

**Project Name:** Soil Studies in the Lower Namoi Valley  
**Project Code:** EDGEROI **Site ID:** ed175 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (QLD)

#### Site Information

<b>Desc. By:</b> M.E. Heape	<b>Locality:</b> R.L.(Bob) Burrell, Woodlands
<b>Date Desc.:</b> 11/02/86	<b>Elevation:</b> 366 metres
<b>Map Ref.:</b> Sheet No. : 8837_N 1:50000	<b>Rainfall:</b> No Data
<b>Northing/Long.:</b> 6655200 AMG zone: 55	<b>Runoff:</b> No Data
<b>Easting/Lat.:</b> 786700 Datum: AGD66	<b>Drainage:</b> No Data

#### Geology

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

#### Land Form

<b>Rel/Slope Class:</b> No Data	<b>Pattern Type:</b> No Data
<b>Morph. Type:</b> No Data	<b>Relief:</b> No Data
<b>Elem. Type:</b> Terrace flat	<b>Slope Category:</b> Very gently sloped
<b>Slope:</b> 1 %	<b>Aspect:</b> 170 degrees

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

#### Erosion:

#### Soil Classification

<b>Australian Soil Classification:</b> N/A	<b>Mapping Unit:</b> N/A
<b>ASC Confidence:</b> Confidence level not specified	<b>Principal Profile Form:</b> Dr4.13
	<b>Great Soil Group:</b> Brown clay

**Site Disturbance:** Complete clearing. Pasture, native or improved, cultivated at some stage, Cultivation. Rainfed,

#### Vegetation:

#### Surface Coarse Fragments:

#### Profile Morphology

A11	0 - 0.1 m	Dark reddish brown (5YR3/3-Moist); Brown (10YR4/3-Dry); ; Clay loam; Moderate grade of structure, 5-10 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; Field pH 7.5 (pH meter); Common, very fine (0-1mm) roots;
A12	0.1 - 0.25 m	Dark reddish brown (5YR3/3-Moist); ; Clay loam; Moderate grade of structure, 5-10 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; Field pH 7.5 (pH meter); Few, very fine (0-1mm) roots;
A13	0.25 - 0.45 m	Dark reddish brown (5YR3/2-Moist); ; Clay loam; Moderate grade of structure, 20-50 mm, Granular; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Moderately moist; Very weak consistence; Field pH 8 (pH meter); Few, very fine (0-1mm) roots; Gradual, Smooth change to -
B21	0.45 - 1 m	Dark reddish brown (5YR3/4-Moist); ; 5YR32, 0-2% , 15-30mm, Faint; Medium clay; Moderate grade of structure, 20-50 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 0.01m <sup>2</sup> ) Coarse (>5mm) macropores, Moderately moist; Very firm consistence; 0-2%, coarse gravelly, 20-60mm, subrounded, Basalt, coarse fragments; Field pH 8 (pH meter); Few, coarse (>5mm) roots;
B22	1 - 1.6 m	Reddish brown (5YR4/4-Moist); ; Medium clay; Moderate grade of structure, 5-10 mm, Platy; Moderate grade of structure, 5-10 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Moderately moist; Very firm consistence; 2-10%, medium gravelly, 6-20mm, subangular, Basalt, coarse fragments; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Sharp, Smooth change to -
2B2k	1.6 - 2.76 m	Reddish brown (5YR4/4-Moist); ; 7.5YR74, 0-2% , 5-15mm, Prominent; ; 5YR32, 0-2% , 0-5mm, Distinct; Heavy clay; Moderate grade of structure, 10-20 mm, Platy; Moderate grade of structure, 10-20 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Moderately moist; Strong consistence; 0-2%, medium gravelly, 6-20mm, subangular, Basalt, coarse fragments; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 8.5 (pH meter);

#### Morphological Notes

A11 70-80 looks like B in profile but colour change is definitely not enough. Soil too shattered for tensile strength. Possibly ?a young soil, notice lack of lime in soil above discontinuity and shallow depth of A horizon. The soil below the br

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A12      eak is darker than soil above and has lime nodules. 2 x 10-20 samples, 10-20a contains some 0-10 horizon, 10-20b is all 10-20 and is the only one being analysed at present.

**Observation Notes**

Parent Rock: alluvial sediment, mixed texture, non-calcareous, mixed texture, with lime Purlawaugh Formation

**Site Notes**

A very weak surface crust. In some places (50%) the surface is quite solid (i.e., close to hard set), though this could be due to puddling. A sedimentary break at 163cm. No fertilizer has ever been used.

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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 - 0.02	6.71A	0.103A	16.64B	6.59	3.19	0.01			
0 - 0.1	6.57A	0.296A	17.97B	4.94	2.96	0.04			
0.1 - 0.2	7.54A	0.159A	22.58B	3.77	2.18	0.04			
0.3 - 0.4	8.19A	0.163A	25.25B	3.25	1.29	0.02			
0.7 - 0.8	8.3A	0.124A	17.79B	7.88	0.81000	0.1			
					01				
1.2 - 1.3	8.63A	0.122A	12.14B	10.93	0.65	0.35			
2.5 - 2.6	9.47A	0.395A	8.46B	20.14	0.51	9.62			

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**Laboratory Analyses Completed for this profile**

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
19B1	Carbonates - manometric
3A1	EC of 1:5 soil/water extract
4A1	pH of 1:5 soil/water suspension
5A2	Chloride - 1:5 soil/water extract, automated colour
6B3	Total organic carbon - high frequency induction furnace, infrared
7B1	Water soluble nitrate - automated colour
9B1	Bicarbonate-extractable phosphorus - manual colour
P10_CF_C	Clay (%) - Coventry and Fett pipette method
P10_CF_Z	Silt (%) - Coventry and Fett pipette method