SHALLOW CALCAREOUS SANDY CLAY LOAM

General Description: *Calcareous sandy loam to sandy clay loam with variable rubble, becoming more clayey and calcareous with depth*

Landform: Gently undulating plains.

Substrate: Calcreted clayey lagoonal sediments (Padthaway Formation).

Vegetation: Mallee

Type Site:

Site No.:	MM079	1:50,000 mapsheet:	6826-1 (Coonalpyn)
Hundred:	Coneybeer	Easting:	398400
Section:	22	Northing:	6049100
Sampling date:	1992	Annual rainfall:	450 mm average

Flat, firm surface with 20-50% calcrete stone (60-600 mm).

Soil Description:

Depth (cm)	*Description*
0-8	Very dark greyish brown moderately calcareous friable granular sandy clay loam with 20-50% calcrete nodules. Abrupt to:
8-12	Brown moderately calcareous massive friable sandy clay with 10-20% calcrete nodules. Clear to:
12-45	Rubbly calcrete with a light brown sandy clay loam matrix. Gradual to:
45-70	White very highly calcareous massive sandy clay loam with 20-50% calcrete nodules. Diffuse to:
70-120	Yellow and light olive grey highly calcareous sandy medium clay with coarse angular blocky structure. Diffuse to:
120-170	Olive yellow and light olive grey sandy medium clay with coarse blocky structure and 10-20% soft calcareous segregations.

Classification: Endohypersodic, Regolithic, Lithocalcic Calcarosol; medium, moderately gravelly, clay loamy / clayey, moderate

Summary of Properties

Drainage: Well to moderately well-drained. Soil is never saturated for more than a week.

Fertility: Inherent fertility is moderate, as indicated by the exchangeable cation data. Phosphorus and nitrogen deficiencies are widespread. Copper and zinc levels are low at the sampling site. Manganese shortages are likely.

pH: Alkaline at the surface, strongly alkaline with depth.

Rooting depth: 60 cm in pit.

Barriers to root growth:

Physical: Calcrete rubble impedes root growth to a large extent.

Chemical: High pH from 45 cm restricts root growth.

Waterholding capacity: 55 mm in rootzone.

Seedling emergence: Satisfactory, although surface wetness occasionally reduces plant establishment.

Workability: Fair. Relatively heavy surface is sometimes too wet for effective working.

Erosion Potential:

Water: Low.

Wind: Low.

Laboratory Data

Depth cm	pH H_2O	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	8.5	7.8	4	0.12	0.69	1.3	35	500	1.3	<0.05	4.5	2.8	<0.06	18.5	14.16	2.34	0.06	1.48	0.3
0-8	8.4	7.8	5	0.12	0.68	1.4	29	660	1.1	0.06	6.2	3.3	<0.06	16.8	12.74	2.13	0.05	1.83	0.3
8-12	8.5	7.8	3	0.11	0.41	0.8	8	430	1.1	0.4	10	1.5	0.28	21.9	15.96	3.24	0.14	1.40	0.6
12-45	9.0	8.1	43	0.11	0.47	0.4	4	170	1	0.19	6.4	0.41	0.25	7.7	6.50	2.43	0.14	0.54	1.8
45-70	9.6	8.4	58	0.12	0.57	1.4	<2	180	1	0.09	1.5	0.23	0.08	3.9	2.47	2.90	0.36	0.46	9.2
70-120	9.9	8.5	44	0.38	0.75	1.2	<2	590	6.8	0.13	2.3	0.22	<0.06	16.2	1.57	9.51	4.69	1.61	29.0
120-170	10. 0	8.5	17	0.51	0.73	0.3	<2	620	7	0.21	3.5	0.13	<0.06	23.2	1.81	10.93	8.43	1.70	36.3

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