Mallard Pass
Solar Farm

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9.55 - Agricultural Land Classification: Trial Pits 3 and 4 data

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MALLARD PASS SOLAR FARM
AGRICULTURAL LAND CLASSIFICATION:
TRIAL PITS 3 AND 4 DATA

November 2023

1 Introduction

1.1 As part of the review of the Agricultural Land Classification (ALC) carried out for the Mallard Pass Solar Farm (MPSF), Natural England has asked for additional information.

1.2 The information asked for is, specifically:

(i) the location of two soil pits referred to in the ALC report (November 2022) and the related soil pit records;

(ii) the location of other trenches examined and referred to in the ALC report, and how these informed the ALC results.

2 Soil Pits

2.1 The Environmental Statement Volume 2 Appendix 12.4 "Agricultural Land Classification Survey" [**APP-091**] states at 2.6 that four soil pits were excavated with a spade to examine certain soil physical properties, such as stone content and subsoil structure in more detail.

2.2 Paragraph 4.19 refers to two pits having been dug in Areas I and J, and a total of 10 archaeological trenches having been examined. The results of the investigation of those pits were used to inform the assessment undertaken.

2.3 The location of the two pits in areas I and J were not included in the ALC report, nor were photographs or the records appended. Therefore this information is now provided.

2.4 At **Attachment A** the following information is provided:

(i) record for pit 3, at Grid Reference TF 058106 in Area J;

Greenacres Barn, Stoke Common Lane, Purton Stoke, Swindon SN5 4LL
T: 01793 771333 Email: info@kernon.co.uk Website: www.kernon.co.uk

*Directors - **Tony Kernon** BSc(Hons), MRAC, MRICS, FBIAC **Sarah Kernon***
*Consultants – **Ellie Chew** BSc(Hons), **Amy Curtis** BSc(Hons)*

(ii) photograph for Pit 3;

(iii) record for Pit 4 at Grid Reference TF 05348 11385;

(iv) photograph of Pit 4.

2.5 The two pit locations are shown below.

2.6 As described in the ALC at 4.19, the pits informed the ALC in respect of stone content, stoniness and soil structure.

3 Archaeological Trenches Examined

3.1 Trenches examined in Areas A and D are shown in **Attachment B**, together with a number of photographs.

3.2 Additional trenches were examined in Areas B and C, with photographs available if required.

4 Comments

4.1 This document provides the locations, records and photographs that informed part of the ALC survey, providing the detail behind the conclusions of the ALC, as referenced in 4.19 and to supplement Annex3.

Attachment A

Soil pits

Pit 3 Area J

Soil Survey						Surveyor	RWA
Easting (X)	505800	Northing (Y)	310600	Alt (m)	25	Grid Reference	TF058106
Land Use	CER	Reference	173 (SP3)	Slope °	≤7	Date	12/10/2022
Bedrock	Blisworth Clay Formation	Superficial	None recorded	Aspect			

Layer		Topsoil	2	3	4	5	6	7
Lower Depth (cm)		20	28	48				
Texture		C - Clay	C - Clay	C - Clay				
Matrix Colour		10YR4/3	10YR5/4	10YR5/3				
Gley (Y/N)			No	Yes				
Ochreous Mottles	Form			CD - Common Distinct				
	Munsell Colour			10YR4/6				
Grey Mottles	Form							
	Munsell Colour							
Manganese (Y/N)		No	No	Yes				
% Stones (type 1)		35	50	50				
Stones > 2cm		18						
Stones > 6cm		2						
Stone Type		HR - All hard roc	HR - All hard rocks or ston	HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger				
% Stones (type 2)								
Stones > 2cm								
Stones > 6cm								
Stone Type								
CaCO3		MC - Moderatel	MC - Moderately calcareo	MC - Moderately calcareous (5 - 10% CaCO3)				
Shape of Peds.		SAB - Subangula	AB - Angular Blocky	AB - Angular Blocky				
Size of Peds.		M - Medium	M - Medium	M - Medium				
Subsoil Structure		Not Applicable	Moderate	Moderate				
Soil or Ped. Strength		Firm	Firm	Firm				
Degree of Ped. Development		M - Moderate	M - Moderate	M - Moderate				
Slowly Permeable Layer (Y/N)		No	No	No				

MDw	MDp	FCD
116	110	113

Wetness	Class (WC)	WC I
	Grade (WE)	2

Notes	Subgrade 3b due to topsoil stone content (16-35% >2cm)

Pit 4 Area I

Soil Survey						Surveyor	RDM
Easting (X)	505348	Northing (Y)	311385	Alt (m)	20	Grid Reference	TF 05348 11385
Land Use	CER	Reference	Pit 4	Slope °	≤7	Date	13/10/2022
Bedrock	Rutland Formation	Superficial	Alluvium	Aspect			

Layer		Topsoil	2	3	4	5	6	7
Lower Depth (cm)		26	50	120				
Texture		HCL - Clay loam (	C - Clay	C - Clay				
Matrix Colour		10YR3/4	10YR5/3	10YR6/2				
Gley (Y/N)		Yes	Yes	Yes				
Ochreous Mottles	Form	FD - Few Distinct	CD - Common Distinct	CD - Common Distinct				
	Munsell Colour	10YR5/8	10YR5/6	10YR5/6				
Grey Mottles	Form		CD - Common Distinct	CD - Common Distinct				
	Munsell Colour		2.5Y6/2	2.5Y6/2				
Manganese (Y/N)		No	No	No				
% Stones (type 1)		4						
Stones > 2cm		2						
Stones > 6cm		0						
Stone Type		HR - All hard rocks or stones (i.e. those which cannot be scratched with a finger nail)						
% Stones (type 2)								
Stones > 2cm								
Stones > 6cm								
Stone Type								
CaCO3		NON - Non-calca	NON - Non-calcareous (<0	NON - Non-calcareous (<0.5% CaCO3)				
Shape of Peds.		SAB - Subangula	AB - Angular Blocky	PRIS - Prismatic				
Size of Peds.		C - Coarse	C - Coarse	C - Coarse				
Subsoil Structure		Not Applicable	Moderate	Poor				
Soil or Ped. Strength		Firm	Firm	Firm				
Degree of Ped. Development		M - Moderate	M - Moderate	W - Weak				
Slowly Permeable Layer (Y/N)		No	No	Yes				

MDw	MDp	FCD
116	110	112

Wetness	Class (WC)	WC III
	Grade (WE)	3b

Notes	

Attachment B
Archaeological Trench Information

C925 Mallards Pass, Area A. Compilation of photos of archaeology trenches.

Trench near AB18, to E&W of TF 03030 12887

Photo at AB16 and in trench 10m to West.

Trench c. 60m SW of 14, at TF 02638 12900

C925 Mallards Pass, Area A. Compilation of photos of archaeology trenches.

Trench near AB12 at TF 02502 12930
Limestone here is not solid rock but compacted weathered limestone material

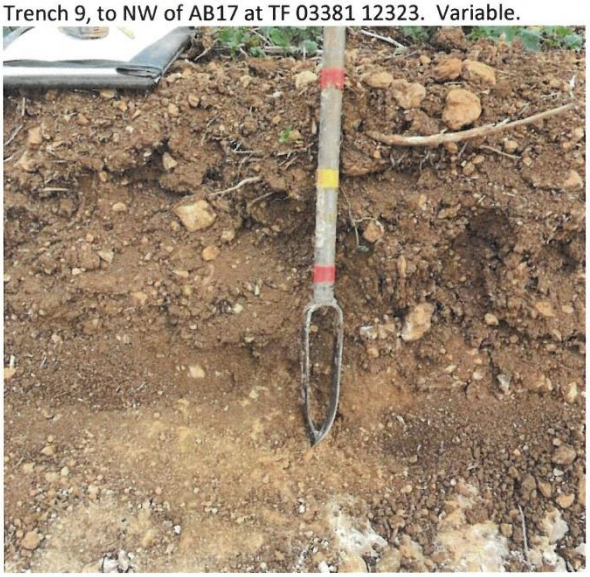
Trench East of AB11 at TF 02989 13002.
These photos illustrate the significant variability in the subsoil

Trench c. 15m South of AB1
significant variability, from IMP limestone at 30cm to deeper fine loamy deposits.

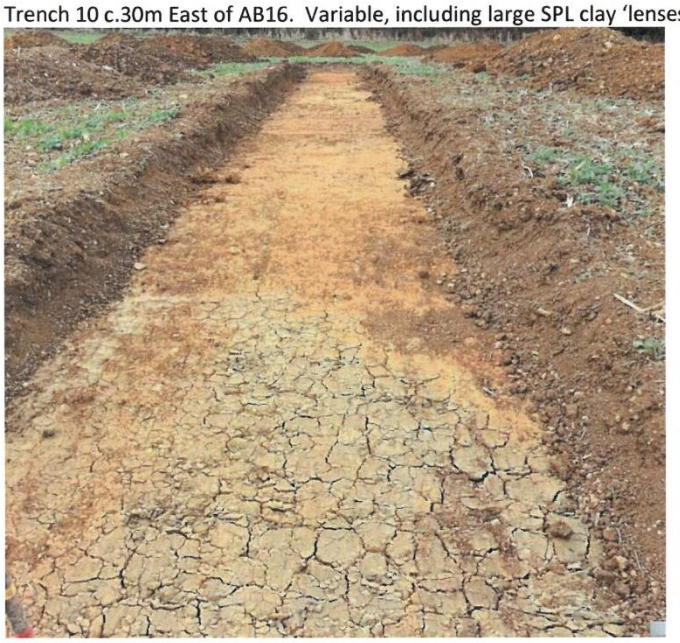
C925 Area D, trenches 8 to 10

Trench 8 , c. 15m SW of AB17 at TF 03395 12287

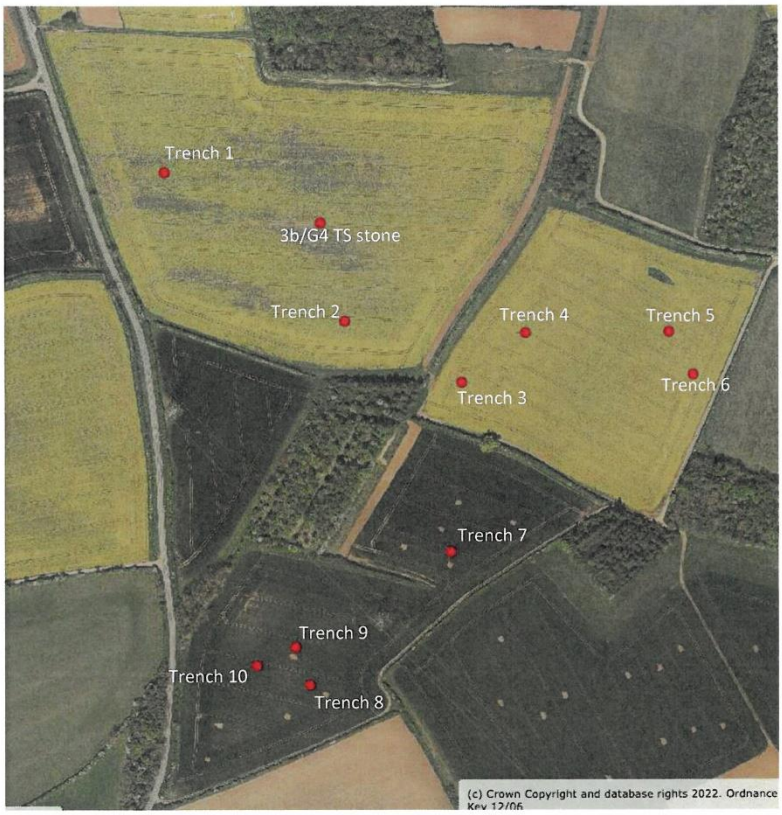
Trench 9, to NW of AB17 at TF 03381 12323. Variable.



Trench 10 c.30m East of AB16. Variable, including large SPL clay 'lenses'

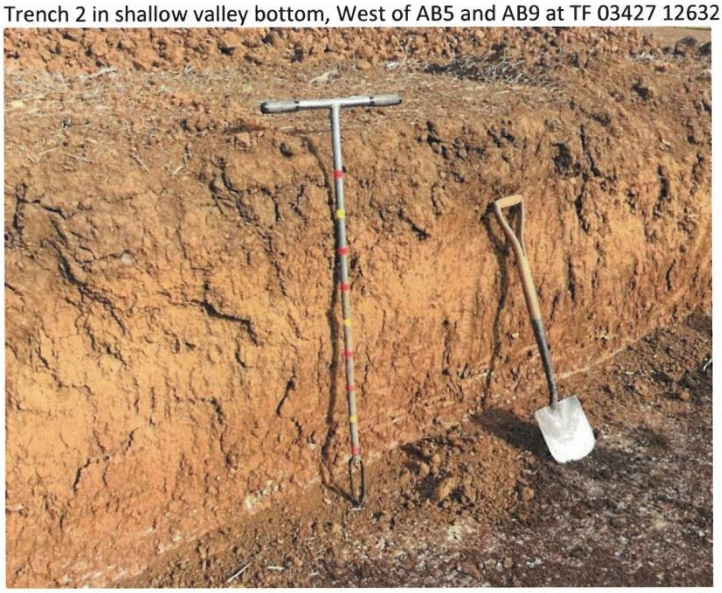


Site D trench locations



C925 - Trench 1 looking West from TF 03255 12773, on S facing slope

Trench 2 in shallow valley bottom, West of AB5 and AB9 at TF 03427 12632



Trench 3 at TF 03539 12574 on lower slopes towards valley bottom

Trench 4 at TF 03599 12622 on lower slopes towards valley bottom. Very variable.

C925 Area D, Trenches 5 to 7

Trench 5 at TF 03733 12622

Trench 6 East of AB10 at TF 03759 12580

Trench 7 near AB15 at TF 03528 12413

Above, Limestone is 'weathered' / 'altered' rather than solid. Few very fine roots, but very dense and compact so probably only rootable for about 20cm.

Variable.