YCCCART 2011 / Y
North Somerset HER xxx

Gradiometry and Resistivity Survey at Havyatt

YATTON, CONGRESBURY, CLAVERHAM AND CLEEVE ARCHAEOLOGICAL RESEARCH TEAM (YCCCART)

General Editor: Vince Russett

The RM15 in action

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Abstract

YCCCART were asked to undertake a geophysical survey by Nick Joy, Chairman of Wrington Local History Society, following the discovery by him of 11/12th century pottery in a field at Havyatt and a potential large square enclosure on a Bing map. Gradiometry and resistivity surveys have revealed a possible area of domestic occupation together with a small square feature and several possible track ways or enclosures. The latter may relate in part to the possible enclosure shown on the Bing map.

Acknowledgements

A Heritage Lottery Grant enabled the purchase, by YCCCART, of a Geoscan RM 15 Resistance Meter and Bartington 601 gradiometer, without which this survey could not have been undertaken.

This survey would also not have been carried out without the willing permission of the landowner Mr Alvis.

The authors are grateful for the hard work by the members of YCCCART and the Wrington Local History Society in performing the survey and Vince Russett for editing this report.

Introduction

Yatton, Congresbury, Claverham and Cleeve Archaeological Research Team (YCCCART) is one of a number of Community Archaeology teams across North Somerset, supported by the North Somerset Council Development Management Team.

The objective of the Community Archaeology in North Somerset (CANS) teams is to carry out archaeological fieldwork, for the purpose of recording, and better management and understanding of, the heritage of North Somerset.

Site Location

Fig 1: Site location

The site lies beside the A38 at Havyatt about 9 miles south of Bristol

Land use and geology

Mercia Mudstone Group-Mudstone and Halite Stone. Sedimentary Bedrock.

Historical & archaeological context

The site of a Roman Villa at Havyatt was recorded by Mrs F Neal (Neal, 1970)

Nick Joy has provided the following information

Metal detecting.

Finds, discovered by myself, have been multi-phasic with everything from a mobile phone to a denarius dated to 104BC being recovered. However the majority of items have been either scraps of lead or tubes of mastitis ointment (they would have been used in the dairy, discarded, swept up with all the dung and spread on the fields). Of the finds of interest the majority seem to date to the Roman period with the only item of medieval date (a hammered silver cut penny probably of Henry III) before a greater concentration of material from George III (1760-1820) onwards.

Of the Roman it's very hard at this stage to gain any weighty evidence of activity at the time of the invasion circa 43AD or shortly afterwards. There is evidence of this period but only represented by the republican denarius and an *as* of the Emperor Claudius (see photo). Brooches and brooch fragments have been recovered, a particularly fine trumpet brooch, missing only its pin, being the finest example (see photo). This trumpet brooch probably dates between 75AD and 175AD.

The bulk of the Roman metallic material recovered is that of very heavily worn and degraded 4th century bronze coins (many beyond identification)- it seems reasonable to assume that if there was indeed a fort or fortlet here in the first century AD that it was used for an extensive amount of time or possibly reused in a manner as yet undetermined over the succeeding 2 or 3 centuries.

Other significant finds of the Roman period include items of bronze jewellery and a couple of curious mounts, one is clearly and unmistakeably phallic and the other a moulded boar's head which may have been mounted on the end of a chair arm.

Lead scraps were recovered in vast numbers and it would be nice to say something of their history and use although sadly they are un-dateable and having no direct evidence of human activity other than the fact that they are lead rather than lead ore. But lead was used in Roman times very much as plastic is now, in a plethora of ways – for every commonplace set of challenging circumstances there was the option of a solution or a repair using lead- given this attitude to lead in this period it does not seem unreasonable to at least assert an assumption that the lead is most probably dating from the Roman period.

Ceramic.

The field in question is under a 5 year rotation and is currently under grass for silage and hay and due to be ploughed again in spring of 2013.

Obviously, being covered in a healthy sward of grass, makes finding ceramic fragments challenging at best. But fragments have been recovered and, as with the metallic remains, heavily favour the Roman period. Types of Roman ceramic recovered include Severn Valley ware, black burnished, a few isolated examples of Samian and grey ware.

The grey ware is by far the most numerous of these listed types and is locally produced in most circumstances. Fortunately we are able to confidently place the manufacture of this grey ware at Congresbury which lies between 3 and 4 miles west of the site.

Of particular note is a 30% complete small jar/vase or urn which measures approximately 13cm in height; it has a base diameter of 7cm and an upper diameter of 10.7cm (see photo). It is Congresbury ware and was recovered at a depth of 30cms by lucky chance when digging for a metallic contact given by my metal detector. Studying the vessel it is of note that the base is of incredible thinness which leads to the idea that the base broke off during use and the remains discarded. The rough location corresponds to the north east corner of the feature on the Bing map. It was found in pieces having been crushed by the weight of modern farm machinery moving above it and the missing two thirds of the vessel. I can only assume have been spread across half the field by plough action. It was recovered with substantial quantities of a larger vessel (also Congresbury ware) as well as a fragment of Severn Valley ware. It leads to the assumption that the *fossa* of the fort was used as a midden at some point.

There were remarkably few examples of any other periods of ceramic recovered with the sole notable exception being a collection of 11th century stoneware shards found underneath the penumbra of the solitary large tree in the north of the field. These shards come from large vessels (jugs & jars etc) and stand alone as examples of their period, no other pieces have been found anywhere in this field to date.

Bing map anomaly

An online Bing map (no longer in existence) showed a square feature across the centre the field. This was considered worthy of investigation by geophysical surveys as a potential Roman fort.

Survey objectives

The survey had the following objectives.

1) To identify any archaeological features.
2) To use the survey to further train YCCCART members and members of Community Archaeology in North Somerset (CANS) in the use of the RM 15 Resistance Meter.

Methodology

The survey was undertaken during the period April to June 2011 by teams from YCCCART using a Bartington 601 gradiometer and Geoscan RM 15, with settings as per the site records in Appendix 1.

The completed survey was downloaded to an ArcheoSurveyor program

ArchaeoSurveyor composites were adjusted using the following filters

Grad shade
Despiked
Destriped
Clip SD2
Colour filters: Black Green White & Red Blue Green 2

The report was written in Microsoft Word 2007.

Results

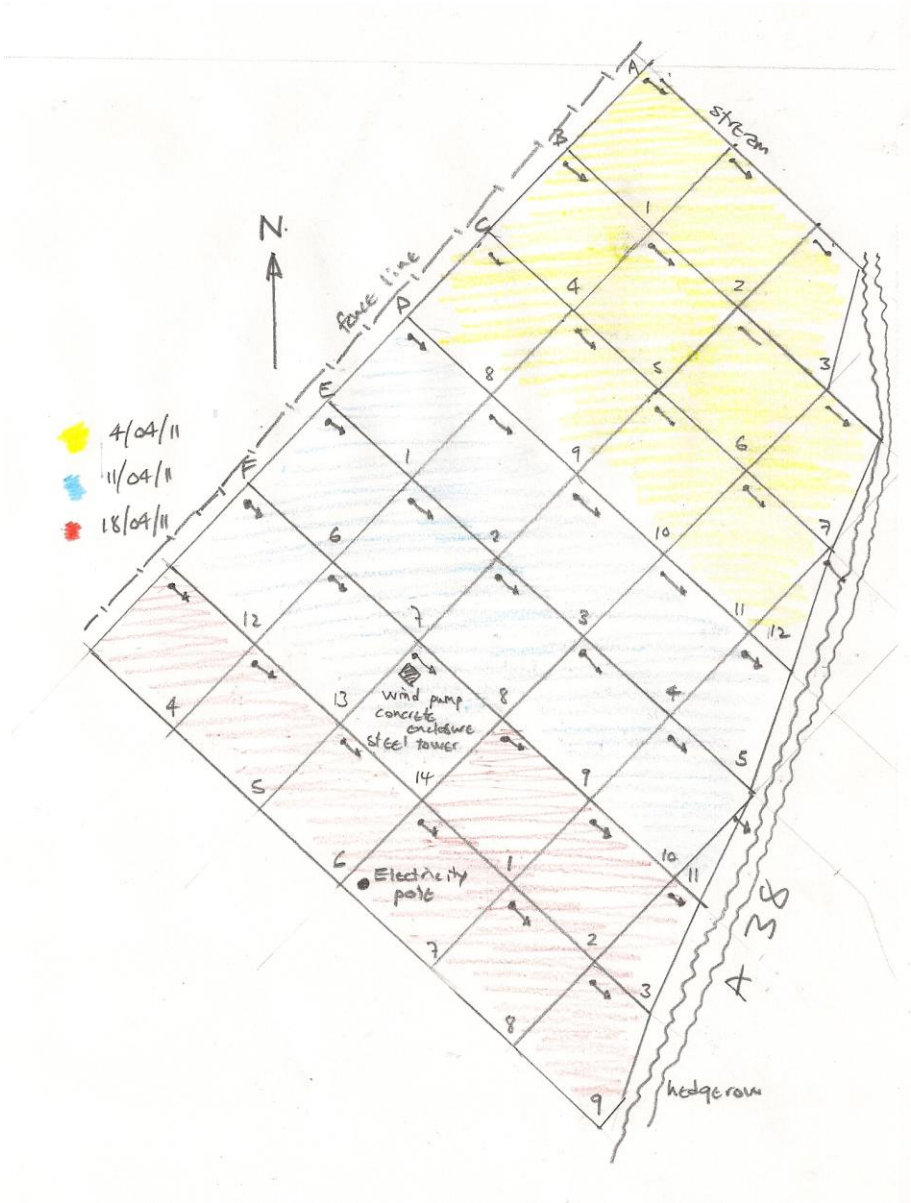


Fig 2: Grid layout

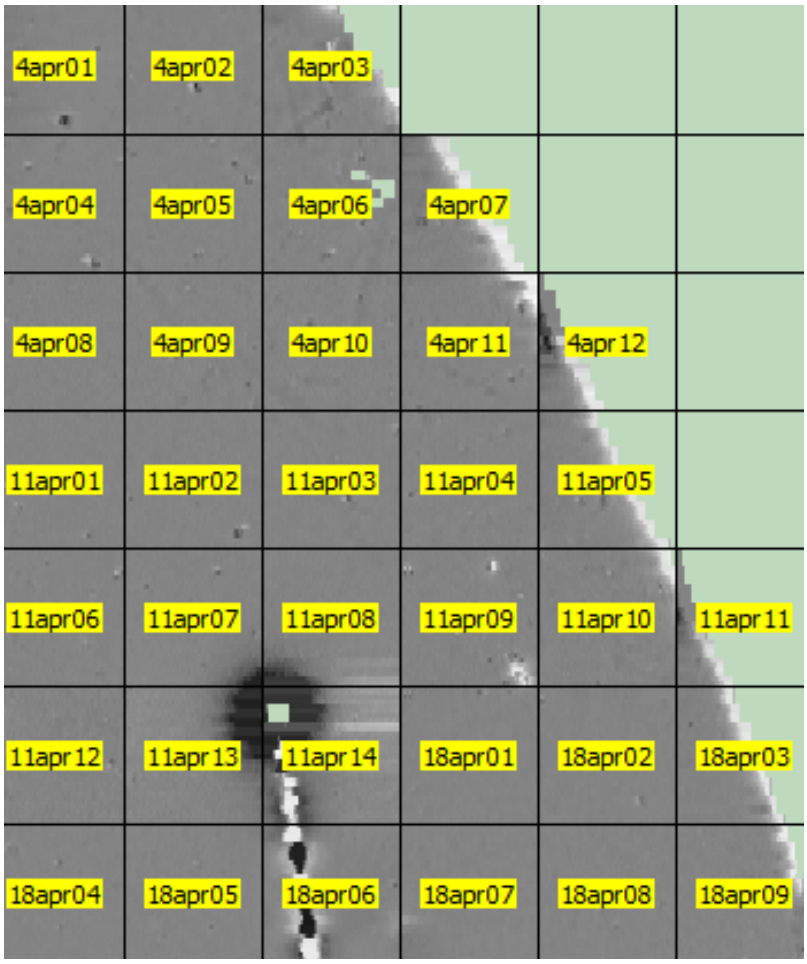


Fig 3: ArchaeoSurveyor grid names

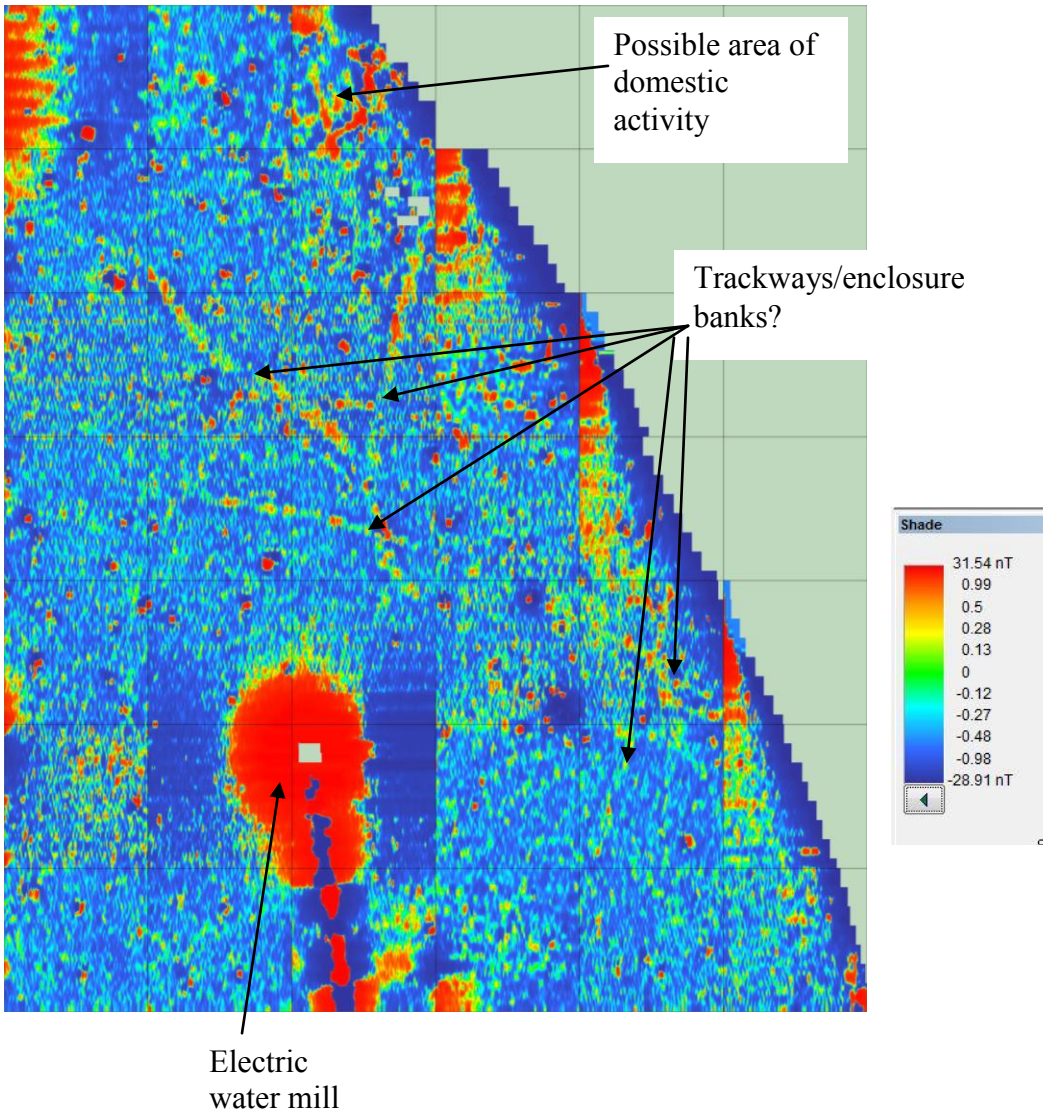


Fig 4: Shade view colour image. High readings are red.

The high readings to the south in Fig 4 above result from magnetic disturbance caused by the steel tower of an electric water mill.

Several straight lines towards the top and middle in Fig 4 may result from track ways or enclosures and relate in part to the potential enclosure shown on the Bing map.

A possible domestic area is shown at the top of Fig 4. This area is close to where 11th / 12th century pottery has been found and is near to the River Yeo and Perry Bridge.

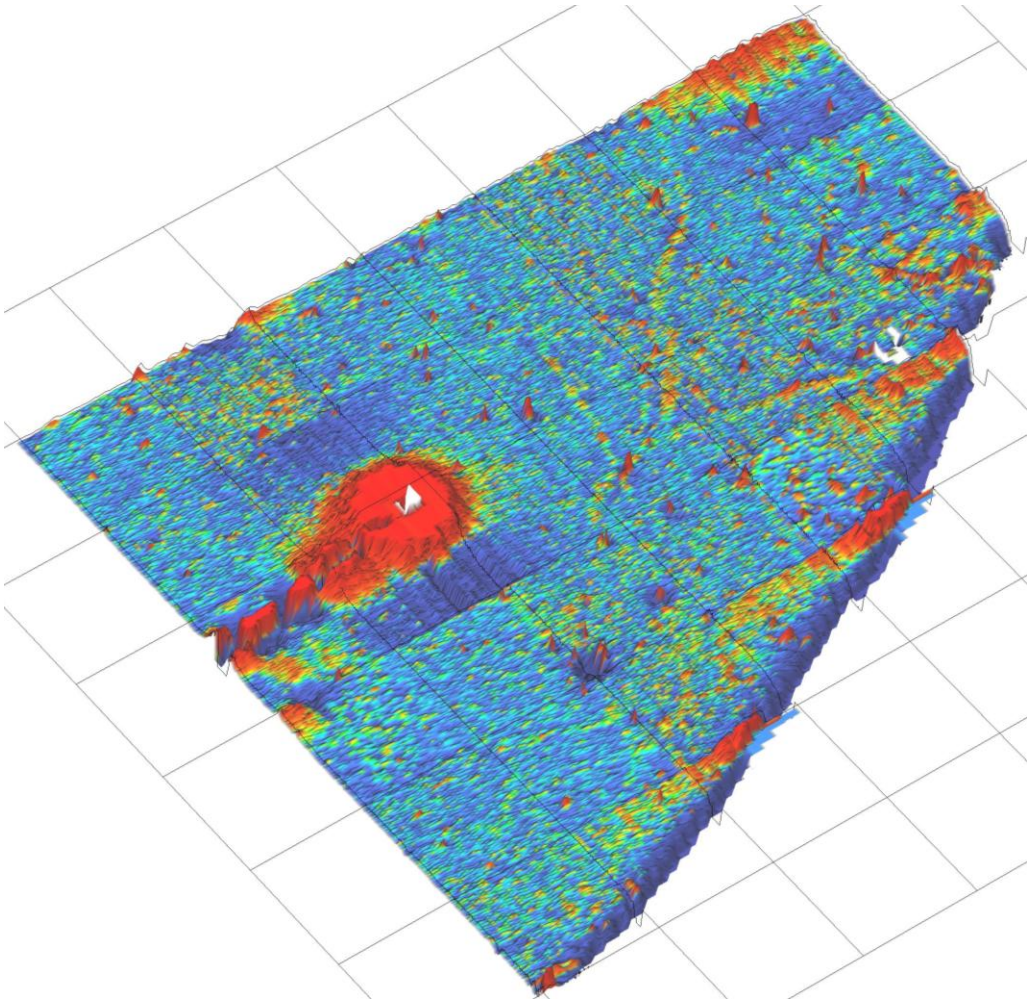


Fig 5: Axonometric view

The 3d image in Fig 5 above further highlights the results shown in Fig 4.

Resistivity

Grid 3	Grid 2
	Grid 1
Grid 4	Grid 5

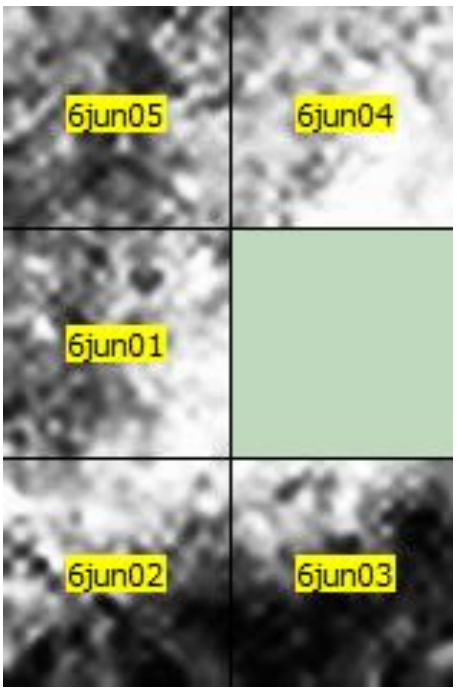


Fig 6: Grid layout and ArcheoSurveyor grid names (right).

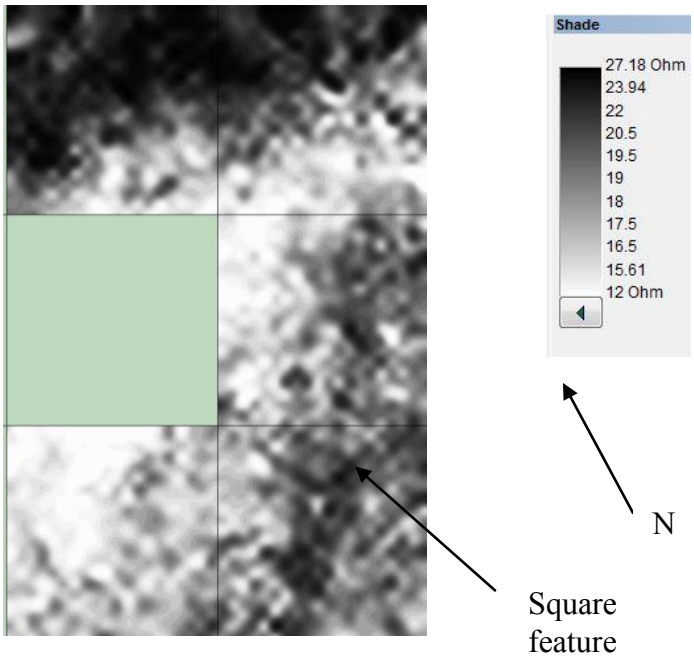


Fig 7: Shade view. High readings are black.

Towards the centre of the results in Fig 7 above a square feature bisected by lines from north to south is revealed. The black area at the top of Fig 7 could be part of a structure.

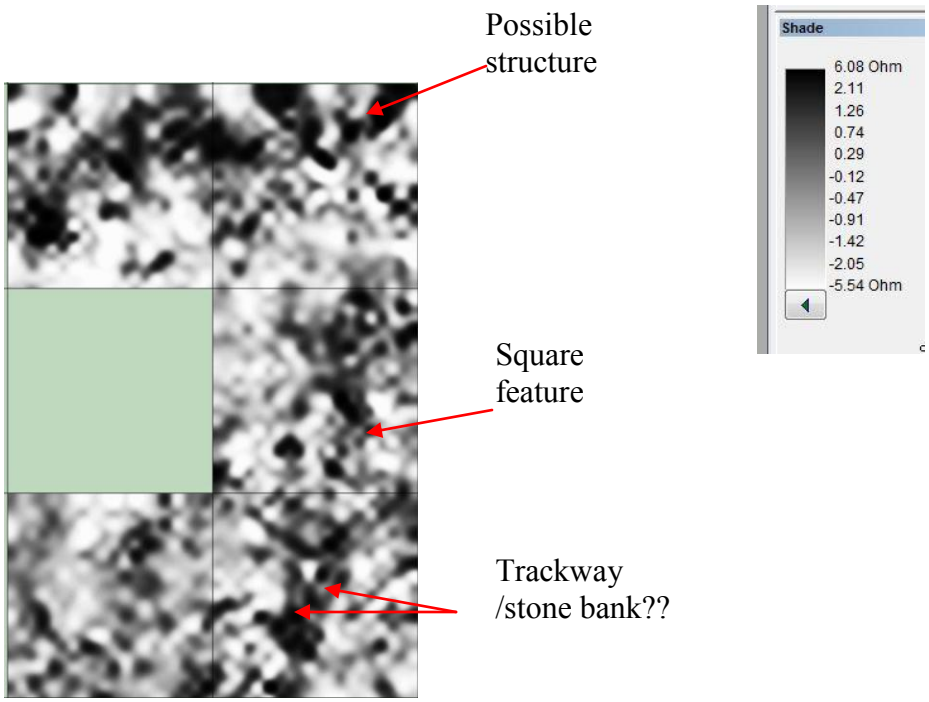


Fig 8: ArcheoSurveyor shade view image with addition of high level pass filter.
High readings are black

Additional processing has produced a clear image of the features mentioned in page 12 and in Fig 4.
The square feature is about 10m by 10m.

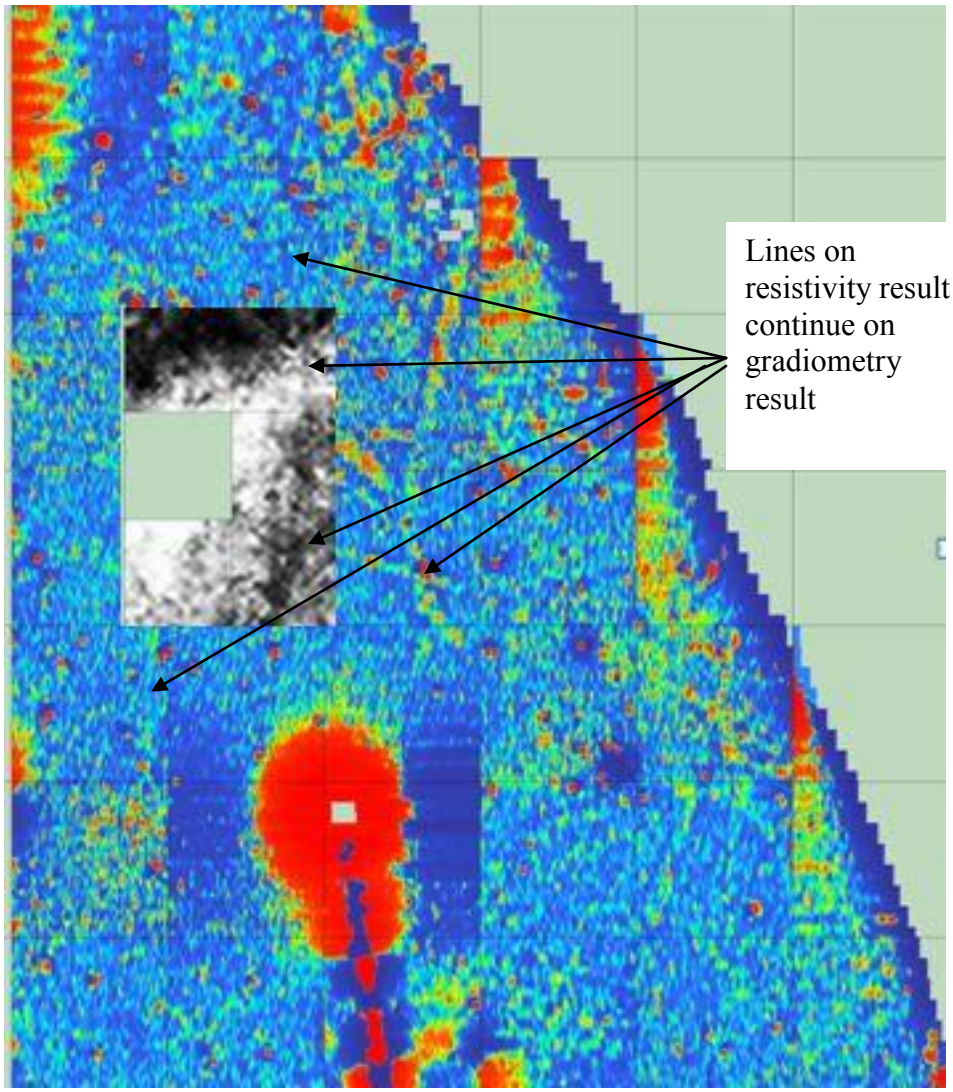


Fig 9: Resistivity result overlaid on gradiometry result colour image.

The resistivity result overlaid on the gradiometry result in Fig 9 above and Fig 10 below clearly shows the resistivity track ways or enclosures continuing in the gradiometry results. The possible enclosure indicated by the two lower arrows in Fig 9 and 10 align with the outline of the square feature shown on the Bing map.

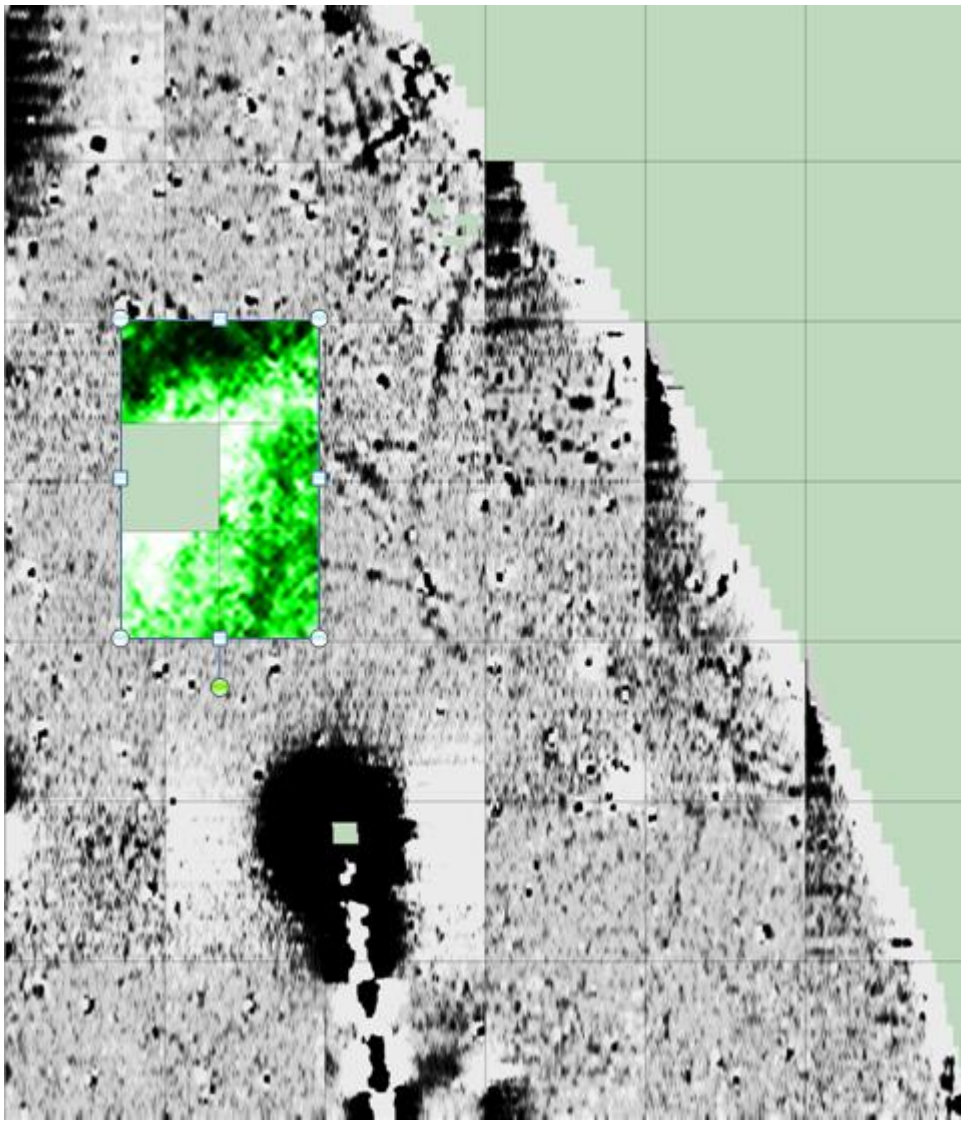


Fig 10 : Resistivity result colour image overlaid on gradiometry result image.

Recommendations

It is recommended that the resistivity survey is extended across the field to cover the area of possible domestic activity close to the river.

References

All historical information provided by Nick Joy, Chairman of Wrington History Society. except :-

Neal, Mrs F 1970 *The Site of the Roman Villa at Havyatt*. Proc Univ Bristol Spelaeol Soc 1970. 12 (2) 195-202

Authors. Nick Joy & Chris Short

Date August 2012

Appendix

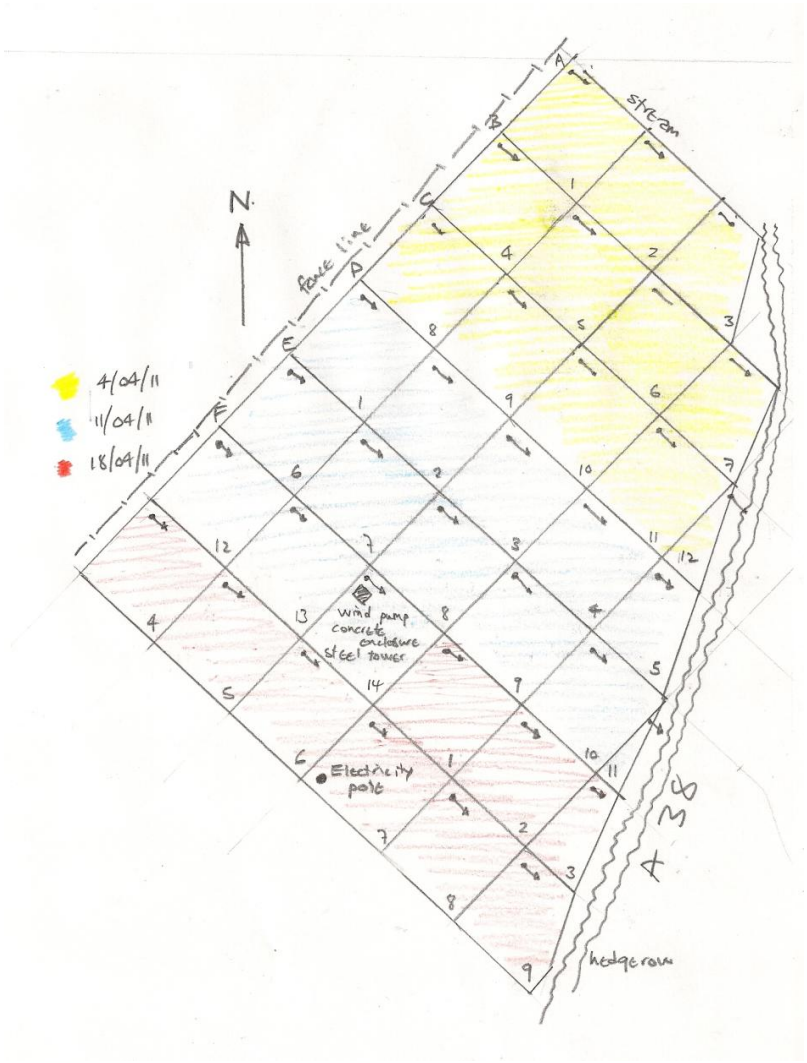
YCCCART Site Survey Project – Havyatt Romano British study							
Survey date			18th April 2011				
Report date			18th April2011				
Type /Instrument			Grad 601				
			Pace :1.5m/s Lines/m : 1 Range:100nT Volume: High Sensors:2	Grid size: 30m x30m Pattern : Zig Zag Samples/m:4 Audio: On Threshold:10nT Reject:50 Hz			
Location			Havyatt Farm				
			See annex A				
Ref			none				
Site name							
Landowner			Alvis				
Tenant			none				
HER ref							
Site type			Open field				
Description			Grass				
Period			Unknown				
Geology			Limestone				
Land use			silage				
Survey team and conditions							
4th April 2011		Team	Peter English, Nick Joy, Bill Cough, Margaret Whittington & Ian Morton				
		weather	cold & overcast				
11th April 2011		Team	Nick Joy, Bill Cough & Ian Morton				
		weather	Cool & overcast, moisture in air toward end of survey				
18th April 2011		Team	Nick Joy, Bill Cough & Ian Morton				
		weather	Bright and warm				
Survey area			notes		readings		
			size	walk direction	max	min	mean
27th February 2011			Setting out grids				
Grid ref #	04/04/2011	1	30 x 30 m	SE	+36.9	-8.1	-0.8
		2	30 x 30 m	SE	+63.4	-75.0	-0.4
		3	30 x 30 m Mirror and return	SE	+21.3	-94.8	-2.8
		4	30 x 30 m	SE	+89.0	-100.0	-0.1
		5	30 x 30 m	SE	+13.9	-11.5	00.3
		6	30 x 30 m Tree in grid	SE	+55.1	-16.1	-0.6

			dummy data entered				
		7	30 x 30 m Mirror and return	SE	+11.1	-100.0	-16.3
		8	30 x 30 m	SE	+3.0	-5.7	-0.7
		9	30 x 30 m	SE	+14.6	-12.3	-0.4
		10	30 x 30 m	SE	+16.8	-6.7	-0.4
	Note change of operator	11	30 x 30 m	SE	+85.5	-100.0	-2.8
		12	30 x 30 m Mirror and return	SE	+35.9	-100.0	-32.7
Grid ref #	11/04/2011	1	30 x 30 m	SE	+17.9	-26.5	-1.9
		2	30 x 30 m	SE	+13.0	-15.0	-2.2
		3	30 x 30 m	SE	+17.4	-79.9	-2.3
		4	30 x 30 m	SE	+10.1	-11.6	-2.6
		5	30 x 30 m Mirror and return	SE	+7.3	-100.0	-8.5
		6	30 x 30 m	SE	+7.5	-15.1	-2.6
		7	30 x 30 m	SE	+30.3	-8.9	-1.9
		8	30 x 30 m	SE	+49.4	-6.5	-0.8
		9	30 x 30 m	SE	+100.0	-100.0	-3.4
		10	30 x 30 m Mirror and return	SE	+18.7	-100.0	-4.7
		11	30 x 30 m Mirror and return	SE	+1.8	-100.0	-34.1
		12	30 x 30 m	SE	+8.7	-9.9	-3.6
		13	30 x 30 m	SE	100.0	-8.2	+4.4
		14	30 x 30 m Dummy data entered for wind pump location	SE	+100.0	-100.0	+11.1
Grid ref #	18/04/2011	1	30 x 30 m	SE	+5.1	-6.3	-1.3
		2	30 x 30 m	SE	+16.6	-6.2	-1.3
		3	30 x 30 m Mirror and return	SE	+14.8	-100.0	-8.8
		4	30 x 30 m	SE	+17.0	-22.0	-1.3
		5	30 x 30 m	SE	+4.5	-14.7	-1.4
		6	30 x 30 m	SE	+100.0	-100.0	-2.1
		7	30 x 30 m Electricity pole in grid	SE	+6.8	-8.1	-1.2
		8	30 x 30 m	SE	+5.0	-7.1	-2.3
		9	30 x 30 m	SE	+18.3	-81.1	-3.6

Appendix 1

Setting out details

A) Gradiometry



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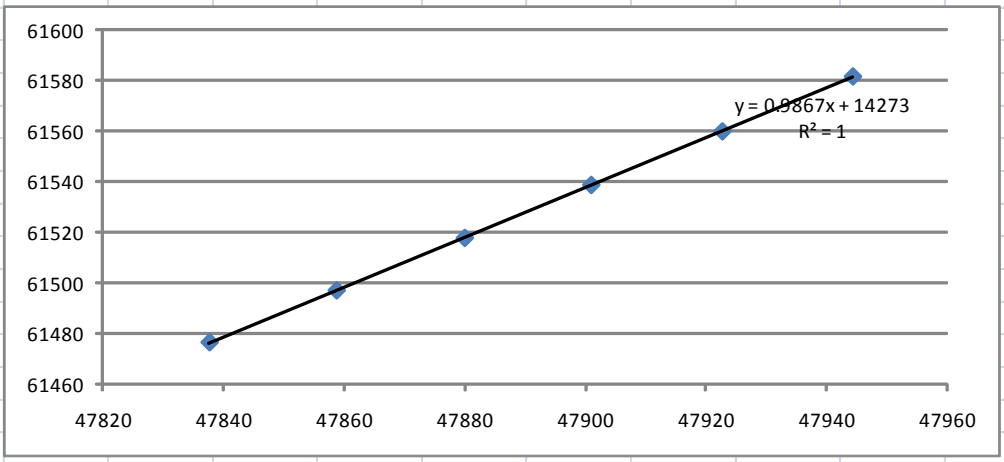
Havyatt Romano British study		
	All ST prefix	
	E	N
A	47944.37	61581.75
B	47922.71	61559.98
C	47900.95	61538.74
D	47879.97	61517.75
E	47858.71	61496.97
F	47837.63	61476.40



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B) Resistivity

YCCCART Site Survey Project **– Havyatt Farm**						
Survey date		6 June 2011				
Report date		9th June 2011				
Type /Instrument		RM15				
		Gain x1, Current 1mA Frequency 137Hz Probes 'Config 1' (2 probes)	Grid size: 20m x20m Pattern : Zig Zag Sample interval 1m Traverse Interval 1m. Mode Zig-Zag			
Weather		Dry & Cloudy				
OS Ref or Lat-Longitude		ST				
Site name		Havyatt Farm				
Landowner		?				
Tenant		N/A				
HER ref						
Site type						
Description		Possible Roman Fort				
Period		unknown				
Geology		unknown				
Land use		Public amenity / graveyard				
Survey team		*Colin Campbell, Ian Morton, Anne Dimmock, Nick Joy, Bill ?.*				
Survey area		notes		readings		
		size	walk direction			
28 Feb	Grid 1	1 x 20m	W			
	Grid 2	"	W			
	Grid 3	"	W			
	Grid 4	"	W			
	Grid 5	"	W			
Summary		Downloaded to Snuffler as Hav 1-5, Geoplot as hav 1-5. ArcheoSurveyor as: Havyatt RM15/6 June grids 1to 5				

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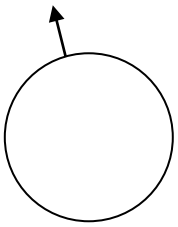
Grid layout Havyatt Farm 6th June 2011

Direction of travel : Just North of West

Grid 3	Grid 2
	Grid 1
Grid 4	Grid 5



See below for relationship between 5 resistivity grids above and gradiometry survey

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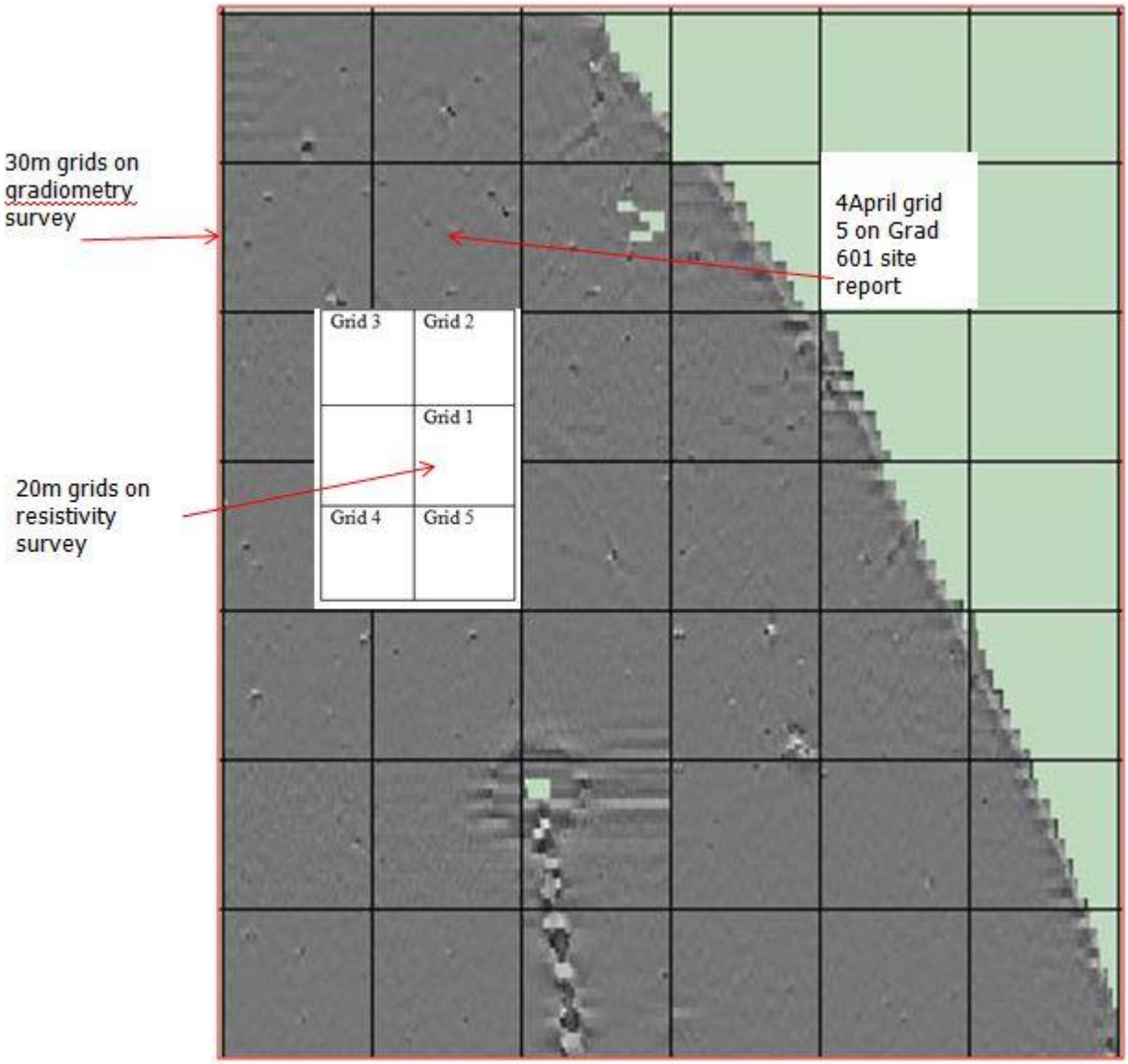
Relationship between 5 resistivity grids above and gradiometry survey



Grids 2, 1 & 5 fit within the right hand side of gradiometry grids 4April grid & 11April grid 2 as above.

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