YCCCART 2014 / Y 10
North Somerset HER 2014/105

Gradiometry Survey at Cobthorn, Congresbury (Mr Collins Field 12)

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General Editor: Vince Russett

The new development at the old mill site Congresbury from the field.

Abstract

YCCCART has a project to establish the extent of the Congresbury Roman kiln sites. A gradiometry survey appears to have located previously unknown kilns.

Acknowledgements

A Heritage Lottery Grant enabled the purchase, by YCCCART, of a 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 A Collins.

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

Introduction

YCCCART is one of a number of Community Archaeology teams across North Somerset, supported by the North Somerset Development Management Team.

The objective of the Community Archaeology in North Somerset (CANS) project is to undertake archaeological fieldwork to enable a better understanding and management of the heritage of the area while recording the activities and locations of the research carried out.

Site Location

Fig 1: Site location indicated by the red arrow.

The field is privately owned, but contains a public footpath.

Land use and geology

The field is used to graze cattle.
Geology is the Murcia Mudstone group – Mudstone and Halite stone.

Historical & archaeological context

Fig 2: *1839 Map. Courtesy of Bristol Record Office BRO 37959/9. The surveyed field is number 1514 on the map.*

The Tithe apportionment record, relating to the 1839 map above, shows field number 1514 as being owned and occupied by John Naish. The field is described as pasture called Clayhill Ten Acres.

The 1885 Ordnance survey map shows a pond on the north side of the field.

Survey objectives

The survey was undertaken in order to continue to investigate the extent of the Congresbury Romano British pottery kiln field.

Methodology

The survey of field was undertaken July to October 2014 by a team from YCCCART, using a Bartington 601 gradiometer, with settings as per the site record in the Appendix.

The completed survey was downloaded to a TerraSurveyor program.

TerraSurveyor composites were adjusted using the following filters:

Standard settings
1) Colour - Red Blue Green 2
2) Band weight equaliser
3) Grad shade
4) Despiked
5) Destriped
6) Clip SD2

The report was written in Microsoft Word 2007.

Results

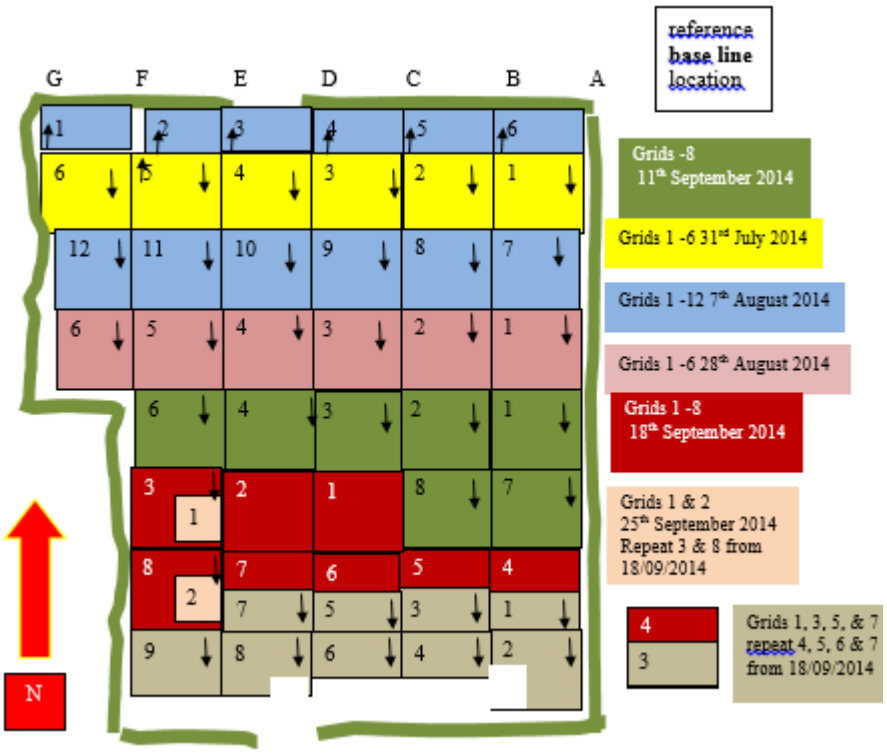


Fig 3: Grid lay out

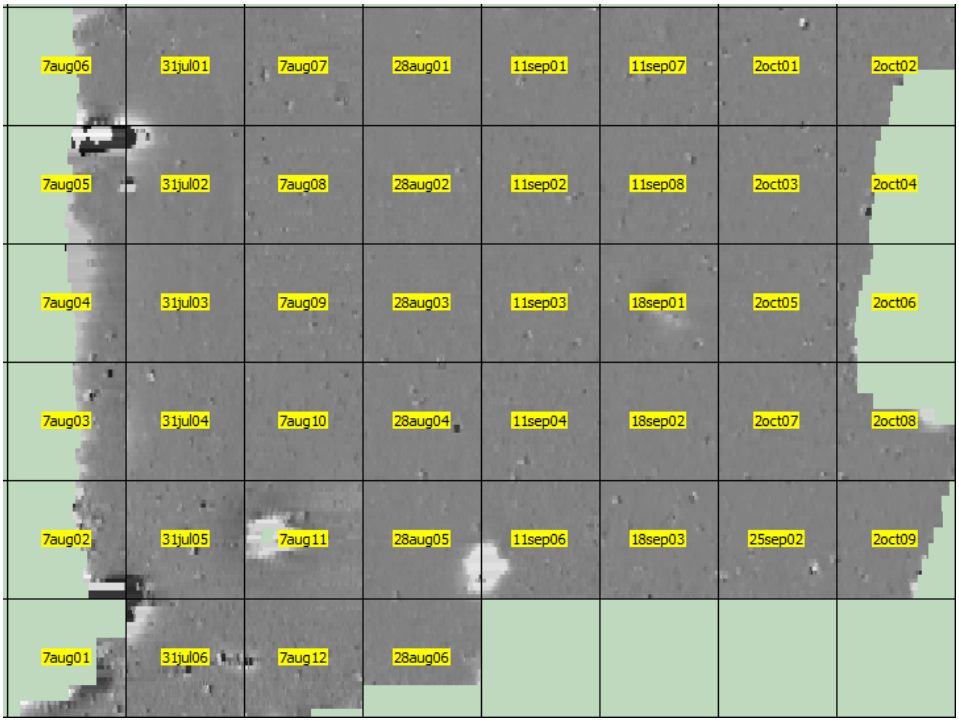


Fig 4: TerraSurveyor grids.

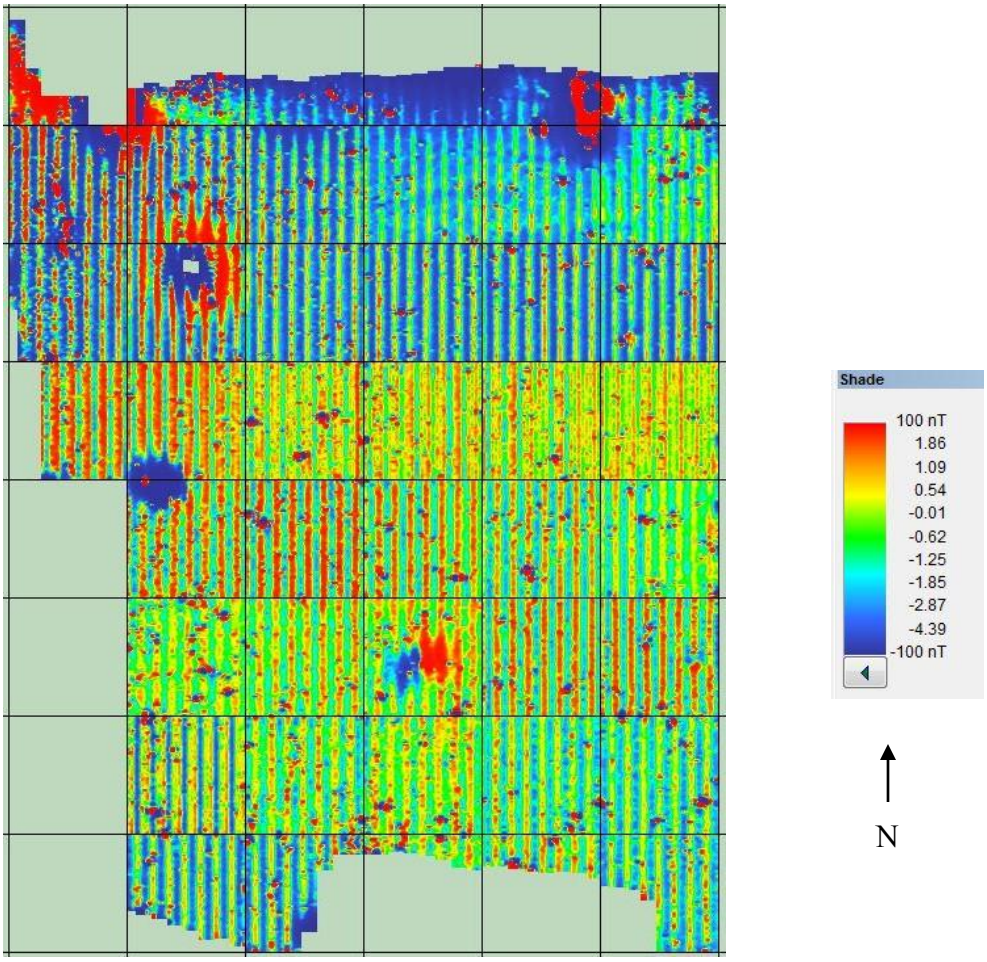


Fig 5: TerraSurveyor shade view colour image. High readings are red. Base filters only.

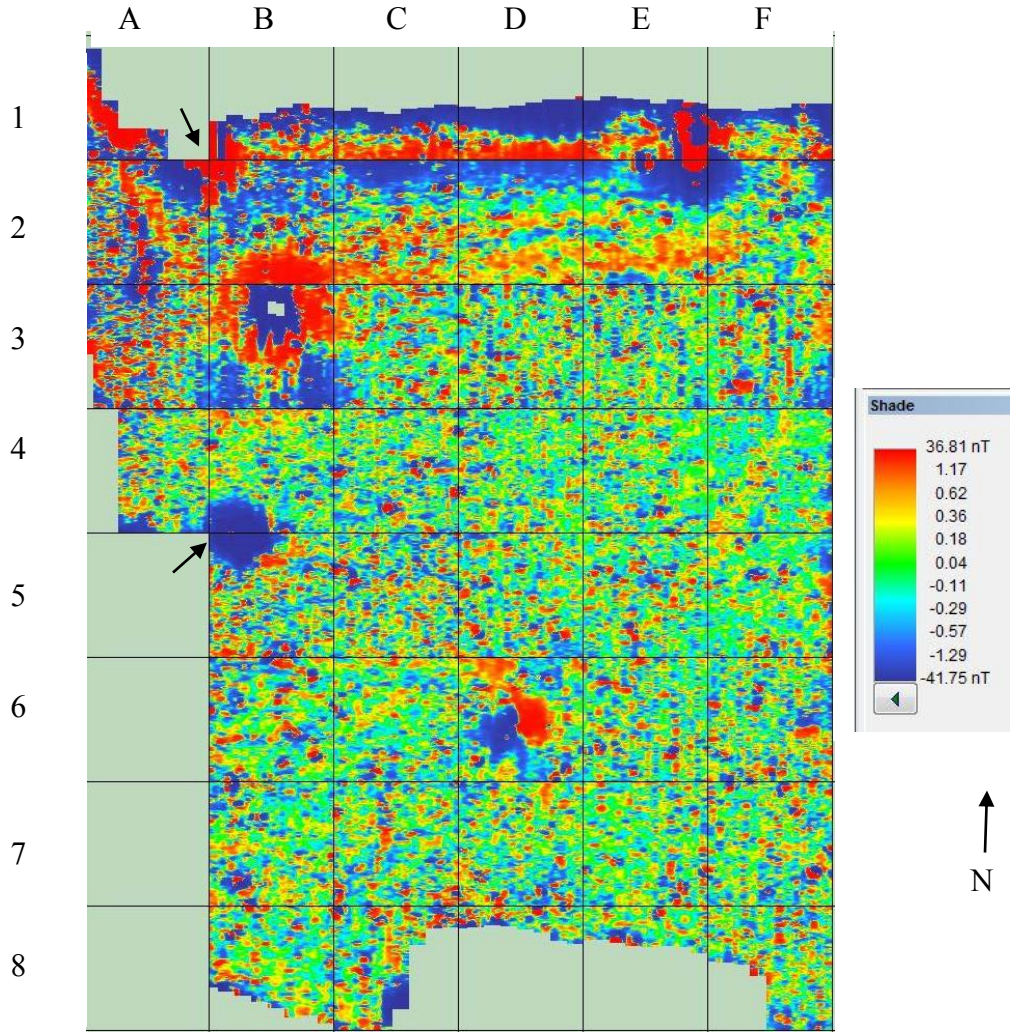


Fig 5: TerraSurveyor shade view colour filtered image. High readings are red.

The results in Fig 5 above reveal a number of features.

1) The centre top of grids 2A and 2B and lower section of grid 1B shows a high red anomaly indicated by the black arrow. This is caused by an electricity pylon. Similarly an electrical pole has resulted in the large blue circle indicated by the lower arrow in grids 4B and 5B. The large blue/red circular feature mainly in grid 3B and the blue and red feature in grid 6D are also the result of electricity pylons. There is also an electricity pole at the bottom of grid 4C.
2) Roman pottery kiln sites are generally indicated in gradiometry surveys by strong negative and positive peaks immediately adjacent to each other. In Fig 5 above, there are a number of such features (e.g. grid 6E and grids 5/6B) which may be indicative of such kilns or pottery waster heaps.
3) Grids 1A to 1F show disturbance from the wire fence bordering the field.
4) Grids 2C to 2F show a level of activity which may be worth investigating with a resistivity survey.

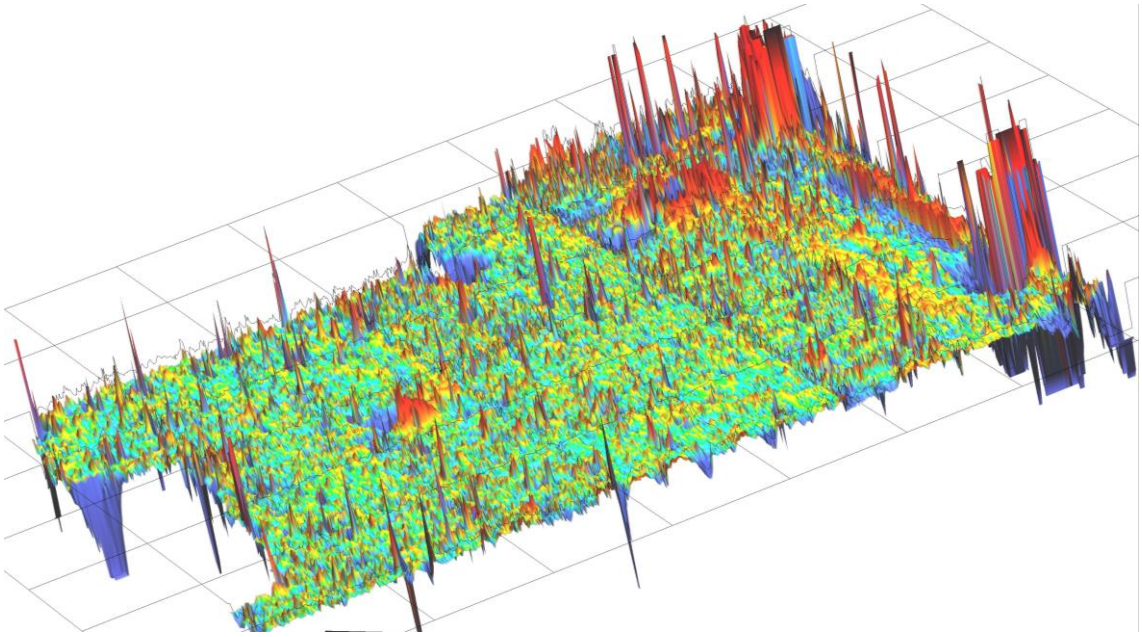
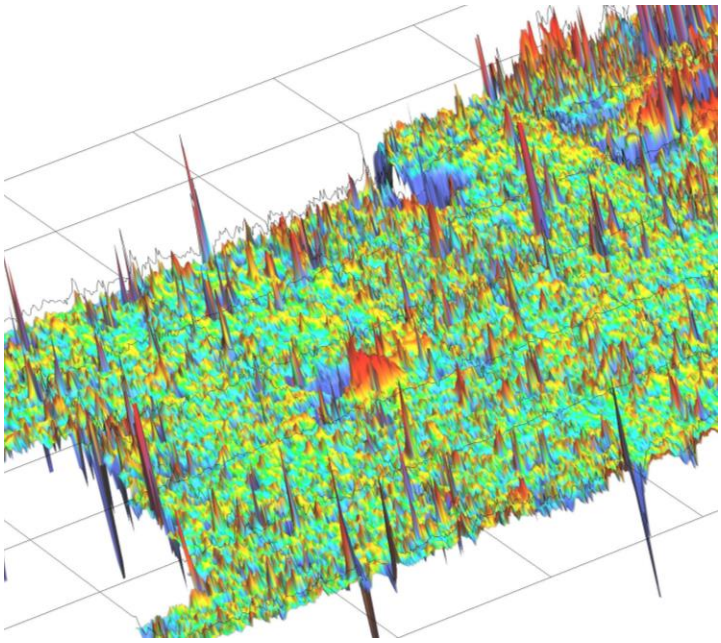


Fig 6: TerraSurveyor axonometric colour image. High readings are red.



The 3d results in Figs 6 and 7 clearly show negative (blue) and positive (red) high peaks immediately adjacent to each other

Fig 7: TerraSurveyor axonometric colour image. High readings are red. Close up of part of Fig 6.

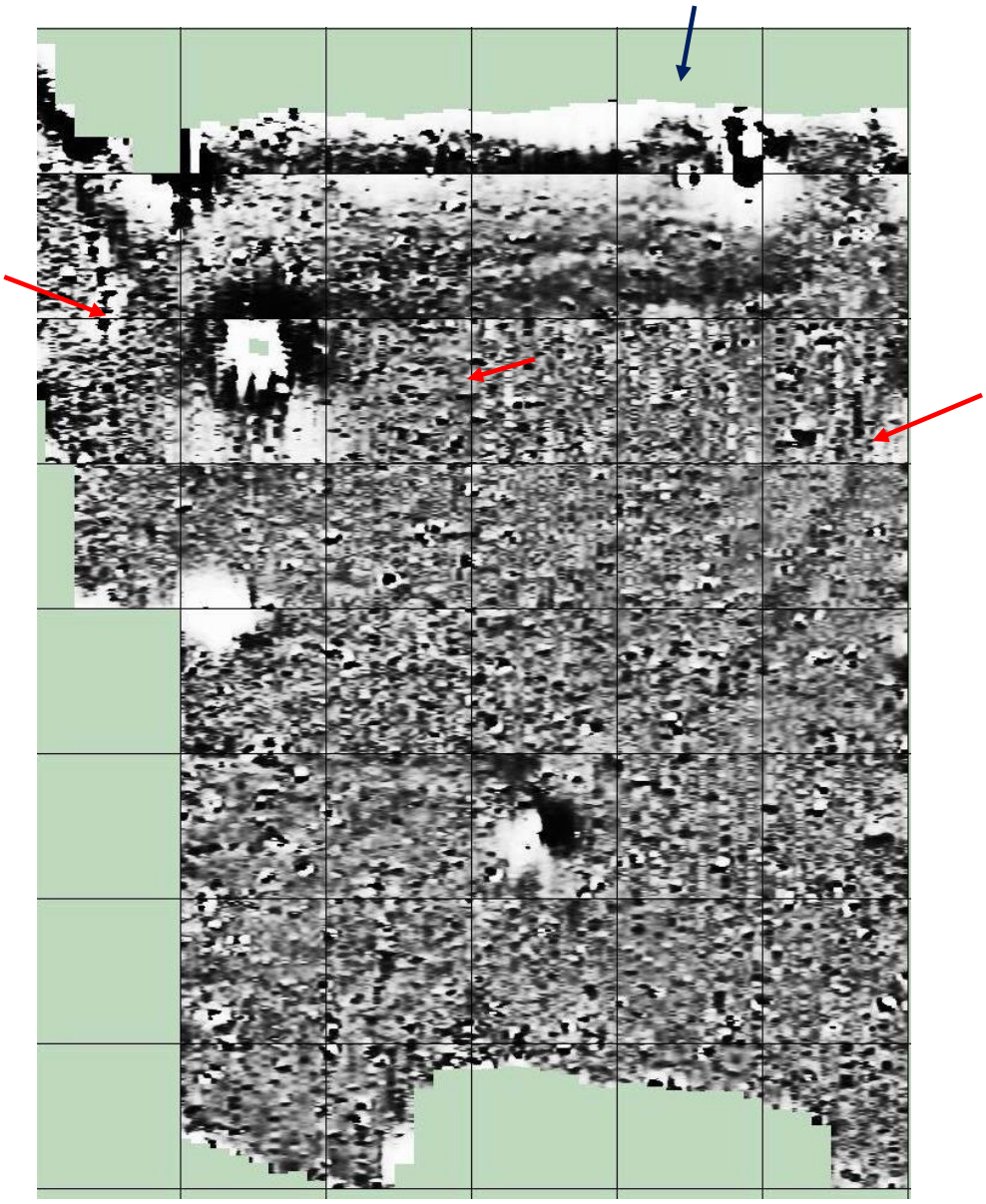


Fig 8: TerraSurveyor shade view black & white image (right). High readings are black.

Fig 8 above shows the black and white results, which include three linear features as indicated by the red arrows.

The pond shown in the 1885 Ordnance Survey map is probably within the grid at the top of the results, indicated by the blue arrow, but is no longer visible.

Recommendations

Grids 2C to 2F show a level of activity which may be worth investigating with a resistivity survey.

References

Congresbury Tithe Map *BRO 37959/9* (Bristol Record Office)

Authors: Ian Morton & Chris Short

Date: October 2014

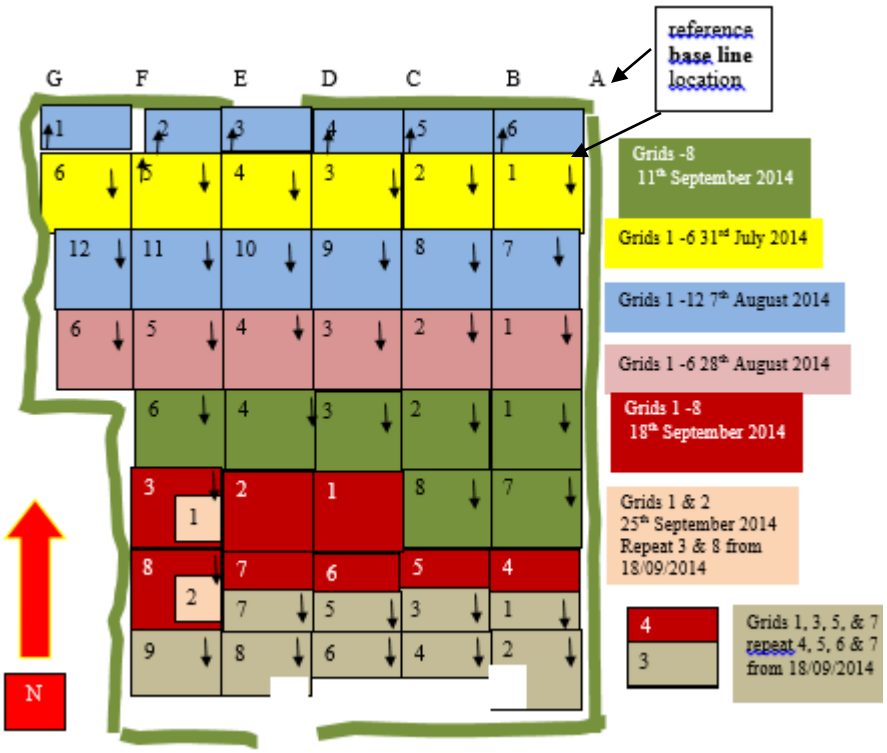
Appendix

Site Record

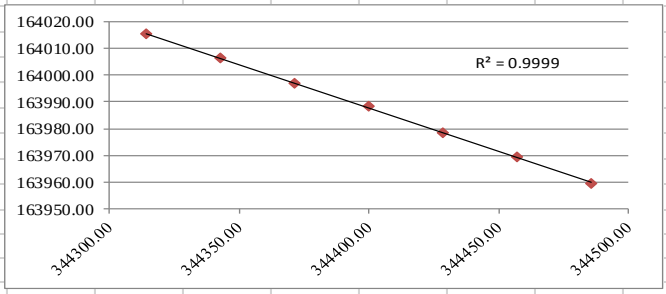
YCCCART Site Survey Project –Collins 12– Congresbury Kilns projects			
Survey date		2nd October 2014	
Report date		2nd October 2014	
Type /Instrument		Grad 601	
		Pace :1.5m/s Lines/m : 1 Range:100nT Volume: High Sensors:2	Grid size: 30m x30m Pattern : Zig Zag Samples/m:4 Audio: On Threshold:10nT Reject:50 Hz
Location		Adjacent Cobthorn way	
Ref		none	
Site name		Collins 12_ Cobthorn 1	
Landowner		A Collins	
Tenant			
HER ref			
Site type		Open land	
Description		Grass land	
Period			
Geology			
Land use		Grazing	
Survey team and conditions			
24/07/2014	Team	Peter Wright, Arthur Langley and Ferdi	
	Weather	Sunny and hot	
31/07/2014	Team	Peter Wright, Arthur Langley, Ann Dymock, Ferdi, Philippa Cormack and Ian Morton	
	Weather	Cloudy and dry	
7/08/2014	Team	Peter Wright, Ferdi, David Walker, Janet Dickson and Ian Morton	
	Weather	Sunny and hot	
28/08/2014	Team	Peter English, David Walker, Janet Dickson and Ian Morton	
	Weather	Overcast and warm	
11/09/2014	Team	Peter English, peter wright, Ferdi, Janet Dickson and Ian Morton	
	Weather	Overcast and warm	
18/09/2014	Team	Peter English, Arthur Langley, Ferdi, Janet Dickson and Mike Fox	
	Weather	Overcast and warm	
25/09/2014	Team	Peter Wright, Arthur Langley, Ferdi, Chris Short and Ian Morton	
	Weather	Overcast and warm	
2/10/2014	Team	Arthur Langley, David Walker, Janet Dickson and Ian Morton	
	Weather	Dry and warm	

Survey area		notes		readings		
		size	walk direction	max	min	mean
Date	Grid number					
24/07/2014		Setting out base line and first row of grids.				
31/07/2014	1	30 x 30m	S	+27.2	-85.4	-1.7
	2	30 x 30m	S	+100.0	-100.0	-3.3
	3	30 x 30m	S	+6.3	-10.9	-2.8
	4	30 x 30m	S	+38.9	-98.3	-4.3
	5 Electricity pole base in edge of grid	30 x 30m	S	+100.0	-68.5	-1.3
	6 Electricity pole base in edge of grid	30 x 30m	S	+100.0	-53.1	-4.4
7/08/2014	1	30 x 30m Mirror and return	N	+74.1	-98.3	-3.8
	2	30 x 30m Mirror and return Dummy data traverses 1 & 2	N	+100.0	-100.0	-1.3
	3	30 x 30m Mirror and return	N	+39.0	-40.0	-8.1
	4	30 x 30m Mirror and return	N	+18.2	-87.7	-16.7
	5	30 x 30m Mirror and return	N	+100.0	-100.0	-9.0
	6	30 x 30m Mirror and return	N	+33.0	-100.0	-7.7
	7	30 x 30m	S	+40.5	-39.1	-4.0
	8	30 x 30m	S	+29.9	-52.8	-4.2
	9	30 x 30m	S	+98.1	-61.6	-4.0
	10	30 x 30m	S	+16.9	-19.1	-3.6
	11	30 x 30m Elec. Pylon in grid dummy data entered	S	+83.4	-89.6	-6.2
	12	30 x 30m Mirror and return	S	+96.0	-100.0	-4.2
28/08/2014	1	30 x 30m	S	+5.2	-5.4	-0.0
	2	30 x 30m	S	+36.8	-37.6	-0.2
	3	30 x 30m	S	+9.1	-6.9	-0.2
	4	30 x 30m	S	+94.0	-72.0	-0.0
	5	30 x 30m Electricity pole influences traverses 11 - 13	S	+21.9	-100.0	-2.5
	6	30 x 30m Grid terminated	S	+27.0	-18.0	-1.0

Survey area		notes		readings		
Date	Grid number	**size**	walk direction	max	min	mean
11/09/2014	1	30 x 30m	S	+36.0	-48.3	-1.3
	2	30 x 30m	S	+9.6	-9.6	-1.5
	3	30 x 30m	S	+49.6	-23.0	-1.2
	4	30 x 30m	S	+68.8	-8.2	-1.2
	5	30 x 30m	S	Grid abandoned		
	6	30 x 30m	S	+ 17.6	-100.0	-5.3
	7	30 x 30m	S	+3.5	-25.7	-1.5
	8	30 x 30m	S	+36.2	-39.8	-1.4
18/09/2014	1	30 x 30m	S	+20.6	-18.0	-0.6
	2	30 x 30m	S	+11.6	-10.0	-6.5
	3	30 x 30m	S	+32.9	-53.9	-0.6
	4	30 x 30m	S	Machine malfunction		
	5	30 x 30m	S			
	6	30 x 30m	S			
	7	30 x 30m	S			
	8	30 x 30m	S			
25/09/2014 Repeat of grids 3 and 8 from 18/09/2014 to test machine repair	1	30 x 30m	S	+30.1	-45.9	-1.2
	2	30 x 30m	S	+98.5	-54.5	-1.6
2/10/2014 1, 3, 5 and 7 are repeats of grids 4, 5, 6, and 7 from 18/09/2014	1	30 x 30m	S	+100.0	-81.3	-0.9
	2	30 x 30m Part mirror and return	S	+16.1	-10.5	-0.5
	3	30 x 30m	S	+18.7	-88.9	-1.2
	4	30 x 30m All mirror and return	S	+61.7	-16.4	-0.9
	5	30 x 30m	S	+98.2	-11.4	-0.3
	6	30 x 30m All mirror and return	S	+34.7	-17.3	-0.5
	7	30 x 30m	S	+66.4	-42.8	-0.3
	8	30 x 30m All mirror and return	S	+20.6	-100.0	-1.6
	9	30 x 30m All mirror and return	S	+43.0	-27.2	-0.3



Grid Ref.	All ST	
	eastings	northings
A	344485.70	163959.60
B	344456.90	163969.60
C	344428.60	163978.60
D	344399.80	163988.20
E	344371.40	163997.10
F	344342.80	164006.40
G	344314.40	164015.50
quiet spot	344398.6	163971.9



HAZARD AND RISK ASSESSMENTS

Severity of hazard:	**Likelihood:**	**Population (no. of persons who could be affected):**	**Risk Factor :**
1= Minor injury 2= Serious injury 3= Major injury or fatality	1= Unlikely 2= Likely 3= Very likely or inevitable	1= 1-5 persons 2= 6-20 persons 3= 21+ persons	Severity x Likelihood x Population (min 1, max 27)

Location:Collins 12 **Activity/Equipment: 601** **Date of assessment:31st July 2014**
Assessor:Ian Morton

Nature of hazard	Slips, trips, falls	Dust	Noise	Fire/Explosion	Exposure to harmful substances	Entrapment	Impact	Contact	Entanglement	Ejection	Electric shock	RSI/Eyestrain	Manual handling	Other Dog faeces	**MAX. RISK FACTOR**
Severity	1	0	0	0	0	0	0	1	0	0	0	1	1	2	
Likelihood	1	1	1	1	1	1	1	1	1	1	1	1	1	2	
Population	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

Control methods and timescale

Ground is sloping and gently undulating. Care will be taken when walking 601.
The area is popular with dog walkers and has a reasonably high occurrence of dog faeces.

Members will wear substantial footwear and long trousers which will deal with the uneven ground, wet grass and protect skin from any stumbles. The shoes will reduce risk of contamination by the dog faeces. Hands will be washed at the end of each day's work.