AGRICULTURAL LAND CLASSIFICATION AND STATEMENT OF PHYSICAL CHARACTERISTICS LARKHALL FARM, NORTHALLERTON, NORTH YORKSHIRE

Proposed Waste Disposal Site

SEPTEMBER 1992

ADAS

LEEDS STATUTORY GROUP

Job No:- 99/92

MAFF FILE:-

LAND AT LARK HALL FARM, NORTHALLERTON

(PROPOSED LANDFILL SITE)

SUMMARY

An area of 5.2 ha. of land was surveyed, all of which is in agricultural use. 2.1 ha. of this is Grade 2 land where soils are well drained (Wetness Class I) and consist of sandy loam or medium clay loam topsoils overlying similarly-textured subsoils. Slight soil droughtiness is the factor limiting this land to Grade 2.

2.4 ha. of Subgrade 3a land occurs in the west of the site. Topsoils are generally medium-textured (typically medium clay loam) and overlie slightly to moderately stony light-textured subsoils. Soil droughtiness is also the limiting factor in this case.

0.68 ha. of Subgrade 3b land occurs in the west of the site alongside the stream. Profiles are poorly drained (Wetness Class IV) and typically consist of medium clay loam or heavy clay loam topsoils overlying heavy clay loam or clay subsoils. This land is limited to Subgrade 3b by soil wetness and workability restrictions.

CONTENTS

MAPS

1. INTRODUCTION AND SITE CHARACTERISTICS

The site is located around Grid Reference SE350930 and lies approximately 2.5 km south west of Northallerton town centre immediately south of the Northallerton-Wensleydale railway. It covers a total of 5.18 ha.

Survey work was carried out in September 1992 when soils were examined by hand auger borings at 50 m. intervals predetermined by the National Grid. Extra borings were made, where necessary, to refine grade boundaries and two soil inspection pits were dug to allow detailed soil descriptions to be made and samples taken for laboratory analysis.

All assessments of land quality were made using the methods described in "Agricultural Land Classification of England and Wales, Revised guidelines and criteria for grading the quality of agricultural land" (MAFF, 1988).

Climate

Altitude (m):	30
Accumulated Temperature above 0°C (January - June)	1357 day °C
Average Annual Rainfall	627
Climatic Grade:	1
Field Capacity Days:	147
Moisture Deficit (mm) Wheat:	103
Moisture Deficit (mm) Potatoes:	93

Land Use and Relief

At the time of survey most of the site was under maize and the remainder under ley grass.

The site is flat to very gently sloping (typically 0° - 2°) with an easterly aspect.

Geology and Soils

The site is underlain by Triassic Mercia Mudstone (formerly Keuper Marl) and overlain by deposits of alluvium (in the east) and glacial sand and gravel (in the west).

The soils closely reflect the drift geology. In the east are poorly drained (Wetness Class IV) soils consisting typically of medium clay loam or heavy clay loam topsoils overlying heavy clay loam or clay subsoils sometimes containing thin peaty bands. In the east soils are well drained (Wetness Class I) and consist of sandy loam or medium clay loam topsoils overlying slightly to moderately stony loamy sand, sandy loam or medium clay loam subsoils. The lighter soils correspond to those mapped as the Wick Association by the Soil Survey and Land Resource Centre.

2. AGRICULTURAL LAND CLASSIFICATION

The A.L.C. grades occurring on this site are as follows:-

Grade/Subgrade	Hectares	Percentage of Total Area
2	2.10	40.5
3a	2.40	46.3
3b	0.68	13.2
TOTAL	5.18	100

Grade 2

Grade 2 land occurs in a band running from north to south in the eastern half of the site. Soils are light to medium textured and typically consist of sandy loam or medium clay loam topsoils overlying similarly textured subsoils. The subsoils are slightly stony, typically containing 6.8% small to large subrounded hard stones. Profiles are well drained (Wetness Class I) but the land is limited to Grade 2 by slight soil droughtiness.

Subgrade 3a

Subgrade 3a land occurs in the west of the site. Profiles are well drained (Wetness Class I) and typically consist of sandy loam or medium clay loam topsoils overlying loamy sand, sandy loam or medium clay loam subsoils. Topsoils are slightly stony and subsoils moderately stony; typically containing 15 - 25% small to large subrounded hard stones. The soils are, thus, moderately droughty and this is the factor which limits the land to Subgrade 3a.

Subgrade 3b

Land in this subgrade occurs in the north-east and south-east of the site. Profiles consist of medium clay loam or heavy clay loam topsoils overlying heavy clay loam or clay subsoils, with bands of peat or moderately stony sandy loam occurring in the south east. Profiles are poorly drained (falling in Wetness Class IV) and the land is restricted to Subgrade 3b by soil wetness and workability limitations.

3. STATEMENT OF PHYSICAL CHARACTERISTICS

Two main soil types occur on this site:-

(a) Slightly to Moderately Stony Light to Medium-textured Soils (Unit T1/S1).

(b) Stoneless Medium to Heavy-textured Soils (Unit T2/S2).

Topsoils

Unit T1 occurs over most of the site and consists of a sandy loam or medium clay loam which is very slightly to slightly stony (typically containing 5 - 8% small and medium rounded and subrounded hard stones). This topsoil has a moderately developed fine subangular blocky structure. Median thickness is 30 cm.

Unit T2 occurs in the north-east and south-east of the site and consists of a stoneless or very slightly stony medium clay loam or heavy clay loam with a weakly developed coarse angular blocky structure. Median thickness is 25 cm.

Subsoils

Unit S1 occurs over most of the site and consists of loamy sand, sandy loam or medium clay loam. It is slightly to moderately stony with a typical stone content of 15 - 20% small to large subrounded and subangular hard stones, and has a moderately developed fine subangular blocky to coarse granular structure.

Unit S2 occurs in the north-east and south-east of the site and consists of heavy clay loam or clay with bands of peat or moderately stony sandy loam occurring in the south-east. Generally it is stoneless to very slightly stony and has a weakly developed coarse prismatic structure.

4. SOIL PROFILE DESCRIPTIONS

Pit 1. near boring 18. Land Use: Ley Grassland. Soil Unit: T1/S1.

Depth (cm)	Description
0 - 35	Dark brown (7.5 YR 3/2) medium clay loam; no mottles; very slightly stony (6% small and medium subrounded hard stones); slightly moist; moderately developed find subangular blocky structure; friable; common fine fibrous roots; moderately sticky; moderately plastic; non-calcareous; gradual smooth boundary.
35 - 100	Dark yellowish brown (10 YR 4/4) medium sandy loam; no mottles; slightly stony (10 - 12% small medium and large subrounded and rounded hard stones); dry; moderately developed fine subangular blocky to coarse granular structure; slightly hard soil strength; common fine fibrous roots; moderately sticky; moderately plastic; non-calcareous.

Pit 2. near boring 20. Land Use: Ley Grassland. Soil Unit: T2/S2

Depth (cm)	Description
0 - 25	Dark grey (10 YR 4/1) heavy clay loam; common medium distinct strong brown (7.5 YR 4/6) mottles; very slightly stony (1 - 2% small rounded hard stones); slightly moist; weakly developed coarse angular blocky structure; moderately firm soil strength; many fine and medium fibrous roots; moderately sticky; moderately plastic; non-calcareous; abrupt smooth boundary.
25 - 50	Dark blue grey (5B 4/1) heavy clay loam; common medium distinct strong brown (7.5 YR 5/8) mottles; very slightly stony (1-4% small and medium subrounded and subangular hard stones); slightly moist; weakly developed coarse prismatic structure; extremely firm soil strength; very slightly porous (< 0.5% pores > 0.5 mm); common fine fibrous roots; moderately sticky; moderately plastic; non-calcareous; clear smooth boundary.
50 - 00	Dark Grey)10 YR 4/1) heavy clay loam; common medium distinct brownish yellow (10 YR 6/8) and yellowish brown (10 YR 5/8) mottles; moderately stony (15 - 20% small to very large rounded to subangular hard stones; moist; weakly developed coarse prismatic structure; very firm soil strength; few fine fibrous roots; moderately sticky; moderately plastic; non-calcareous.

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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	0-25	hcl	10YR42 00	75YR56	00	F			0	0		0						
	25-100	hcl	10YR51 00	75YR68	00	M		Y	0	0		0		M		Y		
2	0-40	scl	10YR33 00						5	2	HR	7						
	40-105	csl	75YR46 00						0	0	HR	4		M				
	105-110	lcs	75YR44 00						0	0	HR	25		M				
3	0-35	msl	10YR43 00						4	2	HR	6						
	35-60	msl	10YR44 00						0	0	HR	6		M				
	60-80	mcl	10YR41 00	75YR46	00	C		Y	0	0	HR	4		M				
	80-100	hcl	10YR51 00	75YR56	00	C		Y	0	0		0		M		Y		
4	0-30	mcl	75YR33 00						3	1	HR	4						
	30-45	mcl	75YR43 00						0	0	HR	10		M				
5	0-35	scl	10YR43 00						5	3	HR	8						
	35-100	lcs	75YR54 00						0	0	HR	4		M				
	100-120	lcs	75YR74 00						0	0	HR	10		M				
6	0-30	msl	10YR33 00						3	0	HR	3						
	30-50	msl	75YR46 00						0	0	HR	2		M				
	50-80	msl	75YR53 00	75YR56	00	F			0	0	HR	2		M				
7	0-25	msl	10YR33 00						3	2	HR	5						
	25-40	csl	75YR54 00						0	0	HR	12		M				
8	0-30	msl	10YR33 00						3	2	HR	5						
	30-60	csl	75YR54 00						0	0	HR	5		M				
	60-85	scl	75YR54 00	75YR56	00	F			0	0	HR	5		M				
	85-110	csl	75YR54 00	75YR56	00	F			0	0	HR	10		M				
9	0-30	csl	10YR33 00						3	1	HR	4						
	30-50	lcs	75YR54 00						0	0	HR	6		M				
	50-60	scl	75YR53 00	75YR56	00	C		Y	0	0	HR	6		M				
10	0-30	mcl	75YR42 00						4	2	HR	6						
	30-60	mcl	75YR43 00	75YR64	00	C			0	0	HR	10		M				
11	0-30	msl	10YR43 00						3	1	HR	4						
	30-45	csl	75YR54 00						0	0	HR	12		M				
12	0-40	mcl	10YR33 00						0	0	HR	4						
	40-100	lp	10YR21 00						0	0		0		M				
13	0-30	mcl	10YR32 00						0	0	HR	16						
	30-50	mcl	10YR32 00						0	0	HR	80		M				
14	0-30	mcl	10YR32 00						0	0	HR	16						
	30-50	mcl	10YR32 00						0	0	HR	80		M				

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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
15	0-30	mcl	10YR32 00						0	0	HR	10						
	30-50	mcl	10YR32 00						0	0	HR	80		M				
16	0-30	mcl	10YR32 00						0	0	HR	10						
	30-50	mcl	10YR32 00						0	0	HR	80		M				
17	0-40	mcl	10YR32 00						0	0	HR	10						
	40-60	mcl	10YR32 00						0	0	HR	80		M				
18	0-30	mcl	10YR32 00						0	0	HR	10						
	30-50	mcl	10YR32 00						0	0	HR	80		M				
19	0-30	mcl	75YR32 00						0	0	HR	10						
	30-50	mcl	10YR32 00						0	0	HR	80		M				
20	0-30	mcl	75YR32 00						0	0	HR	10						
	30-100	c	10YR41 00	75YR58 00	C			Y	0	0		0		M		Y		
21	0-30	mcl	10YR32 00						0	0	HR	10						
	30-100	c	05YR33 00	10YR41 00	C			Y	0	0		0		M		Y		
22	0-20	hcl	10YR32 00						0	0	HR	20						
	20-40	hcl	10YR32 00						0	0	HR	80		M				

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SAMPLE NO.	GRID REF	USE	ASPECT	GRONT	GLEY	SPL	WETNESS CLASS	WETNESS GRADE	WHEAT AP	WHEAT MB	OATS AP	OATS MB	M.REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SE35009315	PGR		025	025		4	3B	135	32	117	29	1				WE	3B	
2	SE34959310	MZE	E 01	000			1	1	139	36	110	13	1					1	1-2
3	SE35009310	PGR	E 02	060	080		2	1	127	24	107	10	2				DR	2	1-2
4	SE34909305	MZE	E	000			1	1	000	0	000	0					DR	3B	PROB 3A
5	SE34959305	MZE	E	000			1	1	096	-7	077	20	3A				DR	3A	
6	SE35009305	MZE	E 02	000			1	1	111	8	108	11	2				DR	2	
7	SE34909300	MZE	E	000			1	1	062	-41	062	-35	3B				DR	3B	PROB 3A
8	SE34959300	MZE	E	000			1	1	138	35	109	12	1					1	1-2
9	SE35009300	MZE	E 02	050			2	2	071	-32	075	-22	3B				DR	3B	PROB 3A
10	SE34909295	MZE	E	000			1	1	089	-14	094	-3	3A				DR	3A	3A-2
11	SE34959295	MZE	E	000			1	1	070	-33	070	-27	3B				DR	3B	PROB 3A
12	SE35009295	CER	E	000			1	1	234	131	174	81	1					1	PEAT SUB
13	SE34859290	CER	E	000			1	1W	054	-49	054	-39	3B				DR	3B	IMPEN-30
14	SE34909290	CER	E	000			1	1	054	-49	054	-39	3B				DR	3B	IMPEN-30
15	SE34959290	CER	E	000			1	1	057	-46	057	-36	3B				DR	3B	
16	SE35009290	CER	E	000			1	1	057	-46	057	-36	3B				DR	3B	IMPEN-30
17	SE34859285	CER	E	000			1	1	072	-31	073	-20	3B				DR	3B	IMPEN-40
18	SE34909285	CER	E	000			1	1	057	-46	057	-36	3B				DR	3B	
19	SE34959285	CER	E 01	000			1	1	057	-46	057	-36	3B				DR	3B	IMPEN-30

21	SE35009280	LEY	E	01	030	030	4	3B	121	18	113	20	2				W	3B	
22	SE350092?5	LEY			000		1	1	037	-66	037	-06	4				DR	4	IMPEN-20