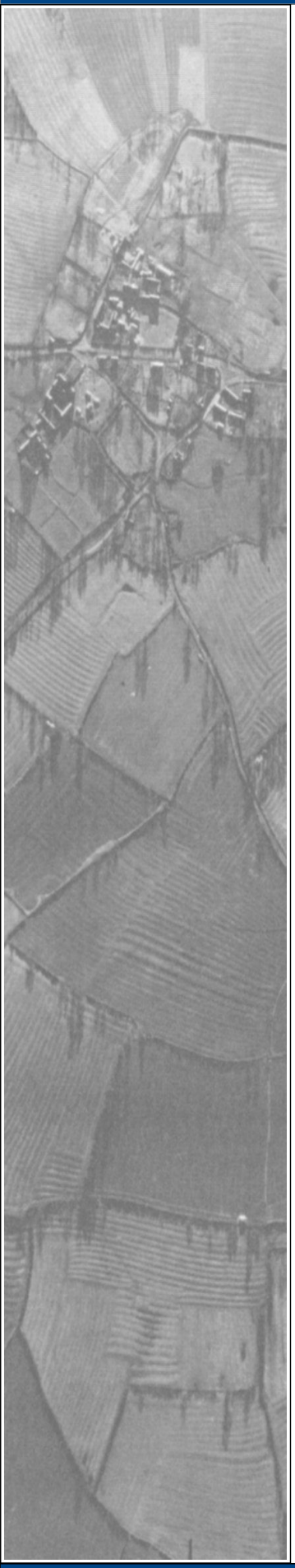

Land at South Street
Castle Cary
Somerset

MAGNETOMETER SURVEY REPORT

for

Cotswold Archaeology

Kerry Donaldson & David Sabin

February 2023

Ref. no. J954

ARCHAEOLOGICAL SURVEYS LTD

Land at South Street
Castle Cary
Somerset

MAGNETOMETER SURVEY REPORT

for

Cotswold Archaeology

Fieldwork by David Sabin BSc (Hons) MCIfA
Report by Kerry Donaldson BSc (Hons) MCIfA
Report checked by David Sabin
Primary archive location - Archaeological Surveys Ltd, Yatesbury, Wiltshire

Survey date – 13th February 2023
Ordnance Survey Grid Reference – **ST 63575 31495**

Somerset HER PRN: 47786

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SUMMARY

Detailed magnetometry was undertaken by Archaeological Surveys Ltd on land to the south of Castle Cary in Somerset. The results indicate the presence of a number of linear and rectilinear ditches as well as a number of discrete, pit-like features of archaeological potential within the site. Several weakly positive linear and discrete anomalies have also been located, but they lack a coherent morphology and cannot be confidently interpreted.

1 INTRODUCTION

1.1 Survey background

1.1.1 Archaeological Surveys Ltd was commissioned by Cotswold Archaeology to undertake a magnetometer survey of an area of land at South Street on the southern edge of Castle Cary in Somerset. The site has been outlined for a proposed residential development and the survey forms part of an archaeological assessment.

1.1.2 The geophysical survey was carried out in accordance with a Written Scheme of Investigation (WSI) produced by Archaeological Surveys (2023) and approved by Steve Membury, Senior Historic Environment Officer for the South West Heritage Trust and archaeological adviser to South Somerset District Council, prior to commencing the fieldwork. Somerset Historic Environment Record (HER) have issued the survey with the PRN: 47786.

1.2 Survey objectives and techniques

1.2.1 The objective of the survey was to use magnetometry to locate geophysical anomalies that may be archaeological in origin so that they may be assessed prior to development of the site. The methodology is considered an efficient and effective approach to archaeological prospection.

1.2.2 Geophysical survey can provide useful information on the archaeological potential of a site; however, the outcome of any survey relies on a number of factors and as a consequence results can vary. The success in meeting the aims and objectives of a survey is, therefore, often impossible to predetermine.

1.3 Standards, guidance and recommendations for the use of this report

1.3.1 Archaeological Surveys Ltd is a Registered Organisation with the Chartered Institute for Archaeologists (CIfA) and both company directors are Members of the Chartered Institute for Archaeologists (MCIfA) and have therefore been

assessed for their technical competence and ethical suitability and abide by the CIfA Codes of Conduct. The survey and report follow the recommendations set out by: European Archaeological Council (2015) Guidelines for the Use of Geophysics in Archaeology; Institute for Archaeologists (2002) The use of Geophysical Techniques in Archaeological Evaluations. The work has been carried out to the Chartered Institute for Archaeologists (2014, updated 2020) Standard and Guidance for Archaeological Geophysical Survey.

1.3.2 Archaeological Surveys Ltd provide a detailed geophysical survey report and it is recommended that where possible the contents should be considered in full. The Summary provides a brief overview of the results with more detail available in the Discussion and/or Conclusion. The *List of anomalies* within the Results provides a detailed assessment of the anomalies within separate categories which can be useful in inferring a level of confidence to the interpretation. Quality and factors influencing the interpretation of anomalies is also set out within the results.

1.3.3 It is recommended that the full report should always be considered when using data and interpretation plots; where this is not possible, in the field for example, the abstraction and interpretation plots should retain their colour coding and be used with a corresponding legend.

1.3.4 Where targeting of anomalies by excavation is to be carried out, care should be taken to place trenches over solid lines or features visible on the abstraction and interpretation plots. Archaeological Surveys abstraction and interpretation avoids the use of dashed or dotted line formats, and broken or fragmented lines used in interpretive plots may well correspond closely with truncation of archaeological features.

1.4 Site location, description and survey conditions

1.4.1 The site is located on the southern edge of Castle Cary in Somerset. It is centred on Ordnance Survey National Grid Reference (OS NGR) ST 63575 31495, see Figs 01 and 02.

1.4.2 The geophysical survey covers approximately 2.9ha within two conjoined pasture fields. The site is bounded to the east by the B3152 South Street, residential dwellings on Cockhill Elm Lane to the north and agricultural land to the south and west, with a cemetery to the south west. The area is mainly level ground at a little over 100m AODN, boundaries are mainly hedgerows with a fragmented hedgerow and small barn located in the southern part of the site. To the east of the barn there are two large poplar trees and a third that had recently fallen creating a large tree throw pit.

Plate 1: Survey area looking north

1.4.3 The ground conditions across the site were generally considered to be favourable for the collection of magnetometry data. Weather conditions during the survey were fine and sunny.

1.5 Site history and archaeological potential

1.5.1 A Heritage Desk-Based Assessment has been carried out by Cotswold Archaeology (2022) which outlines that there are no designated or non-designated heritage assets within the site, but that it has not been subject to previous archaeological investigation. In the surrounding vicinity a number of archaeological investigations have taken place including trial trench evaluation c70m to the north which revealed a field boundary ditch, the robbed remains of walls an a small amount of 13th to 20th century pottery. The nearest scheduled monument is the earthwork remains of a Norman castle approximately 700m north east of the site (NHL: 1019897) and archaeological excavations in the vicinity located evidence for the former medieval manor, elements of the Normal castle, post medieval activity and a Roman lime kiln. An Extensive Urban Survey of Castle Cary carried out by English Heritage and Somerset County Council identified the town and surrounding hinterland as an Area of High Archaeological Potential.

1.5.2 The 1841 Castle Cary tithe map shows the site as the two main land parcels seen today, with a narrow strip field along the southern edge and a small land parcel in the north western corner which is not visible on the 1886 1st edition Ordnance Survey map. By 1962 a small number of agricultural buildings are

recorded in the southern part of the site, with only one standing today.

1.5.3 The lack of archaeological sites and findspots within the site may be a reflection of the lack of archaeological investigation. There is always potential for the survey to locate geophysical anomalies that may relate to archaeological features, should they be present within the site.

1.6 Geology and soils

1.6.1 The underlying solid geology across the site is sandstone from the Bridport Sand Formation (BGS, 2022).

1.6.2 The overlying soil across the majority of the survey area is from the Bursledon association (572j) and is a stagnogleyic argillic brown earth. It consists of a deep, fine, loamy soil with slowly permeable subsoils and slight seasonal waterlogging. The eastern edge of the site contains soils from the South Petherton association (541m) which is a typical brown earth and which consists of a deep, well drained, silty soil (Soil Survey of England and Wales, 1983).

1.6.3 Magnetometry survey carried out across similar soils has produced good results, although there can be low levels of magnetic contrast associated with stagnogley soils. However, where long term occupation or industrial activity has altered the soils sufficiently, then they can result in a good magnetic contrast. The underlying geology and soils are therefore considered acceptable for magnetic survey.

2 METHODOLOGY

2.1 Technical synopsis

2.1.1 Magnetometry survey records localised magnetic fields that can be associated with features formed by human activity. Magnetic susceptibility and magnetic thermoremnance (also known as thermoremanence) are factors associated with the formation of localised magnetic fields.

2.1.2 Iron minerals within the soil may become altered by burning and the break down of biological material; effectively the magnetic susceptibility of the soil is increased, and the iron minerals become magnetic in the presence of the Earth's magnetic field. Accumulations of magnetically enhanced soils within features, such as pits and ditches, may produce positive magnetic anomalies that can be mapped by magnetic prospection. In addition, where soil is displaced by material of comparatively low magnetic susceptibility, such as many types of sedimentary rock, anomalies of negative value may occur which could be indicative of structural remains.

2.1.3 Magnetic thermoremnance can occur when ferrous minerals have been heated to high temperatures such as in a kiln, hearth, oven etc. On cooling, a permanent magnetisation may be acquired due to the presence of the Earth's magnetic field. Certain natural processes associated with the formation of some igneous and metamorphic rock may also result in magnetic thermoremnance.

2.1.4 The localised variations in magnetism are measured as sub-units of the Tesla, which is a SI unit of magnetic flux density. These sub-units are nano Teslas (nT), which are equivalent to 10^{-9} Tesla (T). Additional details are set out in 2.2 below and within Appendix A.

2.2 Equipment configuration, data collection and survey detail

2.2.1 The detailed magnetic survey was carried out using a SENSYS MAGNETO®MXPDA 5 channel cart-based system. The instrument has 5 fluxgate gradiometers (FGM650) spaced 0.5m apart with readings recorded at 20Hz. The cart is pushed at walking speed and not towed. Each sensor is not zeroed in the field as the vertical axis alignment is precisely fixed leaving sensor offsets that are removed during data processing. The fixing of the vertical alignment ensures the sensors are not unduly influenced by localised magnetic fields and that the vertical component of a magnetic anomaly is measured. The gradiometers have a recorded range of ±3000nT, and resolution is approximately 0.1nT. They are linked to a Leica GS10 RTK GNSS with data recorded by SENSYS MonMX software on a rugged notebook computer system.

2.2.2 Due to the fixed offsets within the fluxgate sensors, as a result of the manufacturing and tensioning process, the survey data do not provide a visually useful dataset until a zero median traverse algorithm is applied. It is recognised that this has the potential to affect some anomalies detrimentally by removing linear features orientated parallel to survey transects. However, this has not been noted as a particular problem with the system due to the high resolution data collection, generally long length of traverses and variability within the magnetic characteristics of a linear anomaly.

2.2.3 Data are collected along a series of parallel survey transects to achieve 100% coverage of the surveyable land. The length of each transect is variable and relates to the size of the survey area and other factors including ground conditions. A visual display allows accurate placing of transects and helps maintain the correct separation between adjacent traverses. Data are not collected within fixed grids and data points are considered to be random even though the data are collected in a systematic manner covering all accessible areas (Aspinall, Gaffney and Schmidt, 2009).

2.2.4 Fluxgate sensors are highly sensitive to temperature change and this manifests as drift during the course of a survey. This can be particularly noticeable during the morning as temperatures rise and the equipment warms or cools. Sensor drift within the course of a traverse will appear as a line trending from negative to positive after processing with a zero median traverse algorithm. To remove the potential for

temperature drift, data were collected after a 20 minute stabilisation period and traverses were limited to a time of generally <60s.

2.3 Data processing and presentation

2.3.1 Magnetic data collected by the MAGNETO®MXPDA cart-based system are initially prepared using SENSYS MAGNETO®DLMGPS software. The software effectively allocates a geographic position for each data point and can compensate for fixed offsets present within the FGM650 sensors. The offsets are positive or negative values present on all fluxgate gradiometer sensors. Some systems use manual or electronic balancing to effectively zero the sensors; however, this is a short term measure that is prone to drift through temperature changes and vibration and can easily be incorrectly set due to localised magnetic fields. The FGM650 sensors are very accurately aligned to the vertical magnetic gradient and are highly stable showing negligible drift on long traverses. The offset values are removed using TerraSurveyor software.

2.3.2 Survey tracks are analysed and georeferenced raw data (UTM Z30N) are then exported in ASCII format for further analysis and display within TerraSurveyor. The removal of the offset values (compensation) of the sensors is also carried out in TerraSurveyor using a zero median traverse function. Data are then considered to be minimally processed. Note: without the zero median traverse function it is not possible to create a meaningful data plot as all sensors have a different offset value. Although a zero median traverse algorithm can remove anomalies aligned with the survey tracks, in practice this rarely occurs due to the use of long traverses, high resolution measurement and variability within the magnetic susceptibility of long linear features.

2.3.3 The minimally processed data are collected between limits of ±3000nT and clipped for display at ±3nT. Data are interpolated to a resolution of effectively 0.5m between tracks and 0.15m along each survey track.

2.3.4 Additional data processing has been carried out in the form of high pass filtering. This effectively removes low frequency variation along a traverse that has been caused by large magnetic bodies, cultivation or rapid temperature change. Data treated to additional processing have been compared to unprocessed data to ensure that no significant anomalies have been removed.

2.3.5 Appendix C contains metadata concerning the survey and data attributes and is derived directly from TerraSurveyor. Reference should be made to Appendix B for further information on processing.

2.3.6 A TIF file is produced by TerraSurveyor software along with an associated world file (.TFW) that allows automatic georeferencing (OSGB36 datum) when using GIS or CAD software. The main form of data display used in the report is the minimally processed greyscale plot. Minimally processed data are considered by the manufacturer to be data that are compensated by SENSYS

MAGNETO DLMGPS software, see 2.3.1 and 2.3.2. Note: traceplots are not considered to be appropriate as they do not provide an accurate or useful assessment of the magnetic anomalies due to the very high density of data collection. In addition, traceplots cannot be meaningfully plotted against base mapping and in areas of complexity traces may be lost or highly confused. Traceplots may be used to demonstrate characteristic magnetic profiles across discrete features where it is considered beneficial.

2.3.7 The raster images are combined with base mapping using ProgeCAD Professional 2021, creating DWG (2018) file formats. All images are externally referenced to the CAD drawing in order to maintain good graphical quality. The CAD plots are effectively georeferenced facilitating relocation of features using GNSS, resection method, etc.

2.3.8 An abstraction and interpretation is drawn and plotted for all geophysical anomalies located by the survey. Anomalies are abstracted using colour coded points, lines and polygons. All plots are scaled to landscape A3 for paper printing. Appendix E sets out CAD layer names with colour and graphic content for each interpretation category, see 3.3.

2.3.9 A brief summary of each anomaly, with an appropriate reference number, is set out in list form within the results (Section 3) to allow a rapid and objective assessment of features within the survey area.

2.3.10 A digital archive is produced with this report, see Appendix D below. The main archive is held at the offices of Archaeological Surveys Ltd.

3 RESULTS

3.1 General assessment of survey results

3.1.1 The detailed magnetic survey was carried out over a total of 2.9ha.

3.1.2 Magnetic anomalies located can be generally classified as positive linear and discrete positive responses of archaeological potential, positive anomalies of an uncertain origin, anomalies associated with land management, areas of magnetic debris and disturbance, strong discrete dipolar anomalies relating to ferrous objects. Anomalies located within each survey area have been numbered and are described in 3.4 below.

3.2 Data quality and factors affecting the interpretation or formation of anomalies

3.2.1 Data are considered representative of the magnetic anomalies present within the site. There are no significant defects within the dataset.

3.2.2 The site contains widespread magnetic debris ranging from moderate

amounts in the field to the north of the barn but high levels adjacent to the barn and extending into the south eastern part of the site. The high level magnetic debris is likely to completely obscure weaker magnetic features should they be present within the south eastern part of the site. The more extensive moderate level of magnetic debris is unlikely to obscure anomalies; however, it appears to have reduced magnetic contrast associated with former cut features (pits and ditches) and the associated loss of clarity has the potential to affect interpretation. The zone of high level magnetic debris is likely to be associated with modern demolition, dumping and ground make-up probably relating to a former barn and ground consolidation along a short track to the south eastern gateway. The more moderate level of debris may indicate the spreading of waste as a soil conditioner and may well originate from the town to the north.

3.2.3 Several anomalies were identified as having archaeological potential; however, magnetic contrast appears poor even after taking account of the moderate level of magnetic debris. It is likely that the poor contrast is associated with the soil, subsoil and site hydrology and there is potential that other features are present but have not formed magnetic anomalies. Low levels of magnetic susceptibility may also occur where sites are short-lived and past human activity is of low intensity.

3.3 Data interpretation

3.3.1 The list of sub-headings below attempts to define a number of separate categories that reflect the range and type of features located during the survey. A general explanation of the characteristics of the magnetic anomalies is set out for each category in order to justify interpretation, see Table 1.

Interpretation category	Description and origin of anomalies
Anomalies with archaeological potential	Anomalies have the characteristics (mainly morphological) of a range of archaeological features such as pits, ring ditches, enclosures, etc. The category is used where there is a high level of confidence which may be due to additional supporting information where morphology is unclear or uncharacteristic.
Anomalies with an uncertain origin	The category applies to a range of anomalies where there is not enough evidence to confidently suggest an origin. Anomalies in this category may well be related to archaeologically significant features, but equally relatively modern features, geological/pedological features and agricultural features should be considered. Morphology may be unclear or uncharacteristic and there may be a lack of additional supporting information. Positive anomalies are indicative of magnetically enhanced soils that may form the fill of 'cut' features or may be produced by accumulation within layers or 'earthwork' features; soils subject to burning may also produce positive anomalies. Negative anomalies are produced by material of comparatively low magnetic susceptibility such as stone and subsoil.
Anomalies relating to land management	Anomalies are mainly linear and may be indicative of the magnetically enhanced fill of cut features (i.e. ditches). The anomalies may be long and/or form rectilinear elements and they may relate to topographic features or be visible on early mapping. Associated agricultural anomalies (e.g. headlands, plough marks and former ridge and furrow) may support the interpretation.
Anomalies associated with magnetic debris	Magnetic debris often appears as areas containing many small dipolar anomalies that may range from weak to very strong in magnitude. They often occur where there has been dumping or ground make-up and are related to magnetically thermoremnant materials such as brick or tile or other small fragments of ferrous material. This type of response is occasionally associated with kilns, furnace structures, hearths and nail spreads from former wooden structures or rooves and may, therefore, be archaeologically significant. It is also possible that the response may be caused by natural material such as certain gravels and fragments of igneous or metamorphic rock. Strong discrete dipolar anomalies are responses to ferrous objects within the topsoil.

Anomalies with a modern origin	The magnetic response is often strong and dipolar indicative of ferrous material and may be associated with extant above surface features such as wire fencing, cables, pylons etc. Often a significant area around these features has a strong magnetic flux which may create magnetic disturbance; such disturbance can effectively obscure low magnitude anomalies if they are present. Fluxgate sensors may respond erratically adjacent to strong magnetic sources. Buried services may produce characteristic multiple dipolar anomalies dependant upon their construction.

Table 1: List and description of interpretation categories

3.4 List of anomalies

Area centred on OS NGR 363575 131495, see Figs 03 & 04.

Anomalies of archaeological potential

(1 & 2) – A positive rectilinear anomaly (1) forming an enclosure with outer dimensions of 41m by 23m and containing a small number of pit-like features (2). Linear ditches with a north west to south east orientation extend towards the south east and north western corners of the enclosure.

(3) – Positive linear anomalies relating to further linear ditches that may be associated with anomaly (1).

(4) – A positive linear anomaly is located towards the north western corner of the site. This part of the site is situated at the head of a dry valley that extends to the north west, and it is likely that the response is to magnetically enhanced material with archaeological potential, possibly indicating a cut feature or an infill of the head of the valley or holloway.

(5) – A number of discrete, positive anomalies are located in the north western part of the site. Some appear to form a circular group and they have dimensions of 2.3m - 3.3m by 0.7m - 1m. The response is generally 8-15nT indicating that they contain magnetically enhanced material, stronger than other responses (6) located nearby.

Anomalies with an uncertain origin

(6) – Weakly positive discrete anomalies could relate to pit-like features; however, they have a response of generally 1-2nT and are not clearly defined.

(7) – A small number of weakly positive linear anomalies lack a coherent morphology and it is not clear if they relate to cut features.

Anomalies associated with land management

(8) – A negative rectilinear anomaly is a response to a former land boundary, mapped in 1841, but removed by 1886.

Anomalies with an agricultural origin

(9) – The site contains two series of parallel linear anomalies which relate to relatively modern ploughing.

Anomalies associated with magnetic debris

(10) – Magnetic debris in the south eastern part of the site is a response to demolition material associated with former agricultural buildings, ground consolidation and a track.

(11) – The site contains widespread and numerous strong, discrete, dipolar anomalies which are a response to ferrous and other magnetically thermoremnant objects, such as brick/tile within the topsoil.

4 CONCLUSION

4.1.1 The detailed magnetometry survey has revealed a number of positive linear and rectilinear anomalies that relate to cut features with archaeological potential. These include a rectilinear enclosure, linear ditches and a number of pits. Other anomalies are weak and do not have a coherent morphology.

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Appendix A – basic principles of magnetic survey

Iron minerals are always present to some degree within the topsoil and enhancement associated with human activity is related to increases in the level of magnetic susceptibility and thermoremnant material. Magnetic susceptibility is an induced magnetism within a material when it is in the presence of a magnetic field. This can be thought of as effectively permanent due to the presence of the Earth's magnetic field. Thermoremnant magnetism occurs when ferrous material is heated beyond a specific temperature known as the Curie Point. Demagnetisation occurs at this temperature with re-magnetisation by the Earth's magnetic field upon cooling.

Enhancement of magnetic susceptibility can occur in areas subject to burning and complex fermentation processes on biological material; these are frequently associated with human settlement. Thermoremnant features include ovens, hearths, and kilns. In addition thermoremnant material such as tile and brick may also be associated with human activity and settlement.

Silting and deliberate infilling of ditches and pits with magnetically enhanced soil can create an area of enhancement compared with surrounding soils and subsoils into which the feature is cut. Mapping enhanced areas will produce linear and discrete anomalies allowing an assessment and characterisation of hidden subsurface features.

It should be noted that areas of negative enhancement can be produced from material having lower magnetic properties compared to the topsoil. This is common for many sedimentary bedrocks and subsoils which were often used in the construction of banks and walls etc. Mapping these 'negative' anomalies may also reveal archaeological features.

Magnetic survey or magnetometry can be carried out using a fluxgate gradiometer and may be referred to as gradiometry. The SENSYS gradiometer is a passive instrument consisting of two fluxgate sensors mounted vertically 65cm apart. The instrument is carried about 10-20cm above the ground surface and the upper sensor measures the Earth's magnetic field as does the lower sensor but this is influenced to a greater degree by any localised buried magnetic field. The difference between the two sensors will relate to the strength of the magnetic field created by the buried feature.

There are a number of factors that may affect the magnetic survey and these include soil type, local geology and previous human activity. Situations arise where magnetic disturbance associated with modern services, metal fencing, dumped waste material etc., obscures low magnitude fields associated with archaeological features.

Appendix B – data processing notes

Clipping

Minimum and maximum values are set and replace data outside of the range with those values. Extreme values are removed improving colour or greyscale contrast associated with data values that may be archaeologically significant. Different ranges are applied to data in order to determine the most suitable for anomaly abstraction and display.

Zero Median/Mean Traverse

The median (or mean) of data from each traverse is calculated ignoring data outside a threshold value, the median (or mean) is then subtracted from the traverse. The process is used to equalise differences between the offset values of the gradiometer sensors. The process can remove archaeological features that run along a traverse but with the high resolution datasets created by the Sensys FGM650 sensors and the method of data collection this has not been a notable problem. In fact, the removal of offsets using software avoids carrying out a balancing procedure on site, which inevitably can never be done in magnetically clean conditions and results in improperly aligned fluxgate sensors and/or electronic adjustment values.

Appendix C – survey and data information

Filename: J954-mag-proc.xcp
Description: Imported as Composite from: J954-mag.asc
Instrument Type: Sensys DLMGPS
Units: nT
UTM Zone: 30U
Survey corner coordinates (X/Y):OSGB36
Northwest corner: 363483.04, 131612.11 m
Southeast corner: 363649.24, 131394.76 m
Collection Method: Randomised
Sensors: 5
Dummy Value: 32702
Dimensions
Survey Size (meters): 166 m x 217 m
X&Y Interval: 0.15 m
Source GPS Points: Active: 769106, Recorded: 769111
Stats
Max: 3.32
Min: -3.30
Std Dev: 1.46
Mean: 0.05
Median: 0.04
Composite Area: 3.6124 ha
Surveyed Area: 2.6024 ha
PROGRAM
Name: TerraSurveyor
Version: 3.0.37.0
GPS based Proce5
1 Base Layer.
2 Unit Conversion Layer (UTM to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00 nT
5 Clip from -3.00 to 3.00 nT

Filtered data
Filename: J954-mag-proc-hpfxcp
Stats
Max: 3.32
Min: -3.30
Std Dev: 1.36
Mean: 0.03
Median: 0.02
1 Base Layer.
2 Unit Conversion Layer (UTM to OSGB36).
3 DeStripe Median Traverse:
4 Despike Threshold: 0.5 Window dia:7
5 High pass Uniform (median) filter: Window dia:215
6 Clip from -3.00 to 3.00 nT

Appendix D – digital archive

Archaeological Surveys Ltd hold the primary digital archive at their offices in Wiltshire. Data are backed-up onto an on-site data storage drive and at the earliest opportunity data are copied to CD ROM for storage on-site and off-site.

A PDF copy will be supplied to the Somerset Historic Environment Record with greyscale images and abstraction layers made available on request. The report will also be uploaded to the Online AccesS to the Index of archaeological investigationS (OASIS) and the data will be archived with the Archaeology Data Service (ADS)

Archive contents:

File type	Naming scheme	Description
Data	J954-mag.asc J954-mag.xcp J954-mag-proc.xcp	Raw data as ASCII CSV TerraSurveyor raw data TerraSurveyor minimally processed data
Graphics	J954-mag-proc.tif	Image in TIF format
Drawing	J954-**[version number]**.dwg	CAD file in 2018 dwg format
Report	J954 report.odt	Report text in LibreOffice odt format

Table 2: Archive metadata

Appendix E – CAD layers for abstraction and interpretation plots

The table below sets out Archaeological Surveys Ltd CAD layer names with associated colours and graphical content. Where CAD files are available layers may be extracted for further CAD/GIS use. Note: hatched polygon boundaries are contained within layers with the RGB colour code 254, 255, 255 (near white) in order to prevent their visibility.

Report sub-heading and associated CAD layer names	Colour with RGB index		Layer content
Anomalies with archaeological potential			
AS-ABST MAG POS DISCRETE ARCHAEOLOGY		Red 255,0,0	Solid donut, point or polygon (solid)
AS-ABST MAG POS LINEAR ARCHAEOLOGY		Red 255,0,0	Polyline or polygon (solid)
Anomalies with an uncertain origin			
AS-ABST MAG POS LINEAR UNCERTAIN		255,127,0	Line, polyline or polygon (solid)

AS-ABST MAG NEG LINEAR UNCERTAIN	Blue 0,0,255	Line, polyline or polygon (solid)
AS-ABST MAG POS DISCRETE UNCERTAIN	255,127,0	Solid donut, point or polygon (solid)
Anomalies relating to land management		
AS-ABST MAG BOUNDARY	127,0,0	Line, polyline or polygon (solid or cross hatched ANSI37)
AS-ABST MAG PATH/ROAD/TRACK	0, 153,153	Line, polyline or polygon (solid or partly cross hatched ANSI38)
Anomalies with an agricultural origin		
AS-ABST MAG AGRICULTURAL	Green 0,255,0	Line or polyline
Anomalies associated with magnetic debris		
AS-ABST MAG DEBRIS	132, 132, 132	Polygon (cross hatched ANSI37)
AS-ABST MAG STRONG DIPOLAR	132, 132, 132	Solid donut, point or polygon (solid)
Anomalies with a modern origin		
AS-ABST MAG DISTURBANCE	132, 132, 132	Polygon (hatched ANSI31)

Table 3: CAD layering

Appendix F – copyright and intellectual property

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Archaeological Surveys
Specialist Geophysical Surveyors

Geophysical Survey
Land at South Street
Castle Cary
Somerset

Map of survey area

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Survey location

● Survey location

Site centred on OS NGR
ST 63575 31495

SCALE 1:25 000

0m 500m 1000m

SCALE TRUE AT A3

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KTD	DJS	FIG 01

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Referencing information

363450 363500 363550 363600 363650 363700

131600 131550 131500 131450 131400

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Referencing grid to OSGB36 datum at 50m intervals

363550 131500

Survey tracks

Survey track start

Survey track stop

SCALE 1:1000

0m 10 20 30 40 50m

SCALE TRUE AT A3

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KTD	DJS	FIG 02

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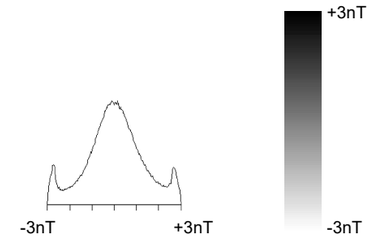
Greyscale plot of minimally processed magnetometer data



SCALE 1:1000

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SCALE TRUE AT A3

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KTD	DJS	FIG 03

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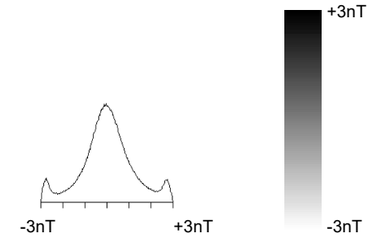
Greyscale plot of filtered magnetometer data



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SCALE TRUE AT A3

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Abstraction and interpretation of magnetic anomalies

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- Positive linear anomaly - cut feature of archaeological potential
- Positive linear anomaly - possible ditch-like feature
- Negative linear anomaly - former field boundary
- Linear anomaly - of agricultural origin
- Discrete positive response - cut feature of archaeological potential
- Discrete positive response - possible pit-like feature
- Magnetic debris - spread of magnetically thermoremnant/ferrous material
- Magnetic disturbance from ferrous material
- Strong dipolar anomaly - ferrous object

SCALE 1:1000

0m 10 20 30 40 50m

SCALE TRUE AT A3

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KTD	DJS	FIG 05