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Agricultural Land Classification  
and Soil Resources

**NG 3162 Buckden, Cambs**

## AGRICULTURAL LAND CLASSIFICATION AND SOIL RESOURCES

NG3162 BUCKDEN, CAMBRIDGESHIRE

### 1. INTRODUCTION

- 1.1 A detailed Agricultural Land Classification (ALC) and Soil Resources survey of this 12.4 hectare site was made during April 1989.
- 1.2 The Agricultural Land Classification provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. The limitations can operate in one or more of four principal ways: they may affect the range of crops which can be grown, the level of yield, the consistency of yield and the cost of obtaining it. The classification system gives considerable weight to flexibility of cropping, whether actual or potential, but the ability of some land to produce consistently high yields of a somewhat narrower range of crops is also taken into account.
- 1.3 The principal physical factors influencing agricultural production are climate, site and soil. The main climatic factors which are taken into account are temperature and rainfall, although account is also taken of exposure, aspect and frost risk. The site factors used in the classification system are gradient, micro relief and flood risk. Soil characteristics of particular importance are texture, structure, depth and stoniness. In some situations chemical properties may also influence the long term potential of land and are taken into account.
- 1.4 These factors result in varying degrees of constraint on agricultural production. They can act either separately or in combination, the most important interactive limitations being soil wetness and droughtiness. The grade or subgrade of land is determined by the most limiting factor present. Five grades of land are recognised ranging from Grade 1 land of excellent quality to Grade 5 land of very poor quality. Grade 3, which constitutes about half of the agricultural land in England and Wales is divided into two subgrades designated 3a and 3b.
- 1.5 Details of the Agricultural Land Classification (ALC) System are contained in MAFF's Revised guidelines and criteria for grading the

quality of agricultural land. Descriptions of the ALC grades and subgrades are provided in Appendix 2.

## 2. BACKGROUND TO THE SITE

- 2.1 On the Ministry's published 1:63360 scale provisional ALC map (Sheet No 134) (MAFF, 1969) the site is graded 3. For detailed site-specific appraisals however, these maps are inappropriate as they were initially surveyed at a reconnaissance level, for strategic planning purposes, and often do not show smaller areas (ie less than 80 hectares) of individual ALC grades.
- 2.2 The site comprises one enclosure and typical cropping includes cereals and oilseed rape.
- 2.3 A total of 30 soil inspections were made over the site using a hand held 125 cm Dutch soil auger. These inspections were supplemented by observations from 4 soil pits.

## 3. PHYSICAL FACTORS AFFECTING LAND QUALITY

### Climate

- 3.1 Site specific climate data has been obtained by interpolating information contained in the 5 km grid dataset produced by the Meteorological Office, (Met Office, 1989).
- 3.2 The annual average rainfall is approximately 560 mm (22 inches) which is low by national standards. Soils are likely to be at field capacity for a relatively short period of approximately 102 days. During this time the workability of the land is not likely to be greatly impaired due to the relatively free-draining nature of the gravel substrate.

3.3 The accumulated temperature for this area is approximately 1455 degrees celsius. This parameter indicates the cumulative build up of warmth available for crop growth, and has an influence on the development of soil moisture deficits (SMD)\* and susceptibility to drought; the soil moisture deficits for potatoes and wheat are 116 mm and 120 mm respectively.

3.4 The site is neither particularly exposed, or frost prone.

3.5 There is no overall climatic limitation to the agricultural use of this land, although the soils are susceptible to drought.

#### Altitude and Relief

3.6 The land lies fairly level across the site ranging in altitude from 13 to 15 m AOD. Gradient and altitude do not constitute limitations to the ALC grade.

#### Geology and Soils

3.7 The published 1:50,000 scale geology map Sheet No 187 (Geol Surv 1975) and the Institute of Geological Sciences 1:25,000 scale Mineral Assessment sheet TL16 show the site to comprise mainly first and second terrace gravels with a narrow deposit of alluvium outcropping along the eastern boundary of the site. Both of these deposits overlie a bedrock of Oxford Clay at depth (58-69 m).

\* SMD represents the balance between rainfall and potential evapotranspiration occurring during the growing season. For ALC purposes the soil moisture deficits developing under a winter wheat and maincrop potato cover are considered. These 'reference' crops have been selected because they are widely grown, and in terms of their susceptibility to drought, are representative of a wide range of crops.

3.8 The Soil Survey of England and Wales have mapped the soils in the Buckden area at a reconnaissance scale of 1:250,000. This map, entitled "The Soils of Eastern England", shows the occurrence of the Sutton 1 Association (\*1) within the survey area. During this survey a more detailed inspection of the soils was carried out.

Three main soil types occur over the site.

#### 3.8.1 Soil Type A (refer Appendix 1 and Map 1)

These soils cover the majority of the site. They typically comprise slightly or moderately droughty, very slightly stony medium clay loam or occasionally sandy clay loam topsoils over very slightly stony heavy clay loam or sandy clay loam upper subsoils. At depth these soils typically merge into slightly or moderately stony\*\* sandy clay loams (or occasionally loamy sand or sands) over gravelly material.

#### 3.8.2 Soil Type B (refer Appendix 1 and Map 1)

These soils comprise two small areas at the south western and north eastern edges of the site. They typically comprise slightly or moderately droughty sandy loam or occasionally medium clay loam topsoils over slightly to moderately stony sandy clay loam or sandy loam upper subsoils. At depth subsoils generally comprise moderately stony sandy clay loams or loamy sands which overlie gravelly material. Topsoil stone ranges from 5-10% small and medium subangular flints.

#### 3.8.3 Soil Type C (refer Appendix 1 and Map 1)

These soils cover a small area at the eastern end of the site. They generally comprise moderately droughty heavy clay loam topsoils over very slightly or slightly stony medium clays which merge into moderately stony sandy clay loams at depth. Below this these soils overlie gravelly material which typically comprises moderately or very stony\*\* sand or occasionally sandy clay loam. Topsoil stone ranges from 3-5% small and medium subangular flints.

(\*1) Sutton 1 Association: Well drained fine and coarse loamy soils locally calcareous and in places shallow over limestone gravel.

\*\* Stony: these flints may be coated with calcium carbonate deposits.

3.8.4 Soils are typically non calcareous, except at depth in soil types A and C where calcium carbonate coating on flints or the presence of limestone fragments make the soil calcareous.

3.8.5 Field pH measurements range from 6.5 to 7.0 and soil profile pit observations indicate that soils are porous and relatively free draining. (ie wetness class I or II).

### 3.9 Flooding

Occasionally, a small area along the eastern edge of the site is prone to flooding by the Diddington Brook. However, in this area, this was not considered to be a significant limitation to the ALC grade.

## 4. AGRICULTURAL LAND CLASSIFICATION (refer to Map 2)

4.1 A breakdown of the ALC grades in hectares and % terms is provided below.

Agricultural Land Classification		
Grade	ha	%
2	2.1	17
3a	<u>10.3</u>	<u>83</u>
Total	12.4	100

Note : The ALC grading in this report and on the accompanying maps relates to the long term potential of the land without irrigation.

4.2 The principal limitation to land quality is droughtiness. This was assessed using the Revised guidelines and criteria for grading agricultural land (MAFF 1989). Crop adjusted available water capacity (AP)\*\*\* values were calculated for each sample profile, using maincrop potatoes and winter wheat as reference crops, characteristic of a broad range of arable and horticultural crops.

\*\*\* AP is a measure of the quantity of water held in the soil profile which can be taken up by a specified crop. The water storage capacity of soil is influenced by texture, structure, organic matter content and stone content. Where rooting is impeded for chemical or physical reasons, this is also taken into account.

These AP values were then offset against the crop adjusted soil moisture deficit values described in para 3.3 to obtain moisture balance figures for wheat and potatoes. These moisture balance figures indicate the relative degree of the droughtiness limitation and relate directly to ALC grade. A description of the type of land occurring in each grade is provided below :

#### 4.3 Grade 2

A small area towards the western end of the site has been graded 2. The land is associated with soil types A and B described above in paragraphs 3.8.1 and 3.8.2 respectively. The soils are slightly droughty and are well drained. The occurrence of many flints at depth in the soil profiles has a slight limiting <sup>u</sup>effect on the available moisture capacity of these soils. As a result slight droughtiness limitations restrict this land to grade 2.

#### 4.4 Subgrade 3a

The remaining land has been graded 3a. This land is associated with moderately droughty variants of the three soil types A, B and C described above in paragraphs 3.8.1, 3.8.2 and 3.8.3 respectively. The common occurrence of flints throughout these soil profiles has a moderate limiting effect on the water holding capacity of these soils. As a result droughtiness is the major limitation to the ALC grade.

April 1989

Resource Planning Group  
Cambridge RO



## Appendix 1

### DESCRIPTION OF SOILS

#### SOIL TYPE A (Auger borings and Soil Pits 2 and 4)

Topsoil	texture	:	medium clay loam or occasionally sandy clay loam
	colour	:	10 yr 3/3
	stone	:	very slightly stony, small subangular flints
	depth	:	27/30 cm
Upper Subsoil	texture	:	heavy clay loam or sandy clay loam
	colour	:	10 yr 5/4
	stone	:	very slightly stony, small subangular flints
	structure	:	moderately developed coarse angular blocky which break into medium angular blocks; friable consistence.
	mottles depth	:	none or few faint ochreous - 10 yr 5/8. 50/65 cm.
Lower Subsoil	texture	:	sandy clay loam (or occasionally loamy sand or sand).
	colour	:	10 yr 5/6
	mottles	:	none
	stone	:	slightly to moderately stony** (small and medium flints)
	structure	:	as above
	depth	:	80/90 cm
Gravelly material	:	moderately to very stony (small and medium flints) sand, loamy sand or sandy clay loam.	

#### SOIL TYPE B (Auger Borings and Pit 1)

Topsoil	texture	:	sandy loam or occasionally medium clay loam
	colour	:	10 yr 3/3
	stone	:	ranges from 5-10% small and medium subangular flints.
	depth	:	26/30 cm
Upper Subsoil	texture	:	sandy clay loam or sandy loam.
	colour	:	7.5 yr 4/6.
	stone	:	slightly to moderately stony, comprising mainly small flints.
	structure	:	weakly developed coarse subangular blocky - friable consistence.
	depth	:	55/65 cm

\*\* Stony: these flints may be coated with calcium carbonate deposits.

Lower  
Subsoil texture : sandy clay loam or loamy sand  
colour : 7.5 yr 4/6  
stone : moderately stony  
depth : 80/90 cm

Gravelly material : moderately to very stony sandy clay loam or sand.

**SOIL TYPE C (Auger borings and Pit 3)**

Topsoil texture : heavy clay loam  
colour : 10 yr 4/2  
stone : 3-5% small and medium subangular flints.  
depth : 30 cm

Upper  
Subsoil texture : medium clay  
colour : 10 yr 5/4  
mottles : few faint ochreous. Colour: 7.5 yr 5/8.  
stone : very slightly to slightly stony  
structure : moderately developed coarse angular blocky, firm  
consistence.  
depth : 55/60 cm

Lower  
Subsoil texture : sandy clay loam.  
colour : 7.5 yr 4/6  
mottles : few distinct ochreous  
stone : moderately stony, small and medium flints.  
structure : weakly developed coarse angular blocky, friable  
consistence.  
depth : 65/70 cm

Gravelly material : moderately or very stony\*\* sand or occasionally  
sandy clay loam. (Stones are mainly very small and  
small ie, less than 2 cm in size).

Very slightly stony	1-5%
Slightly stony	6-15%
Moderately stony	16-35%
Very stony	36-70%

\*\* Stony: These flints may be coated with calcium carbonate deposits.

## Appendix 2

### **Grade 1 - excellent quality agricultural land**

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

### **Grade 2 - very good quality agricultural land**

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

### **Grade 3 - good to moderate quality agricultural land**

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

#### **Subgrade 3a - good quality agricultural land**

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

#### **Subgrade 3a - moderate quality agricultural land**

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

### **Grade 4 - poor quality agricultural land**

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

### **Grade 5 - very poor quality agricultural land**

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

## References

GEOLOGICAL SURVEY OF ENGLAND AND WALES 1975 Drift edition geology map No. 187, Scale 1:50,000.

INSTITUTE OF GEOLOGICAL SCIENCES 1981 'Sand and Gravel resources of the country around Huntingdon and St Ives, Cambridgeshire'. Sheet TL16. Mineral Assessment Report 54, HMSO, London.

MAFF, 1969 Agricultural Land Classification Map Sheet 134, 1:63360.

MAFF, 1988 Agricultural Land Classification of England and Wales. (Revised guidelines and criteria for grading the quality of agricultural land) Alnwick.

METEOROLOGICAL OFFICE (1989) Published rainfall data extracted from ALC agroclimatic dataset, compiled by Meteorological Office.

SOIL SURVEY OF ENGLAND AND WALES 1983 'The Soils of Eastern England' Sheet 4 1:250,000 scale.

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DESCRIPTION OF AUGER BORINGS

1. Level ground: winter cereals  
0-35 10 YR 3/3 (s) MCL  
v. sli. stony  
35-50 10 YR 5/4 SCL  
v. sli. stony  
50-60 7.5 YR 5/4 (s) HCL  
few dist ochreous streaks 7.5 YR 5/8  
60-75 7.5 YR 5/4 C  
common dist ochreous streaks 5 YR 5/8  
sli. stony  
75-120 sli. stony 7.5 YR 5/4 SCL  
mod. stony 80+  
v. stony 95+
  
2. Level ground: winter cereals  
0-30 10 YR 3/3 SCL  
v. sli. stony  
30-40 10 YR 5/4 SCL  
v. sli. stony  
40-60 7.5 YR 4/6 HCL  
few faint ochreous mottles 7.5 YR 5/6  
mottles becoming common 50+  
60-80 7.5 YR 4/6 (s) C  
Common faint ochreous mottles 7.5 YR 5/6  
common Mn conc  
80-120 10 YR 5/6 (s) C  
common faint ochreous mottles 7.5 YR 5/6  
few pale streaks 10 YR 6/4
  
3. Level ground: winter cereals  
0-30 10 YR 3/3 SCL  
v. sli. stony  
30-45 10 YR 5/4 SCL  
sli. stony  
calc.  
45-65 10 YR 5/4 SCL  
mod. stony  
v. calc  
65-80 10 YR 5/4 Lms  
sli. stony  
80-120 10 YR 5/4 ms  
v. stony  
v. calc.
  
4. Level ground: winter cereals  
0-28 10 YR 3/3 MCL  
v. sli. stony  
28-40 10 YR 5/4 HCL  
Few faint ochreous mottles 7.5 YR 4/4  
40-50 10 YR 6/6 SCL  
mod. stony  
calc.  
50-60 10 YR 6/6 Lms  
mod. stony  
calc.  
60-80 10 YR 6/6 ms  
some Lms pockets

- mod. stony
- 80-120      10 YR 6/6 Lms  
v. stony
5.    Level ground: winter cereals
- 0-30        10 YR 4/2 MCL  
v. sli. stony  
non-calc
- 30-60       10 YR 5/4 SCL  
calc.  
sli. stony  
mod. stony 45+
- 60-120      10 YR 5/4 ms  
v. stony  
calc.
6.    Level ground: winter cereals
- 0-30        10 YR 3/3 (s) MCL  
v. sli stony
- 30-55       10 YR 5/4 (s) HCL  
common dist. ochreous mottles 7.5 YR 5/8 + 7.5 YR 4/4  
common Mn conc  
stoneless
- 55-65       10 YR 5/4 to 5/6 HCL  
common dist. ochreous mottles 7.5 YR 5/8  
common Mn conc  
stoneless  
v. sli. calc.
- 65-80       10 YR 5/8 HCL  
Few dist ochreous mottles 7.5 YR 5/8  
common Mn conc.  
stoneless
- 80-90       10 YR 5/8 (s) CL  
mod. stony
- 90-105      10 YR 5/8 SCL  
mod. stony
7.    Level ground: winter cereals
- 0-25        10 YR 3/3 (s) MCL  
v. sli. stony
- 25-65       10 YR 5/4 (s) MCL  
becoming HCL 30+  
v. sli. stony  
non - v. sli. calc
- 65-80       10 YR 5/4 SCL (moist)  
v. stony
- 80-120      10 YR 5/4 SCL (wet)  
v. stony
8.    Level ground: winter cereals
- 0-30        10 YR 3/3 MCL  
v. sli. stony
- 30-65       10 YR 5/4 HCL  
few dist ochreous mottles 10 YR 5/6 50+  
few Mn conc  
becoming (s) MC 60+
- 65-80       10 YR 5/4 SCL  
sli. stony
- 80-95       10 YR 5/4 MSL

- mod. stony  
 95-120 10 YR 5/4 ms  
 v. stony
9. Level ground: winter cereals  
 0-30 10 YR 4/2 MCL  
 non-calc  
 v. sli. stony  
 30-50 10 YR 5/4 HCL  
 v. sli. stony  
 50-70 10 YR 5/4 SCL  
 mod. stony  
 common Mn conc. becoming many 60+  
 70-120 10 YR 5/4 MS  
 v. stony
10. Level ground: winter cereals  
 0-30 10 YR 3/3 MSL  
 v. sli. stony  
 30-35 7.5 YR 4/6 SCL  
 sli. stony  
 35-120 7.5 YR 4/6 SCL  
 v. stony
11. Level ground: winter cereals  
 0-30 10 YR 3/3 MCL  
 v. sli. stony  
 30-75 10 YR 5/4 SCL  
 v. sli. stony  
 75-90 10 YR 5/4 SCL  
 few dist ochreous streaks 7.5 YR 5/8  
 95-120 10 YR 5/4 SC  
 mod. stony
12. Level ground: winter cereals  
 0-30 10 YR 3/3 MCL  
 v. sli. stony  
 non-calc  
 30-40 10 YR 5/4 (s) CL  
 common dist ochreous mottles 7.5 YR 5/8  
 common Mn conc  
 40-55 10 YR 5/8 SCL  
 few dist ochreous mottles 7.5 YR 5/8  
 calc  
 55-80 10 YR 6/6 ms  
 some Lms lenses  
 v. calc  
 80-90 10 YR 6/6 ms  
 v. stony  
 90-120 10 YR 6/4ms  
 mod. stony
13. Level ground: winter cereals  
 0-30 10 YR 3/3 wbms1  
 v. sli. stony  
 30-50 10 YR 5/4 (s) HCL  
 v. sli. stony  
 few dist ochreous mottles 40+  
 sli. calc  
 50-80 10 YR 6/8 SCL

- |        |  |               |
|--------|--|---------------|
|        |  | mod. stony    |
|        |  | v. calc.      |
| 80-90  |  | 10 YR 6/4 LMS |
|        |  | mod. stony    |
|        |  | v. calc.      |
| 90-120 |  | 10 YR 6/4 ms  |
|        |  | mod. stony    |
|        |  | v. calc.      |
14. Level ground: winter cereals
- |        |  |  |
|--------|--|--|
| 0-35   |  | 10 YR 4/2 mc                           |
|        |  | v. sli. stony                          |
|        |  | non-calc.                              |
| 35-60  |  | 10 YR 5/3 mc                           |
|        |  | common dist ochreous streaks 10 YR 5/6 |
|        |  | calc.                                  |
| 60-80  |  | 10 YR 5/4 SCL                          |
|        |  | sli. stony                             |
|        |  | mod. stony 70+                         |
| 80-120 |  | 10 YR 5/4 ms                           |
|        |  | v. stony                               |
15. Level ground: winter cereals
- |        |  |                  |
|--------|--|------------------|
| 0.25   |  | 10 YR 3/3 MSL    |
|        |  | v. sli. stony    |
| 25-60  |  | 7.5 YR 4/4 wbMSL |
|        |  | sli. stony       |
| 60-65  |  | 7.5 YR 4/4 MSL   |
|        |  | mod. stony       |
| 65-70  |  | 7.5 YR 4/4 Lms   |
|        |  | mod. stony.      |
| 70-120 |  | 7.5 YR 4/4 ms.   |
|        |  | v. stony.        |
16. Level ground: winter cereals
- |        |  |               |
|--------|--|---------------|
| 0-25   |  | 10 YR 3/3 MCL |
| 25-50  |  | 10 YR 5/4 SCL |
|        |  | mod. stony    |
|        |  | calc.         |
| 50-70  |  | 10 YR 5/4 Lms |
|        |  | mod. stony    |
| 70-80  |  | 10 YR 5/4 ms  |
|        |  | mod. stony    |
| 80-120 |  | 10 YR 5/4 ms  |
|        |  | v. stony      |
17. Level ground: winter cereals
- |        |  |                |
|--------|--|----------------|
| 0-30   |  | 10 YR 3/3 MSL  |
|        |  | v. sli. stony  |
| 30-50  |  | 7.5 YR 5/4 MSL |
|        |  | v. sli. stony  |
| 50-55  |  | 7.5 YR 5/4 SCL |
|        |  | v. sli. stony  |
| 55-90  |  | 7.5 YR 5/4 SCL |
|        |  | com CS grains  |
|        |  | mod. stony     |
| 90-120 |  | 7.5 YR 5/4 SCL |
|        |  | v. stony       |
18. Level ground: winter cereals



- 0-25 10 YR 3/3 wbMSL  
v. sli. stony
- 25-35 10 YR 5/4 wbMSL  
v. sli. stony  
sli. calc.
- 35-60 10 YR 5/4 SCL  
v. sli. stony  
calc.
- 60-90 10 YR 6/6 SCL (moist 70+)  
v. sli. stony  
calc.
- 90-120 10 YR 6/6 SCL (wet 90+)  
mod. stony  
calc.
19. Level ground: winter cereals
- 0-35 10 YR 3/3 MCL  
v. sli. stony  
non-calc.
- 35-55 10 YR 5/4 HCL  
non-calc.
- 55-70 10 YR 5/4 (s) HCL  
sli stony  
calc.
- 70-80 10 YR 6/6 SCL  
mod. stony  
calc.
- 80-90 10 YR 5/8 Lms  
stoneless  
calc.
- 90-120 10 YR 5/8 SCL  
v. stony  
v. calc.
20. Level ground: winter cereals
- 0-25 10 YR 3/3 MCL  
v. sli. stony  
non. calc.
- 25-55 10 YR 5/4 (s) HCL  
stoneless  
common Mn conc 50+
- 55-70 10 YR 5/4 SCL  
sli. stony  
common Mn conc
- 70-80 10 YR 5/4 SCL  
common faint ochreous mottles 10 YR 5/8  
few faint pale streaks 10 YR 5/3  
sli. stony
- 80-90 10 YR 6/4 Lms  
v. stony  
v. calc.
- 90-120 10 YR 6/4 ms  
very stony
21. Level ground: winter cereals
- 0-30 10 YR 4/2 HCL  
v. sli. stony
- 30-50 10 YR 5/4 HCL  
v. sli. calc.  
few ochreous mottles, 10 YR 5/6, 45+

- 50-85 10 YR 5/4 HCL  
sli. stony
- 85-95 10 YR 6/6 mc  
much weathered 1st 10 YR 8/2  
common ochreous streaks 10 YR 5/6
- 95-100 10 YR 6/6 SCL  
mod. stony
- 100-120 10 YR 6/6 ms  
v. stony
22. Level ground: winter cereals
- 0-25 10 YR 3/3 (s) MCL  
v. sli. stony  
non-calc
- 25-30 7.5 YR 4/6 wbMSL  
stoneless  
common faint ochreous mottles 7.5 YR 4/4, 45+
- 50-60 7.5 YR 4/6 SCL  
stoneless
- 60-70 7.5 YR 4/6 (s) C  
sli. stony
- 70-90 7.5 YR 4/6 SCL  
mod. stony  
calc.
- 90-120 7.5 YR 6/6 ms  
calc.
23. Level ground: winter cereals
- 0-25 10 YR 3/3 (s) MCL  
v. sli. stony
- 25-50 10 YR 4/4 SCL  
stoneless
- 50-60 7.5 YR 4/6 (s) CL  
stoneless
- 60-70 7.5 YR 4/6 SCL  
mod. stony
- 70-120 7.5 YR 4/6 SCL  
v. stony
24. Level ground: winter cereals
- 0-25 10 YR 3/3 MSL  
sli. stony
- 25-50 10 YR 4/3 SCL  
sli stony
- 50-60 7.5 YR 4/6 SCL  
mod. stony
- 60-75 7.5 YR 4/6 LMS  
v. sli. stony
- 75-120 7.5 YR 4/6 SCL  
mod. stony
25. Level ground: winter wheat
- 0-30 10 YR 3/3 MCL

- v. sli. stony  
non-calc.
- 30-40 10 YR 5/4 HCL  
non-calc
- 40-95 10 YR 5/4 mc  
few distinct ochreous streaks 65+ 7.5 YR 5/6
- 95-100 10 YR 5/4 SC  
sli stony
- 110-120 10 YR 5/4 SCL  
sli. stony  
v. calc.
26. Level ground: winter cereals
- 0-30 10 YR 4/2 MCL  
v. sli. stony  
non-calc
- 30-65 10 YR 5/4 SCL  
non-calc  
common ochreous streaks 40+ (7.5 YR 5/6)  
many ochreous streaks 50+
- 65-70 10 YR 5/4 MSL  
sli. stony
- 70-90 10 YR 5/4 MSL (moist 75+)  
mod. stony
- 90-100 10 YR 5/4 SCL (moist)  
mod. stony
- 100-120 10 YR 5/4 ms (wet)  
mod. stony
27. Level ground: winter cereals
- 0-30 10 YR 3/3 SCL  
v. sli. stony
- 30-53 10 YR 5/4 SCL  
non-calc
- 55-60 10 YR 5/4 SCL  
sli. stony
- 60-70 10 YR 5/4 MSL (moist)  
mod. stony
- 70-120 10 YR 5/4 ms (wet)  
v. stony
28. Level ground: winter cereals
- 0-30 10 YR 3/3 MCL  
v. sli. stony  
non-calc
- 30-60 10 YR 5/4 HCL  
few faint ochreous mottles 50+ (10 YR 5/8)
- 60-75 10 YR 5/4 SCL  
mod. stony
- 75-90 10 YR 6/6 SCL  
mod. stony  
v. sli. calc.
- 90-120 10 YR 6/6 ms  
some LMS pockets  
v. stony  
v. calc.
29. Level ground: winter cereals
- 0-30 10 YR 3/3 SCL

		v. sli. stony
30-50	10 YR 5/4 SCL	common dist ochreous mottles (5 YR 5/8) 45+
50-65	10 YR 5/4 SCL	sli. stony
		common Mn conc 55+
65-70	10 YR 5/4 Lms	
70-75	10 YR 5/4 Lms	
		mod. stony
75-120	10 YR 5/4 ms	
		v. stony
30. Level ground: winter cereals		
0-30	10 YR 4/2 HCL	
		v. sli. stony
		non-calc
		30-50
30-50	10 YR 5/4 (s)MC	common ochreous streaks, 10 YR 5/6
50-55	10 YR 5/4 (s) MC	
		sli. stony
55-70	10 YR 5/4 SCL	
		mod. stony
70-80	10 YR 5/4 SCL	
		mod. stony
80-90	10 YR 5/4 MSL	
		mod. stony
90-120	10 YR 5/4 ms	
		v. stony

Stone Content

Very slighty stony : 1-5%  
 Slightly stony : 6-15%  
 Moderately stony : 16-35%  
 Very stony : 36-70%

**LIST OF ABBREVIATIONS USED:**

C	Clay
MC	medium clay
MCL	medium clay loam
HCL	heavy Clay Loam
SCL	Sandy Clay Loam
SC	Sandy clay
LMS	Loamy medium sand
MS	medium sand
MSL	medium sandy loam
Mn	Manganese
conc	concretions
calc	calcareous
wb	well bodied
dist	distinct
v. sli.	very slightly
sli	slightly
mod.	moderately
v	very
lst	limestone
frags	fragments