Project Name: SOIL STRUCTURE & MANAGEMENT

Project Code: SSM Site ID: SSM28 Observation ID: 1

Agency Name: CSIRO Division of Soils (ACT)

Site Information

Desc. By: B. Murphy Locality:

Date Desc.: Elevation: 14/03/91 250 metres Map Ref.: Sheet No.: 8229 1:100000 Rainfall: No Data Northing/Long.: 6219000 AMG zone: 55 Runoff: Slow 496400 Datum: AGD66 Well drained Easting/Lat.: Drainage:

<u>Geology</u>

ExposureType: Undisturbed soil core Conf. Sub. is Parent. Mat.: No Data Geol. Ref.: Ou Substrate Material: No Data

Land Form

Rel/Slope Class:No DataPattern Type:RisesMorph. Type:Lower-slopeRelief:No DataElem. Type:FootslopeSlope Category:No DataSlope:2 %Aspect:90 degrees

Surface Soil Condition (dry): Soft

Erosion:

Soil Classification

Australian Soil Classification:Mapping Unit:N/AEutrophic Red ChromosolPrincipal Profile Form:Gn2.12ASC Confidence:Great Soil Group:Red earth

Confidence level not specified

Site Disturbance: No effective disturbance other than grazing by hoofed animals

Vegetation:

Surface Coarse Fragments:

Profile Morphology	l
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O1 0 - 0.04 m Organic Layer; ;

O2 0.04 - 0.05 m Organic Layer; ;

A11 0.05 - 0.1 m Dark reddish brown (2.5YR2/3-Moist); ; Loam; Moderate grade of structure, 5-10 mm,

Subangular blocky; Rough-ped fabric; Medium, (5 - 10) mm crack; Fine, (0 - 5) mm crack; Many (>5 per 100mm2) Very fine (0.075-1mm) macropores, Few (<1 per 100mm2) Fine (1-2mm) macropores, Common (1-5 per 100mm2) Medium (2-5mm) macropores, Dry; Loose consistence;

Many, very fine (0-1mm) roots; Clear change to -

A12 0.1 - 0.2 m Dark reddish brown (2.5YR2/3-Moist); ; Fine sandy clay loam; Weak grade of structure, 10-20

mm, Subangular blocky; Earthy fabric; Coarse, (10 - 20) mm crack; Medium, (5 - 10) mm crack; Fine, (0 - 5) mm crack; Common (1-5 per 100mm2) Medium (2-5mm) macropores, Few (<1 per 100mm2) Fine (1-2mm) macropores, Many (>5 per 100mm2) Very fine (0.075-1mm) macropores, Dry; Weak consistence; Many, very fine (0-1mm) roots; Few, fine (1-2mm) roots;

Abrupt change to -

AB1 0.2 - 0.35 m Dark reddish brown (2.5YR3/4-Moist); ; Medium clay; Weak grade of structure, 10-20 mm,

Subangular blocky; Earthy fabric; Coarse, (10 - 20) mm crack; Medium, (5 - 10) mm crack; Fine, (0 - 5) mm crack; Few (<1 per 100mm2) Fine (1-2mm) macropores, Common (1-5 per 100mm2) Very fine (0.075-1mm) macropores, Few (<1 per 100mm2) Medium (2-5mm) macropores, Few (<1 per 100mm2) Coarse (>5mm) macropores, Dry; Very firm consistence; Very plastic; Normal plasticity; Very sticky; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Quartz, coarse fragments; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, coarse fragments; Common,

very fine (0-1mm) roots;

B21 0.35 - 0.55 m Dark reddish brown (2.5YR3/4-Moist); ; Medium clay; Strong grade of structure, 100-200 mm,

Prismatic; 50-100 mm, Subangular blocky; Smooth-ped fabric; Very coarse, (20 - 50) mm crack; Coarse, (10 - 20) mm crack; Medium, (5 - 10) mm crack; Dry; Strong consistence; Very plastic; Normal plasticity; Very sticky; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Quartz, coarse fragments; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, coarse fragments; Many cutans, >50% of ped faces or walls coated, distinct; Few, very fine (0-1mm) roots; Gradual

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B22 0.55 - 0.75 m Dark red (2.5YR3/6-Moist); ; Medium clay; Strong grade of structure, 100-200 mm, Prismatic; 50-100 mm, Subangular blocky; Smooth-ped fabric; Very coarse, (20 - 50) mm crack; Coarse, (10 -

20) mm crack; Medium, (5 - 10) mm crack; Dry; Strong consistence; Very plastic; Normal plasticity; Moderately sticky; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, Quartz, coarse fragments; 0-2%, fine gravelly, 2-6mm, subangular, dispersed, coarse fragments; Many

cutans, >50% of ped faces or walls coated, distinct; Few, very fine (0-1mm) roots;

Yellowish red (5YR4/6-Moist); ; Strong grade of structure, 100-200 mm, Prismatic; 50-100 mm, Subangular blocky; Smooth-ped fabric; Fine, (0 - 5) mm crack; Medium, (5 - 10) mm crack; Few

(<1 per 100mm2) Very fine (0.075-1mm) macropores, Strong consistence; Many cutans, >50%

of ped faces or walls coated, distinct; Few, very fine (0-1mm) roots;

Morphological Notes

0.75 - 0.95 m

Observation Notes

Thick organic debris layer.

Site Notes

B31

ROADSIDE, WYALONG FOSTER

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Observation ID: 1

Laboratory Test Results:

<u>Laboratory Test Results:</u>												
Depth	рН	1:5 EC		hangeable			xchangeab	le CEC	;	ECEC	: 1	ESP
m		dS/m	Ca	Mg	К	Na Cmol (+)	Acidity /kg					%
0.05 - 0.07 0.06 - 0.135	5.53B	0.618A	13.62J	8.14	1.67	0.48		19.2	:61		2	2.49
0.07 - 0.1	5.38B	0.347A	9.66J	6.67	1.53	0.38		16.1	5I		2	2.35
0.1 - 0.15	5.36B	0.146A	6.83J	5.07	1.21	0.25		13.2	:31		1	.89
0.2 - 0.35	5.66B	0.079A	5.8J	4.24	0.87	0.21		10.3	5I		2	2.03
0.35 - 0.45	5.96B	0.052A	8.23J	8.59	1.27	0.65		17.9	31		3	3.63
0.36 - 0.435												
0.75 - 0.85	6.77B	0.139A	7.92J	8.81	1.01	1.48		19.9	11		7	7.43
Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Densit		article CS	Size FS	Analysis Silt	
m	%	%	mg/kg	%	%	%	Mg/m3	1		%		•
0.05 - 0.07 0.06 - 0.135		11.94C					1.46				24	35
0.07 - 0.1		6.32C					1.40				25	39
0.1 - 0.15		4.01C									20	24
0.2 - 0.35		1.4C									13	24
0.35 - 0.45		0.69C									7	53
0.36 - 0.435		0.000					1.50				•	00
0.75 - 0.85		0.34C									7	60
Depth	COLE		Grov	imatria/Va	olumotrio V	Vater Cont	onto		Ks		K unsa	
Бериі	COLE	Sat.	0.05 Bar	0.1 Bar	0.5 Bar	1 Bar	5 Bar	15 Bar	r, s	al	n ulisa	
m		Jai.	0.03 Bai		/g - m3/m		J Bai	13 Bai	mn	n/h	mm/h	
0.05 - 0.07												
0.06 - 0.135		0.38F	0.31F	0.261		0.17F	0.14D	0.12G				
0.07 - 0.1							•					
0.1 - 0.15												
0.2 - 0.35												
0.35 - 0.45												
0.36 - 0.435		0.38F	0.35F	0.331								
0.75 - 0.85												

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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

Soluble bases/SE (Ca,Mg,K,Na) 14H1_CA 14H1_K Soluble bases/SE (Ca,Mg,K,Na) Soluble bases/SE (Ca,Mg,K,Na) Soluble bases/SE (Ca,Mg,K,Na) 14H1 MG 14H1_NA

Exchangeable bases by 0.01M silver-thiourea (AgTU)+, no pretreatment for soluble salts 15F1_CA

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)+ Exchangeable sodium percentage (ESP) 15N1

EC of 1:5 soil/water extract 3A1

pH of 1:5 soil/0.01M calcium chloride extract - direct 4B1

6B3 Total organic carbon - high frequency induction furnace, infrared

MIN EC

Exchange Capacity - Minerology
Clay (%) - Coventry and Fett pipette method P10_CF_C P10_CF_Z Silt (%) - Coventry and Fett pipette method

P3A1 Bulk density - g/cm3

P3B3VLc001 0.01 BAR Moisture m3/m3 - Volumetric using undisturbed 98mm diameter core on suction plate 0.03 BAR Moisture m3/m3 - Volumetric using undisturbed 98mm diameter core on suction plate P3B3VLc003 P3B3VLc005 0.05 BAR Moisture m3/m3 - Volumetric using undisturbed 98mm diameter core on suction plate 0.1 BAR Moisture m3/m3 - Volumetric using undisturbed 98mm diameter core on suction plate P3B3VLc01 P3B3VLc03 0.3 BAR Moisture m3/m3 - Volumetric using undisturbed 98mm diameter core on suction plate P3B3VLcSAT Saturated Moisture m3/m3 - Volumetric using undisturbed 98mm diameter core on suction plate P3B3VLd06 0.6 BAR Moisture m3/m3 - Volumetric using undisturbed 48mm diameter and 15mm height core on

pressure plate

P3B3VLd1 1 BAR Moisture m3/m3 - Volumetric using undisturbed 48mm diameter and 15mm height core on

pressure plate

P3B3VLd15 15 BAR Moisture m3/m3 - Volumetric using undisturbed 48mm diameter and 15mm height core on

pressure plate

P3B3VLd3 3 BAR Moisture m3/m3 - Volumetric using undisturbed 48mm diameter and 15mm height core on

pressure plate

P3B3VLd5 5 BAR Moisture m3/m3 - Volumetric using undisturbed 48mm diameter and 15mm height core on

pressure plate

Dispersion Index (Loveday and Pyle, 1973) P6_LP

1000-2000 micron fraction (%) - Wet Sieving after chemical dispersion PWS1-2mm PWS20-63 20-63 micron fraction (%) - Wet Sieving after chemical dispersion 212-425 micron fraction (%) - Wet Sieving after chemical dispersion PWS212-425 PWS425-1mm 425-1000 micron fraction (%) - Wet Sieving after chemical dispersion PWS63-212 63-212 micron fraction (%) - Wet Sieving after chemical dispersion

XRD_C_An Anatase - X-Ray Diffraction XRD_C_Hm XRD_C_II Hematite - X-Ray Diffraction Illite - X-Ray Diffraction

XRD_C_Is Interstratified clay minerals - X-Ray Diffraction

XRD_C_Ka XRD_C_Qz Kaolin - X-Ray Diffraction Quartz - X-Ray Diffraction