

**Project Name:** Soil Studies in the Lower Namoi Valley  
**Project Code:** EDGEROI **Site ID:** na005 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (QLD)

#### Site Information

<b>Desc. By:</b> W.T. Ward	<b>Locality:</b> stock route, near Bohena
<b>Date Desc.:</b> 08/03/88	<b>Elevation:</b> 237 metres
<b>Map Ref.:</b> Sheet No. : 8837_S 1:50000	<b>Rainfall:</b> No Data
<b>Northing/Long.:</b> 6630000 AMG zone: 55	<b>Runoff:</b> No Data
<b>Easting/Lat.:</b> 754650 Datum: AGD66	<b>Drainage:</b> No Data

#### Geology

<b>ExposureType:</b> Undisturbed soil core	<b>Conf. Sub. is Parent. Mat.:</b> No Data
<b>Geol. Ref.:</b> No Data	<b>Substrate Material:</b> No Data

#### Land Form

<b>Rel/Slope Class:</b> No Data	<b>Pattern Type:</b> No Data
<b>Morph. Type:</b> No Data	<b>Relief:</b> No Data
<b>Elem. Type:</b> Terrace flat	<b>Slope Category:</b> Very gently sloped
<b>Slope:</b> 1 %	<b>Aspect:</b> 90 degrees

**Surface Soil Condition (dry):** Loose

#### Erosion:

#### Soil Classification

<b>Australian Soil Classification:</b> N/A	<b>Mapping Unit:</b> N/A
<b>ASC Confidence:</b> Confidence level not specified	<b>Principal Profile Form:</b> Dy5.42
	<b>Great Soil Group:</b> Solodic soil

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

#### Vegetation:

#### Surface Coarse Fragments:

#### Profile Morphology

A11	0 - 0.1 m	Dark greyish brown (10YR4/2-Moist); Pale brown (10YR6/3-Dry); ; Sand; Weak grade of structure, 5-10 mm, Platy; Weak grade of structure, 2-5 mm, Granular; Sandy (grains prominent) fabric; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; Field pH 5.5 (pH meter); Few, very fine (0-1mm) roots;
A12	0.1 - 0.25 m	Pale brown (10YR6/3-Moist); ; Sand; Weak grade of structure, 5-10 mm, Platy; Sandy (grains prominent) fabric; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Weak consistence; Field pH 5.5 (pH meter); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
A21c	0.25 - 0.42 m	Light grey (10YR7/2-Moist); ; Sand; Massive grade of structure; Sandy (grains prominent) fabric; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very weak consistence; Field pH 6 (pH meter); Few, very fine (0-1mm) roots;
A22	0.42 - 0.53 m	Light grey (10YR7/2-Moist); , 10YR82, 20-50% , 30-mm, Prominent; Sand; Massive grade of structure; Sandy (grains prominent) fabric; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very weak consistence; Field pH 7 (pH meter); Few, very fine (0-1mm) roots; Abrupt, Wavy change to -
B21	0.53 - 0.67 m	Pale brown (10YR6/3-Moist); , 7.5YR58, 0-2% , 0-5mm, Faint; , 10YR72, 2-10% , 5-15mm, Distinct; Light clay; Weak grade of structure, 100-200 mm, Columnar; Moderate grade of structure, 50-100 mm, Platy; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Strong consistence; Field pH 5.5 (pH meter); Few, medium (2-5mm) roots;
B22	0.67 - 1 m	Red (2.5YR4/8-Moist); , 10YR74, 10-20% , 5-15mm, Distinct; , 2.5Y62, 20-50% , 30-mm, Prominent; Light clay; Weak grade of structure, 100-200 mm, Columnar; Moderate grade of structure, 10-20 mm, Platy; Rough-ped fabric; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Field pH 5 (pH meter); Few, very fine (0-1mm) roots;
B23	1 - 1.25 m	Light brownish grey (10YR6/2-Moist); , 5YR54, 2-10% , 5-15mm, Distinct; Light clay; Weak grade of structure, 10-20 mm, Platy; Massive grade of structure; Sandy (grains prominent) fabric; Earthy fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Field pH 5.5 (pH meter); Few, fine (1-2mm) roots; Diffuse, Smooth change to -

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C      1.25 - 4.78 m      Yellow (10YR7/6-Moist); , N80, 20-50% , 30-mm, Prominent; Clayey sand; Moderate grade of structure, 10-20 mm, Platy; Sandy (grains prominent) fabric; Rough-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm<sup>2</sup>) Very fine (0.075-1mm) macropores, Moderately moist; Field pH 6.5 (pH meter);

**Morphological Notes**

A11      Brigalow 2, a yellow mottled duplex soil. Apedal A2 rather than single- grained as it holds together weakly. The B horizon has red-centred peds.  
B21      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: prior soil, sand, over weathered sands and clayey sands fifth (eroded) fan, Culgoora

**Site Notes**

1.0 km from road junction at na004, S side, 12 paces in.

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**Laboratory Test Results:**

Depth m	pH	1:5 EC dS/m	Exchangeable Cations				CEC	ECEC	ESP %
			Ca	Mg	K	Na Acidity Cmol (+)/kg			
0 - 0.1	5.41A	0.088A	0.72B	0.5	0.26	<0.01			
0.1 - 0.2	5.66A	0.02A	<0.1B	0.21	0.17	<0.01			
0.3 - 0.4	5.69A	0.011A	<0.1B	<0.1	0.07	<0.01			
0.43 - 0.53	5.86A	0.012A	<0.1B	<0.1	0.02	0.01			
0.53 - 0.63	5.31A	0.134A	<0.1B	3.94	0.11	1.85			
0.7 - 0.8	5.24A	0.21A	<0.1B	6.53	0.11	3.45			
1.2 - 1.3	5.1A	0.271A	<0.1B	6.66	0.1	3.89			
2.5 - 2.6	6.22A	0.096A	<0.1B	2.12	0.02	1.46			

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle		Size	Analysis	
								GV	CS		FS	Silt
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0 - 0.1	<0.1B	1.03C	9.8J									
0.1 - 0.2	<0.1B	0.43C	3.3J									
0.3 - 0.4	<0.1B	0.18C	3J									
0.43 - 0.53	<0.1B	0.03C	1.2J									
0.53 - 0.63	<0.1B	0.15C	1.1J									
0.7 - 0.8	<0.1B	0.16C	<1J									
1.2 - 1.3	<0.1B	0.11C	1.3J									
2.5 - 2.6	<0.1B	0.02C	1.1J									

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 - 0.1										
0.1 - 0.2										
0.3 - 0.4										
0.43 - 0.53										
0.53 - 0.63										
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 (Ca <sup>2+</sup> ,Mg <sup>2+</sup> ,Na <sup>+</sup> ,K <sup>+</sup> ) - 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