

DEEP GRADATIONAL SANDY LOAM

General Description: *Very thick grey sandy to sandy loam surface grading to grey and brown sandy clay loam subsoil*

Landform: Lower slopes and creek flats within ancient glacial valleys of the southern Mount Lofty Ranges.

Substrate: Coarse to medium textured alluvium derived from sand over clay soils of adjacent slopes

Vegetation: Eucalyptus leucoxydon woodland



Type Site: Site No.: CH023

1:50,000 sheet: 6627-3 (Willunga)

Hundred:

Nangkita

Annual rainfall: 750 mm

Sampling date:

20/08/92

Landform: Outwash fan adjacent to low hills, slope 3%

Surface: Soft with no stones

Soil Description:

Depth (cm)	Description
0-10	Very dark greyish brown fine sandy loam with moderate granular structure. Clear to:
10-22	Dark grey light sandy clay loam with weak granular structure. Clear to:
22-50	Light grey and dark yellowish brown soft massive sandy loam. Clear to:
50-105	Yellowish brown and pale brown soft massive clayey sand. Clear to:
105-120	Light brown, yellow and light grey soft massive light sandy clay loam. Gradual to:
120-150	Light olive grey and dark yellowish brown soft massive sandy clay loam. Gradual to:
150-180	Dark grey and dark brown medium clay with strong fine polyhedral structure (buried subsoil of older soil).



Classification: Bleached-Mottled, Mesotrophic, Grey Kandosol; medium, non-gravelly, loamy / clay loamy, very deep

Summary of Properties

Drainage: Imperfectly drained, due to the soil's position in the landscape and the low permeability of the lower subsoil. The profile may remain wet for several weeks.

Fertility: Natural fertility is low, as indicated by the exchangeable cation data. (The high CEC of the clay at 150 cm has no influence on the soil). All major cations (calcium, magnesium and potassium) are deficient, although their ratios are satisfactory.

pH: Acidic at the surface, slightly acidic with depth. Liming is required.

Rooting depth: 120 cm in pit, but few roots below 50 cm.

Barriers to root growth:

Physical: Waterlogging in lower profile.

Chemical: Low fertility.

Water holding capacity: 160 mm in rootzone, but only a fraction of this is effectively available to plants because of the low root density.

Seedling emergence: Good.

Workability: Good.

Erosion Potential

Water: Low to moderately low.

Wind: Low

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CaCO ₃ %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ -S mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	5.4	4.9	0	0.12	0.60	4.3	105	91	-	1.4	1.1	613	22.2	17.7	9.6	5.0	1.7	0.66	0.25	6.9
											*2.5	*792	*38	*19						
0-10	5.3	4.8	0	0.10	0.44	6.3	100	110	-	1.7	1.1	605	23.3	15.3	12.2	6.5	2.5	0.32	0.27	2.6
10-22	5.6	4.9	0	0.08	0.47	1.3	29	21	-	0.8	0.4	388	10.4	8.5	4.8	3.0	0.5	0.56	0.08	11.7
22-50	6.3	5.7	0	0.07	0.63	0.3	16	12	-	0.4	0.1	70	5.5	1.9	2.0	1.5	0.3	0.44	0.08	na
50-105	6.6	6.2	0	0.11	1.64	0.1	6	<5	-	0.2	0.1	44	1.3	1.0	0.8	0.9	0.2	0.36	0.06	na
105-120	6.4	5.9	0	0.11	1.25	0.3	<2	36	-	0.5	0.2	47	2.6	2.7	2.4	1.5	0.5	0.40	0.12	na
120-150	6.6	5.9	0	0.09	1.04	0.2	<2	92	-	0.6	0.4	52	1.9	2.9	3.6	1.4	1.9	0.49	0.21	na
150-180	6.5	5.7	0	0.15	0.92	0.4	<2	150	-	1.2	1.2	116	3.9	6.3	11.1	2.5	6.8	1.99	0.35	17.9

Note: Paddock sample bulked from 20 cores (0-10 cm) taken around the pit.

* EDTA trace element analyses for "paddock" sample.

CEC (cation exchange capacity) is a measure of the soil's capacity to store and release major nutrient elements.

ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC.