

STATEMENT OF PHYSICAL CHARACTERISTICS
AND
AGRICULTURAL LAND CLASSIFICATION
BAYRAM HILL, NORTH YORKSHIRE
PROPOSED BORROW PIT
JUNE 1993

ADAS
Leeds Statutory Group

Job No:- 108/93
MAFF Ref:- EL 10038

SUMMARY

A Statement of Physical Characteristics and Agricultural Land Classification survey of 18ha of land around Bayram Hill was carried out in two stages during September 1990 and June 1993.

At the time of the survey 16.9ha of this was in agricultural use of which 0.6ha falls within Grade 2. These soils are light to medium-textured and well-drained, falling within Wetness Class I. Slight soil droughtiness limits this land to Grade 2.

11.3ha of the site falls within Subgrade 3a. Profiles consist of slightly stony medium sandy loam or sandy clay loam topsoils overlying subsoils which are slightly or very slightly stony and variable in texture (medium sandy loam, sandy clay loam, heavy clay loam or clay). Profiles are well drained (Wetness Class I) or poorly drained (Wetness Class IV) and restricted to Subgrade 3a by soil droughtiness or wetness limitations.

Land in Subgrade 3b covers 4.9ha of the site. Moderately stony light textured topsoils (loamy medium sand or medium sandy loam) overlie very stony very light textured subsoils. Topsoil stoniness and severe soil droughtiness limit this land to Subgrade 3b.

The remainder of the site, 1.1ha, is covered by a small commercial conifer plantation.

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STATEMENT OF PHYSICAL CHARACTERISTICS AND AGRICULTURAL LAND CLASSIFICATION REPORT ON THE PROPOSED BORROW PIT AT BAYRAM HILL, NORTH YORKSHIRE

1. INTRODUCTION AND STATEMENT OF PHYSICAL CHARACTERISTICS

1.1 Location and Survey Methods

The site lies approximately 5½km east of Knaresborough, to the south of the A59 York Road and is centred around National Grid Reference SE 407565. Survey work was carried out in two stages during September 1990 and June 1993, when soils were examined by hand auger borings at 100m intervals predetermined by the National Grid. One soil inspection pit was dug to assess subsoil physical characteristics and additional pits were dug across the site to assess topsoil and subsoil stone contents. Land quality was assessed using techniques described in "Agricultural Land Classification" MAFF 1988.

1.2 Land Use and Relief

At the time of the survey, most of the site was under grass. The remainder consisted of a small coniferous woodland plantation. Site altitude varies from 30 to approximately 39metres above Ordnance Datum. Bayram Hill forms a knoll in the centre of the site, from which the land slopes gently in all directions.

1.3 Climate

Grid Reference	: SE 407 565
Altitude (m)	: 35
Accumulated Temperature above 0°C (January-June)	: 1365 day °C
Average Annual Rainfall (mm)	: 677
Climatic Grade	: 1
Field Capacity Days	: 161
Moisture Deficit (mm) Wheat	: 101
Moisture Deficit (mm) Potatoes	: 90

1.4 Geology, Soils and Drainage

Solid strata do not occur within 1 metre of the surface and soils are developed on drift deposits consisting of glacio-fluvial sand and gravel, till and glacial lake deposits of silt and clay. Soils on the upper part of Bayram Hill are formed on sand and gravel. Soil profiles are well drained (Wetness Class I), consisting of slightly to moderately stony medium sandy loam or loamy medium sand topsoils overlying subsoils consisting either of similar textured, but stonier material or coarse sand and gravel. Soils on the remainder of the site are formed on glacio lacustrine sands, clays and till. Slightly stony medium sandy loam or sandy clay loam topsoils overlie slightly or very slightly stony subsoils of medium sandy loam, sandy clay loam, heavy clay loam or clay texture. Profiles are generally well drained (Wetness Class I), but locally may be poorly drained and slowly permeable (Wetness Class IV) where heavy textured subsoils are present.

1.5. Soil Properties

Two main soil types occur on this site, descriptions of which are given below. Topsoil and subsoil resources are also shown on the accompanying maps along with soil thickness and volume information.

- (a) Soil Type 1: Light textured soils (Unit T1/S1)
(Full Profile Description, Table 1)

This soil formed on fluvio-glacial sand and gravel occurs in the centre of the site around Bayram Hill. It is characterised by light textured, very stony subsoils.

- (b) Soil Type 2:- Light to medium textured soils (Unit T2/S2)

This soil formed on glacio-lacustrine silts, clay and till occurs over the remainder of the site. It is characterised by moderate to low stone contents and variable textured subsoils.

1.6 Soil Resources

(i) Topsoils

Unit T1 occurs in the centre of the site around Bayram Hill. It is light textured (typically medium sandy loam or loamy medium sand) and moderately stony, containing 16-20% small to large subrounded and subangular hardstones and sandstones. This topsoil has a weakly developed fine subangular blocky structure and a mean thickness of 30cm.

Unit T2 occurs over the remainder of the site. It is light to medium textured, typically medium sandy loam or sandy clay loam and slightly stony, containing 6-15% small, medium and large subangular and subrounded hardstones and sandstones. This topsoil has a moderately developed subangular blocky structure and mean thickness of 30cm.

(ii) Subsoils

Unit S1 occurs in the centre of the site. It consists of very stony (50% small to medium and large subangular and subrounded sandstones and hardstones) loose sand and gravel. Mean unit thickness is 70cm.

Unit S2 occurs over the remainder of the site. It consists of medium textured material, typically medium sandy loam or sandy clay loam, or occasionally heavy clay loam or clay. It is slightly or very slightly stony, containing between 2 and 5% small medium and large sandstones and siltstones. Subsoil structure is variable and mean unit thickness is 70cm.

2. SOIL PROFILE DESCRIPTIONS

Table 1 Light textured soil, T1/S1

Profile Pit 1 (Between auger borings 12 and 13)

Slope:- 5°
Land Use: Coniferous woodland
Weather:- Dry and warm

Depth cm	Horizon Description
0-25	Very dark greyish brown (10YR3/2) medium sandy loam; no mottles; moderately stony (approximately 35% small, medium and large subangular and subrounded hardstones and sandstones); dry; weakly developed fine subangular blocky structure; friable; slightly porous; slightly sticky; slightly plastic; many fine and medium fleshy roots, few coarse woody roots, abrupt, irregular boundary
25-120	Brown (7.5YR5/4); loose medium sand and gravel containing approximately 50% small, medium and large subangular sandstones and hardstones; many fine and medium flaky roots and a few coarse woody roots.

3. AGRICULTURAL LAND CLASSIFICATION

The ALC grades occurring on this site are as follows:-

<u>Grade/Subgrade</u>	<u>Hectares</u>	<u>Percentage of Total Area</u>
1		
2	0.6	3.4
3a	11.4	63.3
3b	4.9	27.2
4		
5		
(Subtotal)	(16.9)	(93.9)
Urban		
Non Agricultural		
Woodland - Farm		
- Commercial	1.1	6.1)
Agricultural Buildings		
Open Water		
Land not surveyed		
(Subtotal)	(1.1)	(6.1)
	<hr/>	<hr/>
TOTAL	18.0	100
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3.1 Grade 2

A small area of Grade 2 land occurs in the north eastern corner of the site. Profiles consist of very slightly stony medium sandy loam topsoils over similar but mottled subsoils. these soils are well drained (Wetness Class I) and are restricted to Grade 2 by slight droughtiness.

3.2 Subgrade 3a

Land in this subgrade covers most of the site. Topsoils typically consist of slightly stony medium sandy loam or sandy clay loam textured material. Subsoils are generally less stony and more variable in texture, being medium sandy loam, sandy clay loam, heavy clay loam or clay. Profiles are generally well drained (Wetness Class I) but may be poorly drained locally (Wetness Class IV) where heavy textured subsoils are present. This land is limited to Subgrade 3a by droughtiness and soil wetness limitations.

3.3 Subgrade 3b

Land in this subgrade is confined to the flanks of Bayram Hill. Soil profiles consist of moderately stony, light textured topsoils, typically medium sandy loam or loamy medium sand overlying subsoils consisting either of similar textured but very stony material or loose sand and gravel. Soil profiles are well drained, falling within Wetness Class I. This land is restricted to Subgrade 3b by severe droughtiness and topsoil stoniness limitations.

3.4 Commercial Woodland

A small conifer plantation occupies the top of Bayram Hill in the centre of the site.

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MAPS