

SAND OVER ACIDIC CLAY

General Description: *Thick greyish sand with a bleached A2 horizon, overlying a yellow and red sandy clay loam to light clay subsoil forming in soft sandstone*

Landform: Slopes of undulating rises and low hills

Substrate: Tertiary sandstone

Vegetation: Pink gum scrub



Type Site:	Site No.:	CH066	1:50,000 mapsheet:	6627-4 (Noarlunga)
	Hundred:	Willunga	Easting:	282350
	Section:	5	Northing:	6105850
	Sampling date:	06/05/94	Annual rainfall:	680 mm average

Midslope of an undulating rise, in a vineyard. Loose surface, 8% slope.

Soil Description:

Depth (cm)	Description
0-18	Dark grey loose sand. Abrupt to:
18-40	Yellow loose sand. Clear to:
40-70	Reddish yellow clayey sand with 10-20% quartz and ironstone gravel. Clear to:
70-85	Brownish yellow, light brown and red light medium clay with strong polyhedral structure. Clear to:
85-100	Brownish yellow, light red and brownish grey sandy light clay with moderate polyhedral structure, forming in soft sandstone.
100+	Watertable.



Classification: Bleached-Mottled, Natric, Yellow Kurosol; very thick, non-gravelly, sandy/clayey, deep



Summary of Properties

- Drainage:** Under rainfed conditions the soil is well drained; the clay subsoil may impede water movement temporarily, causing waterlogging for a few days. The water in the pit apparently derived from seepage along the top of the clay.
- Fertility:** The natural fertility is low, a consequence of the low clay content and the high acidity. Phosphorus and potassium are both low (about half adequate levels). The low organic carbon value indicates low nitrogen reserves. Although the calcium : magnesium ratio is satisfactory, the values are low. Trace elements (except for boron) in the surface at least are adequate as far as a soil test is concerned.
- pH:** Acidic at the surface, strongly acidic with depth. Correction with dolomitic lime is required.
- Rooting depth:** Most roots occur in the sandy topsoil.
- Barriers to root growth:**
- Physical:** There are no physical barriers until the sandstone is encountered.
 - Chemical:** Low fertility and acidity are the main limitations. There are no problems with salt or boron toxicity, and despite the low pH, aluminium toxicity is unlikely to be a problem in this soil.
- Waterholding capacity:** Approximately 100 mm (total available) above the watertable.
- Emergence conditions:** Good, although there is potential for water repellence.
- Workability:** Good.
- Erosion Potential:**
- Water:** Moderately low due to the thick highly permeable sandy surface.
 - Wind:** High, due to the sandy surface.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl 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 (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-18	5.5	5.4	0	0.06	0.76	0.7	20	52	-	0.2	3.2	30.6	1.2	3.0	3.5	2.4	0.7	0.09	0.08	na
18-40	5.7	5.6	0	0.05	0.86	0.1	14	35	-	0.1	<0.1	10.6	<0.1	0.3	1.4	0.7	0.3	0.13	0.05	na
40-70	6.5	6.4	0	0.08	0.83	0.1	<4	19	-	0.2	0.1	26.8	<0.1	0.4	1.6	0.9	0.6	0.22	0.07	na
70-85	5.0	4.9	0	0.15	1.06	0.3	<4	24	-	1.1	<0.1	14.9	<0.1	0.2	6.3	2.0	3.0	0.63	0.11	10.0
85-100	4.6	4.5	0	0.16	1.30	0.1	<4	41	-	0.9	<0.1	7.6	<0.1	0.3	5.4	1.6	2.7	0.55	0.09	10.2

Note: 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](#)

