

**Project Name:** Soil Studies in the Lower Namoi Valley  
**Project Code:** EDGEROI **Site ID:** ed235 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (QLD)

#### Site Information

<b>Desc. By:</b>	W.T. Ward	<b>Locality:</b>	Auscott(Togo), Togo
<b>Date Desc.:</b>	05/02/87	<b>Elevation:</b>	192 metres
<b>Map Ref.:</b>	Sheet No. : 8837_N 1:50000	<b>Rainfall:</b>	No Data
<b>Northing/Long.:</b>	6672100 AMG zone: 55	<b>Runoff:</b>	No Data
<b>Easting/Lat.:</b>	748600 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 plain	<b>Slope Category:</b>	Level
<b>Slope:</b>	0 %	<b>Aspect:</b>	No Data

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

#### 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>	Ug5.15
		<b>Great Soil Group:</b>	Grey clay

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

#### Vegetation:

#### Surface Coarse Fragments:

#### Profile Morphology

A11	0 - 0.1 m	Grey (10YR5/1-Moist); Grey (10YR5/1-Dry); , 10YR61, 2-10% , 5-15mm, Prominent; Light medium clay; Moderate grade of structure, 20-50 mm, Prismatic; Strong grade of structure, 10-20 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Field pH 6.5 (pH meter); Few, very fine (0-1mm) roots;
A12	0.1 - 0.25 m	Very dark greyish brown (10YR3/2-Moist); ; Light medium clay; Weak grade of structure, 100-200 mm, Subangular blocky; Massive grade of structure; Smooth-ped fabric; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; 0-2%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Field pH 7.5 (pH meter); Few, very fine (0-1mm) roots;
A13	0.25 - 0.65 m	Very dark greyish brown (10YR3/2-Moist); , 10YR72, 0-2% , 0-5mm, Faint; Light medium clay; Moderate grade of structure, 100-200 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; 0-2%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
2A1	0.65 - 0.8 m	Dark greyish brown (10YR4/2-Moist); , 10YR41, 20-50% , 15-30mm, Distinct; Light medium clay; Moderate grade of structure, 50-100 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Very few (0 - 2 %), Gypseous, Fine (0 - 2 mm), Crystals; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
2A21	0.8 - 1.9 m	Brown (7.5YR4/4-Moist); , 10YR41, 20-50% , 15-30mm, Distinct; , 7.5YR62, 0-2% , 5-15mm, Prominent; Medium clay; Moderate grade of structure, 20-50 mm, Lenticular; Moderate grade of structure, 10-20 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Very few (0 - 2 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 8.5 (pH meter);
2A22	1.9 - 3.1 m	Brown (7.5YR4/4-Moist); , 7.5YR42, 2-10% , 0-5mm, Distinct; Medium 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 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Few (2 - 10 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 9 (pH meter); Diffuse, Smooth change to -

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2C      3.1 - 3.82 m      Reddish yellow (7.5YR6/8-Moist); , 7.5YR52, 10-20% , 5-15mm, Prominent; Medium clay; Weak grade of structure, 20-50 mm, Subangular blocky; Massive grade of structure; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm<sup>2</sup>) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 9 (pH meter);

**Morphological Notes**

A11      Gypsum crystals occur at 60cm. Possibility of a sedimentary break at 65cm. The material of colour of 7.5YR6/8 may be parent material. Note surface crust. I think this is Galathera alluvium on prior relatively well drained profile of ?Namoi  
A12      alluvium. Note occurrence of some water mottling in 2B2.

**Observation Notes**

Parent Rock: alluvial sediment, clay, floodplain

**Site Notes**

The surface is extremely poached, strong surface crust, hardset very pale grey sandy colour. There are small shallow cracks over poached surface, few waterworn fine gravels 2mm diameter on surface - grasses mostly eaten out, indeterminate.

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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	7.35A	0.139A	12.44B	7.84	0.98	1.45			
0 - 0.1	6.83A	0.103A	11.45B	7.9	1.22	2.2			
0.1 - 0.2	7.42A	0.138A	18.23B	11.89	0.81000	4.35			
					01				
0.3 - 0.4	8.49A	0.247A	19.54B	11.52	0.42	6.79			
0.7 - 0.8	7.98A	0.729A	22.96B	14.18	0.89	9.52			
1.2 - 1.3	8.71A	0.577A	24.8B	15.13	1.14	11.25			
2.5 - 2.6	8.78A	0.586A	24.96B	14.68	1.22	12.93			
3.5 - 3.6	8.39A	0.375A	21.54B	11.98	0.79	11.11			

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle		Size	Analysis	
								GV	CS		FS	Silt
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0 - 0.02	<0.1B	1.16C									23.8	39.2
0 - 0.1	<0.1B	1.03C	13J								24.4	39.2
0.1 - 0.2	<0.1B	0.6C	<1J								24.6	48.2
0.3 - 0.4	<0.1B	0.44C	<1J								24.8	48.8
0.7 - 0.8	<0.1B	0.31C	19.5J								20.4	53.9
1.2 - 1.3	0.7B	0.11C	6.4J								18.5	64.9
2.5 - 2.6	2.7B	0.07C	2.8J								16.8	65.7
3.5 - 3.6	<0.1B	0.04C	6.5J								16	52

[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
P10_CF_C	Clay (%) - Coventry and Fett pipette method
P10_CF_Z	Silt (%) - Coventry and Fett pipette method