

RIVER FLAT CLAY

General Description: *Dark grey to black very well structured clay loam to clay which may crack when dry, becoming more clayey with depth.*

Landform: Lower Murray flats.

Substrate: Alluvial clay (Coonambidgal Formation).

Vegetation: Red gum (Euc. camaldulensis)



Type Site:	Site No.:	MP014	1:50,000 mapsheet:	6727-1 (Mobilong)
	Hundred:	Mobilong	Easting:	345200
	Section:	504	Northing:	6109820
	Sampling date:	14/02/2007	Annual rainfall:	340 mm average

Terrace flat of Lower Murray River between the bank and base of cliff. Firm surface, possibly seasonally cracking, with no stones. Watertable at 80 cm.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-10	Very dark greyish brown friable (moderately moist) clay loam with strong fine granular structure. Clear to:
10-25	Very dark greyish brown friable (moderately moist) light clay with strong fine granular structure. Clear to:
25-60	Black friable (moist) medium clay with strong fine polyhedral structure. Gradual to:
60-80	Black friable (wet) medium heavy clay with strong coarse subangular blocky structure.
80-	Watertable.



Classification: Melanic-Vertic*, Eutrophic, Black Dermosol; medium, non-gravelly, clay loamy / clayey, deep
* alternatively Melanic-Sodic



Summary of Properties

- Drainage:** Imperfectly to poorly drained. This land is reclaimed (drained) river flat swamp, so drainage conditions vary depending on micro-topography and proximity to drains. This site is adjacent to a drain.
- Fertility:** Inherent fertility is very high, as indicated by the exchangeable cation data. Levels of all tested nutrient elements are satisfactory to high. However, phosphate fixing capacity is very high, as indicated by reactive iron concentrations.
- pH:** Acidic at the surface, slightly acidic at depth. Note that these soils are variably sulfidic, meaning that excessive drainage may cause the development of acid sulfate conditions.
- Rooting depth:** At least 80 cm in sampling pit.
- Barriers to root growth:**
- Physical:** There are no apparent physical barriers, but the watertable controls root activity.
- Chemical:** High sodicity and moderate salinity from 25 cm restrict, but do not prevent root growth.
- Waterholding capacity:** Approximately 150 mm in the rootzone.
- Seedling emergence:** Satisfactory.
- Workability:** The surface is likely to become sticky and intractable when wet.
- Erosion Potential:**
- Water:** Low.
- Wind:** Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC 1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	Cl mg/kg	SO ₄ -S mg/kg	Boron mg/kg	React Fe 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	5.9	5.1	0	0.33	1.59	5.46	173	552	307	33.8	2.8	8280	3.87	1432	144	21.8	38.9	18.8	14.7	4.00	1.38	10.3
10-25	5.5	4.7	0	0.41	2.42	4.65	70	376	450	34.2	1.4	9990	3.86	1929	43.8	7.08	33.4	14.9	14.2	3.28	1.04	9.8
25-60	5.7	5.1	0	1.02	6.41	4.78	47	209	1423	68.6	1.4	9700	4.00	1801	19.2	4.05	42.2	14.4	17.3	9.98	0.59	23.7
60-80	6.1	5.6	0	1.08	5.86	4.26	51	231	1353	51.4	1.7	9660	5.80	1904	112	5.28	46.5	16.6	18.6	10.7	0.65	23.0

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](#)

