

AGRICULTURAL LAND CLASSIFICATION AND
STATEMENT OF PHYSICAL CHARACTERISTICS

AYCLIFFE QUARRY, AYCLIFFE
Proposed Extension to Limestone Quarry

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CONTENTS

1. AGRICULTURAL LAND CLASSIFICATION
2. STATEMENT OF PHYSICAL CHARACTERISTICS (Soil properties and resources)
3. SOIL PROFILE DESCRIPTION

MAPS

1. AGRICULTURAL LAND CLASSIFICATION
2. TOPSOIL RESOURCES
3. SUBSOIL RESOURCES

1. AGRICULTURAL LAND CLASSIFICATION REPORT ON THE
PROPOSED EXTENSION AT AYCLIFFE LIMESTONE QUARRY,
AYCLIFFE, COUNTY DURHAM

1.1 INTRODUCTION

This 32.6 hectare site (Grid Reference NZ 293 224) lies 1 km east of Aycliffe in County Durham between the existing Aycliffe Quarry and the A1 (M) motorway. Survey work was carried out in September 1989 when soils were examined by hand auger boring to a depth of one metre. The density of borings was one per hectare, at locations predetermined by the National Grid. In addition a profile pit was dug to provide further information on soil characteristics and to collect samples for laboratory analysis.

1.2 CLIMATE AND RELIEF

Salient climatic parameters at Aycliffe as follows:-

Average Annual Rainfall	680 mm
Accumulated Temperature Above 0°C (January to June)	1277
Mean Duration of Field Capacity (Days)	171

These factors indicate an overall climatic limitation of grade two. Altitude ranges from 85 m a.o.d. along Green Lane in the north from where it rises gradually to 95 m a.o.d. near Windmill House in the south. Relief is mainly gentle and slopes do not exceed 7°.

1.3 GEOLOGY, SOILS AND DRAINAGE

Boulder clay (Drift) deposits more than 1 metre in thickness cover the underlying Permian limestone. Soil textures reflect the nature of the drift deposits. Topsoils are always fine loamy, over clayey slowly permeable subsoils sometimes with a thin fine loamy upper subsoil. All but a few profiles fall

within soil wetness class IV and wetness is likely to limit workability for much of the year.

1.4 LAND USE

All the agricultural land is currently in arable use. There are also small areas of non-agricultural land consisting of deciduous woodland, a pond and marshy hollows.

1.5 AGRICULTURAL LAND CLASSIFICATION

Grade	Area (hectares)	% of site
3a	2.1	6
3b	29.5	91
Non Agricultural	<u>0.9</u>	<u>3</u>
Total	<u>32.5</u>	<u>100</u>

1.5.1 Subgrade 3a

The small area subgrade of 3a contains medium clay loam topsoils over similarly textured upper subsoils. The lower subsoil is gleyed and slowly permeable. These soils fall within wetness class III and are limited to subgrade 3a by soil wetness.

1.5.2 Subgrade 3b

Soils in this subgrade show little variation across the site. Topsoils consist either of medium or heavy clay loam or silty clay loam over reddish, gleyed, slowly permeable subsoils all of which fall within wetness class IV. Wetness and workability problems are more severe than on the adjoining subgrade 3a land and are the main limitations on ALC grade.

1.5.3 Non Agricultural

This consists of a pond, some woodland and an area of marshy ground.

AYCLIFFE QUARRY, PROPOSED EXTENSION TO LIMESTONE QUARRY
STATEMENT OF PHYSICAL CHARACTERISTICS (SOIL PROPERTIES AND RESOURCES)

One soil type occurs on the site, descriptions of which are given below. Top and subsoil resources are shown on the accompanying maps along with soil depth and quantity information.

BOULDER CLAY SOILS

Topsoils consist of dark greyish brown medium or heavy textured material with a moderately developed coarse subangular blocky structure. An upper subsoil is sometimes present but is thin and very similar in structure to the lower subsoil and has therefore not been separated. Lower subsoils consist of mottled brown or reddish brown heavy clay loam or clay with a very coarse prismatic or coarse angular blocky structure. It is usually stoneless.

On the soil resource maps unit T1 corresponds with the topsoil and S1 with the subsoil.

AYCLIFFE QUARRY

SOIL PROFILE DESCRIPTION, BOULDER CLAY SOIL

Land Use: Arable

Slope: 1°E

Weather: Previously very dry

Horizon (cm)

1. 0-25 Dark greyish brown (10YR 4/2) heavy clay loam unmottled; stoneless; moist; moderately developed coarse subangular blocky structure; high packing density; slightly porous; few fine pores; common fine fissures; moderately firm; very sticky; very plastic; many fine fibrous roots; non calcareous; abrupt smooth boundary.
2. 25-35 Brown (10YR 5/3) heavy clay loam with common distinct fine and medium strong brown (7.5YR 5/6) and light brownish grey (7.5YR 7/3) mottles. Stoneless; very slightly moist; strongly developed coarse angular blocky structure; high packing density; very slightly porous; few very fine pores and common fine and medium fissures; very firm soil strength; very sticky; very plastic; common very fine fibrous roots; clear wavy boundary; non calcareous.
3. 35-100 Brown (7.5YR 4/3) clay with many medium and coarse distinct strong brown (7.5YR 5/8) and grey (7.5YR 6/0) mottles; stoneless; slightly moist; strongly developed very coarse prismatic structure; high packing density; very slightly porous; few very fine pores and fine fissures; very strong soil strength; very sticky; very plastic; few very fine fibrous roots; slightly calcareous.