Project Name: **Improving Soil Survey Field Measurement and Interpretation. LWRRDC Project No. 90/R16**
Project Code: **Morphology** **Site ID:** **CP309** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (ACT)**

Site Information

Desc. By:	N.J. McKenzie	**Locality:**	
Date Desc.:	14/03/92	**Elevation:**	No Data
Map Ref.:	Sheet No. : 8424Warren	**Rainfall:**	No Data
Northing/Long.:	6491900 AMG zone: 55	**Runoff:**	Slow
Easting/Lat.:	560200 Datum: AGD66	**Drainage:**	Well drained

Geology

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

Land Form

Rel/Slope Class:	Level plain <9m <1%	**Pattern Type:**	Stagnant alluvial plain
Morph. Type:	Flat	**Relief:**	No Data
Elem. Type:	Backplain	**Slope Category:**	Level
Slope:	%	**Aspect:**	No Data

Surface Soil Condition (dry): Hardsetting

Erosion:

Soil Classification

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

Mapping Unit: N/A
Principal Profile Form: Gn4.12
Great Soil Group: N/A

Site Disturbance: Cultivation. Rainfed

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

Surface Coarse Fragments: No surface coarse fragments

Profile Morphology

A11p	0 - 0.1 m	Brown (7.5YR4/4-Moist); Reddish yellow (7.5YR6/8-Dry); Mechanical, 7.5YR32, 20-50% , 15-30mm, Distinct; Silty loam; Massive grade of structure; Earthy fabric; Dry; Very firm consistence; Field pH 7 (Raupach); Common, very fine (0-1mm) roots; Clear, Smooth change to
A12	0.1 - 0.2 m	Dark brown (7.5YR3/2-Moist); ; Silty clay loam; Weak grade of structure, 20-50 mm, Subangular blocky; Earthy fabric; Dry; Strong consistence; Field pH 6 (Raupach); Common, very fine (0-1mm) roots; Clear, Smooth change to -
A3	0.2 - 0.3 m	Dark reddish brown (5YR3/4-Moist); ; Silty clay; Moderate grade of structure, 20-50 mm, Polyhedral; Rough-ped fabric; Moderately moist; Strong consistence; Field pH 7 (Raupach); Many, very fine (0-1mm) roots; Clear, Smooth change to -
B21	0.3 - 0.4 m	Dark reddish brown (5YR3/4-Moist); ; Light medium clay; Moderate grade of structure, 10-20 mm, Polyhedral; Rough-ped fabric; Moderately moist; Strong consistence; Common cutans, 10-50% of ped faces or walls coated, faint; Field pH 7.5 (Raupach); Many, very fine (0-1mm) roots; Gradual, Smooth change to -
B22	0.4 - 0.5 m	Dark reddish brown (5YR3/4-Moist); ; Medium clay; Moderate grade of structure, 10-20 mm, Polyhedral; Rough-ped fabric; Moderately moist; Strong consistence; Common cutans, 10-50% of ped faces or walls coated, faint; Field pH 8 (Raupach); Many, very fine (0-1mm) roots; Diffuse, Smooth change to -
B31	0.5 - 0.7 m	Dark reddish brown (5YR3/4-Moist); ; Light medium clay; Moderate grade of structure, 10-20 mm, Polyhedral; Rough-ped fabric; Moderately moist; Very firm consistence; Few cutans, <10% of ped faces or walls coated, faint; Few (2 - 10 %), Calcareous, Medium (2 -6 mm), Soft segregations; Soil matrix is Highly calcareous; Field pH 8 (Raupach); Many, very fine (0-1mm) roots; Diffuse, Smooth change to -
B32	0.7 - 1 m	Brown (7.5YR4/4-Moist); ; Silty clay loam; Moderate grade of structure, 10-20 mm, Polyhedral; Rough-ped fabric; Moderately moist; Very firm consistence; Common (10 - 20 %), Calcareous, Coarse (6 - 20 mm), Soft segregations; Soil matrix is Highly calcareous; Field pH 8 (Raupach); Common, very fine (0-1mm) roots; Diffuse, Smooth change to -
B33	1 - 1.3 m	Brown (7.5YR4/4-Moist); ; Silty clay loam; Weak grade of structure, 10-20 mm, Polyhedral; Rough-ped fabric; Moderately moist; Firm consistence; Many (20 - 50 %), Calcareous, Coarse (6 - 20 mm), Soft segregations; Soil matrix is Very highly calcareous; Field pH 8 (Raupach); Common, very fine (0-1mm) roots;

Morphological Notes

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A12	Ants nest
B33	Grades into parent material (silty alluvium)

Observation Notes

Within 20m of site110 from LMV survey

Site Notes

Wilga Calcic, ARC Trangie (Morph 8)

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Laboratory Test Results:

Depth	pH	1:5 EC	Exchangeable Cations				Exchangeable Acidity	CEC	ECEC	ESP
			Ca	Mg	K	Na				
m		dS/m				Cmol (+)/kg				%
0 - 0.1	6.05A	0.06A	5.7B	1.2	1.3	0.02		9.8A		0.20
0 - 0.2										
0 - 0.2										
0.1 - 0.2	6.29A	0.03A	7.9B	1.4	0.46	0.04		11.1A		0.36
0.2 - 0.3	6.94A	0.02A	9.4B	1.9	0.33	0.09		11.9A		0.76
0.3 - 0.4	7.34A	0.03A	11.8B	1.8	0.25	0.11		14.6A		0.75
0.3 - 0.5										
0.3 - 0.5										
0.4 - 0.5	7.68A	0.04A	16.2B	2.4	0.33	0.2		19.2A		1.04
0.5 - 0.7	8.43A	0.11A	14.7B	2.2	0.3	0.24		15.8A		1.52
0.5 - 0.7	8.43A	0.11A	14.7B	2.2	0.3	0.24		15.8A		1.52
0.5 - 0.7	8.43A	0.11A	14.7B	2.2	0.3	0.24		15.8A		1.52
0.7 - 1	8.53A	0.1A	9.5B	1.8	0.23	0.2		11.9A		1.68
1 - 1.3	8.56A	0.1A	8.8B	2.5	0.21	0.16		12.3A		1.30

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 - 0.1		1.33B						0				
0 - 0.2							1.35					
							1.37					
							1.37					
							1.40					
0 - 0.2							1.35					
							1.37					
							1.37					
							1.40					
0.1 - 0.2		0.77B					1.43	0				
0.2 - 0.3		0.46B						0				
0.3 - 0.4		0.34B						0				
0.3 - 0.5							1.63					
							1.61					
							1.61					
							1.64					
0.3 - 0.5							1.63					
							1.61					
							1.61					
							1.64					
0.4 - 0.5	0.08B	0.32B					1.64	0				
0.5 - 0.7	1.31B	0.23B					1.59	0				
							1.54					
							1.58					
							1.45					
0.5 - 0.7	1.31B	0.23B					1.59	0				
							1.54					
							1.58					
							1.45					
0.5 - 0.7	1.31B	0.23B					1.59	0				
							1.54					
							1.58					
							1.45					

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0.7 - 1	1B	0.13B	0
1 - 1.3	0.83B	0.13B	0

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 - 0.1										
0 - 0.2		0.4E	0.31E	0.29E	0.25D		0.13F	0.09F	470D	55.3A
		0.4E	0.32E	0.3E	0.24D		0.13F	0.09F		
		0.42E	0.31E	0.29E	0.24D					
		0.41E	0.33E	0.3E	0.25D					
0 - 0.2		0.4E	0.31E	0.29E	0.25D		0.13F	0.09F	470D	55.3A
		0.4E	0.32E	0.3E	0.24D		0.13F	0.09F		
		0.42E	0.31E	0.29E	0.24D					
		0.41E	0.33E	0.3E	0.25D					
0.1 - 0.2	0.013B									
0.2 - 0.3										
0.3 - 0.4										
0.3 - 0.5		0.37E	0.33E	0.31E	0.28D		0.24F	0.21F	43D	5.6A
		0.37E	0.33E	0.31E	0.28D		0.21F	0.19F		
		0.38E	0.33E	0.31E	0.27D					
		0.36E	0.32E	0.31E	0.27D					
0.3 - 0.5		0.37E	0.33E	0.31E	0.28D		0.24F	0.21F	43D	5.6A
		0.37E	0.33E	0.31E	0.28D		0.21F	0.19F		
		0.38E	0.33E	0.31E	0.27D					
		0.36E	0.32E	0.31E	0.27D					
0.4 - 0.5	0.05B									
0.5 - 0.7	0.033B	0.41E	0.33E	0.31E	0.25D		0.17F	0.14F	203.1D	30.5A
		0.39E	0.33E	0.31E	0.27D		0.17F	0.14F		
		0.39E	0.31E	0.29E	0.24D					
0.5 - 0.7	0.033B	0.41E	0.33E	0.31E	0.25D		0.17F	0.14F	203.1D	30.5A
		0.39E	0.33E	0.31E	0.27D		0.17F	0.14F		
		0.39E	0.31E	0.29E	0.24D					
0.5 - 0.7	0.033B	0.41E	0.33E	0.31E	0.25D		0.17F	0.14F	203.1D	30.5A
		0.39E	0.33E	0.31E	0.27D		0.17F	0.14F		
		0.39E	0.31E	0.29E	0.24D					
0.7 - 1										
1 - 1.3										

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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_1000	1000 micron (cumulative %) - Sedigraph
P10_S_125	125 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_31.2	31.2 micron (cumulative %) - Sedigraph
P10_S_500	500 micron (cumulative %) - Sedigraph
P10_S_63	63 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)