

**Project Name:** Soils of the Lower Macquarie Valley, New South Wales  
**Project Code:** Macquarie **Site ID:** 219 **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>     | 17/06/85                 | <b>Elevation:</b> | No Data                 |
| <b>Map Ref.:</b>       | Sheet No. : 8534 1:10000 | <b>Rainfall:</b>  | No Data                 |
| <b>Northing/Long.:</b> | 6464500 AMG zone: 55     | <b>Runoff:</b>    | Moderately rapid        |
| <b>Easting/Lat.:</b>   | 604000 Datum: AGD66      | <b>Drainage:</b>  | Moderately well 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>     | Crest   | <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):** Firm, Hardsetting

#### Erosion:

#### Soil Classification

|  |  |                                |                                |
|--|--|--------------------------------|--------------------------------|
| <b>Australian Soil Classification:</b> |  | <b>Mapping Unit:</b>           | GIN GIN<br>AEOLIAN<br>DEPOSITS |
| N/A                                    |  | <b>Principal Profile Form:</b> | Dr2.12                         |
|  |  | <b>Great Soil Group:</b>       | N/A                            |

#### **ASC Confidence:**

Confidence level not specified

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

#### Vegetation:

Tall Strata - Tussock grass, <0.25m, Sparse. \*Species includes - None Recorded

#### Surface Coarse Fragments:

#### Profile Morphology

|     |               |   |
|-----|---------------|---|
| A1  | 0 - 0.17 m    | Dark reddish brown (5YR3/3-Moist); ; Sandy clay loam; Weak grade of structure, 20-50 mm, Subangular blocky; Many (>5 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Many (>5 per 100mm <sup>2</sup> ) Fine (1-2mm) macropores, Many (>5 per 100mm <sup>2</sup> ) Medium (2-5mm) macropores, Moderately moist; Weak consistence; Field pH 8 (Raupach); Many, very fine (0-1mm) roots; Many, fine (1-2mm) roots; Many, medium (2-5mm) roots; Many, coarse (>5mm) roots; Gradual, Smooth change to -                                     |
| B1  | 0.17 - 0.47 m | Red (2.5YR4/6-Moist); ; Medium clay; Weak grade of structure, 20-50 mm, Subangular blocky; Many (>5 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Many (>5 per 100mm <sup>2</sup> ) Fine (1-2mm) macropores, Many (>5 per 100mm <sup>2</sup> ) Medium (2-5mm) macropores, Moderately moist; Firm consistence; Few cutans, <10% of ped faces or walls coated; Field pH 7 (Raupach); Common, very fine (0-1mm) roots; Common, fine (1-2mm) roots; Common, medium (2-5mm) roots; Common, coarse (>5mm) roots; Clear, Smooth change to - |
| B21 | 0.47 - 0.85 m | Red (2.5YR4/7-Moist); ; Medium clay; Moderate grade of structure, 10-20 mm, Polyhedral; Common (1-5 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Common (1-5 per 100mm <sup>2</sup> ) Fine (1-2mm) macropores, Dry; Firm consistence; 90-100%, medium gravelly, 6-20mm, subrounded, dispersed, coarse fragments; Common cutans, 10-50% of ped faces or walls coated; Field pH 7 (Raupach); Common, very fine (0-1mm) roots; Common, fine (1-2mm) roots; Common, medium (2-5mm) roots; Diffuse, Smooth change to -                   |
| B22 | 0.85 - 1.35 m | Yellowish red (5YR5/8-Moist); ; Sandy clay; Moderate grade of structure, 10-20 mm, Polyhedral; Few (<1 per 100mm <sup>2</sup> ) Very fine (0.075-1mm) macropores, Dry; Firm consistence; 2-10%, medium gravelly, 6-20mm, subrounded, dispersed, coarse fragments; Few cutans, <10% of ped faces or walls coated; Field pH 7.5 (Raupach); Few, very fine (0-1mm) roots; Few, fine (1-2mm) roots;   |

#### Morphological Notes

A1 Crest (flat)

#### Observation Notes

Mitchell Soil Profile Class, Well Drained 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 | 5.9A | 0.112A | 1.5E | 0               | 0.6       | 0           |                      |     | 2.1D |     |
| 0.3 - 0.35 | 6.3A | 0.054A |      |                 |           |             |                      |     |      |     |
| 0.7 - 0.75 | 7A   | 0.069A | 6.2E | 2.7             | 0.2       | 0.3         |                      |     | 9.4D |     |
| 1.3 - 1.35 | 8A   | 0.234A |      |                 |           |             |                      |     |      |     |

| 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 |       |           |          |         |         |         | 1.54         |             | 25.1A   | 43.9        | 8    | 22.9 |
| 0.3 - 0.35 |       |           |          |         |         |         | 1.74         |             |         |             |      |      |
| 0.7 - 0.75 |       |           |          |         |         |         | 1.64         |             | 11.8A   | 15.9        | 4    | 68.3 |
| 1.3 - 1.35 |       |           |          |         |         |         | 1.64         |             |         |             |      |      |

| 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 | 0.032A |                                       |          | 0.11G   |         |       |       | 0.07D  |         |
| 0.3 - 0.35 | 0.021A |                                       |          | 0.13G   |         |       |       | 0.1D   |         |
| 0.7 - 0.75 | 0.024A |                                       |          | 0.17G   |         |       |       | 0.16D  |         |
| 1.3 - 1.35 | 0.106A |                                       |          | 0.2G    |         |       |       | 0.17D  |         |

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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)   |