

## GRADATIONAL CLAY LOAM

**General Description:** *Medium to thick hard clay loam, grading to a brown coarsely structured clay over yellowish brown mottled clay.*

**Landform:** Very gently undulating swampy plain with better drained very low rises.

**Substrate:** Clay of unknown origin.

**Vegetation:**



<b>Type Site:</b>	Site No.:	SE175	1:50,000 mapsheet:	7022-1 (Nangwarry)
	Hundred:	Mingbool	Easting:	492090
	Section:		Northing:	5824120
	Sampling date:	12/12/2012	Annual rainfall:	745 mm average

Lower slope of low rise on very gently undulating plain, less than 1% slope. Hard setting surface with no stones.

### Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-15	Dark brown firm clay loam with weak granular structure. Gradual to:
15-30	Greyish brown hard massive clay loam. Clear to:
30-80	Dark brown hard light clay with moderate coarse angular blocky structure. Gradual to:
80-100	Dark brown hard medium clay with strong coarse subangular blocky structure. Clear to:
100-130	Dark yellowish brown and strong brown mottled hard massive light medium clay



**Classification:** Haplic, Eutrophic, Brown Dermosol; thick, non-gravelly, clay loamy /clayey, deep



## Summary of Properties

- Drainage:** Moderately well drained. No part of the profile is likely to remain wet for more than a week at a time following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is moderately high, as indicated by the exchangeable cation data. This is due to the moderately high to high clay content throughout, and the high organic matter level in the surface soil. Test data indicate marginal deficiencies of phosphorus and sulphur, with low zinc and manganese in the subsoil.
- pH:** Acidic at the surface, slightly alkaline at depth.
- Rooting depth:** Not recorded – estimate that most root growth occurs in the upper 80 cm.
- Barriers to root growth:**
- Physical:** The hard subsoil clay restricts even root distribution to some extent.
- Chemical:** There are no chemical barriers, provided soil is not allowed to acidify.
- Waterholding capacity:** Approximately 100 mm in the estimated potential rootzone.
- Seedling emergence:** Fair. Surface sets hard and can seal over if it dries out immediately post-germination.
- Workability:** The clay loamy surface is reasonably easily worked, but optimal moisture range is limited.

## Erosion Potential

- Water:** Low.
- Wind:** Low.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	Ext. Al mg/kg	EC 1:5 dS/m	Cl mg/kg	Org.C %	NO <sub>3</sub> + NH <sub>4</sub> mg/kg	Avail. P mg/kg	PBI	Avail. K mg/kg	SO <sub>4</sub> -S mg/kg	Boron mg/kg	Trace elements mg/kg (DTPA)				Sum cations cmol (+)/kg	Exchangeable cations cmol(+)/kg				ESP
													Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	5.8	5.1	-	0.14	64	3.49	42	22	94	136	13.6	1.0	0.35	392	7.79	0.34	12.8	9.71	2.42	0.37	0.34	2.9
0-15	6.1	5.6	1.55	0.133	55	3.50	42	12	68	124	4.9	0.6	0.42	232	16.4	1.09	18.2	15.9	1.71	0.26	0.33	1.4
15-30	6.3	5.4	0.60	0.041	6.2	1.22	15	5	53	53	2.3	0.5	0.22	165	1.17	0.86	8.9	7.45	1.14	0.15	0.14	1.7
30-80	6.2	5.4	0.53	0.042	4.5	0.85	4	2	151	82	2.1	0.9	0.34	92	0.45	0.41	13.2	9.20	3.41	0.37	0.21	2.8
80-100	7.0	6.1	0.20	0.087	5.7	0.43	4	< 2	609	118	10.2	1.7	0.25	16	0.47	0.19	19.9	13.9	4.97	0.59	0.36	3.0
100-130	7.6	7.0	0.26	0.117	8.7	0.24	7	< 2	897	129	14.4	1.8	0.13	5	1.93	0.08	25.0	19.5	4.41	0.7	0.38	2.8

**Note:** Paddock sample bulked from cores (0-10 cm).

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](#)

