



Gateford North Worksop Nottinghamshire

Post-Excavation Assessment and Updated Project Design



for

WSP Parsons Brinckerhoff

on behalf of

Lands Improvement Holdings Ltd

CA Project: 669026

CA Report: 16464

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Summary

Site Name: Gateford North, Worksop

Location: Nottinghamshire NGR: SK 5767 8232

Type: Strip Map and Sample Excavation

Date: April – May 2016

Planning Reference: 14/00431/OUT

Location of archive: Bassetlaw Museum

Accession Number: TBC

Site Code: GNWN15

A programme of archaeological investigation was undertaken by Cotswold Archaeology in April and May 2016 at the request of WSP Parsons Brinckerhoff (on behalf of Lands Improvement Holdings Ltd) at land north of Gateford, Worksop, Nottinghamshire. An area of 1 ha was excavated across the development area.

Excavations revealed a sequence of Late Iron Age to Late Roman enclosures, which were situated within a system of contemporary 'brickwork' fields encountered during trial trenching (CA 2016a, ULAS 2013b). The site appears to have been first occupied during the Late Iron Age to Early Roman Period, with a group of heavily truncated ditches possibly indicating a settlement very similar to the one present during later stages of the sequence.

A second phase of LIA-ER activity consisted of two parallel trackway ditches defining access to a pair of sub-square enclosures. Within the western enclosure a rectangular structure was constructed at some point during the mid-1st early 2nd century AD. Extensive re-modelling representing three more stratigraphic phases during the 2nd to 4th centuries AD saw the addition of an additional two enclosures to the north, and the enlargement of the original 1st to 2nd century AD enclosures.

This document presents a quantification and assessment of the evidence recovered from the excavation. It considers the evidence collectively in its local, regional and national context, and presents an updated project design for a programme of post-excavation analysis to bring the results to appropriate publication.

1 INTRODUCTION

1.1 During April and May 2016 Cotswold Archaeology (CA) carried out an archaeological excavation on land north of Gateford, Worksop, Nottinghamshire, (centred on NGR: SK 5767 8232; Fig. 1). The work was undertaken at the request of WSP Parsons Brinckerhoff (on behalf of Land Improvement Holdings Ltd) in accordance with a detailed Archaeological Scheme of Treatment produced by CA (2016b) and approved by the Local Planning Authority (LPA): Bassetlaw District Council (BDC), acting on the advice of Ursilla Spence, the Nottinghamshire County Council Planning Archaeologist (NCCPA), archaeological advisor to the LPA. WSP and the NCCPA established the scope of a program of archaeological mitigation, comprising strip, map and sample (SMS) excavation, which was outlined in the Archaeological Scheme of Treatment (CA 2016b) and approved by the LPA acting on the advice of the NCCPA. The fieldwork also followed Standard and Guidance for Archaeological Excavation (ClfA 2014); the Management of Research Projects in the Historic Environment (MORPHE): Project Manager's Guide (Historic England 2015a) and accompanying Project Planning Note 3 (PPN3): Archaeological Excavation (Historic England 2015b). It was monitored by Ursilla Spence, including site visits on 12 April and the 18 May 2016.

Location, topography and geology

The development site (Fig. 2) comprises an area of approximately 37.5ha and lies immediately to the north of Gateford, a suburb on the north-west outskirts of Worksop, approximately 2.5km to the north-east of the town centre. It comprised four agricultural fields, bordered by a residential estate to the south, the Gateford Hill Care Home to the south-west and woodland and further agricultural land on all other sides. The site is situated on the south-east facing slope of a small valley overlooking a stream that flows north-east into the River Ryton near Blyth. The modern ground surface slopes from west to east, descending from approximately 61m above Ordnance Datum (aOD) at the western end of the site, at Gateford Hill, to c. 34m aOD at its eastern boundary adjacent to the stream. The solid geology of the site comprises Permian mudstone and sandstone of the Edlington Formation; no superficial deposits are recorded (BGS 2015).

Archaeological background

1.3 Archaeological interest in the site arose from a combination of a geophysical survey (Stratascan 2013), field walking (ULAS 2013a) and trial trench evaluation (CA 2016a, ULAS 2013b). The following information is partly summarised from a Desk Based Assessment carried out by ULAS (2014) and partly based on CAs (2016a) evaluation report.

Prehistoric (4000BC-AD43)

1.4 A Neolithic (4000-2400BC) stone axe was found within the development site, near its eastern boundary in 1962 and ten flint artefacts, including two arrowheads, were retrieved during the fieldwalking survey of the site (ULAS 2013a).

Roman (AD43-AD410)

- The geophysical survey (Stratscan 2013) and the ULAS trial trench evaluation (ULAS 2013b) demonstrated the presence of a series of 2nd century AD enclosures and concluded that they represented the outlying field systems of a Roman farmstead, with the settlement focus lying outside of the site boundary (ULAS 2013b; Stratascan 2013).
- 1.6 In January 2016, a second programme of trial trenching was undertaken by CA (CA 2016a) to supplement the results of the earlier stages of evaluation and geophysical survey. This phase of work confirmed the presence of a rectilinear field-system and trackways associated with the previously investigated enclosures; and encountered previously unidentified pits and several ditches to the east of the enclosures, where geophysical survey had not been effective. No dating evidence was recovered from these latter features, but they were considered likely to be prehistoric or Roman in date.
- 1.7 Two groups of cropmarks one approximately 250m to the north-east and one approximately 200m to the south-east of the development site may also be part of the same field system, and include further enclosures and a series of circular features that may be round barrows (Riley 1980, ULAS 2014). In addition, several Roman coins were discovered in the grounds of Gateford Hall, which lies approximately 600m to the south-west of the development site (ULAS 2014).

Early medieval (AD410-1066) and medieval (AD1066-1539)

There were no known archaeological sites or find spots post-dating the Roman period within the development area prior to the ULAS evaluation (ULAS 2013a). However, Worksop appears to have been an Anglo-Saxon foundation; it is mentioned in the Domesday Book of 1086 as "Werchesope", and Gateford appears to have developed in the medieval period (ULAS 2014). It is likely that the development site formed part of the agricultural hinterland of these settlements (ibid.).

2 AIMS AND OBJECTIVES

- 2.1 The general objectives of the archaeological investigation were to determine and understand the nature, function and character of the archaeological remains within the site in their cultural and environmental setting.
- 2.2 The Archaeological Scheme of Treatment (CA 2016b) set out a number of research objectives prior to fieldwork. These are listed below:
 - Identifying evidence for Late Iron Age activity on the site to investigate social, political and economic transitions in the 1st century AD in the local area;
 - using palaeoenvironmental analysis to understand whether the agricultural base of the settlement changed during the period of occupation of the site in the Roman period;
 - analysis of the animal bone from the settlement to look for evidence of changes in the practices of animal husbandry, which may reflect social and economic changes in local livestock markets;
 - analysis of the pottery recovered from the site to contribute to an understanding of local and regional pottery manufacture and distribution, and more broadly the interaction of the settlement with the local and regional trade network.
- 2.3 These research aims have been reviewed and updated to incorporate the fieldwork results (see section 8) and to refer to the following regional research agendas: The Archaeology of the East Midlands: An Archaeological Resource Assessment and Research Agenda (Cooper 2006) and East Midlands Heritage: An Updated Research Agenda and Strategy for the Historic Environment of the East Midlands (Knight et al. 2012).

3 METHODOLOGY

- 3.1 Fieldwork commenced with the removal of topsoil and subsoil from the excavation area by mechanical excavator equipped with a toothless grading bucket, under archaeological supervision.
- 3.2 The archaeological features thus exposed were hand-excavated to the bottom of the archaeological stratigraphy. All major relationships between features were targeted in order to understand the site stratigraphically. A minimum of 5% of the length of all linear features and a minimum of 10% of the length of linear features associated with structures/areas of occupation were sampled. Pits and discrete features were half-sectioned (50% sample). Structural post-holes were 100% excavated. All features were planned and recorded in accordance with CA Technical Manual 1: Fieldwork Recording Manual (CA 2014). Deposits were assessed for their environmental potential in accordance with CA Technical Manual 2: The taking and processing of environmental and other samples from archaeological sites (CA 2012). A total of 50 bulk soil samples were taken following advice given by Sarah Cobain (CA senior environmental specialist), who also recommended three column samples from waterlogged deposits exposed in two of the enclosure ditches. All artefacts recovered from the excavation were retained in accordance with CA Technical Manual 3: Treatment of finds immediately after excavation (CA 1995).

4 RESULTS

Fieldwork summary

4.1 The excavation produced evidence for Late Iron Age and Roman occupation consisting of two parallel trackway ditches terminating at a small group of enclosures, probably representing a small farmstead. The northern arm of the trackway (represented by ditch B) may have originated in the Late Iron Age and subsequently been re-cut and incorporated into a Roman farmstead/rural settlement (Fig. 3). Trial trenching in January 2016 (CA 2016a) identified boundary ditches belonging to a 'brickwork' field system (Riley 1980) into which the settlement was incorporated, one of which contained a small assemblage of pottery dating to the 3rd century AD (CA 2016a). Apart from some post-medieval field drains no other periods of activity were encountered during the excavation. Provisional periods represented are:

- Period 1: Late Iron Age to Early Roman 1
- Period 2: Late Iron Age to Early Roman 2
- Period 3: Middle to Late Roman 1
- Period 4: Middle to Late Roman 2
- Period 5: Middle to Late Roman 3
- Period 6: Post-Medieval
- 4.2 The following discussion will follow the chronological sequence of activity from the Late Iron Age to the 4th century AD and then briefly describe the post-medieval activity.

Period 1: LIA-ER 1 (Fig. 3)

The farmstead

- 4.3 The initial phase of activity consisted of linear features interpreted as boundaries possibly belonging to a small farmstead associated with the origins of the brickwork field system. Five parallel north south aligned ditches (J, S, T, U & V) and an east/west aligned ditch (B) converged on the centre of the excavation area, but were largely removed by later activity.
- A.4 Ditch J orientated north-north-east/south-south-west was located in the central northern part of the site, and measured approximately 20m in length by 1.17m in width, cutting into the substrate with a rounded, shallow profile. Its fill consisted of sterile dark brown-grey silty sand, suggesting a gradual accumulation of material within the cut, rather than a single rapid backfilling event. Two further north-east/south-west aligned ditches (S & T) measuring 4m in length by 1.13m in width and 4.7m in length by 1.15m in width respectively, with sterile sandy fills were located approximately 20m to the east of ditch J, running almost parallel to it. A third short stretch of N-S aligned ditch (U) measuring 9.5m in length by 1.11m in width lay next to the western limit of excavation, extending beyond it to the west. A further short stretch of north/south aligned boundary ditch (V), measuring 3.6m in length by 2.15m in width lay at an approximate right-angle to the southern limit of excavation and ran beyond it to the south, being truncated by Period 2 ditch A to the north.

The trackway

4.5 The remains of a possible trackway leading into the putative settlement from the east was represented by Ditch B (Figs 3&5), which measured approximately 23.2m in length by at least 0.89m in width, and was aligned east-west, with a similar shallow profile to Ditch J and a single sterile fill of mid grey brown silty sand along its length. A single sherd of 13th – 15th century pottery was recovered from the ditch fill, although, given the position of the ditch in the stratigraphic sequence this must be intrusive. The majority of the ditch was truncated by re-cutting and possible extension along the same axis in Period 2 (Ditch K).

Period 2: LIA-ER 2 (Figs 3, 5 & 6)

At some point during the 1st century AD ditches B, J, S, T, U and V silted up and an enclosed settlement was created, possibly along much the same lines as in Period 1, with the establishment of a trackway (A/K) and at least one, but possibly two associated enclosures (E and F). The boundaries making up the putative LIA-ER 1 farmstead were remodelled during the mid to late 1st century to make a trackway consisting of east/west aligned parallel ditches (A & K) aligned on the northern boundary of sub-square enclosure E and possible sub-square enclosure F. The trackway (A and K) probably originally extended across the width of the excavation area.

Trackway A/K

A.7 Ditch K which formed the northern boundary of the trackway measured approximately 115m in length by 2m in width and recut part of Period 1 ditch B (Fig. 3), replacing the earlier feature and exhibiting a steeper 'V' shaped profile (Fig. 5). A series of sterile clay sand and sandy clay fills within the ditch suggested long-term silting and deposition of wind-blown materials, rather than rapid backfilling. The southern boundary of the trackway was defined by ditch A which measured approximately 97m in length by 2-3m in width and had an identical orientation and a similar profile to ditch K (Fig. 6), but ended in a clear rounded terminal on the northern side of possible enclosure F, probably defining one side of an entrance to the enclosure. A small pottery assemblage dating to the Late Iron Age to Early Roman period was recovered from the ditch fill. An extension of ditch K to the west (ditch L), measuring approximately 28m in length suggested the possible continuation of the trackway along the northern boundary of the settlement to the west, on a slightly different alignment.

Enclosures E and F (Fig. 3)

4.8 One or possibly two enclosures (E and F), measuring approximately 25m northwest/south-east by 25m north-east/south-west and 27m north-west/south-east by 35m north-east/south-west respectively were established on the southern side of trackway A/K. The ditch forming the outer boundary of possible enclosure F had been truncated by later activity during Periods 4 and 5, only surviving for relatively short stretches on the eastern and southern sides, and no finds were recovered from the sterile primary fill. Enclosure E enclosed a rectangular post-built structure (G) and several pits and postholes probably relating to occupation. The enclosure was formed by a sub-square ditch measuring approximately 1.5-2.5m in width and cut to an average depth of 0.8 – 1.0m into the substrate. On the northern side of the enclosure the lower fills comprised sterile silty sands, indicative of weathering and sedimentation, while the upper fill consisted of a deposit of dark brown/grey silty sand, containing sherds of mid to late 1st century pottery, along with charred plant remains. On the eastern and southern sides of enclosure E a charcoal rich layer was deposited early in the sequence of ditch fills, and was sealed by a sequence of naturally accumulated sediments.

Structure G

4.9 Structure G (Figs 3&6) was sub-rectangular in plan, orientated north-north-east/south-south-west and consisted of twenty-seven postholes defining the footprint of a building measuring approximately 20m long, and 6.6m wide at the northern end, and 5.95m wide at the southern end. Sherds of Late Iron Age to early Roman pottery were recovered from the fill of posthole 10484 at the north-eastern corner of the building. The postholes ranged in depth from 0.1m to 0.6m, and on average measured 0.2-0.4m wide. A large central sub-circular pit (10554) 2.5-2.7m in diameter and cut into the substrate to a depth of 0.3m possibly represented a hearth, although no evidence for burning was present within the feature itself. A small north-west/south-east aligned gully (10658) on the eastern side of the structure, measuring approximately 7m in length by 0.9m in width and possibly representing a soakaway draining towards the eastern enclosure boundary ditch was cut 0.08m into the substrate.

Pits within enclosure E

4.10 The western half of enclosure E contained pits of varying sizes with a variety of shapes ranging from sub-circular to sub-rectangular and a range of different fills. A series of four large shallow sub-rectangular pits, 10263, 10285, 10552 and 10615,

measuring between 2.29m and 3.21m in length and 1.04m and 1.57m in width contained sterile fills consisting of sands and silty sands and were situated close to the north-eastern boundary of the enclosure. Sub-circular pits 10186 and 10189, measuring 0.83m and 1.53m in diameter and situated in the south-western corner of the enclosure were filled with deposits of charcoal rich dark brown sand, and pit 10189 contained a small assemblage of 1st century AD pottery. Pit 10305, which was situated in the northern part of the enclosure, within a line of 3 other similar but undated pits, measured 1.8m in diameter and contained a similar fill to pits 10186 and 10189; it produced Late Iron Age to Early Roman pottery and a small assemblage of charred plant remains.

Period 3: MR-LR 1 remodelling of the trackway and enclosures (Fig. 3)

4.11 By the late 2nd to 3rd century AD, trackway ditches A and K had silted-up completely. To the north of the trackway a sub-rectangular enclosure C/D, the western boundary of which may have been cut away by Period 4 ditch P was established. Enclosure C/D was defined by curvilinear boundary ditches 0.5-2.8m in width and measuring approximately 70m north-west/south-east by 30m north-east/south-west. The fill of a posthole (10502) cut into the base of enclosure ditch C on its southern side, contained a single copper alloy brooch dated to the 1st – 3rd centuries AD. Large east-west aligned ditch I, measuring 34.7m in length by 0.80m in width formed a barrier between the northern and southern halves of the site, on its western side, re-establishing the alignment of the Period 2 trackway. The fills of Enclosure (C/D) and ditch (I) were largely sterile, suggesting that they were regularly maintained while in use.

Period 4: MR-LR 2 remodelling, working hollow and pits (Figs 3, 6 and 7)

4.12 During Period 4 the boundary ditches of enclosure C/D were recut, with ditch P being cut to define the north-eastern boundary and the enclosure being subdivided with the addition of ditch Q. To the south Period 2 enclosure F was remodelled with the construction of large enclosure ditches N and O. Working hollow H was formed, with a possibly contemporary pit group X immediately to its south west.

Ditches P and R

4.13 Curvilinear recuts P and R formed the north-eastern and north-western sides of the Period 4 enclosures, re-establishing Period 3 enclosures C and D, the north-western and south-eastern halves of which measured approximately 35m north-west/south-east by 30m and 37m north-east/south-west respectively. The ditches were cut into the substrate to an average depth of 0.8 -1.0m, with a steep-sided 'V'

shaped profile. The fills within ditch R were sterile, consisting of naturally accumulated sands and silty sands. Ditch P was filled by dark charcoal rich deposits at its northern end containing charred plant remains, suggesting a localised episode of burning during Period 4. Ditch Q, measuring approximately 32m in length by 1.2-1.5m in width was aligned N-S and cut period 1 ditch J at its north-eastern end.

Enclosure N and Ditch O

4.14 Enclosure N, which measured approximately 34m north-east/south-west by 26m north-west/south-east, probably represents a remodelling of putative enclosure F, recutting the enclosure along its northern, eastern and southern sides, to a depth of between 1.4 and 1.7m into substrate. This enclosure may have been open to the west, but possibly reused the eastern boundary ditch of Period 2 enclosure E. At its widest point the enclosure ditch measured 6.2m, tapering in a moderate to steep 'V' shaped profile to cut the sandstone bedrock at a depth of 2m. The northern boundary ditch of the enclosure cut through Period 2 droveway and flanking ditches A and K on the same alignment as Period 3, ditch I. An entrance to the enclosure, measuring approximately 2m wide was situated at the northeastern corner, respecting the alignment of the former trackway ditches. Ditch O, measuring 8.5m in length by nearly 5m in width defined the northern edge of this entrance and may have been a slightly later addition to the enclosure, partially sealing off a previously much larger gap. However, the similarities between the fills of N and O (Fig. 7), suggest that they were filled at the same time, if not exactly contemporaneous in use. Ditch N contained a primary fill of naturally weathered sand with inclusions of charcoal, with a secondary lens of charcoal rich material deposited as the ditch sited up. On the northern side of Enclosure N, the sequence included a deliberate dump of charcoal rich silt, made once the ditch had almost completely silted up, including an assemblage of mid to late 2nd to 3rd century pottery and charred plant remains.

Working Hollow H and pits 10128 and 10251

4.15 The earliest activity within enclosure N consisted of a sequence of discrete features. Sub-circular pit 10128, measuring 3m in diameter, potentially a small depression or hollow cut into the substrate to a depth of 0.1 – 0.26m, was cut by 10251, a sub-circular vertical sided pit, measuring 1.8m in length by 1m in width, with a flat base cut to a depth of 0.54m and filled by primary silting deposit 10252, containing sherds of 2nd to 4th century pottery, along with a glass intaglio and a

fragment of vessel glass. The primary fill was followed by a backfill deposit 10253, consisting of dark brown black silty sand. The main working hollow (H), an amorphous feature measuring 11.75m long and 8.77m wide, with very shallow sides and an irregular base, was cut through the upper fills of pits 10128 and 10251. The charcoal rich fill of the hollow contained an assemblage of 2nd to 4th century pottery, along with charred plant remains including crop processing waste. The function of the hollow is difficult to ascertain but may have been associated with the earlier pits.

4.16 Pit group X formed a curvilinear arc to the south west of working hollow H, and may be contemporary with it and the surrounding enclosure. Pits (10042, 10045, 10709, 10715 and 10713) measuring 0.77m – 1.2m in diameter, were cut into the substrate to between 0.1m and 0.2m and were sub-circular to oval in plan. Sub-circular pit 10042, measuring 1.2m in diameter contained the intact base of a pot. A small sub-circular posthole (10774), measuring 0.39m in diameter was located immediately to the south west of the main arc of pits.

Period 5: MR-LR 3 further enclosure remodelling (Figs 3 and 8)

Enclosure Y

4.17 The final phase of Roman activity consisted of the partial remodelling of enclosures D and E. A possible small sub-rectangular enclosure (Y) measuring approximately 20m north-west/south-east by 18m north-east/south-west was established within Period 4 enclosure D, which may have remained in use into this period. Enclosure Y consisted of shallow, intermittent flat based gullies cut no more than 0.15m into the substrate, which marked a departure from the more monumental scale of ditches in Period 4. A large sub-oval stone-packed posthole 10499 measuring 2.5m by 0.8m in the south eastern corner of enclosure Y and stake holes recorded in the north-eastern corner suggest a fence-type construction, possibly a sub-enclosure or stock pen.

Enclosure/Ditch M

4.18 Enclosure/ditch M, replaced the now silted up and backfilled Period 2 enclosure/ditch E, potentially enclosing a larger area of up to 60m north-east/south-west by approximately 30m north-west/south-east, while maintaining a gap for the course of the Period 2 and 3 trackway. No later Roman material was recovered from the interior of the enclosure, suggesting that the rectangular building G and associated pits had fallen out of use by Periods 2 or 3, and were

not replaced by new structures. However, Middle to Late Roman pottery and charred plant remains were recovered from the ditch fills.

Period 6: Post medieval activity (Fig. 3)

4.19 During the post medieval period a series of rubble built field drains were installed across the site: a single sherd of late 18th to 19th century pottery was recovered from one of the drains.

Undated Features

4.20 A number of undated pits and postholes, were scattered across the site. Most of these probably belonged to the Late Iron Age to Roman settlement, but could not be assigned to a period because of lack of dating evidence and secure stratigraphic relationships. They included tree-throw 100066 described below.

Tree throw 10066

4.21 Feature 10066 was large discrete feature situated to the south-east of Ditch B a small part of which extended beyond the limit of excavation to the south. It measured at least 6m east-west by 5m north-south and probably represented a large tree throw hole due to its size, amorphous shape and irregular profile. Its fill (10067) consisted of sterile mid grey brown silty sand, and contained a single sherd of later prehistoric pottery, which may well have been either intrusive or residual.

5 FACTUAL DATA AND STATEMENTS OF POTENTIAL

Stratigraphic Record: factual data

5.1 Following the completion of the fieldwork an ordered, indexed, and internally consistent site archive was compiled in accordance with specifications presented in the Management of Research Projects in the Historic Environment (MORPHE): Project Manager's Guide (Historic England 2015a). A database of all contextual and artefactual evidence and a site matrix was also compiled and cross-referenced to spot-dating. The fieldwork archive comprises the following records:

Context sheets	787
Plans (1:10, 1:20, 1:100)	1
CAD Plan (Digital survey)	1
Sections (1:10, 1:20)	207
Sample sheets	53
Monochrome Films	7
Digital photographs	606
Matrices	1

The survival and intelligibility of the site stratigraphy was good with archaeological remains having survived as negative features. All relationships between major phases were investigated where possible. The dominant features on site consisted of large intercutting enclosure ditches, which were assigned to periods according to stratigraphic relationships. Discrete features were assigned to periods according to spatial distribution or spot dating, or were left undated.

Stratigraphic record: statement of potential

- 5.3 A secure stratigraphic sequence is essential to elucidating the form, purpose, date, organisation and development of the various phases of activity represented. This will be achieved through detailed analysis of the sequence and further integration of the artefactual dating evidence. The refined sequence will then serve as the spatial and temporal framework within which other artefactual and biological evidence can be understood.
- The stratigraphic record forms a complete record of the archaeological features uncovered. The inter-relationships between the intercutting enclosure ditches offers the opportunity to define a stratigraphic sequence backed up by artefact spot dating.

Artefactual record: factual data

5.5 All finds collected during the excavation have been cleaned, marked, quantified and catalogued by context. All metalwork has been x-rayed and stabilised where appropriate.

Type	Category	Count	Weight (g)
Pottery	Prehistoric	2	21
	Roman	549	7824
	Medieval	1	3
	Post-medieval/modern	2	6
	Total	554	7854
Flint	Worked/burnt	1	8
Fired Clay	All	170	1906
Brick/tile	All	28	2158
Glass	Vessel	3	15
	Objects	1	<1
Metals	Iron	22	467
	Copper alloy	2	20
	Lead alloy	3	50
Industrial Waste		1	4
Coal		5	1
Stone	Objects	2	423
	Building stone	3	1146

The finds assemblage includes a moderately sized assemblage of ceramics amounting to 554 sherds, weighing 7854g and, with the exception of two prehistoric sherds one medieval sherd and two post-medieval sherds, largely dating to the Roman period. In addition, there is a small assemblage of metal objects, largely comprising iron nails, but including a copper alloy trumpet brooch dating from the 1st to late 2nd centuries, along with three fragments of vessel glass and an intaglio. The remainder of the assemblage consists of a single fragment of industrial waste, a single residual worked flint flake, a single quartzite flake and small assemblages of fired clay, ceramic building materials and building stone.

Worked flint

A single worked flint flake weighing 8g was recorded. It comes from Middle to Late Roman-dated Period 4 pit 10251 (fill 10253) and is clearly a re-deposited piece. Raw material consists of good-quality dark grey flint which is not patinated (recorticated). Its condition is poor, with longer edges with heavy edge damage. This piece exhibits no secondary working or other features suggestive of dating. It is blade-proportioned, although irregular and with a hinge fracture terminal – features not suggestive of intentional manufacture as a 'blade'.

Pottery

A total of 554 sherds weighing 7854g (8.45 EVEs) was hand-recovered. Only two sherds (21g) were suggestive of pre LIA-Roman activity in the area. Both were unfeatured body sherds in handmade quartz-tempered fabric (HMQZ) considered to be of broad Iron Age date. The bulk of the assemblage dates to the Middle and Later Roman period, the majority comprising reduced coarseware fabrics, most or all of which consist of types manufactured in the Nottinghamshire Trent Valley, and shell-tempered Dales wares (DAL SH) originating in the north Lincolnshire area (Tomber and Dore 1998, 157). Regional imports were limited to Southeast Dorset Black-burnished ware, Lower Nene Valley colour-coated ware and Mancetter/Hartshill mortaria. Continental wares are present as a few sherds of Gaulish samian. A single glazed medieval sherd weighing 3g and two sherds of modern refined whiteware (6g) were recovered, but are not discussed further.

Glass

5.9 Three vessel glass fragments weighing 15g and a single glass object (<1g) were recorded, all dating to the Roman period. The object (a blue glass intaglio) and a

small chip of vessel glass were finds from a bulk soil sample taken from Period 4 pit 10251.

Worked Stone

5.10 Five pieces of stone were retained and submitted for analysis. They comprise two pieces of flat stone from fill 10131 of Period 4 working hollow H, possibly used for roofing, although undiagnostic; one cobble with a flat smooth face suggesting use as a rubber from fill 10485 of posthole 10484 from Period 2 structure G, one cobble with straight flat sides that might have been used structurally from fill 10061 of posthole 10060 from Period 2 structure G and a struck flake of quartzite from fill 10051 of undated pit 10050, suggesting that quartzite cobbles were being worked on the site.

Metalwork

5.11 A total of 27 items of metal were recorded from ten deposits and as unstratified finds. This group comprises 2 items of copper alloy, 22 of iron and 3 of lead alloy. The majority of the assemblage comprised iron items, recorded from nine deposits. Of this group, 8 are nails or nail fragments of a forged, flat-headed form for which only broad dating is possible. Additionally there are a total of 13 items for which original form and function are not discernible; nine recorded from ditch fills and four from topsoil. In addition, Ra. 15 consisting of a fragment of a horseshoe, probably of 17th to mid 18th century date (Noël Hume 1969), was recorded from Period 4 ditch N, intervention 10202 (fill 10226). The copper alloy and lead objects consisted of a range of different types, including part of a modern toy soldier. Of particular note is Ra. 1, from Period 3 posthole 10501, fill 10502, a trumpet brooch of Mackreth (2011) type 1.2b4; those with a simple scroll decoration on either side of the trumpet head. Trumpet brooches date from the late 1st to late 2nd centuries. Of the three items of lead alloy recorded, two are waste fragments and one is a curved rod, of uncertain form, function and original date.

Industrial waste

5.12 A single fragment of indeterminate industrial waste (Ra. 17, 4g), two fragments of charcoal (1g) and five fragments of coal (1g) were recorded from three deposits.

Fired clay

5.13 A total of 170 fragments (1906g) was recorded from four deposits. The fragments, all in a fine, sandy fabric, are formless and indeterminate of original function, with

the exception of two fragments of loom weight (of interminable form) recorded from Period 2 (structure G) posthole 10529 (fill 10530).

Ceramic building material

5.14 A total of 28 fragments (2158g) of ceramic building material was recorded from nine deposits. The majority comprise hard-fired, sandy tile fragments or flakes of indeterminable form and function. Fragments of tegula (flanged roof tile) were recorded from three deposits and a fragment of possible brick, also of Roman date, was recorded from Period 4 ditch R, intervention 10321 (fill 10322).

Artefactual record: statements of potential

Worked flint

5.15 The single piece of worked flint recovered was re-deposited in a Roman feature. In isolation it cannot be closely dated and provides only limited evidence for earlier prehistoric activity in the area. Recording/reporting undertaken as part of the assessment are sufficient for the purposes of the archive and further analysis is unnecessary.

Pottery

- 5.16 The pottery described is of some significance as relating to an apparently discrete site, most or all of the surviving ground plan of which was exposed by the excavations. Although modest in size the assemblage provides some good dating evidence to inform the site's (provisional) stratigraphic sequence and suggests a protracted period of occupation beginning in the 1st century AD and extending in to the later 3rd or 4th centuries. In its range of fabrics/vessel forms the assemblage is consistent with the established patterns of pottery supply in the region. The utilitarian character of this group is apparent from the dominance of coarsewares and scarcity of finewares/tablewares and specialist types. In its character this group is consistent with domestic/kitchen-related use of the kind typical for the majority of small and 'lower status' rural sites from this region and across lowland Britain.
- 5.17 The recording undertaken as part of this assessment is sufficient for the purposes of the archive. It is recommended that a report characterising the assemblage should be produced for publication. This may take the form of an enhanced version of the report presented here, updated as necessary with reference to a finalised phasing scheme and including illustrations of selected vessels (up to 20), representative of larger and better-dated context/feature groups.

Worked stone

5.18 The stone assemblage is small and has little potential to contribute to the site narrative but the rubber and struck quartzite suggest that cobbles were being used and possibly worked on the site; this is likely to be indicative of domestic occupation. The stone has been fully recorded and no further work is recommended, but the rubber and struck flake should be included in any publication report which ensues.

Glass

- 5.19 The small vessel glass assemblage is of limited significance, providing some evidence for the use of glass containers at the site. The intaglio is more notable, although its presence is not to be regarded as an indication of 'higher status'; Henig notes the common use of glass-set signet rings in the 3rd century 'by members of the lower orders of society'.
- 5.20 Little further work is warranted with this group of material. A short note for publication recording the vessel glass and detailing the intaglio should be included in the site publication. This may take the form of an adapted version of the report produced here and should include an illustration (drawing or high quality digital photograph) of the intaglio.

Metalwork

5.21 The metalwork assemblage is small and a high proportion (26%) is recorded from topsoil or unstratified deposits, offering little dating potential. Few items are intrinsically dateable, the most notable being Ra. 1, a Roman brooch from Period 3 posthole 10501, fill 10502. It is recommended that Ra. 1 is described and illustrated or photographed for publication. Recording undertaken at this stage is considered sufficient for the archive and further work is unwarranted.

Industrial waste

5.22 The material is of limited significance and presents little potential for analysis. Recording carried out at this stage is considered sufficient for the archive and no further work is required.

Fired clay

5.23 The material is of limited significance and presents little potential for analysis. Recording carried out at the assessment stage is considered sufficient for the archive. Further work is not warranted.

Ceramic building material

5.24 The material is of limited significance and presents no potential for analysis. Recording carried out at this stage is considered sufficient for the archive and further work is unwarranted.

Biological record: factual data

5.25 All ecofacts recovered from the excavation have been cleaned, marked, quantified and catalogued by context. A total of 53 samples were taken for the recovery of environmental remains.

Туре	Category	Count
Samples	Environmental	53

Plant macrofossil and charcoal

5.26 A series of 51 bulk soil samples (701 litres of soil) were processed from a range of feature types and periods with the intention of recovering environmental evidence of industrial or domestic activity on the site and examining how this changed over time. One sample (24) from fill 10578 of cut 10576 of period 3 ditch I was examined for the preservation of waterlogged remains with the intention of gaining information on the nature of the local environment in this area of the site. The samples were processed by standard flotation procedures (CA Technical Manual No. 2). Small assemblages of charred plant remains and charcoal were recovered from the Late Iron Age to Early Roman (Period 2) and Middle to Late Roman (Period 3) phases. Moderate charred plant and charcoal assemblages were recovered from the Middle to Late Roman (Periods 4 and 5) phases.

Pollen

5.27 Pollen assessment of sediment samples derived from two monoliths, <16> and <19>, taken from two of the enclosure ditches (Ditches E and I respectively).

Ditch E

A single sample was taken from Ditch E, cut 10536, Period 2 (LIA-ER 2). Ditch E produced a restricted assemblage dominated by Cichorium intybus-type (chicory and dandelions) and Poaceae (grasses) with occurrences of Ranunculus acristype (buttercups), Stellaria holostea (greater stitchwort), Cerastium-type (mouseers), Plantago lanceolata (ribwort plantain), Cirsium-type (thistles) and Solidago virgaurea-type (goldenrods and daisies). No tree or shrub pollen was encountered. This indicates an open grassland environment. There was no evidence for local arable activity in the form of cereal pollen.

Ditch I

5.29 Four samples were taken from Ditch I: three associated with the basal fills within cut [10576] (contexts 10577, 10578 and 10579) and the fourth sample from an overlying secondary cut [10576] (context 10581), all Period 3 (Middle to Late Roman 1). The pollen sequence/assemblage from Ditch I contains a similar dominance of Cichorium intybus-type and Poaceae as found in Ditch E. However there is a greater diversity in pollen types present, including a range of woodland taxa. Quercus (oak) and Fraxinus excelsior (ash) are the most common of these woodland taxa, though only account for a small component of the pollen assemblage and therefore suggest no local presence of woodland taxa, with the pollen derived from a wider (extra-local to regional) source. A low presence of Calluna vulgaris (heather) throughout the sequence suggests some heathland within the wider area. A consistent presence of Pteridium aquilinum (bracken) could be associated with areas of pasture. The presence of Centaurea nigra (common knapweed) and Polygonum (buckwheat family) may also be associated with areas of pasture, meadows or field borders. Taxa such as Rubus-type (brambles) and Silene vulgaris-type (bladder champion) are also likely to be associated with field boundaries / woodland edge. Filipendula (meadowsweet) and Cyperaceae (sedges) may be associated with the ditch itself and areas of standing water. There was no evidence for local arable activity in the form of Cereal pollen.

Biological record: statements of potential

Plant macrofossil and charcoal

5.30 There is potential for further work on a selection of the charred plant assemblages to provide some information on the nature of the settlement, the surrounding environment and local crop processing activities, particularly in the Period 4 (Roman) phase of the site. The weed seed species noted in the assessment are mainly those typical of grassland, field margins and arable environments. There appears to be an indication of a number of different environments in the area being used for growing crops, such as wetter environments as shown by the presence of species such as blinks and sedge and sandier soils as preferred by species such as ribwort plantain. There does not appear to have been large scale crop processing activity taking place in the area and no evidence of the presence of cereals was observed in the pollen assessment. There is also some information on the nature of the local landscape provided by the presence of remains of species such as hazel, hawthorn and elder within some of the assemblages.

- 5.31 This information will provide a comparison with other assemblages of the same date in the wider area such as Dunston's Clump (Jones 1987), Barton in Fabis (Wyles 2015), Gamston (Moffett 1992) and various sites along the A46 Newark to Widmerpool improvement scheme (Stevens 2014). It would also contribute data to the environmental resource for the East Midlands area and potentially assist in addressing the wider environmental research aims for the area (Monckton 2012).
- 5.32 There is potential for the analysis of a selection of the charcoal remains to provide some information on the species composition and exploitation and management of the local woodland resource and whether this changed over time.
- 5.33 This information will provide a comparison with other assemblages of the same date in the wider area such as various sites along the A46 Newark to Widmerpool improvement scheme (Barnett 2014). It would also contribute data to the environmental resource for the East Midlands area and potentially assist in addressing the wider environmental research aims for the area (Monckton 2012).
- 5.34 There is no potential for any work on waterlogged or insect remains due to the lack of preservation of this material. It is proposed that the charred plant remains assemblages from Period 2 pit 10305, (sample 41), Period 4 ditch N section 10726 (sample 46) and ditch P section 10179 (sample 5), and Period 4 ditch O section 10113 (sample 44) and Period 5 ditch M section 10671 (sample 30) are analysed in more detail.

Recommendations

- 5.35 It is proposed that the charcoal assemblages from Period 2 postholes 10484 (sample 13), 10484 (sample 12), 10532 (sample 15) and 10604 (sample 21), Period 3 ditch I section 10576 (sample 24), Period 4 ditch N section 10726 (sample 46), Period 4 pit 10251 (sample 7) and Period 4 ditch O section 10113 (sample 4), and Period 5 ditch M section 10671 (sample 30) are analysed in more detail.
- 5.36 No further work is proposed on waterlogged plant or insect remains.

Pollen

5.37 Good pollen preservation was found in the sediment derived from Period 2 enclosure ditch E and Period 3 ditch I. Both ditches demonstrate an open grassland-dominated environment probably used for pasture and grazing. Areas of taller vegetation, either as meadows or field boundaries, are also recorded

associated with the Period 3 ditch. Woodland is absent / unrecorded in the Period 2 Ditch E sample, but is recorded in the wider area, along with probable heathland, throughout the Period 3 Ditch I fill. There is no evidence of standing water within the ditches inferred by aquatic pollen types, though there is evidence within Ditch E for damp conditions and the presence of meadowsweet and sedges within the ditch itself

5.38 The pollen evidence from this assessment is of regional importance due to the paucity of environmental data for the Romano-British period in areas away from the river valleys and nucleated settlements, which Taylor (2006: 14-15) states is a high priority. This pollen assessment has demonstrated the potential of the ditch fills at Gateford North to make a contribution to key research areas outlined in the Research Agenda for the Roman Period in the East Midlands. It is recommended that full pollen analysis (extended counting to 400 TLP) of the sediment fills from ditches E and I should be undertaken. No further samples are required from monolith <19> (Ditch I) but two additional samples should be taken from monolith <16> (Ditch E).

6 SUMMARY STATEMENT OF POTENTIAL

- 6.1 The survival of archaeological deposits at Gateford North was moderate. The amount of vertical truncation by medieval and modern agriculture cannot be reliably estimated, however, the absence of widespread midden layers, floor deposits or other layers suggests that truncation had taken place. On the other hand the presence of shallow gullies and postholes suggests that any truncation was not severe. The potential for further analysis and understanding of the site is therefore moderate.
- The ceramic dating evidence is good, but offers little potential for refinement of our understanding of the sequence beyond what has already been achieved. In general, the finds assemblages, particularly including the ceramics, glass, metalwork and worked stone offer the potential for understanding the character of the settlement, and the status and wider connections of the inhabitants, however, there is little potential for further refinement of our understanding beyond what has already been achieved in this document. The plant macrofossil, charcoal and pollen evidence, however, offers greater potential for understanding the place of the settlement at Gateford North in its wider environmental setting and in the wider landscape. There are environmental indicators (charred plant remains) for the

exploitation of different environments including wetter and sandier soils, along with some evidence for small scale crop processing and the cultivation of cereals. The pollen evidence offers potential for refinement of our understanding the regional environmental setting of the settlement, with evidence for open grassland in the immediate environment of the settlement and woodland in the wider area.

- 6.3 The earliest activity recorded on site comprised a series of heavily truncated ditches of Late Iron Age to early Roman date, which may represent evidence for a trackway and small enclosed settlement similar to those evident in the subsequent Late Iron Age to Roman sequence. A small assemblage of Late Iron Age to Early Roman ceramics was recovered from this phase (see section 5.8) there is little potential for refinement of our understanding of this phase of the settlement however.
- 6.4 Later in the Late Iron Age to Early Roman period an east-west running trackway, with at least one and possibly two sub-rectangular enclosures to its south was established. The westernmost of these enclosures contained a rectilinear post-built structure and a scatter of pits indicating domestic occupation. The ceramic, charred plant remains and pollen assemblages from this phase have afforded the opportunity for a good understanding of the economic and social functioning of the settlement, and further analysis of the environmental assemblages may provide some opportunity for further refinement of this understanding.
- Subsequent to the Late Iron Age to Early Roman settlement period the settlement underwent three phases of remodelling between the Middle and Late Roman periods, in which the settlement nevertheless seems to have retained the form of an east-west running trackway, with sub-rectangular enclosures lying to the north and south. These enclosures in general seem to have contained less evidence for domestic occupation, although activity to the south of the trackway in Period 4 (Middle to Late Roman) included a working hollow and pits perhaps indicative of agricultural activity. The ceramic, glass (including a fragment of vessel glass and an intaglio) plant macrofossil and pollen assemblages (5.8, 5.19, 5.26, 5.27 and 5.28) from these periods of activity have again allowed the development of a good understanding of the wider social contacts and standing of the inhabitants, as well as a good understanding the economic functioning and wider landscape and environmental setting of the settlement. However, while the biological assemblage has the potential for enhancing our understanding of agriculture and the wider

regional environment of the settlement, the ceramic and glass assemblages offer little potential for further analysis of the social organisation of the inhabitants.

- The original objectives of the archaeological investigation were to determine and understand the nature, function and character of the archaeological remains within the site in their cultural and environmental setting. These aims have been met fully: a complete record of the features encountered during the excavation has been created, including a record of their stratigraphic relationships to one another and from this an understanding of the function and development of the settlement over time has been established. In addition, assemblages of ceramics, metalwork, glass and biological remains have been recovered and assessed (see sections 5.5-5.38).
- 6.7 The original specific aims of the excavation were to: identify evidence for Late Iron Age activity on the site, to investigate social, political and economic transitions in the 1st century AD in the local area; using palaeoenvironmental analysis to understand whether the agricultural base of the settlement changed during the period of occupation of the site in the Roman period; to analyse the animal bone from the settlement to look for evidence of changes in the practices of animal husbandry, which may reflect social and economic changes in local livestock markets; and to analyse the pottery recovered from the site to contribute to an understanding of local and regional pottery manufacture and distribution, and more broadly the interaction of the settlement with the local and regional trade network. These specific research aims have been largely met: an understanding of change and continuity at the settlement has been established and analysis of pollen and charred plant remains preserved in the ditch fills has enabled an understanding of the agricultural functioning of the settlement and its wider environmental setting. In addition, the recovery and assessment of the pottery assemblage has afforded an understanding of pottery consumption at the settlement. Unfortunately no information pertaining to animal husbandry in the form of animal bone was recovered.
- The proposed further analysis of this archive would result in an academic report, including a descriptive narrative of the stratigraphic sequence, detailed analysis of the charred plant, charcoal and pollen assemblage and a discussion drawing the stratigraphic, artefact and biological evidence together and interpreting the site in its regional and national context. Such a report would be deposited as a typescript

report on the CA website and published in summary form in a suitable academic journal such as *Transactions of the Thoroton Society*.

7 STORAGE AND CURATION

7.1 The archive is currently held at CA offices, Milton Keynes, whilst post-excavation work proceeds. Upon completion of the project and with the agreement of the legal landowners, the site archive and artefactual collection will be deposited with Bassetlaw Museum, Retford (accession number: TBC), which has agreed in principle to accept the complete archive upon completion of the project.

8 UPDATED AIMS AND OBJECTIVES

- 8.1 The archaeological sequence is primarily of local and regional significance and the following updated aims and objectives have therefore largely been defined by reference to the archaeology of the East Midlands: an archaeological resource assessment and research agenda (Cooper 2006) and East Midlands Heritage, An Updated Research Agenda and Strategy for the Archaeology of the East Midlands (Knight et al. 2012). A smaller number of aims and objectives relating to the wider context of the site sequence have been defined with reference to the Rural Settlement of Roman Britain (Smith et al. 2016). The Roman Rural Settlement Project based at the university of Reading (Smith et al. 2016) has shown that enclosed farmsteads integrated into rectilinear field systems such as the one excavated at Gateford North were the most common type of Roman rural settlement in the region, excluding those that could only be classified generically as farmsteads. Enclosed farmsteads represented four out of six settlements in the Sherwood Landscape character area and 16 out of 110 in the Trent Valley and Rises character area (ibid. 146, 246). Given that the data from Gateford North therefore appears to be broadly confirming rather than challenging a previously understood pattern, the following objectives will focus on elucidating the nature of activity within the settlement, including chronology, agricultural subsistence and landscape context. Particular attention should be paid to the environmental context of everyday life at the settlement, given the good state of preservation of charred plant remains and pollen from the environmental samples.
- 8.2 To fulfil the potential of the site data, the following updated objectives have been set out to provide a framework for the proposed further analysis:

Objective 1: To refine the dating and sequence of activity within the late Iron Age and Roman enclosures (Knight et al, 2012: 74)

8.3 Smith et al. (2016) argue that the chronology of enclosed farmsteads in the Trent Valley was different to that of the same settlement type in the broader regions they describe as the central belt and north-east, having a later peak (1st century) and a later decline (3rd century) than elsewhere (ibid. 152). One objective of the publication phase should therefore be to refine the chronology of the settlement ideally using C14 determinations. This objective also fits with the regional research agenda (Knight et al. 2102, 74). To this end two C14 dates could be obtained from the charcoal-rich pits from Period 2 Area E, and the later sequence of ditch fills from Period 4 Ditch O.

Objective 2: Analysis of the agricultural basis of the settlement: can we refine our understanding of the agricultural context of the settlement from the evidence gathered from the enclosures? (Regional Research Objective 5E) (Knight et al, 2012: 81)

This objective could be addressed using palaeoenvironmental analysis of charred plant remains to understand any changes in the agricultural base of the settlement during the Roman period occupation of the site. Charred plant remains from enclosure ditches and pits containing crop processing waste should be analysed in greater detail. In addition, comparisons should be sought with other settlements in the East Midlands through a review of the regional archaeological literature.

Objective 3: Place the Roman enclosures within their landscape context: did the Landscape at Gateford North develop from earlier (Middle Iron Age) Origins (Knight et al, 2012: 65, 79)

8.5 Having analysed the contextual record along with the artefactual and environmental evidence, the site should be considered in its 'landscape' context. The relationship between the Gateford North enclosure and the activity at Raymoth Lane, where pottery production is known to have been ongoing during the Roman period should be considered. Reorganisation linked to agricultural expansion within the wider landscape setting should be examined: specifically how the enclosure functioned within the brickwork plan of the Sherwood Sandstone landscape. Consideration should be given to the evidence which suggests a re-

organisation of the landscape in the 1st century AD. This could be compared to evidence from elsewhere in the East Midlands: for instance evidence from the Roman fort at Margidunum, near East Bridgeford suggests that the layout of Roman enclosures respected Middle Iron Age linear boundaries (Cooke, 2013: 294).

Objective 4: Examine the evidence for the nature of the local environment in the Iron Age and Roman periods (Knight et al, 2012: 79)

8.6 Analysis of pollen, insect and plant macrofossils from column samples of waterlogged fills taken from Period 4 Ditch N and Period 5 Ditch M should be used to characterise the local environment, including vegetation cover. The implications of this data for the agricultural regime of the settlement should be considered.

9 PUBLICATION

9.1 The results from the investigations at Gateford North are of regional significance and merit publication. Analysis of the archive offers the opportunity to investigate the chronology of the settlement, and the environmental and social context of Roman activity within the "brickwork" field system, and to compare the results with nearby sites. It is proposed that a detailed excavation report is made available online including on the CA website and that a summary account is placed in *Transactions of the Thoroton Society*.

Synopsis of Proposed Report

A Late Iron Age and Roman Farmstead and 'brickwork' field system at Gateford North, Worksop, Nottinghamshire, April and May 2016

by Jake Streatfeild-James and Dan Stansbie

Introduction	150
The Late Iron Age and Roman Farmstead and field system	400
The artefactual and ecofactual evidence	500
Discussion	400
Acknowledgements	50
Total Words	1500
	3 pages

Illustrations

Location plan and site plan 1 page

10 PROJECT TEAM

The analysis and publication programme will be quality assured by **Martin Watts**MCIfA (Head of Publications: HoP) and managed by **Dan Stansbie ACIfA**; (Postexcavation Manager: PXM), who will contribute to the discussion as senior author
(SAuth) and co-ordinate the work of the following personnel:

Ed McSloy MCIfA (Senior Finds Officer: FO):

Specialist report preparation and liaison, post-excavation phasing.

Sarah Wyles ACIfA (Senior Environmental Officer: EO)

Specialist report preparation plant macrofossil, molluscs and liaison

Sarah Cobain ACIfA (Post Excavation Manager: PXM)

Radiocarbon dating

Dan Bashford (Senior Illustrator: SILL):

Production of all site plans, sections and artefact drawings

Jon Bennett ACIfA (Geomatics Officer: GO):

GIS applications

- 10.2 Contributions by the following external consultants will be managed by the Finds Officer:
 - Dr Ruth Shaffrey: Worked Stone
- 10.3 Contributions by the following external consultants will be managed by the Environmental Officer:
 - Dana Challinor: Archaeobotanist (Wood and Charcoal)
 - **Dr Michael Grant** (COARS University of Southampton): Pollen Analysis
 - SUERC (East Kilbride): Radiocarbon dating
- 10.4 The final publication report will be edited and refereed internally by CA senior project management, and externally refereed by Dr Tom Moore (University of Durham).

11 TASK LIST

TASK	PERSONNEL	DURATION/ COST
Project Management		
,	PM	5
Stratigraphic Analysis		
• •	PO	4
	FO	1
Research, comparanda		
, <u> </u>	PO	2
Pottery		
Analysis and report	SFO	2
Illustration	SI	2.5
Glass		
Report preparation	SFO	0.25
Illustration	SI	0.25
Metal artefacts		2.20
Report preparation	AFO	0.25
Illustration	SI	0.25
Charred Plant Remains		
Report Preparation	SEO	2.5
Charcoal		
Report preparation	Specialist	FEE
Pollen	- Openiumer	1
Report preparation	Specialist	FEE
Sample preparation	SEO	0.5
Radiocarbon dating	- 020	0.0
Analysis	Specialist	FEE
Report preparation	PM	0.4
Preparation of publication report		
Abstract and introduction	PO	0.5
	SAuth	0.13
Excavation results	PO	4
	SAuth	1
Compilation of specialist reports, tables etc.	PO	3
Discussion, conclusions	PO	1.5
	SAuth	2
Acknowledgements, bibliography	PO	0.5
Submission to external referees	1.5	3.0
Editing	PM	2
Revisions	PO	1
SUBMISSION OF PUBLICATION TEXT	1.0	
Archive		
Research archive completion	PO	0.50
. 10000. Str droint o dompiodott	FO	3.00
Microfilm		FEE
Deposition		FEE
	1	1
Publication		

12 TIMETABLE

12.1 CA would normally aim to have completed a draft excavation typescript report within sixth months of approval of the updated publication project design, and a publication draft within a further 3 months. A detailed programme can be produced if desired on approval of the updated publication project design.

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APPENDIX 1: STRATIGRAPHIC ASSESSEMENT BY JAKE STREATFEILD-JAMES

A total of 787 contexts were recorded during the excavation. Three contexts were assigned to deposits of geological origin and the remaining contexts were assigned to periods as detailed below:

Table1: Number of contexts by period.

PERIOD	NUMBER OF CONTEXTS
Period 0: Undated	219
Period 1: Late Iron Age to Early Roman 1	37
Period 2: Late Iron Age to Early Roman 2	252
Period 3: Middle to Late Roman 1	70
Period 4: Middle to Late Roman 2	106
Period 5: Middle to Late Roman 3	93
Period 6: Post Medieval	10
Total	787

The preservation of the archaeological sequence and the recovered artefactual evidence means that a comprehensive phasing can be achieved for the majority of excavated contexts. In order to achieve this, further stratigraphic analysis will be undertaken on 558 contexts provisionally assigned to Periods 1-5 and those that are currently unphased. Further analysis will not be required for those contexts provisionally assigned to Period 6 (post-medieval).

Period 1

Period 1 consisted of shallow U shaped ditches cut into the natural to an average depth of 0.2m and an average of 2 fills. These are thought to represent activity associated with the layout of the farmstead/brickwork field system, or a precursor.

Period 2

Period 2 consisted of two parallel E-W droveway ditches cut to an average depth of 1.0m with a 'V' shaped profile. The droveway accessed a pair of sub-square enclosures in the centre of the site, cut with 'V' shaped profiles to an average depth of 1.0 m. The secondary fills consisted of dark charcoal rich material. The eastern enclosure encompassed a rectangular building spot dated to the Late Iron Age to 1st Century AD, along with a concentration of sub-circular pits with organic rich fills and elongated oval pits with sterile fills, cut to an average depth of 0.5m.

Period 3

Period 3 consisted of two curvilinear enclosure ditches on the northern side of the site enclosing the corner of one of the cells within the brickwork field system. These ditches varied in depth and profile, from 1.1m deep with a 'V' shaped cut, and 0.2m deep with a shallow sided 'U' shaped cut. An extension of the Period 2 droveway was made to the west, consisting of a large 'V' shaped profile ditch cut to a depth of 1.8m, and shallow 'U' shaped profile gully cut to a depth of 0.2m.

Period 4

Period 4 consisted of a sub-square enclosure on the southern side of the site defined on three sides by a ditch measuring 3.0m wide and 2.5m deep. An entrance measuring 2m wide was recorded in the north eastern corner of the enclosure. The ditches contained a series of well-preserved waterlogged fills with charcoal inclusions. The Phase 3 enclosures on the northern side of site were recut with steep sided 'V' shaped profiles. The secondary fills of P consisted of dark charcoal rich material.

Period 5

Period 2 Enclosure Ditch E was infilled and replaced by a Ditch enclosing a larger area, and consisting of a steep sided 'V' shaped profile cut to a depth of 1.0m. A series of shallow gullies (Y) enclosed a sub-square area on the northern side of the site.

APPENDIX 2: WORKED FLINT BY E.R. MCSLOY

A single worked flint flake weighing 8g was recorded. It comes from Middle to Late Roman-dated Period 4 pit 10251 (fill 10253) and is clearly a re-deposited piece. Raw material consists of good-quality dark grey flint which is not patinated (recorticated). Condition is poor, with longer edges with heavy edge damage. This piece exhibits no secondary working or other features suggestive of dating. It is blade-proportioned, although irregular and with a hinge fracture terminal – features not suggestive of intentional manufacture as a 'blade'.

Statement of potential and recommendations for further analysis

The single piece of worked flint recovered was re-deposited from a Roman feature. In isolation it cannot be closely dated and provides only limited evidence for earlier prehistoric activity in the area. Recording/reporting undertaken as part of the assessment are sufficient for the purposes of the archive and further analysis is unnecessary.

APPENDIX 3: POTTERY BY E.R. MCSLOY

A total of 554 sherds weighing 7854g (8.45 EVEs) was hand-recovered, this total including 12 sherds (161g) recorded from evaluation trenches. A further 18 sherds (64g) were recorded from bulk soil sample residues. The large bulk of the recovered pottery dates to the Roman period. A single glazed medieval sherd weighing 3g and two sherds of modern refined whiteware (6g) were recovered, but are not discussed further.

The assemblage has been fully recorded; viewed by context and quantified according to sherd count/weight and rim EVEs per fabric. In addition vessel form/rim morphology, rim diameter and evidence for vessel use (residues or use wear) have been recorded. Fabric codes utilised for recording are defined in table 1. Where applicable codings of the National Roman Fabric Reference Collection (Tomber and Dore 1998) are used.

The majority of the assemblage was derived from ditch (194 sherds or 35%) or pit/posthole fills (186 sherds or 34%); with most of the remainder from Period 4 working hollow H (160 sherds or 29%). Burial environment has impacted the condition of the pottery to varying degrees; calcareous inclusions do not survive with the result that shell/limestone bearing types are vesicular and commonly well fragmented. A proportion of the assemblage is affected by ferrous concretions which obscure areas of sherd surfaces. Surface preservation is mixed with types including the common greyware types GW1 and GW3 commonly suffering from powdery and well-weathered surfaces. In terms of fragmentation, the mean sherd weight is moderately high and a number of vessels are represented by larger/joining sherds.

Range and variety

Forms

The range of vessel forms is summarised according to broad 'class' in table 2. Jars and utilitarian bowls/dishes are strongly dominant, with fineware classes present as samian vessels (below) and as one Lower Nene valley colour-coated ware indented beaker. Mortaria are represented by two Mancetter/Hartshill vessels.

Fabrics

The overall assemblage range is summarised in Table 1 and individual types are described below. Iron Age material is represented as single sherds in a handmade quartz-tempered fabric (fabric IAQ). Large quantities occur in vesicular fabrics (VES q; VES) characteristic of the transitional Late Iron Age/Early Roman period.

The bulk of the assemblage dates to the Middle and Later Roman period, the majority comprising reduced coarseware fabrics, most or all of which consist of types manufactured in the Nottinghamshire Trent Valley, and shell-tempered Dales wares (DAL SH) originating in the north Lincolnshire area (Tomber and Dore 1998, 157). Regional imports were limited to Southeast Dorset Black-burnished ware, Lower Nene Valley colour-coated ware and Mancetter/Hartshill mortaria. Continental wares are present as a few sherds of Gaulish samian (below).

Samian

Samian pottery amounted to 12 sherds, weighing 200g. The condition of this material was poor, with surfaces poorly preserved and some burning evident to sherds from deposits 10222 and 10253. Most are 2nd century Lezoux (LEZ SA2) products, with some forms indicating dating after *c*. AD 140/150. Identifiable forms among this central Gaulish component consist of Dr 33 cups (Period 2 ditch E fill 10518 and Period 3 ditch D fill 10112) and a form 31 bowl (Period 4 pit 10251, fill 10523). A single decorated form was represented in this type as a base sherd from a form 37 bowl. The single East Gaulish vessel (from Period 4 pit 10251, fill 10523) is a Dr 38 bowl, which dates after *c*. AD 140 and a slate as the mid 3rd century AD.

Fabric descriptions: Iron Age

HMQZ: Handmade quartz-tempered. Soft; red brown ext. surface/margin and dark grey core and inner surface. Abundant angular quartz (0.3-0.5mm) and sparse polycrystalline quarz/sandstone, up to 1.5mm. *Totals: 2 sh; 21g.*

Late Iron Age/Early Roman 'transitional'

SHL: (Leached) shell-tempered. Dark grey/brown throughout or with lighter brown surfaces. Soft with smooth feel. Corky/vesicular fabric with common plate-like voids visible in surface and breaks up to 2.5mm. *Totals:* 62 sh; 201g; 0.14 EVEs.

QZVES: Quartz-tempered/vesicular. Dark grey/brown throughout. Soft with sandy feel. Common sub-rounded quartz 0.2-0.3mm; common sub-angular and plate-like voids 0.5-1mm. *Totals: 35 sh; 205g; 0.28 EVEs*.

GTVES: Grog-tempered/vesicular. Dark grey/brown throughout. Soft with smooth feel. Common sub-angular, sel-coloured grog 0.5-1mm; common sub-angular and plate-like voids 0.5-1mm. *Totals: 1sh; 39g.*

Romano-British

Local//unsourced greywares (most Trent Valley). Fabric Group GW

GW1: Coarse greyware. Grey throughout; harsh feel. Contains common angular or sub-angular quartz 0.3-0.5mm; common dark brown/black ironstone/iron oxide and sparse rounded grey grog or clay pellet 0.5mm. *Totals:* 92 sh; 1692g; 1.33 EVEs.

GW2: Medium sandy greyware. Grey/blue grey throughout or with darker core. A harder fabric compared with GW1/3, the surfaces typically surviving well. Contains abundant angular quartz 0.2-0.2mm. *Totals: 88sh; 1860g; 1.44 EVEs.*

GW3: Finer greyware. Grey throughout or with darker core; slightly sandy feel. Contains sparse sub-angular quartz 0.1-0.3mm; and sparse dark brown/black ironstone/iron oxide. Sparsely micaceous. *Totals:* 59 sh; 900g; 1.41 EVEs.

GW4: Coarse greyware with sparse white inclusions (limestone). Grey throughout or with red margins; harsh feel. Contains common sub-angular quartz 0.1-0.3mm; common to sparse rounded calcareous inclusions (0.3-0.6mm) and sparse rounded grey grog or clay pellet 0.3-0.5mm. *Totals:* 3 sh; 108g; 0.20 EVEs.

GW5: Dark grey/black throughout or with lighter core; slightly sandy feel. Contains sparse sub-angular quartz 0.1-0.3mm; and sparse dark brown/black ironstone/iron oxide. *Totals:* 37 sh; 760g; 0.82 EVEs.

GW6: Dark grey with lighter core; soft with smooth feel. Abundant silt-sized (quartz) inclusions; micaceous. *Totals:* 5 sh; 93g.

GW7: Pale grey surfaces/core with red margin. Abundant angular/sub-angular quartz inclusions (0.2-0.3mm). *Totals*: 2 sh; 14g.

GW8: Dark grey/black surfaces with red brown core. Abundant angular/sub-angular quartz inclusions (0.3-0.4mm). Occurs as forms imitating Black-burnished ware. *Totals: 3 sh; 41g; 0.24 EVEs.*

OX1: Pale orange throughout; slightly sandy feel. Contains sparse sub-angular quartz 0.1-0.3mm; sparsely micaceous. *Totals:* 1 sh; 11g; 0.13 EVEs.

Local/north Lincolnshire

DAL SH: Southeast Dorset Black-burnished ware (Tomber and Dore 1998, 157). Totals: 82 sh; 618g; 0.72 EVEs.

Regional wares

DOR BB1: Southeast Dorset Black-burnished ware (Tomber and Dore 1998, 129). *Totals:* 78 sh; 801g; 1.05 EVEs.

LNV CC: Lower Nene Valley Colour-Coated ware (Tomber and Dore 1998, 118). Totals: 2 sh; 7g.

Mancetter/Hartshill mortaria (fabric group MAH)

MAH WH: Whiteware mortaria (Tomber and Dore 1998, 189). Totals: 1 sh; 133g; 0.19 EVEs.

MAH WS: White slipped mortaria (Tomber and Dore 1998, 190). Totals: 1 sh; 174g; 0.21 EVEs.

MID WH: Whiteware (Midlands type?). White throughout; smooth feel. Contains sparse sub-angular quartz 0.1-0.3mm. 1 sh; 3g.

Imports

Samian (fabric group SA)

LEZ SA2: Central Gaulish (Lezoux) samian (Tomber and Dore 1998, 32). Totals: 11 sh; 161g; 0.07 EVEs.

EG SA: East Gaulish (Trier?) samian (Tomber and Dore 1998, 41). Totals: 2 sh; 41g; 0.22.

Dating/stratigraphy

Iron Age

Only two sherds (21g) were suggestive of pre-Roman activity in the area. Both were unfeatured body sherds in handmade quartz-tempered fabric (HMQZ) considered of broad Iron Age date. One sherd (from evaluation deposit 15004) was associated with Roman pottery and probably re-deposited. The second sherd was the sole find from period 1 tree bole 10066 (fill 10067).

'Transitional' (Late Iron Age/Early Roman) and Early Roman

Pottery characteristic of this period comprises sherds in vesicular (SHI; VESQ) and grog-tempered, fabrics most of which was associated with Provisional Period 2 Enclosure E (table 1). The identifiable vessel forms in these fabrics consist of neckless jars with triangular or 'lid-seated' rims, and carinated bowls. Comparable pottery has been recorded elsewhere from Nottinghamshire, including Balderton, Newark (Leary forthcoming) and Margidunum (McSloy 2015) and a date range in the mid/later 1st century AD based on such comparisons. Continued use of Period 2 features into the 2nd century is hinted at by the occurrence, albeit in small quantities, of greywares and central Gaulish samian (Table 1).

Middle and Late Roman

The larger part of the assemblage dates to the period after c. AD 150, with most probably after c. AD 250. Little closely-dateable material was recorded from Period 3 deposits; the 54 sherds in fabric DOR BB1 Period 3 Ditch D (fill 10112) are from the same vessel, a jar dateable after c. AD 220.

Two thirds of the pottery assemblage (367 sherds) was recorded from Periods 4/5. The samian (9 sherds) is dateable before *c*. AD 200 and can be considered redeposited. Among the more closely-dateable material from Period 4 are Mancetter/Hartshill mortaria vessels (MAH WH; MAH WS) from 'hollow' feature H and pit 10251. Both are hammerhead classes dating, *c*. AD 200/220–350/380. Other than the (residual) samian, finewares are present from Period 4/5 as a single Lower Nene Valley colour-coated ware vessel, an indented beaker of 3rd or 4th century type from Period 4 hollow H (fill 10131). The greywares which makes up the majority of pottery from Periods 4/5 comprises mainly neckless/everted rim jars, bowls and flat or moulded-rim dishes. The range of forms is typical of greyware groups from the region; among the few more closely dateable forms are conical flanged bowls (Period 4 pit 10128, fill 10130) and a bifid/collared-rim jar (unphased pit 10446, fill 10447), both of which date to after *c*. AD 250. Further indications of dating are provided by the Dales wares (DAL SH), a type spanning the period c. AD 250–350/400 (Darling and Precious 2014, 82–85). This type occurs in small quantities from Period 4, but is most abundant from Period 5 deposits (table 2). The identifiable vessel forms are of the characteristic jar forms with internally 'ledged' rim.

Assemblage summary/Statement of potential and recommendations for further analysis

The pottery described is of some significance as relating to an apparently discrete site, most or all of the surviving ground plan of which was exposed by the excavations. Although modest in size the assemblage provides some good dating evidence to inform the site's (provisional) stratigraphic sequence and suggests a protracted period of occupation beginning in the 1st century AD and extending into the later 3rd or 4th centuries. In its range of fabrics/vessel forms the assemblage is consistent with the established patterns of pottery supply in the region. The utilitarian character of this group is apparent from the dominance of coarsewares and scarcity of finewares/tablewares and specialist types. In its character this group is consistent with domestic/kitchen-related use of the kind typical for the majority of small and 'lower status' rural sites from this region and across lowland Britain.

The recording undertaken as part of this assessment is sufficient for the purposes of the archive. It is recommended that a report characterising the assemblage should be produced for publication. This may take the form of an enhanced version the report presented here, updated as necessary with reference to a finalised phasing scheme and including illustrations of selected vessels (up to 20), representative of larger and better-dated context/feature groups.

Summary

Enhanced reporting/drawing catalogue

2 days (SFC)

Drawings (up to 20 vessels)

2.5 days (SI)

Table 2: Pottery summary by Provisional Period/Feature label. Quantities as number of sherds per fabric group/fabric.

Period	Feat.label	HMQZ	GTVES	QZVES	SH	SA	DOR BB1	GW	DAL SH	LNVCC	MAH	MIDWH	OX1	Total
Unph.	-		1		5			4	3					13
1	-	1												1
2	A				8	1		1						10
	Е			28	21	1		9						59
	G			1	1									2
	K				5			5						10
3	D					1	54	8						63
	I				15									15
4	4					5		18			1			24
	Н							26	1		1			28
	N			3		2		15	3			1		24
	Р				4			6					1	11
	Q							1						1
5	Н					2	24	161	74	2				263
	М							8						8
	-							8						8

Table 3: Vessel forms summary. Quantities as minimum vessels and rim EVEs totals.

Form	qzves	SH	redu	oxid	DAL SH	BB1	Invcc	MAH	midwh	sam	Total
flagon									1/-		1/-
beaker							1/-				1/-
cup										2/-	2/-
jar	2/.28	2/.14	22/2.92	1/.13	8/.72	1/.91					36/5.10
bowl	1/-		12/1.56			1/.14				3/.29	17/1.99
bowl-jar			1/.05								1/.05
dish			6/.71								6/.71
mortarium								2/.40			2/.40
Totals	3/.28	2/.14	41/5.24	1/.13	8/.72	2/1.05	1/-	2/.40	1/-	5/.29	

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APPENDIX 4: GLASS BY E.R. MCSLOY

Three vessel glass fragments weighing 15g and a single glass object (<1g) were recorded, all dating to the Roman period. The object (a blue glass intaglio) and a small chip of vessel glass were finds from a bulk soil sample taken from Period 4 pit 10251.

Vessel glass

All fragments occur in natural green coloured glass most typical or the earlier/mid Roman period (1st to 3rd centuries). A fragment from Period 4 Pit H (fill 10130) is unfeatured, although its 'flatness' and thick walls (5.5mm) suggests it may come from a mould-blown bottle. That from unphased pit 10441 (fill 10443) is a handle small fragment, probably of plain ribbon type. Its thickness (6mm) suggests this piece may also come from a bottle. Mould-blown bottles in natural blue/green glass and of prismatic and cylindrical form, were used as household containers, most commonly in the later 1st to 3rd centuries. The third fragment, from Period 4 pit 10251 (fill 10253) is too small for further comment.

Object (intaglio)

This item was recorded from a soil sample taken from Period 4 pit 10251 (fill 10253). It is sub-rounded in form, measuring 6.5 x 6mm and of an opaque cobalt blue glass. An impressed design to one face is of an (unequal-armed) five-pointed 'star', perhaps intended to be anthropomorphic. In its size and style, the intaglio is typical of those produced for bronze finger rings common in the 3rd century (Henig 2007, 14).

Statement of Potential and Potential for further analysis

The small vessel glass assemblage is of limited significance, providing some evidence for the use of glass containers at the site. The intaglio is more notable, although its presence is not to be regarded as an indication of 'higher status'; Henig notes the common use of glass-set signet rings in the 3rd century 'by members of the lower orders of society'.

Little further work is warranted with this group of material. A short note for publication recording the vessel glass and detailing the intaglio should be included in the site publication. This may take the form of an adapted version of the report produced here, should include an illustration (drawing or high quality digital photograph) of the intaglio.

Summary

Report summary
Illustration (intaglio)

0.25 day (SFC)

0.25 day (SI)

APPENDIX 5: WORKED STONE BY RUTH SHAFFREY

Five pieces of stone were retained and submitted for analysis. They comprise two pieces of flat stone from fill 10131 of Period 4 working hollow H, possibly used for roofing, although undiagnostic; one cobble with a flat smooth face suggesting use as a rubber from fill 10485 of posthole 10484 from Period 2 structure G, one cobble with straight flat sides that might have been used structurally from fill 10061 of posthole 10060 from Period 2 structure G and a struck flake of quartzite from fill 10051 of undated pit 10050, suggesting that quartzite cobbles were being worked on the site.

Table 4: Catalogue of stone.

Ctxt	Function	Notes	Size	No	Wt	Lithology
10131	Possible stone roofing	Two undiagnostic fragments of flat stone, possibly roofing fragments	Measures 10 and 17 mm thic k	2	316	fine grained pale brown micaceous sandstone
10485	Cobble rubber	Cobble with one flatted rubbed face. It is cracked suggesting rapid heating and cooling. Another quartzite cobble from this context is unworked	Measures 80 x 56 x 62	1	412	Quartzitic sandstone
10061	Possible structu ral stone	Cobble with three straight flat sides. Could be structural. Also blackened through burning	Measures	1	830	Quartzitic sandstone, micaceous, pink (but burnt)
10050	Struck flake	Flake struck from quartzite cobble. Not retouched	Measures	1	11	Quartzite

Discussion and recommendations

The stone assemblage is small and has little potential to contribute to the site narrative but the rubber and struck quartzite suggest that cobbles were being used and possibly worked on the site; this is likely to be indicative of domestic occupation. The stone has been fully recorded and no further work is recommended, but the rubber and struck flake should be included in any publication report which ensues.

APPENDIX 7: METALWORK BY KATIE MARSDEN

A total of 27 items of metal were recorded from ten deposits and as unstratified finds. This group comprises 2 items of copper alloy, 22 of iron and 3 of lead alloy. A preliminary catalogue has been produced for this assessment with items recorded directly to an MS Access database. The objects have been listed individually by material and summarised by material type in table 5.

The metalwork is currently stored in air-tight plastic containers and with humidity control as appropriate. The metal items have been examined by a specialist conservator (Karen Barker) and assessment included x-radiography (plates K16/579-80) to facilitate identification and clarify constructional and compositional details. The extent of corrosion/fragmentation is variable, with the iron appearing to be in a less stable condition than those items of copper and lead alloys.

Summary

The assemblage as a whole contains few intrinsically dateable items, limited to one item dating to the Roman period and two items of late post-medieval to modern dating. The majority (19 items, 70%) were recorded from ditches, with 26% (seven items) recovered from the topsoil or as an unstratified find. The remaining item (4%) was recorded from a posthole.

Range and Variety

The majority of the assemblage comprised iron items (22), recorded from nine deposits. Of this group, 8 are nails or nail fragments of a forged, flat-headed form for which only broad dating is possible. There are a total of 13 items for which original form and function are not discernible; nine recorded from ditch fills and four from topsoil. Ra. 15, a fragment of a horseshoe, probably of 17th to mid 18th century date (Noël Hume 1969), was recorded from Period 4 ditch N, intervention 10202 (fill 10226).

Of the three items of lead alloy recorded, two are waste fragments and one is a curved rod, of uncertain form, function and original date.

A leaded copper alloy toy soldier helmet was recorded from topsoil 10000, of 20th to 21st century date. Of particular note is Ra. 1, from Period 3 posthole 10501 (fill 10502) a trumpet brooch of Mackreth (2011) type 1.2b4; those with a simple scroll decoration on either side of the trumpet head. Trumpet brooches date from the late 1st to late 2nd centuries.

Statement of Potential and Recommendations for Further Analysis

The metalwork assemblage is small and a high proportion (26%) is recorded from topsoil or unstratified deposits, offering little dating potential. Few items are intrinsically dateable, the most notable being Ra. 1, a Roman brooch. It is recommended that Ra. 1 is described and illustrated or photographed for publication. Recording undertaken at this stage is considered sufficient for the archive and further work is unwarranted.

Illustration 0.25 day (SI)
Description 0.25 (AFO)

Table 5: Metalwork.

Context	Fill of	Context Description	Material	Ra. no	Туре	Classification	Ct.	Wt. (g)
10000		Topsoil	Copper alloy	22	object		1	7
10502	10501	Posthole	Copper alloy	1	brooch	trumpet	1	13
10000		Topsoil	iron	19	object		1	4
10000		Topsoil	iron	20	object		1	19
10000		Topsoil	iron	23	object		1	26
10000		Topsoil	iron	24	object		1	33

10041	10040	Ditch fill	iron	8	object	4	88
10098	10096	Ditch fill	iron	3	nail	1	9
10098	10096	Ditch fill	iron	4	object	1	1
10112	10111	Ditch fill	iron	5	nail	1	2
10174	10172	Ditch fill	iron	2	object	1	2
10226	10202	Ditch fill	iron	12	object	1	3
10226	10202	Ditch fill	iron	13	?nail	2	14
10226	10202	Ditch fill	iron	14	nail	1	4
10226	10202	Ditch fill	iron	15	horseshoe	1	83
10348	10345	Ditch fill	iron	0	nail	1	9
10723	10720	Ditch fill	iron	9	nail	1	21
10732	10726	Ditch fill	iron	6	object	1	98
10732	10726	Ditch fill	iron	7	nail	1	21
10732	10726	Ditch fill	iron	10	object	1	21
0		unstratified	Lead alloy	18	object	1	50
10000		Topsoil	Lead alloy	11	object	1	3
10226	10202	Ditch fill	Lead alloy	16	waste	1	1

APPENDIX 8: MIXED FINDS BY KATIE MARSDEN

Industrial Waste

A single fragment of indeterminate industrial waste (Ra. 17, 4g), two fragments of charcoal (1g) and five fragments of coal (1g) were recorded from three deposits.

Statement of potential and recommendations for further work

The material is of limited significance and presents little analysis potential. Recording carried out at this stage is considered sufficient for the archive and no further work is required.

Fired Clay

A total of 170 fragments (1906g) was recorded from four deposits. The fragments, all in a fine, sandy fabric, are formless and indeterminate of original function, with the exception of two fragments of loom weight (of interminable form) recorded from Period 2 (structure G) posthole 10529 (fill 10530).

Statement of potential and recommendations for further work

The material is of limited significance and presents little analysis potential. Recording carried out at the assessment stage is considered sufficient for the archive. Further work is not warranted.

Ceramic Building Material

A total of 28 fragments (2158g) of ceramic building material was recorded from nine deposits. The majority comprise hard-fired, sandy tile fragments or flakes of indeterminable form and function. Fragments of tegula (flanged roof tile) were recorded from three deposits and a fragment of possible brick, also of Roman date, was recorded from Period 4 ditch R, intervention 10321 (fill 10322).

Statement of potential and recommendations for further work

The material is of limited significance and presents no analysis potential. Recording carried out at this stage is considered sufficient for the archive and further work is unwarranted.

APPENDIX 9: PALAEOENVIRONMENTAL EVIDENCE BY SARAH F. WYLES

A series of 51 bulk soil (701 litres of soil) were processed from a range of feature types and periods with the intention of recovering environmental evidence of industrial or domestic activity on the site and examining how this changed over time. The breakdown of the bulk samples by period is tabulated in Table 6 below. In addition one sample (24) from fill 10578 of cut 10576 of Period 3 ditch I was examined for the preservation of waterlogged remains with the intention of gaining information on the nature of the local environment in this area of the site. The samples were processed by standard flotation procedures (CA Technical Manual No. 2).

Table 6: Breakdown of bulk samples by period.

		Vol	
Period	No. of samples		Feature types
	1	17	Ditch A
2	7	116	Ditch, pit and enclosure E
_	13	155	Pits and postholes G
	1	16	Ditch K
3	2	38	Ditch I
	1	8	Pit H
	4	56	Ditch N
4	1	18	Ditch P
	2	31	Ditch R
	2	32	Pit
	1	17	Pit H
5	1	14	Ditch M
3	2	33	Ditch O
	2	34	Ditch, gully
0	11	116	Pits
Total	51	701	

Preliminary identifications of plant macrofossils are noted in Table 7, following the nomenclature of Stace (1997) for wild plants, and traditional nomenclature, as provided by Zohary *et al* (2012) for cereals. Preliminary identifications of the waterlogged material are noted in Table 8.

Period 2: Late Iron Age-Early Romano-British

A small number of charred weed seeds, including those of persicaria (*Persicaria* sp.), and charcoal fragments greater than 2mm were recovered from fill 10026 (sample 2) of cut 10025 of Period 2 ditch A. This may be representative of wind-blown hearth material.

Fill 10270 (sample 8) of cut 10267 and fill 10571 (sample 29) of cut 10569 of Period 2 enclosure ditch E contained a small number of charred plant remains, including barley (*Hordeum vulgare*) and free-threshing wheat (*Triticum turgidum/aestivum* type) grain and rachis fragments and hazelnut (*Corylus avellana*) shell fragments. There were small to moderately small charcoal assemblages recorded from cuts 10267, 10369, 10513 and 10569 (samples 8, 9, 28 and 29) of enclosure ditch E. These included round and mature wood fragments. These assemblages appear to be dispersed settlement material.

A moderately small quantity of charred plant remains and charcoal were recorded from fill 10306 of Period 2 pit 10305. These included wheat (*Triticum* sp.) grain fragments, seeds of oat (*Avena* sp.), brome grass (*Bromus* sp.), brassica (*Brassica* sp.) and docks (*Rumex* sp.), stem/root fragments and round wood fragments. The assemblage may be waste from settlement activity but there is no clear indication of the function of this feature.

Very few charred plant remains were noted from undated pit 10303 (samples 39 and 40). These included seeds of ribwort plantain (*Plantago lanceolata*). The small quantities of charcoal included round and twig wood fragments. These assemblages may be representative of dispersed hearth material.

No charred plant remains were observed in postholes 10060, 10063, 10484 and 10554 (samples 32, 33, 13 and 34) of structure G. A large quantity of charcoal was retrieved from posthole 10484, a moderate amount from posthole 10060 and moderately small number from posthole 10063. The charcoal included round and twig wood and may be representative of dumped hearth material.

Low levels of charred plant remains were recorded in eight of the nine samples (35, 34, 11, 12, 14, 15, 18, 20 and 21) and large amounts of charcoal fragments from five of the nine samples from structure G postholes 10070, 10072, 10480, 10482, 10529, 10532, 10563, 10586 and 10604. The charred remains included barley and hulled wheat, emmer or spelt (*Triticum dicoccum/spelta*), grain fragments, seeds of bedstraw (*Galium* sp.), brassica and vetch/wild pea (*Vicia/Lathyrus* sp.), acorn fragments and mature, round and twig wood fragments. These may be reflective of dispersed settlement waste.

Fill 10098 (sample27) of cut 10096 of Period 2 ditch K contained a small number of plant remains including barley and hulled wheat grain fragments and seeds of sedge (*Carex* sp.). There was also a moderate small charcoal assemblage, which included round wood fragments. This is likely to be reflective of settlement waste.

Period 3: Middle to Late Roman 1

A few charred plant remains, including indeterminate grain fragments, sloe (*Prunus spinosa*) stone fragments and hazelnut shell fragments, and high numbers of charcoal fragments were recorded from Period 3 ditch I sections 10409 (sample23) and 10576 (sample 24). The charcoal included mature, round and twig wood fragments and may be representative of a dump of hearth material.

Fill 10578 of Period 3 ditch I section 10576 was also examined for the presence of preserved waterlogged and insect remains. No waterlogged or insect remains were recorded from this deposit. The pollen evidence from this ditch showed the presence of some damper conditions within the ditch but no true aquatic species were represented within the pollen assemblages.

Period 4: Middle to Late Roman 2

No charred plant remains and a moderately small charcoal assemblage was observed in sample 45 from fill 10717 in cut 10703 of working hollow H. The charcoal included round and twig wood fragments.

Fill 10730 (sample 46) of cut 10726 of Period 4 ditch N contained a high number of cereal remains including hulled wheat grain, glume base and spikelet fork fragments, barley grain fragments and possible free-threshing wheat grain fragments. A number of the chaff elements were identifiable as being those of spelt wheat (*Triticum spelta*). This is the predominant wheat in Southern Britain during this period (Greig 1991). The weed seeds included seeds of oats, brome grass and vetch/wild pea. This assemblage is likely to represent a dump of domestic crop processing waste, possibly from a late stage in the process. Moderately small charcoal assemblages, including round and twig wood fragments, were recorded from cuts 10056, 10213 and 10726 (samples 43, 6, 46 and 47) of Period 4 ditch N.

A moderate plant assemblage was recorded from fill 10116 (sample 44) and a large quantity of charcoal fragments from fill 10114 (sample 4) of cut 10113 of Period 4 ditch O. These included hulled wheat grain fragments, seeds of oat, brome grass, black bindweed (*Fallopia convolvulus*), rye-grass/fescue (*Lolium/Festuca* sp.), tuber fragments and round and mature wood charcoal fragments.

A moderate quantity of charred material was recovered from fill 10180 (sample 5) of cut 10179 of Period 4 ditch P. This included barley, hulled wheat and possible free-threshing wheat grain fragments, oats, false oat-grass (*Arrhenatherum elatius* var. *bulbosum*) tubers and round wood charcoal fragments. A few of the barley grains were still in the spikelet. This assemblage may be representative of a dump of domestic settlement waste.

The small quantity of remains noted from Period 4 ditch R, cut 10398 (samples 50 and 51) included barley grain fragments, hazelnut shell fragments and charcoal pieces. This may be dispersed hearth material.

Period 4 pit 10251 (samples 7 and 42) contained a high number of charcoal fragments, including round, mature and twig pieces, but only a few plant remains, including hazelnut shell fragments and dock seeds. These assemblages may be representative of dumped hearth material.

Period 5: Middle to Late Roman 3

A small number of charred plant remains, including indeterminate grain and hazelnut shell fragments, and a high number of charcoal pieces, including round and twig wood fragments, were observed in fill 10130 (sample 3) of cut 10128 of working hollow H. This is reflective of settlement waste.

Fill 10673 (sample 30) of cut 10671 of ditch M contained a moderate number of charred plant remains. These included hulled wheat and barley grain fragments, a spelt wheat spikelet, seeds of elder (*Sambucus nigra*) and blinks (*Montia fontana* subsp. *Chondrosperma*), runch (*Raphanus raphanistrum*) capsules and hawthorn (*Crataegus monogyna*) stone fragments. The large amount of charcoal included mature, round and twig wood fragments. This assemblage may be reflective of a dump of settlement waste material.

Very few charred plant remains and low quantities of charcoal were recovered from fill 10657 (sample 52) of ditch 10656 and fill 10704 (sample 31) of Period 5 enclosure Y, gully 10703. These small assemblages may be representative of wind-blown hearth material.

Period 0: Undated

High numbers of charcoal fragments were retrieved from pits 10088 (sample 1) and 10602 (sample 22), moderate numbers from pits 10446 (sample10), 10528 (sample 17), 10620 (sample 25), 10624 (sample 26) and 10635 (sample 48) and small amounts from pits 10050 (sample 38), 10641 (sample 49) and 10776 (sample 53). The charcoal included mature, round and twig wood fragments. The low levels of charred plant remains included hazelnut shell fragments, hulled wheat grain and glume fragments, barley grain fragments, seeds of knotgrass (*Polygonum aviculare*) black bindweed, oats, brome grass, bedstraw, vetch/wild pea, rye-grass/fescue and ribwort plantain, and buds.

There is no clear indication of the date of these features from these assemblages other than hulled wheat is a typical cereal within Romano-British or earlier assemblages in Southern Britain (Greig 1991).

Potential

There is potential for further work on a selection of the charred plant assemblages to provide some information on the nature of the settlement, the surrounding environment and local crop processing activities, particularly in the Period 4 phase of the site. The weed seed species noted in the assessment are mainly those typical of grassland, field margins and arable environments. There appears to be an indication of a number of different environments in the area being used for growing crops, such as wetter environments as shown by the presence of species such as blinks and sedge and sandier soils as preferred by species such as runch, as well as the drier more calcareous soils favoured by species such as ribwort plantain. There does not appear to have been major crop processing activity taking place in the area and no evidence of the presence cereals was observed in the pollen assessment. There is also some information on the nature of the local landscape provided by the presence of remains of species such as hazel, hawthorn and elder within some of the assemblages.

This information will provide a comparison with other assemblages of the same date in the wider area such as Dunston's Clump (Jones 1987), Barton in Fabis (Wyles 2015), Gamston (Moffett 1992) and various sites along the A46 Newark to Widmerpool improvement scheme (Stevens 2014). It would also contribute data to the environmental resource for the East Midlands area and potentially assist in addressing the wider environmental research aims for the area (Monckton 2012).

There is potential for the analysis of a selection of the charcoal remains to provide some information on the species composition and exploitation and management of the local woodland resource and whether this changed over time.

This information will provide a comparison with other assemblages of the same date in the wider area such as various sites along the A46 Newark to Widmerpool improvement scheme (Barnett 2014). It would also contribute data to the environmental resource for the East Midlands area and potentially assist in addressing the wider environmental research aims for the area (Monckton 2012).

There is no potential for any work on waterlogged or insect remains due to the lack of preservation of this material.

Recommendations

It is proposed that the charred plant remain assemblages from Period 2 pit 10303 (sample 41), Period 4 ditch N section 10726 (sample 46), Period 4 ditch P section 10179 (sample 5), Period 5 ditch M section 10671 (sample 30) and Period 4 ditch O section 10113 (sample 44) are analysed in more detail.

It is proposed that the charcoal assemblages from Period 2 structure G postholes 10484 (sample 13), postholes 10484 (sample 12), 10532 (sample 15) and 10604 (sample 21), Period 3 ditch I section 10576 (sample 24), Period 4 ditch N section 10726 (sample 46) Period 4 pit 10251 (sample 7), Period 4 ditch O section 10113 (sample 4) and Period 5 ditch M section 10671 (sample 30) are analysed in more detail.

No further work is proposed on waterlogged plant or insect remains.

Table 7 Assessment table of the palaeoenvironmental remains.

Feature	Context	Sample	Proces sed vol (L)	Unproc essed vol (L)	Flot size (ml)	Roots	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Charcoal > 4/2mm	Other	Analysis
· oataro	o o mora	- Cap.c	10. (2)	10. (2)	()	70			2 Late Iron Age-Early Romand				0 11.01	
Ditch A									<u> </u>					
10025	10026	2	17	20	5	10	-	-	-	*	Persicaria	*/**	-	
Ditch E	•						l.							
10267	10270	8	17	20	40	5	*	*	Barley + f-t wheat grain frags, f-t wheat rachis frag.	-	-	**/***	1	
10369	10373	9	19	20	10	5	-	-	-	-	-	-/*	-	
10513	10514	28	10	10	15	5	-	-	-	-	-	**/**	-	
10569	10571	29	16	10	10	5	-	-	-	*	Corylus avellana shell	**/**	-	
?Grain [Oryer E													
10305	10306	41	20	0	20	5	*	-	Wheat grain frag	**	Avena, Bromus, Brassica, Rumex. Stem/root frags	**/**	ı	Р
Pit E														
10189	10192	39	18	0	10	10	1	-	-	*	Plantago	**/**	ı	
10109	10191	40	16	0	15	5	1	-	-	-	-	**/**	ı	
Pits G														
10060	10061	32	20	0	25	5	1	-	-	-	-	**/***	ı	
10063	10064	33	10	0	20	5	1	-	-	-	-	**/**	ı	
10484	10485	13	15	0	75	1	-	-	-	-	-	****/****	-	С
10554	10555	34	18	20	5	10	-	-	-	-	-	-/*	-	
Posthole	es G													
10070	10071	35	10	0	5	50	*	-	Barley grain frags	-	-	*/*	ı	
10072	10073	36	4	0	10	10	-	-	•	-	-	*/**	ı	
10480	10481	11	5	0	25	2	-	-	•	*	Galium	*/***	ı	
10482	10483	12	8	10	70	2	-	-	•	*	acorn frags	***/****	ı	С
10529	10530	14	16	10	100	1	*	-	Barley grain frag	-	-	****/****	ı	
10532	10533	15	8	0	175	2	*	-	Hulled wheat grain frag	-	-	***/****	ı	С
10563	10564	18	16	10	40	2	*	-	Indet. grain frags	-	-	**/****	ı	
10586	10587	20	9	0	15	5	-	-	-	*	Brassica	*/***	-	
10604	10606	21	16	0	40	5	-	-	-	*	Vicia/Lathyrus	****/****	-	С
Ditch K														
10096	10098	27	16	20	40	5	**	_	Barley + hulled wheat grain frags	*	Carex	**/***	burnt bone (*)	

			Proces	Unproc	Flot									
	Cambaid	Camania	sed	essed	size	Roots %	Casia	Oh-#	Cereal Notes	Charred Other	Notes for Table	Charcoal >	Other	Analysis
Feature	Context	Sample	vol (L)	vol (L)	(ml)	70	Grain	Chan	Period 3 - Romano-British 1	Other	Notes for Table	4/2mm	Other	<u> </u>
Ditch I									T ellou 5 - Norriano-British T					
10409	10412	23	18	20	110	2	*	_	Indet. grain frags	_		****/****		
10-100	10+12		10	20	110				muet. grain nags		-	,	burnt	
10576	10578	24	20	14	75	2	_	_	_	*	Prunus spinosa	****/****	bone (*)	С
		I	_				ı		Period 4 - Romano-British 2	1	· · · · · · · · · · · · · · · · · · ·		()	
Pit H														
10703	10717	45	8	0	15	5	-	-	-	-	-	**/**	-	
Ditch N		•						•						
10056	10058	43	17	20	20	5	-	-	-	-	-	**/**	-	
10213	10220	6	16	20	5	10	*	-	Wheat grain frag	-	-	*/**	-	
									Hulled wheat, barley + ?f-t wheat grain frags, glume base + spikelet					
10726	10730	46	6	0	100	2	****	***	fork frags inc. spelt.	***	Avena, Bromus, Vicia/Lathyrus	**/**	_	РС
	10732	47	17	20	20	5	-	-	-	*	Avena	**/**	-	
Ditch P		•						•						
10179	10180	5	18	20	60	5	***	-	Barley, hulled wheat + ?f-t wheat grain frags. Some barley in spikelet	**	Avena, Arrhenatherum tubers	**/***	-	Р
Ditch R														
10398	10399	50	15	0	5	30	-	-	-	-	-	-/*	-	
	10404	51	16	0	5	10	*	-	Barley grain frags	*	Corylus avellana shell	*/*	-	
Pit	•	1					ı					, ,		
10251	10253	7	15	0	250	2	-	-	-	*	Corylus avellana frags, Rumex	****/****	-	С
.020.	10253	42	17	20	15	5	-	-	<u> </u>	-	-	**/**	-	
									Period 5 - Romano-British 3					
Pit H	40400		1 4 - 1		70		1 4			*		***/****		
10128	10130	3	17	0	70	2	^	-	Indet. grain frags	_ ^	Corylus avellana frags	***/****	-	
Ditch M							1		Hulled wheat + barley grain frags,		Sambucus, Crataegus monogyna	1		
10671	10673	30	14	20	75	5	**	*	Spelt spikelet (2 grains present)	**	stone, Raphanus capsule, Montia	****/****	_	PС
Ditch O		I.					ı		<u> </u>		, - ,			
	10114	4	15	20	350	2	-	-	-	-	-	****/****	-	С
10113	10116	44	18	0	10	10	**		Hulled wheat grain frags	**	Avena, Bromus, Fallopia, Lolium/Festuca, tuber frags	*/**		Р
Ditch														
10656	10657	52	16	20	5	10	-	-	-	-	-	*/*	-	

			Proces	Unproc	Flot									
			sed	essed	size	Roots		O. "	0 1111	Charred	N. (T.)	Charcoal >	011	Analysis
Feature	Context	Sample	vol (L)	vol (L)	(ml)	%	Grain	Chaff	Cereal Notes	Other	Notes for Table	4/2mm	Other	<u> </u>
Gully														
10703	10704	31	18	20	15	5	*	-	Indet. grain frags	-	-	*/**	-	
	Period 0 - Undated													
Pits														
10050	10051	37	7	0	2	50	ı	-	-	-	-	-	ı	
10030	10052	38	8	0	10	5	ı	-	-	*	Corylus avellana shell	*/**	ı	
10088	10089	1	20	0	750	1	ı	-	-	*	Polygonum	*****/****	ı	
10446	10447	10	7	0	170	2	-	-	-	*	Corylus avellana frags	***/****	-	
10528	10527	17	5	0	80	2	-	-	-	-	-	**/***	-	
10602	10603	22	10	0	135	2	*	-	Indet. grain frags	*	Fallopia	****/****	-	
10620	10621	25	8	0	25	5	-	_	-	-	-	***/***	Moll-t (*)	
10624	10625	26	7	0	40	5	-	-	-	-	-	***/***	-	
10635	10636	48	14	0	50	5	**	*	Hulled wheat + barley grain frags, glume base frags	**	Avena, Bromus, Galium, bud	**/***	-	
10641	1067	49	14	0	60	5	*	*	Barley grain frags, glume base frags	*	Vicia/Lathyrus, Lolium/Festuca, Plantago	**/**	ı	
10776	10777	53	16	20	5	10	-	-	-	*	Corylus avellana shell, stem frags	*/**	-	

Key: * = 1–4 items; ** = 5–19 items; *** = 20–49 items; **** = 50–99 items; ***** > 100 items, P = plants, C = charcoal

Table 8 Assessment table of the waterlogged remains.

Period		3
Feature		Ditch I
Cut		10576
Context		10578
Sample		24
Sample Type		waterlogged
Processed vol (L)		1
Waterlogged Remains		-
Insect Remains		-
Charred Remains		
Charcoal > 2mm		**
Corylus avellana	hazelnut shell fragments	*

Key: * = 1–4 items; ** = 5–19 items; ***= 20–49 items; ****= 50–99 items; *****= >100 items

APPENDIX 9: POLLEN BY MICHAEL GRANT

Introduction

A pollen assessment was undertaken on sediment samples derived from two monoliths, <16> and <19>, taken from two of the enclosure ditches (Period 2 ditch E, and Period 3 ditch I respectively). A single sample from ditch E, associated with cut [10536], was derived from context (10538) and is associated with Period 2 at the site (Late Iron Age to Early Romano-British period). Four samples were taken from Ditch I: three associated with the basal fills within cut [10576] (contexts 10577, 10578 and 10579) and the fourth sample from an overlying secondary cut [10576] (context 10581), all of which is associated with Period 3 (Middle to Late Roman).

Assessment aims

The assessment has been undertaken with the following aims:

- 1. Ascertain whether pollen is preserved within the sediment fills of Ditches E and I;
- 2. Characterise the local vegetation inferred from the pollen evidence, and any changes in the local vegetation between the different contexts samples; and
- 3. Identify the archaeological potential of these samples to provide environmental data for the Romano-British period for a site that is not associated with a river valley or nucleated settlement.

Methodology

For the pollen assessment, standard preparation procedures were used (Moore *et al.* 1991). A total of two samples were selected for preparation. 2cm³ of sediment was processed from each sample. To each sample a *Lycopodium* spike was added (two tablets from batch 3862) to allow the calculation of pollen concentrations (Stockmarr 1971). All samples received the following treatment: 20 mls of 10% KOH (80°C for 30 minutes); 20mls of 60% HF (80°C for 120 minutes); 15 mls of acetolysis mix (80°C for 3 minutes); stained in 0.2% aqueous solution of safranin and mounted in silicone oil following dehydration with tert-butyl alcohol. Due to the highly minerogenic nature of these samples additional sieving and decanting was undertaken between the KOH and HF stages.

Table 9: List of pollen samples assessed.

Sample Number	Sample Number	Context Number	
Pol_1	<16>	(10538)	
Pol_2	<19>	(10577)	
Pol_3	<19>	(10578)	
Pol_4	<19>	(10579)	
Pol_5	<19>	(10581)	

Pollen counting was undertaken at a magnification of x400 using a Nikon SE transmitted light microscope. Determinable pollen and spore types were identified to the lowest possible taxonomic level with the aid of a reference collection kept at COARS, University of Southampton. The pollen and spore types used are those defined by Bennett (1994; Bennett *et al.* 1994), with the exception of Poaceae which follow the classification given by Küster (1988), with plant nomenclature ordered according to Stace (2010). The pollen assemblage has

been calculated as %TLP. The TLP sum excludes aquatics and pteridophyes, which are calculated as % + Group. A total land pollen (TLP) sum of 100 grains was achieved in all samples assessed. Results are plotted in Figure 1, using Tilia v 1.7.16 (Grimm 1991).

Results

Pollen assessment

Good pollen preservation was encountered in all five samples derived from the two monolith samples.

Ditch E represents a Period 2 boundary ditch, with context (10538) representing the basal fill. The pollen assessment produced a restricted assemblage dominated by *Cichorium intybus*-type (chicory and dandelions) and Poaceae (grasses) with occurrences of *Ranunculus acris*-type (buttercups), *Stellaria holostea* (greater stitchwort), *Cerastium-type* (mouse-ears), *Plantago lanceolata* (ribwort plantain), *Cirsium-type* (thistles) and *Solidago virgaurea*-type (goldenrods and daisies). No tree or shrub pollen was encountered. This indicates an open grassland environment, with *Stellaria holostea* (greater stitchwort) possibly indicating grassy banks, and local grazing / trampling suggested by the strong presence of *C. intybus*-type along with *P. lanceolata*. *Ranunculus acris*-type and *Cerastium*-type may be associated with damp vegetation within the ditch itself. The good pollen preservation suggests that the high abundance of *C. intybus*-type is probably not the result of differential pollen preservation. There was no evidence for local arable activity in the form of Cereal pollen. Pollen concentration is 12450 grains cm⁻³.

Ditch I is associated with the activity associated with the Middle to Late Roman period, when remodelling of the trackways and enclosures on the site took place. Ditch I is a large east-west aligned ditch which formed a barrier between the northern and southern halves of the site. The pollen sequence assemblage contains a similar dominance of Cichorium intybus-type and Poaceae as found in Ditch E. However there is a greater diversity in pollen types present, including a range of woodland taxa. Within the basal context (10577) woodland taxa account for c. 13% of the TLP assemblage, which is lower in the overlying contexts. Quercus (oak) and Fraxinus excelsior (ash) are the most common of these woodland taxa, though they only account for a small component of the pollen assemblage and therefore suggest no local presence of woodland taxa with the pollen derived from a wider (extra-local to regional) source. A low presence of Calluna vulgaris (heather) throughout the sequence suggests some heathland within the wider area. A consistent presence of Pteridium aquilinum (bracken) could also be associated with these areas of heathland, or associated with areas of pasture, coupled with Plantago lanceolata and C. intybus-type. The presence of Centaurea nigra (common knapweed) and Polygonum (buckwheat family) may also be associated with areas of pasture, meadows or field borders. Taxa such as Rubus-type (brambles) and Silene vulgaris-type (bladder champion) are also likely to be associated with field boundaries / woodland edge, and could be associated with trees such as Acer campestre (field maple) and Sorbus-type (including whitebeam, rowan and blackthorn) along field boundaries. Filipendula (meadowsweet) and Cyperaceae (sedges) may be associated with the ditch itself and areas of standing water. There was no evidence for local arable activity in the form of Cereal pollen. Pollen concentrations are highest in the basal fills of cut [10576] (context (10577: 6770 grains cm⁻³) and [10580] (context 10581: 4090 grains cm⁻³).

Recommendations

Good pollen preservation was found in the sediment derived from Ditch E and I. Both ditches demonstrate an open grassland-dominated environment probably used for pasture and grazing. Areas of taller vegetation, either

as meadows or field boundaries, are also recorded associated with the Period 3 ditch. Woodland is absent / unrecorded in the Phase 2 Ditch E sample, but is recorded in the wider area, along with probable heathland, throughout the Period 3 Ditch I fill. There is no evidence of standing water within the ditches inferred by aquatic pollen types, though there is evidence within Ditch E for damp conditions and the presence of meadowsweet and sedges within the ditch itself.

The comparison of the two ditch fills, from different phases of occupation at the site, indicate broad continuity in land use and vegetation cover at the site between the Late Iron Age and Middle to Late Romano-British period, although there is possible evidence in the latter for more formal field boundaries being present.

The pollen evidence from this assessment is of regional importance due to the paucity of environmental data for the Romano-British period in areas away from the river valleys and nucleated settlements, which Taylor (2006: 14-15) states is a high priority. Taylor states that while there is currently a good level of available information for the study of the structural development of Roman rural landscapes over significant parts of the region, such as the broad layout and extent of field systems and settlement forms for the Iron Age and Roman periods, there is very little environmental information to inform any understanding of the dynamics of agricultural land use in during this period. As such there is a real need to extend palaeoenvironmental studies, where sites with good preservation exist, to identify changing agricultural practice during this period and develop a balanced and extensive understanding of how landscapes in the region developed.

This pollen assessment has demonstrated the potential of the ditch fills at Gateford to make a contribution to the key research areas outlined in the *Research Agenda for the Roman Period in the East Midlands*. It is recommended that full pollen analysis (extended counting to 400 TLP) of the sediment fills from ditches E and I should be undertaken. No further samples are required from monolith <19> (Ditch I) but two additional samples should be taken from monolith <16> (Ditch E).

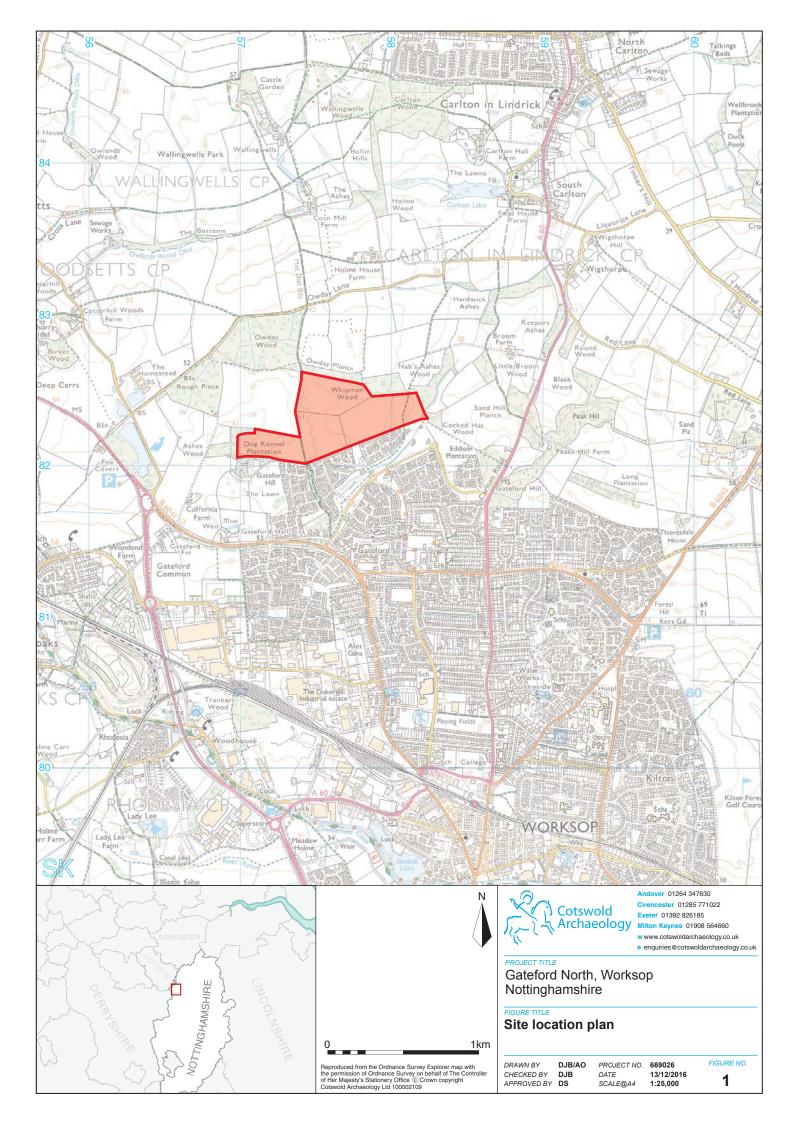
APPENDIX 10: OASIS REPORT FORM

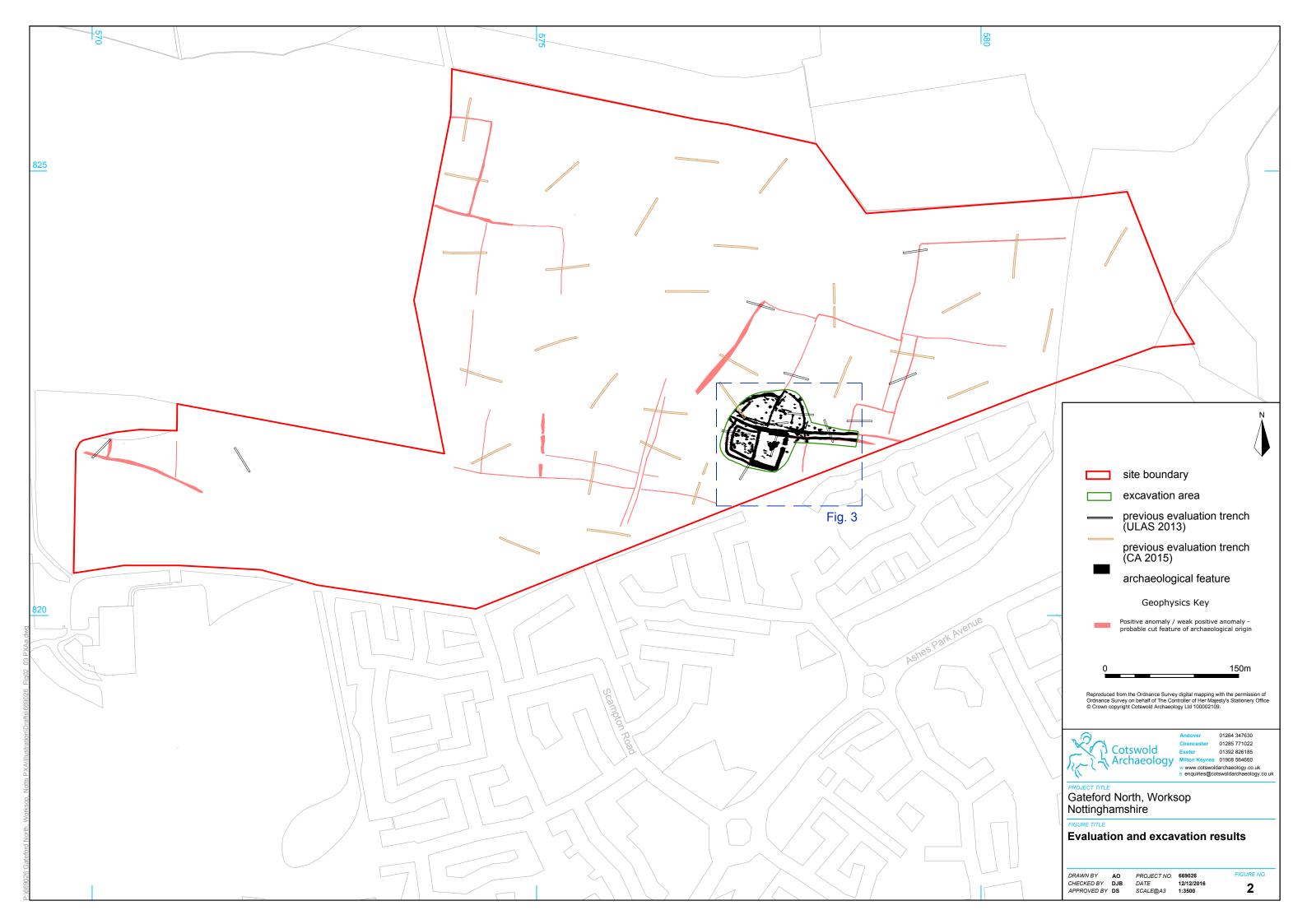
PROJECT DETAILS				
Project Name	Gateford North, Worksop, Nottinghamshire			
Short description	A programme of archaeological investigation was undertaken by Cotswold Archaeology in April and May 2016 at the request of WSP Parsons Brinckerhoff (on behalf of Lands Improvement Holdings Ltd) at land north of Gateford, Worksop, Nottinghamshire. An area of 1 ha was excavated across the development area. Excavations revealed a sequence of Late Iron Age to Late Roman enclosures, which were situated within a system of contemporary 'brickwork' fields encountered during trial trenching (CA 2016b). The site appears to have been first occupied during the Late Iron Age to Early Roman Period, with a group of heavily truncated ditches possibly indicating a settlement very similar to the one present during later stages of the sequence.			

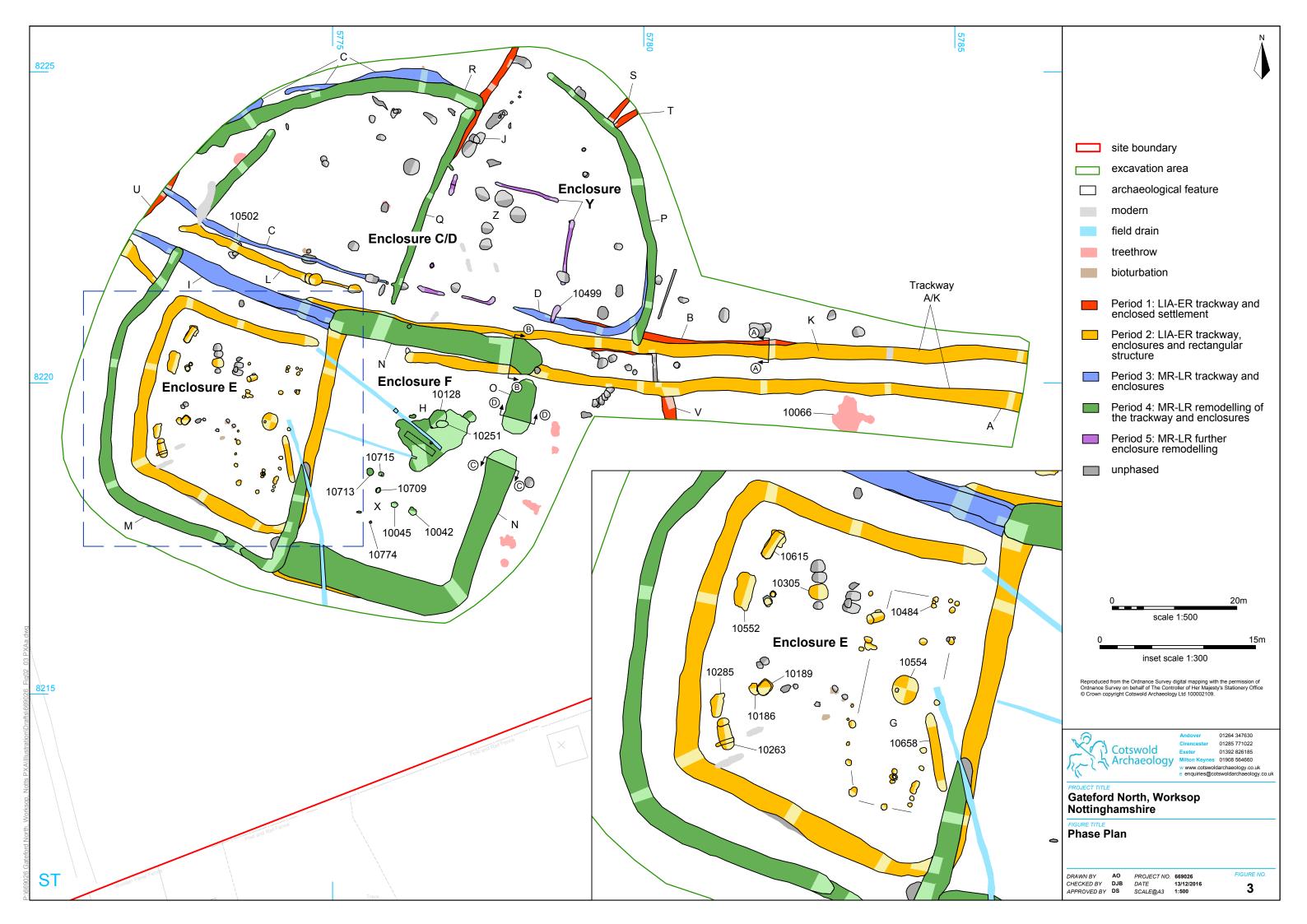
	trackway ditches defining access to enclosures. Within the eastern enclosures was constructed at some point during the AD. Extensive re-modelling representing phases during the 2nd to 4th centuries additional two enclosures to the north, a original 1st to 2nd century AD enclosure. This document presents a quantification evidence recovered from the excavation collectively in its local, regional and nation an updated project design for a progression.	A second phase of LIA-ER activity consisted of two parallel trackway ditches defining access to a pair of sub-square enclosures. Within the eastern enclosure a rectangular structure was constructed at some point during the mid-1st early 2nd century AD. Extensive re-modelling representing three more stratigraphic phases during the 2nd to 4th centuries AD saw the addition of an additional two enclosures to the north, and the enlargement of the original 1st to 2nd century AD enclosures. This document presents a quantification and assessment of the evidence recovered from the excavation. It considers the evidence collectively in its local, regional and national context, and presents an updated project design for a programme of post-excavation analysis to bring the results to appropriate publication.		
Desired dates	Accil May 2040			
Project type	April – May 2016 Excavation			
Project type	Excavation			
Previous work	Field Evaluation (CA 2016) Field Evaluation (ULAS 2013) Field Walking (ULAS 2013)			
Future work	None			
PROJECT LOCATION				
Site Location	Land at Gateford North, Worksop, Nottinghamshire			
Study area (M²/ha)	1ha	1ha		
Site co-ordinates	SK 5767 8232	SK 5767 8232		
PROJECT CREATORS				
Name of organisation	Cotswold Archaeology	Cotswold Archaeology		
Project Brief originator	Nottinghamshire County Council			
Project Design (WSI) originator	Cotswold Archaeology			
Project Manager	Simon Carlyle	Simon Carlyle		
Project Supervisor	Jake Streatfeild-James			
MONUMENT TYPE	ENCLOSURE			
SIGNIFICANT FINDS	TRUMPET BROOCH; VESSEL GLASS			
PROJECT ARCHIVES	Intended final location of archive (museum/Accession no.)	Content (e.g. pottery, animal bone etc)		
Physical	Bassetlaw Museum/TBC	Ceramics, worked flint, worked stone, glass, metalwork, fired clay, ceramic building materials, industrial waste, environmental residues		
Paper	Bassetlaw Museum/TBC	Context registers, context sheets, drawing		

		registers, sections, artefact sample sample photographic matrices	plans, registered registers, registers, sheets, registers,
Digital	Archaeology Data Service/TBC	Database, digital photos, digital matrix	
BIBLIOGRAPHY			

CA (Cotswold Archaeology) 2016 *Gateford North, Worksop, Nottinghamshire: Archaeological Evaluation.* CA typescript report **16464**









View of Site Looking East 4



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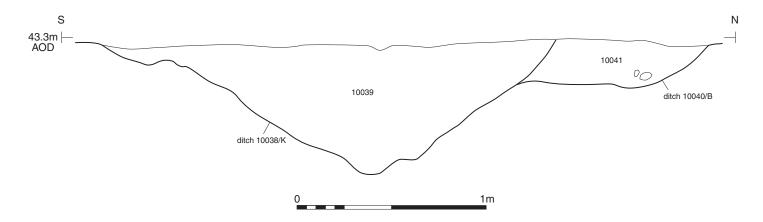
FIGURE TITLE Photograph

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APPROVED BY DS PROJECT NO. 669026

DATE 12/12/2016

SCALE@A4 N/A FIGURE NO. 4

Section AA

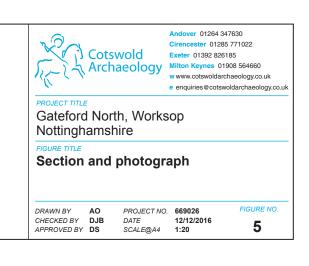


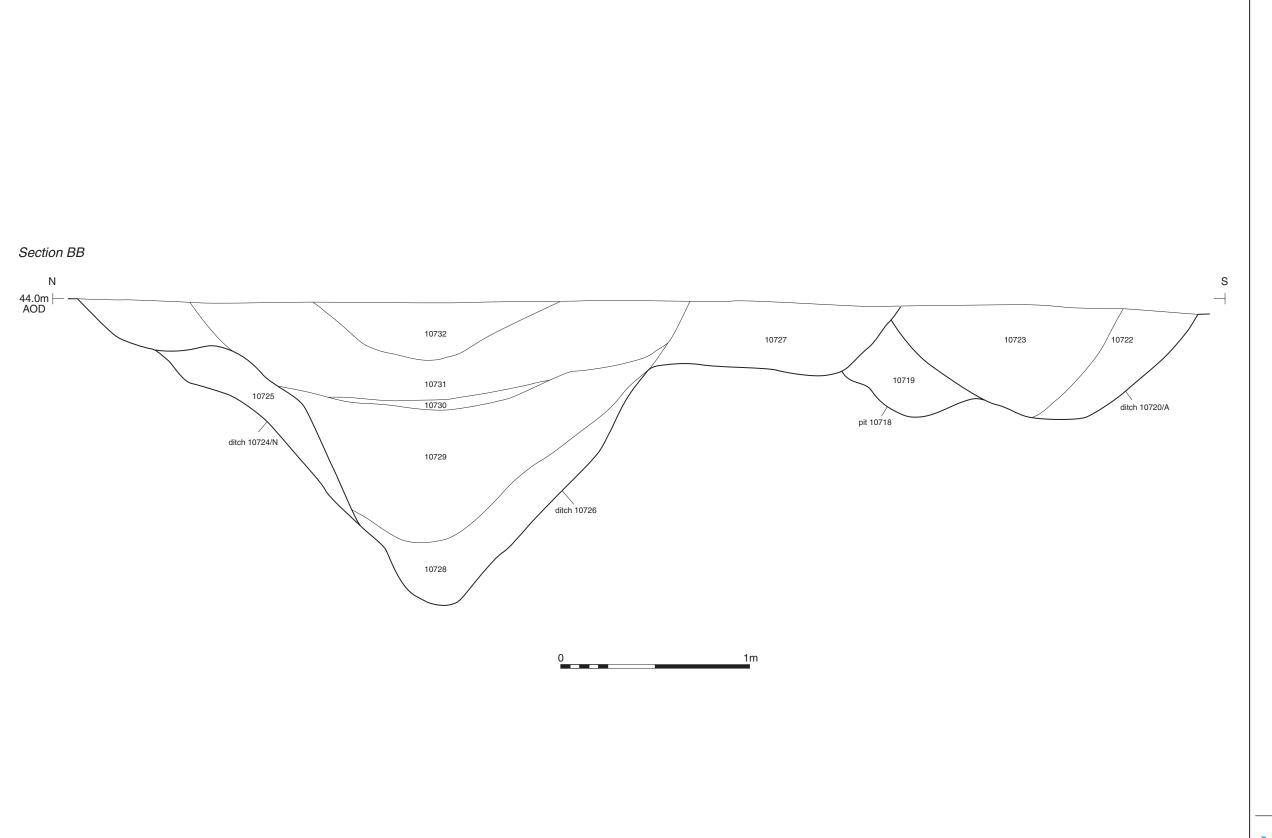


Structure 'G' looking north

East Facing Section through Period 2 (LIA-ER) Ditch K & Period 1 (LIA-ER) Ditch B (1:20)

Photograph of Period 2 (LIA-ER) Structure 'G' looking North







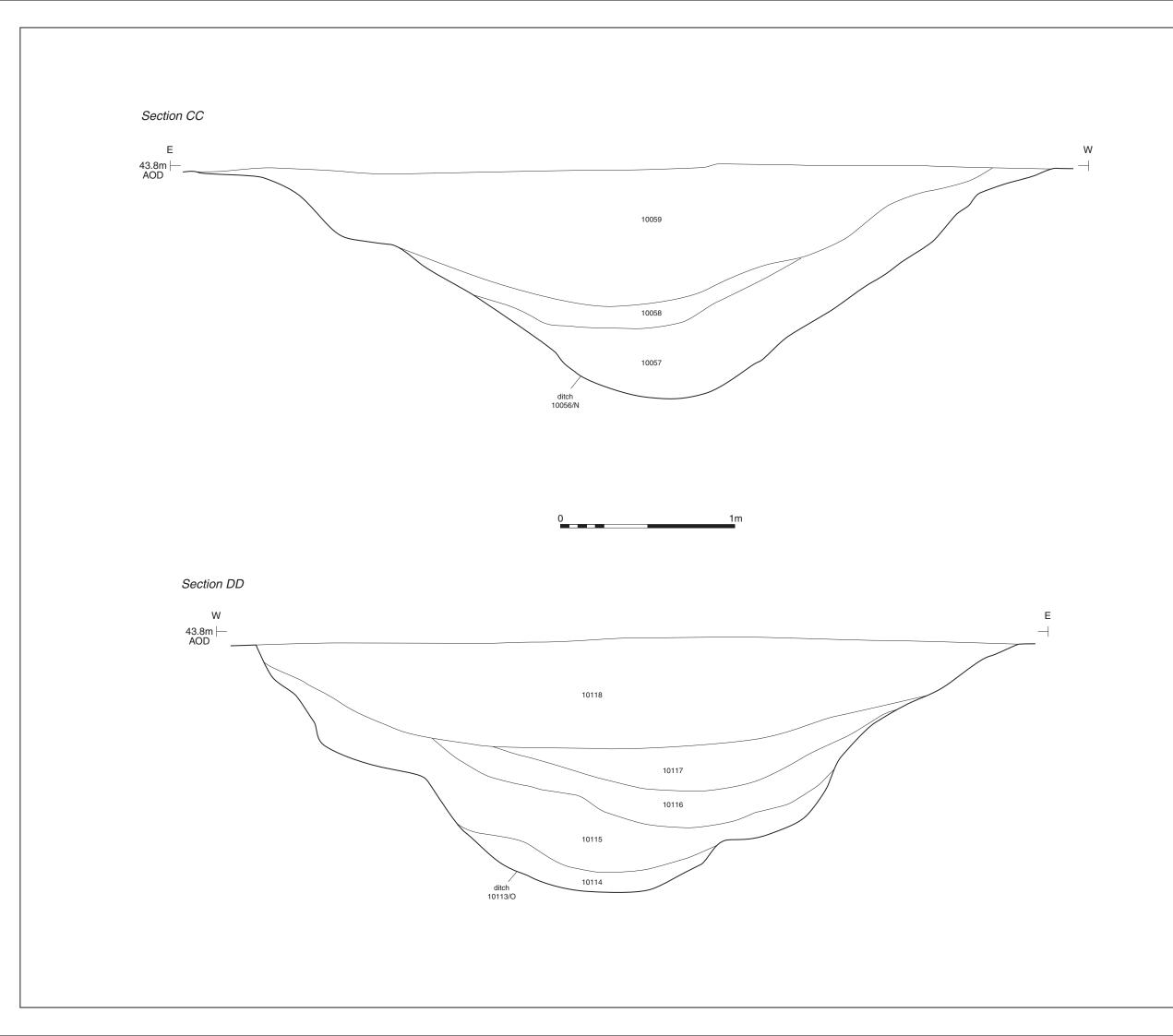
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West Facing Section through Period 2 (LIA-ER) Ditch A & Period 4 (MR-LR) Ditch N (1:20)

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FIGURE NO. 6





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Gateford North, Worksop Nottinghamshire

North Facing Section through Period 4 (MR-LR 2) Ditch N and South Facing Section through Period 4 (MR-LR 2) Ditch O (1:20)

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