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Basingstoke and Deane Borough Local Plan

Plan 5: Land South of Enborne Row

Agricultural Land Classification Report

October 1994

AGRICULTURAL LAND CLASSIFICATION REPORT

BASINGSTOKE AND DEANE BOROUGH PLAN
PLAN 5: LAND SOUTH OF ENBORNE ROW

1. Summary

1.1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land quality for a number of sites in the Basingstoke District of Hampshire. The work forms part of MAFF's statutory input to the preparation of the Basingstoke and Deane Borough Local Plan.

1.2 Plan 5 comprises 30.3 hectares of land, south of Enborne Row, near Newbury, in Hampshire. An Agricultural Land Classification (ALC), survey was carried out during September 1994. The survey was undertaken at a detailed level of approximately one boring per hectare of agricultural land. A total of 24 borings and two soil inspection pits were described in accordance with MAFF's revised guidelines and criteria for grading the quality of agricultural land (MAFF, 1988). These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose a long term limitation on its use for agriculture.

1.3 The work was carried out by members of the Resource Planning Team in the Guildford Statutory Group of ADAS.

1.4 At the time of the survey the agricultural land was under permanent grass, used for grazing cattle. The urban area mapped comprises a metalled track and a dwelling. The Agricultural Buildings shown are feed and machinery storage areas. The Non-Agricultural land consists of, an area of scrub used for machinery storage south of the Agricultural Buildings, a wet ditch with tree planting east of the Agricultural Buildings, and an area of dumped soil used for bale storage towards the south east of the site.

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
2	1.8	5.9	6.7
3b	24.9	82.2	93.3
Non-Agricultural	0.9	3.0	100%(26.7ha)
Urban	0.3	1.0	
Woodland	1.5	4.9	
Agricultural Buildings	0.9	3.0	
Total area of site	30.3ha	100%	

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 Agricultural land at this site has been classified as Grade 2 (very good quality) and Subgrade 3b (moderate quality). Limitations include soil wetness, soil droughtiness and topsoil stone content. Soil wetness limitations occur in the area mapped as Grade 2 . Gleying was noted here as evidence of a very slight drainage impedance at depth. The remainder of the site is limited either, by soil droughtiness due to stones in the profile restricting available water capacity in the soil, leading to a severe risk of drought stress affecting plant growth and yield; or, by topsoil stone content, which is sufficient to significantly increase production costs and adversely affect crop establishment and growth. These areas can be graded no higher than Subgrade 3b. Towards the south east of the site there is evidence of disturbance, the grading of this area has taken this factor into account.

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 Interpolation

Grid Reference	SU446633	SU449629
Altitude, (m, AOD)	95	100
Accumulated Temperature (°days, Jan.-June)	1425	1420
Average Annual Rainfall (mm)	759	768
Field Capacity Days	170	172
Moisture deficit, wheat (mm)	102	100
Moisture deficit, potatoes (mm)	92	91
Overall Climatic Grade	1	1

3. Relief

3.1 The site lies between approximately 95 and 100m AOD. Overall it is flat, except for a slight rise in the south west of the site where the land of highest quality was mapped. Nowhere on the site does relief or gradient affect agricultural land quality.

4. Geology and Soils

4.1 The published geological information (BGS, 1971), shows much of the site to be underlain with river and valley gravels as a drift deposit. Towards the west of the site and in a band from the south to the east Tertiary London Clay has been mapped. In a small area towards the north east of the site alluvium, as a drift deposit is shown.

4.2 The published soils information (SSEW, 1983), shows the site to be underlain by soils of the Wickham 3 Association. The legend accompanying the map describes these as, 'Slowly permeable seasonally waterlogged fine loamy over clayey, coarse loamy over clayey soils, and similar more permeable soils with slight waterlogging. Some deep coarse loamy soils are affected by groundwater,' (SSEW, 1983). Soils encountered commonly comprised very stony coarse and fine loamy topsoils and subsoils. Towards the south west of the site, very slightly stony fine and coarse loamy soils over clay at depth were found.

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

5.3 Land of very good quality has been mapped towards the south west of the site. The principal limitation is slight soil wetness. Profiles typically comprise a very *slightly stony (c. 5% v/v flints, 2% > 2cm) fine sandy silt loam topsoil, over a* commonly gleyed similarly stony fine or medium sandy silt loam upper subsoil. This passes to a stoneless gleyed fine or medium sandy silt loam horizon, which overlies a slightly stony gleyed heavy clay loam or clay horizon from between 80 and 85cm to depth. Occasional observations did not encounter this lower subsoil horizon, continuing as gleyed fine sandy silt loam to depth, e.g. the pit observation 2p (see Appendix III). Gleying occurs as a result of a slight drainage impedance deep in the profile, possibly caused by the clay lower subsoil horizon at this location. Given that the gleyed horizon is at a sufficiently shallow depth to place the area in Wetness Class II (see Appendix II), the medium workability status of many of the topsoils leads to Grade 2 being applied. This area therefore has a slight restriction on the number of days when cultivations and/or stocking may

occur without causing structural damage to the soil. Some observations were of a slightly better quality but are not shown as such due to their limited extent.

Subgrade 3b

5.4 Land of moderate quality is shown for the majority of the agricultural land at this site. The principal limitation is topsoil stoniness and soil droughtiness. Profiles were typically found to comprise a moderately to very stony (25-45% v/v flints, up to 27% >2cm), medium clay loam, fine or medium sandy silt loam topsoil which was commonly impenetrable to the soil auger. From the pit observation 1p, (see Appendix III), the upper subsoil was found to be a moderately to very stony (up to 60% v/v flints) medium sandy silt loam, medium clay loam, or medium sandy loam. This was found to overlie a similarly stony medium sandy silt loam, before becoming impenetrable due to stones around 75cm. Flint contents in the topsoil are sufficient to cause a severe limitation to agricultural land quality due to the damage that they can cause to agricultural machinery and tyres as well as adversely affecting crop establishment and growth, such that a classification of Subgrade 3b is appropriate. Soil profiles of this nature are also severely affected by droughtiness; the stones in the profile reduce the available water capacity of the soil, such that within the local climatic parameters, Subgrade 3b is appropriate on this basis also. The field to the south east of the site showed evidence of having been disturbed, in the form of concrete stones and brick debris within the topsoil. In conversation with Mr. Williams, the owner of the land bordering this field, this assumption was confirmed. The restored soil was similar to that found throughout the majority of the site and as such is graded similarly.

SOURCES OF REFERENCE

British Geological Survey (1971), Sheet 267, Hungerford, Drift Edition. 1:63,360

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 (e.g. 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 (e.g. 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, e.g. 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

DEFINITION OF SOIL WETNESS CLASS

Wetness Class I

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

Wetness Class 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 180 days, but only wet within 40 cm depth for 31-90 days in most years.

Wetness Class 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.

Wetness Class IV

The soil profile is wet within 70 cm depth for more than 180 days but not wet within 40 cm depth fro 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.

Wetness Class V

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

Wetness Class VI

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

APPENDIX III

SOIL PIT AND SOIL BORING DESCRIPTIONS

Contents :

SOIL PROFILE DESCRIPTIONS : EXPLANATORY NOTE

Soil pit and auger boring information collected during ALC fieldwork is held on a 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	**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 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	**ST** : Topsoil Stones
CH : Chemical	**WE** : Wetness	**WK** : Workability	
DR : Drought	**ER** : Erosion Risk	**WD** : Soil Wetness/Droughtiness	

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	**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	**GH** : gravel with non-porous (hard) stones

   SI : soft weathered igneous/metamorphic rock
   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 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 : BASINGSTOKE LP PLAN 5 Pit Number : 1P

Grid Reference: SU44706319 Average Annual Rainfall : 759 mm
Accumulated Temperature : 1425 degree days
Field Capacity Level : 170 days
Land Use : Permanent Grass
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 28	MSZL	10YR42 00	16	30	HR					
28- 55	MSZL	10YR46 00	0	60	HR				P	
55- 75	MSZL	10YR46 00	0	62	HR				P	

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

Drought Grade : 3B APW : 062mm MBW : -40 mm
APP : 065mm MBP : -27 mm

FINAL ALC GRADE : 3B
MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : BASINGSTOKE LP PLAN 5 Pit Number : 2P

Grid Reference: SU44596310 Average Annual Rainfall : 759 mm
Accumulated Temperature : 1425 degree days
Field Capacity Level : 170 days
Land Use : Permanent Grass
Slope and Aspect : 01 degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 28	FSZL	10YR43 00	2	5	HR					
28- 40	MSZL	10YR54 00	0	5	HR		MDCSAB	VM	M	
40- 85	MSZL	10YR63 00	0	0		M	MDCSAB	VM	M	
85-120	FSZL	10YR63 00	0	0		M			M	

Wetness Grade : 1 Wetness Class : I
Gleying : 40 cm
SPL : cm

Drought Grade : 1 APW : 186mm MBW : 84 mm
APP : 129mm MBP : 37 mm

FINAL ALC GRADE : 1
MAIN LIMITATION :

SAMPLE NO.	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EXP	EROSN DIST	FROST LIMIT	CHEM	ALC	COMMENTS
1	SU44406340	PGR					1	1		0		0						TS	3B	IMP 25 SEE 1P
1P	SU44706319	PGR					1	1	062	-40	065	-27	3B					DR	3B	PIT 75
2	SU44506340	PGR					1	1		0		0						TS	3B	IMP 25 SEE 1P
2P	SU44596310	PGR	N	01	40		1	1	186	84	129	37	1						1	PIT 90 AUG 120
3	SU44506330	PGR					1	1	068	-34	068	-24	3B					DR	3B	IMP 40 SEE 1P
4	SU44606330	PGR					1	1		0		0						TS	3B	IMP 28 SEE 1P
5	SU44706330	PGR			25	25	4	3B		0		0						TS	3B	WET SPL 25
6	SU44806330	PGR			20		2	2	076	-26	082	-10	3B					DR	3B	IMP 60 SEE 1P
7	SU44906330	PGR					1	1		0		0						TS	3B	IMP 35 SEE 1P
8	SU45006330	PGR					1	1		0		0						TS	3B	IMP 35 SEE 1P
9	SU45106330	PGR					1	1		0		0						TS	3B	IMP 40 SEE 1P
10	SU45206330	PGR			20		2	2		0		0						TS	3B	IMP 30 SEE 1P
11	SU44506320	PGR			30	80	2	2	150	48	126	34	1					WE	2	
12	SU44606320	PGR			50		1	1	192	90	148	56	1						1	SEE 2P
13	SU44706320	PGR					1	1	032	-70	032	-60	4					DR	3B	IMP 25 SEE 1P
15	SU44906320	PGR					1	1		0		0						TS	3B	IMP 30 SEE 1P
16	SU45006320	PGR					1	1		0		0						TS	3B	IMP 20 SEE 1P
17	SU45106320	PGR			30		2	2	051	-51	051	-41	4					DR	3B	IMP 40 SEE 1P
18	SU44606310	PGR	NE	01	50		1	1	172	70	134	42	1						1	SEE 2P
19	SU44706310	PGR					1	1		0		0						TS	3B	IMP 28 SEE 1P
21	SU44866310	PGR					1	1		0		0				Y		TS	3B	IMP STONES 40
22	SU45006310	PGR					1	1		0		0				Y		TS	3B	IMP STONES 40
25	SU44796297	PGR					1	1	045	-57	045	-47	4			Y		DR	3B	IMP STONES 27
26	SU44906300	PGR			0		2	1	052	-50	052	-40	3B			Y		DR	3B	IMP STONES 35
27	SU45006300	PGR					1	1		0		0				Y		DR	3B	IMP STONES 25
29	SU44906290	PGR			22		2	1		0		0				Y		TS	3A	IMP STONES 30

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	0-25	mcl	10YR42 00						18	0	HR	35						IMP STONES 25
1P	0-28	mszl	10YR42 00						16	0	HR	30						
	28-55	mszl	10YR46 00						0	0	HR	60		P				
	55-75	mszl	10YR46 00						0	0	HR	62		P				IMP STONES 75
2	0-25	mcl	10YR41 00						27	0	HR	40						IMP STONES 25
2P	0-28	fszl	10YR43 00						2	0	HR	5						
	28-40	mszl	10YR54 00						0	0	HR	5	MDCSAB VM	M	Y			
	40-85	mszl	10YR63 00	75YR56 58	M			Y	0	0		0	MDCSAB VM	M	Y			
	85-120	fszl	10YR63 00	10YR66 00	M			Y	0	0		0		M				PIT 90 AUG 120
3	0-30	fszl	10YR42 00						8	0	HR	20						
	30-40	fszl	10YR54 00						0	0	HR	30		M				IMP STONES 40
4	0-28	mszl	10YR31 00						17	0	HR	30						IMP STONES 28
5	0-25	fszl	10YR41 00						17	0	HR	27						
	25-80	c	25Y 61 00	75YR58 00	M			Y	0	0	HR	5		P		Y		
6	0-20	mcl	10YR42 00						8	0	HR	35						
	20-35	c	25Y 53 00	75YR56 00	M		00MN00 00	Y	0	0		0		P				
	35-60	hcl	05YR58 00	10YR76 00	F		00MN00 00	Y	0	0	HR	5		M				IMP STONES 60
7	0-30	mcl	10YR44 00						18	0	HR	35						
	30-35	mcl	75YR44 00						0	0	HR	40		M				IMP STONES 35
8	0-30	mszl	10YR31 00						20	0	HR	35						
	30-35	msl	10YR41 00						0	0	HR	50		M				IMP STONES 35
9	0-28	mszl	10YR31 00						23	0	HR	40						
	28-40	msl	10YR42 00						0	0	HR	50		M				IMP STONES 40
10	0-20	mcl	10YR43 00						16	0	HR	30						
	20-30	c	25Y 53 00	75YR58 00	M			Y	0	0	HR	30		P				IMP STONES 30
11	0-30	fszl	10YR41 00						0	0	HR	5						
	30-55	mcl	25Y 61 00	10YR46 00	C			Y	0	0		0		M				
	55-80	hcl	25Y 61 62	75YR46 00	M		00MN00 00	Y	0	0	HR	5		M				
	80-120	c	25Y 62 00	10YR58 00	M			Y	0	0	HR	5		P		Y		
12	0-30	fszl	10YR42 00						0	0	HR	3						
	30-50	fszl	10YR54 53	00MN00 00	F				0	0		0		M				
	50-85	fszl	10YR52 63	10YR56 00	C		00MN00 00	Y	0	0		0		M				
	85-120	hcl	25Y 62 00	75YR56 00	M			Y	0	0	HR	5		M				
13	0-25	mszl	10YR31 00						5	0	HR	35						IMP STONES 25

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES--- COL	ABUN	CONT	PED COL.	GLEY	----STONES---- >2	>6	LITH	TOT	STRUCT/ CONSIST	SUBS STR	POR	IMP	SPL	CALC	
15	0-25	mcl	10YR41 00						23	0	HR	45							
	25-30	msl	10YR43 00						0	0	HR	45		M					IMP STONES 30
16	0-20	mcl	10YR42 00						17	0	HR	35							IMP STONES 20
17	0-30	mcl	10YR42 00						6	0	HR	25							
	30-40	mcl	10YR53 00	10YR56 00	C			Y	0	0	HR	40		M					IMP STONES 40
18	0-25	fszl	10YR43 00						0	0	HR	3							
	25-50	fszl	10YR53 54	10YR56 00	F				0	0	HR	2		M					
	50-80	scl	10YR53 63	10YR58 00	C			Y	0	0	HR	5		M					
	80-95	hcl	10YR53 62	10YR58 00	M			Y	0	0	HR	5		M					
	95-120	hcl	25Y 62 00	10YR58 00	M			Y	0	0	HR	5		M					
19	0-28	mcl	10YR41 00						20	0	HR	40							IMP STONES 28
21	0-30	mszl	10YR52 00						16	0	HR	27							
	30-40	mcl	10YR53 00						0	0	HR	25		M					IMP STONES 40
22	0-27	mszl	10YR52 00						17	0	HR	30							IMP STONES 27
25	0-25	fszl	10YR41 00						12	0	HR	25							
	25-27	fszl	10YR52 00						0	0	HR	25		M					IMP STONES 27
26	0-30	mszl	10YR52 00	75YR46 00	C			Y	6	0	HR	20							
	30-35	mcl	10YR53 00	10YR58 00	C			Y	0	0	HR	25		M					IMP STONES 35
27	0-25	mcl	10YR52 00						12	0	HR	27							IMP STONES 25
29	0-22	mszl	10YR43 00						11	0	HR	25							
	22-30	hcl	10YR52 00	10YR58 00	C			Y	0	0	HR	25		M					IMP STONES 30