

## SANDY LOAM OVER BROWN CLAY

**General Description:** *Hard massive loamy sand to sandy clay loam, between 20 and 60 cm thick, sharply overlying a yellow, grey and brown mottled very firm blocky clay, sometimes calcareous with depth*

**Landform:** Gently inclined lower slopes and level flats in the Mt. Lofty Ranges

**Substrate:** Alluvial clay

**Vegetation:** Red gum woodland



**Type Site:** Site No.: CH072

1:50,000 sheet:	6627-4 (Noarlunga)	Hundred:	Kuitpo
Annual rainfall:	830 mm	Sampling date:	24/11/94
Landform:	Lower slope of a very gently inclined alluvial fan, 2% slope		
Surface:	Hard setting with no stone		

### Soil Description:

Depth (cm)	Description
0-10	Dark greyish brown fine sandy loam with moderate granular structure. Abrupt to:
10-25	Light grey fine sandy loam with rusty brown mottles and weak coarse prismatic structure. Clear to:
25-45	Yellowish brown and greyish brown mottled medium heavy clay with weak very coarse prismatic, breaking to strong polyhedral structure. Gradual to:
45-85	Yellowish brown, yellow and greyish brown mottled heavy clay with weak coarse prismatic, breaking to strong polyhedral structure. Gradual to:
85-120	Olive brown and greyish brown mottled heavy clay with strong coarse lenticular structure and slickensides. Gradual to:
120-155	Olive brown slightly calcareous heavy clay with strong coarse lenticular structure, slickensides and 2-10% soft and nodular carbonate segregations.



**Classification:** Bleached-Vertic, Eutrophic, Brown Chromosol; medium, non-gravelly, loamy/clayey, deep

## Summary of Properties

<b>Drainage</b>	Imperfect. The heavy clay subsoil has low permeability causing water to "perch", saturating the surface soil for weeks at a time.
<b>Fertility</b>	Natural fertility is moderate as indicated by the exchangeable cation data, but note low levels in the subsurface layer. Higher surface levels are due to organic matter. Phosphorus and potassium are low. Sulphur and trace elements are adequate. The ratios of calcium, magnesium and potassium are satisfactory, although actual values are a little low.
<b>pH</b>	Acidic at the surface. Lime or dolomitic lime should be applied to prevent pH falling lower. Alkaline at depth where calcium carbonate ("lime") is present.
<b>Rooting depth</b>	120 cm in pit but few below 85 cm.
<b>Barriers to root growth</b>	
<b>Physical:</b>	Poorly structured tight subsoil clay, waterlogging on top of clay.
<b>Chemical:</b>	Low phosphorus and potassium. Aluminium is not at toxic levels.
<b>Water holding capacity</b>	Approximately 120 mm in root zone, but not all available due to low root density.
<b>Seedling emergence</b>	Fair, due to tendency for surface to seal over.
<b>Workability</b>	Fair to good. If organic matter levels fall, this soil will have only a narrow moisture range over which it can be effectively worked.
<b>Erosion Potential</b>	
<b>Water:</b>	Low
<b>Wind:</b>	Low

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> -S mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP	Ext Al mg/kg
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K		
Paddock	5.7	4.8	0	0.05	0.28	3.3	21	61	12.8	0.8	3.64	439	165	3.01	13.3	6.08	1.77	0.24	0.21	1.8	2
0-10	5.5	4.6	0	0.05	0.22	3.5	25	32	9.8	0.8	-	-	-	-	12.0	5.28	1.01	0.20	0.15	1.7	4
10-25	6.0	5.1	0	0.02	0.17	0.9	25	22	4.9	0.7	-	-	-	-	8.3	4.40	1.41	0.16	0.11	1.9	<1
25-45	5.5	4.9	0	0.08	0.21	0.6	8	109	170	2.9	-	-	-	-	30.5	9.74	11.75	1.08	0.54	3.5	<1
45-85	5.5	4.7	0	0.11	0.32	0.4	<4	121	81.2	3.2	-	-	-	-	31.2	8.63	12.84	1.61	0.55	5.2	<1
85-120	7.7	6.7	0.1	0.24	0.64	0.4	<4	111	108	3.8	-	-	-	-	33.3	11.06	13.54	3.56	0.39	10.7	
120-155	8.8	8.1	3.9	0.40	0.87	0.2	<4	114	43.6	5.0	-	-	-	-	29.2	10.94	12.06	3.92	0.35	13.4	

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

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.