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**NEW FOREST DISTRICT LOCAL PLAN
Objector Site 1
Land at Pinetops Nursery,
Lymington, Hampshire
Agricultural Land Classification
ALC Map & Report**

February 1997

**Resource Planning Team
Eastern Region
FRCA, Reading**

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AGRICULTURAL LAND CLASSIFICATION REPORT

NEW FOREST DISTRICT LOCAL PLAN OBJECTOR SITE 1 LAND AT PINETOPS NURSERY

INTRODUCTION

1 This report presents the findings of a detailed Agricultural Land Classification (ALC) survey on approximately 24 hectares of land at Pinetops Nurseries Upper Pennington near Lymington in Hampshire. The survey was carried out during February 1997.

2 The survey was commissioned by the Ministry of Agriculture Fisheries and Food (MAFF) from its Land Use Planning Unit in Reading in connection with the New Forest District Local Plan. The results of this survey supersede any previous ALC information for this land.

3 Prior to 1st April 1997 the work was conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS. After this date the work was completed by the same team as part of the Farming and Rural Conservation Agency (FRCA) Reading. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF 1988). A description of the ALC grades and subgrades is given in Appendix I.

4 At the time of survey all of the agricultural land on this site was under permanent grassland. The areas shown as Other Land comprise the nurseries, a recreation ground and other agricultural and residential buildings.

SUMMARY

5 The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10,000. It is accurate at this scale but any enlargement would be misleading.

6 The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1 below.

Table 1 Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
2	7.9	63.2	34.2
3b	4.6	36.8	19.9
Other land	10.6	N/A	45.9
Total surveyed area	12.5	100.0	54.1
Total site area	23.1		100.0

7 The fieldwork was conducted at an average density of 1 boring per hectare. A total of 18 borings and two soil inspection pits were described.

8 All of the agricultural land on this site has been classified as best and most versatile Grade 2 (very good quality) to the south west and Subgrade 3a (good quality) to the north east. The key limitation is soil droughtiness though a small area of land is also limited by soil wetness.

9 The majority of soil profiles comprise medium textured slightly flinty topsoils and upper subsoils over very flinty medium and heavy textured subsoils. In general the soil profiles became impenetrable to a soil auger at moderate depths. However information derived from soil inspection pits showed that a light textured variably stony subsoil continues to depth. In this local climatic regime the combination of soil textures structures and stone contents slightly reduces the amount of profile available water for crops thus restricting the level and consistency of crop yields. The land is therefore limited to either Subgrade 3a or Grade 2 depending on the amount of stone present in the soil profile. The small valley to the north east of the site is also limited by soil wetness. Here the profiles are slightly heavier in texture and distinctly wetter due to poor drainage and high groundwater levels. Soils with this degree of soil wetness are likely to limit seed germination and root development. This land has therefore been classified as Subgrade 3a. Isolated patches of slightly poorer quality land may also occur but these are too small to map separately.

FACTORS INFLUENCING ALC GRADE

Climate

10 Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

11 The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5km grid datasets using the standard interpolation procedures (Met Office 1989).

12 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.

Table 2 Climatic and altitude data

Factor	Units	Values	
Grid reference	N/A	SZ 303 957	SZ 312 959
Altitude	m AOD	26	20
Accumulated Temperature	day°C (Jan June)	1537	1543
Average Annual Rainfall	mm	826	812
Field Capacity Days	days	170	168
Moisture Deficit Wheat	mm	110	111
Moisture Deficit Potatoes	mm	105	106
Overall climatic grade	N/A	Grade 1	Grade 1

13 The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR) as a measure of overall wetness and accumulated temperature (ATO January to June) as a measure of the relative warmth of a locality

14 The combination of rainfall and temperature at this site mean that there is no overall climatic limitation. However climatic factors can interact with soil properties to influence soil wetness and droughtiness. At this locality the field capacity day values are relatively high which will have an impact on the assessment of soil wetness. In addition to this the crop adjusted soil moisture deficits are relatively high thus increasing the likelihood of soil droughtiness

15 Local climatic factors such as frost risk are unlikely to adversely affect agricultural land use on this site. However information derived from unpublished Met Office data (1968) suggests that this area could be rather exposed though at the time of survey it was not considered likely to significantly affect the agricultural land quality. The site is climatically Grade 1

Site

16 The majority of the land on this site is relatively flat lying between 25-27m AOD. However the land a small valley to the north east dips away to just below 25m AOD

17 Gradient, microrelief and flooding do not affect land quality in this area

Geology and soils

18 The relevant geological sheet (BGS 1975) maps the entire site as plateau gravel

19 The most recently published soils information for this area (SSEW 1983) maps the Efford 1 soil association across all of the site. These soils are described as Well drained fine loamy soils often over gravel associated with similar permeable soils variably affected by groundwater (SSEW 1983)

20 Detailed field examination broadly confirmed the existence of soils similar to those described above as Efford 1 soil association

AGRICULTURAL LAND CLASSIFICATION

21 The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1 page 1

22 The location of the auger borings and pits is shown on the attached sample location map and the details of the soils data are presented in Appendix III

Grade 2

23 The agricultural land to the south west of the site has been classified as Grade 2 due to a slight soil droughtiness limitation and an occasional soil wetness limitation. These profiles typically comprise very slightly stony (2-5% flints by v/v) medium clay loam topsoils over

very slightly to slightly stony (2-15% flint by v/v) upper subsoils of a similar texture. At between 50-75cm depth the subsoils become more variable in texture (e.g. medium, heavy or sandy clay loam and occasionally clay) and markedly more stony (20-40% flint by v/v). Most profiles become impenetrable to the soil auger at 60-82cm depth. However, soil inspection Pits 1 and 2 show that the resource continues to depth with moderately to very stony (43-52% flints by v/v) sandy clay loams, medium sandy loams and loamy medium sands. The profiles are also moderately well structured throughout. In this locally warm and wet climatic regime the overriding limitation is soil droughtiness as the combination of soil textures, structures and stone contents acts to reduce the amount of profile available water for plants. As a result, the level and consistency of crop yields will be slightly affected.

24 Some of these profiles also show signs of slight soil wetness in the form of gleying, which probably results from a minor drainage impedence at depth. Where gleying occurs from the upper subsoil the land has been assigned to Wetness Class II and classified as Grade 2 because wet soils such as these will inhibit seed germination and growth. They can also slightly limit the timing and flexibility of cultivations as trafficking by agricultural machinery and livestock during the wetter months can lead to structural damage.

Subgrade 3a

25 The agricultural land in the north east of the site has been classified as Subgrade 3a. Most of the soil profiles are similar to those described in paragraph 23 above so there was no need to describe an additional soil pit in this mapping unit. However, they tend to be more flinty (30-60% stone by v/v) from shallower depths and subsequently become impenetrable to the soil auger between 45-80cm depth. Information gathered from Pits 1 and 2 again suggests that the soil resource continues to depth. However, the amount of profile available water for crops will be significantly less than in the Grade 2 profiles. This will lead to higher drought stress in crops during the drier months.

26 Soil profiles in the small valley to the extreme north east of the site are also shallow and flinty and thus suffer slight drought stress in most years. However, they also experience seasonally high groundwater levels which inhibit crop development and limit the timing and flexibility of cultivations. These profiles have therefore been assigned to Wetness Class III and are placed in Subgrade 3a as a result of this degree of soil wetness. These profiles are also equally limited by soil droughtiness.

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SOURCES OF REFERENCE

British Geological Survey (1975) *Sheet No 330 Lymington 1 50 000 Series Drift Edition*
BGS London

Ministry of Agriculture Fisheries and Food (1988) *Agricultural Land Classification of England and Wales Revised guidelines and criteria for grading the quality of agricultural land*
MAFF London

Met Office (1989) *Climatological Data for Agricultural Land Classification*
Met Office Bracknell

Met Office (1968) *Unpublished Climatological Data Sheet 180*
Met Office Bracknell

Soil Survey of England and Wales (1983) *Sheet 6 Soils of South East England*
SSEW Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in South East England*
SSEW Harpenden

DESCRIPTIONS 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.

APPENDIX II

SOIL WETNESS CLASSIFICATION

Definitions of Soil Wetness Classes

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.

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

Assessment of Wetness Class

Soils have been allocated to wetness classes by the interpretation of soil profile characteristics and climatic factors using the methodology described in *Agricultural Land Classification of England and Wales Revised guidelines and criteria for grading the quality of agricultural land* (MAFF 1988)

¹ The number of days is not necessarily a continuous period

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

APPENDIX III

SOIL DATA

Contents

Sample location map

Soil abbreviations - Explanatory Note

Soil Pit Descriptions

Soil boring descriptions (boring and horizon levels)

Database Printout Horizon Level Information

SOIL PROFILE DESCRIPTIONS EXPLANATORY NOTE

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

Boring Header Information

1 **GRID REF** national 100 km grid square and 8 figure grid reference

2 **USE** Land use at the time of survey. The following abbreviations are used:

ARA	Arable	WHT	Wheat	BAR	Barley
CER	Cereals	OAT	Oats	MZE	Maize
OSR	Oilseed rape	BEN	Field Beans	BRA	Brassicae
POT	Potatoes	SBT	Sugar Beet	FCD	Fodder Crops
LIN	Linseed	FRT	Soft and Top Fruit	FLW	Fallow
PGR	Permanent Pasture	LEY	Ley Grass	RGR	Rough Grazing
SCR	Scrub	CFW	Coniferous Woodland	DCW	Deciduous Wood
HTH	Heathland	BOG	Bog or Marsh	FLW	Fallow
PLO	Ploughed	SAS	Set aside	OTH	Other
HRT	Horticultural Crops				

3 **GRDNT** Gradient as estimated or measured by a hand-held optical clinometer

4 **GLEYSPL** Depth in centimetres (cm) to gleying and/or slowly permeable layers

5 **AP (WHEAT/POTS)** Crop adjusted available water capacity

6 **MB (WHEAT/POTS)** Moisture Balance (Crop adjusted AP - crop adjusted MD)

7 **DRT** Best grade according to soil droughtiness

8 If any of the following factors are considered significant 'Y' will be entered in the relevant column:

MREL	Microrelief limitation	FLOOD	Flood risk	EROSN	Soil erosion risk
EXP	Exposure limitation	FROST	Frost prone	DIST	Disturbed land
CHEM	Chemical limitation				

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

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

Soil Pits and Auger Borings

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

S	Sand	LS	Loamy Sand	SL	Sandy Loam
SZL	Sandy Silt Loam	CL	Clay Loam	ZCL	Silty Clay Loam
ZL	Silt Loam	SCL	Sandy Clay Loam	C	Clay
SC	Sandy Clay	ZC	Silty Clay	OL	Organic Loam
P	Peat	SP	Sandy Peat	LP	Loamy Peat
PL	Peaty Loam	PS	Peaty Sand	MZ	Marine Light Silts

For the sand loamy sand sandy loam and sandy silt loam classes the predominant size of sand fraction will be indicated by the use of the following prefixes

F	Fine (more than 66% of the sand less than 0.2mm)
M	Medium (less than 66% fine sand and less than 33% coarse sand)
C	Coarse (more than 33% of the sand larger than 0.6mm)

The clay loam and silty clay loam classes will be sub divided according to the clay content **M** Medium (<27% clay) **H** Heavy (27-35% clay)

2 **MOTTLE COL** Mottle colour using Munsell notation

3 **MOTTLE ABUN** Mottle abundance expressed as a percentage of the matrix or surface described

F few <2% **C** common 2-20% **M** many 20-40% **VM** very many 40% +

4 **MOTTLE CONT** Mottle contrast

F faint indistinct mottles evident only on close inspection
D distinct mottles are readily seen
P prominent mottling is conspicuous and one of the outstanding features of the horizon

5 **PED COL** Ped face colour using Munsell notation

6 **GLEYS** If the soil horizon is gleyed a **Y** will appear in this column If slightly gleyed an **S** will appear

7 **STONE LITH** Stone Lithology One of the following is used

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

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

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

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

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

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

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

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

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

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

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

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

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

15 Other notations

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

SOIL PIT DESCRIPTION

Site Name NEW FOREST DLP SITE 1 Pit Number 1P
 Grid Reference SZ30909580 Average Annual Rainfall 826 mm
 Accumulated Temperature 1537 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- 33	MCL	10YR42 00	0	3	HR					
33- 52	MCL	10YR43 00	0	5	HR		MDCSAB	FR	M	
52- 68	MCL	10YR54 56	0	46	HR		WKCSAB	FR	M	
68- 82	MSL	10YR54 00	0	52	HR	C	WKCSAB	FR	G	
82-110	MS	10YR54 64	0	20	HR	C		VF	M	

Wetness Grade 1 Wetness Class I
 Gleying 068 cm
 SPL No SPL

Drought Grade 2 APW 116mm MBW 6 mm
 APP 103mm MBP -2 mm

FINAL ALC GRADE 2
 MAIN LIMITATION Droughtiness

SOIL PIT DESCRIPTION

Site Name NEW FOREST DLP SITE 1 Pit Number 2P

Grid Reference SZ30909560 Average Annual Rainfall 826 mm
 Accumulated Temperature 1537 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- 32	MCL	10YR42 00	0	2	HR					
32- 43	MCL	10YR42 00	0	2	HR	F	MDCSAB	FR	M	
43- 60	MCL	10YR54 64	0	5	HR	F	MDCSAB	FR	M	
60- 72	HCL	10YR64 00	0	20	HR	C	MDCSAB	FR	M	
72- 80	HCL	10YR63 00	0	43	HR	C	WKCSAB	FR	M	
80- 95	SCL	10YR63 00	0	43	HR	C		FR	M	
95-105	LMS	25Y 63 00	0	43	HR	M		VF	M	

Wetness Grade 1 Wetness Class I
 Gleying 060 cm
 SPL No SPL

Drought Grade 2 APW 122mm MBW 12 mm
 APP 115mm MBP 10 mm

FINAL ALC GRADE 2
 MAIN LIMITATION Droughtiness

SAMPLE NO	GRID REF	ASPECT		--WETNESS--				-WHEAT-		-POTS-		M REL		EROSN	FROST	CHEM	ALC	COMMENTS	
		USE	GRDNT	GLEYS	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT			
1	SZ31109590	PGR	N	03	028		3	3A	104	-6	104	-1	3A				WD	3A	I85 Gravelly
1P	SZ30909580	PGR			068		1	1	116	6	103	-2	2				DR	2	Roots to 120cm
2	SZ31209590	PGR	E	03	028		2	2	083	-27	083	-22	3B				DR	3A	I50 Flints
2P	SZ30909560	PGR			-060		1	1	122	12	115	10	2				DR	2	Roots to 120cm
3	SZ30609580	PGR					1	1	109	-1	113	8	3A				DR	2	I80 Flints
4	SZ30709580	PGR			0	045	3	3A	131	21	112	7	2				WE	3A	
5	SZ30909580	PGR					1	1	070	-40	070	-35	3B				DR	3A	I45 gravelly
6	SZ30809570	PGR	N	01			1	1	091	-19	093	-12	3A				DR	3A	I80 Gravelly
7	SZ30309570	PGR			050		1	1	117	7	117	12	2				DR	2	I82 See 1P
8	SZ30409570	PGR					1	1	113	3	116	11	3A				DR	2	I80 See 2P
9	SZ30509570	PGR			065		1	1	123	13	116	11	2				DR	2	I90 See 2P
10	SZ30609570	PGR			050		1	1	091	-19	096	-9	3A				DR	3A	I60 Flints
11	SZ30709570	PGR			030		2	2	100	-10	104	-1	3A				WD	2	I78 Gravelly
12	SZ30909570	RGR					1	1	079	-31	079	-26	3B				DR	3A	I50 See 1P
13	SZ31009580	PGR					1	1	093	-17	099	-6	3A				DR	3A	I65 See 1P
14	SZ30509560	PGR			045		1	1	106	-4	112	7	3A				DR	2	I70 See 2P
15	SZ30809560	RGR					1	1	083	-27	088	-17	3B				DR	2	I70 See 1P
16	SZ30709560	PGR			030		2	2	119	9	104	-1	2				WD	2	Wet 75
17	SZ30909560	PGR					1	1	102	-8	112	7	3A				DR	2	I70 See 1P
18	SZ30809550	PGR			050		1	1	111	1	115	10	3A				DR	2	I80 See 1P

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED COL	-----STONES-----			STRUCT/ CONSIST	SUBS STR POR IMP SPL	CALC		
				COL	ABUN	CONT		GLE	>2	>6				LITH	TOT
1	0-28	mc1	10YR31 00					0	0	HR	2		WT 48cm		
	28-48	hc1	10YR61 00	75YR58	00	C		Y	0	0	HR	10	M		
	48-60	hc1	10YR61 00	10YR58	00	C		Y	0	0	HR	15	M		
	60-85	mc1	10YR61 00	10YR58	00	C		Y	0	0	HR	45	M	Imp Gravelly	
1P	0-33	mc1	10YR42 00					0	0	HR	3				
	33-52	mc1	10YR43 00					0	0	HR	5	MDCSAB	FR M		
	52-68	mc1	10YR54 56					0	0	HR	46	WKCSAB	FR M		
	68-82	ms1	10YR54 00	10YR58	00	C		S	0	0	HR	52	WKCSAB	FR G	
	82-110	ms	10YR54 64	10YR56	66	C		Y	0	0	HR	20	VF	M	Assume to 120
2	0-28	mc1	10YR32 00					0	0	HR	2				
	28-50	mc1	10YR62 72	10YR68	00	C		Y	0	0	HR	5	M	I Flints/Clay	
2P	0-32	mc1	10YR42 00					0	0	HR	2				
	32-43	mc1	10YR42 00	10YR56	00	F		0	0	HR	2	MDCSAB	FR M		
	43-60	mc1	10YR54 64	10YR58	00	F		0	0	HR	5	MDCSAB	FR M		
	60-72	hc1	10YR64 00	10YR58	00	C		Y	0	0	HR	20	MDCSAB	FR M	
	72-80	hc1	10YR63 00	75YR58	00	C		Y	0	0	HR	43	WKCSAB	FR M	
	80-95	sc1	10YR63 00	75YR58	00	C		Y	0	0	HR	43	FR	M	
	95-105	1ms	25Y 63 00	10YR68	00	M		Y	0	0	HR	43	VF	M	Assume Roots 120
3	0-30	mc1	10YR41 42					0	0	HR	3				
	30-55	mc1	10YR42 00	10YR56	00	F	00MNOO 00	0	0	HR	3		M		
	55-70	mc1	10YR52 00	10YR56	00	F		0	0	HR	10		M		
	70-80	mc1	10YR52 00	10YR56	00	F		0	0	HR	35		M	Imp Flints	
4	0-25	mc1	25Y 41 00	10YR46	00	C		Y	0	0	HR	5			
	25-45	hc1	25Y 41 42	10YR46	00	C		Y	0	0	HR	3	M		
	45-65	c	25Y 51 00	10YR58	00	C		Y	0	0		0	P	Y	
	65-120	c	25Y 61 00	10YR68	00	M		Y	0	0	HR	5	P	Y	
5	0-30	mc1	10YR41 00					0	0	HR	5				
	30-40	mc1	10YR43 42	10YR46	00	F		0	0	HR	10		M		
	40-45	mc1	10YR43 42					0	0	HR	50		M	Imp Gravelly	
6	0-30	mc1	10YR42 00					0	0	HR	5				
	30-45	mc1	10YR43 00	10YR56	00	F		0	0	HR	5		M		
	45-55	mc1	10YR43 00	10YR56	00	F		0	0	HR	20		M		
	55-70	1ms	10YR44 46					0	0	HR	50		M		
	70-80	1ms	10YR64 54					0	0	HR	60		M	Imp Gravelly	
7	0-35	mc1	10YR42 00					0	0	HR	2				
	35-50	mc1	10YR43 00	75YR58	00	C		S	0	0	HR	2	M		
	50-82	mc1	10YR64 00	10YR58	00	C		Y	0	0	HR	2	M	Imp Flints	
8	0-30	mc1	10YR42 00					0	0	HR	2				
	30-50	mc1	10YR43 00	75YR58	00	C		S	0	0	HR	2	M		
	50-65	fs1	10YR64 00	75YR58	00	C		Y	0	0	HR	20	M		
	65-80	hc1	10YR64 00	75YR58	00	M		Y	0	0	HR	25	M	Imp Flints	

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED	-----STONES-----			STRUCT/ CONSIST	SUBS			CALC
				COL	ABUN	CONT		COL	GLE	>2		>6	LITH	TOT	
9	0-35	mc1	10YR42 00						0	0	HR	2			
	35-65	mc1	10YR64 00	10YR58 00	F				0	0	HR	2		M	
	65-75	sc1	10YR64 00	75YR58 00	C			Y	0	0	HR	2		M	
	75-90	hc1	10YR64 00	75YR58 00	M			Y	0	0	HR	10		M	Imp Flints
10	0-30	mc1	10YR41 42						0	0	HR	3			
	30-50	mc1	10YR52 53	10YR56 00	F				0	0	HR	5		M	
	50-60	mc1	10YR52 53	10YR56 00	C		00MN00	00	Y	0	0	HR	20		M
11	0-30	mc1	10YR41 42						0	0	HR	3			
	30-50	mc1	10YR53 52	10YR56 00	C			Y	0	0	HR	15		M	
	50-75	mc1	10YR61 62	10YR66 00	C			Y	0	0	HR	25		M	
	75-78	mc1	10YR61 62	10YR66 00	C			Y	0	0	HR	52		P	I Wet/Gravelly
12	0-30	mc1	10YR42 00						0	0	HR	5			
	30-50	hc1	10YR42 44						0	0	HR	15		M	Imp Flints
13	0-30	mc1	10YR42 00						0	0	HR	5			
	30-50	mc1	10YR42 43	10YR56 00	F				0	0	HR	5		M	
	50-65	mc1	10YR43 00	10YR56 00	F				0	0	HR	30		M	Imp Flint/Gravel
14	0-35	mc1	10YR43 00						0	0	HR	3			
	35-45	mc1	10YR54 00						0	0	HR	5		M	
	45-65	mc1	10YR64 00	75YR58 00	C			Y	0	0	HR	5		M	
	65-75	c	10YR64 00	75YR58 00	M		00MN00	00	Y	0	0	HR	25		P
	75-78	ms1	10YR64 00	75YR58 00	C			Y	0	0	HR	50		M	Imp Flints
15	0-24	sc1	10YR32 00						0	0	HR	10			
	24-55	sc1	10YR31 00						0	0	HR	10		M	
	55-70	lms	10YR41 00						0	0	HR	20		M	I Wet/Gravelly
16	0-30	mc1	10YR42 00						0	0	HR	5			
	30-50	sc1	10YR53 00	10YR58 00	C			Y	0	0	HR	15		M	
	50-75	ms1	10YR52 00	10YR58 00	C			Y	0	0	HR	10		M	
	75-120	ms	10YR52 00	10YR58 00	M			Y	0	0	HR	5		M	V Wet 90cm
17	0-30	mc1	10YR42 00						0	0	HR	2			
	30-50	mc1	10YR43 00						0	0	HR	2		M	
	50-65	mc1	10YR44 54						0	0	HR	5		M	
	65-70	mc1	10YR54 64	10YR56 00	F				0	0	HR	40		M	Imp Flints
18	0-30	mc1	10YR42 00						0	0	HR	2			
	30-50	mc1	10YR43 00						0	0	HR	2		M	
	50-75	mc1	10YR53 00	10YR56 00	C			Y	0	0	HR	5		M	
	75-80	mc1	10YR53 00	10YR56 00	C			Y	0	0	HR	40		M	Imp Flints