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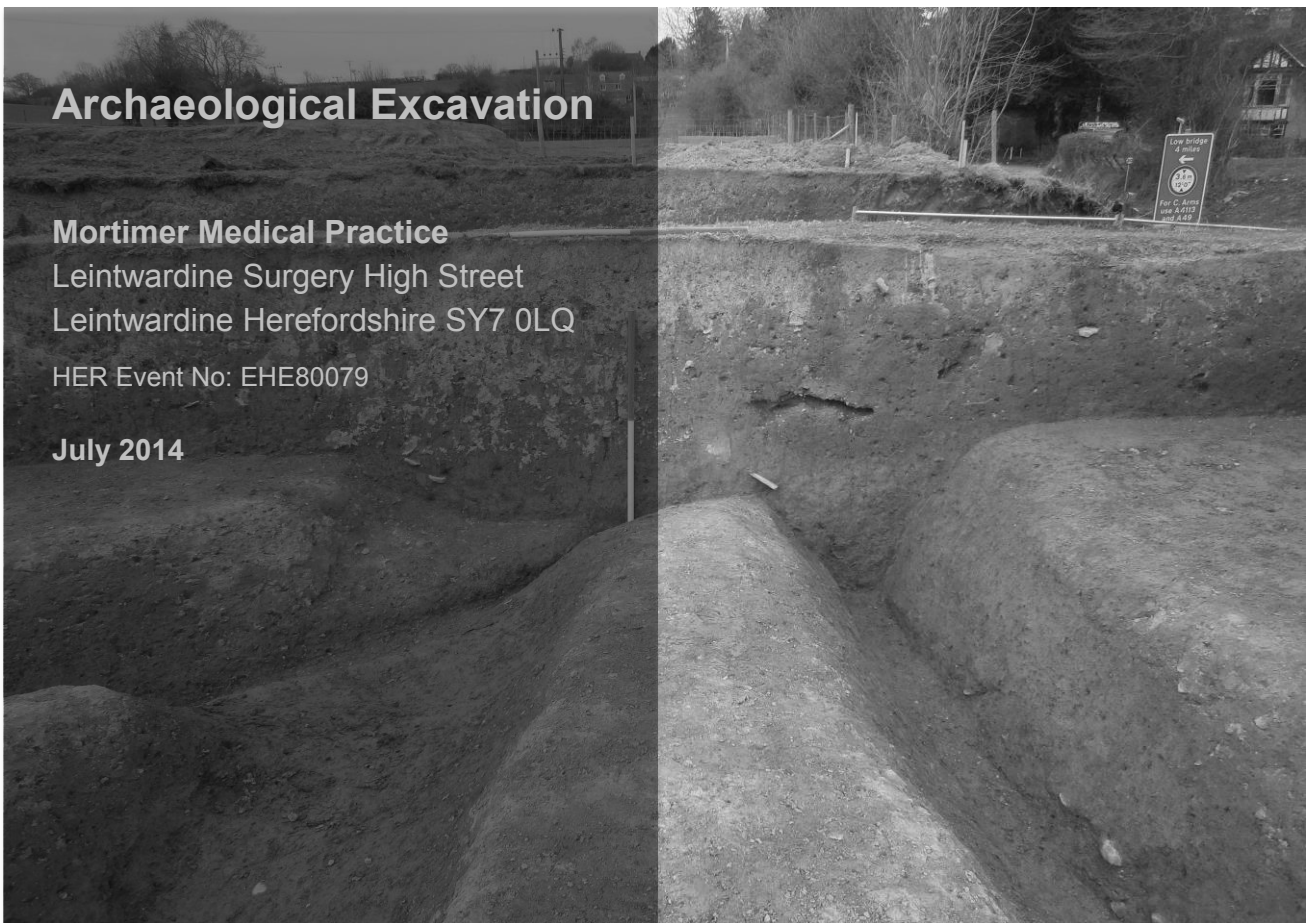
Archaeological Excavation

Mortimer Medical Practice

Leintwardine Surgery High Street
Leintwardine Herefordshire SY7 0LQ

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1 Executive Summary

Border Archaeology's excavation was undertaken on behalf of the Mortimer Medical Practice and related to the site of a new surgery building and associated landscaping and ancillary works, including provision for pedestrian and vehicular access. The development lies on the western flank of the Roman road (represented by the present A4113 (High Street)) extending north from the Roman fortified vicus (civilian settlement) at Leintwardine (Bravonium) towards Wroxeter (Viroconium).

A previous programme of archaeological field evaluation undertaken by Border Archaeology in 2009 revealed a series of cut features close to the line of the road, representing two phases of Romano-British activity separated by a period of abandonment. Fine dark grey ware pottery found in the base of a linear feature [106] dated to the 1st -2nd -century AD whilst a single fragmentary vessel also recovered exhibited evidence of heat exposure and was interpreted as the remains of a cremation vessel. The function of [106] was uncertain but it appeared possibly to reflect the presence of a Romano-British farmstead. Alternatively, it was suggested that, in view of its proximity to the road, its location to the north of the fortified vicus and the presence of potential remains of a cremation burial, the ditch may represent an enclosure demarcating a burial ground. Trenching situated to the west, further upslope and away from the road, failed to produce any evidence of activity predating the post-medieval period (c 1540-1900).

The excavation phase has produced results of considerable importance confirming the presence in this part of Leintwardine of at least three phases of Roman activity representing a fairly short period of occupation in the later 1st -mid-2nd century AD. The discovery of three cremation burials at the far south end of the site, in the approximate location of the previous evaluation trenching, strongly suggests this area constituted part of a larger roadside cemetery adjacent to the present High Street (which mirrors the line of the north-south Roman road forming part of Watling Street West from Caerleon to Chester, a major Roman route-way in the region); however, it remains a possibility that the cremations represent isolated burials, perhaps associated with a nearby farmstead.

Two ditches, one of which [1078] ran parallel with High Street whilst the second [1057] ran west-east, appeared to separate the area containing the cremation pits from the northern part of the site, which revealed several substantial ditches running roughly north-south along the roadside together with a number of pits. This area of the site presented a more agricultural character, with evidence for crop-processing activity, woodland disturbance and landscape change reflected in a diversity of charcoal remains recovered from both pits and ditches, many of which were also found to contain exceptionally well-preserved fragments of Roman pottery. The area situated further upslope to the west was largely devoid of features, which would appear to suggest a concentration of settlement activity along the roadside consistent with a pattern of ribbon development (Brown 1996, 559); the paucity of structural evidence would seem to imply a fairly low density of settlement consistent with the semi-rural character of this area.

The location of the Roman town cemetery has eluded previous fieldwork investigations; however, it would appear a strong possibility that the cremations represent the northern extent of a larger roadside cemetery, associated with either the town or with the fort at Jay Lane. Roman cemeteries tended to occupy roadside sites beyond the main focus of habitation and such a location would thus reflect a pattern found more widely in areas of Roman occupation.

The first of the cremation pits [1091] contained two urns, (SF8) and (SF9), which survived as the lower parts of vessels only, whilst the second [1096], which lay approximately 1m north of [1091], comprised a single intact urn, (SF10). All three cremation vessels are considered to be of local manufacture and consistent with a 1st -or early 2nd -century date.

Urn (SF8) contained the remains of an adult aged 25-40 years at the time of death; sex could not be determined due largely to the limited amount of bone (323.7g) available for specialist examination, this being far less than would be expected from a modern cremation but consistent with a 'token' burial, typical of the late Iron Age/Roman period. Identified bone fragments included parts of the skull, spine, pelvis, legs and feet. The lack of tooth roots and very small bones from the hands and feet may relate to the manner in which the bone was collected prior to burial.

Whilst amounts were relatively small, (SF8) contained cremated bone in sufficient quantity to secure a radiocarbon date, the results of which place the burial at the very end of the Iron Age or in the early Roman period while the pottery evidence is consistent with a 1st -or early 2nd -century date. Urns (SF9) and (SF10) contained so little bone that they may be interpreted as 'cenotaphs', or memorials. Moreover, it was not possible to determine conclusively whether the remains were indeed human. Alternatively, (SF9) may have been a grave offering intended to accompany urn (SF8) rather than containing a burial in its own right.

Cremation pit [1091] also contained much charcoal-rich material and dark brown silt, which may represent bone disturbed from urns (SF8) and (SF9) or pyre debris placed over the urns. Small quantities of cremated bone, charcoal and potential pyre offerings (hobnails, charred plant remains and an animal bone fragment) were recovered from these deposits, which, if not pyre debris, may relate to the same cremation event as the bone deposited in urn (SF8) and so may be part of the same individual, in which case the individual would appear to have been cremated either wearing shoes or with shoes placed on the pyre, as represented by the hobnails, and possibly with accompanying food offerings as attested by the presence of charred plant remains and fragmentary animal bone.

The complete rim and neck fragment of a glass unguent bottle in blue/green glass was also recovered and, whilst a secure date could not be proposed, it would appear to be of the 1st -2nd century; the inclusion of unburnt unguent bottles in funeral rites was not uncommon at this time. The recovery of this piece with a burial perhaps also explains the only identifiable vessel fragment from the excavations of the rest of the site, as that too was an unguent bottle.

The bone from all contexts was predominantly buff/white in colour, suggesting it had been burnt at a sufficiently high temperature and with enough oxygen available to ensure oxidation of most of the bone. This suggests the community had access to adequate supplies of suitable fuel, probably oak, as well as the necessary skills and knowledge to construct and tend a pyre successfully. That sufficient fuel was readily available is clearly suggested by the presence of oak and hazel, which together represent the more useful woodland resources, in all of the bulk samples and cremation deposits.

The site was abandoned at some point in the middle of the 2nd century, with substantial quantities of pottery dumped into the ditches. The date of this abandonment roughly coincided with that of the auxiliary fort at Buckton and the fortification of the town (Brown 1996, 511-13) and it is possible that, with a military presence no longer in the area, the occupants may have preferred the safety of the town. Following a brief hiatus during which a shallow layer of colluvium was deposited, the area was evidently brought back into agricultural use, resulting in the formation of two further features.

The most significant aspect of these results is that they may demonstrate the adoption of Roman customs by the local population in a comparatively remote location. A transition towards cremation burial occurred in the southeast of England during the late Iron Age, from the mid-1st century BC, which may have been associated with Roman influence (O'Brien 1999, 9; Hope 1999, 49). Cremation burial became more widespread in England following the Roman invasion of Britain in AD 43 with cremation cemeteries located outside towns, usually along major roads. However, some areas of Britain may have practised cremation burial during the Iron Age and so the presence of cremation burial cannot be seen as indicative of the adoption of Roman practices in all areas. Indeed, rural areas may have been particularly slow to adopt new fashions in burial practice (O'Brien 1999, 9).

The burials at Leintwardine may thus either indicate rapid and early adoption of a new burial rite in a rural area, or represent the continuation of existing native burial practices

2 Introduction

Border Archaeology was instructed by Mortimer Medical Practice Kingsland Leominster HR6 9QL to carry out a programme of Archaeological Excavation prior to construction works at Leintwardine Surgery High Street Leintwardine SY7 0LQ (NGR: SO 40370 74640) (*fig. 1*).

The site covers an area of approximately 1200m² and is situated immediately adjacent to the A4113 (High Street) so as to reflect the results of the previous evaluation, which indicated archaeological activity to be concentrated on the eastern part of the site, adjacent to the road.

The aim was to strip, map, record and excavate an area measuring 40m × 30m encompassing the footprint of the new surgery building and associated ancillary works, including drainage and vehicular and pedestrian access. Site work took place between February 11th and April 8th 2013.

Copies of this report will be supplied to Mortimer Medical Practice and to Julian Cotton Esq Archaeological Advisor Herefordshire Council.

3 Site description

The site slopes upwards to the W and away from the present A4113 road, which runs roughly N/S parallel to the eastern site boundary, this comprising a substantial hedge (subsequently removed) with a bank to the E descending in excess of 2.5m to road level. The land rises in a westerly direction from approximately 141.5m AOD immediately above the level of the road at the top of the hedge-bank to roughly 158m AOD at the crest of the slope.

In the immediate vicinity of the site, the soils are predominantly typical argillic brown earths of the ROWTON series (571A), comprising well-drained fine silty and fine loamy soils, locally over gravel, and some fine silty over clayey soils with slowly permeable sub-soils and seasonal waterlogging. The underlying geology consists of glaciofluvial or river terrace gravel and till, while the solid geology is of undivided Old Red Sandstone (SSEW, 1983).

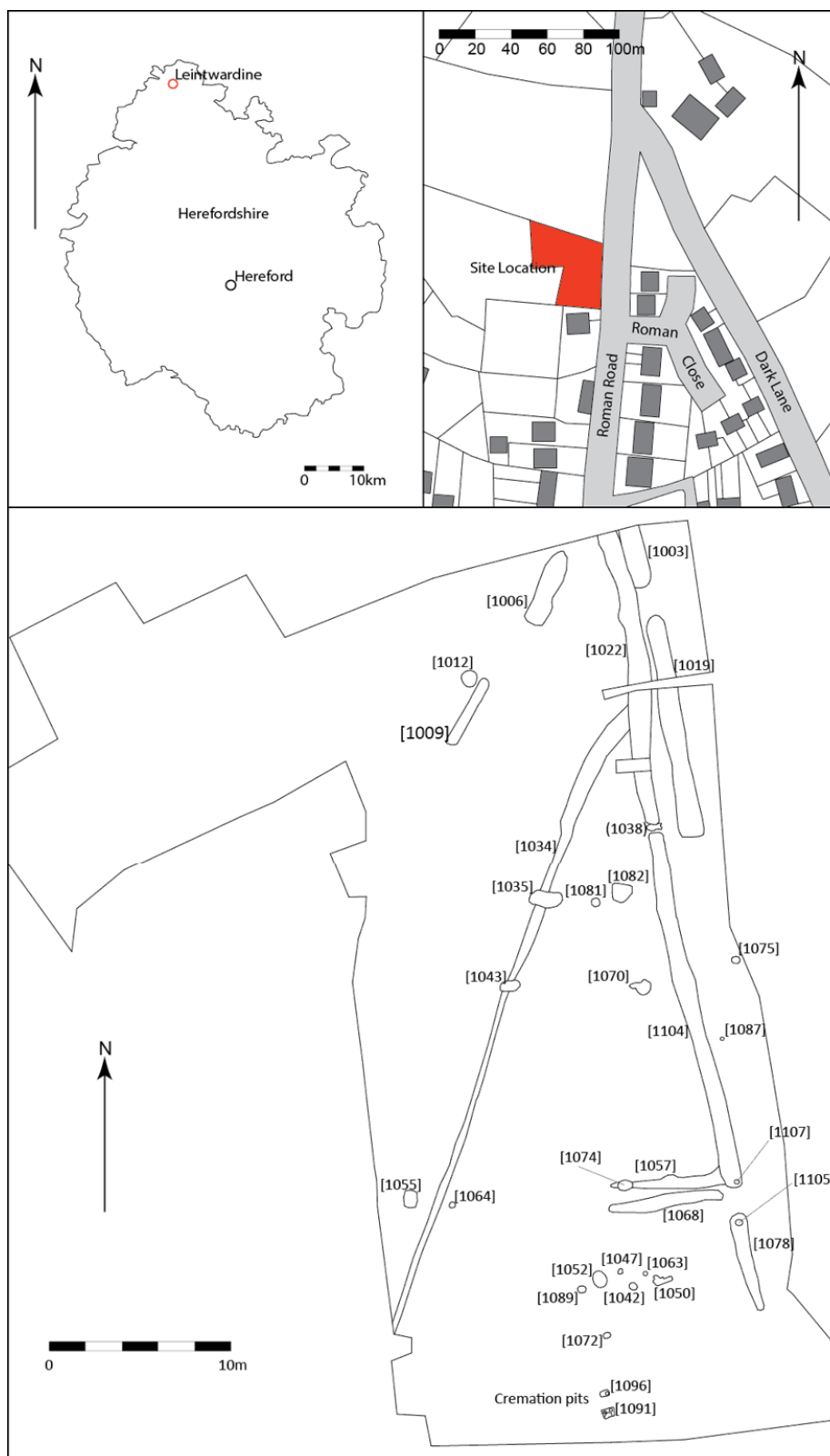


Fig. 1: Site location plan

4 Brief Historical & Archaeological Background

The excavation area (centred on NGR SO 40370 74640) lay adjacent to the line of the Roman road (represented by the present High Street) extending N from the Roman fortified *vicus* at Leintwardine (*Bravonium*) towards Wroxeter.

It has been previously suggested that evidence for extra-mural settlement or possible cemetery sites of Roman date associated either with the mid-1st century auxiliary fort at Jay Lane or the later fortified civil settlement of *Bravonium* (the northern boundary of which lies some 300m due S of the site) might be encountered within this area (BA, 2009a).

The results of the previous archaeological evaluation carried out by Border Archaeology in 2009 attested to the presence of Romano-British activity within an area adjoining the line of the Roman road (represented by the modern A4113). A series of cut features were revealed in Trench 1 representing two phases of Romano-British activity separated by a period of abandonment (BA 2009b).

The small quantity and broad date range of the pottery assemblage recovered from the features in Trench 1 (chiefly dominated by oxidised Severn Valley and black burnished wares) precluded any detailed phasing of the site, although the presence of fine dark grey ware sherds in the primary fill of linear ditch [106] indicated a 1st - 2nd -century origin for this feature. A single fragmentary vessel recovered from the base of the feature exhibited evidence of exposure to intense heat and it was suggested that this may have been the result of cremation. The function of [106] could not be established with any certainty, although it was thought to be associated with a Romano-British farmstead. Alternatively, in view of its proximity to the road, its location to the N of the fortified *vicus* of *Bravonium* and the presence of potential remains of a cremation burial, it was thought this could represent an enclosure ditch demarcating a burial ground.

The trenches situated further upslope to the W failed to produce any evidence of activity predating the post-medieval period, this being largely confined to the series of 19th -20th -century land drains identified in Trenches 2, 3 and 5. The area was therefore excluded from the excavation.

The excavation results have significantly extended our understanding of the site. The fieldwork and assessment/analysis results corroborate the conclusions proposed in the evaluation report and confirm the largely sterile nature of deposits further upslope away from the line of the Roman road (as represented by the modern High Street). The evidence would appear to suggest that settlement in this part of Leintwardine was semi-rural in character and conformed to a pattern of ribbon development extending N-S along the roadside, consistent with the model previously proposed by Brown (1996, 559). The presence of three urned cremation burials in association with what appeared to be boundary ditches strongly suggests that the southern portion of the excavation area could represent the northern extent of a larger Roman cemetery.

5 Methodology

The archaeological programme of work detailed herein was carried out in accordance with recognised sources of professional guidance including *Standard and Guidance for archaeological excavation* (IfA 2008) and *Management of Research Projects in the Historic Environment: The Project Manager's Guide* (EH 2009). Reference was also made to EH technical guidance. Border Archaeology adheres to the *IfA Code of conduct* (2013) and *Code of approved practice for the regulation of contractual arrangements in archaeology* (2008).

The excavation area was identified using the site plan previously supplied to Border Archaeology and finalised through a process of on-site consultation between BA and Julian Cotton of Herefordshire Archaeology.

5.1 Engineering considerations

The new surgery is served by both vehicular and pedestrian access off the main A4113 road (representing the line of the former Roman road). Access points were identified at the northern and southern extremities of the site and the substantial bank and hedge forming the eastern perimeter reduced to carriageway level in these two locations, the gradient of the slope reflecting the needs of different users (including the disabled).

5.2 Archaeological methodology

The aim of the programme of archaeological work was to strip, map, record and excavate an area measuring 40m × 30m encompassing the eastern portion of the development area adjacent to the A4113. The remainder of the site was excluded from the excavation to reflect the negative results obtained from the previous programme of evaluation trenching.

Additionally, the bank forming the eastern boundary of the site was graded at two specific access points. A slope rising to a height of >2.0m above the highway was excavated by machine under archaeological supervision to facilitate provision of an access road at the northern extent of the site. Provision for a stepped/ramped pedestrian access was made by cutting into the bank at its southern end. All such excavations were carried out by BA's usual ground works contractor to ensure recovery of all stratigraphic information.

Topsoil was removed under archaeological supervision using a 360 mechanical excavator and toothless bucket. Removed material was stored on that part of the site excluded from further investigation. Machine excavation continued, ensuring separation of topsoil and subsoil, either to the first significant archaeological horizon or to natural undisturbed deposits. Once a clear archaeological horizon had been attained, pre-excavations plans were produced which identified potential archaeological features and deposits for subsequent investigation.

Wherever such features were identified, excavation proceeded manually to the base of archaeological deposits. Where no archaeological horizon was encountered, excavation ceased upon attainment of undisturbed natural deposits, with *sondages* sunk wherever confirmation of natural deposition was required.

Manual excavation was carried out in a manner consistent with maximising the recovery of information and with achieving a full characterisation of all revealed structural remains, features and deposits constituting the entire archaeological sequence, with each context encountered being defined by trowelling prior to excavation.

Human remains were discovered in the southern portion of the site comprising two burial pits containing three urned cremations, all of which were removed, excavation proceeding in a manner consistent with the full recovery of all associated material, including cremated bone, pottery, faunal remains and palaeoenvironmental material. To this end, Pit [1091] was block-lifted for subsequent laboratory excavation. The cremations may represent the northern extent of a larger cemetery, although no further evidence was obtained to confirm this interpretation.

5.3 Recording

Full written, graphic and photographic records were made in accordance with Border Archaeology's *Archaeological Field Recording Manual* (BA, 2013). A detailed stratigraphic record was maintained using numbered context record sheets. The photographic record comprised high-resolution (12 MPX) digital images comprising photographs of all excavated contexts and archaeological features and structures. Scales were included in each photograph and all photographic records have been indexed and cross-referenced to written site records. Details concerning subject and direction of view are contained in a photographic register, indexed by frame number.

An overall site survey was carried out using a Total Station, with plans and sections of individual features and groups of features planned by hand onto stable polyester film at scales of 1:10 or 1:20, as appropriate. All drawings were numbered and listed in a drawing register, these drawing numbers being cross-referenced to written site records. Temporary benchmarks were established at appropriate locations and plans and section drawings contain grid and level information relative to OS data. All drawings are numbered and listed in a drawing register, these drawing numbers being cross-referenced to written site records

5.4 Sampling

Samples were taken from sealed deposits & fills of pits considered not to be contaminated or of mixed/secondary origin (*e.g.* backfills or deposits with a high degree of residual/intrusive artefactual material), those thought or known to contain well-preserved biological remains, deposits likely to be closely datable and those interpretatively important at the context or site level.

Samples were taken from individual contexts and comprised, where practicable, 20-30L or 100% of the sample if smaller. These samples were subsequently processed and assessed by Archaeological Services University of Durham (ASUD). Insects, mineralised and carbonised seeds and chaff etc., together with potential industrial residues, were recovered from samples by fine-mesh sieving and flotation separation.

Full analysis was undertaken as recommended upon receipt of specialist advice.

Contexts (1036), (1061) and (1077) contained substantial quantities of charcoal >4mm and were therefore sub-sampled by University of Durham using a riffle box, with 66%, 55% and 27% of the samples analysed, respectively. The <4mm fraction was scanned for the presence of any additional taxa.

5.5 Recovery, processing and curation of artefactual data

Recovered artefacts were retained, cleaned, labelled and stored according to *Standard and Guidance for the collection, documentation, conservation and research of archaeological materials* (IfA 2008) and *First Aid for Finds* (Watkinson & Neal 2001).

Artefacts were bagged and labelled with the site code and context number before being removed off-site. Each assemblage has been examined according to typological or chronological criteria and specialist conservation work undertaken, as required.

An Accession Number has been obtained from the Herefordshire Museums Service and processed assemblages boxed according to their deposition guidelines. A register of contents will be compiled prior to deposition of the Project Archive.

6 Results

Although the site was evidently occupied for only a short period in the 1st-2nd centuries AD, at least three phases of Romano-British activity have been identified. Site phasing is wherever possible based upon stratigraphic relationships and ceramic dating; however, where isolated pits or postholes have been identified possessing no relationship to other features, reliance has been placed solely on pottery dates. Those features containing only 1st -century pottery are assigned to Phase 1, as are those from which no dating evidence has been recovered. However, phasing remains uncertain in view of the comparatively short period of occupation.

6.1 Phase 5 Post-Roman deposits

Topsoil (1000) was a loose greyish-brown silt clay with occasional post-medieval debris, extending over the entire site to a depth of 0.2m. Below it the post-medieval subsoil (1001) was a moderately compact light grey brown silt clay, approximately 0.25m deep.

Beneath subsoil (1001) was (1045), thought to be a post-Roman plough soil or hill-wash accumulation, comprising a moderately compact mid grey brown clay silt with frequent small to medium rounded and sub-angular stones and occasional charcoal flecks. The similarity to subsoil (1001) above, meant that it was difficult to identify the interface between the two deposits. Subsoil (1045) was between 0.20m and 0.28m deep, and sealed the upper Roman horizon.

6.2 Phase 4 Roman–Post-hiatus

Two features were associated with the post-hiatus phase of Roman activity on the site. They probably related to agricultural activity following abandonment of the farmstead in the mid- 2nd century AD.

Ditch [1009] was >5m in length 0.87m wide, 0.53m deep and had irregular sides and base. It was aligned NNE/SSW. The primary fill was a mid-yellow brown clay silt (1011), derived from subsoil (1002) and probably formed by washing of the sides into the base (*figs. 2 & 4*). Above it was (1010) a loosely compacted mid orange brown sand clay with occasional flecks of charcoal. It, too, probably formed through natural silting of the feature. The second feature associated with this phase was a pit or posthole [1012] measuring 0.92m, in length and 0.78m wide (*figs. 2 & 3*). It was 0.28m deep with moderate to steeply sloping sides and a concave base. The primary fill was (1013) a mid-orange brown silty clay with flecks of burnt bone and charcoal. A centrally located deposit within [1012] was a possible post-pipe (1014) containing an orange brown silty clay containing fragments of highly abraded Roman ceramic building material (CBM) and pottery of 2nd -century AD date, including sherds of Dorset black burnished ware and oxidised Severn Valley ware.

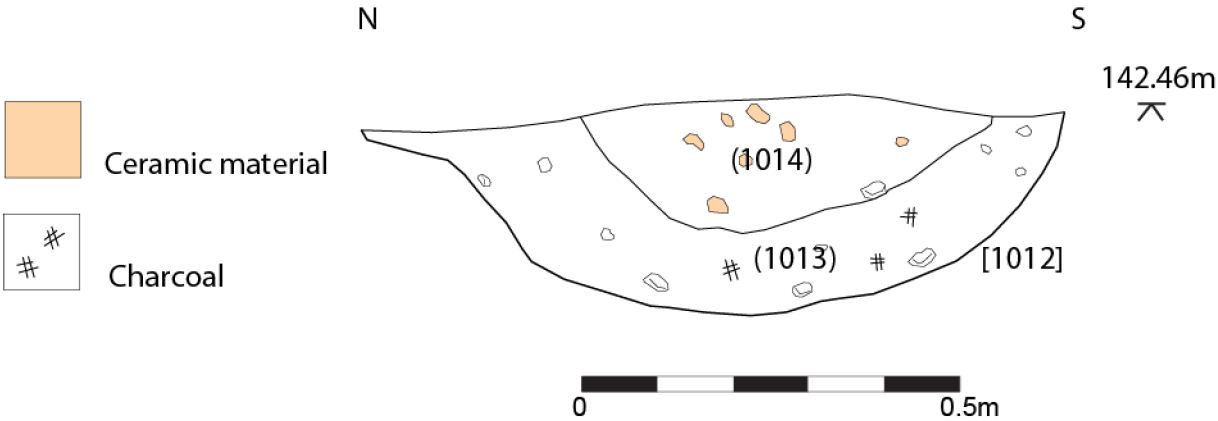


Fig. 3: W-facing section through pit/posthole [1012]

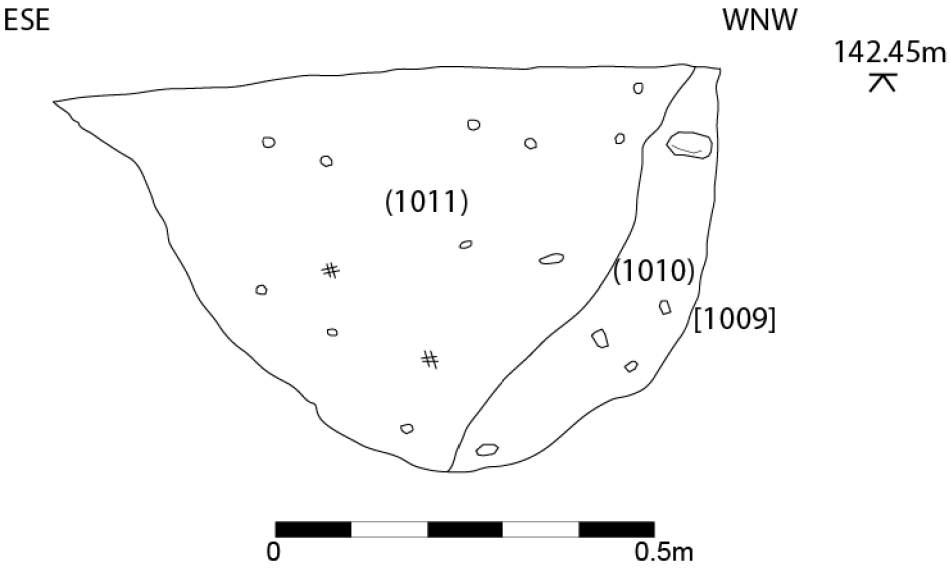


Fig. 4: SSW-facing section through later Roman ditch [1009]

6.3 Phase 3 Abandonment

Phase 4 features cut (1046), a firmly compacted dark yellowish-brown silt clay thought to have derived from colluvial build-up across the site. Following abandonment of the site there appears to have been a brief hiatus in occupation; Phase 3 deposit (1046) sealed the earlier Roman archaeology on the site.

6.4 Phase 2 Roman

6.4.1 Phase 2b Roman–2nd century AD

During Phase 2b the site was dominated by three ditches - [1019] (*Plates 1 & 2; figs. 2 & 5*) [1022] (*Plate 2; figs. 2 & 5*) and [1104] (*Plate 3; figs. 2 & 6*) - running on a generally N/S alignment. These features together accounted for 55 per cent of the entire pottery assemblage, with some 960 sherds recovered from [1022] alone. Whilst each ditch contained several horizons, apparent joins between vessels from different fills, both within the ditches and across the two ditches, suggests these features are contemporary and were perhaps backfilled in single operation at some point in the mid to late 2nd century AD. Both features were found to cut earlier (Phase 2a) ditch [1034] (*fig. 2*).

Samples recovered from features of this phase showed that cereal processing was taking place in the near vicinity.



Plate 1: View S of N-facing section of ditch [1019]



Plate 2: View N showing S-facing section of ditch [1022] with [1019] shown to right & [1034] (see also fig. 5 below)



Plate 3: View N showing ditch [1104]

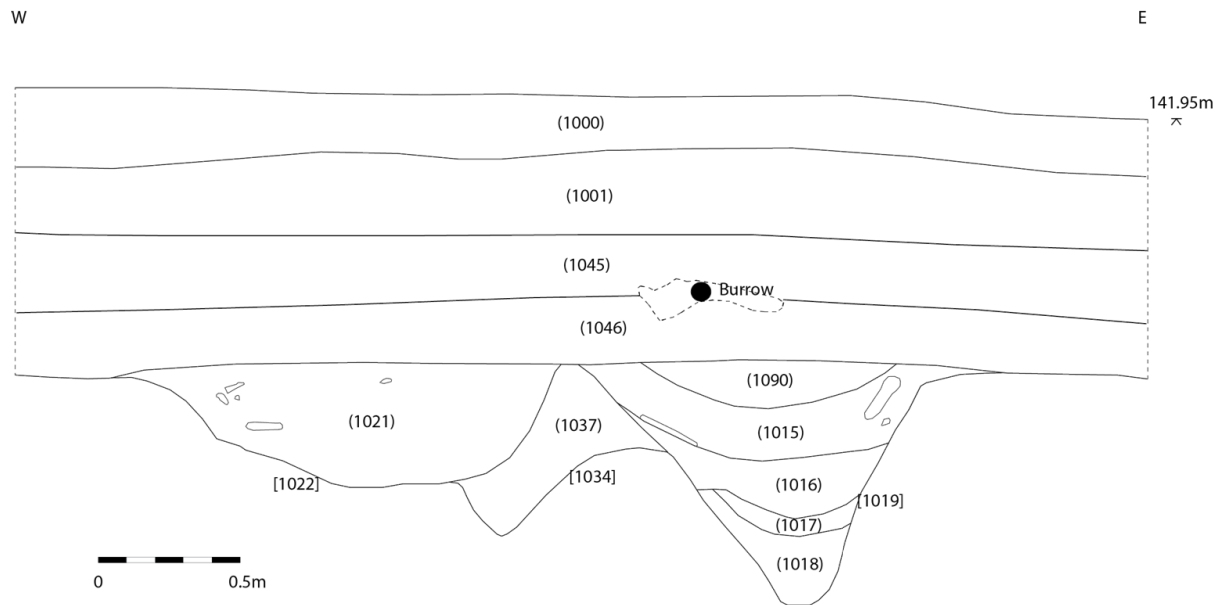


Fig. 5: S-facing section showing ditches [1022] and [1019] truncating earlier ditch [1034] (see also Plate 2 above)

Running across the site on an N/S orientation, ditch [1022] was between 1m and 1.5m in width and between 0.25m and 0.6m deep (figs. 2 & 5); it had steep to gently sloping sides and a flat base although the profile occasionally formed a continuous concave depression. It ran parallel to Phase 1 ditch [1003] and cut that feature's W side. It is highly probable that ditch [1022] represented a perimeter, dividing farmland from the road. The primary fill was (1021), a yellow grey sandy silt with CBM, occasional burnt stones and pottery of early 2nd-century date, together with charcoal of oak, alder and cherry. It was deliberately dumped.

Ditch [1022] extended some 16m S from beyond the N limit of the excavation to a crossing point or barrier, stone structure (1038), where it terminated (Plate 4). Structure (1038) was constructed from local stone, which appeared to have been deliberately selected. The position of (1038) and termination of [1022] also coincides with the termination of ditch [1019], strongly indicating a boundary at this point.

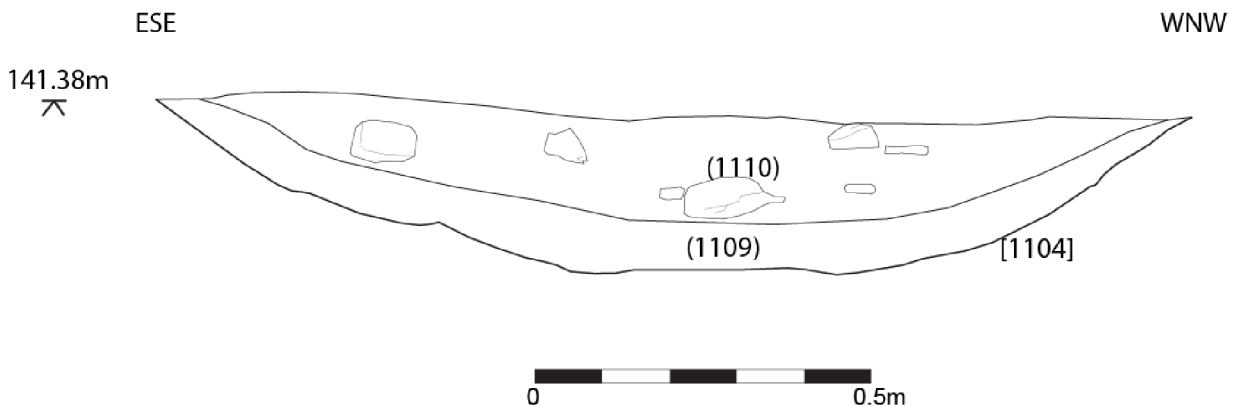


Fig. 6: NNE-facing profile of ditch [1104]

Charcoal-rich grey silt (1039) above (1038) may have originally derived from nearby features, particularly as pottery from it was of slightly earlier date (late 1st -to 2nd -century AD) than the 2nd -century fills surrounding it; this included sherds of handmade Roman Malvernian ware, south Gaulish samian and fine grey ware. The fact that (1039) was present only above (1038) and was not found elsewhere in the ditch suggests it was deliberately deposited at the S terminus or crossing-point or resulted from its use.

The alignment of [1022] was continued S of (1038) by ditch [1104] (*Plate 3; figs. 2 & 6*). Ditch [1104] had gently sloping sides and a rounded base; a shallow lip was present on the W side. The fill was an orange silt (1040), which suggested natural deposition and which contained pottery of early 2nd -century date, together with fragments of CBM, including a fragment of *imbrex*, and small chips of blue-green and amber-coloured Roman glass dated broadly to the 1st -3rd -century AD. Unfortunately, the small size of the glass fragments precluded further identification. Fill (1040) also produced remains of small calibre branch-wood and a diverse tree/shrub assemblage, with birch, hazel, *Fabaceae*, *Maloideae*, cherry family, oak, *Salicaceae*, elder and *cf.* elm all recorded. Although ditches [1022] and [1104] may have been dug at different times, the fact that pottery from their fills was of similar date indicates that both went out of use at about the same time.



Plate 4: Stone structure (1038), view S

At the S end of [1104], a posthole [1107] may suggest the position of a gatepost (*fig. 2*). A gap, some 1.5m wide, before ditch [1078] continued the alignment of [1104] to the S, suggests a possible entrance to the cemetery enclosure (*Plate 6; fig. 2*). At the N end of [1078], a further posthole [1105] suggested that the entrance was originally gated (*fig. 2*).

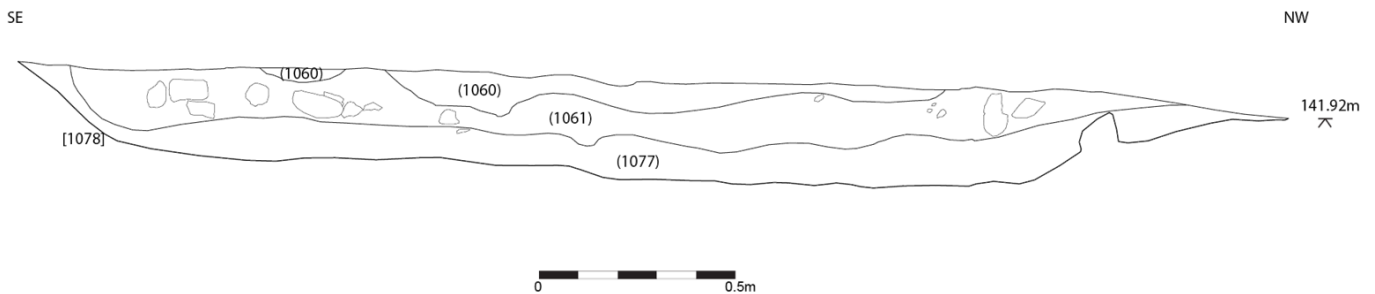


Fig. 7: NE-facing section through ditch [1078]

Steep-sided N/S -oriented ditch [1019] lay about 1m to the E of [1022] and, like that feature, cut earlier ditch [1034] (Plate 1 & 5; figs. 2 & 8). The two features were certainly open at the same time, for they were backfilled in a single operation, with cross-joining sherds of pottery found in both. Ditch [1019] continued the alignment of Phase 1 ditch [1003] to the S. The form suggested a defensive ditch with steeply-sloping sides and a flat base 0.12m wide. The ditch was straight, with sharply angular squared termini; it measured 11m × 1.2m × 0.85m. There were a number of fills, implying dumping of disparate materials.

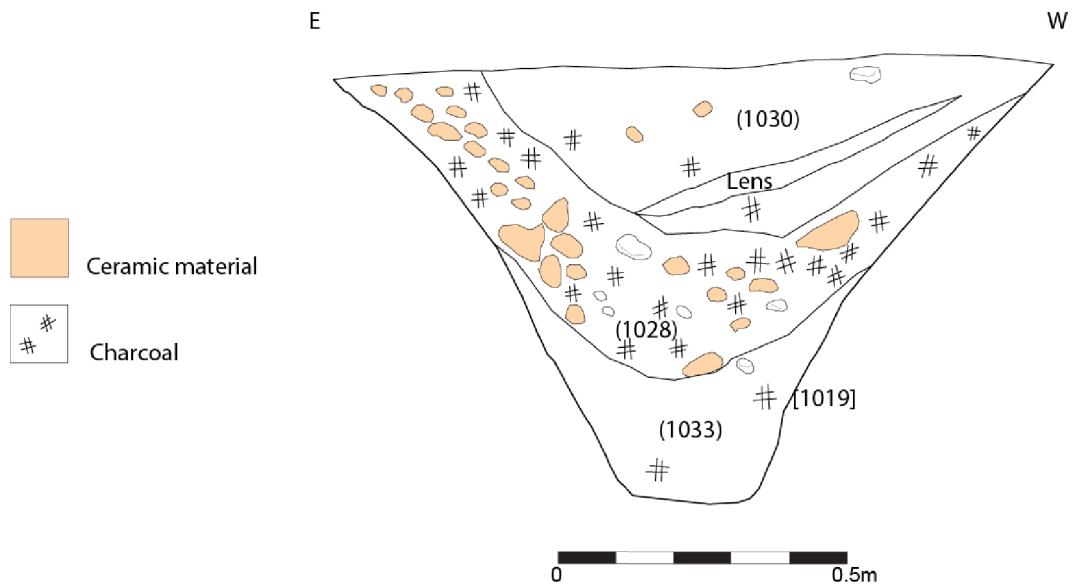


Fig 8: S-facing profile of ditch [1019]

At the N end of the ditch, the primary fill was (1018), a greyish-brown silt clay 0.25m deep containing occasional charcoal and CBM together with a fragment of spelt wheat glume base and a wheat grain. The fill also contained many large pieces of freshly broken 2nd -century AD pottery, often halves or quarters of large vessels, some of which, found in close proximity to each other, were from the same vessel, suggesting they were deposited almost immediately after initial breakage. Despite the large amount of pottery present, there was little other domestic waste, besides charcoal, although the results of other fieldwork investigations in the Leintwardine area have shown that animal bone decomposes fairly rapidly (Brown 1996, 518). The recovery of burnt bone fragments from sample residues suggests that unburnt bone may well have been present but has simply not survived.



Plate 5: View S showing ditch [1019] under excavation

Above (1018) was fill (1017), a moderately compact reddish-brown -to -bluish-grey sandy silt with pottery of 2nd -century date, including examples of Dorset black burnished ware and both oxidised and reduced forms of Severn Valley wares. A small fragment of Roman box flue tile was also recovered, together with occasional oak charcoal and evidence of spelt wheat and barley. The sandy nature of (1017) may suggest an episode of increased colluvial activity during the silting of the ditch, resulting in the deposition of 0.08m of material. Fill (1016), above, was a moderately compact blue-grey silty clay that had probably formed through silting. This again contained 2nd -century pottery, including several sherds from a Dorset black burnished ware handled mug handled mug, decorated with acute burnished lattice and on the underside of the base (*fig. 31*). The pottery from (1016) also included a base-sherd from a bowl or dish with a foot-ring. Originally, possessing a red colour-coated surface, the piece was burnt and revealed faint traces of a centrally placed incomplete potter's stamp which read 'OF A?OF ...' (*Plate 11; fig. 32*).

Overlying (1016) was (1015=1029), a moderately compacted yellow/blue-grey silty clay with occasional sherds of 2nd -century pottery, including a Continental import in the form a Baetican *amphora* sherd, together with fragments of Roman brick and charcoal. It may have been formed by silting into the hollow left following slumping of the earlier fills of the ditch. Against the baulk at the N end of the site silting deposit (1090) filled a hollow left by compression of earlier fills (*fig. 5*).

To the S, the fills of the ditch were less silty than those to the N, suggesting a more anthropogenic deposition process, especially considering the presence of large quantities of CBM, pottery and charcoal within them. The primary fill (1033) was a loose silty clay containing pottery, including several sherds from a necked, cordoned jar in an oxidised Severn Valley Ware fabric (*fig. 29*), and charcoal flecks. Above it, (1028) was dark brown and contained frequent charcoal, predominantly larger branch-wood or stem-wood, predominantly of oak, but with birch, hazel, *Salicaceae* and alder also represented, together with shrub species, such as gorse/broom (*Fabaceae*). This deposit formed the upper fill of ditch [1019] at its southern end and produced a substantial pottery assemblage amounting to some 466 sherds of mid-2nd -century date. Among the wares recovered was a West Midlands

mortarium (SF3) of Trajanic or later date and impressed either side of the spout with the same stamp, which reads '[?]AOXH/', similar to examples found at Wroxeter and Leigh Sinton, near Malvern (*fig. 33*). This was one of two joining sherds, the second (SF2) being from the basal fill (1018) of ditch [1019].

The upper fill (1030) of [1019] included a sandier lens of loose light yellowish-brown silt clay with no inclusions, indicative of tip-lines and further suggesting that the deposition of (1030) was aided by human factors (*fig. 8*). Pottery was of 2nd -century date and vessels included a flared wall oxidised Severn Valley Ware tankard (*fig. 30*)

Whilst most contexts associated with ditch [1019] contained diagnostic spelt wheat (*Triticum spelta*) chaff, this was especially common in (1030) and possibly indicates the presence of crop-processing activity close to the site. The presence of a high proportion of grassland remains and chaff (wheat/barley), together with damp meadow species (*e.g.* sedges/spike-rushes) in (1030) and, to a lesser extent, (1028), may indicate the presence of hay and/or fodder, burnt possibly as fuel or kindling or the disposal of old fodder or bedding.

Two small discrete deposits within ditch [1019], namely, (1031) and (1032), were both located towards the centre of the site. Deposit (1031) was a loose red gritty sand containing 1st -to 2nd -century pottery. Surrounding contexts had been affected by heat, with (1018) discoloured and hardened, suggesting that the sand was still hot when dumped into the ditch. The second deposit, (1032), was a small lump of moderately compacted orange-red clay with some grit, which lay against the western side of ditch [1019], between fills (1033) and (1030), and which may have been dumped as poorly-fired fragments of CBM.

Truncating Phase 1 curvilinear ditch [1034] was pit [1035] (*figs. 2 & 9*). Although the pit was apparently dug following silting of the ditch, its position over it may suggest some recognition of the earlier feature; however, it may have been intended as a refuse pit - it was certainly used in that fashion during the deposition of fill (1036). The pit was sub-rectangular in plan and orientated W/E, measuring 1.5m × 0.82m × 0.33m, with vertical sides and a flat base. Fill (1036), was a loose mid to light grey brown clay with moderate charcoal inclusions, very occasional stones and occasional gravel. The fill also included 2nd -century pottery and a fragment of a large brick of Roman date. The charcoal consisted of oak, birch and hazel and (1036) was one of the few deposits from which identifiable spelt wheat was recovered, the others being ditches [1019] and [1078], pits [1043] and [1055] and postholes [1064] and [1089].

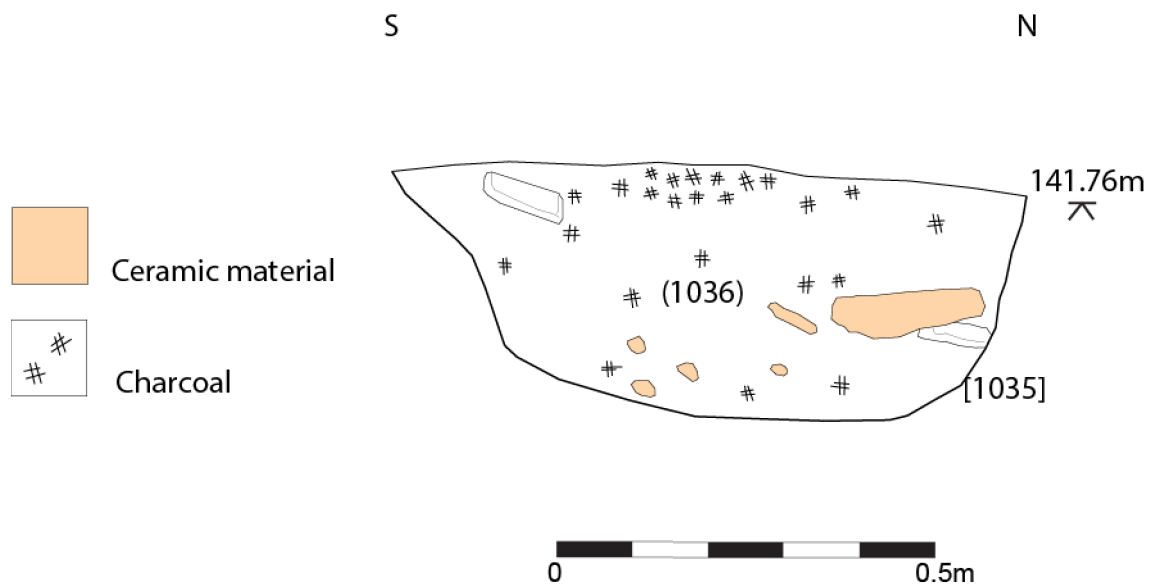


Fig. 9: E-facing section through possible refuse pit [1035]

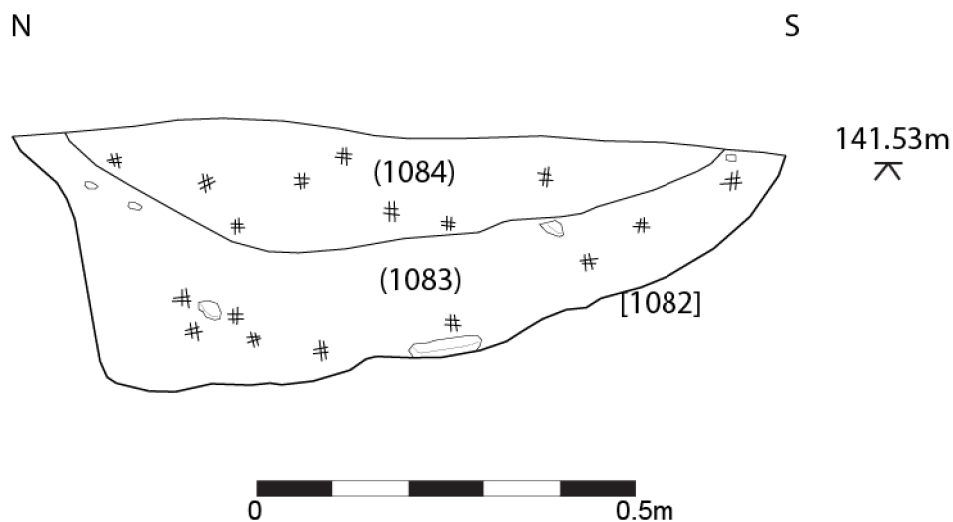


Fig. 10: W-facing section through possible posthole [1082]

Posthole [1082] (fig. 10) was located towards the centre of the site, between ditch [1022] and curvilinear [1034] (fig. 2). The pit was more or less triangular, with the base sloping steeply towards the apex of the triangle at the NW side. A large stone on the base may have been a post-pad, suggesting that the pit may have served as a posthole, the triangular shape potentially being a result of raising the post. The pit measured a maximum of 1.1m E/W, with a minimum width of 1.02m N/S and maximum depth of 0.36m. The basal fill (1083) was a firm to moderately compacted mid orange-brown silt clay with charcoal inclusions, pottery, of 2nd-century date, CBM and an iron nail. It was 0.28m thick and may have formed by a combination of deliberate deposition and natural sedimentation. The upper fill (1084) was a loose mid greyish-brown clayey silt with moderate charcoal inclusions and CBM; the pottery recovered from the fill is dated to the 1st-century AD. Like basal fill (1083), upper fill (1084)

was probably deposited by a combination of silting and deliberate filling. The presence of pottery of an earlier date in the later fill (1084) suggests that this material may have been re-deposited from a midden or dump elsewhere. Evidence of wheat was identified in both deposits, with a fragment of hazelnut shell recovered from in (1084). Oak, beech and hazel charcoal was recorded in (1083) with field maple and ash also found in (1084)

6.4.2 Phase 2a Roman – 1st –2nd centuries AD

Ditch [1078] (*fig. 7*) continued the alignment of ditch [1104] into the S part of the site (*fig. 2*). It was up to 1.03m wide and 0.27m deep, with steep sides and a concave base (*Plate 6*). At the N end, adjacent to a gap evidently intended as an access point, was a sub-circular posthole [1105] measuring 0.33m × 0.30m (*fig. 2*). Its position suggests that it could have been a gatepost. Both the upper (1060) and basal (1077) fills of the ditch were probably formed through a combination of deliberate dumping and natural sedimentation.



Plate 6: View S showing ditches [1078] (top) [1057] & [1104] (foreground)

The middle fill (1061), however, contained a large amount of charcoal and pottery and must have resulted from deliberate deposition of waste materials, suggesting that, after a period in which the ditch was allowed to silt up gradually, an episode of deliberate dumping took place. The pottery dated to the 1st –2nd century AD. Fills (1061) and (1077) produced large quantities of charcoal of greater than 4mm in size, although the composition differed, and the material was thus sub-sampled for analysis. Fill (1077) predominantly comprised hazel and *Maloideae*, with some oak and cherry family, while (1061) was dominated by hazel and oak, with a diverse assemblage that included ash, dogwood, holly, blackthorn, cherry family, *Maloideae*, *Salicaceae* and *Fabaceae*. The common occurrence of strong ring curvature suggests the use of small-calibre branch-wood in both fills.

Significantly, although its small size prevented certain identification, a charcoal fragment from (1061) resembled the walnut tree (*Juglans regia*), in terms of its wood structure; work carried out elsewhere suggests the Romans introduced the walnut to and Britain, possibly as a garden tree. In view of a lack of evidence in the pollen and plant macrofossil records and the paucity of detailed charcoal investigations in Britain, this provisional

identification is potentially of some considerable importance. Ditch [1078] also produced identifiable spelt wheat remains.

Although ditches [1022] and [1078] comprised a continuous alignment, their form differed, with [1078] being wider and shallower than [1022]. They also differed in the date at which they went out of use, with pottery from [1078] dating to the 1st -2nd centuries, while that from [1022] dated from the mid-2nd century. This may indicate that the N part of the cemetery went out of use before nearby occupation ceased.



Plate 7: Ditch [1078] aligned with ditch [1104]. Also shows return [1057]; view N



Plate 8: View E of ditch [1057]

Shallow ditch [1057] (figs. 15 & 16) formed a return to [1104] at the entrance indicated by the termini of [1104] to the N and [1078] to the S (Plates 7 & 8; figs. 2 & 11). The fill (1056) of ditch [1057] was a soft but moderately compact mid yellowis-grey sandy silt with pottery dating to the 1st -2nd centuries and CBM inclusions that probably became incorporated through silting rather than deliberate deposition.

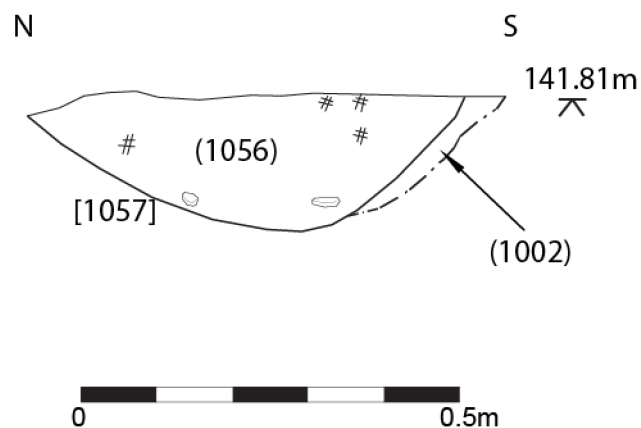


Fig. 11: W-facing section through ditch [1057]

Ditch [1057] - aligned E/W - may have delineated the cemetery boundary (Plate 8; fig. 2). A pit or posthole [1074] (figs. 2 & 12) at the W terminus and cutting fill (1056) could have been associated in use, as pottery from the fill was of similar 1st -2nd -century date to that from the ditch. Alternatively, it may have formed part of a fence intended to define the cemetery boundary following silting of the original ditch, with pottery residual in the feature. The fill (1073) was a firmly compacted mid brownish-grey silty sand with charcoal flecks, which differed

quite markedly from the softer, paler fill of the ditch. The pit or posthole was slightly deeper than the ditch into which it was cut.

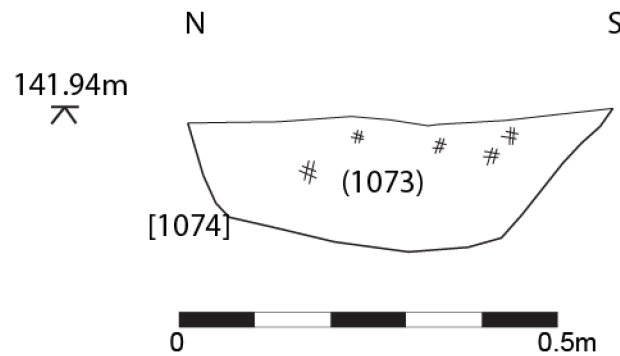


Fig. 12: W-facing profile of pit/posthole [1074]

Like Phase 2b pit [1035] (fig. 9), pit [1043] (fig. 14) cut curvilinear ditch [1034] and may have been deliberately sited over it (fig. 2). It was a W/E -orientated composite feature, apparently comprising two circular features, the eastern one being deeper. Overall, the pit measured 1.06m × 0.78m × 0.19m. The sides were steep and the base comprised two concave depressions. Although apparently comprising two parts, the feature contained a single fill (1044), a loose light greyish-brown clay with very occasional charcoal flecks and gravel. Unlike the fill of [1034], which was thought to have filled through deliberate dumping, it probably formed through natural sedimentation.

A number of isolated features cutting subsoil (1002) lay in the centre of the site. It was not possible to identify any structure of which they may have formed part.

On the western side of ditch [1034] was a fairly substantial sub-rectangular pit [1055] oriented N/S (figs. 2 & 13). The pit had partially silted-up (1058) before the upper, charcoal-rich fill (1059) was dumped into it, presumably after the pit was no longer utilised for its original purpose. The primary fill (1058) was silty, while the charcoal-rich upper fill (1059) contained CBM and a large amount of 1st-2nd century AD pottery, suggesting domestic waste. Pit [1055] also contained spelt wheat remains.

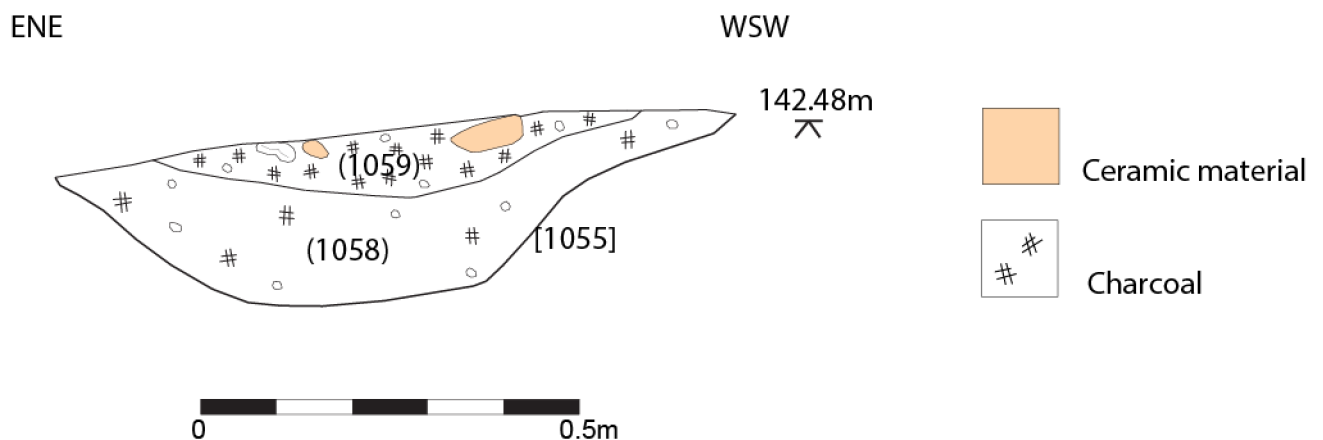


Fig. 13: NNW-facing profile of pit [1055]

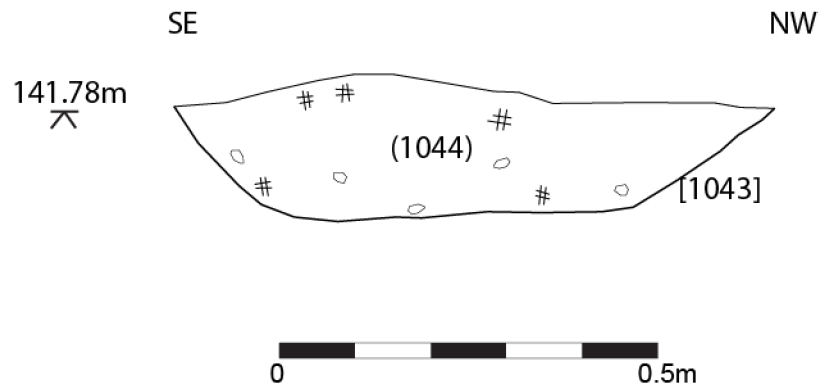
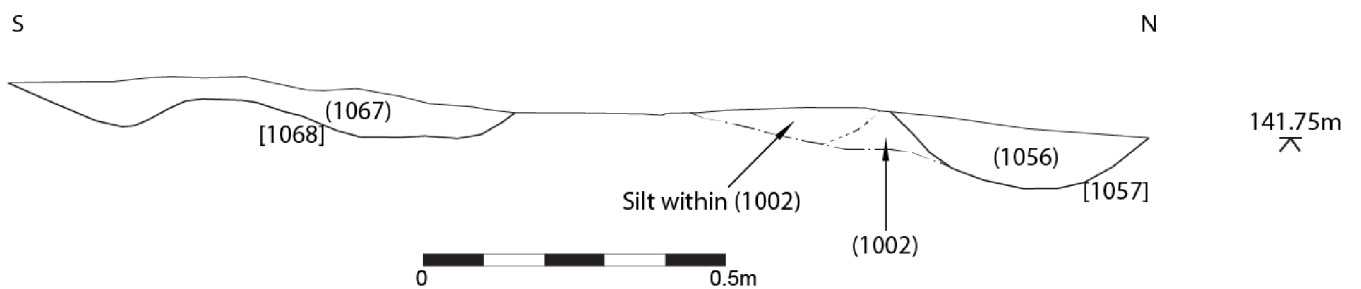
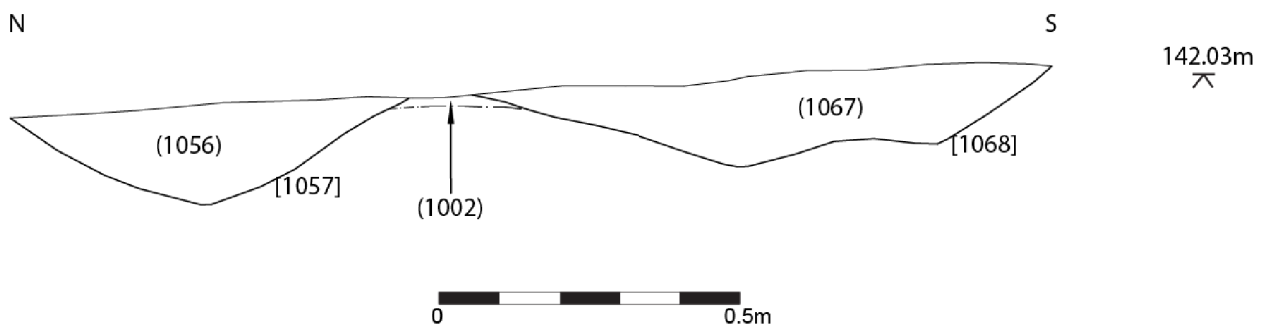


Fig. 14: NE-facing profile of pit [1043]



Figs. 15 &16: Ditch profiles showing the relationship between E/W boundary feature [1057] and Phase 1 ditch [1068]

No definite relationship could be established between the pit [1055] (fig. 13) and posthole [1064] (figs. 2 & 17), which lay on the eastern side of [1034], although the proximity may not be coincidental and pottery from both features was of the same 1st -to 2nd -century date. The posthole was circular in plan with vertical sides and a concave base; it was 0.27m in diameter and 0.27m deep. Fill (1065) was loose and is likely to have formed following removal of the post. This too contained evidence of spelt wheat.

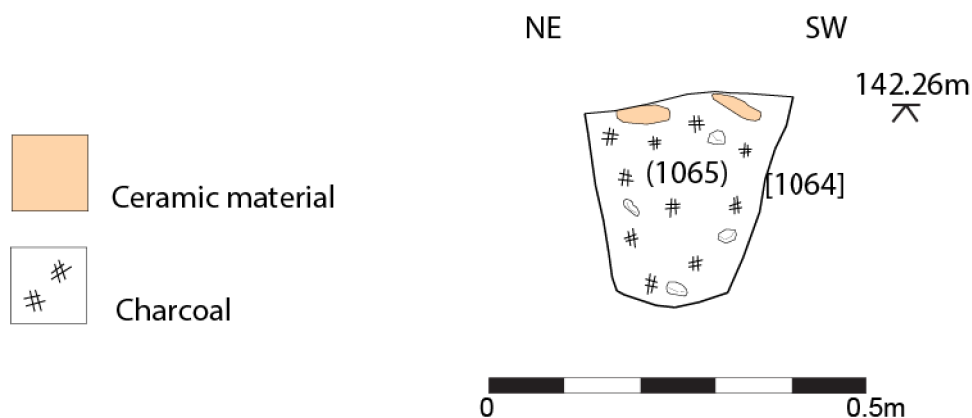


Fig. 17: NW-facing section of posthole [1064]

6.5 Phase 1

Ditch [1034] was a dominant feature on the site and ran SW/NE across its full width, curving to the E at its NE end (figs. 2, 18, 19 and 20).

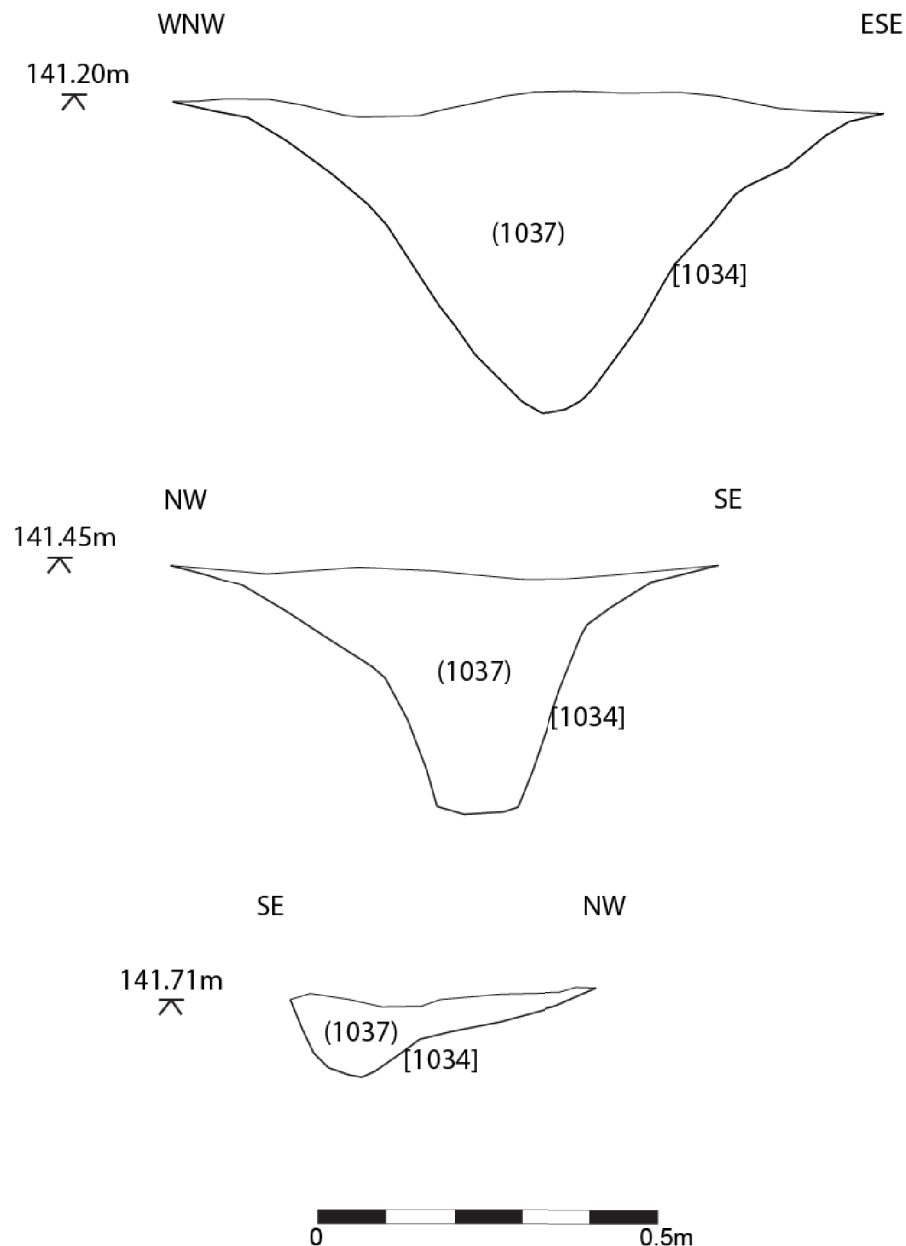


Fig. 18, 19 & 20: Profiles along the course of Phase 1 ditch [1034]

Ditch [1034] was cut by later ditches [1022] and [1019] and apparently terminated at the point where it intersected with [1022], on the E side of ditches [1022] and [1019] (fig. 2). It was 'V' -shaped along its length but was markedly deeper towards the NE end, where it may also have served a defensive function. The homogeneity of the fill (1037), a yellowish-brown, notably sterile silt clay pointed to its being allowed to silt up when it went out of use. A small localised patch (1051) of a firm grey -to -light blue silt, 0.04m thick and containing very frequent gravel, overlay fill (1037). It probably derived from the natural gravel on the site. The NE end of the ditch was up to 1m wide and 0.6m deep, while at the SW end it was 0.3m wide and 0.15m deep. Concentrations of oak, birch and hazel charcoal were recovered, together with artefactual evidence, near to the point at which the ditch was cut by Phase 2b pit [1035] or from close to where it was cut by ditch [1022] (fig. 2). However, it

should be noted that, although the date range is narrow, pottery from fill (1037) dated to the 1st -2nd centuries while that from [1035] and from ditch [1022] was of 2nd -century date.

At the N end of the site was shallow NE/SW -orientated ditch [1006] (*Plate 9; figs. 2 & 21*). The SW terminus was present in the trench and, rather than a ditch, the feature may have been a short linear feature. It measured approximately 4.0m × 1.09m × 0.38m, with a 'U' -shaped profile and a flat base. The terminus was rectangular in plan with rounded corners. The basal fill (1007) was a moderately compacted mid brown clayey silt, 0.36m thick. It contained only a small amount of non-diagnostic pottery, which was of Roman date. The upper fill (1008) was composed of loose orange-brown clay silt, 0.18m thick and 0.43m wide, and formed a small deposit on the surface of (1007).



Plate 9: Ditch [1006] view N

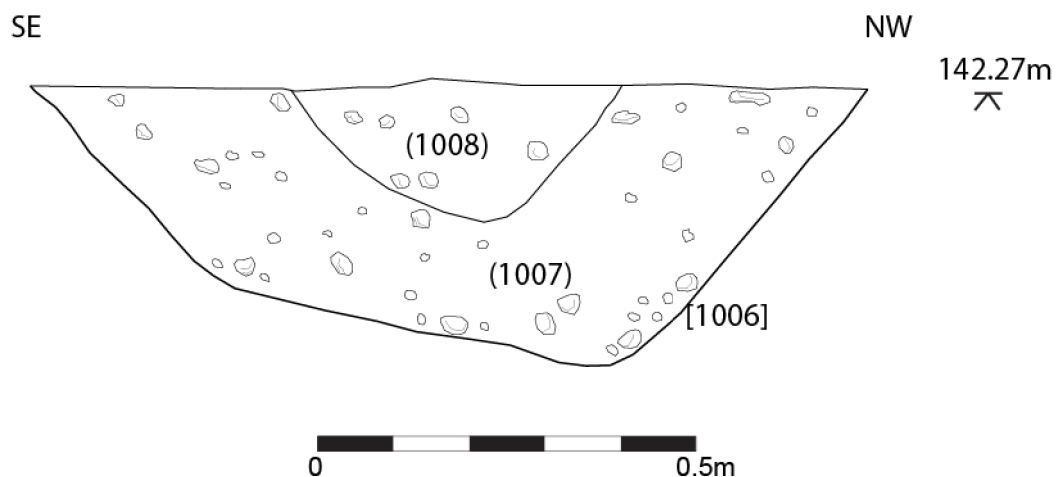


Fig. 21: NE-facing profile through ditch [1006]

Shallow N/S -orientated ditch [1003] was greater than 4m in length, extending N beyond the section edge (*figs. 2 & 22*). Its alignment was continued to the S by later ditch [1019] (*fig. 2*). Ditch [1003] was 1.6m wide and 0.25m deep with a 'U' -shaped profile; the terminus at the S end was rounded. The primary fill (1004) was a firm, mid brown silty clay, with fragments of CBM in the base. The fill was located mainly on the W side of the ditch, possibly implying the presence of a bank on the W side. Further silting then resulted in the deposition of upper fill (1005). No dating evidence was recovered from either of the fills.

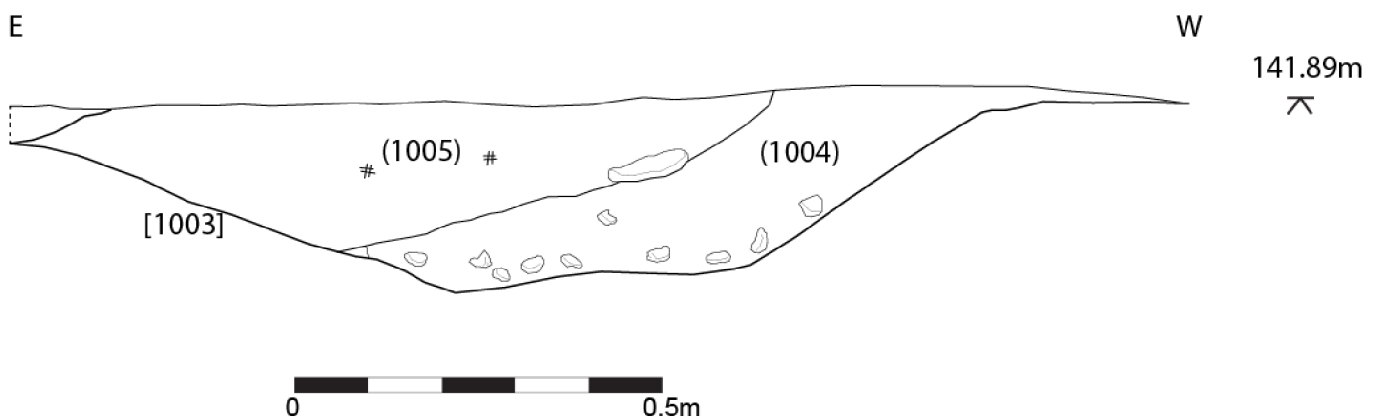


Fig. 22: N-facing profile of ditch [1003]

At the S end of the site and running parallel to the cemetery boundary [1057] was ditch [1068] (*figs. 2, 15 & 16*). This was 5.5m long and 0.95m wide at the widest point, with a maximum depth of 0.15m. The form was irregular, aligned W/E and with concave sides and base. The western terminus was rounded and shallow but the eastern terminus petered out. The fill (1067) was a soft, but moderately compact mid yellowish-grey sandy silt, probably deposited through natural silting. Pottery from it dated to the 1st century as opposed to the 1st -2nd -century material from [1057]. It is thus possible that it formed an earlier boundary to the cemetery, later being replaced by [1057].

Pit [1075] was located at the centre of the site, close to ditch [1022] (*fig. 2*); it was sub-circular in plan and orientated N/S measuring 0.56m × 0.5m × 0.17m. The sides were vertical and the base rose slightly in the centre but was otherwise fairly flat, a form which suggested a specific function. While the sides were regular and sharp, the fill (1076) was relatively sterile, consisting of greyish-brown clay silt with occasional flecks of charcoal, making interpretation difficult. No pottery was recovered from it.

Posthole [1081] lay between ditches [1022] and [1034] (*figs. 2 & 23*); it was sub-circular and orientated N/S with measurements of 0.6m × 0.3m × 0.12m. The sides were steep and the base flat and, although the feature was comparatively shallow, the packing material (1079) strongly suggested a posthole. The packing (1079) was composed of flat, mixed local stone and CBM measuring up to 0.3m in size. The packing material was no longer in its original setting and had probably undergone disturbance during removal of the post. The fill (1080) consisted of loose, mid -to -light brownish-grey silty sand, with frequent charcoal, which had been deposited as a result of silting between the stone packing (1079). No pottery was recovered from the fill.

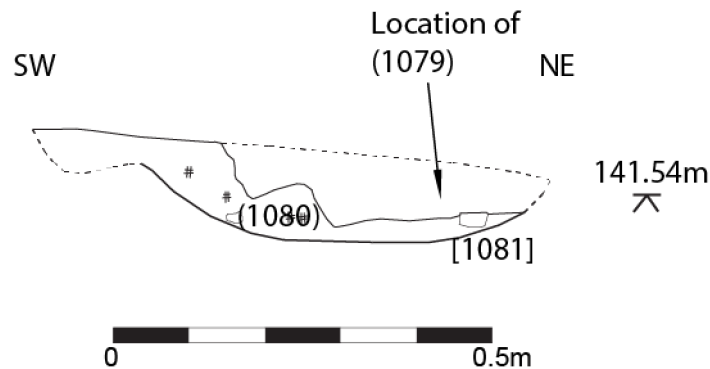


Fig. 23: SE-facing profile of posthole [1081]

On the E side of the site, posthole [1087] was circular in plan, with vertical sides and a base which tapered to a point (*figs. 2 & 24*). It was 0.2-0.22m in diameter and 0.25m deep but was not associated with any similar features. The basal fill (1086) was a moderately compact yellowish-grey clayey silt of 0.23m depth. The upper fill (1085) was a firm grey clay of 0.12m depth that included frequent charcoal. No pottery was recovered from this feature.

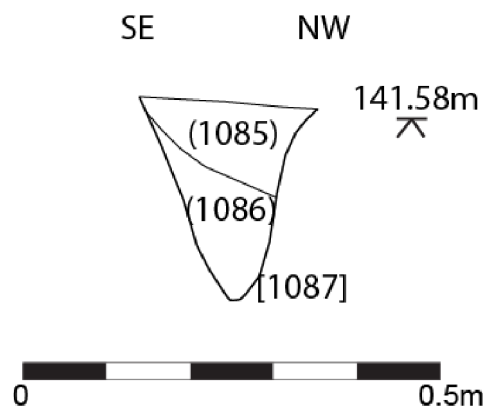


Fig. 24: NE-facing section through posthole [1087]

Stone socket [1070] was a rounded but irregular depression which measured 1.51m (W/E) × 0.68m (N/S) × 0.19m (*figs. 2 & 25*). The fill (1071) was sterile, but for very occasional charcoal flecks, and it would thus appear that this feature formed at a time of limited surrounding activity. Fill (1071) was a firm mid orange-brown silty clay that probably accumulated naturally. No dating evidence was recovered from this deposit.

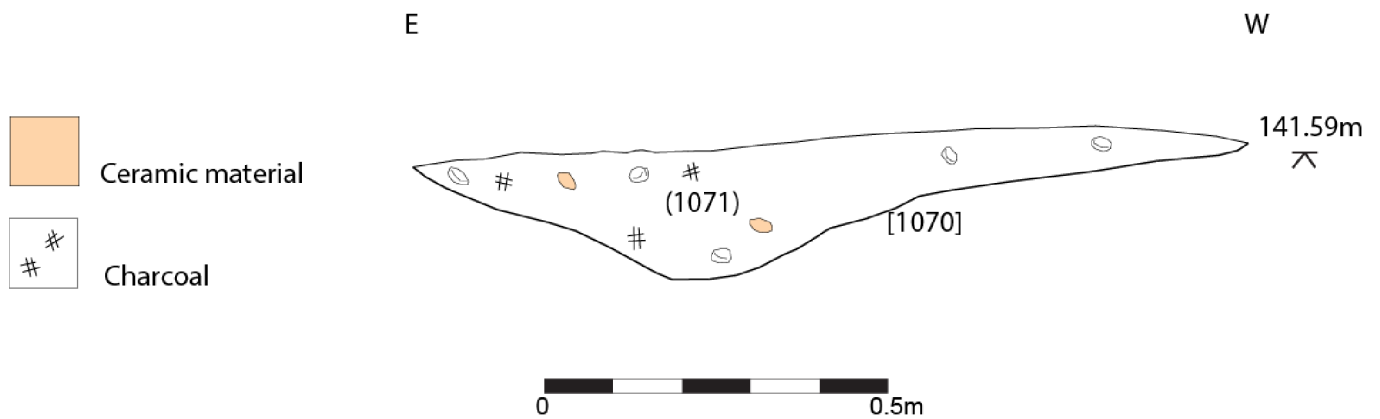


Fig. 25: N-facing section through stone socket [1070]

6.6 Cemetery area

Possibly of the greatest significance in terms of the overall importance of these results, the two cremation pits - [1091] and [1096] – were discovered at the southern end of the site (*Plate 10; figs. 2 & 26*). Cremated human bone from one of the cremations ([1091] (SF8) was dated to the late Iron Age or early Roman period, while pottery from the other dated to the 1st century AD. The urn suggested a Roman date.

Both pits were located in an area bounded by ditch [1057] and accessed through the entrance between ditches [1022] and [1078] (*fig. 2*). Pit [1091] was sub-rectangular in plan with rounded corners and measured 0.6m (W/E) × 0.5m (N/S). Two urns - (SF8) and (SF9) - were visible on the northern side of the cut.

Pit [1091] was block-lifted for subsequent laboratory excavation. The block was initially excavated in quadrants but, due to fissure damage, excavation continued in plan. Pit [1091] cut the natural brownish-orange silty clay subsoil (1103). The fill (1092) had been further cut by two small pits, each of which contained an urn. Pit [1099] was located in the NE part of the block and pit [1100] in the NW part. Pit [1099] measured 0.23m × 0.2m × 0.05m and was filled by dark brown silty clay (1101) measuring 0.05m thick, above which urn (SF8) has been placed.

Urn (SF8) was a sandy grey ware vessel, dated to the 1st or early 2nd centuries, and was filled by (1094), a loose brownish-grey silt sand with very frequent charcoal, cremated bone inclusions and a fragment of glass. The glass fragment was subsequently revealed to be from the narrow neck of a thin-walled Roman unguent bottle (SF11) (*fig. 26*). While the piece was too small to permit identification of the variety of bottle, such artefacts generally date from the 1st-mid-2nd century AD (Appendix 4) and inclusion within a cremation is not unusual. The fill of the urn was excavated in 2cm spits, with cremated bone being recovered from all six (Appendix 6). Although little bone was present, it was comparable with amounts found in other archaeological cremations. The cremation in urn (SF8) was carbon-dated to the late Iron Age or early Roman period and it was established that this individual was probably aged 25-40 years at death (Appendix 6). Oak stem-wood charcoal was also identified, with low levels of vitrification present. A tiny sherd of glass was present in one of the spits and a hobnail was recovered from another.

Pit [1100] was oval in plan and measured 0.21m × 0.15m × 0.07m. At its base was a dark brown silty clay (1102), above which (SF9) has been placed. The urn was of an oxidised Severn Valley ware fabric of similar date to (SF8) and it was filled by (1095), a moderately compacted yellowish-brown sandy silt with frequent charcoal inclusions.

Micro-excavation of urn (SF9) was carried out and a very small amount of calcined bone, insufficient for radiocarbon dating, was noted in three of the six spits removed, together with a few charcoal fragments, including two fragments identifiable as oak stem-wood. Pit fill (1092) partially overlay the urn fills and was below pit fill (1093). Fragments of pottery and calcined bone were recovered from both contexts (1092) and (1093). The complete rim and neck fragment of a second glass unguent bottle (SF12) was also hand-recovered from context (1093) (*fig. 26*). This was coloured blue/green with green impurities at the rim and wear scratches were noted around the lower neck. Whilst a secure date cannot be proposed, the bottle is likely to be of the 1st-2nd century

A few fragments of calcined bone were recorded in most of the samples and small urn fragments were noted in several. Nails and/or hobnails were recovered from contexts (1092), (1093) and (1101); a small blue/green glass chip, no more than 3mm in size, was also recovered from (1093) and probably related to (SF12).

Charred barley grains, ribwort plantains seeds, hazel nutshell fragments, grass caryopses, vetch seeds and a dock nutlet were recorded in the fills, with possible charred beans noted but not confirmed due to poor condition. Oak stem-wood charcoal was identified from all of the samples, in addition to a single fragment of alder from (1093) and birch from (1092). Full results are presented in Appendix 5.



Plate 10: Urns 8 (left) & 9 within cremation pit [1091]. Cuts [1099] and [1100] are also visible; view S

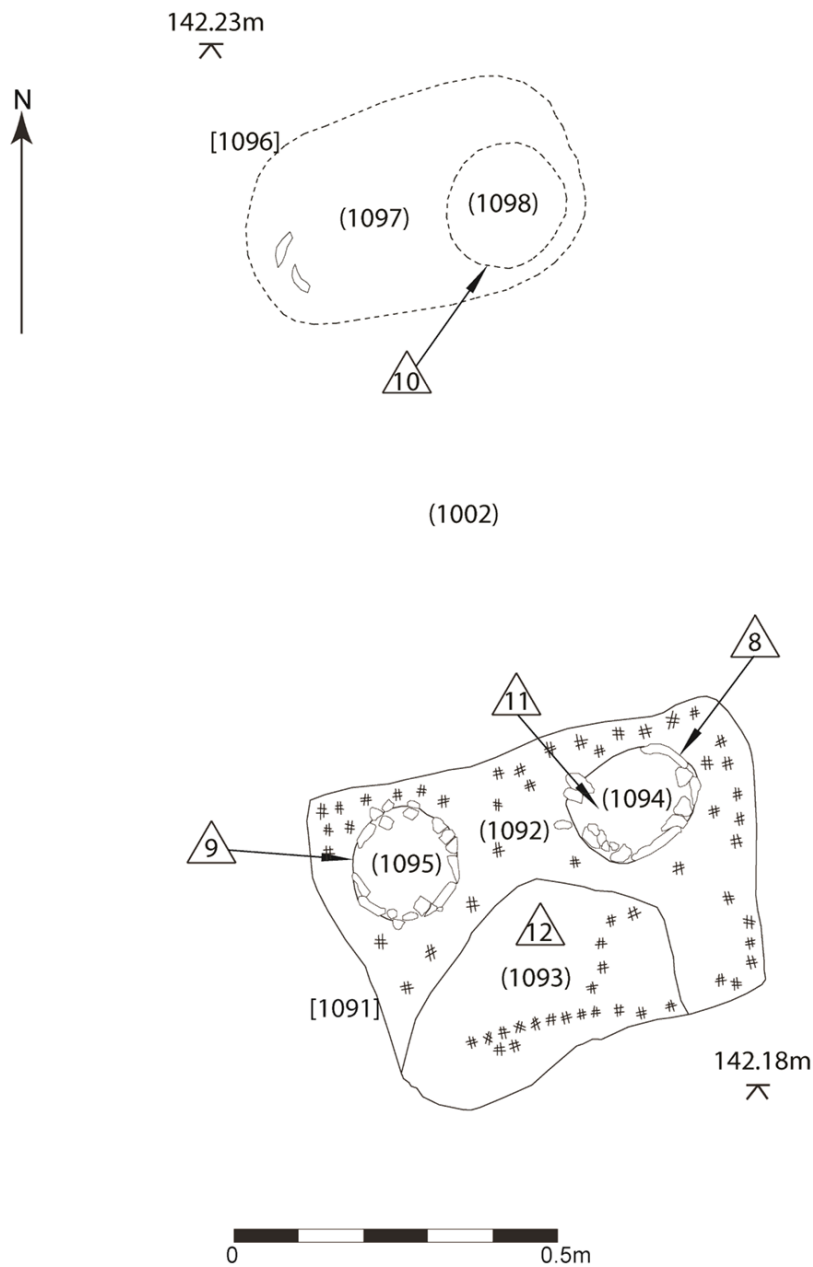


Fig. 26: Plan showing detail of cremation pits [1096] and [1091]

The small amount of bone found in (SF9) left a number of different interpretations. The urn may, for instance have contained an offering for the individual in (SF8), although the fact that it was buried in a separate pit might make this interpretation less likely. Other possibilities are either that (SF9) represented a ‘cenotaph’, or symbolic burial, or that later damage had removed some of the bone. Cremated human bone was also found in pit fills

(1092) and (1093), deposits which may have derived from pyre debris. The remains of charred grain and beans, possibly representing food offerings, together with hobnails, were found in (1092), (1093) and (1101).

Cremation pit [1096] was located approximately 1m N of cremation pit [1091] and lay on similar W/E alignment, measuring approximately 0.55m (W/E) × 0.35m (N/S) × 0.3m. The pit was sub-rectangular to oval in plan and had fairly vertical sides and a flat base. The fill (1097) was a moderately compact light yellow or greyish-brown sandy clay with charcoal inclusions, which had almost certainly derived from the subsoil into which the pit had been dug and was almost identical to that deposit. As (1097) must have been returned to the pit immediately after the burial of the urn, it was difficult to distinguish it from the surrounding material, with only occasional flecks of charcoal helping to define the limits of the pit. These flecks did not appear to represent the dumping of pyre-debris. As a result of the diffuse boundaries, the pit was only seen during machine excavation and cremation urn (SF10) was the only vessel recovered in its entirety.

Urn (SF10) stood upright, although slightly inclined towards the N and lay on the E side of the pit with further pottery fragments to the W (*fig. 26*). The pottery is 1st century AD and it is thought that it was from vessels accompanying the burial, rather than being part of another urn. The urn was filled by (1098), a loose to moderately compact dark yellowish-brown sandy silt containing no visible inclusions. The urn was again excavated in spits under laboratory conditions and, as in the case of urn (SF9), cremated bone was present in only three of the eight spits excavated. Small charcoal fragments were present in all of the spits, these being of oak stem-wood, where identifiable. Although the urns generally produced only a relatively small amount of charcoal, the fragments of oak recovered may represent the remains of the fuel used during the cremation process: oak stem-wood charcoal is able to attain the high temperatures (500°C) required and has frequently been recorded in such cremation deposits.

To the N of the burials lay four features, [1089] to [1050], forming a rough alignment, parallel with ditches [1068] and [1057] (*figs. 2 & 27*). One contained pottery, although CBM and charcoal were present in the remainder. It is possible that the alignment represented a former boundary to the cemetery, possibly a hedge. However, given the varying nature of the features forming it, the alignment might be coincidental. The alignment, together with ditches [1068] and [1057], may represent the position of the northern cemetery boundary at different periods.

The westernmost feature in the alignment was posthole or pit [1089] (*figs. 2 & 27*). It was circular with steeply sloping sides and a flat base. The pit was 0.44m in diameter and 0.1m depth, although it may originally have been up to 40mm deeper; however, the upper parts of the cut would have been significantly more diffuse. The fill (1088) was a moderately compacted dark brown silt containing occasional CBM and charcoal and potentially pieces of burnt bone. The inclusions may have become incorporated as a result of proximity to cremation pits [1091] and [1096].

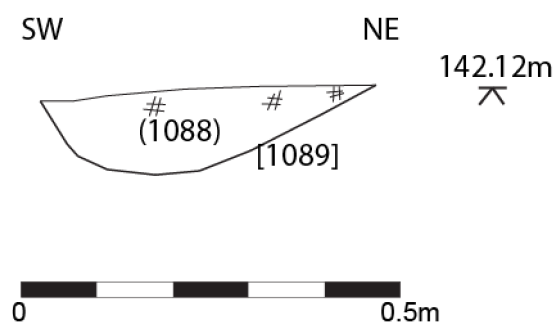


Fig. 27: SE-facing section of pit/posthole [1089]

To the E of [1089] was pit [1052], which may have been the origin of the burnt material within the surrounding rooting features (figs. 2 & 28). The pit comprised a rectangular cut measuring 1.25m (N/S) × 0.85m (W/E) × 0.20m, exhibiting steep sides and a fairly flat base. It was filled by basal burnt deposit (1054) and upper charcoal deposit (1053) but it is not suggested that this resulted from *in-situ* burning. The upper fill (1053) consisted of loose dark brown sandy clay with frequent charcoal that covered the upper part of the cut and was 0.06m thick. The basal fill (1054) was composed of loose dark reddish-brown sandy clay, 0.1m thick, which incorporated occasional charcoal and frequent burnt clay and appeared to have been dumped.

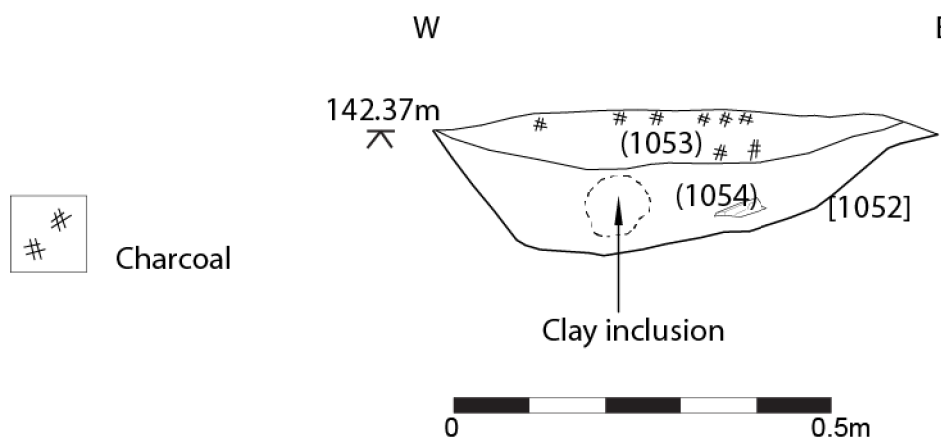


Fig. 28: View N showing S-facing profile of pit [1052]

Adjacent to pit [1052] was burnt clay (1066), which spread over an area measuring 1.25m W/E × 0.2m N/S; it was located 1.2m from the pit and was probably related. Deposit (1066) was 0.04m deep and consisted of very red burnt silty clay; it is possible this represented *in-situ* burning, although the presence of dumped burnt materials within pit [1052] may indicate that deposit (1066) had also been dumped. Association with the nearby cremations seems possible; however, (1066) and the pit fills could represent burning associated with land-clearance activity and the grubbing-out of tree-boles or a dump of industrial waste from a process taking place elsewhere. Pottery from the fills of the feature dated to the 1st-to 2nd centuries AD.

To the E of [1052] was an irregular oval feature [1047] measuring 0.4m (NW/SE) × 0.3m × 0.13m. The base and the sides were irregular but became straighter towards the SW edge and it was initially thought to be a cut feature, although subsequent interpretation favoured a tree-bole. The fill (1048) consisted of firm black-to-grey sandy clay containing frequent charcoal, the presence of which may suggest that, after removal, the roots were burned nearby.

A further tree-bole [1050] lay to the E of [1047], comprising a very irregular oval measuring 1.16m W/E × 0.16m deep. The base exhibited numerous rooting depressions and the sides were equally irregular. The fill (1049) was a loose to moderately compacted greenish-grey sandy silt containing occasional charcoal. The limited presence of charcoal may point to windblown deposition into a root-void.

A fairly regular circular feature [1063] was thought likely to have been related to rooting, despite its regularity. It was 0.5m diameter and 0.4m deep with a single fill (1062) of soft and loose dark brown silt containing occasional CBM inclusions. In common with the other examples of irregular features filled by archaeological material, it is probable that this became incorporated as a result of the hole lying open while activity took place nearby.

Feature [1042] was an irregular sub-rectangle measuring 0.82m (W/E) × 0.63m (N/S) × 0.22m, with a stepped and irregular base and sides varying from near-vertical to shallow. The fill (1041) was a moderately compacted to firm mid pale grey silty clay with occasional to moderate stones, occasional CBM and moderate charcoal inclusions. The inclusions may have become lodged in the depression that would have remained following removal of a tree-bole.

At the very southern end of the site was tree-bole [1072], comprising an extremely irregular sub-rectangle measuring 0.9m (W/E) × 0.5m (N/S) × 0.2m. The fill (1069) consisted of loose black silt, predominantly comprising charcoal but also containing a burnt flint. The flint was broken at the distal end and showed evidence of bladelet removal on the dorsal side (Appendix 8).

6.7 Phase 0 Natural deposition

Similar to subsoil (1001) and (1045), which sealed archaeological features on the site, was subsoil (1002), a moderately compact light brown silty clay into which archaeological features were cut, indicating that it had formed prior to the Roman period. It was present to a depth of 1m across the site and was a re-deposition of the geological naturals. The natural deposit across the site was (1020), a loose to moderately compacted clay sand that varied from dark purple and stony to greenish and sandy. It included occasional large stones and moderate quantities of smaller stones and was probably glacial in origin. Subsoil (1002) was a re-deposition of this weathered and washed natural material.

7 Conclusions

The excavation results broadly reflect the conclusions set out in Border Archaeology's earlier programme of desk-based assessment and field evaluation (BA 2009a & b). The evaluation results in particular indicated that archaeological features could be expected to cluster within the eastern portion of the site (Trench 1) and that these features could include possible evidence of burial activity, as suggested by the presence of a ditch [106] which contained a single fragmentary vessel exhibiting evidence of exposure to considerable heat and which was considered to represent potential evidence of cremation burial. The subsequent discovery during the excavation phase of two cremation pits containing evidence of burnt human bone has confirmed this initial interpretation. Moreover, excavation confirmed the presence of two horizons of Roman archaeology sealed by layers of colluvial subsoil, as previously indicated during the evaluation phase.

The excavation results include a number of ditches that appear to respect the alignment of the Roman road connecting Leintwardine and Wroxeter, the approximate line of which is preserved by the modern A4113 forming the eastern boundary of the site. These features are concentrated on the eastern side of the study area, with a distinct paucity of archaeological remains further upslope to the W, suggesting a pattern of settlement activity consistent with the existing model of ribbon development extending N-S along the roadside (Brown 1996, 559).

The ditches contained large amounts of pottery typical of domestic occupation, although the evidence is in some respects contradictory. The presence of *amphora* sherds from three different vessels would tend to suggest urban or military occupation (Appendix 2); however, the very small proportion of Samian ware (1.5 per cent) is more typical of rural settlement. The plant macrofossil evidence too points more towards a rural environment than a densely settled urban area, with cereal evidently grown and processed either on site or nearby. Spelt and

barley chaff was found in many of the palaeoenvironmental samples, spelt being particularly frequent in the upper fills (1030) and (1028) of ditch [1019]. Weed seeds characteristic of arable land were also common.

It seems likely that the presence of the forts, first at nearby Jay Lane and then, possibly, at Buckton, influenced the composition of the ceramic assemblage and may account for its slightly atypical nature.

Too few obviously structural features were encountered to suggest the presence of buildings, although it seems likely that ploughing during Phase 4 may well have damaged or obliterated a number of shallower and more ephemeral features. Those that have survived suggest an 'organic' process of development, with a number of ditches being found to continue earlier alignments and to have fallen into disuse at different times. Interestingly, the roughly NE/SW alignment of Phase 1 ditch [1034] suggests it could predate construction of the road, although no evidence was found to indicate that it extended eastwards beyond the line of the later roadside ditch [1022] and its termination at this point would suggest that it too respected the road alignment.

The absence of evidence for pottery postdating the middle of the 2nd century may be taken to indicate a link between the abandonment of the roadside settlement and the final dismantling of the fort at Buckton, which took place towards the end of the 2nd century AD. Withdrawal of the Buckton garrison may have left areas peripheral to the main settlement focus exposed and vulnerable and there is evidence that parts of Leintwardine abandoned following removal of the garrison from Jay Lane to Buckton were resettled after the closure of Buckton (Brown 1996, 519), with people leaving outlying areas for the security of the town. Although the fortification of Leintwardine is widely considered to date to around 160-170AD, at about the time when the fort at Buckton was abandoned, a number of small towns were fortified slightly later, during the 190s, a period of political uncertainty, when Clodius Albinus, the governor of Britain, declared himself emperor. With civil war a possibility, the town may have been fortified with military help (Brown 1996, 560). This would explain its military-style fortifications, although there are no obvious military structures within the defences (Brown 1996). Civilian settlement in the town then continued into the 4th century AD.

Abandonment appears to have been fairly orderly. The large sherds of pottery indicate that material was deposited in ditches as a primary means of disposal, rather than as secondary deposition from middens or dumps. The large size of the sherds and the fact that joining sherds from the same vessels were found in ditches [1022] and [1019], could indicate the disposal of non-portable, damaged or otherwise worthless household items. An organised abandonment would also account for the lack of personal effects, as care would have been taken to remove valuables for transportation elsewhere. The paucity of animal bone probably reflects on-site taphonomic processes, as evidence suggests (Brown 1996, 518) bone decomposes quite rapidly in Leintwardine; it should be noted that animal tooth enamel was recovered from one and burnt bone from 17 of the samples (Appendix 5, 6).

Following abandonment, a brief hiatus occurred during which a shallow layer of alluvium was deposited, before the area was almost immediately brought back into cultivation. Indeed, cultivation by the former occupants cannot be ruled out and the intention to continue farming the area from a safer base could partly explain the efficiency of the 2nd-century clearance operation. The comparative paucity of finds and features associated with the post-hiatus phase (Phase 4) confirms that occupation was no longer present close to the site and that this area was probably worked from within the town. Features [1009] and [1012] relating to this post-hiatus phase may relate to stock enclosures or temporary shelters.

The excavation produced an exceptionally good assemblage of 1733 pottery sherds (c 35kg) dating to the early Roman period. Substantial portions of many vessels survived and a number of profiles have been reconstructed.

The presence of several fine wares of British manufacture is notable, as this may suggest a relatively local early 2nd -century fine-ware industry, whilst evidence of continental styles probably reflects the work of an immigrant potter consistent with the military presence at Leintwardine. The assemblage included two stamped *mortaria* and a heavily burnt colour-coated sherd from a platter with an applied foot-ring. The trace of a legible potter's stamp placed centrally on the sherd is of particular interest, as literate stamps are rarely encountered on apparently British products (Appendix 2).

The condition of the material generally reflects good preservation and undisturbed deposits. Pottery was recorded in some 14 features, the majority of which were pits and ditches; the quantity of material recovered from each context ranged from single sherds to a maximum of 466 pieces from fill (1028) in ditch [1019], in addition to the three cremation vessels (SF8-SF10). By contrast, the CBM was found to be heavily worn and fragmentary, with diagnostic material comprising a mixture of bricks and flat tiles, with very small numbers of *tegulae*, *imbrices* and box flue tiles. Whilst this CBM material can be broadly dated to the Roman period, and is thus consistent with the pottery dates, a more precise date cannot be assigned to these fragments and the assemblage thus lacks the potential to further refine understanding the site.

Evidence was also recovered of domestic waste and the use of cereal crops typical of Roman sites in England (spelt wheat and hulled six-row barley) with some evidence for the cultivation of peas and beans, although the poor condition of the remains precluded certain identification. These crops may have been supplemented by gathered foods. Material from contexts (1030) and (1028) suggest the presence of hay. Charcoal exhibiting evidence of insect degradation was recovered from three contexts (1030, 1028 & 1077) and large fragments of oak charcoal from pit fill (1036) comprised 14 evenly spaced wide growth-rings, possibly reflecting woodland management.

7.1 The cemetery

The three cremation burials revealed in the southernmost portion of the site, whilst potentially constituting an isolated group, may equally represent part a larger roadside cemetery extending to the S, beyond the limit of excavation, associated either with the town or with the fort at Jay Lane. Two ditches, one of which [1078] ran parallel with the road whilst the second was aligned E/W [1057], appeared to form a boundary separating the burials from the area to the N, where evidence for crop-processing and woodland management activity was recovered.

The first of the cremation pits [1091] contained two urns, (SF8) and (SF9), only the lower parts of which survived, whilst the second pit [1096], located approximately 1m N of [1091], contained a single intact urn (SF10). All three cremation vessels are considered to be of local manufacture and are consistent with a 1st --or early 2nd -century date.

Urn (SF8) contained the remains of an adult aged 25-40 years at the time of death. Sex could not be determined due largely to the limited amount of bone present (323.7g), which was considerably less than would be expected from a modern cremation but which would be consistent with a 'token' burial typical of the late Iron Age/Roman period, as reflected in bone amounts recovered from urns in other cemeteries (Appendix 6). Identifiable bone fragments included parts of the skull, spine, pelvis, legs and feet. The lack of tooth roots and very small bones from the hands and feet may reflect the manner in which the bone was collected prior to burial.

Human bone from all contexts was predominantly buff/white in colour, suggesting this material had been burnt at sufficiently high temperatures with adequate available oxygen and for long enough to ensure oxidation of

most of the bone. This suggests the community had access to adequate supplies of suitable fuel, probably oak, as well as the necessary skills and knowledge to construct and tend a pyre successfully. This is confirmed by the common presence of oak together with hazel in all of the bulk samples and cremation deposits, indicating that these more useful of woodland resources were readily available.

Only the cremated bone from (SF8) was present in sufficient quantity to obtain a radiocarbon date. The results place the burial at the very end of the Iron Age or in the early Roman period; a similar date was suggested by pottery from the second cremation pit [1096]. Most known Iron Age cremations occur in SE Britain, where pre-conquest Roman influence was strong, and the comparatively remote location of Leintwardine would seem to preclude the likelihood of Roman cultural practices becoming established here at such an early date. It would seem more likely, as cremation remained a military ritual practice throughout the Roman period (Taylor 2000, 125), that the cremations, together with and the use of Roman goods such as *garum* and olive oil (as demonstrated by the presence of *amphora* sherds), relate directly with the period of Roman occupation and, specifically, to occupation of the fort at Jay Lane. Early adoption of this practice may show the immediate influence of the military presence on the local population or there may be a more direct link to the fort itself.

Urns (SF9) and (SF10) contained so little bone that they may be interpreted, not as burials in their own right but as 'cenotaphs', or memorials; indeed so slight was the evidence that it was not possible to determine conclusively whether or not the remains were human. A further possibility is that (SF9) was a grave offering intended to accompany (SF8). Certainly, later in the Roman period, it seems likely that the ceremony of cremation itself rather than the burial of the remains was important, with token amounts of bone buried (Taylor, 2001 125).

Cremation pit [1091] also contained much charcoal-rich material and dark brown silt, which may represent bone disturbed from urns (SF8) and (SF9) or pyre debris placed over the urns. Small quantities of cremated bone, charcoal and potential pyre offerings (hobnails, charred plant remains and an animal bone fragment) were recovered from these deposits. If these do represent deposits of pyre debris, it is possible that they relate to the same cremation event as the bone deposited in urn (SF8) and so may be part of the same individual. If so, it would seem this individual had been cremated either wearing shoes or with shoes placed on the pyre and possibly with accompanying food offerings, as attested by the presence of charred plant remains and fragmentary burnt animal bone.

The complete rim and neck fragment of a glass unguent bottle in blue/green glass with green impurities at the rim (SF12) was also recovered and, whilst a secure date could not be proposed, it would appear to be 1st -2nd century, a period during which the incorporation of unburnt unguent bottles in funeral rites was not uncommon. The recovery of this piece in association with a burial perhaps also explains the fact that only identifiable vessel fragment recovered from the remainder of the site was also an unguent bottle (SF11) (*fig. 26*).

The location of the three cremation urns at the roadside in what would appear to be a less densely settled area is consistent with burial practice as prescribed by Roman law, which stated that no burial or cremation of a corpse should take place within an urban settlement. It is thus possible that these burials represent the northernmost extension of a larger roadside cemetery extending beyond the limit of excavation to the S. With the abandonment of the fort at Jay Lane, the northern part of the cemetery, closer to the fort, may have gone out of use, and was abandoned in the later 1st to 2nd centuries, although further to the S, closer to the town, the cemetery may have remained in use. It is equally possible that the cremations could be isolated burials associated with nearby occupation: ditch [1022], which was possibly associated with a farmstead, continued in use until the middle of the 2nd century.

The northern boundary of the cemetery may have originally been delineated by ditch [1068], which was allowed to silt up in the 1st century AD. Ditch [1057] lay roughly 1m N of [1068] but this, too, soon went out of use, with pottery from the fill dating to the 1st -2nd century AD. Pottery from [1078], running parallel to the road, suggests this feature may have gone out of use at more or less the same time. A possible hedge- or tree-line indicated by features [1089] to [1050] seems to have been grubbed-out when ditches [1057] and [1078] became disused. A period of neglect is suggested by the fact that these features were allowed to silt up prior to deliberate abandonment, as indicated by the dumping of waste (1061) into [1078].

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10 Appendix 1: Context Register

CONTEXT	DESCRIPTION
(1000)	Loose greyish-brown silt clay, occasional post medieval debris; 0.2m thick. Overlies (1001).
INTERPRETATION:	<i>Topsoil</i>
(1001)	Moderately compact light greyish-brown silt clay, occasional CBM; 0.8m thick. Overlies colluvial subsoil (1045), underlies topsoil (1000).
INTERPRETATION:	<i>Subsoil – upper colluvium</i>
(1002)	Moderately compact light greyish-brown sandy clay, very occasional charcoal flecks; 1m thick. Overlies (1020), underlies (1046).
INTERPRETATION:	<i>Subsoil – lower colluvium. Archaeological features cut into this deposit</i>
[1003]	Cut; linear plan; aligned N/S; gently sloping sides, flat base; 1.6m wide, 0.25m deep. Cuts subsoil (1002), filled by (1004) & (1005).
INTERPRETATION:	<i>Cut of shallow N/S ditch</i>
(1004)	Firm mid brown silt clay, CBM and small stone inclusions; 0.19m thick. Basal fill of [1003], underlies upper fill (1005).
INTERPRETATION:	<i>Basal fill of ditch [1003]</i>
(1005)	Loose to moderately compact mid greyish-brown clayey silt, very occasional charcoal flecks & medium stone inclusions; 0.19m thick. Overlies basal fill (1004), underlies (1046).
INTERPRETATION:	<i>Upper fill of ditch [1003]</i>
[1006]	Cut; linear, aligned NE/SW; steep sides, flat base; 1.09m wide, 0.38m deep. Cuts subsoil (1002), filled by (1007) & (1008).
INTERPRETATION:	<i>Cut of shallow NE/SW ditch</i>
(1007)	Moderately compact mid brown clayey silt, occasional small stone and gravel inclusions, pottery; 0.36m thick. Basal fill of [1006], underlies upper fill (1008).
INTERPRETATION:	<i>Basal fill of ditch [1006]</i>
(1008)	Loose mid orange-brown clayey silt, very occasional small stone inclusions; 0.18m thick. Overlies basal fill (1007), underlies (1046).
INTERPRETATION:	<i>Upper fill of ditch [1006]</i>
[1009]	Cut; Irregular linear in plan; aligned N/S; steep sides, irregular flat base; 0.87m wide × 0.53m deep, length unknown. Filled by (1010) & (1011) Cuts (1046).
INTERPRETATION:	<i>Linear cut</i>
(1010)	Moderately compact yellowish-brown clayey silt, very occasional small stone inclusions; 0.31m thick. Fill of [1009], underlies (1011).
INTERPRETATION:	<i>Primary fill of cut [1009]</i>
(1011)	Loose mid orange-brown silt clay, very occasional charcoal flecks and pebble inclusions; 0.53m thick. Fill of [1009], overlies (1010), below (1045).
INTERPRETATION:	<i>Upper fill of linear cut [1009]</i>
[1012]	Cut; sub circular plan; aligned N/S; gently sloping to steep sides, concave base; 0.92m × 0.78m × 0.28m. Filled by (1013) & (1014).
INTERPRETATION:	<i>Small pit</i>
(1013)	Moderately compact mid orange-brown silt clay, very occasional flecks of charcoal & potential burnt bone, small stone and gravel inclusions; 0.22m thick. Fill of (1012), underlies (1014).
INTERPRETATION:	<i>Lower fill of pit [1012]</i>
(1014)	Loose orange-brown silt clay, occasional CBM and pottery, very occasional small stone and gravel inclusions; 0.17m thick. Overlies (1013), below (1046).
INTERPRETATION:	<i>Upper fill or possible post-pipe within [1012]</i>

(1015)	Moderately compact yellowish-blue-grey silt clay, occasional CBM and occasional to moderate charcoal inclusions, occasional to moderate pottery; 0.25m thick. Overlies (1016), underlies (1090).
<i>INTERPRETATION:</i>	<i>Upper fill of ditch [1019]</i>
(1016)	Moderately compact brownish-blue greyish silt clay, occasional to moderate charcoal inclusions, occasional to moderate pottery; 0.20m thick. Overlies fill (1017), underlies fill (1015).
<i>INTERPRETATION:</i>	<i>Upper fill of ditch [1019]</i>
(1017)	Moderately compact reddish-brown & blue grey sandy silt, occasional charcoal inclusions, moderate pottery; 0.08m thick. Overlies fill (1018), underlies fill (1016).
<i>INTERPRETATION:</i>	<i>Re-deposited fill of ditch [1019]</i>
(1018)	Loose brownish-blue-grey clayey silt, occasional CBM and charcoal inclusions, frequent pottery; 0.25m thick. Basal fill of [1019], underlies (1017).
<i>INTERPRETATION:</i>	<i>Basal fill of ditch [1019]</i>
[1019]	Cut; linear plan; aligned N/S; steep sides, flat base; c.11m × 1.2m × 0.85m. Cuts (1002), filled by (1090), (1015), (1016), (1017), (1018), (1028), (1030), (1033), (1031) & (1032).
<i>INTERPRETATION:</i>	<i>Cut of steep sided N/S ditch</i>
(1020)	Loose to moderately compact dark purple -to -green clayey sand, occasional large stones. Underlies subsoil (1002).
<i>INTERPRETATION:</i>	<i>Natural</i>
(1021)	Loose to moderately compact yellowish-grey sandy silt, very occasional burnt stone inclusions, frequent CBM, occasional charcoal flecks, occasional pottery and 1 Fe nail; 0.4m thick. Single or basal fill of [1022], underlies (1027) and subsoil (1046). Abuts fills 1038 & (1039).
<i>INTERPRETATION:</i>	<i>Northern fill of ditch [1022]</i>
[1022]	Cut; linear plan; aligned N/S; gently sloping to steep sides, flat to concave base; 1-1.5m × 0.25-0.6m deep (averaging depth 0.4m). Cuts (1002), filled by (1021), (1027), (1038) & (1039).
<i>INTERPRETATION:</i>	<i>Cut of shallow N/S ditch</i>
[1023]	Cut; irregular curvilinear in plan; aligned NW/SE; irregular steep sides, tapered base; 2.05m × 0.89m × 0.35m. Filled by (1024), (1025) & (1026).
<i>INTERPRETATION:</i>	<i>Irregular feature; possibly formed naturally or affected by bioturbation</i>
(1024)	Loose mid brown silt clay, very occasional small stone and gravel inclusions; 0.21m thick. Underlies (1025).
<i>INTERPRETATION:</i>	<i>Lower fill of irregular feature [1023] naturally derived</i>
(1025)	Loose mid orange-brown silt clay, sterile, 0.1m thick. Within subsoil (1002), overlies (1024), underlies (1026).
<i>INTERPRETATION:</i>	<i>Secondary fill of irregular feature [1023]</i>
(1026)	Loose dark brown silt clay, very occasional gravel inclusions, frequent charcoal; 0.07m thick; overlies (1025).
<i>INTERPRETATION:</i>	<i>Upper anthropogenic deposit within [1023]</i>
(1027)	Loose to moderately compact orange-grey silt, frequent charcoal flecks, frequent CBM; 1.5m × 0.3m thick. Overlies fill (1021), underlies subsoil (1046).
<i>INTERPRETATION:</i>	<i>Upper fill of ditch [1022] at N end</i>
(1028)	Loose dark brown clay, frequent charcoal inclusions, frequent CBM and moderate pottery; 0.26m thick. Overlies fill (1033), underlies fill (1030).
<i>INTERPRETATION:</i>	<i>Upper fill of ditch [1019] at southern end</i>
(1029)	Same as (1015).
<i>INTERPRETATION:</i>	<i>VOID</i>
(1030)	Loose mid to dark brown silt clay, very occasional small stone inclusions, moderate charcoal, CBM & pottery; lens of loose light yellow-brown silt clay (no inclusions); 0.29m

	thick. Overlies fill (1028), underlies subsoil (1046).
<i>INTERPRETATION:</i>	<i>Upper fill of ditch [1019] at southern end</i>
(1031)	Loose red gritty sand, no inclusions; 1m × 0.2m × 0.2m. Overlies fill (1018), underlies fill (1017).
<i>INTERPRETATION:</i>	<i>Isolated deposit within ditch [1019]</i>
(1032)	Moderately compact orange-red clay, very occasional grit inclusions; 0.35m × 0.07m × 0.18m. Overlies fill (1033), underlies fill (1030).
<i>INTERPRETATION:</i>	<i>Isolated deposit within ditch [1019]</i>
(1033)	Loose mid greyish-brown silt clay, very occasional small stone inclusions, occasional charcoal & pottery; 0.24m thick. Fills [1019], underlies (1028).
<i>INTERPRETATION:</i>	<i>Basal fill of ditch [1019] at S end</i>
[1034]	Cut; curvilinear in plan; aligned SW/NE; sides steep, base tapered; 0.3m (SW)-1m (NE) wide × 0.15m (SW)-0.6m (NE) deep. Cuts (1002), filled by (1037) & (1051).
<i>INTERPRETATION:</i>	<i>Cut of curvilinear SW/NE ditch</i>
[1035]	Cut; sub-rectangular in plan; aligned W/E; sides steep, base flat; 1.5m × 0.82m × 0.33m. Cuts fill (1037) of ditch [1034], filled by (1036).
<i>INTERPRETATION:</i>	<i>Cut of sub-rectangular pit</i>
(1036)	Loose mid to light greyish-brown clay, very occasional large stone, occasional gravel, moderate charcoal, pottery & CBM; 0.33m thick. Fills [1035], underlies (1046).
<i>INTERPRETATION:</i>	<i>Single fill of sub-rectangular pit [1035]</i>
(1037)	Loose light yellow-brown silt clay, very occasional small to medium stones, very occasional charcoal flecks; 0.15-0.6m thick. Fills [1034], underlies (1051).
<i>INTERPRETATION:</i>	<i>Single or basal fill of curvilinear ditch [1034]</i>
(1038)	Masonry; 0.3-0.4m × c. 0.25m 0.1m; course; aligned W/E; no bonding. Laid against cut [1022], underlies (1039), abuts (1021) & (1040).
<i>INTERPRETATION:</i>	<i>Structure apparently of selected, locally sourced materials, located between ditches (1022) & (1104)</i>
(1039)	Loose grey silt, very frequent charcoal, occasional CBM, occasional flecks of potential burnt animal bone; 0.1m thick. Overlies (1038), underlies (1046).
<i>INTERPRETATION:</i>	<i>Deposit associated with stone structure (1038)</i>
(1040)	Loose to moderately compact light orange silt, occasional to moderate charcoal inclusions, occasional CBM, pottery & glass; 0.5m thick. Fills [1104], underlies (1046).
<i>INTERPRETATION:</i>	<i>Single fill of ditch [1104]</i>
(1041)	Moderate to firm compaction mid pale grey silt clay, occasional to moderate stone inclusions, moderate charcoal & occasional CBM; 0.22m thick. Fills [1042], underlies (1046).
<i>INTERPRETATION:</i>	<i>Single fill of probable rooting activity [1042]</i>
[1042]	Cut; sub rectangular plan; aligned W/E; sides irregular, base irregular stepped flat; 0.82m × 0.63m × 0.22m. Cuts (1002), filled by (1041).
<i>INTERPRETATION:</i>	<i>Probable rooting activity</i>
[1043]	Cut; oval plan; aligned W/E; sides steep, base concave stepped; 1.06m × 0.78m × 0.19m. Cuts fill (1037) in ditch [1034], filled by (1044).
<i>INTERPRETATION:</i>	<i>Cut of oval pit</i>
(1044)	Loose light greyish-brown clay, very occasional gravel, very occasional charcoal flecks; 0.19m thick. Fills [1043], underlies (1046).
<i>INTERPRETATION:</i>	<i>Single fill of oval pit [1043]</i>
(1045)	Moderately compact, mid greyish-brown clay silt, small medium rounded pebbles angular & sub-angular stones; 0.20-0.32m deep. Underlies (1001), overlies (1046)
<i>INTERPRETATION:</i>	<i>Post Roman plough soil/colluvium across the site</i>
(1046)	Firm mid to dark yellow brown clay silt with occasional small rounded stones & occasional charcoal; 0.18m deep. Underlies (1045), overlies (1002)
<i>INTERPRETATION:</i>	<i>Roman agricultural/abandonment horizon sealing C1-C2 archaeology</i>

[1047]	Cut; irregular oval plan; aligned NW/SE; sides irregular gently sloping, base irregular; 0.4m x 0.3m x 0.13m. Cuts (1002), filled by (1048).
<i>INTERPRETATION:</i>	<i>Probable rooting activity</i>
(1048)	Firm black grey sandy clay, frequent charcoal; 0.13m thick. Fills [1047], underlies (1046).
<i>INTERPRETATION:</i>	<i>Single fill of probable rooting activity [1047]</i>
(1049)	Loose to moderately compact green grey sandy silt, moderate stone inclusions, occasional charcoal; 0.16m thick. Fills 1050], underlies (1046).
<i>INTERPRETATION:</i>	<i>Fill of probable rooting activity [1050]</i>
[1050]	Cut; oval plan; aligned W/E; sides & base irregular, irregular; 1.16m (length) x 0.16m (depth). Cuts (1002), filled by (1049).
<i>INTERPRETATION:</i>	<i>Probable rooting activity</i>
(1051)	Firm grey to light blue silt, very frequent gravel; 0.04m thick. Overlies (1037), underlies (1046).
<i>INTERPRETATION:</i>	<i>Gravel deposit; upper fill of curvilinear [1034]</i>
[1052]	Cut; rectangular plan; aligned N/S; sides steep, base flat; 1.25m x 0.85m x 0.2m. Cuts (1002), filled by (1053) & (1054).
<i>INTERPRETATION:</i>	<i>Cut of pit associated with burning</i>
(1053)	Loose dark brown sandy clay, frequent charcoal; 0.06m thick. Overlies (1054), underlies (1046).
<i>INTERPRETATION:</i>	<i>Upper fill of pit [1052]</i>
(1054)	Loose dark red brown sandy clay, occasional charcoal inclusions, frequent burnt clay; 0.1m thick. Fills [1052], underlies (1053).
<i>INTERPRETATION:</i>	<i>Basal fill of pit [1052]</i>
[1055]	Cut; sub-rectangular plan; aligned N/S; sides sloping, base flat; 1.02m x 0.89m x 0.22m. Cuts subsoil (1002), filled by (1058) & (1059).
<i>INTERPRETATION:</i>	<i>Cut of pit</i>
(1056)	Soft/ moderately compact mid yellow-grey sandy silt, very occasional small stone inclusions; 0.17m thick. Fill of [1057], cut by [1074], underlies (1046).
<i>INTERPRETATION:</i>	<i>Fill of ditch [1057]</i>
[1057]	Cut; linear plan; aligned W/E; sides sloping sides, base concave; 7m x 0.65m x 0.17m. Cuts (1002), filled by (1056).
<i>INTERPRETATION:</i>	<i>Cut of shallow ditch</i>
(1058)	Loose mid greyish-brown silt clay, very occasional gravel inclusions, very occasional charcoal flecks; 0.16m thick. Fills [1055], underlies (1059).
<i>INTERPRETATION:</i>	<i>Basal fill of pit [1055]</i>
(1059)	Loose dark black brown silt clay, very occasional medium stones and gravel, very frequent charcoal, pottery & CBM; 0.1m thick. Overlies (1058), underlies (1046).
<i>INTERPRETATION:</i>	<i>Upper fill of pit [1055]</i>
(1060)	Firm to moderately compact, yellow red clayey silt, occasional gravel, occasional charcoal and pottery, 0.1m thick. Overlies fill (1061), underlies subsoil (1046).
<i>INTERPRETATION:</i>	<i>Upper fill of ditch [1078]</i>
(1061)	Loose greyish-black clayey silt, occasional large stones, very frequent charcoal & pottery, burnt bone; 0.15m thick. Overlies (1077), underlies (1060).
<i>INTERPRETATION:</i>	<i>Middle fill of ditch [1078]</i>
(1062)	Soft / loose dark brown silt, occasional CBM; 0.4m thick. Fills [1063], underlies (1046).
<i>INTERPRETATION:</i>	<i>Fill of probable rooting activity [1063]</i>
[1063]	Cut; circular plan; sides steeply sloping, based tapered; 0.5m (diameter) x 0.4m (depth). Cuts (1002), filled by (1062).
<i>INTERPRETATION:</i>	<i>Probable rooting activity</i>
[1064]	Cut; sub-circular plan; sides near-vertical, base concave; 0.27m (diameter) x 0.27m (depth). Cuts (1002), filled by (1065).

<i>INTERPRETATION:</i>	<i>Cut of posthole</i>
(1065)	Loose greyish-brown silt clay, occasional small stones, moderate charcoal inclusions, very occasional pottery; 0.27m thick. Fills [1064], underlies (1046).
<i>INTERPRETATION:</i>	<i>Single fill of posthole [1064]</i>
(1066)	Moderately compact, very red burnt clay; 1.25m (W/E) × 0.2m (N/S) × 0.04m. Overlies (1002), underlies (1046).
<i>INTERPRETATION:</i>	<i>Burnt clay deposit</i>
(1067)	Soft-moderately compact mid yellow-grey sandy silt, occasional small stone inclusions, very occasional pottery; 0.15m thick. Fills [1068], underlies (1046).
<i>INTERPRETATION:</i>	<i>Single fill of ditch [1068]</i>
[1068]	Cut; linear plan; aligned W/E; sides gently sloping, base concave; measures 5.5m × 0.95m × 0.15m. Cuts (1002), filled by (1067).
<i>INTERPRETATION:</i>	<i>Cut of shallow W/E ditch</i>
(1069)	Loose black silt, very frequent charcoal, one burnt flint, 0.2m thick. Single fill of [1072], underlies subsoil (1046).
<i>INTERPRETATION:</i>	<i>Fill of probable rooting activity [1072]</i>
[1070]	Cut; irregular circular plan; irregular sides, irregular base; 1.51m W/E, 0.68m N/S, 0.19m deep. Depression within subsoil (1002), filled by (1071).
<i>INTERPRETATION:</i>	<i>Stone socket</i>
(1071)	Firm mid orange-brown silt clay, occasional gravel inclusions, very occasional charcoal flecks; 0.19m thick. Fill of [1070], underlies subsoil (1046).
<i>INTERPRETATION:</i>	<i>Fill of stone socket [1070]</i>
[1072]	Cut (?); irregular sub rectangular, irregular steep sides, irregular flat base; 0.9m W/E, 0.5m N/S, 0.2m deep. Cuts (1002), filled by (1069).
<i>INTERPRETATION:</i>	<i>Probable rooting activity</i>
(1073)	Firm mid brownish-grey silt sand, frequent charcoal flecks, moderate pottery inclusions; 0.17m thick. Fills [1074], underlies (1046).
<i>INTERPRETATION:</i>	<i>Single fill of pit [1074]</i>
[1074]	Cut; oval plan; steep sides, concave base; 0.68m W/E, 0.57m N/S, 0.17m deep. Cuts (1002), filled by (1073).
<i>INTERPRETATION:</i>	<i>Cut of pit truncating ditch [1057]</i>
[1075]	Cut; sub circular plan; near vertical sides and a flat base; 0.56m N/S, 0.5m W/E, 0.17m deep. Cuts (1002), filled by (1076).
<i>INTERPRETATION:</i>	<i>Cut of pit</i>
(1076)	Loose greyish-brown clayey silt, very occasional gravel inclusions, very occasional flecks of charcoal and pottery; 0.17m thick. Fills [1075], underlies (1046).
<i>INTERPRETATION:</i>	<i>Single fill of pit [1075]</i>
(1077)	Firm to moderately compact reddish-grey sandy clay, frequent charcoal and pottery; 0.15m thick. Basal fill of [1078], underlies fill (1061).
<i>INTERPRETATION:</i>	<i>Basal fill of ditch [1078]</i>
[1078]	Cut; linear plan; aligned N/S; steep sides, concave base; 1.03m wide, 0.27m deep. Cuts (1002), filled by (1060), (1061) & (1077).
<i>INTERPRETATION:</i>	<i>Cut of shallow N/S ditch</i>
(1079)	Masonry; flat stones & CBM; 0.1m-0.3m long, 0.2m-0.05m wide, 0.1m-0.02m thick. Overlies fill (1080), underlies subsoil (1046).
<i>INTERPRETATION:</i>	<i>Locally sourced stone packing within posthole [1081]</i>
(1080)	Soft-loose mid to light brownish-grey silt sand, occasional small stone inclusions, frequent charcoal; 0.1m thick. Fills [1081], underlies (1079).
<i>INTERPRETATION:</i>	<i>Basal fill of posthole [1081]</i>
[1081]	Cut; sub circular plan; steep sides, flat base; 0.6m N/S, 0.3m W/E, 0.12m deep. Cuts (1002), filled by (1080) & (1079).

<i>INTERPRETATION:</i>	<i>Cut of posthole</i>
[1082]	Cut; triangular plan; gently sloping to near vertical sides, pointed base on NW side; 1.1m long, 1.02m wide, 0.36m deep. Cuts (1002), filled by (1083) & (1084).
<i>INTERPRETATION:</i>	<i>Cut of triangular pit</i>
(1083)	Firm to moderate compaction mid orange-brown silt clay, very occasional large stones and gravel inclusions, moderate charcoal inclusions, pottery, CBM and an iron nail; 0.28m thick. Fills [1082], underlies (1084).
<i>INTERPRETATION:</i>	<i>Basal fill of triangular pit [1082]</i>
(1084)	Loose mid greyish-brown clayey silt, very occasional large stones and gravel inclusions, moderate charcoal inclusions, pottery and CBM; 0.17m thick. Overlies (1083), underlies (1046).
<i>INTERPRETATION:</i>	<i>Upper fill of triangular pit [1082]</i>
(1085)	Firm grey clay, occasional gravel inclusions, frequent charcoal; 0.12m thick. Overlies (1086), underlies (1046).
<i>INTERPRETATION:</i>	<i>Upper fill of posthole [1087]</i>
(1086)	Moderately compact, yellowish-grey clayey silt, moderate gravel inclusions; 0.23m thick. Fills [1087], underlies (1085).
<i>INTERPRETATION:</i>	<i>Basal fill of posthole [1087]</i>
[1087]	Cut; circular plan; near-vertical sides, tapered base; 0.22m × 0.2m × 0.25m. Cuts (1002), filled by (1085) & (1086).
<i>INTERPRETATION:</i>	<i>Cut of posthole</i>
(1088)	Moderately compact dark brown silt, occasional charcoal inclusions, CBM & potential burnt bone; 0.1m thick. Fills [1089], underlies (1046).
<i>INTERPRETATION:</i>	<i>Single fill of pit [1089]</i>
[1089]	Cut; circular plan; sides steep, base flat; 0.44m (diameter) × 0.1m (depth). Cuts (1002), filled by (1088).
<i>INTERPRETATION:</i>	<i>Cut of pit</i>
(1090)	Moderately compact, greyish-brown silt clay, occasional charcoal inclusions, occasional CBM; 0.28m thick. Overlies (1015), underlies (1046).
<i>INTERPRETATION:</i>	<i>Upper fill of ditch [1019]</i>
[1091]	Cut; sub-rectangular plan; sides & base; 0.6m (W/E) × 0.5m (N/S) × unknown depth. Cuts (1002), filled by (1092), (1093) & (SF8) & (SF9).
<i>INTERPRETATION:</i>	<i>Cut of cremation pit containing urned burials</i>
(1092)	Loose brown-grey sandy silt, frequent charcoal inclusions. Fills [1091], underlies (?) (1093).
<i>INTERPRETATION:</i>	<i>Presumed charcoal-rich basal fill of cremation pit [1091]</i>
(1093)	Loose to moderate compaction dark yellow brown clayey silt, moderate charcoal inclusions. Overlies (?) (1092), underlies (1046).
<i>INTERPRETATION:</i>	<i>Fill of cremation pit [1091]</i>
(1094)	Loose brown-grey silt sand, very frequent charcoal & cremated bone, glass. Fills (SF8).
<i>INTERPRETATION:</i>	<i>Fill of (SF8) in cremation pit [1091]</i>
(1095)	Moderately compact, yellow-brown sandy silt, frequent charcoal inclusions. Fills SF9.
<i>INTERPRETATION:</i>	<i>Fill of red urn 9 in cremation pit [1091]</i>
[1096]	Cut; sub rectangular plan; near-vertical sides, flat base; 0.55m (W/E) × 0.35m (N/S) × 0.3m. Cuts (1002), filled by (1097).
<i>INTERPRETATION:</i>	<i>Cut of diffuse cremation pit</i>
(1097)	Moderately compact, light yellow-greyish-brown sandy clay, moderate to occasional charcoal inclusions; 0.3m thick. Fills [1096], underlies (1046).
<i>INTERPRETATION:</i>	<i>Single fill of cremation pit [1096]</i>
(1098)	Loose to moderately compact, dark yellow-brown sandy silt. Fills S10.
<i>INTERPRETATION:</i>	<i>Presumed single fill of urn 10 in cremation pit [1096]</i>
[1099]	Cut; rectangular; 0.23m × 0.20m × 0.05m. Fills [1091] & urn (SF8). Filled by (1101)

<i>INTERPRETATION:</i>	<i>Cut within cremation pit [1091] for urn (SF8)</i>
[1100]	Cut; oval plan; 0.21m × 0.15m × 0.07m. Filled by (SF9) and (1102)
<i>INTERPRETATION:</i>	<i>Cut within cremation pit [1091] for urn (SF9)</i>
(1101)	Dark brown silty clay. Fills [1099]
<i>INTERPRETATION:</i>	<i>Fill of cut [1099] for urn (SF8) within pit [1091]</i>
(1102)	Dark brown silty clay. Fills [1100]
<i>INTERPRETATION:</i>	<i>Fill of cut [1100] for urn (SF9) within pit [1091]</i>
(1103)	Same as (1002)
<i>INTERPRETATION:</i>	<i>Natural subsoil</i>
[1104]	Cut; linear; aligned N/NNW-S/SSE; 20.2m × 1.0m × 0.32m; break of slope top sharp, sides moderate 45-50°, break of slope base moderate, base flat. Truncated by [1107], filled by (1109), (1110)
<i>INTERPRETATION:</i>	<i>Boundary ditch demarcating burials</i>
[1105]	Cut; sub-circular; 0.3m × 0.28m × 0.35m; break of slope top sharp, sides vertical-steeply sloping, break of slope base moderate, base slightly concave. Filled by (1106)
<i>INTERPRETATION:</i>	<i>Cut for post possibly forming part of formal enclosure entrance – associated with [1107] in ditch [1104] immediately to the N</i>
(1106)	Moderately compact, blackish sandy clay; 0.35m × 0.3m × 0.28m. Fills [1105]
<i>INTERPRETATION:</i>	<i>Fill of posthole [1105]</i>
[1107]	Cut; oval; 0.25m × 0.2m × 0.3m; break of slope top sharp, sides moderate-steeply sloping, break of slope base gradual, base concave. Filled by (1108)
<i>INTERPRETATION:</i>	<i>Cut for posthole marking possible formal entrance-way of enclosure. Probably associated with [1105] to the S</i>
(1108)	Firm, dark greyish clayey silt; occasional angular stones; 0.25m × 0.2m × 0.3m. Fills [1107]
<i>INTERPRETATION:</i>	<i>Fill of posthole [1107]</i>
(1109)	Firm, yellowish clayey silt; occasional stones; 20.2m × 1m × 0.12m. Fills [1104], underlies (1110)
<i>INTERPRETATION:</i>	<i>Primary fill of ditch [1104]</i>
(1110)	Moderately compact, mid-greyish-brown clayey silt, moderate angular & sub-angular stones; 20.2m × 0.98m × 0.2m. Fills [1104], overlies (1109)
<i>INTERPRETATION:</i>	<i>Secondary fill of ditch [1104]</i>

11 Appendix 2: Ceramic Assessment

Jane Timby

11.1 Introduction

The programme archaeological work resulted in the recovery of a small assemblage of 41 sherds of pottery (889.5g) from the previous evaluation phase (BA 2009b), to which can added a further 1733 sherds (c. 33kg) from the excavation. The entire assemblage appears to date to the early Roman period. In addition, 17 fragments of ceramic building material (CBM) and six pieces of fired clay were recovered.

The pottery was in exceptionally good condition with the substantial parts of many vessels present and a number of profiles could be reconstructed. The overall average sherd size for the excavation assemblage is 19g, which is reflective of the good condition and suggests primary deposits which have been undisturbed.

Pottery was recorded from two ditches from the previous evaluation (BA 2009b) and some 14 features, largely pits and ditches relating to the excavation: a total of 28 fill contexts, with an additional four other deposits. The quantity of material per context ranges from single sherds up to a maximum of 466 from (1028).

The assemblage was scanned to determine the main fabrics and forms present and quantified by sherd-count and weight for each recorded context. The resulting data is summarised in Table 1. No detailed research has been carried out to place the assemblage into its local or regional contexts.

11.2 Description

The assemblage comprises a mixture of continental and regional imports and local wares.

Imported wares include 26 sherds of samian, a mixture of Southern and Central Gaulish products spanning the later 1st and 2nd centuries. Forms are quite diverse and include cups (?) Ritterling 9 and Dragendorff. 27; dishes Drag. 18, 18/31, 31, 35/6 and bowls Drag 30 and 37.

In addition, there are three sherds of *amphorae*: one sherd of probable Baetican type from southern Spain used to transport olive-oil, one sherd of a Cadiz *amphora* generally used to transport *garum* and one sherd of Campanian *amphora* from Southern Italy, probably used to carry wine.

British regional imports are dominated by sherds of Dorset and South-west black burnished ware, which account for 11.9% of the assemblage. The group includes multiple pieces from a handled mug - decorated with an acute lattice and with a burnished six-point star on the base - jars and flat rim bowls. Several of the jars exhibit sooting on the exterior of the rims. The forms all belong to the earlier phase of the industry and probably largely date to the Hadrianic period.

Also present are sherds of West Midlands *mortaria*, including one stamped with the same name either side of the spout, another, as yet unidentified *mortarium*, with a white-slipped, sandy oxidised fabric and stamped with the word *FECIT* (made by) and a probable example of a *mortarium* made at Gloucester.

Local wares are dominated by products of the Severn Valley industry, with both oxidised and reduced vessels, including a number of the earlier charcoal-tempered variant. Forms include tankards, carinated bowls, flared rims jars / bowls, narrow-necked jars, a copy of a butt beaker and a possible flagon. Altogether, Severn Valley wares accounts form 61% by sherd count of the assemblage, with a number of vessel profiles present.

Also moderately well-represented are handmade vessels from the Malvernian industry with tubby, beaded rim and everted rim jars, dishes with burnished lattice decoration on the walls and bases. One base from ditch [1057] had a minimum of four holes drilled into it after firing. This industry has its origins in the later Iron Age but continues well into the 2nd century. Collectively, it accounts for 9.8% of the assemblage.

There are a number of fine wares in the assemblage of unknown British provenance pointing to a local fine-ware industry probably dating to the early 2nd century.

Products include white-slipped oxidised wares as ring-necked flagons and jars in a fabric not too dissimilar to the stamped *mortarium*; a fine grey micaceous ware, an oxidised ware, a mica-slipped ware and a very fine white ware. These fabrics were used to make very fine copies of samian vessels, a Drag 29 bowl in the grey ware and Drag 30 bowls in the white ware with rouletted and grooved decoration replacing the moulded decoration of the samian forms and flagons. Also within this fine-ware production are several brown colour-coated cornice-rim beakers with fine roughcast decoration, again copying continental forms.

Another colour-coated sherd, which has unfortunately been heavily burnt, is from a platter with an applied foot-ring. The colour-coat has been lost leaving a soft powdery oxidised fabric with argillaceous inclusions not that dissimilar to the Severn Valley ware fabric. What makes this sherd of particular interest is the faint remains of a centrally-placed potters stamp that appears to be legible, starting with the letters 'OF AOF'(?AQF) (*Plate 11*). This piece is of especial significance as it is very unusual to have literate stamps on apparently British products.

Identification of the stamp is uncertain as it appears to be incomplete; 'OF' could be an abbreviation for *officinum* denoting a workshop; however, the personal name is unclear. It could possibly represent an abbreviation of the name 'Aquitanus' (often appearing as 'OF. AQ'), although it is perhaps more likely to correspond to the personal name 'Afer' (represented in various forms, including 'OF. AFRI'). It is worth noting that both of these names occur on stamped South Gaulish *terra sigillata* (probably originating from La Graufesenque) which was exported to Britain from the mid-1st to the early 2nd century AD (Dannell, 2008, 95, 238); a dish of Claudio-Neronian date bearing the stamp of 'OFAQ' was recovered from excavations on the baths and *macellum* at Wroxeter (Ellis 2000, 291-2).



Plate.11: Details of stamped sherd from ditch [1019] (1016)

Seventeen fragments of CBM were recovered mainly comprising *tegulae* roofing tile with at least one *imbrex*. One fragment from ditch [1022] has a lattice incised onto the back

11.3 Site chronology

The assemblage appears to be quite chronologically coherent dating to the later 1st -to mid- 2nd century.

The small group from the evaluation phase (BA 2009b) appears to support a 2nd -century date, with a similar spectrum of wares as found in the excavation.

The largest pottery groups came from ditches [1019] and [1022], effectively accounting for 86% of the recovered assemblage during the excavation phase. The bigger assemblage, some 960 sherds, came from [1022]. Although several horizons were defined in each ditch, there appears to be joins between vessels from different, fills both within the ditches and across the two ditches, suggesting both are contemporary and perhaps that backfilling was carried out as single operation.

A further 79 sherds came from ditch [1078], with the remaining 167 sherds more sparsely spread across the remaining features.

11.4 Potential and further work

This appears to be a very well-preserved assemblage dating to a moderately short period of time. There are few larger assemblage published from Leintwardine, which makes this group of material quite significant.

The range of material suggests a moderately high-status assemblage, although there are slightly contradictory elements. The Samian is diverse, with both plain and decorated vessels present, but only accounts for 1.5% of the total, which would be regarded as typical for a rural site. There are no other fine-ware imports but there are

three different *amphorae* types present, which would normally be regarded as more typical of a military or urban site.

In addition to the overall quality of the assemblage, there are a number of vessels of intrinsic interest pointing to a (?) local fine ware industry and further work is needed to put this either into a wider context or to document its existence for future research. Further detailed work is also required on provenancing the *mortaria* and checking the samian identification.

The quality and the range of the material is good and a number of vessels would warrant illustration if publication were to proceed (c. 20 vessels)

Table 1: Main fabrics and forms present quantified by sherd-count and weight for each recorded context

Context	Cut	Type	SAM	AMP	SVW	BB1	MALV	OXID	MORT	OTHER	TOT No	TOT Wt	CBM		DATE
Excavation													No	Wt	
1001	0	subsoil	0	0	3	0	0	0	0	0	3	34	1	527	Roman
1002	0	subsoil	0	0	10	0	0	0	0	0	10	71	2	17	Roman
1007	1006	ditch	0	0	2	0	0	0	0	0	2	51			Roman
1014	0	colluvium	0	0	1	1	0	0	0	0	2	42			C2
1015	1019	ditch	0	1	34	6	0	0	0	0	41	967			C2
1016	1019	ditch	2	0	89	84	30	3	0	2	210	4318	1fc	50	C2
1017	1019	ditch	0	0	15	6	0	0	0	0	21	1586			C2
1018	1019	ditch	0	0	31	32	29	0	2	26	120	2687			C2
1021	1022	ditch	7	0	134	2	17	3	0	9	172	2232	1	378	e C2
1027	1022	ditch	1	0	49	3	0	3	0	2	58	971			e C2
1028	1022	ditch	3	0	284	63	47	39	1	29	466	9648	1	18	mid C2
1030	1019	ditch	0	0	79	7	0	11	0	12	109	2283			C2
1031	1019	ditch	0	0	3	0	0	0	0	0	3	19			C1/C2
1033	1019	ditch	0	0	23	0	0	0	0	0	23	1095			C1/C2
1036	1035	ditch	1	0	18	0	2	7	0	0	28	415			C2
1037	1034	curvilinear	0	0	1	0	0	0	0	0	1	51			C1/C2
1039	1022	ditch	2	0	10	0	1	0	0	7	20	205			IC1-eC2
1040	1022	ditch	7	1	138	1	16	1	3	83	250	3707.5	5	195	e C2
1052	1052	pit	0	0	4	0	0	0	1	0	5	100	3	27	C2
1053	1052	pit	0	0	0	0	0	0	0	1	1	9			C1/C2
1054	1052	pit	0	0	6	0	0	0	0	0	6	14			C1/C2
1056	1057	ditch	0	0	35	0	7	0	0	2	44	445	1	10	C1/C2

1059	1055	pit	0	0	2	0	7	0	0	2	11	323			C1/C2
1061	1078	ditch	0	0	10	0	0	1	0	0	11	104	3	5	C1/C2
1065	1064	posthole	0	0	2	0	0	0	0	0	2	10			c1/c2
1066	0	burnt clay	1	0	3	0	0	0	0	0	4	26			c1/c2
1067	1068	ditch	1	0	1	0	0	0	0	0	2	9.25			c1
1073	1074	pit	0	0	4	0	3	0	0	0	7	94			C1/C2
1077	1078	ditch	0	0	39	0	8	0	2	19	68	932.5	1	7	C1/C2
1083	1082	pit	0	0	4	1	0	0	0	0	5	135			mid C2
1084	1082	pit	1	0	12	0	2	0	0	0	15	81.5			C1
1097	1096	cremation pit	0	1	12	0	0	0	0	0	13	215			C1
TOTAL			26	3	1058	206	169	68	9	194	1733	32880.75	17 CBM	1181	
													2 fc	53	
Evaluation															
107	106	ditch	1	0	11	1	19	0	0	2	34	766.5	4 fc		C2
108	106	ditch	0	0	3	0	0	0	0	3	6	86			C2
122	121	ditch	1	0	0	0	0	0	0	0	1	37			C2

Table 2: Pottery fabric codes based on the Nation Roman fabric reference system (NFRFC). Fabrics have been cross-referenced where possible to the Hereford and Worcester (H&W) fabric series. Unknown wares are given more generic codes

	H&W code	NFRFC	Generic	Description	No	No %	Wt	Wt %	EVE	EVE %
SVW types	12	SVW OX		Severn Valley ware oxidised	648	37.5	13438.5	41.0	800	25.0
	12.1	SVW RE		Severn Valley ware reduced	373	21.6	5165	15.8	945	29.5
	12.2-3	SVW OX		organic-tempered SVW	23	1.3	493	1.5	7	0.2
		SVW EA		early variant	5	0.3	155	0.5	14	0.4
Local	3	MAL RE A		handmade Roman Malvernian	169	9.8	3603	11.0	281	8.8
	16.2		GROG	grog-tempered	1	0.1	74	0.2	0	0.0

Regional	20		WSOXID	white-slipped oxidised	5	0.3	112	0.3	2	0.1
	22	DOR BB1		Dorset black burnished ware	151	8.7	2493	7.6	335	10.5
	37		GLO MO	Gloucester <i>mortaria</i> ?	1	0.1	28	0.1	0	0.0
		SOW BB1		South-west black burnished ware	55	3.2	1159	3.5	57	1.8
		WRX WH		?Wroxeter white ware <i>mortaria</i>	1	0.1	34	0.1	0	0.0
	98		WS MO	white-slipped oxidised <i>mortaria</i>	1	0.1	285	0.9	22	0.7
	34		WMID MO	West Midlands <i>mortaria</i>	4	0.2	1388	4.2	74	2.3
Continental	42.1	BAT AM		Baetican <i>amphora</i>	1	0.1	7	0.0	0	0.0
imports	42.5	CAD AM		Cadiz <i>amphora</i>	1	0.1	21	0.1	0	0.0
		CAM AM		Campanian <i>amphora</i>	1	0.1	12	0.0	0	0.0
	43.1	LGF SA		South Gaulish samian	15	0.9	79.25	0.2	27	0.8
	43.2	LEZ SA		Central Gaulish samian	11	0.6	108	0.3	35	1.1
Unknown	13		OXID	sandy oxidised	72	4.2	1586	4.8	184	5.8
	14		GYF	fine grey ware	10	0.6	142	0.4	68	2.1
			GYFMIC	fine grey micaceous ware	31	1.8	453	1.4	89	2.8
	15		GREY	medium grey sandy ware	56	3.2	927	2.8	48	1.5
	41		WWF	misc whiteware (fine)	13	0.8	79	0.2	16	0.5
	98		BWFMIC	fine black micaceous ware	12	0.7	122	0.4	29	0.9
	98		CC	misc. colour-coated wares	20	1.2	182	0.6	78	2.4
	98		OXIDFMIC	fine oxidised ware (micaceous)	1	0.1	34	0.1	6	0.2
	98		BSGY	black surfaced grey ware	30	1.7	330	1.0	72	2.3
	98		BSOX	black surfaced fine oxidised ware	12	0.7	181	0.6	5	0.2
	98		PALE	pale buff / cream wares	2	0.1	21	0.1	0	0.0
	98		PALE MO	pale buff <i>mortaria</i>	1	0.1	10	0.0	0	0.0
	114		MICOX	mica-slipped oxidised ware	1	0.1	34	0.1	6	0.2
TOTAL					1727	100.0	32755.75	100.0	3200	100.0

11.5 Pottery Analysis

Jane Timby, with a note on the mortaria by K.F. Hartley

11.5.1 Introduction and methodology

The archaeological work resulted in the recovery of a moderately small assemblage of 1733 sherds of pottery weighing c. 35kg dating to the early Roman period. In addition, 17 fragments of ceramic building material (CBM) and six pieces of fired clay were recovered. The pottery is in exceptionally good condition with the substantial parts of many vessels present and a number of profiles can be reconstructed. The overall average sherd size is 18.6g which is reflective of the good preservation and suggests undisturbed deposits. Pottery was recorded from some 14 features, largely pits and ditches, with the quantity of material per context ranging from single sherds up to a maximum of 466 from (1028) in ditch [1019]. In addition, there are the remains of three cremation vessels (SF8-10).

The assemblage was sorted into fabrics based on the type, size and frequency of the inclusions in the clay, along with the firing colour. Traded or named wares were coded using the Nation Roman fabric reference system (NFRRC) (Tomber & Dore 1998). Where possible, fabrics have been cross-referenced to the Hereford and Worcester (H&W) fabric series. Unknown wares have been given more generic codes (Table 2). Rims were coded to vessel types and measured for the estimation of vessel equivalents (EVE). The sorted assemblage was quantified by sherd count and weight for each recorded context. The purpose of this report is to document the existence of the assemblage from this location for future work in Leintwardine, which may allow the context of the material to be better understood.

11.5.2 Summary of fabrics and associated forms

The assemblage comprises a mixture of continental and regional imports and local wares.

Imported wares include 26 sherds of samian, a mixture of Southern and Central Gaulish products spanning the later 1st and 2nd centuries. Forms are quite diverse and include cups (?) Ritterling 9 and Dragendorff 27; dishes Drag 18, 18/31, 31, 35/6 and bowls 30 and 37. Collectively, the samian accounts for 1.5% of the assemblage.

There are no other fine ware imports but there are five sherds of *amphorae*: two probable Baetican types, at least one probably a Haltern form 70 from southern Spain used to transport olive oil, one from a Cadiz *amphorae* generally used to transport *garum*, one from a Campanian *amphora* from Southern Italy probably used to carry wine and one unidentified piece.

British regional imports are dominated by sherds of Dorset and South-west black burnished ware, which account for 10.9% of the assemblage. The group includes multiple pieces from a handled mug decorated with an acute lattice and with a burnished six-point star on the base (*fig. 31*), jars and flat-rim bowls. Several of the jars have sooting on the exterior of the rims. The forms all belong to the earlier phase of the industry and probably largely date to the Hadrianic period.

Several sherds of *mortaria* are present, including a West Midlands *mortarium* stamped with the same name either side of the spout (*fig. 33*); another, as yet unidentified *mortarium* with a white-slipped, sandy oxidised

fabric and stamped with the word 'FECIT' ('made by') (*fig. 48*) and a probable example of a Gloucester *mortarium*.

Local wares are dominated by products of the Severn Valley industry, with both oxidised and reduced vessels, including a number of the earlier charcoal tempered variant. Forms include tankards (*fig. 30*), carinated and hemispherical bowls (*fig. 46*), flared rim jars / bowls (*fig. 39*), narrow-necked cordoned jars (*fig. 29*), a copy of a butt beaker and a possible flagon (*fig. 40*). The similarity of the fabric to a local oxidised fine ware (see below) makes it difficult to distinguish some sherds. Flagons and hemispherical bowls are not common forms in the Severn Valley ware repertoire. Altogether, the designated Severn Valley ware accounts for 59.5% by sherd-count of the assemblage.

Also moderately well-represented are handmade vessels from the Malvernian industry with tubby, beaded rim and everted rim jars, dishes with burnished lattice decoration on the walls and bases (*figs. 38, 39, 43*). One base has a minimum of four holes drilled into it after firing, ditch [1057]. This industry has its origins in the later Iron Age but continues well into the 2nd century. Collectively, it accounts for 11.5% of the assemblage.

Of particular interest in this assemblage are several fine wares of British manufacture, which might suggest a relatively local fine-ware industry, probably dating to the early 2nd century. The group includes oxidised, reduced, white-slipped and colour-coated wares, mainly in a very fine ware with a slightly sandier variant for the oxidised wares. The finer grey and oxidised fabrics are quite soft and powdery with sparse darker rounded fragments of iron-rich inclusions and few other visible inclusions not that dissimilar to the finer Severn Valley ware fabric. The group also includes fine black, slightly micaceous wares with a grey fabric. The oxidised wares occur in a slightly sandier version with moderately well-sorted fine quartz sand and sparse iron. At least some of these were white-slipped but in most cases the slip has worn away.

Products in the white-slipped oxidised wares include as ring-necked flagons and jars / beakers with cornice (*fig. 41*) or grooved rims (*fig. 44*) and a bowl with a triangular rim in a fine grey micaceous ware, an oxidised ware, a mica-slipped ware and a very fine white ware. These fabrics were used to make very fine copies of samian vessels, including an imitation of a Drag 29 bowl in the grey ware (*fig. 46*) decorated with rouletting and Drag 30 bowls in a fine white ware with deeply grooved decoration (*fig. 48*) and a micaceous black fine ware not that dissimilar to 'London ware'. The grey wares include a number of large beaker/ jars with sharply everted rims with rouletted decoration (*figs. 35-7*) and at least one jar with rusticated decoration. Also within this fine ware production are several brown colour-coated cornice-rim beakers with fine roughcast decoration again copying continental forms (*fig. 42*). Another colour-coated sherd which has unfortunately been heavily burnt is from a platter with an applied foot-ring (*fig. 32*). The colour-coat has been lost leaving a soft powdery oxidised fabric with argillaceous (?) iron-rich inclusions with a trace of a (?) red colour-coat in the foot-ring angle. This sherd is of particular interest because there are the faint remains of a centrally placed potters stamp which appears to be legible starting with the letters 'OF AOF...' (AQF?). It is very unusual to have literate stamps on apparently British products. Collectively, this group of fine wares points to a specialist industry, probably dating to the later 1st – early 2nd century. The continental styles suggest an immigrant potter, which may link with the military presence at Leintwardine.

11.5.3 Two stamped *mortaria* by K. F. Hartley

1. West Midlands *mortarium* stamped either side of the spout with the same stamp which reads (?)'AOXH/' (*fig. 33*). Similar examples have been found at the Bath-site, Wroxeter (WB 22 2); Alcester, Warks; Astley

(Walker 1958, 46, no. 43a & *fig. 9*, no. 2); Eckington, Worcs; Foren Gaer and Leigh Sinton, near Malvern. There is now evidence to show that the workshop supplying cream ware *mortaria* to Wroxeter began c. AD 80 (Howard-Davis 2009, 586, no.2 stamp reading 'DECA.F'). That example is, however, on a clearly Flavian rim whereas this vessel is Trajanic or later. Ditch [1022] (1028) (SF3) and ditch [1019] (1018) (SF2).

2. The right-facing stamp is impressed diagonally and reads 'FECIT' (*fig. 47*). This can be attributed to Camulacus 2, who probably worked at Wroxeter. Three of his *mortaria* from Wroxeter are recorded by Bushe-Fox (1913, *fig. 16*, no. 3 & 1914, *fig. 17*, no. 31(2 exx)). The unpublished example has the counterstamp, 'FECIT' and this Leintwardine stamp can be attributed to the same die, although the rather unusual border has not been impressed. Bushe-Fox failed to have the borders drawn, but it is not uncommon for borders to not be impressed as in this example and the amount of grit in the fabric could have contributed to that. The stamps on two of the Wroxeter *mortaria* are impressed diagonally; on the third they are impressed at right-angles to the rim. A fragmentary stamp from Caersws could be from the same 'FECIT' die (Britnell 1989, 122, no.462). All the available evidence suggests a Flavian-Trajanic or Flavian date. There is a possibility that this potter could be identified with a potter of the same name (Camulacus 1 (unpublished) who worked in the *Verulamium* region. Ditch [1078] (1077) (SF7)

11.5.4 Cremations (*figs. 49-51*)

Three cremation vessels were recovered, (SF8-10), one complete the other two surviving as the lower parts of the vessels only. All three vessels are likely to be of local manufacture. The complete vessel (SF 10) takes the form of a Malvernian jar but wheel-made and with a fabric closer to a variant of oxidised Severn Valley ware. The form would be consistent with a 1st -or early 2nd -century date. The second vessel (SF8) is a handmade closed form in a light grey grog-tempered sandy ware. The third vessel (SF9) is in a more typical SVW OX fabric and is again a closed form. The latter two likely to fall within the same date bracket as (SF10).

11.5.5 Discussion

The recovered assemblage appears to be quite chronologically coherent dating to the later 1st -to mid-2nd century, with no obvious later elements. The largest pottery groups came from ditches [1019] and [1022], effectively accounting for 55% of the assemblage, with some 960 sherds coming from [1022]. Although several horizons were defined in each ditch, there appears to be joins between vessels from different fills, both within the ditches and across the two ditches, suggesting both features are contemporary and perhaps backfilling carried out as single operation. A further 79 sherds came from ditch [1078] and the remaining sherds were more sparsely spread across the remaining features. A total 196 sherds came from the cremations and associated soil, most of which were very small fragments.

This appears to be a very well-preserved assemblage dating to a moderately short period of time. There are few larger assemblage published from Leintwardine, which makes this group of material quite significant. The range of material suggests a moderately high-status assemblage, although there are slightly contradictory elements. The samian is diverse with both plain and decorated vessels present but only accounts for 1.5% of the total which would be regarded as typical for a rural site. There are no other fine ware imports but there are three different *amphorae* -types present, which would normally be regarded as more typical of a military or urban site. The assemblage also contains a number of vessels of intrinsic interest, pointing to a fine-ware industry copying imported forms, including the possible use of literate stamps, all of which might suggest a military link.

11.5.6 Catalogue of illustrated sherds

Fig. 29: Several sherds from a necked, cordoned jar. Fabric: SVW OX. Ditch [1019] (1033)

Fig. 30: Flared wall tankard. Fabric: SVW OX. Ditch [1019] (1030)

Fig. 31: Several sherds from a handled mug. Decorated with acute burnished lattice and on the underside of the base. Fabric: DOR BB1. Ditch [1019] (1016) (1030)

Fig. 32: Basesherd from a bowl or dish with a footring. Originally with a (?) red colour-coated surface. Burnt. Faint traces of a centrally placed incomplete potter's stamp reading OF A?OF . Ditch [1019] (1016)

Fig. 33: West Midlands *mortarium*. Two joining sherds with identical stamps placed either side of a broken spout. Bead set below the flange. Ditch [1019] (1028) (SF3) and (1018) (SF2)

Fig. 34: Bowl with a triangular grooved rim. Partially burnt. Fabric: OXIDSY. Ditch [1019] (1018)

Fig. 35: Sharply everted rim large beaker decorated with smudged rouletting. Fabric: GYF. Ditch [1022] (1040)

Fig. 36: Sharply everted rim jar / beaker. Fabric: GYF. Ditch [1022] (1040)

Fig. 37: Thin-walled everted rim jar / beaker. Originally with a darker grey surface. Fabric: GYF. Ditch [1019] (1028)

Fig. 38: Beaded rim, handmade jar decorated with spaced vertical burnished lines. Fabric: MAL RE A. Ditch [1019] (1028)

Fig. 39: Wide-mouthed jar with a flaring rim. Fabric: SVW OX. Ditch [1019] (1028)

Fig. 40: Flagon with a flat-reeded top. Fabric: SVW OX / OXIDF. Ditch [1019] (1028)

Fig. 41: Large beaker or jar with a cornice rim. Fabric: OXIDSY. Ditch [1019] (1028)

Fig. 42: Beaker with a dark brown colour-coated surface and very fine sparse roughcast decoration. Fabric: OXIDFCC. Ditch [1019] (1028)

Fig. 43: Handmade dish with a sooted exterior and base. Fabric: MAL RE A. Decorated with diagonal burnished lines on the side walls and burnished lines underneath the base with a roughly burnished interior. Ditch [1022] (1021)

Fig. 44: Jar with a grooved rim. Fabric: OXIDSY. Ditch [1022] (1021)

Fig. 45: Hemispherical bowl with traces of rouletted decoration. Fabric: SVW OX / OXIDF. Ditch [1022] (1021)

Fig. 46: Bowl copying a samian Drag. 29 form. Fabric: GYFMIC. The surface was probably originally a fine black polished finish with three lines of rouletted decoration. Ditch [1022] (1021)

Fig. 47: *Mortarium* in an orange-red sandy fabric originally covered in a white slip now worn, probably a Wroxeter product. Worn interior with few trituration grits but where present consist of small rounded grains of quartz. Spout missing but stamped across the flange with the word *FECIT* (made by). Ditch [1078] (1077) (SF7)

Fig. 48: Bowl copying a samian Drag. 30 form. Decorated with pairs of deeply etched parallel vertical grooves. Fabric: WWF. Ditch [1078] (1077)

Fig. 49: Base and lower walls of a handmade closed vessel (jar). The fabric is dark grey on the surfaces with a light core and has a sandy texture. The paste contains fine quartz sand and grog. Fabric: GROG. Cremation vessel (SF8)

Fig. 50: Base and lower walls of a wheel made jar. The vessel is in a shattered condition. One sherd of unidentified *amphora* and a small sherd of SVW RE were mixed with the sherds. Fabric: SVW OX. Cremation vessel (SF9)

Fig. 51: Complete but cracked, wheel-made bucket-shaped vessel. Oxidised in colour with roughly spaced vertical burnished lines on the body. The form is broadly copying the Malvernian 'tubby' jar form but appears to be a SVW OX fabric variant. The paste is similar to SVW OX but with added grit comprising quartz sand and fragments of argillaceous rock (?) slate. Cremation vessel (SF10)

11.5.7 Bibliography

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12 Pottery Drawings

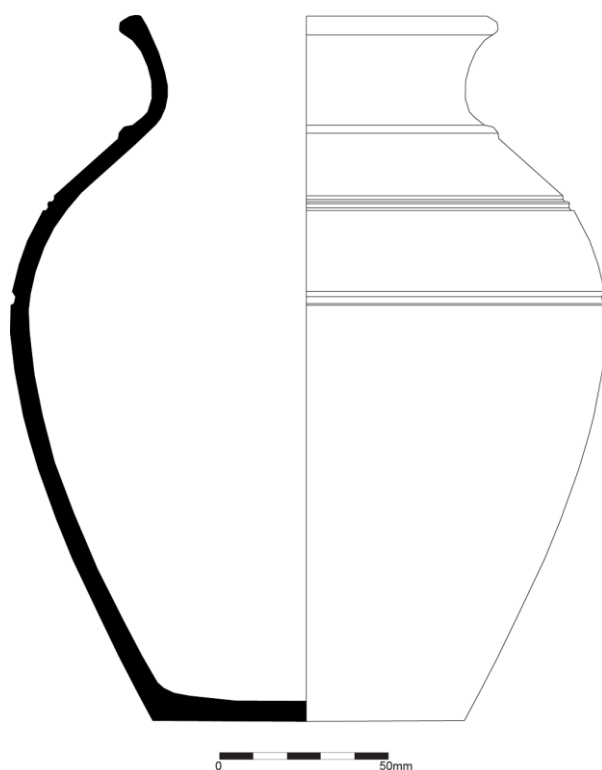


Fig. 29: Necked cordoned Severn Valley Ware jar from (1033)

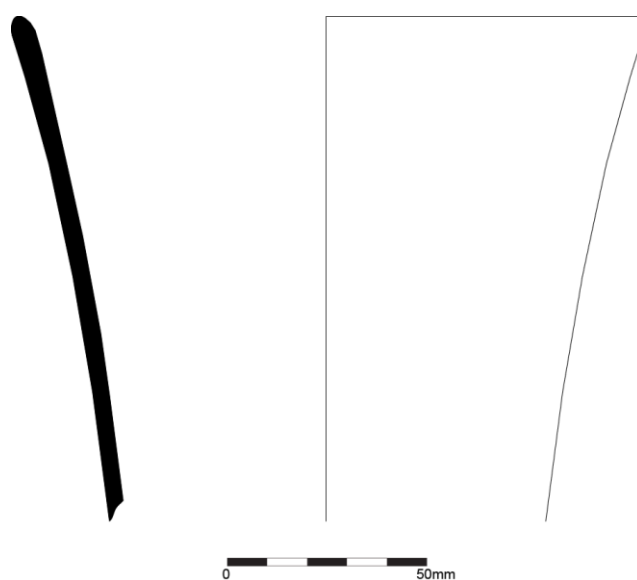


Fig. 30: Severn Valley Ware flared wall tankard from (1030)

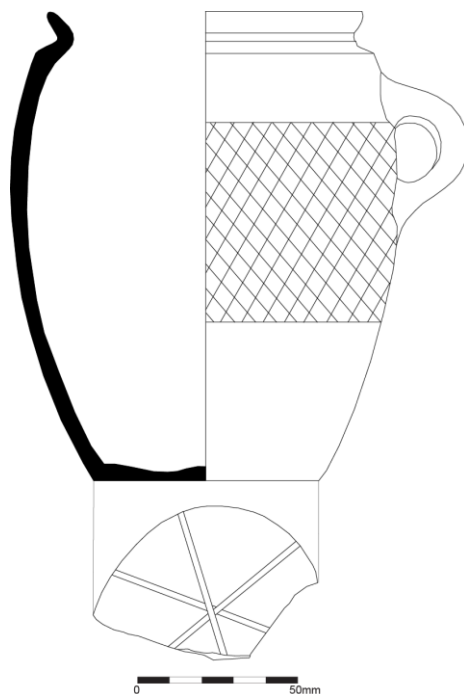


Fig. 31: Dorset black burnished ware handled mug from (1016)

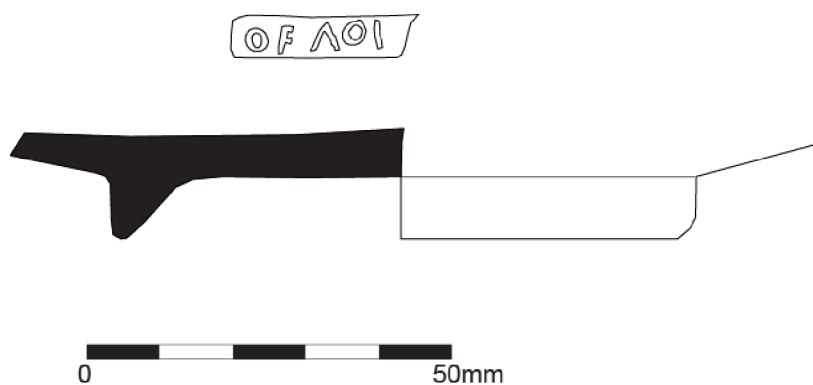


Fig. 32: Basesherd from a bowl or dish with a footring with faint traces of a centrally placed incomplete potter's stamp reading OF A?OF from (1016)

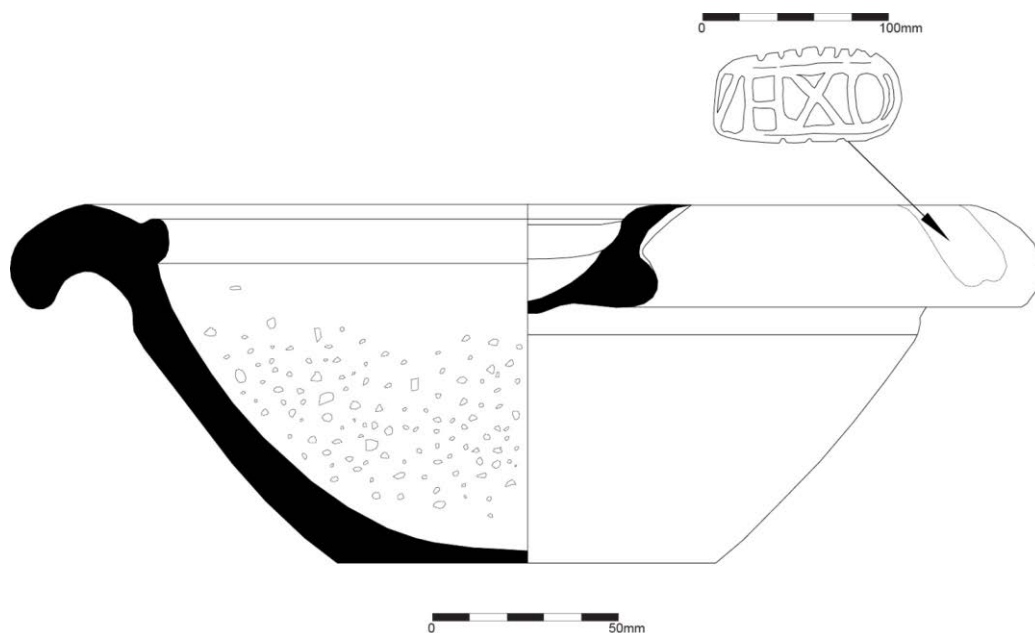


Fig. 33: West Midlands mortarium stamped either side of the spout with the same stamp which reads '[?]AOXH/', reconstructed from joining shards (SF2 & (SF3) recovered from ditch [1019], basal fill (1018) and upper fill southern end (1028)

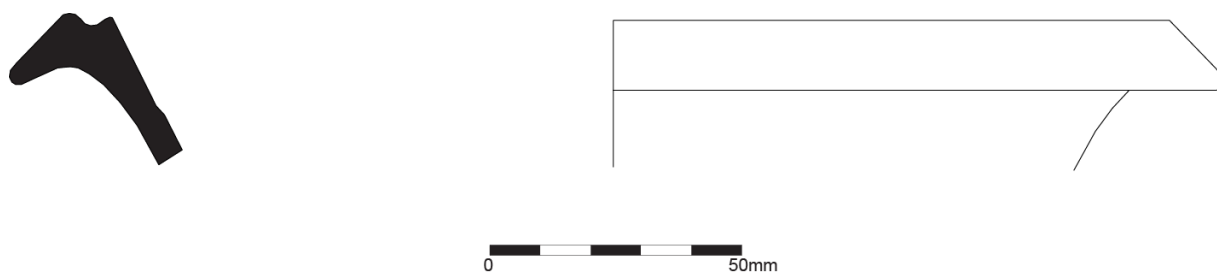


Fig. 34: Bowl with a triangular grooved rim from (1018)

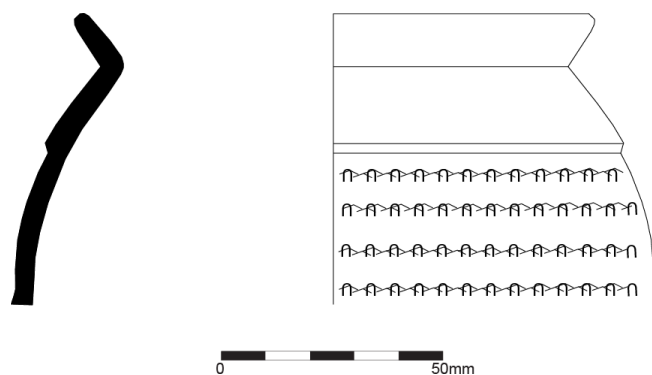


Fig. 35: Sharply everted rim large beaker decorated with smudged rouletting from (1040)

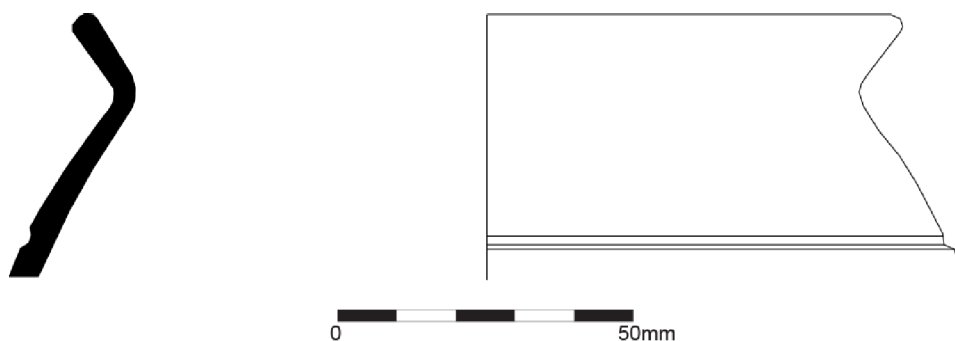


Fig. 36: Sharply everted rim jar / beaker from (1040)

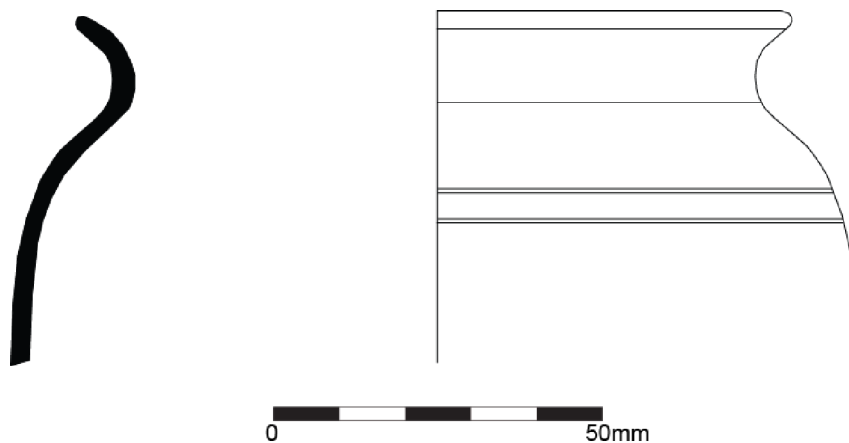


Fig. 37: Thin-walled everted rim jar / beaker, from (1028)

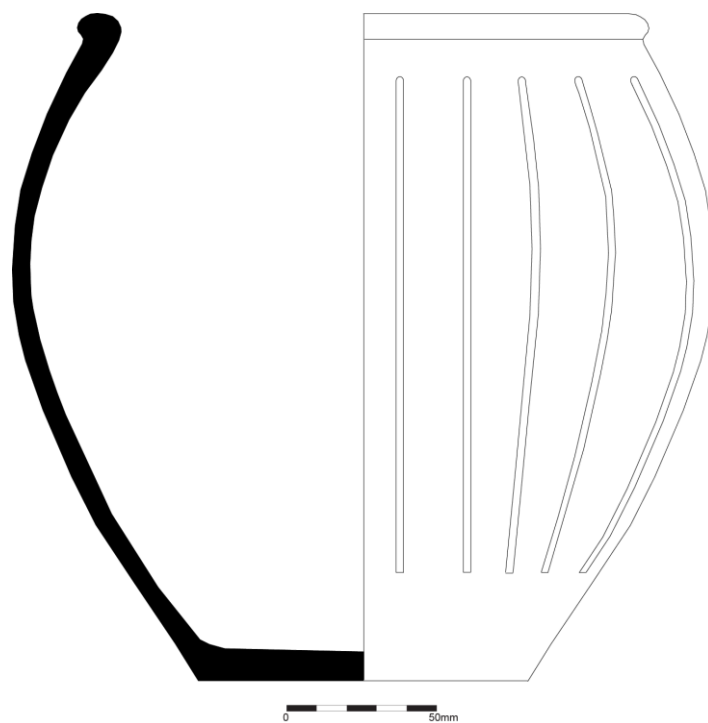


Fig. 38: Beaded rim, handmade jar decorated with spaced vertical burnished lines, from (1028)

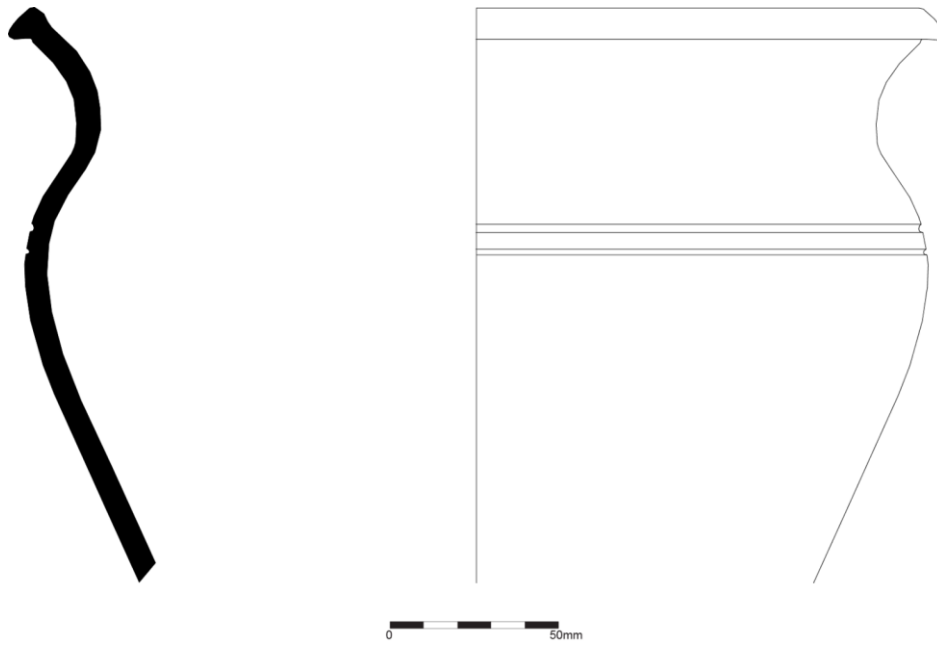


Fig. 39: Severn Valley Ware wide-mouthed jar with a flaring rim from (1028)

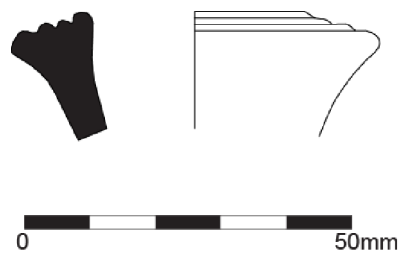


Fig. 40: Flagon with a flat-reeded top from (1028)

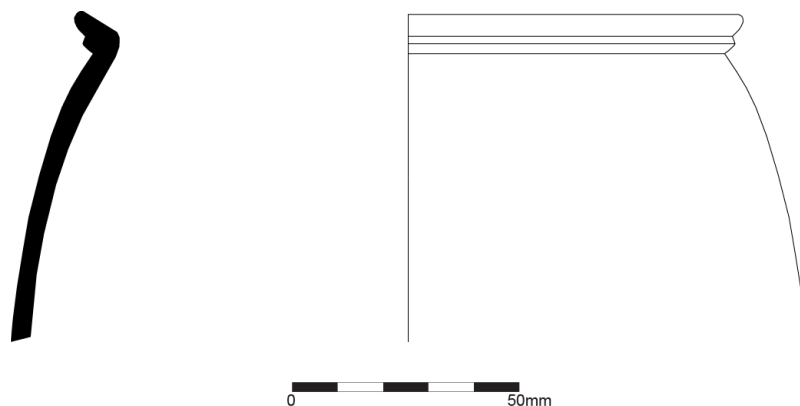


Fig. 41: Large beaker or jar with a cornice rim from (1028)

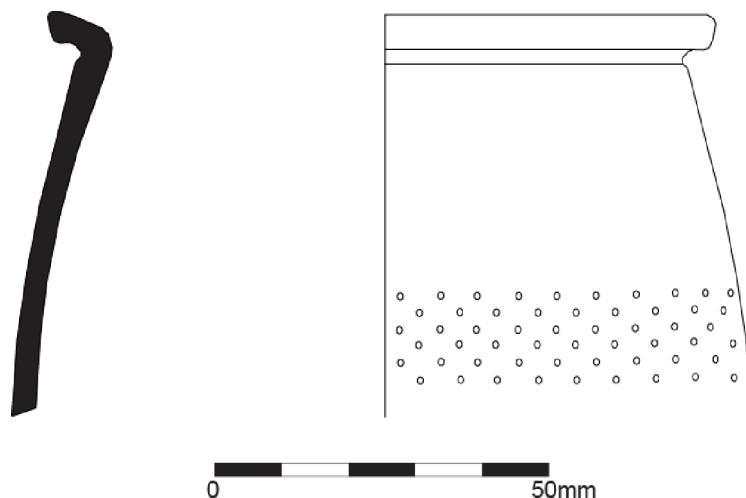


Fig. 42: Beaker with a dark brown colour-coated surface and very fine sparse roughcast decoration from (1028)

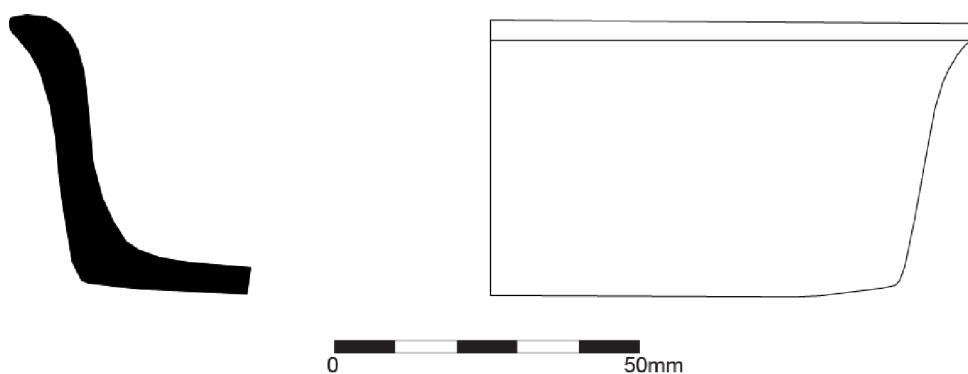


Fig. 43: Handmade dish with a sooted exterior and base, decorated with diagonal burnished lines on the side walls and burnished lines underneath the base with a roughly burnished interior; from (1021)



Fig. 44: Jar with a grooved rim, from (1021)

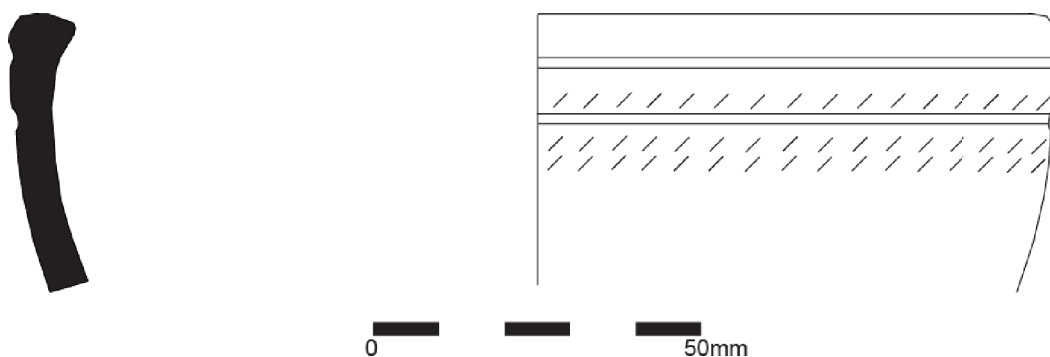


Fig. 45: Hemispherical bowl with traces of rouletted decoration from (1021)

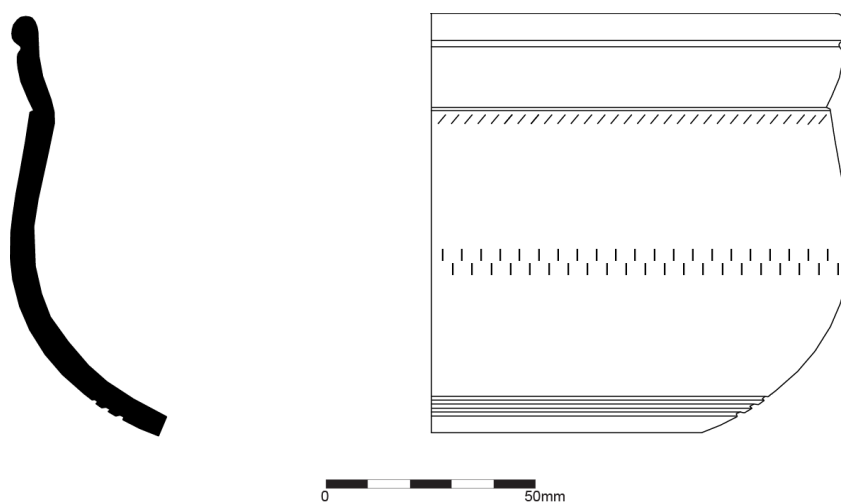


Fig. 46: Vessel copying Samian form from (1021)

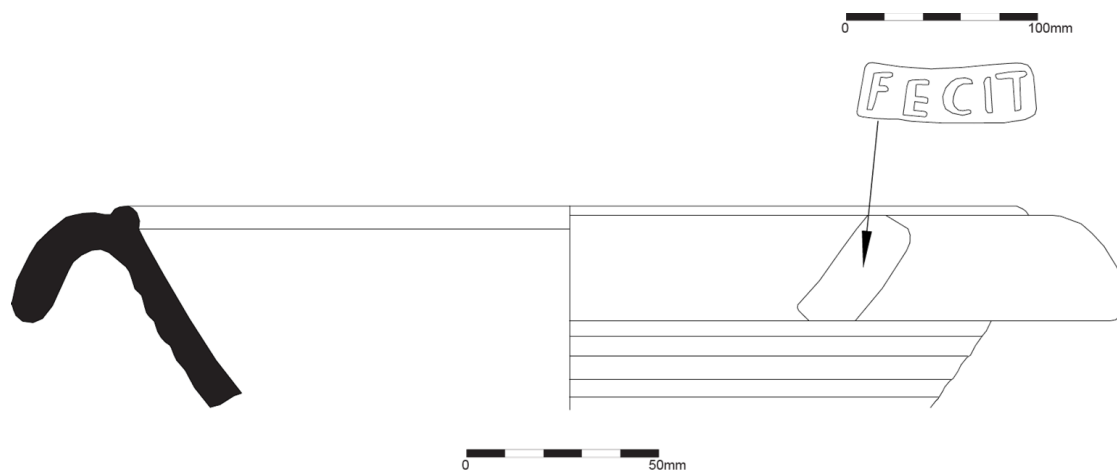


Fig. 47: Mortarium in an orange-red sandy fabric originally covered in a white slip now worn, probably a Wroxeter product. Worn interior with few trituration grits but where present consist of small rounded grains of quartz. Spout missing but stamped across the flange with the word 'FECIT' ('made by'). From (1077)

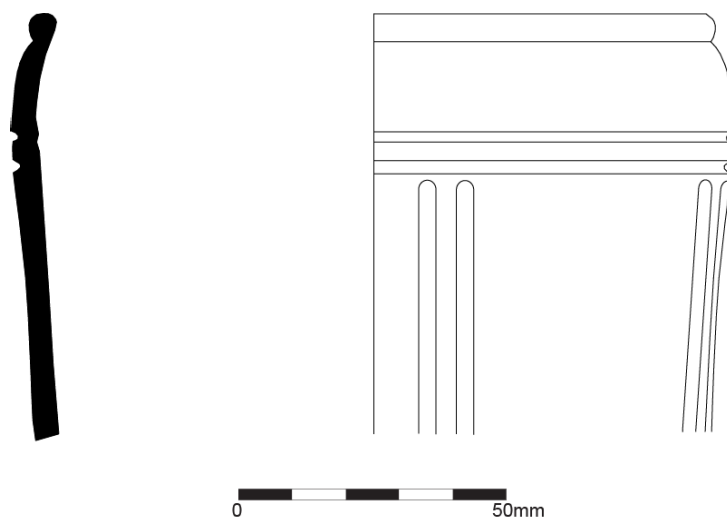


Fig. 48: Bowl copying a Samian form, decorated with pairs of deeply etched parallel vertical grooves, from (1077)

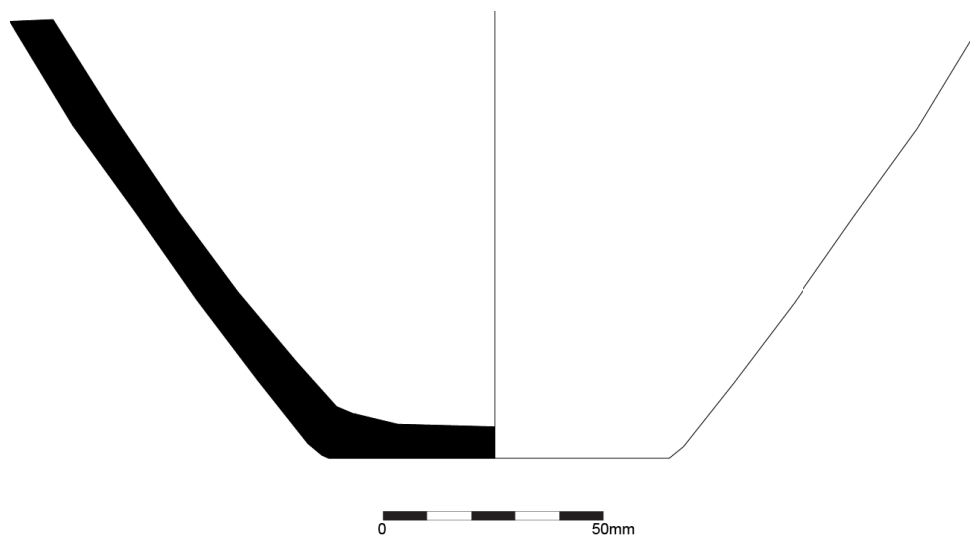


Fig. 49: Base and lower walls of a handmade closed vessel (jar), (Cremation vessel) from (1092)

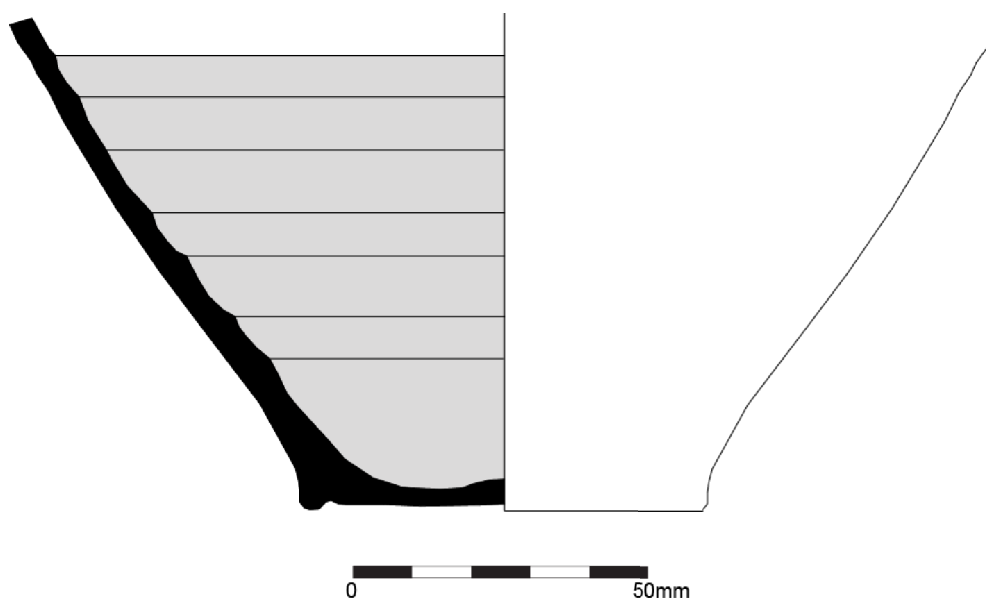


Fig. 50: Base and lower walls of a wheel made jar. (Cremation vessel) from (1092)

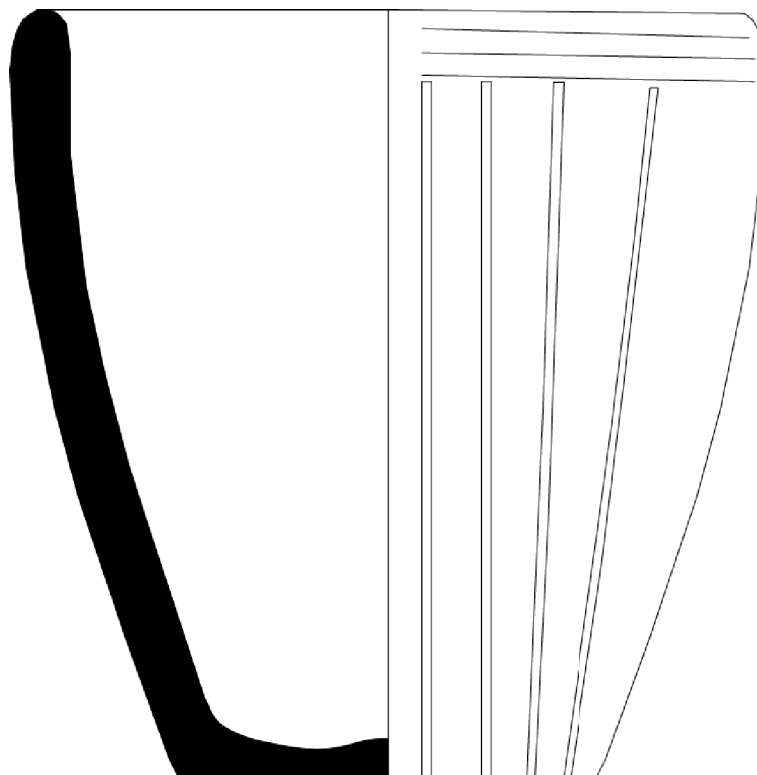


Fig. 51: Complete but cracked Severn Valley Ware, wheel-made bucket-shaped vessel. Oxidised in colour with roughly spaced vertical burnished lines on the body. (Cremation vessel) from (1098)

13 Appendix 3 Assessment of the Ceramic Building Material

Ruth Shaffrey

13.1 Summary and Quantification

A total of 327 fragments of ceramic building material (CBM) weighing a total of 43.7kg were retained. The mean fragment count is 133.7g but this does not reflect the overall nature of the assemblage, as there are a small number of very heavy bricks versus many small worn and indeterminate fragments.

The CBM is all Roman in date, although the assemblage is very worn and little of the material is particularly diagnostic. The Roman date is assigned based on the overall appearance and fabric types present.

13.2 Methodology

The ceramic material was examined with the aid of a ×10 magnification hand-lens. Fresh surfaces were created by the removal of small sections of broken edges in order to facilitate this. Samples were collected of the different identified fabric types and the rest of the assemblage was compared to these samples

13.3 Description

13.3.1 Form

The assemblage of CBM is heavily worn and the diagnostic material comprises a mixture of bricks and flat tiles, with very small numbers of *tegulae*, *imbrices* and box flue tiles (Table 3). By fragment count, the assemblage largely comprises indeterminate fragments (236) but by weight brick is the dominant form type; there are only 42 fragments, but several of these are very large. None is complete enough for the overall dimensions to be determined but the largest surviving example measures >190 mm × >230mm × 70mm thick (1036). This could be from a *bessalis* or any of the larger brick types. A smaller example (measuring >190 mm × >150 mm) is likely to be from a *bessalis* or *pedalis*, based on the position of the signature (see below). As a group, the bricks measure between 40 and 71mm thick, with six fragments measuring in excess of 65mm thick.

A total of 13 fragments (2.7kg) were identified as *tegulae*, with a further 25 fragments of flat tile (3.7kg) that may also have started life as *tegulae* but are now missing their flanges. Only one flange survives sufficiently for its form to be recorded - it is a flat-topped and straight-sided Type A flange. No evidence survives for any cutaway forms to be examined. *Imbrex* tile is very rare within the assemblage, with only three small fragments recorded.

Markings are rare, although this may be in part due to the high level of abrasion. Two pieces of tile retain sections of combing indicating that they were from box flue tile (both from 1017). A single (large) fragment of brick retains part of a signature - it is not sufficiently complete for its form to be classified; however, part of a curved section adjoining a straight line can be observed (1016). Another brick has what looks like three finger-swipes, although these appear too vague to be part of a deliberate signature (1021).

Table 3: Summary of the types of ceramic building material by count and weight

	Weight (g)	Count
Brick	27751	42
Indeterminate	7719	236
Flat	3726	25
<i>Tegula</i>	2743	13
Flat/indeterminate	464	4
Box/flue	701	2
Brick/flat	333	2
<i>Imbrex</i>	306	3
TOTALS	43743	327

13.3.2 Fabric

A total of seven different fabric types were identified within the assemblage. However, during recording it became apparent that the vast majority of fragments were made from one of two fabrics (Types D and E), with fabric D accounting for half the assemblage by weight (23kg) and three-quarters by fragment count. The fabric types are described below.

Other than box flue tile, which were made only from Type A fabrics, there are no specific relationships between form and fabric type.

Table 4: quantification of fabric types

Fabric	Weight (g)	Count
D	23164	251
E	15846	48
A	2061	10
A1	409	5
G1	800	9
C	30	1
F	1026	2
G	407	1
TOTALS	43743	327

13.3.2.1 Fabric A

This is a very fine-grained bright orange fabric with regularly spaced quartz grains up to 1mm in size. It also contains larger rounded red clay pellets and limestone fragments of up to 3mm. A sub-type of this, type A1, is very similar to type A but with much rarer inclusions.

13.3.2.2 Fabric C

A distinctly sandy fabric with frequent quartz inclusions, clay pellets and a fairly coarse-grained moulding sand. This was only observed on one occasion (1021). It *could* be an intrusive piece of medieval tile.

13.3.2.3 Fabric D

The most commonly occurring fabric type, this is a soft pale-orange-coloured silty fabric containing frequent clay pellets up to 8mm.

13.3.2.4 Fabric E

A fine-grained orange silty fabric, with very few inclusions, but there are some holes suggesting some material has burnt out

13.3.2.5 Fabric F

Similar in consistency to fabric C in the silty fabric with regular quartz grains; however, it lacks the pellets and is darker red in colour.

13.3.2.6 Fabric G

Very similar to fabric A - very fine grained bright orange sandy fabric with regularly spaced quartz grains up to 1mm and larger rounded clay pellets of red and limestone fragments of up to 3mm but all the inclusions are much rarer AND its distinguishing characteristic is that this type is very heavily laminated. A sub-type of this fabric (G1) has fewer laminations.

13.4 Statement of Potential

The assemblage of CBM is highly fragmentary and abraded so that in the majority of cases it is not possible to identify the form of the original piece. Due to the weathered nature of the majority of the assemblage, little can be said about its primary use. Those that do survive are fragments of brick, with lesser quantities of *tegulae* and very small quantities of *imbrex* and box flue tile. The dominance of *tegulae* over *imbrices* indicates that the tile may have been brought onto site for reuse, rather than being evidence for tiled buildings on site. Thus, the same can probably be assumed for the box flue tile.

The material is Roman, in keeping with the pottery from the site, but it is not possible to date the fragments any more closely than that. The assemblage thus has little potential to add to our understanding of the site

13.5 Recommendations for further work

No further analysis is recommended.

Appendix 4: Roman Glass

H.E.M. Cool

With such a small assemblage consisting only of body fragments, there is little that can usefully be said about the pieces other than to date them. Of the fragments found, only No. 1 can be assigned to a type. It came from a narrow neck of a thin-walled unguent bottle.

As it is only a neck fragment, it is impossible to identify which precise form it came from, but it may be noted that unguent bottles are most numerous during the 1st -to mid-2nd centuries. More broadly, the blue/green colour of Nos. 1-3 indicates a 1st -to 3rd -century date.

The small chip No. 4 retains no surfaces, but is consistent with being a piece of Roman glass (sufficient remains to see that the vessel was originally amber in colour). This would suggest a 1st -to earlier 2nd -century date

It may be useful to note that the Leintwardine Community Centre site (LCC10) previously excavated by Border Archaeology (BA 2010), the other site from which glass came, produced 1st -century pillar moulded bowl fragments. The glass from the present site could easily belong to the same date of occupation that produced the LCC10 fragments.

1. Unguent bottle; cylindrical neck fragment. Blue/green. Neck diameter 11mm, wall thickness 1.5mm. Weight 0.38g. (SF11) (1094)
2. Body fragment. Blue/green. Weight 0.12g. (1084)
3. Body fragment. Blue/green. Straight side. Weight 1.23g. (SF4): (1040)
4. Chip. Yellow/brown amber. 0.04g. (SF4): (1040)

13.6 Addendum

The glass from the samples consisted of very small fragments, all weighing less than 0.1g. The two that can be described as body fragments (1-2) show no sign of burning and so are unlikely to derive from goods burnt on the pyre. The colour indicates a 1st -to 3rd -century AD date. The colourless chip would be more likely to be from a 2nd -to 3rd -century vessel.

The one piece where the form can be identified comes from an unguent bottle (No. 5). Unfortunately, virtually all of the body is missing and so identifying the type is problematic. Normally the rim finish of unguent bottles provides a useful clue to the date. Those of the mid- to-later 1st century have sheared edges, whilst later ones have folded or rolled ones. This example has a combination of the two finishes.

The very small amount of the angle to the body that survives would not be inconsistent with it having a tubular body. These normally have sheared edges and belong to the 1st century (Price & Cottam 1998, 169-71). In this

case, given the ambiguity of the rim edge a secure date cannot be proposed, but one in the 1st -to 2nd century would be appropriate.

During that time, the inclusion of unburnt unguent bottles in funeral rites is not uncommon. The recovery of this piece with a burial perhaps also explains the only identifiable vessel fragment from the excavations of the rest of the site, as that too was an unguent bottle.

- 1 Body fragment Blue/green Dimensions 9 × 5.5mm, thickness 1mm Weight 0.07g. (1030) <8>
- 2 Body fragment Blue/green Dimensions 7 × 3mm wall, thickness 0.5mm (1036) <12>
- 3 Colourless chip Dimensions 8 × 5 × 2mm (1076) <26>
- 4 Blue/green chip Maximum dimension 3mm (1093) <38>
- 5 Unguent bottle, complete rim and neck fragment. Blue/green with green impurities at rim. Rim bent out, edge sheared on one side and rolled in asymmetrically on other; cylindrical neck broken at tooled junction with body. Wear scratches around lower neck. Present height 37mm, rim diameter 18mm, wall thickness 1.5mm, weight 2.48g (1093) (SF12)
- 6 Chip too small to ascertain colour (1094) (from SF8) <49> Spit E.

13.7 Bibliography

Price, J. & Cottam, S., 1998, *Romano-British Glass Vessels: a Handbook*, CBA Practical Handbook in Archaeology **14** (York)

14 Appendix 5 Palaeoenvironmental assessment

14.1 Summary

14.1.1 The project

This report presents the results of palaeoenvironmental assessment of 35 bulk samples and micro-excavation and assessment of three cremation urns recovered during the archaeological works at Leintwardine in Herefordshire.

The works were commissioned by Border Archaeology and conducted by Archaeological Services Durham University.

14.1.2 Results

The assessment provides evidence of domestic waste and the use of cereal crops typical of Roman sites in England (spelt wheat and hulled six-row barley). The use of peas and beans is possible, although the poor condition of the remains prevented certain identification. These may have been supplemented with wild-gathered food sources. Material from contexts (1030) and (1028) suggests the presence of hay. Charcoal comprising evidence of insect degradation was recovered from three contexts (1030, 1028 & 1077) and possible indication of woodland management was noted in (1036).

A moderate quantity of calcined bone (c. 350g in total) was recovered from the six spits of cremation urn (SF8). An initial examination confirmed that the bone was human and was in relatively good condition, with a number of recognisable elements present. Small fragments of calcined bone were present in urns (SF9) and (SF10). Charcoal recovered from the urns was oak stem-wood.

14.1.3 Recommendations

Full analysis is recommended for the cremated bone from the site in order to identify and examine the bones present and provide information about the number of cremated individuals and the temperatures/oxidising conditions during the cremation process.

Charcoal investigations of material recovered from archaeological excavations are sparse in England, as charcoal has been collected primarily for dating purposes, as highlighted by Huntley (2010). Therefore, full analysis of several of the charcoal assemblages may be considered due to their unusual nature and their potential to provide information concerning the provision of firewood and the exploitation of woodland resources.

No further work is required for the plant macrofossil remains as the flots were scanned in their entirety and no additional information would be provided from an analysis. If additional work is undertaken at the site, the results of this assessment should be added to any further palaeoenvironmental data produced.

The flots should be retained as part of the physical archive of the site. The residues were discarded following examination.

14.2 Project background

14.2.1 Location and background

Archaeological works were conducted by Border Archaeology at Leintwardine in Herefordshire. The site comprised pits, ditches, postholes and cremations of Roman origin. This report presents the results of palaeoenvironmental assessment of 35 bulk samples and a micro-excavation and assessment of three cremation urns.

14.2.2 Objective

The objective of the scheme of works was to assess the palaeoenvironmental potential of the samples, establish the presence of suitable radiocarbon dating material, micro-excavate the cremation urns and provide the client with appropriate recommendations.

14.2.3 Dates

Samples were received by Archaeological Services on 11th April 2013. Assessment and report preparation was conducted between 22nd April and 1st July 2013.

14.2.4 Personnel

Assessment and report preparation was conducted by Lorne Elliott and Dr Charlotte O'Brien. Excavation of the cremation urns was carried out by Catrin Jenkins and the cremated bone was examined by Dr Anwen Caffell. Soil processing was by Rebekah Watson and Janet Beveridge.

14.2.5 Archive

The site code is MMP12, for the Mortimer Medical Practice Leintwardine 2012. The flots and finds are currently held in the Environmental Laboratory at Archaeological Services Durham University awaiting collection or return. The charred plant remains will be retained at Archaeological Services Durham University.

14.3 Palaeoenvironmental assessment of bulk samples

14.3.1 Methods

The bulk samples were manually floated and sieved through a 500µm mesh. The residues were examined for shells, fruit-stones, nutshells, charcoal, small bones, flint, glass, pottery sherds and industrial residues and were scanned using a magnet for ferrous fragments. The flots were examined at up to ×60 magnification for charred and waterlogged botanical remains using a Leica MZ7.5 stereomicroscope. Identification of these was undertaken by comparison with modern reference material held in the Environmental Laboratory at Archaeological Services Durham University. Plant nomenclature follows Stace (1997). Habitat classification follows Preston *et al.* (2002).

A selection of charcoal fragments was identified from each sample to provide material suitable for radiocarbon dating. The transverse, tangential and radial sections were examined at up to ×600 magnification using a Leica DMLM microscope. Identifications were assisted by the descriptions of Hather (2000) and Schweingruber (1990), and modern reference material held in the Environmental Laboratory at Archaeological Services Durham University.

The works were undertaken in accordance with the aims and objectives outlined in the West Midlands Regional Research Framework for Archaeology (Ray 2003).

14.3.2 Results

Finds typical of domestic waste were present in many of the samples and included fragments of pottery, glass, burnt daub, fired clay/CBM, nails/hobnails, calcined bone, animal tooth enamel, fuel waste, charcoal and charred cereal remains.

Charred plant remains occurred in the majority of the bulk samples (27 in total) and 22 samples contained cereal remains of wheat and/or barley. The small to modest-sized charred plant macrofossil assemblages comprised grains generally in poor condition. Many of these were degraded due to pitting and puffing, preventing identification in some instances. This may either be the result of intense heat (Boardman & Jones 1990), exposure to heat on more than one occasion or rapid burning. Better-preserved barley grains were identified as the hulled variety and some of the wheat grains comprised the oval shape and parallel-sided morphology typical of spelt wheat (*Triticum spelta*) as summarised by Jacomet (2006). Diagnostic spelt wheat chaff was present in 12 contexts, including the majority of samples from ditch [1019]. These remains were particularly common in tertiary fill (1030). Other features comprising identifiable spelt wheat remains included pits [1035], [1043], [1055], ditch [1078] and postholes [1064] and [1089]. Four contexts comprised the remains of barley chaff of which several rachis fragments from fills (1016) and (1059) were identified as six-row barley (*Hordeum vulgare*). Low numbers of hazel nutshell fragments were present in seven contexts and elder fruit-stones were recorded in pit fill (1036). Two large seeds noted in ditch fill (1061) may represent the remains of cultivated pea (*Pisum sativum*), although due to their size and condition, these have been recorded as *Fabaceae* (pea family). Recurring weed seeds included grasses, bromes, docks, vetches, cleavers and ribwort plantain. Fills from [1019] also comprised the remains of plants more typical of damp ground habitats (sedges and spike-rushes) and the arable weed scentless mayweed. A charred buttercup achene was recorded in pit fill (1073). The results are presented in Appendix A.

Varying quantities of charcoal were present in all of the samples. A diverse range of tree and shrub species was recorded from the few selected fragments identified from each sample. Identified fragments indicate the samples predominantly comprised oak and included hazel, *Maloideae* (hawthorn, whitebeams, apple), birch, alder, field maple, cherries (blackthorn, wild and bird cherry), willow/poplar, ash, elm and dogwood. Fragments

of birch charcoal comprising insect degradation and poor preservation were present in ditch fills (1028) and (1030), and hazel branch-wood comprising insect degradation occurred in ditch fill (1077). A list of identified charcoal taxa is presented in Appendix B.

A small number of uncharred seeds of fumitory, buttercup and goosefoot family were noted in some of the samples. The non-waterlogged nature of the site and the presence of roots suggest that these are recent intrusions. Material suitable for radiocarbon dating is available for 32 of the samples as listed in Appendix A.

14.3.3 Discussion

Evidence from many of the samples suggests spelt wheat and hulled six-row barley were cultivated at the site. The remains of these cereals regularly occur at sites of Iron Age and Roman origin in England and are considered to be the main cereal crops for these periods (Greig 1991; Hall & Huntley 2007). The common occurrence of spelt wheat chaff may indicate crop-processing at or near to the site. The small assemblages of charred wild taxa recorded, such as vetches and scentless mayweed, are likely to represent weeds of arable fields. The most abundant weeds recorded are grasses, many of which were identified as brome. These may be difficult to remove during winnowing or sieving due to their similar size to the grains. Brome grass is frequently associated with spelt wheat and is believed to have been brought to Britain in imported spelt (Godwin 1975). It has been suggested that this large grass seed was deliberately included to bulk up harvests (Jones 1984).

Charred fragments of hazel nutshell and elder fruit-stones from several contexts suggests wild-gathered foods were also utilised at the site, although their presence in low numbers possibly reflects a minor use of these particular food sources.

Fill (1030) and to a lesser extent (1028) comprised a high proportion of grassland remains and chaff (wheat/barley). The presence of these remains together with the occurrence of plant remains associated with damp meadow (spike-rushes/sedges) may indicate the presence of hay and/or fodder, burnt possibly as fuel or kindling or the disposal of old fodder or bedding.

The occurrence of at least 10 different tree/shrub taxa amongst the charcoal remains indicates a plentiful supply of woodland resources and the predominance of oak (present in all but three of the samples) suggests this species was a readily available and much-exploited resource. Large fragments of oak charcoal from pit fill (1036) comprised 14 evenly-spaced wide growth-rings possibly reflecting woodland management. Charcoal containing insect degradation was noted from at least three samples. This may be the result of exploiting every available resource or simply the disposal of infested material.

14.4 Excavation of pit cut [1091]

Excavation of the block-lifted fill of pit [1091] which comprised two cremation urns was undertaken in the Environmental Laboratory. When unwrapped, the soil block was noted to have developed deep fissures which hampered excavation. Initially the block was excavated in quadrants in order to identify possible individual urn pit cuts. However, due to the fissure damage this became impractical and the block was excavated in plan. The natural brownish-orange silty clay subsoil [1103] was cut by pit [1091] (the dimensions of which were unclear), which was cut by two further probable pits; pit [1099] in the north-eastern part of the block and pit [1100] in the north-western part of the block. Pit [1099] measured 0.23m × 0.2m × 0.05m and was filled with dark brown silty clay (1101) above which urn (SF8) has been placed. The urn was filled with deposit (1094). Pit [1100] measured

0.21m × 0.15m × 0.07m and was also filled with dark brown silty clay (1102) from which a fragment of pottery was hand-recovered. Urn (SF9) had been placed above deposit (1102) and was filled with deposit (1095). Pit fill (1092) partially overlay the urn fills and was below pit fill (1093). Fragments of pottery and calcined bone were recovered from both contexts (1092) and (1093). The neck of a glass vessel (SF12) was also hand-recovered from context (1093).

The fills were sampled and a sample register is presented in Appendix C. They were washed and assessed as for the other environmental samples from the site (see above). A few fragments of calcined bone were recorded in most of the samples and fragments of pottery were noted in several of them (some of which represent small fragments of the urns). Nails and/or hobnails were recovered from contexts (1092), (1093) and (1101). A tiny sherd of glass was also recorded in (1093), which probably related to (SF12). Charred plant macrofossils were present in small numbers in the fills and included barley grains, ribwort plantains seeds, hazel nutshell fragments, grass caryopses, vetch seeds and a dock nutlet. Possible charred beans were also noted, although the identification is uncertain due to their poor condition. A small number of charred monocot stems, tuber/rhizomes and heather twigs were present. A few charcoal fragments were noted in all of the fills. Oak stem-wood charcoal was identified from all of the samples, in addition to a single fragment of alder from (1093) and birch from (1092). The results are presented in Appendix D.

During the excavation, the urns were wrapped in cling film to support them and lifted for individual micro-excavation of their respective fills. Micro-excavation was undertaken on the fills of cremation urns (SF8) and (SF9) and an additional urn, (SF10). These were excavated in 2cm spits from the surface of each vessel, with each spit allocated a letter. (SF8) and (SF9) each comprised six spits (A-F), while (SF10) had eight spits (A-H). The fills were washed over a 500µm mesh to recover artefacts and botanical remains.

A moderate quantity of calcined bone (c. 350g in total) was recovered from the six spits of (SF8). An initial assessment confirmed that the bone was human and was in relatively good condition, with a number of recognisable elements present. A few charred tuber/rhizomes were noted in spit A and a small number of charred monocot stems were recovered from spits A and B, which were thin and grass-like in character. Spit A also contained a possible charred bean. A few small fragments of charcoal were noted in each of the six spits, with the identifiable fragments being oak stem-wood, with low levels of vitrification noted in some. A tiny sherd of glass was present in spit E and a hobnail was recovered from spit F.

From (SF9), a very small amount of calcined bone was noted in spits A, E and F. These fragments would not have been large enough to provide a radiocarbon date. A few charcoal fragments were present in the six spits of (SF9), which, in most cases, were too small for either identification or dating. In spit A, two fragments were identifiable as oak stem-wood.

From (SF10), small fragments of calcined bone were recovered from spits C, E and F. Their combined weight of just over 1g was possibly sufficient to provide a radiocarbon date. Small charcoal fragments were present in all of the spits, with all identifiable fragments being oak stem-wood. A few charred grass-like monocot stems were recorded in spits A, B and C.

Although the urns comprised a relatively small amount of charcoal, the fragments of oak recovered may represent remains of the fuel-wood used during the cremation process. Oak stem-wood charcoal has frequently been recorded from cremation deposits, as this wood provided the high temperatures (500°C) required for the process (O'Donnell 2007).

14.5 Recommendations

Full analysis is recommended for the cremated bone from the site in order to identify and examine the bones present and provide information about the number of cremated individuals and the temperatures/oxidising conditions during the cremation process.

Charcoal investigations of material recovered from archaeological excavations are sparse in England, as charcoal has been collected primarily for dating purposes, as highlighted by Huntley (2010). Therefore, full analysis of several of the charcoal assemblages may be considered due to their unusual nature and their potential to provide information concerning the provision of firewood and the exploitation of woodland resources.

No further work is required for the plant macrofossil remains as the flots were scanned in their entirety and no additional information would be provided from an analysis. If additional work is undertaken at the site, the results of this assessment should be added to any further palaeoenvironmental data produced.

The flots should be retained as part of the physical archive of the site. The residues were discarded following examination.

14.6 Sources

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14.7 Appendix A: Data from palaeoenvironmental assessment

Sample	3	4	5	6	7	8	9	10	11	
Context	1018	1016	1026	1021	1028	1030	1032	1033	1021	
Feature	ditch	ditch	?pit	ditch	ditch	ditch	deposit	ditch	ditch	
Feature number	1019	1019	1023	1022	1019	1019	1019?	1019	1022	
Material available for radiocarbon dating	✓	✓	✓	✓	✓	✓	(✓)	✓	✓	
Volume processed (l)	10	9	2	9	6	8	4	8	10	
Volume of flot (ml)	30	40	40	40	70	60	30	40	40	
<i>Residue contents</i>										
Bone (calcined)	indet. frags	-	-	-	(+)	++	(+)	-	-	-
Charcoal		-	-	+	-	+	+	-	+	(+)
Daub		-	-	-	-	+++	-	++++	-	-
Fired clay / CBM		-	-	-	+	+	++	-	-	++
Fuel waste	semi-vitrified	-	-	-	-	-	-	-	-	-
Glass (number of fragments)		-	-	-	-	-	1	-	-	-
Hammerscale	flake	-	(+)	-	-	-	-	-	-	-
Nail / hobnail (number of fragments)		-	-	-	-	-	2	-	-	-
Pot (number of fragments)		-	-	3	-	4	8	-	-	1
Tooth (number of fragments)	animal enamel	-	-	-	-	-	-	-	-	-
<i>Flot matrix</i>										
Bark (charred)		-	-	-	-	-	-	-	-	-
Charcoal		+	++	++	++	+++	+++	++	++	++
Daub	burnt	-	-	-	-	-	-	-	-	-
Fuel waste		-	-	-	-	-	-	-	-	-
Monocot stems (charred)		-	-	-	-	-	-	-	-	-
Rhizomes / tubers (charred)		-	-	-	-	-	+	-	-	-
Roots (modern)		+	+	+	+	-	(+)	++	++	+
Uncharred seeds		-	-	-	(+)	-	-	-	-	-
<i>Charred remains (total count)</i>										
(a) <i>Bromus</i> sp (Bromes)	caryopsis	-	3	-	-	7	28	-	1	-
(a) <i>Tripleurospermum inodorum</i> (Scentless Mayweed)	achene	-	-	-	-	-	2	-	-	-
(c) <i>Cerealia</i> indeterminate	grain	-	-	-	-	6	43	-	-	-
(c) <i>Hordeum</i> sp (Barley species)	grain	-	1	-	-	-	-	-	-	-
(c) <i>Hordeum</i> sp (Barley species)	hulled grain	-	-	-	-	-	-	-	-	-
(c) <i>Hordeum</i> sp (Barley species)	rachis fragment	-	1	-	-	-	7	-	-	-
(c) <i>Hordeum vulgare</i> (six-row Barley)	rachis fragment	-	-	-	-	-	-	-	-	-
(c) <i>Triticum spelta</i> (Spelt Wheat)	glume base	-	3	-	-	9	182	-	-	-
(c) <i>Triticum spelta</i> (Spelt Wheat)	spikelet fork	-	-	-	-	-	2	-	-	-

Sample	3	4	5	6	7	8	9	10	11
Context	1018	1016	1026	1021	1028	1030	1032	1033	1021
Feature	ditch	ditch	?pit	ditch	ditch	ditch	deposit	ditch	ditch
Feature number	1019	1019	1023	1022	1019	1019	1019?	1019	1022
(c) <i>Triticum</i> sp (Wheat species) grain	-	1	3	-	5	-	-	-	-
(h) <i>Danthonia decumbens</i> (Heath-grass) caryopsis	-	-	-	-	-	-	-	-	-
(r) <i>Galium aparine</i> (Cleavers) seed	-	-	1	-	1	3	-	-	-
(r) <i>Plantago lanceolata</i> (Ribwort Plantain) seed	-	-	-	-	-	1	-	1	-
(t) <i>Corylus avellana</i> (Hazel) nutshell frag.	-	-	3	-	-	1	1	-	-
(t) <i>Sambucus nigra</i> (Elder) fruitstone	-	-	-	-	-	-	-	-	-
(w) <i>Carex</i> sp (Sedges) trigonous nutlet	-	-	-	-	1	-	-	-	-
(w) <i>Eleocharis</i> sp (Spike-rushes) nutlet	-	-	-	-	-	3	-	-	-
(x) Fabaceae undifferentiated (Pea family) large seed	-	-	-	-	-	-	-	-	-
(x) Poaceae undifferentiated >2mm (Grass family) caryopsis	-	2	-	-	7	71	1	-	-
(x) <i>Ranunculus</i> subgenus <i>Ranunculus</i> (Buttercup) achene	-	-	-	-	-	-	-	-	-
(x) <i>Rumex</i> sp (Docks) nutlet	-	1	-	-	1	6	-	-	-
(x) <i>Vicia</i> sp (Vetches) seed	-	-	-	-	2	2	-	-	-

[a-arable; c-cultivated; h-heathland; r-ruderal; t-tree/shrub; w-wet/damp ground; x-wide niche.

(+): trace; +: rare; ++: occasional; +++: common; ++++: abundant

(Ⓜ) there may be insufficient weight of carbon available for radiocarbon dating]

Sample	12	13	14	15	16	17	18	19	20
Context	1036	1040	1044	1048	1053	1054	1058	1059	1065
Feature	pit	ditch	pit	cut	pit	pit	pit	pit	posthole
Feature number	1035	1022	1043	1947	1052	1052	1055	1055	1064
Material available for radiocarbon dating	✓	✓	✓	✓	✓	✓	(✓)	✓	✓
Volume processed (l)	8	10	8	6	6	9	8	4	7
Volume of flot (ml)	300	60	40	40	70	60	30	120	70
Residue contents									
Bone (calcined) indet. frags	(+)	+	-	-	+	+	(+)	+	(+)
Charcoal	-	-	-	-	-	(+)	-	-	-
Daub	-	+	-	-	+	+	+	+++	-
Fired clay / CBM	+	-	-	-	-	-	-	+	(+)
Fuel waste semi-vitrified	-	(+)	-	-	-	-	+	-	-
Glass (number of fragments)	1	-	-	-	-	-	-	-	-
Hammerscale flake	-	-	-	-	-	-	-	-	+
Nail / hobnail (number of fragments)	-	1	-	-	1	-	-	-	-
Pot (number of fragments)	8	1	-	1	2	2	-	4	4
Tooth (number of fragments) animal enamel	-	-	-	-	-	-	-	-	-
Flot matrix									
Bark (charred)	-	-	-	-	-	-	-	-	+
Charcoal	+++	++	++	++	+++	+++	++	+++	+++
Daub burnt	+	-	-	-	-	-	-	-	-
Fuel waste	-	-	-	-	-	-	-	-	-
Monocot stems (charred)	-	-	-	-	-	-	-	-	-
Rhizomes / tubers (charred)	-	-	+	-	(+)	+	-	-	-
Roots (modern)	-	+	+	+	+	+	+	+	-
Uncharred seeds	-	-	(+)	-	+	-	-	-	-
Charred remains (total count)									
(a) <i>Bromus</i> sp (Bromes) caryopsis	-	-	-	-	-	-	1	-	-
(a) <i>Tripleurospermum inodorum</i> (Scentless Mayweed) achene	-	-	-	-	-	-	-	-	-
(c) <i>Cerealia</i> indeterminate grain	6	-	-	-	4	-	3	6	3
(c) <i>Hordeum</i> sp (Barley species) grain	17	-	-	-	2	5	1	6	-
(c) <i>Hordeum</i> sp (Barley species) hulled grain	11	-	-	-	-	-	-	-	-
(c) <i>Hordeum</i> sp (Barley species) rachis fragment	-	-	-	-	-	-	-	-	-
(c) <i>Hordeum vulgare</i> (six-row Barley) rachis fragment	-	-	-	-	-	-	-	1	-
(c) <i>Triticum spelta</i> (Spelt Wheat) glume base	13	-	2	-	-	-	-	1	3
(c) <i>Triticum spelta</i> (Spelt Wheat) spikelet fork	-	-	-	-	-	-	-	-	-
(c) <i>Triticum</i> sp (Wheat species) grain	-	-	1	-	3	-	1	1	-

Sample	12	13	14	15	16	17	18	19	20
Context	1036	1040	1044	1048	1053	1054	1058	1059	1065
Feature	pit	ditch	pit	cut	pit	pit	pit	pit	posthole
Feature number	1035	1022	1043	1947	1052	1052	1055	1055	1064
(h) <i>Danthonia decumbens</i> (Heath-grass) caryopsis	-	-	-	-	-	-	-	-	-
(r) <i>Galium aparine</i> (Cleavers) seed	-	-	1	-	-	-	-	-	-
(r) <i>Plantago lanceolata</i> (Ribwort Plantain) seed	-	-	-	-	-	-	-	-	-
(t) <i>Corylus avellana</i> (Hazel) nutshell frag.	2	2	-	-	-	-	-	-	-
(t) <i>Sambucus nigra</i> (Elder) fruitstone	2	-	-	-	-	-	-	-	-
(w) <i>Carex</i> sp (Sedges) trigonous nutlet	-	-	1	-	-	-	-	-	-
(w) <i>Eleocharis</i> sp (Spike-rushes) nutlet	-	-	-	-	-	-	-	-	-
(x) Fabaceae undifferentiated (Pea family) large seed	-	-	-	-	-	-	-	-	-
(x) Poaceae undifferentiated >2mm (Grass family) caryopsis	7	-	1	-	-	-	1	2	-
(x) <i>Ranunculus</i> subgenus <i>Ranunculus</i> (Buttercup) achene	-	-	-	-	-	-	-	-	-
(x) <i>Rumex</i> sp (Docks) nutlet	1	-	1	-	-	-	1	1	1
(x) <i>Vicia</i> sp (Vetches) seed	2	-	-	-	-	-	-	-	-

[a-arable; c-cultivated; h-heathland; r-ruderal; t-tree/shrub; w-wet/damp ground; x-wide niche.

(+): trace; +: rare; ++: occasional; +++: common; ++++: abundant

(Ⓜ) there may be insufficient weight of carbon available for radiocarbon dating]

Sample		21	22	23	24	25	26	27	28	29
Context		1061	1077	1066	1056	1073	1076	1083	1084	1080
Feature		ditch	ditch	spread	ditch	pit	pit	pit	pit	feature
Feature number		1078	1078	-	1057	1074	1075	1082	1082	1081
Material available for radiocarbon dating		✓	✓	(✓)	✓	✓	✓	✓	✓	✓
Volume processed (l)		12	21	10	9	8	7	8	8	3
Volume of flot (ml)		350	500	20	30	40	40	30	50	25
Residue contents										
Bone (calcined)	indet. frags	++	-	-	+	+	-	+	+	-
Charcoal		(+)	++	-	-	-	-	-	(+)	-
Daub		(+)	-	-	-	-	-	-	+	-
Fired clay / CBM		(+)	-	-	-	-	-	-	-	+
Fuel waste	semi-vitrified	+	-	-	-	-	-	-	-	-
Glass (number of fragments)		-	-	-	-	-	1	-	-	-
Hammerscale	flake	+	-	-	-	-	-	-	-	-
Nail / hobnail (number of fragments)		1	-	-	-	-	-	-	-	-
Pot (number of fragments)		-	-	-	1	-	1	2	2	-
Tooth (number of fragments)	animal enamel	2	-	-	-	-	-	-	-	-
Flot matrix										
Bark (charred)		-	-	-	-	-	-	-	-	-
Charcoal		+++	+++	++	++	++	++	++	++	++
Daub	burnt	++	+	-	-	-	-	-	-	-
Fuel waste		-	-	-	-	-	-	-	-	-
Monocot stems (charred)		-	-	-	-	-	-	-	-	-
Rhizomes / tubers (charred)		-	-	-	-	-	-	-	-	-
Roots (modern)		+	-	++	+	+	+	+	+	+
Uncharred seeds		-	-	+	-	-	-	(+)	-	-
Charred remains (total count)										
(a) <i>Bromus</i> sp (Bromes)	caryopsis	-	-	-	-	-	-	-	-	-
(a) <i>Tripleurospermum inodorum</i> (Scentless Mayweed)	achene	-	-	-	-	-	-	-	-	-
(c) <i>Cerealia</i> indeterminate	grain	-	-	-	-	-	-	1	-	-
(c) <i>Hordeum</i> sp (Barley species)	grain	3	-	-	-	1	-	-	-	-
(c) <i>Hordeum</i> sp (Barley species)	hulled grain	-	-	-	-	-	-	1	-	-
(c) <i>Hordeum</i> sp (Barley species)	rachis fragment	-	-	-	-	1	-	-	-	-
(c) <i>Hordeum vulgare</i> (six-row Barley)	rachis fragment	-	-	-	-	-	-	-	-	-
(c) <i>Triticum spelta</i> (Spelt Wheat)	glume base	1	-	-	-	-	-	-	-	-
(c) <i>Triticum spelta</i> (Spelt Wheat)	spikelet fork	-	-	-	-	-	-	-	-	-
(c) <i>Triticum</i> sp (Wheat species)	grain	1	-	-	-	-	1	3	4	-
(h) <i>Danthonia decumbens</i> (Heath-grass)	caryopsis	-	-	-	-	-	1	-	-	-
(r) <i>Galium aparine</i> (Cleavers)	seed	1	-	-	-	-	1	-	-	-
(r) <i>Plantago lanceolata</i> (Ribwort Plantain)	seed	-	-	-	-	-	-	-	-	-

Sample		21	22	23	24	25	26	27	28	29
Context		1061	1077	1066	1056	1073	1076	1083	1084	1080
Feature		ditch	ditch	spread	ditch	pit	pit	pit	pit	feature
Feature number		1078	1078	-	1057	1074	1075	1082	1082	1081
(t) <i>Corylus avellana</i> (Hazel)	nutshell frag.	1	-	-	-	-	-	-	1	-
(t) <i>Sambucus nigra</i> (Elder)	fruitstone	-	-	-	-	-	-	-	-	-
(w) <i>Carex</i> sp (Sedges)	trigonus nutlet	-	-	-	-	-	-	-	-	-
(w) <i>Eleocharis</i> sp (Spike-rushes)	nutlet	-	-	-	-	-	-	-	-	-
(x) Fabaceae undifferentiated (Pea family)	large seed	2	-	-	-	-	-	-	-	-
(x) Poaceae undifferentiated >2mm (Grass family)	caryopsis	1	-	-	1	1	-	-	1	2
(x) <i>Ranunculus</i> subgenus <i>Ranunculus</i> (Buttercup)	achene	-	-	-	-	1	-	-	-	-
(x) <i>Rumex</i> sp (Docks)	nutlet	-	-	-	-	1	-	-	-	1
(x) <i>Vicia</i> sp (Vetches)	seed	4	-	-	-	4	-	1	2	-

[a-arable; c-cultivated; h-heathland; r-ruderal; t-tree/shrub; w-wet/damp ground; x-wide niche.

(+): trace; +: rare; ++: occasional; +++: common; ++++: abundant

(Ⓜ) there may be insufficient weight of carbon available for radiocarbon dating]

Sample		30	31	32	33	34	35	36	37
Context		1040	1085	1086	1040	1088	1018	1017	1016
Feature		ditch	posthole	posthole	ditch	posthole	ditch	ditch	ditch
Feature number		1022	1087	1087	1022	1089	1019	1019	1019
Material available for radiocarbon dating		(✓)	-	-	(✓)	✓	(✓)	-	✓
Volume processed (l)		9	0.5	0.5	9	4	7	7	4
Volume of flot (ml)		15	5	1	50	50	30	30	60
Residue contents									
Bone (calcined)	indet. frags	-	-	-	+	+	-	-	+
Charcoal		-	-	-	-	-	-	-	-
Daub		-	-	-	+	++	-	-	-
Fired clay / CBM		+	-	-	++	-	-	-	+
Fuel waste	semi-vitrified	-	-	-	-	-	-	-	-
Glass (number of fragments)		-	-	-	-	-	-	-	-
Hammerscale	flake	-	-	-	-	-	-	+	-
Nail / hobnail (number of fragments)		-	-	-	-	-	-	-	-
Pot (number of fragments)		-	-	-	4	-	39	-	-
Tooth (number of fragments)	animal enamel	-	-	-	-	-	-	-	-
Flot matrix									
Bark (charred)		-	-	-	-	-	-	-	-
Charcoal		++	+	(+)	++	++	++	++	++
Daub	burnt	-	-	-	-	-	-	-	-
Fuel waste		-	-	-	-	-	-	-	-
Monocot stems (charred)		-	-	-	-	-	-	-	+
Rhizomes / tubers (charred)		-	-	-	-	-	-	-	-
Roots (modern)		+	+	+	+	-	+	-	+
Uncharred seeds		-	-	-	-	(+)	-	-	-
Charred remains (total count)									
(a) <i>Bromus</i> sp (Bromes)	caryopsis	-	-	-	1	-	-	-	3
(a) <i>Tripleurospermum inodorum</i> (Scentless Mayweed)	achene	-	-	-	-	-	-	-	-
(c) <i>Cerealia</i> indeterminate	grain	-	-	-	1	-	-	-	3
(c) <i>Hordeum</i> sp (Barley species)	grain	-	-	-	-	-	-	-	-
(c) <i>Hordeum</i> sp (Barley species)	hulled grain	-	-	-	-	-	-	-	-
(c) <i>Hordeum</i> sp (Barley species)	rachis fragment	-	-	-	-	-	-	2	14
(c) <i>Hordeum vulgare</i> (six-row Barley)	rachis fragment	-	-	-	-	-	-	-	2
(c) <i>Triticum spelta</i> (Spelt Wheat)	glume base	-	-	-	-	1	1	6	12
(c) <i>Triticum spelta</i> (Spelt Wheat)	spikelet fork	-	-	-	-	-	-	-	3

Sample		30	31	32	33	34	35	36	37
Context		1040	1085	1086	1040	1088	1018	1017	1016
Feature		ditch	posthole	posthole	ditch	posthole	ditch	ditch	ditch
Feature number		1022	1087	1087	1022	1089	1019	1019	1019
(c) <i>Triticum</i> sp (Wheat species)	grain	1	-	-	1	1	1	-	1
(h) <i>Danthonia decumbens</i> (Heath-grass)	caryopsis	-	-	-	-	-	-	-	-
(r) <i>Galium aparine</i> (Cleavers)	seed	-	-	-	-	1	-	-	-
(r) <i>Plantago lanceolata</i> (Ribwort Plantain)	seed	-	-	-	-	-	-	-	-
(t) <i>Corylus avellana</i> (Hazel)	nutshell frag.	-	-	-	-	-	-	-	-
(t) <i>Sambucus nigra</i> (Elder)	fruitstone	-	-	-	-	-	-	-	-
(w) <i>Carex</i> sp (Sedges)	trigonus nutlet	-	-	-	-	-	-	-	-
(w) <i>Eleocharis</i> sp (Spike- rushes)	nutlet	-	-	-	-	-	-	-	-
(x) Fabaceae undifferentiated (Pea family)	large seed	-	-	-	-	-	-	-	-
(x) Poaceae undifferentiated >2mm (Grass family)	caryopsis	-	-	-	1	-	-	-	2
(x) <i>Ranunculus</i> subgenus <i>Ranunculus</i> (Buttercup)	achene	-	-	-	-	-	-	-	-
(x) <i>Rumex</i> sp (Docks)	nutlet	-	-	-	-	-	-	-	2
(x) <i>Vicia</i> sp (Vetches)	seed	-	-	-	-	-	-	-	-

[a-arable; c-cultivated; h-heathland; r-ruderal; t-tree/shrub; w-wet/damp ground; x-wide niche.

(+): trace; +: rare; ++: occasional; +++: common; ++++: abundant

[?] there may be insufficient weight of carbon available for radiocarbon dating]

Sample	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Context	1061	1077	1066	1056	1073	1076	1083	1084	1080	1040	1085	1086	1040	1088	1018	1017	1016
Feature	ditch	ditch	spread	ditch	pit	pit	pit	pit	feature	ditch	post hole	post hole	ditch	post hole	ditch	ditch	ditch
Feature No.	1078	1078	-	1057	1074	1075	1082	1082	1081	1022	1087	1087	1022	1089	1019	1019	1019
<i>Acer campestre</i> (Field Maple)	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-
<i>Alnus glutinosa</i> (Alder)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Betula</i> sp (Birches)	-	-	-	-	-	✓	✓	-	-	-	-	-	-	-	-	-	-
<i>Cornus</i> sp (Dogwood)	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-
<i>Corylus avellana</i> (Hazel)	✓	✓	-	-	-	✓	✓	✓	✓	✓	-	✓	-	-	-	-	-
<i>Fraxinus excelsior</i> (Ash)	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	✓
Maloideae (Apple, hawthorn, whitebeams)	-	✓	✓	✓	-	-	-	-	-	-	-	-	-	✓	-	-	-
cf. <i>Prunus</i> sp (Cherries)	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Quercus</i> sp (Oaks)	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	✓	✓
Salicaceae (Willow family)	-	-	-	-	-	-	-	-	✓	-	-	-	✓	-	-	-	-
<i>Ulmus</i> sp (Elm)	-	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-	-

14.9 Appendix C Samples register from pit cut [1091]

Sample number	Context number	Feature number	Description of context	Reason for sampling	Number of tubs/bags	% of context	Name	Date
38	1093	F1091	Pit fill – SW Quadrant	GBA	1 tub	?50%	CAJ	22/04/13
39	1092	F1091	Pit fill – SW Quadrant	GBA	1 tub	<50%	CAJ	22/04/13
40	1093	F1091	Pit fill – SE Quadrant	GBA	1 tub	<50%	CAJ	22/04/13
41	1092	F1091	Pit fill – N side	GBA	1 tub	<50%	CAJ	23/04/13
42	1101	F1099	Pit fill – deposit below urn (SF8)	GBA	1 tub	100%	CAJ	23/04/13
43	1102	F1100	Pit fill – deposit below urn (SF9)	GBA	1 tub	100%	CAJ	23/04/13
44	1102		Cleaning layer above natural, down fissures in deposit	GBA	1 tub	N/A	CAJ	23/04/13
45	1092	F1091	Pit fill – deposit taken from between urns (SF8) and (SF9)	GBA	1 tub	100%	CAJ	23/04/13
46	N/A		Cleaning layer from entire soil box prior to excavation	GBA	1 tub	N/A	CAJ	23/04/13
47	1103		Natural subsoil	GBA	11 tubs	<100%	CAJ	23/04/13
48	1095		Cremation urn fill (SF9)– spits A-F	Cremation	6 bags	100%	CAJ	26/04/13
49	1094		Cremation urn fill (SF8) – spits A-F	Cremation	6 bags	100%	CAJ	26/04/13
50	1098		Cremation urn fill (SF10)– spits A-H	Cremation	8 bags	100%	CAJ	27/04/13

14.10 Appendix D Palaeoenvironmental data from pit cut [1091]

Sample	38	39	40	41	42	43	44	45	46	47
Context	1093	1092	1093	1092	1101	1102	1102	1092	-	1103
Feature	Pit	Pit	Pit	Pit	Pit	Pit	Pit	Pit	Pit	Subsoil
Feature number	1091	1091	1091	1091	1099	1100	-	1091	-	-
Material available for radiocarbon dating	✓	(✓)	✓	✓	(✓)	(✓)	(✓)	(✓)	(✓)	(✓)
Volume processed (l)	7	6	4	6	5	2	5	2	4	104
Volume of flot (ml)	40	10	5	20	10	3	5	3	5	100
<i>Residue contents</i>										
Bone (calcined) indet. frags	+	+	+	+	++	(+)	(+)	+	-	+
Bone (unburnt) indet. frags	-	-	-	-	-	-	-	-	-	(+)
Charcoal	-	-	-	-	+	-	-	++	+	-
Nail / hobnail	5	6	2	4	1	-	-	-	-	-
Pot (number of fragments)	1	-	1	7	11	5	-	5	11	2
<i>Flot matrix</i>										
Charcoal	+	+	+	++	+	+	+	++	+	+
Clinker / cinder	-	-	-	-	-	-	-	-	-	+
Glass (number of fragments)	1	-	-	-	-	-	-	-	-	-
Heather twigs (charred)	-	-	-	-	(+)	-	-	-	(+)	-
Monocot stems (charred)	+	-	(+)	(+)	-	-	-	(+)	-	(+)
Roots (modern)	+	-	-	-	+	-	-	-	-	+
Tuber / rhizome (charred)	(+)	+	-	(+)	(+)	-	(+)	(+)	(+)	-
Uncharred seeds	-	-	-	-	-	(+)	-	-	(+)	-
<i>Charred remains (total count)</i>										
(c) Cerealia indeterminate grain	-	-	-	-	-	-	-	1	1	1
(c) <i>Hordeum</i> sp (Barley species) grain	-	-	-	-	-	1	-	-	1	2
(c) cf. <i>Vicia faba</i> (Bean) fruit frag.	8	6	-	-	1	1	-	1	1	-
(r) <i>Plantago lanceolata</i> (Ribwort Plantain) seed	-	1	-	-	1	-	-	-	-	-
(t) <i>Corylus avellana</i> (Hazel) nutshell frag.	12	4	-	7	-	-	-	-	-	-
(x) Poaceae undiff. >2mm (Grass family) caryopsis	-	1	-	-	-	-	-	-	-	-
(x) <i>Rumex</i> sp (Docks) nutlet	1	-	-	-	-	-	-	-	-	-
(x) <i>Vicia</i> sp (Vetches) seed	5	10	1	10	3	5	5	3	3	7

15 Appendix 6 Cremated bone analysis

15.1 Summary

15.1.1 The project

This report presents the results of analysis of the bone fragments from the three urned cremation burials.

The works were commissioned by Border Archaeology, and conducted by Archaeological Services Durham University.

15.1.2 Results

Cremated bone was recovered from all three urned burials. Definite fragments of human bone were present in context (1094) from within urn (SF8) and context (1092) from above urns (SF8) and (SF9). A fragment of bone from urn (SF8) was radiocarbon dated to the late Iron Age or early Roman period.

Urn (SF8) contained the largest quantity of bone, although still much less than would be expected from a modern adult cremation burial. This may indicate the 'token' burial of a cremated individual where only a selection of the bone is incorporated from the pyre into the burial. The bone from within (SF8) was of larger fragment size than the fragments in other contexts. Most of the bone examined had achieved full oxidation.

Urns (SF9) and (SF10) contained such little bone that they may represent memorials or grave offerings, rather than burials. Context (1092) may represent bone disturbed from urns (SF8) and (SF9) or deposits of pyre debris over the urns.

The human remains from (1092) were consistent with an adult individual. Fragments from urn (SF8) also derived from an adult individual, with the pelvis auricular surface indicating an age of around 25-40 years at the time of death.

15.2 Project background

15.2.1 Location and background

This report presents the results of cremated bone analysis of the excavated contents of three urns from the Mortimer Medical Practice site Leintwardine Herefordshire.

15.2.2 Objective

The objective of the scheme of works was to analyse the cremated human bone.

15.2.3 Dates

Samples were received by Archaeological Services on 11th April 2013. Analysis and report preparation was conducted between September and October 2013.

15.2.4 Personnel

Analysis and report preparation was conducted by Dr Anwen Caffell. Micro-excavation of the urns and surrounding soil block was undertaken by Catrin Jenkins.

15.2.5 Archive

The cremated bone is currently held in the Environmental Laboratory at Archaeological Services Durham University awaiting collection. The urns and associated finds were returned to Border Archaeology on 11th July 2013.

15.3 Methods

Three urned cremation burials were discovered by Border Archaeology at Mortimer Medical Practice Leintwardine Herefordshire. Two urns (SF8) and SF9) were block-lifted and excavated in 2cm spits by Archaeological Services Durham University (Archaeological Services 2013, 4-5). The third urn (SF10), delivered with fill intact, was also excavated in spits by Archaeological Services Durham University.

The cremated bone was passed through a stack of sieves with mesh sizes of 10mm, 5mm and 2mm and the length of the longest fragment was recorded with digital callipers (McKinley 2004a). All bone fragments were examined and identifiable fragments were grouped according to the following categories: skull, axial (spine and ribs), upper limb and lower limb. The overall weight for each category was recorded and the identifiable fragments were catalogued in detail (Appendix A). The minimum number of individuals present was calculated and any features that might assist with estimating the age or sex were recorded. Any manifestations of pathological conditions were noted.

15.4 Results

Cremated bone was recovered from all three urns, as well as associated contexts (Table 5). A fragment of cremated bone from urn (SF8) was radiocarbon dated and returned a date of 90 cal. BC to 70 cal. AD, placing the remains in the very late Iron Age or early Roman period.

Table 5: Contexts containing cremated remains (analysed in further detail)

Contexts	Detail*	Finds*	Plant Remains*
1053	Context near pit [1091]	-	-
1092	Fill of pit [1091] partially overlying urns SF8)and SF9	Pottery fragments (x12); nails/ hobnails (x10)	Charcoal (oak, birch); charred grain; charred beans; charred nutshells
1093	Fill of pit [1091], above context (1092)	Glass vessel neck (SF12); glass sherd; pottery fragments (x2); nails/ hobnails (x7)	Charcoal (oak, alder); charred beans; charred nutshells
1094	Fill of urn (SF8)(spits A-F)	Glass sherd; hobnail	Charcoal (oak); charred tuber/ rhizomes; charred monocot stems; possible charred bean
1095	Fill of urn (SF9)(spits A-F)	-	Charcoal (oak)
1097	Context near pit [1091]	-	-
1098	Fill of urn (SF10)(spits A-H)	-	Charcoal (oak); charred monocot stems
1101	Fill of pit [1099], which cut pit [1091]; urn SF8)placed above (1101)	Pottery fragments (x11); nail/ hobnail	Charcoal (oak); charred bean
1102	Fill of pit [1100], which cut pit [1091]; urn SF9)placed above (1102)	Pottery fragments (x5)	Charcoal (oak); charred grain; charred bean
1103	Natural clay subsoil, cut by pit [1091]	Pottery fragments (x2)	Charcoal (oak); charred grain
N/A	Cleaning layer from entire soil box prior to excavation (sample <46>)	Pottery fragments (x11)	Charcoal (oak); charred grain

* Data from Archaeological Services (2013)

Burnt bone fragments were also recovered from 14 contexts from elsewhere in the site (Table 6). These were examined briefly, but all contexts contained tiny quantities of burnt bone, which was heavily fragmented (most fragments <10mm in size). None of the fragments could be identified with any certainty, although context (1061) contained one fragment of possible animal bone. The bone from these contexts was not analysed further.

Table 6: Contexts containing burnt bone (not analysed further)

Context no.	Sample no.	ID
1016	<37>	Species unknown
1021	<6>	Species unknown
1028	<7>	Species unknown
1030	<8>	Species unknown
1040	<13> <33>	Species unknown
1054	<17>	Species unknown
1056	<24>	Species unknown
1059	<19>	Species unknown
1061	<21>	One fragment animal?
1065	<20>	Species unknown
1073	<25>	Species unknown
1083	<27>	Species unknown
1084	<28>	Species unknown
1088	<34>	Species unknown

* Data from Archaeological Services (2013)

A summary of the data for each context is presented in Table 7.

Table 7: Cremated remains: summary

Context	Colour	Total Weight (g)	Weight as % of modern	Max Frag Size (mm)	ID	Age	Sex
1053	White	0.7	0.0	12.4	?	?	?
1092	Buff/white, occasional pale/darker grey	27.0	1.7	32.5	Human & Animal?	18 + years	?
1093	Buff/white, occasional pale grey	9.9	0.6	24.3	Human?	?	?
1094 (SF8)	Buff/white, occasional pale grey or black	323.7	19.9	69.2	Human	25-40 years	(F??)
1095 (SF9)	White	0.3	0.0	9.0	?	?	?
1097	White	6.8	0.4	41.3	Human?	?	?
1098 (SF10)	White, occasional pale grey	1.2	0.1	20.7	Human?	?	?
1101	Buff/white	5.5	0.3	30.0	Human?	?	?
1102	Buff/white	0.4	0.0	12.1	?	?	?
1103	Buff/white	1.1	0.1	15.9	Human?	?	?
<46>	Buff/white	0.6	0.0	12.6	?	?	?

* Total weight of cremated bone expressed as a percentage of the average weight of bone recovered from a modern cremation (1625.9g McKinley 1993)

15.4.1 Preservation

The bone from all contexts was fairly well preserved, being hard and with minimal erosion of the broken edges. Some warping and twisting of the bone was observed, along with cracking and fissuring.

15.4.2 Weight

The weights of bone recovered from each context are given in Table 7 above. Urn (SF8) contained the largest quantity of cremated bone, at 323.7g. Even so, this represents only 19.9% of the average weight of bone expected from a modern adult cremation burial (1625.9g), and falls well below the range of weights observed (1001.5-2422.5g, McKinley 1993). All other contexts, including urns (SF9) and (SF10), contained small quantities of cremated bone: mostly <10g and representing <2% of the mean expected weight. The two contexts overlying urns (SF8) and (SF9), (1092) and (1093), combined contained 37.8g of cremated bone (2.3% of the mean expected weight).

Cremated bone was found in all the spits of urn (SF8) (Table 8). Spit A contained the largest proportion (c. a quarter of the overall weight), and spit D contained the smallest amount (c. 5% of the overall weight), but the remaining bone was distributed fairly evenly across the remaining spits.

Table 8: Urn (SF8) (1094): Cremated bone fragment size

Spit	10mm		5mm		2mm		Total g	Max Frag mm
	g	%	g	*	g	%		
A	41.4	48.8	35.8	42.2	7.7	9.1	84.9	69.2
B	29.2	63.8	13.9	30.3	2.7	5.9	45.8	35.3
C	49.8	74.9	14.5	21.8	2.2	3.3	66.5	44.8
D	10.7	64.8	3.8	23.0	2.0	12.1	16.5	37.9
E	43.4	76.0	10.9	19.1	2.8	4.9	57.1	55.1
F	36.7	69.4	9.4	17.8	6.8	12.9	52.9	55.6
Total	211.2	65.2	88.3	27.3	24.2	7.5	323.7	

Cremated bone was only observed in spits A, E and F from urn (SF9) (Table 9), and in spits C, E and F from urn (SF10) (Table 10).

Table 9: Urn (SF9) (1095): Cremated bone fragment size

Spit	10mm		5mm		2mm		Total g	Max Frag mm
	g	%	g	*	g	%		
A	0.0	0.0	0.0	0.0	0.1	100.0	0.1	8.3
B	0.0	-	0.0	-	0.0	-	0.0	-
C	0.0	-	0.0	-	0.0	-	0.0	-
D	0.0	-	0.0	-	0.0	-	0.0	-
E	0.0	0.0	0.0	0.0	0.1	100.0	0.1	9.0
F	0.0	0.0	0.0	0.0	0.1	100.0	0.1	4.4
Total	0.0	0.0	0.0	0.0	0.3	100.0	0.3	

Table 10: Urn (SF10) (1098): Cremated bone fragment size

Spit	10mm		5mm		2mm		Total g	Max Frag mm
	g	%	g	*	g	%		
A	0.0	-	0.0	-	0.0	-	0.0	-
B	0.0	-	0.0	-	0.0	-	0.0	-
C	0.0	0.0	0.0	0.0	0.1	100.0	0.1	6.9
D	0.0	-	0.0	-	0.0	-	0.0	-
E	0.0	0.0	0.6	100.0	0.0	0.0	0.6	20.7
F	0.0	0.0	0.5	100.0	0.0	0.0	0.5	18.2
G	0.0	-	0.0	-	0.0	-	0.0	-
H	0.0	-	0.0	-	0.0	-	0.0	-
Total	0.0	0.0	1.1	91.7	0.1	8.3	1.2	

15.4.3 Fragmentation

The weights of bone in each sieved fraction are shown in Table 11, and the maximum fragment sizes are shown in Table 7 above. The majority of the fragments from urn (SF8) were over 10mm in size (65.2%) and only 7.5% of the bone was found in the 2mm sieved fraction. The largest fragment measured 69.2mm. The same pattern (majority of bone in the 10mm fraction and smallest proportion in the 2mm fraction) was observed within each spit in urn (SF8) (see Table 8) and the maximum fragment size within each spit ranged from 35.3-69.2mm.

Table 11: Cremated bone fragment size

Context No.	Urn	10mm		5mm		2mm		Total g
		g	%	g	*	g	%	
1053	-	0.0	0.0	0.3	42.9	0.4	57.1	0.7
1092	-	10.3	36.9	9.7	34.8	7.9	28.3	27.9
1093	-	0.0	0.0	6.8	68.7	3.1	31.3	9.9
1094	SF8	211.2	65.2	88.3	27.3	24.2	7.5	323.7
1095	SF9	0.0	0.0	0.0	0.0	0.3	100.0	0.3
1097	-	6.8	100.0	0.0	0.0	0.0	0.0	6.8
1098	(SF10)	0.0	0.0	1.1	91.7	0.1	8.3	1.2
1101	-	0.0	0.0	2.9	52.7	2.6	47.3	5.5
1102	-	0.0	0.0	0.1	25.0	0.3	75.0	0.4
1103	-	0.0	0.0	0.8	72.7	0.3	27.3	1.1
<46>	-	0.0	0.0	0.4	66.7	0.2	33.3	0.6

In contrast, the bone in the majority of the remaining contexts, including urns (SF9) and (SF10), was more fragmented. The majority of the bone was found in the 5mm and 2mm sieved fractions and the maximum fragment sizes were smaller (9.0mm to 41.3mm).

15.4.4 Bone Colour

The colour of cremated bone is related to the degree of oxidation achieved and this, in turn, will be related to the temperature attained, the length of time the body was on the pyre and the amount of oxygen available (McKinley 2004a; 2000b). The bone colour from all contexts was predominantly buff/white with occasional areas of pale grey (see Table 7 above). This indicates that the bone had largely achieved full oxidation, with complete loss of the organic components, suggesting it had been burnt at temperatures of over c. 600°C with plenty of oxygen for a sufficient length of time. Small areas of dark grey/black were occasionally observed in bone from urn (SF8) (1094), indicating some parts of bone fragments had failed to achieve full oxidation. They may have

been exposed to reducing conditions (due to a lack of oxygen availability) or been exposed to cooler temperatures. However, since the majority of the bone from urn (SF8) was fully oxidised, it seems likely that cooler temperatures and/or lack of oxygen were restricted to small localised areas within the pyre.

15.4.5 Identification of Fragments

Definite fragments of human bone were present in two contexts: (1092) from above urns (SF8) and (SF9) and (1094) from urn (SF8). It seemed likely that bone from contexts (1093), (1097), (1098), (1101) and (1103) was also human, based on its texture, but no fragments could be identified with certainty and it could not be proved that the remains were human.

A quarter of the bone from context (1092) and nearly a third of the bone from urn (SF8) could be identified (Table 12). The majority of the identified bone from context (1092) came from the skull, including part of the frontal bone (forehead) and cranial vault fragments. The remaining identified bone derived from the axial skeleton and comprised a vertebra body fragment. The latter was probably a cervical (neck) vertebra. No definite fragments from the upper or lower limbs were identified, although long-bone fragments were present. A detailed catalogue of the identified bone is supplied in Appendix A.

Table 12: Identifiable bone: weight and percentage

Context No.	Urn	Skull		Axial		Upper Limb		Lower Limb		Total	
		g	%	g	%	g	%	g	%	g	%*
1092	-	6.0	87.0	0.9	13.0	0.0	0.0	0.0	0.0	6.9	24.7
1094	SF8	11.3	10.8	27.9	26.7	0.0	0.0	65.4	62.5	104.6	32.3

* Total weight of identified bone expressed as a percentage of the total weight of bone per context

The majority (62.5%) of the identified bone from urn (SF8) derived from the lower limb (see Table 12). These included fragments of os coxa (pelvis), femur (thigh), talus (ankle) and cuboid (foot bone). A quarter of the identified bone derived from the axial skeleton, including fragments of cervical (neck), thoracic (chest) and lumbar (lower back) vertebrae, as well as generic vertebra fragments. The remaining identified bone derived from the skull. This mostly comprised cranial vault fragments that could not be identified to a more specific part of the skull, but one fragment was probably part of a parietal bone (side/top of cranium). No fragments from the upper limb were identified.

Identified bone was present in all spits from urn (SF8), making up between 12.7% and 52.4% of the weight of bone per spit (Table 13). No skull fragments were found in the uppermost spits but otherwise there was no indication that the bone had been placed in the urn in any particular order.

Table 13: Urn (SF8) (1094): Summary of identified fragments (weight & percentage)

Spit	Skull		Axial		Upper Limb		Lower Limb		Total	
	g	%	g	%	g	%	g	%	g	%*
A	0.0	0.0	2.6	17.1	0.0	0.0	12.6	82.9	15.2	17.9
B	0.0	0.0	2.4	41.4	0.0	0.0	3.4	58.6	5.8	12.7
C	6.3	28.0	2.5	11.1	0.0	0.0	13.7	60.9	22.5	33.8
D	1.6	21.1	0.0	0.0	0.0	0.0	6.0	78.9	7.6	46.1
E	1.7	5.7	15.3	51.2	0.0	0.0	12.9	43.1	29.9	52.4
F	1.7	7.2	5.1	21.6	0.0	0.0	16.8	71.2	23.6	44.6
Total	11.3	10.8	27.9	26.7	0.0	0.0	65.4	62.5	104.6	32.3

* Total weight of identified bone expressed as a percentage of the total weight of bone per spit

The average proportion of bone in each of the four categories among the undisturbed lidded urned burials at Brougham Cumbria is given here for comparison, with the range in brackets: skull 18% (15-23%); axial 18% (6-30%); upper limb 24% (21-28%) and lower limb 40% (31-53%; McKinley 2004b: 300).

15.4.6 Animal Bone

One fragment of animal bone was recovered from context (1092), which weighed 0.3g. This was identified as a probable rib by Dr Carrie Drew but the dense nature of the bone in cross-section raised the possibility that it may have been part of a larger bone that had been shaped. However, no evidence for tool marks could be observed on the surface (Jen Jones, *pers. comm.*) and identification as an animal rib seems most likely.

15.4.7 Minimum Number of Individuals

None of the bone elements identified in any context from Leintwardine were duplicated, and no marked age-related variation in bone-size or development was observed. This indicated the minimum number of individuals represented by all the contexts was one.

15.4.8 Assessment of Age-At-Death

Age estimation relies on examining particular areas of the skeleton for developmental and degenerative changes (Cox 2000). Even in relatively complete inhumation burials, where several indicators of age can be examined, it can be difficult to place an individual into a particular age category. The issue is further complicated by the fact that no methods have been specifically developed for application to cremated remains and none of those developed for inhumation burials have been tested on cremated bone (Mayne Correia 1997). Thus, any age estimates derived must be regarded with caution.

The remains from context (1092) were from an adult individual, as the fragment of vertebral body present had completed development. However, it was not possible to provide a narrower age estimate.

All fragments from urn (SF8) where the developmental stage could be observed had completed development, indicating they derived from an adult individual. Furthermore, an almost complete auricular surface from the pelvis was preserved, although the surface had multiple cracks. This surface was considered most likely to be stage 2-4 (Lovejoy *et al.* 1985), showing an even, granular surface with no evidence for porosity or densification and with minimal changes at the apex. This would be consistent with an age of c. 25-40 years and so the individual was probably a young-middle or old-middle adult.

15.4.9 Sex Estimation

Estimation of sex for adult individuals requires certain parts of the pelvis and/or skull to be present (Mays & Cox 2000). Since bone shape can be affected by warping as a result of the burning process, this could make the sex-estimation of cremated remains less reliable (Mayne Correia 1997). However, McKinley (2000b) has recorded a high degree of accuracy when estimating the sex of modern cremated remains (where the results could be checked with the known sex of the individual).

Although a moderately large fragment of pelvis from urn (SF8) was present (bearing the auricular surface), the essential features required for assessment of sex with reliability were absent. Not enough of the greater sciatic notch (which is wide in females and narrow in males) was present to observe shape and, although the relationship between the sciatic notch and auricular surface (composite arc) appeared more likely to be female, it was also not possible to observe this with confidence. The pre-auricular sulcus (presence/absence of a groove along the margin of the auricular surface) was indeterminate. The auricular surface was raised along the anterior margins, which is more likely to occur in females (Wescott & Drew, forthcoming) but one section of the posterior margin was not raised and the other was unobservable. Overall, there were subtle hints that the remains were more likely to be female but realistically not enough evidence was present to state this with any confidence and it would be best to consider the remains as unsexed.

It was not possible to determine the sex of the remains from context (1092).

15.4.10 Non-Metric Traits, Pathological Conditions and Dental Health

No non-metric traits were observed on any of the fragments. Two fragments of vertebral body from urn (SF8) had slight osteophytes (bony growths) around the margins of the bodies. Osteophyte formation can be associated with degenerative changes to the spine, and spinal osteophytes tend to become more frequent with age.

No evidence for dental health was present due to the lack of fragments of jaws and / or teeth.

15.5 Discussion

Most Roman cemeteries are located in the SE of England; the majority are found in urban centres and most tend to date towards the later Roman period (Hope 1999, 51). The cremated remains from Leintwardine, therefore, provide useful evidence for burial practices at the transition from the late Iron Age to the early Roman period in a rural area in the Welsh Borders.

During the late Iron Age, from the mid-1st -century BC, there was a transition towards cremation burial in the SE of England that was possibly associated with Roman influence (O'Brien 1999, 9; Hope 1999, 49). Cremation burial became more widespread in England following the Roman invasion of Britain in AD 43 (Hope 1999, 50). These cremation cemeteries were located outside towns, usually alongside major roads (Hope 1999, 51). However, Hope (1999, 49-51) has cautioned that some areas of Britain may have practised cremation burial during the Iron Age and the presence of cremation burial cannot thus be seen as indicative of the adoption of Roman practices in all areas. Rural areas, in particular, may well have been slow to adopt new fashions in burial practice (O'Brien 1999, 9). Therefore, the burials at Leintwardine may either indicate rapid and early adoption of a new burial rite in a rural area or represent the continuation of existing native burial practices.

The amount of bone found in archaeological cremation burials is often lower than that recorded following modern cremations (McKinley 2000a) and this was certainly the case at Leintwardine, where urn (SF8) contained c. 20% of the expected weight of bone and urns (SF9) and (SF10) contained <1% of the expected weight of bone. McKinley (*ibid.*) has suggested that only a selection of the bone was collected from the pyre and included with the burial and consequently most archaeological cremation burials represent 'token' burials. For example, the weight of bone recovered from the urned burials at the 3rd -century AD cemetery at Brougham Cumbria ranged

between 1.0g and 1508.1g, with the weight of bone from undisturbed urn burials weighing between 14.1g and 1324.6g (McKinley 2004b, 296). The average weight from the latter was reported to be 397.7g (McKinley 2004b, 297). Urn (SF8) would appear to contain a typical token burial of a cremated individual. McKinley (2000a) has observed that any bone not selected for burial might have remained with the pyre debris. Alternatively, it could have been used for a variety of ceremonial purposes, including scattering of the remains, or distribution of the remains among relatives or those attending the funeral.

McKinley (2000a, 42-3) has raised the possibility that some cremation burials containing minimal amounts of cremated bone may represent 'cenotaphs'. Such 'memorials' have been identified in late Iron Age and Roman-period cemeteries in Britain (McKinley 2000a, 43) and it is possible that urns (SF9) and (SF10) might fall into this category of burial. However, the possibility that the urns had been disturbed, with subsequent loss of their contents, must also be considered. The bone present in contexts (1092) and (1093) might represent bone disturbed from urns (SF8) and (SF9). Alternatively, these contexts may represent deliberate deposits of pyre debris (containing cremated bone fragments, charcoal and the remains of pyre offerings) on top of the urns following their deposition. The presence of hobnails within these contexts might suggest these deposits are more likely to be re-deposited pyre debris. Such deposits of pyre debris within graves have frequently been recorded in Roman Britain and these deposits may derive from the same cremation as the main burial (McKinley 2000a, 41-2).

Cremation burials from the early Roman period were usually buried in pottery vessels and sometimes the grave was furnished with additional items (*e.g.* pottery, lamps and personal adornments; Hope 1999, 51; Philpott 1991). The remains at Leintwardine conform to this pattern. Cremated bone was contained within a pottery urn (SF8), although the remaining urns (SF9) and (SF10) were largely devoid of bone. One possibility, discussed above, is that these latter urns were memorial deposits. Alternatively, urn (SF9), placed in the pit with urn (SF8), may have been a pottery grave offering intended to accompany (SF8) rather than being a container for another urned burial. A glass vessel had apparently been placed above urns (SF8) and (SF9), and a quantity of nails and/or hobnails were recovered. The latter were primarily from the fills above urns (SF8) and (SF9), but one hobnail was found in the fill of urn (SF8) and one was located beneath urn (SF8). The presence of hobnails indicates the presence of shoes, either as pyre goods (placed on the pyre/worn by the deceased) or grave goods. If these upper deposits are composed of re-deposited pyre debris, then this suggests the shoes were present on the pyre. Hobnails are usually more frequently associated with late Roman urban cemeteries (Quensel-von-Kalben, 2000, 218-19) and it is thought that the dead were equipped with shoes in preparation for their journey into the underworld (Wardle 2000, 29). Fragments of glass vessels have been found in both Iron Age and Roman cremation burials (McKinley 2006, 83). It is possible that the charred plant remains found in the contexts associated with cremated remains at Leintwardine might indicate food offerings placed on the pyre (McKinley 2006, 82-3).

The cremated bone within urn (SF8) was relatively little fragmented, with the survival of reasonably large fragments. Deposition of cremated remains within an urn has been associated with recovery of larger fragment sizes, particularly if the urn is tightly sealed and remains complete (McKinley 1994). The urn usually acts to protect the remains against loss and fragmentation. The small quantities of highly fragmented bone from urns (SF9) and (SF10) is less typical of urned burial but the possibilities for this have been discussed above. It is also important to note that many different factors can impact on the degree of fragmentation of cremated bone. Bone can fragment during the cremation process as a result of dehydration, movement during pyre-tending, pyre collapse and during collection of the remains for deposition (particularly if the remains are still hot when this is done; McKinley 1994). Post-depositional processes can also lead to further fragmentation of cremated bone

(especially if the remains are disturbed by later activity; *ibid.*), as can excavation and post-excavation processing (McKinley 2000b).

The cremated bone from Leintwardine had been burnt at high temperatures for prolonged periods with adequate supplies of oxygen. This indicates that those carrying out the cremation had knowledge of pyre construction techniques and that they had access to suitable quantities of quality fuel resources (McKinley 2000b). The presence of oak charcoal fragments within most contexts suggests oak may have been the fuel of choice and it was suggested that oak was readily available in the area (Archaeological Services 2013, 4-5). Although practical considerations would have no doubt been paramount in the choice of fuel-wood, some choices of fuel may have been related to the social status, age or sex of the individual being cremated (McKinley 2006, 84). The presence of birch and alder charcoal in contexts (1092) and (1093) might be related to such considerations.

Due to the small quantities of bone recovered from most contexts, it was only possible to identify definite human remains from urn (SF8) and overlying context (1092). Urn (SF8) was found to contain the remains of an unsexed adult aged 25-40 years who had suffered slight degenerative changes to the spine. Context (1092) contained the remains of an unsexed adult. If this context represents a deposit of pyre debris within the grave, it is entirely possible that the bone within it derives from the same individual as the bone contained within urn (SF8). Most of the cremation burials at Brougham Cumbria contained a single individual, although some dual deposits were recorded (McKinley 2004b). Most (60%) of the individuals from Brougham (where age could be determined) were adults, with the majority aged between 30-45 years (*ibid.*), which is roughly comparable with the individual from urn (SF8). Sex could be determined for only half the adults at Brougham, but these included both males (19% of the adults) and females (32% of the adults; *ibid.*).

The bulk of the identified remains from urn (SF8) derived from the lower limb, followed by the spine, whereas most of the identified remains from context (1092) comprised the cranial vault. The latter frequently dominate the identified bone from cremated bone assemblages, as they are easy to identify even when fragmented (McKinley 2000b, 2004b). It should be noted that just because bones have not been identified among the cremated remains (*e.g.* upper limb bones from urn (SF8)) does not mean that they were not there. However, the lack of tooth roots and phalanges is slightly unusual, as hand phalanges in particular are usually among the most frequently identified fragments (Mayne Correia 1997; McKinley 2004b) and both are usually more frequently found within urned burials (McKinley 2004b). At Brougham Cumbria only a small proportion of the urned burials contained tooth roots or phalanges and it was suggested that this might indicate that the way bone was collected from the pyre favoured large fragments (*e.g.* collection of bone by hand; McKinley 2004b). The lack of small fragments at Leintwardine might imply a similar collection method.

A small fragment of cremated animal bone was recovered from context (1092), overlying urn (SF8). Small quantities of cremated animal bone have been recovered from around 22% of Iron Age cremation burials and between 10-50% of Roman cremation burials in Britain (McKinley 2006, 83-84). Most animal remains generally indicate the remains of food placed on the pyre but some animals may have been utility animals or pets (*ibid.*). When only one or two fragments of animal bone are present (as at Leintwardine), their inclusion may have been either deliberate (token inclusions of part of the animal) or accidental (possible misidentification of animal bone as human; *ibid.*). If context (1092) represents pyre debris, it is possible the animal bone was not deliberately selected (on purpose or in error) but was scooped up with other remains from the pyre.

15.6 Conclusion

The cremated remains from Leintwardine provide an opportunity to examine burial practices at the transition from the late Iron Age to the Roman period in Britain, in a rural area away from the south-east of England. This is a period when cremation burial becomes more frequent, possibly associated with Roman influence, although continuation of cremation as a native burial practice may also have occurred in some regions.

The majority of the deposits at Leintwardine contained small quantities of highly fragmented bone and for most contexts no bone could be identified. Urns (SF9) and (SF10) contained such little bone that they may have represented 'cenotaphs', or 'memorials', and it was not possible to determine whether the remains were human or not. Alternatively, (SF9) may have been a grave offering meant to accompany urn (SF8) rather than containing a burial in its own right.

Urn (SF8) contained the remains of an unsexed young-middle or old-middle adult, aged 25-40 years at the time of death. The amount of cremated bone (323.7g) was far less than that expected from a modern cremation but typical for the period; (SF8) probably represented a token burial typical of the late Iron Age/Roman period. The urn had probably protected the fragments within, helping to minimise fragmentation and preserving relatively large fragment sizes, which facilitated identification of bone elements. These identified bone fragments included parts of the skull, spine, pelvis, legs and feet. The lack of tooth roots and very small bones from the hands and feet may be related to the way in which the bone was collected prior to burial.

Contexts (1092) and (1093) may represent bone disturbed from urns (SF8) and (SF9). Alternatively, they may represent deposits of pyre debris placed over urns (SF8) and (SF9). These deposits contain small quantities of cremated bone, charcoal and potential pyre offerings (hobnails, charred plant remains and an animal bone fragment). Context (1092) contained the remains of an unsexed adult individual (skull and spine identified); bone from context (1093) could not be identified but was probably human. If these are deposits of pyre debris, it is possible that they relate to the same cremation event as the bone deposited in urn (SF8) and so may be part of the same individual. If so, it would seem the individual had been cremated either wearing shoes or with shoes placed on the pyre (represented by the hobnails primarily in contexts (1092) and (1093), but also found within urn (SF8) and possibly with food offerings (charred plant remains, animal bone fragment). The glass vessel fragment may have been a grave offering.

The bone from all contexts was predominantly buff/white, suggesting it was burnt at sufficiently high temperatures and with enough available oxygen for long enough to ensure oxidation of most of the bone. This suggests the community had access to adequate supplies of suitable fuel, probably oak, as well as the necessary skills and knowledge to construct and tend a pyre successfully.

15.7 Sources

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15.8 Appendix A Catalogue of identified bone fragments

15.8.1 From context (1092)

SKULL					
Bone	Side	Detail	Frag	Spit	Other
Frontal	-	Part squama, small part frontal sinus	1	-	-
Cranial-vault	-	-	2	-	-

AXIAL SKELETON					
Bone	Side	Detail	Frag	Spit	Other
Vertebra	-	Probably cervical. Part body	1	-	Inferior annular ring fused (adult)

ANIMAL BONE					
Bone	Side	Detail	Frag	Spit	Other
Rib?	-	-	1	-	Possibly part of worked bone artefact?

15.8.2 From Urn (SF8) (1094)

SKULL					
Bone	Side	Detail	Frag	Spit	Other
Cranial vault	-	Joining fragments	3	C	-
Cranial vault	-	-	1	D	-
Cranial vault	-	-	1	E	-
Cranial vault	-	Probably parietal	1	F	-

AXIAL SKELETON					
Bone	Side	Detail	Frag	Spit	Other
Cervical vertebra	-	Body	1	A	Superior & inferior annular rings fused (adult). Small osteophytes at margins of inferior body
Vertebra	-	Body fragment, probably thoracic or lumbar	1	A	Annular ring fused (adult)
Vertebra	-	Body fragment	1	B	Annular ring fused (adult)
Thoracic vertebra	-	R superior apophyseal facet, pedicle & costal facet	1	C	-
Vertebra	-	Body fragment	1	C	Annular ring fused (adult)
Vertebra	-	Body fragment	1	C	Annular ring fused (adult)
Thoracic vertebra	-	Probably lower thoracic body, L pedicle	1	E	Annular ring fused (adult). Slight osteophytes at the margins of the superior and inferior body surfaces
Vertebra	-	Body fragment	1	E	Annular ring fused (adult)

Lumbar vertebra	-	Body, R pedicle	1	F	Annular ring fused (adult)
Vertebra	-	Body fragment	1	F	Annular ring fused (adult)
Thoracic vertebra	-	Superior apophyseal facet	1	F	-

LOWER LIMB					
Bone	Side	Detail	Frag	Spit	Other
Femur	?	Midshaft	1	A	-
Talus	?	Trochlea & fibular facet	1	A	-
Femur	?	Midshaft	1	B	-
Os coxa	?	Part acetabulum	1	C	Fully fused (adult)
Femur	?	Part distal joint surface	1	C	-
Femur	?	Part distal joint surface	1	D	-
Os coxa	L	Part of ischial tuberosity	1	E	Fully fused (adult)
Cuboid	R	Part proximal facet (for calcaneus) & facet for lateral cuneiform	1	E	-
Os coxa	L	Part ilium, almost complete auricular surface	1	F	Auricular surface probably stage 2-4 (age:25-40 years)
Os coxa	?	Acetabulum	2	F	-

16 Appendix 7 Charcoal analysis

16.1 Summary

16.1.1 The project

This report presents the results of charcoal analysis of bulk samples and cremation urns of Roman origin, taken during archaeological works at the Mortimer Medical Practice Leintwardine Herefordshire.

The analysis was commissioned by Border Archaeology and conducted by Archaeological Services Durham University.

16.1.2 Results

The analysis provides considerable evidence for extensive woodland disturbance in the region during the Roman period, as suggested by previous pollen studies. The bulk samples produced uncommon charcoal assemblages, with a minimum of 16 different woodland species identified. These ranged from large trees, such as oak, ash, birch and pine, to shrubs, including dogwood, blackthorn, broom/gorse and elder.

A fragment of charcoal with a wood structure resembling the walnut tree occurred in ditch fill (1061). Its small size prevented certain identification, although previous work has suggested walnut was probably introduced to western Europe and Britain by the Romans.

This study has offered the opportunity to address certain research objectives not previously undertaken, due to the scarcity of detailed charcoal investigations in Britain as highlighted by Huntley (2010). It also presents the prospect that future charcoal studies may provide more compelling evidence for the early exploitation of the walnut tree in Britain.

16.2 Project background

16.2.1 Location and background

The site comprised pits, ditches, postholes and cremations of Roman origin. This report presents the results of charcoal analysis of 10 bulk samples and several cremation-related deposits.

16.2.2 Objective

The objective was to analyse the charcoal in order to establish the presence of suitable radiocarbon dating material and provide information concerning the palaeoenvironment, landscape change and the exploitation of woodland resources.

16.2.3 Dates

Samples were received by Archaeological Services on 11th April 2013. Analysis and report preparation was conducted between 7th November and 9th December 2013.

16.2.4 Personnel

Analysis and report preparation was conducted by Lorne Elliott.

16.2.5 Archive

The charcoal samples will be retained in the Environmental Laboratory at Archaeological Services Durham University.

16.3 Methods

Identifications were made on fragments >4mm following Boardman (1995). Samples were either 100% analysed or, where available, a minimum of 100 fragments were identified per context. Contexts (1036), (1061) and (1077) contained substantial quantities of charcoal >4mm and therefore were sub-sampled using a riffle box, with 66%, 55% and 27% of the samples analysed, respectively. The <4mm fraction was scanned for the presence of any additional taxa.

The transverse, radial, and tangential sections were examined at up to ×600 magnifications using a Leica DM/LM microscope. Analysis was undertaken following Marguerie & Hunot (2007) and included examination of the number of tree-rings, tree-ring curvature, and, where possible, the diameter of round-wood was measured. The presence of pith, bark, tyloses, insect degradation, reaction wood, work-marks and alteration by fusion or radial cracks were also recorded. Identifications were assisted by the descriptions of Hather (2000), Schweingruber (1990), Gale & Cutler (2000) and modern reference material held in the Environmental Laboratory at Archaeological Services Durham University. The different species were weighed and bagged separately and material available for radiocarbon dating was cleaned of adhering material and wrapped in foil.

The works were undertaken in accordance with the aims and objectives outlined in the West Midlands Regional Research Framework for Archaeology (Ray 2002).

16.4 Results

16.4.1 General comments

Varying quantities of charcoal were present in the samples, with totals ranging from 7g for pit fill (1083) to nearly 200g for ditch fill (1077). The soft and brittle nature of much of the charcoal resulted in a large proportion of fragments within the <4mm fraction (see Appendix A). Accumulation of mineral inclusions or precipitates was noted in many of the fragments, which prevented identification in some instances. Most of the samples

comprised fragments of bark, although complete round-wood containing pith and bark was rare. Charred buds and twigs were either absent or uncommon. For identification purposes, due to the similarity of the wood structure of willow and poplar (particularly in juvenile wood), these fragments were grouped as *Salicaceae* (willow family). Similarly broom, gorse and green-weeds were grouped as *Fabaceae* (pea family) and hawthorn, apple, pear and whitebeam (which includes rowan) are represented by the subfamily *Maloideae*.

Fragments of *Maloideae* and *Salicaceae* charcoal comprised indistinct ring boundaries, preventing examination of the ring curvature and ring-count. Radial cracks and vitrification regularly occurred in several of the pit and ditch fills, particularly where the remains of small-calibre branch-wood was recorded in large numbers. Insect degradation was generally confined to fragments of birch and hazel branch-wood noted in several of the samples and, in particular, fill (1077). The results are presented in Appendix A.

16.4.2 Ditches

Ditch fills (1061) and (1077) from feature [1078] comprised large quantities of charcoal, although there was a marked difference in the composition of these fills. Fill (1077) predominantly comprised hazel and *Maloideae*, with smaller quantities of oak and cherry family, while (1061) predominantly contained hazel and oak, with a diverse assemblage that included ash, dogwood, holly, blackthorn, cherry family, *Maloideae*, *Salicaceae* and *Fabaceae*. A fragment of charcoal with a wood structure resembling walnut tree (with large dense vessel pitting and wide early-wood vessels in solitary and radial pairs) was also noted. Although these characteristics may be diagnostic, the solitary presence and small size prevented certain identification. Strong ring curvature was commonly recorded suggesting the use of small-calibre branch-wood in both of these contexts.

Fill (1040) also comprised the remains of small calibre branch-wood and a diverse tree/shrub assemblage, with birch, hazel, *Fabaceae*, *Maloideae*, cherry family, oak, *Salicaceae*, elder and *cf.* elm all recorded. Fill (1028) contained evidence suggesting the presence of larger branch-wood or stem-wood and included the remains of oak, birch, hazel, *Salicaceae* and alder in order of abundance.

16.4.3 Pits

Similar diverse assemblages were recorded for fills (1053), (1073), (1083) and (1084), with field maple, birch, *Fabaceae*, holly, *Maloideae*, blackthorn, dogwood, ash, oak, hazel and *Salicaceae* all present. Again, many of these fragments provided evidence indicating the remains of small calibre branch-wood (including oak). The exception was pit fill (1036), which comprised the largest quantity of >4mm charcoal (22g). An abundance of narrow radially-fractured fragments of oak sapwood containing long latewood growth and up to 14 evenly spaced growth rings was noted. Fragments of birch, hazel, ash, cherry family and scots pine were present.

16.4.4 Posthole

Context (1065) predominantly comprised fragments of oak charcoal and charred bark, with low numbers of field maple, alder, hazel, *Maloideae* and *Salicaceae* fragments. Ring curvature was generally indeterminate due to small fragment sizes, although a few fragments indicated the presence of small calibre branch-wood.

16.4.5 Cremation-related deposits

Small quantities of charcoal were recovered from the cremation-related contexts associated with pit [1091] and urns (SF8) and (SF9), which included fills (1092), (1093), (1094), (1095) and (1103). Virtually all of the charcoal examined from these deposits was identified as oak stem-wood. The exception was fragments of alder and hazel from (1093), with both comprising anatomical features associated with branch-wood. All of the charcoal was in relatively good condition apart from the slight vitrification noted for all of the oak fragments. This shiny appearance may represent the high temperatures required for cremating bone as suggested by the cremated bone analysis (Archaeological Services 2013a). The majority of oak fragments were 'slivers' (narrow radially-fractured fragments) of sapwood, although the presence of tyloses indicated some heartwood may be present.

16.5 Discussion

A chronological context is required in order to fully understand the charcoal data from Leintwardine. Radiocarbon analysis of cremated bone from urn (SF8) provided a date of 90 cal. BC to 70 cal. AD, placing the remains in the very late Iron Age or early Roman period, and plant macrofossil remains identified from many of the bulk samples from Leintwardine comprised the charred remains of spelt wheat and brome grass (Archaeological Services 2013b), which are also consistent with an Iron Age or Roman origin. The pottery assemblage recovered from the samples indicates a late 1st -to mid-2nd -century date.

Extrapolating regional vegetation from charcoal records can be problematical, although patterns can begin to emerge when used in conjunction with pollen and plant macrofossil studies. The diverse charcoal assemblages from Leintwardine appear to provide considerable evidence for extensive woodland disturbance in the local area and indicate a changing landscape at the time of deposition. Regional palynological analysis for Herefordshire is scarce; however, a detailed and dated pollen sequence taken from Wellington Quarry in the Lower Lugg Valley (Greig 2011) suggests a modification of the woodland composition during the transition from the Iron Age to the beginning of the Roman period. Pollen values for the 'wildwood' tree species appear to decrease as a decline in tree-cover coincides with an increase in plants associated with open woodland, such as bracken, and anthropogenic clearance indicators, such as ribwort plantain, sedges and grasses.

Many of the trees and shrubs identified from the charcoal record at Leintwardine are light-demanding species characteristic of secondary woodland and scrub, such as elder, blackthorn, holly, ash and possible broom. This may imply that the process of woodland clearance for the local area was already established. The diversity of the charcoal assemblages indicates a random selection of woodland resources, possibly for domestic fuel. The presence of cereal remains recorded in the plant macrofossil assessment (Archaeological Services 2013b) indicates these fills are likely to represent domestic hearth waste. Evidence for woodland management appears to be absent, with the possible exception of some of the oak fragments from fill (1036), and may suggest the land was required for farming purposes. Most of the charcoal remains indicated the calibre of wood was small to moderate in size which may be expected for domestic fuel.

The common presence of oak and hazel in all of the bulk samples and cremation deposits indicates these more useful of woodland resources were readily available, which makes the exploitation of such a varied group of species surprising. Large numbers of hazel and birch branch-wood from several of the samples comprised insect degradation, which may be the result of storage problems or the collection of deadwood. The general absence of buds and twigs within the assemblages is unlikely to be merely poor preservation conditions and may reflect an alternative use for this material prior to burning, such as fodder.

Of interest is the possible charred remains of walnut tree (*Juglans regia*) from ditch fill (1061). It has been suggested that the walnut tree was probably introduced to Western Europe and Britain by the Romans (Godwin 1975), possibly as a garden tree (Gale & Cutler 2000; Preston *et al.* 2002). The uncertainty of its status is due in part to the lack of evidence in the pollen and plant macrofossil records and the scarcity of detailed charcoal investigations in Britain as highlighted by Huntley (2010). This tentative identification of walnut charcoal from Leintwardine presents the prospect that future charcoal studies may provide more compelling evidence for the early exploitation of this tree in Britain.

16.6 Sources

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16.7 Appendix A Data from charcoal analysis

Context	1028	1036	1053	1065	1061	1077	1073	1083	1084	1040
Sample No.	7	12	16	20	21	22	25	27	28	33
Feature No.	1019	1035	1052	1064	1078	1078	1074	1082	1082	1022
Feature	ditch	pit	pit	posthole	ditch	ditch	pit	pit	pit	ditch
<i>Charcoal (g/number of fragments)</i>										
<i>Acer campestre</i> (Field Maple)	-	-	0.019 (1F)	0.058 (2F)	-	-	-	-	0.048 (1F)	-
<i>Alnus glutinosa</i> (Alder)	0.024 (1F)	-	-	0.014 (1F)	-	-	-	-	-	-
<i>Betula</i> sp (Birches)	0.772 (26F)	0.233 (4F)	0.033 (2F)	-	-	-	0.018 (1F)	0.127 (5F)	0.034 (1F)	0.011 (1F)
<i>Cornus sanguinea</i> (Dogwood)	-	-	0.066 (1F)	-	0.115 (3F)	-	0.015 (1F)	-	0.129 (4F)	-
<i>Corylus avellana</i> (Hazel)	0.468 (8F)	0.836 (19F)	0.510 (19F)	0.012 (1F)	2.623 (28F)	7.353 (66F)	0.095 (6F)	0.127 (5F)	0.365 (10F)	0.139 (8F)
Fabaceae (Gorse, broom, greenweeds)	-	-	-	-	0.143 (4F)	-	0.041 (3F)	-	-	0.187 (9F)
<i>Fraxinus excelsior</i> (Ash)	-	0.148 (5F)	-	-	0.035 (1F)	-	-	-	0.084 (3F)	-
<i>Ilex aquifolium</i> (Holly)	-	-	-	-	0.357 (7F)	-	0.009 (1F)	-	-	-
cf. <i>Juglans regia</i> (Walnut)	-	-	-	-	0.007 (1F)	-	-	-	-	-
Maloideae (Hawthorn, apple, whitebeams)	-	-	0.129 (5F)	0.013 (1F)	0.259 (7F)	5.287 (40F)	0.038 (3F)	0.049 (3F)	0.051 (3F)	0.101 (5F)
<i>Pinus sylvestris</i> (Scots Pine)	-	0.117 (1F)	-	-	-	-	-	-	-	-
<i>Prunus spinosa</i> (Blackthorn)	-	-	-	-	0.231 (4F)	-	-	-	0.012 (1F)	-
<i>Prunus</i> sp (Cherries)	-	0.055 (2F)	0.016 (2F)	-	0.470 (11F)	0.109 (2F)	0.084 (7F)	0.102 (4F)	0.012 (1F)	0.101 (5F)
<i>Quercus</i> sp (Oaks)	3.144 (36F)	21.021 (101F)	0.745 (22F)	0.627 (15F)	1.107 (32F)	0.216 (3F)	0.412 (17F)	0.710 (16F)	1.090 (23F)	0.559 (23F)
Salicaceae (Willow/poplar)	0.058 (4F)	-	-	0.058 (2F)	0.015 (1F)	-	0.009 (1F)	-	-	0.047 (3F)
<i>Sambucus nigra</i> (Elder)	-	-	-	-	-	-	-	-	-	0.050 (2F)
cf. <i>Ulmus</i> sp (Elms)	-	-	-	-	-	-	-	-	-	0.144 (4F)
Bark	0.204 (6F)	0.417 (8F)	0.005 (1F)	0.623 (36F)	0.336 (18F)	0.242 (8F)	0.036 (3F)	-	0.071 (3F)	0.209 (9F)
Diffuse porous	0.038 (1F)	-	-	-	0.457 (14F)	0.818 (7F)	-	-	-	-
Indet. >4mm	0.275 (4F)	-	0.048 (2F)	-	0.388 (14F)	0.205 (3F)	-	0.053 (3F)	0.104 (6F)	0.056 (4F)
% of fragments > 4mm analysed	100	66	100	100	55	27	100	100	100	100
Charcoal analysed >4mm (g)	4.983	22.827	1.571	1.405	6.543	14.230	0.757	1.168	2.000	1.604
Number of analysed fragments >4mm	86	140	55	58	145	129	43	36	56	73
Charcoal <4mm (g)	20.519	104.200	26.094	17.784	130.230	131.369	8.031	6.021	21.151	7.656

17 Appendix 8 Flint Assessment

Caroline Rosen

Eight pieces of struck flint were recovered from the programme of works at Mortimer's Medical Practice, Leintwardine (Table 14). Excavation at the site revealed a number of Roman ditch -and pit-features, as well as three cremation pits also dating to this period or slightly earlier. The lithic material derived from the ditch –and-pit features contain securely stratified Early Roman pottery and therefore the flint-work is considered to be residual. In total, eight pieces were recovered from six different contexts.

One piece which showed signs of having been burnt (Item 1) derived from 'burnt deposit' (1053) and therefore this may be the context in which this action occurred.

Item number	Context	Type	Burnt	Comments
1	(1053)	Flake	Yes	Heavily battered at proximal and distal end, edge damage also observed.
2	(1027)	Core	No	Bladelet removals are present. Looks to be exhausted.
3	(1040)	Flake	No	Frost shattering has split this piece in two
4	(1040)	Flake	No	Minimal edge damage, struck with hard hammer
5	(1040)	Blade	No	No edge damage, less than 5% cortication present at proximal end
6	(1069)	?Blade	No	Broken at distal end, evidence of bladelet removal on dorsal side. Cortex present along LHS lateral edge.
7	(1037)	Misc. retouch	No	Broken by ?frost shattering at proximal end and LHS lateral edge. Minimal retouch and use-ware along RHS lateral edge. Flake thick and squat.
8	(1056)	Flake	No	Flake fragment with evidence of post-depositional damage

Table 14: Flint items recovered

18 Appendix 9 Radiocarbon dating certificate

Scottish Universities Environmental Research Centre

Laboratory Code SUERC-48138 (GU31400)

Context Reference (1094)

Sample Reference <49>

Material Cremated bone: Human

$\delta^{13}C$ relative to VPDB -19.1 ‰

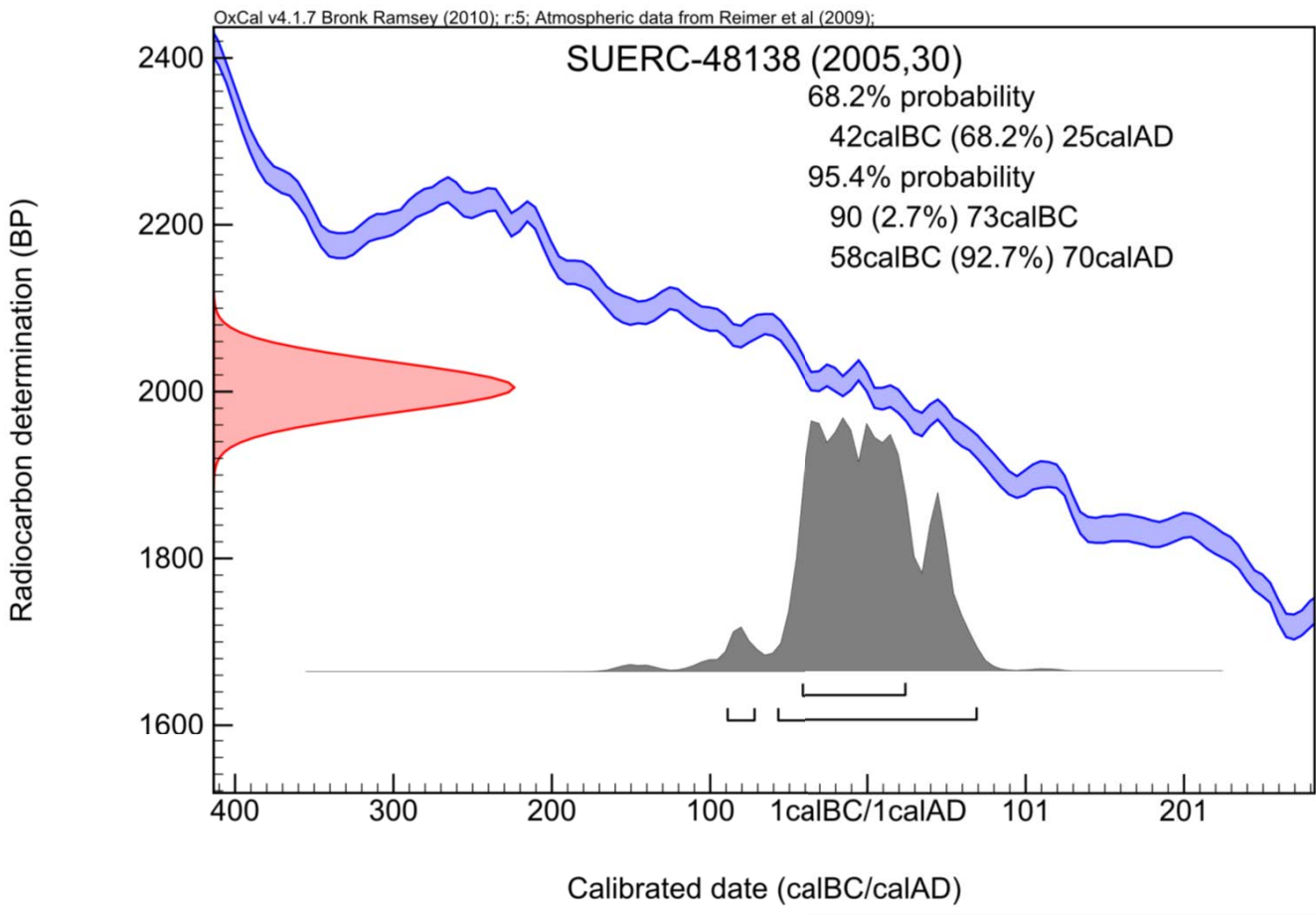
Radiocarbon Age BP 2005 \pm 30

N.B: The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code.

18.1 Calibration plot



19 Appendix 10 Conservation Assessment of Finds

K.Kenward
York Archaeological Trust

19.1 Introduction

Eleven iron artefacts were delivered to the York Archaeological Trust Conservation Laboratory in April 2013 for assessment. The condition of the objects is summarised and indicators of unusual preservation noted. The potential of the assemblage for further analysis and research is discussed and recommendations made for further investigative conservation and long-term storage.

19.2 Aims and objectives

This report aims to meet the requirements of MoRPHE (English Heritage 2006) to produce a stable site archive. This has involved X-radiography and an assessment of the condition, stability and packaging of the finds.

19.3 Procedures

The iron objects were X-rayed using standard YAT procedures and equipment. One sheet of film was used and the plate was given a reference number in the YAT conservation laboratory series. The X-ray number was written on each recorded find bag. Each image on the radiograph was labelled with its recorded finds number. The plate was packaged in an archival paper pocket. Eleven metallic recorded finds were assessed and X-rayed on one plate (X8208). An assessment of each find is presented in Table 15.

All finds were examined under a binocular microscope at $\times 20$ magnification. The material identifications were checked and observations made about the condition and stability of the finds, and recorded below.

19.4 Condition assessment summary

Iron: On arrival in the Laboratory, the iron was found to be slightly damp. Once air-dried the corrosion stabilised and the iron is now in a generally good condition. The general stable nature of the collection is due to the lack of metal within the cores, which are all partially to heavily mineralised. One object was found to have mineral-preserved organic remains in the overlying crust. These remains are poorly defined but are of wood and are likely to be related to its usage rather than being incidentally present from the burial environment.

19.5 Statement of potential

There were no indicators among the collection of specific preservation conditions, all objects having coming from well-aerated deposits.

The majority of the objects are nails and provide no specific evidence of dating or technology. One object (1036) may be a knife and, depending on context, might warrant further investigation.

19.5.1 Recommendations

No further investigative work is required

19.5.2 Long Term Storage

It is highly recommended that the metal finds, and most especially the iron, should be stored in a desiccated environment at less than 15%RH. This is usually achieved through the use of silica gel placed in a sealed plastic box together with the finds. A humidity indicator strip can be used to monitor the Relative Humidity within the box.

The finds have been returned to their original bags, which have been perforated to allow air circulation. A Jiffy foam insert has been added to the bag containing the possible knife blade (1036) to protect from physical damage. Similar inserts should be added to the remaining finds and the finds placed in a desiccated storage environment if long-term storage is proposed.

19.6 References

English Heritage, 1991, *Management of Archaeological Projects*

English Heritage, 2006, *Management of Research Projects in the Historic Environment*

Table 15: Assessment Tables

X-ray	RF	Context	Assessment
8208	PFL09 2013-23	1052	Labelled as 'metal'. Iron nail encrusted with soil and orange/brown corrosion products but with no signs of active corrosion. The crust is cracked in places and the end is exposed with the tip missing. The <u>X-ray</u> shows the object to be a nail with a partially mineralised core. The head is cracked and the tip is missing. Recommendations: no further work required.
8208	MMP12 (SF5 EP26/3/2013	1001	Labelled as 'metal object (nail)'. Two pieces; a nail shaft with broken head and a circular piece which probably completes the head although the join is not neat and there is soil on both break faces. Encrusted with soil and orange/brown corrosion products with a hint of recently active corrosion which is now stable. The <u>X-ray</u> confirms object to be a nail a partially mineralised core but with no surviving metal content in the circular flake. Recommendations: no further work required.
8208	MMP12 20g	1001	Labelled as 'Fe nail?' Iron nail encrusted with soil and orange/brown corrosion products. There are hints of recently active corrosion but this is now stable. The <u>X-ray</u> confirms the object to be a nail with a bent tip and a rounded head. There is some metal present in the core although partially mineralised. Recommendations: no further work required.
8208	MMP12	1004	Labelled as 'Fe object'. Iron nail encrusted with soil and orange/brown corrosion

	12g		products. There are hints of recently active corrosion but this is now stable. The <u>X-ray</u> confirms the object to be a nail shank with a partially mineralised core. The head is missing. Recommendations: no further work required.
8208	MMP12 RJ. 20/2/13 11g	1021	Labelled as 'iron nail'. Iron nail encrusted with soil and orange/brown corrosion products. The tip is broken (recent break) and missing and there are hints of recently active corrosion around the break although this has now stabilized. The <u>X-ray</u> confirms the object to be a nail with a mineralised shaft and a cracked head. Recommendations: no further work required.
8208	MMP12 LC 1/3/13 16g	1028	Labelled as 'Fe find'. Complete iron nail with a bent end, encrusted with soil and orange/brown corrosion products but in a stable condition. There is a hint of poorly defined mineral preserved organic (wood) remains in the crust around the tip. The <u>X-ray</u> shows the metal core to be heavily mineralised, especially at the top of the shank where it is totally mineralised. Recommendations: no further work required.
8208	MMP12 LC 26-02-13 41g	1028	Labelled as 'Fe object'. Surface encrusted with soil with a stone inclusion. There are orange/brown corrosion products present and some hints of recently active corrosion which has stabilized. The <u>X-ray</u> shows the object to be a bent and twisted nail shank with a partially mineralised core. Recommendations: no further work required.
8208	MMP12 LC 1/3/13 109g	1028	Labelled as 'Fe find'. Bulbous crust of soil with charcoal inclusions and orange/brown corrosion products. Slight hint of some recently active corrosion at one end although this has now stabilized. The <u>X-ray</u> shows an almost totally mineralised core surrounded by a thick corrosion crust. It suggests the object is a shank of a large nail. Recommendations: no further work required.
8208	MMP12 LC 26-02-13 11g	1030	Labelled as 'Fe object'. Encrusted with soil and orange/brown corrosion products and some charcoal inclusions. Some signs of recently active corrosion but now stable. The <u>X-ray</u> shows the object to be a bent nail shank with a heavily mineralised core. Recommendations: no further work required.
8208	MMP12 74g	1036	Labelled as 'Fe object'. Overlying soil crust with some orange/brown corrosion products and stone and charcoal inclusions. In 2 pieces (recent break). The broken faces show an object with a rectangular cross section and a heavily mineralized core. The <u>X-ray</u> suggests the object may be a knife blade with a heavily mineralized core Recommendations: no further work required
8208	MMP12 (SF6 21g	1083	Labelled as 'Fe object'. Iron nail with overlying soil crust and some orange/brown corrosion products.. The tip has been damaged and there are signs of recently active corrosion around the damage. The <u>X-ray</u> confirms the object is a nail with a good metal core present. Recommendations: no further work required.

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