

**Project Name:** Soils of the Lower Macquarie Valley, New South Wales  
**Project Code:** Macquarie **Site ID:** 149 **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>	6468875 AMG zone: 55	<b>Runoff:</b>	Slow
<b>Easting/Lat.:</b>	595450 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 - 0.15 m	Dark brown (10YR3/3-Moist); ; Medium clay; Moderate grade of structure, 5-10 mm, Subangular blocky; Moderate grade of structure, 10-20 mm, Granular; Smooth-ped fabric; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Few (<1 per 0.01m2) macropores, Very firm consistence; Field pH 8 (Raupach); Common, very fine (0-1mm) roots; Common, fine (1-2mm) roots; Clear, Smooth change to -
B21	0.15 - 0.65 m	Very dark greyish brown (10YR3/2-Moist); ; Medium clay; Strong grade of structure, 50-100 mm, Subangular blocky; Smooth-ped fabric; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Few (<1 per 0.01m2) macropores, Strong consistence; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Nodules; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Crystals; Very few (0 - 2 %), Calcareous, Fine (0 - 2 mm), Soft segregations; Field pH 8.5 (Raupach); Common, very fine (0-1mm) roots; Gradual, Smooth change to -
B22	0.65 - 1.05 m	Brown (7.5YR4/4-Moist); ; Medium clay; Moderate grade of structure, 20-50 mm, Subangular blocky; Smooth-ped fabric; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Strong consistence; 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 - 1.4 m	Strong brown (7.5YR5/6-Moist); , 10YR53, 10-20% , 5-15mm, Distinct; Medium clay; Moderate grade of structure, 20-50 mm, Subangular blocky; Smooth-ped fabric; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Strong consistence; Many (20 - 50 %), Calcareous, Medium (2 -6 mm), Nodules; Common (10 - 20 %), Ferruginous, Coarse (6 - 20 mm), Crystals; Field pH 8.5 (Raupach);

**Morphological Notes**

**Observation Notes**

Mullah Soil Profile Class, Black Phase

**Site Notes**

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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	8A	0.111A	7.2E	4	0.2	0.6			12D	
0.3 - 0.35	8.7A	0.201A								
0.7 - 0.75	8.3A	1.467A	15.1E	16.1	0.3	7.3			38.8D	
1.3 - 1.35	7.9A	3.31A								

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							1.36		10.8A	26.7	14.8	47.7
0.3 - 0.35							1.29					
0.7 - 0.75							1.44		10.1A	23.9	14.4	51.6
1.3 - 1.35							1.26					

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	0.107A			0.3G				0.17D	
0.3 - 0.35	0.13A			0.33G				0.22D	
0.7 - 0.75	0.09A			0.27G				0.22D	
1.3 - 1.35	0.116A			0.32G				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)