

THICK SAND OVER SANDY CLAY LOAM

General Description: *Very thick red loamy sand over a red sandy clay loam grading to coarse grained alluvium below 100 cm*

Landform: Very gently undulating dune field superimposed on alluvial plain

Substrate: Coarse grained alluvium, near surface in dunefield swales

Vegetation: Mallee



Type Site:	Site No.:	CH143	1:50,000 mapsheet:	6627-3 (Alexandrina)
	Hundred:	Freeling	Easting:	324050
	Section:	3356	Northing:	6086970
	Sampling date:	18/10/05	Annual rainfall:	400 mm average

Slope of gently undulating dune, 2% slope. Soft surface, no stones.

Soil Description:

Depth (cm)	Description
0-15	Dark reddish brown soft single grain loamy sand. Diffuse to:
15-40	Yellowish red soft single grain loamy sand. Diffuse to:
40-65	Red soft single grain loamy sand. Abrupt to:
65-108	Dark reddish brown firm fine sandy clay loam with weak subangular blocky structure. Abrupt to:
108-120	Red soft single grain sand (windblown deposit). Abrupt to:
120-140	Reddish brown friable massive sandy loam (alluvial deposit). Clear to:
140-180	Strong brown soft single grain loamy sand (alluvial deposit).



Classification: Eutrophic, Subnatric, Red Sodosol; very thick, non-gravelly, sandy / clay loamy, deep



Summary of Properties

Drainage:	Rapidly drained. The soil never remains wet for more than an hour or so following heavy or prolonged rainfall. Deep drainage is good.
Fertility:	Inherent fertility is low, as indicated by the exchangeable cation data and low clay content. At sampling site, concentrations of sulphur and copper are low.
pH:	Alkaline throughout.
Rooting depth:	Good root growth to 65 cm, with a few roots extending to the base of the sampling pit (180 cm).
Barriers to root growth:	
Physical:	There are no significant physical barriers.
Chemical:	Low nutrient availability is the only likely chemical barrier.
Waterholding capacity:	(Estimates for potential rootzone of irrigated crops – approx. 200 cm in this profile) Total available: 150 mm Readily available: 85 mm
Seedling emergence:	Satisfactory unless surface is water repellent.
Workability:	The soil is easily worked over a wide range of moisture conditions. However, excessive cultivation of sandy surface will lead to wind erosion.
Erosion Potential:	
Water:	Low.
Wind:	Moderate.

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	
0-15	7.9	7.6	0	0.04	0.38	0.64	54	240	9	2.9	0.7	2.59	65	57.5	10.0	7.1	5.76	2.00	0.08	0.65	1.1
15-40	7.7	7.1	0	0.03	0.28	0.28	8	164	5	1.6	0.5	0.98	30	53.3	0.37	3.9	2.58	0.80	0.07	0.46	1.8
40-65	7.7	7.1	0	0.03	0.25	0.23	2	158	3	1.2	0.4	0.8	16	33.8	0.30	3.1	1.83	0.77	0.09	0.42	2.9
65-108	8.0	7.1	0	0.16	1.84	0.32	2	259	98	47.5	1.9	2.75	21	32.5	0.68	15.4	5.3	7.81	1.59	0.73	10.3
108-120	8.0	7.1	0	0.10	1.23	0.10	2	113	73	19.1	0.5	0.74	11	21.3	0.18	3.4	1.51	1.05	0.57	0.28	16.7
120-140	7.7	7.1	0	0.11	1.32	0.19	2	193	74	25.2	1.1	1.25	17	38.5	0.40	10.4	2.93	5.91	1.06	0.49	10.2
140-180	8.6	7.8	0	0.26	4.15	0.14	2	180	164	94.8	0.9	0.97	10	38.2	1.44	11.1	3.74	5.53	1.34	0.47	12.1

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](#)

