

**Staffordshire and Stoke-on-Trent  
Minerals Local Plan  
Netherset Hey Farm, Madeley  
Agricultural Land Classification  
ALC Map and Report  
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**A I Cooke  
Resource Planning Team  
Northern Region  
FRCA Wolverhampton**

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## AGRICULTURAL LAND CLASSIFICATION REPORT NETHERSET HEY, MADELEY

### INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey on 90 hectares of land. The results of this survey supersede any previous ALC information for this land. The land is located south of Madeley, east of the West Coast Main Line railway and west of the M6 motorway. The survey was in connection with the Staffordshire and Stoke-on-Trent Minerals Local Plan.
2. The survey was undertaken on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF) in September and October 1997 by the Resource Planning Team of the Farming and Rural Conservation Agency (FRCA)- Northern region of FRCA.
3. The land has been graded in accordance with the publication "Agricultural Land Classification of England and Wales - Revised guidelines and criteria for grading the quality of agricultural land" (MAFF 1988) .
4. At the time of survey the agricultural land on this site was either fallow after cereal harvest, in ley or permanent pasture.

### SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10000 with an average auger boring density of 1 per hectare. The ALC map is only accurate at this base map scale and any enlargement would be misleading.
6. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
1	-	-	-
2	23.0	26	25
3a	23.3	26	26
3b	37.5	42	42
4	5.2	6	6
5	0.4	<1	<1
Agricultural land not surveyed	-	N/A	-
Other land	0.6	N/A	<1
Total surveyed area	89.4	100	
Total site area	90.0		100

7. The agricultural land on this site has been classified as Grade 2 (very good quality), Subgrade 3a (good quality), Subgrade 3b (moderate quality), Grade 4 (poor quality) and Grade 5 (very poor quality). The key limitations to the agricultural use of this land are soil wetness and gradient.

8. The areas of very good quality land are located in the south and north of the site. The soils commonly comprise a medium clay loam topsoil overlying medium clay loam or sandy clay loam subsoils occasionally passing to loamy sand or sand at depth.

9. Good quality land is scattered throughout the site. The soils commonly comprise a medium clay loam topsoil overlying a gleyed medium clay loam or sandy clay loam upper subsoil occasionally passing to a gleyed and slowly permeable heavy clay loam lower subsoil.

10. Moderate quality land is found in three blocks. To the north of Netherset Hey Lane, moderate quality land has been mapped either where gradients were between  $7^{\circ}$  and  $11^{\circ}$ , or where the soils comprise a medium clay loam topsoil overlying a slowly permeable heavy clay loam subsoil. West of Netherset Cottage, and along the course of the River Lea, the soils commonly comprise a medium clay loam topsoil overlying a gleyed and slowly permeable heavy clay subsoil, passing to clay at depth.

11. The areas of poor quality land are found south of Netherset Hey Lane and west of Hungerford House Farm. South of Netherset Hey Lane the soils commonly comprise a heavy clay loam topsoil overlying a gleyed and slowly permeable clay subsoil. West of Hungerford House Farm, poor quality land has been mapped where gradients were between  $11^{\circ}$  and  $18^{\circ}$ .

12. The area of very poor quality land is mapped west of Hungerford House Farm, where gradients were measured in excess of  $18^{\circ}$ .

## **FACTORS INFLUENCING ALC GRADE**

### **Climate**

13. Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

14. The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5km grid datasets using standard interpolation procedures (Meteorological Office, 1989).

Table 2: Climatic and altitude data

Factor	Units	Values	
Grid reference	N/A	SJ 780443	SJ 781440
Altitude	m, AOD	115	125
Accumulated Temperature	day°C (Jan-June)	1338	1327
Average Annual Rainfall	mm	779	784
Field Capacity Days	days	187	187
Moisture Deficit, Wheat	mm	82	81
Moisture Deficit, Potatoes	mm	67	65
Overall climatic grade	N/A	Grade 1	Grade 2

15. The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions.

16. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (AT0, January to June), as a measure of the relative warmth of a locality.

17. The combination of rainfall and temperature at this site means that there is a climatic limitation on the highest part of the site, above approximately 120 m, which is restricted to Grade 2. The rest of the site is climatically Grade 1.

### Site

18. The site lies at an altitude of 105 to 135 metres AOD. The north and south of the site are generally level or gently sloping, rising in the west from the River Lea. Towards the centre of the site a spur of higher land occurs.

19. The three site factors of gradient, microrelief and flooding are considered when classifying the land.

20. In the centre of the site slopes were measured which restrict land to Subgrade 3b, Grades 4 and 5.

21. Land close to the River Lea is subject to flooding and based on farmer information (no EA information available) is classified as Subgrade 3b.

22. Microrelief does not impose any limitations on the agricultural use of this land.

### Geology and Soils

23. The solid geology of the area is comprised of Coal Measures. This is overlain with deposits of boulder clay and sands and gravel - British Geological Survey (1902).

24. The soils that have developed on this geology are generally of a clay loam texture over clay or sand at depth.

### **Agricultural Land Classification**

25. The details of the classification of the site are shown on the enclosed ALC map and the area statistics of each grade are given in Table 1, page 1.

#### *Grade 2*

26. Land of very good quality occupies 23.0 hectares (25 %) of the site area and is found in three blocks.

27. In the north of the site, the soil has a medium clay loam texture over an occasionally gleyed and moderately stony sandy clay loam to depth. The depth to gleying places these soils in Wetness Class I.

28. In the south of the site, the soil has a medium clay loam texture over medium clay loam and sandy clay loam passing to sand at depth, with few or no stones within the profile. The absence of gleying or a slowly permeable layer places these soils in Wetness Class I.

29. The main limitation to the agricultural use of this land is soil wetness. These soils are limited to Grade 2 by the interaction between field capacity days (187) and topsoil texture.

#### *Subgrade 3a*

30. Land of good quality occupies 23.3 hectares (26 %) of the site area and is found in several blocks across the site.

31. The soil has either a medium clay loam or sandy clay loam texture overlying medium clay loam or sandy clay loam, occasionally passing to heavy clay loam or clay. The depths to gleying and the slowly permeable layer place these soils in either Wetness Class II or III.

32. The main limitation to the agricultural use of this land is soil wetness.

#### *Subgrade 3b*

33. Land of moderate quality occupies 37.5 hectares (42 %) of the site area and is found in three blocks.

34. South of Netherset Hey Lane the soil has a medium clay loam texture overlying heavy clay loam and clay. The depths to gleying and the slowly permeable layer place these soils in Wetness Class IV.

35. The main limitation to the agricultural use of this land is soil wetness.

36. North of Netherset Hey Lane gradients were measured between 7° and 11°.

37. The main limitation to the agricultural use of this land is gradient.

*Grade 4*

38. Land of poor quality occupies 5.2 hectares (6 %) of the site area and is found in two units.

39. South of Netherset Hey Lane the soil has a heavy clay loam texture overlying clay. The depths to gleying and the slowly permeable layer place these soils in Wetness Class IV.

40. The main limitation to the agricultural use of this land is soil wetness.

41. West of Hungerford House Farm gradients were measured between 11° and 18°.

42. The main limitation to the agricultural use of this land is gradient.

*Grade 5*

43. Land of very poor quality occupies 0.4 hectares (<1 %) of the site area and is found as a single unit.

44. The gradient was measured in excess of 18°.

45. The main limitation to the agricultural use of this land is gradient.

*Other Land*

46. Other land occupies 0.6 hectares (<1 %) of the site area and is found as roads and an extended garden in the south east of the site.

Resource Planning Team  
Northern Region  
FRCA Wolverhampton

## **SOURCES OF REFERENCE**

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