Pegasus Group

Elwy Solar Energy Farm

AGRICULTURAL LAND CLASSIFICATION STUDY

P19-2023 | JULY 2020

solarcentury

Our Ref: SES/PG/ES/#1 **Date: 3rd January 2020**

Client:

Pegasus Group
Pegasus House
Querns Business Centre
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AGRICULTURAL LAND CLASSIFICATION

Elwy Solar Energy Farm

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

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1. INTRODUCTION & METHODOLOGY

An Agricultural Land Classification (ALC) has been carried out on 106 ha at Elwy Solar Energy Farm (Drawing 1). The site is centred on Grid Ref. 302544,375348.

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 survey was conducted on the 11th and 12th December 2019 and classifies the land into one or more of the above grades.

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 a number of maps and reference documents (References).

The field survey consisted of point observations usually on a 100 m grid and generally in line with the nation grid (~5 m accuracy) and hand auger borings to a depth of 1.2 m depth as needed. Pit excavations are 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 the guidelines.

Climatological data[3] was used to determine the overriding site limitation and for interaction with soil parameters. The ALC grade was then determined for this site and for the current survey and is detailed in Table 3.

Soil can vary considerably over short distances and hence some variation can exist in the soils not assessed between observation points compared with those at the observation points. Also, non-significant variation with horizon depths and other parameters can occur between observation points and may not necessarily be recorded for ALC purposes. Using all information available, every effort is made to assess and group soils into significantly different types for the purposes of ALC grading. Some generalisation therefore needs to take place in order to group, categorise and map the soil types.

2. SITE CONDITIONS

2.1. Climate and flooding

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

Table 1
Climatological information[3]

Factor	Units	Value
Altitude AOD	m	9-20
Accumulated temperature	day°C (Jan-June)	1507.2
Average Annual Rainfall	mm	678.2
Field Capacity Days	days	165.6
Moisture Deficit Wheat	mm	110.6
Moisture Deficit Potatoes	mm	108.2

2.2. Mapped soil types

To the east the soils are mapped as silty, loamy floodplain soils with high groundwater and to the west as slowly permeable seasonally wet loamy and clayey soils.

There is a distinct division in the soils previously mapped on site and this follows the site topography which has a general north west to south east line.

2.3. Topography

The slope measured on site was minimal and gradient will not in general limit the ALC Grade for the site. No significant variation in microrelief was noted other than some very small areas of undulation within the higher ground to the south west.

2.4. Current agriculture or other land use

On the survey date the site had recently been ploughed or sown with winter cereals in some of the fields on the flood plain together with areas of grassland and sheep grazing on fodder crops.

3 SOIL CHARACTERISTICS

3.1. Description of soil types

The soils noted on site very much match those previously mapped with those to the east as silty, loamy floodplain soils and to the west as slowly permeable reddish loamy and clayey soils.

As mapped, there is a distinct division in the soils noted on site and this follows the site topography which has a general north west to south east line.

One additional characteristic noted is the gravelly soils below about 0.6/0.7 m depth to the very east as these are bordering on river gravels. This results in less wetness but increased droughtiness and the feature is manifest also on satellite imagery.

Profile data specifically significant for ALC grading is listed in Appendix B.

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

Table 2. Soil Type descriptions			
Profile Description	Soil types		
	Type 1	**Type 2**	**Type 3**
Horizon 1 (topsoil)	0-20 cm Dark greyish brown (10YR4/2) stoneless silty clay loam. No mottles.	0-20 cm Dark greyish brown (10YR4/2) stoneless silty clay loam. No mottles.	0-20 cm Dark reddish grey (5YR4/2) slightly stoney clay loam, no mottles.
Horizon 2 (subsoil 1)	20-60 cm Yellowish brown (10YR5/4) stoneless silty clay loam, few mottles. Moderate fine sub-angular blocky structure.	20-60 cm Yellowish brown (10YR5/4) stoneless silty clay loam, no mottles. Moderate fine sub-angular blocky structure.	20-60 cm Reddish brown (5YR5/3) slightly stoney clay loam, many ochreous, moderate medium prismatic structure.
Horizon 3 (subsoil 2)	60-120 cm Light olive brown (2.5Y 5/3) stoneless silty clay loam. Many ochreous mottles. Moderate coarse prismatic structure.	Terminated on course gravel.	60-120 cm Reddish brown (5YR4/4) slightly stoney clay, many ochreous, moderate medium/coarse prismatic to massive structure.
Wetness Class	IV	I	III
Moisture Balance - Wheat	52.6	-14.7	45.2
Moisture Balance - Potatoes	-26.4	2.2	-14.7

Survey points (Drawing 1) and soil types:
Borings/ Trial Pits
Type 1 soil = 1-21, 24-30, 34-39, 44-50, 55-60, 65-70, 74-78, 82-88, 94-97, 105-107, 113
Type 2 soil = 70, 71, 86, 87, 97, 107
Type 3 soil = 22-24, 31-33, 40-43, 51-54, 61-64, 71-73, 79-81, 88-93, 98-103, 108-112

Notes:- Survey points in line with the underground power line were omitted

4. AGRICULTURAL LAND CLASSIFICATION

4.1. National 1:250 000 map or previous survey ALC grading

Grading on the Welsh Predictive map indicates the site is mapped as **ALC Grades 3a** and **3b**. A previous detailed survey to the north has found Grade 3b and 3a on similar soils.

4.2. Current grading

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

Table 3. ALC gradings and limitations

Grade	Area		Limitation
1			
2			
3a	43.1 6.8	40.7 6.4	Wetness for Type 3 soils Droughtiness for Type 2 soils
3b	53.4	50.4	Wetness for Type 1 soils
4			
5			
Non-agricultural land	2.7	2.5	Woodland and farmyards
Total	106 ha	100%	

Type 1 soils – Wetness Limitation

The combination of the topsoil texture (silty clay), Wetness Class (IV) due in part to high and fluctuating groundwater and the number of Field Capacity Days (165.6) results in **ALC Grade 3b** for Type 1 soils.

Type 2 soils – Droughtiness Limitation

The combination of climatic factors and soil profile textures and depth results in **ALC Grade 3a** for Type 2 soils due to the moisture balance for wheat.

Type 3 soils – Wetness Limitation

The combination of the topsoil texture (clay), Wetness Class (III) and the number of Field Capacity Days (165.6) results in **ALC Grade 3a** for Type 3 soils.

DRAWING 1

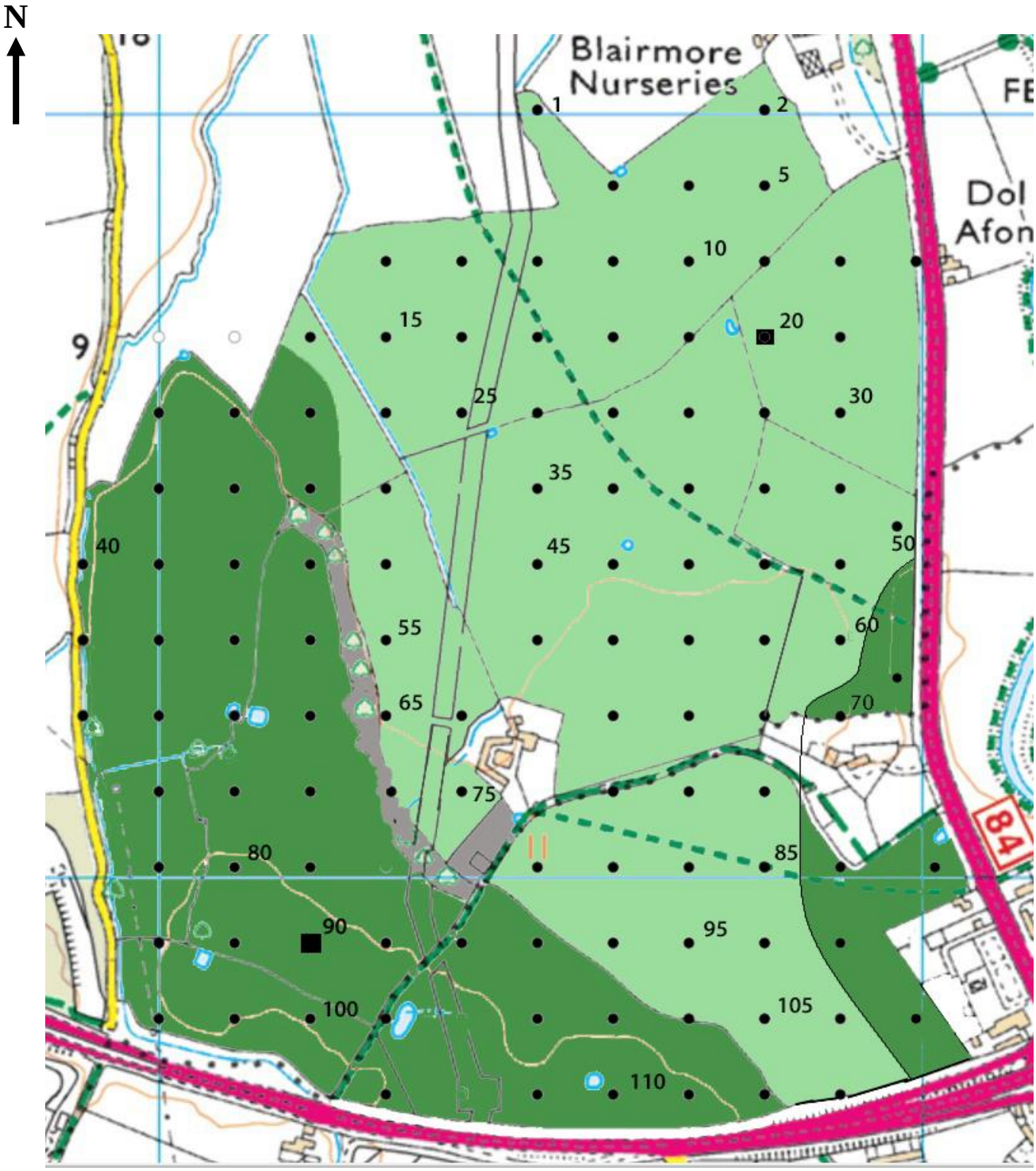
ALC Grade

Key

- Good quality – 3a
- Moderate quality – 3b
- Non agricultural
- Observation point
- Pit

Soil Environment Services

Drawing Title: ALC Grade	Drawing No.: 1
Scale: NA	Date: 03/01/2020



APPENDIX A

Soil profile data

Obs point	Base depth (cm)	Text.	Col.	Motts. %/ depth	Stns %	Grad. > 7°	Struct/ Other	Obs point	Base depth (cm)	Text.	Col.	Motts. %/ depth	Stns %	Slope > 7°	Struct/ Other
1	20	ZCL	10YR42	0	0	na		16	20	ZCL	10YR42	0	0	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	ZCL	10YR54	5/20	0		MFSAB
	120	ZCL	2.5Y53	5/20	0				120	ZCL	2.5Y53	5/20	0		
2	20	ZCL	10YR42	0	0	na		17	20	ZCL	10YR42	0	0	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	ZCL	10YR54	5/35	0		MFSAB
	120	ZCL	2.5Y53	5/20	0				120	ZCL	2.5Y53	5/60	0		
3	20	ZCL	10YR42	0	0	na		18	20	ZCL	10YR42	0	0	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	ZCL	10YR54	5/20	0		MFSAB
	120	ZCL	2.5Y53	5/20	0				120	ZCL	2.5Y53	5/20	0		
4	20	ZCL	10YR42	0	0	na		19	20	ZCL	10YR42	0	0	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	ZCL	10YR54	5/20	0		MFSAB
	120	ZCL	2.5Y53	5/20	0				120	ZCL	2.5Y53	5/20	0		
5	20	ZCL	10YR42	0	0	na		20	20	ZCL	10YR42	0	0	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	ZCL	10YR54	5/30	0		MFSAB
	120	ZCL	2.5Y53	5/20	0				120	ZCL	2.5Y53	5/60	0		
6	20	ZCL	10YR42	0	0	na		21	20	ZCL	10YR42	0	0	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	ZCL	10YR54	5/20	0		MFSAB
	120	ZCL	2.5Y53	5/20	0				120	ZCL	2.5Y53	5/20	0		
7	20	ZCL	10YR42	0	0	na		22	20	CL	5YR42	0	5	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	CL	5YR53	20/30	5		MMP
	120	ZCL	2.5Y53	5/20	0				120	C	5YR44	20/60	5		
8	20	ZCL	10YR42	0	0	na		23	20	CL	5YR42	0	5	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	CL	5YR53	20/30	5		MMP
	120	ZCL	2.5Y53	5/20	0				120	C	5YR44	20/60	5		
9	20	ZCL	10YR42	0	0	na		24	20	CL	5YR42	0	5	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	CL	5YR53	20/30	5		MMP
	120	ZCL	2.5Y53	5/20	0				120	C	5YR44	20/60	5		
10	20	ZCL	10YR42	0	0	na		25	20	ZCL	10YR42	0	0	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	ZCL	10YR54	5/20	0		MFSAB
	120	ZCL	2.5Y53	5/20	0				120	ZCL	2.5Y53	5/20	0		
11	20	ZCL	10YR42	0	0	na		26	20	ZCL	10YR42	0	0	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	ZCL	10YR54	5/20	0		MFSAB
	120	ZCL	2.5Y53	5/20	0				120	ZCL	2.5Y53	5/20	0		
12	20	ZCL	10YR42	0	0	na		27	20	ZCL	10YR42	0	0	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	ZCL	10YR54	5/20	0		MFSAB
	120	ZCL	2.5Y53	5/20	0				120	ZCL	2.5Y53	5/20	0		
13	20	ZCL	10YR42	0	0	na		28	20	ZCL	10YR42	0	0	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	ZCL	10YR54	5/20	0		MFSAB
	120	ZCL	2.5Y53	5/20	0				120	ZCL	2.5Y53	5/20	0		
14	20	ZCL	10YR42	0	0	na		29	20	ZCL	10YR42	0	0	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	ZCL	10YR54	5/20	0		MFSAB
	120	ZCL	2.5Y53	5/20	0				120	ZCL	2.5Y53	5/20	0		
15	20	ZCL	10YR42	0	0	na		30	20	ZCL	10YR42	0	0	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	ZCL	10YR54	5/20	0		MFSAB
	120	ZCL	2.5Y53	5/20	0				120	ZCL	2.5Y53	5/20	0		

Obs point	Base depth (cm)	Text.	Col.	Motts. %/ depth	Stns %	Grad. > 7°	Struct/ Other	Obs point	Base depth (cm)	Text.	Col.	Motts. %/ depth	Stns %	Slope > 7°	Struct/ Other
31	20	CL	5YR42	0	5	na		46	20	ZCL	10YR42	0	0	na	
	60	CL	5YR53	20/50	5		MMP		60	ZCL	10YR54	5/20	0		MFSAB
	120	C	5YR44	20/60	5				120	ZCL	2.5Y53	5/20	0		
32	20	CL	5YR42	0	5	na		47	20	ZCL	10YR42	0	0	na	
	60	CL	5YR53	20/30	5		MMP		60	ZCL	10YR54	5/20	0		MFSAB
	120	C	5YR44	20/60	5				120	ZCL	2.5Y53	5/20	0		
33	20	CL	5YR42	0	5	na		48	20	ZCL	10YR42	0	0	na	
	60	CL	5YR53	20/30	5		MMP		60	ZCL	10YR54	5/20	0		MFSAB
	120	C	5YR44	20/60	5				120	ZCL	2.5Y53	5/20	0		
34	20	ZCL	10YR42	0	0	na		49	20	ZCL	10YR42	0	0	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	ZCL	10YR54	5/20	0		MFSAB
	120	ZCL	2.5Y53	5/20	0				120	ZCL	2.5Y53	5/20	0		
35	20	ZCL	10YR42	0	0	na		50	20	ZCL	10YR42	0	0	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	ZCL	10YR54	5/20	0		MFSAB
	120	ZCL	2.5Y53	5/20	0				120	ZCL	2.5Y53	5/20	0		
36	20	ZCL	10YR42	0	0	na		51	20	CL	5YR42	0	5	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	CL	5YR53	0	5		MMP
	120	ZCL	2.5Y53	5/20	0				120	C	5YR44	20/70	5		
37	20	ZCL	10YR42	0	0	na		52	20	CL	5YR42	0	5	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	CL	5YR53	20/30	5		MMP
	120	ZCL	2.5Y53	5/20	0				120	C	5YR44	20/60	5		
38	20	ZCL	10YR42	0	0	na		53	20	CL	5YR42	0	5	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	CL	5YR53	20/30	5		MMP
	120	ZCL	2.5Y53	5/20	0				120	C	5YR44	20/60	5		
39	20	ZCL	10YR42	0	0	na		54	20	CL	5YR42	0	5	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	CL	5YR53	20/30	5		MMP
	120	ZCL	2.5Y53	5/20	0				120	C	5YR44	20/60	5		
40	20	CL	5YR42	0	5	na		55	20	ZCL	10YR42	0	0	na	
	60	CL	5YR53	20/20	5		MMP		60	ZCL	10YR54	5/20	0		MFSAB
	120	C	5YR44	20/60	5				120	ZCL	2.5Y53	5/20	0		
41	20	CL	5YR42	0	5	na		56	20	ZCL	10YR42	0	0	na	
	60	CL	5YR53	20/30	5		MMP		60	ZCL	10YR54	5/20	0		MFSAB
	120	C	5YR44	20/60	5				120	ZCL	2.5Y53	5/20	0		
42	20	CL	5YR42	0	5	na		57	20	ZCL	10YR42	0	0	na	
	60	CL	5YR53	20/30	5		MMP		60	ZCL	10YR54	5/20	0		MFSAB
	120	C	5YR44	20/60	5				120	ZCL	2.5Y53	5/20	0		
43	20	CL	5YR42	0	5	na		58	20	ZCL	10YR42	0	0	na	
	60	CL	5YR53	20/30	5		MMP		60	ZCL	10YR54	5/20	0		MFSAB
	120	C	5YR44	20/60	5				120	ZCL	2.5Y53	5/20	0		
44	20	ZCL	10YR42	0	0	na		59	20	ZCL	10YR42	0	0	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	ZCL	10YR54	5/20	0		MFSAB
	120	ZCL	2.5Y53	5/20	0				120	ZCL	2.5Y53	5/20	0		
45	20	ZCL	10YR42	0	0	na		60	20	ZCL	10YR42	0	0	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	ZCL	10YR54	5/20	0		MFSAB
	120	ZCL	2.5Y53	5/20	0				120	ZCL	2.5Y53	5/20	0		

Obs point	Base depth (cm)	Text.	Col.	Motts. %/ depth	Stns %	Grad. > 7°	Struct/ Other	Obs point	Base depth (cm)	Text.	Col.	Motts. %/ depth	Stns %	Slope > 7°	Struct/ Other
61	20	CL	5YR42	0	5	na		76	20	ZCL	10YR42	0	0	na	
	60	CL	5YR53	20/30	5		MMP		60	ZCL	10YR54	5/20	0		MFSAB
	120	C	5YR44	20/60	5				120	ZCL	2.5Y53	5/20	0		
62	20	CL	5YR42	0	5	na		77	20	ZCL	10YR42	0	0	na	
	60	CL	5YR53	20/30	5		MMP		60	ZCL	10YR54	5/20	0		MFSAB
	120	C	5YR44	20/60	5				120	ZCL	2.5Y53	5/20	0		
63	20	CL	5YR42	0	5	na		78	20	ZCL	10YR42	0	0	na	
	60	CL	5YR53	20/30	5		MMP		60	ZCL	10YR54	5/20	0		MFSAB
	120	C	5YR44	20/60	5				120	ZCL	2.5Y53	5/20	0		
64	20	CL	5YR42	0	5	na		79	20	CL	5YR42	0	5	na	
	60	CL	5YR53	20/30	5		MMP		60	CL	5YR53	20/30	5		MMP
	120	C	5YR44	20/60	5				120	C	5YR44	20/60	5		
65	20	ZCL	10YR42	0	0	na		80	20	CL	5YR42	0	5	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	CL	5YR53	20/30	5		MMP
	120	ZCL	2.5Y53	5/20	0				120	C	5YR44	20/60	5		
66	20	ZCL	10YR42	0	0	na		81	20	CL	5YR42	0	5	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	CL	5YR53	20/30	5		MMP
	120	ZCL	2.5Y53	5/20	0				120	C	5YR44	20/60	5		
67	20	ZCL	10YR42	0	0	na		82	20	ZCL	10YR42	0	0	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	ZCL	10YR54	5/20	0		MFSAB
	120	ZCL	2.5Y53	5/20	0				120	ZCL	2.5Y53	5/20	0		
68	20	ZCL	10YR42	0	0	na		83	20	ZCL	10YR42	0	0	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	ZCL	10YR54	0	0		MFSAB
	120	ZCL	2.5Y53	5/20	0				120	ZCL	2.5Y53	5/65	0		
69	20	ZCL	10YR42	0	0	na		84	20	ZCL	10YR42	0	0	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	ZCL	10YR54	5/20	0		MFSAB
	120	ZCL	2.5Y53	5/20	0				120	ZCL	2.5Y53	5/20	0		
70	20	ZCL	10YR42	0	0	na		85	20	ZCL	10YR42	0	0	na	
	60	ZCL	10YR54	0	0		MFSAB		60	ZCL	10YR54	5/20	0		MFSAB
									120	ZCL	2.5Y53	5/20	0		
71	20	CL	5YR42	0	5	na		86	20	ZCL	10YR42	0	0	na	
	60	CL	5YR53	0	5		MMP		60	ZCL	10YR54	0	0		MFSAB
72	20	CL	5YR42	0	5	na		87	20	ZCL	10YR42	0	0	na	
	60	CL	5YR53	20/30	5		MMP		60	ZCL	10YR54	0	0		MFSAB
	120	C	5YR44	20/60	5										
73	20	CL	5YR42	0	5	na		88	20	CL	5YR42	0	5	na	
	60	CL	5YR53	20/30	5		MMP		60	CL	5YR53	20/30	5		MMP
	120	C	5YR44	20/60	5				120	SC	5YR44	20/60	5		
74	20	ZCL	10YR42	0	0	na		89	20	CL	5YR42	0	5	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	CL	5YR53	20/30	5		MMP
	120	ZCL	2.5Y53	5/20	0				120	C	5YR44	20/60	5		
75	20	ZCL	10YR42	0	0	na		90	20	CL	5YR42	0	5	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	CL	5YR53	20/30	5		MMP
	120	ZCL	2.5Y53	5/20	0				120	C	5YR44	20/60	5		

Obs point	Base depth (cm)	Text.	Col.	Motts. %/ depth	Stns %	Grad. > 7°	Struct/ Other	Obs point	Base depth (cm)	Text.	Col.	Motts. %/ depth	Stns %	Slope > 7°	Struct/ Other
91	20	CL	5YR42	0	5	na		106	20	ZCL	10YR42	0	0	na	
	60	CL	5YR53	20/30	5		MMP		60	ZCL	10YR54	5/20	0		MFSAB
	120	C	5YR44	20/60	5				120	ZCL	2.5Y53	5/20	0		
92	20	CL	5YR42	0	5	na		107	20	ZCL	10YR42	0	0	na	
	60	CL	5YR53	20/30	5		MMP		60	ZCL	10YR54	0	0		MFSAB
	120	C	5YR44	20/60	5										
93	20	CL	5YR42	0	5	na		108	20	CL	5YR42	0	5	na	
	60	CL	5YR53	20/30	5		MMP		60	CL	5YR53	20/30	5		MMP
	120	C	5YR44	20/60	5				120	C	5YR44	20/60	5		
94	20	ZCL	10YR42	0	0	na		109	20	CL	5YR42	0	5	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	CL	5YR53	20/30	5		MMP
	120	ZCL	2.5Y53	5/20	0				120	C	5YR44	20/60	5		
95	20	ZCL	10YR42	0	0	na		110	20	CL	5YR42	0	5	na	
	60	ZCL	10YR54	5/20	0		MFSAB		60	CL	5YR53	20/30	5		MMP
	120	ZCL	2.5Y53	5/20	0				120	C	5YR44	20/60	5		
96	20	ZCL	10YR42	0	0	na		111	20	CL	5YR42	0	5	na	
	60	ZCL	10YR54	0	0		MFSAB		60	CL	5YR53	20/30	5		MMP
	120	ZCL	2.5Y53	5/70	0				120	C	5YR44	20/60	5		
97	20	ZCL	10YR42	0	0	na		112	20	CL	5YR42	0	5	na	
	60	ZCL	10YR54	0	0		MFSAB		60	CL	5YR53	20/30	5		MMP
									120	C	5YR44	20/60	5		
98	20	CL	5YR42	0	5	na		113	20	ZCL	10YR42	0	0	na	
	60	CL	5YR53	20/30	5		MMP		60	ZCL	10YR54	5/20	0		MFSAB
	120	C	5YR44	20/60	5				120	ZCL	2.5Y53	5/20	0		
99	20	CL	5YR42	0	5	na		114							
	60	CL	5YR53	20/20	5		MMP								
	120	C	5YR44	20/60	5										
100	20	CL	5YR42	0	5	na		115							
	60	CL	5YR53	20/30	5		MMP								
	120	C	5YR44	20/60	5										
101	20	CL	5YR42	0	5	na		116							
	60	CL	5YR53	20/30	5		MMP								
	120	C	5YR44	20/60	5										
102	20	CL	5YR42	0	5	na		117							
	60	CL	5YR53	20/30	5		MMP								
	120	C	5YR44	20/60	5										
103	20	CL	5YR42	0	5	na		118							
	60	CL	5YR53	20/20	5		MMP								
	120	C	5YR44	20/20	5										
104	20	ZCL	10YR42	0	0	na		119							
	60	ZCL	10YR54	5/20	0		MFSAB								
	120	ZCL	2.5Y53	5/20	0										
105	20	ZCL	10YR42	0	0	na		120							
	60	ZCL	10YR54	5/20	0		MFSAB								
	120	ZCL	2.5Y53	5/20	0										

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