8FC6189B

29/98

South Moulton

Agricultural Land Classification

July 1998

Resource Planning Team
Bristol
FRCA Western Region

RPT Job Number: 29/98

FRCA File No: EL10/00178

SOUTH MOLTON

AGRICULTURAL LAND CLASSIFICATION SURVEY

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INTRODUCTION

1. This report presents the findings of a semi-detailed Agricultural Land Classification (ALC) survey of 349.7 ha of land at South Molton, Devon. Field survey was based on 132 auger borings and 4 soil profile pits, and was completed in July 1998. During the survey 12 samples were analysed for particle size distribution (PSD).

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 North Devon Local Plan.

3. Information on climate, geology and soils, and from previous ALC surveys was considered and is presented in the relevant section. The published regional ALC map (MAFF 1977) shows the site at a reconnaissance scale as mainly Grade 3 but with Grade 2 to the south of the town and Grade 4 on the steeper slopes of the Mole Valley and on the alluvial deposits in the north of the site. The site was previously surveyed in 1979 at a scale of 1:25 000 (ADAS 1979), but this was conducted to guidelines for classification which have now been superseded. 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. ALC surveys have also been carried out on 3 small sites adjacent to the current survey area (ADAS 1993). These areas were surveyed using the Revised Guidelines for classification and show Subgrade 3a limited by workability and Subgrade 3b and Grade 4 limited by wetness. This survey is generally consistent with the findings of the current survey, any minor discrepancies being attributable to the location of auger sample points, particularly in the current semi-detailed survey. The 1993 survey can be combined with the current survey to produce a composite ALC map for South Molton.

5. At the time of survey land cover was mainly grass with some cereals and maize and two fields of potatoes. Several areas of agricultural land within the survey area, total 26.1 ha were not surveyed because consent for access was refused by the owners. It is understood that this was mainly because they are hoping for planning permission for development at some time in the future and are concerned that their land may be of good quality. Other land which was not surveyed included industrial and residential land, a school, sports grounds and a large area devoted to the recently planted South Molton community woodland.

SUMMARY

6. The distribution of ALC grades is shown on the accompanying 1:15 000 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: South Molton

Grade	Area (ha)	% Surveyed Area (221.7 ha)
3a	29.5	13
3b	98.9	45
4	83.8	38
5	9.5	4
Agricultural land not surveyed	26.1	
Other land	101.9	
Total site area	349.7	

7. This indicates that 13% of the area was found to be best and most versatile, Subgrade 3a limited by restricted by workability. The rest of the area was found to be Subgrade 3b and Grade 4 limited mainly by wetness.

CLIMATE

8. 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.

9. 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 an overall climatic limitation over most of the site which limits the land to Grade 2 with a small area on the highest land in the north west of the site which is further limited to Subgrade 3a.

10. 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. Climatic data for the site shows that values for FC Days range from 237 to 249.

Table 2: Climatic Interpolations: South Molton

Grid Reference		SS 709263	SS 723621	SS 714246
Altitude (m)		160	100	150
Accumulated Temperature (day °C)		1408	1476	1420
Average Annual Rainfall (mm)		1243	1155	1198
Overall Climatic Grade		3a	2	2
Field Capacity Days		249	237	242
Moisture deficit (mm):	Wheat	65	78	67
	Potatoes	47	64	50

RELIEF

11. Altitude ranges from 100 metres at Mole Bridge to 164 metres at Deerhill Lane with mainly gentle and moderate slopes which are not limiting apart from the east, and particularly the south east, of the survey area where strong to steep slopes on the valley sides restrict this land to Subgrade 3b, Grade 4 and even to Grade 5.

GEOLOGY AND SOILS

12. The underlying geology of the site is shown on the published geology map (IGS, 1982) as mainly shales and sandstones of the Bude and Crackington formations with alluvium in the main river valley and river terrace deposits in the north of the site. This was largely borne out by the current survey which found a detectable distinction between the shales and the sandstones as indicated in the published information, with the sandstones dominating, particularly in the south of the site. This was a very fine sandstone or siltstone, generally freely draining and generally with significantly lighter topsoil textures than the areas of shale which tend to be more common through the centre of the site and in the north.

13. Soils were mapped by the Soil Survey of England and Wales at a reconnaissance scale of 1:250 000 (SSEW 1983) as mainly Denbigh 2 association, described as well-drained fine loamy soils over slate or slate rubble with some fine loamy soils variably affected by groundwater and Hallsworth 2 association on the river terrace deposits in the north of the site, described as slowly permeable seasonally waterlogged clayey, fine loamy and fine silty soils. This was largely borne out by the current survey, although heavy and wet soils fitting the description of Hallsworth 2 were also found in the extreme west of the site around ASPs 33, 74, 111 and 138 and also by the 1993 survey in the depression to the west of Gunsdown Villas.

AGRICULTURAL LAND CLASSIFICATION

14. The distribution of ALC grades found by the current survey is shown on the accompanying 1:15 000 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

15. The area shown as Subgrade 3a was found to have medium clay loam topsoil at Wetness Class I, limited by restricted workability. The topsoil textures are mainly consistent and were confirmed by PSD analysis at ASP 118 and 111E, together with one at ASP 38 of the adjacent 1993 survey.

Subgrade 3b

16. The area shown as Subgrade 3b includes borings variously limited by workability, wetness and gradient.

17. Borings limited by restricted workability tend to be found mainly in the south of the site, particularly in the south east where mainly heavy clay loam topsoils are found at Wetness Class I. These are illustrated by Pits 1 and 2

18. Scattered borings were found with heavy clay loam topsoil at Wetness Class II.

19. Subgrade 3b limited by gradient is found mainly on the east side of the site on the upper slopes of the valley sides of the River Mole, where slopes of 8 to 11° are found.

Grade 4

20. The area shown as Grade 4 was found to be mainly limited by wetness with heavy clay loam topsoil at Wetness Class III or IV with a slowly permeable layer starting in the upper to middle subsoil. This is illustrated by Pit 3. Other Grade 4 profiles limited by wetness were found on the floor of the Mole valley where a normally high water table gives rise to comprehensively gleyed soil profiles which were assessed as Wetness Class IV attributed to ground water conditions even in the absence of a slowly permeable layer.

21. Several small areas of Grade 4 are shown on the steeper valley sides overlooking the River Mole where slopes of 12 to 18° were found.

Grade 5

22. A small area shown as Grade 5 in the north of the site was found to be severely limited by wetness and is illustrated by Pit 4 which found silty clay topsoil at Wetness Class IV.

23. Another small area shown as Grade 5 in the south east of the site is limited by gradient with short slopes of around 20°.

P Barnett
Resource Planning Team
FRCA Bristol
3 September 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 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

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
South Molton	Pit 1 (Asp 159)	4° SE	Ley	Av Rainfall: 1198 mm ATO: 1420 day °C	Crackington shale
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 240 Climatic Grade: 2 Exposure Grade: 1	PSD SAMPLES TAKEN
29.98	16.7.98	SS 7187 2477	PB		TS 0-25 cm: HCL/MCL (S22: Z50: C38%)

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	H/MCL	10YR43	1%>2cm(s) 17%<2cm(s+d) 18% HR	0	0	-	-	-	-	MF,VF	-	Clear Smooth
2	40	HCL	10YR4454	20%>2cm(s) 22%<2cm(s+d) 42%ZR,FSST	0	0	WKMSAB	FR	G	G	MVF	-	Clear Wavy
3	47+	HCL	10YR54	50%>2cm(s) 23%<2cm(s+d) 73%ZR, FSST	0	0	Too stony	-	(M)	(G)	CVF	-	

Profile Gleyed From: -

Slowly Permeable Horizon From: -

Wetness Class: I

Wetness Grade: 3b/3a

Available Water Wheat: 74 mm

Potatoes: 77 mm

Moisture Deficit Wheat: 78 mm

Potatoes: 64 mm

Moisture Balance Wheat: -4 mm

Potatoes: +13 mm

Droughtiness Grade: 3a (Calculated to 60 cm)

Final ALC Grade: 3b/3a

Main Limiting Factor(s): Wk

Remarks:

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
South Molton	Pit 2 (Nr Asp 127)	4° W	Potatoes	Av Rainfall: 1198 mm ATO: 1420 day °C	Crackington shale
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 240 Climatic Grade: 2 Exposure Grade: 1	PSD SAMPLES TAKEN
29.98	21.7.98	SS7100 2497	PB		TS 0-25cm: HZCL /HCL(S19:Z50:31%)

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	HZCL	7.5YR42	1%>2cm (s) 11%<2cm(s+d) 12% HR	0	0	-	-	-	-	CF,VF*	-	Abrupt Smooth
2	42	HCL	7.5YR43	1%>2cm(s) 14%<2cm(s+d) 15% HR	0	0	WKFSAB	FR	G	G	CVF	-	Abrupt Smooth
3	80+	HCL	10YR54	15%>2cm (s) 43% <2cm (s+d) 58% FSST	0	0	Too stony	-	(M)	(G)	FVF	-	

Profile Gleyed From: -

Slowly Permeable Horizon From: -

Wetness Class: I

Wetness Grade: 3b

Available Water Wheat: 112 mm

Potatoes: 98 mm

Moisture Deficit Wheat: 78 mm

Potatoes: 64 mm

Moisture Balance Wheat: +34 mm

Potatoes: +34 mm

Droughtiness Grade: 1 (Calculated to 90 cm)

Final ALC Grade: 3b

Main Limiting Factor(s): Wk

Remarks: Roots sparse because pit in headland, then FSST rock.

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
South Molton	Pit 3 (Asp 52)	2° S	PGR	Av Rainfall: 1228 mm ATO: 1419 day °C	Crackington shale
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 240 Climatic Grade: 2 Exposure Grade: 1	PSD SAMPLES TAKEN
29.98	23.7.98	SS7098 2614	PB		TS 0-25 cm: HCL/HZCL (S20:Z46:C34%)

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	22	HCL	10YR42	10%HR(vis)	0	0	-	-	-	-	MF,VF	-	Clear Smooth
2	55	HCL	10YR44	10%HR(vis)	0	0	WKFSAB	FR	G	G	MVF	-	Clear Wavy
3	70 (60-70)	C	2.5Y64	20%HR(vis)	0	0	WKCSAB	FM	P	P(low)	CVF	-	Gradual Wavy
4	90+	C	2.5Y72	10% HR(vis)	MDMO 10YR58	0	M	FM	P	P	FVF	-	

Profile Gleyed From: 70 cm

Slowly Permeable Horizon From: 70 cm

Wetness Class: III

Wetness Grade: 4

Available Water Wheat: 139 mm

Potatoes: 118mm

Moisture Deficit Wheat: 78 mm

Potatoes: 64 mm

Moisture Balance Wheat: +61 mm

Potatoes: +54 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 4

Main Limiting Factor(s): We

Remarks:

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
South Molton	Pit 4 (Nr Asp 8)	3° E	PGR	Av Rainfall: 1180 mm ATO: 1450 day °C FC Days: 240 Climatic Grade: 2 Exposure Grade: 1	River terrace deposits (alluvium)
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY		PSD SAMPLES TAKEN
29.98	24.7.98	SS7130 2698	PB		TS 0-25 cm: ZC (S10:Z49:C41%)

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	ZC	2.5Y52	0	CDFO 10YR58	0	-	-	-	-	MF,VF	-	Sharp Smooth
2	52	C	2.5Y62	0	CDFO 10YR58	0	MDCPR	FM	P	P	CVF	-	Abrupt Wavy
3	70+	C	2.5Y72	0	ADMO 10YR58	0	M	FM	P	P	FVF	-	

Profile Gleyed From: 0

Slowly Permeable Horizon From: 20 cm

Wetness Class: IV

Wetness Grade: 5

Available Water Wheat: 124 mm

Potatoes: 101 mm

Moisture Deficit Wheat: 78 mm

Potatoes: 64 mm

Moisture Balance Wheat: +46 mm

Potatoes: +37 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 5

Main Limiting Factor(s): We

Remarks: