

## LOAM OVER RED CLAY

**General Description:** *Hard loamy surface overlying a well structured red clay*

**Landform:** Gently undulating plain

**Substrate:** Limestone.

**Vegetation:**

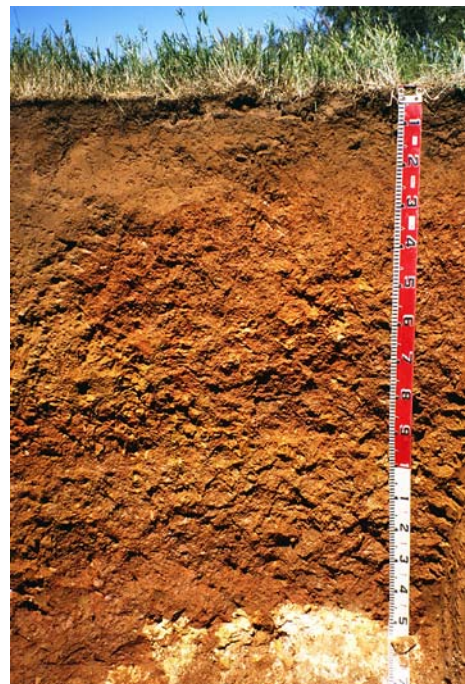


**Type Site:** Site No.: SE113

1:50,000 sheet:	7023-1 (Struan)	Hundred:	Joanna
Annual rainfall:	600 mm	Sampling date:	16/10/06
Landform:	Rise on gently undulating plain, 2% slope.		
Surface:	Hard setting with minor ironstone fragments to 10 cm.		

### Soil Description:

Depth (cm)	Description
0-9	Dark reddish brown firm loam with moderate granular structure. Clear to:
9-20	Dark reddish brown firm fine sandy clay loam with weak polyhedral structure. Clear to:
20-45	Red hard medium heavy clay with strong fine polyhedral structure. Gradual to:
45-90	Red and yellowish red hard medium heavy clay with strong medium polyhedral structure and 2-10% ironstone nodules. Diffuse to:
90-145	Yellowish red and yellowish brown very hard medium clay with strong very coarse lenticular structure. Abrupt to:
145-160	Limestone.



**Classification:** Haplic, Eutrophic, Red Chromosol; medium, non-gravelly, loamy / clayey, deep

## Summary of Properties

- Drainage:** Moderately well drained. The profile may remain wet for up to a week following heavy or prolonged rainfall.
- Fertility:** Inherent fertility is moderately low, as indicated by the exchangeable cation data. Despite relatively high clay content, nutrient retention capacity is low, probably reflecting low activity clay mineralogy. In the sampling pit, levels of P and Cu are low.
- pH:** Acidic at the surface, neutral with depth.
- Rooting depth:** 90 cm in sampling pit, but few roots below 45 cm.
- Barriers to root growth:**
- Physical:** There are no apparent physical limitations within 90 cm. Below 90 cm, coarse structural aggregates prevent satisfactory root development
  - Chemical:** Aluminium toxicity in the subsurface.
- Water holding capacity:** Approximately 80 mm in the potential root zone.
- Seedling emergence:** Fair due to tendency of surface to seal and set hard.
- Workability:** Fair. Surface puddles when worked too wet, and shatters if worked too dry.
- Erosion Potential**
- Water:** Low.
  - Wind:** Low.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC1:5 dS/m	ECe dS/m	Cl mg/kg	Org.C %	NO <sub>3</sub> + NH <sub>4</sub> mg/kg	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> -S mg/kg	React Fe mg/kg	Ext Al 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	
0-9	5.6	4.5	0	0.07	0.68	34	3.61	8	16	292	6.2	1610	0	1.2	0.57	222	60.4	3.06	5.6	4.07	0.68	0.15	0.69	2.7
9-20	5.1	4.2	0	0.04	0.24	10	1.69	6	7	147	7.2	1480	9.7	0.8	0.36	197	45.9	0.55	3.3	2.34	0.43	0.12	0.38	3.7
20-45	5.8	5.0	0	0.04	0.27	26	1.06	9	2	99	8.2	3388	0	1.0	0.32	24	6.37	0.24	9.7	7.04	2.08	0.25	0.28	2.6
45-90	6.4	5.8	0	0.04	0.15	9	0.44	10	1	59	16.4	2802	0	0.9	0.37	25	5.14	0.27	9.7	6.82	2.45	0.20	0.19	2.1
90-145	6.6	6.0	0	0.04	0.14	16	0.37	7	1	87	14.1	4484	0	1.8	0.36	37	71.5	0.15	17.2	14.1	2.46	0.31	0.26	1.8

**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.