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**Newbury District Local Plan  
Housing Omission Site 5938:  
Siege Cross Farm, Thatcham**

**Agricultural Land Classification  
ALC Map and Report**

**August 1997**

**Resource Planning Team  
Eastern Region  
FRCA Reading**

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# AGRICULTURAL LAND CLASSIFICATION REPORT

## NEWBURY DISTRICT LOCAL PLAN HOUSING OMISSION SITE 5938: SIEGE CROSS FARM, THATCHAM

### INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 36.2 ha of land at Siege Cross Farm, Thatcham. The survey was carried out during August 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 Newbury District Local Plan. This survey supersedes previous ALC information for this land (ADAS Ref: 0202/020/80).
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 land use on the site was predominantly permanent grazing, with a small area under a maize crop. Part of the site is also used as an airstrip for light aircraft, although this area is also grazed. The areas mapped as 'Other Land' include farm and other agricultural buildings and an area 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.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
2	18.1	53.1	50.0
3a	2.6	7.6	7.2
3b	13.4	39.3	37.0
Other land	2.1	N/A	5.8
Total surveyed area	34.1	100	94.2
Total site area	36.2	-	100

7. The fieldwork was conducted at an average density of 1 boring per hectare. A total of 34 borings and 2 soil pits were described.

8. The land on this site ranges from Grade 2 (very good quality) agricultural land to Subgrade 3b (moderate quality) agricultural land. The majority of the site is affected by soil wetness restrictions caused by the presence of clayey subsoils which impede drainage. The degree of restriction is dependant on the depth to these clayey horizons, in combination with topsoil texture. Topsoil textures vary across the site; where there are light sandy textures soil wetness is not as restricting as areas with heavier, more clayey topsoil textures. This soil wetness can reduce the number of days when trafficking by machinery or grazing by animals may occur without damaging the soil, making the land less flexible for agricultural production.

9. Within the Grade 2 mapping unit and to the south east of the site, soil droughtiness restricts land quality, either singly or in combination with soil wetness. Where land is assigned to Grade 2, a minor soil droughtiness results from the combination of soils which are slightly sandy and stony with the prevailing climatic conditions. In the south east of the site the profiles are influenced by the underlying valley gravel and are gravelly. This reduces the amount of profile available water and in this locally dry climate the range of crops that can tolerate such conditions is significantly restricted.

## FACTORS INFLUENCING ALC GRADE

### Climate

10. Climate affects the grading of 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	
		SU 533 673	SU 531 678
Grid reference	N/A	SU 533 673	SU 531 678
Altitude	m, AOD	80	105
Accumulated Temperature	day°C (Jan-June)	1439	1410
Average Annual Rainfall	mm	707	721
Field Capacity Days	days	152	154
Moisture Deficit, Wheat	mm	107	103
Moisture Deficit, Potatoes	mm	99	94
Overall climatic grade	N/A	Grade 1	Grade 1

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 there is no overall climatic limitation (Climatic Grade 1). However, climatic factors do interact with soil properties to influence soil wetness and droughtiness.

### Site

15. The site is gently sloping (1-3 degrees) away from the highest land in the north of the site. Small valleys run southwesterly in the west and east of the site. The site ranges in altitude from 75m to 105m AOD. However, there is no limitation due to slope, microrelief or flooding.

### Geology and soils

16. The published geological information (BGS, 1971) maps most of this site as London Clay. There is an area in the south of the site, along the A4 Bath Road, mapped as river and valley gravels.

17. The soils are mapped as Wickham 4 association, which is described as 'slowly permeable seasonally waterlogged fine loamy over clayey and fine silty over clayey soils associated with similar clayey soils, often with brown subsoils' (SSEW, 1983).

## 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 II.

### Grade 2

20. The Grade 2 (very good quality) agricultural land is mapped on the mid-slopes of this site. The land is classified on the basis of a minor soil wetness and/or soil droughtiness limitation. Where soil wetness is overriding the soils typically comprise fine sandy silt loam or medium clay loam topsoils, which are stoneless to slightly stony (up to 15% total flints, 1-8% >2cm). These typically overlie medium clay loam and heavy clay loam upper subsoils. These upper subsoils are either stoneless, or contain 2-20% total flints. Lower subsoils comprise sandy clay loams and/or clays. Where they occur, the clay lower subsoils are slowly permeable and thereby drainage through the profiles. This causes gleying from the

surface and the soils are assigned to Wetness Class III. At this locality, in combination with the light topsoil textures, the land is limited to Grade 2. Soil pit 1 (see Appendix II) is typical of these soils. Soil wetness may adversely affect crop growth and development, as well as limiting the flexibility of the land due to the reduction in the number of days when the soil is in a suitable condition for cultivation, trafficking by machinery or grazing by livestock. There are occasional better quality profiles which are better drained within this mapping unit, but they are not mapped as a better grade since their distribution is sporadic.

21. Some Grade 2 agricultural land is classified due to a minor soil droughtiness limitation, which may occur in conjunction with soil wetness. These profiles are typically similar to those described in paragraph 20., and also by Pit 2. In this local climate, the soil characteristics slightly limit the amount of water available to a crop. This may reduce the level and consistency of yields on this land, especially in drier years, and Grade 2 is appropriate.

### **Subgrade 3a**

22. A small area, on the higher land, is classified as Subgrade 3a. The land is of a good quality, however soil wetness causes a slight limitation. These profiles typically comprise very slightly stony (3-5% total flints, up to 2% >2cm) fine sandy silt loam or medium clay loam topsoils, which overlie medium clay loam and/or clay subsoils. The clay subsoils are slowly permeable and impede drainage, causing seasonal waterlogging. These subsoils occur at shallow depth (30-35cm) and Wetness Class IV is appropriate for these soils. However, the light topsoil textures improve workability, which reduces the effect of soil wetness. Therefore, within the prevailing climatic conditions the land may be classified as Subgrade 3a.

### **Subgrade 3b**

23. Much of the lower lying land is classified as Subgrade 3b on the basis of a significant soil wetness limitation. These soils typically comprise stoneless to slightly stony (up to 10% total flints, up to 6% >2cm) fine sandy silt loam, medium clay loam and heavy clay loam topsoils over similar, sandy clay loam or clay subsoils, which are stoneless to slightly stony (up to 15% total flints). The clay subsoils are similar to those described in paragraphs 21. and 22. and occur at shallow depth (25-39cm) placing these soils in Wetness Class IV. Such drainage status combines with the topsoil textures and the prevailing climate to result in a classification of Subgrade 3b. A small area in the valley bottom to the north east of the site is classified due to the high groundwater level which would be difficult to control. Such soil wetness can reduce the number of days when trafficking by machinery or grazing by animals may occur without damaging the soil, making the land less flexible for agricultural production. Occasionally soils which are better drained are found but they cover too small an area to be mapped as a separate unit.

24. A small area in the east of the site is classified due to a significant soil droughtiness limitation. These soils comprise very slightly stony (3-5% total flints) medium clay loam topsoils and slightly stony (10% total flints) similar subsoils. These soils overlie gravelly

horizons which restrict the amount of available water to crops. In this locally dry climate the range of crops that can tolerate such conditions is significantly limited and the land is classified as Subgrade 3b.

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## SOURCES OF REFERENCE

British Geological Survey (1971) *Sheet No. 267, Hungerford*. BGS: London.

British Geological Survey (1971) *Sheet No. 268, Reading*. 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, 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:**

**Sample location map**

**Soil abbreviations - explanatory note**

**Soil pit descriptions**

**Soil boring descriptions (boring and horizon levels)**

## SOIL PROFILE DESCRIPTIONS: EXPLANATORY NOTE

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

### Boring Header Information

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

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

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

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

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

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

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

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

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

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

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

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

## Soil Pits and Auger Borings

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

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

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

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

The clay loam and silty clay loam classes will be sub-divided according to the clay content:

**M:** Medium (<27% clay)    **H:** Heavy (27-35% clay)

2. **MOTTLE COL:** Mottle colour using Munsell notation.
3. **MOTTLE ABUN:** Mottle abundance, expressed as a percentage of the matrix or surface described:

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

4. **MOTTLE CONT:** Mottle contrast:

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

5. **PED. COL:** Ped face colour using Munsell notation.
6. **GLEYS:** If the soil horizon is gleyed a 'Y' will appear in this column. If slightly gleyed, an 'S' will appear.
7. **STONE LITH:** Stone Lithology - one of the following is used:

<b>HR:</b> all hard rocks and stones	<b>FSST:</b> soft, fine grained sandstone
<b>ZR:</b> soft, argillaceous, or silty rocks	<b>CH:</b> chalk
<b>MSST:</b> soft, medium grained sandstone	<b>GS:</b> gravel with porous (soft) stones
<b>SI:</b> soft weathered igneous/metamorphic rock	<b>GH:</b> gravel with non-porous (hard) stones

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

8. **STRUCT**: the degree of development, size and shape of soil peds are described using the following notation:

Degree of development	<b>WK</b> : weakly developed	<b>MD</b> : moderately developed
	<b>ST</b> : strongly developed	
Ped size	<b>F</b> : fine	<b>M</b> : medium
	<b>C</b> : coarse	
Ped shape	<b>S</b> : single grain	<b>M</b> : massive
	<b>GR</b> : granular	<b>AB</b> : angular blocky
	<b>SAB</b> : sub-angular blocky	<b>PR</b> : prismatic
	<b>PL</b> : platy	

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

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

10. **SUBS STR**: Subsoil structural condition recorded for the purpose of calculating profile droughtiness: **G**: good **M**: moderate **P**: poor

11. **POR**: Soil porosity. If a soil horizon has less than 0.5% biopores >0.5 mm, a 'Y' will appear in this column.

12. **IMP**: If the profile is impenetrable to rooting a 'Y' will appear in this column at the appropriate horizon.

13. **SPL**: Slowly permeable layer. If the soil horizon is slowly permeable a 'Y' will appear in this column.

14. **CALC**: If the soil horizon is calcareous, a 'Y' will appear in this column.

15. Other notations:

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

SOIL PIT DESCRIPTION

Site Name : NEWBURY DLP SITE 5938 Pit Number : 1P

Grid Reference: SU53406770 Average Annual Rainfall : 707 mm  
 Accumulated Temperature : 1439 degree days  
 Field Capacity Level : 152 days  
 Land Use : Permanent Grass  
 Slope and Aspect : 02 degrees SE

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 27	FSZL	10YR42 00	1	3	HR	C				
27- 42	MCL	25 Y53 52	0	5	HR	C	MDCSAB	FR	M	
42- 62	HCL	10YR53 00	0	10	HR	M	MDCSAB	FM	M	
62-120	C	10YR53 62	0	10	HR	M	MDCOAB	FM	P	

Wetness Grade : 2 Wetness Class : III  
 Gleying : 0 cm  
 SPL : 062 cm

Drought Grade : 2 APW : 129mm MBW : 22 mm  
 APP : 109mm MBP : 10 mm

FINAL ALC GRADE : 2  
 MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : NEWBURY DLP SITE 5938 Pit Number : 2P

Grid Reference: SU Average Annual Rainfall : 707 mm  
 Accumulated Temperature : 1439 degree days  
 Field Capacity Level : 152 days  
 Land Use : Permanent Grass  
 Slope and Aspect : 02 degrees E

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 23	MCL	10YR43 00	0	3	HR					
23- 46	MCL	10YR43 44	0	5	HR		MDCOAB	FM	M	
46- 70	HCL	10YR63 53	0	8	HR	C	MDCSAB	FM	M	
70-100	HCL	10YR53 00	0	0		M	WKCOAB	FM	P	
100-120	SCL	10YR53 00	0	15	HR	M			P	

Wetness Grade : 1 Wetness Class : I  
 Gleying : 046 cm  
 SPL : No SPL

Drought Grade : 2 APW : 134mm MBW : 27 mm  
 APP : 111mm MBP : 12 mm

FINAL ALC GRADE : 2  
 MAIN LIMITATION : Droughtiness

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	SU53506790	PGR		0 030	4	3A	000	0 000	0					WE 3A	Imp 60 Flints
1P	SU53406770	PGR SE	02	0 062	3	2	129	22 109	10 2					WD 2	
2	SU52806780	PGR W	01	030	2	1	078	-29 078	-21 3B					DR 3B	Imp50
2P	SU53506760	PGR E	02	046	1	1	134	27 111	12 2					DR 2	
3	SU52906780	PGR S	02	029 029	4	3B	000	0 000	0					WE 3B	
4	SU53106780	PGR SW	02	0 052	3	2	000	0 000	0					WE 2	
5	SU53306780	MZE S	02	030 030	4	3B	000	0 000	0					WE 3B	
6	SU53406780	PGR E	02	0	2	1	160	53 131	32 1					1	
7	SU53506780	PGR NE	02	0	2	1	158	51 128	29 1					1	
8	SU52906770	PGR S	01	025 038	4	3B	000	0 000	0					WE 3B	
9	SU53006770	PGR SW	02	0 055	3	2	000	0 000	0					WE 2	See 1P
10	SU53106770	PGR S	02	0 075	2	1	148	41 123	24 1					1	
11	SU53206770	PGR S	02	025 035	4	3A	000	0 000	0					WE 3A	FSZL Top
12	SU53306770	PGR S	02	0 062	3	2	149	42 123	24 1					WE 2	
13	SU53406770	PGR E	02	0	2	1	095	-12 100	1 3A					WE 2	Imp60 See 1P
14	SU53506770	PGR E	02	0 090	2	1	169	62 133	34 1					1	
15	SU52906760	PGR SW	01	030 038	4	3B	000	0 000	0					WE 3B	
16	SU53006760	PGR SW	02	0 052	3	2	000	0 000	0					WE 2	See 1P
17	SU53106760	PGR S	02	0 065	3	2	105	-2 115	16 3A					WE 2	Imp70 Flints
18	SU53206760	PGR S	02	030 068	3	2	136	29 114	15 2					WD 2	
19	SU53306760	PGR S	02	0 055	3	2	000	0 000	0					WE 2	
20	SU53406760	PGR E	02	0 065	3	2	155	48 132	33 1					WE 2	
21	SU53506760	PGR E	02	0	2	1	171	64 133	34 1					1	See 2P
22	SU52906750	PGR SW	01	030 030	4	3B	000	0 000	0					WE 3B	
23	SU53006750	PGR S	01	0 025	4	3B	000	0 000	0					WE 3B	
24	SU53106750	PGR S	02	0 039	4	3B	000	0 000	0					WE 3B	
25	SU53206750	PGR SE	02	0 055	3	3A	000	0 000	0					WE 3A	
27	SU53406750	PGR E	02	020	2	1	081	-26 081	-18 3B					WD 2	Imp50 See 1P
28	SU53506750	PGR E	02	0	2	1	168	61 130	31 1					1	
29	SU52906740	PGR		0	2	1	086	-21 088	-11 3B					WD 2	Imp55 See 1P
30	SU53006740	PGR		0 062	3	2	140	33 118	19 1					WE 2	
31	SU53106740	PGR S	01	0 038	4	3B	000	0 000	0					WE 3B	
32	SU53206740	PGR		0 030	4	3B	000	0 000	0					WE 3B	
33	SU53306740	PGR SE	02		1	1	062	-45 062	-37 3B					DR 3B	Imp40 Stony
34	SU53406740	PGR SE	03	0	2	1	101	-6 111	12 3A					DR 2	Imp70 See 1P
36	SU53306730	PGR SE	01		1	1	062	-45 062	-37 3B					DR 3B	Imp40 Flints
37	SU53406730	PGR		0 055	3	2	000	0 000	0					WE 3B	GroundwaterHC4

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----			STRUCT/ CONSIST	SUBS		SPL	CALC
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR		
1	0-25	fsz1	10YR51 00 75YR56 00 C				00M00 00 Y	0	0	0						+FineS
	25-30	mc1	10YR52 00 75YR58 00 C				00M00 00 Y	0	0	0		M				+FineS
	30-60	sc1	25 Y62 00 10YR58 00 M				00M00 00 Y	0	0	HR	3		P	Y		Imp Flintsx2
1P	0-27	fsz1	10YR42 00 75YR46 00 C					Y	1	0	HR	3				
	27-42	mc1	25 Y53 52 10YR58 00 C					Y	0	0	HR	5	MDCSAB	FR	M	
	42-62	hc1	10YR53 00 75YR58 00 M				00M00 00 Y	0	0	HR	10	MDCSAB	FM	M	Y	
	62-120	c	10YR53 62 75YR58 00 M				00M00 00 Y	0	0	HR	10	MDCOAB	FM	P	Y	Y
2	0-30	fsz1	10YR42 00						6	0	HR	10				+FineS
	30-50	hc1	10YR52 00 10YR58 00 C				00M00 00 Y	0	0	HR	10		M			Imp VeryStony
2P	0-23	fsz1	10YR43 00						0	0	HR	3				
	23-46	mc1	10YR43 44						0	0	HR	5	MDCOAB	FM	M	
	46-70	hc1	10YR63 53 10YR58 00 C					Y	0	0	HR	8	MDCSAB	FM	M	
	70-100	hc1	10YR53 00 10YR46 00 M				00M00 00 Y	0	0		0	WKCOAB	FM	P		Too Porous
	100-120	sc1	10YR53 00 10YR46 00 M				00M00 00 Y	0	0	HR	15		P			Too Sandy
3	0-29	mc1	10YR42 00						0	0	HR	2				Less Sand
	29-70	c	10YR52 00 75YR56 00 C				10YR71 00 Y	0	0		0		P	Y		Plastic
4	0-25	fsz1	10YR43 00 10YR56 00 C					Y	0	0		0				+FineS
	25-52	hc1	10YR53 00 10YR58 00 M					Y	0	0		0		M		+FineS
	52-80	c	25 Y62 00 10YR58 00 M					Y	0	0		0		P	Y	+Sand Firm
5	0-30	mc1	10YR42 00						2	0	HR	5				Less Sand
	30-70	c	10YR53 00 75YR58 00 C					Y	0	0	HR	8		P	Y	Plastic Moist
6	0-35	fsz1	10YR53 00 10YR58 00 C				00M00 00 Y	0	0		0					+FineS
	35-75	hc1	10YR53 63 10YR58 00 C					Y	0	0	HR	3		M		Sandy
	75-120	sc1	25 Y63 64 10YR58 00 C				00M00 00 Y	0	0	HR	3		P			
7	0-35	fsz1	10YR53 00 10YR56 00 C				00M00 00 Y	0	0		0					+FineS
	35-50	sc1	10YR53 00 10YR58 00 C					Y	0	0		0		M		
	50-70	sc1	10YR53 00 10YR58 00 C					Y	0	0	HR	5		M		
	70-120	sc1	10YR52 53 10YR56 00 C				00M00 00 Y	0	0	HR	2		P			Sandy Heavy
8	0-25	hc1	10YR42 00						0	0	HR	2				Less Sand
	25-38	hc1	10YR42 00 75YR46 00 C					Y	0	0	HR	2		M		
	38-70	c	10YR52 00 75YR58 00 M				00M00 00 Y	0	0	HR	2		P	Y		Plastic
9	0-20	fsz1	10YR42 00 10YR56 00 C					Y	0	0		0				+FineS
	20-38	mc1	10YR53 00 10YR58 00 C					Y	0	0		0		M		+FineS
	38-55	hc1	10YR52 53 10YR58 00 M					Y	0	0		0		M		+FineS
	55-80	c	10YR63 53 10YR58 00 M					Y	0	0		0		P	Y	+Sand
10	0-20	fsz1	10YR43 00 10YR56 00 C					Y	0	0		0				+FineS
	20-40	mc1	10YR53 00 10YR56 00 C					Y	0	0	HR	3		M		+FineS
	40-55	hc1	10YR53 00 10YR56 00 M					Y	0	0		0		M		Sandy
	55-75	hc1	10YR63 00 10YR58 00 M					Y	0	0		0		M		Firm
	75-120	c	10YR62 00 10YR58 00 M					Y	0	0		0		P	Y	Firm Moist



SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----			STRUCT/ CONSIST	SUBS			CALC		
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR		IMP	SPL
11	0-25	fsz1	10YR43 00						0	0	HR	3						
	25-35	mc1	10YR53 00	75YR58	00	C		Y	0	0	HR	3		M				
	35-70	c	10YR53 00	75YR58	00	C		Y	0	0	HR	2		P	Y		+FineS Dry Heavy	
12	0-30	fsz1	10YR42 00	75YR46	00	C		Y	0	0	HR	2					+FineS	
	30-40	mc1	10YR43 00	10YR58	00	C		Y	0	0	HR	5		M			+FineS	
	40-62	mc1	10YR52 00	75YR58	00	M	25	Y72	00	Y	0	0	HR	5		M		
	62-80	c	10YR52 00	75YR58	00	M				Y	0	0	HR	10		P	Y	Plastic Moist
	80-90	sc1	25 Y71 00	75YR58	00	M				Y	0	0		0		M		FineS
	90-120	c	25 Y71 00	75YR58	00	M				Y	0	0		0		P	Y	
13	0-35	fsz1	10YR53 00	10YR56	00	C		00M	00	Y	0	0	HR	2			+FineS PSD	
	35-48	mc1	10YR53 63	10YR58	00	C		00M	00	Y	0	0		0		M		
	48-60	sc1	25 Y63 00	10YR58	00	C		00M	00	Y	0	0	HR	4		M		Imp Flints
14	0-35	fsz1	10YR42 00	10YR46	00	C		00M	00	Y	0	0		0			+FineS	
	35-75	mc1	10YR53 00	10YR58	00	C		00M	00	Y	0	0		0		M		
	75-120	sc1	10YR53 00	10YR58	00	M		00M	00	Y	0	0	HR	4		M		SPL from 90
15	0-30	mc1	10YR43 00	10YR58	00	C			S	0	0	HR	3				Less Sand	
	30-38	hc1	10YR53 54	10YR58	00	C			Y	0	0	HR	2		M			
	38-70	c	10YR52 00	75YR58	00	M		10YR61	00	Y	0	0		0		P	Y	Plastic
16	0-25	fsz1	10YR42 00	10YR56	00	C			Y	0	0		0				+FineS PSD	
	25-45	mc1	10YR53 63	10YR58	00	C			Y	0	0		0		M		+FineS	
	45-52	hc1	10YR53 63	10YR58	00	C			Y	0	0		0		M		Sandy	
	52-75	c	10YR52 62	10YR58	00	M		00M	00	Y	0	0		0		P	Y	Firm Moist
17	0-35	fsz1	10YR53 00	10YR58	00	C			Y	0	0		0				+FineS	
	35-50	mc1	10YR52 62	10YR58	00	C			Y	0	0		0		M		Sandy	
	50-65	sc1	10YR72 00	10YR56	00	M			Y	0	0	HR	2		M		Friable	
	65-70	c	10YR61 00	10YR56	00	M			Y	0	0	HR	3		P	Y	Firm Moist	
18	0-30	fsz1	10YR42 00							8	0	HR	15					
	30-45	mc1	10YR53 00	10YR58	00	C			Y	0	0	HR	20		M			
	45-68	mzc1	10YR62 00	75YR58	00	M	25	Y71	00	Y	0	0	HR	10		M		
	68-120	c	10YR52 00	75YR68	00	M			Y	0	0	HR	2		P	Y	Plastic	
19	0-30	fsz1	10YR42 00	75YR46	00	C			Y	2	0	HR	5				+FineS	
	30-40	hc1	10YR52 00	75YR46	00	C		00M	00	Y	0	0	HR	20		M		
	40-55	hc1	10YR53 00	10YR58	00	C		25	Y72	00	Y	0	0	HR	15		M	
	55-80	c	10YR52 00	75YR58	00	M			Y	0	0	HR	5		P	Y	Plastic Moist	
20	0-35	fsz1	10YR53 00	10YR58	00	C		00M	00	Y	0	0		0			+FineS	
	35-55	mc1	10YR52 53	10YR58	00	C		00M	00	Y	0	0		0		M		
	55-65	hc1	25 Y53 00	10YR58	00	M		00M	00	Y	0	0		0		M		
	65-120	c	25 Y63 00	10YR58	00	M		00M	00	Y	0	0		0		P	Y	Firm Moist

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----		PED		----STONES----			STRUCT/ CONSIST	SUBS			CALC	
				COL	ABUN	CONT	COL.	GLE	>2	>6		LITH	TOT	STR		POR
21	0-35	fsz1	10YR53 00	10YR58 00	C		00MN00 00	Y	0	0	0					+FineS
	35-50	mc1	10YR53 00	10YR58 00	C			Y	0	0	0		M			+FineS
	50-65	hc1	10YR52 53	10YR58 00	C			Y	0	0	0		M			Sandy Moist
	65-120	sc1	10YR52 00	10YR58 00	C		00MN00 00	Y	0	0	0		M			Very Moist
22	0-30	mc1	10YR43 00	10YR58 00	C				S	0	0	HR	5			Less Sand
	30-70	c	10YR53 00	75YR58 00	M		10YR61 00	Y	0	0	0		P		Y	Plastic
23	0-25	mc1	10YR42 00	10YR56 00	C			Y	1	0	HR	3				Less Sand
	25-50	c	10YR53 63	10YR58 00	M		00MN00 00	Y	0	0	0		P		Y	Firm Moist
24	0-28	mc1	10YR42 00	75YR46 00	C			Y	0	0	HR	2				+FineS
	28-39	hc1	25 Y52 00	10YR58 00	C		25 Y71 00	Y	0	0	HR	2		M		
	39-80	c	10YR61 00	75YR58 00	M			Y	0	0	0		P		Y	Plastic
25	0-28	mc1	10YR42 00	10YR56 00	C			Y	0	0	HR	2				+FineS
	28-55	mc1	10YR53 00	10YR58 00	C		00MN00 00	Y	0	0	0		M			
	55-80	c	10YR53 63	10YR58 00	M		00MN00 00	Y	0	0	0		P		Y	+FineS Firm Moist
27	0-20	fsz1	10YR33 00						0	0	HR	2				+FineS PSD
	20-30	mc1	10YR42 52	10YR58 00	C		00MN00 00	Y	0	0	HR	8		M		+FineS
	30-50	mc1	10YR53 00	10YR58 00	C			Y	0	0	HR	5		M		Friable Imp
28	0-30	fsz1	10YR52 53	10YR58 00	C		00MN00 00	Y	0	0	0					
	30-60	mc1	10YR53 00	10YR58 00	C			Y	0	0	0		M			+FineS
	60-120	hc1	10YR53 00	10YR58 00	C			Y	0	0	0		M			A lot FS Moist
29	0-32	fsz1	10YR42 00	10YR58 00	C			Y	0	0	HR	5				
	32-45	mc1	10YR53 00	10YR58 00	C		00MN00 00	Y	0	0	HR	5		M		
	45-55	hc1	10YR53 00	10YR58 00	M		00MN00 00	Y	0	0	HR	15		M		Imp Stony
30	0-28	fsz1	10YR52 00	10YR58 00	M			Y	3	0	HR	8				+FineS
	28-45	mc1	25 Y63 00	10YR58 00	C			Y	0	0	HR	5		M		+MediumS
	45-62	hc1	25 Y62 63	10YR58 00	M		00MN00 00	Y	0	0	HR	6		M		+MediumS
	62-120	c	25 Y62 00	10YR58 00	M		00MN00 00	Y	0	0	HR	6		P		Y
31	0-30	mc1	10YR42 00	75YR46 00	C			Y	0	0	HR	3				Less Sand
	30-38	hc1	25 Y52 00	10YR58 00	C		00MN00 00	Y	0	0	HR	2		M		
	38-70	c	10YR62 00	75YR68 00	M			Y	0	0	0		P		Y	Plastic
32	0-30	mc1	10YR42 00	10YR56 00	C			Y	4	1	HR	8				Less Sand
	30-60	c	10YR63 00	10YR58 00	M		00MN00 00	Y	0	0	0		P		Y	Thick Moist
33	0-30	fs1	10YR42 00						4	0	HR	10				
	30-40	mc1	10YR43 00						0	0	HR	20		M		+FineS Imp
34	0-25	fsz1	10YR52 53	10YR58 00	C		00MN00 00	Y	1	0	HR	3				+FineS
	25-50	sc1	10YR53 00	10YR58 00	C		00MN00 00	Y	0	0	0		M			
	50-70	sc1	10YR63 53	10YR58 00	C			Y	0	0	0		M			Imp Gravelly

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED COL.	----STONES-----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLEY >2	>6	LITH TOT		STR	POR	IMP	SPL	CALC	
36	0-30	mc1	10YR33 00					7	0	HR	12						Less Sand
	30-40	mc1	10YR44 00					0	0	HR	15	M					Heavier than TS
37	0-25	fsz1	25 Y53 52	75YR58	00	M		Y	0	0	0						
	25-55	hc1	25 Y51 52	75YR58	00	M		Y	0	0	0	M					
	55-80	c	10YR52 00	10YR58	00	M		Y	0	0	0	P		Y			Moist