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Lewes District Local Plan
Sites 21: Peacehaven.
ALC Map and Report
May 1995

AGRICULTURAL LAND CLASSIFICATION REPORT

LEWES DISTRICT LOCAL PLAN. SITES 21: PEACEHAVEN.

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 Lewes District of East Sussex. The work forms part of MAFF's statutory input to the preparation of the Lewes District Local Plan.
- 1.2 The site comprises approximately 38 hectares of land on the north eastern edge of Peacehaven. An Agricultural Land Classification (ALC) survey was carried out in May 1995. The survey was undertaken at a detailed level of approximately one boring per hectare of agricultural land surveyed. A total of 37 auger borings and 2 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.
- 1.3 The survey work was carried out by members of the Resource Planning Team in the Guildford Statutory Group of ADAS.
- 1.4 At the time of the survey the agricultural land was under winter wheat, newly sown brassicas and grass. A small area has been identified as urban at the north of the site which represents a house and associated outbuildings.
- 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.

Table 1 : Distribution of Grades and Subgrades

Grade	Area (ha)	% of Site	% of Agricultural Land
2	24.2	63.5	64.0
3a	13.1	34.4	34.7
3b	0.5	1.3	<u>1.3</u>
Urban	<u>0.3</u>	<u>0.8</u>	100.0 (37.8 ha)
Total area of site	38.1	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 agricultural land on the site has been classified as mainly Grade 2, very good quality agricultural land and Subgrade 3a, good quality land. A very small area of moderately steep land has been identified as Subgrade 3b, moderate quality agricultural land. The majority of the site comprises slightly stony coarse loamy over fine loamy soils overlying

chalk at depth. Due to the moderately high moisture deficits that are prevalent in this area, these soils are slightly droughty and the land is therefore restricted to Grade 2. At the southern end of the site, the soils are generally more stony with areas of sandy subsoils and are consequently more susceptible to drought thereby limiting the land to Subgrade 3a. A similar area has also been identified on the eastern boundary of the site.

2. Climate

- 2.1 The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe climatic 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 grid point dataset (Met. Office, 1989). The details are given in the table below and these show that there is no overall climatic limitation affecting the site.
- 2.4 However, climatic factors do interact with soil factors to influence soil wetness and droughtiness limitations. The climate at this location is relatively warm and moist in a regional context and moderately high moisture deficits are common, therefore the likelihood of a wetness or droughtiness limitation may be enhanced depending on the soil conditions.
- 2.4 No local climatic factors such as exposure or frost risk are believed to affect the site significantly.

Table 2 : Climatic Interpolations

Grid Reference	TQ 416 015
Altitude (m)	40
Accumulated Temperature (Day °C, Jan-June)	1493
Average Annual Rainfall (mm)	736
Field Capacity (days)	156
Moisture Deficit, Wheat (mm)	118
Moisture Deficit, Potatoes (mm)	114
Overall Climatic Grade	1

3. Relief

- 3.1 The site lies on the southern side of the South Downs and slopes from north to south into a dry valley before rising again at the southern end of the site. The gradients are gentle 1-3° although the sides of the dry valley are steeper ranging from 5-8°. The altitude of the site ranges from 55m AOD at the northern end to 35m AOD in the valley bottom. Over the majority of the site altitude and relief do not impose any limitation on the agricultural use of the land but a small area of moderately steeply sloping land, which occurs on the northern side of the dry valley feature, has limiting effect on land quality.

4. Geology and Soil

- 4.1 The published geological map (BGS, 1979) shows the site to be underlain by Upper and Middle Chalk with an area of Woolwich Beds over the majority of the southern part of the area.
- 4.2 The published Soil Survey map (SSEW, 1983) shows the soils on the site to belong to the Frilsham association, which is described as 'fine loamy flinty drift over chalk on gently and moderately sloping ground'. (SSEW, 1983).
- 4.3 Detailed field examination showed the area to comprise two distinct soil types. Over the northern and western parts of the site the soils are coarse loamy over fine loamy overlying chalk. A typical soil profile in this area has a medium or fine sandy loam topsoil overlying a sandy clay loam or clay loam subsoil. In the majority of profiles weathered chalk was encountered between 80-100cm depth. The soils are well drained and slightly stony throughout.
- 4.4 Over the south and east of the site the soils were more variable and generally more stony with many profiles sandy at depth. These soils typically have a medium sandy loam or medium clay loam topsoil over a sandy loam or clay loam upper subsoils. In many profiles the lower subsoil is a loamy medium sand or sand. The soils are well drained and variably flinty with the sandy horizons generally becoming stoneless. Occasional clayey lenses were found locally.

5. Agricultural Land Classification

- 5.1 The location of the soil observation points are shown on the attached sample point map.

Grade 2

- 5.2 The majority of the site has been classified as Grade 2 with the main limitation being a slight soil droughtiness restriction due to the moderately high moisture deficits that are prevalent in this locality. The area correlates with the moderately deep soils overlying chalk described in paragraph 4.3 above and the moisture balance calculations reveal that these soils will be slightly droughty for both 'reference' crops restricting the land to this grade.

Subgrade 3a

- 5.3 The eastern and southern part of the site has been classified as Subgrade 3a due to a moderate soil droughtiness limitation caused by the more sandy and stony nature of the soils, which are described in paragraph 4.4. These soils will have a moderate plant available water capacities and with the moderately high moisture deficits of the area, the interaction between soil and climate will restrict the land quality to Subgrade 3a

- 5.4 A small area of Subgrade 3b has been identified on the moderately steeply sloping land on the northern side of the of the dry valley that crosses the site. The gradients in this area have been measured as 8° and consequently the land is restricted to this Subgrade as a result of a gradient limitation. Steep slopes will affect the safety and efficiency of using certain types of farm machinery.

ADAS Ref: 4105/037/95
MAFF Ref: EL41/00232

Resource Planning Team
Guildford Statutory Group
ADAS Reading

SOURCES OF REFERENCE

British Geological Survey (1979), Sheet No 334 Eastbourne, 1:50,000 Series (solid and drift edition)

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

Meteorological Office (1989), Climatological Data for Agricultural Land Classification.

Soil Survey of England and Wales (1983), Sheet 6, Soils of South East England, 1:250,000 and accompanying legend.

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 (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 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 (eg. 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, eg. 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

FIELD ASSESSMENT OF SOIL WETNESS CLASS

SOIL WETNESS CLASSIFICATION

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.

Definition of Soil Wetness Classes

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.

Soils can be allocated to a wetness class on the basis of quantitative data recorded over a period of many years or by the interpretation of soil profile characteristics, site and climatic factors. Adequate quantitative data will rarely be available for ALC surveys and therefore the interpretative method of field assessment is used to identify soil wetness class in the field. The method adopted here is common to ADAS and the SSLRC.

¹The number of days specified is not necessarily a continuous period.

²'In most years' is defined as more than 10 out of 20 years.

APPENDIX III

SOIL PIT AND SOIL BORING DESCRIPTIONS

Contents :

Soil Abbreviations - Explanatory Note

Soil Pit Descriptions

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 computer database. This uses notations and abbreviations as set out below.

Boring Header Information

- GRID REF** : national 100 km grid square and 8 figure grid reference.
- 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		
- GRDNT** : Gradient as estimated or measured by a hand-held optical clinometer.
- GLEYSPL** : Depth in centimetres (cm) to gleying and/or slowly permeable layers.
- AP (WHEAT/POTS)** : Crop-adjusted available water capacity.
- MB (WHEAT/POTS)** : Moisture Balance. (Crop adjusted AP - crop adjusted MD)
- DRT** : Best grade according to soil droughtiness.
- 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

- 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. **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.

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 **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

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 : LEWES LP, SITE 21

Pit Number : 1P

Grid Reference: TQ41600150 Average Annual Rainfall : 728 mm
 Accumulated Temperature : 1505 degree days
 Field Capacity Level : 155 days
 Land Use : Cereals
 Slope and Aspect : 03 degrees E

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	MSL	10YR43 00	5	10	HR					
30- 45	SCL	10YR45 00	0	15	HR		MDCSB	FR	M	
45- 65	HCL	10YR54 55	0	20	HR		WKVCSB	FM	M	
65-110	HCL	10YR64 00	0	4	HR	C	MDVCSB	FM	M	
110-120	MS	25Y 64 00	0	0			SG	FR	M	

Wetness Grade : 1 Wetness Class : I
 Gleying : 065 cm
 SPL : No SPL

Drought Grade : 3A APW : 131mm MBW : 12 mm
 APP : 099mm MBP : -17 mm

FINAL ALC GRADE : 3A
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : LEWES LP, SITE 21 Pit Number : 2P

Grid Reference: TQ41800170 Average Annual Rainfall : 728 mm
 Accumulated Temperature : 1505 degree days
 Field Capacity Level : 155 days
 Land Use :
 Slope and Aspect : 03 degrees SW

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 35	MCL	10YR43 00	6	8	HR					
35- 77	MCL	10YR46 00	0	5	HR		MDVCSB	FM	M	Y
77-105	CH	10YR81 00	0	10	HR				P	Y

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

Drought Grade : 2 APW : 125mm MBW : 6 mm
 APP : 112mm MBP : -4 mm

FINAL ALC GRADE : 2
 MAIN LIMITATION : Droughtiness

SAMPLE NO.	GRID REF	ASPECT		GRDNT	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
		USE			SPL	CLASS	GRADE	AP	MB	AP	MB	DRT					
1	TQ41800210	LEY	S	01		1	1	144	25	110	-6	2			DR	2	
1P	TQ41600150	CER	E	03	065	1	1	131	12	099	-17	3A			DR	3A	STONY
2	TQ41900210	FLW	S	02		1	1	155	36	114	-2	2			DR	2	
2P	TQ41800170	BRA	SW	03		1	1	125	6	112	-4	2			DR	2	
3	TQ41700200	CER	E	03				129	10	111	-5	2			DR	2	
4	TQ18000200	BRA	S	01		1	1	128	9	107	-9	2			DR	2	
5	TQ41900200	BRA	S	01		1	1	137	18	107	-9	2			DR	2	
6	TQ41600190	CER	S	02		1	1	130	11	110	-6	2			DR	2	
7	TQ41700190	CER	SE	02		1	1	117	-2	111	-5	3A			DR	3A	
8	TQ41800190	BRA	S	02		1	1	129	10	106	-10	2			DR	2	
9	TQ41900190	BRA	S	02		1	1	127	8	104	-12	3A			DR	3A	
10	TQ41600180	CER	S	02		1	1	150	31	114	-2	2			DR	2	
11	TQ41700180	CER	SE	02		1	1	151	32	112	-4	2			DR	2	
12	TQ41800180	BRA				1	1	122	3	105	-11	3A			DR	3A	
13	TQ41900180	BRA	S	02		1	1	110	-9	076	-40	3B			DR	3B	
14	TQ41530169	CER	S	01		1	1	000	0	000	0				DR	3A	IMP 65
15	TQ41600170	CER	S	01		1	1	111	-8	098	-18	3A			DR	3A	
16	TQ41700170	CER	SE	03		1	1	156	37	118	2	2			DR	2	
17	TQ41800170	BRA	SW	03		1	1	112	-7	110	-6	3A			DR	2	SEE 2P
18	TQ41900170	BRA	S	02		1	1	128	9	108	-8	2			DR	2	
19	TQ41500160	CER	N	02	095	1	1	182	63	145	29	1				1	SL. GLEY 95
20	TQ41600160	CER	S	03		1	1	126	7	109	-7	2			DR	2	
21	TQ41700160	CER	SE	02		1	1	142	23	114	-2	2			DR	2	
22	TQ41800160	CER	SW	04		1	1	130	11	113	-3	2			DR	2	IMP 95
23	TQ41900160	CER	S	03		1	1	111	-8	108	-8	3A			DR	3A	
24	TQ41600150	CER	E	03		1	1	000	0	000	0				DR	3A	IMP 75 SEE 1P
25	TQ41700150	CER	S	05		1	1	137	18	109	-7	2			DR	2	
26	TQ41800150	CER	S	06		1	1	127	8	111	-5	2			DR	2	
27	TQ41900150	CER	S	08		1	1	000	0	000	0				GR	3B	IMP 80
28	TQ41600140	CER	N	04		1	1	176	57	136	20	1				1	
29	TQ41700140	CER	N	05		1	1	091	-28	097	-19	3B			DR	3B	
30	TQ41800140	CER	N	05		1	1	000	0	000	0				DR	3A	SEE 1P
31	TQ41900140	CER	N	06		1	1	000	0	000	0				DR	3A	SEE 1P
32	TQ41600130	CER	W	01		1	1	000	0	000	0				DR	3A	SEE 1P
33	TQ41700130	CER	N	05		1	1	151	32	108	-8	2			DR	2	
34	TQ41800130	CER	N	02		1	1	111	-8	096	-20	3A			DR	3A	
35	TQ41700120	LEY	SW	03	060	1	1	133	14	118	2	2			DR	2	SL. GLEY 60
36	TQ41800120	LEY	E	01		1	1	084	-35	063	-53	3B			DR	3B	
37	TQ41800110	LEY	S		050	1	1	123	4	108	-8	3A			DR	3A	SL. GLEY 50

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED COL.	----STONES-----			STRUCT/ CONSIST	SUBS			SPL	CALC
				COL	ABUN	CONT		GLY	>2	>6		LITH	TOT	STR		
1	0-30	fs1	10YR43 00					3	2	HR	5					
	30-45	ms1	10YR54 00					0	0	HR	8			M		
	45-65	hc1	10YR55 00					0	0	HR	5			M		
	65-120	sc1	10YR55 00					0	0	HR	10			M		
1P	0-30	ms1	10YR43 00					5	0	HR	10					
	30-45	sc1	10YR45 00					0	0	HR	15	MDCSB	FR	M		
	45-65	hc1	10YR54 55					0	0	HR	20	WKVCSB	FM	M		
	65-110	hc1	10YR64 00	10YR66 00 C			Y	0	0	HR	4	MDVCSB	FM	M		
	110-120	ms	25Y 64 00					0	0		0	SG	FR	M		
2	0-35	mc1	75YR43 00					2	0	HR	3					
	35-55	mc1	10YR44 00					0	0	HR	5			M		
	55-80	ms1	10YR54 00					0	0	HR	3			M		
	80-120	sc1	25Y 54 00					0	0	HR	2			M		
2P	0-35	mc1	10YR43 00					6	0	HR	8					
	35-77	mc1	10YR46 00					0	0	HR	5	MDVCSB	FM	M		Y
	77-105	ch	10YR81 00					0	0	HR	10		P		Y	ROOTS TO 105
3	0-35	fs1	10YR43 00					2	0	HR	4					
	35-80	sc1	75YR55 00					0	0	HR	4			M		
	80-100	sc1	10YR64 00					0	0	CH	40			M	Y	IMP CHALK
4	0-30	ms1	10YR43 00					3	0	HR	5					
	30-75	hc1	10YR46 00					0	0	HR	9			M		
	75-90	sc1	10YR46 00					0	0	HR	10			M		
	90-110	ch	10YR81 00					0	0	HR	5			P	Y	
5	0-33	ms1	10YR43 00					2	0	HR	4					
	33-60	ms1	10YR46 00					0	0	HR	5			M		
	60-75	ms1	10YR56 00					0	0	HR	5			M		
	75-95	sc1	10YR46 00					0	0	HR	5			M		
	95-115	ch	10YR71 00					0	0	HR	5			P	Y	
6	0-30	fs1	10YR43 00					2	0	HR	4					
	30-70	lfs	10YR54 00					0	0	HR	3			M		
	70-120	lms	10YR66 00					0	0		0			M		
7	0-33	fs1	10YR43 00					2	0	HR	4					
	33-50	mc1	10YR44 00					0	0	HR	10			M		
	50-65	hc1	10YR54 56					0	0	HR	10			M		
	65-80	sc1	10YR56 00					0	0	HR	7			M		
	80-120	lms	10YR55 00					0	0	HR	18			M		
8	0-30	sc1	10YR43 00					4	0	HR	6					
	30-55	sc1	10YR55 00					0	0	HR	7			M		
	55-95	hc1	10YR56 00					0	0	HR	5			M		
	95-110	ch	10YR71 00					0	0	HR	5			P	Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----		PED	----STONES----			STRUCT/ CONSIST	SUBS							
				COL	ABUN		CONT	COL.	GLE		>2	>6	LITH	TOT	STR	POR	IMP	SPL
9	0-30	ms1	10YR43 00					7	0	HR	10							
	30-55	sc1	10YR45 00					0	0	HR	5			M				
	55-95	hc1	10YR45 00					0	0	HR	10			M				
	95-120	lms	10YR56 00					0	0	HR	5			M				
10	0-33	fs1	10YR43 00					2	0	HR	4							
	33-60	mc1	10YR46 00					0	0	HR	3			M				
	60-115	sc1	10YR55 00					0	0	HR	3			M				
	115-120	ch	10YR81 00					0	0	HR	5			P				Y
11	0-40	fs1	10YR43 00					2	0	HR	5							
	40-70	ms1	10YR44 00					0	0	HR	5			M				
	70-95	ms1	10YR55 00					0	0	HR	13			M				
	95-120	sc1	10YR56 00					0	0	HR	7			M				
12	0-35	ms1	10YR43 00					6	0	HR	8							
	35-60	sc1	10YR46 00					0	0	HR	9			M				
	60-85	hc1	10YR56 00					0	0	HR	4			M				
	85-105	ch	10YR81 00					0	0	HR	5			P				Y
13	0-30	ms1	10YR43 00					4	0	HR	6							
	30-70	lms	10YR55 00					0	0	HR	5			M				
	70-105	c	75YR55 00					0	0		0			M				
	105-120	c	75YR55 00					0	0	HR	5			M				
14	0-30	fs1	10YR43 00					2	0	HR	5							
	30-65	sc1	10YR44 00					0	0	HR	15							IMP FLINTS
15	0-33	ms1	10YR44 00					3	0	HR	6							
	33-45	ms1	10YR54 56					0	0	HR	4			M				
	45-60	sc1	10YR55 00					0	0	HR	3			M				
	60-120	ms	10YR65 00					0	0		0			M				
16	0-30	fs1	10YR44 00					2	0	HR	3							
	30-40	fsz1	10YR54 00					0	0	HR	10			M				
	40-60	mc1	10YR55 00					0	0	HR	3			M				
	60-75	hc1	75YR56 00					0	0	HR	5			M				
	75-120	sc1	10YR66 00					0	0	HR	1			M				
17	0-35	mc1	10YR43 00					6	0	HR	8							
	35-55	mc1	10YR45 00					0	0	HR	9			M				
	55-70	hc1	75YR55 00					0	0	HR	5			M				
	70-90	ch	10YR71 00					0	0	HR	5			P				Y
18	0-35	sc1	75YR43 00					4	0	HR	5							
	35-65	ms1	10YR55 00					0	0	HR	3			M				
	65-80	sc1	10YR55 00					0	0	HR	3			M				
	80-120	lms	25Y 54 00					0	0		0			M				

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----		PED		----STONES-----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT	COL.	GLE	>2	>6		LITH	TOT	STR	POR	IMP	SPL
19	0-32	fsz1	75YR43 00					0	0	HR	2						
	32-60	fsz1	10YR54 00					0	0		0		M				
	60-95	mzc1	75YR55 00					0	0		0		M				
	95-120	sc1	10YR64 00	10YR66 00	F			S	0	0		0		M			
20	0-33	fs1	10YR43 00					5	0	HR	8						
	33-60	mc1	10YR56 00					0	0	HR	10		M				
	60-85	mc1	10YR65 00					0	0	HR	5		M				
	85-105	ch	10YR71 00					0	0	HR	5		P				Y
21	0-30	fs1	10YR43 00					3	0	HR	5						
	30-60	mc1	75YR55 00					0	0	HR	2		M				
	60-80	hc1	75YR55 00					0	0	HR	5		M				
	80-105	hc1	10YR66 00					0	0	HR	5		M				
	105-115	ch	10YR71 00					0	0	HR	5		P				Y
22	0-32	mc1	75YR44 00					2	0	HR	4						
	32-75	mc1	10YR56 00					0	0	HR	6		M				
	75-95	ms1	10YR67 00					0	0	HR	15		M				IMP FLINTS
23	0-32	mc1	75YR44 00					5	0	HR	8						
	32-70	hc1	75YR55 00	00MN00 00	F			0	0	HR	10		M				
	70-90	ch	10YR71 00					0	0	HR	5		P				Y
24	0-34	ms1	10YR43 00					6	0	HR	11						
	34-50	sc1	10YR54 00					0	0	HR	13						
	50-75	sc1	10YR54 00					0	0	HR	15						IMP FLINTS
25	0-30	fs1	10YR43 00					2	0	HR	5						
	30-65	sc1	10YR55 00					0	0	HR	5		M				
	65-105	hc1	75YR55 00	00MN00 00	F			0	0	HR	10		M				
	105-115	ch	10YR71 00					0	0	HR	5		P				Y
26	0-30	mc1	10YR43 00					2	0	HR	3						
	30-85	sc1	10YR55 00					0	0	HR	3		M				
	85-120	sc	10YR55 00					0	0	HR	10		P				
27	0-30	sc1	10YR43 00					4	0	HR	6						
	30-60	sc1	10YR45 00					0	0	HR	8						
	60-80	mc1	10YR55 00					0	0	HR	10						IMP FLINTS
28	0-30	fs1	10YR43 00					0	0	HR	3						
	30-75	fsz1	75YR54 00					0	0	HR	1		M				
	75-120	sc1	10YR55 00					0	0		0		M				
29	0-33	fs1	75YR44 00					5	0	HR	8						
	33-50	mc1	10YR45 00					0	0	HR	18		M				
	50-70	ch	10YR71 00					0	0	HR	5		P				Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----		PED COL.	----STONES----			STRUCT/ CONSIST	SUBS							
				COL	ABUN		CONT	GLE	>2		>6	LITH	TOT	STR	POR	IMP	SPL	CALC
30	0-30	mc1	10YR44 00					3	2	HR	10							
	30-35	mc1	10YR55 00					0	0	HR	20							IMP FLINTS
31	0-30	mc1	10YR44 00					5	0	HR	8							
	30-45	sc1	10YR45 00					0	0	HR	15							IMP FLINTS
32	0-30	fs1	10YR44 00					0	0	HR	2							
	30-50	mc1	10YR54 00					0	0	HR	2							
	50-60	hc1	75YR55 00					0	0	HR	15							IMP FLINTS
33	0-30	ms1	10YR43 00					0	0	HR	3							
	30-75	ms1	10YR55 00					0	0	HR	2							M
	75-120	sc1	10YR65 00					0	0	HR	1							M
34	0-34	ms1	10YR44 00					1	0	HR	3							
	34-60	ms1	10YR45 00					0	0	HR	18							M
	60-80	lms	10YR55 00					0	0	HR	4							M
	80-120	ms	25Y 74 64					0	0		0							M
35	0-28	ms1	10YR44 00					0	0		0							
	28-45	fs1	10YR54 00					0	0		0							M
	45-60	mc1	10YR63 00	75YR56 00	F			0	0		0							M
	60-75	hc1	10YR54 00	75YR56 00	F			S	0	0	0							M
	75-120	lms	25Y 54 00					S	0	0	0							M
36	0-33	lms	75YR44 00					0	0	HR	1							
	33-70	ms	75YR56 66					0	0		0							M
	70-90	lms	10YR45 48					0	0		0							M
	90-120	lms	25Y 54 46					0	0		0							M
37	0-35	ms1	75YR43 00					0	0		0							
	35-50	ms1	10YR45 00					0	0		0							M
	50-65	sc1	10YR54 00	75YR58 00	C			S	0	0	0							M
	65-120	lms	25Y 64 00	10YR66 00	F			S	0	0	0							M