

## THICK SAND OVER SANDY CLAY

**General Description:** *Thick sand with a bleached A2 layer, overlying a brown coarsely structured sandy clay, calcareous with depth*

**Landform:** Undulating to rolling rises and intervening flats, partly overlain by irregular sandhills.

**Substrate:** Massive sandy clay formed from a mixture of locally derived outwash and Molineaux Sand.

**Vegetation:** Mallee heath



**Type Site:** Site No.: MM100

1:50,000 sheet:	Tintinara (6926-3)	Hundred:	Lewis
Annual rainfall:	455 mm	Sampling date:	09/03/93
Landform:	Swale between sandhills		
Surface:	Loose with no stones		

### Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-13	Dark greyish brown loose loamy sand. Clear to:
13-33	Brown loose loamy sand. Clear to:
33-43	Very pale brown (bleached) loose sand. Sharp to:
43-80	Orange very hard sandy clay with coarse columnar structure. Clear to:
80-120	Brownish yellow very hard massive sandy clay. Gradual to:
120-180	Brownish yellow, light brownish grey and red hard massive sandy clay with minor fine calcareous segregations.



**Classification:** Bleached-Sodic, Calcic, Brown Chromosol; thick, non-gravelly, sandy / clayey, deep

## Summary of Properties

<b>Drainage</b>	Well drained. Soil rarely remains wet for more than a few days.
<b>Fertility</b>	Inherent fertility is low, as indicated by the exchangeable cation data. Regular phosphorus applications are needed and nitrogen status depends on legume content of pastures and cropping intensity. Deficiencies of copper and zinc are likely. Manganese is required by lupins. Concentrations of phosphorus, copper and organic carbon are low at the sampling site.
<b>pH</b>	Slightly acidic at the surface, alkaline with depth.
<b>Rooting depth</b>	80 cm in pit.
<b>Barriers to root growth</b>	
<b>Physical:</b>	The hard dense subsoil clay impedes root growth.
<b>Chemical:</b>	There are no chemical barriers, but low nutrient retention capacity limits root growth.
<b>Water holding capacity</b>	90 mm in the root zone.
<b>Seedling emergence:</b>	Satisfactory, but can be reduced by water repellence in dry seasons.
<b>Workability:</b>	Soft / loose surface is easily worked.
<b>Erosion Potential</b>	
<b>Water:</b>	Low.
<b>Wind:</b>	Moderately low to moderate.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K 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	6.3	6.1	<1	0.03	0.21	0.5	12	89	<0.4	0.14	20	5.3	0.59	3.0	3.07	0.32	0.07	0.17	2.3
0-13	6.3	5.9	8	0.02	0.19	0.5	10	73	<0.4	0.17	26	5.3	0.49	4.1	3.10	0.34	0.08	0.16	2.0
13-33	6.2	6.2	<1	0.01	0.1	0.1	5	41	<0.4	<0.05	17	1	0.09	2.3	1.37	0.14	0.09	0.07	na
33-43	6.8	6.9	<1	0.01	0.07	<0.1	<2	<40	0.42	<0.05	6.2	0.37	0.09	2.1	0.85	0.15	0.09	0.07	na
43-80	7.0	6.5	<1	0.03	0.28	0.2	<2	120	0.9	<0.05	12	0.07	0.1	10.9	5.72	3.14	0.30	0.37	2.8
80-120	7.1	6.0	1	0.04	0.39	<0.1	<2	120	0.81	<0.05	8.4	0.1	0.12	11.4	5.54	2.99	0.73	0.32	6.4
120-180	8.9	7.9	5	0.14	0.5	<0.1	<2	150	1.6	0.13	4.2	0.16	0.09	13.5	7.24	3.36	1.24	0.44	9.2

**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.