Project Name: Soil Studies in the Lower Namoi Valley

Project Code: EDGEROI Site ID: ed174 Observation ID: 1

Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By: W.T. Ward Locality: R.M.(Ross) Fordham, Wonga Plains

Date Desc.: Elevation: 15/12/86 328 metres Map Ref.: Sheet No.: 8837 N 1:50000 Rainfall: No Data Northing/Long.: 6655300 AMG zone: 55 Runoff: No Data 783900 Datum: AGD66 Easting/Lat.: Drainage: No Data

**Geology** 

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

**Land Form** 

 Rel/Slope Class:
 No Data
 Pattern Type:
 No Data

 Morph. Type:
 No Data
 Relief:
 No Data

 Elem. Type:
 Terrace flat
 Slope Category:
 Level

 Slope:
 0 %
 Aspect:
 No Data

Surface Soil Condition (dry): Self-mulching, Recently cultivated

**Erosion:** 

**Soil Classification** 

Australian Soil Classification:Mapping Unit:N/AN/APrincipal Profile Form:Ug5.15ASC Confidence:Great Soil Group:Brown clay

Confidence level not specified

Site Disturbance: Cultivation. Rainfed

**Vegetation:** 

**Surface Coarse Fragments:** 

**Profile Morphology** 

A11p 0 - 0.1 m Dark brown (7.5YR3/2-Moist); Dark brown (7.5YR3/2-Dry); ; Light medium clay; Weak grade of structure, 20-50 mm, Lenticular; Moderate grade of structure, 5-10 mm, Granular; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;

Diffuse, Smooth change to -

A12 0.1 - 0.25 m Dark brown (7.5YR3/2-Moist); ; Light medium clay; Moderate grade of structure, 20-50 mm,

Lenticular; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; 0-2%, fine gravelly, 2-6mm, rounded, Quartz, coarse fragments; Field pH 8.7 (pH meter); Few, very fine (0-1mm) roots;

A13 0.25 - 0.55 m Dark brown (7.5YR3/2-Moist); , 7.5YR54, 0-2% , 0-5mm, Prominent; Medium clay; Weak grade

of structure, 20-50 mm, Lenticular; Moderate grade of structure, 20-50 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; 0-2%, fine gravelly, 2-6mm, rounded, Consolidated rock (unidentified), coarse fragments; Field pH 8.7 (pH meter); Few, very fine (0-

A14 0.55 - 1 m Dark brown (7.5YR3/2-Moist); , 7.5YR42, 0-2% , 0-5mm, Faint; Medium clay; Weak grade of

structure, 20-50 mm, Lenticular; Moderate grade of structure, 20-50 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, Fine (0

- 2 mm), Nodules; Field pH 9 (pH meter); Few, very fine (0-1mm) roots;

B21 1 - 1.5 m Dark reddish brown (5YR3/3-Moist); , 7.5YR32, 0-2% , 5-15mm, Distinct; , 5YR53, 0-2% , 0-

5mm, Distinct; Light medium clay; Strong grade of structure, 20-50 mm, Lenticular; Moderate grade of structure, 2-5 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, Fine (0 - 2 mm), Nodules; Field pH 9 (pH meter); Few, very fine

(0-1mm) roots;

B22 1.5 - 1.82 m Dark reddish grey (5YR4/2-Moist); , 5YR54, 0-2% , 5-15mm, Prominent; Medium clay; Moderate

grade of structure, 20-50 mm, Lenticular; Weak grade of structure, 2-5 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; 2-10%, coarse gravelly, 20-60mm, subrounded, Basalt, coarse fragments; Very few (0 - 2 %), Calcareous, Coarse (6 - 20 mm),

Nodules; Field pH 9 (pH meter);

**Morphological Notes** 

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A11p 30-40cm has small fragments of basalt and quartz. Soil rests on rounded basalt stones

## **Observation Notes**

Parent Rock: alluvial sediment, clay, second terraced fan

## Site Notes

Few, rounded basaltic rocks on surface. Coarse basaltic gravels at 183-185cm. Stopped drilling at 182cm. Dark, fine self mulching topsoil.

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## **Laboratory Test Results:**

Depth	рН	1:5 EC		-	e Cations		Exchangeable	CEC	ECEC	ESP
m		dS/m	Ca	Mg	K	Na Cmol (+	Acidity -)/kg			%
0 - 0.02	8.55A	0.129A	37.87B	13.45	1.94	0.47				
0 - 0.1	8.32A	0.168A	34.3B	13.33	1.42	1.03				
0.1 - 0.2	8.79A	0.151A	28.83B	14.21	0.69	1.51				
0.3 - 0.4	9.1A	0.192A	26.35B	17.51	0.55	2.79				
0.7 - 0.8	9.36A	0.329A	19.28B	27.12	0.78	7.53				
1.2 - 1.3	9.34A	0.548A	12.52B	25.96	0.81000	9.4				
					01					
1.7 - 1.8	9.28A	0.638A	12.53B	24.65	0.9	9.17				
Depth	CaCO3	Organic	Avail.	Total	Total	Total	l Bulk	Particle	Size	Analysis
•		Ċ	Р	Р	N	K	Density	GV CS	FS	Silt Clay
m	%	%	mg/kg	%	%	%	Mg/m3		%	
0 - 0.02	0.1B	1.65C								16.4 56.1
0 - 0.02	0.1B 0.2B	1.63C	13J							14.4 56.2
0.1 - 0.2	0.2B	1.02C 1.14C	2.6J							14.4 56.2
0.1 - 0.2	2.3B	0.9C	2.03 <1J							14.5 55.6
0.3 - 0.4	3.3B	0.9C	<1J							15.9 57.5
1.2 - 1.3	2.9B	0.9C 0.45C	9.9J							15.6 54.9
1.7 - 1.8	2.9B	0.43C 0.18C	9.93 15.2J							18.3 58
1.7 - 1.8	∠.0B	U. 16C	15.ZJ							10.3 38
Depth	COLE	COLE Gravimetric/Volumetric Water Contents K sat K uns								
		Sat.	0.05 Bar	0.1 Bar	0.5 Bar	1 Bar	5 Bar 15	Bar		
m				g	/g - m3/m	3		mn	n/h	mm/h

0 - 0.02

0 - 0.1 0.1 - 0.2

0.1 - 0.2 0.3 - 0.4 0.7 - 0.8 1.2 - 1.3 1.7 - 1.8

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## **Laboratory Analyses Completed for this profile**

15A2\_CA Exchangeable bases (Ca2+,Mg2+,Na+,K+) - 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 Silt (%) - Coventry and Fett pipette method