

SAND OVER CLAY

General Description: Grey loamy sand with a bleached subsurface layer, over a coarsely structured orange clay subsoil

Landform: Plains.

Substrate: Lagoon floor clays and limestones of the Padthaway Formation.

Vegetation:



Type Site:	Site No.:	SE907	1:50,000 mapsheet:	7023-4 (Bool Lagoon)
	Hundred:	Spence	Easting:	459950
	Section:	68	Northing:	5901750
	Sampling date:	26/02/07	Annual rainfall:	595 mm average

Flat plain. Soft surface with no stones. Delved immediately prior to sampling.

Soil Description:

Depth (cm)	Description
0-10	Dark greyish brown single grain loamy sand. Clear to:
10-20	Pale brown (bleached) single grain sand. Sharp to:
20-35+	Strong brown firm coarsely structured clay. Continuing.



Classification: Bleached, Eutrophic*, Brown Chromosol; medium, non-gravelly, sandy / clayey, deep?
* assumes no deep subsoil carbonate



Summary of Properties

Drainage:	Moderately well drained. Water is likely to perch on top of the clay subsoil for up to a week following heavy or prolonged rainfall.
Fertility:	Inherent fertility is low (as indicated by the exchangeable cation data) due to low clay content of the topsoil layers. Delving should significantly improve nutrient retention capacity. Test data for the surface soil indicate deficiencies of phosphorus, potassium and sulphur, and probably copper, manganese and zinc. Magnesium and calcium levels may also be in the deficient range. Potassium, sulphur and magnesium levels increase substantially in the subsoil.
pH:	Slightly acidic in the topsoil and subsoil.
Rooting depth:	Not recorded, but expect that roots would be abundant in the surface, few in the bleached layer, and few to common in the subsoil clay.
Barriers to root growth:	
Physical:	The hard and poorly structured subsoil clay is a significant barrier. Roots are largely confined to the aggregate surfaces.
Chemical:	Root growth is mainly restricted by the very low fertility of the bleached subsurface layer. There are no toxicities in the upper subsoil, but there is no data for the lower subsoil.
Waterholding capacity:	Approximately 35 mm total available water to 35 cm.
Seedling emergence:	Satisfactory provided that delving controls water repellence.
Workability:	Good. Sandy soils are easily worked.
Erosion Potential:	
Water:	Low.
Wind:	Moderate.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Cl mg/kg	Org.C %	NO ₃ + NH ₄ mg/kg	Avail. P mg/kg	Avail. K mg/kg	SO ₄ -S mg/kg	React Fe mg/kg	Ext Al 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	
0-10	6.3	5.0	0	0.03	0.28	9	0.72	4	6	20	1.4	158	1.2	0.4	0.2	81	0.9	0.6	1.7	1.37	0.17	0.05	0.05	3.0
10-20	6.3	4.8	0	0.02	0.32	15	0.28	4	6	23	1.0	107	0.9	0.3	0.7	47	0.5	0.2	0.7	0.43	0.14	0.04	0.05	6.0
20-35?	6.5	5.3	0	0.05	0.30	17	0.50	5	6	236	6.0	1076	0.6	3.7	0.9	103	1.3	0.2	11.8	2.72	8.05	0.32	0.71	2.7

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](#)

