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**Basingstoke and Deane Local Plan  
Land at Bulls Bushes Farm, Oakley  
Agricultural Land Classification,  
ALC Map and Report  
December 1994**

# AGRICULTURAL LAND CLASSIFICATION REPORT

## BASINGSTOKE AND DEANE LOCAL PLAN LAND AT BULLS BUSHES FARM, OAKLEY

### 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 Basingstoke and Deane district of Hampshire. The work forms part of MAFF's statutory input to the preparation of the Basingstoke and Deane Local Plan.
- 1.2 The site comprises approximately 35 hectares of land to the south west of Oakley near Basingstoke in Hampshire. An Agricultural Land Classification (ALC) survey was carried out during November 1994. The survey was undertaken at a detailed level of approximately one boring per hectare of agricultural land. A total of 37 borings and one soil inspection pit 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. This survey was in addition to one carried out in 1993 (ADAS Ref: 1501/037/93) adjacent to this site (see attached map), from which data was extrapolated to confirm the classification of the 1994 survey.
- 1.3 The survey 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 land was in agricultural use. To the east of the site the land was under winter cereals. To the west, the land was in Set aside. The area of Woodland to the south east was mature and mixed.
- 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
2	29.9	86.0	89.3
3a	1.3	3.7	3.9
3b	2.3	6.6	<u>6.8</u>
Woodland	<u>1.3</u>	<u>3.7</u>	100% (33.5ha)
Total area of site	34.8	100.0	

- 1.6 Appendix I 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 The agricultural land at this site has been classified as very good quality (Grade 2) to moderate quality (Subgrade 3b), with a small proportion of good quality (Subgrade 3a). Principal limitations include soil workability, soil droughtiness and soil wetness. Soil workability restrictions occur where land is mapped as Grade 2. Local climatic parameters interact with the medium textured topsoils encountered, causing this area to be prone to structural damage during wetter periods, were it to be stocked or cultivated. Soil droughtiness restricts land quality where Subgrade 3a is mapped; weathered chalk and flints over solid chalk at moderate depths cause profile available water to be restricted. Solid chalk has the effect of restricting plant rooting depth, such that there is a reduction in the available water capacity of the soil. A soil wetness limitation occurs towards the south east of the site leading to this area being classified as Subgrade 3b. Slowly permeable clay subsoils cause a severe drainage impedance.

## 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, 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.
- 2.4 No local climatic factors such as exposure or frost risk are believed to affect the site. However, climatic and soil factors interact to influence soil wetness and droughtiness limitations.

**Table 2: Climatic Interpolation**

Grid Reference	SU570494	SU568492	SU564490
Altitude, (m, AOD)	120	125	130
Accumulated Temperature (°days, Jan.-June)	1400	1395	1389
Average Annual Rainfall (mm)	837	843	850
Field Capacity Days	182	183	184
Moisture deficit, wheat (mm)	95	94	94
Moisture deficit, potatoes (mm)	84	83	82
Overall Climatic Grade	1	1	1

### **3. Relief**

- 3.1 The site lies between approximately 120 and 130m AOD. Towards the east of the site, a dry valley feature dominates the topography. Towards the west of the site, the land gently falls from south to north and from west to east. Nowhere on the site does relief or gradient affect agricultural land quality.

### **4. Geology and Soils**

- 4.1 The published geological information (BGS, 1980), shows the majority of the site to be underlain by Cretaceous Upper Chalk. Towards the south of the area, clay with flints is mapped as a drift deposit, overlying the Chalk.
- 4.2 The published soils information (SSEW 1983 and 1984), shows the site to be underlain by soils from the Carstens Association. These are described as, 'well drained fine silty over clayey, clayey and fine silty soils, often very flinty,' (SSEW, 1983). Soils on the site were commonly found to be similar to those described above, i.e. fine silty over clayey often containing flints, in addition some shallow chalky soils were encountered.

### **5. Agricultural Land Classification**

- 5.1 Paragraph 1.5 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.

#### **Grade 2**

- 5.3 Land of very good quality occurs over the majority of the site in a single mapping unit. Soils in this area were found to be principally limited by soil workability and/or soil droughtiness. A profile typical of this area comprises a very slightly stony (c. 3% v/v flints), non calcareous medium silty clay loam or medium clay loam topsoil, passing to a similarly stony moderately structured non calcareous medium or heavy silty clay loam, heavy clay loam or clay upper subsoil horizon. This was found to overlie a moderately stony (c. 20% v/v flints) clay horizon, often impenetrable to the soil auger between 40 and 110cm. In the pit observation (4p, see Appendix III) the red clay lower subsoil was found to be moderately structured, and not slowly permeable, although it appeared as such in the auger borings. This equates with Wetness Class I (see Appendix II). Profiles of this nature in the local, relatively wet, climate are subject to a slight workability restriction due to the medium topsoil textures encountered. During wetter periods, these topsoils could be prone to structural damage, from trafficking of machinery or stock grazing
- 5.4 Equally limiting in the majority of cases is soil droughtiness caused by the flints in the profile restricting plant available water to the extent that there is a slight risk of drought stress affecting plant growth and yield. The pit observation, 4p (see

Appendix III) is typical of the profiles encountered in this classification at this site. Occasional observations of slightly worse quality were encountered in this area, but of an insufficient distribution to justify separate mapping.

### **Subgrade 3a**

- 5.5 Land of good quality occurs in a small area of the site located towards the north east. The principal limitation is soil droughtiness. Soil profiles comprise a very slightly stony (c. 5% v/v flints) calcareous medium silty clay loam topsoil. This passes to a very chalky (c. 50% v/v chalk fragments) calcareous medium silty clay loam upper subsoil, which overlies very slightly stony (c. 2% v/v flints) chalk at approximately 40cm. Chalk has the effect of restricting plant rooting, which in combination with the shallow soil depth, means that there is a moderate reduction in water available to plants such that within the local climatic parameters Subgrade 3a is appropriate. This supposition is backed up by pit data extrapolated from survey work on adjacent land (see Appendix III, ADAS Ref: 1501/030/93), where roots were found to extend approximately 30cm into the substrate.

### **Subgrade 3b**

- 5.6 Land of moderate quality occurs over a limited area in the south east of the site. The principal limitation is soil wetness. Profiles typically comprise a very slightly stony (c. 5% v/v flints) non-calcareous medium clay loam topsoil. This passes to a very slightly stony (c. 3% v/v flints) red clay subsoil. Soil pit information from an adjacent site (ADAS Ref.: 1501/030/93), shows the subsoil structures to be moderately developed, and slowly permeable (well developed coarse angular blocky). Soil wetness affects land versatility, in terms of cultivation and stocking, and also restricts plant growth and yield.

ADAS Ref: 1501/287/94  
MAFF Ref: EL15/144

Resource Planning Team  
Guildford Statutory Group  
ADAS Reading

## SOURCES OF REFERENCE

ADAS (1993), Basingstoke and Deane Borough Local Plan, Site 15, Pardown, Oakley.  
Reference 1501/030/93

British Geological Survey (1981), Sheet 284 Basingstoke, 1:50,000. Solid & 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), Climatic datasets for Agricultural Land Classification.

Soil Survey of England and Wales (1983), Sheet No. 6, Soils of South-East England,  
1:250,000, and Accompanying Legend.

Soil Survey of England and Wales (1984), Soils and their use in South-East England.  
Bulletin No.15.

## 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 (e.g. 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, religious buildings, cemeteries. 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 (e.g. 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, e.g. 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

### DEFINITION OF SOIL WETNESS CLASS

#### **Wetness Class I**

The soil profile is not wet within 70 cm depth for more than 30 days in most years.

#### **Wetness Class 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 180 days, but only wet within 40 cm depth for 31-90 days in most years.

#### **Wetness Class 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.

#### **Wetness Class 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.

#### **Wetness Class V**

The soil profile is wet within 40 cm depth for 211-335 days in most years.

#### **Wetness Class VI**

The soil profile is wet within 40 cm depth for more than 335 days in most years.

## **APPENDIX III**

### **SOIL PIT AND SOIL BORING DESCRIPTIONS**

**Contents :**

**Sample Point Map**

**Soil Abbreviations - explanatory note**

**Database Printout - soil pit information**

**Database Printout - boring level information**

**Database Printout - horizon level information**

## SOIL PROFILE DESCRIPTIONS : EXPLANATORY NOTE

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

### Boring Header Information

1. **GRID REF** : national grid square and 8 figure grid reference.
2. **USE** : Land use at the time of survey. The following abbreviations are used.

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

3. **GRDNT** : Gradient as measured by a hand-held optical clinometer.
4. **GLEYSPL** : Depth in cm to gleying or slowly permeable layers.
5. **AP (WHEAT/POTS)** : Crop-adjusted available water capacity.
6. **MB (WHEAT/POTS)** : Moisture Balance.
7. **DRT** : Best grade according to soil droughtiness.
8. If any of the following factors are considered significant, an entry of 'Y' will be entered in the relevant column.

<b>MREL</b> : Microrelief limitation	<b>FLOOD</b> : Flood risk	<b>EROSN</b> : Soil erosion risk
<b>EXP</b> : Exposure limitation	<b>FROST</b> : Frost	<b>DIST</b> : Disturbed land
<b>CHEM</b> : Chemical limitation		

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

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

## 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      **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 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
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

6. **STONE LITH** : 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      **GH** : gravel with non-porous (hard) stones  
**SI** : soft weathered igneous/metamorphic rock  
Stone contents (>2cm, >6cm and total) are given in percentages (by volume).

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

degree of development    **WK** : weakly developed    **MD** : moderately developed

**ST** : strongly developed

ped size    **F** : fine            **M** : medium    **C** : coarse    **VC** : very coarse

ped shape    **S** : single grain    **M** : massive    **GR** : granular    **AB** : angular blocky

**SAB** : sub-angular blocky    **PR** : prismatic    **PL** : platy

8. **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

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

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

11. **IMP** : If the profile is impenetrable a 'Y' will appear in this column at the appropriate horizon.

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

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

14. 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 : BASING LP BULLS BUSHES Pit Number : 4P

Grid Reference: SU57004920 Average Annual Rainfall : 843 mm  
 Accumulated Temperature : 1395 degree days  
 Field Capacity Level : 183 days  
 Land Use : Cereals  
 Slope and Aspect : degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 32	MZCL	10YR43 00	0	5	HR					
32- 48	C	10YR56 00	0	3	HR		MCSAB	FR	M	
48- 80	C	05YR56 00	0	8	HR	M	MCSAB	FM	M	

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

Drought Grade : 2 APW : 108mm MBW : 14 mm  
 APP : 115mm MBP : 32 mm

FINAL ALC GRADE : 2  
 MAIN LIMITATION : Workability

SAMPLE NO.	GRID REF	ASPECT USE	GRDNT	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
				GLEY	SPL	CLASS	GRADE	AP	MB	AP	MB					
1A	SU57204950	CER SW	03		1	2	89	-5	93	10	3A			DR	3A	IMP CHALK 65
2A	SU57004940	CER			1	2	108	14	111	28	2			WD	2	IMP CHDRIFT 80
3A	SU57104940	CER			1	2	108	14	114	31	2			WD	2	IMP FLINTS 80
4A	SU57204940	CER SW			1	2	143	49	118	35	1			WK	2	IMP FLINTS 80
4P	SU57004920	CER N			1	2	108	14	115	32	2			WK	2	PIT 80 NO GLEY
5A	5057304940	CER SW			1	2	107	13	114	31	50			WD	2	IMP FLINTS 80
6A	SU56804930	SAS N	01		1	2	104	10	114	31	2			WD	2	IMP FLINTS 75
7A	SU56904930	CER NE	02	75	1	2	136	42	111	28	1			WK	2	
8A	SU57004930	ARB N	02		1	2	154	60	119	36	1			WK	2	
9A	SU57104930	ARB N	02		1	2	74	-20	74	-9	3A			WE	3A	IMP FLINTS 45
10A	SU57204930	ARB N	02		1	2	108	14	115	32	2			WD	2	IMP FLINTS 75
11A	SU57304930	ARB N	02		1	2	143	49	118	35	1			WK	2	
12A	SU56504918	SAS			1	2	117	23	119	36	2			WK	2	IMP FLINTS 85
13A	SU56604920	SAS			1	2	119	25	113	30	2			WK	3A	IMP FLINTS 90
14A	SU56704920	SAS N			1	2	137	43	115	32	1			WK	2	
15A	SU56804920	SAS N	01	70	1	2	133	39	118	35	1			WK	2	IMP FLINTS 110
16A	SU56904920	ARB N			1	2	130	36	120	37	1			WK	2	
17A	SU57004920	ARB N			1	2	121	27	113	30	2			WD	2	
18A	SU57104920	ARB N			1	2	121	27	113	30	2			WD	2	
19A	SU57204920	ARB N	02	60	1	2	120	26	113	30	2			WD	2	
20A	SU57304920	ARB N	02	60	1	2	121	27	112	29	2			WD	2	
21A	SU56304910	SAS			1	2	70	-24	70	-13	3B			WK	2	IMP FLINTS 40
22A	SU56404910	SAS		30	2	3A	122	28	114	31	2			WE	3A	IMP FLINTS 85
23A	SU56504910	SAS		45	1	2	115	21	119	36	2			WD	2	IMP FLINTS 85
24A	SU56604910	SAS			1	2	117	23	118	35	2			WD	2	IMP FLINTS 90
25A	SU56704910	SAS			1	2	115	21	119	36	2			WD	2	IMP FLINTS 85
26A	SU56804910	SAS N		45	1	2	137	43	116	33	1			WK	2	
27A	SU56904910	ARB			1	2	116	22	113	30	2			WK	2	
28A	SU57004910	ARB			30	4	3B	98	4	114	31	3A		WE	3B	RED SPL 30
31A	SU57304910	ARB			30	4	3B	98	4	114	31	3A		WE	3B	RED SPL 30
33A	SU56304900	SAS			1	2	88	-6	92	9	3A			WK	2	IMP FLINTS 55
34A	SU56404900	SAS			1	2	142	48	117	34	1			WK	2	
35A	SU56504900	SAS			1	2	114	20	120	37	2			WD	2	IMP FLINTS 80
36A	SU56604900	SAS			1	2	70	-24	70	-13	3B			WK	2	IMP FLINTS 40
37A	SU56704900	SAS			1	2	101	7	117	34	2			WD	2	IMP FLINTS 70
39A	SU56504390	SAS			1	2	118	24	119	36	2			WK	2	IMP FLINTS 85
40A	SU57444913	CER			1	2	123	29	120	37	2			WK	2	
41A	SU57354913	CER			1	2	108	14	120	37	2			WK	2	IMP FLINTS 70

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED	----STONES----			STRUCT/ CONSIST	SUBS		SPL	CALC	
				COL	ABUN	CONT	COL.	GLEY	>2	>6		LITH	TOT			STR
1A	0-32	mzc1	10YR44 54					1	0	HR	5				Y	
	32-40	mzc1	10YR54 81					0	0	CH	50	M			Y	
	40-65	ch	10YR81 00					0	0	HR	2	P			Y IMP CHALK 65	
2A	0-30	mzc1	10YR43 00					1	0	HR	6					
	30-65	hzc1	10YR46 00					0	0	HR	15	M				
	65-80	mzc1	10YR54 81					0	0	CH	55	M		Y	IMP CHALKY DRIFT 80	
3A	0-30	mzc1	10YR43 44					0	0	HR	5					
	30-55	mzc1	10YR46 00					0	0	HR	5	M				
	55-80	c	75YR46 00	00M00	00	F		0	0	HR	20	M			IMP FLINTS 80	
4A	0-28	mzc1	10YR43 00					0	0	HR	5					
	28-55	hzc1	10YR46 00					0	0	HR	5	M				
	55-70	hzc1	10YR46 00	00M00	00	F		0	0	HR	10	M				
	70-120	c	75YR46 56	00M00	00	F		0	0	HR	5	M			IMP FLINTS 80	
4P	0-32	mzc1	10YR43 00					0	0	HR	5					
	32-48	c	10YR56 00					0	0	HR	3	MCSAB FR M	Y			
	48-80	c	05YR56 00	00M00	00	M		0	0	HR	8	MCSAB FM M	Y		PIT TO 80 NO GLEY	
5A	0-30	mzc1	10YR43 00					1	0	HR	5					
	30-60	mzc1	75YR54 00					0	0	HR	10	M				
	60-80	c	75YR46 00	00M00	00	F		0	0	HR	20	M			IMP FLINTS 80	
6A	0-30	mzc1	10YR43 00					0	0	HR	5					
	30-60	hzc1	10YR54 00	10YR56	00	C	00M00	00	S	0	0	HR	10	M		
	60-75	c	75YR54 56	75YR56	00	F	00M00	00	0	0	HR	20	M			IMP FLINTS 75
7A	0-30	mzc1	10YR43 00					1	0	HR	5					
	30-45	hzc1	10YR46 00					0	0	HR	10	M				
	45-55	c	10YR46 00					0	0	HR	10	M				
	55-75	c	75YR58 00	00M00	00	M		0	0	HR	20	M				
	75-110	c	10YR44 00	75YR58	00	M		S	0	0	HR	5	M			
	110-120	c	10YR44 00	75YR58	00	M	00M00	00	S	0	0	CH	30	M		
8A	0-25	mzc1	10YR44 00					0	0	HR	6					
	25-120	hzc1	75YR46 00					0	0	HR	3	M				
9A	0-25	mzc1	10YR44 00					0	0	HR	10					
	25-45	hzc1	10YR44 00					0	0	HR	8	M			IMP FLINTS 45	
10A	0-25	mzc1	10YR44 00					0	0	HR	8					
	25-50	hzc1	10YR43 00					0	0	CH	5	M				
	50-75	hzc1	10YR72 00					0	0	CH	30	M			IMP FLINTS 75	
11A	0-25	mzc1	10YR44 00					0	0	HR	7					
	25-70	hzc1	10YR46 00					0	0	HR	4	M				
	70-120	c	75YR56 00					0	0	HR	5	M				

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED COL.	----STONES-----			STRUCT/ CONSIST	SUBS		SPL	CALC
				COL	ABUN	CONT		GLEI	>2	>6		LITH	TOT		
12A	0-30	mzc1	10YR42 00					0	0	HR	2				
	30-60	hc1	10YR54 00					0	0	HR	2		M		
	60-85	c	75YR44 00	00MN00	00	C		0	0	HR	2		M		IMP FLINTS 85
13A	0-35	hc1	10YR42 00					0	0	HR	5				
	35-50	c	10YR53 00					0	0	HR	5		M		
	50-60	c	75YR54 00	00MN00	00	C		0	0	HR	5		M		
	60-90	mc1	10YR32 00					0	0	CH	20		M		IMP FLINTS 90
14A	0-30	mzc1	10YR43 00					0	0	HR	5				
	30-45	hzc1	10YR54 00	00MN00	00	F		0	0	HR	5		M		
	45-80	c	75YR54 56	00MN00	00	C		0	0	HR	10		M		
	80-120	c	75YR58 00	05YR46	00	F	00MN00	00	0	0	HR	10		M	
15A	0-30	mzc1	10YR43 00					0	0	HR	5				
	30-60	mzc1	10YR54 00	00MN00	00	F		0	0	HR	5		M		
	60-70	c	10YR54 00	00MN00	00	F		0	0	HR	5		M		
	70-110	c	10YR56 00	10YR53	00	C	F	00MN00	00	0	0	HR	10	M	
16A	0-25	mzc1	10YR44 00					0	0	HR	5				
	25-75	hzc1	75YR56 00					0	0	HR	3		M		
	75-100	c	05YR58 00					0	0	HR	2		M		
17A	0-25	mc1	10YR44 00					0	0	HR	5				
	25-60	c	75YR56 00					0	0	HR	3		M		
	60-100	c	05YR58 00	10YR52	00	F		0	0	HR	3		M		
18A	0-25	mc1	10YR54 00					0	0	HR	5				
	25-70	c	75YR56 00					0	0	HR	3		M		
	70-100	c	05YR58 00	10YR52	00	F		0	0	HR	3		M		
19A	0-25	mc1	10YR44 00					0	0	HR	5				
	25-60	c	10YR52 00	75YR56	00	F		0	0	HR	3		M		
	60-100	c	10YR52 00	05YR58	00	C		Y	0	0	HR	5		M	
20A	0-25	mc1	10YR44 00					0	0	HR	5				
	25-60	hc1	75YR56 00					0	0	HR	5		M		
	60-100	c	10YR52 00	75YR56	00	C		Y	0	0	HR	5		M	
21A	0-30	mzc1	10YR42 00					0	0	HR	5				
	30-40	c	05YR54 00	00MN00	00	C		0	0	HR	2		M		IMP FLINTS 40
22A	0-30	mzc1	10YR42 00					0	0	HR	5				
	30-60	c	10YR53 00	00OC00	00	C	00MN00	00	Y	0	0	HR	7	M	
	60-100	c	10YR54 00	00OC00	00	C		S	0	0	HR	5	M		IMP FLINTS 85
23A	0-30	mzc1	10YR42 00					0	0	HR	2				
	30-45	hc1	10YR53 00					0	0	HR	2		M		
	45-85	c	05YR54 00	00MN00	00	C		0	0	HR	2		M		IMP FLINTS 85

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED		----STONES----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT	COL.	GLEYS	>2	>6	LITH		TOT	STR	POR	IMP	SPL	CALC
24A	0-32	mzc1	10YR42 00						0	0	HR	5						
	32-50	hc1	10YR53 00						0	0	HR	2			M			
	50-70	c	10YR54 00	00MNO0	00	C			0	0	HR	2			M			
	70-90	c	05YR54 00	00MNO0	00	C			0	0	HR	5			M			IMP FLINTS 90
25A	0-32	mzc1	10YR43 00						0	0	HR	2						
	32-50	c	05YR46 00	00MNO0	00	C			0	0	HR	2			M			
	50-85	c	05YR54 00	00MNO0	00	C			0	0	HR	2			M			IMP FLINTS 85
26A	0-30	mzc1	10YR42 43						0	0	HR	5						
	30-45	mzc1	10YR54 00	00MNO0	00	F			0	0	HR	3			M			
	45-55	hzc1	10YR53 63	10YR56	00	C		Y	0	0	HR	3			M			
	55-120	c	75YR56 00	75YR54	58	C	F	00MNO0	00	Y	0	0	HR	15			M	
27A	0-25	mc1	10YR44 00						0	0	HR	5						
	25-65	hc1	10YR52 00	75YR56	00	F			0	0	HR	2			M			
	65-90	c	10YR52 00	75YR56	00	C		Y	0	0	HR	5			M			
28A	0-30	mc1	10YR44 00						0	0	HR	5						
	30-70	c	05YR58 00						0	0	HR	3			M		Y	
31A	0-30	mc1	10YR44 00						0	0	HR	5						
	30-70	c	05YR58 00						0	0	HR	3			M		Y	
33A	0-28	mzc1	10YR42 00						0	0	HR	5						
	28-55	c	05YR44 00	00MNO0	00	C			0	0	HR	5			M			IMP FLINTS 55
34A	0-28	mzc1	10YR42 00						0	0	HR	2						
	28-50	c	75YR54 00						0	0	HR	5			M			
	50-60	hc1	10YR43 00						0	0	HR	2			M			
	60-75	c	75YR54 00						0	0	HR	5			M			
	75-120	c	05YR54 00						0	0	HR	2			M			
35A	0-28	mzc1	10YR43 00						0	0	HR	2						
	28-50	mzc1	10YR43 00						0	0	HR	2			M			
	50-60	hc1	10YR54 00						0	0	HR	2			M			
	60-80	c	05YR46 00	00MNO0	00	C			0	0	HR	5			M			IMP FLINTS 80
36A	0-30	mzc1	10YR43 00						0	0	HR	5						
	30-40	hc1	10YR54 00						0	0	HR	5			M			IMP FLINTS 40
37A	0-30	mzc1	10YR43 00						0	0	HR	5						
	30-50	c	75YR44 00						0	0	HR	2			M			
	50-70	c	75YR56 00	00MNO0	00	C			0	0	HR	2			M			IMP FLINTS 70
39A	0-30	mzc1	10YR42 00						0	0	HR	2						
	30-68	hc1	10YR54 00						0	0	HR	2			M			
	68-85	c	10YR54 00						0	0	HR	2			M			IMP FLINTS 85

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED COL.	----STONES----			STRUCT/ CONSIST	SUBS						
				COL	ABUN	CONT		GLEY	>2	>6		LITH	TOT	STR	POR	IMP	SPL	CALC
40A	0-35	mzc1	10YR42 00					0	0	HR	2							
	35-65	hc1	10YR54 00					0	0	HR	2							M
	65-90	c	75YR46 00	00MNO0	00	C		0	0	HR	2							M
41A	0-35	mzc1	10YR43 00					0	0	HR	2							
	35-70	hc1	10YR54 00					0	0	HR	2							M

IMP FLINTS 70