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BASINGSTOKE AND DEANE LOCAL PLAN
SITE 2: LAND AT KEMPSHOTT LANE
AGRICULTURAL LAND CLASSIFICATION
ALC MAP & REPORT
July 1993

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AGRICULTURAL LAND CLASSIFICATION REPORT**

1.0 Summary

1.1 In March 1993, a detailed Agricultural Land Classification (ALC) was made on approximately 30 hectares of land to the south of Kempshott near Basingstoke in Hampshire.

1.2 The work was conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS in response to a commission by MAFF's Land Use Planning Unit to provide information on the quality of agricultural land affected by proposals contained in the Basingstoke and Deane Local Plan

1.3 The classification has been made using 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. This classification supersedes a survey (ADAS Ref: 1501/07/81) carried out during 1981 under the previous system using Technical Report 11/1 (MAFF, 1976).

1.4 The fieldwork was carried out with an observation density of approximately one per hectare. A total of 30 borings were examined. No soil pits were dug within the site as pit information was available from similar soils on the adjacent land.

1.5 The table below provides the details of the grades found across the site. The majority of the land is classified as being of good quality. The key limitation is droughtiness caused by relatively shallow soil depth over porous chalk.

Table 1 : Distribution of Grades and Sub-grades

<u>Grade</u>	<u>Area (ha)</u>	<u>%of Site</u>
2	4.1	13.9
3A	<u>25.5</u>	<u>86.1</u>
Total Area of Site	29.6	100

1.6 The distribution of the ALC grades is shown on the attached map. The information is presented at a scale of 1:5,000; it is accurate at this level but any enlargement would be misleading. This map replaces the previous ALC information for this site.

1.7 At the time of survey the site had been ploughed, drilled and rolled.

1.8 A general description of the grades and sub-grades is provided as an appendix. The main classes are described in terms of the type of limitation that can occur, the typical cropping range and the expected level and consistency of yield.

2.0 Climate

2.1 The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions.

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

2.3 A detailed assessment of the prevailing climate was made by interpolation from a 5km gridpoint dataset (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 affect the site.

However the climatic regime is such that all but the lightest soils are restricted to a best ALC classification of Grade of 2, due to the high proportion of time during most years when the soil is at field capacity, thereby creating workability problems.

Table 2 : Climatic Interpolations

Grid Reference :	SU 595491,	SU 598487
Altitude (m) :	130	160
Accumulated Temperature (days) :	1388	1354
Average Annual Rainfall (mm) :	827	854
Field Capacity (days) :	180	184
Moisture Deficit, Wheat (mm) :	93	89
Moisture Deficit, Potatoes (mm) :	81	75
Overall Climatic Grade :	1	1

3.0 Relief

3.1 Land within the survey area lies between 130 and 165m AOD. It steadily rises from the north west to the south east. At no point does gradient represent a limitation to land quality.

4.0 Geology and Soil

4.1 The relevant geological sheet (British Geological Survey, Sheet 284, 1978) for the site shows the underlying geology to be Cretaceous Upper Chalk.

4.2 The main soil types that occur on the site, as shown by the Soil Survey map of South East England (SSEW, 1983, 1:250000), are: in the north of the site, Andover 1 Association, a variably flinty shallow well drained silty soil over chalk; and towards the south, Carstens Association, a deeper well drained fine silty over clayey soil, which can be very flinty.

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 is shown on the attached sample point map.

Grade 2

5.3 Land of this quality is mapped in three sections, across areas of lower altitude within the site, i.e. to the north and in a strip to the south west of the site, where a shallow dry valley exists. The soils observed in these areas comprise slightly stony (up to 10% flints (7% > 2cm)), calcareous medium silty clay loams or medium clay loams, over a similar or slightly heavier silty clay loam or clay loam calcareous subsoil, also containing some flints (c.10%). Chalk content increases (up to 50%) with depth and profiles pass to pure Chalk between 48 and 60cm.

The climate of the area is such that topsoils of this texture have the effect of limiting the land to a maximum classification of Grade of 2, as a result of workability limitations. In addition, relatively shallow soil depth over Chalk restricts the water availability for plant growth, thereby causing a soil droughtiness problem such that Grade 2 is appropriate.

Subgrade 3a

5.4 The majority of the site has been assigned to this grade. The soils in this area comprise slightly to moderately stony (10-19% flints (up to 12% > 2cm)), calcareous medium silty clay loams or medium clay loams, either directly overlying pure Chalk between 22 and 35cm or over a similarly textured calcareous subsoil containing some flints (up to 15%) and often a large proportion of weathered chalk (50%+), giving way to pure Chalk at shallow depths. Occasional profiles become impenetrable due to flints in the subsoil.

The main limitation for this area of the site is soil droughtiness caused by restricted rooting depth into Chalk. Soil inspection pits on adjacent land show that plants root approximately 40cm into the chalk and are unlikely to effectively extract moisture beyond this depth. As a result, the land is prone to a soil droughtiness risk. Occasionally, where deeper soils occur, the increased availability of water afforded by a deeper soil profile over Chalk, is offset by stoniness, which restricts available water, resulting in a subgrade of 3a soil droughtiness limitation appropriate.

ADAS REFERENCE : 1501/017/93
MAFF REFERENCE : EL 15/144

Resource Planning Team
Guildford Statutory Group
ADAS Reading

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 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 (1981), Sheet No. 284, Basingstoke. 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 for Agricultural Land Classification.
- * Soil Survey of England and Wales (1983), Sheet No. 6, Soils of South East England, 1:250000
- * Soil Survey of England and Wales (1984), Soils and their use in South East England. Bulletin No. 15.

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
 - * Database Printout : Boring Level Information
 - * Database Printout : Horizon Level Information

SOIL PROFILE DESCRIPTIONS : EXPLANATORY NOTE

Soil profile and pit information obtained during ALC surveys is held on a database. This has commonly used notations and abbreviations as set out below.

BORING HEADERS

1. GRID REF : National grid square followed by 8 figure grid reference.
2. USE : Land-use at the time of survey.
The following abbreviations are used.

ARA - arable	PAS/PGR - permanent pasture
WHT - wheat	RGR - rough grazing
BAR - barley	LEY - ley grassland
CER - cereals	CFW - coniferous woodland
OAT - oats	DCW - deciduous woodland
MZE - maize	SCR - scrub
OSR - oilseed rape	HTH - heathland
BEN - field beans	BOG - bog or marsh
BRA - brassicae	FLW - fallow
POT - potatoes	PLO - ploughed
SBT - sugarbeet	SAS - set-aside
FDC - fodder crops	OTH - other
FRT - soft and top fruit	LIN - linseed
HOR/HRT - horticultural crops	

3. GRDNT : Gradient as measured by optical reading clinometer.
4. GLEY/SPL : Depth in centimetres (cm) to gleyed and/or slowly permeable horizons.
5. AP (WHEAT/POTS) : Crop-adjusted available water capacity. The amount of soil water (in millimetres) held in the soil profile that is available to a growing crop (wheat and potatoes are used as reference crops).
6. MB (WHEAT/POTS) : The moisture balance for wheat and potatoes obtained by subtracting the soil moisture deficit from the crop-adjusted available water capacity.
7. DRT: Grade according to soil droughtiness assessed against soil moisture balances.
8. M REL : Micro-relief)
FLOOD : Flood risk) If any of these factors are considered
EROSN : Soil erosion) significant in terms of the assessment
EXP : Exposure) of agricultural land quality a 'y' will
FROST : Frost prone) be entered in the relevant column.
DIST : Disturbed land)
CHEM : Chemical limitation)

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

OC - overall climate	CH - chemical limitations
AE - aspect	WE - wetness
EX - exposure	WK - workability
FR - frost	DR - drought
GR - gradient	ER - erosion
MR - micro-relief	WD - combined soil wetness/soil droughtiness
FL - flooding	ST - topsoil stoniness
TX - soil texture	
DP - soil depth	

PROFILES & PITS

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

S	- sand
LS	- loamy sand
SL	- sandy loam
SZL	- sandy silt loam
ZL	- silt loam
MZCL	- medium silty clay loam
MCL	- medium clay loam
SCL	- sandy clay loam
HZCL	- heavy silty clay loam
HCL	- heavy clay loam
SC	- sandy clay
ZC	- silty clay
C	- clay

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

F	- fine (more than $\frac{2}{3}$ of the sand less than 0.2 mm)
C	- coarse (more than $\frac{1}{3}$ of sand greater than 0.6 mm)
M	- medium (less than $\frac{2}{3}$ fine sand and less than $\frac{1}{3}$ coarse sand)

The sub-divisions of clay loam and silty clay loam classes according to clay content are indicated as follows:

M	- medium (less than 27% clay)
H	- heavy (27-35% clay)

Other possible texture classes include:

- OL - organic loam
- P - peat
- SP - sandy peat
- LP - loamy peat
- PL - peaty loam
- PS - peaty sand
- MZ - marine light silts

2. MOTTLE COL : Mottle colour

3. MOTTLE ABUN : Mottle abundance

- F - few - less than 2% of matrix or surface described
- C - common - 2-20% of the matrix
- M - many - 20-40% of the matrix
- VM - very many - 40% + of the matrix

4. MOTTLE CONT : Mottle continuity

- F - faint - indistinct mottles, evident only on close examination
- 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 : Stone lithology. One of the following is used.

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

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

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

- degree of development
 - WK - weakly developed
 - MD - moderately developed
 - ST - strongly well developed

- ped size

F - fine
M - medium
C - coarse
VC - very coarse

- ped shape

S - single grain
M - massive
GR - granular
SB/SAB - sub-angular blocky
AB - 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 : BEGGARWOOD LANE BASINGLP Pit Number : 8P

Grid Reference: SU59404850 Average Annual Rainfall : 851 mm
 Accumulated Temperature : 1360 degree days
 Field Capacity Level : 184 days
 Land Use : Cereals
 Slope and Aspect : 02 degrees W

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 22	MZCL	10YR43 00	6	11		
22- 37	HZCL	10YR44 00	0	11		MDCSAB
37- 75	CH	10YR81 00	0	50		

Wetness Grade : 2 Wetness Class : I
 Gleying : 000 cm
 SPL : No SPL

Drought Grade : 3A APW : 091mm MBW : 2 mm
 APP : 093mm MBP : 18 mm

FINAL ALC GRADE : 3A
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : BEGGARWOOD LANE BASINGLP Pit Number : 11P

Grid Reference: SU59704850 Average Annual Rainfall : 851 mm
 Accumulated Temperature : 1360 degree days
 Field Capacity Level : 184 days
 Land Use : Cereals
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 25	MZCL	10YR43 00	5	8		
25- 75	CH	10YR81 00	0	50		

Wetness Grade : 2 Wetness Class : I
 Gleying : 000 cm
 SPL : No SPL

Drought Grade : 3A APW : 086mm MBW : -3 mm
 APP : 089mm MBP : 14 mm

FINAL ALC GRADE : 3A
 MAIN LIMITATION : Droughtiness

SAMPLE NO.	GRID REF	USE	ASPECT	--WETNESS--				-WHEAT-		-POTS-		M.REL		EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
				GRDNT	GLEYS	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT					
1	SU59504910	PLO	N	01	000	1	2	079	-12	083	5	3A			DR	3A	ROOT 65	
2	SU59604910	PLO	W	02	000	1	2	085	-6	088	10	3A			DR	3A	ROOT 75	
3	SU59704910	PLO	N	01	000	1	2	087	-4	086	8	3A			DR	3A	ROOT 80	
4	SU59804910	PLO	E	02	000	1	2	105	14	097	19	2			DR	2	ROOT 90	
5	SU59904910	PLO	W	02	000	1	2	113	22	100	22	2			DR	2	ROOT 100	
6	SU60004910	PLO	W	02	000	1	2	099	8	093	15	2			DR	2	ROOT 88	
7	SU59504900	PLO	N	03	000	1	2	074	-17	077	-1	3A			DR	3A	ROOT 63	
8	SU59604900	PLO	N	03	000	1	2	082	-9	085	7	3A			DR	3A	ROOT 75	
9	SU59704900	PLO	N	03	000	1	2	085	-6	086	8	3A			DR	3A	ROOT 78	
0	SU59804900	PLO	N	03	000	1	2	056	-35	056	-22	3B			DR	3B	IMP 35 HR	
11	SU59904900	PLO	N	03	000	1	2	094	3	086	9	3A			DR	3A	ROOT 92	
12	SU60004900	PLO	N	03	000	1	2	092	1	090	12	3A			DR	3A	ROOT 82	
13	SU59504890	PLO	E	02	000	1	2	074	-17	078	0	3A			DR	3A	ROOT 62	
14	SU59604890	PLO	N	02	000	1	2	075	-16	079	1	3A			DR	3A	ROOT 63	
15	SU59704890	PLO	N	02	000	1	2	074	-17	079	1	3A			DR	3A	ROOT 65	
16	SU59804890	PLO	N	02	000	1	2	084	-7	087	9	3A			DR	3A	ROOT 75	
17	SU59904890	PLO	N	02	000	1	2	106	15	098	20	2			DR	2	ROOT 90	
18	SU60004890	PLO	N	02	000	1	2	081	-10	084	6	3A			DR	3A	ROOT 75	
19	SU59404880	PLO	N	02	000	1	2	071	-20	071	-7	3A			DR	3A	IMP 45 HR	
20	SU59504880	PLO	N	02	000	1	2	077	-14	081	3	3A			DR	3A	ROOT 65	
21	SU59604880	PLO	N	02	000	1	2	080	-11	086	8	3A			DR	3A	ROOT 69	
22	SU59704880	PLO	N	02	000	1	2	081	-10	086	8	3A			DR	3A	ROOT 70	
23	SU59804880	PLO	N	02	000	1	2	089	-2	088	10	3A			DR	3A	ROOT 80	
24	SU59904880	PLO	N	02	000	1	2	093	2	089	11	3A			DR	3A	ROOT 85	
25	SU60004880	PLO	N	02	000	1	2	085	-6	088	10	3A			DR	3A	ROOT 75	
26	SU59604870	PLO	N	02	000	1	2	085	-6	087	9	3A			DR	3A	ROOT 75	
27	SU59704870	PLO	N	02	000	1	2	089	-2	088	10	3A			DR	3A	ROOT 80	
28	SU59804870	PLO	N	02	000	1	2	082	-9	087	9	3A			DR	3A	ROOT 68	
29	SU59904870	PLO	N	02	000	1	2	077	-14	081	3	3A			DR	3A	ROOT 64	
30	SU59804860	PLO	N	02	000	1	2	075	-16	079	1	3A			DR	3A	ROOT 64	

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED COL.	-----STONES-----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLE	>2	>6		LITH	TOT	STR	POR	IMP	SPL
1	0-25	mzc1	10YR43 00					0	0	HR	10						Y
	25-65	ch	00CH00 00					0	0		0		P				Y
2	0-26	mc1	10YR43 00					0	0	HR	10						Y
	26-35	mzc1	10YR81 64					0	0	CH	80		M				Y
	35-75	ch	00CH00 00					0	0		0		P				Y
3	0-25	mc1	10YR43 00					0	0	HR	12						Y
	25-40	mzc1	10YR81 64					0	0	CH	90		M				Y
	40-80	ch	00CH00 00					0	0		0		P				Y
4	0-27	mc1	10YR42 00					0	0	HR	10						
	27-37	hc1	10YR54 46					0	0	HR	10		M				
	37-50	mzc1	10YR64 81					0	0	CH	40		M				Y
	50-90	ch	00CH00 00					0	0		0		P				Y
5	0-26	mc1	10YR42 00					0	0	HR	10						
	26-45	hc1	10YR44 54					0	0	HR	10		M				
	45-60	hzc1	10YR54 81					0	0	CH	50		M				Y
	60-100	ch	00CH00 00					0	0		0		P				Y
6	0-26	mc1	10YR42 00					7	0	HR	10						
	26-40	hc1	75YR54 46					0	0	HR	10		M				
	40-48	mzc1	10YR81 64					0	0	CH	95		P				Y
	48-88	ch	00CH00 00					0	0		0		P				Y
7	0-23	mzc1	10YR43 00					7	0	HR	11						Y
	23-63	ch	00CH00 00					0	0	HR	5		P				Y
8	0-24	mzc1	10YR43 00					8	0	HR	14						Y
	24-35	mzc1	10YR64 81					0	0	CH	90		M				Y
	35-75	ch	00CH00 00					0	0	HR	5		P				Y
9	0-25	mzc1	10YR43 00					12	0	HR	16						Y
	25-38	mzc1	10YR64 81					0	0	CH	80		M				Y
	38-78	ch	00CH00 00					0	0	HR	5		P				Y
10	0-25	mzc1	10YR43 00					8	0	HR	12						Y
	25-35	mzc1	10YR43 44					0	0	HR	20		M				Y
11	0-25	mc1	10YR42 43					9	0	HR	12						Y
	25-52	hzc1	10YR64 81					0	0	CH	60		M				Y
	52-92	ch	00CH00 00					0	0	HR	10		P				Y
12	0-25	mc1	10YR42 43					7	0	HR	10						Y
	25-35	hc1	75YR54 46					0	0	HR	10		M				Y
	35-42	mzc1	10YR64 81					0	0	CH	80		M				Y
	42-82	ch	00CH00 00					0	0	HR	5		P				Y

+12% HR

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED COL.	-----STONES-----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLY	>2	>6		LITH	TOT	STR	POR	IMP	SPL
13	0-22	mzc1	10YR43 00					0	0	HR	10						Y
	22-62	ch	00CH00 00					0	0		0		P				Y
14	0-23	mzc1	10YR43 00					7	0	HR	12						Y
	23-63	ch	00CH00 00					0	0		0		P				Y
15	0-25	mzc1	10YR43 00					9	3	HR	19						Y
	25-65	ch	00CH00 00					0	0		0		P				Y
16	0-27	mc1	10YR43 00					6	0	HR	16						Y
	27-35	mzc1	10YR84 54					0	0	CH	60		M				Y
	35-75	ch	00CH00 00					0	0		0		P				Y
17	0-27	mzc1	10YR42 43					5	0	HR	10						Y
	27-50	hc1	10YR46 00					0	0	HR	15		M				Y
	50-90	ch	00CH00 00					0	0		0		P				Y
18	0-25	mc1	10YR43 00					9	0	HR	14						Y
	25-35	mzc1	10YR43 81					0	0	CH	80		M				Y
	35-75	ch	00CH00 00					0	0	HR	5		P				Y
19	0-25	mzc1	10YR43 00					8	0	HR	12						Y
	25-45	mzc1	10YR43 44					0	0	HR	15		M				Y
20	0-25	mzc1	10YR42 43					0	0	HR	10						Y
	25-65	ch	00CH00 00					0	0	HR	5		P				Y
21	0-25	mzc1	10YR43 00					6	0	HR	10						Y
	25-29	mzc1	10YR43 81					0	0	CH	80		M				Y
	29-69	ch	00CH00 00					0	0	HR	5		P				Y
22	0-25	mzc1	10YR43 00					6	0	HR	11						Y
	25-30	mzc1	10YR43 81					0	0	CH	80		M				Y
	30-70	ch	00CH00 00					0	0	HR	5		P				Y
23	0-25	mzc1	10YR43 00					8	0	HR	13						Y
	25-35	mzc1	10YR43 44					0	0	HR	15		M				Y
	35-80	ch	00CH00 00					0	0	HR	10		P				Y
24	0-25	mzc1	10YR43 00					8	0	HR	12						Y
	25-45	mzc1	10YR43 81					0	0	CH	80		M				Y
	45-85	ch	00CH00 00					0	0	HR	5		P				Y
25	0-25	mzc1	10YR43 00					7	0	HR	10						Y
	25-35	mzc1	10YR43 81					0	0	CH	80		M				Y
	35-75	ch	00CH00 00					0	0	HR	5		P				Y
26	0-25	mzc1	10YR43 00					6	0	HR	10						Y
	25-35	mzc1	10YR64 43					0	0	CH	85		M				Y
	35-75	ch	00CH00 00					0	0	HR	5		P				Y

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----		PED COL.	-----STONES-----			STRUCT/ CONSIST	SUBS						
				COL	ABUN		CONT	GLEY	>2		>6	LITH	TOT	STR	POR	IMP	SPL
27	0-25	mzc1	10YR43 00				6	0	HR	11							Y
	25-40	mzc1	10YR43 64				0	0	CH	85			M				Y
	40-80	ch	00CH00 00				0	0	HR	5			P				Y
28	0-28	mzc1	10YR43 00				0	0	HR	12							Y
	28-68	ch	00CH00 00				0	0		0			P				Y
29	0-24	mzc1	10YR43 00				0	0	HR	10							Y
	24-64	ch	00CH00 00				0	0		0			P				Y
30	0-24	mzc1	10YR43 00				0	0	HR	15							Y
	24-64	ch	00CH00 00				0	0		0			P				Y