

# Springwell Solar Farm

Environmental Statement

Appendix 11.1b: Springwell East  
Agricultural Land Classification

EN010149/APP/6.3  
November 2024  
Springwell Energyfarm Ltd

APFP Regulation 5(2)(a)  
Planning Act 2008  
Infrastructure Planning  
(Applications: Prescribed Forms  
and Procedure) Regulations 2009

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# 1. Introduction

## 1.1. Background

1.1.1. Springwell Solar Farm ('the Proposed Development') is a proposed new solar energy farm, co-located with battery storage. The proposals include grid infrastructure to connect the Solar Farm to the national electricity transmission system and any necessary environmental mitigation. The Proposed Development has secured a grid connection agreement allowing export or import of up to 2 phases of 400MW each of electricity to and from the national electricity transmission system. This qualifies the project as a Nationally Significant Infrastructure Project (NSIP) and requires a Development Consent Order to provide consent to build.

1.1.2. ADAS have been instructed by EDF Renewables to undertake an agricultural land classification survey. The total area surveyed covers over 1,700 hectares of land and is split into three sections (West, Central and East). This report provides information on the soils and agricultural quality of the land in the Eastern section which covers 431 hectares. The report is based on a survey of the land undertaken in Winter 2022 and Spring 2023.

## 1.2. Site Environment

1.2.1. The survey spans 49 agricultural fields between the villages of Scopwick and Blankley in Lincolnshire. The land is level to gently undulating across the section with an elevation of approximately 20-30 m AOD. The land is bordered mostly by adjoining agricultural land, with some farm tracks. Minor roads border the outer boundaries of fields to the west and north of the survey area. There is a railway line that runs along the eastern boundary of the site.

## 1.3. Agricultural Use

1.3.1. At the time of survey, the land was growing winter cereals, legumes, and grass for chlorophyll production.

## 1.4. Published Information

### Geology

- 1.4.1. 1:50,000 scale BGS information records alluvial superficial geology in the northern part of this section.
- 1.4.2. The bedrock geology of the majority of this section is recorded as Great Oolite Formation<sup>1</sup>. A small area in the north west corner of the Eastern Section is recorded as Inferior Oolite Formation. Both the Great and the Inferior Oolites are Jurassic limestone formations.
- 1.4.3. On the eastern border of the Eastern site there is Kellaways and Oxford clay formation. The bedrock on the eastern border is grey mudstone over calcareous siltstone and sandstone.

### Soils

- 1.4.4. The national soils map, published at 1:250,000 scale, records the fields in Eastern Section as mainly belonging to the Aswarby soil association<sup>2</sup>. The fields along the eastern border are mapped as Beccles 1 association and the central eastern part between the Aswarby, and Beccles 1 association is Curdrige association. Elmton 1 association is found in the northeastern section of the site, the northern tip is mapped as Isleham 2 but only found in field C4 and south-east corner is identified as Marcham association.
- 1.4.5. Beccles 1 soils are seasonally waterlogged fine loam over clayey soils. They are noncalcareous with poorly structured subsoil and limited stone contents. On this site they are on the eastern border where Kellaways formation and Oxford clay geology is found.
- 1.4.6. Curdrige soil association are coarse loamy soils that suffer from season waterlogging and groundwater effects. They are formed on sandstone therefore can give sandy topsoil textures, as well as sand content increasing towards the bottom of the profile near the sandstone beds which was observed in the south-east section of the site. These soils have limited stone content, are non-calcareous and poorly structured in the subsoil.
- 1.4.7. The Elmton 1 soil association are calcareous fine loamy soils over limestone. On this site Elmton 1 soils occur at the north-east corner where the bedrock geology changes from Inferior Oolite to Great Oolite Formation limestone. The limestone underlying Elmton 1 is well fissured so is capable of holding more crop available water, and the soils are well drained.

- 1.4.8. Isleham 2 is mapped at the north corner of the site and was found in the northern half of field C4. Isleham 2 association soils have sandy and peaty topsoil with a pale grey subsoil becoming grey and mottled below. Groundwater and the effectiveness of inbuilt drainage systems can heavily influence the soil water regime of this association.
- 1.4.9. The Marcham soil association is described as soils with well-drained and permeable calcareous fine and coarse loamy soils that are shallow over limestone. On this site Marcham soils occur at the south-east corner where the bedrock geology changes from Inferior Oolite to Great Oolite Formation limestone.
- 1.4.10. Aswarby soil association is described as an association of calcareous, well drained, occasionally waterlogged soils which are comprised of Jurassic limestone and clay. Characterised by fine loamy soils over limestone often at shallow depth (less than 60cm). The association occurs on the Great Oolite limestones. Some soils are affected by groundwater. There may also be temporary waterlogging from the presence of slowly permeable clayey beds under the thin limestone. These areas are known as the 'wetter brashy' soils. It should also be noted that some Aswarby soils have hard, only weakly fissured, limestone rock at shallow depth which is a barrier to root penetration. This is a local problem where many fields have patches of shallow soil where partial crop failures/reduction are to be expected due to the restricted rooting volume and associated moisture reserves, particularly in years with a dry May/June period<sup>3</sup>.
- 1.4.11. The Marcham soil association is described as soils with well-drained and permeable calcareous fine and coarse loamy soils that are shallow over limestone. On this site Marcham soils occur at the eastern boundary where the bedrock geology changes from Inferior Oolite to Great Oolite Formation limestone.

### Previous Agricultural Land Classification

- 1.4.12. No detailed post-1988 agricultural land classification is publicly available for this site. The provisional ALC map, published at 1:250,000 scale, records the land as mostly Grade 3 quality, with some areas of Grade 2 quality to the north of the section.

### Flood risk

- 1.4.13. Areas in the north and east of the site (see Figure 1) are at medium risk of flooding from the river.
- 1.4.14. In addition, there is a risk of surface water flooding in the areas in the north and east of the site as show in Figure 2 below.

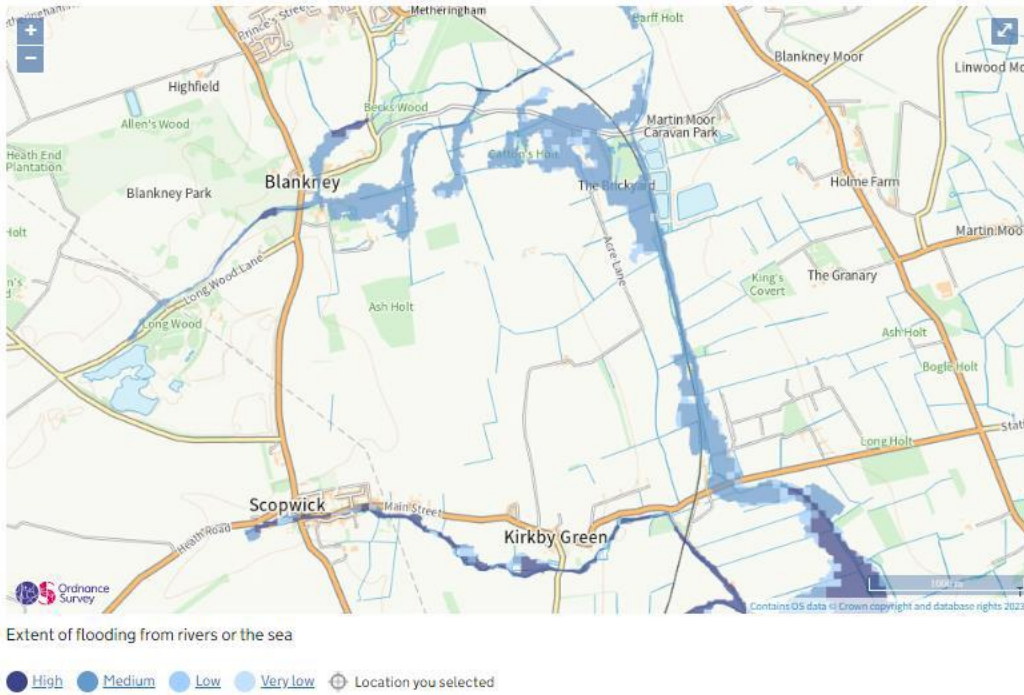


Figure 1 Flood risk map from rivers

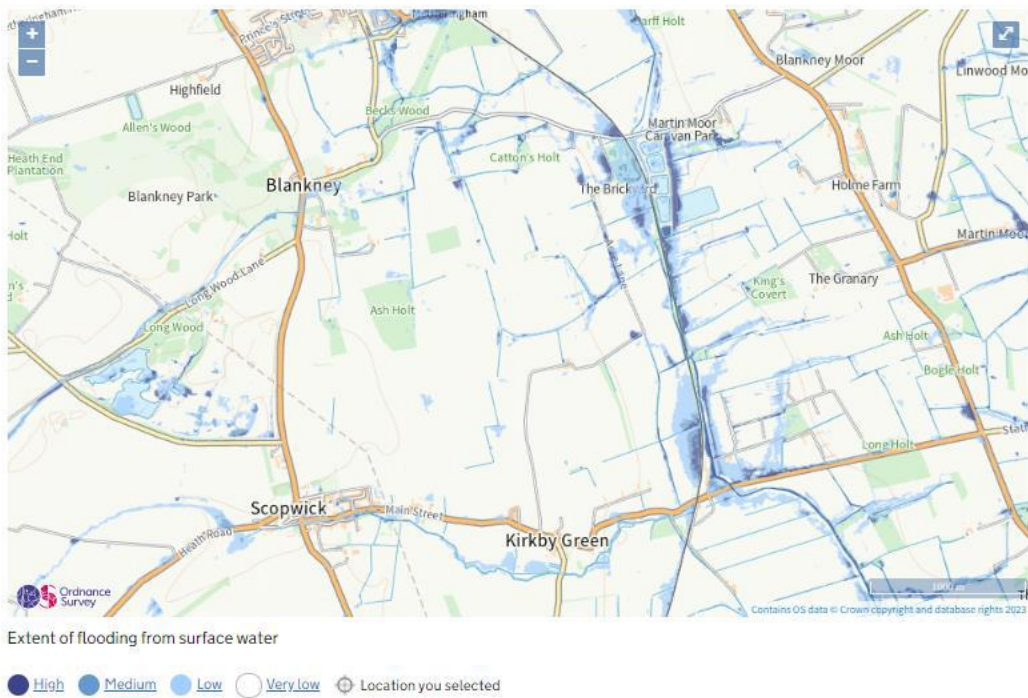


Figure 2 Flood risk map from surface water

## 2. Methodology

- 2.1.1. A soil survey was carried out between August 2022 and March 2023. The survey was based on observations at intersects of a 100 m grid, giving a sampling density of one observation per hectare. During the survey, soils were examined via a combination of auger borings and soil description pits to a maximum depth of 1.2 m. A number of mini pits were also dug *ad hoc* to confirm soils and stone content. A log of the details of each observation point is attached to this report as Appendix A. A map showing the location of each observation point is attached to this report as Appendix B.
- 2.1.2. Samples were taken from the soil description pits and submitted to NRM Laboratories for particle size distribution analysis by the pipette method to confirm soil textures. The results of the analyses are given in Appendix D.

## 3. Soils

### 3.1. Introduction

- 3.1.1. There are six principal soil types at this site as described below;

### 3.2. Non-calcareous loamy soils over seasonally waterlogged clay

- 3.2.1. These soils were found in the fields on the eastern boundary, bordering the railway. The bedrock of this section is formed with sandstone, mudstone and siltstone and is lithologically diverse. The soils in this section are heavy clay loam over clay, with a limited stone content throughout and are non-calcareous. The soil shows signs of seasonal waterlogging and is imperfectly drained with gleying above 40cm belonging to wetness class III. An example is shown in the pit description below:

Table 1 Location: Springwell East - Field Lf04, Profile Pit (509018, 359485)

Depth (cm)	Details
0 - 36	Dark brown (10YR 3/3) heavy clay loam; non-calcareous; moist; stoneless; friable; weakly developed medium subangular blocky structure; common very fine fleshy roots and few fine fleshy roots; clear wavy boundary to:
36 - 68	Light olive brown (2.5Y 5/4) and greyish brown (2.5Y 5/2) gleyed clay with very many very fine yellowish brown (10YR 5/8) mottles and few FMCs (ferri-manganiferous concretions); non-calcareous; very slightly stony (1%) medium angular hard stones; common fine fibrous roots; firm consistence; massive to medium angular blocky structure; less than 0.5% biopores >0.5mm; slowly permeable; diffuse irregular boundary to:

Depth (cm)	Details
<b>68 – 100+</b>	Greyish brown (2.5Y 5/2) gleyed clay with common fine yellowish brown (10YR 5/8) mottles; non-calcareous; very slightly stony (1%) small angular hard stones; firm consistence; massive structure; less than 0.5% biopores >0.5mm; slowly permeable  <i>Wetness Class III, Wetness Grade 3b</i>  <i>MDW 116, MBW = 115.4mm. MDP 110, MBP = -0.4mm. Droughtiness Grade 2.</i>  <i>ALC Grade = 3b, limited by wetness</i>

### 3.3. Calcareous heavy soils over shattered limestone

3.3.1. These soils occur most frequently to the northwest and centre of the Eastern Section. The soils generally have heavy (clay, and heavy clay loam) textured calcareous topsoil. These soils are imperfectly draining and have a slowly permeable layer and belong to wetness class III where gleying occurs within 40cm. The calcareous nature of the topsoil improves the permeability of clayey soils which raises the wetness grade relating to the wetness class. The profile of these soils has large platy fragments of shattered limestone starting at c.55-65cm. In the droughtiness calculations the profile was extended for an additional 30cm at 45% stone. Two examples are shown in the pit descriptions below:

Table 2 Location: Springwell East - Field C6, Profile Pit (507082, 359411)

Depth (cm)	Details
<b>0 – 34</b>	Olive brown (2.5Y 4/4) heavy clay loam; calcareous; slightly stony (6%) medium angular limestone; moderately developed medium subangular blocky structure; friable; clear wavy boundary to:
<b>34 – 50</b>	Light olive brown (2.5Y 5/4) clay with many fine yellowish brown (10YR 5/8) mottles; calcareous; slightly stony (10%) medium angular limestone; friable; moderately developed subangular blocky; few fine fibrous roots; clear fissures and greater than 0.5% biopores >0.5mm; clear wavy boundary to:
<b>50 – 65</b>	Light olive brown (2.5Y 5/4) clay with many fine yellowish brown (10YR 5/8) mottles; calcareous; very stony with 30% medium angular limestone and 10% limestone gravel; friable; moderately developed subangular blocky; few fine fibrous roots; clear fissures and greater than 0.5% biopores >0.5mm. Stopped on shattered limestone

Wetness Class I, Wetness Grade 2.

MDW 115, MBW = -24mm. MDP 109, MBP = -11.2mm. Droughtiness Grade 3b.

ALC Grade = 3b, limited by droughtiness.



**Table 3 Location: Springwell East – Field By24 Profile Pit (508370, 359421)**

Depth (cm)	Details
0 – 36	Olive brown (2.5Y 4/4) heavy clay loam; calcareous; moderately stony (16%) angular limestone with 10% >2cm and 5% >6cm; friable; moderately developed medium subangular blocky structure; many fine fibrous roots; clear boundary to:
36 – 55	Light olive brown (2.5Y 5/4) heavy clay loam; calcareous; moderately developed coarse subangular blocky; common fine fibrous roots; very stony (45%) angular limestone with 3% >2cm and 40% >6cm, increasing with depth to large platy fragments of shattered limestone. Stopped on shattered limestone at 55cm

*Wetness Class I, Wetness Grade 2.*

*MDW 116, MBW = -34.1mm. MDP 110, MBP = -22.5mm. Droughtiness Grade 3b.*

*ALC Grade = 3b, limited by droughtiness*

### 3.4. Silty clay with poorly developed subsoil

- 3.4.1. These soils occur most frequently to the northern centre of the Eastern Section. The soils generally have silty clay loam topsoil over silty clay subsoil with slightly to very calcareous topsoils. These soils have slowly permeable subsoils with gleying often above 40cm, and so belong to wetness class III. An example is shown in the pit description below:

**Table 4 Location: Springwell East – Field By22 Profile Pit (507575, 359486)**

Depth (cm)	Details
0 - 34	Dark brown (10YR 3/3) heavy silty clay loam; slightly calcareous; moderately to well-developed medium to coarse subangular blocky; friable; stoneless; abundant fine friable roots; clear wavy boundary to:
34 - 58	Dark greyish brown (10YR 4/2) heavy silty clay loam with abundant yellowish brown (10YR 5/8) mottles; gleyed; stoneless; very calcareous; poorly developed massive to medium platy structure; firm; slowly permeable; no roots seen; clear irregular boundary to;
58 - 86	Grey (10YR 6/1) silty clay with abundant yellowish brown (10YR 5/8) mottles; gleyed; very calcareous; stoneless; broken and soil filled field drain found at 70 cm; poorly developed massive structure; firm; no roots seen; greater than 0.5% biopores >0.5mm; slowly permeable; clear wavy boundary to:
86 - 120	Greyish brown (10YR 5/2) silty clay loam; extremely calcareous; stoneless; gleyed; poorly developed granular structure; dry and powdery in situ.

Depth (cm)	Details
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*Wetness Class III, Wetness Grade 3a.*

*MDW 115, MBW = 27.2mm. MDP 109, MBP = -2.2mm. Droughtiness Grade 2.*

*ALC Grade = 3a, limited by wetness*

### 3.5. Freely draining non-calcareous sandy soils

- 3.5.1. These soils are found most frequently in the southeast of the Eastern Section. These soils are freely draining with no slowly permeable layer and therefore belong to wetness class I. There is however, evidence of waterlogging in these soils, observed through the common mottles identified in the subsoils. The mottling observed is most likely to be caused by groundwater. The topsoils are very slightly to slightly stony, non-calcareous and loamy fine sand topsoil texture over fine sandy loam subsoil texture. For the droughtiness calculations if an auger was impeded by rock it was extended to the predicted full profile. An example is shown in the pit description below:

**Table 5 Location: Springwell East – Field Lf09 Profile Pit (508601, 358509)**

Depth (cm)	Details
0 – 33	Dark brown (10YR 3/3) loamy fine sand; non-calcareous; very slightly (1%) stony (large, medium, small and very small hardstones); weakly developed coarse granular structure; slightly moist; loose consistence; rapid permeability; common medium and fine fibrous roots; sharp smooth boundary.
33 – 60	Light brownish grey (10YR 6/2) fine sandy loam with common medium brownish yellow (10YR 6/8) mottles; non-calcareous; very slightly (1%) stony with small subrounded hardstones; granular structure; slightly moist; loose consistence; greater than 0.5% biopores >0.5mm; common fine fibrous roots; diffuse smooth boundary.
60 – 120	Grey (10YR 6/1) fine sandy loam with few fine brownish yellow (10YR 6/8) mottles; non-calcareous; very slightly (1%) stony with small subrounded hardstones; granular structure; slightly moist; loose consistence; greater than 0.5% biopores >0.5mm; rare fine fibrous roots.

*Wetness Class I, Wetness Grade 1.*

*MDW 116, MBW = 98.1mm. MDP 110, MBP = 29.7mm. Droughtiness Grade 1.*

*ALC Grade = 2, limited by texture. Loamy sand topsoils are graded at a maximum of Grade 2.*

### 3.6. Non-calcareous imperfectly draining clay

3.6.1. These soils occur most frequently to the south of the Eastern Section. The soils generally have heavy (clay and heavy clay loam) textured non-calcareous topsoil. These soils are imperfectly draining with a slowly permeable layer and belong to wetness class III. An example is shown in the pit description below:

**Table 6 Location: Springwell East - Field Md01, Profile Pit (507561, 358701)**

Depth (cm)	Details
0 – 20	Brown (10YR 4/3) clay; non-calcareous; very slightly stony (1%) small subangular limestones; strongly developed medium granular structure; common fine fissures; abundant fine pores; rapid permeability; many fine roots.

Depth (cm)	Details
20 – 33	Yellowish brown (10YR 5/4) clay; very slightly calcareous; moderately developed coarse subangular blocky; stoneless; firm; rare fine fissures; greater than 0.5% biopores >0.5mm; common fine roots (some horizontal)
33 – 53	Light brownish grey (10YR 6/2) gleyed clay with very many ochreous mottles; stoneless; calcareous; weakly developed coarse columnar structure; common fine fissures; greater than 0.5% biopores >0.5mm.
53 – 100	Grey (N 6/1) gleyed clay with many ochreous mottles; calcareous; massive; stoneless; firm; less than 0.5% biopores >0.5mm

*Wetness Class III, Wetness Grade 3b*  
*MDW 115, MBW = 10.6mm. MDP 109, MBP = -7.4mm. Droughtiness Grade 2.*  
*ALC Grade = 3b, limited by wetness*

### 3.7. Moderately freely draining loamy soils

3.7.1. These soils occur in the northern corner of the Eastern section. They typically have clay loam topsoil over a clay upper subsoil and sandy clay loam lower subsoil. The topsoils are calcareous with limited stones throughout the profile. Despite evidence of mottles and gleying in lower subsoils, no slowly permeable layer was observed within the profile indicating a moderately freely draining soil and wetness class I. An example is shown in the pit description below:

Table 7 Location: Springwell East – Field By11 Profile Pit (508000, 360098)

Depth (cm)	Details
0 – 38	Brown (10YR 5/3) heavy clay loam; slightly calcareous; very slightly (1%) stony (small limestones); strongly developed medium granular structure; moist; friable; common fine fissures; abundant fine pores; rapid permeability; many fine roots.
38 – 53	Light yellowish brown (2.5Y 6/4) clay with many brownish yellow (10YR 6/6) mottles; slightly calcareous; slightly stony (5%) small and very small limestones; weakly developed very coarse columnar; moist; firm; few fine fissures; greater than 0.5% biopores >0.5mm; few very fine roots.
53 – 90	Grey (10YR 6/1) sandy clay loam with very many brownish yellow (10YR 6/6) mottles; calcareous; slightly stony (10%) large, medium, small and very small limestones; very weakly developed very coarse granular; moist; friable; rare fine fissures; greater than 0.5% biopores >0.5mm; few very fine roots. Stopped by stones at 90cm

*Wetness Class I, Wetness Grade 2.*

Depth (cm)	Details
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	<i>MDW 116, MBW = 3.4mm. MDP 110, MBP = 0.3mm, Grade 3a. ALC Grade = 3a, limited by droughtiness.</i>
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## 4. Agricultural Land Classification

### 4.1. Introduction

- 4.1.1. The Agricultural Land Classification (ALC) system provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use for food production. 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 crop yield, the consistency of crop yield, and the cost of obtaining a crop.
- 4.1.2. The classification system gives considerable weight to flexibility of cropping, whether actual or potential, however the ability of some land to produce consistently high yields of a narrower range of crops is also considered.
- 4.1.3. The Agricultural Land Classification (ALC) system classifies land into five grades numbered 1 to 5, with grade 3 divided into two subgrades (3a and 3b). The system was devised and introduced by the then Ministry of Agriculture, Fisheries and Food (MAFF) in the 1960s and revised in 1988.

### 4.2. Climate

- 4.2.1. The agricultural climate is an important factor in assessing the agricultural quality of land, and the agricultural climate of this site has been calculated using the Climatological Data for Agricultural Land Classification<sup>1</sup>. The relevant site data for an average elevation of 25 m AOD is given below.

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<sup>1</sup> Meteorological Office, (1989). *Climatological Data for Agricultural Land Classification*.

**Table 8 Agro-climatic variables**

<b>Grid Reference Location (Bk04-4)</b>	TF079594
<b>Average Annual Rainfall (AAR)</b>	600 mm
<b>January-June Accumulated Temperature (AT0)</b>	1406 days °C
<b>Field Capacity Days (FCD)</b>	118
<b>Field Capacity Period</b>	early Dec - late Mar
<b>Moisture Deficit Wheat (MDW)</b>	114
<b>Moisture Deficit Potatoes (MWP)</b>	107
<b>Climate (upper grade limit)</b>	1

4.2.2. The site is located in Eastern England and there is no agro-climatic limitation to agriculture. A table containing the field capacity days and the moisture deficit values for each field are attached to this report at Appendix E

### 4.3. Results

4.3.1. The results of the soil survey described in section 3 were used in conjunction with the agroclimatic data above to classify the land according to the revised guidelines for Agricultural Land Classification issued in 1988 by the Ministry of Agriculture, Fisheries and Food (now Defra)6.

4.3.2. This report has identified agricultural land of grade 1, grade 2, subgrade 3a and subgrade 3b quality. The limitations to agricultural use of the land are soil droughtiness and soil wetness. Where the soils are shallow over limestone, or have deep sandy profiles droughtiness is the limiting factor. Where the soils are deep and clayey, it is often wetness that is the limiting factor.

### Grade 1

4.3.3. There are 23.8 ha of grade 1 quality land at this site. This land occurs in the deep profiles of fine sandy loam in fields Lf09 and By27. There are two small areas in the north of the site that are also grade 1 quality land. The soils belong to wetness class I and have no limitations to agriculture.

## Grade 2

- 4.3.4. There are 75.3 ha of grade 2 quality land at this site, mostly occurring in fields in the east of the site with deep sandy profiles, including fields By18, Lf03, Lf09 and Lf10. These fields belong to wetness class I and are limited by droughtiness. Other areas of grade 2 quality land occur across the site where there are calcareous heavy topsoils (heavy clay loam, heavy silty clay loams and clay) that are moderately freely draining and belong to wetness class II.

## Subgrade 3a

- 4.3.5. There are 168.6 ha of subgrade 3a land at this site. These soils are made up moderately freely draining to imperfectly draining clayey soils that are calcareous and belong to wetness class II or III. Wetness is the limitation to these soils. Other subgrade 3a soils on this site are comprised of freely draining (wetness class I) soils with calcareous clayey topsoil, over limited depth of subsoil (total depth c.50-85cm) over shattered limestone and are limited by droughtiness.

## Subgrade 3b

- 4.3.6. There are 163.3 ha of subgrade 3b land at this site. This land is formed on freely draining (wetness class I) soils with limited profile depths (total depth c30-50cm) over limestone bedrock. These soils are limited by droughtiness. Some seasonally waterlogged clayey soils that have non-calcareous heavy topsoils (heavy clay loams, heavy silty clay loams and clays) also form subgrade 3b quality land on this site. These are soils are most prominent in the four fields along the eastern boundary – By20, By28, Lf04 and Lf11. These soils belong to wetness class III, have non-calcareous clayey topsoils and have a wetness limitation.

## Grade 4

- 4.3.7. No land of this quality has been mapped

## Grade 5

- 4.3.8. No land of this quality has been mapped

## Non-agricultural

- 4.3.9. No land of this quality has been mapped

## Urban

- 4.3.10. No land of this quality has been mapped



#### 4.4. Summary of grade areas

4.4.1. The boundaries between the different grades of land are shown in Appendix C. The area occupied by each grade is shown below.

**Table 9 Grade areas (area surveyed within Springwell East)**

Grade / Subgrade	Area (ha)	Area (%)
Grade 1	23.8	5.5
Grade 2	75.3	17.5
Subgrade 3a	168.6	39.1
Subgrade 3b	163.3	37.9
Grade 4	-	-
Grade 5	-	-
Non-agricultural	-	-
Urban	-	-
<b>Total</b>	<b>431</b>	<b>100</b>

# Appendix 1- Auger Boring Log



## Key to Auger Log

Colour	Texture	Texture suffixes	Mottle intensity	Limitations
Bk - black	C - clay	Calcareous:	o – unmottled.	CL - climate
Br - brown	ZC - silty clay	v sl ca - very slightly calcareous	x – a few to common rusty root channel mottles (topsoil) or a few ochreous mottles (subsoil).	DE - depth
Bu - blue	SC - sandy clay	sl ca - slightly calcareous	xx – common to many ochreous mottles and/or dull structure faces.	DR - droughtiness
Dk - dark	CL - clay loam (H-heavy, M-medium)	ca - calcareous	xxx – greyish or pale colours dominant in matrix or ped faces and common to many ochreous mottles (gleyed horizon).	ER - erosion
Du - dusky	ZCL - silty clay loam (H-heavy, M-medium)	v ca - calcareous	xxxx – dominantly grey, often with some ochreous mottles (gleyed horizon).	FL - flooding
Gn - green	SCL - sandy clay loam	Stoniness (by volume):	Other:	GR - gradient
Gr - grey	SZL - sandy silt loam (F-fine, M-medium, C-coarse)	v sl st - very slightly stony (1-5%)	fmcs – ferrimanganiferous concentrations	MR - microrelief
Li - light	ZL - silt loam	sl st - slightly stony (6-15%)	SOS or SBS – stopped on/by stones	ST - stoniness
Ol - olive	SL - sandy loam (F-fine, M-medium, C-coarse)	m st - moderately stony (16-35%)		TX - texture
Pi - pink	LS - loamy sand (F-fine, M-medium, C-coarse)	v st - very stony (36-70%)		WE - wetness/workability
Pl - pale	S - sand (F-fine, M-medium, C-coarse)	ex st - extremely stony (>70%)		
Rd - red	Org - organic (S-sand, L-loam, C-clay)			
St - strong	Pty - peaty (S-sand, L-loam)			
V - very	Pt - peat (S-sandy, L-loamy, H-humified, SF-semi-fibrous, F-fibrous)			
Wk - weak				
Yl - yellow	R - bedrock			

## Lithology

- 1 - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)
- 2 - Soft, medium or coarse grained sandstones
- 3 - Soft 'weathered' igneous or metamorphic rocks or stones
- 4 - Soft oolitic or dolomitic limestones
- 5 - Soft fine grained sandstones
- 6 - Soft, argillaceous or silty rocks or stones
- 7 - Chalk or chalk stones
- 8 - Gravel- with non-porous (hard) stones
- 9 - Gravel- with porous stones (mainly soft stone types listed above)

Name	Depth	Munsel colour 1	Munsel colour 2	Colour	Texture	Calc	Total stones (%)	St > 2cm	St > 6cm	Lith'gy	Mott' & gleying	SPL	Notes	Land use	Slope (°)	WC	WE grade	DR grade	ALC grade	Limit
1By01	26	10yr33		Dk Gr Br	CSL		0						0-15cm organic	grassland	0	I	1	1	1	
	54	10yr34		Dk Yl Br	CSL		0				o	no								
	74	10yr54		Yl Br	LCS		0				o	no								
	120	25y68		Ol Yl	CSL		0				o	no								
2BY01	22	10yr32		Dk Br	MSL		0							grassland	0	I	1	1	1	
	74	10yr34		Dk Yl Br	MSL		0				o	no								
	96	10yr56		Yl Br	CS		0				x	no								
	120	10yr61	10yr53	Gr + Br	CSL		0				xxx	no								
3BY01	30	10yr33		Br	CSL		0						organic 0 -13cm	grassland	0	I	1	1	1	
	61	10yr44		Dk Yl Br	CSL		0				x	no								
	82	10yr63		Pl Br	CSL		5			2	xxx	no								
	120	10yr63		Pl Br	LCS		5			2	xxx	no								
4BY01	28	10yr42		V Dk Gr Br	CSL	ca	4			4				grassland	0	(I)	1	3b	3b	DR
	32	10yr33		Dk Br	CSL	ca	12			4	o	no								
	50	10yr63		Pl Br	CS	v ca	50			4	o	no	SBS at 50cm.							
5BY01	37	10yr43		Dk Br	CSL	ca	0							grassland	1	I	1	2	2	DR
	43	10yr43		Br	CSL	ca	1			9	o	no								
	66	10yr63		Pl Br	LCS	v ca	25			4	x	no								
	120	10yr58	10yr61	Yl Br + Gr	LCS	v ca	5			4	xxx	no								
1BY02	39	10yr43		Br	MCL	ca	1			4				arable	0	I	1	3a	3a	DR
	67	10yr64		Li Yl Br	LCS	ca	10			4	o	no								
	90	10yr64		Li Yl Br	LCS	ca	12			2	xxx	no								
	120	10yr62		Li Br Gr	LCS	sl ca	2			4	xxx	no								
2By02	32	10yr33		Dk Br	HCL	ca	4			4			FMCs	arable	1	I	2	1	2	WE
	81	10yr54	10yr61	Yl Br + Gr	MSL		2			4	xxx	no								
	100	10yr58	10yr61	Yl Br + Gr	CSL		25			8	xxx	no								
3By02	37	10yr43		Br	SCL	v ca	8			4				arable	1	(I)	1	3b	3b	DR
	50	10yr56		Yl Br	CS		65			4	o	no	Sos							
4BY02	36	10yr42		Br	HCL	ca	4			4				arable	2	II	2	3a	3a	DR
	57	10yr53		Br	HCL		5			4	xxx	no								
	64	10yr51		Gr	HCL		8			4	xxx	yes	SBS at 64cm							
5BY02	36	10yr54		Br	HCL	v ca	20			1			Sos, FMCs	arable	1	(I)	2	3b	3b	DR
6By02	36	10yr33		Dk Gr Br	CSL	ca	2			4				arable	0	I	1	1	1	
	54	10yr46		Dk Yl Br	CSL		4			4	o	no								
	120	10yr46		Dk Yl Br	MSL		4			4	o	no								
7By02	52	10yr43		Br	SCL	v ca	5			4				arable	2	I	1	3a	3a	DR







1By11	41	25y42		Ol Br	MZCL	ca	10	5	2	4			Sos	arable	0	(I)	1	3a	3a	DR
2By11	40	25y44		Dk Yl Br	MZCL	ca	20	8	1	4			Sos	arable	0	(I)	1	3b	3b	DR
3By11	44	10yr43		Br	MZCL	ca	13	7	1	4			Sos	arable	1	(I)	1	3a	3a	DR
4By11	45	25y44		Ol Br	HZCL	ca	8	4	1	4				arable	0	II	2	3a	3a	DR
	57	25y53		Li Ol Br	HZCL	ca	8			4	xxx	yes	Sos							
5By11	41	10yr44		Dk Gr Br	C	(ca)	1			4				arable	0	II	2	2	2	WE/DR
	80	25y41		Dk Gr	C		0				xxxx	yes	Stopped on stiff clay							
6BY11	28	25y52		Gr Br	HZCL		1			4				arable	2	III	3b	3a	3b	WE
	68	10yr53		Br	HZCL	sl ca	3			7	xxx	yes	SBS at 68cm, sandy in places							
7By11	45	10yr43		Gr Br	HZCL		1			1				arable	2	II	3a	2	3a	WE
	55	25y52		Gr Br	HCL		1			1	xxx	no								
	100	25y64		Li Yl Br	C	sl ca	1			4	xxx	yes								
8By11	35	10yr43		Gr Br	HCL		1			4				arable	2	III	3b	3a	3b	WE
	55	25y53		Li Ol Br	HZCL	v sl ca	2			7	xxx	yes	SBS at 55cm							
9BY11	33	25y52		Gr Br	HCL		1			1				arable	2	III	3b	2	3b	WE
	39	25y52		Gr Br	HCL		1			1	xxx	no								
	100	25y62		Li Br Gr	C		0				xxx	yes								
10By11	45	10yr43		Dk Yl Br	MZCL	ca	15	10	3	4			Sos	arable	0	(I)	1	3a	3a	DR
11By11	44	10yr43		Dk Yl Br	MZCL	ca	12	6	2	4				arable	1	(I)	1	3a	3a	DR
	55	10yr56		Yl Br	MZCL	v ca	20			4	o	no	Sos							
12BY11	31	25y52		Br	MZCL	ca	10	6	1	4				arable	0	(I)	1	3a	3a	DR
	52	10yr54		Yl Br	MZCL	ca	10			4	xx	no	Sos							
1311By	36	10yr44		Br	MZCL	ca	10	6	1	4				arable	0	I	1	3a	3a	DR
	70	10yr56		Yl Br	MZCL	ca	10			4	xx	no	Sandy. Sos							
14By11	37	10yr43		Br	MZCL	ca	10	6	1	4				arable	0	II	2	2	2	WE/DR
	70	10yr56		Yl Br	MZCL	ca	6			4	xx	no	Sandy							
	82	5gy42	10yr56	Dk Gr Gn + C		ca	8			9	xxxx	yes	Sos							
15BY11	31	25y52		Br	MZCL	ca	12	6	1	4				arable	1	I	1	3a	3a	DR
	75	10yr64		Li Yl Br	MZCL	ca	15			4	xxx	no	Shattered limest. Sos							
16By11	41	10yr44		Br	MZCL	ca	10	5	1	4				arable	0	I	1	3a	3a	DR
	50	10yr54		Yl Br	MZCL	ca	7			4	x	no	Sos							
1By-12	32	10yr33		Dk Br	MSL		0							arable	1	I	1	2	2	DR
	53	10yr62		Li Br Gr	MSL		3			1	xxx	no	Common mottles							
	66	75yr63		Li Br	LMS		3			1	xxx	no	Many mottles							



2By-12	34	10yr33		Dk Br	LMS		0							arable	1	I	1	3a	3a	DR
	60	10yr62		Li Br Gr	LMS		0			xxx	no	Many mottles. Stopped on firm soil, too hard to auger								
3By-12	37	10yr34		V Dk Gr Br	LMS		0							arable	1	I	1	3b	3b	DR
	45	75yr32		Dk Br	LMS		0			x	no	Few mottles								
	68	10yr41	10yr51	Dk Gr + Gr	LMS		2		1	xxx	no	Common mottles								
4By-12	35	75yr33		Dk Br	MSL		0							arable	1	I	1	3a	3a	DR
	61	10yr51		Gr	LMS		0			xxx	no	Common								
	70	10yr61		Gr	LMS		0			xxx	no	Many								
5By-12	35	10yr33		Dk Br	MSL		3		1					arable	1	I	1	3a	3a	DR
	45	10yr51		Gr	LMS		3		1	xxx	no									
6By-12	34	10yr32		Dk Br	SCL		1		1					arable	1	III	3a	2	3a	WE
	80	10yr51		Gr	SCL		3		1	xxx	yes	FMC's								
7By-12	32	10yr33		Dk Br	LMS		0							arable	1	I	1	3b	3b	DR
	45	10yr33		Dk Br	LMS		0			x	no	Stopped on solid soil, too								
8BY12	35	10yr34		Dk Yl Br	MSL		5	3	0	1				arable	1	I	1	2	2	DR
	44	75yr34		Dk Br	MSL		3			1	x	no	Stopped on firm soil							
9By-12^ :	37	75yr33		OI Br	HCL	ca	2			8				arable	2	III	3a	2	3a	WE
	77	25y52		Gr Br	SCL		5			8	xxxx	yes	Pockets of S and C							
	100	10yr46		Dk Yl Br	LCS		15			8	xx	no	Unable to see mottles							
10By-12	36	10yr32		Dk Yl Br	SCL		3	1		1				arable	1	III	3a	2	3a	WE
	67	10yr53	10yr62	Br + Li Br G	SCL		1			1	xxx	yes	Common och plus mn							
	105	10yr56	10yr62	Yl Br + Li Br	LMS		1			1	xxx	no								
11By-12	39	10yr33		Dk Br	LMS		1			1				arable	1	I	1	3a	3a	DR
	58	10yr53		Br	LMS		1			1	x	no								
	90	10yr63		Pl Br	LMS		1			1	xxx	no	Common mottles							
12By12	38	25y44		Dk Br	MSL		1			1				arable	1	I	1	2	2	DR
	60	10yr54	10yr62	Yl Br + Li Br	MSL		1			1	xxx	no	Common och							
	85	10yr64	10yr62	Li Yl Br + Li	SCL		1			1	xxx	no	Common och							
13By-12	36	10yr34		Dk Yl Br	MSL		3			1				arable	1	II	1	2	2	DR
	75	10yr53		Br	MSL		3			1	xxx	no								
	90	10yr72		Li Gr	SCL		3			1	xxx	yes	Many och plus mn							
14By-12	37	75yr33		V Dk Gr Br	MSL		5			1				arable	1	(I)	1	2	2	DR
1BY13	30	10yr43		Br	MCL	sl ca	2			4				grassland	0	III	2	2	2	WE/DR
	51	10yr63		Pl Br	SCL		5			4	xxx	no								
	100	n5		Gr	C		10			4	xxx	yes								
2By13	35	10yr43		Br	MCL	sl ca	1			4				grassland	0	II	2	2	2	WE/DR

	63	10yr54		Yl Br	MCL		2		9	xx	no								
	70	10yr63	10yr61	Pl Br + Gr	HCL		3		4	xxx	no	FMCs							
	100	10yr51		Gr	C		2		4	xxxx	yes								
3By13	39	10yr43		Gr Br	HCL	sl ca	4		4				grassland	0	III	3a	2	3a	WE
	66	10yr51		Gr	HCL		3		4	xxx	yes	Spl at 53cm							
	100	n5		Gr	C		3		4	xxx	yes								
4By13	44	10yr33		Br	HCL		0						grassland	0	II	3a	2	3b	WE
	68	10yr54		Yl Br	C		1		9	xx	yes	FMCs							
	100	10yr53		Br	C		6		4	xxxx	yes								
5By13	42	10yr43		Dk Br	MSL	ca	1		4				grassland	0	II	1	3a	3a	DR
	64	10yr64		Li Yl Br	CS		8		9	o	no								
	120	10yr52	10yr41	Gr Br + Dk	C		0			xxx	yes								
6BY13	31	10yr52		Br	SCL	ca	3		4				grassland	0	III	2	2	2	WE/DR
	100	10yr41		Dk Gr	C		1		4	xxxx	yes								
1BY16	40	25y43		Ol Br	MCL	ca	7		4				arable	0	(I)	1	3a	3a	DR
2BY16	32	25y43		Ol Br	MCL	ca	5		4				arable	1	(I)	1	3a	3a	DR
	50	25y54		Li Ol Br	MCL		5		4	xx	no								
3BY16	40	25y43		Ol Br	MCL	ca	3		4				arable	0	(I)	1	3a	3a	DR
	50	25y43		Ol Br	MCL		5		4	o	no	Sos							
4BY16	45	25y44		Ol Br	MCL	ca	4		4				arable	0	II	2	3a	3a	DR
	60	25y64		Li Yl Br	HCL		6		4	xxx	yes								
5BY16	35	25y43		Ol Br	MCL	ca	2		4				arable	3	(I)	1	3a	3a	DR
	52	25y44		Ol Br	HCL		4		4	xx	no								
1By18	32	10yr32		Br	MSL		0						arable	3	I	1	2	2	DR
	61	10yr44		Dk Yl Br	MSL		0			o	no								
	110	10yr64		Li Yl Br	SCL		0			xxxx	no	Groundwater gley							
2By18	35	10yr33		Br	FSL		0						arable	1	I	1	1	1	
	74	10yr58	10yr51	Yl Br + Gr	FSL		0			xxx	no								
	110	10yr51	10yr58	Gr + Yl Br	FSL		1		1	xxxx	no	Groundwater gley							
3By18	36	10yr43		Br	FSL		0						arable	2	II	1	2	2	DR
	59	10yr56		Yl Br	MSL		0			o	no								
	89	10yr58	10yr61	Yl Br + Gr	SCL		0			xxxx	yes								
	110	75yr46		St Br	LMS		0			xx	no								
4By18	37	10yr43		Br	FSL		0						arable	1	I	1	2	2	DR
	73	10yr54		Yl Br	LFS		0			xx	no								
	100	10yr53		Br	LFS		0			xx(x)	no								
5By18	36	10yr43		Br	SCL		1		1				arable	1	(I)	1	2	2	DR











6BY 28	33	10yr33		Dk Br	C		1			1					arable	1	III	3b	2	3b	WE
	100	10yr61		Gr	C	ca	3			4	xxx	yes									
7BY 28	33	10yr33		Dk Br	HCL		1			1					arable	1	III	3b	2	3b	WE
	100	10yr63		Pl Br	C	v sl ca	2			4	xxx	yes	sandy clay inclusions								
1C1	28	10yr42		Dk Gr Br	C	ca	1	1	0	4					arable	3	I	2	2	2	WE/DR
	39	10yr54	10yr52	Yl Br + Gr B	C	ca	3			4	xxx	no	Not 15cm thick so not spl								
	100	75yr53	10yr52	Br + Gr Br	C	ca	20			4	xxx	no	Crushed ls								
2C1	32	10yr43		Br	HZCL		1			4					arable	1	I	2	2	2	WE/DR
	64	10yr54		Yl Br	HCL		2			4	x	no									
	80	10yr58		Yl Br	SCL		2			4	x	no									
	100	10yr58		Yl Br	SC		0				x	no									
3C1	28	10yr42		Dk Gr Br	HCL	ca	1	1	0	4					arable	2	I	2	3a	3a	DR
	90	10yr64	10yr52	Li Yl Br + G	HCL	ca	50			4	xxx	no	Powdered soft LS								
4C1	29	10yr42		Dk Gr Br	C	ca	3	1	0	4					arable	2	III	3a	2	3a	WE
	52	75yr54	10yr52	Br + Gr Br	C	ca	5			4	xxx	no									
	90	10yr63	10yr51	Pl Br + Gr	C	ca	5			4	xxx	yes	V sl gritty								
5C1	34	25y43		Ol Br	MZCL		2			4			Sos		arable	0	(I)	1	3b	3b	DR
6C1	33	10yr43		Br	HCL	ca	3	2	0	4					arable	3	(I)	2	3b	3b	DR
	41	10yr54	10yr52	Yl Br + Gr B	HCL	ca	30			4	xxx	no	Stopped on ls								
7C1	30	10yr42		Dk Gr Br	C	ca	3	1	0	4					arable	3	III	3a	1	3a	WE
	90	10yr54	10yr62	Yl Br + Li Br	C	ca	5			4	xxx	yes									
8C1	27	10yr43		Br	HCL	ca	2	1	0	4			Poss clay		arable	1	(I)	2	3a	3a	DR
	45	10yr53	10yr52	Br + Gr Br	C	ca	10			4	xxx	no	Stopped on ls								
9C1	28	10yr43		Br	HCL	ca	5	3	0	4					arable	2	(I)	2	3a	3a	DR
	48	75yr52	10yr52	Br + Gr Br	HCL	ca	10			4	xxx	no	SOS, Lstone								
10C1	33	10yr43		Br	MZCL		0								arable	0	I	1	2	2	DR
	59	10yr56		Yl Br	HZCL		5			9	o	no									
	74	10yr58		Yl Br	SCL		5			9	o	no	Sos								
1C2	31	25y43		Ol Br	C	ca	3			4					grassland	1	II	2	2	2	WE/DR
	73	10yr56	10yr61	Yl Br + Gr	C		10			4	xxx	no									
	100	10yr52		Gr Br	C		0				xxxx	yes									
2C2	39	10yr43		Br	HCL	ca	1			4					grassland	1	II	2	2	2	WE/DR
	78	10yr64		Li Yl Br	HZCL		5			9	xxx	no									
	100	10yr61		Gr	ZC		2			9	xxxx	yes									
3C2	36	10yr44		Dk Yl Br	HCL	ca	10			4			Sos		grassland	2	(I)	2	3b	3b	DR
1C3	33	10yr32		V Dk Gr Br	MCL		2			4					grassland	0	I	1	2	2	DR





3C5	34	25y32		Dk OI Br	C		1			4				grassland	0	III	3b	2	3b	WE
	52	25y52		Gr Br	C		2			4	xxxx	yes								
1C6	25	10yr44		OI Br	MZCL	ca	3			4				grassland	0	(I)	1	3a	3a	DR
	46	25y54		Li OI Br	MZCL		5			4	x	no	Sos							
6C2	30	25y44		Dk YI Br	MCL	ca	7			4			Sos	grassland	0	(I)	1	3b	3b	DR
3C6	34	25y44		Dk YI Br	MZCL	ca	3			4				grassland	0	(I)	1	3a	3a	DR
	40	25y54		Li OI Br	MZCL	ca	3			4	o	no								
4C6	42	10yr44		OI Br	MCL	ca	5			9				grassland	1	(I)	1	3b	3b	DR
	40	25y54		Li OI Br	MCL		3			4	x	no								
5C6	30	10yr43		Br	MCL	ca	5			9				grassland	0	II	2	2	2	WE/DR
	52	10yr44		Dk YI Br	MCL		7			9	x	no								
	65	10yr54		YI Br	MCL	ca	15			9	xx	no								
	100	25y64		Li YI Br	HCL	ca	15			9	xxx	yes								
6C6	33	10yr44		Dk YI Br	MCL	ca	3			9			Sos	grassland	0	(I)	1	3b	3b	DR
7C6	32	25y44		OI Br	HCL	ca	4			9				grassland	1	II	2	2	2	WE/DR
	48	25y54		Li OI Br	C	ca	5			9	x	no								
	75	25y52		Gr Br	C	ca	5			9	xxxx	yes	Sos							
1C7	21	25y43		Dk Gr Br	HCL	(ca)	1			1				grassland	4	III	3a	2	3a	WE
	100	5y61		Gr	C		1			1	xxx	yes								
2C7	28	10yr43		OI Br	HCL	ca	1			4				grassland	3	III	3a	2	3a	WE
	75	25y43	25y41	OI Br + Dk	C		1			4	xxxx	yes	FMCs							
3C7	27	10yr43		Dk Br	MZCL	v ca	5			4			Sos	grassland	3	(I)	1	3b	3b	DR/DE
4C7	28	10yr42		Br	HZCL	v ca	10			4			SBS at 27cm	grassland	2	(I_	2	3b	3b	DR/DE
5C7	30	25y43		Dk YI Br	HZCL	v ca	10			4			Sos	grassland	3	(I)	2	3b	3b	DR
6C7	30	10yr33		Br	HZCL	v ca	8			4			SBS at 36cm	grassland	0	(I)	2	3b	3b	DR
7C7	32	10yr44		OI Br	HCL	v ca	5			4				grassland	2	III	3a	3b	3b	DR
	42	10yr64		Li YI Br	HCL		15			8	xxx	yes	FMCs. Sos							
8C7	36	10yr53		Gr Br	HZCL	ca	4			4				grassland	2	III	3a	3a	3a	WE/DR
	72	10yr53		Br	ZC	ca	8			4	xxx	yes	SBS at 72cm							
9C7	36	25y43		Br	HCL	v ca	8			4				grassland	1	III	3a	3b	3b	DR
	40	10yr53		Br	HCL		15			8	xxx	yes	Sos							
10C7	32	10yr52		Br	HZCL	v ca	10			4			SBS at 28cm	grassland	3	(I)	2	3b	3b	DR
11C7	35	10yr43		OI Br	C	sl ca	0							grassland	3	III	3a	2	3a	WE



4LF02	35	10yr33		Dk Br	MCL		2	1		4				arable	1	III	3a	2	3a	WE
	48	10yr34	10yr52	Dk Yl Br + G	HCL		0				xxx	no								
	68	25y43	10yr52	Ol Br + Gr	EC		0				xxx	yes	Many och plus mn							
	87	10yr52	10yr51	Gr Br + Gr	C	ca	10			4	xxx	yes	Gritty							
5LF02	36	10yr33		Dk Br	HCL	ca	10	6	0	4				arable	1	II	2	2	2	WE/DR
	50	10yr42		Dk Gr Br	HCL	ca	5			7	x	no	Few och							
	90	10yr53	10yr52	Br + Gr Br	C	ca	3			7	xxx	yes								
6LF02	35	10yr43		Dk Yl Br	C	ca	3	2	0	4				arable	3	III	3a	2	3a	WE
	75	25y42	10yr52	Dk Gr Br +	C		1			4	xxx	yes	Com och							
7LF02	33	10yr33		Dk Yl Br	HCL	ca	10	7		4			Stopped on ls	arable	3	(I)	2	3a	3a	DR
	50	10yr44		Dk Yl Br	HCL	v ca	10			4	o	no								
8Lf-02	34	10yr34		Br	MCL	ca	20	15	0	4				arable	2	(I)	1	3b	3b	DR
	42	10yr53		Br	HCL	ca	20			4	o	no								
9LF02	36	10yr43		Dk Yl Br	MCL	ca	25	18	4	4			very dry and friable	arable	2	(I)	1	3b	3b	DR/ST
10LF02	32	75yr43		Br	SCL	ca	25	12	0	4			Impen deeper than 40cm	arable	2	(I)	1	3b	3b	ST
	40	10yr53		Br	SCL	ca	25			4	o	no								
10LF02 PI	39	10yr34		Dk Br	MCL	ca	15	10	0	4				arable	2	(I)	1	3a	3a	DR
	50	10yr43		Br	MCL	ca	15			4	o	no	Stopped on ls							
11LF02	37	10yr34		Br	HCL	ca	20	12	0	4				arable	2	(I)	1	3b	3b	DR
	44	10yr46	10yr52	Dk Yl Br + G	HCL	ca	10			4	xxx	no	Stopped on ls							
1Lf03	38	10yr43		Gr Br	LFS		0							arable	1	I	1	2	2	DR
	51	10yr33		Dk Br	LMS		0				o	no								
	60	10yr52		Gr Br	FS		0				xxx	no	Common mottles							
	90	10yr51		Gr	SCL		0				xxx	no	Very many mottles							
2LF03	36	10yr33		Dk Br	LFS		0							arable	1	I	1	2	2	DR
	41	10yr43		Br	FSL		0				x	no	Few mottles							
	60	10yr51		Gr	SCL		0				xxx	no	Many mottles							
3Lf03	34	10yr32		Dk Br	LFS		0							arable	1	I	1	2	2	DR
	52	10yr43		Br	LMS		0				o	no								
	68	10yr52		Gr Br	LMS		0				xxx	no	Many mottles							
	80	10yr52	10yr62	Gr Br + Li B	LFS		0				xxx	no	Common mottles							
4Lf-03	32	10yr33		Dk Br	MCL		2			1				arable	1	I	1	3a	3a	DR
	45	10yr43		Br	MCL		0				o	no								
	57	10yr52		Gr Br	MCL		25			7	xxx	no	Stopped by chalk							
5Lf-03	40	10yr33		Dk Br	LFS		1			1				arable	1	I	1	2	2	DR
	64	10yr52		Gr Br	SCL		0				xxx	no	Many mottles							



	90	25y51	25y53	Gr + Li Ol B	C		0			xxx	yes	Com och motts							
5Lf04	38	10yr42		Dk Gr Br	C		0						arable	1	III	3b	2	3b	WE
	50	10yr52	10yr43	Gr Br + Br	C		0			xxx	no	Sli gleyed with com och motts							
	90	10yr52	25y52	Gr Br + Gr	C	ca	5		7	xxx	yes	Calc with chalk and fine ls grit							
6Lf04	35	10yr42		Dk Gr Br	C		1		1				arable	1	III	3b	2	3b	WE
	63	25y52		Gr Br	C		0			xxx	yes								
	90	10yr51		Gr	C	ca	3		7	xxx	yes								
7Lf04	35	10yr42		Dk Gr Br	C		0						arable	1	III	3b	2	3b	WE
	80	25y51	10yr61	Gr + Gr	C		0			xxx	yes	Com och motts							
8Lf04	34	10yr42		Dk Gr Br	C		0						arable	1	III	3b	2	3b	WE
	65	10yr51		Gr	C		0			xxx	yes	Many och motts							
	90	10yr61		Gr	C	ca	5		7	xxx	yes	Many och motts							
9Lf04	33	10yr42		Dk Gr Br	C		1		1			Def clay, not hcl	arable	1	III	3b	2	3b	WE
	80	10yr51	25y62	Gr + Li Br G	C		1		1	xxx	yes	Com och motts							
10Lf04	36	10yr42		Dk Gr Br	C		1		1			Poss hcl	arable	1	III	3b	2	3b	WE
	52	10yr52		Gr Br	C		1		1	xxx	yes	Com och motts							
	90	25y51		Gr	C		0			xxx	yes	Many och motts							
11Lf04	35	10yr42		Dk Gr Br	C		1		1				arable	1	III	3b	2	3b	WE
	80	10yr51	25y52	Gr + Gr Br	C		1		1	xxx	yes	Com och motts							
12Lf04	32	10yr42		Dk Gr Br	HCL		1		1			Poss clay	arable	1	II	3a	3a	3a	WE/DR
	50	10yr41		Dk Gr	C		0			x	no	Not gleyed							
	69	10yr51		Gr	LMS		0			x	no								
	90	10yr61		Gr	C	ca	3		7	xxx	yes								
13Lf04	38	10yr42		Dk Gr Br	C		1		1				arable	1	III	3b	2	3b	WE
	48	10yr52		Gr Br	C		1		1	xxx	no	Borderline gleyed							
	90	10yr52		Gr Br	C		0			xxx	yes	Many och motts							
14Lf04	28	10yr42		Dk Gr Br	C		1		1				arable	1	III	3b	2	3b	WE
	45	10yr52	10yr51	Gr Br + Gr	C		1		1	xxx	yes	Many och motts							
	90	10yr61		Gr	C	ca	5		9	xxx	no								
1Lf05	32	10yr44		Br	HCL	v ca	8		4				arable	0	(I)	2	3a	3a	DR
	45	10yr54		Yl Br	MCL		13		9	o	no	Sos, shattered limestone							
2Lf05	30	25y44		Ol Br	HCL	v ca	1		4				arable	0	III	2	2	2	WE/DR
	58	25y53	25y51	Li Ol Br + G	SC		0			xxxx	yes								
	120	25y51		Gr	C		0			xxxx	yes								
3Lf05	45	25y44		Dk Yl Br	HCL	v ca	1		4				arable	0	(I)	2	3a	3a	DR
	51	10yr46		Dk Yl Br	SCL		3		4	o	no	Sos, Shattered limestone							
4Lf05	33	25y44		Ol Br	HZCL	v ca	8		4			Sos	arable	0	(I)	2	3b	3b	DR

5Lf05	42	25y43		OI Br	HZCL		5		4			Sos		arable	1	(I)	2	3b	3b	DR
66Lf05	30	25y43		OI Br	HZCL	ca	15	5	1	4				arable	1	(I)	2	3b	3b	DR
	46	25y54		Li OI Br	MZCL		15			9	x	no	Sos							
6Lf05	26	25y44		OI Br	HCL	v ca	2			4				arable	1	III	3a	3a	3a	WE/DR
	51	25y53		Li OI Br	C		7			8	xxxx	yes	Sos							
7Lf05	32	25y33		OI Br	HZCL	v ca	15	1	0	4				arable	0	(I)	2	3a	3a	DR
	40	25yr46		Rd	HCL		7			9	x	no	Sos							
8Lf05	25	25y44		OI Br	MCL	v ca	5			4			Sos	arable	1	(I)	1	3b	3b	DR
9Lf05	30	10yr43		Dk OI Br	HCL	ca	1			4				arable	0	II	2	2	2	WE/DR
	45	75yr46		St Br	HCL-C		2			4	xx	no	FMCs							
	120	10yr51		Gr	C		5			9	xxxx	yes								
11Lf05	40	25y44		OI Br	MCL	v ca	15			9			Sos	arable	0	(I)	1	3b	3b	DR
12Lf05	34	10yr43		OI Br	MZCL	v ca	12			9				arable	0	I	1	3a	3a	DR
	80	10yr56		YI Br	SC		5			9	xx	no	Sos							
13Lf05	26	25y44		OI Br	HCL	v ca	8			9				arable	0	(I)	2	3a	3a	DR
	58	10yr54		YI Br	HCL		12			9	xx	no	Sos							
14Lf05	33	25y44		Br	HCL	v ca	15	4	3	4			Sos	arable	0	(I)	2	3b	3b	DR
1Lf07	32	25y43		Dk Gr Br	C	v sl ca	1			1				arable	1	III	3b	2	3b	WE
	100	25y53		Li OI Br	C		0				xxxx	yes								
2Lf07	41	25y43		OI Br	HCL	sl ca	1			4				arable	2	III	3a	2	3a	WE
	100	25y53		Li OI Br	C		0				xxxx	yes								
3Lf07	32	10yr42		OI Br	HCL		1			4				arable	1	III	3b	2	3b	WE
	51	25y42		Dk Gr Br	HCL		2			1	xxx	yes	FMCs							
	75	10yr58		YI Br	HCL		6			9	xx	yes	Sandy							
	100	25y51		Gr	C		0				xxxx	yes								
4Lf07	33	25y44		V Dk Gr	HCL		1			1				arable	0	II	3a	2	3a	WE
	57	25y53		Li OI Br	C		10			9	xxx	no								
	100	25y53	25y51	Li OI Br + G	C		2			4	xxxx	yes	FMCs							
4Lf07	33	10yr31		OI Br	HZCL	ca	0							arable	1	III	3a	2	3a	WE
	100	25y53		Li OI Br	ZC		0				xxxx	yes								
1Lf08	22	10yr53		Br	MZCL	ca	55	25	2	4			SBS at 20cm	arable	0	(I)	1	3b	3b	DR/ST
2Lf08	30	10yr53		Br	MZCL	v ca	55	25	2	4				arable	0	(I)	1	3b	3b	DR/ST
	35	10yr54		YI Br	MZCL	v ca	50			4	o	no	SBS at 35cm							













6Lf13	30	10yr53		Br	HCL		5			4				grassland	0	II	3a	2	3a	WE
	60	10yr54		Yl Br	HCL		0				x	no	FMCs							
	100	10yr61		Gr	C		0				xxx	yes								
1Lf16	30	10yr32		V Dk Gr Br	MCL	v ca	2			1				grassland	0	I	1	2	2	DR
	73	10yr43		Br	HCL		12			9	xx	no								
	85	10yr58		Yl Br	HCL		25			9	x	no	Sos							
2Lf16	42	25y43		OI Br	HCL		2			1				grassland	0	II	3a	2	3b	WE
	100	10yr56	10yr51	Yl Br + Gr	C		0				xxxx	yes								
3Lf16	35	10yr32		V Dk Gr Br	C		0							grassland	0	III	3b	2	3b	WE
	60	25y53		Li OI Br	C		8			9	xxx	yes								
	100	25y53		Li OI Br	C		2			9	xxxx	yes								
4Lf16	36	10yr33		Dk Br	HCL	ca	0							grassland	0	III	3a	2	3a	WE
	74	25y53	25y52	Li OI Br + G	SCL		0				xxx	yes								
	100	75yr46		St Br	MSL		0				x	no								
1Md01	35	25y43		Dk Br	HZCL	v ca	1			4				arable	1	I	2	2	2	WE/DR
	70	10yr44		Dk Yl Br	SCL		1			9	xx	no								
	100	10yr58		Yl Br	SCL		0				o	no								
2Md01	35	10yr33		Dk Yl Br	HZCL	ca	5			4				arable	2	(I)	2	3a	3a	DR
	50	10yr58		Yl Br	SC		8			9	xx	no	Sos							
3Md01	29	25y43		Dk Br	HCL	ca	10			4				arable	1	(I)	2	3a	3a	DR
	45	10yr43		Br	HCL		20			4	o	no	Shattered limestone							
4Md01	33	25y43		Br	HZCL	sl ca	2			4				arable	1	III	3a	2	3a	WE
	42	10yr53		Br	C		0				xxx	yes								
	100	10yr41		Dk Gr	C		0				xxxx	yes								
5Md01	28	10yr44		OI Br	C		0							arable	0	III	3b	2	3b	WE
	76	25y53		Li OI Br	C		0				xxxx	yes								
	120	25y61	25y52	Gr + Gr Br	C		1			4	xxxx	yes								
6Md01	24	10yr43		OI Br	HCL		1			4				arable	0	III	3b	2	3b	WE
	120	25y53		Li OI Br	C		1			9	xxxx	yes								
7Md01	29	25y43		Dk Gr Br	C		1			4				arable	0	III	3b	2	3b	WE
	120	25yr46	25y51	Rd + Gr	C		0				xxxx	yes								
8Md01	28	25y42		OI Br	HZCL	v ca	1			4				arable	0	II	2	2	2	WE/DR
	56	25y54		Li OI Br	C		2			9	xx	no								
	82	25y53		Li OI Br	C		10			4	xxxx	yes	Shattered limestone							
	120	25y73		Pl Br	ZC		10			4	o	no	Shattered limestone							
9Md01	26	10yr33		OI Br	HZCL	v ca	1			4				arable	1	III	3a	2	3a	WE
	75	25y53		Li OI Br	C		2			9	xxxx	yes								
	82	25y73		Pl Br	ZC		10			4	o	no	Limestone shattered, sos							





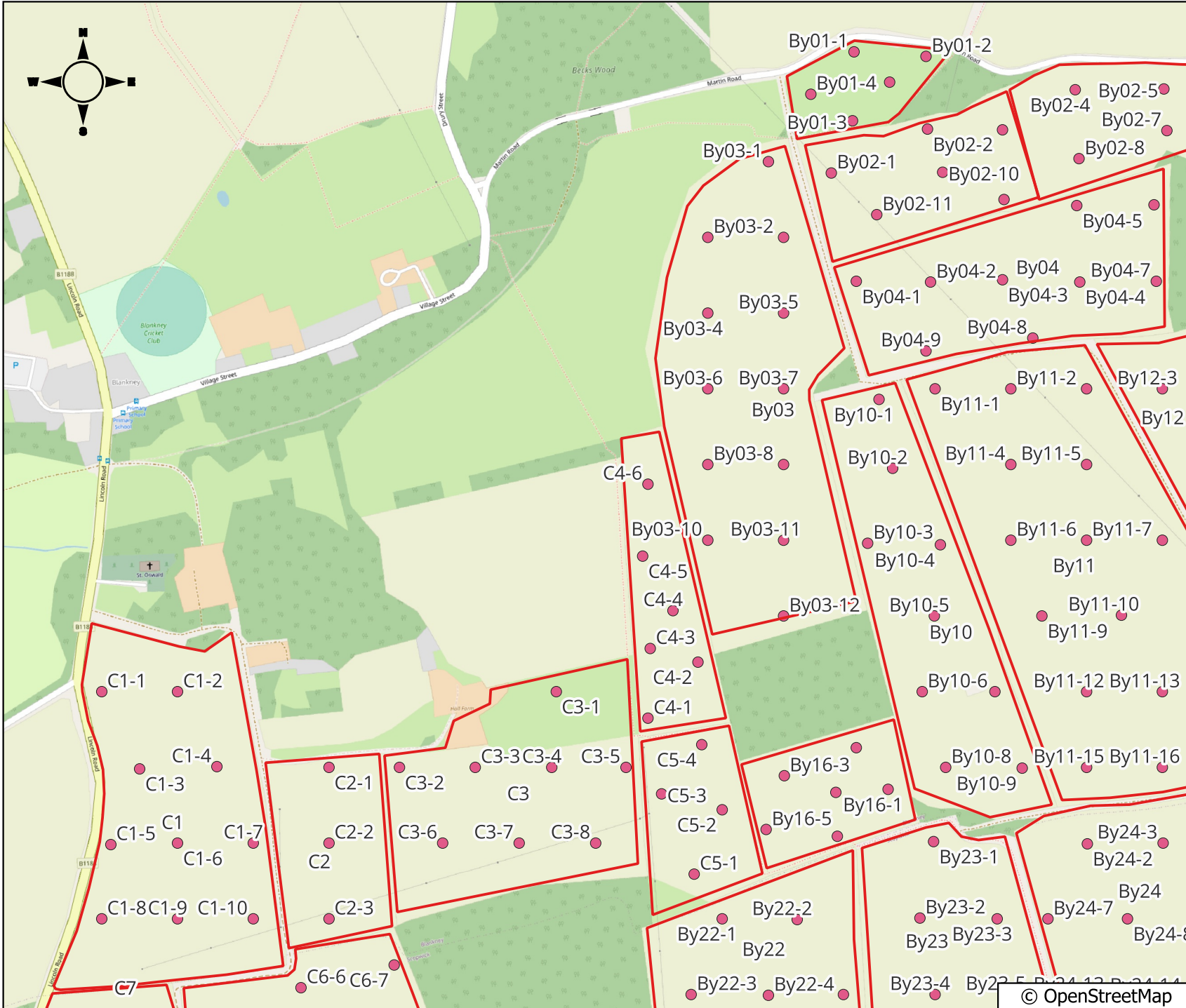




	48	10yr56		Yl Br	HCL	ca	15			4	xxx	no	Crushed ls fragments							
	95	10yr66		Br Yl	MCL	ca	40			4	xxx	no								
	120	10yr51		Gr	C		3			4	xxx	yes								
7Md06	18	10yr22		V Dk Br	HCL	ca	1	1	0	4				arable	1	III	3a	2	3a	WE
	32	10yr53		Br	HCL	ca	2			4	o	no								
	90	25y53	10yr52	Li Ol Br + G	C	ca	5			4	xxx	yes								
8Md06	31	10yr33		Dk Br	HCL	ca	2			4			Organic	grassland	1	(I)	2	3a	3a	DR
	55	10yr44		Dk Yl Br	HCL		7			4	xx	no	Disturbed soil at location moved 10m west							
9Md06	19	10yr22		V Dk Br	SCL		5	3	0	4			Org loam	grassland	1	III	2	3b	3b	DR
	47	10yr41		Dk Gr	SCL		8			4	xxx	yes	Stopped on ls							
10Md06	35	10yr22		V Dk Br	Pty L		0							grassland	1	I	1	1	1	
	62	10yr44		Dk Yl Br	SCL		30			9	x	no								
	100	10yr58		Yl Br	SC		20			9	x	no	RIDGE AND FURROW							
C9-01	27	10yr44		Dk Yl Br	HCL	ca	10			4			Stopped on chalk/ls	grassland	1	(I)	2	3b	3b	DR
C9-01	31	10yr44		Dk Yl Br	HCL	ca	10			4			Stopped on chalk/ls	grassland	1	(I)	2	3b	3b	DR
C9-01	32	10yr44		Dk Yl Br	HCL	ca	2			4				grassland	1	III	3a	3a	3a	WE/DR
	50	75yr54	10yr52	Br + Gr Br	C		2			4	xxx	yes	Stopped on chalk/ls. Common mottles							
C9-01	30	10yr53		Br	C	ca	2			4				grassland	1	III	3a	3a	3a	WE/DR
	38	10yr54	10yr42	Yl Br + Dk C	C		2			4	xxx	yes	Common mottles plus mang							
	60	10yr56	10yr52	Yl Br + Gr B	C		10			4	xxx	yes	Many mottles, stopped on ls/chalk							
C9-01	32	10yr54		Yl Br	C	ca	3			4				grassland	1	(I)	2	3a	3a	DR
	51	10yr64		Li Yl Br	HCL		10			4	xxx	no	Stopped on ls							

# Appendix 2 - Map 1: Location of Observations





Title  
Appendix B - Auger Locations - Map 1

Project  
Agricultural Land Classification. Eastern Section, Springwell Solar Farm, Lincolnshire

Client



**Key**

- Field boundaries
- Auger locations

Date: 26 / 05 / 2023  
Scale: 1 : 7,000 at A4






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Title  
Appendix B - Auger Locations - Map 2

Project  
Agricultural Land Classification. Eastern Section, Springwell Solar Farm, Lincolnshire

Client  


Key  
 Field boundaries  
 Auger locations

Date: 26 / 05 / 2023  
Scale: 1 : 7,000 at A4

  
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Title  
Appendix B - Auger Locations -  
Map 3

Project  
Agricultural Land Classification.  
Eastern Section, Springwell Solar  
Farm, Lincolnshire

Client  


**Key**  
 Field boundaries  
● Auger locations


Date: 26 / 05 / 2023  
Scale: 1 : 7,000 at A4

  
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Title  
**Appendix B - Auger Locations - Map 4**

Project  
**Agricultural Land Classification. Eastern Section, Springwell Solar Farm, Lincolnshire**

Client  


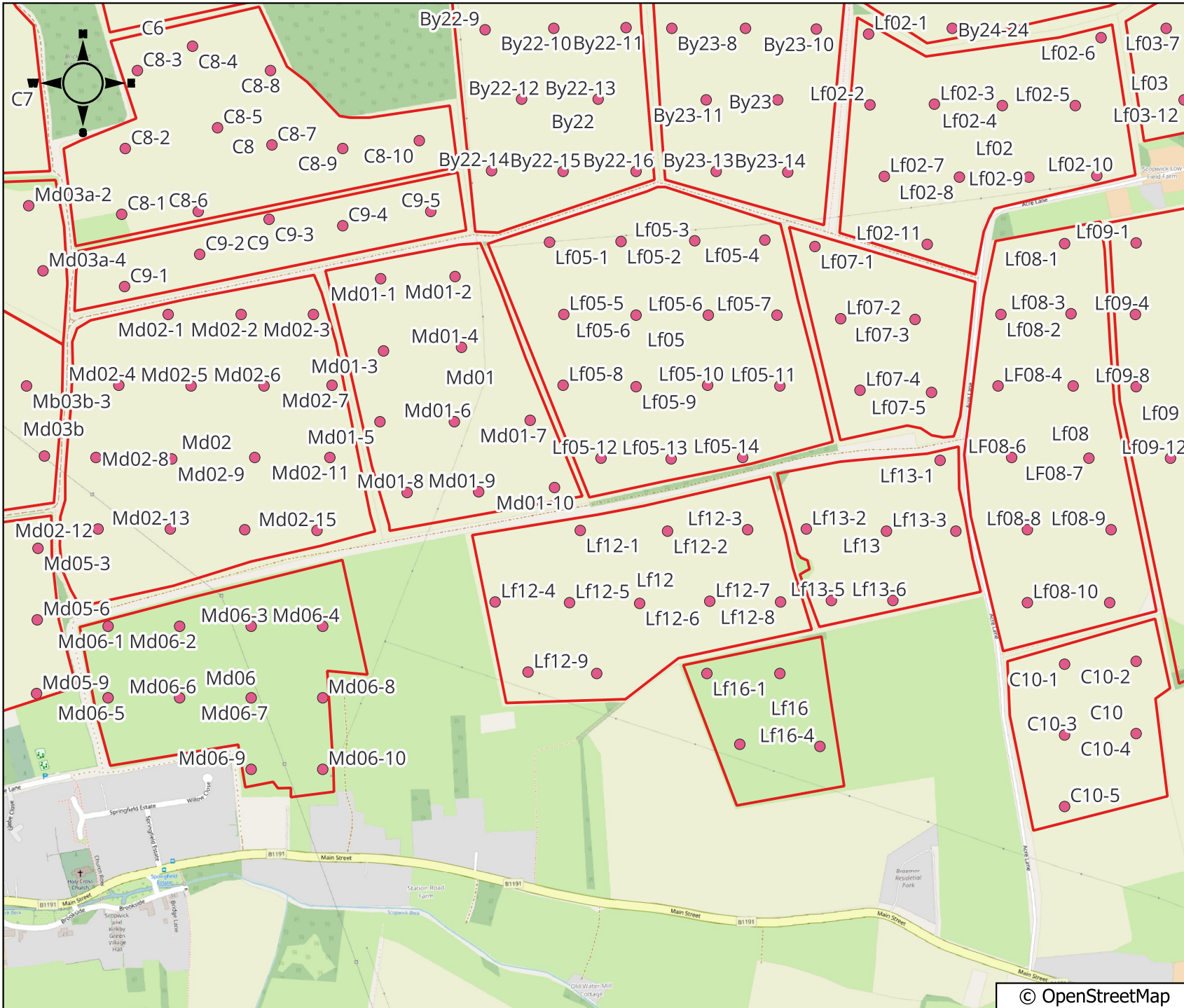
**Key**

- Field boundaries
- Auger locations

Date: 26 / 05 / 2023


Scale: 1 : 7,000 at A4

  
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**Title**  
Appendix B - Auger Locations - Map 5

**Project**  
Agricultural Land Classification. Eastern Section, Springwell Solar Farm, Lincolnshire


**Client**  


**Key**

- Field boundaries
- Auger locations

Date: 26 / 05 / 2023

Scale: 1 : 7,400 at A4

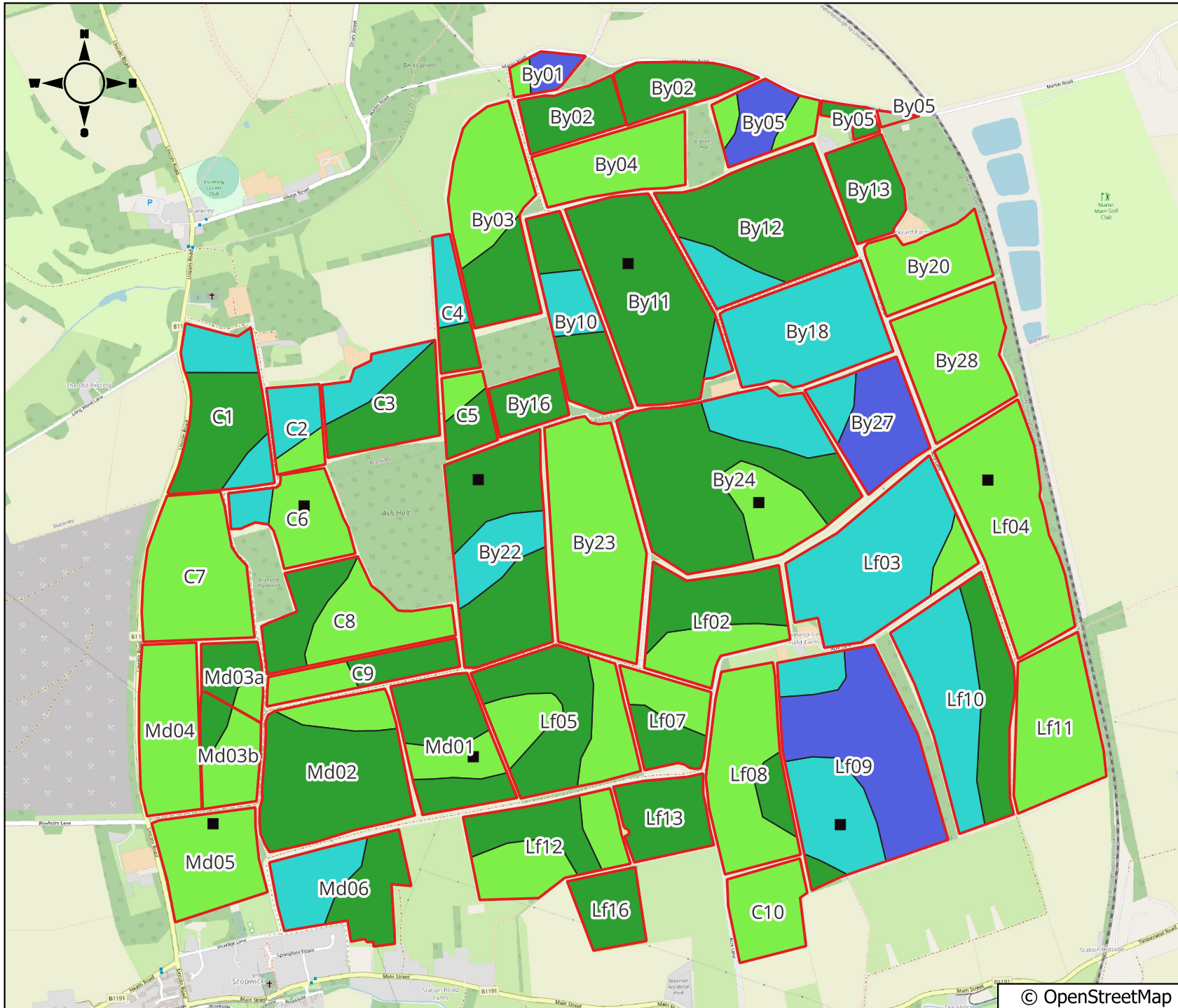
  
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# Appendix 3 - Map 2: Agricultural Classification Grades














Title  
Appendix C - ALC Grade Map

Project  
Agricultural Land Classification.  
Eastern Section, Springwell Solar  
Farm, Lincolnshire

Client  


**Key**

-  Field boundaries
-  Grade 1
-  Grade 2
-  Subgrade 3a
-  Subgrade 3b
-  Pit locations

Date: 26 / 05 / 2023

Scale: 1 : 15,000 at A4

  
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# Appendix 4 - Laboratory Results



**ANALYTICAL REPORT**

<b>Report Number</b>	45315-22	<b>F912</b>	██████████	<b>Client</b>	ACRE LANE
<b>Date Received</b>	16-NOV-2022				BLANKNEY ESTATES WEST
<b>Date Reported</b>	02-DEC-2022				
<b>Project</b>	SOIL				
<b>Reference</b>	ACRE LANE				
<b>Order Number</b>					

<b>Laboratory Reference</b>		SOIL592856								
<b>Sample Reference</b>		ACRE LANE								
<b>Determinand</b>	<b>Unit</b>	<b>SOIL</b>								
Coarse Sand 2.00-0.63mm	% w/w	0								
Sand 2.00-0.063mm	% w/w	80								
Medium Sand 0.63-0.212mm	% w/w	15								
Fine Sand 0.212-0.063mm	% w/w	65								
Silt 0.063-0.002mm	% w/w	9								
Clay <0.002mm	% w/w	11								
Textural Class **		fSL								

**Notes**

Analysis Notes      The sample submitted was of adequate size to complete all analysis requested.  
 The results as reported relate only to the item(s) submitted for testing.  
 The results are presented on a dry matter basis unless otherwise stipulated.

Document Control      **This test report shall not be reproduced, except in full, without the written approval of the laboratory.**

\*\* Please see the attached document for the definition of textural classes.

Reported by      ██████████  
 Natural Resource Management, a trading division of Cawood Scientific Ltd.  
 Coopers Bridge, Braziers Lane, Bracknell, Berkshire, RG42 6NS  
 ██████████  
 ██████████  
 ██████████

**ANALYTICAL REPORT**

<b>Report Number</b>	45985-22	K754	
<b>Date Received</b>	22-NOV-2022		RSK ADAS LTD
<b>Date Reported</b>	29-NOV-2022		MEDEN VALE
<b>Project</b>	1010978		MANSFIELD
<b>Reference</b>	ACRE LANE		NOTTINGHAMSHIRE
<b>Order Number</b>			NG20 9PD

Laboratory Reference		SOIL594131	SOIL594132	SOIL594133	SOIL594134	SOIL594135	SOIL594136	SOIL594137	SOIL594138	SOIL594139	SOIL594140
Sample Reference		BCD01-5TS	BCD01-22 TS	BCD02-15TS	BCD106 TS	LF04 TS	LF04 USS	LF04 LSS	LF09 TS	LF09 USS	LF09 LSS
Determinand	Unit	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Coarse Sand 2.00-0.63mm	% w/w	20	12	19	28	1	2	1	1	1	0
Medium Sand 0.63-0.212mm	% w/w	33	45	35	35	15	18	9	16	15	6
Fine Sand 0.212-0.063mm	% w/w	18	18	21	16	23	20	16	63	71	81
Silt 0.063-0.002mm	% w/w	13	10	9	9	19	20	31	7	6	5
Clay <0.002mm	% w/w	16	15	16	12	42	40	43	13	7	8
Textural Class **		mSL	mSL	mSL	cSL	C	C	C	fSL	LfS	LfS

**Notes**

Analysis Notes      The sample submitted was of adequate size to complete all analysis requested.  
 The results as reported relate only to the item(s) submitted for testing.  
 The results are presented on a dry matter basis unless otherwise stipulated.

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\*\* Please see the attached document for the definition of textural classes.

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 Natural Resource Management, a trading division of Cawood Scientific Ltd.  
 Coopers Bridge, Braziers Lane, Bracknell, Berkshire, RG42 6NS  
 [Redacted]  
 [Redacted]  
 [Redacted]

**ANALYTICAL REPORT**

<b>Report Number</b>	45986-22	K754	
<b>Date Received</b>	22-NOV-2022		RSK ADAS LTD
<b>Date Reported</b>	30-NOV-2022		MEDEN VALE
<b>Project</b>	1010978		MANSFIELD
<b>Reference</b>	ACRE LANE		NOTTINGHAMSHIRE
<b>Order Number</b>			NG20 9PD

Laboratory Reference		SOIL594141	SOIL594142	SOIL594143	SOIL594144	SOIL594145	SOIL594146	SOIL594147	SOIL594148	SOIL594149	SOIL594150
Sample Reference		LF02 TS	C6 TS	C6 USS	C6 LSS	BY22 TS	BY22 USS	BY22 LSS1	BY22 LSS2	MD01 TS	MD01 USS
Determinand	Unit	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Coarse Sand 2.00-0.63mm	% w/w	18	7	15	1	0	0	17	1	2	1
Medium Sand 0.63-0.212mm	% w/w	13	18	15	1	3	1	12	1	9	14
Fine Sand 0.212-0.063mm	% w/w	25	20	15	4	14	13	30	9	14	14
Silt 0.063-0.002mm	% w/w	12	16	18	27	17	24	20	47	17	15
Clay <0.002mm	% w/w	32	39	37	67	66	62	21	42	58	56
Textural Class **		SC	C/SC	C/SC	C	C	C	SCL	ZC	C	C

**Notes**

<b>Analysis Notes</b>	The sample submitted was of adequate size to complete all analysis requested. The results as reported relate only to the item(s) submitted for testing. The results are presented on a dry matter basis unless otherwise stipulated.
<b>Document Control</b>	<b>This test report shall not be reproduced, except in full, without the written approval of the laboratory.</b>

<b>Reported by</b>	** Please see the attached document for the definition of textural classes. [Redacted] Natural Resource Management, a trading division of Cawood Scientific Ltd. Coopers Bridge, Braziers Lane, Bracknell, Berkshire, RG42 6NS [Redacted] [Redacted] [Redacted]
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**ANALYTICAL REPORT**

<b>Report Number</b>	45987-22	K754 [REDACTED]
<b>Date Received</b>	22-NOV-2022	RSK ADAS LTD
<b>Date Reported</b>	30-NOV-2022	MEDEN VALE
<b>Project</b>	1010978	MANSFIELD
<b>Reference</b>	ACRE LANE	NOTTINGHAMSHIRE
<b>Order Number</b>		NG20 9PD

Laboratory Reference		SOIL594151	SOIL594152	SOIL594153	SOIL594154	SOIL594155				
Sample Reference		MD01 LSS	BY11 TS	BY11 USS	BY24 TS	BY24 USS				
Determinand	Unit	SOIL	SOIL	SOIL	SOIL	SOIL				
Coarse Sand 2.00-0.63mm	% w/w	8	7	7	13	27				
Medium Sand 0.63-0.212mm	% w/w	6	23	7	18	23				
Fine Sand 0.212-0.063mm	% w/w	9	23	23	19	13				
Silt 0.063-0.002mm	% w/w	25	14	26	14	11				
Clay <0.002mm	% w/w	52	33	37	36	26				
Textural Class **		C	SC	C	SC	SCL				

**Notes**

Analysis Notes      The sample submitted was of adequate size to complete all analysis requested.  
The results as reported relate only to the item(s) submitted for testing.  
The results are presented on a dry matter basis unless otherwise stipulated.

Document Control      **This test report shall not be reproduced, except in full, without the written approval of the laboratory.**

\*\* Please see the attached document for the definition of textural classes.

Reported by [REDACTED]  
Natural Resource Management, a trading division of Cawood Scientific Ltd.  
Coopers Bridge, Braziers Lane, Bracknell, Berkshire, RG42 6NS  
[REDACTED]  
[REDACTED]  
[REDACTED]

## ADAS (UK) Textural Class Abbreviations

The texture classes are denoted by the following abbreviations:

Class	Code
Sand	S
Loamy sand	LS
Sandy loam	SL
Sandy Silt loam	SZL
Silt loam	ZL
Sandy clay loam	SCL
Clay loam	CL
Silt clay loam	ZCL
Clay	C
Silty clay	ZC
Sandy clay	SC

For the *sand*, *loamy sand*, *sandy loam* and *sandy silt loam* classes the predominant size of sand fraction may be indicated by the use of prefixes, thus:

vf	Very Fine (more than 2/3's of sand less than 0.106 mm)
f	Fine (more than 2/3's of sand less than 0.212 mm)
c	Coarse (more than 1/3 of sand greater than 0.6 mm)
m	Medium (less than 2/3's fine sand and less than 1/3 coarse sand).

The subdivisions of *clay loam* and *silty clay loam* classes according to clay content are indicated as follows:

M	medium (less than 27% clay)
H	heavy (27-35% clay)

Organic soils i.e. those with an organic matter greater than 10% will be preceded with a letter O.

Peaty soils i.e. those with an organic matter greater than 20% will be preceded with a letter P.

# Appendix 5 - Moisture Deficit Values for Eastern Section





Field name	Area (ha)	Easting*	Northing*	Field Capacity Days	Moisture Deficit Wheat (mm)	Moisture Deficit Potatoes (mm)
C1	10.3	506853	359668	119	115	109
C2	3.4	507061	359634	119	115	109
C3	8.0	507309	359707	118	115	109
C4	3.2	507502	359962	118	115	109
C5	2.9	507543	359673	117	115	109
C6	6.0	507062	359379	118	115	109
C7	10.7	506772	359216	119	115	109
C8	9.9	507196	359090	118	115	109
C9	5.0	507249	358938	118	115	109
C10	5.0	508395	358266	116	116	110
By01	1.8	507758	360639	119	114	108
By02	4.4	508126	360600	118	115	108
By03	11.8	507617	360227	120	114	107
By04	7.3	507966	360384	118	115	109
By05	4.9	508383	360502	117	115	109
By10	7.8	507851	359937	117	115	109
By11	16.2	508060	359995	117	116	110
By12	15.4	508375	360204	117	115	109
By13	4.5	508681	360313	117	115	109
By16	2.9	507719	359705	117	115	109
By18	11.4	508507	359910	116	116	110
By20	6.1	508850	360095	116	116	110
By22	15.7	507637	359286	117	115	109
By23	15.4	507903	359312	117	116	110
By24	25.6	508300	359491	116	116	110
By27	7.5	508692	359653	116	116	110
By28	9.8	508930	359828	115	116	110
Lf02	10.0	508236	359087	116	116	110
Lf03	15.7	508719	359255	116	116	110
Lf04	14.3	509083	359358	115	116	110
Lf05	14.3	507803	358806	117	116	110
Lf07	5.2	508111	358807	116	116	110
Lf08	11.4	508342	358656	116	116	110
Lf09	22.6	508638	358678	116	116	110
Lf10	15.4	508955	358868	115	116	110
Lf11	9.6	509210	358787	115	116	110
Lf12	10.1	507761	358451	117	116	110
Lf13	5.1	508102	358532	116	116	110
Lf16	3.7	507949	358272	116	116	110
Md01	9.3	507495	358734	117	115	109
Md02	15.2	507161	358662	118	115	109
Md03a	3.1	506884	358931	119	115	109
Md03b	4.6	506867	358709	118	115	109

Md04	8.0	506701	358780	119	115	109
Md05	7.4	506816	358407	118	115	109
Md06	8.7	507194	358333	118	115	109

\* centre of field



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