

DEEP SILICEOUS SAND

General Description: *Very thick siliceous sand over clay at variable depth*

Landform: Undulating dune field.

Substrate: Calcreted calcarenite.

Vegetation: Blue gum (*Eucalyptus leucoxylon*) and red gum (*E. camaldulensis*)



Type Site: Site No.: SE063

1:50,000 sheet: 7022-3 (Schank)

Hundred: Young

Annual rainfall: 700 mm

Sampling date: 20/08/97

Landform: Upper slope of dune, 5% slope

Surface: Soft with no stones

Soil Description:

Depth (cm)	Description
0-18	Very dark greyish brown soft light sandy loam with weak polyhedral structure. Clear to:
18-40	Brown loose single grain loamy sand. Gradual to:
40-64	Yellowish brown loose single grain loamy sand. Abrupt to:
64-85	Yellowish brown loose single grain sand with more than 50% unidentified nodules (6-60 mm). Clear to:
85-100	Brownish yellow loose single grain sand with 2-10% unidentified nodules (2-6 mm) and minor strong brown clayey lamellae. Clear to:
100-140	Strong brown and brown friable fine sandy light clay with moderate coarse subangular blocky structure with calcreted calcarenite at variable depths from 130 cm.



Classification: Bleached-Mottled, Eutrophic, Brown Chromosol; very thick, non-gravelly, sandy/clayey, deep

Summary of Properties

- Drainage** Well drained. The soil rarely remains wet for more than a couple of days following heavy or prolonged rainfall.
- Fertility** Inherent fertility is low, as indicated by the exchangeable cation data. Nutrient retention capacity is low - organic matter is needed to supplement capacity. There are no obvious deficiencies at the type site, but phosphorus, calcium, magnesium and copper are all approaching marginal levels.
- pH** Acidic at the surface, neutral with depth.
- Rooting depth** 140 cm in pit
- Barriers to root growth**
- Physical:** There are no physical barriers until the calcrete (at 120 cm on opposite side of sampling pit).
- Chemical:** There are no toxic concentrations of salts etc, but low nutrient retention capacity in upper 100 cm restricts root density.
- Water holding capacity** Approximately 140 mm in the root zone.
- Seedling emergence:** Satisfactory except where water repellent.
- Workability:** Soft surface is easily worked.
- Erosion Potential**
- Water:** Low.
- Wind:** Moderately 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 -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	5.9	5.0	0	0.21	-	2.5	24	175	11.0	1.3	1.02	88.5	98.8	4.09	-	5.42	0.92	0.24	0.43	na	1.6
0-18	5.9	4.7	0	0.05	-	1.2	3	58	5.3	0.6	0.34	97.3	36.6	2.02	-	3.82	0.19	0.12	0.15	na	1.9
18-40	6.1	5.0	0	0.02	-	0.5	3	17	3.1	0.4	0.21	59.5	5.28	0.78	-	2.04	< 0.1	0.10	0.10	na	1.2
40-64	6.3	5.2	0	0.01	-	0.2	2	12	2.5	0.4	0.21	59.2	1.81	0.61	-	1.65	< 0.1	0.08	0.09	na	1.1
64-85	6.5	5.7	0	0.02	-	0.2	2	30	2.7	0.3	0.29	106	2.56	0.69	-	1.99	0.23	0.12	0.14	na	1.0
85-100	6.6	5.8	0	0.01	-	0.1	4	66	2.3	0.4	0.24	106	2.41	0.83	-	1.50	0.13	0.10	0.13	na	1.0
100-140	7.1	6.5	0	0.06	-	0.3	< 1	200	15.3	0.7	0.22	20.5	15.0	0.63	-	8.05	2.06	0.66	0.47	5.9	1.0

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. CEC is estimated from the sum of cations in the 100-140 cm layer.