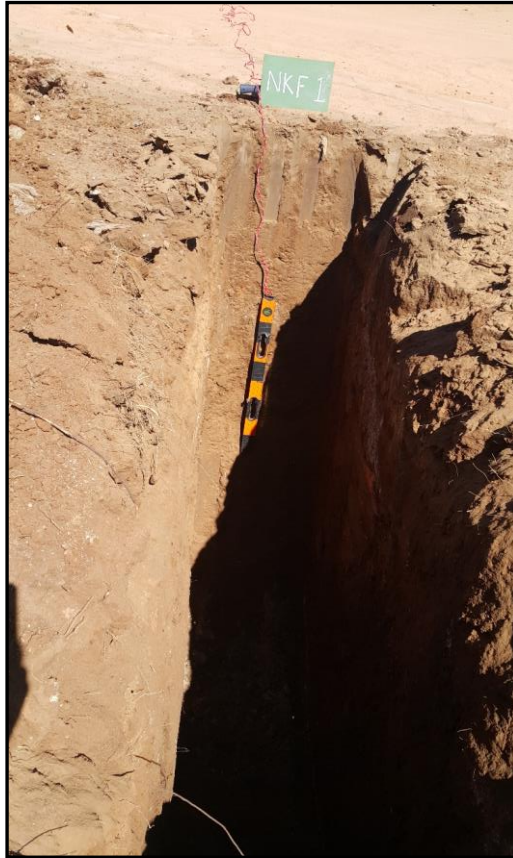


**Soil Profile NKF 01 (Nelsonskop Farm Urban Development)**

**Profiled by** C de Beer  
**Diameter**  
**Depth** 3.30  
**Type:** Trial Pit

**Co-coordinates:**  
**X-coord** 23,64769° E  
**Y-coord** 027,62301° S  
**Z-coord** 862 m



**Contractor** Van Gills  
**Machine** CAT 418  
**Operator** David

**Soil Profile Description**

Profile	Depth to (m)	Description
	0.30	Slightly moist,dark orange brown, medium dense, intact, silty sand with clay, TRANSPORTED SOIL
	3.20	Slightly moist to moist, orange brown, medium dense, intact, silty sand with minor clay, TRANSPORTED SOIL.
	3.30	Moist, pinkish bedded white, highly weathered, weak, jointed layered SANDSTONE.
End of Hole @ 3.30 m. TLB refusal on highly weathered, medium strong, jointed layered SANDSTONE. No groundwater encountered.		

**Comments**

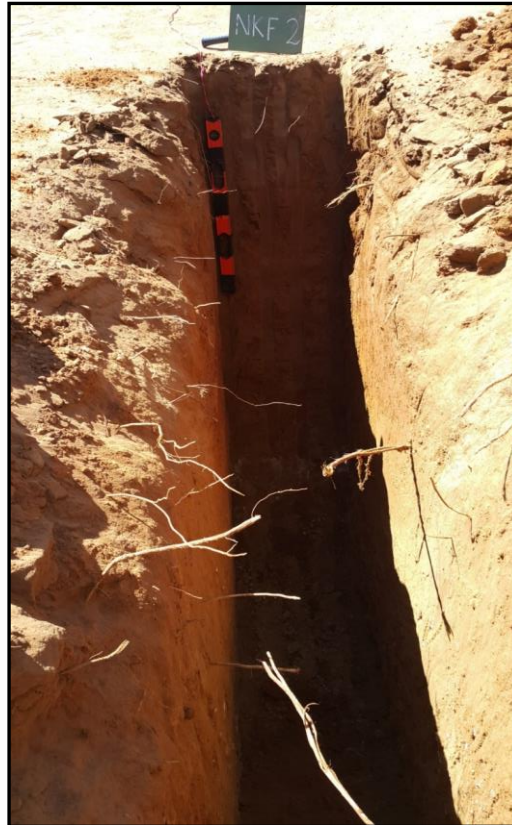
- 1 DCP test conducted at surface to 1.0m
- 2 Sample NKF 01A collected @ 0.6-1.0m



**Soil Profile NKF 02 (Nelsonskop Farm Urban Development)**

**Profiled by** C de Beer  
**Diameter**  
**Depth** 3.20  
**Type:** Trial Pit

**Co-ordinates:**  
**X-coord** 23,64804° E  
**Y-coord** 027,62020° S  
**Z-coord** 862 m



**Contractor** Van Gills  
**Machine** CAT 418  
**Operator** David

**Soil Profile Description**

Profile	Depth to (m)	Description
	0.30	Dry to slightly moist, orange brown, medium dense, intact, silty sand, TRANSPORTED SOIL
	2.40	Slightly moist to moist, orange brown, medium dense, intact, silty sand, TRANSPORTED SOIL.
	3.20	Dry to slightly moist, yellow brown, medium dense, intact, gravelly silty sand, TRANSPORTED SOIL with calcrete nodules
	3.30	Dry to slightly moist light yellow brown to white, medium strong to strong, PEDOGENIC HARDPAN CALCRETE
		End of Hole @ 3.30 m. TLB refusal on medium strong to strong, PEDOGENIC HARDPAN CALCRETE. No groundwater encountered.

**Comments**

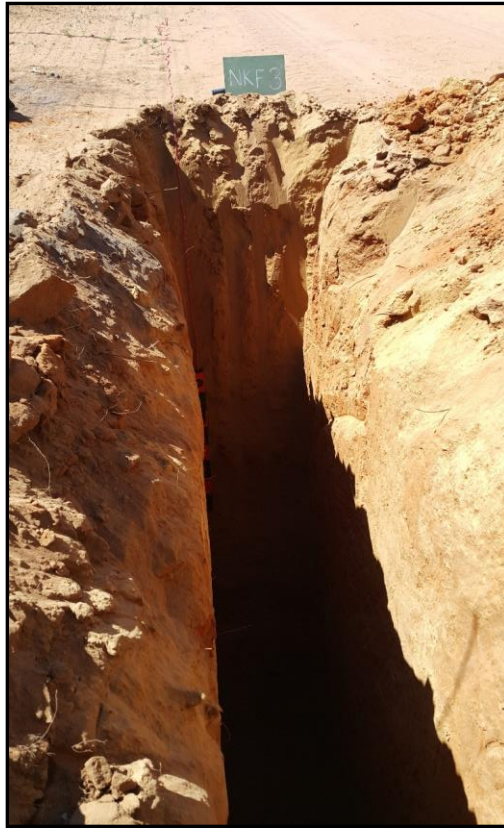
- 1 DCP test conducted at surface to 1.0m
- 2 No Sample collected



**Soil Profile NKF 03 (Nelsonskop Farm Urban Development)**

**Profiled by** C de Beer  
**Diameter**  
**Depth** 3.20  
**Type:** Trial Pit

**Co-ordinates:**  
**X-coord** 23,64911° E  
**Y-coord** 027,61704° S  
**Z-coord** 868 m



**Contractor** Van Gills  
**Machine** CAT 418  
**Operator** David

**Soil Profile Description**

Profile	Depth to (m)	Description
	0.30	Dry to slightly moist, orange brown, medium dense, intact, silty sand, TRANSPORTED SOIL
	2.60	Slightly moist, orange brown, medium dense, intact, silty sand, TRANSPORTED SOIL.
	3.20	Dry to slightly moist, yellow brown, medium dense, intact, silty sand, calcretized TRANSPORTED SOIL

End of Hole @ 3.20 m. TLB reach limit, calcretized TRANSPORTED SOIL  
 No groundwater encountered.

**Comments**

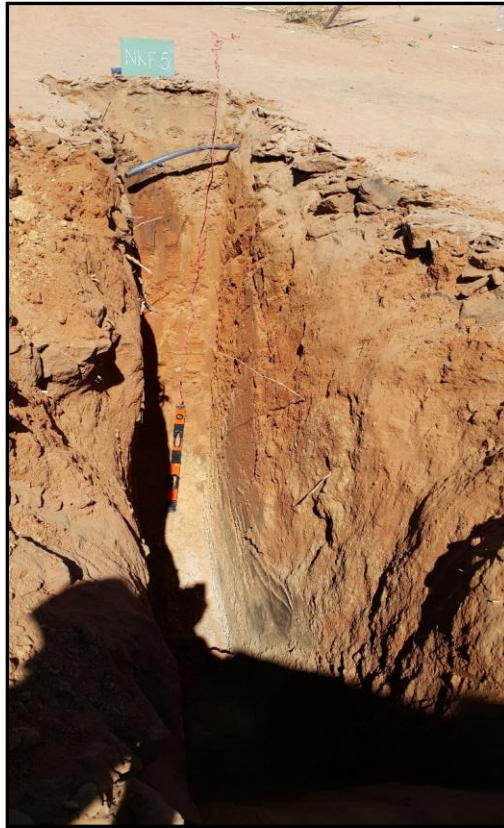
- 1 DCP test conducted at surface to 1.0m
- 2 Sample NKF 01A collected @ 0.6-1.0m



**Soil Profile NKF 05 (Nelsonskop Farm Urban Development)**

**Profiled by** C de Beer  
**Diameter**  
**Depth** 3.20  
**Type:** Trial Pit

**Co-coordinates:**  
**X-coord** 23,650205° E  
**Y-coord** 027,616552° S  
**Z-coord** 868 m



**Contractor** Van Gills  
**Machine** CAT 418  
**Operator** David

**Soil Profile Description**

Profile	Depth to (m)	Description
	0.30	Dry to slightly moist, orange brown, medium dense, intact, silty sand, TRANSPORTED SOIL
	2.80	Slightly moist, orange brown, medium dense, intact, silty sand, TRANSPORTED SOIL.
	3.20	Dry to slightly moist, yellow brown, medium dense, intact, gravelly silty sand, TRANSPORTED SOIL with calcrete nodules

End of Hole @ 3.30 m. TLB reach limit, TRANSPORTED SOIL with calcrete nodules  
 No groundwater encountered.

**Comments**

- 1 DCP test conducted at surface to 1.0m
- 2 No Sample collected

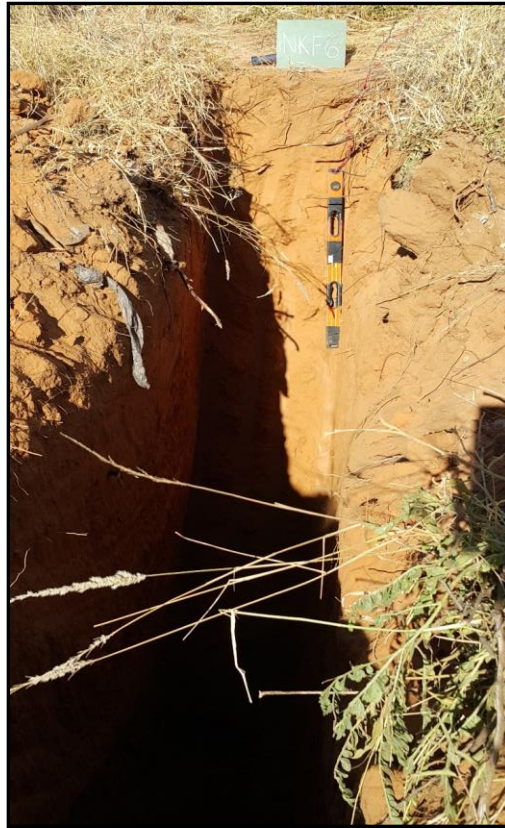




**Soil Profile NKF 06 (Nelsonskop Farm Urban Development)**

**Profiled by** C de Beer  
**Diameter**  
**Depth** 3.20  
**Type:** Trial Pit

**Co-ordinates:**  
**X-coord** 23,65167° E  
**Y-coord** 027,61383° S  
**Z-coord** 866 m



**Contractor** Van Gills  
**Machine** CAT 418  
**Operator** David

**Soil Profile Description**

Profile	Depth to (m)	Description
	0.30	Dry to slightly moist, orange brown, medium dense, intact, silty sand, TRANSPORTED SOIL
	2.80	Slightly moist, orange brown, medium dense, intact, silty sand, TRANSPORTED SOIL.
	3.20	Dry to slightly moist, yellow brown, medium dense, intact, gravelly silty sand, TRANSPORTED SOIL with calcrete nodules

End of Hole @ 3.30 m. TLB reach limit, TRANSPORTED SOIL with calcrete nodules  
 No groundwater encountered.

**Comments**

- 1 DCP test conducted at surface to 1.0m
- 2 No Sample collected



**Soil Profile NKF 07 (Nelsonskop Farm Urban Development)**

**Profiled by** C de Beer  
**Diameter**  
**Depth** 3.20  
**Type:** Trial Pit

**Co-ordinates:**  
**X-coord** 23,65364° E  
**Y-coord** 027,61335° S  
**Z-coord** 865 m



**Contractor** Van Gills  
**Machine** CAT 418  
**Operator** David

**Soil Profile Description**

Profile	Depth to (m)	Description
	1.60	Dry, orange brown, loose to medium dense, building rubble in a matrix of silty sand, UNCOMPACTED FILL
	2.20	Dry, light yellow brown to white, medium strong to strong, PEDOGENIC NODULAR CALCRETE

End of Hole @ 2.20 m. TLB refusal on strong, PEDOGENIC HARDPAN CALCRETE.  
 No groundwater encountered.

**Comments**

- 1 DCP test conducted at surface to 1.0m
- 2 No Sample collected



**Soil Profile NKF 08 (Nelsonskop Farm Urban Development)**

**Profiled by** C de Beer  
**Diameter**  
**Depth** 3.20  
**Type:** Trial Pit

**Co-ordinates:**  
**X-coord** 23,65162° E  
**Y-coord** 027,61022° S  
**Z-coord** 870 m



**Contractor** Van Gills  
**Machine** CAT 418  
**Operator** David

**Soil Profile Description**

Profile	Depth to (m)	Description
	0.30	Dry to slightly moist, orange brown, medium dense, intact, silty sand, TRANSPORTED SOIL
	3.00	Slightly moist, orange brown, medium dense, intact, silty sand, TRANSPORTED SOIL.
	3.20	Dry to slightly moist, yellow brown, medium dense, intact, silty sand, calcretized TRANSPORTED SOIL
		End of Hole @ 3.20 m. TLB reach limit, calcretized TRANSPORTED SOIL No groundwater encountered.

**Comments**

- 1 DCP test conducted at surface to 1.0m
- 2 Sample NKF 01A collected @ 0.6-1.0m





**Soil Profile NKF 09 (Nelsonskop Farm Urban Development)**

**Profiled by** C de Beer  
**Diameter**  
**Depth** 3.20  
**Type:** Trial Pit

**Co-coordinates:**  
**X-coord** 23,65345° E  
**Y-coord** 027,61033° S  
**Z-coord** 870 m



**Contractor** Van Gills  
**Machine** CAT 418  
**Operator** David

**Soil Profile Description**

Profile	Depth to (m)	Description
	0.30	Dry to slightly moist, orange brown, medium dense, intact, silty sand, TRANSPORTED SOIL
	3.20	Slightly moist, orange brown, medium dense, intact, silty sand, TRANSPORTED SOIL.

End of Hole @ 3.20 m. TLB reach limit, TRANSPORTED SOIL  
 No groundwater encountered.

**Comments**

- 1 DCP test conducted at surface to 1.0m
- 2 Sample NKF 01A collected @ 0.6-1.0m





**Soil Profile NKF 10 (Nelsonskop Farm Urban Development)**

**Profiled by** C de Beer  
**Diameter**  
**Depth** 0.90  
**Type:** Trial Pit

**Co-coordinates:**  
**X-coord** 23,65364° E  
**Y-coord** 027,61335° S  
**Z-coord** 865 m



**Contractor** Van Gills  
**Machine** CAT 418  
**Operator** David

**Soil Profile Description**

Profile	Depth to (m)	Description
	0.30	Dry, pale medium brown, medium dense, slightly cutanic, silty sand with clay, TRANSPORTED SOIL
	0.90	Dry, white to pale yellow brown, medium dense to dense, intact, gravelly silty sand, NODULAR CALCRETE
		End of Hole @ 0.90 m. TLB refusal on strong, PEDOGENIC HARDPAN CALCRETE. No groundwater encountered.

**Comments**

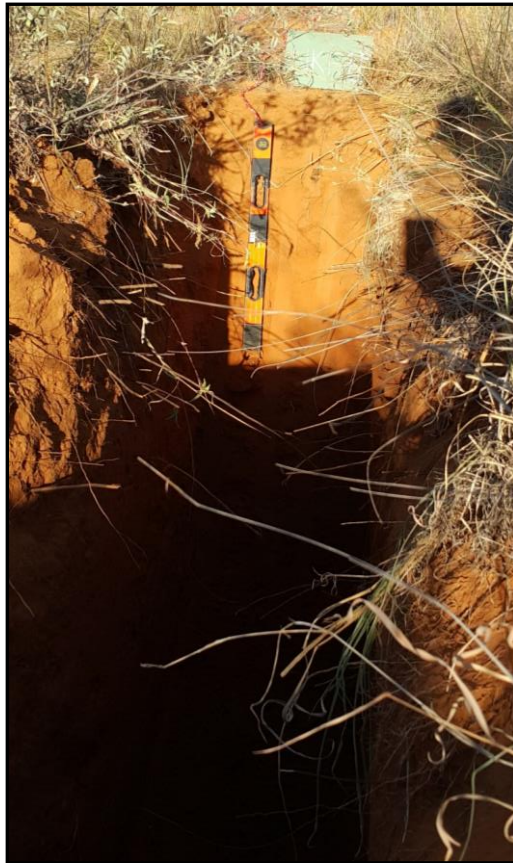
- 1 DCP test conducted at surface to 1.0m
- 2 No Sample collected



**Soil Profile NKF 11 (Nelsonskop Farm Urban Development)**

**Profiled by** C de Beer  
**Diameter**  
**Depth** 3.20  
**Type:** Trial Pit

**Co-ordinates:**  
**X-coord** 23,65360° E  
**Y-coord** 027,60711° S  
**Z-coord** 872 m



**Contractor** Van Gills  
**Machine** CAT 418  
**Operator** David

**Soil Profile Description**

Profile	Depth to (m)	Description
	0.30	Dry to slightly moist, orange brown, medium dense, intact, silty sand, TRANSPORTED SOIL
	3.20	Slightly moist, orange brown, medium dense, intact, silty sand, TRANSPORTED SOIL.

End of Hole @ 3.20 m. TLB reach limit, TRANSPORTED SOIL  
 No groundwater encountered.

**Comments**

- 1 DCP test conducted at surface to 1.0m
- 2 Sample NKF 11A collected @ 0.6-1.0m



**Soil Profile NKF 12 (Nelsonskop Farm Urban Development)**

**Profiled by** C de Beer  
**Diameter**  
**Depth** 3.20  
**Type:** Trial Pit

**Co-ordinates:**  
**X-coord** 23,65748° E  
**Y-coord** 027,60754° S  
**Z-coord** 870 m



**Contractor** Van Gills  
**Machine** CAT 418  
**Operator** David

**Soil Profile Description**

Profile	Depth to (m)	Description
	0.30	Dry to slightly moist, orange brown, medium dense, intact, silty sand, TRANSPORTED SOIL
	3.20	Slightly moist, orange brown, medium dense, intact, silty sand with sparse ferricrete nodules, at depth TRANSPORTED SOIL.

End of Hole @ 3.20 m. TLB reach limit, TRANSPORTED SOIL  
 No groundwater encountered.

**Comments**

- 1 DCP test conducted at surface to 1.0m
- 2 Sample NKF 11A collected @ 0.6-1.0m





**Soil Profile NKF 16 (Nelsonskop Farm Urban Development)**

**Profiled by** C de Beer  
**Diameter**  
**Depth** 3.20  
**Type:** Trial Pit

**Co-ordinates:**  
**X-coord** 23,66121° E  
**Y-coord** 027,59273° S  
**Z-coord** 889 m



**Contractor** Van Gills  
**Machine** CAT 418  
**Operator** David

**Soil Profile Description**

Profile	Depth to (m)	Description
	0.30	Dry to slightly moist, orange brown, medium dense, intact, silty sand, TRANSPORTED SOIL
	3.20	Slightly moist, orange brown, medium dense, intact, silty sand with sparse ferricrete nodules, at depth TRANSPORTED SOIL.

End of Hole @ 3.20 m. TLB reach limit, TRANSPORTED SOIL  
 No groundwater encountered.

**Comments**

- 1 DCP test conducted at surface to 1.0m
- 2 Sample NKF 11A collected @ 0.6-1.0m





**Soil Profile NKF 17 (Nelsonskop Farm Urban Development)**

**Profiled by** C de Beer  
**Diameter**  
**Depth** 3.20  
**Type:** Trial Pit

**Co-ordinates:**  
**X-coord** 23,66015° E  
**Y-coord** 027,58978° S  
**Z-coord** 894 m



**Contractor** Van Gills  
**Machine** CAT 418  
**Operator** David

**Soil Profile Description**

Profile	Depth to (m)	Description
	0.30	Dry, pale yellow brown, loose, intact, silty sand, TRANSPORTED SOIL
	3.20	Slightly moist, orange brown, medium dense, intact, silty sand with sparse ferricrete nodules, at depth TRANSPORTED SOIL.

End of Hole @ 3.20 m. TLB reach limit, TRANSPORTED SOIL  
 No groundwater encountered.

**Comments**

- 1 DCP test conducted at surface to 1.0m
- 2 Sample NKF 21A collected @ 0.6-1.0m



**Soil Profile NKF 18 (Nelsonskop Farm Urban Development)**

**Profiled by** C de Beer  
**Diameter**  
**Depth** 3.20  
**Type:** Trial Pit

**Co-coordinates:**  
**X-coord** 23,66198° E  
**Y-coord** 027,59500° S  
**Z-coord** 882 m



**Contractor** Van Gills  
**Machine** CAT 418  
**Operator** David

**Soil Profile Description**

Profile	Depth to (m)	Description
	0.30	Dry to slightly moist, orange brown, medium dense, intact, silty sand, TRANSPORTED SOIL
	3.20	Slightly moist, orange brown, medium dense, intact, silty sand with sparse ferricrete nodules, at depth TRANSPORTED SOIL.

End of Hole @ 3.20 m. TLB reach limit, TRANSPORTED SOIL  
 No groundwater encountered.

**Comments**

- 1 DCP test conducted at surface to 1.0m
- 2 Sample NKF 11A collected @ 0.6-1.0m



Soil Profile NKF 19 (Nelsonskop Farm Urban Development)

**Profiled by** C de Beer  
**Diameter**  
**Depth** 3.20  
**Type:** Trial Pit

**Co-coordinates:**  
**X-coord** 23,66205° E  
**Y-coord** 027,59013° S  
**Z-coord** 894 m



**Contractor** Van Gills  
**Machine** CAT 418  
**Operator** David

Soil Profile Description

Profile	Depth to (m)	Description
	0.30	Dry, pale yellow brown, loose, intact, silty sand, TRANSPORTED SOIL
	3.20	Slightly moist, orange brown, medium dense, intact, silty sand with sparse ferricrete nodules, at depth TRANSPORTED SOIL.

End of Hole @ 3.20 m. TLB reach limit, TRANSPORTED SOIL  
No groundwater encountered.

Comments

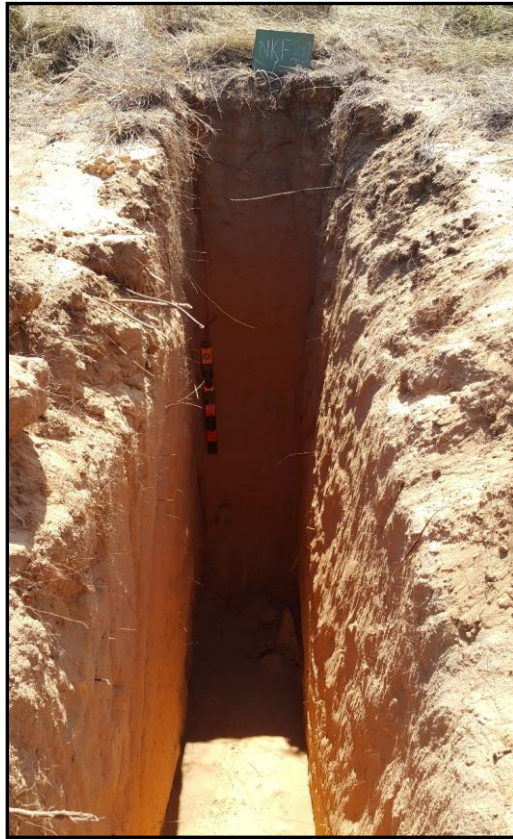
- 1 DCP test conducted at surface to 1.0m
- 2 Sample NKF 21A collected @ 0.6-1.0m



**Soil Profile NKF 20 (Nelsonskop Farm Urban Development)**

**Profiled by** C de Beer  
**Diameter**  
**Depth** 3.20  
**Type:** Trial Pit

**Co-coordinates:**  
**X-coord** 23,66427° E  
**Y-coord** 027,58832° S  
**Z-coord** 892 m



**Contractor** Van Gills  
**Machine** CAT 418  
**Operator** David

**Soil Profile Description**

Profile	Depth to (m)	Description
	0.30	Dry, pale yellow brown, loose, intact, silty sand, TRANSPORTED SOIL
	3.20	Slightly moist, orange brown, loose to medium dense, intact, silty sand with sparse ferricrete noddules, at depth TRANSPORTED SOIL.

End of Hole @ 3.20 m. TLB reach limit, TRANSPORTED SOIL  
 No groundwater encountered.

**Comments**

- 1 DCP test conducted at surface to 1.0m
- 2 No Sample collected





**Soil Profile NKF 21 (Nelsonskop Farm Urban Development)**

**Profiled by** C de Beer  
**Diameter**  
**Depth** 3.20  
**Type:** Trial Pit

**Co-coordinates:**  
**X-coord** 23,66427° E  
**Y-coord** 027,58832° S  
**Z-coord** 892 m



**Contractor** Van Gills  
**Machine** CAT 418  
**Operator** David

**Soil Profile Description**

Profile	Depth to (m)	Description
	0.30	Dry, pale yellow brown, loose, intact, silty sand, TRANSPORTED SOIL
	3.20	Slightly moist, orange brown, medium dense, intact, silty sand with sparse ferricrete nodules, at depth TRANSPORTED SOIL.

End of Hole @ 3.20 m. TLB reach limit, TRANSPORTED SOIL  
 No groundwater encountered.

**Comments**

- 1 DCP test conducted at surface to 1.0m
- 2 Sample NKF 21A collected @ 0.6-1.0m



**Soil Profile NKF 22 (Nelsonskop Farm Urban Development)**

**Profiled by** C de Beer  
**Diameter**  
**Depth** 3.20  
**Type:** Trial Pit

**Co-ordinates:**  
**X-coord** 23,66271° E  
**Y-coord** 027,58579° S  
**Z-coord** 894 m



**Contractor** Van Gills  
**Machine** CAT 418  
**Operator** David

**Soil Profile Description**

Profile	Depth to (m)	Description
	0.30	Dry, pale yellow brown, loose, intact, silty sand, TRANSPORTED SOIL
	3.20	Dry, yellowbrown, loose to medium dense, intact, silty sand with sparse ferricrete noddules, at depth TRANSPORTED SOIL.

End of Hole @ 3.20 m. TLB reach limit, TRANSPORTED SOIL  
 No groundwater encountered.

**Comments**

- 1 DCP test conducted at surface to 1.0m
- 2 Sample NKF 21A collected @ 0.6-1.0m



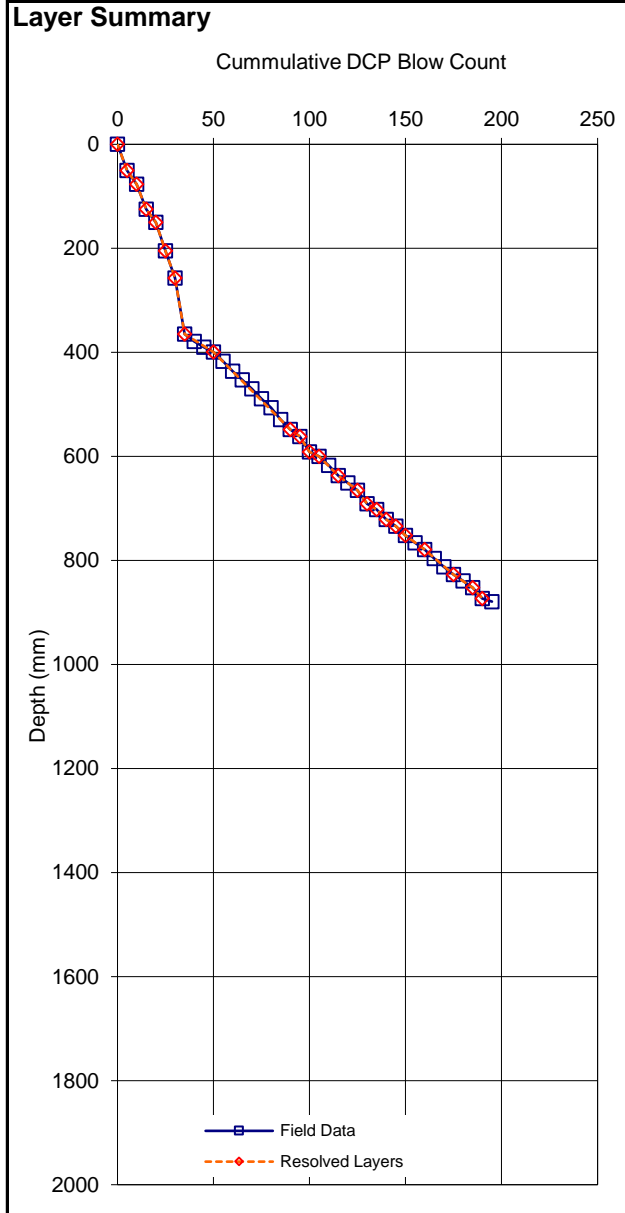
## 10 APPENDIX B – DCP RESULTS

DRAFT

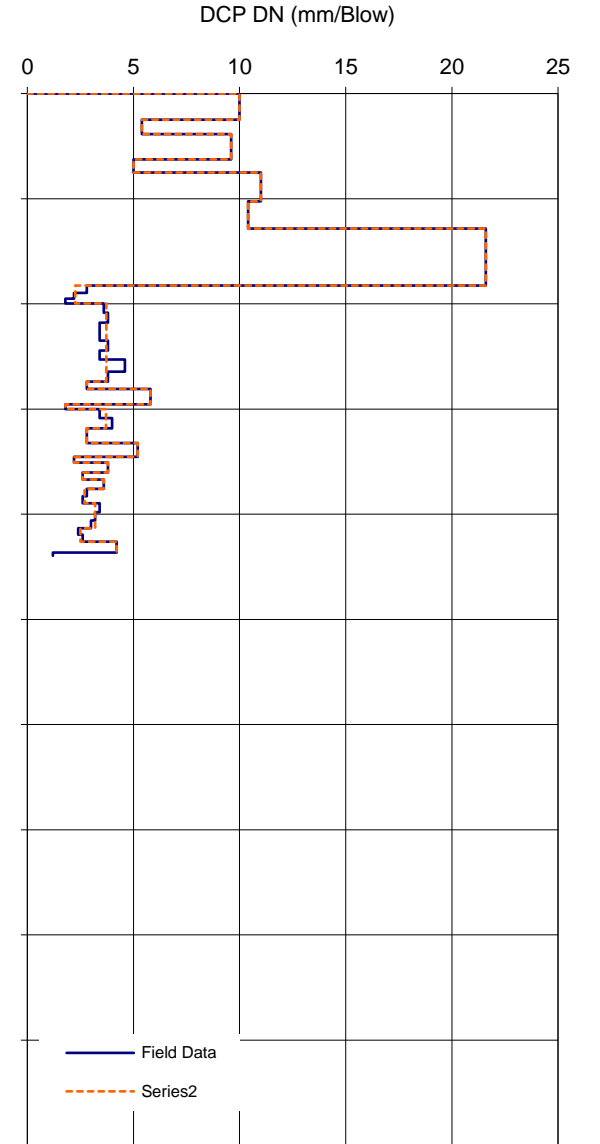
DCP No.	NKF 01
Project No.	Vortum Thermal Energy Plant
Type:	DCP
Chainage:	
Offset:	0
Date:	
Technician:	



Field Data			Resolved Parameters			
Depth Gnd Level (mm)	Interval (mm)	Blows	DPI (mm/Blow)	CBR (%)	UCS (kPa)	Cu (kPa)
0			0			
50	50	5	10.0	22	228	114
77	27	5	5.4	48	454	227
125	48	5	9.6	23	239	119
150	25	5	5.0	53	495	247
205	55	5	11.0	20	205	102
257	52	5	10.4	21	218	109
365	108	5	21.6	8	96	48
379	14	5	2.8	111	945	473
390	11	5	2.2	151	1238	619
399	9	5	1.8	185	1485	743
417	18	5	3.6	81	714	357
436	19	5	3.8	75	672	336
453	17	5	3.4	87	761	380
470	17	5	3.4	87	761	380
489	19	5	3.8	75	672	336
506	17	5	3.4	87	761	380
529	23	5	4.6	59	543	271
548	19	5	3.8	75	672	336
562	14	5	2.8	111	945	473
591	29	5	5.8	44	419	209
600	9	5	1.8	185	1485	743
617	17	5	3.4	87	761	380
637	20	5	4.0	70	635	317
651	14	5	2.8	111	945	473
665	14	5	2.8	111	945	473
691	26	5	5.2	51	473	237
702	11	5	2.2	151	1238	619
721	19	5	3.8	75	672	336
734	13	5	2.6	122	1027	513
752	18	5	3.6	81	714	357
766	14	5	2.8	111	945	473
779	13	5	2.6	122	1027	513
796	17	5	3.4	87	761	380
812	16	5	3.2	94	814	407
827	15	5	3.0	102	875	438
839	12	5	2.4	135	1123	562
852	13	5	2.6	122	1027	513
873	21	5	4.2	66	601	300
879	6	5	1.2	263	2024	1012



DCP DN (mm/Blow)	CBR (%)
10	22
5	48
5	53
11	20
10	21
2	145
4	77
2	185
4	78
5	51
3	122
3	116
3	94
4	66

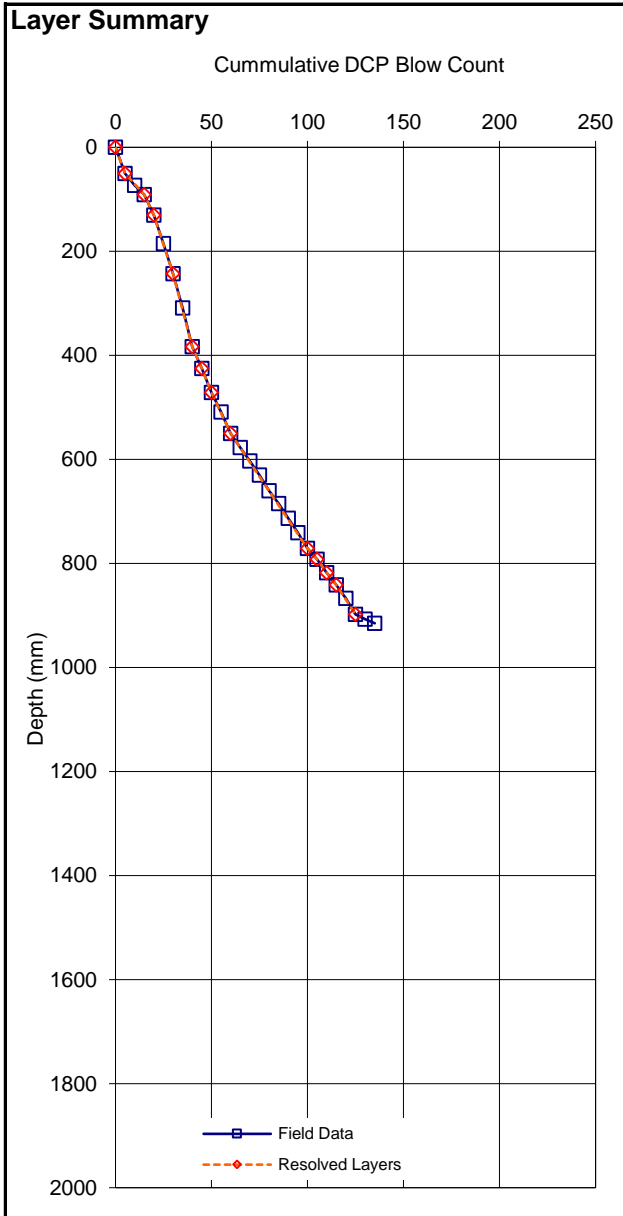




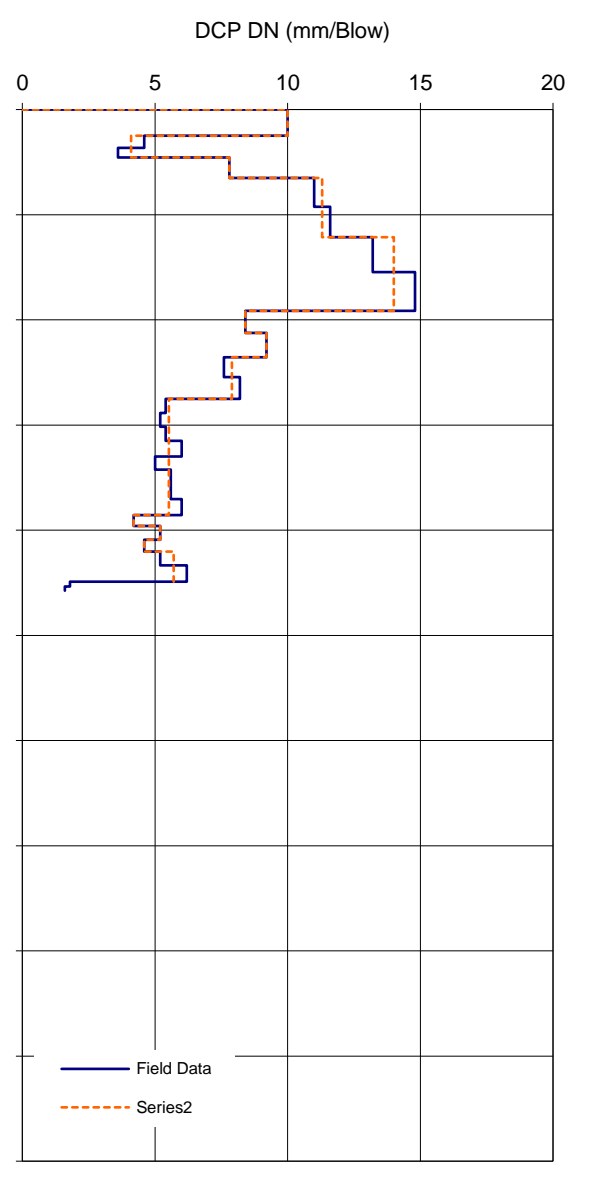
<b>DCP No.</b>	NKF 02
<b>Project No.</b>	Nelsonskop Farm
<b>Type:</b>	DCP
<b>Chainage:</b>	
<b>Offset:</b>	0
<b>Date:</b>	
<b>Technician:</b>	



Field Data			Resolved Parameters			
Depth Gnd Level (mm)	Interval (mm)	Blows	DPI (mm/Blow)	CBR (%)	UCS (kPa)	Cu (kPa)
0			0			
50	50	5	10.0	22	228	114
73	23	5	4.6	59	543	271
91	18	5	3.6	81	714	357
130	39	5	7.8	30	301	150
185	55	5	11.0	20	205	102
243	58	5	11.6	18	193	97
309	66	5	13.2	15	167	84
383	74	5	14.8	13	147	74
425	42	5	8.4	27	277	138
471	46	5	9.2	24	250	125
509	38	5	7.6	31	310	155
550	41	5	8.2	28	284	142
577	27	5	5.4	48	454	227
603	26	5	5.2	51	473	237
630	27	5	5.4	48	454	227
660	30	5	6.0	42	403	202
685	25	5	5.0	53	495	247
713	28	5	5.6	46	436	218
741	28	5	5.6	46	436	218
771	30	5	6.0	42	403	202
792	21	5	4.2	66	601	300
818	26	5	5.2	51	473	237
841	23	5	4.6	59	543	271
867	26	5	5.2	51	473	237
898	31	5	6.2	40	389	194
907	9	5	1.8	185	1485	743
915	8	5	1.6	206	1630	815
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						



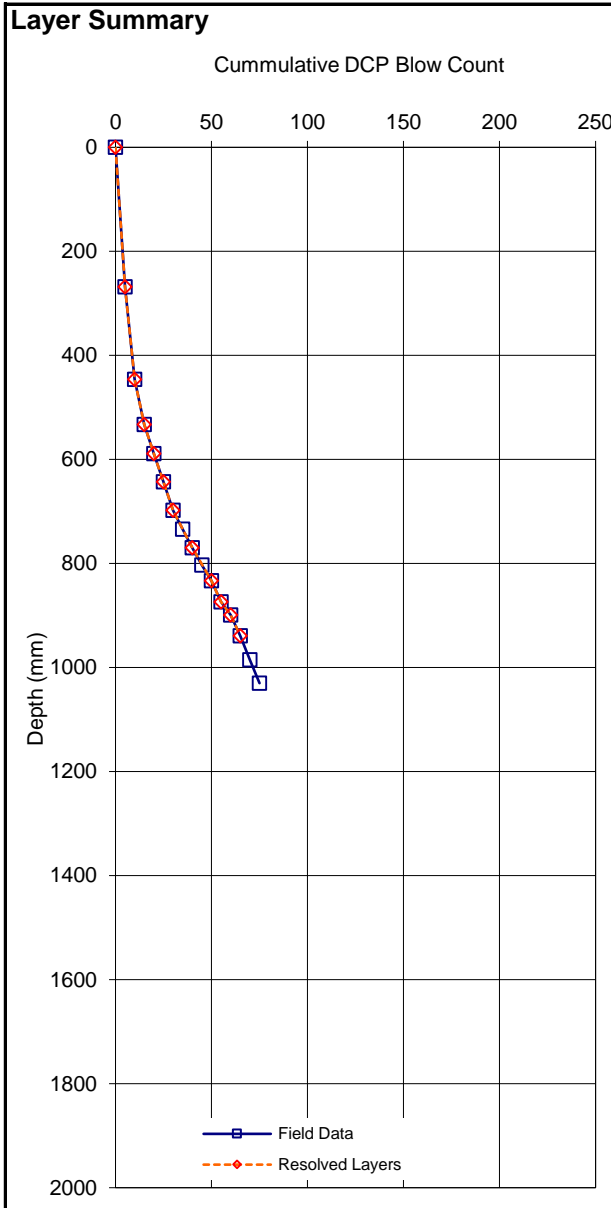
DCP DN (mm/Blow)	CBR (%)
10	22
4	68
8	30
11	19
14	14
8	27
9	24
8	30
4	66
5	59
6	45



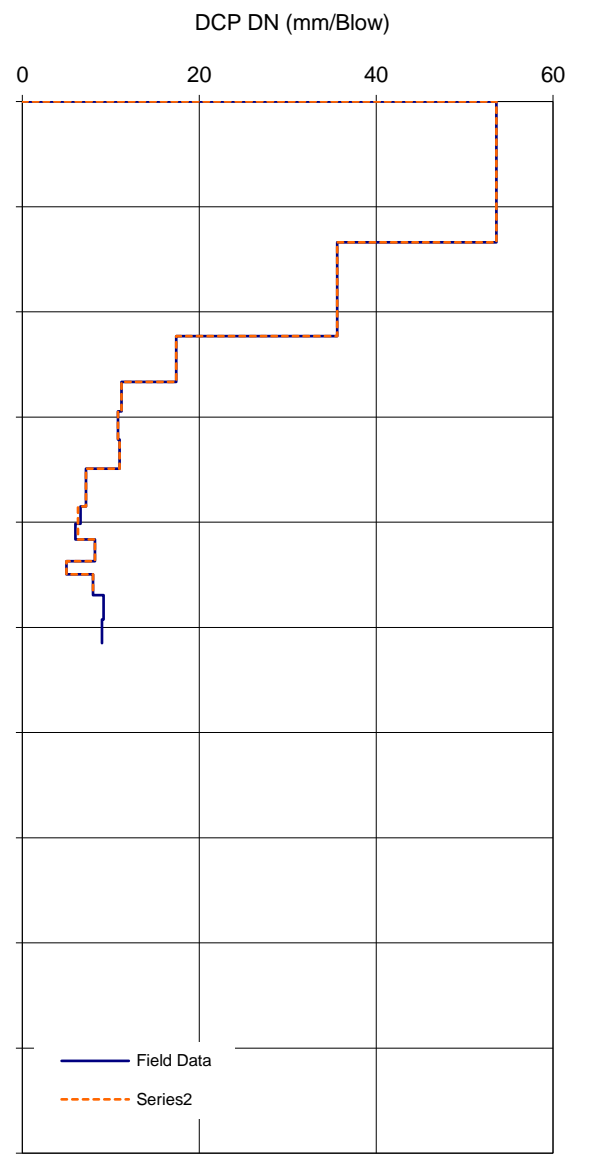
DCP No.	NKF 03
Project No.	Nelsonskop Farm
Type:	DCP
Chainage:	
Offset:	0
Date:	
Technician:	



Field Data			Resolved Parameters			
Depth Gnd Level (mm)	Interval (mm)	Blows	DPI (mm/Blow)	CBR (%)	UCS (kPa)	Cu (kPa)
0			0			
268	268	5	53.6	3	35	17
446	178	5	35.6	4	55	28
533	87	5	17.4	11	123	61
589	56	5	11.2	19	201	100
643	54	5	10.8	20	209	105
698	55	5	11.0	20	205	102
734	36	5	7.2	33	329	164
770	36	5	7.2	33	329	164
803	33	5	6.6	37	363	181
833	30	5	6.0	42	403	202
874	41	5	8.2	28	284	142
899	25	5	5.0	53	495	247
939	40	5	8.0	29	292	146
985	46	5	9.2	24	250	125
1030	45	5	9.0	25	256	128
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				



DCP DN (mm/Blow)	CBR (%)
54	3
36	4
17	11
11	19
11	20
7	33
6	40
5	53
8	29

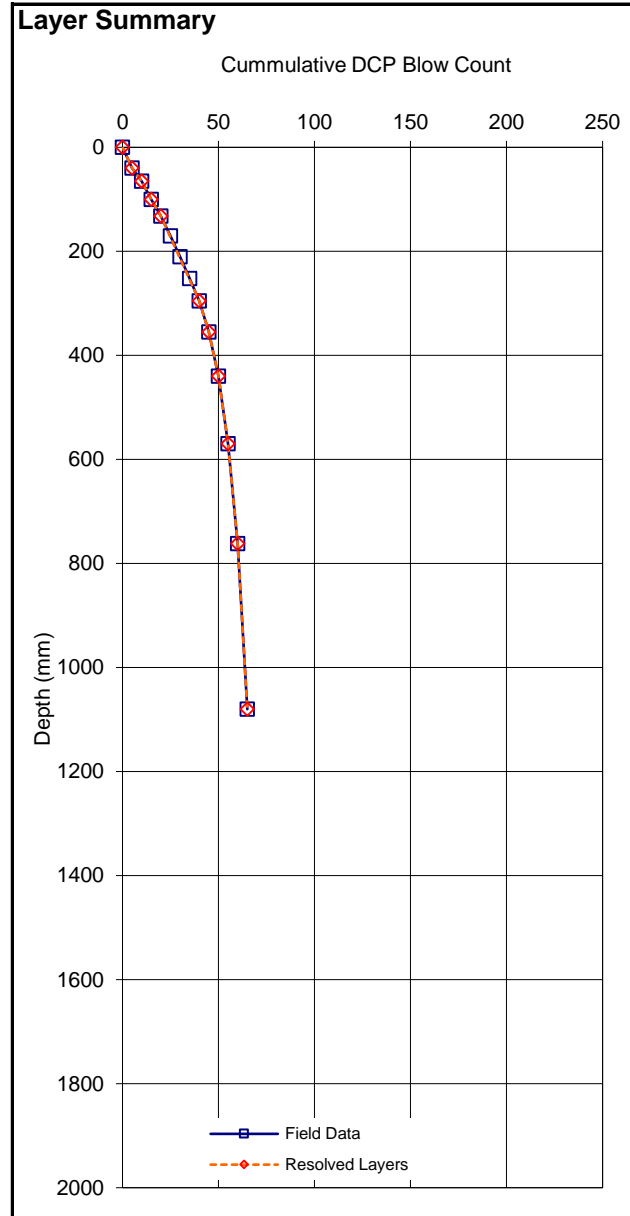


— Field Data  
-- Series2

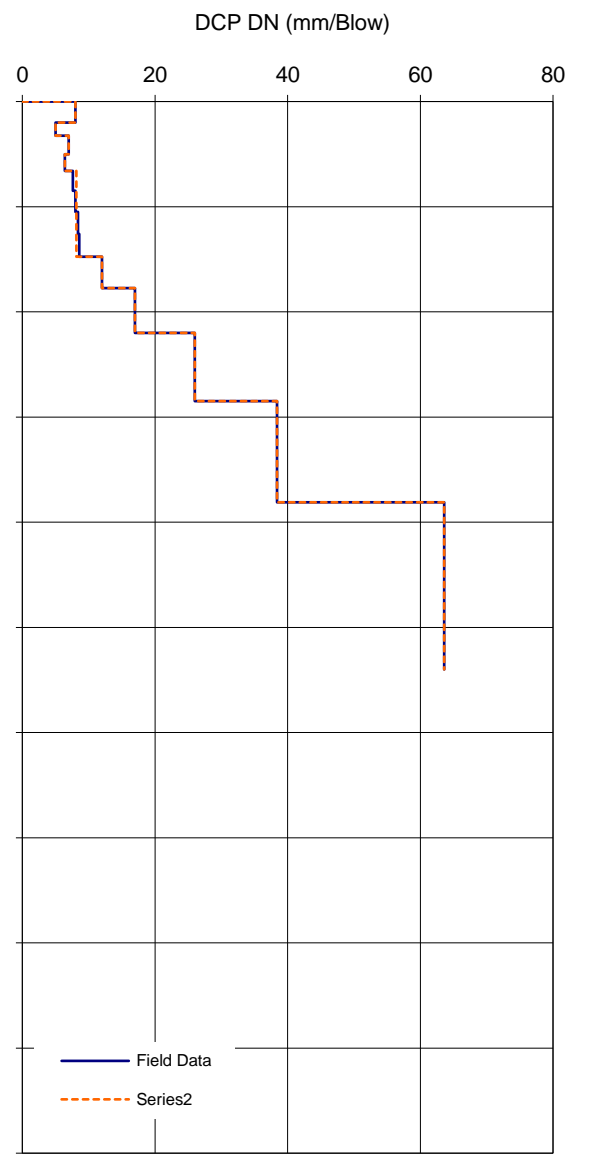
<b>DCP No.</b>	NKF 05
<b>Project No.</b>	Nelsonskop Farm
<b>Type:</b>	DCP
<b>Chainage:</b>	
<b>Offset:</b>	0
<b>Date:</b>	
<b>Technician:</b>	



Field Data			Resolved Parameters			
Depth Gnd Level (mm)	Interval (mm)	Blows	DPI (mm/Blow)	CBR (%)	UCS (kPa)	Cu (kPa)
0			0			
40	40	5	8.0	29	292	146
65	25	5	5.0	53	495	247
100	35	5	7.0	35	340	170
132	32	5	6.4	39	375	188
170	38	5	7.6	31	310	155
210	40	5	8.0	29	292	146
252	42	5	8.4	27	277	138
295	43	5	8.6	27	270	135
355	60	5	12.0	17	186	93
440	85	5	17.0	11	126	63
570	130	5	26.0	7	78	39
762	192	5	38.4	4	51	25
1080	318	5	63.6	2	29	14
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				



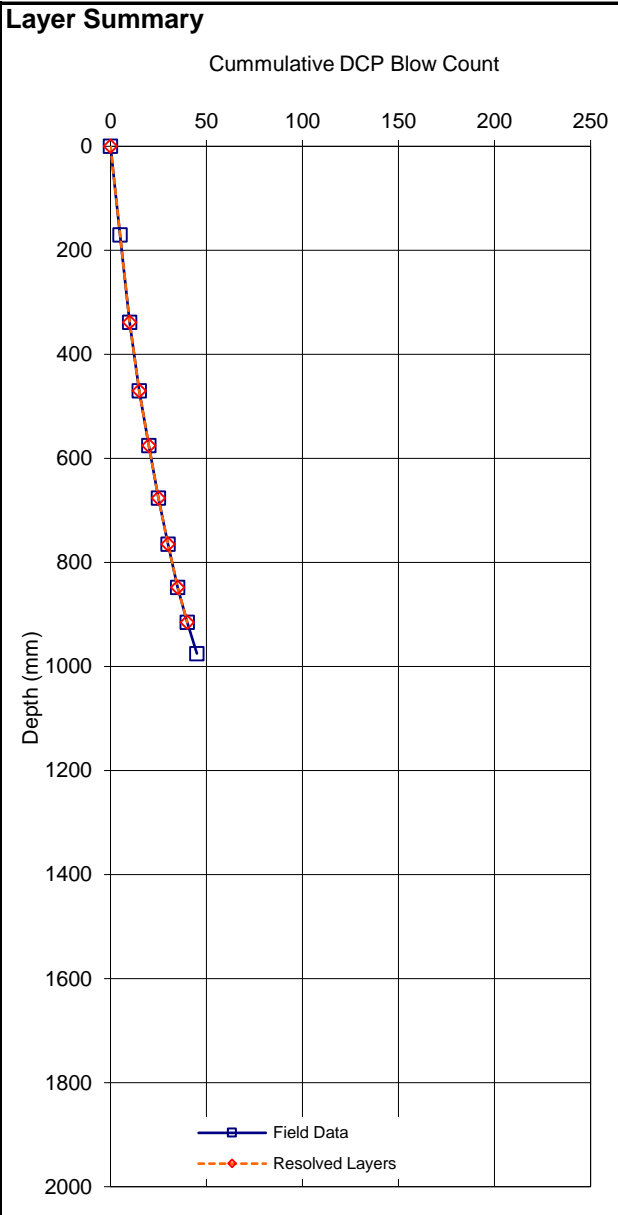
DCP DN (mm/Blow)	CBR (%)
8	29
7	35
6	39
8	29
12	17
17	11
26	7
38	4
64	2



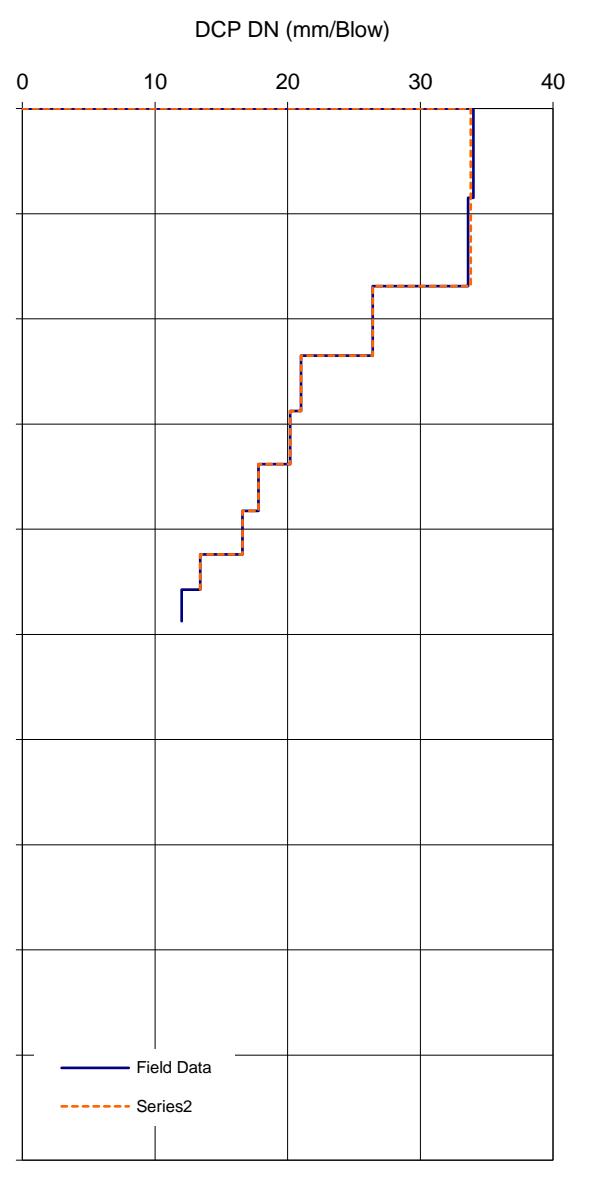
<b>DCP No.</b>	NKF 08
<b>Project No.</b>	Nelsonskop Farm
<b>Type:</b>	DCP
<b>Chainage:</b>	
<b>Offset:</b>	0
<b>Date:</b>	
<b>Technician:</b>	



Field Data			Resolved Parameters			
Depth Gnd Level (mm)	Interval (mm)	Blows	DPI (mm/Blow)	CBR (%)	UCS (kPa)	Cu (kPa)
0			0			
170	170	5	34.0	5	58	29
338	168	5	33.6	5	59	29
470	132	5	26.4	6	77	39
575	105	5	21.0	9	99	50
676	101	5	20.2	9	104	52
765	89	5	17.8	11	120	60
848	83	5	16.6	12	129	65
915	67	5	13.4	15	164	82
975	60	5	12.0	17	186	93
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				



DCP DN (mm/Blow)	CBR (%)
34	5
26	6
21	9
20	9
18	11
17	12
13	15

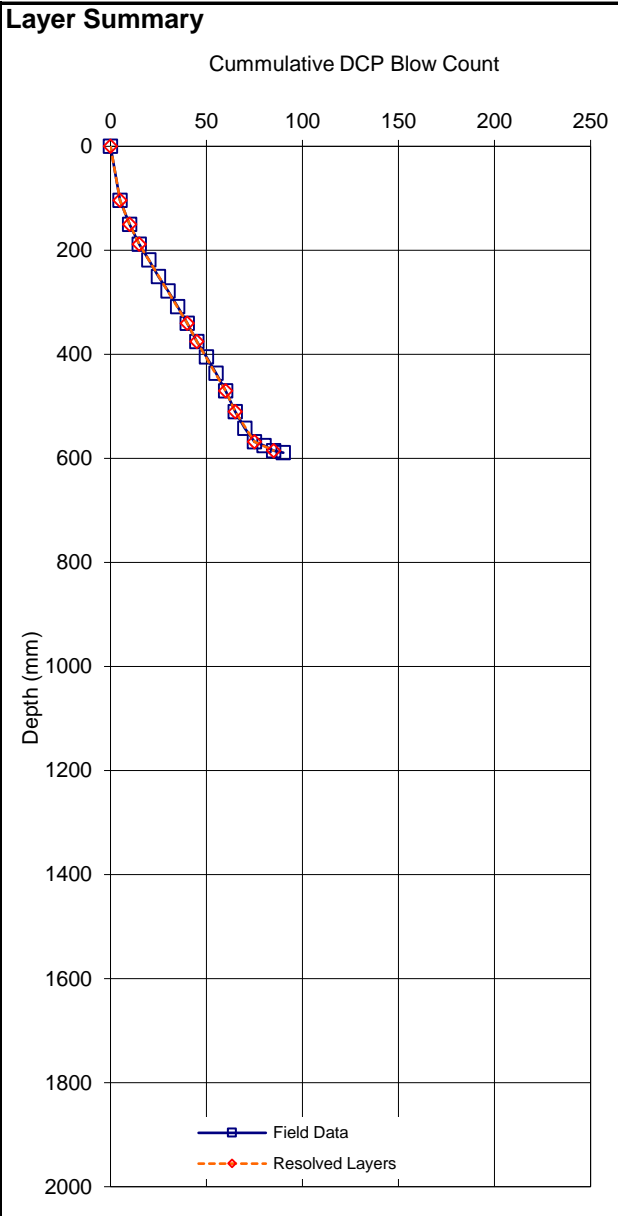




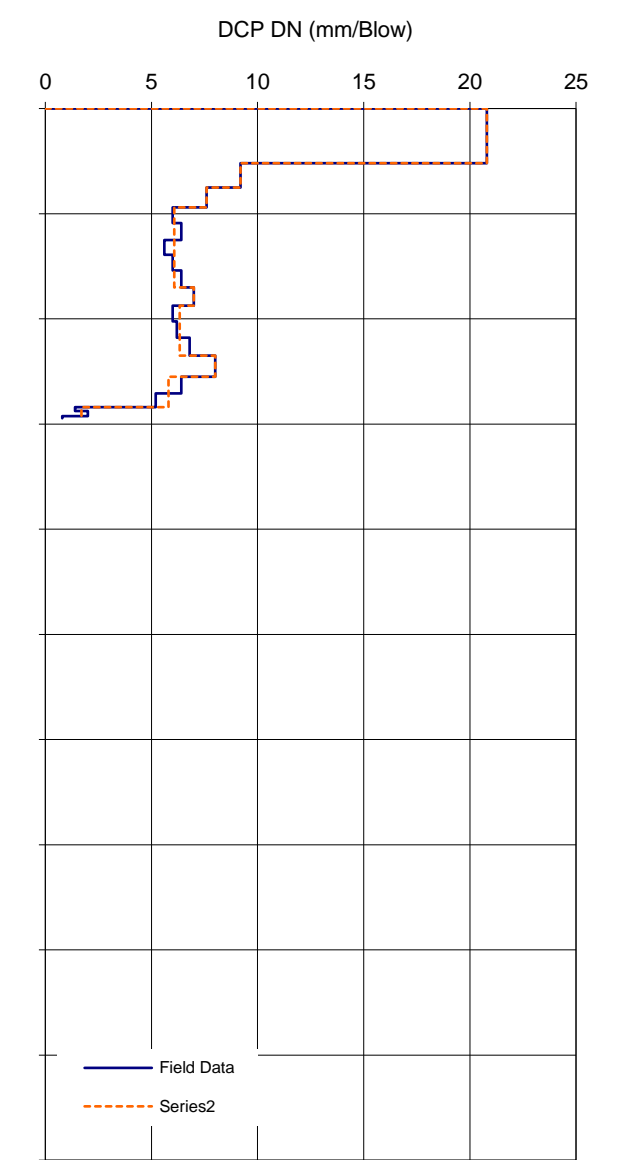
DCP No.	NKF 10
Project No.	Nelsonskop Farm
Type:	DCP
Chainage:	
Offset:	0
Date:	
Technician:	



Field Data			Resolved Parameters			
Depth Gnd Level (mm)	Interval (mm)	Blows	DPI (mm/Blow)	CBR (%)	UCS (kPa)	Cu (kPa)
0			0			
104	104	5	20.8	9	101	50
150	46	5	9.2	24	250	125
188	38	5	7.6	31	310	155
218	30	5	6.0	42	403	202
250	32	5	6.4	39	375	188
278	28	5	5.6	46	436	218
308	30	5	6.0	42	403	202
340	32	5	6.4	39	375	188
375	35	5	7.0	35	340	170
405	30	5	6.0	42	403	202
436	31	5	6.2	40	389	194
470	34	5	6.8	36	351	175
510	40	5	8.0	29	292	146
542	32	5	6.4	39	375	188
568	26	5	5.2	51	473	237
575	7	5	1.4	232	1810	905
585	10	5	2.0	170	1377	688
589	4	5	0.8	342	2547	1273
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				



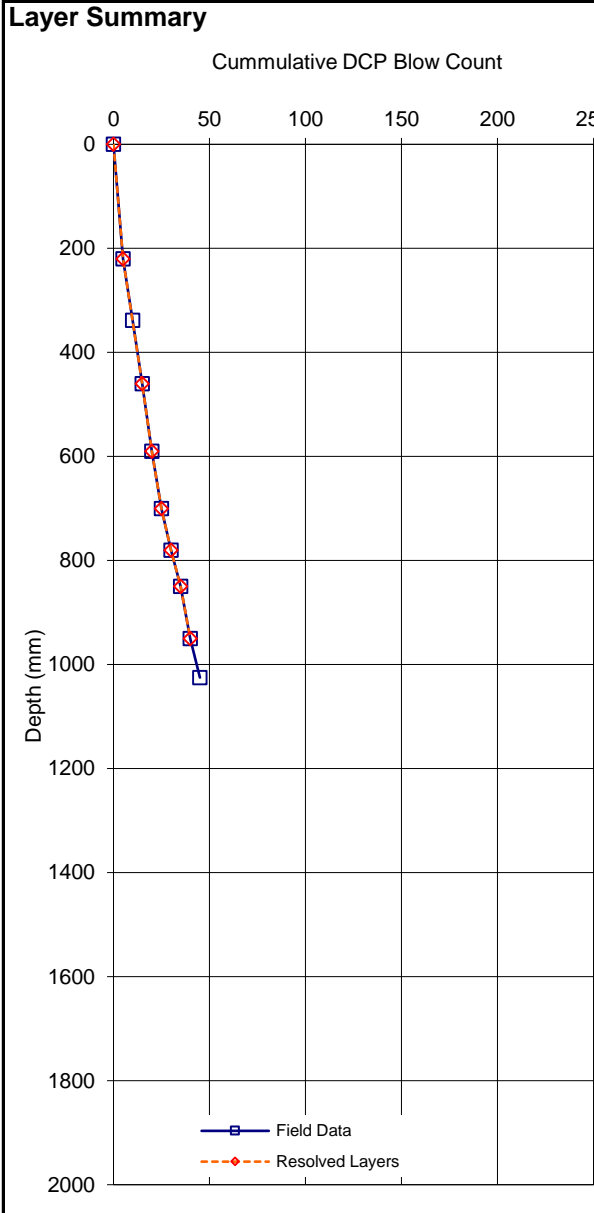
DCP DN (mm/Blow)	CBR (%)
9	24
8	31
6	41
7	35
6	39
8	29
2	195



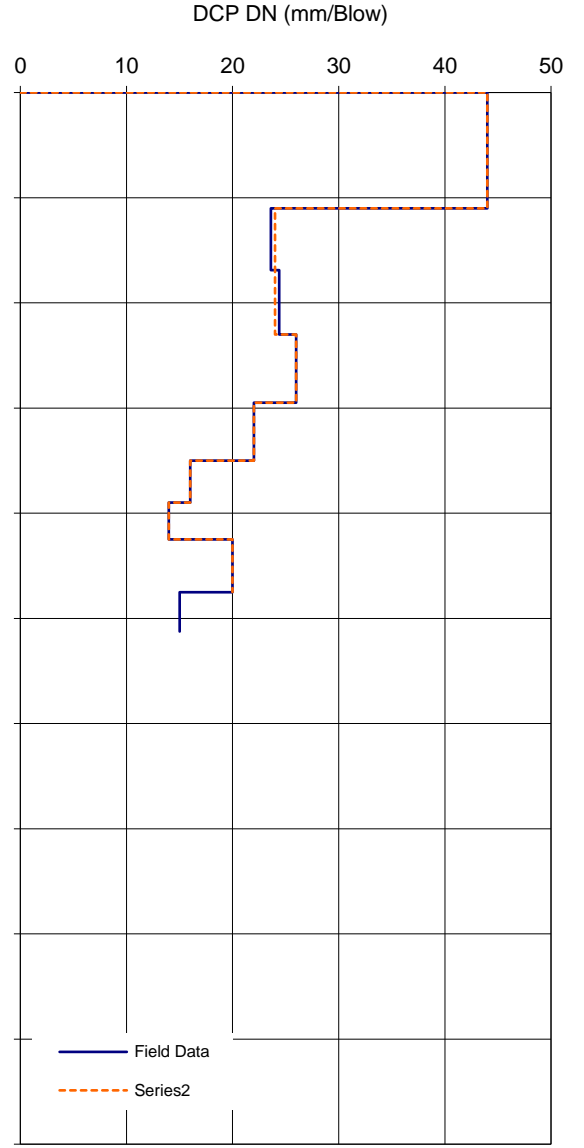
<b>DCP No.</b>	NKF 11
<b>Project No.</b>	Nelsonskop Farm
<b>Type:</b>	DCP
<b>Chainage:</b>	
<b>Offset:</b>	0
<b>Date:</b>	
<b>Technician:</b>	



Field Data			Resolved Parameters			
Depth Gnd Level (mm)	Interval (mm)	Blows	DPI (mm/Blow)	CBR (%)	UCS (kPa)	Cu (kPa)
0			0			
220	220	5	44.0	3	44	22
338	118	5	23.6	7	87	44
460	122	5	24.4	7	84	42
590	130	5	26.0	7	78	39
700	110	5	22.0	8	94	47
780	80	5	16.0	12	135	67
850	70	5	14.0	14	156	78
950	100	5	20.0	9	105	53
1025	75	5	15.0	13	145	72
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				



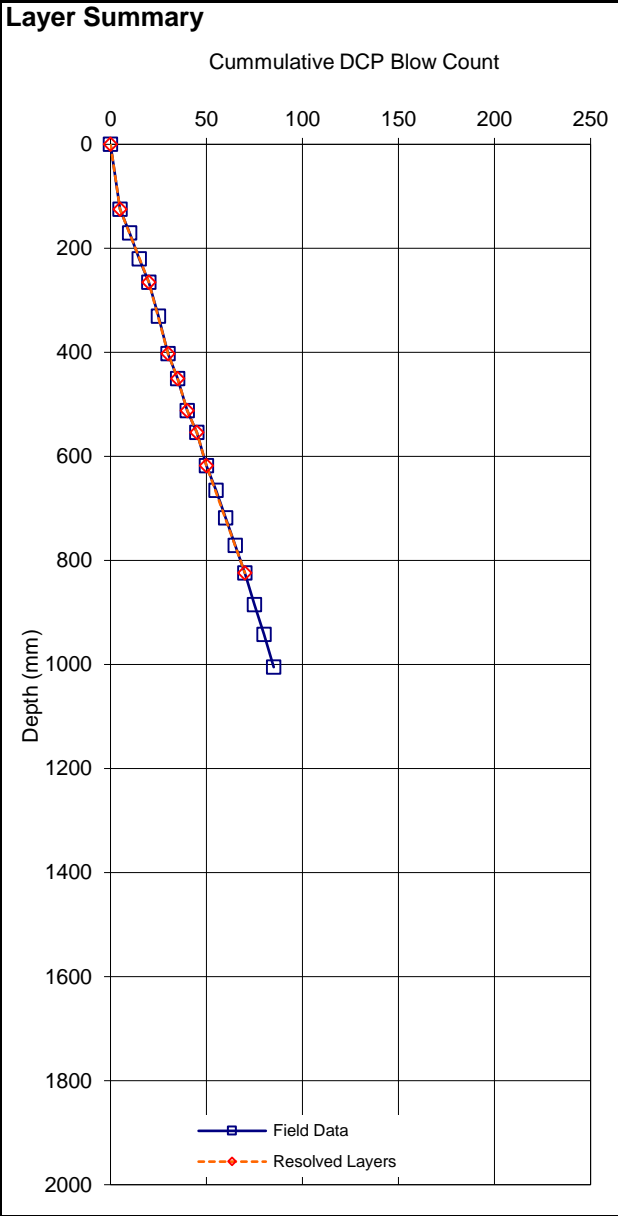
DCP DN (mm/Blow)	CBR (%)
44	3
24	7
26	7
22	8
16	12
14	14
20	9



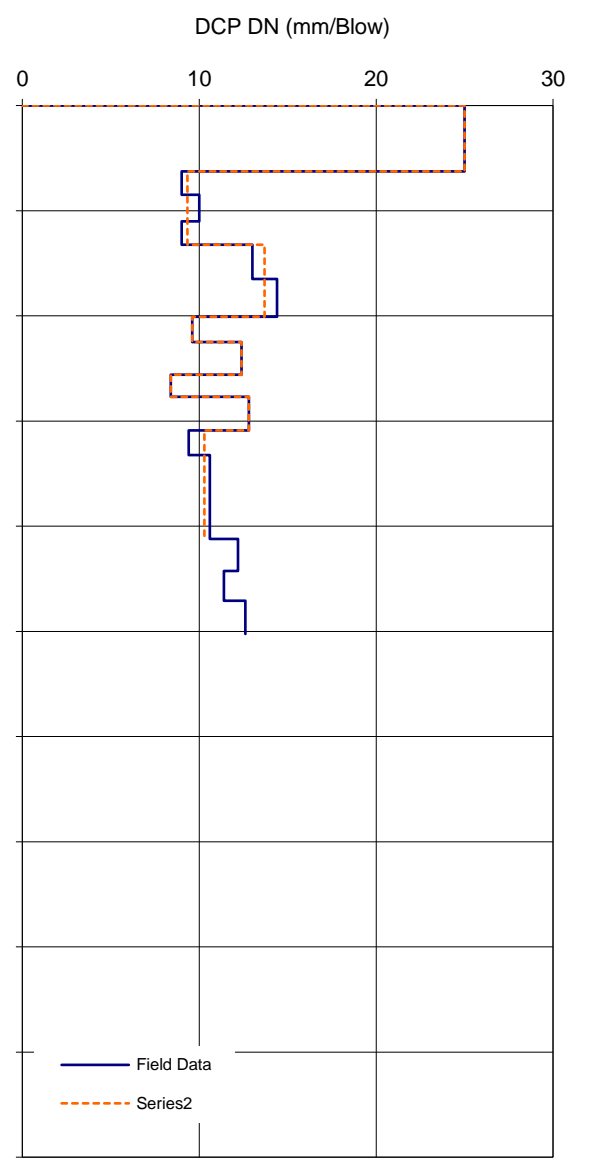
<b>DCP No.</b>	NKF 12
<b>Project No.</b>	Nelsonskop Farm
<b>Type:</b>	DCP
<b>Chainage:</b>	
<b>Offset:</b>	0
<b>Date:</b>	
<b>Technician:</b>	



Field Data			Resolved Parameters			
Depth Gnd Level (mm)	Interval (mm)	Blows	DPI (mm/Blow)	CBR (%)	UCS (kPa)	Cu (kPa)
0			0			
125	125	5	25.0	7	82	41
170	45	5	9.0	25	256	128
220	50	5	10.0	22	228	114
265	45	5	9.0	25	256	128
330	65	5	13.0	16	170	85
402	72	5	14.4	14	152	76
450	48	5	9.6	23	239	119
512	62	5	12.4	17	179	90
554	42	5	8.4	27	277	138
618	64	5	12.8	16	173	86
665	47	5	9.4	24	244	122
718	53	5	10.6	20	214	107
771	53	5	10.6	20	214	107
824	53	5	10.6	20	214	107
885	61	5	12.2	17	182	91
942	57	5	11.4	19	197	98
1005	63	5	12.6	16	176	88
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				



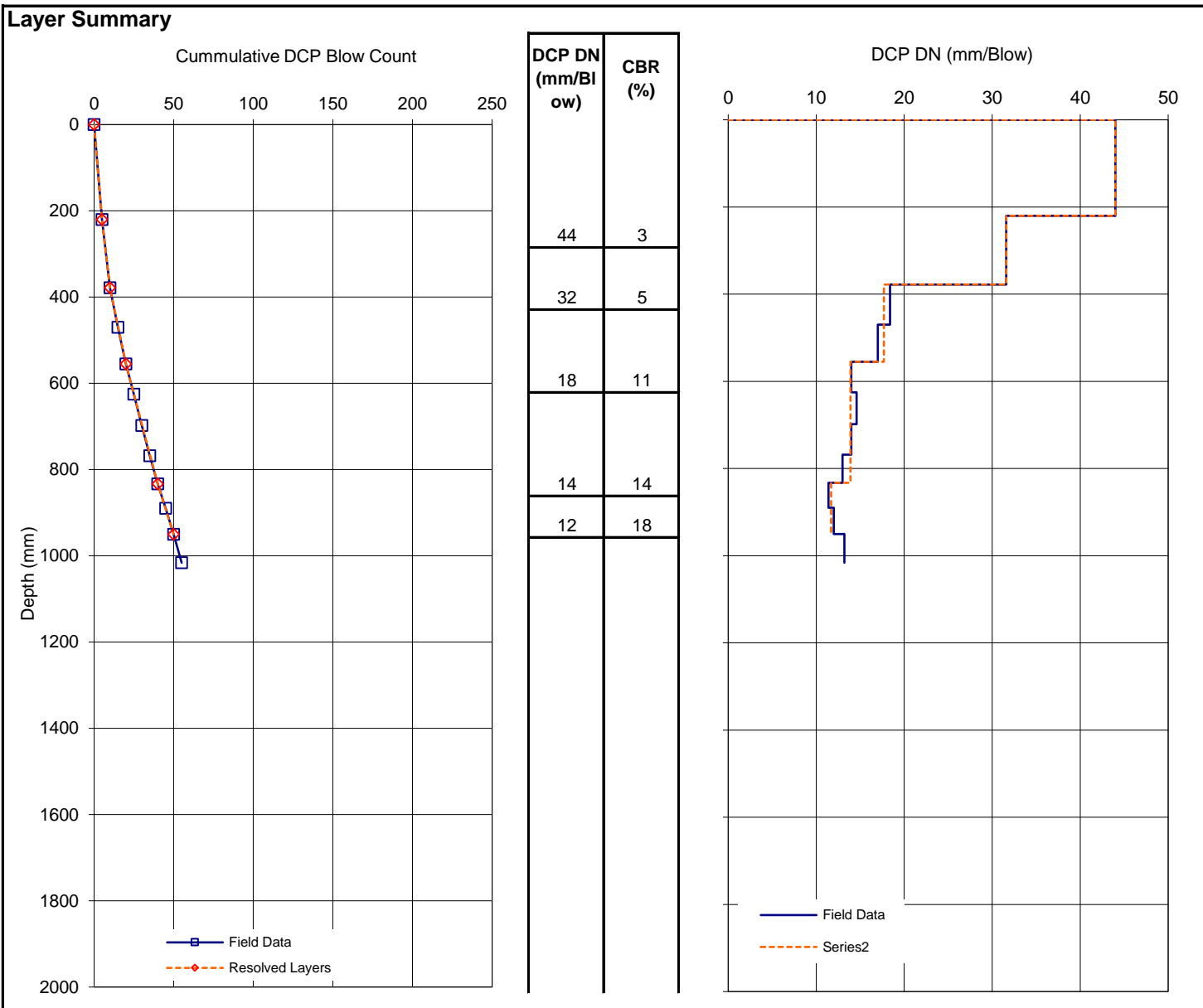
DCP DN (mm/Blow)	CBR (%)
25	7
9	24
10	23
12	17
8	27
13	16
10	21



<b>DCP No.</b>	NKF 16
<b>Project No.</b>	Nelsonskop Farm
<b>Type:</b>	DCP
<b>Chainage:</b>	
<b>Offset:</b>	0
<b>Date:</b>	
<b>Technician:</b>	



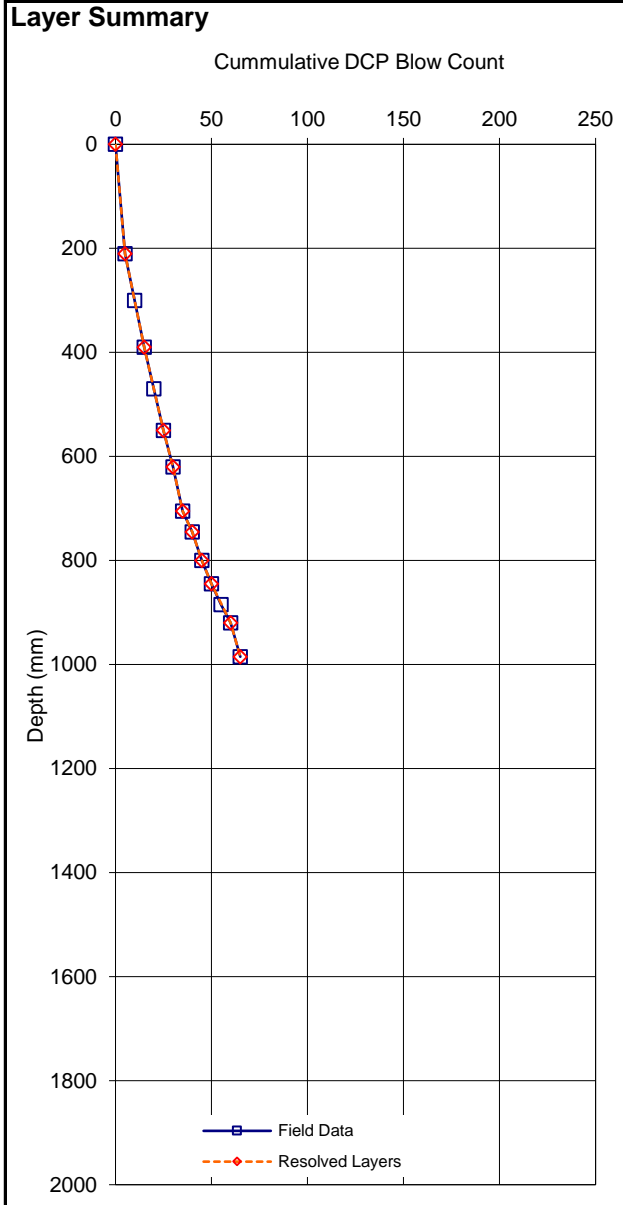
Field Data			Resolved Parameters			
Depth Gnd Level (mm)	Interval (mm)	Blows	DPI (mm/Blow)	CBR (%)	UCS (kPa)	Cu (kPa)
0			0			
220	220	5	44.0	3	44	22
378	158	5	31.6	5	63	31
470	92	5	18.4	10	115	58
555	85	5	17.0	11	126	63
625	70	5	14.0	14	156	78
698	73	5	14.6	14	149	75
768	70	5	14.0	14	156	78
833	65	5	13.0	16	170	85
890	57	5	11.4	19	197	98
950	60	5	12.0	17	186	93
1016	66	5	13.2	15	167	84
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				
		5				



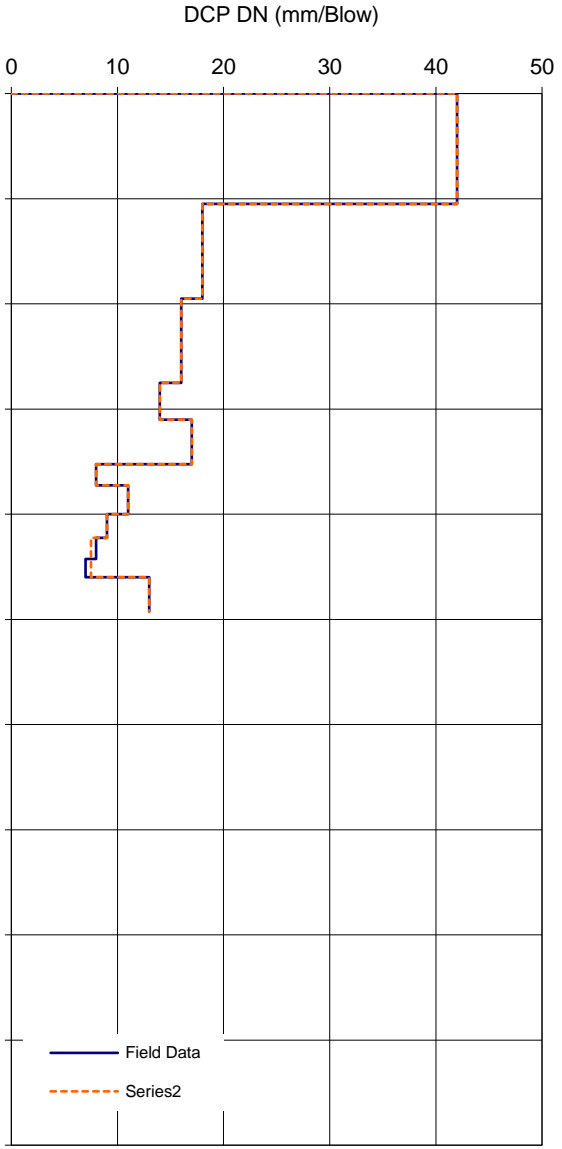
DCP No.	NKF 17
Project No.	Nelsonskop Farm
Type:	DCP
Chainage:	
Offset:	0
Date:	
Technician:	



Field Data			Resolved Parameters			
Depth Gnd Level (mm)	Interval (mm)	Blows	DPI (mm/Blow)	CBR (%)	UCS (kPa)	Cu (kPa)
0			0			
210	210	5	42.0	4	46	23
300	90	5	18.0	10	118	59
390	90	5	18.0	10	118	59
470	80	5	16.0	12	135	67
550	80	5	16.0	12	135	67
620	70	5	14.0	14	156	78
705	85	5	17.0	11	126	63
745	40	5	8.0	29	292	146
800	55	5	11.0	20	205	102
845	45	5	9.0	25	256	128
885	40	5	8.0	29	292	146
920	35	5	7.0	35	340	170
985	65	5	13.0	16	170	85
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						
5						



DCP DN (mm/Blow)	CBR (%)
42	4
18	10
16	12
14	14
8	29
11	20
9	25
8	32
13	16













## 11 APPENDIX C – SOIL LABORATORY TEST RESULTS

DRAFT



OUR REF : 92/GE0007/01/0001/16

DATE RECEIVED : 2016/04/28

CLIENT : Geotechnical Consult Services

CHAINAGE : NKF 03A

SITE : Nelsons Kop Farm

LAYER : 2.6m-3.2m

SAMPLE No. : S/2068

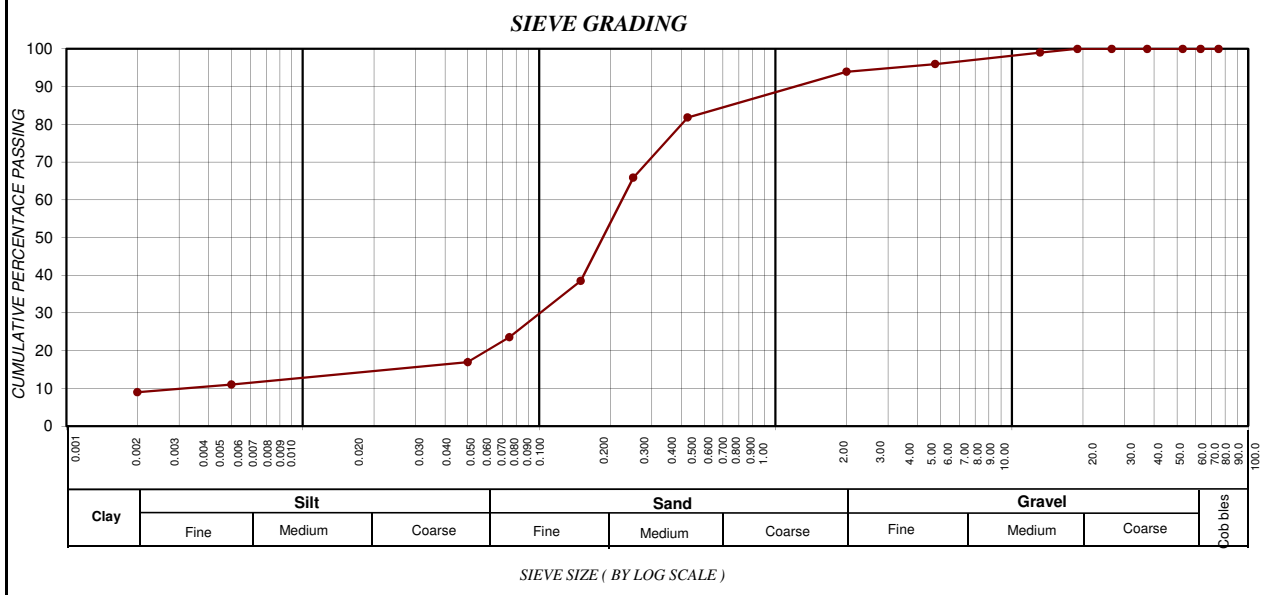
SAMPLE DESCRIPTION : Light Orange  
Silty Sand

**FOUNDATION INDICATOR RESULTS ( TMH 1 : A1, A2, A3, A4, A5 & \*SANS 3001-GR3:2014)**

Weighted PI		0.0
Sieve analysis Cumulative percentage passing ( mm )	75.0	100
	63.0	100
	53.0	100
	37.5	100
	26.5	100
	19.0	100
	13.2	99
	4.75	96
	2.000	94
	0.425	82
	0.250	66
	0.150	39
	0.075	24
0.050*	17	
0.005*	11	
0.002*	9.0	
Soil Mortar Analysis % < 2.00mm	2.000 - 0.425	13
	0.425 - 0.250	17
	0.250 - 0.150	29
	0.150 - 0.075	16
	< 0.075	25
Effective size	0.004	
Uniformity Coefficient	65.3	
Curvature Coefficient	14.4	
Oversize Index	0.0	
Shrinkage Product	1145.5	
Grading Coefficient	5.8	
Grading modulus	1.00	
Atter-berg Limits	Liquid Limit	-
	Plasticity Index	NP
	Linear Shrinkage	-
	PI < 0.075	14
Unified Soil Classification	SC	
U.S. Highway Classification	A-2-4(0)	
pH - Value	N/A	
Conductivity mS/cm	N/A	

PERFORMANCE AS WEARING COURSE	
Shrinkage Product	1145.5
Grading Coefficient	5.8
Grading Modulus	1.00
Atter-berg Limits	NP
Unified Soil Classification	SC
U.S. Highway Classification	A-2-4(0)
pH - Value	N/A
Conductivity mS/cm	N/A



CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
9.0	15.0	69.9	6.1

**OUR REF :** 92/GEO007/01/0001/16

**DATE RECEIVED :** 2016/04/28

**CLIENT :** Geotechnical Consult Services

**CHAINAGE :** NKF 02/A

**SITE :** Nelsons Kop Farm

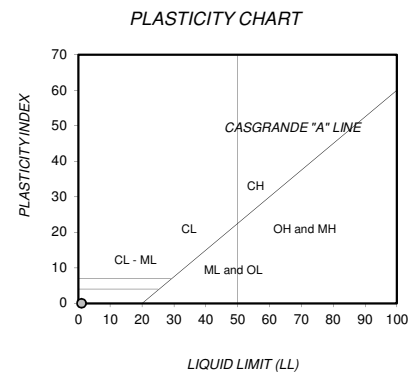
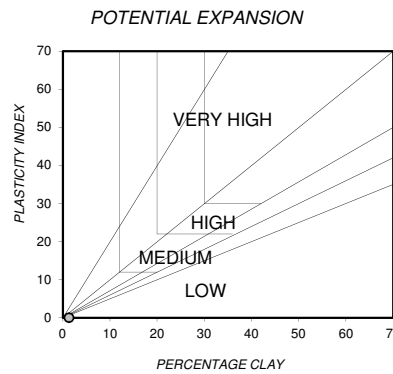
**LAYER :** 0.6m - 1.0m

**SAMPLE No. :** S/2069

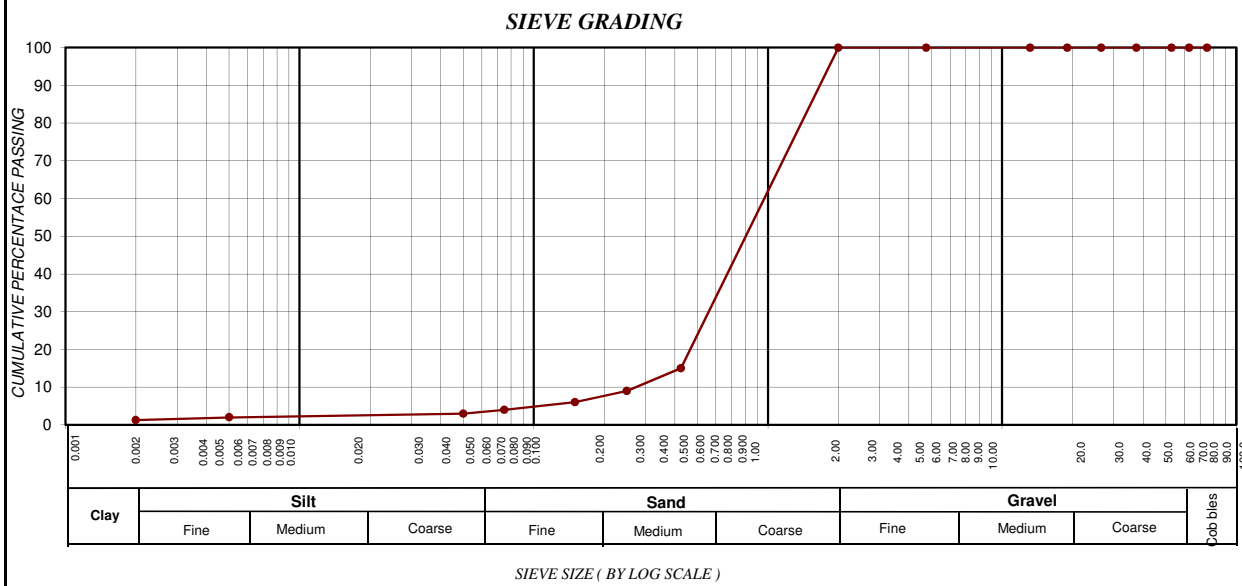
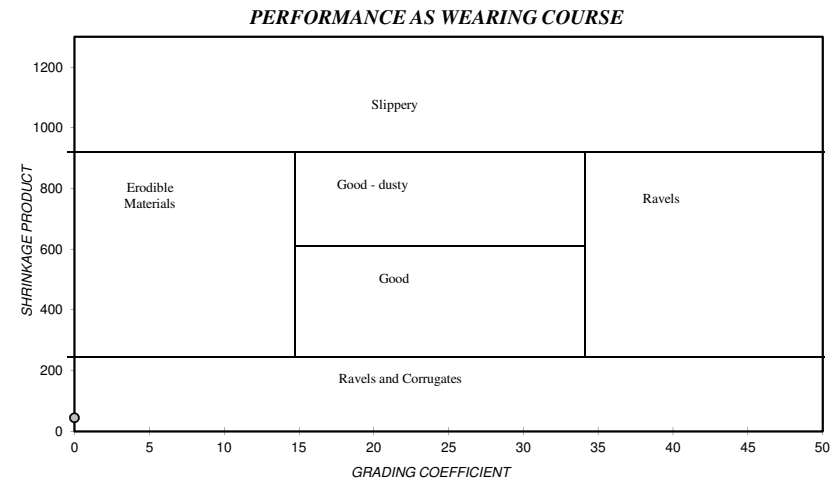
**SAMPLE DESCRIPTION :** Light Yellow Sand

**FOUNDATION INDICATOR RESULTS ( TMH 1 : A1, A2, A3, A4, A5 & \*SANS 3001-GR3:2014)**

<b>Weighted PI</b>		<b>0.0</b>
Sieve analysis Cumulative percentage passing ( mm )	75.0	100
	63.0	100
	53.0	100
	37.5	100
	26.5	100
	19.0	100
	13.2	100
	4.75	100
	2.000	100
	0.425	15
	0.250	9
	0.150	6
	0.075	4
	0.050*	3
0.005*	2	
0.002*	1.3	



Soil Mortar Analysis % < 2.00mm	2.000 - 0.425	85
	0.425 - 0.250	3
	0.250 - 0.150	6
	0.150 - 0.075	4
	< 0.075	2
Effective size	0.279	
Uniformity Coefficient	4.5	
Curvature Coefficient	1.4	
Oversize Index	0.0	
Shrinkage Product	45.0	
Grading Coefficient	0.0	
Grading modulus	1.81	
Atter-berg Limits	Liquid Limit	-
	Plasticity Index	NP
	Linear Shrinkage	-
	PI < 0.075	3
Unified Soil Classification	SC	
U.S. Highway Classification	A-2-4(0)	
pH - Value	N/A	
Conductivity mS/cm	N/A	



CLAY (%) (0.001-0.002)	SILT (%) (0.002-0.060)	SAND (%) (0.060-2.00)	GRAVEL (%) (2.00-60.0)
1.3	2.7	96.0	0.0

**OUR REF :** 92/GEO007/01/0001/16

**DATE RECEIVED :** 2016/04/28

**CLIENT :** Geotechnical Consult Services

**CHAINAGE :** NKF 01/A

**SITE :** Nelsons Kop Farm

**LAYER :** 0.6m - 1.0m

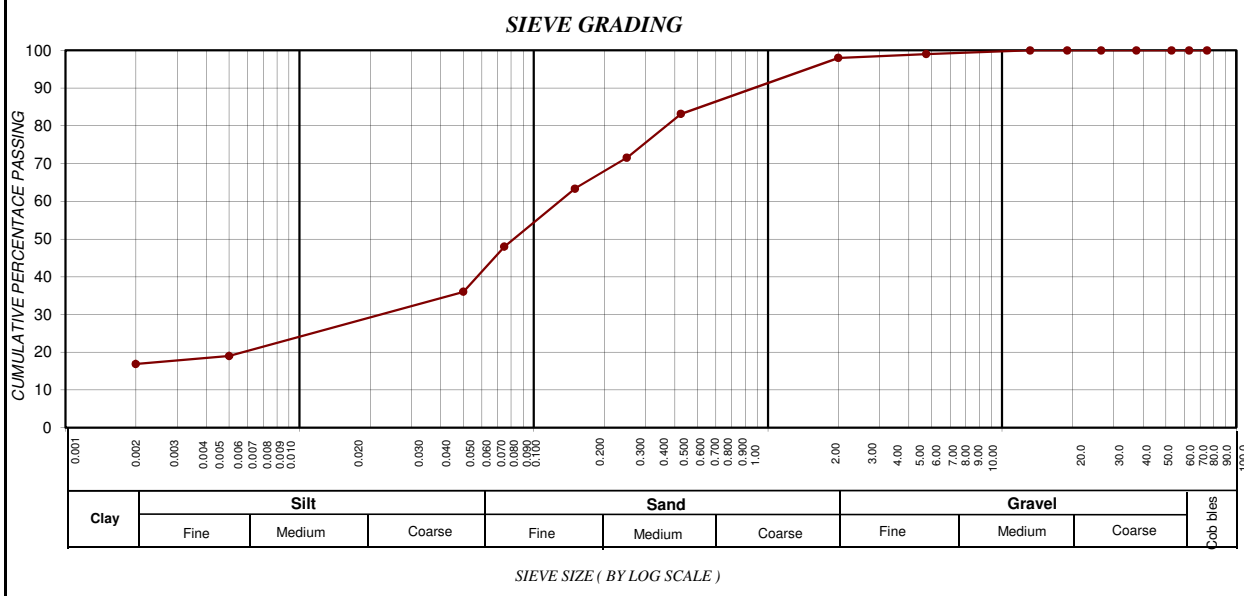
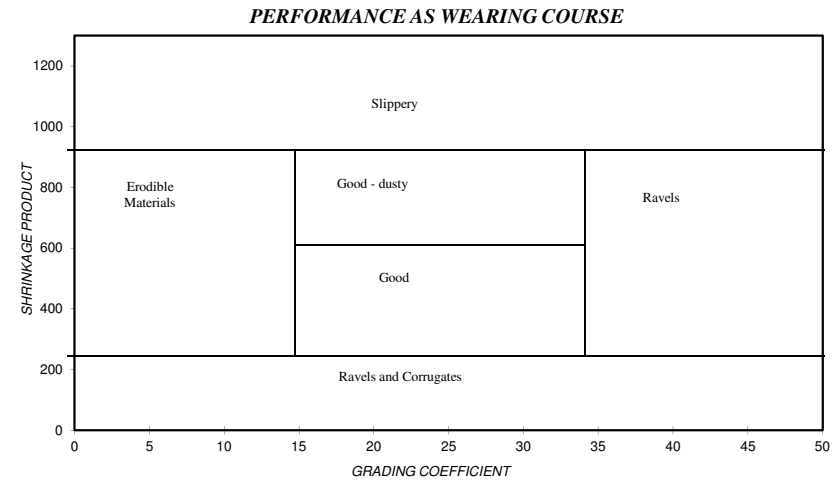
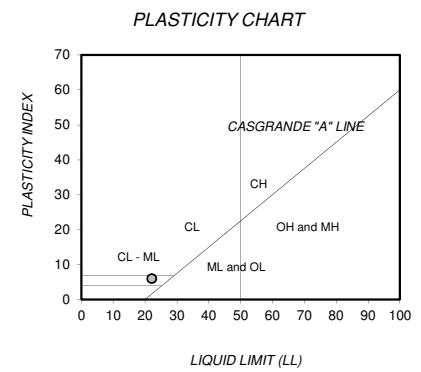
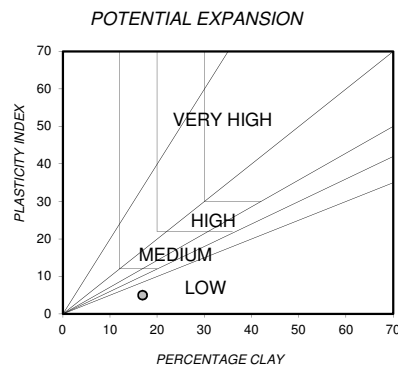
**SAMPLE No. :** S/2070

**SAMPLE DESCRIPTION :** Light Brown

Clayey Silty Sand

**FOUNDATION INDICATOR RESULTS ( TMH 1 : A1, A2, A3, A4, A5 & \*SANS 3001-GR3:2014)**

<b>Weighted PI</b>		<b>5.0</b>
Sieve analysis Cumulative percentage passing (mm)	75.0	100
	63.0	100
	53.0	100
	37.5	100
	26.5	100
	19.0	100
	13.2	100
	4.75	99
	2.000	98
	0.425	83
	0.250	72
	0.150	63
	0.075	48
	0.050*	36
0.005*	19	
0.002*	16.9	
Soil Mortar Analysis % < 2.00mm	2.000 - 0.425	15
	0.425 - 0.250	12
	0.250 - 0.150	8
	0.150 - 0.075	12
	< 0.075	52
Effective size	<b>0.002</b>	
Uniformity Coefficient	<b>66.8</b>	
Curvature Coefficient	<b>4.4</b>	
Oversize Index	<b>0.0</b>	
Shrinkage Product	<b>1663.4</b>	
Grading Coefficient	<b>2.0</b>	
Grading modulus	<b>0.71</b>	
Atter-berg Limits	Liquid Limit	<b>22</b>
	Plasticity Index	<b>6</b>
	Linear Shrinkage	<b>3</b>
	PI < 0.075	<b>20</b>
Unified Soil Classification	<b>ML</b>	
U.S. Highway Classification	<b>A-2-4(0)</b>	
pH - Value	<b>N/A</b>	
Conductivity mS/cm	<b>N/A</b>	



<b>CLAY (%) (0.001-0.002)</b>	<b>SILT (%) (0.002-0.060)</b>	<b>SAND (%) (0.060-2.00)</b>	<b>GRAVEL (%) (2.00-60.0)</b>
<b>16.9</b>	<b>31.1</b>	<b>50.0</b>	<b>2.0</b>

**OUR REF :** 92/GEO007/01/0001/16

**DATE RECEIVED :** 2016/04/28

**CLIENT :** Geotechnical Consult Services

**CHAINAGE :** NKF 0/1A

**SITE :** Nelsons Kop Farm

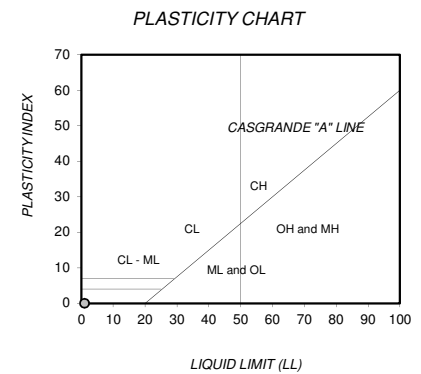
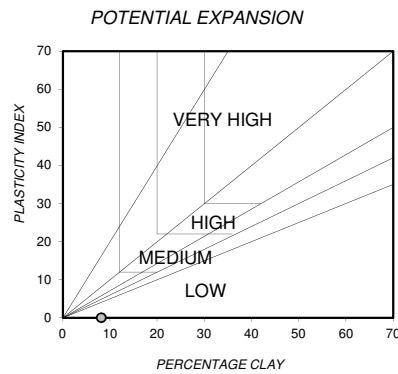
**LAYER :** 0.6m - 1.0m

**SAMPLE No. :** S/2071

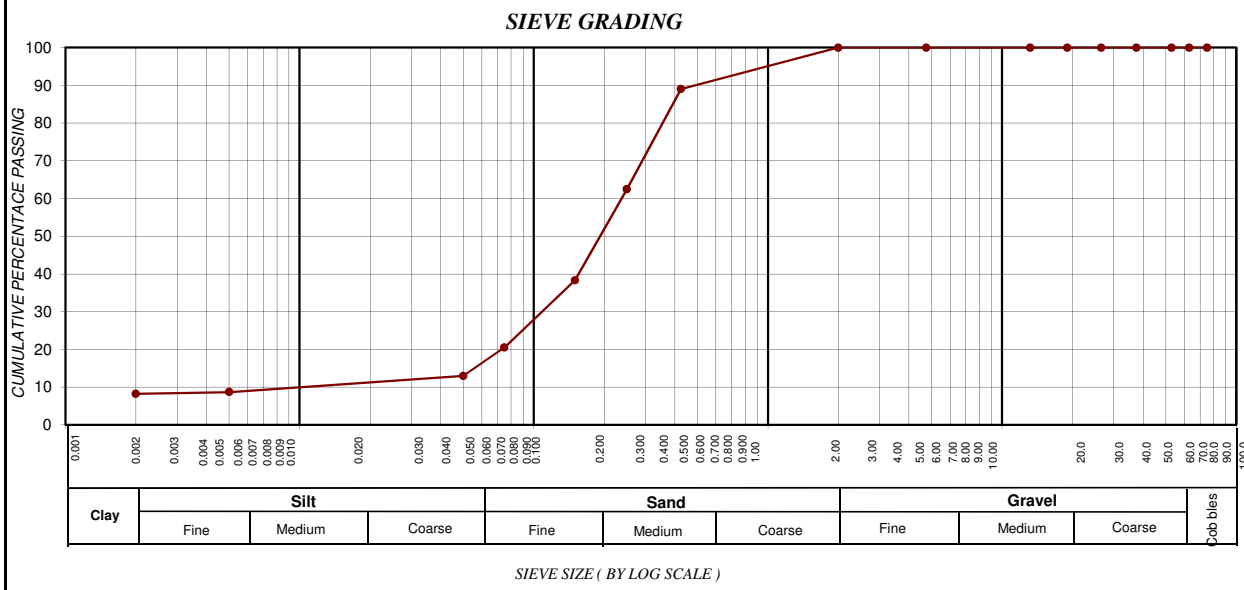
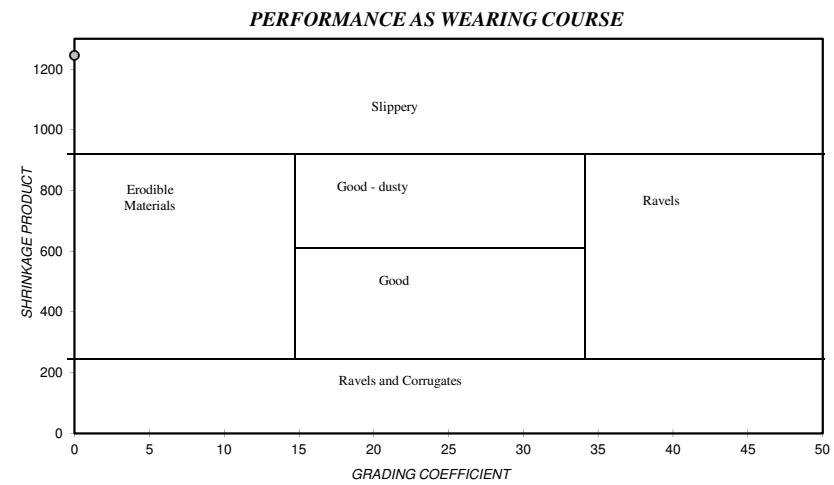
**SAMPLE DESCRIPTION :** Light Brown  
Silty Sand

**FOUNDATION INDICATOR RESULTS ( TMH 1 : A1, A2, A3, A4, A5 & \*SANS 3001-GR3:2014)**

<b>Weighted PI</b>	<b>0.0</b>	
Sieve analysis Cumulative percentage passing ( mm )	75.0	100
	63.0	100
	53.0	100
	37.5	100
	26.5	100
	19.0	100
	13.2	100
	4.75	100
	2.000	100
	0.425	89
	0.250	62
	0.150	38
	0.075	21
0.050*	13	
0.005*	9	
0.002*	8.2	



Soil Mortar Analysis % < 2.00mm	2.000 - 0.425	11
	0.425 - 0.250	27
	0.250 - 0.150	24
	0.150 - 0.075	18
	< 0.075	21
Effective size	0.019	
Uniformity Coefficient	12.9	
Curvature Coefficient	3.0	
Oversize Index	0.0	
Shrinkage Product	1246.0	
Grading Coefficient	0.0	
Grading modulus	0.90	
Atter-berg Limits	Liquid Limit	-
	Plasticity Index	NP
	Linear Shrinkage	-
	PI < 0.075	14
Unified Soil Classification	SC	
U.S. Highway Classification	A-2-4(0)	
pH - Value	N/A	
Conductivity mS/cm	N/A	



<b>CLAY (%) (0.001-0.002)</b>	<b>SILT (%) (0.002-0.060)</b>	<b>SAND (%) (0.060-2.00)</b>	<b>GRAVEL (%) (2.00-60.0)</b>
8.2	12.8	79.0	0.0

## Falling Head Permeability Test Results

Project:	NELSONSKOP FARM DEVELOPMENT		
Project No:	2016-B-968	Date:	24/05/2016

Lab. Sample Reference	Field Sample Reference	Depth (m)	Moisture Contents		Dry density Kg/m <sup>3</sup>		Coefficient of Permeability (m/s)		
			Before Test (%)	After Test (%)	Initial	As tested	Range		Average
							Minimum	Maximum	
968-1	NKF 03A - S/2068	2.6 - 3.2	13.1	18.4	1705	1732	1.1E-07	1.3E-07	<b>1.2E-07</b>
968-2	NKF 02A - S/2069	0.6 - 1.0	13.8	18.5	1645	1678	5.5E-06	6.1E-06	<b>5.8E-06</b>
968-3	NKF 01A - S/2070	0.6 - 1.0	13.2	17.1	1676	1754	3.5E-08	4.2E-08	<b>3.9E-08</b>
968-4	NKF 011A - S/2071	0.6 - 1.0	8.7	14.5	1798	1833	2.8E-06	3.5E-06	<b>3.1E-06</b>

Remarks: Samples remoulded to approximately 90% Proctor.  
Saturated and tested under a load of 100kPa.  
Densities reported are under a load of 100kPa.



**Client** : ROADLAB (PTY) LTD  
**Address** : P O BOX 1476  
 : GERMISTON  
 : 1400

**Client Reference** :  
**Order No.** : PO706915

**Attention** :  
**Facsimile** :  
**E-mail** : debbie@roadlab.co.za

**Date Received** : 09/05/2016  
**Date Tested** : 09/05/2016 - 25/05/2016  
**Date Reported** : 30/05/2016

**Project** : Nelsonskop Farm Development  
**Project No.** : 2016-B-968

**Report Status** : Final  
**Page** : 1 of 6

Herewith please find the test report(s) pertaining to the above project. All tests were conducted in accordance with prescribed test method(s). Information herein consists of the following:

Test(s) conducted / Item(s) measured	Qty.	Test Method(s)	Authorized By**	Page(s)
MDD & OMC	4.000	TMH1 A7	J Marques	2-5
Permeability: Falling Head *	4.000	KH Head	J Marques	1 File, 1 Page

Any test results contained in this report and marked with \* in the table above are "not SANAS accredited" and are not included in the schedule of accreditation for this laboratory.

Any information contained in this test report pertain only to the areas and/or samples tested. Documents may only be reproduced or published in their full context.

While every care is taken to ensure that all tests are carried out in accordance with recognised standards, neither Civilab (Proprietary) Limited nor its employess shall be liable in any way whatsoever for any error made in the execution or reporting of tests or any erroneous conclusions drawn therefrom or for any consequences thereof.

All interpretations, Interpolations, Opinions and/or Classifications contained in this report falls outside our scope of accreditation.

The following parameters, where applicable, were excluded from the classification procedure: Chemical modifications, Additional fines, Fractured Faces, Soluble Salts, pH, Conductivity, Coarse Sand Ratio, Durability (COLTO: G4-G9).

The following parameters, where applicable, were assumed: Rock types were assumed to be of an Arenaceous nature with Siliceous cementing material.

Unless otherwise requested or stated, all samples will be discarded after a period of 3 months.

Deviations in Test Methods:

\*\*All results are authorized electronically by approved managers and/or technical signatories.

Client : ROADLAB (PTY) LTD  
 Project : Nelsonskop Farm Development  
 Project No: 2016-B-968

Date Received: 09/05/2016  
 Date Reported: 25/05/2016  
 Page No. : 2 of 6

### MOISTURE DENSITY RELATIONSHIP

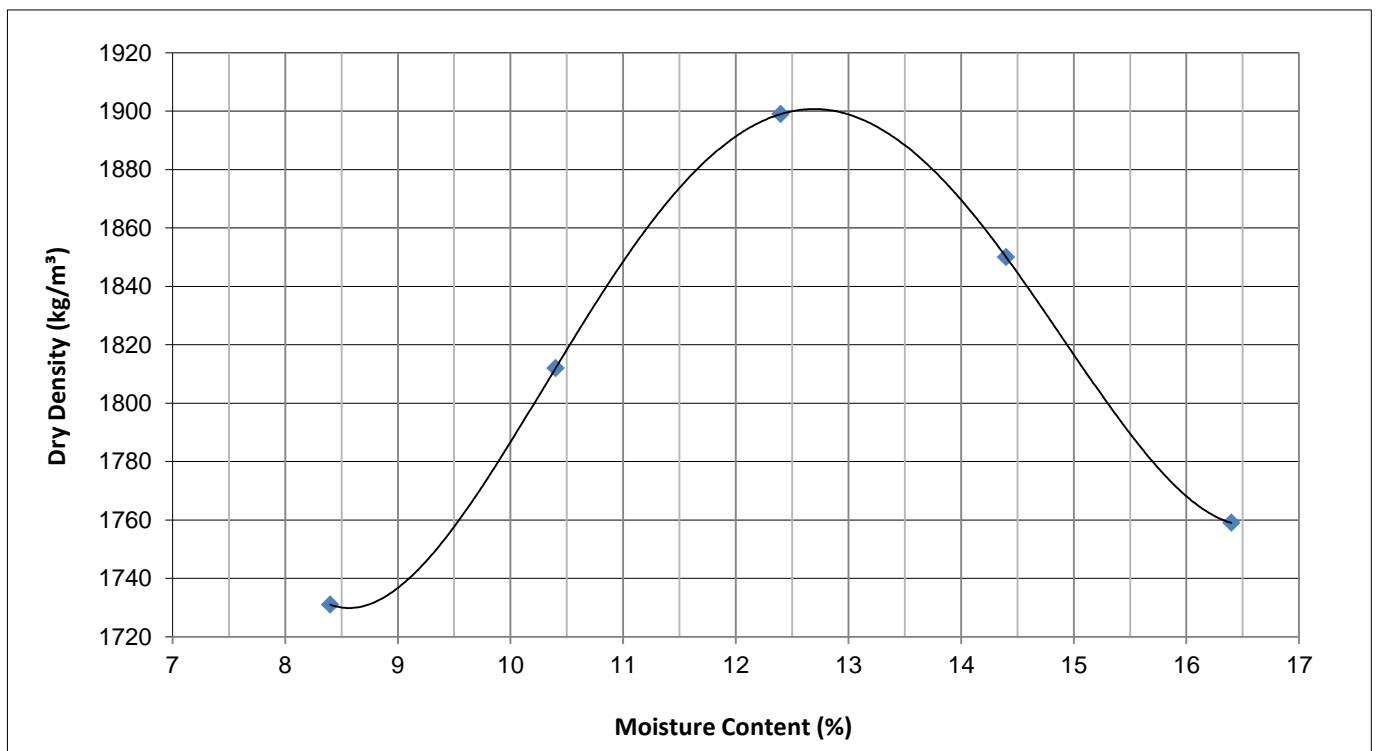
Laboratory Number	1	
Field Number	NKF 03A	
Client Reference	S/2068	
Depth (m)	2.6-3.2	
Position		
Coordinates	X	
	Y	
Description		
Additional Information		
Calcrete / Crushed		
Stabilizing Agent		

#### Maximum Dry Density & Optimum Moisture Content - TMH1 Method A7

Compactive Effort:	Standard Proctor	
--------------------	------------------	--

Dry Density	kg/m <sup>3</sup>	1731	1812	1899	1850	1759	
Moisture Content	%	8.4	10.4	12.4	14.4	16.4	

Max. Dry Density	kg/m <sup>3</sup>	1901
Optimum Moisture	%	12.7



Client : ROADLAB (PTY) LTD  
 Project : Nelsonskop Farm Development  
 Project No: 2016-B-968

Date Received: 09/05/2016  
 Date Reported: 25/05/2016  
 Page No. : 3 of 6

## MOISTURE DENSITY RELATIONSHIP

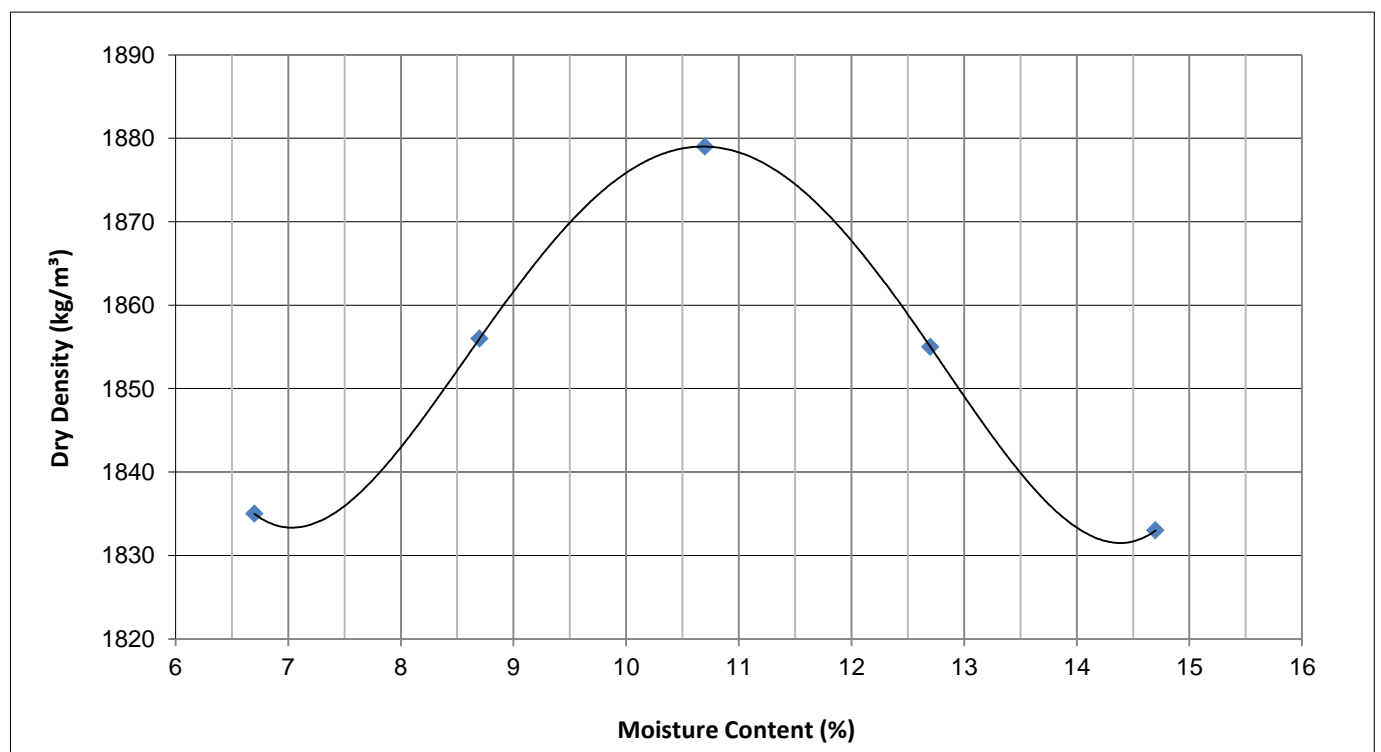
Laboratory Number	2	
Field Number	NKF 02A	
Client Reference	S/2069	
Depth (m)	0.6-1.0	
Position		
Coordinates	X	
	Y	
Description		
Additional Information		
Calcrete / Crushed Stabilizing Agent		

### Maximum Dry Density & Optimum Moisture Content - TMH1 Method A7

Compactive Effort:	Standard Proctor	
--------------------	------------------	--

Dry Density	kg/m <sup>3</sup>	1835	1856	1879	1855	1833	
Moisture Content	%	6.7	8.7	10.7	12.7	14.7	

Max. Dry Density	kg/m <sup>3</sup>	1879
Optimum Moisture	%	10.7



Client : ROADLAB (PTY) LTD  
 Project : Nelsonskop Farm Development  
 Project No: 2016-B-968

Date Received: 09/05/2016  
 Date Reported: 25/05/2016  
 Page No. : 4 of 6

## MOISTURE DENSITY RELATIONSHIP

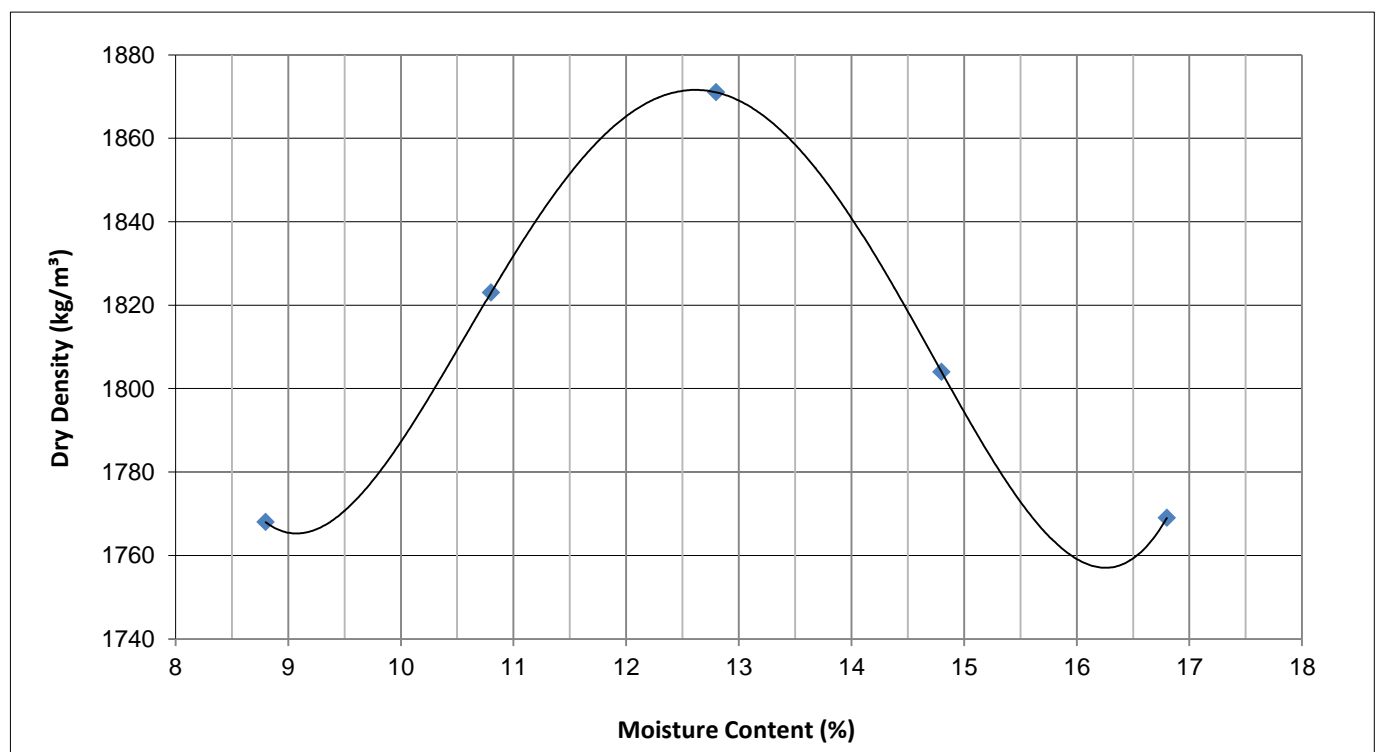
Laboratory Number	3	
Field Number	NKF 01A	
Client Reference	S/2070	
Depth (m)	0.6-1.0	
Position		
Coordinates	X	
	Y	
Description		
Additional Information		
Calcrete / Crushed Stabilizing Agent		

### Maximum Dry Density & Optimum Moisture Content - TMH1 Method A7

Compactive Effort:	Standard Proctor	
--------------------	------------------	--

Dry Density	kg/m <sup>3</sup>	1768	1823	1871	1804	1769	
Moisture Content	%	8.8	10.8	12.8	14.8	16.8	

Max. Dry Density	kg/m <sup>3</sup>	1872
Optimum Moisture	%	12.6



Client : ROADLAB (PTY) LTD  
 Project : Nelsonskop Farm Development  
 Project No: 2016-B-968

Date Received: 09/05/2016  
 Date Reported: 25/05/2016  
 Page No. : 5 of 6

## MOISTURE DENSITY RELATIONSHIP

Laboratory Number	4	
Field Number	NKF 011A	
Client Reference	S/2071	
Depth (m)	0.6-1.0	
Position		
Coordinates	X	
	Y	
Description		
Additional Information		
Calcrete / Crushed		
Stabilizing Agent		

### Maximum Dry Density & Optimum Moisture Content - TMH1 Method A7

Compactive Effort:							
--------------------	--	--	--	--	--	--	--

Dry Density	kg/m <sup>3</sup>	1875	1929	2006	1935	1893	
Moisture Content	%	4.2	6.2	8.2	10.2	12.2	

Max. Dry Density	kg/m <sup>3</sup>	2006
Optimum Moisture	%	8.2

