

THICK SAND OVER SANDY CLAY LOAM

General Description: *Thick bleached sand over a brown coarsely structured sandy clay loam, calcareous with depth*

Landform: Gently undulating plain.

Substrate: Sandy sediments of the Padthaway Formation, capped by fine carbonates.

Vegetation: Mallee - heath

Type Site:	Site No.:	MM043	1:50,000 mapsheet:	6826-4 (Binnie)
	Hundred:	Jeffries	Easting:	372750
	Section:	1	Northing:	6047450
	Sampling date:	16/12/1991	Annual rainfall:	455 mm average

Flat plain, loose surface, no stones. Watertable at 155 cm.

Soil Description:

Depth (cm)	Description
0-10	Greyish brown loose sand. Clear to:
10-23	Light grey (bleached) loose sand. Clear to:
23-55	Very pale brown (bleached) loose sand. Sharp to:
55-72	Dark brown and yellowish brown sandy clay loam with coarse columnar structure. Diffuse to:
72-87	Light grey very highly calcareous massive sandy clay loam. Diffuse to:
87-110	Light grey and yellowish brown highly calcareous massive light sandy loam. Diffuse to:
110-140	Brownish yellow and light grey highly calcareous massive light sandy loam. Clear to:
140-155	Yellowish brown highly calcareous massive light sandy loam.
155-	Watertable.



Classification: Bleached-Mottled, Calcic, Brown Chromosol; thick, non-gravelly, sandy/clay loamy, moderate



Summary of Properties

- Drainage:** Well drained. Water perches on subsoil for a few days at a time following heavy or prolonged rainfall. Watertable impedes deep drainage.
- Fertility:** Inherent fertility is low, as indicated by the exchangeable cation data, low clay and organic matter contents. Deficiencies of phosphorus, nitrogen, zinc and copper can be expected. Manganese may be required by lupins. Organic carbon low at sampling site, as are phosphorus and copper (no nitrogen data).
- pH:** Slightly acidic at the surface, strongly alkaline with depth.
- Rooting depth:** 140 cm in pit, but few roots below 55 cm.
- Barriers to root growth:**
- Physical:** The poorly structured sandy clay loam subsoil restricts uniform root growth.
 - Chemical:** High pH from 87 cm, but low nutrient status and retention capacity is main limitation.
- Waterholding capacity:** Approximately 35 mm in actual rootzone, but 75 mm in potential rootzone.
- Seedling emergence:** Slightly impaired by water repellent surface.
- 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	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	6.5	5.8	<1	0.05	0.30	0.2	10	98	<0.5	0.18	20	2.6	1.3	3.8	3.43	0.83	0.12	0.14	3.2
0-10	6.3	5.5	1	0.04	0.27	0.1	6	90	<0.5	0.14	20	2.2	1.1	2.5	2.03	0.57	0.11	0.12	na
10-23	6.6	6.5	1	0.02	0.13	0.2	4	62	<0.5	<0.05	15	0.56	<0.06	1.3	1.12	0.29	0.10	0.07	na
23-33	6.6	7.0	1	0.02	0.11	<0.1	2	47	<0.5	<0.05	11	0.09	<0.06	0.8	0.70	0.19	0.10	0.07	na
33-43	6.6	7.1	<1	0.01	0.10	<0.1	<2	54	<0.5	<0.05	7.6	<0.06	<0.06	0.7	0.68	0.18	0.11	0.06	na
43-55	6.6	7.2	<1	0.01	0.07	<0.1	<2	189	0.69	<0.05	6.1	<0.06	<0.06	0.6	0.54	0.17	0.11	0.04	na
55-72	7.9	7.1	2	0.07	0.31	0.2	<2	250	0.84	0.06	27	<0.06	<0.06	11.0	7.43	2.36	0.48	0.44	4.4
72-87	9.2	8.1	16	0.12	0.45	0.2	<2	180	<0.5	0.06	11	0.16	<0.06	9.1	8.81	2.58	0.54	0.39	5.9
87-110	9.4	8.1	6	0.10	0.31	0.2	<2	140	0.72	<0.05	5.9	0.08	<0.06	6.5	6.41	1.97	0.41	0.26	6.3
110-140	9.6	8.3	15	0.18	0.78	0.2	2	110	0.78	0.05	3.6	0.09	<0.06	4.8	4.33	2.32	0.73	0.23	15.2
140-155	9.2	8.1	6	0.24	1.82	<0.1	2	150	1.1	<0.05	5.0	0.31	<0.06	7.0	4.87	3.69	0.81	0.29	11.6

- 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.

Further information: [DEWNR Soil and Land Program](#)

