

SFCs 6017A

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Dorset Minerals and Waste Local Plan  
BC11 Trigon

**AGRICULTURAL LAND CLASSIFICATION  
REPORT OF SURVEY**

Resource Planning Team  
Taunton Statutory Unit

## AGRICULTURAL LAND CLASSIFICATION

### DORSET MINERALS AND WASTE LOCAL PLAN BC11 TRIGON

#### REPORT OF SURVEY

##### 1. SUMMARY

The site, an area of 113.4 hectares of land at Trigon, was graded using the Agricultural Land Classification (ALC) system in July 1993. The survey was carried out on behalf of MAFF as part of its statutory role in the preparation of the Dorset Minerals and Waste Local Plan.

The fieldwork was carried out by ADAS (Resource Planning Team, Taunton Statutory Unit) at a scale of 1:10,000. The information is correct at this scale but any enlargement would be misleading. A total of 54 auger borings and a soil profile pit were examined.

The distribution of ALC grades identified in the survey area is detailed below and illustrated on the accompanying map.

##### Distribution of ALC grades: Trigon

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
3a	32.2	28.4	64.3
3b	8.15	7.2	16.3
4	9.7	8.6	19.4
Urban	4.3	3.8	
Non Agric	52.55	46.4	
Not surveyed	6.4	5.6	
	<hr/>	<hr/>	<hr/>
TOTAL	113.3	100%	100% (50.05 ha)

Over half the site is shown on the map as non-agricultural land. This includes woodland, heathland with scrub and disturbed land. There is an area of clay pit included in the site, this is marked as urban. Over half the agricultural land is best and most versatile. These soils are sandy loam and organic sandy loam topsoils over medium sand at a depth of 40-50 cm. At variable depths slowly permeable clay underlies these profiles. Where clay is found higher in the profile, soils are assessed as wetness classes III and IV and Grade 3b and 4 with a wetness limitation.

## 2. INTRODUCTION

An area of 113.4 hectares of land at Trigon, Dorset, was surveyed on behalf of MAFF, as part of its statutory role in the preparation of the Dorset Minerals and Waste Local Plan. Trigon (BC11) is a preferred area for Ball Clay extraction. The survey was carried out in July 1993 by ADAS (Resource Planning Team, Taunton Statutory Unit) using the Agricultural Land Classification (ALC) system and conducted at a scale of 1:10,000 (approximately one sample point for every hectare of agricultural land). The 58 borings were supplemented by a soil inspection pits used to assess subsoil conditions. The information is correct at the scale shown but any enlargement would be misleading. The survey of the south eastern part of the site is incomplete due to difficulties with the tenant farmer.

The published Provisional 1" to the mile ALC map of this area (MAFF 1973) shows much of the site to be Grades 4 and 5, with the rest mapped as non-Agricultural Land. The current survey supersedes any previous surveys and was undertaken to provide a more detailed representation of the agricultural land quality using the Revised Guidelines and Criteria (MAFF 1988). These guidelines provide a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. The grading takes account of the top 120 cm of the soil profile. A description of the grades used in the ALC System can be found in Appendix 2.

## 3. CLIMATE

The grade of the land is determined by the most limiting factor present. The overall climate is considered first because it can have an overriding influence on restricting land to lower grades despite other favourable conditions.

Climatic data for the site were interpolated from the published Agricultural Climate Dataset ( Meteorological Office 1989). The parameters used for assessing climate are accumulated temperature (a measure of the relative warmth of a locality) and average annual rainfall (a measure of overall wetness). The results shown in Table 1 indicate that there is no overall climatic limitation.

Table 1 Climatic interpolations: Trigon

Grid Reference	SY 892 900
Height (m)	50
Accumulated Temperature (day deg)	1522
Average Annual Rainfall (mm)	881
Overall Climatic Grade	1
Field Capacity (Days)	181
Moisture Deficit, Wheat (mm)	107
Potatoes (mm)	101

Climatic data on Field Capacity Days (FCD) and Moisture Deficits for wheat (MDW) and potatoes (MDP) are also shown. This data is used in assessing the soil wetness and droughtiness limitations referred to in Section 5. No local climatic factors such as exposure were noted in the survey area.

#### 4. RELIEF AND LANDCOVER

Over half this site is non-agricultural land, this includes areas of woodland, heath, scrub and derelict land associated with nearby clay pits. The agricultural land was growing grass leys at the time of survey, with one field of barley in the east and one field of maize in the west. The agricultural land is predominantly flat.

#### 5. GEOLOGY AND SOILS

The published 1:50,000 scale solid and drift geology map, sheet 328 (Geological Survey of England and Wales 1981) shows the majority of the site to be underlain by Bagshot beds. Two areas of plateau gravel occupy the south-western corner and the higher ground of Trigon Hill.

The Soil Survey of England and Wales mapped the soils of the area in 1983, at a reconnaissance scale of 1:250,000. This map shows the soils at the site to comprise the Sollon 2 Association. These soils are described as stoneless, acid, humose, sandy. Soils with bleached subsurface horizon, affected by ground water. Well drained very acid sandy soils on slopes. Some sandy over fine loamy soils with slowly permeable subsoils and slight seasonal water logging.

The recent survey indicates there are two soil types in the area. The land grade 3a relates to profiles which comprise stone-free medium sandy loam and medium sandy silt loam topsoils over medium sand subsoils. The soils in the northern and western parts of the site are clayey and poorly drained. The 3b land relates to soils of a variable nature but are gleyed sandy loams and clay loams over slowly permeable clay. The grade 4 land comprises similar subsoils with heavy clay loam or clay topsoils.

#### 6. AGRICULTURAL LAND CLASSIFICATION

The distribution of ALC grades identified in the survey area is detailed in Table 2 and shown on the accompanying ALC map. This shows over half the agricultural land to be best and most versatile.

**Table 2 Distribution of ALC grades: Trigon**

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
3a	32.2	28.4	64.3
3b	8.15	7.2	16.3
4	9.7	8.6	19.4
Urban	4.3	3.8	
Non Agric	52.55	46.4	
Not surveyed	6.4	5.6	
<b>TOTAL</b>	<b>113.3</b>	<b>100%</b>	<b>100% (50.05 ha)</b>

### Subgrade 3a

The land graded 3a relates to the sandy soils described in Section 5. The coarse textures reduce the water available for plant growth imposing a moderate droughtiness limitation.

### Subgrade 3b

The most northern field has been graded 3b with a wetness limitation. Soils are gleyed within 40 cm and slowly permeable within 70 cm, and so are assessed as wetness Class III and IV. Topsoils textures vary across the site but an overall 3b wetness limitation applies despite there being some profiles in the map unit which may be of slightly higher quality.

### Grade 4

This land relates to clayey soils which are poorly drained (Wetness Class IV) and have heavy clay loam and clay topsoils. This land has a severe workability limitation and thus graded 4.

## APPENDIX 1

### REFERENCES

GEOLOGICAL SURVEY OF ENGLAND AND WALES (1981) Solid and Drift edition. Sheet 328, Dorchester, 1:50,000 scale

MAFF (1973) Agricultural Land Classification Map Sheet 179  
Provisional 1:63,360 scale

MAFF (1988) Agricultural Land Classification of England and Wales  
(revised guidelines and criteria for grading the quality of land)  
Alnwick

METEOROLOGICAL OFFICE (1989) Published climatic data extracted from  
the agroclimatic dataset, compiled by the Meteorological Office

SOIL SURVEY OF ENGLAND AND WALES (1983) Sheet 5 Soils of South West  
England 1:250,000 scale

## APPENDIX 2

### 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 include 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 and horticultural crops can usually be grown but on some land in the 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.

#### Grade 3 - good to moderate quality agricultural land

Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where 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 which 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 level of yields. It is mainly suited to grass with occasional arable crops (eg cereals and forage crops) the yields of which are variable. In most 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 very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

## **Descriptions of other land categories used on ALC maps**

### **Urban**

Built-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

### **Non-agricultural**

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: private park land, public open spaces, sports fields, allotments and soft-surfaced areas on airports/airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

### **Agricultural buildings**

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg polythene tunnels erected for lambing) may be ignored.

### **Open water**

Includes lakes, ponds and rivers as map scale permits.

### **Land not surveyed**

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above land cover types, eg buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will usually be shown.

**Source:** MAFF (1988) Agricultural Land Classification of England and Wales (Revised guidelines and criteria for grading the quality of agricultural land) Alnwick.

## APPENDIX 3

### DEFINITION OF SOIL WETNESS CLASSES

#### Wetness Class I

The soil profile is not wet within 70 cm depth for more than 30 days in most years.

#### Wetness Class II

The soil profile is wet within 70 cm depth for 31-90 days in most years or, if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 90 days, but not wet within 40 cm depth for more than 30 days in most years.

#### Wetness Class III

The soil profile is wet within 70 cm depth for 91-180 days in most years or, if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 180 days, but only wet within 40 cm depth for between 31 and 90 days in most years.

#### Wetness Class IV

The soil profile is wet within 70 cm depth for more than 180 days but not within 40 cm depth for more than 210 days in most years or, if there is no slowly permeable layer within 80 cm depth, it is wet within 40 cm depth for 91-210 days in most years.

#### Wetness Class V

The soil profile is wet within 40 cm depth for 211-335 days in most years.

#### Wetness Class VI

The soil profile is wet within 40 cm depth for more than 335 days in most years.

**Notes:** The number of days specified is not necessarily a continuous period. 'In most years' is defined as more than 10 out of 20 years.

**Source:** Hodgson, J M (in preparation) Soil Survey Field Handbook (revised edition).

SITE NAME Trigon		PROFILE NO. Pit 1a	SLOPE AND ASPECT 0°	LAND USE Permanent Grassland	Av Rainfall: 881 mm ATO: 1522 day°C FC Days: 181 Climatic Grade: 1	PARENT MATERIAL Bagshot Beds		
JOB NO. 33/93		DATE 21/7/93	GRID REFERENCE SY 893 903 (ASP 6)	DESCRIBED BY G M Shaw	SOIL SAMPLE REFERENCE RPT/GC/39			

Horizon Number	Lowest Av Depth (cm)	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots: Abundance, Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and form
1	29	10YR21	OSCL	1% HR (Visual)	None	WCSAB	Good	-	Friable	Many fine	None	None	Smooth abrupt
2	46	7.5YR62	MSL	1% HR (Visual)	None	MCSAB	Poor	Moderate	Friable	Common fine	None	None	Smooth clear
3	83	10YR71	MSL	1% HR (Visual)	10YR68 Common	WCSAB	Poor	Good	Friable	V few fine	None	None	Wavy smooth
4	120	7.5YR80	C	1% HR (Visual)	10YR68, 10R46 Common	SCP	Poor	Poor	V firm	Common between peds	None	None	-

Profile Gleyed From: 46 cm  
Depth to Slowly Permeable Horizon: 83 cm  
Wetness Class: II  
Wetness Grade: 3a

Available Water Wheat: 124 mm  
Potatoes: 94 mm  
Moisture Deficit Wheat: 107 mm  
Potatoes: 101 mm  
Moisture Balance Wheat: 17 mm  
Potatoes: -7 mm  
Droughtiness Grade: 2

Final ALC Grade: 3a  
Main Limiting Factor(s): Wetness

Remarks:  
Two sides of the pit have both been described (Pit 1a and Pit 1b).  
The mapping unit is borderline between Grades 3a and 3b on wetness.

SITE NAME		PROFILE NO.		SLOPE AND ASPECT		LAND USE		Av Rainfall: 881 mm			PARENT MATERIAL		
Trigon		Pit 1b		0°		Permanent Grassland		ATO: 1522 day°C			Bagshot Beds		
JOB NO.		DATE		GRID REFERENCE		DESCRIBED BY		FC Days: 181			SOIL SAMPLE REFERENCE		
33/93		21/7/93		SY 893 903 (ASP 6)		G M Shaw		Climatic Grade: 1			RPT/GC/39		
Horizon Number	Lowest Av Depth (cm)	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots: Abundance, Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and form
1	29	10YR21	OSCL	1% HR (Visual)	None	WCSAB	Good	-	Friable	Many fine	None	None	Smooth abrupt
2	50	10YR62	C	1% HR (Visual)	10YR68 Common	MCAB	Poor	Poor	Firm	Many fine between peds	None	None	Smooth clear
3	120	7.5YR80	C	1% HR (visual)	10YR68, 10R46 Common	SCP	Poor	Poor	V firm	Common between peds	None	None	-

Profile Gleyed From: 29 cm  
Depth to Slowly Permeable Horizon: 29 cm  
Wetness Class: IV  
Wetness Grade: 3b

Available Water Wheat: 124 mm  
Potatoes: 94 mm  
Moisture Deficit Wheat: 107 mm  
Potatoes: 101 mm  
Moisture Balance Wheat: 17 mm  
Potatoes: 1 mm  
Droughtiness Grade: 2

Final ALC Grade: 3b  
Main Limiting Factor(s): Wetness

Remarks:  
Two sides of the pit have both been described (Pit 1a and Pit 1b).  
The mapping unit is on the borderline between Grades 3a and 3b on wetness.

SITE NAME		PROFILE NO.		SLOPE AND ASPECT		LAND USE		Av Rainfall: 881 mm			PARENT MATERIAL		
Trigon		Pit 1a		0°		Permanent Grassland		ATO: 1522 day°C			Bagshot Beds		
JOB NO.		DATE		GRID REFERENCE		DESCRIBED BY		FC Days: 181			SOIL SAMPLE REFERENCE		
33/93		21/7/93		SY 893 903 (ASP 6)		G M Shaw		Climatic Grade: 1			RPT/GC/39		
Horizon Number	Lowest Av Depth (cm)	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots: Abundance, Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and form
1	29	10YR21	OSCL	1% HR (Visual)	None	WCSAB	Good	-	Friable	Many fine	None	None	Smooth abrupt
2	46	7.5YR62	MSL	1% HR (Visual)	None	MCSAB	Poor	Moderate	Friable	Common fine	None	None	Smooth clear
3	83	10YR71	MSL	1% HR (Visual)	10YR68 Common	WCSAB	Poor	Good	Friable	V few fine	None	None	Wavy smooth
4	120	7.5YR80	C	1% HR (Visual)	10YR68, 10R46 Common	SCP	Poor	Poor	V firm	Common between peds	None	None	-

Profile Gleyed From: 46 cm  
Depth to Slowly Permeable Horizon: 83 cm  
Wetness Class: II  
Wetness Grade: 3a

Available Water Wheat: 124 mm  
Potatoes: 94 mm  
Moisture Deficit Wheat: 107 mm  
Potatoes: 101 mm  
Moisture Balance Wheat: 17 mm  
Potatoes: -7 mm  
Droughtiness Grade: 2

Final ALC Grade: 3a  
Main Limiting Factor(s): Wetness

Remarks:  
Two sides of the pit have both been described (Pit 1a and Pit 1b).  
The mapping unit is borderline between Grades 3a and 3b on wetness.

SITE NAME		PROFILE NO.		SLOPE AND ASPECT		LAND USE		Av Rainfall: 881 mm			PARENT MATERIAL		
Trigon		Pit 1b		0°		Permanent Grassland		ATO: 1522 day°C			Bagshot Beds		
JOB NO.		DATE		GRID REFERENCE		DESCRIBED BY		FC Days: 181			SOIL SAMPLE REFERENCE		
33/93		21/7/93		SY 893 903 (ASP 6)		G M Shaw		Climatic Grade: 1			RPT/GC/39		
Horizon Number	Lowest Av Depth (cm)	Matrix and Ped Face Colours	Texture	Stoniness: Size, Shape, Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Structure: Development Size and Shape	Pores and Fissures	Structural Condition	Consistence	Roots: Abundance, Size and Nature	Calcium Carbonate Content	Mangan Concs etc	Horizon Boundary: Distinctness and form
1	29	10YR21	OSCL	1% HR (Visual)	None	WCSAB	Good	-	Friable	Many fine	None	None	Smooth abrupt
2	50	10YR62	C	1% HR (Visual)	10YR68 Common	MCAB	Poor	Poor	Firm	Many fine between peds	None	None	Smooth clear
3	120	7.5YR80	C	1% HR (visual)	10YR68, 10R46 Common	SCP	Poor	Poor	V firm	Common between peds	None	None	-

Profile Gleyed From: 29 cm  
Depth to Slowly Permeable Horizon: 29 cm  
Wetness Class: IV  
Wetness Grade: 3b

Available Water Wheat: 124 mm  
Potatoes: 94 mm  
Moisture Deficit Wheat: 107 mm  
Potatoes: 101 mm  
Moisture Balance Wheat: 17 mm  
Potatoes: 1 mm  
Droughtiness Grade: 2

Final ALC Grade: 3b  
Main Limiting Factor(s): Wetness

Remarks:  
Two sides of the pit have both been described (Pit 1a and Pit 1b).  
The mapping unit is on the borderline between Grades 3a and 3b on wetness.