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 sheet:	6627-4 (Noarlunga)	Hundred:	Willunga
Annual rainfall:	600 mm	Sampling date:	06/05/94
Landform:	Midslope of an undulating rise, 8% slope		
Surface:	Loose with no stones		

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+	Water table.

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.

Water holding capacity Approximately 100 mm (total available) above the water table.

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_2O	pH $CaC1_2$	$CaCO_3$ %	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	
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.