

THICK SAND OVER SANDY LOAM

General Description: *Thick pale sand over a massive yellow or red sandy loam, overlying buried soil material*

Landform: Dunefields of closely spaced low to moderate parallel sandhills.

Substrate: Buried subsoil, apparently formed in Blanchetown Clay equivalent.

Vegetation: Mallee



Type Site: Site No.: MM135
 1:50,000 sheet: 6928-3 (Halidon) Hundred: Chesson
 Annual rainfall: 295 mm Sampling date: 22/02/99
 Landform: Dune slope
 Surface: Loose with no stones

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-9	Brown loose loamy sand (recent drift). Sharp to:
9-21	Brown loose loamy sand (recent drift). Sharp to:

21-27	Brown soft loamy sand. Abrupt to:
27-70	Light brown soft loamy sand. Abrupt to:
70-73	Pink soft sand. Sharp to:
73-100	Reddish yellow firm highly calcareous sandy loam with coarse columnar structure. Clear to:
100-115	Yellowish red hard very highly calcareous fine sandy medium clay with coarse blocky structure (buried subsoil of older soil). Clear to:
115-175	Yellowish red hard very highly calcareous fine sandy medium clay with weak coarse blocky structure and 20-50% fine carbonate segregations.



Classification: Bleached-Sodic, Hypocalcic, Yellow Kandosol; thick, non-gravelly, sandy / loamy, moderate

Summary of Properties

Drainage	Moderately well drained. Following heavy or prolonged rainfall, water perches for up to a week on the dispersive clayey subsoil.
Fertility	Inherent fertility is low, as indicated by the exchangeable cation data. Regular phosphorus applications are essential. Nitrogen levels depend on cropping history and legume status of pastures. Zinc and copper deficiencies are likely. P, Cu and Zn all appear to be deficient at the sampling site. Organic carbon levels are also low.
pH	Slightly alkaline at the surface, strongly alkaline at depth.
Rooting depth	Estimate 80 cm plus drift sand, although few roots are likely in the lower 28 cm.
Barriers to root growth	
Physical:	Hard dense subsoil restricts root growth - roots are confined to surfaces of columns.
Chemical:	High pH and sodicity from 52 cm impede root growth, as does low fertility.
Water holding capacity	Approximately 65 mm in the root zone plus 15-20 mm in the drift layers.
Seedling emergence:	Satisfactory, although water repellence may be a problem from time to time.
Workability:	Soft / loose surface is easily worked.
Erosion Potential	
Water:	Low.
Wind:	Moderate.

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	7.8	7.5	< 0.1	0.11	1.5	0.47	11	209	-	0.9	0.2	-	1.5	0.2	4.0	2.9	0.65	< 0.1	0.27	2.5
0-9	7.7	7.4	0.1	0.12	1.6	0.43	15	306	-	0.9	0.2	-	2.0	0.2	4.3	2.9	0.65	< 0.1	0.40	2.3
9-21	7.7	7.3	0.2	0.09	1.3	0.44	11	187	-	0.8	0.1	-	1.3	0.2	4.2	2.8	0.64	< 0.1	0.37	2.4
21-27	8.6	8.1	< 0.1	0.09	1.3	0.22	1	85	-	0.8	0.2	-	0.9	0.2	4.1	2.9	0.62	< 0.1	0.20	2.4
27-70	9.3	8.2	< 0.1	0.98	9.3	0.28	2	252	-	11.7	0.6	-	0.3	0.1	3.3	2.0	0.47	< 0.1	0.11	3.0
70-73	9.4	8.3	-	1.05	10.0	0.19	1	329	-	13.5	0.3	-	0.8	0.1	-	-	-	-	-	-
73-100	9.8	8.7	1.5	0.34	4.8	0.17	1	327	-	5.3	0.1	-	0.3	0.1	6.4	2.1	2.7	1.8	0.62	28.1
100-115	9.9	8.8	4.2	0.62	4.0	0.12	3	691	-	13.9	0.2	-	0.2	0.1	13.4	1.6	5.0	6.3	1.9	47.0
115-175	10.0	8.3	18	0.56	5.3	0.15	1	344	-	6.9	0.4	-	0.2	0.2	8.6	1.1	3.4	5.0	0.72	58.1

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.