

LIGHT SANDY LOAM OVER YELLOW MOTTLED CLAY

General Description: *Thick quartz gravelly loamy sand to sandy loam with a bleached A2 layer, overlying a brown or yellow mottled clay subsoil grading to kaolinitic weathering rock*

Landform: Undulating rises.

Substrate: Weathering quartzite.

Vegetation: Red gum (*E. camaldulensis*) woodland



Type Site:	Site No.:	CH128	1:50,000 mapsheet:	6628-2 (Onkaparinga)
	Hundred:	Talunga	Easting:	313350
	Section:	6586	Northing:	6144700
	Sampling date:	18/06/02	Annual rainfall:	710 mm average

Lower slope of undulating rise, 5% slope. Firm surface with no stones. Sporadic quartzite outcrop within 50 m.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-15	Dark brown friable light sandy loam with weak granular structure and 2 - 10% quartz gravel (6 - 20 mm). Clear to:
15-30	Light brown with strong brown mottles and streaks, massive friable loamy sand with 10 - 20% quartz gravel (6 - 20 mm). Clear to:
30-50	Light brown with strong brown mottles and streaks, massive friable loamy sand with more than 50% quartz gravel (6 - 60 mm). Clear to:
50-70	Reddish yellow, greyish brown and red mottled firm medium heavy clay with strong medium angular blocky structure and 10 - 20% quartz gravel (6 - 20 mm). Gradual to:
70-110	Grey, red and yellowish brown mottled firm medium heavy clay with strong medium lenticular structure, breaking to strong angular blocky, and 10 - 20% quartz gravel (20 - 200 mm).



Classification: Bleached-Mottled, Mesotrophic, Yellow Kurosol; thick, slightly gravelly, loamy / clayey, deep



Summary of Properties

- Drainage:** Imperfectly drained. Water may perch on the clayey subsoil for several weeks at a time following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is moderately low as indicated by the exchangeable cation data. Most of the nutrient retention capacity of the surface soil is due to organic matter - hence the very low capacity in the subsurface layers where organic matter levels are very low. Cation leaching associated with acidification is contributing to fertility loss. Phosphorus and copper levels are low, while potassium, calcium, magnesium and sulphur levels are marginal.
- pH:** Acidic at the surface, strongly acidic at depth.
- Rooting depth:** Roots to base of pit (110 cm), but most below 70 cm are tree roots.
- Barriers to root growth:**
- Physical:** The bleached subsurface layer tends to dry rapidly in spring to a hard dense mass, limiting root growth. The clayey subsoil presents a moderate barrier to root growth.
 - Chemical:** The only chemical barrier is low subsoil nutrient availability associated with acidity.
- Waterholding capacity:** Approximately 60 mm in the potential rootzone for grasses (ie upper 70 cm).
- Seedling emergence:** Satisfactory.
- Workability:** Satisfactory, although surface soil structure liable to degrade under cultivation, resulting in soil having a limited moisture range for effective cultivation.
- Erosion Potential:**
- Water:** Moderate - slope is gentle, but soil itself is highly erodible due to sandy surface and restricted drainage.
 - Wind:** Moderately low to low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP	Exch Al mg/kg
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K		
Paddock	6.3	5.4	0	0.08	-	3.56	22	158	8.2	1.3	0.98	482	29.1	4.01	-	6.13	1.62	0.26	0.33	-	-
0-15	5.7	4.6	0	0.04	-	2.43	15	133	4.6	0.9	0.46	225	17.0	5.68	-	2.94	0.81	0.11	0.33	-	12
15-30	5.8	4.7	0	0.02	-	0.62	13	91	3.2	0.5	0.58	123	4.15	1.14	-	0.60	0.25	0.08	0.21	-	16
30-50	5.5	4.5	0	0.04	-	0.34	17	94	5.7	0.4	0.46	128	2.30	1.07	-	0.45	0.33	0.09	0.22	-	25
50-70	4.9	3.9	0	0.06	-	0.80	3	142	10.1	0.9	0.90	377	5.50	1.06	-	0.91	4.45	0.41	0.37	-	442
70-110	5.0	3.9	0	0.06	-	0.31	3	90	41.2	0.5	0.60	56	4.34	0.77	-	0.55	4.26	0.51	0.21	-	460

Note: Paddock sample bulked from cores (0-10 cm) taken around the pit.

Further information: [DEWNR Soil and Land Program](#)

