SANDY LOAM OVER BROWN CLAY

General Description: *Sandy loam to sandy clay loam over a grey or brown mottled coarsely structured clay, calcareous with depth*

Landform: Gently undulating plains.

Substrate: Fine to medium textured Tertiary sediment.

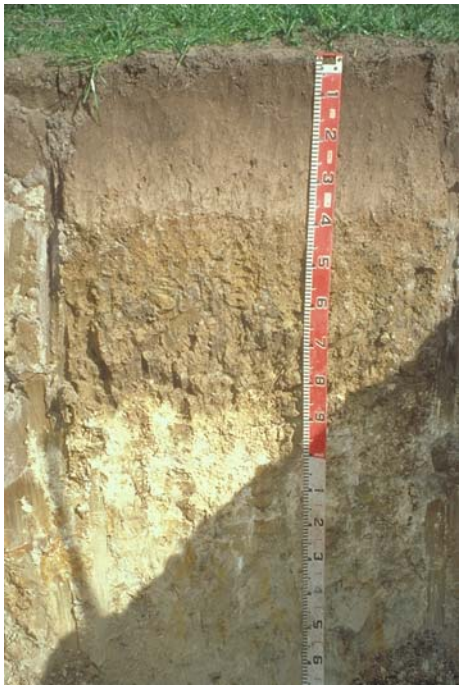
Vegetation Eucalyptus camaldulensis woodland.

Type Site: Site No.: SE069

1:50,000 sheet:	7024-2 (Hynam)	Hundred:	Jessie
Annual rainfall:	550 mm	Sampling date:	28/08/97
Landform:	Plain with a slope of 0.5%		
Surface:	Firm with no stones		

Soil Description:

Depth (cm)	*Description*
0-12	Dark brown soft sandy clay loam with moderate coarse subangular blocky structure. Gradual to:
12-22	Dark greyish brown soft heavy sandy loam with weak blocky structure and minor ironstone concretions. Abrupt to:
22-40	Brown loose loamy sand with 2-10% ironstone nodules. Sharp to:
40-55	Dark greyish brown, red and strong brown friable medium clay with strong coarse prismatic structure. Diffuse to:
55-86	Brown and yellowish brown firm medium clay with strong coarse prismatic structure. Abrupt to:
86-120	Brown and yellow firm calcareous medium clay with moderate subangular blocky structure, 20-50% fine and 2-10% concretionary carbonate segregations. Gradual to:
120-140	Very pale brown firm massive highly calcareous fine sandy clay with minor carbonate concretions. Clear to:
140-170	Very pale brown and yellow friable massive calcareous sandy light clay.



Classification: Mottled, Hypercalcic, Brown Chromosol; thick, non-gravelly, clay loamy / clayey, deep

Summary of Properties

Drainage: Imperfectly drained. Water can perch on the surface of the clay subsoil for several weeks following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderately low as indicated by the exchangeable cation data. Surface nutrient retention capacity is largely supplied by organic matter, and sandy subsurface horizons have very poor capacity. Of the tested nutrients, copper appears to be deficient, and potassium levels are marginal.

pH: Acidic to strongly acidic at the surface, alkaline with depth.

Rooting depth: 140 cm in pit, but few roots below 55 cm.

Barriers to root growth:

Physical: Coarsely structured subsoil reduces root density, but does not prevent root growth.

Chemical: There are no chemical barriers other than surface soil acidity. Low nutrient capacity and status in subsurface layers restrict root growth.

Water holding capacity: Approximately 165 mm in the entire root zone, but up to 75 mm is unavailable due to poor root densities.

Seedling emergence: Good to fair, depending on the degree to which the surface seals.

Workability: Firm surface is easily worked, but excessive working will degrade tilth.

Erosion Potential

Water: Low.

Wind: Low.

Laboratory Data

Depth cm	pH H_2O	pH $CaCl_2$	CO_3 %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO_4-S mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP	Ext Al mg/kg
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K		
Paddock	5.4	4.6	0	0.12	-	2.5	31	102	14	1.1	0.40	397	15.5	1.46	-	5.44	1.38	0.20	0.48	-	1.2
0-12	5.5	4.4	0	0.09	-	1.8	11	172	10	0.9	0.31	221	11.0	1.21	-	4.25	0.97	0.12	0.43	-	1.5
12-22	5.6	4.5	0	0.04	-	0.4	4	91	6.0	0.4	0.30	101	7.09	1.09	-	2.30	0.60	0.09	0.21	-	1.1
22-40	5.9	5.0	0	0.02	-	0.2	<1	51	3.8	0.3	0.22	52	3.15	1.07	-	1.81	0.50	0.06	0.10	-	0.8
40-55	7.3	6.3	0	0.07	-	0.4	<1	192	6.2	1.1	0.70	32	1.41	1.16	23	13.16	4.10	0.52	0.5	2.3	0.9
55-86	7.5	6.6	0	0.06	-	0.2	2	164	4.4	1.9	0.60	23	4.22	1.11	-	14.4	6.09	0.54	0.44	-	0.8
86-120	8.8	7.8	21	0.10	-	0.2	1	124	4.4	2.4	0.39	7.2	2.92	1.13	17	13.26	4.28	0.54	0.25	3.2	0.8
120-140	9.0	8.0	9	0.11	-	0.1	2	119	3.6	2..2	0.27	6.7	3.03	1.04	16	11.24	4.35	0.68	0.24	4.3	0.9
140-170	9.0	8.1	2	0.11	-	0.1	<1	112	3.3	1.7	0.25	11	11.6	1.08	12	7.80	3.39	0.66	0.21	5.5	1.2

Note: Paddock sample bulked from cores (0-15 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.