

DEEP RUBBLLY CALCAREOUS CLAY

General Description: *Calcareous clay loam to light clay with a rubbly layer at shallow depth, grading to a very highly calcareous clay*

Landform: Gently undulating rises.

Substrate: Red Tertiary (Hindmarsh) Clay.

Vegetation:



Type Site: Site No.: CY030

1:50,000 sheet: 6430-3 (Wallaroo)	Hundred: Wallaroo
Annual rainfall: 365 mm	Sampling date: 03/08/94
Landform: Crest of low rise, 2% slope	
Surface: Firm with 10-20% calcrete stone (20-60 mm)	

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-15	Dark brown soft moderately calcareous light clay with moderate granular structure. Clear to:
15-40	Brown soft highly calcareous light medium clay with fine granular structure and 20-50% carbonate nodules (6-20 mm). Clear to:
40-90	Strong brown soft very highly calcareous light medium clay with fine granular structure and 20-50% carbonate nodules (6-20 mm). Gradual to:
90-140	Red friable slightly calcareous medium heavy clay with weak angular blocky structure.



Classification: Hypervescent, Pedal, Supracalcic Calcarosol; medium, gravelly, clayey / clayey, moderate

Summary of Properties

Drainage	Well to moderately well drained. The soil may remain wet for up to a week following heavy or prolonged rainfall.
Fertility	Inherent fertility is moderate, as indicated by the exchangeable cation data. High clay and organic matter contents provide ample nutrient retention capacity, but availability, particularly of trace elements, is reduced by the high carbonate content. Phosphorus applications are regularly required - concentrations are high at sampling site. Nitrogen levels depend on legume content of pastures and cropping history. Concentrations of other nutrients appear to be satisfactory.
pH	Alkaline throughout.
Rooting depth	90cm in pit.
Barriers to root growth	
Physical	The clayey subsoil impedes root growth to some extent, but is not a significant limitation to root growth.
Chemical	High pH, sodicity and boron concentrations, and moderately high salinity restrict deep subsoil root growth. Low trace element availability may also contribute.
Water holding capacity	Approximately 70 mm in rootzone.
Seedling emergence	Fair to satisfactory.
Workability:	Fair. Clayey surface may be hard and prone to shattering if worked too dry, and may become intractable when wet.
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	8.4	7.8	10.7	0.18	1.11	2.6	50	575	-	3.0	6.89	6	19.0	2.69	19.3	15.5	1.85	0.29	2.27	1.5
0-15	8.5	7.8	13.3	0.18	0.85	2.4	34	506	-	3.0	5.95	6	12.6	2.27	19.2	14.2	1.84	0.61	1.84	3.2
15-40	8.9	8.0	37.5	0.61	3.84	1.3	8	117	-	8.8	2.57	7	4.1	0.38	15.9	10.0	4.97	2.34	0.75	14.7
40-90	9.3	8.4	51.1	1.62	12.33	1.1	6	135	-	24.5	2.41	5	2.0	0.36	12.3	3.83	5.91	4.45	0.67	36.2
90-140	9.2	8.5	24.8	1.90	9.10	0.3	<4	321	-	24.3	2.10	6	2.1	0.27	26.5	6.12	11.1	9.86	1.22	37.2

Note: Paddock sample bulked from 20 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