Project Name: **Improving Soil Survey Field Measurement and Interpretation. LWRRDC Project No. 90/R16**
Project Code: **Morphology** **Site ID:** **CP326** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

Site Information

Desc. By:	N.J. McKenzie	**Locality:**	
Date Desc.:	17/02/93	**Elevation:**	708 metres
Map Ref.:	Sheet No. : 8827-11-S 1:25000	**Rainfall:**	No Data
Northing/Long.:	6068200 AMG zone: 55	**Runoff:**	Moderately rapid
Easting/Lat.:	757600 Datum: AGD66	**Drainage:**	Imperfectly drained

Geology

ExposureType:	Soil pit	**Conf. Sub. is Parent. Mat.:**	No Data
Geol. Ref.:	No Data	**Substrate Material:**	Soil pit, 0.75 m deep,Slightly porous, Granite

Land Form

Rel/Slope Class:	Undulating rises 9-30m 3-10%	**Pattern Type:**	Rises
Morph. Type:	Upper-slope	**Relief:**	10 metres
Elem. Type:	Hillslope	**Slope Category:**	Gently inclined
Slope:	4 %	**Aspect:**	45 degrees

Surface Soil Condition (dry): Firm

Erosion:

Soil Classification

Australian Soil Classification:
Yellow Chromosol
ASC Confidence:
No analytical data are available but confidence is fair.

Mapping Unit: N/A
Principal Profile Form: Dy5.42
Great Soil Group: N/A

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

Vegetation: Low Strata - Sod grass, <0.25m, Mid-dense. *Species includes - None recorded

Surface Coarse Fragments: No surface coarse fragments

Profile Morphology

A11	0 - 0.08 m	Very dark greyish brown (10YR3/2-Moist); Light brownish grey (10YR6/2-Dry); ; Sandy clay loam (Heavy); Weak grade of structure, 10-20 mm, Subangular blocky; Earthy fabric; Moderately moist; Firm consistence; 0-2%, fine gravelly, 2-6mm, angular, dispersed, coarse fragments; Field pH 5 (Raupach); Many, very fine (0-1mm) roots; Gradual, Smooth change to -
A12	0.08 - 0.13 m	Very dark grey (10YR3/1-Moist); ; Sandy clay loam (Light); Weak grade of structure, 10-20 mm, Subangular blocky; Earthy fabric; Moderately moist; Firm consistence; 2-10%, fine gravelly, 2-6mm, subangular, dispersed, coarse fragments; Field pH 5.5 (Raupach); Many, very fine (0-1mm) roots; Gradual, Wavy change to -
A21	0.13 - 0.22 m	Greyish brown (10YR5/2-Moist); Light grey (10YR7/2-Dry); ; Sandy clay loam (Heavy); Massive grade of structure; Earthy fabric; Moderately moist; Very firm consistence; 10-20%, fine gravelly, 2-6mm, subangular, dispersed, coarse fragments; Field pH 6 (Raupach); Common, very fine (0-1mm) roots; Clear, Irregular change to -
A22	0.22 - 0.3 m	Yellowish brown (10YR5/4-Moist); Mottles, 10YR52, 10-20% , 15-30mm, Distinct; Sandy clay loam; Massive grade of structure; Earthy fabric; Moderately moist; Very firm consistence; 50-90%, fine gravelly, 2-6mm, subangular, dispersed, coarse fragments; Field pH 6.5 (Raupach); Common, very fine (0-1mm) roots; Abrupt, Wavy change to -
B21	0.3 - 0.5 m	Yellowish brown (10YR5/8-Moist); Mottles, 10YR64, 10-20% , 5-15mm, Faint; Medium clay; Weak grade of structure, 20-50 mm, Angular blocky; Rough-ped fabric; Moist; Very firm consistence; Field pH 6.5 (Raupach); Common, very fine (0-1mm) roots; Diffuse, Smooth change to -
B22	0.5 - 0.65 m	Brownish yellow (10YR6/6-Moist); Mottles, 10YR62, 20-50% , 15-30mm, Distinct; , 10YR72, 20-50% , 15-30mm, Distinct; Medium clay; Weak grade of structure, 20-50 mm, Angular blocky; Rough-ped fabric; Moist; Very firm consistence; Field pH 6.5 (Raupach); Common, very fine (0-1mm) roots; Gradual, Wavy change to -
B3	0.65 - 0.85 m	Yellowish brown (10YR5/4-Moist); Mottles, 10YR66, 20-50% , 15-30mm, Distinct; , 10YR61, 20-50% , 15-30mm, Distinct; Medium clay; Weak grade of structure, 20-50 mm, Angular blocky; Rough-ped fabric; Moist; Very firm consistence; 2-10%, fine gravelly, 2-6mm, angular, undisturbed, coarse fragments; Field pH 7 (Raupach); Few, very fine (0-1mm) roots; Diffuse, Wavy change to -

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C	0.85 - 1.1 m	Dark yellowish brown (10YR4/4-Moist); Mottles, 2.5YR62, 20-50% , 15-30mm, Distinct; , 10YR81, 20-50% , 15-30mm, Distinct; Light clay; Massive grade of structure; Rough-ped fabric; Moist; Firm consistence; 10-20%, fine gravelly, 2-6mm, angular, undisturbed, coarse fragments; Field pH 7.5 (Raupach); Few, very fine (0-1mm) roots;

Morphological Notes

Observation Notes

Rolling granite landforms of low relief typical of the Braibwood area except a deeper phase. Last ploughed in 1974, cleared approx. 1926-1035. Improved pasture.

Site Notes

Billaglen, 8km SE of Braidwood (Morph 25)

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Laboratory Test Results:

Depth m	pH	1:5 EC dS/m	Exchangeable Cations Ca	 Mg	 K	 Na Cmol (+)/kg	Exchangeable Acidity	CEC	ECEC	ESP %
0 - 0.08	5.42A	0.08A	5.4B	1.3	0.17	0.11		8.6A		1.28
0 - 0.2										
0 - 0.2										
0.08 - 0.13	5.59A	0.04A	4.6B	0.88	0.09	0.08		8.6A		0.93
0.13 - 0.22	6.03A	0.03A	5.4B	0.79	0.07	0.05		7.9A		0.63
0.22 - 0.3	6.2A	0.02A	4.2B	0.52	0.06	0.05		5.1A		0.98
0.3 - 0.5	6.83A	0.03A	8.5B	4.8	0.18	0.26		14.7A		1.77
0.3 - 0.5	6.83A	0.03A	8.5B	4.8	0.18	0.26		14.7A		1.77
0.3 - 0.5	6.83A	0.03A	8.5B	4.8	0.18	0.26		14.7A		1.77
0.5 - 0.65	7.06A	0.03A	8.8B	6	0.05	0.32		16.9A		1.89
0.65 - 0.85	7.35A	0.03A	9.2B	6.6	0.05	0.45		17.1A		2.63
0.65 - 0.85	7.35A	0.03A	9.2B	6.6	0.05	0.45		17.1A		2.63
0.65 - 0.85	7.35A	0.03A	9.2B	6.6	0.05	0.45		17.1A		2.63
0.85 - 1.1	7.62A	0.04A	10.9B	7.9	0.04	0.7		16.5A		4.24

Depth m	CaCO3 %	Organic C %	Avail. P mg/kg	Total P %	Total N %	Total K %	Bulk Density Mg/m3	Particle Size Analysis GV	 CS	 FS %	 Silt	 Clay
0 - 0.08		3.68B						5				
0 - 0.2							1.26					
							1.23					
							1.34					
							1.34					
0 - 0.2							1.26					
							1.23					
							1.34					
							1.34					
0.08 - 0.13		2.2B					1.39	7				
0.13 - 0.22		1.27B						13				
0.22 - 0.3		0.61B						35				
0.3 - 0.5		0.44B					1.50	16				
							1.51					
							1.48					
							1.54					
							1.62					
0.3 - 0.5		0.44B					1.50	16				
							1.51					
							1.48					
							1.54					
							1.62					
0.3 - 0.5		0.44B					1.50	16				
							1.51					
							1.48					
							1.54					
							1.62					
0.5 - 0.65		0.29B						10				
0.65 - 0.85		0.27B					1.70	8				
							1.50					
							1.72					
							1.62					
							1.60					

0.65 - 0.85		0.27B	1.70	8
			1.50	
			1.72	
			1.62	
			1.60	
0.65 - 0.85		0.27B	1.70	8
			1.50	
			1.72	
			1.62	
			1.60	
0.85 - 1.1	0.06B	0.16B		4

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 - 0.08										
0 - 0.2		0.45E	0.42E	0.37E	0.27D		0.13F	0.1F	287D	39.2A
		0.45E	0.4E	0.36E	0.28D		0.14F	0.11F		
		0.4E	0.36E	0.33E	0.25D					
		0.43E	0.4E	0.35E	0.26D					
0 - 0.2		0.45E	0.42E	0.37E	0.27D		0.13F	0.1F	287D	39.2A
		0.45E	0.4E	0.36E	0.28D		0.14F	0.11F		
		0.4E	0.36E	0.33E	0.25D					
		0.43E	0.4E	0.35E	0.26D					
0.08 - 0.13	0.013B									
0.13 - 0.22										
0.22 - 0.3										
0.3 - 0.5	0.05B	0.41E	0.39E	0.38E	0.36D		0.3F	0.27F	0.76D	0.38A
		0.42E	0.41E	0.4E	0.38D		0.28F	0.24F		
		0.4E	0.38E	0.37E	0.35D					
		0.38E	0.36E	0.35E	0.33D					
0.3 - 0.5	0.05B	0.41E	0.39E	0.38E	0.36D		0.3F	0.27F	0.76D	0.38A
		0.42E	0.41E	0.4E	0.38D		0.28F	0.24F		
		0.4E	0.38E	0.37E	0.35D					
		0.38E	0.36E	0.35E	0.33D					
0.3 - 0.5	0.05B	0.41E	0.39E	0.38E	0.36D		0.3F	0.27F	0.76D	0.38A
		0.42E	0.41E	0.4E	0.38D		0.28F	0.24F		
		0.4E	0.38E	0.37E	0.35D					
		0.38E	0.36E	0.35E	0.33D					
0.5 - 0.65										
0.65 - 0.85	0.054B	0.38E	0.35E	0.34E	0.32D		0.23F	0.19F	0.03D	0.015A
		0.34E	0.32E	0.31E	0.29D		0.22F	0.17F		
		0.37E	0.34E	0.33E	0.31D					
		0.38E	0.36E	0.34E	0.32D					
0.65 - 0.85	0.054B	0.38E	0.35E	0.34E	0.32D		0.23F	0.19F	0.03D	0.015A
		0.34E	0.32E	0.31E	0.29D		0.22F	0.17F		
		0.37E	0.34E	0.33E	0.31D					
		0.38E	0.36E	0.34E	0.32D					
0.65 - 0.85	0.054B	0.38E	0.35E	0.34E	0.32D		0.23F	0.19F	0.03D	0.015A
		0.34E	0.32E	0.31E	0.29D		0.22F	0.17F		
		0.37E	0.34E	0.33E	0.31D					
		0.38E	0.36E	0.34E	0.32D					
0.85 - 1.1										

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Laboratory Analyses Completed for this profile

15A2_CA	Exchangeable bases (Ca2+,Mg2+,Na+,K+) - 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_CEC	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_K	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_MG	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15A2_NA	Exchangeable bases- 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
19B1	Carbonates - manometric
3A1	EC of 1:5 soil/water extract
4A1	pH of 1:5 soil/water suspension
5A1	Chloride - 1:5 soil/water extract, potentiometric titration
6B2	Total organic carbon - high frequency induction furnace, volumetric
P10_GRAV	Gravel (%)
P10_S_0.20	0.20 micron (cumulative %) - Sedigraph
P10_S_0.48	0.48 micron (cumulative %) - Sedigraph
P10_S_1	1 micron (cumulative %) - Sedigraph
P10_S_1000	1000 micron (cumulative %) - Sedigraph
P10_S_125	125 micron (cumulative %) - Sedigraph
P10_S_15.6	15.6 micron (cumulative %) - Sedigraph
P10_S_2	2 micron (cumulative %) - Sedigraph
P10_S_20	20 micron (cumulative %) - Sedigraph
P10_S_2000	2000 micron (cumulative %) - Sedigraph
P10_S_250	250 micron (cumlative %) - Sedigraph
P10_S_3.9	3.9 micron (cumulative %) - Sedigraph
P10_S_31.2	31.2 micron (cumulative %) - Sedigraph
P10_S_500	500 micron (cumulative %) - Sedigraph
P10_S_53	53 micron (cumulative %) - Sedigraph
P10_S_63	63 micron (cumulative %) - Sedigraph
P10_S_7.8	7.8 micron (cumulative %) - Sedigraph
P3A1	Bulk density - g/cm3
P3B2VL_15	15 BAR Moisture m3/m3 - Volumetric using disturbed sample on pressure plate
P3B2VL_5	5 BAR Moisture m3/m3 - Volumetric using disturbed sample on pressure plate
P3B3VLb001	0.01 BAR Moisture m3/m3 - Volumetric using undisturbed 73mm diameter and 75mm height core on suction plate taken from center of large core (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)
P3B3VLb003	0.03 BAR Moisture m3/m3 - Volumetric using undisturbed 73mm diameter and 75mm height core on suction plate taken from center of large core (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)
P3B3VLb005	0.05 BAR Moisture m3/m3 - Volumetric using undisturbed 73mm diameter and 75mm height core on suction plate taken from center of large core (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)
P3B3VLb01	0.1 BAR Moisture m3/m3 - Volumetric using undisturbed 73mm diameter and 75mm height core on suction plate taken from center of large core (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)
P3B3VLb05	0.5 BAR Moisture m3/m3 - Volumetric using undisturbed 73mm diameter and 75mm height core on suction plate taken from center of large core (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)
P3B3VLbSAT	Saturated Moisture m3/m3 - Volumetric using undisturbed 73mm diameter and 75mm height core on suction plate taken from center of large core (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)
P4_50_McK	Unsaturated Hydraulic Conductivity - 50mm potential (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)
P4_sat_McK	Saturated Hydraulic Conductivity (CSIRO Div of Soil, DR 125, McKenzie and Jacquier, 1996)
P5_LS_MOD	Modified linear shrinkage (McKenzie, Jacquier and Ringrose-Voase, AJSR, 1994, 32, 931-8)