SHALLOW SAND OVER CLAY ON CALCRETE

General Description: *Sandy surface soil with a bleached subsurface layer over a thin clayey subsoil with calcrete at shallow depth*

Landform: Flats and rises in relict coastal dune - corridor country

Substrate: Calcreted calcarenite of the Bridgewater Formation or limestone / marl of the Padthaway Formation.

Vegetation: Pink gum.

Type Site: Site No.: SE047

1:50,000 sheet:	6925-1 (Keith)	Hundred:	Stirling
Annual rainfall:	475 mm	Sampling date:	08/11/95
Landform:	Flat		
Surface:	Soft with 2-10% calcrete fragments		

Soil Description:

Depth (cm)	*Description*
0-5	Dark greyish brown soft loamy sand. Sharp to:
5-9	Bleached soft loamy sand. Sharp to:
9-25	Light yellowish brown mottled firm sandy medium clay with moderate coarse columnar structure and 2-10% calcrete fragments. Clear to:
25-40	Pale olive and pale yellow firm sandy medium clay with weak subangular blocky structure and 20-50% calcrete fragments. Sharp to:
40-60	Calcrete pan. Clear to:
60-80	Limestone.

Classification: Bleached-Mottled, Petrocalcic, Yellow Chromosol; thin, slightly gravelly, sandy / clayey, shallow

Summary of Properties

Drainage Moderately well drained. Some perching of water on top of subsoil clay occurs, but saturation is unlikely to persist for more than a few days.

Fertility The natural fertility of the sandy soil is low, as confirmed by the low CEC values. There is high nutrient retention capacity in the subsoil clay. The data indicate that all elements, with the possible exception of calcium, are in adequate supply.

pH Alkaline at the surface, strongly alkaline with depth. Higher than normal topsoil pH values are probably caused by irrigation water and road dust.

Rooting depth 40 cm in pit.

Barriers to root growth

Physical: Calcrete pan. The depth to the pan varies, as will the extent of fracture, which determines the depth to which roots can exploit moisture.

Chemical: Nil.

Water holding capacity Approximately 40 mm in root zone. However, because of variable depth to the calcrete, and fracturing patterns, this figure may be misleading.

Seedling emergence Good, except where water repellence is a problem.

Workability Good.

Erosion Potential

Water: Low.

Wind: Moderately low.

Laboratory Data

Depth cm	pH H_2O	pH $CaC1_2$	CO_3 %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO_4-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	8.1	7.4	0	0.39	3.15	0.9	27	144	31	1.8	0.80	14	2.0	1.7	5.2	1.78	2.49	0.77	0.19	14.8
0-5	8.4	7.8	0	0.09	0.48	0.7	38	220	8	0.5	-	-	-	-	6.0	4.62	0.94	0.04	0.42	0.7
5-9	8.2	7.5	0	0.06	0.35	0.6	34	193	12	0.6	-	-	-	-	6.8	5.23	1.18	0.05	0.34	0.7
9-25	8.2	7.5	0.1	0.11	0.44	0.4	nd	339	10	1.3	-	-	-	-	16.0	9.34	4.62	0.14	0.88	0.9
25-40	8.6	7.9	0.3	0.13	0.36	0.3	54	321	10	1.6	-	-	-	-	17.4	10.18	4.73	0.55	0.84	3.2
40-60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60-80	9.5	8.3	69.6	0.70	4.85	0.5	10	266	83	1.5	-	-	-	-	8.1	3.80	4.42	2.60	0.51	32.1

Note: Paddock sample bulked from 20 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.