

VERY THICK SAND OVER RED CLAY

General Description: *Thick to very thick reddish brown soft sand to loamy sand with a paler coloured subsurface layer, over a red light clay, calcareous with depth*

Landform: Alluvial plains of the Bremer River.

Substrate: Medium to fine grained alluvium.

Vegetation:



Type Site:	Site No.:	CH164	1:50,000 mapsheet:	6727-3 (Alexandrina)
	Hundred:	Strathalbyn	Easting:	320390
	Section:	71	Northing:	6088900
	Sampling date:	28/11/06	Annual rainfall:	405 mm average

Alluvial plain, 0% slope. Soft surface with no stones.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-15	Reddish brown soft single grain loamy sand. Gradual to:
15-40	Yellowish red soft single grain light loamy sand. Diffuse to:
40-85	Yellowish red soft single grain sand. Clear to:
85-110	Yellowish red, red and dark reddish brown firm light clay with strong medium angular blocky structure. Diffuse to:
110-150	Yellowish brown and brown firm light medium clay with strong medium angular blocky structure and 2-10% nodular carbonate segregations (2-6 mm).



Classification: Hypocalcic, Mesonatric, Red Sodosol; very thick, non-gravelly, sandy / clayey, very deep



Summary of Properties

Drainage: Well drained. No part of the profile is likely to remain wet for more than a day or so following heavy or prolonged rainfall.

Fertility: Inherent fertility is low, as indicated by the exchangeable cation data, and is due to sandiness of the topsoil. At the sampling site, zinc levels appear low, but concentrations of other tested nutrient elements are satisfactory.

pH: Neutral at the surface, alkaline with depth.

Rooting depth: 110 cm in sampling pit, with occasional roots persisting to 150 cm.

Barriers to root growth:

Physical: The subsoil at 85 cm impedes root growth to a minor extent, but there are no physical barriers above this. Subsoil sodicity is probably higher than in a natural soil due to the effects of irrigation water.

Chemical: There are no apparent chemical limitations, although sodicity is approaching toxic levels below 110 cm.

Waterholding capacity: (Estimates for potential rootzone of grape vines)

Total available: 115 mm

Readily available: 60 mm

Seedling emergence: Satisfactory.

Workability: The soft sandy surface is easily worked over a range of moisture conditions.

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	6.4	5.8	0	0.180		0.90	57	229	157	36.8	0.5	477	4.06	74	56.5	1.86	6.1	4.59	0.55	0.48	0.46	7.9
15-40	6.7	6.1	0	0.038		0.21	20	160	24	8.1	0.4	434	1.04	35	51.9	0.20	2.7	1.88	0.22	0.20	0.36	na
40-85	6.9	6.2	0	0.043		0.14	2	180	32	7.4	0.3	320	1.02	18	25.3	0.08	2.3	1.42	0.26	0.28	0.36	na
85-110	8.1	7.1	0	0.274		0.40	2	419	151	72.5	3.0	831	4.00	67	114	0.23	17.2	5.83	7.46	2.87	1.00	16.7
110-150	8.7	7.6	0.3	0.339		0.28	2	460	191	59.3	3.6	862	4.86	79	147	0.33	20.5	8.19	6.54	4.71	1.07	23.0

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](#)

