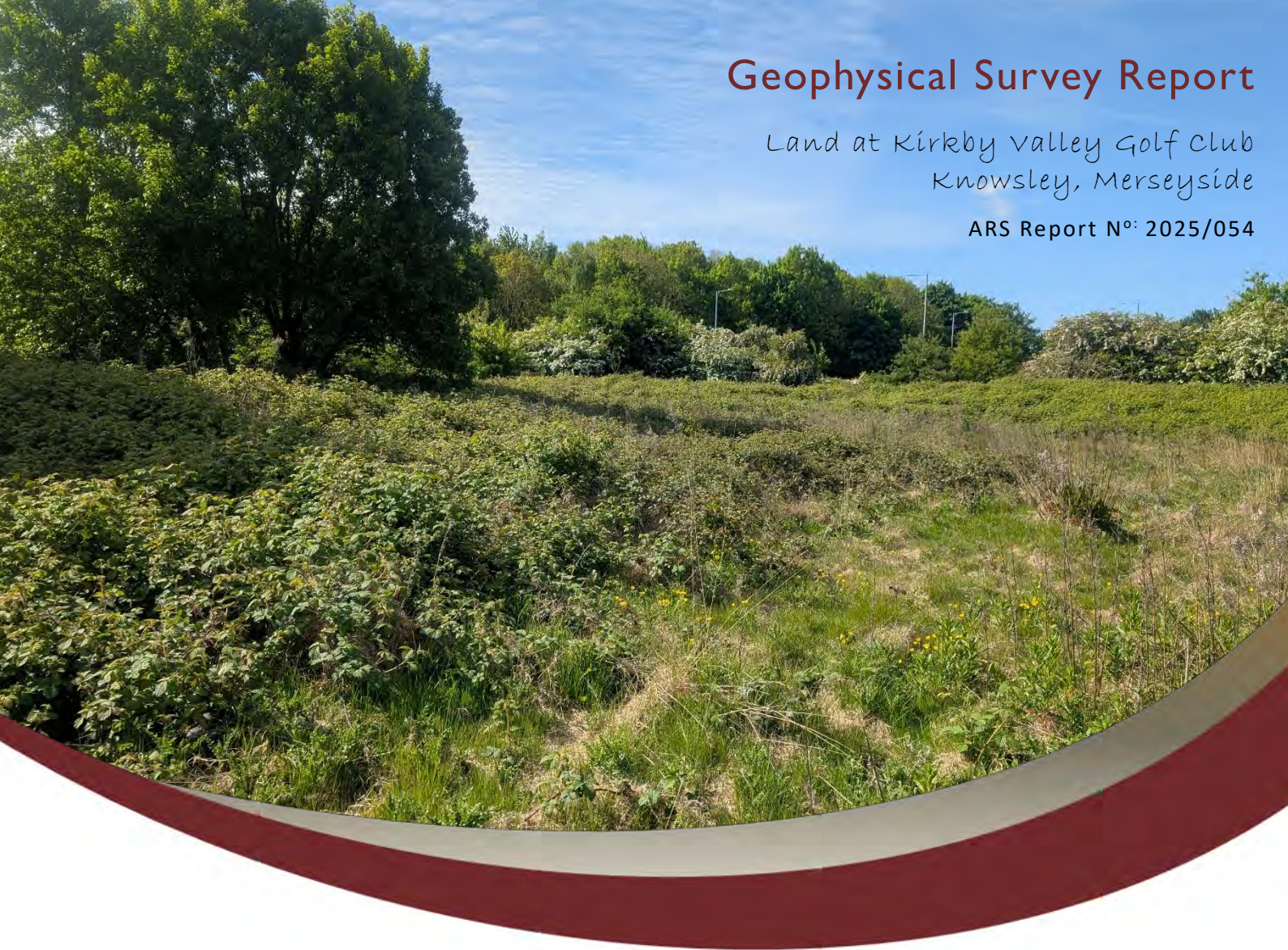


Geophysical Survey Report

Land at Kirkby Valley Golf Club
Knowsley, Merseyside

ARS Report N°: 2025/054



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Geophysical Survey Report Land at Kirkby Valley Golf Club Knowsley, Merseyside

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1	Will Cowap, Soren Greasley	Kimberley Teale BSc ACIfA ISAP	Kimberley Teale BSc ACIfA ISAP	02/06/2025	Client and LPA
1	Will Cowap, Soren Greasley	Kimberley Teale BSc ACIfA ISAP	Kimberley Teale BSc ACIfA ISAP	05/06/2025	Client edits

Prepared on behalf of: Green Circle Estates LTD
Planning Reference: Application No: 21/00744/FUL
Date of compilation: May 2025
Local Authority: Knowsley Council
Site central NGR: SJ 39640 97729
OASIS ID: archaeol5-533104

NON-TECHNICAL SUMMARY

Project Name: Geophysical Survey on land at Kirkby Valley Golf Club
Planning Authority: Knowlsey Council
Planning Reference: 21/00744/FUL
Location: Kirkby Valley Golf Club, Ingoe Lane, Knowsley, Merseyside
Bedrock Geology: Chester formation- sandstone
Superficial Geology: Shirdley Hill sand formation and Devensian Till
NGR: SJ 39640 97729
Date of Fieldwork: 12th to 15th May 2025
Surveyed by: S.Greasley and W.Cowap
Date of Report: May 2025

Archaeological Research Services Ltd was commissioned by Green Circle Estates LTD to undertake a geophysical magnetometer survey on land adjacent to Kirkby Valley Golf Club, in Knowsley, Merseyside. The work was undertaken as a planning condition ahead of the re-development of the golf course, comprising the remodelling of the existing golf course including the creation of a new 9-hole, par 3 golf course and the erection of a new two-story clubhouse, remodelling of the existing golf course including a 2 tier driving range with outfield and an adventure golf course (18 hole) with carpark for the new facilities (Application No: 21/00744/FUL).

The geophysical survey was commissioned across a c.20ha to establish the presence, absence and extents of potential archaeological remains within the site. The results assessed in this report will help to inform any further evaluation and/or mitigation required ahead of the proposed development.

The survey was undertaken between the 12/05/2025 and 15/05/2025 in accordance with the Written Scheme of Investigation (Cowap 2025). The survey was conducted across three areas of disused land adjacent to the existing 18 hole golf course. Overgrown vegetation and trees prohibited surveying the site in its entirety.

The survey identified a former historic field system which could date to the medieval period or earlier, alongside two rectilinear enclosures which could have been stock or property enclosures. Possible ridge and furrow ploughing remnants were also identified, as well as evidence of the former route of the River Alt. Large swathes of magnetic disturbance from rubbish tipping and ground disturbance as well as large ferrous deposits were prevalent across the whole of the site.

These findings provide a basis to inform further decision-making and further mitigation ahead of development of the site.

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I INTRODUCTION

1.1 Project and Planning Background

- 1.1.1 This report describes the methodology, results and interpretation of a non-invasive archaeological geophysical magnetometer survey on land adjacent to Kirkby Valley Golf Club, in Knowsley, Merseyside. This report has been prepared by Archaeological Research Services Ltd (hereafter 'ARS Ltd') for Green Circle Estates Ltd (hereafter 'the Client').
- 1.1.2 A planning application was submitted by the Client relating to the development of a parcel of land adjacent to Kirkby Valley Golf Club, Merseyside for the re-development of the existing golf course including the creation of a new 9-hole, par 3 golf course, driving range, and the erection of a two-story clubhouse, remodelling of the existing golf course including a 2 tier driving range with outfield and an adventure golf course (18 hole) with carpark for the new facilities (Application No: 21/00744/FUL). The proposed work will also include the erection of a footbridge over the River Alt, creation of new access onto valley road, extension to the existing car park and site wide landscaping including replacement tree planting.
- 1.1.3 The development area (DA) is considered by Merseyside Environmental Advisory Service (MEAS) as archaeological advisors to the Local Planning Authority Knowsley Council to have the potential to host buried archaeological remains. The archaeological survey is required in line with the National Planning Policy Framework (NPPF). *"...where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation"* (MHCLG 2025).
- 1.1.4 A phased archaeological evaluation was therefore required relating to the archaeological condition (10) of the planning permission in line with the National Planning Policy Framework (NPPF) *"...where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation"* (MHCLG 2025).
- 1.1.5 The survey was undertaken in accordance with the *Management of Research Projects in the Historic Environment (MORPHE): Project Managers Guide* (Historic England 2015), the *CIfA Standard and Guidance for Archaeological Geophysical Survey* (CIfA 2020), and the European Archaeological Council's (EAC) *Guidelines for the Use of Geophysics in Archaeology* (Schmidt 2016).
- 1.1.6 The evaluation will aim to help determine what, if any, level of archaeological mitigation will be necessary prior to any development commencing. The results of this phase of non-intrusive evaluation will help to inform a phase of mitigation, likely comprising evaluation trial trenching, which will be preceded and informed by a separate WSI.



Figure 1: Site Location

Site name: Kirkby Valley Golf Club
 Date drawn: 09/04/2025
 Drawn by: WHC



This drawing: © ARS Ltd
 Contains Ordnance Survey data.
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Figure 2: Survey Boundary

Legend

 Survey Boundary

 Not Surveyed

Site name: Kirkby Valley Golf Club
Date: 09/04/2025
Drawn by: WHC

0 50 100 m

1:3500



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2 PROJECT AREA

2.1 Site location and description

- 2.1.1 The development area (hereafter the 'DA') is located on a disused parcel of land adjacent to the Kirkby Valley Golf Club, 1.6km west of Kirkby town centre, Merseyside (NGR SJ 39640 97729; Figure 1). The site lies to the immediate south-west of the River Alt and the active Kirkby Valley Golf Course and is bounded to the south by Valley Road / the A506 and Aintree Lane to the west.
- 2.1.2 The area demarcated for geophysical survey supplied by Green Circle Estates Ltd (hereafter 'the Client') measures approximately c.20ha and comprises four fields interspersed with trees and a drainage channel (Figure 2). Overgrown brambles and vegetation around the site boundaries, throughout the survey areas and across the north of the DA presented obstructions to the survey, leading to a total c.10ha area not being surveyed (see Figure 2; Plates in Appendix 1). In particular, the entirety of Field 4 was avoided due to being significantly overgrown with uneven ground levels.
- 2.1.3 The site was mostly level ranging from 15m-19m above Ordnance Datum (aOD). Ground conditions were very undulating with areas of tall grass and foliage and historic churn from ground disturbance. Weather conditions during the survey were dry, sunny and calm.

2.2 Geology and Soils

- 2.2.1 The underlying solid geology of the DA is sandstone of the Chester Formation, a sedimentary bedrock formed 250 and 247.1 million years ago during the Triassic period; with superficial deposits of the Shirdley Hill Sand Formation (BGS 2025). Magnetometer survey responds well over sedimentary geology but can be affected by distorting factors such as parent geology of the sandstone (English Heritage 2008).
- 2.2.2 The soils across the site are described as "naturally wet, very acid, sandy and loamy soils" ("Soilscape 15"; Cranfield University 2025).

2.3 Archaeological and Historical Background

- 2.3.1 A desk-based assessment was produced by ARS LTD in advance of the initial planning application (Jacklin 2019). A review of the archaeological and historical background within a 1km search radius of the site was conducted using data provided from a search by the Merseyside Environmental Advisory Service, the National Heritage List for England (NHLE) and historic mapping sourced from the National Library of Scotland mapping portal (NLS 2025). A summary of the background is provided below.
- 2.3.2 The site and surrounding area were assessed to have moderate potential for surviving archaeological remains, likely relating to multiple phases of human activity ranging from the prehistoric to modern period. The known heritage assets recorded in the MEAS HER indicate that the surrounding landscape is characterized by an archaeological and historical narrative that is multiphasic, rich, and complex.
- 2.3.3 There is a moderate potential for prehistoric remains within the site. A flint core (MHER MME4410), was identified in 1973 c.250m north-west of the DA and a Neolithic polished axe head (MHER MME4676), located c.245m north of the DA. An excavation carried out by National Museums Liverpool Field Archaeology Unit of land at Old Hall Lane, Kirkby, (abutting the Chapel of St Chad) just 1.6km east of Kirkby Golf Club found a Mesolithic or

Neolithic flint scraper, a Mesolithic blade production flake and a possible Mesolithic flint blade fragment.

- 2.3.4 There is no known evidence of archaeological remains dating to the Romano-British period identified within the DA, however Roman coins have been recorded at Toxteth park, Wavertree, West Derby, Speke, and Tarbook, along with a coin hoard in Pool.
- 2.3.5 There is considered to be a moderate potential for the presence of medieval remains within the site. Notably pottery fragments were recovered during a watching brief approximately 300m east of the DA on Ignoe Lane (MHER MME11984). Approximately 1.5km to the northeast lie the former location of a medieval chapel dedicated to St Chad. Historical records indicate the existence of this chapel in Kirkby during the reign of Edward VI, with further documentation provided by a 1650 survey of churches in Lancashire.
- 2.3.6 Potential for surviving below-ground archaeological remains associated with post-medieval activity is high with multiple post-medieval archaeological remains identified within the DA. Alder's Bridge (MHER MME4661), evident on the 1769 Molyneux Estate Map (Jacklin 2019) is located in the south-east corner of the DA. The Former Cottage Hospital (MHER MME4660), evident on the 1888 Ordnance Survey is situated along the northern boundary of the DA. The site of Nicholson's Cottage is also present along the northern boundary c.240 south-west of the Former Cottage Hospital, also evident on OS map (1888). A barn (MME 19886) is also present abutting the northern boundary of the DA.
- 2.3.7 C.400m west of the site are 25 listed buildings dated c.1888. These buildings are part of a self-contained cottage complex along Longmoor Lane, consisting of 24 red brick, slate roof cottages and a red brick, dining hall with clocktower. Three further listed buildings are located c.1km north-west of the site and are associated with Aintree Mill; these are demarcated on historic mapping (NLS 2025).
- 2.3.8 Historic mapping from 1888 (ibid) also reveals that the River Alt deviates in the northern corner of the site, where it has been artificially straightened and channelled in an effort to drain the river and allow access for more land. Further review of the site shows very little change in land use of the site from 1885 until the founding of Kirkby Valley Golf Club in 1928. Given the site's proximity to the Leeds and Liverpool Canal, the railway signal and carriage works and Fazakerley siding and junction, it is expected that evidence of industrial activity will be present within the site.
- 2.3.9 The area surrounding the golf course was subject to militarisation during the Second World War to safeguard Liverpool's infrastructure from aerial bombardment. Among these defensive installations was an anti-aircraft battery recorded in the wider study area (NHRE 147401).

3 AIMS AND OBJECTIVES

3.1 Survey Aims

- 3.1.1 The principal aims of this survey were to undertake an archaeological geophysical survey across the c.20ha site to identify the presence and or absence of archaeological remains, and where possible to establish their significance sufficient to inform a programme of intrusive investigation i.e. trial trenching or similar.

3.2 Survey Objectives

3.2.1 The survey aims were achieved through the following objectives:

- ◆ Identify and record evidence for the absence/presence, location and extent of any archaeological features that may be present within the DA.
- ◆ Establish the character, extent, form and function of any surviving cultural heritage and archaeological features with a view to evaluating their significance and potential, where possible.
- ◆ Establish the integrity and condition of preservation of any remains present.
- ◆ Provide information which will be used to discuss and agree (with the Planning Archaeologist for MEAS) a programme of intrusive investigation i.e. trial trenching or similar.

3.3 Research Aims and Objectives

3.3.1 This archaeological evaluation has the potential to identify the presence of archaeology pertinent to research objectives and overarching research themes identified in research frameworks:

- ◆ **Regional** – The North-west England Regional Research Framework (Research Frameworks 2025a)
- ◆ **National & Thematic** – Historic England Research Agenda (Research Frameworks 2025b)

3.3.2 The Historic England Research Agenda sets out national thematic and period research questions and frameworks pertinent to the planned archaeological works, specifically in reference to the rural landscape. Themes of potential relevance to this project include questions relating to understanding, informing and innovation.

3.3.3 Research questions which may become relevant include:

- ◆ PH29: What activities were undertaken during the Palaeolithic in the North West of England?
- ◆ EM17: What evidence is there for landscape change in the early medieval period?
- ◆ GS38: How did land use and management change through time?
- ◆ What new narratives can we generate from synthesis of 'big data'?
- ◆ Which areas, types of site and historical periods would most benefit from the synthesis of commercially derived 'big data'?

3.3.4 Other research objectives may become relevant should any archaeological features investigated during investigations produce significant findings of regional or greater importance, that also feed into local, regional and national archaeological frameworks.

4 METHODOLOGY

4.1 Coverage

- 4.1.1 The area specified for geophysical survey measured c.20ha including areas which were overgrown and inaccessible for geophysical survey (Figure 2). Photographs of the survey areas and areas that were not surveyable can be seen in Appendix 1.
- 4.1.2 All survey and reporting was undertaken in accordance with the *Codes of Conduct of the Chartered Institute for Archaeologists* (CIfA 2022), the *CIfA Standard and Guidance for Archaeological Geophysical Survey* (2020), and the European Archaeological Council's (EAC) *Guidelines for the Use of Geophysics in Archaeology* (Schmidt 2016).

4.2 Geophysical Survey - Magnetometry

- 4.2.1 Magnetometry is a non-invasive scientific prospecting technique that is the preferred geophysical technique used to determine the presence or absence of buried archaeological features when site and geological conditions are favourable. It is an efficient and effective method for locating anomalies corresponding with buried iron-based features and objects, or those subjected to firing such as kilns, hearths and even the buried remains of brick walls. It is also used to locate subtle features such as boundary or enclosure ditches and larger pits containing humic material. The breakdown of organic matter through microbiotic activity leads to the humic material becoming rich in magnetic iron oxides when compared with the subsoil, thus allowing features to be detected.
- 4.2.2 Furthermore, variations in the magnetic susceptibility between the topsoil, subsoil and bedrock have a localised effect on the Earth's magnetic field enabling the detection of features such as backfilled ditches or pits, due to the fact that the topsoil has more magnetic properties than the subsoil or bedrock, resulting in a 'positive' magnetic anomaly. Conversely, earthwork or embankment features can also be identified as 'negative' magnetic anomalies due to the action of placing less magnetic subsoil on top of more magnetic topsoil. Allowance will be made where possible to limit the potential effect of magnetic interference produced by metal fencing, modern field boundaries or ferrous features upon the data, in order to limit distortion of the overall geophysical results.
- 4.2.3 The magnetometer survey was undertaken using Bartington Grad-601 handheld gradiometers. An array of 14 30m-by-30m survey grids were set out and accurately positioned using an Emlid RTK GNSS REACH RS2+. Each grid was surveyed at 1m traverse intervals with a sampling resolution of 0.25 m (4 readings per meter). The survey was carried out in alternating traverses or 'zigzag' mode. The range of the instrument was set at $\pm 100\text{nT}$ (0.01nT resolution).
- 4.2.4 Prior to commencement of survey, the magnetometers were balanced and calibrated to the local conditions and repeated when necessary. At the end of each day, data were downloaded using Grad601 software, and inspected using Geoplot V4.0 (Geoscan Research).
- 4.2.5 A photographic record of the survey area was taken illustrating ground conditions and areas unsuitable for survey and relevant plates can be seen in Appendix 1.

4.3 Geophysical Data Processing

- 4.3.1 Data processing for the magnetometer data was undertaken using Geoplot V4.0 (Geoscan Research). Unprocessed raw data plots were exported as greyscale images along with XY trace plots to aid in the interpretation of the data. These can be found for reference in Appendix 2.
- 4.3.2 The magnetometer data were processed as minimally as possible to account for issues such as machine drift and stagger. A “de-spike” function was applied to remove erroneous high value readings; followed by a “zero-mean traverse” function (with thresholds applied) to balance the readings across both sensors; followed by a “de-stagger” to bring any overstepped traverses of data back into alignment. The data were then ‘filtered’ to smooth the appearance of data pixels by using a “low pass filter” and an “interpolation” along the X axis.
- 4.3.3 All processed data was exported as a greyscale shade plots as PNG files for insertion into QGIS for interpretation and analysis.
- 4.3.4 The greyscale plots were combined with geolocation data in QGIS to produce georeferenced GeoTIFs. Interpretative diagrams of the data, aided by the XY trace plots, were created in QGIS as shapefiles and have been colour coded using ARS Ltd’s standard scheme.
- 4.3.5 Not all anomalies have been included in the results and discussion. Dipolar anomalies with no clustering or pattern to their distribution are common on most sites and almost certainly relate to natural variations in the soils and geology, agricultural disturbance and miscellaneous ferrous litter on the surface of the field. These anomalies have not been analysed further.

5 SURVEY RESULTS

5.1 Introduction

- 5.1.1 Greyscale shade plot visualisations of the geophysical magnetometer survey data are presented in Figures 3-5. Transcriptions of anomalies visible in the magnetometer data are presented in Figures 6-8. XY trace plots of the unprocessed magnetometer data can be found in Appendix 2 for reference.
- 5.1.2 To align with the report aims, the discussion of results focuses on those that are considered the *key*, *significant*, and *sensitive* archaeological anomalies identified in survey, and those pertinent to the discussion have been assigned ID numbers (Prefixed with [Mag_]).
- 5.1.3 As is the case in all magnetometry survey, the dataset displays magnetic disturbance and isolated ferrous anomalies related to modern debris, utilities and infrastructure. Magnetic disturbance is visible around most field boundaries, fencing, pavements and modern infrastructure. The majority of the datasets for fields 2 and 3 showed an increased presence of magnetic disturbance to the south, likely a result of rubbish being dumped there or the demolition of a building.

5.2 Magnetometer Survey Results (Figures 5 - 10)

Field 1

- 5.2.1 Located in the west of the DA, Field 1 was characterised by common land with large areas of dense vegetation along the western and northern boundary edges.
- 5.2.2 The data for Field 1 contains a number of trends of a historical and possible archaeological origin.
- 5.2.3 Running parallel to the eastern boundary of the field are a series of long positive linear trends [K1]. These correlate with an old field boundary seen on historic mapping from 1888 (NLS 2025). A second former boundary can be seen intersecting this at the midpoint [K2] and the two are likely related and were extant in the same period.
- 5.2.4 A number of further long linear trends parallel to these former boundaries can be seen across the rest of the data for Field 1 [K3] [K4] and their patterning is suggestive of a former field system. These trends are not visible on historic mapping, and it is likely they pre-date the 1888 maps and have anthropogenic origins. A rectilinear enclosure [K5] is visible abutting boundary trend [K4]. Measuring c.19m in width, the feature could be a small stock enclosure or field system, and is likely contemporary with the former boundary trend it is adjacent to.
- 5.2.5 A small rectilinear enclosure is visible in the south-east of the field [K6]. This is also not visible on the earliest historic mapping from 1888, however, magnetic disturbance over the location of a former building near this location is [K7] and it is possible the features could have been related, relating to a building and a garden or property enclosure.
- 5.2.6 Long positive linear trends can be seen across the rest of the dataset for Field 1, e.g. [K8], however they are magnetically weak and it is unclear if they relate to the former field system or if they are agricultural trends.
- 5.2.7 In the north-west of the field an area of magnetically strong striations have been identified [K9]. These are likely ploughing trends, and it is possible they could be historic ridge and furrow trends, or disturbance from land clearance or dredging.
- 5.2.8 A small sub-circular trend is visible in the west of the field which could be archaeological [K10].
- 5.2.9 Agricultural ploughing trends can be seen in the north-west of the field, though they are magnetically very weak. Large areas of magnetic disturbance and ferrous anomalies are prevalent across the rest of the dataset representing modern rubbish dumping and ground disturbance.

Field 2

- 5.2.10 Located in the east of the DA, the dataset for Field 2 was heavily disturbed by strongly magnetic deposits. These are likely from modern rubbish dumping and ground disturbance, and some could also relate to flood deposits from the River Alt before it was artificially straightened and channelled around 1910-1930 (NLS 2025).
- 5.2.11 Extending across nearly the entire width of Field 2 and continuing into Field 3 is a long broad linear anomaly [K11]. The trend corresponds with a historic field boundary present on 19th century mapping (NLS 2025).

- 5.2.12 To the north of this, two parallel positive trends can be seen cutting across the corner of the field [K12]. Demarcated on 19th century mapping, this anomaly corresponds with the original route of the River Alt before it was artificially straightened and channelled around 1910-1930 (NLS 2025). Measuring c.3-5m in width, the positive trends that can be seen in the data could relate to an artificial lining alongside the channel to prevent flooding episodes, or could relate to tow paths running along either side of the river. A magnetically weak trend running parallel to these trends likely represents a further historical route of the river [K13].

Field 3

- 5.2.13 Much of Field 3 was covered in overgrown dense scrub and vegetation and could not be surveyed. Similar to the data Field 2, the southern half of the dataset was heavily disturbed by strongly magnetic deposits. These are likely from modern rubbish dumping and ground disturbance.
- 5.2.14 In the north of the field a positive long linear trend has been identified [K14]. As it sits parallel and perpendicular to the pattern of former field boundary trends seen across the rest of the site, it is likely related, however is not depicted in historic mapping (NLS 2025).

6 DISCUSSION AND CONCLUSIONS

- 6.1.1 The discussion integrates and synthesises the key features and anomalies identified by the geophysical magnetometer survey. It must be noted that the presence of demolition material, dense vegetations and green waste across the site has hampered the visibility of features within the geophysical dataset and it is possible that archaeological remains could be present that were hidden from detection and in areas that were deemed not suitable for survey. It is also possible that archaeological remains not amenable to detection through the method of magnetometry are present within the site.
- 6.1.2 A pattern of former field boundaries can be seen across the site, some of which are seen in 19th Century historic mapping and some of which are not, suggesting they were extant and removed before they could be recorded cartographically. There is a possibility that they could be archaeological in origin. Two smaller enclosures can also be seen abutting these boundary trends, neither of which are recorded cartographically and could be archaeological.
- 6.1.3 Possible ridge and furrow trends can be seen in the north-west of the site, which do appear to lie parallel with the former field system, suggesting they could be of a similar age and represent a former medieval/post medieval agricultural landscape.
- 6.1.4 In the east of the site we can see trends relating to the former route of the River Alt before it was historically straightened. The visible trends could relate to a man-made lining along the channel to prevent flooding, or even a tow path along the banks of the river.
- 6.1.5 The presence of large swathes of magnetic disturbance in the topsoil as well as overgrown vegetation has prohibited full prospection of the site for archaeological remains. However, the data that has been gathered gives an indication of agricultural activity across the site with historic evidence for dissolving the field system into larger fields, likely for modern farming or landscaping associated with the golf course to the north.
- 6.1.6 The survey results have provided a valuable dataset to help address themes highlighted in the research framework for the north-west of England with specific relevance to how land

use and management changed through time (North West England Regional Research Framework 2025).

- 6.1.7 In conclusion, this survey has achieved the survey aims and objectives of assessing and evaluating the site using a non-invasive methodology to locate potential archaeological remains to inform further planning decisions.

7 PUBLICITY, CONFIDENTIALITY AND COPYRIGHT

- 7.1.1 Any publicity will be handled by the client.
- 7.1.2 ARS Ltd will retain the copyright of all documentary, photographic and video material under the Copyright, Designs and Patent Act (1988).

8 STATEMENT OF INDEMNITY

- 8.1.1 All statements and opinions contained within this report arising from the works undertaken are offered in good faith and compiled according to professional standards. No responsibility can be accepted by the author/s of the report for any errors of fact or opinion resulting from data supplied by any third party, or for loss or other consequence arising from decisions or actions made upon the basis of facts or opinions expressed in any such report(s), howsoever such facts and opinions may have been derived.

9 ARCHIVE

- 9.1.1 A digital archive has been created for this project and will be retained on a secure server in line with current best practice (ADS/Digital Antiquity 2011: Archaeology Data Service 2025).
- 9.1.2 No physical archive was generated by this geophysical survey. All original documentary material created and collected during the archaeological works will be selected according to the ARS Ltd Retentions and Discard Policy for inclusion in the final digital archive.

9.2 Digital Archive

- 9.2.1 All digital data created over the course of this project will be collected, stored, and selected for final deposition in line with the project's Data Management Plan. Any digital data will be deposited with the Client and the Archaeology Data Service (ADS) if required and if agreed to by the LPA and the Client.
- 9.2.2 The key types of digital data produced will include:

Type	Data
Text	Digital copies of final report
Images	Site photographs, report illustrations, digital drawings
Survey data	Raw gradiometer data, fully processed data plots and XY trace plots, georeferenced TIFs, and all associated interpretive GIS data files (e.g. .shp)

- 9.2.3 Only the final copies of any digital data will be selected and deposited in the final project archive.

- 9.2.4 Digital photographs will be assessed and selected in line with Historic England guidelines (Cole and Backhouse 2015). Any data to be excluded from the archive will be removed in accordance with ARS Ltd retention and discard policy.

9.3 Archive Deposition

- 9.3.1 Selected digital data will be deposited with MEAS so that it is publicly accessible in the future. Any such digital data will be prepared in line with current best practice (ADS/Digital Antiquity 2011: Archaeology Data Service 2025).
- 9.3.2 Upon final completion of the project, a final copy of the report will be deposited with the MEAS in an agreed format.

10 STATEMENT OF INDEMNITY

- 10.1.1 All statements and opinions contained within this report arising from the works undertaken are offered in good faith and compiled according to professional standards. No responsibility can be accepted by the author/s of the report for any errors of fact or opinion resulting from data supplied by any third party, or for loss or other consequence arising from decisions or actions made upon the basis of facts or opinions expressed in any such report(s), howsoever such facts and opinions may have been derived.

11 ACKNOWLEDGEMENTS

- 11.1.1 ARS Ltd would like to thank Green Circle Estate Ltd for commissioning and facilitating the survey and for their assistance with accessing and clearing the land where possible.

12 REFERENCES

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13 FIGURES

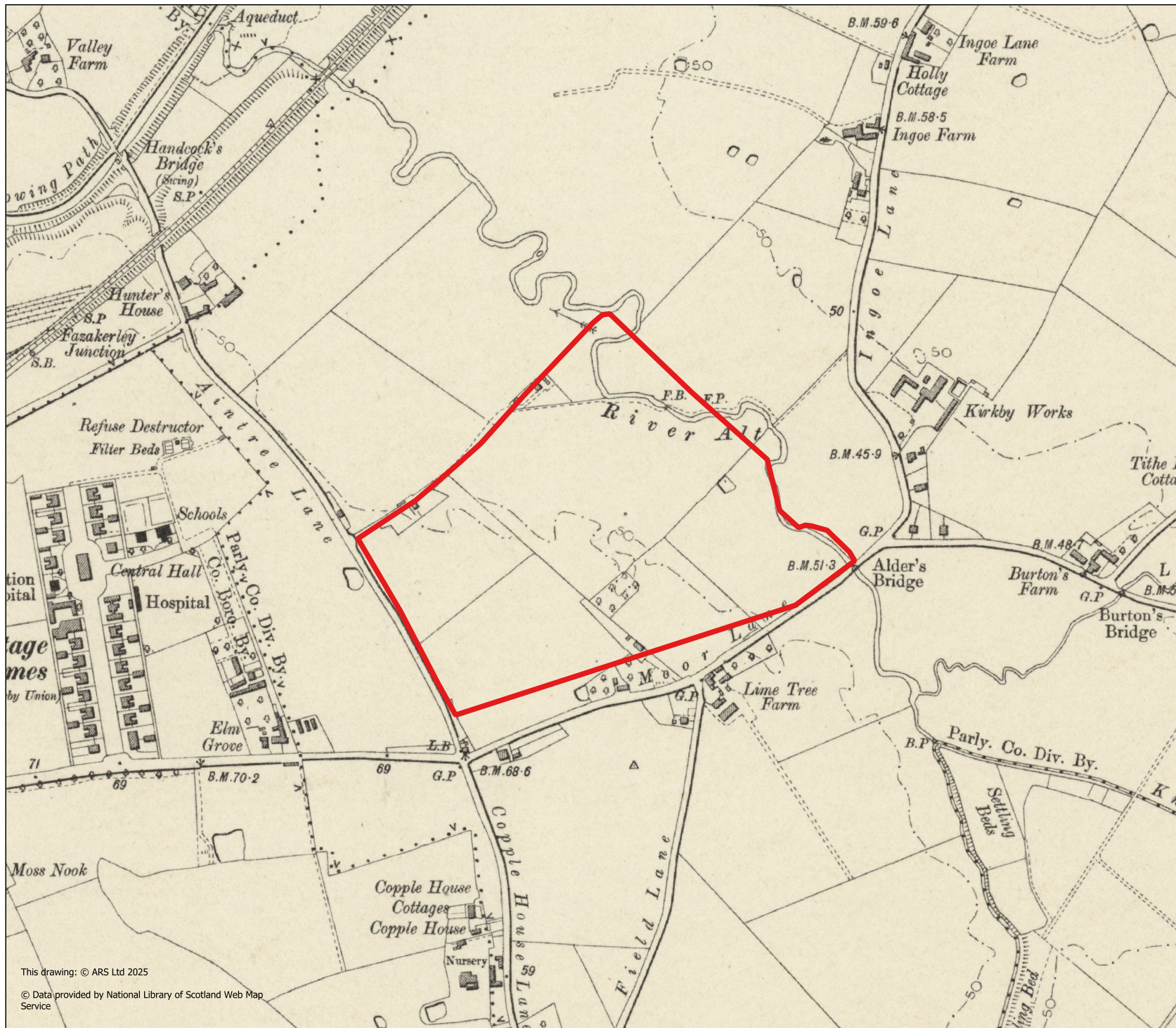


Figure 4: Historic Mapping, 2nd Edition OS Map 1888-1915

Legend

Survey Boundary

Site name: Kirkby Valley Golf Club
Date: 03/06/2025
Drawn by: WHC

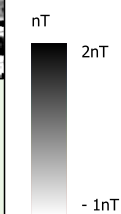
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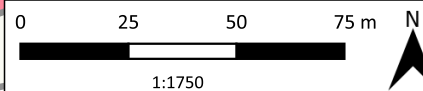
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Figure 5: Field 1 Greyscale
Shadeplot

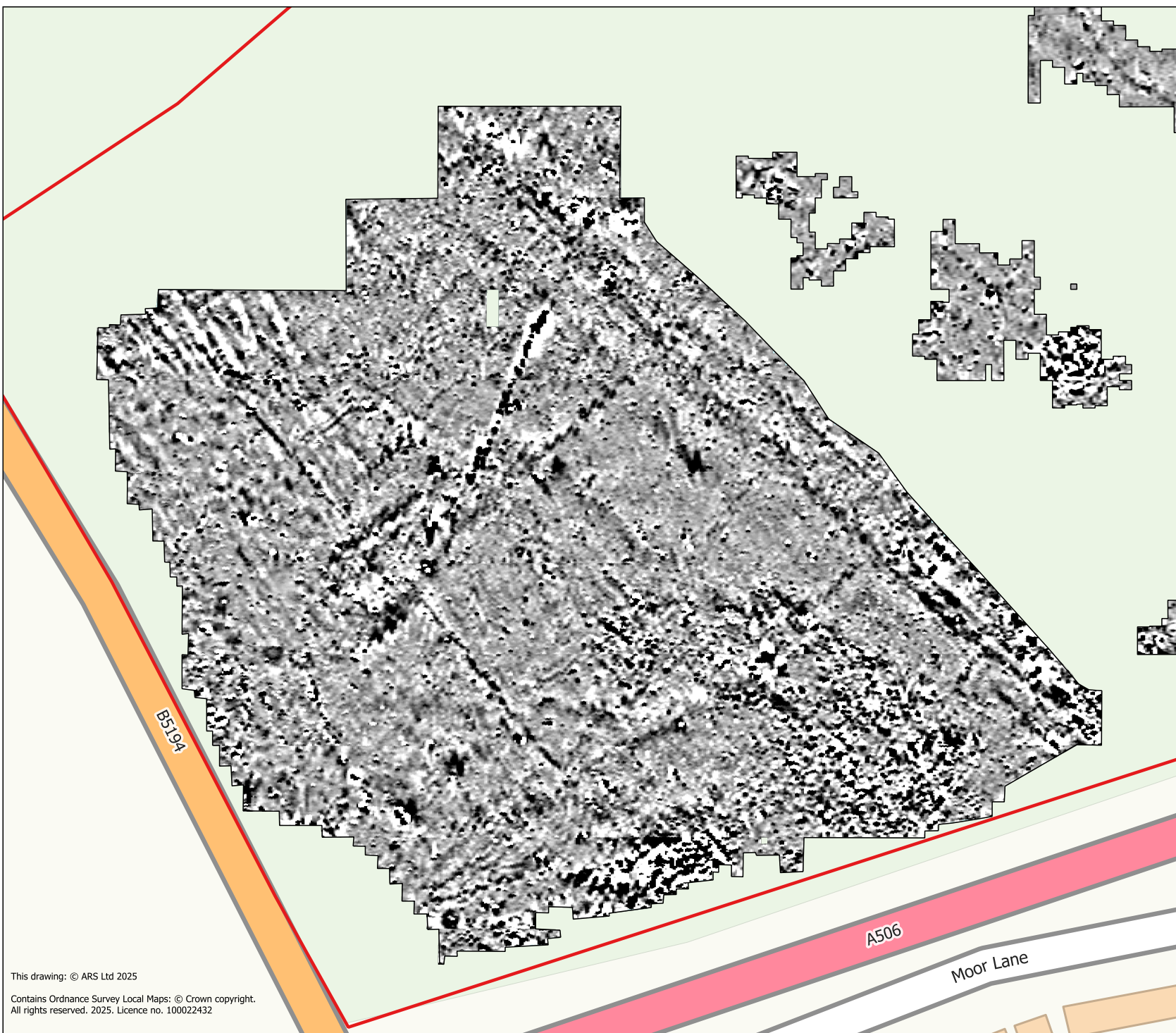
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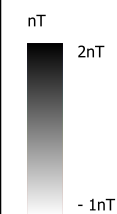


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Figure 6: Field 2 and 3 Greyscale
Shadeplot

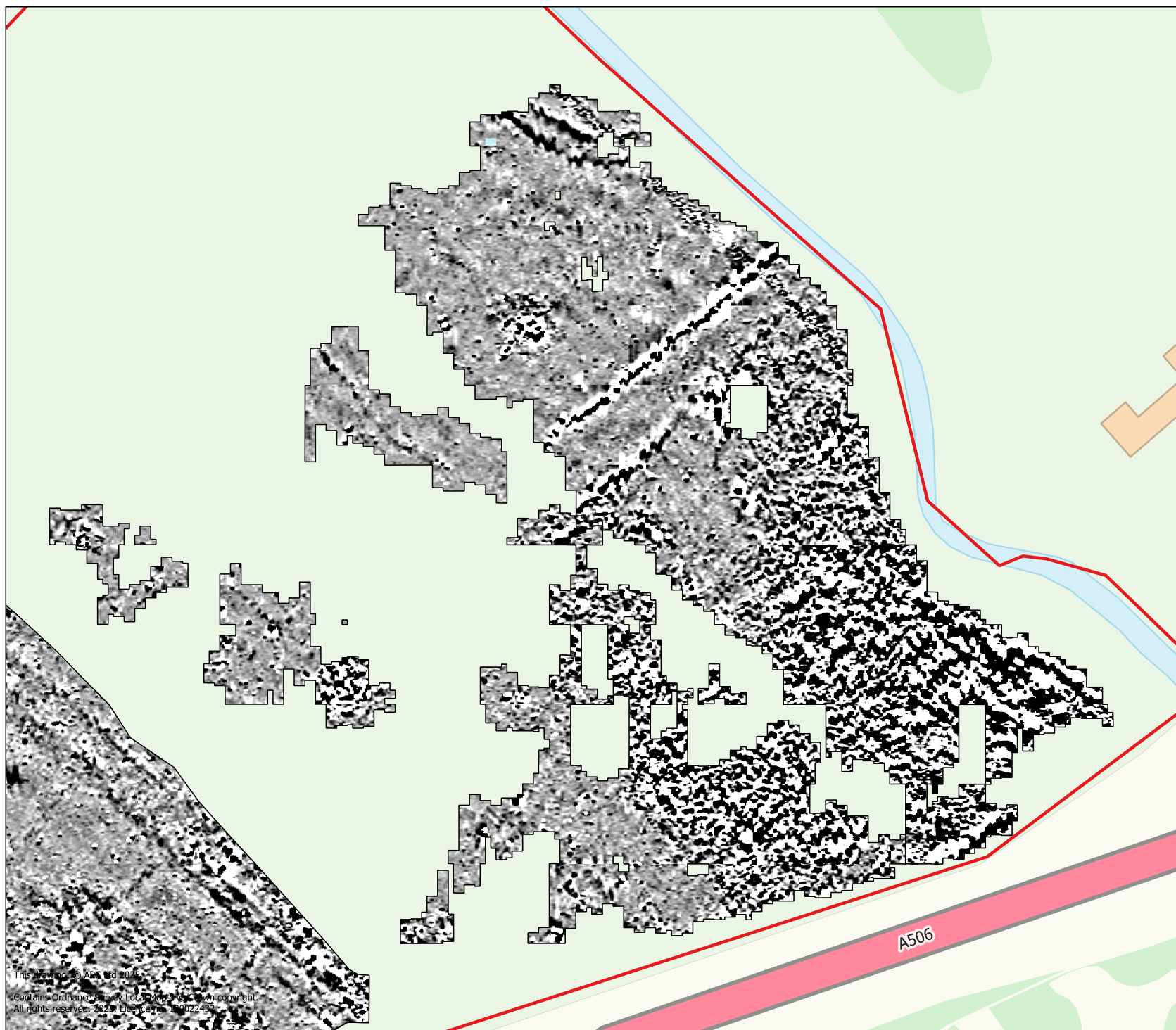
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Figure 7: Field 1 Magnetometry Results Interpretation

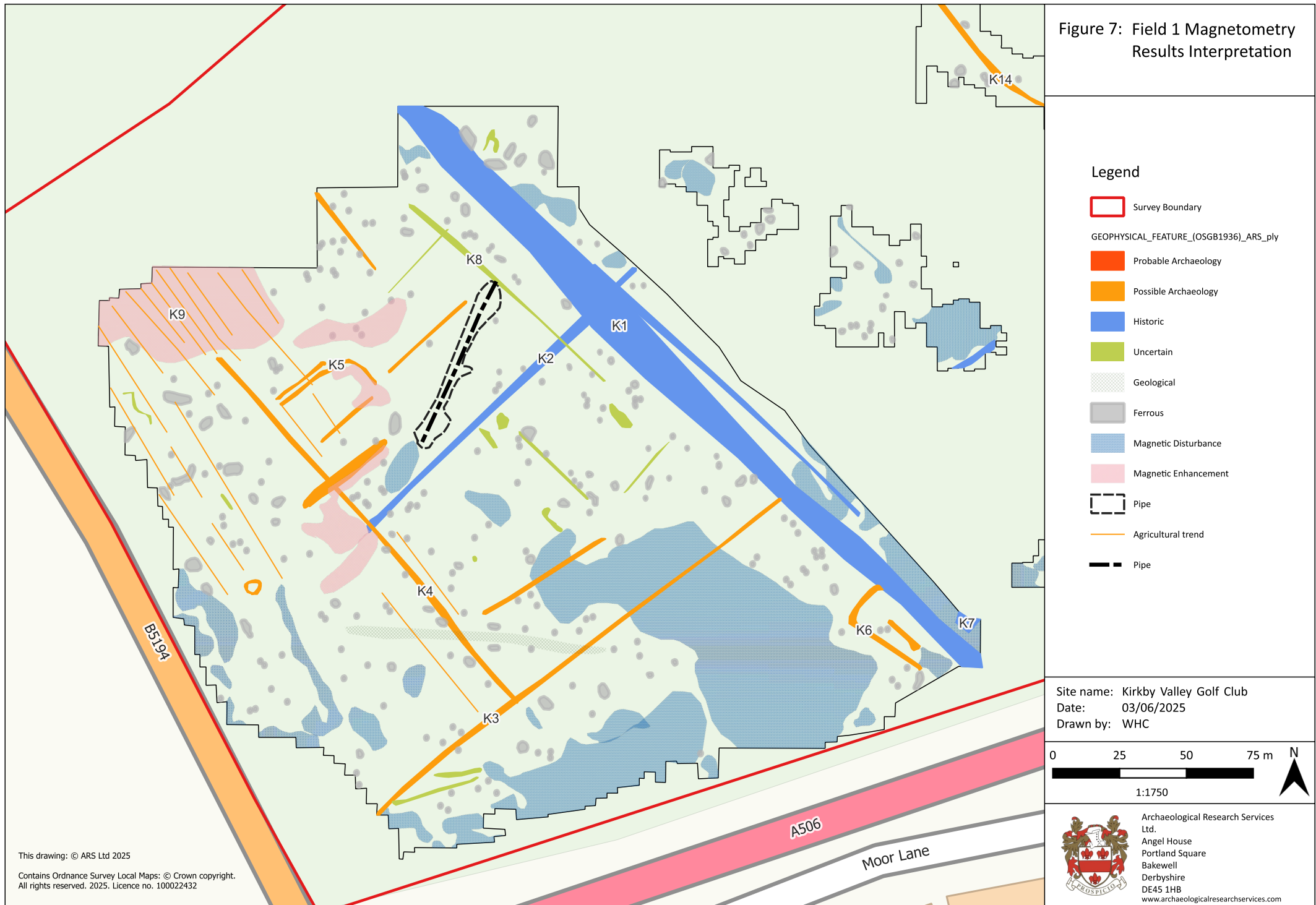
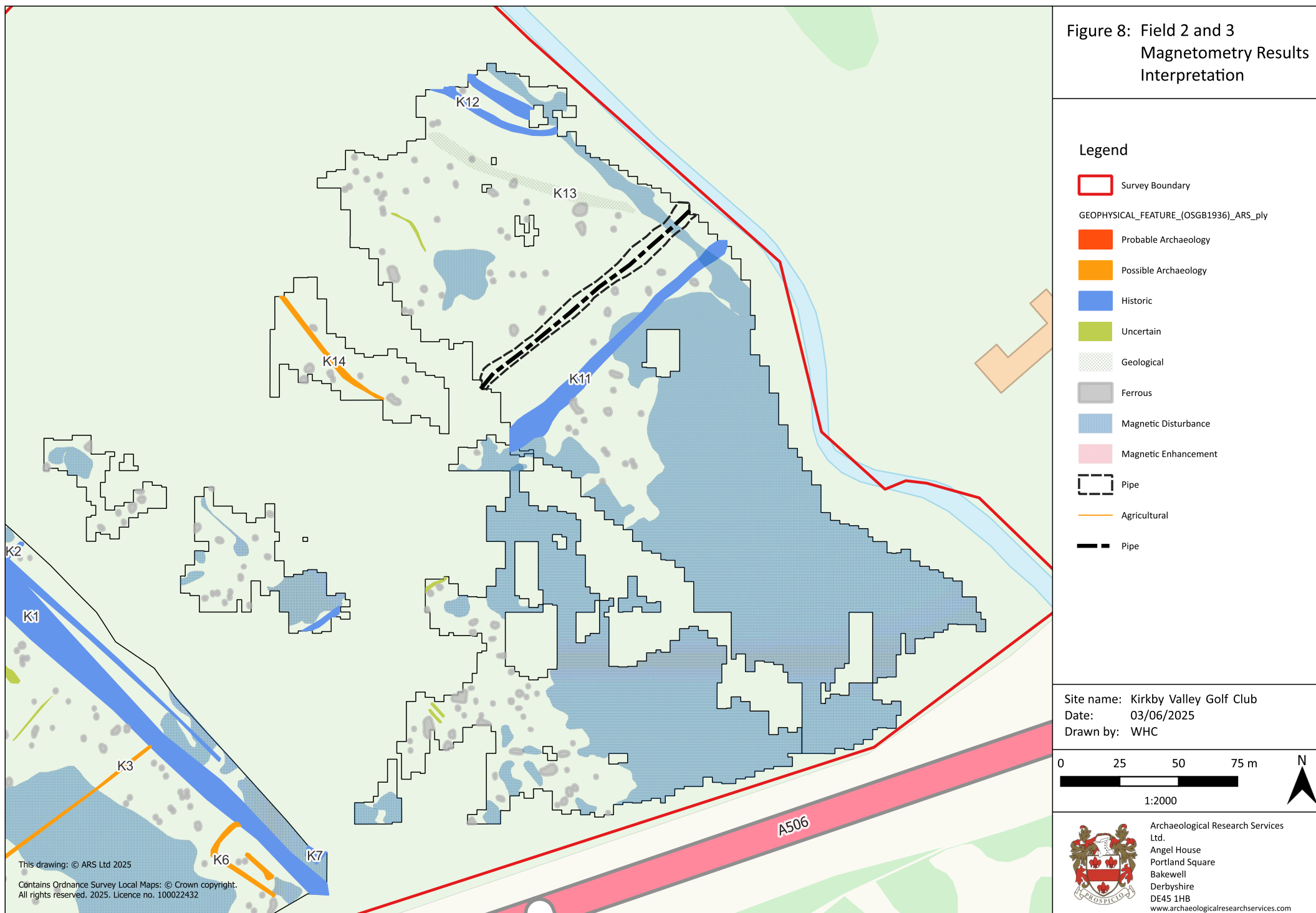


Figure 8: Field 2 and 3
Magnetometry Results
Interpretation



PLATES



Plate 1: Field 2 looking north-east



Plate 2: Field 2 looking west.



Plate 3: Field 4 looking north-west

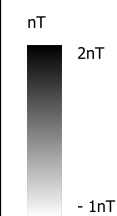


Plate 4: Field 4 looking east

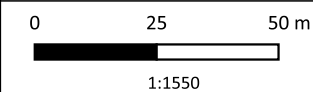
APPENDIX I – XY TRACE PLOTS

Appendix 1.1: Field 1 Traceplot

Legend



Site name: Kirkby Valley Golf Club
Date: 03/06/2025
Drawn by: WHC



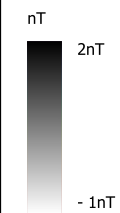
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Appendix 1.2: Field 2 Traceplot

Legend



Site name: Kirkby Valley Golf Club

Date: 03/06/2025

Drawn by: WHC

0 25 50 m



1:1550



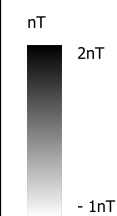
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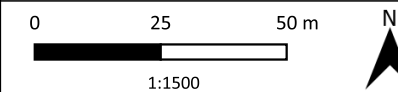
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Appendix 1.3: Field 3 Traceplot

Legend



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