Project Name: **Soil Studies in the Lower Namoi Valley**
Project Code: **EDGEROI** **Site ID:** **ed034** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (QLD)**

Site Information

Desc. By:	D. McGarry	**Locality:**	Des Gordon, Moema State Forest
Date Desc.:	03/07/86	**Elevation:**	332 metres
Map Ref.:	Sheet No. : 8837_N 1:50000	**Rainfall:**	No Data
Northing/Long.:	6674400 AMG zone: 55	**Runoff:**	No Data
Easting/Lat.:	784600 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:	Hillcrest	**Slope Category:**	Very gently sloped
Slope:	2 %	**Aspect:**	320 degrees

Surface Soil Condition (dry): Soft

Erosion:

Soil Classification

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

Mapping Unit: N/A
Principal Profile Form: Db3.13
Great Soil Group: Red-brown earth

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

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11	0 - 0.1 m	Dark reddish brown (5YR3/2-Moist); ; Fine sandy clay loam; Massive grade of structure; Earthy fabric; Common (1-5 per 100mm2) Fine (1-2mm) macropores, Moderately moist; Weak consistence; Field pH 6 (pH meter); Few, very fine (0-1mm) roots;
A12	0.1 - 0.2 m	Dark brown (7.5YR3/2-Moist); ; Fine sandy clay loam; Moderate grade of structure, 20-50 mm, Angular blocky; Rough-ped fabric; Common (1-5 per 100mm2) Fine (1-2mm) macropores, Moderately moist; Firm consistence; Field pH 7 (pH meter); Few, very fine (0-1mm) roots; Clear, Smooth change to -
B21	0.2 - 0.55 m	Dark yellowish brown (10YR4/4-Moist); , 7.5YR32, 2-10% , 5-15mm, Faint; Medium clay; Moderate grade of structure, 10-20 mm, Prismatic; Moderate grade of structure, 10-20 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; Field pH 7.8 (pH meter); Few, very fine (0-1mm) roots;
B22	0.55 - 1 m	Dark yellowish brown (10YR4/4-Moist); , 10YR33, 2-10% , 5-15mm, Faint; , 10YR81, 0-2% , 5-15mm, Distinct; Medium clay; Moderate grade of structure, 20-50 mm, Prismatic; Moderate grade of structure, 10-20 mm, Angular 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), Nodules; Field pH 9 (pH meter); Few, very fine (0-1mm) roots;
B23	1 - 1.9 m	Dark yellowish brown (10YR4/4-Moist); , 10YR33, 2-10% , 5-15mm, Faint; , 10YR81, 2-10% , 15-30mm, Distinct; Medium clay; Moderate grade of structure, 20-50 mm, Prismatic; Moderate grade of structure, 10-20 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; 2-10%, coarse gravelly, 20-60mm, subrounded, Consolidated rock (unidentified), coarse fragments; Few (2 - 10 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 9 (pH meter); Clear, Smooth change to -
C	1.9 - 2.82 m	Brownish yellow (10YR6/6-Moist); , 10YR41, 10-20% , 30-mm, Prominent; , 5YR81, 10-20% , 15-30mm, Distinct; Medium clay; Strong grade of structure, 50-100 mm, Prismatic; Moderate grade of structure, 10-20 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; Common (10 - 20 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 8.2 (pH

Morphological Notes

A11 Coarse fragments are abundant from 100cm, carbonate also increases in abundance

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A12	90cm, and from this depth to the base of the profile there is much evidence of inherited sedimentary features, viz. clay and sand banding, though the large amounts of carbonate mask these features to some extent. There is evidence of sporad
B21	ic bleaching at 18-20cm, just above the B2. This is a solodic-like soil with a brownish B (WTW) formed on ?Pilliga Sandstone.

Observation Notes

Parent Rock: alluvial sediment, mixed texture, with lime, clay Tertiary beds, weathered

Site Notes

Open belah forest. Possibly a basalt knoll to NW. No gilgai but slight surface microrelief is evident. Wheat west of road.

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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	7.08A	0.141A	12.21B	4.02	2.16	0.03				
0 - 0.1	6.56A	0.367A	11.14B	2.92	0.84	0.04				
0.1 - 0.2	7.54A	0.095A	9.05B	3.37	0.79	0.09				
0.3 - 0.4	8.39A	0.087A	8.690001 B	10.98	0.55	1.62				
0.7 - 0.8	8.81A	0.317A	7.42B	10.59	0.33	2.7				
1.2 - 1.3	8.96A	0.48A	6.23B	11.95	0.5	3.41				
2.5 - 2.6	9.27A	0.566A	6.18B	18.83	0.29	7.5				

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	6.07C									6.7	23.3
0 - 0.1	<0.1B	2.61C	71.9J								8.3	25.5
0.1 - 0.2	<0.1B	1.17C	47.2J								8.2	20.6
0.3 - 0.4	<0.1B	0.63C	1J								6.4	40.4
0.7 - 0.8	0.5B	0.26C	<1J								6.7	37
1.2 - 1.3	3B	0.18C	2.2J								5.6	38.2
2.5 - 2.6	0.6B	0.07C	3.1J								10.5	32.8

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