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WEST SUSSEX MINERALS PLAN
SITE 21 : HAWKHURST FARM
AGRICULTURAL LAND CLASSIFICATION
ALC MAP & REPORT
SEPTEMBER 1993

**WEST SUSSEX MINERALS PLAN
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1.0 Summary

1.1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land quality on 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 Approximately 21 hectares of land relating to Site 21, south of Dunford Hollow at Cocking Causeway in West Sussex was surveyed during September 1993. The survey was undertaken at a detailed level of approximately one boring per hectare. A total of 15 soil auger borings and 3 soil inspection pits were assessed 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 long-term limitations on its use for agriculture.

1.3 Work was conducted by members of the Resource Planning Team in the Guildford Statutory Group. At the time of survey, the land was under permanent grass.

1.4 The distribution of grades and subgrades is shown on the attached ALC map and the areas are given in the table below. The map has been drawn at a scale of 1:5,000. It is accurate at this scale, but any enlargement would be misleading. This map supersedes any previous information for this site.

Table 1 : Distribution of Grades and Subgrades

| <u>Grade</u> | <u>Area (ha)</u> | <u>% of Site</u> | <u>% of Agricultural Area</u> |
|--------------------|------------------|------------------|-------------------------------|
| 3a | 11.5 | 53.5 | 59.3 |
| 3b | 7.3 | 34.0 | 37.6 |
| 4 | 0.6 | 2.8 | <u>3.1</u> |
| Non Agricultural | <u>2.1</u> | <u>9.7</u> | 100 (19.4 ha) |
| Total area of site | 21.5 | 100 | |

1.5 Appendix 1 gives a general description of the grades, subgrades and land use categories identified in the survey. The main classes are described in terms of the type of limitation that can occur, the typical cropping range and the expected level and consistency of yield.

1.6 The site has been classified as a mixture of Subgrades 3a and 3b and Grade 4 land. The area of Subgrade 3a that is mapped on the lower slopes experiences a moderate droughtiness limitation related to the textures and structures that occur in the profile. Typically, medium sandy loam topsoils overlie loamy medium sand subsoils. The Subgrade 3a area that is mapped on the higher, flatter land experiences a soil wetness limitation related to the presence of a poorly structured clay layer in the lower subsoil. Where this layer occurs at shallow depths, a more significant wetness limitation occurs, downgrading this land to Subgrade 3b. The majority of the Subgrade 3b unit experiences a gradient limitation, as does the whole of the area of Grade 4.

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 conditions.

2.2 The main parameters used in the assessment of the 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. However, climatic factors do interact with soil factors to influence soil wetness and soil droughtiness. At this locality, the field capacity days and average annual rainfall are high, and the soil moisture deficits are relatively low. This increases the risk of soil wetness at this site.

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

Table 2 : Climatic Interpolation

| | |
|-----------------------------------|------------|
| Grid Reference : | SU 895 196 |
| Altitude (m) : | 40 |
| Accumulated Temperature (days) : | 1496 |
| Average Annual Rainfall (mm) : | 901 |
| Field Capacity (days) : | 194 |
| Moisture Deficit, Wheat (mm) : | 102 |
| Moisture Deficit, Potatoes (mm) : | 94 |
| Overall Climatic Grade : | 1 |

3.0 Relief

3.1 The north-west part of the site is relatively flat and lies at approximately 55m AOD. However, in the southern and middle parts of the site the land undulates and drops sharply such that gradient is a limiting factor. The site then levels out again along the eastern edge and lies at approximately 40m AOD.

4.0 Geology and Soil

4.1 BGS Sheet 317, Chichester (1957) shows the majority of the site to be underlain by Folkestone Beds, with an area of Gault (Marly Clay) in the mid-western part of the site. In addition, Hill and Flint Gravel is shown along the north-west and mid-east edges of the site.

4.2 The soil type for the site, as shown on the Soil Survey map of South East England (SSEW, 1983, 1:250,000), comprises the Shirrell Heath Association. These soils are described as 'well drained, very acid sandy soils with a bleached subsurface horizon. Some similar with slowly permeable subsoils and slight seasonal waterlogging. Some sandy and coarse loamy soils affected by groundwater, often with a humose surface horizon' (SSEW, 1983).

5.0 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.

Subgrade 3a

5.3 On the lower slopes of the site, the land has been downgraded due to a moderate soil droughtiness limitation. As typified by Pit 3, medium sandy loam topsoils overlie loamy medium sand upper and lower subsoils. These subsoils change from being moderately structured to poorly structured at approximately 77cm. Profiles are stoneless and free draining. The combination of these coarse soil textures, substructural conditions and the local climatic regime reduces the available water for crops in the soil profile. Consequently, this restricts the range of crops which can be grown. Thus this land cannot be classified as any higher than Subgrade 3a.

5.4 On the higher, flatter land there is a moderate soil wetness limitation, as shown by Pit 2. Slightly stony medium clay loam topsoils are underlain by clay and heavy clay loam subsoils. These subsoils are moderately structured and slightly stony (10-15% total hard rock by volume). At approximately 95cm these subsoils pass into a poorly structured stoneless clay. The soils are gleyed throughout the profile, and are placed into Wetness Class II. The interaction between soil drainage characteristics and the local climate means this land is assessed as Subgrade 3a.

Subgrade 3b

5.5 The majority of land assessed as Subgrade 3b has been downgraded because of a significant slope limitation. Gradients of 7.5 to 11 degrees were measured using an optical reading clinometer. Such slopes significantly restrict the range of farm machinery that can be safely and efficiently operated.

5.6 A small area of land east of the Grade 4 map unit has been assessed as Subgrade 3b because of a significant soil wetness limitation. Medium clay loam topsoils overlie heavy clay loam and clay subsoils. Profiles are gleyed from the surface, and slowly permeable subsoils at shallow depths severely impede drainage. Given the local climate regime these profiles are placed into Wetness Class IV and so Subgrade 3b is appropriate.

Grade 4

5.7 Land classed as Grade 4 has been downgraded because of a severe slope limitation. Gradients of 11.5 to 18 degrees were measured with an optical reading clinometer. Such slopes severely restrict the range of farm machinery that can be safely and efficiently operated.

Non-Agricultural

5.8 The Non-Agricultural land shown on the map is occupied by woodland and a streamside path.

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

- * British Geological Survey (1957), Sheet No. 317, Chichester, 1:50,000
- * 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 Sets 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 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 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 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 pedes 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 appropriate 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 : W. SUSSEX MINS - SITE 21 Pit Number : 1P

Grid Reference: SUB8701950 Average Annual Rainfall : 908 mm
 Accumulated Temperature : 1485 degree days
 Field Capacity Level : 196 days
 Land Use : Permanent Grass
 Slope and Aspect : 08 degrees SE

| HORIZON | TEXTURE | COLOUR | STONES >2 | TOT.STONE | MOTTLES | STRUCTURE |
|---------|---------|-----------|-----------|-----------|---------|-----------|
| 0- 30 | MSL | 10YR43 00 | 0 | 3 | | MDCAB |
| 30- 50 | MSL | 10YR68 76 | 0 | 0 | | MDCAB |
| 50-120 | LMS | 10YR58 66 | 0 | 0 | | MDCPL |

Wetness Grade : 1 Wetness Class : I
 Gleying : 000 cm
 SPL : No SPL

Drought Grade : 2 APW : 113mm MBW : 11 mm
 APP : 94 mm MBP : 0 mm

FINAL ALC GRADE : 3B
 MAIN LIMITATION : Gradient

SOIL PIT DESCRIPTION

Site Name : W. SUSSEX MINS - SITE 21 Pit Number : 2P

Grid Reference: SU88601950 Average Annual Rainfall : 908 mm
 Accumulated Temperature : 1485 degree days
 Field Capacity Level : 196 days
 Land Use : Permanent Grass
 Slope and Aspect : 01 degrees S

| HORIZON | TEXTURE | COLOUR | STONES >2 | TOT.STONE | MOTTLES | STRUCTURE |
|---------|---------|-----------|-----------|-----------|---------|-----------|
| 0- 23 | MCL | 10YR42 00 | 7 | 14 | M | MDCSAB |
| 23- 49 | C | 25Y 63 62 | 0 | 15 | M | MDCSAB |
| 49- 95 | HCL | 25Y 71 00 | 0 | 10 | M | MDCSAB |
| 95-120 | C | 05Y 51 00 | 0 | 0 | M | |

Wetness Grade : 3A Wetness Class : II
 Gleying : 000 cm
 SPL : 095 cm

Drought Grade : 2 APW : 131mm MBW : 29 mm
 APP : 102mm MBP : 8 mm

FINAL ALC GRADE : 3A
 MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : W. SUSSEX MINS - SITE 21 Pit Number : 3P

Grid Reference: SU88501915 Average Annual Rainfall : 908 mm
Accumulated Temperature : 1485 degree days
Field Capacity Level : 196 days
Land Use : Permanent Grass
Slope and Aspect : 03 degrees S

| HORIZON | TEXTURE | COLOUR | STONES >2 | TOT.STONE | MOTTLES | STRUCTURE |
|---------|---------|-----------|-----------|-----------|---------|-----------|
| 0- 28 | MSL | 10YR44 00 | 0 | 0 | | MDCSAB |
| 28- 77 | LMS | 10YR56 00 | 0 | 0 | | MDVCPL |
| 77-120 | LMS | 10YR56 68 | 0 | 0 | | MDVCPL |

Wetness Grade : 1 Wetness Class : I
Gleying : 000 cm
SPL : No SPL

Drought Grade : 3B APW : 76 mm MBW : -26 mm
APP : 78 mm MBP : -16 mm

FINAL ALC GRADE : 3A
MAIN LIMITATION : Droughtiness

| SAMPLE NO. | GRID REF | ASPECT USE | --WETNESS-- | | -WHEAT- | | -POTS- | | M. REL | | EROSN EXP | FROST DIST | CHEM LIMIT | ALC | COMMENTS |
|------------|------------|------------|-------------|-------|-----------|-------|--------|-----|--------|-----|-----------|------------|------------|-----|----------------|
| | | | GRDNT | GLEYS | SPL CLASS | GRADE | AP | MB | AP | MB | | | | | |
| 1 | SU88601970 | PGR | | 000 | 1 | 1 | 52 | -50 | 52 | -42 | 3B | | DR | 4 | IMPEN 30 CM |
| 1P | SU88701950 | PGR SE | 08 | 000 | 1 | 1 | 113 | 11 | 94 | 0 | 2 | | GR | 3B | GRADE 2 ON DR |
| 2P | SU88601950 | PGR S | 01 | 000 | 095 | 2 | 3A | 131 | 29 | 102 | 8 | 2 | WE | 3A | PIT DUG TO 90 |
| 3 | SU88601960 | PGR S | 01 | 000 | | 2 | 3A | 38 | -64 | 38 | -56 | 4 | DR | 4 | IMPEN 22 CM |
| 3P | SU88501915 | PGR S | 03 | 000 | | 1 | 1 | 76 | -26 | 78 | -16 | 3B | DR | 3A | POOR SUBSOIL |
| 5 | SU88801960 | PGR SE | 04 | 000 | | 1 | 1 | 66 | -36 | 66 | -28 | 3B | DR | 3B | IMPEN 40 CM |
| 6 | SU88501950 | PGR SE | 02 | 000 | | 2 | 3A | 85 | -17 | 85 | -9 | 3A | WE | 3A | IMPEN 50 CM |
| 7 | SU88601950 | PGR S | 01 | 000 | | 1 | 1 | 38 | -64 | 38 | -56 | 4 | DR | 4 | IMPEN 22 CM |
| 9 | SU88801950 | PGR SE | 03 | 000 | | 1 | 1 | 75 | -27 | 75 | -19 | 3B | DR | 3B | IMPEN 45 CM |
| 10 | SU88901950 | PGR SE | 06 | 000 | | 1 | 1 | 50 | -52 | 50 | -44 | 4 | DR | 4 | IMPEN 30 CM |
| 11 | SU88501940 | PGR SW | 02 | 025 | 060 | 3 | 3A | 132 | 30 | 105 | 11 | 1 | WE | 3A | |
| 12 | SU88601940 | PGR S | 02 | 000 | | 2 | 3A | 44 | -58 | 44 | -50 | 4 | DR | 4 | IMPEN 25 CM |
| 14 | SU88801940 | PGR SE | 02 | 000 | | 1 | 1 | 151 | 49 | 109 | 15 | 1 | | 1 | SANDY TEXTURES |
| 15 | SU88501930 | PGR S | 02 | 025 | 040 | 4 | 3B | 124 | 22 | 108 | 14 | 2 | WE | 3B | |
| 16 | SU88601930 | PGR E | 02 | 000 | 025 | 4 | 3B | 126 | 24 | 103 | 9 | 2 | WE | 3B | POSS HCL TOPSL |
| 18 | SU88401920 | PGR | | 000 | | 1 | 1 | 95 | -7 | 104 | 10 | 3A | DR | 3A | IMPEN 65 CM |
| 19 | SU88501920 | PGR | | 000 | | 1 | 1 | 86 | -16 | 88 | -6 | 3A | DR | 3A | IMPEN 55 CM |
| 20 | SU88701910 | PGR SE | 02 | 000 | | 1 | 2 | 44 | -58 | 44 | -50 | 4 | DR | 4 | IMPEN 25 CM |

| SAMPLE | DEPTH | TEXTURE | COLOUR | -----MOTTLES----- | | | PED | | -----STONES----- | | | STRUCT/ | | SUBS | | | | |
|--------|--------|---------|-----------|-------------------|------|------|------|-----|------------------|----|------|---------|---------|------|-----|-----|-----|------|
| | | | | COL | ABUN | CONT | COL. | GLE | >2 | >6 | LITH | TOT | CONSIST | STR | POR | IMP | SPL | CALC |
| 1 | 0-30 | mc1 | 10YR43 00 | | | | | | 0 | 0 | HR | 4 | | | | | | |
| 1P | 0-30 | ms1 | 10YR43 00 | | | | | | 0 | 0 | HR | 3 | MDCAB | FR | M | Y | | |
| | 30-50 | ms1 | 10YR68 76 | | | | | | 0 | 0 | | 0 | MDCAB | FR | M | Y | | |
| | 50-120 | lms | 10YR58 66 | | | | | | 0 | 0 | | 0 | MDCPL | VF | M | | | |
| 2P | 0-23 | mc1 | 10YR42 00 | 10YR58 00 | M | | | Y | 7 | 0 | HR | 14 | MDCSAB | FM | | Y | | |
| | 23-49 | c | 25Y 63 62 | 10YR56 00 | M | | | Y | 0 | 0 | HR | 15 | MDCSAB | FM | M | Y | | |
| | 49-95 | hc1 | 25Y 71 00 | 10YR56 00 | M | | | Y | 0 | 0 | HR | 10 | MDCSAB | FM | M | Y | | |
| | 95-120 | c | 05Y 51 00 | 10YR58 00 | M | | | Y | 0 | 0 | | 0 | | | P | Y | | Y |
| 3 | 0-22 | mc1 | 10YR42 00 | | | | | | 1 | 0 | HR | 4 | | | | | | |
| 3P | 0-28 | ms1 | 10YR44 00 | | | | | | 0 | 0 | | 0 | MDCSAB | FR | | Y | | |
| | 28-77 | lms | 10YR56 00 | | | | | | 0 | 0 | | 0 | MDVCPL | FR | M | Y | | |
| | 77-120 | lms | 10YR56 68 | | | | | | 0 | 0 | | 0 | MDVCPL | FM | P | Y | | |
| 5 | 0-35 | ms1 | 10YR43 00 | | | | | | 0 | 0 | HR | 2 | | | | | | |
| | 35-40 | ms1 | 10YR56 00 | | | | | | 0 | 0 | HR | 5 | | | M | | | |
| 6 | 0-25 | mc1 | 10YR52 00 | 10YR58 00 | C | | | Y | 0 | 0 | | 0 | | | | | | |
| | 25-50 | mc1 | 10YR53 00 | 10YR58 61 | C | | | Y | 0 | 0 | | 0 | | | M | | | |
| 7 | 0-22 | mc1 | 10YR42 00 | | | | | | 1 | 0 | HR | 4 | | | | | | |
| 9 | 0-45 | ms1 | 10YR42 00 | | | | | | 0 | 0 | HR | 2 | | | | | | |
| 10 | 0-28 | ms1 | 10YR44 00 | | | | | | 0 | 0 | HR | 2 | | | | | | |
| | 28-30 | ms1 | 10YR56 00 | | | | | | 0 | 0 | HR | 5 | | | M | | | |
| 11 | 0-25 | mc1 | 10YR42 00 | 10YR58 00 | C | | | Y | 0 | 0 | | 0 | | | | | | |
| | 25-50 | hc1 | 10YR52 00 | 10YR58 61 | C | | | Y | 0 | 0 | | 0 | | | M | | | |
| | 50-60 | lms | 10YR54 00 | | | | | Y | 0 | 0 | HR | 4 | | | M | | | |
| | 60-120 | c | 10YR51 00 | 10YR58 00 | C | | | Y | 0 | 0 | | 0 | | | P | Y | | Y |
| 12 | 0-25 | mc1 | 10YR42 00 | 10YR56 00 | C | | | Y | 0 | 0 | HR | 2 | | | | | | |
| 14 | 0-35 | ms1 | 10YR44 00 | | | | | | 0 | 0 | HR | 2 | | | | | | |
| | 35-55 | ms1 | 10YR44 00 | | | | | | 0 | 0 | HR | 6 | | | M | | | |
| | 55-70 | ms1 | 10YR44 00 | | | | | | 0 | 0 | | 0 | | | M | | | |
| | 70-120 | hc1 | 10YR54 00 | | | | | | 0 | 0 | | 0 | | | M | | | |
| 15 | 0-25 | mc1 | 10YR42 00 | 10YR58 00 | C | | | Y | 0 | 0 | | 0 | | | | | | |
| | 25-40 | hc1 | 10YR53 00 | 10YR58 61 | C | | | Y | 0 | 0 | | 0 | | | M | | | |
| | 40-110 | c | 10YR51 00 | 10YR58 00 | C | | | Y | 0 | 0 | | 0 | | | P | Y | | Y |
| 16 | 0-25 | mc1 | 10YR42 00 | 10YR56 00 | C | | | Y | 0 | 0 | HR | 1 | | | | | | |
| | 25-55 | c | 10YR51 00 | 10YR68 00 | M | | | Y | 0 | 0 | | 0 | | | P | Y | | Y |
| | 55-70 | c | 10YR51 00 | 75YR46 00 | M | | | Y | 0 | 0 | | 0 | | | P | Y | | Y |
| | 70-120 | c | 25Y 51 00 | 10YR58 00 | M | | | Y | 0 | 0 | | 0 | | | P | Y | | Y |

| SAMPLE | DEPTH | TEXTURE | COLOUR | ----MOTTLES---- | | | PED | | ----STONES---- | | | STRUCT/ CONSIST | SUBS | | | | |
|--------|-------|---------|-----------|-----------------|------|------|------|-----|----------------|----|------|--------------------|------|-----|-----|-----|-----|
| | | | | COL | ABUN | CONT | COL. | GLE | >2 | >6 | LITH | | TOT | STR | POR | IMP | SPL |
| 18 | 0-25 | ms1 | 10YR43 00 | | | | | | 0 | 0 | 0 | | | | | | |
| | 25-50 | ms1 | 10YR44 00 | | | | | | 0 | 0 | 0 | | | | M | | |
| | 50-65 | mc1 | 10YR54 00 | | | | | | 0 | 0 | 0 | | | | M | | |
| 19 | 0-25 | ms1 | 10YR43 00 | | | | | | 0 | 0 | 0 | | | | | | |
| | 25-55 | ms1 | 10YR43 00 | | | | | | 0 | 0 | 0 | | | | M | | |
| 20 | 0-25 | mc1 | 10YR43 00 | | | | | | 0 | 0 | HR | | 2 | | | | |