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Newbury District Local Plan
Site 42 : North Thatcham
Agricultural Land Classification
ALC Map and Report
April 1994

AGRICULTURAL LAND CLASSIFICATION REPORT

NEWBURY DISTRICT LOCAL PLAN SITE 42 : NORTH THATCHAM

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 Newbury District of Berkshire. The work forms part of MAFF's statutory input to the preparation of the Newbury District Local Plan.
- 1.2 Approximately 23 hectares of land relating to site 42, North Thatcham was surveyed in February 1994. The survey was undertaken at a detailed level of approximately one boring per hectare. A total of 24 soil auger borings and five 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 longterm limitations on its use for agriculture.
- 1.3 The work was conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS.
- 1.4 At the time of the survey the majority of the agricultural land was under permanent pasture, with an area towards the north east under linseed.
- 1.5 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 survey information for this site.

Table 1 : Distribution of Grades and Subgrades

Grade	Area (ha)	% of Site	% of Agricultural Area
3a	6.2	27.4	34.8
3b	11.6	51.3	<u>65.2</u>
Non Agricultural	1.8	8.0	100% (17.8 ha)
Woodland	0.1	0.5	
Urban	<u>2.9</u>	<u>12.8</u>	
Total area of site	22.6 ha	100%	

- 1.6 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.

1.7 The area under agricultural use has been classified, Subgrade 3a, (good quality) and Subgrade 3b (moderate quality) land. Limitations include soil wetness, soil droughtiness and gradient. The areas affected by soil wetness are characterised by slowly permeable clay subsoils occurring at varying depths. Where these are shallow (<42 cm), the land is classified 3b. Areas affected by soil droughtiness are also graded 3a and 3b. Towards the north of the site, moderate and very stony subsoils restrict profile water availability, whilst in the south west of the site, coarse textures result in a droughtiness limitation. A small area towards the north of the site is limited to Subgrade 3b by gradients of 7.5 degrees, restricting the safe and efficient use of some farm machinery.

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 affect the site. However, climatic and soil factors interact to influence soil wetness and droughtiness limitations.

Table 2 :Climatic Interpolations

Grid Reference	SU502683	SU510684
Altitude, (m, AOD)	92	90
Accumulated Temperature (°days, Jan-June)	1425	1427
Average Annual Rainfall (mm)	700	700
Field Capacity Days	153	153
Moisture deficit, wheat (mm)	105	105
Moisture deficit, potatoes (mm)	97	97
Overall Climatic Grade	1	1

3. Relief

- 3.1 The site lies at an altitude of approximately 85-100 m. The land undulates in the western section of the site. Towards the east the land rises gently northwards from the south of the site, becoming steeper. Relief does not generally affect land quality on this site. However in one small area towards the north the gradient of 7.5° is sufficient to restrict the final classification (see para 5.4).

4. Geology and Soils

- 4.1 The published British Geological Survey map, Sheet 267, Hungerford (1:63360 scale, 1971), shows the majority of the site to be underlain by Reading Beds. One area towards the north east is shown as London Clay and another small area to the northwest is indicated as plateau gravel, of uncertain age and origin.
- 4.2 The published Soil Survey of England and Wales map, Sheet 6, Soils of South-East England (1983, 1:250,000 scale), shows the site to be underlain by soils of the Wickham 3 and Wickham 4 Associations. These are described by SSEW as, "slowly permeable seasonally waterlogged fine loamy over clayey, fine silty over clayey, and coarse loamy over clayey soils, and similar or more permeable soils with slight waterlogging. Some deep coarse loamy soils affected by groundwater" (SSEW, 1983). The soils encountered across this site were broadly of the nature described above.

5. 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 Land of good quality covers approximately one-third of the agricultural land at this site in a total of four separate units. Principal limitations include both soil wetness and soil droughtiness. In the areas towards the southwest and northeast, where soil wetness is the principal limiting factor, profiles typically comprise a stoneless medium or heavy clay loam topsoil which may be gleyed, passing to a similar textured, gleyed upper subsoil, which may contain significant quantities of fine sand. These overlie slowly permeable clay at moderate depth, such that Wetness Classes II and III are appropriate, which given fine loamy topsoils leads to Subgrade 3a being appropriate at this location.

5.4 The remaining areas are limited by soil droughtiness. Towards the extreme south west corner of the site this is commonly due to relatively free draining sandy soils restricting available water capacity. These typically comprise a medium sandy loam topsoil over a loamy medium sand upper subsoil passing to medium sand at a moderate depth. This becomes gleyed between c.60 and 80 cm, due to fluctuating groundwater. The remaining areas affected by soil droughtiness are towards the north of the site. In this area profiles typically comprise very slightly stony gleyed medium or heavy clay loam topsoils passing to a slightly stony medium or heavy clay loam upper subsoil. Below about 50-60 cm, stone content increases to around 40%. Stone contents such as these restrict the water holding capability of the soil such that there is a moderate risk of drought stress to crops.

5.5 **Subgrade 3b**

Land of moderate quality is mapped over the remaining two-thirds of the agricultural area of this site and occurs in a total of three separate units. Principal limitations include soil wetness, soil droughtiness and gradient. In areas where wetness is the main limitation, soils are essentially similar to those described in para 5.3, that is medium or heavy clay loam topsoils, over similar upper subsoils passing to slowly permeable clay at comparatively shallow depth (24-40 cm). Such soils are appropriately placed in Wetness Class IV and included in Subgrade 3b due to moderate wetness limitations which will affect cultivations, cropping and stocking.

5.6 In the area where soil droughtiness is the principal limiting factor, gravel horizons occur immediately beneath slightly stony medium clay loam topsoils, reducing available water capacity in the soil, such that there is a significant risk of drought stress to plants.

5.7 Towards the north of the site gradients of 7.5 degrees were recorded using an optical reading clinometer. This restricts the safe and efficient use of some farm machinery such that this subgrade is appropriate.

5.7 Land shown as non-agricultural is principally scrub and wide hedgerows surrounding drains. Land shown as Urban includes domestic dwellings, a hotel complex and a metalled track leading to farm buildings beyond the site boundary.

ADAS Ref: 0202/030/94
MAFF Ref: EL02/0297

Resource Planning Team
Guildford Statutory Group
ADAS Reading

SOURCES OF REFERENCE

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

MAFF (1988), Agricultural Land Classification of England and Wales : Revised guidelines and criteria for grading the quality of agricultural land.

Meteorological Office (1989), Climatic datasets for Agricultural Land Classification.

Soil Survey of England and Wales (1983), Sheet No. 6, Soils of South-East England, 1:250,000, and Accompanying Legend.

Soil Survey of England and Wales (1984), Soils and their use in South-East England. Bulletin No.15.

APPENDIX I

DESCRIPTION OF THE GRADES AND SUBGRADES

Grade 1 : Excellent Quality Agricultural Land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2 : Very Good Quality Agricultural Land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural or horticultural crops can usually be grown but on some land of this grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1 land.

Grade 3 : Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When more demanding crops are grown, yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a : Good Quality Agricultural Land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b : Moderate Quality Agricultural Land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass, or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4 : Poor Quality Agricultural Land

Land with severe limitations which significantly restrict the range of crops and/or the level of yields. It is mainly suited to grass with occasional arable crops (eg. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5 : Very Poor Quality Agricultural Land

Land with severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Woodland

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm woodland.

Agricultural Buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg. polythene tunnels erected for lambing) may be ignored.

Open Water

Includes lakes, ponds and rivers as map scale permits.

Land Not Surveyed

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above, eg. buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will be shown.

APPENDIX II

FIELD ASSESSMENT OF SOIL WETNESS CLASS

Definition of Soil Wetness Classes

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 <u>or</u> , if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 90 days, but not wet within 40 cm depth for more than 30 days in most years.
III	The soil profile is wet within 70 cm depth for 91-180 days in most years <u>or</u> , 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 between 31 and 90 days in most years.
IV	The soil profile is wet within 70 cm depth for more than 180 days but not within 40 cm depth for more than 210 days in most years <u>or</u> , if there is no slowly permeable layer 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.

¹ The number of days specified is not necessarily a continuous period.

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

APPENDIX III

SOIL PIT AND SOIL BORING DESCRIPTIONS

Contents :

Soil Abbreviations - Explanatory Note

Soil Pit Descriptions

Database Printout - Boring Level Information

Database Printout - Horizon Level Information

SOIL PROFILE DESCRIPTIONS : EXPLANATORY NOTE

Soil 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)

- 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 : NEWBURY LP : SITE 42 Pit Number : 1P

Grid Reference: SU51096850 Average Annual Rainfall : 700 mm
 Accumulated Temperature : 1427 degree days
 Field Capacity Level : 153 days
 Land Use : Linseed
 Slope and Aspect : 02 degrees SE

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 30	MCL	10YR42 00	0	8	C	
30- 60	GH	10YR56 00	0	0		

Wetness Grade : 2 Wetness Class : II
 Gleying : 0 cm
 SPL : No.SPL

Drought Grade : 3B APW : 061mm MBW : -44 mm
 APP : 063mm MBP : -34 mm

FINAL ALC GRADE : 3B
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : NEWBURY LP : SITE 42 Pit Number : 2P

Grid Reference: SU51016850 Average Annual Rainfall : 700 mm
 Accumulated Temperature : 1427 degree days
 Field Capacity Level : 153 days
 Land Use : Permanent Grass
 Slope and Aspect : 02 degrees S

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 29	MCL	10YR53 00	0	2	C	
29- 65	MCL	25Y 63 00	0	1	C	MDCSAB
65- 90	C	25Y 62 63	0	0	M	MDCAB

Wetness Grade : 3A Wetness Class : III
 Gleying : 0 cm
 SPL : 065 cm

Drought Grade : APW : mm MBW : 0 mm
 APP : mm MBP : 0 mm

FINAL ALC GRADE : 3A
 MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : NEWBURY LP : SITE 42 Pit Number : 3P

Grid Reference: SU50026818 Average Annual Rainfall : 700 mm
 Accumulated Temperature : 1427 degree days
 Field Capacity Level : 153 days
 Land Use : Permanent Grass
 Slope and Aspect : 02 degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 28	MSL	10YR43 00	0	2		
28- 50	LMS	10YR53 00	0	0	F	MDCAB
50- 66	MS	25Y 53 63	0	0	F	MDCAB
66-100	MS	25Y 63 00	0	0	C	WKCSAB
100-120	MS	25Y 72 00	0	0	M	

Wetness Grade : 1 Wetness Class : I
 Gleying : 066 cm
 SPL : No SPL

Drought Grade : 3A APW : 091mm MBW : -14 mm
 APP : 074mm MBP : -23 mm

FINAL ALC GRADE : 3A
 MAIN LIMITATION : Droughtiness

SOIL PIT DESCRIPTION

Site Name : NEWBURY LP : SITE 42 Pit Number : 4P

Grid Reference: SU50126828 Average Annual Rainfall : 700 mm
 Accumulated Temperature : 1427 degree days
 Field Capacity Level : 153 days
 Land Use : Permanent Grass
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 24	MCL	25Y 41 00	0	0	C	
24- 61	C	25Y 71 00	0	0	M	WKCAB

Wetness Grade : 3B Wetness Class : IV
 Gleying : 0 cm
 SPL : 024 cm

Drought Grade : APW : mm MBW : 0 mm
 APP : mm MBP : 0 mm

FINAL ALC GRADE : 3B
 MAIN LIMITATION : Wetness

SOIL PIT DESCRIPTION

Site Name : NEWBURY LP : SITE 42 Pit Number : 5P

Grid Reference: SU50206835 Average Annual Rainfall : 700 mm
 Accumulated Temperature : 1427 degree days
 Field Capacity Level : 153 days
 Land Use : Permanent Grass
 Slope and Aspect : 01 degrees SW

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 25	MCL	10YR42 00	0	0	F	
25- 37	HCL	10YR53 62	0	2	M	MDCSAB
37- 70	C	25Y 62 72	0	0	M	WKCSAB
70- 85	C	05G 71 00	0	0	M	MDCAB
85-100	C	05G 71 00	0	0	M	WKVCAB
100-120	C	05G 71 00	0	0	M	

Wetness Grade : 3B Wetness Class : IV
 Gleying : 025 cm
 SPL : 037 cm

Drought Grade : APW : mm MBW : 0 mm
 APP : mm MBP : 0 mm

FINAL ALC GRADE : 3B
 MAIN LIMITATION : Wetness

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--		-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS	
			GRDNT	GLEYSPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST		LIMIT
1	SU50306850	PGR		0	2	2	085	-20	088	-9	3B			DR	3B	IMPST 60 NR 3A
1P	SU51096850	LIN SE	02	0	2	2	061	-44	063	-34	3B			DR	3B	PIT 60 3BT0120
2	SU50406850	PGR		0	2	2	089	-16	094	-3	3A			DR	3A	IMPST 60
2P	SU51016850	PGR S	02	0 065	3	3A		0		0				WE	3A	PIT 91CM
3	SU51106840	PGR W	02	032 032	4	3B		0		0				WE	3B	
3P	SU50026818	PGR N	02	066	1	1	091	-14	074	-23	3A			DR	3A	PIT 91 AUG 120
4	SU50206840	PGR S	02	025 040	4	3B		0		0				WE	3B	
4P	SU50126828	PGR		0 024	4	3B		0		0				WE	3B	PIT 61CM
5	SU50106830	PGR		0 025	4	3B		0		0				WE	3B	
5P	SU50206835	PGR SW	01	025 037	4	3B		0		0				WE	3B	PIT 100 AUG120
6	SU50206830	PGR W	01	0 043	3	3A		0		0				WE	3A	NR 3A/B BDY
7	SU50006820	PGR W	03	075	1	1	101	-4	085	-12	3A			DR	3A	
8	SU50106820	PGR NE	01	035 060	3	3A		0		0				WE	3A	
9	SU50006810	PGR W	03	028 045	3	3A		0		0				WE	3A	NR 3A/B BDY
10	SU50106810	PGR NE	01	030 110	2	2	126	21	088	-9	2			DR	2	
11	SU50206810	PGR NW	01	0 045	3	3A		0		0				WE	3A	NR 3A/B BDY
12	SU50706850	PGR		0 025	4	3B		0		0				WE	3B	
13	SU50806850	PGR S	04	0 056	3	3A		0		0				WE	3A	
14	SU50936850	PGR S	02	0 110	2	3A		0		0				WE	3A	
15	SU51006850	PGR S	02	0 065	3	3A		0		0				WE	3A	
16	SU51106850	LIN SE	01	0	2	2	078	-27	078	-19	3B			DR	3B	IMP 50 3BT0120
17	SU50906840	PGR S	01	0 025	4	3B		0		0				WE	3B	
18	SU51006840	PGR S	02	0 035	4	3B		0		0				WE	3B	
19	SU51106841	PGR S	01	0 058	3	3A		0		0				WE	3A	
20	SU50906840	PGR		0 025	4	3B		0		0				WE	3B	
21	SU51006830	PGR S	02	0 038	4	3B		0		0				WE	3B	
22	SU51156831	PGR S	02	0	2	2	068	-37	068	-29	3B			DR	3B	IMP 45 3BT0120
23	SU51206847	PGR S	02	0 025	4	3B		0		0				WE	3B	
24	SU50236846	PGR N	02	030 040	4	3B		0		0				WE	3B	NR 3A/B BDY

-----MOTTLES----- PED -----STONES----- STRUCT/ SUBS

SAMPLE DEPTH TEXTURE COLOUR COL ABUN CONT COL. GLEY >2 >6 LITH TOT CONSIST STR POR IMP SPL CALC

SAMPLE	DEPTH	TEXTURE	COLOUR	COL	ABUN	CONT	COL.	GLEY	>2	>6	LITH	TOT	CONSIST	STR	POR	IMP	SPL	CALC
1	0-22	mc1	25Y 41 00	10YR46	00	C		Y	0	0	HR	5						
	22-30	mc1	25Y 52 51	10YR58	00	M		Y	0	0	HR	10		M				
	30-50	mc1	25Y 61 00	75YR58	00	M		Y	0	0	HR	10		M				
	50-60	mc1	25Y 61 00	75YR58	00	M		Y	0	0	HR	40		M				
1P	0-30	mc1	10YR42 00	10YR56	00	C		Y	0	0	HR	8						
	30-60	gh	10YR56 00					0	0			0		P				82-86%GRAVEL
2	0-25	hc1	10YR42 00	10YR46	00	C		Y	0	0	HR	5						
	25-45	hc1	25Y 53 00	10YR46	00	M	00MNO0 00	Y	0	0	HR	5		M				
	45-55	hc1	25Y 63 62	10YR58	00	M		Y	0	0	HR	5		M				
	55-60	mc1	25Y 53 00	10YR58	00	M		Y	0	0	HR	40		M				
2P	0-29	mc1	10YR53 00	75YR56	00	C		Y	0	0	HR	2						
	29-65	mc1	25Y 63 00	75YR56	00	C		Y	0	0	HR	1	MDCSAB	FR	M			
	65-90	c	25Y 62 63	75YR56	00	M		Y	0	0		0	MDCAB	FM	P	Y		Y
3	0-32	mc1	10YR42 00						0	0		0						
	32-45	c	25Y 53 63	10YR46	56	M		Y	0	0		0		M				Y
	45-80	c	25Y 53 61	10YR58	00	M	00MNO0 00	Y	0	0		0		P				Y
	80-120	sc	05Y 61 00	10YR68	00	M		Y	0	0		0		M				Y
3P	0-28	ms1	10YR43 00						0	0	HR	2						
	28-50	1ms	10YR53 00	10YR56	00	F			0	0		0	MDCAB	FM	M			
	50-66	ms	25Y 53 63	10YR66	00	F			0	0		0	MDCAB	FR	G			
	66-100	ms	25Y 63 00	10YR66	00	C		Y	0	0		0	WKCSAB	VF	M			
	100-120	ms	25Y 72 00	10YR68	00	M		Y	0	0		0		M				
4	0-25	mc1	10YR43 00						0	0		0						
	25-40	hc1	10YR53 00	10YR56	00	M		Y	0	0		0		M				
	40-50	c	25Y 62 00	10YR56	00	M		Y	0	0		0		M				Y
	50-90	c	05Y 72 00	10YR68	00	M		Y	0	0		0		P				Y
4P	0-24	mc1	25Y 41 00	10YR46	00	C		Y	0	0		0						
	24-61	c	25Y 71 00	10YR68	00	M		Y	0	0		0	WKAB	FM	P	Y		Y
5	0-25	hc1	10YR41 00	10YR46	00	C		Y	0	0		0						
	25-60	c	05Y 62 00	10YR68	00	M		Y	0	0		0		P				Y
5P	0-25	mc1	10YR42 00	10YR58	00	F			0	0	HR	0						SANDY
	25-37	hc1	10YR53 62	10YR68	00	M	10YR53 00	Y	0	0	HR	2	MDCSAB	FR	M			SANDY
	37-70	c	25Y 62 72	10YR58	00	M	10YR53 00	Y	0	0		0	WKCSAB	FM	M	Y		Y
	70-85	c	05G 71 00	10YR68	00	M	05G 71 00	Y	0	0		0	MDCAB	FM	P	Y		Y
	85-100	c	05G 71 00	75YR68	00	M	05G 71 00	Y	0	0		0	WKVCAB	VM	P	Y		Y
	100-120	c	05G 71 00	75YR58	00	M		Y	0	0		0		P	Y		Y	NO SAND
6	0-25	mc1	10YR41 51	10YR46	00	C		Y	0	0		0						
	25-43	hc1	10YR63 61	10YR68	00	M		Y	0	0		0		M				
	43-80	c	25Y 62 00	75YR68	00	M		Y	0	0		0		P				Y

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----				STRUCT/ CONSIST	SUBS				
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT		STR	POR	IMP	SPL	CALC
7	0-40	ms1	10YR42 00						0	0	0							
	40-60	ms	25Y 52 62						0	0	HR	2		M				
	60-75	ms	25Y 62 00						0	0	0			M				
	75-120	ms	25Y 68 00	10YR58	68	C			Y	0	0	0		M				
8	0-35	mc1	10YR42 00						0	0	0							
	35-60	hc1	25Y 62 00	10YR68	00	C			Y	0	0	0		M				
	60-90	c	25Y 63 00	10YR58	00	M			Y	0	0	0		P			Y	
9	0-28	mc1	10YR42 00						0	0	0							
	28-45	hc1	25Y 63 00	10YR56	00	C			Y	0	0	0		M				
	45-70	c	25Y 63 61	75YR58	00	M			Y	0	0	0		P			Y	
	70-90	c	05Y 71 00	75YR68	00	M			Y	0	0	HR	2		P		Y	
10	0-30	sc1	10YR42 00						0	0	0							
	30-40	ms1	10YR53 51	10YR56	00	C			Y	0	0	0		M				
	40-80	lms	10YR63 62	10YR66	56	C			Y	0	0	0		M				
	80-110	sc1	25Y 71 00	75YR68	00	M			Y	0	0	0		M				
	110-120	sc	05Y 71 00	10YR68	00	M			Y	0	0	0		P			Y	
11	0-25	mc1	10YR51 00	10YR46	00	C			Y	0	0	0						
	25-45	hc1	25Y 63 00	10YR68	00	M			Y	0	0	0		M				
	45-80	c	25Y 63 00	10YR58	00	M			Y	0	0	0		P			Y	
12	0-25	c	05Y 51 00	75YR56	00	C			Y	0	0	0						
	25-60	c	25Y 62 63	75YR56	58	M			Y	0	0	0		P			Y	
13	0-25	mc1	10YR42 00	10YR56	00	C			Y	0	0	0						
	25-48	mc1	25Y 63 00	75YR56	00	C			Y	0	0	0		M				
	48-56	hc1	25Y 63 00	75YR56	00	C			Y	0	0	0		M				
	56-90	c	25Y 63 00	75YR58	00	M			Y	0	0	0		P			Y	
14	0-25	hc1	25Y 52 00	75YR56	00	C			Y	0	0	HR	2					
	25-45	mc1	25Y 63 00	10YR56	00	C			Y	0	0	0		M				
	45-110	hc1	25Y 62 63	75YR56	00	C			Y	0	0	0		M				
	110-120	c	25Y 52 00	75YR56	00	M			Y	0	0	0		P			Y	
15	0-29	mc1	10YR53 00	10YR56	00	C			Y	0	0	0						
	29-65	sc1	25Y 63 00	75YR56	00	C			00M00	00	Y	0	0	0	M			
	65-120	sc	25Y 63 00	75YR56	00	M			Y	0	0	0		P			Y	
16	0-30	mc1	10YR42 00	10YR56	00	C			Y	0	0	HR	4					
	30-50	hc1	25Y 63 00	10YR56	00	C			Y	0	0	HR	20		M			IMP STONES 50
17	0-25	c	25Y 63 00	10YR56	00	C			Y	0	0	HR	2					
	25-60	c	25Y 52 00	10YR56	00	C			Y	0	0	HR	1		P		Y	
18	0-30	mc1	10YR42 00	10YR56	00	C			Y	0	0	0						
	30-35	hc1	10YR64 00	75YR56	00	C			Y	0	0	0		M				
	35-120	c	10YR63 64	75YR56	00	M			Y	0	0	0		P			Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED COL.	----STONES----			STRUCT/ CONSIST	SUBS					
				COL	ABUN	CONT		GLY	>2	>6		LITH	TOT	STR	POR	IMP	SPL
19	0-25	mc1	10YR42 00	10YR56	00	C		Y	0	0	HR	1					
	25-58	mc1	25Y 63 00	75YR56	00	C		Y	0	0	HR	5		M			
	58-90	c	25Y 64 00	75YR56	00	M		Y	0	0	HR	10		P		Y	
20	0-25	hc1	25Y 52 00	75YR56	00	C		Y	0	0		0					
	25-40	c	25Y 63 00	75YR56	00	M		Y	0	0		0		P		Y	
	40-60	c	25Y 63 00	75YR56	00	M		Y	0	0	HR	10		P		Y	
21	0-27	mc1	25Y 52 00	10YR56	00	C		Y	0	0		0					
	27-33	mc1	25Y 63 00	75YR56	00	C		Y	0	0		0		M			
	33-38	hc1	25Y 63 00	75YR56	00	C		Y	0	0		0		M			
	38-120	c	05Y 71 00	75YR56	00	M		Y	0	0		0		P		Y	
22	0-30	mc1	10YR42 00	10YR56	00	C		Y	0	0	HR	10					
	30-45	mc1	25Y 63 00	10YR56	00	C		Y	0	0	HR	20		M			IMP STONES 45
23	0-25	c	25Y 63 00	75YR56	00	C		Y	0	0	HR	2					
	25-60	c	25Y 52 00	10YR56	00	C		Y	0	0	HR	1		P		Y	
24	0-30	mc1	10YR41 00						0	0		0					
	30-40	mc1	25Y 53 51	75YR58	00	M	00MNO0	00	Y	0	0	0		M			
	40-70	c	25Y 63 61	10YR68	00	M		Y	0	0		0		P		Y	
	70-100	c	05Y 61 00	75YR68	00	M		Y	0	0	HR	5		P		Y	