

SANDY CLAY LOAM OVER RED CLAY

General Description: *Thick brown silty surface soil with a pale coloured A2 horizon, overlying a red brown strongly structured clay with minor soft or nodular carbonate at depth*

Landform: Terraces and flood plains

Substrate: Fine textured alluvial sediments, weakly calcified

Vegetation:



Type Site:	Site No.:	CM038	1:50,000 mapsheet:	6630-1 (Burra)
	Hundred:	Hanson	Easting:	292150
	Section:	753	Northing:	6267600
	Sampling date:	24/05/93	Annual rainfall:	470 mm average

Alluvial flat with a hard setting surface.

Soil Description:

Depth (cm)	Description
0-10	Brown massive fine sandy clay loam. Clear to:
10-20	Brown massive fine sandy clay loam. Clear to:
20-45	Yellowish red massive silty clay loam. Clear to:
45-55	Pink massive light silty clay loam. Sharp to:
55-95	Dark reddish brown medium clay with strong coarse prismatic structure. Gradual to:
95-135	Dark red light medium clay with weak prismatic structure and minor semi-hard carbonate nodules and root channel in-fills. Gradual to:
135-160	Red clay with moderate blocky structure.



Classification: Bleached, Hypocalcic, Red Chromosol; thick, non-gravelly, clay loamy / clayey, very deep



Summary of Properties

- Drainage:** The soil is moderately well drained, although these soils are subject to run-on following heavy rain. In such situations the soil may be wet for some weeks.
- Fertility:** The surface layers have moderate nutrient retention capacities, as indicated by the exchangeable cation data, and most of this capacity is attributable to organic matter. The clayey subsoil however has high natural fertility. Phosphorus is high at the sampling site, but zinc is low below the surface 10 cm.
- pH:** Acidic at the surface, grading to alkaline with depth.
- Rooting depth:** 135 cm in sampling pit, but there are few roots below 55 cm.
- Barriers to root growth:**
- Physical:** The massive surface layers will impede root growth if there is insufficient moisture to lower their inherent strength.
 - Chemical:** There are no apparent chemical barriers to root growth.
- Waterholding capacity:** 150 mm in rootzone, but not all is available due to poor root distribution patterns.
- Seedling emergence:** Fair, due to the hard setting surface which seals over unless it is constantly moist between seeding and germination.
- Workability:** Fair. The poorly structured surface has a limited moisture range for effective working, tending to shatter if worked too dry and puddle if worked too wet.
- Erosion Potential:**
- Water:** Low.
 - Wind:** Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ mg/kg	Boron mg/kg	Trace Elements mg/kg (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	5.6	5.1	0	0.17	1.17	2.2	51	1044	-	1.4	1.8	212	45.4	0.8	10.7	5.18	1.43	0.24	1.36	2.2
0-10	6.1	5.9	0	0.14	0.76	2.3	67	1098	-	1.4	1.7	204	40.7	0.8	10.4	5.73	1.62	0.34	1.42	3.3
10-20	6.3	5.8	0	0.06	0.40	0.8	12	783	-	1.1	1.2	34	29.6	0.1	6.9	4.75	1.22	0.25	1.00	3.6
20-45	6.7	6.3	0	0.05	0.30	0.4	9	492	-	1.0	1.2	16	25.3	0.1	5.6	3.92	1.50	0.24	0.66	4.3
45-55	7.0	6.5	0	0.04	0.21	0.2	7	304	-	0.9	1.0	13	21.2	<0.1	5.1	3.03	1.96	0.22	0.41	4.3
55-95	7.4	6.7	0	0.06	0.21	0.4	<4	453	-	4.9	1.7	16	9.5	<0.1	25.6	8.01	11.16	0.83	1.37	3.2
95-135	8.4	8.1	2.5	0.19	0.46	0.1	<4	461	-	4.5	1.1	10	3.0	<0.1	19.2	6.90	10.11	0.91	1.13	4.7
135-160	8.4	7.9	0.1	0.14	0.43	0.1	5	441	-	4.3	1.0	10	3.0	<0.1	19.2	6.06	9.64	0.99	1.16	5.2

Note: Paddock sample bulked from 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](#)

