



**Chris Butler MfA  
Archaeological Services Ltd**



A Geophysical Survey  
at  
Land South of Boxal Bridge,  
Wisborough Green,  
West Sussex

Project No. CBAS0443

By  
Dr Caroline Russell

December 2013

### ***Summary***

*A magnetometry survey was carried out at Land South of Boxal Bridge, Kirdford Road, Wisborough Green, West Sussex, in advance of the proposed construction of a compound for an oil well. The survey revealed a number of linear features of potential archaeological interest. It also showed the extent of the gravels of the 3<sup>rd</sup> Arun terrace, which may possibly contain early prehistoric flintwork.*

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## 1. Introduction

- 1.1** Chris Butler Archaeological Services Ltd has been commissioned by Celtique Energie Weald Ltd (The Client) to carry out a geophysical survey of Land South of Boxal Bridge, Kirdford Road, Wisborough Green, West Sussex (Fig. 1). Following submission of the planning application, a geophysical survey was requested by WSCC to supplement an archaeological desk-based assessment<sup>1</sup> and further clarify the archaeological impact of a well installation and its associated infrastructure, including access road and soil bunds (WSCC/083/13/KD) (Fig. 2). Provision of this additional information will enable archaeological issues to be fully considered when the planning decision is made.
- 1.2** The compound of the Application Site is a rectangular piece of land centred at TQ 03718 26728, located in the northeast corner of a large arable field, to the northwest of Wisborough Green. It is bound to its west by a protruding strip of Northup Copse. The compound lies between 15m and 21m OD, on the gentle north-facing slope of a large low-lying hill. This hill slopes down to the north to a belt of woodland that fronts Boxal Brook.
- 1.3** According to the British Geological Survey<sup>2</sup>, the geology of the Application Site comprises the mudstone and sandstone of the Weald Clay Formation, with a localised outcrop of sand and gravel of the Arun Terrace Deposits overlying the mudstone. Alluvium has built up over the mudstone beside Boxal Brook. To address the county council request for additional information, a geoarchaeological report has been prepared to assess the potential of the Application Site containing deposits of early prehistoric significance<sup>3</sup>.
- 1.4** There are no Scheduled Monuments or Conservation Areas designated within a 1km radius of the Application Site. Four Listed Buildings (Grade II) stand within the area. The closest Listed Building stands c.350m to the east on Kirdford Road.
- 1.5** Dr Caroline Russell, Andrew Bradshaw and Steffan Klemenic carried out the survey on the 10<sup>th</sup> and 11<sup>th</sup> December 2013. David Staveley processed the results of the survey.

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<sup>1</sup> Russell, C. 2013. A Desk-based Assessment at Land South of Boxal Bridge, Kirdford Road, Wisborough Green, East Sussex. CBAS0358.

<sup>2</sup> [http://maps.bgs.ac.uk/geologyviewer\\_google/googleviewer.html](http://maps.bgs.ac.uk/geologyviewer_google/googleviewer.html)

<sup>3</sup> Allen, M. 2013. Land South of Boxal Bridge, Wisborough Green, West Sussex. Geological Desktop Survey and Mitigation Proposals.

## **2. Archaeological & Historical Background**

- 2.1** A full archaeological desk-based assessment has been prepared for the Application Site<sup>4</sup>. This established that the Application Site has moderate potential for containing archaeological remains associated with a hollow way of possible Saxon and medieval date and with Post Medieval farming. There is a low potential for the Application Site to produce material of an earlier date, as the Low Weald was exploited for its resources rather than settled during the prehistoric and Roman periods.
- 2.2** The County Archaeologist considered the stated probabilities to be fair assessments although highlighted two reservations. Firstly, he believes it possible that prehistoric worked flints may be contained within any River Arun 3rd terrace sand and gravels present within the Application Site. The absence of such finds from the locality may simply reflect the limited amount of fieldwork undertaken to investigate these deposits.
- 2.3** Secondly, the Application Site is located within the core area of the 16<sup>th</sup> century glass working industry and lies within 1km of two glass working sites. The County Archaeologist therefore thinks that the remains of a glass working site may be present within the Application Site.
- 2.4** The purpose of the geophysical survey is to:-
1. Establish the presence / absence of archaeological remains within the Application Site e.g. glass working kilns or dumps of glass working debris; and
  2. Determine the extent, character, quality and if possible, the date of any archaeological remains present.

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<sup>4</sup> Russell, C. 2013. A Desk-based Assessment at Land South of Boxal Bridge, Kirdford Road, Wisborough Green, East Sussex. CBAS0358.

### **3. Methodology**

- 3.1** The area surveyed covered an area of 1.6ha (Fig. 2). The entire Application Site was under a light crop of grass at the time of the survey. There were no obstructions other than a tree that had fallen across the copse bound northwest side of the compound. The weather was dry but with a near constant cold mist that resulted in damp ground conditions.
- 3.2** The survey was carried out using a Bartington Grad601-2 fluxgate gradiometer within 40m x 40m grids. The grids were set out using a Topcon GTS Total Station on an arbitrary grid. Resection points were recorded for the field, and the outline of the field was partly surveyed to further aid the overlay of the survey results onto an OS base map / aerial mapping (Fig. 2). The sample rate was four readings per meter along lines spaced 1m apart.
- 3.3** The data was processed using Snuffler geophysics software using zero mean line destripe filters, followed by interpolation from 1m x 0.25m samples to 0.5m x 0.25m. The display threshold is +/- 2 nT across the entire Application Site.

#### 4. Survey Results

4.1 The results for the survey are shown on Fig. 3.

4.2 The survey results revealed the Application Site to contain several possible linears of potential archaeological origin (Fig. 4). Multiple plough lines were also seen to run west to east across the Application Site.

4.3 A strong geological change is seen within the southwest half of the Application Site, showing the extent of the 3<sup>rd</sup> Arun Terrace deposits.



Plate 1: The Application Site on a clear day, looking northwest

## **5. Conclusions**

- 5.1** The geophysical survey revealed a number of linear features of potential archaeological interest. It also showed the extent of the gravels of the 3<sup>rd</sup> Arun terrace, which may possibly contain early prehistoric flintwork.
- 5.2** It is recommended that an archaeological evaluation be carried out at the Application Site, as an archaeological condition of planning consent. This will determine the presence of any archaeological remains, and may expose features that cannot be detected through magnetometry, such as small discrete features.
- 5.3** An evaluation excavation would enable further decisions to be made regarding the mitigation strategy for either in-situ preservation of the archaeology or its preservation by record in accordance with the National Planning Policy Framework.



## **6. Acknowledgements**

- 6.1** I would like to thank Celtique Energie Weald Ltd for commissioning this geophysical survey.
  
- 6.2** The project was managed by Chris Butler and monitored for WSCC by John Mills, Senior Archaeologist.

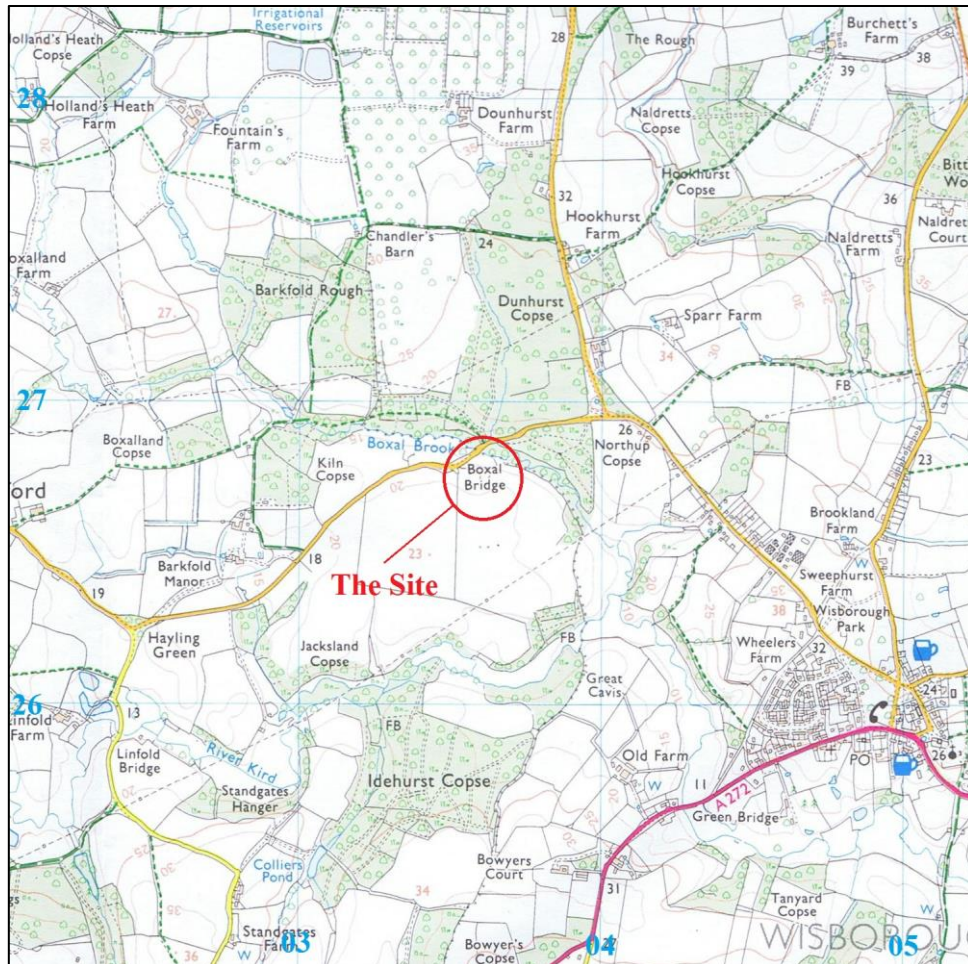


Fig. 1: Land South of Boxal Bridge, Wisborough Green: Site location map

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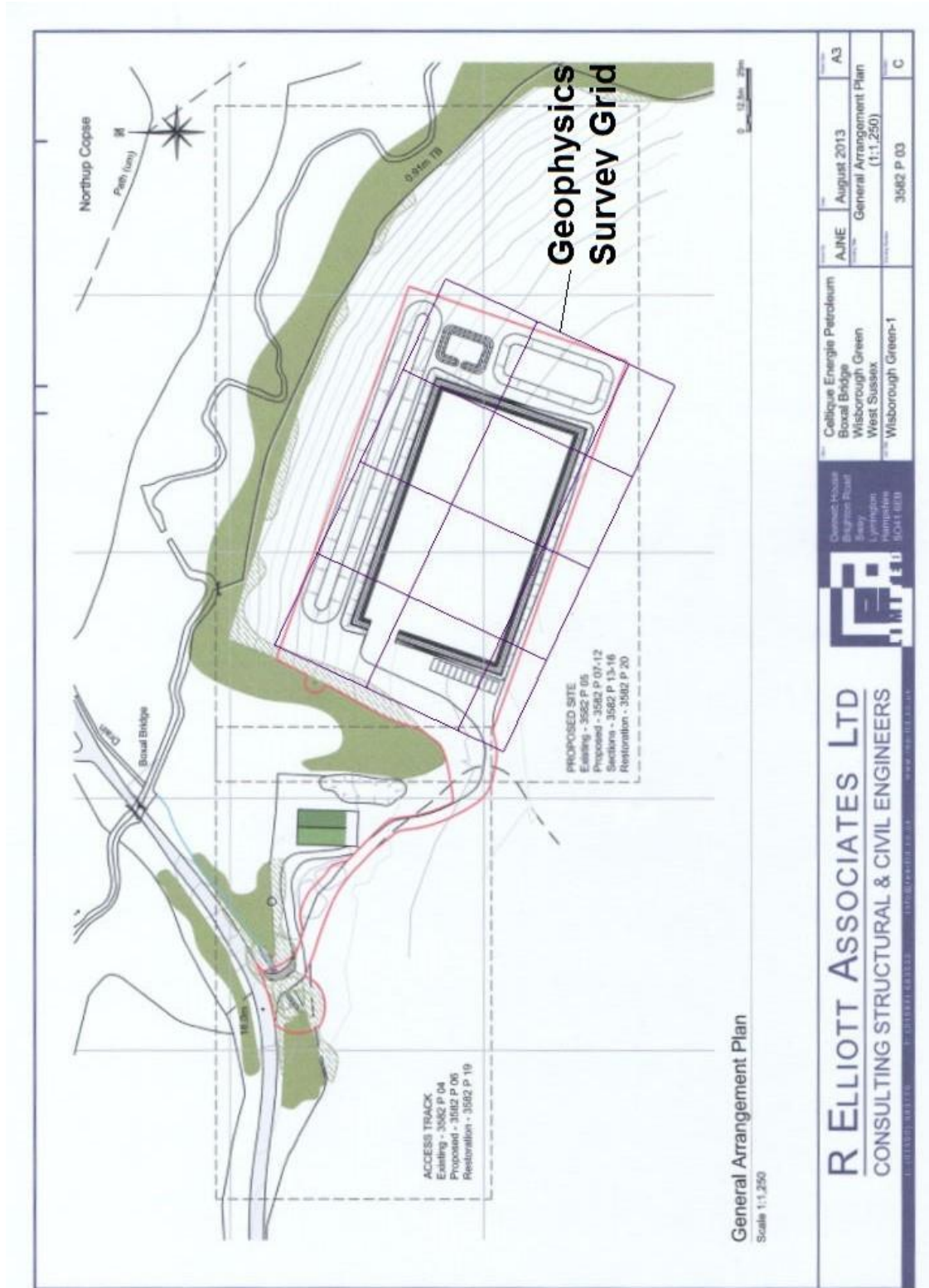


Fig. 2: Land South of Boxal Bridge, Wisborough Green:  
General arrangement plan showing area surveyed and survey grid  
(Adapted from plan provided by The Client)

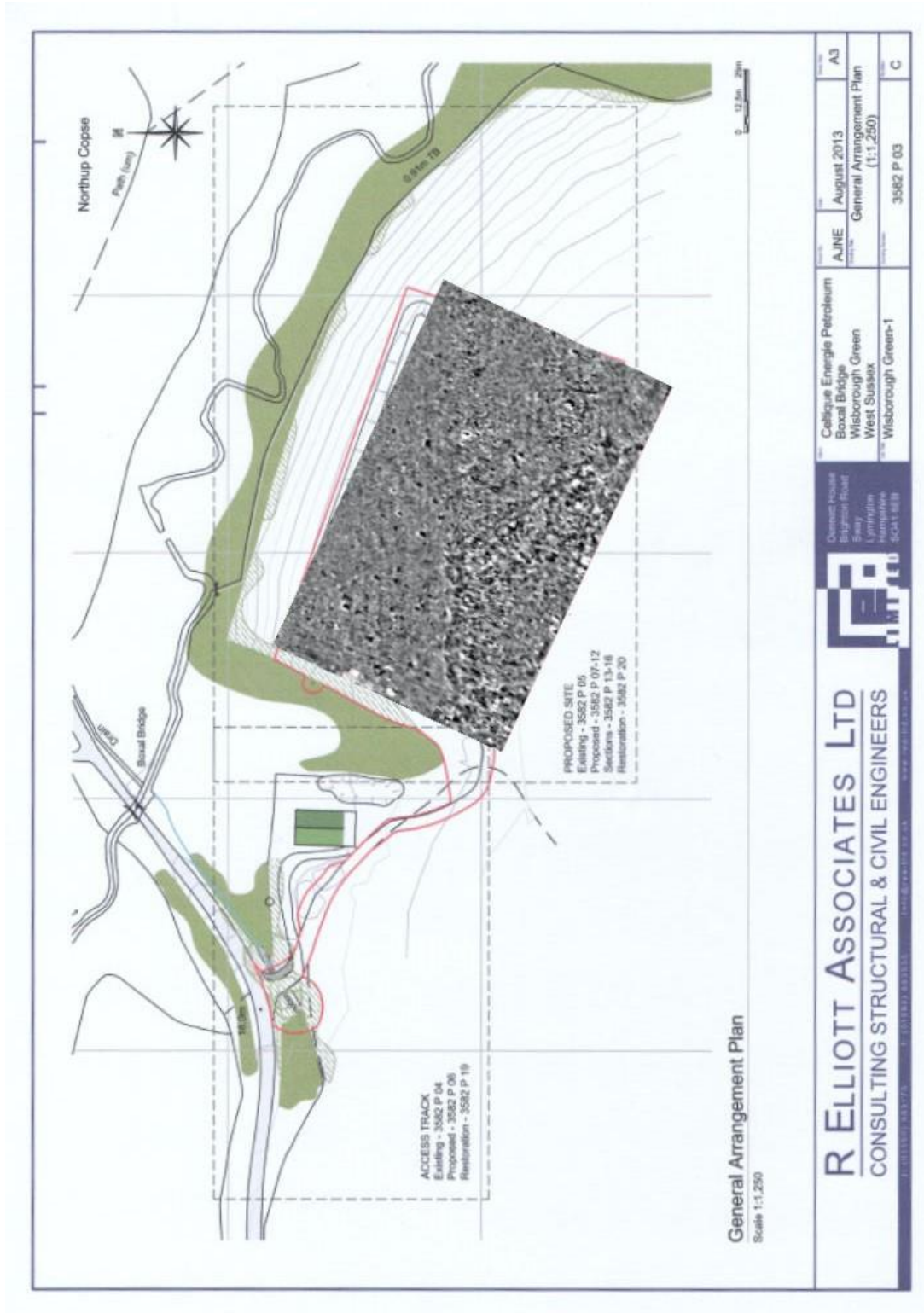


Fig. 3: Land South of Boxal Bridge, Wisborough Green:  
Results of survey on general arrangement plan  
(Adapted from plan provided by The Client)

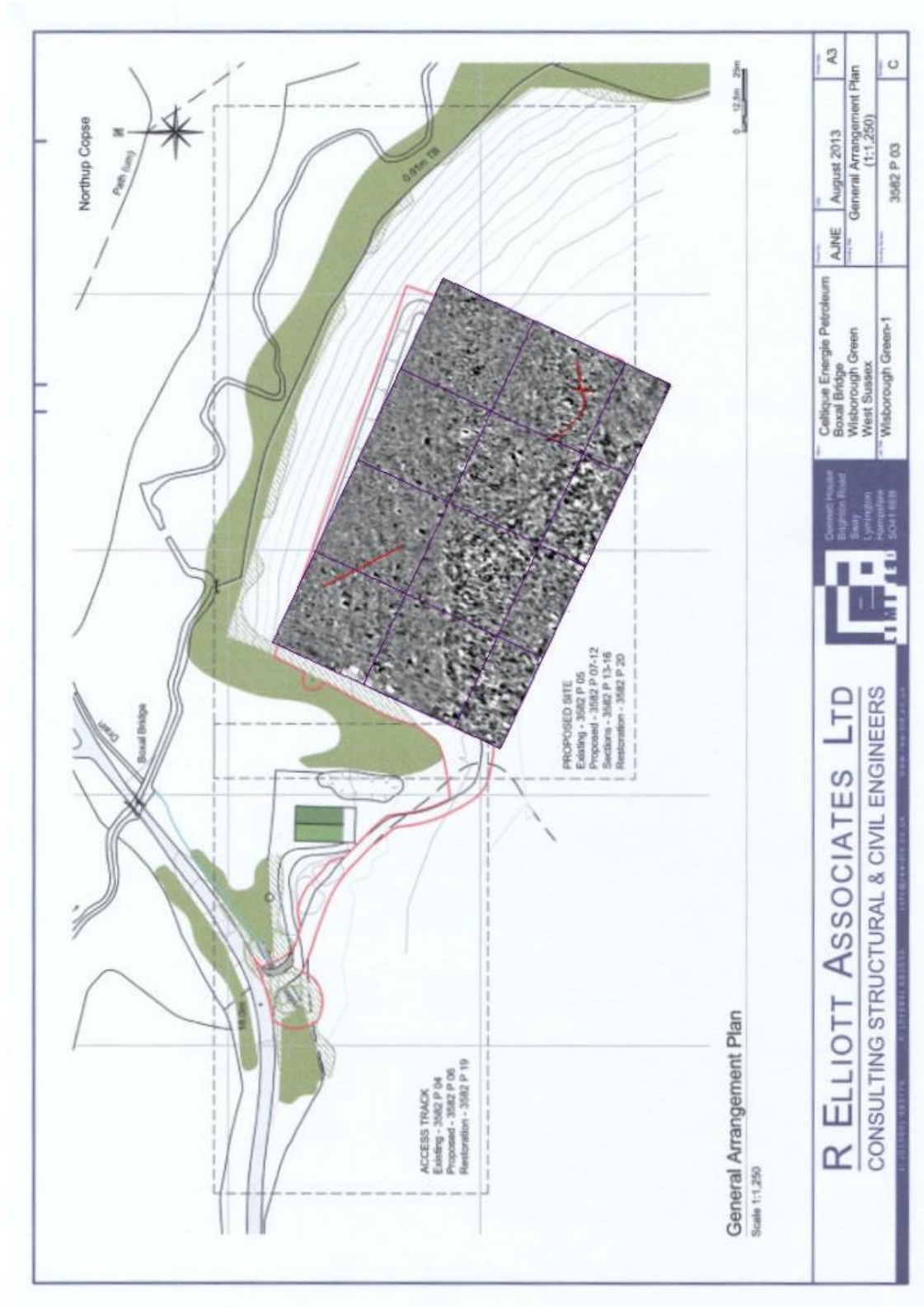


Fig. 4: Land South of Boxal Bridge, Wisborough Green:  
Interpretation of survey results: Potential archaeology highlighted in red  
(Adapted from plan provided by The Client)

### Appendix 1: HER Summary Form

Site Code	WGR13					
Identification Name and Address	Land South of Boxal Bridge, Kirdford Road, Wisborough Green, West Sussex					
County, District &/or Borough	West Sussex County Council, Chichester District Council					
OS Grid Refs.	TQ 03718 26728					
Geology	Weald Clay Formation and Arun Terrace Deposits					
Type of Fieldwork	Eval.	Excav.	Watching Brief	Standing Structure	Survey <b>X</b>	Other
Type of Site	Green Field <b>X</b>	Shallow Urban	Deep Urban	Other		
Dates of Fieldwork	Eval.	Excav.	WB.	Other 10 <sup>th</sup> and 11 <sup>th</sup> December 2013		
Sponsor/Client	Celtique Energie Weald Ltd					
Project Manager	Chris Butler MfA					
Project Supervisor	Caroline Russell					
Period Summary	Palaeo.	Meso.	Neo.	BA	IA	RB
	AS	MED	PM	Other		
<p>100 Word Summary</p> <p><i>A magnetometry survey was carried out at Land South of Boxal Bridge, Kirdford Road, Wisborough Green, West Sussex, in advance of the proposed construction of a compound for an oil well. The survey revealed a number of linear features of potential archaeological interest. It also showed the extent of the gravels of the 3<sup>rd</sup> Arun terrace, which may possibly contain early prehistoric flintwork.</i></p>						

## **Chris Butler Archaeological Services Ltd**

Chris Butler has been an archaeologist since 1985, and formed the Mid Sussex Field Archaeological Team in 1987, since when it has carried out numerous fieldwork projects, and was runner up in the Pitt-Rivers Award at the British Archaeological Awards in 1996. Having previously worked as a Pensions Technical Manager and Administration Director in the financial services industry, Chris formed **Chris Butler Archaeological Services** at the beginning of 2002.

Chris is a Member of the Institute for Archaeologists, and a Fellow of the Society of Antiquaries of London, and was a part time lecturer in Archaeology at the University of Sussex. Recently he has set up The Sussex School of Archaeology Ltd

Chris specialises in prehistoric flintwork analysis, but has directed excavations, landscape surveys and watching briefs, including the excavation of a Beaker Bowl Barrow, a Saxon cemetery and settlement, Roman pottery kilns, and a Mesolithic hunting camp. He has recently undertaken large landscape surveys of Ashdown Forest and Broadwater Warren and is Co-Director of the Barcombe Roman Villa excavation project.

His publications include *Prehistoric Flintwork*, *East Sussex Under Attack* and *West Sussex Under Attack*, all of which are published by Tempus Publishing Ltd.

**Chris Butler Archaeological Services Ltd** is available for Flintwork Analysis, Project Management, Military Archaeology, Desktop Assessments, Field Evaluations, Excavation work, Watching Briefs, Field Surveys & Fieldwalking, Post Excavation Services and Report Writing.

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