AGRICULTURAL LAND CLASSIFICATION

BREAMISH QUARRY EXTENSION
POWBURN, NORTHUMBERLAND

MAFF
Leeds Regional Office

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CONTENTS

MAP(S)

AGRICULTURAL LAND CLASSIFICATION REPORT ON THE PROPOSED EXTENSION TO BREAMISH QUARRY, POWBURN, NORTHUMBERLAND

1.0 Introduction and Site Characteristics

1.1 Location

National Grid Reference:- NU 045 165

Location Details:- Along the floodplain of the River Breamish, immediately north of Branton, 1 km west of Powburn on the A697.

Site Size:- 38 ha

1.2 Survey Methods

Date Surveyed:- July 1991

Boring Density and Spacing Basis:- 1 hand auger boring per hectare *at 100 m intervals predetermined by the National Grid.*

Sampling Method:- Hand auger borings to 1 m.

Number of Borings:- 38

Number of Soil Pits (used for):- 1 pit to assess soil structure.

All land quality assessments were 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)".

1.3 Land Use:-

1.4 Climate and Relief

Average Annual Rainfall (AAR):-	711 mm
Accumulated Temperature above 0°C (January-June):-	1279 day °C
Field Capacity Days:-	194 days
Altitude average:-	95 m a.o.d.
maximum:-	95 m a.o.d.
minimum:-	85 m a.o.d.
Climatic limitation (based on interaction of rainfall and temperature values:-	Grade 2

Relief:- Flat River Terrace
Slopes (°):- 1° maximum
Gradient Limitations:- No gradient limitation

1.5 Geology and Soil

Solid Strata:- Carboniferous shales and limestones of the Cementstone Group

Depth of solid rock from surface:- Greater than one metre

Drift types:- River terrace gravels

Thickness of drift and distribution:- More than 1 metre thick across the site

Soil Types and Distribution:- Stony sandy loams over river and terrace gravels occur over the whole site.

Soil Textures (topsoils and subsoils):- Soils consist of fine sandy loam topsoils over similar upper subsoils.

Soil Series/Associations:- Wick 1 Association

On 1/250000 map:- Wick 1 Association

Identified on site:- Wick 1 Association

Soil Limitations and type:- Stoniness is the main limiting factor.

1.6 Drainage

Soil type and Wetness Class:- Wetness Class I

Drainage Limitations:- No drainage limitations. Some flooding likely, however, close to the river.

2.0 Agricultural Land Classification Grades

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

Grade/Subgrade	Hectares	Percentage of Total Area
3b	25.30	68%
4	6.49	18%
Non Agricultural	3.86	11%
Urban	1.09	3%
Other		
Total	36.75	100

Subgrade 3b

Distribution on site:- Land in this grade is located between Branton Village the River Breamish.

Soil Type(s) and Texture(s):- Soils consist of well drained stony, fine sandy loam topsoils over similar subsoils with river terrace gravel at depth.

Depth to Slowly Permeable Layers:- No slowly permeable layers present.

Wetness and Drainage Class:- Soils are very well drained and fall into Wetness Class I.

Stone Percentage and Type:- 15 to 35% of fine to coarse rounded igneous stone.

Grade Limiting Factors:- Soil droughtiness, due to stone content.

Grade 4

Distribution on site:- Land in this grade occurs along the flood plain of the River Breamish.

Soil Type(s) and Texture(s):- Soils consist of medium to coarse sand to depth with up to 50% stones greater than 2 cm throughout the profile.

Depth to Slowly Permeable Layers:- No slowly permeable layers present.

Wetness and Drainage Class:- Well drained (Wetness Class I) but subject to flooding.

Stone Percentage and Type:- 35-50% of fine to coarse rounded igneous stones.

Grade Limiting Factors:- Flooding and stone content are the main limiting factors on land in this part of the site.

Other Limiting Factor(s):-

Non Agricultural

Type and location of land included:- Disused arable land associated with gravel works adjoining the floodplain of the River Breamish.

Urban

Type of land use included:- Offices, tracks and plant buildings associated with gravel works.

3.0 STATEMENT OF PHYSICAL CHARACTERISTICS (SOIL PROPERTIES AND RESOURCES)

3.1 Soil Properties

One soil type occurs on the site. Its distribution along with soil depth and quantity information are shown on the accompanying maps.

Soil Type 1:- Coarse textured sand and gravel soil.

Occurrence:- Dominant on arable land south of the River Breamish.

Textures:- Fine sandy loam topsoils and fine loamy sand to sandy loam subsoils.

Stone content:- 15-35%

Horizon thicknesses:- Topsoil 30 cm, subsoil 70 cm.

Profile pit features:- Fine to coarse igneous stones dominant throughout the profile.

Other features:- Barley crop on site showed patchy growth, which can be related to stone content and droughtiness.

3.2 Soil Resources

Topsoils

Unit T1

Texture/stone content:- Fine sandy loam, 15-35% igneous stones.

Structure:- Fine subangular blocky.

Occurrence:- Between River Breamish and Branton Village.

Thickness:- 30 cm

Subsoils

Unit S1

Texture group/stone content:- Fine loamy sand to sandy loam with 15-35% of igneous stones.

Structure:- Weak medium subangular blocky.

Occurrence:- Between River Breamish and Branton Village.

Thickness:- 70 cm

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4.0 SOIL PROFILE DESCRIPTION

Breamish Quarry Extension, Powburn, Northumberland.

Land Use: Arable
Weather: Warm, dry.
Slope: 1°

Depth cm

0-30 Very dark greyish brown (10YR32) fine sandy loam; unmottled; very many small to large rounded igneous stones; moist; weakly developed fine subangular blocky structure; non plastic; non sticky; clear wavy boundary; non calcareous.

30-100 Dark yellowish brown (10YR46) loamy fine sandy; unmottled; very many small to large rounded igneous stones; dry; weakly developed medium subangular blocky structure; non plastic; non sticky; non calcareous.