Project Name: Soil Studies in the Lower Namoi Valley

Project Code: EDGEROI Site ID: ed371 Observation ID: 1

Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By: W.T. Ward Locality: Frank O'Neill, Llano

Date Desc.: Elevation: 30/01/87 198 metres Map Ref.: Sheet No.: 8837 N 1:50000 Rainfall: No Data Northing/Long.: 6673580 AMG zone: 55 Runoff: No Data 752180 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:
 Fan
 Slope Category:
 No Data

 Slope:
 0 %
 Aspect:
 No Data

Surface Soil Condition (dry): Surface crust, Trampled

Erosion:

Soil Classification

Australian Soil Classification: Mapping Unit: N/A
N/A Principal Profile Form: Ug5.16
ASC Confidence: Great Soil Group: Grey clay

Confidence level not specified

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

Vegetation:

R21

0.6 - 1 m

Surface Coarse Fragments:

A11	0 - 0.1 m	Very dark greyish brown (10YR3/2-Moist); Grey (10YR5/1-Dry); ; Light medium clay; Moderate grade of structure, 20-50 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; 0-2%, fine gravelly, 2-6mm, subrounded, Quartz, coarse fragments; Field pH 6.5
		(pH meter): Few, fine (1-2mm) roots:

A12 0.1 - 0.2 m Very dark greyish brown (10YR3/2-Moist); ; Medium clay; Moderate grade of structure, 50-100 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, subrounded, Quartz, coarse fragments; Field pH 8 (pH meter); Few, very fine (0-1mm)

roots; Diffuse, Smooth change to -

Very dark greyish brown (10YR3/2-Moist); , 10YR52, 0-2% , 0-5mm, Distinct; Light medium clay; Moderate grade of structure, 100-200 mm, Subangular blocky; Weak 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; Rigid consistence; 0-2%, fine gravelly, 2-6mm, subrounded, Quartz, coarse fragments; Very few (0 - 2%), Calcareous, Medium (2 -6 mm), Soft segregations: Field pH 8 (pH meter): Few yery fine (0-1mm) roots: Diffuse, Smooth

Soft segregations; Field pH 8 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth

Brown (7.5YR4/2-Moist); ; Medium clay; Moderate grade of structure, 50-100 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; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Soft segregations; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;

B22 1 - 1.9 m Brown (7.5YR4/2-Moist); , 10YR62, 0-2% , 0-5mm, Faint; Medium clay; Moderate grade of

structure, 100-200 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; 0-2%, fine gravelly, 2-6mm, subrounded, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field

pH 9 (pH meter);

B23 1.9 - 3.05 m Brown (7.5YR4/4-Moist); , 7.5YR42, 2-10% , 15-30mm, Faint; Medium clay; Moderate grade of

structure, 100-200 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; 0-2%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Few (2 - 10 %), Calcareous, Very coarse (20 - 60 mm), Nodules;

Field pH 9 (pH meter);

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B24 3.05 - 4.05 m Dark reddish grey (5YR4/2-Moist); , 7.5YR32, 0-2% , 5-15mm, Distinct; Medium clay; Moderate

grade of structure, 100-200 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; Very few (0 - 2 %), Calcareous, Medium

(2 -6 mm), Nodules; Field pH 8.5 (pH meter);

C 4.05 - 5.5 m Dark reddish grey (5YR4/2-Moist); ; Medium clay; Moderate grade of structure, 100-200 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; Very few (0 - 2 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 8.5

(pH meter); Abrupt, Smooth change to -

2C1 5.5 - 6.05 m Brown (7.5YR5/4-Moist); , N60, 2-10% , 5-15mm, Prominent; Medium clay; Moderate grade of

structure, 20-50 mm, Lenticular; Massive grade of structure; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; 0-2%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Few (2 - 10

%), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 9 (pH meter);

2C2 6.05 - 6.83 m Dark reddish grey (5YR4/2-Moist); , 10YR51, 0-2% , 0-5mm, Faint; Medium clay; Moderate grade

of structure, 10-20 mm, Lenticular; Massive grade of structure; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; 0-2%, fine gravelly, 2-6mm, rounded tabular, Consolidated rock (unidentified), coarse fragments; Very few (0 - 2 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 9

(pH meter);

Morphological Notes

A11 Some wedge and polished peds at 25cm, also inwashed sand below 25cm. This

suggests possibility of a discontinuity. Manganese stains start at 380cm. From 360cm a

faint water stain (N6/) is associated with the slickensides. There is a sharp c

A12 ontact between basal sand (above) and clay (below), at 552cm. Suspecten bone at

370cm, at 370cm 1 pebble (sandstone?) and a fragment of basalt. Topsoil texture is

"with sand".

Observation Notes

Parent Rock: alluvial sediment, clay, parna on fourth fan

Site Notes

Site is more trampled than poached, near gate.

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Laboratory Test Results:

<u>Laboratory</u>	I COL INC	Juito.								
Depth	рН	1:5 EC		hangeable			Exchangeable	CEC	ECEC	ESP
			Ca	Mg	K	Na	Acidity			
m		dS/m				Cmol (+	·)/kg			%
0 - 0.02	7.75A	0.194A	16.64B	11.02	0.87	3.54				
0 - 0.1										
0.1 - 0.2	8.65A		20.21B	11.02	0.48	6.51				
0.3 - 0.4	8.97A	0.474A	16.63B	9.83	0.27	9.27				
0.7 - 0.8	8.61A	0.93A	19.21B	11.82	0.71	11.63				
1.2 - 1.3	8.87A	0.768A	20.95B	12.16	0.83	13.79				
2.5 - 2.6	8.6A	0.833A	24.11B	12.78	0.93	17.49				
3.5 - 3.6	8.3A	0.676A	19.27B	9.74	0.75	16.92				
4.5 - 4.6	8.26A	0.6580001	IA20.83B	10.07	0.77	18.17				
5.5 - 5.6	8.97A	0.777A	19.82B	10.09	0.7	19.49				
6.5 - 6.6	8.82A	0.9A	21.51B	11.45	1.02	22.06				
Danth	0-003	Oznania	Avail	Tatal	Tatal	Total	Dulk	Dow	iala Cina	Amelyaia
Depth	CaCO3	Organic	Avail. P	Total P	Total				icle Size	•
m	%	C %	mg/kg	%	N %	K %	Density Mg/m3	GV	CS FS	Silt Clay
•••	70	70	ilig/kg	/0	70	/0	Wig/ili3		70	
0 - 0.02	<0.1B	0.81C	15.3J							18.4 42.2
0 - 0.02	<0.1D	0.610	15.50							10.4 42.2
0 - 0.1	<0.1B	0.62C	1.6J							21.9 44.6
			<1J							
0.3 - 0.4	1.1B	0.59C	-							23.2 42.9
0.7 - 0.8	1.2B	0.17C	5.8J							19.2 51.2
1.2 - 1.3	1.9B	0.11C	3.2J							16.9 56
2.5 - 2.6	0.4B	0.08C	<1J							14.5 59.3
3.5 - 3.6	<0.1B	0.03C	<1J							13.7 52.9
4.5 - 4.6		<0.01C	2.8J							12.6 53.6
5.5 - 5.6	2.8B	0.13C	2J							11.8 50.2
6.5 - 6.6	1.5B	0.12C	2.2J							12.3 59
Depth	COLE			rimetric/Vo					K sat	K unsat
		Sat.	0.05 Bar	0.1 Bar	0.5 Bar	1 Bar	5 Bar 15 I	3ar		0-
m				g/	g - m3/m	3			mm/h	mm/h
0 0 00										
0 - 0.02										
0 - 0.1										
0.1 - 0.2										
0.3 - 0.4										
0.7 - 0.8										
1.2 - 1.3										
2.5 - 2.6										
3.5 - 3.6										
4.5 - 4.6										
5.5 - 5.6										
6.5 - 6.6										

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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