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**WEST OXFORDSHIRE LOCAL PLAN  
Land At Ascott-U-Wychwood  
Oxfordshire**

**Agricultural Land Classification  
ALC Map and Report**

**October 1998**

**Resource Planning Team  
Eastern Region  
FRCA Reading**

**RPT Job Number: 3305/065/98  
FRCA Reference: EL 33/1860**

# AGRICULTURAL LAND CLASSIFICATION REPORT

## WEST OXFORDSHIRE LOCAL PLAN LAND AT ASCOTT-U-WYCHWOOD OXFORDSHIRE

### INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 11.0 hectares of land at Ascott-U-Wychwood, West Oxfordshire. The survey was carried out during October 1998.
2. The survey was undertaken by the Farming and Rural Conservation Agency (FRCA)<sup>1</sup> on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF). The survey was carried out in connection with MAFF's statutory input to the West Oxfordshire Local Plan. This survey supersedes any previous ALC information for this land.
3. The work was conducted 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 agricultural land had recently been ploughed. The areas mapped as 'Other land' include a recreation ground and residential 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.
7. The fieldwork was conducted at an average density of approximately 1 boring per hectare of agricultural land. In total, 14 borings and two soil pits were described.

**Table 1: Area of grades and other land**

Grade/Other land	Area (hectares)	% surveyed area	% site area
3a	0.6	6.9	5.5
3b	8.1	93.1	73.6
Other land	2.3	N/A	20.9
Total surveyed area	8.7	100	79.1
Total site area	11.0	-	100

<sup>1</sup> FRCA is an executive agency of MAFF and the Welsh Office.

8. The majority of the land surveyed has been classified as Subgrade 3b (moderate quality) with a small area of Subgrade 3a (good quality) in the south-east corner. The main limitation over much of the survey area is soil wetness. Soil droughtiness is equally or more restricting where limestone outcrops to the south of the site.
9. Where soil wetness is limiting the majority of soils comprise clay loam topsoils overlying clayey subsoils at various depths. Soil drainage is impeded to varying extents across the site by the presence of these clayey horizons. The depth to these horizons determines the severity of the wetness restriction and therefore, the ALC grade. The resultant waterlogging will restrict seed germination and growth as well as limit the timing of cultivations. Wet soils such as these are susceptible to structural damage through trafficking by agricultural machinery and grazing livestock.
10. The land which is affected by a soil droughtiness limitation occurs to the south of the site and has very high volumes of hard limestone in the subsoil. The difference in grade is determined mainly by the depth at which limestone is encountered; shallow in the case of the Subgrade 3b and deeper in the case of Subgrade 3a. Such high stone volumes severely restrict water available for plant growth as well as reduce the potential rooting depth for crops.

## FACTORS INFLUENCING ALC GRADE

### 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 the standard interpolation procedures (Met. Office, 1989).

**Table 2: Climatic and altitude data**

Factor	Units	Values	
		SP 304 189	SP 304 186
Grid reference	N/A		
Altitude	m, AOD	95	100
Accumulated Temperature	day°C (Jan-June)	1404	1398
Average Annual Rainfall	mm	730	731
Field Capacity Days	days	164	164
Moisture Deficit, Wheat	mm	98	97
Moisture Deficit, Potatoes	mm	87	86
Overall climatic grade	N/A	Grade 1	Grade 1

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 (AT0, 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. Other local climatic factors such as exposure and frost risk are not believed to have a significant effect on the site. The site is climatically Grade 1.

#### Site

16. The agricultural land at this site lies at an altitude of 96-114m AOD. North of High Street the land is flat or gently undulating. South of High Street the land rises gently to the south or south-east at a gradient of between 1-3°. The survey area is dissected by two streams which run in a south-east to north-west direction. There is also a spring in the south of the site which marks the junction between the limestone deposits and the Lias Clay and river terrace gravel deposits. Other site restrictions such as flooding or micro-relief do not affect land quality.

#### Geology and soils

17. The most detailed published geological information (BGS, 1982) show a complicated pattern of geological deposits across the site. The majority of the area to the north of High Street is mapped as terrace deposits (river gravels). Lower Lias (dark grey mudstones and rare limestone) is mapped along the southern boundary of this northern section of the site. South of High Street, a combination of Middle Lias (micaceous mud/siltstone and sandy limestone), Upper Lias (dark grey mudstones and thin calcareous beds) and Clypeus grit (shelly oolitic micritic limestone) is mapped which occurs in successive bands from the bottom of the valley to the highest point of the survey area (in the south).
18. The most recently published soil information for the site shows the entire site to be mapped as Oxpasture Association (SSEW, 1983). This includes the Wickham, Holdenby and Denchworth soil series. The Oxpasture Association is described as 'Fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging. Some slowly permeable seasonally waterlogged clayey soils' (SSEW, 1983).
19. Upon detailed field examination, the majority of the soils were found to be consistent with the above description. However, soils in the extreme south-east corner of the site were considerably more stony, shallow over limestone and therefore more drought prone than suggested.

#### AGRICULTURAL LAND CLASSIFICATION

20. 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.
21. 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.

### **Subgrade 3a**

22. A small area (totalling 0.6 hectares) of land in the south-east corner of the site has been classified as Subgrade 3a (good quality) agricultural land. The land is affected mainly by soil droughtiness, but soil wetness is more limiting.
23. All the soil profiles within this unit comprise stoneless or very slightly stony (up to 2% total flint), medium silty clay loam topsoils. These overlie calcareous heavy silty clay loam (or occasionally clay) upper subsoils which are very slightly stony (containing up to 5% total flint fragments). Lower subsoils consist of very slightly stony calcareous clay which varies in nature between profiles.
24. Where soil droughtiness is limiting, the profiles are impenetrable to the soil auger at depths between 60cm and 70cm over limestone. The profiles are well drained showing no evidence of waterlogging (Wetness Class I). The combination of soil texture and the amount of hard rock (limestone) at moderate depths within the profile restricts the water available to crops such that there is a risk of drought stress to the plants in most years. This will result in a reduction in the level and consistency of yields.
25. Where soil wetness is limiting, the profiles show evidence of impeded drainage (in the form of gleying) and have poorly structured, slowly permeable, clay horizons which occur at moderate depths (50cm). In this climatic regime, the occurrence of such waterlogging in the profile results in a soil wetness limitation such that the soils are placed in Wetness Class III and the land is classified as Subgrade 3a. Soil wetness has the effect of causing waterlogging which will restrict seed germination and growth as well as limit the timing of cultivations. Wet soils are also susceptible to structural damage through trafficking by agricultural machinery and grazing livestock.

### **Subgrade 3b**

26. The majority of the site (totalling 8.1 hectares) has been classified as Subgrade 3b agricultural land (moderate quality). The land is affected mainly by soil wetness with soil droughtiness being more restricting on occasions.
27. Profiles affected by soil wetness comprise mainly stoneless or very slightly stony (0-2% total flint), medium clay loam or medium silty clay loam (occasionally heavy silty clay loam) topsoils. These sometimes overlie virtually stoneless, shallow, upper subsoils which are slightly heavier in texture and show evidence of wetness in the form of gleying. At shallow depths within the profile (19cm to 39cm), clay or silty clay subsoils are encountered which impede soil drainage. Soil inspection pit 1 (see Appendix II) shows these shallow clay subsoils to be poorly structured and slowly permeable. Although some soil profiles within this unit become slightly lighter in texture at moderate to deep depths, the clayey horizons sufficiently impede soil drainage to the extent that Wetness Class IV, Subgrade 3b, is considered appropriate for this land. Very occasional borings of better quality occur within the Subgrade 3b mapping unit but were too few in number to be mapped separately at this scale.
28. Occasional borings (to the south of High Street) are limited to Subgrade 3b on the basis of a soil droughtiness limitation where the soils are relatively stony and shallow. Within these areas the soil

profiles generally comprise calcareous medium silty clay loam topsoils which are variably stony (containing up to 18% total hard limestone fragments). Where penetrable these overlie slightly heavier textured upper subsoils which are also calcareous and contain around 20% total limestone. The soil profiles are impenetrable to the auger at depths between 30cm and 40cm. They are permeable and well drained (Wetness Class I). Soil pit 2P (Appendix II) is representative of the soils within this unit. Such high stone volumes severely restrict profile available water for plant growth as well as reduce the potential rooting depth for crops to the extent that Subgrade 3b is appropriate when moisture balance calculations are made.

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## SOURCES OF REFERENCE

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

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## 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:

<b>ARA:</b> Arable	<b>WHAT</b> Wheat	<b>BAR:</b> Barley
	:	
<b>CER:</b> Cereals	<b>OAT:</b> Oats	<b>MZE:</b> Maize
<b>OSR:</b> Oilseed rape	<b>BEN:</b> Field beans	<b>BRA:</b> Brassicae
<b>POT:</b> Potatoes	<b>SBT:</b> Sugar beet	<b>FCD:</b> Fodder crops
<b>LIN:</b> Linseed	<b>FRT:</b> Soft and top fruit	<b>FLW:</b> Fallow
<b>PGR:</b> Permanent pasture	<b>LEY:</b> Ley grass	<b>RGR:</b> Rough grazing
<b>SCR:</b> Scrub	<b>CFW:</b> Coniferous woodland	<b>OTH</b> Other
<b>DCW:</b> Deciduous woodland	<b>BOG:</b> Bog or marsh	<b>SAS:</b> Set-Aside
<b>HTH:</b> Heathland	<b>HRT:</b> Horticultural crops	<b>PLO:</b> 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:

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

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

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

## Soil Pits and Auger Borings

1. **TEXTURE:** soil texture classes are denoted by the following abbreviations:

<b>S:</b> Sand	<b>LS:</b> Loamy Sand	<b>SL:</b> Sandy Loam
<b>SZL:</b> Sandy Silt Loam	<b>CL:</b> Clay Loam	<b>ZCL:</b> Silty Clay Loam
<b>ZL:</b> Silt Loam	<b>SCL:</b> Sandy Clay Loam	<b>C:</b> Clay
<b>SC:</b> Sandy Clay	<b>ZC:</b> Silty Clay	<b>OL:</b> Organic Loam
<b>P:</b> Peat	<b>SP:</b> Sandy Peat	<b>LP:</b> Loamy Peat
<b>PL:</b> Peaty Loam	<b>PS:</b> Peaty Sand	<b>MZ:</b> 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:

<b>F:</b> Fine (more than 66% of the sand less than 0.2mm)
<b>M:</b> Medium (less than 66% fine sand and less than 33% coarse sand)
<b>C:</b> 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:

<b>HR:</b> all hard rocks and stones	<b>FSST:</b> soft, fine grained sandstone
<b>ZR:</b> soft, argillaceous, or silty rocks	<b>CH:</b> chalk
<b>MSST:</b> soft, medium grained sandstone	<b>GS:</b> gravel with porous (soft) stones
<b>SI:</b> soft weathered igneous/metamorphic rock	<b>GH:</b> 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	<b>WK</b> : weakly developed	<b>MD</b> : moderately developed
	<b>ST</b> : strongly developed	
Ped size	<b>F</b> : fine	<b>M</b> : medium
	<b>C</b> : coarse	
Ped shape	<b>S</b> : single grain	<b>M</b> : massive
	<b>GR</b> : granular	<b>AB</b> : angular blocky
	<b>SAB</b> : sub-angular blocky	<b>PR</b> : prismatic
	<b>PL</b> : platy	

9. **CONSIST**: Soil consistence is described using the following notation:

<b>L</b> : loose	<b>FM</b> : firm	<b>EH</b> : extremely hard
<b>VF</b> : very friable	<b>VM</b> : very firm	
<b>FR</b> : friable	<b>EM</b> : extremely firm	

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:

<b>APW</b> :	available water capacity (in mm) adjusted for wheat
<b>APP</b> :	available water capacity (in mm) adjusted for potatoes
<b>MBW</b> :	moisture balance, wheat
<b>MBP</b> :	moisture balance, potatoes

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				
1	SP30401900	PGR		25 25	4 3B	143	45 106	19 1					WE 3B	W/T 65 SEE 1P
2	SP30301890	RGR		25 35	4 3B	93	-5 101	14 3A					WE 3B	I65 SEE 1P
3	SP30401890	FCD		25 25	4 3B	138	40 108	21 1					WE 3B	W/T 110 SEE 1P
4	SP30501890	FCD		30 30	4 3B	104	6 117	30 2					WE 3B	I70 SEE 1P
5	SP30201880	PGR		39 39	4 3B	136	38 115	28 1					WE 3B	SEE 1P
6	SP30301880	FCD		30 30	4 3B	143	45 110	23 1					WE 3B	W/T 60 SEE 1P
7	SP30401870	PGR NW	2	39 39	4 3B	87	-11 96	9 3A					WE 3B	SEE 1P
8	SP30321866	PGR N	1	48 48	3 3A	127	29 105	18 2					WE 3A	SEE 1P
9	SP30341861	PGR			1 1	56	-42 56	-31 3B					DR 3B	I30 LST SEE 2P
10	SP30501860	PGR NW	2		1 1	93	-5 100	13 3A					DR 3A	I60 LST SEE 2P
11	SP30571860	PGR NW	2		1 1	98	0 113	26 3A					DR 3A	I70 LST SEE 2P
12	SP30461855	PGR NW	2		1 1	64	-34 64	-23 3B					DR 3B	I35 LST SEE 2P
13	SP30431882	FCD		25 25	4 3B	142	44 112	25 1					WE 3B	SEE PIT 1
14	SP30561867	PGR N	3	50 50	3 3A	134	36 111	24 1					WE 3A	SEE 1P
1P	SP30401890	FCD		28 28	4 3B	130	32 107	20 1					WE 3B	WATER AT 70CM
2P	SP30501860	PGR N	3		1 1	76	-22 74	-13 3B					DR 3B	ROOTS TO 65CM

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES---			PED COL.	---STONES---			STRUCT/ CONSIST	SUBS STR FOR	IMP	SPL	CALC	
				COL	ABUN	CONT		GLEYS	>2	>6						LITH
1	0-25	HZCL	10YR42	10YR56	C	D		Y	0	0	0					
	25-65	C	25Y 52	10YR58	M	D		Y	0	0	HR 2	P		Y	PLASTIC	
	65-120	MCL	25Y 52	10YR56	M	D		Y	0	0	SLST 5	M			Y WET AT 65CM	
2	0-25	MZCL	10YR32						0	0	0					
	25-35	C	10YR51	10YR58	M	D		Y	0	0	0	P			PLASTIC	
	35-55	C	10YR51	10YR58	M	D		Y	0	0	SLST 2	P		Y	DENSE	
	55-65	MCL	10YR52	10YR58	M	D		Y	0	0	SLST 8	M			Y IMP GRAVELLY	
3	0-25	MCL	10YR42						0	0	0					
	25-65	C	25Y 52	10YR56	58	C	D		Y	0	0	0	P	Y	Y	DENSE
	65-75	HCL	10YR53	10YR58	M	D		Y	0	0	0	M			POROUS	
	75-120	MCL	10YR53	10YR58	M	D		Y	0	0	SLST 10	M			Y WET 110CM	
4	0-30	MZCL	10YR42	10YR56	F	F			0	0	HR 2					
	30-60	C	10YR53	10YR56	M	F		Y	0	0	HR 2	P	Y	Y	DENSE	
	60-70	HCL	10YR53	10YR56	M	D		Y	0	0	HR 10	M			Y IMP GRAVELLY	
5	0-14	MZCL	10YR42	10YR56	F	F			0	0	0					
	14-39	HZCL	10YR54	10YR56	F	F			0	0	HR 2	M				
	39-63	C	10YR63 53	10YR56	C	F		Y	0	0	HR 2	P		Y	DENSE	
	63-120	C	10YR62 52	10YR56	58	C	D		Y	0	0	0	P		Y	PLASTIC, WET 100
6	0-30	MZCL	10YR42	10YR56	F	D			0	0	0					
	30-60	C	10YR61	10YR58	M	D		Y	0	0	0	P		Y	PLASTIC	
	60-120	MCL	10YR53	10YR58	M	D		Y	0	0	SLST 15	M			Y WET AT 60CM	
7	0-20	MCL	10YR42						0	0	HR 2				Y	
	20-39	C	10YR53	10YR56	F	D			0	0	HR 5	M			Y LOOSE	
	39-65	C	05Y 51	10YR56	58	M	D		Y	0	0	HR 2	P		Y	Y PLASTIC
8	0-19	MCL	10YR32 42						0	0	0					
	19-48	C	10YR53	10YR56	F	D			0	0	HR 5	M			Y LOOSE	
	48-120	C	05Y 61	10YR58	M	D		Y	0	0	HR 5	P	Y	Y	Y PLASTIC	
9	0-30	MZCL	10YR32						0	0	HR 2				Y IMP LIMESTONE	
10	0-23	MZCL	10YR32						0	0	HR 1					
	23-50	HZCL	10YR42 43						0	0	HR 5	M			Y LOOSE	
	50-60	C	10YR53	10YR56	F	D			0	0	HR 5	M			Y IMP LIMESTONE	
11	0-22	MZCL	10YR32 42						0	0	HR 2					
	22-40	HZCL	10YR42 43						0	0	HR 5	M			Y LOOSE	
	40-70	C	10YR44 46						0	0	HR 5	M			Y IMP LIMESTONE	
12	0-35	MZCL	10YR31						0	0	HR 2				Y IMP LIMESTONE	
13	0-25	MZCL	10YR32 42						0	0	HR 2					
	25-50	C	10YR53	10YR56	58	C	D		Y	0	0	HR 2	P	Y	Y	DENSE
	50-80	C	25Y 52	10YR58	M	D		Y	0	0	0	P			Y DENSE	
	80-120	HCL	10YR53	10YR58	M	D		Y	0	0	SLST 10	M			Y WET W/T AT 110	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----			PED COL.	----STONES----			STRUCT/ CONSIST	SUBS				CALC		
				COL	ABUN	CONT		GLEY >2	>6	LITH TOT		STR	POR	IMP	SPL			
14	0-23	MZCL	10YR42					0	0	0								
	23-50	C	25Y 56					0	0	HR 5		M			Y	LOOSE		
	50-120	C	10YR52	10YR58	C	F		Y	0	0	0		P	Y	Y	Y	PLASTIC	
1P	0-28	MCL	10YR32 42					0	0	HR 2								
	28-45	C	25Y 52	10YR56	58	C	D	Y	0	0	0	MDCPR	FM	P	Y	Y	DENSE	
	45-60	C	25Y 52	10YR56	58	C	D	Y	0	0	0	MDCPR	FM	P	Y	Y	DENSE	
	60-70	HCL	25Y 52	10YR58			M	D	Y	0	0	0	MDCSAB	FR	M			POROUS, BORDER C
	70-110	MCL	25Y 53	10YR58			M	D	Y	0	0	SLST 10			M		Y	GRITTY
2P	0-21	MZCL	10YR31					3	0	HR 18						Y		
	21-49	HZCL	10YR43					0	0	HR 21	MDCSAB	FR	M			Y	FLAGGY LST	
	49-65	HR	25YR68					0	0	0			P			Y	ROOTS TO 65CM	