

**REPORT OF THE MAFF AGRICULTURAL LAND CLASSIFICATION SURVEY (1988) -
LUDDINGTON EHS:**

Summary:

The land has been classified following the Agricultural Land Classification of England and Wales - revised guidelines and criteria for grading the quality of agricultural land (MAFF, 1988). Of the land surveyed 88% is classified as grade 2 and 9% as sub-grade 3a. A further 3% is classified as non-agricultural land and water.

1. Introduction:

The survey work was carried out on 19th and 24th October 1989. This followed a long period of dry weather, thus making the ground hard and difficult to auger. A free auger boring survey was completed and soil pits were dug as required.

2. Climatic Limitations:

The main parameters used in the assessment of the climatic limitations are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (ATO), as a measure of the relative warmth of the locality. The figures of AAR and ATO indicate that there are no climatic limitations on this site.

3. Site Limitations:

The assessment of site factors is primarily concerned at the way in which topography influences the use of agricultural machinery and hence the cropping potential of the land. There are no site limitations affecting the use of the land.

4. Soil Limitations:

The main soil properties which affect the cropping potential and management requirements of land are texture, structure, depth, stoniness and chemical fertility. These may act as limitations separately, in combination or through interactions with climate or site factors. The physical limitations which result from interactions with climate or site are soil wetness, droughtiness and erosion. Soil wetness, which expresses the extent to which excess water imposes restrictions on crop growth, is the main interactive limitation affecting the grading on this site. Soil wetness is assessed in the field by identifying the depth to any slowly permeable soil horizon, defined in terms of soil texture, structure and gleying, and relating this to the texture of the top 25 cm. Combining the soil wetness class and the field capacity days (FCD) a land classification grade is arrived at. Reference will be made to this limitation in Section 6.

To achieve full yield potential a crop requires an adequate supply of soil moisture throughout the growing season. In the Agricultural Land Classification (ALC) system the method used to assess droughtiness takes into account the crop adjusted available water capacity of the soil and the moisture deficit to give an estimate of the average soil moisture balance. Irrigation can significantly enhance the potential of agricultural land and is taken into account in the ALC grading as it is current practice on this site. An irrigation pond exists and irrigation is available over the whole site.

5. Background information:

The underlying geology is mapped as River terrace gravels Lower Lias clay (Sheet 200, Stratford-upon-Avon, Geological Survey).

6. Agricultural Land Use:

At the time of the survey, October 1989, the land was growing a wide variety of crops including grass, fruit trees, soft fruit and there was evidence of the previous cereal crop.

7. Agricultural Land Quality (Appendix 1):

Grade 2: land within this grade covers most of the site. The soil has either a sandy loam, loamy sand, sandy clay loam or clay loam texture extending to depth or in places overlying clay below 30 cm. In places the topsoil is calcareous and the stone content varies from stoneless to about 5%, and in places exceeds the topsoil stone content limit for Grade 1. Soils with a loamy sand topsoil texture are excluded from Grade 1.

Where soil wetness is a limitation to the agricultural use of the land, observations of gleying and depth of the slowly permeable layer combined with a field capacity day figure of 132 indicate either wetness class II or wetness class III and grade 2.

Taking into account the factors affecting droughtiness and the resultant moisture balance, combined with the availability of irrigation over the whole site, the land is classified as Grade 2.

Sub-Grade 3a: calcareous clays occur over part of the site, extending to depths of at least 70 cm and are generally stoneless. Observations of gleying and depth to a slowly permeable layer combined with a field capacity day figure of 132 indicate wetness class II and Sub-Grade 3a.

Other land: an area of trees and bushes along the line of the dismantled railway is classified as non agricultural land and an irrigation reservoir is classified as open water.

Resource Planning Group
Wolverhampton

November 1989

Agricultural Land Classification Summary

Grade sub/grade	ha	as % of total
2	45.4	88
3a	4.9	9
Non-ag	0.8	2
Open Water	0.5	1
Total	51.6	(100)

SOIL NOTES FOR LUDDINGTON
19 October 1989

1. 0-45cm of brown sandy loam . Stony at 45cm and difficult to auger.
Level, grass. 2/1
2. 0-15cm brown sandy loam. Very dry and difficult to auger.
Stone. level, grass. 3
3. 0-40 cm of brown, fairly coarse sandy loam, 40-45cm of coarse
sandy clay loam, 7.5 YR 4/4, 45-75cm of red brown clay with manganese
concretions and grey colours. SPL = 45cm. Wetness class III/II. 2
4. 0-45cm of sandy clay loam, 7.5 YR 4/4 with manganse concretions at
40cms. 45-70 cm of pink brown sandy clay loam, 70-90cm of clay,
7.5 YR 4/6 with manganese concretions. SPL at 70cms.? Wetness Class
II. 2
5. 0-40cm of brown sandy loam /sandy clay loam. Stony and difficult to
auger below this depth. Level, grass. 2
6. 0-45cm brown sandy loam, 45-60cm of brown sandy loam /loamy sand.
Difficult to auger below 60cm because of stone. 2
7. 0-30cm of brown sandy clay loam . Difficult to auger below this
depth because of stone, several attempts. Apple trees.
8. 0-43cm of brown sandy loam, 43-45cm of brown loamy sand/sand.
Very dry and difficult to auger . Near orchard 3a
9. 0-40cm of brown sandy loam/loamy sand, 40-50cm of brown sandy clay
loam, slightly heavier, difficult to auger below 50cm because of stones.
Level, grass. 2
10. 0-40cm of brown loamy sand, 70-100cm of brown loamy sand with clay
nodules and manganese concretions, 7.5 YR 4/4. Level, grass. 2
(loamy sand topsoil not eligible for grade 1).
11. 0-50cm of brown loamy sand/sandy loam , 50-70cm of pink brown
sand. Difficult to auger below 70cm because dry. Level, grass/
apple trees. 2
12. 0-40cm of brown sandy clay loam, 40-75cm pink brown clay,
slightly mottled. Difficult to auger below 45cm because of stone. Level
grass/cereals.
At 40cm 7.5 YR 4/4. SPL at 40cm.
13. 0-15cm of sandy clay loam, 10 YR 3/2, 15-43 cm Ditto, 43-48 cm
of grey brown clay, 10 YR 3/2 mottled. Difficult to auger 48cm
because of stone. Surface stone content estimated to be about 8%.
If SPL at 43cm then wetness class II. A or C Grade
Level, cereals. 2

14. 0-35cm of brown sandy clay loam, (non calcerous), 35-40cm of brown sandy clay. Difficult to auger below 40cm. Stone? Level, cereal stubble. 3a/2
15. 0-50cm of clay, calcerous, 10 YR 5/4. Stony at 45cm and difficult to auger. Grass, cut. 3a
16. 0-40cm of dull grey brown clay loam, 40-60cm of olive brown clay, very slightly calcerous in topsoil. More calcerous in subsoil. Some manganese specks below 40cm, If SPL = 40cm , 8, wetness class III. 3a/2
Cereal stubble.
17. 0-45cm of clay, 2.5 YR 4/2 calcareous. Very slightly mottled below 40cm. Manganese specks and grey colours. Clay to at least 65cm. SPL at 40cms? 3a?
18. 0-40cms of clay, 10 YR 3/3 calcareous, 40cm+ clay, 2.5 YR 5/4. Stone at 45cm. 3a/2
19. 0-45cm brown sandy loam, 45-60cm brown sandy loam /loamy sand. Stone at 50cm. small quartz pebbles present, difficult to auger below 60cm. Very slight slope. Grass. 2/3a
20. 0-30cm dark grey brown heavy sandy clay loam, very slightly calcareous, 35-60cm of clay, 10 YR 5/3. mottles with grey colours. SPL at 35cm ? Wetness Class III 3b/a
21. 0-15cm of brown sandy clay loam. Very stony and difficult to auger Surface stone content. About 15%. Cereal stubble. 3a
22. 0-35cm of brown sandy clay loam becoming heavier by 40cms, 40-45cm dull grey brown clay, no mottles seen. Stony and difficult to auger 3a
23. 0-15cm of brown sandy clay loam, very difficult to auger. Dry, stones, trees. As 22.
24. 0-30cm of brown sandy loam, stony difficult to auger. Trees, grass 3a
25. 0-33cm of brown heavy clay loam, (calcareous), 33-40cm of clay, 10 YR 5/3 with a few feint mottles. Stony and difficult to auger below 40cm. Level, trees/orchards + grass. 3a
26. 0-60cm of brown loamy sand . Stony at 60cm, moist below 40cm. Very slight slope. Fruit bushes. 2
27. 0-40cm red brown loamy sand/sandy loam, 40-70cm red brown loamy sand, 70-90cm of red clay. 5 YR 4/6 with manganese concretions. SPL at 70cms. 2
Slightly stony on surface, not as much as at auger boring 23, 24 and 25. Fruit bushes, very light slope.
28. 0-45cm of brown loamy sand, 45-75cm of orange brown sand. Difficult to auger below 75cm because compact. No stone. Level, orchards. 2
29. 0-50cm of brown loamy sand, 50-60cm of brown loamy sand/sand 60-100cm orange brown sand. Moist at 70cm. Level, orchards. 2

30. 0-30cm sandy clay loam, calcareous, 10 YR 3/3, very few faint mottles and grey colours, 30-45cm of sandy clay loam, 10 YR 4/4 stone at 45cm . Cereal stubble.

STONE CONTENT CHECK

1. Large less than 3%, small less than 2%.

0-43 brown sandy loam/loamy sand, 43-60cm of brown loamy sand/sand.
60cms plus brown sand.

2. Large less than 1%. Small less than 2%.

3. Large sieve 2%, small sieve less than 1%, 0-45cm of pink brown sandy loam/sandy clay loam, difficult to auger below 45cm because of stone.

4. Large sieve less than 1%, small sieve 2%.
Very small rounded quartz stone. 0-40 cm brown sandy loam/sandy clay loam. Stones at 40cm.