

## HARD SANDY LOAM OVER DISPERSIVE RED CLAY (Loamy flat soil)

**General Description:** *Hard loamy surface soil overlying a red strongly structured clayey subsoil with soft carbonate at depth*

**Landform:** Depressions and flats

**Substrate:** Alluvial clay, mantled by soft carbonate

**Vegetation:** Bladder saltbush and pearl bluebush shrubland



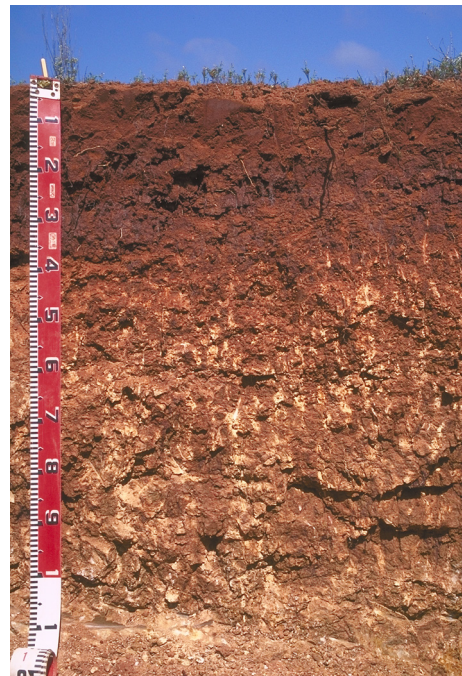
**Type Site:**

Site No.:	CM070	1:50,000 mapsheet:	6831-3
District:	Eastern Districts	Easting:	380860
Property:	Sturtvale	Northing:	6307390
Sampling date:	6/10/95	Annual rainfall:	205 mm average

Flat with hard setting surface.

### Soil Description:

Depth (cm)	Description
0-13	Reddish brown firm massive slightly calcareous light sandy clay loam. Abrupt to:
13-15	Pink (dry) firm massive slightly calcareous light sandy clay loam. Abrupt to:
15-35	Dark reddish brown firm medium clay with strong coarse prismatic structure, breaking to subangular blocky. Abrupt to:
35-65	Reddish brown hard highly calcareous light medium clay with coarse prismatic structure and 10-20% soft carbonate. Gradual to:
65-105	Brown and olive mottled hard highly calcareous medium clay with strong coarse prismatic structure and 10-20% soft carbonate. Gradual to:
105-120	Yellowish brown and light grey mottled very hard calcareous sandy clay with moderate coarse blocky structure.



**Classification:** Calcic, Subnatric, Red Sodosol; medium, non-gravelly, loamy / clayey, deep



## Summary of Properties

**Drainage:** Moderately well drained. The sodic and dispersive B horizon clay will not allow free movement of water, causing a perched water table to develop for a week or so following heavy rain. Runoff into the flat will accentuate the water perching situation.

**Fertility:** Natural fertility is moderately high as indicated by the exchangeable cation data.

**pH:** Alkaline to strongly alkaline throughout.

**Rooting depth:** 105 cm in pit, but few roots below 65 cm.

### Barriers to root growth:

**Physical:** Hard dispersive clay subsoil clogs up preventing good root distribution.

**Chemical:** High boron (from 35 cm) and marginal salinity, pH and sodicity (from 65 cm) affect root growth in some species.

**Waterholding capacity:** Approximately 90 mm in rootzone, although not all is available in lower profile. This is offset by the soil's topographic position - lower slope areas collect additional water from surrounding higher ground.

**Seedling emergence:** Fair, due to hard setting, sealing surface.

### Erosion Potential:

**Water:** Low due to the flatness of the land.

**Wind:** Moderately low - pulverizing by stock will create an erosion hazard.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> 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		
0-13	8.6	8.1	0.2	0.09	0.38	0.4	5	424	4	1.0	-	-	-	-	9.2	6.15	2.25	0.16	1.05	1.7	
13-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-35	9.1	8.3	0.5	0.22	0.79	0.3	<4	434	6	2.3	-	-	-	-	27.3	10.2	12.1	2.94	1.61	10.8	
35-65	9.0	8.4	13.5	0.62	3.83	0.2	<4	347	18	6.5	-	-	-	-	21.5	6.66	11.7	3.70	1.22	17.2	
65-105	9.0	8.5	13.6	1.30	7.56	0.1	<4	314	128	31.3	-	-	-	-	16.5	4.82	9.36	4.01	0.95	24.3	
105-120	8.8	8.5	1.0	1.50	7.37	0.1	<4	227	269	31.4	-	-	-	-	12.8	3.68	6.95	3.30	0.52	25.8	

**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](#)

