

**Project Name:** Soil Studies in the Lower Namoi Valley  
**Project Code:** EDGEROI **Site ID:** ed432 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (QLD)

#### Site Information

<b>Desc. By:</b>	M.E. Heape	<b>Locality:</b>	Bruce Tout, Oakvale
<b>Date Desc.:</b>	26/03/86	<b>Elevation:</b>	286 metres
<b>Map Ref.:</b>	Sheet No. : 8837_N 1:50000	<b>Rainfall:</b>	No Data
<b>Northing/Long.:</b>	6666700 AMG zone: 55	<b>Runoff:</b>	No Data
<b>Easting/Lat.:</b>	776900 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>	Flood plain
<b>Morph. Type:</b>	No Data	<b>Relief:</b>	No Data
<b>Elem. Type:</b>	No Data	<b>Slope Category:</b>	Level
<b>Slope:</b>	0 %	<b>Aspect:</b>	340 degrees

#### Surface Soil Condition (dry):

#### 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>	Ug5.16
		<b>Great Soil Group:</b>	Grey 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	Very dark grey (10YR3/1-Moist); Very dark grey (10YR3/1-Dry); ; Light medium clay; Moderate grade of structure, 20-50 mm, Subangular blocky; Moderate grade of structure, 2-5 mm, Granular; Rough-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;
A12	0.1 - 0.2 m	Very dark grey (10YR3/1-Moist); ; Light medium clay; Moderate grade of structure, 20-50 mm, Subangular blocky; Moderate grade of structure, 2-5 mm, Granular; Rough-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Smooth change to -
A13	0.2 - 0.29 m	Very dark grey (10YR3/1-Moist); ; Light medium clay; Weak grade of structure, 10-20 mm, Angular blocky; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Soft segregations; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Smooth change to -
A14	0.29 - 0.55 m	Very dark grey (10YR3/1-Moist); ; Medium heavy clay; Moderate grade of structure, 50-100 mm, Lenticular; Moderate grade of structure, 10-20 mm, Angular blocky; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Moderately moist; Rigid consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Soft segregations; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;
A15	0.55 - 0.95 m	Dark grey (10YR4/1-Moist); ; Medium heavy clay; Moderate grade of structure, 50-100 mm, Lenticular; Moderate grade of structure, 10-20 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Moderately moist; Rigid consistence; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Soft segregations; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
B21	0.95 - 1.9 m	Dark reddish grey (5YR4/2-Moist); , 10YR31, 0-2% , 0-5mm, Distinct; Medium heavy clay; Moderate grade of structure, 100-200 mm, Lenticular; Moderate grade of structure, 20-50 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm <sup>2</sup> ) Fine (1-2mm) macropores, Moderately moist; Very firm consistence; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Soft segregations; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;

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- B22      1.9 - 3.05 m      Dark reddish grey (5YR4/2-Moist); , 5YR54, 0-2% , 5-15mm, Distinct; Light medium clay; Moderate grade of structure, 50-100 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm<sup>2</sup>) Fine (1-2mm) macropores, Moderately moist; Very firm consistence; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 8 (pH meter); Few, very fine (0-1mm) roots;
- B23      3.05 - 4.09 m      Dark reddish grey (5YR4/2-Moist); , 5YR54, 2-10% , 5-15mm, Distinct; Light medium clay; Moderate grade of structure, 50-100 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm<sup>2</sup>) Fine (1-2mm) macropores, Moderately moist; Very firm consistence; 0-2%, fine gravelly, 2-6mm, subrounded, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 8 (pH meter); Few, very fine (0-1mm) roots;

#### **Morphological Notes**

- A11      Top 20cm thoroughly mixed by sampling technique or ploughing, therefore we have also sampled 20-30cm. MVpH. From 140cm carbonate becomes nodular. The organic stain is also present at layer 7 but it is less abundant than the other colours. A
- A12      t 310cm there are 3, k, h, 4 segregations; which are filled with soil. The sand infills become sand + fine gravel infills from 295cm (fine gravel 3-5mm diameter). Organic stain continues to 350-360cm and to 409 but with increasing manganese
- A13      present. There is possibly a break in the profile at 180cm; note change in colour (5YR4/2 to 5YR3.5/2), structure (has cast granules below 130) and carbonate (soft to hard), not overly convincing.

#### **Observation Notes**

Parent Rock: alluvial sediment, mixed texture, non-calcareous, clay parna on third fan

#### **Site Notes**

Core from 164-252cm had to be pushed out of the sample barrel and is fractured as a result. Site is located 80 m north of a shallow water course.

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**Laboratory Test Results:**

Depth	pH	1:5 EC	Exchangeable Cations			Exchangeable	CEC	ECEC	ESP
		Ca	Mg	K	Na	Acidity			
m		dS/m			Cmol (+)/kg				%
0 - 0.1	7.97A	0.238A	30.82B	8.27	0.86	0.66			
0.1 - 0.2	8.35A	0.218A	29.27B	10.19	0.6	1.05			
0.2 - 0.3	8.79A	0.21A	27.42B	12.65	0.42	1.96			
0.3 - 0.4	9.11A	0.232A	26.54B	14.48	0.39	3.7			
0.7 - 0.8	8.96A	0.825A	22.38B	16	0.44	8.52			
1.2 - 1.3	8.68A	1.024A	20.25B	15.56	0.53	8.7			
2.5 - 2.6	8.92A	0.743A	17.46B	13.65	0.45	7.62			
3.5 - 3.6	8.32A	0.52A	13.86B	12.29	0.38	6.61			

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle Size		Analysis	
m	%	%	mg/kg	%	%	%	Mg/m3	GV	CS	FS	Silt Clay
0 - 0.1	1.2B	1.75C	18.6J								
0.1 - 0.2	3B	1.62C	11.1J								
0.2 - 0.3	3.9B	1.22C	6.5J								
0.3 - 0.4	4B	1.01C	1.7J								
0.7 - 0.8	2.8B	0.68C	1.5J								
1.2 - 1.3	0.6B	0.26C	3.1J								
2.5 - 2.6	1.7B	0.14C	3.7J								
3.5 - 3.6	<0.1B	0.11C	2.3J								

[illegible]

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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