Project Name: **Soil Studies in the Lower Namoi Valley**
Project Code: **EDGEROI** **Site ID:** **ed069** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (QLD)**

Site Information

Desc. By:	G.M. Roberts	**Locality:**	B. & M.(Bevan) O'Regan, Moema
Date Desc.:	30/07/85	**Elevation:**	341 metres
Map Ref.:	Sheet No. : 8837_N 1:50000	**Rainfall:**	No Data
Northing/Long.:	6669600 AMG zone: 55	**Runoff:**	No Data
Easting/Lat.:	784400 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:**	Very gently sloped
Slope:	1 %	**Aspect:**	270 degrees

Surface Soil Condition (dry): Self-mulching

Erosion:

Soil Classification

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

Mapping Unit: N/A
Principal Profile Form: Ug5.15
Great Soil Group: Brown 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	Dark brown (7.5YR3/2-Moist); Brown (7.5YR4/2-Dry); ; Light medium clay; Weak grade of structure, 5-10 mm, Subangular blocky; Earthy fabric; Smooth-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; 0-2%, fine gravelly, 2-6mm, rounded tabular, Quartz, coarse fragments; Field pH 7 (pH meter); Few, fine (1-2mm) roots;
A12	0.1 - 0.25 m	Dark brown (7.5YR3/2-Moist); ; Medium clay; Moderate grade of structure, 5-10 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; 0-2%, fine gravelly, 2-6mm, rounded tabular, Quartz, coarse fragments; Field pH 7.5 (pH meter); Few, fine (1-2mm) roots;
A13	0.25 - 0.65 m	Dark brown (7.5YR3/2-Moist); ; Medium heavy clay; 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; 0-2%, fine gravelly, 2-6mm, rounded tabular, Quartz, coarse fragments; Field pH 8.8 (pH meter); Few, very fine (0-1mm) roots; Clear change to -
B21	0.65 - 1 m	Reddish brown (5YR4/3-Moist); , 7.5YR84, 10-20% , 15-30mm, Prominent; Heavy clay; 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 firm consistence; 2-10%, medium gravelly, 6-20mm, rounded, Quartz, coarse fragments; Common (10 - 20 %), Calcareous, Coarse (6 - 20 mm), Soft segregations; Field pH 9 (pH meter); Few, very fine (0-1mm) roots;
B22	1 - 2.28 m	Reddish brown (5YR4/3-Moist); , 7.5YR84, 0-2% , 5-15mm, Prominent; Medium clay; Moderate grade of structure, 20-50 mm, Prismatic; Moderate grade of structure, 5-10 mm, Angular blocky; Smooth-ped fabric; Earthy 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, Basalt, coarse fragments; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Soft segregations; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Abrupt change to -
B23	2.28 - 3.2 m	Dark reddish grey (5YR4/2-Moist); , 7.5YR84, 10-20% , 15-30mm, Prominent; , 7.5YR32, 2-10% , 15-30mm, Prominent; Light clay; Moderate grade of structure, 10-20 mm, Prismatic; Moderate grade of structure, 5-10 mm, Angular blocky; Earthy fabric; Smooth-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Many (20 - 50 %), Calcareous, Coarse (6 - 20 mm), Soft segregations; Few (2 - 10 %), Organic (humified), Coarse (6 - 20 mm), Veins; Field pH 8.5 (pH meter);

Morphological Notes

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A11	Basalt gravels heavily coated with calcium carbonate up to 20mm diameter from 75cm. Other rounded quartz gravels scattered in small numbers throughout the first metre. Note A13 is very hard (hardset). This soil appears to be developed on ba
A12	salt alluvium over prior older sandstone sediments. The burials appear to be too transitional for clear identification.

Observation Notes

Parent Rock: alluvial sediment, clay, first terraced fan

Site Notes

This site is in a newly formed floodway. 284-320 is in silts; firm; many pores; clay stains on partings, few basalt gravels and stones. Stipa ?scabra is questionable. 10 to 12 cracks per metre.

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations				Exchangeable Acidity	CEC	ECEC	ESP
			Ca	Mg	K	Na				
m		dS/m	Cmol (+)/kg							%
0 - 0.02	7.36A	0.093A	25.22B	17.06	2.45	0.15				
0 - 0.1	7.75A	0.064A	25.15B	15.77	1.03	0.44				
0.1 - 0.2	7.94A	0.055A	26.9B	16.78	0.59	0.63				
0.3 - 0.4	8.51A	0.073A	26.81B	18.28	0.43	1.3				
0.7 - 0.8	9.02A	0.197A	21.06B	20.88	0.43	2.72				
1.2 - 1.3	8.82A	0.275A	20.2B	21.98	0.47	2.51				
2.5 - 2.6	8.84A	0.229A	21.56B	20.06	0.38	2.13				

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	3.01C									26.3	53.3
0 - 0.1	<0.1B	1.78C	48.6J								24.7	53.7
0.1 - 0.2	0.1B	1.4C	15.3J								25.3	52.9
0.3 - 0.4	0.1B	1.26C	18.7J								25.5	53
0.7 - 0.8	4B	0.75C	35.6J								26.1	44.1
1.2 - 1.3	3.8B	0.35C	42.3J								29	41.8
2.5 - 2.6	7.3B	0.21C	33.6J								26.4	37.9

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