

THICK SAND OVER SANDY CLAY

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

Landform: Flat to gently undulating plains with frequent irregular sandhills and swampy depressions

Substrate: Clayey lagoonal sediments (Padthaway Formation)

Vegetation: Mallee / heath



Type Site:	Site No.:	MM106	1:50,000 mapsheet:	6826-2 (Culburra)
	Hundred:	Richards	Easting:	408200
	Section:	134	Northing:	6016350
	Sampling date:	15/03/1993	Annual rainfall:	500 mm average

Flat. Soft surface, no stones.

Soil Description:

Depth (cm)	Description
0-10	Dark greyish brown loose sand. Clear to:
10-23	Greyish brown loose sand. Clear to:
23-50	Light grey (bleached) soft sand. Abrupt to:
50-65	Dark yellowish brown hard sandy clay with coarse columnar structure. Diffuse to:
65-115	Yellowish brown and light yellowish brown hard massive sandy clay with minor fine carbonate segregations. Diffuse to:
115-160	Light olive brown and light olive grey mottled hard massive moderately calcareous sandy clay with 10-20% carbonate nodules (20-60 mm). Diffuse to:
160-190	Olive friable massive moderately calcareous sandy clay.
190	Watertable.



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



Summary of Properties

- Drainage:** Well drained. Soil rarely remains wet for more than a few days.
- Fertility:** Inherent fertility is low, as indicated by the exchangeable cation data. Phosphorus and nitrogen deficiencies are widespread, and occasional copper and zinc deficiencies are likely. Potassium may be deficient where hay has been cut. Manganese is required by lupins. Phosphorus and potassium levels are marginal at sampling site. Organic carbon levels are adequate.
- pH:** Slightly acidic at the surface, alkaline with depth.
- Rooting depth:** 80 cm in pit (lucerne).
- Barriers to root growth:**
- Physical:** The dense clayey subsoil and substrate restrict root growth.
 - Chemical:** There are no chemical barriers in the upper metre (sodic at depth), but low nutrient retention capacity limits root volume.
- Waterholding capacity:** 75 mm in rootzone.
- Seedling emergence:** Satisfactory, but can be reduced by water repellence in dry years.
- Workability:** Soft to 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	0.07	0.44	1.2	15	99	1.0	0.29	-	2.3	1.3	3.6	3.82	0.64	0.03	0.25	0.8
0-10	6.1	5.3	<1	0.08	0.65	1.2	18	120	0.85	0.21	-	2.9	1.2	3.5	3.42	0.53	0.02	0.24	0.6
10-23	6.2	5.5	<1	0.03	0.25	0.3	14	69	0.44	0.07	-	0.54	0.08	1.9	1.62	0.39	0.03	0.25	na
23-50	6.3	5.6	<1	0.02	0.19	0.1	7	51	0.19	<0.05	-	0.07	<0.06	0.9	0.74	0.30	0.16	0.22	na
50-65	7.3	6.4	<1	0.09	0.59	0.3	9	390	1.9	0.41	-	0.73	<0.06	12.2	5.59	2.84	0.51	1.32	4.2
65-115	8.8	7.8	3	0.26	1.82	0.2	<2	400	4.3	0.15	-	0.3	<0.06	9.9	5.03	2.99	1.13	1.08	11.4
115-160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
160-190	8.8	8.3	4	1.93	18.7	<0.1	3	660	15	0.28	-	0.081	<0.06	11.9	3.07	4.27	3.23	1.92	27.1

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.

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

