

**Project Name:** Regional  
**Project Code:** REG **Site ID:** T161 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (QLD)

#### Site Information

<b>Desc. By:</b> R.F. Isbell	<b>Locality:</b> 1.1KM north of Black Braes turnoff on Hann Highway:
<b>Date Desc.:</b> 09/10/70	<b>Elevation:</b> 910 metres
<b>Map Ref.:</b> Sheet No. : 7758 1:100000	<b>Rainfall:</b> 0
<b>Northing/Long.:</b> 144.236111111111	<b>Runoff:</b> Moderately rapid
<b>Easting/Lat.:</b> -19.541666666667	<b>Drainage:</b> Moderately well drained

#### Geology

<b>ExposureType:</b> Undisturbed soil core	<b>Conf. Sub. is Parent. Mat.:</b> No Data
<b>Geol. Ref.:</b> Czc	<b>Substrate Material:</b> Basalt

#### Land Form

<b>Rel/Slope Class:</b> Undulating plains <9m 3-10%	<b>Pattern Type:</b> Plain
<b>Morph. Type:</b> Simple-slope	<b>Relief:</b> 6 metres
<b>Elem. Type:</b> Plain	<b>Slope Category:</b> Gently inclined
<b>Slope:</b> 0 %	<b>Aspect:</b> No Data

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

#### Erosion:

#### Soil Classification

<b>Australian Soil Classification:</b>	<b>Mapping Unit:</b> N/A
Haplic Eutrophic Red Ferrosol	<b>Principal Profile Form:</b> Gn3.12
<b>ASC Confidence:</b>	<b>Great Soil Group:</b> Euchrozem
All necessary analytical data are available.	

#### Site Disturbance:

**Vegetation:** Low Strata - Tussock grass, 0.51-1m, Mid-dense. \*Species includes - None recorded  
 Tall Strata - Tree, 6.01-12m, Very sparse. \*Species includes - Eucalyptus crebra, Eucalyptus papuana

**Surface Coarse Fragments:** No surface coarse fragments

#### Profile Morphology

A1	0 - 0.1 m	Dark reddish brown (5YR3/3-Moist); Dark reddish brown (5YR2/4-Dry); ; Clay loam; Massive grade of structure; Weak grade of structure, 5-10 mm, Angular blocky; Dry; Strong consistence; CommonGradual change to -
A3	0.1 - 0.2 m	Dark reddish brown (5YR3/3-Moist); Dark reddish brown (5YR2/4-Dry); ; Clay loam (Heavy); Weak grade of structure, 5-10 mm, Angular blocky; Dry; Strong consistence; CommonGradual change to -
B1	0.2 - 0.3 m	Dark reddish brown (5YR3/3-Moist); Dark reddish brown (5YR2/4-Dry); ; Light clay; Weak grade of structure, 5-10 mm, Angular blocky; Dry; Strong consistence; Very few (0 - 2 %), Ferruginous, Fine (0 - 2 mm), Nodules; FewGradual change to -
B1	0.3 - 0.6 m	Dark reddish brown (2.5YR3/3-Moist); Dark reddish brown (2.5YR2/3-Dry); ; Light clay (Heavy); Moderate grade of structure, 5-10 mm, Angular blocky; Smooth-ped fabric; Dry; Strong consistence; 2-10%, fine gravelly, 2-6mm, rounded, Quartz, coarse fragments; Few (2 - 10 %), Argillaceous, Medium (2 -6 mm), Nodules; Gradual change to -
B2	0.6 - 0.9 m	Dark reddish brown (2.5YR3/3-Moist); Dark reddish brown (2.5YR2/3-Dry); ; Light medium clay; Strong grade of structure, 5-10 mm, Angular blocky; Smooth-ped fabric; Dry; Strong consistence; 2-10%, fine gravelly, 2-6mm, rounded, Quartz, coarse fragments; Few (2 - 10 %), Argillaceous, Medium (2 -6 mm), Nodules; Gradual change to -
B2	0.9 - 1.2 m	Dark reddish brown (2.5YR3/4-Moist); ; Light medium clay; Strong grade of structure, 5-10 mm, Angular blocky; Smooth-ped fabric; Dry; Strong consistence; 2-10%, fine gravelly, 2-6mm, rounded, Quartz, coarse fragments; Few (2 - 10 %), Argillaceous, Medium (2 -6 mm), Nodules;
B2	1.2 - 1.5 m	Dark reddish brown (2.5YR3/4-Moist); ; Light medium clay; Strong grade of structure, 5-10 mm, Angular blocky; Smooth-ped fabric; Dry; Strong consistence; 2-10%, fine gravelly, 2-6mm, rounded, Quartz, coarse fragments; Few (2 - 10 %), Argillaceous, Medium (2 -6 mm), Nodules;
B2	1.5 - 1.8 m	Dark reddish brown (2.5YR3/4-Moist); ; Light medium clay; Moderate grade of structure, 5-10 mm, Angular blocky; Smooth-ped fabric; Dry; Strong consistence; 2-10%, Basalt, coarse fragments; Few (2 - 10 %), Argillaceous, Medium (2 -6 mm), ; Clear change to -

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1.8 - 2 m      Dark red (10R3/5-Moist); ; Light medium clay; Strong grade of structure, 5-10 mm, Angular blocky; Strong grade of structure, 20-50 mm, Prismatic; Smooth-ped fabric; Strong consistence; 0-2%, fine gravelly, 2-6mm, Quartz, coarse fragments;

**Morphological Notes**

**Observation Notes**

30-180CM+<2% 2-6MM FE NODULES:60-180CM W'D TERTIARY BA. INCREASING DOWNWARDS:

**Site Notes**

BLACK BRAES

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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 - 0.1	6.5A	0.047A	12.8B	4.04	1.79	0.2			
0.1 - 0.2	6.5A	0.038A	12.1B	3.04	1.49	0.018			
0.2 - 0.3	6.6A	0.035A	11.8B	3.01	1.29	0.18			
0.3 - 0.6	6.7A	0.032A	9.78B	3.04	1.52	0.18			
0.6 - 0.9	6.7A	0.026A							
0.9 - 1.2	6.8A	0.029A	6.88B	2.58	0.86	0.2			
1.2 - 1.5	6.8A	0.026A							
1.5 - 1.8	6.7A	0.026A	6.32B	2.48	1.47	0.2			
1.8 - 2	6.6A	0.026A							

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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_CA	Exchangeable bases (Ca <sup>2+</sup> ,Mg <sup>2+</sup> ,Na <sup>+</sup> ,K <sup>+</sup> ) - 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_K	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_MG	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_NA	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
17A1	Total potassium - X-ray fluorescence
2A1	Air-dry moisture content
3A1	EC of 1:5 soil/water extract
4A1	pH of 1:5 soil/water suspension
6A1_UC	Organic carbon (%) - Uncorrected Walkley and Black method
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)
MIN_EC	Exchange Capacity - Minerology
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 (%)
XRD_C_Ch2	Chloritized 2:1 minerals - X-Ray Diffraction
XRD_C_Hm	Hematite - X-Ray Diffraction
XRD_C_K2O	K <sub>2</sub> O - X-Ray Diffraction or Clay Fraction (air dry)
XRD_C_Ka	Kaolin - X-Ray Diffraction
XRD_C_Mh	Meghemite - X-Ray Diffraction
XRD_C_Qz	Quartz - X-Ray Diffraction