Project Name: **Soil Studies in the Lower Namoi Valley**
Project Code: **EDGEROI** **Site ID:** **ed116** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (QLD)**

Site Information

Desc. By:	W.T. Ward	**Locality:**	A.R.(Alan) & A.E.Campbell, Avondale
Date Desc.:	03/02/86	**Elevation:**	235 metres
Map Ref.:	Sheet No. : 8837_N 1:50000	**Rainfall:**	No Data
Northing/Long.:	6662900 AMG zone: 55	**Runoff:**	No Data
Easting/Lat.:	769000 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:	0 %	**Aspect:**	No Data

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

Erosion:

Soil Classification

Australian Soil Classification:
N/A
ASC Confidence:
Confidence level not specified

Mapping Unit: N/A
Principal Profile Form: Ug6.1
Great Soil Group: Brown clay

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

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11p	0 - 0.1 m	Dark brown (7.5YR3/2-Moist); Dark brown (7.5YR3/2-Dry); ; Light medium clay; Weak grade of structure, 10-20 mm, Angular blocky; 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; Weak consistence; Field pH 7.5 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
A12	0.1 - 0.25 m	Dark brown (7.5YR3/2-Moist); ; Medium clay; Moderate grade of structure, 20-50 mm, Prismatic; Earthy fabric; Fine, (0 - 5) mm crack; Moderately moist; Very firm consistence; Field pH 8 (pH meter); Few, very fine (0-1mm) roots;
A13	0.25 - 0.5 m	Dark brown (7.5YR3/2-Moist); ; Medium clay; Moderate grade of structure, 20-50 mm, Prismatic; Weak grade of structure, 10-20 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Field pH 8.8 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to
B2	0.5 - 1 m	Dark reddish brown (5YR3/2-Moist); ; Medium clay; Moderate grade of structure, 20-50 mm, Prismatic; Moderate grade of structure, 10-20 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Common (10 - 20 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.8 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
2A1	1 - 2.3 m	Dark brown (7.5YR3/2-Moist); , 7.5YR54, 0-2% , 0-5mm, Distinct; Medium heavy clay; Moderate grade of structure, 20-50 mm, Angular blocky; Moderate grade of structure, 2-5 mm, Cast; Smooth-ped fabric; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 0.01m2) Medium (2-5mm) macropores, Moderately moist; Firm consistence; 0-2%, medium gravelly, 6-20mm, subrounded, Sandstone, coarse fragments; Few (2 - 10 %), Calcareous, Fine (0 - 2 mm), Nodules; Very few (0 - 2 %), Gypseous, Fine (0 - 2 mm), Crystals; Field pH 8.8 (pH meter); Gradual, Smooth change to -
2B2m	2.3 - 2.79 m	Brown (7.5YR5/2-Moist); , 7.5YR42, 10-20% , 5-15mm, Faint; Medium heavy clay; Strong grade of structure, 20-50 mm, Prismatic; Weak grade of structure, 20-50 mm, Lenticular; Smooth-ped fabric; Fine, (0 - 5) mm crack; Moderately moist; 0-2%, fine gravelly, 2-6mm, subrounded, Quartz, coarse fragments; Few (2 - 10 %), Manganiferous, Fine (0 - 2 mm), Laminae; Very few (0 - 2 %), Gypseous, Fine (0 - 2 mm), Crystals; Field pH 6.5 (pH meter); Few, very fine (0-1mm)

Morphological Notes

A11p A friable, weak fine crumb structure occurs in 0-10cm. 120-130 is generally a dull grey 7.5YR3/2-4/2 with browner inwashed sand. There are infilled cracks still occuring at

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	250-260cm. Gypsum continues down to 230, after which the manganese
A12	occurs. The soil below 110 is possibly a buried A, guessing from the improved structure and common infilled cracks, but infilled cracks at 70-80 also. Notice low CO3 content v.high gypsum, ?paludal deposition. ?Red soil over buried prior so
A13	il.

Observation Notes

Parent Rock: alluvial sediment, mixed texture, non-calcareous, second terraced fan

Site Notes

This site is 200m upslope from a small stream. The surface is quite crusty, a little dispersive perhaps. Gypsum crystals at

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations				Exchangeable Acidity	CEC	ECEC	ESP
			Ca	Mg	K	Na				
m		dS/m	Cmol (+)/kg							%
0 - 0.02	7.65A	0.061A	17.27B	5.52	1.77	0.52				
0 - 0.1	8.02A	0.133A	15.92B	5.66	1.39	0.86				
0.1 - 0.2	8.63A	0.116A	16.79B	9.43	0.9	1.84				
0.3 - 0.4	9.28A	0.262A	15.07B	10.49	0.5	4.04				
0.7 - 0.8	9.38A	0.606A	9.74B	11.63	0.41	7.85				
1.2 - 1.3	8.7A	1.542A	12.12B	13.66	0.58	8.93				
2.5 - 2.6	6.54A	1.215A	10.87B	12.14	0.47	7.8				

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle Size Analysis GV	CS	FS	Silt	Clay
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0 - 0.02	<0.1B	1.36C									20.4	36.9
0 - 0.1	0.2B	1.11C	25.8J								15.2	32.3
0.1 - 0.2	<0.1B	0.92C	7.9J								13.4	38.3
0.3 - 0.4	5.9B	0.78C	7J								13.2	34.8
0.7 - 0.8	7.1B	0.5C	18.1J								17	34.2
1.2 - 1.3	3.3B	0.4C	14J								18.2	39.9
2.5 - 2.6	<0.1B	0.06C	19.8J								16.8	43.4

Depth	COLE	Gravimetric/Volumetric Water Contents						K sat	K unsat
		Sat.	0.05 Bar	0.1 Bar	0.5 Bar	1 Bar	5 Bar	15 Bar	
m		g/g - m3/m3						mm/h	mm/h
0 - 0.02									
0 - 0.1									
0.1 - 0.2									
0.3 - 0.4									
0.7 - 0.8									
1.2 - 1.3									
2.5 - 2.6									

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Laboratory Analyses Completed for this profile

15A2_CA	Exchangeable bases (Ca2+,Mg2+,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