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Tonbridge and Malling District Local Plan
Land at Wouldham, Kent

Agricultural Land Classification
ALC Map and Report
May 1996

Resource Planning Team
Guildford Statutory Group
ADAS Reading

ADAS Reference 2013/016/96
MAFF Reference EL 20/01393
LUPU Commission 02429

AGRICULTURAL LAND CLASSIFICATION REPORT

TONBRIDGE AND MALLING DISTRICT LOCAL PLAN
LAND AT WOULDHAM, KENT

Introduction

1 This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 37 4 hectares of land either side of School Lane to the east of the village of Wouldham in Kent The survey was carried out during February 1996

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 the Tonbridge and Malling District Local Plan 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 majority of the site was agricultural land under arable cropping Towards the west and south of the site there are areas under permanent grass The parts of the site shown as Other Land include allotments a recreation ground some scrub and the part of School Lane which falls within the site boundary

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 overleaf

7 The fieldwork was conducted at an average density of approximately 1 boring per hectare A total of 34 borings and two soil pits were described

8 The land at this site has been classified as Grade 2 (very good quality) Subgrade 3a (good quality) and Subgrade 3b (moderate quality) on the basis of a soil droughtiness limitation

9 The areas shown as Grade 2 and Subgrade 3a are across the west and south of the site In these areas very slightly stony and occasionally chalky medium loamy topsoils overlie similar upper subsoils passing to well rooted soft chalky drift in the lower subsoil The flint stones and chalk in the profile cause a reduction in available water such that there is a risk of droughtiness which may affect plant growth and yield The relative stone contents and depths of soils determine the degree of droughtiness and therefore the ALC grade

10 Towards the east and north of the site Subgrade 3b is mapped In these areas the soil resource is shallow over blocky slightly weathered chalk, passing to harder chalk at moderate depths The slightly weathered chalk was observed to be moderately well rooted The hard chalk was observed to contain very few roots This restriction in the depth of rooting causes a reduction in the available water capacity of the soil As a result of this soil droughtiness occurs which in the relatively dry local climate in regional terms leads to Subgrade 3b being appropriate

Table 1 Area of grades and other land

Grade/Other Land	Area (hectares)	% Total Site Area	% Agricultural Land
2	14 2	38 0	44 4
3a	2 8	7 5	8 8
3b	15 0	40 1	46 8
Other Land	5 4	14 4	N/A
Total Agricultural Area	32 0		100 0
Total Site Area	37 4	100 0	

Climate

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

12 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	
Grid reference	N/A	TQ 714 639	TQ 717 645
Altitude	m, AOD	10	25
Accumulated Temperature	day°C	1493	1476
Average Annual Rainfall	mm	667	673
Field Capacity Days	days	137	138
Moisture Deficit Wheat	mm	121	119
Moisture Deficit Potatoes	mm	117	115

13 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

14 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 (ATO January to June) as a measure of the relative warmth of a locality

15 The combination of rainfall and temperature at this site mean that there is no overall climatic limitation However the site is believed to be rather frost prone (Met Office 1979) but soil factors are overriding in this area so this factor has no effect on the overall land quality

Site

16 The site lies at an altitude in the range 6-35 m AOD Overall the site rises steadily from the west to the east with gradients of 5° being recorded as a maximum Slopes of this gradient are insufficient to affect land quality

Geology and soils

17 The published geological information for the site (BGS 1977) shows the majority of the site to be underlain by Pleistocene/Recent head material overlying Cretaceous Upper Chalk The Chalk is exposed at the surface towards the north east of the site To the north west of the site a small area of head brickearth has been mapped

18 The most detailed published soils information for the site (SSEW 1983 and 1984) shows the site to comprise soils of the Coombe 1 association These are described as well drained calcareous fine silty soils deep in valley bottoms shallow to chalk on valley sides in places Slight risk of water erosion (SSEW 1983) Soils of this broad type were found across the site

Agricultural Land Classification

19 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

20 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

Grade 2

21 Land of very good quality has been mapped towards the west of the site in a single unit The principal limitation is slight soil droughtiness

22 Soils in this area are characterised by the pit observation 2p and commonly comprise a calcareous very slightly to slightly stony and chalky (up to 5% v/v total flints and 5% v/v total chalk fragments) medium silty clay loam or medium clay loam topsoil This passes to slightly stonier (up to 15% v/v total chalk fragments and 5% flints) calcareous medium silty clay loam medium clay loam or occasionally heavy clay loam upper subsoil horizons These overlie a soft chalky drift which comprises a calcareous medium silty clay loam soil material containing up to 65% v/v chalk fragments and up to 3% v/v total flints This commonly

overlies blocky hard chalk between 80 and 100cm On occasion the pure chalk does not appear in the profile and the chalky drift extends to depth (120cm) The combination of the chalk content and flints in the profile in association with the local climatic regime causes profile available water to be slightly restricted such that a slight soil droughtiness limitation exists Soil droughtiness can affect plant growth and yield especially in drier years

Subgrade 3a

23 Land of good quality has been mapped in a single unit towards the south of the site The principal limitation is soil droughtiness

24 Soils in this area commonly comprise a slightly stony (up to 8% v/v total flints including 4%>2cm) calcareous medium clay loam topsoil passing to a similarly stony medium clay loam upper subsoil horizon These profiles are then impenetrable over large flints located at the top of impenetrable chalk This causes the available water in the profile to be more limited than in the profiles above (Grade 2 see para 22) to the extent that Subgrade 3a is appropriate given the local climate The soil droughtiness which results may affect plant growth and yield to a greater extent than for land classified as Grade 2 especially in drier years

Subgrade 3b

25 Land of moderate quality has been mapped towards the east of the site in a single mapping unit The principal limitation to land quality is soil droughtiness

26 Soils in this area are characterised by the soil pit 1p and commonly comprise a calcareous slightly chalky (up to 15% v/v total chalk fragments) and occasionally very slightly stony (up to 3% v/v total flints) medium silty clay loam or medium clay loam topsoil commonly passing to a similar narrow thin subsoil horizon These overlie weathered blocky chalk at between 30 and 45cm In the pit observation roots were observed to extend 35cm into the chalk At this point the chalk became harder and less blocky In combination with the stoniness of the soil this rooting restriction causes available water to be limited to plants to the extent that given the local climate Subgrade 3b is appropriate to this land Soil droughtiness will affect plant growth and yield more severely than elsewhere on the site

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SOURCES OF REFERENCE

British Geological Survey (1977) *Sheet 272 Chatham 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

Meteorological Office (1979) *Unpublished Climate data relating to Ordnance Survey Sheet 172 1 63 360 scale* Met Office Bracknell

Meteorological 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 of 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

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 sandston	**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	**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	

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

SOIL PIT DESCRIPTION

Site Name TON & MALLING WOULDHAM Pit Number 1P

Grid Reference TQ71606430 Average Annual Rainfall 667 mm
Accumulated Temperature 1493 degree days
Field Capacity Level 137 days
Land Use Arable
Slope and Aspect 2 degrees W

HORIZON	TEXTURE	COLOUR	STONES >2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	MZCL	10YR52 00	3	15	CH					Y
30- 65	CH	10YR81 00	0	0				FM	P	Y
65- 80	CH	10YR81 00	0	0					P	Y

Wetness Grade 1 Wetness Class I
Gleying cm
SPL cm

Drought Grade 3B APW 94 mm MBW -27 mm
APP 93 mm MBP -24 mm

FINAL ALC GRADE 3B
MAIN LIMITATION Droughtiness

SOIL PIT DESCRIPTION

Site Name TON & MALLING WOULDHAM Pit Number 2P

Grid Reference TQ71506410 Average Annual Rainfall 667 mm
Accumulated Temperature 1493 degree days
Field Capacity Level 137 days
Land Use Arable
Slope and Aspect 2 degrees W

HORIZON	TEXTURE	COLOUR	STONES >2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 28	MZCL	10YR42 52	1	2	HR					Y
28- 64	MZCL	10YR54 00	0	15	CH		MDCSAB	FR	M	Y
64-100	MZCL	10YR64 74	0	60	CH			FM	M	Y
100-120	CH	10YR81 00	0	5	HR				P	Y

Wetness Grade 1 Wetness Class I
Gleying cm
SPL cm

Drought Grade 2 APW 144mm MBW 23 mm
APP 117mm MBP 0 mm

FINAL ALC GRADE 2
MAIN LIMITATION Droughtiness

SAMPLE NO	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M REL DRT	EROSN FLOOD	FROST EXP	CHEM DIST	ALC LIMIT		COMMENTS
1	TQ71326459	CER	W	1		1	1	1	133	12	115	-2	2				DR	2	SEE 2P
1P	TQ71606430	ARA	W	2		1	1	1	94	-27	93	-24	3B				DR	3B	ROOTING TO 65
2	TQ71406460	CER	W	1		1	1	1	102	-19	112	-5	3A				DR	2	IMP 70 SEE 2P
2P	TQ71506410	ARA	W	2		1	1	1	144	23	117	0	2				DR	2	PIT100 AUG120
3	TQ71306450	CER	W	2		1	1	1	120	-1	117	0	3A				DR	2	IMP 85 SEE 2P
4	TQ71406450	CER	W	2		1	1	1	125	4	116	-1	3A				DR	2	IMP 80 SEE 2P
5	TQ71506450	CER	W	4		1	1	1	92	-29	96	-21	3B				DR	3B	IMP 40 SEE 1P
6	TQ71606450	CER	W	3		1	1	1	76	-45	76	-41	3B				DR	3B	IMP 45 SEE 1P
7	TQ71706450	CER	W	2		1	1	1	68	-53	68	-49	4				DR	3B	IMP 40 SEE 1P
8	TQ71806450	CER	W	3		1	1	1	158	37	122	5	2				DR	2	SEE 2P
9	TQ71906450	CER	N	3		1	1	1	100	-21	99	-18	3B				DR	3B	IMP 50 BDR 3A
10	TQ71406440	CER	W	2		1	1	1	155	34	117	0	2				DR	2	SEE 2P
11	TQ71606440	CER	W	2		1	1	1	143	22	115	-2	2				DR	2	IMP 110 SEE 2P
12	TQ71706440	CER	W	3		1	1	1	154	33	117	0	2				DR	2	SEE 2P
13	TQ71806440	CER	W	3		1	1	1	53	-68	53	-64	4				DR	3B	IMP 30 SEE 1P
14	TQ71906440	CER	N	2		1	1	1	68	-53	68	-49	4				DR	3B	IMP 40 SEE 1P
15	TQ71506430	ARA	W	2		1	1	1	150	29	118	1	2				DR	2	SEE 2P
16	TQ71606430	ARA	W	5		1	1	1	89	-32	94	-23	3B				DR	3B	IMP 50 SEE 1P
17	TQ71436420	PGR	W	1		1	1	1	156	35	122	5	2				DR	2	SEE 2P
18	TQ71506420	ARA	W	2		1	1	1	116	5	119	2	3A				DR	2	IMP 80 SEE 2P
19	TQ71606420	ARA	W	5		1	1	1	96	-25	99	-18	3B				DR	3B	IMP 45 SEE 1P
20	TQ71406410	PGR	W	1		1	1	1	127	6	123	6	2				DR	2	IMP 90 SEE 2P
21	TQ71506410	ARA	W	1		1	1	1	139	18	120	3	2				DR	2	IMP 100 SEE 2P
22	TQ71606410	ARA	W	5		1	1	1	96	-25	99	-18	3B				DR	3B	IMP 45 SEE 1P
23	TQ71706410	ARA	S	2		1	1	1	96	-25	98	-19	3B				DR	3B	IMP 50 SEE 1P
24	TQ71806410	ARA	S	2		1	1	1	96	-25	98	-19	3B				DR	3B	IMP 50 SEE 1P
25	TQ71406399	PGR	W	1		1	1	1	117	-4	121	4	3A				DR	2	IMP 80 SEE 2P
26	TQ71506400	ARA	W	1		1	1	1	106	-15	117	0	3A				DR	2	IMP 70 SEE 2P
27	TQ71606400	ARA	W	2		1	1	1	127	6	112	-5	2				DR	2	IMP 100 SEE 2P
28	TQ71706400	ARA	W	2		1	1	1	131	10	115	-2	2				DR	2	IMP 100 SEE 2P
29	TQ71806400	ARA	W	2		1	1	1	100	-21	112	-5	3B				DR	3B	IMP 70 BDR 3A
31	TQ71506390	PGR	W	2		1	1	1	116	-5	119	2	3A				DR	2	IMP 80 SEE 2P
32	TQ71606390	PGR	W	1		1	1	1	80	-41	80	-37	3B				DR	3A	IMP 50
33	TQ71706390	ARA	W	2		1	1	1	84	-37	87	-30	3B				DR	3A	IMP 55
34	TQ71806390	ARA	W	2		1	1	1	80	-41	80	-37	3B				DR	3A	IMP 50
36	TQ71506380	RGR	W	1		1	1	1	95	-26	100	-17	3B				DR	3A	IMP 60

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	CALC	
1	0 35	mzcl	10YR42 00						1	0	HR	5					Y		SEE 2P
	35-65	hcl	10YR54 00						0	0	HR	5		M			Y		+1% CHALK FRAGS
	65-80	mcl	10YR81 00						0	0	CH	65		M			Y		+5% FLINTS
	80-110	ch	10YR81 00						0	0	HR	5		P			Y		IMP CHALK 80
1P	0-30	mzcl	10YR52 00						3	0	CH	15					Y		
	30-65	ch	10YR81 00						0	0		0		FM P			Y		MAX ROOTING DEPTH
	65-80	ch	10YR81 00						0	0		0		P		Y	Y		PIT IMP 80
2	0-30	mzcl	10YR43 00						0	0	HR	3					Y		SEE 2P
	30-50	mcl	10YR54 00						0	0	HR	10		M			Y		+5% CHALK FRAGS
	50-70	mcl	10YR54 00						0	0	CH	15		M			Y		IMPCHDRIFT70 +5% HR
2P	0-28	mzcl	10YR42 52						1	0	HR	2					Y		+3% CHALK FRAGS
	28-64	mzcl	10YR54 00						0	0	CH	15	MDCSAB	FR M			Y		
	64-100	mzcl	10YR64 74						0	0	CH	60		FM M			Y		+5% FLINTS
	100-120	ch	10YR81 00						0	0	HR	5		P			Y		SOFT CH ROOTSVIS100
3	0-35	mzcl	10YR42 00						1	0	HR	5					Y		SEE 2P +2% CHALK
	35-70	mcl	10YR54 00						0	0	HR	5		M			Y		+5% CHALK FRAGS
	70-85	hcl	10YR54 00						0	0	CH	10		M			Y		IMPCHDRIFT85 +5% HR
4	0-30	mcl	10YR43 00						0	0	HR	3					Y		SEE 2P +1% CHALK
	30-75	hcl	75YR44 54	75YR56 00	C			S	0	0	CH	1		M			Y		SLIGHTLY GLEYED
	75-105	ch	10YR81 00						0	0	HR	3		P			Y		IMP CHALK 80
5	0-38	mcl	10YR52 00						0	0	CH	10					Y		SEE 1P +3% FLINTS
	38-73	ch	10YR81 00						0	0	HR	5		P			Y		IMP CHALK 40
6	0-30	mcl	10YR52 00						0	0	CH	5					Y		SEE 1P
	30-45	mcl	10YR53 00						0	0	CH	5		M			Y		IMP CHALK 45
7	0-30	mcl	10YR52 00						0	0	CH	5					Y		SEE 1P
	30-40	mcl	10YR53 00						0	0	CH	5		M			Y		IMP CHALK 40
8	0-30	mzcl	10YR52 00						0	0	CH	5					Y		SEE 2P
	30-120	mzcl	10YR62 00						0	0	CH	5		M			Y		
9	0-30	mcl	10YR52 00						0	0	CH	5					Y		SEE 1P
	30-45	mcl	10YR62 00						0	0	CH	5		M			Y		
	45-80	ch	10YR71 00						0	0		0		P			Y		IMP CHALK 50
10	0-35	mzcl	10YR42 00						0	0	HR	3					Y		SEE 2P
	35-50	mcl	10YR43 00						0	0	HR	10		M			Y		
	50-105	mcl	10YR54 00						0	0	CH	15		M			Y		
	105-120	msl	10YR64 00						0	0	HR	5		M			Y		
11	0 30	mcl	10YR52 00						0	0	HR	3					Y		SEE 2P
	30-110	mcl	10YR53 00						0	0	HR	2		M			Y		IMP CHALKYDRIFT 110

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES----- COL	ABUN	CONT	PED COL	GLEY	----STONES---- >2	6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
12	0-30	mcl	10YR42 00						0	0	CH	3					Y		SEE 2P
	30-120	mcl	10YR53 00						0	0	CH	3		M			Y		
13	0-30	mcl	10YR52 00						0	0	CH	5					Y		SEE 1P / IMP CH 30
14	0-30	mcl	10YR52 00						0	0	CH	5					Y		SEE 1P
	30-40	mcl	10YR62 00						0	0	CH	5		M			Y		IMP CHALK 40
15	0-25	mzcl	25Y 42 00						0	0	CH	5					Y		SEE 2P
	25-35	mzcl	10YR43 00						0	0	HR	2		M			Y		
	35-55	mzcl	10YR53 00						0	0	CH	10		M			Y		
	55-90	mzcl	10YR54 81						0	0	CH	30		M			Y		
	90-120	mzcl	10YR54 81						0	0	CH	50		M			Y		SOFT CHALKY DRIFT
16	0 33	mzcl	25Y 42 00						3	0	CH	10					Y		SEE 1P
	33-68	ch	10YR81 00						0	0	HR	3		P			Y		IMP CHALK 50
17	0 28	mzcl	10YR42 00						0	0	CH	5					Y		SEE 2P
	28-45	mzcl	10YR54 00						0	0	CH	5		M			Y		
	45 90	mzcl	10YR54 00						0	0	CH	3		M			Y		
	90 120	mzcl	10YR64 00						0	0	CH	30		M			Y		SOFT CHALKY DRIFT
18	0 30	mzcl	10YR41 42						0	0	HR	3					Y		SEE 2P
	30 65	mzcl	10YR54 64						0	0	CH	15		M			Y		
	65-80	mzcl	10YR64 00						0	0	CH	20		M			Y		IMP CHALKY DRIFT 80
19	0 30	mcl	10YR42 00						0	0	CH	5					Y		SEE 1P
	30 40	mcl	10YR53 00						0	0	CH	3		M			Y		
	40 75	ch	10YR71 00						0	0		0		P			Y		IMP CHALK 45
20	0-30	mzcl	10YR41 00						0	0	CH	2					Y		SEE 2P
	30 65	mzcl	10YR54 00	10YR56 00	F				0	0	CH	2		M			Y		
	65-90	mzcl	10YR64 81						0	0	CH	40		M			Y		IMP CHALKY DRIFT 90
21	0-28	mzcl	10YR42 00						0	0	CH	5					Y		SEE 2P
	28-65	mzcl	10YR54 64						0	0	CH	10		M			Y		
	65-75	mzcl	10YR54 64						0	0	CH	20		M			Y		
	75-95	mzcl	10YR64 81						0	0	CH	50		M			Y		SOFT CHALKY DRIFT
	95-100	ch	10YR81 00						0	0	HR	3		P			Y		IMP 100/10% SOIL
22	0 30	mcl	10YR42 00						0	0	CH	5					Y		SEE 1P
	30-40	mcl	10YR53 00						0	0	CH	3		M			Y		
	40-75	ch	10YR71 00						0	0		0		P			Y		IMP CHALK 45
23	0-30	mcl	10YR42 00						0	0	CH	5					Y		SEE 1P
	30-40	mcl	10YR53 00						0	0	CH	5		M			Y		
	40-75	ch	10YR71 00						0	0		0		P			Y		IMP CHALK 50

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	IMP	SPL	CALC	
24	0-30	mcl	10YR42 00						0	0	CH	5					Y		SEE 1P
	30-40	mcl	10YR53 00						0	0	CH	5		M			Y		
	40-75	ch	10YR71 00						0	0		0		P			Y		IMP CHALK 50
25	0-28	mzcl	10YR42 00						0	0	CH	3					Y		SEE 2P
	28-65	mzcl	10YR44 54	10YR56 00	F				0	0	CH	5		M			Y		
	65-80	mzcl	10YR64 81						0	0	CH	50		M			Y		IMP CHALKY DRIFT 80
26	0-28	mzcl	10YR42 00						0	0	HR	3					Y		SEE 2P
	28-55	mzcl	10YR44 54	10YR56 00	F				0	0	CH	5		M			Y		
	55-70	mzcl	10YR64 81						0	0	CH	50		M			Y		IMP CHALKY DRIFT 70
27	0-30	mcl	10YR41 00						0	0	HR	5					Y		SEE 2P +2% CHALK
	30-90	mcl	10YR44 54						0	0	CH	5		M			Y		+3% FLINTS
	90-100	mzcl	10YR64 81						0	0	CH	65		M			Y		IMPCHDRIFT100 +5%HR
28	0-30	mcl	10YR34 00						0	0	HR	5					Y		SEE 2P
	30-70	mcl	10YR53 00						0	0	CH	2		M			Y		
	70-100	mcl	10YR56 00						0	0	CH	20		M			Y		IMP CHALKYDRIFT 100
29	0-30	mcl	10YR33 00						0	0	HR	5					Y		
	30-70	mcl	10YR54 00						0	0	HR	5		M			Y		IMP FLINT 70
31	0-30	mzcl	10YR41 00						0	0	HR	2					Y		SEE 2P
	30 75	mcl	10YR54 44						0	0	CH	5		M			Y		
	75-80	mzcl	10YR64 81						0	0	CH	60		M			Y		IMP CHALKY DRIFT 80
32	0-28	mcl	10YR41 00						4	0	HR	8					Y		SEE 2P +2% CHALK
	28-40	mzcl	10YR44 54						0	0	CH	3		M			Y		
	40-50	mzcl	10YR64 81						0	0	CH	60		M			Y		IMP CHALKY DRIFT 50
33	0-30	mcl	10YR53 00						4	0	HR	8					Y		
	30-55	mcl	10YR54 00						0	0	CH	20		M			Y		IMP FLINT 55
34	0-25	mcl	10YR43 00						4	0	HR	8					Y		
	25-50	mcl	10YR54 00						0	0	HR	5		M			Y		IMP FLINT 50
36	0-25	mzcl	10YR42 00						0	0	CH	3					Y		SEE 2P +2% FLINT
	25-45	mzcl	10YR54 00	10YR56 00	F				0	0	CH	10		M			Y		
	45-60	mzcl	10YR64 81						0	0	CH	50		M			Y		IMP CHALKY DRIFT 60