Project Name: **Improving Soil Survey Field Measurement and Interpretation. LWRRDC Project No. 90/R16**
Project Code: **Morphology** **Site ID:** **CP337** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

Site Information

Desc. By:	N.J. McKenzie	**Locality:**	
Date Desc.:	12/02/94	**Elevation:**	265 metres
Map Ref.:	Sheet No. : 8823-111-N 1:25000	**Rainfall:**	No Data
Northing/Long.:	5868600 AMG zone: 55	**Runoff:**	Moderately rapid
Easting/Lat.:	735700 Datum: AGD66	**Drainage:**	Imperfectly drained

Geology

ExposureType:	Soil pit	**Conf. Sub. is Parent. Mat.:**	No Data
Geol. Ref.:	No Data	**Substrate Material:**	Soil pit, Adamellite

Land Form

Rel/Slope Class:	Rolling hills 90-300m 10-32%	**Pattern Type:**	Hills
Morph. Type:	Upper-slope	**Relief:**	250 metres
Elem. Type:	Hillslope	**Slope Category:**	Moderately inclined
Slope:	12 %	**Aspect:**	45 degrees

Surface Soil Condition (dry): Soft

Erosion: Moderate (gully)

Soil Classification

Australian Soil Classification:
Kurosol
ASC Confidence:
Confidence level not specified

Mapping Unit: N/A
Principal Profile Form: Dy5.41
Great Soil Group: N/A

Site Disturbance: Limited clearing, for example selective logging

Vegetation: Low Strata - Tussock grass, 0.26-0.5m, Sparse. *Species includes - None recorded
Mid Strata - Tree, 12.01-20m, Mid-dense. *Species includes - Casuarina littoralis
Tall Strata - Tree, 20.01-35m, Sparse. *Species includes - Eucalyptus seiberi, Eucalyptus agglomerata

Surface Coarse Fragments: No surface coarse fragments

Profile Morphology

A11	0 - 0.005 m	Dark brown (7.5YR3/2-Moist); ; Loamy coarse sand; Single grain grade of structure; Sandy (grains prominent) fabric; Dry; Loose consistence; 50-90%, fine gravelly, 2-6mm, angular, dispersed, Quartz, coarse fragments; Field pH 4.5 (Raupach); Sharp, Smooth change to -
A21	0.005 - 0.08 m	Light grey (10YR7/2-Moist); ; Clayey coarse sand; Single grain grade of structure; Sandy (grains prominent) fabric; Dry; Weak consistence; 20-50%, fine gravelly, 2-6mm, angular, dispersed, Quartz, coarse fragments; Field pH 6.5 (Raupach); Many, medium (2-5mm) roots; Abrupt, Irregular change to -
A31	0.08 - 0.23 m	Pale brown (10YR6/3-Moist); Mottles, 10YR73, 20-50% , 15-30mm, Distinct; Biological mixing, 10YR51, 20-50% , 15-30mm, Distinct; Clayey coarse sand; Massive grade of structure; Sandy (grains prominent) fabric; Dry; Weak consistence; 20-50%, fine gravelly, 2-6mm, angular, dispersed, Quartz, coarse fragments; Field pH 6 (Raupach); Common, coarse (>5mm) roots; Gradual, Wavy change to -
A32	0.23 - 0.35 m	Yellow (10YR7/6-Moist); ; Coarse sandy loam; Massive grade of structure; Sandy (grains prominent) fabric; Moderately moist; Firm consistence; 20-50%, fine gravelly, 2-6mm, angular, dispersed, Quartz, coarse fragments; Field pH 6 (Raupach); Common, fine (1-2mm) roots;
A33	0.35 - 0.45 m	Yellow (10YR7/6-Moist); ; Coarse sandy clay loam; Massive grade of structure; Sandy (grains prominent) fabric; Moderately moist; Firm consistence; 20-50%, fine gravelly, 2-6mm, angular, dispersed, Quartz, coarse fragments; Field pH 6.5 (Raupach); Common, fine (1-2mm) roots; Clear, Smooth change to -
B21	0.45 - 0.75 m	Strong brown (7.5YR5/8-Moist); Mottles, 10YR64, 20-50% , 15-30mm, Prominent; Mottles, 5YR46, 20-50% , 15-30mm, Prominent; Medium clay; Moderate grade of structure, 20-50 mm, Polyhedral; Rough-ped fabric; Moderately moist; Very firm consistence; 10-20%, fine gravelly, 2-6mm, angular, dispersed, Quartz, coarse fragments; Field pH 4.5 (Raupach); Few, fine (1-2mm) roots; Diffuse, Smooth change to -
B22	0.75 - 1.1 m	Strong brown (7.5YR5/8-Moist); Mottles, 10YR62, 20-50% , 30-mm, Prominent; Mottles, 2.5YR48, 20-50% , 30-mm, Prominent; Medium clay; Weak grade of structure, 20-50 mm, Polyhedral; Rough-ped fabric; Moderately moist; Very firm consistence; 10-20%, fine gravelly, 2-6mm, angular, dispersed, Quartz, coarse fragments; Field pH 6 (Raupach); Few, fine (1-2mm) roots;

Project Name: **Improving Soil Survey Field Measurement and Interpretation. LWRRDC Project No. 90/R16**
Project Code: **Morphology** **Site ID:** **CP337** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

Morphological Notes

A11	Salt and pepper, coarse frags. Diff. To estimate (20% > 2).
B21	Structure - B21 keeps breaking down.
B22	Some feldspars at depth.

Observation Notes

Appearance of an insipient A2 over an A3. Very gritty 2-6mm coarse fragments. Increasing clay in A Horizon. Duplex. Very dense B Horizon. Dry and tough to core. Many roots in the first 5 cm.

Site Notes

Yambulla State Forest. Experimental catchment No. 2 (Geebung). Logged in the late 80's. Very wet site! (Morph 36)

Project Name: Improving Soil Survey Field Measurement and Interpretation. LWRRDC Project No. 90/R16
Project Code: Morphology **Site ID:** CP337 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (ACT)

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 - 0.005	4.81A	0.06A	3.5B	1.9	0.22	0.15		10.2A		1.47
0.005 - 0.08	5.1A	0.05A	0.31B	0.53	0.14	0.15		4.3A		3.49
0.005 - 0.2										
0.005 - 0.2										
0.08 - 0.23	5.64A	0.02A	0.27B	0.43	0.11	0.1		2.8A		3.57
0.23 - 0.35	5.58A	0.02A	0.3B	0.49	0.12	0.2		3A		6.67
0.2 - 0.4										
0.2 - 0.4										
0.35 - 0.45	5.71A	0.02A	0.4B	1	0.21	0.18		5.5A		3.27
0.45 - 0.75	5.7A	0.03A	0.92B	3	0.47	0.31		9.9A		3.13
0.55 - 0.75										
0.55 - 0.75										
0.75 - 1.1	5.65A	0.03A	0.79B	3	0.44	0.31		9.2A		3.37

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 - 0.005		6.81B						47				
0.005 - 0.08		1.59B						21				
0.005 - 0.2							1.31					
							1.40					
							1.33					
0.005 - 0.2							1.31					
							1.40					
							1.33					
0.08 - 0.23		0.58B					1.16	27				
0.23 - 0.35		0.32B						34				
0.2 - 0.4							1.73					
							1.64					
							1.62					
							1.67					
0.2 - 0.4							1.73					
							1.64					
							1.62					
							1.67					
0.35 - 0.45		0.35B					1.67	36				
0.45 - 0.75		0.21B					1.92	27				
0.55 - 0.75							1.50					
							1.47					
							1.51					
							1.47					
0.55 - 0.75							1.50					
							1.47					
							1.51					
							1.47					
0.75 - 1.1		0.23B						34				

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

Project Name: **Improving Soil Survey Field Measurement and Interpretation. LWRRDC Project No. 90/R16**
Project Code: **Morphology** **Site ID:** **CP337** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

0.005 - 0.08									
0.005 - 0.2		0.35E	0.24E	0.22E	0.16D	0.08F	0.07F	1782D	194.4A
		0.34E	0.25E	0.22E	0.17D	0.07F	0.05F		
		0.31E	0.2E	0.18E	0.13D				
0.005 - 0.2		0.35E	0.24E	0.22E	0.16D	0.08F	0.07F	1782D	194.4A
		0.34E	0.25E	0.22E	0.17D	0.07F	0.05F		
		0.31E	0.2E	0.18E	0.13D				
0.08 - 0.23	0.004B								
0.23 - 0.35									
0.2 - 0.4		0.23E	0.2E	0.18E	0.15D	0.09F	0.05F	383.6D	11.6A
		0.23E	0.16E	0.14E	0.12D	0.1F	0.06F		
		0.23E	0.19E	0.17E	0.13D				
		0.21E	0.15E	0.13E	0.11D				
0.2 - 0.4		0.23E	0.2E	0.18E	0.15D	0.09F	0.05F	383.6D	11.6A
		0.23E	0.16E	0.14E	0.12D	0.1F	0.06F		
		0.23E	0.19E	0.17E	0.13D				
		0.21E	0.15E	0.13E	0.11D				
0.35 - 0.45	0.021B								
0.45 - 0.75	0.021B								
0.55 - 0.75		0.35E	0.34E	0.33E	0.3D	0.3F	0.25F	39.6D	2.5A
		0.38E	0.36E	0.35E	0.33D	0.29F	0.22F		
		0.36E	0.33E	0.32E	0.29D				
		0.36E	0.34E	0.33E	0.3D				
0.55 - 0.75		0.35E	0.34E	0.33E	0.3D	0.3F	0.25F	39.6D	2.5A
		0.38E	0.36E	0.35E	0.33D	0.29F	0.22F		
		0.36E	0.33E	0.32E	0.29D				
		0.36E	0.34E	0.33E	0.3D				
0.75 - 1.1									

Project Name: **Improving Soil Survey Field Measurement and Interpretation. LWRRDC Project No. 90/R16**
Project Code: **Morphology** **Site ID:** **CP337** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

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
3A1	EC of 1:5 soil/water extract
4A1	pH of 1:5 soil/water suspension
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)