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LAND NORTH-EAST OF SULHAMSTEAD
BERKSHIRE MINERALS PLAN : SITE 8
AGRICULTURAL LAND CLASSIFICATION
ALC MAP & REPORT
AUGUST, 1993

LAND NORTH-EAST OF SULHAMSTEAD, BERKSHIRE
BERKSHIRE MINERALS PLAN : SITE 8
AGRICULTURAL LAND CLASSIFICATION REPORT

1.0 Summary

1.1 In August, 1993, a detailed Agricultural Land Classification (ALC) was made on approximately 58 hectares of land south of the River Kennet and north-east of Sulhamstead, south-west of Reading in Berkshire.

1.2 The work was conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS in response to a commission by MAFF's Land Use Planning Unit to provide information on the quality of agricultural land affected by an objection to the non-inclusion of this land in the Berkshire Minerals Plan.

1.3 The classification has been made using MAFF's revised guidelines and criteria for grading the quality of agricultural land. These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on its use for agriculture.

1.4 The fieldwork was carried out with an observation density of approximately one per hectare. A total of 46 borings and 1 soil pit was examined.

1.5 All of the agricultural land (54.3 ha) has been classified as Grade 4. Soil wetness and flood risk combine to severely restrict the potential of this land. It is deemed to be suitable only for grassland and this was the land use over all of the site at the time of survey.

1.6 The areas of the site that were not in agricultural use include Urban (0.2 ha), Woodland (1.8 ha) and Open Water (2.1 ha).

1.7 The ALC information is presented at a scale of 1:10,000; it is accurate at this level but any enlargement would be misleading. This map supercedes any previous ALC information for this site.

1.8 A general description of the grades and sub-grades is provided as an appendix. 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.

2.0 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 conditiions.

2.2 The main parameters used in the assessment of the overall climatic limitation are annual average rainfall, as a measure of overall wetness, and accumulated temperature, as a measure of the relative warmth of a locality.

2.3 A detailed assessment of the prevailing climate was made by interpolation from a 5km gridpoint dataset. The details are given in the table below and these show that there is no overall climatic limitation affecting the site.

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

Table 2 : Climatic Interpolations

Grid Reference :	SU636694
Altitude (m) :	50
Accumulated Temperature (days) :	1470
Average Annual Rainfall (mm) :	689
Field Capacity (days) :	144
Moisture Deficit, Wheat (mm) :	113
Moisture Deficit, Potatoes (mm) :	107
Overall Climatic Grade :	1

3.0 Relief

3.1 All of the site is flat at an altitude of 45-50 metres.

4.0 Geology and Soil

4.1 The relevant geological sheet for the site shows the underlying geology to be Alluvium.

4.2 Heavy soil profiles have developed over this parent material, many with poorly structured clay subsoils.

5.0 Agricultural Land Classification

5.1 The ALC information is shown on the attached ALC map and the location of the soil observation points is shown on the attached sample point map.

5.2 Grade 4 : Pit 1 is typical of the soils that have been placed in this grade. Heavy Silty Clay Loam topsoils overlie calcareous upper subsoils of similar texture. The subsoils show strong evidence of gleying and are slowly permeable, exhibiting Coarse Prismatic structure, a firm consistence and low porosity. The shallow gleying and slowly permeable layers place thes soils in Wetness Class IV. This, in combination with the topsoil texture and the prevailing Field Capacity level (144 days), limits the land to no better than Sub-grade 3B. The wetness status of these soils is further complicated by a groundwater problem and, at the time of survey (mid-summer), the upper subsoils were still very moist and the lower subsoils (a calcareous marl) were wet. Wetness Class IV may therefore be a more sensitive reflection of the degree of waterlogging that these profiles experience. Given this degree of wetness, the land would generally not be suitable for regular ploughing and Grade 4 is therefore the most appropriate grade for this land.

5.3 Flooding is also a problem for the site. Only anecdotal evidence is available for recent years but this suggests frequent flooding in the winter of at least medium duration which means that the land may be graded no higher than Sub-grade 3B on this alone.

5.5 The areas marked as Urban include houses and gardens.

5.6 The areas marked as Non-agricultural include

APPENDIX I

DESCRIPTION OF THE GRADES AND SUB-GRADES

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 on the 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.

Grade 3 : Good To Moderate Quality Agricultural Land

Land with moderate limitations which affect the choice of crops, 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.

Sub-grade 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.

Sub-grade 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 very 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 : *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/airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Woodland

Includes commercial and non-commercial 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

REFERENCES

* 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.

* British Geological Survey (1971), Sheet No.268, Reding, 1:63,360

APPENDIX III

DEFINITION OF SOIL WETNESS CLASSES

Wetness Class I

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

Wetness Class II

The soil profile is wet within 70cm depth for 31-90 days in most years **or**, if there is no slowly permeable layer within 80cm depth, it is wet within 70cm for more than 90 days, but not wet within 40cm depth for more than 30 days in most years.

Wetness Class III

The soil profile is wet within 70cm depth for 91-180 days in most years **or**, if there is no slowly permeable layer within 80cm depth, it is wet within 70cm for more than 180 days, but only wet within 40cm depth for 31-90 days in most years.

Wetness Class IV

The soil profile is wet within 70cm depth for more than 180 days but not wet within 40cm depth for more than 210 days in most years **or**, if there is no slowly permeable layer within 80cm depth, it is wet within 40cm depth for 91-210 days in most years.

Wetness Class V

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

Wetness Class VI

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

(The number of days is not necessarily a continuous period. 'In most years' is defined as more than 10 out of 20 years.)

APPENDIX IV

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 database. This has commonly used notations and abbreviations as set out below.

Boring Header Information

1. **GRID REF** : national grid square and 8 figure grid reference.

2. **USE** : Land use at the time of survey. The following abbreviations are used.

ARA : Arable **WHT** : Wheat **BAR** : Barley **CER** : Cereals **OAT** : Oats **MZE** : Maize **OSR** : Oilseed rape
BEN : Field Beans **BRA** : Brassicae **POT** : Potatoes **SBT** : Sugar Beet **FCD** : Fodder Crops **LIN** : Linseed
FRT : Soft and Top Fruit **HRT** : Horticultural Crops **PGR** : Permanent Pasture **LEY** : Ley Grass **RGR** : Rough Grazing
SCR : Scrub **CFW** : Coniferous Woodland **DCW** : Deciduous Woodland **HTH** : Heathland **BOG** : Bog or Marsh
FLW : Fallow **PLO** : Ploughed **SAS** : Set aside **OTH** : Other

3. **GRDNT** : Gradient as measured by a hand-held optical clinometer.

4. **GLEY/SPL** : Depth in cm to gleying or slowly permeable layers.

5. **AP (WHEAT/POTS)** : Crop-adjusted available water capacity.

6. **MB (WHEAT/POTS)** : Moisture Balance.

7. **DRT** : Best grade according to soil droughtiness.

8. If any of the following factors are considered significant, an entry of 'Y' will be entered in the relevant column.

MREL : Microrelief limitation **FLOOD** : Flood risk **EROSN** : Soil erosion risk **EXP** : Exposure limitation **FROST** : Frost
DIST : Disturbed land **CHEM** : Chemical limitation

9. **LIMIT** : The main limitation to land quality. The following abbreviations are used.

OC : Overall Climate **AE** : Aspect **EX** : Exposure **FR** : Frost Risk **GR** : Gradient **MR** : Microrelief
FL : Flood Risk **TX** : Topsoil Texture **DP** : Soil Depth **CH** : Chemical **WE** : Wetness **WK** : Workability
DR : Drought **ER** : Soil Erosion Risk **WD** : Combined 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
SCL : Sandy Clay Loam **C** : Clay **SC** : Sandy Clay **ZC** : Silty Clay **OL** : Organic Loam **P** : Peat **SP** : Sandy Peat
LP : Loamy Peat **PL** : Peaty Loam **PS** : Peaty Sand **MZ** : Marine Light Silts

For the sand, loamy sand, sandy loam and sandy silt loam classes, the predominant size of sand fraction will be indicated by the use of prefixes.

F : Fine (more than 66% of the sand less than 0.2mm)
M : Medium (less than 66% fine sand and less than 33% coarse sand)
C : Coarse (more than 33% of the sand larger than 0.6mm)

The clay loam and silty clay loam classes will be sub-divided according to the clay content.

M : Medium (<27% clay) **H** : Heavy (27-35% clay)
2. **MOTTLE COL** : Mottle colour

3. **MOTTLE ABUN** : Mottle abundance, expressed as a percentage of the matrix or surface described.

F : few <2% **C** : common 2-20% **M** : many 20-40 **VM** : very many 40%+

4. **MOTTLE CONT** : Mottle contrast

F : faint - indistinct mottles, evident only on close inspection **D** : distinct - mottles are readily seen
P : prominent - mottling is conspicuous and one of the outstanding features of the horizon

5. **PED. COL** : Ped face colour

6. **STONE LITH** : One of the following is used.

HR : all hard rocks and stones **MSST** : soft, medium or coarse grained sandstone
SI : soft weathered igneous or metamorphic **SLST** : soft oolitic or dolimitic limestone
FSST : soft, fine grained sandstone **ZR** : soft, argillaceous, or silty rocks **CH** : chalk
GH : gravel with non-porous (hard) stones **GS** :gravel with porous (soft) stones

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

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

- degree of development **WK** : weakly developed **MD** : moderately developed **ST** : strongly developed

- ped size **F** : fine **M** : medium **C** : coarse **VC** : very coarse

- ped shape **S** : single grain **M** : massive **GR** : granular **AB** : angular blocky **SAB** : sub-angular blocky **PR** : prismatic
PL : platy

8. **CONSIST** : Soil consistence is described using the following notation:

L : loose **VF** : very friable **FR** : friable **FM** : firm **VM** : very firm **EM** : extremely firm **EH** : extremely hard

9. **SUBS STR** : Subsoil structural condition recorded for the purpose of calculating profile droughtiness.

G : good **M** : moderate **P** : poor

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

11. **IMP** : If the profile is impenetrable a 'Y' will appear in this column at the appropiate horizon.

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

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

14. Other notations

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

SOIL PIT DESCRIPTION

Site Name : BERKS.MINERALS PLAN SUL. Pit Number : 1P

Grid Reference: SU634 695 Average Annual Rainfall : 689 mm
Accumulated Temperature : 1470 degree days
Field Capacity Level : 144 days
Land Use : Permanent Grass
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 17	HZCL	10YR31 00	0	0		
17- 69	HZCL	10YR66 00	0	0	C	MDSTCP
69- 90	MCL	10YR72 00	0	50	C	
90-120	PL	10YR32 00	0	0		

Wetness Grade : 3B Wetness Class : IV
Gleying :017 cm
SPL :017 cm

Drought Grade : 3A APW : 155mm MBW : 42 mm
APP : 096mm MBP : -11 mm

FINAL ALC GRADE : 3B
MAIN LIMITATION : Wetness

SAMPLE NO.	GRID REF	USE	ASPECT 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	SU635 700	PGR		018	018	4	3B	000	0	000	0					WE	3B	4
1P	SU634 695	PGR		017	017	4	3B	155	42	096	-11	3A				WE	3B	CALCMARL
3	SU634 6990	PGR		018	018	4	3B	000	0	000	0					WE	3B	CACO3-Q
5	SU636 6990	PGR		018	018	4	3B	000	0	000	0					WE	3B	4
6	SU637 6990	PP		010	010	4	3B	000	0	000	0					WE	3B	3B-4
8	SU633 6980	PGR		020	020	4	3B	000	0	000	0					WE	3B	4
9	SU634 6980	PGR		012	025	4	3B	000	0	000	0					WE	3B	
10	SU636 6980	PP		020	020	4	3B	000	0	000	0		Y			WE	3B	
11	SU637 6980	PP		015	015	4	3B	000	0	000	0		Y			WE	3B	3B-4 FLD
12	SU638 6980	PP		025	025	4	3B	000	0	000	0		Y			WE	3B	3B-4-FLD
13	SU639 6980	PP		025	025	4	3B	000	0	000	0					WE	3B	H2O-60
14	SU634 6970	PGR		023	023	4	3B	000	0	000	0					WE	3B	4
15	SU635 6970	PP		015	015	4	3B	000	0	000	0		Y			WE	3B	3B-4
16	SU636 6970	PP		015	015	4	3B	000	0	000	0		Y			WE	3B	3B-4 FLD
18	SU638 6970	PP		020	020	4	3B	000	0	000	0					WE	3B	H2O-65
19	SU632 6960	PGR		020	020	4	3B	000	0	000	0					WE	3B	4
20	SU633 6960	PGR		020	020	4	3B	000	0	000	0					WE	3B	4
22	SU635 6960	PP		000	000	4	3B	000	0	000	0					WE	3B	
23	SU636 6960	PP		015	015	4	3B	000	0	000	0					WE	3B	3B-4 FLD
24	SU637 6960	PP		030	030	4	3B	000	0	000	0					WE	3B	
25	SU631 6950	LEY		025	025	4	3B	000	0	000	0					WE	3B	4
26	SU632 6950	PGR		040	040	3	3B	000	0	000	0					WE	3B	4
28	SU634 6950	PGR		020	020	4	3B	000	0	000	0					WE	3B	4
28A	SU634 6950	PGR		020	020	4	3B	000	0	000	0					WE	3B	4
29	SU635 6950	PGR		020	030	4	3B	000	0	000	0					WE	3B	4
30	SU636 6950	PGR		020	030	4	3B	000	0	000	0					WE	3B	4
31	SU637 6950	PP		000	015	4	3B	000	0	000	0					WE	3B	3B-4 FLD
32	SU629 6940	LEY		000		1	1	000	0	000	0					WE	3B	DTA 1B
33	SU630 6940	LEY		020	020	4	3B	000	0	000	0					WE	3B	
34	SU631 6940	LEY		028	028	4	3B	000	0	000	0					WE	3B	4
35	SU632 6940	LEY		045	045	3	3B	000	0	000	0					WE	3B	
37	SU634 6940	PP		020		4	3B	000	0	000	0		Y			WE	3B	3B-4 FLD
39	SU628 6930	LEY		028	028	4	3B	000	0	000	0		Y			WE	3B	4
40	SU629 6930	LEY		025	025	4	3B	000	0	000	0					WE	3B	4
41	SU630 6930	LEY		020	020	4	3B	000	0	000	0					WE	3B	4
43	SU632 6930	PP		030	030	4	3B	000	0	000	0		Y			WE	3B	GH-90
44	SU633 6930	PP		020	020	4	3B	000	0	000	0		Y			WE	3B	3B-4 FLD
45	SU634 6930	PP		000	020	4	3B	000	0	000	0		Y			WE	3B	3B-4
46	SU628 6920	PP		025	025	4	3B	125	12	124	17	2	Y			WE	3B	GH-85
47	SU629 6920	PP		025	025	4	3B	000	0	000	0		Y			WE	3B	GH-100
48	SU630 6920	PP		020	020	4	3B	000	0	000	0					WE	3B	3B-4 FLD
49	SU631 6920	PP		025	025	4	3B	116	3	115	8	3A				WE	3B	3B4-FLD

SAMPLE NO.	GRID REF	USE	ASPECT GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT		ALC	COMMENTS
50	SU632 6930	SET	020	020	4	3B	000	0	000	0		Y				WE	3B	3B-4 FLD	
51	SU633 6930	SET	020	020	4	3B	000	0	000	0		Y				WE	3B	3B-4 FLD	
52	SU629 6910	PP	025	025	4	3B	000	0	000	0		Y				WE	3B	GH-85	
53	SU630 6910	PP	025	025	4	3B	000	0	000	0		Y				WE	3B		
54	SU631 6910	SET	025	025	4	3B	000	0	000	0						WE	3B	3B-4 FLD	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC
1	0-18	mzcl	10YR43 00						0	0		0						
	18-70	zc	10YR62 00	10YR58 00	M			Y	0	0		0					Y	
	70-120	mzcl	10YR72 00					Y	0	0		0					Y	
1P	0-17	hzcl	10YR31 00						0	0		0						
	17-69	hzcl	10YR66 00	10YR62 00	C			Y	0	0		0	MDSTCP FM	P			Y	Y
	69-90	mcl	10YR72 00	10YR78 00	C			Y	0	0	CH	50		M			Y	Y
	90-120	pl	10YR32 00					Y	0	0		0		M			Y	
3	0-18	zcl	10YR43 00						0	0	HR	1						
	18-80	hcl	10YR62 00	10YR58 00	M			Y	0	0		0					Y	
	80-90	zcl	25Y 61 00	25Y 68 00	C			Y	0	0		0					Y	
	90-120	pl	10YR31 00					Y	0	0		0					Y	
5	0-18	zcl	10YR32 00						0	0		0						
	18-65	zc	10YR62 00	10YR68 00	C			Y	0	0		0					Y	
	65-120	zcl	25Y 62 00	25Y 66 00	C			Y	0	0		0					Y	
6	0-10	mzcl	10YR32 00	10YR58 00	F				0	0		0						
	10-120	zc	10YR62 00	10YR58 00	C			Y	0	0		0					Y	
8	0-20	zcl	10YR43 00						0	0		0						
	20-120	zc	25Y 62 00	10YR58 00	M			Y	0	0		0					Y	
9	0-12	c	10YR32 00						0	0	HR	5						
	12-25	hcl	10YR41 00	10YR58 00	C			Y	0	0		0						
	25-70	zc	25Y 62 00	10YR58 00	M			Y	0	0		0					Y	Y
	70-120	pl	10YR31 00					Y	0	0		0					Y	
10	0-20	mzcl	10YR32 00						0	0		0						
	20-120	zc	10YR62 00	10YR58 00	C			Y	0	0		0					Y	
11	0-15	mzcl	10YR32 00						0	0		0						
	15-120	zc	10YR62 00	10YR58 00	C			Y	0	0		0					Y	
12	0-25	mzcl	10YR31 00						0	0	GH	2						
	25-100	zc	10YR51 00	10YR58 00	F			Y	0	0		0					Y	
	100-120	zc	10YR51 00	10YR58 00	C			Y	0	0	GH	5					Y	
13	0-25	mzcl	10YR31 00						0	0		0						
	25-120	zc	10YR61 00	10YR58 00	C			Y	0	0		0					Y	
14	0-23	pl	10YR32 00						0	0	HR	3						
	23-60	zcl	10YR61 00	10YR68 00	C			Y	0	0		0					Y	
	60-120	szl	10YR71 00					Y	0	0		0					Y	
15	0-15	mzcl	10YR32 00						0	0		0						
	15-120	zc	10YR62 00	10YR58 00	C			Y	0	0		0					Y	

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
16	0-15	mzcl	10YR32 00						0	0		0						
	15-120	zc	10YR62 00	10YR58 00	C			Y	0	0		0					Y	
18	0-20	mzcl	10YR31 00						0	0		0						
	20-120	zc	10YR51 00	10YR58 00	C			Y	0	0		0					Y	
19	0-20	mzcl	10YR43 00						0	0		0						
	20-120	hzcl	10YR62 00	10YR58 00	C			Y	0	0		0					Y	
20	0-20	pl	10YR32 00						0	0		0						
	20-45	hzcl	10YR62 00	10YR58 00	C			Y	0	0		0					Y	
	45-120	szl	10YR71 00	10YR58 00	F			Y	0	0		0					Y	
23	0-15	mzcl	10YR32 00						0	0		0						
	15-120	zc	10YR62 00	10YR58 00	C			Y	0	0		0					Y	
24	0-30	mzcl	10YR32 00						0	0		0						
	30-120	zc	10YR61 00	10YR58 00	C			Y	0	0	GH	1					Y	
25	0-25	mzcl	10YR43 00						0	0		0						
	25-120	hzcl	10YR62 00	10YR66 00	C			Y	0	0		0					Y	
26	0-30	hcl	10YR43 00						0	0		0						
	30-40	zc	25Y 63 00						0	0		0						
	40-120	hzcl	10YR62 00	10YR58 00	C			Y	0	0		0					Y	
28	0-20	mzcl	10YR43 00						0	0		0						
	20-100	hzcl	10YR62 00	10YR68 00	M			Y	0	0		0					Y	
	100-120	hzcl	25Y 51 00					Y	0	0	GH	5					Y	
28A	0-20	mzcl	10YR43 00						0	0		0						
	20-100	hzcl	10YR62 00	10YR58 00	C			Y	0	0		0					Y	
	100-120	pl	10YR32 00					Y	0	0		0					Y	
29	0-20	mzcl	10YR43 00						0	0		0						
	20-65	hzcl	10YR62 00	10YR68 00	C			Y	0	0		0						
	65-120	hzcl	10YR64 00					Y	0	0		0						
30	0-20	mzcl	10YR43 00						0	0		0						
	20-30	hzcl	10YR42 00	10YR58 00	C			Y	0	0		0						
	30-120	hzcl	75YR61 00	75YR56 00	C			Y	0	0		0					Y	
31	0-15	mzcl	10YR41 00	10YR58 00	F			Y	0	0	GH	1						
	15-120	zc	10YR51 00	10YR68 00	C			Y	0	0	GH	1					Y	
32	0-15	mzcl	10YR32 00						0	0	HR	18						
33	0-20	hzcl	10YR43 00						0	0		0						
	20-120	hzcl	10YR32 00	10YR68 00	M			Y	0	0		0					Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES----- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC
34	0-28	mzcl	10YR43 00						0	0		0						
	28-60	hzcl	10YR62 00	10YR58 00	C			Y	0	0		0					Y	
	60-80	szl	25Y 68 00	25Y 71 00	C			Y	0	0		0					Y	
	80-120	lp	10YR31 00					Y	0	0		0					Y	
35	0-30	mzcl	10YR43 00						0	0		0						
	30-45	hzcl	10YR32 00						0	0		0						
	45-65	hzcl	25Y 62 00	10YR58 00	C			Y	0	0		0					Y	
	65-120	scl	10YR72 00					Y	0	0		0					Y	
37	0-20	mzcl	10YR32 00						0	0	CH	1						
	20-120	zc	10YR62 00	10YR68 00	C			Y	0	0	CH	1						
39	0-28	mzcl	10YR32 00						0	0		0						
	28-120	zc	10YR62 00	10YR66 00	C			Y	0	0		0					Y	
40	0-25	mzcl	10YR32 00						0	0		0						
	25-40	zc	10YR62 00	10YR58 00	C			Y	0	0		0					Y	
	40-120	szl	10YR81 00					Y	0	0		0					Y	Y
41	0-20	mzcl	10YR32 00						0	0		0						
	20-60	zc	10YR62 00	10YR58 00	C			Y	0	0		0					Y	
	60-120	scl	10YR81 00					Y	0	0		0					Y	Y
43	0-30	mzcl	10YR32 00						0	0		0						Y
	30-70	zc	10YR62 00	10YR58 00	C			Y	0	0	GH	3					Y	Y
	70-90	hcl	10YR61 00					Y	0	0	GH	5					Y	Y
44	0-20	mzcl	10YR32 00						0	0		0						Y
	20-120	zc	10YR62 00	10YR58 00	C			Y	0	0		0					Y	Y
45	0-20	mzcl	10YR32 00						0	0		0						Y
	20-120	zc	10YR62 00						0	0		0					Y	Y
46	0-25	mzcl	10YR32 00						0	0		0						
	25-85	hzcl	10YR62 00	10YR68 00	F			Y	0	0		0		M			Y	
47	0-25	mzcl	10YR32 00						0	0		0						Y
	25-80	zc	10YR62 00	10YR68 00	C			Y	0	0		0					Y	
	80-100	pzl	10YR31 00					Y	0	0		0					Y	
48	0-20	mzcl	10YR32 00						0	0		0						Y
	20-120	zc	10YR51 00	10YR58 00	C			Y	0	0		0					Y	Y
49	0-25	mzcl	10YR32 00						0	0		0						Y
	25-70	zc	10YR62 00	10YR68 00	C			Y	0	0		0		M			Y	Y
	70-85	scl	10YR72 00					Y	0	0	GH	2		M			Y	Y

				----MOTTLES-----			PED		----STONES----				STRUCT/	SUBS			
SAMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL.	GLEY	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
50	0-20	mzcl	10YR32 00						0	0		0						
	20-80	hzcl	10YR51 00	10YR58 00	C			Y	0	0		0					Y	
	80-120	zc	10YR51 00	10YR58 00	C			Y	0	0		0					Y	
51	0-20	hzcl	10YR32 00						0	0		0						
	20-120	zc	10YR62 00	10YR68 00	C			Y	0	0		0					Y	Y
52	0-25	mzcl	10YR32 00						0	0		0						Y
	25-60	hzcl	10YR51 00	10YR58 00	C			Y	0	0		0					Y	Y
	60-85	scl	10YR72 00					Y	0	0		0					Y	Y
53	0-25	mzcl	10YR32 00						0	0		0						Y
	25-100	hzcl	10YR51 00	10YR58 00	C			Y	0	0		0					Y	Y
	100-120	scl	10YR72 00	10YR68 00	C			Y	0	0	GH	2					Y	Y
54	0-25	mzcl	10YR32 00						0	0		0						
	25-120	zc	10YR51 00	10YR58 00	C			Y	0	0		0					Y	