

Steeple Renewables Project

Appendix 15.1: Agricultural Land Classification Report Environmental Statement - Volume 2

April 2025

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Appendix 15.1: Agricultural Land Classification Report

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Agricultural Land Classification (ALC) Report

Steeple Solar Farm

April 2025

Renewable Energy Systems Ltd

Reference: 240424.AC.05

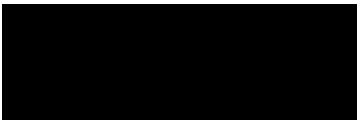
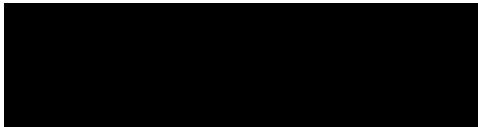
Agricultural Land Classification (ALC) Report

Steeple Solar Farm

**Client: Renewable Energy Systems
Ltd**

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1. Scope & Objectives

The Services	Agricultural Land Classification (ALC) Report	
The Client	Renewable Energy Systems Ltd	
Appointment Details	The Services have been carried out in accordance with the Proposal dated 17 th April 2024 and REL's Terms and Conditions of Engagement, (together " the Agreement ") as accepted by the Client on 22 nd April 2024.	
Site Name	Steeple Solar Farm	
Site Address	Steeple-le-Sturton, Nottingham, DN22 9HW (" the Site ")	
Proposed Development	It is understood that the site is to be developed for a solar farm with the capacity of up to 400 MW of solar energy generation and a 200 MW Battery Energy Storage System (BESS) with associated infrastructure and equipment.	
Planning Application	The Proposed Development falls within the definition of a 'Nationally Significant Infrastructure Project' (NSIP) under Section 14(1)(a) and 15(2) of the Planning Act 2008 as the construction of a generating station with a capacity of more than 50MW, with a capacity in the region of 400MW and hence will require a Development Consent Order (DCO) application to be submitted to the Planning Inspectorate (PINS), who will be the Examining Authority on behalf of the Secretary of State (SoS).	
Information Sources (Where appropriate documents are contained in appendices with data extracts provided and summarised within pertinent sections of this report. List not exhaustive)	Online Source	Natural England Provisional Agricultural Land Classification Grade (pre-1988), accessed via Magic Web Mapping Service, DEFRA, 2025.
		Natural England Agricultural Land Classification Grades Post-1988 Surveys (Polygons) Database and Mapping, accessed via Magic Web Mapping Service, DEFRA, 2025.
		British Geological Survey (BGS) Database and Mapping.
		BGS Geoindex Web Mapping Service.
		BGS 1: 50,000 scale Provisional Series, Geological Map, England and Wales, Sheet No.101 (East Retford), available on the BGS map portal.
		Google Historic Satellite Imagery.
		National Library of Scotland Historical Ordnance Survey England and Wales, 1830-1956 Maps.
	Documentation Source	Soil Classification for Soil Survey, Monographs on Soil Survey, Butler, B E (1980), Clarendon Press, Oxford.
		Hodgson, J.M (ed.) (2022). <i>Soil Survey Field Handbook</i> . Soil Survey Technical Monograph No. 5, Cranfield.
		Meteorological Office (Met Office), 1989, Climatological Data for Agricultural Land Classification – Gridpoint Datasets of Climatic Variables, at 5km intervals, for England and Wales.
		MAFF, 1988, Agricultural Land Classification of England and Wales – Revised Guidelines and Criteria for Grading the Quality of Agricultural Land.
		Natural England, Technical Information Note TIN049 Second Edition, 2012.
		Soils and their use in Eastern England, 1984, Soil Survey of England and Wales Memoir and accompanying 1:250,000 scale map.
	Previous Reports	No previous reports, including Post-1988 ALC surveys, are available for the site.
	Site Works	The site works were undertaken by REL during July to September 2024.

2. Site Details

National Grid Ref.	Approximate centre of the site: 479360, 383238
Ground Level Topography	Range 30-35m AOD, average for site: 32.5m AOD.
Site Area	892 hectares (ha).
Survey Area	722 ha.
Location	The subject site is located around the town of Sturton-le-Steeple, adjacent south of West Burton power station, approximately 10km east of Retford and approximately 700m to the west side of the River Trent.



Figure 1: Site Boundary (highlighted in red)

Current Site Description and Usage	The subject site comprises mainly agricultural fields which are currently used for arable crop (based on observations made during the site visit).
Surrounding Land Uses	Surrounding land uses comprise agricultural fields around the entire site, with West Burton power station located adjacent north.
Site History	From the earliest mapping dated 1830, the site is shown as agricultural land.
Current Grading	The site is currently mapped as Grade 3 on the provisional 1: 250,000 scale ALC map (MAFF, 1983) see Appendix V for key to the gradings.

3. Methodology

Desk Study

Using published data sources, an initial desk-based study has been undertaken to provide a reconnaissance of the general site characteristics, including soil type(s) and agricultural classification.

Where available, Post-1988 ALC Surveys (undertaken at varying scales and levels of detail, ranging from 1:5,000 to 1:50,000 scale) have been consulted. Surveys included on this map provide the most detailed and up to date ALC grading following surveys between 1989 and 1999 by MAFF (now part of DEFRA).

Climatological data provided by the Met Office has been used to determine the overriding agroclimatic site limitations, using interpolated values based on the central point of the site.

Intrusive Soil Survey

The intrusive soil survey comprised at least one hand auger boring per hectare to a depth of 1.20m below ground level (where achievable) in accordance with current guidance. These were undertaken to examine the soil profiles, using standard soil survey methods.

In addition, in order to determine subsoil structure, at least one inspection pit has been excavated for each soil type encountered.

The application boundary has altered since the site survey works were undertaken, therefore the survey area boundary differs to the site boundary and the application boundary.

ALC Grade Assessment

All potential limiting ALC grade factors (listed in **Appendix V**) have been considered as part of the assessment, including those which pose no limitation on the ALC grading for the site.

Using the information collected during the site survey and the MAFF ALC guidance documents, an ALC grade was then determined for the site, or for each soil type based on the most limiting ALC grade (**Appendix I**). A brief overview of relevant terminology is included in **Appendix V**.

4. Desk Based Reconnaissance

Prior to the intrusive site investigation, a review of available desk-based information was undertaken. Pertinent information has been summarised below.

Climate Data

Using the climatological data set (Met Office, 1989) the following information (**Table 1**) has been calculated for the site. Calculations comprised altitude adjustment and interpolation, using the formula presented within the data set.

Table 1: Summary of Agroclimatic Data for the Site

(Site Centre Grid Reference: 479360, 383238)		
Average Annual Rainfall (mm)	AAR	568.90
Accumulated Temperature (°C)	ATO	1392.44
Field Capacity Duration (Days)	FCD	111.20
Moisture Deficit Wheat (mm)	MDWHT	115.61
Moisture Deficit Potatoes (mm)	MDPOT	109.23

The site is identified to have an average ATO, with below average AAR and FCD when compared to the mapped values for the area between Lincoln and Worksop (Soils and their Use in Eastern England, 1984).

Using the AAR and ATO values within **Table 1**, the site is not considered to be limited by climate (Figure 1, MAFF 1988).

Topography

The site was identified to have a gradient between 0° and 2°, therefore topography is identified to not be a limiting factor of the ALC grade of the site (Table 1, MAFF 1988).

BGS Published Data

A review of BGS information has identified that no Made Ground areas are indicated across the site.

The eastern section of the site is indicated as having superficial deposits of the Holme Pierrepont Sand and Gravel Member, with some potential discrete areas of Alluvium (Clay, Silt, Sand and Gravel), particularly encroaching onto the northern and southern site boundaries. The remainder of the site is indicated to be free from superficial deposits.

The bedrock geology is indicated as the Mercia Mudstone Group across the whole site.

Published Soils Data

Soils mapping for the area as shown on *Soils and their use in Eastern England, 1984*, Soil Survey of England and Wales Memoir and accompanying 1:250,000 scale map has been reviewed as part of this assessment. The approximate location of the site is shown in the soils mapping extract below in **Figure 2**.

The soil mapping suggests the soils on site comprise the Worcester Association across the majority of the site, with the potential for soils of the Brockhurst 2 Association and Blackwood Association to encroach on to the east of the site. The soils are described as follows:

- **Worcester Association (431)** - Slowly permeable non-calcareous and calcareous reddish clayey soils over mudstone, shallow on steeper slopes. Associated with similar non-calcareous fine loamy over clayey soils. Slightly risk of water erosion.
- **Brockhurst 2 Association (711c)** – Slowly permeable seasonally waterlogged reddish fine loamy over clayey and clayey soils. Some reddish clayey alluvial soils affected by groundwater.
- **Blackwood Association (821b)** – Deep permeable sandy and coarse loamy soils. Groundwater controlled by ditches.

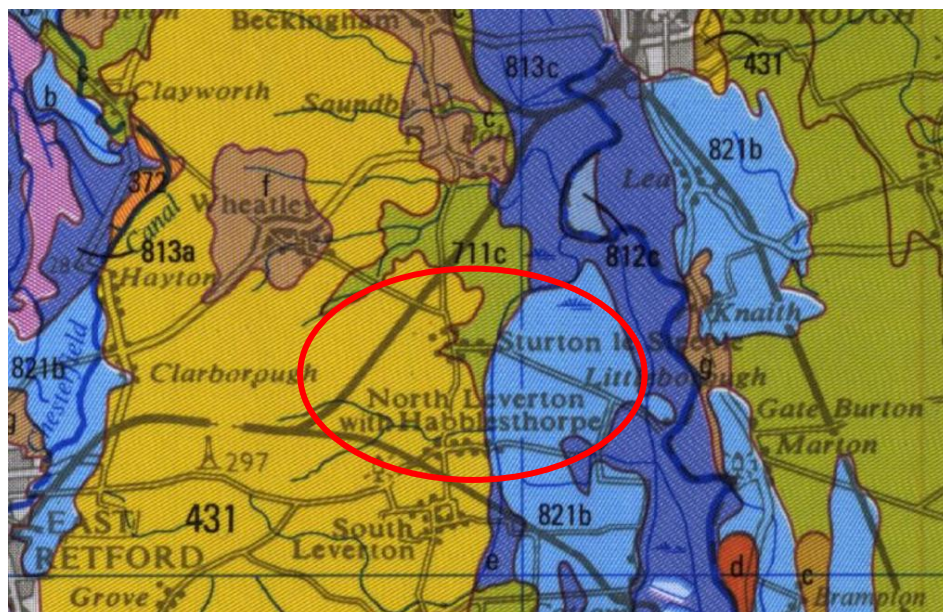


Figure 2: Soils Mapping for the Site and Surrounding Area (approximate site location indicated in red)

Previous Reports

No previous ALC reports are available for the site or adjacent surrounding areas.

Flood Risk Assessment

Flooding is not anticipated to affect the cultivation potential on site and therefore does not limit the ALC grade.

5. Intrusive Survey Findings

The survey identified Four Soil Types across the entire site. Generalised profiles of the soil types encountered have been described as below (**Table 2**) however, please note some localised variations were recorded. Complete soil logs are provided in **Appendix II** and photographs of the surveyed soils are presented in **Appendix III**.

Table 2: Summary of Soils Identified on Site

	Depth (cm)	Texture	Munsell Colour	Stones (%)	Mottles	Structure
Soil Type 1	0-20	Heavy Silty Clay Loam (HZCL)	Dark Brown (7.5YR 3/4)	5	No	Subangular Blocky
	20-120	Silty Clay (ZC)	Reddish Brown (5YR 4/4)	15	Many Medium Grey (GLEY 2 7/1 5B) and Ochreous (10YR 6/8)	Coarse Prismatic
Soil Type 2	0-42	Heavy Clay Loam (HCL)	Dark Brown (10YR 3/3)	5	No	Subangular Blocky
	42-120	Clay (C)	Dark Reddish Brown (5YR 3/4)	5	Few Ochreous (7.5YR 5/8)	Coarse Prismatic
Soil Type 3	0-34	Heavy Silty Clay Loam (HZCL)	Dark Brown (7.5 YR 3/3)	5	No	Subangular Blocky
	34-90	Clay (C)	Dark Yellowish Brown (10YR 4/4)	5	No	Subangular Blocky
	90-120	Fine Sand (fS)	Pale Olive (5Y 6/4)	5	No	Single Grain
Soil Type 4	0-39	Fine Sandy Silt Loam (fSZL)	Dark Brown (7.5YR 3/3)	5	No	Subangular Blocky
	39-120	Fine Sand (fS)	Strong Brown (7.5YR 4/6)	5	No	Single Grain

The general profiles for the soil types identified on the Site has been used to assess the Wetness Class (WC) for the Soil Type (see **Appendix V** for the MAFF decision flow chart). The general profile is reflective of the findings in the soil pit associated with the Soil Type identified on site. The assessment process and results of the in-field wetness assessment is provided within **Table 3** below with a plan of the distribution of the soil types across the site shown in **Appendix I**.

Table 3: Wetness Class Assessment for Soil Types Encountered on Site

Soil Type	Parameters (Figure 6, MAFF)						Wetness Class
	Disturbed	FCD	SPL (depth cm) Justification	Colour	Gleying (depth cm) Justification	Ref	
Type 1	No	111.20	At a depth of 20 cm, the SPL was identified to be present due to the following characteristics: Silty Clay (ZC) coarse prismatic structure less than 0.50% biopores greater than 0.50 mm diameter evidence of wetness in the layer; gleying	Other	Gleyed (<40cm), reddish colours dominant in the matrix with ochreous and grey mottles.	Figure 7	III
Type 2	No	111.20	At a depth of 42 cm, the SPL was identified to be present due to the following characteristics: Clay (C) coarse prismatic structure less than 0.50% biopores greater than 0.50 mm diameter evidence of wetness in the layer; gleying	Other	Gleyed (>40cm), reddish colours dominant in the matrix with ochreous mottles.	Figure 8	II
Type 3	No	111.20	No SPL	Other	Not gleyed.	N/A	I
Type 4	No	111.20	No SPL	Other	Not gleyed.	N/A	I

Notes: This Table follows the flow chart of Figure 6 of the MAFF ALC guidance to identify the wetness classification per Soil Type.

6. Conclusions

The ALC grading for the site area is summarised below within **Table 4**, overall findings of this assessment can be found in **Appendix IV**. The table below identifies the grades of the areas of agricultural land present across the site (**Appendix I**).

Table 4: ALC Classification

ALC Grade	Area (Ha)	Percentage
Grade 1	56.36	7.81%
Grade 2	153.57	21.27%
Subgrade 3a	430.32	59.60%
Subgrade 3b	81.76	11.32%
Grade 4	0.0	0.0%
Grade 5	0.0	0.0%
Non-Agricultural	0.0	0.0%
Total BMV	640.24	88.68%
Total Non-BMV	81.76	11.32%
Total Site Area	722.0	100%

Soil Type 1 – Wetness Limitation

The combination of the topsoil texture (Heavy Silty Clay Loam), Wetness class (III) and the number of Field Capacity Days (111.20) results in **ALC Grade 3b** for Type 1 soils with a Wetness limitation.

Soil Type 2 – Wetness Limitation

The combination of the topsoil texture (Heavy Clay Loam), Wetness Class (II), and the number of Field Capacity Days (111.20) results in **ALC Grade 3a** for Type 2 soils with a Wetness limitation.

Soil Type 3 – Wetness Limitation

The combination of the topsoil texture (Heavy Silty Clay Loam), Wetness Class (I), and the number of Field Capacity Days (111.20) results in **ALC Grade 2** for Type 3 soils with a Wetness limitation.

Soil Type 3 - Droughtiness Limitation

The water availability of the soil type and the local climate results in **ALC Grade 2** for Type 3 soils with a soil Droughtiness limitation with respect to the crop adjusted available water capacity for potatoes.

Soil Type 4 – No Limitation

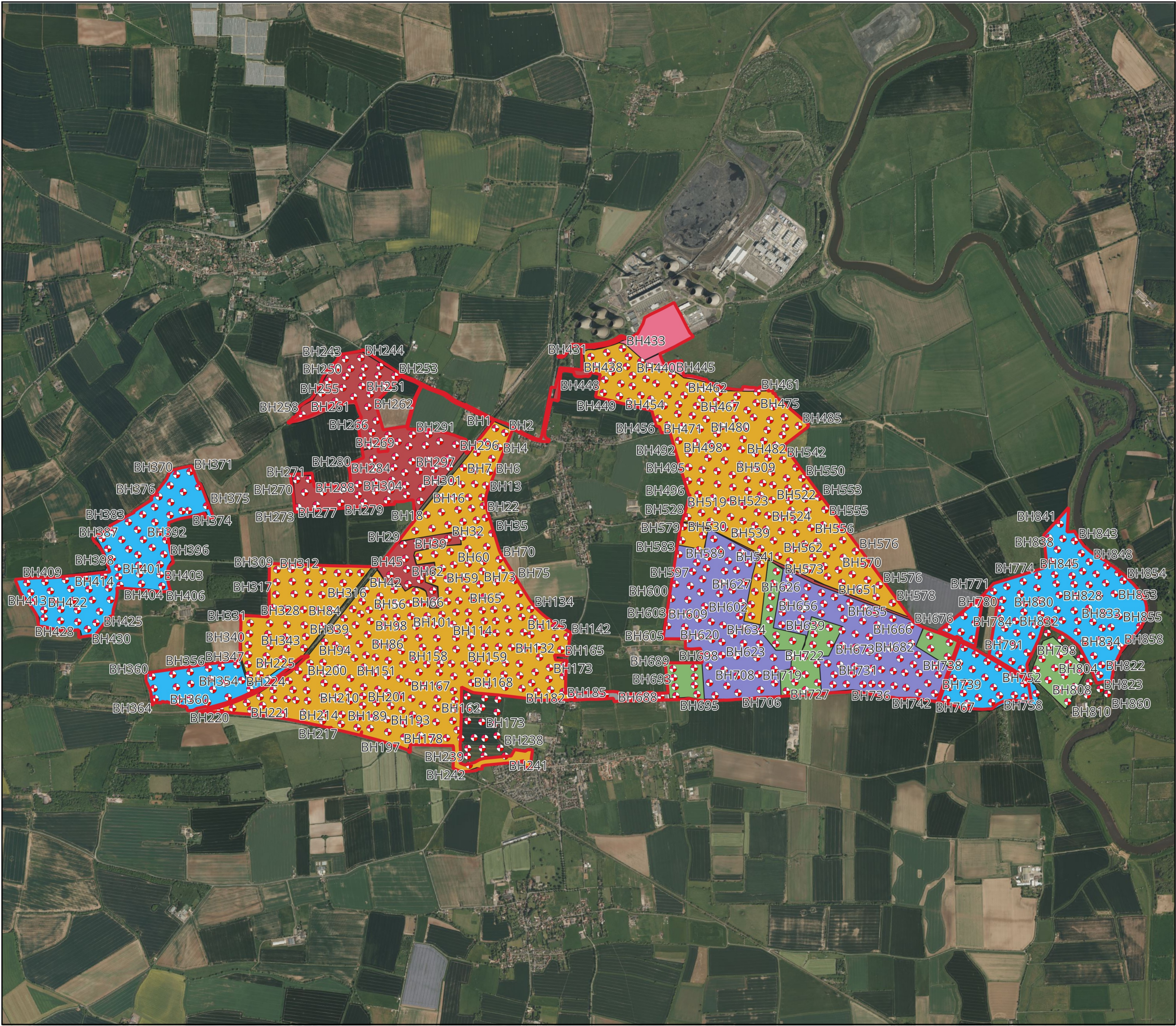
No limitation to the ALC Grade for Type 4 soils have been identified.

Overall Site ALC Grade and Conclusions

The land surveyed as part of this assessment has been identified as a mixture of **ALC Grades 1, 2, 3a** and **3b**. As such, 640.24ha (88.68%) of the site has been assessed to be BMV land and 81.76ha (11.32%) has been identified as non-BMV land.

APPENDIX I

SITE PLANS



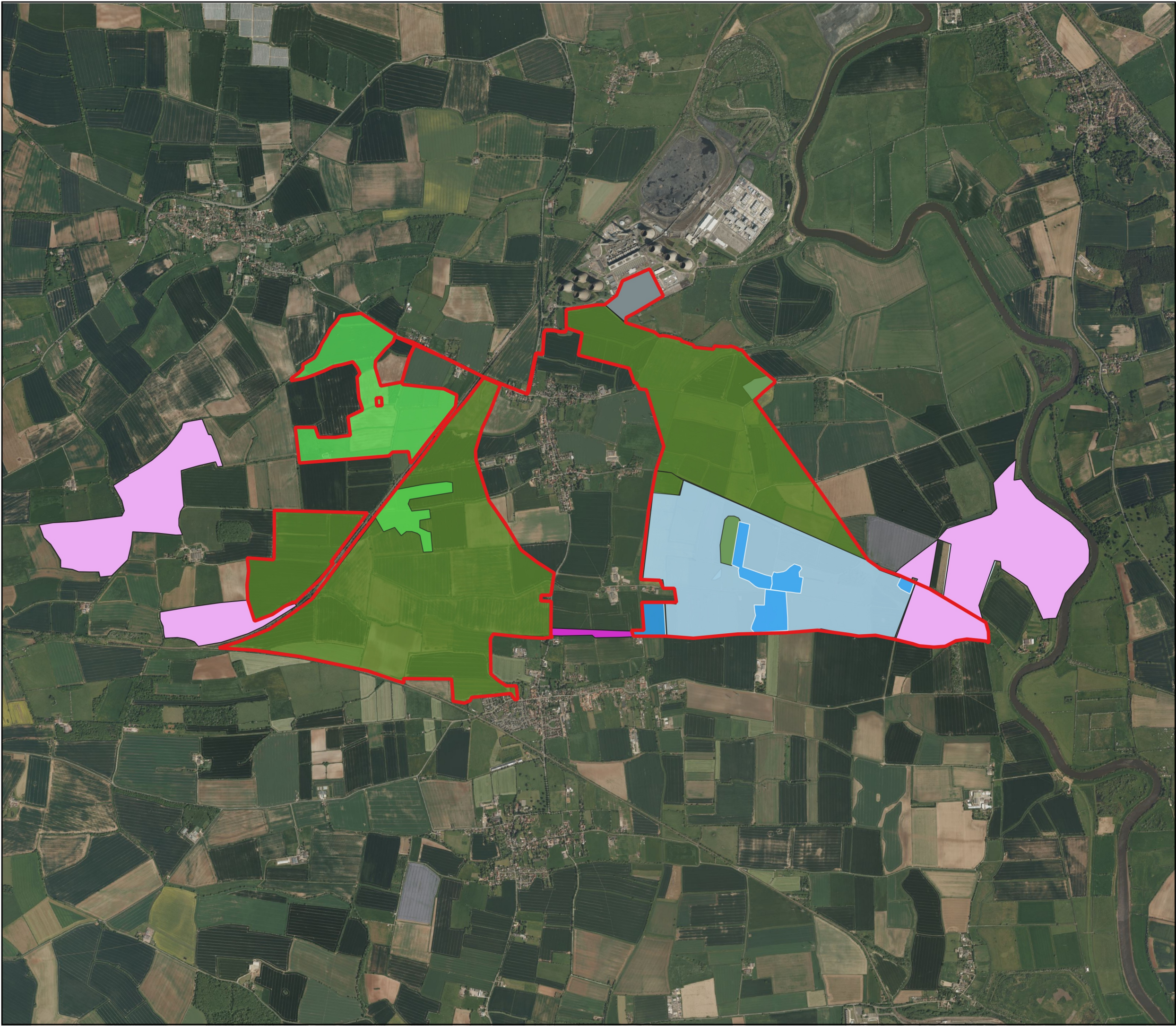
Legend

- RED Line Boundry
- Boreholes
- Soil Type 2
- Soil Type 3
- Soil Type 4
- No Access
- Non Agricultural
- Biodiversity Net Gain
- Cable Route

0 200 400 600 800 1,000 m



Figure Borehole Locations and Soil Type		
Job Steeple Solar		
Client Renewable Energy Systems Ltd		
Figure No. 1	Revision 4	Date 21 November 2024
Drawn by EH	Checked by LM	Scale 1:26,000
Job No. 240424.AC.04		
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Key

- Surveyed Land
- Biodiversity Net Gain
- Cable Route
- Grade 1
- Grade 2
- Grade 3b
- Grade 3a
- non-agricultural

02004006008001,000 m

X

Figure

ALC Grades

Job

Land at Steeple Solar Farm

Client

Renewable Energy System Ltd

Figure No.	Revision	Date
2	5	08 January 2025
Drawn by	Checked by	Scale
EH	LM	1:28,000

Job No.

240424

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APPENDIX II

SITE SURVEY LOGS

No.	Depth (cm)	Texture	Stones	Motting	Structure	Depth (cm)	Texture	Stones	Motting	Structure	Depth (cm)	Texture	Stones	Motting	Structure	Depth (cm)	Texture	Stones	Motting	Structure	Depth (cm)	Texture	Stones	Motting	Structure
1	0-41	HCL	15 *	SAB	41-120	C		5 O	CP																
2	0-29	SCl	15 *	SAB	29-65	SCl		15 MOG	SAB	65-120	C		5 O	CP											
3	0-39	HCL	15 *	SAB	39-97	C		15 *	CP	97+	R														
4	0-36	HCL	5 *	SAB	36-120	C		15 *	CP																
5	0-36	HCL	15 *	SAB	36-64	C		35 MG	CP	64-120	C		5 O	CP											
6	0-30	HCL	5 *	SAB	30-120	C		5 *	CP																
7	0-27	HCL	15 *	SAB	27-80	C		5 *	CP	80-120	C		5 O	CP											
8	0-37	HCL	5 *	SAB	37-64	C		5 G	CP	64-120	C		5 MG	CP											
9	0-35	HCL	5 *	SAB	35-120	C		5 *	CP																
10	0-28	HCL	15 *	SAB	28-120	C		15 GO	CP																
11	0-48	HCL	15 *	SAB	48-102	C		5 MG	CP	102+	C		5 MG	CP											
12	0-48	HCL	15 *	SAB	48-120	C		5 MOG	CP																
13	0-34	HCL	15 *	SAB	34-60	C		35 *	CP	60-100	C		35 MO	CP	60-100	C			35 MO	CP					
14	0-32	HCL	15 *	SAB	32-55	SC		15 O	SAB	55-100	C		5 GO	CP											
15	0-49	HCL	15 *	SAB	49-100	C		5 MG	CP																
16	0-22	HCL	15 *	SAB	22-63	C		35 MG	CP	63-102	C		35 MO	CP	102+				Rock						
17	0-26	HCL	15 *	SAB	26-82	C		35 MG	CP	32-94	C		35 MG	CP	94-120	C			35 MO	CP					
18	0-49	HCL	15 *	SAB	49-120	C		35 MG	CP																
19	0-35	HCL	15 *	SAB	35-66	C		35 MCG	CP	66-100	C		35 MCO	CP	100+				Rock						
20	0-35	HCL	15 *	SAB	35-88	C		35 MG	CP	88-110	C		35 MG	CP											
21	0-32	HCL	15 *	SAB	32-60	C		35 MG	CP	60-90	C		35 MG	CP											
22	0-35	HCL	15 *	SAB	35-70	C		35 MG	CP	70-80	C		35 MG	CP											
23	0-35	C	15 *	SAB	35-66	C		35 MCG	CP	66-100	C		35 MCO	CP	100+				Rock						
24	0-35	HCL	15 *	SAB	35-66	C		15 MCG	CP	66-100	C		15 MCO	CP	100+				Rock						
25	0-35	HCL	15 *	SAB	35-66	C		35 MCG	CP	66-100	C		35 MCO	CP	100+				Rock						
26	0-45	HCL	5 *	SAB	45-80	C		15 NMG	CP	80+															
27	0-20	HCL	15 *	SAB	20-70	C		15 FFG	CP	70-100	C		35 *	CP	100+				Rock						
28	0-30	HCL	15 *	SAB	30-55	C		35 MCG	CP	55-100	C		35 MCO	CP	100+				Rock						
29	0-30	HCL	5 *	SAB	30-100	ZC		5 *	CAB	100+															
30	0-30	HCL	5 *	SAB	30-100	ZC		5 *	CAB	100+															
31	0-30	HCL	5 *	SAB	30-100	ZC		5 *	CAB	100+															
32	0-30	HCL	5 *	SAB	30-100	ZC		5 *	CAB	100+															
33	0-35	C	5 *	CP	35-85	C		5 *	CP	85-120	C		35 MCO+Y	CP											
34	0-20	HCL	15 *	SAB	20-70	C		15 FFG	CP	70-100	C		35 *	CP	100+				Rock						
35	0-30	C	15 *	SAB	30-55	C		35 MCG	CP	55-100	C		35 MCO	CP	100+				Rock						
36	0-30	ZC	5 *	SAB	30-100	ZC		5 *	CAB	100+															
37	0-20	C	15 *	CP	20-46	C		15 FFG	CP	46-85	C		15 MCO+Y	CP	85-120	C			15 FFG	CP					
38	0-20	C	5 *	CP	20-46	C		15 FFG	CP	46-85	C		15 MCG+Y	CP	85-120	C			15 FFG	CP					
39	0-35	C	5 *	CP	35-85	C		5 *	CP	85-120	C		35 MCO+Y	CP											
40	0-20	C	15 *	CP	20-46	C		15 FFG	CP	46-85	C		15 MCG+Y	CP	85-120	C			15 FFG	CP					
41	0-20	HCL	15 *	SAB	20-70	C		15 FFG	CP	70-100	C		35 *	CP	100+				Rock						
42	0-40	HCL	5 *	SAB	40-110	C		5 FFG	CP	110-120	C		35 MCO	CP	120+				Rock						
43	0-40	HCL	5 *	SAB	40-110	C		5 FFG	CP	110-120	C		35 MCO	CP	120+				Rock						
44	0-30	HCL	5 *	SAB	30-120	ZC		5 *	CAB																
45	0-30	HCL	5 *	SAB	30-120	ZC		5 *	CAB																
46	0-30	HCL	5 *	SAB	30-120	ZC		5 *	CAB																
47	0-35	HCL	15 *	SAB	35-66	C		35 MCG	CP	66-100	C		35 MCO	CP	100+				Rock						
48	0-35	HCL	15 *	SAB	35-66	C		35 MCG	CP	66-100	C		35 MCO	CP	100+				Rock						
49	0-30	HCL	5 *	SAB	30-120	ZC		5 *	CAB																
50	0-30	HCL	5 *	SAB	30-120	ZC		5 *	CAB																
51	0-35	C	5 *	CP	35-70	C		5 NFO+G	CP	70-90	C		35 MCO	CP	90-120	C			35 FCG	CP					
52	0-35	HCL	15 *	SAB	35-66	C		35 MCG	CP	66-100	C		35 MCO	CP	100+				Rock						
53	0-30	C	5 *	CP	30-120	ZC		5 *	CAB																
54	0-35	C	5 *	CP	35-50	C		5 NFO+G	CP	50-90	C		35 MCO	CP	90-120	C			35 FCG	CP					
55	0-35	C	5 *	CP	35-70	C		5 NFO+G	CP	70-90	C		35 MCO	CP	90-120	C			35 FCG	CP					
56	0-35	HCL	15 *	SAB	35-66	C		35 MCG	CP	66-100	C		35 MCO	CP	100+				Rock						
57	0-35	HCL	15 *	SAB	35-66	C		35 MCG	CP	66-100	C		35 MCO	CP	100+				Rock						
58	0-35	C	5 *	CP	35-70	SC		15 NMO+G	CP	70-90	C		35 MCO	CP	90-120	C			35 FCG	CP					
59	0-30	C	5 *	CP	35-50	C		5 NFO+G	CP	50-90	C		35 MCO	CP	90-120	C			35 FCG	CP					
60	0-30	HCL	5 *	SAB	30-120	ZC		5 *	CAB																
61	0-35	C	5 *	CP	35-70	SC		15 NMO+G	CP	70-90	C		35 MCO	CP	90-120	C			35 FCG	CP					
62	0-35	C	5 *	CP	35-70	C		5 NFO+G	CP	70-90	C		35 MCO	CP	90-120	C			35 FCG	CP					
63	0-30	C	5 *	CP	30-60	C		5 NFO+G	CP	60-75	C		35 MCO	CP	75-100	C			35 FCG	CP	100+			Rock	
64	0-35	HCL	15 *	SAB	35-66	C		35 MCG	CP	66-100	C		35 MCO	CP	100+				Rock						
65	0-35	HCL	15 *	SAB	35-66	C		35 MCG	CP	66-100	C		35 MCO	CP	100+				Rock						
66	0-30	C	5 *	CP	30-60	C		5 NFO+G	CP	60-75	C		35 MCO	CP	75-100	C			35 FCG	CP	100+			Rock	
67	0-30	C	5 *	CP	30-60	C		5 NFO+G	CP	60-75	C		35 MCO	CP	75-100	C			35 FCG	CP	100+			Rock	
68	0-35	HCL	15 *	SAB	35-66	C		35 MCG	CP	66-100	C		35 MCO	CP	100+				Rock						
69	0-40	HCL	15 *	SAB	40-120	C		15 *	CP																
70	0-32	HCL	15 *	SAB	32-120	C		15 *	CP																
71	0-31	HCL	15 *	SAB	31-120	C		15 MG	CP																
72	0-38	HCL	15 *	SAB	38-50	C		15 MG	CP	50+															
73	0-37	HCL	15 *	SAB	37-120	C		15 MG	CP																
74	0-31	HCL	15 *	SAB	31-76	C		15 *	CP	76-120	C		15 O	CP											
75	0-24	HCL	15 *	SAB	24-120	C		15 MO	CP																
76	0-37	HCL	15 *	SAB	37-120	C		15 MG	CP																
77	0-22	HCL	15 *	SAB	22-120	C		5 MG	CP																
78	0-36	HCL	15 *	SAB	36-120	C		15 MO	CP																
79	0-32	H2CL	5 *	SAB	32-120	C		5 *	CP																
80	0-32	H2CL	5 *	SAB	32-120	C		5 *	CP																
81	0-32	H2CL	5 *	SAB	32-120	C		5 *	CP																
82	0-32	H2CL	5 *	SAB	32-120	C		5 *	CP																

137	0-43	HCL	S *	SAB	43-81	CL		S O	CP	80-92	C		S OG	CP	92+		Rock		
138	0-45	HCL	S *	SAB	45-90	C		S *	CP	90+									
139	0-38	HCL	15 *	SAB	38-120	C		15 *	CP										
PIT140	0-26	HCL	S *	SAB	26-32	C		S NMO+G	CP										
141	0-51	HCL	15 *	SAB	51-88	HCL		15 *	CP	88-120	HCL		S G	CP					
142	0-42	HCL	15 *	SAB	42-55	C		S MO	CP	55-120	C		S MOG	CP					
143	0-42	HCL	S *	AB	42-120	C		S *	CP										
144	0-42	HCL	S *	AB	42-120	C		S *	CP										
145	0-42	HCL	S *	AB	42-120	C		S *	CP										
146	0-42	HCL	S *	AB	42-120	C		S *	CP										
147	0-42	HCL	S *	AB	42-120	C		S *	CP										
148	0-42	HCL	S *	AB	42-120	C		S *	CP										
149	0-42	HCL	S *	AB	42-120	C		S *	CP										
150	0-42	HCL	S *	AB	42-120	C		S *	CP										
151	0-42	HCL	S *	AB	42-120	C		S *	CP										
152	0-35	HCL	15 *	SAB	35-66	C		35 MCG	CP	66-100	C		35 MCO	CP	100+		Rock		
153	0-35	HCL	15 *	SAB	35-66	C		35 MCG	CP	66-100	C		35 MCO	CP	100+		Rock		
154	0-30	HCL	S *	SAB	30-110	C		S FFG	CP	110+									
155	0-30	HCL	S *	SAB	30-110	C		S FFG	CP	110+									
156	0-30	HCL	S *	SAB	30-110	C		S FFG	CP	110+									
157	0-35	HCL	S *	CP	35-70	C		S NFO+G	CP	70-90	C		35 MCO	CP	90-120	C		35 FCG	CP
158	0-35	HCL	15 *	SAB	35-66	C		35 MCG	CP	66-100	C		35 MCO	CP	100+		Rock		
159	0-30	HCL	S *	CP	35-70	SC		15 NMO+G	CP	70-90	C		35 MCO	CP	90-120	C		35 FCG	CP
160	0-30	HCL	S *	SAB	30-80	C		S FFG	CP	80+									
161	0-37	HCL	15 *	SAB	37-61	C		S G	CP	61-120	C		S MO	CP					
162	0-38	HCL	15 *	SAB	38-120	C		15 MG	CP										
163	0-33	HCL	15 *	SAB	33-100	C		S MG	CP	100-120	C		S MO	CP					
164	0-35	HCL	15 *	SAB	35-58	C		S MO	CP	58-92	C		S MG	CP	92-110	C		S MO	CP
165	0-43	HCL	15 *	SAB	43-120	C		S FG	CP										
166	0-25	HCL	S *	SAB	25-70	C		35 MCG	CP	70+									
167	0-25	HCL	S *	SAB	25-70	C		35 MCG	CP	70+									
168	0-25	HCL	S *	SAB	25-70	C		35 MCG	CP	70+									
169	0-25	HCL	S *	SAB	25-70	C		35 MCG	CP	70+									
170	0-25	HCL	S *	SAB	25-70	C		35 MCG	CP	70+									
171	0-25	HCL	S *	SAB	25-70	C		35 MCG	CP	70+									
172	0-40	HCL	15 *	SAB	40-120	C		S MO	CP										
173	0-41	HCL	15 *	SAB	41-100	C		S MO	CP										
174	0-55	HCL	15 *	SAB	55-120	C		15 FGO	CP										
175	0-43	FSCL	15 *	SAB	43-120	C		S MO	CP										
176	0-40	FSCL	15 *	SAB	40-120	C		15 FGO	CP										
177	0-36	SCL	15 *	SAB	36-120	C		S MO	CP										
178	0-37	FSCL	15 *	SAB	37-120	C		S MO	CP										
179	0-25	HCL	S *	SAB	25-70	C		35 MCG	CP	70+									
180	0-25	HCL	S *	SAB	25-70	C		35 MCG	CP	70+									
181	0-25	HCL	S *	SAB	25-70	C		35 MCG	CP	70+									
182	0-25	HCL	S *	SAB	25-70	C		35 MCG	CP	70+									
183	0-34	HCL	15 *	SAB	34-65	C		15 MG	CP	65-120	C		S MO	CP					
184	0-39	HCL	15 *	SAB	39-120	C		15 MOG	CP										
185	0-37	FSCL	15 *	SAB	37-120	C		15 MO	CP										
186	0-39	HCL	15 *	SAB	39-120	C		15 MOG	CP										
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192	0-39	HCL	15 *	SAB	39-120	C		15 MOG	CP										
193	0-39	HCL	15 *	SAB	39-120	C		15 MOG	CP										
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198	0-42	HCL	S *	AB	42-120	C		S FO	CP										
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212	0-42	HCL	S *	AB	42-120	C		S FO	CP										
213	0-42	HCL	S *	AB	42-120	C		S FO	CP										
214	0-42	HCL	S *	AB	42-120	C		S FO	CP										
215	0-42	HCL	S *	AB	42-120	C		S FO	CP										
216	0-42	HCL	S *	AB	42-120	C		S FO	CP										
217	0-42	HCL	S *	AB	42-120	C		S FO	CP										
218	0-30	HCL	S *	AB		30 R													
219	0-42	HCL	S *	AB	42-120	C		S FO	CP										
220	0-42	HCL	S *	AB	42-120	C		S FO	CP										
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234	0-42	HCL	S *	AB	42-120	C		S FO	CP										
235	0-42	HCL	S *	AB	42-120	C		S FO	CP										
236	0-39	HCL	15 *	SAB	39-120	C		15 MOG	CP										
237	0-39	HCL	15 *	SAB	39-120	C		15 MOG	CP										
238	0-39	HCL	15 *	SAB	39-120	C		15 MOG	CP										
239	0-39	HCL	15 *	SAB	39-120	C		15 MOG	CP										
240	0-39	HCL	15 *	SAB	39-120	C		15 MOG	CP										
241	0-39	HCL	15 *	SAB	39-120	C		15 MOG	CP										
242	0-39	HCL	15 *	SAB	39-120	C		15 MOG	CP										
243	0-30	MZCL	S *	AB	30-120	C		S *	CP										
244	0-30	MZCL	S *	AB	30-120	C		S *	CP										
245	0-20	MZCL	S *	AB	20-120	C													

[illegible]

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Not surveyed - Ecology Offset Area

Structure	
MSAB	Medium Subangular Blocky
AB	Angular Blocky
CP	Coarse Prismatic
MSAB	Massive
SAB	Subangular Blocky
CP	Coarse
W	Weak

Stones	
5	Very Slightly Stony
15	Slightly Stony
35	Moderately Stony

Texture	
C	Clay
ZC	Silty Clay
SC	Sandy Clay
CL	Clay Loam
ZCL	Silty Clay Loam
SCL	Sandy Clay Loam
SZL	Sandy Silty Loam
SL	Sandy Loam
LS	Loamy Sand
S	Sand
ZS	Silty Sand
MG	Made Ground
F (sand)	Fine
M (sand)	Medium
C (sand)	Coarse
H (clay)	Heavy
M (clay)	Medium

Rock Type	
Ca	Calcareous

Mottling	
*	No Mottling
X	Fine Grey
O	Fine Ochreous
N	Numerous Mottles
F	Few Mottles
D	Fine Brown

Cell Colours	Reason
	Livestock in field - not accessed
	Woodland/Made Ground/Urban
	Inaccessible areas
	N/A

APPENDIX III

SITE SURVEY PHOTOGRAPHS

Photograph Number	Photograph Description	Photograph
1.	Land at Steeple Solar Farm General view.	
2.	Land at Steeple Solar Farm General view.	
3.	Land at Steeple Solar Farm Borehole showing Soil Type 1.	

Photograph Number	Photograph Description	Photograph
4.	Land at Steeple Solar Farm Borehole showing Soil Type 2.	
5.	Land at Steeple Solar Farm Borehole showing Soil Type 3.	
6.	Land at Steeple Solar Farm Borehole showing Soil Type 4.	

Photograph Number	Photograph Description	Photograph
7.	Land at Steeple Solar Farm Photograph of Pit showing Soil Type 2.	
8.	Land at Steeple Solar Farm Photograph of Pit showing Soil Type 4.	

APPENDIX IV

SUMMARY OF FINDINGS

Job Name:	Steeple Solar Farm
Job Number:	240424
Date:	16/04/2025
Completed By:	EH

Site Altitude:	32.5
Centre Grid Ref:	479360 383238

AAR	568.90
ATO	1392.44
FCD	111.20
MDMWHT	115.61
MDMPOT	109.23

	Soil Type 1	Soil Type 2	Soil Type 3
AP WHT	123.55	137.78	150.74
MB WHT	7.94	22.17	35.13
AP POT	100.7	114.73	116.44
MB POT	-8.53	5.50	7.21



Site Limitations Summary			
	Soil Type 1	Soil Type 2	Soil Type 3
Wetness Class	III	II	I
Wetness Grading	3b	3a	2
Droughtiness Wheat	2	2	1
Droughtiness Potato	2	2	2
Gradient Limitation	1	1	1
Soil Depth Limitation	1	1	1
Stoniness Limitation	1	1	1
	Overall		
Site Climatic Limitation	1	1	1
Overall Grade	3b	3a	2

Job Name:	Steeple Solar Farm
Job Number:	240424
Date:	16/04/2025
Completed By:	EH

Site Altitude:	32.5
Centre Grid Ref:	479360 383238

AAR	568.90
ATO	1392.44
FCD	111.20
MDMWHT	115.61
MDMPOT	109.23

Soil Type 4	
AP WHT	176.54
MB WHT	60.93
AP POT	123.09
MB POT	13.86



Site Limitations Summary	
	Soil Type 4
Wetness Class	1
Wetness Grading	1
Droughtiness Wheat	1
Droughtiness Potato	1
Gradient Limitation	1
Soil Depth Limitation	1
Stoniness Limitation	1
	Overall
Site Climatic Limitation	1
Overall Grade	1

Agricultural Land Classification (ALC)

The Agricultural Land Classification (ALC) provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. The limitations can operate in one or more of four principal ways: they may affect the range of crops which can be grown; the level of yield; the consistency of yield and the cost of obtaining it. The classification system gives considerable weight to flexibility of cropping, whether actual or potential, but the ability of some land to produce consistently high yields of a somewhat narrower range of crops is also taken into account.

These factors form the basis for classifying agricultural land into one of five grades (with Grade 3 land divided into Subgrades 3a and 3b since the guidelines were revised in 1988), ranked from Excellent (Grade 1) to Very Poor (Grade 5). ALC grading is determined using the Ministry of Agriculture Food and Fisheries (MAFF) '*Agricultural Land Classification of England and Wales – Revised guidelines and criteria for grading the quality of agricultural land*'.

Definition of Agricultural Land Classification Grades

ALC Grade	Description
Grade 1	Excellent quality agricultural land No or very minor limitations to agricultural use.
Grade 2	Very good quality agricultural land Minor limitation which affect crop yield, cultivation or harvesting.
Subgrade 3a (pre-1988 Grade 3)	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.
Subgrade 3b (pre-1988 Grade 3)	Moderate quality agricultural land Capable of producing moderate yields of a narrow range of arable crops and/or lower yields of a wider range of crops.
Grade 4	Poor quality agricultural land Severe limitations which significantly restrict the range of crops and/or levels of yield.
Grade 5	Very poor quality agricultural land Very severe limitations which restrict use to permanent pasture or rough grazing.

Best and Most Versatile (BMV) Agricultural Land

The National Planning Policy Framework (NPPF) (Department for Communities and Local Government, 2012) defines Best and Most Versatile (BMV) agricultural land as land of Excellent (ALC Grade 1), Very Good (Grade 2) and Good (Grade 3a) agricultural quality. BMV land is provided a degree of protection against development within planning policy, with most Local Plans including specific policies which refer to the protection of BMV agricultural land.

Non-BMV agricultural land, i.e. Moderate, Poor and Very Poor quality agricultural land is designated subgrade 3b or Grades 4 and 5 respectively, and is restricted to a narrower range of agricultural uses. Limited to no protection is provided against development on this grade land within planning policy.

Limiting Factors

Main Factor	Sub Factor	Explanation
Climatic Limitations	Overall Climatic Limitation	Using a dataset of five parameters, as set on a 5km grid for the whole of the UK, the site climatic values are used to determine if there is an overriding limiting factor for the site with regard to the wider climate.
	Local Climatic Factors	Where the above climatic factors are liable to be modified by local factors such as aspect, gradient and elevation then one or more of these factors may become a limiting factor for the site.
Site Limitations	Gradient	Gradient may have an impact on mechanised farm operations and also on soil erosion. The ALC grade limitations with reference to gradient are given in Table 1 of the MAFF guidance.
	Microrelief	Complex changes in slope angle and direction over short distances may have an impact on agricultural machinery. The effect of microrelief is considered in conjunction with overall gradient.
	Flooding	The extent, duration, frequency and timing of flooding may have an influence over the ALC Grade and could become the limiting site factor. The ALC grade limitations with reference to flooding are given in Tables 2 and 3 of the MAFF guidance.
Soil Limitations	Soil Texture and Structure	Soil texture and structure can influence the water retention, water movement and aeration of the soil and therefore affect the workability, trafficability, poaching risk and suitability for plant growth. Soil texture is determined by the proportions of sand, silt and clay and is used to assess the wetness class of the soil.
	Soil Depth	Soil depth can influence the available water capacity of the soil, restrict nutrient uptake, root growth and root anchorage. The ALC grade limitations with reference to soil depth are given in Table 4 of the MAFF guidance.
	Stoniness	Stone content can influence the cultivation, harvesting and crop growth and may negatively impact machinery. The ALC grade limitations with reference to stoniness are given in Table 5 of the MAFF guidance.
	Chemical Limitations	Certain physical limitations may limit soil chemical properties, such as saline conditions, organic matter and toxic elements.
Interactive Limitations	Soil Wetness	Soil wetness is assessed using a combination of factors including climate, soil water regime and soil texture. The ALC grade limitations with reference to soil wetness are given in Tables 6 and 7 of the MAFF guidance.
	Droughtiness	Soil droughtiness is assessed using a combination of factors including available water capacity, moisture deficit, moisture balance and irrigation. The ALC grade limitations with reference to droughtiness are given in Table 8 of the MAFF guidance.
	Soil Erosion	Soil erosion may be caused by wind or water action and is determined by interactions between weather, soil type, topography and vegetation cover.

Soil Series

Soil series is the lowest categorical level used for classifying soils in England and Wales. According to the Soil Survey of England and Wales 1984:

"Soil series are defined using a combination of three main properties, the broad type of parent material present (substrate type), the texture of the soil material (textural grouping) and the presence or absence of material with a distinctive mineralogy."

Higher categories are: Major Soil Group, Soil Group, and Soil Subgroup, which are not explicitly used in this report.

Soil Association

A soil association is a geographic grouping of soils identified by the name of the most frequently occurring soil series and by the combination of additional soil series.

Gleying

Gleying is the process of iron reduction (opposite to oxidation) in soils from ferric (reddish in colour) to ferrous compounds (grey or colourless), by microorganisms or by-products of decomposing organic matter. Gleying occurs in areas devoid of oxygen when the soil is waterlogged. The resulting mottling (spots or blotches of colour) can therefore be used to identify the existence of a Slowly Permeable Layer (SPL); as defined within the MAFF ALC guidance.

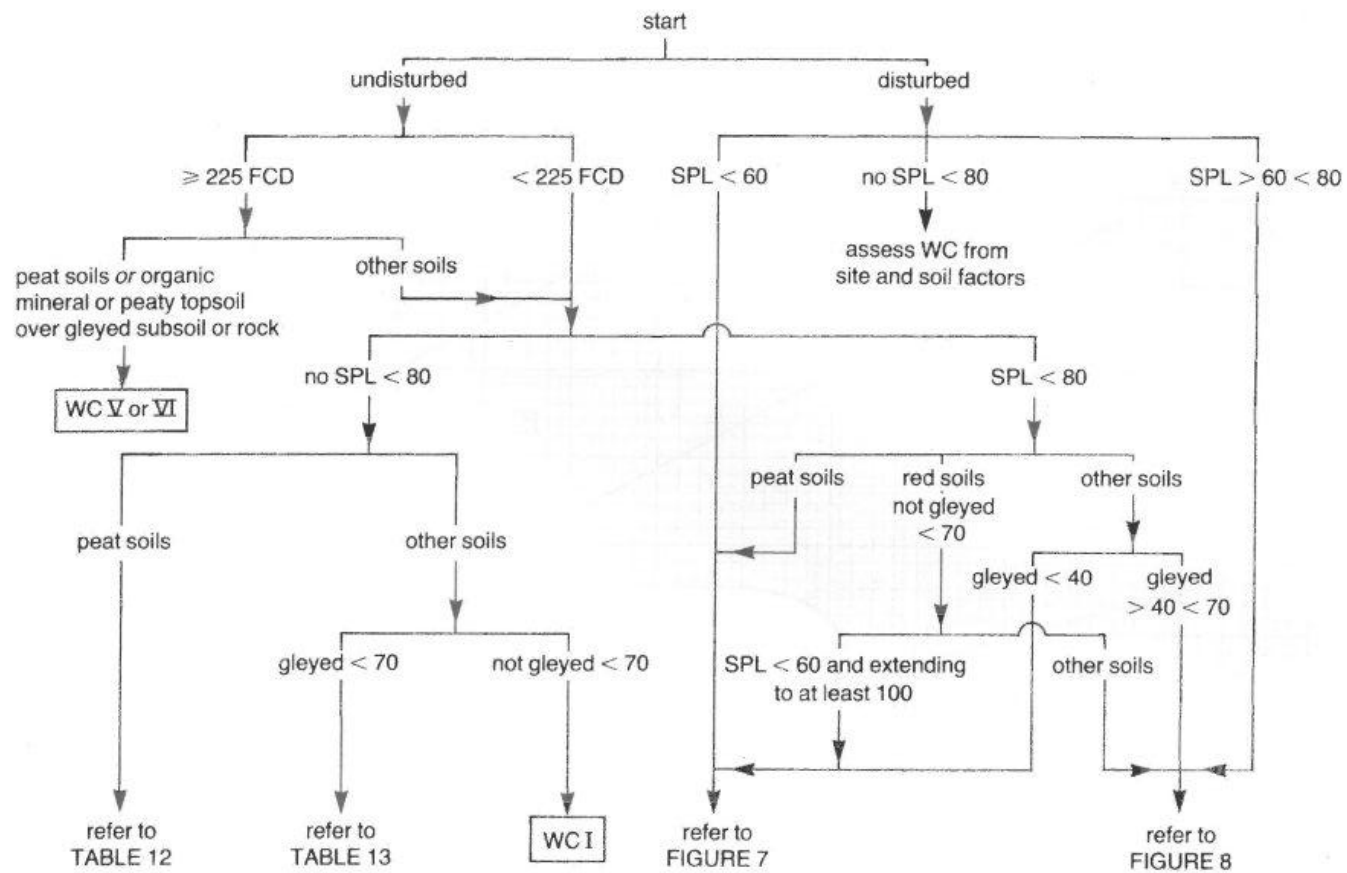


Figure 6. Flow diagram for assessing soil wetness class (WC) from field capacity days (FCD), depth to gleying (in cm) and depth to a slowly permeable layer (SPL, in cm)

Figure 6