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A1
Hart District Replacement Local Plan
Site 1001: Mill Corner
Agricultural Land Classification
September 1996

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Resource Planning Team
Guildford Statutory Group
ADAS Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

HART DISTRICT REPLACEMENT LOCAL PLAN
SITE 1001: MILL CORNER.

Introduction

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of approximately 12 hectares of land at Mill Corner, to the north of Mill Lane, North Warnborough, in the Hart District of Hampshire. The survey was carried out during October 1996.

2. The work was commissioned by the Ministry of Agriculture, Fisheries and Food (MAFF) from its Land Use Planning Unit in Reading, in connection with MAFF's statutory input to the Hart District Replacement Local Plan. This survey supersedes any previous ALC information for this land.

3. The current work was conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.

4. At the time of survey, all of the agricultural land on this site was under maize stubble. The area shown as Other Land comprises residential buildings.

Summary

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10,000. It is accurate at this scale, but any enlargement would be misleading.

6. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1 below.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% Total site area	% Surveyed Area
2	4.4	36.4	37.3
3a	7.4	61.1	62.7
Other land	0.3	2.5	-
Total surveyed area	11.8	97.5	100.0
Total site area	12.1	100.0	-

7. The fieldwork was conducted at an average density of 1 boring per hectare. A total of 13 borings and 3 soil pits were described.

8. The agricultural land on this site comprises mainly Subgrade 3a land (good quality) with some Grade 2 (very good quality) in the north west. In general, the soil profiles comprise very slightly flinty, medium clay loam topsoils over increasingly stony but moderately well structured, medium or heavy clay loam subsoils. All of the profiles became impenetrable to the soil auger at moderate depths. Two soil inspection pits showed that the soil resource continues, with a moderate to high stone content, to at least 70-75cm depth before these also became impenetrable. It is assumed that the resource continues deeper but that the dry conditions at the time of survey (end of October) prevented further investigation. Depending on the stone content present through the profile, this land has therefore been graded as Subgrade 3a or Grade 2 due to soil droughtiness.

Factors Influencing ALC Grade

Climate

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

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

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	SU 729 523
Altitude	m, AOD	75
Accumulated Temperature	day°C (Jan-June)	1446
Average Annual Rainfall	mm	726
Field Capacity Days	days	156
Moisture Deficit, Wheat	mm	107
Moisture Deficit, Potatoes	mm	99

11. 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.

12. 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 (ATO, January to June), as a measure of the relative warmth of a locality.

13. The combination of rainfall and temperature at this site mean that there is no overall climatic limitation (Climatic Grade 1). However, climatic factors do interact with soil properties to influence soil wetness and droughtiness.

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

Site

15. The land on this site is relatively flat. The site lies at an altitude of 75m AOD. Neither gradient or microrelief affect agricultural land quality on this site.

16. Local site factors such as flooding, are unlikely to affect land quality at this site.

Geology and soils

17. The relevant geological sheet (BGS, 1978) maps the site as London Clay with a drift cover of low level terrace deposits (formerly classed as valley gravels).

18. The most recently published soils information for this area (SSEW, 1983) maps the whole site as Hurst soil association These soils are described as 'coarse and fine loamy permeable soils mainly over gravel variably affected by groundwater.' (SSEW, 1983).

19. Detailed field survey revealed similar soils to those described above as the Hurst soil association, although profiles consisted of clay loams rather than sandy loams.

Agricultural Land Classification

20. 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.

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

Grade 2

22. Approximately 40% of the site is classified as Grade 2; in the northern half of the site. The land is restricted by a minor soil droughtiness limitation and occasional soil wetness limitations. The profiles comprise slightly stony (3-5% total flints, 1-3% >2cm) medium clay loam or fine sandy silt loam topsoils over very slightly to moderately stony (3-27% total flints) medium or heavy clay loam subsoils. The subsoils of these profiles are gleyed from 32-45cm depth, but are not slowly permeable. In this local climatic regime the land has therefore been classified as Wetness Class I or II, which in combination with the topsoil textures places the soils in Wetness Grade 1 or 2. The principal limitation is however soil droughtiness as the combinations of soil textures and stone contents slightly limit the amount of available water for crop roots causing reduced crop yields.

Subgrade 3a

23. Approximately 60% of this site is classified as Subgrade 3a land where the land is restricted by a slight soil droughtiness limitation. The profiles comprise very slightly to moderately stony (5-18% total flints, 3-12% >2cm) medium clay loam topsoils over very slightly to very stony (5-43% total flints) medium or heavy clay loam and clay subsoils. Some of the profiles are gleyed from 30-45cm depth, but they are moderately well structured throughout. Within this climatic regime these soils have also been assigned to Wetness Class I or II depending on the depth to

gleying. Combined with the topsoil texture the land is classified as Wetness Grade 1 or 2. However, soil droughtiness limits this land to Subgrade 3a as the high stone contents and combination of soil textures restrict the amount of available water to crops. This reduces the yield and range of arable crops able to be grown on this land. Occasional profiles are also equally limited by a topsoil stoniness restriction, where >10% large flints (>2cm) cause increased wear to tyres and damage farm machinery.

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SOURCES OF REFERENCE

British Geological Survey (1978) *Sheet No. 284, Basingstoke.* 1:50,000 Series. Solid & Drift. BGS: London.

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

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

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

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

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 WETNESS CLASSIFICATION

Definitions of Soil Wetness Classes

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

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

Assessment of Wetness Class

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

[1] The number of days is not necessarily a continuous period.
[2] 'In most years' is defined as more than 10 out of 20 years.

APPENDIX III

SOIL DATA

Contents:

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

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

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

degree of development	**WK**: weakly developed **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

SOIL PIT DESCRIPTION

Site Name : HART DRLP,1001 MILL CORN Pit Number : 1P

Grid Reference: SU73005230 Average Annual Rainfall : 726 mm
Accumulated Temperature : 1446 degree days
Field Capacity Level : 156 days
Land Use :
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 32	MCL	10YR42 00	3	5	HR					
32- 40	MCL	10YR43 00	0	34	HR				M	
40- 70	MCL	10YR53 00	0	43	HR				M	

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

Drought Grade : 3B APW : 85 mm MBW : -22 mm
APP : 92 mm MBP : -7 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : HART DRLP,1001 MILL CORN Pit Number : 2P

Grid Reference: SU72805230 Average Annual Rainfall : 726 mm
Accumulated Temperature : 1446 degree days
Field Capacity Level : 156 days
Land Use :
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	MCL	10YR43 53	1	3	HR					
30- 43	MCL	25 Y53 00	0	5	HR				M	Y
43- 75	HCL	25 Y54 00	0	27	HR	C			M	Y

Wetness Grade : 1 Wetness Class : I
Gleying :043 cm
SPL : No SPL

Drought Grade : 3A APW : 99 mm MBW : -8 mm
APP : 105mm MBP : 6 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : HART DRLP,1001 MILL CORN Pit Number : 3P

Grid Reference: SU72705240 Average Annual Rainfall : 726 mm
Accumulated Temperature : 1446 degree days
Field Capacity Level : 156 days
Land Use :
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 35	MCL	10YR52 00	1	3	HR					
35- 60	HCL	25Y 52 71	0	3	HR	M	MDCSAB	FR	M	

Wetness Grade : 2 Wetness Class : II
Gleying :035 cm
SPL : No SPL

Drought Grade : 3A APW : 94 mm MBW : -13 mm
APP : 100mm MBP : 1 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Droughtiness

SAMPLE NO.	GRID REF	ASPECT USE	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EXP	EROSN DIST	FROST LIMIT	CHEM	ALC	COMMENTS
1	SU72805250	STB		042		1	1	99	-8	109	10	3A				DR		2	I68 See 2P
1P	SU73005230	STB				1	1	85	-22	92	-7	3B				DR		3A	Q enough AP:3A
2	SU72705240	STB		035		2	2	96	-11	103	4	3A				WD		2	I62 See 3P
2P	SU72805230	STB		043		1	1	99	-8	105	6	3A				DR		2	Q enough AP:2
3	SU72805240	STB		032		2	1	119	12	121	22	2				DR		2	I80 See 2P
3P	SU72705240	STB		035		2	2	94	-13	100	1	3A				WD		2	At Boring 2
4	SU72905240	STB		030		2	2	63	-44	63	-36	3B				DR		3A	I40 See 1P
5	SU73005240	STB				1	1	66	-41	66	-33	3B				DR		3A	I40 See 1P
6	SU72705230	STB				1	1	63	-44	63	-36	3B				DR		3A	I40 See 1P
7	SU72805230	STB		045		1	1	82	-25	82	-17	3B				DR		2	I50 See 2P
8	SU72905230	STB		032		2	2	67	-40	67	-32	3B				DR		3A	I42 See 1p
9	SU73005230	STB				1	1	64	-43	64	-35	3B				DR		3A	I40 See 1P
10	SU73105230	STB				1	1	65	-42	65	-34	3B				DR		3A	I40 See 1P
11	SU72805220	STB		030		2	2	81	-26	81	-18	3B				DR		3A	I50 See 1P
12	SU72905220	STB		035		2	2	70	-37	70	-29	3B				DR		3A	I45 See 1P
13	SU73005220	STB				1	1	59	-48	59	-40	3B				ST		3A	I40 See 1P

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	0-30	mcl	25Y 52 00						1	0	HR	3							
	30-42	mcl	25Y 64 00						0	0	HR	8		M					
	42-55	hcl	25Y 63 72	10YR58 00	C			Y	0	0	HR	8		M					
	55-68	hcl	25Y 62 00	10YR58 00	M			Y	0	0	HR	8		M					Imp Flinty
1P	0-32	mcl	10YR42 00						3	0	HR	5							At Boring 9
	32-40	mcl	10YR43 00						0	0	HR	34		M					
	40-70	mcl	10YR53 00						0	0	HR	43		M					Assume cont's 120
2	0-35	mcl	10YR52 00						1	0	HR	3							
	35-62	hcl	25Y 62 71	75YR58 00	M		00MN00 00	Y	0	0	HR	3		M					Imp Flinty/Dry
2P	0-30	mcl	10YR43 53						1	0	HR	3							At Boring 7
	30-43	mcl	25 Y53 00						0	0	HR	5		M				Y	
	43-75	hcl	25 Y54 00	75YR58 00	C			Y	0	0	HR	27		M				Y	Assume cont's 120
3	0-32	fszl	10YR52 00						3	0	HR	5							
	32-50	mcl	10YR64 00	75YR58 00	C		00MN00 00	Y	0	0	HR	10		M					
	50-80	hcl	25Y 72 63	75YR58 00	M		00MN00 00	Y	0	0	HR	15		M					Imp Hard/Flinty
3P	0-35	mcl	10YR52 00						1	0	HR	3							
	35-60	hcl	25Y 52 71	75YR58 00	M			Y	0	0	HR	3	MDCSAB FR	M					Assume to 120
4	0-30	mcl	10YR42 00						8	0	HR	10							
	30-40	mcl	10YR53 00	75YR58 00	C			Y	0	0	HR	15		M					Imp Flinty
5	0-30	mcl	10YR34 00						3	0	HR	5							
	30-40	mcl	10YR44 00						0	0	HR	10		M					Imp Flinty
6	0-30	mcl	10YR42 00						8	0	HR	10							
	30-40	mcl	10YR64 00						0	0	HR	15		M					Imp Flinty
7	0-30	mcl	10YR42 00						2	0	HR	4							
	30-45	mcl	10YR64 00						0	0	HR	8		M					
	45-50	hcl	25Y 73 00	10YR58 00	C			Y	0	0	HR	8		M					Imp Flinty/Dry
8	0-32	mcl	10YR42 00						8	0	HR	10							
	32-42	c	10YR53 00	75YR58 00	C			Y	0	0	HR	5		M					Imp Flinty
9	0-30	mcl	10YR42 00						3	0	HR	5							
	30-40	mcl	10YR43 53						0	0	HR	20		M					Imp Flinty
10	0-28	mcl	10YR32 00						3	0	HR	5							
	28-40	mcl	10YR42 00						0	0	HR	10		M					Imp Flinty
11	0-30	mcl	10YR34 00						5	0	HR	8							
	30-48	hcl	10YR63 00	10YR56 00	C			Y	0	0		0		M					
	48-50	hcl	10YR63 00	10YR56 00	C			Y	0	0	HR	15		M					Imp Flinty

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
12	0-35	mcl	10YR32 00						10	0	HR	12							
	35-45	hcl	25 Y53 00	10YR58 00	C			Y	0	0	HR	10		M					Imp Flinty
13	0-35	mcl	10YR32 00						12	0	HR	18							3A T/S Stone
	35-40	mcl	10YR43 00						0	0	HR	20		M					Imp Flinty