SHALLOW SANDY LOAM OVER CALCRETE

General Description: *Non calcareous sandy loam with variable rubble and a weakly developed more clayey subsoil over sheet or rubbly calcrete at shallow depth*

Landform: Flat to gently undulating plains.

Substrate: Lagoonal limestone (Bungunnia Limestone equivalent)

Vegetation: Melaleuca acuminata scrub

Type Site:

Site No.:	MM072	1:50,000 mapsheet:	6827-2 (Buccleuch)
Hundred:	Peake	Easting:	406850
Section:	75	Northing:	6074050
Sampling date:	1992	Annual rainfall:	400 mm average

Flat with a firm surface and 20-50% calcrete stones (60-200 mm)

Soil Description:

Depth (cm)	*Description*
0-7	Dark brown soft heavy sandy loam with 2-10% calcrete nodules (20-60 mm). Abrupt to:
7-13	Reddish brown friable light sandy clay loam with 2-10% calcrete nodules (20-60 mm). Sharp to:
13-65	Calcrete pan. Clear to:
65-100	Reddish yellow very highly calcareous massive sandy clay loam with 20-50% calcrete nodules (20-60 mm). Clear to:
100-125	Limestone. Clear to:
125-170	Light olive grey very highly calcareous firm sandy clay with 10-20% calcrete nodules and 10-20% clay pockets. Clear to:
170-200	Pale yellow very highly calcareous sandy clay with 20-50% calcrete nodules and 20-50% light olive grey clay pockets.

Classification: Basic, Petrocalcic, Leptic Tenosol; thin, moderately gravelly, loamy / clay loamy, very shallow

Summary of Properties

Drainage: Well drained. Soil is never saturated for more than a few days.

Fertility: Inherent fertility is moderate, as indicated by the exchangeable cation data. Regular phosphorus and nitrogen applications are essential; zinc and copper deficiencies can be expected, and manganese may be required for cereals. Organic carbon levels are satisfactory.

pH: Neutral to slightly alkaline at the surface, strongly alkaline with depth.

Rooting depth: 13 cm in pit, although a few roots penetrate deeper into the calcrete.

Barriers to root growth:

Physical: The calcrete severely restricts deeper root growth.

Chemical: No chemical limitations above the calcrete.

Waterholding capacity: 15 mm in rootzone.

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_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	7.4	7.0	<1	0.10	0.47	1.0	24	540	1.3	-	-	-	-	8.4	6.58	1.06	0.08	1.05	1.0
0-7	7.6	7.2	<1	0.10	0.46	1.4	24	560	1.5	-	-	-	-	10.4	8.57	1.11	0.12	0.97	1.2
7-13	8.0	7.6	1	0.12	0.46	0.85	9.7	290	1.6	-	-	-	-	10.4	9.40	1.56	0.12	0.69	1.2
13-65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
65-100	9.3	8.5	34	0.85	5.66	0.09	3.6	530	4.3	-	-	-	-	12.0	4.92	4.99	4.83	1.31	40.3
100-125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
125-170	9.5	8.7	31	1.18	3.43	0.04	<2.0	1100	11.6	-	-	-	-	29.1	4.06	12.33	11.77	2.99	40.4
170-210	9.6	8.4	46	0.99	3.82	0.02	<2.0	1000	7.4	-	-	-	-	17.8	3.16	7.93	7.91	2.05	44.4

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