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West Sussex Minerals Plan
Site H: East Clayton Farm, Washington
Agricultural Land Classification,
ALC Map and Report
May 1995

AGRICULTURAL LAND CLASSIFICATION REPORT

WEST SUSSEX MINERALS PLAN

SITE H: EAST CLAYTON FARM, WASHINGTON

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 West Sussex. The work forms part of MAFF's statutory input to the West Sussex Minerals Plan.
- 1.2 Site H comprises 27.8 hectares of land to the east of Storrington in West Sussex. An Agricultural Land Classification (ALC) survey was carried out during April 1995. The survey was undertaken at a detailed level of approximately one boring per hectare. A total of 28 borings and two soil inspection pits were described according to 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 agricultural land was under permanent grass. Land mapped as Urban comprises a well-established fenced unsurfaced track. The Agricultural Buildings comprise barns and machinery storage areas. The areas of Non-agricultural land are used for storing silage and logs.
- 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
1	7.0	25.2	25.9
2	2.1	7.6	7.8
3a	17.9	64.4	<u>66.3</u>
Non-agricultural	0.2	0.7	100.0 (27.0ha)
Agricultural Buildings	0.2	0.7	
Urban	<u>0.4</u>	<u>1.4</u>	
Total area of site	27.8	100.0	

- 1.6 Appendix I gives a general description of the grades, subgrades and land use categories identified in the survey. The main classes are described in terms of the type of limitation that can occur, the typical cropping range and the expected level and consistency of yield.

1.7 The agricultural land at this site has been classified as being in the range, Grade 1 (excellent quality) to Subgrade 3a (good quality). Where limitations occur, they are primarily due to soil droughtiness. Grade 1 land, located towards the west of the site, comprises freely draining deep stoneless light loamy soils. In the prevailing local climate these are sufficiently moisture retentive to provide adequate water for crop growth in most years. Grade 2 land to the south east of the site is similar to that assigned to Grade 1, except that the profiles either contain flints, or medium loamy horizons. These factors slightly reduce profile available water, such that there is a slight risk of drought stress affecting plant growth and yield. The Subgrade 3a land over the majority of the site comprises deep light loamy and sandy soils. As a result of the free draining nature of these soils, profile available water is limited. This leads to a moderate risk of drought stress occurring and affecting plant growth and yield.

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, 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.

2.4 No local climatic factors such as exposure or frost risk are believed to affect the site. However, climatic and soil factors interact to influence soil wetness and droughtiness limitations. The normally droughty nature of the sandy soils encountered at this site are partially offset by the relatively high, in a regional context, average annual rainfall and consequent field capacity days in this area.

Table 2: Climatic Interpolations

Grid Reference	TQ113138	TQ116137
Altitude, (m, AOD)	60	70
Accumulated Temperature (day degrees C., Jan.-June)	1471	1460
Average Annual Rainfall (mm)	885	889
Field Capacity Days	185	185
Moisture deficit, wheat (mm)	102	101
Moisture deficit, potatoes (mm)	94	92
Overall Climatic Grade	1	1

3. Relief

- 3.1 The site lies between approximately 55 and 80m AOD. To the west of the track, the land is relatively flat, rising gently from south to north. To the east of the track, a similar south to north rise is more pronounced. Nowhere in this area does relief or gradient affect agricultural land quality.

4. Geology and Soils

- 4.1 The published geological information (BGS, 1984), shows the majority of the site to be underlain by Cretaceous Folkestone Beds. The remaining area to the south west is shown as being underlain by Cretaceous Gault Clay.
- 4.2 The published soils information (SSEW, 1983), shows the site to be underlain by soils from the Shirrell Heath 2 and Fyfield 1 Associations. The Shirrell Heath soils are located towards the north of the site and are described as, 'well drained sandy soils with a bleached subsurface horizon, sometimes over soft rock, mainly on heaths and often very acid. Well drained sandy and coarse loamy soils on farmland.' (SSEW, 1983). The Fyfield soils located towards the south of the site are described as, 'well drained coarse and fine loamy soils over interbedded sands and sandstones. Similar fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging. Slight risk of water erosion.' (SSEW 1983). The soils encountered at the site were broadly similar to those described by the soil survey.

5. Agricultural Land Classification

- 5.1 Paragraph 1.5 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 1

- 5.3 Excellent quality agricultural land capable of supporting a wide range of arable and horticultural crops has been identified towards the west of the site. Land in this area showed no significant limitation in terms of its agricultural use. Soils are well drained (Wetness Class I, see Appendix II) and contain adequate reserves of available water for plant growth. Soil profiles commonly comprise a very slightly stony (2% v/v total flints) medium sandy loam topsoil. This passes to two stoneless medium sandy loam upper subsoil horizons. The lower subsoil from between 90 and 110cm comprises a loamy medium sand or medium sand. The pit observation 2p (see Appendix III) is representative of this soil type. In the relatively wet local climate, soils of this nature are sufficiently moisture retentive to supply adequate water for plant growth in most years and the light topsoil texture does not restrict land utilisation. As such Grade 1 is appropriate. Occasional observations in this area were of a slightly worse quality, but these were of insufficient number and distribution to justify separate mapping.

Grade 2

- 5.5 Land of very good quality has been mapped towards the south east of the site. The principal limitation to land quality in this area is topsoil workability. The soils encountered commonly comprise a stoneless medium clay loam topsoil. This overlies a stoneless sandy clay loam upper subsoil to approximately 65cm, passing to a stoneless sandy clay loam showing evidence of wetness (ie, gleying). Beneath this, (from 90cm) the lower subsoil to 120cm was a loamy medium sand. Given the prevailing climate, soils of this nature have adequate reserves of available water for plant growth. The evidence of wetness occurs at a depth where the land classification is unaffected. However as the topsoil is of a medium texture, there is a slight restriction on land utilisation given the relatively wet local climatic conditions. Topsoils may be adversely affected by inappropriate cultivations and/or grazing during wetter periods. Because of this slight restriction, Grade 2 is mapped. Occasional observations in this area were of a slightly better quality, but these were of insufficient quantity and distribution to be mapped separately.

Subgrade 3a

- 5.8 Land of good quality occurs over the majority of the site. The principal limitation to land quality is soil droughtiness. Profiles in this area commonly comprise a very slightly stony (2% v/v total flints) medium sandy loam topsoil. This passes to a stoneless or very slightly stony (2% v/v total flints) loamy medium sand or medium sandy loam upper subsoil. The lower subsoil horizons are more variable over the site. They comprise combinations of medium sandy loam, loamy medium sand and medium sand, all of which are moderately structured and occasionally show evidence of wetness (gleying) at depths which do not affect the classification. The pit observation 1p (see Appendix III) is representative of this soil type. The coarse textured nature of these soils leads to a reduction in plant available water, such that under the local climatic regime, there is a risk of soil droughtiness affecting plant growth and yield, to the extent that land is restricted to Subgrade 3a.

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Resource Planning Team
Guildford Statutory Group
ADAS Reading

SOURCES OF REFERENCE

British Geological Survey (1984), Sheet 318/333, Brighton & Worthing, 1:50,000. Solid & 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), Climatic datasets for Agricultural Land Classification.

Soil Survey of England and Wales (1983), Sheet No. 6, Soils of South-East England, 1:250,000, and Accompanying Legend.

Soil Survey of England and Wales (1984), Soils and their use in South-East England. Bulletin No.15.

APPENDIX I

DESCRIPTION OF THE GRADES AND SUBGRADES

Grade 1 : Excellent Quality Agricultural Land

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

Grade 2 : Very Good Quality Agricultural Land

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

Grade 3 : Good to Moderate Quality Land

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

Subgrade 3a : Good Quality Agricultural Land

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

Subgrade 3b : Moderate Quality Agricultural Land

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

Grade 4 : Poor Quality Agricultural Land

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

Grade 5 : Very Poor Quality Agricultural Land

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

Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Woodland

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm woodland.

Agricultural Buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg. polythene tunnels erected for lambing) may be ignored.

Open Water

Includes lakes, ponds and rivers as map scale permits.

Land Not Surveyed

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above, eg. buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will be shown.

APPENDIX II

FIELD ASSESSMENT OF SOIL WETNESS CLASS

SOIL WETNESS CLASSIFICATION

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile. Six soil wetness classes are identified and are defined in the table below.

Definition of Soil Wetness Classes

Wetness Class	Duration of Waterlogging ¹
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years. ²
II	The soil profile is wet within 70 cm depth for 31-90 days in most years or, if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 90 days, but only wet within 40 cm depth for 30 days in most years.
III	The soil profile is wet within 70 cm depth for 91-180 days in most years or, if there is no slowly permeable layer present within 80 cm depth, it is wet within 70 cm for more than 180 days, but only wet within 40 cm depth for between 31-90 days in most years.
IV	The soil profile is wet within 70 cm depth for more than 180 days but not wet within 40 cm depth for more than 210 days in most years or, if there is no slowly permeable layer present within 80 cm depth, it is wet within 40 cm depth for 91-210 days in most years.
V	The soil profile is wet within 40 cm depth for 211-335 days in most years.
VI	The soil profile is wet within 40 cm depth for more than 335 days in most years.

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

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

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

APPENDIX III

SOIL PIT AND SOIL BORING DESCRIPTIONS

Contents :

Soil Abbreviations - Explanatory Note

Soil Pit Descriptions

Database Printout - Boring Level Information

Database Printout - Horizon Level Information

SOIL PROFILE DESCRIPTIONS : EXPLANATORY NOTE

Soil pit and auger boring information collected during ALC fieldwork is held on a computer database. This uses notations and abbreviations as set out below.

Boring Header Information

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. **GLEYSPL** : 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. **GLEYS** : If the soil horizon is gleyed a 'Y' will appear in this column. If slightly gleyed, an 'S' will appear.
7. **STONE LITH** : Stone Lithology - One of the following is used.

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

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

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

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

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

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

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

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

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

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

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

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

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

15. Other notations

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

SOIL PIT DESCRIPTION

Site Name : W SUSSEX MINS LP SITE H Pit Number : 1P

Grid Reference: TQ11501375 Average Annual Rainfall : 885 mm
 Accumulated Temperature : 1471 degree days
 Field Capacity Level : 185 days
 Land Use : Permanent Grass
 Slope and Aspect : 3 degrees S

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 32	MSL	10YR43 00	0	2	HR					
32- 49	LMS	10YR44 00	0	0			WKCSAB	VF	M	
49- 70	MS	75YR46 00	0	0			SGRAIN	L	M	
70-120	MS	75YR34 61	0	0		M	WKCSAB	FM	M	

Wetness Grade : 1 Wetness Class : I
 Gleying : cm
 SPL : cm
 Drought Grade : 3A APW : 94 mm MBW : -8 mm
 APP : 77 mm MBP : -17 mm

FINAL ALC GRADE : 3A
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : W SUSSEX MINS LP SITE H Pit Number : 2P

Grid Reference: TQ11201390 Average Annual Rainfall : 885 mm
 Accumulated Temperature : 1471 degree days
 Field Capacity Level : 185 days
 Land Use : Permanent Grass
 Slope and Aspect : 3 degrees S

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 27	MSL	10YR43 00	0	2	HR					
27- 69	MSL	10YR44 00	0	0			MDCSAB	FR	M	
69- 95	MSL	10YR46 00	0	0			MDCSAB	FR	M	
95-120	MS	10YR66 00	0	0		C	WKCSAB	VF	M	

Wetness Grade : 1 Wetness Class : I
 Gleying : cm
 SPL : cm
 Drought Grade : 1 APW : 139mm MBW : 37 mm
 APP : 110mm MBP : 16 mm

FINAL ALC GRADE : 1
 MAIN LIMITATION :

SAMPLE NO.	GRID REF	ASPECT		--WETNESS--			-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS
		USE	GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT	
1	TQ11201410	PGR	SW	2			1	1	92	-10	75	-19	3A				DR 3A
1P	TQ11501375	PGR	S	3			1	1	94	-8	77	-17	3A				DR 3A
2	TQ11201400	PGR	W	2			1	1	126	24	79	-15	3A				DR 3A
2P	TQ11201390	PGR	S	3			1	1	139	37	110	16	1				1
3	TQ11301400	PGR	SW	3	50		1	1	96	-6	79	-15	3A				DR 3A
4	TQ11201390	PGR					1	1	139	37	109	15	1				1
5	TQ11301390	PGR	SW	3			1	1	129	27	79	-15	3A				DR 3A Q MSL 30
6	TQ11401390	PGR	SW	3			1	1	127	25	108	14	2				DR 2
7	TQ11101380	PGR					1	1	109	7	107	13	2				DR 2 IMP 80 STONY
8	TQ11201380	PGR	SW	1			1	1	135	33	108	14	1				1
9	TQ11301380	PGR	SW	1			1	1	135	33	109	15	1				1
10	TQ11401380	PGR	SW	1			1	1	115	13	101	7	2				DR 2
11	TQ11501380	PGR	W	3			1	1	97	-5	81	-13	3A				DR 3A
12	TQ11601380	PGR	S	2			1	1	89	-13	72	-22	3A				DR 3A
13	TQ11701380	PGR	S	2			1	1	105	3	90	-4	3A				DR 3A
14	TQ11101370	PGR			60		1	2	153	51	114	20	1				WK 2 QSPL 60 3A
15	TQ11201370	PGR					1	1	153	51	112	18	1				1
16	TQ11301370	PGR					1	1	93	-9	76	-18	3A				DR 3A
17	TQ11401370	PGR					1	1	92	-10	75	-19	3A				DR 3A
18	TQ11501370	PGR	S	3			1	1	96	-6	80	-14	3A				DR 3A
19	TQ11601370	PGR	S	5			1	1	98	-4	83	-11	3A				DR 3A
20	TQ11701370	PGR	S	4			1	1	93	-9	76	-18	3A				DR 3A
21	TQ11101360	PGR			50		1	1	110	8	94	0	2				DR 2
22	TQ11201360	PGR					1	1	96	-6	80	-14	3A				DR 3A
23	TQ11301360	PGR					1	1	136	34	111	17	1				1
24	TQ11401360	PGR	W	2			1	1	96	-6	79	-15	3A				DR 3A
25	TQ11501360	PGR					1	1	96	-6	81	-13	3A				DR 3A
26	TQ11601360	PGR			65		1	2	138	36	114	20	1				WK 2
27	TQ11701360	PGR	S	4			1	1	82	-20	65	-29	3A				DR 3A
28	TQ11701350	PGR	S	2			1	1	153	51	108	14	1				1

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----		PED	----STONES----		STRUCT/	SUBS	SPL	CALC
				COL	ABUN		CONT	COL.				
1	0-30	ms1	10YR42 00					0	0	HR	2	
	30-45	lms	10YR44 00					0	0		0	M
	45-120	ms	10YR56 00					0	0		0	M
1P	0-32	ms1	10YR43 00					0	0	HR	2	
	32-49	lms	10YR44 00					0	0		0	WKCSAB VF M
	49-70	ms	75YR46 00					0	0		0	SGRAIN L M
	70-120	ms	75YR34 61	00MN00 00	M	00FE00 00		0	0		0	WKCSAB FM M
2	0-30	ms1	10YR43 00					0	0	HR	2	
	30-75	lms	10YR44 00					0	0		0	M
	75-120	ms1	10YR56 00					0	0		0	M
2P	0-27	ms1	10YR43 00					0	0	HR	2	
	27-69	ms1	10YR44 00					0	0		0	MDCSAB FR M
	69-95	ms1	10YR46 00					0	0		0	MDCSAB FR M
	95-120	ms	10YR66 00	75YR46 00	C	00FE00 00		0	0		0	WKCSAB VF M
3	0-30	ms1	10YR42 00					0	0	HR	2	
	30-50	lms	10YR54 00					0	0		0	M
	50-90	lms	10YR54 00	10YR58 00	C			Y	0	0	0	M
	90-120	ms	10YR54 00	10YR56 00	C			Y	0	0	0	M
4	0-30	ms1	10YR43 00					0	0	HR	2	
	30-65	ms1	10YR44 00					0	0	HR	2	M
	65-95	ms1	10YR44 54					0	0		0	M
	95-120	ms	10YR66 00					0	0		0	M
5	0-30	ms1	10YR42 00					0	0	HR	2	
	30-70	lms	10YR44 00					0	0		0	M
	70-90	ms1	10YR56 54					0	0		0	M
	90-120	ms1	10YR56 00					0	0		0	M
6	0-25	ms1	10YR42 00					0	0	HR	2	
	25-80	ms1	10YR44 00					0	0	HR	2	M
	80-120	ms	10YR66 00					0	0		0	M
7	0-25	ms1	10YR43 00					0	0	HR	2	
	25-65	ms1	10YR54 00					0	0	HR	2	M
	65-80	ms1	10YR54 00					0	0	HR	15	M
8	0-25	ms1	10YR43 00					0	0	HR	2	
	25-55	ms1	10YR44 00					0	0	HR	2	M
	55-90	ms1	10YR54 00					0	0	HR	2	M
	90-120	lms	10YR56 00					0	0	HR	5	M
9	0-25	ms1	10YR43 00					0	0	HR	2	
	25-75	ms1	10YR44 00					0	0		0	M
	75-90	ms1	10YR54 00					0	0		0	M
	90-120	ms	10YR56 00					0	0		0	M

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----		PED CONT	COL.	----STONES----			STRUCT/ CONSIST	SUBS STR POR IMP SPL CALC
				COL	ABUN			GLEY	>2	>6		
10	0-25	ms1	10YR42 00					0	0	HR	2	
	25-60	ms1	10YR54 44					0	0		0	M
	60-75	lms	10YR54 00					0	0		0	M
	75-120	ms	10YR66 00					0	0		0	M
11	0-33	ms1	10YR43 00					0	0		0	
	33-60	lms	10YR44 00					0	0		0	M
	60-90	ms	75YR46 56					0	0		0	M
	90-100	ms	75YR46 58 00FE00 00 C					0	0		0	M
	100-120	ms	05YR46 56					0	0		0	M
12	0-27	ms1	10YR42 43					0	0	HR	2	
	27-45	lms	10YR44 46					0	0		0	M
	45-70	ms	75YR58 00					0	0		0	M
	70-120	ms	75YR68 00					0	0		0	M
13	0-25	ms1	10YR42 00					0	0	HR	2	
	25-45	ms1	10YR42 00					0	0		0	M
	45-70	lms	75YR58 00					0	0		0	M
	70-120	ms	75YR68 00					0	0		0	M
14	0-30	sc1	10YR43 00					0	0		0	
	30-60	hc1	10YR44 00					0	0		0	M
	60-80	sc1	10YR44 00 10YR58 00 C					Y	0	0	0	M
	80-120	sc1	10YR53 00 10YR58 00 M					Y	0	0	0	M
15	0-35	ms1	10YR43 00					0	0		0	
	35-60	ms1	10YR44 00					0	0		0	M
	60-80	ms1	10YR46 00					0	0		0	M
	80-110	ms1	10YR56 58					0	0		0	M
	110-120	lms	10YR58 00					0	0		0	M
16	0-30	ms1	10YR43 00					0	0	HR	2	
	30-55	lms	10YR44 00					0	0		0	M
	55-90	ms	10YR46 00					0	0		0	M
	90-120	ms	10YR56 00					0	0		0	M
17	0-30	ms1	10YR43 00					0	0	HR	2	
	30-45	lms	10YR44 00					0	0		0	M
	45-70	ms	75YR46 31 05YR56 00 C				00FE00 00	0	0		0	M
	70-120	ms	75YR46 00 05YR56 00 C				00FE00 00	0	0		0	M
18	0-33	ms1	10YR43 00					0	0	HR	2	
	33-60	lms	10YR44 00					0	0		0	M
	60-95	ms	75YR46 00					0	0		0	M
	95-100	ms	75YR21 00					0	0		0	M
	100-120	ms	75YR68 00					0	0		0	M

IRON PAN
IRON PAN

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES---			PED COL.	---STONES---			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLE	>2	>6		LITH	TOT	STR	POR	IMP	SPL
19	0-35	msl	10YR43 00					0	0	HR	2						
	35-65	lms	10YR44 00					0	0		0			M			
	65-100	ms	75YR46 00					0	0		0			M			
	100-120	ms	75YR56 00					0	0		0			M			
20	0-25	msl	10YR43 00					0	0	HR	2						
	25-35	msl	10YR44 46					0	0		0			M			
	35-85	ms	10YR56 00					0	0		0			M			
	85-120	ms	75YR68 00					0	0		0			M			
21	0-33	msl	10YR43 00					0	0	HR	2						
	33-50	msl	75YR44 00 03					0	0		0			M			
	50-65	lms	75YR46 00 75YR68 00 C					Y	0	0	0			M			
	65-120	ms	75YR66 00 05YR58 00 C					Y	0	0	0			M			
22	0-33	msl	10YR43 00					0	0	HR	2						
	33-60	lms	10YR44 46					0	0		0			M			
	60-120	ms	10YR68 78					0	0		0			M			
23	0-33	msl	10YR43 00					0	0	HR	2						
	33-70	msl	10YR43 44					0	0		0			M			
	70-85	msl	10YR46 00					0	0		0			M			
	85-120	lms	10YR66 56					0	0		0			M			
24	0-33	msl	10YR33 43					0	0	HR	2						
	33-55	lms	10YR43 00					0	0		0			M			
	55-70	ms	10YR44 00					0	0		0			M			
	70-120	ms	75YR56 00					0	0		0			M			
25	0-33	msl	10YR41 00					0	0	HR	2						
	33-65	lms	10YR44 00					0	0		0			M			
	65-90	ms	10YR46 00					0	0		0			M			
	90-120	ms	75YR68 00					0	0		0			M			
26	0-30	mc1	10YR42 00					0	0		0						
	30-65	sc1	10YR43 00					0	0		0			M			
	65-90	sc1	10YR53 00 10YR58 00 C					Y	0	0	0			M			
	90-120	lms	75YR58 00					Y	0	0	0			M			
27	0-20	msl	10YR42 00					0	0		0						
	20-38	lms	10YR42 58					0	0		0			M			
	38-90	ms	75YR58 00					0	0		0			M			
	90-120	ms	75YR56 00					0	0		0			M			
28	0-25	msl	10YR42 00					0	0	HR	1						
	25-65	msl	10YR46 00					0	0	HR	2			M			
	65-95	msl	10YR46 00					0	0	HR	5			M			
	95-120	msl	10YR56 00					0	0	HR	2			M			