

ACIDIC SANDY LOAM OVER RED CLAY ON ROCK

General Description: *Medium to thick dark sandy loam overlying a friable red, orange and brown clay grading to gneissic parent rock within 100 cm*

- Landform:** Rises and low hills
- Substrate:** Albitized gneiss of the Barossa Complex
- Vegetation:** Euc. camaldulensis - Euc. leucoxyton woodland



- Type Site:** Site No.: CH106
- | | |
|--|-------------------------|
| 1:50,000 sheet: 6628-2 (Onkaparinga) | Hundred: Para Wirra |
| Annual rainfall: 775 mm | Sampling date: 03/03/97 |
| Landform: Mid slope of an undulating rise, 10% slope | |
| Surface: Firm with no stone | |

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-20	Dark brown soft sandy loam with moderate granular structure. Clear to:
20-40	Reddish brown firm light sandy clay loam with weak granular structure and 20-50% gneiss gravel and stone. Abrupt to:
40-60	Red and orange friable medium clay with strong polyhedral structure and 10-20% gneiss stone and gravel. Clear to:
60-100	Orange and red firm fine sandy clay loam with weak polyhedral structure and more than 50% weathering gneiss fragments. Gradual to:
100-130	Weathering gneiss.



Classification: Melanic, Eutrophic, Red Chromosol; thick, slightly gravelly, loamy / clayey, deep

Summary of Properties

Drainage Well drained. The soil is unlikely to remain saturated for more than a day or so after heavy rain.

Fertility All measured nutrient elements are well supplied in the surface soil and organic carbon levels are satisfactory.

pH Acidic at the surface, neutral with depth.

Rooting depth 100 cm in pit, with a few roots in the weathering rock.

Barriers to root growth

Physical: None, except where bedrock is close to the surface.

Chemical: None, although there is sodium concentration at the base of the profile (possibly due to irrigation).

Water holding capacity Approximately 80 mm in root zone.

Seedling emergence: Good.

Workability: Prone to compaction, but easily worked.

Erosion Potential

Water: Moderate, due to the slope.

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 (EDTA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Row	6.4	5.7	0	0.16	-	2.6	112	428	20	1.5	103	257	54.2	18.4	12.8	9.0	1.8	0.16	0.77	1.2
0-20	5.6	4.8	0	0.11	-	2.2	87	331	16	0.9	73	256	40.6	10.2	11.0	6.2	0.9	0.09	0.56	0.8
20-40	6.4	5.4	0	0.02	-	0.5	7	146	2.4	0.3	6.6	68	2.8	1.1	8.0	4.4	1.9	0.21	0.14	2.6
40-60	6.5	5.5	0	0.04	-	0.7	2	152	2.8	0.3	0.98	96	1.3	1.3	19.3	8.8	7.3	0.73	0.24	3.8
60-100	6.9	6.0	0	0.06	-	0.2	35	152	17	0.5	0.21	45	1.7	1.2	10.7	5.2	9.9	1.27	0.08	11.9
100-130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Row sample bulked from 20 cores (0-10 cm) taken along tree lines near 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.