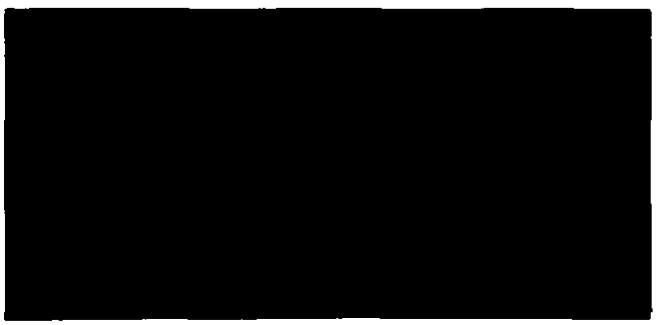

MAFF Ministry of Agriculture Fisheries and Food

STATEMENT OF PHYSICAL CHARACTERISTICS AND AGRICULTURAL LAND CLASSIFICATION POTGATE QUARRY, NORTH STAINLEY NORTH YORKSHIRE

PROPOSED QUARRY EXTENSION

JUNE 1994

ADAS
Leeds Statutory Group

Job No:- 67/94
MAFF Ref:- EL 10370
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SUMMARY

A Statement of Physical Characteristics and Agricultural Land Classification Survey of 79.4 ha of land at Potgate, North Stainley was carried out in June 1994.

At the time of survey 52.7 ha of the site was in agricultural use of which 10.4 ha falls in Grade 2. The soils are well drained, with medium clay loam topsoils overlying medium or heavy clay loam subsoils. Both topsoils and subsoils contain between 5% and 8% stones greater than 2cm and these are of mixed lithologies. This land is limited to Grade 2 by the overall climate of the area, by topsoil stoniness and topsoil workability limitations and, in places, by slight soil droughtiness.

40.8 ha of the site falls in Subgrade 3a. The soils are similar to those on the Grade 2 land but topsoils contain around 12% stones greater than 2cm and it is this factor which limits the land to Subgrade 3a.

1.5 ha in the east of the site falls in Subgrade 3b, where the soils have been disturbed. A slightly stony medium clay loam topsoil overlies overburden at around 20cm depth and the land is principally limited to this subgrade by soil droughtiness. The remainder of the site consists of Urban land (14.3 ha), Woodland (8.9 ha), Agricultural Buildings (2.1 ha) and Open Water (1.4 ha)

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STATEMENT OF PHYSICAL CHARACTERISTICS AND AGRICULTURAL LAND CLASSIFICATION REPORT ON THE PROPOSED QUARRY EXTENSION AT POTGATE QUARRY, NORTH STAINLEY

1. INTRODUCTION AND SITE CHARACTERISTICS

1.1 Location and Survey Methods

The site lies six kilometres north-west of Ripon and covers a total area of 79.4 ha. Survey work was carried out in June 1994 when soils were examined by hand auger borings at 100m intervals predetermined by the National Grid. Four soil inspection pits were dug to allow full profile descriptions to be made and to allow samples to be taken for laboratory analysis, and a number of topsoil samples were sieved in order to more accurately assess topsoil stoniness.

Land quality was assessed 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).

1.2 Land Use and Relief

At the time of survey 66 % of the site was in agricultural use, being mainly arable land but with a small area of ley grassland in the south-east. The remainder of the site consists of Urban land (the existing quarry), Farm Woodland, Agricultural Buildings and Open Water.

Site altitude varies from 60m AOD in the east to 98m AOD and the north-west. The land is generally level or gently sloping (0-3°) with an easterly aspect.

1.3 Climate

Grid Reference	: SE 277 758
Altitude	: 80
Accumulated Temperature above 0°C (January - June)	: 1309 day °C
Average Annual Rainfall (mm)	: 741
Climatic Grade	: 2
Field Capacity Days	: 182
Moisture Deficit (mm) Wheat	: 92
Moisture Deficit (mm) Potatoes	: 79

1.4 Geology, Soils and Drainage

The site is underlain by deposits of Lower Magnesian Limestone which occasionally outcrop to within one metre of the soil surface in the east. Overlying the limestone are deposits of boulder clay. The soils are generally well drained, falling in Wetness Class I, with medium clay loam topsoils overlying medium clay loam or heavy clay loam subsoils. Topsoils and subsoils are very slightly to slightly stony, typically containing between 3% and 12% very small to large subangular hard stones, sandstones and limestones. The soils correspond to the Nercwys Association as mapped by the Soil Survey and Land Research Centre.

1.5 Soil Profiles

One main soil type occurs on this site, a description of which is given below. Topsoil and subsoil resources are also shown on the accompanying maps along with soil thickness and volume information.

(a) Soil Type 1:- Medium to heavy textured soils (Unit T1/S1)
(Full Profile Description, Table 1)

This soil, formed in deposits of boulder clay, occurs over the whole site. It is characterised by a very slightly to slightly stony medium-textured topsoil overlying a very slightly to slightly stony medium to heavy-textured subsoil.

1.6 Soil Resources

(i) Topsoil

Unit T1 occurs over the whole site with the exception of the areas where there are no soil resources. It is medium-textured (usually medium clay loam) and very slightly to slightly stony (typically containing between 3% and 12% very small to large subangular hard stones, sandstones, and limestones). This soil has a moderately developed medium and coarse subangular blocky structure and a median unit thickness of 30cm.

(ii) Unit S1 also occurs over the whole site with the exception of those areas where there are no soil resources. It is medium to heavy-textured, typically consisting of medium or heavy clay loam. It is very slightly to slightly stony, with between 5%

and 8% hard stones, sandstones and limestones in most cases. It has a moderately developed medium and coarse angular blocky structure and a mean thickness of 91cm. Limestone bedrock is occasionally found at depths of less than 120cm.

2 SOIL PROFILE DESCRIPTIONS

Table 1 Medium to heavy-textured soil (T1/S1)

Profile Pit 1 (Near auger boring 16)

Land Use:- Beans
Weather:- Hot and Sunny

Depth (cm)	Horizon	Description
0-30		Dark brown (10 YR 3/3) medium clay loam; no mottles; slightly stony, containing around 8% stones; slightly moist; moderately developed coarse subangular blocky structure; firm; moderately porous; common medium fibrous roots; slightly sticky; slightly plastic; non-calcareous; abrupt smooth boundary.
30-80		Strong brown (7.5 YR 5/6) sandy clay loam; no mottles; slightly stony containing around 6% hard stones; slightly moist; moderately developed coarse angular blocky structure; friable to firm soil strength; moderately porous; few fine fibrous roots; slightly sticky; slightly plastic; non-calcareous; clear smooth boundary.
80-120		Grey (10YR 5/1) heavy clay loam; common distinct dark yellowish brown (10 YR 4/4) mottles; slightly stony, containing around 7% medium and large subrounded hard stones; slightly moist; moderately developed coarse subangular blocky structure; firm; few fine fibrous roots; moderately sticky; moderately plastic; non-calcareous.

3. AGRICULTURAL LAND CLASSIFICATION

The ALC grades occurring on this site are as follows:

Grade/Subgrade	Hectares	Percentage of Total Area
1		
2	10.4	13.1
3a	40.8	51.4
3b	1.5	1.9
4		
5		
(Sub total)	(52.7)	(66.4)
Urban	14.3	18.0
Non Agricultural		
Woodland - Farm	8.9	11.2
- Commercial		
Agricultural Buildings	2.1	2.6
Open Water	1.4	1.8
Land not surveyed		
(Sub total)	(26.7)	(33.6)
TOTAL	79.4	100

3.1 Grade 2

Grade 2 land occurs in two areas, one in the east and one in the west. The soils are generally well drained, falling in Wetness Class I, with medium clay loam topsoils overlying medium or heavy clay loam subsoils. Topsoils and subsoils are very slightly to slightly stony, containing between 5% and 8% medium to large, subangular hard stones, limestones, and sandstones. This land is restricted to Grade 2 by the overall climate of the area, by topsoil stoniness and topsoil workability limitations and, in places, by slight soil droughtiness.

3.2 Subgrade 3a

Most of the agricultural land on this site falls in Subgrade 3a. As with the adjoining Grade 2 land, profiles are generally well drained, falling in Wetness Class I, with medium clay loam topsoils overlying medium to heavy clay loam subsoils. Topsoils are typically slightly stony, often containing around 12% medium to large subangular hard stones, limestones and sandstones. Subsoils are generally very slightly to slightly stony, with around 8% hard stones, limestones and sandstones. This land is restricted to Subgrade 3a by topsoil stone content.

3.3 Subgrade 3b

A small area of Subgrade 3b land occurs in the east of the site, where the soil has been disturbed. A slightly stony (containing around 15% hard stones) medium clay loam topsoil overlies overburden at around 20 cm depth. This land is limited to Subgrade 3b by soil droughtiness and, in places, by topsoil stoniness.

3.4 Urban

The existing limestone quarry in the centre of the site has been mapped as Urban land.

3.5 Woodland

Three areas of woodland occur on the site, two in the south and one in the north.

3.6 Agricultural Buildings

This category includes the buildings at Potgate Farm, in the south.

3.7 Open Water

This category includes a number of slurry ponds in the west of the site

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MAPS