

## THICK SAND OVER SANDY CLAY

**General Description:** *Thick bleached sand over a brown or red sandy clay to clay subsoil, usually calcareous with depth*

**Landform:** Gently undulating plain with sandhills.

**Substrate:** Calcrete.

**Vegetation:**



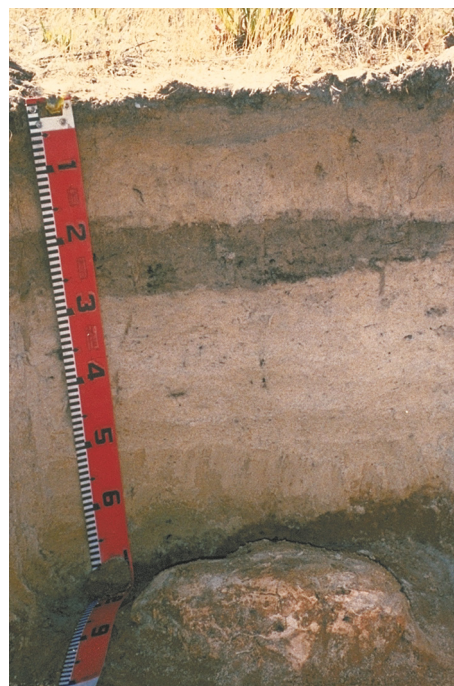
<b>Type Site:</b>	Site No.:	CY022	1:50,000 mapsheet:	6428-1 (Port Julia)
	Hundred:	Muloowurtie	Easting:	760750
	Section:	34	Northing:	6172550
	Sampling date:	25/11/1993	Annual rainfall:	395 mm average

Crest of sandhill, 1% slope. Loose surface with no stones.

### Soil Description:

18 cm drift sand on surface, not included in following description.

<i>Depth (cm)</i>	<i>Description</i>
0-10	Yellowish brown loose sand. Abrupt to:
10-47	Very pale brown (bleached) loose sand. Clear to:
47-56	Strong brown firm massive sandy medium clay with more than 50% carbonate nodules (60-200 mm), cemented into a pan.



**Classification:** Bleached, Petrocalcic, Brown Chromosol; thick, non-gravelly, sandy / clayey, moderate



## Summary of Properties

- Drainage:** Well drained due to elevated position on low dune. Despite the poorly structured clayey subsoil, saturation rarely lasts more than a couple of days.
- Fertility:** The natural fertility of the surface layers is low, but high in the lower clay layers as indicated by the exchangeable cation data. Due to the low clay content, surface fertility relies on maintaining high organic matter levels: native organic carbon levels on this cleared but uncropped dune are very low. Natural phosphorus, potassium, zinc, manganese, copper and boron levels are also low, although potassium and boron levels increase in the clayey subsoil.
- pH:** Neutral at the surface, alkaline in subsoil.
- Rooting depth:** Greater than 50 cm.
- Barriers to root growth:**
- Physical:** Abundant large hard carbonate nodules and the tight clay subsoil restrict root growth.
  - Chemical:** There are no limitations due to high levels of sodicity, boron, salt or pH - low nutrient status is likely to be the main limitation to root growth.
- Waterholding capacity:** Approximately 45 mm in the rootzone (moderately low). Limited in the subsoil by hard carbonate fragments. There is likely to be some lateral water movement along the top of the clay.
- Seedling emergence:** Good, except in seasons when water repellence is a problem.
- Workability:** Good.
- Erosion Potential:**
- Water:** Low.
  - Wind:** Moderately high (semi-arable).

## 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	SO <sub>4</sub> 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	
0-10	7.5	6.9	0	0.02	0.10	0.2	7	38	-	0.1	0.1	4	0.4	0.1	2.3	1.7	0.5	0.2	0.1	na
10-47	7.5	7.0	0	0.01	0.07	0.0	6	14	-	<0.1	0.1	2	<0.1	0.1	1.3	0.8	0.2	0.1	0.1	na
47-56	8.2	7.8	0.2	0.08	0.19	0.2	4	310	-	2.1	0.1	9	<0.1	0.1	19.7	13.0	4.9	0.4	1.5	1.9

**Note:** 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](#)

