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# Land at Freeth Farm, Compton Bassett, Calne, Wiltshire

**Geophysical Survey (Magnetic)**

**by Kyle Beaverstock and Tim Dawson**

**Site Code: FFW07/153**

**(SU 0261 7268)**

# Land at Freeth Farm, Compton Bassett, Calne, Wiltshire

**Geophysical Survey (Magnetic) Report**

**For Hills Quarry Products Ltd**

by Kyle Beaverstock and Tim Dawson

Thames Valley Archaeological Services Ltd

Site Code FFW 07/153

**April 2015**

## Summary

**Site name:** Land at Freeth Farm, Compton Bassett, Calne, Wiltshire

**Grid reference:** SU 0261 7268

**Site activity:** Magnetometer survey

**Date and duration of project:** 26th March - 2nd April 2015

**Project manager:** Steve Ford

**Site supervisor:** Kyle Beaverstock

**Site code:** FFW 07/153

**Area of site:** 11.48ha

**Summary of results:** A large number of magnetic anomalies were identified by the survey. These were located in all four fields but were at their highest density in the south-western part of the site. The majority of the anomalies most likely indicate the presence of buried archaeological cut features such as ditches and pits with their layout suggesting farming or housing enclosures, particularly in the south-western field.

**Location of archive:** The archive is presently held at Thames Valley Archaeological Services, Reading in accordance with TVAS digital archiving policies.




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|---|---|
| Report edited/checked by: | Steve Ford✓ 17.04.15 |
| | Andrew Mundin✓ 17.04.15 |




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# Land at Freeth Farm, Compton Bassett, Calne, Wiltshire
# A Geophysical Survey (Magnetic)

by Kyle Beaverstock and Tim Dawson

**Report 07/153b**

## Introduction

This report documents the results of a geophysical survey (magnetic) carried out on land at Freeth Farm, Compton Bassett, Calne, Wiltshire (SU 0261 7268) (Fig. 1). The work was commissioned by Mr Nick Dunn, Environmental Consultant at Land & Mineral Management, Roundhouse Cottages, Bridge Street, Frome, Somerset BA11 1BE on behalf of Hills Quarry Products Ltd, Wiltshire House, County Park Business Centre, Shrivenham Road, Swindon SN1 2NR.

Planning permission for mineral extraction was granted previously and so the site has been classified as a dormant ROMP. There is therefore a need to update the information about the site to allow the submission of a modern scheme of conditions for furtherance of the planning permission. This is in accordance with the Department for Communities and Local Government's National Planning Policy Framework (NPPF 2012) and the County's policies on archaeology. The field investigation was carried out to a specification approved by Ms Melanie Pomeroy-Kellinger, County Archaeologist at Wiltshire County Council. The fieldwork was undertaken by Kyle Beaverstock, Daniel Bray, Anna Ginger and Laurie Greenaway between 26th March and 2nd April 2015 and the site code is FFW 07/153.

The archive is presently held at Thames Valley Archaeological Services, Reading in accordance with TVAS digital archiving policies.

## Location, topography and geology

The site is located to the north-east of Freeth Farm (Fig. 2), approximately 1.5km west of Compton Bassett and 2.5km north-east of Calne in central Wiltshire (Fig. 1). The area earmarked for extraction covers portions of four fields on the south-facing slope of a ridge that extends to the north-east and south-west. A trackway and two houses separate the north-western field from the other three. To the west are a lane and Freeth Farm and a wooded area (Ash Bed) lies to the east. The remaining areas of the north-western and both of the southern fields extend to the north and south. All four are arable fields with the north-western being stubble while the other three had been ploughed and recently seeded at the time of survey (Pl. 1-4). The site gently sloped downhill from *c*.97.4m above Ordnance Datum (aOD) in the north to *c*.94.9m aOD in the south-east. The underlying geology is

described as Lower Greensand for the majority of the site with a thin band of Kimmeridge Clay along the southern boundary (BGS 1974). The weather during the survey period was generally overcast with some sunny periods giving a cool temperature. The ground was soft but not saturated with no standing water save for rare occasions where the plough had gone deeper.

## Site history and archaeological background

A desk-based assessment has been produced for the extraction site (Hopkins 2007) which details the its history and archaeological background. In summary, the report noted a range of finds and sites of different periods very close to the proposal site. The presence of struck flint of Mesolithic and Neolithic date suggests the location of earlier prehistoric occupation, although it remains to be seen if this survives as stratified deposits below the ploughsoil. Finds of Iron Age quern stones also suggest the presence of contemporary occupation deposits, which are more likely to be present as subsoil deposits. Of particular note to the east of the site are medieval mill ponds and dams associated with the possible remains of a medieval watermill (Curry 1989a, 1989b). These form a Scheduled Ancient Monument (SM31658), with which the site shares a common boundary. Freeth Farm itself lies just beyond the south-western margin of the site and is documented from at least the 17th century, although it may have earlier origins.

## Methodology

Sample interval

Data collection required a temporary grid to be established across the survey area using wooden pegs at 20m intervals with further subdivision where necessary. Readings were taken at 0.25m intervals along traverses 1m apart. This provides 1600 sampling points across a full 20m × 20m grid (English Heritage 2008), providing an appropriate methodology balancing cost and time with resolution. Grids were laid out across the four fields of the survey area with the only obstructions being a large pond on the western edge of the north-western field and an area containing derelict farm equipment in the northern corner of the north-eastern field.

The Grad 601-2 has a typical depth of penetration of 0.5m to 1.0m. This would be increased if strongly magnetic objects have been buried in the site. Under normal operating conditions it can be expected to identify buried features >0.5m in diameter. Features which can be detected include disturbed soil, such as the fill of a ditch, structures that have been heated to high temperatures (magnetic thermoremnance) and objects made from

ferro-magnetic materials. The strength of the magnetic field is measured in nano Tesla (nT), equivalent to $10^{-9}$ Tesla, the SI unit of magnetic flux density.

Equipment

The purpose of the survey was to identify geophysical anomalies that may be archaeological in origin in order to inform a targeted archaeological investigation of the site prior to development. The survey and report generally follow the recommendations and standards set out by both English Heritage (2008) and the Chartered Institute *for* Archaeologists (2002, 2011, 2014).

Magnetometry was chosen as a survey method as it offers the most rapid ground coverage and responds to a wide range of anomalies caused by past human activity. These properties make it ideal for fast yet detailed survey of an area.

The detailed magnetometry survey was carried out using a dual sensor Bartington Instruments Grad 601-2 fluxgate gradiometer. The instrument consists of two fluxgates mounted 1m vertically apart with a second set positioned at 1m horizontal distance. This enables readings to be taken of both the general background magnetic field and any localised anomalies with the difference being plotted as either positive or negative buried features. All sensors are calibrated to cancel out the local magnetic field and react only to anomalies above or below this base line. On this basis, strong magnetic anomalies such as burnt features (kilns and hearths) will give a high response as will buried ferrous objects. More subtle anomalies such as pits and ditches, can be seem from their infilling soils containing higher proportions of humic material, rich in ferrous oxides, compared to the undisturbed subsoil. This will stand out in relation to the background magnetic readings and appear in plan following the course of a linear feature or within a discrete area.

A Trimble Geo7x handheld GPS system with sub-decimetre real-time accuracy was used to tie the site grid into the Ordnance Survey national grid. This unit offers both real-time correction and post-survey processing; enabling a high level of accuracy to be obtained both in the field and in the final post-processed data.

Data gathered in the field was processed using the TerraSurveyor software package. This allows the survey data to be collated and manipulated to enhance the visibility of anomalies, particularly those likely to be of archaeological origin. The table below lists the processes applied to this survey, full survey and data information is recorded in Appendix 1.

| **Process** | **Effect** |
|---|---|
| Clip from -1.80 to 2.20 nT | Enhance the contrast of the image to improve the appearance of possible archaeological anomalies. |

| | |
|---|---|
| Interpolate: *y* doubled | Increases the resolution of the readings in the *y* axis, enhancing the shape of anomalies. |
| De-stripe: median, all sensors | Removes the striping effect caused by differences in sensor calibration, enhancing the visibility of potential archaeological anomalies. |
| De-spike: threshold 1, window size 3×3 | Compresses outlying magnetic points caused by interference of metal objects within the survey area. |
| Search & Replace: from: ±30 nT to: ±1000 nT with: dummy | Removes extreme values resulting from magnetic interference caused by near-by ferromagnetic objects. |
| De-stagger: all grids, both by -1 intervals | Cancels out effects of site's topography on irregularities in the traverse speed. |

Once processed, the results are presented as a greyscale plot shown in relation to the site (Fig. 3), followed by a second plan to present the abstraction and interpretation of the magnetic anomalies (Fig. 4). Anomalies are shown as colour-coded lines, points and polygons. The grid layout and georeferencing information (Fig. 2) is prepared in EasyCAD v.7.58.00, producing a .FC7 file format, and printed as a .PDF for inclusion in the final report.

The greyscale plot of the processed data is exported from TerraSurveyor in a georeferenced portable network graphics (.PNG) format, a raster image format chosen for its lossless data compression and support for transparent pixels, enabling it to easily be overlaid onto an existing site plan. The data plot is combined with grid and site plans in QGIS 2.6.1 Brighton and exported again in .PNG format in order to present them in figure templates in Adobe InDesign CS5.5, creating .INDD file formats. Once the figures are finalised they are exported in .PDF format for inclusion within the finished report.

## Results

A large number of magnetic anomalies of potential archaeological origin were identified by the survey (Figs. 3 and 4). These will be discussed below on a field-by-field basis.

North-western field

The majority of the magnetic anomalies recorded in this field were positive and of varying strength. This type of anomaly usually indicates the presence of buried cut features, such as ditches and pits, which, based on their layout, may be archaeological in origin. The first of these is a set of linear anomalies in the north-western corner of the survey area **[Fig. 4: 1]**. They appear to form a rhomboidal enclosure open at the western end and with several smaller linear anomalies projecting from it to the north and south. Further to the east, along the northern limit of survey, a pair of positive linear anomalies **[2]** form a T-shape on a different alignment to the first set. To the north and south of these are three discreet positive anomalies which may indicate the presence of buried pit-

type features. Moving south, a series of weaker positive linear anomalies **[3]** appear to form an extension of **[2]** with possibly three enclosures being represented here, the middle one measuring 25m × 7m. Another set of stronger positive linear anomalies were recorded at right-angles to one-another to the east **[4]**. These, however, are on a different orientation to **[2]** and **[3]** and, if they are buried ditches, may represent a different phase of field division. On a similar alignment, seven discreet positive anomalies of varying strength **[5]** were recorded forming a right-angle further to the east. Within the area enclosed by the pits was a weak positive linear anomaly which appeared to form a right-angle on a different orientation and with a short length extending to the south-west.

In the south-western corner of the survey area a series of parallel positive linear anomalies were identified **[6]** which appear to be on a similar alignment to those at **[4]** to the north-east. Immediately to the east of the parallel linears are what appear to be nine discreet positive anomalies laid out in three rows at regular intervals forming a diamond shape. These may be archaeological in origin although there is a possibility that they indicate areas of deeper ploughing where two plough patterns have crossed creating deeper furrows where they intersect. Further to the south-east are another pair of weak positive linear anomalies which run parallel to each other **[7]** and both appear to have a stronger anomaly at their north-western ends, possibly indicating a pit. Similar anomalies appear in the southern corner of the field **[8]** where there are several pairs of positive linear anomalies, two of which are on a similar alignment to those seen at **[7]**. Also in this corner are four other positive linear anomalies, all on different orientations.

Aside from the positive anomalies, the survey of the north-western field also identified a large irregular area of strong positive and negative magnetic variation **[29]**. This organic-looking area appeared to coincide with a wetter area of ground around the pond on the western edge of the field and probably represents a change in underlying geology or subsoil water content.

North-eastern field

This field contains several strong positive linear anomalies, most of which are on the same north-west - south-east orientation. There is also a regular positive striping in the background across the whole field which follows its long axis and most likely represents modern plough furrows. In the northern corner of the field three linear positive anomalies meet to form a cross shape **[10]** with the south-eastern arm extending to meet another positive anomaly that curves around the southern side of the cross in a 90° arc **[11]**. The other three arms of the cross appear to have smaller positive anomalies intersecting and extending from them which may be archaeological in origin although they are on a similar alignment to the plough marks. What may be an extension of the western-

most segment of **[11]** may continue to the south-east with a pair of short linear positive anomalies being visible at **[12]**. One of the strongest positive anomalies in this field **[13]** runs parallel to **[12]** and extends diagonally across almost the entire area. At its north-western end a shorter positive anomaly crosses it perpendicularly, matching that seen to the west at **[10]**. A narrower branch extends southwards for *c*.46m from the intersection of the cross with a discreet positive anomaly, possibly representing a buried pit, further to the west. On the north-eastern side of **[13]** another linear positive anomaly **[14]** extends from the cross area, again possibly just a stronger plough mark although it appears to turn southwards through 90° at its eastern end. This southward turn continues as a weaker positive linear anomaly which meets **[13]** where another possible plough mark extends to the east.

A single strong linear positive anomaly lies on an north-south orientation in the eastern corner of the field **[15]**. It appears to stop with a weak positive linear anomaly extending to the south-east from its southern end and a gap of *c*.5m before continuing southwards as a shorter linear anomaly **[16]**. This southern section turns westwards through 90° with a weaker positive anomaly creating what appears to be a circular feature in the area created by the angle. To the south-west, a set of positive linear anomalies **[17]** create what appears to be a square-shaped enclosed area on a similar alignment to **[13]**. To the west and north-west are two sections of weaker positive linear anomaly **[18]**, the southern-most of which may be related to the anomalies at **[17]**. In the western corner of the field are another series of positive linear anomalies, one stronger than the rest **[19]**.

A large patch of scattered strong magnetic anomalies in the centre of the field **[20]** may represent an area of scattered magnetic debris within the subsoil.

South-western field

The south-western field proved to be the most densely-packed area of magnetic activity with a large number of strong linear positive anomalies. If the underlying features are contemporary with one another then they appear to form a series of enclosed areas separated by paths and droveways. In the north-western corner are two anomalies **[21]** which give the impression of the southern boundary of two enclosures with the right-angle turn in the western anomaly forming the boundary between the two. Across a seemingly open area to the south a group of linear positive anomalies **[22]** create at least three small enclosures with three discreet positive anomalies to the north possibly indicating the presence of buried pits. A 5m-wide passageway separates these from another, larger, enclosed area **[23]** to the east. A pair of linear positive anomalies **[24, 25]** head north-eastwards from **[22, 23]** at a distance of 9m from each other. This possible droveway appears to link up with the southern end of the existing track although the alignment does not match up precisely. Further linear anomalies

extend both westward **[24]** and eastward **[25]** of the droveway with those to the east suggesting a particularly high level of activity with several smaller linear and discreet anomalies potentially indicating the presence of buried structures and pits. Another set of strong positive linear anomalies to the east **[26]** suggests that the system of enclosures continues for a short distance into the unsurveyed area between the south-western and south-eastern fields.

South-eastern field

When compared with the first three fields, the south-eastern survey area proved to contain very little in the way of magnetic anomalies. An isolated linear positive anomaly was detected in the south-western corner of the area **[27]** with a weaker one on a similar orientation further to the east. At the eastern end of the field a series of positive linear anomalies **[28]** were recorded with the stronger ones appearing to form a square enclosure and other linear anomalies to the north and east.

All of the fields contained areas of magnetic disturbance caused by nearby metal objects such as farm machinery or fencing. The survey also recorded several magnetic spikes, probably a result of buried ferrous objects such as fragments of broken plough or discrete metal object within the soil.

## Conclusion

The geophysical survey of the four plots of land at Freeth Farm was undertaken successfully with the majority of the proposed extraction area covered. It identified a large number of magnetic anomalies, most of which were positive when compared to the local magnetic field indicating that they correspond to buried cut features such as ditches and pits. The layout of these possible ditches suggests that, if they are contemporary, they represent a series of enclosures and, quite possibly, structures, particularly in the south-western field.

## References


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English Heritage, 2008, *Geophysical Survey in Archaeological Field Evaluation*, English Heritage, Portsmouth (2nd edn)

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NPPF, 2012, *National Planning Policy Framework*, Dept Communities and Local Government, London

## **Appendix 1.** Survey and data information

**Programme:**
Name: TerraSurveyor
Version: 3.0.25.0

**North-western field**
**Raw data**
Survey corner coordinates (X/Y):
Northwest corner: 402696.77, 172831.63 m
Southeast corner: 402916.77, 172531.63 m
Direction of 1st Traverse: 192.68 deg
Collection Method: ZigZag
Sensors: 2 @ 1.00 m spacing.
Dummy Value: 2047.5

Dimensions
Composite Size (readings): 880 x 300
Survey Size (meters): 220 m x 300 m
Grid Size: 20 m x 20 m
X Interval: 0.25 m
Y Interval: 1 m

Stats
Max: 100.00
Min: -100.00
Std Dev: 8.19
Mean: 0.09
Median: -0.27
Composite Area: 6.6 ha
Surveyed Area: 3.2727 ha

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99 Col:10 Row:4 grids\b47.xgd
100 Col:10 Row:5 grids\b48.xgd

**Processed data**
Stats
Max: 2.20
Min: -1.80
Std Dev: 0.86
Mean: 0.06
Median: 0.00

Processes: 8
1 Base Layer
2 DeStripe Median Sensors: All
3 Search & Replace From: -1000 To: -30 With: Dummy
4 Search & Replace From: 30 To: 1000 With: Dummy
5 De Stagger: Grids: All Mode: Both By: -1 intervals

6 Despike Threshold: 1 Window size: 3x3
7 Interpolate: Y Doubled.
8 Clip from -1.80 to 2.20 nT

**North-eastern field**

**Raw data**

Survey corner coordinates (X/Y):
Northwest corner: 402569.59, 172624.16 m
Southeast corner: 402749.59, 172344.16 m
Direction of 1st Traverse: 28.12 deg
Collection Method: ZigZag
Sensors: 2 @ 1.00 m spacing.
Dummy Value: 2047.5

Dimensions
Composite Size (readings): 720 x 280
Survey Size (meters): 180 m x 280 m
Grid Size: 20 m x 20 m
X Interval: 0.25 m
Y Interval: 1 m

Stats
Max: 100.00
Min: -100.00
Std Dev: 5.44
Mean: 0.51
Median: 0.48
Composite Area: 5.04 ha
Surveyed Area: 3.2893 ha

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72 Col:5 Row:7 Grids 2\73.xgd
73 Col:5 Row:8 Grids 2\74.xgd
74 Col:5 Row:9 Grids 2\75.xgd
75 Col:5 Row:10 Grids 2\76.xgd
76 Col:5 Row:11 Grids 2\77.xgd
77 Col:5 Row:12 Grids 2\78.xgd
78 Col:5 Row:13 Grids 2\79.xgd
79 Col:6 Row:0 Grids 2\80.xgd
80 Col:6 Row:1 Grids 2\81.xgd
81 Col:6 Row:2 Grids 2\82.xgd
82 Col:6 Row:3 Grids 2\83.xgd
83 Col:6 Row:4 Grids 2\84.xgd
84 Col:6 Row:5 Grids 2\85.xgd
85 Col:6 Row:6 Grids 2\86.xgd
86 Col:6 Row:7 Grids 2\87.xgd
87 Col:6 Row:8 Grids 2\88.xgd
88 Col:6 Row:9 Grids 2\89.xgd
89 Col:6 Row:10 Grids 2\90.xgd
90 Col:6 Row:11 Grids 2\91.xgd
91 Col:6 Row:12 Grids 2\92.xgd
92 Col:7 Row:1 Grids 2\93.xgd
93 Col:7 Row:2 Grids 2\94.xgd
94 Col:7 Row:3 Grids 2\95.xgd
95 Col:7 Row:4 Grids 2\96.xgd
96 Col:7 Row:5 Grids 2\97.xgd
97 Col:7 Row:6 Grids 2\98.xgd
98 Col:7 Row:7 Grids 2\99.xgd
99 Col:7 Row:8 Grids 2\100.xgd
100 Col:7 Row:9 Grids 2\101.xgd
101 Col:7 Row:10 Grids 2\102.xgd
102 Col:7 Row:11 Grids 2\103.xgd
103 Col:8 Row:2 Grids 2\104.xgd
104 Col:8 Row:3 Grids 2\105.xgd
105 Col:8 Row:4 Grids 2\106.xgd
106 Col:8 Row:5 Grids 2\107.xgd
107 Col:8 Row:6 Grids 2\108.xgd
108 Col:8 Row:7 Grids 2\109.xgd

**Processed data**

Stats
Max: 2.20
Min: -1.80
Std Dev: 0.67
Mean: 0.02
Median: 0.01

Processes: 8
1 Base Layer
2 DeStripe Median Sensors: All
3 Search & Replace From: -1000 To: -30 With: Dummy

4 Search & Replace From: 30 To: 1000 With: Dummy
5 De Stagger: Grids: All Mode: Both By: -1 intervals
6 Despike Threshold: 1 Window size: 3x3
7 Interpolate: Y Doubled.
8 Clip from -1.80 to 2.20 nT

**South-western field**

**Raw data**

Survey corner coordinates (X/Y):
Northwest corner: 402388.03, 172580.93 m
Southeast corner: 402508.03, 172380.93 m
Direction of 1st Traverse: 20.95 deg
Collection Method: ZigZag
Sensors: 2 @ 1.00 m spacing.
Dummy Value: 2047.5

Dimensions
Composite Size (readings): 480 x 200
Survey Size (meters): 120 m x 200 m
Grid Size: 20 m x 20 m
X Interval: 0.25 m
Y Interval: 1 m

Stats
Max: 100.00
Min: -100.00
Std Dev: 6.51
Mean: -0.83
Median: -0.63
Composite Area: 2.4 ha
Surveyed Area: 1.1598 ha

Source Grids: 48
1 Col:0 Row:1 grids 4\43.xgd
2 Col:0 Row:2 grids 4\44.xgd
3 Col:0 Row:3 grids 4\45.xgd
4 Col:0 Row:4 grids 4\46.xgd
5 Col:0 Row:5 grids 4\47.xgd
6 Col:0 Row:6 grids 4\48.xgd
7 Col:0 Row:7 grids 4\49.xgd
8 Col:1 Row:0 grids 4\35.xgd
9 Col:1 Row:1 grids 4\36.xgd
10 Col:1 Row:2 grids 4\37.xgd
11 Col:1 Row:3 grids 4\38.xgd
12 Col:1 Row:4 grids 4\39.xgd
13 Col:1 Row:5 grids 4\40.xgd
14 Col:1 Row:6 grids 4\41.xgd
15 Col:1 Row:7 grids 4\42.xgd
16 Col:2 Row:0 grids 4\26.xgd
17 Col:2 Row:1 grids 4\27.xgd
18 Col:2 Row:2 grids 4\28.xgd
19 Col:2 Row:3 grids 4\29.xgd
20 Col:2 Row:4 grids 4\30.xgd
21 Col:2 Row:5 grids 4\31.xgd
22 Col:2 Row:6 grids 4\32.xgd
23 Col:2 Row:7 grids 4\33.xgd
24 Col:2 Row:8 grids 4\34.xgd
25 Col:3 Row:0 grids 4\17.xgd
26 Col:3 Row:1 grids 4\18.xgd
27 Col:3 Row:2 grids 4\19.xgd
28 Col:3 Row:3 grids 4\21.xgd
29 Col:3 Row:4 grids 4\20.xgd
30 Col:3 Row:5 grids 4\22.xgd
31 Col:3 Row:6 grids 4\23.xgd
32 Col:3 Row:7 grids 4\24.xgd
33 Col:3 Row:8 grids 4\25.xgd
34 Col:4 Row:1 grids 4\08.xgd
35 Col:4 Row:2 grids 4\09.xgd
36 Col:4 Row:3 grids 4\10.xgd
37 Col:4 Row:4 grids 4\11.xgd
38 Col:4 Row:5 grids 4\12.xgd
39 Col:4 Row:6 grids 4\13.xgd
40 Col:4 Row:7 grids 4\14.xgd
41 Col:4 Row:8 grids 4\15.xgd
42 Col:4 Row:9 grids 4\16.xgd
43 Col:5 Row:4 grids 4\01.xgd
44 Col:5 Row:5 grids 4\03.xgd
45 Col:5 Row:6 grids 4\04.xgd
46 Col:5 Row:7 grids 4\05.xgd
47 Col:5 Row:8 grids 4\06.xgd
48 Col:5 Row:9 grids 4\07.xgd

**Processed data**

Stats
Max: 2.20
Min: -1.80
Std Dev: 1.13
Mean: 0.08
Median: 0.01

Processes: 8
1 Base Layer
2 DeStripe Median Sensors: All
3 Search & Replace From: -1000 To: -30 With: Dummy
4 Search & Replace From: 30 To: 1000 With: Dummy
5 De Stagger: Grids: All Mode: Both By: -1 intervals
6 Despike Threshold: 1 Window size: 3x3
7 Interpolate: Y Doubled.
8 Clip from -1.80 to 2.20 nT

**South-eastern field**

**Raw data**

Survey corner coordinates (X/Y):
Northwest corner: 402581.21, 172534.43 m
Southeast corner: 402681.21, 172334.43 m
Direction of 1st Traverse: 27.47 deg
Collection Method: ZigZag
Sensors: 2 @ 1.00 m spacing.
Dummy Value: 2047.5

Dimensions
Composite Size (readings): 400 x 200
Survey Size (meters): 100 m x 200 m
Grid Size: 20 m x 20 m
X Interval: 0.25 m
Y Interval: 1 m

Stats
Max: 100.00
Min: -100.00
Std Dev: 4.36
Mean: 0.38
Median: 0.29
Composite Area: 2 ha
Surveyed Area: 1.0817 ha

Source Grids: 44
1 Col:0 Row:2 Grids 3\39.xgd
2 Col:0 Row:3 Grids 3\40.xgd
3 Col:0 Row:4 Grids 3\41.xgd
4 Col:0 Row:5 Grids 3\42.xgd
5 Col:0 Row:6 Grids 3\43.xgd
6 Col:0 Row:7 Grids 3\44.xgd
7 Col:1 Row:1 Grids 3\31.xgd
8 Col:1 Row:2 Grids 3\32.xgd
9 Col:1 Row:3 Grids 3\33.xgd
10 Col:1 Row:4 Grids 3\34.xgd
11 Col:1 Row:5 Grids 3\35.xgd
12 Col:1 Row:6 Grids 3\36.xgd
13 Col:1 Row:7 Grids 3\37.xgd
14 Col:1 Row:8 Grids 3\38.xgd
15 Col:2 Row:0 Grids 3\21.xgd
16 Col:2 Row:1 Grids 3\22.xgd
17 Col:2 Row:2 Grids 3\23.xgd
18 Col:2 Row:3 Grids 3\24.xgd
19 Col:2 Row:4 Grids 3\25.xgd
20 Col:2 Row:5 Grids 3\26.xgd
21 Col:2 Row:6 Grids 3\27.xgd
22 Col:2 Row:7 Grids 3\28.xgd
23 Col:2 Row:8 Grids 3\29.xgd
24 Col:2 Row:9 Grids 3\30.xgd
25 Col:3 Row:0 Grids 3\11.xgd

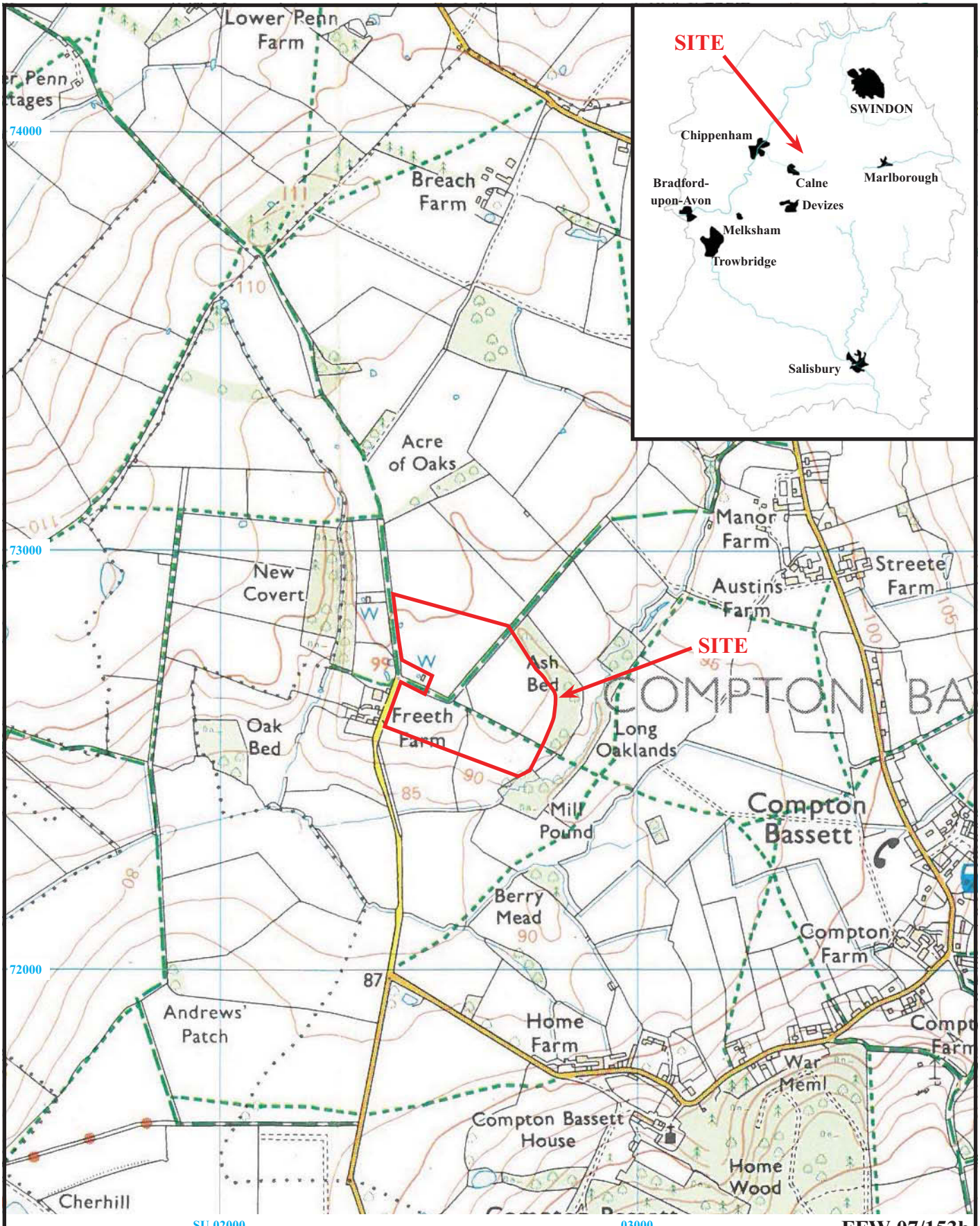
26 Col:3 Row:1 Grids 3\12.xgd
27 Col:3 Row:2 Grids 3\13.xgd
28 Col:3 Row:3 Grids 3\14.xgd
29 Col:3 Row:4 Grids 3\15.xgd
30 Col:3 Row:5 Grids 3\16.xgd
31 Col:3 Row:6 Grids 3\17.xgd
32 Col:3 Row:7 Grids 3\18.xgd
33 Col:3 Row:8 Grids 3\19.xgd
34 Col:3 Row:9 Grids 3\20.xgd
35 Col:4 Row:0 Grids 3\01.xgd
36 Col:4 Row:1 Grids 3\02.xgd
37 Col:4 Row:2 Grids 3\03.xgd
38 Col:4 Row:3 Grids 3\04.xgd
39 Col:4 Row:4 Grids 3\05.xgd
40 Col:4 Row:5 Grids 3\06.xgd
41 Col:4 Row:6 Grids 3\07.xgd
42 Col:4 Row:7 Grids 3\08.xgd
43 Col:4 Row:8 Grids 3\09.xgd
44 Col:4 Row:9 Grids 3\10.xgd

**Processed data**

Stats

| | |
|---|---|
| Max: | 2.20 |
| Min: | -1.80 |
| Std Dev: | 0.67 |
| Mean: | 0.04 |
| Median: | 0.01 |

Processes: 8
1 Base Layer
2 DeStripe Median Sensors: All
3 Search & Replace From: 30 To: 1000 With: Dummy
4 Search & Replace From: -1000 To: -30 With: Dummy
5 De Stagger: Grids: All Mode: Both By: -1 intervals
6 Despike Threshold: 1 Window size: 3x3
7 Interpolate: Y Doubled.
8 Clip from -1.80 to 2.20 nT




FFW 07/153b

**Land at Freeth Farm, Calne,**
**Wiltshire, 2015**
**Geophysical Survey (Magnetic)**

Figure 1. Location of site within Compton Bassett and Wiltshire.



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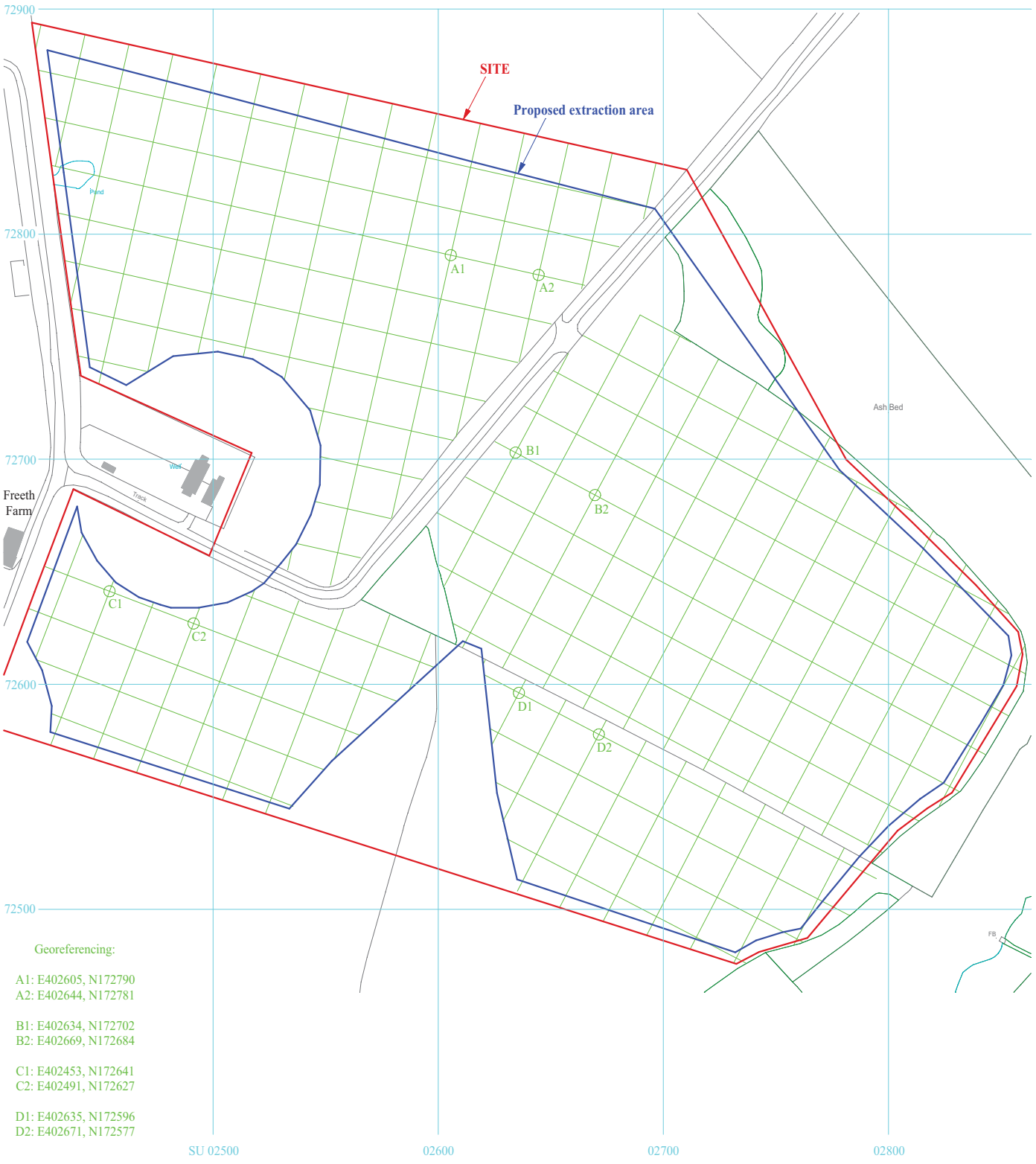



FFW 07/153b

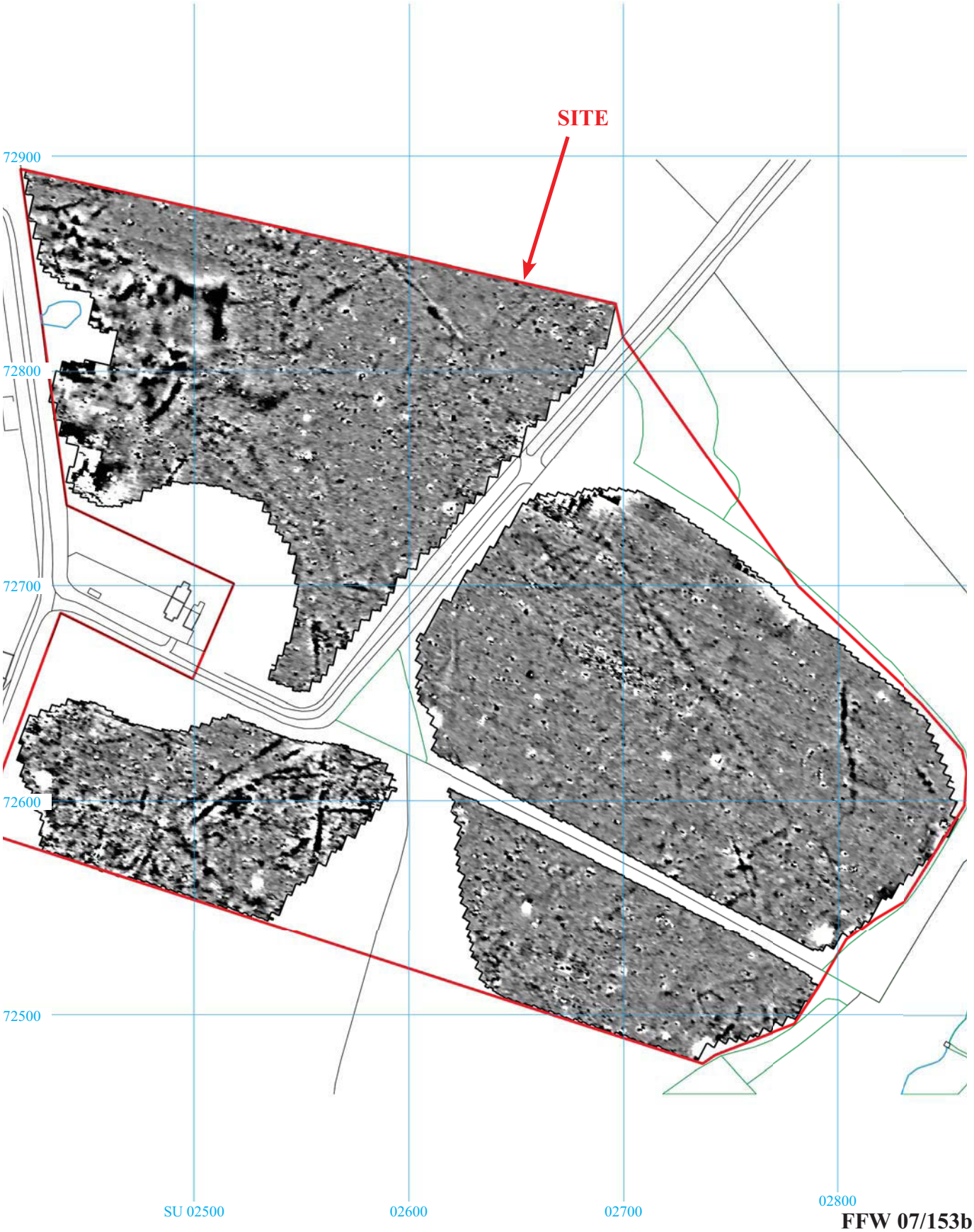
N

# Land at Freeth Farm, Calne
# Wiltshire, 2015
# Geophysical Survey (Magnetic)

Figure 2. Survey grid layout.

0 50m

THAMES VALLEY ARCHAEOLOGICAL SERVICES




N

**Land at Freeth Farm, Calne,**
**Wiltshire, 2015**
**Geophysical Survey (Magnetic)**

Figure 3. Plot of minimally processed gradiometer data.

0m 100m

+2.2 nT

-1.8 nT

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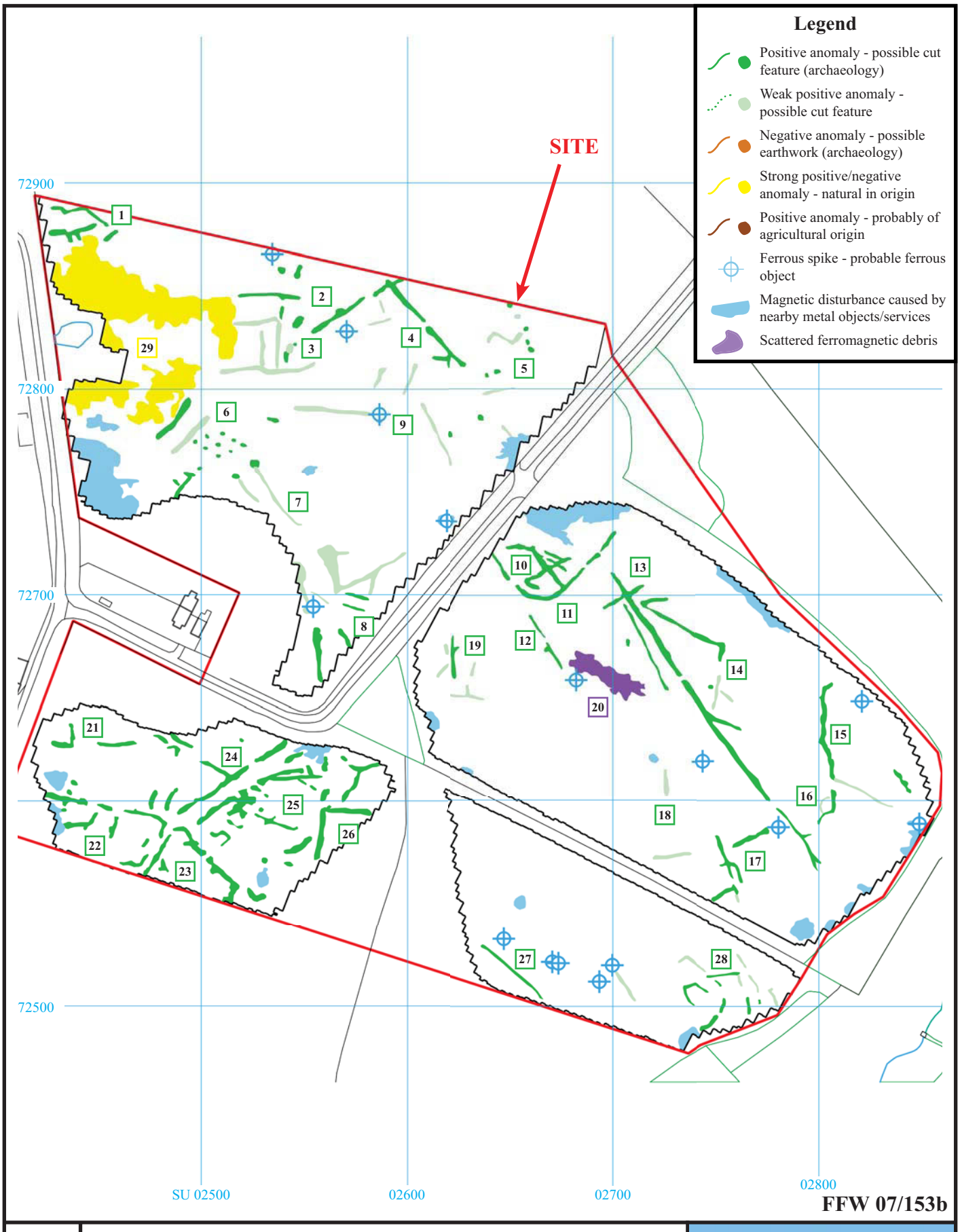


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**Land at Freeth Farm, Calne, Wiltshire, 2015**
**Geophysical Survey (Magnetic)**

Figure 4. Interpretation plot.

0m 100m

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Plate 1. North-western field, looking south-west.

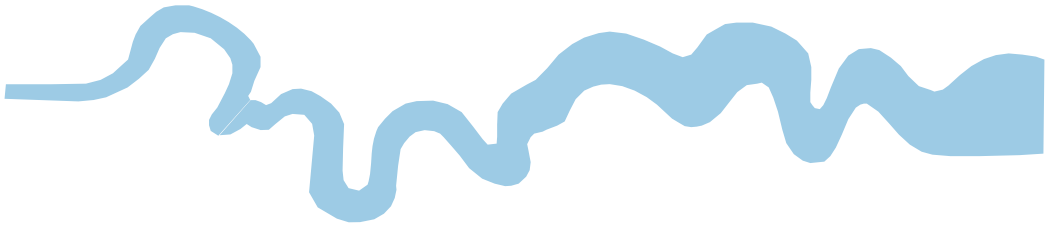
Plate 2. North-eastern field, looking north-west.

Plate 3. South-western field, looking north-west.

Plate 4. South-eastern field, looking west.

## TIME CHART

| | Calendar Years |
|---|---|
| Modern | AD 1901 |
| Victorian | AD 1837 |
| Post Medieval | AD 1500 |
| Medieval | AD 1066 |
| Saxon | AD 410 |
| Roman | AD 43 |
| Iron Age | BC/AD 750 BC |
| Bronze Age: Late | 1300 BC |
| Bronze Age: Middle | 1700 BC |
| Bronze Age: Early | 2100 BC |
| Neolithic: Late | 3300 BC |
| Neolithic: Early | 4300 BC |
| Mesolithic: Late | 6000 BC |
| Mesolithic: Early | 10000 BC |
| Palaeolithic: Upper | 30000 BC |
| Palaeolithic: Middle | 70000 BC |
| Palaeolithic: Lower | 2,000,000 BC |



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