

Project Name: Soil Studies in the Lower Namoi Valley
Project Code: EDGEROI **Site ID:** ed123 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By:	M.E. Heape	Locality:	W.R.(Rick) Tapp, Fernleigh
Date Desc.:	13/02/86	Elevation:	442 metres
Map Ref.:	Sheet No. : 8837_N 1:50000	Rainfall:	No Data
Northing/Long.:	6662100 AMG zone: 55	Runoff:	No Data
Easting/Lat.:	788300 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:	Gently inclined
Slope:	3 %	Aspect:	170 degrees

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:	Uf6.51
		Great Soil Group:	Brown clay

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

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A11	0 - 0.1 m	Dark reddish grey (5YR4/2-Moist); Dark reddish brown (5YR3/4-Dry); ; Light clay; Weak grade of structure, 20-50 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 8 (pH meter); Few, very fine (0-1mm) roots;
A12	0.1 - 0.25 m	Dark reddish grey (5YR4/2-Moist); ; Light clay; Weak grade of structure, 20-50 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm ²) Very fine (0.075-1mm) macropores, Moderately moist; Firm consistence; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Smooth change to -
B21	0.25 - 0.55 m	Yellowish brown (10YR5/4-Moist); , 5YR42, 10-20% , 5-15mm, Distinct; , 10YR74, 0-2% , 5-15mm, Distinct; Medium clay; Weak grade of structure, 50-100 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Moderately moist; Very firm consistence; Few (2 - 10 %), Calcareous, Coarse (6 - 20 mm), Soft segregations; Field pH 8.5 (pH meter); Few, very fine (0-1mm) roots;
B22	0.55 - 0.85 m	Yellowish brown (10YR5/4-Moist); , 5YR42, 0-2% , 5-15mm, Distinct; , 10YR64, 0-2% , 0-5mm, Distinct; Medium heavy clay; Weak grade of structure, 50-100 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Moderately moist; Very firm consistence; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Soft segregations; Field pH 8.5 (pH meter); Gradual, Smooth change to -
B23	0.85 - 1.5 m	Reddish brown (5YR4/3-Moist); , 7.5YR86, 0-2% , 0-5mm, Distinct; Medium heavy clay; Moderate grade of structure, 100-200 mm, Lenticular; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 0.01m ²) Coarse (>5mm) macropores, Moderately moist; Strong consistence; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Soft segregations; Field pH 8.5 (pH meter); Diffuse, Smooth change to -
R	1.5 - 2.73 m	Rock

Morphological Notes

A11	Soil is plastic. Holes in 123.05 are ant channels. 1 quartz pebble and 1 sandstone pebble at 100cm. Weathered basalt below 150cm suggests that the red B2 could be original material on basalt soil and the higher material is old colluvium or
A12	talus. I am inclined to believe that the red is also talus, not weathering basalt, but subjacent contact is indistinct. HCl fizzes basalt everywhere. The basalt has horizontal platy fractures. Is this soil on Purlawaugh Formation?

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B23 horizon seemingly inherited from an older prior soil, but not separated by any evidence of erosion. (The present soil is the remodelled prior soil)

Observation Notes

Parent Rock: colluvial sediment, from sandstone, with lime, basalt Purlawaugh Formation

Site Notes

Topsoil quite moist, and profile to 90cm quite wet. Few sandstone rocks are evident on the surface. The site is not exactly on target which would be 200m from here, south-west, on a steep (30 degree) slope. That hill is a sandy/gritty stone

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Laboratory Test Results:

Depth m	pH	1:5 EC	Exchangeable Cations			Exchangeable	CEC	ECEC	ESP
		dS/m	Ca	Mg	K	Na			Acidity
						Cmol (+)/kg			
0 - 0.02	7.65A	0.175A	36.89B	15.83	1.94	0.02			
0 - 0.1	8.08A	0.264A	30.2B	24.75	1.11	0.1			
0.1 - 0.2	8.47A	0.167A	30.12B	31.29	0.54	0.33			
0.3 - 0.4	8.86A	0.18A	21.73B	34.37	0.27	1.23			
0.7 - 0.8	9.31A	0.448A	7.97B	33.76	0.24	5.03			
1.2 - 1.3	8.94A	0.9080001A	5.96B	45.79	0.13	9.95			
2.5 - 2.6	9.63A	0.366A	6.14B	37.02	0.1	10.04			

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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