

GEOPHYSICAL SURVEY REPORT

STRATASCAN™



Project name:

Low Common, Barlborough, Derbyshire

Client:

CgMs Consulting

July 2015

Job ref:

J8623

Report author:

Rebecca Davies BSc (Hons)

GEOPHYSICAL SURVEY REPORT

Project name:

Low Common, Barlborough, Derbyshire

Client:

CgMs Consulting

Job ref:

J8623

Techniques:

**Detailed magnetic survey –
Gradiometry**

Survey date:

25th - 26th June 2015

Site centred at:

SK 464 769

Post code:

S21 3US

Field team:

**Nathan Thomas, Leanne Swinbank,
Kimberley Teale, Rachael Brown**

Project manager:

Simon Haddrell BEng(Hons) AMBCS PCIfA

Report written By:

Rebecca Davies BSc (Hons)

CAD illustrations by:

Rebecca Davies BSc (Hons)

Checked by:

David Elks MSc ACIfA

TABLE OF CONTENTS

LIST OF FIGURES.....	2
1 SUMMARY OF RESULTS	3
2 INTRODUCTION	3
2.1 Background synopsis.....	3
2.2 Site location	3
2.3 Description of site	3
2.4 Geology and soils	3
2.5 Site history and archaeological potential	4
2.6 Survey objectives	4
2.7 Survey methods	4
2.8 Processing, presentation and interpretation of results.....	4
2.8.1 Processing	4
2.8.2 Presentation of results and interpretation.....	5
3 RESULTS.....	5
3.1 Probable Archaeology.....	5
3.2 Possible Archaeology	5
3.3 Medieval/Post-Medieval Agriculture.....	6
3.4 Other Anomalies	6
4 DATA APPRAISAL & CONFIDENCE ASSESSMENT	7
5 CONCLUSION	7
6 REFERENCES	8
APPENDIX A – METHODOLOGY & SURVEY EQUIPMENT	9
APPENDIX B – BASIC PRINCIPLES OF MAGNETIC SURVEY	10
APPENDIX C – GLOSSARY OF MAGNETIC ANOMALIES.....	11

LIST OF FIGURES

Figure 01	1:1000	Site location, survey area & referencing
Figure 02	1:1000	Colour plot of gradiometer data showing extreme values
Figure 03	1:1000	Plot of minimally processed gradiometer data
Figure 04	1:1000	Abstraction and interpretation of gradiometer anomalies

1 SUMMARY OF RESULTS

A detailed gradiometry survey was conducted over approximately 10.8 hectares of agricultural land. Linear anomalies of archaeological origin have been identified, along with a further linear feature, though this may also be agricultural in origin. Areas of disturbance related to industrial activity on the site have been identified, supporting information obtained from the HER search and information from historic maps. A former field boundary, ridge and furrow and evidence of modern ploughing indicate that the site has a more recent agricultural past. The remaining features are natural or modern in origin and include a service, land drains and magnetic disturbance from nearby ferrous objects.

2 INTRODUCTION

2.1 *Background synopsis*

Stratascan were commissioned to undertake a geophysical survey of an area outlined for solar farm development. This survey forms part of an archaeological investigation being undertaken by CgMs Consulting.

2.2 *Site location*

The site is located west of Barlborough, Derbyshire at OS ref. SK 464 769. The survey area is bound by agricultural land to the north and south with woodland to the west, while the A6135 forms the eastern boundary of the site.

2.3 *Description of site*

The survey area is approximately 10.8 hectares of arable farmland, sloping downwards from east to west and is unobstructed.

2.4 *Geology and soils*

The underlying geology comprises both mudstone and sandstone of Pennine Middle Coal Measures, with the mudstone across the west and western part of the eastern field, and sandstone across the remainder of the site (British Geological Survey website). No drift geology is recorded (British Geological Survey website). Areas of 'artificial ground' are recorded in Fields 1 and 2 and are related to an opencast colliery abandoned c.1923 – this area was not surveyed as a result of this.

The overlying soils across the east of the site are known as Disturbed Soils 3, which are typical disturbed soils related to opencast coal workings and consist of slowly permeable, seasonally waterlogged, compacted fine loamy and clayey disturbed soils. The soils across the west of the site are known as Bardsey, which are typical cambic stagnogley soils. These consist of slowly permeable seasonally waterlogged loamy over clayey and fine silty soils over soft rock (Soil Survey of England and Wales, Sheet 3 Midland and Western England).

2.5 **Site history and archaeological potential**

A search of Derbyshire Historic Environment Record (Derbyshire County Council, 2015) shows a number of bell pits and evidence of colliery activity in the area surrounding the site. The site of a likely early 18th Century coal pit (MDR 14872) in the far north of the central field of the site appears on a 1723 Tithe map under the name Pitt Close, and appears again as Near Pit Close and Far Pit Close on the 1839 Tithe map, though there is no indication as to when the pits may have been worked. A number of further pits related to post-medieval coal extraction are recorded, (MDR 6205, MDR 6203 and MDR 6201) to the north of the site. A holloway and rectilinear earthwork feature have been identified north of the site, and are related to SMR 1139.

The site is part of an extensive industrial landscape, and the site of the early 18th Century coal pit (MDR 14872 is recorded to the south of the site. Further coal mines operational in the 19th century are recorded immediately adjacent to the site's north-eastern boundary (MDR 14870 & 14871). It can therefore be determined that there is a high potential for the site to provide evidence of an industrial past.

2.6 **Survey objectives**

The objective of the survey was to locate any features of possible archaeological origin in order that they may be assessed prior to development.

2.7 **Survey methods**

This report and all fieldwork have been conducted in accordance with both the English Heritage guidelines outlined in the document: *Geophysical Survey in Archaeological Field Evaluation, 2008* and with the Chartered Institute for Archaeologists document *Standard and Guidance for Archaeological Geophysical Survey*.

Detailed magnetic survey (gradiometry) was used as an efficient and effective method of locating archaeological anomalies. More information regarding this technique is included in Appendix A.

2.8 **Processing, presentation and interpretation of results**

2.8.1 **Processing**

Processing is performed using specialist software. This can emphasise various aspects contained within the data but which are often not easily seen in the raw data. Basic processing of the magnetic data involves 'flattening' the background levels with respect to adjacent traverses and adjacent grids. Once the basic processing has flattened the background it is then possible to carry out further processing which may include low pass filtering to reduce 'noise' in the data and hence emphasise the archaeological or man-made anomalies.

The following schedule shows the basic processing carried out on all minimally processed gradiometer data used in this report:

1. *Destripe* (Removes striping effects caused by zero-point discrepancies between different sensors and walking directions)
2. *Destagger* (Removes zigzag effects caused by inconsistent walking speeds on sloping, uneven or overgrown terrain)

2.8.2 Presentation of results and interpretation

The presentation of the data for each site involves a print-out of the minimally processed data both as a greyscale plot and a colour plot showing extreme magnetic values. Magnetic anomalies have been identified and plotted onto the 'Abstraction and Interpretation of Anomalies' drawing for the site.

3 RESULTS

The detailed magnetic gradiometer survey conducted at Barlborough has identified a small number of anomalies that have been characterised as being either of a *probable* or *possible* archaeological origin.

The difference between *probable* and *possible* archaeological origin is a confidence rating. Features identified within the dataset that form recognisable archaeological patterns or seem to be related to a deliberate historical act have been interpreted as being of a probable archaeological origin.

Features of possible archaeological origin tend to be more amorphous anomalies which may have similar magnetic attributes in terms of strength or polarity but are difficult to classify as being archaeological or natural.

The following list of numbered anomalies refers to numerical labels on the interpretation plots.

3.1 Probable Archaeology

- 1 Positive linear anomalies in Field 2. These are indicative of former cut features, such as ditches, and are likely to be of archaeological origin.

3.2 Possible Archaeology

- 2 A linear anomaly in Field 3. This is indicative of a former cut feature of possible archaeological origin, though its exact origin is unknown.

3.3 *Medieval/Post-Medieval Agriculture*

- 3 A number of widely spaced parallel linear anomalies in Fields 1 & 3. These are related to ridge and furrow cultivation.
- 4 A positive linear anomaly in Field 1. This is related to a former field boundary visible on the 1798 Enclosure Map.
- 5 Two positive linear anomalies in Field 3. Given their orientation, in line with field boundaries present on the 1798 Tithe map, these are likely to be related to former field boundaries.
- 6 Closely spaced parallel linear anomalies in Fields 1 & 2. These are related to modern agricultural activity such as ploughing.

3.4 *Other Anomalies*

- 7 A number of areas of amorphous magnetic variation in Field 2. These are possibly related to mining activity on the site, or of natural origin.
- 8 A number of linear anomalies in Fields 1 & 2. These are of unknown origin, and are possibly modern in origin or related to historic industrial activity on the site.
- 9 Isolated areas of strong magnetic disturbance in Fields 1 & 2. These are of unknown origin, though are likely to be modern or related to industrial activity on the site.
- 10 Large areas of strong scattered magnetic debris in Fields 1, 2 & 3. These are possibly related to the disturbed soils associated with opencast mining.
- 11 An area of strong magnetic disturbance in Field 3. This is likely to be related to an air shaft, visible on mapping c.1883.
- 12 Areas of amorphous magnetic variation in Fields 1 & 2. These are likely to be natural in origin.
- 13 Weak bipolar linear anomalies in Field 2. These are likely to be related to modern land drains.
- 14 A strong bipolar linear anomaly in Field 1. This is likely to be related to a modern underground service such as a pipe.
- 15 Areas of magnetic disturbance are the result of substantial nearby ferrous metal objects such as fences and underground services. These effects can mask weaker archaeological anomalies, but on this site have not affected a significant proportion of the area.

- 16** A number of magnetic 'spikes' (strong focussed values with associated antipolar response) indicate ferrous metal objects. These are likely to be modern rubbish.

4 DATA APPRAISAL & CONFIDENCE ASSESSMENT

Both sandstone and mudstone geologies, such as those present across the site, can give variable results for magnetic survey. The disturbed soils, seen across a large portion of the site, may mask weaker archaeological features should any be present, however some linear responses are seen which may be former field boundaries as seen on the 1798 enclosure map. In the areas where the disturbed soils are not present, a small number of archaeological and agricultural features can be seen. This suggests that across areas unaffected by the disturbed soils the survey has been effective, however in Fields 1 and 3, largely covered by the disturbed soils, the survey has been less effective.

5 CONCLUSION

The survey at Barlborough has identified a small number of features of probable and possible archaeological origin. Linear anomalies are likely to be related to a former enclosure, though their exact origin is unknown. A further linear anomaly may be of archaeological origin, though may also be related to agricultural activity. A former airshaft, and areas of magnetic disturbance of unknown origin are likely related to the industrial activity known on the site and surrounding area, along with areas of amorphous magnetic variation. Large areas of disturbed soils are also related to the former mining activity on the site. Former field boundaries, evidence of ridge and furrow cultivation and modern ploughing indicate that the site has a more recent agricultural past.

The remaining features are natural or modern in origin and include a service, land drains and magnetic disturbance from nearby ferrous metal objects.

6 REFERENCES

British Geological Survey South Sheet, 1977. *Geological Survey Ten Mile Map, South Sheet First Edition (Quaternary)*. Institute of Geological Sciences.

British Geological Survey, 2001. *Geological Survey Ten Mile Map, South Sheet, Fourth Edition (Solid)*. British Geological Society.

British Geological Survey, n.d., *website*:
(<http://www.bgs.ac.uk/opengeoscience/home.html?Accordion1=1#maps>) Geology of Britain viewer.

Chartered Institute For Archaeologists. *Standard and Guidance for Archaeological Geophysical Survey*.
<http://www.archaeologists.net/sites/default/files/nodefiles/Geophysics2010.pdf>

Derbyshire County Council, 2015. *Historic Environment Record [online]* Available through:
www.heritagegateway.org.uk [Accessed 16/07/2015]

English Heritage, 2008. *Geophysical Survey in Archaeological Field Evaluation*.

Soil Survey of England and Wales, 1983. *Soils of England and Wales, Sheet 3 Midland and Western England*.

APPENDIX A – METHODOLOGY & SURVEY EQUIPMENT

Grid locations

The location of the survey grids has been plotted together with the referencing information. Grids were set out using a Leica 705auto Total Station and referenced to suitable topographic features around the perimeter of the site or a Leica Smart Rover RTK GPS.

An RTK GPS (Real-time Kinematic Global Positioning System) can locate a point on the ground to a far greater accuracy than a standard GPS unit. A standard GPS suffers from errors created by satellite orbit errors, clock errors and atmospheric interference, resulting in an accuracy of 5m-10m. An RTK system uses a single base station receiver and a number of mobile units. The base station re-broadcasts the phase of the carrier it measured, and the mobile units compare their own phase measurements with those they received from the base station. A SmartNet RTK GPS uses Ordnance Survey's network of over 100 fixed base stations to give an accuracy of around 0.01m.

Survey equipment and gradiometer configuration

Although the changes in the magnetic field resulting from differing features in the soil are usually weak, changes as small as 0.2 nanoTeslas (nT) in an overall field strength of 48,000nT, can be accurately detected using an appropriate instrument.

The mapping of the anomaly in a systematic manner will allow an estimate of the type of material present beneath the surface. Strong magnetic anomalies will be generated by buried iron-based objects or by kilns or hearths. More subtle anomalies such as pits and ditches can be seen if they contain more humic material which is normally rich in magnetic iron oxides when compared with the subsoil.

To illustrate this point, the cutting and subsequent silting or backfilling of a ditch may result in a larger volume of weakly magnetic material being accumulated in the trench compared to the undisturbed subsoil. A weak magnetic anomaly should therefore appear in plan along the line of the ditch.

The magnetic survey was carried out using a dual sensor Grad601-2 Magnetic Gradiometer manufactured by Bartington Instruments Ltd. The instrument consists of two fluxgates very accurately aligned to nullify the effects of the Earth's magnetic field. Readings relate to the difference in localised magnetic anomalies compared with the general magnetic background. The Grad601-2 consists of two high stability fluxgate gradiometers suspended on a single frame. Each gradiometer has a 1m separation between the sensing elements so enhancing the response to weak anomalies.

Sampling interval

Readings were taken at 0.25m centres along traverses 1m apart. This equates to 3600 sampling points in a full 30m x 30m grid.

Depth of scan and resolution

The Grad 601-2 has a typical depth of penetration of 0.5m to 1.0m, though strongly magnetic objects may be visible at greater depths. The collection of data at 0.25m centres provides an optimum methodology for the task balancing cost and time with resolution.

Data capture

The readings are logged consecutively into the data logger which in turn is daily down-loaded into a portable computer whilst on site. At the end of each site survey, data is transferred to the office for processing and presentation.

APPENDIX B – BASIC PRINCIPLES OF MAGNETIC SURVEY

Detailed magnetic survey can be used to effectively define areas of past human activity by mapping spatial variation and contrast in the magnetic properties of soil, subsoil and bedrock.

Weakly magnetic iron minerals are always present within the soil and areas of enhancement relate to increases in *magnetic susceptibility* and permanently magnetised *thermoremanent* material.

Magnetic susceptibility relates to the induced magnetism of a material when in the presence of a magnetic field. This magnetism can be considered as effectively permanent as it exists within the Earth's magnetic field. Magnetic susceptibility can become enhanced due to burning and complex biological or fermentation processes.

Thermoremanence is a permanent magnetism acquired by iron minerals that, after heating to a specific temperature known as the Curie Point, are effectively demagnetised followed by re-magnetisation by the Earth's magnetic field on cooling. Thermoremanent archaeological features can include hearths and kilns and material such as brick and tile may be magnetised through the same process.

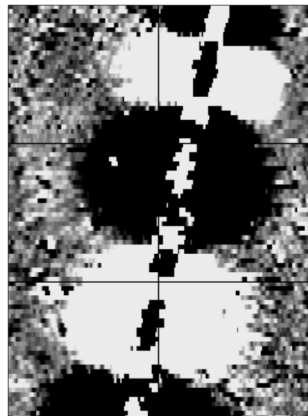
Silting and deliberate infilling of ditches and pits with magnetically enhanced soil creates a relative contrast against the much lower levels of magnetism within the subsoil into which the feature is cut. Systematic mapping of magnetic anomalies will produce linear and discrete areas of enhancement allowing assessment and characterisation of subsurface features. Material such as subsoil and non-magnetic bedrock used to create former earthworks and walls may be mapped as areas of lower enhancement compared to surrounding soils.

Magnetic survey is carried out using a fluxgate gradiometer which is a passive instrument consisting of two sensors mounted vertically 1m apart. The instrument is carried about 30cm above the ground surface and the top sensor measures the Earth's magnetic field whilst the lower sensor measures the same field but is also more affected by any localised buried field. The difference between the two sensors will relate to the strength of a magnetic field created by a buried feature, if no field is present the difference will be close to zero as the magnetic field measured by both sensors will be the same.

Factors affecting the magnetic survey may include soil type, local geology, previous human activity, disturbance from modern services etc.

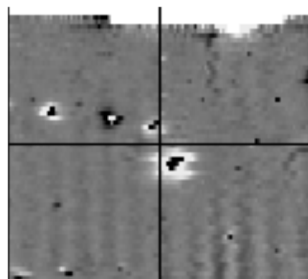
APPENDIX C – GLOSSARY OF MAGNETIC ANOMALIES

Bipolar



A bipolar anomaly is one that is composed of both a positive response and a negative response. It can be made up of any number of positive responses and negative responses. For example a pipeline consisting of alternating positive and negative anomalies is said to be bipolar. See also dipolar which has only one area of each polarity. The interpretation of the anomaly will depend on the magnitude of the magnetic field strength. A weak response may be caused by a clay field drain while a strong response will probably be caused by a metallic service.

Dipolar

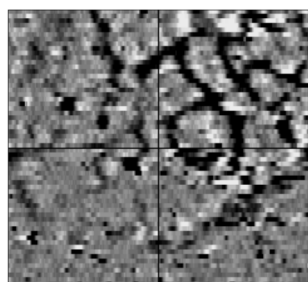


This consists of a single positive anomaly with an associated negative response. There should be no separation between the two polarities of response. These responses will be created by a single feature. The interpretation of the anomaly will depend on the magnitude of the magnetic measurements. A very strong anomaly is likely to be caused by a ferrous object.

Positive anomaly with associated negative response

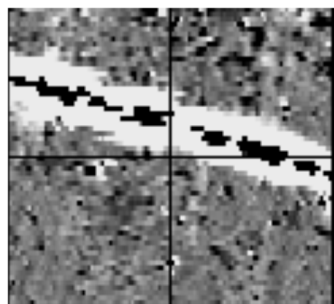
See bipolar and dipolar.

Positive linear



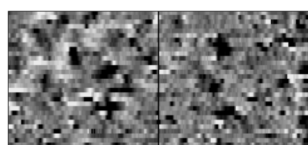
A linear response which is entirely positive in polarity. These are usually related to in-filled cut features where the fill material is magnetically enhanced compared to the surrounding matrix. They can be caused by ditches of an archaeological origin, but also former field boundaries, ploughing activity and some may even have a natural origin.

Positive linear anomaly with associated negative response



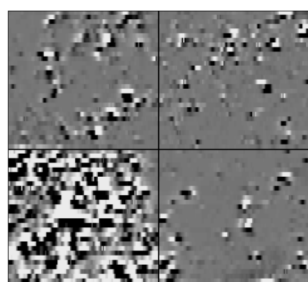
A positive linear anomaly which has a negative anomaly located adjacently. This will be caused by a single feature. In the example shown this is likely to be a single length of wire/cable probably relating to a modern service. Magnetically weaker responses may relate to earthwork style features and field boundaries.

Positive point/area



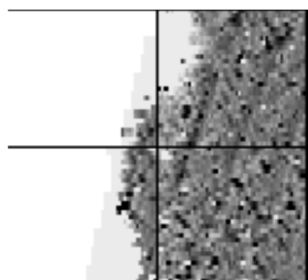
These are generally spatially small responses, perhaps covering just 3 or 4 reading nodes. They are entirely positive in polarity. Similar to positive linear anomalies they are generally caused by in-filled cut features. These include pits of an archaeological origin, possible tree bowls or other naturally occurring depressions in the ground.

Magnetic debris



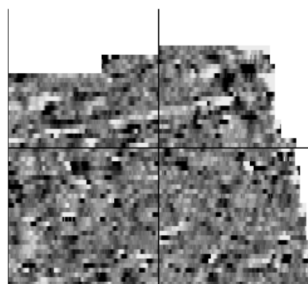
Magnetic debris consists of numerous dipolar responses spread over an area. If the amplitude of response is low ($\pm 3nT$) then the origin is likely to represent general ground disturbance with no clear cause, it may be related to something as simple as an area of dug or mixed earth. A stronger anomaly ($\pm 250nT$) is more indicative of a spread of ferrous debris. Moderately strong anomalies may be the result of a spread of thermoremanent material such as bricks or ash.

Magnetic disturbance



Magnetic disturbance is high amplitude and can be composed of either a bipolar anomaly, or a single polarity response. It is essentially associated with magnetic interference from modern ferrous structures such as fencing, vehicles or buildings, and as a result is commonly found around the perimeter of a site near to boundary fences.

Negative linear

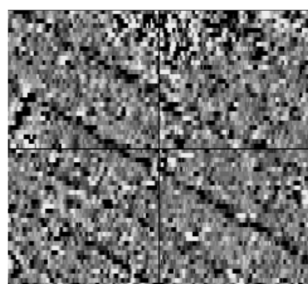


A linear response which is entirely negative in polarity. These are generally caused by earthen banks where material with a lower magnetic magnitude relative to the background top soil is built up. See also ploughing activity.

Negative point/area

Opposite to positive point anomalies these responses may be caused by raised areas or earthen banks. These could be of an archaeological origin or may have a natural origin.

Ploughing activity



Ploughing activity can often be visualised by a series of parallel linear anomalies. These can be of either positive polarity or negative polarity depending on site specifics. It can be difficult to distinguish between ancient ploughing and more modern ploughing. Clues such as the separation of each linear, straightness, strength of response and cross cutting relationships can be used to aid this, although none of these can be guaranteed to differentiate between different phases of activity.

Polarity

Term used to describe the measurement of the magnetic response. An anomaly can have a positive polarity (values above 0nT) and/or a negative polarity (values below 0nT).

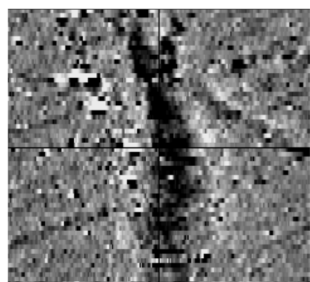
Strength of response

The amplitude of a magnetic response is an important factor in assigning an interpretation to a particular anomaly. For example a positive anomaly covering a 10m² area may have values up to around 3000nT, in which case it is likely to be caused by modern magnetic interference. However, the same size and shaped anomaly but with values up to only 4nT may have a natural origin. Colour plots are used to show the amplitude of response.

Thermoremanent response

A feature which has been subject to heat may result in it acquiring a magnetic field. This can be anything up to approximately +/-100 nT in value. These features include clay fired drains, brick, bonfires, kilns, hearths and even pottery. If the heat application has occurred in situ (e.g. a kiln) then the response is likely to be bipolar compared to if the heated objects have been disturbed and moved relative to each other, in which case they are more likely to take an irregular form and may display a debris style response (e.g. ash).

Weak background variations



Weakly magnetic wide scale variations within the data can sometimes be seen within sites. These usually have no specific structure but can often appear curvy and sinuous in form. They are likely to be the result of natural features, such as soil creep, dried up (or seasonal) streams. They can also be caused by changes in the underlying geology or soil type which may contain unpredictable distributions of magnetic minerals, and are usually apparent in several locations across a site.



Amendments

Issue No.	Date	Description
-	-	-
-	-	-

© Stratascan Ltd - 2015

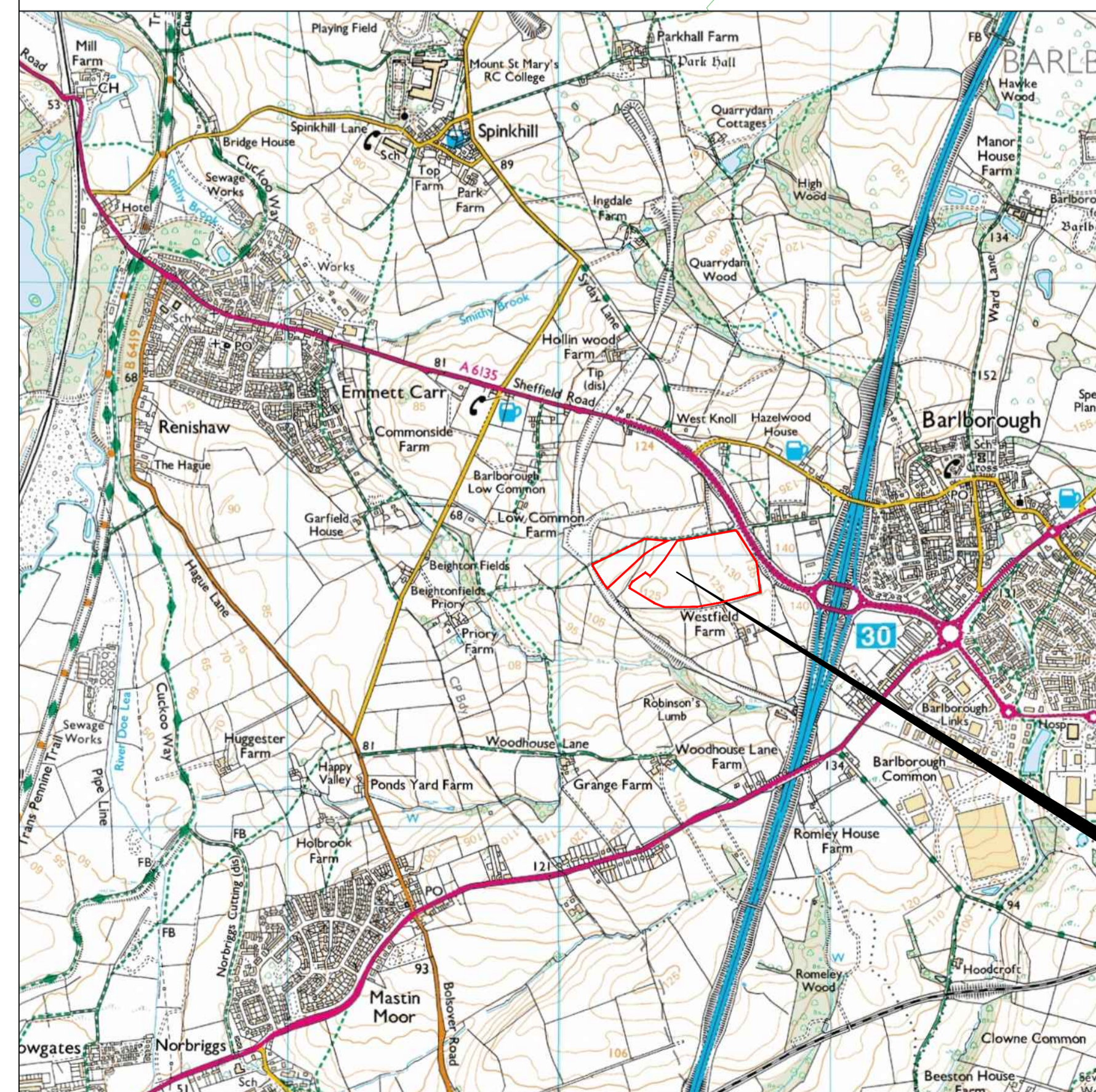


Site centred on NGR SK 464 769

FIELD 3

FIELD 1

FIELD 2



Reproduced from Ordnance Survey's 1:25 000 map of 1998 with the permission of the controller of Her Majesty's Stationary Office. Crown Copyright reserved. Licence No: AL 50125A

Licencee: Stratascan Ltd, Vineyard House, Upper Hook Road, Upton Upon Severn, WR8 0SA

OS 100km square = SK

OS REFERENCING INFORMATION

A	446166.38, 376960.79
B	446225.36, 376971.81
C	446431.57, 377011.80
D	446466.10, 376835.14
E	446520.32, 376934.26
F	446697.23, 376967.42

Job No.	8623	Survey Date	JUN 15
---------	------	-------------	--------

Client
CgMs CONSULTING

Project Title
GEOPHYSICAL SURVEY - LOW COMMON, BARLBOROUGH, DERBYSHIRE

Subject
SITE LOCATION, SURVEY AREA & REFERENCING

STRATASCAN
GEOPHYSICS FOR ARCHAEOLOGY AND ENGINEERING

VINEYARD HOUSE T: 01684 592266
UPTON UPON SEVERN E: info@stratascan.co.uk
WR8 0SA www.stratascan.co.uk

GPR ASSOCIATION

SUMO GROUP MEMBER

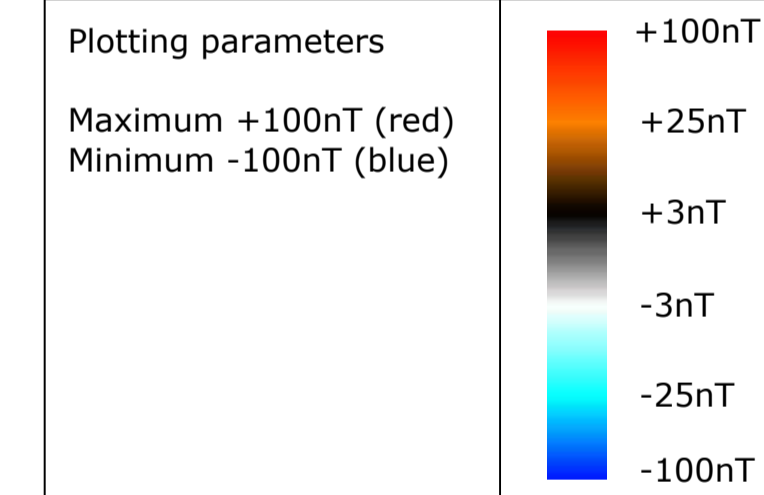
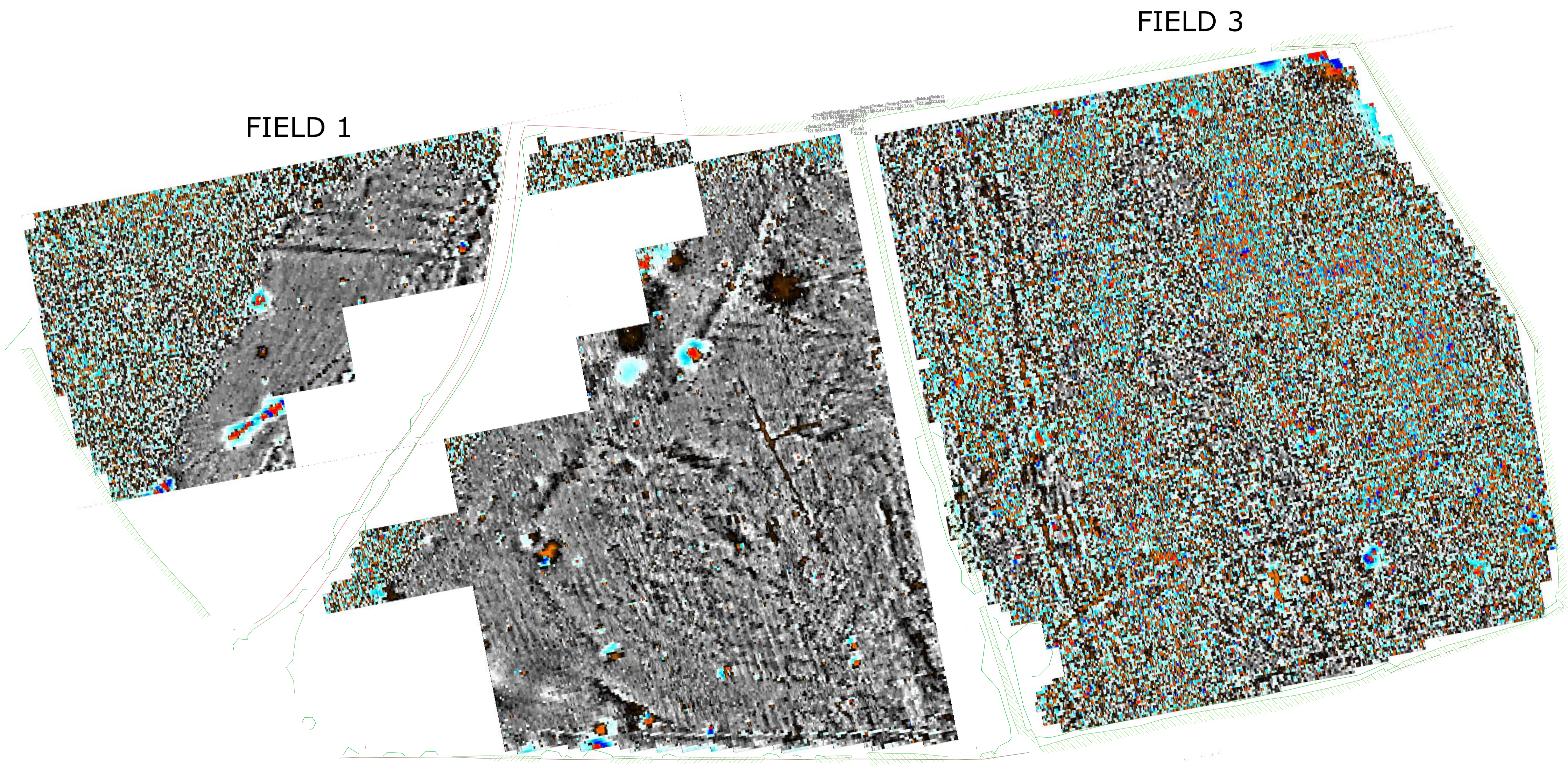
ISO 9001 certified
ISO 14001 certified

Scale 1:1000
0m 10 20 30 40 50 60m

Plot	A1	Checked by	DGE	Issue No.	01
Date	JUL 15	Drawn by	RD	Figure No.	01



Amendments		
Issue No.	Date	Description
-	-	-
-	-	-
© Stratascan Ltd - 2015		



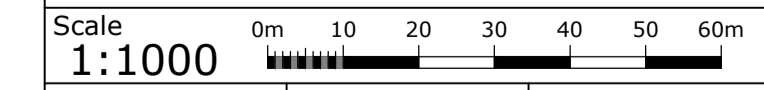
Job No.	8623	Survey Date	JUN 15
---------	------	-------------	--------

Client
CgMs CONSULTING

Project Title
GEOPHYSICAL SURVEY - LOW COMMON, BARLBOROUGH, DERBYSHIRE

Subject
COLOUR PLOT OF GRADIOMETER DATA SHOWING EXTREME VALUES

STRATASCAN™
GEOPHYSICS FOR ARCHAEOLOGY AND ENGINEERING
VINEYARD HOUSE T: 01684 592266
UPTON UPON SEVERN E: info@stratascan.co.uk
WR8 0SA www.stratascan.co.uk



Plot	A1	Checked by	DGE	Issue No.	01
Date	JUL 15	Drawn by	RD	Figure No.	02



Amendments

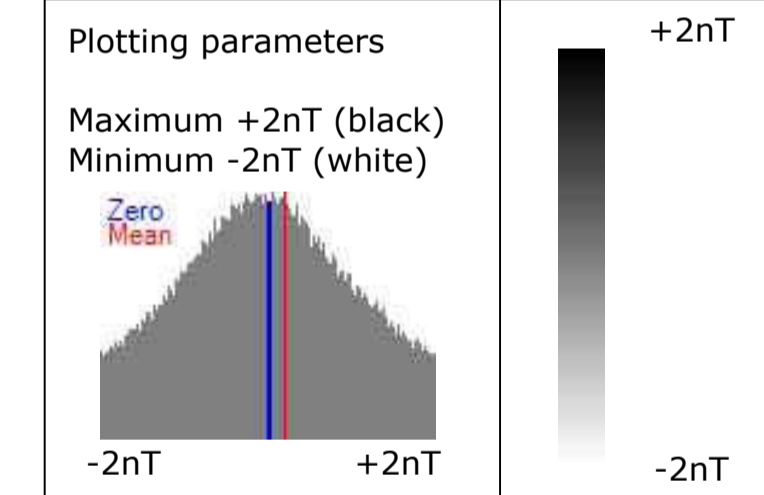
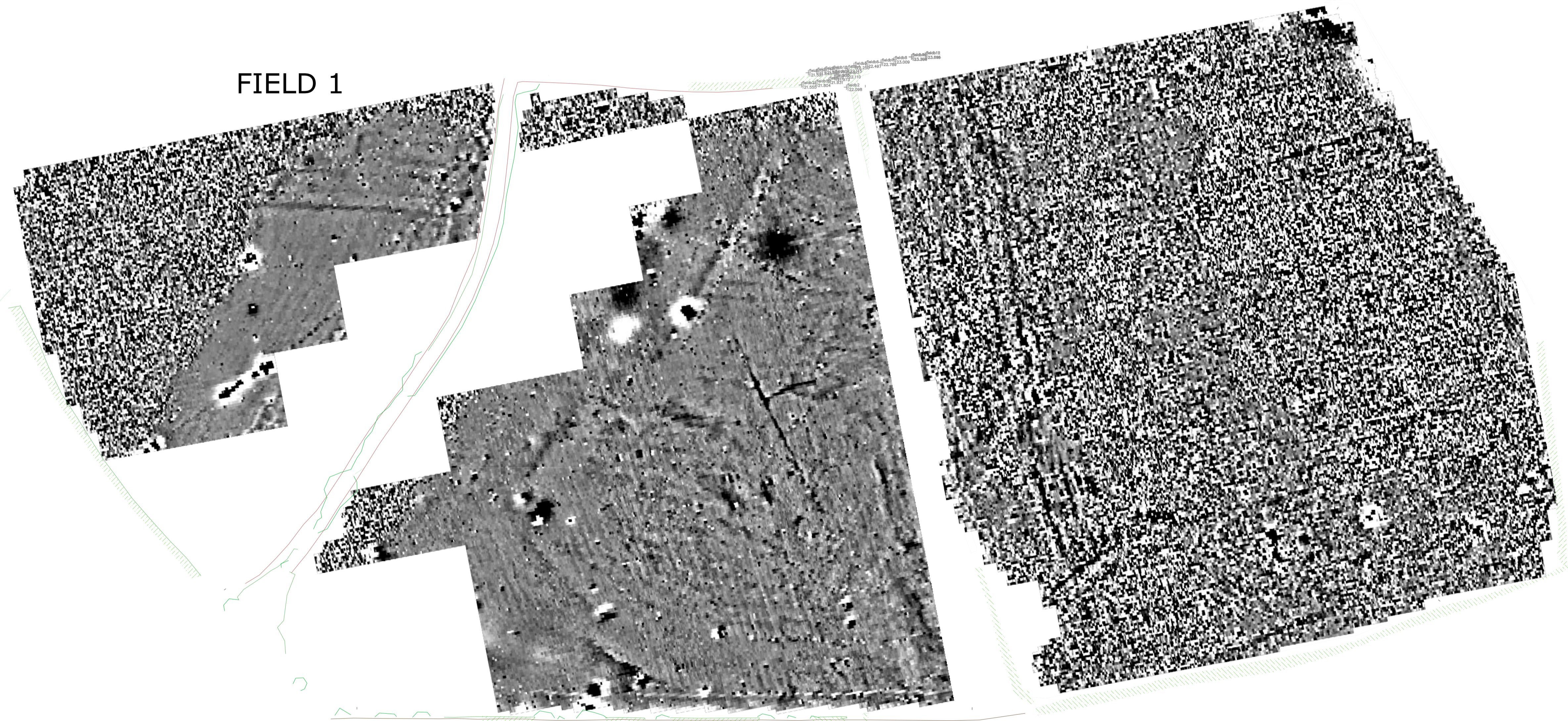
Issue No.	Date	Description
-	-	-
-	-	-

© Stratascan Ltd - 2015

FIELD 3

FIELD 1

FIELD 2



Job No.	8623	Survey Date	JUN 15
---------	------	-------------	--------

Client
CgMs CONSULTING

Project Title
GEOPHYSICAL SURVEY - LOW COMMON, BARLBOROUGH, DERBYSHIRE

Subject
PLOT OF MINIMALLY PROCESSED GRADIOMETER DATA

STRATASCAN™
 GEOPHYSICS FOR ARCHAEOLOGY AND ENGINEERING
 VINEYARD HOUSE T: 01684 592266
 UPTON UPON SEVERN E: info@stratascan.co.uk
 WR8 0SA www.stratascan.co.uk



Plot	A1	Checked by	DGE	Issue No.	01
Date	JUL 15	Drawn by	RD	Figure No.	03

Your Survey Partner

For a complete and complementary
range of survey services

*Survey services
you can rely on*

Archaeological
As Built Records
BIM Ready 3D Models
Boundary Disputes
CCTV
Geophysical
Laser Scanning
Measured Building
Pipeline Routes
Railway
Retrofit
Setting Out
Statutory Plan Collation
Topographic
Utility Mapping
UXO Detection
Void Detection

STRATASCAN LTD

Vineyard House Upper Hook Road Upton upon Severn
Worcestershire WR8 0SA United Kingdom

T:01684 592266 F: 01684 594142

info@stratascan.co.uk www.stratascan.co.uk

STRATASCAN™



SUMO
Group
Member