

**AGRICULTURAL QUALITY OF LAND IN
MELTON BOROUGH**

Report 542/1

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Introduction

Land Research Associates were retained by Melton Borough Council to provide details of the agricultural land quality to be found in the council area, to inform the policies and proposals of the Melton Local Development Framework that will cover the period to 2016. The study is in two parts, comprising a semi-detailed study of land near the town itself based on an auger survey, and a desk study of the other land based on published soil information.

THE LAND ADJOINING MELTON MOWBRAY

The land close to the town has been divided into eleven areas of interest, labelled A-K. The strategy has been to visit the agricultural land in these areas to carry out a semi-detailed survey of the agricultural land, based on soil examinations at locations on a staggered 100 m grid, giving a density of observations of one every two hectares. The soils are examined in shallow pits and augerings to a maximum depth of 1.2 m at points located using GPS. A map (Map 3) of the areas and location of observations is in an appendix to this report.

The survey was carried out during October to December 2005 with the permissions of landowners and farmers for access. Most of the land was accessible, the exceptions being a small area of farmland in the east in the SSSI of the River Eye. Only land in agriculture was examined. Golf courses, public parks and playing fields that might be easily returned to agricultural use were excluded because of the disruption caused by intrusive examination.

ENVIRONMENT

Melton Mowbray lies mainly on the lower slopes of the Wreake-Eye Valley at 70-80 m AOD through which the River Eye meanders in a broad floodplain. The land rises to around 100 m AOD to the south, and to around 120 m AOD to the north. It is a rolling landscape dissected by valleys, and with few steep slopes.

Arable land accounts for about half of the area and, because the soils are mainly heavy textured with impeded drainage, is used for growing principally autumn – sown crops like oilseed rape and winter wheat. The rest of the land is in grass for

cattle, sheep and, close to the urban fringe, horses. Some of the grassland is old and has retained substantial 'rigg and furrow' topography.

The hills around the town are formed in Jurassic materials, mainly clay shales and limestones in the Lias Formations. These outcrop locally in some valley sides, but the principal soil forming material is Pleistocene chalky till (chalky boulder clay) which mantles the upper slopes of most of the area. At lower levels as in the River Eye valley there are areas of river alluvium, and some associated loamy terrace material.

Agricultural land quality around Melton Mowbray

To assist in assessing land quality, the Ministry of Agriculture, Fisheries and Food (MAFF) has developed a method for classifying agricultural land by grade according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use for food production. The Agricultural Land Classification (ALC) system¹ classifies land into five grades numbered 1 to 5, with grade 3 divided into two sub-grades (3a and 3b). The system was devised and introduced in the 1960s and revised in 1988.

The agricultural climate is an important factor in assessing the agricultural quality of land and has been calculated using the *Climatological Data for Agricultural Land Classification*². The relevant data for the average site elevation of 100 m is given below:

- Average annual rainfall: 638 mm
- January-June accumulated temperature >0°C 1344 day°
- Field capacity period 135 days
(when the soils are fully replete with water) late Nov-late April
- Summer moisture deficits for: wheat: 104 mm
potatoes: 94 mm

There is no overall climatic limitation to agricultural quality in the district.

RESULTS OF THE SURVEY

Most of the land close to the town is underlain by clayey parent material that is slowly permeable, so that the soils are subject to winter waterlogging. Hence most of the land (95%) is of grade 3 quality.

Chalky till is the most common substrate, and there are two common soil types associated with it. These are the Ragdale and Hanslope series, the former described after a village close to Melton Mowbray. Both are heavy soils with

¹ *Agricultural Land Classification for England and Wales: Guidelines and Criteria for Grading the Quality of Agricultural Land*. MAFF, 1988.

² *Climatological Data for Agricultural Land Classification*. Meteorological Office, 1989

slightly stony clay or heavy clay loam topsoils over clay subsoils. In Ragdale series the upper subsoil is heavily mottled, contains no free calcium carbonate, and is slowly permeable directly below the plough layer. The lower subsoil is often dark grey mottled, and contains small chalk stones. These soils are subject to long periods of waterlogging in winter and spring (wetness class IV), so that cultivation in these periods is not possible, and arable land is restricted to autumn-sown crops. Animals will also poach (puddle) the land badly if left out to graze in this part of the year. Land with this type of soil is of **sub-grade 3b** quality.

Hanslope series soils have a calcareous upper subsoil, still slowly permeable, but browner in colour and showing less mottling. This indicates slightly improved drainage status (Wetness class III) over the Ragdale soils. Strongly mottled clay with chalk stones occurs at 40-55 cm depth. The cultivation and animal bearing properties are similar in most cases to that of the wetter Ragdale soils, although less severe. Many of these soils have non-calcareous topsoils, and the associated land is also in **sub-grade 3b**. Some soils, particularly on slopes, have calcareous topsoils and, because calcium carbonate dominated soils tend to have stronger and more stable structure, the land here is raised to **sub-grade 3a** quality.

In practice, the difference between the land in the two grades is not spectacular. Both tend to be limited to similar crop ranges, and because both types of land occur in the same field, working tends to be dominated by the poorer grade. Rigg and furrow, thought to have been established to improve drainage by creating mounds with run-off channels between, occurs on both types of land.

On the other heavy substrate types, similar distinctions occur. Some of the soil on Lias Clay contains limestone bands, and may have calcareous upper layers. In general soils with brownish upper subsoils and calcareous topsoil give **sub-grade 3a** land, and those with non calcareous topsoil form **sub-grade 3b** land.

Near the River Eye, the soils on alluvium are generally clayey throughout, except close to the banks of the stream. Most of the land is thus of sub-grade 3b quality, especially now that there is some protection from flooding.

On the sides of some land in Area H, limestone and ironstone outcrops on the side of the valleys in narrow strips. Some soils have heavy clay loam topsoils and upper subsoils over hard limestone at around 50 cm depth. Limited rooting depth

reduces the moisture available for crop growth, and the land is limited to sub-grade 3a because of droughtiness.

Grade 2

On the edge of the flood plain of the River Eye, and particularly in Areas D and I, is a series of loamy terrace deposits. The soils here have sandy loam or light sandy clay loam topsoils over mainly permeable sandy clay loam subsoils. Clay occurs below 1 m depth in some of the soils. Close to the river they may have been more influenced by rising groundwater before flood control measures were put in place up stream, as evidenced by the fact that much of the land has strongly defined 'rigg and furrow' micro-topography. These deep, permeable soils give rise to good quality land in **grade 2**, and some of the higher land may be of grade 1 status.

Similar soils in Area H tend to have heavy clay loam topsoils over permeable loamy subsoils, and these are limited to grade 2 by workability restrictions.

Grade 4

There are small areas of almost permanently wet land in some parts of the area. Some land in the River Eye valley close to the railway is wet and boggy for long periods and has rushes (*Juncus* sp) growing. In Area H is a patch of land affected by springs, probably emanating from Lias limestones close to the surface. Although it is in arable use, the soils are wet for long periods. Also in area H some areas of land have been affected by industrial working, and have been left with a rough surface or in wet hollows. Such land can be grazed, but is unsuitable for arable use.

Grade 5

In Area I is the embankment of a former railway. There is little soil on this, but it is used for rough grazing.

Other land

The land within Areas A-K not in agriculture is predominantly in use for other development including business and industrial parks, sewage works and other industrial depots. Playing fields and urban green spaces are also common.

Other issues

Some other issues which, while not affecting land grade, have an impact on land utilisation were noted during the survey.

Area D

A field close to the Asfordby Storage facility has two very large mounds. This land has agricultural potential as grazing land, but is not used as present, mainly for security reasons. The soils have been examined, but they are generally of a disturbed nature.

The land in the River Eye valley is an SSSI, which limits its use to grazing, with no fertilizer or chemical inputs.

Area G

As small triangular field in the south eastern corner of the area had reportedly been in use as a shooting range for many years, leading to the possibility of contamination by lead.

Area H

Land to the north of Kirby Lane and next to the industrial estate is composed of a large soil mound planted with trees. This is not in agriculture, although it could be grazed, but is probably too steep-sided for cultivation.

Area K

The grass fields around Hilltop Farm are known to have raised metal content (probably copper) as the result of the iron workings at Asfordby. The levels are sufficiently high to preclude the use of the land for recycling sewage sludge. There are at present no guidelines for the phytotoxic metals, but they are unlikely to be a serious threat to health and safety in humans, or to influence strongly land planning decisions. Their raised levels may indicate possible contamination by other potentially toxic elements from this source.

There are substantial protected earthworks in one of the fields of Hilltop Farm, which preclude cultivation of the land.

The distribution of the various qualities of land is shown on Map 1 and the areas are shown below.

GRADE/SUBGRAD E	AREA (HA)	% OF AGRICULTURAL	% OF SURVEY
Grade 2	29.3	4.0	3.4
Sub-grade 3a	140.0	19.1	16.1
Sub-grade 3b	553.7	75.4	63.7
Grade 4	9.9	1.3	1.1
Grade 5	1.2	0.2	0.1
Non-agricultural	134.7		15.5
TOTAL	868.8	100	100

Agricultural land quality in the wider Borough

A desk study has been carried out to assess the agricultural land quality of the remainder of the Melton Borough. The information is presented in GIS format

SOURCES OF INFORMATION

There are two principal soil information sources for the whole borough. “*Soils of the Melton Mowbray District*” by A J Thomasson was published in 1971 by the Soil Survey of Great Britain as a one inch to the mile map with accompanying memoir. Soils are described down to series level for the most part. This covers around 70% of the borough.

The remaining areas in the south and east of the borough are covered by “*Soils of Midland and Western England*”(Ragg *et al*) published in 1984 at 1:250,000 scale. This was based partly on reconnaissance soil survey and partly on interpolation of existing smaller scale mapping, and the soils are described as associations of soil series, i.e. less detailed than the Thomasson publication.

In addition, a small area has been intensively surveyed (one observation per hectare) by Land Research Associates for a proposed quarry at Brooksby Agricultural College in the south of the borough.

AGRICULTURAL CLIMATE

There is a range of altitude and conditions across the borough, and the agricultural climate was calculated for a number of locations representing the main spreads of the different soil types encountered.

SOIL INTERPRETATION

The soils were assessed according to the representative profiles published in the Melton Mowbray memoir, and interpreted with the information gained from the semi-detailed survey carried out around the town. The original Melton survey would not have been carried out in the sort of detail appropriate to planning standards for agricultural land quality, and so in some cases single land grades could not be applied, and ranges are given. In the case of the land assessed from the 1:250,000 survey, the detail available is even less.

For each survey unit, a description of the main soils is given, together with the agricultural limitations that apply to characterise the land grading, and an assessment of the likely variation in each unit. The information is presented as a map (Map 2) in this report, and as information in map polygons in a GIS system. Clicking on any point on the map gives the assessed likely land grade, a soil description, agricultural limitation, and variability at that point.

LIMITATIONS OF THE DATA

The information on soil series and soil classification given in the 1:250,000 mapping is the most recent available. There have been a number of classification changes and rationalisations since the Melton Mowbray Soil Map was published, and some of the names used for labels are not those of current soil series. The soils and their descriptions have not changed, however, and it is this information which has been used in assessment of land grade.

APPENDIX
LOCATION AND DETAILS OF OBSERVATIONS

Land adjoining Melton Mowbray Area A - Details of observations at each sampling point

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
A1	0-30	C	0	30-60	C	xxx	60+	stopped on stone		0	IV	3b	W
A2	0-25	caC	1	25-50	caC	x(x)	50-100+	caC+ck stones	xxx	3	III	3a	W
A3	0-28	HCL	1	28-45	C	xxx	45-110+	caC+ck stones	xxx	0	IV	3b	W
A4	0-24	HCL	2	24-80	C	xxx	80-110+	caC+ck stones	xxxx	1	IV	3b	W
A5	0-25	HCL	1	25-40	C	xxx	40-110+	caC+ck stones	xxx	1	IV	3b	W
A6	0-25	HCL	1	25-70	C	xxx	70-110+	caC+ck stones	xxx	<1	IV	3b	W
A7	0-28	caC	2	28-50	caC+ck stones	xxx	50-100+	caC+ck stones	xxxx	1-2	IV	3b	W
A8	0-25	caC	3	25-40	caC	xx	40-90	caC+ck stones	xxx	2-3	IV	3b	W
A9	0-28	HCL	2	28-40	C	xxx	40-60 60+	caC+ck stones stopped on stone	xxx	<1	IV	3b	W
A10	0-29	HCL	0	29-85	C	xxx	85-110+	caC+ck stones	xxxx	1	IV	3b	W
A11	0-30	HCL	1	30-70	C	xxx	70-110+	caC+ck stones	xxx	0	IV	3b	W
A12	0-30	HCL	1	30-60	C	xxx	60-110+	caC+ck stones	xxx	2	IV	3b	W
A13	0-28	HCL-C	1	28-45	C	xxx	45-70 70+	caC+ck stones stopped in stones	xxx	<1	IV	3b	W
A14	0-28	HCL	3	28-50	HCL	xxx	50-110	C	xx-	2	III	3b	W
A15	0-30	HCL	1	30-45	caC	xx	45-100+	caC+ck stones	xxx	<1	III	3b	W
A16	0-28	HCL	2	28-70	C	xxx	70-110+	caC+ck stones	xxxx	1	IV	3b	W
A17	0-26	M-HCL	1	26-45	caC	xx	45-110+	caC+ck stones	xxx	2	III	3a/3b	W
A18	0-21	HCL	1	21-60	C	xxx	60-110+	caC+ck stones	xxx	1	IV	3b	W
A19	0-28	caC	1	28-110+	caC	xxx				1	IV	3b	W
A20	0-20	HCL	0	20-40	C	xx	40-110+	C	xxx	2	III	3b	W
A21	0-23	HCL	0	23-35	C	xx	35-100+	caC+ck stones	xxx	0	IV	3b	W
A22	0-26	HCL	0	26-50	C	xxx	50-70 70-110+	caC+ck stones caC+ck stones	xxx xxxx	1-2	IV	3b	W
A23	0-18	MCL	0	18-40	C	xx	40-110+	caC+ck stones	xxx	<1	III	3a	W
A24	0-25	HCL	2	25-55	HCL	x	55-85 85-100 100-120	HCL C HCL	xxx xxx xxx	<1	II	3a	W
A25	0-30	caC	1	30-50	caC	xx	50-100+	caC+ck stones	xxx	2	III	3a	W
A26	0-30	caC	2	30-55	caC+ck stones	xxx	55-100+	caC+ck stones	xxx	2	IV	3b	W
A27	0-23	caM-HCL	1	23-40	caC	xx	40-120	caC+ck stones	xxx	2	III	3a	W
A28	0-30	HCL	2	30-50	C	xx	50-70 70+	caC+ck stones stopped on stones	xxx	1	III	3a	W
A29	0-25	HCL	0	25-40	C	xx(x)	40-120	caC	xxx	1	III	3b	W
A30	0-28	C	1	28-50	C	xx	50-120	C	xx(x)	3-4	III	3b	W
A31	0-26	C-HCL	1	26-70	caC+ck stones	xxx	70-110+	caC+ck stones	xxxx	0	IV	3b	W
A32	0-26	HCL	2	26-45	caC+ck stones	xxx	45-70 70-110+	C C	x xxx	2	IV	3b	W
A33	0-29	(ca)HCL	2	29-60	C	xxx	60-110+	caC+ck stones	xxx	2	IV	3b	W
A34	0-22	caC	2	22-110+	caC+ck stones	xxx				2	IV	3b	W
A35	0-18	HCL	1	18-45	HCL	xx	45-90 90-110+	C caC+ck stones	xxx xxx	1	III	3b	W
A36	0-28	HCL	1	28-40	C	xx	40-90	caC+ck stones	xxx	1	III	3b	W

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality		
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation	
							90+	stopped on stones						
A37	0-28	HCL	1	28-50	C	xx	50-70 70-110+	stC caC+ck stones	xxx xxx	3	III	3b	W	
A38	0-26	HCL	1	26-50	caC+ck stones	xx	50-80 80-120	caC+ck stones caC	xx(x) xxx	<1	II/III	3a/3b	W	
A39	0-19	caHCL	3	19-120	caC+ck stones	xxx				2	IV	3b	W	
A40	0-23	HCL	0	23-110+	C	xxx				2	IV	3b	W	
A41	0-30	HCL	2	30-65	C	xx(x)	65-120	caC+ck stones	xxx	0	II/III	3a/3b	W	
A42	non ag													
A43	0-20	HCL	2	20-450	caC	xx	50-100+	caC	xxx	<1	II/III	3a/3b	W	
A44	0-28	caHCL	2	28-60	caC+ck stones	xxx	60+	stopped on stones			2	IV	3b	W
A45	0-27	caMCL	1	27-100	caC+ck stones	xxx				1	IV	3b	W	
A46	0-20	HCL	1	20-40	caC+ck stones	xx(x)	40-100+	caC+ck stones	xxx	1	III	3b	W	
A47	0-22	M-HCL	0	22-60	caC	xx	60-90+	caC+ck stones	xx(x)	1	II/III	3a/3b	W	

Land adjoining Melton Mowbray Area B - Details of observations at each sampling point

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality		
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation	
B1	0-22	caMCL	1	22-40	caC+chks	xxxx	40+	stopped on stone			1	IV	3b	W
B2	0-25	caHCL	1	25-110+	caC+chks					2-3	III	3a/3b	W	
B3	0-25	HCL	0	25-40	C	xx	40-110+	caC+chks	xxx	0	III	3b	W	
B4	0-25	caHCL	3	25-65	C (top+subsoil mix)		65-110+	C	xxx	3	III	3a	W	
B5	0-20	caHCL	2	20-50	caC+ck stones	xxx	50-70 70+	caC+ck stones stopped on stone	xxxx	2	IV	3b	W	
B6	0-29	HCL	1	29-50	HCL	xx	50-120	C	xxx	3	II	3a	W	
B7	0-23	HCL	0	23-100	C	xxx				0	IV	3b	W	
B8	0-30	HCL	1	30-40	caC	xx(x)	40-80 80+	caC+chks stopped on stone	1	III	3b	W		
B9	0-22	M-HCL	1	22-50	C	xx	50-110+	caC+chks	xxx	1	III	3a/3b	W	
B10	0-25	HCL	1	25-50	C	xx	50-110+	caC+ck stones	xxx	1	II/III	3a/3b	W	
B11	0-19	MCL	0	19-40	C	xx(x)	40-100+	caC+ck stones	xxx	3	III/IV	3a/3b	W	
B12	0-29	HCL	1	29-40	caC	xx	40-50 50+	caC stopped on stone	xxx	1	III	3b	W	
B13	0-25	HCL	1	25-50	C	xx	50-120	C	xxx	<1	II/III	3b	W	
B14	0-25	HCL	0	25-50	caC	xx	50-70 70+	caC+ck stones stopped on stones	xxx	1	II	3a	W	
B15	0-26	MCL	1	26-65	caC	xxx	65+	stopped on stones			3	IV	3b	W
B16	0-28	M-HCL	2	28-45	caC	xx	45-110+	caC+ck stones	xxx	2	III	3a/3b	W	
B17	0-25	HCL	2	25-38	C	xx(x)	38-70 70+	caC+ck stones stopped on stones	xxx	1	III	3b	W	
B18	0-28	(ca)HCL	2	28-50	caC+chks	xxx	50+	stopped on stones			<1	IV	3b	W
B19	0-25	HCL	1	25-50	C	xx(x)	50-110+	caC	xxx	3	IV	3b	W	
B20	0-25	caHCL	1	25-45	caC	xx	45-110+	caC+ck stones	xxx	1	III	3a	W	
B21	0-26	caMCL	0	26-60	caC	xx	60-110+	caC+ck stones	xxx	1	III	2/3a	W	

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
B22	0-20	caHCL	3	20-40	caC	xx	40-100+	caC+ck stones	xxx	2	III	3a	W
B23	0-32	HCL	2	32-50	HCL(topsI)	xxx	stopped on brick and charcoal			2			
B24	0-30	M-HCL	1	30-60	caC	xx(x)	60-110+	caC+ck stones	xxxx	1	IV	3b	W
B25	0-25	caHCL	1	25-40	caC	xx	40-110+	caC+ck stones	xxx	2	III	3a	W
B26	0-28	MCL	3	28-60	caC	x	60-110+	caC	xxx	2	III	3a	W
B27	0-29	caHCL	2	29-110+	caC+ck stones	xxx				1	IV	3b	W
B28	0-29	HCL	2	29-45	caC	x	45-80 80-110+	caC caC+ck stones	xxx xxx	1	III	3b	W
B29	0-19	MCL	1	19-110+	caC+ck stones					1	IV	3b	W
B30	0-225	HCL	0	25-40	caC	xx	40-70	caC+ck stones	xxx	1	III	3b	W
B31	0-26	(ca)HCL	2	26-45	C	xx	45-70 45+	caC+chks stopped on stone	xxx	2	III	3b	W

Land adjoining Melton Mowbray Area C - Details of observations at each sampling point

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
C1	0-26	HCL	0	26-35	HCL	xx	35-120	C	xxx	0	II/IV	3b	W
C2	0-26	C	2	26-45	C	xx(x)	45-100+	C	xxx	4	II/IV	3b	W
C3	0-26	HCL	0	26-45	HCL	xx	45-110+	C	xxx	0	III	3b	W
C4	0-28	caHCL-C	2	28-100+	caC+ck stones	xxx				3-4	II/III	3a	W
C5	0-30	caHCL-C	4	30-50	caC	xx(x)	50-100	caC+ck stones	xxx	3	III	3a	W
C6	0-30	HCL	2	30-40	C	xx	40-90 90+	caC+ck stones stopped on stones	xxx	<1	III	3b	W
C7	0-30	HCL	1	30-45	caC	x	45-70 70-110+	caC caC+ck stones	xx	2	II/III	3a/3b	W
C8	0-18	caHCL	2	18-35	caC+ck stones	xx(x)	35-110+	caC+ck stones	xxxx	3	IV	3b	W
C9	0-26	HCL-C	5	26+	stopped					0			
C10	0-25	HCL	3	25-40	caC	xxx	40-50 50+	caC+ck stones stopped on stone	xxx	0	IV	3b	W
C11	0-21	caMCL	2	21-45	caC	xxx	45-110+	caC+ck stones	xxx	1	IV	3a	W
C12	0-22	caHCL	1	22-45	caC	xx	45-100+	caC+ck stones	xxx	<1	III	3a	W
C13	0-27	HCL	1	27-55	caC	xx	55-100+	caC+ck stones	xxx	3	II/III	3a/3b	W
C14	0-28	(ca)HCL	1	28-70	caC+ck stones	xxx	70-120	caC	xxxx	2	IV	3b	W
C15	0-29	caHCK-C	1	29-60	caC+ck stones	xxx	60+	stopped on stones		1-2	IV	3b	W
C16	0-27	C	2	27-40	caC	xx	40-110+	caC+ck stones	xxx	2	III	3b	W
C17	0-28	C	3	28-45	caC	xx	45-110+	caC+ck stones	xxx	1	III	3b	W
C18	0-24	HCL	3	24-40	caC	xx	40-100+	caC+ck stones	xxx	<1	III	3b	W
C19	0-26	HCL	3	26-55	C	xxx	55-100+	caC+ck stones	xxx	2	IV	3b	W
C20	0-25	HCL	2	25-45	caC	xx	45-100+	caC+ck stones	xxx	0	III	3b	W
C21	0-30	HCL	4	30-45	HCL	xx	45-60 60-100 100-120	HCL C SCL	xxx xxx x	2	II	3a	W
C22	0-30	C	3	30-40	caC+ck stones	xx(x)	40-100+	caC+ck stones	xxx	1	III	3b	W

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
C23	0-26	HCL	3	26-35	caC	xx	35-110+	caC+ck stones	xxx	2	III	3b	W
C24	0-26	HCL	2	26-40	caC	x	40-65 65-90 90+	caC+ck stones vcaSCL stopped on stones	xx xxx	2	II/III	3a/3b	W
C25	0-30	caHCL	2	30-40	caC	xx(x)	40-110+	caC+ck stones	xxx	0	III/IV	3a/3b	W
C26	0-28	HCL	4	28-50	caC	xx	50-110+	caC+ck stones	xxx	2-3	II	3a	W
C27	0-35	CL	4	35-100+	caC+ck stones	xxx				2	IV	3b	W
C28	0-30	(ca)HCL	2	30-45	caC	xx	45-60 60-110+	caC+ck stones caC+ck stones	xxx xxxx	<1	III	3a/3b	W
C29	0-24	HCL	3	24-45	HCL	xx	45-110+	C-SC	xxx	1	III	3b	W
C30	0-55	caHCL	2	55-75	C	xxx	75-110+	caC	xxxx	2	II	3a	W
C31	0-23	HCL	4	23-40	C	xx	40-110+	caC+ck stones	xxx	1-2	III	3b	

Land adjoining Melton Mowbray Area D - Details of observations at each sampling point

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
D1	0-25	caSCL	3	25-60	caSCL	xx	60-110	C	xxx	0	III	3a	W
D2	0-26	HCL	0	26-40	bC	xx	40-110	C	xxx	0	III	3b	W
D3	0-23	HCL	0	23-100	C	xxx				0	IV	3b	W
D4	0-24	HCL	1	24-70	HCL	x-xx	70-100 100-120	SCL C	xxx xxx	0-1	II	3a	W
D5	0-25	C(md)	<1	25-50	C	xx(x)	50-100+	C	xxx	0	III/IV	3b	W
D6	0-22	C	2	22-110	(st)caC	xxx				2	IV	3b	W
D7	0-30	HCL	1	30-60	SCL	xxx	60-100+	C	xxx	1	III	3b	W
D8	0-22	C	1	22-35	C	xxx	35-110+	caC	xxx	2	IV	3b	W
D9	0-28	HCL	0	28-40	HCL	xxx	40-110+	caC+ck stones	xxx	1	IV	3b	W
D10	0-28	HCL	0	28-60	C	xxx	60-110+	caC	xxx	0	IV	3b	W
D11	0-24	HCL	0	24-35	C	xx	35-100+	caC	xxxx	III	3b	W	
D12	0-24	HCL	0	24-45	C	xx	45-110+	caC+ck stones	xxx	2	III	3b	W
D13	0-30	MCL	0	30-50	MCL	xxx	50-100+	C	xxx	1-2	III	3b	W
D14	0-40	C(topsoil/subsoil mix)		14-65	SCL topsoil		65-100	SCL+C mixed subsoil		7-8			
D15	0-20	(ca)SCL	0	20-50	caSCLL	o	50-70 70-100	SCL HCL	xx xxx	1	II	2	W
D16	0-30	SCL	1	30-65	caHCL topsoil		65-90	dark ca HCL&C		1			
D17	0-30	HCL	0	30-50	black c		50-60 60-100	caC+ck stones stinking dk grey HCL	xxx	1	Possibly land fill gas affected?		
D18	No access												
D19	No access												
D20	No access												
D21	0-25	HCL	0	25-110+	C	xxx				0	IV	3b	W
D22	No access												
D23	0-28	M-HCL	0	28-90	HCL	o-x	90-110+	C	xxx	0	II	3b	FI
D24	0-33	MSL	0	33-60	SCL	0	60-110+	SCL	x	0	I/II	1	

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
D25	No access												
D26	0-25	MCL	0	25-100	C	xxxx				0	IV	3b	W,FI
D27	0-31	MSL	0	31-50	MSL	0	50-80	(st)SCL	o	0	I	½	D
D28	0-30	MSL	0	30-57	SCL	o	57-110+	SCL	xx	0	II/III	1/2	FI
D29	0-15	caHCL	0	15-100	HCL-C	xxx				0	V	4	FI
D30	0-29	MCL	0	29-40	HCL	xxx	40-120	C	xxx	0	III/III	3b	W,FI
D31	0-22	MSL	0	22-40	MSL	o-x	40-80	SCL	o-x	<1	I/II	1/2	D
D32	0-34	MSL	0	34-80	SCL	0	80-110	SCL	xxx	1	II/III	2	W

Land adjoining Melton Mowbray Area E - Details of observations at each sampling point

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
E1	0-30	HZCL	1	30-110+	C	xxxx				0	IV-V	3b/4	W
E2	0-26	MCL-SCL	0	26-50	MCL-SCL	x	50-80	SCL	xxx	0	II	2	W,D
E3	0-33	MSL-SCL	0	33-70	SCL	o-x	70-100 100-120	SCL C	xx xxx	0	II	2	D
E4	0-26	C	4	26-50	C	xxx	50-120	caC	xxxx	5	IV	3b	W
E5	0-30	SCL-HCL	2	30-45	SC	xxx	45-90 90-110+	caC caC	xxx xxxx	1	IV	3b	W
E6	0-26	MCL	0	26-40	MCL	xx(x)	40-60 60-120	SCL SCL wet	xxx xxx	1	III	3a	W
E7	0-30	C	5	30-120	C	xx				2	II	3b	W
E8	0-32	C	5	32-60	C	xxx	60-120	C	xxxx	2	IV	3b	W
E9	0-23	HCL	0	23-45	caC	xxx	45-55 55-70 70	limestone+C caC+lst stopped on limestone	xx xxx	1-2	IV	3b	W
E10	0-22	M-HCL	0	22-30	C	xxx	30-40 40-110+	C caC+lst frags	x xx	2	III/IV	3a/3b	W
E11	0-25	C	4	25-50	C	xxx	50-85 85+	caC+ck stones stopped on stone	xxxx	<1	IV	3b	W
E12	0-30	HCL	10	30-60	C	xxx	60-100+	SCL	xxx	1	IV	3b	W
E13	0-22	HCL	4	22-45	caC	xxx	45-110+	caC	xxxx	1	IV	3b	W
E14	0-28	C	3	28-90	caC+ck stones	xxx	90+	stopped on stones		2	IV	3b	W
E15	0-24	caC	7	24-60	caC+ck stones	xxx	60+	stopped on stone		2	IV	3b	W
E16	0-24	C	5	24-38	C	xx	38-60 60-120	C caC+ck stones	xxx xxx	1	III	3b	W
E17	0-25	HCL	4	25-60	C	xxx	60-90 90+	caC stopped on stone	xxx	1	IV	3b	W
E18	0-23	C	3	23-50	C	xxx	50-110+	caC+ck stones	xxx	1	IV	3b	W
E19	0-30	C	3	30-35	caC	xx	35-70 70-110+	caC+ck stones caC+ck stones	xxx xxxx	2	III	3b	W
E20	0-28	HCL	3	28-45	C	xxx	45-110+	caC+ck stones	xxx	0	IV	3b	W
E21	0-35	HCL	4	35-45	SCL	xx	45-90	caC+ck stones	xxx	2	III	3b	W

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
							90+	stopped on stones					
E22	0-29	HCL	3	29-45	C	xx	45-110+	caC+ck stones	xxx	2	III	3b	W
E23	0-33	C	2	33-75	C	xx	75-110+	caC+ck stones	xxx	<1	II	3a	W
E24	0-26	HCL	4	26-50	C	xxx	50-110+	caC+ck stones	xxx	<1	IV	3b	W
E25	0-20	caHCL	3	20-35	caC	xx	35-100+	caC+ck stones	xxx	<1	IV	3b	W
E26	0-28	HCL	4	28-60	C	xxx	60-110+	caC+ck stones	xxx	3	IV	3b	W
E27	0-30	HCL	4	30-45	C	xx	45-100 100-120	C caC+ck stones	xxx xxxx	1	III	3b	W
E28	0-24	HCL	4	24-45	C	x(x)	45-90	caC+ck stones	xxx	<1	III	3b	W
E29													
E30	0-23	HCL	4	23-50	C	xxx	50-110+	caC+ck stones	xxxx	<1	IV	3b	W
E31	0-27	HCL	4	27-40	C	xx	40-50 50-120	C caC+ck stones	xxx xxx	<1	III	3b	W
E32	0-26	C	3	26-50	C	xxx	50-100 100-110 110+	caC+ck stones C+ironstone stopped on stones	xxx xxx	0	IV	3b	W
E33	0-29	caHCL	3	29-50	SCL	xx(x)	50-110+	caC+ck stones	xxx	1	II/III	2/3a	W
E34	0-27	HCL	3	27-60	HCL	xxx	60-120	caC+ck stones	xxx	0	III	3b	W
E35	0-29	HCL	2	29-60	caC	xx	60-80	caC+ck stones	xxx	0	II	3a	W
E36	0-30	caC	4	30-45	caC	xx(x)	45-90+	caC+ck stones	xxx	<1	III	3a	W
E37	0-26	HCL	2	26-55	C	xxx	55-90+	caC+ck stones	xxx	0	IV	3b	W
E38	0-26	HCL	2	26-36	C	xx	36-90+	caC+ck stones	xxx	<1	III	3b	W
E39	0-24	caC	5	24-50	caC	xxx	50-110+	caC+ck stones	xxx	2	IV	3b	W
E40	Playing field												
E41	0-21	C	3	21-100+	caC+ck stones	xxx				1	IV	3b	W
E42	0-26	C	3	26-60	caC	xxx	60-110+	caC+ck stones	xxxx	2	IV	3b	W
E43	0-27	C-HCL	2	27-387	C	xx	87-90+	caC+ck stones	xxx	0	III	3b	W
E44	0-28	C	3	28-40	C	xx(x)	40-80+	caC+ck stones	xxx	2	III	3b	W
E45	0-24	HCL	3	24-60	C	xxx	60-120	caC+ck stones	xxxx	1	IV	3b	W
E46	0-20	caHCL	4	20-35	caC	xx	35-120	caC+ck stones	xxx	1	IV	3b	W

Land adjoining Melton Mowbray Area F- Details of observations at each sampling point

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
F1	0-20	HCL	1	20-110+	C	xxx				0	IV	3b	W
F2	0-18	HCL	1	18-30	caC	xx	30-60 60+	caC+ck stones stopped on stones	xxx	2	IV	3b	W
F3	0-30	caHCL	6	30-100+	caC+ck stones	xxxx				2	IV	3b	W
F4	0-32	caHCL	7	32-70	caC+ck stones	xxx	70+	stopped on stones		2	IV	3b	W
F5	0-26	C	2	26-45	C	xx	45-100+	caC	xx-xxx	0	II/III	3a/3b	W
F6	0-25	HCL	1	25-40	C	xx	40-100	C	xxx	0	III	3b	W
F7	0-28	©HCL	1	28-50	caC	xx	50-90+	caC+ck stones	xxx	<1	II/III	3a/3b	W
F8	0-18	MCL	1	18-30	C	xx(x)	30-110+	C	xxx	2	IV	3b	W

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
F9	0-24	C-HCL	3	24-100+	C	xxx				1	IV	3b	W
F10	0-29	caC	2	29-70	caC	xx	70-110+	caC+ck stones	xxx	1	III	3a	W
F11	0-24	caHCL	4	24-40	caC	xxx	40-110+	caC+ck stones	xxx	1	IV	3b	W
F12	0-26	HCL	4	26-50	C	xxx	50-100 100-120	caC+ck stones MS	xxx o	0	IV	3b	W
F13	0-30	HCL	1	30-40	C	xx	40-100+	caC+ck stones	xxx	0	III	3b	W
F14	0-23	caHCL	1	23-40	caC	x(x)	40-70	caC+ck stones stopped on stones	xxx	1-2	III	3a	W
F15	0-20	MCL	2	20-50	caC+ck stones	xxx	50+	stopped on stones		3	IV	3b	W
F16	0-21	HCL-C	3	21-100	caC+ck stones	xxxx				3	IV	3b	W
F17	0-26	caHCL	7	26-60	caC+ck stones	xxx	60-110+	caC+ck stones	xxxx	2	IV	3b	W
F18	0-25	caHCL	4	25-35 35-60	caC caC+ck stones	xx xxx	60-90 90-110+	caC+ck stones C	xxxx xxxx	2	IV	3b	W
F19	0-26	(ca)HCL	4	26-50	caC	xx	50-110+	caC+ck stones	xxx	1	III	3a	W
F20	0-30	HCL	1	30-50	C	x(x)	50-110+	caC+ck stones	xxx	0	II/III	3a/3b	W
F21	0-25	HCL	1	25-40	C	xx	40-90+	caC+ck stones	xxx	1	III	3b	W
F22	0-28	HCL	3	28-90	C	xxx	90-100	caC+ck stones	xxx	0	IV	3b	W
F23	0-25	(ca)HCL	2	25-100+	C	xxx				<1	IV	3b	W
F24	0-25	HCL-C	3	25-50	C	xxx	50-110+	caC	xxxx	2	IV	3b	W
F25	0-31	caC	2	31-45	caC	xxx	45-110+	caC+ck stones	xxxx	0	IV	3b	W
F26	0-28	caHCL	5	28-60	caC+ck stones	xxxx	60+	stopped on stones		0	IV	3b	W
F27	0-30	caHCL	4	30-60	caC+ck stones	xxxx	60+	stopped on stones		2	IV	3b	W
F28	0-24	caC	3	24-60	caC	xxx	60-110+	caC	xxxx	1	IV	3b	W
F29	0-32	caHCL	3	32-40	caC	xx	40-60	caC	xxx	0	III	3a	W

Land adjoining Melton Mowbray Area G - Details of observations at each sampling point

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
G1	0-30	caHCL	6	30-50	HCL	xx	50-110	caC+ck stones	xxx	1	II/III	3a	W
G2	0-18	MCL	0	18-45	HCL	xx	45-70 70-120	HCL SCL	xx(x) xx	1	II/III	3a	W
G3	0-30	HCL	0	30-50	C	x(x)	50-120	caC	xxx	<1	II/III	3a	W
G4	0-25	M-HCL	2	25-40	C	x	40-120	caC	xxx	1	III	3b	W
G5	0-32	caC	3	32-100+	caC+ck stones	xxx				0	IV	3b	W
G6	0-32	HCL	4	32-50	HCL	xx(x)	50-90+	caC+ck stones	xxx	2	III	3b	W
G7	0-25	HCL	1	25-50	caC+ck stones	xxx	50-110+	caC+ck stones	xxxx	1	IV	3b	W
G8	0-20	HCL-C	3	20-70	caC+ck stones	xx(x)	70-110+	caC+ck stones	xxx	1	III/IV	3b	W
G9	0-30	HCL	5	30-50	caHCL	xx	50-70 70-120	FSZL HCL+lst	x xx	2	II	3a	W
G10	0-28	HCL	1	28-100+	caC+ck stones	xxx				<1	IV	3b	W
G11	0-28	C	3	28-80	C	xxx	80+	stopped on stone		<1	IV	3b	W
G12	0-28	HCL	2	28-45	C	xxx	45-100+	caC+ck stones	xxx	1	IV	3b	W

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
G13	0-28	MCL	1	28-45	HCL-SCL	xx	45-110+	HCK-C	xx	1	III	3a	W
G14	0-20	MCL	6	20-110+	caC	xxx				1	IV	3b	W
G15	0-28	M-HCL	1	28-110+	caHCL	x				1-2	II	2	W
G16	0-31	M-HCL	1	31-42	HCL	xxx	42-90+	caC+ck stones	xxxx	2	III	2/3a	W
G17	0-29	M-HCL	1	29-70	HCL	x	70-110	caHCL+cks	xxx	0	II/III	3a/3b	W
G18	0-25	HCL-C	2	25-50	caC	xx	50-80 80+	caC+ck stones stopped on stones	xxx	<1	III	3b	W
G19	0-29	caHCL	1	29-48	HCL-SCL	xxx	48-120	caC+ck stones	xxx	2	III	3a/3b	W
G20	0-25	caHCL	1	25-110+	caC	xx				3	III	3a	W
G21	0-32	HCL	4	32-70	HCL	xx(x)	70-110+	caC+ck stones	xxx	2	II/III	3a/3b	W
G22	0-32	C	3	32-45	C	xx	45-110+	caC	xxx	1	III	3b	W
G23	0-25	HCL-C	1	25-35	C	xx	35-110+	caC+ck stones	xxx	0	III	3b	W
G24	0-27	C	2	27-45	C	xx	45-80 80-110+	caC+ck stones caC+ck stones	xxx xxxx	0	III	3b	W
G25	0-32	HCL	2	32-60	HCL	xxx	60-120	HCL	xxx	2	III	3b	W
G26	0-28	caC	3	28-120	caC+ck stones	xxx				1	IV	3b	W
G27	0-27	caHCL	5	27-40	caC	xx	40-120	caC+ck stones	xxx	3	III	3a	W
G28	0-30	C	4	30-44	C	xx	44-60 60+	caC+ck stones stopped on stones	xxx	2	III	3b	W
G29	0-30	HCL	2	30-50	C	xx	50-75 75-100+	C caC+ck stones	xx(x)	0	III	3b	W
G30	0-26	HCL-C	5	26-80	C	xx	80-110+	caC+ck stones	xxx	0	II/III	3a/3b	W
G31	0-26	caHCL	4	26-38	caC+ck stones	xx	38-110	caC+ck stones	xxx(x)	1	IV	3b/3a	W
G32	0-25	HCL	2	25-50	HCL-C	xx	50-110+	C	xxx	<1	III	3b	W
G33	0-28	HCL	3	28-50	C	xxx	50+	ironstone		1	IV	3b	W
G34	0-25	HCL-C	2	25-45	caC	xx	45-100+	caC+ck stones	xxx	0	III	3b	W

Land adjoining Melton Mowbray Area H - Details of observations at each sampling point

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
H1	0-16	HCL	0	16-110+	HCL	x				0	II	3a	W
H1a	0-35	MSZL	0	35-60	SCL	x	60-90 90+	caSCLstbr stop on lst?	o	1	I	2	W
H1b	0-25	HCL	0	25-45	HCL	xx(x)	45-100	caC	xxx	0	III	3b	W
H2	0-16	caMCL	2	16-120	caC+ck stones	xxxx				1	IV	3b	W
H3	0-26	HCL	1	26-45	HCL	x	45-110+	SCL	xxx	2	II	3b	W
H4	0-28	SCL	1	28-80	SCL-HCL	x	80-110+	SCL	xx	0	II	2	W
H5	0-45	MCL	0	45-110	C	xxx				0	III	3a	W
H6	0-30	MCL-SZL	1	30-50	HCL	o	50-90 90-110	HCL dgC	xx	0 xxx	III	3a	W
H7	0-28	C	2	28-70	C	xxx	70+	stopped on stones		3	IV	3b	W
H8	0-28	(ca)HCL-C	1	28-45	C	xxx	45-110+	caC	xxxx	4	IV	3b	W
H9	0-25	caHCL	0	25-70	HCL	xx		made ground		0	II	3a	W

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
H10	0-20	C	1	20-50	C	xxx	50-100+	rbC	xxxx	1	IV	3b	W
H11	0-25	C	2	25-55	C	xxx	55+	stopped on stone		1	IV	3b	W
H12	0-30	HCL	1	30-45	HCL	xxx	45-60 60+	C	xxx	2	IV	3b	W
H13	0-30	HCL	4	30-65	C	xxx	65-120	caC	xxxx	2	IV	3b	W
H14	0-25	C	1	25-65	rbC	xxx	65-110	caC	xxxx	2	IV	3b	W
H15	0-27	C	1	27-35	caC	xx	35-60 60-120	caC caC	xxx xxxx	3	IV	3b	W
H16	0-10 10-30	grey HCL HCL	0 0	30-60	C	xxx	60-100+	caC	xxx	0	IV	3b	W
H17	0-24	HCL	5	24-40	SCL	xx	40-90 90-110	st br SCL st br MSL	o x	2	I/II	2/3a	W
H18	0-32	HCL	3	32-75	C	xxx	75+	stopped on limestone		0	IV	3b	W
H19	0-30	HCL	2	30-40	HCL	xx(x)	40-100+	caC	xxx	0	III	3b	W
H20	0-29	HCL-C	5	29-50 50-70	vcaHCL caC	xx xx	70-85 85-100	SCL caC	o x	1	II/III	3a/3b	W
H21	0-26	caHCL	6	26-50	vcaSCL	x	50/70	stopped on limestone		1	I	2/3a	D,W
H22	0-28	HCL	1	28-45	HCL	xx	45-110+	HCL	xxx	0	II/III	3a/3b	W
H23	0-23	HCL	1	23-35	HCL	xxx	35-100	C	xxx	0	III	3b	W
H24	0-32	HCL	2	32-60	C	xxx	60-110+	caC	xxx	0	IV	3b	W
H25	0-27	HCL	4	27-40	C	xx	40-65 65-110	caC caC+lst	xx xxx	2	II/III	3a/3b	W
H26	0-30	HCL	1	30-40	C	xx	40-100+	caC	xxx	0	III	3b	W

Land adjoining Melton Mowbray Area I - Details of observations at each sampling point

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
I1	Not accessible												
I2	0-25	dkHCL	0	25-100+	C	xxx				0	IV	3b	W
I3	0-24	M-HCL	0	24-80+	C	xxxx				0	IV	3b	W
I4	0-25	md HCL	0	25-80+	C	xxx				0	IV	3b	W
I5	0-22	HCL	0	22-100+	C	xxx				2	IV	3b	W
I6	0-12	caHCL	0	12-50	rgC	xxxx	50+	stopped on stone		0	IV	3b	W
I7	0-25	HCL	0	25-80	C	xxx				0	IV	3b	W
I8	0-25	SCL	0	25-50	SCL	xx	90	C	xxx	0	III	3a	W
I9	0-30	MSL	1	30-70	SCL	x	70-100	st bSCL	o	0	I	2	W
I10	0-22	SCL	1	22-55	SCL	o	55-110	(st)SCL	xx	1	II	2	W
I11	0-24	HCL	0	24-50	caC+lst	xxx	50-100	caC	xxx	1	IV	3b	W
I12	0-26	caSCL	5	26-70	SCL	xxx	70-120	st br SCL	xxx	0	II	2	W
I13	0-25	HCL	0	25-80+	C	xxx				0	IV	3b	W

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
I13a	0-25	HCL	0	25-60	C	xxx				0	IV	3b	W
I14	0-25	SCL	2	25-60	SCL	o-x	60-80 80-120	HCL-SCL brownSL-LS	xxx o	1-2	II	2	W
I15	Not in agriculture												
I16	0-25	MCL	3	25-50	stC	xxx	50-90	HCL	xxx	0	IV	3b	W
I17	0-30	SCL	5	30-50	stSCL	x	50-60 60-110	brownC C	o xxx	1	II	2	W
I18	0-30	HCL	3	30-45	SCL	xxx	45-100+	SCL	xxx	0	II/III	3a/3b	W
I19	0-55	MCL-SCL	1		Stopped					0	1	2	W
I20	0-26	HCL	1	26-60	(st)SCL	x	60+	stopped on stone		2	II	2/3a	D
I21	0-30	HCL	1	30-50	HCL	xx	50-100	stC	xx	0	III	3b/a	W
I22	0-20	HCL	0	20-50	C	xx	50-100	C	xxx	0	III	3b	W,FL
I23	0-30	HZCL	0	30-70	ZC	xx	70-120	C	xxx	0	III	3b	W
I24	0-24	HCL	0	24-45	brownC	x	45-100	C	xxx	0	III	3b	W
I25	0-25	C	0	25-45	brownC	xx	45-100	C	xxx	0	III	3b	W
I26	0-22	SCL	1	22-90	SCL	xxx	90-120	MS	xxx	0	II	2	W
I27	0-29	HCL	0	29-65	HCL	xx	65-110+	HCL	xxx	0	II/III	3a/3b	W
I28	0-28	C	0	28-45	O	xx	45-100	C	xxx	0	III	3b	W
I29	0-31	SCL	2	31-55	SCL	xxx	55-110	SCL	xxxx	1	III	3a	W
I30	0-30	SCL	0	30-50	SCL	xx	50-100	C	xxxx	1	II/III	2/3a	W
I31	0-27	SCL-MSL	2	27-50	SCL	x	50-80 80+	SCL stopped on stone	xxx	3	II	2	W
I32	0-30	SCL	3	30-45	SCL	x	45-90 90-120	C SCL	xxxx xxx	1	III	3a	W
I33	0-28	SCL	3	28-55	SCL(st)	o	55-110	LMS-MS	o	<1	II	2	D
I34	0-25	SCL	1	25-50	SCL	xx	50-90	MSL	xx	<1	II	2	D
							90-120	LMS	xx				

Land adjoining Melton Mowbray Area J - Details of observations at each sampling point

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
J1	0-25	C	3	25-60	C	xxx	60-100	caC+ck stones	xxx	0	IV	3b	W
J2	0-30	C	2	30-60	C	xxx	60-110+	caC+ck stones	xxx	0	IV	3b	W
J3	0-30	(ca)C	3	30-50	C	xx(x)	50-100	caC+ck stones	xxx	1	III	3b	W
J4	0-22	HCL	1	22-40	C	x	40-100	C	xxx	2	III	3b	W
J5	0-30	C	2	30-45	C	xx(x)	45-90+	caC+ck stones	xxx	1	III	3b	W
J6	0-24	C	2	24-40	C	x	40-60 60-80 80-120	caC+ck stones caHCL st br caC	xxx x xxxx	3	III	3b	W
J7	0-26	M-HCL	0	26-60	HCL	x	60-100+	caC	xxx	3	II	3a	W
J8	0-19	caHCL	0	19-60	caC+ck stones		made ground			0	IV	3b	W
J9	0-30	HCL	2	30-45	C	xx(x)	45-100	caC+ck stones	xxx	<1	III	3b	W
J10	0-22	caHCL	10	22-50	stcaHCL	x	50+	stopped on limestone		2	I/II	3a	D

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
J11	0-19	HCL	0	19-60	HCL	x	60-100+	HCL-SCL	x	1	II	3a	W
J12	0-23	HCL	0	23-45	HCL	x	45-60 60+	C stopped on stone	xxx	5	II	3a	W
J13	0-15	caC	5	15-40	caC+ck stones			made ground		0	IV	3b	W
J14	0-25	C	2	25-50	C	xxx	50-100	C (ca at 70cm)	xxxx	0	IV	3b	W
J15	0-32	HCL	1	32-45	C	xx	45-100	caC	xxx	<1	III	3b	W
J16	0-25	HCL	1	25-45	C	xx	45-100	C (ca@80)	xxx	3	III	3b	W
J17	0-17	HCLca	1	17-45	Cca	xx(x)	45-100	Cca	xxx	7	III	3a	W
J18	0-19	caHCL	2	19-50	caC+ck stones	xx	50-100	caC+ck stones	xxx	2	III	3a	W
J19	0-30	C	1	30-50	C	xx(x)	50-100	caC+ck stones	xxx	0	III	3b	W
J20	0-27	HCL	3	27-35	C	xx(x)	35-80 80-110	caC+ck stones caC+ck stones	xxx xxxx	0	IV	3b	W
J21	0-23	HCL	3	23-50	C (disturbed)	xx	50-75 75-100	Cca Cca	xx xxx	3	II-III	3a-b	W
J22	0-23	C(ca)	2	23-45	Cca	x	45-70 70-100	Cca Cca	xx xxx	3	III	3b	W
J23	0-20	caHCL	0	20-55	caC	x	55-100	caC+ck stones	xxx	3	III	3a	W
J24	0-25	(ca)C	3	25-40	C	xx(x)	40-100	caC+ck stones	xxx	0	III	3b/a	W
J25	0-25	C	3	25-50	C	xx	50-100	caC+ck stones	xxx	1	II	3a	W
J26	0-24	HCL	1	24-40	Cca (?sp)	xx(x)	40-100	Cca	xxx	3	III	3b	W
J27	0-22	C	2	22-50	C	xx	50-100	C	xxx	3	II-III	3a-b	W
J28	0-16	Cca	2	16-48	Cca	xx	48-100	Cca	xxx	3	II-III	3a	W
J29	0-28	C	2	28-100	caC+ck stones	xxx				1	IV	3b	W
J30	0-23	Cca	2	23-65	Cca	xx(x)	65-100	Cca	xxx	2	II-III	3a	W
J31	0-23	HCL	1	23-45	HCL	o	45-70 70-100	HCL/C HCL	xx xxx	2	II	3a	W
J32	0-18	HCLca	1	18-48	Cca	o	48-100	Cca	xxx	4	II-III	3a	W
J33	0-20	HCL	0	20-80	HCL	xx	80-100	C	xxx	3	II	3a	W
J34	0-25	C	2	25-35	C	xx(x)	35-100	Cca	xxx	2	III	3b	W
J35	0-24	HCL	1	24-45	HCL/C	xx(x)	45-100	C	xxx	3	III	3b	W
J36	0-20	caHCL	1	20-50	caC+ck stones	xx	50-90+	caC+ck stones	xxx	4	III	3a	W
J37	0-30	caHCL	4	30-60	caC	xxx	60-100	caC+ck stones	xxx	0	IV	3b	W
J38	0-30	C	1	30-60	C	xx	60-110	C	xx(x)	2	II/III	3a/3b	W
J39	0-24	C(ca)	1	24-55	Cca	xxx	55-100	Cca	xxxx	3	III	3b	W
J40	0-19	HCL	0	19-65	C	x	65-100	C	xxx	3	II	2-3a	W
J41	0-15	HCL/Cca	2	15-65	Cca	x	65-100	Cca	xxx	2	II	3a	W
J42	0-19	HCL(ca)	2	19-55	Cca (?sp)	x	55-100	Cca	xxx	1	II-III	3a	W
J43	0-24	HCL-ZCL	1	24-60	caC	xxx	60-120	C	xxxx	2	IV	3b	W
J44	0-26	Cca	2	26-60	Cca	x	60-100	HCLca	xx(x)	2	II	2-3a	W
J45	0-30	HCL	1	30-50	HCL	x	50-100	C	xxx	<1	II	3a	W
J46	0-19	M-HCL	0	19-50	C	xx	50-100	C	xxx	4	II/III	3a	W
J47	0-24	caHCL	2	24-60	caC	xxx	60+	stopped on stone		1	IV	3b	W
J48	0-20	HCL	0	20-35	C	xx	35-90	caC	xxx	2-3	IV	3b	W
J49	0-25	C	o	25-38	C	xx(x)	38-100	C (ca@75)	xxx	2	III	3b	W
J50	0-20	MCL	0	20-35	C	xx	35-80 80-100	C caC	xxx xxxx	2	IV	3b	W
J51	0-20	HCL	0	20-50	C	xxx	50-100	C	xxxx	1	IV	3b	W

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
J52	0-17	caHCL	3	17-50	HCL	xx	50-100	caC	xxx	1	III	3a	W
J53	0-23	HCL	2	23-45	C	xxx	45-60 60-100	x caC	xx xxx	2	IV	3b	W
J54	0-20	HCL	0	20-50	HCL	xx	50-100	C	xxx	4	II	3a	W
J55	0-22	HCL	0	22-110	C	xxx		C		1	IV	3b	W
J56	0-19	HCL	0	19-100	C	xxx				0	IV	3b	W
J57	0-22	HCL	0	22-70	C	xxx	70-110+	caC	xxxx	1	IV	3b	W

Land adjoining Melton Mowbray Area K - Details of observations at each sampling point

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
K1	0-27	HCL	0	27-40	C	xxx	40-70 70+	caC+ck stones stopped on stones	xxx	1	IV	3b	W
K2	0-19	HCL	0	19-110+	caC+ck stones					2	IV	3b	W
K3	not in ag												
K4	0-20	HCL	1	20-45	caC	xx	45-100+	C	xxx	1	III	3b	W
K5	0-20	C	3	20-35	caC	xx	35-80+	caC+ck stones	xxx	1	IV	3b	W
K6	0-25	HCL	1	25-40	caC	xx	40-110+	caC+ck stones	xxx	1	III	3b	W
K7	0-25	HCL	3	25-40	caC	xx	40-100+	caC+ck stones	xxx	2	III	3b	W
K8	0-25	HCL	2	25-40	caC	xx	40-70 70+	caC+ck stones stopped in stones	xxx	1	III	3b	W
K9	0-25	HCL	0	25-60	C	xxx	60-110+	caC+ck stones	xxxx	1	IV	3b	W
K10	0-25	HCL	1	25-50	caC	xxx	50-110+	caC+ck stones	xxx	1	IV	3b	W
K11	0-23	HCL	0	23-70	C	xx	70-100	C	xxx	2	III	3b	W
K12	0-20	MCL	0	20-50	C	xxx	50-110+	caC+ck stones	xxxx	1	IV	3b	W
K13	0-25	C	1	25-50	C	xxx	50-100+	caC+ck stones	xxxx	<1	IV	3b	W
K14	0-25	M-HCL	1	25-50	C	xx(x)	50-110+	caC+ck stones	xxx	0	III	3a/3b	W
K15	0-23	MCL	1	23-50	C	xx	50-70 70-100	C C	xxx xx	2	III	3a	W
K16	0-20	M-HCL	0	20-50	C	xx	50-100	C	xxx	2	III	3a	W
K17	0-17	HCL	0	17-70	C	xxx	70-110+	caC+ck stones	xxxx	0	IV	3b	W
K18	0-16	HCL	2	16-45	caC	x	45-100	caC	xx	1	II	3a	W
K19	0-23	HCL	0	23-55	C	x	55-100	C	xxx	3	II	3a	W
K20	0-17	HCL	0	17-35	C	xxx	35-100+	caC+ck stones	xxx	0	IV	3b	W
K21	not in agriculture												
K22	0-19	HCL	0	19-60	C	x	60-100	caC+ck stones	xxx	4	II	3a	W
K23	0-18	caHCL	2	18-40	caC	x	40-70 70+	caC+ck stones stopped on stone	xxx	2	III	3a	W
K24	0-19	HCL	0	19-30	C	xx	30-60 60-100	C caC+ck stones	xxx xxx	1	IV	3b	W
K25	0-15	HCL	2	15-45	HCL	x	45-60 60-100	C (st)C	xx xxx	3	II	3a	W
K26	0-13	C	1	13-40	C	x	40-100	Cca	xxx	4	III	3b	W

Obs No	Topsoil			Upper subsoil			Lower subsoil			Slope (°)	Wetness Class	Agricultural quality	
	Depth (cm)	Texture	Stones (%)	Depth (cm)	Texture	Mottling	Depth (cm)	Texture	Mottling			Grade	Main limitation
K27	0-25	HCL	2	<u>25</u> -50	C	xxx	50-100	caC+ck stones	xxx(x)	0	IV	3b	W
K28	0-22	caHCL	1	22-55	caC	xx	<u>55</u> -100	caC+ck stones	xxx	2	III	3a	W
K29	0-20	HCL/C	1	20-50	Cca	x	<u>50</u> -100	Cca	xxx	4	II-III	3b	W
K30	0-17	HCL/C	0	17-40	Cca	xx	<u>40</u> -100	Cca	xxx	½	III	3b	W
K31	0-10	C	<u>0</u>	10-50	C	xxx	disturbed ground			0	IV	3b	W
K32	0-18	Cca	3	18-45	Cca	xx	<u>45</u> -55 55+	Cca stony	xxx	4	III	3a	W
K33	0-19	HCL	1	19-45	Cca	xx	<u>45</u> -100	Cca	xxx	4	III	3b	W

Key to soil and ALC tables

Mottle intensity:

- O unmottled
- X few to common rusty root mottles (topsoils) or a few ochreous mottles (subsoils)
- XX common to many ochreous mottles and/or dull structure faces
- XXX common to many greyish or pale mottles (gleyed horizon)
- XXXX dominantly grey, often with some ochreous mottles (gleyed horizon)

Texture:

- C - clay
- ZC - silty clay
- SC - sandy clay
- CL - clay loam (H-heavy, M-medium)
- ZCL - silty clay loam (H-heavy, M-medium)
- SCL - sandy clay loam
- SZL - sandy silt loam (F-fine, M-medium, C-coarse)
- SL - sandy loam (F-fine, M-medium, C-coarse)
- LS - loamy sand (F-fine, M-medium, C-coarse)
- S - sand (F-fine, M-medium, C-coarse)
- P - peat (H-humified, SF-semi-fibrous, F-fibrous)

Limitations:

- W - wetness/workability
- D - droughtiness
- De - depth
- St - stoniness
- Sl - slope
- F - flooding

Texture suffixes & prefixes:

- rb – reddish brown
- org - organic

a depth underlined (e.g. 50) indicates the top of a slowly permeable layer

