Land at St Mary's Convent, Challow Road, Wantage

Archaeological Geophysical Survey 2014

Report by:

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Land at St Mary's Convent, Challow Road, Wantage, Oxfordshire

Geophysical Survey 2014

1. Introduction

This geophysical survey was undertaken as part of an archaeological evaluation of land within the grounds of St Mary's Convent, Wantage.

The survey was commissioned from Bartlett Clark Consultancy, Specialists in Archaeogeophysics of Oxford, by CgMs Consulting of Cheltenham. Fieldwork for the survey was done on 20-21 October 2014.

2. The site: location and geology

The convent buildings are located to the north of Challow Road, and to the west of the town centre (at NGR SU 392882). The areas proposed for geophysical investigation comprise three paddocks (labelled fields 1-3 on the enclosed plans) located to the north and west of the convent buildings, and to the south of Challow Road. Other gardens and smaller enclosed plots adjacent to the buildings (where a magnetometer survey would give a highly disturbed response) were excluded from the survey.

The three paddocks together amount in total to an area of 3.57 ha. It was found on arrival at the site that the western paddock (field 2) was subdivided by fences into a number of smaller enclosures occupied by horses. A survey here would be fragmented and disturbed by magnetic interference from the fences and other obstructions. The survey coverage was therefore limited to fields 1 and 3, with a total area of 2.2 ha. These fields were surveyed as completely as other obstacles (a fenced enclosure in field 1, and chicken run in field 3) permitted.

The underlying geology of the site is mudstone and sandstone of the Gault and Upper Greensand formations. The site appears to be free of drift deposits. These conditions should not present any particular difficulties for a magnetometer survey, although soils on Upper Greensand may not be highly responsive to magnetic surveying. It is probable therefore that isolated features lacking magnetically enhanced fill will be less clearly detectable than settlement or industrial remains.

3. Archaeological background

We have not been told of any previously identified archaeological findings from within the convent grounds, but information on the archaeological potential of the surrounding area is

included in an Archaeological Evaluation Report on a site at Stockham House, Denchworth Road, Wantage (which is about 500m north of the convent). This report was prepared by Oxford Archaeology for CgMs in 2012 [1]. The conclusions from this document were summarised in our report on a geophysical survey completed at that time [2]. It is mentioned in the 2012 survey report that there is extensive evidence for Romano-British, Anglo-Saxon and Medieval settlement activity in the surrounding area, where there have been four previous archaeological investigations within 250m of the Stockham House site, as well as in the historic centre of Wantage. Findings have included Iron Age pottery and pits to the south east of Stockham House (HER 16305), and an Iron Age or Roman settlement 700m to the south east (HER 16516).

Excavations in the 1990s identified Roman roadside settlement activity at locations within the Denchworth Road and Mill Street areas of Wantage. The convent is therefore located close to areas of confirmed Roman activity, but may lie beyond the extent of Anglo-Saxon and early Medieval settlement at Wantage.

4. Objectives of the survey

The aim of the geophysical survey was to identify the extent and character of any archaeological remains capable of producing a magnetic response. The magnetometer responds to cut features such as ditches and pits when they are silted with topsoil, which usually has a higher magnetic susceptibility than the underlying natural subsoil. It also detects the thermoremanent magnetism of fired materials, notably baked clay structures such as kilns or hearths, and so responds preferentially to the presence of ancient settlement or industrial remains. It is also strongly affected by ferrous and other debris of recent origin.

5. Survey Procedure

The procedure used for the investigation was a fluxgate gradiometer survey across the evaluation area. Results are presented as described below.

A survey grid was set out at the required locations, and tied to the OS grid using a GPS system with differential correction. The plans are therefore geo-referenced, and OS co-ordinates of map locations can be read from the AutoCAD version of the plans.

The magnetometer readings were collected along transects 1m apart using Bartington 1m fluxgate gradiometers, and are plotted at 25cm intervals along each transect. The results of the survey are presented as grey a scale plot in figure 1 (at 1:2000 scale at A4), and as a graphical (x-y trace) plot in figures 2-3 (at 1:1250 scale). Inclusion of both types of presentation allows the detected magnetic anomalies to be examined in plan and profile respectively.

The graphical (x-y) plot represents minimally pre-processed magnetometer readings, as recommended for initial presentation of survey data in the 2008 English Heritage geophysical guidelines document [3]. Adjustments are made for irregularities in line spacing caused by variations in the instrument zero setting (as is required for legibility in gradiometer data), but no further filtering or other process which could affect the anomaly profiles or influence the interpretation of the data has been applied. A weak additional 2D

low pass filter has been applied to the grey scale plot to adjust background noise levels.

An interpretation of the findings is shown in figures 2-3, and is reproduced separately to provide a summary of the findings in figure 4. Colour coding has been used in the interpretation to distinguish different effects. The interpretation is intended to categorize most of the identifiable magnetic anomalies, but cannot reproduce the detail of the grey scale plots.

Features as marked include magnetic anomalies which may show characteristics to be expected from features of potential archaeological significance (in red), and stronger (perhaps recent) disturbances in grey. Small (and mainly natural) background magnetic anomalies are outlined in light brown. Some of the more conspicuous ferrous objects (identifiable as narrow spikes in the graphical plots) are outlined in light blue. Cultivation effects are shown in green.

6. Results

The survey has detected magnetic activity from various sources, but much of it (as would be expected at an enclosed urban location) is likely to be of recent or non-archaeological origin. A possibility remains that some features of potential archaeological relevance might also be present.

Features visible in the survey plots include strong magnetic anomalies representing disturbances near to fences and boundaries (as outlined in grey). There is also a relatively dense scatter of individual ferrous objects across both the fields investigated (outlined in blue). The remaining small background magnetic anomalies (light brown) may be partly natural, but could also include disturbances in the previous categories. They are densely scattered in the western half of field 1, and throughout field 3.

Findings which cannot clearly be eliminated as of non-archaeological origin include a group of possible ditch-like linear markings (visible in the grey scale plot, and indicated by broken red lines in the interpretation) in the eastern half of field 1. These features could perhaps represent weakly defined ditched enclosures, and would be consistent if so with the presence nearby of Iron Age and Roman settlement remains, as previously noted. The ditch-like features visible in the survey do not appear to enclose any concentrations of occupation remains (although one possible pit-like feature is outlined in red at the east of field 1, and others could be present), but they could perhaps form part of a field system in the vicinity of a settlement. Alternatively, they could perhaps be cultivation effects of medieval or later date.

The survey plots from field 3 are more disturbed and difficult to interpret than from field 1, but they could again indicate possible (but indistinct) ditch-like linear features (red). There is a possible weak parallel pattern which could be a cultivation effect in the eastern half of the field (as indicated in green). These possible cultivation markings do not align with the present field boundaries.

7. Conclusions

Only two of the three fields within the evaluation area were accessible or suitable for a

magnetometer survey, and ground conditions on the Greensand bedrock are not highly responsive to magnetic investigation. The survey has, even so, produced findings consistent with the possible survival of traces of ditched enclosures, particularly in the north eastern part of the site. These findings are defined only by relatively weak magnetic anomalies, and so their presence or significance cannot be fully confirmed on the basis of the survey results alone. The enclosures, if present, do not appear to contain any dense concentrations of settlement remains, but could be associated with Roman settlement sites which have been identified nearby. Interpretation of the survey results in the southern field (field 3) is problematic because of disturbed ground conditions, but it is possible that remains of additional ditches or cultivation effects may be present.

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20 November 2014

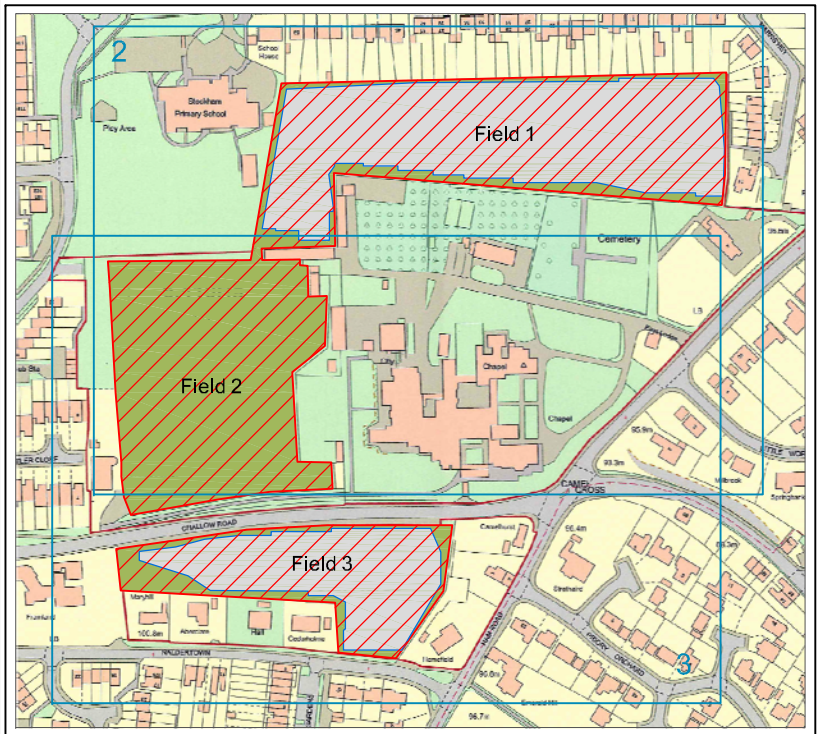
The fieldwork for this project was done by R. and S. Ainslie.

References

[1] *Stockham House, Denchworth Road, Wantage: Archaeological Evaluation Report.* Report prepared by Oxford Archeology for CgMs. OA Job No. 5425; September 2012.

[2] *Stockham House, Wantage, Oxfordshire: Report on Archaeological Geophysical Survey 2012.* Report by Bartlett Clark Consultancy for CgMs Consulting: 10 may 2012.

[3] English Heritage 2008 *Geophysical Survey in Archaeological Field Evaluation* [online facsimile] (English Heritage: Swindon, 2008), English Heritage Research.



Site location and survey coverage 1:4000

439300E

188200N

N

1.8 nT

-1.6

small fenced paddocks
+ horses

Proposed survey area

Survey coverage

Location of 1:1250 figures (2-3)

St Mary's Convent
Challow Road, Wantage
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Figure 1: Magnetometer survey (grey scale plot)

Scale 1:2000 @ A3

0 100m

Surveyed by Bartlett - Clark Consultancy (01865 200864)
for CgMs Consulting (Cheltenham)

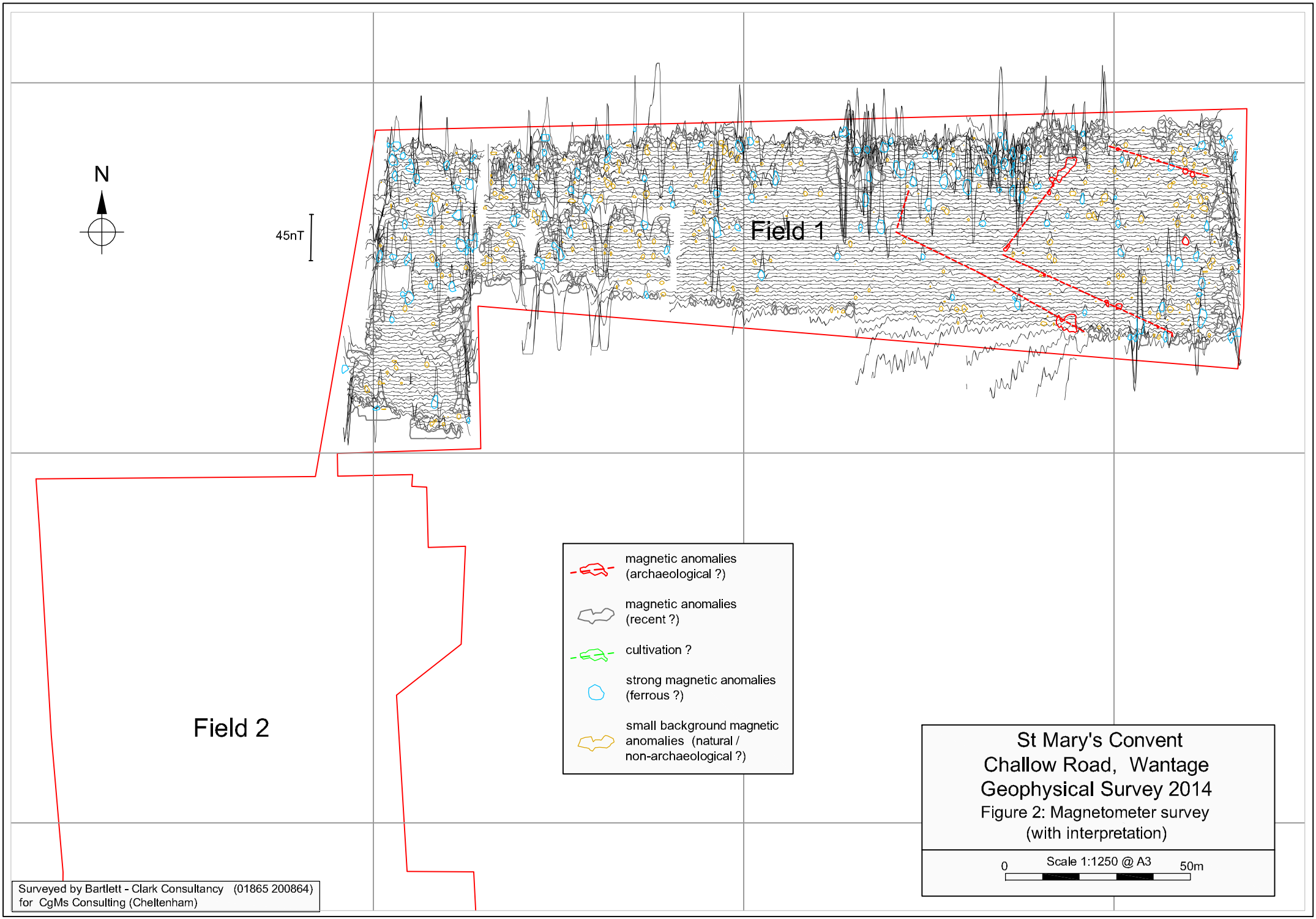
N
45nT
Field 1
Field 2
magnetic anomalies (archaeological ?)
magnetic anomalies (recent ?)
cultivation ?
strong magnetic anomalies (ferrous ?)
small background magnetic anomalies (natural / non-archaeological ?)
St Mary's Convent
Challow Road, Wantage
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Figure 2: Magnetometer survey (with interpretation)
Scale 1:1250 @ A3
0
50m
Surveyed by Bartlett - Clark Consultancy (01865 200864)
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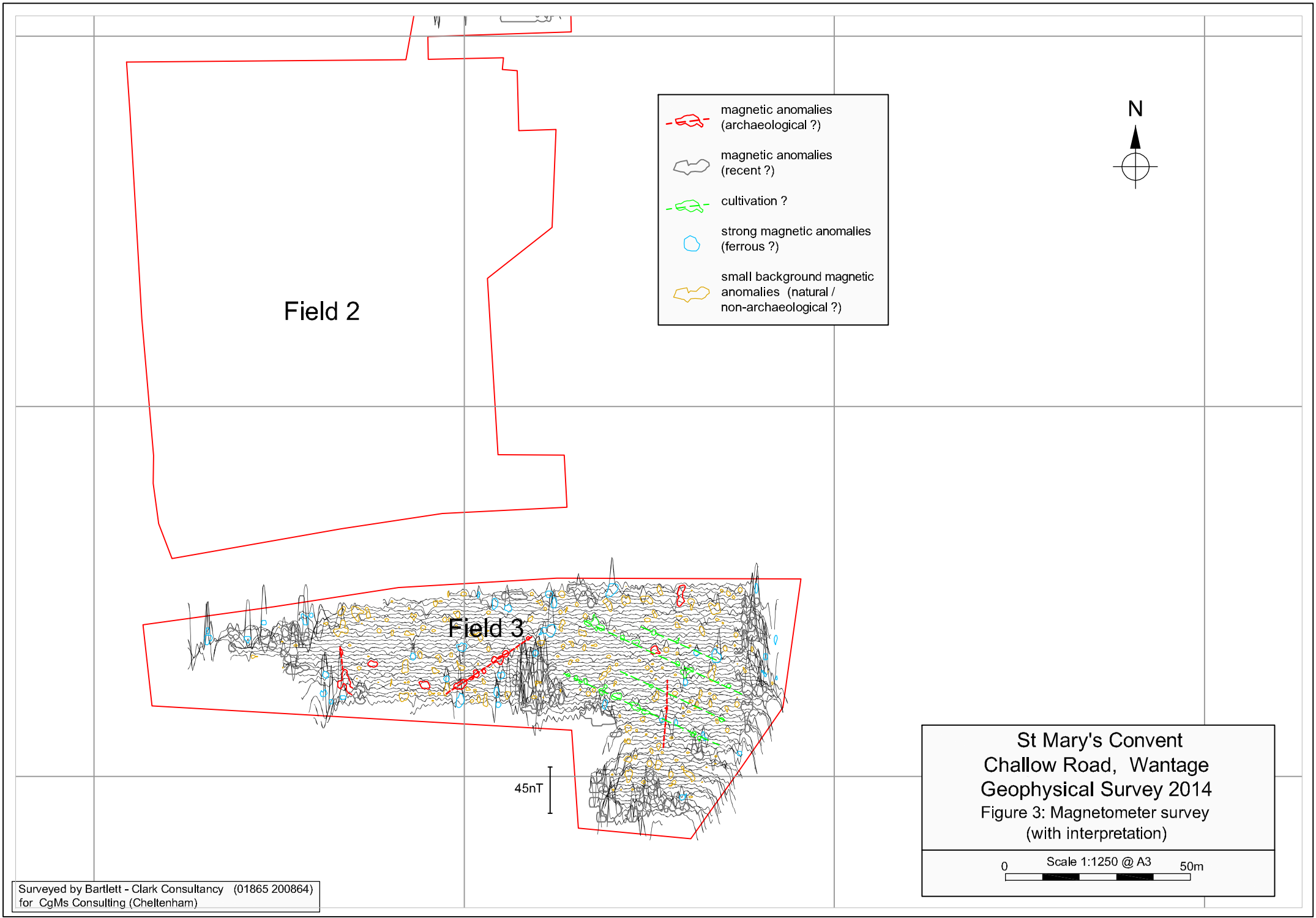
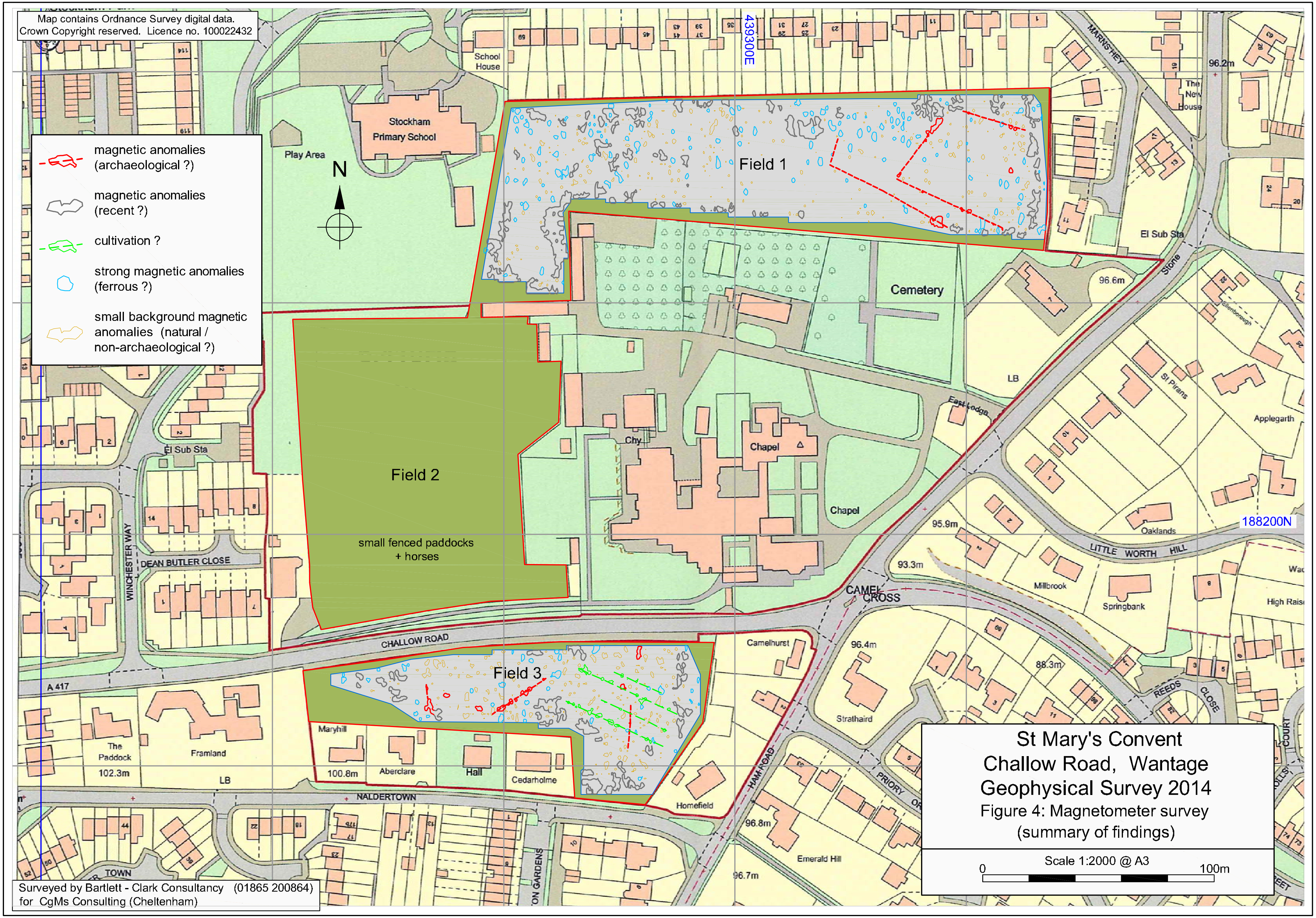

Field 2
Field 3
magnetic anomalies (archaeological ?)
magnetic anomalies (recent ?)
cultivation ?
strong magnetic anomalies (ferrous ?)
small background magnetic anomalies (natural / non-archaeological ?)
N
45nT
St Mary's Convent
Challow Road, Wantage
Geophysical Survey 2014
Figure 3: Magnetometer survey (with interpretation)
Scale 1:1250 @ A3
0
50m
Surveyed by Bartlett - Clark Consultancy (01865 200864)
for CgMs Consulting (Cheltenham)



Map contains Ordnance Survey digital data.
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magnetic anomalies (archaeological ?)
magnetic anomalies (recent ?)
cultivation ?
strong magnetic anomalies (ferrous ?)
small background magnetic anomalies (natural / non-archaeological ?)
N
439300E
188200N
Field 1
Field 2
Field 3
small fenced paddocks + horses
Stockham Primary School
School House
Play Area
Cemetery
Chapel
Chy
CHALLOW ROAD
A 417
NALDERTOWN
CAMEL CROSS
LITTLE WORTH HILL
DEAN BUTLER CLOSE
WINCHESTER WAY
El Sub Sta
St Mary's Convent
Challow Road, Wantage
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Figure 4: Magnetometer survey
(summary of findings)
Scale 1:2000 @ A3
0
100m
Surveyed by Bartlett - Clark Consultancy (01865 200864)
for CgMs Consulting (Cheltenham)