

## SAND OVER POORLY STRUCTURED CLAY

**General Description:** *Medium thickness loose bleached sand sharply overlying a grey or brown mottled dense sandy clay loam to sandy clay with coarse columnar structure and soft carbonate with depth.*

**Landform:** Undulating rises.

**Substrate:** Weathering granite or other coarse grained basement metamorphic rock.

**Vegetation:**



**Type Site:** Site No.: MO006  
 1:50,000 sheet: 6727-4 (Monarto) Hundred: Mobilong  
 Annual rainfall: 350 mm Sampling date: 1976  
 Landform: Upper slope of gently undulating rise, 3% slope  
 Surface: Loose to soft with scattered granite and quartzite stones

### Soil Description:

Depth (cm)	Description
0-7	Dark greyish brown loose single grain sand. Clear to:
7-15	Light grey soft single grain sand. Sharp to:
15-28	Dark greyish brown and light olive brown mottled hard sandy clay loam with coarse columnar structure. Clear to:
28-35	Light olive brown and dark greyish brown mottled hard sandy clay with coarse angular blocky structure. Sharp to:
35-45	Light olive brown and yellowish brown mottled hard sandy clay with strong fine angular blocky structure and minor fine carbonate. Clear to:
45-55	Yellowish brown, white and dark red hard sandy clay loam with moderate angular blocky structure and 2-10% fine carbonate. Gradual to:
55-100	Weathering granite with clayey and carbonate inclusions.



**Classification:** Calcic, Mottled-Mesonatric, Grey Sodosol; medium, non-gravelly, sandy / clayey, moderate

## *Summary of Properties*

- Drainage:** Moderately well to imperfectly drained. Water perches on top of the sodic clay subsoil for a week or more following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is low as indicated by the exchangeable cation data. Nutrient retention capacity of the surface soil is poor due to low clay content. As well as nitrogen and phosphorus, copper and zinc deficiencies are likely, and some crops will require manganese additions.
- pH:** Slightly alkaline at the surface, strongly alkaline with depth.
- Rooting depth:** Not recorded. Estimate 35 cm in pit.

### **Barriers to root growth:**

**Physical:** The dispersive sodic subsoil restricts root growth to the aggregate surfaces, severely impairing water use efficiency.

**Chemical:** High pH from about 40 cm retards deeper root growth.

**Water holding capacity:** Approximately 40 mm in the root zone.

**Seedling emergence:** Satisfactory, except in seasons when water repellence is a problem.

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

### **Erosion Potential**

**Water:** Moderate.

**Wind:** Moderate.

## *Laboratory Data*

Depth cm	Coarse sand %	Fine sand %	Silt %	Clay %	pH H <sub>2</sub> O	CO <sub>3</sub> %	EC 1:5 dS/m	Cl mg/kg	CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
										Ca	Mg	Na	K	
0-7	52	44	1	1	7.9	0	0.06	<50	2	1.9	0.26	0.08	0.13	na
15-28	42	26	2	26	8.4	0	0.12	60	16	5.3	5.5	1.7	1.2	10.6
28-35	36	24	2	34	8.8	0.1	0.16	88	21	6.1	7.5	2.7	1.7	12.9
45-55	36	20	2	32	9.7	7.7	0.35	150	19	7.3	7.2	3.6	1.8	18.9
65-75	37	16	4	25	9.9	13	0.43	194	17	5.0	6.9	3.8	1.2	22.4

**Note:** 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.