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Oxfordshire Structure Plan
Land North of Drayton
Agricultural Land Classification Report
Semi detailed Survey
March 1996

Resource Planning Team
Guildford Statutory Group
ADAS Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

OXFORDSHIRE STRUCTURE PLAN LAND NORTH OF DRAYTON

Introduction

1 This report presents the findings of a semi detailed Agricultural Land Classification (ALC) survey on approximately 30 hectares of land between Drayton Lodge and the village of Drayton near Banbury in Oxfordshire. The survey was carried out during March 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 Oxfordshire Structure 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 agricultural land on this site was in arable use. The areas shown as Other Land comprised a golf course club house car park dismantled railway and two areas of scrub. The area shown as Not Surveyed comprises a golf driving range. Though this land is not currently in agricultural use it does not appear to have been disturbed so could therefore be returned to agriculture if required.

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 below.

Table 1 Area of grades and other land

Grade/Other land	Area (hectares)	% site area	% surveyed land
2	9.4	30.9	47.0
3b	10.6	34.9	53.0
Other Land	6.8	22.4	
Not surveyed	3.6	11.8	
Total surveyed land	20.0		100.0
Total site area	30.4	100.0	

7 The fieldwork was conducted at an average density of just under 1 boring per hectare. A total of 19 borings and two soil pits were described.

8 Approximately half of the agricultural land on this site has been classified as Subgrade 3b (moderate quality) on the basis of soil wetness. Grade 2 (very good quality) has been mapped across the remainder of the site, the key limitation being soil droughtiness.

9 The Subgrade 3b land comprises poorly drained loamy over clayey profiles. The resultant wet soils restrict seed germination and root development, thus reducing crop growth and yields. Towards the south of the site, the land is believed to have been disturbed by quarry working and an old railway embankment. Profiles in this area are extremely variable but have all been classified as Subgrade 3b. Occasional borings of slightly better quality occur on the boundary between the better quality and Subgrade 3b land. These have not been mapped separately, however, due to their limited distribution.

10 The Grade 2 land comprises very slightly to slightly stony medium silty clay loams over slightly heavier and distinctly stonier subsoils. In this local climatic regime, the combination of deep well drained soils with a moderate to high stone content act to reduce the amount of profile available water for crops. This land has therefore been mapped as Grade 2 on the basis of slight drought risk. Occasional profiles of excellent quality also occur in this area but they were too limited in number and extent to map separately.

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
Grid reference	N/A	SP 433 422
Altitude	m AOD	140
Accumulated Temperature	day°C (Jan June)	1340
Average Annual Rainfall	mm	703
Field Capacity Days	days	159
Moisture Deficit Wheat	mm	98
Moisture Deficit Potatoes	mm	87

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 (Climatic Grade 1) However climatic factors can interact with soil properties to influence soil wetness and droughtiness At this location the crop adjusted soil moisture deficits are relatively low thus decreasing the likelihood of soil droughtiness Field capacity values are also slightly low thus decreasing the effects of soil wetness

16 Local climatic factors such as frost risk and exposure are not thought likely to adversely affect agricultural land use on this site

Site

17 The land on this site slopes gently from 140m AOD in the north east to 130m AOD in the south west Gradient and microrelief do not affect agricultural land quality

18 Flooding does not appear to be limiting on this site

Geology and soils

19 The relevant geological sheet (BGS 1978) maps the majority of the site as the Marlstone Bedrock A narrow strip of Upper Lias Clay has been mapped along the eastern edge of the site while Middle Lias follows the western edge

20 The most recently published soils information for this area (SSEW 1983) maps the Banbury soil association across most of the site with a small area of Wickham 2 soils along the western edge The former are described as well drained brashy fine and coarse loamy ferruginous soils over Ironstone Some deep fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging (SSEW 1983) The latter are slowly permeable seasonally waterlogged fine loamy over clayey soils fine silty over clayey and clayey soils Small areas of slowly permeable calcareous soils on the steeper slopes (SSEW 1983)

Agricultural Land Classification

21 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

22 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 III

Grade 2

23 Grade 2 (very good quality agricultural land) has been mapped towards the west of the site The soil profiles are typically well drained Wetness Class 1 (Appendix III) comprising very slightly to slightly stony (1.8% total sandstone) medium clay loam or medium silty clay loam topsoils The subsoils are generally moderately structured heavy silty clay loams or

sandy clay loams. These horizons range from being moderately to very stony (15-48% total sandstone) causing some profiles to become impenetrable to the soil auger. Soil inspection Pit 1 however demonstrated that the soil resource continues to depth with a very stony (55% total sandstone) sandy clay loam. In this climatic regime the combination of soil textures, structures and stone contents acts to slightly reduce the amount of profile available water for crops. This land has therefore been assigned to Grade 2 on the basis of a minor soil droughtiness limitation.

Subgrade 3b

24 The majority of the agricultural land on this site has been mapped as Subgrade 3b (moderate quality land). To the north east the soil profiles are poorly drained comprising slightly stony (5-10% total sandstone) medium silty clay loam topsoils over very slightly stony (2-5% total sandstone) heavy silty clay loam or clay upper subsoils. Occasional moderately stony (25% sandstone) silty clay lower subsoils occur but generally the stone content is negligible. Soil inspection Pit 2 shows the clay to be poorly structured and slowly permeable from the upper subsoil. Drainage through the profile will therefore be restricted causing prolonged waterlogging. In this local climatic regime the resultant soil wetness will limit seed germination and growth. Trafficking of the land by farm machinery and grazing livestock will also cause increased damage to the soil structure thus limiting the timing of cultivations. This land has therefore been assessed as Wetness Class IV (Appendix III) Subgrade 3b due to soil wetness and workability restrictions.

25 The remaining Subgrade 3b land is thought to have been disturbed by previous railway and quarry workings. The route of a now disused railway runs across the site from the west to the south east corner. The soil profiles in this area are extremely variable and are believed to be the result of earth movements during the construction of the railway embankment. This land will therefore be extremely difficult to manage. The south eastern corner is also believed to be a restored quarry. Here the soil profiles comprise moderately stony (15% sandstone) medium silty clay loam topsoils over very slightly stony (2-5% sandstone) medium and heavy silty clay loam upper subsoils. At 40-50cm depth the profiles become stonier again, comprising heavy silty clay loams with 20% sandstone. Below this at 45-55cm depth, the profiles are impenetrable possibly over the quarry fill. These areas are therefore restricted to Subgrade 3b due to significant soil droughtiness and pattern limitations. Crop establishment and growth will therefore be disrupted by the high stone content and variability of soils.

Helen Goode
Resource Planning Team
Guildford Statutory Group
ADAS Reading

SOURCES OF REFERENCE

British Geological Survey (1978) *Sheet No 201 Banbury* 1 50 000 Series Solid & Drift
BGS London

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

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

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

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

DESCRIPTIONS OF THE GRADES AND SUBGRADES

Grade 1 Excellent Quality Agricultural Land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2 Very Good Quality Agricultural Land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural or horticultural crops can usually be grown but on some land of this grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1 land.

Grade 3 Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When more demanding crops are grown, yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a Good Quality Agricultural Land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b Moderate Quality Agricultural Land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass, or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4 Poor Quality Agricultural Land

Land with severe limitations which significantly restrict the range of crops and/or the level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5 Very Poor Quality Agricultural Land

Land with severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

APPENDIX II

SOIL WETNESS CLASSIFICATION

Definitions of Soil Wetness Classes

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile. Six soil wetness classes are identified and are defined in the table below.

Wetness Class	Duration of waterlogging ¹
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years ²
II	The soil profile is wet within 70 cm depth for 31-90 days in most years or if there is no slowly permeable layer within 80 cm depth it is wet within 70 cm for more than 90 days but only wet within 40 cm depth for 30 days in most years
III	The soil profile is wet within 70 cm depth for 91-180 days in most years or if there is no slowly permeable layer present within 80 cm depth it is wet within 70 cm for more than 180 days but only wet within 40 cm depth for between 31-90 days in most years
IV	The soil profile is wet within 70 cm depth for more than 180 days but not wet within 40 cm depth for more than 210 days in most years or if there is no slowly permeable layer present within 80 cm depth it is wet within 40 cm depth for 91-210 days in most years
V	The soil profile is wet within 40 cm depth for 211-335 days in most years
VI	The soil profile is wet within 40 cm depth for more than 335 days in most years

Assessment of Wetness Class

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

¹ The number of days is not necessarily a continuous period

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

APPENDIX III

SOIL DATA

Contents

Sample location map

Soil abbreviations Explanatory Note

Soil Pit Descriptions

Soil boring descriptions (boring and horizon levels)

Database Printout Horizon Level Information

SOIL PROFILE DESCRIPTIONS EXPLANATORY NOTE

Soil pit and auger boring information collected during ALC fieldwork is held on a computer database. This uses notations and abbreviations as set out below.

Boring Header Information

- 1 **GRID REF** national 100 km grid square and 8 figure grid reference
- 2 **USE** Land use at the time of survey. The following abbreviations are used:

ARA Arable	WHT Wheat	BAR Barley
CER Cereals	OAT Oats	MZE Maize
OSR Oilseed rape	BEN Field Beans	BRA Brassicae
POT Potatoes	SBT Sugar Beet	FCD Fodder Crops
LIN Linseed	FRT Soft and Top Fruit	FLW Fallow
PGR Permanent Pasture	LEY Ley Grass	RGR Rough Grazing
SCR Scrub	CFW Coniferous Woodland	DCW Deciduous Wood
HTH Heathland	BOG Bog or Marsh	FLW Fallow
PLO Ploughed	SAS Set aside	OTH Other
HRT Horticultural Crops		
- 3 **GRDNT** Gradient as estimated or measured by a hand held optical clinometer
- 4 **GLEYSPL** Depth in centimetres (cm) to gleying and/or slowly permeable layers
- 5 **AP (WHEAT/POTS)** Crop adjusted available water capacity
- 6 **MB (WHEAT/POTS)** Moisture Balance (Crop adjusted AP - crop adjusted MD)
- 7 **DRT** Best grade according to soil droughtiness
- 8 If any of the following factors are considered significant 'Y' will be entered in the relevant column

MREL Microrelief limitation	FLOOD Flood risk	EROSN Soil erosion risk
EXP Exposure limitation	FROST Frost prone	DIST Disturbed land
CHEM Chemical limitation		

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

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

Soil Pits and Auger Borings

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

S	Sand	LS	Loamy Sand	SL	Sandy Loam
SZL	Sandy Silt Loam	CL	Clay Loam	ZCL	Silty Clay Loam
ZL	Silt Loam	SCL	Sandy Clay Loam	C	Clay
SC	Sandy Clay	ZC	Silty Clay	OL	Organic Loam
P	Peat	SP	Sandy Peat	LP	Loamy Peat
PL	Peaty Loam	PS	Peaty Sand	MZ	Marine Light Silts

For the sand loamy sand sandy loam and sandy silt loam classes the predominant size of sand fraction will be indicated by the use of the following prefixes

F	Fine (more than 66% of the sand less than 0.2mm)
M	Medium (less than 66% fine sand and less than 33% coarse sand)
C	Coarse (more than 33% of the sand larger than 0.6mm)

The clay loam and silty clay loam classes will be sub divided according to the clay content **M** Medium (<27% clay) **H** Heavy (27-35% clay)

2 **MOTTLE COL** Mottle colour using Munsell notation

3 **MOTTLE ABUN** Mottle abundance expressed as a percentage of the matrix or surface described

F few <2% **C** common 2-20% **M** many 20-40% **VM** very many 40%+

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

Stone contents (>2cm >6cm and total) are given in percentages (by volume)

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 OXON SP N OF DRAYTON Pit Number 1P

Grid Reference SP43104193 Average Annual Rainfall 703 mm
 Accumulated Temperature 1340 degree days
 Field Capacity Level 159 days
 Land Use
 Slope and Aspect 02 degrees N

HORIZON	TEXTURE	COLOUR	STONES	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 30	MZCL	10YR46 00	2	5	HR					
30 90	HZCL	75YR46 56	0	48	HR		MDCSAB	FR	M	
90 120	SCL	10YR54 00	0	55	HR	C			M	

Wetness Grade 1 Wetness Class I
 Gleying cm
 SPL No SPL

Drought Grade 2 APW 109mm MBW 11 mm
 APP 92 mm MBP 5 mm

FINAL ALC GRADE 2
 MAIN LIMITATION Droughtiness

SOIL PIT DESCRIPTION

Site Name OXON SP N OF DRAYTON Pit Number 2P

Grid Reference SP43364228
 Average Annual Rainfall 703 mm
 Accumulated Temperature 1340 degree days
 Field Capacity Level 159 days
 Land Use Cereals
 Slope and Aspect 01 degrees N

HORIZON	TEXTURE	COLOUR	STONES	%	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0	27 MZCL	10YR44 46	0		2	HR					
27	65 C	10YR62 00	0		2	HR	C	MDCAB	FM	P	

Wetness Grade 3B
 Wetness Class IV
 Gleying 027 cm
 SPL 027 cm

Drought Grade 3A
 APW 90 mm MBW 8 mm
 APP 99 mm MBP 12 mm

FINAL ALC GRADE 3B
 MAIN LIMITATION Wetness

SAMPLE NO	GRID REF	ASPECT USE	GRDNT	WETNESS GLEY SPL	WHEAT CLASS GRADE	POTS AP MB	M REL DRT	EROSN FLOOD	FROST EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SP43354253	CER N	02	028 028	4 3B	101 3 102 15 3A					WE	3B	
1P	SP43104193	STB N	02		1 1	109 11 92 5 2					DR	2	At Bo ing 19
2	SP43354242	CER S	01	039 039	4 3B	91 7 97 10 3A					WE	3B	
2P	SP43364228	CER N	01	027 027	4 3B	90 -8 99 12 3A					WE	3B	At bo ing 4
3	SP43454239	CER S	02	060	1 1	102 4 112 25 3A					DR	2	I65 See 1P
4	SP43364228	CER N	01	030 030	4 3B	84 14 87 0 3A					WE	3B	See 2P
5	SP43204220	PLO			1 1	64 34 64 23 3B					DR	2	I40 See 1P
6	SP43304220	CER W	03		1 1	118 20 113 26 2					DR	2	I90 Valley
7	SP43404220	CER N	01	055 055	3 3A	95 3 103 16 3A					WE	3A	I65
8	SP43104210	CER S	05		1 1	133 35 116 29 1						1	
9	SP43204210	CER S	04	060 060	2 2	122 24 113 26 2					WE	2	
10	SP43304210	CER W	02		1 1	106 8 118 31 2					DR	2	I70 Valley
11	SP43404210	CER S	04		1 1	75 23 75 12 3B				Y	DB	3B	Distu bed
12	SP43504210	CER S	01	048	1 1	86 12 89 2 3A				Y	DB	3B	D tu bed
13	SP43004200	CER N	02		1 1	92 6 97 10 3A					DR	2	I60 See 1P
14	SP43104200	CER N	02		1 1	106 8 120 33 2					DR	2	I70
15	SP43204200	CER N	02	025 025	4 3B	99 1 104 17 3A					DB	3B	Q Distu bed
16	SP43304200	CER		050 050	3 3A	120 22 111 24 2					DB	3B	Q Distu bed
17	SP43404200	CER		055	1 1	150 52 110 23 1					DB	3B	Q Disturbed
18	SP43504200	CER		035 035	4 3B	101 3 106 19 3A				Y	DB	3B	D st bed
19	SP43104193	CER			1 1	86 12 86 1 3A					DR	2	I50 See 1P

SAMPLE	DEPTH	TEXTURE	COLOUR	-MOTTLES			PED		STONES			STRUCT/	SUBS			SPL	CALC			
				COL	ABUN	CONT	COL	GLE	2	6	LITH	TOT	CONSIST	STR	POR			IMP		
1	0 28	mzc1	10YR44 46						6	0	HR	10								
	28 70	c	10YR71 00 75YR58 00 M						Y	0	0	HR	2		P		Y			
	70 90	zc	10YR63 62 10YR66 00 M						00MN00	00	Y	0	0	HR	25		P	Y	Imp Sst/ZR	
1P	0 30	mzc1	10YR46 00									2	0	HR	5					
	30 90	h c1	75YR46 56									0	0	HR	48	MDCSAB	FR	M		Wet Sieved
	90 120	sc1	10YR54 00 75YR58 00 C							S	0	0	HR	55			M			
2	0 30	mzc1	10YR44 43									2	0	HR	5					
	30 40	hzc1	10YR46 00									0	0	HR	2		M			
	40 60	c	10YR71 00 75YR58 00 M						Y	0	0	HR	1			P		Y		
2P	0 27	mzc1	10YR44 46									0	0	HR	2					
	27 65	c	10YR62 00 10YR58 00 C							10YR63	00	Y	0	0	HR	2	MDCAB	FM	P	Y
3	0 35	mzc1	10YR44 46									2	0	HR	5					
	35 60	h c1	10YR56 00									0	0	HR	2		M			
	60 65	hzc1	10YR62 63 10YR66 00 C							00MN00	00	Y	0	0	HR	15		M		Imp Sst/ZR
4	0 30	mzc1	10YR44 00									0	0	HR	2					
	30 55	c	10YR72 00 10YR66 00 M							Y	0	0	HR	5		P		Y	Imp Sst/ZR	
5	0 40	mc1	10YR43 00									7	0	HR	12					Imp Sst/ZR
6	0 30	mzc1	10YR44 00									3	0	HR	5					
	30 90	h c1	10YR46 00 00MN00 00 F									0	0	HR	15		M			Imp Sst/ZR
7	0 30	mzc1	10YR44 00									0	0	HR	5					
	30 55	hzc1	10YR46 00									0	0	HR	10		M			
	55 65	c	10YR64 00 10YR66 00 C							00MN00	00	Y	0	0	HR	25		P	Y	Imp Sst/ZR
8	0 30	mc1	10YR43 00									0	0	HR	2					
	30 100	hc1	75YR46 00									0	0	HR	2		M			
9	0 30	mc1	10YR43 00									0	0	HR	3					
	30 60	hc1	75YR46 00									0	0		0		M			
	60 100	c	10YR62 00 75YR56 00 C							Y	0	0		0		P		Y		
10	0 30	mzc1	10YR44 00									2	0	HR	5					
	30 60	hzc1	10YR46 00									0	0	HR	2		M			
	60 70	hzc1	10YR46 00									0	0	HR	20		M			Imp Sst/ZR
11	0 30	mzc1	10YR44 00									6	0	HR	10					
	30 40	hzc1	10YR46 63									0	0	HR	5		M			Mixed ho izo
	40 45	hzc1	10YR46 00									0	0	HR	20		M			Imp Sst
12	0 30	mzc1	10YR54 00 10YR58 00 F									8	5	HR	15					
	30 48	mzc1	10YR54 00 10YR58 00 C									S	0	0	HR	2		M		
	48 55	hzc1	10YR52 00 75YR58 61 M							Y	0	0	HR	20		M				M ed Imp Sst

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES		PED		STONES			STRUCT/	SUBS						
				COL	ABUN	CONT	COL	GLE	2	6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
13	0 30	mc1	10YR43 00						0	0	HR	2						
	30 60	sc1	75YR46 00						0	0	HR	2	M					Imp Sst/Z
14	0 30	mc1	10YR43 00						0	0	HR	1						
	30 70	mzc1	75YR46 00						0	0	HR	2	M					Imp Sst/ZR
15	0 25	mc1	10YR43 00						0	0		0						
	25 80	c	10YR62 00	75YR56 00	C			Y	0	0		0	P					Y
16	0 30	mc1	10YR43 00						0	0	HR	1						
	30 50	mc1	10YR46 00						0	0		0	M					
	50 100	c	10YR62 00	75YR56 00	C			Y	0	0		0	P					Y
17	0 30	sc1	10YR43 00						0	0	HR	2						
	30 55	sc1	10YR46 00						0	0		0	M					
	55 120	c1	10YR52 00	75YR56 00	C			Y	0	0		0	M					
18	0 35	mc1	10YR43 00						0	0	HR	3						
	35 50	c	10YR62 00	75YR56 00	C			Y	0	0	HR	1	P					Y
	50 80	c	25Y 30 00	75YR56 00	C			Y	0	0	HR	3	P					Y
19	0 30	mc1	10YR43 00						0	0	HR	2						
	30 50	hzc1	75YR46 00						0	0	HR	2	M					Imp Sst/ZR