AGRICULTURAL LAND CLASSIFICATION
and Statement of Physical Characteristics

Windmill Lane, Gildersome,
Leeds, West Yorkshire

Proposed Opencast Coal Site

MAFF
Leeds Regional Office

April 1992
File Ref: 2FCS 5831
Project No: 26/92

Lds.AL6.Gilders.ome

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MAP(S)

AGRICULTURAL LAND CLASSIFICATION REPORT

1.0 Introduction and Site Characteristics

1.1 Location

National Grid Reference:-	SE 250287
Location Details:-	Between the A62 and M621
Site Size:-	12.3 hectares

1.2 Survey Methods

Date Surveyed:-	10th April 1992
Boring Density and Spacing Basis:-	1 boring per hectare on a 100 metre grid pattern predetermined by the National Grid. Extra borings were carried out to provide additional information.
Sampling Method:-	Hand auger borings to a depth of 1 metre.
Number of Borings:-	12
Number of Soil Pits (used for):-	1 pit was dug in order to examine soil structure and profile characteristics.

All 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)".

1.3	Land Use:-	At the time of survey land was under oilseed rape.
1.4	Climate and Relief	Average Annual Rainfall (AAR):- 729 mm.
	Accumulated temperature above 0°C (January-June):-	1307 day °C.
	Field Capacity Days:-	181 days
	Altitude average:-	150 m a.o.d.
	maximum:-	157 m a.o.d.
	minimum:-	137 m a.o.d.
	Climatic limitation (based on interaction of rainfall and temperature values:-	Grade 2.
	Relief:-	Land slopes north and south away from a ridge running from Windmill Lane to the "Depot" on the east of the site.
	Slopes:-	0-4° generally, but with slopes of up to 20° next to Dean Beck.
	Limiting gradients:-	Yes, but within non agricultural woodland area adjoining Dean Beck.

1.5 Geology and Soil

Solid Strata:-	Coal measures.
Depth of solid rock from surface:-	Soils become too stony to penetrate by auger or by spade below about 50-80cm deep over large areas in the southern part of the site.
Thickness of drift and distribution:-	Thin cover of loamy and clayey material formed from weathering coal measure shales and sandstones.
Soil Types and Distribution:-	Medium textured topsoils and upper subsoils passing to heavy material on sandstone rubble at depth.
Soil Textures (topsoils and subsoils):-	Topsoils consist of medium clay loams over similar upper subsoils passing to clay or stony rubble at depth.
Soil Limitations and type:-	Soil droughtiness is occasionally limiting on the shallower, stonier soils.

1.6 Drainage

Soil type and Wetness Class:-	Medium over heavy soils - Wetness Class III Medium over stony soils - Wetness Class I
Drainage Limitations:-	Slowly permeable deeper subsoil horizons in the medium over heavy soils.

2.0 Agricultural Land Classification Grades

The ALC grades occurring on the site are as follows:-

Grade/Subgrade	Hectares	Percentage of Agricultural Area	Percentage of Total Area
1			
2			
3a	11.2	100	91.1
3b			
4			
5			
Non Agricultural	0.8		6.5
Agricultural Buildings			
Urban	0.3		2.4
Other			
	12.3	100	100

Subgrade 3a

Distribution on site:-	This subgrade covers the whole site.
Soil Types and Textures:-	Medium textured soils predominate with medium clay loam topsoils over similar or slightly heavier subsoils often reaching clay at depth.
Depth to Slowly Permeable Layers:-	50 - 80 cm where present.
Wetness and Drainage Class:-	Soils are either Wetness Class I (well drained) or Wetness Class III (imperfectly drained).
Stone Percentage and Type:-	0-5% hard rocks and sandstones in the topsoil with 0-20% in the subsoils.
Grade Limiting Factors:-	Grade is limited by soil droughtiness on the shallower stonier soils along with soil wetness problems on profiles containing slowly permeable horizons.

Non Agricultural

Type and location of land included:-	The steeply sloping woodland next to Dean Beck in the south.

Urban

Type of land use included:-	Tracks leading into the site and a derelict building adjoining Windmill Lane.

3.0 STATEMENT OF PHYSICAL CHARACTERISTICS (SOIL PROPERTIES AND RESOURCES)

3.1 Soil Properties

One soil type occurs on the site. Its distribution along with soil depth and quantity information are shown on the accompanying maps.

Soil Type 1:- Medium textured,

Occurrence:- Over the whole site.

Textures:- Medium clay loam topsoils over similar upper subsoils reaching clay containing stony horizons at depth.

Stone content:- 0-20% hard rocks and medium soft sandstones.

Horizon thicknesses:- Topsoil: 30cm
Upper subsoil: 40cm
Lower subsoil: 30cm

Profile pit features:- Soils have a well developed fine sub angular blocky structure becoming coarse angular blocky in the clayey horizons at depth.

3.2 Soil Resources

Topsoils

Unit T1

Texture/stone content:- medium/0-5%
Structure:- Well developed fine sub angular blocky.
Occurrence:- Over the whole site.
Thickness:- Mean 30cm

Subsoils

Upper Subsoils

Unit U1

Texture group/stone content:- Medium/0-20%
Structure:- well developed fine sub angular blocky
Occurrence:- over the entire site
Thickness:- 40 cm

Subsoils

Lower Subsoils

Unit S1

Texture group/stone content:- Heavy/0-5%
Structure:- well developed coarse angular blocky
Occurrence:- in the deeper soils on the lower slopes north and south of the central ridge.
Thickness:- 30 cm

Soil Profile Description for Pit A.

Location: near boring 2
Climate: fine & sunny
Land Use: oilseed rape
Gradient: 3°N

depth (cm)	profile description
0-30	Very dark greyish brown (10YR3/2) medium clay loam; unmottled; very slightly stony; most; well developed fine sub angular blocky; medium packing density; friable; slightly sticky; slightly plastic; many fine fibrous and fleshy roots; non-calcareous; clear wavy boundary.
30-70	Dark yellowish brown (10YR4/4) medium clay loam; few fine feint (10YR6/6) mottles; very slightly stony; moist; well developed fine sub angular blocky; friable; slightly sticky; slightly plastic; many fine fibrous roots; non-calcareous; abrupt smooth boundary.
70-100	Very pale brown (10YR7/3) clay; many medium prominent (10YR5/6) mottles; stoneless; moist; well developed coarse angular blocky; firm; slightly sticky; moderately plastic; few fine fibrous roots; non calcareous; few fine pores (0.5%) and fissures.