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**West Sussex Minerals Plan  
Site G: Park Farm, Pulborough,  
Agricultural Land Classification,  
ALC Map and Report.  
June 1995**

# AGRICULTURAL LAND CLASSIFICATION, SUMMARY REPORT

## WEST SUSSEX MINERALS PLAN.

### SITE G: PARK FARM, PULBOROUGH.

#### 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 preparation of the West Sussex Minerals Plan.
- 1.2 The site comprises 23.5 hectares of land to the west of Pulborough 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 1 boring per hectare of agricultural land surveyed. A total of 26 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 majority of the site was fallow from a previous arable crop. Towards the north of the site, the land was under permanent grazing. The area shown as Non-agricultural is a track. The Agricultural buildings are stables.
- 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. This survey supersedes any previous ALC information for this site.

**Table 1: Distribution of Grades and Subgrades**

Grade	Area (ha)	% of Site	% of Agricultural Area
2	17.9	76.1	76.8
3b	4.9	20.9	21.0
4	0.5	2.1	<u>2.2</u>
Non-Agricultural	0.2	0.9	100.0 (23.3ha)
Agricultural Buildings	<u>&lt;0.1</u>	<u>&lt;0.1</u>	
Total area of site	23.5ha	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 Grade 2 (very good quality) to Grade 4 (poor quality). The classification is based on limitations comprising soil workability, soil droughtiness and gradient. The area of Grade 2 land was affected by soil workability and soil droughtiness. The relatively wet climate in the site causes the medium textured topsoils encountered over much of this area to be prone to structural damage if they are cultivated and/or grazed when too wet. This leads to a slight workability restriction. The remaining profiles in this area were of a free draining light loamy nature. Under the prevailing local climate, these factors slightly restrict profile available water. Consequently there is a risk of drought stress affecting plant growth and yield.
- 1.8 The areas of Subgrade 3b and Grade 4 within the site are affected by soil droughtiness limitations and slope. The soils encountered in this area were of a free draining, light loamy and sandy nature. In the local climate, soils of this nature are drought prone. Consequently, there is a significant risk of drought stress affecting plant growth restricting this area to a classification no higher than Subgrade 3b. Occasionally, iron-pans or soft sandstone were encountered at depth. These have the effect of restricting plant rooting depth and subsequently profile available water is also further restricted. However these profiles still remain in the range where Subgrade 3b is appropriate.
- 1.9 Towards the north-east of the site, slope is significant in the land classification. Gradients in the range 7-18° were measured. These are sufficient to compromise the safe and efficient use of agricultural machinery insofar as the assigned grades are appropriate.

## **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.

**Table 2: Climatic Interpolations**

Grid Reference	TQ035183	TQ037188
Altitude, (m, AOD)	5	35
Accumulated Temperature (day degrees C., Jan.-June)	1534	1499
Average Annual Rainfall (mm)	858	865
Field Capacity Days	182	183
Moisture deficit, wheat (mm)	108	105
Moisture deficit, potatoes (mm)	103	98
Overall Climatic Grade	1	1

**3. Relief**

3.1 The site lies between approximately 5 and 35m AOD. The majority of the site in the south is relatively flat, rising gently. However, towards the north of the site, gradients are steeper so that in the north-east, slope becomes an overriding factor in the land classification of this part of the site. Gradients in the range 7-18° were measured.

**4. Geology and Soils**

4.1 The published geological information (BGS, 1972), shows the majority of the site to be underlain by Cretaceous Folkestone Beds. Towards the east of the site Cretaceous Sandgate beds are shown and valley gravel as a drift deposit along the southern boundary.

4.2 The published soils information (SSEW, 1983) shows the site to be underlain by soils from the Frilford Association. This is described as comprising, 'deep well drained sandy and coarse loamy soils. Some ferruginous sandy and some coarse loamy soils affected by groundwater. Risk of water erosion.' (SSEW 1983). The soils encountered at the site were of a similar type to the above towards the north of the site. Towards the south, the soils comprised slightly imperfectly drained medium and heavy clay loams.

**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 2**

- 5.5 Land of very good quality extends over the majority of the site. Over most of this area soil workability was the principal limitation however, towards the north west of the site, soil droughtiness was overriding. In this area, soils were found to typically comprise a stoneless or very slightly stony (2% flints by volume) medium sandy loam topsoil, passing to a similarly stony medium sandy loam or loamy medium sand upper subsoil that occasionally showed evidence of soil wetness in the form of gleying. The lower subsoil horizons were variable, either remaining as a stoneless to very slightly stony medium sandy loam, or becoming medium sand, sandy clay loam or medium clay loam. Occasionally these horizons were impenetrable to the soil auger between 85 and 90cm, over sandstone or a deep ironpan. The lower subsoil horizons were often observed to be slightly affected by soil wetness in the form of gleying. However, this occurred at a depth where it had no effect on the classification. The coarse loamy nature of parts of these profiles causes a slight reduction in plant available water. This leads to a very slight risk of soil droughtiness affecting plant growth and yield under the local relatively wet climatic conditions
- 5.6 The remaining area of Grade 2 land is restricted by topsoil workability. Soils in this area comprise a very slightly stony (2% total flints) medium clay loam topsoil, passing to a commonly stoneless medium clay loam upper subsoil. The lower subsoil horizons comprise moderately structured medium and heavy clay loams to depth (120cm). The lower subsoils commonly exhibit slight soil wetness characteristics in the form of gleying, but the depth at which this occurs and the moderate structures of these horizons are such that classification is unaffected. The pit observation 1p (see Appendix III), is typical of this soil type. These soils contain sufficient quantities of water for plant growth. However, the relatively wet local climatic regime is such that the medium textured topsoils encountered in this area are very slightly restricted in terms of workability. This leads to a slight restriction on land utilisation, Grade 2 is therefore appropriate.

## **Subgrade 3b**

- 5.7 The area of moderate quality land within the site is principally limited by soil droughtiness and slope. The area limited by soil droughtiness has soils which comprise a very slightly stony (2% total flints) medium sandy loam or loamy medium sand topsoil. These pass to stoneless to slightly stony (up to 10% total flints) medium sandy loam, loamy medium sand or medium sand horizons to depth. The pit observation 2p (see Appendix III), is typical of this soil type. Occasionally these profiles became impenetrable to the soil auger between 40 and 75cm. This was due to the presence of either an ironpan or sandstone in the profile, causing plant rooting depth to be restricted. In the prevailing local climate free draining soils of this nature are restricted in terms of plant available water. Therefore Subgrade 3b is appropriate as there is a significant risk of soil droughtiness affecting plant growth and yield in this area.
- 5.8 Towards the north east of the site, slope gradients increase, such that this becomes the overriding limitation to land quality. Gradients in this area were measured in

the range 7-11°. This restricts the safe and efficient use of farm machinery such that Subgrade 3b is appropriate.

**Grade 4**

- 5.9 In the extreme north east of the site, slope is the principal limitation to land quality. Gradients in this area were measured in the range 11-18°. This leads to there being a severe restriction on the safe and efficient use of farm machinery such that Grade 4 is appropriate.

ADAS Ref: 2007/068/95  
MAFF Ref: EL42/228

Resource Planning Team  
Guildford Statutory Group  
ADAS Reading

## **SOURCES OF REFERENCE**

British Geological Survey (1972), Sheet 317, Chichester, 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), 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 <sup>1</sup>
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years. <sup>2</sup>
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.

<sup>1</sup>The number of days specified is not necessarily a continuous period.

<sup>2</sup>'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

- GRID REF** : national 100 km grid square and 8 figure grid reference.
- USE** : Land use at the time of survey. The following abbreviations are used.

<b>ARA</b> : Arable	<b>WHT</b> : Wheat	<b>BAR</b> : Barley
<b>CER</b> : Cereals	<b>OAT</b> : Oats	<b>MZE</b> : Maize
<b>OSR</b> : Oilseed rape	<b>BEN</b> : Field Beans	<b>BRA</b> : Brassicae
<b>POT</b> : Potatoes	<b>SBT</b> : Sugar Beet	<b>FCD</b> : Fodder Crops
<b>LIN</b> : Linseed	<b>FRT</b> : Soft and Top Fruit	<b>FLW</b> : Fallow
<b>PGR</b> : Permanent Pasture	<b>LEY</b> : Ley Grass	<b>RGR</b> : Rough Grazing
<b>SCR</b> : Scrub	<b>CFW</b> : Coniferous Woodland	<b>DCW</b> : Deciduous Wood
<b>HTH</b> : Heathland	<b>BOG</b> : Bog or Marsh	<b>FLW</b> : Fallow
<b>PLO</b> : Ploughed	<b>SAS</b> : Set aside	<b>OTH</b> : Other
<b>HRT</b> : Horticultural Crops		
- GRDNT** : Gradient as estimated or measured by a hand-held optical clinometer.
- GLEYSPL** : Depth in centimetres (cm) to gleying and/or slowly permeable layers.
- AP (WHEAT/POTS)** : Crop-adjusted available water capacity.
- MB (WHEAT/POTS)** : Moisture Balance. (Crop adjusted AP - crop adjusted MD)
- DRT** : Best grade according to soil droughtiness.
- If any of the following factors are considered significant, 'Y' will be entered in the relevant column.

<b>MREL</b> : Microrelief limitation	<b>FLOOD</b> : Flood risk	<b>EROSN</b> : Soil erosion risk
<b>EXP</b> : Exposure limitation	<b>FROST</b> : Frost prone	<b>DIST</b> : Disturbed land
<b>CHEM</b> : Chemical limitation		
- LIMIT** : The main limitation to land quality. The following abbreviations are used.

<b>OC</b> : Overall Climate	<b>AE</b> : Aspect	<b>EX</b> : Exposure
<b>FR</b> : Frost Risk	<b>GR</b> : Gradient	<b>MR</b> : Microrelief
<b>FL</b> : Flood Risk	<b>TX</b> : Topsoil Texture	<b>DP</b> : Soil Depth
<b>CH</b> : Chemical	<b>WE</b> : Wetness	<b>WK</b> : Workability
<b>DR</b> : Drought	<b>ER</b> : Erosion Risk	<b>WD</b> : Soil Wetness/Droughtiness
<b>ST</b> : Topsoil Stoniness		

## Soil Pits and Auger Borings

1. **TEXTURE** : soil texture classes are denoted by the following abbreviations.

<b>S</b> :	Sand	<b>LS</b> :	Loamy Sand	<b>SL</b> :	Sandy Loam
<b>SZL</b> :	Sandy Silt Loam	<b>CL</b> :	Clay Loam	<b>ZCL</b> :	Silty Clay Loam
<b>ZL</b> :	Silt Loam	<b>SCL</b> :	Sandy Clay Loam	<b>C</b> :	Clay
<b>SC</b> :	Sandy Clay	<b>ZC</b> :	Silty Clay	<b>OL</b> :	Organic Loam
<b>P</b> :	Peat	<b>SP</b> :	Sandy Peat	<b>LP</b> :	Loamy Peat
<b>PL</b> :	Peaty Loam	<b>PS</b> :	Peaty Sand	<b>MZ</b> :	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:

<b>F</b> :	Fine (more than 66% of the sand less than 0.2mm)
<b>M</b> :	Medium (less than 66% fine sand and less than 33% coarse sand)
<b>C</b> :	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.

<b>HR</b> :	all hard rocks and stones	<b>SLST</b> :	soft oolitic or dolimitic limestone
<b>CH</b> :	chalk	<b>FSST</b> :	soft, fine grained sandstone
<b>ZR</b> :	soft, argillaceous, or silty rocks	<b>GH</b> :	gravel with non-porous (hard) stones
<b>MSST</b> :	soft, medium grained sandstone	<b>GS</b> :	gravel with porous (soft) stones
<b>SI</b> :	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 SITE G Pit Number : 1P

Grid Reference: TQ03541848 Average Annual Rainfall : 858 mm  
 Accumulated Temperature : 1534 degree days  
 Field Capacity Level : 182 days  
 Land Use : Arable  
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 33	MCL	10YR43 00	0	2	HR					
33- 46	MCL	75YR43 00	0	0			MCSAB	FR	M	
46- 90	MCL	75YR53 00	0	0		C	MCSAB	FR	M	
90-120	HCL	75YR53 00	0	0		C	MCSAB	FM	M	

Wetness Grade : 2 Wetness Class : I  
 Gleying : 46 cm  
 SPL : cm

Drought Grade : 1 APW : 155mm MBW : 47 mm  
 APP : 117mm MBP : 14 mm

FINAL ALC GRADE : 2  
 MAIN LIMITATION : Workability

SOIL PIT DESCRIPTION

Site Name : W SUSSEX MINS SITE G Pit Number : 2P

Grid Reference: TQ03601860 Average Annual Rainfall : 858 mm  
 Accumulated Temperature : 1534 degree days  
 Field Capacity Level : 182 days  
 Land Use : Arable  
 Slope and Aspect : 2 degrees S

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 32	LMS	10YR43 00	0	2	HR					
32- 55	LMS	75YR58 00	0	0			WKCSAB	VF	M	
55-120	LMS	75YR56 63	0	0		C		FR	M	

Wetness Grade : 1 Wetness Class : I  
 Gleying : cm  
 SPL : cm

Drought Grade : 3B APW : 79 mm MBW : -29 mm  
 APP : 60 mm MBP : -43 mm

FINAL ALC GRADE : 3B  
 MAIN LIMITATION : Droughtiness



SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC COMMENTS	
			GRDNT	GLEYSPL	CLASS	GRADE	AP	MB	AP	MB					DRT
1	TQ03601880	PGR S	5		1	1	78	-30	79	-24	3B		DR	3B	IMP SAND 55
1A	TQ03601880	PGR S	3		1	1	77	-31	78	-25	3B		DR	3B	
1P	TQ03541848	ARA		46	1	2	155	47	117	14	1		WK	2	
2	TQ03701880	PGR S	9		1	1	70	-38	54	-49	3B		DR	3B	GRADE 3B SLOPE
2P	TQ03601860	ARA S	2		1	1	79	-29	60	-43	3B		DR	3B	PIT 120
3	TQ03801880	PGR S	12	100	1	1	78	-30	60	-43	3B		SL	4	3B DROUGHT
4	TQ03401870	PGR S	5		1	1	113	5	109	6	2		DR	2	IMP SAND 90
5	TQ03501870	ARA S	3	75	1	1	152	44	110	7	2		DR	2	
6	TQ03601870	PGR S	4		1	1	97	-11	81	-22	3A		DR	3A	
7	TQ03701870	PGR S	6		1	1	70	-38	54	-49	3B		DR	3B	
8	TQ03801870	ARA SE	2		1	1	158	50	111	8	2		DR	2	
9	TQ03401860	PGR S	2		1	2	156	48	118	15	1		WK	2	
10	TQ03501860	ARA S	2	100	1	2	115	7	99	-4	2		WD	2	
11	TQ03601860	ARA S	6		1	1	92	-16	77	-26	3A		DR	3A	
12	TQ03701860	ARA S	2	60	1	1	152	44	111	8	2		DR	2	
13	TQ03801860	ARA S	2	30	2	2	147	39	115	12	1		WE	2	
14	TQ03401850	ARA S	2		1	2	156	48	118	15	1		WK	2	
15	TQ03501850	ARA		75	1	2	156	48	118	15	1		WK	2	
16	TQ03601850	ARA			1	2	155	47	117	14	1		WK	2	
17	TQ03701850	ARA S	1		1	2	157	49	119	16	1		WK	2	
18	TQ03801850	ARA S	1		1	2	156	48	118	15	1		WK	2	
19	TQ03401840	ARA S	1		1	2	156	48	118	15	1		WK	2	
20	TQ03501840	ARA		45	1	2	154	46	116	13	1		WK	2	
21	TQ03601840	ARA			1	2	156	48	118	15	1		WK	2	
22	TQ03701840	ARA			1	2	161	53	119	16	1		WK	2	
23	TQ03541876	PGR S	04		1	1	37	-71	37	-66	4		DR	3B	
24	TQ03401830	ARA		35	1	1	158	50	111	8	2		DR	2	
25	TQ03501830	ARA		80	1	1	105	-3	105	2	3A		DR	2	IMP QIRONPANBS
26	TQ03571875	PGR S	4		1	1	72	-36	56	-47	3B		DR	3B	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED COL.	----STONES-----			STRUCT/ CONSIST	SUBS STR POR IMP SPL CALC
				COL	ABUN	CONT		GLY	>2	>6		
1	0-35	ms1	10YR43 00					0	0	HR	2	
	35-45	ms1	05YR32 00					0	0	HR	10	M
	45-55	lms	05YR66 00					0	0		0	M
IMP SAND 55												
1A	0-35	ms1	10YR43 00					0	0	HR	2	
	35-75	ms	10YR63 00					0	0		0	M
IMP SAND 75												
1P	0-33	mc1	10YR43 00					0	0	HR	2	
	33-46	mc1	75YR43 00					0	0		0	MCSAB FR M
	46-90	mc1	75YR53 00	75YR66 00 C				Y	0	0	0	MCSAB FR M
	90-120	hc1	75YR53 00	75YR56 00 C			00M000 00 Y	0	0	0	0	MCSAB FM M Y
2	0-30	lms	75YR43 00					0	0		0	
	30-50	ms	05YR56 00					0	0		0	M
	50-100	ms	05YR58 00					0	0		0	M
	100-120	ms	05YR46 00					0	0		0	M
2P	0-32	lms	10YR43 00					0	0	HR	2	
	32-55	lms	75YR58 00					0	0		0	WKCSAB VF M
	55-120	lms	75YR56 63	05YR56 00 C				0	0		0	FR M
3	0-30	lms	10YR44 00					0	0		0	
	30-60	lms	75YR56 00					0	0		0	M
	60-100	lms	75YR58 00					0	0		0	M
	100-120	ms	25Y 63 00	75YR58 00 C				Y	0	0	0	M
4	0-35	ms1	10YR43 00					0	0	HR	2	
	35-55	ms1	75YR43 00					0	0	HR	2	M
	55-75	ms1	10YR54 00					0	0	MSST	10	M
	75-90	lms	05YR66 00					0	0		0	M
IMP SAND 90												
5	0-35	ms1	10YR43 00					0	0	HR	2	
	35-75	ms1	75YR43 00					0	0	HR	2	M
	75-120	mc1	10YR53 00	000C00 00 C				Y	0	0	0	M
6	0-32	ms1	10YR43 00					0	0	HR	2	
	32-60	lms	10YR63 00					0	0		0	M
	60-78	lms	75YR32 00					0	0		0	M
	78-120	ms	25YR66 00					0	0		0	M
7	0-30	lms	10YR43 00					0	0		0	
	30-45	ms	75YR58 00					0	0		0	M
	45-100	ms	05YR58 00					0	0		0	M
	100-120	ms	05YR58 68					0	0		0	M
8	0-30	ms1	10YR43 00					0	0		0	
	30-75	ms1	10YR44 00					0	0		0	M
	75-120	ms1	10YR54 00	10YR56 00 F				0	0		0	M

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED	-----STONES-----			STRUCT/	SUBS					
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL
9	0-30	mc1	10YR44 00					0	0	0							
	30-45	mc1	75YR46 00					0	0	0				M			
	45-68	mc1	75YR56 00					0	0	0				M			
	68-120	hc1	75YR66 00	00MN00	00	F		0	0	0				M			
10	0-30	sc1	10YR44 00					0	0	0							
	30-55	ms1	10YR44 00	10YR56	00	F	00MN00	00	0	0	0			M			
	55-70	1ms	75YR44 00	00MN00	00	F		0	0	0				M			
	70-100	1ms	75YR44 00					0	0	HR	5			M			
	100-120	ms	05YR56 00	10YR76	00	C		Y	0	0	0			M			
11	0-28	ms1	10YR43 00					0	0	HR	1						
	28-65	1ms	75YR46 00					0	0	0				M			
	65-88	ms	05YR58 00					0	0	0				M			
	88-120	ms	05YR66 00					0	0	0				M			
12	0-28	ms1	10YR44 00					0	0	0							
	28-40	ms1	10YR44 64					0	0	0				M			
	40-60	ms1	10YR54 00					0	0	0				M			
	60-75	sc1	10YR53 00	10YR56	00	C		Y	0	0	0			M			
	75-120	sc1	10YR54 53	10YR58	00	M		Y	0	0	0			M			Y
13	0-30	ms1	10YR43 00					0	0	0							
	30-65	mc1	10YR63 00	10YR66	00	C		Y	0	0	0			M			
	65-100	hc1	10YR63 00	10YR66	00	C		Y	0	0	0			M			Y
	100-120	c	25Y 73 00	10YR58	00	M	00MN00	00	Y	0	0	0		P			Y
14	0-35	mc1	10YR43 00					0	0	HR	1						
	35-60	mc1	75YR44 00					0	0	HR	1			M			
	60-120	mc1	75YR56 00					0	0	HR	1			M			
15	0-30	mc1	10YR44 00					0	0	0							
	30-55	mc1	10YR44 00					0	0	0				M			
	55-75	mc1	10YR54 00	10YR56	00	F		0	0	0				M			
	75-120	hc1	10YR54 53	10YR56	58	M	00MN00	00	Y	0	0	0		M			Y
16	0-30	mc1	10YR43 00					0	0	HR	1						
	30-65	mc1	75YR43 00					0	0	0				M			
	65-120	mc1	10YR54 00					0	0	0				M			
17	0-35	mc1	10YR43 00					0	0	0							
	35-50	mc1	75YR44 00					0	0	0				M			
	50-75	mc1	75YR56 00					0	0	0				M			
	75-90	mc1	75YR64 00	75				0	0	0				M			
	90-120	hc1	75YR56 00					0	0	0				M			
18	0-30	mc1	10YR43 00					0	0	0							
	30-65	mc1	10YR44 00					0	0	0				M			
	65-80	mc1	75YR56 00					0	0	0				M			
	80-120	hc1	10YR64 00	75YR58	00	F		0	0	0				M			

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----		PED	----STONES----			STRUCT/ CONSIST	SUBS	SPL	CALC
				COL	ABUN		CONT	COL.	GLE				
19	0-35	mc1	10YR43 00						0	0	HR	2	
	35-70	mc1	75YR44 00						0	0		0	M
	70-80	mc1	75YR46 00						0	0		0	M
	80-85	mc1	75YR56 00						0	0		0	M
	85-100	mc1	75YR44 00	75YR56 00 F		00MN00 00			0	0		0	M
	100-120	hc1	75YR44 00	10YR58 00 F		00MN00 00			0	0		0	M
20	0-25	mc1	10YR44 00						0	0	HR	2	
	25-45	mc1	10YR44 54						0	0		0	M
	45-60	mc1	10YR54 00	10YR66 00 C				Y	0	0		0	M
	60-75	mc1	25Y 62 00	10YR58 00 M				Y	0	0		0	M
	75-120	hc1	10YR53 00	10YR58 00 M		00MN00 00 Y			0	0		0	M
21	0-32	mc1	10YR43 00						0	0	HR	1	
	32-70	hc1	75YR43 00						0	0		0	M
	70-120	hc1	10YR54 00	00MN00 00 F					0	0		0	M
22	0-35	mc1	10YR43 00						0	0		0	
	35-85	mc1	75YR54 00						0	0		0	M
	85-120	ms1	75YR56 00						0	0		0	M
23	0-32	lms	75YR43 00						0	0	HR	2	
	32-40	ms	10YR56 00						0	0		0	M
24	0-35	ms1	10YR43 00						0	0	HR	1	
	35-45	ms1	10YR53 00	000C00 00 C				Y	0	0		0	M
	45-58	ms1	75YR44 00					Y	0	0		0	M
	58-120	ms1	75YR44 00					Y	0	0		0	M
25	0-37	ms1	10YR44 00						0	0		0	
	37-60	ms1	10YR44 54						0	0		0	M
	60-80	lms	10YR56 00						0	0		0	M
	80-85	lms	10YR54 00	10YR56 00 C		00MN00 00 Y			0	0		0	M
26	0-35	lms	75YR43 00						0	0		0	
	35-70	ms	75YR56 00						0	0	HR	2	M
	70-120	ms	75YR68 00						0	0	HR	4	M

IMP SAND 40

IMP SAND 85