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East Hampshire Local Plan
Site 1172: Land At Tilmore Road,
North of Petersfield.
Agricultural Land Classification,
ALC Map and Report.
March 1995

AGRICULTURAL LAND CLASSIFICATION REPORT

EAST HAMPSHIRE LOCAL PLAN

SITE 1172: LAND AT TILMORE ROAD, NORTH OF PETERSFIELD.

1. Summary

- 1.1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land quality for a number of sites in the East Hampshire District. The work forms part of MAFF's statutory input to the preparation of the East Hampshire Local Plan.
- 1.2 The site comprises 10.6 hectares of land to the north of Petersfield in Hampshire. An Agricultural Land Classification (ALC) survey was carried out during February 1995. The survey was undertaken at a detailed level of approximately one boring per hectare of agricultural land surveyed. A total of 10 borings and two soil inspection pits were described in accordance with MAFF's revised guidelines and criteria for grading the quality of agricultural land (MAFF, 1988). These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose a long term limitation on its use for agriculture.
- 1.4 At the time of the survey the agricultural land was under permanent grass to the south and west of the site and a turnip fodder crop being grazed by cattle to the north and east. The urban area shown is a drainage catchment basin collecting water from the recently completed A3 Petersfield by-pass bordering the site to the north. It is surrounded by newly planted trees shown as woodland which extends along the boundary of the site to act as a screen. The drainage water then flows through the site in open drains feeding into Tilmore Brook. The area of non-agricultural land to the south east of the site is scrub and an enlarged field entrance.
- 1.5 The distribution of grades and subgrades is shown on the attached ALC map and the areas and extent are given in the table below. The map has been drawn at a scale of 1:10,000. It is accurate at this scale, but any enlargement would be misleading. Part of the site was previously surveyed by ADAS in 1984 in connection with the Petersfield by-pass (Ref: 1502/29/84). This recent survey supersedes the 1984 work which was undertaken prior to the ALC revision in 1988

Table 1: Distribution of Grades and Subgrades

Grade	Area (ha)	% of Site	% of Agricultural Land
3a	6.1	57.6	61.6
3b	2.1	19.8	21.2
4	1.7	16.0	<u>17.2</u>
Urban	<0.1	0.5	100.0 (9.9ha)
Non-Agricultural	<0.1	0.4	
Woodland	<u>0.6</u>	<u>5.7</u>	
Total area of site	10.6ha	100.0	

- 1.6 Appendix I gives a general description of the grades, subgrades and land use categories identified in the survey. The main classes are described in terms of the type of limitation that can occur, the typical cropping range and the expected level and consistency of yield.
- 1.7 The land at this site has been classified as good quality (Subgrade 3a) to poor quality (Grade 4) including a substantial proportion of moderate quality (Subgrade 3b) land. The land has been classified principally on the basis of soil wetness limitations, although locally slope influences land quality. Where land is of good quality (Subgrade 3a), the majority of soils comprise permeable coarse loamy upper horizons over heavier lower horizons. Towards the western boundary however, the soils have a higher clay content. These soils are permeable, but they are affected by fluctuating groundwater giving rise to a slight to moderate wetness limitation in the moist climate regime of the Petersfield area. Where Subgrade 3b has been assigned, land quality is influenced by soil wetness and slope. Towards the south of the mapping unit poorly structured slowly permeable clay subsoils significantly impede drainage. Towards the north of the unit, gradients of 8.5° were measured using an optical reading clinometer, causing the safe and efficient use of certain types of farm machinery to be restricted. Land of poor quality (Grade 4) towards the south east of the site, is shown on the basis of a severe soil wetness limitation due to seepage from springs occurring at a geological boundary, leading to extremely wet conditions for much of the year. Soil wetness has the effect of restricting the opportunities for landwork and/or grazing by livestock.

2. Climate

- 2.1 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.
- 2.2 The main parameters used in the assessment of an overall climatic limitation are average annual rainfall, as a measure of overall wetness, and accumulated temperature, as a measure of the relative warmth of a locality.
- 2.3 A detailed assessment of the prevailing climate was made by interpolation from a 5km gridpoint dataset (Met. Office, 1989). The details are given in table 2 overleaf and these show that there is no overall climatic limitation affecting the site.
- 2.4 No local climatic factors such as exposure or frost risk are believed to affect the site. However, climatic and soil factors interact to influence soil wetness and droughtiness limitations.

3. Relief

- 3.1 The site lies between approximately 75 and 85m AOD. The central northern area of the site forms a ridge from which the land falls to the east and west. Towards the west and south of the site, the land levels into a shallow valley around Tilmore Brook. On the westerly facing slope of the ridge towards the north of the site and to the south of Steep House, slope gradient was sufficient to affect land quality.

Table 2: Climatic Interpolation

Grid Reference	SU744244	SU744246
Altitude, (m, AOD)	75	85
Accumulated Temperature (day degrees C., Jan.-June)	1458	1446
Average Annual Rainfall (mm)	953	957
Field Capacity Days	209	210
Moisture deficit, wheat (mm)	93	91
Moisture deficit, potatoes (mm)	83	81
Overall Climatic Grade	1	1

4. Geology and Soils

- 4.1 The published geological information (BGS, 1981), shows the majority of the site to be underlain by Folkestone Beds, with an area to the south east shown as Sandgate Beds. These are part of the Cretaceous Lower Greensand group of deposits.
- 4.2 The published soils information (SSEW, 1983), shows the site to be underlain by soils of the Fyfield 4 Association. The legend accompanying the map describes these as, 'deep well drained often stoneless sandy and coarse loamy soils. Some fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging and some slowly permeable seasonally waterlogged fine loamy over clayey soils. Risk of water erosion.' (SSEW, 1983). Soils of these broad types were encountered at this site.

5. Agricultural Land Classification

- 5.1 Paragraph 1.5 provides the details of the area measurements for each grade and the distribution of each grade is shown on the attached ALC map.
- 5.2 The location of the soil observation points are shown on the attached sample point map.

Subgrade 3a

- 5.3 Good quality land has been mapped over the majority of the site where soil properties and climatic factors combine to give rise to soil wetness limitations. Profiles typically comprise a stoneless to very slightly stony (0-3% v/v flints) fine or medium sandy loam, medium clay loam, occasionally fine sandy silt loam topsoil. This passes to a gleyed or slightly gleyed, very slightly stony upper subsoil horizon of similar textural groupings, which from the pit observations (1p and 2p, see Appendix III) was shown to have a moderate structural condition. These overlie further horizons which are gleyed and become progressively heavier (ie, sandy clay loam and heavy clay loam) to depth. The pit observation 2p shows these to be permeable with a moderate structural condition, such that it can be concluded that the gleying evident at shallow and moderate depths is caused by either deep (below sampling depth) slowly permeable horizons or by seasonal

groundwater fluctuations. The depth to gleying is sufficient in most cases to place these soils in Wetness Class II and III, which, at this location typically equates with Subgrade 3a or Grade 2. Soil wetness may affect crop growth and development, and cause restrictions on the timing of cultivations and/or grazing. Although some individual observations were of a slightly better quality, given the size of the site and the variation of these profiles, they have been included in this mapping unit.

Subgrade 3b

- 5.4 Moderate quality land is mapped in the centre of the site. Principal limitations include soil wetness and slope. Towards the west of this mapping unit the land is affected by soil wetness due to impeded drainage. Pit 1 is typical with soil profiles commonly comprising gleyed medium clay loam topsoils containing up to 2% total flints by volume, overlying a narrow stoneless gleyed moderately structured medium or heavy clay loam upper subsoil. This passes to a poorly structured gleyed and slowly permeable clay lower subsoil. The clay significantly impedes drainage and soils are assigned to Wetness Class IV, leading to Subgrade 3b given the local climate and topsoil texture.
- 5.5 Towards the north, centre and south east of the site, on the west and south facing slopes of the ridge around Steep House, slope gradient was a significant factor in land classification. Gradients in this area were measured, at approximately 8.5°. Slopes of this gradient are sufficient to compromise the safe and efficient operation of farm machinery, particularly for cultivation and harvesting, to the extent that Subgrade 3b is appropriate. It may also be that given the prevailing soil type erosion may occur.

Grade 4

- 5.6 Poor quality land is shown towards the extreme south of the site on the lowest lying land surrounding Tilmore Brook. The principal limitation in this area is soil wetness due to impeded soil drainage and an elevated groundwater level due to seepage. The observation in this area comprises a very slightly stony (2% v/v total flints) gleyed heavy clay loam topsoil passing directly to a deep poorly structured gleyed and slowly permeable clay similar to that found at the pit observation, 1p. The clay severely impedes drainage such that Wetness Class IV is applied. However given the prevailing climatic conditions and the low workability status of the heavy clay loam topsoil, this area is assigned to Grade 4 due to a very severe soil wetness limitation. This lower lying area of the site is also affected by seepage of groundwater at the junction of two geological deposits, leading to long periods of waterlogging, throughout the year. As such it will present severe difficulties in terms of cropping and cultivations and will be best suited to its current usage, seasonal grazing.

SOURCES OF REFERENCE

British Geological Survey (1975), Sheet 300, Alresford, Drift Edition. 1:50,000

MAFF (1988), Agricultural Land Classification of England and Wales : Revised guidelines and criteria for grading the quality of agricultural land.

Meteorological Office (1989), Climatic datasets for Agricultural Land Classification.

Soil Survey of England and Wales (1983), Sheet No. 6, Soils of South-East England, 1:250,000, and Accompanying Legend.

Soil Survey of England and Wales (1984), Bulletin No.15, Soils and their use in South-East England.

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 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.

Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Woodland

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm woodland.

Agricultural Buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (e.g. polythene tunnels erected for lambing) may be ignored.

Open Water

Includes lakes, ponds and rivers as map scale permits.

Land Not Surveyed

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above, e.g. buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will be shown.

APPENDIX II

DEFINITION OF SOIL WETNESS CLASS

Wetness Class I

The soil profile is not wet within 70 cm depth for more than 30 days in most years.

Wetness Class 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 180 days, but only wet within 40 cm depth for 31-90 days in most years.

Wetness Class 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.

Wetness Class 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.

Wetness Class V

The soil profile is wet within 40 cm depth for 211-335 days in most years.

Wetness Class VI

The soil profile is wet within 40 cm depth for more than 335 days in most years.

APPENDIX III

SOIL PIT AND SOIL BORING DESCRIPTIONS

Contents :

- Sample Point Map
- Soil Abbreviations - explanatory note
- Database Printout - soil pit information
- Database Printout - boring level information
- Database Printout - horizon level information

SOIL PROFILE DESCRIPTIONS : EXPLANATORY NOTE

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

Boring Header Information

1. **GRID REF** : national 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 measured by a hand-held optical clinometer.
4. **GLEYSPL** : Depth in cm to gleying or slowly permeable layers.
5. **AP (WHEAT/POTS)** : Crop-adjusted available water capacity.
6. **MB (WHEAT/POTS)** : Moisture Balance.
7. **DRT** : Best grade according to soil droughtiness.
8. If any of the following factors are considered significant, an entry of 'Y' will be entered in the relevant column.

MREL : Microrelief limitation **FLOOD** : Flood risk **EROSN** : Soil erosion risk
EXP : Exposure limitation **FROST** : Frost **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 ST : Topsoil Stones
CH : Chemical	WE : Wetness	WK : Workability
DR : Drought	ER : Erosion Risk	WD : Soil Wetness/Droughtiness

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	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 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
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

6. **STONE LITH** : 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	GH : gravel with non-porous (hard) stones
SI : soft weathered igneous/metamorphic rock	

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

7. **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 **VC** : very coarse

ped shape **S** : single grain **M** : massive **GR** : granular **AB** : angular blocky

SAB : sub-angular blocky **PR** : prismatic **PL** : platy

8. **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

9. **SUBS STR** : Subsoil structural condition recorded for the purpose of calculating profile droughtiness : **G** : good **M** : moderate **P** : poor
10. **POR** : Soil porosity. If a soil horizon has less than 0.5% biopores >0.5 mm, a 'Y' will appear in this column.
11. **IMP** : If the profile is impenetrable a 'Y' will appear in this column at the appropriate horizon.
12. **SPL** : Slowly permeable layer. If the soil horizon is slowly permeable a 'Y' will appear in this column.
13. **CALC** : If the soil horizon is calcareous, a 'Y' will appear in this column.
14. 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 : E HANTS LP SITE 1172 Pit Number : 1P

Grid Reference: SU74312459 Average Annual Rainfall : 956 mm
 Accumulated Temperature : 1452 degree days
 Field Capacity Level : 209 days
 Land Use : Permanent Grass
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 18	MCL	10YR41 00	0	2	HR	C				
18- 35	MCL	05Y 41 00	0	0		C	MDCSAB	FR	M	
35- 80	C	05Y 51 00	0	2	HR	M	MDCAB	FM	P	

Wetness Grade : 3B Wetness Class : IV
 Gleying : 0 cm
 SPL : 35 cm

Drought Grade : 2 APW : 99 mm MBW : 7 mm
 APP : 104mm MBP : 22 mm

FINAL ALC GRADE : 3B
 MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : E HANTS LP SITE 1172 Pit Number : 2P

Grid Reference: SU74302460 Average Annual Rainfall : 956 mm
 Accumulated Temperature : 1452 degree days
 Field Capacity Level : 209 days
 Land Use :
 Slope and Aspect : 01 degrees SW

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 28	MSL	10YR42 00	0	3	HR					
28- 47	MSL	10YR44 54	0	0		C	MDCAB	FR	M	
47- 66	MSL	10YR52 53	0	0		C	MDCSAB	FR	M	
66- 73	SCL	25Y 53 00	0	0		M	MDCSAB	FR	M	
73- 90	HCL	25Y 52 63	0	0		M	MDCSAB	FR	M	

Wetness Grade : 2 Wetness Class : II
 Gleying : 47 cm
 SPL : cm

Drought Grade : 2 APW : 121mm MBW : 29 mm
 APP : 109mm MBP : 27 mm

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

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	SU74502469	FCD E	01	25		3	3A		0	0						WE	3A	SATURATED 30+
1P	SU74312459	PGR		0	35	4	3B		99	7	104	22	2			WE	3B	PIT 80
2	SU74222459	PGR SW		75		1	1		151	59	112	30	1					
2P	SU74302460	FCD SW	01	47		2	2		121	29	109	27	2			WD	2	PIT 90 AUG 120
3	SU74302460	FCD SW	02	65		2	2		0	0						WE	2	SL GLEY 30 2P
5	SU74502460	FCD S	04	55		2	2		176	84	135	53	1			WE	2	
6	SU74202450	PGR	05	50		2	3A		0	0						WE	3A	
7	SU74312449	PGR		0	35	4	3B		0	0						WE	3B	
8	SU74302440	PGR	02	50		2	3A		114	22	116	34	2			WE	3A	IMP FLINT 80
9	SU74402440	PGR	03	70		1	1		163	71	117	35	1					
10	SU74602430	PGR		0	20	4	4		0	0						WE	4	
11	SU74502430	PGR	08	60		1	1		120	28	102	20	2			GR	3B	DROUGHT 2

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED COL.	----STONES----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLE	>2	>6		LITH	TOT	STR	POR	IMP	SPL
1	0-25	msl	10YR44 00					0	0	HR	3						
	25-60	msl	10YR52 53 10YR56 00 C					Y	0	0	HR	5		M			
	60-100	sc1	25Y 53 00 10YR58 00 M					Y	0	0		0		M			
	100-120	hc1	25Y 53 00 10YR58 00 M					Y	0	0		0		M			
1P	0-18	mc1	10YR41 00 10YR46 00 C					Y	0	0	HR	2					
	18-35	mc1	05Y 41 00 10YR46 00 C					Y	0	0		0	MDCSAB	FR	M		
	35-80	c	05Y 51 00 10YR58 00 M				05GY51 00	Y	0	0	HR	2	MDCAB	FM	P	Y	Y
2	0-25	msl	10YR43 00						0	0		0					
	25-75	mc1	10YR44 00						0	0	HR	3		M			
	75-120	hc1	25Y 53 00 10YR66 00 M				00MN00 00	Y	0	0		0		M			
2P	0-28	msl	10YR42 00						0	0	HR	3					
	28-47	msl	10YR44 54 10YR56 00 C					S	0	0		0	MDCAB	FR	M		
	47-66	msl	10YR52 53 10YR66 00 C					Y	0	0		0	MDCSAB	FR	M		
	66-73	sc1	25Y 53 00 10YR66 00 M					Y	0	0		0	MDCSAB	FR	M		
	73-90	hc1	25Y 52 63 10YR68 00 M					Y	0	0		0	MDCSAB	FR	M		
3	0-30	msl	10YR43 00						0	0	HR	3					
	30-65	msl	10YR54 00 10YR56 00 F					S	0	0		0		M			
	65-120	hc1	25Y 53 52 10YR56 58 M				00MN00 00	Y	0	0		0		M			
5	0-30	fs1	10YR43 00						0	0	HR	3					
	30-55	fsz1	10YR44 54						0	0	HR	3		M			
	55-75	fsz1	10YR53 00 10YR58 00 C					Y	0	0		0		M			
	75-120	hc1	25Y 52 00 10YR58 00 C					Y	0	0		0		M			
6	0-25	mc1	10YR43 00						0	0	HR	2					
	25-50	mc1	10YR44 00						0	0	HR	2		M			
	50-80	hc1	10YR64 00 75YR46 00 C					Y	0	0	HR	2		M			
7	0-10	mc1	25Y 41 00 75YR46 00 C					Y	0	0	HR	2					
	10-35	hc1	10YR51 52 75YR46 00 C					Y	0	0		0		M			
	35-50	c	10YR51 52 75YR46 00 C					Y	0	0		0		P		Y	
	50-80	c	25Y 61 63 10YR58 00 C					Y	0	0		0		P		Y	
8	0-25	mc1	10YR44 00						0	0	HR	2					
	25-50	mc1	10YR43 00						0	0		0		M			
	50-80	mc1	10YR53 00 10YR56 00 C					Y	0	0		0		M			
9	0-20	fsz1	10YR43 00						0	0	HR	2					
	20-70	msl	10YR44 00						0	0	HR	2		M			
	70-120	msl	10YR53 00 75YR58 00 C					Y	0	0	HR	2		M			
10	0-20	hc1	25Y 41 00 75YR46 00 C					Y	0	0	HR	2					
	20-80	c	25Y 61 63 10YR58 00 C					Y	0	0	HR	2		P		Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED	----STONES----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		COL.	GLY	>2		>6	LITH	TOT	STR	POR	IMP
11	0-30	ms1	10YR43 00					0	0	HR	1						
	30-60	ms1	10YR53 00					0	0	HR	1						M
	60-120	1ms	10YR52 00	10YR5B	00	C		Y	0	0	HR	1					M