

## SANDY LOAM OVER POORLY STRUCTURED BROWN CLAY

**General Description:** *Hard grey sandy loam with a strongly bleached A2 horizon over a brown and grey mottled coarsely structured clay*

- Landform:** Lower slopes and outwash fans.
- Substrate:** Fine grained alluvium
- Vegetation:** Red and blue gum woodland.



- Type Site:** Site No.: CH113  
 Hundred: Macclesfield  
 Section: 2996  
 Sampling date: 4/3/97
- 1:50,000 mapsheet: 6627-1 (Echunga)  
 Easting: 304150  
 Northing: 6111000  
 Annual rainfall: 825 mm average

Fan abutting an undulating rise, 3% slope. Firm surface, no stone.

### Soil Description:

Depth (cm)	Description
0-13	Dark greyish brown massive loamy fine sand. Clear to:
13-25	Greyish brown (white when dry), massive hard loamy fine sand. Sharp to:
25-45	Yellowish brown, brown and red mottled very hard medium clay with strong coarse prismatic structure. Gradual to:
45-80	Yellowish brown, grey and red mottled medium heavy clay with weak prismatic breaking to strong polyhedral structure. Diffuse to:
80-110	Olive, yellowish brown and red mottled medium heavy clay with weak coarse prismatic structure. Diffuse to:
110-170	Grey and orange mottled medium clay with weak coarse prismatic structure.



**Classification:** Eutrophic, Mottled-Subnatric, Brown Sodosol; medium, non-gravelly, sandy / clayey, very deep



## Summary of Properties

- Drainage:** Imperfectly drained. Water will "perch" in the bleached layer for weeks after prolonged rain.
- Fertility:** Natural fertility is moderate. Tests indicate that phosphorus and manganese are deficient, and that potassium, copper and sulphur are marginal. Organic carbon levels are high. Calcium : magnesium ratios are slightly high.
- pH:** Acidic at the surface, neutral with depth. Dolomitic lime is needed for correction.
- Rooting depth:** 110 cm in pit but few roots below 80 cm.
- Barriers to root growth:**
- Physical:** Tight clay subsoil prevents good proliferation. The dense, infertile sub-surface layer restricts good near-surface root development.
  - Chemical:** None.
- Waterholding capacity:** Approximately 80 mm in rootzone.
- Seedling emergence:** Fair. Surface prone to compaction.
- Workability:** Fair. Surface soil has a narrow moisture range for effective working.
- Erosion Potential:**
- Water:** Moderately low.
  - Wind:** Moderately low.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	5.7	4.8	0	0.06	-	3.4	11	88	6.0	0.7	0.7	453	11	2.0	8.5	4.1	0.9	0.19	0.19	2.2
0-13	5.3	4.5	0	0.10	-	3.3	16	41	4.9	0.5	0.7	658	8.2	2.2	7.0	1.9	0.6	0.23	0.07	3.3
13-25	5.2	4.3	0	0.04	-	0.5	3	22	2.6	0.3	0.2	141	2.3	0.4	2.6	0.3	0.2	0.15	0.07	5.8
25-45	5.7	4.7	0	0.13	-	0.7	2	122	7.7	1.0	0.6	159	16	1.1	16.5	4.9	5.3	1.21	0.31	7.3
45-80	6.1	5.6	0	0.36	-	0.3	2	117	59	0.8	0.5	40	1.9	1.0	17.6	4.8	6.1	2.28	0.28	13.0
80-110	6.7	6.0	0	0.37	-	0.2	2	92	73	0.9	0.4	36	1.2	0.9	16.4	4.8	5.9	3.47	0.21	25.9
110-170	6.0	5.2	0	0.40	-	0.1	2	70	67	0.7	0.5	60	1.9	0.7	13.7	3.5	4.7	3.65	0.14	26.6

**Note:** Paddock sample bulked from 20 cores (0-10 cm) taken around the pit.  
 CEC (cation exchange capacity) is 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.

**Further information:** [DEWNR Soil and Land Program](#)

