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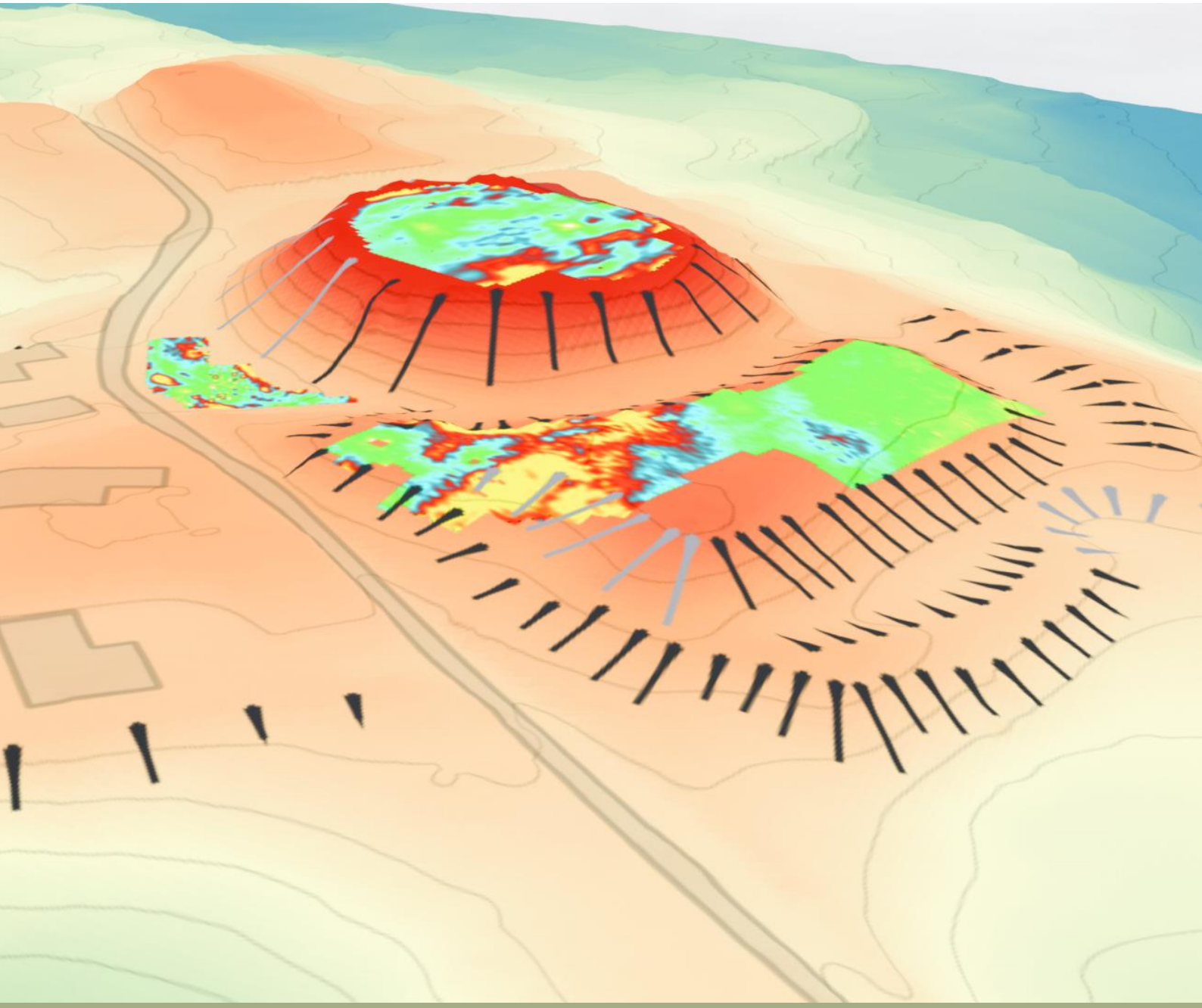
YMDDIRIEDOLAETH ARCHAEOLEGOL CYMRU

THE TRUST FOR WELSH ARCHAEOLOGY

Ellesmere Castle

Geophysical Investigations 2026



Rhif Adroddiad / Report Number 2026-1026

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Ellesmere Castle

Geophysical Investigation 2026

Rhif Prosiect / Project Number: PD26-063

Rhif Adroddiad / Report No. 2026-1026

Wedi'i baratoi ar gyfer / Prepared for: The Ellesmere Bowling Club

Ysgrifenwyd gan / Written by: Chris Matthews MRes BSc

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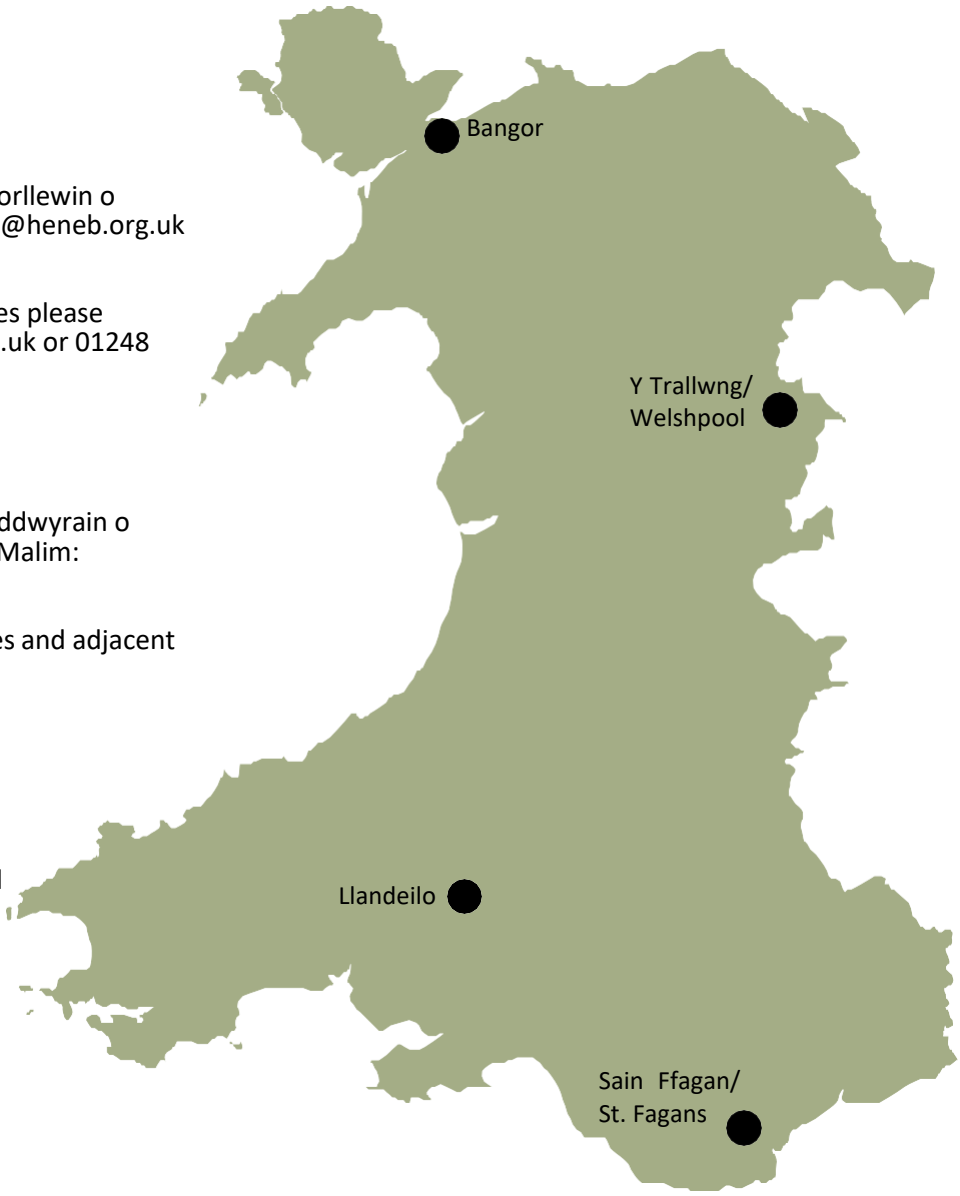

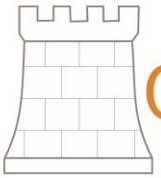

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NON-TECHNICAL SUMMARY

In May 2026, Heneb: The Trust for Welsh Archaeology carried out a non-invasive geophysical survey at Ellesmere Castle on behalf of the Ellesmere Bowling Club. Ellesmere Castle is designated as a Scheduled Monument and the work was undertaken with Scheduled Monument Consent granted by Historic England. The surveys covered the motte, now occupied by the bowling green, together with the adjoining bailey and surrounding open ground, with the aim of improving understanding of the monument without excavation.

The survey results indicate that buried archaeological remains are likely to survive across the site. The clearest evidence was recorded on the motte, where multiple datasets point to substantial buried masonry, probably relating to the castle keep, together with other features that may include a well and areas of demolition rubble. Further probable remains were identified within the bailey, including possible structural features and elements of the defensive earthworks. This investigation has also made a case for the bailey enclosure having extended south across Sandy Lane, an interpretation supported by LiDAR and historic aerial photography.

Overall, the investigation has significantly improved understanding of the castle's layout and survival. It shows that important remains are likely to survive below ground despite later landscaping and modern use of the site, and it provides a strong basis for any future programme of targeted archaeological investigation, subject to agreement with Historic England.

1 Introduction

1.1. Heneb: Clwyd-Powys Archaeology was commissioned by Gary Bick on behalf of the Ellesmere Bowling Club to undertake an archaeological geophysical investigation as part of a long-term research programme into the designated remains of Ellesmere Motte and Bailey Castle (List Entry No. 1019303).

1.2. The castle is located east of Ellesmere, Shropshire (Figure 1), on the site now occupied by the Ellesmere Bowling Club off Church Hill and Sandy Lane (NGR SJ 40301 34674). The Bailey and Castle Fields to the east are owned by Shropshire County Council.

1.3. A Written Scheme of Investigation was prepared and approved by Historic England, which granted Section 42 Scheduled Monument Consent in April 2026.

1.4. This investigation follows a Ground Penetrating Radar survey undertaken in 2025 by Adam Cook of Sub-surface Measurement Technologies (SMT), the results of which are discussed alongside the present survey data.

Figure 1: Site location

1.5. The primary aim of this investigation was to assess the archaeological potential of the main open and accessible areas within the motte and bailey. The survey principally employed high-resolution magnetometry across a minimum of 0.5ha, supplemented by electrical resistivity survey to further test anomalies and provide corroborative data.

Location, geology and topography

1.6. The site comprises the earthwork and buried remains of a motte and bailey castle on the south-eastern edge of Ellesmere, close to the 12th-century St Mary's Church. The landscape includes managed green space over the motte, now occupied by the Ellesmere Bowling Club, as well as undulating meadow and lightly wooded ground to the southeast, which form the scheduled extent of the bailey and castle fields.

1.7. The bedrock geology consists of the Wilmslow Sandstone Formation, a sedimentary sandstone of fluvial, lacustrine and marine origin. These detrital sediments were deposited in lagoonal or shallow marine environments, with periods of hot, arid climate contributing to evaporite formation (BGS, 2026). The superficial geology comprises Devensian Till (Diamicton), a glaciogenic deposit of predominantly sand and gravel (ibid).

Historic background

1.8. The following provides a summary of the site's historical background, based on records held by Historic England and the Shropshire Historic Environment Record.

1.9. The castle was likely established soon after 1086 by Roger de Montgomery, a prominent marcher lord. Following the 1101 rebellion of his son, Robert de Bellesme, the estate was seized by the Crown. Through the 12th and 13th centuries the manor passed through several hands, including William Peverel of Dover and Dafydd ab Owain, before in 1263 the manor and castle were granted to Hamo le Strange. The property remained with the Le Strange family until its descent to the Stanleys, Earls of Derby.

1.10. In the mid-16th century, John Leland, chaplain to Henry VIII, recorded that little of the castle buildings survived, and by the early 18th century the motte had been levelled to form a bowling green (Historic England, 2000). No specific destruction event is clearly recorded for Ellesmere Castle; instead, the evidence suggests a gradual process of decline, decay, dismantling and material reuse. A Gazetteer for Shropshire of 1824 also makes no reference to the English Civil War in relation to the castle, implying that it was already ruinous or functionally obsolete before the mid-17th century and was not directly reduced by that conflict as some sources suggest (Gregory, 1824, p. 141). Further in-depth historical research is required to better understand the demise of the site during this period.

1.11. As part this project, the project leads Nick Cull and Gary Bick have undertaken extensive research into the known timeline of the castle which is summarised as follows:

Kings of England	Kings and Princes of Wales	Date	Event relevant to Ellesmere Castle, its site and ownership/occupancy
			Not a great deal has been written directly about the history of Ellesmere Castle in comparison with some other castles of a contemporary period, possibly because it appears to have fallen into disuse during the 16th Century and physical remains of the Castle have not been visible for many years. However, from what has been written there is little doubt that it played a part in the Welsh/English conflicts of the 12th and 13th Centuries. Its history involved a number of key figures of that period including Kings of England and Princes of Wales. Inevitably, some events and episodes have conflicting or incomplete evidence and accounts. The ongoing archaeological survey work may in time provide circumstantial and supporting evidence to help develop a better understanding of the Castle, its construction, role and social activity. This short timeline is not intended as an academic paper but merely a guide to the probable main events in the Castle's history. Details have been extracted from two main sources; a Paper, "Ellesmere Castle, Shropshire", June 2024 by Dr. Rachel E. Swallow and various publications by Christopher Jobson.
			There is an assumption that a saxon place of worship existed on the site of the current parish Church, St Mary's. A saxon cross is recorded as having been found when St Marys was undergoing alterations in the 19th Century. Also suggestion of a saxon fort on the site of Ellesmere Castle.
William 1		1066	Earl Edwin, last saxon lord of Ellesmere, held Ellesmere with Earl Roger of Montgomery as Tenant-in-Chief from 1071.
		1071	Earl Edwin died.
			Following a rebellion by Roger's son, Robert de Bellesme, Ellesmere's lands were confiscated by the Crown.

Kings of England	Kings and Princes of Wales	Date	Event relevant to Ellesmere Castle, its site and ownership/occupancy
	Gruffydd 11	1081	
		1086	A settlement at Ellesmere was detailed in the Domesday Book although no mention of a Castle or a saxon fort.
Henry 1		1100	
		C1114	There are two alternative suggestions as to who was responsible for constructing EC. The first that it was built by William Peveril (WP) of Dover and given to him by Henry 1. (Ordericus Vitalis (OV) mentioned EC and WP in his contemporaneous Ecclesiastical History. The Peveril connection also featured in an Anglo-Norman poem). In any event Henry 1 granted Ellesmere to William Peverel of Dover in 1114. The second is that it was constructed by Roger de Montgomery, first Earl of Shrewsbury although there is no supporting evidence.
		1133	WP died and his estates, including EC, passed to his two nephews, WP the Younger and Walcheline Maminot (WM).
		1135	Death of Henry 1
Stephen		1135	Civil war
	Owain	1137	
		1138	WP the Younger held EC (with Bourne, Overton and Whittington) against the Crown. OV states that EC was supporting Matilda, King Henry's daughter and heir.
		1146	Men of Powys ravaged EC
		C1147	Death of WP the Younger in the Holy Land so WM becomes the sole surviving Lord of EC.

Kings of England	Kings and Princes of Wales	Date	Event relevant to Ellesmere Castle, its site and ownership/occupancy
		1154	Death of King Stephen.
Henry 11		1154	Henry 11 (Matilda's son) succeeded Stephen but did not recognise WM's right to the Peveril Lordship, so Maelor which included EC held for the Crown by King Madog of Powys until his death in 1160.
		1170	
	David 1 (King of east Wales)	1174	
		1177	Ellesmere granted to Dafydd ap Owain when he married Emma, the King' sister, while EC was retained by the Crown.
			Herbert de Castello custodian of EC
Richard 1		1189	
	Llewelyn 11.	1194	
John		1199	
		1205	The keeper of EC instructed to hand it to Llewelyn ab Iorwerth, Prince of Wales, as a gift on his marriage to Joan, the King's daughter.
		1208	Ellesmere Manor again reverted to the Crown after relationships between King John and Llewelyn deteriorated.
		1209	EC placed into possession of William, Earl of Salisbury, the King's brother, and Thomas de Erdgnyton.
Henry 111		1216	

Kings of England	Kings and Princes of Wales	Date	Event relevant to Ellesmere Castle, its site and ownership/occupancy
		1221	EC returned to Llewelyn by the King (Henry 111 granted the right to hold a weekly market in Ellesmere)
		1225	Llewelyn donated Ellesmere church (part of a wedding gift on his marriage to Joan the King's daughter) to the Hospital of Jerusalem – Order of St. John of Jerusalem. This was maintained until the Reformation some 300 years later.
		1230	Joan held in confinement at EC following discovery of her adultery. (There is however an alternative opinion that she was held in confinement at Aber) Joan conferred Borough status on Ellesmere.
		1231	Sheriff of Shropshire ordered to take EC back into King's hands. John Lestrange (JLS), Governor.
		1237	Death of Joan
	David 11	1240	
		C1240	After Llewelyn, his son Dafydd forced to surrender Ellesmere to the King who placed it under the control of the Sheriffs of Shropshire
		1241	John Lestrange, Sheriff of Shropshire received £40 to build a castle at Ellesmere,
		1243	Manor of Ellesmere committed to John de Grey
	Llewelyn 111	1246	
		1248	JLS relieved of some of his responsibilities including EC. Thomas Corbet instructed to keep them during pleasure.

Kings of England	Kings and Princes of Wales	Date	Event relevant to Ellesmere Castle, its site and ownership/occupancy
		1256	Sheriff and tenants informed that the King had granted Ellesmere to his son Edward.
		C1258	Peter de Montford holds the Lordship of Ellesmere, probably for Llewelyn ap Gruffydd.
		1263	King Edward awarded EC to Hamo Lestrange (HLS)
		1265	Ellesmere must have fallen into the hands of de Montford
		1270	HLS goes on Crusade and leaves Hundred of Ellesmere to Roger Lestrange (RLS)
Edward 1		1272	
		1275	EC restored to RLS for life (after previous transaction found not to be sound) with reversion to the Crown.
	David 111	1282	Death of Llewelyn 11
		1282	English conquest. EC fell from the Welsh to royal troops from Chester.
Edward 11		1307	
		1309	David de Oteley to guard one of the towers at EC at his own expense.
		1311	Death of RLS. EC reverts to the the King who grants it to Queen Isabella who in turn appointed various castellans.
		1317	John de Hinckley held EC for the Queen
		1318	Queen Isabella granted the manor of Ellesmere to John de Knockyn although no mention of a castle.
		1322	Oliver de Ingham (Custos) granted custody of EC and required to raise 100 men from Lordship of Ellesmere

Kings of England	Kings and Princes of Wales	Date	Event relevant to Ellesmere Castle, its site and ownership/occupancy
Edward 111		1327	EC and the Manor held by the King. EC's military function ceased.
		1330	Charter dated 16 February, gave EC to Eubolo Lestrange and his wife Alice. Remained in the family util the 15th Century.
Richard 11		1377	
		1477	EC passed to Stanley family (probably deserted).
		1533- 1543	John Leland states "there was no castle" in his Itinerary book.
		1680	Bowling green possibly in use.
		1759	Bowling green mentioned in Bowen's "Natural History of England"
		1763	Pavilion rebuilt at cost of £39 13s 6d.

References to Castle construction

Date	Reference
C1114	Castle built
C1177	King orders wall to be repaired at a cost of £4. Guy Lestrange, Shropshire Sherriff to supervise.
1203	100 shillings spent on repairs.
1241	John Lestrange received £40 to build a castle at Ellesmere
1241	JLS spent £21 0s 11d building two bretasches
1256	Kings House, within Castle, repaired at a cost of £5 10s 9d £116 9s 4d spent on Castle repairs
1258	Peter de Montford empowered to levy customs on people of Ellesmere to allow repairs to EC walls (and build town walls)
1274	100 shillings provided to buy timber for repairs of EC (but timber removed for repair of private house)
1309	Devid de Oteley to guard one of the towers

2 Methodology

2.1. The geophysical investigation was undertaken in accordance with the Chartered Institute for Archaeologists' *Standard and guidance for archaeological geophysical survey* (updated 2020), with reference to David et al. (2008), *Geophysical Survey in Archaeological Field Evaluation*.

2.2. This investigation combined desk-based analysis of aerial data, including LiDAR and aerial photography, with ground-based survey comprising high-resolution magnetic gradiometry across all accessible areas and targeted electrical resistivity survey. The principal survey parameters are outlined below.

2.3. Survey focused primarily on accessible ground within the motte (Figure 2, Area A) and bailey (Figure 2, Area B), with secondary survey undertaken within Castle Fields (Area C).

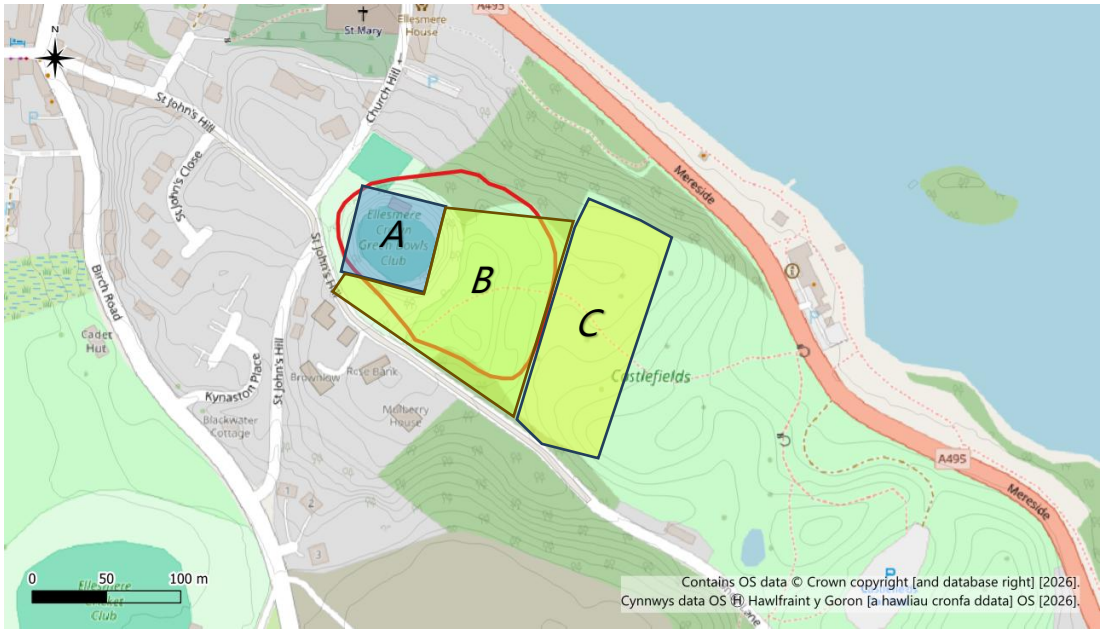

Figure 2: Survey areas (scheduled monument boundary shown in red)

Aerial Survey data

2.4. The principal aerial dataset assessed in this study comprised 1m resolution LiDAR obtained from the National LiDAR Programme via data.gov.uk. Raw DTM GeoTIFF files were processed in QGIS to produce a range of analytical hillshade, relief and slope models, not all of which are reproduced in this report.

Modern and historical aerial photography from sources including Historic England, the National Library of Scotland and Google Earth were also consulted and are discussed in Section 3.

Survey Grid setup

2.5. Both survey methods used a grid-based layout. Grids were established using GPS with an accuracy of between 0.01m and 0.1m and marked out with blue bamboo flags inserted no deeper than 5cm. Traverses were marked at 2m intervals using alternating red and yellow

flags. Where a predetermined grid could not be set out, a survey baseline was established and the end points recorded using GPS.

Magnetic Fluxgate Gradiometry

2.6. Magnetic gradiometry maps variation in the magnetic properties of the soil in order to identify localised anomalies. These may derive from natural processes or from past human activity. As a broad example, cut features such as ditches infilled with more magnetically enhanced material than the surrounding soil may appear as positive linear anomalies, while walls built of less magnetic material may appear as sharply defined negative anomalies. Features containing ferrous or fired material can often be distinguished by the strength and gradient of their response.

2.7. High-resolution magnetic gradiometry was employed. The survey specifications were as follows:

- **Equipment**
  - Bartington 601-2 fluxgate gradiometer.
- **Software**
  - Terra Surveyor 64
  - QGIS
- **Survey Parameters**
  - 0.25m sample / 4 points per meter (Y axis)
  - 0.5m traverse (X axis)
  - Zig-zag traverse pattern
  - 30m grid
  - Range 100nT

Twin Probe Electrical Resistivity

2.8. Electrical resistivity survey measures variation in the electrical resistance / conductivity of the soil to identify localised anomalies. Differences in resistance are influenced primarily by moisture content and other taphonomic processes. Stone generally produces high-resistance responses, whereas cut features such as ditches that retain moisture typically produce low-resistance responses.

2.9. The survey specifications were as follows:

- **Equipment**
  - Frobisher TAR-3, twin probe resistivity array.
- **Software**
  - Terra Surveyor 64
  - QGIS
- **Survey Parameters**
  - 0.5m sample / 4 points per meter (x axis)
  - 1m traverse (y axis)
  - Zig-zag traverse pattern
  - 30m grid

Survey Limitations

2.10. Based on Gaffney and Gater (2002), the geological conditions at this site are likely to produce variable geophysical results. Local geological variation, particularly glacial sand and gravel lenses, may create anomalies of geological origin rather than archaeological origin and can also produce a muted magnetic response. Debris containing ferrous or fired material, however, should remain detectable. Electrical resistivity may also be less effective in identifying cut features where their fills are similar in composition to the relatively soft natural substrate. It should, however, remain capable of identifying substantial stone deposits, which are of particular interest in this study.

2.11. Additional factors, including pedestrian movement, underground services, and interference from nearby structures, are also likely to contribute to magnetic noise within the survey data.

3 Aerial survey data analysis

3.1. The LiDAR analysis for this investigation is illustrated in Map 1 at the end of this report, with additional topographic zoning and LiDAR modelling shown in Figures 3 and 4. Profiles of the castle earthworks have also been produced from the 1m LiDAR data and are presented in Map 6.

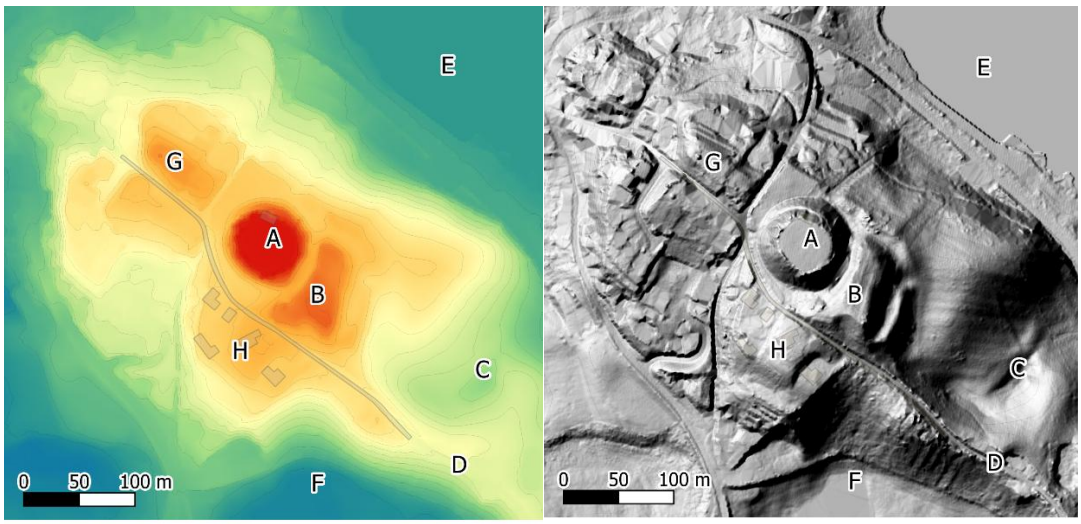

Figure 3: Topographic zoning of the castle and its surroundings

3.2. The castle occupies a raised island, bordered to the north by the mere (Figure 3, E) and to the south by a floodplain later traversed by the Shropshire Canal (Figure 3, F). This island forms the high point of a ridge aligned northwest to southeast, along which the historic routeway known as Sandy Lane runs (Figure 3, D). The same ridge also incorporates Castle Fields to the southeast of the site (Figure 3, C). The principal earthwork is the motte (Figure 3, A), whose oval summit measures approximately 54m by 47m, with a base of about 72m by 69m. It forms the highest point of the monument, surviving to around 120m AOD.

3.3. The scheduled remains of the bailey lie directly to the east and south-east of the motte (Figure 3, B) and comprise a sub-rectangular platform approximately 60m long and 31m wide at its broadest point. A curving break of slope is visible along its southern edge, suggesting probable quarrying of the earthwork, shown in Figure 4 as feature 1. A ditch and counterscarp bank enclose this platform to the northeast and east. A second possible quarry cut into the outer earthwork is shown in Figure 4 as feature 2. LiDAR hillshade modelling

also indicates probable ridge-and-furrow cultivation within Castle Fields to the east of the castle, shown in Figure 4 as feature 3; this is likely to date to the early post-medieval period.

3.4. Previous interpretations of the castle have suggested that the present bailey is too small to have served as the principal castle bailey, with the raised ground to the northwest proposed instead as a candidate for the main outer bailey. Although this appears as a clearly elevated area in the LiDAR data (Figure 3, G), subsequent investigations, including a watching brief by Castlering Archaeology in 2016, indicate that this ground largely results from 19th- and 20th-century landscaping (Shropshire HER ESA8057).

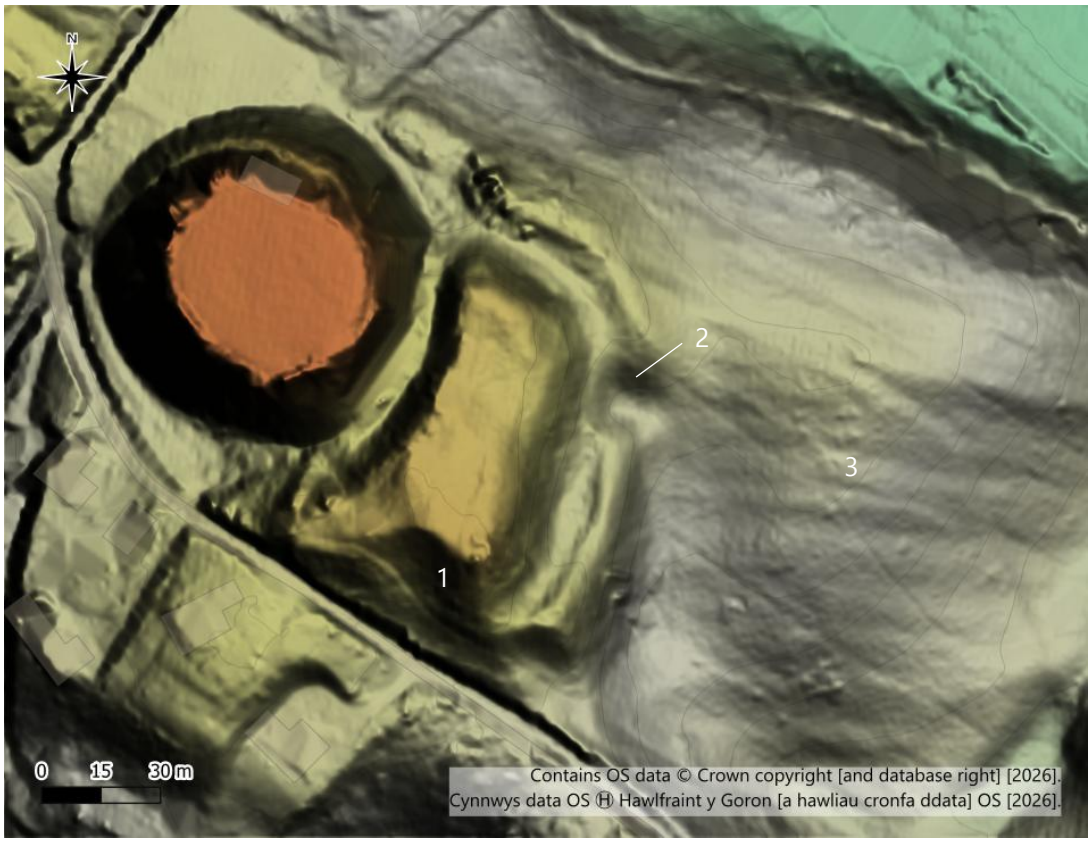

Figure 4: Multidirectional hillshade model of the castle earthworks

3.5. Evidence observed during this investigation suggests that a more likely candidate for the main castle bailey is the raised ground visible in the LiDAR immediately south of the castle, separated from the earthworks by Sandy Lane. In the LiDAR data this plateau has a distinct triangular outline that corresponds with the eastern side of the present scheduled bailey and appears to return westwards towards the motte. A 1946 aerial photograph from the Historic England archive, taken before housing was constructed south of Sandy Lane (Figure 5), shows this promontory occupied by gardens within which the outline of a probable bailey can be discerned. Its southeastern boundary appears to continue the line of the scheduled bailey's outer earthworks, extending approximately 85m south of Sandy Lane before returning westwards across a larger area of open ground to rejoin the western side of the motte. This correspondence with the LiDAR plateau, historic aerial photography and projected earthwork circuit suggests that elements of a more extensive outer bailey may survive, although later housing, terracing and earlier quarrying have truncated parts of the area. Modern truncation is most evident immediately south of Sandy Lane on the eastern side, where the ground was terraced for housing between 1999 and 2009. An addition to a second house built off Sandy Lane after within the same period, no archived evidence

viewed in this study has been identified in the Shropshire HER or the Archaeological Data Service to show that archaeological monitoring accompanied this work. The southwestern point of the earthwork may also have been altered historically, and a sand pit is shown in this area on the 1902 second edition Ordnance Survey map (Figure 6).

Figure 5: Extract from 1946 RAF aerial photography (from the Historic England Archive) showing the castle prior to the construction of housing along Sandy Lane. Potential southern bailey extent highlighted in dotted yellow

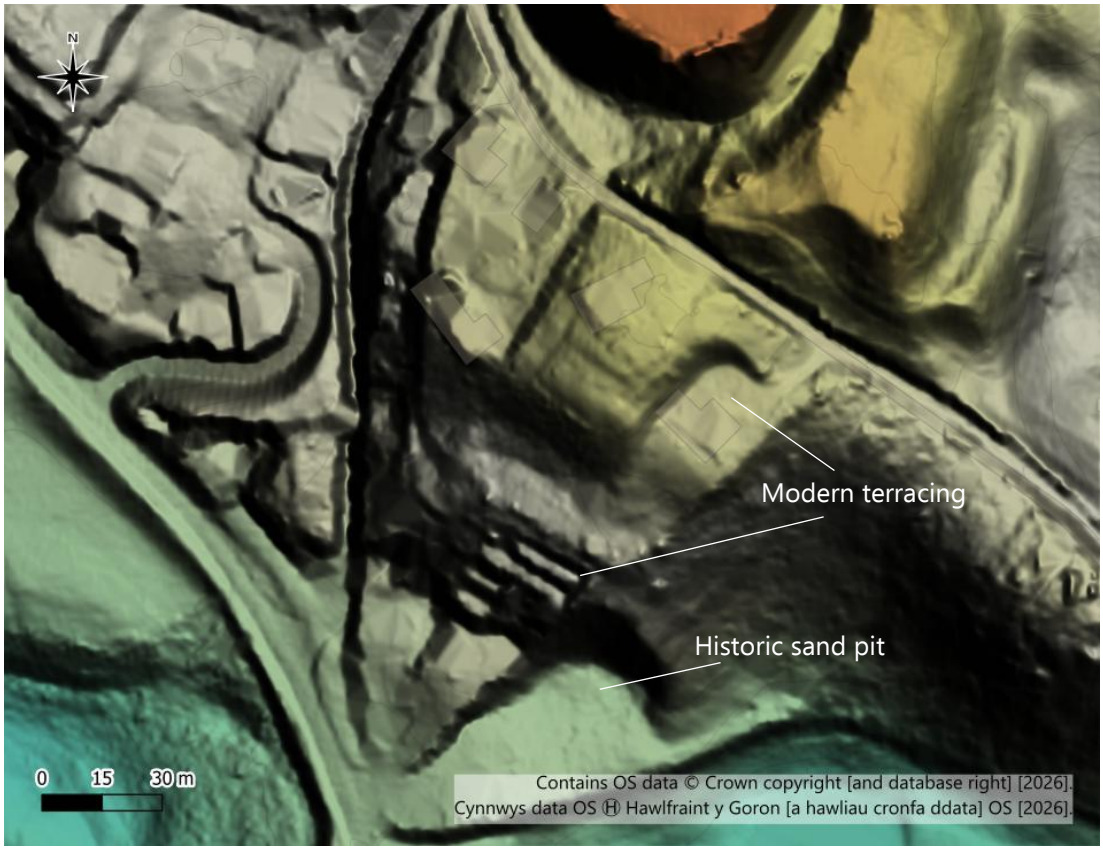

Figure 6: Multidirectional hillshade model of the possible southern bailey

4 Geophysical Survey Analysis

4.1. The following analysis is based on features identified through magnetic gradiometry (MG), shown in Map 2, and electrical resistivity (ER), shown in Map 3. An integrated interpretation of these datasets is presented in Map 5, with features discussed in this section labelled sequentially. Features identified by Adam Cook through Ground Penetrating Radar (GPR) survey are also shown in Maps 6 and 7.

4.2. All features discussed in this section have been assigned an indicative archaeological potential based on the present analysis. These categories are defined as follows:

> **High:** A feature clearly identified as being of archaeological origin that has the potential to significantly add to our understanding of the site.
> **Medium:** A feature with probable archaeological significance that should require further investigation.
> **Low:** A feature with possible archaeological potential that might require further investigation.
> **Negligible:** A feature that has little or no archaeological significance and requires no further investigation.

4.3. These interpretations represent the most likely explanations based on the currently available data and should not be regarded as definitive.

4.4. Weather conditions varied slightly during the survey but were predominantly mild, at approximately 15°C, and overcast, with occasional light drizzle. In the days preceding the survey, conditions had generally been warm and sunny, with intermittent showers; however, the ground was relatively dry at commencement. The bowling green, which forms the motte, had been watered each morning prior to the survey.

Anomaly	*Description*	*Potential*
A	This feature was identified by all three survey methods and corresponds with GPR feature A shown on Map 6. It is most clearly defined in the low-frequency GPR data as a consistent sub-rectangular concentration of high-reflection anomalies between 1.0m and 2.4m depth. The regular form of these responses suggests a constructed feature rather than natural bedrock, including a persistent rectangular void between 1.5m and 2.0m depth and a larger central rectangular void between 2.1m and 2.4m depth. Taken together, these responses indicate a high probability of surviving masonry from around 1.1m depth, with possible demolition material concentrated along the southeastern side at shallower levels (Feature C). Comparable detail was not visible in the high-frequency GPR data, although a rectilinear anomaly of similar alignment and extent remained apparent. This may reflect the greater depth of the features and/or the effect of clay capping associated with the later formation of the bowling green, which is likely to have reduced radar performance at this depth. The MG and ER surveys did not show the same level of detail, but both recorded anomalies of comparable alignment and linearity, supporting an archaeological interpretation. In the MG survey, a central rectangular zone of increased magnetic noise contrasts with a relatively quiet outer zone around the mound edge, despite interference from surface ferrous and electrical sources. This pattern is likely to reflect later re-	High

Anomaly	*Description*	*Potential*
	landscaping of the mound, with the quieter outer zone representing imported post-medieval material and the central magnetic noise indicating deposits containing structural debris corresponding with the GPR results. Features in the ER data are less distinct, but the same general linearity remains visible. Later re-landscaping of the mound is also evident in the GPR survey (Map 6, GPR-B), where a curvilinear striation encircles feature A and may indicate the original outline of the mound summit.	
B	This feature was first identified in the GPR survey (GPR-C, Map 6) as a distinct low-reflection anomaly measuring approximately 5m by 4m. It appears in a consistent form and scale from 0.2m depth to at least 2.4m depth. The same feature is also visible in the ER survey as a low-resistance, highly conductive anomaly, consistent with a deposit that retains moisture. Although the dimensions are somewhat large, its vertical persistence and correlation with the ER data suggest that it may represent a well.	High
C	This anomaly is visible in the ER survey and in the low-frequency GPR data at shallower depths between 0.4m and 0.9m. It comprises a notable increase in resistance and high reflection to the southeast of the central structure, following a similar alignment and a broadly linear form. This most likely indicates the presence of shallower structural remains and/or demolition debris associated with underlying masonry.	High
D	This feature was identified in the MG survey as a broadly linear strong positive anomaly crossing the narrow surveyed section within the open space to the south of the motte. Its limited extent makes interpretation difficult, and it may relate to a modern service or drain. However, the anomaly appears relatively broad for a drain but also corresponds with the possible line of the southern bailey identified in Section 3, so an archaeological origin remains possible.	Low
E	This feature is most clearly defined in the ER survey and consists of two bands of high resistance: one along the lower base of the motte slope and a second running parallel approximately 9m to the south, with a band of low resistance between them. This pattern may represent the infilled ditch surrounding the motte and suggests the survival of substantial deposits that may be informative in relation to the castle's abandonment. The response may, however, have been affected by later road surfacing, as this area has been used as an overflow car park.	Low
F	This feature was identified only in the MG survey, where it appears as a roughly L-shaped concentration of strong magnetic response. The feature has a very linear and right-angled form, but the absence of a corresponding anomaly in the ER data indicates a lack of stone rubble being present. However, other possible explanations include a concentration of burnt material, a wall robbing trench, or a feature retaining moisture, although the latter seems less likely given the sandy topsoil conditions. The anomaly may be of archaeological origin, but there is currently insufficient evidence to	Low

Anomaly	*Description*	*Potential*
	refine the interpretation further.	
G	This feature is expressed mainly in the ER survey, with part of its eastern extent also visible in the MG data. The ER results suggest a linear anomaly composed of slightly less conductive material, such as smaller less consolidated stone rubble, while the MG data show strong positive pit-like responses. Although this could result from natural gravel lensing, the correlation between the ER and MG datasets, together with the linear form of the anomaly, suggests a possible archaeological origin.	Medium
H	This feature comprises a substantial high-resistance anomaly in the ER data, with notable linear elements, particularly along its north-eastern extent, suggesting the presence of consolidated structural masonry. Its orientation is comparable with the structural features identified on the motte (A). Although there was some initial question as to whether the response might result from tree roots or animal burrowing, its extent and alignment do not correlate with the present trees or with the quarried earthwork to the southeast, where some burrowing was noted. The root systems of other trees within the survey area have also not produced similarly strong high-resistance responses. On this basis, the feature is considered highly likely to be of archaeological origin. The MG survey did not identify any clearly defined structural anomalies in this area, although there is a slight increase in magnetic noise compared with the northern part of the bailey, which may indicate demolition debris.	High
I	This feature consists of a weak positive linear magnetic response visible in the MG dataset to the east of the bailey earthworks. It is most likely the result of water collecting and being retained at the base of the outer earthwork bank.	Low
J	These features comprise two strong ferrous or industrial magnetic responses, indicating either large pieces of iron close to the surface or possible industrial features such as a kiln or oven. The anomalies lie close to a steel mesh fence associated with a sapling, but they do not appear to be directly related, and there is no visible surface feature to explain them. They may represent modern features such as buried signpost remains or the bases of a former telegraph post, particularly given the modern alignment farther east. An archaeological or historic industrial origin cannot, however, be ruled out.	Low

5 Conclusions

5.1. The results of this investigation confirm that Ellesmere Castle retains considerable archaeological potential. Combined geophysical and aerial survey data indicate that substantial buried remains are likely to survive on the motte and within the bailey despite later landscaping, quarrying and the construction of the bowling green.

5.2. The clearest evidence was recorded on the motte, where anomaly A, chiefly defined by the earlier GPR data, indicates a substantial rectilinear masonry feature with associated internal voids and demolition deposits. Together with anomaly B, interpreted as a possible well, and

anomaly C, which may represent shallower structural remains or rubble spreads, this strongly suggests the survival of significant buried elements of the castle's principal structure beneath the bowling green. Based on this survey, the main structure is likely to be approximately 15-16m wide and extends 24m long (although may incorporate multiple structures or elements along the length of the anomaly).

5.3. Within the scheduled bailey and its surrounding earthworks, the survey identified further anomalies of probable archaeological origin, including possible structural remains. The larger structural anomaly follows a similar alignment to the principal structure on the motte measuring at least 26m northwest to southeast and 35m northeast to southwest. It is possible that this structure represents a forebuilding or barbican.

5.4. The full extent of the bailey has long been uncertain, and the present scheduled area is widely considered too limited for a castle of this scale. Analysis of the aerial and LiDAR data presents a strong case for a more extensive bailey extending south across a triangular plateau beyond Sandy Lane, where possible earthworks were still visible in the 1940s. Although later terracing, quarrying and housing development have truncated this area, the correspondence between the LiDAR plateau, historic aerial photography and the projected scheduled earthwork circuit suggests that elements of this outer extent may survive within the gardens of the modern houses.

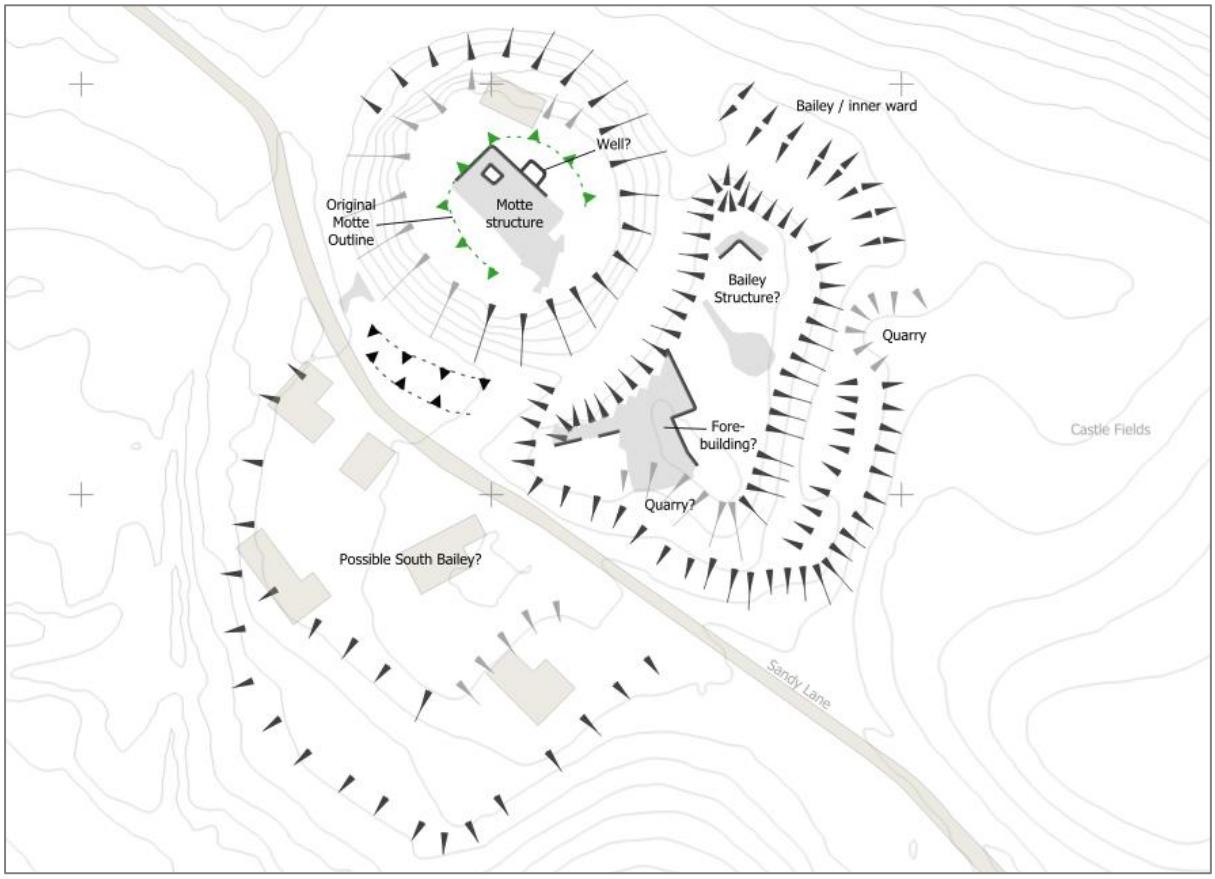

Figure 7: Provisional Archaeological Interpretation

5.5. Overall, the survey has significantly improved understanding of the monument and provides a strong basis for further work. Geophysical survey within the scheduled area can now be considered largely complete, although some additional work would be beneficial, particularly across the possible southern bailey and through the use of GPR within the

scheduled bailey. There is now, however, a clear case for a programme of targeted intrusive archaeological investigation. While the results indicate substantial surviving archaeological potential, they cannot be regarded as definitive until the identified features have been excavated and fully characterised. Initial investigation should focus on testing the principal anomalies in order to ground-truth the provisional archaeological interpretation shown in Figure 7, refine the extent and character of the bailey and its possible southern extension, and establish a firmer evidence base for the castle's form, chronology and state of preservation.

6 Bibliography

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7 Acknowledgements

7.1. This survey was commissioned and organised by Gary Bick and Nick Cull on behalf of the Ellesmere Bowling Club. The work was funded by the Castle Studies Trust, undertaken with Scheduled Monument Consent granted by Historic England, and carried out with land access permission kindly granted by Shropsire County Council.

Appendix 1: Archive Selection Strategy

Ellesmere Castle (NGR SJ 40301 34674) Geophysical Investigations 2026 06/05/2026-11/05/2026 Selection Strategy v2.0	
Project Management	
Project Manager	Tim Malim
Project Supervisor	Chris Matthews
Archives Manager	Sophie Edwards
Project Stakeholders	
Project Lead / Project Assurance	Historic England Monuments Inspectorate
Client / Landowner	The Ellesmere Bowling Club and Shropshire County Council.
Other	
Collecting Institutions	
Regional HER	Shropshire
HER Enquiry Number	N/A
HER Event PRN	N/A
Digital Archive Repository	Archaeological Data Service and Oasis
Documentary Archive Repository	N/A
Finds Archive Repository	N/A
Museum Accession Number	N/A

Digital Project Data			
Project sub-folders	**Data**	**Retained**	**Selected for Archive**
Admin			
H&S - RAMS	Risk Assessment	Y	N
WSI	Written Scheme of Investigation	Y	N
Client Data	Planning documents/other files provided by the client.	Y	N
Correspondence	Correspondence records relevant to the project	Y	N
Drafting	Working site drawings/illustrations	Y	N
Finds data	Finds catalogues/specialist reports etc	N/A	N/A
GIS data	Survey data	Y	Y
Metadata	Metadata report for all files submitted as part of the archive.	Y	Y
Photogrammetry & Laser	N/A	N/A	N/A
Photography	N/A	N/A	N/A
Report	HENEB Report 2026-1026 (.docx/.pdf)	Y	Y
Report Illustrations	Illustrations generated for inclusion within the project report	Y	N
Research Data	Research data – always secondary sources and available elsewhere	Y	N
Site data	N/A	N/A	N/A
Temporary	Temporary storage for temporary files – always deleted at project completion	N	N

Appendix 2: Maps and drawings

Map 1: Multidirectional hillshade model with coloured relief

Map 2: Magnetic gradiometer survey grey scale plot

Map 3: Electrical Resistivity multispectral survey plot

Map 4: Survey feature plot with annotations

Map 5: Archaeological Interpretation

Map 6: Earthwork profiles (based on 1m LiDAR data)

Map 7: Ground Penetrating Radar features

Map 8: Ground Penetrating Radar time slices (SMT, 2025)

340200
340300
340400
340500
334700
334600
334500
N
50
0
50
100 m
Legend
Meters AOD
130
79

Heneb
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Ellesmere Castle
Shropshire
LiDAR Multidirection Hillshade
Map 1
Scale
1:1200 @ A3
Date
19/05/2026

340200
340300
340400
334700
334600
334500
N
Motte
Bailey / inner ward
Possible Bailey
Castle Fields
Sandy Lane
MG1
MG2
MG3
MG4
50
0
50
100 m
Legend
MG1
10
8
6
4
2
0
-2
-4
-6
-8
-10
MG2
20
16
12
8
4
0
-4
-8
-12
-16
-20
MG3
3
2
1
0
-1
-2
-3
MG4
3
2
1
0
-1
-2
-3

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Ellesmere Castle
Shropshire
Magnetic Gradiometer Survey
Map 2
Scale
1:1000 @ A3
Date
26/06/2026

340200
340300
340400
334700
334600
334500
N
Motte
Bailey / inner ward
ER1
ER2
ER3
Castle Fields
Possible Bailey
Sandy Lane
50
0
50
100 m
Legend
ER1
164.17
132.78
101.4
70.02
38.63
7.25
-24.13
-55.51
-86.89
-118.28
-149.66
ER2
202.85
193.63
184.4
175.17
165.95
156.72
147.49
138.27
129.04
119.81
110.59
ER3
1661.84
1576.09
1490.34
1404.59
1318.84
1233.09
1147.34
1061.59
975.84
890.09
804.34

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Ellesmere Castle
Shropshire
Electrical Resistivity Survey
Map 3
Scale
1:1000 @ A3
Date
26/06/2026

340200
340300
340400
334700
334600
334500
N
Motte
Bailey / inner ward
Possible Bailey
Castle Fields
Sandy Lane
A
B
C
D
E
F
G
H
I
J
50
0
50
100 m

Legend

Limit of Combined Mag and Res Surveys

Magnetic Gradiometer Survey Features
- Magnetic noise
- Strong positive responce
- Weak positive responce
- Ferrous / industrial
- Linear

Electrical Resistivity Survey Features
- High resistance
- Low resistnace
- Weak anomaly (higher resistance)

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Ellesmere Castle

Shropshire

Survey Features

Map 4

Scale: 1:1000 @ A3

Date: 20/05/2026

340200
340300
340400
334700
334600
334500
N
Bailey / inner ward
Well?
Original Motte Outline
Motte structure
Bailey Structure?
Quarry
Fore-building?
Quarry?
Possible South Bailey?
Castle Fields
Sandy Lane
50
0
50
100 m

Legend

- Castle earthwork
- Truncation or modern earthwork
- Buried earthwork
- Original motte outline
- Structural edge / wall
- Structural material / demolition

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Ellesmere Castle

Shropshire

Archaeological Interpretation

Map 5

Scale: 1:1000 @ A3

Date: 21/05/2026

340000 340100 340200 340300 340400 340500 340600

334700 334600 334500

N

A B C

50 0 50 100 m

A

120 115 110 105 100 95

Motte Ditch Scheduled Bailey Counterscarp

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210

B

120 115 110 105 100

Motte Ditch Sandy Lane South Bailey?

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210

C

120 115 110 105 100

Counterscarp Scheduled Bailey Sandy Lane South Bailey?

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210

Legend

- Castle earthwork
- Truncation or modern earthwork
- Buried earthwork
- Original motte outline
- Structural edge / wall
- Structural material / demolition

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Shropshire

Earthwork Profiles

Map 6

Scale 1:1986 @ A3

Date 19/05/2026

340300

334700

334600

N

Motte

GPR-A

GPR-B

GPR-C

GPR-B

Sandy Lane

50 0 50 100 m

Legend

Low Frequency GPR
(Based on a combination of time slices)

High reflection anomaly

Low Reflection

Feature outline

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Shropshire

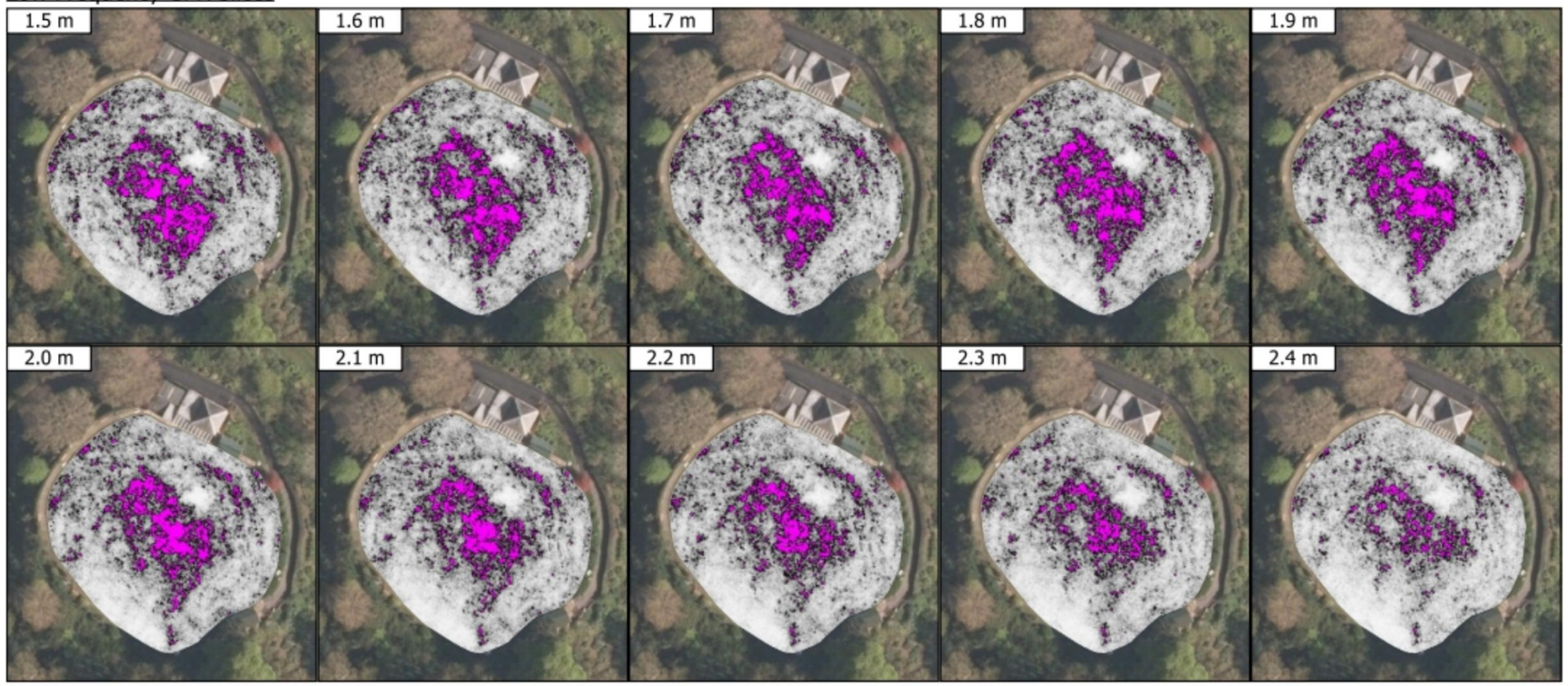
Ground Penetrating Radar Features

Map 7

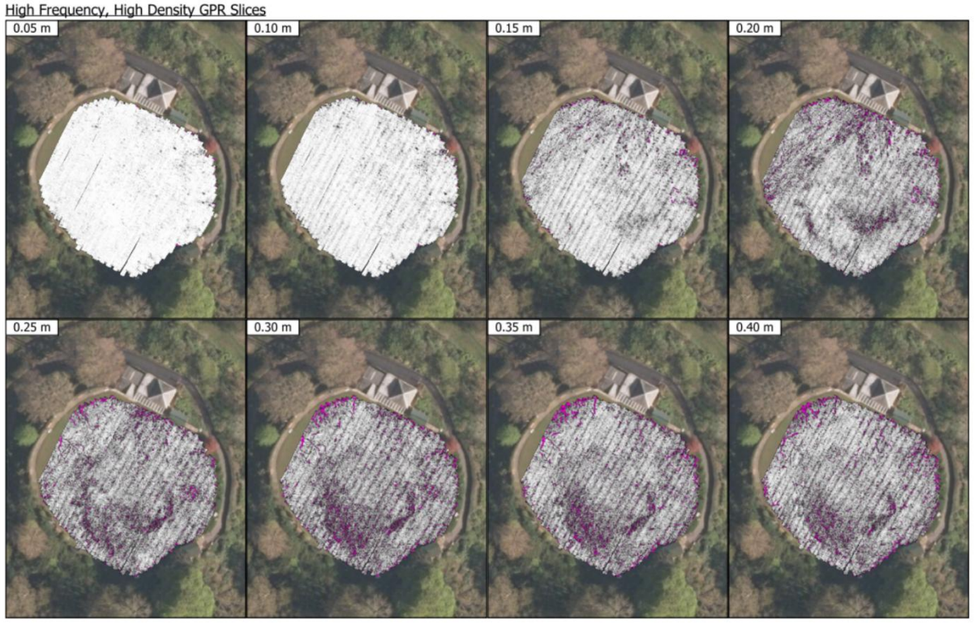
Scale
1:500 @ A3

Date
20/05/2026

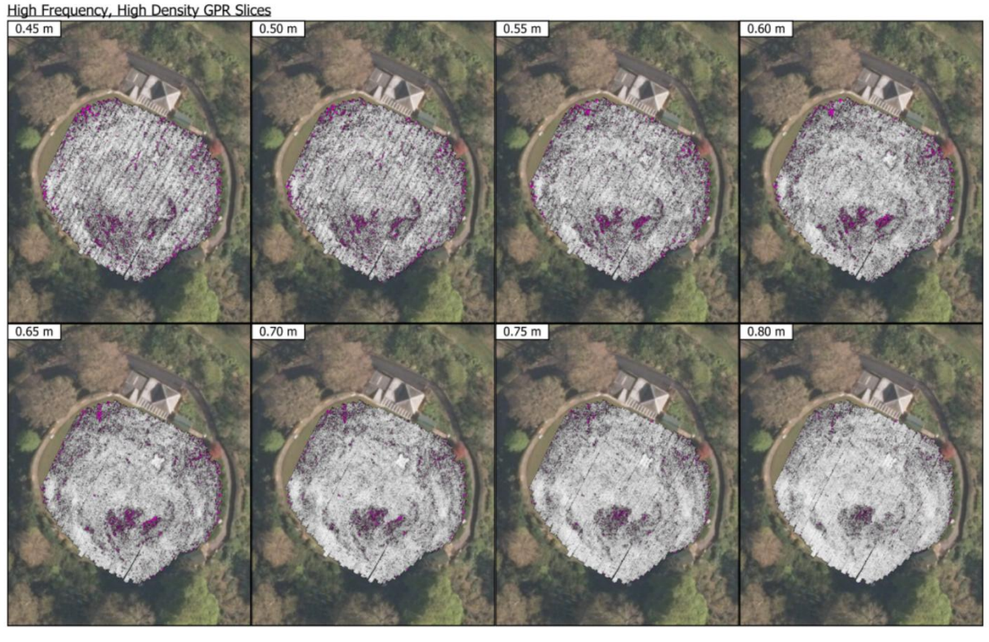
Low Frequency GPR Slices



High Frequency, High Density GPR Slices



High Frequency, High Density GPR Slices



Legend

GPR Data produced by Subsurface Measurment Technology (SMT, 2025)

Subsurface Measurement Technology

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Shropshire

Ground Penetrating Radar

Map 8

Scale	Date
1: @ A3	20/05/2026

Appendix 3: Survey Metadata

MG composite 1

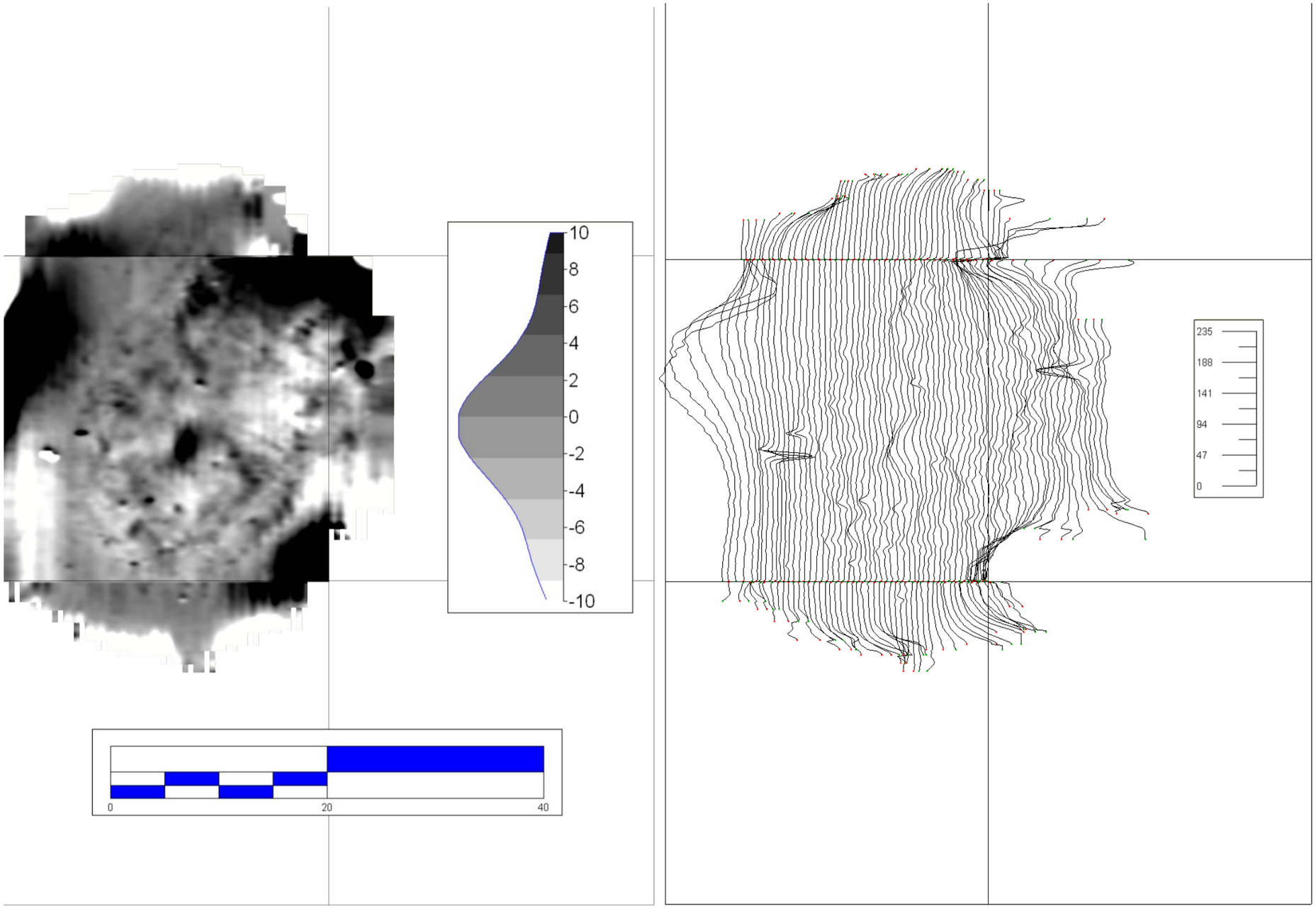

Figure 8: MG Composite 1 processed (left) trace data (right)

SITE MG Composite 1	**Processes**
Surveyed Area: 0.13548 ha Survey Extent: 0.54 ha Direction of 1st Traverse: 90 deg Map Coordinate System: MTRS (TL) Survey Type: Composite Interval: 0.5m x 0.125m Grid Size: 30m x 30m Base layer Stats Max: 96.58 Min: -100.00 Std Dev: 23.35 Mean: 5.22 Median: 2.92 Top layer Stats Max: 95.60 Min: -134.08 Std Dev: 16.32 Mean: 1.14 Median: -0.30	Hi/Lo FilterMode DeSpike WindowLength 3 WindowWidth 3 WeightingMode Median Threshold 9.00 ReplaceCenterWith Average DeStripe Mode Track Method Median Orientation Along MaintainMean ✗ ThresholdType None ThresholdMin 2.00 ThresholdMax 2.00 Sectors 5 WindowLength 0 WindowWidth 0 DeStagger Mode MoveValue Distance -0.20 Hi/Lo FilterMode Low WindowLength 3 WindowWidth 3 WeightingMode Gaussian Threshold 9.00 ReplaceCenterWith Average Interpolate Mode Match Factor 0.50 Clip Min -10.00 Max 10.00 SelectSD 0.00
Source: Name Extent (Left,Right,Bottom,Top)	
A01 0 30 30 60 A02 30 60 30 60 A03 0 30 60 90 A04 0 30 0 30	

MG Comp 2

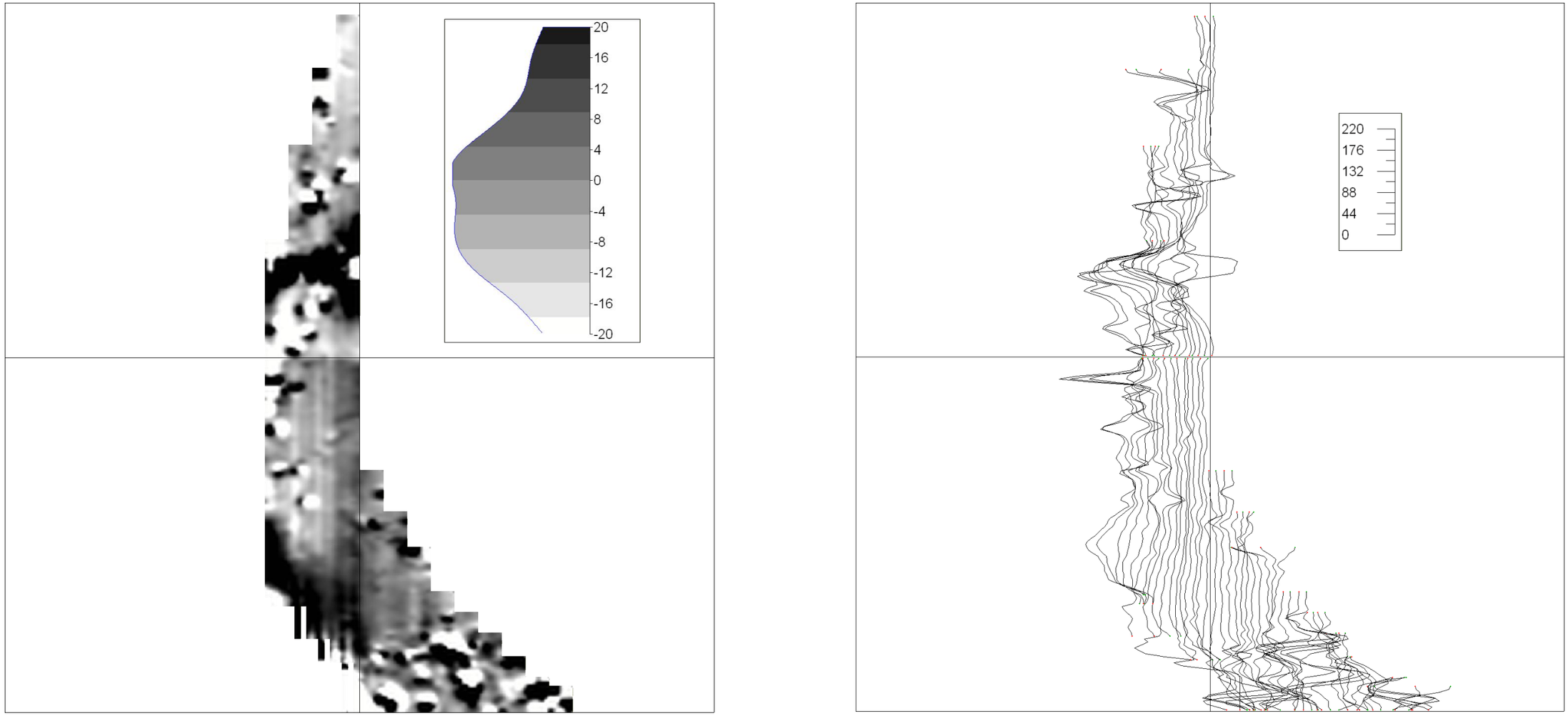

Figure 9 MG Composite 2 processed (left) trace data (right)

SITE MG Composite 2	**Processes**
Surveyed Area: 0.052825 ha Survey Extent: 0.36 ha Direction of 1st Traverse: 315 deg Map Coordinate System: MTRS (TL) Survey Type: Composite Interval: 0.5m x 0.25m Grid Size: 30m x 30m Base layer Stats Max: 97.04 Min: -100.00 Std Dev: 34.74 Mean: 2.74 Median: 2.07 Top layer Stats Max: 119.47 Min: -96.02 Std Dev: 24.14 Mean: 0.02 Median: -1.22	DeStripe Mode Track Method Mean Orientation Along MaintainMean ✗ ThresholdType None ThresholdMin 2.00 ThresholdMax 2.00 Sectors 5 WindowLength 0 WindowWidth 0 Hi/Lo FilterMode DeSpike WindowLength 3 WindowWidth 3 WeightingMode Median Threshold 9.00 ReplaceCenterWith Average Hi/Lo FilterMode Low WindowLength 3 WindowWidth 3 WeightingMode Gaussian Threshold 9.00 ReplaceCenterWith Average Interpolate Mode Match Factor 0.50 Clip Min -20.00 Max 20.00 SelectSD 0.00
Source: Name Extent (Left,Right,Bottom,Top)	
B01 0 30 0 30 B02 30 60 0 30 B03 0 30 30 60	

MG Composite 3

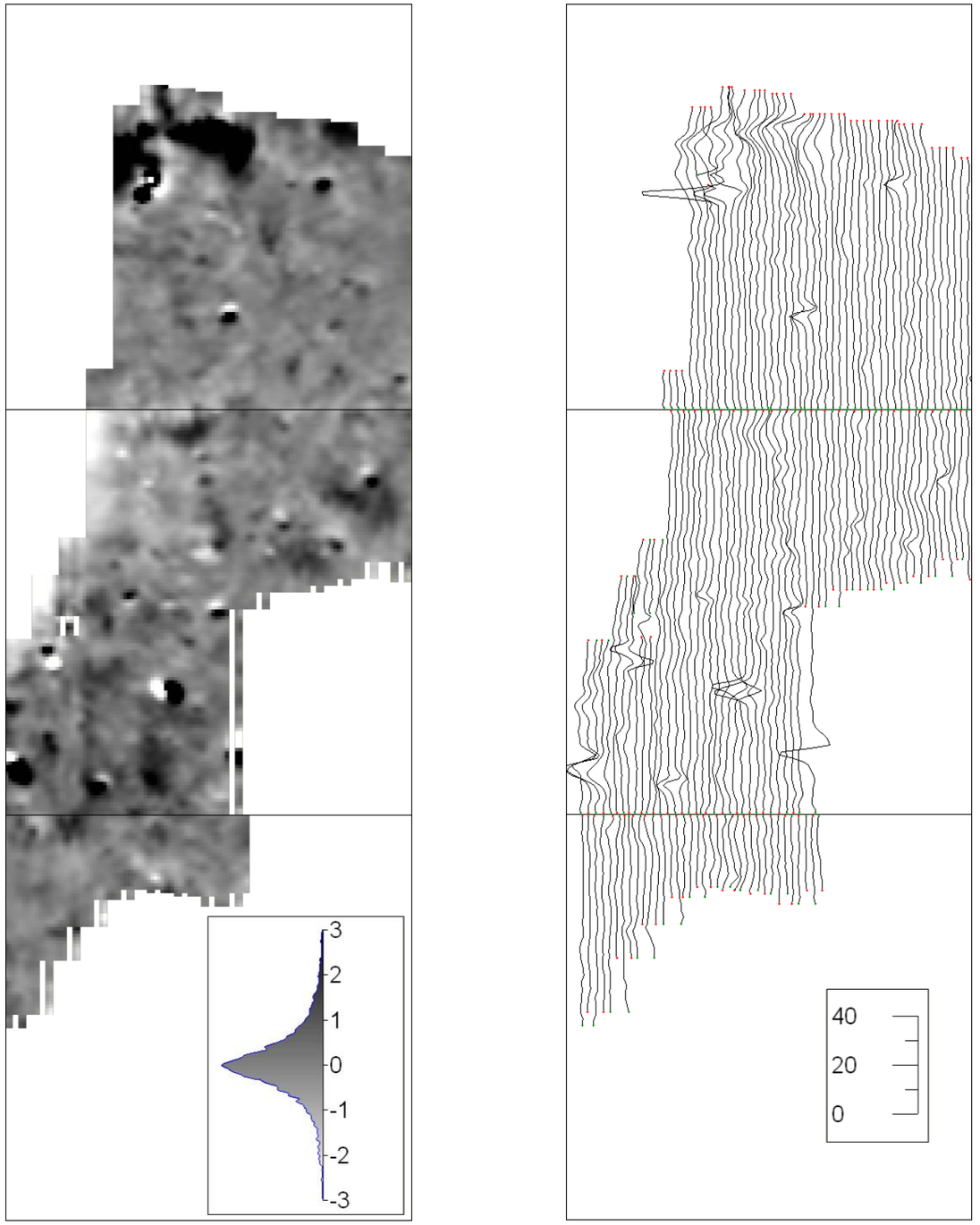

Figure 10 MG Composite 3 processed (left) trace data (right)

SITE MG Composite 3	**Processes**
Surveyed Area: 0.12365 ha Survey Extent: 0.27 ha Direction of 1st Traverse: 315 deg Map Coordinate System: MTRS (TL) Survey Type: Composite Interval: 0.5m x 0.25m Grid Size: 30m x 30m Base layer Stats Max: 58.05 Min: -21.29 Std Dev: 2.23 Mean: -0.60 Median: -0.74 Top layer Stats Max: 29.71 Min: -9.23 Std Dev: 1.29 Mean: 0.13 Median: 0.01	DeStripe Mode Track Method Median Orientation Along MaintainMean ✗ ThresholdType None ThresholdMin 2.00 ThresholdMax 2.00 Sectors 5 WindowLength 0 WindowWidth 0 Hi/Lo FilterMode Low WindowLength 3 WindowWidth 3 WeightingMode Gaussian Threshold 9.00 ReplaceCenterWith Average Interpolate Mode Match Factor 0.50 Clip Min -3.00 Max 3.00 SelectSD 0.00
Source: Name Extent (Left,Right,Bottom,Top)	
B04 0 30 30 60 B05 0 30 60 90 B06 0 30 0 30	

MG Composite 4

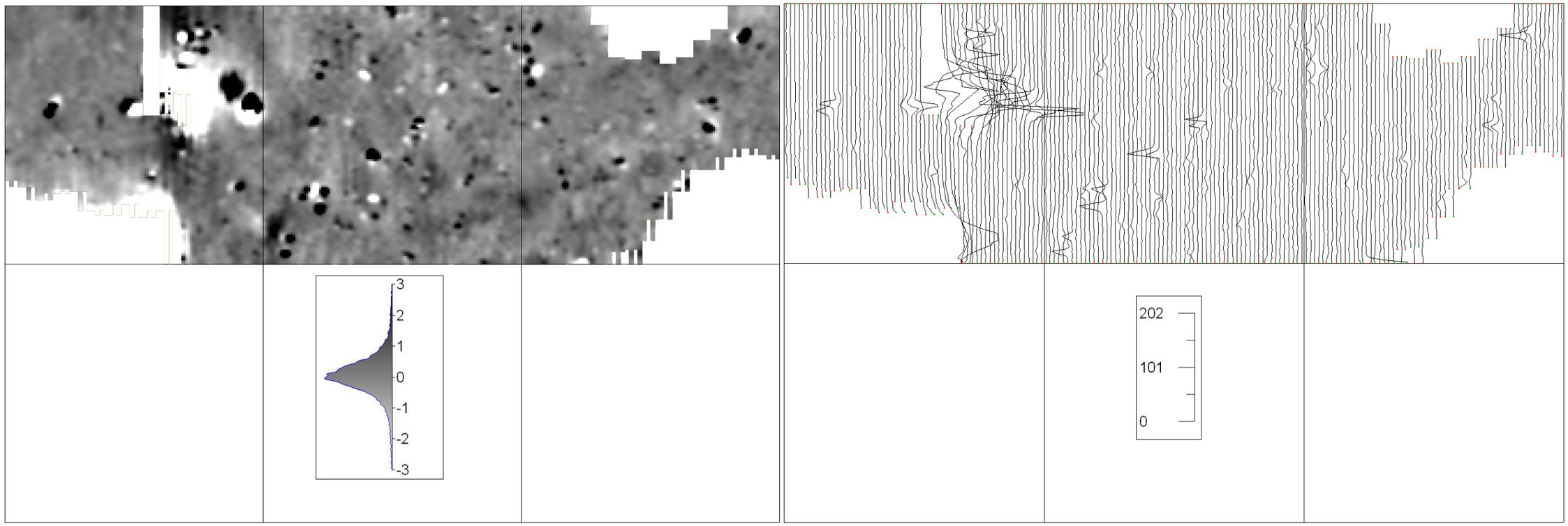

Figure 11: MG Composite 4 processed (left) trace data (right)

SITE MG Composite 4	**Processes**
SURVEY SurveyDate: Not set AssembleDate: Not set ProcessDate: Not set Surveyors: Assemblers: Desc: Comments: Units: Surveyed Area: 0.22848 ha Survey Extent: 0.54 ha Direction of 1st Traverse: 90 deg Map Coordinate System: MTRS (TL) Survey Type: Composite Interval: 0.5m x 0.25m Grid Size: 30m x 30m Base layer Stats Max: 96.13 Min: -100.00 Std Dev: 6.49 Mean: -1.07 Median: -0.11 Top layer Stats Max: 99.96 Min: -100.70 Std Dev: 5.99 Mean: -0.40 Median: 0.00	DeStripe Mode Track Method Median Orientation Along MaintainMean ✗ ThresholdType None ThresholdMin 2.00 ThresholdMax 2.00 Sectors 5 WindowLength 0 WindowWidth 0 Hi/Lo FilterMode DeSpike WindowLength 3 WindowWidth 3 WeightingMode Median Threshold 9.00 ReplaceCenterWith Average DeStagger Mode MoveValue Distance -0.25 Hi/Lo FilterMode Low WindowLength 3 WindowWidth 3 WeightingMode Gaussian Threshold 9.00 ReplaceCenterWith Average Interpolate Mode Match Factor 0.50 Clip Min -3.00 Max 3.00 SelectSD 0.00
Source: Name Extent (Left,Right,Bottom,Top)	
A01 0 30 30 60 A02 30 60 30 60 A03 60 90 30 60	

ER composite 1

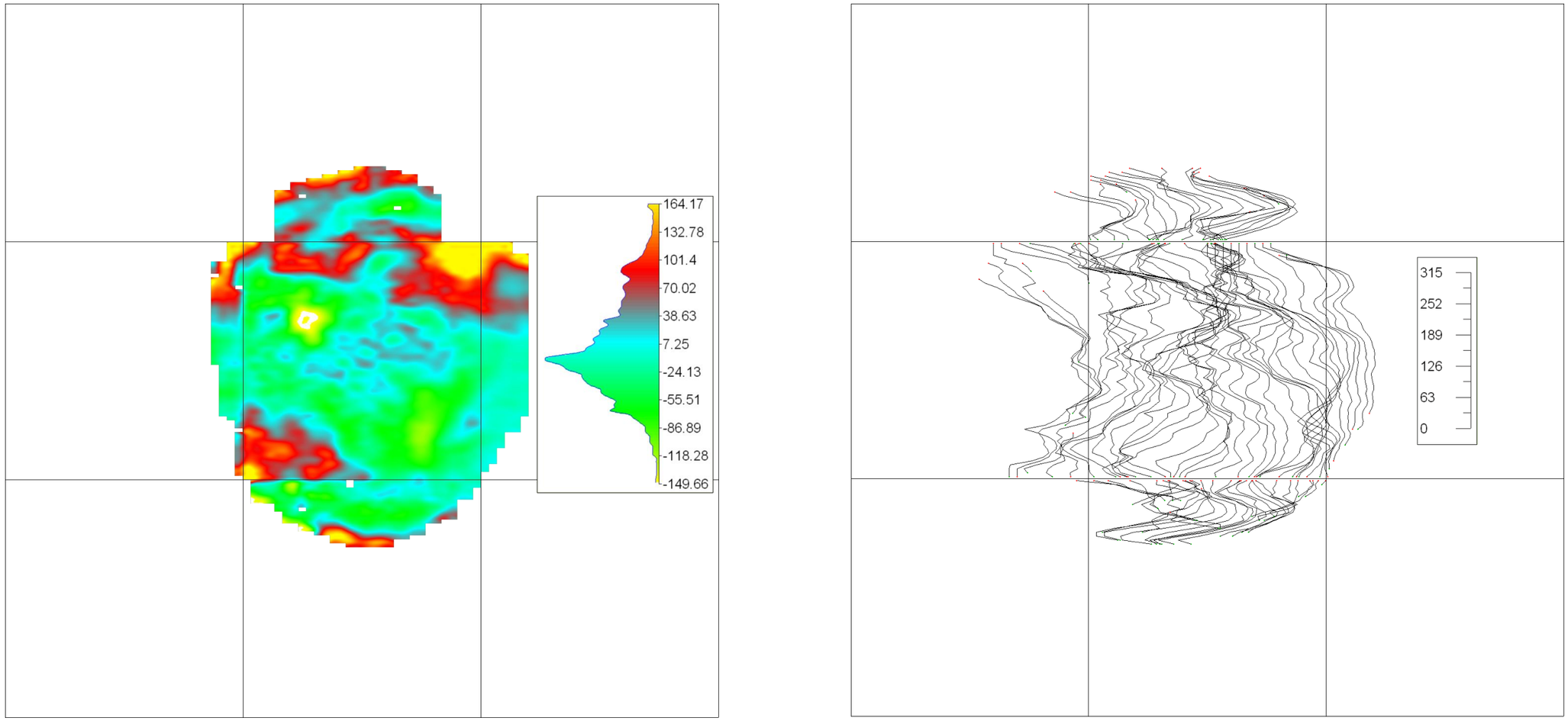

Figure 12: ER Composite 1 processed (left) trace data (right)

SITE- ER composite 1

Surveyed Area: 0.14765 ha
Survey Extent: 0.81 ha
Direction of 1st Traverse: 90 deg
Map Coordinate System: MTRS (TL)
Survey Type: Composite
Interval: 1m x 0.5m
Grid Size: 30m x 30m

Base layer Stats
Max: 772.68
Min: 103.35
Std Dev: 94.78
Mean: 314.36
Median: 297.32

Top layer Stats
Max: 164.25
Min: -149.60
Std Dev: 60.22
Mean: 6.64
Median: -3.79

Processes

DeStripe
Mode Track
Method Median
Orientation Along
MaintainMean ✗
ThresholdType None
ThresholdMin 2.00
ThresholdMax 2.00
Sectors 5
WindowLength 0
WindowWidth 0

Hi/Lo
FilterMode DeSpike
WindowLength 3
WindowWidth 3
WeightingMode Median
Threshold 9.00
ReplaceCenterWith Average

Grid Match
Method Periphery
StripWidth 2
AvgMethod Median

Hi/Lo
FilterMode Low
WindowLength 3
WindowWidth 3
WeightingMode Gaussian
Threshold 9.00
ReplaceCenterWith Average

Clip
Min -131.04
Max 161.63
SelectSD 2.50

Source: Name Extent (Left,Right,Bottom,Top)

A1	30 60 30 60
A2	60 90 30 60
A3	30 60 60 90
B1	30 60 0 30
B2	0 30 30 60

ER composite 2

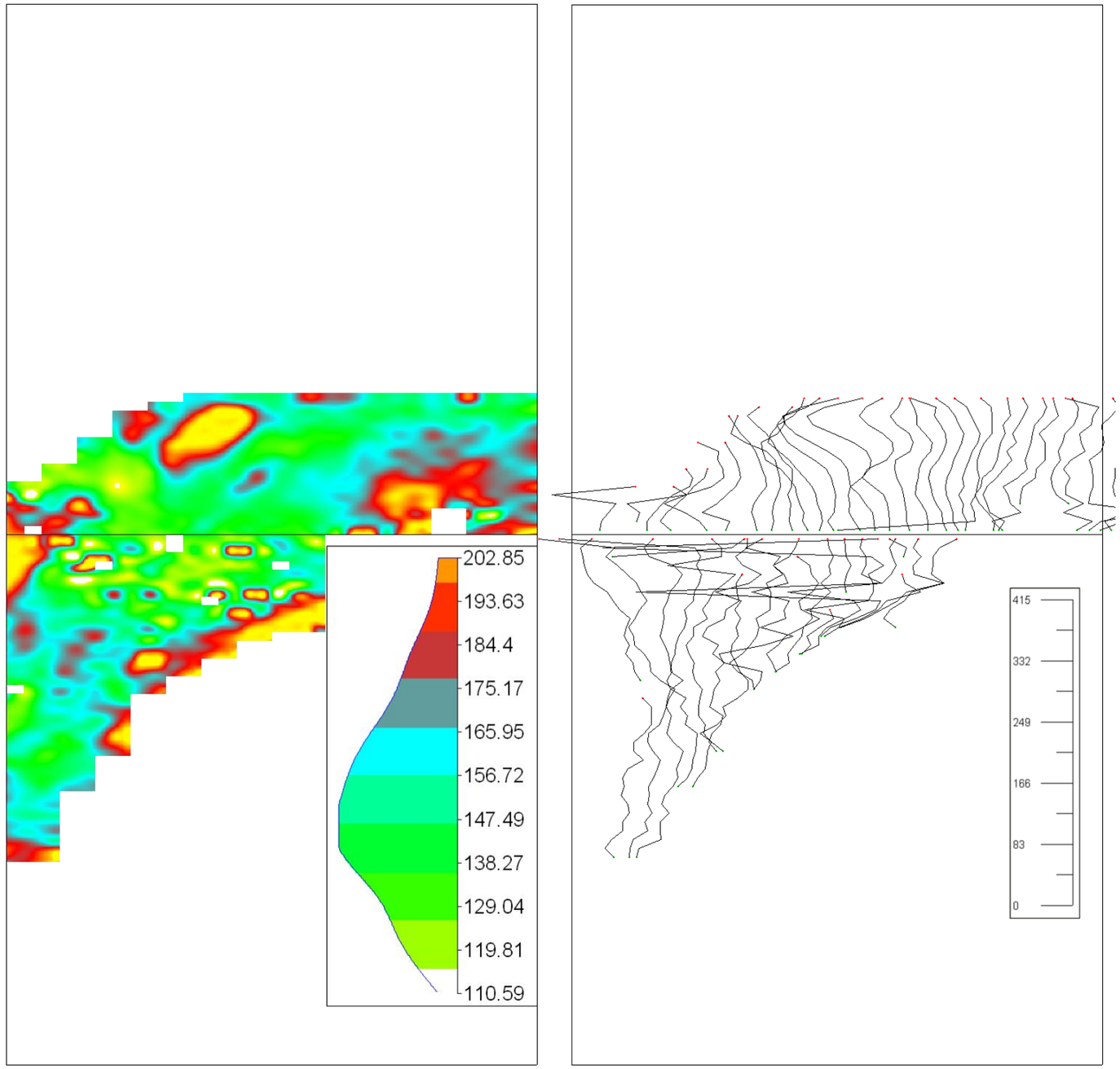

Figure 13 *ER Composite 2 processed (left) trace data (right)*

SITE- ER composite 2	Processes
Surveyed Area: 0.03935 ha Survey Extent: 0.18 ha Direction of 1st Traverse: 90 deg Map Coordinate System: MTRS (TL) Survey Type: Composite Interval: 1m x 0.5m Grid Size: 30m x 30m Base layer Stats Max: 501.48 Min: 87.48 Std Dev: 31.34 Mean: 156.37 Median: 151.53 Top layer Stats Max: 501.48 Min: 87.48 Std Dev: 31.34 Mean: 156.37 Median: 151.53	Hi/Lo FilterMode DeSpike WindowLength 3 WindowWidth 3 WeightingMode Median Threshold 9.00 ReplaceCenterWith Average Interpolate Mode Match Factor 0.50 Clip Min 110.59 Max 202.86 SelectSD 1.50
Source: Name Extent (Left,Right,Bottom,Top)	
B3 0 30 30 60 B4 0 30 0 30	

ER composite 3

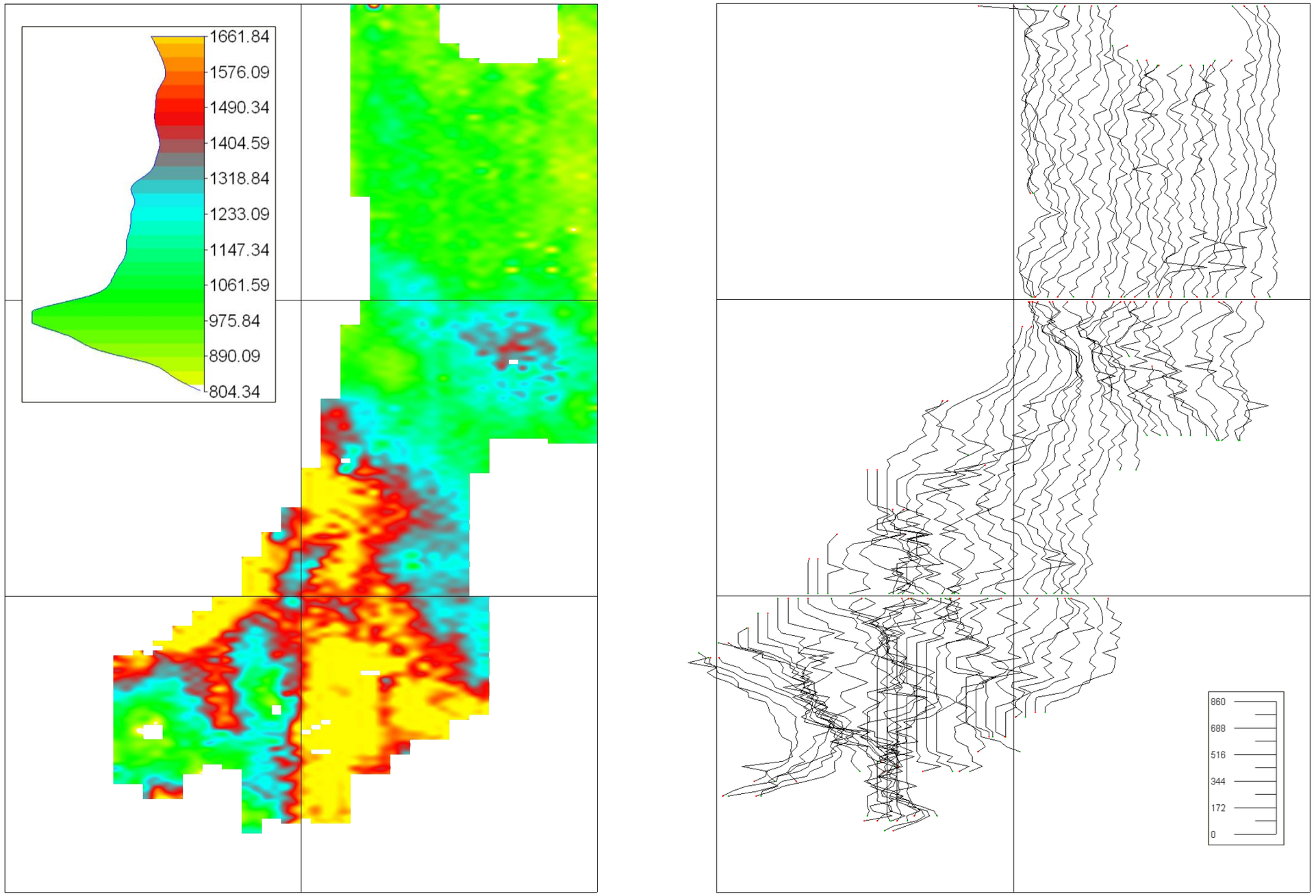

Figure 14 ER Composite 3 processed (left) trace data (right)

SITE- ER composite 3	Processes
Surveyed Area: 0.20025 ha Survey Extent: 0.54 ha Direction of 1st Traverse: 90 deg Map Coordinate System: MTRS (TL) Survey Type: Composite Interval: 1m x 0.5m Grid Size: 30m x 30m Base layer Stats Max: 2217.41 Min: 588.44 Std Dev: 285.83 Mean: 1233.10 Median: 1158.20 Top layer Stats Max: 1661.85 Min: 804.35 Std Dev: 251.76 Mean: 1217.14 Median: 1158.20	Hi/Lo FilterMode DeSpike WindowLength 3 WindowWidth 3 WeightingMode Median Threshold 9.00 ReplaceCenterWith Average Clip Min 804.35 Max 1661.85 SelectSD 1.50

Source: Name Extent (Left,Right,Bottom,Top)	
C1 0 30 30 60 C2 30 60 30 60 D1 30 60 0 30 D2 30 60 60 90 E1 0 30 0 30	

01792 655 208
01633 275 400
fieldservices@heneb.org.uk

Heneb