# DEEP SAND

***General Description:*** *Deep siliceous sand, slightly calcareous with depth*

**Landform:** Low to moderate sandhills

**Substrate:** Windblown coarse textured deposits (Molineaux Sand).

**Vegetation:** Mallee

**Type Site:**

| | | | |
|---|---|---|---|
| Site No.: | MM022 | 1:50,000 mapsheet: | 6727-1 (Mobilong) |
| Hundred: | Burdett | Easting: | 358650 |
| Section: | 143 | Northing: | 6121350 |
| Sampling date: | 31/10/1991 | Annual rainfall: | 345 mm average |

Sandhill in undulating landscape of low to moderate dunes. Loose surface, no stones.

**Soil Description:**

| *Depth (cm)* | *Description* |
|---|---|
| 0-16 | Dark brown loose loamy sand. Clear to: |
| 16-32 | Brown loose loamy sand. Diffuse to: |
| 32-80 | Yellowish red loose sand. Sharp to: |
| 80-135 | Yellowish red and light brown soft clayey sand with red sandy clay loam lamellae (6 cm in total within depth range). Diffuse to: |
| 135-180 | Yellowish red soft light sandy loam with minor soft fine calcareous segregations. Diffuse to: |
| 180-220 | Orange soft calcareous light sandy loam. |

**Classification:** Calcareous, Argic, Brown-Orthic Tenosol; medium, non-gravelly, sandy / sandy, very deep

## *Summary of Properties*

**Drainage:** Rapidly drained. Soil never remains wet for more than a few hours.

**Fertility:** Inherent fertility is low, as indicated by the exchangeable cation data and low clay content. Phosphorus, nitrogen, copper and zinc deficiencies are likely, confirmed by data (except nitrogen - no data). Organic carbon levels, although low, are satisfactory for a sandy soil in this rainfall environment.

**pH:** Neutral at the surface, alkaline with depth.

**Rooting depth:** 180 cm in pit, but few roots below 135 cm.

**Barriers to root growth:**

**Physical:** No physical barriers.

**Chemical:** Low nutrient status and retention capacity limit root growth.

**Waterholding capacity:** 55 mm in rootzone.

**Seedling emergence:** Satisfactory although affected by water repellence in dry seasons.

**Workability:** Loose surface is easily worked.

**Erosion Potential:**

**Water:** Low.

**Wind:** Moderate to moderately high.

## *Laboratory Data*

| Depth cm | pH $H_2O$ | pH $CaCl_2$ | $CO_3$ % | EC1:5 dS/m | ECe dS/m | Org.C % | Avail. P mg/kg | Avail. K 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 | 7.5 | 7.5 | <1 | 0.06 | 0.46 | 0.6 | 6 | 170 | 0.9 | 0.14 | 5.8 | 2.9 | 0.25 | 3.8 | 3.07 | 0.49 | 0.12 | 0.19 | 3.2 |
| | | | | | | | | | | | | | | | | | | | |
| 0-16 | 7.1 | 7.2 | <1 | 0.03 | 0.23 | 0.7 | 5 | 100 | 0.6 | 0.10 | 10 | 3.4 | 0.37 | 3.4 | 3.39 | 0.49 | 0.14 | 0.15 | 4.7 |
| 16-32 | 7.5 | 7.4 | 1 | 0.02 | 0.17 | 0.2 | <2 | 57 | 0.5 | <0.05 | 7.3 | 0.43 | <0.06 | 3.0 | 2.41 | 0.47 | 0.16 | 0.11 | 5.3 |
| 32-50 | 7.7 | 7.2 | <1 | 0.02 | 0.11 | 0.1 | <2 | 70 | 0.5 | 0.05 | 4.5 | 0.22 | <0.06 | 2.1 | 1.52 | 0.40 | 0.13 | 0.09 | na |
| 50-80 | 7.6 | 7.1 | 1 | 0.02 | 0.12 | <0.1 | <2 | 54 | 0.7 | <0.05 | 3.2 | 0.16 | <0.06 | 2.2 | 1.37 | 0.64 | 0.16 | 0.08 | na |
| 80-100 | 7.8 | 7.1 | 1 | 0.03 | 0.20 | <0.1 | <2 | 67 | 0.7 | 0.06 | 3.3 | 0.12 | <0.06 | 3.4 | 1.83 | 1.10 | 0.22 | 0.09 | 6.5 |
| 100-135 | 7.9 | 7.0 | 1 | 0.03 | 0.22 | <0.1 | <2 | 74 | 0.5 | 0.05 | 3.3 | 0.23 | <0.06 | 3.8 | 2.13 | 1.09 | 0.30 | 0.12 | 7.9 |
| 135-180 | 8.1 | 7.3 | <1 | 0.09 | 1.03 | <0.1 | <2 | 87 | 0.5 | <0.05 | 2.3 | 0.43 | <0.06 | 3.2 | 1.97 | 0.75 | 0.37 | 0.14 | 11.6 |
| 180-220 | 9.2 | 8.1 | 1 | 0.10 | 0.56 | <0.1 | <2 | 74 | 0.5 | <0.05 | 1.7 | 0.25 | <0.06 | 3.5 | 2.92 | 0.71 | 0.41 | 0.17 | 11.7 |

**Note**: Paddock sample bulked from 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