

HARD CLAY LOAM OVER SODIC RED CLAY

General Description: *Thick reddish brown massive clay loam overlying a dark reddish brown strongly structured clay, calcareous with depth*

Landform: Valley flats and outwash fans

Substrate: Alluvial clays (Pooraka Formation) with weak soft carbonate

Vegetation:



Type Site: Site No.: CM086

1:50,000 sheet:	6630-4 (Spalding)	Hundred:	Ayers
Annual rainfall:	450 mm	Sampling date:	27/02/97
Landform:	Flat, 0% slope		
Surface:	Hard setting with no stones		

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-13	Dark reddish brown massive hard light clay loam with 2-10% siltstone gravel. Clear to:
13-35	Dark reddish brown clay loam with moderate polyhedral structure and 2-10% siltstone gravel. Abrupt to:
35-70	Dark reddish brown medium clay with strong polyhedral structure and 2-10% siltstone gravel. Clear to:
70-100	Yellowish red very highly calcareous massive light clay with 2-10% soft carbonate segregations and 2-10% siltstone and quartzite gravel. Gradual to:
100-150	Red very highly calcareous light medium clay with moderate polyhedral structure and 2-10% siltstone gravel.



Classification: Calcic, Subnatric, Red Sodosol; thick, slightly gravelly, clay loamy / clayey, deep

Summary of Properties

Drainage Moderately well drained. Water will "perch" on top of the subsoil clay for periods of a week or so following prolonged rainfall.

Fertility Natural fertility is high. Test results indicate no nutrient deficiencies. Organic carbon levels are satisfactory.

pH Slightly alkaline at the surface (possibly caused by road dust), alkaline with depth.

Rooting depth 150 cm in pit.

Barriers to root growth

Physical: None, apart from moderate soil strength.

Chemical: None apparent, although manganese may become toxic if soil acidity increases.

Water holding capacity More than 150 mm in rootzone.

Seedling emergence: Fair, due to hard setting surface. Gypsum response is likely.

Workability: Fair. Surface structure is easily destroyed by compaction or working too wet or too dry.

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	SO ₄ -S mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	7.8	7.0	0	0.20	-	1.9	58	858	13	1.8	3.1	164	301	3.4	16.0	6.8	3.3	0.36	1.82	2.3
0-13	7.3	6.7	0	0.19	-	1.7	35	734	12	1.9	3.3	170	330	2.9	15.0	6.9	3.5	0.38	1.40	2.5
13-35	7.7	6.9	0	0.07	-	0.5	20	448	5.6	1.4	4.7	166	432	1.4	11.8	6.1	2.7	0.75	0.79	6.4
35-70	8.1	7.3	0	0.13	-	0.4	20	514	12	2.9	4.1	112	398	1.9	18.6	6.6	7.7	1.24	1.16	6.7
70-100	8.7	8.2	10.9	0.33	-	0.1	31	464	26	2.6	1.3	5.5	8.8	3.5	12.6	4.6	7.5	0.84	0.94	6.7
100-150	8.7	8.1	3.0	0.48	-	0.1	19	496	39	2.4	1.4	14	34	3.4	12.8	4.3	6.6	1.53	0.96	12.0

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.