

STATEMENT OF PHYSICAL CHARACTERISTICS  
AND  
AGRICULTURAL LAND CLASSIFICATION  
CLAXTON GRANGE, GREATHAM,  
HARTLEPOOL, CLEVELAND  
PROPOSED EXTENSION TO WASTE DISPOSAL SITE  
MARCH 1993

ADAS  
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## SUMMARY

A Soil Survey and Agricultural Land Classification of approximately 6 hectares of land at Claxton Grange, Greatham was carried out in March 1993.

The site is entirely in agricultural use of which 0.5 ha falls within Subgrade 3a. Soils within this grade are moderately well or imperfectly drained and consist of heavy or medium clay loam topsoils over interbedded reddish clay, sandy clay loam or sandy loam subsoils. They are limited to Subgrade 3a by wetness.

The remainder of the site (5.4 ha) falls within Subgrade 3b. Soils are poorly drained and consist of heavy clay loam topsoils over slowly permeable reddish clay subsoils. Soils of this type are limited to Subgrade 3b by wetness and workability problems.

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STATEMENT OF PHYSICAL CHARACTERISTICS AND AGRICULTURAL LAND CLASSIFICATION REPORT ON THE PROPOSED EXTENSION TO THE WASTE DISPOSAL SITE AT CLAXTON GRANGE, GREATHAM, HARTLEPOOL, CLEVELAND

1. INTRODUCTION AND STATEMENT OF PHYSICAL CHARACTERISTICS

1.1 Location and Survey Methods

The site is located 5 Km south west of Hartlepool town centre on the northern side of the A689 around National Grid Reference NZ 479279. It covers a total area of 5.9 hectares. Survey work was carried out in March 1993 when soils were examined by hand auger borings at the rate of 2 borings per hectare at points predetermined by the National Grid. Soil pits were also dug to allow the assessment of subsoil structure to be carried out. Land quality was assessed using the methods described in "Agricultural Land Classification of England and Wales". (MAFF 1988).

1.2 Land Use and Relief

At the time of survey the site was entirely in arable use. Altitude varies from 15-20cm AOD and the land is gently undulating with the highest ground occurring on the central northern edge of the site.

1.3 Climate

Grid Reference	: NZ 479279
Altitude (m)	: 20
Accumulated Temperature above 0°C (January-June)	: 1350 day°C
Average Annual Rainfall (mm)	: 580
Climatic Grade	: 1
Field Capacity Days	: 138
Moisture Deficit (mm) Wheat	: 107
Moisture Deficit (mm) Potatoes	: 97

#### 1.4 Geology, Soils and Drainage

The area is underlain by Triassic Sandstones over which there is a thick cover of glacial and post glacial drift. Within the site this consists of stoneless reddish clay containing, in places, lenses of sandy loam. Soils consist mainly of heavy clay loam topsoils over poorly drained (mainly Wetness Class IV) slowly permeable reddish clay subsoils. Greyer clayey subsoils occur in places near the southern edge of the site where some profiles are also disturbed. On the highest central northern part of the site, near the edge of the application area reddish sandy loam lenses are common, especially at depth, in many profiles. These soils, which correspond to the area of Subgrade 3a land described below, do not cover a large enough area within the application area, to warrant separation as a distinct unit.

#### 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:- Stoneless heavy textured reddish soils (Unit T1/S1)  
(Full Profile Description, Table 1)

This soil formed on stoneless reddish clay occurs over the whole site. It is characterised by heavy clay loam topsoils overlying slowly permeable red clay subsoils. Sandy loam or sandy clay loam layers and lenses occur at depth in places, especially near the central northern edge of the application area.

## 1.6 Soil Resources

### (1) Topsoils

Unit T1 occurs over the whole site. It is heavy textured and consists of stoneless heavy clay loam. It has a moderately developed coarse subangular to angular blocky structure which is compacted in many parts of the site. Median unit thickness is 25cm.

### (ii) Subsoils

Unit S1 occurs over the whole site. It is generally stoneless and heavy textured and consists of reddish grey mottled clay. Sandy loam lenses and layers occur in places, especially near the central northern edge of the site. The clayey material has a well developed coarse prismatic structure. Sandy loam lenses have moderately developed subangular to angular blocky structures. Mean unit thickness is 75cm.

2. SOIL PROFILE DESCRIPTIONS

Table 1 Stoneless textured reddish soil, T1/S1

Profile Pit 1 (Near auger boring 4)

Slope:- 0°  
Land Use:- Oil Seed Rape  
Weather:- Cold, dry, sunny

Depth cm	Horizon Description
0-25	Dark greyish brown (10YR 4/2) heavy clay loam; stoneless; moist; moderately developed adherent coarse sub angular blocky structure; high packing density; compacted slightly porous with a few fine pores and fissures; very firm; very sticky and very plastic; many very fine fibrous roots; non calcareous; abrupt smooth boundary.
25-100	Reddish brown (5YR 4/4) clay with common distinct grey (N5) mottles; reddish brown (5YR 5/3) structure faces; stoneless moist; strongly developed medium prismatic structure becoming coarse at depth; high packing density; slightly porous with few fine pores and fissures; extremely firm; very sticky and very plastic; very few fine fibrous roots; 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	0.5	8.5
3b	5.4	91.5
4		
5		
(Subtotal)	(5.9)	(100)
Urban		
Non Agricultural		
Woodland - Farm		
- Commercial		
Agricultural Buildings		
Open Water		
Land not surveyed		
(Subtotal)		
<b>TOTAL</b>	<u>5.9</u>	<u>100</u>



3.1 Subgrade 3a

Subgrade 3a land occurs on the highest ground in the central northern part of the site. Soils consist of heavy clay loam or occasionally medium clay loam topsoils over interbedded reddish clay, sandy clay loam or sandy loam subsoil horizons. Although slowly permeable horizons occur at variable depths, most profiles are moderately well or imperfectly drained (Wetness Classes II and III) and are restricted to Subgrade 3a by slight or moderate wetness limitations.

3.2 Subgrade 3b

Most of the site falls within this subgrade. Soils consist of heavy clay loam topsoils over strongly mottled slowly permeable reddish clay subsoils. Profiles are poorly drained (Wetness Class IV) and limited to this subgrade by wetness and workability problems.

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MAPS