

**Lydiard Millicent**  
**Agricultural Land Classification**  
**November 1998**

Resource Planning Team  
Bristol  
FRCA Western Region

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**LYDIARD MILLICENT**  
**AGRICULTURAL LAND CLASSIFICATION SURVEY**

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**LYDIARD MILLICENT  
AGRICULTURAL LAND CLASSIFICATION SURVEY**

**INTRODUCTION**

1 This report presents the findings of a semi detailed Agricultural Land Classification (ALC) survey of 97.7 ha of land at Lydiard Millicent Swindon. Field survey was based on 40 auger borings and 3 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 the preparation of Swindon Development Appraisal in connection with the Wiltshire Structure Plan.

3 Information on climate, geology and soils and from previous ALC surveys was considered and is presented in the relevant sections. Apart from the published regional ALC map (MAFF 1977) which shows the site at a reconnaissance scale as Grade 3, the site had not been surveyed previously. However, 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 At the time of survey, land cover was primarily pasture with a little horticultural production.

5 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 Table 1.

**SUMMARY**

**Table 1 Distribution of ALC grades Lydiard Millicent**

<b>Grade</b>	<b>Area (ha)</b>	<b>% Surveyed Area (75.2 ha)</b>
3b	75.2	100
Agricultural land not surveyed	5.3	
Other land	17.3	
Total site area	97.7	

6 All of the site has been mapped as Subgrade 3b. Two types of soil were found during the survey: to the north, shallow soils over coral rag were found to experience a moderate droughtiness limitation, whilst the soils in the south of the site were poorly drained clays experiencing a moderate wetness limitation.

## CLIMATE

7 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

8 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

9 Climatic variables also affect 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 Lydiard Millicent**

Grid Reference	SU 104856	SU 105865
Altitude (m)	110	115
Accumulated Temperature (day °C)	1406	1400
Average Annual Rainfall (mm)	687	690
Overall Climatic Grade	1	1
Field Capacity Days	155	156
Moisture deficit (mm) Wheat	102	101
Potatoes	92	91

## RELIEF

10 Altitude ranges from 96 metres at Washpool in the east of the site to 122 metres in the north west at Stone Lane The land slopes gently towards a stream which runs east west across the site The slopes are not limiting to agricultural land quality

## GEOLOGY AND SOILS

11 The geology of the site is shown on the published geology map (IGS 1974) Coral Rag (Upper Corallian) dominates the geology with a band of alluvium running along the stream Just to the south of the stream Kimmeridge Clay is found extending to the bottom of the site The soils found during the recent survey are closely related to the underlying geology with shallow soils found in the north and poorly drained clayey soils in the south

12 Soils were mapped by the Soil Survey of England and Wales at a reconnaissance scale of 1 250 000 (SSEW 1983) The Sherborne Association soils were found in the north of the site north of the stream A band of soils from the Evesham 1 Association run along the stream and to the south of this are Denchworth Soils which are also found in the north east of the site

13 Sherborne Association is described as shallow well drained brashy calcareous clayey soils over limestone also associated with slowly permeable calcareous clayey soils The Evesham 1 Association is described as slowly permeable calcareous clayey soils associated with shallow well drained brashy calcareous soils over limestone The Denchworth Association is described as slowly permeable seasonally waterlogged clayey soils with similar fine loamy over clayey soils some of which only show slight seasonal waterlogging

14 The soils found during the recent survey are typical of the mapped associations which in turn are closely related to the underlying geology as indicated above

### **AGRICULTURAL LAND CLASSIFICATION**

15 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 3b**

16 All of the agricultural land surveyed has been mapped as Subgrade 3b moderate quality land Two types of soil were found during the recent survey Soils to the south of the stream were found to be poorly drained clayey soils typically with a heavy clay loam topsoil over clayey subsoils which were gleyed and slowly permeable The presence of the slowly permeable layer was confirmed in a soil profile pit within this part of the site These soils were assessed as Wetness Class IV (see Appendix II) and experience a moderate wetness limitation

17 To the north of the stream shallow soils over Coral Rag were found Both clay and heavy clay loam topsoils were found in this area The depth to the Coral Rag was variable across the site and in places an upper subsoil was found before the very stony horizons were encountered Two soil profile pits were dug in this stony material to assess the stone content in the subsoil The first in the east of the site where the soils appeared shallower and one further west where deeper profiles were experienced The shallow pit in the east revealed that there was around 9% stone in the topsoil quickly rising to over 50% stone in the subsoil The Coral Rag was hard The other soil profile pit showed a slightly lower stone content in topsoil and the upper subsoil had nearly 30% hard rock and soft limestone with a slightly stonier lower subsoil with 34% hard rock and soft limestone The first pit was clearly Subgrade 3b with a moderate droughtiness limitation whereas the second pit was borderline Subgrade 3b/3a However because of the variable nature of these stony soils it was felt appropriate that the whole area should be mapped as Subgrade 3b Within this area there were also some deeper clayey poorly drained profiles which were Subgrade 3b due to wetness providing further evidence that this area should be mapped as Subgrade 3b

## **Other Land**

18 The small area in the south west of the site was not surveyed because ownership could not be established. It is likely that this area would also be Subgrade 3b. Other land not surveyed includes a playing field, residential areas and a large block in the east of the site which has already been developed.

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November 1998

## REFERENCES

INSTITUTE OF GEOLOGICAL SCIENCES (1974) Sheet 252 Swindon 1 63 360 series  
Solid and Drift edition IGS London

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

MAFF (1977) 1 250 000 series Agricultural Land Classification South West Region MAFF  
Publications Alnwick

MAFF (1988) Agricultural Land Classification of England and Wales Revised Guidelines  
and Criteria for grading the quality of agricultural land MAFF Publications Alnwick

METEOROLOGICAL OFFICE (1989) Climatological Data for Agricultural Land  
Classification Meteorological Office Bracknell

SOIL SURVEY OF ENGLAND AND WALES (1983) Sheet 5 Soils of South West England  
1 250 000 scale SSEW Harpenden

SOIL SURVEY OF ENGLAND AND WALES (1984) Soils and Their Use in South West  
England Bulletin No 14 SSEW Harpenden

## **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 pioneer forage crops

**Source** MAFF (1988) Agricultural Land Classification of England and Wales Revised Guidelines and Criteria for Grading the Quality of Agricultural Land MAFF Publications Alnwick

## **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

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

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

**GLEYSPL** 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

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

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

<b>OC</b>	Overall Climate	<b>AE</b>	Aspect	<b>EX</b>	Exposure
<b>FR</b>	Frost Risk	<b>GR</b>	Gradient	<b>MR</b>	Microrelief

<b>FL</b>	Flood Risk	<b>TX</b>	Topsoil Texture	<b>DP</b>	Soil Depth
<b>CH</b>	Chemical	<b>WE</b>	Wetness	<b>WK</b>	Workability
<b>DR</b>	Drought	<b>ER</b>	Erosion Risk	<b>WD</b>	Soil Wetness/Droughtiness
<b>ST</b>	Topsoil Stoniness				

**TEXTURE** Soil texture classes are denoted by the following abbreviations

<b>S</b>	Sand	<b>LS</b>	Loamy Sand	<b>SL</b>	Sandy Loam
<b>SZL</b>	Sandy Silt Loam	<b>CL</b>	Clay Loam	<b>ZCL</b>	Silty Clay Loam
<b>ZL</b>	Silt Loam	<b>SCL</b>	Sandy Clay Loam	<b>C</b>	Clay
<b>SC</b>	Sandy clay	<b>ZC</b>	Silty clay	<b>OL</b>	Organic Loam
<b>P</b>	Peat	<b>SP</b>	Sandy Peat	<b>LP</b>	Loamy Peat
<b>PL</b>	Peaty Loam	<b>PS</b>	Peaty Sand	<b>MZ</b>	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

<b>F</b>	Fine (more than 66% of the sand less than 0.2mm)
<b>M</b>	Medium (less than 66% fine sand and less than 33% coarse sand)
<b>C</b>	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

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

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

**GLEYS** 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

<b>HR</b>	All hard rocks and stones	<b>SLST</b>	Soft oolitic or dolimitic limestone
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<b>CH</b>	Chalk	<b>FSST</b>	Soft fine grained sandstone
<b>ZR</b>	Soft argillaceous or silty rocks	<b>GH</b>	Gravel with non porous (hard) stones
<b>MSST</b>	Soft medium grained sandstone	<b>GS</b>	Gravel with porous (soft) stones
<b>SI</b>	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

<b><u>Degree of development</u></b>	<b>WA</b>	Weakly developed Adherent	<b>WK</b>	Weakly developed
	<b>MD</b>	Moderately developed	<b>ST</b>	Strongly developed
<b><u>Ped size</u></b>	<b>F</b>	Fine	<b>M</b>	Medium
	<b>C</b>	Coarse	<b>VC</b>	Very coarse
<b><u>Ped Shape</u></b>	<b>S</b>	Single grain	<b>M</b>	Massive
	<b>GR</b>	Granular	<b>AB</b>	Angular blocky
	<b>SAB</b>	Sub angular blocky	<b>PR</b>	Prismatic
	<b>PL</b>	Platy		

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

<b>L</b>	Loose	<b>VF</b>	Very Friable	<b>FR</b>	Friable	<b>FM</b>	Firm
<b>VM</b>	Very firm	<b>EM</b>	Extremely firm	<b>EH</b>	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

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

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

## POROSITY

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

## ROOT ABUNDANCE

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

## ROOT SIZE

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

## HORIZON BOUNDARY DISTINCTNESS

<b>Sharp</b>	<0 5cm	<b>Gradual</b>	6 13cm
<b>Abrupt</b>	0 5 2 5cm	<b>Diffuse</b>	>13cm
<b>Clear</b>	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	Av Rainfall	687 mm	PARENT MATERIAL	
Lydiard Millicent		Pit 1	0	Potatoes	ATO	1406 day C	Coral Rag	
JOB NO		DATE	GRID REFERENCE	DESCRIBED BY	FC Days	155	PSD SAMPLES TAKEN	
91/98		14/10/98	SU 102 861	GMS/GMN	Climatic Grade	1	None	
					Exposure Grade	1		

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	25	C	10YR32	1%HR>2 cm 4% HR>2 mm 5%HR t tal ( +d)	None	None					FVF		Clear Smooth
2	45	C	2 5Y54	1%HR+SLST> 2 cm 27%HR+SLHT>2 mm 28%HR+SLST Total ( d)	None	None	WKCSAB	Friable	Moderate	Good	FVF		Clear Smooth
3	70+	C	2 5Y62	20%HR> 2 m 14%HR+SLST> 2mm 34%HR+SLST t t l ( +d)	MDMO 10YR68	None	Determined by stones		Assume Good	Good	FVF		

Profile Gleyed From 45 cm  
Slowly Permeable Horizon From No SPL  
Wetness Class I  
Wetness Grade 3a

Available Water	Wheat	82 mm
	Potatoes	93 mm
Moisture Deficit	Wheat	102 mm
	Potatoes	92 mm
Moisture Balance	Wheat	20 mm
	Potatoes	+1 mm
Droughtiness Grade	3b	(Calculated to 70 cm)

Final ALC Grade 3b  
Main Limiting Factor(s) Droughtiness

Remarks H3 Where less stony clay is mottled suggesting poor drainage in stonier parts soil colour is 2 5Y54 with no mottles Overall horizon seems to be well drained Pit is borderline 3a/3b droughtiness since drought calc could be taken deeper rooting continues to depth

SITE NAME		PROFILE NO	SLOPE AND ASPECT	LAND USE	Av Rainfall	687 mm	PARENT MATERIAL	
Lydiard Millicent		Pit 2	0	PGR	ATO	1406 day C	Coral Rag	
JOB NO		DATE	GRID REFERENCE	DESCRIBED BY	FC Days	155	PSD SAMPLES TAKEN	
91/98		14/10/98	SU 1060 8615	GMS/GMN	Climatic Grade	1		
					Exposure Grade	1		

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	25	HZCL	10YR41	1%HR>2 m 8%HR>2 mm 9%HR total (s+d)	None	None					MF& VF		Clear Smooth
2	35	C	2 5Y54	25%HR 2 cm 27%HR 2 mm 52%HRT t l (s+d)	None	None	Determined by stones	Friable	Assume moderate	Good	CVF		Gradual Wavy
3	55+	C	2 5Y56	60%HR ( )	FFFO 10YR56	None	Determined by stones	Friable	Assume Moderate	Good	FVF		

Profile Gleyed From Not gleyed

Slowly Permeable Horizon From No SPL

Wetness Class (1)

Wetness Grade (2)

Available Water Wheat 69 mm

Potatoes 76 mm

Moisture Deficit Wheat 102 mm

Potatoes 92 mm

Moisture Balance Wheat 33 mm

Potatoes 16 mm

Droughtiness Grade 3b (Calculated to 70 cm)

Final ALC Grade 3b

Main Limiting Factor(s) Droughtiness

Remarks Calc to 90 cm still gives 31 16 3b



SITE NAME		PROFILE NO	SLOPE AND ASPECT		LAND USE		Av Rainfall		687 mm		PARENT MATERIAL	
Lydiard Millcent		Pit 3	0		PGR		ATO		1406 day C		Kimmeridge Clay	
JOB NO		DATE	GRID REFERENCE		DESCRIBED BY		FC Days		155		PSD SAMPLES TAKEN	
91/98		15/10/98	SU 105 856		GMS		Climatic Grade		1			
							Exposure Grade		1			

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	18	HZCL	7 5YR41	N	None	None					MVF		Abrupt Smooth
2	22	C	10YR42	No	CDFO 7 5YR56	None	MDM+FSAB	Friable	Good	Good	MVF		Clear Wavy
3	60+	C	2 5Y52	1/2 HR ( s) (fl ts)	MDFO 7 5YR68 10YR68	None	STCPR	Firm	Poor	Low	CVF		

Profile Gleyed From 18 cm

Slowly Permeable Horizon From 22 cm

Wetness Class IV

Wetness Grade 3b

Available Water Wheat 100 mm

Potatoes 105 mm

Moisture Deficit Wheat 102 mm

Potatoes 92 mm

Moisture Balance Wheat 2 mm

Potatoes +13 mm

Droughtiness Grade 3a (Calculated to 80 cm)

Final ALC Grade 3b

Main Limiting Factor(s) Wetness

Remarks H2 is transitional