GREY-BROWN CRACKING CLAY

General Description: *Self mulching dark brown calcareous seasonally cracking clay*

Landform: Gilgai depression

Substrate: Cracking clay

Vegetation: -

Type Site: Site No.: CY041

1:50 000 sheet:	6429-3 (Maitland)	Hundred:	Maitland
Annual rainfall:	500 mm	Sampling date:	06/02/02
Landform:	Salinized gilgai plain		
Surface:	Self-mulching with no stones. Water table at 165 cm.		

Soil Description:

Depth (cm)	*Description*
0 – 3	Dark brown self-mulching calcareous medium clay.
3 – 20	Dark brown hard calcareous medium clay with platy structure.
20 – 36	Dark brown calcareous medium clay with weak subangular blocky structure.
36 – 50	Very dark brown calcareous medium clay with weak polyhedral structure.
50 – 72	Very dark greyish brown light clay with weak subangular blocky structure.
72 – 100	Dark greyish brown light clay with weak angular blocky structure and a few small quartz pebbles.
100 – 150	Light olive brown calcareous medium clay with light yellowish brown mottles and weak angular blocky structure.
150 – 185	Light olive brown calcareous medium clay with light brown-grey mottles and weak angular blocky structure. Water table at 165 cm.

Classification: Episodic-Epicalcareous, Self-mulching, Brown Vertosol; non-gravelly, moderately deep

Summary of Properties

Drainage: Poorly drained, seasonally flooded. Water table at 165 cm.

Fertility: Very high inherent fertility and capacity to retain nutrients,

pH: Alkaline throughout.

Rooting depth: No root growth.

Barriers to root growth:

Physical: Plough pan from 3-20 cm. High ESP throughout soil causes clay to disperse when soil is moist .

Chemical: High salinity levels concentrated in the surface soil inhibit germination and growth.

Water holding capacity: Very high.

Seedling emergence: Good to fair. Self-mulching characteristic and high organic carbon levels help to maintain satisfactory surface soil structure. High ESP levels in surface soil may result in surface sealing.

Workability: Poor to fair due to narrow moisture range for effective working.

Erosion potential:

Water: Low.

Wind: Low.

Laboratory Data

Depth cm	pH H_2O	pH $CaC1_2$	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)				Sum of cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP (%)
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	8.4	8.0	15.5	6.70	55.9	1.43	109	352	429	8.4	0.93	22.9	10.9	1.93	63.22	19.70	9.62	32.96	0.94	52
0-3	8	8.0	20.6	9.39	65.6	2.00	150	467	492	6.9	1.85	38.7	28.6	3.31	77.24	25.43	11.22	39.32	1.27	51
3-20	8.6	8.1	20.4	4.18	29.9	1.69	159	471	318	4.3	1.16	31.4	8.39	1.62	52.38	24.35	6.23	20.60	1.20	39
20-36	8.8	8.1	11.3	2.08	17.1	1.20	38	391	185	2.7	0.81	28.3	5.11	0.43	44.60	23.68	5.14	14.72	1.06	33
36-50	8.8	8.1	3.9	2.20	17.8	1.47	11	342	161	2.6	0.83	38.4	5.83	0.28	50.43	25.22	6.81	17.48	0.92	35
50-72	8.9	8.1	0.64	1.98	19.0	0.75	5	243	133	1.7	0.52	39.1	3.50	0.13	38.66	17.26	6.05	14.67	0.68	38
72-100	8.8	8.1	0.68	1.75	17.6	0.35	3	262	139	1.6	0.64	28.5	2.69	0.14	38.89	14.77	7.29	16.17	0.66	42
100-150	9.0	8.3	19.1	1.70	15.0	0.29	4	194	164	2.6	0.48	16.5	3.14	0.15	43.21	17.31	8.13	17.27	0.50	40
150-185	9.1	8.3	20.0	1.91	13.7	0.26	2	202	167	5.2	0.46	16.6	3.87	0.32	43.61	16.32	9.17	17.60	0.52	40

Note: Paddock sample bulked from cores (0-10 cm) taken around the pit.

ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the sum of cations (an estimate of cation exchange capacity).