

LOAM OVER WELL STRUCTURED RED CLAY

General Description: *Hard setting sandy loam to loam over a well structured red clay, calcareous with depth*

Landform: Gently sloping pediments below undulating low hills.

Substrate: Clayey alluvium derived from fine grained basement rocks. Contains fine carbonates leached in from aeolian deposition.

Vegetation: -



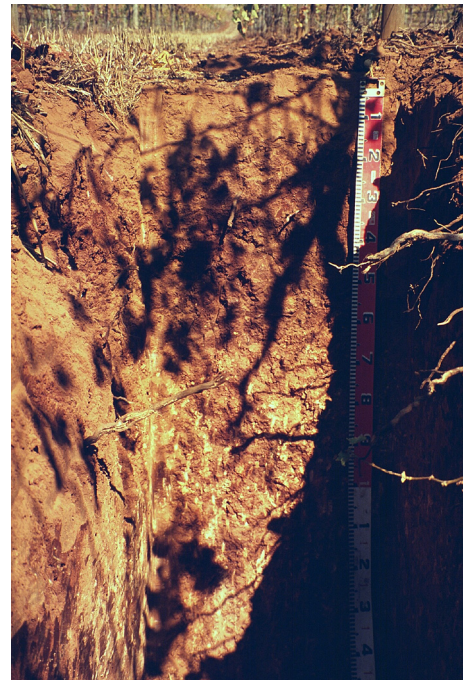
Type Site:

Site No.:	CL044D	1:50,000 mapsheet:	6628-1 (Barossa)
Hundred:	Nuriootpa	Easting:	306560
Section:	101	Northing:	6180180
Sampling date:	22/04/08	Annual rainfall:	500 mm average

Lower slope of gently inclined pediment (6% slope). Hard setting surface with no stones.

Soil Description:

Depth (cm)	Description
0-13	Dark reddish brown hard massive silty loam. Abrupt to:
13-25	Dark red hard medium clay with moderate medium subangular blocky structure, and 2-10% quartz fragments to 20 mm. Abrupt to:
25-55	Dark red hard medium heavy clay with strong medium angular blocky structure. Clear to:
35-80	Dark red very hard moderately calcareous medium heavy clay with strong medium angular blocky structure and 10-20% fine and nodular carbonate segregations. Diffuse to:
80-150	Dark red very hard medium heavy clay with strong medium angular blocky structure and 10-20% fine and nodular carbonate segregations.



Classification: Haplic, Calcic, Red Chromosol; medium, non-gravelly, silty / clayey, deep



Summary of Properties

Drainage: Moderately well drained. The clayey subsoil perches water, saturating the lower part of the topsoil for a week or at a time following heavy or prolonged rainfall. This is only likely to affect grape vines in the event of heavy summer rain.

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. Elevated copper levels in the topsoil are possibly old pesticide residues.

pH: Slightly alkaline at the surface (irrigation and/or road dust effect), alkaline with depth. Natural surface pH likely to be neutral, or slightly acidic.

Rooting depth: There are some roots to 150 cm, moderate growth between 55 and 80 cm, with most growth in the upper 55 cm.

Barriers to root growth:

Physical: There are no apparent significant physical barriers to root growth.

Chemical: There are no apparent chemical barriers. Mild sodicity in the topsoil and subsurface, and small peaks in salinity and chloride in the 13-25 cm layer are caused by irrigation water.

Waterholding capacity: (Estimates for potential rootzone of irrigated crops)

Total available: 145 mm

Readily available: 65 mm

Seedling emergence: Fair due to hard setting sealing surface.

Workability: Fair. Surface tends to shatter if worked too dry, and puddle if worked too wet.

Erosion Potential:

Water: Moderate.

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	
0-13	7.6	7.0	0	0.10	1.13	0.95	45	553	84	12.8	1.3	17.6	98	290	4.09	9.6	5.06	2.37	0.76	1.45	7.9
13-25	6.9	6.1	0	0.18	1.73	0.70	7	566	252	17.9	2.3	5.57	71	209	0.74	17.7	8.79	5.94	1.48	1.47	8.4
25-55	8.5	7.7	1.2	0.14	0.77	0.48	3	506	66	10.0	3.2	3.82	29	104	0.41	27.3	15.7	9.12	1.22	1.27	4.5
55-80	9.1	8.2	18.6	0.15	0.87	0.26	2	443	91	16.5	3.5	1.15	7	7.51	0.25	25.4	12.6	10.9	0.86	1.07	3.4
80-150	9.1	8.3	14.1	0.17	1.15	0.08	1	481	134	12.2	4.1	1.10	6	5.50	0.32	22.8	9.62	10.9	1.19	1.14	5.2

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](#)

