2011/133/94

AGRICULTURAL LAND CLASSIFICATION REPORT

SWALE BOROUGH LOCAL PLAN

LAND SOUTH OF TEYNHAM
SITE DD

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Summary

1.1 ADAS was commissioned by MAFF's Land Use Planning Unit to provide information on land quality on land south of Teynham (Site DD). This work was in connection with Swale Borough Local Plan.

1.2 Approximately 47 hectares of land relating to Swale Borough Local Plan was surveyed in July 1994. The survey was undertaken at a detailed level of approximately one boring per hectare. A total of 41 borings and 2 soil inspection pits were assessed in accordance with MAFF's 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 its use for agriculture.

1.3 The work was carried out by members of the Resource Planning Team in the Huntingdon Statutory Group of ADAS.

1.4 At the time of survey, the agricultural land use was orchards, wheat, oilseed rape and small areas of grass paddocks. The Non-agricultural area is a garden and the areas of Urban include a new cold storage depot, stables, new bungalow and associated buildings and houses. The unsurveyed land includes an inaccessible overgrown orchard and land which is no longer within the Local Plan Area.

1.5 The distribution of the grades and subgrades is shown on the attached ALC map and the areas are given in the table below. The map has been drawn at a scale of 1:10 000. It is accurate at this scale but any enlargement would be misleading. This map supersedes any previous survey information for this site.

Table 1 : Distribution of Grades and Subgrades

Grade	Area (ha)	% of Site	% of Agricultural Area
1	30.4	65.1	78.4
2	8.3	17.8	21.4
Subgrade 3b	0.1	0.2	0.2
Non Agricultural	0.1	0.2	**100% (ha)**
Woodland	0.1	0.2	
Unsurveyed	3.9	8.4	
Urban	3.8	8.1	
Total	**46.7 ha**	**100%**	**100% (38.8 ha)**

1.6 A general description of the grades, subgrades and land use categories is provided in Appendix 1. The main classes are described in terms of the type of limitation that can occur, the typical cropping range and the expected level and consistency of yield.

1.7 The land quality on the site has been classified predominantly as grades 1 and 2 (excellent and very good quality land) as a result of no limitations or minor wetness and/or droughtiness. A small area of land is graded 3b to the south west of Orchard House due to gradients at 10°.

2.0 Climate

2.1 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.

2.2 The main parameters used in the assessment of an overall climatic limitation are average annual rainfall, as a measure of overall wetness, and accumulated temperature, as a measure of the relative warmth of a locality. The combination of rainfall and temperature at this site means that the site is classified as climatic grade 1.

Table 2 : Climatic Interpolation

Grid Reference	TQ 948 626
Altitude (m, AOD)	18
Accumulated Temperature (° C days, Jan-June)	1429
Average Annual Rainfall (mm)	635
Field Capacity Days	126
Moisture Deficit, wheat (mm)	118
Moisture Deficit, potatoes (mm)	114
Overall Climatic Grade	1

3.0 Relief

3.1 Much of the site is gently undulating with a maximum altitude of 26 m AOD to the west of Cellar Hill falling to a minimum altitude of 13 m AOD at the western end of the site. Two northerly running dry valleys dissect the site and to the southwest of Orchard House a small area of the valley side was measured at 10° using a hand held clinometer. Only in this area does gradient impose a limitation on the ALC grade.

4.0 Geology and Soils

4.1 The published geology map for the site area, (BGS Sheet 272, 1977) shows much of the site to be underlain by Head Brickearth. However, between Cellar Hill and

to the east of Lynsted Lane there is an outcrop of Thanet Beds and Sands and in the valley bottom to the east of Cellar Hill Chalk is mapped.

4.2 The published soils information for the area (SSEW 1983, Sheet 6, 1:250 000) shows the whole site to comprise the Hamble 1 Association, described as deep well drained often stoneless fine silty soils.

5.0 Agricultural Land Classification

5.1 The ALC classification of the site is shown on the attached ALC map.

5.2 The location of the soil observation points is shown on the attached sample point map.

Grade 1

5.3 Grade 1 land has been mapped over the majority of the site. Soils typically comprise either deep very slightly stony non calcareous silty loams or silty loam topsoil (occasionally medium silty clay loam) over medium silty clay loam subsoils which occasionally become heavy silty clay loam at depth. In a small area to the west of Lynsted Lane soft chalk is encountered at variable depths. Soils are well drained and assessed as wetness class I. The high moisture reserves of these silty profiles ensures that available water is more than adequate to meet the demands of a growing crop throughout the year. Consequently, this land has no limitation to agricultural use and has therefore been graded 1 (excellent quality agricultural land).

Grade 2

5.4 Grade 2 land has been mapped in the vicinity of Cellar Hill and also to the south of the Transport Depot at the eastern end of the site.

5.5 Profiles in the vicinity of Cellar Hill typically comprise very slightly stony non calcareous silt loam or medium silty clay loam topsoils over medium/heavy silty clay loam upper subsoils. Lower subsoils (typically below 45/65 cm) comprise stoneless non calcareous slowly permeable clay. Soils have been assessed as wetness class II and thus the land is limited by slight wetness and workability limitations. The slightly heavier profile textures also impose minor constraints on the availability of water for crop growth therefore slight droughtiness is also a limitation to this land.

5.6 Land to the south of the Transport Depot has been disturbed with additional soil material spread on this area. Topsoils are silt loam over similar subsoils which contain variable amounts of chalk and are compacted. These factors slightly reduce the amount of water available for crop growth and this land is limited to grade 2 by slight droughtiness constraints.

Subgrade 3b

5.7 As mentioned in paragraph 3.1 a small area of land to the southwest of Orchard House is limited to subgrade 3b due to gradient measured at 10°.

Non Agricultural

5.8 An extended garden is mapped as non agricultural together with a small area of woodland to the south of White Hall.

Urban

5.9 A cold storage depot, dwellings, stables and farm buildings are mapped as urban.

Unsurveyed

6.0 An inaccessible overgrown orchard and land which is no longer in the Local Plan area are mapped as unsurveyed.

ADAS Reference: 2011/133/94
MAFF Reference : EL 20/245

Resource Planning Team
Huntingdon Statutory Group
ADAS Cambridge

REFERENCES

GEOLOGICAL SURVEY OF ENGLAND AND WALES, 1977. Sheet 272 Chatham. Solid and Drift Edition 1:63 360 scale.

MAFF 1968. Agricultural Land Classification Map No 172 1:63 60 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. Published climatic data extracted from the agroclimatic dataset compiled by the Meteorological Office.

SOIL SURVEY OF ENGLAND AND WALES 1983. Soils of South East England, Sheet 6, 1:250 000 scale.

Appendix 1

DESCRIPTION OF THE GRADES AND SUBGRADES

The ALC grades and subgrades are described below in terms of the types of limitation which can occur, typical cropping range and the expected level of consistency of yield. In practice, the grades are defined by reference to physical characteristics and the grading guidance and cut-offs for limitation factors in Section 3 enable land to be ranked in accordance with these general descriptions. The most productive and flexible land falls in Grades 1 and 2 and Subgrade 3a and collectively comprises about one-third of the agricultural land in England and Wales. About half the land is of moderate quality in Subgrade 3b or poor quality in Grade 4. Although less significant on a national scale such land can be locally valuable to agriculture and the rural economy where farmland predominates. The remainder is very poor quality land in Grade 5, which most occurs in the uplands.

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 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 levels of yields. It is mainly suited to grass with occasional arable crops (eg. cereals and forage crops) the yield 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 parkland, 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.

Woodland

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm woodland.

Agricultural buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (e.g. polythene tunnels erected for lambing) may be ignored.

Open water

Includes lakes, ponds and rivers as map scale permits.

Land not surveyed

Where the land use includes more than one of the above land cover types, e.g. buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will usually be shown.

Appendix 2

FIELD ASSESSMENT OF SOIL WETNESS CLASS

Definition of Soil Wetness Classes

Wetness Class	Duration of Waterlogging[1]
I	The soil profile is not wet within 70 cm depth for more than 30 days in most years[2].
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.
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.
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.
V	The soil profile is wet within 40 cm depth for 211-335 days in most years.
VI	The soil profile is wet within 40 cm depth for more than 335 days in most years.

[1] The number of days specified is not necessarily a continuous period.

[2] 'In most years' is defined as more than 10 out of 20 years.

Appendix 3

SOIL BORING AND SOIL PIT DESCRIPTIONS

Contents:

* Soil boring descriptions
* Soil pit descriptions
* Soil Abbreviations : Explanatory Note

SAMPLE NO.	GRID REF	ASPECT USE		GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	TQ94206270	OSR	N	02	000		1	1	209	91	156	42	1					1	
3	TQ94106260	OSR	SE	01	000		1	1	203	85	157	43	1					1	
4	TQ94206260	WHT	SE	01	000		1	1	211	93	157	43	1					1	
5	TQ94306260	WHT	S	04	000		1	1	146	28	123	9	2			Y	DR	2	DIST
6	TQ94406260	LEY			030		1	1	156	38	120	6	2				DR	2	DISTURBD
7	TQ94306250	WHT	NE	01	000		1	1	207	89	156	42	1					1	
8	TQ94406250	WHT	E	01	000		1	1	151	33	124	10	1			Y	DR	1	BORDER 2
9	TQ94506250	WHT	E	02	000		1	1	211	93	157	43	1					1	
10	TQ94606250	FLW	N	01	000		1	1	192	74	156	42	1					1	
11	TQ94706250	FLW	NW		000		1	1	185	67	150	36	1					1	
12	TQ94806250	FLW	NW		000		1	1	187	69	152	38	1					1	
13	TQ94906250	WHT	NW		000		1	1	198	80	144	30	1					1	
14	TQ94606240	FLW	N	01	000		1	1	170	52	134	20	1					1	
15	TQ94706240	FLW	NW	01	000		1	1	184	66	149	35	1					1	
16	TQ94806240	FLW	NW		000		1	1	184	66	148	34	1					1	
17	TQ94906240	WHT	NW		000		1	1	171	53	130	16	1					1	
18	TQ95006240	FRT	NW		000		1	1	193	75	155	41	1					1	
19	TQ94806230	WHT	NW		000		1	1	200	82	156	42	1					1	
20	TQ94906230	WHT	NW		000		1	1	186	68	144	30	1					1	
21	TQ95006230	WHT	NW	03	000		1	1	208	90	154	40	1					1	
22	TQ95206230	FRT	N	01	080		1	1	179	61	143	29	1					1	
23	TQ95306230	FRT	N	02	065	065	2	2	160	42	138	24	1				WE	2	POSS 1
24	TQ95406230	FRT	NW	01	055	055	2	2	139	21	116	2	2				WE	2	
25	TQ95506230	FRT	E	02	035	035	3	3A	140	22	117	3	2				WE	3A	
27	TQ95106220	PGR	N		000		1	1	186	68	151	37	1					1	
28	TQ95206220	PGR	N		000		1	1	166	48	128	14	1			Y		1	
29	TQ95306220	FRT	N		065	065	2	2	157	39	135	21	1				WE	2	
30	TQ95406220	FRT	N	02	045	055	2	2	139	21	116	2	2				WE	2	DR TOO
31	TQ95606220	PGR	E	02	060		1	1	156	38	120	6	2				DR	2	
32	TQ95706220	WHT	E	03	000		1	1	161	43	125	11	1					1	
33	TQ95806220	PGR	W	01	050		1	1	209	91	155	41	1					1	
35	TQ95306210	FRT	W	01	045	045	2	2	141	23	113	-1	2				WE	2	DR TOO
37	TQ95506210	FRT	NE	02	060		2	2	133	15	111	-3	2				WE	2	DR TOO
38	TQ95606210	WHT	NE	04	000		1	1	159	41	124	10	1				DR	2	
39	TQ95706210	WHT	NE	02	000		1	1	181	63	143	29	1					1	
40	TQ95806210	PGR	W	06	000		1	1	184	66	148	34	1					1	
41	TQ95906210	OSR	N	02	000		1	1	210	92	156	42	1					1	
43	TQ95606200	WHT	E	04	000			1	155	37	119	5	2					1	BORDER 2
44	TQ95706200	FLW	NE		060		1	1	185	67	132	18	1					1	
45	TQ95006220	WHT	NW		000		1	1	181	63	146	32	1					1	
46	TQ95136236	PGR	N	02	000		1	1	164	46	130	16	1			Y		1	TS DIST

COMPLETE LIST OF PROFILES 08/01/94 S OF TEYNHAM DD SWALE LP

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
1	0-35	zl	10YR43 00						1	0	HR	1						Y
	35-60	zl	10YR63 64						0	0	HR	1		M				Y
	60-120	zl	10YR64 63	10YR66 00	F				0	0	HR	1		M				Y
3	0-35	zl	10YR43 00						1	0	HR	1						
	35-90	zl	10YR64 63						0	0		0		M				Y
	90-95	zl	10YR64 63	10YR62 00	F				0	0	HR	10		M				Y
	95-120	zl	10YR64 00	10YR62 00	F				0	0	HR	20		M				Y
4	0-35	zl	10YR43 00						1	0	HR	1						
	35-50	zl	10YR65 64						0	0		0		M				Y
	50-120	zl	10YR65 64	10YR62 00	F				0	0		0		M				Y
5	0-35	zl	10YR43 00						0	0		0						Y
	35-65	zl	10YR43 00						0	0	CH	60		P				Y
	65-75	c	10YR65 00						0	0		0		P	Y			Y
	75-120	c	10YR65 00						0	0	HR	20		M				Y
6	0-30	zl	10YR43 00						2	0	HR	2						Y
	30-50	mzcl	10YR54 00	10YR58 00	C			Y	0	0	CH	20		P	Y			Y
	50-60	c	10YR54 53	10YR58 00	C			Y	0	0	HR	5		P	Y			Y
	60-120	mzcl	10YR54 00	10YR58 00	F			Y	0	0	HR	2		M	Y			Y
7	0-35	zl	10YR54 53						1	0	HR	1						
	35-65	zl	10YR64 63						0	0		0		M				Y
	65-120	zl	10YR64 63						0	0	HR	5		M				Y
8	0-35	zl	10YR44 00						0	0	HR	1						Y
	35-40	zl	10YR54 53	10YR58 00	F				0	0		0		P	Y			Y
	40-120	zl	10YR54 53						0	0	HR	20		P				Y
9	0-35	zl	10YR43 00						1	0	HR	1						
	35-65	zl	10YR54 00						0	0		0		M				
	65-120	zl	10YR54 53						0	0		0		M				
10	0-30	zl	10YR43 00						0	0	HR	1						
	30-75	zl	10YR44 00						0	0	HR	1		M				
	75-120	mzcl	10YR54 00						0	0		0		M				
11	0-30	zl	10YR43 00						2	0	HR	3						
	30-60	zl	10YR54 00						0	0		0		M				
	60-120	mzcl	10YR54 00						0	0		0		M				
12	0-30	zl	10YR43 00						0	0		0						
	30-60	zl	10YR54 00						0	0		0		M				
	60-120	mzcl	10YR54 00						0	0		0		M				
13	0-30	mszl	10YR42 00						1	0	HR	1						Y
	30-120	zl	10YR54 00						0	0		0		M				Y

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
14	0-30	zl	10YR43 00						1	0	HR	2						Y
	30-85	mzcl	10YR54 00						0	0	HR	2		M				Y
	85-120	hzcl	10YR54 00						0	0		0		M				Y
15	0-35	zl	10YR43 00						1	0	HR	1						Y
	35-55	zl	10YR54 00						0	0	HR	1		M				Y
	55-85	mzcl	10YR54 00						0	0		0		M				
	85-120	hzcl	10YR54 00						0	0		0		M				Y
16	0-35	zl	10YR43 00						1	0	HR	2						
	35-55	zl	10YR54 00						0	0	HR	1		M				
	55-90	mzcl	10YR54 00						0	0		0		M				
	90-120	hzcl	10YR54 00						0	0		0		M				
17	0-25	zl	10YR43 00						4	0	HR	5						Y
	25-35	zl	10YR54 00						0	0	HR	15		M				Y
	35-120	zl	10YR54 71						0	0	CH	50		M				Y
18	0-45	zl	10YR43 00						3	0	HR	4						Y
	45-80	zl	10YR54 00						0	0		0		M				
	80-120	mzcl	10YR54 00						0	0		0		M				
19	0-30	zl	10YR43 53						1	0	HR	1						Y
	30-90	zl	10YR54 00						0	0		0		M				Y
	90-120	zl	10YR54 71						0	0	CH	50		M				Y
20	0-30	zl	10YR43 00						1	0	HR	1						
	30-50	zl	10YR54 00						0	0		0		M				Y
	50-120	zl	10YR54 71						0	0	CH	50		M				Y
21	0-25	zl	10YR43 00						1	0	HR	2						
	25-35	zl	10YR54 00						0	0	HR	2		M				
	35-70	zl	10YR64 00						0	0	HR	1		M				
	70-120	zl	10YR62 00						0	0		0		M				
22	0-20	zl	10YR43 00						0	0		0						
	20-45	zl	10YR54 00						0	0	HR	1		M				
	45-80	mzcl	10YR54 00	10YR56 00	F				0	0		0		M				
	80-120	hzcl	10YR54 00	10YR56 63	C			Y	0	0		0		M				
23	0-25	zl	10YR43 00						2	0	HR	2						
	25-40	zl	10YR54 64						0	0	HR	1		M				
	40-65	mzcl	10YR54 64	10YR58 00	F				0	0		0		M				
	65-120	c	10YR54 00	10YR58 62	C			Y	0	0		0		P	Y		Y	
24	0-20	mzcl	10YR32 00						0	0	HR	1						
	20-40	mzcl	10YR54 00						0	0	HR	1		M				
	40-55	hzcl	10YR54 00	10YR56 00	F		10YR56 00		0	0		0		M				
	55-120	c	10YR54 53	10YR56 52	C			Y	0	0		0		P	Y		Y	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	PED GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
25	0-20	zl	10YR42 00						0	0		0						
	20-35	mzcl	10YR53 63	10YR56 00	F				0	0		0		M				
	35-120	c	10YR53 63	10YR58 00	C		10YR52 00	Y	0	0		0		P	Y		Y	
27	0-20	zl	10YR43 00						0	0		0						
	20-65	zl	10YR54 00						0	0	HR	3		M				
	65-90	mzcl	10YR55 00	10YR58 00	F				0	0		0		M				
	90-120	hzcl	10YR55 00	10YR58 00	F				0	0		0		M				
28	0-20	zl	10YR43 00						0	0		0						
	20-50	mcl	10YR54 00						0	0	HR	1		M				
	50-70	mszl	25Y 66 63						0	0		0		M				
	70-120	scl	25Y 66 63	10YR58 00	F				0	0		0		M				
29	0-20	mzcl	10YR43 00						0	0		0						
	20-50	zl	10YR54 00						0	0	HR	1		M				
	50-65	mzcl	10YR54 00	10YR56 00	F				0	0		0		M				
	65-120	c	10YR53 52	10YR58 00	C			Y	0	0		0		P	Y		Y	
30	0-20	mzcl	10YR32 00						0	0		0						
	20-45	mzcl	10YR54 00						0	0	HR	2		M				
	45-55	mzcl	10YR54 00	10YR61 56	C			Y	0	0		0		M				
	55-120	c	10YR54 53	10YR61 56	C			Y	0	0		0		P	Y		Y	
31	0-20	mzcl	10YR43 00						5	0	HR	5						
	20-40	mzcl	10YR54 00						0	0	HR	5		M				
	40-60	mzcl	10YR54 00						0	0		0		M				
	60-120	mzcl	10YR54 00	10YR62 00	C			Y	0	0		0		M				
32	0-35	mzcl	10YR43 00						0	0	HR	1						
	35-120	mzcl	10YR54 53						0	0		0		M				
33	0-30	zl	10YR43 00						2	0	HR	2						
	30-40	zl	10YR54 00						0	0		0		M				
	40-50	zl	10YR54 00						0	0	CH	2		M				Y
	50-120	zl	10YR54 64	10YR68 00	C		10YR63 00	Y	0	0		0		M				
35	0-25	mzcl	10YR43 00						0	0		0						
	25-45	mzcl	10YR54 00						0	0	HR	2		M				
	45-70	c	10YR54 53	10YR56 58	C			Y	0	0		0		P			Y	
	70-120	sc	10YR54 53	10YR56 58	C			Y	0	0		0		P	Y		Y	
37	0-30	mcl	10YR42 43						3	0	HR	3						
	30-60	mcl	10YR54 53						0	0	HR	5		M				
	60-120	c	10YR54 53	10YR58 00	C			Y	0	0	HR	5		P	Y		Y	
38	0-30	mzcl	10YR43 00						1	0	HR	1						
	30-45	mzcl	10YR54 00						0	0	HR	1		M				
	45-60	hzcl	10YR55 00						0	0	HR	1		M				
	60-120	mzcl	10YR55 00						0	0	HR	1		M				

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL.	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
39	0-30	mszl	10YR43 00						0	0		0						
	30-50	zl	10YR54 00						0	0	HR	4		M				
	50-80	zl	10YR54 00						0	0		0		M				
	80-120	mzcl	10YR44 00	10YR62 00	F				0	0	HR	1		M				
40	0-25	zl	10YR43 00						0	0		0						
	25-45	zl	10YR54 00						0	0		0		M				
	45-55	zl	10YR54 00						0	0	CH	5		M				Y
	55-120	mzcl	10YR64 00						0	0		0		M				
41	0-30	zl	10YR44 00						1	1	HR	2						
	30-120	zl	10YR56 00						0	0		0		M				
43	0-30	mzcl	10YR43 00						4	0	HR	10						
	30-35	mzcl	10YR55 00						0	0	HR	1		M				
	35-45	mzcl	10YR55 00						0	0	CH	5		M				Y
	45-80	mzcl	10YR55 00						0	0		0		M				
	80-120	hzcl	10YR55 00	10YR58 00	F				0	0		0		M				
44	0-30	mzcl	10YR43 00						1	0	HR	2						
	30-50	mzcl	10YR55 00						0	0	CH	1		M				Y
	50-60	zl	10YR55 00			F			0	0	CH	5		M				Y
	60-120	zl	10YU55 00	10YR58 52	C			Y	0	0	CH	6		M				Y
45	0-30	zl	10YR43 00						3	0	HR	4						
	30-55	zl	10YR54 00						0	0	HR	2		M				
	55-120	mzcl	10YR54 00						0	0		0		M				
46	0-20	mcl	10YR43 00						5	10	HR	10						
	20-35	mcl	10YR54 00						0	0	HR	3		M				
	35-65	zl	10YR54 00						0	0	HR	1		M				
	65-80	mzcl	10YR55 00						0	0	HR	1		M				
	80-120	hzcl	10YR54 55	10YR58 00	F				0	0		0		M				

SOIL PIT DESCRIPTION

SITE : DD SOUTH OF TEYNHAM PIT 1 (AB15)

G.R. TQ 94706240

AAR	:	635 mm
ATO	:	1479° C days
FCD	:	126
Land Use	:	Set Aside
Slope & Aspect	:	1° north west

Horizon	Texture	Colour	Stones >2	Tot Stone	Mottles	Structure
0-25	ZL	10YR43	0	0	-	-
25-55	MZCL	10YR46	0	0	-	WKCAB
55-120	HZCL	10YR56	0	0	F	MDCAB

Wetness Grade : 1

Wetness class	:	I
Gleying	:	None
SPL	:	None

Drought Grade : 1

APW = 170 mm MBW = 52 mm

APP = 134 mm MBP = 20 mm

Final ALC grade : 1

Limitations : None

SOIL PIT DESCRIPTION

SITE : DD SOUTH OF TEYNHAM PIT 2 (AB24)

G.R. TQ 95306230

AAR	:	635 mm
ATO	:	1479° C days
FCD	:	126
Land Use	:	Set Aside
Slope & Aspect	:	2° north west

Horizon	Texture	Colour	Stones >2	Tot Stone	Mottles	Structure
0-20	ZL	10YR43	0	1	-	-
20-50	MZCL	10YR54	0	1	F	MDCSAB
50-120	HZCL	10YR52	0	0	C	STCAB

Wetness Grade : 2

Wetness class	:	II
Gleying	:	50 cm
SPL	:	50 cm

Drought Grade : 2

APW = 139 mm	MBW = 21 mm
APP = 121 mm	MBP = 7 mm

Final ALC grade : 2

Limitations : Wetness and drought

SOIL PROFILE DESCRIPTIONS : EXPLANATORY NOTE

Soil profile and pit information obtained during ALC surveys is held on a database. This has commonly used notations and abbreviations as set out below.

BORING HEADERS

1. GRID REF : National grid square followed by 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
FDC - fodder crops
FRT - soft and top fruit
HOR/HRT - horticultural crops

PAS/PGR - permanent pasture
RGR - rough grazing
LEY - ley grassland
CFW - coniferous woodland
DCW - deciduous woodland
SCR - scrub
HTH - heathland
BOG - bog or marsh
FLW - fallow
PLO - ploughed
SAS - set-aside
OTH - other
LIN - linseed

3. GRDNT : Gradient as measured by optical reading clinometer.

4. GLEY/SPL : Depth in centimetres (cm) to gleyed and/or slowly permeable horizons.

5. AP (WHEAT/POTS) : Crop-adjusted available water capacity. The amount of soil water (in millimetres) held in the soil profile that is available to a growing crop (wheat and potatoes are used as reference crops).

6. MB (WHEAT/POTS) : The moisture balance for wheat and potatoes obtained by subtracting the soil moisture deficit from the crop-adjusted available water capacity.

7. DRT : Grade according to soil droughtiness assessed against soil moisture balances.

8.

M REL	: Micro-relief	)
FLOOD	: Flood risk	) If any of these factors are
EROSN	: Soil erosion	) considered significant in terms of
EXP	: Exposure	) the assessment of agricultural land
FROST	: Frost prone	) quality a 'y' will be entered in the
DIST	: Disturbed land	) relevant column.
CHEM	: Chemical limitation	)

9. LIMIT :Principal limitation to agricultural land quality.
The following abbreviations are used:

OC - overall climate
AE - aspect
EX - exposure
FR - frost
GR - gradient
MR - micro-relief
TX - soil texture
DP - soil depth
CH - chemical limitations
WE - wetness
WK - workability
DR - drought
ER - erosion
WD - combined soil wetness/soil droughtiness
ST - topsoil stoniness

PROFILES AND PITS

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

S	- sand
LS	- loamy sand
SL	- sandy loam
SZL	- sandy silt loam
ZL	- silt loam
MZCL	- medium silty clay loam
MCL	- medium clay loam
SCL	- sandy clay loam
HZCL	- heavy silty clay loam
HCL	- heavy clay loam
SC	- sandy clay
ZC	- silty clay
C	- clay

For the sand, loamy sand, sandy loam and sandy silt loam classes, the predominant size of sand fraction may be indicated by the use of prefixes.

F - fine (more than ⅔ of the sand less than 0.2 mm)
C - coarse (more than ⅓ of sand greater than 0.6 mm)
M - medium (less than ⅔ fine sand and less than ⅓ coarse sand)

The sub-divisions of clay loam and silty clay loam classes according to clay content are indicated as follows:

M - medium (less than 27% clay)
H - heavy (27-35% clay)

Other possible texture classes include:

OL - organic loam
P - peat
SP - sandy peat
LP - loamy peat
PL - peaty loam
PS - peaty sand
MZ - marine light silts

2. MOTTLE COL : Mottle colour

3. MOTTLE ABUN : Mottle abundance

F - few - less than 2% of matrix or surface described
C - common - 2-20% of the matrix
M - many - 20-40% of the matrix
VM - very many - 40% + of the matrix

4. MOTTLE CONT : Mottle continuity

F - faint - indistinct mottles, evident only on close examination
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

6. STONE LITH : Stone lithology. One of the following is used.

HR - all hard rocks or stones
MSST - soft, medium or coarse grained sandstone
SI - soft weathered igneous or metamorphic
SLST - soft oolitic or dolomitic limestone
FSST - soft fine grained sandstone
ZR - soft, argillaceous, or silty rocks
CH - chalk
GH - gravel with non-porous (hard) stones
GS - gravel with porous (soft) stones

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

7. 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 well developed

- ped size
  - F - fine
  - M - medium
  - C - coarse
  - VC - very coarse

- ped shape
  - S - single grain
  - M - massive
  - GR - granular
  - SB/SAB - sub-angular blocky
  - AB - angular blocky
  - PR - prismatic
  - PL - platy

8. 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

9. SUBS STR : Subsoil structural condition recorded for the purpose of calculating profile droughtiness.

G - good
M - moderate
P - poor

10. POR : Soil porosity. If a soil horizon has less than 0.5% biopores >0.5 mm, a 'y' will appear in this column.

11. IMP : If the profile in impenetrable a 'y' will appear in this column at the appropriate horizon.

12. SPL : slowly permeable layer. If the soil horizon is slowly permeable a 'y' will appear in this column.

13. CALC : If the soil horizon is calcareous, a 'y' will appear in this column.

14. 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