

GRADATIONAL DARK SANDY CLAY LOAM

General Description: *Hard sandy clay loam grading to a red coarsely structured clay, calcareous with depth*

Landform: Flats and gently inclined outwash fans

Substrate: Pleistocene clay, underlain by Tertiary sand.

Vegetation:



Type Site: Site No.: MP009

1:50,000 sheet:	6727-4 (Monarto)	Hundred:	Monarto
Annual rainfall:	375 mm	Sampling date:	28/10/94
Landform:	Gently inclined slope of 3%		
Surface:	Loose (cultivated), otherwise hard setting with no stones		

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-8	Dark brown friable sandy clay loam with strong granular structure. Sharp to:
8-17	Dark brown hard massive sandy clay loam. Clear to:
17-32	Dark brown hard light medium clay with strong coarse prismatic structure. Gradual to:
32-80	Light brown highly calcareous firm loam. Clear to:
80-115	Brown, red and orange firm medium clay (Blanchetown Clay equivalent) with strong coarse prismatic structure and 2-10% fine carbonate. Clear to:
115-165	Grey and red hard massive sandy loam (Parilla Sand equivalent).



Classification: Sodic, Hypercalcic, Black Dermosol; medium, non-gravelly, clay loamy / clayey, moderate

Summary of Properties

Drainage	Moderately well drained. The soil may remain wet for up to a week following heavy or prolonged rainfall.
Fertility	Natural fertility is high due to the high clay content and favourable organic carbon level.
pH	Alkaline at the surface, strongly alkaline in the substrate
Rooting depth	80 cm in pit, but few roots below 20 cm.
Barriers to root growth	
Physical:	The coarsely structured subsoil prevents uniform root distribution, leading to sub-optimal water use efficiency.
Chemical:	There are no chemical barriers above the Blanchetown Clay.
Water holding capacity	Approximately 110 mm in the root zone (ie above the Blanchetown Clay).
Seedling emergence:	Fair - surface tends to set hard and seal.
Workability:	Fair - likely to become sticky when wet.
Erosion Potential	
Water:	Moderately low (very gentle slope).
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	7.9	7.4	0.2	0.14	0.53	1.5	26	477	1.3	-	-	-	-	20.2	16.01	2.67	0.17	1.40	0.8
0-8	7.8	7.4	0.1	0.13	0.51	1.8	29	540	1.3	-	-	-	-	19.6	15.03	2.55	0.16	1.47	0.8
8-17	8.2	7.6	0.1	0.13	0.34	1.2	6	345	0.9	-	-	-	-	21.1	16.80	2.62	0.19	1.06	0.9
17-32	8.3	7.7	0.8	0.13	0.33	1.0	4	240	0.7	-	-	-	-	23.5	20.46	3.32	0.30	0.75	1.3
32-80	9.0	7.9	29.1	0.22	0.81	0.5	3	134	0.6	-	-	-	-	14.9	9.65	4.39	1.49	0.27	10.0
80-115	9.4	8.4	7.7	0.58	3.29	0.9	2	256	2.0	-	-	-	-	18.0	5.95	8.21	5.65	0.63	31.4
115-165	9.1	8.3	0.2	0.77	5.31	<0.1	11	260	5.9	-	-	-	-	18.0	3.86	6.88	6.83	0.66	38.0

Note: Paddock sample bulked from 20 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