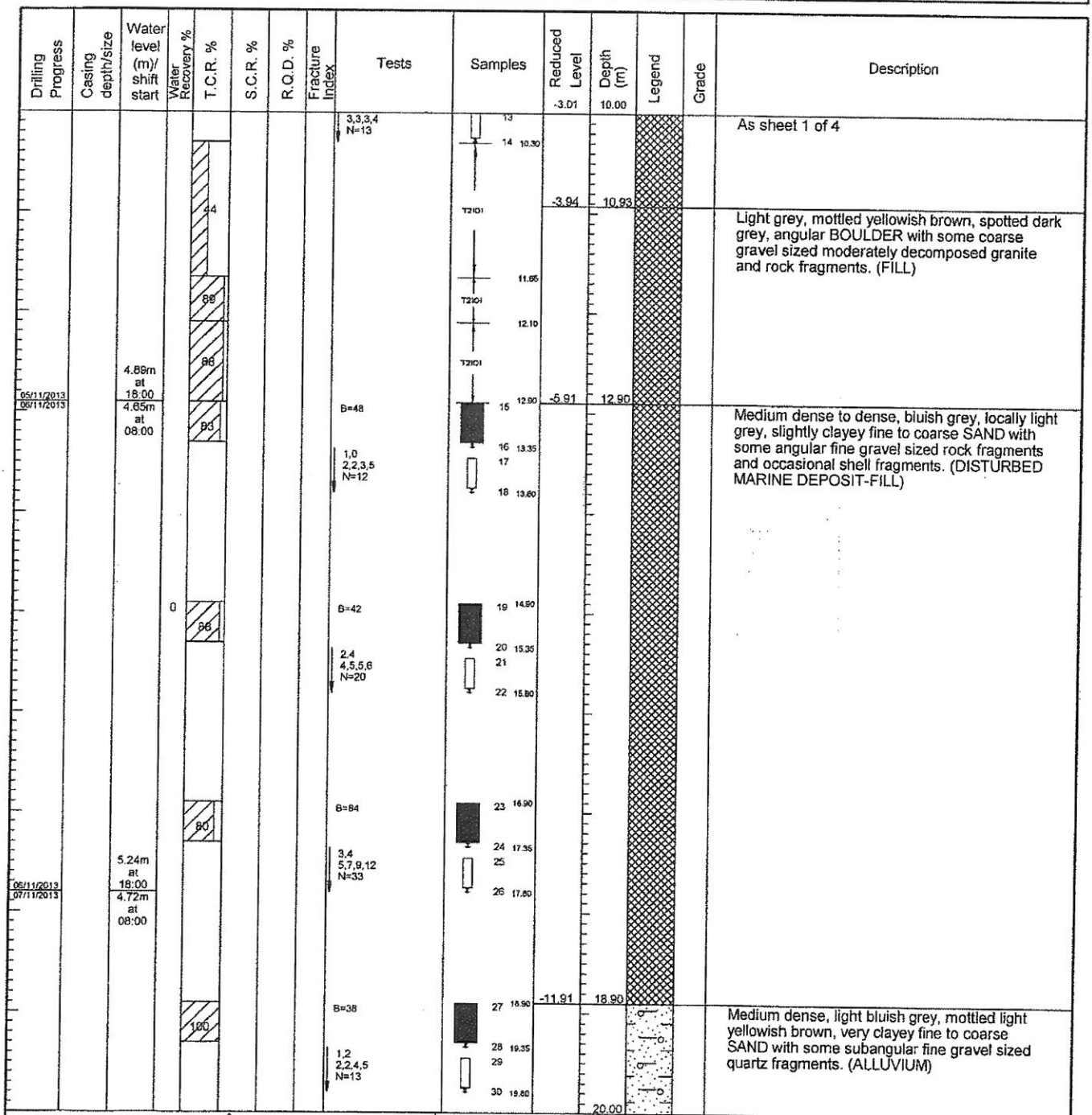
1. The environmental hole of P282-DH 3.
2. Inspection pit excavated to 0.90m.
3. Acoustic borehole televiewer was carry out from 25.22m to 30.18m.
4. Piezometer was installed at 24.40m.

AMENDMENT

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P282-DH 3<br>SHEET 2 of 4 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| METHOD : **RCG** | CO-ORDINATES<br>E **811644.29**<br>N **819908.09** | JOB NO. : **SI1304** |
|---|---|---|
| MACHINE & NO. : **ZA019** | | DATE from **31/10/2013** to **08/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 6.99** mPD |




- Disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Pressuremeter Test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test
- Televiewer test

LOGGED **T.TANG**

DATE **09/11/2013**

CHECKED **D.AU**

DATE **11/11/2013**

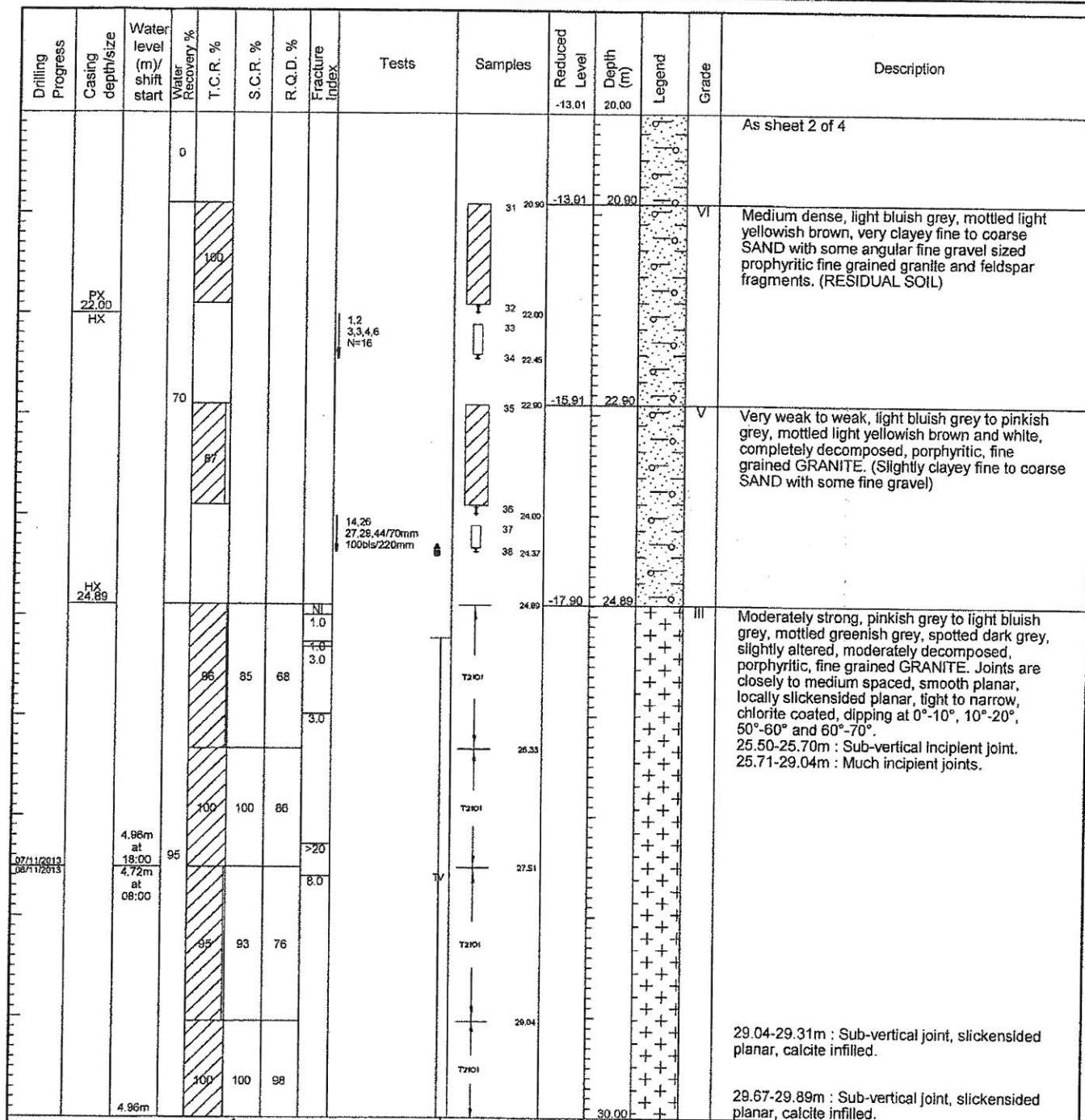
REMARKS

AMENDMENT

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P282-DH 3<br>SHEET 3 of 4 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| | | |
|---|---|---|
| METHOD : **RCG** | CO-ORDINATES<br>E **811644.29**<br>N **819908.09** | JOB NO. : **SI1304** |
| MACHINE & NO. : **ZA019** | | DATE from **31/10/2013** to **08/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 6.99** mPD |




| | |
|---|---|
| Disturbed sample | Standpipe tip |
| Water sample | Piezometer tip |
| SPT liner sample | Standard penetration test |
| U76 undisturbed sample | Pressuremeter Test |
| U100 undisturbed sample | Packer test |
| Mazier sample | Permeability test |
| Piston sample | Impression packer test |
| | In-situ vane shear test |
| | Televiewer test |

| | |
|---|---|
| LOGGED | T.TANG |
| DATE | 09/11/2013 |
| CHECKED | D.AU |
| DATE | 11/11/2013 |

REMARKS

AMENDMENT

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower, 8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P282-DH 3<br>SHEET 4 of 4 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| METHOD : **RCG** | CO-ORDINATES<br>E **811644.29**<br>N **819908.09** | JOB NO. : **SI1304** |
|---|---|---|
| MACHINE & NO. : **ZA019** | | DATE from **31/10/2013** to **08/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 6.99** mPD |

| Drilling Progress | Casing depth/size | Water level (m)/ shift start | Water Recovery % | T.C.R. % | S.C.R. % | R.Q.D. % | Fracture Index | Tests | Samples | Reduced Level | Depth (m) | Legend | Grade | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 08/11/2013 | | at 18:00 | 95 | | | | | | 30.22 | -23.01<br>-23.23 | 30.00<br>30.22 | | | As sheet 3 of 4<br>End of hole at 30.22m. |
| | | | | | | | | | | | 40.00 | | | |

- Disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Pressuremeter Test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test
- Televiewer test

LOGGED **T.TANG**

DATE **09/11/2013**

CHECKED **D.AU**

DATE **11/11/2013**

REMARKS

AMENDMENT

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P282-DH 4<br>SHEET 1 of 4 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| | | |
|---|---|---|
| METHOD : **RCG** | CO-ORDINATES<br>E 811702.50<br>N 819959.80 | JOB NO. : **SI1304** |
| MACHINE & NO. : **ZA016** | | DATE from **08/11/2013** to **18/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 6.84** mPD |

| Drilling Progress | Casing depth/size | Water level (m)/ shift start | Water Recovery % | T.C.R. % | S.C.R. % | R.Q.D. % | Fracture Index | Tests | Samples | Reduced Level | Depth (m) | Legend | Grade | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 08/11/2013 | SX | | | | | | | | | 6.84 | 0.00 | | | |
| | | | | | | | | | | 6.54 | 0.30 | | | ASPHALT surface. |
| | | | | | | | | | INSPECTION PIT 1 0.50 | | | | | Reddish brown, fine to coarse SAND with much fine to coarse gravel. (FILL) |
| | | | | | | | | | 2 1.00 | | | | | |
| | | | | | | | | | 3 1.20 | 5.64 | 1.20 | | | |
| | | | | 100 | | | | | T2101 | | | | | Light grey, mottled yellowish brown and white, spotted dark grey, angular BOULDER with some gravel and cobble sized rock fragments. (FILL) |
| | | 2.15m at 18:00 | | | | | | | 1.90 | | | | | |
| 08/11/2013 | | | | 100 | | | | | T2101 | | | | | |
| 09/11/2013 | | 2.70m at 08:00 | | | | | | | 2.40 | | | | | |
| | | | | 75 | | | | | T2101 | | | | | |
| | SX 3.00 | | | 100 | | | | | 2.80 | | | | | |
| | PX | | | | | | | | T201 3.00 | 3.84 | 3.00 | | | |
| | | | | 86 | | | | B=98 | 4 | | | | | Medium dense, light reddish brown, slightly clayey, silty fine to coarse SAND with some fine to coarse gravel. (FILL) |
| | | | | | | | | 2,2 4,4,6,14 N=30 | 5 3.40 | | | | | |
| | | Dry at 18:00 | | | | | | | 6 | | | | | |
| 09/11/2013 | | | | | | | | | 7 3.86 3.90 | | | | | |
| 11/11/2013 | | 3.20m at 08:00 | | | | | | | 4.10 | 2.74 | 4.10 | | | |
| | | | | 89 | | | | | T2101 | | | | | Light grey, mottled white, spotted dark grey, angular BOULDER with some cobble sized of slightly decomposed granite and rock fragments. (FILL) |
| | | 2.80m at 18:00 | | | | | | | 5.00 | | | | | |
| 11/11/2013 | | | | | | | | | 8 | 1.84 | 5.00 | | | |
| 12/11/2013 | | 3.83m at 08:00 | 0 | 86 | | | | B=98 | | | | | | Dense, reddish brown, fine to coarse SAND with much fine to coarse gravel. (FILL) |
| | | | | | | | | 3,5 6,6,9,11 N=32 | 9 6.45 | | | | | |
| | | | | | | | | | 10 | | | | | |
| | | | | | | | | | 11 5.80 6.02 | 0.82 | 6.02 | | | |
| | | | | 77 | | | | | T2101 | | | | | Light grey, mottled white, spotted dark grey BOULDER with some gravel sized of slightly decomposed granite fragments. Contains some cobble sized slight decomposed granite fragments. (FILL) |
| | | | | | | | | | 6.80 | 0.04 | 6.80 | | | |
| | | | | 96 | | | | B=49 | 12 | | | | | Medium dense, reddish brown, fine to coarse SAND with much fine to coarse gravel. (FILL) |
| | | | | | | | | | 13 7.25 | | | | | |
| | | | | | | | | 2,2 4,6,8,10 N=28 | 14 | | | | | |
| | PX 7.93 | | | | | | | | 15 7.70 | -1.09 | 7.93 | | | |
| | HX | | | | | | | | 7.98 | | | | | |
| | | | | | | | | | T2101 | | | | | Light grey, mottled reddish brown and white, spotted dark grey, angular BOULDER with some gravel sized of slightly decomposed granite fragments. Contains some cobble sized of slight decomposed granite fragments. (FILL) |
| | | | | 86 | | | | | | | | | | |
| | | 4.13m at 18:00 | | | | | | | | | | | | |
| 12/11/2013 | | | | | | | | | 9.13 | | | | | |
| 13/11/2013 | | 5.30m at 08:00 | 30 | 100 | | | | | T2101 | | | | | |
| | | | | | | | | | 9.82 | | | | | |
| | | | | 6 | | | | | T2101 10.00 | -3.16 | 10.00 | | | |

- Disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test
- Televiewer test

LOGGED **T.TANG**

DATE **19/11/2013**

CHECKED **D.AU**

DATE **20/11/2013**

REMARKS

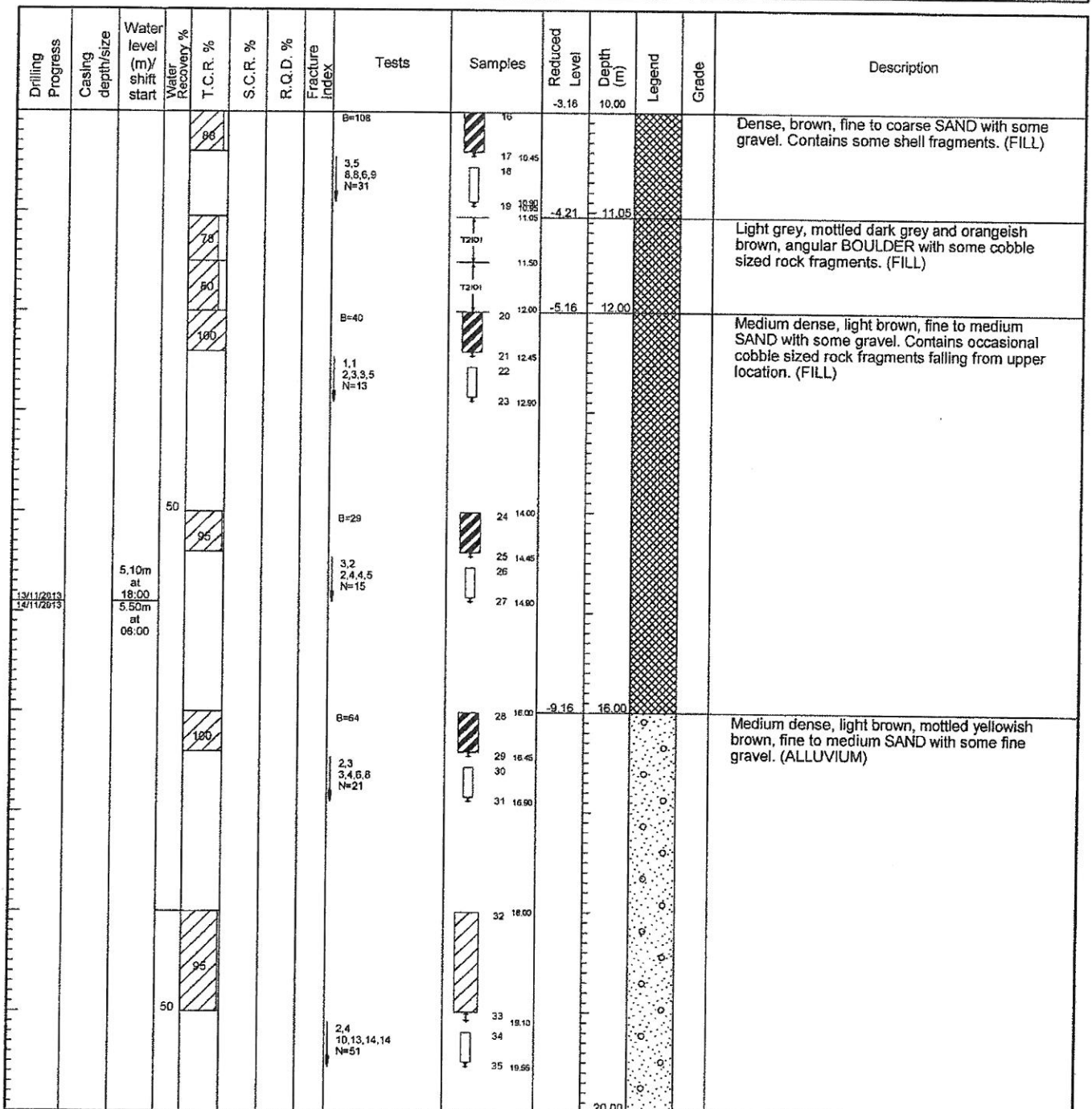
1. Inspection pit excavated to 1.20m.
2. Acoustic borehole televiewer was carry out from 31.50m to 36.57m.
3. Piezometer was installed at 31.00m.

PRELIMINARY

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P282-DH 4<br>SHEET 2 of 4 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| | | |
|---|---|---|
| METHOD : **RCG** | CO-ORDINATES<br>E **811702.50**<br>N **819959.80** | JOB NO. : **SI1304** |
| MACHINE & NO. : **ZA016** | | DATE from **08/11/2013** to **18/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 6.84** mPD |




- Disturbed sample
- Water sample
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- U76 undisturbed sample
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- Standpipe tip
- Piezometer tip
- Standard penetration test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test
- Televiewer test

LOGGED **T.TANG**
DATE **19/11/2013**
CHECKED **D.AU**
DATE **20/11/2013**

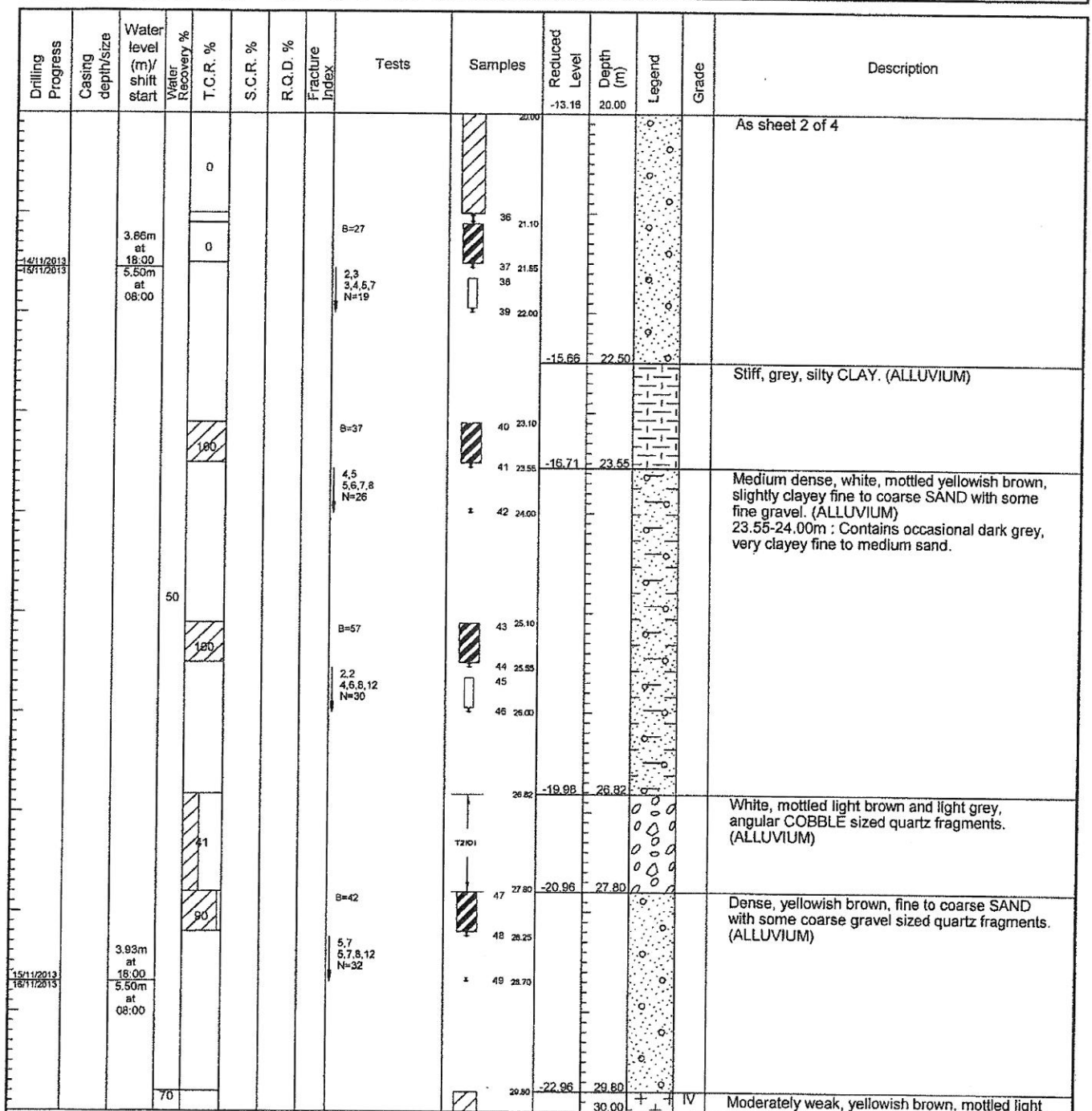
REMARKS

PREMIUM

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P282-DH 4<br>SHEET 3 of 4 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| | | |
|---|---|---|
| METHOD : **RCG** | CO-ORDINATES<br>E **811702.50**<br>N **819959.80** | JOB NO. : **SI1304** |
| MACHINE & NO. : **ZA016** | | DATE from **08/11/2013** to **18/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 6.84** mPD |




| | |
|---|---|
| Disturbed sample | Standpipe tip |
| Water sample | Piezometer tip |
| SPT liner sample | Standard penetration test |
| U76 undisturbed sample | Packer test |
| U100 undisturbed sample | Permeability test |
| Mazier sample | Impression packer test |
| Piston sample | In-situ vane shear test |
| | Televiewer test |

LOGGED **T.TANG**
DATE **19/11/2013**
CHECKED **D.AU**
DATE **20/11/2013**

REMARKS

PRELIMINARY

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P282-DH 4<br>SHEET 4 of 4 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| | | |
|---|---|---|
| METHOD : **RCG** | CO-ORDINATES<br>E 811702.50<br>N 819959.80 | JOB NO. : **SI1304** |
| MACHINE & NO. : **ZA016** | | DATE from **08/11/2013** to **18/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 6.84** mPD |

| Drilling Progress | Casing depth/size | Water level (m)/ shift start | Water Recovery % | T.C.R. % | S.C.R. % | R.Q.D. % | Fracture Index | Tests | Samples | Reduced Level | Depth (m) | Legend | Grade | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | HX 31.35 | | | 0<br>66 | | | 5.6<br>5.3<br>0.7 | | 50 30.90<br>51<br>52 31.35<br>31.50 | -23.16 | 30.00 | | | grey and white, highly decomposed, medium grained GRANITE. Recovered as slightly sandy angular gravel with some cobble sized highly decomposed granite fragments. |
| | | | 70 | 100 | 100 | 100 | | | T2101 | -24.66 | 31.50 | | III | Moderately strong to strong, pinkish grey, mottled orangeish brown, light grey, spotted green and dark grey, slightly altered, moderately decomposed, medium grained GRANITE. Joints are medium to widely spaced, smooth planar and smooth stepped, tight to narrow, chlorite and iron oxide stained, dipping at 0°-5°.<br>31.60-36.63m : Silicification.<br>31.60-31.81m : Quartz vein, 5mm to 20mm wide, dipping at 60°-70°.<br>33.16-33.45m : Sub-vertical joint. |
| | | | | 100 | 97 | 97 | 4.5<br>1.2 | | 32.95<br>T2101 | | | | | |
| | | | | 100 | 100 | 100 | 1.8 | | 33.95<br>T2101 | | | | | 33.98-34.00m : Quartz vein, 4mm wide, dipping at 60°.<br>34.22-35.67m : Sub-vertical quartz vein, 22mm to 90mm wide. |
| | | | | 100 | 100 | 97 | | | 34.53<br>T2101 | | | | | |
| 16/11/2013 | | 3.10m at 18:00 | | 100 | 100 | 95 | 0.0 | | 35.87<br>T2101<br>36.63 | -29.79 | 36.63 | | | End of hole at 36.63m. |
| | | | | | | | | | | | 40.00 | | | |

Tv

- Disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test
- Televiewer test

LOGGED T.TANG
DATE 19/11/2013
CHECKED D.AU
DATE 20/11/2013

REMARKS

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P282-DH 6<br>SHEET 1 of 4 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| METHOD : **RCG** | CO-ORDINATES<br>E 811752.53<br>N 819893.23 | JOB NO. : **SI1304** |
|---|---|---|
| MACHINE & NO. : **ZA018** | | DATE from **29/10/2013** to **07/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 6.24** mPD |

| Drilling Progress | Casing depth/size | Water level (m)/ shift start | Water Recovery % | T.C.R. % | S.C.R. % | R.Q.D. % | Fracture Index | Tests | Samples | Reduced Level | Depth (m) | Legend | Grade | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | 6.24 | 0.00 | | | |
| 29/10/2013 | SX | | | | | | | | | 6.06 | 0.18 | | | ASPHALT surface. |
| | | | | | | | | | 1 0.50 | | | | | Yellowish brown, fine to coarse SAND with some shell fragments. (FILL) |
| | | | | | | | | | INSPECTION PIT 2 1.00 | | | | | |
| | | Dry at 18:00 | | | | | | | 3 1.50 | 4.74 | 1.50 | | | |
| 29/10/2013 | | | | | | | | | | | | | | Yellowish brown to brown, fine to coarse SAND with some angular fine gravel sized rock fragments. (FILL) |
| 31/10/2013 | | Dry at 08:00 | | | | | | | 4 2.00 | 4.24 | 2.00 | | | |
| | SX 2.45 | | | 100 | | | | B=48 | 5 | | | | | Reddish brown, spotted white, slightly silty fine to medium SAND with occasional angular fine gravel sized rock fragments. (FILL) |
| | PX | | | | | | | | 6 2.45 | 3.79 | 2.45 | | | |
| | | | | 84 | | | | | T2\01 | | | | | Light greyish brown, angular BOULDER sized slightly decomposed granite fragments. (FILL) |
| | | | | | | | | | 7 3.00 | 3.24 | 3.00 | | | |
| | | Dry at 18:00 | | 100 | | | | B=53 | | | | | | Medium dense, yellowish brown, silty fine to coarse SAND. (FILL) |
| 31/10/2013 | | | 0 | | | | | | 8 3.45 | | | | | |
| 01/11/2013 | | Dry at 08:00 | | | | | | 9,7 8,7,6,8 N=29 | 9 | | | | | |
| | | | | | | | | | 10 3.90 | | | | | |
| | | | | | | | | | 4.40 | 1.84 | 4.40 | | | |
| | | | | 82 | | | | | T2\01 | | | | | Light greyish brown, angular BOULDER sized slightly decomposed granite fragments. (FILL) |
| | | | | | | | | B=28 | 11 5.00 | 1.24 | 5.00 | | | 4.80-5.00m : Brown, silty fine to coarse SAND with cobble mixed. (FILL) |
| | | | | 100 | | | | | | | | | | Very dense, yellowish brown to brown, slightly silty fine to coarse SAND. (FILL) |
| | | | | | | | | 3,3 18,23,21,17 N=79 | 12 5.45 | | | | | |
| | | | | | | | | | 13 | | | | | |
| | | | | | | | | | 14 5.90 | | | | | |
| | | | 70 | | | | | | 6.42 | -0.18 | 6.42 | | | |
| | | | | 100 | | | | | T2\01 | | | | | Light brownish grey, angular BOULDER sized rock fragment sized moderately decomposed to slightly decomposed granite fragments. (FILL) |
| | | | | | | | | | 6.89 | | | | | |
| | | 3.12m at 18:00 | | | | | | | T2\01 | | | | | |
| 01/11/2013 | | | | 98 | | | | | | | | | | |
| 02/11/2013 | | 3.50m at 08:00 | | | | | | B=92 | 7.50 | -1.26 | 7.50 | | | Densed to very dense, brown, mottled white, fine to coarse SAND with some angular coarse gravel and cobble sized rock fragments and some shell fragments. (FILL) |
| | | | | 0 | | | | | | | | | | |
| | | | | | | | | 4,4 8,9,13,20 N=50 | 15 7.95 | | | | | |
| | PX 8.40 | | | | | | | | 16 | | | | | |
| | HX | | | | | | 5.9 | | 17 8.40 | -2.16 | 8.40 | | II | Strong, light brownish grey, slightly decomposed, medium grained GRANITE. (CORESTONE) |
| | | | | | | | 0.4 | | | | | | | |
| | | | 0 | 100 | 100 | 100 | | | T2\01 | | | | | |
| | | | | | | | | | 9.53 | | | | | |
| | | | | | | | | | T2\01 | | | | | |
| | | | | | | | | | | | 10.00 | | | |

- Disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Pressuremeter Test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test
- Televiewer test

LOGGED T.TANG

DATE 08/11/2013

CHECKED D.AU

DATE 09/11/2013

REMARKS

1. The environmental hole of P282-DH 6.
2. Inspection pit excavated to 2.00m.

AMENDMENT

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P282-DH 6<br>SHEET 2 of 4 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| | | |
|---|---|---|
| METHOD : **RCG** | CO-ORDINATES<br>E **811752.53**<br>N **819893.23** | JOB NO. : **SI1304** |
| MACHINE & NO. : **ZA018** | | DATE from **29/10/2013** to **07/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 6.24** mPD |

| Drilling Progress | Casing depth/size | Water level (m)/ shift start | Water Recovery % | T.C.R. % | S.C.R. % | R.Q.D. % | Fracture Index | Tests | Samples | Reduced Level | Depth (m) | Legend | Grade | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | -3.76 | 10.00 | | | As sheet 1 of 4 |
| 02/11/2013 | | 1.50m at 18:00 | | 100 | 100 | 100 | | | T2/D1 10.89 T2/D1 11.30 | | | | | |
| 04/11/2013 | | 3.65m at 08:00 | | 78 | 78 | 68 | 2.8 | | | -5.06 | 11.30 | | V | Very weak to weak, yellowish brown, mottled light grey and pink, completely decomposed, porphyritic, fine grained GRANITE. (Slightly clayey, silty fine to coarse SAND) |
| | | | | 63 | | | | B=63 | 18 19 11.75 20 21 12.20 | | | | | |
| | | | | | | | | 2,3 5,6,10,10 N=31 | | | | | | |
| | | | | | | | | | 22 13.30 | | | | | |
| | | | | 100 | | | | | 23 14.40 24 25 14.85 | | | | | |
| | | | 0 | | | | | 7,11 21,22,28,29 N=100 | | | | | | |
| | | | | | | | | | 26 15.30 | | | | | |
| | | | | 100 | | | | | 27 16.40 28 29 16.65 | | | | | |
| | | | | | | | | 8,29 58,42/35mm 100blS/110mm | | | | | | |
| 04/11/2013 | | 2.70m at 16:00 | | | | | | | 17.30 | -11.06 | 17.30 | | IV | Weak, yellowish brown, mottled light green and light grey, striped dark grey, highly decomposed, porphyritic, fine grained GRANITE. Recovered as angular coarse gravel with some cobble. |
| 05/11/2013 | | 3.70m at 08:00 | | 0 | | | | | 30 17.95 T2/D1 18.17 | -11.71 | 17.95 | | III | Moderately strong, pinkish brown, mottled light grey, striped dark green, moderately decomposed, porphyritic, fine grained GRANITE. Joints are very closely to medium spaced, smooth stepped and smooth planar, tight to narrow, iron and manganese oxide stained, dipping 10°-20° and 20°-30°. |
| | | | | 91 | 0 | 0 | NI | | | | | | | |
| | | | | | | | >20 | | | | | | | |
| | | | | | | | 8.6 | | | | | | | |
| | | | | 100 | 88 | 34 | | | T2/D1 19.51 T2/D1 | | 20.00 | | | |
| | | | | | | | 2.3 | | | | | | | |

- Disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Pressuremeter Test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test
- Televiewer test

LOGGED **T.TANG**

DATE **08/11/2013**

CHECKED **D.AU**

DATE **09/11/2013**

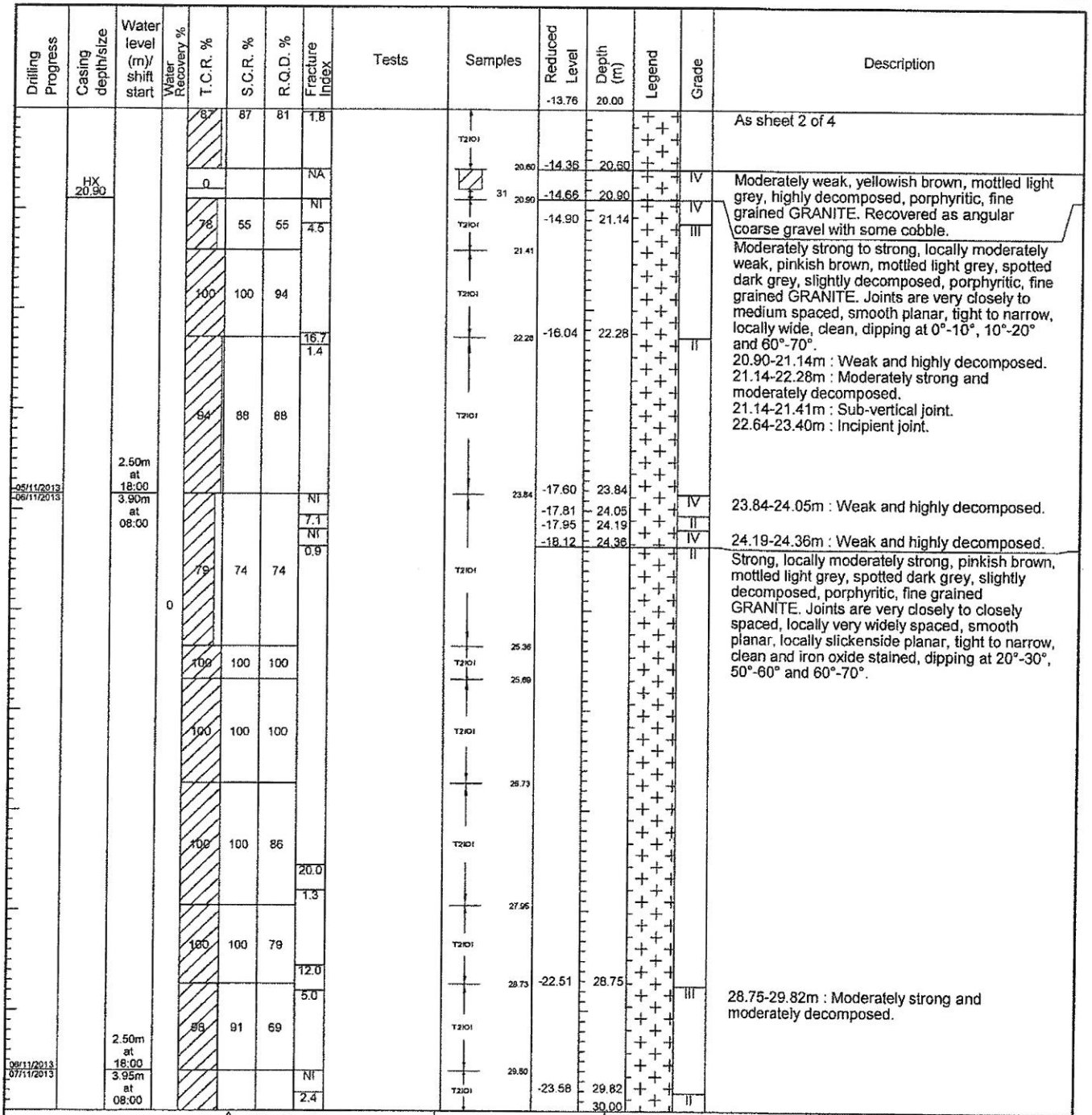
REMARKS

AMENDMENT

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P282-DH 6<br>SHEET 3 of 4 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| | | |
|---|---|---|
| METHOD : **RCG** | CO-ORDINATES<br>E **811752.53**<br>N **819893.23** | JOB NO. : **SI1304** |
| MACHINE & NO. : **ZA018** | | DATE from **29/10/2013** to **07/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 6.24** mPD |




- Disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Pressuremeter Test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test
- Televiewer test

LOGGED T.TANG
DATE 08/11/2013
CHECKED D.AU
DATE 09/11/2013

REMARKS

AMENDMENT

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P282-DH 6<br>SHEET 4 of 4 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| METHOD : **RCG** | CO-ORDINATES<br>E **811752.53**<br>N **819893.23** | JOB NO. : **SI1304** |
|---|---|---|
| MACHINE & NO. : **ZA018** | | DATE from **29/10/2013** to **07/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 6.24** mPD |

| Drilling Progress | Casing depth/size | Water level (m)/ shift start | Water Recovery % | T.C.R. % | S.C.R. % | R.Q.D. % | Fracture Index | Tests | Samples | Reduced Level | Depth (m) | Legend | Grade | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | -23.76 | 30.00 | | | |
| 07/11/2013 | | 3.00m at 13:00 | 0 | 100 | 61 | 58 | | | T210 30.66 | -24.42 | 30.66 | | | 30.39-30.66m : Incipient joint.<br>End of hole at 30.66m. |
| | | | | | | | | | | | 40.00 | | | |

- Disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Pressuremeter Test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test
- Televiewer test

LOGGED **T.TANG**
DATE **08/11/2013**
CHECKED **D.AU**
DATE **09/11/2013**

REMARKS

AMENDMENT

No C.

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower, 8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P283-DH036<br>SHEET 1 of 4 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| | | |
|---|---|---|
| METHOD : **RCG** | CO-ORDINATES<br>E **811844.81**<br>N **819929.43** | JOB NO. : **SI1304** |
| MACHINE & NO. : **ZA026** | | DATE from **24/10/2013** to **31/10/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 7.32** mPD |

| Drilling Progress | Casing depth/size | Water level (m)/ shift start | Water Recovery % | T.C.R. % | S.C.R. % | R.Q.D. % | Fracture Index | Tests | Samples | Reduced Level | Depth (m) | Legend | Grade | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | 7.32 | 0.00 | | | |
| 25/10/2013 | PX | | | | | | | | | 7.27 | 0.05 | | | ASPHALT surface. |
| | | | | | | | | | | 7.10 | 0.22 | | | CONCRETE with low cement content. |
| | | | | | | | | | INSPECTION PIT 1 0.50 | | | | | Reddish brown, slightly silty fine to coarse SAND with some fine to coarse gravel and cobble. (FILL) |
| | | | | | | | | | 2 1.00 3 1.10 | 6.22 | 1.10 | | | |
| | | | | 28 | | | | | T2/D1 | | | | | Pinkish grey, mottled yellowish brown, angular COBBLE with some coarse gravel. (FILL) |
| | | | 40 | 67 | | | | | 1.40 T2/D1 | | | | | |
| | | | | 69 | | | | | 2.10 T2/D1 | | | | | |
| 25/10/2013 | PX 2.80 | 1.25m at 18:00 | | | | | | | 2.80 | 4.52 | 2.80 | | | |
| 26/10/2013 | HX | 1.95m at 08:00 | | | | | | | 4 | | | | | Very dense, reddish brown, spotted pink, slightly clayey, silty fine to coarse SAND with occasional cobble. (FILL) |
| | | | | 86 | | | | | 5 3.90 6 7 4.25 | | | | | |
| | | | 50 | | | | | 15,25<br>26,24,50/50mm<br>100bls/200mm | 4.80 | | | | | |
| | | | | 0 | | | | | | | | | | |
| | | | | 0 | | | | | 8 5.90 6.30 6.38 | | | | | |
| | | | 70 | 30 | | | | 50/30mm<br>100/30mm<br>100bls/30mm | 9 6.48 T2/D1 | 0.84 | 6.48 | | | |
| | | | 50 | 0 | | | | | 6.80 | 0.52 | 6.80 | | | Pinkish grey, mottled light brown, angular COBBLE with some coarse gravel. (FILL) |
| | | | | | | | | | | | | | | Dark grey, slightly clayey, silty fine coarse SAND with some fine gravel. (MARINE DEPOSIT) |
| | | | | | | | | | 10 7.53 | -0.21 | 7.53 | | | |
| | | | | 100 | | | | | | | | | | Light grey, mottled reddish brown, spotted dark grey, subangular BOULDER sized moderately decomposed granite fragments. (COLLUVIUM) |
| | | | 70 | | | | | | T2/D1 | | | | | |
| | | | | 70 | | | | | 8.80 T2/D1 | | | | | 9.30m : Contains coral reef fragments. |
| | | | 50 | | | | | | 9.75 11 | -2.43 | 9.75 | | | |
| | | | | | | | | | | | 10.00 | | V | Very weak to weak, reddish brown, mottled pink. |

- Disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test
- Televiewer test

LOGGED **T.TANG**

DATE **02/11/2013**

CHECKED **D.AU**

DATE **04/11/2013**

REMARKS

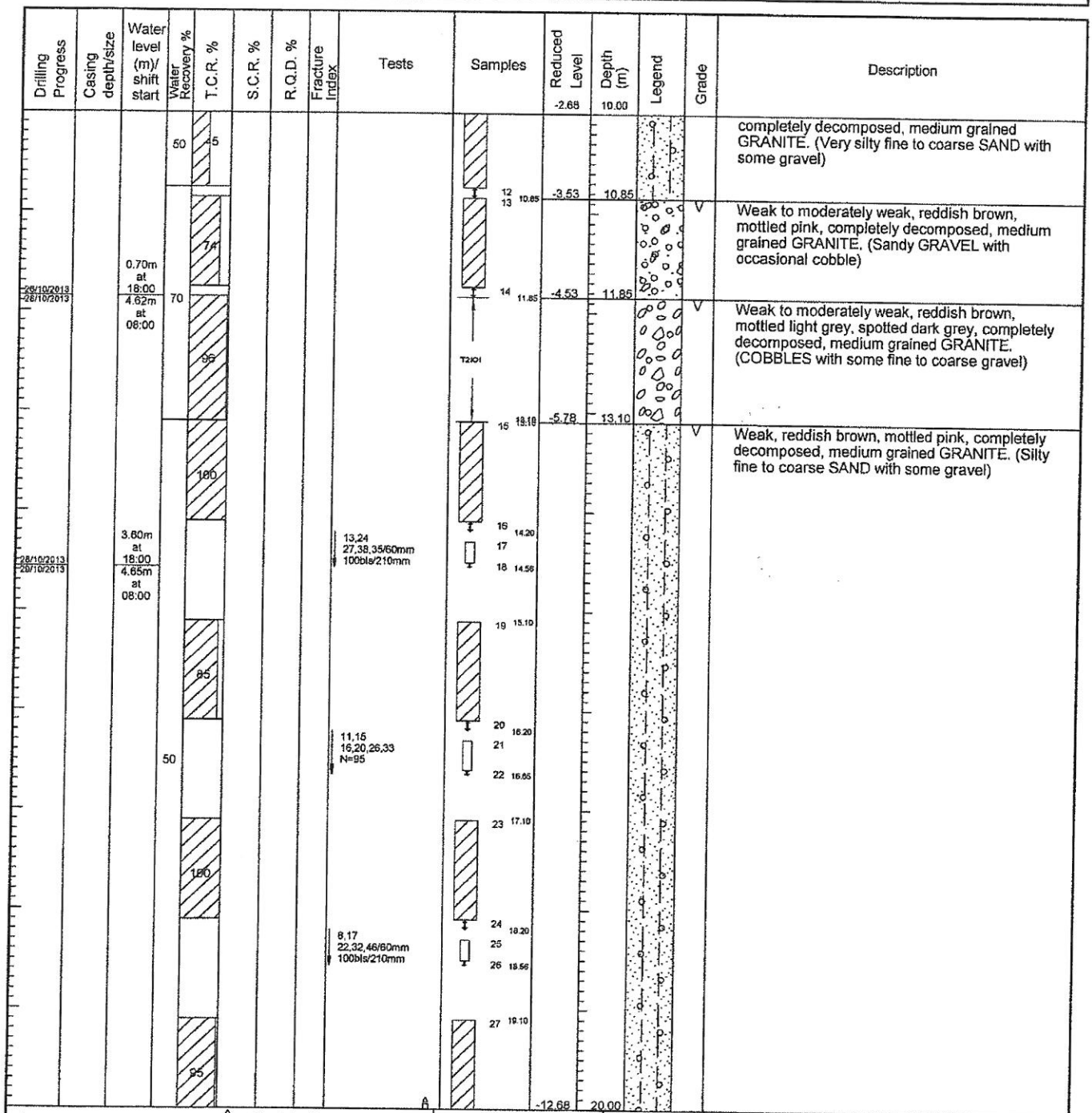
1. Inspection pit excavated to 1.10m.
2. Acoustic borehole televiewer was carry out from 22.34m to 29.30m.
3. Water sample was taken at 32.51m.
4. Standpipe was Installed at 20.00m.
5. Piezometer was installed at 22.30m.

AMENDMENT

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P283-DH036<br>SHEET 2 of 4 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| | | |
|---|---|---|
| METHOD : **RCG** | CO-ORDINATES<br>E **811844.81**<br>N **819929.43** | JOB NO. : **SI1304** |
| MACHINE & NO. : **ZA026** | | DATE from **24/10/2013** to **31/10/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 7.32** mPD |




| | |
|---|---|
| Disturbed sample | Standpipe tip |
| Water sample | Piezometer tip |
| SPT liner sample | Standard penetration test |
| U76 undisturbed sample | Packer test |
| U100 undisturbed sample | Permeability test |
| Mazier sample | Impression packer test |
| Piston sample | In-situ vane shear test |
| | Televiewer test |

LOGGED **T.TANG**
DATE **02/11/2013**
CHECKED **D.AU**
DATE **04/11/2013**

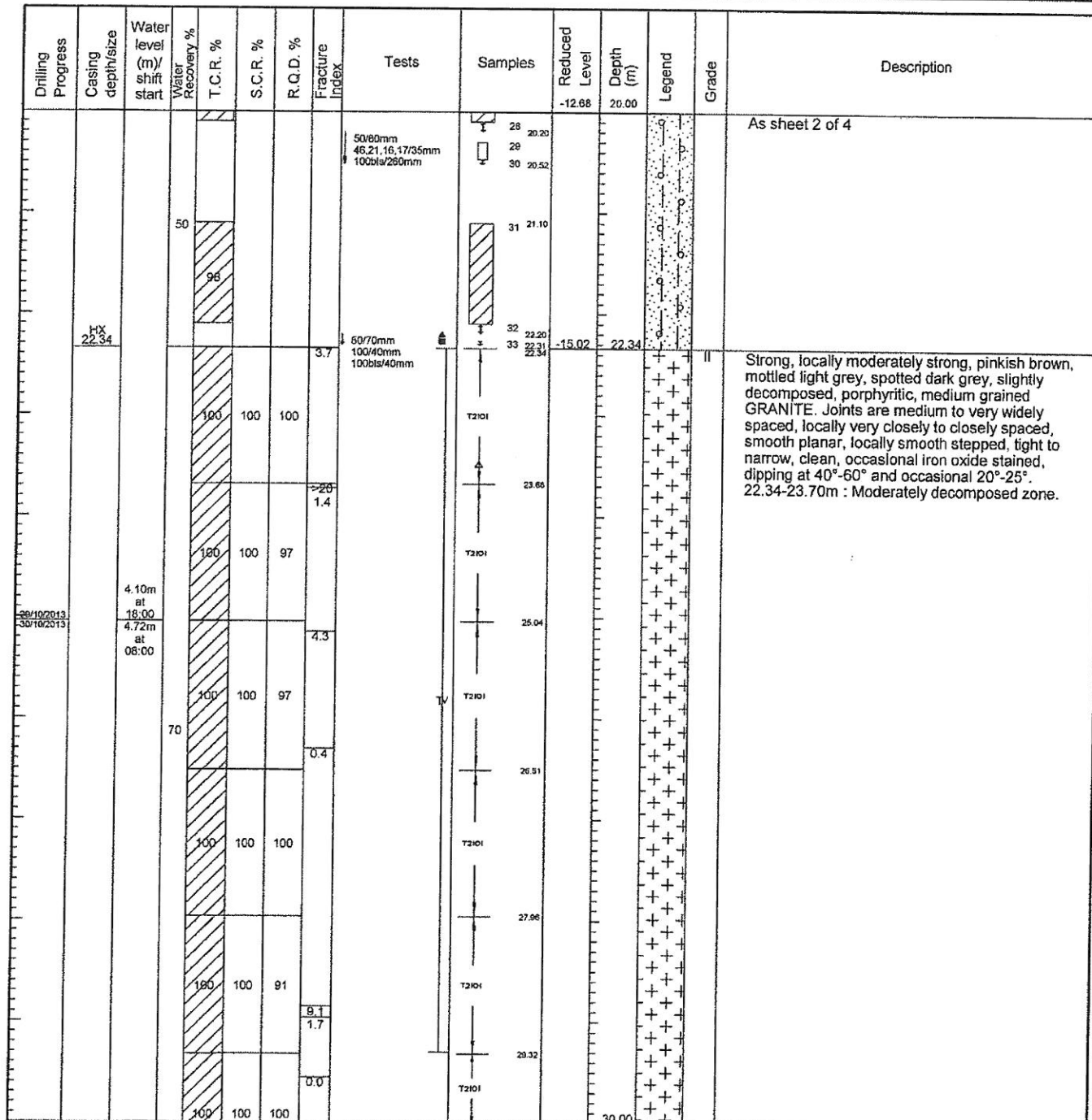
REMARKS

AMENDMENT

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P283-DH036<br>SHEET 3 of 4 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| METHOD : **RCG** | CO-ORDINATES<br>E 811844.81<br>N 819929.43 | JOB NO. : **SI1304** |
|---|---|---|
| MACHINE & NO. : **ZA026** | | DATE from **24/10/2013** to **31/10/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 7.32** mPD |




Disturbed sample
Water sample
SPT liner sample
U76 undisturbed sample
U100 undisturbed sample
Mazier sample
Piston sample
Standpipe tip
Piezometer tip
Standard penetration test
Packer test
Permeability test
Impression packer test
In-situ vane shear test
Televiewer test

LOGGED T.TANG
DATE 02/11/2013
CHECKED D.AU
DATE 04/11/2013

REMARKS

AMENDMENT

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P283-DH036<br>SHEET 4 of 4 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| METHOD : **RCG** | CO-ORDINATES<br>E **811844.81**<br>N **819929.43** | JOB NO. : **SI1304** |
|---|---|---|
| MACHINE & NO. : **ZA026** | | DATE from **24/10/2013** to **31/10/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 7.32** mPD |

| Drilling Progress | Casing depth/size | Water level (m)/ shift start | Water Recovery % | T.C.R. % | S.C.R. % | R.Q.D. % | Fracture Index | Tests | Samples | Reduced Level | Depth (m) | Legend | Grade | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | -22.68 | 30.00 | | | |
| | | | 70 | 100 | 100 | 100 | | | T2101 30.50 | | | | | 30.50-31.04m : Sub-vertical incipient joint. |
| | | | | | | | | | T2101 31.95 | | | | | |
| 30/10/2013 | | 3.60m at 18:00 | | 100 | 100 | 100 | | | T2101 32.51 | -25.19 | 32.51 | | | End of hole at 32.51m. |
| | | | | | | | | | | | 40.00 | | | |

- Disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test
- Televiewer test

LOGGED T.TANG

DATE 02/11/2013

CHECKED D.AU

DATE 04/11/2013

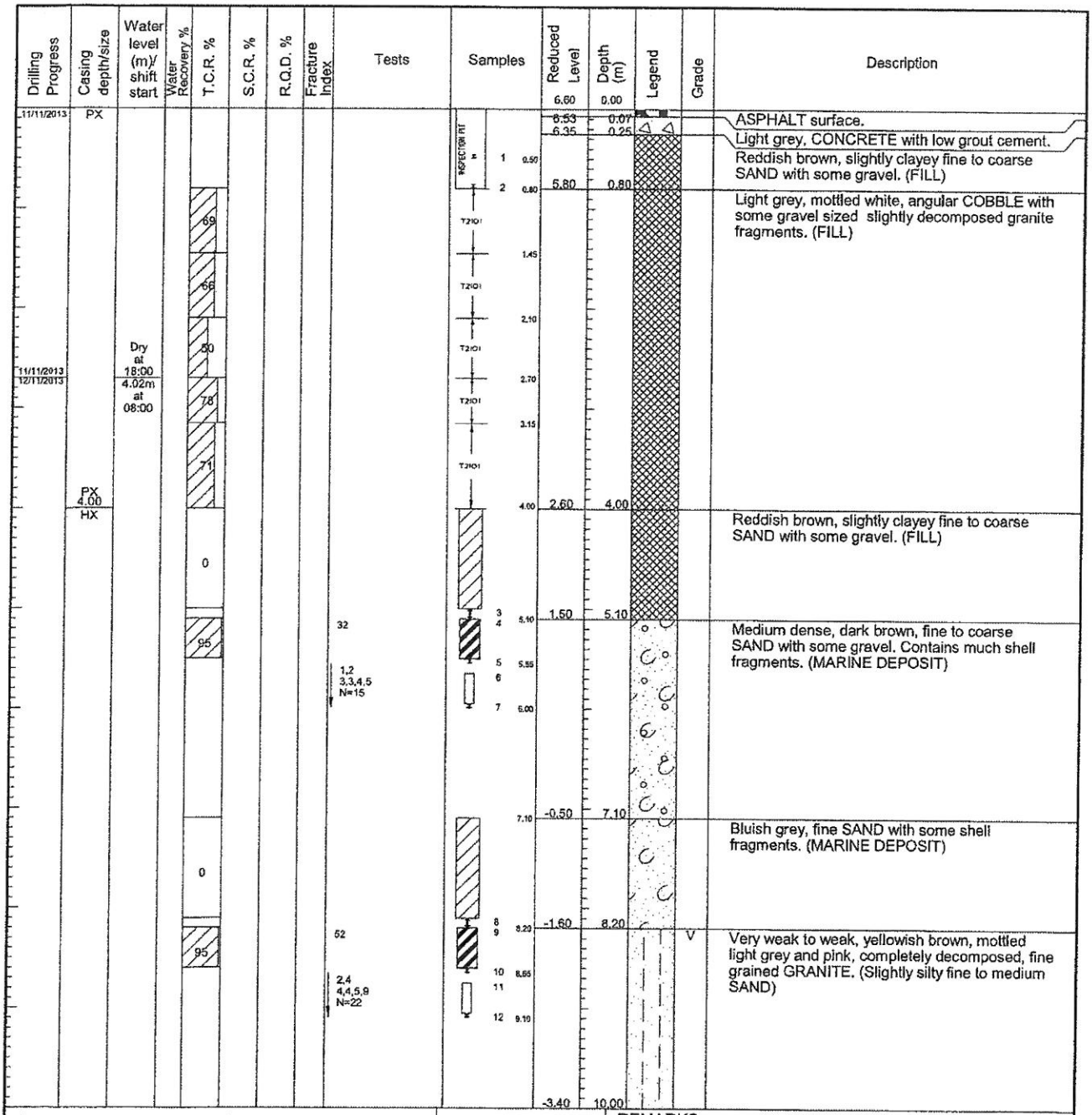
REMARKS

AMENDMENT

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P283-DH038<br>SHEET 1 of 3 |
|---|---|---|---|

PROJECT : **Contract P549 Land Based Site Investigation Works**

| | | |
|---|---|---|
| METHOD : **RCG** | CO-ORDINATES<br>E **811979.09**<br>N **819975.74** | JOB NO. : **SI 1304** |
| MACHINE & NO. : **ZA022** | | DATE from **09/11/2013** to **14/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **VERTICAL** | GROUND LEVEL **+ 6.60** mPD |




| | |
|---|---|
| Small disturbed sample | Standpipe tip |
| Water sample | Piezometer tip |
| SPT liner sample | Standard penetration test |
| U76 undisturbed sample | Packer test |
| U100 undisturbed sample | Permeability test |
| Mazier sample | Impression packer test |
| Piston sample | In-situ vane shear test |

LOGGED **T. TANG**
DATE **15/11/2013**
CHECKED **D. AU**
DATE **16/11/2013**

REMARKS

1. Inspection pit excavated to 0.80m.
2. Contant head permeability test was carry out from 11.80m to 13.30m.
3. Acoustic borehole televiewer was carry out from 15.60m to 25.00m.
4. Water sample was taken at 25.32m.

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower, 8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P283-DH038<br>SHEET 2 of 3 |
|---|---|---|---|

PROJECT : **Contract P549 Land Based Site Investigation Works**

| METHOD : **RCG** | CO-ORDINATES<br>E 811979.09<br>N 819975.74 | JOB NO. : **SI 1304** |
|---|---|---|
| MACHINE & NO. : **ZA022** | | DATE from **09/11/2013** to **14/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **VERTICAL** | GROUND LEVEL **+ 6.60** mPD |

| Drilling Progress | Casing depth/size | Water level (m)/ shift start | Water Recovery % | T.C.R. % | S.C.R. % | R.Q.D. % | Fracture Index | Tests | Samples | Reduced Level | Depth (m) | Legend | Grade | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | -3.40 | 10.00 | | | |
| | | | | 93 | | | | 12,18<br>21,32,42,60<br>N=155 | 13 10.20<br>14 11.30<br>15<br>16 11.75 | | | | | As sheet 1 of 3 |
| | | | | | | | | | | -5.60 | 12.20 | | V | |
| 12/11/2013<br>13/11/2013 | | 3.62m at 18:00<br>4.03m at 08:00 | | | | | | 13,37/25mm<br>100/40mm<br>100blS/40mm | 17 13.44<br>18 14.10 | | | | | Weak to moderately weak, yellowish brown, mottled light grey, completely decomposed, medium grained GRANITE. (Fine to coarse SAND with some gravel) |
| | HX 15.09 | | | 56 | | | | | 19 15.09 | -8.49 | 15.09 | | III | |
| | | | | | | | 10.0<br>1.5 | | | -8.69 | 15.29 | | II | Strong, locally moderately strong, light pinkish grey, mottled white, spotted dark grey, slightly decomposed, medium grained GRANITE. Joints are medium to very widely spaced, occasionally very closely to closely spaced, smooth planar and smooth stepped, tight to narrow, chlorite and iron oxide stained, dipping at 0°-5° and 60°-70°. |
| | | | | 100 | 100 | 85 | | | T2101 | | | | | 15.09-15.29m : Moderately decomposed. |
| | | | | | | | 7.0 | | 16.62 | -10.02 | 16.62 | | III | 16.62-17.05m : Moderately decomposed. |
| | | | | | | | 1.4 | | | -10.45 | 17.05 | | II | 17.00-17.72m : Sub-vertical joint, smooth planar, iron-oxide stained. |
| 13/11/2013<br>14/11/2013 | | 3.90m at 18:00<br>4.03m at 18:00 | | 100 | 95 | 88 | | | T2101 | | | | | |
| | | | | | | | | | 18.15 | | | | | 18.15-19.85m : Sub-vertical joint, smooth stepped, iron-oxide and chlorite stained. |
| | | | | 100 | 100 | 89 | | | T2101 | | | | | |
| | | | | | | | 18.8<br>1.1 | | 19.38 | -12.62<br>-12.78 | 19.22<br>19.38 | | III<br>II | 19.22-19.38m : Moderately decomposed. |
| | | | | | | | | | T2101 | -13.40 | 20.00 | | | |

- Small disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED **T. TANG**
DATE **15/11/2013**
CHECKED **D. AU**
DATE **16/11/2013**

REMARKS

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P283-DH038<br>SHEET 3 of 3 |
|---|---|---|---|

PROJECT : **Contract P549 Land Based Site Investigation Works**

| METHOD : **RCG** | CO-ORDINATES<br>E **811979.09**<br>N **819975.74** | JOB NO. : **SI 1304** |
|---|---|---|
| MACHINE & NO. : **ZA022** | | DATE from **09/11/2013** to **14/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **VERTICAL** | GROUND LEVEL **+ 6.60** mPD |

| Drilling Progress | Casing depth/size | Water level (m)/ shift start | Water Recovery % | T.C.R. % | S.C.R. % | R.Q.D. % | Fracture Index | Tests | Samples | Reduced Level | Depth (m) | Legend | Grade | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14/11/2013 | | 3.80m at 18:00 | | 100<br>100<br>100<br>100 | 100<br>100<br>100<br>100 | 100<br>100<br>95<br>100 | 6.7<br>1.5 | | T2101 20.94<br>T2101 22.50<br>T2101 23.87<br>T2101 25.32 | -13.40<br>-18.72 | 20.00<br>25.32<br>30.00 | | | As sheet 2 of 3<br>End of hole at 25.32m. |

Small disturbed sample
Water sample
SPT liner sample
U76 undisturbed sample
U100 undisturbed sample
Mazier sample
Piston sample
Standpipe tip
Piezometer tip
Standard penetration test
Packer test
Permeability test
Impression packer test
In-situ vane shear test

LOGGED T. TANG
DATE 15/11/2013
CHECKED D. AU
DATE 16/11/2013

REMARKS

No C.

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower, 8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P283-DH039<br>SHEET 1 of 3 |
|---|---|---|---|

PROJECT : **Contract P549 Land Based Site Investigation Works**

| METHOD : **RCG** | CO-ORDINATES<br>E **812045.98**<br>N **819951.34** | JOB NO. : **SI1304** |
|---|---|---|
| MACHINE & NO. : **ZA026** | | DATE from **18/10/2013** to **28/10/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 7.00** mPD |

| Drilling Progress | Casing depth/size | Water level (m)/ shift start | Water Recovery % | T.C.R. % | S.C.R. % | R.Q.D. % | Fracture Index | Tests | Samples | Reduced Level | Depth (m) | Legend | Grade | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | 7.00 | 0.00 | | | |
| 18/10/2013 | SX | Dry at 18:00 | | | | | | | | 6.90 | 0.10 | | | Top soil. (FILL) |
| 18/10/2013 | | | | | | | | | | | | | | Reddish brown, mottled light grey, slightly silty SAND with some angular gravel. (FILL) |
| 21/10/2013 | | Dry at 08:00 | | | | | | | | | | | | |
| | SX 2.30 | | 80 | 74 | | | | | | 5.50 | 1.50 | | | Dark grey, slightly sandy, clayey SILT with some angular gravel. (FILL) |
| | PX | | 70 | 71 | | | | | | 5.00 | 2.00 | | | Light grey, spotted dark grey, angular BOULDER of slightly decomposed GRANITE. (FILL) |
| | PX 2.65 | | | | | | | | | 4.70 | 2.30 | | | |
| | HX | | 80 | 86 | | | | | | | | | | Reddish brown, mottled light grey and dark grey, slightly clayey, silty fine to coarse SAND with cobbles of slightly decomposed granite and occasional fine gravel. (FILL) |
| | | 2.00m at 18:00 | | 35 | | | | | | | | | | |
| 21/10/2013 | | 2.31m at 08:00 | | | | | | | | 2.92 | 4.08 | | | |
| 22/10/2013 | | | | 0 | | | | | | | | | | Very dense, light brown, mottled yellowish brown, fine to medium SAND with some angular gravel and occasional cobble of slightly decomposed granite falling from upper location. (FILL) |
| | | | 0 | 0 | | | | | | | | | | |
| | | | | | | | | 50/30mm<br>100/30mm<br>100blS/30mm | | 0.50 | 6.50 | | | Pinkish brown, mottled light grey and yellowish brown, spotted dark grey, angular BOULDER of slightly decomposed granite. (FILL) |
| | | | | 58 | | | | | | -0.10 | 7.10 | | | |
| | | | | 100 | | | | | | | | | V | Weak, reddish brown, mottled pink and light grey, spotted dark grey, completely decomposed, medium to coarse grained GRANITE. (Silty fine to coarse SAND with some gravel) |
| | | | 70 | 47 | 46 | 33 | NR | | | -0.72 | 7.72 | | V | |
| | | | | | | | 9.3 | | | -1.22 | 8.22 | | III | Moderate strong to strong, reddish brown, mottled light grey, spotted dark grey, moderately decomposed, medium to coarse grained GRANITE. (CORESTONE) Joints are very closely to medium spaced, smooth planar and smooth stepped, extremely narrow to tight, iron and manganese oxide stained, dipping 30°-40° and 60°-70°.<br>7.72-8.22m : No recovery, assumed to be completely decomposed GRANITE.<br>9.48-10.28m : Sub-vertical joint. |
| | | | | 71 | 71 | 60 | 2.6 | | | | | | | |
| | | | | 73 | 66 | 49 | | | | -3.00 | 10.00 | | | |

Small disturbed sample
Water sample
SPT liner sample
U76 undisturbed sample
U100 undisturbed sample
Mazier sample
Piston sample
Standpipe tip
Piezometer tip
Standard penetration test
Packer test
Permeability test
Impression packer test
In-situ vane shear test
Televiewer test

LOGGED T.TANG
DATE 29/10/2013
CHECKED D.AU
DATE 30/10/2013

REMARKS
1. Inspection pit excavated to 2.00m.
2. Acoustic borehole televiewer was carry out from 14.86m to 22.60m.
3. Water sample was taken at 20.64m.
4. Standpipe was installed at 6.30m.

PRELIMINARY

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower, 8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P283-DH039<br>SHEET 2 of 3 |
|---|---|---|---|

PROJECT : **Contract P549 Land Based Site Investigation Works**

| METHOD : **RCG** | CO-ORDINATES<br>E **812045.98**<br>N **819951.34** | JOB NO. : **SI1304** |
|---|---|---|
| MACHINE & NO. : **ZA026** | | DATE from **18/10/2013** to **28/10/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 7.00** mPD |

| Drilling Progress | Casing depth/size | Water level (m)/ shift start | Water Recovery % | T.C.R. % | S.C.R. % | R.Q.D. % | Fracture Index | Tests | Samples | Reduced Level | Depth (m) | Legend | Grade | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | -3.00 | 10.00 | | | |
| 22/10/2013<br>23/10/2013 | | 1.90m at 18:00<br>4.10m at 08:00 | | | | | | | T2I01 | -3.28 | 10.28 | | | As sheet 1 of 3 |
| | | | | 0 | | | | | 10.28<br>10.88 | | | | V | Weak to moderate weak, reddish brown, completely decomposed, medium to coarse grained GRANITE. (Fine to coarse SAND with fine to coarse gravel) |
| | | | | 86 | 60 | 60 | 4.1<br>3.2 | | 12<br>10.93 | -3.93 | 10.93 | | III | Moderate strong to strong, reddish brown, mottled light grey, spotted dark grey, moderately decomposed, medium to coarse grained GRANITE. (CORESTONE) Joints are very closely to medium spaced, smooth planar and smooth stepped, extremely narrow to tight, iron and manganese oxide stained, dipping 30°-40° and 60°-70°. |
| | | | | 59 | 66 | 50 | | | T2I01<br>12.03 | | | | | |
| | | | | 40 | 40 | 25 | | | T2I01<br>12.93 | | | | | |
| | | | | | | | | | T2I01<br>13.58 | -6.58 | 13.58 | | | |
| | | | | 0 | | | | | 13.70 | | | | IV | Moderate weak, reddish brown, highly decomposed, medium to coarse grained GRANITE. Recovered as angular fine to coarse gravel. |
| | HX<br>14.56 | | | | | | NI<br>7.8 | | 13<br>14.56 | -7.56 | 14.56 | | III | Moderate strong to strong pinkish brown, mottled light grey and yellowish brown, spotted dark grey, moderately decomposed, medium to coarse grained GRANITE. Joints are very closely to medium spaced, locally widely spaced, smooth planar, narrow to tight, iron oxide stained, dipping 0°-10° and 60°-70°. |
| | | | 70 | 100 | 91 | 87 | 1.5 | | T2I01<br>15.42 | | | | | |
| | | 2.90m at 18:00 | | 100 | 50 | 50 | >20<br>NI | | T2I01 | | | | | 15.83-16.10m : Much parallel sub-vertical joints, slickenside planar, chlorite infilled. |
| 23/10/2013<br>24/10/2013 | | 5.93m at 08:00 | | | | | >20<br>2.0 | | | -9.22 | 16.22 | | II | 16.10-16.22m : Highly decomposed zone, recovered as angular fine to coarse gravel sized rock fragments. |
| | | | | 100 | 97 | 82 | 16.7<br>2.6 | TV | 16.42<br>T2I01 | | | | | Strong, locally moderate strong, pinkish brown, mottled light grey, spotted dark grey, slightly decomposed, medium grained and locally porphyritic GRANITE. Joints are medium to widely spaced, occasional very closely to closely spaced, smooth planar, extremely narrow to tight, iron oxide stained, locally clean, dipping 0°-10°, 20°-30°, 50°-60° and 60°-70°. |
| | | | | | | | 1.5 | | 17.94 | | | | | 16.22-16.55m : Sub-vertical joint. |
| | | | | 100 | 100 | 100 | 4.3 | | T2I01 | | | | | 16.22-17.16m : Moderately decomposed zone. |
| | | | | | | | 1.0 | | 19.25 | | | | | 19.30-20.28m : Moderately decomposed zone. |
| | | | | 100 | 100 | 100 | | | T2I01 | | 20.00 | | | |

- Small disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test
- Televiewer test

LOGGED **T.TANG**
DATE **29/10/2013**
CHECKED **D.AU**
DATE **30/10/2013**

REMARKS

PRELIMINARY

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P283-DH039<br>SHEET 3 of 3 |
|---|---|---|---|

PROJECT : **Contract P549 Land Based Site Investigation Works**

| METHOD : **RCG** | CO-ORDINATES<br>E **812045.98**<br>N **819951.34** | JOB NO. : **SI1304** |
|---|---|---|
| MACHINE & NO. : **ZA026** | | DATE from **18/10/2013** to **28/10/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 7.00** mPD |

| Drilling Progress | Casing depth/size | Water level (m)/ shift start | Water Recovery % | T.C.R. % | S.C.R. % | R.Q.D. % | Fracture Index | Tests | Samples | Reduced Level -13.00 | Depth (m) 20.00 | Legend | Grade | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 24/10/2013<br>25/10/2013 | | 2.90m at 18:00<br>5.90m at 08:00 | 70 | 100 | 100 | 100 | 2.5 | TV | T2I01 20.28 | | | | | 20.15-22.00m : Sub-vertical joint. |
| | | | | 100 | 100 | 92 | | | T2I01 21.78 | | | | | |
| | | | | 100 | 100 | 95 | | | T2I01 22.51 | | | | | |
| | | | | 100 | 100 | 100 | | | T2I01 23.37 | | | | | |
| | | | | 100 | 98 | 98 | | | T2I01 23.80 | | | | | |
| | | | | 100 | 92 | 92 | | | T2I01 24.67 | | | | | 24.85-25.20m : Sub-vertical joint. |
| | | | | 100 | 100 | 100 | 0.0 | | T2I01 25.38 | | | | | 25.80-26.10m : Sub-vertical joint. |
| 25/10/2013 | | 5.90m at 18:00 | | | | | | | 26.64 | -19.64 | 26.64 | | | End of hole at 26.64m. |
| | | | | | | | | | | | 30.00 | | | |

- Small disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test
- Televiewer test

LOGGED T.TANG
DATE 29/10/2013
CHECKED D.AU
DATE 30/10/2013

REMARKS

PRELIMINARY

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P283-DH041<br>SHEET 1 of 3 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| METHOD : **RCG** | CO-ORDINATES<br>E 811941.49<br>N 819930.27 | JOB NO. : **SI1304** |
|---|---|---|
| MACHINE & NO. : **ZA026** | | DATE from **09/11/2013** to **21/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 8.12** mPD |

| Drilling Progress | Casing depth/size | Water level (m)/ shift start | Water Recovery % | T.C.R. % | S.C.R. % | R.Q.D. % | Fracture Index | Tests | Samples | Reduced Level | Depth (m) | Legend | Grade | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/11/2013 | PX | | | | | | | | | 8.12 | 0.00 | | | |
| | | | | | | | | | | 8.02 | 0.10 | | | Top soil. (FILL) |
| | PX 0.90 | | | | | | | | INSPECTION PIT 1 0.50 | | | | | Reddish brown, sandy angular fine to coarse GRAVEL sized rock fragments. (FILL) |
| | HX | | | | | | | | 2 0.90 | 7.22 | 0.90 | | | |
| | | Dry at 18:00 | | 86 | | | | | T2\|01 | | | | | Light grey, spotted dark grey, angular COBBLE with some gravel and boulder sized moderately decomposed and slightly decomposed granite fragments. (FILL) |
| 11/11/2013 | | | | | | | | | 1.70 | | | | | |
| 12/11/2013 | | Dry at 08:00 | | 73 | | | | | T2\|01 | | | | | |
| | | | | 55 | | | | | 2.25 | | | | | |
| | | | 80 | | | | | | T2\|01 | | | | | |
| | | | | 63 | | | | | 2.65 | | | | | |
| | | | | | | | | | T2\|01 | | | | | |
| | | | | 100 | | | | | 3.25 | | | | | |
| | | | | | | | | | T2\|01 | | | | | |
| | | | | 42 | | | | | 3.58 | | | | | |
| | | | | | | | | | T2\|01 | | | | | |
| | | | | | | | | | 4.40 | 3.72 | 4.40 | | V | |
| | | | | 67 | | | | | 3 | | | | | Weak, reddish brown, mottled dark grey and white, spotted pink, completely decomposed, medium grained GRANITE. (Slightly clayey fine to medium SAND) |
| | | | | | | | | B | | | | | | |
| | | | | | | | 0.5 | | 4 5.60 | 2.52 | 5.60 | | II | |
| | | | | 73 | 73 | 73 | | | T2\|01 | | | | | Strong, locally moderately strong, light grey, mottled white, spotted dark grey, slightly decomposed, medium grained GRANITE. Joints are widely spaced, locally very closely spaced, smooth planar and smooth undulating, extremely narrow to very narrow, iron and manganese oxide stained, dipping at 60°-70°. |
| | | | 70 | | | | | | 6.83 | | | | | |
| | | | | 100 | 100 | 80 | | | T2\|01 | 0.41 | 7.71 | | III | 7.71-8.33m : Moderately strong and moderately decomposed. |
| | | 1.20m at 18:00 | | | | | 6.1 | | | | | | | |
| 12/11/2013 | | | | | | | | | | | | | | |
| 13/11/2013 | | 2.73m at 08:00 | | 100 | 100 | 100 | | | 8.33 | -0.21 | 8.33 | | II | |
| 13/11/2013 | | 2.73m at 18:00 | | | | | | | T2\|01 | -0.35 | 8.47 | | IV | Moderately weak, reddish brown, mottled dark grey, highly decomposed, medium grained GRANITE. Recovered as sandy angular with much angular fine to coarse gravel sized rock fragments. |
| 14/11/2013 | | 4.70m at 08:00 | | | | | | | 8.60 | | | | | |
| | | | | 84 | | | | | 5 9.00 | | | | | |
| | | | | | | | | | | | 10.00 | | | |

- Disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Pressuremeter Test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test
- Televiewer test

LOGGED **T.TANG**

DATE **22/11/2013**

CHECKED **D.AU**

DATE **23/11/2013**

REMARKS

1. Inspection pit excavated to 0.90m.
2. Constant head permeability test was carried out from 9.00m to 10.50m.
3. Acoustic borehole televiewer was carried out from 13.00m to 21.85m.
4. Standpipe was installed at 5.00m.
5. Water sample was taken at 22.20m.

AMENDMENT

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P283-DH041<br>SHEET 2 of 3 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| | | |
|---|---|---|
| METHOD : **RCG** | CO-ORDINATES<br>E 811941.49<br>N 819930.27 | JOB NO. : **SI1304** |
| MACHINE & NO. : **ZA026** | | DATE from **09/11/2013** to **21/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 8.12** mPD |

| Drilling Progress | Casing depth/size | Water level (m)/ shift start | Water Recovery % | T.C.R. % | S.C.R. % | R.Q.D. % | Fracture Index | Tests | Samples | Reduced Level | Depth (m) | Legend | Grade | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 50/60mm<br>100/20mm<br>100bls/20mm | 7 10.10<br>10.18 | | | | | As sheet 1 of 3 |
| | | | | 89 | | | | | 8 11.00 | | | | | |
| | HX<br>12.00<br>NX | | | | | | | | 9 12.00 | -3.88 | 12.00 | | | |
| 14/11/2013<br>15/11/2013 | | 1.80m at 18:00<br>5.49m at 08:00 | | 94 | 90 | 90 | NI<br>0.8 | | T2I01 | | | | II | Strong, light grey, mottled white, spotted dark grey, slightly decomposed, porphyritic, medium grained GRANITE. Joints are widely to very widely spaced, locally very closely to closely spaced, smooth planar and smooth undulating, tight to narrow and locally moderately wide, clean and iron oxide stained, dipping at 0°-10°. |
| | | | | 94 | 94 | 94 | 3.6<br>0.4 | | T2I01 | | | | | |
| | | | 70 | 100 | 100 | 100 | | | T2I01 | | | | | 14.49-14.91m : Sub-vertical joint. |
| | | | | 100 | 100 | 100 | 2.3 | | T2I01 | | | | | |
| | | | | 100 | 100 | 93 | 0.8 | TV | T2I01 | | | | | |
| | | | | 100 | 100 | 100 | | | T2I01 | | | | | |
| | | | | 100 | 100 | 96 | 16.7<br>0.3 | | T2I01 | | | | | |
| 15/11/2013<br>18/11/2013 | | 1.90m at 18:00<br>5.49m at 08:00 | | 100 | 100 | 100 | | | T2I01 | | | | | |
| | | | | 100 | 100 | 100 | | | T2I01 | | 20.00 | | | |

- Disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Pressuremeter Test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test
- TV Televiewer test

LOGGED T.TANG

DATE 22/11/2013

CHECKED D.AU

DATE 23/11/2013

REMARKS

AMENDMENT

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P283-DH041<br>SHEET 3 of 3 |
|---|---|---|---|

PROJECT : **Contract P549 - Land Based Site Investigation Works**

| METHOD : **RCG** | CO-ORDINATES<br>E 811941.49<br>N 819930.27 | JOB NO. : **SI1304** |
|---|---|---|
| MACHINE & NO. : **ZA026** | | DATE from **09/11/2013** to **21/11/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 8.12** mPD |

| Drilling Progress | Casing depth/size | Water level (m)/ shift start | Water Recovery % | T.C.R. % | S.C.R. % | R.Q.D. % | Fracture Index | Tests | Samples | Reduced Level | Depth (m) | Legend | Grade | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | -11.88 | 20.00 | | | |
| 18/11/2013<br>19/11/2013 | NX<br>22.24 | 5.49m at 18:00<br>5.49m at 08:00 | 70 | 100<br>100<br>100<br>100<br>100<br>100 | 100<br>100<br>100<br>100<br>100<br>100 | 100<br>100<br>70<br>0<br>100<br>100 | 1.0<br>0.6 | TV | T2IO1<br>T2IO1<br>T2IO1<br>TNW<br>TNW | 20.80<br>21.55<br>22.20<br>22.24<br>22.60<br>24.10 | | | | 20.80-21.45m : Sub-vertical incipient joint.<br>21.84-22.41m : Sub-vertical joint, slickensided planar, clean. |
| 19/11/2013<br>20/11/2013 | | 2.20m at 18:00<br>5.49m at 08:00 | 80 | 100<br>100<br>100<br>100<br>100 | 100<br>100<br>93<br>100<br>100 | 100<br>100<br>100<br>100<br>100 | 1.2<br>3.2<br>0.0 | | TNW<br>TNW<br>TNW<br>TNW | 25.38<br>25.73<br>26.26 | | | | |
| 20/11/2013 | | 5.49m at 13:00 | | | | | | | | 27.43 | -19.31 | 27.43 | | End of hole at 27.43m. |
| | | | | | | | | | | | 30.00 | | | |

- Disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Pressuremeter Test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test
- Televiewer test

LOGGED **T.TANG**

DATE **22/11/2013**

CHECKED **D.AU**

DATE **23/11/2013**

REMARKS

AMENDMENT

N5 C

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P283-DH042<br>SHEET 1 of 2 |
|---|---|---|---|

PROJECT : **Contract P549 Land Based Site Investigation Works**

| | | |
|---|---|---|
| METHOD : **RCG** | CO-ORDINATES<br>E 812100.72<br>N 819981.36 | JOB NO. : **SI1304** |
| MACHINE & NO. : **ZA026** | | DATE from **09/10/2013** to **17/10/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 7.74** mPD |

| Drilling Progress | Casing depth/size | Water level (m)/ shift start | Water Recovery % | T.C.R. % | S.C.R. % | R.Q.D. % | Fracture Index | Tests | Samples | Reduced Level | Depth (m) | Legend | Grade | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/10/2013 | SX | | | | | | | | | 7.74 | 0.00 | | | Top soil. (FILL) |
| | | | | | | | | | | 7.64 | 0.10 | | | Firm, reddish brown, mottled light grey, slightly clayey SILT with much fine to coarse sand, gravel and occasional cobble. (FILL) |
| | SX 2.20 | | 70 | 0 | | | | | INSPECTION PIT 1 0.50 2 1.00 3 1.50 4 2.00 5 2.10 | | | | | |
| | PX | 2.00m at 18:00 | 80 | 75 | 11 | 0 | NI | | T2101 2.20 | 5.74 | 2.00 | | III | Moderate strong to strong, light grey, mottled greyish brown, spotted dark grey, moderately decomposed, medium grained GRANITE. Recovered non-intact as angular of gravel and occasional cobble sized fragments. (Fracture zone caused by explosion) |
| 10/10/2013 11/10/2013 | | Dry at 08:00 | | 100 | 24 | 0 | | | T2101 2.72 | | | | | |
| | | | | 100 | 66 | 26 | | | T2101 3.01 | | | | | |
| | | | | 80 | 28 | 11 | | | T2101 3.39 | | | | | |
| | PX 4.75 | | | 100 | 100 | 100 | 10.0<br>4.3 | | T2101 4.29 | 3.45 | 4.29 | | II | Strong, light grey, locally mottled light brown, spotted dark grey, slightly decomposed, medium to fine grained GRANITE. Joints are medium to widely spaced, locally very closely to closely spaced, smooth planar, tight to narrow, clean, occasional iron oxide stained, dipping at 0°-10°, 10°-20°, 40°-50° and 60°-70°.<br>4.29-4.49m : Sub-vertical joint. |
| | | | | 100 | 100 | 64 | 11.1<br>1.9 | | T2101 4.75 | | | | | |
| | | | | 100 | 100 | 100 | 1.1 | | T2101 5.33 | | | | | |
| 11/10/2013 15/10/2013 | | 2.12m at 18:00<br>4.92m at 08:00 | 0 | 96 | 96 | 58 | 5.0 | | T2101 6.40 | | | | | |
| | | | | 100 | 100 | 100 | 4.7 | | T2101 6.91 | | | | | |
| | | | | 100 | 100 | 100 | 0.9 | | T2101 7.76 | | | | | |
| | | | | 99 | 99 | 97 | | | T2101 8.18 | | | | | |
| | | | | 100 | 100 | 100 | | | T2101 8.86 | | | | | |
| | | | | | | | | | T2101 9.96 | | 10.00 | | | |

- Small disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Packer test
- Permeability test
- Impression packer test
- In-situ vane shear test

LOGGED T. TANG

DATE 18/10/2013

CHECKED D. AU

DATE 19/10/2013

REMARKS

1. Inspection pit excavated to 2.00m.
2. Acoustic borehole televiewer was carry out from 4.96m to 15.69m.
3. Water sample was taken at 15.79m.

| intrafor | INTRAFOR HONG KONG LTD.<br>20/F, Eight Commercial Tower,<br>8 Sun Yip Street, Chai Wan, Hong Kong. | DRILLHOLE RECORD | HOLE NO.: P283-DH042<br>SHEET 2 of 2 |
|---|---|---|---|

PROJECT : **Contract P549 Land Based Site Investigation Works**

| | | |
|---|---|---|
| METHOD : **RCG** | CO-ORDINATES<br>E 812100.72<br>N 819981.36 | JOB NO. : **SI1304** |
| MACHINE & NO. : **ZA026** | | DATE from **09/10/2013** to **17/10/2013** |
| FLUSHING MEDIUM : **WATER** | ORIENTATION **Vertical** | GROUND LEVEL **+ 7.74** mPD |

| Drilling Progress | Casing depth/size | Water level (m)/ shift start | Water Recovery % | T.C.R. % | S.C.R. % | R.Q.D. % | Fracture Index | Tests | Samples | Reduced Level | Depth (m) | Legend | Grade | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | -2.26 | 10.00 | | | 9.96-10.40m : Incipient joint. |
| 15/10/2013 | | 3.10m at 18:00 | | 100 | 100 | 87 | 5.9 | | T2I01 | | | | | |
| 16/10/2013 | | 4.93m at 08:00 | | | | | | | | 11.44 | | | | |
| | | | | 100 | 100 | 91 | 1.4 | | T2I01 | | | | | |
| | | | 0 | | | | 46.7 | | | | | | | |
| | | | | | | | 0.4 | | | 12.91 | | | | |
| | | | | 100 | 100 | 100 | | | T2I01 | | | | | 13.10-15.17m : 5 parallel sub-vertical incipient joints. |
| | | | | | | | | | | 14.38 | | | | |
| | | | | 100 | 100 | 99 | 8.1 | | T2I01 | | | | III | Moderate strong to strong, light grey, mottled light greyish brown, spotted dark grey, moderately decomposed, fine grained GRANITE. Joints are closely to medium spaced, smooth stepped, locally slickenside planar, iron oxide stained, dipping at 0°-10°. |
| 16/10/2013 | | 4.92m at 18:00 | | | | | | | | 15.79 | | | | 15.20-15.50m : Chlorite stained. |
| | | | | | | | | | | -7.16 | 14.90 | | | 15.20-15.79m : Sub-vertical joint. |
| | | | | | | | | | | -8.05 | 15.79 | | | End of hole at 15.79m. |
| | | | | | | | | | | | 20.00 | | | |

- Small disturbed sample
- Water sample
- SPT liner sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- Piston sample
- Standpipe tip
- Piezometer tip
- Standard penetration test
- Packer test
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- Impression packer test
- In-situ vane shear test

LOGGED T. TANG
DATE 18/10/2013
CHECKED D. AU
DATE 19/10/2013

REMARKS