

**Project Name:** Regional  
**Project Code:** REG **Site ID:** T359 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (QLD)

**Site Information**

<b>Desc. By:</b>	M.G. Cannon	<b>Locality:</b>	
<b>Date Desc.:</b>	22/11/83	<b>Elevation:</b>	50 metres
<b>Map Ref.:</b>	Sheet No. : 8161 1:100000	<b>Rainfall:</b>	2250
<b>Northing/Long.:</b>	146.129166666667	<b>Runoff:</b>	Slow
<b>Easting/Lat.:</b>	-18.452777777778	<b>Drainage:</b>	Well drained

**Geology**

<b>ExposureType:</b>	Undisturbed soil core	<b>Conf. Sub. is Parent. Mat.:</b>	No Data
<b>Geol. Ref.:</b>	QA	<b>Substrate Material:</b>	Unconsolidated material (unidentified)

**Land Form**

<b>Rel/Slope Class:</b>	Undulating rises 9-30m 3-10%	<b>Pattern Type:</b>	Rises
<b>Morph. Type:</b>	Upper-slope	<b>Relief:</b>	No Data
<b>Elem. Type:</b>	Fan	<b>Slope Category:</b>	Gently inclined
<b>Slope:</b>	4 %	<b>Aspect:</b>	No Data

**Surface Soil Condition (dry):** Hardsetting

**Erosion:** Partial, Minor (sheet)

**Soil Classification**

<b>Australian Soil Classification:</b>		<b>Mapping Unit:</b>	N/A
Haplic Dystrophic Red Kandosol		<b>Principal Profile Form:</b>	Gn2.21
<b>ASC Confidence:</b>		<b>Great Soil Group:</b>	Red earth

All necessary analytical data are available.

**Site Disturbance:** Limited clearing, for example selective logging

**Vegetation:** Low Strata - Tussock grass, 0.51-1m, Mid-dense. \*Species includes - None recorded  
Mid Strata - Tree, 3.01-6m, Very sparse. \*Species includes - Planchonia careya  
Tall Strata - Tree, 12.01-20m, Sparse. \*Species includes - Eucalyptus alba, Eucalyptus tessellaris

**Surface Coarse Fragments:** 0-2%, stony, 200-600mm, subrounded,

**Profile Morphology**

A11	0 - 0.05 m	Very dark grey (10YR3/1-Moist); Mottles; Mottles; Sandy clay loam; Massive grade of structure; Earthy fabric; Moderately moist; Very weak consistence; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Quartz, coarse fragments; Few, fine (1-2mm) roots; Clear, Smooth change to -
A12	0.05 - 0.1 m	Very dark greyish brown (10YR3/2-Moist); Mottles; Mottles; Sandy clay loam; Massive grade of structure; Earthy fabric; Moderately moist; Very weak consistence; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Quartz, coarse fragments; Few, fine (1-2mm) roots; Gradual, Wavy change to -
AB	0.1 - 0.2 m	Brown (7.5YR4/3-Moist); Mottles; Mottles; Clay loam, sandy; Massive grade of structure; Earthy fabric; Moderately moist; Weak consistence; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Quartz, coarse fragments; Few, fine (1-2mm) roots;
AB	0.2 - 0.25 m	Brown (7.5YR4/3-Moist); Mottles; Mottles; Clay loam, sandy; Massive grade of structure; Earthy fabric; Moderately moist; Weak consistence; 0-2%, fine gravelly, 2-6mm, angular, dispersed, Quartz, coarse fragments; Few, fine (1-2mm) roots; Diffuse, Wavy change to -
B1	0.25 - 0.3 m	Yellowish red (5YR5/6-Moist); Mottles; Mottles; Clay loam, sandy (Heavy); Massive grade of structure; Earthy fabric; Moderately moist; Weak consistence; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Quartz, coarse fragments; Few, medium (2-5mm) roots;
B1	0.3 - 0.6 m	Yellowish red (5YR5/6-Moist); Mottles; Mottles; Clay loam, sandy (Heavy); Massive grade of structure; Earthy fabric; Moderately moist; Weak consistence; 0-2%, fine gravelly, 2-6mm, angular, dispersed, Quartz, coarse fragments; Few, medium (2-5mm) roots; Diffuse, Wavy change to -
B21	0.6 - 0.9 m	Red (2.5YR5/8-Moist); Mottles; Mottles; Sandy medium clay; Massive grade of structure; Earthy fabric; Moderately moist; Weak consistence; 10-20%, fine gravelly, 2-6mm, subangular, dispersed, Quartz, coarse fragments; Few, medium (2-5mm) roots;
B21	0.9 - 1.2 m	Red (2.5YR5/8-Moist); Mottles; Mottles; Sandy medium clay; Massive grade of structure; Earthy fabric; Moderately moist; Weak consistence; 10-20%, fine gravelly, 2-6mm, angular, dispersed, Quartz, coarse fragments; Few, medium (2-5mm) roots; Diffuse, Wavy change to -

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B22	1.2 - 1.5 m	Red (2.5YR4/8-Moist); Mottles, 7.5YR6/4, 20-50% , 5-15mm, Distinct; Mottles, 10YR8/8, 20-50% , 5-15mm, Distinct; Sandy medium clay (Light); Massive grade of structure; Earthy fabric; Weak consistence; 10-20%, stony, 200-600mm, subangular, dispersed, Sand, coarse fragments; Diffuse, Wavy change to -
B3	1.5 - 1.8 m	Brownish yellow (10YR6/5-Moist); Mottles, 2.5YR4/8, 10-20% , 5-15mm, Distinct; Mottles, 10YR8/8, 10-20% , 5-15mm, Distinct; Sandy medium clay (Light); Massive grade of structure; Earthy fabric; Weak consistence; 20-50%, stony, 200-600mm, subangular, dispersed, Sand, coarse fragments;
B3	1.8 - 1.95 m	Brownish yellow (10YR6/5-Moist); Mottles, 2.5YR4/8, 10-20% , 5-15mm, Distinct; Mottles, 10YR8/8, 10-20% , 5-15mm, Distinct; Sandy medium clay (Light); Massive grade of structure; Earthy fabric; Weak consistence; 20-50%, stony, 200-600mm, subangular, dispersed, Sand, coarse fragments;

**Morphological Notes**

**Observation Notes**

COARSE AND FINE GRAINED LARGE GRAVEL IN PROFILE:

**Site Notes**

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**Laboratory Test Results:**

Depth	pH	1:5 EC	Exchangeable Cations			Exchangeable		CEC	ECEC	ESP
m		dS/m	Ca	Mg	K	Na	Acidity			%
						Cmol	(+)/kg			
0 - 0.05	6.5A	0.039A	6H	1.88	0.42	0.04	<0.05F	6.3A	8.4F	0.63
								10.7C		0.37
0.05 - 0.1	5.9A	0.023A	1.91H	1.04	0.22	0.02	0.44F	3.6A	3.6F	0.56
								6C		0.33
0.1 - 0.2	6A	0.016A								
0.2 - 0.25	5.8A	0.017A	0.45H	0.7	0.14	0.09	0.94F	2.2A	2.3F	4.09
								3C		3.00
0.25 - 0.3	5.6A	0.018A								
0.3 - 0.6	5.6A	0.016A	0.16H	0.62	0.13	<0.02	1.37F	2.5A	2.3F	
								3.6C		
0.6 - 0.9	5.7A	0.01A	0.12H	0.76	0.18	<0.02	1.67F	3.1A	2.9F	
								4.4C		
0.9 - 1.2	5.8A	0.01A								
1.2 - 1.5	5.9A	0.01A	0.37H	1.29	0.21	0.03	1.25F	3.4A	3.3F	0.88
								4C		0.75
1.5 - 1.8	5.9A	0.01A								

Depth m	CaCO3	Organic	Avail.	Total	Total	Total	Bulk Density Mg/m3	Particle		Size	Analysis	
	%	C %	P mg/kg	P %	N %	K %		GV	CS	FS %	Silt	Clay
0 - 0.05		3.41C	19B	0.02A	0.16A	2.4A		0	38A	29	20	14
0.05 - 0.1		1.71C	7B		0.1A			1	33A	32	20	16
0.1 - 0.2			5B					1	29A	36	19	16
0.2 - 0.25		0.63C	5B	0.009A		2.26A		3	25A	37	18	20
0.25 - 0.3			5B					6	27A	35	18	20
0.3 - 0.6		0.34C	4B					4	26A	34	19	21
0.6 - 0.9		0.19C	4B	0.009A		2.44A		2	28A	32	16	24
0.9 - 1.2								2	29A	29	18	24
1.2 - 1.5		0.13C						2	29A	30	17	23
1.5 - 1.8								5	37A	26	16	20

[illegible]

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**Laboratory Analyses Completed for this profile**

10A1	Total sulfur - X-ray fluorescence
12_HF_CU	Total element - Cu(mg/kg) - HF/HClO <sub>4</sub> Digest
12_HF_FE	Total element - Fe(%) - HF/HClO <sub>4</sub> Digest
12_HF_MN	Total element - Mn(mg/kg) - HF/HClO <sub>4</sub> Digest
12_HF_ZN	Total element - Zn(mg/kg) - HF/HClO <sub>4</sub> Digest
13C1_FE	Citrate/dithionite-extractable iron, aluminium, Manganese and Silicon
15A2_CEC	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15D1_CEC	CEC - 1M ammonium acetate at pH 7.0, pretreatment for soluble salts; manual leach
15E1_CA	Exchangeable bases (Ca <sup>2+</sup> ,Mg <sup>2+</sup> ,Na <sup>+</sup> ,K <sup>+</sup> ) by compulsive exchange, no pretreatment for soluble salts
15E1_K	Exchangeable bases, CEC and AEC by compulsive exchange, no pretreatment for soluble salts
15E1_MG	Exchangeable bases, CEC and AEC by compulsive exchange, no pretreatment for soluble salts
15E1_NA	Exchangeable bases, CEC and AEC by compulsive exchange, no pretreatment for soluble salts
15G_C	Exchange acidity (hydrogen and aluminium) - meq per 100g of soil - By 1M KCl exch. acidity by titration to pH 8.4
15J1	Effective CEC
17A1	Total potassium - X-ray fluorescence
3A1	EC of 1:5 soil/water extract
4A1	pH of 1:5 soil/water suspension
6B3	Total organic carbon - high frequency induction furnace, infrared
7A2	Total nitrogen - semimicro Kjeldahl , automated colour
9A1	Total phosphorus - X-ray fluorescence
9G_BSES	Available P (mg/kg) - Acid P - 0.005M H <sub>2</sub> SO <sub>4</sub> (BSES)
9H1	Phosphate retention
P10_CF_C	Clay (%) - Coventry and Fett pipette method
P10_CF_CS	Coarse sand (%) - Coventry and Fett pipette method
P10_CF_FS	Fine sand (%) - Coventry and Fett pipette method
P10_CF_Z	Silt (%) - Coventry and Fett pipette method
P10_GRAV	Gravel (%)