Soil Environment Services Ltd

AGRICULTURAL LAND CLASSIFICATION

Enzygo Limited

Ford Oaks Solar & Green Infrastructure Facility

Soil Environment Services Ltd
April 2022

Our Ref: SES/EG/FOS/#4 **Date: 29th April 2022**

Client:

Enzygo Ltd
The Byre
Woodend Lane
Cromhall
GL12 8AA

AGRICULTURAL LAND CLASSIFICATION

Ford Oaks Solar & Green Infrastructure Facility

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

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CONTENTS

1. INTRODUCTION

An Agricultural Land Classification (ALC) has been carried out on 87 ha of land at the Ford Oaks Solar & Green Infrastructure site, Quarter Mile Lane (Drawing 1). The site is centred on OS Grid Ref 303724,093436.

The survey was conducted on the 15th July 2021 and classified the land into one or more of the below grades.

1.1 Methodology

Agricultural land is classified into the following grades according to the 1988 guidelines[1].

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

The classification includes an initial desktop investigation to examine previously mapped soil types and to note the drift and solid geology followed by the field survey consisting of auger borings at one every 100 m in general and a pit excavated in each of the main soil types to confirm the structures and stone content if needed. Additional observation points have been included on the client's request. Laboratory analysis of soil textures is undertaken if needed in order to confirm textures such the *heavy/medium* clay and *medium/fine* sand categories or stone content. All site survey profile data is listed in Appendix A.

All of the potential limitations are assessed and then the most limiting factor dictating the ALC grade was determined for this site and is detailed in Table 2.

1.2 Previous ALC gradings

Grading on the MAFF (1983) 1: 250 000 map indicated the site is mapped as ALC Grade 3. No detailed ALC survey has been undertaken.

2. CLIMATIC LIMITATIONS

2.1 Overall climate

The climatological data for the entire site centre is detailed in Table 1.

Table 1
Climatological information[3]

Factor	Units	Value
Altitude AOD	m	60
Accumulated temperature	day°C (Jan-June)	1527.6
Average Annual Rainfall	mm	812.5
Field Capacity Days	days	171.2
Moisture Deficit Wheat	mm	109.2
Moisture Deficit Potatoes	mm	102.5
Overall climate ALC Grade	Grade 1	

Overall climate will not result in the most significant limiting factor for this site.

2.2. Local climate

Local climate will not result in a significant limiting factor for this site.

3 SITE LIMITATIONS

3.1 Gradient

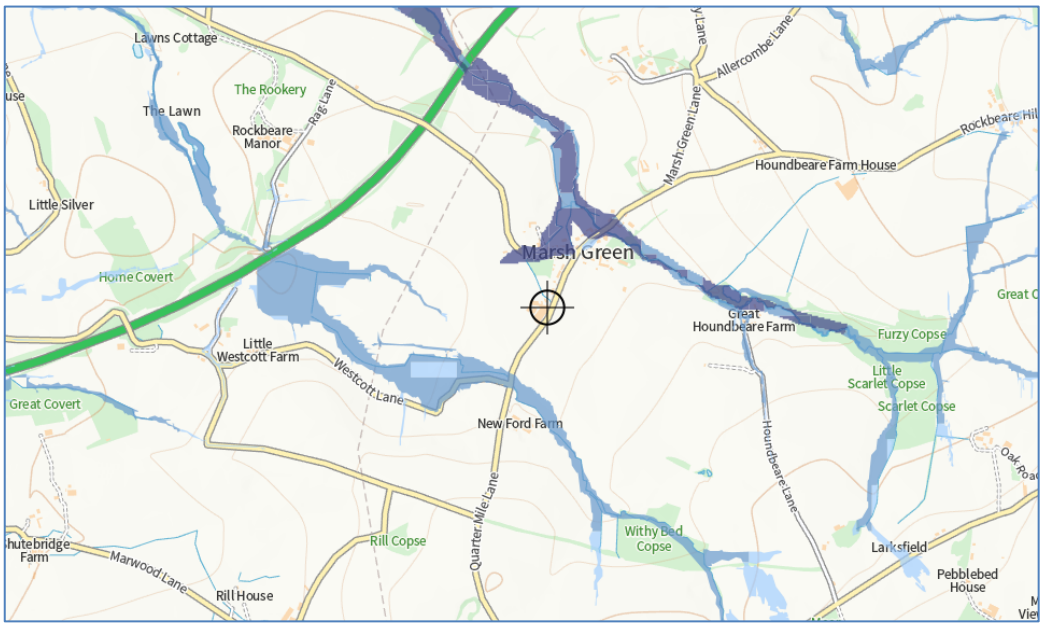
The gradient will result in a significant limiting factor for just two locations at the site: Borings 46 and 55 with a Grade of 3b.

3.2 Microrelief

The microrelief will not result in a significant limiting factor for this site.

3.3 Flooding

No significant risk of flooding from surface water or from rivers or sea has been identified following consultation of the below and the farmer of the land near the stream (https://flood-warning-information.service.gov.uk/long-term-flood-risk).



4 SOIL LIMITATIONS

4.1 Texture and structure

The textures noted across the site were generally medium clay loams over clay loam or heavy clay loam. Some slight variation exists with silty clay topsoils or heavy clay loam topsoils in places.

The soil structure is generally coarse prismatic or angular blocky below about 40-45 cm depth.

The site has previously been mapped as having soils of the Whimple Association throughout the site or Brockhurst Association along the site centre near the stream. Both are fine loamy with impeded drainage.

Superficial Geology 1:50 000 scale superficial deposits description
Head, 1 - Clay, Silt, Sand And Gravel in three (E to W) bands across the site from north to south and Alluvium - Clay, Silt, Sand And Gravel along the central stream.

Bedrock Geology *1:50 000 scale bedrock geology description:*
Aylesbeare Mudstone Group - Mudstone. Sedimentary Bedrock.

4.2 Depth

Soil depth will not result in a significant limiting factor for this site.

4.3 Stoniness

Stoniness is not a direct significant limiting factor for soils noted on site.

4.4 Chemical

Chemical contamination will not result in a significant limiting factor for this site.

5. INTERACTIVE LIMITATIONS

5.1 Wetness

In general the soils have a slowly permeable layer (SPL) within of 40-45 cm of the surface with gleying from around 30 cm depth . This results in a Wetness Class (WC) of IV given the Field Capacity Days and will produce an ALC Grade of 3b with either heavy or medium clay loam soils.

The deep silty clay soils along the stream do not exhibit any gleying so as WC I, this results in Grade 3a with the silty clay topsoils.

5.2. Droughtiness

The Available Water Capacity which subsequently when considered with respect to the Moisture Deficit for wheat and potatoes resulted in a Droughtiness limitation and ALC Grade 2 across the site in general.

5.3 Erosion

Erosion will not result in a significant limiting factor for this site.

6. AGRICULTURAL LAND CLASSIFICATION

6.1 Most limiting factor/s

Wetness is the main limiting factor at the site with a Grade 3b across most of the site and 3a on the well drained silty land near the central stream. A small area of land also, jointly, limits the land to Grade 3b due to gradient.

6.2 Current grading

This survey has resulted in an Agricultural Land Classification of the following grades (Table 2 and Drawing 1):

Table 2. ALC gradings and limitations

Grade	ha	%	Limitation
1			
2			
3a	7	8.0	Wetness
3b	80	92.0	Wetness, Gradient
4			
5			
Non-agricultural land			
Total	87	100%	

DRAWING 1

ALC Grade

Key

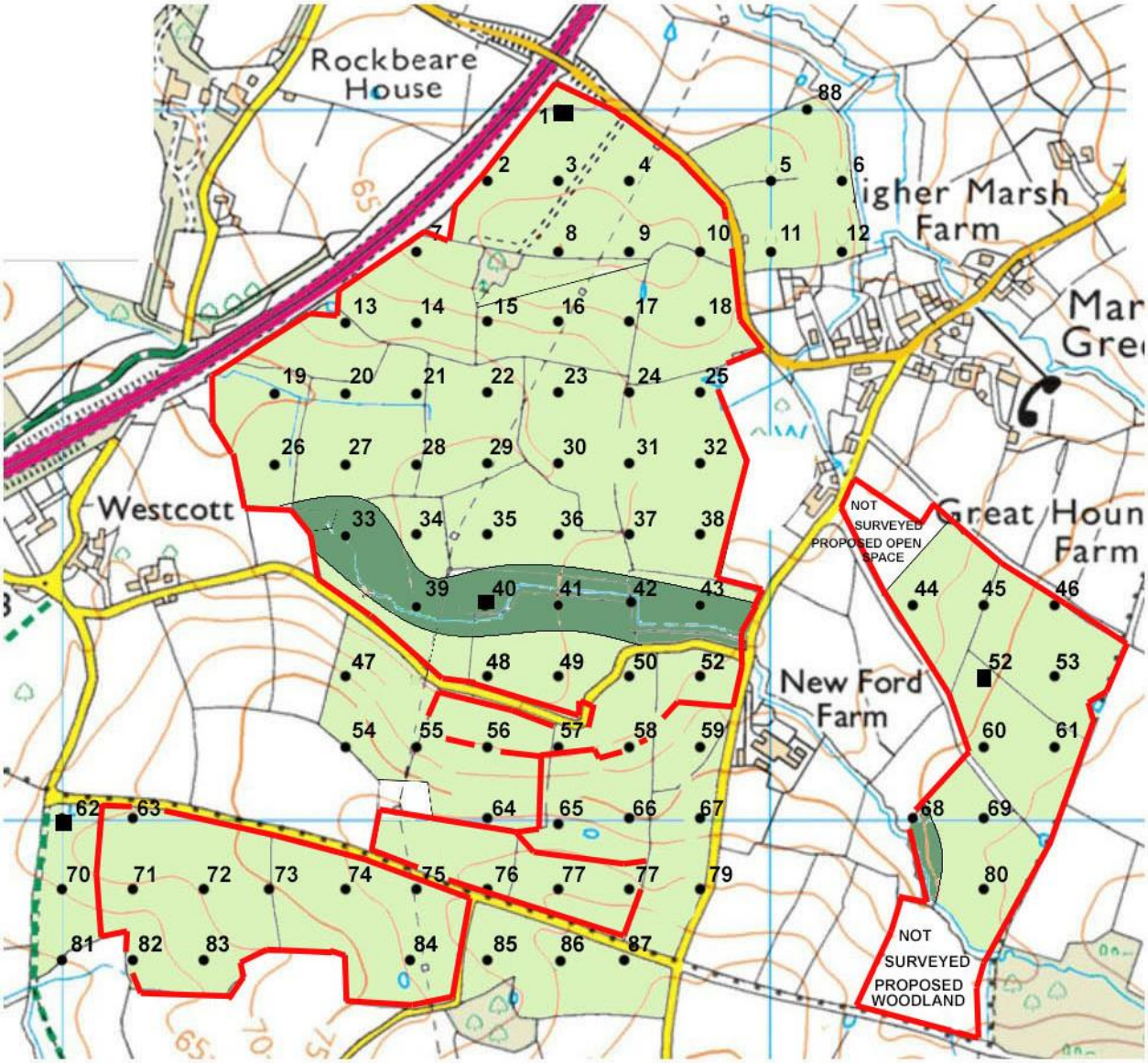
ALC Grades
- Grade 1
- Grade 2
- Grade 3a
- Grade 3b
- Grade 4
- Grade 5
- Non agricultural land

● Boring
■ Pit

Application boundary

Soil Environment Services

Title: ALC Grade	Drawing No.: 1
Scale: 1:10000	Date: 24/07/2021



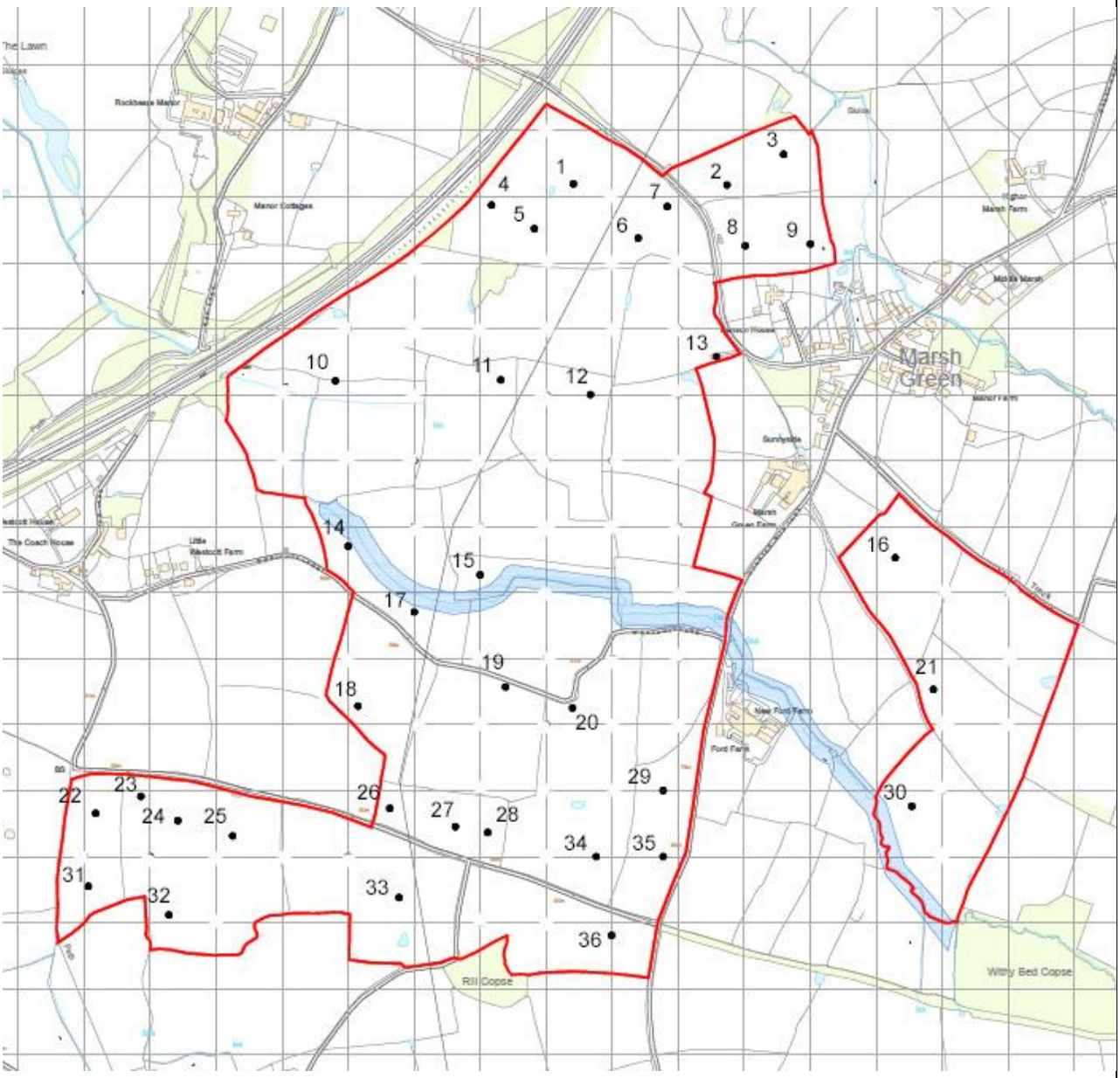
Key

● **Observation point**

See Drawing 1 for correct boundary

Soil Environment Services

Drawing Title: Client observation points	Drawing No.: 2
Scale: 1:~10000	Date: 24/07/2021



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APPENDIX A

Soil profile data

Notes

1 All abbreviations relating to soil parameters are standard and derived from the guidance documents:

Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land. MAFF. 1988.
Soil Survey Field Handbook. Technical Monograph No.5. Soil Survey of England and Wales.1976.

2 The pit data is detailed in this table and information on structure and stone content copied to the appropriate boring profiles.

3 Any blanks or zeros in the cells indicate the data is not needed or appropriate for that cell.

4 If 'NA' is inserted in a cell the information is not appropriate on this occasion.

5. Boring or pit locations are directly (within 2 m accuracy) on the grid reference corresponding to the points on the map unless otherwise stated.

6 A point directly marked on a track, boundary or other feature will be moved 2-3 m off the point or omitted if surrounding points and soil types allow.

7. Borings that are potentially within 15 m of a gas pipeline are limited to 0.4 m depth and the strata description in the data table below this depth will be extrapolated from nearby borings and upper strata characteristics.

8. The *Observation Density* is 1 per ha on a 100 m grid using a semi *Free Survey* method if appropriate*. The letter 'B' in the second column of the data table refers to an observation point at which a boring may have been undertaken. In some situations it is not possible to visit the location due to for example crop status or animals in a field. In some cases the location is visited and observation of the soils at the surface is sufficient. In all cases the soil, geology, topography, flood risk and aerial crop patterns are assessed from published sources and the soils will be subject to a full 120 cm depth boring either side of a non-visited or non-bored point. If all data sources are agreeable, a soil pattern can be established.

* British Society of Soil Science. Working With Soil – The Professional Competency Scheme. Agricultural Land Classification: England and Wales. How2 sheet 4.2.4. 2018.

9. For moisture balance calculations, *strongly, moderately* and *well developed* structure will equate to *good, moderate* or *poor* structure terms respectively in Table 14 of the guidelines.

10. Pit information in addition to that listed in the table below will be detailed in Section 4.1 and 4.3 if needed.

Obs point	Boring or Pit	Grad (deg)	Base Depth (cm)	Subsoil horizon thickness for droughtiness calcs (cm)			Text.	Calc	Col.	Motts. %/ depth	Mott colour	Pale ped faces	Stns %	Stns type	Biopores <0.5% >0.5 mm	Struct	Dev.	SPL depth (cm)	Gleying depth (cm)	SWC	Grade (wetness)	TAv	Eav	StTAv	StEAv	MBW	Grade (Drought. WHEAT)	MBP	Grade (Drought. POTATOES)
			30	To 50	50 to 120	to 70	MCL	N	5YR43				5	MH								18		1					
1	P	≤7	45	15	0	15	MCL		7.5YR53	10/30	7.5YR46	Yes	5	MH	No	MCP	M	45	30	IV	3b	16	10	1	0.5	20.11	2	1.83	2
			120	5	70	25	MCL		7.5YR54	10/45	7.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
			30	To 50	50 to 120	to 70	MCL	N	5YR43				5	MH								18		1					
2	B	≤7	45	15	0	15	MCL		5YR53	10/30	7.5YR46	Yes	5	MH	No	MCP	M	45	30	IV	3b	16	10	1	0.5	20.11	2	1.83	2
			120	5	70	25	MCL		7.5YR54	10/60	7.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
			30	To 50	50 to 120	to 70	MCL	N	5YR43				5	MH								18		1					
3	B	≤7	45	15	0	15	MCL		7.5YR53	10/30	7.5YR46	Yes	5	MH	No	MCP	M	45	30	IV	3b	16	10	1	0.5	20.11	2	1.83	2
			120	5	70	25	MCL		5YR54	10/60	7.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
			30	To 50	50 to 120	to 70	MCL	N	5YR43				5	MH								18		1					
4	B	≤7	45	15	0	15	MCL		7.5YR53	10/30	7.5YR46	Yes	5	MH	No	MCP	M	45	30	IV	3b	16	10	1	0.5	20.11	2	1.83	2
			120	5	70	25	MCL		7.5YR54	10/60	7.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
			30	To 50	50 to 120	to 70	MCL	N	7.5YR44	10/10	5YR46		5	MH								18		1					
5	B	≤7	70	20	20	40	MCL		7.5YR53	20/30	2.5YR46	Yes	5	MH	No	MCP>45	M	45	30	IV	3b	16	10	1	0.5	26.78	2	9.96	2
			120	0	50	0	MCL		5YR54	20/70	2.5YR48	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
			30	To 50	50 to 120	to 70	MCL	N	7.5YR44	10/10	5YR46		5	MH								18		1					
6	B	≤7	70	20	20	40	MCL		7.5YR53	20/30	2.5YR46	Yes	5	MH	No	MCP>45	M	45	30	IV	3b	16	10	1	0.5	26.78	2	9.96	2
			120	0	50	0	MCL		5YR54	20/70	2.5YR48	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
			30	To 50	50 to 120	to 70	MCL	N	5YR43	10/10	5YR46		0									18		1					
7	B	≤7	60	20	10	30	MCL		5YR44	15/30	5YR46	Yes	5	MH	No	MCP>35	M	35	30	IV	3b	16	10	1	0.5	26.81	2	9.26	2
			120	0	60	10	hcl		5YR44	10/60	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
			30	To 50	50 to 120	to 70	MCL	N	7.5YR43	10/10	5YR58		5	MH								18		1					
8	B	≤7	60	20	10	30	MCL		5YR54	10/30	7.5YR46	Yes	5	MH	No	MCP>45	M	45	30	IV	3b	16	10	1	0.5	12.26	2	2.71	2
			120	0	60	10	MST		5YR44				0		Yes	M	R					8	5	1	0.5				
			120	0	0	0																0			7				
			30	To 50	50 to 120	to 70	MCL	N	7.5YR43	10/10	5YR58		5	MH								18		1					
9	B	≤7	60	20	10	30	MCL		5YR54	10/30	7.5YR46	Yes	5	MH	No	MCP>45	M	45	30	IV	3b	16	10	1	0.5	12.26	2	2.71	2
			120	0	60	10	MST		5YR44				0		Yes	M	R					8	5	1	0.5				
			120	0	0	0																0			7				
			30	To 50	50 to 120	to 70	MCL	N	7.5YR43	10/10	5YR58		5	MH								18		1					
10	B	≤7	60	20	10	30	MCL		5YR54	10/30	7.5YR46	Yes	5	MH	No	MCP>45	M	45	30	IV	3b	16	10	1	0.5	12.26	2	2.71	2
			120	0	60	10	MST		5YR44				0		Yes	M	R					8	5	1	0.5				
			120	0	0	0																0			7				
			30	To 50	50 to 120	to 70	MCL	N	7.5YR44	10/10	5YR46		5	MH								18		1					
11	B	≤7	70	20	20	40	MCL		7.5YR53	20/30	2.5YR46	Yes	5	MH	No	MCP>45	M	45	30	IV	3b	16	10	1	0.5	26.78	2	9.96	2
			120	0	50	0	MCL		5YR54	20/70	2.5YR48	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
			30	To 50	50 to 120	to 70	MCL	N	7.5YR44	10/10	5YR46		5	MH								18		1					
12	B	≤7	70	20	20	40	MCL		7.5YR53	20/30	2.5YR46	Yes	5	MH	No	MCP>45	M	45	30	IV	3b	16	10	1	0.5	26.78	2	9.96	2
			120	0	50	0	MCL		5YR54	20/70	2.5YR48	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
			30	To 50	50 to 120	to 70	MCL	N	5YR43	10/10	5YR46		0									18		1					
13	B	≤7	60	20	10	30	MCL		5YR44	15/30	5YR46	Yes	5	MH	No	MCP>35	M	35	30	IV	3b	16	10	1	0.5	26.81	2	9.26	2
			120	0	60	10	hcl		5YR44	10/60	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
			30	To 50	50 to 120	to 70	MCL	N	5YR43	10/10	5YR46		0									18		1					
14	B	≤7	60	20	10	30	MCL		5YR44	15/30	5YR46	Yes	5	MH	No	MCP>35	M	35	30	IV	3b	16	10	1	0.5	26.81	2	9.26	2
			120	0	60	10	hcl		5YR44	10/60	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
			30	To 50	50 to 120	to 70	MCL	N	5YR43	10/10	5YR46		0									18		1					
15	B	≤7	60	20	10	30	MCL		5YR44	15/30	5YR46	Yes	5	MH	No	MCP>35	M	35	30	IV	3b	16	10	1	0.5	26.81	2	9.26	2
			120	0	60	10	hcl		5YR44	10/60	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
			20	To 50	50 to 120	to 70	MCL	N	7.5YR43	5/10	7.5YR46		5	MH								18		1					
16	B	≤7	60	30	10	40	MCL		5YR54	15/20	5YR46	Yes	5	MH	No	MCP>40	M	40	20	IV	3b	16	10	1	0.5	22.36	2	4.81	2
			120	0	60	10	HCL		5YR54	10/60	5YR58	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
			20	To 50	50 to 120	to 70	MCL	N	7.5YR43	5/10	7.5YR46		5	MH								18		1					
17	B	≤7	60	30	10	40	MCL		5YR54	15/20	5YR46	Yes	5	MH	No	MCP>40	M	40	20	IV	3b	16	10	1	0.5	22.36	2	4.81	2
			120	0	60	10	HCL		5YR54	10/60	5YR58	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
			30	To 50	50 to 120	to 70	MCL	N	5YR43	10/10	5YR46		0									18		1					
18	B	≤7	60	20	10	30	MCL		5YR44	15/30	5YR46	Yes	5	MH	No	MCP>35	M	35	30	IV	3b	16	10	1	0.5	26.81	2	9.26	2
			120	0	60	10	hcl		5YR44	10/60	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
			20	To 50	50 to 120	to 70	MCL	N	10YR43	10/10	7.5YR46		10	MH								18		1					
19	B	≤7	45	25	0	25	MCL		7.5YR43	10/20	7.5YR46	Yes	5	MH	No	MCP	M	45	20	IV	3b	16	10	1	0.5	16.51	2	-1.77	2
			70	5	20	25	HCL		5YR54	20/45	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	50	0	HCL		2.5YR54	10/70	2.5YR46		0		Yes	M	W					12	7	1	0.5				
			20	To 50	50 to 120	to 70	MCL	N	10YR43	10/10	7.5YR46		10	MH								18		1					
20	B	≤7	45	25	0	25	MCL		7.5YR43	10/20	7.5YR46	Yes	5	MH	No	MCP	M	45	20	IV	3b	16	10	1	0.5	16.51	2	-1.77	2
			70	5	20	25	HCL		5YR54	20/45	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	50	0	HCL		2.5YR54	10/70	2.5YR46		0		Yes	M	W					12	7	1	0.5				

Obs point	Boring or Pit	Grad. (deg)	Base Depth (cm)	Subsoil horizon thickness for droughtiness calcs (cm)			Text.	Calc	Col.	Motts. %/ depth	Mott colour	Pale ped faces	Stns %	Stns type	Biopores <0.5% >0.5 mm	Struct	Dev.	SPL depth (cm)	Gleying depth (cm)	SWC	Grade (wetness)	TAv	Eav	StTAv	StEAv	MBW	Grade (Drought. WHEAT)	MBP	Grade (Drought. POTATOES)
21	B	≤7	20	To 50	50 to 120	to 70	MCL	N	10YR43	10/10	7.5YR46		10	MH				45	20	IV	3b	18		1		16.5	2	-1.77	2
			45	25	0	25	MCL		7.5YR43	10/20	7.5YR46	Yes	5	MH	No	MCP	M					16	10	1	0.5				
			70	5	20	25	HCL		5YR54	20/45	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	50	0	HCL		2.5YR54	10/70	2.5YR46		0		Yes	M	W					12	7	1	0.5				
22	B	≤7	30	To 50	50 to 120	to 70	MCL	N	5YR43	10/10	5YR46		0					35	30	IV	3b	18		1		26.8	2	9.26	2
			60	20	10	30	MCL		5YR44	15/30	5YR46	Yes	5	MH	No	MCP>35	M					16	10	1	0.5				
			120	0	60	10	hcl		5YR44	10/60	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
23	B	≤7	20	To 50	50 to 120	to 70	MCL	N	7.5YR43	5/10	7.5YR46		5	MH				40	20	IV	3b	18		1		22.4	2	4.81	2
			60	30	10	40	MCL		5YR54	15/20	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	HCL		5YR54	10/60	5YR58	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
24	B	≤7	20	To 50	50 to 120	to 70	MCL	N	7.5YR43	5/10	7.5YR46		5	MH				40	20	IV	3b	18		1		22.4	2	4.81	2
			60	30	10	40	MCL		5YR54	15/20	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	HCL		5YR54	10/60	5YR58	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
25	B	≤7	20	To 50	50 to 120	to 70	MCL	N	7.5YR43	5/10	7.5YR46		5	MH				40	20	IV	3b	18		1		22.4	2	4.81	2
			60	30	10	40	MCL		5YR54	15/20	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	HCL		5YR54	10/60	5YR58	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
26	B	≤7	20	To 50	50 to 120	to 70	MCL	N	10YR43	10/10	7.5YR46		10	MH				45	20	IV	3b	18		1		16.5	2	-1.77	2
			45	25	0	25	MCL		7.5YR43	10/20	7.5YR46	Yes	5	MH	No	MCP	M					16	10	1	0.5				
			70	5	20	25	HCL		5YR54	20/45	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	50	0	HCL		2.5YR54	10/70	2.5YR46		0		Yes	M	W					12	7	1	0.5				
27	B	≤7	20	To 50	50 to 120	to 70	MCL	N	10YR43	10/10	7.5YR46		10	MH				45	20	IV	3b	18		1		16.5	2	-1.77	2
			45	25	0	25	MCL		7.5YR43	10/20	7.5YR46	Yes	5	MH	No	MCP	M					16	10	1	0.5				
			70	5	20	25	HCL		5YR54	20/45	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	50	0	HCL		2.5YR54	10/70	2.5YR46		0		Yes	M	W					12	7	1	0.5				
28	B	≤7	20	To 50	50 to 120	to 70	MCL	N	10YR43	10/10	7.5YR46		10	MH				45	20	IV	3b	18		1		16.5	2	-1.77	2
			45	25	0	25	MCL		7.5YR43	10/20	7.5YR46	Yes	5	MH	No	MCP	M					16	10	1	0.5				
			70	5	20	25	HCL		5YR54	20/45	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	50	0	HCL		2.5YR54	10/70	2.5YR46		0		Yes	M	W					12	7	1	0.5				
29	B	≤7	20	To 50	50 to 120	to 70	MCL	N	10YR43	10/10	7.5YR46		10	MH				45	20	IV	3b	18		1		16.5	2	-1.77	2
			45	25	0	25	MCL		7.5YR43	10/20	7.5YR46	Yes	5	MH	No	MCP	M					16	10	1	0.5				
			70	5	20	25	HCL		5YR54	20/45	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	50	0	HCL		2.5YR54	10/70	2.5YR46		0		Yes	M	W					12	7	1	0.5				
30	B	≤7	20	To 50	50 to 120	to 70	MCL	N	7.5YR43	5/10	7.5YR46		5	MH				40	20	IV	3b	18		1		22.4	2	4.81	2
			60	30	10	40	MCL		5YR54	15/20	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	HCL		5YR54	10/60	5YR58	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
31	B	≤7	20	To 50	50 to 120	to 70	MCL	N	7.5YR43	5/10	7.5YR46		5	MH				40	20	IV	3b	18		1		22.4	2	4.81	2
			60	30	10	40	MCL		5YR54	15/20	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	HCL		5YR54	10/60	5YR58	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
32	B	≤7	20	To 50	50 to 120	to 70	MCL	N	7.5YR43	5/10	7.5YR46		5	MH				40	20	IV	3b	18		1		22.4	2	4.81	2
			60	30	10	40	MCL		5YR54	15/20	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	HCL		5YR54	10/60	5YR58	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
33	B	≤7	35	To 50	50 to 120	to 70	ZC	N	5YR44				0							I	3a	17		1		23.8	2	9.51	2
			70	15	20	35	ZC		5YR43				0		No	MCP	M					15	8	1	0.5				
			120	0	50	0	ZC		5YR43				0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
34	B	≤7	20	To 50	50 to 120	to 70	MCL	N	10YR43	10/10	7.5YR46		10	MH				45	20	IV	3b	18		1		16.5	2	-1.77	2
			45	25	0	25	MCL		7.5YR43	10/20	7.5YR46	Yes	5	MH	No	MCP	M					16	10	1	0.5				
			70	5	20	25	HCL		5YR54	20/45	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	50	0	HCL		2.5YR54	10/70	2.5YR46		0		Yes	M	W					12	7	1	0.5				
35	B	≤7	20	To 50	50 to 120	to 70	MCL	N	10YR43	10/10	7.5YR46		10	MH				45	20	IV	3b	18		1		16.5	2	-1.77	2
			45	25	0	25	MCL		7.5YR43	10/20	7.5YR46	Yes	5	MH	No	MCP	M					16	10	1	0.5				
			70	5	20	25	HCL		5YR54	20/45	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	50	0	HCL		2.5YR54	10/70	2.5YR46		0		Yes	M	W					12	7	1	0.5				
36	B	≤7	20	To 50	50 to 120	to 70	MCL	N	10YR43	10/10	7.5YR46		10	MH				45	20	IV	3b	18		1		16.5	2	-1.77	2
			45	25	0	25	MCL		7.5YR43	10/20	7.5YR46	Yes	5	MH	No	MCP	M					16	10	1	0.5				
			70	5	20	25	HCL		5YR54	20/45	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	50	0	HCL		2.5YR54	10/70	2.5YR46		0		Yes	M	W					12	7	1	0.5				
37	B	≤7	20	To 50	50 to 120	to 70	MCL	N	10YR43	10/10	7.5YR46		10	MH				45	20	IV	3b	18		1		16.5	2	-1.77	2
			45	25	0	25	MCL		7.5YR43	10/20	7.5YR46	Yes	5	MH	No	MCP	M					16	10	1	0.5				
			70	5	20	25	HCL		5YR54	20/45	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	50	0	HCL		2.5YR54	10/70	2.5YR46		0		Yes	M	W					12	7	1	0.5				
38	B	≤7	20	To 50	50 to 120	to 70	MCL	N	10YR43	10/10	7.5YR46		10	MH				45	20	IV	3b	18		1		16.5	2	-1.77	2
			45	25	0	25	MCL		7.5YR43	10/20	7.5YR46	Yes	5	MH	No	MCP	M					16	10	1	0.5				
			70	5	20	25	HCL		5YR54	20/45	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	50	0	HCL		2.5YR54	10/70	2.5YR46		0		Yes	M	W					12	7	1	0.5				
39	B	≤7	35	To 50	50 to 120	to 70	ZC	N	5YR44				0							I	3a	17		1		23.8	2	9.51	2
			70	15	20	35	ZC		5YR43				0		No	MCP	M					15	8	1	0.5				
			120	0	50	0	ZC		5YR43				0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
40	P	≤7	35	To 50	50 to 120	to 70	ZC	N	5YR44				0							I	3a	17		1		23.8	2	9.51	2
			70	15	20	35	ZC		5YR43				0		No	MCP	M					15	8	1	0.5				
			120	0	50	0	ZC		5YR43				0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				

Obs point	Boring or Pit	Grad. (deg)	Base Depth (cm)	Subsoil horizon thickness for droughtiness calcs (cm)			Text.	Calc	Col.	Motts. %/ depth	Mott colour	Pale ped faces	Stns %	Stns type	Biopores <0.5% >0.5 mm	Struct	Dev.	SPL depth (cm)	Gleying depth (cm)	SWC	Grade (wetness)	TAv	Eav	StTAv	StEAv	MBW	Grade (Drought. WHEAT)	MBP	Grade (Drought. POTATOES)
41	B	≤7	35	To 50	50 to 120	to 70	ZC	N	5YR44				0							I	3a	17		1		23.78	2	9.51	2
			70	15	20	35	ZC		5YR43				0		No	MCP	M					15	8	1	0.5				
			120	0	50	0	ZC		5YR43				0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
42	B	≤7	35	To 50	50 to 120	to 70	ZC	N	5YR44				0							I	3a	17		1		23.78	2	9.51	2
			70	15	20	35	ZC		5YR43				0		No	MCP	M					15	8	1	0.5				
			120	0	50	0	ZC		5YR43				0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
43	B	≤7	35	To 50	50 to 120	to 70	ZC	N	5YR44				0							I	3a	17		1		23.78	2	9.51	2
			70	15	20	35	ZC		5YR43				0		No	MCP	M					15	8	1	0.5				
			120	0	50	0	ZC		5YR43				0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
44	B	≤7	25	To 50	50 to 120	to 70	MCL	N	7.5YR53				0					40	25	IV	3b	18		1		23.53	2	7.88	2
			60	25	10	35	C		5YR54	20/25	5YR46	Yes	5	MH	No	MCP>40	M					16	8	1	0.5				
			120	0	60	10	C		2.5YR44	5/60	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
45	B	≤7	25	To 50	50 to 120	to 70	MCL	N	7.5YR53				0					40	25	IV	3b	18		1		23.53	2	7.88	2
			60	25	10	35	C		5YR54	20/25	5YR46	Yes	5	MH	No	MCP>40	M					16	8	1	0.5				
			120	0	60	10	C		2.5YR44	5/60	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
46	B	9.5	15	To 50	50 to 120	to 70	HCL	N	5YR43				5	MH				45	30	IV	3b	18		1		11.33	2	1.41	2
			55	35	5	40	HCL		5YR44	5/30	5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			80	0	25	15	HCL		5YR54	5/55	7.5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	40	0	MST		5YR54				0									8	5	0	0				
47	B	≤7	15	To 50	50 to 120	to 70	HCL	N	5YR43				5	MH				45	30	IV	3b	18		1		11.33	2	1.41	2
			55	35	5	40	HCL		5YR44	5/30	5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			80	0	25	15	HCL		5YR54	5/55	7.5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	40	0	MST		5YR54				0									8	5	0	0				
48	B	≤7	15	To 50	50 to 120	to 70	HCL	N	5YR43				5	MH				45	30	IV	3b	18		1		11.33	2	1.41	2
			55	35	5	40	HCL		5YR44	5/30	5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			80	0	25	15	HCL		5YR54	5/55	7.5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	40	0	MST		5YR54				0									8	5	0	0				
49	B	≤7	15	To 50	50 to 120	to 70	HCL	N	5YR43				5	MH				45	30	IV	3b	18		1		11.33	2	1.41	2
			55	35	5	40	HCL		5YR44	5/30	5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			80	0	25	15	HCL		5YR54	5/55	7.5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	40	0	MST		5YR54				0									8	5	0	0				
50	B	≤7	25	To 50	50 to 120	to 70	HCL	N	7.5YR43	5/10	5YR46		5					40	25	IV	3b	18		1		18.51	2	1.41	2
			50	25	0	25	HCL		5YR43	15/25	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	70	20	HCL		5YR54	5/50	5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
51	B	≤7	25	To 50	50 to 120	to 70	HCL	N	7.5YR43	5/10	5YR46		5					40	25	IV	3b	18		1		18.51	2	1.41	2
			50	25	0	25	HCL		5YR43	15/25	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	70	20	HCL		5YR54	5/50	5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
52	P	≤7	25	To 50	50 to 120	to 70	MCL	N	7.5YR53				0					45	25	IV	3b	18		1		15.91	2	7.88	2
			60	25	10	35	C		5YR54	20/25	5YR46	Yes	5	MH	No	MCP>40	M					16	8	1	0.5				
			120	0	60	10	C		2.5YR44	5/60	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
53	B	≤7	25	To 50	50 to 120	to 70	MCL	N	7.5YR53				0					40	25	IV	3b	18		1		23.53	2	7.88	2
			60	25	10	35	C		5YR54	20/25	5YR46	Yes	5	MH	No	MCP>40	M					16	8	1	0.5				
			120	0	60	10	C		2.5YR44	5/60	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
54	B	≤7	15	To 50	50 to 120	to 70	HCL	N	5YR43				5	MH				45	30	IV	3b	18		1		11.33	2	1.41	2
			55	35	5	40	HCL		5YR44	5/30	5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			80	0	25	15	HCL		5YR54	5/55	7.5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	40	0	MST		5YR54				0									8	5	0	0				
55	B	9	15	To 50	50 to 120	to 70	HCL	N	5YR43				5	MH				45	30	IV	3b	18		1		11.33	2	1.41	2
			55	35	5	40	HCL		5YR44	5/30	5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			80	0	25	15	HCL		5YR54	5/55	7.5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	40	0	MST		5YR54				0									8	5	0	0				
56	B	≤7	15	To 50	50 to 120	to 70	HCL	N	5YR43				5	MH				45	30	IV	3b	18		1		11.33	2	1.41	2
			55	35	5	40	HCL		5YR44	5/30	5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			80	0	25	15	HCL		5YR54	5/55	7.5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	40	0	MST		5YR54				0									8	5	0	0				
57	B	≤7	25	To 50	50 to 120	to 70	HCL	N	7.5YR43	5/10	5YR46		5					40	25	IV	3b	18		1		18.51	2	1.41	2
			50	25	0	25	HCL		5YR43	15/25	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	70	20	HCL		5YR54	5/50	5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
58	B	≤7	25	To 50	50 to 120	to 70	HCL	N	7.5YR43	5/10	5YR46		5					40	25	IV	3b	18		1		18.51	2	1.41	2
			50	25	0	25	HCL		5YR43	15/25	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	70	20	HCL		5YR54	5/50	5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0							
59	B	≤7	25	To 50	50 to 120	to 70	HCL	N	7.5YR43	5/10	5YR46		5					40	25	IV	3b	18		1		18.51	2	1.41	2
			50	25	0	25	HCL		5YR43	15/25	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	70	20	HCL		5YR54	5/50	5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0							
60	B	≤7	15	To 50	50 to 120	to 70	MCL	N	7.5YR43	5/10	7.5YR46		5	MH				40	15	IV	3b	18		1		16.89	2	0.13	2
			55	35	5	40	MCL		5YR43	10/15	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	65	15	SCL		7.5YR53	10/55	7.5YR46	Yes	20	MH	Yes	MCAB	W					13	8	1	0.5				
			120	0	0	0																0							

Obs point	Boring or Pit	Grade (Rep)	Base Depth (cm)	Subsoil horizon thickness for droughtiness calcs (cm)			Text.	Calc	Col.	Motts. %/ depth	Mott colour	Pale ped faces	Stns %	Stns type	Biopores <0.5% >0.5 mm	Struct	Dev.	SPL depth (cm)	Gleying depth (cm)	SWC	Grade (wetness)	TAv	Eav	StTAv	StEAv	MBW	Grade (Drought. WHEAT)	MBP	Grade (Drought. POTATOES)
61	B	≤7	15	To 50	50 to 120	to 70	MCL	N	7.5YR43	5/10	7.5YR46		5	MH				40	15	IV	3b	18		1		16.89	2	0.13	2
			55	35	5	40	MCL		5YR43	10/15	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	65	15	SCL		7.5YR53	10/55	7.5YR46	Yes	20	MH	Yes	MCAB	W					13	8	1	0.5				
			120	0	0	0																0							
62	P	≤7	20	To 50	50 to 120	to 70	HCL	N	5YR43	5/10	5YR58		5	MH				45	20	IV	3b	18		1		22.36	2	4.81	2
			60	30	10	40	HCL		5YR44	10/20	5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			90	0	30	10	HCL		2.5YR43	10/60	2.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	30	0	HCL		2.5YR54	5/90	2.5YR46	Yes	0		Yes	M	W					12	7	1	0.5				
63	B	≤7	20	To 50	50 to 120	to 70	HCL	N	5YR43	5/10	5YR58		5	MH				45	20	IV	3b	18		1		22.36	2	4.81	2
			60	30	10	40	HCL		5YR44	10/20	5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			90	0	30	10	HCL		2.5YR43	10/60	2.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	30	0	HCL		2.5YR54	5/90	2.5YR46	Yes	0		Yes	M	W					12	7	1	0.5				
64	B	≤7	25	To 50	50 to 120	to 70	MCL	N	5YR43				5	MH				40	25	IV	3b	18		1		25.66	2	8.38	2
			60	25	10	35	MCL		5YR43	10/25	5YR46	Yes	0	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	MCL		5YR44	10/60	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
65	B	≤7	25	To 50	50 to 120	to 70	MCL	N	5YR43				5	MH				40	25	IV	3b	18		1		25.66	2	8.38	2
			60	25	10	35	MCL		5YR43	10/25	5YR46	Yes	0	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	MCL		5YR44	10/60	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
66	B	≤7	25	To 50	50 to 120	to 70	HCL	N	7.5YR43	5/10	5YR46		5					40	25	IV	3b	18		1		18.51	2	1.41	2
			50	25	0	25	HCL		5YR43	15/25	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	70	20	HCL		5YR54	5/50	5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
67	B	≤7	25	To 50	50 to 120	to 70	HCL	N	7.5YR43	5/10	5YR46		5					40	25	IV	3b	18		1		18.51	2	1.41	2
			50	25	0	25	HCL		5YR43	15/25	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	70	20	HCL		5YR54	5/50	5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
68	B	≤7	30	To 50	50 to 120	to 70	MCL	N	10YR33				5					45	30	IV	3b	18		1		20.11	2	1.83	2
			45	15	0	15	MCL		10YR34	10/30	7.5YR46	Yes	5	MH	No	MCP	M					16	10	1	0.5				
			120	5	70	25	MCL		10YR34	10/60	7.5YR46	Yes	0	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
69	B	≤7	15	To 50	50 to 120	to 70	MCL	N	7.5YR43	5/10	7.5YR46		5	MH				40	15	IV	3b	18		1		16.89	2	0.13	2
			55	35	5	40	MCL		5YR43	10/15	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	65	15	SCL		7.5YR53	10/55	7.5YR46	Yes	20	MH	Yes	MCAB	W					13	8	1	0.5				
			120	0	0	0																0							
70	B	≤7	20	To 50	50 to 120	to 70	HCL	N	5YR43	5/10	5YR58		5	MH				45	20	IV	3b	18		1		22.36	2	4.81	2
			60	30	10	40	HCL		5YR44	10/20	5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			90	0	30	10	HCL		2.5YR43	10/60	2.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	30	0	HCL		2.5YR54	5/90	2.5YR46		0		Yes	M	W					12	7	1	0.5				
71	B	≤7	20	To 50	50 to 120	to 70	HCL	N	5YR43	5/10	5YR58		5	MH				45	20	IV	3b	18		1		22.36	2	4.81	2
			60	30	10	40	HCL		5YR44	10/20	5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			90	0	30	10	HCL		2.5YR43	10/60	2.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	30	0	HCL		2.5YR54	5/90	2.5YR46		0		Yes	M	W					12	7	1	0.5				
72	B	≤7	20	To 50	50 to 120	to 70	HCL	N	5YR43	5/10	5YR58		5	MH				45	20	IV	3b	18		1		22.36	2	4.81	2
			60	30	10	40	HCL		5YR44	10/20	5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			90	0	30	10	HCL		2.5YR43	10/60	2.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	30	0	HCL		2.5YR54	5/90	2.5YR46		0		Yes	M	W					12	7	1	0.5				
73	B	≤7	30	To 50	50 to 120	to 70	MCL	N	7.5YR43				5	MH				40	30	IV	3b	18		1		13.13	2	1.26	2
			50	20	0	20	MCL		5YR53	10/30	7.5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			90	0	40	20	MCL		5YR54	20/50	7.5YR46	Yes	10	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	30	0	MST		5YR54													8	5		7				
74	B	≤7	30	To 50	50 to 120	to 70	MCL	N	7.5YR43				5	MH				40	30	IV	3b	18		1		13.13	2	1.26	2
			50	20	0	20	MCL		5YR53	10/30	7.5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			90	0	40	20	MCL		5YR54	20/50	7.5YR46	Yes	10	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	30	0	MST		5YR54													8	5		7				
75	B	≤7	30	To 50	50 to 120	to 70	MCL	N	7.5YR43				5	MH				40	30	IV	3b	18		1		13.13	2	1.26	2
			50	20	0	20	MCL		5YR53	10/30	7.5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			90	0	40	20	MCL		5YR54	20/50	7.5YR46	Yes	10	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	30	0	MST		5YR54													8	5		7				
76	B	≤7	25	To 50	50 to 120	to 70	MCL	N	5YR43				5	MH				40	25	IV	3b	18		1		25.66	2	8.38	2
			60	25	10	35	MCL		5YR43	10/25	5YR46	Yes	0	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	MCL		5YR44	10/60	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
77	B	≤7	25	To 50	50 to 120	to 70	MCL	N	5YR43				5	MH				40	25	IV	3b	18		1		25.66	2	8.38	2
			60	25	10	35	MCL		5YR43	10/25	5YR46	Yes	0	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	MCL		5YR44	10/60	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
78	B	≤7	25	To 50	50 to 120	to 70	HCL	N	7.5YR43	5/10	5YR46		5					40	25	IV	3b	18		1		18.51	2	1.41	2
			50	25	0	25	HCL		5YR43	15/25	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	70	20	HCL		5YR54	5/50	5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
79	B	≤7	25	To 50	50 to 120	to 70	HCL	N	7.5YR43	5/10	5YR46		5					40	25	IV	3b	18		1		18.51	2	1.41	2
			50	25	0	25	HCL		5YR43	15/25	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	70	20	HCL		5YR54	5/50	5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
80	B	≤7	15	To 50	50 to 120	to 70	MCL	N	7.5YR43	5/10	7.5YR46		5	MH				40	15	IV	3b	18		1		16.89	2	0.13	2
			55	35	5	40	MCL		5YR43	10/15	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	65	15	SCL		7.5YR53	10/55	7.5YR46	Yes	20	MH	Yes	MCAB	W					13	8	1	0.5				
			120	0	0	0																0							

Obs point	Boring or Pit	Grad. (deg)	Base Depth (cm)	Subsoil horizon thickness for droughtiness calcs (cm)			Text.	Calc	Col.	Motts. %/ depth	Mott colour	Pale ped faces	Stns %	Stns type	Biopores <0.5% >0.5 mm	Struct	Dev.	SPL depth (cm)	Gleying depth (cm)	SWC	Grade (wetness)	TAv	Eav	StTAv	StEAv	MBW	Grade (Drought. WHEAT)	MBP	Grade (Drought. POTATOES)
81	B	≤7	20	To 50	50 to 120	to 70	HCL	N	5YR43	5/10	5YR58		5	MH				45	20	IV	3b	18		1		22.36	2	4.81	2
			60	30	10	40	HCL		5YR44	10/20	5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			90	0	30	10	HCL		2.5YR43	10/60	2.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	30	0	HCL		2.5YR54	5/90	2.5YR46		0		Yes	M	W					12	7	1	0.5				
82	B	≤7	20	To 50	50 to 120	to 70	HCL	N	5YR43	5/10	5YR58		5	MH				45	20	IV	3b	18		1		22.36	2	4.81	2
			60	30	10	40	HCL		5YR44	10/20	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	HCL		2.5YR43	10/60	2.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0						Yes	0									0	0	1	0.5				
83	B	≤7	20	To 50	50 to 120	to 70	HCL	N	5YR43	5/10	5YR58		5	MH				45	20	IV	3b	18		1		22.36	2	4.81	2
			60	30	10	40	HCL		5YR44	10/20	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	HCL		2.5YR43	10/60	2.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0							0									0	0	1	0.5				
84	B	≤7	30	To 50	50 to 120	to 70	MCL	N	7.5YR43				5	MH				40	30	IV	3b	18		1		13.13	2	1.26	2
			50	20	0	20	MCL		5YR53	10/30	7.5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			90	0	40	20	MCL		5YR54	20/50	7.5YR46	Yes	10	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	30	0	MST		5YR54													8	5		7				
85	B	≤7	30	To 50	50 to 120	to 70	MCL	N	7.5YR42				5	MH				45	30	IV	3b	18		1		24.26	2	6.71	2
			60	20	10	30	HCL		7.5YR53	10/30	7.5YR56	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	HCL		5YR54	10/60	7.5YR56	Yes	0	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0							
86	B	≤7	30	To 50	50 to 120	to 70	MCL	N	7.5YR42				5	MH				45	30	IV	3b	18		1		24.26	2	6.71	2
			60	20	10	30	HCL		7.5YR53	10/30	7.5YR56	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	HCL		5YR54	10/60	7.5YR56	Yes	0	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0							
87	B	≤7	30	To 50	50 to 120	to 70	MCL	N	7.5YR42				5	MH				45	30	IV	3b	18		1		24.26	2	6.71	2
			60	20	10	30	HCL		7.5YR53	10/30	7.5YR56	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	HCL		5YR54	10/60	7.5YR56	Yes	0	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0							
88	B	≤7	30	To 50	50 to 120	to 70	MCL	N	7.5YR44	10/10	5YR46		5	MH				45	30	IV	3b	18		1		26.78	2	9.96	2
			70	20	20	40	MCL		7.5YR53	20/30	2.5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			120	0	50	0	MCL		5YR54	20/70	2.5YR48	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
89																													
90																													
91																													
92																													
93																													
94																													
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100																													

APPENDIX B

Client observation point data

Notes

1 All abbreviations relating to soil parameters are standard and derived from the guidance documents:

Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land. MAFF. 1988.
Soil Survey Field Handbook. Technical Monograph No.5. Soil Survey of England and Wales.1976.

2 The pit data is detailed in this table and information on structure and stone content copied to the appropriate boring profiles.

3 Any blanks or zeros in the cells indicate the data is not needed or appropriate for that cell.

4 If 'NA' is inserted in a cell the information is not appropriate on this occasion.

5. Boring or pit locations are directly (within 2 m accuracy) on the grid reference corresponding to the points on the map unless otherwise stated.

6 A point directly marked on a track, boundary or other feature will be moved 2-3 m off the point or omitted if surrounding points and soil types allow.

7. Borings that are potentially within 15 m of a gas pipeline are limited to 0.4 m depth and the strata description in the data table below this depth will be extrapolated from nearby borings and upper strata characteristics.

8. The letter 'B' in the second column of the data table refers to an observation point at which a boring may have been undertaken. In some situations it is not possible to visit the location due to for example crop status or animals in a field. In some cases the location is visited and observation of the soils at the surface is sufficient. In all cases the soil, geology, topography, flood risk and aerial crop patterns are assessed from published sources and the soils will be subject to a full 120 cm depth boring either side of a non-visited or non bored point. If all data sources are agreeable, a soil pattern can be established. This general procedure is accepted practice for ALC site surveys.

Obs point	Boring or Pit	Grad. (a) (dg)	Base Depth (cm)	Subsoil horizon thickness for droughtiness calcs (cm)			Text.	Calc	Col.	Motts. %/ depth	Mott colour	Pale ped faces	Stns %	Stns type	Biopores <0.5% >0.5 mm	Struct	Dev.	SPL depth (cm)	Gleying depth (cm)	SMC	Grade (wetness)	TAv	Eav	StTAv	StEAv	MBW	Grade (Drought. WHEAT)	MBP	Grade (Drought. POTATOES)
1	B	≤7	30	To 50	50 to 120	to 70	MCL	N	5YR43				5	MH				45	30	IV	3b	18		1		20.11	2	1.83	2
			45	15	0	15	MCL		7.5YR53	10/30	7.5YR46	Yes	5	MH	No	MCP	M					16	10	1	0.5				
			120	5	70	25	MCL		7.5YR54	10/45	7.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
2	B	≤7	30	To 50	50 to 120	to 70	MCL	N	7.5YR44	10/10	5YR46		5	MH				45	30	IV	3b	18		1		26.78	2	9.96	2
			70	20	20	40	MCL		7.5YR53	20/30	2.5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			120	0	50	0	MCL		5YR54	20/70	2.5YR48	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
3	B	≤7	30	To 50	50 to 120	to 70	MCL	N	7.5YR44	10/10	5YR46		5	MH				45	30	IV	3b	18		1		26.78	2	9.96	2
			70	20	20	40	MCL		7.5YR53	20/30	2.5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			120	0	50	0	MCL		5YR54	20/70	2.5YR48	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
4	B	≤7	30	To 50	50 to 120	to 70	MCL	N	5YR43				5	MH				45	30	IV	3b	18		1		20.11	2	1.83	2
			45	15	0	15	MCL		7.5YR53	10/30	7.5YR46	Yes	5	MH	No	MCP	M					16	10	1	0.5				
			120	5	70	25	MCL		7.5YR54	10/45	7.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
5	B	≤7	30	To 50	50 to 120	to 70	MCL	N	5YR43				5	MH				45	30	IV	3b	18		1		20.11	2	1.83	2
			45	15	0	15	MCL		7.5YR53	10/30	7.5YR46	Yes	5	MH	No	MCP	M					16	10	1	0.5				
			120	5	70	25	MCL		7.5YR54	10/45	7.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
6	B	≤7	30	To 50	50 to 120	to 70	MCL	N	7.5YR43	10/10	5YR58		5	MH				45	30	IV	3b	18		1		12.26	2	2.71	2
			60	20	10	30	MCL		5YR54	10/30	7.5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			120	0	60	10	MST		5YR44				0		Yes	M	R					8	5	1	0.5				
			120	0	0	0																0			7				
7	B	≤7	30	To 50	50 to 120	to 70	MCL	N	7.5YR43	10/10	5YR58		5	MH				45	30	IV	3b	18		1		12.26	2	2.71	2
			60	20	10	30	MCL		5YR54	10/30	7.5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			120	0	60	10	MST		5YR44				0		Yes	M	R					8	5	1	0.5				
			120	0	0	0																0			7				
8	B	≤7	30	To 50	50 to 120	to 70	MCL	N	7.5YR44	10/10	5YR46		5	MH				45	30	IV	3b	18		1		26.78	2	9.96	2
			70	20	20	40	MCL		7.5YR53	20/30	2.5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			120	0	50	0	MCL		5YR54	20/70	2.5YR48	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
9	B	≤7	30	To 50	50 to 120	to 70	MCL	N	7.5YR44	10/10	5YR46		5	MH				45	30	IV	3b	18		1		26.78	2	9.96	2
			70	20	20	40	MCL		7.5YR53	20/30	2.5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			120	0	50	0	MCL		5YR54	20/70	2.5YR48	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
10	B	≤7	20	To 50	50 to 120	to 70	MCL	N	10YR43	10/10	7.5YR46		10	MH				45	20	IV	3b	18		1		16.51	2	-1.77	2
			45	25	0	25	MCL		7.5YR43	10/20	7.5YR46	Yes	5	MH	No	MCP	M					16	10	1	0.5				
			70	5	20	25	HCL		5YR54	20/45	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	50	0	HCL		2.5YR54	10/70	2.5YR46		0		Yes	M	W					12	7	1	0.5				
11	B	≤7	20	To 50	50 to 120	to 70	MCL	N	10YR43	10/10	7.5YR46		10	MH				45	20	IV	3b	18		1		16.51	2	-1.77	2
			45	25	0	25	MCL		7.5YR43	10/20	7.5YR46	Yes	5	MH	No	MCP	M					16	10	1	0.5				
			70	5	20	25	HCL		5YR54	20/45	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	50	0	HCL		2.5YR54	10/70	2.5YR46		0		Yes	M	W					12	7	1	0.5				
12	B	≤7	20	To 50	50 to 120	to 70	MCL	N	7.5YR43	5/10	7.5YR46		5	MH				40	20	IV	3b	18		1		5.21	2	4.81	2
			60	30	10	40	MCL		5YR54	15/20	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	HCL		5YR54	10/60	5YR58	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
13	B	≤7	20	To 50	50 to 120	to 70	MCL	N	7.5YR43	5/10	7.5YR46		5	MH				40	20	IV	3b	18		1		22.36	2	4.81	2
			60	30	10	40	MCL		5YR54	15/20	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	HCL		5YR54	10/60	5YR58	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
14	B	≤7	35	To 50	50 to 120	to 70	ZC	N	5YR44				0							I	3a	17		1		23.78	2	9.51	2
			70	15	20	35	ZC		5YR43				0		No	MCP	M					15	8	1	0.5				
			120	0	50	0	ZC		5YR43				0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
15	B	≤7	35	To 50	50 to 120	to 70	ZC	N	5YR44				0							I	3a	17		1		23.78	2	9.51	2
			70	15	20	35	ZC		5YR43				0		No	MCP	M					15	8	1	0.5				
			120	0	50	0	ZC		5YR43				0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
16	B	≤7	25	To 50	50 to 120	to 70	MCL	N	7.5YR53				0					40	25	IV	3b	18		1		23.53	2	7.88	2
			60	25	10	35	C		5YR54	20/25	5YR46	Yes	5	MH	No	MCP>40	M					16	8	1	0.5				
			120	0	60	10	C		2.5YR44	5/60	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
17	B	≤7	35	To 50	50 to 120	to 70	ZC	N	5YR44				0							I	3a	17		1		23.78	2	9.51	2
			70	15	20	35	ZC		5YR43				0		No	MCP	M					15	8	1	0.5				
			120	0	50	0	ZC		5YR43				0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
18	B	≤7	30	To 50	50 to 120	to 70	MCL	N	5YR43	10/10	5YR46		0					35	30	IV	3b	18		1		26.81	2	9.26	2
			60	20	10	30	MCL		5YR44	15/30	5YR46	Yes	5	MH	No	MCP>35	M					16	10	1	0.5				
			120	0	60	10	hcl		5YR44	10/60	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
19	B	≤7	15	To 50	50 to 120	to 70	HCL	N	5YR43				5	MH				45	30	IV	3b	18		1		11.33	2	1.41	2
			55	35	5	40	HCL		5YR44	5/30	5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			80	0	25	15	HCL		5YR54	5/55	7.5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	40	0	MST		5YR54				0									8	5	0	0				
20	B	≤7	25	To 50	50 to 120	to 70	HCL	N	7.5YR43	5/10	5YR46		5					40	25	IV	3b	18		1		18.51	2	1.41	2
			50	25	0	25	HCL		5YR43	15/25	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	70	20	HCL		5YR54	5/50	5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0							

Obs point	Boring or Pit	Grad. (deg)	Base Depth (cm)	Subsoil horizon thickness for droughtiness calcs (cm)			Text.	Calc	Col.	Motts. %/ depth	Mott colour	Pale ped faces	Stns %	Stns type	Biopores <0.5% >0.5 mm	Struct	Dev.	SPL depth (cm)	Gleying depth (cm)	SWC	Grade (wetness)	TAv	Eav	StTAv	StEAv	MBW	Grade (Drought. WHEAT)	MBP	Grade (Drought. POTATOES)
21	B	≤7	15	To 50	50 to 120	to 70	MCL	N	7.5YR43	5/10	7.5YR46		5	MH				40	15	IV	3b	18		1		16.9	2	0.13	2
			55	35	5	40	MCL		5YR43	10/15	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	65	15	SCL		7.5YR53	10/55	7.5YR46	Yes	20	MH	Yes	MCAB	W					13	8	1	0.5				
			120	0	0	0																0							
22	B	≤7	20	To 50	50 to 120	to 70	HCL	N	5YR43	5/10	5YR58		5	MH				45	20	IV	3b	18		1		22.4	2	4.81	2
			60	30	10	40	HCL		5YR44	10/20	5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			90	0	30	10	HCL		2.5YR43	10/60	2.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	30	0	HCL		2.5YR54	5/90	2.5YR46		0		Yes	M	W					12	7	1	0.5				
23	B	≤7	20	To 50	50 to 120	to 70	HCL	N	5YR43	5/10	5YR58		5	MH				45	20	IV	3b	18		1		22.4	2	4.81	2
			60	30	10	40	HCL		5YR44	10/20	5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			90	0	30	10	HCL		2.5YR43	10/60	2.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	30	0	HCL		2.5YR54	5/90	2.5YR46		0		Yes	M	W					12	7	1	0.5				
24	B	≤7	20	To 50	50 to 120	to 70	HCL	N	5YR43	5/10	5YR58		5	MH				45	20	IV	3b	18		1		22.4	2	4.81	2
			60	30	10	40	HCL		5YR44	10/20	5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			90	0	30	10	HCL		2.5YR43	10/60	2.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	30	0	HCL		2.5YR54	5/90	2.5YR46		0		Yes	M	W					12	7	1	0.5				
25	B	≤7	20	To 50	50 to 120	to 70	HCL	N	5YR43	5/10	5YR58		5	MH				45	20	IV	3b	18		1		22.4	2	4.81	2
			60	30	10	40	HCL		5YR44	10/20	5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			90	0	30	10	HCL		2.5YR43	10/60	2.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	30	0	HCL		2.5YR54	5/90	2.5YR46		0		Yes	M	W					12	7	1	0.5				
26	B	≤7	25	To 50	50 to 120	to 70	MCL	N	5YR43				5	MH				40	25	IV	3b	18		1		25.7	2	8.38	2
			60	25	10	35	MCL		5YR43	10/25	5YR46	Yes	0	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	MCL		5YR44	10/60	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
27	B	≤7	25	To 50	50 to 120	to 70	MCL	N	5YR43				5	MH				40	25	IV	3b	18		1		25.7	2	8.38	2
			60	25	10	35	MCL		5YR43	10/25	5YR46	Yes	0	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	MCL		5YR44	10/60	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
28	B	≤7	25	To 50	50 to 120	to 70	MCL	N	5YR43				5	MH				40	25	IV	3b	18		1		25.7	2	8.38	2
			60	25	10	35	MCL		5YR43	10/25	5YR46	Yes	0	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	MCL		5YR44	10/60	5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
29	B	≤7	25	To 50	50 to 120	to 70	HCL	N	7.5YR43	5/10	5YR46		5					40	25	IV	3b	18		1		18.5	2	1.41	2
			50	25	0	25	HCL		5YR43	15/25	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	70	20	HCL		5YR54	5/50	5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
30	B	≤7	30	To 50	50 to 120	to 70	MCL	N	10YR33				5					45	30	IV	3b	18		1		20.1	2	1.83	2
			45	15	0	15	MCL		10YR34	10/30	7.5YR46	Yes	5	MH	No	MCP	M					16	10	1	0.5				
			120	5	70	25	MCL		10YR34	10/60	7.5YR46	Yes	0	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
31	B	≤7	20	To 50	50 to 120	to 70	HCL	N	5YR43	5/10	5YR58		5	MH				45	20	IV	3b	18		1		22.4	2	4.81	2
			60	30	10	40	HCL		5YR44	10/20	5YR46	Yes	5	MH	No	MCP>45	M					16	10	1	0.5				
			90	0	30	10	HCL		2.5YR43	10/60	2.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	30	0	HCL		2.5YR54	5/90	2.5YR46		0		Yes	M	W					12	7	1	0.5				
32	B	≤7	20	To 50	50 to 120	to 70	HCL	N	5YR43	5/10	5YR58		5	MH				45	20	IV	3b	18		1		22.4	2	4.81	2
			60	30	10	40	HCL		5YR44	10/20	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	HCL		2.5YR43	10/60	2.5YR46	Yes	0		Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0						Yes	0									0	0	1	0.5				
33	B	≤7	30	To 50	50 to 120	to 70	MCL	N	7.5YR43				5	MH				40	30	IV	3b	18		1		13.1	2	1.26	2
			50	20	0	20	MCL		5YR53	10/30	7.5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			90	0	40	20	MCL		5YR54	20/50	7.5YR46	Yes	10	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	30	0	MST		5YR54													8	5		7				
34	B	≤7	25	To 50	50 to 120	to 70	HCL	N	7.5YR43	5/10	5YR46		5					40	25	IV	3b	18		1		18.5	2	1.41	2
			50	25	0	25	HCL		5YR43	15/25	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	70	20	HCL		5YR54	5/50	5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
35	B	≤7	25	To 50	50 to 120	to 70	HCL	N	7.5YR43	5/10	5YR46		5					40	25	IV	3b	18		1		18.5	2	1.41	2
			50	25	0	25	HCL		5YR43	15/25	5YR46	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	70	20	HCL		5YR54	5/50	5YR56	Yes	5	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0			7				
36	B	≤7	30	To 50	50 to 120	to 70	MCL	N	7.5YR42				5	MH				45	30	IV	3b	18		1		24.3	2	6.71	2
			60	20	10	30	HCL		7.5YR53	10/30	7.5YR56	Yes	5	MH	No	MCP>40	M					16	10	1	0.5				
			120	0	60	10	HCL		5YR54	10/60	7.5YR56	Yes	0	MH	Yes	MCAB	W					12	7	1	0.5				
			120	0	0	0																0							
37																													
38																													
39																													
40																													

Statement of competence - Agricultural land Classification

SES Ltd undertake several dozen Agricultural Land Classification (ALC) or Land Capability Classifications for Agriculture (LCCA- Scotland) surveys a year and have worked on sites up to 1000 ha including housing, roads, solar farm and mineral extraction developments.. We have been undertaking ALC surveys for 25 years and have won many contracts to supply Land Classification reports to local authorities as part of their strategic development plans. A number of our staff have attended the training course Agricultural Land Classification: England and Wales. Working with Soil – The IPSS Professional Competency Scheme. BSSS & DEFRA.

DR ROBIN DAVIES BSc PhD F.I.SoilSci. (Managing Director)

- Fellow of The British Society of Soil Science
- Council Member of The Institute of Professional Soil Scientists for 4 years.
- PhD Soil Physics - Agricultural land drainage - University of Newcastle upon Tyne
- Founder and Managing Director of Soil Environment Services Limited for 25 years.

Selected peer reviewed scientific papers:

* **Soil nitrogen depletion - the threat from soil stockpiling**. Environmental Scientist: Journal of The Institution of Environmental Sciences, 1997.
* **Nitrogen loss from a soil, restored after surface-mining**. Journal of Environmental Quality, 1995
* **The influence of soil factors on the growth of a grass/clover sward on a restored site in Northumberland.** Grass & Forage Science, 1994.
* **The effect of post-restoration cropping regime on some physical properties of a restored soil.** Soil Use & Management, 1994
* **Water availability in a restored soil.** Soil Use & Management, 1992.
* **A laboratory Method for Investigating the Stabilisation of Mole** Channels.J.Agric.Eng.Res.1991.

GENERAL INFORMATION SOURCES

1. ***Agricultural Land Classification of England and Wales***. Revised guidelines 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 South West England.*** Soil Survey of England and Wales,

6. ***Agricultural Land Classification Map*** 1:250 000. MAFF 1983.

7. ***Risk of Flooding:*** https://flood-warning-information.service.gov.uk/long-term-flood-risk

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*

10. ***Munsell Soil Colour Charts****, Munsell Colour, Grand Rapids* ***1994.***

GLOSSARY

ABBREVIATIONS AND TERMS USED IN SURVEY DATA

Soil pit and auger boring information collected during ALC survey is held on a computer database and is reproduced in this report. Terms used and abbreviations are set out below. These conform to definitions contained in the Soil Survey Field Handbook (Hodgson, 1997).

1. Terms used on computer database, in order of occurrence.

GRID REF: National 100 km grid square and 8 figure grid reference.

LAND USE: At the time of survey

WHT:	Wheat	**SBT:**	Sugar Beet	**HTH:**	Heathland
BAR:	Barley	**BRA:**	Brassicas	**BOG:**	Bog or Marsh
OAT:	Oats	**FCD:**	Fodder Crops	**DCW:**	Deciduous Wood
CER:	Cereals	**FRT:**	Soft and Top Fruit	**CFW:**	Coniferous Woodland
MZE:	Maize	**HRT:**	Horticultural Crops	**PLO:**	Ploughed
OSR:	Oilseed Rape	**LEY:**	Ley Grass	**FLW:**	Fallow (inc. Set aside)
POT:	Potatoes	**PGR:**	Permanent Pasture	**SAS:**	Set Aside (where known)
LIN:	Linseed	**RGR:**	Rough Grazing	**OTH:**	Other
BEN:	Field Beans	**SCR:**	Scrub		

GRDNT: Gradient as estimated or measured by hand-held optical clinometer.

GLEY, SPL: Depth in centimetres to gleying or slowly permeable layer.

AP (WHEAT/POTS): Crop-adjusted available water capacity.

MB (WHEAT/POTS): Moisture Balance. (Crop adjusted AP - crop potential MD)

DRT: Best grade according to soil droughtiness.

If any of the following factors are considered significant, 'Y' will be entered in the relevant column.

MREL:	Microrelief limitation	**FLOOD:**	Flood risk	**EROSN:**	Soil erosion risk
EXP:	Exposure limitation	**FROST:**	Frost prone	**DIST:**	Disturbed land
CHEM:	Chemical limitation				

LIMIT: The main limitation to land quality: The following abbreviations are used.

OC:	Overall Climate	**AE:**	Aspect	**EX:**	Exposure
FR:	Frost Risk	**GR:**	Gradient	**MR:**	Microrelief
FL:	Flood Risk	**TX:**	Topsoil Texture	**DP:**	Soil Depth
CH:	Chemical	**WE:**	Wetness	**WK:**	Workability
DR:	Drought	**ER:**	Erosion Risk	**WD:**	Soil Wetness/Droughtiness

ST: Topsoil Stoniness

TEXTURE: Soil texture classes are denoted by the following abbreviations:-

S:	Sand	**LS:**	Loamy Sand	**SL:**	Sandy Loam
SZL:	Sandy Silt Loam	**CL:**	Clay Loam	**ZCL**	Silty Clay Loam
ZL:	Silt Loam	**SCL:**	Sandy Clay Loam	**C:**	Clay
SC:	Sandy clay	**ZC:**	Silty clay	**OL:**	Organic Loam
P:	Peat	**SP:**	Sandy Peat	**LP:**	Loamy Peat
PL:	Peaty Loam	**PS:**	Peaty Sand	**MZ:**	Marine Light Silts

For the sand, loamy sand, sandy loam and sandy silt loam classes, the predominant size of sand fraction will be indicated by the use of the following prefixes:-

F: Fine (more than 66% of the sand less than 0.2mm)
M: Medium (less than 66% fine sand and less than 33% coarse sand)
C: Coarse (more than 33% of the sand larger than 0.6mm)

The clay loam and silty clay loam classes will be sub-divided according to the clay content: **M:** Medium (< 27% clay) **H:** heavy (27 - 35% clay)

MOTTLE COL: Mottle colour using Munsell notation.

MOTTLE ABUN: Mottle abundance, expressed as a percentage of the matrix or surface described.

F: few <2% **C:** common 2 - 20% **M:** many 20 - 40% **VM:** very many 40%+

MOTTLE CONT: Mottle contrast

F: faint - indistinct mottles, evident only on close inspection
D: distinct - mottles are readily seen
P: Prominent - mottling is conspicuous and one of the outstanding features of the horizon.

PED. COL: Ped face colour using Munsell notation.

GLEY: If the soil horizon is gleyed a 'Y' will appear in this column. If slightly gleyed, an 'S' will appear.

STONE LITH: Stone Lithology - One of the following is used.

HR:	All hard rocks and stones	**SLST:**	Soft oolitic or dolimitic limestone
CH:	Chalk	**FSST:**	Soft, fine grained sandstone
ZR:	Soft, argillaceous, or silty rocks	**GH:**	Gravel with non-porous (hard) stones
MSST:	Soft, medium grained sandstone	**GS:**	Gravel with porous (soft) stones
SI:	Soft weathered igneous or metamorphic rock		

Stone contents are given in % by volume for sizes >2cm, >6cm and total stone >2mm.

STRUCT: The degree of development, size and shape of soil peds are described using the following notation

Degree of development	**WA:**	Weakly developed Adherent	**WK:**	Weakly developed
	MD:	Moderately developed	**ST:**	Strongly developed
Ped size	**F:**	Fine	**M:**	Medium
	C:	Coarse	**VC:**	Very coarse
Ped Shape	**S:**	Single grain	**M:**	Massive
	GR:	Granular	**AB:**	Angular blocky
	SAB:	Sub-angular blocky	**PR:**	Prismatic
	PL:	Platy		

CONSIST: Soil consistence is described using the following notation:

L:	Loose	**VF:**	Very Friable	**FR:**	Friable	**FM:**	Firm
VM:	Very firm	**EM:**	Extremely firm			**EH:**	Extremely Hard

SUBS STR: Subsoil structural condition recorded for the purpose of calculating profile droughtiness: **G:** Good **M:** Moderate **P:** Poor

POR: Soil porosity. If a soil horizon has poor porosity with less than 0.5% biopores >0.5mm, a 'Y' will appear in this column.

IMP: If the profile is impenetrable to rooting a 'Y' will appear in this column at the appropriate horizon.

SPL: Slowly permeable layer. If the soil horizon is slowly permeable a 'Y' will appear in this column.

CALC: If the soil horizon is calcareous with naturally occurring calcium carbonate exceeding 1% a 'Y' will appear this column.

2. Additional terms and abbreviations used mainly in soil pit descriptions.

STONE ASSESSMENT:

V:	Visual	**S:**	Sieved	**D:**	Displacement

MOTTLE SIZE:

EF:	Extremely fine <1mm	**M:**	Medium 5-15mm
VF:	Very fine 1-2mm>	**C:**	Coarse >15mm
F:	Fine 2-5mm		

MOTTLE COLOUR: May be described by Munsell notation or as ochreous (OM) or grey (GM).

ROOT CHANNELS: In topsoil the presence of 'rusty root channels' might also be noted as RRC.

MANGANESE CONCRETIONS: Assessed by volume

N:	None		**M:**	Many	20-40%
F:	Few	<2%	**VM:**	Very Many	>40%
C:	Common	2-20%			

POROSITY:

P: Poor - less than 0.5% biopores at least 0.5mm in diameter
G: Good - more than 0.5% biopores at least 0.5mm in diameter

ROOT ABUNDANCE:

The number of roots per $100cm^2$:		Very Fine and Fine	Medium and Coarse
F:	Few	1-10	1 or 2
C:	Common	10.25	2 - 5
M:	Many	25-200	>5
A:	Abundant	>200	

ROOT SIZE

VF:	Very fine	<1mm	**M:**	Medium	2 - 5mm
F:	Fine	1-2mm	**C:**	Coarse	>5mm

HORIZON BOUNDARY DISTINCTNESS:

Sharp:	<0.5cm	**Gradual:**	6 - 13cm
Abrupt:	0.5 - 2.5cm	**Diffuse:**	>13cm
Clear:	2.5 - 6cm		

HORIZON BOUNDARY FORM: Smooth, wavy, irregular or broken.*

* See Soil Survey Field Handbook (Hodgson, 1997) for details.