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Moor Mill Farm,
Uffington, Oxfordshire
Agricultural Land Classification
ALC Map and Report
July 1996

Resource Planning Team
Guildford Statutory Group
ADAS Reading

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**AGRICULTURAL LAND CLASSIFICATION REPORT
MOOR MILL FARM,
UFFINGTON, OXFORDSHIRE**

Introduction

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of approximately 38 hectares of land at Moor Mill Farm to the north east of Uffington, Oxfordshire. The survey was carried out during June 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 proposals for mineral extraction. 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 either in arable crops or grass. The areas of the site shown as Other Land consists of woodland.

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)	% Total site area
3b	37.3	98.7
Other land	0.5	1.3
Total site area	37.8	100

7. The fieldwork was conducted at an average density of 1 boring per hectare. A total of 36 borings and 2 soil pits were described.
8. The land at this site has been classified as Subgrade 3b (moderate quality) on the basis of soil wetness/workability limitations.

9. The majority of the land at the site is mapped as Subgrade 3b and is limited by soil wetness/workability where soils have developed from deposits of Jurassic and Cretaceous interbedded loams and clays (Lower Greensand) and alluvium. In these areas the soils commonly comprise medium, or heavy clay loam topsoils over clay or occasionally heavy clay loam subsoils. The soils are generally stoneless or very slightly stony and are gleyed at shallow depths. The clays are slowly permeable at shallow to moderate depths in the profile. These slowly permeable horizons cause drainage to be impeded so that land utilisation is restricted. The depth at which these horizons occur determines the severity of the soil wetness restrictions and therefore the ALC grade.

Factors Influencing ALC Grade

Climate

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

11. 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	SU 304 905
Altitude	m, AOD	80
Accumulated Temperature	day°C	1434
Average Annual Rainfall	mm	660
Field Capacity Days	days	144
Moisture Deficit, Wheat	mm	106
Moisture Deficit, Potatoes	mm	97

12. 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.

13. 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.

14. 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 also believed not to affect the site. The site is climatically Grade 1.

Site

15. The agricultural land at this site lies at an altitude of 76-84m AOD. The land is flat with slight undulations. Nowhere does gradient or microrelief affect the land quality.

Geology and soils

16. The published geological information for the site (BGS, 1971) shows the site to consist predominantly of Jurassic and Cretaceous interbedded loams and clays (Lower Greensand) with a small section of alluvium along the northern edge and through the middle of the site trending north south.

17. The most recently published soil information for the site (SSEW, 1983) shows the Kingston series to dominate the area with the possibility of the Thames, Fladbury and Rowsham series occurring locally along the northern edge and through the middle of the site. The former is described as 'slowly permeable, seasonally waterlogged fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging. Some well drained fine and coarse loamy soils.' (SSEW, 1983). The Thames, Fladbury and Rowsham series are developed over non-calcareous or calcareous clayey alluvium and clayey, or fine loamy drift deposits respectively. The soils are imperfectly, poorly or very poorly drained and suffer from seasonal waterlogging (SSEW, 1973).

Agricultural Land Classification

18. The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1, page 1.

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

Subgrade 3b

20. The Subgrade 3b mapping unit which covers the entire site is limited by soil wetness/workability. Here, medium clay loam and heavy clay loam topsoils overlie heavy clay loam or clay subsoils with no stones or very few stones. Soils are generally non-calcareous. Soil inspection pit 1 revealed the upper subsoils to be moderately structured and the lower subsoils to be poorly structured. Inspection pit 2 showed both the upper and lower subsoils to be poorly structured. The subsoil was slowly permeable at shallow depths typically within 40cm (or less) of the surface. Drainage is thus significantly impeded causing prolonged seasonal waterlogging in the soil profile. As a result, crop germination and growth may be adversely affected. The heavier topsoil textures can also restrict the timing of cultivations as trafficking by agricultural machinery or grazing by livestock may lead to structural damage. Wetness Class IV, Subgrade 3b is therefore considered appropriate for this land.

21. A number of borings of better agricultural land were encountered on the site, but these were few and far between so were not mapped on the final ALC map as separate mapping units.

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SOURCES OF REFERENCE

British Geological Survey (1971) Sheet No. 253, Abingdon 1:63,360 scale (Drift Edition).
BGS: London.

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

Met. Office (1989) *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.

Soil Survey of Great Britain (1973) *Soils of the Wantage and Abingdon District.*: 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:

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. **GLEYS:** If the soil horizon is gleyed a 'Y' will appear in this column. If slightly gleyed, an 'S' will appear.

7. **STONE LITH:** Stone Lithology - One of the following is used.

HR: all hard rocks and stones	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	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 : MOOR MILL FM MINERALS Pit Number : 1P

Grid Reference: SU30409060 Average Annual Rainfall : 660 mm
 Accumulated Temperature : 1434 degree days
 Field Capacity Level : 144 days
 Land Use : Wheat
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 28	MCL	10YR32 42	0	2	HR					
28- 45	HCL	10YR41 52	0	1	HR	C	MDCSAB	FM	M	
45- 68	C	10YR51 52	0	1	HR	M	MDCOPR	FM	P	
68-120	C	25Y 62 00	0	1	HR	M	MDCOPR	FM	P	

Wetness Grade : 3A Wetness Class : III
 Gleying : 028 cm
 SPL : 045 cm

Drought Grade : 2 APW : 131mm MBW : 24 mm
 APP : 109mm MBP : 11 mm

FINAL ALC GRADE : 3A
 MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : MOOR MILL FM MINERALS Pit Number : 2P

Grid Reference: SU30509070 Average Annual Rainfall : 660 mm
 Accumulated Temperature : 1434 degree days
 Field Capacity Level : 144 days
 Land Use : Cereals
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 20	HCL	10YR32 00	0	0						
20- 30	C	10YR42 00	0	0		C	MDCDPR	FM	P	
30- 45	C	10YR41 51	0	0		C	MDCOAB	FM	P	
45-120	C	10YR41 51	0	0		M	MDCOAB	FM	P	

Wetness Grade : 3B Wetness Class : IV
 Gleying : 020 cm
 SPL : 020 cm

Drought Grade : APW : 000mm MBW : 0 mm
 APP : 000mm MBP : 0 mm

FINAL ALC GRADE : 3B
 MAIN LIMITATION : Wetness

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS
			GRDNT	GLEYSPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	
1	SU29909080	PGR	0	038	4	3B	130	23	107	9	2			WE 3B	RIDGE FURROW
1P	SU30409060	WHT	028	045	3	3A	131	24	109	11	2			WE 3A	AT BORING 17
2	SU30009080	PGR	0	038	4	3B	130	23	107	9	2			WE 3B	RIDGE FURROW
2P	SU30509070	CER	020	020	4	3B	000	0	000	0				WE 3B	
3	SU29909070	WHT	0	028	4	3B	000	0	000	0				WE 3B	
4	SU30009070	WHT	0	035	4	3B	000	0	000	0				WE 3B	
5	SU30109070	CER	025	040	3	3A	000	0	000	0				WE 3A	
6	SU30209070	CER	025	025	4	3B	000	0	000	0				WE 3B	
7	SU30309070	CER	020	020	4	3B	000	0	000	0				WE 3B	
8	SU30409070	CER	023	023	4	3B	000	0	000	0				WE 3B	
9	SU30509070	CER	025	025	4	3B	000	0	000	0				WE 3B	
10	SU30609070	CER	028	028	4	3B	000	0	000	0				WE 3B	
11	SU30709070	CER	028	100	2	2	151	44	116	18	1			WE 2	
12	SU29909060	PGR	0	035	4	3B	000	0	000	0				WE 3B	
13	SU30009060	PGR	0	030	4	3B	000	0	000	0				WE 3B	
14	SU30109060	CER	030	030	4	3B	000	0	000	0				WE 3B	
15	SU30209060	CER	022	022	4	3B	000	0	000	0				WE 3B	
16	SU30309060	CER	022	022	4	3B	000	0	000	0				WE 3B	
17	SU30409060	CER	030	040	3	3A	000	0	000	0				WE 3A	
18	SU30509060	CER	028	028	4	3B	000	0	000	0				WE 3B	IMP 68
19	SU30609060	CER	028	028	4	3B	000	0	000	0				WE 3B	
20	SU30709060	PGR	028	028	4	3B	000	0	000	0				WE 3B	
21	SU29809050	PGR	0	035	4	3B	000	0	000	0				WE 3B	
22	SU29909050	PGR	0	045	3	3A	000	0	000	0				WE 3A	
23	SU30009050	PGR	025	025	4	3B	000	0	000	0				WE 3B	
24	SU30109050	PGR	032	032	4	3B	000	0	000	0				WE 3B	
25	SU30209050	CER	020	020	4	3B	000	0	000	0				WE 3B	PLASTIC
26	SU30309050	CER	025	025	4	3B	000	0	000	0				WE 3B	PLASTIC
27	SU30409050	CER	028	028	4	3B	000	0	000	0				WE 3B	
28	SU30509050	CER	030	030	4	3B	000	0	000	0				WE 3B	
29	SU30609050	PGR	028	036	4	3B	000	0	000	0				WE 3B	
30	SU30709050	PGR	0	045	3	3A	000	0	000	0				WE 3A	
31	SU29809040	CER	028	028	4	3B	000	0	000	0				WE 3B	
32	SU29909040	CER	030	030	4	3B	000	0	000	0				WE 3B	
33	SU30009040	CER	030	045	3	3A	000	0	000	0				WE 3A	
34	SU30109040	CER	030	030	4	3B	000	0	000	0				WE 3B	
35	SU30209040	CER	030	045	3	3A	000	0	000	0				WE 3A	
36	SU29809030	CER	035	035	4	3B	000	0	000	0				WE 3B	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES-----			STRUCT/ CONSIST	SUBS				
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR	IMP	SPL
1	0-25	mc1	10YR42 00 75YR58 00 C					Y	0	0	HR	1					
	25-38	hc1	10YR52 00 10YR68 00 C					Y	0	0	HR	1		M			
	38-120	c	10YR61 00 75YR68 00 M					Y	0	0		0		P			Y
1P	0-28	mc1	10YR32 42						0	0	HR	2					
	28-45	hc1	10YR41 52 10YR56 00 C					Y	0	0	HR	1	MDCSAB	FM	M		
	45-68	c	10YR51 52 10YR68 00 M					Y	0	0	HR	1	MDCOPR	FM	P	Y	Y
	68-120	c	25Y 62 00 75YR58 00 M					Y	0	0	HR	1	MDCOPR	FM	P	Y	Y
2	0-25	mc1	10YR42 00 75YR68 00 C					Y	0	0	HR	1					
	25-38	hc1	10YR52 00 10YR68 00 C					Y	0	0	HR	1		M			
	38-120	c	10YR61 00 10YR68 00 M					Y	0	0		0		P			Y
2P	0-20	hc1	10YR32 00						0	0		0					
	20-30	c	10YR42 00 75YR58 00 C					Y	0	0		0	MDCOPR	FM	P		Y
	30-45	c	10YR41 51 75YR58 00 C					Y	0	0		0	MDCOAB	FM	P	Y	Y
	45-120	c	10YR41 51 75YR58 00 M				00M00 00	Y	0	0		0	MDCOAB	FM	P	Y	Y
3	0-28	mc1	10YR42 00 75YR68 00 C					Y	0	0	HR	1					
	28-45	c	10YR61 00 75YR68 00 M					Y	0	0		0		P			Y
	45-120	c	25Y 62 00 10YR58 00 C					Y	0	0		0		P			Y
4	0-35	mc1	10YR42 00 75YR68 00 C					Y	0	0	HR	1					
	35-70	c	10YR52 00 75YR68 46 C					Y	0	0		0		P			Y
	70-120	c	25Y 62 00 10YR58 00 C					Y	0	0		0		P			Y
5	0-25	mc1	10YR33 00						0	0		0					
	25-40	hc1	10YR53 00 10YR58 00 C				10YR61 00	Y	0	0		0		M			
	40-120	c	10YR61 00 75YR68 00 M				00FE00 00	Y	0	0		0		P			Y
6	0-25	hc1	10YR32 00						0	0		0					
	25-120	c	10YR61 62 75YR58 00 C					Y	0	0		0		P			Y
7	0-20	hc1	10YR32 00						0	0		0					
	20-90	c	05Y 31 42 10YR58 00 C					Y	0	0		0		P			Y
8	0-23	hc1	10YR32 00						0	0		0					
	23-48	c	10YR41 00 10YR58 00 C				75YR41 00	Y	0	0		0		P			Y
	48-120	c	10YR41 51 75YR58 00 M				05Y 52 00	Y	0	0		0		P			Y
9	0-25	hc1	10YR32 00						0	0		0					
	25-55	c	10YR41 00 10YR46 00 C				10YR51 00	Y	0	0		0		P			Y
	55-120	c	10YR51 00 10YR58 00 M					Y	0	0		0		P			Y
10	0-28	mc1	10YR32 00						0	0		0					
	28-50	c	10YR41 00 10YR58 00 C				10YR51 00	Y	0	0		0		P			Y
	50-120	c	10YR61 00 75YR68 00 M					Y	0	0		0		P			Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----			STRUCT/ CONSIST	SUBS			CALC
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR	
11	0-28	mc1	10YR32 00						0	0	0					
	28-55	hc1	10YR53 00	10YR58 00	C		10YR61 00	Y	0	0	0		M			
	55-65	sc1	10YR72 00	75YR68 00	C		10YR71 00	Y	0	0	0		M			
	65-80	ms1	10YR72 00	75YR68 00	C		10YR71 00	Y	0	0	0		M			
	80-100	sc1	10YR72 00	75YR68 00	C		10YR71 00	Y	0	0	0		M			
	100-120	c	10YR61 00	75YR68 00	M			Y	0	0	0		P		Y	
12	0-35	mc1	10YR42 00	75YR58 00	C			Y	0	0	0					
	35-75	c	10YR61 62	05Y 58 00	M			Y	0	0	0		P		Y	
	75-120	c	10YR71 72	75YR68 00	M			Y	0	0	0		P		Y	
13	0-30	mc1	10YR42 00	75YR68 00	C			Y	0	0	0					
	30-45	c	10YR42 00	75YR68 00	M			Y	0	0	0		P		Y	
	45-100	c	25 Y71 00	75YR68 00	M			Y	0	0	0		P		Y	
	100-120	sc1	25Y 61 00	75YR58 00	M			Y	0	0	0		M		Y	
14	0-30	hc1	10YR32 00						0	0	0					
	30-60	c	10YR41 51	75YR68 00	C			Y	0	0	0		P		Y	
	60-120	c	10YR61 00	75YR68 00	M			Y	0	0	0		P		Y	
15	0-22	hc1	10YR31 00						0	0	0					
	22-35	c	10YR41 00	10YR58 00	C			Y	0	0	0		P		Y	
	35-120	c	10YR62 00	75YR58 00	M			Y	0	0	0		P		Y	
16	0-22	hc1	10YR32 00						0	0	0					
	22-60	c	10YR41 00	10YR46 00	C			Y	0	0	0		P		Y	
	60-120	c	10YR41 00	10YR46 00	M			Y	0	0	0		P		Y	Y
17	0-30	mc1	10YR42 32						0	0	0					
	30-45	hc1	10YR41 52	10YR56 00	C			Y	0	0	0		M			
	45-120	c	10YR51 52	75YR58 00	M		25Y 62 00	Y	0	0	0		P		Y	
18	0-28	mc1	10YR32 00						0	0	0					
	28-68	c	10YR41 52	10YR56 00	M		00FE00 00	Y	0	0	0		P		Y	Imp-Stone
19	0-28	hc1	10YR32 00						0	0	0					
	28-55	c	10YR62 00	75YR56 00	C			Y	0	0	0		P		Y	
20	0-28	mc1	10YR32 00						0	0	0					
	28-70	c	10YR51 52	75YR56 58	C			Y	0	0	0		P		Y	
	70-120	c	10YR71 72	75YR58 00	M			Y	0	0	0		P		Y	
21	0-25	mc1	10YR42 00	10YR68 00	C			Y	0	0	HR	1				
	25-35	hc1	10YR52 00	75YR58 00	M			Y	0	0	HR	1		M		
	35-55	c	10YR61 00	75YR68 41	M			Y	0	0	0		P		Y	
	55-90	c	10YR71 00	75YR68 00	M			Y	0	0	0		P		Y	
	90-120	c	10YR72 00	10YR68 00	C			Y	0	0	0		P		Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES-----			STRUCT/ CONSIST	SUBS				
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR	IMP	SPL
22	0-30	mc1	10YR42 00	10YR68 00	C			Y	0	0	HR	1					
	30-45	hc1	10YR52 00	75YR68 00	C			Y	0	0	HR	1	M				
	45-90	c	10YR61 00	75YR68 00	M			Y	0	0		0	P			Y	
	90-120	c	10YR72 00	10YR68 00	M			Y	0	0		0	P			Y	
23	0-25	mc1	10YR42 00						0	0		0					
	25-38	c	10YR42 00	75YR68 00	M			Y	0	0		0	P			Y	
	38-60	c	10YR52 00	75YR68 00	M			Y	0	0		0	P			Y	
	60-120	c	10YR71 00	75YR68 00	M			Y	0	0		0	P			Y	
24	0-32	mc1	10YR32 33						0	0		0					
	32-55	c	10YR42 00	75YR58 00	C			Y	0	0		0	P			Y	
	55-120	c	10YR61 00	75YR68 00	M			Y	0	0		0	P			Y	
25	0-20	hc1	10YR32 00						0	0		0					
	20-120	c	05Y 51 52	10YR46 00	C			Y	0	0		0	P			Y	
26	0-25	hc1	10YR31 00						0	0		0					
	25-120	c	25 Y42 00	10YR58 00	C			Y	0	0		0	P			Y	
27	0-28	hc1	10YR42 00						0	0		0					
	28-65	c	10YR51 52	75YR58 00	M			Y	0	0		0	P			Y	
	65-120	c	10YR61 00	75YR68 00	M			Y	0	0		0	P			Y	
28	0-30	hc1	10YR41 00						0	0		0					
	30-60	c	10YR52 00	10YR58 00	M			Y	0	0		0	P			Y	
	60-120	c	10YR61 00	10YR68 00	C			Y	0	0		0	P			Y	
29	0-28	mc1	10YR32 00	75YR46 00	F				0	0		0					
	28-36	hc1	10YR63 00	75YR56 00	C			Y	0	0		0	M				
	36-50	c	10YR63 00	75YR56 00	C			00MN00	Y	0	0	0	P			Y	
	50-120	c	10YR71 00	75YR68 00	M			Y	0	0		0	P			Y	
30	0-30	mc1	10YR32 00	75YR46 00	C			Y	0	0		0					
	30-45	hc1	10YR62 00	10YR58 00	C			Y	0	0		0	M				
	45-120	c	10YR71 72	75YR58 00	C			Y	0	0		0	P			Y	
31	0-28	hc1	10YR32 00						0	0		0					
	28-60	c	10YR42 00	10YR58 00	C			Y	0	0		0	P			Y	
	60-120	c	10YR61 00	75YR68 00	M			Y	0	0		0	P			Y	
32	0-30	mc1	10YR32 00						0	0		0					
	30-50	c	10YR41 51	75YR68 00	M			Y	0	0		0	P			Y	
	50-120	c	10YR61 00	75YR68 00	M			10YR71	00	Y	0	0	0	P		Y	
33	0-30	mc1	10YR32 00						0	0		0					
	30-45	hc1	10YR42 00	10YR58 00	C			Y	0	0		0	M				
	45-120	c	10YR52 00	75YR68 00	M			10YR71	00	Y	0	0	0	P		Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED	----STONES----			STRUCT/	SUBS					
				COL	ABUN	CONT	COL.	GLEY	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL
34	0-30	hc1	10YR31 00					0	0	0							
	30-50	c	10YR41 00 75YR68 00 M					Y	0	0	0		P				Y
	50-120	c	10YR62 00 75YR68 00 M					Y	0	0	0		P				Y
35	0-30	mc1	10YR41 42					0	0	0							
	30-45	hc1	10YR41 52 10YR56 00 M					Y	0	0	0		M				
	45-120	c	10YR52 00 75YR58 00 M					Y	0	0	0		P				Y
36	0-35	hc1	10YR41 42					0	0	0							
	35-50	c	10YR52 53 10YR56 00 M					Y	0	0	0		P				Y
	50-120	c	10YR51 00 75YR58 00 M					Y	0	0	0		P				Y