LAND OFF RATBY LANE, MARKFIELD

AGRICULTURAL LAND CLASSIFICATION AND CONSIDERATIONS

May 2025

KERNON
COUNTRYSIDE CONSULTANTS LIMITED

LAND OFF RATBY LANE,
MARKFIELD

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AND CONSIDERATIONS

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Authorised By EGC 05/25

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CONTENTS

Appendices

Plans

1 INTRODUCTION

1.1 This report considers the land quality of a parcel of land extending to approximately 5.4 ha, at land west of Ratby Lane, Markfield.

1.2 The Site comprises one field, which is shown edged in red on the aerial image below.

Insert 1. The Site (boundary approx.)

1.3 A detailed Agricultural Land Classification has been carried out over the Site. The Site is recorded as Subgrade 3a, plus a narrow services connection corridor that has not been surveyed.

1.4 This report:

(i) reviews the relevant planning policy in section 2;

(ii) describes the Site and the ALC survey findings in section 3;

(iii) assesses the findings against policy in section 4; and

(iv) ends with a summary and conclusions in section 5.

1.5 This report has been prepared by Kernon Countryside Consultants Ltd. We specialise in assessing the effects of development proposals on agricultural land and businesses.

2 PLANNING POLICY OF RELEVANCE

National Planning Policy Framework

2.1 The National Planning Policy Framework (NPPF) (2024), paragraph 187 notes that planning policies and decisions should contribute to enhance the natural and local environment by, inter alia, recognising **"the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land"**.

2.2 The best and most versatile (BMV) agricultural land is defined in Annex 2 of the NPPF as land which is of Grade 1, 2 and Subgrade 3a of the Agricultural Land Classification.

2.3 Paragraph 188 of the NPPF discusses plan making. It requires plans to, inter alia, allocate land with the least environmental or amenity value, where consistent with other policies in the Framework. Footnote 65 of the NPPF identifies that **"where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality"**.

2.4 There is no definition of what constitutes "significant" development. However, the "Guide to assessing development proposals on agricultural land" (Natural England, February 2021) advises local planning authorities to **"take account of smaller losses (under 20 ha) if they're significant when making your decision"**, suggesting that 20ha is a suitable threshold for defining "significant" in many cases.

Local Plan

2.5 There is no reference made within the Hinckley and Bosworth Local Plan with regards to the best and most versatile agricultural land.

Guidance

2.6 Natural England's "Guide to Assessing Development Proposals on Agricultural Land" (February 2021) describes the ALC process and sets out guidance on managing soils. It advises on the consultation process where more than 20ha of BMV land is involved.

2.7 The Institute of Environmental Management and Assessment (IEMA) produced a Guide "A New Perspective on Land and Soil in Environment Impact Assessment" in February 2022. Whilst this refers to EA development, it identifies in table 3 (page 49) the magnitude of the impacts on soil resources. Losses of under 5ha are defined as minor magnitude losses. Losses of between 5 – 20ha is classified as moderate losses.

3 AGRICULTURAL LAND QUALITY OF THE SITE

The ALC System

3.1 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 the agricultural use of the site. The ALC system divides agricultural land into five grades. Grade 1 of the ALC is described as being of excellent quality and Grade 5, at the other end of the scale, is described as being of very poor quality. The current guidelines and criteria for the ALC were published by the Ministry of Agriculture, Fisheries and Food (MAFF) in 1988.

3.2 The ALC system is further described in Natural England's Technical Information Note 049 which can be found reproduced in **Appendix KCC1**.

Detailed ALC Survey Results

3.3 A detailed ALC survey was carried out on the 28th October 2024 across the Site. 6 auger point inspection sites were examined on a regular 100m grid, using a spade and soil auger to a maximum depth of 120cm where possible.

3.4 One soil pit was dug to measure the stoniness and to better describe the soil profiles. One sample was sent for laboratory analysis for the fractions of sand, silt and clay.

3.5 A detailed ALC report is set out in **Appendix KCC2**.

3.6 The results of the survey can be seen in the table below.

Table 1. KCC1 ALC Results

ALC Grade	**Area (Ha)**	**Proportion (%)**
Subgrade 3a	5.2	96
Not surveyed	0.2	4
Total	**5.4**	**100**

3.7 The distribution of grading can be seen on the extract of the ALC plan below. The full plan can be found at the back of the report referenced **Plan KCC3798/02**.

Insert 2. Extract from the ALC Plan

KEY	
	Grade 1
	Grade 2
	Grade 3a
	Grade 3b
	Grade 4
	Grade 5
	Non-agricultural
	Urban
	Not surveyed

4 POLICY ASSESSMENT

4.1 The NPPF (2024) identifies that the economic and other benefits of BMV land be recognised. In plan making terms the NPPF requires that, where significant development of agricultural land is involved, poorer quality land should be used in preference. Therefore, we consider the economic and other benefits then go on to consider the plan-making considerations.

Economic Benefits

4.2 The NPPF (2024) does not prevent development of BMV land. It requires only that the economic and other benefits of BMV land be recognised.

4.3 There is no research available that we are aware of that seeks to analyse the productive economic advantages of BMV to non-BMV land.

4.4 In the absence of any empirical data, an economic assessment is inevitably crude. Taking standard budgeting textbooks, such as the John Nix Pocketbook for Farm Management (extracts which have been reproduced in **Appendix KCC3**), it is possible to show the difference between moderate and high yields as an illustration between crops.

4.5 Taking that crude measure and applying it to winter wheat and oilseed rape, the differences are shown below.

Table 2. Assessment of Economic of Farmed Land

Item	Winter Wheat		Oilseed Rape	
	Average	High	Average	High
Yield (t/ha)	8.3t/ha	9.5t/ha	3.5t/ha	4.0t/ha
Output (£)	£1,765/ha	£1,993/ha	£1,488/ha	£1,700/ha
Gross Margin (£)	£1,110/ha	£1,338/ha	£906/ha	£1,118/ha
Uplift (£)	-	£228/ha	-	£212/ha

John Nix Pocketbook for Farm Management, September 2024

4.6 Based on this, the economic benefits of the 5.2ha of BMV land to non-BMV land would be £1,186 per annum (£1,102 - £1,186 based on 2025 budgets). Hence the economic benefits of a land parcel of this size are limited.

4.7 Therefore, for development management purposes, the economic and other benefits of BMV have been recognised and quantified, and these will need to be considered in the overall planning balance.

Whether this is "Significant" Development

4.8 This proposal falls below the threshold for consultation with Natural England and is therefore arguably not "significant" development of agricultural land in the context of the NPPF.

4.9 Footnote 65 to paragraph 188 of the NPPF considers whether poorer quality land is available. This footnote is to paragraph 188, which is a plan making policy paragraph. Setting that aside, the trigger for an assessment of poorer quality land is that the proposal involves "**significant development of agricultural land**". "**Significant Development**" is not defined in the NPPF. One threshold for determination of what is significant is the threshold for consultation with Natural England, which is set at the loss of 20ha or more of BMV land (as can be seen in the TIN049 in **Appendix KCC1**). This has been the threshold for consultation with MAFF since 1987.

4.10 At 5.2ha the quantum of BMV within the Site is 26% of the threshold of consultation with Natural England. Therefore, this quantum is not "significant development".

4.11 The "Guide to assessing development proposals on agricultural land" (Natural England, 5th February 2021) (**Appendix KCC4**) does not define a threshold but does provide some guidance. This adds to our view that 20ha is a reasonable threshold for defining what is significant development:

- paragraph 6 states **"you should take account of smaller losses (under 20ha) if they are significant when making your decision"**, which suggests that losses of under 20ha would not be significant unless there are particular local circumstances. What those particular local circumstances are, is not defined but it would be reasonable to consider that the loss of 20ha may be significant in an area where BMV land is rare, for example; and
- paragraph 7.1 states that you can use Natural England's chargeable discretionary advice system **"if your proposal is large, for example 20ha or more, and requires more detailed advice"**. The definition of large as being more than 20ha suggests that a site under 20ha is considered small, and hence, not significant.

4.12 This is not significant development of BMV land. Therefore, the requirement to consider if poorer quality land is available, under footnote 65, is not triggered. For completeness, however, we now turn to assess that.

Land Quality in the Area Generally and Whether Poorer Quality Land is Available

4.13 The significance of development involving agricultural land needs to be considered in context. Across England it is estimated that 42% of farmland is of Grade 1, 2 and 3a quality (see TIN049, **Appendix KCC1**).

4.14 The Utilised Agricultural Area (UAA) of England, which is less than the total amount of agricultural land, was 8.7 million hectares in June 2024 (Agricultural Land Use in England on 1 June 2024, DEFRA, 26 September 2024). This suggests that about 3.7 million hectares of BMV land is in active agricultural use.

4.15 Statistically about 40% of Grade 3 land falls within Subgrade 3a. However, in parts of the country the proportion of Subgrade 3a is expected to be much higher, as there are large areas of the country where land is poor (eg Lake District, Pennines, Dartmoor etc).

4.16 Therefore, it is not considered that BMV quality is a rare resource.

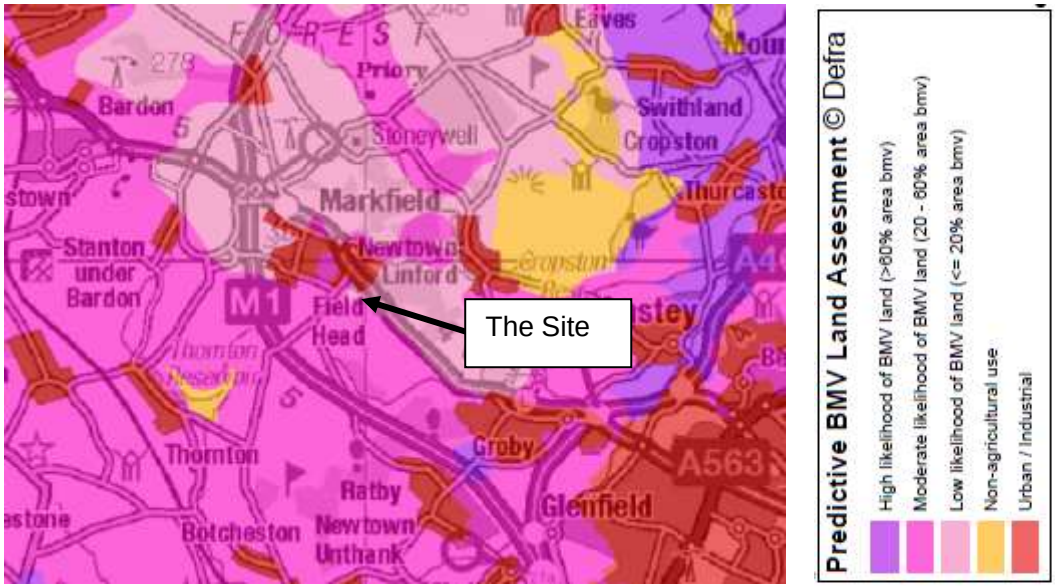
4.17 On the published "provisional" ALC maps from the 1970's the land is shown as undifferentiated Grade 3.

Insert 3. Provisional ALC Map

4.18 There are limitations with the "provisional" maps, which are described in TIN049 (**Appendix KCC1**). In 2017 Natural England produced predictive best and most versatile maps. These estimate the proportion of land within an area that is of BMV quality. There are three categories which are low (<20% area BMV), moderate (20-60% area BMV), and high (>60% area BMV).

4.19 The predictive BMV likelihood maps predict that the land is of a low (<20% BMV) and moderate (20-60% BMV) land quality.

Insert 4. Predictive BMV Map



4.20 Based on the above maps it is noted that the majority of the land in close proximity to the Site have a moderate likelihood of BMV. To the north east of the Site is predicted to be of low likelihood of BMV however, through google earth imagery, it shows that this land is non-agricultural.

4.21 The Proposed Development Site has not been previously surveyed. Survey results for Sites in close proximity to the Site have been searched for as published on www.magic.gov.uk however, there are no survey results available within the immediate proximity of the Site.

4.22 Survey results further afield are available, which have identified Grade 2, Subgrade 3a and Subgrade 3b quality land. Therefore, similar to that of the Proposed Development Site. These Sites can be seen below.

Insert 5. Survey Land in the Area

4.23 The survey results from the area suggest that there is a possibility that poorer quality land could be identified within the area.

4.24 Based on above, it can be concluded that, in terms of land quality in the local area:

(i) the land is shown on provisional mapping as undifferentiated Grade 3;

(ii) the predictive likelihood of BMV maps show that the Site to be located within an area of moderate to high likelihood of BMV with a small pocket of low likelihood at the Proposed Development Site;

(iii) the majority of the land surrounding the Site is also predicted to have a moderate to high likelihood of BMV;

(v) other Sites which have been surveyed within close proximity to the Site have identified areas of poorer quality land.

4.25 The Site itself is Subgrade 3a land quality. In the event that there was a need to consider whether poorer quality land is available, it cannot be concluded that there is not poorer quality land available. Nevertheless, as this Proposed Development Site is not classified as significant development, whether there is poorer quality land available does not need to be assessed.

Conclusion

4.26 A survey of the Site was carried out in October 2024. This identified that the Site was made up of Subgrade 3a with a small proportion of the Site not being surveyed.

4.27 At approximately 5.2ha of BMV land the Site is 26% of the threshold for consultation with Natural England. Therefore, the quantum of BMV is not significant.

5 SUMMARY AND CONCLUSIONS

5.1 The Proposed Development Site extends to 5.4ha.

5.2 The land has been classified as comprising of 5.2ha (96%) of Subgrade 3a and 0.2ha (4%) of land which was not surveyed. Therefore, the Site contains best and most versatile agricultural land.

5.3 The NPPF requires economic benefits to be considered. The economic benefits of this Site are limited at £1,186 per annum over the BMV land.

5.4 In terms of the NPPF, this is not considered significant development of agricultural land. Accordingly, poorer quality land does not need to be considered in preference.

5.5 It is a possibility that poorer quality land could be identified within the area. However, given that this Site is not significant development, whether poorer quality land is available does not need to be assessed.

5.6 It is also not considered that the proposal will have a significant impact on the farm business or cause any severance of land or farm holdings that would mean any remaining land parcels could not continue to be farmed.

5.7 Based on the above, it is concluded that only minimal weight can be given to this loss of agricultural land.

Appendix KCC1

Natural England's Technical Information Note TIN 049

Natural England Technical Information Note TIN049

Agricultural Land Classification: protecting the best and most versatile agricultural land

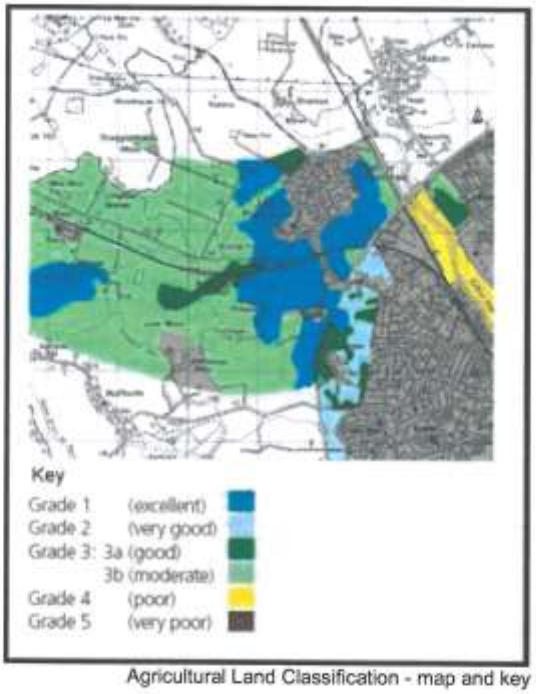
Most of our land area is in agricultural use. How this important natural resource is used is vital to sustainable development. This includes taking the right decisions about protecting it from inappropriate development.

Policy to protect agricultural land

Government policy for England is set out in the National Planning Policy Framework (NPPF) published in March 2012 (paragraph 112). Decisions rest with the relevant planning authorities who should take into account the economic and other benefits of the best and most versatile agricultural land. Where significant development of agricultural land is demonstrated to be necessary, local planning authorities should seek to use areas of poorer quality land in preference to that of higher quality. The Government has also re-affirmed the importance of protecting our soils and the services they provide in the Natural Environment White Paper The Natural Choice:securing the value of nature (June 2011), including the protection of best and most versatile agricultural land (paragraph 2.35).

The ALC system: purpose & uses

Land quality varies from place to place. The Agricultural Land Classification (ALC) provides a method for assessing the quality of farmland to enable informed choices to be made about its future use within the planning system. It helps underpin the principles of sustainable development.



Agricultural Land Classification - map and key

Second edition 19 December 2012
www.naturalengland.org.uk

NATURAL ENGLAND

Agricultural Land Classification: protecting the best and most versatile agricultural land

The ALC system classifies land into five grades, with Grade 3 subdivided into Subgrades 3a and 3b. The best and most versatile land is defined as Grades 1, 2 and 3a by policy guidance (see Annex 2 of NPPF). This is the land which is most flexible, productive and efficient in response to inputs and which can best deliver future crops for food and non food uses such as biomass, fibres and pharmaceuticals. Current estimates are that Grades 1 and 2 together form about 21% of all farmland in England; Subgrade 3a also covers about 21%.

The ALC system is used by Natural England and others to give advice to planning authorities, developers and the public if development is proposed on agricultural land or other greenfield sites that could potentially grow crops. The Town and Country Planning (Development Management Procedure) (England) Order 2010 (as amended) refers to the best and most versatile land policy in requiring statutory consultations with Natural England. Natural England is also responsible for Minerals and Waste Consultations where reclamation to agriculture is proposed under Schedule 5 of the Town and Country Planning Act 1990 (as amended). The ALC grading system is also used by commercial consultants to advise clients on land uses and planning issues.

Criteria and guidelines

The Classification is based on the long term physical limitations of land for agricultural use. Factors affecting the grade are climate, site and soil characteristics, and the important interactions between them. Detailed guidance for classifying land can be found in: *Agricultural Land Classification of England and Wales: revised guidelines and criteria for grading the quality of agricultural land* (MAFF, 1988):

- **Climate:** temperature and rainfall, aspect, exposure and frost risk.
- **Site:** gradient, micro-relief and flood risk.
- **Soil:** texture, structure, depth and stoniness, chemical properties which cannot be corrected.

The combination of climate and soil factors determines soil wetness and droughtiness. Wetness and droughtiness influence the choice of crops grown and the level and consistency of yields, as well as use of land for grazing livestock. The Classification is concerned with the inherent potential of land under a range of farming systems. The current agricultural use, or intensity of use, does not affect the ALC grade.

Versatility and yield

The physical limitations of land have four main effects on the way land is farmed. These are:

- the range of crops which can be grown;
- the level of yield;
- the consistency of yield; and
- the cost of obtaining the crop.

The ALC gives a high grading to land which allows more flexibility in the range of crops that can be grown (its 'versatility') and which requires lower inputs, but also takes into account ability to produce consistently high yields of a narrower range of crops.

Availability of ALC information

After the introduction of the ALC system in 1966 the whole of England and Wales was mapped from reconnaissance field surveys, to provide general strategic guidance on land quality for planners. This Provisional Series of maps was published on an Ordnance Survey base at a scale of One Inch to One Mile in the period 1967 to 1974. These maps are not sufficiently accurate for use in assessment of individual fields or development sites, and should not be used other than as general guidance. They show only five grades: their preparation preceded the subdivision of Grade 3 and the refinement of criteria, which occurred after 1976. They have not been updated and are out of print. A 1:250 000 scale map series based on the same information is available. These are more appropriate for the strategic use originally intended and can be downloaded from the Natural England **website**. This data is also **available on 'Magic', an interactive, geographical** information website **http://magic.defra.gov.uk/**.

Since 1976, selected areas have been re-surveyed in greater detail and to revised

guidelines and criteria. Information based on detailed ALC field surveys in accordance with current guidelines (MAFF, 1988) is the most definitive source. Data from the former Ministry of Agriculture, Fisheries and Food (MAFF) archive of more detailed ALC survey information (from 1988) is also available on **http://magic.defra.gov.uk/**. Revisions to the ALC guidelines and criteria have been limited and kept to the original principles, but some assessments made prior to the most recent revision in 1988 need to be checked against current criteria. More recently, strategic scale maps showing the likely occurrence of best and most versatile land have been prepared. Mapped information of all types is available from Natural England (see *Further information* below).

New field survey

Digital mapping and geographical information systems have been introduced to facilitate the provision of up-to-date information. ALC surveys are undertaken, according to the published Guidelines, by field surveyors using handheld augers to examine soils to a depth of 1.2 metres, at a frequency of one boring per hectare for a detailed assessment. This is usually supplemented by digging occasional small pits (usually by hand) to inspect the soil profile. Information obtained by these methods is combined with climatic and other data to produce an ALC map and report. ALC maps are normally produced on an Ordnance Survey base at varying scales from 1:10,000 for detailed work to 1:50 000 for reconnaissance survey

There is no comprehensive programme to survey all areas in detail. Private consultants may survey land where it is under consideration for development, especially around the edge of towns, to allow comparisons between areas and to inform environmental assessments. ALC field surveys are usually time consuming and should be initiated well in advance of planning decisions. Planning authorities should ensure that sufficient detailed site specific ALC survey data is available to inform decision making.

Consultations

Natural England is consulted by planning authorities on the preparation of all development plans as part of its remit for the natural environment. For planning applications, specific consultations with Natural England are required under the Development Management Procedure Order in relation to best and most versatile agricultural land. These are for non agricultural development proposals that are not consistent with an adopted local plan and involve the loss of twenty hectares or more of the best and most versatile land. The land protection policy is relevant to all planning applications, including those on smaller areas, but it is for the planning authority to decide how significant the agricultural land issues are, and the need for field information. The planning authority may contact Natural England if it needs technical information or advice.

Consultations with Natural England are required on all applications for mineral working or waste disposal if the proposed afteruse is for agriculture or where the loss of best and most versatile agricultural land agricultural land will be 20 ha or more. Non-agricultural afteruse, for example for nature conservation or amenity, can be acceptable even on better quality land if soil resources are conserved and the long term potential of best and most versatile land is safeguarded by careful land restoration and aftercare.

Other factors

The ALC is a basis for assessing how development proposals affect agricultural land within the planning system, but it is not the sole consideration. Planning authorities are guided by the National Planning Policy Framework to protect and enhance soils more widely. This could include, for example, conserving soil resources during mineral working or construction, not granting permission for peat extraction from new or extended mineral sites, or preventing soil from being adversely affected by pollution. For information on the application of ALC in Wales, please see below.

Further information

Details of the system of grading can be found in: *Agricultural Land Classification of England and Wales: revised guidelines and criteria for grading the quality of agricultural land* (MAFF, 1988).

Please note that planning authorities should send all planning related consultations and enquiries to Natural England by e-mail to **consultations@naturalengland.org.uk**. If it is not possible to consult us electronically then consultations should be sent to the following postal address:

Natural England
Consultation Service
Hornbeam House
Electra Way
Crewe Business Park
CREWE
Cheshire
CW1 6GJ

ALC information for Wales is held by Welsh Government. Detailed information and advice is available on request from Ian Rugg (**ian.rugg@wales.gsi.gov.uk**) or David Martyn (**david.martyn@wales.gsi.gov.uk**). If it is not possible to consult us electronically then consultations should be sent to the following postal address:

Welsh Government
Rhodfa Padarn
Llanbadarn Fawr
Aberystwyth
Ceredigion
SY23 3UR

Natural England publications are available to download from the Natural England website: **www.naturalengland.org.uk**.

For further information contact the Natural England Enquiry Service on 0300 060 0863 or e-mail **enquiries@naturalengland.org.uk**.

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Appendix KCC2

Agricultural Land Classification

AGRICULTURAL LAND CLASSIFICATION

1 This section of the report provides the findings of a detailed Agricultural Land Classification (ALC). It is based on a desktop study of relevant published information on climate, topography, geology, and soil, in conjunction with a soil survey. The approximately 5.4 hectare (ha) Study Area is shown in **Plan KCC3798/01**.

Methodology

2 The work has been carried out by a Chartered Scientist (CSci), who is a Fellow (F. I. Soil Sci) of the British Society of Soil Science (BSSS). This ALC survey has been carried out by a soil scientist who meets the BSSS Professional Competency Standard (PSC) scheme requirements for ALC (see BSSS PCS Document 2 '*Agricultural Land Classification of England and Wales*'[1]). The BSSS PSC scheme is endorsed, amongst others, by the Department for Environment, Food and Rural Affairs (Defra), Natural England, the Science Council, and the Institute of Environmental Assessment and Management (IEMA).

3 This assessment is based upon the findings of a study of published information on climate, geology and soil in combination with a soil investigation carried out in accordance with the Ministry of Agriculture, Fisheries and Food (MAFF) [2] '*Agricultural Land Classification of England and Wales: Revised Guidelines and Criteria for Grading the Quality of Agricultural Land*', October 1988 (henceforth referred to as the 'the ALC Guidelines').

4 The 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. The ALC system divides agricultural land into five grades (Grade 1 'Excellent' to Grade 5 'Very Poor'), with Grade 3 subdivided into Subgrade 3a 'Good' and Subgrade 3b 'Moderate'. Agricultural land classified as Grade 1, 2 and Subgrade 3a falls in the '*best and most versatile*' category in Paragraphs 187 and 188 of the National Planning Policy Framework (NPPF), revised in December 2024. Further details of the ALC system and national planning policy implications are set out in Natural England's '*Guide to assessing development proposals on agricultural land'* online[3].

[1] British Society of Soil Science. Professional Competency Scheme Document 2 'Agricultural Land Classification of England and Wales'. Available online @ https://www.soils.org.uk/sites/default/files/events/flyers/ipss-competency-doc2.pdf Last accessed November 2024

[2] The Ministry of Agriculture, Fisheries and Food (MAFF) was incorporated within the Department for Environment, Food and Rural Affairs (Defra) in November 2001

[3] Natural England (2022) 'Guide to assessing development proposals on agricultural land'. Available online at https://www.gov.uk/government/publications/agricultural-land-assess-proposals-for-development/guide-to-assessing-development-proposals-on-agricultural-land Last accessed November 2024

5 A detailed ALC survey of the Study Area was carried out on the 28th of October 2024. The ALC survey involved examination of the soil's physical properties at six auger-bores within the Study Area at a density of one auger-bore per hectare (ha). One soil pit, i.e., Pit 1 located near auger-bore location 4, was excavated with a spade to examine certain soil physical properties, such as stone content and subsoil structure, in more detail. See **Plan KCC3798/01** for the location of auger bores and soil pits.

6 The sample locations were located using a hand-held Garmin E-Trec Geographic Information System (GIS) to enable the sample locations to be relocated for verification, if necessary.

7 The soil profile at each sample location was examined to a maximum depth of approximately 1.2 m by hand using a 5 cm diameter Dutch (Edleman) soil auger. The soil profile at each sample location was described using the '*Soil Survey Field Handbook: Describing and Sampling Soil Profiles*' (Ed. J.M. Hodgson, Cranfield University, 1997). Each soil profile was ascribed a grade following the ALC Guidelines. A log of the soil profiles examined and described on-site is given in **Attachment 1**, and a description of the soil pit is given in **Attachment 2**.

8 A topsoil sample was collected at auger-bore locations 4 (Pit 1) and 6, as shown in **Plan KCC3798/01**. The samples were sent to an accredited laboratory for particle size analysis, i.e., sand, silt, and clay proportions. This is to determine the definitive texture class of the topsoil, especially regarding distinguishing between medium clay loams (i.e., <27% clay) and heavy clay loams (27% to 35% clay). The results of the laboratory particle size (texture) analysis are given in Section 3.0, and a laboratory report is given in **Attachment 3**.

9 As described in the ALC Guidelines, the main physical factors influencing agricultural land quality are:

- climate;
- site;
- soil; and
- interactive limitations.

10 These factors are considered in turn below.

Climate

11 Interpolated climate data relevant to determining the ALC grade of land at the Site is given in Table 1 below.

Table 1: ALC Climate Data

Climate Parameter	**Grid Ref:** SK 497 095
Average Altitude (m)	175
Average Annual Rainfall (mm)	721
Accumulated Temperature above 0˚C (January – June)	1269
Moisture Deficit (mm) Wheat	88
Moisture Deficit (mm) Potatoes	73
Field Capacity Days (FCD)	164
Grade according to climate	2

12 Parameters used for assessing overall climate are accumulated temperature, a measure of relative warmth, and average annual rainfall, a measure of overall wetness. Regarding Figure 1 '*Grade according to climate*' on page 6 of the ALC Guidelines, there is an overall climatic limitation to the quality of agricultural land at the Site to Grade 2. This means that agricultural land at the Site could be graded no higher than ALC Grade 2 in overall climatic terms without any other limiting factor, i.e., site, soil, and/or interactive limitations.

13 The soil profiles across the Study Area are predicted to be at field capacity (i.e., the amount of soil moisture or water content held in the soil after excess water has drained away) for approximately 164 Field Capacity Days (FCD) per year, mainly over the late autumn, winter and early spring. The climate interacts with soil physical properties, i.e., soil texture and wetness class, and can limit agricultural land quality due to soil wetness as per Table 6 of the ALC Guideline 'Grade according to soil wetness'. It should be noted that the number of FCD at this Site just falls in the FCD category 151-175 for determining the grade according to wetness.

Site

14 As shown in **Plan KCC3798/01**, the Study Area is located on the south-eastern edge of Markfield, Leicestershire. The approximate centre of the Site is located at British National Grid (BNG) reference SK497095. The Study Area is bordered by residential development to the north, Ratby Lane to the west, agricultural land to the south, and woodland to the east.

15 With regard to the ALC Guidelines, agricultural land quality can be limited by one or more of three main site factors as follows:

- gradient;
- micro-relief (i.e., complex change in slope angle over short distances); and
- risk of flooding.

Gradient and Micro-Relief

16 The Study Area is located on a gentle, south-facing slope at approximately 180 metres (m) Above Ordnance Datum (AOD) at the highest point in the northeast at auger bore 1 and approximately 174m AOD at the lowest elevation in the south at auger bore 2.

17 The quality of agricultural land within the Study Area is not limited by gradient, which does not exceed 7° (refer to Table 1 of ALC Guidelines). Likewise, the quality of agricultural land in the Study Area is not limited by micro-relief, i.e., where complex changes in slope angle and direction over short distances, or the presence of boulders or rock outcrops, even on level ground or gentle slopes, can severely limit the use of agricultural machinery.

Risk of Flooding

18 According to the Government Flood Map for Planning website[4], the land in the Study Area is in Flood Zone 1 at a low risk of flooding. The MAFF ALC Guidelines (1988) take account of the frequency, duration, and timing of flooding in the summer and winter (re Table 2 '*Grade according to flood risk in summer*' and/or Table 3 '*Grade according to flood risk in winter*'). There is no evidence the grade of agricultural land in the Study Area is limited by flood risk during the summer or winter following the ALC Guidelines.

Soil

19 **Geology/Soil Parent Material.** British Geological Survey (BGS) online[5] information has been utilised to identify the Bedrock underlying the Study Area and any Superficial (Drift) Deposits over the Bedrock. This information helps to determine the parent material[6] from and within which a soil has formed.

20 From the BGS information, the Study Area is underlain by diorite (i.e., a group of coarse-grained igneous rocks with a composition between that of granite and basalt) of the South Charnwood Diorites. The bedrock in the southwest and northeast is covered by superficial deposits described as glacial till of the Oadby member (diamicton).

[4] Government/Environment Agency. 'Get flood risk information for planning in England'. Available online at https://flood-map-for-planning.service.gov.uk/ Last accessed November 2024
[5] British Geological Survey 'Geology of Britain Viewer'. Available online @ http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html Last accessed November 2024
[6] British Geological Survey. A 'parent material' is a soil-science name for a weathered rock or deposit from and within which a soil has formed. In the UK, parent materials provide the basic foundations and building blocks of the soil, influencing their texture, structure, drainage and chemistry. Available online @ Soil Parent Material Model - British Geological Survey (bgs.ac.uk) Last accessed November 2024

21 **Published information on Soil.** Soil information on the National Soil Map[7] indicates that land at the Site is covered by soils grouped in the Claverley Association, with soil in the Salop Association present in the northwest of the site. As described by the Soil Survey of England and Wales (SSEW)[8], the Claverley association consists of the Claverley series, typical stagnogley soils, and Iveshead series, typical brown podzolic soils. The distinctive upland landscape of craggy outcrops of Pre-Cambrian igneous and metamorphic rocks rises to 278 m O.D. through the surrounding reddish tills and Triassic rocks. The soil pattern is closely related to topography. Iveshead soils, which are often interspersed with rock outcrops, are found on ridge crests or steep valley sides. They are very stony, well drained loamy soils with strong brown subsoil horizons over igneous rock. On lower gentle and moderate slopes, Claverley soils are developed in a thick locally-derived Head overlying and intermixed with reddish till. Claverley soils have coarse loamy upper horizons containing large igneous stones, and have a grey mottled subsurface horizon over a loamy but slowly permeable reddish subsoil. There are ancillary typical stagnogley soils, Salop and Clifton series , where the coarse upper drift thins over the till. These slowly permeable mottled soils are similar to the Claverley series but of finer texture and contain fewer large igneous stones.

22 The Salop Association consists mainly of stagnogley soils with slowly permeable subsoils in reddish drift mostly derived from Permo-Triassic rocks. There is a small proportion of stagnogleyic argillic brown earths. As there is little run-off on the level or gently sloping land these slowly permeable soils are seasonally waterlogged. The association occupies large areas in the Midlands and Northern England and occurs on the narrow coastal lowland of north Wales. The Salop series, fine loamy over clayey typical stagnogley soils, occupies one-third to two-thirds of the area. Clifton series, similar but fine loamy throughout, is generally a minor associate but in Cheshire covers about a quarter of the ground. Small patches of the clayey Crewe series, pelostagnogley soils, usually on level land, are included. Coarse loamy over clayey Rufford soils occur locally where there are glaciofluvial deposits nearby. Stagnogleyic brown earths belonging to Flint series mainly cover the steeper slopes. Most of the soils when undrained are waterlogged for long periods in winter (Wetness Class IV). Surface waterlogging results from the combination of slowly permeable subsoil and slow surface run-off from relatively flat land. The soils can be improved to Wetness Class III with underdrainage especially in the drier eastern districts. Where the field capacity period exceeds 200 days, Salop, Clifton and Crewe soils remain severely waterlogged even with underdrainage (Wetness Class IV). Flint soils suffer some waterlogging in winter (Wetness Class III) but duration depends on

[7] Cranfield University (2024) Soil site report, Soil Report for location 449712E, 309500N, 1km x 1km, Cranfield University..
[8] Soil Survey of England and Wales, National Soil Resource Institute, Cranfield University (2024). *The Soils Guide.* Available online at https://www.landis.org.uk/soilsguide/mapunit_list.cfm Last accessed November 2024

climate and the efficiency of drainage measures. The soils are slightly droughty for most crops but moderately droughty for grass and non-droughty for spring barley.

Soil Survey

23 The soil profiles recorded at each auger-bore location are given in **Attachment 1**. A detailed description of Soil Pit 1 is given in **Attachment 2**.

24 The soil survey determined predominantly dark brown (Munsell colour 10YR3/3 and 7.5YR3/3) medium clay loam topsoil over dark brown (7.5YR3/4) heavy clay loam upper subsoil, over reddish brown (5YR4/4) clay lower subsoil. The subsoil is gleyed and has common to many, ochreous mottles (10YR5/8) and common to many greyish mottles (2.5Y7/1). Where the top of a Slow Permeable Layer (SPL), in ALC Terms, occurs at a depth within 45cm and 72cm from ground level this is sufficient to place the soil profiles in Wetness Classes III. Some soil profiles are not gleyed in the top 40cm, and these have been placed in Wetness Class II as per Figure 8 of the ALC Guidelines. These soil profiles are similar to those described by the SSEW as belonging to the Salop Association.

25 **Topsoil Particle Size Analysis.** To substantiate topsoil texture determined during the ALC survey by hand-texturing, two topsoil samples were collected over the Study Area, i.e., from auger bore locations 4 (Pit 1) and 6, see **Plan KCC3798/01**. The topsoil samples were sent to an accredited laboratory for analysis of particle size distribution (PSD), based on the British Standard Institution particle size grades. The certificate of analysis is provided as **Attachment 3**. The findings of the PSD analysis are shown in Table 2 below.

Table 2. Topsoil Particle Size Analysis

Topsoil Sample Location (See Plan KCC3798/01)	**% sand 0.063-2.0 mm**	**% silt 0.002-0.063 mm**	**% clay <0.002 mm**	**ALC Soil Texture Class**
4 (Pit 1)	37	41	22	Medium Clay Loam
6	38	45	17	Sandy Silt Loam

Interactive Limitations

26 From the information above, together with the findings of the detailed soil survey (see Soil Profile Log given in **Attachment 1**), it has been determined that the quality of agricultural land at the Site is limited by soil wetness, as described below.

27 **Soil Wetness.** From the ALC Guidelines, a soil wetness limitation exists where '*the soil water regime adversely affects plant growth or imposes restrictions on cultivations or grazing by livestock*'. Agricultural land quality at the Site is limited by soil wetness as per Table 3 below (based on Table 6 'Grade According to Soil Wetness – Mineral Soils' in the ALC Guidelines).

Table 3. ALC Grade According to Soil Wetness

Wetness Class	Texture of the Top 25 cm	151-175 Field Capacity Days
I	Sand, Loamy Sand, Sandy Loam, Sandy Silt Loam	1
	Sandy Clay Loam/Medium Silty Clay Loam /Medium Clay Loam*	1
	Heavy Silty Clay Loam/Heavy Clay Loam**	2
	Sandy Clay/Silty Clay/Clay	3a
II	Sand, Loamy Sand, Sandy Loam, Sandy Silt Loam	1
	Sandy Clay Loam/Medium Silty Clay Loam /Medium Clay Loam*	2
	Heavy Silty Clay Loam/Heavy Clay Loam**	3a
	Sandy Clay/Silty Clay/Clay	3b
III	Sand, Loamy Sand, Sandy Loam, Sandy Silt Loam	2
	Sandy Clay Loam/Medium Silty Clay Loam /Medium Clay Loam*	3a
	Heavy Silty Clay Loam/Heavy Clay Loam**	3b
	Sandy Clay/Silty Clay/Clay	3b
IV	Sand, Loamy Sand, Sandy Loam, Sandy Silt Loam	3a
	Sandy Clay Loam/Medium Silty Clay Loam /Medium Clay Loam*	3b
	Heavy Silty Clay Loam/Heavy Clay Loam**	3b
	Sandy Clay/Silty Clay/Clay	3b
Key: * 18% to <27% clay; and ** 27% to 35% clay		

28 In a climate area with 164 FCD, profiles that are slowly permeable and seasonally waterlogged (i.e., Wetness Classes III) are limited by soil wetness to Subgrade 3a where the topsoil texture is medium clay loam.

29 Soil profiles in Wetness Class III with a sandy silt loam topsoil are limited by soil wetness to Grade 2.

ALC Grading at the Site

30 By detailed ALC survey, it has been determined that the quality of agricultural land at the Site is limited by soil wetness to Subgrade 3a over the Study Area.

31 As described on page 7 of the ALC Guidelines '…*a degree of variability in physical characteristics within a discrete area is to be expected. If the area includes a small proportion of land of different quality, the variability can be considered as a function of the mapping scale*.' By convention, two or more contiguous auger bores of the same grade are mapped as a single unit. Where a single auger bore has a different ALC grade from those surrounding it, it is included in the predominant ALC grade. Accordingly, isolated auger bores (1 and 6) that has been determined to be Grade 2 have been included in the predominant Subgrade 3b mapping unit (see **Attachment 1**)

32 The area and proportion of agricultural land in each ALC grade have been measured from an ALC map given in **Plan KCC3798/02**. The findings are reported in Table 4 below.

Table 4. Agricultural Land Classification

ALC Grade	**Area (Ha)**	**Area (% of Total Site)**
Grade 1 (Excellent)	0	0
Grade 2 (Very Good)	0	0
Subgrade 3a (Good)	5.2	96.0
Subgrade 3b (Moderate)	0	0
Grade 4 (Poor)	0	0
Grade 5 (Very Poor)	0	0
Non-agricultural / Other land	0.2	4.0
Total	**5.4**	**100**

Attachment 1

Soil Pit Log

Point	Grid ref.			Alt (m)	Slope °	Aspect	Land use	Depth (cm)			Matrix	Ochreous Mottles		Grey Mottles		Gley	Texture	Stones - type 1				Stones - type 2				Ped			SUBS STR	CaCO3	Mn C	SPL	Drought			Wet		Final ALC			
	NGR	X	Y					Top	Bttm	Thick	Munsell colour	Form	Munsell colour	Form	Munsell colour			%	> 2cm	> 6cm	Type	%	> 2cm	> 6cm	Type	Strength	Size	Shape					MBw	MBp	Gd	WC	Gw	Limitation 1	Limitation 2	Limitation 3	Grade
1	SK 49700 09600	449700	309600	180	≤7	Level	CER	0	40	40	7.5YR3/3					No	MCL - Clay loam (medium)	8	6	1	HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)								Not Applicable		No	No	43	35	1	WC II	2	Wetness			2
								40	43	3	7.5YR4/3					No	MCL - Clay loam (medium)												Moderate		No	No									
								43	50	7	7.5YR4/4					No	MCL - Clay loam (medium)												Moderate		No	No									
								50	60	10	5YR5/4	CD - Common Distinct	10YR5/6			Yes	HZCL - Silty clay loam (heavy)												Poor		No	No									
								60	120	60							C - Clay												Poor			Yes									
2	SK 49600 09500	449600	309500	174	≤7	Level	CER	0	30	30	10YR3/3					No	MCL - Clay loam (medium)	8	6		HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)								Not Applicable		No	No	41	33	1	WC III	3a	Wetness			3a
								30	45	15	10YR3/3					No	MCL - Clay loam (medium)												Moderate		No	No									
								45	50	5	5YR4/3	CD - Common Distinct	10YR5/6			Yes	HCL - Clay loam (heavy)		10		HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)								Poor		No	No									
								50	120	70							C - Clay												Poor			Yes									
3	SK 49700 09500	449700	309500	175	≤7	Level	CER	0	38	38	7.5YR3/3					No	MCL - Clay loam (medium)	2	1		HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)								Not Applicable		No	No	46	38	1	WC III	3a	Wetness			3a
								38	45	7	7.5YR3/4					No	MCL - Clay loam (medium)												Moderate		No	No									
								45	55	10	5YR4/4	FF - Few Faint	10YR5/6			Yes	C - Clay												Poor		No	Yes									
								55	65	10	5YR4/4					Yes	C - Clay												Poor		No	Yes									
								65	120	55							C - Clay												Poor			Yes									
4	SK 49800 09500	449800	309500	175	≤7	Level	CER	0	40	40	10YR3/3					No	MCL - Clay loam (medium)	2	1		HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)								Not Applicable		No	No	49	41	1	WC III	3a	Wetness			3a
								40	55	15	7.5YR3/3	FF - Few Faint	10YR5/6			No	HCL - Clay loam (heavy)												Moderate		No	No									
								55	100	45	5YR5/3	CF - Common Faint	10YR5/6			Yes	C - Clay												Poor		No	Yes									
								100	120	20							C - Clay												Poor			Yes									
5	SK 49900 09500	449900	309500	178	≤7	Level	CER	0	25	25	10YR3/3					No	MCL - Clay loam (medium)	6	2	1	HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)								Not Applicable		No	No	43	35	1	WC III	3a	Wetness			3a
								25	38	13	10YR4/2					No	MCL - Clay loam (medium)												Moderate		No	No									
								38	45	7	10YR5/3					No	HZCL - Silty clay loam (heavy)												Moderate		No	No									
								45	100	55	5YR5/4	CD - Common Distinct	10YR5/6			Yes	C - Clay												Poor		No	Yes									
								100	120	20							C - Clay												Poor			Yes									
6	SK 49900 09400	449900	309400	178	≤7	Level	CER	0	40	40	7.5YR3/3						MSZL - Medium sandy silt loam	6	4	1	HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)								Not Applicable			No	33	39	1	WC III	2	Wetness			2
								40	45	5	7.5YR4/4						MCL - Clay loam (medium)												Moderate			No									
								45	100	55							C - Clay												Poor			Yes									
	END																																							

Attachment 2

Soil Pit Description

Project	Location	Date	Surveyor(s)	Company
C1143	KCC3798 Markfield, Leics	28-Oct-24	RDM	Askew Land and Soil

Pit	WC	Grade	Limitation(s)	Notes
1	III	3a	Wetness	Dug to 60mm augered to 100cm. MBW = 49mm MDP = 41mm (Grade 1 according to soil droughtiness)

Grid Ref.			Altitude	Nearest	Topography				Flora		Weather and conditions			
Square	East	North		point	Gradient	Aspect	Slope form	Surface	Cultivation type	Vegetation types	Temp	Sky	Wind	Precipitation
SK	495	095	175	4						cereal stubble				

Horizon	Depth		Matrix			Gleying			Mottles			Stone content					Calc.	Mn C	Ped/soil structure				Horizon boundary		Biopores	SPL
	Top	Bttm	Texture	Colour	Munsell	Gley	Colour	Munsell	Form	Colour	Munsell	%	H	Type	S	Type			Dev.	Size	Structure	Strength	Distinct	Form		
1	0	40	mcl		10YR3/3																					
2	40	60	c		5YR4/4	5YR6/3															massive to wk cab	firm		wavy	<	y
3	60	80+	c		5YR4/4/ 2.5YR							10		hard												y

Pit	WC	Grade	Limitation(s)	Notes

Grid Ref.			Altitude	Nearest	Topography				Flora		Weather and conditions			
Square	East	North		point	Gradient	Aspect	Slope form	Surface	Cultivation type	Vegetation types	Temp	Sky	Wind	Precipitation

Horizon	Depth		Matrix			Gleying			Mottles			Stone content					Calc.	Mn C	Ped/soil structure				Horizon boundary		Biopores	SPL
	Top	Bttm	Texture	Colour	Munsell	Gley	Colour	Munsell	Form	Colour	Munsell	%	H	Type	S	Type			Dev.	Size	Structure	Strength	Distinct	Form		

Attachment 3

Laboratory Analysis

ANALYTICAL REPORT

Report Number	**62628-24**	**P248**	**SARAH KERNON**
Date Received	**01-NOV-2024**		**KERNON COUNTRYSIDE**
Date Reported	**20-NOV-2024**		**CONSULTANTS LTD**
Project	**KCC3798**		**GREENACRES BARN**
Reference	**SARAH KERNON**		**PURTON STOKE**
Order Number	**KCC3798**		**WILTSHIRE SN5 4LL**

Laboratory Reference		**SOIL720325**	**SOIL720326**								
Sample Reference		**6**	**PIT 1**								
Determinand	**Unit**	**SOIL**	**SOIL**								
Sand 2.00-0.063mm	% w/w	38	37								
Silt 0.063-0.002mm	% w/w	45	41								
Clay <0.002mm	% w/w	17	22								
Textural Class **		SZL	MCL								

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: *Teresa Clyne*

Natural Resource Management, a trading division of Cawood Scientific Ltd.
Coopers Bridge, Braziers Lane, Bracknell, Berkshire, RG42 6NS
Tel: 01344 886338
Fax: 01344 890972
email: enquiries@nrm.uk.com

Technical Information

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:

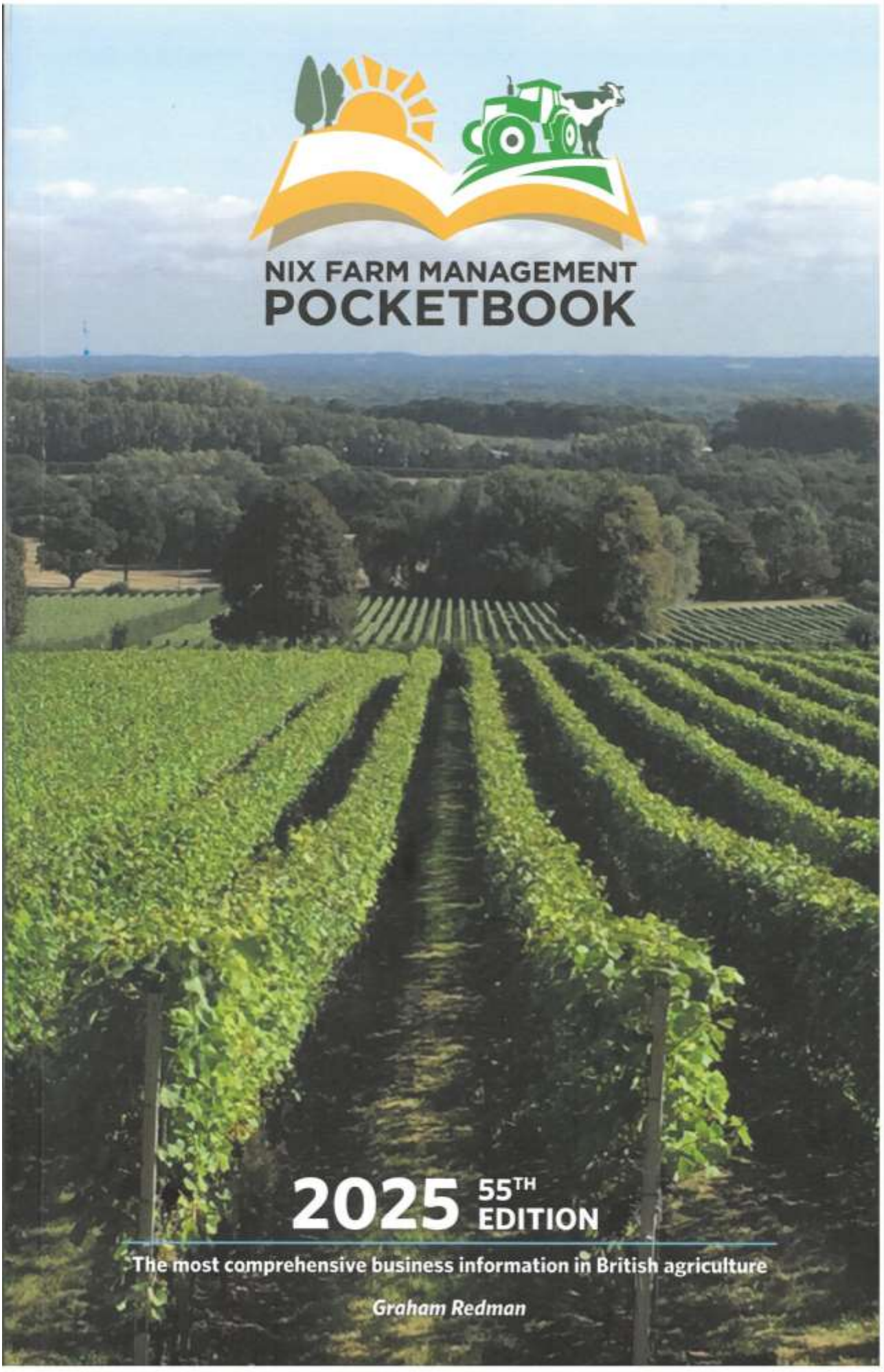
- M medium (less than 27% clay)
- H heavy (27-35% clay)

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 KCC3

John Nix Pocketbook for Farm Management (55th Ed) Extracts


NIX FARM MANAGEMENT
POCKETBOOK
2025 55TH EDITION
The most comprehensive business information in British agriculture
Graham Redman

WHEAT

Feed Winter Wheat

Production level	Low	Average	High	
Yield: t/ha (t/ac)	7.1 (2.9)	8.3 (3.4)	9.5 (3.8)	
	£	£	£	£/t
Grain at £190/t	1,349	1,577 (639)	1,805 (731)	
Straw in Swath	188 (76)	188 (76)	188 (76)	
Total Output	**1,537 (622)**	**1,765 (715)**	**1,993 (807)**	***213***
Variable Costs £/ha *(£/ac)*:				
Seed		82 (33)		*10*
Fertiliser		295 (119)		*36*
Sprays		278 (112)		*33*
Total Variable Costs		655 (265)		*79*
Gross Margin £/ha (ac)	**882** (357)	**1110** (449)	**1,338** (542)	***134***

Fertiliser Basis 8.3t/ha

Nutrient	Kg/t	Kg/Ha	£/Ha
N	*23*	190	£184
P	7.0	58	£58
K	10.5	87	£52

Seed:

£/t C2	£515
Kg/Ha	175
% HSS	30%
£/t HSS	£354

prays £/ha:

Herbicides	£121
Fungicides	£110
Insecticides	£3
PGRs	£16
Other	£27

1. *Yields*. The average yield is for all winter feed wheat, i.e. all varieties and 1st and subsequent wheats. See over for First and Second Wheats. The yield used for feed and milling wheats including spring varieties is 8.18t/ha (overall 10-year average *Defra)*.

   The table below offers a weighted estimate of yield variations according to wheat type based on a national yield of 8.4t/ha. Percentages compare yield categories with 'all wheat'. These yields are used in the gross margins.

   Calculation of spread of 'average yields depending on wheat type –

	Yield Adjustment	Winter	1st WW	2nd WW	spring	Total
t/ha		101%	102%	93%	85%	100%
Total	100%	8.27	8.40	7.61		**8.18**
Feed	101%	8.35	8.48	7.69		8.27
Bread	93%	7.69	7.81	7.08	6.02	7.61
Biscuit	99%	8.18	8.32	7.54		8.10

2. *Straw* is sold in the swath. Assuming 1 hectare is worth 2.5 tonnes baled straw at 4.2t/ha. So £75/tonne baled = £188/ha for winter wheat.
3. *Seed* is costed with a single purpose dressing. Up to a third of growers require additional seed treatments, specifically to supress BYDV. This can add £170/t of seed (£30/ha). This has not been added in the gross margins.
4. This schedule does not account for severe *grass weed infestations* such as Black Grass or Sterile Brome. Costs associated with managing such problems can amount to up to £190/hectare additional agrochemical costs. Yield losses increase as infestation rises:

OILSEED RAPE

Winter Oilseed Rape

Production level	Low	Average	High	
Yield: t/ha (t/ac)	3.0 (1.2)	3.50 (1.4)	4.0 (1.6)	
	£	£	£	£/t
Output at £425/t	1275 (516)	1,488 (602)	1,700 (689)	*425*
Variable Costs £/ha *(£/ac)*:				
Seed		73 (29)		*21*
Fertiliser		257 (104)		*73*
Sprays		252 (102)		*72*
Total Variable Costs		582 (236)		*166*
Gross Margin £/ha (ac)	**693** (281)	**906** (367)	**1,118** (453)	***259***

Fertiliser Basis 3.5t/ha				**Seed:**		**Sprays:**	
Nutrient	Kg/t	Kg/Ha	£/Ha	£/Ha C	43	Herbicides	£124
N	*54*	190	£184	£/Ha Hy	88	Fungicides	£68
P	14	49	£49	£/Ha HSS	29	Insecticides	£16
K	11	39	£23	C:Hy:HSS	20:20:60	PGRs	£0
	Seed write-off		8%	Kg/Ha	5.5	Other	£44

Spring Oilseed Rape

Production level	Low	Average	High	
Yield: t/ha (t/ac)	1.9 (0.8)	2.25 (0.9)	2.6 (1.1)	
	£	£	£	£/t
Output at £425/t	808 (327)	956 (387)	1,105 (448)	*425*
Variable Costs £/ha *(£/ac)*:				
Seed		69 (28)		*31*
Fertiliser		115 (47)		*51*
Sprays		131 (53)		*58*
Total Variable Costs		316 (128)		*140*
Gross Margin £/ha (ac)	**492** (199)	**641** (259)	**789** (320)	***285***

1. *Prices*. The price used is £399/t plus oil bonuses at 44% oil content making £425/. The bonus is paid on the percentage of oil over 40%, at 1.5 times the sale value of the crop and an equal but opposite penalty below 40%. For example, in this case, the bonus is on 4% oil x £410 x 1.5 = £25.
2. *Spring OSR Inputs: Seed* as per WOSR, but 35% conventional, 5% HSS, 60% hybrid. *Fertiliser*: N/P/K at 70/32/25 kg/ha. *Sprays*, Herbicides. £50, Fungicides, £41, Insecticides £13, and Others £27/ha
3. *Winter Versus Spring*: As little as 8,000 hectares of spring OSR are grown in the UK which is 2.5% of the entire crop. The financial reward is slim compared with other combinable crops.

Appendix KCC4

Natural England's "Guide to Assessing Development Proposals on Agricultural Land

GOV.UK

Home > Agricultural land: assess proposals for development

(https://www.gov.uk/government/organisations/natural-england)

Guidance

Guide to assessing development proposals on agricultural land

Updated 5 February 2021

Applies to England

Contents

This publication is available at https://www.gov.uk/government/publications/agricultural-land-assess-proposals-for-development/guide-to-assessing-development-proposals-on-agricultural-land

1. Policies to protect agricultural land and soil

Developers and local planning authorities (LPAs) should refer to the following government policies and legislation when considering development proposals that affect agricultural land and soils. They aim to protect:

- the best and most versatile (BMV) agricultural land from significant, inappropriate or unsustainable development proposals
- all soils by managing them in a sustainable way

Natural England uses these policies to advise on development proposals as a statutory consultee (https://www.gov.uk/guidance/consultation-and-pre-decision-matters#Statutory-consultees) in the planning process.

1.1 A Green Future: Our 25 Year Plan to improve the Environment 2018

A Green Future: Our 25 Year Plan to Improve the Environment (https://www.gov.uk/government/publications/25-year-environment-plan) sets out the government's 25-year plan to improve the health of the environment by using natural resources more sustainably and efficiently. It plans to:

- protect the best agricultural land
- put a value on soils as part of our natural capital
- manage soils in a sustainable way by 2030
- restore and protect peatland

1.2 National Planning Policy Framework (NPPF)

LPAs should use the NPPF to make decisions about the natural and local environment to:

- protect and enhance landscapes, biodiversity, geology and soils
- recognise soils as a natural capital asset that provide important ecosystem services
- consider the economic and other benefits of BMV agricultural land, and try to use areas of poorer quality land instead of higher quality land
- prevent soil, air, water, or noise pollution, or land instability from new and existing development

Read Chapter 15: Conserving and enhancing the natural environment (https://www.gov.uk/guidance/national-planning-policy-framework/15-conserving-and-enhancing-the-natural-environment) for full details.

1.3 Town and Country Planning (Development Management Procedure (England) Order) (DMPO) 2015

Planning authorities must consult Natural England on all non-agricultural applications that result in the loss of more than 20 hectares (ha) of BMV land if the land is not included in a development plan (https://www.gov.uk/guidance/national-planning-policy-framework/3-plan-making). For example, this includes the likely cumulative loss of BMV land from the proposed development if it's part of a phased development.

This is required by schedule 4(y) of the Order (http://www.legislation.gov.uk/uksi/2015/595/schedule/4/made).

1.4 Planning Practice Guidance for the Natural Environment

Paragraphs 001 and 002: Planning Practice Guidance for the Natural Environment (https://www.gov.uk/guidance/natural-environment#brownfield-land-soils-and-agricultural-land) explain why planning decisions should take account of the value of soils and agricultural land classification (ALC) to enable informed choices on the future use of agricultural land within the planning system.

2. LPAs: consult Natural England

You must consult Natural England for development proposals that are both:

- likely to cause the loss (or likely cumulative loss) of 20ha or more of BMV land
- not in accordance with an approved development plan

Natural England will advise you on the level of impact the proposal may have on BMV agricultural land. Natural England will take into account the type of development and its likely long-term effects.

Email consultations@naturalengland.org.uk or write to:

> Natural England consultation service
> Hornbeam House
> Electra Way
> Crewe Business Park
> Crewe
> Cheshire
> CW1 6GJ

3. LPAs: how to use agricultural land classification (ALC)

You can use ALC to help inform decisions on the appropriate sustainable development of land.

ALC uses a grading system to enable you to assess and compare the quality of agricultural land in England and Wales.

A combination of climate, topography and soil characteristics and their unique interaction determines the limitation and grade of the land. These affect the:

- range of crops that can be grown
- yield of crop
- consistency of yield
- cost of producing the crop

4. About ALC grades

ALC is graded from 1 to 5.

The highest grade goes to land that:

- gives a high yield or output
- has the widest range and versatility of use
- produces the most consistent yield
- requires less input

BMV agricultural land is graded 1 to 3a.

4.1 Grade 1 – excellent quality agricultural land

Land with no or very minor limitations. A very wide range of agricultural and horticultural crops can be grown and commonly includes:

- top fruit, for example tree fruit such as apples and pears
- soft fruit, such as raspberries and blackberries
- salad crops
- winter harvested vegetables

Yields are high and less variable than on land of lower quality.

4.2 Grade 2 – very good quality agricultural land

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

4.3 Grade 3 – good to moderate quality agricultural land

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

4.4 Subgrade 3a – good quality agricultural land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of crops including:

- cereals
- grass
- oilseed rape
- potatoes
- sugar beet
- less demanding horticultural crops

4.5 Subgrade 3b – moderate quality agricultural land

Land capable of producing moderate yields of a narrow range of crops, principally:

- cereals and grass
- lower yields of a wider range of crops
- high yields of grass which can be grazed or harvested over most of the year

4.6 Grade 4 – poor quality agricultural land

Land with severe limitations which significantly restrict the range of crops or level of yields. It is mainly suited to grass with occasional arable crops (for example cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties using the land. The grade also includes arable land that is very dry because of drought.

4.7 Grade 5 – very poor quality agricultural land

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

5. LPAs: carry out ALC assessments to support your planning decisions

For an overview of ALC use:

- 1:250,000 scale regional ALC maps (http://publications.naturalengland.org.uk/category/5954148537204736) (grade 3 land is not divided into subgrades 3a and 3b)
- 1:250,000 scale regional maps predicting the likelihood of BMV agricultural land (http://publications.naturalengland.org.uk/category/5208993007403008)

These maps are not at a scale suitable or accurate for assessment of individual fields or sites.

You can assess if a development proposal is likely to affect BMV agricultural land by using the post 1988 ALC Magic map (http://magic.defra.gov.uk/MagicMap.aspx?chosenLayers=dudleystampIndex,backdropDIndex,backdropIndex,europeIndex,vmlBWIndex,25kBWIndex,50kBWIndex,250kBWIndex,miniscaleBWIndex,baseIndex&box=449447:459357:467834:470294&useDefaultbackgroundMapping=false) and detailed site survey reports (http://publications.naturalengland.org.uk/category/6249382855835648).

If no site survey reports are available, a new detailed survey may be necessary.

6. Use ALC to support your planning decisions

Use ALC survey data to assess the loss of land or quality of land from a proposed development. You should take account of smaller losses (under 20ha) if they're significant when making your decision. Your decision should avoid unnecessary loss of BMV land.

6.1 Protect soil

You should make sure development proposals include plans to:

- manage soils in a sustainable way during construction (https://www.gov.uk/government/publications/code-of-practice-for-the-sustainable-use-of-soils-on-construction-sites)

- avoid peat extraction
- protect soils from contamination
- reclaim land after mineral working or landfilling (https://www.gov.uk/government/publications/reclaim-minerals-extraction-and-landfill-sites-to-agriculture)

6.2 Carry out new surveys

If there's not enough information from previous data, you may need to have a new field survey to plan for development or to inform a planning decision. You should use soil scientists or experienced soil specialists to carry out new surveys. They should be:

- members of the British Society of Soil Science, the British Institute of Agricultural Consultants or similar professional body
- knowledgeable about the ALC 1988 guidelines (http://publications.naturalengland.org.uk/publication/6257050620264448)
- experienced in soil description and ALC assessments

6.3 Survey requirements

For a detailed ALC assessment, a soil specialist should normally make boreholes:

- every hectare on a regular grid on agricultural land in the proposed development area
- up to 1.2m deep using a hand-held auger

They should:

- dig small inspection pits by hand to a minimum depth of 1m to add supporting evidence to the borehole data
- dig pits where there's a change in main soil type and ALC grade to provide a good depiction of the site
- combine the survey results with local climate and site data to plot on an Ordnance Survey (OS) base map
- use a base map at an appropriate scale for detailed work, such as 1:10,000 scale

7. Developers: check if your proposal affects agricultural land

Use the post 1988 ALC Magic map (http://magic.defra.gov.uk/MagicMap.aspx?chosenLayers=dudleystampIndex,backdropDIndex,backdropIndex,europeIndex,vmlBWIndex,25kBWIndex,50kBWIndex,250kBWIndex,miniscaleBWIndex,baseIndex&box=449447:459357:467834:470294&useDefaultbackgroundMapping=false) and detailed site survey reports (http://publications.naturalengland.org.uk/category/6249382855835648) to help you assess whether a development proposal is likely to affect BMV agricultural land. If no suitable data exists, you may need to carry out a detailed survey to support your planning application.

7.1 Free and chargeable advice

Natural England offers advice for proposals. Some initial advice is free. More detailed advice is chargeable (https://www.gov.uk/guidance/developers-get-environmental-advice-on-your-planning-proposals#when-you-can-pay-for-agency-advice), for example if your proposal is 20ha or more and requires more detailed advice.

Email: consultations@naturalengland.org.uk

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Plan KCC798/01

Auger Point Plan

KEY

- ● Auger sample location
- ○ Topsoil sample
- ■ Soil Pit

PLAN	**KCC3798/01**		
TITLE	**Auger Points Plan**		
SITE	Land off Ratby Lane, Markfield		
CLIENT	Taylor Wimpey Strategic Land		
NUMBER	**KCC3798/01 12/24hr**		
DATE	December 2024	**SCALE**	NTS

KERNON COUNTRYSIDE CONSULTANTS LTD
GREENACRES BARN, PURTON STOKE, SWINDON,
WILTSHIRE SN5 4LL
Tel 01793 771 333 Email: info@kernon.co.uk

Plan KCC3798/02

Agricultural Land Classification Plan

KEY		Ha	%	PLAN	KCC3798/02		
	Grade 1			TITLE	Agricultural Land Classification Plan		
	Grade 2			SITE	Land off Ratby Lane, Markfield		
	Grade 3a	5.2	96	CLIENT	Taylor Wimpley Strategic Land		
	Grade 3b			NUMBER	KCC3798/02 12/24hr		
	Grade 4			DATE	December 2024	SCALE	NTS
	Grade 5			KERNON COUNTRYSIDE CONSULTANTS LTD GREENACRES BARN, PURTON STOKE, SWINDON, WILTSHIRE, SN5 4LL Tel 01793 771 333 Email: info@kernon.co.uk This plan is reproduced from the Ordnance Survey under copyright license 100015226		
	Non-agricultural						
	Urban						
	Not surveyed	0.2	4.0				

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