

SAND OVER ACIDIC CLAY

General Description: *Moderately deep loose sand, sharply overlying a yellow, red and brown coarsely structured clay.*

- Landform:** Rolling low hills and prominent crests. Slope range is 10% to 25%
- Substrate:** Sandy clays (weakly indurated in places), deposited in ancient glacial valleys
- Vegetation:** Pink gum (*Eucalyptus fasciculosa*) woodland



- Type Site:** Site No.: CH006
- 1:50,000 sheet: 6527-2 (Yankalilla) Hundred: Yankalilla
- Annual Rainfall: 675 mm Sampling date: 30/01/92
- Landform: Midslope of prominent crest, 14% slope.
- Surface: Loose with no stones.

Soil Description:

Depth (cm)	Description
0-10	Dark greyish brown soft sand. Clear to:
10-22	Brown soft light loamy sand. Gradual to:
22-75	White soft sand. Sharp to:
75-85	Red and yellowish red firm strongly coarse columnar medium heavy clay. Gradual to:
85-130	Greyish brown, red and yellowish brown, firm, weakly coarse prismatic medium heavy clay. Diffuse to:
130-170	Light yellowish brown, red and yellow, firm massive sandy medium clay. Gradual to:
170-200	Pale yellow, greyish brown and brownish yellow firm massive sandy clay.



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

Summary of Properties

Drainage	Moderately well to well. Soil may remain wet for a few days to a week.
Fertility	Low, due to thickness of sand with low nutrient retention capacity, as indicated by the very low cation exchange capacities of the upper 75 cm. Calcium, magnesium and potassium are all low, as are phosphorus and copper.
pH	Acidic to strongly acidic throughout. Lime and dolomite are required to correct the problem.
Rooting Depth	110 cm at type site. Varies according to depth of sand. Root density is low throughout.
Barriers to root growth	
Physical:	Tough clay subsoil, caused by moderately high exchangeable sodium and magnesium levels.
Chemical:	Acidity throughout profile and low fertility.
Water holding capacity	100-120 mm in root zone (moderately high). Depends on depth of sand.
Seedling emergence	Good, but water repellence may be a problem in places.
Workability	Good.
Erosion potential	
Water:	Moderate to high, depending on depth of sand.
Wind:	High due to deep, loose, 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	Cl 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	
0-10	5.5	5.0	0	0.07	0.6	0.9	18	140	43	0.3	<0.1	35	9.5	1.4	2.6	1.5	0.5	0.1	0.2	4
10-22	4.7	4.2	0	0.04	0.2	0.1	9	32	6	0.2	<0.1	28	3.3	<0.1	1.3	<0.4	<0.2	<0.1	0.1	ns
22-75	5.1	4.7	0	0.04	0.1	0.0	8	33	7	<0.1	<0.1	13	0.9	<0.1	1.0	<0.4	<0.2	0.1	.05	ns
75-85	5.1	4.1	0	0.06	0.1	0.5	4	250	14	1.1	<0.1	33	<0.5	<0.1	18.3	3.4	8.7	1.3	0.6	7
85-130	5.2	4.0	0	0.05	0.1	0.3	5	160	14	0.4	<0.1	25	<0.5	<0.1	15.3	2.7	7.1	1.2	0.4	8
130-170	5.3	4.1	0	0.05	0.1	0.2	29	240	13	0.8	<0.1	23	<0.5	<0.1	13.4	2.3	6.5	1.3	0.3	10
170-200	5.2	4.1	0	0.06	0.4	0.1	6	130	23	0.6	0.1	9	<0.5	<0.1	8.8	2.0	5.0	1.3	0.2	15

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.