Project Name: **Soil Studies in the Lower Namoi Valley**
Project Code: **EDGEROI** **Site ID:** **ed092** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (QLD)**

Site Information

Desc. By:	W.T. Ward	**Locality:**	Auscott Ltd, Unfaan
Date Desc.:	15/01/87	**Elevation:**	197 metres
Map Ref.:	Sheet No. : 8837_N 1:50000	**Rainfall:**	No Data
Northing/Long.:	6665800 AMG zone: 55	**Runoff:**	No Data
Easting/Lat.:	751200 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:	Terrace flat	**Slope Category:**	Level
Slope:	0 %	**Aspect:**	No Data

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

Erosion:

Soil Classification

Australian Soil Classification:
N/A
ASC Confidence:
Confidence level not specified

Mapping Unit: N/A
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	Brown (7.5YR4/2-Moist); Grey (10YR5/1-Dry); ; Light medium clay; Moderate grade of structure, 10-20 mm, Subangular blocky; Moderate grade of structure, 2-5 mm, Granular; 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, Fine (0 - 2 mm), Nodules; Field pH 7.5 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Smooth
A12	0.1 - 0.25 m	Dark brown (7.5YR3/2-Moist); , 7.5YR64, 0-2% , 0-5mm, Faint; Light medium clay; Moderate grade of structure, 50-100 mm, Subangular blocky; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) 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	Dark brown (7.5YR3/2-Moist); ; Medium clay; Moderate grade of structure, 50-100 mm, Subangular blocky; Smooth-ped fabric; Medium, (5 - 10) 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;
A14y	0.55 - 1 m	Dark brown (7.5YR3/2-Moist); , 10YR62, 0-2% , 0-5mm, Distinct; Medium clay; Moderate grade of structure, 20-50 mm, Lenticular; 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; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Very few (0 - 2 %), Gypseous, Fine (0 - 2 mm), Crystals; Field pH 9 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
B21	1 - 1.9 m	Brown (7.5YR5/4-Moist); , 7.5YR42, 10-20% , 15-30mm, Distinct; Medium clay; Moderate grade of structure, 100-200 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; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 9 (pH meter);
B22	1.9 - 3.34 m	Brown (7.5YR4/2-Moist); ; Medium clay; Weak grade of structure, 100-200 mm, Lenticular; Strong 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; Strong consistence; Very few (0 - 2 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 9 (pH

Morphological Notes

A11p The soil has a deep crack to 1 metre. More like older alluvium.

Observation Notes

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

Site Notes

Very dense hardpan just under tilled layer. Recent cultivation has covered large cracks. At 300cm there were large calcium carbonate nodules, plus manganese stains around the well-developed angular blocky structure; polished ped fabric. The

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations				Exchangeable	CEC	ECEC	ESP
			Ca	Mg	K	Na	Acidity			
m		dS/m	Cmol (+)/kg							%
0 - 0.02	8.3A	0.102A	29.15B	11.41	1.75	1.92				
0 - 0.1	7.78A	0.203A	27.92B	13.94	1.75	1.99				
0.1 - 0.2	8.57A	0.158A	27.3B	13.06	1.05	2.96				
0.3 - 0.4	9.16A	0.224A	27.46B	13.82	0.88	5.75				
0.7 - 0.8	7.9A	2.91A	26.65B	13.47	0.98999 99	8.37				
1.2 - 1.3	8.34A	1.665A	24.82B	16.32	1.43	9.84				
2.5 - 2.6	8.29A	0.829A	24.96B	15.37	1.41	10.71				

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle Size Analysis GV	CS	FS	Silt	Clay
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0 - 0.02	<0.1B	0.9C									16.5	62.9
0 - 0.1	<0.1B	1.12C	21.8J								14.2	58.8
0.1 - 0.2	0.2B	0.72C	9.4J								15.7	57.9
0.3 - 0.4	0.7B	0.56C	10.8J								15	59.5
0.7 - 0.8	0.9B	0.41C	15.2J								16.5	59.8
1.2 - 1.3	0.9B	0.14C	14.1J								16.7	65.8
2.5 - 2.6	<0.1B	0.09C	6.4J								15.1	68.5

Depth	COLE	Gravimetric/Volumetric Water Contents							K sat	K unsat
		Sat.	0.05 Bar	0.1 Bar	0.5 Bar	1 Bar	5 Bar	15 Bar		
m		g/g - m3/m3							mm/h	mm/h
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										

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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
P10_CF_Z	Silt (%) - Coventry and Fett pipette method