

## DEEP CALCAREOUS LOAMY SAND

**General Description:** *Very thick soft loamy sand becoming very highly calcareous and slightly more clayey with depth*

**Landform:** Gently undulating dunefield

**Substrate:** Windblown Molineaux Sand and associated fine carbonate

**Vegetation:**



<b>Type Site:</b>	Site No.:	MM163	1:50,000 mapsheet:	7029-3 (Loxton)
	Hundred:	Gordon	Easting:	471640
	Section:	10	Northing:	6193680
	Sampling date:	22/10/2007	Annual rainfall:	265 mm average

Duneslope in gently undulating dunefield, 3% slope. Loose surface with no stones.

### Soil Description:

Depth (cm)	Description
0-11	Yellowish red loose single grain light loamy sand (surface drift). Clear to:
(11-20)	Discontinuous charcoal layer
11-25	Dark reddish brown soft single grain moderately calcareous loamy sand (original surface). Clear to:
25-40	Reddish brown soft massive moderately calcareous single grain loamy sand. Gradual to:
40-70	Yellowish red soft massive highly calcareous loamy sand with 2-10% fine carbonate segregations. Gradual to:
70-100	Yellowish red friable massive very highly calcareous loamy sand with 10-20% fine carbonate segregations. Gradual to:
100-120	Reddish yellow friable massive very highly calcareous heavy loamy sand with 20-50% fine carbonate segregations and 2-10% nodules (6-20 mm).



**Classification:** Ceteric, Regolithic, Hypercalcic Calcarosol; very thick, non-gravelly, sandy / sandy, deep



## Summary of Properties

- Drainage:** Rapidly drained. No part of the profile is likely to remain saturated for more than a few hours following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is low, as indicated by the exchangeable cation data. Test data indicate deficiencies of sulphur and copper. Carbonate levels are not high enough to induce other deficiencies.
- pH:** Alkaline throughout.
- Rooting depth:** 120 cm in the sampling pit, but very few roots deeper than 70 cm.
- Barriers to root growth:**
- Physical:** Light textured soil with no natural root growth restrictions, but compaction can develop over time. Well drained (too well drained in dry seasons), so potential for water to be lost from rootzone.
- Chemical:** There are no apparent chemical constraints. Salinity, pH, boron / chloride concentrations and sodicity are all well within satisfactory limits.
- Waterholding capacity:** Approximately 80 mm (moderately high) in the potential rootzone.
- Seedling emergence:** Potentially patchy in water repellence seasons.
- Workability:** Satisfactory.
- Erosion Potential:**
- Water:** Low.
- Wind:** Moderate to moderately high due to the thick sandy surface soil and exposed position.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC 1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	Cl mg/kg	SO <sub>4</sub> -S mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est. ESP
												Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-11	8.3	7.6	0.2	0.05	0.32	0.47	27	306	5	2.1	0.6	0.45	48	29.3	2.86	5.1	3.72	0.69	0.06	0.65	1.2
(11-20)	8.7	7.7	0.6	0.09	0.38	0.91	25	366	3	4.1	0.9	0.54	68	29.1	0.87	9.0	7.32	0.75	0.11	0.80	1.2
11-25	8.9	8.3	0.7	0.07	0.33	0.74	4	330	5	2.4	1.0	1.02	48	55.0	0.68	11.2	9.37	0.99	0.06	0.78	0.5
25-40	9.0	8.4	0.5	0.07	0.31	0.54	6	227	3	2.3	1.2	0.76	52	38.9	0.40	9.2	7.65	1.04	0.07	0.46	0.8
40-70	9.1	8.3	0.7	0.08	0.44	0.32	5	125	7	2.8	1.4	0.80	15	33.7	0.33	8.8	6.69	1.67	0.17	0.27	1.9
70-100	9.2	8.7	2.0	0.12	0.61	0.22	4	133	18	2.6	1.7	0.43	2	4.41	0.24	10.4	7.54	1.91	0.64	0.31	6.2
100-120	9.2	8.8	2.5	0.33	2.86	0.16	4	147	243	20.3	1.7	0.47	0	2.59	0.48	11.5	7.09	2.23	1.81	0.37	15.7

**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](#)

