

STATEMENT OF PHYSICAL CHARACTERISTICS
AND AGRICULTURAL LAND CLASSIFICATION

BROADOAK QUARRY, EBCHESTER
NORTHUMBERLAND

Proposed Extraction of
Sand and Gravel

ADAS
Leeds Regional Office

December 1990
2FCS 5186

lds.al2.Brdok.qry

CONTENTS

1. Statement of Physical Characteristics
2. Soil properties
3. Agricultural Land Classification
4. Soil Profile Descriptions

MAPS

1. Topsoil Resource Map
2. Subsoil Resource Map
3. Agricultural Land Classification Map

STATEMENT OF PHYSICAL CHARACTERISTICS AND AGRICULTURAL LAND
CLASSIFICATION, BROADOAK QUARRY, EBCHESTER, NORTHUMBERLAND

1. INTRODUCTION AND GENERAL SITE CHARACTERISTICS

The site is located around National Grid Reference NZ 100 570, 2 km north of Ebchester. It covers 18 hectares.

Survey work was carried out in November 1990 when soils were examined by hand auger borings at 100 metre intervals at points pre-determined by the National Grid. Two soil profile pits were also dug to assess soil structural characteristics and degree of stoniness. All assessments of land quality were made using the methods described in "Agricultural Land Classification: Revised Guidelines and Criteria for grading the quality of agricultural land". (MAFF 1988).

1.1 Land Use

At the time of the survey the site was under grass except for the northern most field which was sown to cereals.

1.2 Climate

Average Annual Rainfall (AAR) in the area is approximately 725 mm. Accumulated temperature (ATO) above 0°C between January and June is 1220 day °C and the land is at field capacity for 191 days a year. The temperature and rainfall figures indicate that there is a climatic restriction on ALC of Grade 2.

1.3 Relief

Altitude varies between 100 and 150 metres above ordnance datum. Slopes in the centre of the site do not exceed 7° and so do not limit the use of agricultural machinery. Around the edge of the site, however, gradients of more than 7° and in some cases in excess of 11°

and 18° downgrade land to subgrade 3b, and grades 4 and 5 respectively.

1.4 Geology and Soils and Drainage

Soils are formed on fluvio-glacial sand and gravel deposits which form a thick cover over the underlying Coal Measures.

Soils consist of loamy medium sand to medium sandy loam topsoils over similar or lighter subsoils which pass into gravel deposits at variable depths. Profiles are generally well drained (Wetness Class I) although water logging could occur in the north east corner of the site during exceptional wet periods.

2. SOIL PROPERTIES

A. SOIL TYPES

One soil type occurs on the site. This consists of medium sandy loam topsoils over similar or lighter subsoils. Stone content is variable but generally increases with depth. Closer examination in a pit showed the topsoil to have a weakly developed medium angular blocky structure. The subsoil was very weakly structured.

B. SOIL RESOURCES

The topsoil and subsoil resources on the site are shown on the accompanying maps along with soil depth information.

TOPSOIL

Unit T1

Topsoil resources are fairly uniform being predominantly light or very light textured. Although some medium textured and peaty material also occurs, this is too localised in occurrence to separate. As a result all topsoil resources are grouped into one unit with a mean thickness of 25 cm.

SUBSOIL

Unit S1

This consists of very light textured weakly structured or loose material with a variable stone content.

3. AGRICULTURAL LAND CLASSIFICATION

The ALC grades occurring on the site are as follows:

Grade	Hectares	Percentage of Total Area
3a	12.9	67.2
3b	0.4	2.0
4	1.2	6.3
5	1.2	6.3
Non-ag (woodland)	<u>3.5</u>	<u>18.2</u>
TOTAL	19.2	100

Subgrade 3a

Land in this subgrade dominates the plateau area in the centre of the site. Soils are well drained (Wetness Class I) consisting of medium loamy sands or sandy loams over similar subsoils with increasing percentage of stones at depth. Droughtiness and exposure are the factors limiting this land to subgrade 3a.

Subgrade 3b

Subgrade 3b land occurs in a small area on the north eastern edge of the site. Soils are similar to those elsewhere, but are limited to 3b by slopes of between 8° and 11°.

Grade 4

Land in this grade contains soils similar to those elsewhere on the site, but is restricted to Grade 4 by gradients of 11°-18°.

Grade 5

This steeply sloping area in the north east is limited to Grade 5 by slopes of more than 18°. Soils are light textured and similar to those in other parts of the site.

Non-Agricultural

This consists of West Howdenway and East Howdenway Woods.

Resource Planning Group
Leeds Regional Office

4. SOIL PROFILE DESCRIPTIONS

BROADOAK QUARRY, EBCHESTER

Pit 1 - Between auger borings 11 and 15.

Land Use: Pasture

Slope: 2°

Aspect: North

0-25 Very dark greyish brown (10YR32) unmottled, medium sandy loam; common medium and a few large rounded sandstones; moist; weakly developed medium angular blocky structure; low packing density; extremely porous with fine pores and fissures; weak soil strength; slightly sticky and non-plastic; many fine fibrous roots; non calcareous, clear wavy boundary.

25-100 Yellowish brown. (10YR56) unmottled coarse loamy sand; many medium and a few large rounded sandstones becoming abundant and small with depth; low packing density; extremely porous with fine medium pores and fissures; very weakly developed fine subangular blocky structure; moist; weak soil strength; slightly sticky and non plastic; common fine fibrous roots; non calcareous; abrupt smooth boundary.