

## GRADATIONAL SANDY LOAM

**General Description:** *Sandy loam grading to a brown or red sandy clay loam becoming calcareous and more clayey with depth*

**Landform:** Undulating rises overlain by rounded sandhills.

**Substrate:** Yellow and orange sandy clay (Tertiary Parilla Sand equivalent).

**Vegetation:** Mallee.



**Type Site:** Site No.: MM147

1:50,000 sheet: 6927 - 3 (Jabuk)

Annual rainfall: 400 mm

Landform: Flat

Surface: Soft with no stones

Hundred:

Price

Sampling date:

25/02/99

### Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-5	Dark greyish brown friable sandy loam. Abrupt to:
5-18	Brown hard massive sandy clay loam. Gradual to:
18-50	Orange firm very highly calcareous light clay with moderate subangular blocky structure. Clear to:
50-88	Yellowish brown firm very highly calcareous light clay with moderate subangular blocky structure. Gradual to:
88-170	Brownish yellow and orange hard sandy light clay with moderate subangular blocky structure and 2-10% fine carbonate segregations.



**Classification:** Sodic, Hypercalcic, Brown Kandosol; thin, non-gravelly, loamy / clayey, moderate

## Summary of Properties

<b>Drainage</b>	Moderately well drained. The soil is never saturated for more than a week.
<b>Fertility</b>	Inherent fertility is moderate, according to the exchangeable cation data. Regular phosphorus applications are necessary (levels are high at sampling site). Nitrogen concentrations depend on cropping history and legume content of pastures. Zinc and copper are occasionally needed (levels are adequate at sampling site). Organic carbon levels are satisfactory.
<b>pH</b>	Neutral at the surface, alkaline with depth.
<b>Rooting depth</b>	Not recorded. Estimate 88 cm in pit, with reduced root growth below 50 cm.
<b>Barriers to root growth</b>	
<b>Physical:</b>	Compact substrate (from 88 cm) impedes root growth.
<b>Chemical:</b>	High pH and sodicity from 88 cm prevent deeper growth. Low nutrient status restricts root growth below 50 cm.
<b>Water holding capacity</b>	Approximately 75 mm in potential root zone.
<b>Seedling emergence:</b>	Satisfactory.
<b>Workability:</b>	Firm surface is easily worked.
<b>Erosion Potential</b>	
<b>Water:</b>	Low.
<b>Wind:</b>	Low.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> -S 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	7.1	6.9	0.1	0.10	1.0	1.06	68	326	-	1.0	0.3	-	3.5	1.0	9.6	7.6	1.0	< 0.1	0.85	1.0
0-5	7.2	6.9	< 0.1	0.08	1.1	1.20	51	350	-	1.1	0.2	-	3.4	0.7	9.4	7.1	1.0	< 0.1	0.82	1.0
5-18	8.1	7.6	0.9	0.14	0.9	0.46	5	253	-	1.1	0.1	-	0.6	0.2	15.2	11.3	1.6	0.11	0.73	0.7
18-50	8.4	7.8	17	0.13	0.9	0.38	5	119	-	1.0	0.1	-	0.5	0.1	14.5	11.0	3.4	0.20	0.38	1.4
50-88	8.8	8.0	16	0.17	1.1	0.12	2	236	-	1.5	0.1	-	1.0	0.1	15.9	7.6	6.9	1.0	0.64	6.3
88-170	9.5	8.4	7.6	0.33	2.2	0.09	1	395	-	8.4	0.1	-	0.3	0.1	15.0	2.8	7.1	4.4	0.88	29.3

**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.