AGRICULTURAL LAND CLASSIFICATION AND SOIL RESOURCES
SPOUTBANK QUARRY, HEYWOOD

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AGRICULTURAL LAND CLASSIFICATION REPORT AND SOIL RESOURCES REPORT FOR SPOUTBANK QUARRY, HEYWOOD

1 SUMMARY

1.1 The Agricultural Land Classification (ALC) Survey for this site shows that the following proportions of ALC grades are present:

Grade/Subgrade	ha	% of site
3a	6.8	32.6
3b	13.8	66.0
Other land		
Non agricultural	0.3	1.4

1.2 The main limitations to the agricultural use of land in Subgrades 3a and 3b is soil wetness and climate.

2 INTRODUCTION

2.1 The site was surveyed by the Resource Planning Team in February 1995. An Agricultural Land Classification survey was undertaken according to the guidelines laid down in the "Agricultural Land Classification of England and Wales - Revised Guidelines and Criteria for Grading the Quality of Agricultural Land" (MAFF 1988).

2.2 The 20.9 ha site is situated to the west of Heywood and to the east of the M66. The land immediately to the north of the site is being worked for sand and gravel extraction. To the east and south the site is bounded by main roads.

2.3 The survey was requested by MAFF in connection with a proposal for an extension to the existing quarry.

2.4 At MAFF Land Use Planning Unit's request this was a detailed grid survey at 1:10000 with a minimum auger boring density of 1 per hectare. The attached map is only accurate at the base map scale and any enlargement would be misleading.

2.5 At the time of the survey the site was under permanent grass and a fodder crop.

3 CLIMATE

3.1 The following interpolated data are relevant for the site (SD 831095) :

Average Annual Rainfall (mm)	1098
Accumulated Temperature above 0°C January to June (day °C)	1301

3.2 The combination of Average Annual Rainfall and Accumulated Temperature limit the site to Subgrade 3a on climate.

3.3 Other relevant data for classifying land include:

Field Capacity Days (days)	250
Moisture Deficit Wheat (mm)	58
Moisture Deficit Potatoes (mm)	38

4 SITE

4.1 Three site factors of gradient, micro relief and flooding are considered when classifying land.

4.2 These factors do not impose any limitations on the agricultural use of the land.

5 GEOLOGY AND SOILS

5.1 The solid geology of the area is comprised of Lower Coal Measures British Geological Survey Sheet 85 Manchester 1 Inch. This is overlain with deposits of Glacial Sand and Gravel.

5.2 The underlying geology influences the soils which either have a sandy loam texture or a clay loam texture.

6 AGRICULTURAL LAND CLASSIFICATION

6.1 Subgrade 3a - occupies 6.8 ha (32.6%) of the survey area and is found in the centre of the site.

6.1.1 These soils typically have a sandy loam texture overlying loamy sand and sand to depth, with few or no stones within the profile. The soils are not gleyed. The climatic limitation places these soils in Subgrade 3a.

6.1.2 The main limitation to the agricultural use of this land is climate.

6.2 Subgrade 3b - occupies 13.8 ha (66.0%) of the survey area.

6.2.1 These soils typically have either an organic clay loam texture over clay loam, occasionally with clay at depth, or organic clay loam over sandy loam. Both profile types exhibit gleying and the clay, where it occurs forms a slowly permeable layer. The presence of gleying places these soils in Wetness Class III.

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

6.3 Non-agricultural occupies 0.3 ha (1.4%) of the site and comprises the slopes of the soil bund facing the Pilsworth road, which have been planted with trees.

6.4 SUMMARY OF AGRICULTURAL LAND CLASSIFICATION GRADES

Grade/Sub-grade	Area in Hectares	% of Survey Area	% of Agricultural Land
3a	6.8	32.6	3.1
3b	13.8	66.0	66.9
Other land			
Non-agricultural	0.3	1.4	
Totals	**20.9**	**100.0**	**100.0**

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SOIL RESOURCES REPORT

1. INTRODUCTION

1.1 The soils on the site were investigated using the Dutch auger with borings made on a 100m grid. Four soil units were identified on the site and these are described below.

2. SOIL UNITS

2.1 Unit 1 comprises 4.5 ha (21.5%) of the site. The unit occupies the hill top and upper slopes in the centre of the site. The soils have a sandy loam texture over loamy sand and sand with stones common in the profile. The soils show no evidence of gleying. A typical profile description is as follows:

0-27 cm; very dark grey 10YR31; slightly stony; medium sandy loam; moderately developed fine sub-angular blocky; friable;

28-47 cm; brown 75YR43; slightly stony; medium sandy loam; weakly developed medium sub-angular blocky; friable.

48-75 cm; strong brown 75YR46; moderately stony; loamy medium sand; weakly developed fine sub-angular blocky; very friable.

75-120 cm; yellowish brown 10YR56; very slightly stony; medium sand; weakly developed course sub-angular blocky; very friable.

2.2 Unit 2 occupies 1.8 ha (8.6%) of the site. The soils have an organic clay loam texture over fine sandy loam and fine sand and have few or no stones. The profile shows some ochreous deposits along root channels at depth. A typical profile description is as follows:

0-42 cm; very dark grey 10YR31; organic medium clay loam; moderately developed medium sub-angular blocky; friable.

43-54 cm; brown 10YR53; fine sandy loam; moderately developed medium sub-angular blocky; very friable.

54-120 cm; pale brown 10YR63, yellowish brown 10YR56 deposits along root channels only; fine sand; weakly developed medium angular blocky; very friable

2.3 Unit 3 occupies 4.4 ha (21.2%) of the site. The soils have a clay loam or silt loam texture over loamy sand or clay loam, sandy loam and sand. The profile is gleyed within 40 cm of the surface. The following description is from an auger boring and no structural characteristics are described:

0-25 cm; very dark greyish brown 10YR32; medium sandy silt loam;

26-38 cm; dark greyish brown 10YR42; medium clay loam

39-55 cm; grey 74YR51 44, strong brown 75YR56 common mottles; sandy clay loam

56-100 cm; grey 10YR51; yellowish brown 10YR56 few mottles; medium sand

2.4 Unit 4 occupies 9.0 ha (43.1%). The soils consist of organic clay loam or organic sandy silt loam over clay loam and clay. The subsoil is gleyed and the clay forms a slowly permeable layer. A typical profile description is as follows:

0-25 cm; very dark grey 10YR31; organic medium clay loam; moderately developed medium to coarse sub-angular blocky; friable.

26-38 cm; light greyish brown 10YR62; silty clay loam; moderately developed medium sub-angular blocky; friable.

39-80 cm; light brownish grey 10YR62; brownish yellow 10YR68 common mottles; clay; strongly developed coarse angular blocky; firm; porosity less than 0.5%.

81-120 cm; light brownish grey 10YR62; brownish yellow 10YR66 common mottles; fine sandy silt loam; weakly developed medium sub-angular blocky; friable.

2.5 Unit 5. This comprises 1.2 ha (5.7%). Along the south western boundary of the site an earth bund has been constructed. The soils forming this bund are disturbed and therefore their characteristics have not been described.

2.6 Summary of Soil Unit Areas

Unit	Area (ha)	% of the site
1	4.5	21.5
2	1.8	8.6
3	4.4	21.1
4	9.0	43.1
5	1.2	5.7
Totals	20.9	100.0

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Comparison of Findings by ADAS and Dr. McRae

Following a detailed ALC survey by ADAS certain differences between the findings of ADAS and Dr. McRae are apparent. ADAS have found a lesser extent of Subgrade 3a and a greater extent of Subgrade 3b. ADAS have also found a difference in the distribution and extent of the soil units, with a greater extent of Unit A (ADAS Units 1 and 2), a greater extent and wider distribution of Unit C (ADAS Unit 4), and a lesser extent of Unit B (ADAS Unit 3).

These differences are most likely accounted for by the inherent variability of the site, a consequence of the underlying geology. Whilst ADAS is in general agreement with Dr. McRae over the description of soils present on the site, the differences found in the extent and distribution of these soils should be taken into account when preparing a schedule for stripping and restoration.

Grade/Subgrade	ADAS % of site	McRae % of site
3a	32.6	41.2
3b	66.0	52.1
Other land		
Non-agricultural	1.4	6.7
Totals	100.0	100.0

Table 1: Comparison of ALC Grades

ADAS		McRae	
Unit	% of site	Unit	% of site
1	21.5	A	24.4
2	8.6		
3	21.1	B	43.3
4	43.1	C	27.4
5	5.7	Bund	4.9
Totals	100.0		100.0

Table 2: Comparison of Soil Units