STATEMENT OF PHYSICAL CHARACTERISTICS AND AGRICULTURAL LAND CLASSIFICATION HULL ROAD, KEYINGHAM, HUMBERSIDE PROPOSED QUARRY EXTENSION FEBRUARY 1993

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SUMMARY

A Statement of Physical Characteristics and Agricultural Land Classification survey of 3.6ha of land adjoining Hull Road, Keyingham was carried out in February 1993.

At the time of survey, all of this was in agricultural use of which only 0.74ha falls within Subgrade 3a. Soils vary from light to heavy textured and from well-drained (Wetness Class I) to moderately well drained (Wetness Class II). The light soils are limited to Subgrade 3a by droughtiness. The heavier soils, in the south west corner of the site, are limited by slight wetness and workability problems.

The remainder of the site (2.9ha) falls within Subgrade 3b. Profiles are well drained (Wetness Class I) and consist of slightly stony loamy medium sand or sandy loam topsoils overlying slightly or moderately stony loamy sand or sand subsoils at around 30cm depth. Soil droughtiness is the factor which limits this land to Subgrade 3b.

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STATEMENT OF PHYSICAL CHARACTERISTICS AND AGRICULTURAL LAND CLASSIFICATION REPORT ON THE PROPOSED QUARRY EXTENSION AT HULL ROAD, KEYINGHAM, HUMBERSIDE

1. INTRODUCTION AND STATEMENT OF PHYSICAL CHARACTERISTICS

1.1 Location and Survey Methods

The site lies 4Km south east of Hedon on the south side of the A1033 Hull to Withernsea road. It is centred on Grid Reference TA 232252 and covers a total of 3.64ha. Survey work was carried out in February 1993 when soils were examined by hand auger borings at intervals predetermined by the National Grid. Overall boring density was approximately 4 per hectare and extra borings were made, where necessary, to refine grade boundaries. One soil inspection pit was dug to allow detailed descriptions of soil structure to be made. 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, all of the site was in arable use. Site altitude varies from 8m in the centre down to about 3m in the south west corner. Topography is slightly to moderately undulating with gradients varying from 0°-6°.

1.3 Climate

Grid Reference	: TA 232252
Altitude (m)	: 5
Accumulated Temperature above 0°C (January-June)	: 1394 day°C
Average Annual Rainfall (mm)	: 616
Climatic Grade	: 1
Field Capacity Days	: 135
Moisture Deficit (mm) Wheat	: 113
Moisture Deficit (mm) Potatoes	: 106

1.4 Geology, Soils and Drainage

The site is underlain by chalk over which there is a thick cover of boulder clay, sand and gravel and alluvium. Soils are formed in sand and gravel and are generally light or very light textured (typically medium sandy loam, loamy medium sand or sand) except along the southern edge where there is a small area of alluvial clay. Soils formed on the sand and gravel deposits are well drained (Wetness Class I). Those formed on alluvial clay are moderately well drained (Wetness Class II) or imperfectly drained (Wetness Class III).

1.5 Soil Properties

Two main soil types occur on this site, descriptions of which are given below. Topsoils and subsoil resources are also shown on the accompanying maps along with soil thickness and volume information.

(a) Soil Type 1: Light to very light textured soils (Unit T1/S1)
(Full Profile Description, Table 1)

This soil formed on glacial sand and gravel deposits occurs over most of the site. It is characterised by weak structure, free drainage and, generally slight stoniness.

(b) Soil Type 2:- Variable heavy to light textured soils (Unit T2/S2)

This soil, formed on a mixture of gravel and alluvium, occurs on the southern edge of the site. It is characterised by heavy sticky topsoils which overlie stoneless clay, loamy gravel or a mixture of clay and gravel.

1.6 Soils Resources

(i) Topsoils

Unit T1 occurs over almost all of the site. It is light or very light textured and typically consists of medium sandy loam, loamy medium sand or occasionally medium sand which is stoneless to slightly stony (0-12% small and medium sized angular and subangular flints and other hard stones).

This topsoil has a very weakly developed fine subangular blocky structure and a median thickness of 30cm.

Unit T2 occurs only along the southern edge of the site. It is heavy to medium textured (silty clay, heavy clay loam or sandy clay loam) and is stoneless to slightly stony. The stones originate from the adjoining higher gravel deposits. This topsoil has a moderately developed coarse angular blocky structure and a median thickness of 30cm.

(ii) Subsoils

Unit S1 occurs over most of the site. It is very light textured and consists of loamy medium sand, or medium sand. It is stoneless to slightly stony, containing 0-10% small and medium angular and subangular flint and other hard stones. Unit S1 has a single grain structure and a mean thickness of 70cm.

Unit S2 occurs along the southern edge of the site. It is variable in texture (silty clay to medium sandy loam) and stoneless to slightly stony, containing 0-12% small and medium hard stones. Structure varies from coarse prismatic to angular blocky. Mean thickness is 70cm.

2. SOIL PROFILE DESCRIPTIONS

Table 1 *Light textured soil T1/S1*

Profile Pit 1 (Near Auger Boring 4)

Slope:- 3°E
Land Use: Arable
Weather: Clear, sunny and mild

Depth	Horizon Description
0-30	Brown (10YR4/3) loamy medium sand; unmottled; very slightly stony (1-5%) with a few angular flints and rounded igneous stones; moist; very weak fine subangular blocky structure; medium packing density; extremely porous; very friable; non sticky and non plastic; common fine fibrous roots; non *calcareous; abrupt smooth boundary.*
30-120	Brownish yellow (10YR6/6) medium sand; unmottled; stoneless; moist; single grain structure; medium packing density; extremely porous; loose; non sticky and non plastic; few fine fibrous roots; 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		
3a	0.74	20.3
3b	2.90	79.7
4		
5		
(Subtotal)	(3.64)	(100)
Urban		
Non Agricultural		
Woodland - Farm		
- Commercial		
Agricultural Buildings		
Open Water		
Land not surveyed		
(Subtotal)		
TOTAL	3.64	100

3.1 Subgrade 3a

Subgrade 3a land occurs mainly along the western and north eastern edges of the site. Profiles are well or moderately well drained (Wetness Classes I and II) and consist typically of medium sandy loam topsoils overlying medium sandy loam or loamy medium sand subsoils. Both topsoils and subsoils are stoneless to slightly stony, typically containing 0-12% small and medium sized angular or subangular hard stones. This land is limited to Subgrade 3a by soil droughtiness. Also included within this subgrade is a small area in the south western corner of the site. Here, topsoils consist of heavy clay loam overlying slightly stony sandy loam subsoils. The topsoils are sticky and difficult to work when wet and this area is limited to Subgrade 3a for this reason.

3.2 Subgrade 3b

Subgrade 3b land occurs over most of the site. Most profiles are well drained (Wetness Class I) and consist of slightly stony (0-12% angular flints and hard stones) medium loamy sand, sandy loamy or occasionally medium sand topsoils overlying loamy sand or sand subsoils at about 30cm depth. Subsoils are stoneless to slightly stony (typically containing 0-15% small and medium angular flints and other hard stones). Profiles of this type although easily worked are very droughty and are limited to Subgrade 3b for this reason. Also included within Subgrade 3b is a small area of alluvial clay adjoining the drain in the south eastern corner of the site. Soils in this area consist of heavy clay loam or silty clay topsoils overlying similar but slowly permeable subsoils. Profiles are poorly drained (Wetness Class IV) and limited to Subgrade 3b by wetness and workability problems.

MAPS