



STATEMENT OF PHYSICAL CHARACTERISTICS  
AND  
AGRICULTURAL LAND CLASSIFICATION  
PROPOSED SAND AND GRAVEL EXTRACTION  
AT WOOPERTON NEAR POWBURN  
NORTHUMBERLAND  
MAY 1995

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## SUMMARY

An Agricultural Land Classification and Statement of Physical Characteristics survey of 26.9 ha of land at Wooperton near Powburn, Northumberland was carried out in May 1995.

23.3 ha of land falls into Subgrade 3b. Soils consist of well drained, moderately stony loamy medium sand topsoils, overlying very stony loamy coarse sand subsoils. This land is mainly limited to Subgrade 3b by topsoil stone content and severe droughtiness restrictions. A small area of land to the north of the site is also limited by a gradient of 10°

The remaining land, 3.6 ha, falls into Grade 4. The soils are similar to those of the Subgrade 3b land but this area is limited to Grade 4 by a gradient of 13°.

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STATEMENT OF PHYSICAL CHARACTERISTICS AND AGRICULTURAL LAND CLASSIFICATION REPORT ON THE PROPOSED SAND AND GRAVEL EXTRACTION SITE AT WOOPERTON NEAR POWBURN, NORTHUMBERLAND

1. INTRODUCTION AND STATEMENT OF PHYSICAL CHARACTERISTICS

1.1 Location and Survey Methods

A detailed survey of 26.9 ha of land at Wooperton, Northumberland, centred on National Grid Reference NU 047204, was carried out in May 1995. Soils were examined by hand auger borings at 100m intervals, predetermined by the National Grid. Three soil inspection pits were dug to allow the soils to be described in more detail. 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).

1.2 Land Use and Relief

At the time of the survey all of the site was in permanent grass. Areas to the north and west of the site are strongly to moderately steeply sloping (8-13°). The remaining land is level to moderately sloping (0-6°). Aspect is variable. The site altitude varies from 96m AOD in the east to 75m AOD in the north-west.

1.3 Climate

Grid Reference	: NU 047 204
Altitude (m)	: 85
Accumulated Temperature above 0°C (January - June)	: 1245 day°C
Average Annual Rainfall (mm)	: 714
Climatic Grade	: 2
Field Capacity Days	: 193
Moisture Deficit (mm) Wheat	: 81
Moisture Deficit (mm) Potatoes	: 64

#### 1.4 Geology, Soils and Drainage

The whole site is underlain by Cementstone with a drift cover of glacial sand and gravel. Soils over the whole site consist of well drained (Wetness Class I) loamy medium sand topsoils over loamy coarse sand and coarse sand subsoils.

The soils on this site correspond to the Wick 1 Association as mapped by the Soil Survey and Land Research Centre.

#### 1.5 Soil Properties

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 : - Light textured soils (Unit T1/S1)  
(Full Profile Description, Table 1)

This soil, formed on glacial sand and gravel, occurs over the whole of the site. It is characterised by light textured topsoils over similar subsoils.

#### 1.6 Soil Resources

(i) Topsoils

Unit T1 occurs over the whole of the site. It is light textured, typically loamy medium sand, and moderately stony (16% hard stones >2cm and 5% hard stones <2cm). It has a moderately developed fine subangular blocky structure, and a mean thickness of 30cm.

(ii) Subsoils

Unit S1 underlies Unit T1. It is light textured, typically loam coarse sand, and very stony, containing between 55% and 65% total hard stones. It has a well developed granular structure and a mean depth of 90cm.

## 2. SOIL PROFILE DESCRIPTION

Table 1 Light Textured Soil (T1/S1)

Profile 1 near auger boring 16

Land Use :- Permanent Grass

Slope and Aspect :- 0°

Weather :- Overcast

Depth (cm)	Horizon Description
0-30	Dark brown (10YR3/3) loamy medium sand; no mottles; moderately stony (21% hard stones >2cm, 25% total hard stones); slightly moist; moderately developed fine subangular blocky structure; very friable; very porous; abundant fine fibrous roots; non sticky; non plastic; non calcareous; smooth clear boundary.
30-120	Dark yellowish brown (10YR3/6) loamy coarse sand; no mottles; very stony (65% total hard stones); slightly moist; well developed granular structure; very friable; common fine fibrous roots; non sticky; non plastic; non calcareous.

### 3. AGRICULTURAL LAND CLASSIFICATION

The ALC grades occurring on this site are as follows:

<u>Grade/Subgrade</u>	<u>Hectares</u>	<u>Percentage of Total Area</u>
1		
2		
3a		
3b	23.3	86.6
4	3.6	13.4
5		
(Sub total)	(26.9)	(100.0)
Urban		
Non Agricultural		
Woodland - Farm		
- Commercial		
Agricultural Buildings		
Open Water		
Land not surveyed		
(Sub total)		
	_____	_____
TOTAL	26.9	100
	_____	_____



### 3.1 Subgrade 3b

Subgrade 3b land covers the majority of the site. The soils are well drained (Wetness Class I) and consist of moderately stony (16-20% hard stones >2cm, 21-26% total), loamy medium sand topsoils, over very stony (55-65% total hard stones) loamy coarse sand subsoils. This land is limited to Subgrade 3b by topsoil stone content and severe soil droughtiness restrictions.

A small area to the north of the site is also restricted to Subgrade 3b by a gradient of 10°.

### 3.2 Grade 4

Grade 4 land is located in three small areas to the west of the site. Although soil physical characteristics are similar to elsewhere on the site, a gradient of 13° limits this land to Grade 4.

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MAPS