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Newbury Local Plan
Site 53 : Wash Water, Southwest of
Newbury
Agricultural Land Classification
ALC Map and Report
January 1994

AGRICULTURAL LAND CLASSIFICATION REPORT

NEWBURY LOCAL PLAN

SITE 53 : WASHWATER, SOUTHWEST OF NEWBURY

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 51 hectares of land relating to site 53, Wash Water, southwest of Newbury was surveyed during January 1994. The survey was undertaken at detailed level approximately one boring per hectare for the agricultural area. A total of 27 soil borings and three 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 a long term limitation on its use for agriculture.
- 1.3 The survey work was conducted by members of the Resource Planning Team in the Guildford Statutory Group of ADAS.
- 1.4 At the time of survey the majority of the agricultural land was in permanent pasture. Two areas were not surveyed at the request of the owners.
- 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 1:10,000. It is accurate at this scale, but any enlargement would be misleading. This map supersedes any previous information for the site.

Table 1: Distribution of Grades and Subgrades

Grade	Area (ha)	% of Site	% Agricultural Area
2	0.6	1.2	2.2
3a	11.5	22.7	41.7
3b	9.2	18.1	33.3
4	6.3	12.4	<u>22.8</u>
Non Agricultural	1.6	3.1	<u>100</u> (27.6 ha)
Woodland	11.2	22.0	
Not surveyed	10.3	20.3	
Open Water	<u>0.1</u>	<u>0.2</u>	
Total area of site	<u>50.8</u>	<u>100.0</u>	

- 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 on this site is predominantly Subgrade 3a (good quality land) and Subgrade 3b (moderate quality land). Areas of poor quality, Grade 4, land and good quality, Grade 2, land also occur. Soil wetness is the key limitation to agricultural land quality with variations in soil permeability giving rise to the distribution of ALC grades. Poor quality Grade 4 land is associated with areas of severe waterlogging around springs and wet flushes, which may occur in combination with steep gradients, (up to 14 degrees) particularly towards the eastern half of the site.

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 (degree days Jan-June), as a measure of the relative warmth of a locality.
- 2.3 A detailed assessment of the prevailing climate was made by interpolation from a 5km gridpoint dataset (Met. Office 1989). The details are given in the table below and these show that there is no overall climatic limitation affecting the site. However climatic factors do interact with soil properties to influence soil wetness and droughtiness limitations.
- 2.4 No local climatic factors such as exposure or frost risk are believed to affect the site.

Table 2 : Climatic Interpolations

Grid Reference	SU450638	SU459635
Altitude (m)	115	90
Accumulated Temperature (days (°days, Jan-June)	1402	1426
Field Capacity (days)	765	753
Moisture Deficit, Wheat (mm)	170	168
Moisture Deficit, Potatoes (mm)	99	102
Overall Climatic Grade	89	93
	1	1

3. Relief

- 3.1 The site occupies a valley side of the River Enborne, falling from c. 120m AOD at its highest point adjacent to Bell Hill to c. 90m AOD along the course of the river to the south-east. South of the river the land is flat. To the north of the river the land rises with overall gradients of 2-4°, as measured using an optical reading clinometer. In the east of the site, where there is a pronounced break in slope, gradients of 7-14° were measured. Such slopes pose a limitation to agricultural use, and can be graded no higher than grades 3b or 4.

4. Geology and Soil

- 4.1 British Geological Survey (1971), Sheet 267, Hungerford shows the survey area to be underlain by five different geological deposits. The predominant deposits are London Clay and Bagshot Beds. The mid-slopes are mapped as London Clay with Bagshot Beds generally being found on the slightly higher land. The lowest lying land, mostly found south of the river, is mapped as alluvium with a limited area of river and valley gravel shown north of Wash Water bridge. A small area of plateau gravel is mapped east of Warren Copse.
- 4.2 The published soil survey map (SSEW, 1983, 1:250,000) maps the entire site as the Wickham 3 association. These soils are described as 'slowly permeable seasonally waterlogged fine loamy over clayey and coarse loamy over clayey soils, and similar more permeable soils with slight seasonal waterlogging. Some deep coarse loamy soils affected by groundwater' (SSEW, 1983).
- 4.3 Detailed field examination confirmed the presence of similar soils with variations in soil permeability.

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.

Grade 2

- 5.3 A small area of very good quality agricultural land occurs on slightly elevated land south of Conifer Crest. Moderately well drained profiles comprise medium clay loam topsoils over slowly permeable clay at c. 90 cm depth. Profiles are gleyed within 40 cm (Wetness Class II), and the interaction between these drainage characteristics and topsoil textures at this site means that this land is subject to minor restrictions on cultivations and flexibility of cropping and stocking.

Subgrade 3a

- 5.4 The majority of agricultural land surveyed has been classed as good quality. The key limitations are soil wetness and workability. Profiles typically comprise medium clay loam topsoils over loamy upper subsoils and clay lower subsoils. The clay, or sometimes heavy clay loam, present at c. 50-70 cm depth, is slowly permeable and impairs drainage, as indicated by gleying within the upper subsoils and occasionally within the topsoil (Wetness Class III). Pit 2 typifies such profiles. The interaction between these imperfectly drained profiles and topsoil textures at this site means that the land is subject to moderate restrictions on flexibility of cultivations, cropping and stocking. Within this mapping unit there are occasional profiles of slightly better quality, comprising either well or moderately well drained (Wetness Classes I and II) loamy soils over gravelly deposits at depth or moderately well drained profiles (Wetness Class II) with sandy lenses, represented by Pit 3.

Subgrade 3b

- 5.5 Moderate quality agricultural land is limited by soil wetness and workability and gradient. Medium clay loam, and occasionally heavy clay loam, topsoils overlie similar textured or clay upper subsoils and clay lower subsoils. The clay is slowly permeable and its presence at shallow depths (c. 22-45 cm) results in poor drainage (Wetness Class IV). These profiles are typified by Pit 1. The interaction between these drainage characteristics and topsoil textures at this site means that this land has significantly reduced flexibility of cultivations, cropping and stocking. In the east of the site, gradients of 7-11°, as measured using an optical clinometer, significantly restrict the range of farm machinery that may be safely and efficiently used. Such land can be graded no better than 3b.

Grade 4

- 5.6 Poor quality agricultural land is restricted by severe soil wetness and workability and gradient limitations. In the east of the site there are slopes with gradients of 11.5-14°, as measured using an optical clinometer. These slopes would severely restrict or preclude mechanised farm operations and such land is best suited to grazing. Elsewhere Grade 4 land is limited by soil wetness and workability. Profiles comprise medium and heavy clay loam topsoils which directly overlie permeable and slowly permeable profiles. Given the high groundwater levels and extreme saturation of the land for much of the year the soils were considered to be Wetness Class V. The predominance of hydrophilic vegetation, such as rushes and sedges, across this land is indicative of long periods of waterlogging caused by the seepage of groundwater at the junction of two geological deposits. Such land is unlikely to benefit significantly from artificial drainage. As such it will present severe difficulties in terms of cropping and cultivations and will be best suited to seasonal grazing.

Other Land Categories

- 5.7 The Woodland marked on the map mostly comprises mature deciduous trees; the Non-Agricultural mapped as areas of scrubby vegetation.

ADAS Ref: 0202/006/94
MAFF Ref: EL02/00297

Resource Planning Team
Guildford Statutory Group
ADAS Reading

SOURCES OF REFERENCE

British Geological Survey (1971), Sheet No 267, Hungerford, 1:63,360 (drift).

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 6, Soils of South East England, 1:250,000 and accompanying legend.

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

SOIL WETNESS CLASSIFICATION

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.

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 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.

Soils can be allocated to a wetness class on the basis of quantitative data recorded over a period of many years or by the interpretation of soil profile characteristics, site and climatic factors. Adequate quantitative data will rarely be available for ALC surveys and therefore the interpretative method of field assessment is used to identify soil wetness class in the field. The method adopted here is common to ADAS and the SSLRC.

¹The 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 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 : NEWBURY LP SITE 53 Pit Number : 1P

Grid Reference: SU44976382 Average Annual Rainfall : 768 mm
 Accumulated Temperature : 1396 degree days
 Field Capacity Level : 171 days
 Land Use : Permanent Grass
 Slope and Aspect : 03 degrees S

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 25	MCL	10YR41 00	0	0		C				
25- 36	MCL	10YR52 00	0	0		M	MDCSAB	FR	M	
36- 70	C	10YR52 00	0	0		M	MDCAB	FM	P	

Wetness Grade : 3B Wetness Class : IV
 Gleying : 0 cm
 SPL : 036 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 53 Pit Number : 2P

Grid Reference: SU45596360 Average Annual Rainfall : 768 mm
 Accumulated Temperature : 1396 degree days
 Field Capacity Level : 171 days
 Land Use : Permanent Grass
 Slope and Aspect : 03 degrees SE

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 31	MCL	10YR43 00	4	10	HR					
31- 49	MCL	10YR53 00	0	10	HR	C	MDCSAB	FR	M	
49- 58	HCL	10YR62 00	0	0		M	WKCSAB	FM	P	
58-100	C	10YR62 00	0	0		M	WKCSAB	FM	P	

Wetness Grade : 3A Wetness Class : III
 Gleying : 031 cm
 SPL : 049 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 53 Pit Number : 3P

Grid Reference: SU45606367 Average Annual Rainfall : 768 mm
 Accumulated Temperature : 1396 degree days
 Field Capacity Level : 171 days
 Land Use : Permanent Grass
 Slope and Aspect : 04 degrees SE

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 29	MCL	10YR43 00	0	0						
29- 57	MCL	10YR62 00	0	0		M	MDCSAB	FR	M	
57- 85	HCL	10YR62 00	0	0		M	MDCSAB	FR	M	
85-120	C	10YR62 00	0	0		M	MDCSAB	FM	M	

Wetness Grade : 2 Wetness Class : II
 Gleying : 029 cm
 SPL : No SPL

Drought Grade : 1 APW : 149mm MBW : 49 mm
 APP : 118mm MBP : 28 mm

FINAL ALC GRADE : 2
 MAIN LIMITATION : Wetness

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--				-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS
			GRDNT	GLEYS	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT	
1P	SU44976382	PGR S	03	0	036	4	3B			0	0				WE	3B	
2	SU44976394	PGR SE	03	035		2	2			0	0				WE	2	Sandy lenses
2P	SU45596360	PGR SE	03	031	049	3	3A			0	0				WE	3A	Pit dug to 100
3P	SU45606367	PGR SE	04	029		2	2			149	49	118	28	1	WE	2	Sandy lenses
6	SU44976382	PGR SE	03	0	028	4	3B			0	0				WE	3B	
9	SU45306380	RGR E	04	025	095	2	2			0	0				WE	2	
10	SU45406380	RGR E	03	025	025	4	3B			0	0				WE	3B	
14	SU44996372	PGR SE	02	0	070	3	3A			0	0				WE	3A	
16	SU45206370	PGR E	02	025	025	4	3B			0	0				WE	3B	Wet
17	SU45306370	PGR SE	03	0	045	4	3B			0	0				WE	3B	Seepage
19	SU45606370	PGR SE	04	037		2	2			0	0				WE	2	Sandy lenses
20	SU45706370	PGR W	04	035	050	3	3A			0	0				WE	3A	Q See 3P
22	SU45926370	PGR				1	1			61	-39	61	-29	3B	DR	3B	Impen 40
23	SU48006370	PGR S	02	025		2	2			0	0				WE	2	
29	SU45206360	PGR NE	03	070	070	2	2			0	0				WE	2	S1 gleyed 50
30	SU45306360	PGR NE	04	0		2	2			91	-9	95	5	3A	DR	3A	Impen 77
31	SU45506360	PGR		060		1	1			95	-5	107	17	3A	DR	3A	Impen 70
32	SU45606360	PGR		030	060	3	3A			0	0				WE	3A	
33	SU45706360	PGR		055	055	3	3A			0	0				WE	3A	
35	SU45946360	PGR		065	065	2	2			135	35	114	24	1	WE	2	
36	SU46006360	PGR S	02	045	045	3	3A			0	0				WE	3A	
37	SU44906350	PGR W	02	0	065	5	4			0	0				WE	4	Wet - seepage
38	SU44996350	PGR S	03	0	025	5	4			0	0				WE	4	Wet - seepage
39	SU45106350	PGR S	03	0	030	5	4			0	0				WE	4	Wet - seepage
40	SU45426355	PGR				1	1			155	55	116	26	1		1	
41	SU45506350	PGR		080		1	2			0	0				WK	2	S1 gleyed 30
43	SU45706350	PGR				1	2			99	-1	107	17	3A	DR	3A	Impen 65
44	SU45806350	PGR		030		2	3A			0	0			Y	WE	3A	S1 gleyed 30+
45	SU45906352	PGR		0	022	4	3B			0	0				WE	3B	
46	SU46006350	PGR				1	2			0	0			Y	WE	3A	Flooding

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED COL.	----STONES-----			STRUCT/ CONSIST	SUBS			CALC	
				COL	ABUN	CONT		GLE	>2	>6		LITH	TOT	STR		POR
1P	0-25	mc1	10YR41 00 75YR56 00 C					Y	0	0	0					
	25-36	mc1	10YR52 00 10YR58 00 M					Y	0	0	0	MDCSAB	FR	M		
	36-70	c	10YR52 00 10YR58 00 M					Y	0	0	0	MDCAB	FM	P	Y	Y
2	0-35	mc1	10YR42 00						0	0	0					
	35-45	mc1	10YR53 00 75YR58 00 C					Y	0	0	0			M		
	45-100	c	10YR53 00 75YR58 00 C					Y	0	0	0			M		Sandy lenses
2P	0-31	mc1	10YR43 00						4	0	HR	10				
	31-49	mc1	10YR53 00 10YR56 00 C					Y	0	0	HR	10	MDCSAB	FR	M	
	49-58	hc1	10YR62 00 75YR68 00 M					Y	0	0	0	WKCSAB	FM	P	Y	Y
	58-100	c	10YR62 00 75YR58 68 M					Y	0	0	0	WKCSAB	FM	P	Y	Y
3P	0-29	mc1	10YR43 00						0	0	0					
	29-57	mc1	10YR62 00 75YR58 00 M					Y	0	0	0	MDCSAB	FR	M		
	57-85	hc1	10YR62 00 75YR58 00 M					Y	0	0	0	MDCSAB	FR	M		Sandy lenses
	85-120	c	10YR62 00 75YR58 00 M					Y	0	0	0	MDCSAB	FM	M	Y	Sandy lenses
6	0-28	mc1	10YR52 00 75YR56 00 C					Y	0	0	0					
	28-70	c	10YR71 00 75YR68 78 M					Y	0	0	0			P		Y
9	0-25	mc1	10YR32 00						0	0	0					
	25-55	mc1	10YR53 54 75YR58 00 C					Y	0	0	0					
	55-85	mc1	10YR53 00 75YR58 00 C					Y	0	0	0					
	85-95	mc1	10YR53 00 75YR58 00 C					Y	0	0	0					
	95-120	c	10YR72 00 75YR58 00 M					Y	0	0	0					Y
10	0-25	mc1	10YR31 00						0	0	0					
	25-75	c	10YR52 00 53YR58 00 M					Y	0	0	HR	3				Y
14	0-30	mc1	10YR52 00 75YR56 00 C					Y	0	0	0					
	30-60	sc1	10YR52 00 75YR46 00 C				10YR71 00	Y	0	0	0			M		
	60-70	hc1	10YR71 00 75YR58 00 M					Y	0	0	0			M		Q sp1
	70-90	c	10YR52 51 75YR58 00 M					Y	0	0	0			P		Y
16	0-25	mc1	25Y 32 00						0	0	0					
	25-45	c	10YR53 00 75YR58 00 C					Y	0	0	0					Y
	45-80	c	10YR51 00 75YR58 00 M					Y	0	0	HR	5				Y
17	0-30	mc1	10YR52 00 75YR46 00 C					Y	0	0	0					
	30-45	mc1	10YR62 00 75YR58 00 M					Y	0	0	0					
	45-70	c	10YR62 00 75YR58 00 M					Y	0	0	0					Y
19	0-28	mc1	10YR43 00						0	0	0					
	28-37	mc1	10YR44 00						0	0	0			M		
	37-85	hc1	10YR53 00 10YR56 71 M					Y	0	0	0			M		Sandy lenses
	85-120	c	10YR53 00 10YR56 71 M					Y	0	0	0			M		Sandy lenses

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED		----STONES----				STRUCT/ CONSIST	SUBS			CALC	
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT		STR	POR	IMP		SPL
20	0-35	mc1	10YR32 00						0	0	HR	2						
	35-50	hc1	10YR32 51	75YR56	00	C		Y	0	0	HR	2		M				
	50-80	hc1	25Y 52 00	10YR58	56	M		Y	0	0		0		M		Y		
22	0-25	mc1	10YR31 00						0	0	HR	5						
	25-40	mc1	10YR41 00						0	0	HR	25		M				
23	0-25	mc1	25Y 32 00	75YR46	00	F			0	0	HR	2						
	25-50	mc1	10YR63 00	10YR56	52	M		Y	0	0	HR	8		M				
	50-65	ms1	10YR63 00						0	0	HR	5		M				
	65-120	mc1	10YR63 00	10YR58	00	M		Y	0	0	HR	5		M				
29	0-27	mc1	10YR44 00						0	0		0						
	27-50	hc1	10YR44 00						0	0		0						
	50-70	c	10YR54 00	75YR58	00	C		S	0	0		0					S1. gleyed	
	70-95	c	10YR53 00	75YR58	00	M		Y	0	0		0				Y		
30	0-25	mc1	10YR53 00	10YR56	00	C		Y	0	0		0						
	25-45	mc1	10YR64 00	75YR58	00	C		Y	0	0		0		M				
	45-77	c	22XX22 00					Y	0	0	HR	50		P				
31	0-35	mc1	10YR32 00						0	0	HR	5						
	35-60	hc1	10YR54 00						0	0	HR	15		M				
	60-70	c	10YR62 00	10YR58	61	C		Y	0	0	HR	25		M				
32	0-30	mc1	10YR43 00						0	0	HR	5						
	30-50	mc1	10YR52 00	10YR58	61	C		Y	0	0	HR	10		M				
	50-60	hc1	10YR62 00	10YR58	61	C		Y	0	0	HR	10		M				
	60-85	c	10YR62 00	10YR58	61	M		Y	0	0	HR	5		P		Y		
33	0-25	mc1	10YR42 00						0	0		0						
	25-55	fs1	10YR66 54						0	0		0		M				
	55-80	c	10YR62 00	10YR58	61	M		Y	0	0		0		P		Y		
35	0-35	mc1	10YR32 00						0	0	HR	2						
	35-50	mzc1	10YR41 51						0	0	HR	5		M				
	50-65	hc1	10YR52 00						0	0	HR	8		M				
	65-120	c	10YR62 00	10YR68	00	M		Y	0	0	HR	10		P		Y		
36	0-28	mc1	25Y 31 00	75YR46	00	F			0	0	HR	4						
	28-45	mc1	25Y 31 00						0	0	HR	15		M				
	45-70	c	25Y 53 00	10YR56	00	M		Y	0	0	HR	5		P		Y		
37	0-20	mzc1	10YR52 00	75YR56	00	M	10YR61 00	Y	0	0		0						
	20-65	mc1	10YR63 00	75YR58	00	M	10YR71 00	Y	0	0		0		M				
	65-90	c	10YR62 00	75YR68	00	M		Y	0	0		0		P		Y	Wet flush area	
38	0-25	hc1	10YR51 00	75YR56	00	C		Y	0	0		0						
	25-60	c	10YR71 00	75YR58	68	M		Y	0	0		0		P		Y	Wet flush area	

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED	----STONES----			STRUCT/	SUBS	CALC				
				COL	ABUN	CONT		COL.	GLE	>2				>6	LITH	TOT	CONSIST
39	0-30	mc1	10YR51 00	75YR46	00	C		Y	0	0	0						
	30-60	c	10YR61 00	75YR68	00	M		Y	0	0	0	P		Y			Wet flush area
40	0-32	mc1	10YR43	00					0	0	HR	2					
	32-55	mc1	10YR54	00					0	0		0	M				
	55-85	sc1	10YR66	00					0	0		0	M				
	85-120	hc1	10YR68	00					0	0		0	M				
41	0-30	hc1	10YR44	00					0	0	HR	4					
	30-50	hc1	10YR44	52	10YR58	00	M	00MN00	00	S	0	0	HR	8	M		S1. gleyed
	50-80	hc1	10YR44	53	10YR58	00	M		S	0	0	HR	2	M			S1. gleyed
	80-120	mc1	10YR52	00	10YR58	44	M		Y	0	0		0	M			
43	0-30	hc1	10YR44	00					0	0		0					
	30-50	hc1	10YR44	00	10YR52	00	F	00MN00	00		0	0		0	M		
	50-65	hc1	10YR44	00	10YR52	00	F	00MN00	00		0	0	HR	15	M		
44	0-30	hc1	10YR43	00					0	0		0					
	30-50	hc1	10YR42	00	10YR58	61	C		Y	0	0		0	M			
	50-120	hc1	10YR43	00	10YR58	61	C	00MN00	00	S	0	0		0	M		S1. gleyed
45	0-22	hc1	10YR42	00	10YR58	61	C		Y	0	0		0				
	22-65	zc	10YR62	00	10YR68	51	M		Y	0	0		0	M		Y	
	65-80	hzc1	10YR62	00	10YR58	51	C		Y	0	0		0	M			
46	0-30	hc1	10YR43	00					0	0		0					
	30-75	hc1	10YR44	00					0	0		0	M				
	75-95	hc1	10YR44	00	00MN00	00	F		0	0		0	M				