

## 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*)



<b>Type Site:</b>	Site No.:	SE048	1:50,000 mapsheet:	7024-4 (Keppoch)
	Hundred:	Beeamma	Easting:	472700
	Section:	31	Northing:	5957950
	Sampling date:	31/01/1996	Annual rainfall:	540 mm average

Lower slope of low dune, 1% slope. Soft surface with no stones.

### Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
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.

**Waterholding capacity:** Approximately 70 mm in the rootzone.

**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 <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 (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

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

