Project Name: **Soil Studies in the Lower Namoi Valley**
Project Code: **EDGEROI** **Site ID:** **ed049** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (QLD)**

Site Information

Desc. By:	W.T. Ward	**Locality:**	stock route, near Moema North
Date Desc.:	31/01/86	**Elevation:**	270 metres
Map Ref.:	Sheet No. : 8837_N 1:50000	**Rainfall:**	No Data
Northing/Long.:	6672200 AMG zone: 55	**Runoff:**	No Data
Easting/Lat.:	777600 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 plain	**Slope Category:**	Level
Slope:	0 %	**Aspect:**	No Data

Surface Soil Condition (dry): Self-mulching, Trampled

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: Cultivation. Rainfed

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11	0 - 0.1 m	Dark reddish brown (5YR2/2-Moist); Dark reddish brown (5YR2/2-Dry); ; Medium clay; Weak grade of structure, 20-50 mm, Subangular blocky; Moderate grade of structure, 2-5 mm, Granular; Earthy fabric; Fine, (0 - 5) mm crack; Moderately moist; Firm consistence; 0-2%, fine gravelly, 2-6mm, subrounded, Quartz, coarse fragments; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;
A12	0.1 - 0.25 m	Dark reddish brown (5YR2/2-Moist); ; Medium heavy clay; Weak grade of structure, 20-50 mm, Subangular blocky; Moderate grade of structure, 2-5 mm, Granular; Earthy fabric; Fine, (0 - 5) mm crack; Moderately moist; Firm consistence; 2-10%, fine gravelly, 2-6mm, subrounded, Quartz, coarse fragments; Field pH 8.8 (pH meter); Few, very fine (0-1mm) roots;
A13	0.25 - 0.55 m	Dark reddish brown (5YR2/2-Moist); , 7.5YR72, 0-2% , 0-5mm, Faint; Medium heavy clay; Strong grade of structure, 20-50 mm, Angular blocky; Earthy fabric; Medium, (5 - 10) mm crack; Moderately moist; Strong consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.8 (pH meter); Few, very fine (0-1mm) roots;
A14	0.55 - 0.85 m	Dark reddish brown (5YR2/2-Moist); , 7.5YR72, 0-2% , 0-5mm, Faint; Heavy clay; Moderate grade of structure, 20-50 mm, Angular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Moderately moist; Strong consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.8 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
B21	0.85 - 2.2 m	Dark reddish brown (5YR3/3-Moist); , 7.5YR64, 0-2% , 5-15mm, Distinct; , 5YR21, 0-2% , 5-15mm, Distinct; Medium clay; Moderate grade of structure, 20-50 mm, Angular blocky; Moderate grade of structure, 20-50 mm, Lenticular; Smooth-ped fabric; Fine, (0 - 5) mm crack; Moderately moist; Strong consistence; Very few (0 - 2 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 8.8 (pH meter); Diffuse, Smooth change to -
C	2.2 - 2.98 m	Dark reddish brown (5YR3/3-Moist); , 7.5YR64, 0-2% , 15-30mm, Distinct; , 2.5YR46, 0-2% , 5-15mm, Distinct; Medium clay; Weak grade of structure, 50-100 mm, Lenticular; Moderate grade of structure, 2-5 mm, Cast; Smooth-ped fabric; Earthy fabric; Fine, (0 - 5) mm crack; Moderately moist; Strong consistence; 2-10%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 8.8 (pH meter);

Morphological Notes

A11 Pedality of 30-40cm tends towards prismatic structure. C has evident depositonal bedding. Red terrace Q or MVpH? At 260 an abrupt sedimentary break from bedded sand to clay and gravel with detrital carbonate.

Observation Notes

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Parent Rock: alluvial sediment, mixed texture, with lime, second terraced fan

Site Notes

Very slight slope to north east. Very slight gilgai. Surface just beginning to crack after 50mm rainfall. Larger partly closed cracks were observed - see photo.

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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	7.95A	0.175A	28.04B	10.54	2.68	0.98				
0 - 0.1	8.14A	0.33A	27.21B	11.96	2.02	1.83				
0.1 - 0.2	8.9A	0.251A	28.63B	13.68	0.74	3.2				
0.3 - 0.4	9.34A	0.411A	25.22B	15.82	0.59	9.83				
0.7 - 0.8	8.88A	1.499A	20.35B	15.57	0.8	16.33				
1.2 - 1.3	9.01A	1.413A	18.36B	16.57	0.76	15.57				
2.5 - 2.6	9.29A	0.976A	12.71B	13.64	0.61	12.88				

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	3.07C									16.8	51.7
0 - 0.1	0.2B	1.83C	39.9J								15.5	48.4
0.1 - 0.2	1.6B	1.13C	7J								16.4	49.5
0.3 - 0.4	2.5B	0.91C	<1J								18	49
0.7 - 0.8	1.4B	0.74C	15.9J								18.6	51.7
1.2 - 1.3	3.5B	0.14C	16.6J								19.7	53.7
2.5 - 2.6	3.4B	0.14C	9.4J								12.8	42.7

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