

## CALCAREOUS RUBBLY SANDY CLAY LOAM

**General Description:** *Calcareous sandy loam to sandy clay loam, becoming more clayey with depth, over a very highly calcareous light clay with abundant carbonate rubble, decreasing with depth*

**Landform:** Gently undulating alluvial fans.

**Substrate:** Alluvial clay (Pooraka Formation) mantled by windblown calcareous deposits.

**Vegetation:**



<b>Type Site:</b>	Site No.:	CM106	1:50,000 mapsheet:	6529-4 (Wakefield)
	Hundred:	Kulpara	Easting:	229500
	Section:	116	Northing:	6233230
	Sampling date:	15/02/2013	Annual rainfall:	430 mm average

Midslope of alluvial fan with slope of 2%. Firm surface with no stones.

### Soil Description:

Depth (cm)	Description
0-10	Dark reddish brown highly calcareous fine sandy clay loam with weak granular structure. Gradual to:
10-25	Dark reddish brown very highly calcareous clay loam with weak polyhedral structure and 10-20% calcareous nodules to 20 mm. Clear to:
25-65	Reddish yellow massive very highly calcareous light clay with 10-20% calcareous nodules to 20mm, and 10-20% soft calcareous segregations. Gradual to:
65-100	Reddish yellow massive very highly calcareous light clay with 20-50% carbonate nodules to 20 mm, and 10-20% soft calcareous segregations. Gradual to:
100-130	Reddish yellow massive very highly calcareous coarse sandy clay loam with 20-50% carbonate nodules to 20 mm, and 10-20% soft calcareous segregations.



**Classification:** ?, Regolithic, Supracalcic, Calcarosol; medium, 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 following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is high, as indicated by the exchangeable cation data (CEC exceeding 15 cmol(+)/kg means high nutrient retention capacity). There are no deficiencies at this site according to the laboratory data. Carbonate-induced fixation of phosphorus and trace elements may be expected where surface carbonate levels exceed 8%.
- pH:** Alkaline throughout, strongly alkaline from 90 cm.
- Rooting depth:** Most root growth is in the upper 50 cm, with some roots persisting to 75 cm.
- Barriers to root growth:**
- Physical:** There are no apparent physical barriers.
  - Chemical:** High sodicity, pH and boron concentrations restrict deeper root growth.
- Waterholding capacity:** Approximately 90 mm in potential rootzone.
- Seedling emergence:** Satisfactory – calcareous surface soils usually maintain friable consistence.
- Workability:** Calcareous surface soils can usually be worked over a range of moisture conditions.
- Erosion Potential**
- Water:** Slight due to slope, but surface soil is relatively stable.
  - Wind:** Moderately low – calcareous soils can become powdery and susceptible to wind erosion if over-grazed or worked too dry.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC 1:5 dS/m	ECe dS/m	Org.C %	NO <sub>3</sub> mg/kg	Avail. P mg/kg	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				Est. ESP
												Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	8.6	7.6	13.5	0.190	1.8	2.00	18	29	699	5.5	1.8	0.98	5	12.7	1.89	28.4	23.8	2.41	0.26	1.89	0.9
0-10	8.3	7.6	12.7	0.193	1.8	2.44	16	73	1310	6.1	1.9	1.00	5	19.3	3.82	28.7	23.8	2.29	0.22	2.31	0.8
10-25	8.7	7.8	21.9	0.130	1.2	1.28	3	8	355	5.2	2.4	1.33	6	5.25	0.36	26.4	22.2	2.91	0.40	0.96	1.5
25-65	8.9	7.9	41.9	0.512	3.3	0.70	11	3	156	33.4	5.1	1.65	5	2.13	0.16	23.0	13.4	6.12	2.98	0.40	13.0
65-100	9.6	8.6	43.4	0.972	6.3	0.52	16	3	312	107	20.6	0.84	5	1.67	0.18	22.3	8.26	5.96	7.29	0.80	32.7
100-130	9.3	8.3	47.0	0.842	5.5	0.38	6	< 2	383	95.1	19.9	0.58	4	1.90	0.20	19.1	6.66	3.80	7.68	0.98	40.2

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

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](#)

