APPENDIX 5
PHOTOGRAPHS

Bophirima Site

Coarse Colluvium

Residual Basaltic Lava

APPENDIX 6
SITE PLAN

MOOKODI INTEGRATION PROJECT
ROUTE OVERVIEW
(EIA PHASE)

INSET 1: PROPOSED KALPLATS SUBSTATION

Goudkop
1282
Rec
PROPOSED KALPLATS SUBSTATION
Silos
Môrester
1283
1263
GEMSBOK PAN 3

0 250 500
Meters

INSET 2: EXISTING VRYBURG SUBSTATION

Sta.
1189
1183.3
Silos
506
177
1173
Purification Plant
Diggings
VRYBURG 506
Diggings
Diggings
VRYBURG MUNICIPAL SUBSTATION

0 240 480
Meters

INSET 3: PROPOSED BOPHIRIMA SUBSTATION

WOODHOUSE SUBSTATION (TO BE DECOMMISSIONED)
1197
Constantia
674-IN
1186
1197
PROPOSED BOPHIRIMA SUBSTATION (ALTERNATIVE 1)
Georgia
1170
PROPOSED BOPHIRIMA SUBSTATION (ALTERNATIVE 2)

0 250 500
Meters

EDWARDS DAM SUBSTATION
INSET 1
PROPOSED KALPLATS SUBSTATION
VRYBURG
Vryburg
INSET 2
INSET 3
VRYBURG MUNICIPAL SUBSTATION
WOODHOUSE SUBSTATION (TO BE DECOMMISSIONED)
MOOKODI SUBSTATION (UNDER CONSTRUCTION)
PROPOSED BOPHIRIMA SUBSTATION

Legend

- 🟥 Existing Substations
- 🟨 Proposed Substations
- ⬜ Substation Under Construction

Proposed Routes

- Bophirima Substation to Kalplats Substation (Alternative 1)
- Bophirima Substation to Kalplats Substation (Alternative 2)
- Bophirima Substation to Existing Vryburg Substation
- Mookodi Transmission Substation to Bophirima Substation
- Kalplats Substation to Existing Edwards Dam Substation (Alternative 1)
- Kalplats Substation to Existing Edwards Dam Substation (Alternative 3)
- 300m Wide Assessment Corridor

N
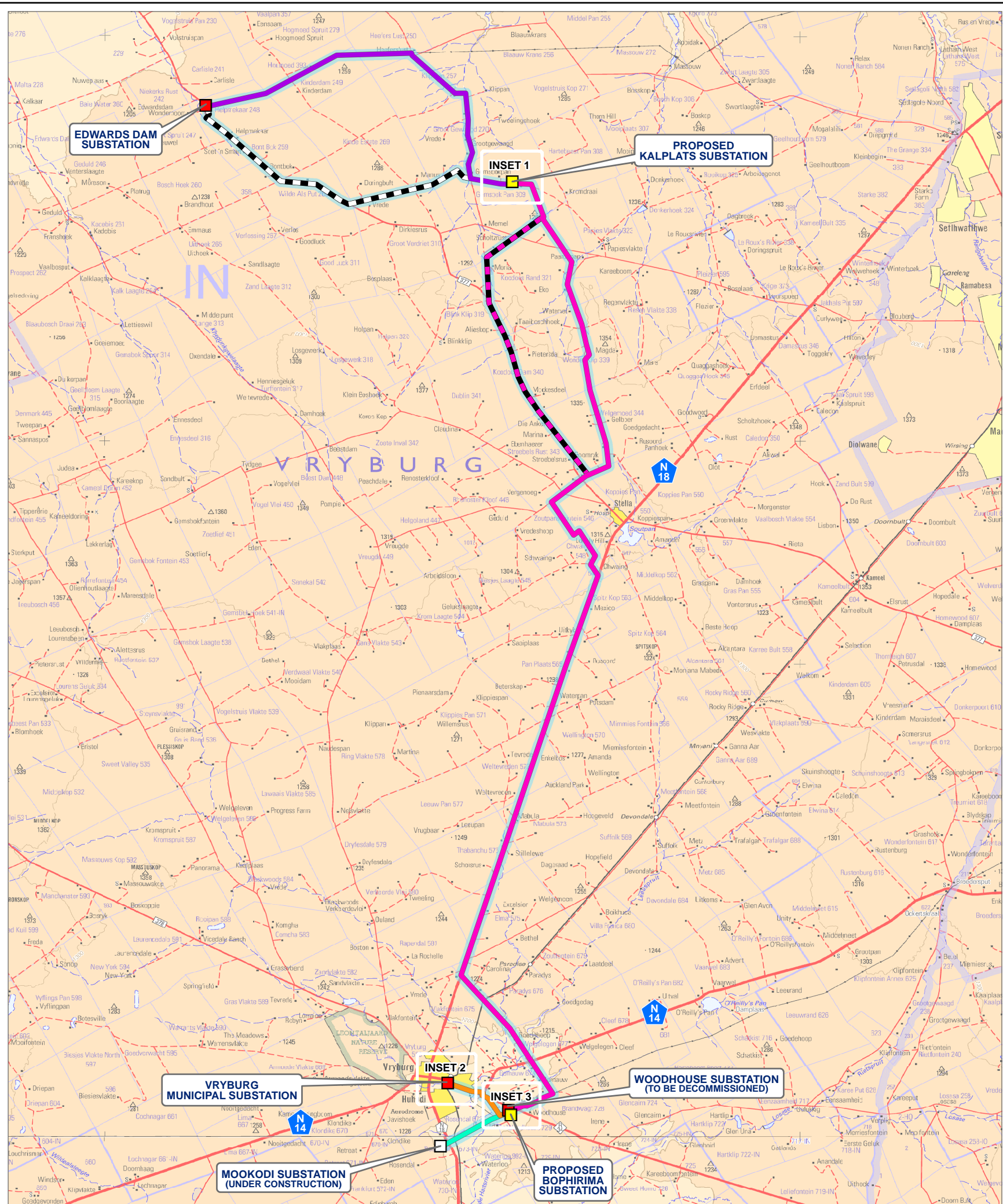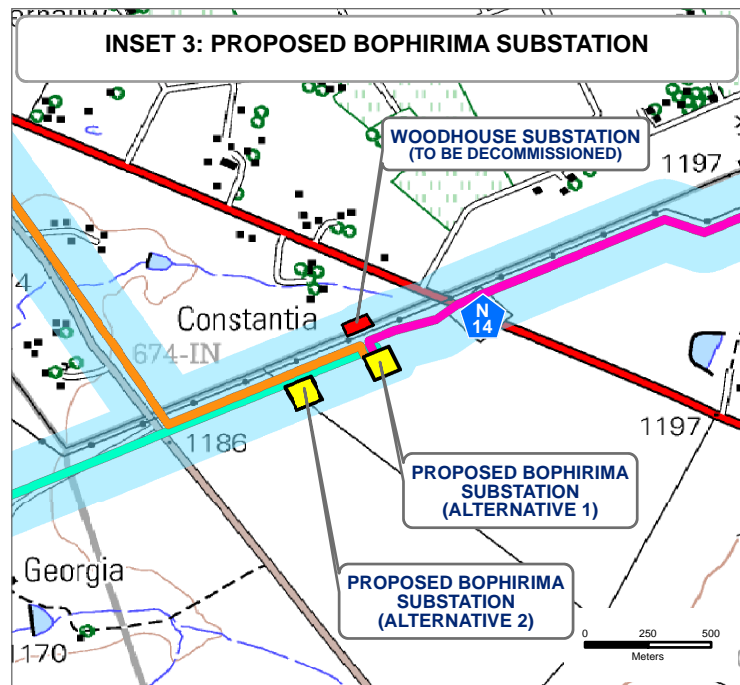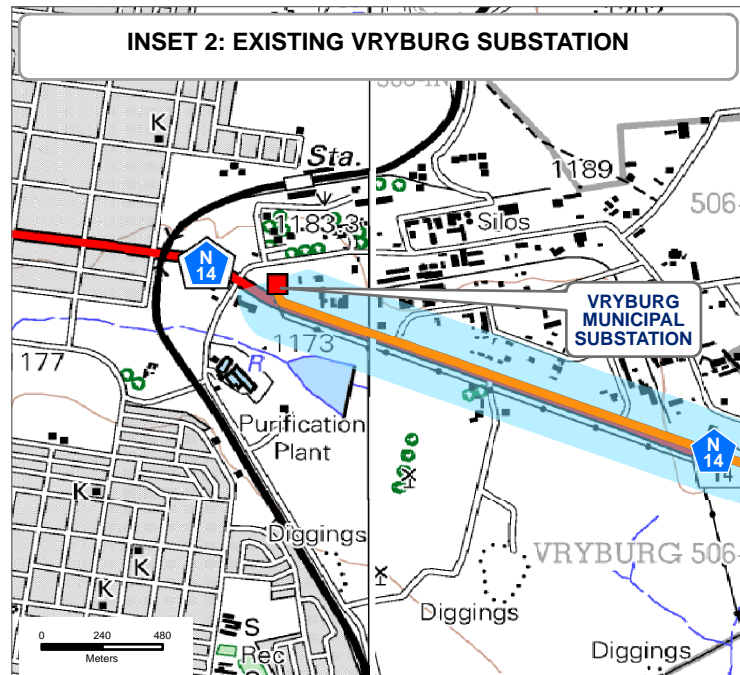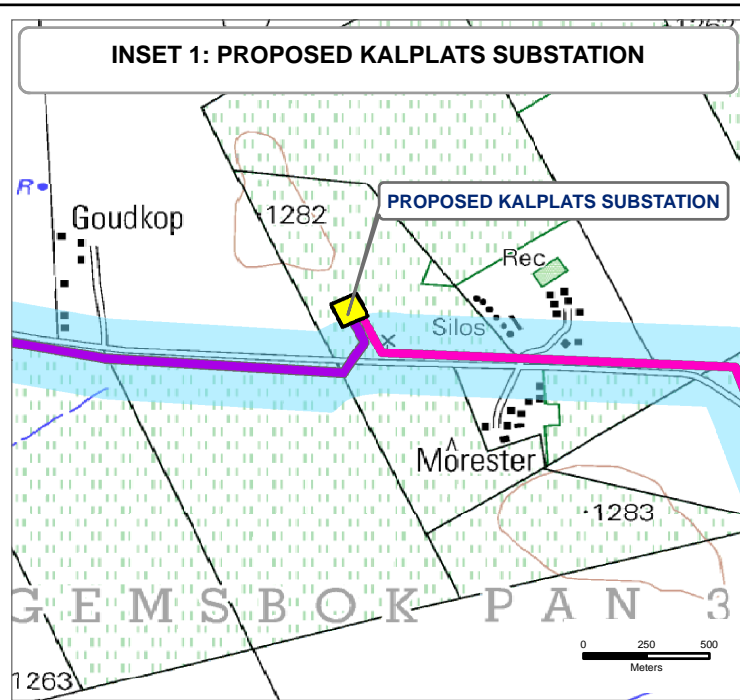
0 5 10
Kilometers

SiVEST
ENVIRONMENTAL DIVISION
51 WESSELS ROAD
RIVONIA, 2128
JOHANNESBURG
SOUTH AFRICA

Phone: +27 11 798 0600
Fax: +27 11 803 7272
e-mail: info@sivest.co.za

Project No	Map Ref No	Prepared By	Date
10466	10466/EIA_01	KLS	17/08/2012

Site Plan -Kalplaats Site, Morester

APPENDIX 7

IDEALISED GEOLOGICAL PROFILES

Idealised Geological Profiles - Kalplaats - Site 1

Depth (y-axis): 0, -0.2, -0.4, -0.6, -0.8, -1, -1.2, -1.4, -1.6, -1.8, -2, -2.2, -2.4, -2.6, -2.8, -3, -3.2, -3.4

Trial Pit Numbers: KAL 1 – 1, KAL 1 – 2, KAL 1 – 3, KAL 1 – 4, KAL 1 – 5, KAL 1 – 6
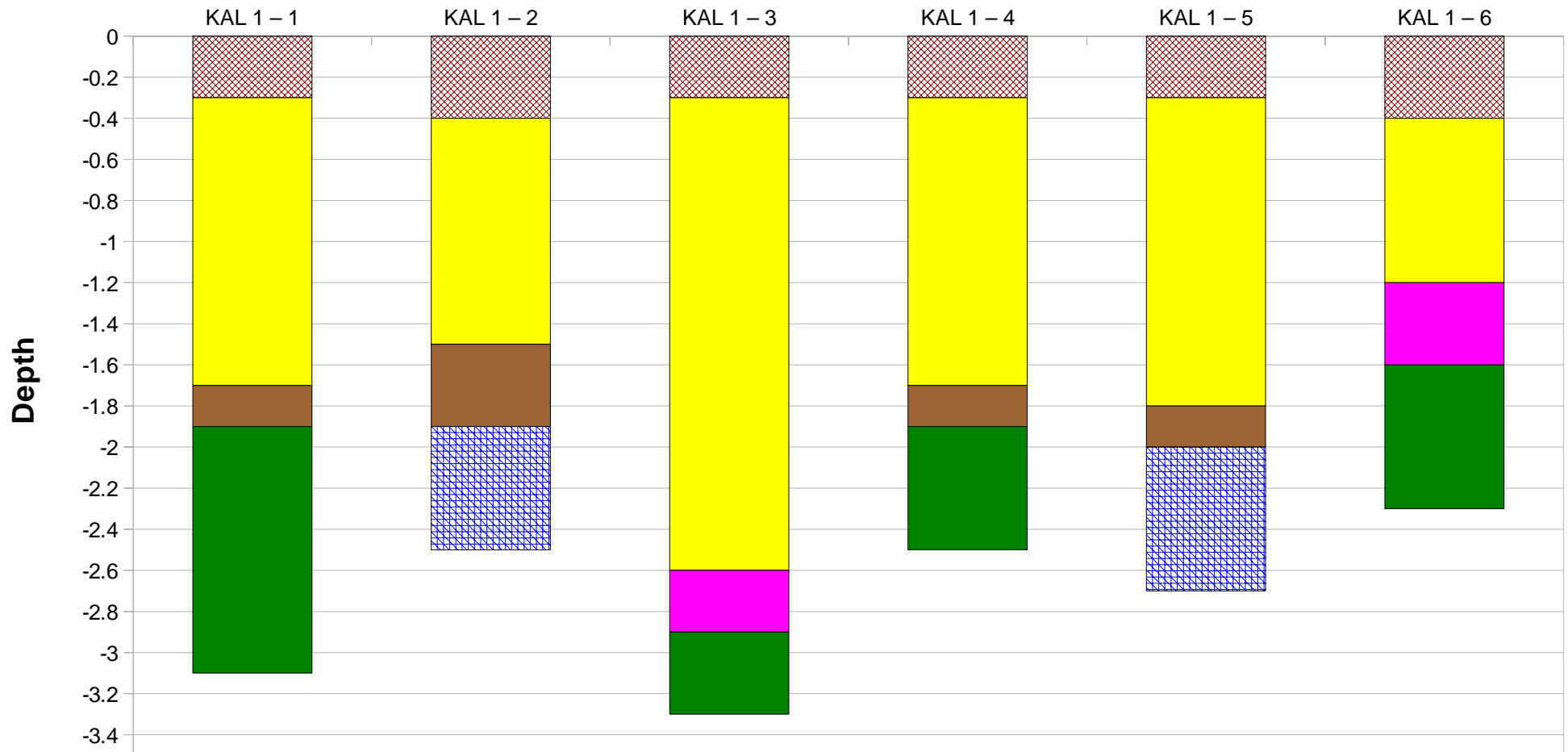
Legend:
- Topsoil
- Aeolian Sands
- Pebble Marker
- Reworked Residual Granite
- Residual Granite
- Very Dense to Very Soft Rock Granite

Idealised Geological Profiles - Kalplaats - Site 2

Depth

Trial Pit Numbers

KAL 2 – 1   KAL 2 – 2   KAL 2 – 3   KAL 2 – 4   KAL 2 – 5

Topsoil   Aeolian Sands

Reworked Residual Granite   Residual Granite   Very Dense to Very Soft Rock Granite

| APPENDIX 8 |
| TRIAL PIT PROFILES |

Sivest
Kalplaats

Scale
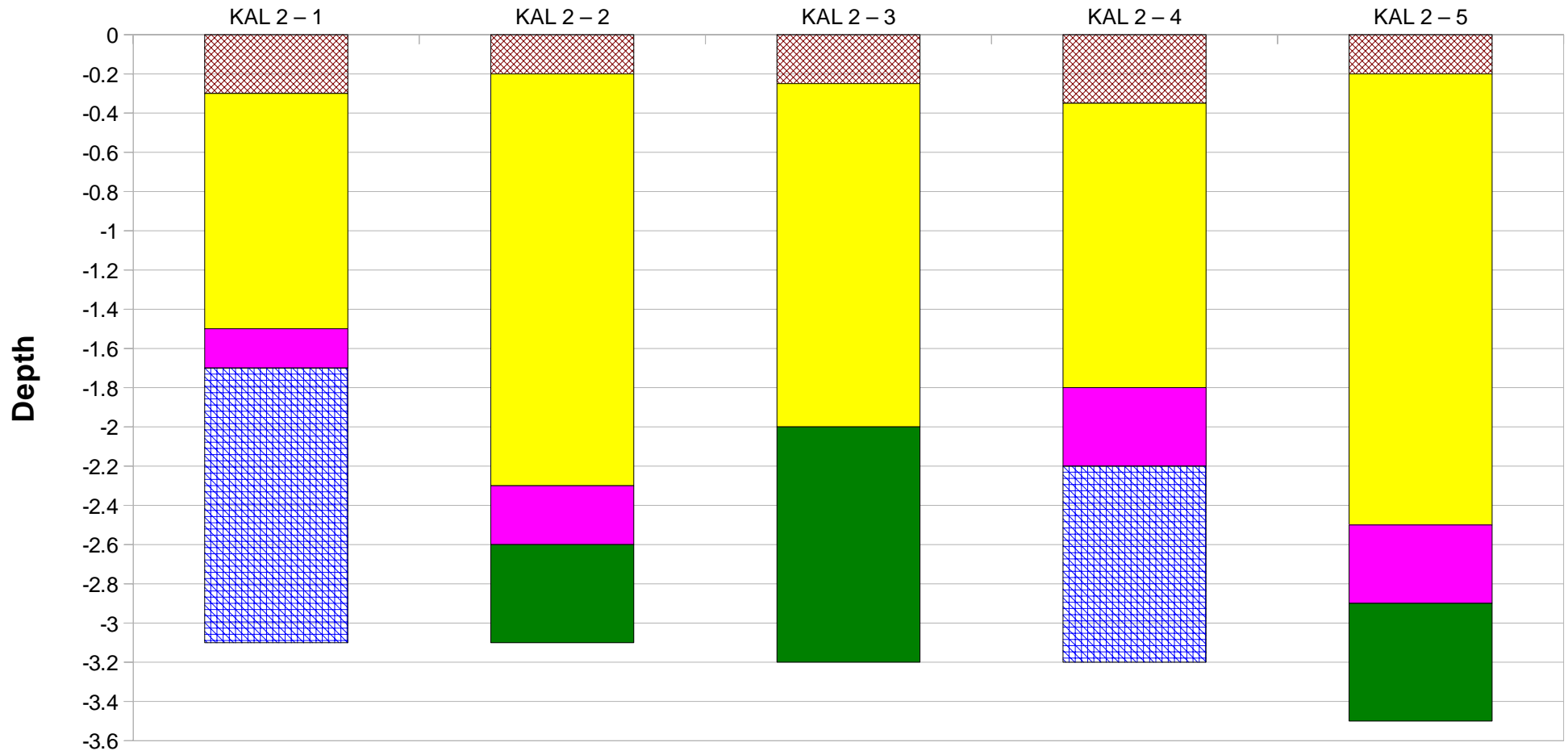1:25

0.00

Dry, orange brown, loose to medium dense, intact, silty sand: Topsoil.

0.30

Dry, orange brown, speckled orange, generally dense with medium dense pockets, intact, silty sand: Aeolian Sand.

CBR/FI ●

DO/FI ■

1.70

Dry, orange brown to reddish brown, silty sand as infilling for abundant sub-rounded coarse gravels with an overall consistancy of dense: Pebble Marker.

1.90

Slightly moist, greyish brown, mottled orange and yellow, dense to very dense, relic fissured, gravelly sand: Residual Granite.

2.30

Slightly moist, orange brown, very dense, relic fissured, fine gravelly sand: Residual Granite.

3.10

NOTES

1) Final reach of TLB @ 3.1m

2) No water seepage observed

3) Disturbed sample CBR/FI 0.3--1.5m

4) Undisturbed sample DO/FI 1.0--1.2m

CONTRACTOR : Die Timmerman
MACHINE : JCB
DRILLED BY : David
PROFILED BY : M.C.

TYPE SET BY : Rev 1
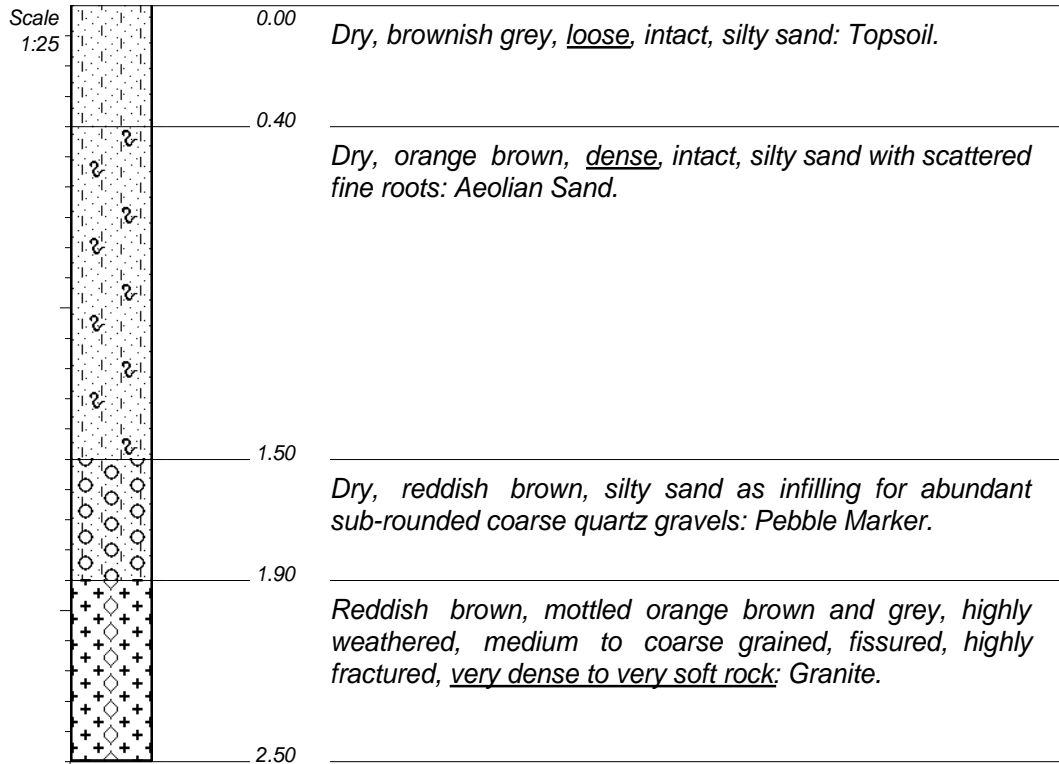SETUP FILE : STANDARD.SET

INCLINATION : Vertical
DIAM :
DATE : 04/09/2012
DATE :

DATE : 08/10/12 11:26
TEXT : ..\2012\10162-~1.TXT

ELEVATION :
X-COORD : 2911484
Y-COORD : 0020655

HOLE No: KAL1-1

D060 Geopractica

dotPLOT 6007 PBp

Scale
1:25

0.00

Dry, brownish grey, <u>loose</u>, intact, silty sand: Topsoil.

0.40

Dry, orange brown, <u>dense</u>, intact, silty sand with scattered fine roots: Aeolian Sand.

1.50

Dry, reddish brown, silty sand as infilling for abundant sub-rounded coarse quartz gravels: Pebble Marker.

1.90

Reddish brown, mottled orange brown and grey, highly weathered, medium to coarse grained, fissured, highly fractured, <u>very dense to very soft rock</u>: Granite.

2.50

NOTES

1) Refusal of TLB @ 2.5m

2) No water seepage observed

CONTRACTOR : Die Timmerman
MACHINE : JCB
DRILLED BY : David
PROFILED BY : M.C.

TYPE SET BY : Rev 1
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 04/09/2012
DATE :

DATE : 08/10/12 11:26
TEXT : ..\2012\10162-~1.TXT

ELEVATION :
X-COORD : 2911528
Y-COORD : 0020745

HOLE No: KAL1-2

D060 Geopractica

dotPLOT 6007 PBp

Scale
1:25

0.00

Dry, reddish brown, <u>loose</u>, intact, silty sand with scattered fine roots: Topsoil.

0.30

Dry, orange brown, <u>dense</u>, intact, silty sand: Aeolian Sand.

0.90

Slightly moist, orange brown, speckled orange and grey, <u>soft to medium dense</u>, intact, silty sand: Aeolian Sand.

CP/FI

2.60

FI

Grey brown, speckled and mottled orange and grey, <u>soft to firm</u>, intact, slightly clayey, silty sand: Reworked Residual Granite.

2.90

Moist, grey brown, mottled orange and grey, <u>medium dense to dense</u>, relic fissured, fine gravelly sand: Residual Granite.

3.30

NOTES

1) Final reach of TLB @ 3.3m

2) No water seepage observed

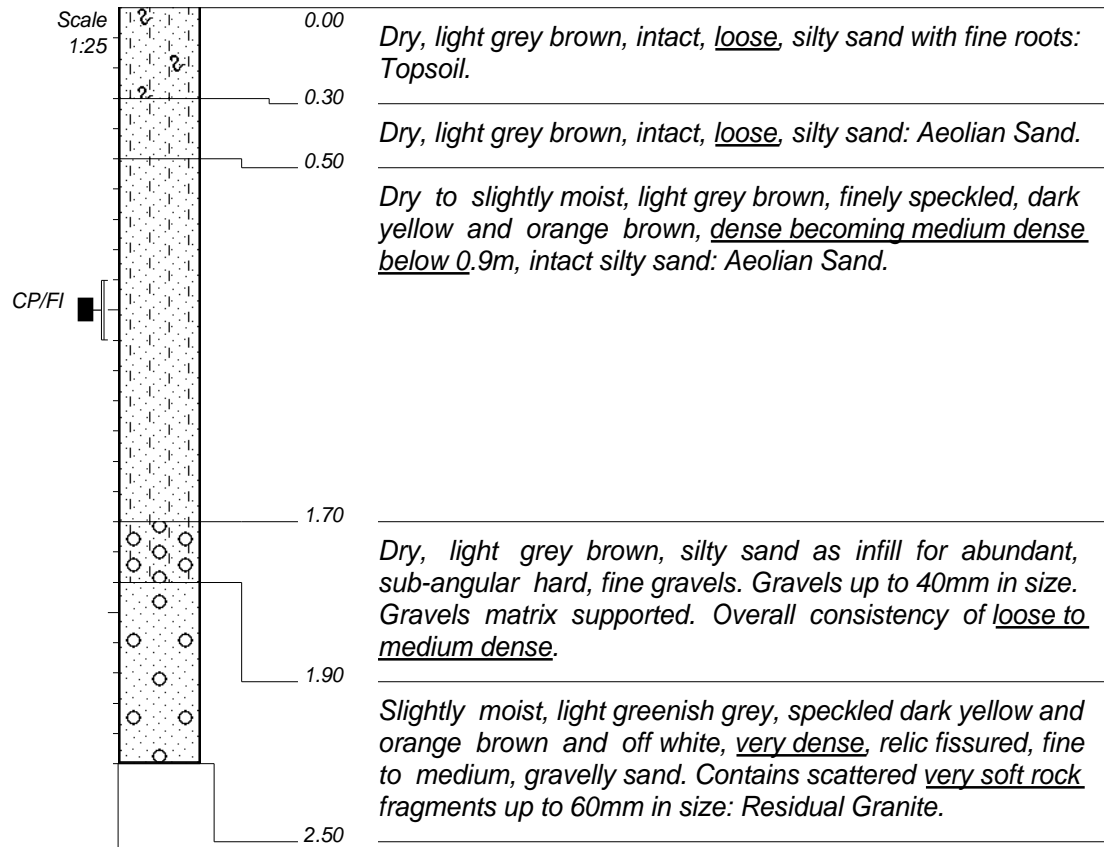*3) Undisturbed sample CP/FI 1.3--1.5m*
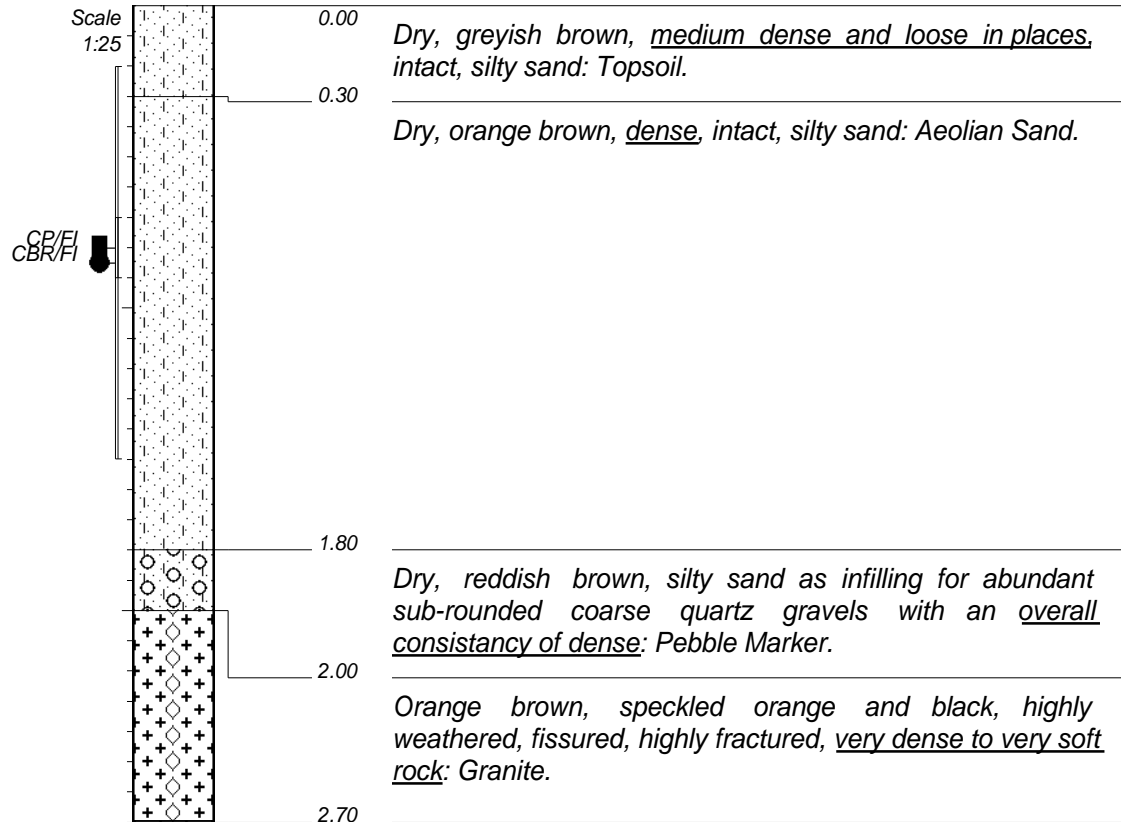
4) Disturbed sample FI 2.6--2.9m

CONTRACTOR : Die Timmerman
MACHINE : JCB
DRILLED BY : David
PROFILED BY : M.C.

TYPE SET BY : Rev 1
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 04/09/2012
DATE :

DATE : 08/10/12 11:26
TEXT : ..\2012\10162-~1.TXT

ELEVATION :
X-COORD : 2911541
Y-COORD : 0020675

HOLE No: KAL1-3

D060 Geopractica

dotPLOT 6007 PBp

Scale
1:25

0.00

Dry, light grey brown, intact, <u>loose</u>, silty sand with fine roots: Topsoil.

0.30

Dry, light grey brown, intact, <u>loose</u>, silty sand: Aeolian Sand.

0.50

Dry to slightly moist, light grey brown, finely speckled, dark yellow and orange brown, <u>dense becoming medium dense below 0</u>.9m, intact silty sand: Aeolian Sand.

CP/FI ■

1.70

Dry, light grey brown, silty sand as infill for abundant, sub-angular hard, fine gravels. Gravels up to 40mm in size. Gravels matrix supported. Overall consistency of <u>loose to medium dense</u>.

1.90

Slightly moist, light greenish grey, speckled dark yellow and orange brown and off white, <u>very dense</u>, relic fissured, fine to medium, gravelly sand. Contains scattered <u>very soft rock fragments up to 60mm in size: Residual Granite.

2.50

NOTES

1) Refusal of TLB @ 2.5m on very soft to soft rock granite

2) No water seepage observed

3) Undisturbed sample CP/FI 0.9--1.1m

Scale
1:25

0.00

Dry, greyish brown, <u>medium dense and loose in places</u>, intact, silty sand: Topsoil.

0.30

Dry, orange brown, <u>dense</u>, intact, silty sand: Aeolian Sand.

CP/FI
CBR/FI

1.80

Dry, reddish brown, silty sand as infilling for abundant sub-rounded coarse quartz gravels with an <u>overall consistancy of dense</u>: Pebble Marker.

2.00

Orange brown, speckled orange and black, highly weathered, fissured, highly fractured, <u>very dense to very soft rock</u>: Granite.

2.70

NOTES

1) Refusal of TLB @ 2.7m

2) No water seepage observed

3) Undisturbed sample CP/FI 0.7--0.9m

4) Disturbed sample CBR/FI 0.2--1.5m

CONTRACTOR : Die Timmerman
MACHINE : JCB
DRILLED BY : David
PROFILED BY : M.C.

TYPE SET BY : Rev 1
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE : 04/09/2012
DATE :

DATE : 08/10/12 11:26
TEXT : ..\2012\10162-~1.TXT

ELEVATION :
X-COORD : 2911618
Y-COORD : 0020701

HOLE No: KAL1-5

D060 Geopractica

dotPLOT 6007 PBp