

SHALLOW CALCAREOUS SANDY CLAY LOAM

(Mitchellville / Calcrete soil)

General Description: *Shallow calcareous sandy loam to sandy clay loam with variable rubble content over sheet calcrete within 50 cm*

Landform: Gently undulating plains with parallel sandhills.

Substrate: Ripon Calcrete.

Vegetation: Mallee scrub of *E. gracilis*, *E. oleosa* and *Melaleuca lanceolata*



Type Site:	Site No.:	EE071	1:50,000 mapsheet:	6230-1 (Cowell)
	Hundred:	Playford	Easting:	682770
	Section:	Block 1D	Northing:	6275870
	Sampling date:	22/1/1993	Annual rainfall:	280 mm average

Swale between parallel sandhills. Soft surface with 2-10% calcrete stones

Soil Description:

Depth (cm)	Description
0-20	Brown soft highly calcareous sandy clay loam with weak subangular blocky structure. Abrupt to:
20-40	Brown soft very highly calcareous sandy loam with more than 50% carbonate concretions. Sharp to:
40-	Class II calcrete.



Classification: Ceteric, Petrocalcic, Lithocalcic, Calcarosol; medium, slightly gravelly, loamy / loamy, shallow



Summary of Properties

- Drainage:** Rapidly drained. The soil never remains wet for more than a few hours.
- Fertility:** Inherent fertility is moderate, as indicated by the exchangeable cation data, moderate clay content and relatively high organic carbon levels. Phosphorus concentrations are low, and regular applications are needed. Nitrogen levels depend on legume component of pastures and cropping history. Copper and zinc deficiencies are possible given the alkaline surface reaction, but levels are satisfactory at the sampling site.
- pH:** Alkaline throughout.
- Rooting depth:** 50 cm in pit.
- Barriers to root growth:**
- Physical:** The calcrete prevents deeper root growth, except where fractures fill with soil from above, providing limited additional depth.
 - Chemical:** There are no chemical barriers.
- Waterholding capacity:** Approximately 40 mm in the rootzone.
- Seedling emergence:** Satisfactory.
- Workability:** Soft surface is easily worked, but stones interfere with and abrade equipment.
- Erosion Potential:**
- Water:** Low.
 - Wind:** Moderately 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	SO ₄ 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	
0-20	8.8	8.1	8	0.11	0.54	1.3	7	580	-	4.6	1.1	4.6	3.3	0.38	14.7	11.35	3.41	0.22	1.68	1.5
20-40	9.0	8.3	12	0.13	0.72	1.3	8	210	-	5.8	1.3	3.6	2.7	0.36	13.4	10.16	5.52	0.62	0.61	4.6

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](#)

