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Hampshire Minerals Plan
Omission Site 20 Roke Manor
Shootash
Agricultural Land Classification
ALC Map and Report
November 1994

AGRICULTURAL LAND CLASSIFICATION REPORT

HAMPSHIRE MINERALS PLAN
OMISSION SITE 20 ROKE MANOR SHOOTASH

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 County of Hampshire The work forms part of MAFF s statutory input to the Hampshire Minerals Plan

1 2 Site 20 comprises 24 5 hectares of land to the west of Roke Manor Farm Shootash Romsey Hampshire An Agricultural Land Classification (ALC) survey was carried out during November 1994 The survey was undertaken at a detailed level of approximately one boring per hectare of agricultural land surveyed A total of 27 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 The 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 land was in cereal production

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
3a	3 5	14 3	14 3
3b	21 0	85 7	85 7
Total agricultural area	24 5		100 0
Total area of site	24 5	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 All of the agricultural land surveyed has been classified as good quality Subgrade 3a, to moderate quality Subgrade 3b The grading of the site is primarily influenced by soil droughtiness limitations although soil wetness/workability and topsoil stoniness may also act to limit land quality across small parts of the site Where land has been graded 3a slightly impeded drainage combined with a moist climatic regime (in regional terms) results in slight soil wetness/workability restrictions Subgrade 3b has been mapped where soils are stony and relatively shallow over gravel Topsoil stoniness is equally limiting across parts of the site particularly towards the west

2 Climate

2 1 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 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 In addition no local climatic factors such as exposure or frost risk are believed to affect the site

2 3 Climatic factors do however interact with soil properties to influence soil wetness and droughtiness limitations At this locality the climate is relatively moist in regional terms thereby partially offsetting the risk of soil droughtiness

Table 2 Climatic Interpolation

Grid Reference	SU330225	SU337228
Altitude (m)	60	55
Accumulated Temperature (degree days Jan June)	1486	1491
Average Annual Rainfall (mm)	827	819
Field Capacity (days)	178	177
Moisture Deficit Wheat (mm)	105	106
Moisture Deficit Potatoes (mm)	98	99
Overall Climatic Grade	1	1

3 Relief

3 1 The site lies at an altitude of 55 60m (AOD) falling gently from west to east Nowhere on the site does gradient or relief affect land quality

4 Geology and Soil

4 1 British Geological Survey (1971) Sheet 315 Southampton shows the entire site to be underlain by plateau gravel

4 2 The published Soil Survey map (SSEW 1983 1 250 000) shows the majority of the site to comprise soils of the Wickham 3 Association These are described as stagnogleys developed in fine loamy or fine silty drift over clay (SSEW 1984) The remaining land a narrow band mapped along the northern boundary comprises soils of the Sonning Association These are described as reddish flinty coarse loamy soils over gravel (SSEW 1984)

4 3 Detailed field examination found medium silty loamy or clayey loams over gravel at variable depths The soils are affected by droughtiness caused by high stone content of the soils and the presence of gravel in the subsoil Where profiles are deeper clayey subsoils slightly impede 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 3a

5 3 Good quality land has been mapped where soil properties and climatic factors combine to give rise to soil droughtiness and/or soil wetness limitations

Profiles comprise non calcareous medium silty clay loam or silt loam topsoils which may contain 5 12% total flints by volume (1 5% of which are >2cm in diameter) These overlie upper subsoils of similar or slightly heavier texture (ie heavy silty clay loam or clay loam) with stone contents in the range 2 10% total flints Lower subsoils may be impenetrable (to soil auger) over gravelly horizons at 70 78cm containing 40 65% total stones If so the land is affected by soil droughtiness The high stone content throughout the profile restricts the amount of soil moisture which may be available to a growing crop Yield potential may thus be decreased and variable

Alternatively where lower subsoils pass to clay the land is affected by soil wetness The clay horizons are poorly structured and slowly permeable and therefore impede drainage Gleying in the upper and lower subsoil is indicative of this imperfect drainage These soils are placed in Wetness Class III which equates with Subgrade 3a given the prevailing climate and topsoil texture Soil wetness may affect crop growth and development and cause restrictions on cultivations and/or grazing

Grade 3b

5 4 Moderate quality agricultural land has been mapped where soil droughtiness is limiting Topsoil stoniness is equally limiting across parts of the site

Profiles typically comprise non calcareous medium silty clay loam and silt loam topsoils and contain between 5 35% total flints by volume (up to 20% may be >2cm in diameter) These overlie similar upper subsoils which become impenetrable (to soil auger) at shallow depths ie between 30 and 50cm Pit 1 confirmed the presence of moderately to very stoney horizons containing 20 50% stones in the upper subsoil passing to gravel below 50 53cm depth Pit 2 showed the gravelly horizons to occur even higher in the profile stone contents being at about 60% total flints immediately below the topsoil The high stone contents throughout these profiles as well as restricted rooting into the gravelly horizons cause the available water in the profile to be severely restricted As a result crops will be prone to drought stress and yields may be inconsistent and depressed

Topsoil stoniness also acts as a limitation to agricultural use across parts of the site particularly towards the west Stone contents in the range 16 20% >2cm in diameter increase the costs of production through wear and tear to farm machinery adverse effects on seed germination and restrictions on certain agricultural operations such as precision drilling

ADAS Ref 1512/279/94
MAFF Ref EL15/107

Resource Planning Team
Guildford Statutory Group
ADAS Reading

SOURCES OF REFERENCE

British Geological Survey (1971) Sheet No 317 Southampton 1 63 360 (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 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	**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 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 HANTS MINS OM SITE 20 Pit Number 1P

Grid Reference SU33602270 Average Annual Rainfall 819 mm
Accumulated Temperature 1491 degree days
Field Capacity Level 177 days
Land Use Wheat
Slope and Aspect 01 degree S

HORIZON	TEXTURE	COLOUR	STONES %	TOT STONE %	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 20	MZCL	10YR44 00	20	23	HR					
20 35	MZCL	10YR43 00	0	25	HR				M	
35 53	HCL	10YR54 00	0	50	HR				P	
53 120	GH	10YR54 00	0	0					P	

Wetness Grade 2 Wetness Class I
Gley g cm
SPL No SPL

Drought Grade 3B APW 67 mm MBW 39 mm
APP 64 mm MBP 35 mm

FINAL ALC GRADE 3B
MAIN LIMITATION Drought ness

SOIL PIT DESCRIPTION

S te Name HANTS MINS OM SITE 20 P t N mbe 2P

G d Reference SU33002260 Ave age A l Ra fall 819 mm
Acc mulated Tempe t re 1491 degree d y
F eld C pa ty Le el 177 d y
Land U e Whe t
Slope and Aspect 01 degrees E

HORIZON	TEXTURE	COLOUR	STONES 2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0 35	ZL	10YR31 00	17	35	HR					
35 45	MZCL	10YR54 00	0	60	HR				P	

Wet G de 2 Wet es Cl I
Gley g cm
SPL No SPL

Dro ght Grade 3B APW 59 mm MBW 47 mm
APP 59 mm MBP 40 mm

FINAL ALC GRADE 3B
MAIN LIMITATION Dro ght ness

SAMPLE NO	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	WETNESS CLASS	WHEAT GRADE	POTS AP	POTS MB	M REL AP	M REL MB	DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SU33302280	WHT					1	2	110	4	119	20	3A				WK	2	SL GLEY 55
1P	SU33602270	WHT	S	01			1	2	67	39	64	35	3B				DR	3B	ROOTS TO 53
2	SU33402280	WHT					1	2	98	8	111	12	3A				DR	3A	SL GLEY 55
2P	SU33002260	WHT	E	01			1	2	59	47	59	40	3B				DR	3B	SMALL PIT
3	SU33502280	WHT					1	2	61	45	61	38	3B				DR	3B	IMP 40 SEE 1P
4	SU33602280	WHT					1	2	102	4	105	6	3A				DR	3A	IMP 80
5	SU33702280	WHT					1	2	46	60	46	53	3B				DR	3B	IMP 30 SEE 1P
6	SU33102270	CER			025	070	3	3A	110	4	108	9	3A				WE	3A	SPL AT 70
7	SU33202270	CER			050	050	3	3A	99	7	111	12	3A				WE	3A	
8	SU33302270	CER					1	2	67	39	67	32	3B				DR	3B	SEE 1P
9	SU33402270	CER					1	2	58	48	58	41	3B				DR	3B	SEE 1P
10	SU33502270	CER			030		2	3A	111	5	115	16	3B				WE	3A	
11	SU33602270	CER					1	2	76	30	76	23	3B				DR	3B	SEE 1P
12	SU33702270	CER					1	2	67	39	67	32	3B				DR	3B	SEE 1P
13	SU32802260	WHT					1	2	49	57	49	50	3B				DR	3B	TOPSOIL STONES
14	SU32902260	WHT	E	01			1	2	57	49	57	42	3B				DR	3B	TOPSOIL STONES
15	SU33002260	WHT	E	01			1	2	43	63	43	56	3B				DR	3B	TOPSOIL STONES
16	SU33102260	CER					1	2	78	28	78	21	3B				DR	3B	SEE 1P
17	SU33202260	CER					1	2	71	35	71	28	3B				DR	3B	SEE 1P
18	SU33302260	WHT					1	2	59	47	59	40	3B				DR	3B	IMP 35 SEE 1P
19	SU33402260	WHT	S	01			1	2	42	64	42	57	4				DR	3B	IMP 30 SEE 1P
20	SU33502260	WHT	SW	01			1	2	44	62	44	55	4				DR	3B	IMP 30 SEE 1P
21	SU33602260	WHT				040	3	3A	107	1	99	0	3A				WE	3A	SL GLEY 40
22	SU33702260	WHT					1	2	48	58	48	51	4				DR	3B	IMP 32 SEE 1P
23	SU32802250	WHT	S	01			1	2	59	47	59	40	3B				DR	3B	TOPSOIL STONES
24	SU32902250	WHT	E	01			1	2	58	48	58	41	3B				DR	3B	TOPSOIL STONES
25	SU33002250	WHT	E	01			1	2	52	54	52	47	4				DR	3B	TOPSOIL STONES
26	SU33602250	WHT	SW	01			1	2	76	30	76	23	3B				DR	3B	IMP 50 SEE 1P
27	SU33702250	WHT					1	2	78	28	78	21	3B				DR	3B	IMP 50 SEE 1P

				MOTTLES			PED		STONES				STRUCT/	SUBS				
SAMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL	GLEY	2	6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
1	0 30	mzcl	10YR43 00						1	0	HR	5						
	30 55	h l	75YR54 00						0	0	HR	2		M				
	55 70	c	75YR54 00	75YR58 00	C			S	0	0		0		M				
	70 78	c	75YR54 00	75YR58 00	C			S	0	0	HR	15		M				Imp g a elly
1P	0 20	mzcl	10YR44 00						20	0	HR	23						
	20 35	mzcl	10YR43 00						0	0	HR	25		M				
	35 53	hcl	10YR54 00						0	0	HR	50		P				Roots to 53
	53 120	gh	10YR54 00						0	0		0		P				Waterlogged
2	0 30	mzcl	10YR43 00						5	0	HR	12						
	30 55	h cl	75YR54 00						0	0	HR	10		M				
	55 60	h l	75YR54 00	75YR58 00	C		00MN00 00	S	0	0	HR	10		M				
	60 70	hz l	75YR54 00	75YR58 00	C		00MN00 00	S	0	0	HR	20		M				Imp g elly
2P	0 35	l	10YR31 00						17	0	HR	35						
	35 45	mzcl	10YR54 00						0	0	HR	60		P				Roots to 45
3	0 30	mzcl	10YR42 00						13	0	HR	17						
	30 40	mzcl	10YR54 00						0	0	HR	25		M				Imp g a elly
4	0 33	mzcl	10YR43 00						8	0	HR	15						
	33 80	mzcl	10YR54 00						0	0	HR	20		M				Imp g a elly
5	0 28	m l	10YR42 00						13	0	HR	20						
	28 30	m l	10YR44 00						0	0	HR	25		M				Imp g elly
6	0 25	mzcl	10YR44 00						0	0	HR	5						
	25 50	hcl	10YR42 62	75YR58 00	C			Y	0	0	HR	5		M				
	50 90	c	10YR62 63	75YR58 00	C			Y	0	0	HR	5		P				Imp g elly
7	0 30	mzcl	10YR44 00						0	0	HR	5						
	30 50	hcl	10YR42 00	75YR58 00	F				0	0	HR	5		M				
	50 70	c	10YR42 62	75YR56 58	C			Y	0	0	HR	0		P		Y		Imp gra elly
8	0 30	mzcl	10YR44 00						0	0	HR	5						
	30 40	mz l	75YR44 00						0	0	HR	25		M				Imp g a elly
9	0 35	mz l	10YR44 00						14	0	HR	14						Imp g velly
10	0 30	mzcl	10YR44 00						13	0	HR	13						
	30 80	h cl	10YR42 62	75YR58 00	C			Y	0	0	HR	5		M				Imp gra elly
11	0 35	mz l	10YR44 00						0	0	HR	5						
	35 45	mz l	10YR43 00						0	0	HR	25		M				Imp g elly
12	0 30	mzcl	10YR44 00						0	0	HR	5						
	30 40	mzcl	10YR43 00						0	0	HR	25		M				Imp g elly

				MOTTLES			PED		STONES				STRUCT/	SUBS				
SAMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL	GLEY	2	6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
13	0 30	zl	10YR32 00						17	0	HR	30				Imp	gra	elly
14	0 35	zl	10YR31 00						16	0	HR	30				Imp	gra	elly
15	0 28	l	10YR31 00						17	0	HR	35				Imp	g	avelly
16	0 25	mzcl	10YR44 00						0	0	HR	5						
	25 45	mzcl	75YR44 00						0	0	HR	5		M		Imp	g	avelly
17	0 30	mzcl	10YR44 00						0	0	HR	5						
	30 40	mz l	10YR42 00						0	0	HR	5		M		Imp	g	a elly
18	0 30	m l	10YR43 00						6	0	HR	8						
	30 35	h cl	10YR44 00						0	0	HR	25		M		Imp	g	a elly
19	0 30	m l	10YR43 00						17	0	HR	27				Imp	g	elly
20	0 30	mzcl	10YR42 00						16	0	HR	25				Imp	gravelly	
21	0 30	mzcl	10YR43 00						12	0	HR	20						
	30 40	c	10YR54 00	10YR58 00	F				0	0	HR	5		M				
	40 100	c	10YR56 00	75YR58 00	C		10YR61 00	S	0	0	HR	5		P		Y	Imp	g v lly
22	0 29	m cl	10YR43 00						15	0	HR	22						
	29 32	m cl	10YR44 00						0	0	HR	25		M		Imp	gravelly	
23	0 35	l	10YR31 00						20	0	HR	35						
	35 42	ms l	10YR64 00						0	0	HR	50		P		Imp	g	elly
24	0 33	l	10YR31 00						15	0	HR	25				Imp	gra	elly
25	0 32	l	10YR31 00						17	0	HR	30				Imp	gravelly	
26	0 30	m cl	10YR42 00						7	0	HR	15						
	30 50	m cl	10YR44 00						0	0	HR	20		M		Imp	gr	elly
27	0 27	m cl	10YR42 00						12	0	HR	15						
	27 50	mzcl	10YR44 00						0	0	HR	15		M		Imp	g	a elly