September 2020

Bridgend College

Agricultural Land Classification and Soil Resources

at

Pencoed Campus, Bridgend College, Bridgend

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1 Introduction

1.1 Reading Agricultural Consultants Ltd (RAC) is instructed by Bridgend College to investigate the Agricultural Land Classification (ALC) and soil resources of land at the Pencoed Campus of Bridgend College, by means of a detailed survey of soil and site characteristics.

1.2 Guidance for assessing the quality of agricultural land in England and Wales is set out in the Ministry of Agriculture, Fisheries and Food (MAFF)/ Welsh Office Agriculture Department revised guidelines and criteria for grading the quality of agricultural land (1988)[1].

1.3 Agricultural land in England and Wales is graded between 1 and 5, depending on the extent to which physical or chemical characteristics impose long-term limitations on agricultural use. The principal physical factors influencing grading are climate, site and soil which, together with interactions between them, form the basis for classifying land into one of the five grades.

1.4 Grade 1 land is excellent quality agricultural land with very minor or no limitations to agricultural use. Grade 2 is very good quality agricultural land, with minor limitations which affect crop yield, cultivations or harvesting. Grade 3 land has moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield, and is subdivided into Subgrade 3a (good quality land) and Subgrade 3b (moderate quality land). Grade 4 land is poor quality agricultural land with severe limitations which significantly restrict the range of crops and/or level of yields. Grade 5 is very poor quality land, with very severe limitations which restrict use to permanent pasture or rough grazing.

1.5 Land which is classified as Grades 1, 2 and 3a in the ALC system is defined in paragraph 3.54 of Planning Policy Wales[2] as the best and most versatile (BMV) agricultural land which should be conserved as a finite resource for the future. Paragraph 3.55 goes on to state that considerable weight should be given to protecting BMV land from development because of its special importance, and that it should only be developed if there is an overriding need for the development and either previously developed land or land in lower agricultural grades is unavailable, or if available lower grade land has a recognised environmental value.

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[1] **MAFF (1988).** *Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land*. MAFF Publications.

[2] **Welsh Government (2018).** *Planning Policy Wales, Edition 10.* https://gov.wales/sites/default/files/publications/2018-12/planning-policy-wales-edition-10.pdf

1.6 Natural Resources Wales has published a Predictive ALC Map for Wales[3]. Within each 50m x 50m grid square, criteria including climate, slope, soil wetness, droughtiness and stone contents have been considered and used to determine the most likely limitation to agricultural land quality.

1.7 The Predictive ALC Map shows the site at Pencoed Campus to be of Grade 2 in the south and Subgrade 3a in the north. However, as explained by the Welsh Government's Frequently Asked Questions on ALC[4], the only way to accurately determine the agricultural grade of land is by a detailed field survey in accordance with the current ALC guidelines. This survey follows the established methodology and guidelines for carrying out ALC surveys.

2 Site and climatic conditions

General features, land form and drainage

2.1 The site extends to around 52ha in total, of which around 24ha is agricultural grassland, and around 13ha comprises a disused golf course which is now informally grazed. The remainder is non-agricultural land which is primarily related to the existing campus, including buildings and sports pitches. The A473 dissects the site in the west, separating approximately 6ha from the bulk of the area. Collectively, the site is bounded to the west by the settlement of Pencoed, to the north by the A473 and to the south and east other agricultural land, with Felindre Road also to the south and woodland to the east.

2.2 Topography across the site is broadly gently sloping from the highest altitude of around 45m above Ordnance Datum (AOD) in the north, falling to the south to an altitude of 35m AOD.

2.3 Drainage of the land is via Ewenni Fach in the east and the Afon Ewenni in the west. Natural Resources Wales' mapping of long-term flood[5] risk shows areas west of the A473 to be at high risk of flooding by rivers and much of the area to be at some risk of surface water flooding.

[3] **Natural Resources Wales (2019)**. *Predictive Agricultural Land Classification (ALC) Map for Wales.* http://lle.gov.wales/map/alc2

[4] **Welsh Government (2017).** *Agricultural Land Classification, Frequently Asked Questions* https://beta.gov.wales/sites/default/files/publications/2018-02/agricultural-land-classification-frequently-asked-questions.pdf

[5] **Natural Resources Wales (2020)**. https://naturalresources.wales/evidence-and-data/maps/long-term-flood-risk/?lang=en

Agro-climatic conditions

2.4 Agro-climatic data for the site have been interpolated from the Meteorological Office's standard 5km grid point data set at a representative altitude of 40m AOD, and are given in Table 1. The climate is warm and very wet with moderately small moisture deficits. The number of Field Capacity Days is very large and is considered to be very unfavourable for providing opportunities for agricultural field work.

Table 1: Local agro-climatic conditions

Parameter	Value
Average Annual Rainfall	1,335mm
Accumulated Temperatures >0°C	1,514 day°
Field Capacity Days	262 days
Average Moisture Deficit, wheat	70mm
Average Moisture Deficit, potatoes	55mm

2.5 There is an overriding climatic limitation on the threshold of Grade 2 and Subgrade 3a (shown in Appendix 1).

Soil parent material and soil type

2.6 The principal underlying geology mapped by the British Geological Survey[6] across the site is the Marros Group, commonly comprising grey mudstone, locally with cherts, sandstone and conglomerates. In the north-east of the site is a band of the South Wales Lower Coal Measures Formation which includes grey coal-bearing mudstones and siltstones. Superficial deposits of glacial till overlie the bedrock in the north and include sand and gravel, locally with lenses of silt, clay or peat. Where the altitude falls below around 40m AOD the superficial deposits are river terrace sand and gravel. There are superficial deposits of alluvium associated with the watercourses to the east and west of the site which is normally consolidated, compressible silty clay.

2.7 The Soil Survey of England and Wales soil association mapping[7] (1:250,000 scale) shows the Wick 1 association to be present across the site, bordering on Brickfield 2 soils to the east and Alun association soils to the south. Wick 1 soils develop in river terrace drift and are characterised by coarse loamy and sandy profiles, locally over gravel. The similar Alun soils develop on flatter land next to rivers within alluvial deposits and may include sandy loam throughout. The main soils are

[6] **British Geological Survey (2020).** *Geology of Britain viewer*, http://mapapps.bgs.ac.uk/geologyofbritain/home.html

[7] **Soil Survey of England and Wales (1984).** *Soils of Wales* (1:250,000), Sheet 2

permeable and of Wetness Class (WC) I, however some component Alun soils are affected by groundwater and may be of WC III and IV.

2.8 The contrasting Brickfield 3 soils include fine loamy textures with slowly permeable subsoil horizons. The soils are seasonally waterlogged, of WC IV[8].

3 Agricultural land quality

Soil survey methods

3.1 In total, 29 soil profiles were examined across the site using an Edelman (Dutch) auger at an observation density of one per hectare in accordance with the established recommendations for ALC surveys[4]. Three observation pits were also excavated to examine subsoil structures. The locations of observations are indicated on Figure RAC8671-1. At each observation point the following characteristics were assessed for each soil horizon up to a maximum of 120cm or any impenetrable layer:

- soil texture;
- significant stoniness;
- colour (including localised mottling);
- consistency;
- structural condition;
- free carbonate; and
- depth.

3.2 Three topsoil samples were submitted for laboratory determination of particle size distribution, pH, organic matter content and nutrient contents (P, K, Mg). Results are presented in Appendix 2.

3.3 Soil Wetness Class (WC) was inferred from the matrix colour, presence or absence of, and depth to, greyish and ochreous gley mottling, and slowly permeable subsoil layers at least 15cm thick, in relation to the number of Field Capacity Days at the location.

3.4 Soil droughtiness was investigated by the calculation of moisture balance equations (given in Appendix 3). Crop-adjusted Available Profile Water (AP) is estimated from texture, stoniness and

[8] **Rudeforth et al (1984).** *Soils and their Use in Wales.* Soil Survey of England and Wales, Bulletin 11, Harpenden

depth, and then compared to a calculated moisture deficit (MD) for the standard crops, wheat and potatoes. The MD is a function of potential evapotranspiration and rainfall. Grading of the land can be affected if the AP is insufficient to balance the MD and droughtiness occurs.

Agricultural land classification and site limitations

3.5 Assessment of land quality has been carried out according to the MAFF/Welsh Office Agriculture Department revised ALC guidelines[1]. Soil profiles have been described according to Hodgson (1997)[9] which is the recognised source for describing soil profiles and characteristics according to the ALC guidelines.

3.6 Agricultural land quality at the site is most affected by workability as influenced by the climate. The land is classified as mostly Subgrade 3a with areas of Subgrade 3b and a restricted area of Grade 4.

3.7 There is one major soil type present at the site, and three minor soil types present in discrete areas. Topsoil of the main soil type comprises medium clay loam which is mostly brown (10YR4/3 in the Munsell soil colour charts[10]) and has an average depth of 28cm. The topsoil is stoneless to slightly stony. The consistency is friable. A pit excavated in this soil type shows the topsoil to be well-rooted and to contain many pores. The structure is moderately well developed and the soil forms fine to medium subangular blocky peds.

3.8 Upper subsoil is mostly brown (7.5YR4/3, 4/4 or 10YR4/3, 5/3) medium clay loam or sandy clay loam. Most of the upper subsoil of this type is slightly stony (estimated at 5-10% by volume) although there are isolated areas of increased stoniness, for example at Observations 6 and 15 where larger pebbles are included. The consistency is friable and roots continue to be common. The upper subsoil has a weakly developed medium to fine subangular blocky structure. Along the southern boundary of the site there are frequent occurrences of mottling in the subsoil. Three of these profiles are considered to be gleyed.

3.9 The average depth able to be observed is 53cm before the profiles became impenetrable to auger due to subsoil stones. Where the lower subsoil was able to be assessed it comprises brown (7.5YR5/3) loamy medium sand or medium clay loam, or yellowish brown (10YR5/4)

[9] **Hodgson, J. M. (Ed.) (1997).** *Soil survey field handbook.* Soil Survey Technical Monograph No. 5, Silsoe.

[10] **Munsell Color (2009).** *Munsell Soil Color Book*. Grand Rapids, MI, USA

sandy clay loam. Based on the observations made and in correlation with the mapped soil types, it is assumed that the lower subsoil continues as a stony and coarse loamy horizon to depth.

3.10 Most profiles of this soil type are freely draining, of WC I, and are limited by workability to Subgrade 3a (owing to the large number of FCD). Although the profiles are inherently permeable, those in which there is gleying in the upper subsoil are of WC II or III, and are limited by wetness and workability to Subgrade 3b.

3.11 The minor soil types are each identified in sporadic locations. East and west of the A473 and at one location on the disused golf course, the topsoil is of sandy loam or sandy clay loam of 33cm average depth. The colour is dark brown or brown (7.5YR3/3, 4/2 or 4/3) and stone content is mostly slight, although is higher in localised areas (e.g. Pit 2). There are many roots and pores distributed through the topsoil, which has a fine subangular blocky structure with some compound peds that part easily.

3.12 Upper subsoil comprises reddish brown or brown (5YR4/3 or 7.5YR4/3) sandy loam or loamy sand. The subsoil is friable and has a weakly developed fine subangular blocky structure. The average total depth able to be observed is 41cm. Due to the significant proportion of stone and fragmented rock at relatively shallow depth in the west of the site, it is assumed that bedrock may be present within 120cm.

3.13 The profiles are of WC I. East of the A473, the soil profile is limited by topsoil stone content to Grade 4. West of the A473, where there is fragmented rock within around 30cm depth, there are potential restrictions on cultivation and crop establishment, which would result in a borderline depth limitation to Subgrade 3a/3b. This profile and an adjacent profile that was observable to greater depth are mapped as being at high risk of flooding by rivers, and are accordingly assessed as Subgrade 3b. The profile of this soil type to the east of the site is limited by workability to Grade 2, but is also on the threshold of Subgrade 3a due to the overriding climatic limitation (and is mapped as such to form a cohesive unit with the surrounding land).

3.14 Identified in the centre south and north-east of the site are soils with a medium clay loam topsoil of 29cm average depth which is brown to dark greyish brown (7.5YR4/2, 10YR4/2 or 10YR4/3). The topsoil is friable and slightly stony. In one profile there is an intermediate horizon of sandy clay loam below which, and forming the upper subsoil of the other two profiles, is brown (7.5YR5/3) heavy clay loam. The upper subsoil is also slightly stony and has a friable to firm consistency. Most profiles are mottled at depth but all are permeable (WC I or II), and limited by workability to Subgrade 3a or 3b.

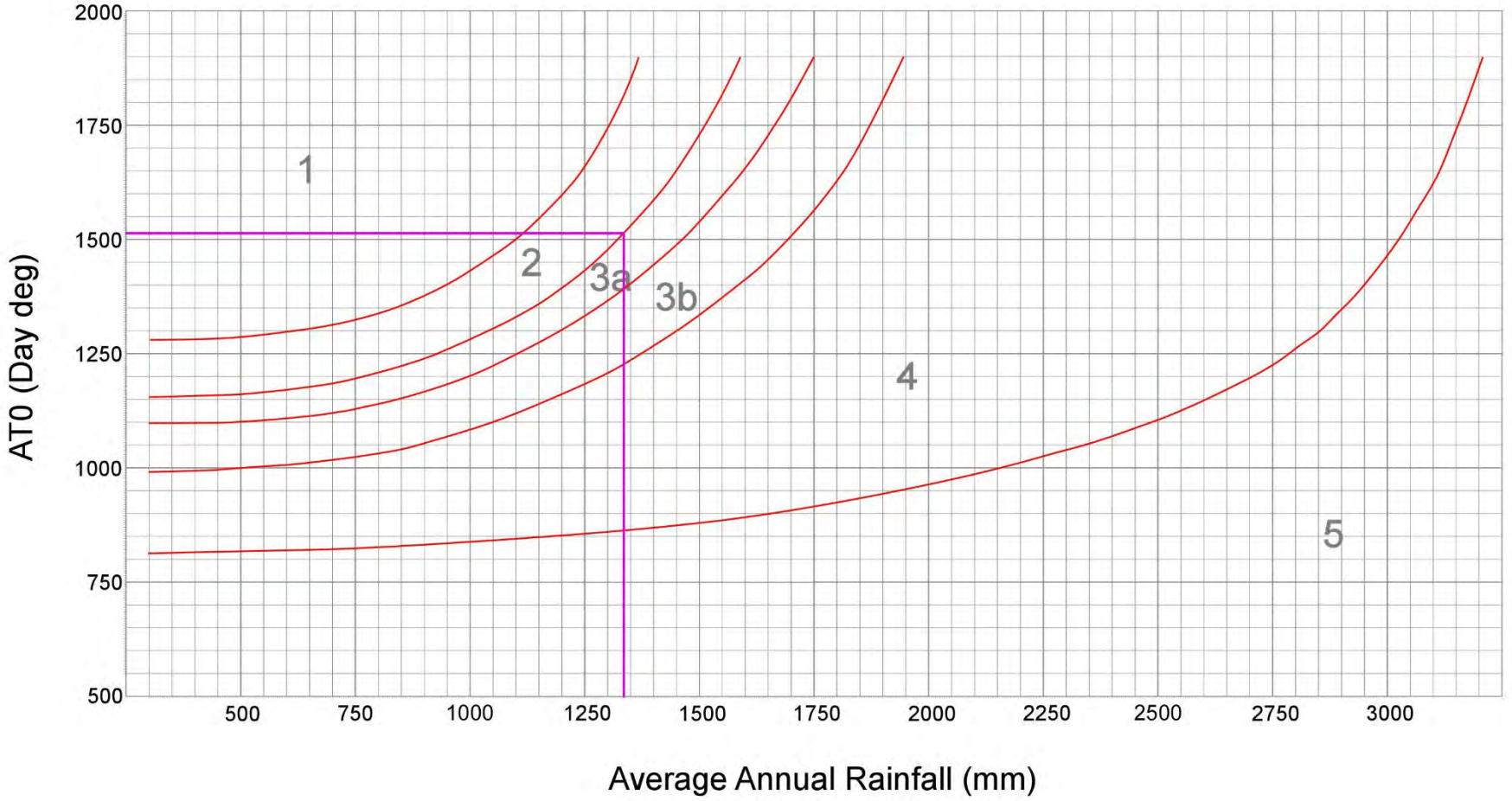
3.15 The third minor soil type is identified in isolated points in the east and west of the site and is similar to the main soil, but has a medium silty clay loam topsoil. The stone content increases in the lower subsoil such that observation was restricted to 75-80cm. The profiles are of WC I and limited by workability to Subgrade 3a.

3.16 The areas of each ALC grade are given in Table 2 and the distribution is shown in Figure RAC8671-2. Photographs taken at the site are given in Appendix 4.

Table 2: Agricultural land classification

Grade	Description	Hectares	%
3a	Good quality	25.6	49
3b	Moderate quality	10.1	20
4	Poor quality	0.6	1
Non-Agricultural	Total Agricultural	15.7	30
Total		52.0	100

Appendix 1: Climatic Limitation



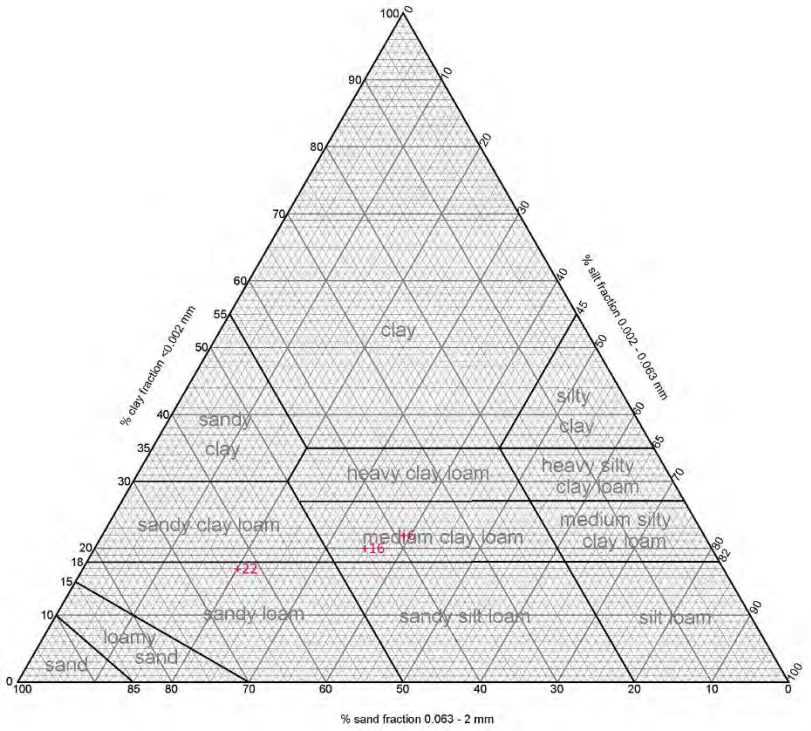
Appendix 2: Laboratory Data

Determinand	Site 6	Site 16	Site 22	Units
Sand 2.00-0.063 mm	39	45	63	% w/w
Silt 0.063-0.002 mm	39	35	20	% w/w
Clay <0.002 mm	22	20	17	% w/w
Organic Matter	4.1	5.4	3.6	% w/w
Texture	Medium Clay Loam	Medium Clay Loam	Sandy Loam	

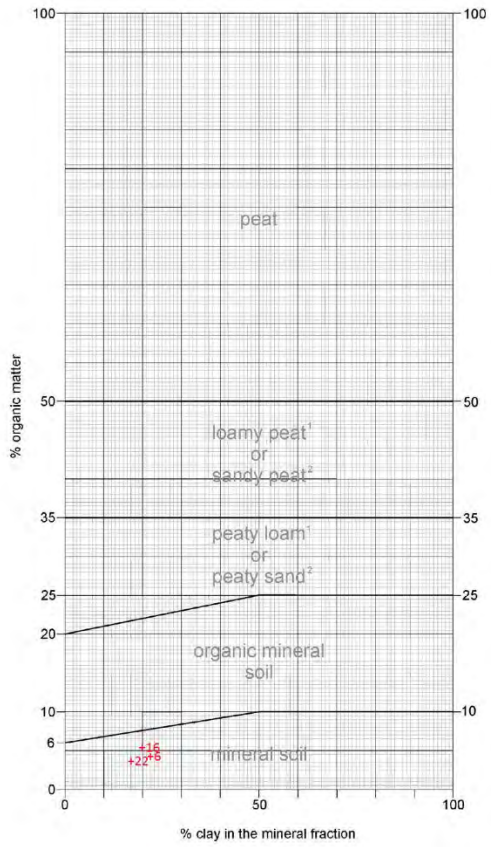
Determinand	Site 6	Site 16	Site 22	Units
Soil pH	6.1	6.6	6.2	
Phosphorus (P)	14.8	24.6	9.8	Mg/l (av)
Potassium (K)	40.9	48.4	27.0	Mg/l (av)
Magnesium (Mg)	77.0	83.8	75.3	Mg/l (av)

Determinand	Site 6	Site 16	Site 22	Units
Phosphorus (P)	1	2	1	ADAS Index
Potassium (K)	0	0	0	ADAS Index
Magnesium (Mg)	2	2	2	ADAS Index

Soil Texture by Particle Size Analysis



Organic Matter Class



[1] Less than 50% sand in the mineral fraction

[2] 50% sand or more in the mineral fraction

Appendix 3: Soil Profile Summaries and Droughtiness Calculations

Wetness / workability limitations are determined according to the methodology given in Appendix 3 of the ALC guidelines, MAFF 1988

Droughtiness calculations are made according to the methodology given in Appendix 4 of the ALC guidelines, MAFF 1988.

Grades are shown for drought, wetness and any other soil or site factors which are relevant. The overall Grade is set by the most limiting factor and shown on the right.

Stone types		
%	TAv	EAv
hard	1	0.5
chalk	10	7

Climate Data	
MDwheat	70
MDpotato	55
FCD	262

Wetness Class Guidelines		*III*	*IV*	*V*
SPL within 80cm, gleying within 40cm		>71cm	30-71cm	<30cm
SPL within 80cm, gleying at 40-70cm		All		
No SPL but gleying within 40cm	coarse subsoil	*III*	other cases	*III*
No SPL but gleying at 40-70cm	coarse subsoil	*II*	other cases	*II*

hard flint & pebble

Maximum depth of auger penetration is underlined

Site No.		Depth cm		Texture	$CaCO_3$	Colour	Mottle colour	abund-ance	stone% hard	stone% chalk	Struct-ure	APwheat mm	AP potato mm	Gley	SPL	WC	Wetness grade WE	Final Grade	Limiting Factor(s)
1	T	0	25	mCL		10YR4/3						45	45	n	n	*I*	3a	**3a**	WK
		25	75	mCL		7.5YR4/4	Fe	few				65	72	n	n				
		75	80	LmS		7.5YR5/3	Fe	com	10			3	0	y	n				
		80	120	LmS		7.5YR5/3	Fe	com	20			20	0	y	n				
											Total	**132**	**117**						
											MD	62	62						
									Droughtiness grade (DR)			1	1						
2	T	0	28	mCL		10YR4/3						50	50	n	n	*I*	3a	**3a**	WK
		28	35	mCL		7.5YR4/3			15			10	10	n	n				
		35	75	mCL		7.5YR4/3			15			42	48	n	n				
		75	120	LmS					20			22	0	y	n				
											Total	**124**	**108**						
											MD	54	53						
									Droughtiness grade (DR)			1	1						
3	T	0	25	mCL		7.5YR3/3			2			44	44	n	n	*I*	3a	**3a**	WK
		25	45	SCL		7.5YR4/4			5			29	29	n	n				

		45	75	SCL	7.5YR4/4			10		29	34	n	n						
		75	120	LmS				20		22	0	y	n						
									Total	**124**	**107**								
									MD	54	52								
									Droughtiness grade (DR)	1	1								
4	T	0	25	mCL	10YR4/3			2		44	44	n	n	*I*	3a	**3a**	WK		
		25	28	mCL	7.5YR4/3			5		5	5	n	n						
		28	75	mCL	7.5YR4/3			10		55	61	n	n						
		75	120	LmS				20		22	0	y	n						
									Total	**125**	**110**								
									MD	55	55								
									Droughtiness grade (DR)	1	1								
5	T	0	23	mZCL	10YR3/3			5		42	42	n	n	*I*	3a	**3a**	WK		
		23	45	mZCL	10YR4/3			5		36	36	n	n						
		45	75	SCL	7.5YR5/3	Fe	few	10		29	34	n	n						
		75	120	SL				20		40	0	y	n						
									Total	**147**	**111**								
									MD	77	56								
									Droughtiness grade (DR)	1	1								
6	T	0	30	mCL	10YR4/3			10		49	49	n	n	*I*	3a	**3a**	WK		
Pit 1		30	50	mCL	10YR4/3			25		25	25	n	n						
		50	60	fSCL	10YR5/4	Fe	com	15		9	14	n	n						
		60	75	fSCL	10YR5/4	Fe	com	20		12	13	n	n						
		75	120	LmS				20		22	0	n	n						
									Total	**116**	**100**								
									MD	46	45								
									Droughtiness grade (DR)	1	1								
7	T	0	25	mCL	10YR4/3			0		45	45	n	n	*II*	3b	**3b**	WE		
		25	45	mCL	10YR4/3			5		31	31	n	n						
		45	50	mCL	7.5YR5/3	Fe	com	5		8	8	y	n						

		50	80	mCL	7.5YR5/3	Fe	com	10		27	29	y	n						
		80	120	LmS				20		20	0								
									Total	**130**	**112**								
									MD	60	57								
									Droughtiness grade (DR)	1	1								
8	T	0	28	mCL	10YR4/2			5		48	48	n	n	*I*	3a	**3a**	WK		
		28	38	mCL	10YR4/3			10		15	15	n	n						
		38	75	mCL	10YR4/3			15		38	44	n	n						
		75	120	LmS				20		22	0								
									Total	**123**	**107**								
									MD	53	52								
									Droughtiness grade (DR)	1	1								
9	T	0	30	mCL	10YR4/3			5		51	51	n	n	*III*	3b	**3b**	WE		
		30	60	SCL	10YR6/3	Fe	com	5		38	43	y	n						
		60	75	SCL	10YR6/3	Fe	com	10		14	14	y	n						
		75	120	LmS				20		22	0								
									Total	**125**	**108**								
									MD	55	53								
									Droughtiness grade (DR)	1	1								
10	T	0	28	mCL	7.5YR4/2			2		49	49	n	n	*II*	3b	**3b**	WE		
		28	72	SCL	7.5YR5/3	Fe	com, v faint	10		50	57	(y)	n						
		72	80	SCL	7.5YR5/3	Fe	com, v faint	10		7	0	(y)	n						
		80	120	LmS				20		20	0								
									Total	**126**	**107**								
									MD	56	52								
									Droughtiness grade (DR)	1	1								
11	T	0	25	mCL	10YR4/2			2		44	44	n	n	*I*	3a	**3a**	WK		
		25	50	SCL	7.5YR4/3	Fe	com	5		36	36	n	n						
		50	75	SCL	7.5YR4/3	Fe	com	10		23	27	n	n						

		75	120	LmS				20		22	0							
									Total	**125**	**107**							
									MD	55	52							
								Droughtiness grade (DR)		1	1							
12	T	0	32	mZCL	7.5YR4/2			2		60	60	n	n	*I*	3a	**3a**	WK	
		32	70	SCL	7.5YR4/3	Fe	com	5		45	54	n	n					
		70	80	SCL	10YR4/3	Fe	com	5		10	0	n	n					
		80	120	SCL	10YR4/3	Fe	com	15		34	0	n	n					
									Total	**148**	**114**							
									MD	78	59							
								Droughtiness grade (DR)		1	1							
13	T	0	30	mCL	10YR4/2			2		53	53	n	n	*I*	3a	**3a**	WK	
		30	70	SCL	7.5YR4/3	Fe	few to com	2		49	59	n	n					
		70	105	hCL	7.5YR5/3	Fe	com, v faint	5		33	0	(y)	n					
		105	120	hCL	7.5YR5/3	Fe	com, v faint	5		14	0	(y)	n					
									Total	**150**	**112**							
									MD	80	57							
								Droughtiness grade (DR)		1	1							
14	T	0	24	SCL	7.5YR3/2			40		25	25	n	n	*I*	3a	**4**	ST	
Pit 2		24	30	mS	7.5YR4/3			40		3	3	n	n					
		30	75	mS	7.5YR5/3			40		17	18	n	n					
		75	120	Rock						0	0							
									Total	**45**	**47**							
									MD	-25	-8							
								Droughtiness grade (DR)		3b	2							
15	T	0	28	mCL	10YR4/3			10		46	46	n	n	*I*	3a	**3a**	WK	
		28	35	mCL	7.5YR4/3			15		10	10	n	n					
		35	75	mCL	7.5YR4/3			15		42	48	n	n					
		75	120	LmS				20		22	0							

									Total	**119**	**103**			Localised stoniness - augered on third attempt				
									MD	49	48			3b				
								Droughtiness grade (DR)		1	1							
16	T	0	28	mCL	10YR4/3			2		49	49	n	n	*I*	3a	**3a**	WK	
		28	35	SCL	7.5YR4/3	Fe	com	10		10	10	n	n					
		35	75	SCL	7.5YR4/3	Fe	com	15		41	45	n	n					
		75	120	LmS				20		22	0							
									Total	**122**	**104**							
									MD	52	49							
								Droughtiness grade (DR)		1	1							
17	T	0	23	mCL	10YR4/3			5		39	39	n	n	*II*	3b	**3b**	WE	
		23	60	mCL	7.5YR4/3	Fe	few	2		52	58	n	n					
		60	75	mSL	7.5YR5/3	Fe	com	10		15	14	y	n					
		75	120	mSL	7.5YR5/3	Fe	com	15		42	0	y	n					
									Total	**149**	**111**							
									MD	79	56							
								Droughtiness grade (DR)		1	1							
18	T	0	30	mZCL	7.5YR4/2			5		54	54	n	n	*I*	3a	**3a**	WK	
		30	45	mCL	10YR4/3	Fe	few	5		23	23	n	n					
		45	75	mCL	10YR4/3	Fe	com	10		30	36	n	n					
		75	120	mSL				20		40	0							
									Total	**147**	**113**							
									MD	77	58							
								Droughtiness grade (DR)		1	1							
19	T	0	28	mCL	7.5YR4/2			5		48	48	n	n	*I*	3a	**3a**	WK	
		28	38	hCL	7.5YR4/3			15		14	14	n	n					
		38	75	hCL	7.5YR4/3			15		38	44	n	n					
		75	120	mSL				20		40	0							
									Total	**140**	**106**							

									MD	70	51							
								Droughtiness grade (DR)		1	1							
20	T	0	45	SCL	7.5YR3/3			5		73	73	n	n	*I*	3a	**3b**	FL	
		45	90	mSL	7.5YR4/2	Fe	few	2		51	37	n	n					
		90	120	mSL	7.5YR4/2	Fe	few	10		30	0	n	n					
									Total	**153**	**110**							
									MD	83	55							
								Droughtiness grade (DR)		1	1							
21	T	0	32	mCL	7.5YR4/2			5		55	55	n	n	*I*	3a	**3b**	FL	
		32	64	SCL	7.5YR4/3			5		39	46	n	n					
		64	75	SCL	7.5YR4/3			10		10	8	n	n					
		75	120	LmS				20		22	0							
									Total	**126**	**109**							
									MD	56	54							
								Droughtiness grade (DR)		1	1							
22	T	0	28	mSL	7.5YR3/3			10		43	43	n	n	*I*	2	**3b**	FL (DP)	
Pit 3		28	32	mSL	7.5YR4/3			50		3	3	n	n					
		32	75	mSL	7.5YR4/3			50		29	30	n	n					
		75	120	Rock						0	0							
									Total	**75**	**77**			Large slabs of broken rock				
									MD	5	22							
								Droughtiness grade (DR)		2	1							
23	T	0	38	SCL	7.5YR4/2			10		59	59	n	n	*I*	3a	**3b**	FL	
		38	58	LcS	5YR4/3			10		13	15	n	n					
		58	75	LcS	5YR4/3			15		9	8	n	n					
		75	120	Rock						0	0							
									Total	**80**	**81**							
									MD	10	26							
								Droughtiness grade (DR)		2	1							
24	T	0	30	SCL	7.5YR4/2			2		59	59	n	n	*II*	3b	**3b**	WE	

		30	50	SCL	7.5YR4/3	Fe	few	2		13	15	n	n					
		50	60	mSL	7.5YR5/3	Fe	com	5		9	8	y	n					
		60	120	mSL	7.5YR5/3	Fe	com	10		0	0	y	n					
									Total	**80**	**81**							
									MD	10	26							
									Droughtiness grade (DR)	2	1							
25	T	0	28	SCL	10YR4/2			8		44	44	n	n	*I*	3a	**3a**	WK	
		28	38	SCL	7.5YR3/3	Fe	few	10		14	14	n	n					
		38	75	SCL	7.5YR3/3	Fe	few	10		39	44	n	n					
		75	120	LmS				20		22	0							
									Total	**119**	**101**							
									MD	49	46							
									Droughtiness grade (DR)	1	1							
26	T	0	32	cSL	7.5YR4/3			5		52	52	n	n	*I*	2	**2**	WK	
		32	45	cSL	7.5YR4/3			20		17	17	n	n					
		45	120	LmS				25		36	18							
									Total	**105**	**86**							
									MD	35	31							
									Droughtiness grade (DR)	1	1							
27	T	0	34	mCL	7.5YR4/3			5		58	58	n	n	*I*	3a	**3a**	WK	
		34	55	SCL	7.5YR5/3	Fe	few	5		28	30	n	n					
		55	75	SCL	7.5YR5/3	Fe	few	15		17	19	n	n					
		75	120	LmS				20		22	0							
									Total	**125**	**108**							
									MD	55	53							
									Droughtiness grade (DR)	1	1							
28	T	0	38	mCL	7.5YR4/3			2		67	67	n	n	*I*	3a	**3a**	WK	
		38	80	SCL	7.5YR5/3	Fe	few	5		46	46	n	n					
		80	120	SCL	7.5YR5/3	Fe	few	15		34	0	n	n					

Border 3a - climate

										Total	**147**	**113**						
										MD	77	58						
									Droughtiness grade (DR)		1	1						
29	T	0	30	mCL	10YR4/3			10			49	49	n	n	//	3b	**3b**	WE
		30	54	hCL	7.5YR5/3	Fe	few to com	5			34	37	(y)	n				
		54	75	hCL	7.5YR5/3	Fe	few to com	15			18	22	(y)	n				
		75	120	LmS				20			22	0						
										Total	**123**	**108**						
										MD	53	53						
									Droughtiness grade (DR)		1	1						

Appendix 4: Site Photographs

Pit 1

Pit 1 topsoil

Pit 1 subsoil

Pit 1 subsoil stone

Pit 2

Pit 2 topsoil

Pit 2 topsoil stone/rock

Pit 3

Pit 3 topsoil

Pit 3 subsoil

Pit 3 broken rock

Survey Area

+1 Auger Observation

.P1 Pit Observation

N

Scale 1:10,000@A4 Mar/2020

Figure	RAC8671-1: Observations
Site:	Pencoed Campus, Bridgend College
Client:	Bridgend College

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Grade 1 - excellent quality
Grade 2 - very good quality
Subgrade 3a - good quality
Best and most versatile land
Not Present
Subgrade 3b - moderate quality
Grade 4 - poor quality
Grade 5 - very poor quality
Non-agricultural

N

Scale 1:10,000@A4 Mar/2020

Figure: RAC8671-2: Agricultural Land Classification

Site: Pencoed Campus, Bridgend College

Client: Bridgend College

Reading Agricultural Consultants