LOAMY SAND OVER POORLY STRUCTURED RED CLAY

General Description: *Firm loamy sand to sandy loam over a coarsely structured red clay, generally calcareous at depth*

Landform: Flats and lower slopes.

Substrate: Fine to medium grained alluvial sediments.

Vegetation:

Type Site: Site No.: MO039

1:50,000 sheet:	6727-4 (Monarto)	Hundred:	Monarto
Annual rainfall:	380 mm	Sampling date:	1976
Landform:	Outwash fan, 2% slope		
Surface:	Firm with no stones		

Soil Description:

Depth (cm)	*Description*
0-13	Reddish brown massive soft loamy sand. Clear to:
13-29	Yellowish red massive firm sandy loam with 2-10% quartz gravel (2-6 mm). Clear to:
29-45	Reddish brown soft massive loamy sand. Sharp to:
45-60	Dark reddish brown firm light clay with moderate prismatic structure. Clear to:
60-140	Yellowish red and pink hard calcareous sandy clay loam with weak subangular blocky structure and 10-20% fine carbonate segregations.

Classification: Calcic, Mesonatric, Red Sodosol; thick, non-gravelly, sandy / clayey, deep

Summary of Properties

Drainage: Moderately well drained. Water perches temporarily on top of the clayey subsoil, but the profile rarely remains saturated for more than a week following heavy or prolonged rainfall.

Fertility: Inherent fertility is moderately low, a function of low surface clay content. Nitrogen and phosphorus deficiencies are usual, with trace elements likely to be required from time to time.

pH: Alkaline throughout.

Rooting depth: Not recorded. Estimate 60 cm in pit.

Barriers to root growth:

Physical: The clayey subsoil affects root growth to some extent.

Chemical: High salinity from 60 cm impedes deeper root growth.

Water holding capacity: Approximately 65 mm in the root zone.

Seedling emergence: Satisfactory, due to the sandy surface.

Workability: Sandy surface is easily worked over a range of moisture conditions.

Erosion Potential

Water: Moderately low.

Wind: Moderately low.

Laboratory Data

Depth cm	Coarse sand %	Fine sand %	Silt %	Clay %	pH H_2O	CO_3 %	EC 1:5 dS/m	Cl mg/kg	CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
										Ca	Mg	Na	K	
0-13	9	71	8	6	8.6	1	0.10	<50	11	6.9	1.3	0.10	1.4	0.9
13-29	-	-	-	-	8.8	0	0.12	60	-	-	-	-	-	-
29-45	10	70	10	6	8.8	0	0.20	196	10	5.8	1.4	0.53	0.68	5.3
45-60	7	36	6	39	8.7	0	0.91	1380	25	10.3	6.1	4.3	2.0	17.2
60-140	8	46	6	20	8.9	12	2.52	4440	14	6.7	5.1	4.2	1.2	30.0

Note: CEC (cation exchange capacity) is a measure of the soil's capacity to store and release major nutrient elements. CEC at this site is estimated from the sum of exchangeable cations.

ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC.