

**Project Name:** SOIL STRUCTURE & MANAGEMENT  
**Project Code:** SSM      **Site ID:** SSM15      **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (ACT)

**Site Information**

|                        |                      |                   |                         |
|------------------------|----------------------|-------------------|-------------------------|
| <b>Desc. By:</b>       | B. Murphy            | <b>Locality:</b>  |                         |
| <b>Date Desc.:</b>     | 12/02/91             | <b>Elevation:</b> | 370 metres              |
| <b>Map Ref.:</b>       | Sheet No. : 8531     | <b>Rainfall:</b>  | No Data                 |
| <b>Northing/Long.:</b> | 6347500 AMG zone: 55 | <b>Runoff:</b>    | Slow                    |
| <b>Easting/Lat.:</b>   | 618800 Datum: AGD66  | <b>Drainage:</b>  | Moderately well drained |

**Geology**

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

**Land Form**

|                         |             |                        |             |
|-------------------------|-------------|------------------------|-------------|
| <b>Rel/Slope Class:</b> | No Data     | <b>Pattern Type:</b>   | Rises       |
| <b>Morph. Type:</b>     | Lower-slope | <b>Relief:</b>         | No Data     |
| <b>Elem. Type:</b>      | Footslope   | <b>Slope Category:</b> | No Data     |
| <b>Slope:</b>           | 2 %         | <b>Aspect:</b>         | 135 degrees |

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

**Erosion:**

**Soil Classification**

|  |  |                                |           |
|--|--|--------------------------------|-----------|
| <b>Australian Soil Classification:</b> |  | <b>Mapping Unit:</b>           | N/A       |
| Eutrophic Red Dermosol                 |  | <b>Principal Profile Form:</b> | Gn4.12    |
| <b>ASC Confidence:</b>                 |  | <b>Great Soil Group:</b>       | Red earth |
| Confidence level not specified         |  |                                |           |

**Site Disturbance:** Extensive clearing, for example poisoning, ringbarking, Cultivation. Rainfed,

**Vegetation:**

**Surface Coarse Fragments:** 0-2%, , subrounded, ; No surface coarse fragments; No surface coarse fragments

**Profile Morphology**

|     |               |  |
|-----|---------------|--|
| A11 | 0 - 0.12 m    | Red (2.5YR4/6-Moist); ; Clay loam; Weak grade of structure, 20-50 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Medium, (5 - 10) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Few (<1 per 100mm2) Fine (1-2mm) macropores, Dry; Firm consistence; 0-2%, fine gravelly, 2-6mm, subrounded, dispersed, coarse fragments; 0-2%, fine gravelly, 2-6mm, subrounded, dispersed, Quartz, coarse fragments; Common, very fine (0-1mm) roots; Clear change to -  |
| B1  | 0.12 - 0.21 m | Dark reddish brown (2.5YR3/4-Moist); Yellowish red (5YR5/8-Dry); ; Light clay; Weak grade of structure, 20-50 mm, Subangular blocky; Earthy fabric; Fine, (0 - 5) mm crack; Medium, (5 - 10) mm crack; Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Few (<1 per 100mm2) Fine (1-2mm) macropores, Dry; Strong consistence; 0-2%, fine gravelly, 2-6mm, subrounded, dispersed, coarse fragments; 0-2%, fine gravelly, 2-6mm, subrounded, dispersed, Quartz, coarse fragments; Few cutans, <10% of ped faces or walls coated, distinct; Common, very fine (0-1mm) roots; Clear change to - |
| B21 | 0.21 - 0.51 m | Red (2.5YR4/6-Moist); ; Light medium clay; Moderate grade of structure, 50-100 mm, Prismatic; 50-100 mm, Angular blocky; Rough-ped fabric; Fine, (0 - 5) mm crack; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Few (<1 per 100mm2) Fine (1-2mm) macropores, Dry; Very firm consistence; 0-2%, fine gravelly, 2-6mm, subrounded, dispersed, coarse fragments; 0-2%, fine gravelly, 2-6mm, subrounded, dispersed, Quartz, coarse fragments; Many cutans, >50% of ped faces or walls coated, distinct; Few, very fine (0-1mm) roots; Gradual change to -           |
| B22 | 0.51 - 0.8 m  | Red (2.5YR4/6-Moist); ; Light medium clay; Strong grade of structure, 50-100 mm, Prismatic; 50-100 mm, Angular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Medium, (5 - 10) mm crack; Few (<1 per 100mm2) Very fine (0.075-1mm) macropores, Few (<1 per 100mm2) Fine (1-2mm) macropores, Dry; Weak consistence; 0-2%, fine gravelly, 2-6mm, subrounded, dispersed, coarse fragments; 0-2%, fine gravelly, 2-6mm, subrounded, dispersed, Quartz, coarse fragments; Many cutans, >50% of ped faces or walls coated, prominent; Few, very fine (0-1mm) roots; Gradual change to -                |

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B23      0.8 - 0.9 m      Red (2.5YR5/8-Moist); ; Light medium clay; Moderate grade of structure, 50-100 mm, Prismatic; 50-100 mm, Angular blocky; Rough-ped fabric; Fine, (0 - 5) mm crack; Medium, (5 - 10) mm crack; Few (<1 per 100mm<sup>2</sup>) Very fine (0.075-1mm) macropores, Dry; Firm consistence; 0-2%, fine gravelly, 2-6mm, subrounded, dispersed, coarse fragments; 0-2%, fine gravelly, 2-6mm, subrounded, dispersed, Quartz, coarse fragments; Many cutans, >50% of ped faces or walls coated, distinct; Very few (0 - 2 %), Manganiferous, Medium (2 -6 mm), Soft segregations, weak, segregations;

**Morphological Notes**

B21      Sub-Dominant peds also smaller (5-10 mm)also polyhedral ped shape.

B22      Sub-Dominant peds also smaller (5-10 mm)also polyhedral peds.

B23      Sub-Dominant peds also smaller (5-10 mm)also polyhedral peds.

**Observation Notes**

**Site Notes**

Telescope cropping - Simpson

**Observation ID: 1**

**Laboratory Test Results:**

| Depth        | pH    | 1:5 EC | Exchangeable Cations |      |      | Exchangeable      | CEC     | ECEC   | ESP  |
|--------------|-------|--------|----------------------|------|------|-------------------|---------|--------|------|
| m            |       | dS/m   | Ca                   | Mg   | K    | Na<br>Cmol (+)/kg | Acidity |        | %    |
| 0 - 0.02     | 5.19B | 0.152A | 5.39J                | 1.77 | 1.69 | 0.02              |         | 9.69I  | 0.21 |
| 0.01 - 0.085 |       |        |                      |      |      |                   |         |        |      |
| 0.02 - 0.05  | 4.99B | 0.116A | 4.43J                | 1.55 | 1.24 | 0.02              |         | 8.66I  | 0.23 |
| 0.05 - 0.1   | 4.74B | 0.076A | 4.97J                | 1.46 | 1.14 | 0.02              |         | 10.75I | 0.19 |
| 0.1 - 0.2    | 5.52B | 0.035A | 7.24J                | 2.45 | 0.9  |                   |         | 11.15I |      |
| 0.2 - 0.3    | 5.84B | 0.036A | 7.79J                | 2.53 | 0.72 | 0.01              |         | 10.91I | 0.09 |
| 0.2 - 0.285  |       |        |                      |      |      |                   |         |        |      |
| 0.7 - 0.8    | 6.64B | 0.048A | 8.38J                | 3.8  | 0.55 | 0.05              |         | 12.8I  | 0.39 |

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**Laboratory Analyses Completed for this profile**

|            |   |
|------------|---|
| 13A1_AL    | Oxalate-extractable aluminium   |
| 13A1_FE    | Oxalate-extractable iron  |
| 13A1_MN    | Oxalate-extractable manganese   |
| 13A1_SI    | Oxalate-extractable silicon   |
| 13C1_AL    | Citrate/dithionite-extractable iron, aluminium, Manganese and Silicon   |
| 13C1_FE    | Citrate/dithionite-extractable iron, aluminium, Manganese and Silicon   |
| 13C1_MN    | Citrate/dithionite-extractable iron, aluminium, Manganese and Silicon   |
| 13C1_SI    | Citrate/dithionite-extractable iron, aluminium, Manganese and Silicon   |
| 14H1_CA    | Soluble bases/SE (Ca,Mg,K,Na)   |
| 14H1_K     | Soluble bases/SE (Ca,Mg,K,Na)   |
| 14H1_MG    | Soluble bases/SE (Ca,Mg,K,Na)   |
| 14H1_NA    | Soluble bases/SE (Ca,Mg,K,Na)   |
| 15F1_CA    | Exchangeable bases by 0.01M silver-thiourea (AgTU)+, no pretreatment for soluble salts  |
| 15F1_K     | Exchangeable bases by 0.01m (AgTU)+, no pretreatment for soluble salts  |
| 15F1_MG    | Exchangeable bases by 0.01m (AgTU)+, no pretreatment for soluble salts  |
| 15F1_NA    | Exchangeable bases by 0.01m (AgTU)+, no pretreatment for soluble salts  |
| 15F3       | CEC by 0.01M silver-thiourea (AgTU)+  |
| 15N1       | Exchangeable sodium percentage (ESP)  |
| 3A1        | EC of 1:5 soil/water extract  |
| 4B1        | pH of 1:5 soil/0.01M calcium chloride extract - direct  |
| 6B3        | Total organic carbon - high frequency induction furnace, infrared   |
| P10_CF_C   | Clay (%) - Coventry and Fett pipette method   |
| P10_CF_Z   | Silt (%) - Coventry and Fett pipette method   |
| P3A1       | Bulk density - g/cm <sup>3</sup>  |
| P3B3VLd06  | 0.6 BAR Moisture m <sup>3</sup> /m <sup>3</sup> - Volumetric using undisturbed 48mm diameter and 15mm height core on pressure plate |
| P3B3VLd15  | 15 BAR Moisture m <sup>3</sup> /m <sup>3</sup> - Volumetric using undisturbed 48mm diameter and 15mm height core on pressure plate  |
| P3B3VLd3   | 3 BAR Moisture m <sup>3</sup> /m <sup>3</sup> - Volumetric using undisturbed 48mm diameter and 15mm height core on pressure plate   |
| P3B3VLd5   | 5 BAR Moisture m <sup>3</sup> /m <sup>3</sup> - Volumetric using undisturbed 48mm diameter and 15mm height core on pressure plate   |
| P6_LP      | Dispersion Index (Loveday and Pyle, 1973)   |
| PWS1-2mm   | 1000-2000 micron fraction (%) - Wet Sieving after chemical dispersion   |
| PWS20-63   | 20-63 micron fraction (%) - Wet Sieving after chemical dispersion   |
| PWS212-425 | 212-425 micron fraction (%) - Wet Sieving after chemical dispersion   |
| PWS425-1mm | 425-1000 micron fraction (%) - Wet Sieving after chemical dispersion  |
| PWS63-212  | 63-212 micron fraction (%) - Wet Sieving after chemical dispersion  |