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Arun District Local Plan
Site 20 : Land between Pagham Road and Hook Lane, Bognor Regis
Agricultural Land Classification
ALC Map and Report
May 1994

AGRICULTURAL LAND CLASSIFICATION REPORT

ARUN DISTRICT LOCAL PLAN
SITE 20 : LAND BETWEEN PAGHAM ROAD AND HOOK LANE, BOGNOR REGIS

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 Arun District of West Sussex. The work forms part of MAFF's statutory input to the preparation of the Arun District Local Plan.

1.2 Site 20 comprises 17.9 hectares of land located between Pagham Road and Hook Lane in Bognor Regis, West Sussex. An Agricultural Land Classification, (ALC), survey was carried out during April 1994. The survey was undertaken at a detailed level of approximately one boring per hectare. A total of 18 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.

1.3 At the time of the survey the land had been recently ploughed and sown with an arable crop.

1.4 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 1:5,000. 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	17.5	97.8	97.8
3a	0.4	2.2	2.2
Urban	≤0.1	neg	100.0 (17.9 ha)
Total area of site	17.9	100.0	

1.5 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.

1.6 The majority of agricultural land surveyed has been classed as Grade 2, very good quality. The predominant limitations are minor risks of soil droughtiness and wetness. Profiles typically comprise medium silty clay loam topsoils overlying similar textured subsoils which occasionally become heavier textured at depth.

Land classed as Subgrade 3a, good quality, is restricted by a slightly more severe soil droughtiness limitation resulting from heavier textured and stonier profiles.

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 (degree days Jan-June), 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 the table below and these show that there is no overall climatic limitation affecting the site. However, climatic factors do interact with soil properties to influence soil wetness and droughtiness limitations. At this locality the crop adjusted moisture deficits are relatively high, in a regional context, thus increasing the likelihood of soil droughtiness limitations.

2.4 No local climatic factors such as exposure or frost risk are believed to affect the site.

Table 2 : Climatic Interpolations

Grid Reference	SZ896994	SZ894989
Altitude (m)	5	6
Accumulated Temperature (degree days, Jan-June)	1546	1545
Average Annual Rainfall (mm)	739	731
Field Capacity (days)	150	149
Moisture Deficit, Wheat (mm)	121	121
Moisture Deficit, Potatoes (mm)	118	118
Overall Climatic Grade	1	1

3. Relief

3.1 The site is virtually flat and lies at approximately 6m AOD. Nowhere on the site does gradient nor relief impose any restriction to land quality.

4. Geology and Soil

4.1 British Geological Survey (1975), Sheet 332, Bognor maps the entire site as brickearth underlain by London Clay.

4.2 The published Soil Survey map, (SSGB, 1967, 1:25,000) maps the soil type as the Park Gate series, described as 'non-calcareous gley soils' (SSGB, 1967).

4.3 Detailed field examination found deep silty textured soils exhibiting a slight impedance to drainage.

5. Agricultural Land Classification

5.1 Table 1 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.

Grade 2

5.3 Very good quality land is equally restricted by slight soil droughtiness and wetness limitations. Profiles typically comprise non-calcareous medium silty clay loam topsoils over medium and heavy silty clay loam upper subsoils and clay lower subsoils. Profiles are moderately well drained (Wetness Class II) due to slowly permeable layers, of varying texture, at c. 55-80cm depth. These layers slightly impede drainage, as evidenced by gleying within the upper subsoils. This land may be subject to slightly restricted flexibility of cropping, stocking and cultivations. The land is also equally limited by slight soil droughtiness. The interaction between the soil textures and profile stone contents (c.0-8% total flints by volume) at this site, which is relatively dry in a regional context, imparts a minor reduction in profile available water. Such land may have slightly lowered yield potential as a result. Pit 1 typifies this mapping unit. However, within this mapping unit there are occasional profiles that are of poorer quality, as represented by Pit 2. These profiles are slowly permeable at slightly shallower depths (c. 50cm) and consequently are imperfectly drained (Wetness Class III).

Subgrade 3a

5.4 A small area of good quality land is mapped in the north of the site. The key limitation is soil droughtiness. Profiles comprise medium silty clay loam topsoils over clay subsoils which are affected by groundwater (Wetness Class II). The slightly higher clay content and stone contents (c. 5-15% total flints by volume) in these profiles, in comparison to land Graded 2, imparts a moderate reduction in profile available water. Such land may have slightly reduced yield potential as a result and so can be graded no higher than Subgrade 3a.

SOURCES OF REFERENCE

British Geological Survey (1984), Sheet No. 332, Bognor, 1:50,000 (drift).

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 Great Britain (1967), Bulletin No. 3, Soils of the West Sussex Coastal Plain and accompanying maps (Sheets SZ79 and SZ89 Selsey Bill).

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, religous buildings, cemetries. 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.

[1]The 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 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 appropiate horizon.

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

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

15. Other notations
APW : available water capacity (in mm) adjusted for wheat
APP : available water capacity (in mm) adjusted for potatoes
MBW : moisture balance, wheat
MBP : moisture balance, potatoes

SOIL PIT DESCRIPTION

Site Name : ARUN LP SITE 20 Pit Number : 1P

Grid Reference: SZ89709940 Average Annual Rainfall : 737 mm
Accumulated Temperature : 1545 degree days
Field Capacity Level : 149 days
Land Use : Arable
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 32	MZCL	10YR43 00	0	3	HR					
32- 52	MZCL	10YR54 00	0	2	HR		MDCSAB	FR	M	
52- 62	HZCL	10YR54 00	0	1	HR		MDCSAB	FR	M	
62- 75	HZCL	10YR53 00	0	0		C	MDCSAB	FM	M	
75-100	C	10YR53 00	0	0		C	WKCPR	FR	M	
100-120	C	10YR53 00	0	0		C			M	

Wetness Grade : 2 Wetness Class : II
Gleying :062 cm
SPL :075 cm

Drought Grade : 2 APW : 150mm MBW : 29 mm
APP : 123mm MBP : 5 mm

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

SOIL PIT DESCRIPTION

Site Name : ARUN LP SITE 20 Pit Number : 2P

Grid Reference: SZ89609940 Average Annual Rainfall : 737 mm
Accumulated Temperature : 1545 degree days
Field Capacity Level : 149 days
Land Use : Arable
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 29	MZCL	10YR42 00	0	3	HR					
29- 50	HZCL	25Y 52 00	0	0		M	MDCSAB	FR	M	
50-120	C	25Y 52 00	0	0		M	MDMPR	FR	M	

Wetness Grade : 3A Wetness Class : III
Gleying :029 cm
SPL :050 cm

Drought Grade : 2 APW : 145mm MBW : 24 mm
APP : 121mm MBP : 3 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Wetness

SAMPLE NO.	GRID REF	USE	ASPECT		--WETNESS--		-WHEAT-		-POTS-		M.REL	EROSN	FROST	CHEM	ALC	
			GRDNT	GLEY SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT	COMMENTS
1	SZ89609950	ARA		028 075	2	2	130	9	106	-12	3A				DR 3A	
1P	SZ89709940	ARA		062 075	2	2	150	29	123	5	2				WD 2	PIT TO 100
2	SZ89609940	ARA		030	2	2	143	22	119	1	2				WD 2	Q SPL @ depth
2P	SZ89609940	ARA		029 050	3	3A	145	24	121	3	2				WE 3A	PIT TO 80
3	SZ89709940	ARA		050	1	1	143	22	119	1	2				DR 2	
4	SZ89809940	ARA		045 075	2	2	151	30	124	6	2				WD 2	
5	SZ89509930	ARA		055	2	2	141	20	117	-1	2				WD 2	SL. GLEYED 45
6	SZ89609930	ARA		080 080	2	2	153	32	125	7	2				WD 2	BORDER WC I/II
7	SZ89709930	ARA			1	1	158	37	122	4	2				DR 2	
8	SZ89809930	ARA		030 080	2	2	144	23	120	2	2				WD 2	
9	SZ89509920	ARA			1	1	158	37	122	4	2				DR 2	SL. GLEYED 45
10	SZ89609920	ARA		080 080	2	2	150	29	124	6	2				WD 2	BORDER WC I/II
11	SZ89709920	ARA		028	2	2	160	39	124	6	2				WD 2	
12	SZ89509910	ARA		050 050	3	3A	143	22	119	1	2				WE 3A	SL. GLEYED 40
13	SZ89609910	ARA		042 075	2	2	147	26	123	5	2				WD 2	
14	SZ89709910	ARA		025 055	2	2	143	22	119	1	2				WD 2	
15	SZ89409900	ARA		045 065	2	2	150	29	124	6	2				WD 2	
16	SZ89509900	ARA		029	2	2	141	20	118	0	2				WD 2	
17	SZ89609900	ARA		050 060	2	2	146	25	122	4	2				WD 2	
18	SZ89409890	ARA		050 060	2	2	146	25	121	3	2				WD 2	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	PED GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC	
1	0-28	mzcl	10YR42 00						0	0	HR	10							
	28-75	c	25Y 52 00	10YR58 00	M		00MN00 00	Y	0	0	HR	15		M					
	75-120	c	25Y 71 00	10YR58 00	M			Y	0	0	HR	5		M					
1P	0-32	mzcl	10YR43 00						0	0	HR	3					Y		
	32-52	mzcl	10YR54 00						0	0	HR	2	MDCSAB	FR M					
	52-62	hzcl	10YR54 00						0	0	HR	1	MDCSAB	FR M					
	62-75	hzcl	10YR53 00	10YR53 00	C			Y	0	0		0	MDCSAB	FM M					
	75-100	c	10YR53 00	10YR56 00	C			Y	0	0		0	WKCPR	FR M			Y		
	100-120	c	10YR53 00	10YR56 00	C			Y	0	0		0		M			Y		
2	0-30	mzcl	10YR42 00						0	0	HR	3							
	30-120	c	25Y 63 62	10YR58 00	M		00MN00 00	Y	0	0		0		M					
2P	0-29	mzcl	10YR42 00						0	0	HR	3							
	29-50	hzcl	25Y 52 00	10YR56 00	M			Y	0	0		0	MDCSAB	FR M					
	50-120	c	25Y 52 00	10YR56 00	M			Y	0	0		0	MDMPR	FR M	Y		Y		
3	0-30	mzcl	10YR43 00						0	0	HR	5							
	30-50	mzcl	10YR54 56						0	0	HR	5		M					
	50-120	c	10YR56 58	10YR56 68	M		00MN00 00	Y	0	0		0		M					
4	0-28	mzcl	10YR42 00	10YR46 00	F				0	0	HR	2							
	28-45	mzcl	25Y 53 52	10YR56 00	F				0	0		0		M					
	45-55	mzcl	10YR53 52	10YR56 00	C			Y	0	0		0		M					
	55-75	mzcl	25Y 61 63	10YR58 00	C			Y	0	0		0		M					
	75-120	zc	25Y 61 63	10YR58 00	M			Y	0	0		0		M			Y		
5	0-25	mzcl	10YR43 00						1	0	HR	8							
	25-45	mzcl	10YR56 54						0	0	HR	2		M					
	45-55	c	10YR54 00	10YR58 00	M		00MN00 00	S	0	0		0		M					sl. gleyed
	55-120	c	10YR54 53	10YR58 00	M		00MN00 00	S	0	0		0		M			Y		
6	0-35	mzcl	10YR43 00	10YR56 00	F				0	0	HR	2							
	35-45	mzcl	25Y 43 00						0	0		0		M					
	45-65	mzcl	10YR54 00	10YR56 00	F				0	0		0		M					
	65-80	hzcl	10YR54 00	10YR56 00	F				0	0		0		M					
	80-120	c	10YR53 00	10YR56 00	C			Y	0	0		0		M			Y		
7	0-30	mzcl	10YR43 00						0	0	HR	4							
	30-50	mzcl	10YR54 00						0	0	HR	4		M					
	50-80	hzcl	10YR54 56						0	0		0		M					
	80-120	mzcl	10YR56 54						0	0		0		M					
8	0-30	mzcl	10YR43 00						0	0	HR	3							
	30-42	mzcl	10YR52 00	10YR56 00	M			Y	0	0	HR	3		M					
	42-80	c	10YR62 00	10YR56 68	M		00MN00 00	Y	0	0		0		M					
	80-120	c	10YR62 54	10YR56 68	M		00MN00 00	Y	0	0		0		M			Y		

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	PED GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC	
9	0-25	mzcl	10YR43 00						0	0	HR	4							
	25-45	mzcl	10YR43 00	10YR56 00	F				0	0		0		M					
	45-90	hzcl	10YR44 00	10YR56 00	C			S	0	0		0		M					sl. gleyed
	90-120	hzcl	10YR44 00	10YR56 00	C			S	0	0	HR	2		M					sl. gleyed
10	0-35	mzcl	10YR42 00						0	0	HR	2							
	35-65	hzcl	10YR53 54	10YR56 00	F				0	0		0		M					
	65-80	zc	10YR52 53	10YR56 00	F				0	0		0		M		Y			
	80-120	c	25Y 62 63	10YR58 00	M		00MN00 00	Y	0	0		0		M		Y			
11	0-28	mzcl	10YR43 00						0	0	HR	2							
	28-60	hzcl	10YR53 00	10YR56 54	C			Y	0	0		0		M					
	60-120	hzcl	10YR62 00	10YR56 68	M		00MN00 00	Y	0	0		0		M					
12	0-25	mzcl	10YR43 00						0	0	HR	5							
	25-40	mzcl	10YR44 00	10YR54 00	F				0	0	HR	2		M					
	40-50	hzcl	10YR56 68	10YR63 00	C			S	0	0		0		M					sl. gleyed
	50-120	c	10YR51 52	10YR56 68	M		00MN00 00	Y	0	0		0		M					
13	0-42	mzcl	25Y 43 00	10YR56 00	F				0	0	HR	2							
	42-75	c	25Y 53 00	10YR58 00	M		00MN00 00	Y	0	0		0		M					
	75-120	c	25Y 63 00	10YR58 00	M		00MN00 00	Y	0	0		0		M		Y			
14	0-25	mzcl	10YR42 00	10YR56 00	F				0	0	HR	2							
	25-55	c	25Y 53 63	10YR56 00	M			Y	0	0		0		M					
	55-75	c	25Y 53 63	10YR58 00	M		00MN00 00	Y	0	0		0		M		Y			
	75-120	zc	25Y 53 63	10YR58 00	M			Y	0	0		0		M		Y	Y		
15	0-35	mzcl	10YR42 43	10YR56 00	F				0	0	HR	2							
	35-45	mzcl	10YR53 00	10YR56 00	F				0	0		0		M					
	45-65	hzcl	10YR53 00	10YR56 00	C			Y	0	0		0		M					
	65-120	zc	10YR53 52	10YR58 00	M		00MN00 00	Y	0	0		0		M		Y			
16	0-29	mzcl	10YR43 00						0	0	HR	5							
	29-70	c	10YR52 00	10YR58 68	M		00MN00 00	Y	0	0		0		M					
	70-120	c	10YR56 00	10YR53 00	F				0	0	HR	2		M					
17	0-32	mzcl	10YR42 00	10YR56 00	F				0	0	HR	2							
	32-50	mzcl	25Y 53 54	10YR56 00	F				0	0		0		M					
	50-60	c	25Y 53 61	10YR58 00	C			Y	0	0		0		M					
	60-85	c	25Y 63 71	10YR58 00	M		00MN00 00	Y	0	0		0		M		Y			
	85-120	c	10YR53 71	10YR56 00	M		00MN00 00	Y	0	0		0		M		Y	Y		
18	0-33	mzcl	25Y 42 00	10YR56 00	F				0	0	HR	2							
	33-50	mzcl	10YR54 53	10YR56 00	F		00MN00 00		0	0		0		M					
	50-60	zc	25Y 53 62	10YR56 00	C		00MN00 00	Y	0	0		0		M					
	60-120	c	25Y 53 52	10YR58 00	M		00MN00 00	Y	0	0		0		M		Y			