

DARK BROWN CRACKING CLAY

General Description: *Strongly structured dark clay with seasonal cracks, over a coarsely structured dark brown heavy clay with variable carbonate grading to heavy clay sediments*

Landform: Slopes of undulating to gently undulating rises

Substrate: Heavy clay with coarse lenticular structure and minor carbonate accumulations

Vegetation:



Type Site:	Site No.:	CL004	1:50,000 mapsheet:	6629-1 (Riverton)
	Hundred:	Gilbert	Easting:	296300
	Section:	504	Northing:	6216850
	Sampling date:	09/03/92	Annual rainfall:	510 mm average

Upper slope of undulating rise, 3% slope. Firm, seasonally cracking surface, no stones.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-28	Dark brown slightly calcareous light clay with strong subangular blocky structure. Clear to:
28-75	Dark brown highly calcareous medium clay with strong coarse prismatic structure. Gradual to:
75-100	Reddish yellow very highly calcareous medium clay with strong coarse lenticular structure.



Classification: Epicalcareous-Endohypersodic, Epipedal, Brown Vertosol.



Summary of Properties

Drainage:	Moderately well drained. The cracking soil accepts water readily when dry, but after the cracks close, water moves slowly through the soil. Saturation may last up to a week following heavy or prolonged rainfall.
Fertility:	Natural fertility is very high, as indicated by the exchangeable cation data. Nutrient retention capacity is very high throughout due to the clayey textures and high surface organic matter levels. All measured nutrient elements except zinc are in good supply.
pH:	Alkaline at the surface, strongly alkaline in the subsoil.
Rooting depth:	120 cm in pit, but few roots below 75 cm.
Barriers to root growth:	
Physical:	The coarse structural units prevent optimum root distribution.
Chemical:	High pH from 28 cm and very high pH from 75 cm affect root growth, as does high sodicity from 75 cm. Soluble salt levels are moderate at depth, but boron levels are non toxic.
Waterholding capacity:	Approx. 100 mm in rootzone (high).
Seedling emergence:	Good.
Workability:	Fair to good. Surface becomes sticky once soil is wet. Gypsum helps overcome this condition.
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 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	8.4	7.5	4.6	0.12	-	1.94	69	810	-	-	1.1	4.6	1.8	0.30	36.8	34.2	4.10	0.28	2.80	0.8
0-28	8.6	7.7	6.2	0.11	0.3	1.18	20	390	-	-	1.3	6.7	3.4	0.17	38.9	34.8	5.78	0.69	1.77	1.8
28-75	9.3	7.9	12.0	0.21	0.5	0.59	4	270	-	2.4	1.3	8.5	2.7	0.10	36.4	23.9	9.91	4.41	1.26	12.1
75-100	10.0	8.4	54.4	0.43	0.6	0.15	2	190	-	9.7	0.70	3.8	0.8	0.06	18.4	4.68	9.12	7.07	0.67	38.4

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.

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

