A1

# East Hampshire Local Plan
# *Site 1091: Blanes Farm and* Cadnam Farm, Anstey, Alton
# Agricultural Land Classification, ALC Map and Report
# March 1995

# AGRICULTURAL LAND CLASSIFICATION REPORT

## EAST HAMPSHIRE LOCAL PLAN
## SITE 1091: BLANES FARM AND CADNAM FARM, ANSTEY, ALTON

### 1. Summary

1.1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land quality for a number of sites in the East Hampshire district of Hampshire. The work forms part of MAFF's statutory input to the East Hampshire Local Plan.

1.2 Site 1091 comprises 12.5 hectares of land to the north of Gilbert White Way and either side of Anstey Lane at Alton, east Hampshire. An Agricultural Land Classification (ALC) survey was carried out during March 1995. The survey was undertaken at a detailed level of approximately one boring per hectare. A total of 13 borings and two soil inspection pits were described in accordance with MAFF's revised guidelines and criteria for grading the quality of agricultural land (MAFF, 1988). These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose a long term limitation on its use for agriculture.

1.3 The work was carried out by members of the Resource Planning Team in the Guildford Statutory Group of ADAS.

1.4 At the time of the survey the majority of agricultural land was under permanent pasture, with oilseed rape in the extreme west of the site. Land mapped as Urban comprises a road and residential dwelling. Land marked as Non-agricultural consists of scrubby woodland, a roadside embankment and an area used for storing disused cars. The Agricultural Buildings shown are that of horse stables and farm barns.

1.5 The distribution of grades and subgrades is shown on the attached ALC map and the areas and extent are given in the table below. The map has been drawn at a scale of 1:10,000. It is accurate at this scale, but any enlargement would be misleading.

**Table 1 : Distribution of Grades and Subgrades**

| Grade | Area (ha) | % of Site | % of Agricultural Land |
|---|---|---|---|
| 3a | 11.1 | 88.8 | 100.0 (11.1 ha) |
| Urban | 0.2 | 1.6 | |
| Non-Agricultural | 0.5 | 4.0 | |
| Agricultural Buildings | 0.7 | 5.6 | |
| Total area of site | 12.5 | 100.0 | |

1.6 Appendix 1 gives a general description of the grades, subgrades and land use categories identified in the survey. The main classes are described in terms of the type of limitation that can occur, the typical cropping range and the expected level and consistency of yield.

1.7 All of the agricultural land surveyed has been classified as Subgrade 3a, good quality. The slightly higher land on the site is restricted by moderate soil droughtiness limitations. Shallow soil profiles over chalk interact with the relatively moist prevailing climate to reduce the amount of soil available water. Consequently this land may suffer from lowered levels and consistency of crop yields. Elsewhere, the land is restricted by soil workability limitations. Heavy textured topsoils interact with the local climatic conditions to increase the likelihood of structural damage to the topsoil through trafficking by machinery or livestock.

## 2. Climate

2.1 The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions.

2.2 The main parameters used in the assessment of an overall climatic limitation are average annual rainfall, as a measure of overall wetness, and accumulated temperature (degree days Jan-June), as a measure of the relative warmth of a locality.

2.3 A detailed assessment of the prevailing climate was made by interpolation from a 5km gridpoint dataset (Met. Office 1989). The details are given in the table below and these show that there is no overall climatic limitation affecting the site. However, climatic factors do interact with soil properties to influence soil wetness and droughtiness limitations. The crop adjusted soil moisture deficits are relatively low and the field capacity days are relatively high (in a regional context) due to the high altitude of this site. These climatic factors respectively decrease the likelihood of soil droughtiness limitations and increase that of soil wetness restrictions.

**Table 2 : Climatic Interpolations**

| Grid Reference | SU 717 408 | SU 721 410 |
|---|---|---|
| Altitude (m) | 150 | 125 |
| Accumulated Temperature (degree days, Jan-June) | 1366 | 1395 |
| Average Annual Rainfall (mm) | 870 | 845 |
| Field Capacity (days) | 189 | 185 |
| Moisture Deficit, Wheat (mm) | 90 | 94 |
| Moisture Deficit, Potatoes (mm) | 78 | 83 |
| Overall Climatic Grade | 1 | 1 |

2.4 No local climatic factors such as exposure or frost risk are believed to affect the site.

## 3. Relief

3.1 The lowest lying land occurs in the south of the site, either side of Anstey lane. This land is relatively flat and lies at approximately 130 to 135 m AOD. The site gently rises to the north-east and north-west, with this higher land lying at approximately 140 to 150 m AOD. Nowhere on the site does gradient or relief impose any limitation to the agricultural land quality.

## 4. Geology and Soil

4.1 The relevant geological sheet (BGS, 1975) shows the entire site to be underlain by Upper Chalk.

4.2 The published Soil Survey map (SSEW, 1983) shows soils of the Coombe 1 Association across the entire site. These soils are described as 'well drained calcareous fine silty soils, deep in valley bottoms, shallow to chalk on valley sides in places' (SSEW, 1983).

4.3 Detailed field examination found well drained silty soils overlying chalk at varying depths.

## 5. Agricultural Land Classification

5.1 Table 1 provides the details of the area measurements for each grade and the distribution of each grade is shown on the attached ALC map.

5.2 The location of the soil observation points are shown on the attached sample point map.

### Subgrade 3a

5.3 All of the agricultural land surveyed has been classified as Subgrade 3a, good quality. On the slightly higher land on the site, where the soil profiles are shallow over chalk, soil droughtiness is the principal limitation. Topsoils comprise calcareous medium silty clay loams which tend to be very slightly or slightly stony, containing 3-10% total flints by volume. These either directly overlie chalk or shallow upper subsoils. These upper subsoils comprise medium or heavy silty clay loams which are slightly to moderately stony, containing about 10-25% total chalk by volume. These slightly deeper profiles pass into chalk at approximately 40 cm depth. All of these profiles are well drained (Wetness Class I). As observed from Pit 2, which represents such profiles, the chalk at this site was found to be relatively soft and blocky, and to contain approximately 2% total flints by volume. Roots extended a further 30 cm into the chalk. The interaction between these soil properties and the prevailing local climate results in the amount of soil available water being slightly restricted. Although the soils are shallow the risk of soil droughtiness is partially offset by the relatively moist climate (in regional terms) at this locality. Consequently this land is classified as Subgrade 3a. Soil droughtiness may cause crops to suffer drought stress and thereby adversely affect yield potential.

5.4 The flatter lower lying land on the site is restricted by soil workability limitations. Non-calcareous heavy clay loam and heavy silty clay loam topsoils overlie similarly textured or clay upper subsoils. These pass into clay lower subsoils at approximately 40 to 55 cm depth. The topsoils tend to be slightly stony, containing 2-5% flints >2cm and 5-15% total flints by volume. Subsoils are generally slightly to moderately stony, containing 10-35% total flints by volume. The flinty nature of these soils meant that many of these profiles proved impenetrable to a soil auger between 50 and 80 cm depth. Pit 1, which typifies such profiles, showed these soils to be well drained (Wetness Class I) because of underlying chalk at depth. However, the interaction between the heavy textured topsoils and the relatively moist prevailing local climate limits the workability of this land, placing it into Subgrade 3a. The topsoils will be susceptible to structural damage through trafficking by machinery or poaching by grazing livestock for part of the year.

ADAS Ref: 1502/005/95
MAFF Ref: EL 15/468

Resource Planning Team
Guildford Statutory Group
ADAS Reading

## SOURCES OF REFERENCE

British Geological Survey (1975), Sheet No. 300, Alresford, 1:50,000 Series (drift edition).

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

Meteorological Office (1989), Climatological Data for Agricultural Land Classification.

Soil Survey of England and Wales (1983), Sheet 6, Soils of South East England, 1:250,000 and accompanying legend.

# APPENDIX I

## DESCRIPTION OF THE GRADES AND SUBGRADES

**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 or horticultural crops can usually be grown but on some land of this 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 land.

**Grade 3 : Good to Moderate Quality Land**

Land with moderate limitations which affect the choice of crops, the 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 3b : Moderate Quality Agricultural Land**

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

**Grade 4 : Poor Quality Agricultural Land**

Land with severe limitations which significantly restrict the range of crops and/or the 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 moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

**Grade 5 : Very Poor Quality Agricultural Land**

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

**Urban**

Built-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religous buildings, cemetries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

**Non-agricultural**

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

**Woodland**

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm woodland.

**Agricultural Buildings**

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg. polythene tunnels erected for lambing) may be ignored.

**Open Water**

Includes lakes, ponds and rivers as map scale permits.

**Land Not Surveyed**

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above, eg. buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will be shown.

# APPENDIX II

## FIELD ASSESSMENT OF SOIL WETNESS CLASS

### SOIL WETNESS CLASSIFICATION

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile. Six soil wetness classes are identified and are defined in the table below.

**Definition of Soil Wetness Classes**

| Wetness Class | Duration of Waterlogging[1] |
|---|---|
| I | The soil profile is not wet within 70 cm depth for more than 30 days in most years.[2] |
| II | The soil profile is wet within 70 cm depth for 31-90 days in most years **or**, if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 90 days, but only wet within 40 cm depth for 30 days in most years. |
| III | The soil profile is wet within 70 cm depth for 91-180 days in most years **or**, if there is no slowly permeable layer present within 80 cm depth, it is wet within 70 cm for more than 180 days, but only wet within 40 cm depth for between 31-90 days in most years. |
| IV | The soil profile is wet within 70 cm depth for more than 180 days but not wet within 40 cm depth for more than 210 days in most years **or**, if there is no slowly permeable layer present within 80 cm depth, it is wet within 40 cm depth for 91-210 days in most years. |
| V | The soil profile is wet within 40 cm depth for 211-335 days in most years. |
| VI | The soil profile is wet within 40 cm depth for more than 335 days in most years. |

Soils can be allocated to a wetness class on the basis of quantitative data recorded over a period of many years or by the interpretation of soil profile characteristics, site and climatic factors. Adequate quantitative data will rarely be available for ALC surveys and therefore the interpretative method of field assessment is used to identify soil wetness class in the field. The method adopted here is common to ADAS and the SSLRC.

[1]The number of days specified is not necessarily a continuous period.
[2]'In most years' is defined as more than 10 out of 20 years.

# APPENDIX III

## SOIL PIT AND SOIL BORING DESCRIPTIONS

**Contents :**

# SOIL PROFILE DESCRIPTIONS : EXPLANATORY NOTE

Soil pit and auger boring information collected during ALC fieldwork is held on a computer database. This uses notations and abbreviations as set out below.

**Boring Header Information**

1. **GRID REF** : national 100 km grid square and 8 figure grid reference.

2. **USE** : Land use at the time of survey. The following abbreviations are used.

| | | | | | |
|---|---|---|---|---|---|
| **ARA** : | Arable | **WHT** : | Wheat | **BAR** : | Barley |
| **CER** : | Cereals | **OAT** : | Oats | **MZE** : | Maize |
| **OSR** : | Oilseed rape | **BEN** : | Field Beans | **BRA** : | Brassicae |
| **POT** : | Potatoes | **SBT** : | Sugar Beet | **FCD** : | Fodder Crops |
| **LIN** : | Linseed | **FRT** : | Soft and Top Fruit | **FLW** : | Fallow |
| **PGR** : | Permanent Pasture | **LEY** : | Ley Grass | **RGR** : | Rough Grazing |
| **SCR** : | Scrub | **CFW** : | Coniferous Woodland | **DCW** : | Deciduous Wood |
| **HTH** : | Heathland | **BOG** : | Bog or Marsh | **FLW** : | Fallow |
| **PLO** : | Ploughed | **SAS** : | Set aside | **OTH** : | Other |
| **HRT** : | Horticultural Crops | | | | |

3. **GRDNT** : Gradient as estimated or measured by a hand-held optical clinometer.

4. **GLEY/SPL** : Depth in centimetres (cm) to gleying and/or slowly permeable layers.

5. **AP (WHEAT/POTS)** : Crop-adjusted available water capacity.

6. **MB (WHEAT/POTS)** : Moisture Balance. (Crop adjusted AP - crop adjusted MD)

7. **DRT** : Best grade according to soil droughtiness.

8. If any of the following factors are considered significant, 'Y' will be entered in the relevant column.

| | | | | | |
|---|---|---|---|---|---|
| **MREL** : | Microrelief limitation | **FLOOD** : | Flood risk | **EROSN** : | Soil erosion risk |
| **EXP** : | Exposure limitation | **FROST** : | Frost prone | **DIST** : | Disturbed land |
| **CHEM** : | Chemical limitation | | | | |

9. **LIMIT** : The main limitation to land quality. The following abbreviations are used.

| | | | | | |
|---|---|---|---|---|---|
| **OC** : | Overall Climate | **AE** : | Aspect | **EX** : | Exposure |
| **FR** : | Frost Risk | **GR** : | Gradient | **MR** : | Microrelief |
| **FL** : | Flood Risk | **TX** : | Topsoil Texture | **DP** : | Soil Depth |
| **CH** : | Chemical | **WE** : | Wetness | **WK** : | Workability |
| **DR** : | Drought | **ER** : | Erosion Risk | **WD** : | Soil Wetness/Droughtiness |
| **ST** : | Topsoil Stoniness | | | | |

**Soil Pits and Auger Borings**

1. **TEXTURE** : soil texture classes are denoted by the following abbreviations.

| | | | | | |
|---|---|---|---|---|---|
| **S** : | Sand | **LS** : | Loamy Sand | **SL** : | Sandy Loam |
| **SZL** : | Sandy Silt Loam | **CL** : | Clay Loam | **ZCL** : | Silty Clay Loam |
| **ZL** : | Silt Loam | **SCL** : | Sandy Clay Loam | **C** : | Clay |
| **SC** : | Sandy Clay | **ZC** : | Silty Clay | **OL** : | Organic Loam |
| **P** : | Peat | **SP** : | Sandy Peat | **LP** : | Loamy Peat |
| **PL** : | Peaty Loam | **PS** : | Peaty Sand | **MZ** : | Marine Light Silts |

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

**F** : Fine (more than 66% of the sand less than 0.2mm)
**M** : Medium (less than 66% fine sand and less than 33% coarse sand)
**C** : Coarse (more than 33% of the sand larger than 0.6mm)

The clay loam and silty clay loam classes will be sub-divided according to the clay content: **M** : Medium (<27% clay) **H** : Heavy (27-35% clay)

2. **MOTTLE COL** : Mottle colour using Munsell notation.

3. **MOTTLE ABUN** : Mottle abundance, expressed as a percentage of the matrix or surface described.

**F** : few <2% **C** : common 2-20% **M** : many 20-40% **VM** : very many 40% +

4. **MOTTLE CONT** : Mottle contrast

**F** : faint - indistinct mottles, evident only on close inspection
**D** : distinct - mottles are readily seen
**P** : prominent - mottling is conspicuous and one of the outstanding features of the horizon

5. **PED. COL** : Ped face colour using Munsell notation.

6. **GLEY** : If the soil horizon is gleyed a 'Y' will appear in this column. If slightly gleyed, an 'S' will appear.

7. **STONE LITH** : Stone Lithology - One of the following is used.

| | | | |
|---|---|---|---|
| **HR** : | all hard rocks and stones | **SLST** : | soft oolitic or dolimitic limestone |
| **CH** : | chalk | **FSST** : | soft, fine grained sandstone |
| **ZR** : | soft, argillaceous, or silty rocks | **GH** : | gravel with non-porous (hard) stones |
| **MSST** : | soft, medium grained sandstone | **GS** : | gravel with porous (soft) stones |
| **SI** : | soft weathered igneous/metamorphic rock | | |

Stone contents (>2cm, >6cm and total) are given in percentages (by volume).

8. **STRUCT** : the degree of development, size and shape of soil peds are described using the following notation:

| | | |
|---|---|---|
| degree of development | **WK** : weakly developed<br>**ST** : strongly developed | **MD** : moderately developed |
| ped size | **F** : fine<br>**C** : coarse | **M** : medium<br>**VC** : very coarse |
| ped shape | **S** : single grain<br>**GR** : granular<br>**SAB** : sub-angular blocky<br>**PL** : platy | **M** : massive<br>**AB** : angular blocky<br>**PR** : prismatic |

9. **CONSIST** : Soil consistence is described using the following notation:

**L** : loose **VF** : very friable **FR** : friable **FM** : firm **VM** : very firm
**EM** : extremely firm **EH** : extremely hard

10. **SUBS STR** : Subsoil structural condition recorded for the purpose of calculating profile droughtiness : **G** : good **M** : moderate **P** : poor

11. **POR** : Soil porosity. If a soil horizon has less than 0.5% biopores >0.5 mm, a 'Y' will appear in this column.

12. **IMP** : If the profile is impenetrable to rooting a 'Y' will appear in this column at the appropiate horizon.

13. **SPL** : Slowly permeable layer. If the soil horizon is slowly permeable a 'Y' will appear in this column.

14. **CALC** : If the soil horizon is calcareous, a 'Y' will appear in this column.

15. Other notations
**APW** : available water capacity (in mm) adjusted for wheat
**APP** : available water capacity (in mm) adjusted for potatoes
**MBW** : moisture balance, wheat
**MBP** : moisture balance, potatoes

SOIL PIT DESCRIPTION

Site Name : EAST HANTS LP SITE 1091 Pit Number : 1P

Grid Reference: SU71804100 Average Annual Rainfall : 853 mm
Accumulated Temperature : 1377 degree days
Field Capacity Level : 186 days
Land Use : Oilseed Rape
Slope and Aspect : 03 degrees SE

| HORIZON | TEXTURE | COLOUR | STONES >2 | TOT.STONE | LITH | MOTTLES | STRUCTURE | CONSIST | SUBSTRUCTURE | CALC |
|---|---|---|---|---|---|---|---|---|---|---|
| 0- 24 | HCL | 10YR43 00 | 3 | 8 | HR | | | | | |
| 24- 53 | HCL | 10YR46 00 | 0 | 12 | HR | F | MDCSAB | FM | M | |
| 53- 70 | C | 75YR56 00 | 0 | 35 | HR | F | | FM | M | |
| 70-100 | CH | 10YR81 00 | 0 | 2 | HR | | | | M | Y |

Wetness Grade : 3A Wetness Class : I
Gleying : cm
SPL : cm

Drought Grade : 2 APW : 109mm MBW : 17 mm
APP : 99 mm MBP : 19 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Workability

SOIL PIT DESCRIPTION

Site Name : EAST HANTS LP SITE 1091 Pit Number : 2P

Grid Reference: SU72104120
Average Annual Rainfall : 853 mm
Accumulated Temperature : 1377 degree days
Field Capacity Level : 186 days
Land Use : Permanent Grass
Slope and Aspect : 03 degrees S

| HORIZON | TEXTURE | COLOUR | STONES >2 | TOT.STONE | LITH | MOTTLES | STRUCTURE | CONSIST | SUBSTRUCTURE | CALC |
|---|---|---|---|---|---|---|---|---|---|---|
| 0- 26 | MZCL | 10YR43 00 | 0 | 5 | CH | | | | | Y |
| 26- 33 | MZCL | 10YR64 00 | 0 | 15 | CH | | MDCSAB | FR | M | Y |
| 33- 41 | MZCL | 10YR64 81 | 0 | 50 | CH | | MDCSAB | FR | M | Y |
| 41- 70 | CH | 10YR81 00 | 0 | 2 | HR | | | | M | Y |

Wetness Grade : 2
Wetness Class : I
Gleying : cm
SPL : cm

Drought Grade : 3A
APW : 93 mm MBW : 1 mm
APP : 99 mm MBP : 19 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness

| SAMPLE NO. | GRID REF | USE | ASPECT | GRDNT | GLEY | SPL | --WETNESS-- CLASS | GRADE | -WHEAT- AP | MB | -POTS- AP | MB | M.REL DRT | FLOOD | EXP | EROSN DIST | FROST LIMIT | CHEM | ALC | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SU72104120 | PGR | S | 01 | | | 1 | 2 | 91 | -1 | 96 | 16 | 3A | | | | DR | | 3A | Chalk 38 |
| 1P | SU71804100 | OSR | SE | 03 | | | 1 | 3A | 109 | 17 | 99 | 19 | 2 | | | | WK | | 3A | Chalk 70 |
| 2 | SU72204120 | PGR | S | 03 | | | 1 | 2 | 75 | -17 | 76 | -4 | 3A | | | | DR | | 3A | Chalk 25 |
| 2P | SU72104120 | PGR | S | 03 | | | 1 | 2 | 93 | 1 | 99 | 19 | 3A | | | | DR | | 3A | Pit75 Augd120 |
| 3 | SU71904110 | PGR | S | 03 | | | 1 | 3A | 114 | 22 | 109 | 29 | 2 | | | | WK | | 3A | Chalk 60 |
| 4 | SU72004110 | PGR | S | 02 | | | 1 | 3A | 86 | -6 | 90 | 10 | 3A | | | | WK | | 3A | I55flnty Re1P |
| 5 | SU72104110 | PGR | S | 01 | | | 1 | 3A | 94 | 2 | 106 | 26 | 3A | | | | WK | | 3A | I68flnty Re1P |
| 6 | SU72204110 | PGR | SW | 03 | | | 1 | 2 | 70 | -22 | 71 | -9 | 3B | | | | DR | | 3B | Chalk 23 |
| 7 | SU71804100 | OSR | SE | 03 | | | 1 | 3A | 78 | -14 | 78 | -2 | 3A | | | | WK | | 3A | I50flnty Re 1P |
| 8 | SU71904100 | PGR | SE | 03 | | | 1 | 3A | 105 | 13 | 111 | 31 | 2 | | | | WK | | 3A | I80flnty Re 1P |
| 9 | SU72004100 | PGR | S | 01 | | | 1 | 2 | 58 | -34 | 58 | -22 | 3B | | | | DR | | 3A | Imp40 Q 3a dr |
| 10 | SU72104100 | PGR | S | 01 | | | 1 | 3A | 80 | -12 | 85 | 5 | 3A | | | | WK | | 3A | I60flnty Re 1P |
| 11 | SU71804090 | OSR | E | 02 | | | 1 | 3A | 108 | 16 | 106 | 26 | 2 | | | | WK | | 3A | S1 gley 30 |
| 12 | SU71924092 | PGR | | | | | 1 | 2 | 77 | -15 | 77 | -3 | 3A | | | | WD | | 2 | I50flnty Re 1P |
| 13 | SU71704080 | CER | SE | 03 | | | 1 | 2 | 88 | -4 | 94 | 14 | 3A | | | | DR | | 3A | Chalk 40 |

| SAMPLE | DEPTH | TEXTURE | COLOUR | ----MOTTLES----- COL | ABUN | CONT | PED COL. | GLEY | ----STONES---- >2 | >6 | LITH | TOT | STRUCT/ CONSIST | SUBS STR | POR | IMP | SPL | CALC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0-25 | mzcl | 10YR43 00 | | | | | | 0 | 0 | CH | 3 | | | | | | Y |
| | 25-38 | hzcl | 10YR63 00 | | | | | | 0 | 0 | CH | 25 | | M | | | | Y |
| | 38-68 | ch | 10YR71 00 | | | | | | 0 | 0 | HR | 1 | | M | | | | Y |
| 1P | 0-24 | hcl | 10YR43 00 | | | | | | 3 | 0 | HR | 8 | | | | | | |
| | 24-53 | hcl | 10YR46 00 | 00MN00 | 00 | F | | | 0 | 0 | HR | 12 | MDCSAB | FM M | | Y | | |
| | 53-70 | c | 75YR56 00 | 00MN00 | 00 | F | | | 0 | 0 | HR | 35 | | FM M | | Y | | |
| | 70-100 | ch | 10YR81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y |
| 2 | 0-25 | mzcl | 10YR53 00 | | | | | | 0 | 0 | CH | 5 | | | | | | Y |
| | 25-55 | ch | 10YR71 00 | | | | | | 0 | 0 | HR | 1 | | M | | | | Y |
| 2P | 0-26 | mzcl | 10YR43 00 | | | | | | 0 | 0 | CH | 5 | | | | | | Y |
| | 26-33 | mzcl | 10YR64 00 | | | | | | 0 | 0 | CH | 15 | MDCSAB | FR M | | | | Y |
| | 33-41 | mzcl | 10YR64 81 | | | | | | 0 | 0 | CH | 50 | MDCSAB | FR M | | | | Y |
| | 41-70 | ch | 10YR81 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y |
| 3 | 0-30 | hzcl | 10YR53 00 | | | | | | 0 | 0 | CH | 10 | | | | | | Y |
| | 30-60 | hzcl | 10YR74 00 | | | | | | 0 | 0 | CH | 30 | | M | | | | Y |
| | 60-90 | ch | 10YR74 81 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y |
| 4 | 0-28 | hcl | 10YR42 00 | | | | | | 2 | 0 | HR | 5 | | | | | | |
| | 28-45 | hcl | 10YR44 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | |
| | 45-55 | c | 10YR44 00 | | | | | | 0 | 0 | HR | 2 | | M | | | | |
| 5 | 0-20 | hzcl | 10YR43 00 | | | | | | 3 | 0 | HR | 8 | | | | | | |
| | 20-50 | hzcl | 10YR44 00 | | | | | | 0 | 0 | HR | 8 | | M | | | | |
| | 50-68 | c | 10YR46 00 | | | | | | 0 | 0 | HR | 20 | | M | | | | |
| 6 | 0-23 | mzcl | 10YR53 00 | | | | | | 0 | 0 | CH | 10 | | | | | | Y |
| | 23-53 | ch | 10YR71 00 | | | | | | 0 | 0 | HR | 1 | | M | | | | Y |
| 7 | 0-30 | hcl | 10YR43 53 | | | | | | 4 | 0 | HR | 10 | | | | | | |
| | 30-50 | c | 75YR56 00 | 00MN00 | 00 | F | | | 0 | 0 | HR | 10 | | M | | | | |
| 8 | 0-30 | hzcl | 10YR43 00 | | | | | | 3 | 0 | HR | 10 | | | | | | |
| | 30-45 | c | 10YR56 00 | | | | | | 0 | 0 | HR | 5 | | M | | | | |
| | 45-72 | c | 10YR56 58 | 00MN00 | 00 | F | | | 0 | 0 | HR | 10 | | M | | | | |
| | 72-80 | hzcl | 10YR68 81 | | | | | | 0 | 0 | CH | 40 | | M | | | | Y |
| 9 | 0-20 | mcl | 10YR43 00 | | | | | | 5 | 0 | HR | 12 | | | | | | |
| | 20-40 | mcl | 10YR54 00 | | | | | | 0 | 0 | HR | 20 | | M | | | | |
| 10 | 0-25 | hzcl | 10YR43 00 | | | | | | 5 | 0 | HR | 15 | | | | | | |
| | 25-40 | hcl | 10YR44 00 | | | | | | 0 | 0 | HR | 20 | | M | | | | |
| | 40-55 | c | 75YR44 00 | | | | | | 0 | 0 | HR | 20 | | M | | | | |
| | 55-60 | c | 75YR44 00 | | | | | | 0 | 0 | CH | 65 | | M | | | | Y |

| SAMPLE | DEPTH | TEXTURE | COLOUR | ----MOTTLES----- COL | ABUN | CONT | PED COL. | GLEY | ----STONES---- >2 | >6 | LITH | TOT | STRUCT/ CONSIST | SUBS STR | POR | IMP | SPL | CALC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 0-30 | hcl | 10YR44 00 | | | | | | 5 | 0 | HR | 12 | | | | | | |
| | 30-65 | c | 75YR43 53 | 75YR56 00 | C | | 00MN00 | 00 S | 0 | 0 | HR | 10 | | M | | | | |
| | 65-90 | c | 05YR56 00 | 75YR66 00 | C | | 00MN00 | 00 S | 0 | 0 | HR | 15 | | M | | | | |
| | 90-95 | c | 05YR56 00 | 75YR66 00 | M | | 00MN00 | 00 S | 0 | 0 | HR | 30 | | M | | | | |
| 12 | 0-25 | mzcl | 10YR43 53 | | | | | | 5 | 0 | HR | 12 | | | | | | |
| | 25-50 | mzcl | 75YR56 00 | | | | | | 0 | 0 | HR | 20 | | M | | | | |
| 13 | 0-25 | mzcl | 10YR43 00 | | | | | | 5 | 0 | HR | 10 | | | | | | Y |
| | 25-40 | hzcl | 10YR54 00 | | | | | | 0 | 0 | HR | 15 | | M | | | | Y |
| | 40-70 | ch | 10YR81 64 | | | | | | 0 | 0 | HR | 2 | | M | | | | Y |