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Hoodsclose Proposed Surface Mine near Whittonstall Northumberland

Geophysical Survey

December 2009

Report No. 2017

CLIENT

UK Coal Mining Ltd.

Hoodsclose Proposed Surface Mine
Whittonstall
Northumberland

Geophysical Survey

Summary

A geophysical (magnetometer) survey covering approximately 6 hectares was undertaken at twelve locations, on land to the east of the village of Whittonstall, Northumberland, prior to the submission of a planning application for a proposed surface mine. The only definite archaeological features revealed by the survey are in Block 1 which was targeted over a cropmark interpreted as a possible Iron Age enclosure. Linear anomalies caused by the outer enclosure ditch are clearly identifiable. Discrete anomalies within the enclosure may locate features such as pits or areas of burning. In Block 2 no anomalies consistent with the presence of a possible Roman fort have been identified. Numerous anomalies have also been identified in all the remaining survey blocks. However, without any other supporting archaeological information, these anomalies are interpreted as being due to geological or topographical variation, agricultural practice or modern activity, probably associated with small scale, localised extractive industry. The survey has clearly demonstrated the potential for magnetometer survey to identify areas of archaeological activity on the soils and geology at this site.

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Report Information

Client:	UK Coal Mining Ltd, Harworth Park, Blyth Road, Harworth, Doncaster, South Yorkshire, DN11 8DB
Report Type:	Geophysical Survey
Location:	Whittonstall
County:	Northumberland
Grid Reference:	NZ 081 575
Period(s) of activity represented:	Iron Age/Romano-British?
Report Number:	2017
Project Number:	3502
Site Code:	HSM09
Planning Application No.:	Pre-Planning
Museum Accession No.:	-
Date of fieldwork:	December 2009
Date of report:	January 2010
Project Management:	Sam Harrison BSc MSc AIfA
Fieldwork:	Sam Harrison Tom Weavill BSc
Report:	Sam Harrison Alistair Webb BA MIfA
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Contents

Report information ii
Contents iii
List of Figures iv

1 Introduction 1
Site location and topography 1
Soils, geology and land use 1
2 Archaeological background 1
3 Aims and Objectives 2
4 Methodology 2
Magnetometer Survey 2
Reporting 2
5 Results and Discussion 3
6 Conclusions 5

Figures

Appendices
Appendix 1: Magnetic survey: technical information
Appendix 2: Survey location information
Appendix 3: Geophysical archive

Bibliography

List of Figures

1 Site location (1:50000)
2 Site location showing greyscale magnetometer data (1:10000)
3 Processed greyscale magnetometer data; Block 1 (1:1000)
4 XY trace plot of unprocessed magnetometer data; Block 1 (1:1000)
5 Interpretation of magnetometer data; Block 1 (1:1000)
6 Processed greyscale magnetometer data; Block 2 (1:1000)
7 XY trace plot of unprocessed magnetometer data; Block 2 (1:1000)
8 Interpretation of magnetometer data; Block 2 (1:1000)
9 Processed greyscale magnetometer data; Block 3 (1:1000)
10 XY trace plot of unprocessed magnetometer data; Block 3 (1:1000)
11 Interpretation of magnetometer data; Block 3 (1:1000)
12 Processed greyscale magnetometer data; Block 4 (1:1000)
13 XY trace plot of unprocessed magnetometer data; Block 4 (1:1000)
14 Interpretation of magnetometer data; Block 4 (1:1000)
15 Processed greyscale magnetometer data; Block 5 (1:1000)
16 XY trace plot of unprocessed magnetometer data; Block 5 (1:1000)
17 Interpretation of magnetometer data; Block 5 (1:1000)
18 Processed greyscale magnetometer data; Block 6 (1:1000)
19 XY trace plot of unprocessed magnetometer data; Block 6 (1:1000)
20 Interpretation of magnetometer data; Block 6 (1:1000)
21 Processed greyscale magnetometer data; Block 7 (1:1000)
22 XY trace plot of unprocessed magnetometer data; Block 7 (1:1000)
23 Interpretation of magnetometer data; Block 7 (1:1000)
24 Processed greyscale magnetometer data; Block 8 (1:1000)
25 XY trace plot of unprocessed magnetometer data; Block 8 (1:1000)
26 Interpretation of magnetometer data; Block 8 (1:1000)
27 Processed greyscale magnetometer data; Block 9 (1:1000)
28 XY trace plot of unprocessed magnetometer data; Block 9 (1:1000)
29 Interpretation of magnetometer data; Block 9 (1:1000)
30 Processed greyscale magnetometer data; Block 10 (1:1000)
31 XY trace plot of unprocessed magnetometer data; Block 10 (1:1000)
32 Interpretation of magnetometer data; Block 10 (1:1000)
33 Processed greyscale magnetometer data; Block 11 (1:1000)
34 XY trace plot of unprocessed magnetometer data; Block 11 (1:1000)
35 Interpretation of magnetometer data; Block 11 (1:1000)
36 Processed greyscale magnetometer data; Block 12 (1:1000)
37 XY trace plot of unprocessed magnetometer data; Block 12 (1:1000)
38 Interpretation of magnetometer data; Block 12 (1:1000)

1 Introduction

1.1.1 Archaeological Services WYAS (ASWYAS) was commissioned by Ms M. Ball of UK Coal Mining Ltd to undertake a sample geophysical (magnetometer) survey on land near Whittonstall, Northumberland (see Fig. 1), to inform the design of the proposed Hoodsclose Surface Mine.

1.2 Site location and topography

1.2.1 The site, centred at NZ 0810 5750, is situated north and south-east of Whittonstall with the B6309 (Dere Street) forming the southern site boundary (see Fig. 2). In total the survey covered 5.88 hectares in twelve sample blocks. Blocks 1 to 10 inclusive fall within the proposed extraction area whilst Block 11 and Block 12 were located further to the north in the area of the proposed haul road and spoil mound. Topographically the land slopes down to the north-east from Whittonstall, at approximately 210m above Ordnance Datum, towards a wooded valley with a small burn at approximately 150m aOD, before rising again to about 170m aOD in the vicinity of Block 11 and Block 12.

1.3 Soils, geology and land-use

The solid geology comprises Pennine Lower Coal Measures overlain by soils classified in the Brickfield 3 association. These soils are derived from drift from sandstone and shale and are described as seasonally waterlogged fine loams and clays. All of the sample areas were under permanent pasture with the exception of Block 6 which was fallow (stubble) and Block 1 and Block 3 which were under arable cultivation at the time of survey.

2 Archaeological background

2.1.1 An archaeological assessment of the site comprising of desk-based research and a walkover survey (Entec 2009) highlighted the potential presence of archaeological features within the site. The identified features include a potential Roman fort, a possible Iron Age enclosure and post-medieval coal mining activity.

2.1.2 The Roman road of Dere Street, which links Ebchester and Corbridge, runs north-west/south-east immediately to the south of the site and there are a number of settlements along this route including the fort at Ebchester and fortlet at Apperley Dene. Cropmarks interpreted as a rectilinear enclosure of probable Iron Age or Romano-British date have been identified approximately 80m north of Dere Street, within the site boundary. Block 1 was positioned to evaluate this feature. Block 2 was located to evaluate another possible fort and vicus, identified as earthworks.

3 Aims and Objectives

3.1.1 The general aim of the geophysical evaluation was to establish the suitability of magnetometer survey to identify archaeological features on the prevailing soils and geology and to therefore clarify the potential for archaeological features within the proposed site boundary. This information would then be used to inform further pre-determination evaluation works which may include a further stage of geophysical survey.

3.1.2 Specifically the survey sought to provide information about the nature and possible interpretation of magnetic anomalies identified during the survey and thereby determine the likely extent, presence or absence of any buried archaeological remains in those areas identified for survey.

3.1.3 These aims were to be achieved by undertaking detailed (recorded) magnetometer survey at twelve locations selected by the clients consultants. Block 1 was situated over a possible Iron Age enclosure and Block 2 sampled across part of a potential Roman fort. The remaining blocks were located over possible features and 'blank' areas identified during the desk-based assessment, to provide an even distribution across the proposed site and to cover a representative sample of land uses and sub-soil types.

4 Methodology

4.1 Magnetometer Survey

4.1.1 The survey blocks were laid out using a Trimble VRS differential Global Positioning System (Trimble 5800 model). The accuracy of this equipment is better then 0.01m.

4.1.2 A Bartington Grad601 magnetic gradiometer was used to take readings at 0.25m intervals on zig-zag (east-west) traverses 1m apart within 30m by 30m grids so that 3600 readings were recorded in each grid. These readings were stored in the memory of the instrument and later downloaded to computer for processing and interpretation. Geoplot 3 (Geoscan Research) software was used to process and present the data. Further details are given in Appendix 1. Detailed (recorded) survey allows the visualisation of weaker anomalies that may not have been readily identifiable by alternative evaluation techniques such as magnetometer (magnetic) scanning.

4.2 Reporting

4.2.1 A general site location plan, incorporating the 1:50000 Ordnance Survey mapping, is shown in Figure 1. Figure 2 shows the processed greyscale magnetometer data at a scale of 1:10000. The processed and 'raw' (unprocessed) magnetometer data from the survey, together with interpretations of the identified magnetic anomalies, are presented at a scale of 1:1000 in Figures 3 to 38 inclusive.

4.2.2 The geophysical survey methodology, report and any recommendations comply with guidelines outlined by English Heritage (David *et al.* 2008) and by the IfA (Gaffney *et al.* 2002). All figures reproduced from Ordnance Survey mapping are with the permission of the controller of Her Majesty's Stationery Office (© Crown copyright).

4.2.3 Technical information on the equipment used, data processing and magnetic survey methodology is given in Appendix 1. Appendix 2 details the survey location information and Appendix 3 describes the composition and location of the survey archive.

The figures in this report have been produced following analysis of the data in 'raw' and processed formats and over a range of different display levels. All figures are presented to most suitably display and interpret the data from this site based on the experience and knowledge of Archaeological Services staff.

5 Results and Discussion

5.1 *Ferrous responses/Magnetic disturbance*

5.1.1 These anomalies are typically caused by ferrous (magnetic) material, either on the ground surface or in the topsoil, which causes rapid variations in the magnetic readings giving a characteristic, 'spiky', XY trace. Little importance is normally attached to such anomalies, unless there is supporting evidence for an archaeological interpretation, as modern ferrous detritus is common on rural sites, often being present as a consequence of manuring, public access or tipping/infilling. Iron spike anomalies are present in all of the survey blocks and there is no obvious pattern or clustering to their distribution to suggest they are caused by anything other than random ferrous debris in the plough-soil.

5.1.2 A large, magnetically disturbed, area has been identified in the south-east corner of Block 8. This disturbance correlates with a small patch of waste ground that has been tipped or dumped on in the recent past.

5.1.3 Linear, dipolar, anomalies aligned south-west/north-east have been identified in Block 2 and Block 11. These anomalies are caused by service pipes.

5.2 *Areas of magnetic variation*

5.2.1 Large areas where the magnetic background is extremely variable have been noted in Block 4 and Block 5. At both locations there is a degree of linearity to the readings that could suggest that the anomalies are due to modern activity, possibly associated with former extractive processes. A geological cause could be an alternative explanation.

5.3 ***Linear anomalies and trends***

5.3.1 Parallel linear anomalies have been identified in six of the survey blocks on varying alignments. These anomalies are all interpreted as having an agricultural origin. The more closely spaced anomalies, such as those in Block 5, are probably due to recent ploughing regimes. The more regular, slightly further apart, anomalies, such as those in Block 3, are probably caused by field drains.

5.3.2 Weak irregular trends in the data have been identified in Block 2 and Block 3. These anomalies are interpreted as probably being caused by variation in the underlying geology.

5.3.3 Linear trends of possible archaeological potential have been identified in two blocks. In Block 1 two closely spaced anomalies aligned east/west have been recorded to the west of the block. These anomalies are accorded a possible archaeological interpretation based on their proximity to the enclosure identified in the eastern half of the block (see below).

5.3.4 In Block 10 two anomalies aligned broadly north/south have been identified. Whilst a definite interpretation cannot be given an archaeological cause cannot be ruled out. However, it is thought that these anomalies could equally have a modern or agricultural origin.

5.4 ***Discrete anomalies (areas of magnetic enhancement)***

5.4.1 Throughout many of the survey blocks discrete anomalies (areas of magnetic enhancement) have been identified. It is difficult to assign a specific interpretation to each anomaly as any could be due to an archaeological feature, geological variation or to modern activity. Where there is a large cluster of these anomalies, such as in Block 6, it is assumed that they are more likely to have a geological or modern origin. Where there are fewer such anomalies or there are other anomalies of possible archaeological origin in the vicinity, such as in Block 10 or more particularly in Block 1, an archaeological cause is considered possible. However, on balance, it is considered that the majority of these anomalies will not be due to archaeological activity.

5.4.2 In Block 2, which was positioned to sample across the postulated Roman fort, a line of anomalies trending south-west/north-east, have been identified in the south-eastern corner of the block. These anomalies correlate with a shallow depression which aligns and runs towards a small beck whose course is indicated by a line of trees. It is thought that this ‘earthwork’ may have been interpreted as forming one side of the postulated fort. However, the anomalies are not convincing as potential archaeological features, such as a bank or a ditch, and it is considered far more likely that these anomalies merely reflect the different depths of soil associated with the change in slope.

Interestingly the pipe identified in the northern corner of this block is on the same alignment as these anomalies. When viewed from above (on Google Earth) the cropmark caused by the buried pipe and the 'earthwork' depression appear as two parallel features which could have been the interpreted as forming the long axes of a possible fort.

5.4.3 In Block 1 a series of fragmented anomalies describing three sides of a large curvi-linear feature are clearly visible. These anomalies correlate with the cropmarks interpreted as an enclosure of probable Iron Age/Romano-British origin and are caused by the infilled ditches defining the northern half of the enclosure. The discontinuous nature of the responses could reflect differential truncation by ploughing or perhaps entrances into the enclosure. Numerous discrete anomalies inside the enclosure could also be due to archaeological features such as pits or areas of burning although some of these anomalies are likely to be geological in origin.

6 Conclusions

6.1.1 The survey has confirmed the location of an enclosure previously identified as a cropmark thereby demonstrating that magnetometry has the potential to identify other areas or features of archaeological interest on the prevailing soils and geology.

6.1.2 The survey block centred on the postulated Roman fort has also identified anomalies. However, these anomalies are not thought to be due to archaeological features associated with a fort but to the chance alignment of a cropmark caused by a pipe trench and a shallow natural depression.

6.1.3 Anomalies of possible archaeological potential have been identified in some of the other survey blocks. However, on balance and without any supporting information, it is considered likely that these anomalies are due to either geological variation or to activity possibly associated with small scale extractive industry.

6.1.4 On the basis of the survey results it is thought further archaeological sites may be identified through additional magnetometer survey, particularly in those parts of the site adjoining Dere Street.

The results and subsequent interpretation of data from geophysical surveys should not be treated as an absolute representation of the underlying archaeological and non-archaeological remains. Confirmation of the presence or absence of archaeological remains can only be achieved by direct investigation of sub-surface deposits.

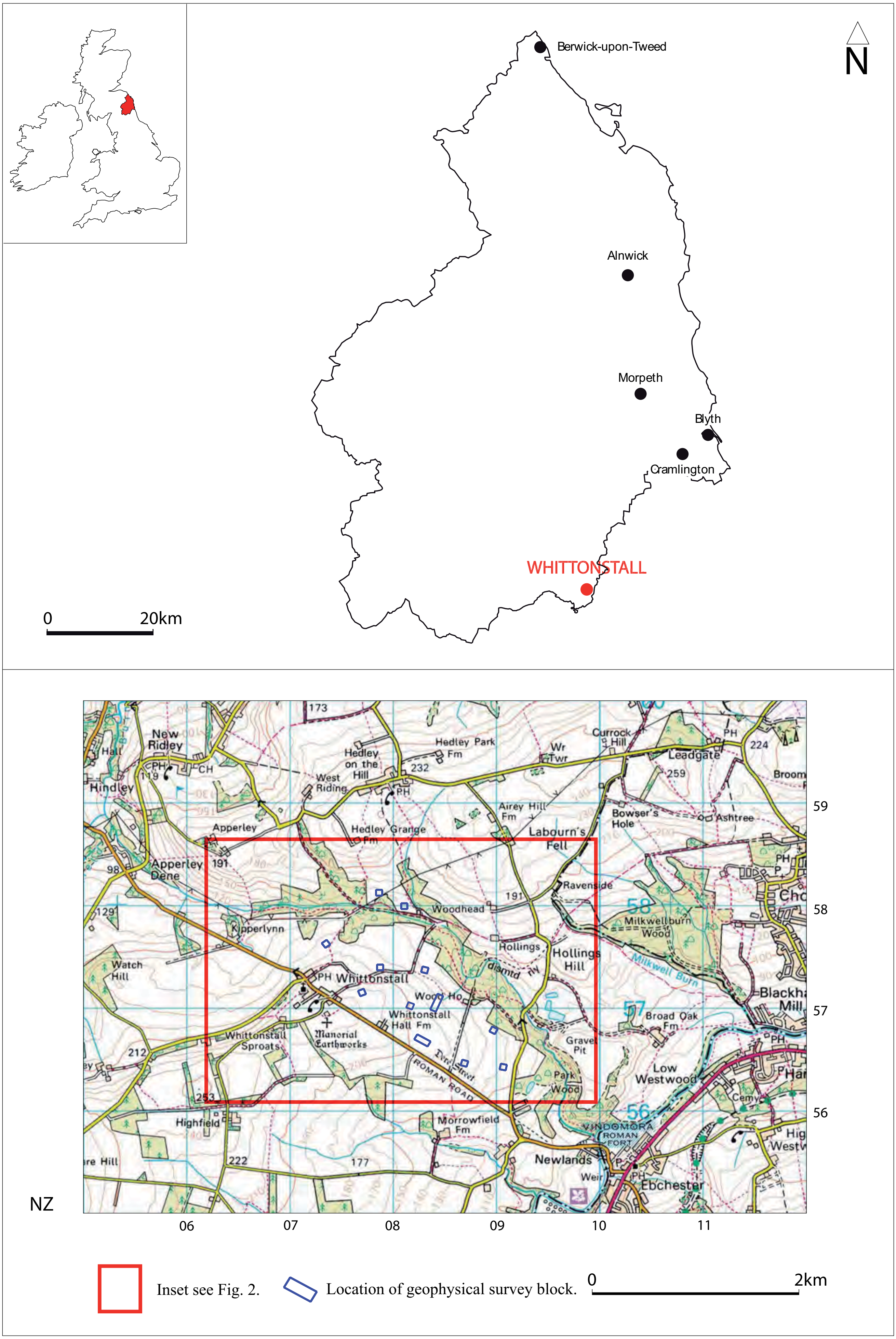

Fig. 1. Site location

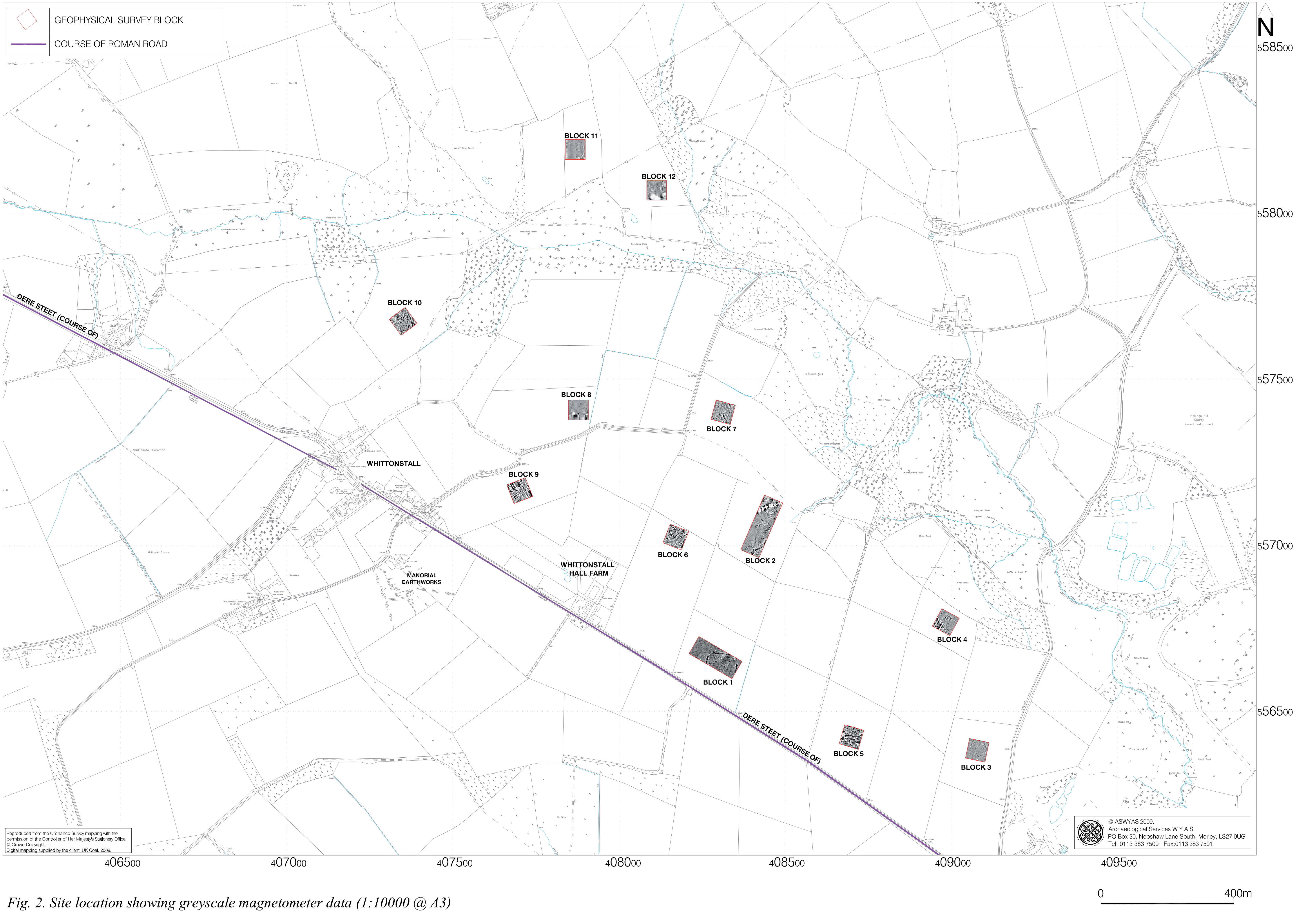

Fig. 2. Site location showing greyscale magnetometer data (1:10000 @ A3)

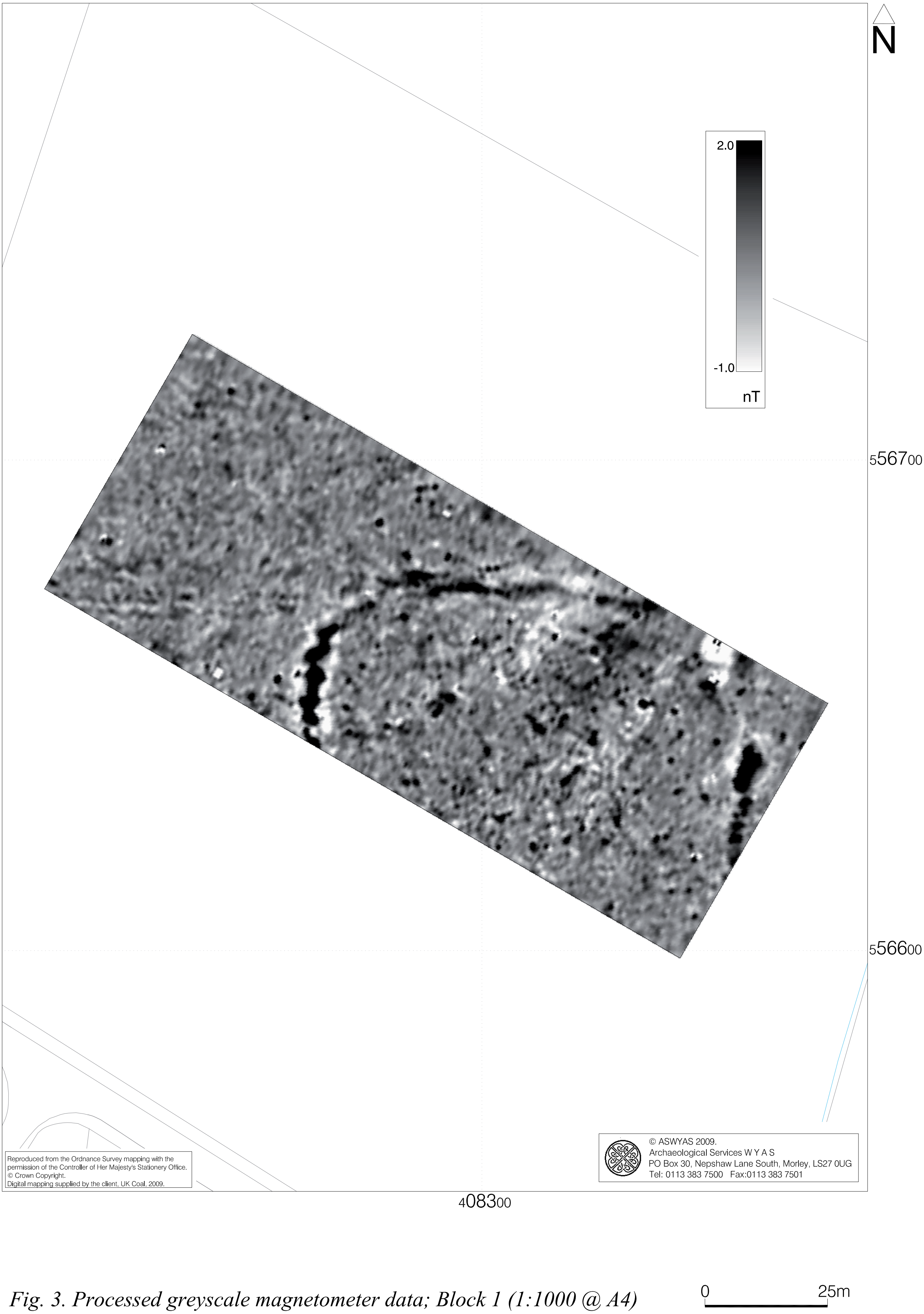

Fig. 3. Processed greyscale magnetometer data; Block 1 (1:1000 @ A4)

Fig. 4. XY trace plot of unprocessed magnetometer data; Block 1 (1:1000 @ A4) 0 25m

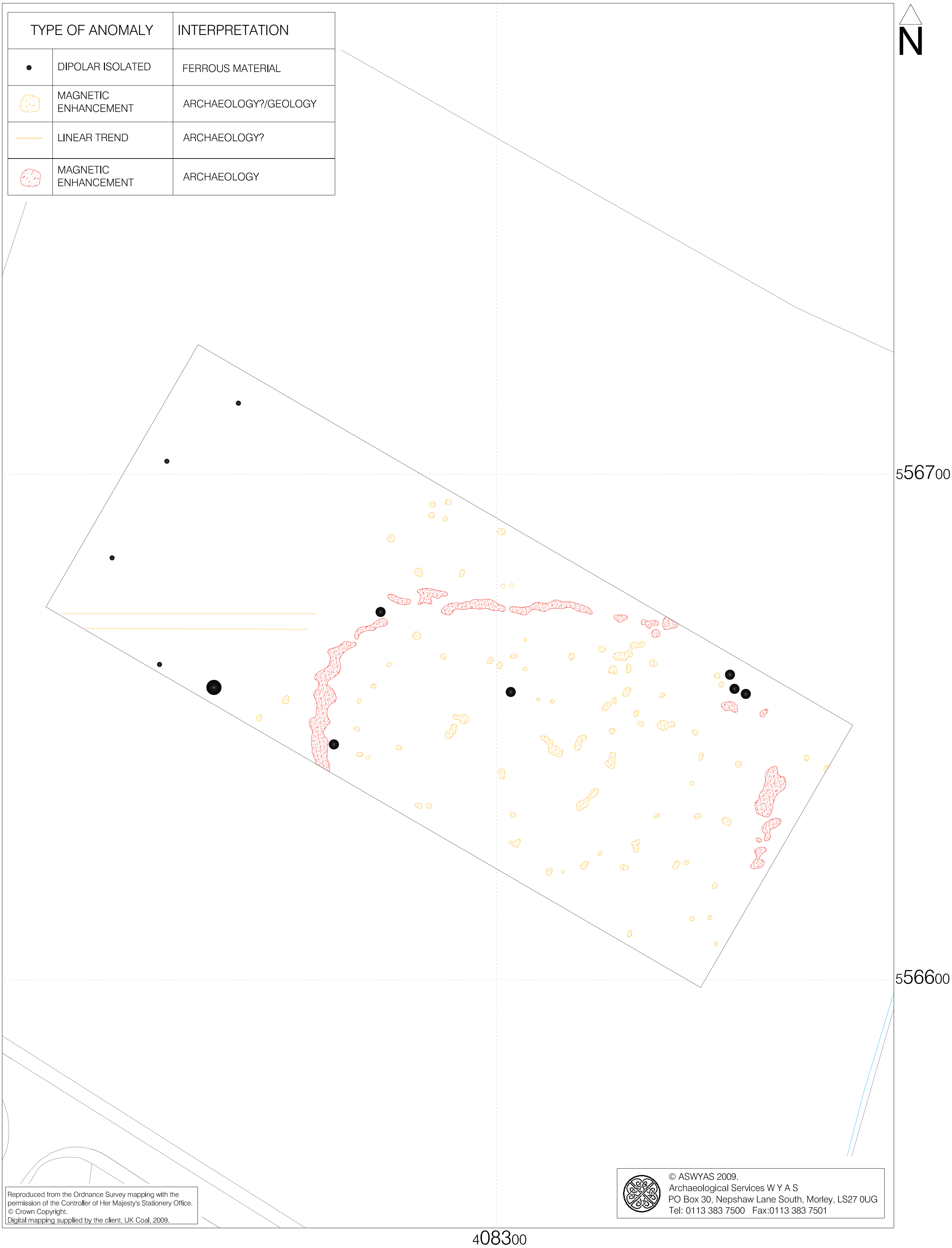

Fig. 5. Interpretation of magnetometer data; Block 1 (1:1000 @ A4)

0 25m

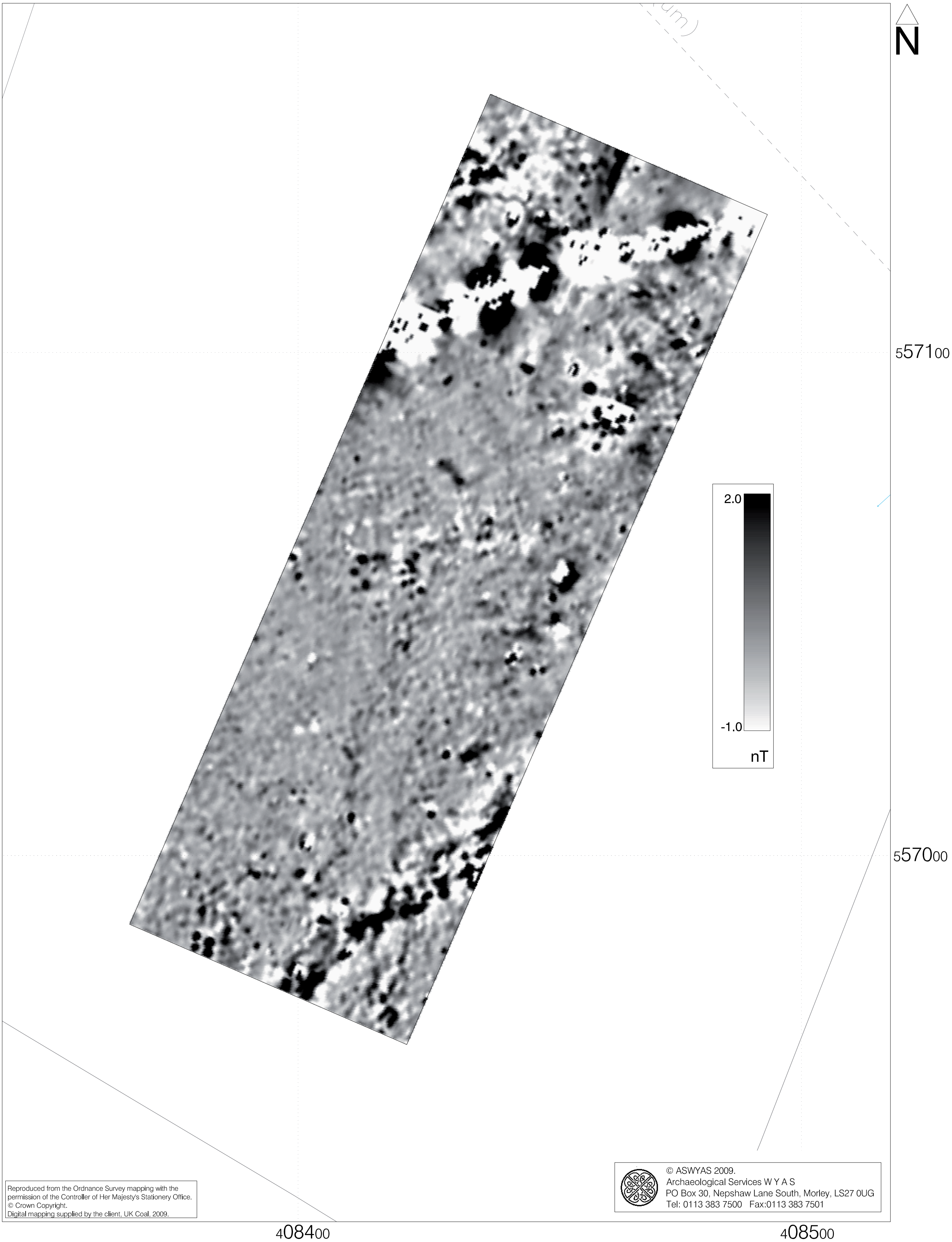

Fig. 6. Processed greyscale magnetometer data; Block 2 (1:1000 @ A4)

Fig. 7. XY trace plot of unprocessed magnetometer data; Block 2 (1:1000 @ A4)

0 25m

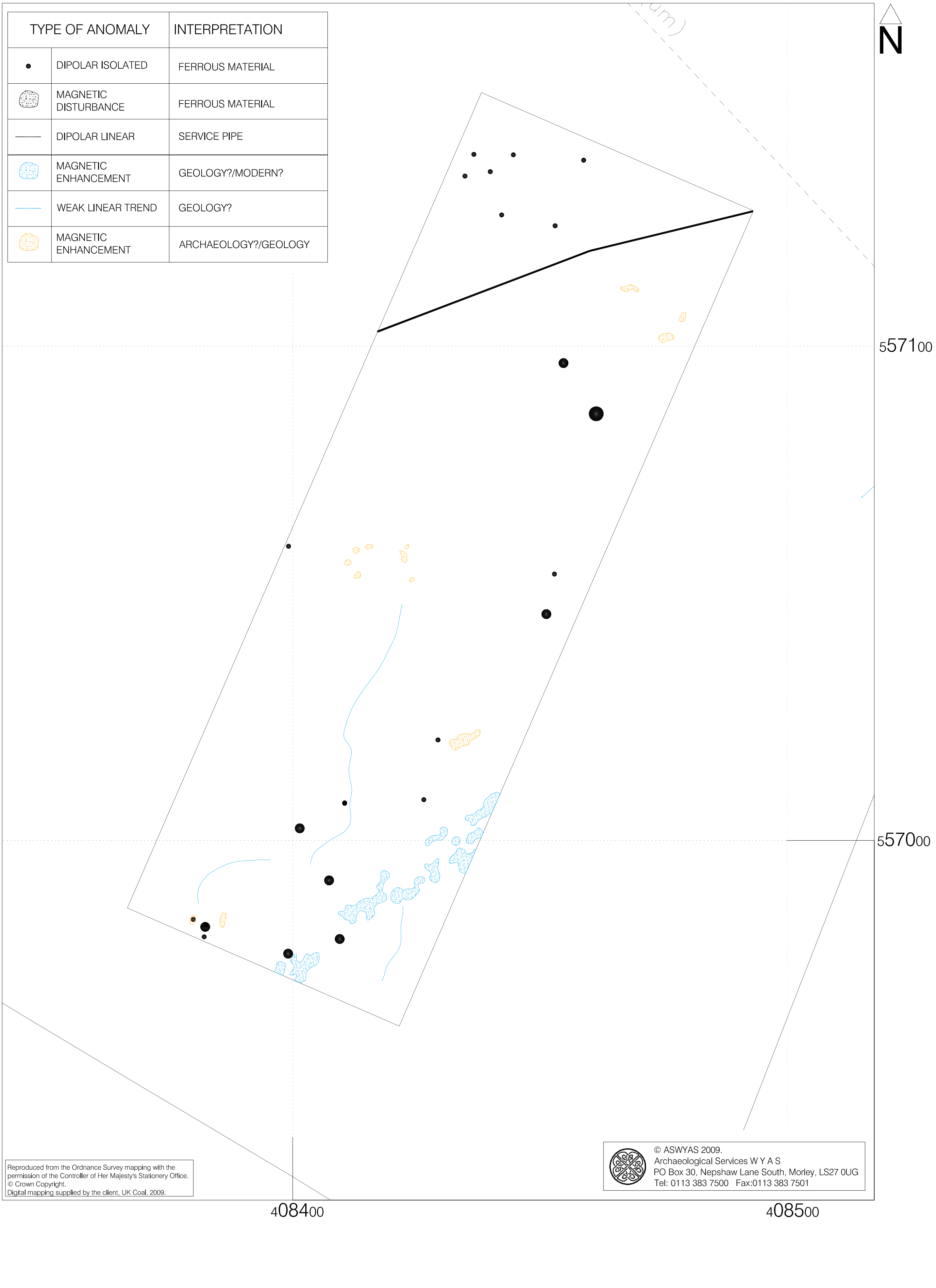

Fig. 8. Interpretation of magnetometer data; Block 2 (1:1000 @ A4)

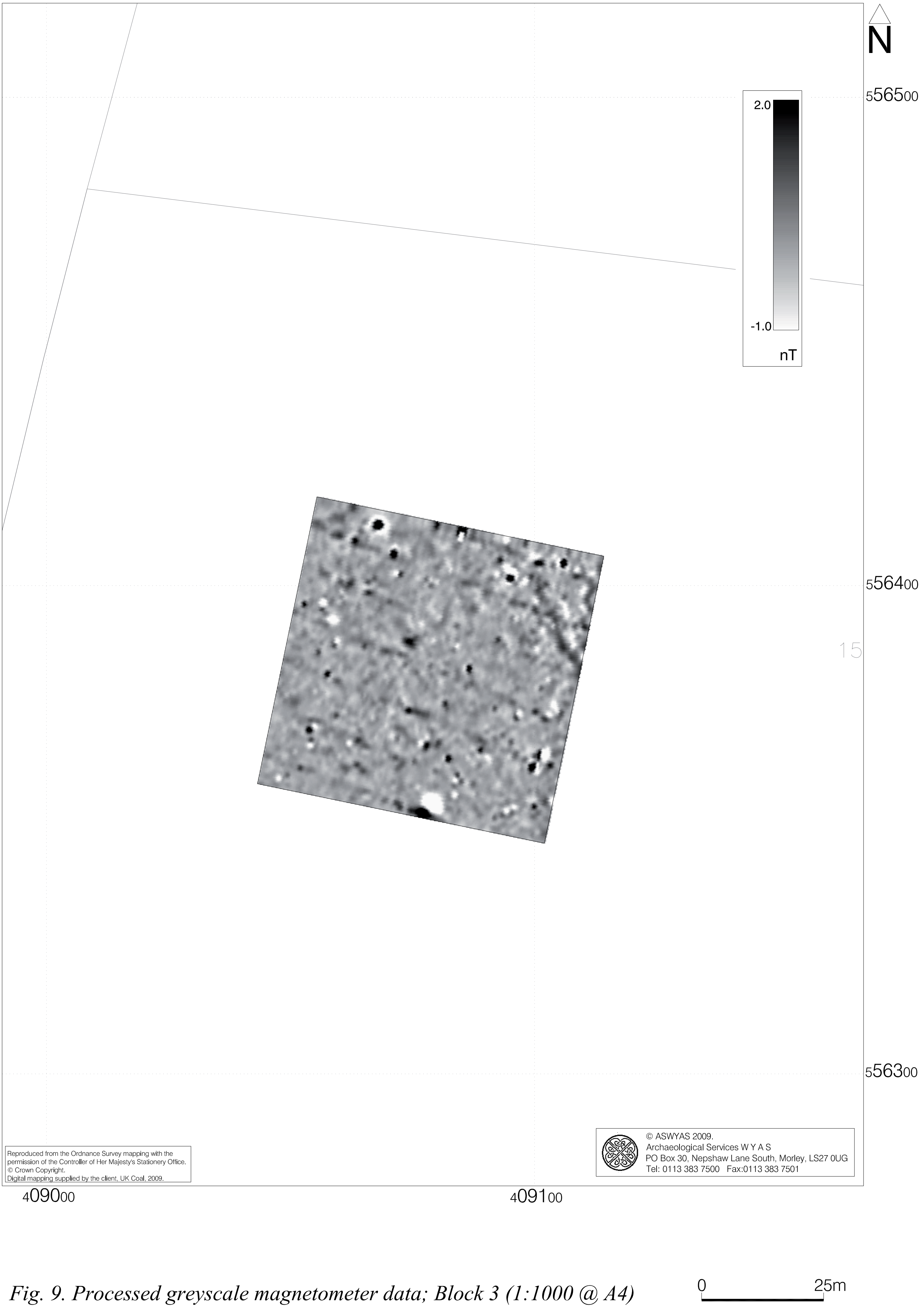

Fig. 9. Processed greyscale magnetometer data; Block 3 (1:1000 @ A4)

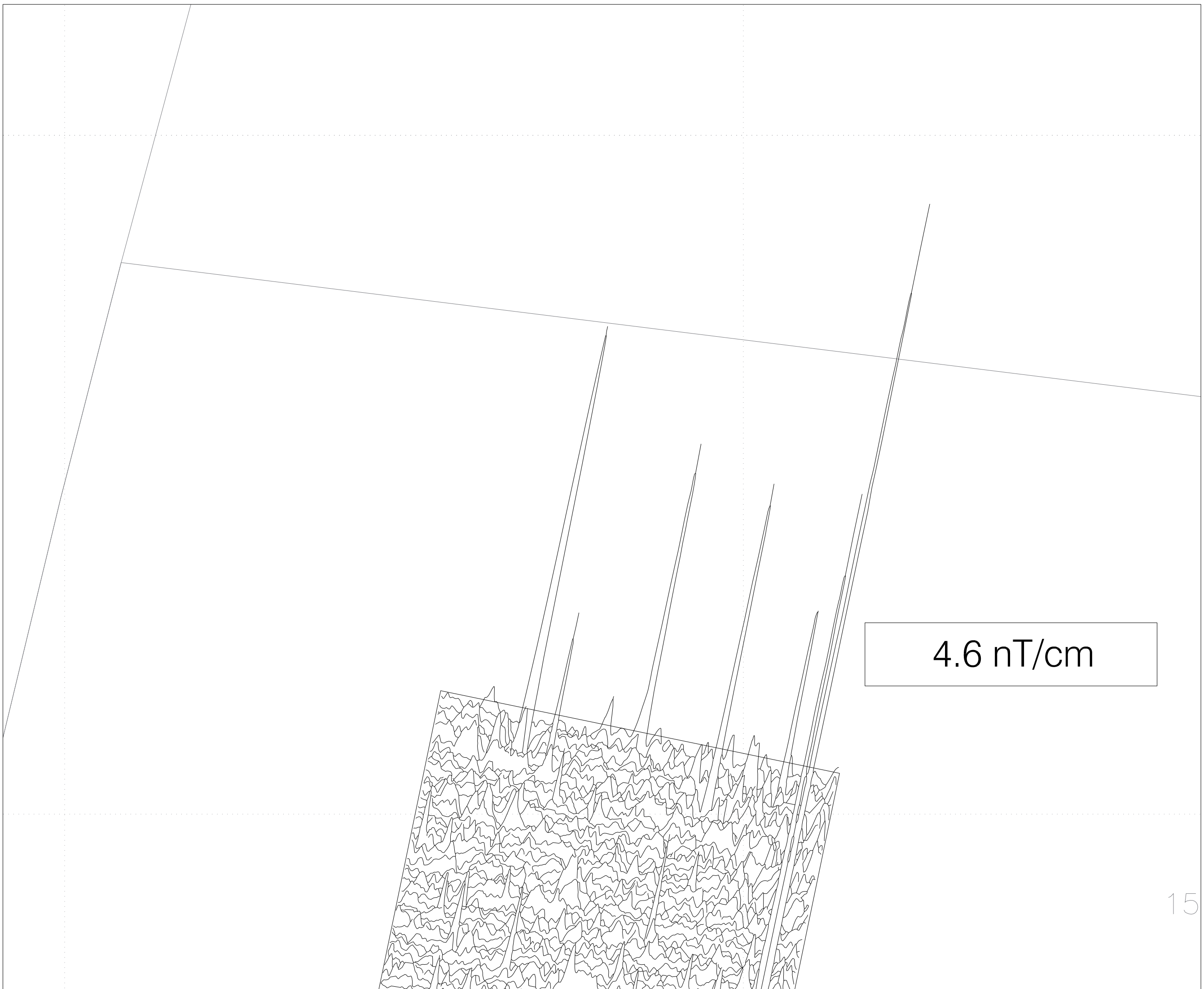

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Fig. 10. XY trace plot of unprocessed magnetometer data; Block 3 (1:1000 @ A4) 0 25m

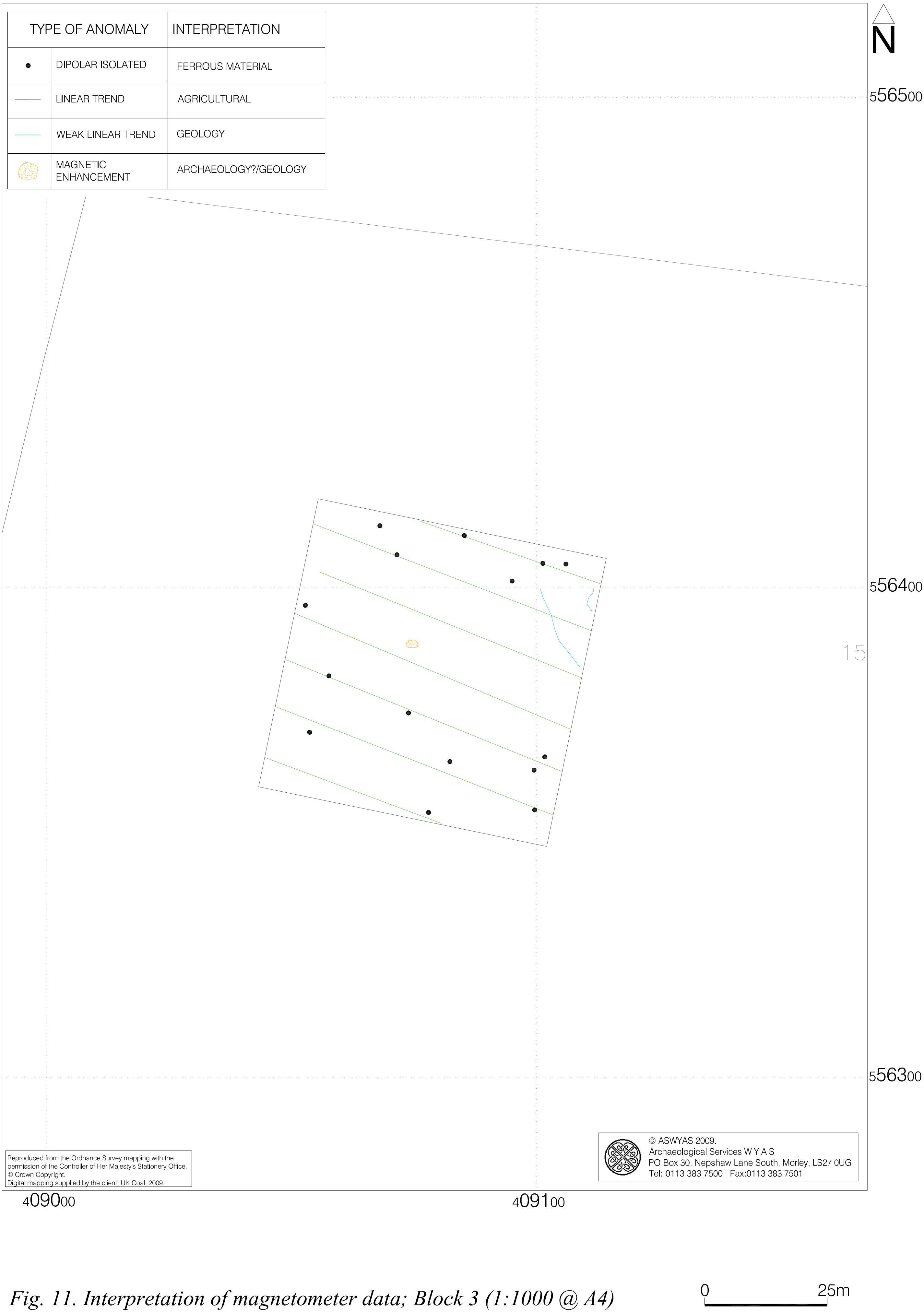

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Fig. 11. Interpretation of magnetometer data; Block 3 (1:1000 @ A4)

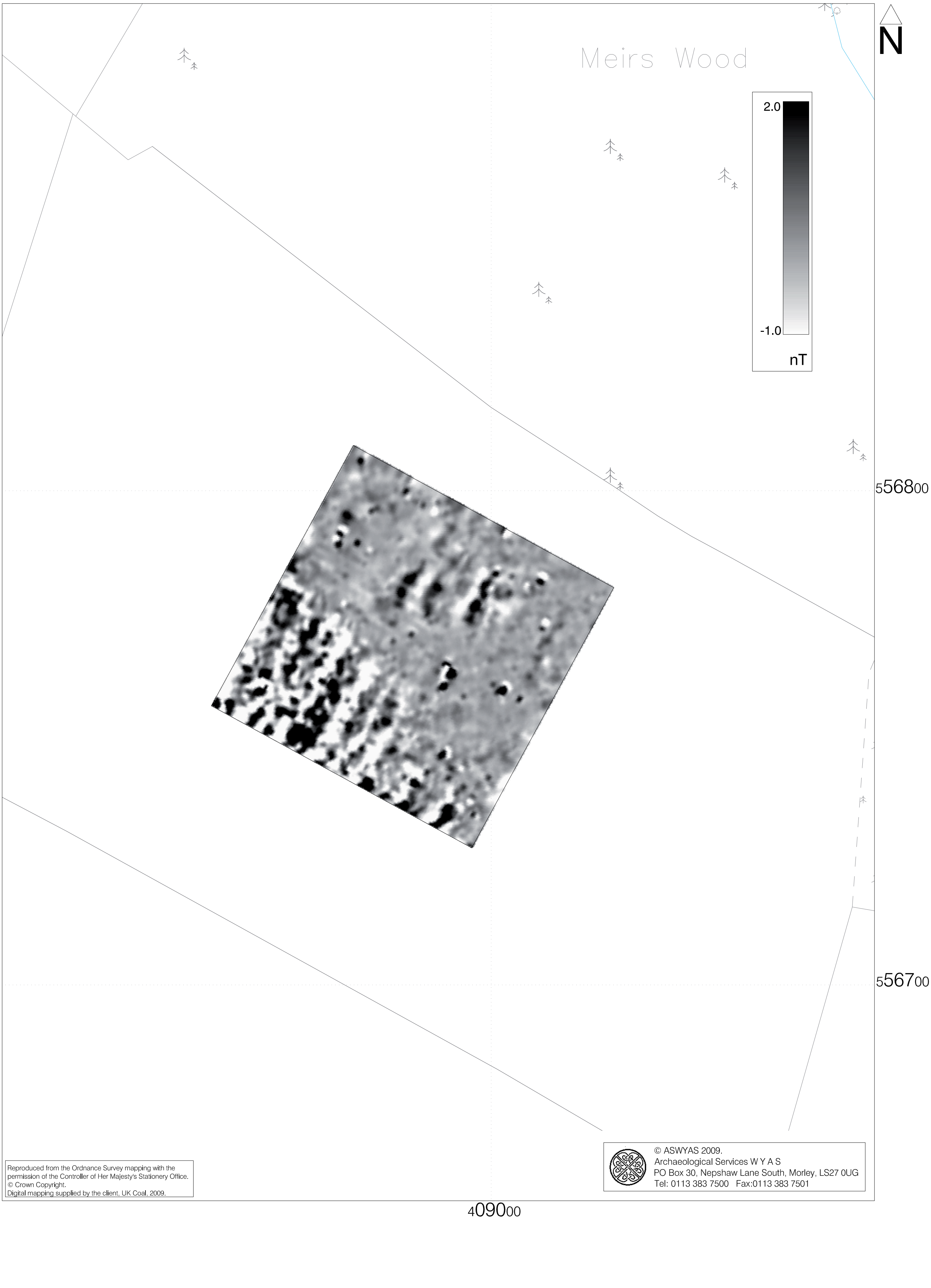

Fig. 12. Processed greyscale magnetometer data; Block 4 (1:1000 @ A4)

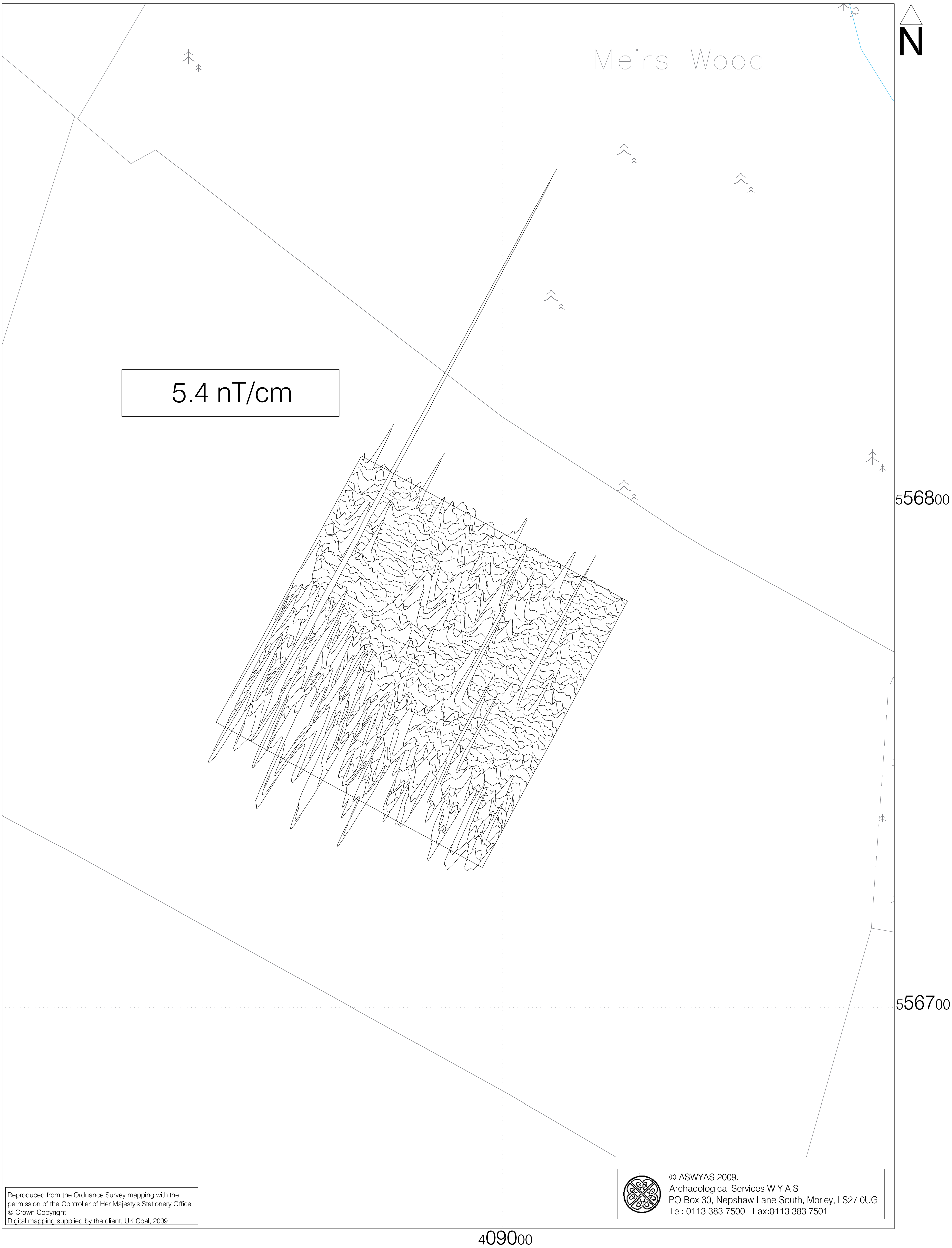

Fig. 13. XY trace plot of unprocessed magnetometer data; Block 4 (1:1000 @ A4)

0 25m

Fig. 14. Interpretation of magnetometer data; Block 4 (1:1000 @ A4)

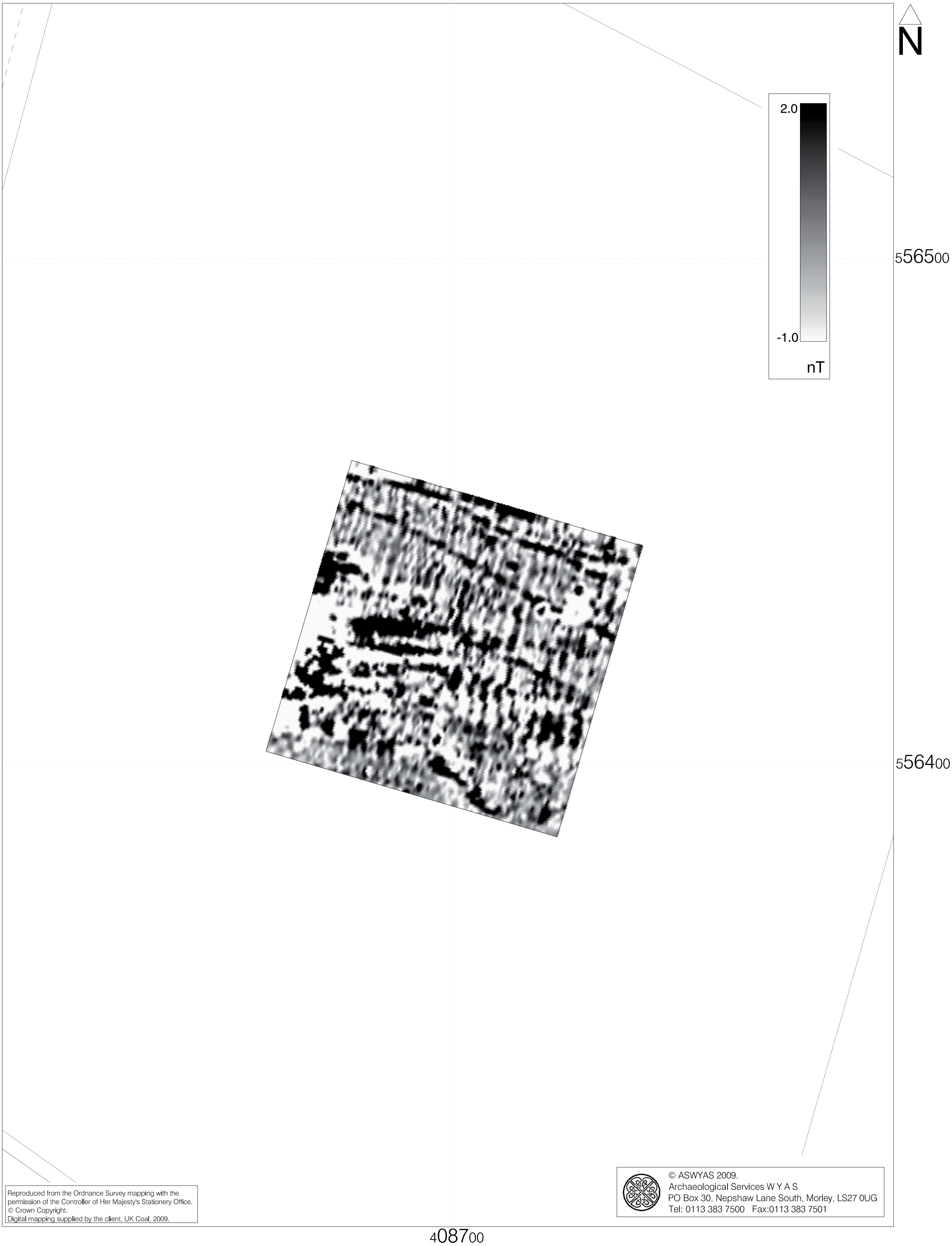

Fig. 15. Processed greyscale magnetometer data; Block 5 (1:1000 @ A4)

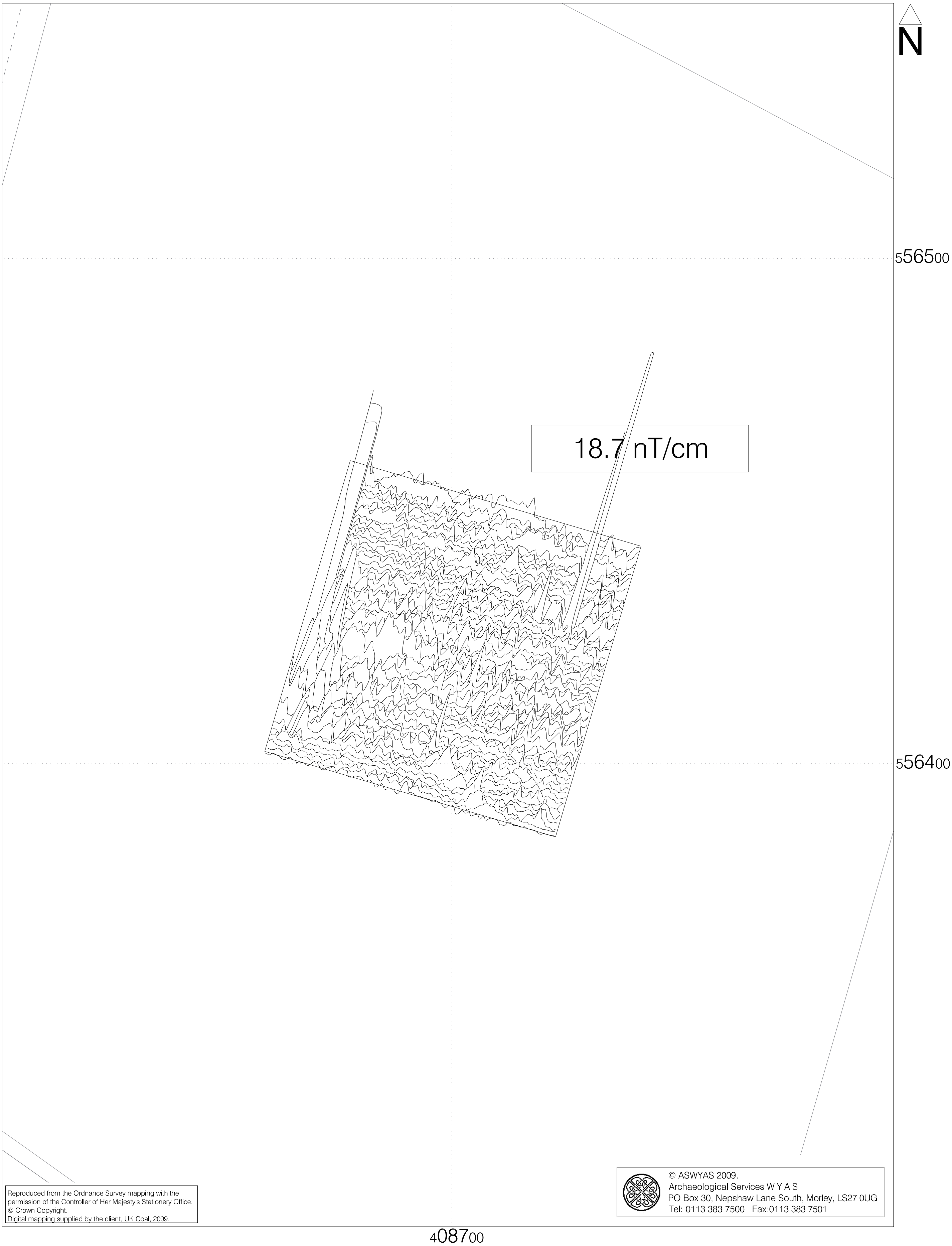

Fig. 16. XY trace plot of unprocessed magnetometer data; Block 5 (1:1000 @ A4)

0 25m

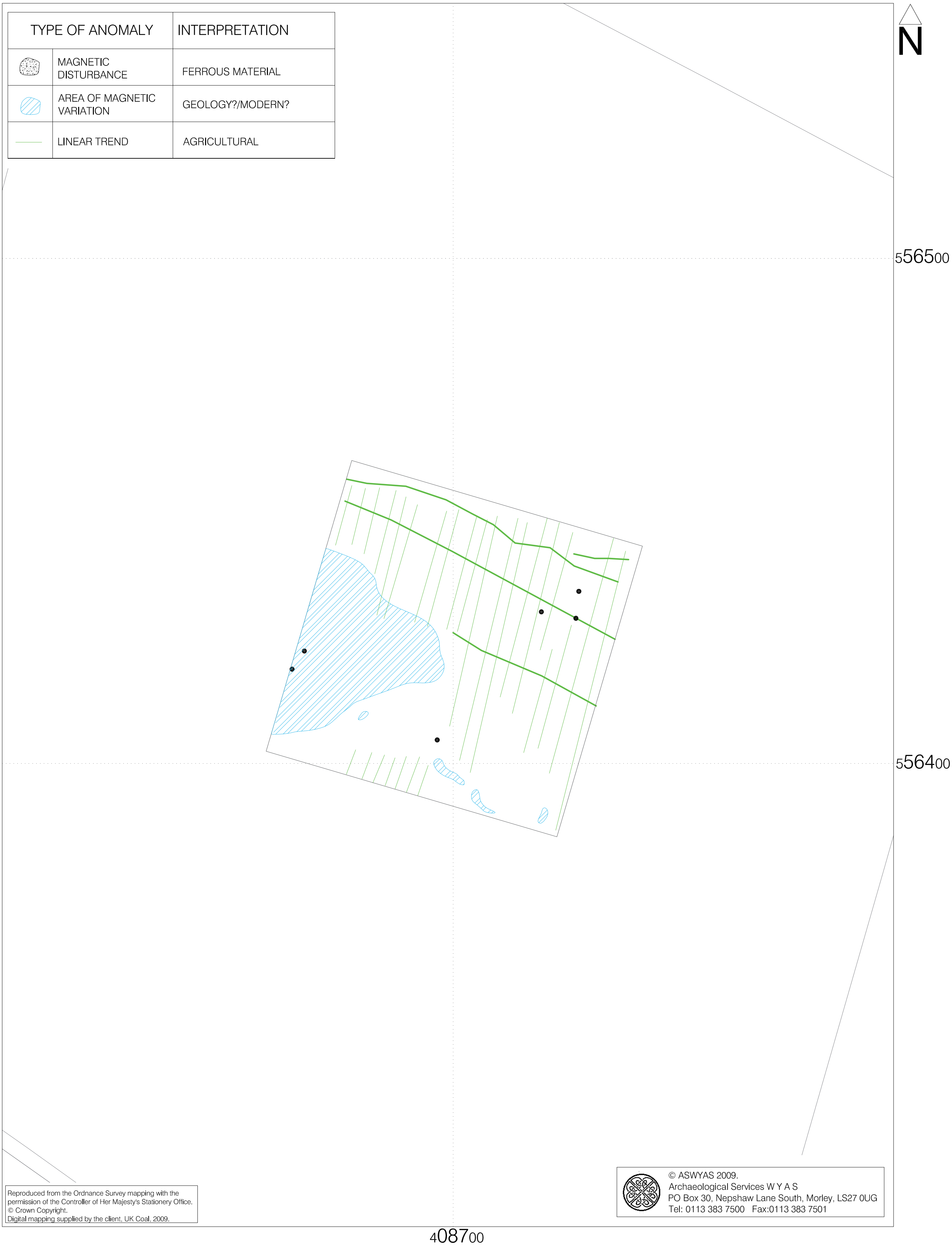

Fig. 17. Interpretation of magnetometer data; Block 5 (1:1000 @ A4)

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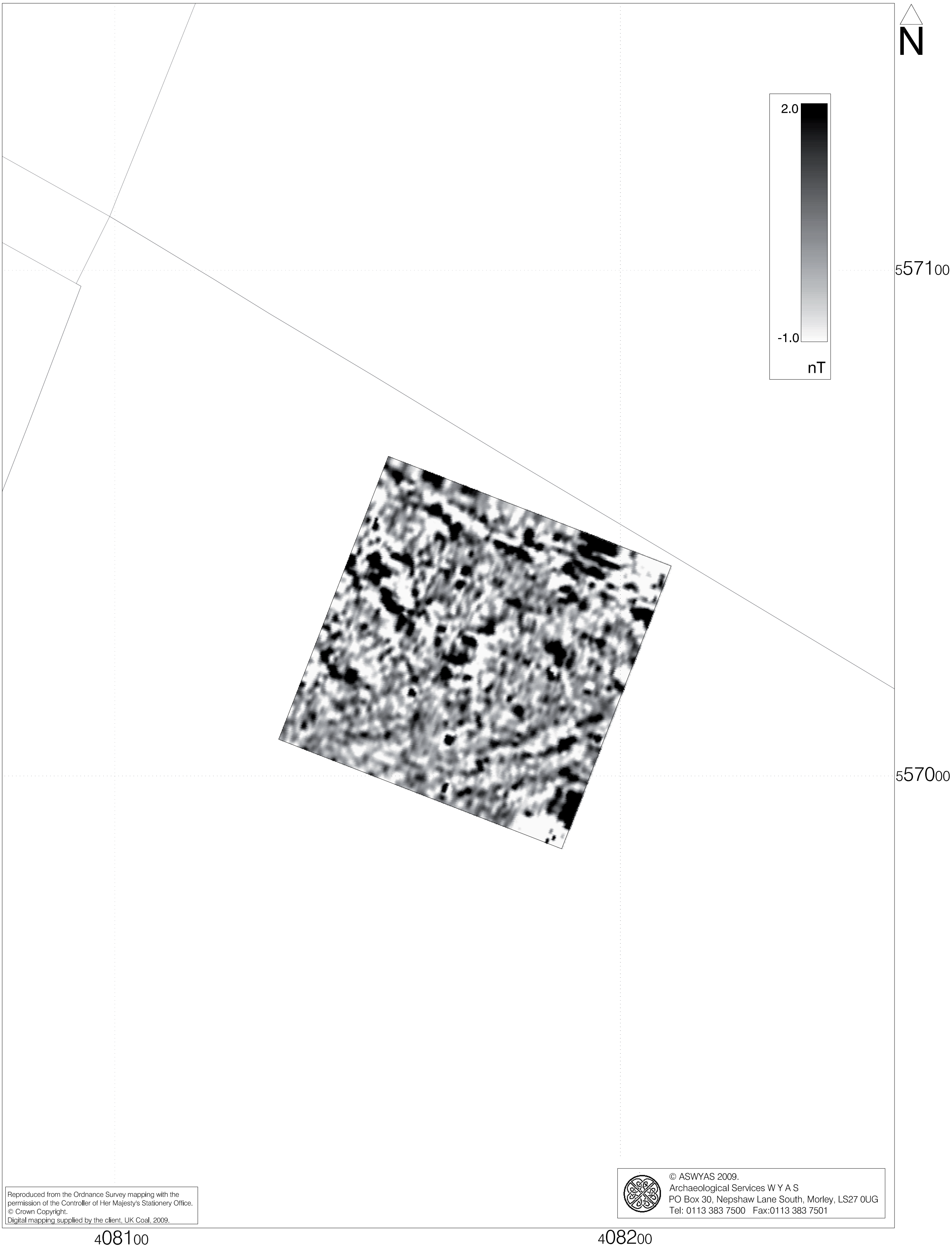

Fig. 18. Processed greyscale magnetometer data; Block 6 (1:1000 @ A4)

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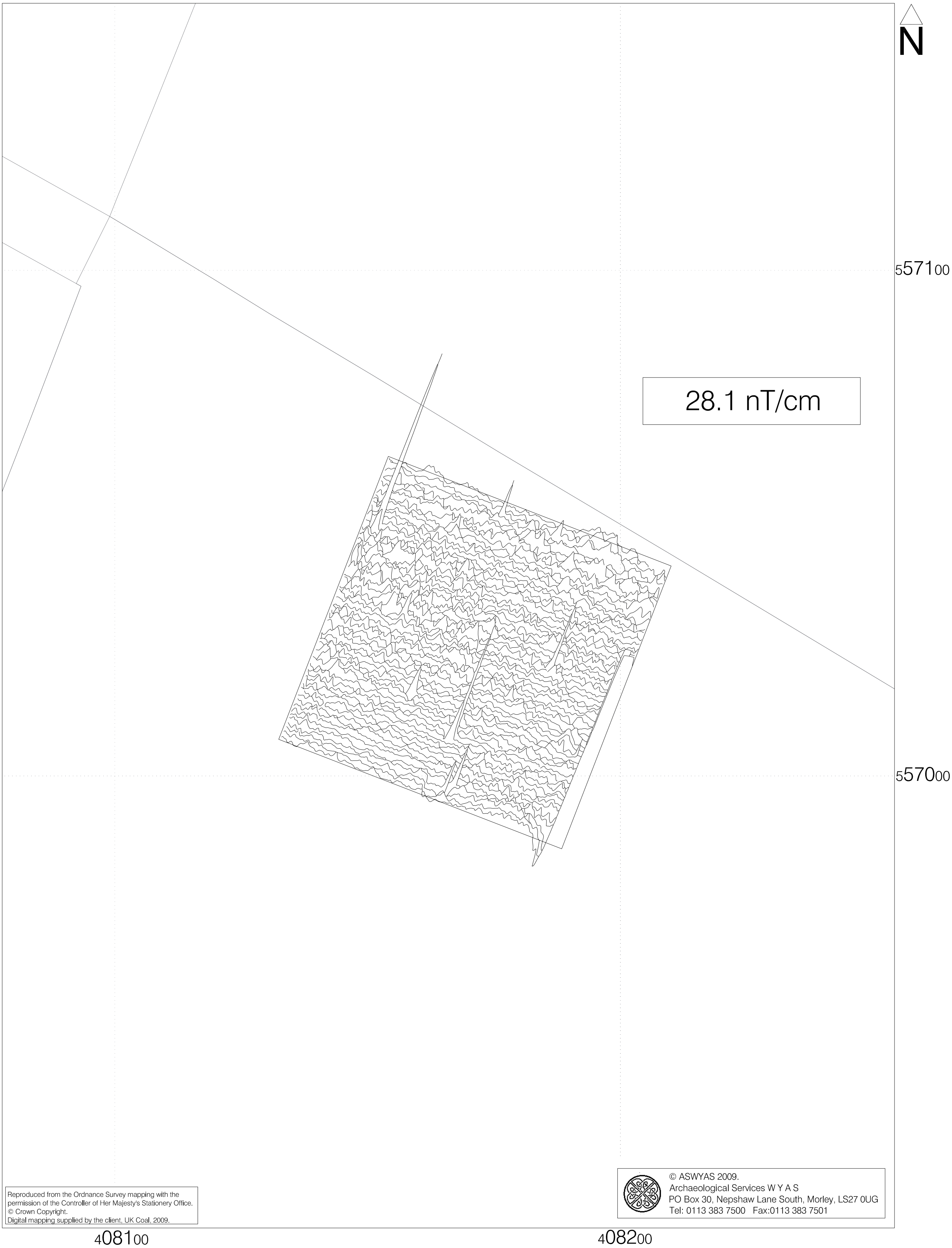

Fig. 19. XY trace plot of unprocessed magnetometer data; Block 6 (1:1000 @ A4)

Fig. 20. Interpretation of magnetometer data; Block 6 (1:1000 @ A4)

Fig. 21. Processed greyscale magnetometer data; Block 7 (1:1000 @ A4)

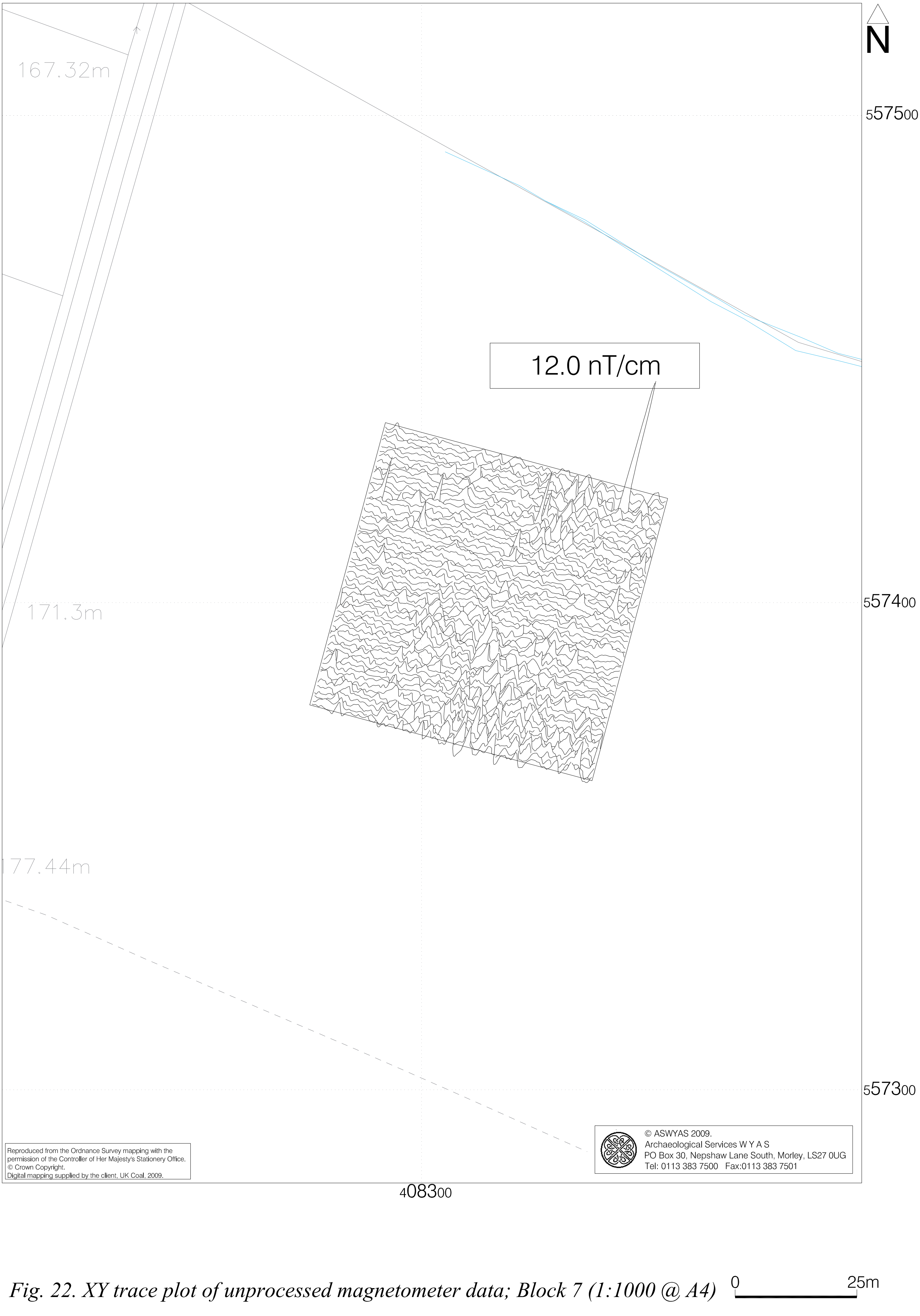

Fig. 22. XY trace plot of unprocessed magnetometer data; Block 7 (1:1000 @ A4)

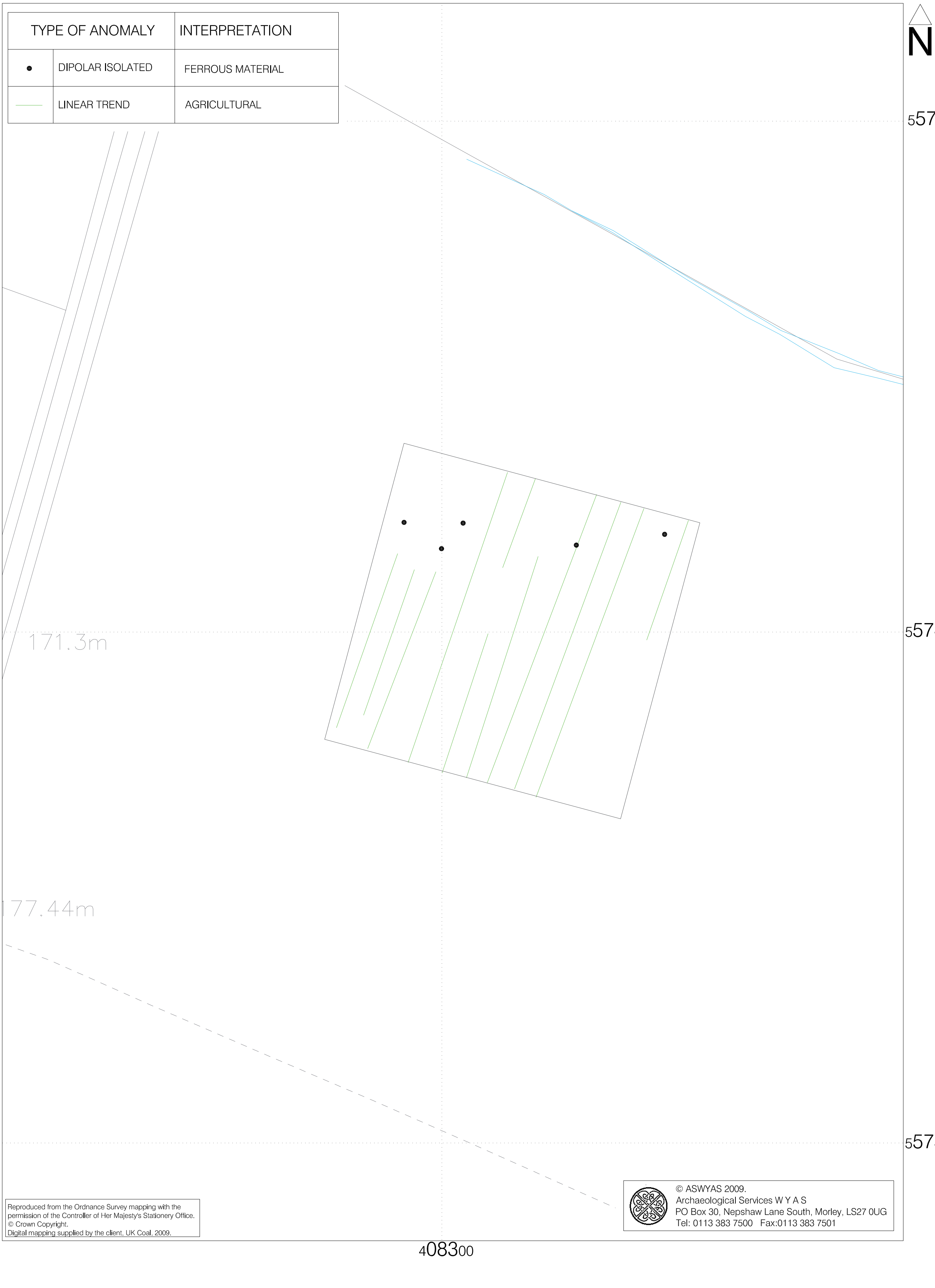

Fig. 23. Interpretation of magnetometer data; Block 7 (1:1000 @ A4)

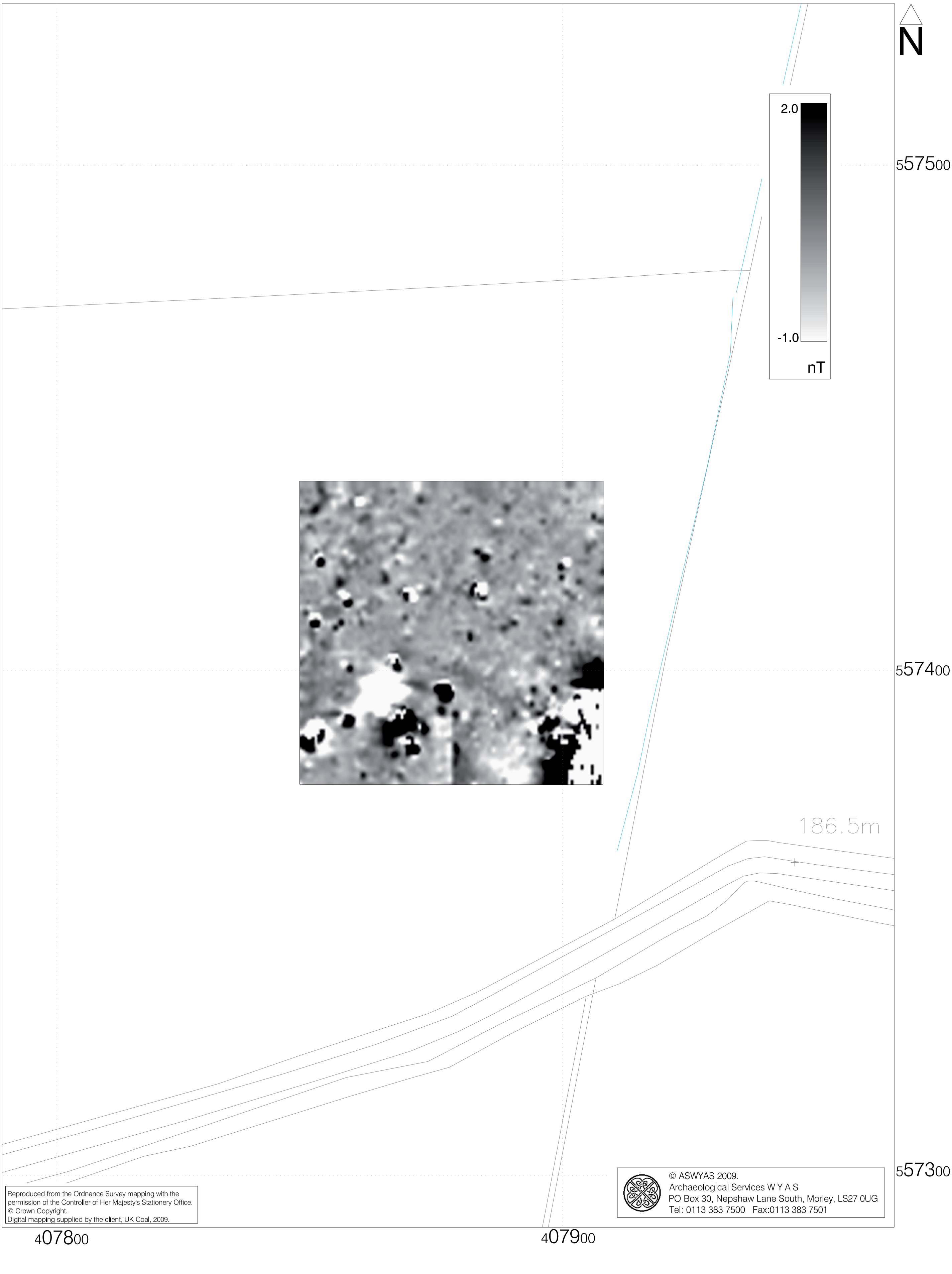

Fig. 24. Processed greyscale magnetometer data; Block 8 (1:1000 @ A4)

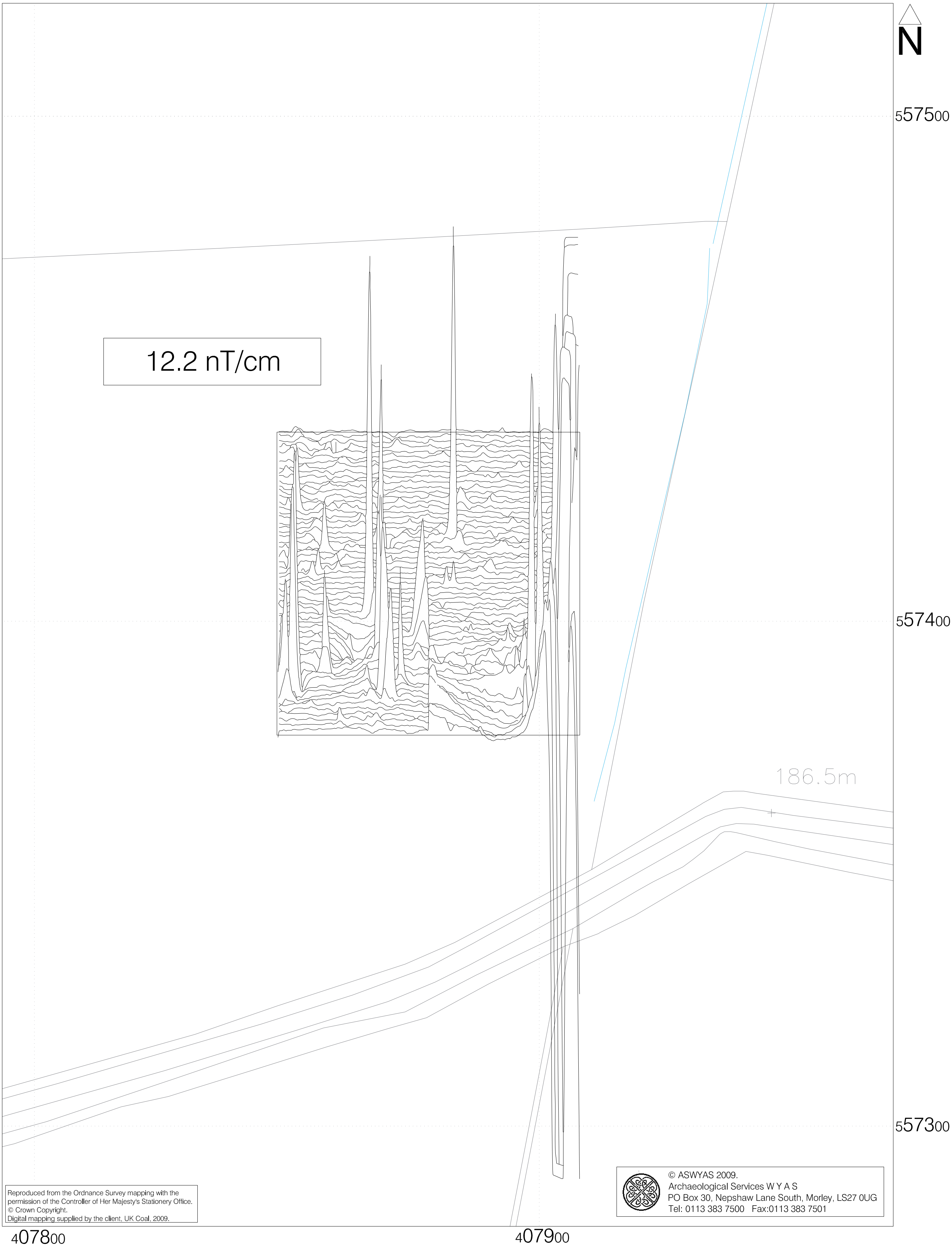

Fig. 25. XY trace plot of unprocessed magnetometer data; Block 8 (1:1000 @ A4)

Fig. 26. Interpretation of magnetometer data; Block 8 (1:1000 @ A4)

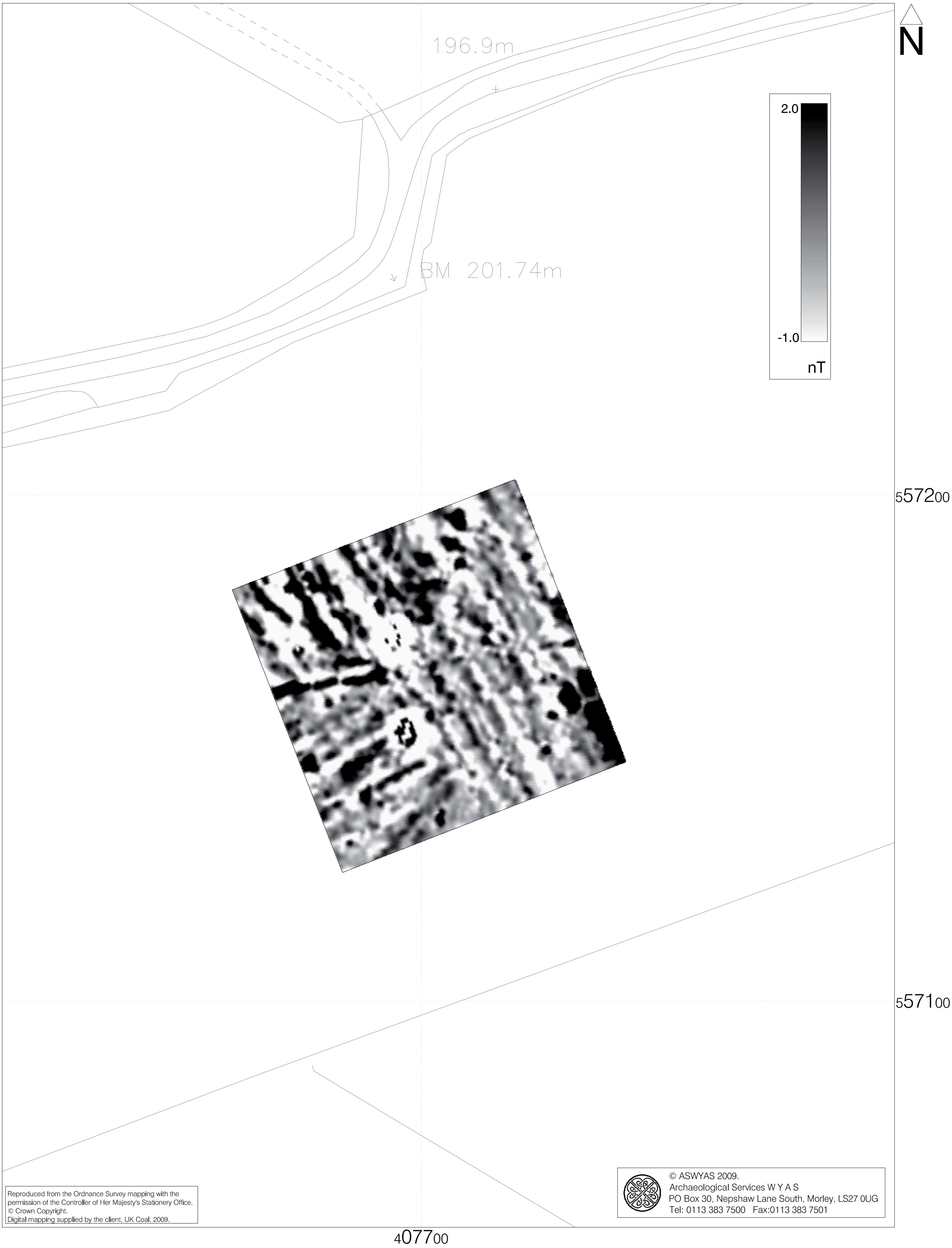

Fig. 27. Processed greyscale magnetometer data; Block 9 (1:1000 @ A4)

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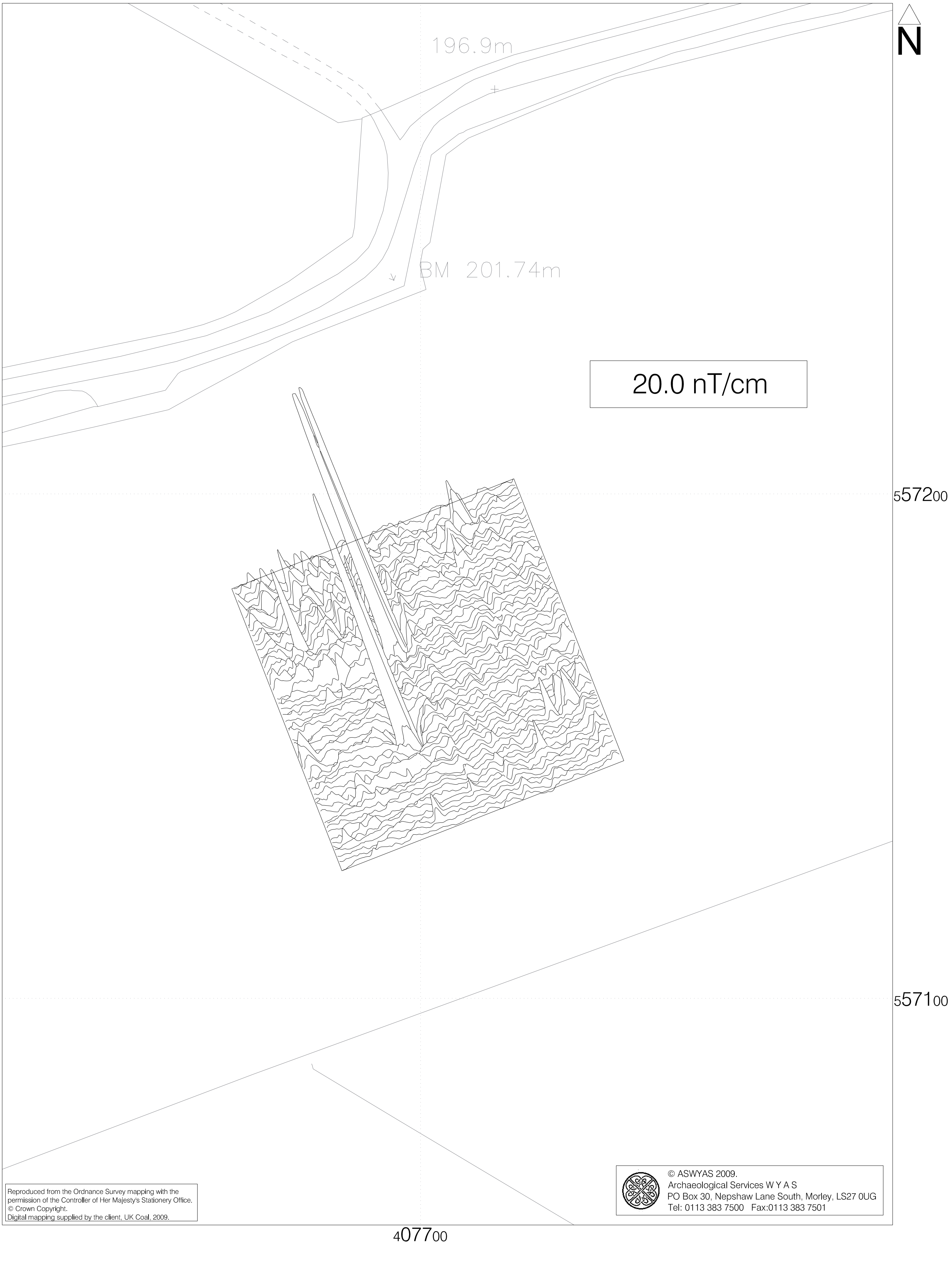

Fig. 28. XY trace plot of unprocessed magnetometer data; Block 9 (1:1000 @ A4)

Fig. 29. Interpretation of magnetometer data; Block 9 (1:1000 @ A4)

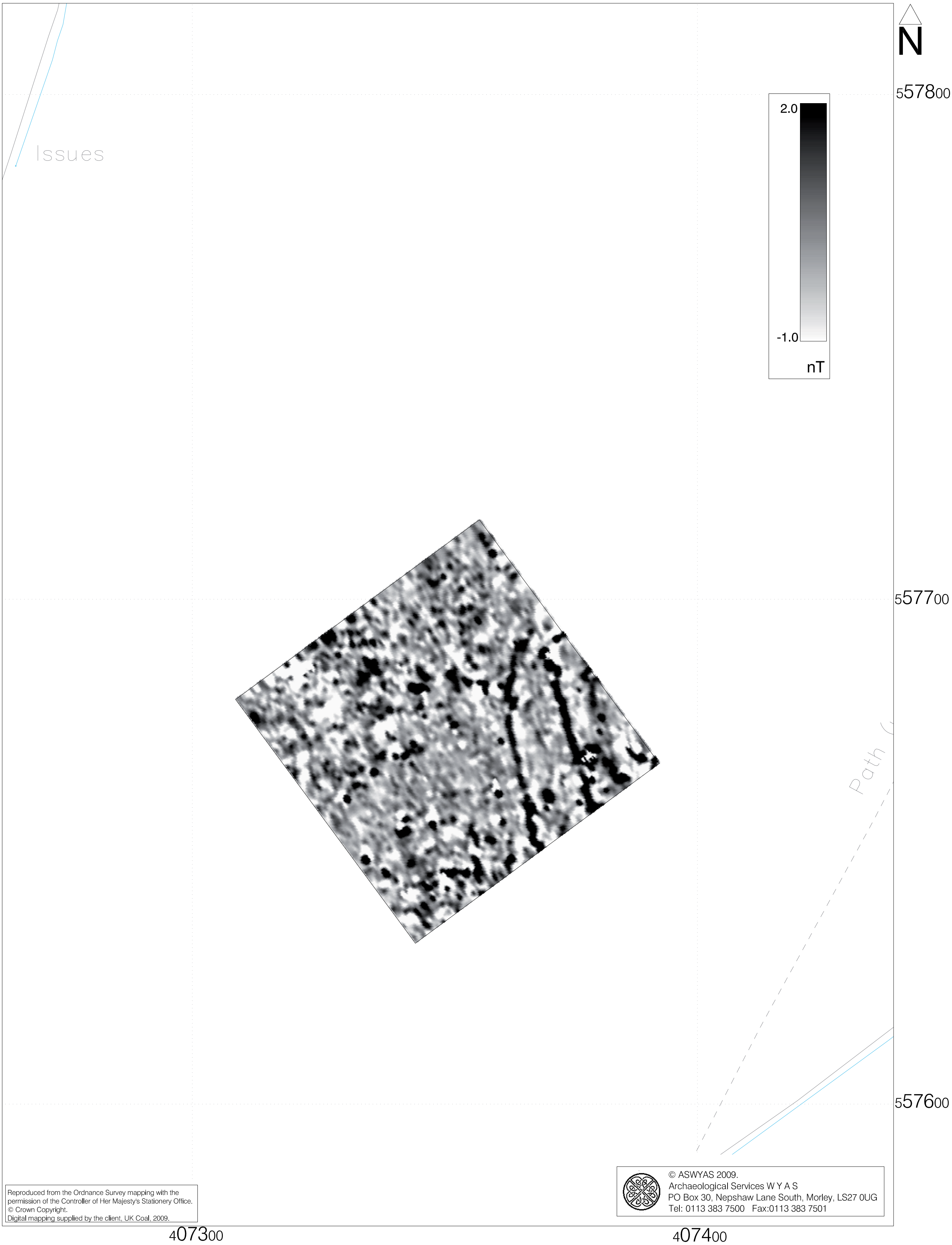

Fig. 30. Processed greyscale magnetometer data; Block 10 (1:1000 @ A4)

0 25m

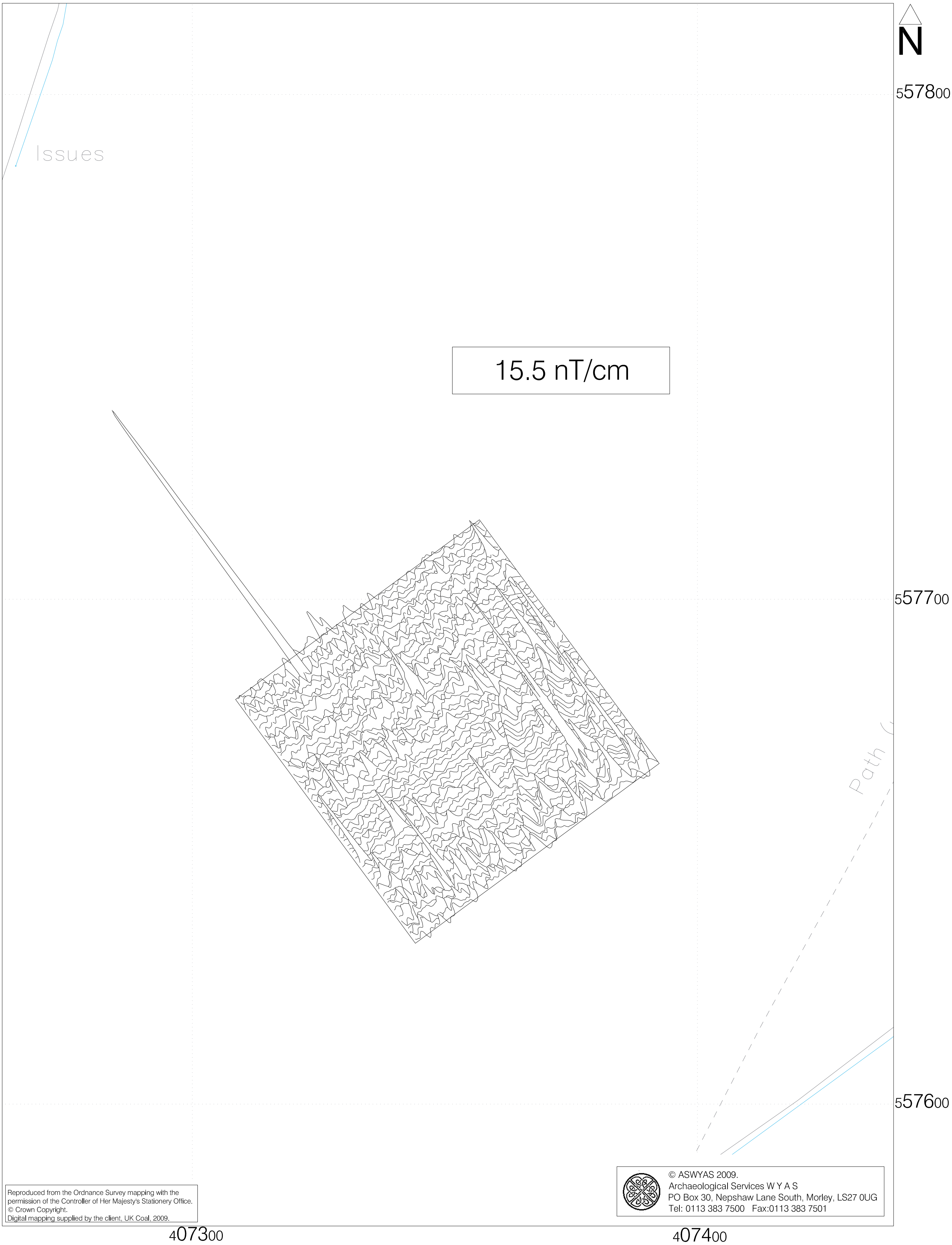

Fig. 31. XY trace plot of unprocessed magnetometer data; Block 10 (1:1000 @ A4)

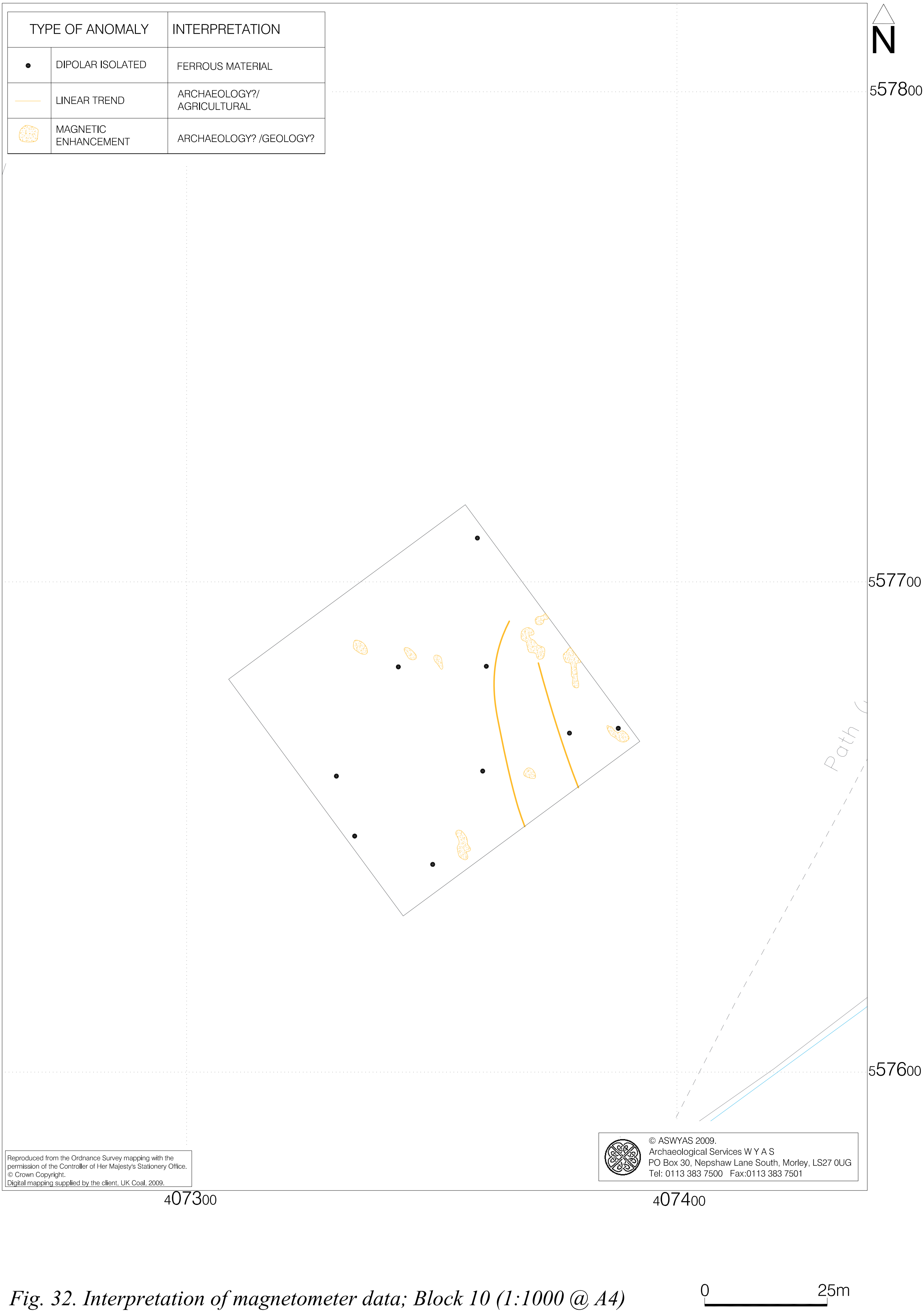

Fig. 32. Interpretation of magnetometer data; Block 10 (1:1000 @ A4)

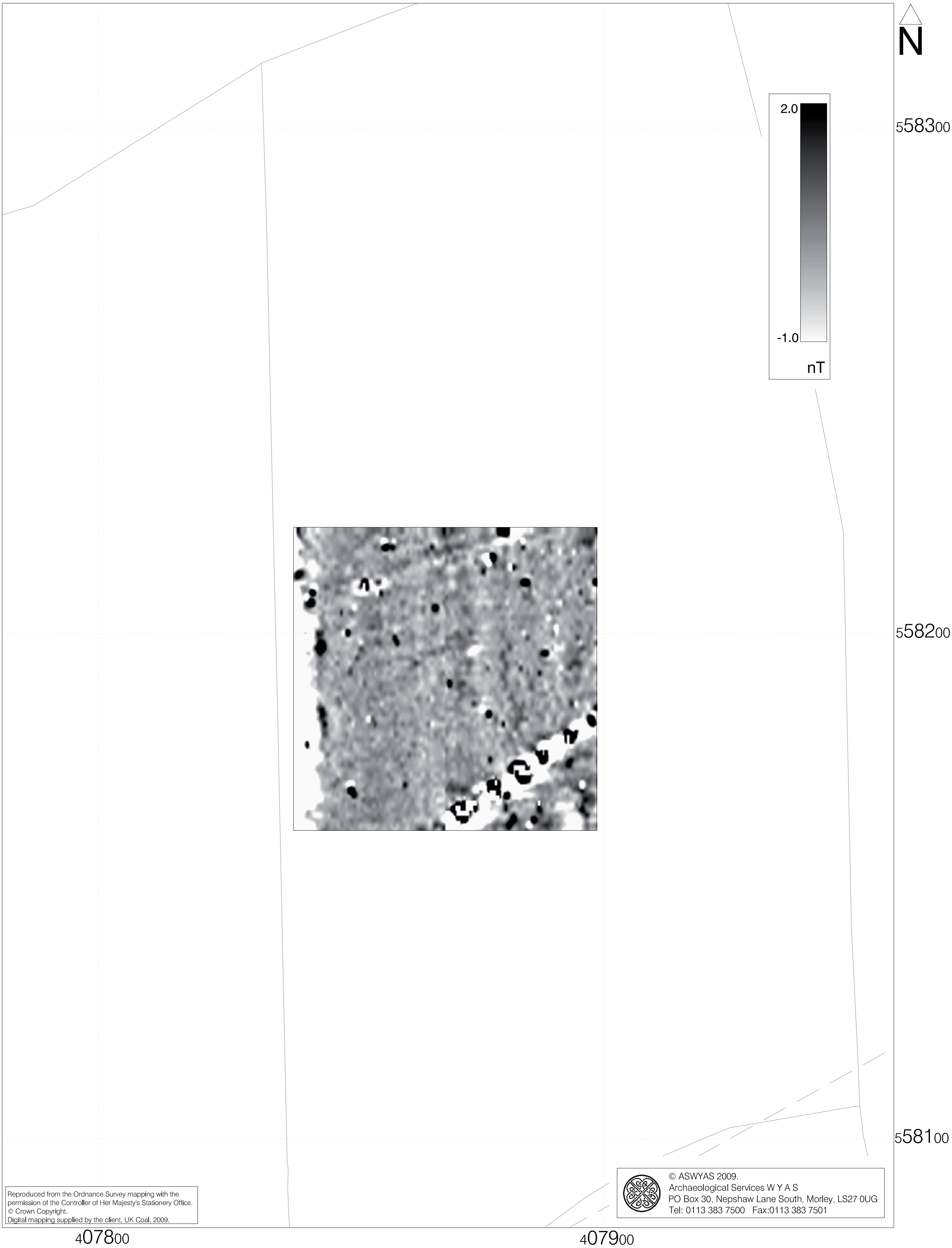

Fig. 33. Processed greyscale magnetometer data; Block 11 (1:1000 @ A4)

Fig. 34. XY trace plot of unprocessed magnetometer data; Block 11 (1:1000 @ A4)

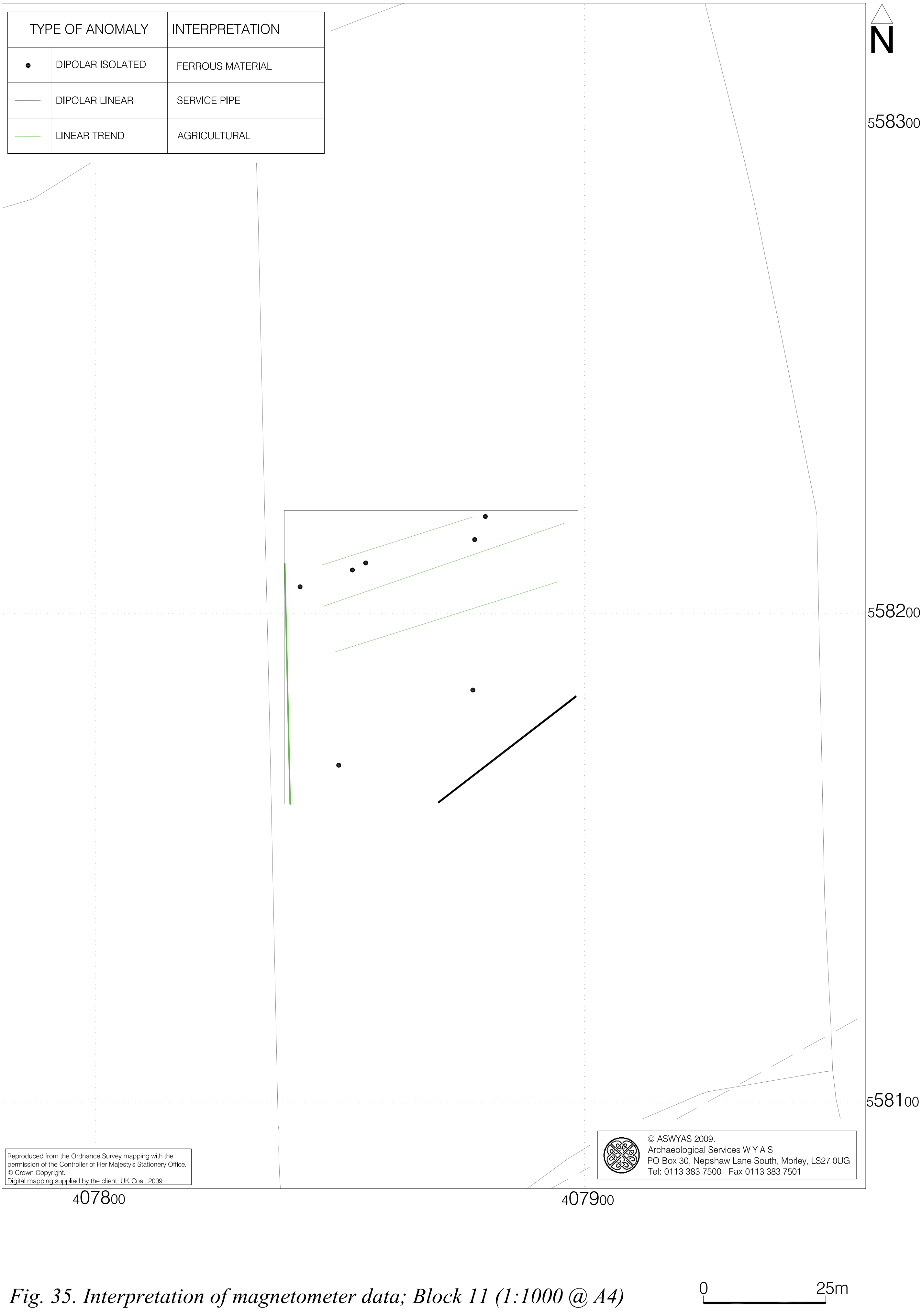

Fig. 35. Interpretation of magnetometer data; Block 11 (1:1000 @ A4)

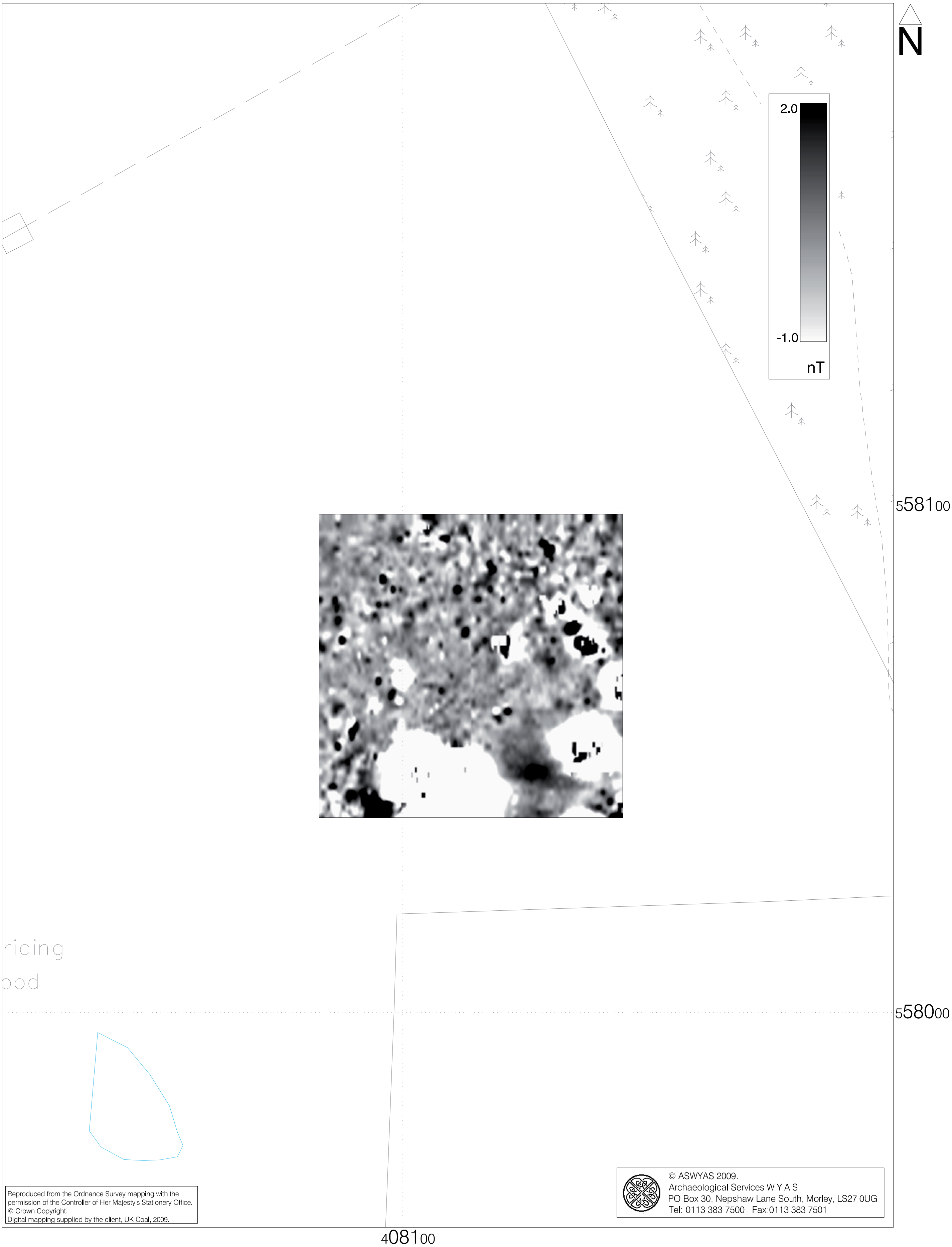

Fig. 36. Processed greyscale magnetometer data; Block 12 (1:1000 @ A4)

0 25m

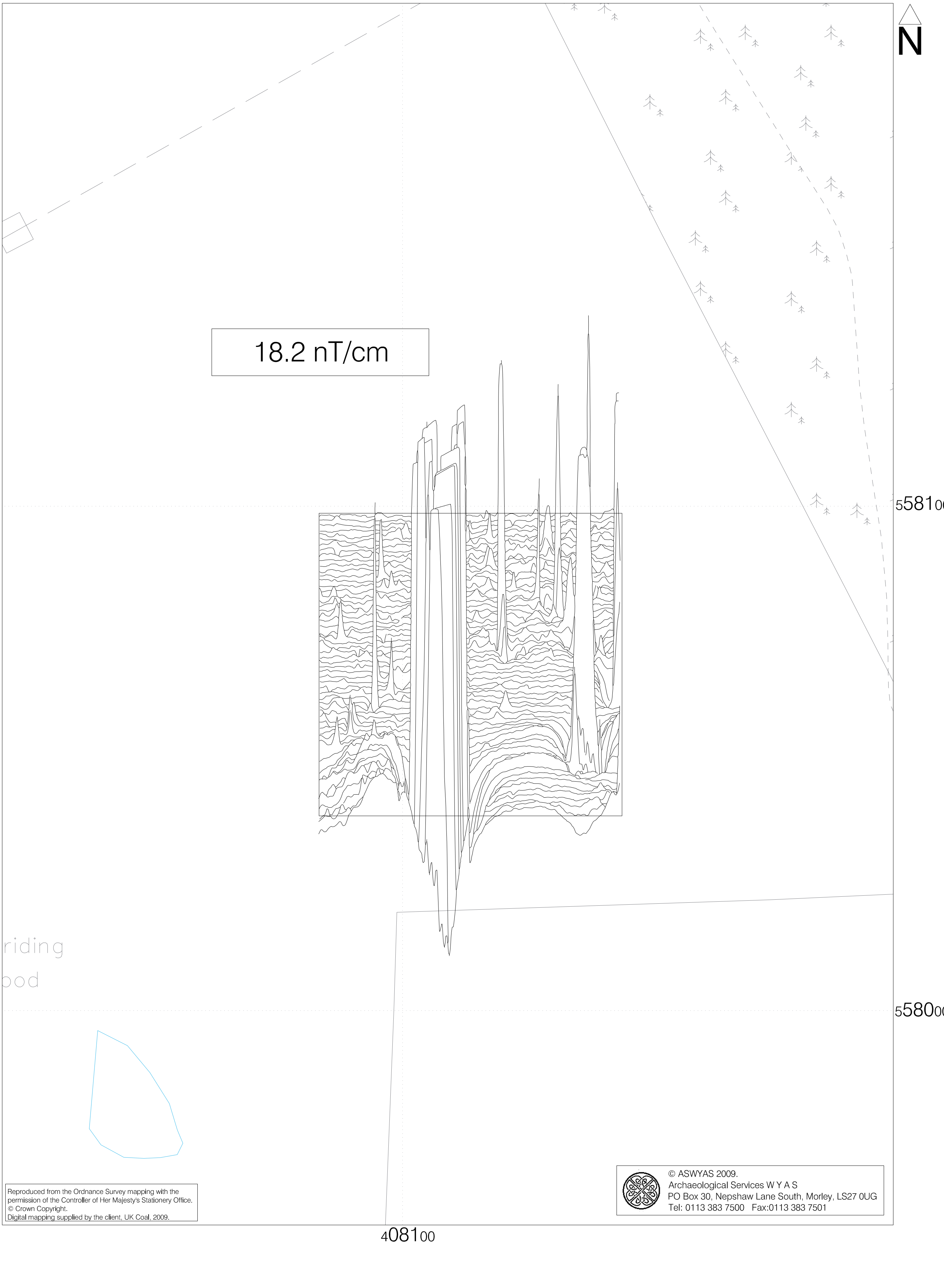

Fig. 37. XY trace plot of unprocessed magnetometer data; Block 12 (1:1000 @ A4)

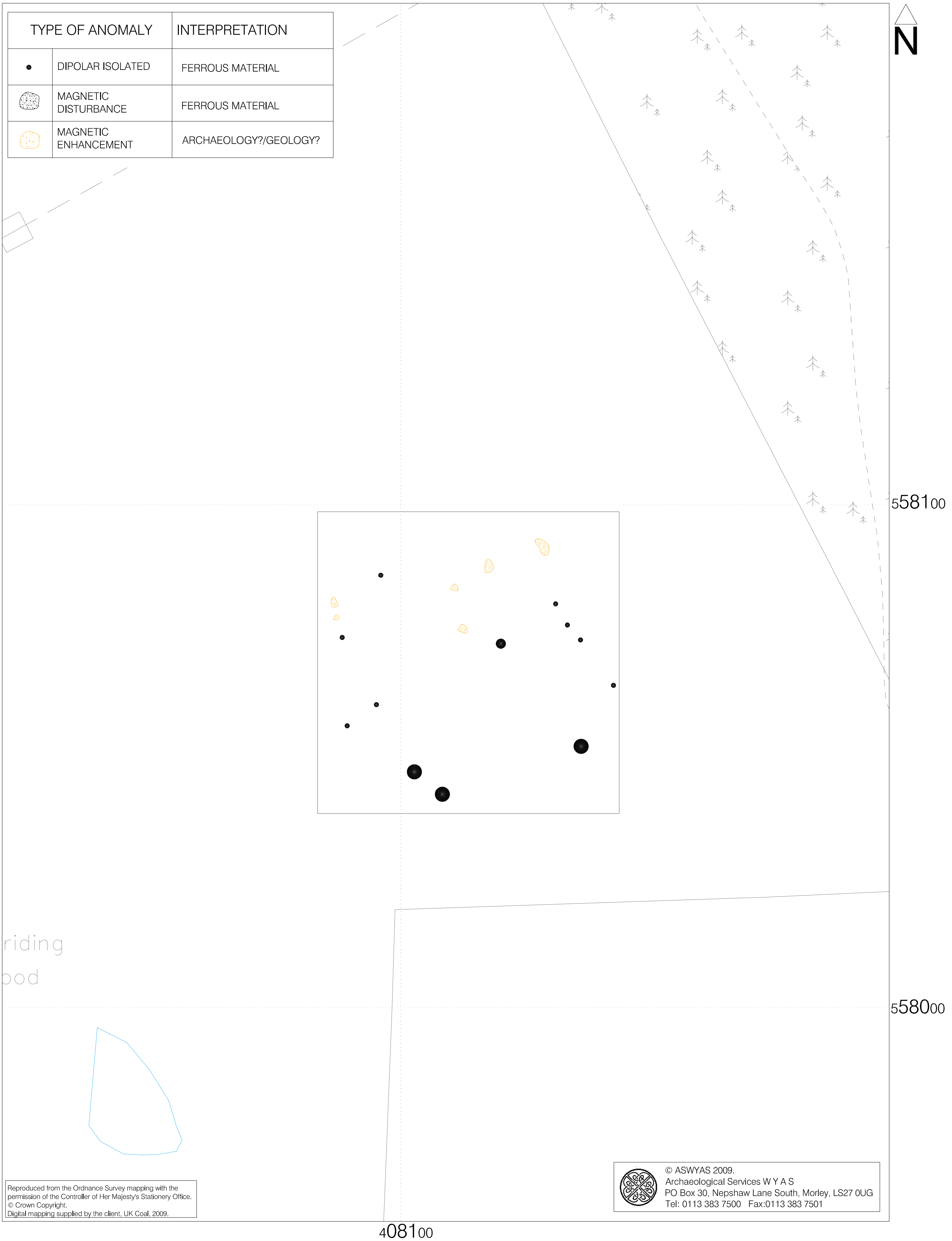

Fig. 38. Interpretation of magnetometer data; Block 12 (1:1000 @ A4)

Appendix 1: Magnetic survey: technical information

Magnetic Susceptibility and Soil Magnetism

Iron makes up about 6% of the Earth's crust and is mostly present in soils and rocks as minerals such as maghaemite and haemetite. These minerals have a weak, measurable magnetic property termed magnetic susceptibility. Human activities can redistribute these minerals and change (enhance) others into more magnetic forms so that by measuring the magnetic susceptibility of the topsoil, areas where human occupation or settlement has occurred can be identified by virtue of the attendant increase (enhancement) in magnetic susceptibility. If the enhanced material subsequently comes to fill features, such as ditches or pits, localised isolated and linear magnetic anomalies can result whose presence can be detected by a magnetometer (fluxgate gradiometer).

In general, it is the contrast between the magnetic susceptibility of deposits filling cut features, such as ditches or pits, and the magnetic susceptibility of topsoils, subsoils and rocks into which these features have been cut, which causes the most recognisable responses. This is primarily because there is a tendency for magnetic ferrous compounds to become concentrated in the topsoil, thereby making it more magnetic than the subsoil or the bedrock. Linear features cut into the subsoil or geology, such as ditches, that have been silted up or have been backfilled with topsoil will therefore usually produce a positive magnetic response relative to the background soil levels. Discrete feature, such as pits, can also be detected. Less magnetic material such as masonry or plastic service pipes that intrude into the topsoil may give a negative magnetic response relative to the background level.

The magnetic susceptibility of a soil can also be enhanced by the application of heat. This effect can lead to the detection of features such as hearths, kilns or areas of burning.

Types of Magnetic Anomaly

In the majority of instances anomalies are termed 'positive'. This means that they have a positive magnetic value relative to the magnetic background on any given site. However some features can manifest themselves as 'negative' anomalies that, conversely, means that the response is negative relative to the mean magnetic background. Such negative anomalies are often very faint and are commonly caused by modern, non-ferrous, features such as plastic water pipes. Infilled natural features may also appear as negative anomalies on some geological substrates.

Where it is not possible to give a probable cause of an observed anomaly a '?' is appended.

It should be noted that anomalies interpreted as modern in origin might be caused by features that are present in the topsoil or upper layers of the subsoil. Removal of soil to an archaeological or natural layer can therefore remove the feature causing the anomaly.

The types of response mentioned above can be divided into five main categories that are used in the graphical interpretation of the magnetic data:

Isolated dipolar anomalies (iron spikes)

These responses are typically caused by ferrous material either on the surface or in the topsoil. They cause a rapid variation in the magnetic response giving a characteristic 'spiky' trace. Although ferrous archaeological artefacts could produce this type of response, unless there is supporting evidence for an archaeological interpretation, little emphasis is normally given to such anomalies, as modern ferrous objects are common on rural sites, often being present as a consequence of manuring.

Areas of magnetic disturbance

These responses can have several causes often being associated with burnt material, such as slag waste or brick rubble or other strongly magnetised/fired material. Ferrous structures such as pylons, mesh or barbed wire fencing and buried pipes can also cause the same disturbed response. A modern origin is usually assumed unless there is other supporting information.

Linear trend

This is usually a weak or broad linear anomaly of unknown cause or date. An agricultural origin, either ploughing or land drains is a common cause.

Areas of magnetic enhancement/positive isolated anomalies

Areas of enhanced response are characterised by a general increase in the magnetic background over a localised area whilst discrete anomalies are manifest by an increased response (sometimes only visible on an XY trace plot) on two or three successive traverses. In neither instance is there the intense dipolar response characteristic exhibited by an area of magnetic disturbance or of an 'iron spike' anomaly (see above). These anomalies can be caused by infilled discrete archaeological features such as pits or post-holes or by kilns. They can also be caused by pedological variations or by natural infilled features on certain geologies. Ferrous material in the subsoil can also give a similar response. It can often therefore be very difficult to establish an anthropogenic origin without intrusive investigation or other supporting information.

Linear and curvilinear anomalies

Such anomalies have a variety of origins. They may be caused by agricultural practice (recent ploughing trends, earlier ridge and furrow regimes or land drains), natural geomorphological features such as palaeochannels or by infilled archaeological ditches.

Methodology: Magnetic Susceptibility Survey

There are two methods of measuring the magnetic susceptibility of a soil sample. The first involves the measurement of a given volume of soil, which will include any air and moisture that lies within the sample, and is termed volume specific susceptibility. This method results in a bulk value that it not necessarily fully representative of the constituent components of the sample. The second technique overcomes this potential problem by taking into account both the volume and mass of a sample and is termed mass specific susceptibility. However, mass specific readings cannot be taken in the field where the bulk properties of a soil are usually unknown and so volume specific readings must be taken. Whilst these values are not fully representative they do allow general comparisons across a site and give a broad indication of susceptibility changes. This is usually enough to assess the susceptibility of a site and evaluate whether enhancement has occurred.

Methodology: Gradiometer Survey

There are two main methods of using the fluxgate gradiometer for commercial evaluations. The first of these is referred to as ***magnetic scanning*** and requires the operator to visually identify anomalous responses on the instrument display panel whilst covering the site in widely spaced traverses, typically 10m apart. The instrument logger is not used and there is therefore no data collection. Once anomalous responses are identified they are marked in the field with bamboo canes and approximately located on a base plan. This method is usually employed as a means of selecting areas for detailed survey when only a percentage sample of the whole site is to be subject to detailed survey.

The disadvantages of magnetic scanning are that features that produce weak anomalies (less than 2nT) are unlikely to stand out from the magnetic background and so will be difficult to detect. The coarse sampling interval means that discrete features or linear features that are parallel or broadly oblique to the direction of traverse may not be detected. If linear features are suspected in a site then the traverse direction should be perpendicular (or as close as is possible within the physical constraints of the site) to the orientation of the suspected features. The possible drawbacks mentioned above mean that a 'negative' scanning result should be validated by sample detailed magnetic survey (see below).

The second method is referred to as ***detailed survey*** and employs the use of a sample trigger to automatically take readings at predetermined points, typically at 0.25m intervals, on zig-zag traverses 1m apart. These readings are stored in the memory of the instrument and are later dumped to computer for processing and interpretation. Detailed survey allows the visualisation of weaker anomalies that may not have been detected by magnetic scanning.

During this survey a Bartington Grad601 magnetic gradiometer was used taking readings on the 0.1nT range, at 0.25m intervals on zig-zag traverses 1m apart within 30m by 30m square grids. The instrument was checked for electronic and mechanical drift at a common point and calibrated as necessary. The drift from zero was not logged.

Data Processing and Presentation

The detailed gradiometer data has been presented in this report in XY trace and greyscale formats. In the former format the data shown is 'raw' with no processing other than grid biasing having been done. The data in the greyscale images has been interpolated and selectively filtered to remove the effects of drift in instrument calibration and other artificial data constructs and to maximise the clarity and interpretability of the archaeological anomalies.

An XY plot presents the data logged on each traverse as a single line with each successive traverse incremented on the Y-axis to produce a 'stacked' plot. A hidden line algorithm has been employed to block out lines behind major 'spikes' and the data has been clipped. The main advantage of this display option is that the full range of data can be viewed, dependent on the clip, so that the 'shape' of individual anomalies can be discerned and potentially archaeological anomalies differentiated from 'iron spikes'. Geoplot 3 software was used to create the XY trace plots.

Geoplot 3 software was used to interpolate the data so that 3600 readings were obtained for each 30m by 30m grid. The same program was used to produce the greyscale images. All greyscale plots are displayed using a linear incremental scale.

Appendix 2: Survey location information

The site grid was laid out using a Trimble VRS differential Global Positioning System (Trimble 5800 model). The accuracy of this equipment is better then 0.01m. The locations of the temporary reference points left on site are shown on Figure 2 and the Ordnance Survey grid co-ordinates tabulated below. The internal accuracy of these markers is better than 0.01m. The survey grids were then super-imposed onto a base map provided by the client to produce the displayed block locations. However, it should be noted that Ordnance Survey positional accuracy for digital map data has an error of 0.5m for urban and floodplain areas, 1.0m for rural areas and 2.5m for mountain and moorland areas. This potential error must be considered if co-ordinates are measured off hard copies of the mapping rather than using the digital co-ordinates.

Archaeological Services WYAS cannot accept responsibility for errors of fact or opinion resulting from data supplied by a third party or for the removal of any of the survey reference points.

Appendix 3: Geophysical archive

The geophysical archive comprises:-

- an archive disk containing compressed (WinZip 8) files of the raw data, report text (Microsoft Word 2000), and graphics files (Adobe Illustrator CS2 and AutoCAD 2007) files.
- a full copy of the report

At present the archive is held by Archaeological Services WYAS although it is anticipated that it may eventually be lodged with the Archaeology Data Service (ADS). Brief details may also be forwarded for inclusion on the English Heritage Geophysical Survey Database after the contents of the report are deemed to be in the public domain (i.e. available for consultation in the relevant Sites and Monument Record Office).

Bibliography

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