

SALINE SANDY LOAM OVER RED CLAY

(Saline red brown earth)

General Description: *Sandy loam over a coarsely structured sodic red clay, calcareous and marginally to highly saline throughout*

Landform: Plains with saline depressions.

Substrate: Clay.

Vegetation:

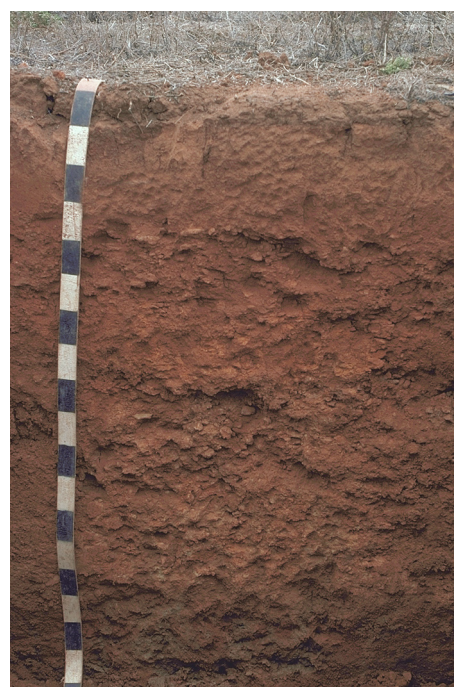


Type Site:	Site No.:	EL101	1:50,000 mapsheet:	6129-1 (Neill)
	Hundred:	Dixon	Easting:	620210
	Section:	30	Northing:	6234440
	Sampling date:	11/03/1994	Annual rainfall:	325 mm average

Marginally saline flat. Firm surface with no stones.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-5	Reddish brown soft slightly calcareous sandy loam with weak fine subangular blocky structure. Clear to:
5-30	Reddish brown soft moderately calcareous medium clay with strong coarse prismatic structure. Clear to:
30-80	Yellowish red soft moderately calcareous medium clay with weak subangular blocky structure and more than 50% fine calcrete fragments. Clear to:
80-110	Reddish brown and grey mottled friable moderately calcareous medium clay with moderate angular blocky structure and more than 50% calcrete fragments (20-60 mm). Gradual to:
110-150	Reddish yellow, grey and red mottled soft moderately calcareous medium clay with weak subangular blocky structure and more than 50% calcrete fragments (60-200 mm). Gradual to:
150-200	Red and brown friable slightly calcareous medium clay with moderate angular blocky structure.



Classification: Calcic, Hypernatric, Red Sodosol; thin, non-gravelly, loamy / clayey, moderate



Summary of Properties

- Drainage:** Imperfectly drained. The soil may remain wet for several weeks at a time.
- Fertility:** Inherent fertility is high, as indicated by the exchangeable cation data. Concentrations of all measured nutrient elements are high at the sampling site.
- pH:** Alkaline throughout.
- Rooting depth:** 150 cm in pit.
- Barriers to root growth:**
- Physical:** The sodic clay subsoil is a potential barrier, but as it is generally moist, it will stay friable.
 - Chemical:** The soil is moderately to highly saline throughout, restricting the growth of most agricultural plants. In addition, sodicity is very high from 5 cm, and boron concentrations are toxic for most crop species from 30 cm.
- Waterholding capacity:** For non salt tolerant plants, potential rootzone depth is zero. For plants which can tolerate high salinity, sodicity and boron, waterholding capacity is over 200 mm.
- Seedling emergence:** High surface salinity prevents emergence of most species.
- Workability:** The soil is easily worked in summer when soil is at its driest. At other times of the year, the land is likely to be boggy.
- Erosion Potential:**
- Water:** Low.
 - Wind:** Low

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-5	8.2	8.0	3	2.34	17.87	1.2	49	960	-	4.3	0.59	6.4	11	0.64	29.9	14.4	8.12	3.55	3.90	11.9
5-30	9.3	8.5	12	1.73	13.63	0.35	8.8	720	-	1.2	1.1	5.9	3.0	0.33	26.9	8.73	7.62	7.60	3.00	28.2
30-80	9.1	8.5	20	2.49	19.16	0.23	<2.0	770	-	31	1.2	4.2	1.3	0.45	28.0	7.44	10.0	7.53	3.05	26.9
80-110	8.9	8.5	22	3.82	28.6	0.21	<2.0	940	-	35	1.0	4.7	1.6	1.7	29.9	5.04	12.4	8.80	3.70	29.4
110-150	8.8	8.4	20	4.60	27.4	0.18	<2.0	890	-	36	0.68	5.0	1.4	0.48	31.7	5.09	13.0	9.07	4.54	28.6
150-200	7.9	7.5	1	3.10	25.5	<0.1	<2.0	630	-	36	0.43	6.2	3.8	0.34	22.6	2.67	9.2	7.99	2.69	35.4

Note: CEC (cation exchange capacity) is 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.

Further information: [DEWNR Soil and Land Program](#)

