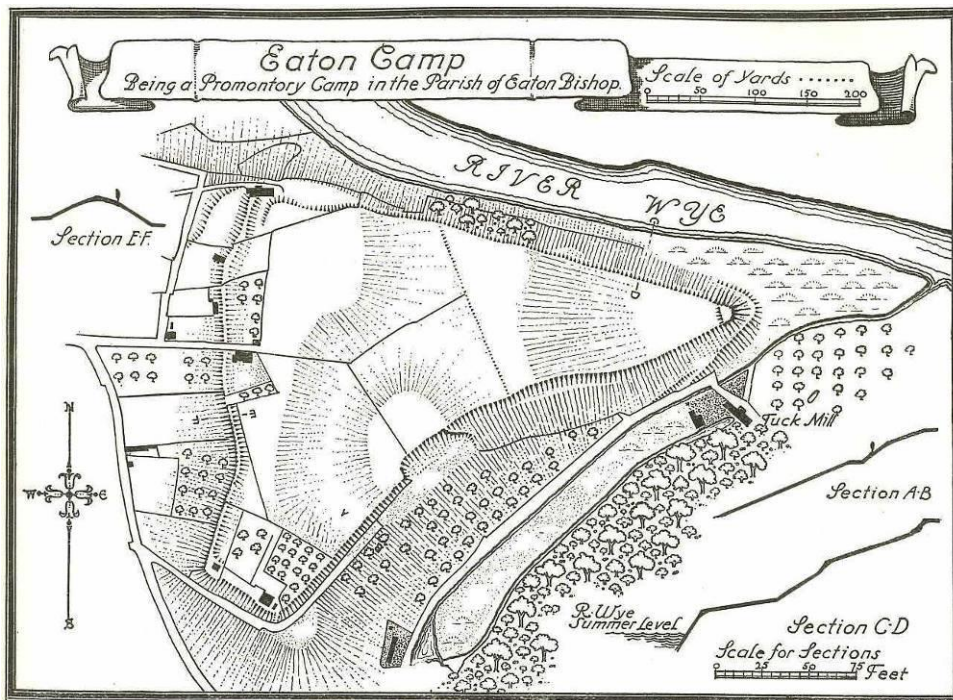


**Eaton Camp, Ruckhall,
Eaton Bishop, Herefordshire**
A Report on Excavations in May 2012 and June 2013

February 2014



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Herefordshire Council



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Herefordshire Archaeology is Herefordshire Council's county archaeology service. It advises upon the conservation of archaeological and historic landscapes, maintains the county Sites and Monument Record, and carries out conservation and investigative field projects. The County Archaeologist is Dr. Keith Ray.

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Summary

This report presents the results of two seasons of small scale excavations within the interior of Eaton Camp promontory hillfort. The work was carried out as part of the Eaton Camp Conservation Project a Heritage Lottery funded project organised by the Eaton Camp Historical Society.

In 2012 two trenches (1 and 2) each 5.00m x 5.00m were opened to test the nature and significance of two apparently substantial ditches that were detected within the interior of the fort following a comprehensive geophysical survey. In each case the ditch terminals were targeted as these were expected to give the best chance of recovering datable artefacts and deposits.

The presence of the ditches was confirmed and the primary fill in each case was radiocarbon dated to the early Iron Age. The form and location of the westernmost ditch suggests that it may be an early phase of the promontory fort defences. The second ditch cut off the very end of the promontory and served to demarcate that area. Deliberate deposition may be suggested by articulated cattle bones and fragments of human skull in the primary fill. An apparent midden deposit in the very top of the ditch contained Middle Iron age ceramics, including crucible, burnt bone, fire cracked stones and abundant charred plant and cereal remains.

The following year three further trenches were opened. The main trench (3) was 6.00m x 6.00m and was located to investigate apparent occupation deposits identified in Trench 2 running east into the area demarcated by the ditch. Two smaller subsidiary trenches were located to investigate a further large geophysical anomaly (Trench 4) and a mound on the very end of the promontory (Trench 5).

Sealed below the occupation deposits in Trench 3 were features associated with a circular building. These comprised a wall slot and drainage gully, the former suggesting that the building was about 6.00m in diameter. No direct dating evidence was recovered but it may be contemporary with the ditch in Trench 2 and the overlying soils contained middle Iron Age pottery.

The large geophysical anomaly was confirmed to be a large pit around 3.00m in diameter and of significant depth (it was not fully excavated). A single sherd of decorated middle Iron Age pottery was recovered from one of its fills.

The mound on the eastern end of the promontory was confirmed to be a section of rampart. This probably served to enhance the visibility of the fort from below (from the River Wye) and/or to enhance the enclosure of the area containing the building and defined on the west by the ditch.

Introduction and background

Project Background

The excavations described in this report are part of the on-going Eaton Camp Conservation Project, developed by the Eaton Camp Historical Society and funded by the Heritage Lottery Fund. The core aims of the project as set out in the project proposals document were:

- To add to knowledge of the prehistory of Herefordshire and the United Kingdom through archaeological study to determine: when, how, and by whom Eaton Camp was built; its use over time; and its importance strategically and socially.
- Involve the local community and schools in ways that encourage them to view Eaton Camp as an important part of their history and heritage.
- To promote development of a Conservation Management Plan for the site in conjunction with local landowners and residents, The National Trust, English Heritage and Herefordshire Council.
- To research, record and disseminate information on other aspects of local history that help to place Eaton Camp in perspective.
- To impart new skills to local residents, students, and project volunteers that enable them to support the conservation of Eaton Camp in the future.
- To work toward the removal of Eaton Camp from English Heritage's "At Risk" list.

Herefordshire Archaeology is working in partnership with the Eaton Camp Historical Society providing training, guidance and advice to the project and also organising a number of the practical elements of the project including survey, excavation and the provision of the Conservation Management Plan.

As part of the current project a detailed topographic survey has been carried out (Atkinson, 2012). This included study of the Lidar data for the site and the immediately surrounding landscape. Geophysical survey has been carried out by ArchaeoPhysica Ltd (Roseveare, 2011 and 2012).

The excavations were carried out between the 12th and 25th of May 2012 and the 10th and 21st of June 2013.

Location and geology

Location

Eaton Camp is a Scheduled Ancient Monument (SM Herefordshire 10) located at SO 4538 3933 in the hamlet of Ruckhall in Eaton Bishop parish, Herefordshire (figure 1). It is recorded as an Iron Age hillfort and is located on a promontory defined on the north by the River Wye and to the south by Cage Brook (figure 2). The highest point of the promontory stands at 90m OD, with steep north and south facing slopes. To the west the topography comprises gentle slopes, across which the Iron Age ramparts were constructed in order to enclose the promontory. The interior is roughly triangular, the eastern point overlooking the confluence of the Wye and Cage Brook, the western end (the base of the triangle) defined by massive bivallate defences now denuded in parts by later development.

Geology

The geology underlying the Eaton Camp and Ruckhall area consists primarily of mudstones and siltstones of the Old Red Sandstone Raglan Mudstone Formation. Later drift deposits include the second terrace deposits of the River Wye. These are exposed in the steep scarp slopes above the river Wye flanking the eastern end of the enclosure. Underlying the western ramparts and the settlement of Ruckhall are glacial deposits, which include moraine sandy tills, gravels and clays. These support typical argillic brown earths of the Escrick 1 Association (Findlay *et al.* 1984).

The interior of the monument is permanent pasture within three fields. These are divided by established hedges. The rampart lies for the most part in private gardens and is also overlain in part by houses and outbuildings.

Archaeological and survey background

Prior to the current project very little archaeological work had been carried out at the site. Some small scale development related work took place just outside the north-west corner of the hillfort in 1985 at the Ancient Camp Inn. The inner rampart of the hillfort was exposed in section and found to be a simple dump construction of clay, stone and river boulders. The bank sealed a horizon containing fragments of burnt bone and charcoal stratified above the contemporary ground surface. Mention is made in the short entry in West Midlands Archaeology of the intention to obtain a C14 date for the burnt material (Bond, 1985). Recent enquiries suggest that this was not carried out.

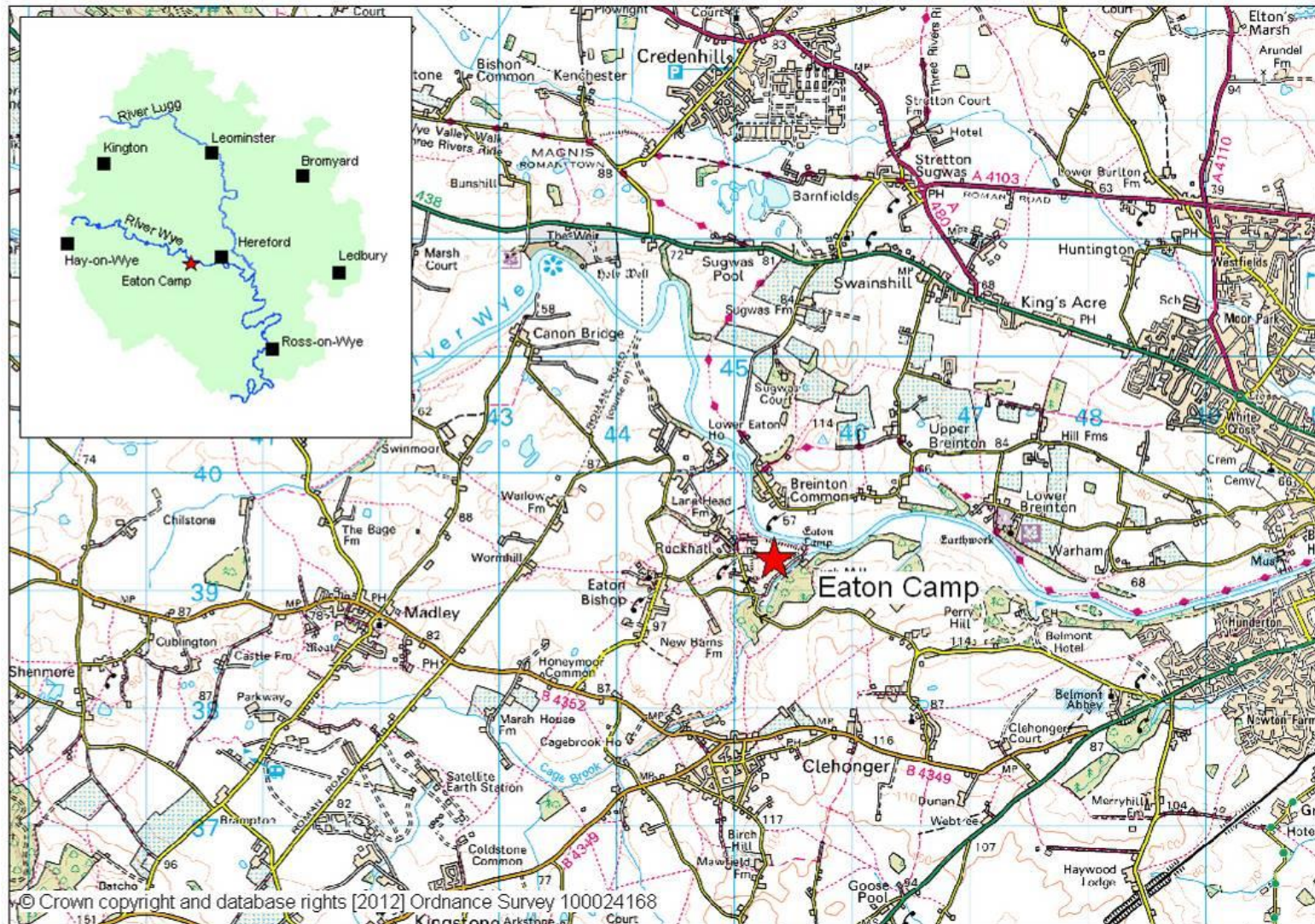


Figure 1: Location of Eaton Camp

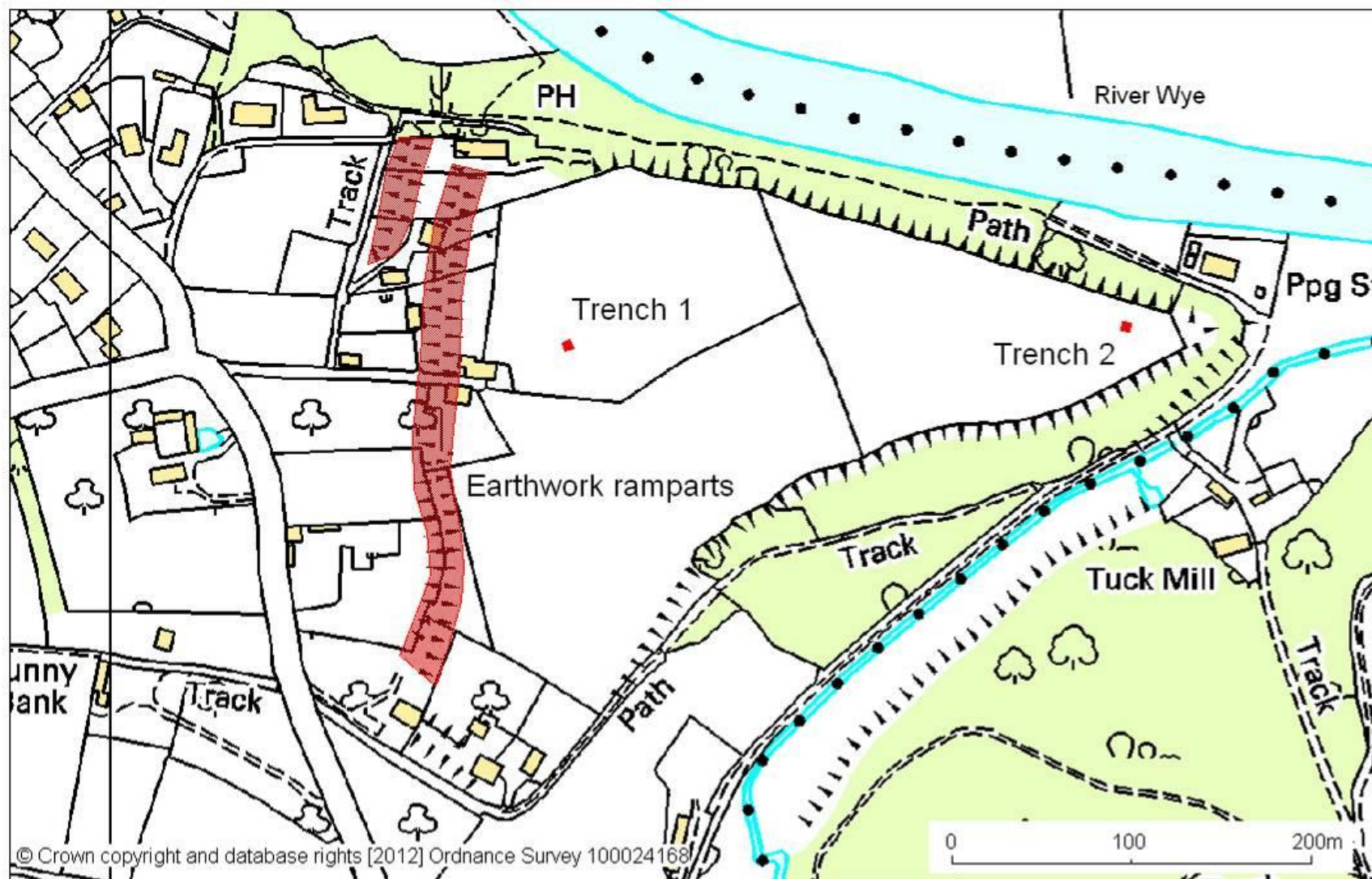


Figure 2: Site and 2012 trench location plan

Two particular areas within the interior of the site had been drawn attention to by previous recorders. The eastern end (the point or nose) of the promontory is occupied by a mound. This does appear to be artificial in origin and it has been suggested that it may be an additional strong point or the site of a belvedere. The other feature is a large mound in the southern part of the south western field. It has been suggested that it may be a castle tump (motte) though it appears to be a natural feature.

As part of the current project the monument has been the subject of a detailed survey by Herefordshire Archaeology (Atkinson, 2012). A number of features recorded relate to Medieval and post-Medieval boundary division and arable agriculture. Gravel extraction has severely affected the southern scarp slope and may have removed or altered Iron Age features in this area. Apart from the rampart no definite prehistoric features were identified though it was suggested that earthworks at the southern end of the rampart may be associated with an original entrance. A single sherd of Palaeozoic limestone tempered ware (an Iron Age Malvernian ware fabric) was recovered from a mole hill in the interior.

Study of the Lidar data for the site by Herefordshire Archaeology (Atkinson, op cit) has revealed more detail within the interior. Relict field boundaries and ridge and furrow are clearly visible, the latter covering virtually the whole of the site and supporting the evidence from field survey that the site has been subject to extensive cultivation. Perhaps of more significance is the identification of a low broad earthwork bank located about 60m to the west of the surviving ramparts (i.e. outside the current enclosure) and seemingly running parallel to them. Although some of this feature has been destroyed by landscaping and cultivation enough survives to show that in running from the top of the north facing scarp of the promontory to the top of the south facing scarp it appears to isolate the promontory in the same way as the ramparts and may define an annex area or perhaps be the rampart of an earlier larger enclosure.

Geophysics

Magnetometry and selective Electrical Resistance survey was carried out within the interior of the hillfort by a specialist contractor in 2011 and 2012 respectively (Roseveare, 2011 and 2012).

Much of the interior shows numerous small discrete anomalies typical of irregularities in glacial till (Roseveare, 2011, page 11). A number of features clearly of artificial origin are also visible (figure 3). In the western half of the site three linear anomalies run north to south across the site although two are only apparent in the southern field. The most westerly one is interpreted as a "probable field boundary ditch with a debris rich fill, perhaps slightly spread by subsequent cultivation". The other two appear to be parallel associated ditches though only the most easterly (12) runs across the whole width of the

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promontory. Both are recorded as around 3.00m wide and therefore interpreted as possible defensive ditches rather than field boundary ditches. Feature 12 (figure 3 in this report) has a clear break and two ditch butt ends on the highest point of the north-west field. Another ditch (42), about 2.00m wide, cuts off the tip of the promontory. There appears to be an entrance gap of about 6.00m in the northern section of the feature. The location of this feature suggests it is unlikely to be a field boundary and again a defensive or definition function is a possibility given the presence of the mound on the tip of the promontory.

The excavation strategy was set out in the Scheduled Monument consent application for each seasons work. In 2012 it argued that the two major ditches 12 and 42 (figure 3), being protected from disturbance by activities such as cultivation, had the potential to provide information about the pre or early hillfort use and possibly about the later use of the site. By excavating one of the ditch terminals in each case it was anticipated that the chances of artefact recovery would be high and that these areas provided the best potential for surviving stratified deposits and material that would help date the features.

In 2013 the objective was to build on the results of the previous year and to examine a further geophysical anomaly 3 on figure 3 and the apparently artificial mound on the tip of the promontory.

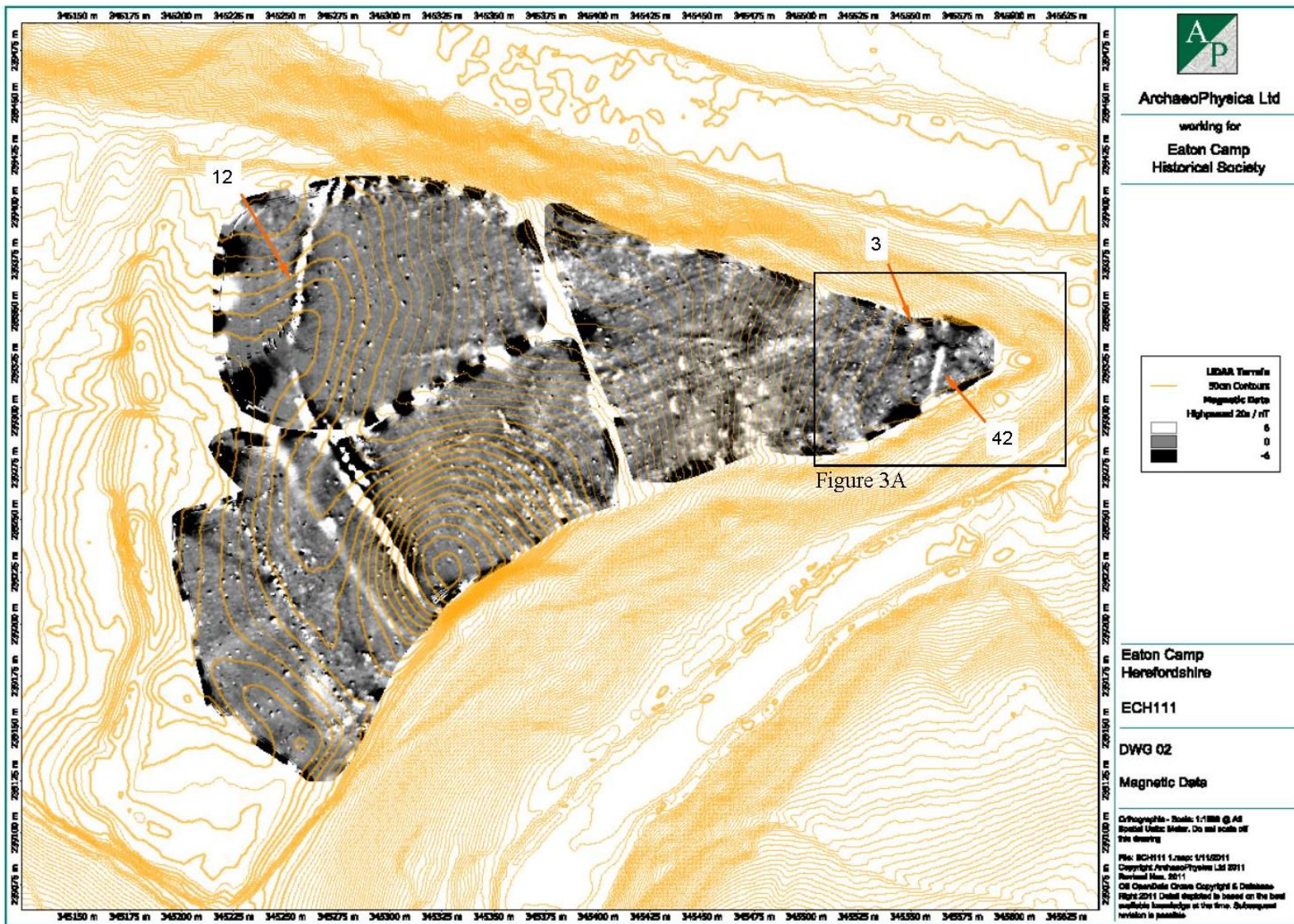


Figure 3: Magnetometry survey results (© ArchaeoPhysica Ltd)

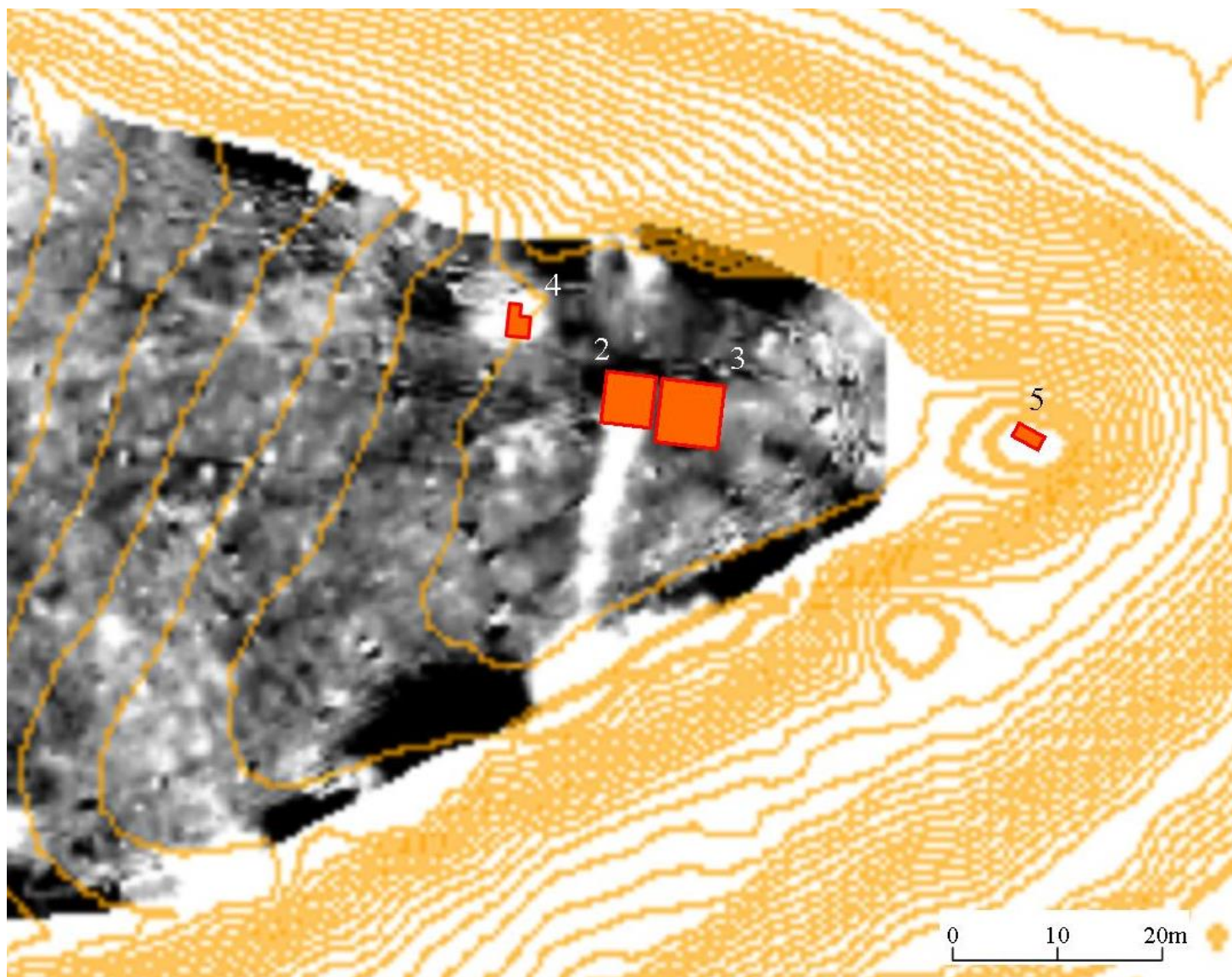


Figure 3A: Location of Trench 2 (2012) and the 2013 trenches

Excavation results

Trench 1 (2012)

Trench 1 was located to examine the northern terminal of the southern length of ditch 12 recorded by the magnetometry survey in the north-western part of the hillfort interior (figure 3). The trench was 5.00m by 5.00m and was accurately located by GPS from the geo-referenced geophysical survey plot. All excavation was carried out by hand. On completion the trench was backfilled by mechanical mini-digger and the turves re-laid by hand.

Rather than finding a ditch terminal a large ditch was revealed running north to south across the entire excavation area (figure 6, cut 1005). An initial section dug at the north end of the trench revealed a broad U shaped ditch c4.00m across and 1.20 to 1.30m deep below the surface of the natural subsoil (figures 4 and 6). However on cutting back and cleaning the section for detailed recording it was discovered that within less than 0.10m of the section the ditch fills dropped away to the north (i.e. beyond the limits of the excavation) into a deeper section of ditch (cut 1017).

A further section within the trench was excavated 2.50m to the south of the initial section to confirm the nature of the ditch here and in an attempt to recover further artefactual or dating evidence. This revealed a ditch of a quite different character (cut 1018), a flat bottomed V-shaped ditch 3.90m wide and 1.90m deep below the surface of the natural subsoil, the base of which at this point was only 0.30m wide (figures 5 and 6). It seems likely that the profile of the ditch to the north of the excavation would be similar to this second profile.

The fills of the ditch are relatively straight forward comprising primary natural fills, secondary stone dump and colluvial deposits and tertiary colluvial deposits (for a detailed description see Geo-archaeological Observations below). There was no trace of any bank material and it is assumed that this would have been completely removed by later ploughing.

Primary fills (1012, 1013, 1014, 1015, 1016, figures 4 and 5)

Of the primary fills 1014 is re-deposited natural subsoil representing rapid ditch-side weathering and slumping. The sharp inner profile of this deposit appears to represent re-cutting or cleaning of the ditch base at an early stage (though an alternative interpretation is suggested below). Contexts 1012, 1013, 1015 and 1016 represent rain-wash deposits, though 1012 and 1013 were only recorded in the northern section.

Charcoal samples were recovered from 1012, 1014 and 1016. Small round-wood samples from 1016 (stratigraphically the lowest) provided a radiocarbon date of 750–400 Cal BC (2451±18 BP, NZA-51906).

A small bone from a small to medium-sized dog was recovered from 1015 (see the Animal Bone report below) otherwise no other artefacts were recorded from these primary fills.

Secondary fills (1004, 1007, 1008, 1008a, 1009, 1010, 1011, figures 4 and 5)

The secondary fills comprised a series of alternating colluvial in-wash and stony dump deposits. All are present in both sections, though in the southern section 1008 could be subdivided hence 1008a. The colluvial deposits (1011, 1009 and 1007) comprise silty clay and silty clay loams. The stony deposits (1010, 1008 and 1008a) are angular and sub-angular green-grey sandstone and eroded grey mudstone within a silty clay matrix. These latter deposits in particular appear to have accumulated mainly from the east side of the ditch. The origin of the stone in the deposits is uncertain. Such a sandstone formation is not known to outcrop within the hillfort interior and therefore appears to have been imported to the site. This reinforces an impression that it may be derived from a former bank associated with the line of the ditch that would have stood to the east.

The final (upper) secondary fill 1004 was different in character. It was a dump deposit of angular stone, abundant burnt clay/soil and large (oak) charcoal fragments again deposited from the east side. It had been deposited on an incipient soil developing on the top of the underlying colluvial horizon (1007) suggesting stabilisation and vegetation cover within the ditch at this time. The burnt nature of this deposit is suggestive of the demolition of a structure that burned down, or perhaps of a field kiln. Its position at the top of the ditch and overlying lower levels of the plough-soil may indicate a comparatively recent date (i.e. medieval or post-medieval).

Finds again were few but context 1011 contained a poorly preserved cattle mandible, some indeterminate bone fragments and six adjoining sherds of Palaeozoic limestone tempered ware, the latter are undecorated body sherd and cannot be dated with any precision. Context 1010 contained part of a shale object, possibly a bracelet or armlet, with incised decoration and perforations at each (broken) end (figure 13).

Tertiary fill (1003, figures 4 and 5)

The final fill of the ditch (1003) is another colluvial deposit about 0.30m deep below recent plough-disturbed soils another 0.30m deep.

Three small sherds of Malvernian mudstone tempered ware were recovered from the uppermost ditch fill context 1003. These were again body sherds which cannot be accurately dated.

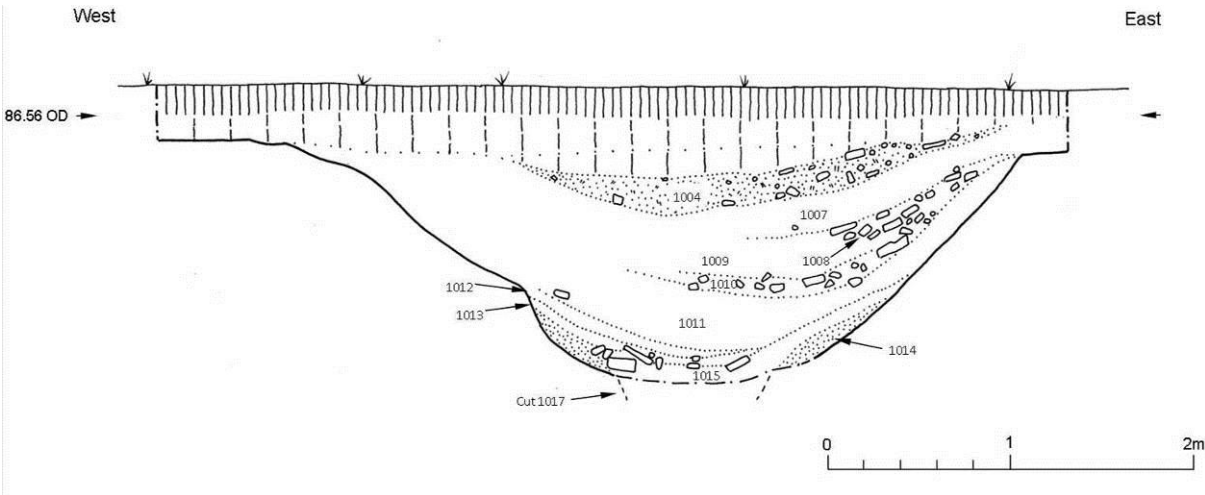


Figure 4: South facing section of ditch 1005, trench 1, (A – A on figure 6)

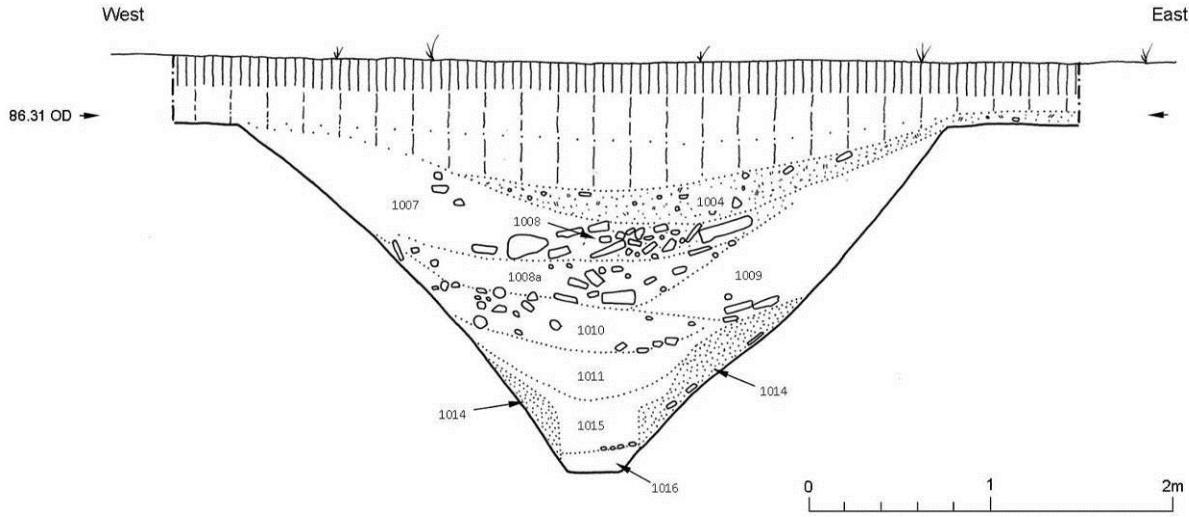


Figure 5: North facing section of ditch 1005 trench 1, (B – B on figure 6, mirror image)

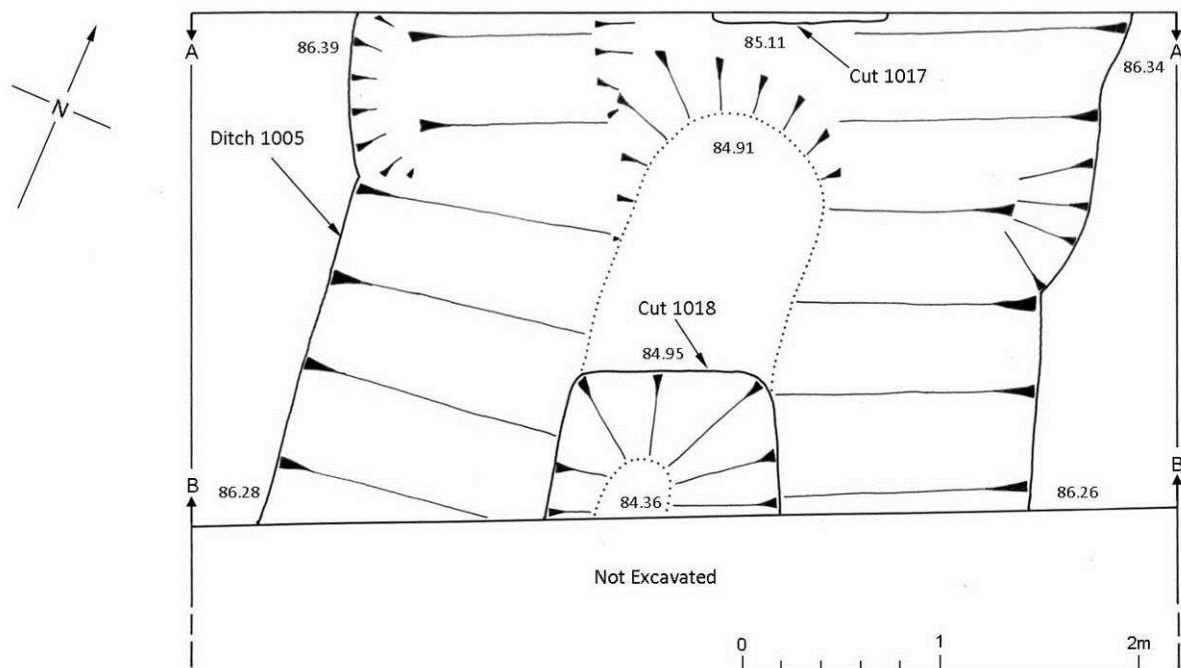


Figure 6: Final excavation plan of trench 1 (heights shown are above ordnance datum)

Trench 2 (2012)

Trench 2 was located to examine the apparent terminal of the ditch (12) cutting off the tip of the promontory (figure 3 and 3A). As with Trench 1 it was located by GPS coordinates in relation to the magnetometry survey. The trench was 5.00m x 5.00m and was initially excavated by hand. The deeper colluvial deposits were then stripped by machine. It was backfilled in the same manner as Trench 1.

The ditch terminal was identified here and a section excavated across it 2.00m from the end of the terminal (figure 8). At this point the ditch was a broad U shape in profile, 4.08m wide and 1.50m deep below the top of the natural subsoil (figure 7). The west side of the ditch was a more or less even slope whereas the east side was stepped. This in part coincided with natural stony river terrace deposits that were cut through by the ditch at this point. The primary, secondary and tertiary fills were made up of a series of very distinct but contrasting deposits. The primary fills had accumulated with very little disturbance or inclusions and in wet conditions. The secondary fills represent colluvial in-wash and the tertiary fills comprised artefact rich deposits for the main part dumped into a cut in the top of the, by then, nearly completely silted up ditch. Colluvial deposits made up the remainder of the tertiary fills.

Primary fills (2013 and 2014, figure 7)

The primary fills all represent deposits that had formed in very wet conditions and with apparently very little disturbance. The lowest of these (2014) is a highly laminated deposit of alternating medium and fine silts that probably formed under standing water. It represents differential settling out rates of the sediment within the water. Whilst the entire deposit is only a maximum 0.20m deep it is made up of

hundreds of laminae. These vary widely in depth with some being less than 1mm thick (see figure 4 in Geo-archaeological observations below). This may in part be wind-blown material from locally broken or cultivated ground. Above these fine laminae are a series of further broadly-banded deposits (2013) again up to 0.20m deep but of mud and soil in-wash and with more biotic mixing and disturbance (ie the action of root growth) and inclusions of rotted stone.

The articulated bones from the left lower leg of a cow (see animal bone report below) and several fragments of human skull were recovered from within 2014 close to the base of the ditch. A single flint flake was also recovered from the same context.

The articulated cow fibula provided a radiocarbon date of 700-390 Cal BC (2340±24 BP, NZA-51905).

Secondary Fills (2010, 2011, 2012, 2016, figure 7)

The secondary fills appear to have accumulated in drier conditions and comprise broad bands of silty clay loam soils with zones of sandy infill, rotted stone and stonier lenses accumulating from the west, the four deposits have a combined maximum depth of 0.55m. This is a plough-wash, or colluvial, material but was still affected (leached) by periodic episodes of standing water.

Occupation deposit / buried soil (2003, figure 7)

On the east side of the ditch and overlying the secondary infill 2010, and the natural subsoil in the north-east part of the trench (between the ditch and the trench edge), is what appears to be an in-situ occupation horizon or buried soil deposit. It is a dark loamy soil deposit containing stamp decorated middle Iron Age ceramics and abundant charcoal flecks. It appears to have originally continued to the west and perhaps to have sealed the top of the ditch before being cut by 2018 during later activity. See below for further description of this deposit in the 2013 excavation of Trench 3.

The ceramics recovered from this deposit were nine sherds of Palaeozoic limestone tempered ware, one sherd of mudstone tempered ware and one of Droitwich briquetage.

Midden deposits (2004, 2008, 2009, 2015 and 2017, figure 7)

The clear cut through horizon 2003 (cut 2018) and the irregular surface of 2010 indicate activity in the top of the almost completely filled ditch. This cut is filled by a series of dump deposits. These comprised three identifiable major deposits. The earliest (2009) is a concentrated deposit of fire-cracked pebbles 0.20m maximum depth and extending some 1.80m from the western side of the ditch (that is it was confined to the western half of the ditch). Between this and the upper midden deposit (2004) is context 2008, a deposit of grey clay c0.16m maximum depth.

A single sherd of Droitwich briquetage and two sherds of Palaeozoic limestone-tempered ware were recovered from context 2008.

The main midden deposit is 2004; this was rich in ceramics, burnt bone fragments, charcoal and further fire cracked pebbles. It contained the majority of the ceramics recovered from the excavation, 75 sherds of various Malvernian fabrics (see finds section below and the pottery report), eight sherds of Droitwich briquetage and four sherds from a crucible. An iron object and three flint flakes were also recovered from this context.

A bulk sample taken from context 2004 for palaeo-environmental analysis showed the deposit to be rich in charred plant remains. These included hulled emmer and spelt wheat chaff fragments (161) and grains (24), a single barley grain and a chaff fragment and single oat grain. This is interpreted as de-husking waste from a domestic context and was possibly used as tinder material for fire lighting. Hazel nut, acorn and bramble seeds were also identified with charcoal of oak, hazel, alder and hawthorn. This evidence supports the interpretation of the deposit as deriving from domestic waste.

See the specialist report below for a full account of the analysis of the samples taken, and discussion of the plant remains.

Tertiary fill (2002, figure 7)

The main ditch deposits were covered and sealed by a deep colluvial deposit (2002) that had accumulated to a maximum depth of 0.60m. Above this a modern plough-soil and turf had developed.

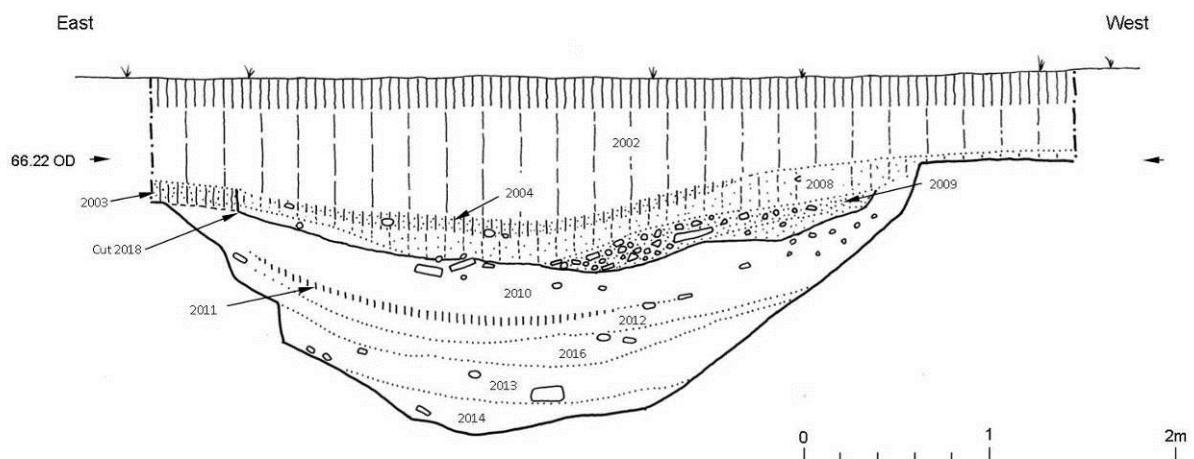


Figure 7: Detail of north facing section of ditch 2019, trench 2 (A – A on figure 8)

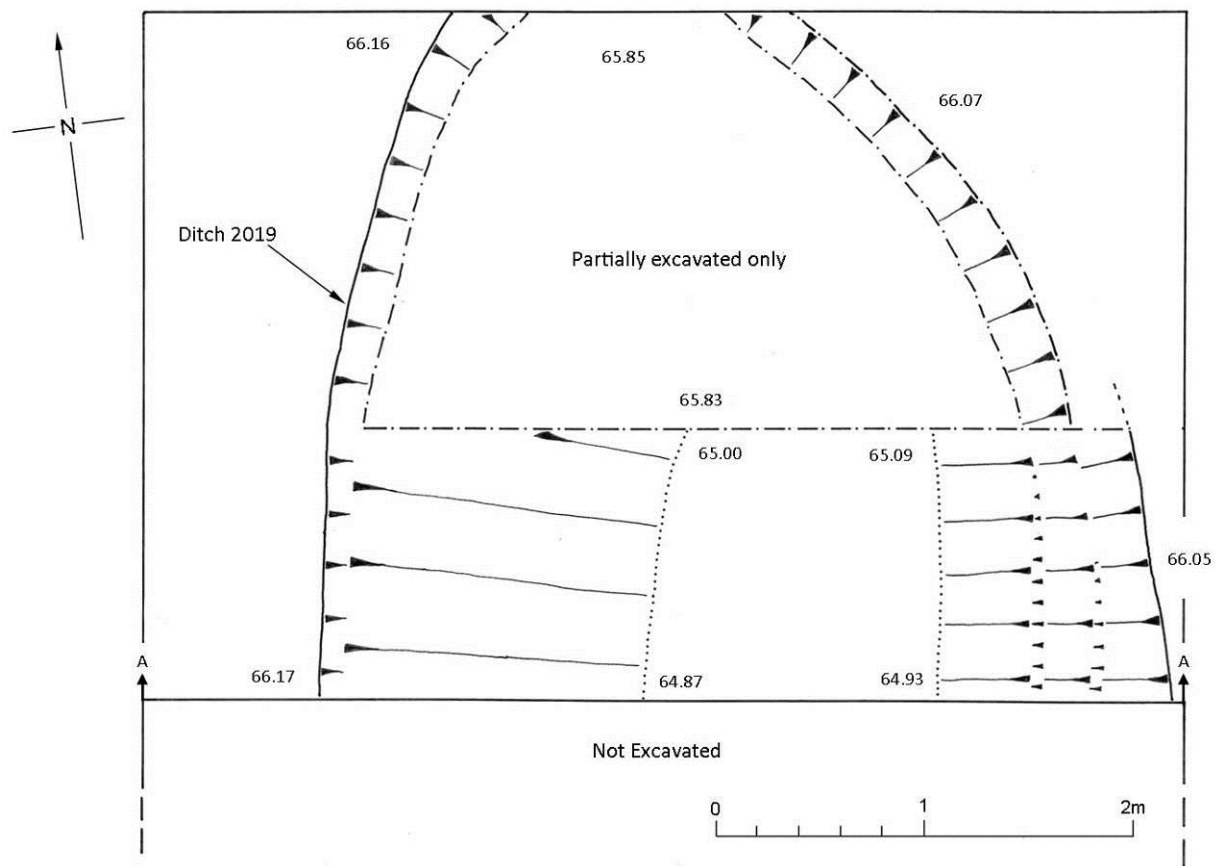


Figure 8: Final excavation plan of trench 2 (heights shown are above ordnance datum)

Trench 3 (2013)

Trench 3 was located to test the nature and extent of the apparent occupation deposit (context 2003) identified in the eastern part of Trench 2 in 2012. An area 6m x 6m was opened 0.30m to the west of Trench 2 with the northern side of each trench on the same line (figure 3A). The trench was de-turfed by hand prior to machine stripping of the colluvial material that was known from the previous year's work to be between 0.50m and 0.60m deep. Backfilling was carried out by machine and re-turfing by hand.

The deposit was found to continue undisturbed across the whole area of the trench and sealed the remains of a circular structure and a narrow linear slot recorded running roughly north to south across the western part of the trench between the structure and the ditch excavated in 2012. There may be a direct relationship between these two features, or indeed between all three, but this could not be conclusively demonstrated.

Building (3010, 3013, 3014, 3018, 3020, 3021, 3022, 3023, figures 9 and 10)

Amongst the earliest features apparent within the trench were those associated with a circular building (figures 9 and 10). These comprised a probable wall slot (3021) and an external drainage/drip gully (3018), both of which were cut into the natural gravels. The former had a U shaped profile and was 0.40m across and 0.17m deep

with a flat base c0.14m across. The fill (3020) was firm red and red-brown silty clay with large rounded and flat stones. Two within the length of the feature excavated were clearly packing stones suggesting that structural timbers were held in the trench. An irregular slot (3015) apparent in the top of the fill (3020) was around 8cm deep and filled with soft dark reddish-brown silty clay with charcoal flecking. This is thought to represent the location of wall timbers, perhaps constructed from wattle hurdles, but it was only visible in the top of 3020, nowhere in the length of the feature excavated did it penetrate the full depth of the fill and there were no clear post pipes, plank slots or stake holes (see section figure 10).

The external drainage gully (3018) was more V shaped in profile. It was 0.50m wide and 0.20m deep with a narrow base only some 6cm across. The fill was soft dark reddish brown silty clay with abundant charcoal flecks. It was clearly the product of gradual silting. Finds from the length excavated were some burnt bone fragments, 3 small sherds of Palaeozoic limestone-tempered ware and a number of heat cracked pebbles. The material originally excavated from this gully had been thrown inwards and formed a raised stony band between the two slots (3010). This did not however overlie the fill of 3021 and was presumably therefore piled against an already in-situ building wall.



Figure 9: The wall line and drainage gully of the circular building viewed from the east. The stony band between the two (context 3010) can be clearly seen. The stone surfacing within the interior is visible in the foreground. Scales 2.00m and 1.00m

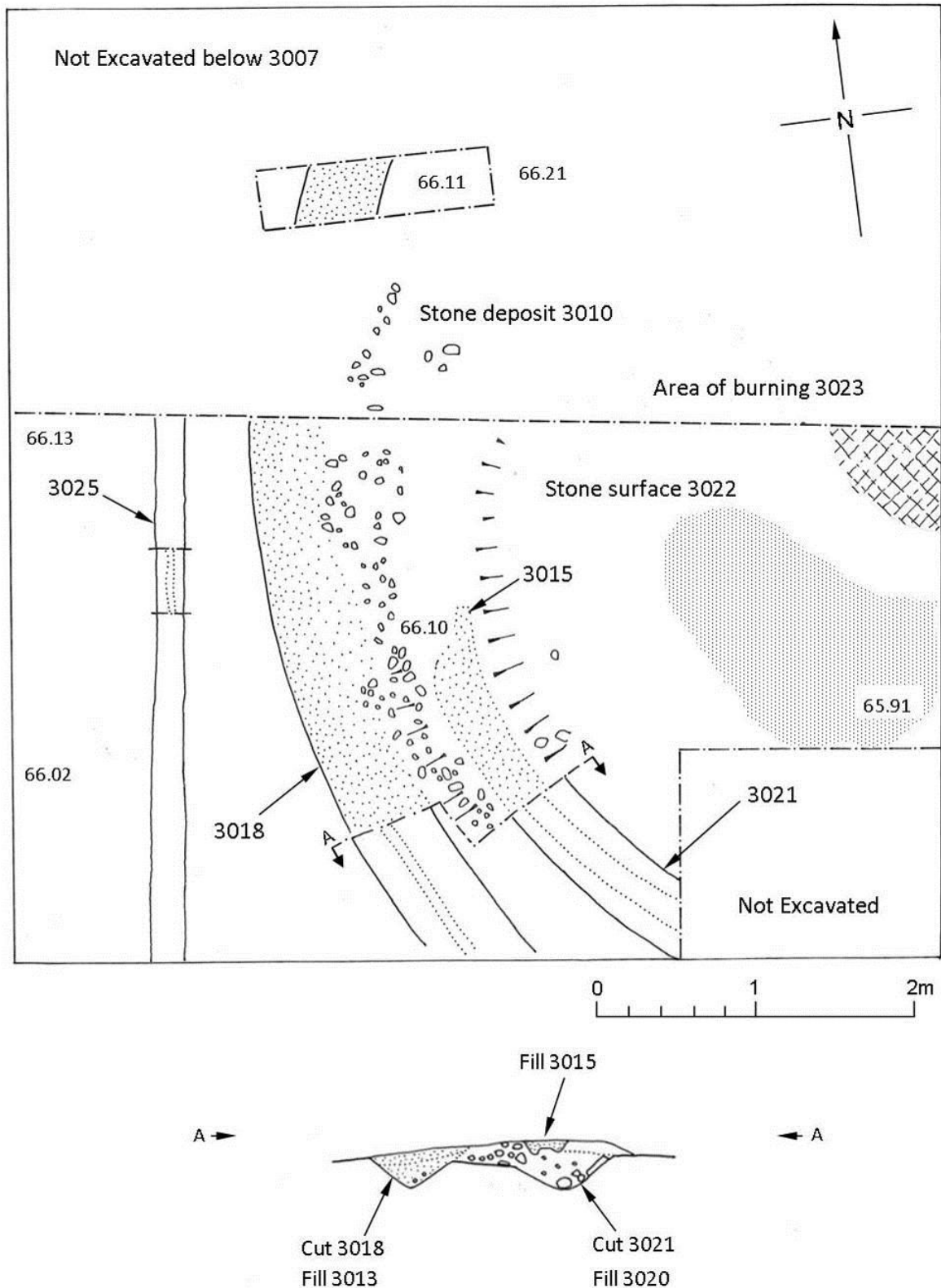


Figure 10: Final excavation plan of trench 3 and section across the building wall slot and drainage gully (heights shown are above ordnance datum)

The interior of the building sank towards the central area which was some 18-20cm below the surface of the fill of 3021. The natural subsoil in the central area had been affected by burning (3023) and this is likely to represent a hearth. Placed around this

was an area of deliberate stone surfacing (3022) comprising pebbles and cobbles between 8 and 10cm. These would have been readily obtainable from the local gravels.

The soil deposit within this depression (3014) was virtually indistinguishable from the overlying deposit/soil (3007) but because it was within the depression it was possible to isolate it as a separate context. On excavation it was found to differ in as much as it contained far larger amounts of ceramics (33 sherds, 122gms total weight from 3014 compared to 9 sherds, 22gms total weight from 3007). It also contained heat cracked stones and a number of pieces of fuel ash slag including one of a fairly substantial size (this material is discussed further below). The ceramics from the deposit included a number of stamp decorated rims typical of a middle Iron Age date.

Linear slot (3024 and 3025, figures 9 and 10)

The only other feature recorded below 3007 and cutting into the natural subsoil was a linear slot running north to south across the trench to the west of the drainage gully of the circular structure. It was 0.20m wide and the excavated section was 9cm deep with irregular sides and base which was between 4cm and 6cm across. The fill (3024) was dark red-brown silty clay. There were no finds from this feature.

Occupation deposit / buried soil (3003, 3004, 3005 and 3007, figures 9 and 10)

The "occupation deposit" recorded in the adjacent trench (Trench 2) in 2012 was found to continue and was present across the entire area of the 2013 excavation (3005 upper and 3007 lower in this area). The contexts allocated are based on depth, ie the first 10cm or so is 3005, below that is 3007. The two could not be separated definitively and are probably one deposit that darkens with depth. Both were silty clay, 3005 was recorded as dark red-brown with brown mottling and 3007 as dark brown with red-brown mottling.

Both contexts contained abundant charcoal flecks, pottery fragments and occasional small pieces of burnt bone. One feature was visible cut into the top of 3005 this was a linear slot (3004) 0.20m wide, 0.04m deep and 2.60m long within the excavated area. The fill (3003) comprised distinctive pale red-brown silty clay. The only other feature visible was a concentration of charcoal (3006) that was found to be present through both 3005 and 3007 (figure 9, centre left).

A number of tentatively identified features (3008, 3009 and 3012) turned out to be either part of 3007 or part of underlying features: that is context 3009 was part of 3010. Two large adjacent edge-set stones (3011) appeared to be contained entirely within the deposit. Finds from these contexts (detailed in the pottery report below) can therefore be allocated to context 3007.

The finds apart from fragments of burnt bone and a single piece of slag, the finds from 3007 were mostly small abraded sherds of Iron Age pottery. This was predominantly Palaeozoic limestone-tempered ware (fourteen sherds from 3007 and seven from 3005) although the upper horizon (3005) also produced single sherds of handmade Malvernian ware, sand-tempered ware and organic-tempered Severn

Valley ware. The two former are typical Iron Age fabrics but the latter is a conquest period or early Roman fabric.

The nature of this deposit appears to be a soil horizon sealing the features associated with the structure rather than an occupation deposit per se. It is possible that this is a soil that developed after activity on the site had stopped. The mixed nature of the soil and the abraded and fragmentary nature of the pottery perhaps suggest limited ploughing before it was covered and protected by the deep accumulation of colluvium (3002).

Colluvium and modern plough-soil (3001 and 3002)

The colluvium and modern plough/top-soil combined was around 0.50m deep.

Trench 4 (2013)

Trench 4 was located to investigate a large pit-like feature recorded by the magnetometry survey (feature 3 on figure 3). The objective was simply to test whether this was a modern feature (perhaps an animal burial pit) or a feature contemporary with the hillfort. A 2m x 2m trench was initially opened but this was extended from the north-west corner by a further 1m x 1m square (figures 3A and 11).

A large (apparently) circular feature (4007) was cut into the natural subsoil. From the arc present in the excavated area it is estimated to be approximately 5.00m in diameter at the surface of the subsoil. The sides of this cut were initially quite steep but then shelved to form a gently sloping outer lip to a deeper cut that would be about 3.20m in diameter. The sides of this inner cut dropped steeply and the fills were not able to be excavated. They clearly however extended to some considerable depth below the excavated level.

Three fills were identified in the area excavated (figure 11). The earliest was a red-brown silty clay re-deposited natural (4006) that sat on the natural subsoil within the outer lip. Overlying this and dropping away into the deeper area of the pit was a medium red-brown to dark yellow-brown fine clay loam (4004) containing abundant rounded stone pebbles and cobbles and at lower levels abundant angular sandstone. In the more central area of the pit the upper fill was dark red-brown silty clay with charcoal flecking (4005). The abundant large angular sandstone blocks revealed in plan are likely to be in the top of the underlying deposit, context 4004. The density of these stones precluded further useful excavation, but a number of them were steeply pitched implying the deliberate filling of a deep open feature.

Only two artefacts were recovered, both from context 4005. A small rim sherd of Palaeozoic limestone-tempered ware decorated with a double row of finger nail impressions and a fragment of bronze. A single small fragment of burnt bone was also recovered from 4005. The finds alone do not really help in the dating of the feature because both could be residual. However the form of the feature and the nature of the fills do suggest that this is a prehistoric feature although its function is not readily apparent.

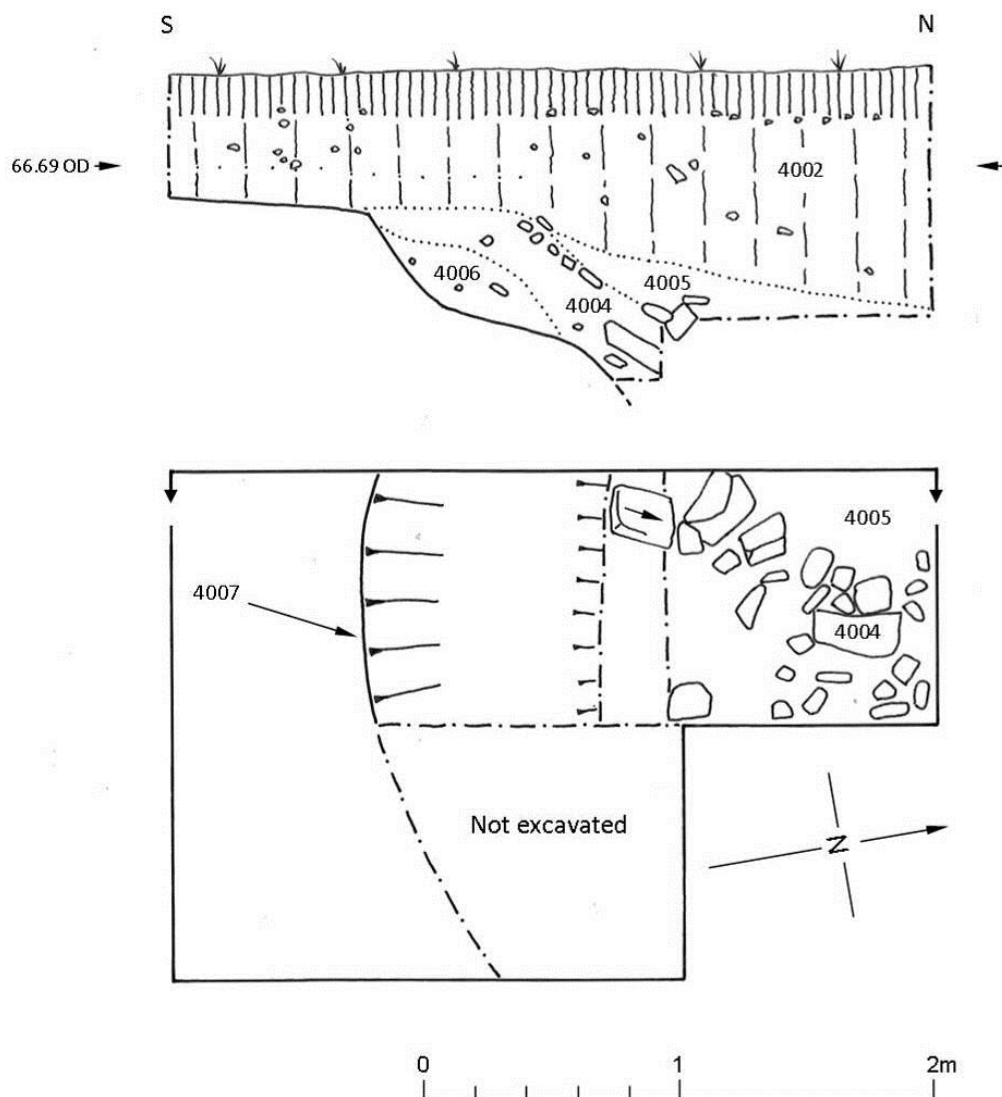


Figure 11: Trench 4 plan and section

Trench 5 (2013)

Trench 5 was located to examine a distinct mound on the very tip of the promontory. The area opened was 2.80m x 1.5m and a 1m strip was excavated through the deposits exposed (figure 3A and 12).

Removal of humic soils and root and animal disturbed material revealed the rear of a large bank. The top levels/layers of this were comprised of a series of light to mid brown and red brown silty clay deposits with signs of lamination in the top layer (5003) probably representing differential dumps of material. In the lowest layer examined (5005) was a discrete dump of burnt stone and clay with charcoal flecks.

The maximum height of bank exposed in the excavation was 0.90m although given the relative height of this trench above the archaeological deposits in trenches 2, 3

and 4 (the level at the top of the surviving bank was 2.15m above the surface of the natural subsoil in trench 3) it is likely that this is the top of a substantial rampart.

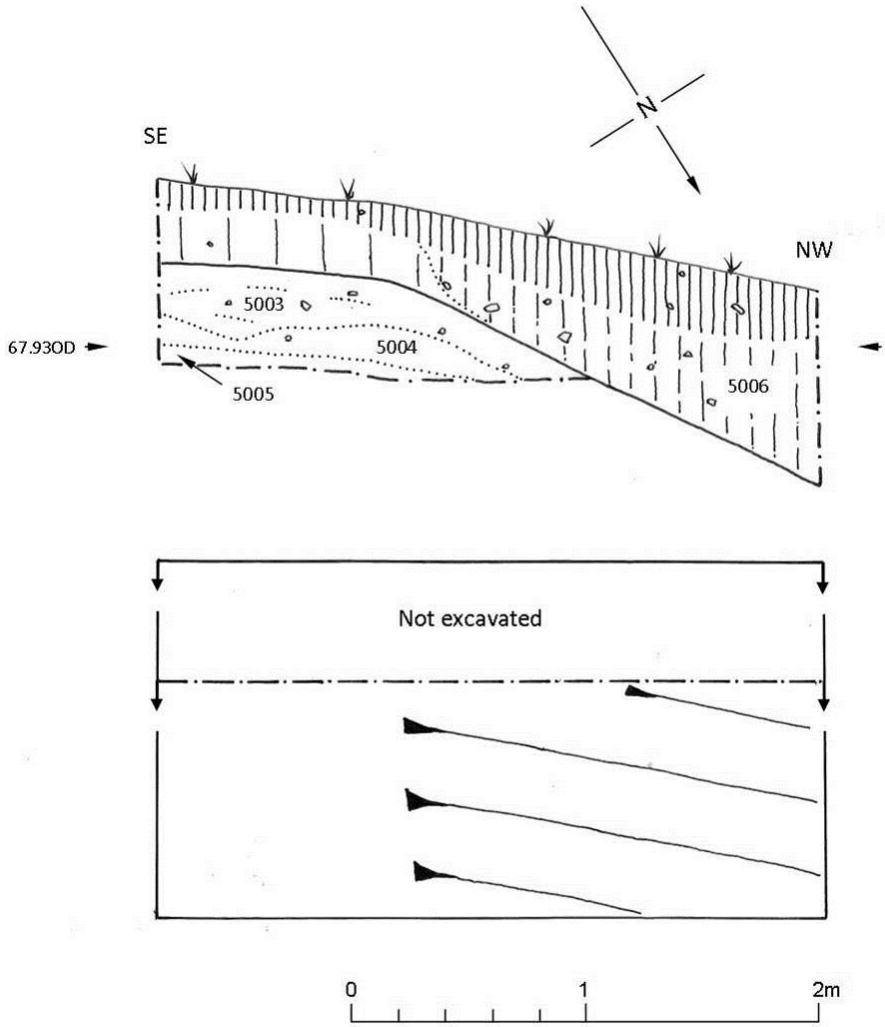


Figure 12: Trench 5 plan and section

The Finds

Small finds (figure 13)

Part of a shale object with incised line decoration and small perforations at either broken end came from Trench 1, context 1010. It measures 16mm wide by 9mm deep and is 42mm long (figure 13.1). Although other sources are known, the majority of prehistoric shale objects were produced using Kimmeridge shale from south-east Dorset.

An iron object was recovered from Trench 2, context 2004. It is square in section measuring 4mm by 3mm and 40mm long, and one end has been tapered to form a flattened point (figure 13.2). This is a small implement or tool perhaps designed for personal grooming.

A small piece of bronze came from context 4005 in trench 4 (not illustrated). It measures 17mm x 9mm. The regularity of the arc on its inner side suggests that it was part of a larger artefact.

Crucible (figure 13.3)

Two joining rim fragments from a crucible were found in the trench 2 midden deposit, fill 2004. These were in a highly fired, reduced fabric with a coarse organic temper. Two body sherds in a similar fabric (not illustrated), recovered from the associated occupation deposit (2003) are likely to be from a similar, if not the same, vessel. Visual examination provided no visible evidence for use, and it is possible that the vessel was unused or used for some other process.

Ceramics (figure 14)

The pottery assemblage is dominated by Palaeozoic limestone-tempered ware (70% by weight), followed by much smaller amounts of mudstone-tempered ware (13%), handmade Malvernian ware (8%) and angular quartz-tempered ware (7%). This dominance of limestone tempered wares is seen at other hillforts in Herefordshire and at Wellington Quarry and is perhaps to be expected given its probable source in the Woolhope Hills area.

The fabrics, forms and decoration of most of the pottery are consistent with a middle Iron Age date. The quartz tempered ware however has parallels with late Bronze Age material from Wellington Quarry (see specialist report below for detail) although recent excavations at nearby Credenhill (Dorling, 2009), and at Little Doward in the south of the county (Dorling et al, 2012) have also recorded this fabric where it seems, as at Eaton Camp, to be closely associated with typical middle Iron Age ceramics.

There is one sherd of organic-tempered Severn Valley ware which dates to the conquest or early Roman period. This came from the upper levels of the occupation/buried soil horizon in Trench 3 (3005) and may indicate some level of activity on the site at that time.

The bulk of the pottery from two years of excavation (46% (75) by count and 58% (364gms) by weight) came from the apparent midden deposit (2004) in the top of the ditch in Trench 2. The majority of the rest (20% (33) by count and 17% (122gms) by weight) came from soils within the area of the interior of the building in Trench 3.

Also of note are the sherds of Droitwich fabric briquetage salt containers and four crucible fragments. The presence of the latter, although possibly unused in this instance, suggests the likelihood of metal working activity on the site.

Burnt residues are present on some of the ceramics, and this indicates the strong possibility that these were used as cooking pots.

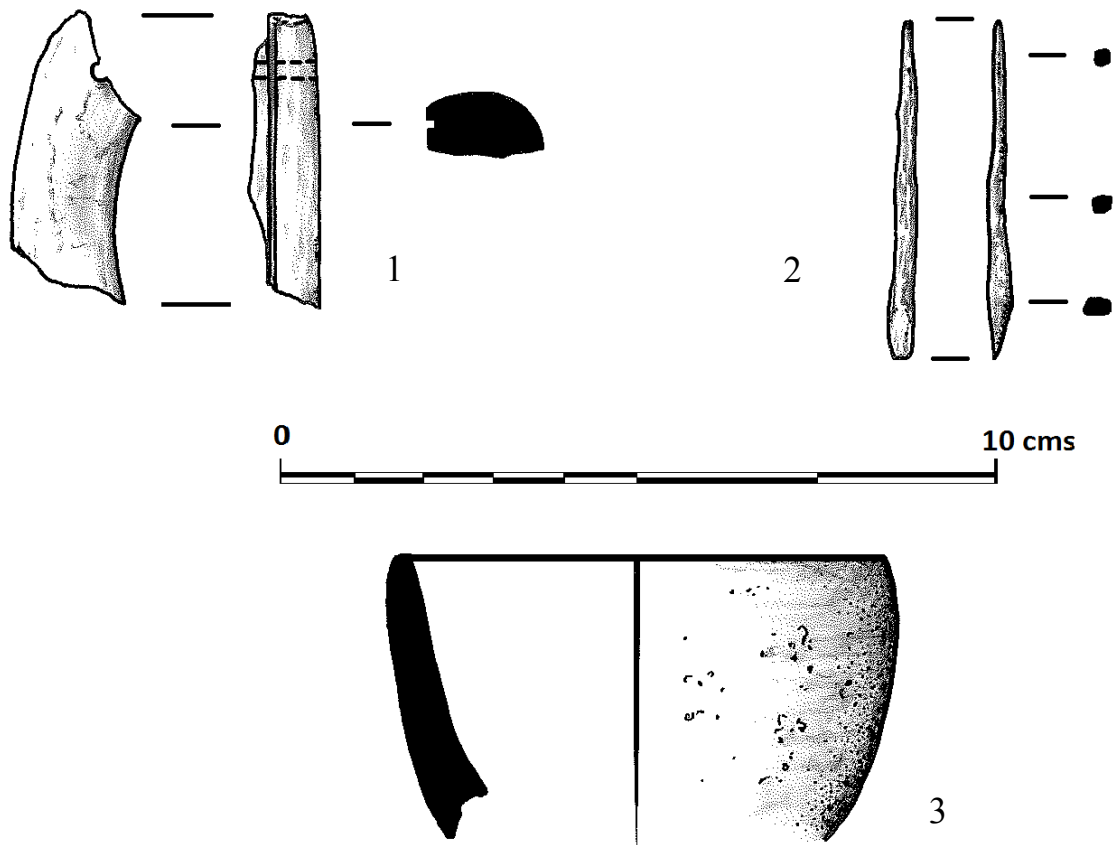


Figure 13 Small Finds from Eaton Camp (Drawings by Tim Hoverd)

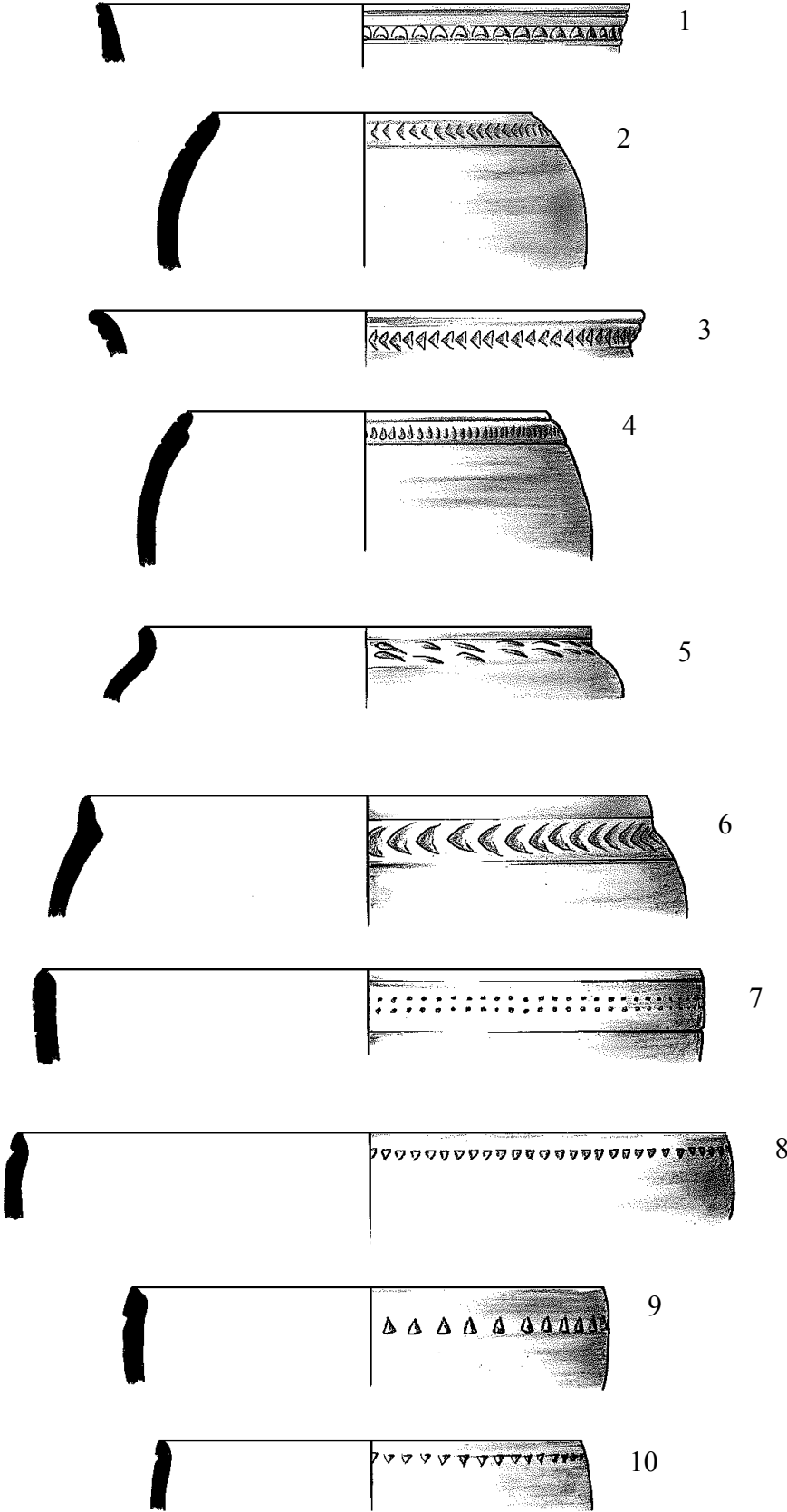


Figure 14: Decorated pottery from Eaton Camp (Drawings by Tim Hoverd)

Flint

Four flint flakes were recovered from Trench 2. Three came from context 2004 and one from 2014. None shows any signs of secondary working. Another small waste flake was recovered from the base of the colluvium (3002) in trench 3.

Animal and Human Bone

Bone does not generally survive well in the predominantly acid Herefordshire soils. There are exceptions where sites coincide with limestone (for instance at Little Doward hillfort, Dorling et al, 2012) or under specific burial conditions. No un-burnt bone has for instance survived in the occupation/buried soil horizons in Trench 3 and the assemblage must be assessed in the light of this differential preservation.

A relatively small assemblage of animal bone was recovered mainly from the ditches in Trench 1 (19 pieces) and Trench 2 (84 pieces). A few small fragments of burnt bone were recovered from Trench 3 (9) and one from Trench 4.

The small assemblage from Trench 1 was almost exclusively from cattle, mainly jaw and teeth. The exception was a dog metacarpal the size of which suggested a dog with a shoulder height of 45cm. This is in the mid-range for Iron Age dogs in Britain (see specialist report below).

Seventy-one separate pieces of bone were recorded from the main midden deposit (2004) in Trench 2. This was almost all calcined (burnt). Fifty were indeterminate mammal bones but identifiable bones included part of a pig fibula, a sheep/goat ulna and un-burnt cattle teeth. The condition of the cattle teeth suggests that un-burnt pig and sheep/goat bone would be unlikely to survive.

In contrast context 2008 contained mainly un-burnt bone but only eight pieces. These included a sub-adult cattle tibia, some cattle upper molar fragments and several pieces of one or two cattle-sized ribs. There were two fragments of calcined bone one of which bore cut marks.

Perhaps the most interesting bone finds were those from the primary fill of the ditch (2014). A few fragments of human skull were recovered and an articulated lower left cow leg. The size suggests a male animal which was at least three years old at death. The articulation implies that the joint was fleshed when deposited and with the close spatial and temporal association of the human bone this may have been a deliberately placed assemblage.

Pyrotechnological Residues

The excavation produced four fragments of pyrotechnological residue all from context 3014. The materials include a bloated and slagged stone fragment, two small fragments of fuel ash slag and a large block 150mm in diameter of similar slag.

The materials are almost certainly non-metallurgical (see specialist report below), but probably derive from slagging at the margins of a large domestic hearth (or a similar

setting). The material can be compared with non-metallurgical fuel ash slags from other sites of Iron Age date, the generation of fuel ash slag of this type appears to be linked to cultural factors – perhaps communal cooking on large permanent hearths.

Environmental evidence

The burnt plant remains from the Trench 2 midden deposit (2004) have been briefly summarized above and are discussed in detail in the specialist report below. However a few significant points from that report are worth emphasising here.

The soil sample from the deposit contained a relatively large concentration of reasonably well-preserved charred plant remains. The main component was hulled wheat chaff of emmer and spelt in a ratio of 3:1 respectively. In the south of England spelt had been replacing emmer from the late Bronze Age but evidence from various excavations suggest that emmer continued to be important in the Midlands, east Wales and northern England.

Most grain in the Iron Age would have been stored in spikelet form, prior to being de-husked and used for cooking on a day-to-day basis. The ratio of 4:8:1 grain : chaff : weed seeds supports the interpretation of de-husking waste.

Cereal processing waste was a valuable commodity that could be used as fodder, fuel, temper etc. The fact that quite a large number of cereal grains were present amongst the waste could suggest that the processing was inefficient, or more probably that the waste was mixed in nature, with domestic cooking waste containing cleaned grains also being present. Since traces of hazelnut shell, bramble seed and possible acorn cup were also recorded, the evidence for a mixed cereal processing and domestic waste deposit is strengthened.

Dating

The primary fills of both ditches excavated in 2012 provided suitable material for radiocarbon dating. Both however are affected by the Iron Age radiocarbon plateau which gives a wide calibrated date range (calendar date range) for a single radiocarbon date (see tables 1 and 2 and specialist dating report below).

The calibrated result for the primary fill of the ditch in trench 2 is therefore 702 – 396 Cal BC at 95.4% probability but within that there is a 94.6% probability that the date falls within the range of 538 – 396 Cal BC. Similarly with the date from the primary fill of trench 1 there is a 95.4% probability that the date lies somewhere between 750 – 412 Cal BC. Both sets of dates therefore span the whole of the early Iron Age. Statistically however the two dates are not comparable, that from Trench 1 is likely to be earlier.

<i>Ditch</i>	<i>context</i>	<i>context type</i>	<i>material</i>	<i>Lab no</i>	<i>Result BP</i>	δC^{13}	<i>Calibrated result (cal BC)</i>
2019	2014	primary fill	cow distal fibula unfused articulated	NZA-51905	2340±24	-22.2	700-390
1015,	1016	primary fill with charcoal	small roundwood charcoal twig <5yrs	NZA-51906	2451±18	-25.3	750-400

Table 1: Radiocarbon results from Eaton Camp

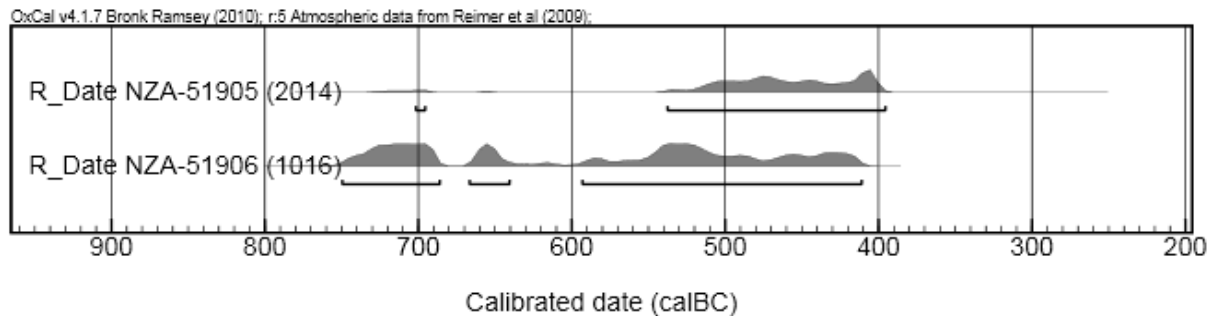


Table 2: Calibrated date range of the radiocarbon results

The ceramics provide only a very general guide in dating deposits and features (see specialist report below). More specific dating could be carried out on the burnt residues present on a few sherds but these dates would also be affected by the radiocarbon plateau and give a similar wide calibrated date range. The pottery assemblage is assigned a mainly middle Iron Age date, conventionally c400BC – 100BC. This seems to correlate with the dating of the ditch digging to the early Iron Age with the (later) midden material deposited following the almost complete silting up of the ditch (ie forming the tertiary fill) implying a reasonable duration of time between the ditch digging and the midden formation.

Discussion

The aim of the excavations was to follow up the indications from survey (especially the geophysical surveys) that there was good potential to gain positive information about the length and nature of occupation within Eaton Camp by carefully-targeted excavation. The pin-pointing strategy for selection of areas to excavate chosen first in 2012 and then followed up in 2013 has been proven to have been well-judged.

The extent of these excavations has clearly been minimal but they have none the less demonstrated the high archaeological potential of Eaton Camp. They have confirmed that there is good preservation of deposits in low lying areas of the site where colluvium has protected the archaeology from more recent ploughing. Moderately high levels of prehistoric activity have been demonstrated by the results and further potential is suggested by the results of the geophysical survey, the utility of which has been enhanced by the results of the excavation.

There has been good definition of features and deposits and some useful dating from both radiocarbon and ceramic evidence. Together with the contextual and stratigraphic data from the excavations we are able tentatively to propose a sequence of enclosure and activity within the hillfort. However the following discussion and suggestions are based on limited data and it is acknowledged that few firm conclusions can be drawn and that further work would be required to confirm these preliminary observations.

Trench 1

It would appear that, at this point at least, the ditch in Trench 1 was formed by two deeper sections joined by a shallower stretch of ditch. Why this should be the case is unclear. The fills of each section were comparable enough to suggest that this was not due to substantial re-cutting of the two deeper sections during the life time of the ditch and that the configuration as observed was therefore probably deliberate.

The deeper (southern-most) section of ditch revealed within the excavation area (cut 1018) would appear to be that showing as an apparent butt end or terminal in the magnetometry survey. Why neither the less deep continuation nor the potentially similarly profiled ditch to the north show on the geophysics is unclear.

The nature of the re-deposited natural (1014), interpreted as ditch-side slippage, suggests re-cutting or at least cleaning of the ditch. However, the original profile of the ditch was not modified at this point, suggesting that the difference in adjacent sections was an original feature and not due to later differential re-cutting or cleaning activity. One possibility, if a relatively unlikely one, is that these deeper areas are in fact pits or postholes and that the re-deposited natural is packing material around posts that were subsequently removed. This might indicate a bridged entrance at this point or that the ditch consisted of a series of deeper pits/postholes perhaps representing a palisaded enclosure. The line of the ditch, shown by the geophysics survey, is not entirely what might be expected of a conventional Iron Age enclosure ditch. In continuing to the south it runs obliquely up the side of the large natural tump in the south-western part of the interior (see figure 3) rather than continuing across the lower ground to the west.

The radiocarbon date of 750 – 400 Cal BC even with the wide date range caused by the radiocarbon plateau falls within the early Iron Age. The pottery from the ditch, although an Iron Age fabric, consisted only of body sherds so could not be more precisely dated.

Given the location and extent of the ditch and the probable early Iron Age date there is a strong argument for interpreting this as an early phase of the promontory forts defences which were subsequently replaced by the current earthwork ramparts.

Trench 2 and 3

The features within trenches 2 and 3 are discussed together as they are likely to be associated.

The lower fills of the ditch in trench 2 (2019) were apparently laid down with very little disturbance and seemingly little or no in-wash of coarse material from the ditch sides. Given the apparent time period over which these must have formed this is surprising. There was clearly standing water in the bottom of the ditch although given the location of the ditch the source of this may have been ground water rather than direct rainfall. The ditch is in what is effectively the lowest-lying area of the hillfort interior and at the base of a long slope which would have drained to this area. It was noted during the excavation that the area was still distinctly damp. One of the functions of the ditch was that it clearly drained this low lying area of the site although, given its size and form, this is unlikely to have been its primary purpose. However the deliberate collection of water may have been an important part of its purpose if not for practical purposes (there was little or no disturbance of the water lain sediments) then perhaps for symbolic reasons.

There was no evidence that a bank had accompanied the ditch on the eastern, internal, side. Given the good preservation of deposits in this area it is thought some evidence would have survived although it is possible (though perhaps unlikely) that it survives to the west of the ditch.

The ditch also clearly serves to demarcate the end of the promontory. The possibility of deliberately placed deposits – a joint of meat and some human skull – in the base of the terminal of the ditch might suggest that it defines an important or for some reason special area of the site. The apparent lack of further activity or disturbance within the ditch sediments, before that associated with the midden material in the upper ditch fills, might hint at exclusion and support this sense of specialness.

Within the area defined by the ditch are the remains of the circular building. Structurally this building appears to be a conventional roundhouse with a wall slot and an outer storm water drainage gully. It is at the lower end of the recorded size range of Iron Age roundhouses, the wall slot outer diameter is 6.20m giving a probable interior size of just under 6.00m diameter, about 30 square metres in area (figure 15). The configuration of the fill of this slot might suggest a wall constructed of wattle hurdles.

There was no evidence for any further structural elements of the building, for instance postholes representing roof supports. The entrance might be expected to be in the south-eastern quadrant which would be outside the area of the excavation. The area of light burning roughly in the middle of the building probably represents a hearth. This and the associated stone surfacing might suggest a domestic function although there is no direct evidence for this and other functions remain a possibility. It is perhaps unwise to make too many assumptions based on the minimal level of excavation. Less than one fifth (18.5%) of the circumference was recorded and only 6% of the wall slot excavated. Further excavation would be required to make any more definitive statements.

The identification of this roundhouse is especially significant in Herefordshire as it is the first positive identification of such a building within a hillfort in the county. Extensive excavation within the sites of Croft Ambrey and Midsummer Hill failed to record any circular structures and it was argued in the reports that these sites (and others) were occupied exclusively by square and rectangular buildings (Stanford, 1974 and 1981). Needless to say, many commentators considered that this was unlikely but the Eaton Camp building is the first tangible evidence in support of that view.

A circular building was recorded during the excavation of an Iron Age unenclosed settlement at Kenchester near Credenhill just across the Wye from Eaton Camp (Willmott and Rahtz, 1985). That building is reported to be 9.5m in diameter making it larger than the Eaton Camp example. Detailed comparison however is made difficult by errors in the report either in terms of the above stated dimensions or with the scale in the drawing of the building (figure 6, op cit). The Eaton Camp example at 6.00m is at the lower end of the size range in comparison to many sites in Britain. Although smaller sites have been recorded the majority are larger at around 8m diameter or above.

The linear slot (3025) running between the building and the ditch may represent a fence line separating the two. Although there is no direct stratigraphic link its location might also confirm and explain the lack of a bank in this area.

The occupation or buried soil deposit (3005 and 3007) sealed the slot and the remains of the circular building and formed one of the upper fills of the ditch (2003). It appears to have continued right across the ditch before it was cut prior to the deposition of the midden material in or after the middle Iron Age. It seems likely therefore that the ditch and the building are broadly contemporary but were abandoned prior to the deposition of the midden material. The date of 700 – 390 Cal BC (more probably 538 – 396 Cal BC) for the primary fill of the ditch places it in the early Iron Age or very early in the middle Iron Age.

The midden deposits forming the upper fills of the ditch (especially the burnt plant remains, the burnt residues on some of the pottery sherds, the burnt bone, fire cracked stones and the briquetage) might reflect normal cooking and domestic activity. However it could equally represent activity of a non-domestic nature such as feasting. This alternative interpretation may be supported by other evidence such as the large block of fuel ash slag that might have originated in a continuously burning communal hearth (see specialist report below) and the apparently placed deposits of

an articulated (fleshed) cow bone and human skull fragments in the terminal of the ditch.

It is not clear whether the midden material is in-situ or if it has been moved from elsewhere. It is noted in the pottery report that “the small sherd size supports the interpretation of the upper ditch fill being midden material, re-deposited in the ditch terminal”. However pottery from this and the occupation deposit appear to be broadly contemporary.

Either way the apparent hiatus in the use of this area of the site between the abandonment of the ditch and roundhouse and the deposition of the midden deposit is interesting. Colluvial material forms the secondary fill of the ditch suggesting agricultural activity upslope. It is tempting to link the possible remodelling of the defences to this renewed activity in the top of the ditch in the middle or later Iron Age but again further work would be necessary to propose this.

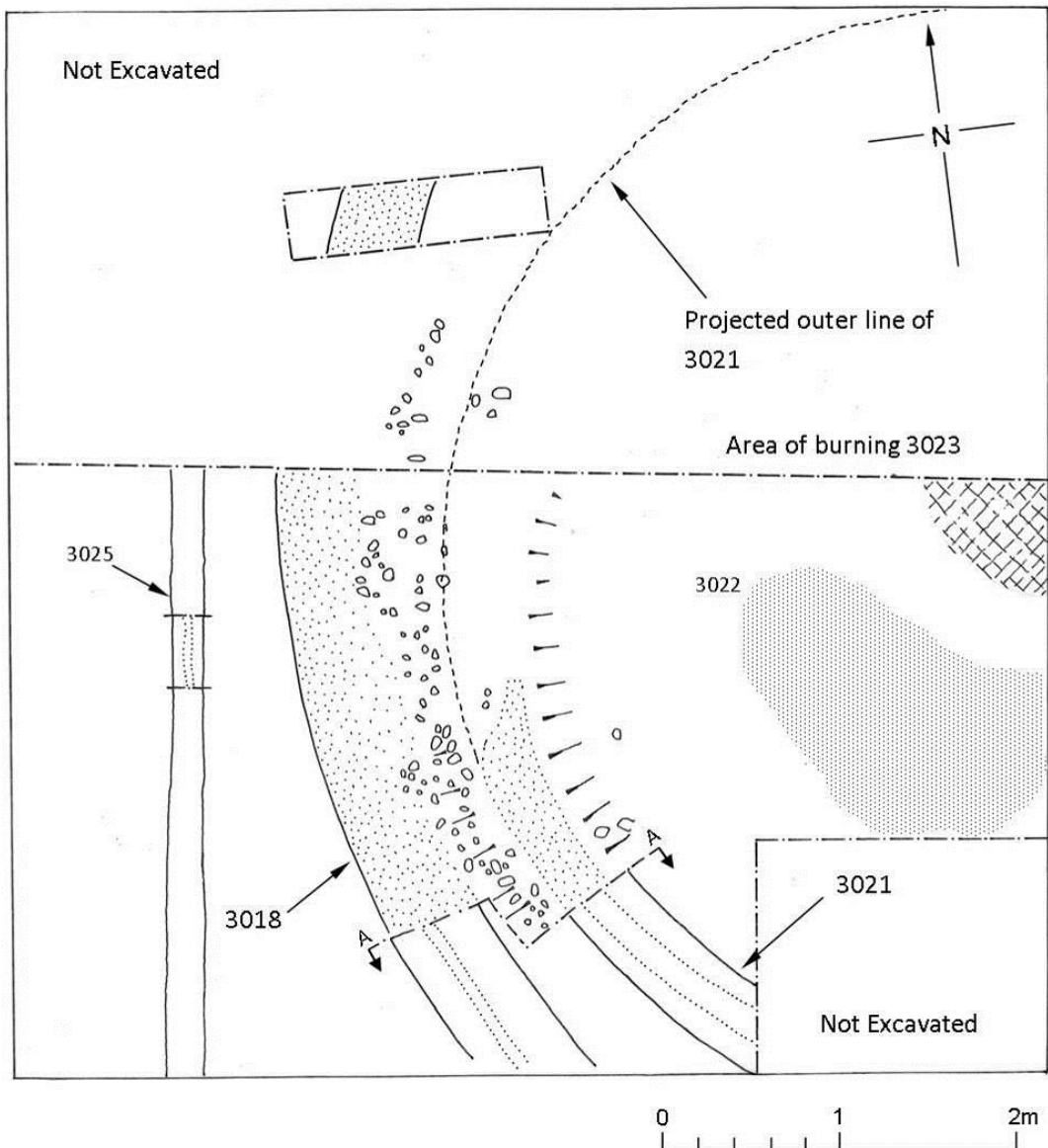


Figure 15: Projection of building wall line

Trench 4

The pit in trench 4 does appear to be a substantial prehistoric feature. In form it resembles a well head although the proximity of the river and the likely depth of the water table would seem to negate the need for a well here. An alternative though tentative suggestion is that this might be a ritual shaft or pit. These have been recorded in a number of Iron Age enclosures both in Britain and on the continent and are comparable with the feature at Eaton Camp in a number of respects, particularly the outward splaying or step at the top and the final sealing of the shaft with a stone deposit.

At Codford Circle, an Iron Age enclosure site in Wiltshire, apparent feasting deposits were deposited in a purpose dug pit 2.5m deep and oval in plan (3.6m x 2.4m). The deposit was then deliberately sealed by 1.20m of chalk rubble fill. The excavators were undecided as to whether this represented "...normal settlement practice or ... more ritualistic and ceremonial feasting events." (Allan and Gardiner, 2006)

Stuart Piggott includes a brief discussion of ritual shafts in his book "The Druids" (Piggott, 1975). The British examples noted were a 12m deep Romano-British shaft within a sub-rectangular hilltop enclosure at Bosence (St. Erth) in Cornwall; and three rectangular ditched enclosures at Fox Furlong, Long Wittenham, Berkshire (now Oxfordshire), each of which contained a ritual shaft 2m+ deep. Baulks of timber, whole trees, and animal bones and skulls were frequent deposits within such shafts.

He also noted 4 German Iron Age *Viereckschanze* (square ditched enclosure) sites that were found to contain ritual shafts. He illustrates one at a Bavarian site called Holzhausen. Here the shaft as excavated was found to be around 6m deep and 2m wide, extending to just over 3m wide as it splayed outwards towards the top. It contained a succession of fills, the uppermost of which comprised a closely-packed deposit of stones. On one side of the flanged top, at least, there was a step down. Three other shafts at sites in the Vendee, France, all had a dense packing of stones at the top, sealing the shaft, or, in the case of two Gallo-Belgic examples, more formal stone capping structures.

Trench 5

The identification of an apparently substantial rampart defining the end of the promontory was unexpected. Promontory forts generally rely on natural defensive qualities of the site with the ramparts usually just cutting off the promontory from the land beyond. Although there has clearly been substantial erosion and some quarrying and terracing along the scarp slopes on the northern and southern side of Eaton Camp this is unlikely to have removed all trace of ramparts had they encompassed the whole site and it is more likely that it was only the end of the site that was enhanced in this way. This might have been to add prominence to the site when viewed from below especially when approaching up the River Wye, but it would also add to the sense of enclosure of the area demarcated by the ditch in trench 2 and containing the building. This might reinforce the special nature of the area suggested by the possibility of placed deposits in the ditch.

Summary overview and significance

- The presence of presumed pre-Iron Age flints is indicative of earlier occupation at or near the hill. This suggests that the significance of the location pre-dates the later prehistoric enclosure and activity
- The primary function of the 'ditch' in the promontory-tip area of the site may not have been to drain the area or exclusively to define the end of the promontory. It may be associated with ritual deposition and/or feasting. It sits well with the roundhouse of small proportions; the possible evidence for a communal hearth; the stone-sealed pit or shaft and the apparently isolated stretch of rampart on the end of the promontory to suggest some kind of shrine or sanctuary location. Such functions are suggested for particular areas within other Iron Age sites such as South Cadbury, Maiden Castle and Danebury. We might expect these to be a characteristic, rather than atypical or unusual, feature of hillforts but very few such sites offer the degree of preservation and close association of features as appear to be present at Eaton Camp
- Regardless of its purpose and function the recording of the first roundhouse from a Herefordshire hillfort is of significance
- Clearly, there is scope to understand a complex series of developments here at Eaton Camp, from earlier prehistory, through early Iron Age, to Middle Iron Age, to later Iron Age (note especially the existence of an important 'ritual' deposit of rich and fine metalwork in a hooped barrel just to the east of the site below the fort). The wealth of material recovered from the promontory 'tip' area indicates both the likely special character of this area, and the potential for understanding a lot more about the history of the site
- The potential shaft is of high significance – others may be present in Herefordshire at Croft Ambrey and at Wapley hillforts, but logistically both may be difficult to investigate: Wapley for instance still contains water. Preservation may be remarkable, with potential for waterlogged objects and material
- There is good data recovery from relatively small (keyhole) excavations. The work has demonstrated the good preservation of stratified deposits containing cultural and environmental material allowing for analysis of the Iron Age environment and economy and scientific dating

Acknowledgements

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Specialist Reports

The Prehistoric and Romano-British Pottery, briquetage and fired clay

C. Jane Evans

The pottery, briquetage, crucible and fired clay considered in this report come from fieldwork undertaken as part of the Eaton Camp Conservation project, with trenches 1 and 2 being excavated during the 2012 season, and trenches 3, 4 and 5 in 2013. The majority of finds came from trench 2 (Table 1), particularly from midden deposits forming the upper fills of the ditch terminal and trench 3, mainly from a soil deposit within the building.

Trench	object type	count	weight (g)	average weight (g)
TR1	pot	9	26	3
TR2	pot	89	448.5	5
TR3	pot	65	211	3
TR4	pot	1	7	7
TR5	pot	2	7	4
<i>Total pot</i>		<i>166</i>	<i>699.5</i>	<i>4</i>
TR2	briquetage	10	284	28
TR2	crucible	5	16	3
TR2	fired clay	13	126.5	10
TR2	sintered clay	4	46	12
TR3	fired clay	4	24	6

Table 1: Summary of the ceramic finds by trench and object type

The pottery

Most of the pottery was recovered from trench 2, with 46% by count and 58% by weight from the midden deposits that formed the upper fills of the ditch terminal (Table 2). Trench 3 produced the second largest group, mainly coming from layers within the building. Only a handful of sherds were recovered from trenches 1, 4 and 5. Most of the pottery was very fragmentary and abraded, with average sherds weights between 2 and 7g, the exception being sherds from context 2008 (20g; Table 2).

trench	feature/layer	context	count	% count	wt. (g)	% wt.	average wt.
TR1	ditch 1005	1003	3	2%	6	1%	2
TR1	ditch 1005	1011	6	4%	20	3%	3
TR2	layer	2002	2	1%	4	1%	2
TR2	occupation deposit	2003	10	6%	40	6%	4
TR2	midden deposits, cut 2018	2004	75	45%	364.5	52%	5
TR2	midden deposits, cut 2018	2008	2	1%	40	6%	20
TR3	colluvium layer	3002	2	1%	3	0%	2
TR3	occupation deposit/buried soil	3005	10	6%	26	4%	3
TR3	occupation	3007	9	5%	20	3%	2

	deposit/buried soil						
TR3	Fill/area of darker soil	3008	4	2%	24	3%	6
TR3	fill of possible feature	3009	1	1%	5	1%	5
TR3	upcast from cut 3018	3010	3	2%	10	1%	3
TR3	fill of drainage gully	3013	3	2%	1	0%	0
TR3	layer within building	3014	33	20%	122	17%	4
TR4	fill, cut 4007	4005	1	1%	7	1%	7
TR5	layer of soil on bank	5006	2	1%	7	1%	4
Total pot			166		699.5		4

Table 2: Summary of pottery by trench and context

Methodology

The pottery was analysed using x10 magnification, and the fabrics were recorded using the Worcestershire (formerly the Hereford and Worcester) County type-series (Hurst and Rees 1992; www.worcestershireceramics.org) (Table 3), cross-referenced with the series for Kenchester (Tomber 1985) and *Ariconium* (Willis 2012). The assemblage was quantified by sherd count and weight. Rim diameters and percentages, for calculating rim EVEs (Estimated Vessel Equivalents), were recorded where possible. However, as the pottery was handmade and often fragmentary, this data could not be consistently recorded and is not presented here. The assemblage included a number of diagnostic rim sherds, which provided useful dating evidence. Forms and decoration were recorded with reference to the series produced for the major Iron Age assemblage from Beckford, Worcestershire (Evans *et al* in preparation). Evidence for decoration, manufacture, repair, use or re-use was recorded where evident. Most of the pottery was very fragmentary, reflected in the low average sherd weights (Tables 1, 2 and 4). The data were analysed using Microsoft Access 2002 and Microsoft Excel 2007, the pottery from the 2013 season being integrated with the 2012 data. Examples of all the decorated forms are illustrated. The pottery and briquetage from each context is quantified by fabric in Appendix 1.

Fabrics

Only six fabrics were identified (Tables 2 and 3), excluding the briquetage which is discussed separately below. The distinction between two of the fabrics, the Palaeozoic limestone-tempered ware (Worcestershire Fabric 4.1) and mudstone-tempered ware (Worcestershire Fabric 9) was not always clear. The inclusions in both are prone to 'leaching,' leaving a vesicular fabric. Where sherds had any evidence of soft reddish brown inclusions, rather than white or cream, these were classified as mudstone-tempered ware. This difficulty in clearly separating the two fabrics needs to be taken into consideration when considering the data presented below.

Most of the pottery discussed below came from trenches 2 and 3. Trench 1 produced only body sherds in mudstone-tempered ware (Worcestershire Fabric 9) and palaeozoic limestone-tempered ware (Worcestershire Fabric 4.1). Trench 4 produced one sherd, and trench 5 two sherds, all in Palaeozoic limestone tempered ware.

Fabric code	Name	Description	Kenchester code	Ariconium code
3	Malvernian group A, handmade	Peacock 1968	Malvernian Group A/ Malv HM	G11
4.1	Malvernian, group B1, handmade	Peacock 1968	Palaeozoic Group B1	C11
5.1	Sandy ware	Hurst and Rees 1992, 201	Grey ware	-
5.4	Angular quartz, fine	www.worcestershireceramics.org	-	-
9	Group D, Mudstone-tempered ware	Morris 1982 Group D; cf Moreton on Lugg MoL4	Mudstone Group D	-
12.2	Organic tempered Severn Valley ware	Organic tempered variant, oxidised with black carbonised inclusions	SVW/SVW allied	-

Table 3: List of pottery fabrics represented (excluding briquetage)

fabric code	count	% count	weight(g)	% weight	average weight
3	7	4%	58	8%	8
4.1	130	78%	492.5	70%	4
5.1	1	1%	2	0%	2
5.4	6	4%	52	7%	9
9	21	13%	91	13%	4
12.2	1	1%	4	1%	4
	166		699.5		4

Table 4: Summary of pottery by fabric (excluding briquetage)

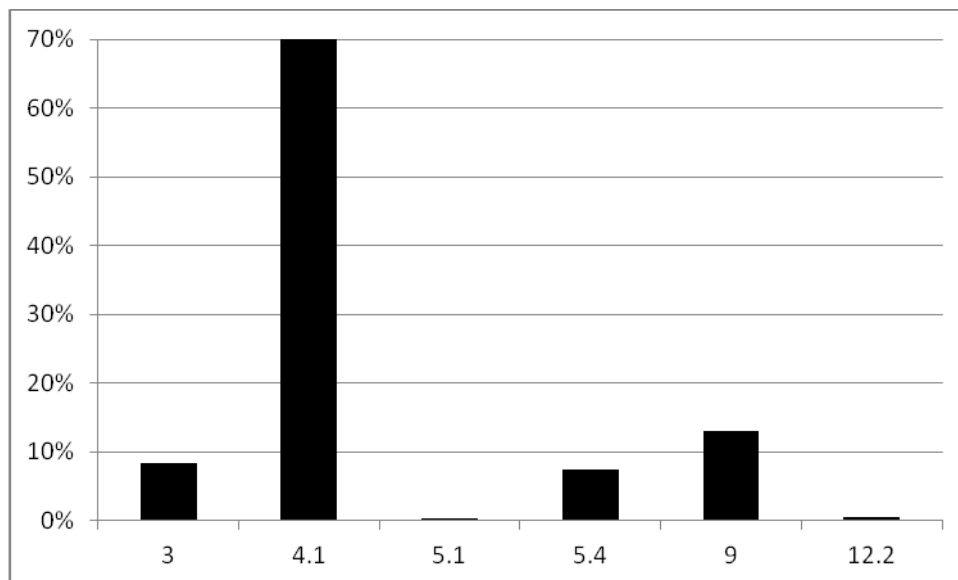


Figure 1: Prehistoric fabrics (% weight)

The assemblage was dominated by Palaeozoic limestone-tempered ware (Worcestershire Fabric 4.1; Tables 3 and 4, Fig. 1). This dominance is paralleled at other Herefordshire sites: at Sutton Walls, for example, it makes up more than 90% of the assemblage (op. cit.), at Wellington quarry, about 87% by weight (Hurst 2011, table 4.1) and at Little Doward 73% (unpublished material seen by this author). Petrological analysis of this ware and analysis of its distribution suggest a source in the Woolhope Hills area (Morris 1983, 116–22, figs 4.17–4.18). The forms represented here (Fig. 2.1–6) are all typical Middle Iron Age types, as described by Peacock (1968, 422). The jars from trench 2 all had inturned rims, two with simple rounded rims (Fig. 2.1, no 2), and two with concave internal bevels just below the rim (Fig. 2.3, 2.4). All had stamped decoration, bordered by one or two tooled horizontal lines. Trench 4 produced an upright rim, with fingernail decoration (Fig. 2.5). Fingernail decoration is less typical of Middle Iron Age vessels than the more usual stamped decoration, but is paralleled in the assemblage at Beckford. Trench 5 produced two rims; a lid-seated, stamped rim (Fig. 2.6) and a small fragment from an upright rim with grooved decoration (not illustrated).

The other fabrics were present in much smaller quantities. The second most common fabric was Group D mudstone tempered ware (Worcestershire Fabric 9), with a source proposed in the Martley area of Worcestershire (Morris 1983). The relatively low proportion of this ware is consistent with existing evidence. Though produced from the mid-5th century BC through to the latest Iron Age (Morris 1982, 1983; Tomber 1985, 113–5), this ware does not seem to have been widely distributed until later in the Iron Age (Morris 1983, 135), so is not common on Middle Iron Age sites in this area. The proportion represented here is similar to that noted at Croft Ambrey, 11%, (Tomber 1985, 120), and Little Doward, 14%, (unpublished material seen by this author), but much lower than, for example at Credenhill, 73%, and Dinedor, 40%, (Tomber 1985, 120), and The Leen, in the Arrow Valley (38%; Evans 2003). Only one rim was identified as mudstone-tempered ware, in a form, and decoration, similar to the limestone-tempered wares described above (Fig. 2.7).

Six sherds from the trench 2 midden, fill 2004, were in a fine, angular quartz tempered ware (Worcestershire Fabric 5.4). The sherds did not join but were all thin-walled and are likely to be from the same vessel. This ware is similar to fabrics noted in the, as yet, unpublished late Bronze Age assemblage from Wellington North (Wellington W1; Robin Jackson, pers. comm.) and has parallels on sites in Worcestershire (Worcestershire Fabrics 5.4 and 5.8). They could, therefore, be residual finds, contemporary with the construction of the ditch. The end date for use of this ware, however, is uncertain and could extend into the Early Iron Age. Also, Morris (1983, 112) describes an Iron Age, Malvernian Group A variant with large angular quartz grains, which could be related. This fabric clearly, therefore, requires further characterisation.

Seven sherds of handmade Malvernian ware (Group A, Worcestershire Fabric 3) were recovered, five from the trench 2 midden, fill 2004 and two from trench 3. This ware is characteristic of Iron Age assemblages in this region, though tends to be more common to the east of the Malvern hills than in Herefordshire to the west (Peacock 1968, 424). Three forms, all with inturned rims, were identified, one with a simple rounded rim, one with a flat rim, and one with a faceted rim (Fig. 2.8-10). All had a single row of stamped decoration.

Two additional fabrics were represented by single, fragmentary sherds, both from trench 3, layer 3005. One was in a sand tempered ware (Worcestershire Fabric 5.1) and one in an

organic-tempered Severn Valley ware (Worcestershire fabric 12.2). The former is an Iron Age fabric that continues up to the conquest period, while the latter is a conquest period or early Roman fabric. The latter provides the only evidence for later activity on the site.

Catalogue of illustrated forms (Fig. 2)

Group B1, Palaeozoic limestone-tempered ware (WHEAS Fabric 4.1)

1 Beckford type 2.12, barrel-shaped jar with a simple, rounded, inturned rim. With stamped and tooled decoration just below the rim (Beckford decoration code Aa15Fb). Diameter uncertain. Trench 2, midden 2018, fill 2004b. Database record 22

2 Beckford type 2.12, barrel-shaped jar with a simple, rounded, inturned rim. With stamped and tooled decoration just below the rim (Beckford decoration code Aa21Fb). Diameter 120mm (the smaller end of the size range at Beckford, 100–210mm) Trench 2, occupation deposit 2003. Database records 24 and 25

3 Beckford type 2.15 barrel-shaped jar with an inturned rim, with a concave facet at the rim. Stamped and linear-tooled decoration just below the rim (Beckford decoration code Aa21Fa). Diameter uncertain. Trench 2, midden 2018, fill 2004. Database record 26

4 Beckford type 2.15 barrel-shaped jar with an inturned rim, with a concave facet at the rim. Stamped and linear-tooled decoration just below the rim (Beckford decoration code Aa10Fb). Diameter 13cm. (the smaller end of the size range noted at Beckford, 120–300mm). Trench 2, midden 2018, fill 2004. Database record 8 and 28

5 Beckford type 2.22 globular jar with a simple upright rim. Fingernail impressed decoration below the rim (Beckford decoration code Db20). Diameter uncertain. Trench 4, fill 4005. Database record 65

6 Beckford type 3.41 barrel-shaped or globular jar with a rounded rim and two internal facets. Stamped decoration enclosed by impressed grooves below the rim (Beckford decoration code Aa17t). Diameter 20cm (diameter range at Beckford 170–330mm). Trench 3, deposit within building, layer 3014. Database record 86

Group D, Mudstone-tempered ware (WHEAS Fabric 9)

7 Beckford type 2.12, barrel-shaped jar with a simple, rounded, inturned rim. With stamped and tooled decoration just below the rim (Beckford decoration code Ab3Fb). Diameter uncertain. Trench 2, midden 2018, fill 2004. Database record 21

Group A, Malvernian ware (WHEAS Fabric 3)

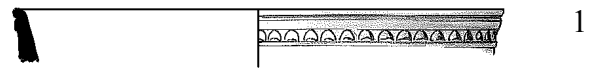
8 Beckford type 2.12, barrel-shaped jar with a simple, inturned rim with a rounded or pinched top (uncertain). With stamped decoration below the rim (Beckford decoration code Aa11). Diameter uncertain. Trench 2, midden 2018, fill 2004. Database record 19

9 Beckford type 2.13 barrel-shaped jar with a simple, inturned, flat rim. With stamped decoration below the rim (Beckford decoration code Aa11). Diameter 140mm. (within the

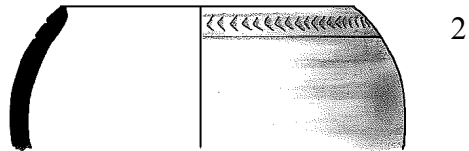
size range noted at Beckford, 70–270mm). Trench 2, midden 2018, fill 2004. Database record 20.

10 Beckford type 2.15 barrel-shaped jar, inturned rim, with an internal concave facet at the rim. With stamped decoration below the rim (Beckford decoration code Aa11). Diameter uncertain. Trench 3, deposit within building, layer 3014. Database record 87

Group B1 Palaeozoic limestone tempered ware



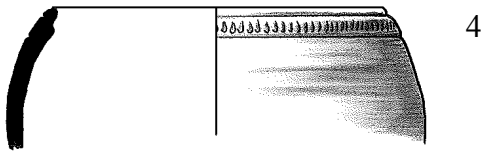
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2



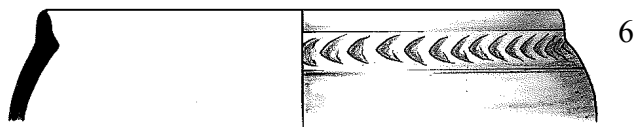
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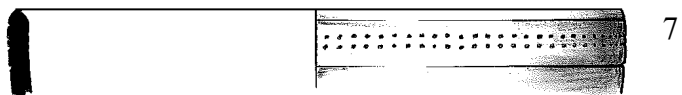


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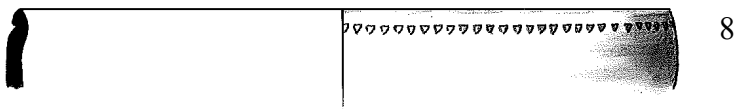
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Group D, mudstone tempered ware

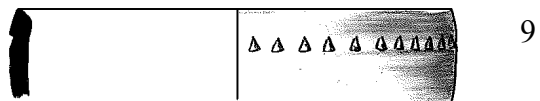


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Group A, Malvernian ware



8



9



10



Figure 2: Eaton Camp Pottery (Drawings by Tim Hoverd)

Discussion: date and function

Although a relatively small group, the pottery assemblage includes a number of diagnostic forms and decorative motifs that provide useful dating evidence; the stamp decorated vessels are characteristic Middle Iron Age types. Overall, the pottery provided little, if any, evidence for earlier or later activity on the site. The small Trench 1 assemblage comprised only body sherds, which cannot be dated with any precision.

It is likely that the pottery from the trench 2 occupation deposit (2003) and the ditch (2004) are contemporary, in which case the C14 dates will be of particular interest for dating the group more precisely. The small sherd size supports the interpretation of the upper ditch fill being midden material, re-deposited in the ditch terminal. Burnt residues were noted on the internal surfaces of four sherds, one in the limestone-tempered fabric (4.1) and three in the angular quartz-tempered fabric (5.4). These provide evidence for use as cooking vessels, and could also be used for C14 dating, if further dating was required.

The pottery from trenches 3, 4 and 5 appears to be of a similar Middle Iron Age date, with the exception of the sherd of Severn Valley ware from trench 3, layer 3005, which indicates conquest period or early Roman activity somewhere in the environs of the site.

Crucible

Two joining rim fragments from a crucible were found in the trench 2 midden deposit, fill 2004 (Fig. 3.1). These were in a highly fired, reduced fabric with a coarse organic temper. Two body sherds in a similar fabric, recovered from the associated occupation deposit (2003) are likely to be from a similar, if not the same, vessel. Visual examination provided no visible evidence for use, and it is possible that the vessel was unused or used for some other process (Bayley *et al* 2008, 13).

Another very fragmentary sherd in an organically tempered fabric was also noted from 2004. This was unlike any of the pottery fabrics, but lacked the distinctive, reduced firing of the crucible, and so identification remained uncertain.

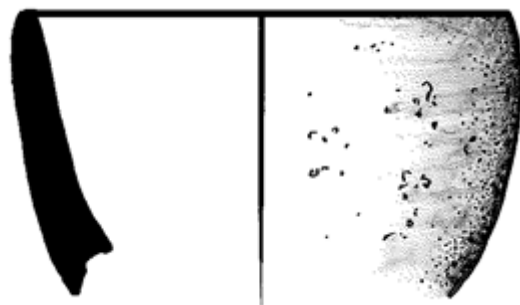


Fig 3.1 Rim from a crucible. Diameter 70mm, 11%. Trench 2, Midden 2018, fill 2004b (Drawing by Tim Hoverd)

Briquetage

Trench 2 produced a small quantity of briquetage, from the midden and an associated occupation deposit (Table 5). The fragments displayed a number of characteristic features: internal finger marks, vertical finger-wide channels on the external surface, and distinctive breaks between the collars of clay used to form the vessel. The group included one rim fragment. None of the briquetage had the bleached surfaces sometimes noted elsewhere (Morris 2007, 439-40; Morris 2010, section 4.3.3).

trench	feature/layer	context	count	% count	weight (g)	% weight	average weight (g)
TR2	occupation deposit	2003	1	10%	14	5%	14
TR2	midden deposits, cut 2018	2004	8	80%	257	90%	32
TR2	midden deposits, cut 2018	2008	1	10%	13	5%	13
Total			10	-	284	-	28

Table 5: Summary of the briquetage by trench and context

	fabric code	count	weight (g)	average weight (g)
Droitwich briquetage, sand and clay pellets	1.1	9	271	30
Droitwich briquetage, organic	2	1	13	13
Total		10	284	28

Table 6: Summary of the briquetage by fabric

Only two fabrics were represented, both from Droitwich (Table 6). Most fragments were tempered with clay pellets, along with varying quantities of sand and organic material. This is likely to be the Droitwich fabric 1 variant described by Morris (1985, 342-3, fabric 1a), and is thought to be an earlier fabric variant, based on the evidence from Beckford (Derek Hurst, pers. comm.). Most of the sherds recovered could come from a single vessel, though no joins were noted. A single fragment in the Droitwich, organic-tempered fabric was also identified (WHEAS Fabric 2).

None of the briquetage is illustrated

Miscellaneous fired clay

The trench 2 midden produced small quantities of miscellaneous fired clay, with no diagnostic features, and sintered clay. There is no evidence to suggest whether the latter was associated with a domestic hearth or industrial activity. The only other fired clay, also without diagnostic features, came from trench 3 (Table 7).

object type	trench	feature/layer	context	count	weight (g)	average weight (g)
fired clay	TR2	midden deposits, cut 2018	2004	13	126.5	10
sintered clay	TR2	midden deposits, cut 2018	2008	4	46	12
fired clay	TR3	layer	3005	3	21	7
fired clay	TR3	layer	3007	1	4	4

Table 7: Summary of the miscellaneous fired clay by trench and context

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Eaton Camp Excavation Report 2012 and 2013

Appendix 1: summary of pottery and briquetage by context and fabric

trench	context	object type	fabric code	count	Weight (g)	average weight (g)
TR1	1003	pottery	9	3	6	2
	1011	pottery	4.1	6	20	3
TR2	2002	pottery	9	2	4	2
	2003	briquetage	1.1	1	14	14
		pottery	4.1	9	32	4
			9	1	8	8
	2004	briquetage	1.1	8	257	32
		pottery	3	5	43	9
			4.1	55	240.5	4
			5.4	6	52	9
			9	9	29	3
		crucible		4/5		
	2008	briquetage	2	1	13	13
		pottery	4.1	2	40	20
TR3	3002	pottery	4.1	2	3	2
	3005	pottery	3	1	9	9
			4.1	7	11	2
			5.1	1	2	2
			12.2	1	4	4
	3007	pottery	4.1	9	20	2
	3008	pottery	4.1	4	24	6
	3009	pottery	4.1	1	5	5
	3010	pottery	4.1	3	10	3
	3013	pottery	4.1	3	1	0
	3014	pottery	3	1	6	6
			4.1	26	72	3
			9	6	44	7
TR4	4005	pottery	4.1	1	7	7
TR5	5006	pottery	4.1	2	7	4

Radiocarbon Results

Michael J Allen

Radiocarbon determinations were sought to date the digging of each of the enclosure ditches to indicate if they are later Bronze Age or Iron Age, and to determine if they are broadly contemporary. Dumps of midden of burnt waste were present high up in both ditches (contexts 1004 and 2004) could be dated via small roundwood charcoal fragments.

Events that can be dated

?✓ i) digging of ditch 1005 via twig charcoal in 1016; but the information about this charcoal and its association is weak and there is a possibility that this be residual and blown or washed in from earlier an event. There is no absolutely clear evidence that this is part of a recognisable single deposition event or activity in the ditch in context 1016.

✗ ii) Occupation deposit 1004: the bone is just tooth enamel and could be residual. The obvious charcoal is large woody fragments which could be heartwood with an age-offset of between 0 and 350 years. If identified, there may be suitable material in here, but its not obvious

✓ iii) digging ditch 2079 via one element of the articulated (and therefore not residual) cow calcanium, astragalus and distal tibia from basal primary context 2014

✓ iv) midden in ditch 2019 via unfused cow tibia with proximal end and epiphysis from context 2008

Selection of suitable material

A number of animal bones and charcoal was present in the ditch. Those selected were to date the digging of the two ditches. At the base of ditch 1015 were a selection of articulated cattle bones; calcaneum, astragalus and distal fibula. These were considered ideal being in articulated cattle lower left leg/foot elements in the primary fill. Ditch 2019 was more difficult. Although the rapidly inwashed fine-grained primary fill contained charcoal, there was no clear dump or lens. Nevertheless this was assumed to be contemporary with the construction of the ditch (Dorling pers. comm.) though no evidence or clear dumping is present. Nevertheless, five hand-picked charcoal fragments were recovered from this context of which one roundwood (<5 years) was selected for radiocarbon dating.

Radiocarbon results

The two samples were submitted for AMS radiocarbon dating and the results are given in Table 1 and are quoted in accordance with the international standard known as the Trodheim convention (Stuiver & Kra 1986). They are conventional radiocarbon ages (Stuiver & Polach 1977), and were calibrated (see below) with probability distributions shown in figure 1.

Calibration of the results has been performed using the data set published by Riemer *et al.* (2004) and performed using the programme OxCal v4.1.7 (www.flaha.ox.ac.uk/). Details of the algorithms employed by this program are available from the on-line manual or in Bronk Ramsey (1995; 1998; 2001). The calibrated date ranges cited in the text are those with 95%

confidence and have been rounded out to the nearest 10 years (Mook 1986), and all posterior density estimates are presented in italics.

<i>Ditch</i>	<i>context</i>	<i>context type</i>	<i>material</i>	<i>Lab no</i>	<i>Result BP</i>	δC^{13}	<i>Calibrated result (cal BC)</i>
2019	2014	primary fill	cow distal fibula unfused articulated	NZA-51905	2340±24	-22.2	700-390
1015,	1016	primary fill with charcoal	small roundwood charcoal twig <5yrs	NZA-51906	2451±18	-25.3	750-400

Table 1. Radiocarbon results and calibrated dates

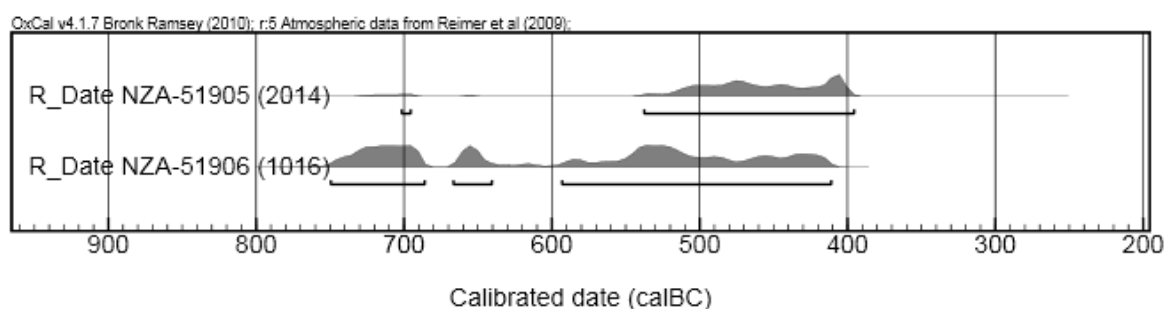


Figure 1. Radiocarbon probability distributions

Implications

The results indicate the digging of ditch 1015 (primary fill, context 1016), soon after 750-400 cal BC (Table 1), assuming that the charcoal is not residual. This result clearly falls on the early first millennium BC radiocarbon plateau. Ditch 2019 (primary fill, context 2014) has a narrower and slightly later distribution (700-390 cal BC), and the probability distribution at 68% confidence is 510-400 cal BC (Fig. 1). This was from the articulated lower cattle limb as we assume was not curated and formed part of the normal discarded domestic debris. When the dated elements are combined they fail the χ^2 test: (5% - X^2 ; df=1, T=4.126(%53.8; Ward & Wilson 1978), indicating the two dated events are not statistically indistinguishable and are of differing ages. From this we can conclude that the material dated in ditch 1016 is likely to be earlier than that in 2019, however, the isolated charcoal may be residual from events not connected with the digging of the ditch. Nevertheless, the results suggest that the later part of the bipartite distribution for NZA-51906 (ditch 1015; Fig. 1) is more likely.

The enclosures relate to mid Iron Age activity and are broadly contemporaneous, though 1015 seems to be the earlier enclosure.

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Appendix

OxCal v4.1.7 Bronk Ramsey (2010); r:5
Atmospheric data from Reimer et al (2009);

NZA-51905 (2014) R_Date(2390,24)

68.2% probability
508BC (49.5%) 439BC
420BC (18.7%) 401BC

95.4% probability
702BC (0.8%) 696BC
538BC (94.6%) **396BC**

NZA-51906 (1016) R_Date(2451,18)

68.2% probability
741BC (27.5%) 689BC
664BC (7.6%) 648BC
549BC (22.0%) 506BC
461BC (3.3%) 451BC
440BC (7.7%) 418BC

95.4% probability
750BC (30.1%) 687BC
667BC (9.4%) 641BC
594BC (55.9%) **412BC**

Animal bone and Charred Plants

*Michael J. Allen
S. Hamilton-Dyer
Wendy J. Carruthers*

Environment Evidence; Environment and Economy

Michael J. Allen

Two bulk samples taken by the excavators from each of the ditch sections in 2012 (ditch 1005 and 2019) were processed and assessed for charred plant and charcoal remains along with a number of hand-picked charcoal pieces (Table 1). In addition the small animal bone assemblage was rapidly assessed and suitable bones selected for radiocarbon dating (Allen 2012a). Subsequently the assemblage was re-examined as a single Iron Age assemblage and its palaeo-environmental potential and significance assessed.

Animal Bones

S. Hamilton-Dyer

A small assemblage of animal bones was recovered from the two ditches. Taxonomic identifications were made using the author's modern comparative collections. Recently broken fragments were joined where possible and have been counted as single bones.

Results

A total of 103 bone specimens was recorded; 19 from ditch 1005 (Trench 1) and 84 from ditch 2019 (Trench 2). The actual number of individual bones is probably much lower as several specimens were recovered in pieces and some fragments with damaged edges could not be joined. Four animal taxa and part of a human cranium were identified; the summary counts are given in table 2 and full details in archive (data table A1).

Ditch 1005 (trench 1)

Primary fill 1012 contained five tooth fragments and a small piece of maxilla, all assumed to be from a single cattle maxilla. A poorly preserved cattle mandible was recovered from secondary fill 1009/11, together with several indeterminate fragments that are probably also from this bone. Tertiary fill 1004 contained a fragment of cattle tooth in poor condition.

The remaining bone specimen came from primary fill 1015. Unlike the other remains this is from dog, a slightly damaged 2nd metacarpal. The bone is relatively small and slim but falls into the dog proportions rather than fox (Ratjen & Heinrich 1978). Although damaged the bone offers an estimated shoulder height of about 45 cm (Clark 1995), near the middle of the range reported for Iron Age dogs in Britain (Harcourt 1974: Clark 1995).

Ditch 2019 (trench 2)

The primary fill 2014 contained four articulating bones of a cattle left lower leg/ankle. These elements are a tibia missing the proximal third and the complete calcaneum, astragalus and fibula. This last was selected for C14 dating. The distal tibia and proximal calcaneum epiphyses were both fused and this animal would have been at least three years at death. A withers height cannot be calculated from the tibia but the size of the astragalus at 61.3 GL is quite large for the Iron Age (Maltby 1981), perhaps indicating a male. Several fragments of human cranial vault were also recovered from this fill.

The two midden deposits in the ditch, 2004 and 2008, have a different character to each other. Fill 2008 contained the proximal portion and unfused epiphysis of a subadult cattle tibia, some cattle upper molar fragments and several pieces of one or two cattle-sized ribs. All of these are in quite good but fragile condition. In addition there are two small calcined (burnt at high temperature) fragments, one with cut marks. Almost all of the material from 2004 is calcined and most specimens are very small and indeterminate. Some fragments could be identified and include the distal end of a pig fibula and a small fragment of sheep/goat ulna. There are also fragments of unburnt but poorly preserved cattle molar(s). The condition of the tooth fragments suggests that the pig and sheep/goat bones would not have survived had they not been burnt.

Comments

As at other hillfort sites in the Hereford area the faunal assemblage is small and variable in condition. The resistant teeth are often over represented but the ditches at this site include several fills where bone survival is relatively good. Cattle bones and teeth predominate as expected but there are also a few elements of pig, sheep/goat and dog. The finding of an articulated cattle ankle near to part of a human cranium at the base of the ditch in trench 2 could indicate a deliberate, ritual, deposition. The survival of bone in the deeper fills is important; these specimens are unlikely to be of recent origin and there is less taphonomic bias than where survival is restricted to a few teeth and fragments. The assemblage, though small, thus adds valuable data to the growing dataset available for the Hereford area.

Analysis of charred plant remains from context 2004

Wendy J. Carruthers

Two soil samples were taken from the enclosure ditches for the recovery of environmental information. The environmental program was overseen by Mike Allen (Allen Environmental Archaeology).

Methods

Two bulk samples were taken by the excavators, one from each ditch section in trenches 1 and 2. The samples were processed using standard methods of bucket floatation by Allen Environmental Archaeology using a minimum mesh of 500µm to recover the flots and 1mm mesh (minimum) to retain the residues. After assessment (Allen 2012a), both unsorted flots and charred items recovered from the residues were sent to the author for scanning and analysis where required.

The flot (ditch 2019 context 2004) was fully sorted using an Olympus SZX7 stereoscopic microscope and plant macrofossils were placed in a labelled glass tube. Identifications were made with reference to the author's own extensive reference collection as well as with reference to relevant archaeobotanical literature.

Samples

The first deposit sampled (17.5 litres soil) from fill ditch 1005, context 1009 (trench 1), consisted of a charcoal-rich colluvial secondary fill only charcoal (Allen 2012b). The very small flot (2.5ml) from this sample was checked by the author, but no charred plant remains were present, and it is not discussed further in this report.

The second sample (15 litres volume) came from the midden fill (context 2004) of a ditch 2019 (trench 2), from high up the infill sequence. The 300ml flot contained frequent large charcoal (c.125ml >3mm), occasional modern rootlets, occasional modern seeds and occasional small bone fragments, in addition to a reasonable quantity of charred plant remains, described below. A quick assessment of the charcoal by the author indicated that a range of species were present, including oak (*Quercus* sp.), hazel/alder type (*Corylus avellana/ Alnus* sp.) and probable Pomoideae (includes hawthorn). All groups are common in the area and useful as fuel wood. The charcoal was not analysed.

Plant macrofossil results

The results of the analysis of sample 1 are presented in table 3. Nomenclature follows Stace (2010) for wild/weed taxa and Zohary and Hopf (2004) for cereals.

Notes on identification

Differentiation between the hulled wheats emmer (*Triticum dicoccum*) and spelt (*T. spelta*) using grain morphology is insecure (Jacomet 2006), but because glume bases and spikelet forks in sample 1 confirmed that both species were present, tentative identifications were given for the best-preserved grains (see Table 3). No free-threshing wheat was present. A fragment of the 'sucker-mouth' scar from a wild oat floret confirmed the presence of weedy oats (*Avena fatua*). The barley grain (*Hordeum* sp.) was not in a good enough condition to confirm that it was hulled barley, but naked barley is rare in the Iron Age.

Discussion and comparisons with other hillforts

A relatively large concentration (18.7 items per litre) of reasonably well-preserved charred plant remains were recovered from the flot, considering that ditch fills are often devoid of burnt waste. The main component of the assemblage was hulled wheat chaff, with several cereal grains and only occasional weed seeds. Both emmer (*Triticum dicoccum*) and spelt wheat (*T. spelta*) were represented amongst the chaff fragments and grain (tentative identifications), with a ratio of 3:1 emmer chaff to spelt chaff. This is a significant observation, since spelt was replacing emmer as the principal cereal grown during the Late Bronze Age and Iron Age, and in some parts of the country emmer is fairly scarce by the Iron Age.

Only a trace of barley (*Hordeum* sp.; a grain and chaff fragment) and oat (*Avena* sp.; a grain and chaff fragments) were present, and the presence of a wild oat floret base (*A. fatua*) suggested that oat was a weed contaminant rather than a crop. Barley may have been a minor crop or relict from a previous crop. Weed seeds were sparse and un-specific in their habitat preferences, being general weeds of cultivated and disturbed land such as dock (*Rumex* sp.), persicaria (*Persicaria maculosa/lapathifolium*) and vetch/tare (*Vicia/Lathyrus* sp.). Brome grass (*Bromus* sect. *Bromus*) was the main contaminant, probably because the assemblage derived from the de-husking of cleaned spikelets. Large-seeded weeds such as brome are not easily separated from spikelets by sieving. At this time most grain would have been stored in spikelet form, prior to being de-husked and used for cooking on a day-to-day basis (Hillman 1981). The ratio of 4:8:1 grain : chaff : weed seeds supports the interpretation of de-husking waste. This material may have been used as tinder to light a domestic hearth, or as fuel for some sort of craft activity. Cereal processing waste was a valuable commodity that could be used as fodder, fuel, temper etc. The fact that quite a large number of cereal grains was present amongst the waste could suggest that the processing was inefficient, or

more probably that the waste was mixed in nature, with domestic cooking waste containing cleaned grains also being present. Since traces of hazelnut shell (*Corylus avellana*), bramble seed (*Rubus* sp.) and possible acorn cup (cf. *Quercus* sp.) were also recorded, the evidence for a mixed cereal processing and domestic waste deposit is strengthened.

These remains reflect the 'midden' type nature of deposit 2004, indicating that mixed burnt domestic waste had been deposited in the top of the ditch. Since a radiocarbon date of 700-390 cal BC (2340±24BP; NZA-51905) was recovered from a cow distal fibula in the primary fill of the ditch (context 2014; Allen 2012a), it is important to establish whether the cereal assemblage fits in with a Middle Iron Age date, or whether the midden material was added at a later date. As noted above, the dominance of emmer in this sample rather than spelt fits in better with a Middle Iron Age rather than later date, although relying on the evidence from a single sample is not advisable. With charred plant evidence, chance burning events can skew results so that they are not representative of the whole economy, so detailed investigations into site economy are only secure when large scale sampling can be undertaken. However, evidence from other sites in the area, in particular hillforts and ringforts, does indicate that emmer continued to be important in areas with well-drained, sandy soils across the Midlands, from Wandlebury Ringfort in Cambridgeshire (Cyganowski 2004; Ballantyne 2004) to Conderton hillfort in Worcestershire (Monckton 2005). Emmer was also more frequent in Kent and northern Britain in the Iron Age than in southern England, where spelt was usually the main crop species from early in the Iron Age.

Geographically the closest sites at The Wrekin, Shropshire and Croft Ambrey, and Midsummer Hill in Herefordshire were excavated in a period when detailed environmental sampling was seldom undertaken. However, the limited information recovered suggests that remarkably similar assemblages were present at these sites, though poor conditions of preservation limited the identification of hulled wheats at all three sites to emmer/spelt. At all sites hulled wheats were dominant. Traces of barley and wild oat (*Avena fatua* confirmed) were present at The Wrekin and the weed taxa were very similar to Eaton Camp (Colledge 1984). At Midsummer Hill barley was a little more frequent but otherwise similar results were obtained (Colledge 1981). Small amounts of hazelnut shell were present at all sites. In the Wrekin report Colledge notes that Hillman (unpublished) found that emmer dominated at the hillforts of The Breiddin, Powys and Dinorben, Clwyd. It is hoped that future excavations in the area of some of the numerous hillforts in the West Midlands and Welsh border country might add to the interesting picture that is building up. By comparison, at Danebury hillfort, Hampshire, in southern England (Campbell 2000, 46) emmer was thought to have no longer been cultivated as a crop even from the early phase of occupation in the 6th century BC. The chalk and clay soils in this area were probably better suited to the cultivation of spelt wheat.

Little information about soils cultivated or crop husbandry can be recovered from the weed taxa in the Eaton Camp sample, as the few weeds present are general weeds of cultivated land and disturbed soils, but it is interesting to note how similar the range of weeds was to other sites. This may partly be the result of crop processing activities reducing the range of weeds to larger, heavier seeds by the time cleaned spikelets are prepared for storage. The presence of wild foods remains in the midden deposit such as hazelnut shell, bramble and an acorn cup may represent gathered wild foods, since even acorns can be consumed if first roasted or soaked (Schneider 1990).

Conclusions

Although recovered from only a single sample, these charred plant remains have provided useful information about the economy of the site and cereal processing activities. It also provided an indication (albeit tentative) that the midden material was probably deposited not very much later than the radiocarbon dated cow fibula. Other possibilities are that the emmer-rich deposit was atypical of the site, or that the site continued to lag behind changes to growing predominantly spelt towards the Late Iron Age. However, comparisons to other sites in the region suggest that a very similar pattern can be found in hillforts of the West Midlands, with emmer continuing to be considered to be a valuable crop on the lighter, sandy soils.

Summary: Environment and Economy

Michael J. Allen

The environmental evidence is relatively scant; apart from the charcoal which was relatively abundant (Allen 2012b), the charred plant remains were non-existent in the sample from the upper enclosure ditch (ditch 1005). Animal remains were differentially preserved; the upper more acidic soils of the enclosure ditch resulting in less bone survival than the sandier soils of the lower enclosure ditch (2019, see table 3). The survival of the larger more robust fauna remains, may in part, reflect this poor survival.

Nevertheless, cattle seem the predominant, with sheep/goats, in what seems to be a largely pasture landscape, but the presence of pig might suggest some woodland, as today. Certainly we can suggest that the steeper slopes probably remained wooded. Much of the faunal remains seem to represent basic waste (skull and extremities) with little evidence of butchery and we can suggest that these have not been brought to site as meat elements but were grazed on the hilltop with the cattle being taken down to water daily. The plant remains, predominant emmer and spelt wheat, contained too few remains to determine the soils cultivated, and have certainly been processed in preparation for use. The interpretation in the field of deposit in the lower enclosure ditch (2019) as midden (context 2004) is borne out by the charred plant remains assemblage - indicating the deposition and discard of typical domestic waste. Clear evidence of deliberate, if not placed, deposition in the ditches occurs with both an articulated cattle ankle and human skull fragments in the lower enclosure ditch (2019), and the deposition of human remains in domestic contexts is common throughout the Iron Age.

Although limited assemblages, this makes an important contribution to the generally impoverished environmental data from hillforts in Herefordshire. Certainly the evidence is in keeping with that from other hillforts and sites in the West Midlands.

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TABLES

Context	Fill	Sample vol (L)	Flot vol (ml)	Grain	Weed seeds/ chaff	Flot /Hand-picked charcoal > 4mm	Notes
Tr 1 Upper Enclosure Ditch 1005							
1009	secondary	17.5	2.5	-	- / -	-	fine comminuted charcoal >2mm only
<i>Hand-picked</i>							
1004	tertiary	-	-	-	-	c. 20	Large woody frags with burnt soil frags
1004	tertiary	-	-	-	-	c. 50	Large wood frags
1009	secondary	-	-	-	-	5	Large chunks ?heartwood
1011	secondary	-	-	-	-	c. 40	Large woody frags, moist, with burnt soil
1012	primary	-	-	-	-	c. 5	Large woody frags Few >4mm
1014	primary	-	-	-	-	c. 8	Large woody frags Few >4mm
1016	primary	-	-	-	-	5	Base of ditch, inc 1 or 2 roundwood
Tr 2 Lower Enclosure Ditch 2019							
2004	midden	15	300	B	C / ?C	c. 125	many fine comminuted charcoal >2mm
<i>Hand-picked</i>							
2004	midden	-	-	-	-	5	Large woody frags

key: A = >10, 5 = 5-9; C =<5; + = present. Analysis: P = charred plant remains; C = charcoal

Table 1. Assessment of the charred plant and charcoal remains

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Context	human	cattle	sheep/ goat	pig	cattle- size	s/g/pig- size	indet. mammal	dog	Total
<i>Upper Enclosure Ditch</i>									
1004 tertiary	-	1	-	-	-	-	-	-	1
1009/11 secondary	-	1	-	-	10	-	-	-	11
1012 primary	-	6	-	-	-	-	-	-	6
1015 primary	-	-	-	-	-	-	-	1	1
Total	0	8	0	0	10	0	0	1	19
percent	0	42.1	0	0	52.6	0	0	5.3	
% cattle, sheep, pig		100.0	0	0					8
Context	human	cattle	sheep/ goat	pig	cattle- size	s/g/pig- size	indet. mammal	dog	Total
<i>Lower Enclosure Ditch</i>									
2004 midden	-	5	2	1	4	9	50	-	71
2008 midden	-	4	-	-	4	-	-	-	8
2014 primary	1	4	-	-	-	-	-	-	5
Total	1	13	2	1	8	9	50	0	84
percent	1.2	15.5	2.4	1.2	9.5	10.7	59.5	0	
% cattle, sheep, pig		81.3	12.5	6.3					16
Grand Total	1	21	2	1	18	9	50	1	103
percent	1.0	20.4	1.9	1.0	17.5	8.7	48.5	1.0	
% cattle, sheep, pig		87.5	8.3	4.2					24

Table 2. Animal bones; species presence

Eaton Camp Excavation Report 2012 and 2013

Feature	Ditch 2019
Context	2004
Volume (litres)	15
Grain	
<i>Triticum</i> cf. <i>dicoccum</i> Schübl. (emmer-type grain)	5
<i>T.</i> cf. <i>spelta</i> L. (spelt-type grain)	1
<i>Triticum dicoccum/spelta</i> (emmer/spelt grain)	19
<i>Hordeum</i> sp. (indeterminate barley grain)	1
<i>Avena</i> sp. (wild/cultivated oat grain)	1
Indeterminate cereal or large grass caryopsis	52
Total grain	79
Chaff	
<i>Triticum dicoccum</i> Schübl. (emmer glume base)	49
<i>Triticum dicoccum</i> Schübl. (emmer spikelet fork)	10
<i>T. spelta</i> L. (spelt glume base)	24
<i>T. spelta</i> L. (spelt rachis fragment)	3
<i>T. dicoccum/spelta</i> (emmer/spelt glume base)	54
<i>T. dicoccum/spelta</i> (emmer/spelt spikelet fork)	20
<i>T. dicoccum/spelta</i> (emmer/spelt rachis frag.)	1
<i>Hordeum</i> sp. (barley rachis fragment)	3
<i>Avena fatua</i> L. (wild oat floret base)	1
<i>Avena</i> sp. awn fragment	++
cereal-sized culm node	2
Total chaff	167
Weeds and Wild Plants	
<i>Vicia/Lathyrus</i> sp. (vetch/tare seed <2mm diameter) CGD	1
<i>Rubus</i> sp. (bramble-type seed fragment) HSW	1
cf. <i>Quercus</i> sp. (cf. acorn cupule fragment) HSW	1
<i>Corylus avellana</i> L. (hazelnut shell fragments) HSW	2
<i>Persicaria maculosa/lapathifolia</i> (redshank/pale persicaria achene) Co	2
<i>Rumex</i> sp. (dock achene) CDG	1
<i>Bromus</i> sect. <i>Bromus</i> (brome grass caryopsis) CD	5 + 23 frags (≅15 whole in total)
Poaceae (small-seeded grass caryopsis) CDG	1
Total Weeds/Wild Plants	37
TOTAL REMAINS	283
SAMPLE VOLUME (LITRES)	15
CHARRED ITEMS PER LITRE OF SOIL PROCESSED	18.7
EMMER TO SPELT RATIO (using glume base numbers)	3 : 1
GRAIN : CHAFF : WEED SEED RATIO	4 : 8 : 1

KEY: C=cultivated land; D=disturbed; G=grassland; H=hedgerows; S=scrub; W=woodland;
o=open soils

Table 3. Charred plant remains from ditch 2019

Assessment of pyrotechnological residues from Eaton Camp, Herefordshire

Dr T.P. Young

Abstract

The excavation at Eaton Camp produced four fragments of pyrotechnological residue. The materials include a bloated and slagged stone fragment, two small fragments of fuel ash slag and a large block 150mm in diameter of similar slag. The materials are almost certainly non-metallurgical, but derive instead from slagging at the margins of large domestic hearths (or a similar setting). The material can be compared with non-metallurgical fuel ash slags from other sites of Iron Age date, which generation of such slag appears linked to cultural factors – perhaps communal cooking on large permanent hearths.

Methods

All materials were examined visually with a low powered binocular microscope where required. As an evaluation, the materials were not subjected to any high-magnification optical inspection, not to any form of instrumental analysis. The identifications of materials in this report are therefore necessarily limited and must be regarded as provisional.

Description of materials

The materials comprise three small pieces (two of friable fuel ash slag and one of a slagged and bloated rock fragment) from (3014), together with a larger block, approximately 150mm across. The supplied materials are broadly similar in texture and composition and they may be classified as fuel ash slags (FAS). They show fragments of heat-altered stone, and probably clay, coated and bound by a dark slag, often with a somewhat maroon or violet surface colour. The slag-rich parts of the specimens show a superficial resemblance to clinker (the partially-fused residue from the burning of impure coal), but the clasts are of fine sandstone, rather than shale. The material shows characteristics of slight flow under very viscous conditions. The slag phase is highly vesicular, with the voids often elongate, possibly partly formed from the rising of the gas bubbles, but more likely as a result of their deformation during this very viscous flow. Many of the rock clasts too are moderately vesicular (bloated). On the surface cut through the largest specimen (Figure 1), the partially-melted and bloated clasts are clearly visible. The clasts show variable oxidation (from a brownish oxidised state to a slate grey reduced state), as also shown within the isolated individual slagged rock specimen.

Interpretation

Fuel ash slags are formed by the fluxing action (i.e. the lowering of the temperature at which a part of the material will melt) of the ash of the fuel (typically rich in calcium and potassium) on silicate and other materials derived from the walls of a hearth. The flux promotes the melting of the more clay-rich and calcareous materials, with much of the quartz left un-melted.

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In archaeological contexts, FAS may have been formed during metallurgical processes, but is usually only significant where no metal entered the hearth (as for instance may occur during the melting of nonferrous metals in crucibles). Most archaeological FAS was produced, however, from non-metallurgical processes. Recent descriptions of fuel ash slags have included examples derived from cereal-drying kilns (Young 2005, 2010), burnt cob or daub (Young 2012b) and domestic hearths (Young 2005, 2012a). Most of these settings produce only small blebs of FAS, but larger sheets may originate in large domestic hearths. Such slags are particularly commonly found in Middle to Late Iron Age contexts, where they have been informally dubbed 'Iron Age grey slag' (Cowgill 2000, 2008; Cowgill *et al.* 2001; Swiss & McDonnell 2001; Young 2011). The origin of this material has been rather controversial. In contrast to some earlier interpretations, it is now clear that the slags were only ever partially-melted and became fluid at relatively low temperatures. Their formation would be particularly enhanced in hearths dug into a calcareous substrate (e.g. the calcareous sand forming the substrate into which the hearth were cut at Bornais; Young 2005, 2012a), but they have been found in a wide range of geological settings. At Eaton Camp, it is likely that partial melting of the finer-grained parts of the substrate has allowed the more refractory quartz-rich sandstone fragments to become incorporated within the slag mass. The Eaton Camp samples are less highly vesicular (making them denser) than many other examples, which probably reflects the low water and carbonate content of the geological materials involved.

The cultural reasons behind the particular production of these slags during the Iron Age has not yet been fully explored in the literature, but it seems likely that cultural practices led to an emphasis on communal cooking (including the use of cauldrons), at least at times, on outdoor hearths. The large communal hearths may have been kept alight almost continuously, forming an ideal environment for progressive reaction of the hearth walls with the ashes of the fuel.

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Geo-archaeological Observations

Michael J. Allen

The excavations at Eaton Camp conducted by Herefordshire Archaeology were visited on 25/5/12. The enclosure (hillfort) is at Ruckhall in Eaton Bishop parish, Herefordshire, on a clear promontory overlooking the confluence of the River Wye to the north and by Cage Brook to the south. The underlying geology is principally mudstones and siltstones of the Old Red Sandstone Raglan Mudstone Formation. Localised deposits of sand and gravel terrace deposits on the western heights of the promontory hill and on the nose of the promontory. These support typical argillic brown earths of the Escrick 1 Association (Findlay *et al.* 1984).

Sections were excavated through two ditches within the interior of the site that had been discovered by geophysics. Each was examined and described. The sections were cleaned where necessary, and the profiles described following standard pedological notation following Hodgson (1976). Primary, secondary and tertiary ditch terminologies follow Evans (1972) and Limbrey (1975).

Trench 1

The broad U-shaped ditch was exposed in trench (Fig. 1).



Figure 1: Trench 1 ditch section

Ditch Section 1

Depth	context	Profile/deposit	Description
0-18cm	1	Ah	Reddish brown (5YR 4/4) stone-free silt loam with weak small crumb structure giving way to clear small to medium blocky structure under grass, clear to diffuse boundary
18-32cm	2	A	Reddish brown (5YR 5/4) silt loam with large sub-angular blocky structure, rare medium coal fragment, clear boundary
32-c. 50cm	3	Tertiary – plough-wash	Reddish brown (5YR 5/4) essentially stone-free silt to silty clay loam, very firm, gradual to diffuse boundary with context 7
	4	Upper secondary Dumped burnt deposit	Zone of stones derived from the east. Some large, common medium sub-angular stones with clear boundary above, and abrupt boundary below containing many large branch wood/heartwood charcoal fragments- some ring porous – hand lens - (oak), and common small and very small burnt reddish brown (2.5YR 5/4) reddened soil fragments, and other small and medium charcoal fragments. Lens peters out to the centre of the ditch
c. 90cm	7		Reddish brown (5YR 5/4 to 4/4) stone-free and charcoal-free firm to stiff silty (clay) loam with some coarse silt (no sand), and large blocky structure, sharp contact under stony context 4, but gradual to diffuse boundary under context 3. (Below context 4 this displays a weak medium sub-angular blocky structure not seen elsewhere in this context indicating some incipient <i>in-situ</i> pedo-genesis prior to the rapid deposition of context 4)
	8	Secondary fill	Zone of large sub-angular block greenish grey (Gley 1 6/1) imported sandstone, clearly dumped from the east, in a reddish brown (5Y 5/4) stiff silty clay loam matrix, clear boundary.
95- 105cm	9	In-wash	Reddish brown (5YR 4/4) reddish brown massive silty clay with common fine flecks of charcoal, common fine degraded sandstone pieces
	10	Stony in-wash	As above but with rare large sub-angular stones, some eroded/weathered greyish mudstone

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110-138cm	11	In-wash	Reddish brown (75Yr 5/4) massive silt loam with common fine degraded stone. Primary/secondary fill including greenish grey and red/reddish brown small inclusions and rare fine charcoal fragments
	12	Weathered sides	Lens or band 8cm (but 7-9cm) of massive mixed deposit – as 11 but with degraded mudstone, weathered mudstone from west, with rare very small charcoal pieces
	13	Primary wash	Slime a: firm reddish brown (5Yr 4/4) stone-free silty <u>clay</u> wash from mudstone/siltstone sides (washed Rw material)
	14	primary	Mixed massive deposit of slumped mudstone/siltstone on both sides – primary weathering
	15	Primary wash	Slime b: moist stone-free reddish brown (5YR 5/4) silty clay fine wash infill with some large tumbled stones from edges
	16	Cut fill - wash	Massive fine-grained reddish brown silty clay loam

The infill history of this ditch is relatively straight-forward. The initial cut below context 15 was not clearly observable to record, however context 15 is reminiscent of rain-wash sorted deposits typical of the initial primary fill (*sensu* Evans 1972; Limbrey 1975). There is some rapid ditch side weathering and slumping (context 14), and further 'rain-wash,' deposit (context 12) constituting the primary fill.

The secondary fill includes

- massive fine-grained stone-free in-fills which include
- occupation debris
- ditch side weathering becoming less pronounced over time
- dumps and deposits of imported stone
- plough-wash

Weak soil formation is indicated prior to the dump of context 4

The final secondary fill is the clear dump of burnt soil and charcoal (context 4) which is clearly deposited on a stable ditch infill, overlain by the tertiary fill comprising plough-wash (context 3) and brown earth soil development (contexts 1 and 2), with a weak stone lens suggesting a young pasture soil.

The lack of buried soils indicates no long periods of stasis and soil formation or the rapid burial of soils forming in the ditch in-fills.

Trench 2

This broad U-shaped ditch (Figs 2 and 3) displays clear laminations and banding relating to the sedimentation and infilling process of the ditch. Five primary zones can be detected.

Zone A: Clearly banded deposits (Fig 4) alternating light yellow medium silt and reddish brown fine silt, with clear evidence of disturbance (possibly root or physical insertion of an object such as a stick or stake which was then withdrawn). The deposits are formed as a result of intense rain-wash, and may have settled in part under temporary stands of water as each sediment input is represented by two bands indicating differential sedimentation during settling. Or the lighter finer silt represented by the lighter colours may have been aeolian (windblown) in origin.

Very basal deposit is 38mm of reddish brown (5Y 4/4 to 7.5YR 4/4) silty loam, above which there is 16cm of alternating bands of reddish brown silt loam and pale yellow (2.5YR 7/3) well sorted silt (possibly aeolian or setting in water).

Zone B: Broadly banded zone (23cm) with and of rotted stone and indurated coarse banding indicating mud and soil in-wash, and deposits disturbed by biotic activity (vegetation and soil biota) including rooting. In-filled ancient root voids are present.



Figure 2: Trench 2 ditch section, note the fine banded laminations at base of ditch (see also figure 4)

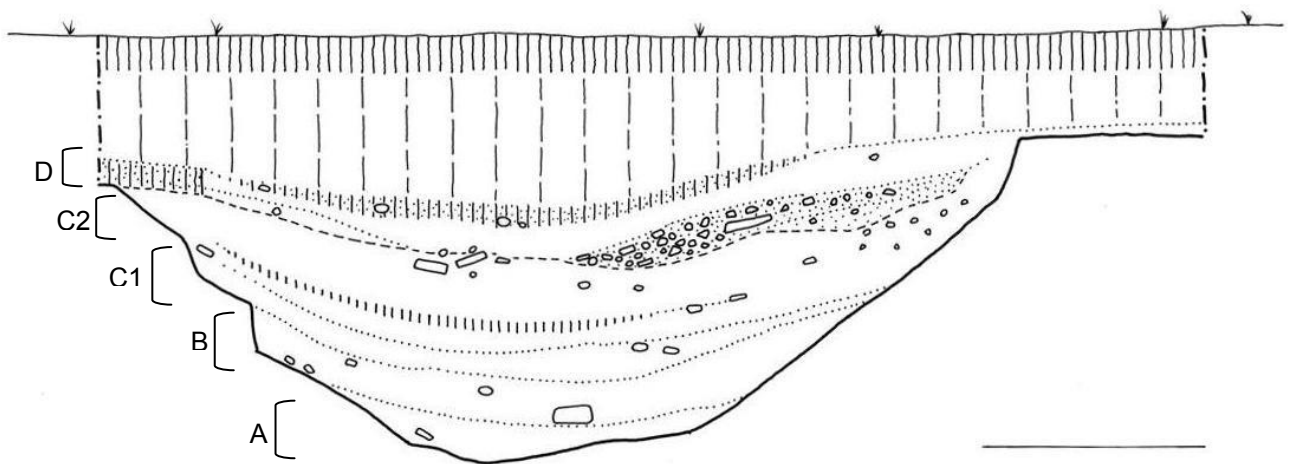
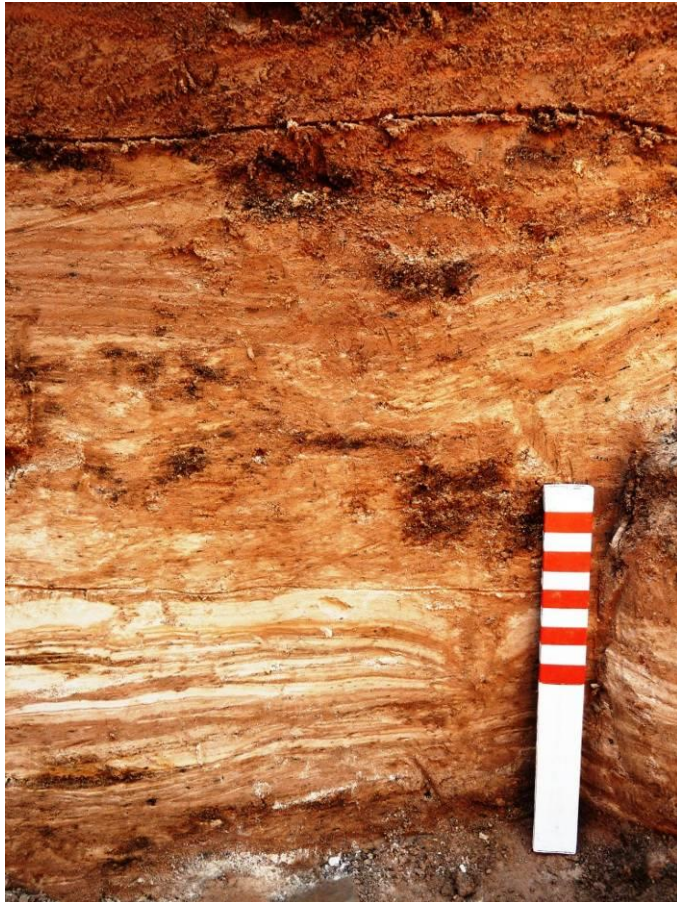


Figure 3: Trench 2 draft section drawing



Weakly banded / laminated deposits

Vertical biotic mixing

Strongly banded / laminated basal deposits with vertical biotic intrusion

Figure 4: Detail of the lamination and banding in ditch section in trench 2

Zone C: Zone (56cm) of broader diffuse in-wash of soil material deposited in dryish conditions (secondary fill and plough-wash); comprising light brown (7.5YR 6/3) silty clay loam soil material in broad bands with zones of dark brown (7.5YR 3/3 to 3/2) sandy infill with small stone grits (C1); becoming stonier with dumped lenses from the west (C2).

Zone D A brown (7.5YR) loam with patches of reddish brown fine inclusions and fine charcoal – very weak small block structure suggesting incipient soil formation very late in the infill sequence. Between 12 and 27cm below datum the brown massive silty clay loam represent eroded soil material, typically B horizon material of a typical brown earth. Localised standing water (?seasonal) is indicated by evidence of *in-situ* gleying as seen by fine mottling

The ditch is covered by colluvial plough-wash.

Summary

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We can see this ditch changing from an infill under standing water (A), to one with some standing water and flushes of soils input washed down slope (B), to a more terrestrial and colluvial plough-wash infill (C) and finally locally damp tertiary plough-wash (zone D and E).

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Validation

Herefordshire Archaeology operates a validation system for its reports, to provide quality assurance and to comply with Best Value procedures.

This report has been checked for accuracy and clarity of statements of procedure and results.

Dr Keith Ray, County Archaeologist

Disclaimer: It should not be assumed that land referred to in this document is accessible to the public. Location plans are indicative only. National Grid References are accurate to approximately 10m. Measured dimensions are accurate to within 1m at a scale of 1:500, 0.1m at 1:50 and 0.02m at 1:20m

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