

A1

**TONBRIDGE AND MALLING BOROUGH
LOCAL PLAN
Bushey Wood 'Area of Opportunity'**

**Agricultural Land Classification
ALC Map and Report**

March 1998

**Resource Planning Team
Eastern Region
FRCA Reading**

**RPT Job Number 2013/059/97
FRCA Reference EL 20/01393**

AGRICULTURAL LAND CLASSIFICATION REPORT

TONBRIDGE AND MALLING BOROUGH LOCAL PLAN BUSHEY WOOD 'AREA OF OPPORTUNITY'

INTRODUCTION

1 This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 131.0 hectares of land at Bushey Wood near Aylesford Kent. The survey was carried out during March 1998.

2 The survey was carried out by the Farming and Rural Conservation Agency (FRCA) on behalf of the Ministry of Agriculture Fisheries and Food (MAFF) in connection with the Tonbridge and Malling Borough Local Plan. This survey supersedes any previous ALC information for this land.

3 The work was carried out under sub-contracting arrangements by N A Duncan & Associates and was overseen by members of the Resource Planning Team in the Eastern Region of FRCA. 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 majority of the agricultural land had been sown to peas or winter cereals with three small areas of permanent grass used for pony grazing. A field at the south western edge of the site had been sprayed off and was currently fallow. The areas mapped as 'Other land' include areas of scrub woodland, old quarry workings, former industrial areas, a waste paper storage yard, playing fields, allotments together with houses and farm buildings.

SUMMARY

5 The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10,000. 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.

Table 1 Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
2	16.3	27.5	12.4
3a	27.2	46.0	20.8
3b	15.7	26.5	12.0
Other land	71.8	N/A	54.8
Total surveyed area	59.2	100	45.2
Total site area	131.0		100

Site

14 The site is located on the river terrace on the eastern side of the River Medway. The land is relatively flat falling very gently toward the south west. The altitude of the site ranges from approximately 25 m AOD in the north eastern corner near the village of Eccles to 10 m AOD along the western edge. Gradient, microrelief and flood risk do not impose any limitation to the quality of the agricultural land.

Geology and soils

15 The two published geology maps which cover the area (BGS 1976 & 1977) show Gault Clay occupying the central part of the site with Pleistocene and Recent Head deposits to the north and east and Head gravel in the south.

16 On the published reconnaissance scale soil map (SSEW 1983) the northern part of the site has been mapped as Denchworth association which is briefly described as comprising slowly permeable seasonally waterlogged clayey soils with similar fine loamy over clayey soils and some slowly permeable calcareous clayey soils. The eastern part of the site has been mapped as Block association which comprises moderately permeable calcareous loamy soils over chalky gravel variably affected by groundwater. The southern end of the site is shown to comprise soils of the Fyfield 2 association which are described as well drained coarse loamy and sandy soils over sands and siltstone (SSEW 1984).

17 During detailed field examination three different soil types were found on the site which are broadly similar to those described above. The majority of the northern part of the agricultural land on the site comprises poorly drained clayey soils with heavy clay loam or clay topsoils overlying slowly permeable calcareous clay subsoil. The central part of the site is occupied by loamy soils overlying calcareous gravels at depth. These soils are typically free draining medium clay loams becoming sandy clay loam with depth. The soils are variably stony but typically deeper and less stony on the eastern side of the site. At the southern end of the site stonier coarser textured soils were encountered. These soils typically have medium clay loam topsoils over sandy clay loam upper subsoils becoming loamy sand with depth. The upper horizons were slightly stony becoming moderately or very stony with depth.

AGRICULTURAL LAND CLASSIFICATION

18 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.

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

Grade 2

20 Two areas of Grade 2 land have been mapped on the site. The larger area in the central part of the site comprises the deeper less stony loamy soils described above. These soils typically have a medium clay loam topsoil containing 3-5% total flints over a clay loam upper subsoil becoming stonier with depth (rising to 10% total flints). Many soils were found to be impenetrable to the soil auger at variable depths. However soil Pit 1 (see Appendix II)

shows the presence of calcareous stony (25-35% flints by volume) sandy clay loam at depth but with plant roots exploiting the full profile to 1.2 m depth. Moisture balance calculations indicate that these soils are slightly droughty for the shallower rooting crops such as potatoes restricting the land quality to Grade 2.

21 A small area of Grade 2 has been mapped at the northern edge of the site. This area comprises calcareous heavy silty clay loam soils overlying impenetrable chalky material at moderate depths between 70 and 85cm. These soils are free draining (wetness class I) and due to the heavy silty clay loam topsoil textures have a minor workability restriction limiting the land to Grade 2. The land is also limited by minor soil droughtiness arising from the interaction of slightly stony soils and a particularly dry climatic regime.

Subgrade 3a

22 Three areas of Subgrade 3a have been mapped which correlate with the shallower stonier soils in the central and southern parts of the sites. These soils are typically free draining (wetness class 1) and have medium clay loam topsoils over sandy clay loam upper subsoils becoming stony loamy sand with depth. Topsoil stone contents are typically 5-10% flints rising to 15-25% in the subsoil. Soil pit 3 shows that plant roots exploit the full profile depth to 1.2 m. However the available water capacity of these soils is moderate due to the amount of stone in the profile. Soil moisture balance calculations indicate that these soils are moderately droughty especially for shallower rooting crops restricting the land quality to Subgrade 3a.

Subgrade 3b

23 Three areas of Subgrade 3b have been mapped in the central and northern part of the site which correlate with the poorly drained clayey soils developed on the Gault Clay. Typical soil profiles have heavy clay loam or clay topsoils over slowly permeable strongly gleyed clay subsoils. These soils have been assessed as Wetness Class III or IV which under the prevailing climatic conditions results in a moderately severe wetness and workability restriction. Timing of cultivations, trafficking and stocking therefore needs to be carefully controlled to prevent structural damage occurring to these soils. This moderately severe limitation therefore restricts the land to Subgrade 3b.

24 A further small area of Subgrade 3b has been mapped on the southern edge of the site. Some soil disturbance has occurred in this area resulting in very shallow soils overlying sand and gravel. These soils therefore have a very low moisture holding capacity and as such are very droughty. The land is restricted to permanent pasture and used for horse grazing.

N A Duncan
for the Resource Planning Team
Eastern Region
FRCA, Reading

SOURCES OF REFERENCE

British Geological Survey (1976) *Sheet No 288 Maidstone 1 50 000 scale Solid & Drift edition* BGS London

British Geological Survey (1977) *Sheet No 272 Chatham 1 50 000 scale Drift edition* 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) *Chimatological Data for Agricultural Land Classification*
Met Office Bracknell

Soil Survey of England and Wales (1983) *Sheet 6 South East England*
SSEW Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in South East England*
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 DATA

Contents

Sample location map

Soil abbreviations - explanatory note

Soil pit descriptions

Soil boring descriptions (boring and horizon levels)

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	Brassicacae
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	OTH	Other
DCW	Deciduous woodland	BOG	Bog or marsh	SAS	Set Aside
HTH	Heathland	HRT	Horticultural crops	PLO	Ploughed
- 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	ST	Topsoil Stoniness
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
EX	Exposure				

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 **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	FSST	soft fine grained sandstone
ZR	soft argillaceous or silty rocks	CH	chalk
MSST	soft medium grained sandstone	GS	gravel with porous (soft) stones
SI	soft weathered igneous/metamorphic rock	GH	gravel with non porous (hard) stones

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	MD	moderately developed
	ST	strongly developed		
Ped size	F	fine	M	medium
	C	coarse		
Ped shape	S	single grain	M	massive
	GR	granular	AB	angular blocky
	SAB	sub angular blocky	PR	prismatic
	PL	platy		

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 appropriate 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

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					
2	TQ71906130	PGR				1	2	124	3	123	5	3A			WD	2	
5	TQ71906120	PGR				1	2	108	-13	120	2	3A			WD	2	
28	TQ72686099	PEA NW	1	35	35	4	3B	107	-14	105	-13	3A			WE	3B	IMP FLINT 90
37	TQ72616089	PEA NE	3	27	27	4	3B	122	1	100	-18	3A			WE	3B	
38	TQ72706090	PEA N	2	28	28	4	3B	124	3	101	-17	3A			WE	3B	
39	TQ72806090	PEA N	1	28	28	4	3B	122	1	99	-19	3A			WE	3B	
48	TQ72606080	PEA NE	3	28	28	4	3B	124	3	101	-17	3A			WE	3B	
51	TQ72006070	SAS N	2	32	32	4	3B		0		0				WE	3B	
52	TQ72106070	PLO W	3	25	25	4	3B		0		0				WE	3B	
55	TQ72416068	PLO SE	1	30	30	4	3B		0		0				WE	3B	
56	TQ72506070	PEA NE	1	28	28	4	3B	125	4	102	-16	3A			WE	3B	CALC 2B PLUS
59	TQ72026061	SAS N	3	45	45	3	3B		0		0				WE	3B	
60	TQ72106060	SAS W	2	45	45	3	3A		0		0				WE	3A	
61	TQ72206060	PLO SE	1			1	1	93	-28	100	-18	3B	Y		DR	3B	POSS 3A
62	TQ72306060	PLO E	1	30	40	3	3B	87	34	93	-25	3B			WE	3B	
63	TQ72406060	PLO E	1	45	45	3	3B		0		0				WE	3B	
64	TQ72506060	PEA W	1	40	40	3	3B	130	9	106	-12	3A			WE	3B	CALC 40+
65	TQ72606060	PEA		30	50	3	3B	130	9	106	-12	3A			WE	3B	
68	TQ72106050	BRA S	2			1	1	144	23	110	-8	2			DR	2	
69	TQ72206050	PEA S	1	75	75	2	3A	113	-8	109	-9	3A	Y		WE	3A	DISTURBED
70	TQ72306050	PEA				1	1	81	40	81	-37	3B			DR	3A	I FLINTS 50 3P
71	TQ72406050	PEA				1	1	91	-30	96	-22	3B			DR	3A	I FLINTS 60 3P
72	TQ72506050	PEA				1	1	130	9	113	-5	2			DR	2	I FLINTS 100
73	TQ72606050	PEA			55	2	2	105	-16	107	-11	3A			WD	2	SEE 1P
74	TQ72906050	PEA				1	1	81	-40	81	-37	3B			DR	3B	IMP 50 CALCTS
79	TQ72106040	PGR		30	30	4	3B		0		0				WE	3B	
81	TQ72306040	PGR		0	30	4	3B		0		0				WE	3B	IMP 90
82	TQ72406040	PEA				1	1	147	26	112	-6	2			DR	2	
83	TQ72506040	PEA				1	1		0		0				DR	2	IMP 80 SEE 1P
84	TQ72606040	PEA				1	1		0		0				DR	2	IMP 95 SEE 1P
85	TQ72706040	PEA				1	1	149	28	113	-5	2			DR	2	
88	TQ71976029	FAL		70	70	2	2	107	-14	112	-6	3A			DR	3A	IMP 80
90	TQ72206030	PGR		0	25	4	3B		0		0				WE	3B	
90A	TQ72246030	PGR		0	25	4	3B	126	5	102	-16	3A			WE	3B	
91	TQ72306030	PGR		65	65	2	2	132	11	107	-11	3A			DR	3A	
92	TQ72406030	PLO		65	65	2	2	136	15	112	-6	2			WD	2	
93	TQ72506030	PLO				1	1	151	30	112	-6	2			DR	2	
94	TQ72606030	PEA				1	1		0		0				DR	3A	SEE 1P PROB G2
97	TQ71806020	FAL				1	1	122	1	111	-7	3A			DR	3A	IMP 95 SEE 3P
98	TQ71906020	FAL SW	1			1	1	102	19	106	-12	3A			DR	3A	IMP 80 SEE 3P
99	TQ72006020	FAL SW	1			1	1	143	22	107	-11	3A			DR	3A	
100	TQ72086019	FAL		27	27	4	3B		0		0				WE	3B	IMP 45

SAMPLE NO	GRID REF	ASPECT USE	-WETNESS-		-WHEAT-		POTS-		M REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC COMMENTS		
			GRDNT	GLEYSPL	CLASS	GRADE	AP	MB	AP	MB					DRT	FLOOD
103	TQ72406020	PLO			1	1	125	4	110	-8	3A		DR	2	IMP 100 SEE 1P	
104	TQ72506020	PLO			1	1		0	0				DR	2	IMP 70 SEE 1P	
105	TQ72606020	PLO			1	1		0	0				DR	2	IMP 75 SEE 1P	
106	TQ72706020	PLO			1	1	106	-15	107	-11	3A		DR	2	IMP 80 SEE 1P	
107	TQ71806010	FAL			1	1	123	2	107	-11	3A		DR	3A	IMP 100	
108	TQ71906010	FAL			1	1	143	22	107	-11	3A		DR	3A		
109	TQ72006010	FAL			1	1		0	0				DR	3A	IMP 75 SEE 3P	
110	TQ72106010	FAL			1	1	101	-20	112	-6	3A		DR	2	IMP 70 SEE 1P	
111	TQ72206010	RGR			1	1		0	0			Y	DR	4	I40 NOTS NONAG	
112	TQ72306010	CER			1	1	151	30	111	-7	2		DR	2		
113	TQ72406010	CER			1	1		0	0				DR	3A	IMP 50	
114	TQ72506010	PLO			1	1		0	0				DR	3A	IMP 55	
115	TQ72606010	PLO			1	1	150	29	110	-8	2		DR	2		
117	TQ71906000	FAL			1	1	139	18	103	-15	3A		DR	3A		
118	TQ72106000	RGR			1	1		0	0				DR	3B	IMP 40 X3	
120	TQ72306000	CER			1	1		0	0				DR	3A	IMP 50 SEE 3P	
121	TQ72406000	CER			1	1	119	2	113	-5	3A		DR	2	IMP 90 SEE 1P	
122	TQ72506000	CER			1	1		0	0				DR	3A	IMP 60 SEE 3P	
123	TQ72606000	CER			1	1		0	0				DR	3A	IMP 60 SEE 3P	
125	TQ72205990	RGR			1	1		0	0			Y	DR	3B	IMP 45	
126	TQ72305990	CER			1	1	104	-17	104	-14	3A		DR	3A	IMP 80	
127	TQ72405990	CER			1	1	131	10	107	-11	3A		DR	3A		
128	TQ72505990	CER			1	1		0	0				DR	3A	IMP 60 SEE 3P	
129	TQ72605990	CER			1	1	97	-24	108	-10	3B		DR	3A	IMP 70 SEE 3P	
130	TQ72405980	CER			1	1		0	0				DR	3A	IMP 70	
131	TQ72505980	CER	SE	1	1	1	133	12	104	-14	3A		DR	3A		
132	TQ72605980	CER			1	1	118	-3	106	-12	3A		DR	3A	IMP 100	
133	TQ72595973	CER			1	1	143	22	106	-12	3A		DR	3A		
1P	TQ72506020	PLO			1	1	129	8	110	-8	2		DR	2		
2P	TQ72606080	PEA					30	30	4	3B	125	4	102	-16	3A	WE 3B CALC CLAY 58
3P	TQ71906020	FAL	SW	2	1	1	131	10	106	12	3A		DR	3A		

SAMPLE	DEPTH	TEXTURE	COLOUR	-- -MOTTLES----- PED			-- -STONES----- STRUCT/			SUBS						
				COL	ABUN	CONT	COL	GLEY	2 >6 LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
2	0-25	HZCL	10YR33						0	0	HR	2				Y
	25-60	HZCL	10YR64						0	0		0	M			Y
	60-85	MZCL	10YR74						0	0	CH	2	M			Y
IMP CHALK 85																
5	0-25	HZCL	10YR33						0	0	HR	2				Y
	25-40	ZC	10YR64						0	0	CH	1	M			Y
	40-72	HZCL	10YR64						0	0	CH	2	M			Y
IMP CHALK 72																
28	0-35	HCL	75YR42						1	0	HR	2				
	35-65	C	25Y 63	10YR66	C	D		Y	0	0	HR	5	P		Y	Y
	65-90	C	25Y 73	10YR68	M	D		Y	0	0	HR	5	P		Y	Y
+3% CHALK																
37	0-27	C	10YR42						1	0	HR	2				
	27-60	C	25Y 53 63	10YR66	C	D		Y	0	0	HR	2	P		Y	
	60-120	C	05Y 62	25Y 66	C	D		Y	0	0	HR	3	P		Y	Y
38	0-28	C	75YR42						1	0	HR	2				
	28-65	C	25Y 64	10YR66	C	D		Y	0	0	HR	1	P		Y	
	65-120	C	05Y 72	25Y 66	C	D		Y	0	0		0	P		Y	Y
39	0-28	HCL	10YR42						3	0	HR	4				
	28-65	C	25Y 63	10YR68	C	D		Y	0	0	HR	8	P		Y	
	65-120	C	05Y 72	10YR66	C	D		Y	0	0	HR	2	P		Y	Y
48	0-28	C	10YR42						1	0	HR	2				
	28-80	C	25Y 63	10YR66	C	D		Y	0	0	HR	1	P		Y	
	80-120	C	05Y 62	25Y 66	C	D		Y	0	0		0	P		Y	Y
51	0-32	HCL	25Y 31						0	0	HR	1				
	32-70	C	10YR53	75YR58	C	D		Y	0	0		0	P		Y	
52	0-25	HCL	25Y 31						2	0	HR	3				Y
	25-70	C	25Y 5152	75YR58	M	D		Y	0	0	HR	5	P		Y	Y
55	0-30	HCL	10YR31						0	0	HR	1				
	30-60	C	25Y 53	10YR58	C	F		Y	0	0		0	P		Y	
	60-80	C	25Y 62	75YR68	M	D	CDM MN	Y	0	0		0	P		Y	
56	0-28	C	10YR42						0	0	HR	1				
	28-40	C	25Y 63	10YR66	C	D		Y	0	0	HR	1	P		Y	
	40-55	C	05Y 62	25Y 66	C	D		Y	0	0		0	P		Y	
	55-120	C	05Y 72	10YR68	C	D		Y	0	0	CH	2	P		Y	Y
59	0-30	HCL	10YR31						0	0	HR	2				
	30-45	C	10YR42						0	0	HR	5	M			
	45-70	C	10YR41 51	10YR58	C	D		Y	0	0		0	P		Y	
60	0-32	MCL	10YR31						3	0	HR	8				
	32-45	C	25Y 32						0	0	HR	5	M			
	45-80	C	25Y 52	10YR58	C	D		Y	0	0		0	P		Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	--MOTTLES--			PED COL	----STONES--			STRUCT/ CONSIST	SUBS		SPL	CALC
				COL	ABUN	CONT		GLE	>2	>6		LITH	TOT		
61	0-32	MCL	10YR31						1	0	HR	2			Y
	32-50	MCL	10YR32						0	0	HR	10	M		Y
	50-65	MCL	10YR32						0	0	HR	30	M		Y
IMP FLINTS 65															
62	0-30	HCL	10YR32						1	0	HR	2			Y
	30-40	C	10YR53	10YR58	C	D	FEW MN	Y	0	0	HR	5	M		Y
	40-60	C	10YR53	10YR58	M	D	COM MN	Y	0	0	HR	5	P		Y
IMP FLINTS 60															
63	0-30	HCL	10YR31						0	0	HR	1			
	30-45	C	25Y 53						0	0		0	M		Y
	45-80	C	25Y 53	10YR58	C	D	COM MN	Y	0	0		0	P		Y
IMP FLINTS 60															
64	0-27	HCL	10YR42						1	0	HR	2			
	27-40	HCL	25Y 53						0	0	HR	2	M		
	40-65	C	25Y 53	75YR56	C	D		Y	0	0	HR	2	P		Y
	65-120	C	05Y 82	10YR68	C	D		Y	0	0	CH	2	P		Y
65	0-30	HCL	75YR42						2	1	HR	4			
	30-50	HCL	10YR53	10YR56	C	D		Y	0	0	HR	5	M		
	50-70	C	25Y 63	10YR68	C	D		Y	0	0	HR	10	P		Y
	70-120	C	05Y 82	25Y 68	C	D		Y	0	0		0	P		Y
68	0-30	MCL	75YR32						4	0	HR	7			
	30-45	MCL	10YR44						0	0	HR	7	M		
	45-90	HCL	10YR54	75YR56	C	D		S	0	0	HR	8	M		N
	90-120	SCL	10YR66	10YR68	C	D		S	0	0	HR	10	M		N
69	0-30	HCL	10YR32						3	1	HR	5			
	30-75	HCL	10YR34						0	0	HR	10	M		
	75-90	HCL	10YR64	75YR56	C	D		Y	0	0	HR	10	P		Y
70	0-30	MCL	75YR42						3	0	HR	5			
	30-50	HCL	75YR55						0	0	HR	8	M		IMP FLINTS 50
71	0-30	MCL	10YR32						3	0	HR	4			
	30-50	MCL	75YR44						0	0	HR	7	M		
	50-60	HCL	75YR45						0	0	HR	10	M		IMP FLINTS 60
72	0-30	MCL	75YR43						2	0	HR	3			
	30-75	MCL	75YR54						0	0	HR	5	M		
	75-95	HCL	75YR56						0	0	HR	5	M		
	95-100	SCL	75YR56						0	0	HR	10	M		IMP FLINTS 100
73	0-30	MCL	75YR43						4	0	HR	5			
	30-55	HCL	75YR54						0	0	HR	5	M		
	55-70	C	10YR54	75YR56	C	F	COM MN	S	0	0	HR	10	P		Y
	70-80	HCL	25Y 74						0	0	HR	10	M		IMP FLINTS 80

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES---		PED COL	---STONES---			STRUCT/ CONSIST	SUBS			CALC	
				COL	ABUN		CONT	GLE	>2		>6	LITH	TOT		STR
93	0-30	MCL	10YR42					4	0	HR	5				
	30-45	MCL	75YR54					0	0	HR	5		M		
	45-70	HCL	75YR55				FEW MN	0	0	HR	5		M		
	70-100	SCL	10YR56					0	0	HR	5		M		
	100-120	MSL	10YR65					0	0	HR	5		M		Y
94	0-30	MCL	10YR42					3	0	HR	4				
	30-60	MCL	75YR54					0	0	HR	5		M		IMP FLINTS 60
97	0-30	MCL	75YR43					5	0	HR	8				
	30-65	MCL	75YR45					0	0	HR	5		M		
	65-80	HCL	75YR56					0	0	HR	7		M		
	80-95	SCL	75YR56					0	0	HR	10		M		IMP FLINTS 95
98	0-30	MCL	75YR43					5	0	HR	7				
	30 40	MCL	75YR45					0	0	HR	5		M		
	40 65	SCL	75YR55					0	0	HR	5		M		
	65 80	LMS	10YR55					0	0	HR	10		M		IMP FLINTS 80
99	0 30	MCL	75YR33					5	2	HR	8				
	30 50	MCL	75YR44					0	0	HR	8		M		
	50 120	SCL	75YR56					0	0	HR	10		M		
100	0 27	HCL	10YR43					4	0	HR	6				
	27 45	C	25Y 53	10YR56	C	D		Y	0	0	HR	12		P	Y Y IMP FLINTS 45
103	0-30	MCL	10YR43					5	2	HR	7				
	30-85	MCL	10YR56				FEW MN	0	0	HR	8		M		
	85-100	MCL	10YR65 75					0	0	HR	15		M		Y
104	0 30	MCL	10YR43					4	0	HR	6				
	30 60	MCL	75YR55					0	0	HR	8		M		
	60-70	HCL	75YR55				FEW MN	0	0	HR	12		M		IMP FLINTS 70
105	0 30	MCL	10YR43					4	0	HR	6				
	30 65	MCL	75YR54					0	0	HR	5		M		
	65 75	SCL	75YR54					0	0	HR	10		M		IMP FLINTS 75
106	0-30	MCL	10YR33					6	1	HR	8				
	30-65	HCL	75YR44					0	0	HR	10		M		
	65-80	SCL	10YR54					0	0	HR	10		M		IMP FLINTS 80
107	0-30	MCL	10YR33					6	0	HR	8				
	30 55	MCL	75YR45					0	0	HR	10		M		
	55-100	HCL	10YR56					0	0	HR	12		M		
108	0-30	MCL	75YR43					5	0	HR	8				
	30-50	MCL	75YR45					0	0	HR	8		M		
	50-120	SCL	75YR56					0	0	HR	10		M		

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES---			PED COL	--- STONES---			STRUCT/ CONSIST	SUBS		
				COL	ABUN	CONT		GLE	>2	>6		LITH	TOT	STR
109	0-28	MCL	75YR43					6	0	HR	10			
	28-50	MCL	75YR45					0	0	HR	12	M		
	50-75	SCL	75YR46					0	0	HR	20	M		IMP FLINTS 75
110	0-30	MCL	75YR43					3	0	HR	5			
	30-70	MCL	75YR56					0	0	HR	5	M		IMP FLINTS 70
111	0-4	MSZL	75YR43					0	0	HR	5			
	4-40	MCL	75YR56					0	0	HR	10	M		I40-DIST/NONAG
112	0-30	MCL	75YR43					5	0	HR	6			
	30-65	MCL	75YR56					0	0	HR	5	M		
	65-85	SCL	10YR56					0	0	HR	5	M		
	85-120	MSL	10YR56					0	0	HR	5	M		
113	0-30	MCL	75YR43					6	0	HR	8			
	30-50	HCL	75YR56					0	0	HR	10	M		IMP FLINTS 50
114	0-30	MCL	75YR43					7	1	HR	9			
	30-55	SCL	10YR54					0	0	HR	10	M	Y	+5% CHALK
115	0-30	MCL	75YR43					4	0	HR	6			
	30-45	MCL	75YR45					0	0	HR	7	M		
	45-80	HCL	75YR56					0	0	HR	10	M		
	80-120	MSL	10YR56					0	0	HR	5	M		
117	0-30	MCL	75YR43					7	1	HR	10			
	30-90	SCL	75YR55					0	0	HR	10	M		
	90-120	HCL	75YR55					0	0	HR	10	M		
118	0-20	MSL	75YR43					0	0	HR	5			
	20-40	MSL	75YR56					0	0	HR	10	M		IMP FLINTS 40
120	0-30	MCL	75YR43					6	1	HR	8			
	30-50	MCL	75YR46					0	0	HR	15	M		IMP FLINTS 50
121	0-27	MSZL	75YR43					5	0	HR	8			
	27-70	MCL	75YR56					0	0	HR	5	M		
	70-90	SCL	75YR56					0	0	HR	12	M		
122	0-30	MCL	75YR43					5	1	HR	7			
	30-55	MCL	75YR56					0	0	HR	7	M		
	55-60	HCL	75YR46					0	0	HR	15	M		IMP FLINTS 60
123	0-30	MCL	75YR43					4	2	HR	6			
	30-55	MCL	10YR56					0	0	HR	10	M		
	55-60	HCL	10YR54					0	0	HR	15	M		IMP FLINTS 60

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES----			PED COL	----STONES----			STRUCT/ CONSIST	SUBS			SPL	CALC	
				COL	ABUN	CONT		GLE	>2	>6		LITH	TOT	STR			POR
125	0-10	MSL	75YR43					0	0	HR	5						
	10-35	SCL	75YR56					0	0	HR	10		M				
	35-45	LMS	10YR66					0	0	HR	20		M			IMP FLINTS 45	
126	0-30	MSL	75YR43					6	0	HR	8						
	30-75	SCL	75YR56					0	0	HR	5		M				
	75-80	HCL	75YR46					0	0	HR	15		M				
127	0-30	MCL	75YR43					8	2	HR	12						
	30-55	MCL	75YR56					0	0	HR	5		M				
	55-85	MSL	75YR56					0	0	HR	5		M				
	85-120	LMS	10YR56					0	0	HR	5		M				
128	0-30	MCL	75YR43					7	1	HR	10						
	30-55	MCL	75YR56					0	0	HR	8		M				
	55-60	HCL	75YR56					0	0	HR	15		M			IMP FLINTS 60	
129	0-30	MCL	75YR43					7	2	HR	10						
	30-65	MCL	75YR56					0	0	HR	7		M				
	65-70	HCL	75YR56					0	0	HR	15		M			IMP FLINTS 70	
130	0-30	MSL	10YR32					6	1	HR	8						
	30-50	SCL	75YR44					0	0	HR	12		M				
	50-70	HCL	75YR56					0	0	HR	15		M			IMP FLINTS 70	
131	0-30	MSL	75YR43					6	0	HR	8						
	30-70	SCL	75YR56					0	0	HR	5		M				
	70-95	MSL	75YR56					0	0	HR	5		M				
	95-120	MS	10YR66					0	0		0		M				
132	0-30	MCL	75YR43					8	1	HR	10						
	30-50	HCL	75YR46					0	0	HR	12		M				
	50-85	SCL	75YR56					0	0	HR	5		M				
	85-100	LMS	10YR75					0	0	HR	15		M		Y	+5% CHALK	
133	0-25	MCL	10YR32					6	0	HR	8						
	25-55	MCL	10YR46					0	0	HR	12		M				
	55-120	SCL	10YR46					0	0	HR	5		M				
1P	0-30	MCL	75YR43					3	1	HR	5						
	30-65	MCL	75YR56					0	0	HR	7	MDCSAB	FR	M			
	65-85	SC	75YR54	75YR56	C	F	FEW MN	S	0	0	HR	25	WDCSAB	FM	M		
	85-120	SCL	10YR64					0	0	HR	35	MASSIV	FM	P		Y	
2P	0-30	C	25Y 42					1	0	HR	3						
	30-58	C	25Y 52	10YR56	C			Y	0	0	0	MDCAB	FM	P	Y	Y	
	58-120	C	25Y 62 72	10YR68	C			Y	0	0	0	MDCAB	FM	P	Y	Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES----- PED			----STONES- --			STRUCT/ SUBS							
				COL	ABUN	CONT	COL	GLEY	2 >6 LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC	
3P	0-30	MCL	10YR32						3	0	HR	6					
	30-55	MCL	75YR44						0	0	HR	6	MDCSAB	FR	M		
	55-78	SCL	75YR46				FEW	MN	0	0	HR	25			M		
	78-95	MSL	75YR58						0	0	HR	25			M		
	95-120	LMS	75YR58						0	0	HR	10			M		