

THICK LOAMY SAND OVER RED SANDY CLAY LOAM

General Description: *Thick to very thick reddish loamy sand over a reddish brown (light) sandy clay loam, weakly calcareous with depth, grading to coarse textured alluvium*

Landform: Alluvial plains of the Bremer River.

Substrate: Sandy loam alluvium.

Vegetation:



Type Site: Site No.: CH162A

1:50,000 sheet: 6727-3 (Alexandrina) Hundred: Strathalbyn

Annual rainfall: 400 mm

Sampling date: 28/11/06

Landform: Alluvial plain, 0% slope.

Surface: Firm with no stones.

Soil Description:

Depth (cm)	Description
0-15	Reddish brown soft massive loamy sand. Gradual to:
15-40	Yellowish red soft massive loamy sand. Gradual to:
40-80	Yellowish red soft massive loamy sand. Clear to:
80-110	Dark reddish brown and reddish brown friable massive light sandy clay loam. Diffuse to:
110-150	Dark reddish brown and yellowish red firm sandy clay loam with weak subangular blocky structure and minor fine carbonate segregations. Diffuse to:
150-180	Strong brown friable massive moderately calcareous sandy loam with 2-10% fine carbonate segregations.



Classification: Sodic, Calcic, Red Kandosol; medium, non-gravelly, sandy / clay loamy, very deep

Summary of Properties

- Drainage:** Well drained. No part of the soil is likely to be saturated for more than a day or so following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is low, due to sandiness of topsoil. Concentrations of phosphorus are low, and copper marginal at the sampling site. Unusually high surface sulphur levels may be the residual of a past gypsum application.
- pH:** Neutral at the surface, alkaline at depth.
- Rooting depth:** 180 cm in sampling pit, but few roots below 150 cm.
- Barriers to root growth:**
- Physical:** There are no apparent physical restrictions.
 - Chemical:** The only likely chemical barrier is low nutrient retention capacity and nutrient status below the surface soil.

Water holding capacity: (Estimates for potential root zone of grape vines)

Total available: 160 mm
 Readily available: 80 mm

- Seedling emergence:** Satisfactory.
- Workability:** The soft sandy surface is easily worked.

Erosion Potential

- Water:** Low.
- Wind:** Moderately 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	React Fe 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	
0-15	7.0	6.5	0	0.210	2.33	0.94	12	199	88	69.6	1.0	401	2.21	63	78.5	4.35	7.1	5.18	0.98	0.48	0.46	6.8
15-40	7.5	6.9	0	0.062	1.05	0.07	2	204	29	5.1	0.5	465	1.62	50	82.5	0.12	4.0	2.25	0.87	0.54	0.33	13.5
40-80	8.4	7.2	0	0.065	1.08	0.23	5	280	31	11.9	0.6	454	2.17	29	75.1	0.22	5.0	2.63	1.48	0.65	0.21	13.1
80-110	8.6	7.5	0	0.110	1.47	0.26	2	201	47	19.6	1.2	591	2.71	43	68.0	0.21	8.4	3.99	2.82	1.25	0.36	14.8
110-150	8.9	8.1	0	0.317	2.65	0.33	3	333	141	35.6	2.1	513	2.89	32	80.5	0.20	13.7	6.50	4.54	2.17	0.51	15.8
150-180	9.4	8.2	4.8	0.293	2.38	0.25	5	304	175	33.1	1.6	442	1.54	11	7.91	0.18	12.3	7.79	2.35	1.76	0.35	14.4

- 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.