

Project Name: Soil Studies in the Lower Namoi Valley
Project Code: EDGEROI **Site ID:** na023 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By: W.T. Ward	Locality: University of Sydney, I.A.Watson Research Farm
Date Desc.: 24/02/88	Elevation: 230 metres
Map Ref.: Sheet No. : 8837_S 1:50000	Rainfall: No Data
Northing/Long.: 6647820 AMG zone: 55	Runoff: No Data
Easting/Lat.: 770860 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: Very gently sloped
Slope: 1 %	Aspect: 180 degrees

Surface Soil Condition (dry): Surface crust, Recently cultivated

Erosion:

Soil Classification

Australian Soil Classification: N/A	Mapping Unit: N/A
ASC Confidence: Confidence level not specified	Principal Profile Form: Um5.21
	Great Soil Group: Rendzina

Site Disturbance: Cultivation. Rainfed

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11	0 - 0.1 m	Very dark grey (10YR3/1-Moist); Dark grey (10YR4/1-Dry); ; Clay loam; Weak grade of structure, 10-20 mm, Platy; Weak grade of structure, 2-5 mm, Granular; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very weak consistence; Field pH 8 (pH meter); Few, very fine (0-1mm) roots; Clear, Wavy change
A12s	0.1 - 0.3 m	Dark grey (10YR4/1-Moist); ; Clay loam; Weak grade of structure, 5-10 mm, Subangular blocky; Massive grade of structure; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; Very few (0 - 2 %), Calcareous, Coarse (6 - 20 mm), Soft segregations; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Sharp, Wavy change to -
B21m	0.3 - 0.45 m	Light brownish grey (10YR6/2-Moist); ; Clay loam; Massive grade of structure; Earthy fabric; Fine, (0 - 5) mm crack; Moderately moist; Rigid consistence; Field pH 8.5 (pH meter); Clear, Smooth change to -
B22k	0.45 - 1 m	Grey (10YR6/1-Moist); , 10YR32, 0-2% , 0-5mm, Distinct; Light clay; Massive grade of structure; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Very many (50 - 100 %), Calcareous, Very coarse (20 - 60 mm), Nodules; Field pH 8.5 (pH meter);
B23k	1 - 1.75 m	Grey (10YR6/1-Moist); , 10YR32, 2-10% , 5-15mm, Distinct; Light clay; Massive grade of structure; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Very many (50 - 100 %), Calcareous, Extremely coarse (> 60 mm), Nodules; Field pH 8.5 (pH meter); Diffuse, Smooth change to -
C	1.75 - 2.91 m	Grey (10YR6/1-Moist); , 10YR41, 2-10% , 5-15mm, Distinct; Light medium clay; Massive grade of structure; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Very many (50 - 100 %), Calcareous, Very coarse (20 - 60 mm), Nodules; Field pH 8.5 (pH meter);

Morphological Notes

A11	Topsoil is powdery (top 2-3cm), with platy ploughpan beneath. Topsoil textures approaching sandy clay loam, especially na02301. The material below 175cm is like a marl. It has grey clay in cracks and very hard carbonate pebbles and secondary
A12s	impregnated clays that are almost marble [kunkar]. There are also small quartz grits and pebbles at 230cm.

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Site Notes

Very loose topsoil, once the surface crust is penetrated, with many small and large pieces of limestone at the surface. The site appears to be similar to na022, but carbonate may be close to the surface here. Very poor aggregation (very fin

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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 - 0.02	8.36A	0.146A	12.55B	3.35	1.83	<0.01			
0 - 0.1	8.26A	0.178A	11.07B	3.27	1.48	1			
0.1 - 0.2	8.43A	0.132A	8.54B	2.6	0.73	1.06			
0.3 - 0.4	8.7A	0.119A	2.74B	1.78	0.03	0.98999			
						99			
0.7 - 0.8	8.84A	0.11A	1.97B	2.26	<0.01	0.85			
1.2 - 1.3	9.16A	0.115A	1.49B	3.25	0.12	0.27			
2.5 - 2.6	9.18A	0.217A	2.15B	17.36	0.71	3.07			

Depth m	CaCO3 %	Organic C %	Avail. P mg/kg	Total P %	Total N %	Total K %	Bulk Density Mg/m ³	Particle Size		Analysis	
								GV	CS	FS %	Silt Clay
0 - 0.02	1.6B	1.75C								9.9	24
0 - 0.1	3.7B	1.09C	5.3J							11.4	22.4
0.1 - 0.2	10B	1.31C	<1J							6.1	26
0.3 - 0.4	60.7B	0.04C	2.7J							2.8	12.3
0.7 - 0.8	55.2B	0.57C	3.4J							3.9	11.4
1.2 - 1.3	75.1B	0.21C	2.8J							1.8	13.4
2.5 - 2.6	37.1B	0.03C	2.8J							3.4	27.8

[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