

SHALLOW LOAMY SAND OVER CALCRETE

General Description: *Loamy sand to sandy loam with variable rubble overlying calcrete at shallow depth*

Landform: Flats marked by depressions, stony rises and sandhills

Substrate: Bakara Calcrete.

Vegetation: Mallee



Type Site: Site No.: MM137

1:50,000 sheet: 6928 - 2 (Nobah)

Hundred: Mindarie

Annual rainfall: 300 mm

Sampling date: 22/02/99

Landform: Rise on a gently undulating plain

Surface: Soft with 2-10% calcrete stone (20-60 mm)

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Brown soft loamy sand. Sharp to:
10-17	Reddish brown soft light sandy loam. Clear to:
17-30	Reddish brown very highly calcareous light sandy loam with more than 50% carbonate rubble (20-200 mm). Abrupt to:
30-	Sheet calcrete.



Classification: Calcareous, Petrocalcic, Leptic Tenosol; medium, slightly gravelly, sandy / loamy, shallow

Summary of Properties

Drainage	Well drained. Soil is never wet for more than a few days.
Fertility	Inherent fertility is low, as indicated by the exchangeable cation data. Regular phosphorus and nitrogen applications are essential; zinc and copper deficiencies can be expected (both are deficient at the sampling site). Organic carbon levels are low.
pH	Neutral at the surface, alkaline with depth.
Rooting depth	30 cm in pit, but few roots below 17 cm.
Barriers to root growth	
Physical:	The calcrete severely restricts deeper root growth.
Chemical:	No chemical limitations above the calcrete.
Water holding capacity	Approximately 20 mm in root zone.
Seedling emergence:	Slight limitation due to stoniness.
Workability:	Soft / firm surface is easily worked, but stones interfere with and abrade equipment.
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	SO ₄ -S 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	6.8	-	0.08	1.1	0.61	11	272	-	1.0	0.2	-	7.7	0.4	6.0	3.5	0.88	< 0.1	0.64	1.7
0-10	7.3	7.0	< 0.1	0.10	1.4	0.60	8	310	-	1.0	0.1	-	6.2	0.5	4.6	2.7	0.85	< 0.1	0.52	2.2
10-17	8.4	7.8	0.6	0.13	1.9	0.56	2	410	-	1.3	0.2	-	2.3	0.2	9.6	6.9	1.2	< 0.1	1.0	1.0
17-30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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.