

GRADATIONAL SANDY LOAM

General Description: *Friable sandy loam, gradually becoming more clayey and calcareous with depth, over calcrete*

Landform: Dunefield

Substrate: Bakara calcrete

Vegetation: Mallee



Type Site:	Site No.:	MM157	1:50,000 mapsheet:	6828-4 (Swan Reach)
	Hundred:	Forster	Easting:	378500
	Section:	128	Northing:	6157620
	Sampling date:	17/07/2007	Annual rainfall:	290 mm average

Swale in a gently undulating dune-swale landscape, 0% slope. Soft surface with no stones.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-18	Dark reddish brown (5YR3/3) soft single grain light sandy loam. Clear to:
18-30	Yellowish red (5YR5/8) friable massive slightly calcareous sandy loam. Clear to:
30-50	Yellowish red (5YR4/6) friable massive highly calcareous light sandy clay loam. Clear to:
50-68	Yellowish red (5YR5/8) and strong brown (7.5YR5/6) firm highly calcareous sandy clay loam with weak subangular blocky structure and 2-10% veins and pockets of fine carbonate. Abrupt to:
68-90	Red (2.5YR4/8) and reddish yellow (7.5YR6/8) firm massive highly calcareous sandy clay loam with weak subangular blocky structure and 10-20% veins and pockets of fine carbonate. Abrupt to:
90-100	Pan of nodular and fragmented carbonate



Classification: Haplic, Calcic, Red Kandosol; medium, non-gravelly, loamy / clay loamy, moderate



Summary of Properties

Drainage:	Well drained. Except during extreme events, no part of the profile is likely to be saturated for more than a couple of days at a time.
Fertility:	Inherent fertility is moderately low, as indicated by the exchangeable cation data. This is a consequence of the relatively low clay content (10-12%) of the surface soil. Levels of phosphorus and potassium are high, but test data indicate low copper concentration. This should be checked via tissue testing
pH:	Alkaline throughout.
Rooting depth:	90 cm in sampling pit, few roots below 68 cm.
Barriers to root growth:	
Physical:	There are no natural physical barriers above the calcrete, although excessive use of heavy machinery can cause compaction.
Chemical:	There are no apparent chemical barriers – pH is high, but not excessively so, and soluble salt, sodicity and boron levels are all acceptable.
Waterholding capacity: (Estimates for total irrigable rootzone)	
	Total available: 90 mm
	Readily available: 50 mm
Seedling emergence:	Satisfactory.
Workability:	Light sandy loam soils are 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	
0-18	8.2	7.4	0	0.14	1.30	0.88	73	504	25	10.2	1.2	531	0.90	119	39.1	3.88	9.1	6.63	1.1	0.1	1.31	1.1
18-30	8.5	7.6	1	0.11	0.69	0.38	23	291	12	4.4	1.0	517	0.51	55	27.9	0.69	10.1	7.96	1.11	0.24	0.81	2.4
30-50	8.7	7.7	4	0.11	0.74	0.44	5	224	14	7.9	1.5	571	0.32	14	2.95	0.31	13.4	11.1	1.36	0.34	0.6	2.5
50-68	8.7	7.8	8	0.15	1.29	0.34	2	214	53	17.6	2.1	597	0.37	16	2.37	0.34	17.4	12.7	3.64	0.51	0.59	2.9
68-90	8.9	7.9	6	0.18	1.47	0.19	1	429	73	25.0	3.0	634	0.34	13	0.99	0.68	18.6	9.01	7.59	0.88	1.10	4.7
90-100	8.9	7.9	39	0.17	0.99	0.20	1	381	32	23.7	3.3	417	0.37	12	1.67	0.31	14.3	8.99	3.66	0.69	0.97	4.8

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](#)

