

AGRICULTURAL LAND CLASSIFICATION AND
STATEMENT OF PHYSICAL CHARACTERISTICS
CRIME RIGG QUARRY, CO. DURHAM

SEPTEMBER 1992

ADAS
LEEDS STATUTORY GROUP

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MAFF FILE:-

PROPOSED EXTENSION TO CRIME RIGG QUARRY
SHADFORTH, CO DURHAM

SUMMARY

An area of 14 ha. of land was surveyed, all of which was in arable use. The whole site falls within Subgrade 3b and consists of medium clay loam topsoils overlying heavy clay loam subsoils. The soils are poorly drained (falling in Wetness Class IV) and the land is limited to Subgrade 3b by soil wetness and workability restrictions.

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1. INTRODUCTION AND SITE CHARACTERISTICS

The site is located around Grid Reference NZ352416 and lies approximately 8 km. east of Durham city centre. It covers a total of 14 ha., all of which was in arable use at the time of survey.

Survey work was carried out in September 1992 when soils were examined by hand auger borings at 100 m intervals predetermined by the National Grid. A detailed soil description and sampling for laboratory analysis were carried out at a representative point on the site.

The assessment of land quality was 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): 135

Accumulated Temperature above 0°C
(January - June): 1216 day °C

Average Annual Rainfall (mm): 694

Climatic Grade: 2

Field Capacity Days: 176

Moisture Deficit (mm) Wheat: 85

Moisture Deficit (mm) Potatoes: 69

Relief

The site is generally very slightly sloping with a south-easterly aspect. However, in the south-eastern corner slopes are moderate (typically 8 - 11°) and restrict the land here to Subgrade 3b. and restrict the land here to

Geology and Soils

The site is underlain by Magnesian limestone and overlain by thick deposits of boulder clay.

Soils typically consist of medium clay loam topsoils overlying slowly permeable heavy clay loam subsoils and profiles are generally poorly drained, falling in Wetness Class IV.

2. AGRICULTURAL LAND CLASSIFICATION

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

<u>Grade/Subgrade</u>	<u>Hectares</u>	<u>Percentage of Total Area</u>
3b	14.1	100

Subgrade 3b

Subgrade 3b land covers the whole site. Soils typically consist of a very slightly stony medium clay loam topsoil overlying a very slightly stony slowly permeable heavy clay loam subsoil at between 25 cm. and 30 cm. depth. Profiles are poorly drained, falling in Wetness Class IV, and soil wetness and workability limitations are the factors limiting the land to this subgrade.

In parts of the east and south-east of the site where slopes of 8 - 11° occur, land is also restricted to Subgrade 3b by a gradient limitation.

3. STATEMENT OF PHYSICAL CHARACTERISTICS

One soil type occurs on this site:-

(i) Medium to Heavy-textured Boulder Clay Soil

Topsoil (Unit T1)

Topsoils consist of a very slightly stony (2% small and medium subrounded and subangular sandstones and hard stones) medium clay loam with a moderately developed medium angular blocky structure. Median topsoil depth is 25cm.

Subsoil (Unit S1)

The subsoil on the site consists of a heavy clay loam with a weakly developed coarse angular blocky structure which becomes coarse prismatic below around 50 cm. depth. It is very slightly stony, containing around 4% small, medium and large subangular sandstones and hard stones. Mean depth is 75 cm.

4. SOIL PROFILE DESCRIPTION

Pit 1. South of Boring 4. Slope: 1°S Land Use: Arable

<u>Depth (cm)</u>	<u>Description</u>
0 - 30	Very dark greyish brown (10 YR 3/2) medium clay loam; no mottles; very slightly stony (2% small and medium sub-rounded and sub-angular sandstones and hard stones); moist; moderately developed medium angular blocky structure; firm soil strength; few fine pores; common fine fissures; many fine fibrous roots; slightly sticky; moderately plastic; non-calcareous; abrupt smooth boundary.
30 - 100	Grey (10 YR 5/1) heavy clay loam; many fine distinct reddish yellow (7.5 YR 6/8) mottles; very slightly stony (4% small to large subangular sandstones and hard stones); slightly moist; weakly developed coarse angular blocky structure becoming coarse prismatic below 50 cm; extremely firm soil strength; few fine pores (<0.5% .0.5 mm) and medium fissures; few fine fibrous roots; moderately sticky; moderately plastic; non-calcareous.