

**A1
South London Golf Course Extension
Wrotham, Kent,**

**Agricultural Land Classification
ALC Map and Report
November 1995**

**Resource Planning Team
Guildford Statutory Group
ADAS Reading**

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AGRICULTURAL LAND CLASSIFICATION REPORT

SOUTH LONDON GOLF COURSE, WROTHAM, KENT GOLF COURSE EXTENSION PROPOSAL

Introduction

1 This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 45.2 hectares of land to the west of Stansted near Wrotham in Kent. The survey was carried out during November 1995.

2 The survey was commissioned by the Ministry of Agriculture Fisheries and Food (MAFF) from its Land Use Planning Unit in Reading in connection with a proposal for an extension to the existing golf course. The results of this survey supersede any previous ALC information for this land.

3 The work was conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF 1988). A description of the ALC grades and subgrades is given in Appendix I.

4 At the time of survey the agricultural land was under permanent grass used for grazing sheep. The area shown as Other Land was an established fenced track.

Summary

5 The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10000. It is accurate at this scale but any enlargement would be misleading.

6 The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1 overleaf.

Table 1 Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% agricultural area
3a	4.8	10.6	10.7
3b	39.9	88.3	89.3
Other Land	0.5	1.1	
Total Agricultural Area	44.7		100.0
Total Site area	45.2	100.0	

7 The fieldwork was conducted at an average density of approximately 1 boring per hectare. A total of 42 borings and two soil pits were described.

8 The agricultural land at this site has been classified as Subgrade 3a (good quality) and Subgrade 3b (moderate quality). Principal limitations to land quality include soil wetness and topsoil stoniness. Over the majority of the site slightly to moderately stony medium and heavy clay loam topsoils overlie slowly permeable clays at shallow depths in the profile leading to a Subgrade 3b classification. In the area of Subgrade 3a there is a heavy clay loam upper subsoil overlying the clay. The slowly permeable clay horizons cause drainage to be impeded such that land utilisation is restricted. The depth at which these horizons occur determines the severity of the soil wetness restrictions and therefore the ALC grade. In some areas of the site the topsoil stone content alone is sufficient to restrict the land to a Subgrade 3b classification due to the increased economic costs of cultivation operations on stony land.

Climate

9 Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

10 The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5km grid datasets using standard interpolation procedures (Met Office 1989).

Table 2 Climatic and altitude data

Factor	Units	Values	Values	Values
Grid reference	N/A	TQ 597 632	TQ 599 630	TQ 595 622
Altitude	m AOD	150	160	175
Accumulated Temperature	day°C	1337	1325	1309
Average Annual Rainfall	mm	708	713	729
Field Capacity Days	days	145	146	149
Moisture Deficit Wheat	mm	100	98	95
Moisture Deficit Potatoes	mm	89	87	83

11 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.

12 The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR) as a measure of overall wetness and accumulated temperature (AT0 January to June) as a measure of the relative warmth of a locality.

13 The combination of rainfall and temperature at this site means that there is an overall climate limitation where the land rises above approximately 170m AOD. This occurs towards the south of the site and means that this area cannot be graded higher than Grade 2. The remaining areas to the north are climatically Grade 1. Local climatic factors such as exposure and frost risk are believed not to affect the site.

Site

14 The site lies at an altitude in the range of 150 175 m AOD Overall the land falls gently from east to west and rises slightly from north to south Nowhere on the site does gradient microrelief or flooding affect the agricultural land quality

Geology and soils

15 The published geological information for the site (BGS 1977) shows it to be underlain by clay-with-flints a drift deposit overlying Cretaceous Upper Chalk

16 The most detailed published soils information for the site (SSEW 1983 and 1984) shows the site to comprise soils of the Batcombe Association These are described as fine silty over clayey and fine loamy over clayey with slowly permeable subsoils and slight seasonal waterlogging Some well drained clayey soils over chalk Variably flinty (SSEW 1983) On detailed site inspection the soils were found to be fine loamy over clayey with slowly permeable subsoils they were also variably flinty

Agricultural Land Classification

17 The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1 page 1

18 The location of the auger borings and pits is shown on the attached sample location map and details of the soils data are presented in Appendix III

Subgrade 3a

19 Land of good quality has been mapped towards the south west of the site on some of the lower lying land Principal limitations include soil wetness and topsoil stoniness

20 Soils in this area commonly comprise a slightly to moderately stony (up to 17% v/v total flints including 13% > 2cm) medium clay loam topsoil passing to a similarly stony (up to 20% total v/v flints) gleyed heavy clay loam upper subsoil This passes to a slightly stony (up to 10% v/v total flints) gleyed and slowly permeable poorly structured clay to a depth of at least 120cm The soil pit 2p is representative of this soil type The slowly permeable clay horizon has the effect of restricting water flow through the soil profile so causing drainage to be impeded The depth at which this horizon occurs in combination with the local climate leads to Wetness Class III being appropriately applied and subsequently Subgrade 3a given the workability status of the topsoil Soil wetness affects plant growth and yield as well as restricting land utilisation in terms of the number of days when machinery cultivations and grazing by livestock can occur without causing structural damage to the soil

21 In some cases within the Subgrade 3a mapping unit including the soil pit 2p the volume of large stones (>2cm) in the topsoil is sufficient to restrict land quality to Subgrade 3a alone ie contents are in the range 10 15% by volume A high stone content in the topsoil can increase production costs by causing extra wear and tear to implements and tyres as well as adversely affecting crop establishment and growth

Subgrade 3b

22 Land of moderate quality has been mapped over the majority of the site. Principal limitations to land quality include soil wetness and topsoil stoniness.

23 Soils in this area comprise a slightly to moderately stony (up to 30% v/v total flints including 25% > 2cm) medium or heavy clay loam topsoil. This commonly passes to a slightly to moderately stony (up to 20% v/v total flints) gleyed and slowly permeable poorly structured clay. Occasionally the topsoil and the clay horizon was separated by a gleyed slightly to moderately stony (up to 25% v/v total flints) medium or heavy clay loam upper subsoil horizon. These observations were often impenetrable to the soil auger in this horizon and were primarily limited by topsoil stone content or passed to clay within 36cm. The clay horizon was often impenetrable to the soil auger between 30 and 90 cm due to large flints in the matrix. The pit observation 1p is typical of this soil type. The slowly permeable clay horizon restricts water flow through the soil profile so causing drainage to be impeded to the extent that Wetness Class IV and Subgrade 3b has been appropriately applied to this land given the local climate and the workability status of the topsoils. Soil wetness affects plant growth and yield as well as restricting land utilisation in terms of the number of days when machinery cultivations and grazing by livestock can occur without causing structural damage to the soil.

24 In some observations mainly towards the west of the site the topsoil contained sufficient large flints (more than 15% > 2cm) to restrict land quality to Subgrade 3b on this basis alone. Large stones in the topsoil cause an increase in production costs and adversely affect crop establishment, growth and subsequent yield.

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SOURCES OF REFERENCE

British Geological Survey (1981) *Sheet 271 Dartford Drift Edition 1 50 000 Scale* BGS London

Ministry of Agriculture Fisheries and Food (1988) *Agricultural Land Classification of England and Wales Revised guidelines and criteria for grading the quality of agricultural land* MAFF London

Met Office (1989) *Climatological Data for Agricultural Land Classification*
Met Office Bracknell

Soil Survey of England and Wales (1983) *Soils of South East England. 1 250 000 Scale*
SSEW Harpenden

Soil Survey of England and Wales (1984) *Soils and their Use in South East England. Bulletin No 15* SSEW Harpenden

APPENDIX I

DESCRIPTIONS 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.

APPENDIX II

SOIL WETNESS CLASSIFICATION

Definitions of Soil Wetness Classes

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.

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

Assessment of Wetness Class

Soils have been allocated to wetness classes by the interpretation of soil profile characteristics and climatic factors using the methodology described in *Agricultural Land Classification of England and Wales Revised guidelines and criteria for grading the quality of agricultural land* (MAFF 1988)

¹ The number of days is not necessarily a continuous period

² In most years is defined as more than 10 out of 20 years

APPENDIX III

SOIL DATA

Contents

Sample location map

Soil abbreviations Explanatory Note

Soil Pit Descriptions

Soil boring descriptions (boring and horizon levels)

Database Printout - Horizon Level Information

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 **GLEYSPL** 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% +
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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 **GLEYS** 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)

SOIL PIT DESCRIPTION

Site Name S LONDON GC WROTHAM KENT Pit Number 1P

Grid Reference TQ59906330 Average Annual Rainfall 713 mm
 Accumulated Temperature 1325 degree days
 Field Capacity Level 146 days
 Land Use Permanent Grass
 Slope and Aspect 2 degrees SW

HORIZON	TEXTURE	COLOUR	STONES	2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 28	MCL	10YR42 43	13		20	HR					
28 70	C	75YR58 00	0		15	HR	C	WK CAB	FM	P	

Wetness Grade 3B Wetness Class IV
 Gleying 28 cm
 SPL 28 cm

Drought Grade APW mm MBW 0 mm
 APP mm MBP 0 mm

FINAL ALC GRADE 3B
 MAIN LIMITATION Wetness

SOIL PIT DESCRIPTION

Site Name S LONDON GC WROTHAM KENT Pit Number 2P

Grid Reference TQ59616240 Average Annual Rainfall 713 mm
 Accumulated Temperature 1325 degree days
 Field Capacity Level 146 days
 Land Use Permanent Grass
 Slope and Aspect degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 26	MCL	10YR43 00	8	12	HR					
26- 58	HCL	10YR53 54	0	20	HR	C	MDCSAB	FR	M	
58 90	C	75YR56 00	0	10	HR	M	WKCSAB	FM	P	

Wetness Grade 3A Wetness Class III
 Gleying 26 cm
 SPL 58 cm

Drought Grade APW mm MBW 0 mm
 APP mm MBP 0 mm

FINAL ALC GRADE 3A
 MAIN LIMITATION Wetness

SAMPLE NO	GRID REF	ASPECT USE	--WETNESS--				-WHEAT-		-POTS-		M REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
			GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT					
1	TQ59906340	PGR			25		2	2		0	0			ST	3B	IMP FLINT 40	
1P	TQ59906330	PGR SW	2	28	28	4	3B			0	0			WE	3B	PIT IMP 70	
2	TQ60006340	PGR			25	25	4	3B		0	0			WE	3B		
2P	TQ59616240	PGR			26	58	3	3A		0	0			WE	3A	PIT 90	
3	TQ60106340	PGR			38	38	4	3B		0	0			WE	3B		
4	TQ59806330	PGR SW	1	28	28	4	3B			0	0			ST	3B	3B WE ALSO	
5	TQ59906330	PGR SW	1	25	25	4	3B			0	0			WE	3B	IMP FLINTS 40	
6	TQ60006330	PGR S	1	25	25	4	3B			0	0			ST	3B	IMP FLINTS 35	
7	TQ60106330	PGR			25	35	4	3B		0	0			WE	3B	IMP FLINTS 50	
8	TQ59806320	PGR SW	2	27	27	4	3B			0	0			ST	3B	IMP FLINTS 30	
9	TQ59906320	PGR SW	2	25		2	2			0	0			WD	3A	IMP FLINT 50	
10	TQ60006320	PGR SW	2	27	55	3	3B			0	0			WE	3B	IMP FLINT 60	
11	TQ60106320	PGR			27	27	4	3B	119	21	97	10	2	WE	3B		
12	TQ59706310	PGR			25		2	3A		0	0			WD	3A	IMP FLINTS 50	
13	TQ59806310	PGR SW	1	25	55	3	3B			0	0			WE	3B	IMP FLINTS 70	
14	TQ59906310	PGR SW	2	25	25	4	3B			0	0			WE	3B	IMP FLINT 50	
15	TQ60006310	PGR N	1	28	28	4	3B			0	0			WE	3B		
16	TQ59706300	PGR			35	35	4	3B		0	0			WE	3B		
17	TQ59806300	PGR					1	1		0	0			ST	3B	IMP FLINTS 30	
18	TQ59906300	PGR W	2	25	25	4	3B			0	0			WE	3B	IMP FLINTS 55	
19	TQ60006300	PGR			30	30	4	3B		0	0			WE	3B		
20	TQ59706290	PGR W	2	25	25	4	3B			0	0			WE	3B		
21	TQ59806290	PGR			35	35	4	3B		0	0			WE	3B		
22	TQ59906290	PGR			20	20	4	3B		0	0			WE	3B	IMP FLINTS 35	
23	TQ59606280	PGR W	1	25	60	3	3A			0	0			ST	3B	IMP FLINTS 90	
24	TQ59706280	PGR W	2	27	27	4	3B			0	0			WE	3B	IMP FLINTS 50	
25	TQ59806280	PGR			28	28	4	3B		0	0			WE	3B	IMP FLINTS 55	
26	TQ59906280	PGR SE	2	25	25	4	3B			0	0			WE	3B		
27	TQ59606270	PGR			28	28	4	3B		0	0			WE	3B	IMP FLINTS 70	
29	TQ59806270	PGR W	2	25	42	3	3B			0	0			WE	3B	IMP FLINT 80	
31	TQ59606260	PGR			25	25	4	3B		0	0			WE	3B	IMP FLINT 50	
32	TQ59706260	PGR			30	60	3	3A	131	33	108	21	1	WE	3A		
33	TQ59806260	PGR NE	1	27	27	4	3B		120	22	98	11	2	WE	3B		
34	TQ59506250	PGR NW	2	20		2	2			0	0			WE	3A	IMP 42 SEE 2P	
35	TQ59606250	PGR			28		2	2		0	0			WE	3A	IMP 45 SEE 2P	
36	TQ59706250	PGR			30	30	4	3B		0	0			WE	3B	IMP FLINT 80	
37	TQ59806250	PGR			28	28	4	3B		0	0			WE	3B		
38	TQ59526240	PGR N	1	28	45	3	3A			0	0			WE	3A	ST ALSO	
39	TQ59616240	PGR			28		2	2		0	0			WE	3A	IMP 40 SEE 2P	
40	TQ59706240	PGR			28	38	4	3B		0	0			WE	3B		
41	TQ59606230	PGR			28	28	4	3B		0	0			WE	3B		
42	TQ59726252	PGR			30	65	3	3A	131	33	109	22	1	WE	3A		

SAMPLE NO	GRID REF	USE	ASPECT		--WETNESS--				-WHEAT-		-POTS-		M REL		EROSN	FROST	CHEM	ALC	COMMENTS
			GRDNT	GLEYS	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT			
43	TQ59516220	PGR	N	2	25	25	4	3B		0		0					WE	3B	IMP 50 ST 3B
45	TQ59706220	PGR			28	28	4	3B		0		0					WE	3B	IMP FLINT

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----			PED COL	----STONES----				STRUCT/ CONSIST	SUBS			SPL	CALC
				COL	ABUN	CONT		GLEYS	>2	>6	LITH		TOT	STR	POR		
1	0-25	mc1	10YR43 00					16	11	HR	25						
	25-40	hc1	10YR53 00 75YR56 00 C					Y	0	0	HR	25	M			IMP FLINTS 40	
1P	0-28	mc1	10YR42 43					13	5	HR	20					IMP FLINTS 70	
	28-70	c	75YR58 00 05YR56 00 C				75YR53 00	Y	0	0	HR	15	WKCSAB	FM	P	Y	+ MN CONCS
2	0-25	hc1	10YR43 00					12	7	HR	20						
	25-35	c	10YR63 00 75YR58 00 M					Y	0	0	HR	5			P	Y	
	35-80	c	10YR63 00 75YR68 58 M					Y	0	0		0			P	Y	
2P	0-26	mc1	10YR43 00					8	3	HR	12						
	26-58	hc1	10YR53 54 10YR56 00 C					Y	0	0	HR	20	MDCSAB	FR	M		
	58-90	c	75YR56 00 05YR56 00 M				10YR63 00	Y	0	0	HR	10	WKCSAB	FM	P	Y	+ MN CONCS
3	0-27	hc1	10YR41 00					7	3	HR	13						
	27-38	hc1	10YR44 00					0	0	HR	15			M		SLIGHTLY SANDY	
	38-90	c	75YR53 51 75YR58 00 M				05YR58 00	Y	0	0	HR	5			P	Y	SLIGHTLY SANDY
4	0-28	hc1	10YR43 00					17	12	HR	20						
	28-80	c	10YR63 00 75YR58 00 M					Y	0	0		0			P	Y	
5	0-25	mc1	10YR43 00					13	5	HR	20						
	25-40	c	10YR63 00 75YR56 68 M				00MN00 00	Y	0	0	HR	10			P	Y	IMP FLINTS 40
6	0-25	hc1	10YR42 41					16	12	HR	20						
	25-35	c	10YR63 00 75YR56 00 M				00MN00 00	Y	0	0	HR	15			P	Y	IMP FLINTS 35
7	0-25	hc1	10YR41 00					7	5	HR	15						
	25-35	hc1	10YR44 00 75YR56 00 C					S	0	0	HR	15			M		
	35-50	c	75YR54 56 00MN00 00 M					S	0	0	HR	20			P	Y	IMP FLINTS 50
8	0-27	hc1	10YR42 00					18	10	HR	25						
	27-30	c	75YR63 00 75YR58 00 C					Y	0	0	HR	25			P	Y	IMP FLINTS 30
9	0-25	mc1	10YR42 00					5	0	HR	10						
	25-50	hc1	10YR53 00 10YR56 00 C					Y	0	0	HR	10			M		IMP FLINT 50
10	0-27	hc1	10YR42 00					5	2	HR	10						
	27-55	hc1	10YR53 00 10YR58 00 C					Y	0	0	HR	10			M		
	55-60	c	75YR53 00 75YR58 00 C					Y	0	0	HR	15			P	Y	IMP FLINT 60
11	0-27	hc1	10YR41 00					5	3	HR	10						
	27-120	c	10YR52 56 75YR68 00 C				00MN00 00	Y	0	0	HR	5			P	Y	
12	0-25	hc1	10YR42 00					8	3	HR	15						
	25-50	hc1	10YR53 00 10YR56 00 C					Y	0	0	HR	15			M		IMP FLINTS 50
13	0-25	hc1	10YR42 00					8	5	HR	12						
	25-55	hc1	10YR53 00 10YR56 00 C					Y	0	0	HR	10			M		
	55-70	c	75YR63 00 75YR58 00 M				00MN00 00	Y	0	0	HR	10			P	Y	IMP FLINTS 70

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----			PED COL	----STONES----			STRUCT/ CONSIST	SUBS			CALC	
				COL	ABUN	CONT		2	>6	LITH		TOT	STR	POR		IMP
14	0-25	hc1	10YR42 43					6	3	HR	10					
	25-50	c	75YR63 00 75YR68 00 M					Y	0	0	HR	10	P		Y	IMP FLINT 50
15	0-28	hc1	10YR43 00						7	4	HR	12				BORDER CLAY TS
	28-35	c	10YR63 00 75YR56 00 M					Y	0	0	HR	5	P		Y	
	35-80	c	10YR63 00 75YR56 68 M				00MN00 00	Y	0	0		0	P		Y	
16	0-35	mc1	10YR43 00						5	2	HR	10				
	35-50	c	10YR63 00 05YR58 00 M					Y	0	0	HR	10	P		Y	
	50-80	c	10YR63 00 05YR58 68 M					Y	0	0		0	P		Y	
17	0-25	mc1	10YR44 00						18	11	HR	25				
	25-30	mc1	10YR54 00						0	0	HR	25	M			IMP FLINTS 30
18	0-25	mc1	10YR43 00						7	4	HR	12				
	25-55	c	10YR63 00 75YR56 00 M					Y	0	0	HR	15	P		Y	IMP FLINTS 55
19	0-15	hc1	10YR53 00						5	3	HR	10				
	15-30	c	10YR53 00						0	0	HR	10	M			
	30-40	c	10YR53 00 10YR58 00 C				00MN00 00	Y	0	0	HR	5	P		Y	
	40-80	c	05YR56 00 10YR63 00 C				00MN00 00	Y	0	0		0	P		Y	
20	0-25	mc1	10YR43 00						13	5	HR	20				
	25-50	c	10YR63 00 75YR58 00 M					Y	0	0	HR	10	P		Y	
	50-80	c	10YR63 00 10YR68 00 M					Y	0	0		0	P		Y	
21	0-20	mc1	10YR43 00						13	5	HR	20				
	20-35	hc1	10YR54 00						0	0	HR	10	M			
	35-80	c	10YR63 00 10YR68 00 M					Y	0	0		0	P		Y	
22	0-20	mc1	10YR43 00						13	5	HR	20				
	20-35	c	05YR56 00 75YR68 00 M					Y	0	0	HR	15	P		Y	IMP FLINTS 35
23	0-25	mc1	10YR42 00						17	10	HR	23				
	25-60	hc1	10YR53 00 10YR58 00 C					Y	0	0	HR	15	M			
	60-90	c	75YR63 00 75YR68 00 C				00MN00 00	Y	0	0	HR	15	P		Y	IMP FLINTS 90
24	0-27	hc1	10YR42 00						7	3	HR	12				
	27-50	c	25Y 62 00 05YR58 00 M				75YR58 00	Y	0	0	HR	15	P		Y	IMP FLINTS 50
25	0-28	mc1	10YR43 00						12	4	HR	20				
	28-55	c	05YR56 00 10YR68 00 M					Y	0	0	HR	15	P		Y	IMP FLINTS 55
26	0-25	mc1	10YR43 00						12	4	HR	10				
	25-55	c	05YR46 00 10YR68 00 M				00MN00 00	Y	0	0	HR	10	P		Y	
	55-80	c	05YR46 00 10YR68 00 M				00MN00 00	Y	0	0	HR	20	P		Y	
27	0-28	hc1	10YR42 43						6	3	HR	8				
	28-70	c	10YR63 00 75YR68 00 M				00MN00 00	Y	0	0	HR	5	P		Y	IMP FLINTS 70

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES ---			PED	----STONES --			STRUCT/ CONSIST	SUBS			CALC		
				COL	ABUN	CONT		COL	GLE	>2		>6	LITH	TOT		STR	POR
29	0-25	hc1	10YR42 00					8	5	HR	12						
	25-42	hc1	10YR53 00	10YR56	00	C		Y	0	0	HR	10	M				
	42-80	c	25Y 63 00	75YR56	00	M		05YR58	00	Y	0	0	HR	3	P	Y	IMP FLINT 80
31	0-25	hc1	10YR42 00	10YR46	56	F						11	7	HR	15		
	25-50	c	75YR58 00	75YR53	00	C		00MN00	00	Y	0	0	HR	5	P	Y	IMP FLINT 50
32	0-30	mc1	10YR42 00									4	1	HR	8		
	30-60	hc1	10YR54 53	10YR56	00	C		Y	0	0	HR	5	M				
	60-120	c	10YR63 62	10YR58	00	M		Y	0	0	HR	3	P			Y	
33	0-27	hc1	10YR42 00									4	1	HR	8		
	27-120	c	75YR68 00	10YR62	63	C		Y	0	0	HR	5	P			Y	
34	0-20	mc1	10YR43 44									8	3	HR	12		
	20-42	mc1	10YR53 00	10YR56	00	C		00MN00	00	Y	0	0	HR	15	M		IMP FLINTS 42
35	0-28	mc1	10YR42 00									7	3	HR	15		
	28-45	hc1	10YR53 00	10YR58	00	M		Y	0	0	HR	15	M				IMP FLINTS 45
36	0-30	mc1	10YR42 00									6	2	HR	10		
	30-80	c	10YR58 00	10YR53	63	C		00MN00	00	Y	0	0	HR	5	P	Y	IMP FLINT 80
37	0-28	mc1	10YR43 00									6	3	HR	10		
	28-35	c	10YR63 00	75YR58	66	M		Y	0	0	HR	10	P			Y	
	35-80	c	10YR63 00	75YR58	66	M		00MN00	00	Y	0	0		0	P	Y	05YR58 MOTS FROM 70
38	0-28	mc1	10YR42 00									13	8	HR	17		
	28-45	hc1	10YR53 00	10YR56	00	C		Y	0	0	HR	15	M				
	45-90	c	75YR58 00	05YR58	00	C		10YR63	00	Y	0	0	HR	10	P	Y	
39	0-28	mc1	10YR43 00									8	3	HR	12		
	28-40	mc1	10YR53 00	10YR56	00	C		Y	0	0	HR	15	M				IMP FLINTS 40
40	0-28	mc1	10YR42 00									5	3	HR	10		
	28-38	hc1	10YR53 00	10YR68	00	M		Y	0	0	HR	10	M				
	38-80	c	05YR56 00	10YR68	00	M		Y	0	0	HR	3	P			Y	
41	0-28	mc1	10YR43 00									5	2	HR	10		
	28-60	c	05YR46 00	75YR56	52	M		Y	0	0	HR	15	P			Y	
	60-80	c	05YR46 00	75YR58	52	M		00MN00	00	Y	0	0	HR	2	P	Y	
42	0-30	mc1	10YR42 00									5	2	HR	8		
	30-65	hc1	10YR53 54	10YR56	00	C		Y	0	0	HR	5	M				
	65-120	c	10YR63 62	10YR68	00	C		00MN00	00	Y	0	0	HR	5	P	Y	
43	0-25	mc1	10YR41 42									25	15	HR	30		
	25-50	c	75YR58 00	10YR62	00	C		05YR58	00	Y	0	0	HR	15	P	Y	IMP FLINTS 50 + MN CONCS