

SHALLOW SILTY LOAM OVER RED CLAY ON ROCK

General Description: *Gravelly sandy loam to loam with an intermittent red clayey subsoil grading to weathering basement rock shallower than 50 cm*

Landform: Slopes of undulating to rolling low hills and rises.

Substrate: Fine grained basement rock – phyllite of the Saddleworth Formation at this site.

Vegetation: -

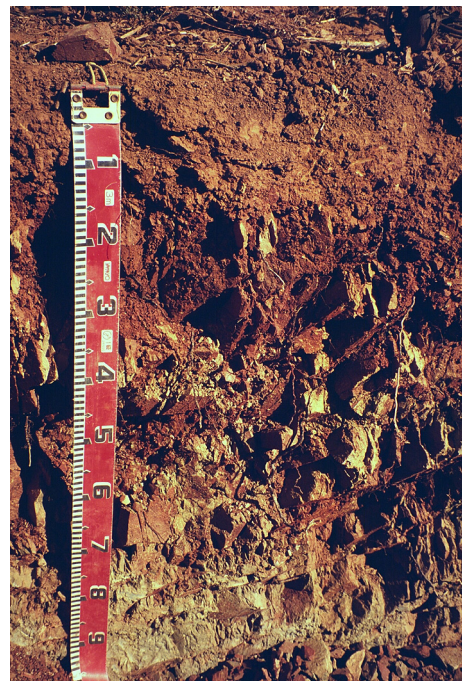


Type Site:	Site No.:	CL056	1:50,000 mapsheet:	6629-2 (Kapunda)
	Hundred:	Nuriootpa	Easting:	306500
	Section:	103	Northing:	6181060
	Sampling date:	22/04/08	Annual rainfall:	515 mm average

Upper slope (3%) of rolling low hills. Firm surface with 2-10% phyllite stones.

Soil Description:

Depth (cm)	Description
0-12	Dark reddish brown firm silty loam with moderate fine granular structure and 10-20% phyllite fragments to 20 mm. Abrupt to:
12-30	Dark red firm light clay with strong fine polyhedral structure and more than 50% phyllite fragments to 60 mm. Gradual to:
30-65	90% weathering phyllite with pockets of dark red firm silty clay loam with moderate very fine polyhedral structure. Gradual to:
65-100	Moderately hard phyllite.



Classification: Eutrophic, Subnatric, Red Sodosol; medium, gravelly, silty / clayey, shallow



Summary of Properties

Drainage:	Well drained. The soil is rarely likely to remain wet for more than a day or so following heavy or prolonged rainfall.
Fertility:	Inherent fertility is moderately high, as indicated by the exchangeable cation data. Both topsoil and subsoil have ample nutrient retention capacity. Data indicate satisfactory levels of all tested nutrients.
pH:	Neutral in the surface, alkaline with depth.
Rooting depth:	There is good root growth to 65 cm, although confined to cleavages in weathering rock below 30 cm.
Barriers to root growth:	
Physical:	The hard basement rock determines root zone depth. Typically, this depth is highly variable. There are no constraints in the soil profile.
Chemical:	There are no apparent chemical barriers. Mild sodicity is caused by irrigation water.
Waterholding capacity:	(Estimates for potential rootzone of irrigated crops) Total available: 30 mm Readily available: 15 mm
Seedling emergence:	Satisfactory.
Workability:	Satisfactory.
Erosion Potential:	
Water:	Moderately low.
Wind:	Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC 1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	Cl mg/kg	SO ₄ -S mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est. ESP
												Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-12	7.0	6.4	0	0.12	1.19	1.65	103	706	121	12.3	0.8	20.8	97	131	7.99	14.5	10.3	2.7	0.73	0.76	5.1
12-30	7.1	6.1	0	0.07	0.68	0.67	10	193	67	11.4	1.2	2.85	40	44.0	0.62	18.3	10.8	5.92	1.11	0.50	6.1
30-65	7.5	6.7	0	0.07	0.80	0.24	3	149	72	17.1	1.2	0.6	53	13.3	0.23	13.6	7.26	5.27	0.86	0.22	6.3
65-100	8.8	7.8	0	0.09	0.90	0.12	2	224	51	16.2	0.7	0.42	68	10.6	0.31	12.9	7.77	3.98	1.00	0.10	7.8

Note: Sum of cations, in a neutral to alkaline soil, approximates the CEC (cation exchange capacity), 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, in this case estimated by the sum of cations.

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

