APPENDICES

Appendix 4.1a Description for a modal profile from the disposal area at Paarl 1

Classified by: R and L	Date: 11 May 2000	Locality: Paarl 1	Profile no: 1
Terrain morp unit:Foot slope	Slope (%): 2	Slope form: Plain	Aspect: South East

Master horizon	Ap	B1	B2	B3
Depth (cm)	0-10cm	10-50cm	50-80cm	80 - 100+
Colour	7.5YR6/2 (D)	7.5YR4/2 (D)	7.5YR3/2(D)	7.5YR3/2 (D)
Structure	Fine-med weak-modera sub-ang blocky	Coarse-mod prismatic breaking to stro ang blocky	Moderate-strong prismatic-breaking into strong moderat angular blocky	Moderate prisimatic - strong moderate angular blocky
Coarse fragments	None	None	None	Some fine coarse gravel
Transition	Clear-Wavey	Gradual	Gradual	
Diagnostic hor/mat	Orthic A	Prismacutanic B	Prismacutanic B	
Moisture content	Dry	Dry	Dry	
Roots	Abundant massive &turn sharp at bot	Rare	Rare	Dead roots
Mottles	None	None	Dull-yellow(rust muscles in rootchannels)	As for B2
Swelling	None	Strong cracks	None	None
Other features	None	Thick light colour clay skins washed, signs of clay dispersion.		

Soil form: Sterkspruit **Soil family: Hermon**

Appendix 4.1b Particle size distribution of the soil from the disposal area at Paarl 1

Depth (cm)	% Clay	% Silt	%Fine sand	%Medium sand	% Coarse sand	% Stone
0 - 30	18.4	19.6	23.6	16.2	22.2	15.5
30 – 60	25.4	19.2	24.2	14.4	16.8	17.5
60 - 90	17.2	9.8	29.0	17.2	26.8	11.3

Appendix 4.2a. Description for a modal profile from disposal area at Paarl 2

Classified by: R and L	Date: 11 May 2000	Locality: Paarl 2	Profile no: 2
Terrain morp unit:Foot slope	Slope (%): 5	Slope form: Convex	Aspect: South

Master horizon	Ap	E	B1	G
Depth (cm)	2.5-15cm	15 - 30cm	30 - 40cm	40 - 120+
Colour	7.5YR5/4(m) 7/2 (d)	7.5YR5/4(m) 7/2 (d)	10YR 6/3(m) 7.5YR 6/2(d)	
Structure	Single grain	Single grains(moist) and massive(dry)	Massive	
Coarse fragments	Rare small stones	Rare small stones	Rare small stones	
Transition	Clear	Abrupt	Clear	
Diagnostic hor/mat	Orthic A	E- horizon	Soft plinthic	Non diagnostic horizon
Moisture content	Moist	Moist	Wet	
Roots	Frequent(not in good condition)	Frequent poor condition (dead)	Rare	
Mottles	None	None	Abundant chroma mostly red mottle and iron concentration	
Swelling	None	None	None	
Other features	None	None	None	

Soil form: Longlands **Soil family: Ermelo**

Appendix 4.2b Particle Size distribution of the soil from the disposal area at Paarl 2

Depth (cm)	% Clay	% Silt	%Fine sand	%Medium sand	% Coarse sand	% Stone
0 – 30	9.2	5.8	21.2	20.4	43.4	41.6
30 – 60	10.8	4.1	11.8	16.1	57.2	17.4
60 - 90	32.8	3.4	12.4	11.2	40.2	28.8

Appendix 4.3a. Description for a modal profile from the disposal area at Stellenbosch

Classified by: R and L	Date: 15 May 2000	Locality: Stellenbosch	Profile no: 3
Terrain morp unit: Foot slope	Slope (%): 4	Slope form: Concave	Aspect: South

Master horizon	Ap	E1	E2
Depth (cm)	10 - 40cm	40 - 75cm	75cm+
Colour	7.5YR3/2 (m)	7.5YR 5/2(m)	7.5YR 6/1(w)
Structure	Apedal	Apedal	Apedal
Coarse fragments	Few stones	Few fine gravel	Fine gravel
Transition	Abrupt	Gradual	
Diagnostic hor/mat	Orthic/Humic	E	E
Moisture content	Slightly moist	Wet	Wet
Roots	Frequent fine roots	Very rare	Very rare
Mottles	none	None	None
Swelling	none	None	None
Other features	none	None	None

Soil form : Fernwood **Soil family: Waterton**

Appendix 4.3b Particle Size distribution of the soil from the disposal area at Stellenbosch

Depth (cm)	% Clay	% Silt	%Fine sand	%Medium sand	% Coarse sand	% Stone
0 – 30	9.8	11.2	21.6	17.0	40.4	35.6
30 – 60	22.0	7.6	16.6	12.8	41.0	52.9
60 - 90	19.2	6.2	17.4	13.6	43.6	57.9

Appendix 4.4a. Description for a modal profile from the disposal area at Robertson 1

Classified by: R and L	Date: 12 May 2000	Locality: Robertson 1	Profile no: 4
Terrain morp unit: Lower foot slope	Slope (%): 1	Slope form: Plain	Aspect: West

Master horizon	A	E1	E2
Depth (cm)	3 - 25cm	25 - 60cm	60 – 100cm
Colour	7.5YR7/2(d) 5/3(m)	10YR 7/1(d) 10YR 6/2(m)	10YR 5/2 (m)
Structure	Massive single grain	Single grain	Single grains Massive-dry
Coarse fragments	None	None	None
Transition	Gradual	Clear	
Diagnostic hor/mat	Orthic A	E	E
Moisture content	Dry	Moist	Moist
Roots	Rare to frequent	Rare	Very rare
Mottles	None	None	None
Swelling	None	None	None
Other features	None	None	

Soil form: Fernwood **Soil family: Penicuik**

Appendix 4.4b Particle Size distribution of the soil from the disposal area at Robertson 1

Depth (cm)	% Clay	% Silt	%Fine sand	%Medium sand	% Coarse sand	% Stone
0 – 30	5.8	4.0	24.5	48.1	17.6	13.0
30 – 60	3.9	3.6	29.1	48.6	14.8	6.1
60 - 90	2.6	3.0	39.5	47.3	7.6	0.3

Appendix 4.5a. Description for a modal profile from the disposal area at Worcester

Classified by: R and L	Date: 15 May 2000	Locality: Worcester	Profile no: 5
Terrain morp unit: Valley bottom	Slope (%): 1	Slope form: Plain	Aspect: East

Master horizon	Ap	C1	C2
Depth (cm)	0 - 27cm	27 - 55cm	55 - 100+
Colour	5YR3/2(m)	5YR3/2 (m)	7.5YR6/3
Structure	Single grains	Single grains	Single grains
Coarse fragments	Rare small stones	Frequent small to med stones	Abundant fine gravels and stones varying from small-big
Transition	Clear	Clear	
Diagnostic hor/mat	Orthic/Humic	Stratified alluvial	Stratified alluvial
Moisture content	Moist	Moist	Moist
Roots	Abundant in top 10cm	Rare to frequent	Rare to frequent
Mottles	None	None	None
Swelling	None	None	None
Other features	None	None	None

Soil form: Dundee **Soil family: Mtamvuna**

Appendix 4.5b Particle Size distribution of the soil from the disposal area at Worcester

Depth (cm)	% Clay	% Silt	%Fine sand	%Medium sand	% Coarse sand	% Stone
0 – 30	2.8	3.6	30.9	47.3	15.4	2.6
30 – 60	3.1	5.1	31.8	45.6	14.4	4.3
60 - 90	3.6	5.3	19.7	52.6	18.8	2.3

Appendix 4.6a. Description for a modal profile from the disposal area at Berg river

Classified by: R and L	Date: 16 May 2000	Locality: Berg river	Profile no: 6
Terrain morp unit: Lower midslope	Slope (%): 9	Slope form: Convex	Aspect: South

Master horizon	A	B	C1	C2
Depth (cm)	0 - 15cm	15 - 42cm	42 - 70cm	70 – 100+
Colour	10YR 6/3(d)	10YR 6/4 (d)	Predominantly yellow	Predominantly yellow
Structure	Moderate-fine crumb structure	Moderate-strong-fine-medium-angular-sub-angular blocky	As for B. Shale suprolite	Weathering shale
Coarse fragments	Few small stones	Rare to frequent small-medium stones	Some quarts gravel	Quarts gravel
Transition	Clear	Clear	Clear	
Diagnostic hor/mat	Orthic A	Pedocutanic B	Suprolite	Suprolite
Moisture content	Dry	Dry	Dry	Dry
Roots	Frequent unhealthy roots	Frequent dead roots	Very rare	Very rare
Mottles	None	Rare mottles associated with weathering rocks	Frequently bright red mottles associated with weathered shale	Dull yellow and brown associated with weathering shale
Swelling	None	None	None	None
Other features	None	Some indication of washed dispersed clay	None	Dense soft weathered shale

Soil form: Swartland **Soil family: Riebeeck**

Appendix 4.6b Particle Size distribution of the soil from the disposal area at Berg river

Depth (cm)	% Clay	% Silt	%Fine sand	%Medium sand	% Coarse sand	% Stone
0 – 30	**29.2**	**26.4**	**20.8**	**8.2**	**15.4**	**59.2**
30 – 60	**37.4**	**22.4**	**17.0**	**7.0**	**16.2**	**64.2**
60 - 90	**19.6**	**19.0**	**17.0**	**12.2**	**32.2**	**68.7**

Appendix 4.7a. Description for a modal profile from the disposal area at Olifants river

Classified by: R and L	Date: 16 May 2000	Locality: Olifants river	Profile no: 7
Terrain morp unit:	Slope (%):	Slope form:	Aspect:

Master horizon	M1	M2	M3	Suprolite(dorbank that is breaking up)	Weathered shale
Depth (cm)	0 - 15cm	15 - 17.5cm	17.5 - 30cm	30 - 47cm	47 - 1m+
Colour	7.5YR5/2(m)	7.5YR 6/4(w)	7.5YR3/2		
Structure	Apedal	Apedal (single grains)	Apedal		
Coarse fragments	Grape seeds	None	None		
Transition	Abrupt	Abrupt	Clear		
Diagnostic hor/mat	Man made horizon	Man made soil layer	Man made soil layer		
Moisture content	Moist	Wet	Wet		
Roots	None	None	None		
Mottles	None	None	None		
Swelling	None	None	None		
Other features	None	None	None		

Appendix 4.7b Particle Size distribution of the soil from the disposal area at Olifants river

Depth (cm)	% Clay	% Silt	%Fine sand	%Medium sand	% Coarse sand	% Stone
0 – 30	6.0	5.8	62.2	19.8	6.2	2.3
30 - 60	5.6	5.8	52.6	22.8	13.2	14.2

Appendix 4.8a. Description for a modal profile from the disposal area at Orange river

Classified by: R and L.	Date: 18 May 2000	Locality: Orange river	Profile no: 8
Terrain morp unit: Flat disposal pond	Slope (%):	Slope form:	Aspect:

Master horizon	A	E1	E2	E3
Depth (cm)	10 - 25cm	25 - 50cm	50 - 88cm	88 - 120+
Colour	5YR3/6(s.m)	5YR5/4(m) 5YR6/3(d)	5YR5/3(m) 5YR6/3(d)	5YR6/2(d) 5YR4/4(m)
Structure	Single grains	Single grains	Single grains	Single grains
Coarse fragments	Rare to frequent coarse gravel	Frequent fine gravel	Some fine gravel	Rare-frequent fine gravel
Transition	Clear	Clear	Gradual	
Diagnostic hor/mat	Orthic	E	E	E
Moisture content	Slightly moist	Moist	Moist	Moist
Roots	Few roots	None	None	None
Mottles	None	None	None	None
Swelling	None	None	None	None
Other features	Pockets of organic matter	None	Some black sports	Some black spots

Soil form: Fernwood **Soil family: Hopefield**

Appendix 4.8b Particle Size distribution of the soil from the disposal area at Orange river

Depth (cm)	% Clay	% Silt	%Fine sand	%Medium sand	% Coarse sand	% Stone
0 – 30	4.3	2.3	42.9	25.8	24.7	17.1
30 – 60	6.7	1.8	35.2	25.9	30.4	18.6
60 - 90	5.6	2.1	28.9	27.0	36.4	48.6