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Land at Westford, Wellington
Agricultural Land Classification

Prepared for MAFF by
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Land Use Planning Unit

MAFF

LAND AT WESTFORD, WELLINGTON

AGRICULTURAL LAND CLASSIFICATION

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LAND AT WESTFORD, WELLINGTON

AGRICULTURAL LAND CLASSIFICATION SURVEY

SUMMARY

The survey was carried out by ADAS on behalf of MAFF as part of its statutory role in the preparation of the Taunton Deane Local Plan. The fieldwork at Westford was completed in March 1995 at a scale of 1:10,000. Data on climate, soils, geology and previous ALC Surveys was used and is presented in the report. The distribution of grades is detailed below and illustrated on the accompanying ALC map. Information is correct at this scale but could be misleading if enlarged.

Distribution of ALC grades: Westford, Wellington

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
1	80.4	39.5	58.1	
2	19.0	9.3	13.7	
3a	11.6	5.7	8.4	
3b	27.3	13.4	19.8	
Urban	42.6	20.9	0.0	
Non Agricultural	20.9	10.3	0.0	
Agricultural Buildings	0.7	0.3	0.0	
Open Water	1.2	0.6	0.0	
TOTAL	203.7	100.0	100.0	(138.3 ha)

Over 80% of the agricultural land surveyed was found to be best and most versatile, with nearly 60% being Grade 1. The Grade 1 land was typically deep, well drained sandy loams with negligible stone contents. The Grade 2 land has either a higher stone content or loamy sand subsoil leading to a minor droughtiness limitation, or slightly heavier topsoil textures leading to minor workability and wetness limitations. The areas of lower land have been mapped as either Subgrade 3a or Subgrade 3b due to moderate wetness limitations caused by poor drainage conditions and slowly permeable layers. The differences between the two subgrades are the topsoil texture and the depth to gleying and the slowly permeable layers. The area of Subgrade 3b land adjacent to Winsbeer Lane has a moderate limitation due to its gradient.

1. INTRODUCTION

An Agricultural Land Classification (ALC) Survey was carried out in February and March 1995 at Westford, Wellington on behalf of MAFF as part of its statutory role in the preparation of the Taunton Deane Local Plan. The fieldwork covering 203.7 ha of land was conducted by ADAS at a scale of 1:10,000 (approximately one boring per hectare of agricultural land). A total of 207 auger borings were examined and 7 soil profile pits used to assess subsoil conditions.

The published provisional one inch to the mile ALC map of this area (MAFF 1971) shows the grades of the site at a reconnaissance scale. This shows the land in the valleys as Grade 4 with most of the higher ground being Grade 2. There are areas of Grade 1 land at Rockwell Green and to the west of Westford. An area of Grade 3 land is shown in the north-west corner of the site, adjacent to Winsbeer Lane.

The recent survey supersedes this map having been carried out at a more detailed level and using the 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 long-term limitations on agricultural use. The grading takes account of the top 120 cm of the soil profile. A description of the grades used in the ALC system can be found in Appendix 2.

2. CLIMATE

The grade of the land is determined by the most limiting factor present. The overall climate is considered first because it can have an overriding influence on restricting land to a lower grade despite other favourable conditions.

Estimates of climatic variables were interpolated from the published agricultural climate dataset (Meteorological Office 1989). The parameters used for assessing overall climate are accumulated temperature (a measure of the relative warmth of a locality) and average annual rainfall (a measure of overall wetness). The results shown in Table 1 indicate there is no overall climatic limitation.

Table 1: Climatic Interpolations: Westford, Wellington

Grid Reference		ST 124 213	ST 119 211	ST 121 204	ST 129 203
Altitude (m)		65	90	60	75
Accumulated Temperature (day °)		1508	1480	1514	1497
Average Annual Rainfall (mm)		879	910	884	892
Overall Climatic Grade		1	1	1	1
Field Capacity Days		185	190	186	187
Moisture deficit (mm):	Wheat	96	92	97	95
	Potatoes	87	81	88	85

Climatic data on Field Capacity Days (FCD) and Moisture Deficits for wheat and potatoes are also shown. These data are used in assessing the soil wetness and droughtiness limitations referred to in later sections.

3. RELIEF AND LANDCOVER

The site includes the valleys of Westford Stream and Back Stream, and the valley below Runnington House along the northern edge of the site. The lowest point of the site is 50 m AOD near Tone. The land rises up gently from these valleys with slopes of less than 7°, except for an area near Rockwell Green and the hillsides to the west of Tonedale where the gradient can be up to 11°. The high point of the site is 90 m AOD near Winsbeer Lane. At the time of the survey the land was being used for a combination of cereal and maize cultivation, permanent and ley grassland and areas of fallow.

4. GEOLOGY AND SOILS

The geology of the site is shown on the published 1:50,000 scale drift geology map, sheet 311, Institute of Geological Sciences 1976. This shows that the valleys are underlain by alluvium whilst most of the higher ground is underlain by Upper Sandstone. There are areas underlain by pebble beds and conglomerates at Westford House and to the east of Winsbeer Lane. To the west of Lower Westford Farm and along Payton Road the land is underlain by Lower Marls.

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000. This shows that most of the site consists of soils from the Whimple 1 Association, which are described as being reddish fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging. They are associated with similar well drained soils, some over gravel. The north west corner of the site, towards Runnington Wood, consists of soils from the Crediton Association. These are described as being well drained, gritty, reddish, loamy soils over breccia and can be locally less stony. The land on the edge of Wellington is shown as urban.

The soils found during the recent survey were fairly similar, allowing for local variations. Soils in the valleys had slowly permeable subsoils but those higher up were well drained with patches of soil having increased stone and sand contents.

5. AGRICULTURAL LAND CLASSIFICATION

The distribution of ALC grades is shown in Table 2 and on the accompanying ALC map. The information could be misleading if shown at a larger scale.

Table 2: Distribution of ALC grades: Westford, Wellington

Grade	Area (ha)	% of Survey Area	% of Agricultural Land	
1	80.4	39.5	58.1	
2	19.0	9.3	13.7	
3a	11.6	5.7	8.4	
3b	27.3	13.4	19.8	
Urban	42.6	20.9	0.0	
Non Agricultural	20.9	10.3	0.0	
Agricultural Buildings	0.7	0.3	0.0	
Open Water	1.2	0.6	0.0	
TOTAL	203.7	100.0	100.0	(138.3 ha)

Grade 1

The soils in this grade are typically deep, well draining and relatively stone-free sandy loams. They were assessed as Wetness Class I (see Appendix 3). There was some mottling and gleyed horizons below 40 cm in some profiles but they are still Wetness Class I. In places an horizon of loamy sand was found at depth but this did not affect the overall grade either. Within the mapping units there is the odd profile with a wetness limitation on the lower land and there is a small area just to the west of Tonedale where increased stone contents cause a minor droughtiness limitation.

Grade 2

The soils in this grade fall into two main types. The mapping units to the north of Lower Westford Farm have a minor droughtiness limitation where horizons of loamy sand occur higher up the profile than the Grade 1 land and in places there are up to 50% hard rocks by volume in the lower subsoil. The other two areas of Grade 2 land, near Tone and to the north of Westford House, are typically well drained and were assessed as Wetness Class I but have

medium clay loam topsoils. With the local FCD value this leads to a minor workability limitation. There are also some small areas where the profiles have moderate wetness and droughtiness limitations within these mapping units.

Subgrade 3a

The soils in these mapping units have moderate wetness limitations and were assessed as Wetness Class II and III, depending on the depth to a slowly permeable layer. The profiles have *clay loam topsoils, medium and heavy, with slowly draining clay subsoils.*

Subgrade 3b

There are two types of profile within this subgrade. The small mapping unit near Rockwell Green and the mapping unit between Winsbeer Lane and Tone have a moderate limitation due to their gradients of between 7° and 11°. These restrict the type of machinery which can be safely and efficiently operated. The mapping units at Westford Stream, Back Stream and below Runnington House are all on the alluvial valley floors and suffer from moderate wetness limitations. The profiles typically have heavy and medium clay loam topsoils over clay subsoils. They were assessed as Wetness Class III and IV depending on the depth to a slowly permeable layer.

Other Land

The areas mapped as urban include roads, residences, gardens and commercial property. Farmsteads and other agricultural buildings are as shown. The non-agricultural land includes playing fields, allotments and open scrub.

Resource Planning Team
Taunton Statutory Unit
March 1995

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APPENDIX 1

REFERENCES

INSTITUTE OF GEOLOGICAL SCIENCES (1976) Drift Edition, Sheet 311, Wellington 1:50,000

MAFF (1971) Agricultural Land Classification Map, Sheet 164, Provisional 1:63,360 scale.

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

METEOROLOGICAL OFFICE (1989) Climatological Data for Agricultural Land Classification.

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

APPENDIX 2

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.

Descriptions of other land categories used on ALC maps

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 park land, public open spaces, sports fields, allotments and soft-surfaced areas on airports/airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

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 landcover types, eg buildings in large grounds, and where may be shown separately. Otherwise, the most extensive cover type will usually be shown.

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

APPENDIX 3

DEFINITION OF SOIL WETNESS CLASSES

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 (in preparation), Soil Survey Field Handbook (revised edition).

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Westford, Wellington	Pit 1	3° North	Fallow	Av Rainfall: 879 mm ATO: 1508 day °C FC Days: 185 Climatic Grade: 1 Exposure Grade: 1	Upper Sandstone
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY		SOIL SAMPLE REFERENCES
1/95	15/2/95	(ASP 62) ST 125 210	PB/PRW		RPT/PB/252

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	27	MSL	2% HR (vis)	05YR44	None	None	-	-	-	-	CF	-	Clear smooth
2	100+	MSL	10% >2cm (S) 16%<2cm(S+D) 26% HR 8% >2cm (S) 11% <2cm (S+D) 19% HR AV 22% HR	05YR46	None*	None	WCSAB	V Friable	Good	Good	CF (FF below 70 cm)	-	-

Profile Gleyed From: Not gleyed

Depth to Slowly Permeable Horizon: No SPL

Wetness Class: I

Wetness Grade: 1

Available Water	Wheat:	148 mm
	Potatoes:	103 mm
Moisture Deficit	Wheat:	96 mm
	Potatoes:	87 mm
Moisture Balance	Wheat:	52 mm
	Potatoes:	16 mm
Droughtiness Grade:		1 (Calculated to 120 cm)

Final ALC Grade: 1

Main Limiting Factor(s):

Remarks:

*Small zones with CDFOM within H2 but not gleyed overall.

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SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Westford, Wellington	Pit 2	0°	Permanent Grass	Av Rainfall: 879 mm ATO 1508 day °C FC Days: 185 Climatic Grade: 1 Exposure Grade: 1	Alluvium
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY		SOIL SAMPLE REFERENCES
1/95	15/2/95	(ASP 157) ST 127 205	P R Woode/P Barnett		RPT/PB/253

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	MCL	5YR54	None	None	None	-	-	-	Good	MF	-	Abrupt smooth
2	50	MCL	5YR54	1% HR (Vis)	None	None	MCSAB	Friable	Moderate	Good	MF	-	Gradual smooth
3	71	C	75YR64	None	CFFOM (75YR58)	None	MCPr	Firm	Poor	Good	MF	-	Clear smooth
4	100+	C	10YR63	None	CDMOM (10YR56)	Few	WCPr	Firm	Poor	Poor	CVF	-	-

Profile Gleyed From: 50cm

Depth to Slowly Permeable Horizon: 71cm

Wetness Class: II

Wetness Grade: 3a

Available Water Wheat: 133 mm

Potatoes: 110 mm

Moisture Deficit Wheat: 96 mm

Potatoes: 87 mm

Moisture Balance Wheat: 37 mm

Potatoes: 23 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 3a

Main Limiting Factor(s): Wetness

Remarks:

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SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Westford, Wellington	Pit 3	5° South West	Fallow - was maize	Av Rainfall: 879 mm ATO: 1508 day °C FC Days: 185 Climatic Grade: 1 Exposure Grade: 1	Lower Marls
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY		SOIL SAMPLE REFERENCES
1/95	15/2/95	(ASP 149-150) ST 119 205	PB/PRW		RPT/PB/254

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	FSL	05YR4/6	2% <2cm HR (vis)	None	None	-	Friable	Moderate	Good	Common Fine	-	Abrupt smooth
2	44	SCL	2.5YR4/4	None	None	None	Moderate Coarse Subangular Blocky	Friable	Moderate	Good	Few Fine	-	Gradual smooth
3	68	MSL	2.5YR4/4	None	None	Common Diffuse	Weak Medium Angular Blocky	Friable	Good	Good	Few Fine	-	Gradual smooth
4	100+	LMS	2.5YR4/4	None	None	None	Weak Coarse Angular Blocky	Friable	Good	Good	Few Fine	-	-

Profile Gleyed From: Not gleyed

Depth to Slowly Permeable Horizon: No SPL

Wetness Class: I

Wetness Grade: I

Available Water Wheat: 145 mm

Potatoes: 116 mm

Moisture Deficit Wheat: 96 mm

Potatoes: 87 mm

Moisture Balance Wheat: 49 mm

Potatoes: 29 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 1

Main Limiting Factor(s):

Remarks:

H1 PSD within 1% of SCL therefore mapped in Grade 2 unit.

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SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Westford, Wellington	Pit 4 (ASP 61)	3° North East	PGR	Av Rainfall: 879 mm ATO: 1508 day °C FC Days: 185 Climatic Grade: 1 Exposure Grade: 1	Pebble Beds and Conglomerate
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY		SOIL SAMPLE REFERENCES
1/95	21.2.95	ST 124 211	PB/HLJ		RPT/PB/246

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	FSL	05YR43	1% HR (Vis)	None	None	-	-	-	Good	MF, VF	-	Clear wavy
2	70	MSL	2.5YR44	1% HR (Vis)	None	None	WCSAB	Friable	Good	Good	CF, VF	-	Clear smooth
3	110+	MSL	05YR54	1% HR (Vis)	None	None	WCSAB	Friable	Good	Good	FF, VF	-	-

Profile Gleyed From: Not gleyed

Depth to Slowly Permeable Horizon: No SPL

Wetness Class: I

Wetness Grade: 1

Available Water Wheat: 174 mm

Potatoes: 118 mm

Moisture Deficit Wheat: 96 mm

Potatoes: 87 mm

Moisture Balance Wheat: 78 mm

Potatoes: 31 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 1

Main Limiting Factor(s):

Remarks:

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SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Westford, Wellington	Pit 5 (ASP 73)	1° East	Ley	Av Rainfall: 879 mm ATO: 1508 day °C FC Days: 185 Climatic Grade: 1 Exposure Grade: 1	Pebble Beds and Conglomerate
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY		SOIL SAMPLE REFERENCES
1/95	21/2/95	ST 123 210	HLJ/PB		RPT/PB/248

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	28	MSL	05YR44	1% HR Total (Vis)	None	None	-	-	-	Good	MF+VF	-	Abrupt wavy
2	46	MSL	2.5YR44	1% HR Total (Vis)	None	None	WCSAB	Friable	Good	Good	CF+VF	-	Clear wavy
3	110+	MSL	2.5YR34/46	1% HR Total (Vis)	None	None	WCSAB	Very Friable	Moderate	Good	FVF	-	-

Profile Gleyed From: Not gleyed

Depth to Slowly Permeable Horizon: No SPL

Wetness Class: I

Wetness Grade: 1

Available Water	Wheat:	160 mm
	Potatoes:	113 mm
Moisture Deficit	Wheat:	96 mm
	Potatoes:	87 mm
Moisture Balance	Wheat:	64 mm
	Potatoes:	26 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 1

Main Limiting Factor(s):

Remarks:

Pockets of sand in lower parts of H3.

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SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Westford, Wellington	Pit 6 (ASP 183)	2° East	Ley	Av Rainfall: 879 mm ATO: 1508 day °C FC Days: 185 Climatic Grade: 1 Exposure Grade: 1	Upper Sandstone
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY		SOIL SAMPLE REFERENCES
1/95	21/2/95	ST 116 203	PB/HLJ		RPT/PB/251

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	MSL	05YR43	1% HR (Vis)	None	None	-	-	-	Good	CF, VF	-	Clear smooth
2	47	MCL	05YR44	1% HR (Vis)	None	None	MCAB	Friable	Moderate	Good	CF, VF	-	Abrupt wavy
3	100	MCL	7.5YR54	1% HR (Vis)	MDMOM (7.5YR58)	None	WCSAB	Friable	Moderate	Good	FF, VF	-	Clear smooth
4	120 (Pit 90cm)	LMS	05YR54	None	None	None	WCSAB	V Friable	Moderate	Good	None	-	-

Profile Gleyed From: 47cm

Depth to Slowly Permeable Horizon: No SPL

Wetness Class: I

Wetness Grade: 1

Available Water	Wheat:	141 mm
	Potatoes:	113 mm
Moisture Deficit	Wheat:	96 mm
	Potatoes:	87 mm
Moisture Balance	Wheat:	45 mm
	Potatoes:	26 mm
Droughtiness Grade:		1 (Calculated to 120 cm)

Final ALC Grade: 1

Main Limiting Factor(s):

Remarks:

Pit filled with water to 55 cm.

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SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Westford, Wellington	Pit 7 (ASP 159)	1° North	Permanent Grass	Av Rainfall: 879 mm ATO: 1508 day °C FC Days: 185 Climatic Grade: 1 Exposure Grade: 1	Upper Sandstone
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY		SOIL SAMPLE REFERENCES
1/95	21/2/95	ST 129 205	PB/HLJ		RPT/PB/250

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	23	MCL	7.5YR44	2% HR Total (Vis)	None	None	-	-	-	Good	CF, VF	-	Clear smooth
2	50	MSL	2.5YR46	1% HR Total (Vis)	None	None	MCSAB	Friable	Moderate	Good	FF, VF	-	Clear wavy
3	95	MSL	2.5YR46	1% HR Total (Vis)	None	None	MCAB	Friable	Moderate	Good	FF+VF	-	Clear wavy
4	115+	C	2.5YR44	<1% HR Total (Vis)	None	None	MMSAB	Firm	Good	Poor	FF+VF	-	-

Profile Gleyed From: Not gleyed

Depth to Slowly Permeable Horizon: No SPL

Wetness Class: I

Wetness Grade: 1

Available Water	Wheat:	167 mm
	Potatoes:	110 mm
Moisture Deficit	Wheat:	96 mm
	Potatoes:	87 mm
Moisture Balance	Wheat:	71 mm
	Potatoes:	23 mm

Droughtiness Grade: 1 (Calculated to 120 cm)

Final ALC Grade: 1

Main Limiting Factor(s):

Remarks:

Patches of clay in H2 + H3. Patches of LMS in H4.

NL3361

SOIL PLASTICITY RECORDING SHEET

ANNEX 2

SITE DATA

Grid Ref	ST 125 210		Site Name	Westford, Wellington			LPA	Taunton Deane BC	
AAR	879	ATO	1508	FCD	185	MD (wheat)	96	MD (potatoes)	87

SOIL PIT DATA

	PIT ONE ST 125 211 SOIL SERIES Whimple 1			PIT TWO ST 124 211 SOIL SERIES Whimple 1			PIT THREE ST 116 203 SOIL SERIES Whimple 1		
DEPTH	TEXTURE	PLASTIC Y/N	COMMENTS	TEXTURE	PLASTIC Y/N	COMMENTS	TEXTURE	PLASTIC Y/N	COMMENTS
10 cm	MSL	N	Ball no worm	MSL	N	Crumbly ball	MSL	N	Ball, no worm
20 cm	MSL	N	Ball no worm	MSL	N	Crumbly ball	MSL	Y	Cracking worm
30 cm	MSL	Y	Borderline	MSL	N	Crumbly ball	MCL	Y	Good worm
40 cm	MSL	Y	Good worm	MSL	N	Crumbly ball	MCL	Y	Good worm
50 cm	MSL	N	Ball no worm	MSL	N	Crumbly ball	MCL	Y	Cracking worm
60 cm	MSL	N	Ball no worm	MSL	N	Crumbly ball	MCL	Y	Cracking worm

INL569