highways england

A47 Wansford to Sutton Dualling

Scheme Number: TR010039

Volume 6
6.3 Environmental Statement Appendices
Appendix 6.2 – Geophysical Survey Report

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

July 2021

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

A47 Wansford to Sutton Development Consent Order 202[x]

ENVIRONMENTAL STATEMENT APPENDICES
Appendix 6.2 - Geophysical Survey Report

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Rev 0	July 2021	Application Issue

WYAS Archaeological Services

Wansford to Sutton Dualling

Peterborough

Geophysical Survey

Report no. 3135
November 2018

Client: Mott MacDonald Sweco Joint Venture

Wansford to Sutton Dualling
Peterborough

Geophysical Survey

Summary

A geophysical (magnetometer) survey, covering approximately 50 hectares was undertaken on land to the north and south of the A47 between Wansford and Sutton, Peterborough. Anomalies of an archaeological origin have been recorded, some of which correspond to cropmarks and HER data and include prehistoric enclosures, trackways and pit alignments. Possible archaeological anomalies have been recorded which are likely to be associated with enclosures, large pits and industrial/occupational areas.

Former field boundaries have been detected in the western part of the site which correspond well with recorded boundaries on Ordnance Survey mapping. Responses associated with a geological origin are present to the north of the river Nene and modern agricultural anomalies have been recorded throughout the survey areas. The archaeological potential of the site would, therefore, be characterised as high to medium.

WYAS
Archaeological Services

Report Information

Client:	Mott MacDonald Sweco Joint Venture
Address:	22 Station Road, Cambridge, CB1 2JD
Report Type:	Geophysical Survey
Location:	Wansford to Sutton
County:	Peterborough
Grid Reference:	TL 087 995 (approximate centre)
Period(s) of activity:	?Prehistoric / Roman
Report Number:	3135
Project Number:	8234
Site Code:	AIP18
OASIS ID:	archaeol11-318978
Date of fieldwork:	March – May, August 2018
Date of report:	November 2018
Project Management:	Emma Brunning BSc MCIfA
Fieldwork:	Chris Sykes BSc MSc MCIfA
	Clare Asplin BA
	Jake Freeman BA
	Jamie Ranaldi BSc MSc
	Alastair Trace BSc MSc
	David Inglis BA MA
Report:	Emma Brunning and Chris Sykes
Illustrations:	Emma Brunning and Chris Sykes

Authorisation for distribution: ----------

Nepshaw Lane South, Morley, Leeds LS27 7JQ
Telephone: 0113 535 0163.
Email: admin@aswyas.com

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1 Introduction

Archaeological Services WYAS (ASWYAS) were commissioned by Mott MacDonald Sweco Joint Venture (the client), to undertake a geophysical (magnetometer) survey on land to the north and south of the A47 between Wansford and Sutton, to the west of Peterborough. This is in advance of junction improvements as part of the A47 improvement programme. The survey was undertaken in line with current best practice (CIfA 2014; David *et al*. 2008) and also to the archaeological specification for geophysical survey prepared by the client on behalf of Highways England (MM 2018). The survey was carried out between the 20th March and the 2nd May 2018, with additional survey undertaken between the 11th and 17th September 2018.

Site location, topography and land-use

The survey area is located to the north and south of the A47 from the A1/A47 junction at Wansford to the A47/Nene Way junction at Sutton, to the west of Peterborough (see Fig. 1). The River Nene is located to the immediate south of the survey areas. This section of the scheme comprises 18 areas (WAN01-18) which total approximately 50 ha. The survey area is centred at TL 087 995. The height above Ordnance Datum (aOD) lies between 30m in the west to 15m in the east.

Soils and geology

The bedrock geology of the survey area belongs to the Upper Lincolnshire Limestone member surrounding the Wansford Junction, the Lower Lincolnshire Limestone member surrounding Sacrewell Farm, the Grantham formation – sandstone, siltstone and mudstone with superficial deposits recorded as river terrace deposits in the centre of the scheme with Rutland formation – argillaceous rocks with subordinate sandstone and limestone and with superficial deposits recorded as river terrace deposits to the east of the scheme (BGS 2018). The soils in the area are classified as shallow lime-rich soils in the west to freely draining slightly acid to the east (CSAI 2018).

2 Archaeological Background

Peterborough Historic Environment Record (PHER) data were supplied on mapping provided by the client and have been plotted on Figure 2. This was then followed up by a search on PHER website to obtain additional information. Information has also been taken from the Archaeological Specification for Geophysical Survey (MM 2018). The information below runs from the west of the scheme through to the east.

A Roman iron working site (50343) is recorded at Sacrewell Farm which falls within WAN01. Also within this area several worked flints, mostly scrapers, have been found from 1970 onwards dating to the Neolithic and Bronze Age (01976).

To the north of WAN01 lies a post-medieval mill house and watermill dated 1755 known as Sacrewell Mill (50791). In 2013 archaeological monitoring (53534) of a test pit adjacent to the watermill discovered an earlier metalled track running north-south past the mill buildings and underlying the existing farm track. A number of find spots are also recorded nearby including Roman pottery (01975, 07695, 01980a) and Neolithic or Bronze Age worked flints (01980). The site of a Roman building is recorded to the south of Sacrewell Mill (00131) and a fishery of uncertain date lies to the east (53698).

To the east of WAN02 lies the site of a Roman villa (00131) which in 1963 was excavated by Peterborough Museum Society's Archaeological Field Section (01991).

In the west of WAN03 lies the site of a Royal Observer Corps bunker (50635). Also within this area lies a Bronze Age cist burial (00176), a trackway (00190a) and a linear feature (00190b) seen on aerial photography.

To the west of WAN04 an excavation took place in 1993 prior to development (11038). Finds included post-medieval debris (11039). Within the same year six trenches were dug on a large mound (50596) but no significant archaeological features were found.

To the south of WAN05, in the River Nene, a Roman brooch and pottery (00180) and two Roman lamps were found (00181).

To the north of WAN05 lies a scheduled monument (listing entry 1006796), (SAM201) which lies within WAN12. The field known as 'Toll Bar' contains several cropmarks of enclosures and ring ditches. Roman sherds are visible in large quantities on the surface of the ploughed field.

To the east of WAN06 lies the former Stamford and Wansford Railway (53529), which was closed to passengers in 1929 and to goods in 1931.

North of WAN07 a linear feature and ring ditch are located (00227) along with a post-hole (00230) to the east.

An Iron Age pit alignment (08368) is located in WAN07 and is visible in aerial photography. It extends southeast from the A47 and ends near a double ring ditch (08359). Another two ring ditches are positioned to the south (01987, 08144).

To the south of WAN08 another ring ditch (01653) is recorded as well as Neolithic spot finds (00229).

WAN12 contains the scheduled monument, a cropmark site of a barrow cemetery, ditch enclosure and pit alignment (1006796).

WAN13 lies to the east of WAN12 and has a series of pit alignments recorded within it.

WAN14 is located to the immediate east of the junction of the A47 and Sutton Heath Road which records a semi-circular feature along the western extent and a ditch feature which projects through the centre of the survey area.

Two archaeological features have been recorded on aerial photography data, (00230) and (00227), as prehistoric enclosures located within WAN15.

3 Aims, Methodology and Presentation

The main aim of the geophysical survey was to provide sufficient information to enable an assessment to be made of the impact of the development on potential sub-surface archaeological remains and for further evaluation or mitigation proposals, if appropriate, to be recommended. To achieve this aim, a magnetometer survey covering all amenable parts of the PDA was undertaken (see Fig. 2).

The general objectives of the geophysical survey were to:

- Locate and identify the nature and extent of previously unknown archaeological features along the proposed route option;
- Establish whether any features associated with known archaeological remains can be traced within the current survey areas;
- Establish whether any remains identified during previous geophysical surveys can be traced continuing into the current survey areas;
- Establish the condition of any archaeological deposits, particularly their level of preservation; and,
- Identify any areas of modern disturbance.

Magnetometer survey

The site grid was laid out using a Trimble VRS differential Global Positioning System (Trimble R6 model). The survey was undertaken using Bartington Grad601 magnetic gradiometers. These were employed taking readings at 0.25m intervals on zig-zag traverses 1.0m 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.

Reporting

A general site location plan, incorporating the 1:50000 Ordnance Survey (OS) mapping, is shown in Figure 1. Figure 2 displays an overview of the processed magnetometer data at a

scale of 1: 6000, with the overall interpretation, at the same scale in Figure 3. The minimally processed data, together with an interpretation of the survey results are presented in Figures 4 to 42 inclusive at a scale of 1:1250.

Technical information on the equipment used, data processing and survey methodologies are given in Appendix 1. Technical information on locating the survey area is provided in Appendix 2. Appendix 3 describes the composition and location of the archive. A copy of the completed OASIS form is included in Appendix 4.

The survey methodology, report and any recommendations comply with guidelines outlined by Historic England (David *et al.* 2008) and by the Chartered Institute for Archaeologists (CIfA 2014). All figures reproduced from Ordnance Survey mapping are with the permission of the controller of Her Majesty's Stationery Office (© Crown copyright).

The figures in this report have been produced following analysis of the data in 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.

4 Results and Discussion (see Figures 4 to 42)

Modern anomalies

Ferrous anomalies, as individual 'spikes', or as large discrete areas are typically caused by ferrous (magnetic) material, either on the ground surface or in the plough-soil. Little importance is normally given to such anomalies, unless there is any supporting evidence for an archaeological interpretation, as modern ferrous debris or material is common on rural sites, often being present as a consequence of manuring or tipping/infilling. There is no obvious pattern or clustering to their distribution in this survey to suggest anything other than a random background scatter of ferrous debris in the plough-soil.

Service pipes have been detected in WAN03 (Figs 13-15) and WAN08 (Figs 25-27) which are also recorded on the mapping provided by the client. The continuation of this service has been detected in WAN13 and WAN16.

Areas of magnetic disturbance along the limits of the survey areas have been caused by metal fencing and debris in the boundaries.

The southwestern portion of WAN18 has created a blanking effect in the data, caused by the electro-magnetic interference of overhead cabling.

Geological anomalies

The survey has detected a number of low magnitude anomalies across the scheme. Those in WAN10 (Figs 4-6) are likely to be due to flooding of the adjacent stream to the north. Similar responses in WAN05 (Figs 16-18) are probably due to flooding of the river Nene or alluvium deposits. A large band of responses in WAN09 (Figs 28-20) could be due to the topography. Other smaller responses that have been detected are thought to be down to the variation in the composition and depth of the deposits of superficial material in which they derive and also topographical variations.

Agricultural anomalies

Former field boundaries have been identified in WAN01 and WAN02 which appear on Ordnance Survey mapping dating from 1886 (OM 2018). By the 1975 maps, the boundaries have been removed.

Ridge and furrow responses have been detected, predominantly in WAN15, indicative of earlier agricultural practice (Figs 37-39).

Linear trends have been recorded throughout the scheme and are associated with modern cultivation. These can be seen in areas WAN01, 02, 05, 06, 07, 08, 09 and 11.

Possible archaeological anomalies

A number of anomalies (**P1**) have been recorded in WAN01 which have the potential of having an archaeological origin. These anomalies do not appear to form any patterns and the ploughing within this area has added to the uncertainty of the interpretation. However, within this vicinity a Roman iron working site is located (PHER 50343) and the responses **P1a** certainly have an increased magnetic strength which would be expected from an industrial site.

Further possible anomalies (**P2**) within the same field have been interpreted as short ditch lengths, linear trends and pit like responses. As above, it is difficult to determine a function due to the agricultural activity within the area, but an archaeological origin is preferred due to the rich archaeological activity in the vicinity.

Large pit type responses (**P3**) can be seen in the northwest of WAN02 (Figs 10-12) and are placed approximately 20m apart. These are visible on aerial imagery from 2008 (Google Earth 2018). It is possible that they have an origin other than archaeological such as being associated with the construction of the A47, although this is hypothetical. It has also been noted that the purported line of the Roman Road (571 Ailsworth-King's Cliffe) runs through this vicinity (see Fig 2) (Margary 1973).

Also within WAN02, large pit type responses (**P4**) are located to the southeast of the field and are located to the west of a known Roman villa (PHER 00131 / 01991). A Roman quarry was

excavated at the same time as the villa in 1963 and it is possible that these large pits are associated with further quarrying.

A number of anomalies (**P5**) have been interpreted as possible archaeology in WAN03 (Figs 13-15) with the majority situated to the west of the double ditched feature **A3**. The responses include both positive and negative linear trends and pits with a large rectilinear form (**P5a**) located on the northern limits of the dataset. Some of these responses can be seen on aerial imagery from 2009 (Google Earth 2018) and follow an approximate northwest to southeast alignment. It is possible that the feature at **P5a** shows an area of burning associated with the demolition of a building. Similar anomalies (**P6**) can be seen in WAN04 (Figs 16-18) and are likely to be contemporary with those at **P5**. It is possible that these responses are associated with a Roman roadside settlement as the Roman Road runs through WAN03 and to the immediate north of WAN04. Linear ditch lengths and trends (**P7**) in WAN05 (Figs 16-18) have been interpreted as being of possible archaeological interest as the magnetic signature is well defined. However these anomalies are on the same alignment as the geological and agricultural responses in this area and must be viewed with care.

A group of anomalies (**P8**) are located within a pit alignment (**A7**) (see below). It is possible that these represent a ring ditch, which measures approximately 11m in diameter. Another possible ring ditch (**P9**) can be seen to the east of the pit alignment. Both these features are tentative but due to other ring ditches in the area and their location, adjacent to the pit alignment, a possible archaeological interpretation is given.

Possible anomalies (**P10** & **P11**) located within WAN08 (Figs 25-27) consist of linear ditches and pit like responses. They show no pattern but due to their location, immediately south of the Roman road, an archaeological origin cannot be dismissed.

Anomalies (**P12**) in the northeast of WAN09 (Figs 28-30) have a rectilinear character to them and may represent part of an enclosure, although this is tentative due to the lack of other archaeological remains within the immediate vicinity.

Three possible magnetic anomalies have been identified (**P13**) (Figs 28-30) within WAN18. These anomalies could form a semi-circular feature, which has since become fragmented which therefore makes definitive archaeological identification difficult.

A number of magnetically enhanced responses (**P14)** (Figs 37-39) have been identified in the southeast corner of WAN14. They occur in the hinterland of two archaeological anomalies, yet do not form coherent patterns. As such a possible archaeological interpretation has been reached. Located in the northeast corner of the same survey area (**P15**), are a collection of magnetic responses which may have archaeological potential, given the proximity to **A13** but they have been obscured by later field boundaries and agricultural activity.

A series of responses (**P16)** within WAN15 (Figs 37-39), located between two archaeological enclosures, have been identified as being possibly archaeological in origin. The clustering of

magnetic responses indicate that there may have been a connection between (**A9)** and (**A14**), but given the lack of structural cohesion, only a possible archaeological interpretation has been given.

Archaeological anomalies

Archaeological anomalies have been identified in Areas WAN01, 02, 03, 04, 06, 07, 12, 13, 14, 15, 16 and 17. The feature in Areas WAN01 and 02 (Figs 7-12) consists of a single linear ditch (**A1**) which runs on a north to south alignment from the southern boundary of WAN02 to the south of WAN01 for approximately 165m before turning slightly to the northeast for approximately 215m. It is possible that it represents a prehistoric land division or a field boundary which pre-dates available historic mapping.

A linear ditch (**A2**) has been recorded in the west of WAN03 (Figs 13-15). It is likely that this is archaeological but due to the location, being immediately to the east of a track it may also be related to agriculture.

A group of anomalies in Areas WAN03 and 04 (Figs 16-18) include a double ditched feature (**A3**) which corresponds to HER data and cropmark evidence and is recorded as a trackway (PHER 00190a) of an uncertain date.

A linear ditch (**A5**) in WAN06 (Figs 19-21) has been recorded. Although there is no corresponding HER data to support this feature, the magnetic strength of the ditch suggests an archaeological origin. Cropmark evidence to the northeast (PHER 00227) locates a ring ditch and linear feature in which the latter is on the same projection as **A5**. It is therefore likely that **A5** is a continuation of the ditch mapped by aerial photography. This feature continues in WAN14, to the immediate north of the A47 for a distance of 146m.

Part of an enclosure (**A6**) showing internal and external features has been detected in the west of WAN07 (Figs 22-24). The enclosure measures approximately 37m along its southern boundary, with the eastern and western ‘arms’ heading towards and being masked by the location of Deep Springs cottage. Pit type anomalies and divisions can be seen within the enclosure with a linear ditch seen to the east and south of the enclosure.

Also within WAN07 a series of pits (**A7**) can be seen which correspond to an Iron Age pit alignment (PHER 08368). The alignment runs on a northwest to southeast orientation for at least 190m within the geophysical dataset and correlates well with the cropmark evidence. There appears to be a gap in the alignment where a possible archaeological feature (**P8**) has been recorded which has been interpreted as a tentative ring ditch.

Within WAN12 (**A8**) (Figs 16-21, 31-33), a portion of a ditch outside of the scheduled monument (listing entry 1006796), (SAM201) has been detected.

A9 is a square enclosure within WAN15 with a spur to the southwest. This has been previously recorded on aerial photogrpahs (SMR00230) and is likely to have been associated

with **A6**, to the south. This would make it Roman in date. It measures 30m by 35m, with a western spur which measures 31m. (Figs 22-24, 37-39).

Part of a field boundary (**A10**), has been detected within the northwest corner of WAN16 (Figs 22-24, 40-42), measuring 15m. The magnetic characteristics are different from that of other anomalies in the survey area, making it more likely to be archaeological in origin. It is associated with (**A15**) (Figs 37-39). It may be medieval in origin given the difference in alignment of the features to those identified as Roman or earlier.

Within WAN 13 are a series of pit-like anomalies stretching for approximately 60m east to west (**A11**) (Figs 33-36). These have been recorded on aerial photography data, a few metres south of the location of the geophysical responses mapped here. A line of responses project north for a distance of 30m and indicate that these pits have formed a defined area. They have a similar magnetic quality to those of (**A12**), to the south, and may be associated with **A7** (Figs 22-24).

A13 is within WAN14 and represents a fragmented magnetic response to a feature recorded on aerial photography data. It is along the western boundary of the survey area and forms a semi-circular feature (Figs 33-36). Magnetic responses **P15** are likely to be associated with this anomaly. The fragmented nature of the response, makes it difficult to date accurately, but is likely to be of the same period of **A14**.

A clearly defined semi-circular feature (**A14)** has been recorded in WAN15 (Figs 37-39). It lies between **A5** and **A9** and has been recorded on aerial photography data (SMR 00227) as a ring ditch. It shows a feature which has been curtailed along its western boundary by a later field division. The diameter measures 22m. It is unlikely to be contemporaneous with **A9**, but it may have an association with **A11**, in WAN14. It has been identified as predating the Roman period which is supported by the geophysical data.

A “T-bone” field boundary (**A15**) in WAN15 (Figs 37-39) is noted to the northeast of **A9**. **A10** in WAN16 is likely to be the eastern remnants of this field boundary. It is not recorded on aerial photographs, but given the response, it may be medieval in origin, given the difference in alignment of the features to those identified as Roman or earlier.

Along the northern limit of the survey area, in WAN17, (**A16**) magnetic anomalies record a fragment of a possible defined space which largely falls outside of the survey area (Figs 40-42). A clear definition is difficult, but it may date from the Iron Age/Roman period.

5 Conclusions

The magnetic survey has detected anomalies of archaeological and possible archaeological origin, some of which correspond to cropmark and HER evidence. These anomalies consist of enclosures, ditches, pit alignments, industrial and occupational activity and possible ring ditches.

Former field boundaries have been identified which correspond to former mapping to the west of the scheme. Services pipes have also been located along with modern agricultural activity and areas of magnetic disturbance. These are associated with the location of the A47 and metal fencing in the boundaries.

The survey has worked well on this geology and land-use and has detected anomalies of interest. Based upon the results of the survey, the archaeological potential of the site is considered to be high to medium.

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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. Areas of human occupation or settlement can then be identified by measuring the magnetic susceptibility of the topsoil because 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. The magnetic susceptibility of a soil can also be enhanced by the application of heat and the fermentation and bacterial effects associated with rubbish decomposition. The area of enhancement is usually quite large, mainly due to the tendency of discard areas to extend beyond the limit of the occupation site itself, and spreading by the plough.

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.

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. These anomalies are often caused by agricultural activity, either ploughing or land drains being 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 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: Gradiometer Survey

The main method of using the fluxgate gradiometer for commercial evaluations is referred to as ***detailed survey*** and requires the surveyor to walk at an even pace carrying the instrument within a grid system. A sample trigger automatically takes readings at predetermined points, typically at 0.25m intervals, on traverses 1m apart. These readings are stored in the memory of the instrument and are later dumped to computer for processing and interpretation.

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 0.5m 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.

The gradiometer data have been presented in this report in processed greyscale format. The data in the greyscale images have 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.

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

Appendix 2: Survey location information

An initial survey station was established using a Trimble VRS differential Global Positioning System (Trimble R6 model). The data was geo-referenced using the geo-referenced survey station with a Trimble RTK differential Global Positioning System (Trimble R6 model). The accuracy of this equipment 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.

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 CS6 and AutoCAD 2008) files; and
- 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 Peterborough Historic Environment Record).

Appendix 4: Oasis form

OASIS DATA COLLECTION FORM: England

Printable version

OASIS ID: archaeol11-318978

Project details

Project name	Wansford to Sutton Dualling
Short description of the project	A geophysical (magnetometer) survey, covering approximately 30 hectares was undertaken on land to the north and south of the A47 between Wansford and Sutton, Peterborough. Anomalies of archaeological origin have been recorded, some of which correspond to cropmarks and HER data and include enclosures, trackways and a pit alignment. Possible archaeological anomalies have also been recorded which are likely to be associated with enclosures, large pits and industrial/occupational areas. Former field boundaries have also been detected in the western part of the site which correspond well with recorded boundaries on Ordnance Survey mapping. Responses associated with a geological origin are present to the north of the River Nene and modern agricultural anomalies have been recorded throughout the survey areas. The archaeological potential of the site would therefore be characterised as high to medium.
Project dates	Start: 20-03-2018 End: 02-05-2018
Previous/future work	Not known / Not known
Any associated project reference codes	8234 - Sitecode
Type of project	Field evaluation
Monument type	INDUSTRIAL Roman
Monument type	VILLA Roman
Monument type	ENCLOSURES, RING DITCHES Late Prehistoric
Monument type	PIT ALIGNMENT Iron Age
Monument type	SPOT FINDS Neolithic
Significant Finds	PIT ALIGNMENT Iron Age
Significant Finds	RING DITCHES Late Prehistoric
Significant Finds	TRACKWAY Late Prehistoric
Significant Finds	ENCLOSURE Late Prehistoric
Methods & techniques	"Geophysical Survey"
Development type	Road scheme (new and widening)

Prompt	National Planning Policy Framework - NPPF
Position in the planning process	Not known / Not recorded
Solid geology (other)	UPPER AND LOWER LINCOLNSHIRE LIMESTONE
Drift geology	ALLUVIUM
Techniques	Magnetometry

Project location

Country	England
Site location	CAMBRIDGESHIRE PETERBOROUGH WANSFORD Wansford to Sutton
Study area	30 Hectares
Site coordinates	TL 087 995 52.582064433525 -0.395518660327 52 34 55 N 000 23 43 W Point
Height OD / Depth	Min: 15m Max: 30m

Project creators

Name of Organisation	Archaeological Services WYAS
Project brief originator	Mott MacDonald
Project design originator	Mott MacDonald
Project director/manager	E Brunning
Project supervisor	C. Sykes

Project archives

Physical Archive Exists?	No
Digital Archive recipient	Mott MacDonald
Digital Contents	"Survey"
Digital Media available	"Geophysics","Images raster / digital photography","Survey","Text"
Paper Archive Exists?	No

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Wansford to Sutton Dualling, Peterborough
Author(s)/Editor (s)	Brunning, E
Date	2018
Issuer or publisher	ASWYAS

Place of issue or publication	Leeds
Description	A4 report with A3 figures
Entered by	Emma Brunning (emma.brunning@aswyas.com)
Entered on	6 June 2018

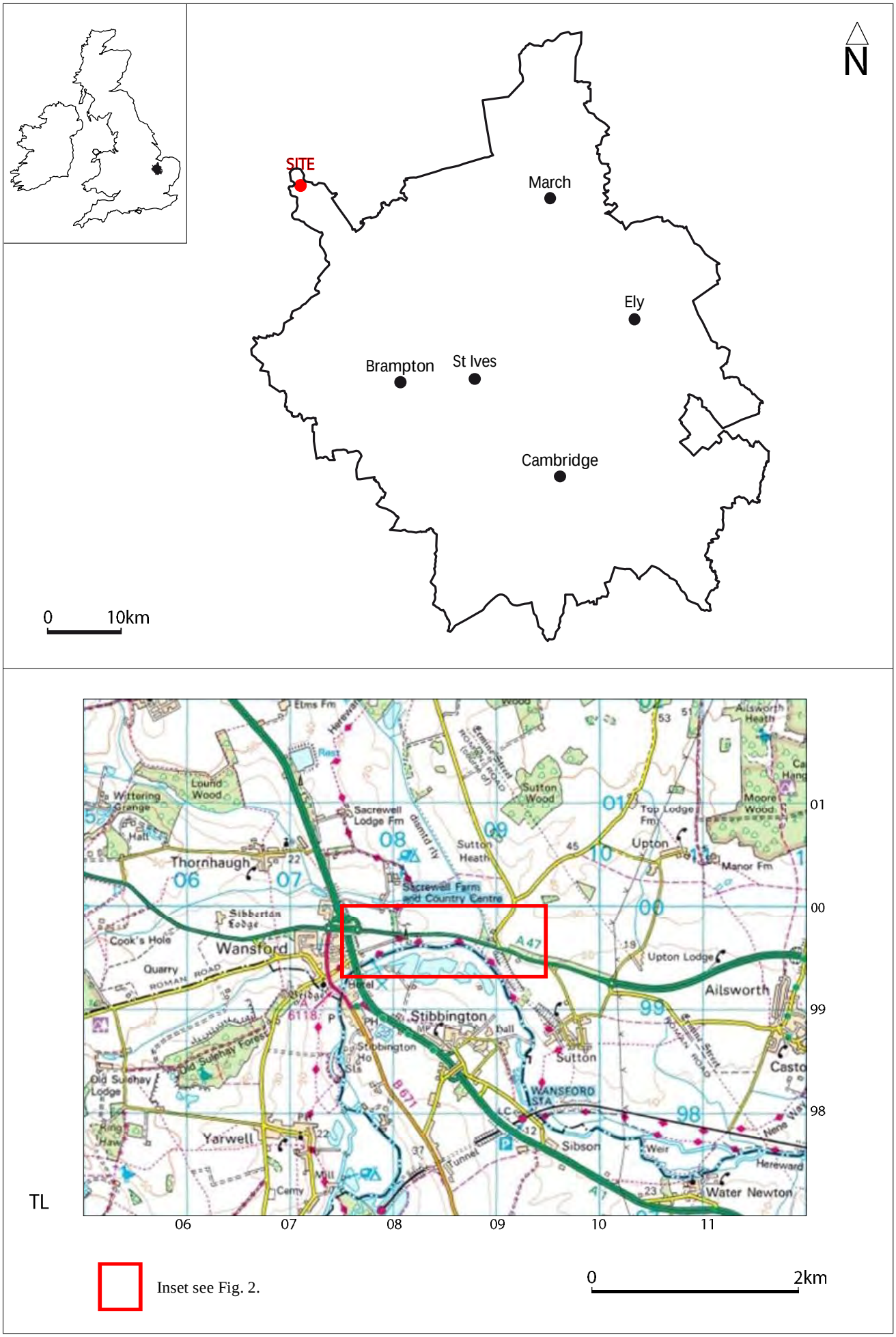

Fig. 1. Site location

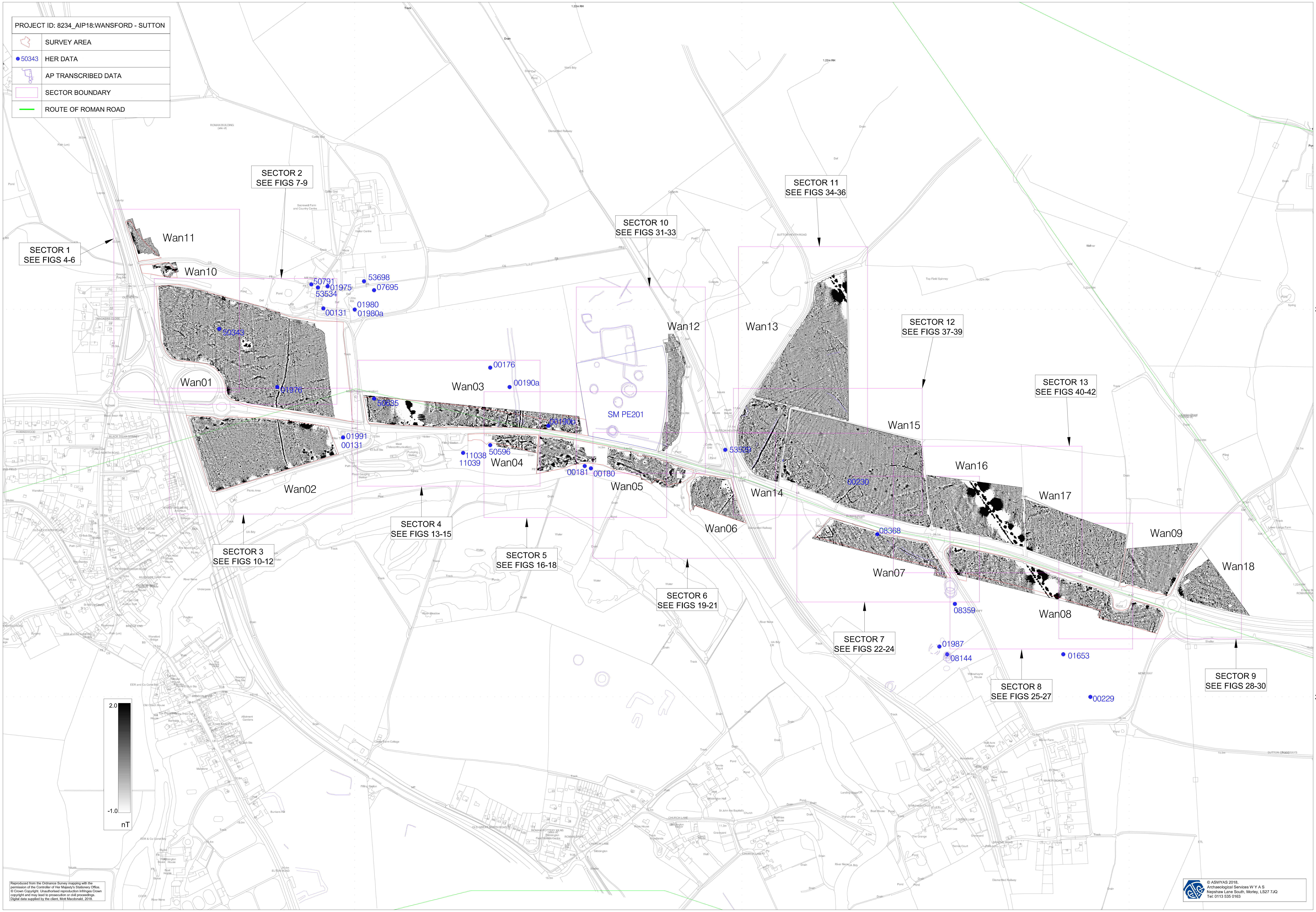

Fig. 2. Site location showing greyscale magnetometer data, 1:6000 @ A2

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON	
50343	HER DATA
	AP TRANSCRIBED DATA
	SECTOR BOUNDARY

TYPE OF ANOMALY		INTERPRETATION
•	DIPOLAR ISOLATED	FERROUS MATERIAL
	MAGNETIC DISTURBANCE	FERROUS MATERIAL
	DIPOLAR LINEAR	SERVICE PIPE
	LINEAR TREND	OLD FIELD BOUNDARY
	LINEAR TREND	AGRICULTURAL
	LINEAR TREND	GEOLOGY
	MAGNETIC ENHANCEMENT	GEOLOGY
	LINEAR TREND	ARCHAEOLOGY?
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY? - DITCH
	LINEAR TREND	ARCHAEOLOGY
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY - DITCH

N

SECTOR 1 SEE FIGS 4-6

SECTOR 2 SEE FIGS 7-9

SECTOR 3 SEE FIGS 10-12

SECTOR 4 SEE FIGS 13-15

SECTOR 5 SEE FIGS 16-18

SECTOR 6 SEE FIGS 19-21

SECTOR 7 SEE FIGS 22-24

SECTOR 8 SEE FIGS 25-27

SECTOR 9 SEE FIGS 28-30

SECTOR 10 SEE FIGS 31-33

SECTOR 11 SEE FIGS 34-36

SECTOR 12 SEE FIGS 37-39

SECTOR 13 SEE FIGS 40-42

Wan01 Wan02 Wan03 Wan04 Wan05 Wan06 Wan07 Wan08 Wan09 Wan10 Wan11 Wan12 Wan13 Wan14 Wan15 Wan16 Wan17 Wan18

50343 50791 01975 53534 53698 07695 01980 01980a 00131 01976 50635 00176 00190a 00190b SM PE201 01991 00131 50596 11038 11039 00181 00180 53529 00227 00230 08368 08359 01987 08144 01653 00229

3000000 2990000

5080000 5090000 5100000

0 300m

Fig. 3. Interpretation of magnetometer data, 1:6000 @ A2

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

N

Wan11

Wan10

Wan01

23.5m

Def

CS

Sewage
Ppg Sta

24.1m

ROAD

OLD NORTH

A 1

A 1

CLOSE

43
29.9m

MP

A 1

20.0 nT/cm

3002 00

3000 00

2998 00

5074 00

5076 00

0 50m

Archaeological Services W Y A S
Nepshaw Lane South, Morley, LS27 7JQ
Tel: 0113 535 0163

Fig. 5. XY trace plot of minimally processed magnetometer data; Sector 1 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

TYPE OF ANOMALY		INTERPRETATION
	DIPOLAR ISOLATED	FERROUS MATERIAL
	MAGNETIC DISTURBANCE	FERROUS MATERIAL
	DIPOLAR LINEAR	SERVICE PIPE
	LINEAR TREND	OLD FIELD BOUNDARY
	LINEAR TREND	AGRICULTURAL
	LINEAR TREND	GEOLOGY
	MAGNETIC ENHANCEMENT	GEOLOGY
	LINEAR TREND	ARCHAEOLOGY?
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY? - DITCH

N

Wan11

Wan10

Wan01

23.5m

Def

Sewage Ppg Sta

24.1m

ROAD

OLD NORTH

A 1

A 1

CS

CLOSE

29.9m

MP

A 1

P1

P1a

3002 00

3000 00

2998 00

5074 00

5076 00

Archaeological Services W Y A S
Nepshaw Lane South, Morley, LS27 7JQ
Tel: 0113 535 0163

0 50m

Fig. 6. Interpretation of magnetometer data; Sector 1 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

N

Pond

Pond

Def

FB

FB

CS

Sacrewell Farm

2.0

-1.0

nT

300000

Wan01

299800

Archaeological Services W Y A S
Nepshaw Lane South, Morley, LS27 7JQ
Tel: 0113 535 0163

507600

507800

0

50m

Fig. 7. Processed greyscale magnetometer data; Sector 2 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

N

20.0 nT/cm

Pond

Pond

Pond

Def

FB

FB

CS

Laurel Hill Farm

300000

Wan01

299800

507600

507800

0 50m

Archaeological Services W Y A S
Nepshaw Lane South, Morley, LS27 7JQ
Tel: 0113 535 0163

Fig. 8. XY trace plot of minimally processed magnetometer data; Sector 2 (1:1250 @ A3)

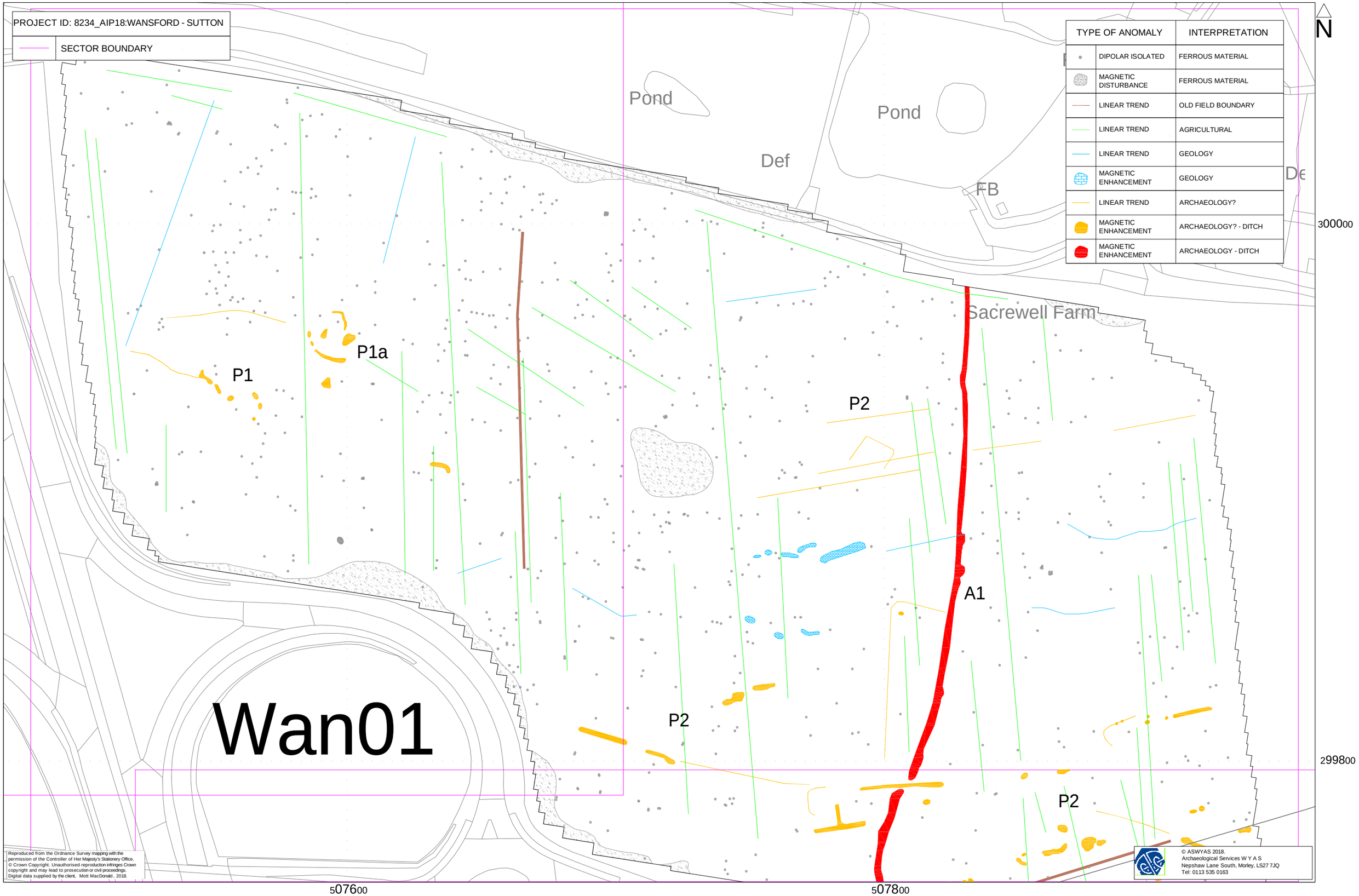

Fig. 9. Interpretation of magnetometer data; Sector 2 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

N

Mast (

A

Filter Tank

Path (u

F

2996 00

19

15

11

1

ANSFORD MEWS

Picnic Area

PC

Wan02

2.0

-1.0

nT

Archaeological Services W Y A S
Nepshaw Lane South, Morley, LS27 7JQ
Tel: 0113 535 0163

5076 00

5078 00

4604 00

0

50m

Fig. 10. Processed greyscale magnetometer data; Sector 3 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

N

Mast (

A

Filter Tank

Path (u

F

299600

20.0 nT/cm

Wan02

Picnic Area

PC

19

15

11

1

ANSFORD MEWS

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Nepshaw Lane South, Morley, LS27 7JQ
Tel: 0113 535 0163

507600

507800

460400

0

50m

Fig. 11. XY trace plot of minimally processed magnetometer data; Sector 3 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

N

P2

P3

A1

P4

Mast (

A

Filter Tank

18.0m

Path (u

F

19

Picnic Area

PC

Wan02

ANSFORD MEWS

TYPE OF ANOMALY		INTERPRETATION
	DIPOLAR ISOLATED	FERROUS MATERIAL
	MAGNETIC DISTURBANCE	FERROUS MATERIAL
	LINEAR TREND	OLD FIELD BOUNDARY
	LINEAR TREND	AGRICULTURAL
	LINEAR TREND	ARCHAEOLOGY?
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY? - DITCH
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY - DITCH

Archaeological Services W Y A S
Nepshaw Lane South, Morley, LS27 7JQ
Tel: 0113 535 0163

5076 00

5078 00

4604 00

2996 00

0 50m

Fig. 12. Interpretation of magnetometer data; Sector 3 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

N

Wan03

Wan04

Telecommunication)

A 47

MS

22.8m

19.9m

17.3m

Mast
(Telecommunication)

El Sub Sta

Filling Station

Pumping
Station

Drain

Drain

Sluice

FB

um)

lood Gauging
Station

2.0

-1.0

nT

2998⁰⁰

2996⁰⁰

5080⁰⁰

5082⁰⁰

5084⁰⁰

0

50m

Archaeological Services W Y A S
Nepshaw Lane South, Morley, LS27 7JQ
Tel: 0113 535 0163

Fig. 13. Processed greyscale magnetometer data; Sector 4 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

N

Wan03

Wan04

Telecommunication)

A 47

MS

22.8m

19.9m

17.3m

Mast
(Telecommunication)

El Sub Sta

Pumping
Station

Filling Station

Drain

Drain

FB

Sluice

lood Gauging
Station

um)

20.0 nT/cm

2998^{00}

2996^{00}

5080^{00}

5082^{00}

5084^{00}

0

50m

Archaeological Services W Y A S
Nepshaw Lane South, Morley, LS27 7JQ
Tel: 0113 535 0163

Fig. 14. XY trace plot of minimally processed magnetometer data; Sector 4 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

TYPE OF ANOMALY		INTERPRETATION
	DIPOLAR ISOLATED	FERROUS MATERIAL
	MAGNETIC DISTURBANCE	FERROUS MATERIAL
	DIPOLAR LINEAR	SERVICE PIPE
	MAGNETIC ENHANCEMENT	GEOLOGY
	LINEAR TREND	ARCHAEOLOGY?
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY? - DITCH
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY - DITCH

N

Wan03

Telecommunication)

A2

P5a

P5

A3

A 47

MS

22.8m

19.9m

Mast
(Telecommunication)

Filling Station

El Sub Sta

Pumping
Station

Drain

um)

Sluice

lood Gauging
Station

17.3m

P6

A4

Drain

Wan04

FB

Archaeological Services W Y A S
Nepshaw Lane South, Morley, LS27 7JQ
Tel: 0113 535 0163

299800

299600

508000

508200

508400

0 50m

Fig. 15. Interpretation of magnetometer data; Sector 4 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

N

20.0 nT/cm

17.3m

14.9m

Lay-by

Drain

Wan04

FB

UA Bdy

CR

River Nene

Wan05

Drain

Drain

Pond

299600

508400

508600

508800

0

50m

Archaeological Services W Y A S
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Tel: 0113 535 0163

Fig. 17. XY trace plot of minimally processed magnetometer data; Sector 5 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

TYPE OF ANOMALY		INTERPRETATION
•	DIPOLAR ISOLATED	FERROUS MATERIAL
	MAGNETIC DISTURBANCE	FERROUS MATERIAL
	DIPOLAR LINEAR	SERVICE PIPE
	LINEAR TREND	AGRICULTURAL
	LINEAR TREND	GEOLOGY
	MAGNETIC ENHANCEMENT	GEOLOGY
	LINEAR TREND	ARCHAEOLOGY?
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY? - DITCH
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY - DITCH

N

P5a

A3

17.3m

P6

A4

Drain

Wan04

FB

UA Bdy

CR

Drain

14.9m

Lay-by

A8

P7

11.8m

River Nene

Wan05

Drain

Pond

299600

508400

508600

508800

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Tel: 0113 535 0163

0 50m

Fig. 18. Interpretation of magnetometer data; Sector 5 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

N

14.9m

Lay-by

Pond

Cattle Grid

Pond

17.8m

River Nene

Def

A 47

19.5m

Wan05

Wan14

CS

9.3m

Drain

Pond

Drain

2.0

-1.0

nT

Wan06

Dismantled Railway

299600

299400

508800

509000

0

50m

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Tel: 0113 535 0163

Fig. 19. Processed greyscale magnetometer data; Sector 6 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

N

Wan05

Wan14

Wan06

14.9m

Lay-by

Pond

Cattle Grid

Pond

17.6m

River Nene

Def

A 47

19.5m

CS

9.3m

Drain

Pond

Drain

20.0 nT/cm

Dismantled Railway

299600

299400

508800

509000

0

50m

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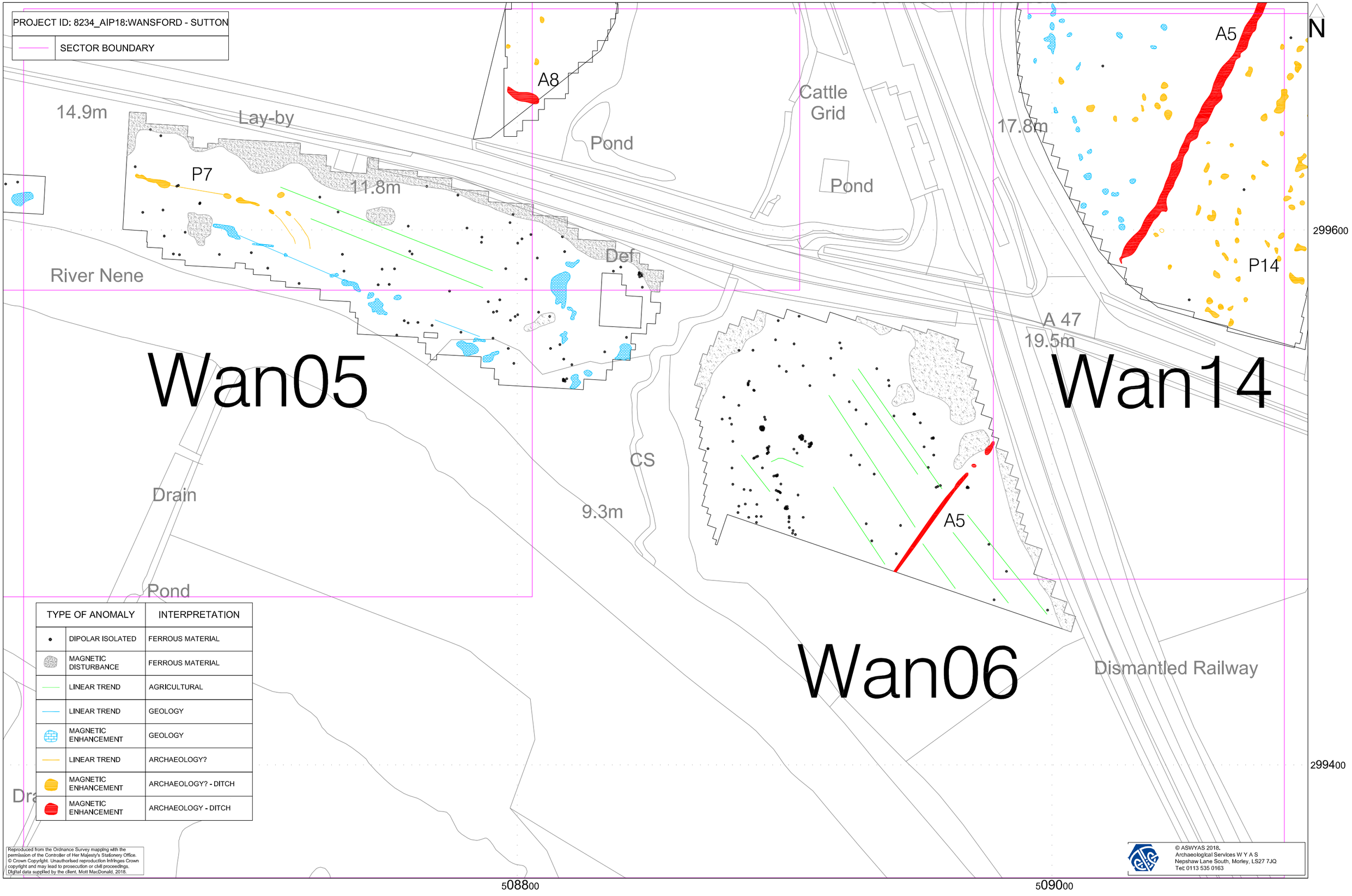
Tel: 0113 535 0163

Fig. 20. XY trace plot of minimally processed magnetometer data; Sector 6 (1:1250 @ A3)



TYPE OF ANOMALY		INTERPRETATION
•	DIPOLAR ISOLATED	FERROUS MATERIAL
	MAGNETIC DISTURBANCE	FERROUS MATERIAL
	LINEAR TREND	AGRICULTURAL
	LINEAR TREND	GEOLOGY
	MAGNETIC ENHANCEMENT	GEOLOGY
	LINEAR TREND	ARCHAEOLOGY?
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY? - DITCH
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY - DITCH

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Tel: 0113 535 0163

Fig. 21. Interpretation of magnetometer data; Sector 6 (1:1250 @ A3)

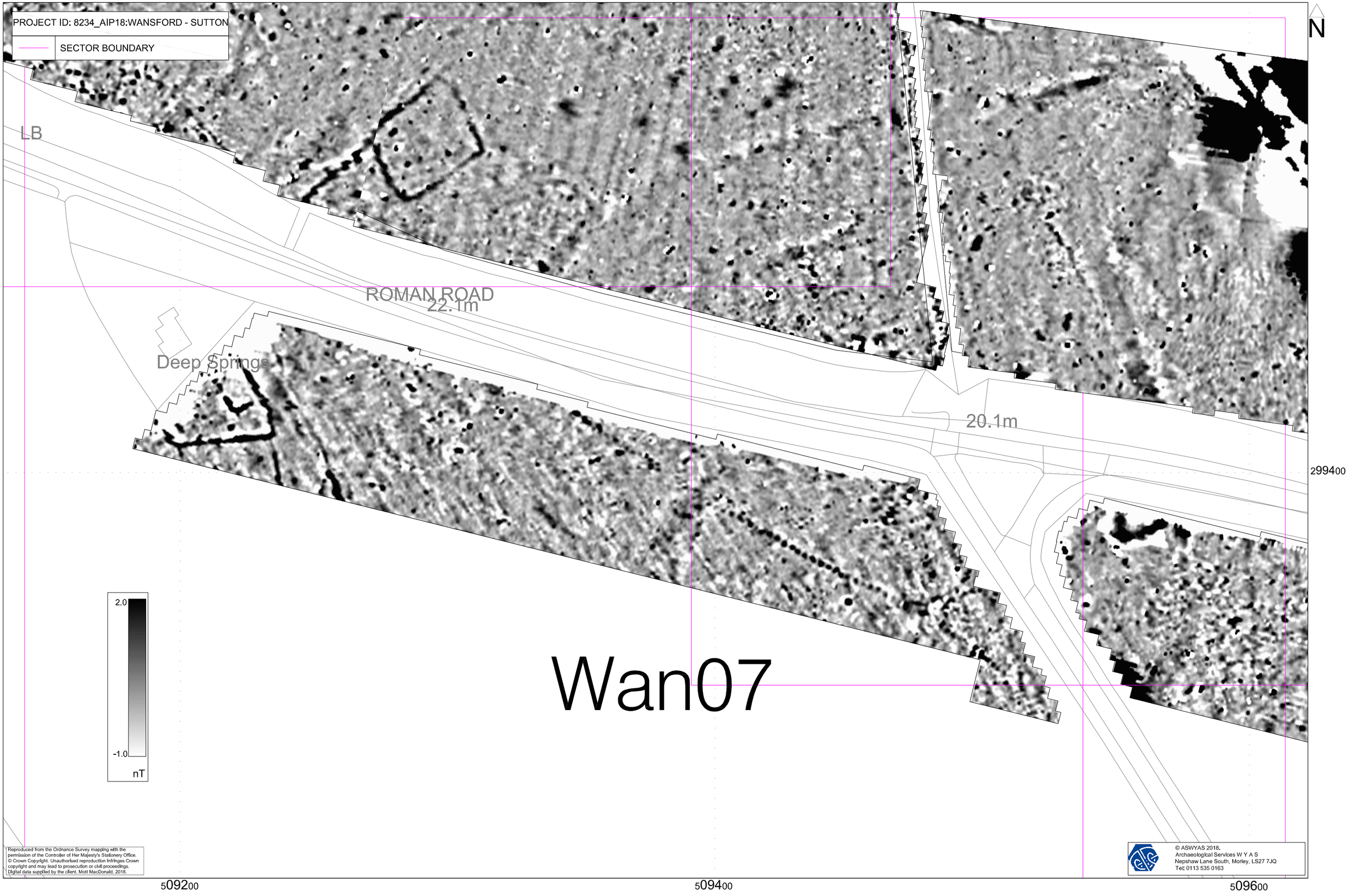

Fig. 22. Processed greyscale magnetometer data; Sector 7 (1:1250 @ A3)

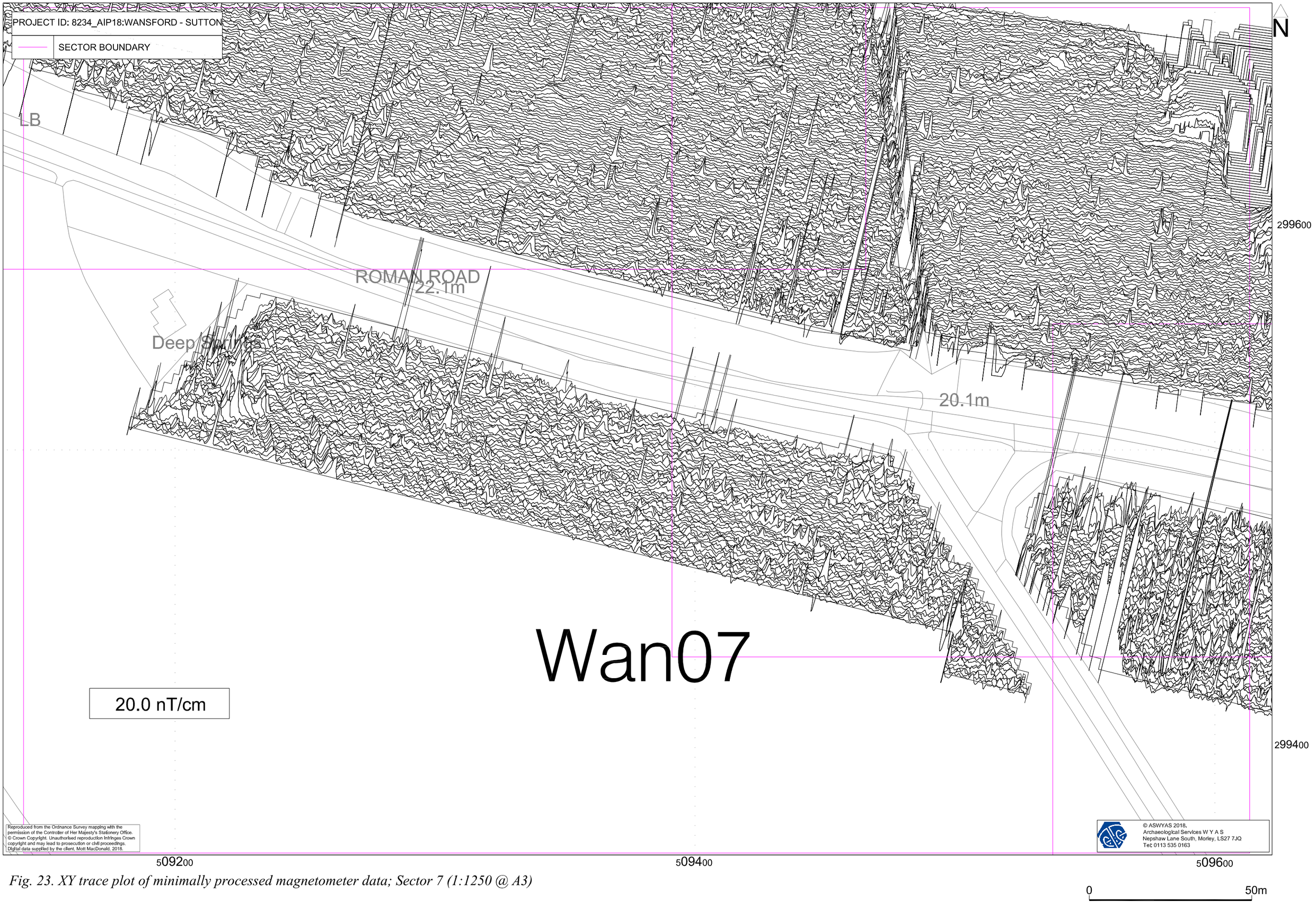

Fig. 23. XY trace plot of minimally processed magnetometer data; Sector 7 (1:1250 @ A3)

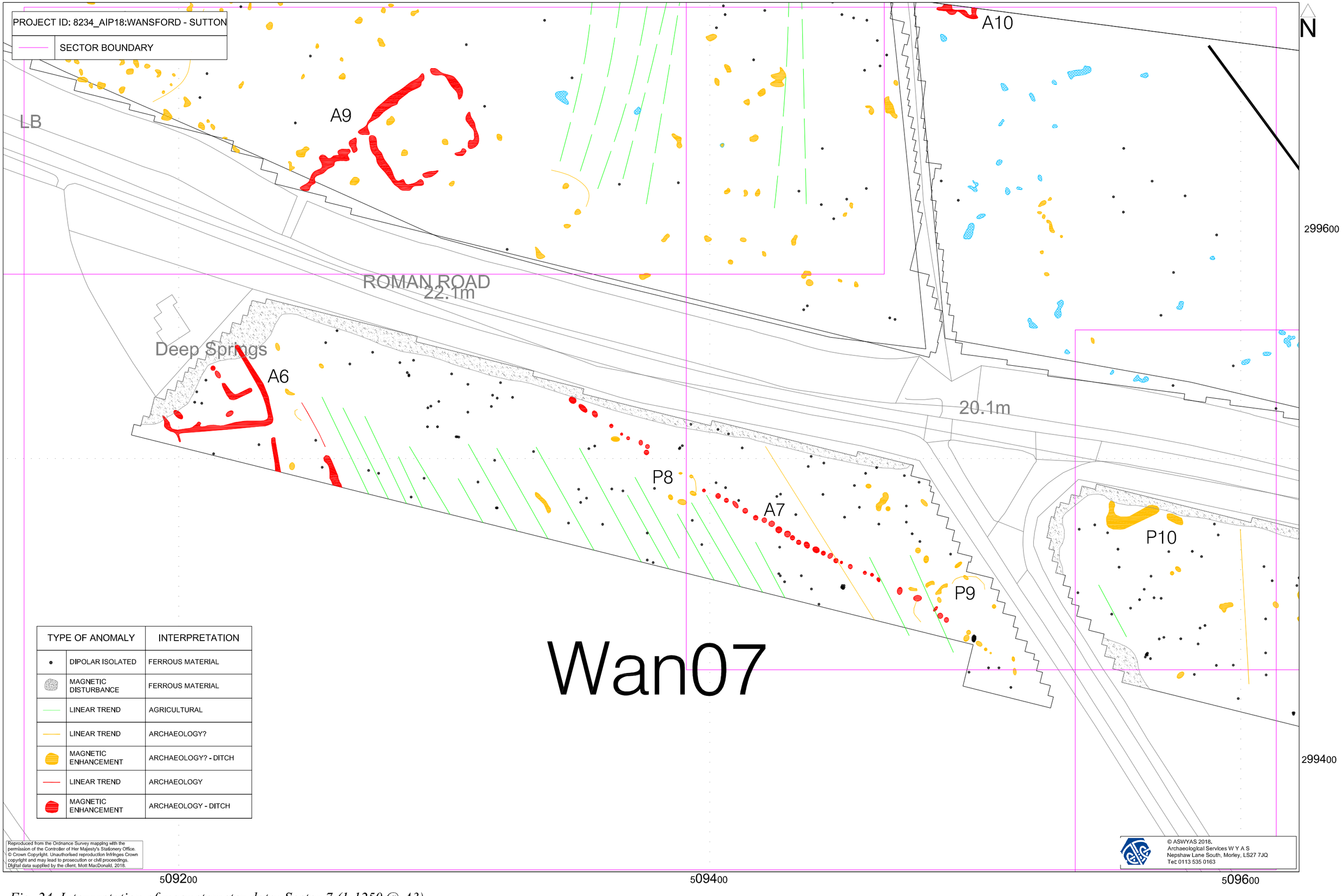

Fig. 24. Interpretation of magnetometer data; Sector 7 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

N

299400

MS

A 47

Pond

THE DRIFT

Wan08

299200

2.0

-1.0

nT

Archaeological Services W Y A S
Nepshaw Lane South, Morley, LS27 7JQ
Tel: 0113 535 0163

509600 509800 510000

0 50m

Fig. 25. Processed greyscale magnetometer data; Sector 8 (1:1250 @ A3)

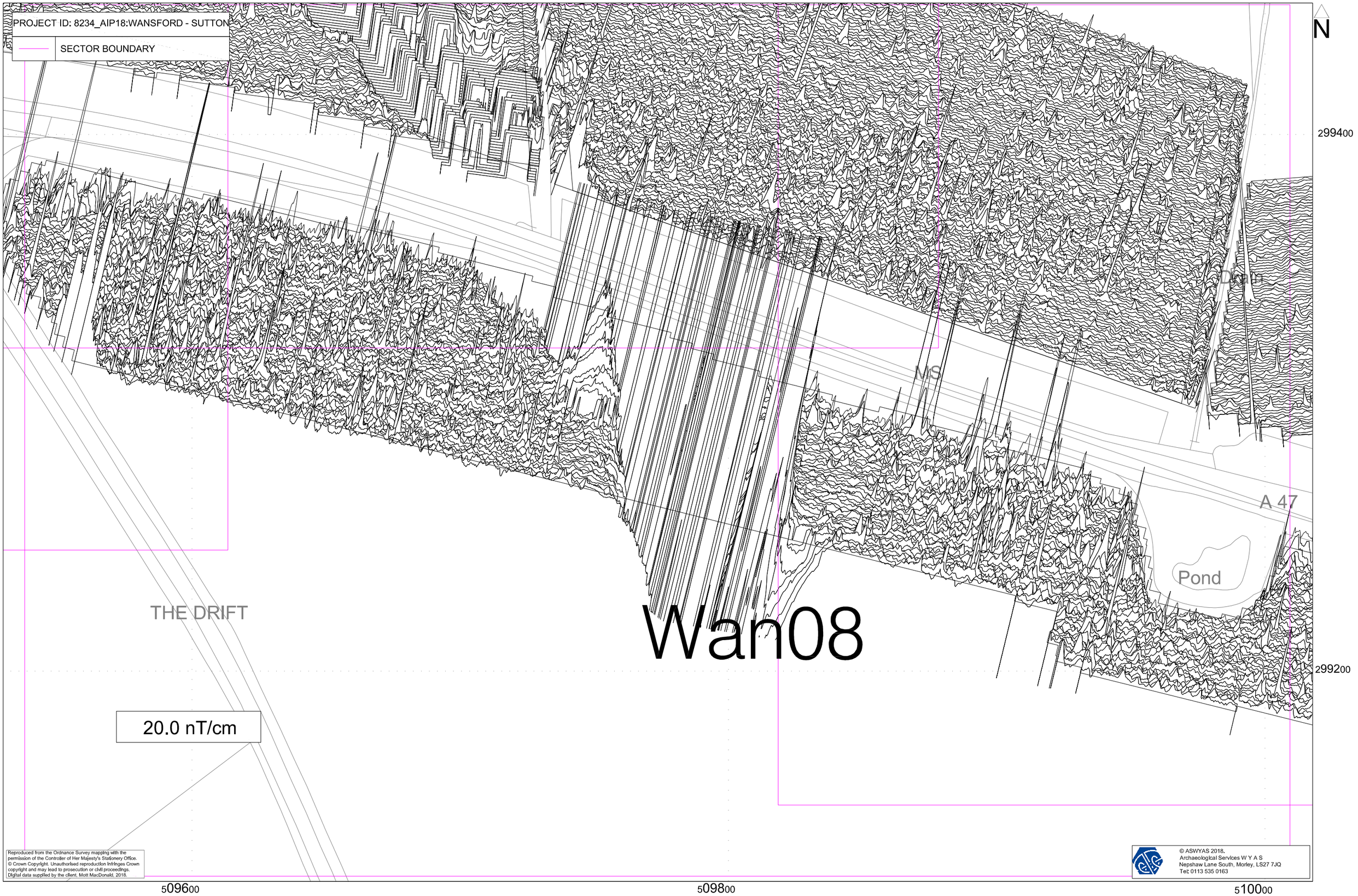

Fig. 26. XY trace plot of minimally processed magnetometer data; Sector 8 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

N

299400

P10

MS

Drain

A 47

P11

Pond

Wan08

299200

TYPE OF ANOMALY		INTERPRETATION
•	DIPOLAR ISOLATED	FERROUS MATERIAL
	MAGNETIC DISTURBANCE	FERROUS MATERIAL
—	DIPOLAR LINEAR	SERVICE PIPE
—	LINEAR TREND	OLD FIELD BOUNDARY
—	LINEAR TREND	AGRICULTURAL
	MAGNETIC ENHANCEMENT	GEOLOGY
—	LINEAR TREND	ARCHAEOLOGY?
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY? - DITCH

509600 509800 510000

0 50m

Fig. 27. Interpretation of magnetometer data; Sector 8 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

Wan09

Wan18

n08

2.0

-1.0

nT

N

299400

299200

510000

510200

MS

A 47

Pond

0

50m

Archaeological Services W Y A S
Nepshaw Lane South, Morley, LS27 7JQ
Tel: 0113 535 0163

Fig. 28. Processed greyscale magnetometer data; Sector 9 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

N

Wan09

Wan18

n08

20.0 nT/cm

MS

A 47

Pond

299400

299200

510000

510200

0 50m

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Fig. 29. XY trace plot of minimally processed magnetometer data; Sector 9 (1:1250 @ A3)

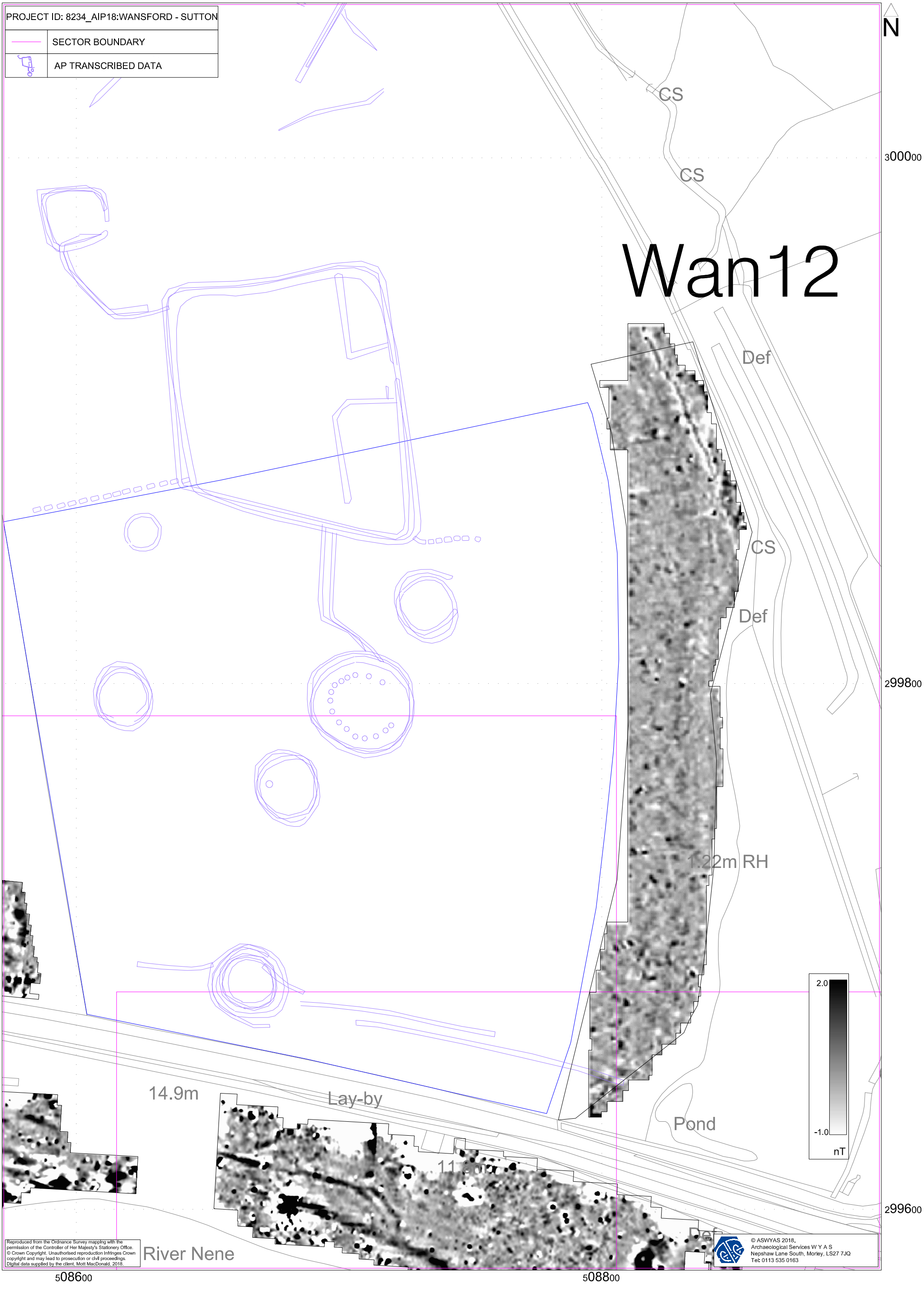

Fig. 31. Processed greyscale magnetometer data; Sector 10 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

AP TRANSCRIBED DATA

N

20.0 nT/cm

Wan12

CS

CS

Def

CS

Def

1.2m RH

Lay-by

14.9m

Pond

River Nene

3000 00

2998 00

2996 00

5086 00

5088 00

Archaeological Services W Y A S
Nepshaw Lane South, Morley, LS27 7JQ
Tel: 0113 535 0163

0 50m

Fig. 32. XY trace plot of minimally processed magnetometer data; Sector 10 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON	
	SECTOR BOUNDARY
	AP TRANSCRIBED DATA

TYPE OF ANOMALY		INTERPRETATION
•	DIPOLAR ISOLATED	FERROUS MATERIAL
	MAGNETIC DISTURBANCE	FERROUS MATERIAL
	LINEAR TREND	AGRICULTURAL
	LINEAR TREND	GEOLOGY
	MAGNETIC ENHANCEMENT	GEOLOGY
	LINEAR TREND	ARCHAEOLOGY?
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY?
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY - DITCH

N

Wan12

Def

CS

Def

1.22m RH

A8

14.9m

Lay-by

11.8m

Pond

Def

River Nene

3000$_{00}$

2998$_{00}$

2996$_{00}$

5086$_{00}$

5088$_{00}$

Archaeological Services W Y A S
Nepshaw Lane South, Morley, LS27 7JQ
Tel: 0113 535 0163

0 50m

Fig. 33. Interpretation of magnetometer data; Sector 10 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

N

Drain

GP

Wan13

25.7m

21.4m

3000$_{00}$

2998$_{00}$

2.0

-1.0

nT

m

5090$_{00}$

5092$_{00}$

Archaeological Services W Y A S
Nepshaw Lane South, Morley, LS27 7JQ
Tel: 0113 535 0163

0 50m

Fig. 34. Processed greyscale magnetometer data; Sector 11 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

N

Drain

GP

Wan13

20.0 nT/cm

25.7m

21.4m

m

3000 00

2998 00

5090 00

5092 00

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Tel: 0113 535 0163

0 50m

Fig. 35. XY trace plot of minimally processed magnetometer data; Sector 11 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON	
	SECTOR BOUNDARY

TYPE OF ANOMALY		INTERPRETATION
•	DIPOLAR ISOLATED	FERROUS MATERIAL
——	DIPOLAR LINEAR	SERVICE PIPE
	MAGNETIC DISTURBANCE	FERROUS MATERIAL
- - -	LINEAR TREND	RIDGE AND FURROW
	MAGNETIC ENHANCEMENT	GEOLOGY
——	LINEAR TREND	ARCHAEOLOGY?
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY?
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY - DITCH

N

GP

Wan13

25.7m

21.4m

A11

A12

A13

P15

A5

m

300000

299800

509000

509200

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Archaeological Services W Y A S
Nepshaw Lane South, Morley, LS27 7JQ
Tel: 0113 535 0163

0 50m

Fig. 36. Interpretation of magnetometer data; Sector 11 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

N

17.0m

m

TH ROAD

17.8m

Wan15

2996 00

2.0

-1.0

nT

A 47

.5m

Wan14

LB

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Archaeological Services W Y A S
Nepshaw Lane South, Morley, LS27 7JQ
Tel: 0113 535 0163

5090 00

5092 00

5094 00

0

50m

Fig. 37. Processed greyscale magnetometer data; Sector 12 (1:1250 @ A3)

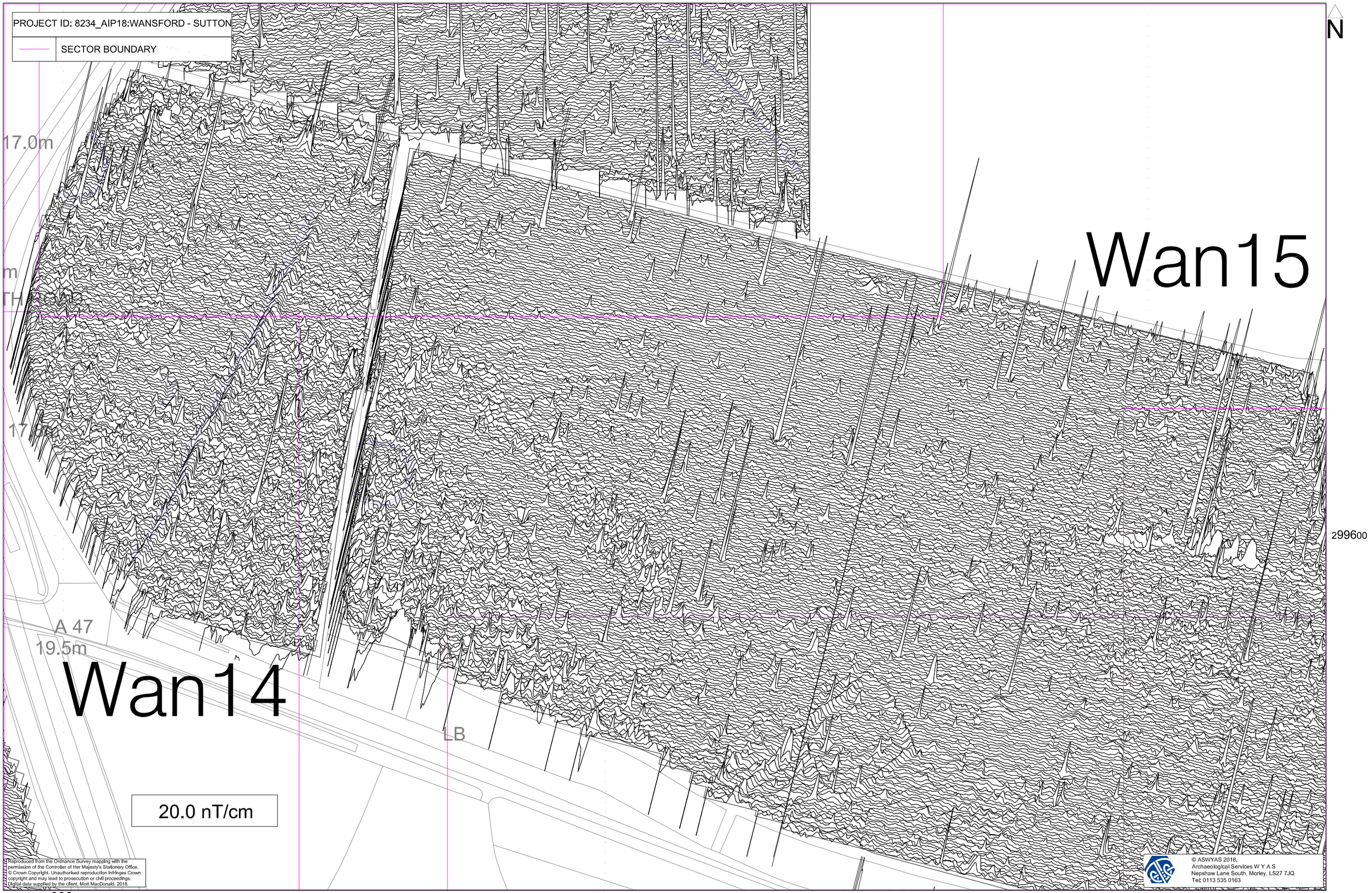

Fig. 38. XY trace plot of minimally processed magnetometer data; Sector 12 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

TYPE OF ANOMALY		INTERPRETATION
•	DIPOLAR ISOLATED	FERROUS MATERIAL
	MAGNETIC DISTURBANCE	FERROUS MATERIAL
	LINEAR TREND	RIDGE AND FURROW
	MAGNETIC ENHANCEMENT	GEOLOGY
	LINEAR TREND	ARCHAEOLOGY?
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY?
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY - DITCH

N

Wan15

Wan14

A12 P15 A13 A5 A14 P14 P16 A15 A9

17.0m

m

TH ROAD

17.8m

A 47

19.5m

LB

299600

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509000 509200 509400

0 50m

Fig. 39. Interpretation of magnetometer data; Sector 12 (1:1250 @ A3)

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SECTOR BOUNDARY

Wan16

Wan17

Drain

20.1m

2.0

-1.0

nT

N

299600

299400

509400

509600

509800

0

50m

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Tel: 0113 535 0163

Fig. 40. Processed greyscale magnetometer data; Sector 13 (1:1250 @ A3)

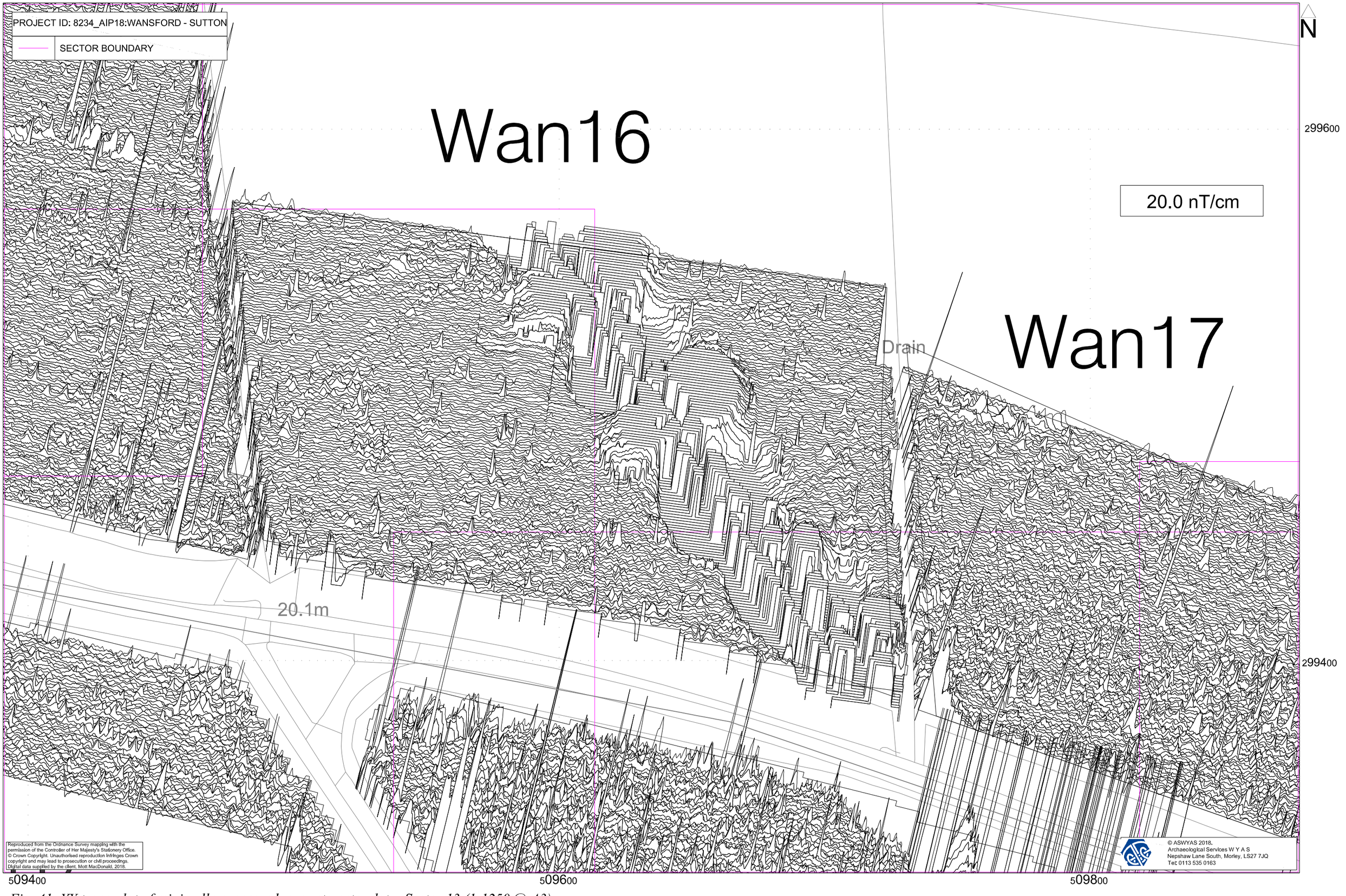

Fig. 41. XY trace plot of minimally processed magnetometer data; Sector 13 (1:1250 @ A3)

PROJECT ID: 8234_AIP18:WANSFORD - SUTTON

SECTOR BOUNDARY

TYPE OF ANOMALY		INTERPRETATION
•	DIPOLAR ISOLATED	FERROUS MATERIAL
	MAGNETIC DISTURBANCE	FERROUS MATERIAL
	LINEAR TREND	AGRICULTURAL
	LINEAR TREND	ARCHAEOLOGY?
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY? - DITCH
	LINEAR TREND	ARCHAEOLOGY
	MAGNETIC ENHANCEMENT	ARCHAEOLOGY - DITCH

N

Wan16

Wan17

A15

A10

A16

A7

P9

P10

Drain

20.1m

299600

299400

509400

509600

509800

0

50m

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Nepshaw Lane South, Morley, LS27 7JQ
Tel: 0113 535 0163

Fig. 42. Interpretation of magnetometer data; Sector 13 (1:1250 @ A3)