Agricultural Land Classification Report

Stokes Lane Solar Farm

Prepared for:

Stokes Lane Solar Farm Limited

22 Grosvenor Gardens

London

United Kingdom

SW1W 0DH

Report prepared by:

Charles Garrard BSc (Hons) MBPR (Agric.)
Ceres Rural LLP
Suits 11 – 12 Council Offices
London Road
Saffron Walden
CB11 4ER

May 2025

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1. Background

We are instructed by Stokes Lane Solar Farm Limited to determine the Agricultural Land Classification (ALC) of the land north and south of Rookery Farm Lane, Monk Sherborne in Hampshire. The site is centred on the grid reference SU 604 556 and the site area for this assessment is approximately 24 hectares. The site is predominantly in arable cropping, sown with spring barley during our site visit, with a small environmental stewardship plot to the southwest of the site.

The consultants undertaking this work are Joe Pitt and Charles Garrard of Ceres Rural LLP. Joe is a BASIS & FACTS Qualified Adviser and holds a 1st class BSc (Hons) degree in Agricultural Business Management from the University of Reading. Charles is a BASIS & FACTS Qualified Adviser and holds a 1st class BSc (Hons) degree in Agronomy from the University of Newcastle. Both Joe and Charles have attended the two-day training course "Working with Soil" run by the Institute of Professional Soil Scientists in association with the British Society of Soil Science and work together on Agricultural Land Classification reporting with several other qualified colleagues at Ceres Rural.

2. Methodology

A desktop study of the location and climatological data associated with the land was undertaken before the site visit. The climate data was obtained from the Met Office publication 'Climatological Data for Agricultural Land Classification' and was used to determine the overriding site limitation and interaction with soil parameters.

Fieldwork was carried out on Monday 28th April, during which 6 auger borings were carried out by hand, and 5 soil pits dug using a mini-digger. Soil texture was assessed by hand texturing from both consultants carrying out the survey. The samples taken were representative of the whole site and captured the small variations found across both pits and borings. Pit and boring locations can be found in Appendix E.

3. Land Classification Report

This ALC assessment is undertaken in accordance with the Agricultural Land Classification for England and Wales; Revised Guidelines on Criteria for Grading the Quality of Agricultural Land 1988 and the final grade is determined by the most limiting factor present.

The main limiting factors used in the ALC system which influence the grade of land are:

- Climatic limitations
- Site limitations
- Soil limitations
- Interactive limitations

3.1 Climatic Limitations

The climatological data for the site has been interpolated from Meteorological Office (1989) data and is shown below in Table 1; the full workings are detailed in Appendix A. It shows the interpolated adjustment for altitude, average annual rainfall, accumulated temperature, field capacity days and the moisture deficit for wheat and potatoes.

TABLE 1 – CLIMATOLOGICAL DATA FOR LAND AT STOKES LANE

Climatological Factor	Units	Value
Altitude	m	105
Average Annual Rainfall (AAR)	mm	782
Accumulated Temperature (AT0)	day ° C (Jan – Jun)	1428
Field Capacity Days	day	168
Moisture Deficit – Wheat	mm	100
Moisture Deficit - Potatoes	mm	90

Based on the Average Annual Rainfall and Accumulated Temperature, the grade according to climate at this site should be no less than **ALC Grade 1** (MAFF 1988).

3.2 Site Limitations

The assessment of site factors is primarily concerned with the way in which the topography influences the use of agricultural machinery and hence the potential cropping of the land.

3.2.1 Gradient

The slope gradient can influence the ALC of a site, due to it affecting the type of machinery which can be safely and efficiently operated. Grades 1 to 3a have a gradient limit of 7 degrees. Grade 3b has a limit of 11 degrees. Although the site had a gently rolling aspect, the gradient did not exceed 7 degrees at any point, and therefore should be classified no less than **ALC Grade 1** (MAFF 1988) based on gradient.

3.2.2 Microrelief

Microrelief can be defined as slight irregularities of the land surface causing variations in elevation amounting to no more than a few feet. Complex changes to slope angle and direction over short distances, or the presence of boulders or rock considerably limits the use of agricultural machinery. Upon the site visit, we did not find any indicators of microrelief issues. As such, the site still be classified no less than **ALC Grade 1** (MAFF 1988).

Image 1 - View of gradient and microrelief at Stokes Lane.

3.2.4 Flooding

As stated in the National Soil Resources Extended Soils Report (2025) for the area, the risk of flooding is minor and therefore is not a limiting factor when assessing the ALC grade of this site.

3.3 Soil Limitations

In addition to the effects of climate, relief, organisms, and time, the underlying geology or 'parent material' plays a crucial role in the development of soils in England and Wales. Through the process of weathering, rocks contribute inorganic mineral grains to the soils, thereby influencing the soil texture. The underlying geological parent material of the site is split between chalk and drift over tertiary clays, as noted in the National Soil Resources Extended Soils Report (2025). The expected land use of both is split between permanent and short-term grassland dairying, winter cereals and short-term grassland with dairying and stock rearing; cereals, sugar beet and potatoes as well as woodland.

The split of soil types presented itself clearly during fieldwork, with borings and pits on the eastern edge of the site (typically on the slopes nearest Manor Farm) presented a shallower, calcareous silty soils over chalk, whereas borings and pits to the north and west of the site revealed a deeper, clayey subsoil with a silty clay loam topsoil.

During site inspection and auger borings, it was noted that some of the clay subsoils found in the pits and auger borings contained a significant amount of large flint stones at depth (40%+), which will affect the rooting and the overall grade within the profile. Despite the massive, clay subsoils and number of Field Capacity Days noted on the climatic calculations, we found very limited evidence of mottling or gleying across the site.

According to the National Soil Resources Institute (2025), the suggested predominant soil associations found on the site are Andover (343h) and Wickham (711h). Andover association is described as shallow well drained calcareous silty soils over chalk on slopes and crests, whilst Wickham is described as slowly permeable seasonally waterlogged fine loamy over clayey and fine silty over clayey soils associated with similar clayey soils often with brown subsoils (National Soil Resources Institute, 2025). However, upon the fieldwork inspection, we suspect the site features Carstens (581d) and Andover soil series. In this region, the association is usually restricted to narrow interfluves and hilltops, giving characteristic clay capped hills with shallow chalk soils of the Andover 1 association between. As shown in Image 2, this soil association is distinct from the shallower soils over chalk found on other areas of the site.

During the fieldwork, the Andover series was easily identifiable on the eastern and southern slopes over the site at Stokes Lane. Soils in these areas of the site were found to contain a light grey or grey, medium silty clay loam topsoil, which is extremely calcareous. The depth of the soils of this type varied from around 30-40cm, where the solid chalk subsoil often prevented excavation by hand and made mechanical excavation prohibitively difficult. The other borings and soil pits to the northern and western edges of the site featured more clay in the profile, together with a clay or silty clay subsoil. From the soil pits and auger borings carried out, we found these soils to be a brownish, slightly stony silty clay loam topsoil, extending to a strong brown to reddish brown, silty clay or silty clay subsoil. This is more typical of the Carstens soil series, and were found to be significantly different to the shallower soils over chalk found on other areas of the site.

Image 2 – Boring 4, showing a brown, stony silty clay loam topsoil over a reddish brown stony silty clay subsoil – typical of Carstens. There was evidence of solid chalk beyond 120cm in places.

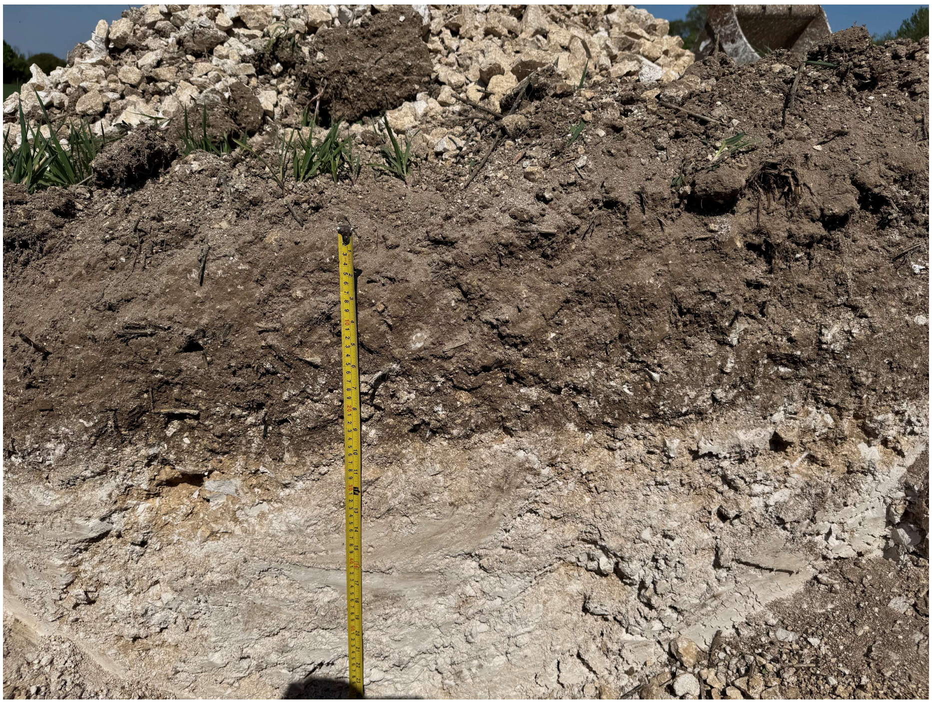


Image 3 – Pit 5, showing the grey silty clay loam topsoil over solid chalk layer at a shallow depth. By using the mini-digger, we were able to excavate pits deeper than would be possible by hand, to give a clear indication of this change in soil type and depth.

Soil depth is an important factor in determining the available water capacity and nutrient status of a soil, as well as influencing the range and type of cultivations which can be carried out. The depth of soil overlying a consolidated or fragmented rock can therefore be a limiting factor within ALC. Boring 1, Pit 3 and Pit 5 all showed extremely hard chalk subsoils at a depth of between 30cm and 40cm. At these points, the recorded depths would be a limiting factor, and as such, these points should be classified no less than **ALC Grade 3a** based on soil depth alone (MAFF 1988). The remaining borings and soil pits had a soil depth of at least 60cm or greater, which means the land may be classified no less than **ALC Grade 1** based on soil depth alone (MAFF 1988).

Stoniness is a further factor to consider when determining the grade of the site. As per MAFF (1988) the main effects of stones are as an impediment to cultivation, harvesting and crop growth and to cause a reduction in the available water capacity of a soil. Although the site was found to contain around 5% to 15% stones in the top 25 cm of the soil profile, there were not significant quantities of stones over 2cm or 6cm in size. As such, stoniness was not deemed a significant enough factor to downgrade the site.

3.4 Interactive Limitations

Interactive limitations are the physical limitations which result from interactions between climate, site and soil (MAFF, 1988). Within this, soil wetness, droughtiness and soil erosion are assessed.

Droughtiness indicates the degree to which a shortage of soil water influences the range of crops which may be grown and the level of yield which may be achieved. Two crops, a shallow and a deep rooting crop, are used to provide an average drought risk assessment of the soil. Stoniness of the soil, soil type and soil structure are all used to determine the moisture balance (crop adjusted available water capacity *less* moisture deficit).

Using the droughtiness information obtained from the auger borings and soil pits, the site achieved a grade of either **ALC Grade 3b** or **ALC Grade 2** based on drought. The points across the site found to be ALC Grade 3b were typically found to be a shallower silty clay loam topsoil soils over chalk. As shown in Image 3, the depth of the soil typically only extended to a maximum of 40cm before the soil chalk would preclude any further rooting. Shallower soils of this type will typically be more vulnerable to drought than deeper soils and those with a predominantly clay-based subsoil. These soils typically reach wilting point more rapidly and more frequently in dry periods. Boring 1, Pit 3 and Pit 5 were all found to be a shallower silty clay loam topsoil over solid chalk at a relatively shallow depth, and as a result, achieved the lower ALC grading due to droughtiness.

The points calculated to be ALC Grade 2 were those with deeper profiles with silty clay loam and silty clay or clay subsoils, which are less affected by droughtiness. Although it was found that some of the subsoils contained significant amounts of flint, the stone content found in the top 25cm of soil was less significant, and as such, would only have a marginal effect on the droughtiness grading. Those sampling points were found to be more in line with the Carstens soil series and, unsurprisingly, the droughtiness was mitigated by the high levels of clay and deeper soil profiles found across different areas of the site. These factors indicate that these points are unlikely to be as affected by drought compared to the shallower soils over chalk.

Soil wetness expresses the extent to which excess water imposes restrictions on crop growth and cultivations. Auger boring and soil pits which were more in line with the Carstens soil series across the site showed little evidence of gleying or a slowly permeable layer in the top 80cm of the profile. Looking at the guidance within MAFF (1988) and referring to Figure 6, this would indicate that the other auger borings and soil pits would fall into Wetness Class I. The number of Field

Capacity Days (FCD) from the climatic calculations and texture of the top 25cm of the profile – found to be a moderate silty clay loam across the site – would result in the site being classified no less than **ALC Grade 1** for wetness.

Soil erosion by wind or water action can be an important factor to consider. On this site, given the relative lack of relief, water erosion is not considered to be a limiting factor. Moreover, wind erosion is rare for silty clay loam soils, with these erosion factors not considered significant enough to downgrade the site.

4. Conclusion

Prior to carrying out this report, the area of land in question at Stokes Lane was classified by Natural England in their pre 1988 Agricultural Land Classification Map as ALC Grade 3, as shown in Appendix D.

Drawing on the climatological data, site limitations, soil limitations and interactive limitations investigated in this report, the 24.05 hectares of agricultural land assessed in this report at the Stokes Lane Site should receive the following classifications.

	ALC GRADE FOR LAND AT STOKES LANE		
ALC Grade	**Area (ha)**	**Area (%)**	**Limiting Factor**
1	-	-	-
2	18.24	76%	Droughtiness
3a	-	-	-
3b	5.59	23%	Droughtiness
4	-	-	-
Non agricultural	0.22	1%	Woodland

Table 2 - ALC Grade classification for the site

The grade of the agricultural land at Stokes Lane is predominantly affected by drought. The soils found within the surveyed area transition from a shallower silty clay loam over chalk to deeper, silty clay loams over silty clay and clay subsoil. As such, the two different soil types have been graded accordingly.

The areas shown as Grade 3b were principally due to soil droughtiness. The shallower soils over chalk, found mostly on the eastern edges of the site, causes plant rooting depth to be restricted, and increases the risk of drought for all arable crops. As such, these areas should receive the lower classification – ALC Grade 3b – due to a higher risk of droughtiness. The deeper silty clay loams over clay soils (Carstens series) are more marginally affected by drought. Without further evidence to downgrade these areas, they should receive a grade of no less than ALC Grade 2. Please refer to Appendix F for the mapped divide of these grades.

5. References

Ministry of Agriculture, Fisheries and Food, 1988, Agricultural Land Classification of England and Wales

Meteorological Office, 1989, Climatological Data for Agricultural Land Classification

Munsell Colour Chart

Cranfield University (2025) Soil site report, Extended Soil Report for location 460607E, 155781N, 1km x 1km, Cranfield University

Appendix A – Interpolated Climate Calculations

Elevation (ALTs)	105

Easting	0.4605
Northing	0.1557

Closest reference points (calculated)

4600	4650
1550	1600

Data for closest 4 reference points form ALC Climatological Data Set

	SQ	E	N	MAPREF	ALT	AAR	LR_AAR	ASR	ATO	ATS	MDW	MDP	FCD
1	SU	4600	1550	46001550	124	792	0.9	375	1392	2349	96	85	169
2	SU	4600	1600	46001600	88	740	1.1	370	1431	2393	101	91	158
3	SU	4650	1550	46501550	76	740	0.9	345	1446	2411	107	99	158
4	SU	4650	1600	46501600	67	709	1.5	345	1454	2420	108	100	151

Equation 6 $AAR_a=AAR_g+LR\_AAR_g(ALT_s-ALT_g)$

1	ARR_a	792 + 0.9 (105 - 124)	**774.90**
2	ARR_a	740 + 1.1 (105 - 88)	**758.70**
3	ARR_a	740 + 0.9 (105 - 76)	**766.10**
4	ARR_a	709 + 1.5 (105 - 67)	**766.00**

Equation 7 $ATO_a=ATO_g+1.14(ALT_g-ALT_s)$

1	ATO_a	1392+1.14 (124-105)	**1,413.66**
2	ATO_a	1431+1.14 (88-105)	**1,411.62**
3	ATO_a	1446+1.14 (76-105)	**1,412.94**
4	ATO_a	1454+1.14 (67-105)	**1,410.68**

Equation 8 $FCD_a=FCD_g + 0.1446\,[LR\_AAR_g\,(ALTs-ALT_g)]$

1	FCD_a	169+0.1446 [(0.9 (105-124)]	**166.53**
2	FCD_a	158+0.1446 [(1.1 (105-88)]	**160.70**
3	FCD_a	158+0.1446 [(0.9 (105-76)]	**161.77**
4	FCD_a	151+0.1446 [(1.5 (105-67)]	**159.24**

Equation 9 $D_{sg}=\sqrt{(EAST_g-EAST_s)^2+(NORTH_g-EAST_s)^2}$

1	D_{sg}	√[(4600-4604.61)^2+ (1550-1556.57)^2]	**8.03**
2	D_{sg}	√[(4600-4604.61)^2+ (1600-1556.57)^2]	**43.67**
3	D_{sg}	√[(4650-4604.61)^2+ (1550-1556.57)^2]	**45.86**
4	D_{sg}	√[(4650-4604.61)^2+ (1600-1556.57)^2]	**62.82**

Equation 10 $W_g=(1/D_{sg})^2$

1	W_g	(1 /8.03)^2	**0.01551**
2	W_g	(1 /43.67)^2	**0.00052**
3	W_g	(1 /45.86)^2	**0.00048**
4	W_g	(1 /62.82)^2	**0.00025**

Equation 11 $W_p=W_g/W_t$

1	W_p	0.015508 / 0.01676	**0.93**
2	W_p	0.000524 / 0.01676	**0.03**
3	W_p	0.000475 / 0.01676	**0.03**
4	W_p	0.000253 / 0.01676	**0.02**

Equation 12 $Vs=(V_{g1}xW_{p1})+(V_{g2}xW_{p2})+(V_{g3}xW_{p3})+(V_{g4}xW_{p4})$

AAR (mm)	(774.9x0.93)+(758.7x0.03)+(766.1x0.03)+(766x0.02)	**782**
ATO	(1413.66x0.93)+(1411.62x0.03)+(1412.94x0.03)+(1410.68x0.0	**1428**
FCD	(166.53x0.93)+(160.7x0.03)+(161.77x0.03)+(159.24x0.02)	**168**

Equation 13 $MD_x=B_0+B_1xAAR_g+B_2xATO_g$

1	$MD_{(w)}$	96+(-0.07x(0.9x(105-124)))+(0.09x(1.14x(124-105)))	**99.15**
2	$MD_{(w)}$	101+(-0.07x(1.1x(105-88)))+(0.09x(1.14x(88-105)))	**97.95**
3	$MD_{(w)}$	107+(-0.07x(0.9x(105-76)))+(0.09x(1.14x(76-105)))	**102.20**
4	$MD_{(w)}$	108+(-0.07x(1.5x(105-67)))+(0.09x(1.14x(67-105)))	**100.11**

Wheat	B_1	-0.07
	B_2	0.09

1	$MD_{(p)}$	85+(-0.09x(0.9x(105-124)))+(0.12x(1.14x(124-105)))	**89.14**
2	$MD_{(p)}$	91+(-0.09x(1.1x(105-88)))+(0.12x(1.14x(88-105)))	**86.99**
3	$MD_{(p)}$	99+(-0.09x(0.9x(105-76)))+(0.12x(1.14x(76-105)))	**92.68**
4	$MD_{(p)}$	100+(-0.09x(1.5x(105-67)))+(0.12x(1.14x(67-105)))	**89.67**

Potatoes	B_1	-0.09
	B_2	0.12

Equation 14

MD(WHEAT)	(99.15x0.93)+(97.95x0.03)+(102.2x0.03)+(100.11x0.02)	**100**
MD (POTATOES)	(89.14x0.93)+(86.99x0.03)+(92.68x0.03)+(89.67x0.02)	**90**

NB - All numbers on this page have been rounded to 2dp however the calculations have been completed using the full value

Appendix B – National Soil Resources Institute – Full Soil Site Report

Soil Site Report

Extended Soil Report

Atmos Consulting ALC

Easting: 460607
Northing: 155781
Site Area: 1km x 1km

Prepared for: Charles Garrard, Ceres Rural LLP
Date: 07 May 2025

Appendix C – Soil Pit Information including Droughtiness Calculations

																Wheat Droughtiness				Potatoes Droughtiness				Soil Wetness		
Pit/Boring	Horizon	Top Soil?	Top Depth cm	Bottom Depth cm	Depth cm	Texture	Colour	Mottle	Mottle Colour	Stones %	Lithology	Gleyed?	SPL?	Structure	Structural Condition for AW	TAv or EAv (stones) %	TAv or EAv (soil) %	AP Wheat mm	20% Reduction for S /LS Subsoil	TAv (stones) %	TAv (soil) %	AP Potatoes mm	20% Reduction for S /LS Subsoil	Field Capacity Days	Wetness Class	Wetness Grade
Boring 1	1		0	20	20	ZCL	10YR5/2			5%	Chalk					10.0	19	37		10.0	19	37		168	I	1
	2		20	35	15	ZCL	10YR5/2			5%	Chalk			Strong fine subangular blocky, calcareous	MODERATE	10.0	17	25		10.0	17	25				
			SOLID CHALK BELOW 35CM																							
																		62	0			62	0			
																	AP Wheat (mm)	62			AP Potatoes	62				
																	MD Wheat (mm)	100			MD Potatoes (mm)	90				
																	MB Wheat (mm)	-38			MB Potatoes (mm)	-28				
																	Droughtiness Grade	3b			Droughtiness Grade	3a				

																Wheat Droughtiness				Potatoes Droughtiness				Soil Wetness		
Pit/Boring	Horizon	Top Soil?	Top Depth cm	Bottom Depth cm	Depth cm	Texture	Colour	Mottle	Mottle Colour	Stones %	Lithology	Gleyed?	SPL?	Structure	Structural Condition for AW	TAv or EAv (stones) %	TAv or EAv (soil) %	AP Wheat mm	20% Reduction for S /LS Subsoil	TAv (stones) %	TAv (soil) %	AP Potatoes mm	20% Reduction for S /LS Subsoil	Field Capacity Days	Wetness Class	Wetness Grade
Boring 2	1		0	30	30	ZCL	10YR 4/3			10%	Flint					1.0	19	52		1.0	19	52		168	I	1
	2		30	50	20	ZCL	5YR 4/4			20%	Flint			Moderate fine subangular blocky	MODERATE	1.0	17	28		1.0	17	28				
	2		50	70	20	ZCL	5YR 4/4			20%	Flint			Moderate fine subangular blocky	MODERATE	0.5	10	16		1.0	17	28				
	2		70	90	20	ZCL	5YR 4/4			20%	Flint			Moderate fine subangular blocky	MODERATE	0.5	10	16								
	3		90	120	30	ZC	5YR 5/8			40%	Flint			Moderate coarse angular blocky	MODERATE	0.5	8	15								
																		127	0			107	0			
																	AP Wheat (mm)	127			AP Potatoes	107				
																	MD Wheat (mm)	100			MD Potatoes (mm)	90				
																	MB Wheat (mm)	27			MB Potatoes (mm)	17				
																	Droughtiness Grade	2			Droughtiness Grade	1				

																Wheat Droughtiness				Potatoes Droughtiness				Soil Wetness		
Pit/Boring	Horizon	Top Soil?	Top Depth cm	Bottom Depth cm	Depth cm	Texture	Colour	Mottle	Mottle Colour	Stones %	Lithology	Gleyed?	SPL?	Structure	Structural Condition for AW	TAv or EAv (stones) %	TAv or EAv (soil) %	AP Wheat mm	20% Reduction for S /LS Subsoil	TAv (stones) %	TAv (soil) %	AP Potatoes mm	20% Reduction for S /LS Subsoil	Field Capacity Days	Wetness Class	Wetness Grade
Boring 3	1		0	30	30	ZCL	10YR 4/4			15%	Flint					1.0	19	49		1.0	19	49		168	I	1
	2		30	50	20	ZCL	5YR 4/4			20%	Flint			Moderate fine subangular blocky	MODERATE	1.0	17	28		1.0	17	28				
	2		50	70	20	ZCL	5YR 4/4			20%	Flint			Moderate fine subangular blocky	MODERATE	0.5	10	16		1.0	17	28				
	2		70	80	10	ZCL	5YR 4/4			20%	Flint			Moderate fine subangular blocky	MODERATE	0.5	10	8								
	3		80	120	40	C	5YR 5/8			40%	Flint			Moderate coarse angular blocky	MODERATE	0.5	8	20								
																		121	0			104	0			
																	AP Wheat (mm)	121			AP Potatoes	104				
																	MD Wheat (mm)	100			MD Potatoes (mm)	90				
																	MB Wheat (mm)	21			MB Potatoes (mm)	14				
																	Droughtiness Grade	2			Droughtiness Grade	1				

																Wheat Droughtiness				Potatoes Droughtiness				Soil Wetness		
Pit/Boring	Horizon	Top Soil?	Top Depth cm	Bottom Depth cm	Depth cm	Texture	Colour	Mottle	Mottle Colour	Stones %	Lithology	Gleyed?	SPL?	Structure	Structural Condition for AW	TAv or EAv (stones) %	TAv or EAv (soil) %	AP Wheat mm	20% Reduction for S /LS Subsoil	TAv (stones) %	TAv (soil) %	AP Potatoes mm	20% Reduction for S /LS Subsoil	Field Capacity Days	Wetness Class	Wetness Grade
Boring 4	1		0	20	20	ZCL	10YR 3/4			10%	Flint					1.0	19	34		1.0	19	34		168	I	1
	2		20	50	30	ZCL	5YR 4/4			20%	Flint			Moderate fine subangular blocky	MODERATE	1.0	17	41		1.0	17	41				
	2		50	70	20	ZCL	5YR 4/4			20%	Flint			Moderate fine subangular blocky	MODERATE	0.5	10	16		1.0	17	28				
	3		70	120	50	C	5YR 5/8			30%	Flint			Moderate coarse angular blocky	MODERATE	0.5	8	29								
																		121	0			103	0			
																	AP Wheat (mm)	121			AP Potatoes	103				
																	MD Wheat (mm)	100			MD Potatoes (mm)	90				
																	MB Wheat (mm)	21			MB Potatoes (mm)	13				
																	Droughtiness Grade	2			Droughtiness Grade	1				

																Wheat Droughtiness				Potatoes Droughtiness				Soil Wetness		
Pit/Boring	Horizon	Top Soil?	Top Depth cm	Bottom Depth cm	Depth cm	Texture	Colour	Mottle	Mottle Colour	Stones %	Lithology	Gleyed?	SPL?	Structure	Structural Condition for AW	TAv or EAv (stones) %	TAv or EAv (soil) %	AP Wheat mm	20% Reduction for S /LS Subsoil	TAv (stones) %	TAv (soil) %	AP Potatoes mm	20% Reduction for S /LS Subsoil	Field Capacity Days	Wetness Class	Wetness Grade
Boring 5	1		0	25	25	ZCL	10YR 4/3			15%	Flint					1.0	19	41		1.0	19	41		168	I	1
	2		25	45	20	ZCL	5YR 3/4			10%	Flint			Moderate fine subangular blocky	MODERATE	1.0	17	31		1.0	17	31				
	3		45	50	5	C	2.5YR 4/6			50%	Flint			Moderate coarse angular blocky	MODERATE	1.0	16	4		1.0	16	4				
	3		50	70	20	C	2.5YR 4/6			50%	Flint			Moderate coarse angular blocky	MODERATE	0.5	8	9		1.0	16	17				
	3		70	120	50	C	2.5YR 4/6			50%	Flint			Moderate coarse angular blocky	MODERATE	0.5	8	21								
																		106	0			93	0			
																	AP Wheat (mm)	106			AP Potatoes	93				
																	MD Wheat (mm)	100			MD Potatoes (mm)	90				
																	MB Wheat (mm)	6			MB Potatoes (mm)	3				
																	Droughtiness Grade	1			Droughtiness Grade	2				

																Wheat Droughtiness				Potatoes Droughtiness				Soil Wetness		
Pit/Boring	Horizon	Top Soil?	Top Depth cm	Bottom Depth cm	Depth cm	Texture	Colour	Mottle	Mottle Colour	Stones %	Lithology	Gleyed?	SPL?	Structure	Structural Condition for AW	TAv or EAv (stones) %	TAv or EAv (soil) %	AP Wheat mm	20% Reduction for S /LS Subsoil	TAv (stones) %	TAv (soil) %	AP Potatoes mm	20% Reduction for S /LS Subsoil	Field Capacity Days	Wetness Class	Wetness Grade
Boring 6	1		0	25	25	ZCL	10YR 4/3			15%	Flint					1.0	19	41		1.0	19	41		168	I	1
	2		25	50	25	C	5YR 3/4			20%	Flint			Moderate fine subangular blocky	MODERATE	1.0	16	33		1.0	16	33				
	3		50	70	20	C	2.5YR 4/6			30%	Flint			Moderate coarse angular blocky	MODERATE	0.5	8	12		1.0	16	23				
	3		70	120	50	C	2.5YR 4/6			30%	Flint			Moderate coarse angular blocky	MODERATE	0.5	8	29								
																		114	0			96	0			
																	AP Wheat (mm)	114			AP Potatoes	96				
																	MD Wheat (mm)	100			MD Potatoes (mm)	90				
																	MB Wheat (mm)	14			MB Potatoes (mm)	6				
																	Droughtiness Grade	2			Droughtiness Grade	2				

																Wheat Droughtiness				Potatoes Droughtiness				Soil Wetness		
Pit/Boring	Horizon	Top Soil?	Top Depth cm	Bottom Depth cm	Depth cm	Texture	Colour	Mottle	Mottle Colour	Stones %	Lithology	Gleyed?	SPL?	Structure	Structural Condition for AW	TAv or EAv (stones) %	TAv or EAv (soil) %	AP Wheat mm	20% Reduction for S /LS Subsoil	TAv (stones) %	TAv (soil) %	AP Potatoes mm	20% Reduction for S /LS Subsoil	Field Capacity Days	Wetness Class	Wetness Grade
Pit 1	1		0	30	30	ZCL	5YR 4/2			10%	Flint					1.0	17	46		1.0	17	46		168	I	1
	2		30	50	20	C	5YR 4/6			20%	Flint			Moderate coarse angular blocky	MODERATE	1.0	16	26		1.0	16	26				
	2		50	70	20	C	5YR 4/6			30%	Flint			Moderate coarse angular blocky	MODERATE	0.5	8	12		1.0	16	23				
	2		70	120	50	C	5YR 4/6			50%	Flint			Moderate coarse angular blocky	MODERATE	0.5	8	21								
																		105	0			95	0			
																	AP Wheat (mm)	105			AP Potatoes	95				
																	MD Wheat (mm)	100			MD Potatoes (mm)	90				
																	MB Wheat (mm)	5			MB Potatoes (mm)	5				
																	Droughtiness Grade	2			Droughtiness Grade	2				

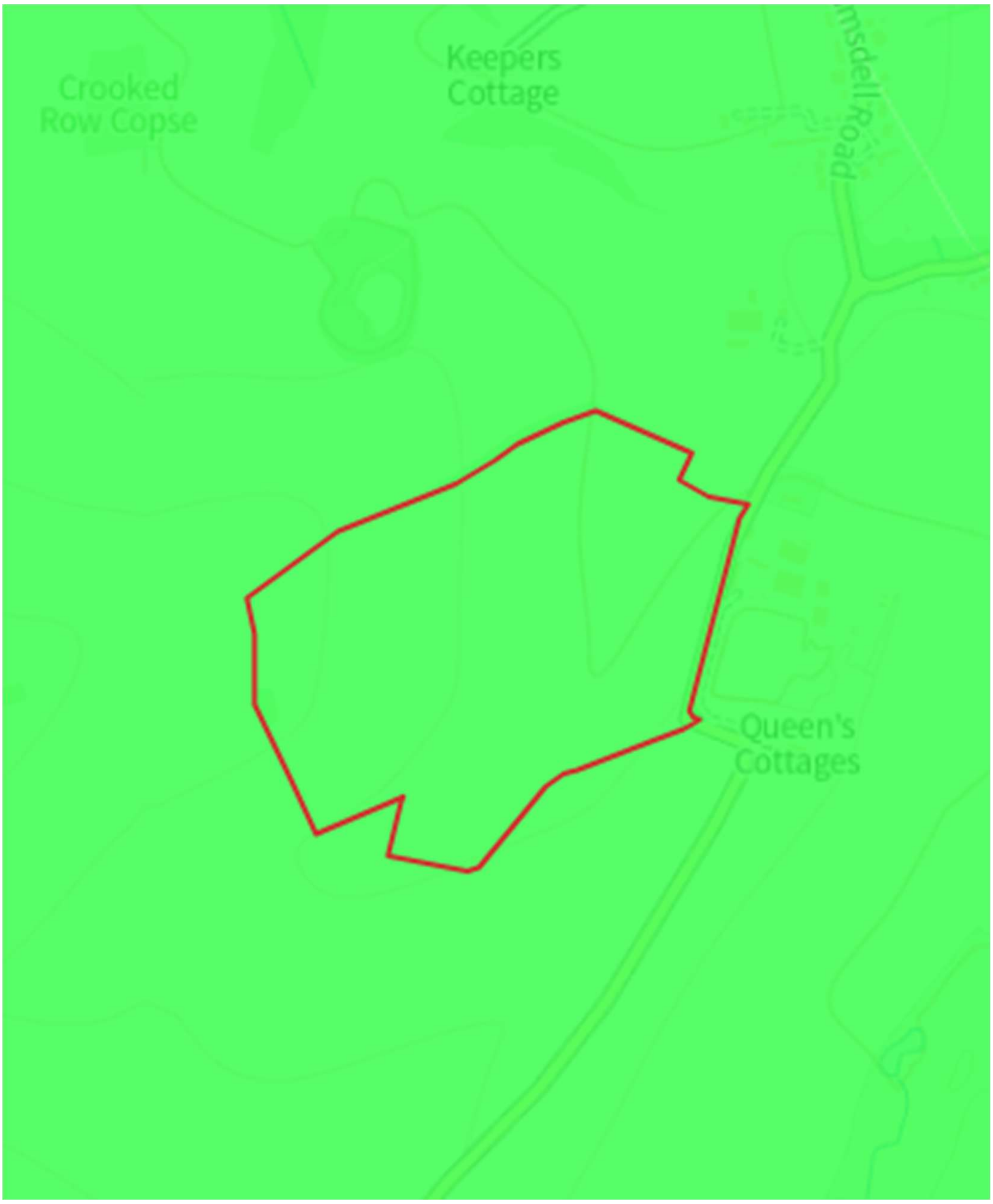
																Wheat Droughtiness				Potatoes Droughtiness				Soil Wetness		
Pit/Boring	Horizon	Top Soil?	Top Depth cm	Bottom Depth cm	Depth cm	Texture	Colour	Mottle	Mottle Colour	Stones %	Lithology	Gleyed?	SPL?	Structure	Structural Condition for AW	TAv or EAv (stones) %	TAv or EAv (soil) %	AP Wheat mm	20% Reduction for S /LS Subsoil	TAv (stones) %	TAv (soil) %	AP Potatoes mm	20% Reduction for S /LS Subsoil	Field Capacity Days	Wetness Class	Wetness Grade
Pit 2	1		0	38	38	ZCL	5YR 4/2			15%	Flint					1.0	19	62		1.0	19	62		168	I	1
	2		38	50	12	ZCL	5YR 4/4			10%	Flint			Moderate fine subangular blocky	MODERATE	1.0	17	18		1.0	17	18				
	2		50	70	20	ZCL	5YR 4/4			10%	Flint			Moderate fine subangular blocky	MODERATE	0.5	10	18		1.0	17	31				
	3		70	120	50	ZC	5YR 5/8			30%	Flint			Moderate coarse angular blocky	MODERATE	0.5	8	29								
																		127	0			111	0			
																	AP Wheat (mm)	127			AP Potatoes	111				
																	MD Wheat (mm)	100			MD Potatoes (mm)	90				
																	MB Wheat (mm)	27			MB Potatoes (mm)	21				
																	Droughtiness Grade	2			Droughtiness Grade	1				

																Wheat Droughtiness				Potatoes Droughtiness				Soil Wetness		
Pit/Boring	Horizon	Top Soil?	Top Depth cm	Bottom Depth cm	Depth cm	Texture	Colour	Mottle	Mottle Colour	Stones %	Lithology	Gleyed?	SPL?	Structure	Structural Condition for AW	TAv or EAv (stones) %	TAv or EAv (soil) %	AP Wheat mm	20% Reduction for S /LS Subsoil	TAv (stones) %	TAv (soil) %	AP Potatoes mm	20% Reduction for S /LS Subsoil	Field Capacity Days	Wetness Class	Wetness Grade
Pit 3	1		0	25	25	ZCL	7.5YR 4/2			10%	Flint					1.0	19	43		1.0	19	43		168	I	1
	2		25	38	13	ZCL	7.5YR 6/6			5%	Chalk			Strong fine subangular blocky, calcareous	MODERATE	10.0	17	22		10.0	17	22				
			SOLID CHALK BELOW 38CM																							
																		65	**0**			**65**	**0**			
																	AP Wheat (mm)	**65**			**AP Potatoes**	**65**				
																	MD Wheat (mm)	**100**			**MD Potatoes (mm)**	**90**				
																	MB Wheat (mm)	**-35**			**MB Potatoes (mm)**	**-25**				
																	Droughtiness Grade	**3b**			**Droughtiness Grade**	**3a**				

																Wheat Droughtiness				Potatoes Droughtiness				Soil Wetness		
Pit/Boring	Horizon	Top Soil?	Top Depth cm	Bottom Depth cm	Depth cm	Texture	Colour	Mottle	Mottle Colour	Stones %	Lithology	Gleyed?	SPL?	Structure	Structural Condition for AW	TAv or EAv (stones) %	TAv or EAv (soil) %	AP Wheat mm	20% Reduction for S /LS Subsoil	TAv (stones) %	TAv (soil) %	AP Potatoes mm	20% Reduction for S /LS Subsoil	Field Capacity Days	Wetness Class	Wetness Grade
Pit 4	1	Y	0	28	28	ZCL	5YR2.5/2			15%	Flint					1.0	19	46		1.0	19	46		168	I	1
	2		28	50	22	ZC	5YR 4/4			20%	Flint			Moderate coarse angular blocky	MODERATE	1.0	15	27		1.0	15	27				
	2		50	70	20	ZC	5YR 4/4			20%	Flint			Moderate coarse angular blocky	MODERATE	0.5	8	13		1.0	15	24				
	2		70	120	50	ZC	5YR 4/4			20%	Flint			Moderate coarse angular blocky	MODERATE	0.5	8	33								
																		118	**0**			**97**	**0**			
																	AP Wheat (mm)	**118**			**AP Potatoes**	**97**				
																	MD Wheat (mm)	**100**			**MD Potatoes (mm)**	**90**				
																	MB Wheat (mm)	**18**			**MB Potatoes (mm)**	**7**				
																	Droughtiness Grade	**2**			**Droughtiness Grade**	**2**				

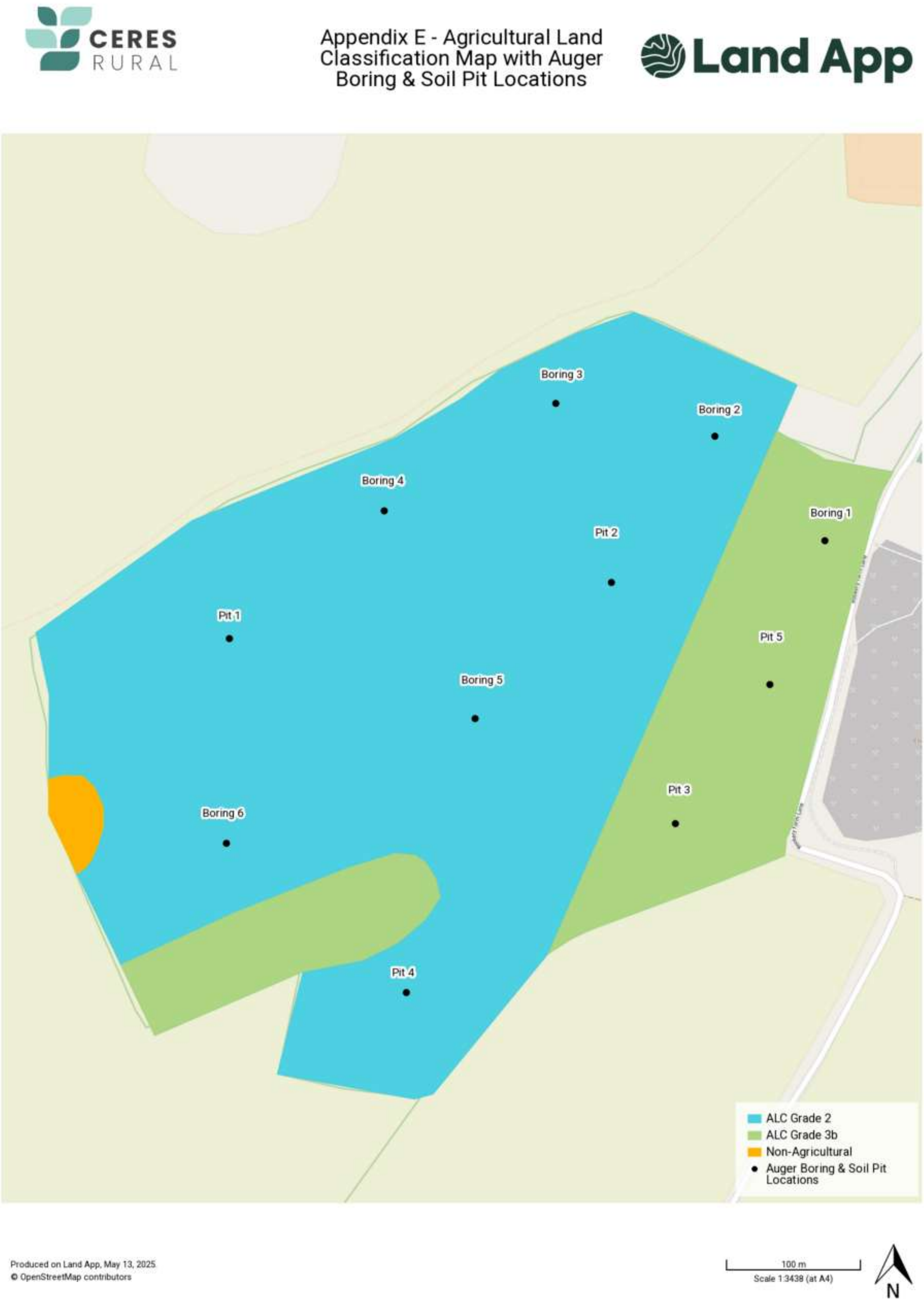
																Wheat Droughtiness				Potatoes Droughtiness				Soil Wetness		
Pit/Boring	Horizon	Top Soil?	Top Depth cm	Bottom Depth cm	Depth cm	Texture	Colour	Mottle	Mottle Colour	Stones %	Lithology	Gleyed?	SPL?	Structure	Structural Condition for AW	TAv or EAv (stones) %	TAv or EAv (soil) %	AP Wheat mm	20% Reduction for S /LS Subsoil	TAv (stones) %	TAv (soil) %	AP Potatoes mm	20% Reduction for S /LS Subsoil	Field Capacity Days	Wetness Class	Wetness Grade
Pit 5	1	Y	0	28	28	ZCL	10YR5/2			10%	Flint					1.0	19	48		1.0	19	48		168	I	1
	2		28	33	5	ZCL	10YR5/2			10%	Chalk			Strong fine subangular blocky, calcareous	MODERATE	10.0	17	8		10.0	17	8				
			SOLID CHALK BELOW 33CM																							
																		56	**0**			**56**	**0**			
																	AP Wheat (mm)	**56**			**AP Potatoes**	**56**				
																	MD Wheat (mm)	**100**			**MD Potatoes (mm)**	**90**				
																	MB Wheat (mm)	**-44**			**MB Potatoes (mm)**	**-34**				
																	Droughtiness Grade	**3b**			**Droughtiness Grade**	**3b**				

Appendix D – Pre 1988 Agricultural Land Classification Map



Natural England, 2025

Appendix E - Agricultural Land Classification Map with Soil Pit Locations



Appendix F - Definition & Description of Agricultural Land Classification Grades

Grade 1 - excellent quality agricultural land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2 - very good quality agricultural land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.

Grade 3 - good to moderate quality agricultural land

Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a - good quality agricultural land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b - moderate quality agricultural land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4 - poor quality agricultural land

Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5 - very poor quality agricultural land

Land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.