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**Ashford Borough Local Plan
Site 63, Land off Hitherfield,
Charing, Kent**

**Agricultural Land Classification
ALC Map and Report**

April 1997

**Resource Planning Team
Eastern Region
FRCA Reading**

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AGRICULTURAL LAND CLASSIFICATION REPORT

ASHFORD BOROUGH LOCAL PLAN SITE 63, LAND OFF HITHERFIELD, CHARING, KENT

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of approximately 34 hectares of land between Maidstone Road and the railway line, west of Charing, near Ashford in Kent. The survey was carried out during April 1997.
2. The survey was undertaken by the Farming and Rural Conservation Agency (FRCA) on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF), in connection with its statutory input to the Ashford Borough Local Plan. This survey supersedes any previous ALC information for this land.
3. The work was conducted by members of the Resource Planning Team in the Eastern Region of the FRCA. The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.
4. At the time of survey, the west of the site was in oilseed rape; elsewhere was under permanent pasture which was being grazed by sheep. The areas mapped as 'Other land' include residential dwellings, a surgery and an area of scrub. Land in the centre of the site is mapped as 'Agricultural land not surveyed'; permission to survey this land was not obtained within the timescale for the field survey work.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10,000. It is accurate at this scale, but any enlargement would be misleading.
6. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
1	3.9	15.8	11.4
2	11.6	47.0	33.8
3a	3.2	12.9	9.3
3b	6.0	24.3	17.5
Agricultural land not surveyed	8.4	N/A	24.5
Other land	1.2	N/A	3.5
Total surveyed area	24.7	100.0	72.0
Total site area	34.3	-	100.0

7. The fieldwork was conducted at an average density of approximately one boring per hectare. A total of 31 borings and three soil pits were described.

8. The higher land on this site has typically been classified as Grades 1 and 2 (excellent and very good quality, respectively) together with Subgrade 3a (good quality). The lower lying, flatter land has been classified as Subgrade 3b (moderate quality).

9. Where Grade 1 land is mapped, the soils are deep, well drained and silty textured. The soils are (very) slightly stony and, at this locality, the reserves of soil available water will be sufficient to meet crop needs throughout the growing season in most years. As a result, this land has no or very minor limitations to agricultural use and is suitable for a very wide range of agricultural or horticultural crops.

10. Land classified as Grade 2 is limited by soil droughtiness and/or soil wetness. The soils either overlie calcareous gravelly deposits or Lower Chalk at moderate depths. The interaction between these soil characteristics and the local climate acts to impart slight soil droughtiness, which may act to slightly lower the level and consistency of crop yields. Where the calcareous gravelly deposits occur, the soils are also prone to fluctuating groundwater levels. Consequently, this land may also be equally prone to minor restrictions on the flexibility of cropping, stocking and cultivations. Where these soil droughtiness and soil wetness limitations are slightly more severe, the land has been classified as Subgrade 3a.

11. The lower lying land on the site has been classified as Subgrade 3b, because of significant soil wetness and workability limitations. This land, which forms the edge of a drainage basin, is likely to be prone to high groundwater levels for much of the year. Poor soil drainage can adversely affect seed germination and survival, lower crop yields and also influences the sensitivity of soil to structural damage. Consequently, Subgrade 3b is appropriate.

FACTORS INFLUENCING ALC GRADE

Climate

12. Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

13. The key climatic variables used for grading this site are given overleaf in Table 2 and were obtained from the published 5km grid datasets using the standard interpolation procedures (Met. Office, 1989).

14. The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions.

15. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (AT0, January to June), as a measure of the relative warmth of a locality.

Table 2: Climatic and altitude data

Factor	Units	Values	
Grid reference	N/A	TQ 945 495	TQ 944 498
Altitude	m, AOD	95	105
Accumulated Temperature	day°C (Jan-June)	1397	1386
Average Annual Rainfall	mm	755	760
Field Capacity Days	days	157	157
Moisture Deficit, Wheat	mm	111	110
Moisture Deficit, Potatoes	mm	104	103
Overall climatic grade	N/A	Grade 1	Grade 1

16. The combination of rainfall and accumulated temperature at this site mean that there is no overall climatic limitation. However, climatic factors do interact with soil properties to influence soil wetness and droughtiness limitations. At this locality, the climate is slightly drier than average in regional terms. As a result the likelihood of soil droughtiness problems may be increased. No local climatic factors, such as exposure or frost risk, are believed to adversely affect the land quality on the site. This site is climatically Grade 1.

Site

17. The site occupies a broad basin. The highest land on the site occurs along the western boundary and lies at approximately 105 m AOD. The land falls gently (1-3°), typically in an easterly direction, to the lowest point on the site. The latter, which lies at approximately 90 m AOD, occurs mid-point along the railway line, which forms the southern site boundary. Land in the east of the site is relatively flat (0-1°) and lies at approximately 95 m AOD. Nowhere on the site do gradient or microrelief adversely affect agricultural land quality.

Geology and soils

18. The published geology map (BGS, 1976) shows the highest land, in the north west of the site, to be underlain by Lower Chalk. The remaining area is shown to be underlain by Gault Clay. Alluvial deposits are mapped on the lowest lying land in the centre of the site. Discrete areas in the east and west of the site are shown to be overlain by head deposits.

19. The published soil map for this area (SSEW, 1983) shows the land adjacent to the northern site boundary to comprise soils of the Coombe 2 Association. These soils are described as 'Well drained calcareous fine silty soils over chalk or chalk rubble. Shallow soils in places especially on brows and steeper slopes.' (SSEW, 1983). The remainder of the site is shown as the Denchworth Association. These soils are described as 'Slowly permeable seasonally waterlogged clayey soils with similar fine loamy over clayey soils. Some fine loamy over clayey soils with only slight seasonal waterlogging and some slowly permeable calcareous clayey soils.' (SSEW, 1983).

AGRICULTURAL LAND CLASSIFICATION

20. The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1, page 1.

21. The location of the auger borings and pits is shown on the attached sample location map and the details of the soils data are presented in Appendix II, page 10.

Grade 1

22. Grade 1 (excellent quality) land occurs on the mid-slopes in the north west of the site. This land has no or very minor limitations to agricultural use. Profiles comprise non-calcareous medium silty clay loam topsoils which overlie similarly textured upper subsoils. Lower subsoils comprise either medium or heavy silty clay loams. Topsoils are (very) slightly stony, containing 2-4% flints > 2 cm, 0-3% flints > 6 cm and 5-8% total flints. Subsoils have a similar stone content, containing 2-10% total flints. The relatively dry subsoil conditions at the time of survey meant that most of these profiles proved impenetrable to an auger between 70 and 80 cm depth. Consequently, Pit 2 (see Appendix II) was dug to assess subsoil conditions.

23. From Pit 2 it could be seen that the lower subsoils comprise heavy silty clay loams which are slightly stony (10% total flints by volume) and which pass into silty clay at 95 cm depth. The silty clay was found to be gleyed, poorly structured and slowly permeable; all other subsoil horizons were assessed as being moderately structured and permeable. These profiles are well drained (Wetness Class I), and, given the medium textured topsoils and prevailing climate this land has no or very minor restrictions on the flexibility of cropping, stocking and cultivations. In addition, the silty textures and relatively low stone content means that at this locality these profiles have adequate reserves of soil available water to support a wide range of agricultural or horticultural crops throughout the growing season in most years. Consequently Grade 1 is appropriate.

Grade 2

24. Land classified as Grade 2 (very good quality) is limited by minor soil wetness or by soil droughtiness; across parts of the site, the two limitations act equally to restrict land to this grade. Where soil wetness is the key limitation, topsoils comprise non-calcareous and calcareous medium silty clay loams. These overlie similarly textured and, occasionally, heavy silty clay loam subsoils. Profiles are (very) slightly stony. Topsoils contain 0-2% flints > 2 cm and 1-5% total flints. Upper subsoils have a similar stone content; lower subsoils contain 2-3% total flints and 2-15% total chalk. All of these profiles, which are typified by Pit 3 (see Appendix II), are gleyed within 40 cm and consequently are assessed as moderately well drained (Wetness Class II). The interaction between the medium textured topsoils and soil drainage characteristics at this locality means that this land will be subject to slight restrictions on the flexibility of cropping, stocking and cultivations.

25. Where soil wetness and droughtiness are equally limiting, the profiles are similar to those described in paragraph 24 (gleyed within 40 cm and with medium textured topsoils), but contain more stone and pass into less silty lower subsoils (medium clay loams, heavy clay loams and clays). Upper subsoils are slightly to moderately stony (7-25% total flints and 2-

10% total chalk); lower subsoils are very stony (5-15% total flints and 40-50% total chalk). These profiles are typified by Pit 1 (see Appendix II). The higher stone contents and less silty lower subsoils in these soils means that at this locality the profile available water is not quite sufficient to fully meet crop needs. Consequently, there is a minor risk of drought stress for those crops which are grown. This will result in slightly lower yield potential and less consistent crop yields.

26. Where soil droughtiness is the overriding limitation, profiles comprise non-calcareous medium silty clay loam topsoils which overlie similarly textured or heavy silty clay loam subsoils. Topsoils are very slightly stony, containing 0-4% flints > 2 cm, 0-1% flints > 6 cm and 3-5% total flints. Subsoils have a similar stone content, though become more stony (5-10% total flints and 30% total chalk) at about 85 cm depth. Some calcareous profiles pass into weathered Lower Chalk at 45 to 65 cm depth. All of these profiles are well drained (Wetness Class I). The interaction between the silty textured soils, stone content and the prevailing climate means that this land is subject to a minor soil droughtiness limitation.

Subgrade 3a

27. Most of the land classified as Subgrade 3a (good quality) is limited by soil wetness. Topsoils comprise non-calcareous and calcareous medium silty clay loams. These overlie similarly textured or heavy silty clay loam upper subsoils which are moderately structured and permeable. At approximately 45 to 50 cm depth, these pass into clay and silty clay lower subsoils which are poorly structured and slowly permeable. This results in imperfect soil drainage conditions (Wetness Class III), as indicated by gleying from 30 to 40 cm depth. The interaction between these soil drainage characteristics, medium textured topsoils and the prevailing climate means that this land will have some restrictions on the flexibility of cropping, stocking and cultivations.

28. Land in the north of the site has been classified as Subgrade 3a because of a topsoil stone content limitation. Here, topsoils contain about 12% flints larger than 2 cm. These larger stones may act as an impediment to cultivation, harvesting and crop growth, cause extra wear and tear to implements and tyres and reduce the amount of available water. A small area of the land classified as Subgrade 3a is limited by soil droughtiness. In such profiles, the very stony lower subsoils (approximately 5-15% total flints and 40-50% total chalk, as indicated by Pit 1) occur at much shallower depths within the soil profile. Consequently, these profiles have slightly lower amounts of profile available water and Subgrade 3a is appropriate.

Subgrade 3b

29. The flatter, lower lying land on the site has been classified as Subgrade 3b (moderate quality) because of significant soil wetness and workability limitations. This land, which forms the edge of a drainage basin, is likely to be prone to high groundwater levels for much of the year. Topsoils comprise very calcareous medium silty clay loams. These overlie very calcareous permeable and moderately structured similarly textured or medium clay loam upper subsoils. Topsoils are (very) slightly stony (0-4% flints > 2 cm, 0-3% flints > 6 cm and 3-10% total flints and, in parts, an additional 5% total chalk). Upper subsoils are moderately to very stony (10-25% total flints and 5-20% total chalk). Underlying calcareous stream gravels meant that all of these profiles proved impenetrable to an auger between 50 and 55 cm depth. These profiles are gleyed either directly below the topsoil or at relatively shallow depths

within the profile. Given that no slowly permeable layer occurs within 80 cm such profiles are technically well or moderately well drained (Wetness Classes I and II). However, the flat and low-lying nature of this land means that drainage measures are likely to prove inadequate, and that groundwater levels would be high for much of the year.

30. At the time of survey, these profiles were moist from the surface. Given that March and April 1997 had been exceptionally dry months it was considered that in most years these profiles would be seasonally wet. The predominance of hydrophilic vegetation (sedges and rushes) across the unsurveyed agricultural land proximate to this area also indicate prolonged periods of waterlogging and anaerobic soil conditions. Consequently, this land was assessed as being poorly drained (Wetness Class IV). Adjacent to the railway line, plastic clay subsoils occur at shallow depths within the soil profile. The subsoils are slowly permeable, and result in poor soil drainage conditions (again, Wetness Class IV is appropriate). The interaction between these soil drainage characteristics and the local climate means that all of this land is classified as Subgrade 3b because of soil wetness. Excessive soil wetness adversely affects seed germination and survival, and inhibits the development of a good root system. Soil wetness also imposes restrictions on cultivations, trafficking by machinery or grazing by livestock.

31. Discrete areas proximate to the railway line are limited to Subgrade 3b because of soil droughtiness. These profiles comprise shallow medium silty clay loams which have slightly stony topsoils (2% flints > 2 cm and 5-10% total flints) and moderately stony upper subsoils (15-20% total flints). These profiles proved impenetrable to an auger between 40 and 45 cm depth. Information from an adjoining survey (RPT Job Number: 2001/037/97) indicates that Subgrade 3b is the most appropriate classification for this land.

Gillian Iles
Resource Planning Team
Eastern Region
FRCA Reading

SOURCES OF REFERENCE

British Geological Survey (1976) *Sheet No. 288, Maidstone, 1:50,000 (solid and drift edition)*. BGS: London.

Ministry of Agriculture, Fisheries and Food (1988) *Agricultural Land Classification of England and Wales: Revised guidelines and criteria for grading the quality of agricultural land*. MAFF: London.

Met. Office (1989) *Climatological Data for Agricultural Land Classification*.
Met. Office: Bracknell.

Soil Survey of England and Wales (1983) *Sheet 6, 1:250,000 scale, Soils of South East England and accompanying legend*. SSEW: Harpenden.

APPENDIX I

DESCRIPTIONS OF THE GRADES AND SUBGRADES

Grade 1: Excellent Quality Agricultural Land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2: Very Good Quality Agricultural Land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural or horticultural crops can usually be grown but on some land of this grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1 land.

Grade 3: Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When more demanding crops are grown, yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a: Good Quality Agricultural Land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b: Moderate Quality Agricultural Land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass, or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4: Poor Quality Agricultural Land

Land with severe limitations which significantly restrict the range of crops and/or the level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5: Very Poor Quality Agricultural Land

Land with severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

APPENDIX II

SOIL DATA

Contents:

Sample location map

Soil abbreviations - explanatory note

Soil pit descriptions

Soil boring descriptions (boring and horizon levels)

SOIL PROFILE DESCRIPTIONS: EXPLANATORY NOTE

Soil pit and auger boring information collected during ALC fieldwork is held on a computer database. This uses notations and abbreviations as set out below.

Boring Header Information

1. **GRID REF:** national 100 km grid square and 8 figure grid reference.
2. **USE:** Land use at the time of survey. The following abbreviations are used:

ARA: Arable	WHT: Wheat	BAR: Barley
CER: Cereals	OAT: Oats	MZE: Maize
OSR: Oilseed rape	BEN: Field beans	BRA: Brassicae
POT: Potatoes	SBT: Sugar beet	FCD: Fodder crops
LIN: Linseed	FRT: Soft and top fruit	FLW: Fallow
PGR: Permanent pasture	LEY: Ley grass	RGR: Rough grazing
SCR: Scrub	CFW: Coniferous woodland	OTH: Other
DCW: Deciduous woodland	BOG: Bog or marsh	SAS: Set-Aside
HTH: Heathland	HRT: Horticultural crops	PLO: Ploughed

3. **GRDNT:** Gradient as estimated or measured by a hand-held optical clinometer.
4. **GLEYSPL:** Depth in centimetres (cm) to gleying and/or slowly permeable layers.
5. **AP (WHEAT/POTS):** Crop-adjusted available water capacity.
6. **MB (WHEAT/POTS):** Moisture Balance. (Crop adjusted AP - crop adjusted MD)
7. **DRT:** Best grade according to soil droughtiness.
8. If any of the following factors are considered significant, 'Y' will be entered in the relevant column:

MREL: Microrelief limitation	FLOOD: Flood risk	EROSN: Soil erosion risk
EXP: Exposure limitation	FROST: Frost prone	DIST: Disturbed land
CHEM: Chemical limitation		

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

OC: Overall Climate	AE: Aspect	ST: Topsoil Stoniness
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
EX: Exposure		

Soil Pits and Auger Borings

1. **TEXTURE:** soil texture classes are denoted by the following abbreviations:

S:	Sand	LS:	Loamy Sand	SL:	Sandy Loam
SZL:	Sandy Silt Loam	CL:	Clay Loam	ZCL:	Silty Clay Loam
ZL:	Silt Loam	SCL:	Sandy Clay Loam	C:	Clay
SC:	Sandy Clay	ZC:	Silty Clay	OL:	Organic Loam
P:	Peat	SP:	Sandy Peat	LP:	Loamy Peat
PL:	Peaty Loam	PS:	Peaty Sand	MZ:	Marine Light Silts

For the sand, loamy sand, sandy loam and sandy silt loam classes, the predominant size of sand fraction will be indicated by the use of the following prefixes:

F:	Fine (more than 66% of the sand less than 0.2mm)
M:	Medium (less than 66% fine sand and less than 33% coarse sand)
C:	Coarse (more than 33% of the sand larger than 0.6mm)

The clay loam and silty clay loam classes will be sub-divided according to the clay content:

M: Medium (<27% clay) **H:** Heavy (27-35% clay)

2. **MOTTLE COL:** Mottle colour using Munsell notation.
3. **MOTTLE ABUN:** Mottle abundance, expressed as a percentage of the matrix or surface described:
F: few <2% **C:** common 2-20% **M:** many 20-40% **VM:** very many 40% +
4. **MOTTLE CONT:** Mottle contrast:
F: faint - indistinct mottles, evident only on close inspection
D: distinct - mottles are readily seen
P: prominent - mottling is conspicuous and one of the outstanding features of the horizon
5. **PED. COL:** Ped face colour using Munsell notation.
6. **GLEYS:** If the soil horizon is gleyed a 'Y' will appear in this column. If slightly gleyed, an 'S' will appear.
7. **STONE LITH:** Stone Lithology - one of the following is used:

HR:	all hard rocks and stones	FSST:	soft, fine grained sandstone
ZR:	soft, argillaceous, or silty rocks	CH:	chalk
MSST:	soft, medium grained sandstone	GS:	gravel with porous (soft) stones
SI:	soft weathered igneous/metamorphic rock	GH:	gravel with non-porous (hard) stones

Stone contents (>2cm, >6cm and total) are given in percentages (by volume).

8. **STRUCT**: the degree of development, size and shape of soil peds are described using the following notation:

Degree of development	WK : weakly developed	MD : moderately developed
	ST : strongly developed	
Ped size	F : fine	M : medium
	C : coarse	
Ped shape	S : single grain	M : massive
	GR : granular	AB : angular blocky
	SAB : sub-angular blocky	PR : prismatic
	PL : platy	

9. **CONSIST**: Soil consistence is described using the following notation:

L: loose **VF**: very friable **FR**: friable **FM**: firm **VM**: very firm
EM: extremely firm **EH**: extremely hard

10. **SUBS STR**: Subsoil structural condition recorded for the purpose of calculating profile droughtiness: **G**: good **M**: moderate **P**: poor
11. **POR**: Soil porosity. If a soil horizon has less than 0.5% biopores >0.5 mm, a 'Y' will appear in this column.
12. **IMP**: If the profile is impenetrable to rooting a 'Y' will appear in this column at the appropriate horizon.
13. **SPL**: Slowly permeable layer. If the soil horizon is slowly permeable a 'Y' will appear in this column.
14. **CALC**: If the soil horizon is calcareous, a 'Y' will appear in this column.
15. Other notations:

APW: available water capacity (in mm) adjusted for wheat
APP: available water capacity (in mm) adjusted for potatoes
MBW: moisture balance, wheat
MBP: moisture balance, potatoes

SOIL PIT DESCRIPTION

Site Name : ASHFORD BLP, SITE 63 Pit Number : 1P

Grid Reference: TQ94904950 Average Annual Rainfall : 755 mm
 Accumulated Temperature : 1397 degree days
 Field Capacity Level : 157 days
 Land Use : Permanent Grass
 Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 23	MZCL	10YR42 00	2	10	HR					Y
23- 47	MZCL	10YR62 00	0	25	HR	C	WKVSAB	FR	M	Y
47- 69	MCL	10YR62 00	0	25	HR	M	MDVSAB	FR	M	Y
69-120	MCL	25Y 72 00	0	40	CH	M	WKCSAB	FR	M	Y

Wetness Grade : 2 Wetness Class : II
 Gleying : 023 cm
 SPL : No SPL

Drought Grade : 2 APW : 124mm MBW : 13 mm
 APP : 96 mm MBP : -8 mm

FINAL ALC GRADE : 2
 MAIN LIMITATION : Soil Wetness/Droughtiness

SOIL PIT DESCRIPTION

Site Name : ASHFORD BLP, SITE 63 Pit Number : 2P

Grid Reference: TQ94404970 Average Annual Rainfall : 755 mm
 Accumulated Temperature : 1397 degree days
 Field Capacity Level : 157 days
 Land Use : Oilseed Rape
 Slope and Aspect : 02 degrees E

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 28	MZCL	10YR43 00	4	6	HR					
28- 42	MZCL	10YR44 00	0	5	HR		MDCSAB	FR	M	
42- 70	HZCL	10YR44 00	0	5	HR		MDCSAB	FR	M	
70- 95	HZCL	10YR44 00	0	10	HR		MDCSAB	FR	M	
95-120	ZC	25 Y53 62	0	5	HR	M		FM	P	

Wetness Grade : 1 Wetness Class : I
 Gleying : 095 cm
 SPL : 095 cm

Drought Grade : 1 APW : 144mm MBW : 33 mm
 APP : 118mm MBP : 14 mm

FINAL ALC GRADE : 1
 MAIN LIMITATION :

SOIL PIT DESCRIPTION

Site Name : ASHFORD BLP, SITE 63 Pit Number : 3P

Grid Reference: TQ94424953 Average Annual Rainfall : 755 mm
 Accumulated Temperature : 1397 degree days
 Field Capacity Level : 157 days
 Land Use : Oilseed Rape
 Slope and Aspect : 01 degrees E

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 26	MZCL	10YR42 00	2	5	HR					
26- 38	MZCL	10YR44 43	0	3	HR		MVCSAB	FR	M	Y
38- 67	HZCL	25Y 53 54	0	3	HR	C	MDCSAB	FM	M	Y
67- 90	MZCL	10YR72 63	0	10	CH	C	MDCSAB	FR	M	Y
90-120	MZCL	10YR72 71	0	15	CH	C	MDCSAB	FR	M	Y

Wetness Grade : 2 Wetness Class : II
 Gleying : 038 cm
 SPL : No SPL

Drought Grade : 1 APW : 154mm MBW : 43 mm
 APP : 120mm MBP : 16 mm

FINAL ALC GRADE : 2
 MAIN LIMITATION : Wetness

SAMPLE NO.	GRID REF	ASPECT USE	--WETNESS--				-WHEAT-		-POTS-		M.REL		EROSN	FROST	CHEM	ALC	COMMENTS
			GRDNT	GLEY	SPL	CLASS	GRADE	AP	MB	AP	MB	DRT	FLOOD	EXP	DIST	LIMIT	
1	TQ94504990	OSR S	02			1	1	118	7	118	14	2			DR	2	I85chalk/flint
1P	TQ94904950	PGR		023		2	2	124	13	96	-8	2			WD	2	Deep calc grav
2	TQ94404980	OSR E	03			1	1	134	23	111	7	2			DR	2	Lower chalk 65
2A	TQ94384976	OSR E	03			1	1	130	19	102	-2	2			DR	2	Lower chalk 45
2P	TQ94404970	OSR E	02	095	095	1	1	144	33	118	14	1				1	Plastic 95
3	TQ94504960	OSR				1	1	101	-10	113	9	3A				1	Imp70 see 2P
3P	TQ94424953	OSR E	01	038		2	2	154	43	120	16	1			WE	2	Deep calc grav
4	TQ94604960	OSR		055		1	1	113	2	118	14	3A			DR	2	Imp80 prob 2DR
5	TQ94404970	OSR E	02			1	1	108	-3	116	12	3A				1	Imp75 see 2P
6	TQ94504970	OSR E	01	075		1	1	154	43	119	15	1				1	S1 gleyed 60
7	TQ94604970	OSR				4	3B	83	-21	83	-21	3B			WE	3B	Low;calcgravel
9	TQ94304960	OSR E	01	035	050	3	3A	134	23	109	5	2			WE	3A	Plastic 50
10	TQ94404960	OSR E	02			1	1	114	3	117	13	3A				1	Imp80 see 2P
11	TQ94504960	OSR E	02			1	1	71	-40	71	-33	3B			DR	2	I40 flinter 2P
12	TQ94604960	OSR		030		4	3B	85	-26	85	-19	3B			WE	3B	Low;calcgravel
15	TQ94904960	PGR SW	02	023		2	2	96	-15	94	-10	3A			ST	3A	I85 calcgravel
15S	TQ94954958	PGR							0		0				ST	1	T/soil ST nr15
16	TQ94304950	OSR		028		2	2	72	-39	72	-32	3B			DR	3B	Imp45 see59/87
17	TQ94404950	OSR E	01	032		2	2	158	47	122	18	1			WE	2	
18	TQ94504950	OSR E	01	030	098	2	2	155	44	120	16	1			WE	2	
19	TQ94624950	OSR		045		4	3B	80	-31	81	-23	3B			WE	3B	Low;calcgravel
21	TQ94814952	PGR		0		4	3B		0		0				WE	3B	Low lying
22	TQ94904950	PGR		020		2	2	122	11	114	10	2			WD	2	Imp95 see 1P
23	TQ95004950	PGR		040	070	2	2	115	4	116	12	3A			WD	2	Imp85 flinty
24	TQ94504940	OSR E	01	030	090	2	2	140	29	116	12	2			WD	2	
25	TQ94604940	OSR E	01	025		2	2	157	46	122	18	1			WE	2	
26	TQ94184952	OSR		0		2	2	67	-44	67	-37	3B			DR	3B	Imp40 see59/87
27	TQ94394942	OSR		0	030	4	3B		0		0				WE	3B	Plastic 30
28	TQ94904940	PGR		035		2	2	146	35	112	8	2			WE	2	
29	TQ95004940	PGR SW	01	032		2	2	134	23	123	19	2			WD	2	Imp95 see 1P
30	TQ94654933	OSR		030		4	3B	81	-30	83	-21	3B			WE	3B	Low;calcgravel
31	TQ94904930	PGR		030	045	3	3A	130	19	105	1	2			WE	3A	
32	TQ95004930	PGR W	01	030		2	2	101	-10	108	4	3A			DR	3A	Imp62 flinty
33	TQ95094937	PGR				1	1	66	-45	66	-38	3B			DR	3B	Imp45 distbd
34	TQ94884924	PGR N	02	028	028	4	3B		0		0				WE	3B	

SAMPLE	DEPTH	TEXTURE	COLOUR	-----MOTTLES-----			PED COL.	-----STONES-----				STRUCT/ CONSIST	SUBS			CALC		
				COL	ABUN	CONT		GLE	>2	>6	LITH		TOT	STR	POR		IMP	SPL
1	0-25	mzc1	10YR43 00					0	0	HR	3						Y	
	25-40	mzc1	10YR43 54					0	0	HR	5		M				Y	
	40-75	mzc1	10YR54 00					0	0	HR	8		M				Y	
	75-85	mzc1	10YR54 65					0	0	CH	30		M				Y +5% flints; Imp85	
1P	0-23	mzc1	10YR42 00					2	0	HR	10						Y	
	23-47	mzc1	10YR62 00	10YR68 00 C				Y	0	0	HR	25	WKVSAB	FR M			Y +2%ch;weak vcoarse	
	47-69	mc1	10YR62 00	10YR68 00 M				Y	0	0	HR	25	MDVSAB	FR M			Y +10%ch;mod vcoarse	
	69-120	mc1	25Y 72 00	10YR58 00 M				Y	0	0	CH	40	WKCSAB	FR M			Y +15% flints	
2	0-25	mzc1	10YR43 00					0	0	HR	5						Y	
	25-50	hzc1	75YR46 00	00M00 00 F				0	0	HR	8		M				Y	
	50-65	hzc1	75YR46 58	00M00 00 F				0	0	HR	15		M				Y	
	65-120	ch	10YR82 71	10YR66 00 F				0	0	HR	5		P				Y Lower chalk	
2A	0-28	mzc1	10YR33 00					3	0	HR	5						Y	
	28-45	mzc1	10YR54 00					0	0	HR	5		M				Y +10% chalk	
	45-120	ch	10YR72 82	10YR66 00 F				0	0	HR	2		P				Y Lower chalk	
2P	0-28	mzc1	10YR43 00					4	3	HR	6						Y	
	28-42	mzc1	10YR44 00					0	0	HR	5	MDCSAB	FR M			Y		
	42-70	hzc1	10YR44 00					0	0	HR	5	MDCSAB	FR M			Y		
	70-95	hzc1	10YR44 00					0	0	HR	10	MDCSAB	FR M	Y		Y		
	95-120	zc	25 Y53 62	10YR58 00 M	00M00 00 Y			0	0	HR	5		FM P	Y	Y	Y	Plastic- spl	
3	0-25	mzc1	10YR43 00					2	0	HR	8						Y	
	25-50	mzc1	10YR44 00					0	0	HR	10		M				Y	
	50-70	mzc1	10YR54 00					0	0	HR	10		M				Y Imp70 flinty	
3P	0-26	mzc1	10YR42 00					2	0	HR	5						Y	
	26-38	mzc1	10YR44 43					0	0	HR	3	MVCSAB	FR M			Y		
	38-67	hzc1	25Y 53 54	10YR56 00 C	00M00 00 Y			0	0	HR	3	MDCSAB	FM M			Y		
	67-90	mzc1	10YR72 63	10YR66 00 C	00M00 00 Y			0	0	CH	10	MDCSAB	FR M			Y +2% flints		
	90-120	mzc1	10YR72 71	10YR56 00 C				Y	0	0	CH	15	MDCSAB	FR M			Y	
4	0-25	mzc1	10YR33 00					4	1	HR	5						Y	
	25-40	mzc1	10YR34 00					0	0	HR	5		M				Y	
	40-55	hzc1	10YR44 00					0	0	HR	5		M				Y	
	55-75	hzc1	10YR53 00	10YR56 00 C				Y	0	0	HR	5		M				Y
	75-80	zc	10YR53 00	10YR56 00 C				Y	0	0	HR	10		M				Y Imp80 flinty
5	0-30	mzc1	10YR43 00					4	0	HR	5						Y	
	30-42	mzc1	10YR43 00					0	0	HR	10		M				Y	
	42-75	hzc1	10YR44 00	00M00 00 F				0	0	HR	10		M				Y Imp75 stone	
6	0-28	mzc1	10YR43 00					4	1	HR	5						Y	
	28-60	mzc1	10YR44 00					0	0	HR	5		M				Y	
	60-75	mzc1	10YR54 00	75YR56 00 C	00M00 00 S			0	0	HR	5		M				Y S1 gleyed	
	75-90	mzc1	10YR53 00	75YR56 00 C	00M00 00 Y			0	0	HR	2		M				Y	
	90-120	hzc1	10YR53 00	75YR56 00 C	00M00 00 Y			0	0	HR	2		M				Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES---			PED		---STONES---			STRUCT/ CONSIST	SUBS			CALC	
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	STR	POR		IMP
7	0-25	mzc1	10YR33 00						4	3	HR	5				Y	+5% chalk
	25-50	mzc1	10YR33 00						0	0	HR	10	M			Y	+5% chalk; Imp50
9	0-35	mzc1	10YR43 00						2	0	HR	5					+1% chalk
	35-40	mzc1	25 Y53 00 10YR58 00 C					Y	0	0	HR	10	M				
	40-50	hzc1	25 Y53 52 10YR58 00 C				00MNO0 00 Y		0	0	HR	10	M				Border mzc1
	50-75	zc	25 Y52 62 75YR58 00 M				00MNO0 00 Y		0	0	HR	5	P		Y		Plastic
	75-90	c	25 Y62 63 10YR58 00 C				00MNO0 00 Y		0	0	HR	2	P		Y		Plastic
	90-120	c	05 Y61 62 10YR58 00 C				00MNO0 00 Y		0	0	HR	2	P		Y		Plastic
10	0-30	mzc1	10YR43 00						3	0	HR	5					
	30-55	mzc1	10YR44 00						0	0	HR	10	M				
	55-70	mzc1	10YR54 00						0	0	HR	5	M				
	70-80	hzc1	10YR56 00 10YR53 00 F						0	0	HR	2	M				Imp80 flinty
11	0-30	mzc1	10YR33 00						3	1	HR	5					
	30-40	mzc1	10YR43 00 10YR56 00 C					S	0	0	HR	5	M				Imp40 flinty
12	0-30	mzc1	10YR32 00						4	3	HR	6			Y		V calc
	30-50	mzc1	10YR43 00 10YR56 00 C					S	0	0	HR	5	M		Y		+5% chalk; Imp50
15	0-23	mzc1	10YR43 00						12	7	HR	25					
	23-40	hzc1	25 Y64 63 10YR46 00 M				00MNO0 00 Y		0	0	HR	20	M				
	40-85	mc1	25 Y62 00 25 Y68 00 M				00MNO0 00 Y		0	0	HR	15	M		Y		+25% chalk; Imp80
15S	0-25	mzc1	10YR43 00						3	2	HR	7					Measure of ST
	28-45	mzc1	10YR53 00 10YR58 00 C				00MNO0 00 Y		0	0	HR	20	M				+2% chalk; Imp45
17	0-32	mzc1	10YR42 00						2	0	HR	5					
	32-55	hzc1	10YR53 00 10YR58 00 C				00MNO0 00 Y		0	0	HR	2	M		Y		Soft & friable
	55-120	hzc1	10YR63 00 10YR58 00 C				00MNO0 00 Y		0	0		0	M		Y		Soft & friable
18	0-30	mzc1	10YR53 00						2	0	HR	5			Y		
	30-75	mzc1	25Y 53 00 10YR58 00 C				00MNO0 00 Y		0	0	CH	5	M		Y		+2% flints
	75-98	mc1	10YR72 00 10YR58 00 M					Y	0	0	CH	10	M		Y		+2% flints
	98-120	hzc1	10YR71 00 10YR66 00 C					Y	0	0	CH	5	P		Y	Y	V pale-spl
19	0-30	mzc1	10YR42 00						2	0	HR	10			Y		
	30-45	mzc1	10YR42 00						0	0	HR	20	M		Y		+5% chalk
	45-52	mzc1	10YR53 00 10YR58 00 C					Y	0	0	HR	20	M		Y		+5% chalk
21	0-25	omzc1	25Y 41 00 75YR58 00 C					Y	0	0	HR	3			Y		Nr rushy area
	25-42	mzc1	25Y 52 00 75YR58 00 M					Y	0	0	HR	25	M		Y		+5% chalk
	42-65	mzc1	25Y 51 00 10YR56 00 C					Y	0	0	HR	20	M		Y		+5% chalk
	65-70	mc1	25Y 51 00 10YR56 00 C					Y	0	0	HR	20	M		Y		+10% chalk

SAMPLE	DEPTH	TEXTURE	COLOUR	---MOTTLES---			PED		---STONES---			STRUCT/	SUBS			CALC	
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH		TOT	CONSIST	STR		POR
22	0-20	mzc1	10YR33 00						3	0	HR	5					Y
	20-45	mzc1	10YR42 00 10YR56 00 C					Y	0	0	HR	7	M			Y	+3% chalk
	45-75	mzc1	10YR42 00 10YR58 00 M					Y	0	0	CH	10	M			Y	+5% flints
	75-95	mc1	25 Y64 63 10YR56 00 M				00M00	00	Y	0	0	CH	50	M		Y	+5% flints; Imp95
23	0-25	mzc1	10YR43 00						0	0	HR	3					Y
	25-40	mzc1	10YR43 00 10YR58 00 C					S	0	0	HR	5	M			Y	
	40-70	hc1	10YR53 00 75YR58 00 M					Y	0	0	HR	5	M			Y	
	70-85	c	10YR53 54 75YR58 56 M				00M00	00	Y	0	0	HR	2	P		Y	Y
24	0-30	mzc1	10YR42 00						2	0	HR	5					Y
	30-50	mzc1	10YR63 00 10YR68 00 C					Y	0	0	HR	20	M			Y	+2% chalk
	50-75	hzc1	25Y 62 00 10YR58 00 C					Y	0	0		0	M			Y	
	75-90	mzc1	10YR72 00 10YR66 00 C					Y	0	0		0	M			Y	
	90-120	hzc1	10YR71 00 10YR66 00 C				00M00	00	Y	0	0		0	P		Y	Y
25	0-25	mzc1	10YR42 00						0	0	HR	1					
	25-55	mzc1	10YR63 00 10YR68 00 C					Y	0	0	HR	2	M				
	55-120	mzc1	10YR62 00 10YR58 00 C				00M00	00	Y	0	0	HR	2	M		Y	+2% chalk
26	0-25	mzc1	10YR42 00 10YR46 00 C					Y	2	0	HR	5					
	25-40	hzc1	10YR52 00 10YR46 00 C					Y	0	0	HR	15	M				Imp40 flinty
27	0-30	mzc1	10YR42 00 75YR46 00 C					Y	2	0	HR	5					
	30-55	c	10YR61 00 75YR68 00 M					Y	0	0		0	P		Y		Plastic
	55-90	zc	10YR61 00 75YR68 00 M					Y	0	0		0	P		Y		Plastic
28	0-35	z1	10YR32 00						0	0		0					
	35-50	omzc1	10YR21 00 10YR68 00 C					Y	0	0		0	M				
	50-120	mzc1	10YR71 00 10YR68 00 M					Y	0	0	CH	20	M			Y	
29	0-32	mzc1	10YR42 00 75YR46 00 F						0	0	HR	2					Border z1
	32-38	hzc1	25Y 52 00 10YR58 00 C					Y	0	0	HR	2	M				
	38-88	hzc1	10YR72 00 10YR68 00 M					Y	0	0	CH	5	M		Y		Border mzc1
	88-95	mzc1	10YR72 00 10YR66 00 M					Y	0	0	CH	20	M		Y		195 calc gravel
30	0-30	mzc1	10YR42 00						2	0	HR	5					Y
	30-48	mc1	10YR62 00 10YR58 00 C					Y	0	0	HR	25	M			Y	+10% chalk
	48-55	mc1	10YR63 00 10YR58 00 C					Y	0	0	HR	25	M			Y	+20% chalk; Imp55
31	0-30	mzc1	25Y 42 00						2	0	HR	10					Y
	30-45	hzc1	25Y 53 00 10YR68 00 C					Y	0	0	HR	5	M			Y	Friable- not spl
	45-120	zc	10YR71 00 10YR66 00 M				00M00	00	Y	0	0	HR	2	P		Y	Y
32	0-30	mzc1	10YR42 00						0	0	HR	2					
	30-45	mzc1	25Y 42 00 75YR46 00 C					Y	0	0	HR	2	M				
	45-55	mzc1	25Y 41 00 75YR46 00 C					Y	0	0	HR	2	M				Border hzc1
	55-62	hc1	25Y 51 00 10YR58 00 C					Y	0	0	HR	5	M			Y	Imp 62 flinty

SAMPLE	DEPTH	TEXTURE	COLOUR	----MOTTLES-----			PED	----STONES----			STRUCT/	SUBS	SPL	CALC	
				COL	ABUN	CONT	COL.	GLE	>2	>6	LITH	TOT			CONSIST
33	0-20	msz1	10YR42 00					6	0	HR	20			+ brick & metal	
	20-30	mc1	25Y 42 00					0	0	HR	20	M		+ brick	
	30-45	mc1	10YR53 00					0	0	HR	10	M		+ brick; Imp45	
34	0-28	mzc1	10YR42 00					0	0	HR	2				
	28-38	hzc1	10YR62 00	10YR68	00	C		Y	0	0	HR	1	P	Y	Firm- spl
	38-85	zc	10YR61 00	10YR66	00	M		Y	0	0		0	P	Y	