

## GRADATIONAL SANDY LOAM OVER SANDSTONE

**General Description:** *Very gravelly grey coarse sandy loam with a bleached A2 layer grading to a brown sandy clay loam merging with coarse grained sandstone within a metre*

**Landform:** Rolling to steep hillslopes

**Substrate:** Coarse grained sandstone – Aldgate Sandstone at this site.

**Vegetation:** Eucalyptus baxteri forest.

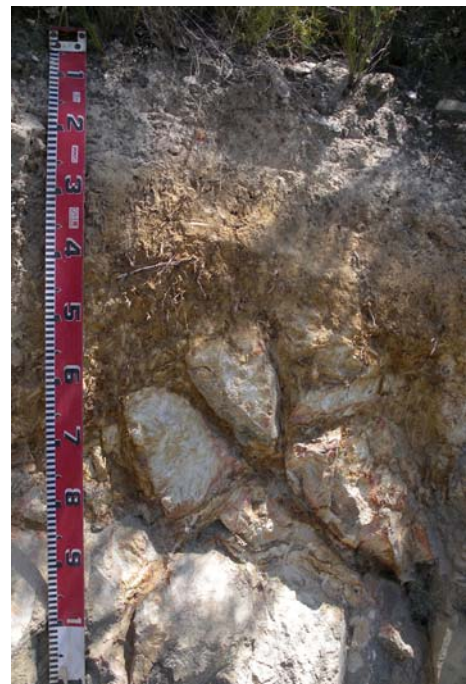


**Type Site:** Site No.: CH139

1:50,000 sheet: 6627-4 (Noarlunga)      Hundred: Noarlunga  
 Annual rainfall: 950 mm      Sampling date: 16/12/04  
 Landform: Upper slope in a landscape of rolling hills, 30% slope  
 Surface: Soft with 20-30% sandstone and quartzite stones to 200 mm

### Soil Description:

Depth (cm)	Description
0-10	Very dark greyish brown firm massive coarse sandy loam with more than 50% sandstone and quartzite stones to 60 mm. Clear to:
10-25	White firm massive coarse sandy loam with more than 50% sandstone and quartzite stones to 60 mm. Gradual to:
25-35	Strong brown firm massive sandy clay loam with 10-20% sandstone and quartzite stones to 60 mm. Clear to:
35-50	Strong brown friable clay loam with weak polyhedral structure. Gradual to:
50-90	Strong brown friable clay loam with more than 50% sandstone fragments. Abrupt to:
90-150	Coarse sandstone.



**Classification:** Bleached-Acidic, Eutrophic, Brown Kandosol; medium, moderately gravelly, loamy /clay loamy, moderate

## Summary of Properties

- Drainage:** Well drained. No part of the profile is likely to remain wet for more than a day or two, even in this high rainfall environment.
- Fertility:** Inherent fertility is low, as indicated by the exchangeable cation data. As would be expected at a low fertility site in undisturbed vegetation, concentrations of phosphorus, trace elements, calcium and magnesium are low. Application of dolomitic lime to correct acidity will overcome the latter two deficiencies.
- pH:** Acidic at the surface, strongly acidic with depth
- Rooting depth:** Root growth (indigenous trees and shrubs) extend to 90cm, with some deeper growth in cracks in the rock.
- Barriers to root growth:**
- Physical:** Hard rock at relatively shallow depth prevents root systems accessing all the water that enters this soil.
- Chemical:** There are no chemical barriers other than low nutrient status.
- Water holding capacity:** Approximately 75 mm in the root zone.
- Seedling emergence:** Satisfactory
- Workability:** Land is too steep for cultivation. On gentler slopes, soil surface is friable and easily worked, but stones are highly abrasive.

## Erosion Potential

- Water:** High due to the slope and low stability of surface soil.
- Wind:** Low.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC 1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	Cl mg/kg	SO <sub>4</sub> -S mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est. ESP
												Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-10	6.1	4.9	0	0.059	0.71	1.77	<1	181	22	8.9	0.4	0.61	109	8.14	1.18	3.8	2.33	0.87	0.20	0.38	na
10-25	6.0	5.0	0	0.052	0.64	0.64	<1	117	20	6.1	0.3	0.50	79	6.84	0.75	2.0	1.02	0.59	0.15	0.27	na
25-35	5.8	4.6	0	0.071	0.62	0.68	<1	188	34	8.1	0.4	0.50	62	5.61	0.38	3.1	1.04	1.30	0.34	0.46	na
35-50	5.4	4.5	0	0.120	0.94	0.62	<1	225	98	17	0.6	0.51	55	5.80	0.27	5.4	1.17	2.99	0.61	0.59	11.4
50-90	5.4	4.4	0	0.087	0.60	0.42	<1	165	59	42.9	0.7	0.09	34	1.17	0.18	5.4	1.53	3.14	0.34	0.43	6.3

**Note:** Sum of cations, in a neutral to alkaline soil, approximates the CEC (cation exchange capacity), 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, in this case estimated by the sum of cations.