

STATEMENT OF PHYSICAL CHARACTERISTICS  
AND  
AGRICULTURAL LAND CLASSIFICATION

BUCK PARK QUARRY, DENHOLME, BRADFORD

PROPOSED QUARRY EXTENSION

ADAS  
Leeds Regional Office

September 1990  
2FCS 4962  
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Lds.AL2.Buck.Pk

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## 1. STATEMENT OF PHYSICAL CHARACTERISTICS

### A. GENERAL INTRODUCTION

This 15 hectare site adjoins the present Buck Park quarry (grid reference SE 070352) which is located 0.5 km north of Denholme.

The site was surveyed in September 1990 when soils were examined by hand auger borings at a density of one boring per hectare at points predetermined by the National Grid. A detailed soil description to provide information on soil structure and to collect samples for analysis was carried out at one location.

#### Land Use

Agricultural land on the site is under permanent pasture. The northern part of the application area forms part of the present quarry.

#### Climate and Relief

Average annual rainfall is approximately 1053 mm per year and the accumulated temperature above 0°C (January to June) is 1138 day 0°C. The site is at field capacity for 244 days per year. The rainfall and temperature figures together with altitude of 250 m impose an overall climatic limitation on agricultural land use, the best grade being 3b.

#### Geology and Soils

The site is underlain by Carboniferous Millstone Grit over which there is a cover of more than 1 metre of boulder clay. The soils formed on this drift deposit consist of medium clay loam topsoils over medium or heavy clay loam subsoils. Most profiles are slowly permeable below 50-60 cm depth.

## Drainage

Soils are all poorly drained and fall within Wetness Class IV.

## B. SOIL PROPERTIES

One soil type consisting of medium over heavy boulder clay covers the whole site. (Full description in Table 1). Sandstone does not occur within 1 metre of the surface.

Topsoils consist of medium clay loam, often with a high organic content over mottled heavy clay loam upper subsoils. These pass into gleyed slowly permeable heavy clay loam at about 60 cm from the surface. Profiles are slightly stony throughout.

## C. SOIL RESOURCES

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

### 1. TOPSOILS

#### Unit T1

This consists of medium textured material which is very slightly stony. Structure is well developed fine and medium subangular blocky. Mean thickness is 30 cm.

### 2. SUBSOILS

#### Unit S1

This is heavy in texture, slightly stony and strongly mottled or gleyed, especially at depth. Structure is moderately or well developed coarse prismatic. Mean thickness is 70 cm.

TABLE 1 Medium clay loam over heavy clay loam boulder clay soil.

BUCK PARK QUARRY

Crop: Pasture  
Slope: 2° E  
Weather: Cloudy, windy

Depth cm

0-25	Very dark grey (10 YR 3/1) medium clay loam; common fine distinct yellowish red (10 YR 4/6) mottles; very slightly stony with few small angular sandstone fragments; dry; well developed fine medium subangular blocky structure; very porous; slightly hard when dry; moderately sticky and plastic; many fine fibrous roots; non calcareous; abrupt irregular boundary.
25-60	Brownish yellow (10 YR 6/8) heavy clay loam with yellowish brown (10 YR 5/4) structure faces; common fine faint yellowish brown (10 YR 5/6) mottles; very slightly stony with few medium angular and rounded sandstones; slightly moist; well developed coarse prismatic structure; slightly porous very firm; moderately sticky and very plastic; few very fine fibrous roots down structure faces; non calcareous; abrupt wavy boundary.
60-100	Brown (10 YR 4/3) heavy clay loam with brown (10 YR 5/3) structure faces; common medium distinct dark grey (N4) and strong brown (7.5 YR 5/8) mottles; very slightly stony with few medium and large rounded and angular sandstone; slightly moist; moderately developed coarse prismatic structure; slightly porous with few very fine pores; moderately strong; very sticky and plastic; very few fine fibrous roots; non calcareous.

## 2. AGRICULTURAL LAND CLASSIFICATION

The ALC grades on the site are as follows:

Grade	Hectares	Percentage of total area
3b	6.8	45.3
Non agricultural	0.3	2.0
Urban (quarry)	<u>7.9</u>	<u>52.7</u>
	15.0	100

### Subgrade 3b

This subgrade occurs on all the agricultural land on the site. Topsoils consist of well structured medium clay loams over prismatic structured heavy clay loam subsoils which are slowly permeable below 60 cm. Drainage is poor and all profiles fall within Wetness Class IV. Climate and soil wetness are the dominant factors limiting this land to subgrade 3b.

### Non agricultural

This consists of a strip of fenced off derelict grassland close to the quarry edge.

### Urban

This consist of the present Buck Park Quarry.

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MAPS