

## 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 sheet:	6629-1 (Riverton)	Hundred:	Gilbert
Annual rainfall:	525 mm	Sampling date:	09/03/92
Landform:	Upper slope of undulating rise, 3% slope		
Surface:	Firm, seasonally cracking, with no stones		

### Soil Description:

Depth (cm)	Description
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 Vertisol.

## 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.

**Water holding capacity:** Approx. 100 mm in root zone (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 <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> -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	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.