

**Project Name:** Soil Studies in the Lower Namoi Valley  
**Project Code:** EDGEROI **Site ID:** ed143 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (QLD)

#### Site Information

<b>Desc. By:</b>	D. McGarry	<b>Locality:</b>	J.L.N.(Neil) Schwager, Fernleigh
<b>Date Desc.:</b>	09/07/86	<b>Elevation:</b>	197 metres
<b>Map Ref.:</b>	Sheet No. : 8837_N 1:50000	<b>Rainfall:</b>	No Data
<b>Northing/Long.:</b>	6658700 AMG zone: 55	<b>Runoff:</b>	No Data
<b>Easting/Lat.:</b>	747000 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>	Level
<b>Slope:</b>	0 %	<b>Aspect:</b>	No Data

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

#### 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, Cultivation. Rainfed,

#### Vegetation:

#### Surface Coarse Fragments:

#### Profile Morphology

A11	0 - 0.1 m	Very dark greyish brown (10YR3/2-Moist); Very dark greyish brown (10YR3/2-Dry); , 10YR82, 0-2% , 0-5mm, Distinct; Medium heavy clay; Moderate grade of structure, 5-10 mm, Angular blocky; Moderate grade of structure, 5-10 mm, Subangular blocky; Smooth-ped fabric; Earthy fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Fine (1-2mm) macropores, Moderately moist; Very firm consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 7 (pH meter); Few, very fine (0-1mm) roots;
A12	0.1 - 0.25 m	Very dark greyish brown (10YR3/2-Moist); , 10YR82, 0-2% , 0-5mm, Distinct; Medium heavy clay; Moderate grade of structure, 10-20 mm, Angular blocky; Moderate grade of structure, 5-10 mm, Subangular blocky; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Fine (1-2mm) macropores, Moderately moist; Strong consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 9 (pH meter); Few, very fine (0-1mm) roots;
A13	0.25 - 0.55 m	Very dark greyish brown (10YR3/2-Moist); , 10YR82, 0-2% , 0-5mm, Distinct; Medium heavy clay; Moderate grade of structure, 10-20 mm, Subangular blocky; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Fine (1-2mm) macropores, Moderately moist; Very strong consistence; 0-2%, fine gravelly, 2-6mm, subrounded, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 9 (pH meter); Few, very fine (0-1mm) roots;
A14	0.55 - 1.1 m	Very dark greyish brown (10YR3/2-Moist); , 10YR82, 2-10% , 0-5mm, Distinct; Medium heavy clay; Weak 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; Very strong consistence; Few (2 - 10 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 9 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
B21	1.1 - 1.9 m	Dark brown (10YR3/3-Moist); , 10YR34, 10-20% , 5-15mm, Distinct; , 10YR82, 2-10% , 0-5mm, Distinct; Medium heavy clay; Weak grade of structure, 20-50 mm, Lenticular; Weak 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; Few (2 - 10 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 9 (pH meter); Few, very fine (0-1mm) roots;
B22	1.9 - 2.82 m	Brown (7.5YR4/4-Moist); , N30, 2-10% , 0-5mm, Distinct; , 10YR82, 10-20% , 0-5mm, Distinct; Medium heavy clay; Strong grade of structure, 50-100 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; Few (2 - 10 %), Calcareous, Medium (2 - 6 mm), Soft segregations; Field pH 9.5 (pH meter);

#### Morphological Notes

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A11      Top 2cm is granular/crumb (2-3mm diam.). Top 56cm is very dry and severely cracked.  
Not a very dark topsoil, though it is deep. The upper B2 is a 'gingery' colour, then more  
orange below 200cm. WTW says this resembles the pH plot at Myall V  
ale. MVpH.

A12

**Observation Notes**

Parent Rock: alluvial sediment, clay, parna on third fan, Namoi

**Site Notes**

There is a thick belt of bumble box south of this site. The surface has been heavily trampled by stock and this has hidden many surface cracks. This surface has a weak crust which has numerous fine cracks, not the ones which were originally

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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	7.75A	0.182A	22.01B	12.72	3.62	0.49			
0 - 0.1	7.67A	0.204A	23.44B	17.05	2.35	0.63			
0.1 - 0.2	8.43A	0.162A	25.83B	18.26	0.7	1.2			
0.3 - 0.4	8.65A	0.244A	23.3B	21.05	0.67	3.33			
0.7 - 0.8	9.14A	0.315A	20.14B	24.39	0.83	6.16			
1.2 - 1.3	9.02A	0.4A	17.88B	21.77	1.05	6.84			
2.5 - 2.6	9.22A	0.381A	15.41B	22.27	0.72	6.35			

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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