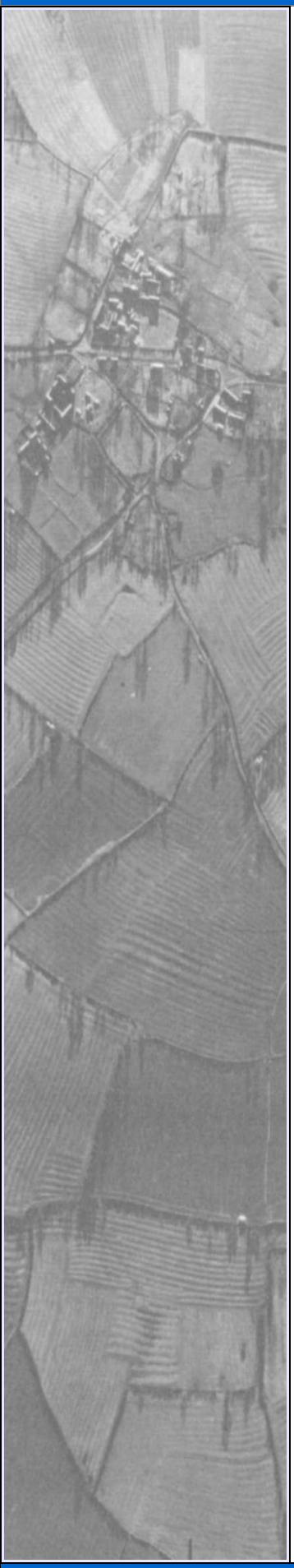

Lower Bryanston Farm
Bryanston
Dorset

MAGNETOMETER SURVEY REPORT

for

Amec Foster Wheeler
Environment & Infrastructure UK Ltd

David Sabin and Kerry Donaldson

March 2015

Ref. no. 587

ARCHAEOLOGICAL SURVEYS LTD

Lower Bryanston Farm
Bryanston
Dorset

Magnetometer Survey Report

for

Amec Foster Wheeler
Environment & Infrastructure UK Ltd

Fieldwork by David Sabin
Report by David Sabin BSc (Hons) MIFA and Kerry Donaldson BSc (Hons)

Survey date – 28th February 2015
Ordnance Survey Grid Reference – **ST 88175 05750**

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SUMMARY

A detailed magnetometer survey was carried out by Archaeological Surveys Ltd within eight horse paddocks covering 2.8ha at Lower Bryanston Farm, Bryanston in Dorset. The survey located an irregular pit-like response that may indicate former chalk extraction. Several broadly linear, very weakly positive and negative responses have also been located. Although this type of response may be associated with the underlying geology, or possibly with former field boundaries, they are generally confined within individual paddocks and cannot be confidently interpreted. Other discrete and linear responses of uncertain origin are also evident within the site.

1 INTRODUCTION

1.1 Survey background

1.1.1 Archaeological Surveys Ltd was commissioned by Amec Foster Wheeler Environment & Infrastructure UK Ltd to undertake a magnetometer survey of an area of land at Lower Bryanston Farm, Bryanston, Dorset. The site has been outlined for a proposed residential development and the survey forms part of an archaeological assessment of the site.

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 The survey and report generally follow the recommendations set out by: English Heritage (2008) *Geophysical survey in archaeological field evaluation;* and 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) *Standard and Guidance for Archaeological Geophysical Survey.*

1.3 Site location, description and survey conditions

1.3.1 The site is located at Lower Bryanston Farm within the parish of Bryanston, but immediately west of Blandford St Mary and south west of Blandford Forum in Dorset. It is centred on Ordnance Survey National Grid Reference (OS NGR) ST 88175 05750, see Figures 01 and 02.

1.3.2 The geophysical survey covers approximately 2.8ha within eight small horse paddocks separated by electric fencing, see Plate 1. The site contains a shallow valley in the centre, sloping up towards the north east and the south west.

Plate 1: Central part of site looking north east

1.3.3 Initially a survey was scheduled for the 21st January 2015, but the presence of horses within each of the paddocks prevented survey on that day. The ground conditions across the site were generally considered to be favourable for the collection of magnetometry data. Some small boggy and poached patches were avoided. Live electric fencing was a hazard to the electronics within the magnetometer and GPS so a safety margin was left immediately adjacent to all of paddock boundaries. Weather conditions during the survey were wet.

1.4 Site history and archaeological potential

1.4.1 There are no designated or non-designated heritage assets within the site. A number of Romano-British burials are listed approximately 200m to the south west, but the exact location is uncertain. The site was discovered in 1833 where the burials were accompanied by a number of artefacts including coins, brooches, tweezers and “spear-heads”. Excavations at the Stour Park Retail Park, approximately 500m to the east, revealed evidence for Late Bronze Age activity, and also settlement dating to the late Saxon and medieval periods, possibly deserted by the 14th century.

1.4.2 The lack of known archaeological sites and findspots within the site may indicate that there is low potential for archaeological remains. However there is always potential for the geophysical survey to locate archaeological features should they exist within the site.

1.5 Geology and soils

1.5.1 The underlying geology is Seaford Chalk Formation and Newhaven Chalk Formation with overlying head deposits within the dry valley in the central part of the survey area (BGS, 2013).

1.5.2 The overlying soil across the site is from the Coombe 1 association and is a typical brown calcareous earth. It consists of a well drained, calcareous, fine, silty soil, deep in valley bottoms but shallow over chalk on valley sides (Soil Survey of England and Wales, 1983).

1.5.3 Magnetometry carried out over similar geology and soil has produced good results. The site is, therefore, considered suitable 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 are factors associated with the formation of localised fields. Additional details are set out below and within Appendix A.

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 magnetic anomalies that can be mapped by magnetic prospection.

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).

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 spaced 0.5m apart with readings recorded at 20 Hz. The gradiometers have a range of recording data between 0.1nT and 10,000nT. They are linked to a Leica GS10 RTK GPS with data recorded by

SENSYS MAGNETO®MXPDA software on a rugged PDA computer system.

2.2.2 Data are collected along a series of parallel survey transects wherever possible. 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.

2.3 Data processing and presentation

2.3.1 Magnetic data collected by the MAGNETO®MXPDA cart-based system are initially prepared and automatically compensated using SENSYS MAGNETO®DLMGPS software. Georeferenced raw data are then exported in ASCII format for further analysis and display using TerraSurveyor.

2.3.2 The data are collected at ±10000nT and clipped for display at ±20nT. Data are resampled to a resolution of effectively 0.5m between tracks and 0.15m along each survey track. Appendix C contains specific information concerning the survey and data attributes and is derived directly from TerraSurveyor. Reference should be made to Appendix B for further information on any processes, such as clipping, carried out on the data.

2.3.3 A TIFF 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.

2.3.4 The raster images are combined with base mapping using ProgeCAD Professional 2014, creating DWG 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 GPS, resection method, etc.

2.3.5 An abstraction and interpretation is offered for all geophysical anomalies located by the survey. 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 each survey area. Anomalies are abstracted using colour coded points, lines and polygons. All plots are scaled to landscape A3 for paper printing.

2.3.6 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 8 survey areas covering approximately 2.8ha and will be considered as a whole within the following description and interpretation.

3.1.2 Magnetic anomalies located can be generally classified as positive and negative anomalies of an uncertain origin, anomalies associated with land management, 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.

3.2 Statement of data quality

3.2.1 Data are considered representative of the magnetic anomalies present within the site. There are no significant defects within the dataset. The quality is good with only minimal disturbance from magnetic objects, debris and services.

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 basic explanation of the characteristics of the magnetic anomalies is set out for each category in order to justify interpretation, a basic key is indicated to allow cross referencing to the abstraction and interpretation plot. CAD layer names are included to aid reference to associated digital files (.dwg/.dxf). Sub-headings are then used to group anomalies with similar characteristics within the survey area.

Report sub-heading CAD layer names and plot colour	**Description and origin of anomalies**
Anomalies with an uncertain origin AS-ABST MAG POS LINEAR UNCERTAIN AS-ABST MAG NEG LINEAR UNCERTAIN AS-ABST MAG POS DISCRETE UNCERTAIN AS-ABST MAG POS UNCERTAIN AS-ABST MAG NEG UNCERTAIN	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. 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 AS-ABST MAG PATH	Anomalies may be positive, negative or both and correspond to paths either visible on the ground or mapped.
Anomalies associated with magnetic debris AS-ABST MAG DEBRIS AS-ABST MAG STRONG DIPOLAR	Magnetic debris often appears as areas containing many small dipolar anomalies that may range from weak to very strong in magnitude. It often occurs where there has been dumping or ground make-up and is 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, or hearths 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 AS-ABST MAG DISTURBANCE AS-ABST MAG SERVICE	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 such 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 and with hysteresis 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 388175 105750, see Figures 03 & 04.

Anomalies with an uncertain origin

(1) – An irregularly shaped positive response is located towards the north western corner of the site. It has dimensions of 9.4m by 7.2m and a response of 2-3nT. This type of response may indicate a former chalk extraction pit. A smaller pit-like response is located immediately to the south west.

(2) – The site contains a small number of weak, discrete positive responses. It is not possible to determine if these pit-like anomalies relate to naturally or anthropogenically formed features.

(3) – A number of short positive and negative linear responses are evident within the site. They are very weak and lack any coherent pattern or morphology. It is not possible to determine if they are anthropogenic or natural features.

(4) – Negative linear anomalies located at the south western corner of the site are contained within one small paddock.

(5) – The northern part of the site contains a number of very weakly positive and negative broad linear responses. This type of response may be associated with the underlying geology or possibly indicate former agricultural features/boundaries. However, the responses are generally confined within individual paddocks and they lack a coherent pattern.

Anomalies associated with land management

(6) – A group of positive and negative linear responses appear to be associated with a footpath that leads across the eastern part of the site.

Anomalies associated with magnetic debris

(7) – A large zone of magnetic debris is evident at the eastern edge of the site. This corresponds to a parcel of land, which was subsumed into the current site during the mid 20th century. The material indicates ferrous and other magnetically thermoremnant material was spread across this land parcel.

(8) – Strong, discrete, dipolar anomalies are a response to ferrous and other magnetically thermoremnant objects within the topsoil.

Anomalies with a modern origin

(9) – A buried pipe or service extends across the eastern part of the survey area.

4 CONCLUSION

4.1.1 The detailed magnetometer survey located a large, pit-like anomaly that may indicate former chalk extraction near the north western corner of the site. Other discrete and linear anomalies have also been located, but these lack a coherent morphology and pattern preventing confident interpretation. Several broad, very weakly positive and negative anomalies have also been located. This type of response may relate to the underlying geology, or possibly indicate former field boundaries, however the responses are generally confined to individual paddocks.

5 REFERENCES

British Geological Survey, 2015. *Geology of Britain viewer, 1:50 000 scale [online]* available from http://mapapps.bgs.ac.uk/geologyofbritain/home.html [accessed 11/3/2015].

Chartered Institute for Archaeologists, 2014. *Standard and Guidance for archaeological geophysical survey*. IfA, University of Reading.

English Heritage, 2008. *Geophysical survey in archaeological field evaluation. Research and Professional Service Guideline No.1.* 2nd ed. Swindon: English Heritage.

Institute for Archaeologists, 2002. *The use of Geophysical Techniques in Archaeological Evaluations*. IfA Paper No. 6. IfA, University of Reading.

Soil Survey of England and Wales, 1983. *Soils of England and Wales, Sheet 5 South West England.*

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 field. The difference between the two sensors will relate to the strength 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. It has been found that clipping data to ranges between ±20nT and ±10nT often improves the appearance of features associated with archaeology. Different ranges are applied to data in order to determine the most suitable for anomaly abstraction and display.

High Pass Filtering

A mathematical process used to remove low frequency anomalies relating to survey tracks and modern agricultural features.

Appendix C – survey and data information

Area 1

COMPOSITE
Filename: J587-mag-Area1-proc.xcp
Description: Imported as Composite from: J587-mag-Area1.asc
Instrument Type: Sensys DLMGPS
Units: nT
UTM Zone: 30U
Survey corner coordinates (X/Y):
Northwest corner: 388052.77672347, 105775.780571813 m
Southeast corner: 388115.65672347, 105705.100571813 m
Direction of 1st Traverse: 90 deg
Collection Method: Parallel
Sensors: 1
Dummy Value: 32702

Source GPS Points: 78600

Dimensions
Composite Size (readings): 524 x 589
Survey Size (meters): 62.9 m x 70.7 m
Grid Size: 62.9 m x 70.7 m
X Interval: 0.12 m
Y Interval: 0.12 m

Stats
Max: 11.05
Min: -11.00
Std Dev: 3.08
Mean: 0.11
Median: -0.01
Composite Area: 0.44444 ha
Surveyed Area: 0.26035 ha

Processes: 1
1 Base Layer

GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00 nT

Area 2

COMPOSITE
Filename: J587-mag-Area2-proc.xcp
Description: Imported as Composite from: J587-mag-Area2.asc
Instrument Type: Sensys DLMGPS
Units: nT
UTM Zone: 30U
Survey corner coordinates (X/Y):
Northwest corner: 388093.81901528, 105755.715833499 m
Southeast corner: 388148.29901528, 105689.115833499 m
Direction of 1st Traverse: 90 deg
Collection Method: Parallel
Sensors: 1
Dummy Value: 32702

Source GPS Points: 69100

Dimensions
Composite Size (readings): 454 x 555
Survey Size (meters): 54.5 m x 66.6 m
Grid Size: 54.5 m x 66.6 m
X Interval: 0.12 m
Y Interval: 0.12 m

Stats
Max: 11.05
Min: -11.00
Std Dev: 2.40
Mean: 0.06
Median: 0.03
Composite Area: 0.36284 ha
Surveyed Area: 0.20283 ha

Processes: 1
1 Base Layer

GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00 nT

Area 3

COMPOSITE
Filename: J587-mag-Area3-proc.xcp
Description: Imported as Composite from: J587-mag-Area3.asc
Instrument Type: Sensys DLMGPS
Units: nT
UTM Zone: 30U
Survey corner coordinates (X/Y):
Northwest corner: 388136.9140852, 105741.780386755 m
Southeast corner: 388172.9140852, 105696.660386755 m
Direction of 1st Traverse: 90 deg
Collection Method: Parallel
Sensors: 1
Dummy Value: 32702

Source GPS Points: 45000

Dimensions
Composite Size (readings): 300 x 376
Survey Size (meters): 36 m x 45.1 m
Grid Size: 36 m x 45.1 m
X Interval: 0.12 m
Y Interval: 0.12 m

Stats
Max: 11.05
Min: -11.00
Std Dev: 2.31
Mean: 0.12
Median: 0.03
Composite Area: 0.16243 ha
Surveyed Area: 0.10228 ha

Processes: 1
1 Base Layer

GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00 nT

Area 4

COMPOSITE
Filename: J587-mag-Area4-proc.xcp
Description: Imported as Composite from: J587-mag-Area4.asc
Instrument Type: Sensys DLMGPS
Units: nT
UTM Zone: 30U
Survey corner coordinates (X/Y):
Northwest corner: 388168.986501237, 105764.915867839 m
Southeast corner: 388213.986501237, 105694.235867839 m
Direction of 1st Traverse: 90 deg
Collection Method: Parallel
Sensors: 1
Dummy Value: 32702

Source GPS Points: 66300

Dimensions
Composite Size (readings): 375 x 589
Survey Size (meters): 45 m x 70.7 m
Grid Size: 45 m x 70.7 m
X Interval: 0.12 m
Y Interval: 0.12 m

Stats
Max: 11.05
Min: -11.00
Std Dev: 3.36
Mean: 0.17
Median: 0.06
Composite Area: 0.31806 ha
Surveyed Area: 0.18792 ha

Processes: 1
1 Base Layer

GPS based Proce6
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00 nT
5 High pass Uniform (median) filter: Window dia: 300
6 Clip from -10.00 to 10.00 nT

Area 5

COMPOSITE
Filename: J587-mag-Area5-proc.xcp

Description: Imported as Composite from: J587-mag-Area5.asc
Instrument Type: Sensys DLMGPS
Units: nT
UTM Zone: 30U
Survey corner coordinates (X/Y):
Northwest corner: 388197.450373997, 105773.650674797 m
Southeast corner: 388303.050373997, 105682.810674797 m
Direction of 1st Traverse: 90 deg
Collection Method: Parallel
Sensors: 1
Dummy Value: 32702

Source GPS Points: 185300

Dimensions
Composite Size (readings): 880 x 757
Survey Size (meters): 106 m x 90.8 m
Grid Size: 106 m x 90.8 m
X Interval: 0.12 m
Y Interval: 0.12 m

Stats
Max: 11.05
Min: -11.00
Std Dev: 4.97
Mean: -0.10
Median: 0.00
Composite Area: 0.95927 ha
Surveyed Area: 0.55943 ha

Processes: 1
1 Base Layer

GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00 nT

Area 6

COMPOSITE
Filename: J587-mag-Area6-proc.xcp
Description: Imported as Composite from: J587-mag-Area6.asc
Instrument Type: Sensys DLMGPS
Units: nT
UTM Zone: 30U
Survey corner coordinates (X/Y):
Northwest corner: 388159.301932294, 105820.869696704 m
Southeast corner: 388279.901932294, 105741.549696704 m
Direction of 1st Traverse: 90 deg
Collection Method: Parallel
Sensors: 1
Dummy Value: 32702

Source GPS Points: 146700

Dimensions
Composite Size (readings): 1005 x 661
Survey Size (meters): 121 m x 79.3 m
Grid Size: 121 m x 79.3 m
X Interval: 0.12 m
Y Interval: 0.12 m

Stats
Max: 11.05
Min: -11.00
Std Dev: 2.78
Mean: 0.06
Median: 0.02
Composite Area: 0.9566 ha
Surveyed Area: 0.4177 ha

Processes: 1
1 Base Layer

GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00 nT

Area 7

COMPOSITE
Filename: J587-mag-Area7-proc.xcp
Description: Imported as Composite from: J587-mag-Area7.asc
Instrument Type: Sensys DLMGPS
Units: nT
UTM Zone: 30U
Survey corner coordinates (X/Y):
Northwest corner: 388103.723241745, 105836.766759261 m
Southeast corner: 388185.563241745, 105748.326759261 m
Direction of 1st Traverse: 90 deg
Collection Method: Parallel
Sensors: 1
Dummy Value: 32702

Source GPS Points: 177000

Dimensions
Composite Size (readings): 682 x 737
Survey Size (meters): 81.8 m x 88.4 m
Grid Size: 81.8 m x 88.4 m
X Interval: 0.12 m
Y Interval: 0.12 m

Stats
Max: 11.05
Min: -11.00
Std Dev: 2.45
Mean: 0.10
Median: 0.05
Composite Area: 0.72379 ha
Surveyed Area: 0.47463 ha

Processes: 1
1 Base Layer

GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00 nT

Area 8

COMPOSITE
Filename: J587-mag-Area8-proc.xcp
Description: Imported as Composite from: J587-mag-Area8.asc
Instrument Type: Sensys DLMGPS
Units: nT
UTM Zone: 30U
Survey corner coordinates (X/Y):
Northwest corner: 388077.53525446, 105850.275332591 m
Southeast corner: 388132.13525446, 105770.955332591 m
Direction of 1st Traverse: 90 deg
Collection Method: Parallel
Sensors: 1
Dummy Value: 32702

Source GPS Points: 82100

Dimensions
Composite Size (readings): 455 x 661
Survey Size (meters): 54.6 m x 79.3 m
Grid Size: 54.6 m x 79.3 m
X Interval: 0.12 m
Y Interval: 0.12 m

Stats
Max: 11.05
Min: -11.00
Std Dev: 2.62
Mean: 0.05
Median: 0.05
Composite Area: 0.43309 ha
Surveyed Area: 0.213 ha

Processes: 1
1 Base Layer

GPS based Proce4
1 Base Layer.
2 Unit Conversion Layer (Lat/Long to OSGB36).
3 DeStripe Median Traverse:
4 Clip from -10.00 to 10.00 nT

Appendix D – digital archive

Archaeological Surveys Ltd hold the primary digital archive at their offices in Wiltshire (see inside cover for address). 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.

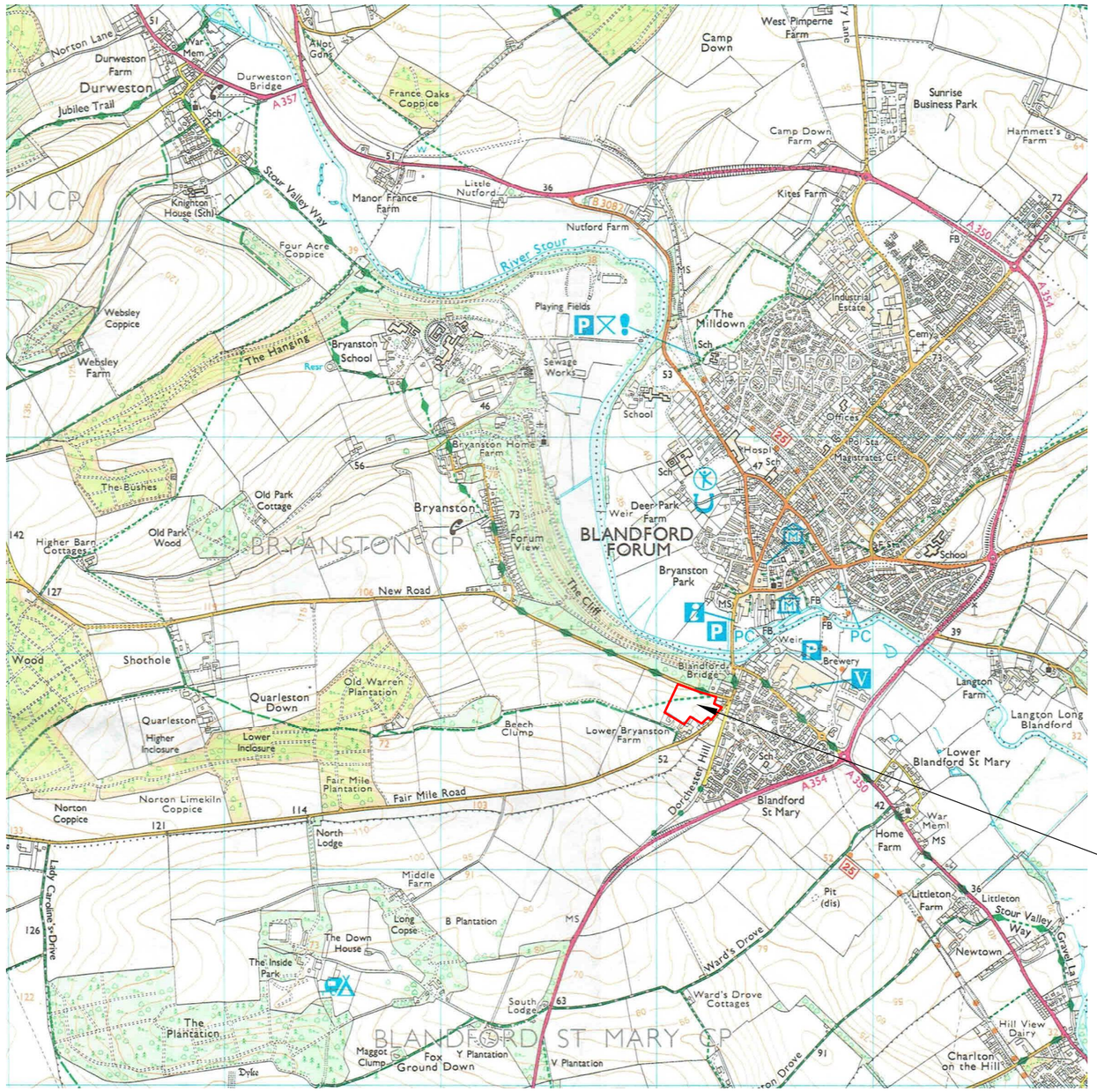
Surveys are reported on in hardcopy (recycled paper) using A4 for text and A3 for plots (all plots are scaled for A3).

This report has been prepared using the following software on a Windows XP platform:

- TerraSurveyor version 3.0.23.0 (geophysical data analysis),
- SENSYS MAGNETO®ARCH version 1.00-04(geophysical data analysis),
- ProgeCAD Professional 2014 (report graphics),
- OpenOffice.org 3.0.1 Writer (document text),
- PDF Creator version 0.9 (PDF)
- Solid PDF Creator version 8 (PDF archive).

Digital data produced by the survey and report include the following files:

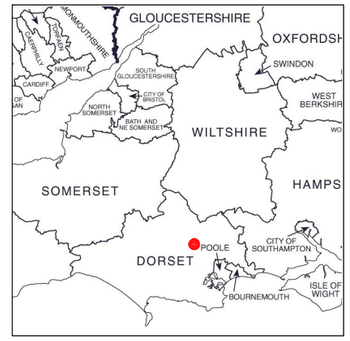
- TerraSurveyor grid and composite files for all geophysical data,
- CSV files for raw and processed composites,
- geophysical composite file graphics as TIF images,
- CAD DWG files in 2007 version,
- report text as OpenOffice.org ODT file,
- report text as PDF / PDF/A,
- PDFs of all figures.



Archaeological Surveys Ltd

Geophysical Survey
Lower Bryanston Farm
Bryanston
Dorset

Map of survey area



Survey location

Site centred on OS NGR
ST 88175 05750

SCALE 1:25 000

0m 500m 1000m

SCALE TRUE AT A3

FIG 01

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Geophysical Survey
Lower Bryanston Farm
Bryanston
Dorset

Referencing information

Referencing grid to OSGB36 datum at 50m intervals

Data collected at 20Hz and georeferenced to ETRS89 zone 30 with conversion to OSGB36 using OSTN02

● 388100 105700

SCALE 1:1000

0m 10 20 30 40 50m

SCALE TRUE AT A3

FIG 02

388050 388100 388150 388200 388250 388300

105850 105800 105750 105700 105650

Area 1 Area 2 Area 3 Area 4 Area 5 Area 6 Area 7 Area 8

The Old Riding School

Birdswood Cottage

Laurel Rise

Bryanston Edge

Lower Bryanston Cottages

Lower Bryanston Farm

Slurry Pit

Silos

40.5m

CP

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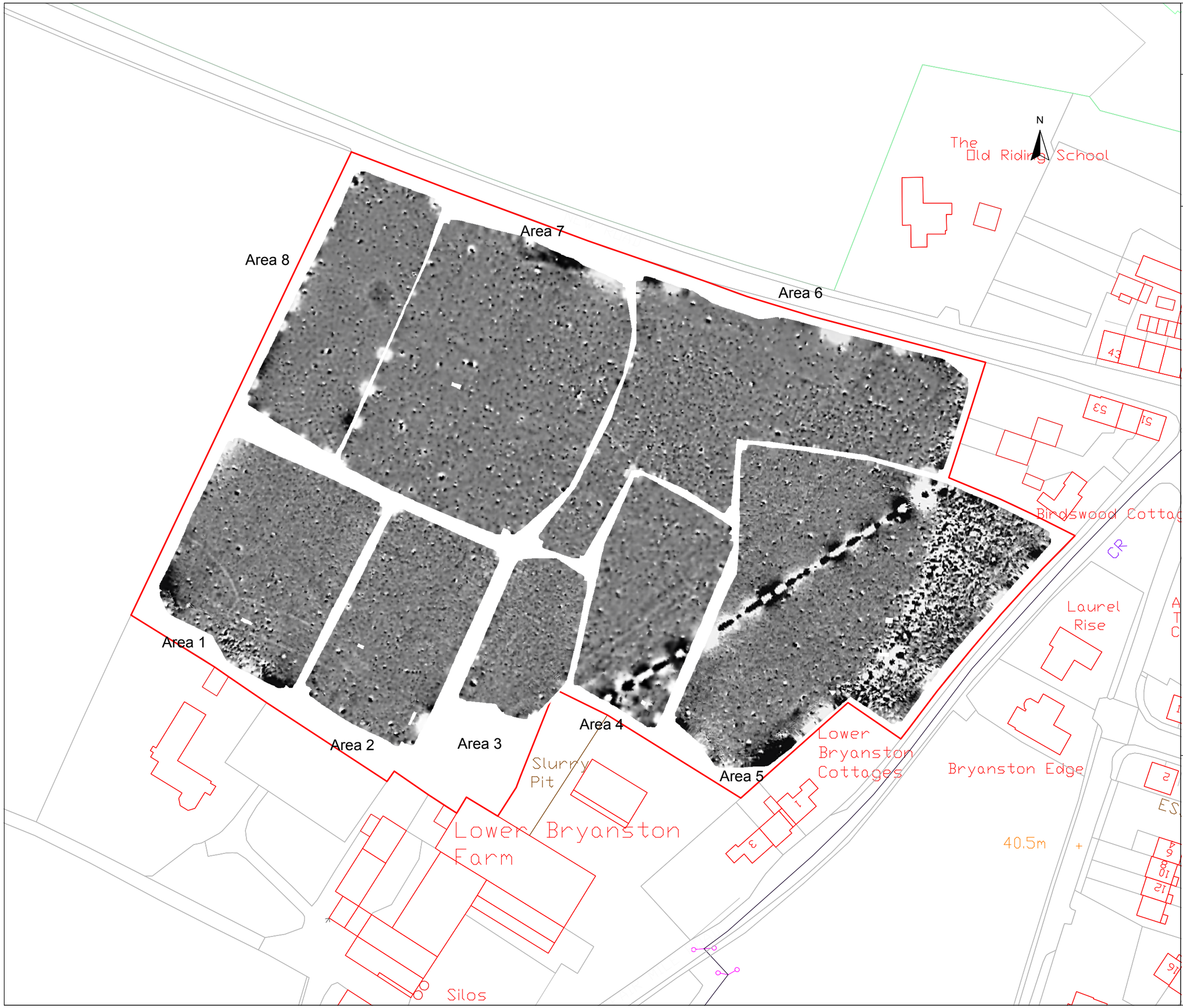
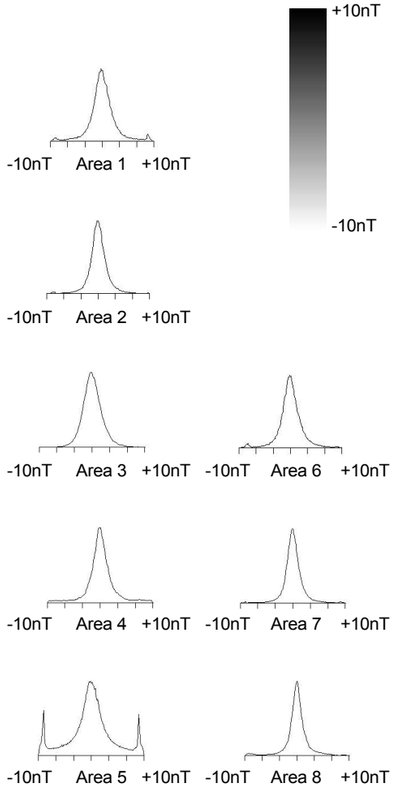
Geophysical Survey
Lower Bryanston Farm
Bryanston
Dorset

Greyscale plot of minimally processed magnetometer data





SCALE 1:1000

0m 10 20 30 40 50m

SCALE TRUE AT A3

FIG 03

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Geophysical Survey
Lower Bryanston Farm
Bryanston
Dorset

Abstraction and interpretation of magnetometer anomalies

- Positive linear anomaly - possible ditch-like feature
- Negative linear anomaly - material of low magnetic susceptibility
- Discrete positive response - possible pit-like feature
- Positive anomaly - magnetically enhanced material
- Negative anomaly - material of low magnetic susceptibility
- Positive/negative anomaly - footpath
- 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

FIG 04

N

1 2 3 4 5 6 7 8 9

The Old Riding School

Birdswood Cottage

Laurel Rise

Bryanston Edge

Lower Bryanston Cottages

Slurry Pit

Lower Bryanston Farm

Silos

40.5m