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Winchester District Local Plan

Site 137 Lovedon Lane Kings Worthy

Agricultural Land Classification

ALC Map and Report

July 1994

AGRICULTURAL LAND CLASSIFICATION, REPORT

WINCHESTER DISTRICT LOCAL PLAN
SITE 137 LOVEDON LANE KINGS WORTHY

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 Winchester district of Hampshire The work forms part of MAFF s statutory input to the Winchester District Local Plan

1 2 Site 137 comprises approximately 15 hectares of land to the east of the village of Kings Worthy in Hampshire An Agricultural Land Classification (ALC) survey was carried out in July 1994 The survey was undertaken at a detailed level of approximately one boring per hectare A total of 17 borings and three soil inspection pits were assessed 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 it s physical or chemical characteristics impose long term limitations on it s use for agriculture

1 3 The work was carried out by members of the Resource Planning Team in the Guildford Statutory Group of ADAS

1 4 At the time of the survey the land was in stubble

1 5 The distribution of grades and subgrades is shown on the attached ALC map and the areas 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 This map supersedes any previous ALC survey information for this site

Table 1 Distribution of Grades and Subgrades

Grade	Area (ha)	% of Site
2	1 9	12 9
3a	10 7	72 8
3b	2 1	14 3
Total area of Site	14 7ha	100%

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) including a substantial proportion of good quality (Subgrade 3a) Principal limitations include soil workability and soil droughtiness Soil workability restrictions (Grade 2) occur here because of local climatic parameters which cause the moderately textured topsoils found at this site to be prone to structural damage during wetter periods Soil droughtiness which occurs over the majority of the site is either due to moderate proportions of weathered chalk and flints in the soil matrix overlying solid chalk at moderate depths (Subgrade 3a) or solid chalk underlying the soil at shallow depths (Subgrade 3b) The effect of these is to restrict plant rooting depths and thereby reduce the effective available water capacity of the soil such that there is a moderate to severe risk of drought stress to plants in most years

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 According to unpublished Met Office data (1971) part of the site towards the south is shown as being frost prone However climatic and soil factors interact to influence soil wetness workability and droughtiness limitations which are of greater significance to land quality than frost such that this does not affect the final classification

Table 2 Climatic Interpolation

Grid Reference	SU495328
Altitude (m AOD)	52
Accumulated Temperature days Jan June)	1487
Average Annual Rainfall (mm)	807
Field Capacity Days	176
Moisture deficit wheat (mm)	105
Moisture deficit potatoes (mm)	98
Overall Climatic Grade	1

3 Relief

3 1 The site lies at an altitude of 55 70 m AOD falling gently from north to south in the form of a dry valley Nowhere on the site does relief or gradient affect agricultural land quality

4 Geology and Soils

4 1 The published geological information (BGS 1975) shows the entire site to be underlain by Cretaceous Upper Chalk comprising soft white chalk with many flint nodules

4 2 The published soils information (SSEW 1983) shows the site to be underlain by soils of the Andover 1 Association The legend accompanying the map describes these as Shallow well drained calcareous silty soils over chalk on slopes and crests Deep calcareous and non calcareous fine silty soils in valley bottoms Soils of this broad nature were found at the site following the pattern described i e shallow and silty over chalk on the slopes to the east of the site and deeper silty flinty and chalky towards the valley bottom However some deeper silty soils with chalky drift were encountered on slopes towards the west of the site

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 has been mapped towards the south west of the site on the land of lowest altitude The principal limitation is soil workability Profiles typically comprise a very slightly stony (c 3% v/v flints) medium silty clay loam topsoil over a similarly stony medium silty clay loam upper subsoil passing to a similarly textured horizon containing c 3% flints and c 3% weathered chalk This overlies between 70 and 85cm a slightly stony (c 5 15% v/v flints and up to c 5% v/v weathered chalk) heavy silty clay loam lower subsoil which extends to depth Due to the prevailing relatively wet nature of the local climate and the medium workability status of the topsoils this area is very slightly restricted by soil workability as during wetter periods the topsoil could be prone to structural damage were trafficking of stock or machinery to take place

Subgrade 3a

5 4 Land of good quality has been mapped for the majority of this site The principal limitation is soil droughtiness Soil profiles fall into two units The first covers the west of the site and is found on shallow slopes Typically profiles comprise a very slightly stony (c 3 5% v/v flints) occasionally very slightly chalky (up to c 5% v/v weathered chalk) medium silty clay loam topsoil This passes to a similar upper subsoil which commonly overlies a shallow moderately chalky (c 15 30% weathered chalk) medium silty clay loam horizon This passes to chalky drift (a pale very chalky (c 50 60% weathered chalk) solid chalk derived periglacial deposit) which overlies hard solid chalk between c 40 and 70cm into which roots were visible for about 7cm in the pit observation 3p (see Appendix III) The restriction of rooting depth due to the chalk causes a reduction in available water such that there is a moderate risk of drought stress occurring to plants in most years

The second soil unit occurs towards the north east of the site and is typically shown by the pit observation 2p (see Appendix III) The profiles comprise a very slightly stony (c 3 5% v/v flints) medium silty clay loam topsoil passing to a slightly stony (c 5 12% v/v flints) medium or heavy clay loam upper subsoil which was commonly impenetrable to the soil auger between c 40 and 50cm In the pit observation this was found to pass to a moderately stony (20% v/v flints 15%>2cm and c 15% weathered chalk) medium silty clay loam horizon This passes at 57cm to chalky drift into which roots were visible for approximately 13cm However there was no physical reason why roots could not extend to the solid chalk encountered in the pit at 82cm As above the restriction of rooting caused by the chalk means that there is a reduction in water available to plants such that within the local climatic parameters Subgrade 3a is appropriate for these areas

Subgrade 3b

5 5 Land of moderate quality (Subgrade 3b) has been mapped on the slopes towards the east of the site The principal limitation is soil droughtiness Typically soils in this area comprise a slightly stony and chalky (c 3% v/v flints and 10% v/v weathered chalk) medium silty clay loam topsoil commonly passing to a shallow very chalky (c 50% v/v weathered chalk) medium silty clay loam subsoil This directly overlies blocky chalk between 25 and 28cm into which in the pit observation 1p (see Appendix III) roots were visible for 35cm The reduction in rooting depth that the chalk causes leads to a severe restriction in plant available water such that drought stress to plants is likely in most years

SOURCES OF REFERENCE

British Geological Survey (1975) Sheet 299 Winchester 1 50 000 Drift Edition

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

Meteorological Office (1971) Unpublished Climate data relating to 1 63 360 Sheet 168

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 fro 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

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

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 measured by a hand held optical clinometer

4 **GLEY/SPL** 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

MREL Microrelief limitation	**FLOOD** Flood risk	**EROSN** Soil erosion risk
EXP Exposure limitation	**FROST** Frost	**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 Stones

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 WINCHESTER LP SITE 137 Pit Number 1P

G id Ref ce SU49703300 Average A al Ra fall 807 mm
A cum lated Temperature 1487 degree days
F eld Capac ty Le el 176 days
La d Use
Slope and Aspect 01 deg ees NW

HORIZON	TEXTURE	COLOUR	STONES	2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 20	MZCL	10YR43 53	1		5	CH					Y
20 55	CH	10YR81 00	0		5	HR				P	Y

Wetness G ade 2 Wetness Class I
Gley ng cm
SPL cm

Dro ght Grade 3B APW 68 mm MBW 37 mm
APP 69 mm MBP 29 mm

FINAL ALC GRADE 3B
MAIN LIMITATION Dro ghti ess

SOIL PIT DESCRIPTION

Site Name WINCHESTER LP SITE 137 Pit Number 2P

Grid Reference SU49703320 Average Annual Rainfall 807 mm
Accumulated Temperature 1487 deg ee days
Field Capacity Level 176 days
Land Use
Slope and Aspect 01 degrees NW

HORIZON	TEXTURE	COLOUR	STONES 2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 24	MZCL	10YR42 43	1	3	HR					
24 48	MZCL	10YR44 54	7	12	HR		WKCSAB	FR	M	Y
48 57	MZCL	10YR44 64	15	20	HR				M	Y
57 82	MZCL	10YR74 81	0	40	CH				M	Y

Wetness Grade 2 Wetness Class I
Gleying cm
SPL cm

Drought Grade 3A APW 104mm MBW 1 mm
APP 106mm MBP 8 mm

FINAL ALC GRADE 3A
MAIN LIMITATION Droughtiness

SOIL PIT DESCRIPTION

Site Name WINCHESTER LP SITE 137 P t Number 3P

Gr d Reference SU49503310 A e age A al Ra fall 807 mm
Accum lated Temperat re 1487 deg ee days
F eld Capac ty Le el 176 d ys
Land Use
Slope a d Aspect 04 deg ees SE

HORIZON	TEXTURE	COLOUR	STONES 2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 16	MZCL	10YR44 00	2	5	HR					Y
16 46	MZCL	10YR54 00	3	10	HR		WKCSAB	VF	M	Y
46 63	MZCL	10YR64 74	0	60	CH				M	Y
63 70	CH	10YR81 00	0	5	HR				M	Y

Wetness Grade 2 Wetness Class I
Gley g cm
SPL cm

Dro ght Grade 3A APW 90 mm MBW 15 mm
APP 98 mm MBP 0 mm

FINAL ALC GRADE 3A
MAIN LIMITATION Dro ghtıness

SAMPLE NO	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	WETNESS CLASS	WHEAT GRADE	POTS AP	POTS MB	M REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SU49603330	STB	SE	02			1	2	98	7	107 9 3A				DR	3A	IMPCHDRFT70 3P
1P	SU49703300	STB	NW	01			1	2	68	37	69 29 3B				DR	3B	PIT 62 ROOTS55
2	SU49703330	STB	SE	02			1	2	92	13	97 1 3A				DR	3A	IMP CH 55 3P
2P	SU49703320	STB	NW	01			1	2	104	1	106 8 3A				DR	3A	PIT 82 ROOTS70
3	SU49803330	STB	NW	01			1	2	128	23	118 20 2				WD	2	IMP HR 85 2P
3P	SU49503310	STB	SE	04			1	2	90	15	98 0 3A				DR	3A	PIT 75 ROOTS70
4	SU49603320	STB	SE	02			1	2	89	16	94 3 3A				DR	3A	IMP CH 60 3P
5	SU49703320	STB	NW	02			1	2	104	1	106 8 3A				DR	3A	IMP HR 48 2P
6	SU49803320	STB	W	02			1	2	76	29	78 20 3B				DR	3B	IMP CH 40 1P
7	SU49503310	STB	SE	05			1	2	90	15	98 0 3A				DR	3A	IMPCHDRFT58 3P
8	SU49703310	STB	NW	02			1	2	86	19	91 7 3A				DR	3A	IMP CH 45 1P
9	SU49503300	STB	SE	03			1	2	105	0	116 18 3A				DR	3A	IMP CH 75 3P
10	SU49603300	STB	NW	03			1	2	102	3	111 13 3A				DR	3A	IMP CH 70 3P
11	SU49703300	STB	NW	01			1	2	68	37	69 29 3B				DR	3B	IMP CH 60 1P
12	SU49403290	STB	E	05			1	2	102	3	111 13 3A				DR	3A	IMPCHDRFT65 3P
13	SU49503290	STB	S	01			1	2	156	51	121 23 1				WK	2	
14	SU49603290	STB	SW	05			1	2	77	28	81 17 3B				DR	3B	IMP CH 40 1P
15	SU49503280	STB					1	2	151	46	122 24 1				WK	2	
16	SU49823325	STB	NW	02			1	2	107	2	109 11 3A				DR	3A	IMP HR 40 2P
17	SU49593283	STB	W	05			1	2	80	25	84 14 3B				DR	3B	IMP CH 45 1P

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL	GLEY	STONES 2	STONES 6 LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	IMP	SPL	CALC	
1	0 25	mzcl	10YR43 00						0	0 HR	3						Y	
	25 35	mzcl	10YR44 54						0	0 HR	3		M				Y	
	35 50	mzcl	10YR54 81						0	0 CH	30		M				Y	+2% FLINTS
	50 70	mzcl	10YR74 81						0	0 CH	50		P				Y	IMP CHALKY DRIFT 70
1P	0 20	mzcl	10YR43 53						1	0 CH	5						Y	+3% FLINTS
	20 55	ch	10YR81 00						0	0 HR	5		P				Y	INC5%SOIL 35cmROOTS
2	0 28	mzcl	10YR43 00						0	0 HR	3						Y	+2% CHALK
	28 35	mzcl	10YR54 81						0	0 CH	25		M				Y	
	35 40	mzcl	10YR64 81						0	0 CH	50		P				Y	CHALKY DRIFT
	40 55	ch	10YR81 74						0	0 HR	5		P				Y	INC5% SOIL IMPCH 55
2P	0 24	mzcl	10YR42 43						1	0 HR	3							
	24 48	mzcl	10YR44 54						7	0 HR	12	WKCSAB FR	M				Y	
	48 57	mzcl	10YR44 64						15	0 HR	20		M				Y	15% CHALK
	57 82	mz l	10YR74 81						0	0 CH	40		M				Y	CHALKY DRIFT 3% HR
3	0 25	mzcl	10YR43 00						0	0 HR	3							
	25 55	h cl	10YR44 00						0	0 HR	5		M					
	55 85	h cl	75YR44 00						0	0 HR	10		M					IMP FLINTS 85cm
3P	0 16	mzcl	10YR44 00						2	0 HR	5						Y	
	16 46	mzcl	10YR54 00						3	0 HR	10	WKCSAB VF	M				Y	+12% CHALK 2% 2cm
	46 63	mzcl	10YR64 74						0	0 CH	60		M				Y	CHALKY DRIFT
	63 70	ch	10YR81 00						0	0 HR	5		M				Y	BLOCKY CHALK
4	0 25	mzcl	10YR43 00						0	0 HR	3							5% CHALK
	25 35	mzcl	10YR44 00						0	0 CH	15		M				Y	
	35 55	ch	10YR81 54						0	0 HR	5		P				Y	INC 5% SOIL
	55 60	ch	10YR81 00						0	0 HR	5		P				Y	IMP CHALK 65cm
5	0 30	cl	10YR43 00						0	0 HR	5							
	30 48	hz l	10YR44 54						0	0 HR	3		M					IMP FLINTS 48cm
6	0 25	mzcl	10YR43 53						0	0 HR	3						Y	+5% CHALK
	25 40	ch	10YR81 54						0	0 HR	5		P				Y	IMPCH 40 INC5% SOIL
7	0 28	mzcl	10YR43 53						0	0 HR	3						Y	
	28 35	m l	10YR54 64						0	0 CH	30		M				Y	
	35 58	mzcl	10YR74 81						0	0 CH	50		P				Y	IMP CHALKY DRIFT 58
8	0 28	mzcl	10YR43 53						0	0 HR	3						Y	+5% CHALK
	28 35	mzcl	10YR81 54						0	0 CH	60		P				Y	
	35 45	ch	10YR81 64						0	0 HR	5		P				Y	IMPCH 45 INC5% SOIL
9	0 30	mzcl	10YR43 00						0	0 HR	3							
	30 60	mzcl	10YR44 54						0	0 HR	5		M					
	60 65	mzcl	10YR54 81						0	0 CH	30		M				Y	5% FLINTS
	65 75	ch	10YR81 64						0	0	0		P				Y	IMP CHALK 75cm

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	SUBS CALC	
10	0 30	mzcl	10YR43 00						0	0	HR	3						Y	
	30 60	mzcl	10YR54 00						0	0	CH	10			M			Y	+5% FLINTS
	60 70	ch	10YR81 64						0	0	HR	5			P			Y	INC5% SOIL IMPCH 70
11	0 25	mzcl	10YR43 53						0	0	HR	3						Y	
	25 55	ch	10YR81 64						0	0	HR	5			P			Y	INC 5% SOIL
	55 60	ch	10YR81 00						0	0	HR	5			P				IMP CHALK 60cm
12	0 30	mzcl	10YR43 00						0	0	HR	3							
	30 55	mzcl	10YR44 54						0	0	CH	10			M				+3% FLINTS
	55 65	mzcl	10YR81 74						0	0	CH	60			P				IMP CHALKY DRIFT 65
13	0 30	mzcl	10YR41 00						0	0	HR	3							
	30 60	mzcl	10YR44 00						0	0	HR	3			M				
	60 85	zcl	10YR44 54						0	0	HR	3			M				3% CHALK
	85 120	hzcl	75YR44 00						0	0	HR	5			M				5% CHALK
14	0 25	mzcl	10YR43 53						0	0	CH	10						Y	3% FLINTS
	25 28	mzcl	10YR53 81						0	0	CH	50			P			Y	
	28 40	ch	10YR81 00						0	0		0			P			Y	IMP CHALK 40cm
15	0 25	mzcl	10YR42 43						0	0	HR	2							
	25 70	mzcl	10YR62 63	10YR58 00	F				0	0	HR	2			M				
	70 120	hzcl	10YR54 00						0	0	HR	15			M				
16	0 30	mzcl	10YR43 44						0	0	HR	5							
	30 40	hzcl	75YR44 00						0	0	HR	10			M				IMP FLINTS 40cm
17	0 28	mzcl	10YR43 53						0	0	HR	5						Y	
	28 45	ch	10YR81 64						0	0		0			M				IMP CHALK 45cm