

Project Name: Soil Studies in the Lower Namoi Valley
Project Code: EDGEROI **Site ID:** ed024 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By:	D. McGarry	Locality:	P.A. Eather, Bald Knob
Date Desc.:	11/10/85	Elevation:	210 metres
Map Ref.:	Sheet No. : 8837_N 1:50000	Rainfall:	No Data
Northing/Long.:	6675200 AMG zone: 55	Runoff:	No Data
Easting/Lat.:	756900 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, Recently cultivated

Erosion:

Soil Classification

Australian Soil Classification:	N/A	Mapping Unit:	N/A
ASC Confidence:	Confidence level not specified	Principal Profile Form:	Ug5.15
		Great Soil Group:	Brown clay

Site Disturbance: Cultivation. Rainfed

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11p	0 - 0.1 m	Very dark grey (10YR3/1-Moist); Very dark greyish brown (10YR3/2-Dry); ; Heavy clay; Weak grade of structure, 20-50 mm, Subangular blocky; Moderate grade of structure, 5-10 mm, Angular blocky; Earthy 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 7.7 (pH meter); Few, very fine (0-1mm) roots;
A12p	0.1 - 0.22 m	Very dark grey (10YR3/1-Moist); Very dark greyish brown (10YR3/2-Dry); ; Heavy clay; Weak grade of structure, 50-100 mm, Subangular blocky; Moderate grade of structure, 5-10 mm, Angular blocky; Earthy fabric; Medium, (5 - 10) 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); Few, very fine (0-1mm) roots; Clear, Smooth change to -
A13	0.22 - 0.55 m	Very dark greyish brown (10YR3/2-Moist); , 10YR82, 0-2% , 0-5mm, Faint; Heavy clay; Moderate grade of structure, 5-10 mm, Lenticular; Moderate grade of structure, 2-5 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; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.5 (pH meter); Few, very fine (0-1mm)
A14	0.55 - 0.9 m	Dark brown (7.5YR3/2-Moist); , 7.5YR64, 0-2% , 5-15mm, Distinct; , 7.5YR52, 0-2% , 0-5mm, Faint; Heavy clay; Moderate grade of structure, 10-20 mm, Lenticular; Moderate grade of structure, 5-10 mm, Angular 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, Medium (2 - 6 mm), Nodules; Field pH 8.7 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
B2k	0.9 - 1.55 m	Dark brown (10YR3/3-Moist); , 10YR73, 0-2% , 0-5mm, Faint; , 7.5YR32, 0-2% , 0-5mm, Faint; Light clay; Moderate grade of structure, 20-50 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; Weak consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.7 (pH meter); Gradual, Smooth change to -

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C	1.55 - 1.7 m	Dark brown (10YR3/3-Moist); , 10YR63, 10-20% , 5-15mm, Prominent; Medium heavy clay; Moderate grade of structure, 20-50 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 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; Field pH 8.5 (pH meter); Abrupt, Smooth change to -
2C	1.7 - 3.09 m	Yellowish red (5YR5/6-Moist); , 10YR33, 2-10% , 0-5mm, Distinct; Clayey sand; Weak grade of structure, 20-50 mm, Platy; Earthy fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Field pH 7.5 (pH meter);

Morphological Notes

A11p	Note sand coating crack in 024.03, which extends from 60cm. Horizontal band (2-5mm thick) of carbon at 31cm, appears discontinuous, and may be a root, burnt through in situ. Depositional banding of clay and silt at 165-170. From 170 to 220c
A12p	m there is a buried B2 layer with moderate, prismatic (breaking to angular blocky), 10YR3/3, with manganese stain (10YR2/1) and gradual boundary at 220cm to 2C (which is sample .07). At 200cm a slickenside intersects the core. Tensile at 26
A13	0-270 done on 1/3 sand, 2/3 clay sample. Prominent sedimentary bands from 220cm on. At 270cm a coarse band of quartz, basalt and carbonate. Sedimentary material (layer .07) interbedded with dark clay (similar to .06) continues to 352cm.

Observation Notes

Parent Rock: alluvial sediment, mixed texture, with lime, parna on fourth fan

Site Notes

Distinctive bands of fine sand and coarse sand form layers from 220cm.

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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	8.21A	0.104A	30.51B	10.4	1.86	1.12			
0 - 0.1	8.28A	0.152A	32.23B	12.04	1.58	1.52			
0.1 - 0.2	8.77A	0.18A	36.12B	13.99	0.96	2.25			
0.3 - 0.4	9.05A	0.21A	30.47B	14.4	1.03	4.35			
0.7 - 0.8	9.29A	0.304A	21.61B	14.78	0.8	8.16			
1.2 - 1.3	9.03A	0.517A	22.45B	14.54	0.8	8.21			
1.6 - 1.7	9.09A	0.545A	20.48B	13.73	0.54	7.35			
2.5 - 2.6	8.94A	0.225A	10.65B	6.77	0.16	3.63			

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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