DEEP SILICEOUS SAND

General Description: *Deep, disturbed, sporadically bleached sandy soil*

Subgroup soil: H2–H3

Landform: Disturbed linear dune

Substrate: Siliceous sand.

Vegetation: Woody native revegetation site (revegetated in 1991).

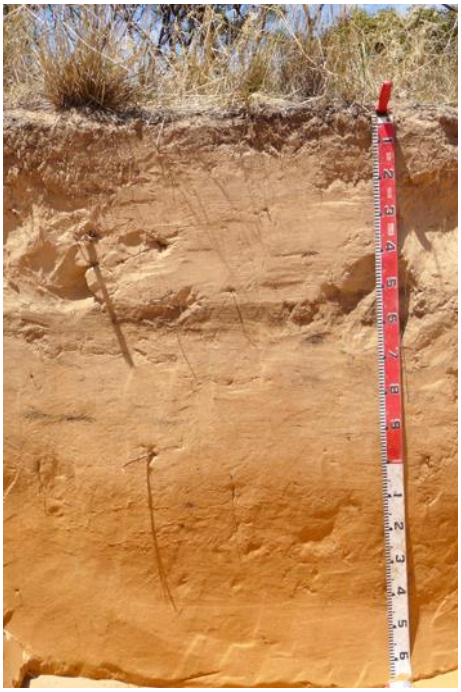
Type Site:

Site No:	MM167	1:50,000 mapsheet:	6827–3 (Moorlands)
Hundred:	Sherlock	Easting:	375870
Section:	-	Northing:	6088630
Sampling date:	13/12/2011	Annual rainfall:	380 mm average

The site is in on a duneslope. The site and surrounding area have been subjected to considerable wind erosion activity since clearing and settlement, with the described site overlain by 54 cm of deposited sand.

Soil Description:

Depth (cm)	*Description*
Overlying sand:	
0–13	Loose, water repellent, dark brown, loamy sand with single grain structure.
13–32	Light yellowish brown, loamy sand with single grain structure.
32–54	as above.
Buried soil:	
54–60	Dark brown, loamy sand with massive structure
60–75	Yellowish brown and orange brown, clayey sand with sporadic bleaching and massive structure.
75–102	as above
102–140	Dark brown, clayey sand with sporadic bleaching and massive structure.
140–170	Strong brown, clayey sand with sporadic bleaching and massive structure.



Classification: Basic, Arenic, Yellow-Orthic Tenosol; medium, non-gravelly, sandy / sandy, deep.

Summary of Properties

Drainage: Drainage is excessive (rapid).

Fertility: Inherent fertility is very low (as the sandy soil has limited capacity to retain and provide nutrients). This is evidenced by very low cation exchange capacity (which is approximated by the sum of cations). There is also little organic matter (which provides natural fertility), even in the surface soil, owing to disturbance and erosion, and the soil's low clay content. Maintenance and improvement of surface soil organic matter, residues and vegetative cover is extremely important for maintenance of fertility as well as protection against erosion.

pH: Surface soil pH is acidic; pH increases with depth to slightly alkaline levels.

Rooting depth: Root growth was observed to the base of the pit, with roots becoming few below 140 cm.

Barriers to Root Growth:

Physical: There are no physical limitations to root growth to the base of the pit.

Chemical: Low fertility may limit root growth (e.g. low to very low phosphorus, sulfur and boron levels). Zinc and even manganese levels below the surface soil may also limit root growth with depth.

Waterholding capacity: Estimate for perennial vegetation to 140 cm = 90 mm (moderate)
[(0.13x100)+(0.41x60)+(0.06x90)+(0.8x60)].

Seedling emergence: Good.

Workability: Good.

Erosion Potential:

Water: Low.

Wind: Extreme – highly fragile. Permanent vegetation cover is essential to protect soil against erosion.

Laboratory Data

Depth cm	pH H_2O	pH $CaC1_2$	CO_3 %	EC 1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	Cl mg/kg	SO_4 -S mg/kg	Boron 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	
Paddock	6.3	5.5	0	0.027	0.26	0.65	13	111	7.1	6.4	0.33	0.27	40.5	1.83	0.92	2.1	1.45	0.39	0.04	0.22	1.9
0–13	6.1	5.3	0	0.018	0.21	0.58	13	108	4.4	2.9	0.17	0.32	13.8	1.54	0.92	1.9	1.33	0.36	0.03	0.20	1.6
13–32	6.8	5.8	0	0.022	0.19	0.14	4	64	6.6	2.2	0.15	0.22	17.4	0.32	0.04	1.3	0.78	0.31	0.07	0.15	5.3
32–54	7.2	6.7	0	0.021	0.17	0.07	<2	85	4.9	2.2	0.15	0.64	8.30	0.56	0.33	1.5	0.92	0.32	0.07	0.18	4.7
54–60	7.5	6.5	0	0.052	0.47	0.25	<2	114	23.6	3.4	0.36	0.16	8.33	1.46	0.05	3.2	2.24	0.46	0.23	0.25	7.2
60–75	7.5	6.8	0	0.052	0.53	0.18	<2	86	32.1	5.9	0.29	0.23	8.77	0.28	0.06	2.9	2.06	0.37	0.25	0.19	8.7
75–102	7.0	6.5	0	0.064	0.83	0.06	<2	65	58.5	5.9	0.18	0.15	5.84	0.17	0.10	2.3	1.58	0.38	0.18	0.16	7.8
102–140	7.6	6.9	0	0.033	0.41	<0.05	<2	47	19.0	4.0	0.23	0.20	5.44	0.28	0.13	3.1	2.17	0.67	0.12	0.12	3.9
140–170	7.7	6.8	0	0.038	0.29	<0.05	<2	54	16.1	3.1	0.23	0.31	3.21	0.25	0.45	3.1	2.03	0.84	0.09	0.14	2.9

Note: Paddock sample bulked from 20 cores (0–10 cm) taken around the pit.

Sum of cations 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