

**PHYSICAL CHARACTERISTICS REPORT FOR PROPOSED BORROW PIT AT MALDON HALL FARM,
ESSEX
INCORPORATING AGRICULTURAL LAND CLASSIFICATION**

1.0 INTRODUCTION

This 5.1 hectare (12.6 acres) site was surveyed on 11 May 1989. Soils were examined by carrying out 12 soil auger borings and in addition a soil pit was dug at the centre of the site. At the time of survey, the site was in arable use (winter wheat) and according to information supplied by the current occupier is not irrigated.

2.0 AGRICULTURAL LAND CLASSIFICATION

2.3 hectares (45%) of the site is graded 3a and 2.8 hectares (55%) is graded 3b. The principal limitation in both areas is droughtiness risk. Topsoils on both the 3a and 3b land are similar but subsoils in the area graded 3a are somewhat more moisture retentive than those in the northern part of the site (see map). A minority of profiles on the 3a land exhibited a moderate wetness limitation but this was not sufficiently severe to down grade the area below 3a.

A full description of the site physical characteristics which determine ALC grade is given below.

3.0 SITE PHYSICAL CHARACTERISTICS

Climate

3.1 Climatic data for the site was obtained from the recently published Meteorological Office Agroclimatic data set which indicates that mean annual rainfall in the vicinity of the site is 559mm (22"). This, by national standards, low rainfall increases the importance of soil moisture reserves in reducing droughtiness risk.

Relief

- 3.2 The site lies at a mean altitude of 40m (130ft) and slopes gently towards the north east, gradient imposes no significant limitation on the use of farm machinery.

4.0 SOIL PHYSICAL CHARACTERISTICS

Parent Material

- 4.1 Soils on the site are developed primarily on stony glacial drift and on head deposits overlying London Clay. The glacial and head deposits give rise to loamy soils with good workability and relatively high available water content. However, the high stone content observed, especially in most subsoils, significantly reduces their moisture retention characteristics. Clay subsoil, probably derived directly from London Clay was observed in some profiles in the Southern part of the site.

Topsoil

Texture: Predominantly medium clay loam, occasionally sandy silt loam.

Stone Content: Slightly stony (5-15% stone), occasionally moderately stony (15-20% stone) consisting predominantly of small to medium flints.

Depth: Range 23-30cms, typically 25/26cms.

Boundary: Clear, wavy.

Calcium Carbonate: Generally non calcareous (occasionally slightly/very slightly calcareous).

Subsoil

Texture: Typically medium clay loam. Clay observed in some profiles towards the southern boundary of the site.

Stone content: In a majority of borings a shallow moderately stony (15-35% stone content) upper subsoil horizon was encountered, typically between 25 and 40/45cms in depth. In some profiles, the subsoil directly overlies a very stony horizon (50% stone content). Stone consists predominantly of medium and large flints.

Structure: Loamy subsoils were too stony to determine structure but are assessed as generally friable and free draining. No pit was dug in the small area of clay subsoil but this is likely to be slowly permeable.

Depth: A soil pit dug in the stony drift subsoil confirmed that at the centre of the site this exceeded 75cms in depth.

Calcium Carbonate: Both the drift/head subsoils and the clay subsoils are generally non calcareous.

Drainage: Subsoils are generally free draining. However, where clay subsoils occurred, profiles were assessed as Wetness Class III.

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REFERENCES

MAFF: Agricultural Land Classification of England and Wales, Revised Guidelines and Criteria (October 1988).

Meteorological Office: Climatological Datasets for Agricultural Land Classification (January 1989).

Geological Survey: 1: 50,000 Solid and Drift Geology Map, Chelmsford (Sheet 241 Published 1975).