

LOAM OVER RED CLAY ON ROCK

General Description: *Hard loam to clay loam abruptly overlying a red well structured clay grading to fine grained weathering basement rock*

Landform: Rolling low hills

Substrate: Fine grained basement rock - siltstone, phyllite slate, shale etc

Vegetation: Stringybark (*Euc. obliqua*) forest

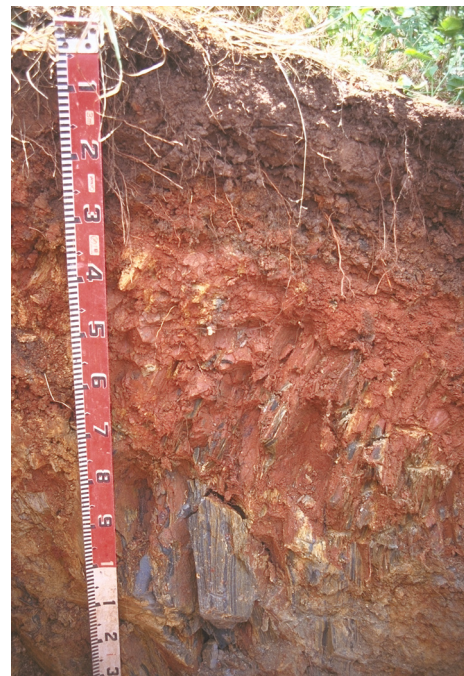


Type Site:	Site No.:	CH125	1:50,000 mapsheet:	6628-2 (Onkaparinga)
	Hundred:	Onkaparinga	Easting:	301500
	Section:	71	Northing:	6135450
	Sampling date:	02/11/00	Annual rainfall:	925 mm average

Midslope of rolling low hills, 25% slope. Hard setting surface, with no stones. Apple orchard.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Dark brown friable loam with strong granular structure and 2-10% phyllite fragments (20-60 mm). Clear to:
10-25	Pink (bleached) friable clay loam with weak granular structure and 10-20% phyllite fragments (20-60 mm). Clear to:
25-50	Red firm medium heavy clay with strong fine polyhedral structure and 10-20% phyllite fragments (20-60 mm). Diffuse to:
50-80	Red firm medium clay with strong fine polyhedral structure and 20-50% phyllite fragments (60-200 mm). Diffuse to:
80-120	Yellowish red firm light clay in cleavages in weathering phyllite.



Classification: Bleached, Eutrophic, Red Chromosol; medium, slightly gravelly, loamy / clayey, deep



Summary of Properties

Drainage:	Moderately well drained. Clayey subsoil perches water for up to a week at a time.
Fertility:	Inherent fertility is moderate, as indicated by the exchangeable cation data. At the sampling site, concentrations of phosphorus, potassium, sulphur and boron are low. Copper and zinc levels are excessive. Calcium : magnesium ratio is slightly high, but satisfactory. Organic carbon levels are high.
pH:	Neutral throughout.
Rooting depth:	120 cm in pit, but few roots below 80 cm. Most root activity is in upper 25 cm.
Barriers to root growth:	
Physical:	The clayey subsoil, although well structured, appears to be impeding strong root growth. Where hard rock is closer to the surface (as is usual on this land type), it will present a barrier.
Chemical:	There are no chemical barriers to root growth.
Waterholding capacity:	Approximately 120 mm (total available), and approximately 50 mm (readily available).
Seedling emergence:	(for cover crops) Fair to good, depending on degree of hard setting.
Workability:	Fair to good.
Erosion Potential:	
Water:	High.
Wind:	Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC1:5 dS/m	Cl mg/kg	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP	Ext Al mg/kg
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K		
Orchard	6.9	6.1	0	0.07	10	2.7	19	172	6.9	1.0	41.9	20.2	38.1	19.1	-	11.90	1.95	0.20	0.41	-	ns
0-10	6.9	6.1	0	0.09	44	3.1	17	106	5.4	1.0	35.7	19.4	34.6	16.4	-	11.15	1.98	0.27	0.26	-	ns
10-25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25-50	7.0	5.9	0	0.08	13	0.4	2	82	47.5	0.5	2.5	37.5	2.7	1.3	-	4.23	5.81	0.41	0.23	-	ns
50-80	6.5	6.0	0	0.09	22	0.2	2	82	62.1	0.4	1.1	26.3	1.0	0.8	-	3.54	7.46	0.36	0.24	-	ns
80-120	6.7	5.9	0	0.08	34	0.2	1	75	40.5	0.4	1.2	29.5	2.1	1.3	-	2.20	7.57	0.57	0.18	-	ns

Note: Orchard sample bulked from cores (0-10 cm) taken around the pit.

Further information: [DEWNR Soil and Land Program](#)

