

THICK SAND OVER SANDY CLAY

General Description: *Thick to very thick sand, grey at the surface with a bleached subsurface, abruptly overlying a very coarsely columnar yellowish brown and grey mottled sandy clay.*

Landform: Flat corridor plains between ancient beach ridges.

Substrate: Lagoonal clays and sands of the Padthaway Formation.

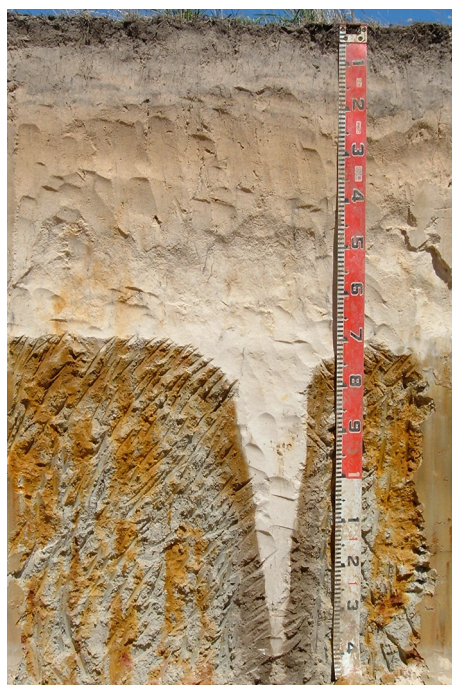
Vegetation: -

Type Site: Site No.: SE135 1:50,000 mapsheet: 6924-2 (Lucindale)
 Hundred: Woolumbool Easting: 444310
 Section: 83 Northing: 5931710
 Sampling date: 13/02/06 Annual rainfall: 570 mm average

Level plain. Soft surface with no stones

Soil Description:

Depth (cm)	Description
0-6	Black loose weakly granular loamy sand. Clear to:
6-18	Brown soft single grain loamy sand. Gradual to:
18-38	Yellow soft single grain sand. Diffuse to:
38-52	Very pale brown soft single grain sand. Diffuse to:
52-65	Very pale brown soft single grain sand. Diffuse to:
65-73	Very pale brown soft single grain sand. Sharp to:
73-82	Brownish yellow hard light coarse sandy clay loam with very coarse (>100 cm) columnar structure. Clear to:
82-110	Strong brown and light grey hard coarse sandy clay loam with strong very coarse columnar structure. Diffuse to:
110-150	Light grey, brownish yellow and red mottled hard coarse sandy light clay loam with strong very coarse columnar structure.



Classification: Mesotrophic, Mottled-Mesonatric, Brown Sodosol; very thick, non-gravelly, sandy / clayey, very deep



Summary of Properties

- Drainage:** Poorly drained prior to installation of Upper South East drainage system. This was due to seasonal inundation and shallow seasonal watertable. Post drain construction, profile is moderately well drained. The clayey subsoil perches water causing saturation of the lower topsoil for up to a week following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is low, as indicated by the exchangeable cation data. This is due to low clay content of the topsoil. Test data indicate deficiencies of phosphorus, potassium, sulphur and copper. This is a high leaching soil which requires surface spread clay for long term improvement in fertility status.
- pH:** Slightly acidic at the surface, alkaline in the subsoil.
- Rooting depth:** There are some roots to 150 cm, but most growth is in the upper 50 cm.
- Barriers to root growth:**
- Physical:** The dense subsoil imposes a significant barrier to deeper root penetration.
 - Chemical:** Low nutrient availability is the most significant limitation. High sodicity in the subsoil is unlikely to have a significant impact.
- Waterholding capacity:** Approximately 65 mm in the rootzone
- Seedling emergence:** Satisfactory.
- Workability:** Good. Sandy surface is easily worked over a range of moisture conditions.
- 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	Cl mg/kg	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ -S mg/kg	Boron mg/kg	React Fe mg/kg	Trace Elements mg/kg (DTPA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est. ESP
													Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-6	6.0	4.8	-	0.25	-	8	1.86	10	39	2.4	0.6	278	0.13	41	1.20	1.07	3.4	2.25	1.09	0.02	0.07	0.6
6-18	6.4	6.0	-	0.03	-	15	0.27	8	23	<1	0.3	284	0.11	29	0.08	0.05	1.1	0.69	0.27	0.05	0.06	4.7
18-38	6.9	5.9	-	0.03	-	7	<0.05	3	17	<1	0.2	73	0.04	8	0.07	0.06	1.1	0.75	0.18	0.05	0.07	4.6
38-52	6.5	5.8	-	0.02	-	8	<0.05	2	16	<1	0.2	32	0.09	4	0.02	0.14	0.7	0.52	0.10	0.03	0.05	4.7
52-65	6.9	6.2	-	0.02	-	12	<0.05	2	21	<1	0.3	49	0.06	2	0.01	0.20	0.8	0.55	0.15	0.04	0.05	4.8
65-73	7.6	6.5	-	0.02	-	6	<0.05	3	28	<1	0.2	25	0.04	<1	0.04	0.17	0.7	0.52	0.12	0.06	0.05	7.7
73-82	8.4	7.2	-	0.09	-	48	0.08	2	110	6.3	1.3	559	0.03	4	0.04	0.26	2.4	0.94	1.09	0.23	0.13	9.6
82-110	8.4	7.5	-	0.18	-	133	<0.05	2	200	42.8	3.1	418	0.07	<1	0.01	0.32	3.3	1.00	1.38	0.69	0.20	21.1
110-150	8.1	7.1	-	0.26	-	264	<0.05	2	161	64.0	2.3	373	0.02	<1	0.03	0.25	2.9	0.91	1.28	0.58	0.17	19.7

Note: Sum of cations, in a neutral to alkaline soil, approximates the CEC (cation exchange capacity), 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, in this case estimated by the sum of cations.

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

