

AGRICULTURAL LAND CLASSIFICATION

ARCUS CONSULTANCY SERVICES

Ninfield



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AGRICULTURAL LAND CLASSIFICATION

Ninfield

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1. INTRODUCTION & METHODOLOGY

An Agricultural Land Classification (ALC) has been carried out on ~ 2.7 ha of land north of Ninfield (Drawing 1). The site is centred on Grid Ref. 572134,111740.

Agricultural land is classified into the following grades according to the 1988 guidelines¹.

Grade	Description
1	Excellent quality agricultural land with no or very minor limitations to agricultural use.
2	Very good quality agricultural land with minor limitations which affect crop yield, cultivation or harvesting.
3a	Good quality agricultural land capable of producing moderate to high yields of a narrow range of arable crops or moderate yields of a wider range of crops.
3b	Moderate quality agricultural land capable of producing moderate yields of a narrow range of crops or lower yields of a wider range of crops.
4	Poor quality agricultural land with severe limitations which significantly restrict the range of crops and/or level of yields.
5	Very poor quality agricultural land with very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

The survey was conducted on the 15th July 2020 and classifies the land into one or more of the above grades.

The classification includes an initial desktop investigation to examine previously mapped soil types and to note the drift and solid geology. This included consultation from a number of maps and reference documents (References).

The field survey consisted of point observations usually on a 100 m grid and generally in line with the nation grid (~5 m accuracy) and hand auger borings to a depth of 1.2 m depth as needed. Pit excavations are conducted to determine sub soil structure where necessary. This data was used to map the principal soil types for determining the ALC. The soil removed during augering and pit excavations was examined in accordance with the guidelines.

Climatological data³ was used to determine the overriding site limitation and for interaction with soil parameters. The ALC grade was then determined for this site and for the current survey and is detailed in Table 3.

Soil can vary considerably over short distances and hence some variation can exist in the soils not assessed between observation points compared with those at the observation points. Also, non-significant variation with horizon depths and other parameters can occur between observation points and may not necessarily be recorded for ALC purposes. Using all information available, every effort is made to assess and group soils into significantly different types for the purposes of ALC grading. Some generalisation therefore needs to take place in order to group, categorise and map the soil types.

2. SITE CONDITIONS

2.1. Climate and flooding

The climatological data for the site centre is detailed in Table 1.

Factor	Units	Value
Altitude AOD	m	25
Accumulated temperature	day°C (Jan-June)	1552.3
Average Annual Rainfall	mm	773.5
Field Capacity Days	days	162.6
Moisture Deficit Wheat	mm	125.4
Moisture Deficit Potatoes	mm	124.1

No significant flood risk is recorded for the site.

2.2. Geology

Drift geology/ superficial deposits

None recorded.

Bedrock geology

1:50 000 scale bedrock geology description: Wadhurst Clay Formation - Mudstone.

Sedimentary Bedrock formed approximately 134 to 139 million years ago in the Cretaceous Period. Local environment previously dominated by swamps, estuaries and deltas.

2.3. Topography

The slope measured on site in general was minimal and gradient will not limit the ALC Grade in excess of any other limitations. No significant variation in micro relief was noted such as to effect farming practices.

2.4. Current agriculture or other land use

On the survey date the site had pastures for grass grazing by cattle and for horses.

3 SOIL CHARACTERISTICS

3.1. Mapped soil types

The soils are mapped as clayey, poorly drained across the site.

3.2. Description of surveyed soil types

The soils noted on site, in general match those previously mapped.

Profile data specifically significant for ALC grading is listed in Appendix B. A summary of the features of the soil type/s are listed in Table 2 and observation points locations are shown within Drawing 1.

Table 2. Soil Type descriptions			
Profile Description	Soil types		
	Type 1		
Horizon 1 (topsoil)	0-30 cm Brown (10YR5/3) heavy silty clay loam, very slightly stoney		
Horizon 2 (subsoil 1)	30-60 cm Yellowish brown (10YR5/4) with grey (2.5Y6/1) ped faces, very slightly stoney clay, many mottles, moderate coarse angular blocky structure		
Horizon 2 (subsoil 2)	60-120 Light olive brown (2.5Y5/4) and light yellowish brown (2.5Y6/4) very slightly stoney clay. Many mottles (10YR6/8), massive structure		
Wetness Class	IV		
Moisture Balance - Wheat	7.1		
Moisture Balance - Potatoes	-8.8		
Survey points (Drawing 1) and soil types: Borings/ Trial Pits 1-4 Type 1 soil = ALC Grade 3b			

4. AGRICULTURAL LAND CLASSIFICATION

4.1. National 1:250 000 map or previous survey ALC grading

Grading on the MAFF 1:250 000 map indicates the site is mapped as **ALC Grade 3 and 4**. No previous detailed surveys have been undertaken on the site.

4.2. Current grading

This survey has resulted in an Agricultural Land Classification of the following grades (Drawing 1):

Table 3. ALC gradings and limitations			
Grade	Area		Limitation
	ha.	%	
1			
2			
3a			
3b	2.7	100	Wetness
4			
5			
Non-agricultural land			
Total	2.7	100%	

Grade 3a land

The combination of soil a Wetness Class of IV, heavy silty clay loam topsoil and 162.6 Field Capacity Days results in an ALC Grade of 3b across the site.

DRAWING 1

ALC Grade

Soil Environment Services

Key

- ALC Grades
 - Grade 1
 - Grade 2
 - Grade 3a
 - Grade 3b
 - Grade 4
 - Grade 5
 - Non agricultural land
- Pit
- Auger boring/ observation point

Drawing Title: ALC Grade

Drawing No.: 1

Scale: NA

Date: 30/07/2020



APPENDIX A

Soil profile data

Obs point	Base depth (cm)	Text.	Col.	Motts. %/ depth	Stns %	Grad. (degrees)	Struct/ Other	Obs point	Base depth (cm)	Text.	Col.	Motts. %/ depth	Stns %	Grad. (degrees)	Struct/ Other	
1	30	HZCL	10YR53	0	5	<7°		16								
	60	C	10YR54	30	5											MCAB
	120	C	2.5Y54/64	30	5											M
2	20	HZCL	10YR53	0	5	<7°		17								
	60	C	10YR54	30	5											MCAB
	120	C	2.5Y54/64	30	0											M
3	25	HZCL	10YR53	0	5	<7°		18								
	60	C	10YR54	30	5											MCAB
	120	C	2.5Y54/64	30	0											M
4	30	HZCL	10YR53	0	5	<7°		19								
	60	C	10YR54	30	5											MCAB
	120	C	2.5Y54/64	30	5											M
5								20								
6								21								
7								22								
8								23								
9								24								
10								25								
11								26								
12								27								
13								28								
14								29								
15								30								

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4. *Soil Map of England and Wales: 1:250 000*. Soil Survey of England and Wales, Harpenden.
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