

Project Name: Soil Studies in the Lower Namoi Valley
Project Code: EDGEROI **Site ID:** ed430 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By:	M.E. Heape	Locality:	Bruce Tout, Oakvale
Date Desc.:	30/04/86	Elevation:	291 metres
Map Ref.:	Sheet No. : 8837_N 1:50000	Rainfall:	No Data
Northing/Long.:	6665900 AMG zone: 55	Runoff:	No Data
Easting/Lat.:	777400 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:	Very gently sloped
Slope:	1 %	Aspect:	350 degrees

Surface Soil Condition (dry): Hardsetting, Recently cultivated

Erosion:

Soil Classification

Australian Soil Classification:	N/A	Mapping Unit:	N/A
ASC Confidence:	Confidence level not specified	Principal Profile Form:	Dy3.12
		Great Soil Group:	Soloth

Site Disturbance: Cultivation. Rainfed

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11	0 - 0.1 m	Dark brown (10YR3/3-Moist); Brown (10YR5/3-Dry); ; Clayey sand; Weak grade of structure, 10-20 mm, Subangular blocky; Weak grade of structure, <2 mm, Granular; Rough-ped fabric; Common (1-5 per 100mm2) Fine (1-2mm) macropores, Moderately moist; Very firm consistence; Field pH 6.5 (pH meter); Few, very fine (0-1mm) roots;
A12	0.1 - 0.25 m	Dark brown (10YR3/3-Moist); Brown (10YR5/3-Dry); ; Clayey sand; Weak grade of structure, 10-20 mm, Subangular blocky; Weak grade of structure, <2 mm, Granular; Rough-ped fabric; Common (1-5 per 100mm2) Fine (1-2mm) macropores, Moderately moist; Very firm consistence; Few (2 - 10 %), Ferruginous, Medium (2 -6 mm), Nodules; Field pH 6.5 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Wavy change to -
B21	0.25 - 0.55 m	Light yellowish brown (10YR6/4-Moist); , 10YR53, 0-2% , 5-15mm, Distinct; Light clay; Weak grade of structure, 20-50 mm, Prismatic; Weak grade of structure, 5-10 mm, Angular blocky; Rough-ped fabric; Smooth-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Fine (1-2mm) macropores, Moderately moist; Strong consistence; 0-2%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Field pH 7 (pH meter); Few, fine (1-2mm) roots;
B22	0.55 - 1 m	Yellowish red (5YR4/8-Moist); , 10YR61, 20-50% , 30-mm, Prominent; , 10YR22, 0-2% , 5-15mm, Distinct; Light clay; Weak grade of structure, 20-50 mm, Prismatic; Weak grade of structure, 5-10 mm, Angular blocky; Rough-ped fabric; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Field pH 7.5 (pH meter); Few, medium (2-5mm) roots;
B23	1 - 2.4 m	Yellowish brown (10YR5/4-Moist); , 10YR61, 10-20% , 15-30mm, Prominent; Light clay; Moderate grade of structure, 20-50 mm, Prismatic; Moderate grade of structure, 5-10 mm, Angular blocky; Rough-ped fabric; 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 %), Manganiferous, Fine (0 - 2 mm), Nodules; Field pH 8 (pH meter); Common, fine (1-2mm) roots; Diffuse, Smooth change to -
C	2.4 - 3.2 m	White (5Y8/2-Moist); , 7.5YR58, 2-10% , 5-15mm, Prominent; , 5Y61, 2-10% , 5-15mm, Distinct; Sand; Massive grade of structure; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; Field pH 8 (pH meter);

Morphological Notes

A11 There is a 1cm thick hard crust on the soil profile surface. In layer 4 the grey mottles appear as vertical streaks in the orange/brown material. Note abundance of Fe nodules

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A12 in top 30cm. Large carbonate nodules begin at 150cm (1kn4) and stop at 200cm. Rock (sandstone) on its own begins at 245cm, but there is a diffuse boundary between the B2 and C where sand and clay are well intermixed. Layer 6 is hard, yellowish sandstone with red mottles and grey clay infills in joints.

Observation Notes

Parent Rock: residual, sandstone, clay Pilliga Sandstone, weathered

Site Notes

Site was located 100m off the target point because the field is full of sorghum. Ironstone nodules with surface erosion near hole caused by water erosion - about 10cm width.

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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 Cmol (+)/kg	Acidity		%
0 - 0.1	5.3A	0.028A	1.25B	0.26	0.37	<0.01			
0.1 - 0.2	5.46A	0.026A	1.64B	0.37	0.39	<0.01			
0.3 - 0.4	6.42A	0.023A	6.61B	2.47	0.63	<0.01			
0.7 - 0.8	7.68A	0.034A	9.45B	4.06	0.61	0.1			
1.2 - 1.3	8.32A	0.119A	9.309999	5.42	0.65	0.22			
			B						
2.5 - 2.6	8.2A	0.033A	9.11B	9.02	0.56	0.46			

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle Size		Analysis	
m	%	%	mg/kg	%	%	%	Mg/m3	GV	CS	FS %	Silt Clay
0 - 0.1	<0.1B	0.47C	27.3J								
0.1 - 0.2	<0.1B	0.38C	17.9J								
0.3 - 0.4	<0.1B	0.24C	15.2J								
0.7 - 0.8	<0.1B	0.1C	7J								
1.2 - 1.3	0.1B	0.06C	<1J								
2.5 - 2.6	<0.1B	0.03C	<1J								

[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