THICK SAND OVER CLAY

General Description: *Thick sand with a bleached A2 layer, over a coarsely structured brown or grey mottled clay*

Landform: Gently undulating dunefield.

Substrate: Medium textured Tertiary age sediments.

Vegetation: Red gum (Eucalyptus camaldulensis)

Type Site: Site No.: SE048

1:50,000 sheet:	7024-4 (Keppoch)	Hundred:	Beeamma
Annual rainfall:	550 mm	Sampling date:	31/01/96
Landform:	Lower slope of low dune, 1% slope		
Surface:	Soft with no stones		

Soil Description:

Depth (cm)	*Description*
0-6	Very dark greyish brown soft single grain loamy sand. Clear to:
6-15	Dark greyish brown loose single grain sand. Clear to:
15-38	Pale brown loose single grain sand. Abrupt to:
38-53	Yellowish brown, yellowish red and brown hard fine sandy medium heavy clay with strong coarse columnar breaking to coarse subangular blocky structure. Clear to:
53-78	Brown and reddish yellow hard fine sandy medium clay with strong coarse subangular blocky structure. Clear to:
78-101	Yellowish brown and red firm massive sandy light medium clay. Clear to:
101-140	Yellowish brown, light yellowish brown and red massive friable sandy clay loam.

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

Summary of Properties

Drainage Imperfectly drained. The coarsely structured dispersive subsoil perches water for up to several weeks following heavy or prolonged rainfall.

Fertility Inherent fertility is low, as indicated by the exchangeable cation data. Low clay and organic matter contents restrict topsoil nutrient retention capacity - phosphorus, potassium, calcium, magnesium and sulphur are all deficient. Concentrations of all but phosphorus and sulphur increase in the subsoil.

pH Acidic at the surface, alkaline with depth.

Rooting depth 140 cm in pit, but few roots below 53 cm.

Barriers to root growth

Physical: There is very little root growth into the coarsely structured dispersive subsoil aggregates, so root density and consequent water use efficiency are reduced.

Chemical: There are no toxic barriers - low nutrient retention and status are the main causes of poor root growth.

Water holding capacity Approximately 70 mm in the root zone.

Seedling emergence: Fair due to water repellence.

Workability: The soft surface is easily worked.

Erosion Potential

Water: Low.

Wind: Moderately low.

Laboratory Data

Depth cm	pH H_2O	pH $CaC1_2$	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 (DTPA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	5.5	4.6	0	0.05	0.49	0.8	4	86	4	0.9	0.26	69	4.38	1.06	2.5	1.48	0.32	0.11	0.14	na
0-6	5.6	4.8	0	0.06	0.50	1.6	6	92	6	0.9	-	-	-	-	3.9	2.83	0.65	0.18	0.19	na
6-15	5.2	4.4	0	0.03	0.33	0.4	<4	53	2	0.8	-	-	-	-	1.3	0.76	0.22	0.11	0.06	na
15-38	5.6	4.6	0	0.01	0.11	0.1	<4	60	2	0.7	-	-	-	-	0.7	0.40	0.14	0.11	0.05	na
38-53	6.2	4.9	0	0.06	0.21	0.4	<4	213	4	1.9	-	-	-	-	14.3	4.36	5.45	1.35	0.61	9.5
53-78	7.3	6.0	<0.1	0.06	0.22	0.2	<4	214	6	4.0	-	-	-	-	13.5	3.47	5.15	1.65	0.52	12.3
78-101	8.1	6.8	<0.1	0.08	0.31	0.1	<4	170	7	6.1	-	-	-	-	11.6	3.21	4.99	1.71	0.42	14.7
101-140	8.6	7.3	<0.1	0.08	0.33	0.1	<4	129	5	3.9	-	-	-	-	7.2	2.51	2.96	1.12	0.24	15.6

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