

Project Name: Soil Studies in the Lower Namoi Valley
Project Code: EDGEROI **Site ID:** ed416 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By:	M.E. Heape	Locality:	Bruce Tout, Oakvale
Date Desc.:	29/04/86	Elevation:	282 metres
Map Ref.:	Sheet No. : 8837_N 1:50000	Rainfall:	No Data
Northing/Long.:	6663500 AMG zone: 55	Runoff:	No Data
Easting/Lat.:	775000 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:	Pediment	Slope Category:	Gently inclined
Slope:	2 %	Aspect:	260 degrees

Surface Soil Condition (dry): Loose

Erosion:

Soil Classification

Australian Soil Classification:	N/A	Mapping Unit:	N/A
ASC Confidence:	Confidence level not specified	Principal Profile Form:	Dy5.83
		Great Soil Group:	Solodic soil

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

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11	0 - 0.03 m	Very dark grey (10YR3/1-Moist); Brown (7.5YR5/2-Dry); ; Loam; Moderate grade of structure, 2-5 mm, Platy; Moderate grade of structure, 2-5 mm, Angular blocky; Rough-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; Field pH 7 (pH meter); Few, very fine (0-1mm) roots; Sharp, Smooth change to -
A21	0.03 - 0.14 m	Dark brown (7.5YR3/2-Moist); Reddish grey (5YR5/2-Dry); ; Clayey sand; Moderate grade of structure, 2-5 mm, Subangular blocky; Weak grade of structure, <2 mm, Granular; Rough-ped fabric; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 7 (pH meter); Common, very fine (0-1mm) roots; Sharp, Wavy change to -
2A1	0.14 - 0.24 m	Very dark brown (10YR2/2-Moist); Dark grey (10YR4/1-Dry); ; Silty clay loam; Weak grade of structure, 20-50 mm, Subangular blocky; Rough-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Fine (1-2mm) macropores, Moderately moist; Firm consistence; Field pH 6.5 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Smooth change to -
2A21s	0.24 - 0.65 m	Dark brown (7.5YR3/2-Moist); Brown (7.5YR4/2-Dry); ; Clayey sand; Massive grade of structure; Sandy (grains prominent) fabric; Fine, (0 - 5) mm crack; Common (1-5 per 0.01m2) Medium (2-5mm) macropores, Moderately moist; Firm consistence; 0-2%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Field pH 7.5 (pH meter); Few, very fine (0-1mm) roots; Gradual, Smooth change to -
2A22	0.65 - 0.83 m	Light brownish grey (10YR6/2-Moist); , 7.5YR42, 2-10% , 5-15mm, Distinct; Sand; Massive grade of structure; Weak grade of structure, 10-20 mm, Cast; Sandy (grains prominent) fabric; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Loose consistence; 0-2%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Few (2 - 10 %), Ferromanganiferous, Medium (2 -6 mm), Nodules; Field pH 8 (pH meter); Few, very fine (0-1mm) roots; Sharp, Wavy change to -
2B21	0.83 - 1.05 m	Brown (10YR5/3-Moist); , 10YR62, 20-50% , 30-mm, Prominent; , 10YR41, 2-10% , 0-5mm, Prominent; Sandy clay loam (Light); Massive grade of structure; Rough-ped fabric; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; 0-2%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Field pH 8 (pH meter); Common, very fine (0-1mm) roots;

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2B22	1.05 - 2.2 m	Brownish yellow (10YR6/6-Moist); , 5Y61, 2-10% , 5-15mm, Prominent; , 10YR62, 2-10% , 5-15mm, Distinct; Light clay; Weak grade of structure, 100-200 mm, Lenticular; Moderate grade of structure, 20-50 mm, Angular blocky; Rough-ped fabric; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Sharp, Smooth
C	2.2 - 3.01 m	Brownish yellow (10YR6/6-Moist); , 10YR71, 2-10% , 5-15mm, Prominent; , 7.5YR42, 2-10% , 5-15mm, Prominent; Clayey fine sand; Massive grade of structure; Rough-ped fabric; Moderately moist; Very firm consistence; Field pH 7.5 (pH meter); Common, fine (1-2mm) roots;

Morphological Notes

A11	The top 14cm appears to be a soil formed in relatively recent sediment. An A1 and A2 have formed in this, and the top of the 2A1 is beginning to look like a B2 (domed top and bleached caps). Layer 7 has clay concentrations which are almost
A21	slickensides (colour 2). This layer also has colour 3 of layer 6, but here is colour 4. The sandstone of layer 8 is flecked with white which is perhaps an altered mineral. Clay bands occur in layer 8, associated with organic matter and root
2A1	s, perhaps infilling joints in the sandstone. There is some evidence that at 170cm there is a stratigraphic break to higher clay content, prismatic structured, buried B2 - but the break (if any) is masked by proline mixing. Co-author McGarr
2A21s	y.

Observation Notes

Parent Rock: alluvial sediment, mixed texture, non-calcareous, sandstone Tertiary beds

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations			Exchangeable	CEC	ECEC	ESP
m		dS/m	Ca	Mg	K	Na	Acidity		%
						Cmol (+)/kg			
0 - 0.03	6.43A	0.179A	4.49B	2.92	2.67	0.04			
0.03 - 0.1	6.82A	0.044A	2.22B	1.06	1.22	0.01			
0.14 - 0.2	6.03A	8.899999E-02A	3.52B	0.89	0.47	0.02			
0.3 - 0.4	6.75A	0.024A	4.6B	0.49	1.99	0.05			
0.7 - 0.8	7.12A	0.017A	1.85B	0.41	0.19	<0.01			
0.83 - 0.9	7.7A	0.039A	4.57B	3.73	0.51	0.61			
1.2 - 1.3	8.32A	0.077A	4.86B	5.98	0.51	1.74			
2.5 - 2.6	6.68A	0.232A	3.47B	7.74	0.43	3.22			

Depth m	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle Size		Analysis	
	%	%	Mg/kg	%	%	%	Mg/m3	GV	CS	FS %	Silt Clay
0 - 0.03	<0.1B	3.05C	52.7J								13.5 18.3
0.03 - 0.1	<0.1B	2.37C	30.5J								4 7.9
0.14 - 0.2	<0.1B	0.73C	25.6J								13.4 20.2
0.3 - 0.4	<0.1B	0.62C	21.9J								4.7 10
0.7 - 0.8	<0.1B	0.18C	11.4J								3.9 5.4
0.83 - 0.9	<0.1B	0.33C	3.2J								4.5 25.4
1.2 - 1.3	<0.1B	0.14C	2.8J								2.9 34
2.5 - 2.6	<0.1B	0.08C	4.2J								6.7 20.3

[illegible]

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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