Project Name: **Soil Changes under Agriculture**
Project Code: **Paired** **Site ID:** **M3** **Observation ID:** **1**
Agency Name: **CSIRO Division of Soils (SA)**

Site Information

Desc. By: N.J. McKenzie
Date Desc.: 04/04/89
Map Ref.: Sheet No. : 6629 1:100000
Northing/Long.: 6214600 AMG zone: 54
Easting/Lat.: 288900 Datum: AGD66
Locality: S.E. Rhynie
Elevation: No Data
Rainfall: No Data
Runoff: No Data
Drainage: No Data

Geology

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

Land Form

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

Surface Soil Condition (dry):

Erosion:

Soil Classification

Australian Soil Classification:
N/A
ASC Confidence:
Confidence level not specified
Mapping Unit: N/A
Principal Profile Form: Ug5.37
Great Soil Group: Red-brown earth

Site Disturbance: Cultivation. Rainfed

Vegetation:

Surface Coarse Fragments:

Profile Morphology

A1	0 - 0.1 m	Dark reddish brown (5YR3/3-Moist); Yellowish red (5YR5/6-Dry); Mottles, 5YR56, 20-50% , 15-30mm, Distinct; Sandy clay loam, fine sandy; Moderate grade of structure, 20-50 mm, Granular; Strong grade of structure, 5-10 mm, Granular; Rough-ped fabric; Dry; Strong consistence; Field pH 7 (Raupach); Abrupt, Smooth change to -
B1	0.1 - 0.15 m	Red (2.5YR4/6-Moist); Mottles, 2.5YR44, 20-50% , 15-30mm, Distinct; Light medium clay; Strong grade of structure, 10-20 mm, Polyhedral; Rough-ped fabric; Dry; Strong consistence; Few cutans, <10% of ped faces or walls coated, distinct; Field pH 7.5 (Raupach); Clear, Smooth change to -
B21	0.15 - 0.2 m	Reddish brown (2.5YR4/4-Moist); Mottles, 2.5YR46, 2-10% , 15-30mm, Distinct; Heavy clay; Strong grade of structure, 100-200 mm, Prismatic; Smooth-ped fabric; Fine, (0 - 5) mm crack; Dry; Strong consistence; Many cutans, >50% of ped faces or walls coated, prominent; Field pH 8.5 (Raupach);
B21	0.2 - 0.3 m	Reddish brown (2.5YR4/4-Moist); ; Heavy clay; Strong grade of structure, 100-200 mm, Prismatic; Moderate grade of structure, 20-50 mm, Polyhedral; Smooth-ped fabric; Fine, (0 - 5) mm crack; Dry; Strong consistence; Many cutans, >50% of ped faces or walls coated, prominent; Field pH 8.5 (Raupach);
B21	0.3 - 0.35 m	Reddish brown (2.5YR4/4-Moist); ; Medium heavy clay; Strong grade of structure, 100-200 mm, Prismatic; Moderate grade of structure, 20-50 mm, Polyhedral; Smooth-ped fabric; Fine, (0 - 5) mm crack; Dry; Strong consistence; Many cutans, >50% of ped faces or walls coated, prominent; Field pH 8.5 (Raupach); Clear, Wavy change to -
B22	0.35 - 0.4 m	Red (2.5YR4/6-Moist); Mottles, 10-20% , 15-30mm, Prominent; Medium heavy clay; Moderate grade of structure, 10-20 mm, Polyhedral; Smooth-ped fabric; Moderately moist; Strong consistence; 10-20%, cobbly, 60-200mm, angular, stratified, Shale, coarse fragments; Many cutans, >50% of ped faces or walls coated, prominent; Common (10 - 20 %), Calcareous, Very coarse (20 - 60 mm), Soft segregations; Field pH 8.5 (Raupach); Clear, Wavy change to -
B3	0.4 - 0.5 m	Red (2.5YR4/6-Moist); Mottles, 7.5YR84, 20-50% , 30-mm, Prominent; Medium heavy clay; Weak grade of structure, 10-20 mm, Polyhedral; Smooth-ped fabric; Moderately moist; Very firm consistence; 20-50%, coarse gravelly, 20-60mm, angular platy, stratified, Shale, coarse fragments; Common cutans, 10-50% of ped faces or walls coated, prominent; Many (20 - 50 %), Calcareous, Fine (0 - 2 mm), Soft segregations; Field pH 8.5 (Raupach); Gradual, Smooth change to -

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BC	0.5 - 0.7 m	Yellowish red (5YR5/6-Moist); Mottles, 7.5YR84, 20-50% , 30-mm, Prominent; Medium heavy clay; Weak grade of structure, 2-5 mm, Polyhedral; Smooth-ped fabric; Moderately moist; 50-90%, cobbly, 60-200mm, angular platy, stratified, Shale, coarse fragments; Common cutans, 10-50% of ped faces or walls coated, prominent; Many (20 - 50 %), Calcareous, Fine (0 - 2 mm), Soft segregations; Field pH 8.5 (Raupach); Gradual, Smooth change to -
C	0.7 - 1.1 m	Red (2.5YR4/6-Moist); Mottles, 7.5YR84, 20-50% , 30-mm, Prominent; Moderately moist; 90-100%, cobbly, 60-200mm, angular platy, undisturbed, Shale, coarse fragments; Many (20 - 50 %), Calcareous, Fine (0 - 2 mm), Soft segregations; Field pH 8.5 (Raupach);
R	1.1 - m	Rock

Morphological Notes

Observation Notes

Disturbed Transitional Red-Brown Earth - paired with M4

Site Notes

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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 - 0.1	6.4C 6.6A	0.15A	6.1D	5.2	1.5	0.78		17.5L	13.5D	4.46
0.1 - 0.15	6.4C 7A	0.12A	5.7D	6.2	1.3	1.4		18.7L	14.6D	7.49
0.2 - 0.3	6.9C 7.6A	0.15A	8.5E	11.1	1.7	2.9		26.5B	24.2D	10.94
0.3 - 0.35	8.4C 9A	0.62A	7.6E	14.7	1.6	6		32.4B	29.9D	18.52
0.35 - 0.4	8.4C 9.1A	0.63A	7.2E	13.8	1.6	6.3		28.4B	28.8D	22.18
0.4 - 0.5	8.8C 9.4A	0.9A	7.8E	8.7	0.81	2.7		17.3B	20.1D	15.61
0.5 - 0.7	8.8C 9A	2.07A	7.8E	9.9	0.84	3.9		17B	22.4D	22.94

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	<0.1B	1.7A					1.45		2A	49	18	28
0.1 - 0.15	<0.1B	1A					1.37		2A	45	14	36
0.2 - 0.3	<0.1B	1A					1.24		1A	27	17	51
0.3 - 0.35	0.2B	0.6A							1A	24	13	62
0.35 - 0.4	1.4B	0.3A					1.29		1A	23	13	62
0.4 - 0.5	6.3B	0.3A							18A	22	32	28
0.5 - 0.7	1.8B	0.2A							10A	33	18	37

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	0.02A		0.32G					0.09F	
0.1 - 0.15	0.08A		0.4G					0.13F	
0.2 - 0.3	0.12A		0.48G					0.19F	
0.3 - 0.35									
0.35 - 0.4	0.11A		0.47G					0.23F	
0.4 - 0.5									
0.5 - 0.7									

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Laboratory Analyses Completed for this profile

15B2_CA	Exchangeable bases (Ca2+,Mg2+,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
15C1_CA	Exchangeable bases (Ca2+,Mg2+,Na+,K+) - alcoholic 1M ammonium chloride at pH 8.5, pretreatment for soluble salts
15C1_CEC	CEC - alcoholic 1M ammonium chloride at pH 8.5, pretreatment for soluble salts
15C1_K	Exchangeable bases and CEC - alcoholic 1M ammonium chloride at pH 8.5, pretreatment for soluble salts
15C1_MG	Exchangeable bases and CEC - alcoholic 1M ammonium chloride at pH 8.5, pretreatment for soluble salts
15C1_NA	Exchangeable bases and CEC - alcoholic 1M ammonium chloride at pH 8.5, 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/cm3
P3B2VL_15	15 BAR Moisture m3/m3 - Volumetric using disturbed sample on pressure plate
P3B4VL_005	0.05 BAR Moisture m3/m3 - Volumetric of soil clods (Soil Survey Staff,1967)
P5_COLE	Coefficient of Linear Extensibility (Grossman et al. 1968)