SANDY LOAM OVER POORLY STRUCTURED CLAY ON ROCK

General Description: *Brown sandy loam to loam surface with a bleached A2 horizon overlying a brown, yellow and red mottled coarsely prismatic clay subsoil forming in weathering schist or sandy metamorphic rock*

Landform: Slopes of low hills in the central-eastern Mt. Lofty Ranges

Substrate: Sodic schists of the Tarcowie and Tapley Hill Formations

Vegetation: Blue gum and sheoak woodland

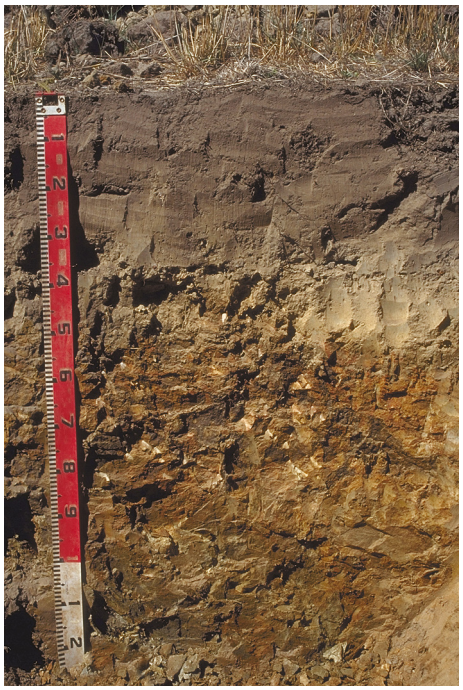
Type Site:

Site No.:	CH064	1:50,000 mapsheet:	6628-2 (Onkaparinga)
Hundred:	Kanmantoo	Easting:	309700
Section:	5293	Northing:	6126800
Sampling date:	17/03/94	Annual rainfall:	875 mm average

Upper slope of rolling low hills, 10% slope. Firm surface.

Soil Description:

Depth (cm)	*Description*
0-20	Dark brown massive loam. Clear to:
20-35	Greyish brown (bleached when dry) massive sandy loam with 20-50% sandstone and quartz gravel. Abrupt to:
35-50	Brown, yellowish brown and red mottled medium clay with strong coarse prismatic structure. Gradual to:
50-80	Yellowish brown, red and dark brown mottled fine sandy light clay with 20-50% soft weathering schist fragments. Gradual to:
80-110	Soft weathering schist with 10% clay in fissures and cleavages.



Classification: Eutrophic, Mottled-Hypernatric, Brown Sodosol; thick, non-gravelly, loamy / clayey, moderate

Summary of Properties

Drainage: Moderate. The clay subsoil prevents free drainage so that a perched water table will develop intermittently during winter.

Chemical fertility: The nutrient holding capacity of the surface soil is moderate (due to organic matter), low in the pale subsurface layer and moderate in the clay subsoil. Organic matter levels are high, phosphorus is marginal. Other tested elements appear to be at satisfactory levels.

pH: Acidic at the surface, mildly alkaline with depth.

Rooting depth: 110 cm in pit but very few roots below 80 cm.

Barriers to root growth:

Physical: The hard sodic clay may prevent roots from fully exploiting the subsoil. Waterlogging will also affect root development from time to time.

Chemical: Marginally high salinity and high sodium may affect some species. Extractable iron is very high indicating potential for acid sulphate soils in catchment.

Waterholding capacity: Approximately 100 mm (moderate to high).

Seedling emergence: Good.

Workability: Good.

Erosion Potential:

Water: Moderate.

Wind: Low.

Laboratory Data

Depth cm	pH H_2O	pH $CaC1_2$	CO_3 %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO_4 mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	5.7	5.2	0	0.46	1.32	3.7	27	471	-	0.9	3.6	910	56	3.7	13.6	8.70	2.06	0.75	0.32	5.5
											*1.1	*269	*9.9	*2.5						
0-20	6.3	5.8	0	0.38	2.78	3.6	90	382	-	1.1	3.2	1100	71	5.1	12.6	7.08	3.14	0.80	0.69	6.3
20-35	6.6	5.6	0	0.22	3.14	0.7	7	189	-	0.5	1.3	350	10	0.75	5.0	2.34	1.15	0.92	0.32	18.4
35-50	6.7	6.0	0	0.58	4.65	0.5	5	219	-	1.1	2.1	850	2.7	1.3	10.8	3.26	3.78	3.05	0.68	28.2
50-80	7.5	6.6	0	0.42	2.92	0.3	4	162	-	1.4	-	-	-	-	12.1	2.52	3.18	3.09	0.44	25.5
80-110	8.0	7.0	0	0.25	2.13	0.1	<4	104	-	1.1	-	-	-	-	7.1	1.78	3.09	1.74	0.21	24.5

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

Further information: DEWNR Soil and Land Program