

Project Name: Soil Studies in the Lower Namoi Valley
Project Code: EDGEROI **Site ID:** ed360 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By: W.T. Ward	Locality: Frank O'Neill, Llano
Date Desc.: 20/01/87	Elevation: 197 metres
Map Ref.: Sheet No. : 8837_N 1:50000	Rainfall: No Data
Northing/Long.: 6674810 AMG zone: 55	Runoff: No Data
Easting/Lat.: 751750 Datum: AGD66	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: Level
Slope: 0 %	Aspect: No Data

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

Erosion:

Soil Classification

Australian Soil Classification: N/A	Mapping Unit: N/A
ASC Confidence: Confidence level not specified	Principal Profile Form: Ug5.16
	Great Soil Group: Grey clay

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; Strong grade of structure, 5-10 mm, Granular; Moderate grade of structure, 20-50 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; 0-2%, fine gravelly, 2-6mm, subrounded, Quartz, coarse fragments; Field pH 7.5 (pH meter); Few, very fine (0-1mm) roots; Clear, 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, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;
A13	0.25 - 0.65 m	Dark brown (7.5YR3/2-Moist); , 7.5YR54, 0-2% , 0-5mm, Distinct; Medium clay; Moderate grade of structure, 100-200 mm, Prismatic; Moderate grade of structure, 20-50 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Very firm 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; Diffuse, Smooth change to -
B21	0.65 - 1 m	Brown (7.5YR4/4-Moist); , 7.5YR32, 10-20% , 5-15mm, Distinct; Medium clay; Moderate grade of structure, 20-50 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; 0-2%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Medium (2 - 6 mm), Nodules; Very few (0 - 2 %), Gypseous, Fine (0 - 2 mm), Crystals; Field pH 9 (pH meter); Few, very fine (0-1mm) roots;
B22	1 - 1.5 m	Dark reddish grey (5YR4/2-Moist); , 7.5YR32, 0-2% , 5-15mm, Distinct; Light medium clay; Moderate grade of structure, 50-100 mm, Lenticular; Weak grade of structure, 10-20 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 0.01m ²) Medium (2-5mm) macropores, Moderately moist; Very firm consistence; Very few (0 - 2 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 9 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -

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B23g	1.5 - 3.05 m	Dark grey (5YR4/1-Moist); , 5YR43, 2-10% , 5-15mm, Prominent; Light clay; Weak grade of structure, 50-100 mm, Lenticular; Weak 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; Very firm consistence; Few (2 - 10 %), Calcareous, Medium (2 - 6 mm), Nodules; Field pH 9 (pH meter);
B24g	3.05 - 4.05 m	Reddish brown (5YR4/3-Moist); , 5YR41, 10-20% , 15-30mm, Prominent; Medium clay; Moderate 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; Very firm consistence; Very few (0 - 2 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 8.7 (pH meter);
B25g	4.05 - 5 m	Dark reddish grey (5YR4/2-Moist); , 5YR41, 10-20% , 15-30mm, Prominent; Light clay; Moderate grade of structure, 50-100 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; Field pH 8.5 (pH meter); Diffuse, Smooth change to -
C	5 - 5.61 m	Dark grey (5YR4/1-Moist); , N50, 10-20% , 15-30mm, Prominent; Medium clay; Moderate grade of structure, 50-100 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%, medium gravelly, 6-20mm, subrounded, Quartz, coarse fragments; Common (10 - 20 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 8.5 (pH meter);

Morphological Notes

A11p	Llano 11. Prismatic structure possibly includes 10-20cm. At 10-20cm the subangular blocky coexists with a wedge structure. 250-260cm the primary soil colour is uncertain, the grey could be hydromorphic, the reddish brown could be faunal mix
A12	ing. Note colour order is reversed at 350-360cm, suggesting hydromorphism. 350-360cm; has N2/ manganese stains. There is very little lime at 450-460cm. The core terminates at a slickenside. At 560cm there is a large quartz pebble as well as
A13	abundant (3) carbonate nodules (pebbles?) forming a band 6cm thick. The lower part of the profile is distinctly hydromorphic.

Observation Notes

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

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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 - 0.1	8.49A	0.15A	27.58B	11.99	1.47	3.9			
0.1 - 0.2	8.96A	0.214A	28.47B	12.18	0.89	5.11			
0.3 - 0.4	9.11A	0.295A	28.36B	12.81	0.81000	9.59			
					01				
0.7 - 0.8	8.72A	0.965A	23.41B	13.39	0.86	14.98			
1.2 - 1.3	8.68A	1.101A	26.02B	14.59	1.24	14.78			
2.5 - 2.6	8.9A	0.886A	21B	13.24	0.93999	14.33			
					99				
3.5 - 3.6	9.23A	0.714A	15.4B	8.12	0.58	9.88			
4.5 - 4.6	8.45A	0.784A	21.52B	11.26	0.82	15.32			
5.5 - 5.6	9.03A	0.927A	20.24B	10.22	0.7	15.14			

Depth m	CaCO ₃	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle Size		Analysis	
	%	%	mg/kg	%	%	%	Mg/m ³	GV	CS	FS %	Silt Clay
0 - 0.1	0.1B	0.64C	15.8J								16.9 57.9
0.1 - 0.2	0.3B	0.47C	9.3J								17.1 55.6
0.3 - 0.4	0.5B	0.43C	11.3J								17.7 51.5
0.7 - 0.8	0.9B	0.24C	17.9J								17 59.1
1.2 - 1.3	1.1B	0.09C	13.8J								18.5 63
2.5 - 2.6	0.8B	0.13C	6.3J								14.6 59.4
3.5 - 3.6	11.3B	0.05C	4.1J								12.2 40.1
4.5 - 4.6	<0.1B	0.02C	6.2J								12.7 53.7
5.5 - 5.6	8.2B	0.01C	6.9J								14 51.4

[illegible]

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Laboratory Analyses Completed for this profile

15A2_CA	Exchangeable bases (Ca ²⁺ ,Mg ²⁺ ,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
P10_CF_Z	Silt (%) - Coventry and Fett pipette method