

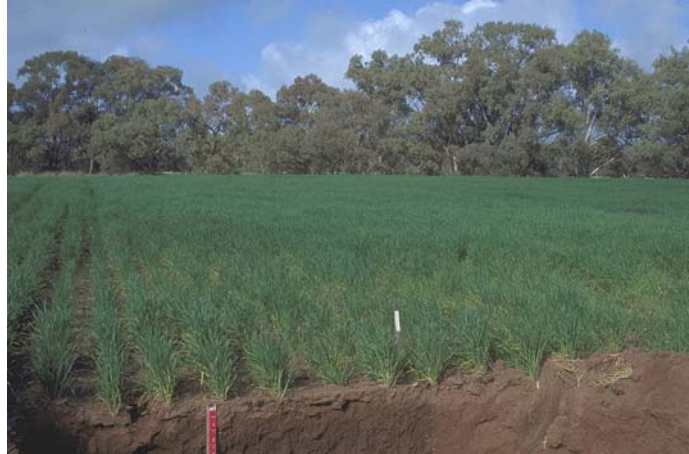
GRADATIONAL SANDY LOAM

General Description: *Massive sandy loam to silty loam surface grading to a friable brown clayey subsoil, moderately calcareous with depth*

Landform: Alluvial flats subjected to flooding in relatively recent times

Substrate: Alluvial clay capped by soft carbonates

Vegetation: Red gum woodland

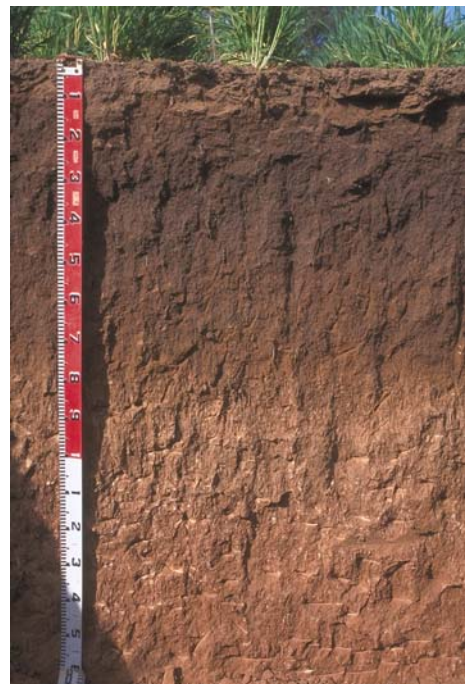


Type Site: Site No.: CM063

1:50,000 sheet:	6529-1 (Balaklava)	Hundred:	Hall
Annual rainfall:	375 mm	Sampling date:	23/08/95
Landform:	Flat terrace adjacent to Wakefield River channel		
Surface:	Hard setting with no stones		

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-8	Dark brown massive sandy loam. Sharp to:
8-15	Dark brown massive sandy clay loam. Clear to:
15-35	Dark reddish brown fine sandy light clay with moderate polyhedral structure. Diffuse to:
35-50	Reddish brown fine sandy light clay with moderate polyhedral structure. Gradual to:
50-73	Brown fine sandy light clay with moderate polyhedral structure. Clear to:
73-120	Brown highly calcareous fine sandy clay loam with moderate coarse prismatic structure and 2-10% soft carbonate segregations. Diffuse to:
120-160	Orange highly calcareous light clay with moderate coarse prismatic structure and 2-10% soft carbonate segregations.



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

Summary of Properties

Drainage	Well drained. The soil is unlikely to remain saturated for more than a day or so, although water may sometimes perch on top of the clay.
Fertility	Natural fertility is moderate, and because of the low clay content at the surface, organic matter is a key component of surface soil nutrient retention capacity. Organic carbon is low at this site. Phosphorus and potassium are high and other major nutrients appear to be at marginal levels. Tissue testing is recommended.
pH	Slightly acidic at the surface, strongly alkaline with depth.
Rooting depth	120 cm in pit, but few roots below 75 cm.
Barriers to root growth	
Physical:	Strong plough pan at 8 cm prevents strong early root development.
Chemical:	Very high pH at depth inhibits root growth.
Water holding capacity	Approximately 100 mm in root zone (moderate to high).
Seedling emergence	Fair depending on the degree of sealing and hard setting, caused by the sandy texture and low organic matter content of the surface soil.
Workability	Fair. The moisture range over which effective working can occur is limited - i.e. soil tends to puddle if too wet and shatter if too dry.
Erosion Potential	
Water:	Soil is highly erodible but risk of water erosion is minimal (no slope).
Wind:	Surface will blow if excessively cultivated or overgrazed.

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 -S 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	6.5	5.6	0	0.04	0.21	0.8	48	557	5	0.9	0.95	-	17.6	1.46	7.7	5.50	1.59	0.16	1.04	2.1
0-8	6.7	6.1	0	0.06	0.27	0.8	65	565	7	0.6	-	-	-	-	6.8	5.13	1.56	0.16	1.03	2.4
8-15	6.4	5.4	0	0.04	0.20	0.5	52	509	7	0.5	-	-	-	-	8.1	5.98	1.66	0.18	0.98	2.2
15-35	7.8	7.0	0	0.05	0.26	0.5	5	475	9	0.6	-	-	-	-	13.5	10.35	2.82	0.20	0.99	1.5
35-50	8.1	7.3	0	0.05	0.40	0.3	<4	394	7	0.6	-	-	-	-	12.9	9.49	2.89	0.23	0.78	1.8
50-73	8.3	7.4	0	0.07	0.49	0.3	<4	355	5	0.7	-	-	-	-	12.6	8.67	3.15	0.34	0.70	2.7
73-120	9.2	8.2	4.7	0.16	0.68	0.2	<4	341	13	0.8	-	-	-	-	10.2	6.47	4.10	0.91	0.65	8.9
120-160	9.6	8.4	5.9	0.39	2.04	0.2	<4	408	22	2.9	-	-	-	-	10.6	4.03	5.11	2.79	0.85	26.3

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.