

**DEEP GRADATIONAL RED LOAM**

(Non scalded)

**General Description:** *Thin weakly structured loam grading to a well structured red clay, calcareous from shallow depth grading to clayey alluvium*

**Landform:** Level alluvial plain

**Substrate:** Strongly structured red clay with soft carbonate segregations

**Vegetation:** Acacia victoriae / Atriplex shrubland with Stipa grass cover



**Type Site:**

Site No.:	CU045A	1:50,000 mapsheet:	6633-3 (Carrieton)
Hundred:	Yanyarrie	Easting:	265550
Section:	16	Northing:	6413550
Sampling date:	02/11/1994	Annual rainfall:	275 mm average

Level plain with lichen crust surface and minor quartzite stone. Sporadic scalding. 1% slope. CU045A: non scalded. CU045B: scalded

**Soil Description: CU045A (non scalded site)**

<i>Depth (cm)</i>	<i>Description</i>
0-6	Red loam with weak coarse structure. Abrupt to:
6-18	Dark reddish brown light clay with moderate polyhedral structure. Clear to:
18-40	Red highly calcareous weakly structured clay loam. Gradual to:
40-70	Red highly calcareous weakly structured clay loam with up to 10% carbonate nodules. Gradual to:
70-120	Red highly calcareous light medium clay with strong polyhedral structure, 10-20% soft carbonate and 10-20% carbonate nodules. Diffuse to:
120-170	Red moderately calcareous medium clay with strong polyhedral structure, 10-20% soft carbonate and 10-20% carbonate nodules.



**Classification:** Sodic, Calcic, Red Dermosol; thin, non gravelly, loamy / clayey, very deep.



**Summary of Properties**

- Drainage:** Well drained. The soil is unlikely to remain wet for more than a day or so after prolonged rain. The scalded area will shed water and is less likely to become wet.
- Fertility:** Natural fertility is high as indicated by the exchangeable cation data.
- pH:** Alkaline throughout.
- Rooting depth:** Strong root growth to 40 cm, and some roots to 70 cm, in natural soil; no roots in the scalded soil.
- Barriers to root growth:**
- Physical:** There are no physical barriers to root growth.
- Chemical:** High salinity is the main chemical barrier (to salt sensitive plants). Note that in the natural soil, surface salinity is low, levels increasing with depth. In the scalded soil, salt levels are highest near the surface due to evaporative accumulation.
- Waterholding capacity:** This soil has a potentially very high waterholding capacity, but in practice this would rarely be filled. The capacity in the rootzone is about 100 mm.
- Seedling emergence:** Good, except on scalded areas where sealing surfaces, rapid runoff and high salinity prevent any establishment.
- Erosion Potential:**
- Water:** Moderately low due to run on from higher ground.
- Wind:** Moderately low - livestock can pulverize the surface causing it to blow. The scalded surface is at high risk of both types of erosion.

**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	SAR	Cl mg/kg
											Cu	Mn	Zn		Ca	Mg	Na	K			
0-6	8.0	7.6	-	0.38	2.15	0.6	-	-	<1	1.5	-	-	-	18.8	8.2	5.1	0.7	1.8	3.9	3.7	179
6-18	8.5	8.3	-	2.36	10.65	0.4	-	-	13	3.9	-	-	-	21.8	8.1	7.5	3.6	1.3	16.3	13.2	1437
18-40	8.4	8.3	-	2.80	27.1	0.3	-	-	225	5.7	-	-	-	19.9	10.2	9.6	2.0	0.9	10.0	11.9	4082
40-70	8.4	8.2	-	2.83	25.6	0.2	-	-	488	2.9	-	-	-	18.2	8.9	9.0	1.7	0.9	9.6	8.8	3436
70-120	8.3	8.1	-	3.78	33.8	0.1	-	-	467	2.9	-	-	-	18.5	9.0	9.6	1.0	1.1	5.3	7.7	5057
120-170	8.2	8.1	-	3.79	36.8	<0.1	-	-	412	3.0	-	-	-	22.4	9.5	12.7	1.3	1.3	5.9	8.0	6540

**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. SAR is sodium adsorption ratio measured on the saturation extract.

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

