DEEP BLACK CLAY

General Description: *Black well structured seasonally cracking clay with increasing carbonate segregations at depth*

Landform: Flat plains

Substrate: Lagoon-deposited calcareous clay of the Padthaway Formation.

Vegetation:

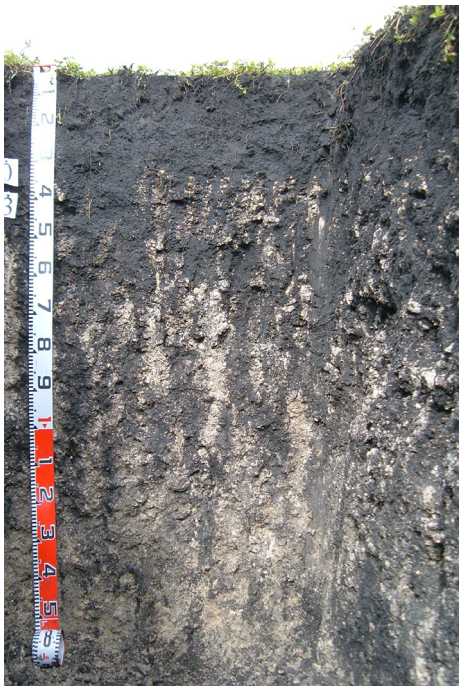
Type Site:

Site No.:	SE160B	1:50,000 mapsheet:	7023-4 (Bool Lagoon)
Hundred:	Killanoola	Easting:	474870
Section:	403	Northing:	5882680
Sampling date:	21/08/2007	Annual rainfall:	630 mm average

Flat plain. Seasonally cracking, crusting surface with no stones. Irrigated pasture.

Soil Description:

Depth (cm)	*Description*
0-10	Black firm medium clay with weak medium angular blocky structure, breaking to fine polyhedral. Gradual to:
10-20	Black firm medium heavy clay with weak medium angular blocky structure, breaking to fine polyhedral. Gradual to:
20-32	Black friable light medium clay with strong medium polyhedral structure. Abrupt to:
32-60	Black friable highly calcareous light clay with moderate medium polyhedral structure and more than 50% nodular carbonate segregations forming a weak discontinuous pan. Diffuse to:
60-100	Black friable very highly calcareous light clay with moderate polyhedral structure and more than 50% nodular carbonate segregations. Diffuse to:
100-150	Black friable light clay with highly calcareous light brownish grey segregations and 20-50% nodular carbonate.



Classification: Sodic, Supracalcic, Black Dermosol; medium, non-gravelly, clayey / clayey, very deep

Summary of Properties

Drainage: Moderately well drained due to favourable soil permeability, but rising seasonal watertables and inundation are likely to cause saturation for several weeks at a time in average to wetter seasons.

Fertility: Inherent fertility is very high, as indicated by the exchangeable cation data. This is due to the high clay and organic matter contents of the surface layers. Laboratory data indicate satisfactory levels of all tested nutrients.

pH: Acidic to strongly acidic at the surface, slightly alkaline with depth

Rooting depth: 150 cm in sampling pit, but few roots below 100 cm.

Barriers to root growth:

Physical: There are no significant physical barriers to root growth.

Chemical: High chloride levels below 60 cm may affect sensitive crops.

Waterholding capacity: (Estimates for potential rootzone of irrigated crops)
Total available: 100 mm
Readily available: 40 mm

Seedling emergence: Satisfactory.

Workability: Fair. Clayey surface becomes sticky when wet.

Erosion Potential:

Water: Low.

Wind: Low.

Laboratory Data

Depth cm	pH H_2O	pH $CaCl_2$	CO_3 %	EC1:5 dS/m	ECe dS/m	Cl mg/kg	Org.C %	NO_3+ NH_4 mg/kg	Avail. P mg/kg	Avail. K mg/kg	SO_4-S mg/kg	React Fe mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est. ESP
														Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-10	8.1	7.1	0	0.20	0.82	19	3.13	47	82	1295	8.2	510	2.0	3.1	78	16	11	43.7	26.4	12.2	2.93	2.22	6.7
10-20	8.3	7.2	0	0.17	0.67	22	2.54	-	19	628	4.8	488	-	-	-	-	-	44.3	26.0	13.3	3.45	1.54	7.8
20-32	8.3	7.3	0	0.26	0.85	39	1.91	-	6	559	21.1	461	-	-	-	-	-	44.6	26.0	14.0	3.03	1.64	6.8
32-60	8.6	7.9	10	0.43	1.99	351	1.58	-	5	459	44.9	371	-	-	-	-	-	44.6	27.0	13.2	3.07	1.31	6.9
60-100	8.8	8.2	39	0.53	3.27	586	0.73	-	5	320	6.6	299	-	-	-	-	-	-	-	-	-	-	-
100-150	9.1	8.3	40	0.49	2.61	484	0.32	-	10	397	15.5	273	-	-	-	-	-	33.4	11.1	18.5	2.63	1.11	7.9

Note: Sum of cations, in a neutral to alkaline soil, approximates the CEC (cation exchange capacity), 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, in this case estimated by the sum of cations.

Further information: DEWNR Soil and Land Program