

**Project Name:** Soil Studies in the Lower Namoi Valley  
**Project Code:** EDGEROI **Site ID:** we008 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (QLD)

#### Site Information

<b>Desc. By:</b> W.T. Ward	<b>Locality:</b>
<b>Date Desc.:</b> 22/02/89	<b>Elevation:</b> 175 metres
<b>Map Ref.:</b> Sheet No. : 8737_N 1:50000	<b>Rainfall:</b> No Data
<b>Northing/Long.:</b> 6661300 AMG zone: 55	<b>Runoff:</b> No Data
<b>Easting/Lat.:</b> 708700 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> 180 degrees

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

#### 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> N/A
	<b>Great Soil Group:</b> Prairie soil

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

#### Vegetation:

#### Surface Coarse Fragments:

#### Profile Morphology

A11	0 - 0.1 m	Dark brown (7.5YR3/2-Moist); Dark brown (7.5YR3/2-Dry); ; Light clay; Weak grade of structure, 2-5 mm, Granular; Weak grade of structure, 10-20 mm, Angular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 7 (pH meter); Few, very fine (0-1mm) roots; Clear, Smooth change to -
A12	0.1 - 0.25 m	Very dark grey (10YR3/1-Moist); ; Light clay; Moderate grade of structure, 10-20 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;
A13	0.25 - 0.65 m	Very dark grey (10YR3/1-Moist); ; Light clay; Moderate grade of structure, 20-50 mm, Prismatic; 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; Very firm consistence; Very few (0 - 2 %), Calcareous, Medium (2 - 6 mm), Nodules; Field pH 8.8 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
B21	0.65 - 1 m	Strong brown (7.5YR5/6-Moist); , 10YR31, 20-50% , 15-30mm, Prominent; Light clay; Moderate grade of structure, 20-50 mm, Prismatic; Moderate grade of structure, 10-20 mm, Lenticular; 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, Medium (2 - 6 mm), Nodules; Field pH 8.8 (pH meter); Few, very fine (0-1mm) roots;
B22	1 - 1.8 m	Brown (7.5YR4/4-Moist); , 10YR31, 0-2% , 0-5mm, Distinct; Light clay; Moderate grade of structure, 20-50 mm, Prismatic; Smooth-ped fabric; Rough-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Common (10 - 20 %), Calcareous, Coarse (6 - 20 mm), Soft segregations; Field pH 8.8 (pH meter); Diffuse, Smooth change to -
C	1.8 - 2.69 m	Yellowish brown (10YR5/6-Moist); , 10YR53, 0-2% , 5-15mm, Distinct; Clayey sand; Weak grade of structure, 20-50 mm, Prismatic; Massive grade of structure; Sandy (grains prominent) fabric; Smooth-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Very few (0 - 2 %), Calcareous, Medium (2 - 6 mm), Soft segregations; Field pH 8.8 (pH meter);

#### Morphological Notes

A11	Originally bu010. 0-10cm is possibly new flood thickening. Top is dark structured, subsoil like Q but soil is Pian. Note that carbonate concretions start at 35cm. Much sand is
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A12      visible from 150cm. The sample at 250-260cm is from a clayey band in a clayey sand horizon. Great soil group is difficult to identify. Possibly best as prairie soil.

**Observation Notes**

Parent Rock: alluvial sediment, clay, mixed texture, with lime first terraced fan, Namoi

**Site Notes**

Bonny Hill is a sand hill rising one metre above the plain: probably a low source-bordering dune. Sand to 10m+ in water bore.  
Pian Creek originally collected drainage only from the plain. It was connected to the Namoi by a dug channel. Low

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Depth	pH	1:5 EC	Exchangeable Cations			Exchangeable	CEC	ECEC	ESP
m		dS/m	Ca	Mg	K	Na	Acidity		%
						Cmol (+)/kg			
0 - 0.1	6.79A	0.345A	18.34B	7.08	2.62	0.32			
0.1 - 0.2	8.04A	0.246A	23.2B	10.32	1.47	0.62			
0.3 - 0.4	8.76A	0.177A	22.93B	16.98	0.75	1.6			
0.7 - 0.8	8.75A	0.44A	12.16B	19.62	0.65	3.37			
1.2 - 1.3	8.68A	0.564A	8.3B	15.05	0.55	3			
2.5 - 2.6	8.74A	0.349A	9.05B	14.88	0.51	3.9			

[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