SHALLOW SAND OVER SANDY CLAY ON CALCRETE

General Description: *Medium thickness sand over a thin brown sandy clay overlying calcrete*

Landform: Undulating to rolling rises and low hills overlain by irregular sandhills

Substrate: Calcreted calcarenite (Bridgewater Formation).

Vegetation: Mallee

Type Site:

Site No.:	MM094	1:50,000 mapsheet:	6726-2 (Magrath Flat)
Hundred:	Glyde	Easting:	363950
Section:	44	Northing:	6021950
Sampling date:	1992	Annual rainfall:	510 mm average

Slope of undulating low hill, 15% slope. Soft surface, no stones.

Soil Description:

Depth (cm)	*Description*
0-12	Very dark greyish brown loose loamy sand. Abrupt to:
12-38	Very pale brown (bleached) sand. Sharp to:
38-55	Yellowish brown firm massive sandy clay. Clear to:
55-110	Laminar calcrete. Gradual to:
110-130	Very pale brown very highly calcareous hard loamy sand (weak calcarenite).

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

Summary of Properties

Drainage: Rapidly drained. Soil rarely remains wet for more than a few hours.

Fertility: Inherent fertility is low, as indicated by the exchangeable cation data. Phosphorus applications are needed regularly and nitrogen status depends on legume component of pastures. Zinc and copper deficiencies occur from time to time - both are marginal at sampling site. Manganese may be required by lupins. Organic carbon level is very low at sampling site.

pH: Neutral at the surface, alkaline at depth.

Rooting depth: 55 cm in pit.

Barriers to root growth:

Physical: The calcrete layer effectively prevents further root growth.

Chemical: There are no chemical barriers.

Waterholding capacity: 50 mm in rootzone.

Seedling emergence: Satisfactory, but can be reduced by water repellence in dry years.

Workability: Soft / loose surface is easily worked.

Erosion Potential:

Water: Moderate due to slope.

Wind: Moderately low to moderate.

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	7.6	7.1	<1	0.05	0.38	0.3	30	67	0.83	0.18	20	0.91	0.46	5.1	5.38	0.64	0.09	0.23	1.8
0-12	7.5	7.0	<1	0.05	0.36	1	25	78	0.5	0.13	23	1.2	0.85	7.0	7.11	0.77	0.08	0.20	1.1
12-38	7.8	7.3	<	0.03	0.23	0.2	7	50	<0.40	<0.05	11	0.11	<0.06	2.0	2.28	0.35	0.08	0.11	na
38-55	8.6	7.7	2	0.11	0.47	0.3	4	200	1.0	0.07	18	0.18	0.07	9.2	7.48	1.97	0.23	0.60	2.5
55-110	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	
110-130	9.3	8.2	55	0.16	1.16	0.2	<2	93	1.2	<0.05	1.6	0.61	0.5	1.7	1.93	1.05	0.30	0.23	17.6

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