

Project Name: Soil Studies in the Lower Namoi Valley
Project Code: EDGEROI **Site ID:** na016 **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.: 25/05/88	Elevation: 219 metres
Map Ref.: Sheet No. : 8837_S 1:50000	Rainfall: No Data
Northing/Long.: 6645500 AMG zone: 55	Runoff: No Data
Easting/Lat.: 769400 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 flat	Slope Category: Level
Slope: 1 %	Aspect: 270 degrees

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: N/A
	Great Soil Group: Grey clay

Site Disturbance: Cultivation. Rainfed

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11	0 - 0.1 m	Dark brown (7.5YR3/2-Moist); Dark grey (10YR4/1-Dry); ; Heavy clay; Strong grade of structure, 2-5 mm, Granular; Weak grade of structure, 20-50 mm, Angular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 8.5 (pH meter);
A12x	0.1 - 0.25 m	Dark brown (7.5YR3/2-Moist); ; Heavy clay; Weak grade of structure, 20-50 mm, Angular blocky; Massive grade of structure; Earthy fabric; Smooth-ped fabric; Moderately moist; Firm consistence; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;
A13x	0.25 - 0.55 m	Dark brown (7.5YR3/2-Moist); ; Heavy clay; Weak grade of structure, 50-100 mm, Angular blocky; Massive grade of structure; Earthy fabric; Smooth-ped fabric; Moderately moist; Firm consistence; Field pH 8.6 (pH meter);
A14k	0.55 - 1 m	Very dark greyish brown (10YR3/2-Moist); , 10YR52, 0-2% , 0-5mm, Faint; Heavy clay; Weak grade of structure, 50-100 mm, Lenticular; Earthy fabric; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 8.7 (pH meter);
A15	1 - 1.3 m	Dark brown (7.5YR3/2-Moist); , 7.5YR44, 2-10% , 0-5mm, Faint; Heavy clay; Weak grade of structure, 50-100 mm, Lenticular; Weak 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; Firm consistence; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 8.7 (pH meter); Diffuse, Smooth change to -
B2	1.3 - 2.75 m	Brown (7.5YR4/4-Moist); , 10YR41, 2-10% , 15-30mm, Distinct; , 5YR46, 0-2% , 5-15mm, Distinct; Heavy clay; Moderate grade of structure, 20-50 mm, Lenticular; Weak 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, Coarse (6 - 20 mm), Nodules; Field pH 8.6 (pH meter);

Morphological Notes

A11	Most of the top metre is compacted to some extent by cultivation - note lack of structure and presence of some polished faces near ground surface. Soil is difficult to describe well because of the moist condition and damage during sampling
A12x	by push tube and subsampling for lab. prior to description. MVpH. Field textures and pH's estimated from lab particle size analyses and pH's.

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Parent Rock: alluvial sediment, clay, parna on third fan

Site Notes

The soil is plastic as a result of irrigation, and is very difficult to extract from push tubes. Was wet when cultivated. There are no visible cracks in the cultivated field but inwashed sand at 70-80cm implies cracking in natural condition

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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 - 0.02	8.52A	0.143A	28.48B	18.81	1.61	1.46			
0 - 0.1	8.55A	0.128A	29.09B	15.06	1.61	2.02			
0.1 - 0.2	8.61A	0.15A	28.56B	17.18	1.51	2.45			
0.3 - 0.4	8.87A	0.205A	25.86B	19.4	0.9	4.45			
0.7 - 0.8	9.01A	0.315A	21.9B	22.61	1.13	8.86			
1.2 - 1.3	9.03A	0.374A	20.46B	23.62	1.38	9.92			
2.5 - 2.6	8.83A	0.55A	18.67B	23.81	1.19	8.61			

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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