SHALLOW CALCAREOUS SANDY LOAM OVER CALCRETE

General Description: *Calcareous sandy loam to sandy clay loam with variable rubble and slight clay increase with depth over calcrete at shallow depth*

Landform: Stony flats

Substrate: Thick calcrete capping on Blanchetown Clay

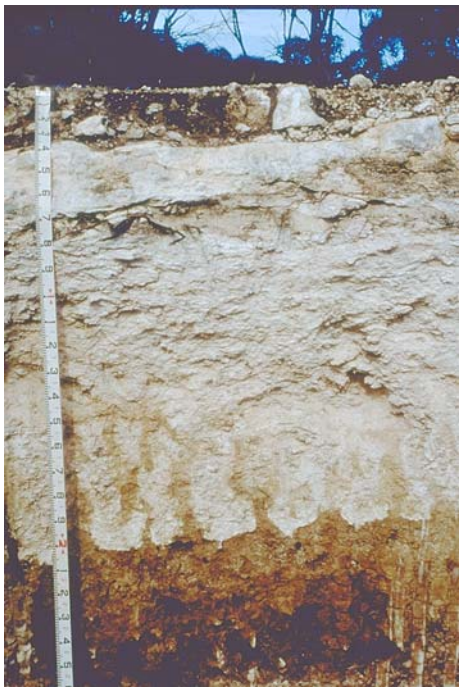
Vegetation: Mallee

Type Site: Site No.: MM026

1:50,000 sheet:	6828-2 (Bandon)	Hundred:	Vincent
Annual rainfall:	300 mm	Sampling date:	28/10/91
Landform:	Stony flat		
Surface:	Firm with more than 50% calcrete fragments (60-600 mm)		

Soil Description:

Depth (cm)	*Description*
0-9	Dark brown highly calcareous light sandy clay loam with more than 50% calcrete fragments (60-200 mm). Sharp to:
9-30	Brown very highly calcareous sandy clay loam with more than 50% calcrete fragments (60-200 mm). Clear to:
30-70	Sheet calcrete. Abrupt to:
70-150	Very pale brown very highly calcareous sandy clay loam with more than 50% calcrete nodules (20-60 mm). Diffuse to:
150-205	Very pale brown very highly calcareous light clay with 20-50% calcrete nodules (20-60 mm). Abrupt to:
205-280	Orange and yellowish brown heavy clay with strong coarse angular blocky structure.



Classification: Ceteric, Petrocalcic, Lithocalcic Calcarosol; thin, very gravelly, loamy / clay loamy, shallow

Summary of Properties

Drainage Well drained. Calcrete may restrict the percolation of heavy rain for a few days.

Fertility Inherent fertility is moderate, as indicated by the exchangeable cation data and high organic carbon values. Apart from the usual phosphorus and nitrogen deficiencies, low zinc is also likely to be a problem due to the high carbonate content.

pH Alkaline at the surface, strongly alkaline with depth.

Rooting depth 30 cm in pit.

Barriers to root growth

Physical: The calcrete is essentially an impenetrable barrier. Ripping will be very expensive and severely disrupt the soil surface.

Chemical: There are no chemical barriers above the calcrete.

Water holding capacity 10 mm in pit.

Seedling emergence: Slight limitation due to stoniness.

Workability: Firm surface is easily worked, but stones interfere with tillage, abrade implements, and are continually brought to the surface by cultivation.

Erosion Potential

Water: Low.

Wind: Low.

Laboratory Data

Depth cm	pH H_2O	pH $CaC1_2$	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	
0-9	8.2	7.9	7.4	0.12	0.62	2.1	10	260	1.6	0.3	8	5.1	0.3	16.9	16.6	2.3	0.24	0.88	1.4
9-30	8.3	8.0	12.7	0.21	1.4	2.4	10	179	3.0	0.4	8	4.2	0.3	17.6	16.3	3.9	0.87	0.69	4.9
30-70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
70-100	9.4	8.7	68.5	0.26	1.5	1.0	4	202	6.8	0.4	2	1.7	0.2	5.7	3.1	4.1	1.76	0.54	30.9
100-150	9.6	8.9	72.0	1.93	16.6	0.6	<4	339	12.7	0.3	2	0.6	0.1	6.7	1.3	3.9	4.42	0.87	66.0
150-205	9.1	8.7	41.5	4.18	33.4	0.7	<4	572	18.1	0.3	3	1.0	0.1	12.8	1.0	6.7	8.28	1.52	64.7
205-280	7.6	7.1	0.1	2.06	9.1	0.1	<4	613	22.7	0.3	1	<0.1	0.1	22.8	0.5	9.3	11.96	1.69	52.5

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.