

THICK SAND OVER SANDY CLAY

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

Landform: Flat to gently undulating plains with occasional sandhills and low stony rises.

Substrate: Coarse grained lagoonal sediments (Padthaway Formation).

Vegetation: Mallee heath.



Type Site: Site No.: MM092
1:50,000 sheet: 6826-3 (Woods Well) Hundred: Strawbridge
Annual rainfall: 460 mm Sampling date: 1992
Landform: Flat
Surface: Loose with no stones

Soil Description:

Depth (cm)	Description
0-10	Very dark greyish brown loose loamy sand. Clear to:
10-23	Dark greyish brown loose sand. Clear to:
23-43	Light grey (bleached) loose sand. Sharp to:
43-60	Orange hard sandy clay with coarse columnar structure. Clear to:
60-70	Yellowish brown and yellowish red very hard columnar sandy clay with minor fine carbonate. Clear to:
70-100	Yellowish brown and pale olive very hard columnar sandy clay with 10-20% fine carbonate segregations. Diffuse to:
100-180	Pale olive and orange very hard massive calcareous light sandy clay loam. Diffuse to:
180-220	Light grey soft massive clayey sand with minor fine carbonate segregations.



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

Summary of Properties

Drainage	Well drained. Soil rarely remains wet for more than a day or so.
Fertility	Inherent fertility is low as indicated by the exchangeable cation data. Regular phosphorus applications are essential. Nitrogen levels depend on pasture legume condition. Copper and zinc deficiencies are likely, and lupins may require manganese. Organic carbon levels are good at sampling site.
pH	Neutral at the surface, alkaline with depth.
Rooting depth	70 cm in pit.
Barriers to root growth	
Physical:	Hard dense subsoil restricts root growth.
Chemical:	There are no chemical barriers, although low nutrient retention capacity limits root development.
Water holding capacity	70 mm in root zone.
Seedling emergence:	Satisfactory although reduced by water repellence in dry seasons.
Workability:	Soft / loose surface is easily worked.
Erosion Potential	
Water:	Low.
Wind:	Low

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	6.9	6.6	0	0.12	0.84	1.1	14	170	0.5	-	-	-	-	4.5	4.69	0.54	0.09	0.31	2.0
0-10	6.7	6.5	0	0.05	0.34	1.0	8.6	150	0.4	-	-	-	-	2.9	4.42	0.42	0.09	0.12	na
10-23	6.9	6.5	0	0.03	0.16	0.16	7.6	47	0.1	-	-	-	-	1.0	1.68	0.14	0.08	0.07	na
23-43	6.7	6.3	0	0.02	0.11	<0.01	5.8	24	0.1	-	-	-	-	0.6	0.72	0.10	0.09	0.06	na
43-60	6.9	6.4	<1	0.07	0.20	0.13	<2.0	490	1.1	-	-	-	-	11.1	8.83	2.61	0.29	1.19	2.6
60-70	6.8	6.2	<1	0.06	0.25	0.04	<2.0	350	1.1	-	-	-	-	11.4	9.41	2.91	0.37	0.81	3.2
70-100	8.3	7.8	9	0.16	0.49	0.01	<2.0	200	0.8	-	-	-	-	7.6	7.65	1.74	0.31	0.39	4.1
100-180	8.8	8.1	5	0.11	0.42	<0.01	<2.0	150	0.5	-	-	-	-	6.0	6.49	1.14	0.25	0.24	4.2

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.