

## SANDY CLAY LOAM OVER GRAVELLY RED CLAY

**General Description:** *Gravelly sandy loam to sandy clay loam, overlying a very stony, reddish brown well structured clay subsoil, calcareous with depth*

**Landform:** Gently inclined slopes below rocky hills

**Substrate:** Very stony (mostly quartzite) medium to fine grained local outwash sediments

**Vegetation:**



**Type Site:** Site No.: CU019  
 1:50,000 sheet: 6531-4 (Pirie) Hundred: Napperby  
 Annual rainfall: 400 mm Sampling date: 16/12/92  
 Landform: Upper slope of a gently inclined alluvial fan, 6% slope  
 Surface: Hard setting with 20% quartzite stones (60 mm)

### Soil Description:

Depth (cm)	Description
0-10	Dark reddish brown massive sandy clay loam with 10% quartzite stones (20-60 mm). Abrupt to:
10-35	Dark reddish brown medium heavy clay with strong polyhedral structure and 65% quartzite stones (20-60 mm). Gradual to:
35-65	Red medium heavy clay with strong polyhedral structure and 65% quartzite stones (20-60 mm). Clear to:
65-90	Red medium clay with strong polyhedral structure, 75% quartzite stones (20-60 mm), and 20% soft calcareous segregations (Class I carbonate). Gradual to:
90-140	Reddish brown, soft, massive, highly calcareous light sandy clay loam, with 25% quartzite stones (20-60 mm), and 10% soft carbonate segregations.



**Classification:** Haplic, Calcic, Red Chromosol; medium, gravelly, clay loamy / clayey, moderate

## Summary of Properties

<b>Drainage</b>	Well drained. Soil is unlikely to remain wet for more than a few days.
<b>Fertility</b>	Natural fertility is high, as indicated by the high CEC value in the clay subsoil. Low organic matter content however reduces the capacity of the surface soil to retain nutrients.
<b>pH</b>	Slightly acidic at surface, alkaline with depth.
<b>Rooting depth</b>	140 cm in pit, but few roots below 90 cm.
<b>Barriers to root growth</b>	
<b>Physical:</b>	Heavy stone layers may impede root penetration.
<b>Chemical:</b>	Class I carbonate layer. Salt and boron are not significant.
<b>Water holding capacity</b>	60 mm. High stone content and poor root distribution at depth are responsible for the moderately low value.
<b>Seedling emergence</b>	Fair due to hard setting, sealing surface.
<b>Workability</b>	Fair to poor due to narrow moisture range for effective working, and abrasive effects of extensive surface quartzite.
<b>Erosion Potential</b>	
<b>Water:</b>	Moderate (6% slope).
<b>Wind:</b>	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	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO <sub>4</sub> -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	6.6	6.0	1	0.05	0.29	0.5	47	330	-	1.4	-	-	-	-	8.4	6.90	1.32	0.34	0.79	4.0
0-10	6.9	6.6	0	0.09	0.36	0.8	33	470	-	1.4	-	-	-	-	8.9	7.69	1.31	0.10	1.09	1.1
10-35	6.4	5.8	1	0.04	0.23	0.4	7	250	-	2.7	-	-	-	-	17.6	12.4	5.01	0.23	0.77	1.3
35-65	6.6	6.1	1	0.07	0.29	0.3	5	200	-	3.9	-	-	-	-	24.8	18.1	8.25	0.36	0.85	1.5
65-90	8.3	7.8	8	0.17	0.56	0.1	<2	270	-	2.9	-	-	-	-	21.1	15.7	6.30	0.32	0.85	1.5
90-140	8.7	8.1	10	0.18	0.59	<0.1	<2	380	-	2.5	-	-	-	-	17.7	9.06	8.77	0.86	1.09	4.9

**Note:** Paddock sample bulked from 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.