Project Name: Soil Studies in the Lower Namoi Valley

Project Code: EDGEROI Site ID: ed027 Observation ID: 1

Agency Name: CSIRO Division of Soils (QLD)

Site Information

Desc. By: G.M. Roberts Locality: stock route, near Bundaroo

Date Desc.: Elevation: 17/07/85 229 metres Sheet No.: 8837 N 1:50000 Map Ref.: Rainfall: No Data Northing/Long.: 6675000 AMG zone: 55 Runoff: No Data 765300 Datum: AGD66 Easting/Lat.: 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 DataPattern Type:No DataMorph. Type:No DataRelief:No Data

Elem. Type: Terrace flat Slope Category: Very gently sloped

Slope: 0 % Aspect: No Data

Surface Soil Condition (dry): Self-mulching, Trampled

Erosion:

Soil Classification

Australian Soil Classification: Mapping Unit: N/A
N/A Principal Profile Form: Ug5.15
ASC Confidence: Great Soil Group: Brown clay

Confidence level not specified

Site Disturbance: Cultivation. Rainfed

Vegetation:

B22

1.05 - 1.85 m

Surface Coarse Fragments:

Profile Morphology

A11 0 - 0.1 m Dark greyish brown (10YR4/2-Moist); Greyish brown (10YR5/2-Dry); ; Medium clay; Moderate grade of structure, 5-10 mm, Subangular blocky; Earthy fabric; Coarse, (10 - 20) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very strong

consistence; Field pH 7 (pH meter); Common, very fine (0.1mm) roots; Abrupt, Smooth change

to -

A12 0.1 - 0.25 m Dark brown (7.5YR3/2-Moist); ; Medium clay; Weak grade of structure, 50-100 mm, Prismatic;

Moderate grade of structure, 5-10 mm, Angular blocky; Earthy fabric; Smooth-ped fabric; Very coarse, (20 - 50) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; Field pH 7.5 (pH meter); Few, very fine (0-1mm)

roots;

A13 0.25 - 0.5 m Dark brown (7.5YR3/2-Moist); ; Medium heavy clay; Weak grade of structure, 50-100 mm,

Prismatic; Moderate grade of structure, 5-10 mm, Angular blocky; Earthy fabric; Smooth-ped fabric; Very coarse, (20 - 50) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; Field pH 9 (pH meter); Few, very fine

(0-1mm) roots; Gradual, Smooth change to -

B21k 0.5 - 1.05 m Brown (7.5YR4/2-Moist); , 10YR32, 2-10%, 5-15mm, Faint; , 10YR81, 0-2%, 0-5mm, Faint;

Medium heavy clay; Weak grade of structure, 50-100 mm, Lenticular; Moderate grade of structure, 5-10 mm, Angular blocky; Smooth-ped fabric; Earthy fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very strong consistence; 0-2%, fine gravelly, 2-6mm, rounded, Quartz, coarse fragments; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Nodules; Few (2 - 10 %), Gypseous, Fine (0 - 2 mm),

Crystals; Field pH 9 (pH meter); Few, very fine (0-1mm) roots; Gradual, Smooth change to -Brown (7.5YR4/4-Moist); , N30, 10-20% , 15-30mm, Distinct; , 7.5YR56, 2-10% , 0-5mm,

Distinct; Medium heavy clay; Moderate grade of structure, 5-10 mm, Lenticular; Moderate grade of structure, 10-20 mm, Lenticular; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Few (2

- 10 %), Ferruginous, Medium (2 -6 mm), Veins; Very few (0 - 2 %), Gypseous, Fine (0 - 2 mm),

Crystals; Field pH 9 (pH meter);

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B23 1.85 - 2.5 m

Brown (7.5YR4/2-Moist); , 5YR58, 2-10% , 5-15mm, Prominent; , N30, 2-10% , 5-15mm, Distinct; Medium heavy clay; Moderate grade of structure, 5-10 mm, Lenticular; Moderate 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; Few (2 - 10 %), Ferruginous, Medium (2 -6 mm), Veins; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm),

Nodules; Field pH 9 (pH meter);

Morphological Notes

Although the pH at 30-40cm is 9.0, there is no visible calcium carbonate.

Observation Notes

Parent Rock:,, parna on fourth fan

Site Notes

Site on high level above drainage line (donga) of Bulldog Creek. Red ochreous mottles in B2 horizon.

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Laboratory Test Results:

Depth	рН	1:5 EC		hangeable			Exchangeable	CEC	ECEC	ESP
m		dS/m	Ca	Mg	K	Na Cmol (-	Acidity +)/kg			%
0 - 0.02	7.53A	0.106A	21.94B	3.530001	2.39	0.72				
0 - 0.1	7.56A	0.149A	18.72B	9	1.89	1.39				
0.1 - 0.2	8.32A	0.081A	22.92B	10.23	0.59	2.53				
0.3 - 0.4	9.3A	0.276A	21.61B	10.35	0.34	6.32				
0.7 - 0.8	9.04A	0.605A	19.51B	11.7	0.61	8.19000				
1.2 - 1.3	8.37A	1.612A	21.25B	14.22	0.98	9.04				
2.4 - 2.5	8.8A	1.116A	23.41B	16.15	1.35	10.98				
Depth	CaCO3	Organic C	Avail. P	Total P	Tota N	al Tota K		Particle GV CS	Size FS	Analysis
m	%	%	mg/kg	%	N %	К %	Density Mg/m3	GV CS	го %	Silt Clay
0 - 0.02	<0.1B	1.58C								19.4 45.8
0 - 0.1	<0.1B	1.33C	24.8J							18.8 44.3
0.1 - 0.2	<0.1B	0.9C	10.6J							21 45.6
0.3 - 0.4	1.2B	0.67C	6.3J							21.8 46.7
0.7 - 0.8	0.9B	0.56C	6.9J							20.7 51
1.2 - 1.3	1.4B	0.22C	12.1J							17.4 58
2.4 - 2.5	1.6B	0.09C	12.9J							13.8 66.3
Depth	COLE									
m		Sat.	u.uo Bar		0.5 Bar g - m3/ı		5 Bar 15 E		n/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 2.4 - 2.5

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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 Silt (%) - Coventry and Fett pipette method