CLAY LOAM OVER RED CLAY

General Description: *Reddish brown clay loam overlying a red prismatic structured clay subsoil, calcareous at depth with abundant quartzite stones throughout*

Landform: Outwash fans and plains associated with quartzite ranges

Substrate: Heavy clay sediments with abundant quartzite stones and soft carbonate segregations

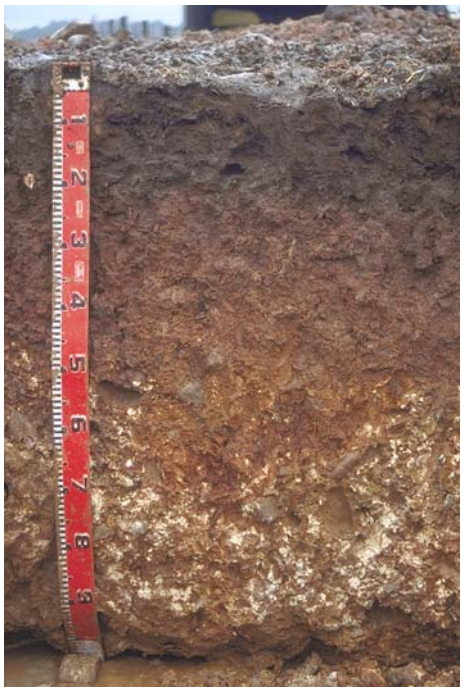
Vegetation: Red gum / box woodland

Type Site: Site No.: CU042

1:50,000 sheet:	6532-3 (Melrose)	Hundred:	Wongyarra
Annual rainfall:	580 mm	Sampling date:	06/06/94
Landform:	Gently sloping fan, 2% slope		
Surface:	Hard setting with 20% quartzite stones		

Soil Description:

Depth (cm)	*Description*
0-18	Dark reddish brown clay loam with 2-10% quartzite stones. Abrupt to:
18-30	Red and reddish brown heavy clay with moderate coarse prismatic structure and 2-10% quartzite stones. Abrupt to:
30-50	Red heavy clay with strong coarse prismatic structure and 2-10% quartzite stones. Clear to:
50-90	Red and dark brown mottled highly calcareous heavy clay with strong angular blocky structure, 20-50% quartzite stones and 10-20% soft carbonate segregations (Class I carbonate). Gradual to:
90-120	Brown and red mottled highly calcareous medium heavy clay with 20-50% quartzite stones and 2-10% soft carbonate segregations.



Classification: Sodic, Calcic, Red Chromosol; medium, slightly gravelly, clay loamy / clayey, deep

Summary of Properties

Drainage Moderately well drained. The heavy dispersive clay prevents free water movement and the soil may remain wet for a week or so following rain.

Fertility The soil has a very high nutrient retention capacity (high CEC). All measured elements are well supplied, with phosphorus levels exceptionally high. Organic carbon (and therefore total nitrogen reserves) are satisfactory.

pH Neutral at the surface, alkaline with depth.

Rooting depth 90 cm in pit.

Barriers to root growth

Physical: The very firm clay may limit optimal root penetration.

Chemical: There are no chemical barriers to root growth, except for marginal sodicity at the base.

Water holding capacity Approximately 80 mm. The heavy clay has a high wilting point and withholds significant amounts of water.

Seedling emergence Fair due to the tendency of the surface to set down and seal over.

Workability Fair due to the poor soil surface condition. The soil is sticky when over wet and becomes very hard when dry.

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	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	6.8	6.6	0	0.16	0.76	1.9	62	428	-	1.5	1.4	54	28.5	2.2	21.8	16.2	3.7	0.33	1.39	1.5
0-18	6.6	6.4	0	0.13	0.98	1.4	98	507	-	1.3	1.0	36	10.2	3.7	13.4	10.9	2.1	0.16	1.54	1.2
18-30	7.2	6.7	0.1	0.12	0.32	0.7	19	1503	-	4.5	1.4	26	6.4	0.3	32.9	17.9	11.3	1.37	4.91	4.2
30-50	8.4	7.9	1.1	0.23	0.43	0.5	12	1397	-	5.5	1.1	12	3.2	0.3	37.7	18.3	11.7	2.01	3.94	5.3
50-90	9.0	8.2	19.3	0.29	0.71	0.3	5	300	-	9.2	0.8	10	2.2	0.4	29.1	13.7	10.6	3.86	0.98	13.3
90-120	8.9	8.2	6.4	0.49	1.76	0.1	6	206	-	9.0	0.9	13	1.9	0.4	31.6	15.3	11.5	5.78	0.65	18.3

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.