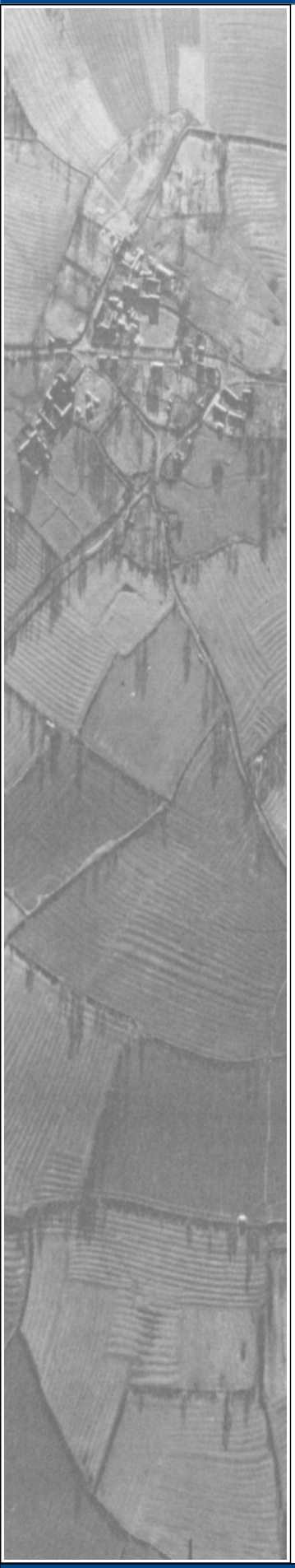

Land at Minchens Lane
Bramley
Hampshire

MAGNETOMETER SURVEY REPORT

for

Penso Power Ltd

Kerry Donaldson & David Sabin

March 2023

Ref. no. J956

ARCHAEOLOGICAL SURVEYS LTD

Land at Minchens Lane
Bramley
Hampshire

MAGNETOMETER SURVEY REPORT

for

Penso Power Ltd

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 – 17th February 2023
Ordnance Survey Grid Reference – **SU 64775 59785**

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SUMMARY

A detailed magnetometry survey was carried out by Archaeological Surveys Ltd ahead of a battery storage facility development near Bramley in Hampshire. The results indicate the presence of a number of negative linear anomalies that appear to relate to cut features with a fill of comparatively low magnetic susceptibility. Although two of the anomalies may relate to ditches associated with a formerly mapped trackway, the date and function of the majority are uncertain. A small number of positive anomalies have also been located, including a small C-shaped curvilinear feature and several pit-like features. These relate to magnetically enhanced material with an anthropogenic origin, but their archaeological potential cannot be determined. A zone of magnetic debris in the central western part of the site may relate to modern dumping or burning, although it may indicate a focus of anthropogenic activity in this area.

1 INTRODUCTION

1.1 Survey background

1.1.1 Archaeological Surveys Ltd was commissioned by Landgage Heritage, on behalf of Penso Power Ltd, to undertake a magnetometer survey of an area of land at Minchens Lane, Bramley, Hampshire. The site has been outlined for a proposed battery storage facility adjacent to Bramley electricity substation 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 Landgage Heritage (2023) and approved by David Hopkins, County Archaeologist for Hampshire County Council.

1.2 Survey objectives and techniques

1.2.1 The objective of the survey is to help to confirm the presence, nature, extent and archaeological interest of any remains present within the site and to ensure that they are adequately recorded prior to construction of the development. The geophysical survey comprises the first stage of archaeological investigation and detailed magnetometry was undertaken across the footprint of the development, but not over the existing access track which was unsuitable for survey.

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 to the west of Minchens Lane, on the north western edge of Bramley in Hampshire. It is centred on Ordnance Survey National Grid Reference (OS NGR) SU 64775 59785, see Figs 01 and 02.

1.4.2 The geophysical survey covers approximately 3.8ha within the western part of a larger arable field. It is bounded to the south by a hedgerow and access track to Bramley Substation, which is located in Bramley Frith Wood to the north west of the site. To the north the field boundary contains a number of large trees with arable land extending beyond the eastern limit of the survey to Minchens Lane. A proposed access track leading from Minchens Lane towards the site is an existing farm track which was unsuitable for survey as it formed part of an easement used for storage and access by construction

plant.

Plate 1: Survey area looking north west

1.4.3 The ground conditions across the site were generally considered to be suitable for the collection of magnetometry data. The area contained a low arable crop, a few small zones were difficult to traverse due to waterlogged ground and sticky clay soil. Weather conditions during the survey were fine.

1.5 Site history and archaeological potential

1.5.1 A Heritage Desk-Based Assessment has been prepared by Pegasus Group (2020) which outlines that there are no designated or undesignated heritage assets recorded within the site, but it has not been subject to previous archaeological investigation. In the surrounding vicinity there is a findspot of a sherd of Romano-British pottery, 50m to the west and two earthworks of possible lynchets 50m and 225m to the south. An Iron age pit and a small undated pit lie 150m to the south and 330m to the south west. Within Bramley Frith Wood are earthworks relating to a late prehistoric or Roman enclosure 500m to the north west. Approximately 1km to the north west are a complex of cropmark features likely to relate to a Roman villa or settlement.

1.5.2 The nearest scheduled monuments are the Iron Age multivallate hill fort of Bulls Down Camp (List entry no: 1001944) situated 2.4km to the south east, the moated site and associated fishponds 100m south of Clappers Farm (List entry no: 1013670), 1.5km to the north, three sections of a linear earthwork between Churchlane Copse and Early Bridge Copse, south of Silchester (List entry no: 1011956), situated 1.7-1.9km to the north west and the Late Iron Age

oppidum and Roman town of Calleva Atrebatum (List entry no: 1011957) 2km to the north north west.

1.6 Geology and soils

1.6.1 The underlying geology is sand from the London Clay Formation (BGS, 2023).

1.6.2 The overlying soil across the site is from the Burlesdon association (572j) and is a stanogleyic argillic brown earth. It consists of a deep, fine, loamy soil with slowly permeable subsoils and slight seasonal waterlogging (Soil Survey of England and Wales, 1983). The soil is considered to be acidic.

1.6.3 The underlying geology and acidic soil are frequently associated with low magnetic contrast and low levels of magnetic susceptibility. However, cut features of archaeological potential may be located where human activity has altered the magnetic characteristics of the soil sufficiently. 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 <100s.

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 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.

2.3.5 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.

2.3.6 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.

2.3.7 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.

2.3.8 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.

2.3.9 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 3.8ha within a single survey area.

3.1.2 Magnetic anomalies located can be generally classified as positive and negative anomalies of an uncertain origin, linear anomalies of an agricultural origin, areas of magnetic debris and disturbance, strong discrete dipolar anomalies relating to ferrous objects and strong multiple dipolar linear anomalies relating to buried services or pipelines.

3.1.3 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 Magnetic disturbance is associated with a buried service crossing the eastern part of the site and the presence of above ground steel objects, including plant and fencing, just beyond the northern limit of the survey. The disturbance is considered unlikely to obscure more significant anomalies.

3.2.3 Magnetic contrast appears low and anomalies are weak. Unusually the site contains predominantly negative anomalies and this probably relates to somewhat acidic soil conditions. Negative anomalies may occur where former cut features are infilled with soil of comparatively low magnetic susceptibility; this may occur where acidic topsoil looses iron salts which then accumulate within the subsoil through illuviation. As a consequence, the soil profile may show increasing magnetic susceptibility with depth so that weathering and backfill of former ditches with topsoil of comparatively low magnetic susceptibility creates a negative magnetic anomaly. Occasionally negative

anomalies occur where low magnetic susceptibility material from the subsoil or underlying geology is introduced into the topsoil but this is more likely in areas of neutral to alkaline soil.

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 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 with an agricultural origin	The anomalies are often linear and form a series of parallel responses or are parallel to extant land boundaries. Where the response is broad, former ridge and furrow is likely; narrow response is often related to modern ploughing. This category does not include agricultural features of early date or considered to be of archaeological potential (e.g. animal stockades, enclosures, farmsteads, etc).
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 464775 159785, see Figs 03 & 04.

Anomalies with an uncertain origin

(1) – Two parallel negative linear anomalies 5.5m apart. It is likely that they are associated with ditches, bounding a trackway mapped on 19th and earth 20th century mapping.

(2) – A negative linear anomaly relates to a linear feature visible on LiDAR imagery. It is possible that it relates to a ditch, drain or pipe, but its date and origin are

uncertain.

(3) – The survey area contains a number of negative linear anomalies. The features do not have a coherent layout that would indicate an association with land drains and they appear to relate to cut, ditch-like features with a soil infill of lower magnetic susceptibility than the natural subsoil.

(4) – A small, negative rectilinear anomaly can be seen at the northern end of the survey area. It has a similar response to anomalies 1-3 but its origin is uncertain.

(5) – The survey area contains a small number of weakly positive linear anomalies that lack any coherent morphology and it is not possible to determine their origin.

(6) – A small, positive curvilinear anomaly forms a C-shaped feature approximately 3m across. Although its origin is uncertain, it relates to a magnetically enhanced feature with an anthropogenic origin.

(7) – The survey area contains a small number of discrete, positive anomalies that appear to form pit-like features. Although their origin is uncertain, they appear to relate to magnetically enhanced features and may be associated with anthropogenic activity.

(8) – Short, positive, linear anomalies oriented parallel with the northern and southern field boundaries may be associated with agricultural activity.

Anomalies with an agricultural origin

(9) – Linear anomalies, parallel with the northern and southern boundaries relate to modern agricultural activity.

Anomalies associated with magnetic debris

(10) – An amorphous zone of magnetic debris is evident towards the western central part of the site. It lies in the vicinity of the formerly mapped trackway, but it is not clear if it relates to a spread of material associated with the former track, dumped material or whether it is associated with a focus of anthropogenic activity.

(11) – The survey area contains widespread and numerous strong, discrete, dipolar anomalies which are responses to ferrous and other magnetically thermoremnant objects, such as brick and tile, which have been spread across the site.

Anomalies with a modern origin

(12) – A strong, multiple dipolar, linear anomaly extends across the site and relates to a buried pipe or service.

4 CONCLUSION

4.1.1 The geophysical survey located a number of negative linear and rectilinear anomalies within the site. Two parallel negative linear anomalies may be ditches associated with a formerly mapped trackway. The negative anomalies indicate a response to material within a cut feature that is less magnetically enhanced than the surrounding subsoil and/or geology; this may be related to the acidic nature of the soil. The negative anomalies generally lack a coherent morphology, and it is not possible to determine their age or function. A small number of positive anomalies have also been located, including a curvilinear feature 3m across and a small number of discrete, pit-like features. It is possible that they relate to magnetically enhanced features with an anthropogenic origin. An area of magnetic debris in the central western part of the site would be consistent with a spread of ferrous material, although it is uncertain whether this relates to an area of dumping or burning or whether it is associated with a focus of anthropogenic activity within the site.

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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: J956-mag-proc.xcp
Instrument Type: Sensys DLMGPS
Units: nT
UTM Zone: 30U
Survey corner coordinates (X/Y):OSGB36
Northwest corner: 464633.08, 159887.01 m
Southeast corner: 464922.28, 159684.36 m
Collection Method: Randomised
Sensors: 5
Dummy Value: 32702
Dimensions

Survey Size (meters): 289 m x 203 m
X&Y Interval: 0.15 m
Source GPS Points: Active: 1064869, Recorded: 1064874
Stats
Max: 3.32
Min: -3.30
Std Dev: 0.97
Mean: -0.01
Median: 0.01
Composite Area: 5.8606 ha

Surveyed Area: 3.9562 ha
PROGRAM
Name: TerraSurveyor
Version: 3.0.37.0
GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (UTM to OSGB36).
3 DeStripe Median Traverse:
4 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 Hampshire 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).

Archive contents:

File type	Naming scheme	Description
Data	J956-mag.asc J956-mag.xcp J956-mag-proc.xcp	Raw data as ASCII CSV TerraSurveyor raw data TerraSurveyor minimally processed data
Graphics	J956-mag-proc.tif	Image in TIF format
Drawing	J956-**[version number]**.dwg	CAD file in 2018 dwg format
Report	J956 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 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 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)

AS-ABST MAG SERVICE		132, 132, 132	Line or polyline

Table 3: CAD layering

Appendix F – copyright and intellectual property

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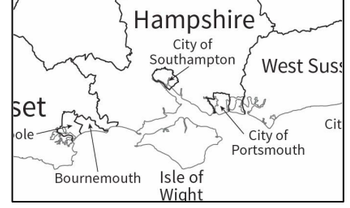
Archaeological Surveys
Specialist Geophysical Surveyors

Geophysical Survey
Land at Minchens Lane
Bramley
Hampshire

Map of survey area



Survey location

Site centred on OS NGR
SU 64775 59785

SCALE 1:25 000

0m 500m 1000m

SCALE TRUE AT A3

DRAWN BY	CHECKED BY	
KTD	DJS	FIG 01

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Referencing information

464550 464600 464650 464700 464750 464800 464850 464900 464950 465000 465050 465100 465150

160000 159950 159900 159850 159800 159750 159700 159650 159600 159550

N

Existing farm track

Proposed
battery
storage site

Referencing grid to OSGB36 datum at 50m intervals

- 464750 159800
- Survey tracks
- Survey track start
- Survey track stop
- Development boundary

SCALE 1:2000

0m 20 40 60 80 100m

SCALE TRUE AT A3

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KTD	DJS	FIG 02

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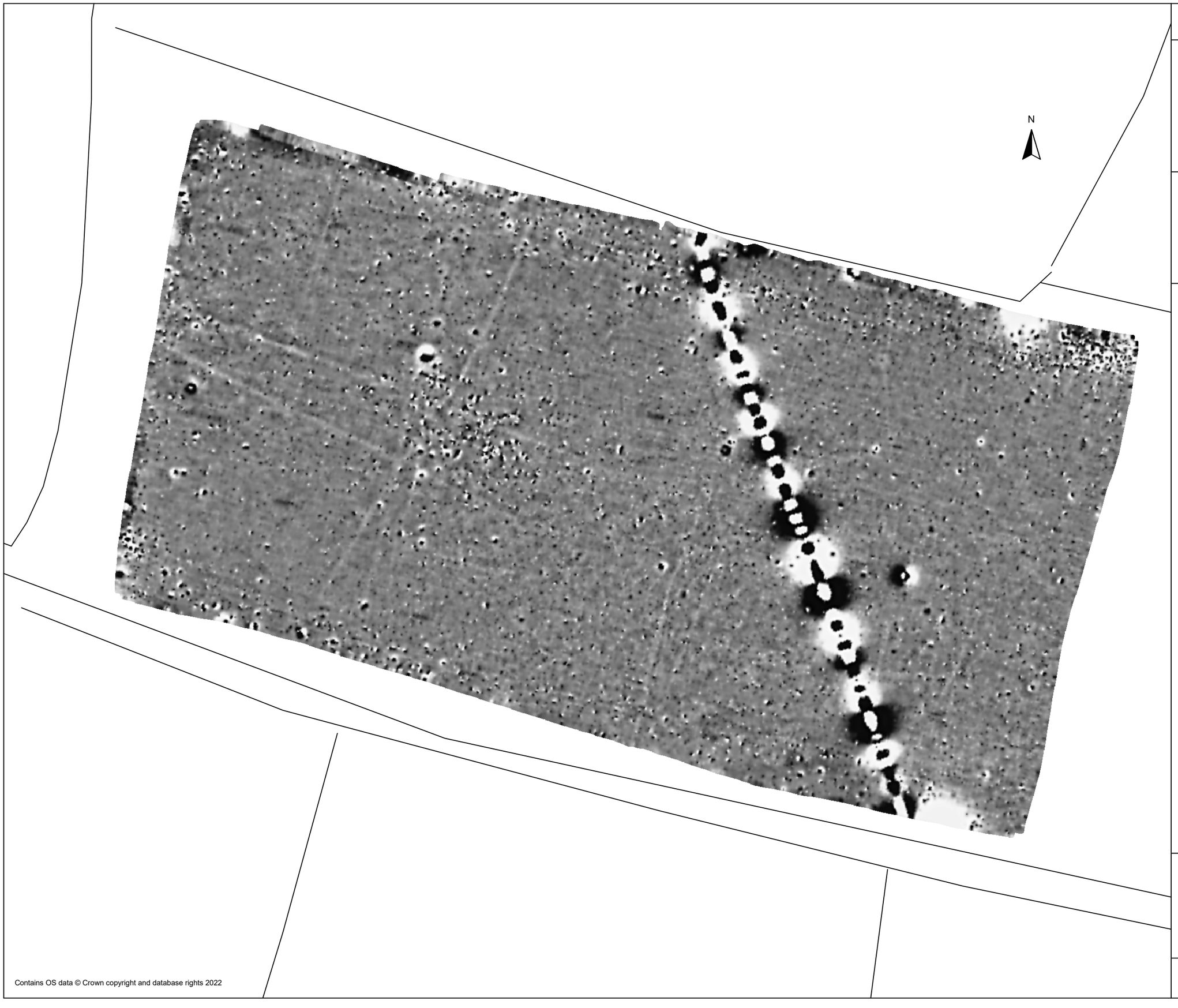
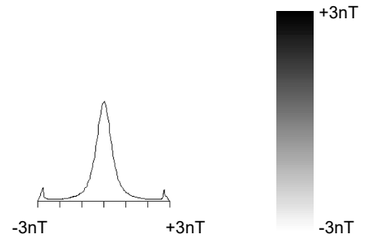
Greyscale plot of minimally processed magnetometer data





SCALE 1:1000

0m 10 20 30 40 50m

SCALE TRUE AT A3

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Abstraction and interpretation of magnetic anomalies

N

5 4 7 3 2 10 8 6 3 1 8 9 3 12 11 7 5 7 7 3

- Positive linear anomaly - possible ditch-like feature
- Negative linear anomaly - material of low magnetic susceptibility
- Linear anomaly - of agricultural origin
- Discrete positive response - possible pit-like feature
- Magnetic debris - spread of magnetically thermoremnant/ferrous material
- Magnetic disturbance from ferrous material
- Strong multiple dipolar linear anomaly - pipeline / cable / service
- 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 04