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New Forest District Local Plan
Objectors Site 37
Land At Sandle Manor Farm
Fordingbridge, Hampshire
Agricultural Land Classification
ALC Map and Report

February 1997

Resource Planning Team
Eastern Region
FRCA Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

NEW FOREST DISTRICT LOCAL PLAN
OBJECTOR SITE 37
LAND AT SANDLE MANOR FARM, FORDINGBRIDGE, HAMPSHIRE

INTRODUCTION

1 This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 5 ha of land located on the northern side of the B3078 road between Sandleheath and Fordingbridge The survey was carried out in February 1997

2 The survey was commissioned by Ministry of Agriculture Fisheries and Food (MAFF) from itsLand Use Planning Unit in Reading in connection with the New Forest District Local Plan the site is one of a number of objector sites The results of this survey supersede any previous ALC information for this land

3 Prior to the 1 April 1997 the work was conducted by the Resource Planning Team in the Guildford Statutory Group in ADAS After this date the work was completed by the same team as part of the Farming and Rural Conservation Agency (FRCA) Reading The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF 1988) A description of the ALC grades and subgrades is given in Appendix I

4 At the time of survey all the agricultural land was under permanent grass and used for grazing sheep and horses Included within the site boundary are the buildings and garden of Sandle Manor Farm at the western end of the site and another house and garden toward the eastern end These have been mapped as other land

SUMMARY

5 The findings of the survey are shown on the enclosed ALC map The map has been drawn at a scale of 1 10 000 It is accurate at this scale but 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)	% Total survey area	% Total site Area
3a	4 0	100 0	80 0
Other land	1 0		20 0
Total surveyed area	4 0	100	
Total site area	5 0		100

7 The fieldwork was conducted at an average density of 1 boring per hectare A total of 7 borings and 1 soil pit was described

8 All the agricultural land on the site has been mapped as Subgrade 3a, good quality agricultural land On the slightly higher land at the eastern end of the site the soils are very sandy comprising sandy loam topsoils overlying loamy sand and sand subsoils The major limiting factor in this area is drought with these soils having moderately low amounts of available water for plant growth Although moisture deficits are moderate in this area, moisture balance calculations indicate that this land will be restricted to Subgrade 3a Over the remainder of the site wetness and workability restrictions are the limiting factors to agricultural land quality The soils in this area have sandy silt loam topsoils overlying slowly permeable clayey subsoil horizons which result in periodic waterlogging restricting the land quality to Subgrade 3a It should however be noted that within this area the depth to the slowly permeable material is variable and soil profiles of Grade 2 and Subgrade 3b were identified but it was not possible to delineate these at this scale of mapping

FACTORS INFLUENCING ALC GRADE

Climate

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

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

Table 2 Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	SU 134 146
Altitude	m, AOD	50
Accumulated Temperature	day°C (Jan June)	1506
Average Annual Rainfall	mm	879
Field Capacity Days	days	181
Moisture Deficit Wheat	mm	105
Moisture Deficit, Potatoes	mm	97

11 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

12 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 (ATO January to June) as a measure of the relative warmth of a locality

13 The combination of rainfall and temperature at this site mean there is no overall climatic limitation (Climate Grade 1) However climatic factors do interact with soil properties to influence soil wetness and droughtiness limitations At this locality the

moderately high rainfall figures mean that soil wetness may be enhanced whilst droughtiness limitations will be restricted to soils with low available water capacities

14 Local climatic factors such as exposure or frost risk are not believed to affect this site

Site

15 The site is located on the north facing side of a minor valley feature with the land falling from approximately 50 m AOD alongside the road to approximately 45 m AOD in the valley bottom Gradients of 1 3° were measured and consequently topography does not form any limitation to the agricultural quality of the site

Geology and soils

16 The relevant geological map (BGS 1976) shows the majority of the site to be underlain by London Clay with the higher land at the eastern end underlain by Bagshot Sands

17 The most recently published soil information for the site (SSEW 1983) shows the Wickham 3 soil association to occupy the majority of the site with Sonning 1 association at the eastern end Soils of the Wickham 3 association are described as slowly permeable seasonally waterlogged fine loamy over clayey and coarse loamy over clayey soils with similar more permeable soils with slight seasonal waterlogging (SSEW 1983) Sonning 1 soils are described as well drained flinty coarse loamy and sandy soils mainly over gravel with some coarse loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging (SSEW 1983)

AGRICULTURAL LAND CLASSIFICATION

18 The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1

19 The location of the auger borings and pits is shown on the attached sample location map and the details of the soils data are presented in Appendix II

Subgrade 3a

20 The whole site has been mapped as Subgrade 3a, good quality agricultural land with a small area at the eastern end limited to this subgrade by drought and the remainder by a wetness/workability limitation On the slightly higher land at the eastern end of the site the soils are typically coarse loamy over sandy and have a dark brown medium sandy loam topsoil overlying a brown or pale brown loamy medium sand upper subsoil which becomes a stoneless medium sand at depth Although mottling was evident in the sand and at the extreme eastern end of the site the profile examined was very wet throughout no slowly permeable layer was found within 1 2 m depth and consequently the soils are assessed as Wetness Class I Moisture balance calculations indicate that under the prevailing climatic conditions these soils are moderately droughty for both reference crops which will result in drought stress and yield reduction during the drier periods of the year This land therefore is restricted to Subgrade 3a

21 Over the majority of the site the major limitation is due to wetness caused by slowly permeable subsoil horizons giving rise to workability restrictions affecting the timing of cultivations and trafficking The soils in this area typically comprise loamy over clayey profiles having a dark brown medium or fine sandy silt loam topsoil overlying a brown medium clay loam upper subsoil with faint ochreous mottles The lower subsoil is typically a slowly permeable mottled stoneless clay with coarse angular blocky structure The depth to the slowly permeable layer varies across the site from 45 to 70 cm depth, and although the Wetness Class is typically III profiles range from Wetness Class II to IV The land therefore has been mapped as Subgrade 3a, although profiles of Grade 2 and Subgrade 3b were found but it was not considered practical to delineate them at this scale of mapping

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SOURCES OF REFERENCE

British Geological Survey (1976) *Sheet No* 314 Ringwood 1 50 000 scale (Drift Edition) BGS London

Ministry of Agriculture Fisheries and Food (1988) *Agricultural Land Classification of England and Wales Revised guidelines and criteria for grading the quality of agricultural land* MAFF London

Met Office (1989) *Climatological Data for Agricultural Land Classification* Met Office Bracknell

Soil Survey of England and Wales (1983) *Sheet* 6 *Soils of South East England.* 1 250 000 scale SSEW Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in South East England* Bulletin 15 SSEW Harpenden

APPENDIX I

DESCRIPTION OF THE GRADES AND SUBGRADES

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 of this 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 land

Grade 3 Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops the 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

Subgrade 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

Subgrade 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 that 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 (e g 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 severe limitations that restricts use to permanent pasture or rough grazing except for occasional pioneer forage crops

APPENDIX II

SOIL DATA

Contents

SOIL PROFILE DESCRIPTIONS EXPLANATORY NOTE

Soil pit and auger boring information collected during ALC fieldwork is held on a computer database This uses notations and abbreviations as set out below

Boring Header Information

1 **GRID REF** national 100 km grid square and 8 figure grid reference

2 **USE** Land use at the time of survey The following abbreviations are used

ARA	Arable	**WHT**	Wheat	**BAR**	Barley
CER	Cereals	**OAT**	Oats	**MZE**	Maize
OSR	Oilseed rape	**BEN**	Field beans	**BRA**	Brassicae
POT	Potatoes	**SBT**	Sugar beet	**FCD**	Fodder crops
LIN	Linseed	**FRT**	Soft and top fruit	**FLW**	Fallow
PGR	Permanent pasture	**LEY**	Ley grass	**RGR**	Rough grazing
SCR	Scrub	**CFW**	Coniferous woodland	**OTH**	Other
DCW	Deciduous woodland	**BOG**	Bog or marsh	**SAS**	Set Aside
HTH	Heathland	**HRT**	Horticultural crops	**PLO**	Ploughed

3 **GRDNT** Gradient as estimated or measured by a hand held optical clinometer

4 **GLEY/SPL** Depth in centimetres (cm) to gleying and/or slowly permeable layers

5 **AP (WHEAT/POTS)** Crop adjusted available water capacity

6 **MB (WHEAT/POTS)** Moisture Balance (Crop adjusted AP crop adjusted MD)

7 **DRT** Best grade according to soil droughtiness

8 If any of the following factors are considered significant 'Y' will be entered in the relevant column

MREL	Microrelief limitation	**FLOOD**	Flood risk	**EROSN**	Soil erosion risk
EXP	Exposure limitation	**FROST**	Frost prone	**DIST**	Disturbed land
CHEM	Chemical limitation				

9 **LIMIT** The main limitation to land quality The following abbreviations are used

OC	Overall Climate	**AE**	Aspect	**ST**	Topsoil Stoniness
FR	Frost Risk	**GR**	Gradient	**MR**	Microrelief
FL	Flood Risk	**TX**	Topsoil Texture	**DP**	Soil Depth
CH	Chemical	**WE**	Wetness	**WK**	Workability
DR	Drought	**ER**	Erosion Risk	**WD**	Soil Wetness/Droughtiness
EX	Exposure				

Soil Pits and Auger Borings

1 **TEXTURE** soil texture classes are denoted by the following abbreviations

S	Sand	**LS**	Loamy Sand	**SL**	Sandy Loam
SZL	Sandy Silt Loam	**CL**	Clay Loam	**ZCL**	Silty Clay Loam
ZL	Silt Loam	**SCL**	Sandy Clay Loam	**C**	Clay
SC	Sandy Clay	**ZC**	Silty Clay	**OL**	Organic Loam
P	Peat	**SP**	Sandy Peat	**LP**	Loamy Peat
PL	Peaty Loam	**PS**	Peaty Sand	**MZ**	Marine Light Silts

For the sand loamy sand, sandy loam and sandy silt loam classes the predominant size of sand fraction will be indicated by the use of the following prefixes

F Fine (more than 66% of the sand less than 0 2mm)
M Medium (less than 66% fine sand and less than 33% coarse sand)
C Coarse (more than 33% of the sand larger than 0 6mm)

The clay loam and silty clay loam classes will be sub-divided according to the clay content
M Medium (<27% clay) **H** Heavy (27 35% clay)

2 **MOTTLE COL** Mottle colour using Munsell notation

3 **MOTTLE ABUN** Mottle abundance expressed as a percentage of the matrix or surface described

F few <2% **C** common 2 20% **M** many 20-40% **VM** very many 40% +

4 **MOTTLE CONT** Mottle contrast

F faint indistinct mottles evident only on close inspection
D distinct mottles are readily seen
P prominent mottling is conspicuous and one of the outstanding features of the horizon

5 **PED COL** Ped face colour using Munsell notation

6 **GLEY** If the soil horizon is gleyed a Y will appear in this column If slightly gleyed an S will appear

7 **STONE LITH** Stone Lithology one of the following is used

HR	all hard rocks and stones	**FSST**	soft fine grained sandstone
ZR	soft argillaceous or silty rocks	**CH**	chalk
MSST	soft medium grained sandstone	**GS**	gravel with porous (soft) stones
SI	soft weathered igneous/metamorphic rock	**GH**	gravel with non porous (hard) stones

Stone contents (>2cm >6cm and total) are given in percentages (by volume)

8 **STRUCT** the degree of development size and shape of soil peds are described using the following notation

Degree of development	**WK**	weakly developed	**MD**	moderately developed
	ST	strongly developed		
Ped size	**F**	fine	**M**	medium
	C	coarse		
Ped shape	**S**	single grain	**M**	massive
	GR	granular	**AB**	angular blocky
	SAB	sub angular blocky	**PR**	prismatic
	PL	platy		

9 **CONSIST** Soil consistence is described using the following notation

L loose **VF** very friable **FR** friable **FM** firm **VM** very firm
EM extremely firm **EH** extremely hard

10 **SUBS STR** Subsoil structural condition recorded for the purpose of calculating profile droughtiness **G** good **M** moderate **P** poor

11 **POR** Soil porosity If a soil horizon has less than 0 5% biopores >0 5 mm a 'Y will appear in this column

12 **IMP** If the profile is impenetrable to rooting a 'Y will appear in this column at the appropriate horizon

13 **SPL** Slowly permeable layer If the soil horizon is slowly permeable a 'Y' will appear in this column

14 **CALC** If the soil horizon is calcareous a 'Y will appear in this column

15 Other notations

APW available water capacity (in mm) adjusted for wheat
APP available water capacity (in mm) adjusted for potatoes
MBW moisture balance wheat
MBP moisture balance potatoes

SOIL PIT DESCRIPTION

Site Name NEW FOREST DLP SITE 37 Pit Number 1P

Grid Reference SU13151470

Average Annual Rainfall	879 mm
Accumulated Temperature	1506 degree days
Field Capacity Level	181 days
Land Use	Permanent Grass
Slope and Aspect	03 degrees NE

HORIZON	TEXTURE	COLOUR	STONES >2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 30	FSZL	75YR43 00	1	3	HR					
30- 50	MCL	10YR54 00	0	7	HR	F	MDCSB	FR	M	
50-120	C	10YR63 62	0	0		M	MDVCAB	FM	P	

Wetness Grade 3A

Wetness Class	III
Gleying	050 cm
SPL	050 cm

Drought Grade 1

APW	143mm	MBW	38 mm
APP	120mm	MBP	23 mm

FINAL ALC GRADE 3A
MAIN LIMITATION Wetness

SAMPLE NO	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	-WETNESS- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT	ALC	COMMENTS
1	SU13001470	PGR	NE	01	047	070	2	2	148	43	120	23	1				WE	2	
1P	SU13151470	PGR	NE	03	050	050	3	3A	143	38	120	23	1				WE	3A	SL GLEY 30
2	SU13101470	PGR	NE	02	0	045	4	3B	144	39	121	24	1				WE	3B	V WET
3	SU13201470	PGR	NE	03	048	048	3	3A	143	38	120	23	1				WE	3A	SL GLEY 30
4	SU13301470	PGR	NE	02	050	050	3	3A	131	26	107	10	2				WE	3A	V WET 50
5	SU13331460	PGR	NE	02			1	1	092	-13	076	-21	3A				DR	3A	
6	SU13401460	RGR	NE	01	035		2	2	099	-6	083	-14	3A				DR	3A	V WET 75
7	SU13231463	PGR	NE	02	065	105	1	1	163	58	116	19	1					1	

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC
1	0-30	msz1	75YR43 00						0	0	HR	2						
	30-47	mc1	75YR55 00						0	0		0		M				
	47-70	hc1	10YR55 00	75YR58 00	C			Y	0	0		0		M				
	70-120	sc	25Y 73 00	75YR58 00	M			Y	0	0		0		P			Y	
1P	0-30	fsz1	75YR43 00						1	0	HR	3						
	30-50	mc1	10YR54 00	10YR56 00	F			S	0	0	HR	7	MDCSB FR	M				
	50-120	c	10YR63 62	10YR68 00	M			Y	0	0		0	MDVCAB FM	P	Y		Y	
2	0-30	fsz1	75YR43 00	05YR46 00	C			Y	0	0	HR	1						
	30-45	hc1	10YR63 00	10YR68 00	M			Y	0	0	HR	5		M				
	45-120	c	05Y 73 00	10YR68 00	M			Y	0	0		0		P			Y	
3	0-30	fsz1	75YR43 00						0	0	HR	3						
	30-48	mc1	10YR54 00	10YR56 00	F			S	0	0	HR	5		M				
	48-120	c	10YR63 00	10YR68 00	M			Y	0	0		0		P			Y	
4	0-25	msz1	75YR43 00						2	0	HR	4						
	25-50	mc1	10YR54 00						0	0	HR	7		M				
	50-120	hc1	10YR64 00	10YR68 00	C			Y	0	0	HR	2		P			Y	
5	0-35	ms1	75YR43 00						5	0	HR	8						
	35-50	lms	75YR45 00						0	0	HR	15		M				
	50-120	ms	10YR65 00	75YR58 00	F				0	0		0		M				
6	0-35	ms1	75YR43 00	05YR46 00	F				0	0	HR	3						
	35-75	lms	10YR64 00	10YR68 00	C			Y	0	0		0		M				
	75-120	ms	10YR64 00	10YR68 00	C			Y	0	0		0		M				
7	0-30	fsz1	75YR43 00						1	0	HR	4						
	30-65	ms1	10YR54 00						0	0	HR	15		M				
	65-95	lfs	10YR64 00	10YR68 00	C			Y	0	0		0		M				
	95-105	sc1	10YR64 00	10YR68 00	M			Y	0	0		0		M				
	105-120	c	25Y 73 00	75YR68 00	M			Y	0	0		0		P			Y	