

***AGRICULTURAL LAND CLASSIFICATION***

**Ernest Cook Trust and Gloucestershire County Council**

**Land at the Narles  
Slimbridge Estate  
Wisloe**



Our Ref: SES/ECT&GCC/NSEW/#1

Date: 13<sup>th</sup> September 2019

**Clients:**

Ernest Cook Trust	Gloucestershire County Council
Fairford Park	Shire Hall
Fairford	Westgate Street
Gloucestershire	Gloucester
GL7 4JH	GL12TG

***AGRICULTURAL LAND CLASSIFICATION***

**Land at the Narles  
Slimbridge Estate  
Wisloe**

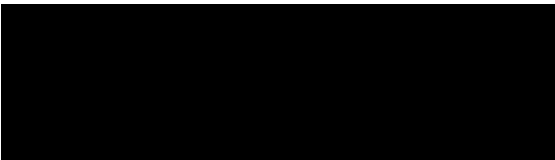
A report prepared on behalf of *Soil Environment Services* by:



Environmental Consultant

Attended the *Agricultural Land Classification England and Wales Soil Training Event* (November 2018) and the *Introduction to Soil Classification Training Event* (June 2016) organised by BSSS.

Approved by:



Managing Director

*This report has been prepared by Soil Environment Services with all reasonable skill, care and diligence, within the terms of The Contract with The Client. The report is the property of The Client who can assign this report to any third party who will then be afforded the same assurances as detailed within the terms of the original Contract with The Client.*

---

**Soil Environment Services**

Agricultural Land Classification, Contaminated Land  
Risk Assessment, Mineral Extraction Soil Planning  
Unit 8, Stocksfield Hall, Stocksfield, Northumberland, NE43 7TN  
Tel: 01661 844 827, Email: rd@soilenvironmental.co.uk

[www.soilenvironmental.co.uk](http://www.soilenvironmental.co.uk)

---

# CONTENTS

	<b>Page</b>
<b>1. INTRODUCTION</b>	<b>4</b>
<b>2. METHODOLOGY</b>	<b>5</b>
<b>3. BASELINE CONDITIONS</b>	<b>6</b>
<b>3.1. Climate and flooding</b>	<b>6</b>
<b>3.2. Soils, geology and topography</b>	<b>8</b>
<b>4. FIELDWORK RESULTS</b>	<b>10</b>
<b>4.1. Description of soil types</b>	<b>10</b>
<b>4.2. Field study photographs</b>	<b>11</b>
<b>4.3. In-field wetness class assessment</b>	<b>12</b>
<b>5. AGRICULTURAL LAND CLASSIFICATION (ALC)</b>	<b>13</b>
<b>5.1. National 1:250 000 map ALC grading</b>	<b>13</b>
<b>5.2. Current ALC grading</b>	<b>13</b>

## **DRAWINGS**

    ALC/1          ALC Grade

**APPENDIX A**          Climatological data for agricultural land classification

**APPENDIX B**          Survey profile data sheet

## **INFORMATION SOURCES**

## 1. INTRODUCTION

An Agricultural Land Classification (ALC)<sup>1</sup> has been carried out on 77 ha of land located at the Narles, Slimbridge Estate, Wisloe (Drawing ALC/1). The site is centred on OS Grid Ref. 374813, 202590.

Agricultural land is classified into the following grades according to the 1988 guidelines<sup>1</sup>.

Grade	Description
1	<b>Excellent quality agricultural land</b> with no or very minor limitations to agricultural use.
2	<b>Very good quality agricultural land</b> with minor limitations which affect crop yield, cultivation or harvesting.
3a	<b>Good quality agricultural land</b> capable of producing moderate to high yields of a narrow range of arable crops or moderate yields of a wider range of crops.
3b	<b>Moderate quality agricultural land</b> capable of producing moderate yields of a narrow range of crops or lower yields of a wider range of crops.
4	<b>Poor quality agricultural land</b> with severe limitations which significantly restrict the range of crops and/or level of yields.
5	<b>Very poor quality agricultural land</b> with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

The survey was conducted on the 3<sup>rd</sup> and 4<sup>th</sup> September 2019 and classifies the land into one or more of the above grades.

On the survey date the majority of site was in a recently cut arable crop or grassland for grazing horses.

### Statement of competence

The survey was undertaken by Rebecca Jordan BSc MSc, an Environmental Consultant who is a member of BSSS with 3 years ALC survey experience and has attended the *Agricultural Land Classification: England and Wales Training Event* (November 2018) and the *Introduction to Soil Classification Training Event* (June 2016) organised by BSSS. The report was checked by Dr Robin Davies who has been a member of the BSSS for over 30 years, the IPSS since it was formed in 1991 and has been undertaking ALC surveys for 25 years.

## 2. METHODOLOGY

The classification includes an initial desktop investigation to examine previously mapped soil types and to note the drift and solid geology. This included consultation from:

*Soil Survey of England and Wales 1:250 000<sup>4</sup>*  
*British Geological Survey 1:50 000 solid and drift map<sup>8</sup>*

The field survey consisted of hand auger borings to a depth of 1.2 m (where possible) to examine soil profiles on a 100 m grid (1 boring per hectare) using standard soil survey methods<sup>2</sup>. Pit excavations were conducted to determine sub soil structure where necessary. This data was used to map the principal soil types for determining the ALC. The soil removed during augering and pit excavations was examined in accordance with:

*Soil Survey Field Handbook<sup>2</sup>*  
*Describing and Sampling Soil Profiles*  
*Soil Survey of England and Wales, Technical Monograph No. 5, 1976*

*Soil Classification for Soil Survey<sup>9</sup>*  
*Monographs on Soil Survey*  
*Butler, B E (1980) Clarendon Press, Oxford*

Climatological data<sup>3</sup> was used to determine the overriding site limitation and for interaction with soil parameters (Appendix A). The above information was cross referenced with geological surveys<sup>8</sup>, previous soil surveys<sup>10</sup> and the national 1:250 000 series ALC survey<sup>4</sup> relevant for this site to substantiate the findings. The ALC grade was then determined for this site and for the current survey and is detailed in Drawing ALC/1.

### 3. BASELINE CONDITIONS

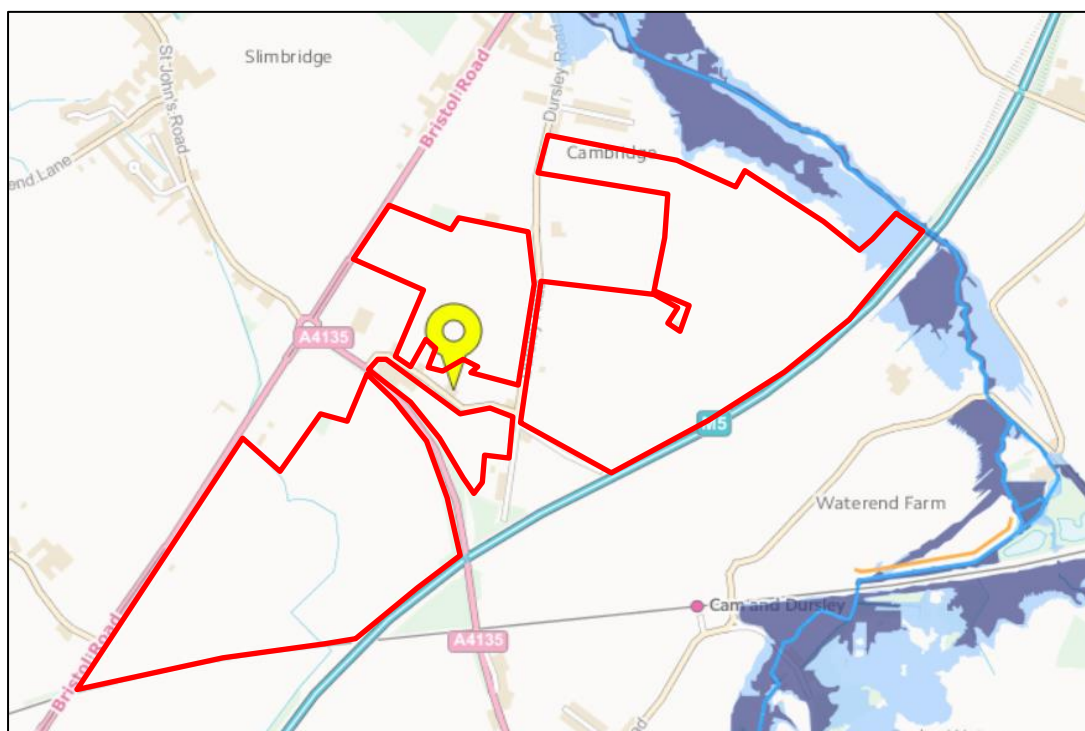
#### 3.1. Climate and flooding

The climatological data (Table 1) indicates slightly above average temperature, average rainfall and an average number of field capacity days for the region.

<b>Table 1a</b>		
<b>Climatological information<sup>3</sup></b>		
<b>Factor</b>	<b>Units</b>	<b>Value</b>
Altitude AOD	m	19
Accumulated temperature	day°C (Jan-June)	1511.2
Average Annual Rainfall	mm	790.4
Field Capacity Days	days	175.3
Moisture Deficit Wheat	mm	101.2
Moisture Deficit Potatoes	mm	93.5

The majority of the site is not mapped within a flood risk area, with the exception of the north east corner of the site which is mapped as Flood Zone 2 flood risk area<sup>7</sup>.

Environment Agency Risk of Flooding from Rivers and Sea Map (1:10,000 scale, 2019)



For the purpose of this report, the terms used by the Environment Agency to categorise flood risk have been changed to match terms used by MAFF. This is to allow an agricultural classification grade to be determined for the site based on flood risk. The classifications have been found to correspond as follows:

- Environment Agency Zone 3a High Probability – MAFF Frequent
- Environment Agency Zone 3b Functional Floodplain – MAFF Frequent
- Environment Agency Zone 2 Medium Probability – MAFF Occasional
- Environment Agency Zone 1 Low Probability – MAFF Rare to Very Rare

The total site area affected by the Zone 2 Medium Probability flooding is approximately 0.6 ha (Table 1b).

**Table 1b. ALC Grade according to flood risk**

**WINTER Mid November to mid March**

ALC Grade	Frequency	Duration	Approx. Area affected (m <sup>2</sup> )
1	rare	short	
2	rare	medium	
2	occasional	short	
3a	rare	long	
3a	occasional	medium	6,000.00
3a	frequent	short	
3b	occasional	long	
3b	frequent	medium	
4	frequent	long	

**SUMMER Mid March to mid November**

ALC Grade	Frequency	Duration	Approx. Area affected (m <sup>2</sup> )
1	very rare	short	NA
2	rare	short	NA
3a	very rare	medium or long	NA
3a	rare	medium	NA
3a	occasional	short	NA
3b	rare	long	NA
3b	occasional	medium	NA
4	occasional	long	NA
4	frequent	short or medium	NA
5	frequent	long	NA

MAFF Frequency definitions	
very rare	< 1 in 15 year
rare	1 in 10 -14 year
occasional	1 in 3 - 9 year
frequent	> 1 in 3 year

Duration definitions	
short	<48 hrs
medium	2 to 4 days
long	> 4 days

## **3.2. Soils, geology and topography**

### **3.2.1. Soils**

The site has previously been mapped as having soils of the *Badsey 1 Association*<sup>4,5</sup>.

One general soil type was noted for the purposes of ALC grading.

This study has identified the soils to be clay loams over sandy clay loams and sandy gravels to depth.

### **3.2.2. Geology<sup>8</sup>**

#### **Superficial Geology**

Majority of the site

*1:50 000 scale superficial deposits description: Cheltenham Sand And Gravel - Sand And Gravel. Superficial Deposits formed up to 3 million years ago in the Quaternary Period. Local environment previously dominated by subaerial slopes (U).*

North and south

*None recorded*

North

*1:50 000 scale superficial deposits description: Alluvium - Clay, Silt, Sand And Gravel. Superficial Deposits formed up to 2 million years ago in the Quaternary Period. Local environment previously dominated by rivers (U).*

#### **Bedrock Geology**

*1:50 000 scale bedrock geology description: Blue Lias Formation And Charmouth Mudstone Formation (undifferentiated) - Mudstone. Sedimentary Bedrock formed approximately 183 to 210 million years ago in the Jurassic and Triassic Periods. Local environment previously dominated by shallow lime-mud seas.*



### **3.2.3. Topography**

The slope measured on site was a maximum of 4° and hence gradient will not limit the ALC Grade for the site.

No significant variation in microrelief was noted on the site.

## 4. FIELDWORK RESULTS

### 4.1. Descriptions of soil types

The soils across the site were noted as clay loams over sandy clay loams and sandy gravels. Full profile data is listed in Appendix B.

A summary of the features of the soil type/s are listed in Table 2 and locations are shown within Drawing ALC/1.

<b>Table 2. Soil Type descriptions</b>			
<b>Profile</b>	<b>Soil types</b>		
<b>Description</b>	<b>Type 1</b>		
Horizon 1 (topsoil)	0-25 cm Light olive brown (2.5Y 5/4) slightly stony clay loam, no mottles; friable weak fine subangular blocky structure.		
Horizon 2 (subsoil 1)	25-50cm Yellowish brown (10YR 5/4) slightly stony clay loam, few fine ochreous mottles; firm weak medium angular blocky structure.		
Horizon 3 (subsoil 2)	50-55 cm Olive yellow (2.5Y 6/6) moderately stony sandy clay loam, few fine ochreous mottles; single grain structure.		
Horizon 4 (subsoil 3)	55 cm Boring terminated due to stoniness.		
<p>Survey points (Drawing ALC/1) and soil types: Borings/ Trial Pits</p> <p>Type 1 soil = 1-77</p> <p>Notes: Some depth variation occurred across the site (see Appendix B).</p>			

## 4.2. Field study photographs

**Photo 1. Boring location 5 – Profile of Soil Type 1**



**Photo 2. Boring location 51 – Profile of Soil Type 1**



NB Photographs of auger borings are included for an illustration of horizons, to verify profile depth and provide an indication of colour but are not intended to verify any structure.

**Photo 3. Pit 19 – Soil Type 1**



**Photo 4. Subsoil 1 of Pit 19 - Soil Type 1**



### 4.3. In-field wetness class assessment

An in-field wetness assessment was conducted for the soil types (Table 3).

<b>Table 3. In-field Wetness Class Assessment</b>						
<b>Soil Type</b>	<b>Feature</b>	<b>Parameters</b>	<b>Findings</b>	<b>WC</b>		
1	Site conditions	Undisturbed/ disturbed	Undisturbed	IV		
		FCD	175.3			
	Potential Slowly Permeable Layer (SPL)	Horizon depth (cm)	25-50			
		Texture	CL			
		Structure	FWMAB			
		Biopores > 0.5 mm (%)	< 0.5			
		Evidence of wetness	Mottles			
	Potential Gleyed Horizon	Matrix colour	Brownish – 10YR 5/4			
		Ped faces colour	Pale – 10YR 5/3			
		Mottles	Ochreous – 10YR 4/6			
		Depth to gleying (cm)	25			
	<b>Reference in ALC guidelines – Figure 7</b>					
	<p><b>Key</b>                      FCD – Field Capacity Days                      CL – Clay Loam                      WC – Wetness Class                      FWMAB – Firm Weak Medium Angular Blocky</p> <p><b>Notes:</b></p>					

## 5. AGRICULTURAL LAND CLASSIFICATION

### 5.1. National 1:250 000 map grading

Grading on the MAFF (1983) 1: 250 000 map<sup>7</sup> indicated the site was mapped as **ALC Grades 2 and 3**. Two detailed ALCs have been undertaken for land to the south of the site (ALCB/87/97 and ALCB/88/97). The surveys identified the land as Grades 2, 3a, 3b and 4.

### 5.2. Current grading

This survey has resulted in an Agricultural Land Classification of the following grades (Drawing ALC/1):

<b>Grade</b>	<b>Area</b>		<b>Limitation</b>
1			
2			
3a			
3b	76.2 ha	98.9%	Type 1 Soils – Wetness Limitation
4			
5			
Non-agricultural land	0.8	1.1%	Stables
<b>Total</b>	<b>77 ha</b>	<b>100%</b>	

#### ***Type 1 soils – Wetness limitation***

The combination of the topsoil texture (medium clay loam), Wetness Class (IV) and the number of Field Capacity Days (175.3) results in **ALC Grade 3b** for Type 1 soils.


# **DRAWING ALC/1**

**ALC Grade**

**Key**

 Moderate quality – 3b

 Non Agricultural

 Boring Location

# Soil Environment Services

Drawing Title: ALC Grade

Drawing No.: ALC/1

Scale: 1:11345

Date: 04/09/2019



# **APPENDIX A**

**Climatological data for**  
*Agricultural Land Classification*





## Droughtiness (moisture balance) determination for each soil type and restored profile

Moisture availability data for each texture from MAFF ALC Guidelines 1988

Moisture Balance (MB) = AP - MD for wheat and potatoes (adjusted for stones)

	Horizon	Type 1		Type 2		Type 3	
		texture	water	texture	water	texture	water
TAvt - Topsoil water available (mm)		CL	16.98	0	0.00	0	0.00
LTt - Topsoil thickness (cm)		0	25.00	0	0.00	0	0.00
TAvs - Subsoil total available	1	CL	11.12	0	0.00	0	0.00
	2	SCL	11.20	0	0.00	0	0.00
	3	LST	3.96	0	0.00	0	0.00
	4	0	0.00	0	0.00	0	0.00
EAvs - Subsoil (SS) easily available	1	CL	6.48	0	0.00	0	0.00
	2	SCL	7.00	0	0.00	0	0.00
	3	LST	2.88	0	0.00	0	0.00
	4	0	0.00	0	0.00	0	0.00
LT50 - Thickness ss layers to 50cm	1	CL	25.00	0	0.00	0	0.00
	2	SCL	0.00	0	0.00	0	0.00
	3	LST	0.00	0	0.00	0	0.00
	4	0	0.00	0	0.00	0	0.00
LT120 - Thickness ss layers 50 to 120cm	1	CL	0.00	0	0.00	0	0.00
	2	SCL	5.00	0	0.00	0	0.00
	3	LST	65.00	0	0.00	0	0.00
	4	0	0.00	0	0.00	0	0.00
LT0 - Thickness ss layers to 70cm	1	CL	25.00	0	0.00	0	0.00
	2	SCL	5.00	0	0.00	0	0.00
	3	LST	15.00	0	0.00	0	0.00
	4	0	0.00	0	0.00	0	0.00
Total profile thickness for soil type cm		0	120	0	0	0	0

### SOIL Droughtiness (moisture balance) results

Type 1

Grade

Results

AP wheat =

92.5

Moisture balance wheat =

-8.7 3a

AP potatoes =

75.8

Moisture balance potatoes =

-17.7 3a

Notes

ALC Grade	Moisture Balance Limits	
	wheat	potatoes
1	30	10
2	5	-10
3a	-20	-30
3b	-50	-55
4	<-50	<-55

# **APPENDIX B**

## **Site Survey Field Notes**

## ALC Survey Profile Data Sheet

Site: Land at the Narles Slimbridge Estate Wisloe

Boring no.	Topsoil						Subsoil 1						Subsoil 2						Subsoil 2					
	Depth (cm)	Texture	Colour (Munsell)	Stoniness (%)	Mottles	Structure	Depth (cm)	Texture	Colour (Munsell)	Stoniness (%)	Mottles	Structure	Depth (cm)	Texture	Colour (Munsell)	Stoniness (%)	Mottles	Structure	Depth (cm)	Texture	Colour (Munsell)	Stoniness (%)	Mottles	Structure
1	0-25	CL	2.5Y 5/4	4	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	23	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
2	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FMO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
3	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	59	FFO	FrSG
4	0-25	CL	2.5Y 5/4	5	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
5	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	12	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FMO	FrSG
6	0-35	CL	2.5Y 5/4	6	No	FrWFSAB	35-40	CL	10YR 5/4	8	FFO	FWMAB	40-45	SCL	2.5Y 6/6	25	FFO	FrSG	45	SCL	2.5Y 6/6	60	FFO	FrSG
7	0-25	CL	2.5Y 5/4	8	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	59	FFO	FrSG
8	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
9	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	11	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
10	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
11	0-25	CL	2.5Y 5/4	9	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
12	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	9	FFO	FWMAB	50-55	SCL	2.5Y 6/6	18	FFO	FrSG	55	SCL	2.5Y 6/6	59	FFO	FrSG
13	0-35	CL	2.5Y 5/4	6	No	FrWFSAB	35-40	CL	10YR 5/4	8	FFO	FWMAB	40-45	SCL	2.5Y 6/6	20	FFO	FrSG	45	SCL	2.5Y 6/6	60	FFO	FrSG
14	0-35	CL	2.5Y 5/4	8	No	FrWFSAB	35-40	CL	10YR 5/4	8	FFO	FWMAB	40-45	SCL	2.5Y 6/6	20	FFO	FrSG	45	SCL	2.5Y 6/6	60	FMO	FrSG
15	0-35	CL	2.5Y 5/4	6	No	FrWFSAB	35-40	CL	10YR 5/4	8	FFO	FWMAB	40-45	SCL	2.5Y 6/6	20	FMO	FrSG	45	SCL	2.5Y 6/6	60	FFO	FrSG
16	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
17	0-25	CL	2.5Y 5/4	7	No	FrWFSAB	25-50	CL	10YR 5/4	7	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
18	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	17	FFO	FrSG	55	SCL	2.5Y 6/6	59	FFO	FrSG
19	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
20	0-25	CL	2.5Y 5/4	9	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
21	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	6	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
22	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	58	FFO	FrSG
23	0-25	CL	2.5Y 5/4	8	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	21	FMO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
24	0-35	CL	2.5Y 5/4	6	No	FrWFSAB	35-40	CL	10YR 5/4	7	FFO	FWMAB	40-45	SCL	2.5Y 6/6	20	FFO	FrSG	45	SCL	2.5Y 6/6	60	FFO	FrSG
25	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
26	0-35	CL	2.5Y 5/4	6	No	FrWFSAB	35-40	CL	10YR 5/4	9	FFO	FWMAB	40-45	SCL	2.5Y 6/6	20	FFO	FrSG	45	SCL	2.5Y 6/6	60	FFO	FrSG
27	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FMO	FrSG
28	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	22	FFO	FrSG	55	SCL	2.5Y 6/6	66	FFO	FrSG
29	0-25	CL	2.5Y 5/4	8	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	59	FFO	FrSG
30	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
31	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	59	FFO	FrSG
32	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
33	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FMO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
34	0-35	CL	2.5Y 5/4	6	No	FrWFSAB	35-40	CL	10YR 5/4	8	FFO	FWMAB	40-45	SCL	2.5Y 6/6	20	FFO	FrSG	45	SCL	2.5Y 6/6	68	FFO	FrSG
35	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	29	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
36	0-25	CL	2.5Y 5/4	9	FFO	FrWFSAB	25-50	CL	10YR 5/4	12	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
37	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	11	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
38	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	59	FFO	FrSG
39	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
40	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	28	FMO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG

41	0-25	CL	2.5Y 5/4	7	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
42	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
43	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	9	FFO	FWMAB	50-55	SCL	2.5Y 6/6	24	FFO	FrSG	55	SCL	2.5Y 6/6	61	FFO	FrSG
44	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	58	FFO	FrSG
45	0-25	CL	2.5Y 5/4	5	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
46	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FMO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
47	0-35	CL	2.5Y 5/4	6	No	FrWFSAB	35-40	CL	10YR 5/4	8	FFO	FWMAB	40-45	SCL	2.5Y 6/6	23	FFO	FrSG	45	SCL	2.5Y 6/6	60	FFO	FrSG
48	0-35	CL	2.5Y 5/4	6	No	FrWFSAB	35-40	CL	10YR 5/4	8	FFO	FWMAB	40-45	SCL	2.5Y 6/6	20	FFO	FrSG	45	SCL	2.5Y 6/6	60	FFO	FrSG
49	0-25	CL	2.5Y 5/4	8	No	FrWFSAB	25-50	CL	10YR 5/4	7	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	57	FFO	FrSG
50	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	63	FFO	FrSG
51	0-35	CL	2.5Y 5/4	6	No	FrWFSAB	35-40	CL	10YR 5/4	8	FFO	FWMAB	40-45	SCL	2.5Y 6/6	18	FFO	FrSG	45	SCL	2.5Y 6/6	60	FFO	FrSG
52	0-25	CL	2.5Y 5/4	4	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
53	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
54	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	22	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
55	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
56	0-35	CL	2.5Y 5/4	8	No	FrWFSAB	35-40	CL	10YR 5/4	8	FFO	FWMAB	40-45	SCL	2.5Y 6/6	20	FFO	FrSG	45	SCL	2.5Y 6/6	60	FFO	FrSG
57	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
58	0-35	CL	2.5Y 5/4	6	No	FrWFSAB	35-40	CL	10YR 5/4	8	FFO	FWMAB	40-45	SCL	2.5Y 6/6	20	FFO	FrSG	45	SCL	2.5Y 6/6	60	FFO	FrSG
59	0-25	CL	2.5Y 5/4	6	FFO	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
60	0-25	CL	2.5Y 5/4	8	No	FrWFSAB	25-50	CL	10YR 5/4	12	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
61	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	21	FFO	FrSG	55	SCL	2.5Y 6/6	64	FFO	FrSG
62	0-25	CL	2.5Y 5/4	7	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
63	0-35	CL	2.5Y 5/4	6	No	FrWFSAB	35-40	CL	10YR 5/4	8	FFO	FWMAB	40-45	SCL	2.5Y 6/6	20	FFO	FrSG	45	SCL	2.5Y 6/6	60	FFO	FrSG
64	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
65	0-25	CL	2.5Y 5/4	7	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	65	FFO	FrSG
66	0-25	CL	2.5Y 5/4	8	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	23	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
67	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	11	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
68	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	58	FFO	FrSG
69	0-35	CL	2.5Y 5/4	7	No	FrWFSAB	35-40	CL	10YR 5/4	8	FFO	FWMAB	40-45	SCL	2.5Y 6/6	20	FFO	FrSG	45	SCL	2.5Y 6/6	60	FFO	FrSG
70	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	7	FFO	FWMAB	50-55	SCL	2.5Y 6/6	22	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
71	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
72	0-25	CL	2.5Y 5/4	6	No	FrWFSAB	25-50	CL	10YR 5/4	6	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	60	FFO	FrSG
73	0-25	CL	2.5Y 5/4	8	No	FrWFSAB	25-50	CL	10YR 5/4	8	FFO	FWMAB	50-55	SCL	2.5Y 6/6	20	FFO	FrSG	55	SCL	2.5Y 6/6	57	FFO	FrSG
74	0-35	CL	2.5Y 5/4	6	No	FrWFSAB	35-40	CL	10YR 5/4	8	FFO	FWMAB	40-45	SCL	2.5Y 6/6	20	FFO	FrSG	45	SCL	2.5Y 6/6	60	FFO	FrSG
75	0-35	CL	2.5Y 5/4	6	No	FrWFSAB	35-40	CL	10YR 5/4	11	FFO	FWMAB	40-45	SCL	2.5Y 6/6	21	FFO	FrSG	45	SCL	2.5Y 6/6	60	FFO	FrSG
76	0-35	CL	2.5Y 5/4	6	No	FrWFSAB	35-40	CL	10YR 5/4	8	FFO	FWMAB	40-45	SCL	2.5Y 6/6	20	FFO	FrSG	45	SCL	2.5Y 6/6	59	FFO	FrSG
77	0-35	CL	2.5Y 5/4	9	No	FrWFSAB	35-40	CL	10YR 5/4	9	FFO	FWMAB	40-45	SCL	2.5Y 6/6	20	FFO	FrSG	45	SCL	2.5Y 6/6	60	FFO	FrSG
78	0-35	CL	2.5Y 5/4	6	No	FrWFSAB	35-40	CL	10YR 5/4	8	FFO	FWMAB	40-45	SCL	2.5Y 6/6	18	FFO	FrSG	45	SCL	2.5Y 6/6	70	FFO	FrSG

Key:  
CL - Clay Loam  
SCL - Sandy Clay Loam

No - No Mottles  
FFO - Few Fine Ochreous  
FMO - Few Medium Ochreous

FrWFSAB - Friable Weak Fine Subangular Blocky  
FWMAB - Firm Weak Medium Angular Blocky  
FrSG - Friable Single Grain

## INFORMATION SOURCES

1. *Agricultural Land Classification of England and Wales*. Guidance and criteria for grading the quality of agricultural land. MAFF. 1988.
2. *Soil Survey Field Handbook*. Technical Monograph No.5. Soil Survey of England and Wales.1976.
3. *Climatological Data for Agricultural Land Classification*, The Met. Office 1989
4. *Soil Map of England and Wales: 1:250 000*. Soil Survey of England and Wales, Harpenden.
5. *Soils and Their Use in Midland and Western England*. Soil Survey of England and Wales, Harpenden.
6. *Agricultural Land Classification Map* 1:250 000. MAFF 1983.
7. *Risk of Flooding from Rivers and Sea: 1:15 000*. Environment Agency
8. *Geology of Britain Viewer*. Reproduced with the permission of the British Geological Survey ©NERC. All rights Reserved
9. *Butler, B E. Soil Classification for Soil Survey Monographs on Soil Survey (1980)* Clarendon Press, Oxford