

GRADATIONAL RED SANDY CLAY LOAM

General Description: *Red sandy clay loam becoming more clayey with depth and calcareous from about 50 cm*

Landform: Flats and swales on gently undulating plains and dune fields

Substrate: Massive Tertiary sandy loams, sandy clay loams and sandy clays

Vegetation: Mallee



Type Site: Site No.: MM015

1:50,000 sheet:	6827-1 (Karoonda)	Hundred:	Hooper
Annual rainfall:	360 mm	Sampling date:	19/09/91
Landform:	Depression in a gently undulating dunefield		
Surface:	Firm with no stones		

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-5	Dark reddish brown light sandy clay loam. Abrupt to:
5-22	Reddish brown sandy light clay with strong coarse blocky structure. Clear to:
22-33	Yellowish red and brown medium clay with strong coarse blocky structure. Gradual to:
33-76	Red, pale brown and yellowish brown highly calcareous massive medium clay. Diffuse to:
76-113	Strong brown, pale brown and yellowish brown massive calcareous medium clay. Diffuse to:
113-176	Red, pale brown and yellowish brown massive calcareous sandy clay loam. Clear to:
176-195	Brownish yellow and yellowish brown massive sandy loam with 2-10% fine carbonate segregations.



Classification: Mottled, Calcic, Red Dermosol; thin, non-gravelly, clay loamy / clayey, deep

Summary of Properties

Drainage	Moderately well drained. The soil is never saturated for more than a week.
Fertility	Inherent fertility is high, according to the exchangeable cation data. Relatively clayey texture and high organic matter levels provide substantial nutrient retention capacity. Phosphorus levels are low at sampling site.
pH	Neutral at the surface, alkaline with depth.
Rooting depth	76 cm in pit, but few roots below 43 cm.
Barriers to root growth	
Physical:	Coarsely structured subsoil and very hard compact substrate (from 33 cm) impede root growth.
Chemical:	No chemical barriers.
Water holding capacity	65 mm in root zone.
Seedling emergence:	Satisfactory.
Workability:	Firm surface is easily worked.
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	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
										Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	8.3	7.1	0.7	0.19	1.15	1.51	13	670	2.2	0.45	17.3	16.06	1.04	18.7	12.85	3.66	0.37	1.29	2.0
0-5	7.0	6.4	1.0	0.10	0.76	2.03	20	710	2.2	0.49	28.9	45.1	1.30	19.4	11.23	2.51	0.24	1.38	1.2
5-22	6.9	6.5	1.1	0.05	0.42	0.65	5	300	1.7	0.43	25.8	10.5	0.24	17.9	11.31	2.29	0.26	0.75	1.5
22-33	8.5	7.3	1.2	0.12	0.39	0.25	2.6	210	2.2	0.66	19.1	2.2	0.27	17.2	13.26	2.68	0.36	0.47	2.1
33-53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
53-76	8.8	7.8	7.6	0.13	0.64	0.18	1.6	200	2.4	0.70	9.8	0.37	0.20	13.3	10.79	2.65	0.54	0.31	4.1
76-113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
113-145	8.9	7.9	0.8	0.11	0.83	0.11	1.6	100	1.8	0.33	7.1	0.11	0.16	8.2	5.57	1.88	0.40	0.21	4.9
145-195	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Paddock sample bulked from cores (0-10 cm) taken around the pit.

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.