FRCA

Claydon Pike

Agricultural Land Classification

November 1998

Resource Planning Team
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CLAYDON PIKE

AGRICULTURAL LAND CLASSIFICATION SURVEY

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INTRODUCTION

1 This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 63 8 ha of two blocks of land at Manor Farm Lechlade Field survey was based on 33 auger borings and 4 soil profile pits and was completed in November 1998

2 The survey was conducted by the Resource Planning Team of FRCA Western Region on behalf of MAFF in its statutory role in connection with an application to the Planning Authority under the Town and Country Planning Act 1990 for creation of a lake complex known as Claydon Pike

3 Information on climate geology and soils and from previous ALC surveys was considered and is presented in the relevant section Apart from the published regional ALC map (MAFF 1977) which shows the sites at a reconnaissance scale as Grade 2 with a small area of Grade 3 in the SW corner of the southern block the site had not been surveyed previously The current survey uses the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988) and supersedes any previous ALC survey Grade descriptions are summarised in Appendix I

4 The northern block had previously been worked for gravel The western part of this area was restored to agricultural use in two phases The most westerly field was reported to have been restored six years ago and to the east four years ago The eastern section of the block has not been restored to agricultural use and no ALC grade has been assigned to this area Since soils which have been disturbed will often have a weakened soil structure which can take many years to return to a stable condition the grading which has been applied to the restored areas should be considered as an interim grading The ALC system assumes that where underdrainage can be installed then the land will be classified as if the drainage were in place The first phase of restoration is reportedly underdrained but the second is not The southern block of land was undisturbed at the time of survey

5 An area to the west of the current survey was surveyed in 1990 (ADAS 1990) This showed poorly drained Subgrade 3b land along the River Coln and droughty Grade 2 land elsewhere

6 At the time of survey land cover was grassland in the west of the restored block and arable stubble on the rest of the restored land The southern block was also in arable production The area not restored to agriculture was not surveyed neither was a small copse in the southern area

SUMMARY

7 The distribution of ALC grades is shown on the accompanying 1 10 000 scale ALC map The detail of information shown at this scale is appropriate to the intensity of field survey but could be misleading if enlarged or applied to small areas Areas are summarised in the Table 1

Table 1 Distribution of ALC grades Claydon Pike

Grade	Area (ha)	% Surveyed Area (42 5 ha)
3a	35 3	83
3b	7 2	17
Other land	21 3	
Total site area	63 8	

Table 1a Distribution of ALC grades Claydon Pike (northern block)

Grade	Area (ha)	% Surveyed Area (27 8 ha)
3a	27 8*	100
Unrestored land	19 5	
Other land	1 3	
Total area	48 6	

* of which 10 0 ha is Zone 1 and 17 8 ha is Zone 2 restoration

Table 1b Distribution of ALC grades Claydon Pike (southern block)

Grade	Area (ha)	% Surveyed Area (14 7 ha)
3a	7 5	51
3b	7 2	49
Other land	0 5	
Total site area	15 2	

8 All of the restored land has been mapped as Subgrade 3a primarily with a moderate wetness limitation The heavy clay loam soils even with underdrainage installed would remain wet for part of the year The soil become increasingly stony with depth and have minor and moderate droughtiness limitations The undisturbed soil in the south is partly mapped as Subgrade 3a again with a moderate wetness limitation and partly Subgrade 3b where the stonier soils experience a moderate droughtiness limitation Part of the northern block has not been restored to agricultural use and has not been classified

CLIMATE

9 Estimates of climatic variables for this site were derived from the published agricultural climate dataset Climatological Data for Agricultural Land Classification (Meteorological Office 1989) using standard interpolation procedures Data for key points around the site are given in Table 2 below

10 Since the ALC grade of land is determined by the most limiting factor present overall climate is considered first because it can have an overriding influence by restricting land to a lower grade despite more favourable site and soil conditions Parameters used for assessing overall climate are accumulated temperature a measure of relative warmth and average annual rainfall a measure of overall wetness The results shown in Table 2 indicate that there is no overall climatic limitation

11 Climatic variables also affect the ALC grade through interactions with soil conditions The most important interactive variables are Field Capacity Days (FCD) which are used in assessing soil wetness and potential Moisture Deficits calculated for wheat and potatoes which are compared with the moisture available in each profile in assessing soil droughtiness limitations These are described in later sections

Table 2 Climatic Interpolations Claydon Pike

Grid Reference		SU 180 999	SU 195 990
Altitude (m)		75	75
Accumulated Temperature (day °C)		1439	1438
Average Annual Rainfall (mm)		693	689
Overall Climatic Grade		1	1
Field Capacity Days		153	153
Moisture deficit (mm)	Wheat	106	106
	Potatoes	97	97

RELIEF

12 Altitude at the sites is around 75m although the restored site is at a lower level than the pre working level The southern undisturbed site is fairly flat whilst the northern site has man made contours At the western side of the site there is an embankment running around the edge which has slopes ranging from 7 5 to over 11 degrees There is an area of flat land on top of the embankment of at least 20m width The slope extends over approximately 20m Land with this gradient is downgraded within the ALC system however because the land involved at this site forms a narrow band it is not shown at the scale of mapping Towards the east of this block the slopes are more gentle

13 The restored site is at a lower level than the original land surface and is below the level of the water table of the surrounding land during some of the year In order to prevent the area flooding the water has to be pumped away The restored area is surrounded by deep ditches The most westerly field has underdrainage installed and at the time of survey (November 1998) the drains were running The surface of this field was wet but beneath the surface the soils were not waterlogged suggesting that the surface wetness was a management problem such as surface compaction which could be alleviated The other restored fields also had standing water on the surface however the whole profile was waterlogged These fields are reportedly not drained There is adequate outfall for underdrainage to function if it were

installed The ALC system grades land according to the limitation remaining after drainage has been installed (see Paragraphs 19ff)

14 The undisturbed southern block was partly flooded at the eastern end at the time of the survey but the limitation imposed by flood risk from the River Coln is assessed to be no worse than other limitations

GEOLOGY AND SOILS

15 The underlying geology of the site prior to extraction is shown on the published geology map (IGS 1974) as First Terrace gravels over Oxford Clay The southern fringe of the southern site has alluvial drift deposits The undisturbed southern block showed evidence of terrace and alluvial deposits Restoration of the northern block has used material similar to the terrace deposits in the soils profile and occasional bands of clay similar to the parent clay were also found

16 Soils were mapped by the Soil Survey of England and Wales at a reconnaissance scale of 1 250 000 (SSEW 1983) as Badsey 2 Association prior to disturbance in the northern block The southern block also showed Badsey 2 with Kelmscot along the southern edge

17 Badsey 2 Association is described as well drained calcareous fine loamy soils over limestone gravel affected by groundwater Kelmscot Association are similar soils

18 The recent survey found soils similar to the described associations Even the restored land had profiles which were similar to the original undisturbed soils

AGRICULTURAL LAND CLASSIFICATION

19 The distribution of ALC grades found by the current survey is shown on the accompanying 1 10 000 scale map and areas are summarised in Table 1 The detail of information shown at this scale is appropriate to the intensity of field survey but could be misleading if enlarged or applied to small areas

Subgrade 3a

20 Part of the undisturbed southern block has been mapped as Subgrade 3a good quality land These soils experience a moderate wetness limitation imposed by groundwater The heavy clay loam topsoils lie over increasingly stony subsoils The subsoils are gleyed reflecting the effect of high watertables for part of the year These soils are assessed as Wetness Class II

21 The restored land in the northern block has also been mapped as Subgrade 3a The grading for this area is based on the current structural conditions It is recognised that the soil structure is still returning to a more stable and natural structural condition which takes several years to occur The condition of the soil and its grading therefore may change with time

22 The western field which forms the first phase of restoration shows some evidence of waterlogging in the soil The mottling and pale and grey colours may be relic from the previous soil environment However the matrix colour of the soil is more responsive to the

aerobic condition of the soil than mottling Mottling can persist even when the conditions which formed it are removed Nevertheless the presence of the greyish and pale matrix colour in the profiles suggest that there are anaerobic conditions for part of the season in the current profile Based on the evidence available most of the profiles within this area have been assessed as Wetness Class II (see Appendix II) Generally the typical profile has heavy clay loam topsoils with around 10% small stones over further heavy clay loam horizons with higher stone contents measured as 27% in a soil profile pit These soils typically have a minor or moderate droughtiness limitations There are sometimes clay horizons present but often too shallow to be considered as an effective slowly permeable layer A soil profile pit dug in this area showed that the stony subsoils had moderate structural conditions and were free draining This area has underdrainage and the drains were freely running

23 The western part of the site has an embankment running around the edge The gradient of this area was measured as being over 7 degrees and is thus downgraded to Subgrade 3b However the sloping land forms a narrow band some 20 metres in width which at the scale of mapping is not shown on the accompanying ALC map This land accounts for about 2 ha in area The versatility of this land is restricted particularly in the west where there is a ditch running along the bottom of the slope The land on the top of the embankment although it is also a narrow band could be farmed as Subgrade 3a since cultivations could take place parallel to the field boundary

24 The second phase of restoration which forms the rest of the restored land shows less evidence of waterlogging in the soil than the first phase but the soil profile at the time of survey was waterlogged to within 30 40cm of the surface This part of the site is reportedly not drained The installation of underdrainage would alleviate the high water table and improve the soil wetness regime as indicated by the first phase of restoration The ditches around the site would provide sufficient outfall for the ground water level to be lowered such that the soils could be classified as Wetness Class II i e the soil is wet within 70cm for more than 90 days but not wet within 40cm depth for more than 30 days in most years These soils are therefore classified as Subgrade 3a with a moderate wetness limitation Should the site remain undrained the profiles would be assessed as Wetness Class IV and Subgrade 3b however the ALC system assumes the land would be drained

25 The soils in this second phase area were typically heavy clay loams down the profile but with around 15 20% stone in the topsoil and variable stone contents in the subsoil At two soil profile pits dug in this area the subsoil contents were measured as over 40% and 60% Some profiles also have a moderate droughtiness limitation where the higher stone contents are found Some of the soil profiles also have clay bands which can be thick enough to be slowly permeable and too deep in the profile to be removed and are Subgrade 3b

Subgrade 3b

26 Part of the undisturbed southern block has been mapped as Subgrade 3b moderate quality land These soils experience a moderate droughtiness limitation The subsoils are very stony 55% measured in a soil profile pit The soil matrix is a lighter texture loamy medium sand than that found in the restored soils in the north and this restricts the available water in the profile The water table was high within this area and the soils have been assessed as Wetness Class II based on the level of the watertable rather than the usual wetness assessment which would underestimate the affects of the high groundwater Within this unit there is a

profile where the stony layer is much deeper and would be assessed as Subgrade 3a but the shape of the survey area means that this is included in the lower grade land

Other Land

27 Part of the northern block has not been restored to agricultural use and so is not classified There is no topsoil present in this area and there are heaps of quarry spoil The land associated with Manor Farmhouse and Cottage and a small copse on the southern site are mapped as other land

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24 November 1998

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APPENDIX I

DESCRIPTION OF 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 include 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 and horticultural crops can usually be grown but on some land in 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 Where 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 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 most 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 plone

APPENDIX II

DEFINITION OF SOIL WETNESS CLASSES

Soil wetness is classified according to the depth and duration of waterlogging in the soil profile

Wetness Class I

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

Wetness Class II

The soil profile is wet within 70 cm depth for 31 90 days in most years or if there is no slowly permeable layer within 80 cm depth it is wet within 70 cm for more than 90 days but not wet within 40 cm depth for more than 30 days in most years

Wetness Class III

The soil profile is wet within 70 cm depth for 91 180 days in most years or if there is no slowly permeable layer 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

Wetness Class 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 or 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

Wetness Class V

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

Wetness Class VI

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

Notes The number of days specified is not necessarily a continuous period

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

Source Hodgson J M (Ed) (1997) Soil Survey Field Handbook Soil Survey Technical Monograph No 5 Silsoe

APPENDIX III

ABBREVIATIONS AND TERMS USED IN SURVEY DATA

Soil pit and auger boring information collected during ALC survey is held on a computer database and is reproduced in this report Terms used and abbreviations are set out below These conform to definitions contained in the Soil Survey Field Handbook (Hodgson 1997)

1 Terms used on computer database in order of occurrence

GRID REF National 100 km grid square and 8 figure grid reference

LAND USE At the time of survey

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

GRDNT Gradient as estimated or measured by hand held optical clinometer

GLEY SPL *Depth in centimetres to gleying or slowly permeable layer*

AP (WHEAT/POTS) Crop adjusted available water capacity

MB (WHEAT/POTS) Moisture Balance (Crop adjusted AP crop potential MD)

DRT Best grade according to soil droughtiness

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				

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				

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)

MOTTLE COL Mottle colour using Munsell notation

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%+

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

PED COL Ped face colour using Munsell notation

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

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 or metamorphic rock

Stone contents are given in % by volume for sizes >2cm >6cm and total stone >2mm

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

Degree of development	**WA**	Weakly developed Adherent	**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		

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		

SUBS STR Subsoil structural condition recorded for the purpose of calculating profile droughtiness **G** Good **M** Moderate **P** Poor

POR Soil porosity If a soil horizon has poor porosity with less than 0 5% biopores >0 5mm a Y will appear in this column

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

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

CALC If the soil horizon is calcareous with naturally occurring calcium carbonate exceeding 1% a Y will appear this column

2 Additional terms and abbreviations used mainly in soil pit descriptions

STONE ASSESSMENT

VIS	Visual	**S**	Sieve	**D**	Displacement

MOTTLE SIZE

EF	Extremely fine <1mm	**M**	Medium 5 15mm
VF	Very fine 1 2mm>	**C**	Coarse >15mm
F	Fine 2 5mm		

MOTTLE COLOUR May be described by Munsell notation or as ochreous (OM) or grey (GM)

ROOT CHANNELS In topsoil the presence of rusty root channels should also be noted

MANGANESE CONCRETIONS Assessed by volume

N	None		**M**	Many	20 40%
F	Few	<2%	**VM**	Very Many	>40%
C	Common	2 20%			

POROSITY

P	Poor	less than 0 5% biopores at least 0 5mm in diameter
G	Good	more than 0 5% biopores at least 0 5mm in diameter

ROOT ABUNDANCE

The number of roots per 100cm^2		Very Fine and Fine	Medium and Coarse
F	Few	1 10	1 or 2
C	Common	10 25	2 5
M	Many	25 200	>5
A	Abundant	>200	

ROOT SIZE

VF	Very fine	<1mm	**M**	Medium	2 5mm
F	Fine	1 2mm	**C**	Coarse	>5mm

HORIZON BOUNDARY DISTINCTNESS

Sharp	<0 5cm	**Gradual**	6 13cm
Abrupt	0 5 2 5cm	**Diffuse**	>13cm
Clear	2 5 6cm		

HORIZON BOUNDARY FORM Smooth wavy irregular or broken *

* See Soil Survey Field Handbook (Hodgson 1997) for details

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Claydon Pike	Pit 1	0	Ley	Av Rainfall 689 mm ATO 1438 day C	Restored site
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY	FC Days 152 Climatic Grade 1 Exposure Grade 1	PSD SAMPLES TAKEN
99/98	12/11/98	SP 17750030	GMS		

Horizon No	Lowest Av Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness Size Type and Field Method	Mottling Abundance Contrast Size and Colour	Mangan Concs	Structure Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots Abundance and Size	Calcium Carbonate Content	Horizon Boundary Distinctness and form
1	20	HCL	10YR41	9% HR 2mm (+d)	None	None	WKCSAB	Friable		Good	MVF		Sharp Smooth
2	36	C	25Y51	2% HR (VIS)	CDFO 10YR56	None	MDCAB	Firm	Poor	Low	CVF		Clear Smooth
3	110	HCL	25Y52 53	27% HR 2 mm (+d)	CDFO 10YR56	None	MDCSAB	Friable	Mod	Good	FVF		
4	120+	C	25Y41	N	CDFO 10YR56	None	Augured only						

Profile Gleyed From (20 cm) ? relic

Slowly Permeable Horizon From No spl

Wetness Class II

Wetness Grade 3a

Available Water	Wheat	123 mm
	Potatoes	94 mm
Moisture Deficit	Wheat	106 mm
	Potatoes	97 mm
Moisture Balance	Wheat	17 mm
	Potatoes	3 mm

Droughtiness Grade 2 (Calculated to 120 cm)

Final ALC Grade 3a

Main Limiting Factor(s) Wetness

Remarks Mottling in H2 + H3 may be relic may be WCI but matrix colour suggests possible current wetness problem Texture of H3 is variable with some more clayey patches

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Claydon Pike	Pit 3	0	Cereal Stubble	Av Rainfall 689 mm ATO 1438 day C	Restored site
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY	FC Days 152 Climatic Grade 1 Exposure Grade 1	PSD SAMPLES TAKEN
99/98	17/11/98	SP 18100015	GMS/SH		

Horizon No	Lowest Av Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness Size Type and Field Method	Mottling Abundance Contrast Size and Colour	Mangan Concs	Structure Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots Abundance and Size	Calcium Carbonate Content	Horizon Boundary Distinctness and form
1	35	HCL	10YR42	18 HR 2 mm (d)	None	None					CVF		Abrupt Smooth
2	80+	HCL	10YR52	60 HR> 2 mm (+d)	Some ochreous mottling associated with stones		Probably M or W CSAB	Friable	Mod	Good	Possibly CVF		

Profile Gleyed From Not gleyed

Slowly Permeable Horizon From No spl

Wetness Class II (see remarks)

Wetness Grade 3a

Available Water Wheat 93 mm

Potatoes 77 mm

Moisture Deficit Wheat 106 mm

Potatoes 97 mm

Moisture Balance Wheat 13 mm

Potatoes 20 mm

Droughtiness Grade 3a (Calculated to 120 cm)

Final ALC Grade 3a

Main Limiting Factor(s) Wetness/Droughtiness

Remarks Water filled to 35 cm
WCII seems appropriate even if soil is to be drained

SITE NAME	PROFILE NO	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Claydon Pike	Pit 2	0	Cereal Stubble	Av Rainfall 689 mm ATO 1438 day C	Restored site
JOB NO	DATE	GRID REFERENCE	DESCRIBED BY	FC Days 152 Climatic Grade 1 Exposure Grade 1	PSD SAMPLES TAKEN
99/98	12/11/98	SP 17950025	GMS		

Horizon No	Lowest Av Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness Size Type and Field Method	Mottling Abundance Contrast Size and Colour	Mangan Concs	Structure Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots Abundance and Size	Calcium Carbonate Content	Horizon Boundary Distinctness and form
1	30	HCL	10YR42	18 HR>2 mm (S+D)	None	None	WKC+ MSAB	Friable			MVF		Clear Smooth
2	45	HCL	10YR52,32	41 HR >2 mm (+d)	None	None	WKCSAB	Friable	Mod	Good	CVF		Abrupt Smooth
3	60	C	N4	O hreo w th d st and CDOM	Ochreous weathered stones and some CDOM	None	MDCAB	Firm	Mod	Low	FVF		Below water level
4	80+	HCL	10YR41 52	40 HR ( )	FFDO	None	Below water						

Profile Gleyed From Not gleyed

Slowly Permeable Horizon From 45 cm

Wetness Class III

Wetness Grade 3b

Available Water Wheat 113 mm

Potatoes 94 mm

Moisture Deficit Wheat 106 mm

Potatoes 92 mm

Moisture Balance Wheat +7 mm

Potatoes 3 mm

Droughtiness Grade 2 (Calculated to 120 cm)

Final ALC Grade 3b

Main Limiting Factor(s) Wetness

Remarks Difficult to assess depth of H3 since Pit filled with water to 40 cm If site was drained this wetness regime may improve Grade to 3a