

## SANDY LOAM OVER BROWN CLAY

**General Description:** *Thick grey sandy loam with a bleached A2 horizon over a brown mottled sandy clay to clay*

**Landform:** Flats and lower slopes

**Substrate:** Fine to medium grained alluvium

**Vegetation:** Euc. camaldulensis - Euc. leucoxylon - Euc. goniocalyx woodland



**Type Site:** Site No.: CH108      1:50,000 mapsheet: 6628-1 (Barossa)  
 Hundred: Para Wirra      Easting: 306800  
 Section: 1545      Northing: 6154850  
 Sampling date: 03/03/97      Annual rainfall: 665 mm average

Valley flat between rolling low hills. Hard setting surface, no stone. 1% slope.

### Soil Description:

Depth (cm)	Description
0-15	Dark brown hard fine sandy loam with weak granular structure. Gradual to:
15-40	Light brown (bleached) hard massive fine sandy loam with orange mottles. Clear to:
40-70	Yellowish brown and brown mottled extremely hard fine sandy medium clay with moderate coarse blocky structure. Gradual to:
70-90	Light grey and brown mottled very hard fine sandy clay loam with weak coarse prismatic structure. Abrupt to:
-----Buried soil-----	
90-120	Dark grey, olive and yellow brown mottled very hard medium heavy clay with strong coarse prismatic structure. Gradual to:
120-170	Light grey and brown friable medium clay with weak coarse blocky structure. Diffuse to:
170-230	Olive grey and brown massive light clay with water table at 230 cm.



**Classification:** Bleached-Mottled, Eutrophic, Brown Chromosol; thick, non-gravelly, loamy/clayey, moderate



## Summary of Properties

**Drainage:** Imperfectly drained. Water will "perch" on top of the subsoil clay for several weeks to months after prolonged rain.

**Fertility:** Natural fertility is moderately low. Test results indicate that none of the measured nutrient elements is deficient. Organic carbon levels are satisfactory. Calcium : magnesium ratios are high - magnesium is probably deficient.

**pH:** Slightly acidic at the surface, slightly alkaline with depth.

**Rooting depth:** 170 cm in pit, but few roots below 120 cm.

### Barriers to root growth

**Physical:** Waterlogging, and high clay strength. Root growth is sub optimal in the coarsely structured very hard clay subsoil.

**Chemical:** No chemical barriers.

**Waterholding capacity:** Approximately 80 mm in rootzone.

**Seedling emergence:** Hard setting - susceptible to seedling emergence problems.

**Workability:** Fair - restricted moisture range for effective working. Highly susceptible to pugging and compaction.

### Erosion Potential:

**Water:** Low, provided run off from surrounding hills is diverted.

**Wind:** Moderately low - surface will pulverize if overgrazed or excessively cultivated.

## 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	6.6	6.0	0	0.09	-	2.5	107	183	8.6	1.0	3.9	417	56	4.4	8.3	8.5	0.6	0.09	0.25	1.1
0-15	5.9	5.1	0	0.07	-	1.6	46	160	8.1	0.6	2.6	455	37	1.8	6.8	3.6	0.6	0.09	0.30	1.3
15-40	5.5	4.5	0	0.03	-	0.3	5	98	1.7	0.3	1.7	161	51	0.6	4.5	1.7	0.9	0.11	0.11	2.4
40-70	6.3	5.3	0	0.01	-	0.2	3	172	1.7	0.4	3.3	71	31	0.7	10.1	3.6	4.3	0.21	0.33	2.1
70-90	6.9	6.0	0	0.02	-	0.10	2	132	2.1	0.6	1.7	37	12	0.6	6.0	2.1	3.1	0.17	0.20	2.8
90-120	7.7	6.6	0	0.06	-	0.23	2	246	8.1	0.6	3.5	53	69	1.3	19.7	7.7	10.4	0.91	0.53	4.6
120-170	7.8	6.7	0	0.05	-	0.10	2	188	4.5	0.3	1.9	49	116	0.7	9.8	3.7	5.3	0.45	0.44	4.6
170-230	7.8	6.7	0	0.04	-	0.06	2	164	4.2	0.6	1.1	37	11	0.6	6.2	2.2	3.3	0.35	0.20	5.6

**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](#)

