

Project Name: Soil Studies in the Lower Namoi Valley
Project Code: EDGEROI **Site ID:** ed038 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By:	W.T. Ward	Locality:	Twynam Pastoral Co., Boolcarrol
Date Desc.:	09/12/86	Elevation:	191 metres
Map Ref.:	Sheet No. : 8837_N 1:50000	Rainfall:	No Data
Northing/Long.:	6673000 AMG zone: 55	Runoff:	No Data
Easting/Lat.:	747300 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:	Flood plain
Morph. Type:	No Data	Relief:	No Data
Elem. Type:	No Data	Slope Category:	Level
Slope:	0 %	Aspect:	No Data

Surface Soil Condition (dry): Self-mulching

Erosion:

Soil Classification

Australian Soil Classification:	N/A	Mapping Unit:	N/A
ASC Confidence:	Confidence level not specified	Principal Profile Form:	Ug5.25
		Great Soil Group:	Grey clay

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

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11p	0 - 0.1 m	Dark greyish brown (10YR4/2-Moist); Grey (10YR5/1-Dry); ; Heavy clay; Strong grade of structure, 10-20 mm, Angular blocky; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; 0-2%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Field pH 7.5 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Smooth change to -
A12	0.1 - 0.25 m	Dark grey (10YR4/1-Moist); ; Heavy clay; Moderate grade of structure, 50-100 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) 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); Few, very fine (0-1mm) roots;
A13	0.25 - 0.55 m	Dark grey (10YR4/1-Moist); , 10YR62, 0-2% , 0-5mm, Distinct; , 10YR83, 0-2% , 0-5mm, Distinct; Heavy clay; Moderate grade of structure, 50-100 mm, Angular blocky; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;
A14	0.55 - 1 m	Dark brown (7.5YR3/2-Moist); , 10YR72, 0-2% , 0-5mm, Distinct; , N90, 0-2% , 0-5mm, Faint; Heavy clay; Moderate grade of structure, 50-100 mm, Lenticular; Moderate grade of structure, 20-50 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; 0-2%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Very few (0 - 2 %), Gypseous, Fine (0 - 2 mm), Crystals; Field pH 9 (pH meter); Few, very fine (0-1mm) roots; Gradual, Smooth change to -
B21y	1 - 1.5 m	Brown (7.5YR4/4-Moist); , 10YR72, 0-2% , 0-5mm, Distinct; , 10YR73, 0-2% , 5-15mm, Distinct; Medium heavy clay; Moderate grade of structure, 50-100 mm, Lenticular; Moderate grade of structure, 20-50 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; 0-2%, fine gravelly, 2-6mm, subangular, Quartz, coarse fragments; Very few (0 - 2 %), Gypseous, Medium (2 - 6 mm), Crystals; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Soft segregations; Field pH 9 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -

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B22 1.5 - 2.78 m Brown (7.5YR4/4-Moist); , 7.5YR42, 2-10% , 5-15mm, Distinct; , 7.5YR62, 2-10% , 5-15mm, Prominent; Medium heavy clay; Moderate grade of structure, 50-100 mm, Lenticular; Moderate grade of structure, 20-50 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm²) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Few (2 - 10 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 9 (pH meter);

Morphological Notes

A11p In the layer 000-010cm there is a significant amount of quartz grains, a few coarse fragments, no distinct layering and no self mulching. Note 10N0/0 is colourless. At 120-130cm there are 10YR3/1 humus stains. Below 260cm there are hard lime concretions up to 5cm across. Are salts accumulating in drainageways? Profile development shows little evidence of sedimentation other than sand on cracks - has stream only recently reached this site?. Gypsum added from surface?

A12

Observation Notes

Parent Rock: alluvial sediment, clay, floodplain

Site Notes

Photo site looking towards Auscott levee bank. Hand pen broad tip. Ground covered with straw from dry pasture. Weak surface crust.

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Ca	Exchangeable Mg	Cations K	Exchangeable Na	Exchangeable Acidity	CEC	ECEC	ESP
m		dS/m				Cmol (+)/kg				%
0 - 0.02	7.72A	0.101A	22.99B	14.28	2.47	1.16				
0 - 0.1	7.48A	0.093A	18.49B	15.74	1.61	2.03				
0.1 - 0.2	8.14A	8.199999E-02A	19.66B	15.78	1.09	3.05				
0.3 - 0.4	8.64A	0.151A	20.76B	14.39	0.8100001	4.93				
0.7 - 0.8	7.83A	1.928A	20.96B	14.89	1.08	7.99				
1.2 - 1.3	7.79A	3.19A	20.65B	14.52	1.16	7.59				
2.5 - 2.6	8.69A	0.832A	20.22B	15.63	1.24	9.62				

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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