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**Milton Keynes Local Plan
Potential Development Area 11**

**Agricultural Land Classification
Semi-Detailed Survey
ALC Map and Report**

June 1997

**Resource Planning Team
Eastern Region
FRCA Reading**

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**AGRICULTURAL LAND CLASSIFICATION REPORT
SEMI-DETAILED SURVEY
MILTON KEYNES LOCAL PLAN
POTENTIAL DEVELOPMENT AREA 11**

INTRODUCTION

1. This report presents the findings of a semi-detailed Agricultural Land Classification (ALC) survey of approximately 240 hectares of land south east of Stony Stratford and to the north of Upper Weald. The survey was carried out in June 1997.
2. The survey was undertaken by the Farming and Rural Conservation Agency (FRCA) on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF), in connection with its statutory input to the Milton Keynes Local 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 Eastern Region of the 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 land was in permanent grass, (which was grazed by cows, sheep and horses), ley grass, and cereal production. Areas of the site mapped as 'Other Land' comprise mostly dwellings and farm buildings with a covered reservoir and caravan park also within the survey area. Parts of the site were not surveyed since permission to enter the land was not granted.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:15,000. 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	4.9	2.1	2.1
3a	43.4	19.1	18.3
3b	179.4	78.8	75.5
Not surveyed	6.2	N/A	2.6
Other land	3.5	N/A	1.5
Total surveyed area	227.7	100	-
Total site area	237.4	-	100

7. The fieldwork was conducted at an average density of slightly more than 1 boring per 2 hectares (1 boring every 1.8 hectares) of agricultural land surveyed. A total of 126 borings and 4 soil pits were described.

8. The agricultural land on this site has been assigned predominantly to Subgrade 3b, (moderate quality) with more restricted areas of Grade 2 (very good quality) and Subgrade 3a (good quality) land occurring in the north and central parts of the site. The heavy soils are derived mainly from glacial Boulder Clay and the underlying Oxford Clay. However, there is a complicated pattern of a variety of limestones, sandstones and mudstones in the central area of the site where a valley feature has exposed a sequence of deposits.

9. The majority of the land on this site has been classified as Subgrade 3b on the basis of soil wetness/workability restrictions. Typical profiles comprise calcareous and non-calcareous clay loam topsoils over clayey subsoils which impede soil drainage. The combination of soil drainage status and the heavy topsoils, causes significant soil wetness/workability problems, such that the flexibility of cropping and the opportunities for cultivations or grazing will be reduced. Some of the profiles to the north and central parts of the site are of better quality (Subgrade 3a or occasionally Grade 2) as the soils are less clayey, better structured, or rest over more permeable substrata (e.g. limestone or sand) and are thereby better drained.

10. Where limestone is exposed, particularly close to Lower Wield and in the central valley, land is equally or solely limited by soil droughtiness. The soils are variable but typically comprise fine loamy and clayey profiles, which are on the whole freely draining. Profile available water is often restricted due to the presence of limestone fragments at varying depths within the profile. The degree of restriction determines the ALC grade; the deeper and less stony profiles are assigned to Grade 2, whilst shallower soils fall into Subgrade 3a and 3b. Soil droughtiness may result in the yield potential being lower, and less consistent.

11. A small area of land to the South east of Lower Wield, on lower valley slopes is limited to Subgrade 3b on the basis of microrelief where it is believed that small scale quarrying may have occurred in the past. Complex changes of slope and direction occur over short distances which will limit the safe and efficient use of agricultural machinery.

FACTORS INFLUENCING ALC GRADE

Climate

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

13. The key climatic variables used for grading this site are given in Table 2 overleaf and were obtained from the published 5km grid datasets using the standard interpolation procedures (Met. Office, 1989).

Table 2: Climatic and altitude data

Factors	Units	Values	Values	Values	Values
Grid reference	N/A	SP 789 393	SP 801 384	SP 810 384	SP 802 378
Altitude	m,AOD	75	90	95	105
Accumulated Temperature	day°C	1406	1390	1384	1373
Average Annual Rainfall	mm	656	661	661	666
Field Capacity Days	days	140	140	140	140
Moisture Deficit, Wheat	mm	106	105	104	103
Moisture Deficit, Potatoes	mm	98	95	95	93
Overall Climatic Grade	N/A	Grade 1	Grade 1	Grade 1	Grade 1

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 there is no overall climatic limitation. The site is climatically Grade 1. The site is believed not to be at particular risk from frost or exposure.

Site

17. The agricultural land at this site lies at an altitude of 70-105m AOD. The majority of the land at the site is very gently sloping with slight undulations. Adverse gradient does not affect agricultural land quality however a small area of land to the west of the site near Rectory Farm at Lower Weald is affected by microrelief limitations believed to be the result of past quarrying activities.

Geology and soils

18. The published geological information (BGS, 1971) shows the majority of the site to be underlain with boulder clay. An area just north of the centre of the site running along a small valley feature in an east-west direction, together with a small area to the extreme Northwest of the site, is mapped as a complicated pattern of clays, mudstone, limestone, sands and alluvium.

19. The most recently published soil information (SSEW, 1983) shows the majority of the survey area to be mapped as the Hanslope Association. These are described as 'Slowly permeable calcareous clayey soils. Some slowly permeable non-calcareous clayey soils. Slight risk of water erosion.' (SSEW, 1983). A small area of Wickham 2 association is mapped in the eastern corner of the survey area whilst Evesham 1 association is mapped in the top west corner. The former of these is described as 'seasonally waterlogged fine loamy over clayey, fine silty over clayey and clayey soils. Small areas of slowly permeable calcareous soils on steeper slopes'.(SSEW,1983). The latter are described as 'Slowly permeable calcareous clayey soils associated with shallow well drained brashy calcareous soils over limestone.' (SSEW,1983).

20. Soils found on the site were broadly consistent with 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 area (just over 2% of the site) to the east of the central part of the site (near the Kiln Farm Industrial area) is mapped as very good quality agricultural land (Grade 2). This land is affected by soil droughtiness with soil wetness and workability being equally restricting in the majority of cases. The soils within this unit generally comprise calcareous heavy clay loam topsoils which are stoneless to very slightly stony (0-5% total flints, up to 5% flints > 2cm diameter). The topsoils overlie similar or slightly heavier or sandier upper subsoils which are stoneless or very slightly stony and tend to be loose and moderately structured. Slowly permeable, calcareous, plastic clays often lie at depth, but at some locations subsoils become impenetrable to the auger at depths of approximately 70-75 cm over limestone. The degree of waterlogging (as evidenced by gleying in the profile) varies considerably. Some soils within this unit are freely draining and not gleyed (i.e. those believed to rest over limestone), whilst others are gleyed with slowly permeable horizons from 55-80cm depth. A wetness class of I or II has been assigned to these soils depending on the degree of waterlogging. Given the calcareous heavy clay loam topsoils, such soils are placed in Grade 2 due to a combination of minor wetness restrictions which may reduce the flexibility of mechanised operations and grazing management. The combination of heavy soil texture and hard stone also restricts the water available to crops such that there is a slight risk of drought stress to the plants. This also restricts the land to a Grade 2 classification due to adverse effects on yield potential.

Subgrade 3a

24. Just under 20% of the site has been mapped as good quality agricultural land (Subgrade 3a). This area is mainly confined to the northern and central parts of the site. Similar to the Grade 2 unit, the principal limitations are soil wetness and workability with soil droughtiness being equally or more limiting in places.

25. The areas affected by soil droughtiness tend to occur in the valley bottoms or where limestone occurs at depth in the profile. Here, soil texture and moderate stone contents within the profile restrict water availability to plants. Typically, these profiles consist of medium clay loam, heavy silty clay loam, or clay topsoils which are generally very slightly stony (0-5% total flints and hard limestone, 0 >2cm diameter) and are sometimes calcareous. These pass to similar upper subsoils which usually have a maximum stone content of 10% total hard limestone and flints. The lower subsoils are again, of similar textures to the topsoil horizons and contain up to 60% hard limestone fragments. These lower horizons are often impenetrable to the soil auger between 50-70cm depth. Overall, these soil types tend to be well drained throughout (having no evidence of gleying) and a Wetness class of I or occasionally II has been assigned. As in the Grade 2 unit, water availability to crops is restricted such that there is a slight risk of drought stress to plants. The presence of high volumes of limestone within the soil profile means that these soils will be more drought prone than similar land graded as 2.

26. The majority of the profiles within the Subgrade 3a unit are affected by soil wetness and workability limitations. They have impeded drainage which gives rise to gleying from depths between 30 and 55cm from the surface. Topsoils comprise both calcareous and non-calcareous medium and heavy clay loams and heavy silty clay loams which are generally very slightly stony (up to 5% total flints). These rest over similar or slightly heavier upper subsoils which are sometimes gleyed but not slowly permeable. At depth, plastic, slowly permeable calcareous clay was found to contain up to 5% chalk and soft limestone fragments. These soil profiles have been allocated to wetness class II or III (see Pit 3, Appendix II) and given the topsoil characteristics, are usually placed in Subgrade 3a due to wetness and workability limitations. These may restrict the utilisation of the land by reducing the number of days when cultivations and/or grazing may occur without causing structural damage to the soil, consequently flexibility of use is reduced.

Subgrade 3b

27. The remainder of the site has been mapped as Subgrade 3b. This land is limited mainly by soil wetness and workability restrictions, but occasionally soil droughtiness and microrelief are equally, or more limiting, in terms of agricultural land quality.

28. Over 75% of the borings within the Subgrade 3b unit are affected by soil wetness. These soils mainly comprise stoneless to slightly stony (0-8% total flint, 0-3% > 2cm diameter, 0% > 6cm diameter), medium and heavy clay loam, medium silty clay loam or occasionally clay topsoils. Some topsoils are calcareous whilst others are not. The profiles sometimes have shallow upper subsoil horizons which have similar characteristics to the topsoils and tend to be gleyed, calcareous and contain up to 15% soft limestone and flints. On the whole however, the topsoils generally lie directly over denser more plastic calcareous clay subsoils (typically within 35cm or less of the surface). The soil inspection pits 1 and 4 reveal this denser clay to be poorly structured and slowly permeable. As a result, soil drainage will be impeded to the extent that wetness class III or more commonly wetness class IV is appropriate, which when combined with local climatic conditions and topsoil characteristics, gives rise to a land classification of Subgrade 3b on the basis of soil wetness and workability limitations. These limitations (which are more severe than for land graded as Subgrade 3a), will restrict the timing of cultivations as trafficking by agricultural machinery or grazing by livestock may lead to structural damage. Flexibility of cropping or stocking, together with the yield potential of crops, may be reduced.

29. In and around the western corner of the survey area where soils on valley sides are shallow over the limestone substrate, some borings within the Subgrade 3b unit are affected by soil droughtiness. Topsoils are usually calcareous and comprise medium and heavy clay loam or heavy silty clay loam textures and contain up to 24% hard limestone fragments (0-24% total flints, 0-13% > 2cm diameter, 0-3% > 6cm diameter). Many profiles were impenetrable to the soil auger at depths between 25-40cm (the point at which soils pass into weathered limestone). Where upper subsoils were observed, these were generally similar to the topsoils, in that they contain up to 20% hard limestone, were calcareous and permeable. A wetness class of I has subsequently been assigned to these soils (see Pit 2, Appendix II). Due to the combination of high limestone content, soil shallowness and the local climate regime, these soils have restricted amounts of available water, such that the land suffers a moderate droughtiness limitation and crop growth and yields will be adversely affected.

30. There is a very small area of Subgrade 3b land to the south east of Lower Weald (on lower valley slopes) which is limited on the basis of microrelief. Field examination suggests that small scale quarrying may have occurred in the past. Complex changes of slope and direction occur over short distances which will limit the safe and efficient use of agricultural machinery.

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SOURCES OF REFERENCE

British Geological Survey (1971) Sheet No. SP83, 1:25,000 scale (Solid and Drift Edition). BGS: London.

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Soil Survey of England and Wales (1984) *Soils and their Use in South East England*. Bulletin 15. SSEW: Harpenden.

APPENDIX I

DESCRIPTION OF THE GRADES AND SUBGRADES

Grade 1: Excellent Quality Agricultural Land

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

Grade 2: Very Good Quality Agricultural Land

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

Grade 3: Good to Moderate Quality Land

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

Subgrade 3a: Good Quality Agricultural Land

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

Subgrade 3b: Moderate Quality Agricultural Land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass, or lower yields of a wider range of crops or high yields of grass that 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 (eg. 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 that restricts 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:

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	OTH:	Other
DCW:	Deciduous woodland	BOG:	Bog or marsh	SAS:	Set-Aside
HTH:	Heathland	HRT:	Horticultural crops	PLO:	Ploughed

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	ST:	Topsoil Stoniness
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
EX:	Exposure				

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 - undistinct 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	FSST:	soft, fine grained sandstone
ZR:	soft, argillaceous, or silty rocks	CH:	chalk
MSST:	soft, medium grained sandstone	GS:	gravel with porous (soft) stones
SI	soft weathered igneous/metamorphic rock	GH:	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	WK: weakly developed	MD: moderately developed
	ST: strongly developed	
Ped size	F: fine	M: medium
	C: 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 : MILTON KEYNES ES AREA 11 Pit Number : 1P

Grid Reference: SP80203820 Average Annual Rainfall : 653 mm
 Accumulated Temperature : 1406 degree days
 Field Capacity Level : 140 days
 Land Use : Permanent Grass
 Slope and Aspect : 02 degrees NW

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 25	MCL	10YR42 00	0	1	HR					
25- 48	C	10YR53 00	0	4	SLST	C	MDCPR	FM	P	
48- 78	C	25Y 63 61	0	4	SLST	M	STCPR	FM	P	Y

Wetness Grade : 3B Wetness Class : IV
 Gleying : 025 cm
 SPL : 025 cm

Drought Grade : 3A APW : 95 mm MBW : -12 mm
 APP : 101mm MBP : 3 mm

FINAL ALC GRADE : 3B
 MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : MILTON KEYNES ES AREA 11 Pit Number : 2P

Grid Reference: SP79103890 Average Annual Rainfall : 653 mm
 Accumulated Temperature : 1406 degree days
 Field Capacity Level : 140 days
 Land Use : Permanent Grass
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 24	MCL	10YR42 00	13	24	HR					Y
24- 43	C	25Y 54 00	10	24	HR		MDCSAB	FM	M	Y
43- 50	C	25Y 54 00	50	69	HR				M	Y

Wetness Grade : 1 Wetness Class : I
 Gleying : cm
 SPL : cm

Drought Grade : 38 APW : 62 mm MBW : -45 mm
 APP : 62 mm MBP : -36 mm

FINAL ALC GRADE : 38
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : MILTON KEYNES ES AREA 11 Pit Number : 3P

Grid Reference: SP79603940 Average Annual Rainfall : 653 mm
 Accumulated Temperature : 1406 degree days
 Field Capacity Level : 140 days
 Land Use : Ley
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 20	HCL	25Y 42 00	0	5	HR					Y
20- 41	C	10YR53 00	0	5	HR	F	MDCSAB	FM	M	Y
41- 63	C	25Y 63 00	0	8	HR	C	MDCSAB	FM	M	Y
63-120	C	25Y 51 53	0	5	HR	M	MDCAB	VM	P	Y

Wetness Grade : 2 Wetness Class : II
 Gleying : 041 cm
 SPL : 063 cm

Drought Grade : 2 APW : 127mm MBW : 20 mm
 APP : 108mm MBP : 10 mm

FINAL ALC GRADE : 2
 MAIN LIMITATION : Soil Wetness/Droughtiness

SOIL PIT DESCRIPTION

Site Name : MILTON KEYNES ES AREA 11 Pit Number : 4P

Grid Reference: SP80603890 Average Annual Rainfall : 653 mm
 Accumulated Temperature : 1406 degree days
 Field Capacity Level : 140 days
 Land Use : Set-aside
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 20	HCL	25Y 32 00	0	2	HR					Y
20- 37	C	10YR53 00	0	5	HR	C	MDCSAB	VM	M	Y
37- 60	C	25Y 51 52	0	3	HR	M	MDCPR	VM	P	Y

Wetness Grade : 3B Wetness Class : IV
 Gleying :020 cm
 SPL :037 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	GLEY SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST		LIMIT
1	SP79603960	WHT		045 045	3	3A	101	-6	109	11	3A			WE	3A	
1P	SP80203820	PGR NW	02	025 025	4	3B	95	-12	101	3	3A			WE	3B	
2	SP79103950	PGR			1	1	87	-20	90	-8	3A			DR	3A	IMP 55
2P	SP79103890	PGR			1	1	62	-45	62	-36	3B			DR	3B	ROOTS50 LST
3	SP79503950	WHT		055 055	2	2	000	0	000	0				WE	2	POSS 2 DR
3P	SP79603940	LEY		041 063	2	2	127	20	108	10	2			WD	2	
4	SP79703950	WHT SW	01	037 037	4	3B	96	-11	107	9	3A			WE	3B	SEE 4P
4P	SP80603890	SAS		020 037	4	3B	000	0	000	0				WE	3B	
5	SP79003940	PGR W	01		1	1	60	-47	60	-38	3B	Y		DR	3B	Q3A SEE 2P
6	SP79203940	PGR NW	01	040 040	3	3B	100	-7	108	10	3A			WE	3B	IMP 75
7	SP79603940	LEY SW	01	042 060	2	2	111	4	109	11	3A			WD	2	SEE 3P
8	SP79803940	WHT S	01	035 065	3	3A	117	10	123	25	2			WE	3A	SEE 1P
9	SP80003940	WHT SW	01		1	2	88	-19	88	-10	3A			DR	3A	IMP 50
10	SP78903930	PGR W	02		1	2	46	-61	46	-52	4	Y		DR	3B	SEE 2P
11	SP79103930	PGR W	01				65	-42	65	-33	3B			DR	3B	
12	SP79303930	PGR W	01	045 045	3	2	109	2	106	8	3A			WE	2	
13	SP79503930	PGR SE	01	042 042	3	3A	105	-2	102	4	3A			WE	3A	
14	SP79703930	BAR S	01		1	1	158	51	116	18	1				1	
15	SP79903930	WHT SW	01		1	2	89	-18	89	-9	3A			DR	3A	IMP 50
16	SP80103930	WHT			1	2	59	-48	59	-39	3B			DR	3A	IMP 35
17	SP79003920	PGR W	01	065 065	2	3A	135	28	114	16	2			WE	3B	Q DIST
18	SP79203920	PGR W	02	055 055	2	2	131	24	108	10	2			WD	2	
19	SP79403920	BAR S	03	043 043	3	3A	103	-4	108	10	3A			WE	3A	
20	SP79603920	CER SW	01	030 078	2	3A	136	29	110	12	2			WE	3A	
21	SP79803920	BAR S	01	026 035	4	3B	87	-20	95	-3	3A			WE	3B	SEE 4P
22	SP80003920	WHT		020 035	4	3B	80	-27	86	-12	3B			WE	3B	SEE 4P
23	SP80203920	WHT		042 042	3	3A	89	-18	95	-3	3A			WE	3A	
24	SP79003910	PGR NE	01	025 035	4	3B	64	-43	64	-34	3B			WE	3B	IMP 50
25	SP79103910	PGR			1	1	117	10	116	18	2	Y		DR	2	IMP 80
26	SP79303910	BAR SW	02	037 037	4	3B	101	-6	106	8	3A			WE	3B	SEE 4P
27	SP79503910	BAR S	01				36	-71	36	-62	4			ST	3B	IMP28 SEE 2P
28	SP79703910	CER		070 070	2	2	129	22	110	12	2			WD	2	
29	SP79903910	LEY NW	03		1	2	51	-56	51	-47	4			DR	3A	IMP 30
30	SP80103910	WHT		042 042	3	3B	88	-19	94	-4	3A			WE	3B	SEE 4P H3
31	SP80303910	WHT		045 045	3	3A	94	-13	103	5	3A			WE	3A	CALC T/S
32	SP79203900	PGR		020 035	4	3B	116	9	107	9	2	Y		WE	3B	
33	SP79403900	BAR S	03				78	-29	78	-20	3B			DR	3A	IMP50 SEE 2P
34	SP79603900	CER S	02		1	2	54	-53	54	-44	4			DR	3B	IMP35 SEE 2P
35	SP79803900	PGR NE	02				41	-66	41	-57	4			DR	3B	IMP25 SEE 2P
36	SP80003900	LEY S	03	025 035	4	3B	79	-28	85	-13	3B			WE	3B	SEE 4P
37	SP80203900	WHT			1	2	66	-41	66	-32	3B			DR	3A	SEE 2P
37A	SP80303900	CER SW	02	055 055	2	2	110	3	113	15	3A			WD	2	SEE 2P

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
			GRDNT	GLEY SPL	CLASS	GRADE	AP	MB	AP	MB					
38	SP80403900	WHT		030 030	4	3B	86	-21 92	-6 3B				WE	3B	SEE 4P
39	SP79103890	PGR			1	1	48	-59 48	-50 4	Y			DR	3B	IMP30 SEE 2P
40	SP79303890	PGR SE	01		1	1	67	-40 67	-31 3B	Y			DR	3B	Q3A IMP 40
41	SP79503890	PGR N	02	060 060	2	2	116	9 109	11 2				WE	2	
42	SP79703890	PGR NW	01	055 055	2	3A	124	17 116	18 2				WE	3A	
43	SP79903890	PGR NW	01				47	-60 47	-51 4				DR	3B	IMP28 SEE 2P
44	SP80103890	LEY			1	2	87	-20 98	0 3A				DR	3A	IMP70 SEE 2P
45	SP80203890	WHT SW	02		1	2	100	-7 112	14 3A				DR	2	IMP75 SEE 2P
46	SP80303890	WHT			1	2	100	-7 116	18 3A				WD	2	
47	SP80503890	LEY		055 055	2	2	106	-1 110	12 3A				WD	2	
48	SP80603890	SAS W	01	025 025	4	3B	000	0 000	0				WE	3B	SEE 4P
49	SP79203880	PGR		041 060	2	2	129	22 114	16 2	Y		Y	MR	3B	HUMMOCKY
50	SP79403880	PGR N	04				068	-39 068	-30 3B				DR	3B	IMP30 SEE 2P
51	SP79603880	PGR NE	01	0 035	4	3B	100	-7 105	7 3A				WE	3B	SEE 4P
52	SP79803880	PGR NE	01	030 045	3	3A	104	-3 109	11 3A				WE	3A	
53	SP80003880	PGR NW	01		1	1	99	-8 109	11 3A				DR	3A	IMP 70
54	SP80203880	PGR NE	04	050 050	2	3A	106	-1 111	13 3A				WE	3A	
55	SP80403880	LEY	02	042 042	3	3B	086	-21 091	-7 3B				WE	3B	IMP 60
56	SP80603880	LEY		0 080	2	2	123	16 117	19 2				WD	2	SEE 4P H2
57	SP80803880	LEY		0 035	4	3B	83	-24 86	-12 3B				WE	3B	SEE 4P
58	SP79303870	PGR		043 043	3	2	098	-9 110	12 3A				DR	3A	IMP70 SEE 2P
59	SP79503870	PGR		025 035	4	3B	130	23 108	10 2	Y			WE	3B	MR
60	SP79703870	PGR NW	01	0 030	4	3B	100	-7 105	7 3A				WE	3B	SEE 4P
61	SP79903870	PGR N	01	025 035	4	3B	92	-15 104	6 3A				WE	3B	SEE 4P
62	SP80103870	PGR SW	01	024 035	4	3B	89	-18 101	3 3A				WE	3B	SEE 4P
63	SP80303870	PGR W	03	028	2	2	64	-43 64	-34 3B				DR	3B	Q3A IMP 40
64	SP80503870	PGR		028 035	4	3B	82	-25 85	-13 3B				WE	3B	SEE 4P
65	SP80703870	PGR NE	03	0 022	4	3B	105	-2 100	2 3A				WE	3B	SEE 4P
66	SP80903870	LEY		030 035	4	3B	87	-20 93	-5 3A				WE	3B	SEE 4P
67	SP79403860	PGR		020 045	3	2	87	-20 87	-11 3A	Y			DR	3A	SEE 2P
68	SP79603860	PGR N	03	0 035	4	3B	87	-20 93	-5 3A				WE	3B	
69	SP79803860	PGR NE	02	0 035	4	3B	92	-15 104	6 3A				WE	3B	SEE 4P
70	SP80003860	PGR NE	01	028 040	4	3B	101	-6 113	15 3A				WE	3B	IMP70 SEE 1P
71	SP80203860	PGR NE	01	025 035	4	3B	80	-27 86	-12 3B				WD	3B	SEE 4P
72	SP80403860	PGR			1	2	52	-55 52	-46 4				DR	3A	I30 Q3B SEE4P
73	SP80603860	PGR NE	01	0 045	3	3B	129	22 110	12 2				WE	3B	SEE 4P
74	SP80803860	LEY		0 035	4	3B	82	-25 88	-10 3B				WE	3B	SEE 4P
75	SP81003860	PGR N	03	0 035	4	3B	84	-23 90	-8 3B				WE	3B	SEE 4P
76	SP79703850	PGR NE	01	025	2	2	64	-43 64	-34 3B				DR	3B	SEE 2P Q3B WE
77	SP79903850	PGR NE	01	028 035	4	3B	127	20 104	6 2				WE	3B	
78	SP80103850	LEY N	01	028 035	4	3B	82	-25 88	-10 3B				WE	3B	SEE 4P
79	SP80303850	LEY NE	01	030 035	4	3B	90	-17 102	4 3A				WE	3B	SEE 4P, H3

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS	
			GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP		DIST
80	SP80503850	PGR SW	02	015	035	4	3B	120	13	96	-2	2		WE	3B	SEE 1P
81	SP80703850	LEY		030	035	4	3B	87	-20	93	-5	3A		WE	3B	SEE 1P
82	SP80903850	PGR		028	035	4	3B	083	-24	089	-9	3B		WE	3B	SEE 1P
83	SP81103850	PGR		0	035	4	3B	086	-21	092	-6	3B		WE	3B	SEE 1P
84	SP79803840	PGR		035	035	4	3B	65	-42	65	-33	3B		WE	3B	IMP40
85	SP80003840	PGR		020	035	4	3B	81	-26	87	-11	3B		WE	3B	SEE 4P
86	SP80203840	PGR		028	035	4	3B	99	-8	104	6	3A		WE	3B	SEE 1P
87	SP80403840	PGR		045	045	3	3A	105	-2	110	12	3A		WE	3A	SEE 1P
88	SP80803840	LEY		025	035	4	3B	082	-25	088	-10	3B		WE	3B	SEE 4P
89	SP81003840	LEY		0	035	4	3B	086	-21	092	-6	3B		WE	3B	SEE 4P
90	SP79703830	PGR		0	035	4	3B	84	-23	89	-9	3B		WE	3B	SEE 4P
91	SP79903830	PGR		022	035	4	3B	82	-25	88	-10	3B		WE	3B	SEE 4P
92	SP80103830	LEY N	02	050	050	2	2	120	13	111	13	2		WD	2	SEE 2P
93	SP80303830	PGR		038	038	4	3B	106	-1	107	9	3A		WE	3B	SEE 4P
94	SP80503830	PGR NW	01	025	035	4	3B	134	27	114	16	2		WE	3B	SEE 1P
95	SP80803830	LEY		030	030	4	3B	000	0	000	0			WE	3B	SEE 1P
96	SP80903830	LEY		0	035	4	3B	084	-23	090	-8	3B		WE	3B	SEE 1P
97	SP79803820	PGR		0	035	4	3B	79	-28	85	-13	3B		WE	3B	SEE 1P
98	SP80003820	LEY		030	035	4	3B	98	-9	103	5	3A		WE	3B	SEE 1P
99	SP80203820	LEY		025	035	4	3B	85	-22	89	-9	3B		WE	3B	155 SEE 1P
100	SP80403820	PGR NE	01	018	035	4	3B	124	17	100	2	2		WE	3B	SEE 1P
101	SP80603820	LEY		030	035	4	3B	147	40	106	8	2		WE	3B	
102	SP80803820	LEY		030	035	4	3B	086	-21	092	-6	3B		WE	3B	SEE 4P
103	SP81003820	LEY		0	035	4	3B	086	-21	092	-6	3B		WE	3B	SEE 4P
104	SP79703810	PGR		042	042	3	3B	93	-14	102	4	3A		WE	3B	SEE 4P
105	SP79903810	LEY NW	28	028	035	4	3B	96	-11	101	3	3A		WE	3B	SEE 1P
106	SP80103810	PGR N	01	027	027	4	3B	102	-5	110	12	3A		WE	3B	SEE 1P
108	SP80303810	LEY NW	02	025	040	3	3A	96	-11	105	7	3A		WE	3A	SEE 1P
109	SP80703810	PGR		025	035	4	3B	084	-23	090	-8	3B		WE	3B	SEE 1P
110	SP80903810	LEY		025	035	4	3B	084	-23	090	-8	3B		WE	3B	SEE 1P
111	SP79803800	LEY SW	02	025	035	4	3B	96	-11	101	3	3A		WE	3B	SEE 1P
112	SP80003800	PGR W	02	025	035	4	3B	87	-20	99	1	3A		WE	3B	SEE 1P
113	SP80203800	PGR NW	01	035	035	4	3B	76	-31	76	-22	3B		WE	3B	IMP 45
114	SP80303800	LEY		0	035	4	3B	081	-26	084	-14	3B		WE	3B	SEE 1P
115	SP80503800	PGR		0	035	4	3B	086	-21	092	-6	3B		WE	3B	SEE 1P
116	SP80603800	PGR		025	035	4	3B	084	-23	090	-8	3B		WE	3B	SEE 1P
117	SP80303790	PGR NW	01	042	042	3	2	106	-1	104	6	3A		WD	2	SEE 2P
118	SP80403790	PGR		0	035	4	3B	086	-21	092	-6	3B		WE	3B	SEE 1P
119	SP80503790	PGR		035	035	4	3B	087	-20	093	-5	3B		WE	3B	SEE 1P
120	SP80603790	PGR		0	037	4	3B	088	-19	094	-4	3A		WE	3B	SEE 1P
121	SP80203780	PGR N	02	025		2	2	83	-24	83	-15	3B		DR	3B	150 POSS 3A
122	SP80403780	PGR		025	035	4	3B	084	-23	090	-8	3B		WE	3B	SEE 1P

SAMPLE NO.	GRID REF	USE	ASPECT		--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS
			GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT	
123	SP80503780	PGR		038	038	3	3A	089	-18	095	-3	3A			WE	3B	SEE 4P
124	SP80303770	PGR		035	035	4	3B	088	-19	094	-4	3A			WE	3B	SEE 4P
125	SP80403770	PGR		0	035	4	3B	086	-21	092	-6	3B			WE	3B	SEE 4P
126	SP80453777	PGR		035	035	4	3B	088	-19	094	-4	3A			WE	3B	SEE 4P

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----			PED	----STONES----			STRUCT/ CONSIST	SUBS			SPL	CALC			
				COL	ABUN	CONT	COL.	GLE	>2	>6		LITH	TOT	STR				POR	IMP
1	0-23	hc1	25Y 32 00						0	0	0						Y		
	23-45	c	25Y 43 00			F			0	0	0		M				Y		
	45-63	c	25Y 52 53	10YR56	00	C		Y	0	0	0			P		Y	Y		
	63-75	c	10YR61 00	10YR56	00	C		Y	0	0	0			P		Y	Y		
1P	0-25	mc1	10YR42 00						0	0	HR	1							
	25-48	c	10YR53 00	10YR56	00	C		Y	0	0	SLST	4	MDCPR	FM	P		Y	dense, firm	
	48-78	c	25Y 63 61	10YR56	00	M		Y	0	0	SLST	4	STCPR	FM	P		Y	Y	plastic
2	0-22	mc1	10YR42 00						0	0	HR	3					Y		
	22-55	hc1	10YR44 00						0	0	CH	5		M			Y		
2P	0-24	mc1	10YR42 00						13	3	HR	24					Y		
	24-43	c	25Y 54 00						10	0	HR	24	MDCSAB	FM	M		Y		
	43-50	c	25Y 54 00						50	0	HR	69		M		Y	imp, 1st		
3	0-28	hc1	10YR32 00						0	0		0					Y		
	28-55	hc1	25Y 43 00			F			0	0		0		M			Y		
	55-80	c	25Y 53 00	10YR56	00	C		Y	0	0	HR	10		P		Y	Y		
3P	0-20	hc1	25Y 42 00						0	0	HR	5					Y		
	20-41	c	10YR53 00	10YR56	00	F			0	0	HR	5	MDCSAB	FM	M		Y	loose	
	41-63	c	25Y 63 00	10YR56	00	C		Y	0	0	HR	8	MDCSAB	FM	M		Y	friable	
	63-120	c	25Y 51 53	10YR58	00	M	00MN00	00	Y	0	0	HR	5	MDCAB	VM	P	Y	Y	heavy, dense
4	0-28	hc1	25Y 53 00						0	0		0					Y		
	28-37	c	25Y 43 00						0	0		0		M			Y		
	37-70	c	25Y 53 51	10YR58	00	C		Y	0	0	CH	5		P		Y	Y		
4P	0-20	hc1	25Y 32 00						0	0	HR	2					Y		
	20-37	c	10YR53 00	10YR56	00	C	00MN00	00	Y	0	0	HR	5	MDCSAB	VM	M		Y	friable
	37-60	c	25Y 51 52	10YR56	58	M	00MN00	00	Y	0	0	HR	3	MDCPR	VM	P	Y	Y	plastic
5	0-20	mc1	10YR33 00						4	0	HR	5					Y		
	20-40	hc1	10YR44 00						0	0	HR	20		M			Y	imp 1st	
6	0-25	hc1	10YR32 00						0	0		0							
	25-40	hc1	10YR43 00						0	0		0		M					
	40-75	c	25Y 51 52	10YR58	00	M		Y	0	0		0		P		Y			
7	0-25	hzc1	10YR32 00						0	0		0					Y		
	25-42	hc1	25Y 43 00						0	0	HR	5		M			Y		
	42-60	c	25Y 53 00	10YR56	00	C		Y	0	0	CH	5		M			Y	loose	
	60-90	c	25Y 53 71	10YR56	00	C		Y	0	0	CH	5		P		Y	Y	plastic	
8	0-35	hzc1	25 Y54 00						0	0		0					Y		
	35-65	hzc1	25 Y53 00	10YR58	00	C		Y	0	0	CH	5		M			Y		
	65-80	c	25 Y53 00	10YR58	00	C		Y	0	0	CH	5		P		Y	Y		

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES---			PED	---STONES---			STRUCT/	SUBS	SPL	CALC		
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT			CONSIST	STR
9	0-30	hzc1	25 Y33 00						3	0	HR	5			Y	
	30-50	hzc1	25 Y54 00						0	0	HR	10	M		Y	imp, 1st
10	0-20	hc1	10YR31 00						4	1	HR	10			Y	
	20-30	hc1	10YR31 00						0	0	HR	20	M		Y	
11	0-20	mzc1	10YR32 00						0	0	HR	5			Y	
	20-40	hc1	10YR53 00						0	0	HR	10	M		Y	
12	0-28	mc1	25Y 42 00						2	0	HR	2			Y	
	28-45	hc1	25Y 44 00						0	0	HR	10	M		Y	
	45-90	c	25Y 53 51	10YR46 00	C			Y	0	0	CH	2	P		Y	Y
13	0-28	hc1	25Y 42 00						0	0	HR	0			Y	
	28-42	c	25Y 53 54	10YR56 00	F				0	0	HR	0	M		Y	
	42-70	c	10YR52 53	10YR56 00	C			Y	0	0	HR	5	P		Y	Y
	70-80	c	25Y 52 63	10YR58 00	M			Y	0	0	CH	5	P		Y	Y
14	0-35	mc1	10YR43 00						0	0	HR	2			Y	
	35-60	mc1	10YR54 00						0	0	HR	2	M		Y	
	60-80	sc1	10YR54 00						0	0	HR	2	M		Y	
	80-120	ms1	10YR54 00						0	0	HR	2	M		Y	
15	0-30	hzc1	25 Y33 00						1	0	HR	3			Y	
	30-50	hzc1	25 Y54 00				00M00 00		0	0	CH	5	M		Y	imp, stones
16	0-20	hc1	10YR42 00						0	0	HR	2			Y	
	20-35	c	10YR43 00						0	0	CH	2	M		Y	
17	0-45	c	25 Y32 00						0	0		0			Y	
	45-65	c	25 Y32 00						0	0	CH	10	M		Y	
	65-120	c	25 Y52 00	25 Y58 00	M			Y	0	0	CH	10	P		Y	Y
18	0-20	hc1	10YR42 00						0	0	HR	3			Y	
	20-55	c	25Y 53 00						0	0	HR	3	M		Y	
	55-80	c	25Y 61 54	10YR56 00	C			Y	0	0	CH	10	P		Y	Y
	80-120	c	25Y 51 53	10YR56 00	C			Y	0	0	CH	25	P		Y	Y
19	0-28	hc1	25Y 42 00						2	0	HR	2			Y	
	28-43	hc1	10YR54 00						0	0	HR	2	M		Y	
	43-80	c	25Y 53 00	10YR46 00	C			Y	0	0	CH	2	P		Y	Y
20	0-30	hc1	10YR52 53	10YR56 00	F				0	0	HR	3			Y	
	30-47	hc1	10YR53 00	10YR58 00	M		00M00 00	Y	0	0	HR	5	M		Y	sandy
	47-58	c	25Y 61 51	10YR85 00	M		00M00 00	Y	0	0	HR	10	P		Y	shallow
	58-78	hc1	25Y 53 63	10YR56 00	C			Y	0	0	HR	3	M		Y	loose, sandy
	78-120	c	05Y 61 62	75YR58 00	M			Y	0	0		0	P		Y	plastic

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES---			PED	----STONES----			STRUCT/	SUBS									
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC			
21	0-26	c	25Y 53 00						0	0	HR	3						Y			
	26-49	c	25Y 62 63	10YR56	00	C		Y	0	0	SLST	15		P				Y	Y		
	49-75	c	25Y 51 53	10YR46	00	C		Y	0	0	SLST	10		P				Y	Y		
22	0-20	hc1	10YR42 00						0	0	HR	2									
	20-60	c	25Y 52 00	000C00	00	C		Y	0	0	HR	2		P	Y				Y		
23	0-30	hc1	10YR42 00						0	0	HR	2							Y		
	30-42	c	25Y 54 00						0	0	HR	2		M					Y		
	42-60	c	25Y 52 00	000C00	00	C		Y	0	0	CH	2		P	Y				Y	Y	
24	0-25	mc1	10YR42 00						0	0		0							Y		
	25-50	c	25 Y53 00	10YR56	00	C	00M00	00	Y	0	0	CH	5		P				Y	Y	imp, flints
25	0-25	mc1	10YR43 00						0	0		0							Y		
	25-60	hc1	10YR54 00						0	0		0		M					Y		
	60-80	ms1	10YR54 00						0	0		0		M					Y		
26	0-28	hc1	25Y 32 00						2	0	HR	2							Y		
	28-37	c	25Y 53 00						0	0	HR	2		M					Y		
	37-60	c	25Y 53 00	10YR46	00	C		Y	0	0	CH	2		P				Y	Y		
	60-80	c	25Y 51 00	10YR56	00	C		Y	0	0	CH	2		P				Y	Y		
27	0-28	mzc1	10YR32 00						25	12	HR	35							Y	imp, 1st	
28	0-30	hc1	10YR42 00						0	0	HR	5							Y		
	30-40	hc1	10YR54 00						0	0	HR	3		M					Y		
	40-70	c	10YR44 54						0	0	HR	2		M							
	70-120	c	05Y 51 61	10YR58	00	M		Y	0	0		0		P				Y			
29	0-30	hc1	10YR43 00						3	0	HR	5							Y	imp, 1st	
30	0-25	hc1	10YR42 00						0	0	HR	2									
	25-42	c	10YR43 00						0	0	HR	2		M					Y	loose	
	42-60	c	25Y 52 00	000C00	00	C		Y	0	0	CH	2		P	Y				Y	Y	plastic
31	0-30	hc1	10YR42 00						0	0	HR	2							Y		
	30-45	c	10YR43 00						0	0	HR	2		M					Y		
	45-65	c	25YR53 51	000C00	00	C		Y	0	0		0		P	Y				Y	Y	
32	0-20	mzc1	10YR33 00						0	0		0							Y		
	20-30	hzc1	10YR53 00	10YR56	00	F			S	0	0	SLST	2		M				Y		
	30-75	c	25 Y52 00	10YR56	00	M	00M00	00	Y	0	0		0		P				Y	Y	firm, dense
	75-100	c	10GY05 00	25 Y58	00	M		Y	0	0		0		P					Y	Y	plastic
33	0-28	hc1	10YR32 00						4	1	HR	8							Y		
	28-50	hc1	10YR54 00						0	0	HR	10		M					Y	imp, 1st	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED	----STONES----				STRUCT/	SUBS					
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
34	0-35	hc1	10YR42 00					0	0	HR	15						Y	imp, 1st
35	0-25	mzc1	10YR32 00					10	0	HR	15						Y	imp, 1st
36	0-25	c	10YR42 00					0	3	HR	8						Y	
	25-60	c	25Y 62 00	000C00	00	M		Y	0	0			P	Y		Y	Y	plastic
37	0-28	hc1	10YR42 00					0	0	SLST	5						Y	
	28-40	hc1	10YR43 00					0	0	SLST	10		M				Y	imp, 1st
37A	0-25	hc1	10YR32 00					0	0		0						Y	
	25-55	c	10YR53 54					0	0		0		M				Y	
	55-85	c	25Y 51 53	10YR56	00	M		Y	0	0	SLST	2		P		Y	Y	
38	0-30	hc1	10YR42 00					0	0	HR	1						Y	
	30-60	c	25Y 52 00	000C00	00	M		Y	0	0	CH	1		P	Y	Y	Y	
39	0-20	mc1	10YR43 00					3	0	HR	5						Y	
	20-30	hc1	10YR44 00					0	0	HR	15		M				Y	imp, 1st
40	0-20	mzc1	10YR43 00					0	0		0						Y	
	20-40	hzc1	10YR44 00					0	0	HR	15		M				Y	imp, 1st
41	0-20	mzc1	10YR32 00					0	0		0						Y	
	20-60	c	25Y 53 54					0	0	HR	10		M				Y	
	60-100	c	05Y 71 00	10YR66	00	C		Y	0	0	SLST	5		P		Y	Y	
42	0-28	hc1	25Y 32 00					0	0		0							
	28-55	hzc1	10YR54 00					0	0		0		M					
	55-90	c	25Y 53 00	10YR56	00	C		Y	0	0		0		P		Y		dense, firm
	90-100	c	25Y 53 52	10YR56	00	C		Y	0	0		0		P		Y		plastic
43	0-28	hzc1	25Y 32 00					8	0	HR	12						Y	imp, 1st
44	0-30	c	10YR42 00					0	0	HR	5						Y	
	30-70	c	10YR54 00					0	0	HR	5		M				Y	imp, 1st
45	0-25	hc1	10YR32 00					5	0	HR	5						Y	
	25-75	c	10YR54 00					0	0	HR	5		M				Y	imp, 1st
46	0-30	hc1	10YR42 00					0	0	HR	2							
	30-70	c	10YR43 00					0	0	HR	2		M				Y	
47	0-28	hc1	10YR42 00					0	0	HR	1						Y	
	28-38	hc1	10YR54 00					0	0	HR	2		M				Y	
	38-55	sc1	10YR54 00					0	0	HR	2		M				Y	
	55-80	c	25YR53 00	000C00	00	C		Y	0	0		0		P	Y	Y	Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED	----STONES----			STRUCT/	SUBS	SPL	CALC			
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT			CONSIST	STR	POR
60	0-30	mc1	10YR51 52	10YR56	00	C		Y	0	0	HR	2					
	30-80	c	25Y 61 00	10YR58	00	M		Y	0	0		0	P	Y	plastic		
61	0-25	hc1	10YR42	00					0	0		0					
	25-35	c	25Y 52 53	10YR56	00	M		Y	0	0		0	P				
	35-70	c	25Y 51 52	10YR56	00	M		Y	0	0		0	P	Y			
62	0-24	hc1	10YR52	00					0	0	HR	2					
	24-58	c	25Y 62 63	10YR56	00	C		Y	0	0	HR	2	P	Y	Y		
	58-70	c	25Y 61 63	10YR56	00	C		Y	0	0	HR	2	P	Y			
63	0-28	mc1	10YR42	00					0	0	HR	5					
	28-35	c	25Y 53 00	10YR56	00	C	00M00	00	Y	0	0	HR	5	M	friable		
	35-40	c	10YR43	00	10YR56	00	M	00M00	00	Y	0	0	HR	35	M	imp, 1st	
64	0-28	hc1	10YR42	00					0	0	HR	1					
	28-55	c	25Y 52 00	00C00	00	C		Y	0	0	HR	1	P	Y	Y		
65	0-22	mc1	10YR42	00	75YR46	00	C		Y	0	0	HR	2				
	22-65	c	25Y 53 54	10YR56	00	C		Y	0	0	HR	2	P	Y	dense, firm		
	65-95	c	25Y 51 41	10YR56	00	C		Y	0	0	SLST	5	P	Y	Y	plastic	
66	0-30	mc1	10YR42	00					0	0		0					
	30-60	c	25Y 52 00	00C00	00	C		Y	0	0		0	P	Y	Y	plastic	
67	0-20	mzc1	10YR43	00	10YR56	00	C			0	0	0			Y		
	20-45	hzc1	10YR52	00	10YR58	00	C	00M00	00	Y	0	0	0	M	Y		
	45-50	c	25YR61	52	10YR58	00	M	00M00	00	Y	0	0	0	P	Y	Y	imp, 1st
68	0-25	hzc1	10YR41	42	75YR56	00	C		Y	0	0	0					
	25-60	c	10YR71	00	10YR68	00	M		Y	0	0	0	P	Y			
69	0-25	hc1	10YR41	42	75YR56	00	C		Y	0	0	0					
	25-70	c	10YR71	00	10YR68	00	M		Y	0	0	0	P	Y			
70	0-28	mzc1	10YR43	00						0	0	0					
	28-40	c	10YR53	00	75YR56	00	C		Y	0	0	0	P	Y	dense, firm		
	40-70	c	25 Y53	00	10YR56	00	M	00M00	00	Y	0	0	HR	5	P	Y	plastic
71	0-25	hc1	10YR42	00						0	0	HR	5				
	25-50	c	25Y 53 00	10YR56	00	M	00M00	00	Y	0	0	HR	5	P	Y	Y	hard, dense
	50-60	c	10YR56	00						0	0	SLST	20	M	Y	plastic	
72	0-20	hc1	10YR42	00						0	0	HR	5		Y		
	20-30	c	10YR43	00						0	0	HR	10	M	Y	imp, 1st	
73	0-22	hc1	10YR42	00	10YR46	00	C		Y	0	0	HR	2				
	22-45	c	25Y 51 53	10YR56	00	C		Y	0	0	HR	2	M		loose, friable		
	45-63	c	25Y 51 53	10YR56	00	M		Y	0	0	SLST	10	P	Y	Y	dense, firm	
	63-120	c	25Y 51 00	10YR46	00	M		Y	0	0	SLST	15	P	Y	Y	dense, plastic	

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES---			PED	---STONES---			STRUCT/	SUBS						
				COL	ABUN	CONT	COL.	GLEY	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
74	0-20	hc1	10YR42 00 000C00 00 C					Y	0	0	0							
	20-60	c	25Y 52 00 000C00 00 M					Y	0	0	0		P	Y		Y		plastic
75	0-20	mzc1	10YR41 42 75YR56 00 C					Y	0	0	0							
	20-60	c	05GY62 00 10YR56 00 M					Y	0	0	0		P			Y		dense, firm
76	0-25	mc1	10YR42 00						0	0	0							Y
	25-40	c	25Y 53 00 10YR56 00 C				00M00 00	Y	0	0	SLST	5	P			Y	Y	imp, 1st
77	0-28	mzc1	10YR43 00						0	0	0							
	28-70	c	25 Y53 62 10YR58 00 C				00M00 00	Y	0	0	0		P			Y		firm
	70-120	c	25 Y43 00 75YR46 00 M				00M00 00	Y	0	0	0		P			Y		plastic
78	0-28	hc1	10YR42 00						0	0	HR	5						Y
	28-60	c	25Y 51 53 10YR56 00 C				00M00 00	Y	0	0	HR	5	P			Y	Y	
79	0-30	hc1	10YR42 00						0	0	HR	2						Y
	30-45	c	10YR51 53 10YR56 58 M				00M00 00	Y	0	0	HR	10	P			Y	Y	dense, plastic
	45-70	c	25Y 51 53 10YR58 00 M				00M00 00	Y	0	0	HR	5	P			Y	Y	
80	0-15	mc1	10YR42 00						0	0	HR	2						Y
	15-45	c	25Y 61 54 10YR56 00 C					Y	0	0	CH	5	P			Y	Y	dense, firm
	45-58	c	25Y 61 54 10YR56 00 C					Y	0	0	CH	15	P			Y	Y	sandy, plastic
	58-120	c	25Y 41 00 10YR56 00 C					Y	0	0	CH	15	P			Y	Y	plastic
81	0-30	hc1	10YR42 00						0	0		0						
	30-60	c	25Y 52 00 000C00 00 M					Y	0	0		0	P	Y		Y		
82	0-28	c	10YR42 00						0	0		0						
	28-60	c	25Y 63 00 000C00 00 C					Y	0	0		0	P	Y		Y		
83	0-28	hc1	10YR42 00 000C00 00 C					Y	0	0	HR	1						
	28-60	c	25Y 53 00 000C00 00 C					Y	0	0		0	P	Y		Y		
84	0-20	hc1	10YR42 00						0	0	HR	2						
	20-35	c	25Y 53 00						0	0	HR	2		M				Y
	35-40	c	25Y 53 00 000C00 00 C					Y	0	0	HR	2	P	Y		Y	Y	imp, flint
85	0-20	hc1	10YR42 00						0	0	HR	2						
	20-60	c	25Y 62 00 000C00 00 C					Y	0	0	CH	2	P	Y		Y	Y	
86	0-28	hc1	10YR42 00						0	0	HR	1						
	28-60	c	10YR53 00 000C00 00 C					Y	0	0	CH	1	P	Y		Y	Y	dense, firm
	60-80	c	25Y 52 00 000C00 00 M					Y	0	0	CH	1	P	Y		Y	Y	
87	0-30	mc1	10YR42 00						0	0	HR	1						
	30-45	c	25Y 54 00						0	0		0		M				dense, firm
	45-60	c	10YR53 00 000C00 00 C					Y	0	0		0	P	Y		Y		plastic
	60-80	c	25Y 52 00 000C00 00 C					Y	0	0		0	P	Y		Y		

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED	----STONES----			STRUCT/	SUBS						
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
102	0-30	hc1	10YR42 00						0	0	HR	1						
	30-60	c	25Y 53 51 000C00 00 C					Y	0	0	CH	1	P	Y		Y	Y	
103	0-30	hc1	10YR42 00 000C00 00 C					Y	0	0	HR	1						
	30-60	c	25Y 53 00 000C00 00 C					Y	0	0		0	P	Y		Y		
104	0-20	hzc1	10YR32 00						0	0	HR	2						
	20-42	c	25Y 42 00						0	0		0	M			Y	loose	
	42-65	c	25Y 42 51 000C00 00 C					Y	0	0		0	P	Y		Y	plastic	
105	0-28	hc1	10YR41 42						0	0	HR	2						
	28-40	c	10YR53 00 10YR56 00 C					Y	0	0	HR	5	P		Y	Y	dense, firm	
	40-80	c	10YR51 53 10YR58 00 M					Y	0	0	SLST	10	P		Y	Y		
106	0-27	mc1	10YR42 00						0	0	HR	2				Y		
	27-40	c	25Y 52 53 10YR56 00 C					Y	0	0	HR	10	P		Y	Y	dense	
	40-70	c	25Y 51 53 10YR56 00 M				00MN00 00	Y	0	0	HR	10	P		Y	Y	dense	
	70-80	c	05Y 51 00 10YR58 00 M					Y	0	0	HR	15	P		Y	Y	plastic	
108	0-25	mc1	10YR42 00						0	0	HR	2						
	25-40	hc1	25Y 53 00 10YR56 58 M				00MN00 00	Y	0	0	HR	5	M				loose	
	40-67	c	10YR61 62 10YR56 58 M				00MN00 00	Y	0	0	SLST	5	P		Y	Y	firm	
	67-75	c	25Y 51 53 10YR56 58 C				00MN00 00	Y	0	0	SLST	10	P		Y	Y	plastic	
109	0-25	hc1	10YR42 00						0	0	HR	1						
	25-60	c	25Y 53 51 000C00 00 C					Y	0	0	CH	1	P	Y		Y	Y	
110	0-25	hc1	10YR42 00						0	0	HR	1						
	25-60	c	25Y 53 00 000C00 00 C					Y	0	0	CH	1	P	Y		Y	Y	
111	0-25	hc1	10YR41 00						0	0	HR	2						
	25-45	c	10YR52 53 10YR56 00 C					Y	0	0	HR	5	P		Y	Y	dense, firm	
	45-80	c	25Y 51 53 10YR58 00 M					Y	0	0		0	P		Y	Y		
112	0-25	hc1	10YR42 00						0	0	HR	2						
	25-45	c	10YR53 00 10YR56 00 C					Y	0	0	HR	10	P		Y	Y	dense, firm	
	45-70	c	25Y 51 53 10YR56 00 C					Y	0	0	HR	5	P		Y	Y		
113	0-25	mc1	10YR42 00 10YR46 00 F						0	0		0						
	25-35	hc1	25Y 54 00						0	0	HR	5	M			Y		
	35-45	c	10YR63 00 10YR56 00 C					Y	0	0	HR	5	P		Y	Y	plastic i45	
114	0-30	hc1	10YR42 53 10YR56 00 C						Y	0	0	HR	2				Y	
	30-55	c	25Y 51 53 10YR58 00 M				00MN00 00	Y	0	0	HR	5	P		Y	Y		
115	0-28	hc1	10YR42 00 000C00 00 C						Y	0	0	0						
	28-60	c	25Y 53 51 000C00 00 C					Y	0	0		0	P	Y		Y	Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED	----STONES----			STRUCT/	SUBS							
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC	
116	0-25	hc1	10YR42 00						0	0	HR	1							
	25-60	c	25Y 53 51	000C00	00	C		Y	0	0		0		P	Y		Y		
117	0-28	mc1	10YR42 00						0	0	HR	5							Y
	28-42	hc1	25Y 53 54	10YR46	00	F			0	0	HR	5		M					Y
	42-90	c	25Y 51 53	10YR56	58	C	00MNO0	00	Y	0	0	HR	5		P			Y	Y
118	0-28	hc1	10YR42 00	000C00	00	C		Y	0	0	HR	1							
	28-60	c	25Y 53 00	000C00	00	M		Y	0	0		0		P	Y		Y	Y	
119	0-25	hc1	10YR42 00						0	0	HR	1							
	25-35	c	25Y 53 51						0	0	HR	1		M					loose
	35-60	c	25Y 53 00	000C00	00	C		Y	0	0	CH	1		P	Y		Y	Y	plastic
120	0-28	hc1	10YR42 00	000C00	00	F		Y	0	0	HR	1							
	28-37	c	25Y 54 00	000C00	00	F		Y	0	0		0		M					
	37-60	c	25Y 53 00	000C00	00	C		Y	0	0		0		P	Y		Y	Y	
121	0-25	mc1	10YR41 42	10YR46	00	F			0	0	HR	2							
	25-50	hc1	10YR42 53	10YR56	00	C		Y	0	0	HR	2		M					imp, flints
122	0-25	hc1	10YR42 00						0	0	HR	1							
	25-60	c	25Y 53 51	000C00	00	C		Y	0	0	CH	1		P	Y		Y	Y	
123	0-28	hc1	10YR42 00	000C00	00	F			0	0	HR	1							
	28-38	c	10YR53 00	000C00	00	F			0	0		0		M					Y
	38-60	c	25Y 53 51	000C00	00	C		Y	0	0		0		P	Y		Y	Y	
124	0-30	hc1	10YR43 00						0	0	HR	1							Y
	30-35	c	10YR53 00						0	0	HR	1		M					Y
	35-60	c	25Y 53 51	000C00	00	C		Y	0	0	CH	1		P	Y		Y	Y	loose dense, firm
125	0-28	hc1	10YR42 00	000C00	00	C		Y	0	0	HR	1							
	28-60	c	25Y 53 51	000C00	00	M		Y	0	0		0		P	Y		Y	Y	
126	0-28	hc1	10YR42 00						0	0	HR	1							Y
	28-35	c	25Y 53 51						0	0	CH	1		M					Y
	35-60	c	25Y 53 00	000C00	00	C		Y	0	0	CH	1		P	Y		Y	Y	loose plastic