

SAND OVER POORLY STRUCTURED SANDY CLAY

General Description: *Medium thickness loose sand sharply overlying a brown to red sandy clay to clay, calcareous with depth, over variable clayey to clayey sand sediments*

Landform: Slopes of undulating rises and low hills

Substrate: Tertiary age clayey sands, sandy clays and heavy clays, mantled by fine carbonates.

Vegetation:



Type Site: Site No.: CL008

1:50,000 sheet:	6629-2 (Kapunda)	Hundred:	Light
Annual rainfall:	450 mm	Sampling date:	10/03/92
Landform:	Upper slope of low hill, 4% slope		
Surface:	Soft with no stones		

Soil Description:

Depth (cm)	Description
0-15	Soft dark grey sand. Abrupt to:
15-21	Light grey (bleached) loose sand. Sharp to:
21-72	Yellowish red hard sandy clay with coarse columnar structure. Diffuse to:
72-100	Reddish yellow hard coarsely structured very highly calcareous heavy clay.



Classification: Hypercalcic, Mesonatric, Red Sodosol; medium, non-gravelly, sandy / clayey, deep

Summary of Properties

Drainage: Moderately well to imperfect. The strongly dispersive subsoil prevents free drainage, so a perched water table may persist for a week or more following prolonged or heavy rainfall. Lateral seepage occurs, depending on the shape of the slope.

Fertility: Natural fertility is low, due to the low clay content of the surface. However, nutrient retention is reasonable due to the relatively high organic matter concentrations which have been achieved. All measured nutrient elements are at satisfactory levels reflecting the management input.

pH: Slightly acidic at the surface, strongly alkaline in the subsoil.

Rooting depth: 63 cm in the pit.

Barriers to root growth:

Physical: The hard dispersive subsoil clay prevents uniform root distribution, by confining most roots to the faces of the aggregates.

Chemical: High pH and high sodicity from 21 cm and more so from 72 cm restrict root growth.

Water holding capacity: Approximately 75 mm in the root zone (moderately high).

Seedling emergence: Good, except where water repellent.

Workability: Good.

Erosion Potential

Water: Moderate. Water perches on the subsoil and saturates the surface soil which loses its strength and is easily washed downslope.

Wind: Moderate to high.

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 -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	
Paddock	6.6	5.4	0	0.06	-	1.35	58	360	-	-	0.53	53	2.7	1.61	7.3	4.96	1.45	0.18	1.14	2.5
0-15	6.8	5.8	0	0.10	0.9	1.50	51	390	-	-	0.51	46	3.2	2.93	5.8	4.45	1.14	0.34	0.94	5.9
15-21	6.3	5.3	0	0.11	1.2	0.89	49	280	-	1.9	0.43	81	2.9	0.47	5.5	3.90	1.34	0.26	0.84	4.7
21-72	9.4	8.1	2.5	0.44	2.1	0.21	7	410	-	7.1	0.32	8.0	0.2	0.12	17.0	6.54	8.06	4.06	1.22	23.9
72-100	9.8	8.8	25.8	1.30	7.5	0.13	2	220	-	13.9	0.54	3.7	0.4	0.11	17.4	2.13	9.64	9.46	0.70	54.4

Note: Paddock sample bulked from 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.