

**Project Name:** Rhynie Soil Survey  
**Project Code:** Rhynie **Site ID:** A1245 **Observation ID:** 1  
**Agency Name:** CSIRO Division of Soils (SA)

#### Site Information

<b>Desc. By:</b>	N.J. McKenzie	<b>Locality:</b>	
<b>Date Desc.:</b>	01/11/88	<b>Elevation:</b>	No Data
<b>Map Ref.:</b>	Sheet No. : 6629-18 1:10000	<b>Rainfall:</b>	No Data
<b>Northing/Long.:</b>	6216400 AMG zone: 54	<b>Runoff:</b>	No Data
<b>Easting/Lat.:</b>	289710 Datum: AGD66	<b>Drainage:</b>	No Data

#### Geology

<b>ExposureType:</b>	Undisturbed soil core	<b>Conf. Sub. is Parent. Mat.:</b>	No Data
<b>Geol. Ref.:</b>	No Data	<b>Substrate Material:</b>	No Data

#### Land Form

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

#### Surface Soil Condition (dry):

#### Erosion:

#### Soil Classification

<b>Australian Soil Classification:</b>		<b>Mapping Unit:</b>	N/A
N/A		<b>Principal Profile Form:</b>	N/A
<b>ASC Confidence:</b>		<b>Great Soil Group:</b>	N/A
Confidence level not specified			

#### Site Disturbance:

#### Vegetation:

#### Surface Coarse Fragments:

#### Profile Morphology

A1	0 - 0.06 m	Dark reddish brown (5YR3/2-Moist); ; Silty clay; Moderate grade of structure, 5-10 mm, Subangular blocky; Rough-ped fabric; Dry; Field pH 7.5 (Raupach); Sharp change to -
A2	0.06 - 0.1 m	Reddish brown (5YR4/4-Moist); Brown (7.5YR5/4-Dry); ; Loam; Massive grade of structure; Earthy fabric; Dry; Field pH 7.5 (Raupach);
A2	0.1 - 0.14 m	Reddish brown (5YR4/4-Moist); Brown (7.5YR5/4-Dry); ; Loam; Massive grade of structure; Earthy fabric; Dry; Field pH 7.5 (Raupach); Sharp change to -
B21	0.14 - 0.2 m	Dark reddish brown (5YR3/4-Moist); ; Strong grade of structure, 5-10 mm, Angular blocky; Smooth-ped fabric; Dry; Common cutans, 10-50% of ped faces or walls coated, distinct; Field pH 8 (Raupach); Clear change to -
B22	0.2 - 0.3 m	Dark reddish brown (5YR3/4-Moist); ; Strong grade of structure, 10-20 mm, Angular blocky; Smooth-ped fabric; Dry; Common cutans, 10-50% of ped faces or walls coated, distinct; Field pH 8.5 (Raupach); Gradual change to -
B23	0.3 - 0.4 m	Dark red (2.5YR3/6-Moist); , 2.5YR33, 2-10% , 5-15mm, Faint; Strong grade of structure, 20-50 mm, Angular blocky; Smooth-ped fabric; Dry; Common cutans, 10-50% of ped faces or walls coated, distinct; Field pH 9 (Raupach); Clear change to -
B24	0.4 - 0.5 m	Red (2.5YR4/6-Moist); ; Moderate grade of structure, 20-50 mm, Angular blocky; Smooth-ped fabric; Dry; Common cutans, 10-50% of ped faces or walls coated, distinct; Field pH 9 (Raupach); Clear change to -
B31	0.5 - 0.7 m	Yellowish red (5YR4/6-Moist); ; Massive grade of structure; Rough-ped fabric; Dry; Common cutans, 10-50% of ped faces or walls coated, faint; Many (20 - 50 %), Calcareous, Coarse (6 - 20 mm), Soft segregations; Field pH 9 (Raupach); Gradual change to -
B32	0.7 - 0.9 m	Light brown (7.5YR6/4-Moist); ; Massive grade of structure; Rough-ped fabric; Dry; Common cutans, 10-50% of ped faces or walls coated, faint; Common (10 - 20 %), Calcareous, Medium (2 - 6 mm), Soft segregations; Field pH 9 (Raupach);
B32	0.9 - 1.1 m	Light brown (7.5YR6/4-Moist); ; Massive grade of structure; Rough-ped fabric; Dry; Common cutans, 10-50% of ped faces or walls coated, faint; Common (10 - 20 %), Calcareous, Medium (2 - 6 mm), Soft segregations; Field pH 9 (Raupach);

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B32	1.1 - 1.3 m	Reddish yellow (5YR6/6-Moist); ; Massive grade of structure; Rough-ped fabric; Dry; Few cutans, <10% of ped faces or walls coated, distinct; Common (10 - 20 %), Calcareous, Medium (2 - 6 mm), Soft segregations; Field pH 9 (Raupach); Clear change to -
B33	1.3 - 1.55 m	Reddish yellow (7.5YR6/6-Moist); , 2.5YR56, 20-50% , 15-30mm, Prominent; Massive grade of structure; Rough-ped fabric; Dry; 20-50%, coarse gravelly, 20-60mm, rounded platy, Shale, coarse fragments; Common cutans, 10-50% of ped faces or walls coated, prominent; Many (20 - 50 %), Calcareous, Coarse (6 - 20 mm), Soft segregations; Field pH 9 (Raupach); Gradual change to -
BC	1.55 - 1.8 m	Yellowish brown (10YR5/4-Moist); ; Massive grade of structure; Rough-ped fabric; Dry; 20-50%, coarse gravelly, 20-60mm, rounded platy, Shale, coarse fragments; Common cutans, 10-50% of ped faces or walls coated, prominent; Many (20 - 50 %), Calcareous, Coarse (6 - 20 mm), Soft segregations; Field pH 9 (Raupach); Gradual change to -
C	1.8 - m	Yellowish brown (10YR5/4-Moist); ; Dry;

#### **Morphological Notes**

A1	An interesting profile. The A1 appears to be deposited. It is very dark and high in organic matter and silty clay.
A2	The A2 has very sharp upper and lower boundaries.
B21	The structural changes in the B are very clear and the consistence changes markedly. The B21 has a fine, strong AB structure and a high sorptivity, it swells instantaneously and any water is quickly absorbed.
B22	There is a very high sorptivity in the B2 horizon, but very low sorptivity in the B3. There is also a coarsening of sttructure down the profile.
B23	The mottle is due to the cutans.
B31	The B21 contrasts sharply with the B3 which may well be sodic, it is tough and massive with a more dull colour.
B32	The sand reduction occurs where the carbonate begins.
BC	Into Woolshed Flat Shale at depth.

#### **Observation Notes**

#### **Site Notes**

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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 - 0.06	7.27C	0.25A								
	7.52A									
0.06 - 0.14	7.54C	0.15A								
	7.87A									
0.1 - 0.14										
0.14 - 0.2	7.35C	0.13A								
	7.7A									
0.2 - 0.3	7.59C	0.2A								
	8.05A									
0.3 - 0.4	7.51C	0.13A								
	8.27A									
0.4 - 0.5	8.14C	0.23A								
	8.66A									
0.5 - 0.7	8.4C	0.43A								
	9.13A									
0.7 - 0.9										
0.9 - 1.1	8.44C	0.6A								
	9.32A									
1.1 - 1.3										
1.3 - 1.55	8.38C	0.52A								
	9.52A									
1.55 - 1.8										
1.8 -										

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 - 0.06												
0.06 - 0.14												
0.1 - 0.14												
0.14 - 0.2												
0.2 - 0.3												
0.3 - 0.4												
0.4 - 0.5												
0.5 - 0.7												
0.7 - 0.9												
0.9 - 1.1												
1.1 - 1.3												
1.3 - 1.55												
1.55 - 1.8												
1.8 -												

Depth	COLE	Sat.	Gravimetric/Volumetric Water Contents	15 Bar	K sat	K unsat
m			0.05 Bar 0.1 Bar 0.5 Bar 1 Bar 5 Bar		mm/h	mm/h
			g/g - m3/m3			
0 - 0.06						
0.06 - 0.14						
0.1 - 0.14						
0.14 - 0.2						
0.2 - 0.3						

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0.3 - 0.4  
0.4 - 0.5  
0.5 - 0.7  
0.7 - 0.9  
0.9 - 1.1  
1.1 - 1.3  
1.3 - 1.55  
1.55 - 1.8  
1.8 -

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**Laboratory Analyses Completed for this profile**

12C2	Calcium chloride extractable boron - ICPAES
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