**Project Name:** **Soils of the Lower Macquarie Valley, New South Wales**
**Project Code:** **Macquarie** **Site ID:** **407** **Observation ID:** **1**
**Agency Name:** **CSIRO Division of Soils (ACT)**

## Site Information

| | | | |
|---|---|---|---|
| **Desc. By:** | N.J. McKenzie | **Locality:** | |
| **Date Desc.:** | 17/10/85 | **Elevation:** | No Data |
| **Map Ref.:** | Sheet No. : 8533 1:10000 | **Rainfall:** | No Data |
| **Northing/Long.:** | 6448000 AMG zone: 55 | **Runoff:** | Slow |
| **Easting/Lat.:** | 603833 Datum: AGD66 | **Drainage:** | Imperfectly drained |

## Geology

| | | | |
|---|---|---|---|
| **ExposureType:** | Soil pit | **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:** | Flat | **Relief:** | No Data |
| **Elem. Type:** | No Data | **Slope Category:** | No Data |
| **Slope:** | % | **Aspect:** | No Data |

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

**Erosion:**

## Soil Classification

**Australian Soil Classification:**
N/A

**Mapping Unit:** OLD ALLUVIUM BACKPLAIN

**Principal Profile Form:** Ug5.15

**ASC Confidence:**
Confidence level not specified

**Great Soil Group:** N/A

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

**Vegetation:**
Tall Strata - Tussock grass, 0.51-1m, Mid-dense. *Species includes - None Recorded

**Surface Coarse Fragments:**

## Profile Morphology

| | | |
|---|---|---|
| A1 | 0 - 0.18 m | Dark brown (10YR3/3-Moist); ; Medium heavy clay; Strong grade of structure, 10-20 mm, Subangular blocky; Rough-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, Moist; Firm consistence; Field pH 8 (Raupach); Many, very fine (0-1mm) roots; Many, fine (1-2mm) roots; Gradual, Smooth change to - |
| B21 | 0.18 - 0.43 m | Very dark greyish brown (10YR3/2-Moist); ; Heavy clay; Strong grade of structure, 20-50 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Few (<1 per 100mm2) Fine (1-2mm) macropores, Moist; Very firm consistence; Many cutans, >50% of ped faces or walls coated; Very few (0 - 2 %), Calcareous, Medium (2 -6 mm), Nodules; Field pH 8.5 (Raupach); Common, very fine (0-1mm) roots; Common, fine (1-2mm) roots; Gradual, Smooth change to - |
| B22 | 0.43 - 0.95 m | Brown (7.5YR4/4-Moist); ; Heavy clay; Moderate grade of structure; Smooth-ped fabric; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moderately moist; Very firm consistence; Many cutans, >50% of ped faces or walls coated; Common (10 - 20 %), Calcareous, Medium (2 -6 mm), Nodules; Common (10 - 20 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 9 (Raupach); Common, very fine (0-1mm) roots; Gradual, Smooth change to - |
| B23 | 0.95 - 1.4 m | Yellowish brown (10YR5/4-Moist); , 5YR56, 10-20% , 15-30mm, Faint; Medium heavy clay; Moderate grade of structure; Smooth-ped fabric; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Moist; Firm consistence; Many cutans, >50% of ped faces or walls coated; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Nodules; Few (2 - 10 %), Calcareous, Coarse (6 - 20 mm), Nodules; Field pH 8.5 (Raupach); Few, very fine (0-1mm) roots; |

## Morphological Notes

## Observation Notes

Mullah Soil Profile Class, Black Phase, 406 & 405 are full of water (swampy around) = water to surface

## Site Notes

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## Laboratory Test Results:

| Depth | pH | 1:5 EC | Exchangeable Cations | | | | Exchangeable | CEC | ECEC | ESP |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Ca | Mg | K | Na | Acidity | | | |
| m | | dS/m | Cmol (+)/kg | | | | | | | % |
| 0.1 - 0.15 | 8.4A | 0.113A | 15.4E | 6.3 | 1 | 0.8 | | | 23.5D | |
| 0.3 - 0.35 | 9A | 0.236A | | | | | | | | |
| 0.7 - 0.75 | 9.3A | 0.505A | 8.1E | 13.1 | 0.5 | 4.2 | | | 25.9D | |
| 1.3 - 1.35 | 8.9A | 1.157A | | | | | | | | |

| Depth | CaCO3 | Organic C | Avail. P | Total P | Total N | Total K | Bulk Density | Particle Size Analysis GV | CS | FS | Silt | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| m | % | % | mg/kg | % | % | % | Mg/m3 | | | % | | |
| 0.1 - 0.15 | | | | | | | 1.48 | | 11.4A | 30.7 | 11.8 | 46.1 |
| 0.3 - 0.35 | | | | | | | 1.47 | | | | | |
| 0.7 - 0.75 | | | | | | | 1.46 | | 10.7A | 27.7 | 13.2 | 48.5 |
| 1.3 - 1.35 | | | | | | | 1.46 | | | | | |

| 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 |
| 0.1 - 0.15 | 0.067A | | | 0.24G | | | | 0.16D | | |
| 0.3 - 0.35 | 0.089A | | | 0.26G | | | | 0.18D | | |
| 0.7 - 0.75 | 0.121A | | | 0.28G | | | | 0.18D | | |
| 1.3 - 1.35 | 0.091A | | | 0.27G | | | | 0.18D | | |

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**Laboratory Analyses Completed for this profile**

| | |
|---|---|
| 15C1_CA | Exchangeable bases (Ca2+,Mg2+,Na+,K+) - 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/cm3 |
| 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) |