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FRCA

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FARMING AND RURAL CONSERVATION AGENCY

An Executive Agency of the Ministry of Agriculture, Fisheries and Food and the Welsh Office

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ARUN DISTRICT LOCAL PLAN
Objector Sites - Additional Land at Ford Aerodrome, Yapton, West Sussex

Agricultural Land Classification
ALC Map and Report

August 1998

Resource Planning Team
Eastern Region
FRCA Reading

RPT Job Number: 4204/059/98
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AGRICULTURAL LAND CLASSIFICATION REPORT

ARUN DISTRICT LOCAL PLAN
OBJECTOR SITES - ADDITIONAL LAND AT FORD AERODROME, YAPTON, WEST SUSSEX

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of approximately 32 hectares of additional land at the disused Ford Aerodrome, south-east of Yapton in West Sussex. The survey was carried out during August 1998.

2. The survey was undertaken by the Farming and Rural Conservation Agency (FRCA)[1] on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF), in connection with MAFF's statutory input to the Arun District Local Plan. This survey supersedes any previous ALC information for this land. Information from ALC surveys on adjacent land (FRCA reference numbers 4202/64/94, 4202/120/97 and 4202/65/94) have been used in the classification of this site.

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

4. At the time of survey the agricultural land use on the site consisted mostly of recently ploughed land with the remainder comprising permanent grassland. The areas mapped as 'Other land' include the runway of the disused aerodrome and a small hanger.

SUMMARY

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

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

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
2	27.2	97.1	86.6
3a	0.8	2.9	2.6
Other land	3.4	N/A	10.8
Total surveyed area	28.0	100.0	
Total site area	31.4	-	100.0

[1] FRCA is an executive agency of MAFF and the Welsh Office

7. The fieldwork was conducted at an average density of 1 boring per hectare of agricultural land. In total, 30 borings and 1 soil pit were described.

8. The majority of the agricultural land is mapped as Grade 2 (very good quality) with the remainder shown as Subgrade 3a (good quality). The principal limitations include soil droughtiness and soil wetness.

9. Very good quality agricultural land comprises non-calcareous medium silty clay loam topsoils. These overlie similar textures or heavy silty clay loam upper subsoils before passing to similar or slowly permeable clay lower subsoils. The variable nature of the subsoil horizons means that, where the clay layers are present, there is a soil wetness and a soil droughtiness limitation. Where the clays are absent, it is soil droughtiness alone that is the limiting factor. These minor restrictions may adversely affect the levels of crop yield, the consistency of yield and the crop quality, as well as restricting the number of days when the land is in a suitable condition to work.

10. Good quality land suffers from a soil wetness limitation caused by shallow slowly permeable clay lower subsoils which impede the movement of water down the profile. This limitation will affect the range and yield of crops that can be grown on this land as well as restricting the number of days when the land is in a suitable condition for cultivation, trafficking by machinery or grazing by livestock.

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 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 991 026	SU 991 031
Altitude	m, AOD	5	5
Accumulated Temperature	day°C (Jan-June)	1542	1542
Average Annual Rainfall	mm	745	750
Field Capacity Days	days	153	154
Moisture Deficit, Wheat	mm	121	120
Moisture Deficit, Potatoes	mm	118	117
Overall climatic grade	N/A	Grade 1	Grade 1

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 at this site mean that there is no overall climatic limitation. Local climatic factors, such as frost risk do not affect land quality at this location, but the site's proximity to the sea means that it is shown as an area recorded as 'rather exposed' by the Met. Office (Met. Office, unpublished data, 1968). However, there was no evidence of significant exposure detected at a low level across the site at the time of the survey. The site is, therefore, climatically Grade 1.

Site

16. The site is flat, lying at an altitude of approximately 5 m AOD. It is not affected by any site restrictions, such as gradient, microrelief or flooding.

Geology and soils

17. The most detailed published geology information for the site (BGS, 1975) shows it to be entirely underlain by Brickearth deposits.

18. The most detailed published soils information covering the area (SSEW, 1983) shows it to comprise entirely soils of the Hamble 2 association. These soils are described as 'deep stoneless well drained silty soils and similar soils affected by groundwater; over gravel locally. Usually flat land' (SSEW, 1983). Soils consistent with this description were observed across the site.

AGRICULTURAL LAND CLASSIFICATION

19. 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.

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

Grade 2

21. Very good quality land is mapped over most of the site. Limitations include soil droughtiness and, in places, soil wetness.

22. Most of the land classified as Grade 2 is affected by soil droughtiness restrictions. Soils comprise non-calcareous medium silty clay loam topsoils. These soils contain between 1 and 3 % total flints by volume (1 % > 2 cm in size). Topsoils overlie similar upper subsoils which pass to slightly gleyed heavy silty clay loam lower subsoils at moderate depths (48–72 cm). These soils are similar to those observed in Pit 1 from an adjacent survey (FRCA ref: 4202/120/97). The variable depth to the slightly gleyed horizons is suggestive of a fluctuating water-table and minor seasonal waterlogging. Consequently, these soils are assigned to Wetness Class 1. The combination of soil properties interacting with the locally dry climate reduces the amount of available water to growing crops in these soils. The resulting moisture

balance calculations classify this land as Grade 2. A minor droughtiness limitation such as this may affect the level and consistency of yields, especially in drier years.

23. The Grade 2 land along the western boundary is also restricted by a soil wetness limitation. These profiles have similar topsoils and upper subsoils (MZCL), but pass to slowly permeable clay lower subsoils which commence from 55–75 cm. Pit 1 is typical of these soils (see Appendix II). The pit confirmed the existence of these poorly structured clay subsoils, which are slowly permeable and which impede the movement of water through the soil profile. The depth to gleying and the slowly permeable layer assigns these soils to Wetness Class II, and this combination of imperfect drainage, topsoil texture and the local climate gives rise to a land classification of Grade 2.

Subgrade 3a

24. Good quality land occupies a very small area along the western boundary. These soils are similar to those of the Grade 2 land with the slowly permeable clay layer beginning at shallower depths (from approximately 43 cm). The depth to these poorly structured clays assigns these soils to Wetness Class III and this, combined with the topsoil texture, and climatic regime, restricts land quality to Subgrade 3a. This degree of soil wetness may adversely affect crop growth and development, as well as limiting the flexibility of the land due to a reduction in the number of days when the soil is in a suitable condition for cultivation, trafficking by machinery or grazing by livestock.

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SOURCES OF REFERENCE

British Geological Survey (1975) *Sheet No. 332, Bognor.*
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, 1:250,000.*
SSEW: Harpenden.

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

APPENDIX I

DESCRIPTIONS OF THE GRADES AND SUBGRADES

Grade 1: Excellent Quality Agricultural Land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2: Very Good Quality Agricultural Land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural or horticultural crops can usually be grown but on some land of this grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1 land.

Grade 3: Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When more demanding crops are grown, yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a: Good Quality Agricultural Land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b: Moderate Quality Agricultural Land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass, or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4: Poor Quality Agricultural Land

Land with severe limitations which significantly restrict the range of crops and/or the level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5: Very Poor Quality Agricultural Land

Land with severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

APPENDIX II

SOIL DATA

Contents:

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	**OTH**	Other
DCW:	Deciduous woodland	**BOG:**	Bog or marsh	**SAS:**	Set-Aside
HTH:	Heathland	**HRT:**	Horticultural crops	**PLO:**	Ploughed

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	**ST:**	Topsoil Stoniness
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
EX:	Exposure				

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

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

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

Degree of development	**WK:**	weakly developed	**MD:**	moderately developed
	ST:	strongly developed		
Ped size	**F:**	fine	**M:**	medium
	C:	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	**FM**: firm	**EH**: extremely hard
VF: very friable	**VM**: very firm	
FR: friable	**EM**: extremely firm	

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

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

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

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

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

15. Other notations:

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

SAMPLE NO.	GRID REF	ASPECT USE	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT		ALC	COMMENTS
1	SU99100310	PLO				1	1	160	39	124	6	2				DR		2	SEE1P(120/97)
2	SU99200310	PLO				1	1	160	39	124	6	2				DR		2	SEE1P(120/97)
3	SU99100300	PLO				1	1	160	39	124	6	2				DR		2	SEE1P(120/97)
4	SU99200300	PLO				1	1	160	39	124	6	2				DR		2	SEE1P(120/97)
5	SU99100290	PLO				1	1	122	1	124	6	3A				DR		3A	SEE1P(120/97)
6	SU99200290	PLO				1	1	159	38	123	5	2				DR		2	SEE1P(120/97)
7	SU99300290	PLO				1	1	160	39	124	6	2				DR		2	SEE1P(120/97)
8	SU99100280	PLO				1	1	160	39	124	6	2				DR		2	SEE1P(120/97)
9	SU99200280	PLO				1	1	157	36	120	2	2				DR		2	SEE1P(120/97)
10	SU99300280	PGR				1	1	159	38	123	5	2				DR		2	SEE1P(120/97)
11	SU99400280	PLO			50	3	3A	139	18	116	-2	2				WE		3A	
12	SU98900270	PGR	56	66		2	2	133	12	124	6	2				WD		2	SEE1PATAB21
13	SU99000270	PGR				1	1	159	38	123	5	2				DR		2	SEE1P(120/97)
15	SU99200270	PLO	77	77		2	2	151	30	124	6	2				DR		2	SEE1PATAB21
16	SU99300270	PLO	65	65		2	2	149	27	124	6	2				DR		2	SEE1PATAB21
17	SU99400270	PLO				1	1	160	39	124	6	2				DR		2	SEE1P(120/97)
18	SU99500270	PLO			62	2	2	143	22	121	3	2				WD		2	
19	SU99000260	PGR	30	90		2	2	152	31	122	4	2				WD		2	SEE1PATAB21
20	SU99100260	PLO	52	52		3	3A	146	25	121	3	2				WD		3A	SEE1PATAB21
21	SU99200260	PLO	55	55		2	2	145	24	121	3	2				WD		2	SEE1PATAB21
22	SU99300260	PLO	75	75		2	2	150	29	123	5	2				WD		2	SEE1PATAB21
23	SU99400260	PLO				1	1	159	38	123	5	2				DR		2	SEE1P(120/97)
24	SU99500260	PLO				1	1	154	33	121	3	2				DR		2	
25	SU99300250	PLO	56	56		2	2	147	26	123	4	2				WD		2	SEE1PATAB21
26	SU99400250	PLO	70	70		2	2	149	28	121	3	2				WD		2	SEE1PATAB21
27	SU99500250	PLO	85	85		1	1	153	32	124	6	2				DR		2	SEE1PATAB21
28	SU99600250	PGR		70		2	2	151	30	125	7	2				WD		2	
29	SU99400240	PLO	43	43		3	3A	113	-8	121	3	3A				WE		3A	SEE1PATAB21
30	SU99600240	PGR	95	95		1	1	150	29	121	3	2				DR		2	
31	SU99700240	PGR		90		1	1	145	24	117	-1	2				DR		2	
1P	SU99200260	PLO	54	54		2	2	146	25	122	4	2				WD		2	PIT1ATAB21

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	0-27	MZCL	10YR43						0	0	HR	1						
	27-50	MZCL	10YR44						0	0		0		M				
	50-120	HZCL	10YR54	10YR58	C	F		S	0	0		0		M				BORDER C
2	0-30	MZCL	10YR43						0	0	HR	2						
	30-70	MZCL	10YR54						0	0		0		M				BORDER HZCL
	70-120	HZCL	10YR54	10YR72	C	D		S	0	0		0		M				BORDER C
3	0-28	MZCL	10YR43						0	0	HR	1						
	28-56	MZCL	10YR44						0	0		0		M				
	56-68	HZCL	10YR56						0	0		0		M				
	68-120	HZCL	10YR56	10YR72	C	D		S	0	0		0		M				BORDER C
4	0-29	MZCL	10YR43						0	0	HR	1						
	29-48	MZCL	10YR54						0	0		0		M				
	48-72	HZCL	10YR56						0	0		0		M				BORDER C
	72-120	HZCL	10YR56	10YR58	C	D		S	0	0		0		M				BORDER C
5	0-26	MZCL	10YR43						0	0	HR	1						
	26-38	MZCL	10YR54						0	0		0		M				BORDER HZCL
	38-58	HZCL	10YR54	10YR58	C	D		S	0	0		0		M				
	58-82	HZCL	10YR56	10YR58	C	D		S	0	0		0		M				IMP FLINT
6	0-23	MZCL	10YR43						0	0	HR	1						
	23-56	MZCL	10YR56						0	0		0		M				BORDER HZCL
	56-66	HZCL	10YR56	10YR58	C	D		S	0	0		0		M				
	66-120	HZCL	10YR56	10YR72	C	D		S	0	0		0		M				
7	0-26	MZCL	10YR43						0	0	HR	1						
	26-45	MZCL	10YR44						0	0		0		M				
	45-65	HZCL	10YR56						0	0		0		M				BORDER HZCL
	65-120	HZCL	10YR56	10YR72	C	D		S	0	0		0		M				BORDER C
8	0-26	MZCL	10YR43						0	0	HR	1						
	26-58	MZCL	10YR44						0	0		0		M				BORDER HZCL
	58-80	HZCL	10YR56	10YR58	C	D		S	0	0		0		M				
	80-120	HZCL	10YR56	10YR72	C	D		S	0	0		0		M				BORDER C
9	0-30	MZCL	10YR43						0	0	HR	1						
	30-55	MZCL	10YR44						0	0	HR	10		M				DIST? COKE
	55-70	MZCL	10YR56						0	0		0		M				BORDER HZCL
	70-120	HZCL	10YR56	10YR72	C	D		S	0	0		0		M				BORDER C
10	0-32	MZCL	10YR43						0	0	HR	3						
	32-50	MZCL	10YR44						0	0	HR	1		M				
	50-120	HZCL	10YR56	10YR58	C	D		S	0	0		0		M				BORDER C
11	0-28	MZCL	10YR43						0	0	HR	1						
	28-50	HZCL	10YR44						0	0		0		M				
	50-71	C	10YR54	10YR58	M	D		S	0	0		0		P		Y		
	71-120	C	10YR54	10YR56	F	D			0	0		0		P		Y		BORDER HCL

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	
12	0-30	MZCL	10YR43						0	0	HR	2							
	30-56	MZCL	10YR54	10YR58	C	D		S	0	0		0		M					
	56-66	HZCL	10YR64	10YR58	C	D		Y	0	0		0		M					
	66-100	C	10YR64	10YR58	M	D		Y	0	0		0		M			Y		
13	0-30	MZCL	10YR43						0	0	HR	2							
	30-68	MZCL	10YR54						0	0	HR	2		M					
	68-120	HZCL	10YR54	10YR72	C	D		S	0	0		0		M					
15	0-27	MZCL	10YR43						0	0	HR	1							
	27-48	MZCL	10YR44						0	0		0		M					BORDER HZCL
	48-77	HZCL	10YR54	10YR58	C	D		S	0	0		0		M					BORDER C
	77-120	C	10YR63	10YR58	C	D		Y	0	0		0		M			Y		
16	0-28	MZCL	10YR43						0	0	HR	1							
	28-45	MZCL	10YR44						0	0		0		M					
	45-65	MZCL	10YR54						0	0		0		M					
	65-120	C	10YR63	10YR58	C	D		Y	0	0		0		M			Y		
17	0-29	MZCL	10YR43						0	0	HR	1							
	29-75	HZCL	10YR54	10YR56	F	D			0	0		0		M					
	75-120	HCL	10YR54	10YR56	C	D		S	0	0		0		M					BORDER C
18	0-30	MZCL	10YR43						0	0	HR	1							
	30-62	MZCL	10YR44						0	0		0		M					BORDER HZCL
	62-120	C	10YR56	10YR58	C	F		S	0	0		0		P			Y		
19	0-30	MZCL	10YR43						0	0	HR	2							
	30-40	MZCL	10YR63	10YR58	C	D		Y	0	0	HR	10		M					DIST? COKE
	40-50	MZCL	10YR63	10YR68	C	D		Y	0	0		0		M					
	50-90	MZCL	10YR54						0	0		0		M					BORDER HZCL
	90-120	C	10YR63	10YR58	M	D		Y	0	0		0		M			Y		
20	0-26	MZCL	10YR43						0	0	HR	2							
	26-52	MZCL	10YR44						0	0		0		M					
	52-120	C	10YR63	10YR58	C	D		Y	0	0		0		M			Y		
21	0-18	MZCL	10YR43						0	0	HR	1							
	18-55	MZCL	10YR44						0	0		0		M					
	55-120	C	10YR63	10YR58	C	D		Y	0	0		0		M			Y		
22	0-27	MZCL	10YR43						0	0	HR	3							
	27-65	MZCL	10YR44						0	0		0		M					
	65-75	HZCL	10YR54	10YR58	C	F		S	0	0		0		M					
	75-120	C	10YR63	10YR58	M	D		Y	0	0		0		M			Y		
23	0-27	MZCL	10YR43						0	0	HR	1							
	27-120	HZCL	10YR54						0	0	HR	1		M					

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
24	0-28	MZCL	10YR43						0	0	HR	1							
	28-42	HZCL	10YR44						0	0		0		M					
	42-75	C	10YR54						0	0		0		M					
	75-90	HCL	10YR54						0	0		0		M					SL. SANDY
	90-120	HZCL	10YR56	10YR58	C	F		S	0	0		0		M					BORDER C
25	0-28	MZCL	10YR43						0	0	HR	1							
	28-56	MZCL	10YR54	10YR56	C	F		S	0	0		0		M					
	56-120	C	10YR63	10YR58	M	D		Y	0	0		0		M			Y		
26	0-27	MZCL	10YR43						0	0	HR	1							
	27-45	MZCL	10YR54	10YR56	F	D		N	0	0		0		M					
	45-70	HCL	10YR54	10YR56	C	D		S	0	0		0		M					BORDER C
	70-120	C	10YR62	10YR58	M	D		Y	0	0		0		M			Y		SL. SANDY
27	0-29	MZCL	10YR43						0	0	HR	1							
	29-45	MZCL	10YR54	10YR56	C	D		S	0	0		0		M					
	45-85	MZCL	10YR54						0	0		0		M					
	85-120	C	10YR62	10YR58	M	D		Y	0	0		0		M			Y		
28	0-35	MZCL	10YR54						0	0	HR	1							
	35-45	MZCL	10YR54						0	0		0		M					
	45-70	MZCL	10YR56						0	0		0		M					BORDER HZCL
	70-120	SC	10YR54	10YR58	M	D		S	0	0		0		P			Y		
29	0-27	MZCL	10YR43						0	0	HR	1							
	27-43	MZCL	10YR54	10YR56	F	F		N	0	0		0		M					BORDER HZCL
	43-80	C	10YR63	10YR58	M	D		Y	0	0		0		P			Y		SL. SNADY
30	0-30	MZCL	10YR54	10YR56	C	D		S	0	0	HR	2							
	30-65	MZCL	10YR44	10YR56	C	F		S	0	0	HR	5		M					
	65-95	MZCL	10YR44	10YR58	C	D		S	0	0		0		M					
	95-120	C	10YR64	10YR58	C	D		Y	0	0		0		M			Y		SL. SANDY
31	0-30	MZCL	10YR44	10YR56	C	D		S	0	0	HR	2							
	30-45	HCL	10YR44	10YR56	C	D		S	0	0	HR	2		M					BORDER C
	45-90	HCL	10YR54	10YR56	C	D		S	0	0	HR	7		M					BORDER SC
	90-120	C	10YR54	10YR56	C	D		S	0	0		0		P			Y		
1P	0-25	MZCL	10YR43						1	0	HR	2							
	25-55	MZCL	10YR54						0	0		0	MDCSAB	FR M	N				
	55-120	C	10YR64	10YR58	M			Y	0	0		0	MDCPR	FR M	Y		Y		