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Berkshire Minerals Plan
Omission Sites
Site OS17, Extension to Horton
ALC Map and Report
July 1993

AGRICULTURAL LAND CLASSIFICATION

BERKSHIRE MINERALS PLAN - (OMISSION SITES)

SITE OS17 - EXTENSION TO HORTON

1.0 INTRODUCTION

- 1.1 An Agricultural Land Classification (ALC) survey was carried out over two small sites at Horton on 19 July 1993. The two areas form an extension to a larger area of land which was surveyed in 1991. Both sites lie on the eastern side of the main site, one to the south east and the other to the east and both abut the Colne Brook on their eastern boundaries.
- 1.2 The northern site which extends to 5.9 ha, comprises two fields with the southern one under linseed and the northern under set aside rape. Three auger borings were made in this area, al of which were stopped by impenetrable waterlogged gravel between 45 and 60 cm depth.
- 1.3 The southern site which covers 3.9 ha comprises an area of winter wheat in which three auger borings were made together with an area of old farm buildings.

2.0 PHYSICAL FACTORS AFFECTING LAND QUALITY

Climate

- 2.1 Climatic information for the area has been interpolated from the 5 km dataset produced by the Meteorological Office (Met. Office, 1989) and is set out in the table below:

Grid Reference	TQ 021760
Altitude (m AOD)	20
Accumulated Temperature (deg)	1492
Average annual rainfall (mm)	663
Field capacity days	137
Moisture deficit, wheat (mm)	118
Moisture deficit, potatoes (mm)	114

- 2.2 Although the average annual rainfall is relatively low in a national context, there is no overall climatic limitation affecting the land quality of the site. However, climatic factors do affect interactive limitations between soil and climate, namely soil wetness and droughtiness.

Relief

- 2.3 Both the sites are relatively level and low lying, adjacent to the Colne Brook. The altitude of the land is 20 m AOD. Relief therefore does not constitute any limitation to the agricultural land quality.

Geology and Soils

- 2.4 The British Geological Survey, Sheet 269, Windsor (1964) shows both areas to be *underlain entirely by Alluvium*.
- 2.5 The Soil Survey of England and Wales, Sheet 6, Soils of South East England, (1983) shows the southern site to comprise soils of the Waterstock Association, which are described as "fine loamy gleyic argillic brown earths with ochreous mottling in the subsoil, (SSEW, 1984).
- 2.6 The northern area is mapped as the Fladbury Association which is described as "clayey alluvial soils on the floodplains of major rivers", (SSEW, 1984).
- 2.7 The current survey confirmed these soil types, with the northern area comprising clayey alluvial soils over waterlogged gravels. Profiles typically have a very dark brown slightly humose silty clay loam topsoil with few rusty root mottles, over a black clay subsoil. Below 45-60 cm depth impenetrable waterlogged gravel was encountered. The watertable in the gravels was under slight artesian pressure as when the clay was punctured by the auger, the water rose up the auger hole to the base of the topsoil. These soils have therefore been assigned to wetness class V.
- 2.8 On the southern area the soils were generally fine loamy throughout having a medium clay loam topsoil with few small and medium flints over a yellowish brown heavy clay loam upper subsoil. Below 50-60 cm depth the soil became greyer with distinct ochreous mottles and a heavy clay loam texture. In some profiles impenetrable gravel was encountered below 80 cm depth. The soils have been assigned to wetness class II.

3.0 **AGRICULTURAL LAND CLASSIFICATION**

- 3.1 The northern area has been mapped as Grade 4 on account of the heavy textured soils and the high groundwater table as described in para 2.7 above. Due to the low lying nature of the land it is considered that underdrainage would be unlikely to be effective due to the lack of sufficient outfalls. At the time of survey the ditches alongside the fields were full of water.
- 3.2 A small area of Grade 3a has been mapped on the extreme western boundary where there is a break of slope and the land rises to the west, and is felt to be better drained than the land to the east.
- 3.3 The southern area has been mapped as predominantly Grade 2 with a small area of Grade 3a in the north west corner adjacent to the grading carried out previously on the larger site in 1991. In addition an area of farm buildings has also been delineated.
- 3.4 The majority of the site which has been classified as Grade 2 is limited to this grade by a minor wetness limitation. The soils which are described in para 2.8 above have been assessed as wetness class II and with a medium clay loam topsoil will have a minor

workability restriction in the wetter periods of the year. In addition these soils are likely to have a slight droughtiness limitation as a result of the depth over the underlying geology.

3.5 The following table shows the areas of each grade on the two sites:

Northern area

<u>Grade</u>	<u>Area (ha)</u>	<u>% of total agricultural land</u>
3a	0.5	8.5
4	<u>5.4</u>	<u>91.5</u>
Total area of site	<u>5.9</u>	<u>100</u>

Southern area

<u>Grade</u>	<u>Area (ha)</u>	<u>% of total agricultural land</u>
2	3.2	94.1
3a	0.2	<u>5.9</u>
Farm buildings	0.5	<u>100</u>
Total area of site	<u>3.9</u>	

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ADAS Reading

APPENDIX I

DESCRIPTION OF THE GRADES AND SUB-GRADES

Grade 1 : Excellent Quality Agricultural Land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft, fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2 : Very Good Quality Agricultural Land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural or horticultural crops can usually be grown but on some land on the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.

Grade 3 : Good To Moderate Quality Agricultural Land

Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. When more demanding crops are grown yields are generally lower or more variable than on land in grades 1 and 2.

Sub-grade 3A : Good Quality Agricultural Land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Sub-grade 3B : Moderate Quality Agricultural Land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass, or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4 : Poor Quality Agricultural Land

Land with severe limitations which significantly restrict the range of crops and/or the level of yields. It is mainly suited to grass with occasional arable crops (eg. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. the grade also includes very droughty arable land.

Grade 5 : Very Poor Quality Agricultural Land

Land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture : housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including : private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports/airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Woodland

Includes commercial and non-commercial woodland.

Agricultural Buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg. polythene tunnels erected for lambing) may be ignored.

Open Water

Includes lakes, ponds and rivers as map scale permits.

Land Not Surveyed

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above, eg. buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will be shown.

REFERENCES

BRITISH GEOLOGICAL SURVEY (1964) *Sheet 269, Windsor*

MAFF (1988) *Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land.*

METEOROLOGICAL OFFICE (1989) *Climatological data for Agricultural Land Classification.*

SOIL SURVEY OF ENGLAND AND WALES (1983) *Sheet No 6, Soils of South East England.*

SOIL SURVEY OF ENGLAND AND WALES (1984) *Soils and their use in South East England.*

APPENDIX III

DEFINITION OF SOIL WETNESS CLASSES

Wetness Class I

The soil profile is not wet within 70cm depth for more than 30 days in most years.

Wetness Class II

The soil profile is wet within 70cm depth for 31-90 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 70cm for more than 90 days, but not wet within 40cm depth for more than 30 days in most years.

Wetness Class III

The soil profile is wet within 70cm depth for 91-180 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 70cm for more than 180 days, but only wet within 40cm depth for 31-90 days in most years.

Wetness Class IV

The soil profile is wet within 70cm depth for more than 180 days but not wet within 40cm depth for more than 210 days in most years or, if there is no slowly permeable layer within 80cm depth, it is wet within 40cm depth for 91-210 days in most years.

Wetness Class V

The soil profile is wet within 40cm depth for 211-335 days in most years.

Wetness Class VI

The soil profile is wet within 40cm depth for more than 335 days in most years.

(The number of days is not necessarily a continuous period. 'In most years' is defined as more than 10 out of 20 years.)

Site 17 (southern area)

- 1 0-30 10YR3/3 mCL/SZL sl calc 3-4% small & med flints
30-50 10YR5/4 hCL sl calc no mottles
50-80 10YR5/4 hCL com dist och mottles
Impenetrable stone @ 80 cm
Wetness Class II Grade 2
- 2 0-30 10YR3/3 m(z)CL non calc 2-3% flints
30-60 10YR5/4 hCL no mottles non calc few stones
60-70 10YR5/3 hZCL common faint och mottles
70-110 2.5Y5/3 ZC common dist och mottles no stones
Impenetrable gravel @ 110 cm very wet
Wetness Class II Grade 2
- 3 0-30 10YR3/3 mCL non calc 2-3% small flints
30-50 2.5Y4/3 hCL few faint och mottles sl stony
50-70 2.5Y5/3 hZCL common dist och mottles v few stones
70-120 as above but many dist och mottles v moist & plastic
Wetness Class II/III Grade 2/3a

(northern area)

- 2 0-30 10YR2/3 sl humose mZCL few dark rusty root mottles non calc
30-50 N2/0 C few dark brown mottles non calc
Impenetrable waterlogged gravel @ 50 cm
Wetness Class V Grade 4
- 4 0-30 10YR2/3 sl humose mZCL few rusty root mottles non calc
30-45 N2/0 C few dark brown mottles non calc
Impenetrable waterlogged gravel @ 45 cm
Wetness Class V Grade 4
- 6 0-25 10YR2/3 sl humose mZCL 3-4% small & med flints
25-45 N3/0 C common dark brown mottles v sl calc few stones
45-60 2.5Y6/3 & N4/0 v soft SC
Impenetrable waterlogged gravel @ 60 cm
Wetness Class IV/V Grade 4