

**Project Name:** Soils of the Lower Macquarie Valley, New South Wales  
**Project Code:** Macquarie **Site ID:** 153 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (ACT)

#### Site Information

<b>Desc. By:</b>	N.J. McKenzie	<b>Locality:</b>	
<b>Date Desc.:</b>	09/05/85	<b>Elevation:</b>	No Data
<b>Map Ref.:</b>	Sheet No. : 8534 1:10000	<b>Rainfall:</b>	No Data
<b>Northing/Long.:</b>	6469575 AMG zone: 55	<b>Runoff:</b>	Slow
<b>Easting/Lat.:</b>	596450 Datum: AGD66	<b>Drainage:</b>	Imperfectly drained

#### Geology

<b>ExposureType:</b>	Soil pit	<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>	Flat	<b>Relief:</b>	No Data
<b>Elem. Type:</b>	No Data	<b>Slope Category:</b>	No Data
<b>Slope:</b>	%	<b>Aspect:</b>	No Data

**Surface Soil Condition (dry):** Self-mulching

#### Erosion:

#### Soil Classification

<b>Australian Soil Classification:</b>		<b>Mapping Unit:</b>	MACQUARIE
N/A			ALLUVIUM
			BACKPLAI

#### **ASC Confidence:**

Confidence level not specified

**Principal Profile Form:** Ug5.15

**Great Soil Group:** N/A

**Site Disturbance:** Cultivation. Rainfed

#### Vegetation:

#### Surface Coarse Fragments:

#### Profile Morphology

A1	0 - 0.2 m	Very dark greyish brown (10YR3/2-Moist); ; Medium clay; Strong grade of structure, 10-20 mm, Subangular blocky; Strong grade of structure, 20-50 mm, Granular; Smooth-ped fabric; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Common (1-5 per 100mm2) Fine (1-2mm) macropores, Few (<1 per 0.01m2) Medium (2-5mm) macropores, Firm consistence; 0-2%, fine gravelly, 2-6mm, subrounded, dispersed, coarse fragments; Field pH 6 (Raupach); Common, very fine (0-1mm) roots; Common, fine (1-2mm) roots; Clear, Smooth change to -
B21	0.2 - 0.68 m	Very dark grey (10YR3/1-Moist); ; Heavy clay; Strong grade of structure, 100-200 mm, Cast; Smooth-ped fabric; Medium, (5 - 10) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Few (<1 per 100mm2) Fine (1-2mm) macropores, Few (<1 per 0.01m2) macropores, Dry; Very strong consistence; 0-2%, fine gravelly, 2-6mm, subrounded, dispersed, coarse fragments; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), ; Field pH 7 (Raupach); Many, very fine (0-1mm) roots; Common, fine (1-2mm) roots; Diffuse, Smooth
B22	0.68 - 1.05 m	Very dark brown (10YR2/3-Moist); ; Medium clay; Moderate grade of structure, 20-50 mm, Polyhedral; Smooth-ped fabric; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Few (<1 per 100mm2) Fine (1-2mm) macropores, Few (<1 per 0.01m2) macropores, Dry; Strong consistence; 0-2%, fine gravelly, 2-6mm, subrounded, dispersed, coarse fragments; Common (10 - 20 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 8.5 (Raupach); Few, very fine (0-1mm) roots; Diffuse, Smooth change to -
BC	1.05 - 1.5 m	Brown (10YR4/3-Moist); ; Medium clay; Moderate grade of structure, 20-50 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moist; Strong consistence; 0-2%, fine gravelly, 2-6mm, subrounded, dispersed, coarse fragments; Common (10 - 20 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 8 (Raupach); Few, very fine (0-1mm) roots;

#### Morphological Notes

#### Observation Notes

Mullah Soil Profile Class, Black Phase

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**Laboratory Test Results:**

Depth	pH	1:5 EC	Ca	Exchangeable Mg	Cations K	Na	Exchangeable Acidity	CEC	ECEC	ESP
m		dS/m				Cmol (+)/kg				%
0.1 - 0.15	7A	0.078A	10.4E	5.9	0.4	0.8			17.5D	
0.3 - 0.35	7.9A	0.11A								
0.7 - 0.75	8.7A	0.272A	18.2E	14.1	0.5	4.5			37.3D	
1.3 - 1.35	8.5A	0.454A								

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle GV	Size CS	Analysis FS	Silt	Clay
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0.1 - 0.15							1.37		6A	14	22.1	58
0.3 - 0.35							1.29					
0.7 - 0.75							1.39		4.9A	13.6	17.6	63.8
1.3 - 1.35							1.45					

Depth	COLE	Gravimetric/Volumetric Water Contents						K sat	K unsat
m		Sat.	0.05 Bar	0.1 Bar	0.5 Bar	1 Bar	5 Bar	15 Bar	
				g/g	m3/m3				mm/h
0.1 - 0.15	0.084A			0.3G				0.21D	
0.3 - 0.35	0.152A			0.35G				0.23D	
0.7 - 0.75	0.1214A			0.32G				0.24D	
1.3 - 1.35	0.09A			0.27G				0.21D	

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**Laboratory Analyses Completed for this profile**

15C1_CA	Exchangeable bases (Ca <sup>2+</sup> ,Mg <sup>2+</sup> ,Na <sup>+</sup> ,K <sup>+</sup> ) - alcoholic 1M ammonium chloride at pH 8.5, pretreatment for soluble salts
15C1_K	Exchangeable bases and CEC - alcoholic 1M ammonium chloride at pH 8.5, pretreatment for soluble salts
15C1_MG	Exchangeable bases and CEC - alcoholic 1M ammonium chloride at pH 8.5, pretreatment for soluble salts
15C1_NA	Exchangeable bases and CEC - alcoholic 1M ammonium chloride at pH 8.5, pretreatment for soluble salts
15J_BASES	Sum of Bases
3A1	EC of 1:5 soil/water extract
4A1	pH of 1:5 soil/water suspension
P10_CF_C	Clay (%) - Coventry and Fett pipette method
P10_CF_CS	Coarse sand (%) - Coventry and Fett pipette method
P10_CF_FS	Fine sand (%) - Coventry and Fett pipette method
P10_CF_Z	Silt (%) - Coventry and Fett pipette method
P3A1	Bulk density - g/cm <sup>3</sup>
P3B1GV_15	15 BAR Moisture g/g - Gravimetric of ground sample (<2mm) using pressure plate
P3B4GV_01	0.1 BAR Moisture g/g - Gravimetric of soil clods (Soil Survey Staff,1967)
P5_COLE	Coefficient of Linear Extensibility (Grossman et al. 1968)