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MILTON KEYNES EXPANSION STUDY
Land at Belvedere Farm, Fenny Stratford, Buckinghamshire

Agricultural Land Classification
ALC Map and Report

January 1999

Resource Planning Team
Eastern Region
FRCA Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

MILTON KEYNES EXPANSION STUDY
LAND AT BELVEDERE FARM, FENNY STRATFORD, BUCKINGHAMSHIRE

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of approximately 21 ha of land at Belvedere Farm, to the east of Fenny Stratford, in Buckinghamshire. The survey was carried out during January 1999.

2. The survey was undertaken by the Farming and Rural Conservation Agency (FRCA)[1] on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF). It was carried out in connection with MAFF's statutory input to the Milton Keynes Expansion Study. 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 was in grassland production (permanent and ley as well as rough grazing). Parts of the land were in Set-aside use. The areas mapped as 'Other land' include a nursery, farm buildings and tracks, residential dwellings and a tree plantation.

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.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
2	2.1	12.4	10.2
3a	12.8	75.8	62.1
3b	2.0	11.8	9.7
Other land	3.7	N/A	18.0
Total surveyed area	16.9	100	82.0
Total site area	20.6	-	100

[1] FRCA is an executive agency of MAFF and the Welsh Office

7. The fieldwork was conducted at an average density of 1 boring per hectare of agricultural land. A total of 19 borings and 2 soil pits was described.

8. The majority of the survey area is classified as Subgrade 3a agricultural land (good quality). Two small units of Grade 2 (very good quality) and Subgrade 3b (moderate quality) agricultural land have been mapped along the south-east and north-west edges of the site respectively. The land is mainly restricted by soil wetness with soil droughtiness occasionally being equally restricting.

9. Land which lies at a slightly higher altitude than the rest of the site occurs in the south-east of the survey area and has been classified as Grade 2. The profiles comprise deep, well drained, fine loamy soils with little stone content throughout. This land is restricted in its agricultural use to a minor extent by a very slight soil wetness limitation related to fluctuating groundwater levels.

10. Subgrade 3a land has been mapped across the majority of the site where soil wetness is the overriding limitation. Soil drainage, at the time of survey, was restricted in many areas due to a combination of high groundwater levels and clayey subsoil horizons; this is supported by evidence of surface ponding (especially in the north and central parts of the site). The versatility of this land will be affected by restricting the number of days when the land is in a suitable condition for cultivation and/or grazing by livestock. Soil wetness will also affect crop establishment and development. The soils within this Subgrade 3a unit vary over relatively short distances and, consequently, individual borings of Grade 2 and Subgrade 3b do occur but are not mapped separately at this scale.

11. A small section of land in the north-west of the survey area in the floodplain of the River Ouzel has been classified as Subgrade 3b. Here, poorly drained clayey soils give rise to soil wetness and workability restrictions and are also prone to flooding.

FACTORS INFLUENCING ALC GRADE

Climate

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

Table 2: Climatic and altitude data

Factor	Units	Values	
Grid reference	N/A	SP 886 342	SP 887 340
Altitude	m, AOD	70	70
Accumulated Temperature	day°C (Jan-June)	1413	1413
Average Annual Rainfall	mm	634	634
Field Capacity Days	days	134	134
Moisture Deficit, Wheat	mm	109	108
Moisture Deficit, Potatoes	mm	101	101
Overall climatic grade	N/A	Grade 1	Grade 1

13. 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).

14. 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.

15. 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.

16. The combination of rainfall and temperature at this site mean that the area is relatively dry and warm and 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

17. The agricultural land at this site lies at an altitude of 55–65m AOD and is generally flat or slightly undulating. A small section of low lying land in the north-west of the survey area (which lies in the floodplain of the River Ouzel) is prone to flooding (according to Environment Agency information). Soil wetness is the most limiting factor in this area Other site limitations, such as gradient and microrelief, do not affect land quality.

Geology and soils

18. The published geology map for this area (BGS, 1992) shows that alluvium and 1st Terrace Deposits predominate in the centre, the north-west, and south-east extremes of the site. Elsewhere, Oxford Clay deposits are mapped.

19. The most recently published soil information for the site (SSEW, 1983) shows the majority of the survey area to be mapped as the Bishampton 2 association. This is described as 'Deep fine loamy and fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging associated with similar slowly permeable seasonally waterlogged soils'. (SSEW,1983). On the lower lying land (along the north-west edge of site), adjacent to the River Ouzel, the Fladbury 1 association is mapped. This is described as 'Stoneless clayey soils, in places calcareous, variably affected by groundwater. Flat land. Risk of flooding.'(SSEW, 1983).

20. Upon detailed field examination soils were found to be broadly similar to those described above.

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.

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 II.

Grade 2

23. A small proportion (totalling 12.4% of the surveyed area) of Grade 2 land (very good quality) occurs in the south-east of the survey area at a slightly higher altitude than the rest of the site. This land is restricted in its agricultural use to a minor extent by a very slight soil wetness limitation related to fluctuating groundwater levels.

24. The profiles within this unit typically comprise very slightly stony (2-5% total flints) non-calcareous medium clay loam topsoils. These overlie similar or slightly heavier subsoils which are gleyed (suggesting seasonal waterlogging) at moderate depths between 50-90cm and contain between 2-15% total flints. In addition to gleying, the profiles were saturated at depths between 65cm and 90cm at the time of survey (January 1999). As a result, Grade 2 was considered appropriate for this land on the basis of a soil wetness (groundwater) limitation. Soil wetness affects crop growth and development and opportunities for landwork and/or grazing.

Subgrade 3a

25. The majority of the survey area (75.8%) is of good quality agricultural land (Subgrade 3a). As in the Grade 2 unit, the principal limitation is soil wetness.

26. The profiles within the Subgrade 3a mapping unit are variable, but generally comprise non-calcareous, medium clay loam topsoils which are stoneless to slightly stony (containing up to 8% total flints). These overlie similar or slightly heavier textured upper subsoils which usually show signs of wetness in the form of gleying. The majority of this unit comprises permeable subsoils which are affected by fluctuating groundwater levels. At the time of the survey (January) the watertable was found to occur in the upper part of the soil profile (0-55cm depth). Due to the flat, low lying position in the landscape and the fact that the survey area is sandwiched between the River Ouzel and the A5 road, it is unlikely that the watertable can be adequately controlled across the land. As a result, these soils are assessed as Wetness Class III and the land classified as Subgrade 3a on the basis of soil wetness. Pit 1 (Appendix II) is representative of this soil type. Elsewhere within this Subgrade 3a unit, lower subsoils are more clayey and dense and as a result, significantly impede drainage as they are slowly permeable (see Pit 2, Appendix II). Here, the combination of these drainage characteristics (Wetness Class III) and the prevailing climate also gives rise to ALC Subgrade of 3a. Soil wetness is likely to affect crop growth and development, as well as influence the number of days when the land is suitable for cultivation and/or grazing by livestock.

27. Occasional profiles of better or worse quality were observed within the Subgrade 3a mapping unit but these were not mapped separately because of their limited extent and sporadic distribution.

Subgrade 3b

28. Land of moderate quality is mapped in the north-west of the site on the low lying area adjacent to the River Ouzel. The land is assigned to this grade on account of moderate soil wetness/workability limitations. The soil profiles comprise non-calcareous topsoils of heavy clay loam which are generally free of stones. These overlie poorly structured clay subsoils at shallow depths. These subsoils are slowly permeable and act to significantly impede soil drainage. This is indicated by gleying directly below the topsoil. Given the prevailing climate, these profiles are assessed as poorly drained (Wetness class IV). The interaction between the heavy textured topsoils, the poor drainage and the prevailing climate means that this land is limited by soil wetness and workability. In addition to the above, information from the Environment Agency suggests that flooding takes place in this area. As such, the land should be graded no better than Subgrade 3b as flooding will present significant difficulties in terms of cropping and cultivations.

Sharron Cauldwell
Resource Planning Team
Eastern Region
FRCA

SOURCES OF REFERENCE

British Geological Survey (1992) *Leighton Buzzard, Sheet 220 (Solid and 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

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:

SOIL PROFILE DESCRIPTIONS: EXPLANATORY NOTE

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

Boring Header Information

1. **GRID REF**: national 100 km grid square and 8 figure grid reference.

2. **USE**: Land use at the time of survey. The following abbreviations are used.

ARA:	Arable	**WHT**:	Wheat	**BAR**:	Barley
CER:	Cereals	**OAT**:	Oats	**MZE**:	Maize
OSR:	Oilseed rape	**BEN**:	Field Beans	**BRA**:	Brassicae
POT:	Potatoes	**SBT**:	Sugar Beet	**FCD**:	Fodder Crops
LIN:	Linseed	**FRT**:	Soft and Top Fruit	**FLW**:	Fallow
PGR:	Permanent Pasture	**LEY**:	Ley Grass	**RGR**:	Rough Grazing
SCR:	Scrub	**CFW**:	Coniferous Woodland	**DCW**:	Deciduous Wood
HTH:	Heathland	**BOG**:	Bog or Marsh	**FLW**:	Fallow
PLO:	Ploughed	**SAS**:	Set aside	**OTH**:	Other
HRT:	Horticultural Crops				

3. **GRDNT**: Gradient as estimated or measured by a hand-held optical clinometer.

4. **GLEY/SPL**: Depth in centimetres (cm) to gleying and/or slowly permeable layers.

5. **AP (WHEAT/POTS)**: Crop-adjusted available water capacity.

6. **MB (WHEAT/POTS)**: Moisture Balance. (Crop adjusted AP - crop adjusted MD)

7. **DRT**: Best grade according to soil droughtiness.

8. If any of the following factors are considered significant, 'Y' will be entered in the relevant column.

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

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

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

Soil Pits and Auger Borings

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

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

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

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

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

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

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

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

4. **MOTTLE CONT:** Mottle contrast

F: faint - indistinct mottles, evident only on close inspection
D: distinct - mottles are readily seen
P: prominent - mottling is conspicuous and one of the outstanding features of the horizon

5. **PED. COL**: Ped face colour using Munsell notation.

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

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

HR:	all hard rocks and stones	**SLST**:	soft oolitic or dolimitic limestone
CH:	chalk	**FSST**:	soft, fine grained sandstone
ZR:	soft, argillaceous, or silty rocks	**GH**:	gravel with non-porous (hard) stones
MSST:	soft, medium grained 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 **ST**: strongly developed	**MD**: moderately developed
ped size	**F**: fine **C**: coarse	**M**: medium **VC**: very coarse
ped shape	**S** : single grain **GR**: granular **SAB**: sub-angular blocky **PL**: platy	**M**: massive **AB**: angular blocky **PR**: prismatic

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 appropiate 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

SAMPLE NO.	GRID REF	ASPECT USE	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SP88703430	RGR	S25			3	3A	134	25	116	15	2				WE	3A	190 GRAVELLY
2	SP88503420	PGR	30	30		4	3B	93	-16	105	4	3A	Y			WE	3B	FLOODPLAIN
3	SP88603420	PGR	28	55		3	3A	93	-16	103	2	3A				WE	3A	WET AT 40CM
4	SP88703420	RGR	26			3	3A	114	5	96	-5	2				WE	3A	PONDING
7	SP88703410	SAS	25			3	3A	67	-42	67	-34	3B				WE	3A	WET35 PONDING
8	SP88803410	RGR	24			3	3A	114	5	111	10	2				WE	3A	I85 WET 10CM
9	SP88603400	RGR	20	38		3	3B	94	-15	106	5	3A	Y			WE	3B	FLOODPLAIN
10	SP88703400	PGR	25			3	3A	115	6	113	12	2				WE	3A	PONDING SEE1P
11	SP88803400	SAS	25			3	3A	144	35	115	14	1				WE	3A	WET 20 SEE 1P
12	SP88703390	PGR	0			3	3A	138	29	104	3	2				WE	3A	PONDING SEE 1P
13	SP88803390	PGR	55	55		3	3A	105	-4	111	10	3A				WE	3A	WET 35 SEE 2P
14	SP88903390	PGR	35			3	3A	138	29	110	9	2				WD	2	SEE PIT 2
15	SP88803380	PGR	65	75		2	2	128	19	114	13	2				WE	2	IMP 105
16	SP88903380	PGR	35	78		2	2	140	31	113	12	1				WE	2	SEE PIT 2
17	SP89003380	PGR	50	50		2	2	98	-11	109	8	3A				WE	3A	WET55 SEE 2P
18	SP89003370	LEY	90	90		1		142	33	114	13	1				WE	2	Q WCI/II WET65
19	SP89103370	PGR	25	40		3	3A	88	-21	93	-8	3B				WE	3A	IMP 60CM
20	SP89103360	LEY	50			1	1	146	37	112	11	1					1	WET AT 90CM
21	SP89203360	LEY	25	35		4	3B	81	-28	84	-17	3B				WE	3B	Q DISTURBED
1P	SP88803400	SAS	20			3	3A	97	-12	108	7	3A				WE	3A	WET AT 35CM
2P	SP88803390	PGR	48	48		3	3A	120	11	106	5	2				WE	3A	I100 WET 35CM

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	
1	0-25	MCL	10YR43						0	0	HR	3							
	25-90	MCL	10YR43	10YR58	C	D		S	0	0		0		M					WET 50CM
	90-100	SCL	10YR42	10YR58	C	D		Y	0	0		0		M					IMP GRAVELLY
2	0-30	HCL	10YR4142						0	0	HR	2							
	30-70	C	05Y 5152	10YR4658	M	D		Y	0	0		0		P		Y			PLASTIC
3	0-28	MCL	10YR42						0	0	HR	2							
	28-35	HCL	10YR5152	10YR46	C	D		Y	0	0	HR	5		M					
	35-55	HCL	10YR5152	10YR4656	M	D		Y	0	0	HR	20		M					WET 40CM
	55-70	C	05Y 5152	10YR58	M	D		Y	0	0	HR	15		P		Y			PLASTIC
4	0-26	MSL	10YR32						0	0	HR	8							WET AT SURFACE
	26-60	HCL	10YR53	10YR58	C	D		Y	0	0	HR	15		M					
	60-120	MCL	10YR53	10YR58	C	D		Y	0	0	HR	50		M					
7	0-25	MCL	10YR3132						0	0	HR	3							WET 35CM
	25-40	HCL	10YR4151	10YR46	C	D		Y	0	0	HR	5		M					IMP GRAVELLY
8	0-24	MCL	10YR42						0	0	HR	5							WET
	24-85	HCL	25Y 52	10YR58	C	D		Y	0	0	HR	5		M					IMP STONY
9	0-20	HCL	10YR42						0	0		0							
	20-38	HCL	10YR5253	10YR46	F	D		Y	0	0		0		M					
	38-70	C	05Y 5152	10YR58	M	D		Y	0	0		0		P		Y			PLASTIC
10	0-25	MCL	10YR32						0	0		0							WET AT SURFACE
	25-45	MCL	10YR4132	10YR46	C	D		Y	0	0	HR	2		M					
	45-85	MCL	25Y 4151	10YR4656	M	D		Y	0	0	HR	10		M					IMP GRAVELLY
11	0-25	MCL	25Y 42	10YR56	C	D		Y	0	0	HR	2							WET AT 20CM
	25-70	HCL	25Y 52	10YR58	C	D		Y	0	0	HR	2		M					
	70-120	HCL	25Y 52	10YR58	C	D		Y	0	0	HR	20		M					
12	0-17	MCL	10YR42	10YR46	C	D		Y	0	0		0							WET AT SURFACE
	17-39	MCL	75YR42	75YR46	C	D		Y	0	0	HR	5		M					
	39-120	SCL	10YR41	75YR46	C	F		Y	0	0	HR	15		M					
13	0-26	MCL	10YR42						0	0		0							
	26-55	MCL	75YR42						0	0	HR	5		M					WET AT 35CM
	55-79	C	25Y5363	10YR58	M	D		Y	0	0		0		P		Y			IMP GRAVELLY
14	0-35	MCL	10YR33	10YR56	C				0	0	HR	5							
	35-60	MCL	10YR42	10YR56	C			Y	0	0	HR	5		M					
	60-120	MCL	10YR54						0	0	HR	25		M					
15	0-35	MCL	10YR42						0	0	HR	2							
	35-65	SCL	75YR31	10YR56	F	D			0	0		0		M					
	65-75	HCL	10YR52	75YR46	M	D		Y	0	0	HR	15		M					
	75-105	C	25Y6453	75YR46	M	D		Y	0	0	HR	2		P		Y			IMP STONEY

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	IMP	SPL	CALC	
16	0-35	MCL	10YR42						0	0	HR	2							
	35-78	SCL	10YR32	75YR46	C	F		Y	0	0	HR	2			M				
	78-120	C	25Y63	10YR4656	M	D		Y	0	0	HR	2			P		Y		
17	0-25	MCL	10YR42	10YR56	C			Y	0	0	HR	2							
	25-50	C	10YR53	10YR56	F				0	0	HR	2			M				
	50-66	C	10YR53	10YR56	C			Y	0	0	HR	2			P		Y		WET AT 55CM
	66-72	C	10R53						0	0	HR	25			M				
18	0-30	MCL	10YR32						0	0	HR	2							
	30-65	HCL	10YR42						0	0	HR	5			M				
	65-90	MCL	10YR53						0	0	HR	5			M				WET AT 65CM
	90-120	C	25Y 63	10YR56	C			Y	0	0	HR	2			P		Y		
19	0-25	MCL	10YR42						0	0	HR	2							
	25-40	C	25Y 63	10YR56	C			Y	0	0	HR	2			M				
	40-60	C	25Y 63	10YR56	C			Y	0	0	HR	1			P		Y		IMP STONY
20	0-30	MCL	10YR32						0	0	HR	5							
	30-50	HCL	10YR42						0	0	HR	5			M				
	50-90	MCL	10YR53	10YR56	C			Y	0	0	HR	5			M				
	90-120	HCL	10YR53	10YR56	C			Y	0	0	HR	15			M				WET AT 90CM
21	0-25	HCL	10YR42						0	0	HR	5							
	25-35	C	10YR42	10YR56	C			Y	0	0	HR	2			M				
	35-55	C	10YR52	10YR56	C			Y	0	0	HR	2			P		Y		PLASTIC
1P	0-20	MCL	10YR42	10YR46	F	D			0	0	HR	5							
	20-45	HCL	25Y 53	10YR4656	C	D		Y	0	0	HR	8	MDCSAB	FR	M				WET AT 35CM
	45-70	MCL	25Y 52	10YR5658	M	D		Y	0	0	HR	10	MDCSAB	FR	M				
2P	0-28	MCL	10YR42						0	0	HR	2							
	28-48	HCL	75YR42						0	0	HR	5			M				WET AT 35CM
	48-78	HCL	25Y5363	10YR58	M	D		Y	0	0	HR	2			P		Y		TOO WET
	78-100	HCL	25Y5363	10YR58	M	D		Y	0	0	HR	15			M				IMP GRAVELLY