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Fareham Borough Local Plan
Site 4, Burridge and North of Whiteley
Agricultural Land Classification
March 1996

Resource Planning Team
Guildford Statutory Group
ADAS Reading

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AGRICULTURAL LAND CLASSIFICATION

FAREHAM BOROUGH LOCAL PLAN
SITE 4, BURRIDGE AND NORTH OF WHITELEY, FAREHAM, HAMPSHIRE

Introduction

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 17.3 ha of land situated to the east of the village of Burridge, about 4 km north west of Fareham. The survey was carried out in March 1996.

2. The survey was commissioned by the Ministry of Agriculture, Fisheries and Food (MAFF) from its Land Use Planning Unit in Reading, in connection with Fareham Borough Local Plan Review. This site was surveyed in 1977 and incorporated in a subsequent survey in 1980 (ADAS Ref 1513/013/80) when Subgrades 3a, 3b and 3c were mapped. This previous survey was carried out at a reconnaissance level of detail using technical guidelines which have since been superceded (MAFF, 1988). An area adjacent to the northern boundary of the current site was surveyed at a reconnaissance level in 1994, where predominately 3b land was mapped, with some Grade 2 land identified. Consequently a new detailed survey was undertaken; the current survey supersedes all previous ALC surveys on this land.

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

4. At the time of survey 13.7 ha was under grassland, although most of this area appears to have a low management input at present. 2.8 ha was mapped as Other land, occupied by residential properties, woodland, a scrap yard or having areas of hard standings or made roads. 0.8 ha of agricultural land was not surveyed as permission for access onto the land had not been confirmed.

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 areas 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	% Total site area
3a	4.7	34.3	27.2
3b	9.0	65.7	52.0
Other land	2.8	-	16.2
Agricultural land not surveyed	0.8	-	4.6
Total surveyed area	13.7	100.0	79.2
Total site area	17.3	-	100.0

7. The fieldwork was conducted at an average density of 1.1 borings per hectare. Supplementary borings were placed where necessary. On this site a total of 15 borings and 2 soil pits were described.

8. Subgrade 3a (good quality) land is mapped in the north and centre of the site. Soils have very slightly stony sandy loam topsoils over stoneless, similar or lighter textured upper and lower subsoils, passing to slowly permeable clay in some areas. Land quality is limited by a combination of soil droughtiness and wetness, with droughtiness being the primary limitation. Soil droughtiness is a measure of the restrictions on the potential yield or on the flexibility of the land to grow a range of crops, imposed by a shortfall of available water in the profile during the drier months of the year. It is directly related to the climate of the area, and to the water holding characteristics of the profile, mainly soil texture and stone content.

9. Subgrade 3b (moderate quality) land is mapped in the south, east and west of the site. Soils have medium clay loam topsoils, overlying slowly permeable clay subsoils, occasionally having heavy clay loam upper subsoils. Generally, soils with slowly permeable subsoils are difficult to work with machinery during the wetter months of the year and the yield potential and choice of crops grown are limited by poor drainage. Seasonal waterlogging reduces the number of days on which the land can be grazed without the risk of poaching, and root development is restricted by prolonged wet conditions.

10. The remaining areas are mapped as Other land comprised of woodland, derelict hardstandings, residential properties and a scrap yard, or agricultural land which was not surveyed. The central fields tending east to west appear to be used as a type of airfield, possibly for microlite aircraft as suggested by a mown area and a wind sock.

Factors Influencing ALC Grade

Climate

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

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

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	SU 520 103
Altitude	m, AOD	25
Accumulated Temperature (>0°C Jan-June)	day°C	1527
Average Annual Rainfall	mm	811
Field Capacity Days	days	166
Moisture Deficit, Wheat	mm	112
Moisture Deficit, Potatoes	mm	107

13. 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.

14. 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.

15. The combination of rainfall and temperature on this site mean that there is no limitation on grade due to climate. Neither exposure nor frost are considered to be a potential limitation, and this site is climatically Grade 1.

Site

16. The site is bounded on the north by Whiteley Lane and in the west by residential properties and by Botley Road. The southern boundary lies adjacent to residential properties and to vacant land owned by a property developer in the south east. The west of the site borders woodland and agricultural land.

17. Altitude (above Ordnance Datum in each case) ranges from 32 m in the west to 14 m in the east with land being level to gently sloping in the south west with gradients increasing towards the east.

18. The drainage of the site is impeded locally in the level areas in the west and south west over the slowly permeable soils and where lighter textured soils overlie the clay in the east of the site.

Geology and soils

19. The most detailed published geological information (BGS, 1971: Sheet 316, Fareham and BGS, 1973: Sheet 315, Southampton), shows the site to be underlain by a solid geology of London Clay over approximately 60% of the site, in the north east, south west and west. The east and south east are mapped as Reading Beds. No drift cover (greater than one metre thickness) is mapped.

20. The most detailed published soils information (SSEW, 1983), records the whole area as having soils corresponding to the Wickham 4 association. Wickham 4 soils are 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, 1984).

21. A Survey of the Soils of the Strawberry District of South Hampshire (FF Kay 1939) maps two soil types in this area, the most extensive being the gley soils of the Swanmore series. Swanmore soils are formed on Reading beds and London Clay and are described as medium clay loams over clay loams over clay This corresponds to the soils with shallow slowly permeable subsoils described in this report.

22. Across the centre of the site from the north east to the centre, soils of the Shedfield series are mapped by Kay. These soils are derived in this area from the sands of the Reading Beds and are described as stoneless sandy profiles. As with the Swanmore soils, this mapping unit accords well with the soils found in the survey.

Agricultural Land Classification

23. 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.

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

Subgrade 3a

25. Subgrade 3a (good quality) land is mapped from the centre of the site to the northern boundary, including the northern part of the site. Soils in this mapping unit can be described as falling into two types, with different factors limiting the grade.

Type 1.

26. Soils in the north of the site and in the centre-south have stoneless or very slightly stony profiles with sandy loam topsoils and similar or loamy sand upper subsoils. These pass to similar lower subsoils over clay, which can be slowly permeable in places but in others it is discontinuous and can be mixed with sandy horizons to give a sandy clay loam. Sandy horizons can occur beneath the clay. Gleying commonly occurs below 40 cm depth. These profiles are well to imperfectly drained (Wetness Class I or II) and are primarily limited by droughtiness, or jointly by wetness and droughtiness to Subgrade 3a or Grade 2 on an individual boring basis.

Type 2.

27. Soils in the centre of the site form a transition between the sandy profiles and the shallow clay of the remaining area. Soils are slightly heavier than those of Type 1, with sandy loam and clay loam horizons, and slowly permeable horizons occur at 60 to 70 cm depth, which restrict profile drainage slightly. Soils are gleyed within 40 cm depth and are imperfectly drained, falling into Wetness Class III. This land is graded 3a or 2 depending on topsoil texture. The characteristic horizons of these soils were examined in two inspection pits.

Subgrade 3b

28. Soils over the remaining area of the site have gleyed medium clay loam topsoils overlying slowly permeable clay subsoils at shallow depths of 30 to 40 cm. Upper subsoils occur in some areas, but are always above slowly permeable horizons. These soils are poorly drained, falling into Wetness Class IV. Soil inspection pit number 2 confirms that the clay is slowly permeable.

29. Surface water was observed at the time of survey and the southernmost field was badly poached. Seepage is evident where the permeable soils in the centre of the site overlie slowly permeable clay, resulting in wet areas at the foot of the slope in the east of the site. Isolated flushes occur in a mid-slope position and some of these areas appear to have had topsoil removed, but are too small to be mapped separately.

30. The farm buildings mapped on the OS map at Sweethills Farm no linger exist and have been removed. The soils in this area have undergone some disturbance but cover a small area which would not be mapped separately at this scale and is suitably included in Subgrade 3b.

Haidee Bishop
Resource Planning Team
ADAS Reading

SOURCES OF REFERENCE

F.F. Kay (1939) *A Survey of the Soils of the Strawberry District of South Hampshire.*

British Geological Survey (1971) *Sheet No.316, Fareham;*
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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, Bulletin No. 15*
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 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 dolimitic limestone
CH:	chalk	**FSST**:	soft, fine grained sandstone
ZR:	soft, argillaceous, or silty rocks	**GH**:	gravel with non-porous (hard) stones
MSST:	soft, medium grained sandstone	**GS**:	gravel with porous (soft) stones
SI:	soft weathered igneous/metamorphic rock		

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

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

degree of development	**WK**: weakly developed **ST**: strongly developed	**MD**: moderately developed
ped size	**F**: fine **C**: coarse	**M**: medium **VC**: very coarse
ped shape	**S** : single grain **GR**: granular **SAB**: sub-angular blocky **PL**: platy	**M**: massive **AB**: angular blocky **PR**: prismatic

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

L: loose **VF**: very friable **FR**: friable **FM**: firm **VM**: very firm
EM: extremely firm **EH**: extremely hard

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

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

12. **IMP**: If the profile is impenetrable to rooting a 'Y' will appear in this column at the 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 : FAREHM LP BURRIDG & NWHI Pit Number : 1P

Grid Reference: SU52051020 Average Annual Rainfall : 811 mm
Accumulated Temperature : 1527 degree days
Field Capacity Level : 166 days
Land Use : Permanent Grass
Slope and Aspect : 03 degrees E

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 25	MSL	10YR42 00	2	2	HR	F		FR		
25- 55	MSL	10YR62 00	0	0		C	MDCAB	FR	M	
55- 75	SCL	10YR62 00	0	0		M	MDCSAB	FR	G	
75-120	MSL	10YR62 00	0	0		M			M	

Wetness Grade : 1 Wetness Class : II
Gleying :025 cm
SPL : No SPL

Drought Grade : 2 APW : 162mm MBW : 50 mm
APP : 115mm MBP : 8 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : FAREHM LP BURRIDG & NWHI Pit Number : 2P

Grid Reference: SU52101050
Average Annual Rainfall : 811 mm
Accumulated Temperature : 1527 degree days
Field Capacity Level : 166 days
Land Use : Permanent Grass
Slope and Aspect : 01 degrees E

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	MSL	10YR42 00	1	1	HR					
30- 40	MSL	10YR64 00	0	0		F	MDCSAB	FR	M	
40- 80	LMS	10YR64 00	0	0		F	MDCAB	FR	G	
80-100	C	10YR71 00	0	0		M	WKCPR	FM	P	
100-120	MSL	10YR64 00	0	0		C			M	

Wetness Grade : 1
Wetness Class : II
Gleying :080 cm
SPL :080 cm

Drought Grade : 3A
APW : 133mm MBW : 21 mm
APP : 094mm MBP : -13 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	DRT	M.REL FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SU52101050	PGR	N	01	075	075	2	1	110	-2	087	-20	3A				DR	3A	SEE 2P
1P	SU52051020	PGR	E	03	025		2	1	162	50	115	8	2				DR	2	
2	SU52001040	PGR			0	030	4	3B	128	16	105	-2	2				WE	3B	SEE 1P
2P	SU52101050	PGR	E	01	080	080	2	1	133	21	094	-13	3A				DR	3A	
3	SU52101040	PGR			040		2	1	124	12	079	-28	3A				DR	3A	SEE 2P
4	SU52201040	PGR	E	02	010	060	3	2	131	19	106	-1	2				WD	2	SEE 2P
6	SU51901030	PGR			0	040	4	3B		0		0					WE	3B	SEE 1P
7	SU52001030	PGR			030	030	4	3B		0		0					WE	3B	IMP 90, SEE 1P
8	SU52101030	PGR	E	03	030	070	3	3A	120	8	112	5	2				WE	3A	SEE 1P
9	SU51801020	PGR			0	030	4	3B		0		0					WE	3B	SEE 1P
10	SU51901020	PGR			0	040	4	3B		0		0					WE	3B	SEE 1P
11	SU52001020	PGR	E	02	030		2	2	154	42	117	10	1				WD	2	
12	SU52101020	PGR	E	03	025	070	3	2	135	23	110	3	2				WD	2	SEE 1P
13	SU52201020	PGR	E	02	030	045	4	3B		0		0					WE	3B	SEE 1P
14	SU52301020	PGR			0	030	4	3B		0		0					WE	3B	SEE 1P
15	SU51801010	PGR	E	01	0	045	4	3B		0		0					WE	3B	SEE 1P
16	SU51901010	PGR	E	01	0	030	4	3B		0		0					WE	3B	SEE 1P

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
1	0-30	msl	10YR43 00						1	0	HR	1							SEE 2P
	30-40	msl	10YR53 00	10YR68 00	F				0	0	HR	1		M					
	40-75	lms	10YR66 00						0	0		0		G					
	75-100	c	10YR64 00	10YR68 71	C			Y	0	0		0		P			Y		
	100-120	ms	10YR58 00	10YR58	C			Y	0	0		0		M					
1P	0-25	msl	10YR42 00	10YR46 00	F				2	0	HR	2		FR					BETW B 12 & 11
	25-55	msl	10YR62 00	10YR58 00	C			Y	0	0		0	MDCAB	FR	M				
	55-75	scl	10YR62 00	10YR68 00	M			Y	0	0		0	MDCSAB	FR	G				V FRIABLE
	75-120	msl	10YR62 00	10YR68 00	M			Y	0	0		0		M					
2	0-30	mcl	10YR53 00	10YR56 00	C			Y	1	0	HR	1							SEE 1P
	30-120	c	10YR72 00	10YR68 00	M			Y	0	0		0		P			Y		
2P	0-30	msl	10YR42 00						1	0	HR	1							
	30-40	msl	10YR64 00	10YR68 00	F				0	0		0	MDCSAB	FR	M				
	40-80	lms	10YR64 00	10YR68 00	F				0	0		0	MDCAB	FR	G				V FRIABLE
	80-100	c	10YR71 00	10YR68 00	M			Y	0	0		0	WKCPR	FM	P		Y		
	100-120	msl	10YR64 00	10YR68 00	C			Y	0	0		0		M			Y		
3	0-30	msl	10YR43 00						1	0	HR	1							SEE 2P
	30-40	lms	10YR54 00						0	0	HR	1		G					
	40-70	lms	10YR64 00	10YR68 00	C			Y	0	0	HR	1		G					
	70-90	scl	10YR64 00	10YR63 58	C			Y	0	0		0		G					
	90-120	scl	10YR64 00	10YR63 58	C			Y	0	0		0		G					
4	0-10	fsl	10YR42 00						1	0	HR	1							SEE 2P
	10-30	msl	10YR62 00	10YR61 58	C			Y	0	0		0		M					
	30-60	msl	10YR63 00	10YR71 68	C			Y	0	0		0		M					
	60-120	c	10YR72 00	10YR58 00	M			Y	0	0		0		P			Y		
6	0-30	mcl	10YR42 00	10YR46 00	C			Y	1	0	HR	1							SEE 1P
	30-40	hcl	10YR53 00	10YR46 00	C			Y	0	0	HR	1		M					
	40-80	c	25 Y72 00	75YR58 00	M			Y	0	0		0		P			Y		
7	0-30	mcl	10YR42 00	10YR44 00	F				1	0	HR	1							SEE 1P
	30-90	c	25 Y72 00	75YR58 00	M			Y	0	0	HR	1		P			Y		
8	0-30	scl	10YR42 00	10YR46 00	F				1	0	HR	1							SEE 1P
	30-60	scl	10YR63 00	10YR66 00	C			Y	0	0		0		G					
	60-70	c	25 Y72 00	10YR68 00	M			Y	0	0		0		P			Y		
	70-100	c	25 Y72 00	10YR68 00	M			Y	0	0		0		P			Y		
9	0-30	mzcl	10YR42 00	10YR46 00	C			Y	1	0	HR	1							SEE 1P
	30-70	c	10YR71 00	10YR68 00	M			Y	0	0		0		P			Y		
10	0-30	mcl	10YR41 00	10YR56 00	C			Y	1	0	HR	1							SEE 1P
	30-40	hcl	10YR53 00	10YR58 00	C			Y	0	0	HR	5		M					
	40-80	c	10YR72 00	10YR68 00	M			Y	0	0		0		P			Y		

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC
11	0-30	mcl	10YR42 00						0	0		0						
	30-40	mcl	10YR53 00	10YR58 00	C			Y	0	0		0		M				
	40-120	hcl	10YR62 00	10YR58 00	M		00MN00	Y	0	0	HR	2		M				
12	0-25	msl	10YR52 00	75YR56 00	F				0	0		0						SEE 1P
	25-50	scl	10YR63 00	10YR68 00	M			Y	0	0		0		G				
	50-70	scl	10YR63 00	10YR68 00	M			Y	0	0		0		G				
	70-120	c	10YR71 00	10YR68 00	M			Y	0	0		0		P		Y		
13	0-30	mcl	10YR52 00	10YR58 00	F				0	0		0						SEE 1P
	30-45	hcl	10YR61 00	10YR66 00	C			Y	0	0		0		M				
	45-70	c	10YR63 00	10YR68 00	M		00MN00	00 Y	0	0	HR	1		P		Y		
	70-120	c	10YR71 00	10YR68 00	M			Y	0	0	HR	2		P		Y		
14	0-30	hcl	10YR52 00	10YR58 00	C			Y	0	0		0						SEE 1P
	30-70	c	10YR71 00	10YR68 00	M			Y	0	0	HR	2		P		Y		
15	0-20	mzcl	10YR52 00	10YR56 00	C			Y	2	0	HR	2						SEE 1P
	20-45	c	10YR64 00	10YR68 00	C			Y	0	0	HR	30		M				
	45-100	c	10YR71 00	10YR68 00	M			Y	0	0		0		P		Y		
16	0-20	mzcl	10YR52 00	10YR56 00	C			Y	0	0		0						SEE 1P
	20-30	mcl	10YR63 00	10YR58 00	C			Y	0	0	HR	7		M				
	30-70	c	10YR71 00	10YR68 00	M			Y	0	0	HR	2		P		Y		