

Project Name: Soil Changes under Agriculture
Project Code: Paired **Site ID:** M8 **Observation ID:** 1
Agency Name: CSIRO Division of Soils (SA)

Site Information

Desc. By:	N.J. McKenzie	Locality:	Keyneton
Date Desc.:	24/08/89	Elevation:	No Data
Map Ref.:	Sheet No. : 6629 1:100000	Rainfall:	No Data
Northing/Long.:	6175300 AMG zone: 54	Runoff:	No Data
Easting/Lat.:	328400 Datum: AGD66	Drainage:	No Data

Geology

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

Land Form

Rel/Slope Class:	No Data	Pattern Type:	No Data
Morph. Type:	Simple-slope	Relief:	No Data
Elem. Type:	No Data	Slope Category:	No Data
Slope:	32 %	Aspect:	No Data

Surface Soil Condition (dry):

Erosion:

Soil Classification

Australian Soil Classification:	N/A	Mapping Unit:	N/A
ASC Confidence:	Confidence level not specified	Principal Profile Form:	Dy5.42
		Great Soil Group:	Soloth

Site Disturbance: No effective disturbance. Natural

Vegetation:

Tall Strata - Tree, , . *Species includes - None Recorded

Surface Coarse Fragments:

Profile Morphology

A1	0 - 0.05 m	Dark brown (7.5YR3/2-Moist); Brown (7.5YR4/2-Dry); ; Loam; Massive grade of structure; Earthy fabric; Moist; Loose consistence; Slightly plastic; Normal plasticity; Non-sticky; Field pH 6 (Raupach); Many, very fine (0-1mm) roots; Clear, Smooth change to -
A11	0.05 - 0.1 m	Dark reddish brown (5YR3/2-Moist); ; Loam; Weak grade of structure, 20-50 mm, Subangular blocky; Earthy fabric; Moist; Very weak consistence; Moderately plastic; Normal plasticity; Slightly sticky; Field pH 7.5 (Raupach); Many, very fine (0-1mm) roots; Abrupt, Smooth change to -
A21	0.1 - 0.15 m	Reddish brown (5YR4/4-Moist); Light reddish brown (5YR6/4-Dry); ; Sandy clay loam; Massive grade of structure; Earthy fabric; Moist; Weak consistence; Moderately plastic; Normal plasticity; Slightly sticky; 2-10%, medium gravelly, 6-20mm, angular, dispersed, Quartz, coarse fragments; Field pH 8 (Raupach); Common, very fine (0-1mm) roots; Clear, Wavy change to -
A22	0.15 - 0.2 m	Red (2.5YR5/6-Moist); Light reddish brown (5YR6/4-Dry); ; Sandy clay loam; Massive grade of structure; Earthy fabric; Moist; Very firm consistence; Moderately plastic; Normal plasticity; Slightly sticky; 10-20%, medium gravelly, 6-20mm, angular, dispersed, Quartz, coarse fragments; Field pH 8 (Raupach); Few, very fine (0-1mm) roots; Abrupt, Smooth change to -
B1	0.2 - 0.3 m	Yellowish red (5YR4/6-Moist); ; Sandy clay; Massive grade of structure; Rough-ped fabric; Moist; Very firm consistence; Very plastic; Normal plasticity; Moderately sticky; 0-2%, medium gravelly, 6-20mm, angular, dispersed, Quartz, coarse fragments; Field pH 7 (Raupach); Few, very fine (0-1mm) roots; Gradual, Smooth change to -
B21	0.3 - 0.4 m	Yellowish red (5YR5/6-Moist); Mottles, 5YR54, 10-20% , 0-5mm, Faint; , 5YR57, 10-20% , 0-5mm, Faint; Medium clay; Moderate grade of structure, 10-20 mm, Polyhedral; Strong grade of structure, 20-50 mm, Polyhedral; Rough-ped fabric; Fine, (0 - 5) mm crack; Moist; Very firm consistence; Very plastic; Normal plasticity; Moderately sticky; Common cutans, 10-50% of ped faces or walls coated, faint; Field pH 7 (Raupach); Few, fine (1-2mm) roots;
B21	0.4 - 0.5 m	Yellowish red (5YR5/6-Moist); Mottles, 5YR54, 10-20% , 0-5mm, Faint; , 5YR57, 10-20% , 0-5mm, Faint; Medium clay; Strong grade of structure, 20-50 mm, Angular blocky; Rough-ped fabric; Fine, (0 - 5) mm crack; Moist; Very firm consistence; Very plastic; Normal plasticity; Moderately sticky; Common cutans, 10-50% of ped faces or walls coated, faint; Field pH 7 (Raupach); Few, fine (1-2mm) roots; Gradual, Smooth change to -

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B22	0.5 - 0.6 m	Yellowish red (5YR5/6-Moist); Mottles, 5YR54, 10-20% , 0-5mm, Faint; Mottles, 5YR57, 10-20% , 0-5mm, Faint; Medium clay; Strong grade of structure, 20-50 mm, Angular blocky; Rough-ped fabric; Fine, (0 - 5) mm crack; Moist; Very firm consistence; Very plastic; Normal plasticity; Moderately sticky; Many cutans, >50% of ped faces or walls coated, distinct; Field pH 7 (Raupach); Few, fine (1-2mm) roots; Gradual, Smooth change to -
B23	0.6 - 0.8 m	Yellowish red (5YR5/6-Moist); Mottles, 7.5YR56, 20-50% , 5-15mm, Distinct; Silty clay loam; Moderate grade of structure, 20-50 mm, Angular blocky; Rough-ped fabric; Moist; Firm consistence; Very plastic; Normal plasticity; Moderately sticky; Many cutans, >50% of ped faces or walls coated, distinct; Field pH 6.5 (Raupach); Common, medium (2-5mm) roots; Gradual, Smooth change to -
BC	0.8 - 1.2 m	Red (2.5YR4/6-Moist); Mottles, 10YR57, 20-50% , 15-30mm, Distinct; Silty clay loam; Weak grade of structure, 10-20 mm; Rough-ped fabric; Moderately moist; Firm consistence; Very plastic; Normal plasticity; Moderately sticky; Few cutans, <10% of ped faces or walls coated, faint; Field pH 7 (Raupach); Few, medium (2-5mm) roots;
C1	1.2 - 1.5 m	Yellowish red (5YR4/6-Moist); Mottles, 10YR68, 10-20% , 15-30mm, Faint; Mottles, 7.5YR80, 10-20% , 15-30mm, Faint; Silty clay loam; Weak grade of structure; Rough-ped fabric; Moderately moist; Firm consistence; Very plastic; Normal plasticity; Moderately sticky; Few cutans, <10% of ped faces or walls coated, faint; Field pH 7 (Raupach); Few, medium (2-5mm) roots; Gradual, Smooth change to -
C2	1.5 - 1.7 m	Yellowish red (5YR4/6-Moist); Mottles, 10YR68, 20-50% , 15-30mm, Distinct; Silty clay loam; Weak grade of structure; Rough-ped fabric; Moderately moist; Firm consistence; Very plastic; Normal plasticity; Moderately sticky; Few cutans, <10% of ped faces or walls coated, faint; Field pH 7 (Raupach); Few, medium (2-5mm) roots; Diffuse, Smooth change to -
C3	1.7 - 2 m	Yellow (10YR7/6-Moist); Mottles, 7.5YR68, 20-50% , 15-30mm, Distinct; Silty clay loam; Weak grade of structure; Rough-ped fabric; Moderately moist; Firm consistence; Very plastic; Normal plasticity; Moderately sticky; Field pH 7 (Raupach); Gradual, Smooth change to -
R	- m	Rock

Morphological Notes

Observation Notes

Undisturbed Soloth - paired with M7

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Laboratory Test Results:

Depth	pH	1:5 EC	Ca	Exchangeable Mg	Cations K	Na	Exchangeable Acidity	CEC	ECEC	ESP
m		dS/m				Cmol (+)/kg				%
0 - 0.05	5C 5.3A	0.2A	24.8D	6.1	0.44	0.19		28L	31.5D	0.68
0.05 - 0.1	5.9C 6.1A	0.18A	29.8D	6	0.21	0.16		30.5L	36.2D	0.52
0.1 - 0.15	6.8C 7.1A	0.12A	15.5D	4.5	0.3	0.22		17.2L	20.5D	1.28
0.15 - 0.2	6.9C 7.3A	0.1A	4.4D	1.9	0.19	0.26		7.4L	6.7D	3.51
0.2 - 0.3	6.5C 6.9A	0.17A	3.9D	2.7	0.31	0.4		5.6L	7.3D	7.14
0.3 - 0.4	6.3C 6.7A	0.18A	3.3D	3.5	0.31	0.5		7.6L	7.6D	6.58
0.4 - 0.5	5.1C 5.5A	0.29A	2.6D	5.2	0.26	0.9		10.9L	9D	8.26
0.5 - 0.6	5.4C 5.8A	0.35A	2.5D	5.8	0.26	1.1		12.2L	9.6D	9.02
0.6 - 0.8	5.4C 5.9A	0.35A	2.2D	6.1	0.23	1.3		9.5L	9.8D	13.68
0.8 - 1.2	5.1C 5.5A	0.54A	0.97D	4.8	0.18	1.8		5.6L	7.8D	32.14
1.2 - 1.5	5.3C 5.7A	0.71A	0.45D	3.2	0.21	2.4		5.2L	6.2D	46.15
1.5 - 1.7	5.3C 5.8A	0.72A	0.66D	4.2	0.21	3.5		7.5L	8.5D	46.67
1.7 - 2	5.5C 6.2A	0.59A	0.31D	2.4	0.11	3.2		4.8L	6D	66.67

Depth	CaCO3	Organic C	Avail. P	Total P	Total N	Total K	Bulk Density	Particle GV	Size CS	Analysis FS	Silt	Clay
m	%	%	mg/kg	%	%	%	Mg/m3			%		
0 - 0.05	<0.1B	19.2A							9A	41	12	15
0.05 - 0.1	<0.1B	11.1A					0.75		5A	47	13	18
0.1 - 0.15	<0.1B	3.2A					1.19		6A	57	16	14
0.15 - 0.2	<0.1B	0.9A					1.64		13A	53	17	20
0.2 - 0.3	<0.1B	0.7A					1.77		8A	51	16	26
0.3 - 0.4	<0.1B	0.6A					1.61		3A	44	18	35
0.4 - 0.5	<0.1B	0.5A							1A	30	18	52
0.5 - 0.6	<0.1B	0.6A					1.56		0A	31	17	52
0.6 - 0.8	<0.1B	0.6A					1.59		1A	33	18	48
0.8 - 1.2	<0.1B	0.3A							1A	39	22	38
1.2 - 1.5	<0.1B	0.2A							2A	47	25	25
1.5 - 1.7	<0.1B	0.5A							2A	45	20	34
1.7 - 2	<0.1B	0.2A							2A	66	19	16

Depth	COLE	Gravimetric/Volumetric Water Contents						K sat	K unsat
m		Sat.	0.05 Bar	0.1 Bar	0.5 Bar	1 Bar	5 Bar	15 Bar	
			g/g - m3/m3						mm/h
0 - 0.05									
0.05 - 0.1	0.07A		0.25G					0.13F	

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0.1 - 0.15	0.02A	0.27G	0.09F
0.15 - 0.2	0.01A	0.31G	0.11F
0.2 - 0.3	0.02A	0.29G	0.15F
0.3 - 0.4	0.04A	0.35G	0.18F
0.4 - 0.5			
0.5 - 0.6	0.05A	0.36G	0.25F
0.6 - 0.8	0.05A	0.37G	0.26F
0.8 - 1.2			
1.2 - 1.5			
1.5 - 1.7			
1.7 - 2			

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Laboratory Analyses Completed for this profile

15B2_CA	Exchangeable bases (Ca ²⁺ ,Mg ²⁺ ,Na ⁺ ,K ⁺) - 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15B2_CEC	CEC - 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15B2_K	Exchangeable bases and CEC - 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15B2_MG	Exchangeable bases and CEC - 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15B2_NA	Exchangeable bases and CEC - 1M ammonium chloride at pH 7.0, pretreatment for soluble salts
15J_BASES	Sum of Bases
15N1	Exchangeable sodium percentage (ESP)
19B1	Carbonates - manometric
3A1	EC of 1:5 soil/water extract
4A1	pH of 1:5 soil/water suspension
4B2	pH of 1:5 soil/0.01M calcium chloride extract - following Method 4A1
5A2	Chloride - 1:5 soil/water extract, automated colour
6A1	Organic carbon - Walkley and Black
P10_CF_C	Clay (%) - Coventry and Fett pipette method
P10_CF_CS	Coarse sand (%) - Coventry and Fett pipette method
P10_CF_FS	Fine sand (%) - Coventry and Fett pipette method
P10_CF_Z	Silt (%) - Coventry and Fett pipette method
P3A1	Bulk density - g/cm ³
P3B2VL_15	15 BAR Moisture m ³ /m ³ - Volumetric using disturbed sample on pressure plate
P3B4VL_005	0.05 BAR Moisture m ³ /m ³ - Volumetric of soil clods (Soil Survey Staff,1967)
P5_COLE	Coefficient of Linear Extensibility (Grossman et al. 1968)