Final Report on an Archaeological Strip, Plan and Record Excavation at Aston Hall Hospital, Aston-on-Trent, Derbyshire.

Aston Hall Hospital Site, Area A mid-excavation looking west

For CGMS Ltd

Prepared by P. Flintoft

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Trent & Peak ARCHAEOLOGY

Trent & Peak Archaeology is the Nottingham office of the York Archaeological Trust, a significant charity with annual turnover of over £7million. Trent & Peak Archaeology (TPA) was founded in Nottingham in 1967 and became part of YAT in 2011, formalising links that have existed between the

two organisations for over 30 years. YAT's **Archaeology and Heritage** division undertakes a wide range of urban and rural archaeological consultancies, surveys, evaluations, assessments and excavations for commercial, academic and charitable clients. It can manage projects, provide professional advice and monitor archaeological works to ensure high quality, cost effective archaeology. Its staff have a considerable depth and variety of professional experience and an international reputation for research, development and maximising the public, educational and commercial benefits of archaeology. TPA and the Trust, through its offices in Glasgow, York, Sheffield and Nottingham, offer services throughout Britain and internationally.

York Archaeological Trust's **Attractions and Events** division runs major archaeological tourist attractions including the world-famous *Jorvik Viking Centre* and several large archaeological events including the *Jorvik Viking Festival* and *Yorkshire Medieval Festival*. This unique partnership bridges the gap between archaeological discovery and research, and public participation, educational outreach and inspiring presentation.

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SUMMARY

- Following the identification of multi period occupation during an archaeological evaluation (Davies, G. 2014), Trent & Peak Archaeology were commissioned by CGMS UK Ltd, to carry out a strip and record excavation. The excavation comprised 3 areas. The westernmost of these, Area A, the centrally located Area C and Area D towards the east of the proposed development area. The entirety of the striped areas covered approximately 1.9 hectares. The work was undertaken in advance of a proposed housing and private hospital at the now derelict Aston Hall Hospital, Aston on Trent, Derbyshire centred on NGR SK 41692 29248.

- The work was carried out between the 18th August and 3rd September 2014 in accordance with the approved Written Scheme of Investigation for Excavation by CgMs Ltd (Shepherd, N. 2014) and the approved TPA Risk Assessment and Methods Statement (Davies, G. 2014a). Monitoring was provided by the Development Control Archaeologist at Derbyshire County Council.

- Two separate phase of evaluation identified ditches, post holes and pits in association with Neolithic pottery and a small number of features which were undated. Their location, morphology and fills suggested they might be of Prehistoric date. It was deemed likely that these undated features were part of a wider and well investigated prehistoric landscape, evidenced by cropmarks immediately to the south (HER 27706) and 170m to the west (HER 16601, 27710) of the site including a scheduled cursus, henge and barrows.

- The formal excavation at Aston Hall Hospital has successfully identified a moderate density of archaeological features that, in general, can be attributed to a prehistoric date. Where dating evidence is present, archaeological features appear to be mostly Middle to Late Iron Age in date, with a small number of Bronze Age and Neolithic features and a single potentially Mesolithic pit.

- An investment in the site appears to be broadly continuous with few interruptions from the Late Mesolithic or Early Neolithic to the Later Iron Age. Neolithic and Bronze Age activity can be characterised by the digging of pits, and although they are believed to have been associated with settlement but no actual remains of domestic structures were identified. The apparent density in occupation increases greatly in the Iron Age with the establishment of a field system and elaborate boundary in the form of large pit alignment.

Assessment Report on an Archaeological Strip, Plan and Record Excavation at Aston Hall Hospital, Aston-on-Trent, Derbyshire.

Prepared by P. Flintoft & G. Davis

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1. INTRODUCTION

1.1. Following the positive identification of prehistoric and undated features of potential archaeological interest (Davies, G. 2014), at Aston Hall Hospital, Aston-On-Trent, Derbyshire, Trent & Peak Archaeology were commissioned by CgMs, on behalf of Richmond Care

Villages, to carry out a strip and record excavation. The excavation comprised 3 areas (Area A to the east, Area C to the west and Area D to the north) a total of 1.9 hectares in size. The work was undertaken in advance of the proposed redevelopment of the Aston Hall Hospital site, centred on NGR SK 41692 29248.

1.2. The development, hereafter 'the Site', is located 300m south of the historic core of Aston-On-Trent village in South Derbyshire. The former Hospital complex forms a southern boundary to a modern southern extension of the settlement lying on the east of Weston Road. The site, c.5.1 hectares in size, comprises a mixture of former hospital buildings, associated metalled car parking/ access routes and areas of rough grass and mature trees. The archaeological works are secured as a condition of planning consent (planning reference 9/2010/1022/MAF) stating that:

> *Condition 22.(A) No development shall take place until a Written Scheme of Investigation for archaeological work has been submitted to and approved by the local planning authority in writing.*

2. PROJECT BACKGROUND

2.1. Prior to submission of planning application (9/2010/1022/MAF), a Heritage Statement (HS) for the development was prepared by CgMs (Shepherd, N. 2014) on behalf of Richmond Care Villages Holdings Ltd. The HS suggested that trench evaluation in the area of the hospital buildings (to test whether prehistoric remains survived north of the playing fields) and, potentially, pre-construction excavation to record any prehistoric remains that would be impacted by construction phase groundworks might be required at the site.

2.2. Following the submission of this document, the Development Control Archaeologist for Derbyshire County Council (DCC) advised South Derbyshire LPA, in accordance with the National Planning Policy Framework (NPPF) Paragraph 128, that as the site had potential to include heritage assets with archaeological interest that a field evaluation that described that potential significance would be required in support of the application.

2.3. Subsequently a trial trench evaluation was undertaken. The 2014 evaluation trenching (Davies, G. 2014) was focussed around the extant former Hospital Buildings in the northern part of the application. This was because an earlier trial trench evaluation (undertaken under as part of a former planning application), within the southern part of the application area had already previously revealed buried prehistoric remains comprising ditches, post holes and pits in association with Neolithic pottery (Hurford, M. 2006), successfully evaluating this part of the site.

2.4. The 2014 evaluation by Trent and Peak Archaeology (TPA) (Davies, G. 2014) focussed on the central and northern part of the site, around the standing buildings. The trenches were largely empty of archaeological remains although a small number of features were recorded close to the limits of the playing fields. Although these were undated, their location, morphology and fills suggested they might be of Prehistoric date. It was deemed likely that these undated features were part of a wider and well investigated prehistoric landscape, evidenced by cropmarks immediately to the south (HER 27706) and 170m to the west (HER 16601, 27710) of the site including a scheduled cursus, henge and barrows.

2.5. Following the results of two phases of evaluation (2006 and 2014) which together indicated archaeological remains are of local/regional significance (based on rarity of such prehistoric remains, as defined in the East Midlands Heritage Updated Research Agenda and Strategy (Knight, Vyner and Allen, 2012) concentrated within the southern side of the site, an area for 'Strip, Map and Sample' investigation was agreed between CgMs and the Development Control Archaeologist for Derbyshire County Council (DCC). The methodology for the 'Strip, Map and Sample' investigation was secured by the approval of a Written Scheme of Investigation (WSI) (Shepherd, N. 2014a).

2.6. Based on the results of the evaluations, and the development proposal, three areas for investigation were undertaken (See Figure 2):

Area A (0.6ha); located in the south west in an area of residential development and focussed on five trenches containing archaeological remains.

Area C (1.2ha); located in the south central part of the site and focussed on 5 trenches in an area of residential development containing archaeological remains. This area covers the location of four trenches that did not contain archaeological remains and so there may be parts of this area where remains are widely dispersed or are not present.

Area D (0.1ha); located in the east and focussed on a single trench in an area of access road, which contained two undated pit type features.

2.7. An area of parkland landscaping located in between Areas A and C (designated Area B) was excluded from investigation.

2.8. This report is a final analysis report which focuses on the complete investigations with areas A, C and D and incorporates final specialist reports and comments. The report details research questions and topics which were highlighted in the Updated Project Design which was included as part of the Assessment Report (Flintoft, P & Davis, G. 2014).

3. SITE TOPOGRAPHY AND GEOLOGY

3.1. The site consisted of a roughly five sided polygon parcel of land, bounded to the north and east by Maple Drive/modern housing stock and to the south and west by grassed fields that run southwards towards the line of the Trent & Mersey canal and the floodplain of the River Trent. At the time of the archaeolgical investigation the site comprised a mixture of former hospital buildings, associated metalled car parking/ access routes and areas of rough grass and mature trees.

3.2. The 1: 50,000 British Geological Mapping shows that site is situated on the border between bedrock geology of Edwalton Member mudstone (a Sedimentary Bedrock formed approximately 217 to 229 million years ago in the Triassic Period). Immediately to the north lies an outcrop Arden Formation sandstone (a Sedimentary Bedrock formed approximately

217 to 229 million years) (http://mapapps.bgs.ac.uk/geologyofbritain/home.html). Overlying these bedrocks are superficial deposits of Beeston Member Sands and Gravels. These depsits were formed in the Quaternary period (up to 3 million years ago) in local environments previously dominated by rivers.

3.3. Topographically, much of the site is realtively flat (c.41m AoD), forming a low elevated plateu north of the River Trent floodplain. At the southeast extent of the site the topography drops away towards the floodplain to a minimum height of c.35m AoD. In many places the natural topography is obscured by modern buildings.

4. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

4.1. The application area is situated within an archaeologically important landscape with a particular emphasis on prehistoric settlement and land use. Approximately 200m east of the site lie the cropmarks of the Aston-On-Trent cursus and other air photographic cropmarks (DHER27710). A cursus comprises a pair of large parallel linear banks/ditches attributed to the Neolithic period and interpreted as a monumental ritual feature. The Aston-On-Trent cursus, now partially quarried away, is a Scheduled Monument. In places, the Aston cursus is certainly overlain by a landscape of later prehistoric (Iron Age) fields and enclosures. Approximately 200m south of the application area further cropmark enclosures and early field boundaries (some in the form of pit alignments, an early boundary form) are visible and have been confirmed as Iron Age through partial excavation (DHER27706, Hurford 2006, 2). Within the southern part of the application area, trial trench evaluation has already revealed buried prehistoric remains comprising ditches (including a possible ring ditch), post holes and pits in association with Neolithic pottery (Hurford, M. 2006).

4.2. South of the application area the later prehistoric cropmarks (DHER27706) are overlain by medieval/post-medieval ridge and furrow cropmarks (DHER27224). This suggests that much of the development area was reserved as agricultural land at this time, with the historic cores of Weston and Aston some distance away.

4.3. During the late eighteenth century Aston Hall was built and the application area lies within its estate and grounds. Towards the south of the application area was an ice house (DHER16604) which was probaly constructed to serve Aston Hall in the nineteenth century.

5. METHODOLOGY

5.1. All work was carried out in accordance with the requirements and standards set out in *Management of Research Projects in the Historic Environment Project Planning Note 3: Archaeological Excavation* (MoRPHE PPN3) (English Heritage 2008), and the requirements and standards set by the Institute for Archaeologists (IfA) in their *Standard and Guidance for archaeological field excavation* (IfA 1994; revised 2008) *Standard and Guidance for the collection, documentation, conservation and research of archaeological material* (IfA 2001; Revised 2008); *Code of Conduct* (IfA 1985; revised to 2008) and *Standard and Guidance for the creation, compilation, transfer and deposition of archaeological archives (*IfA, 2009).

5.2. General and Specific Aims

The field investigation initially sought to characterise activity at the site (Stage 1, Phase 1). Following review and DCC monitoring, targeted sample excavation (Stage 1, Phase 2) then aimed to address both the broad research questions detailed below, and any detailed, specific research questions that arose out of the characterisation phase.

5.3. The overall aim of the project can be summarised as follows:

- to carry out appropriate archaeological investigation sufficient to discharge the conditions attached to the planning consent;

- to carry out investigation proportionate to the significance of the remains, and mitigate the impact of the development on these heritage assets.

- address relevant local, regional and national research themes;

5.4. Based on the evaluation results, there was evidence for ditches, pits and post-holes, some of which were of prehistoric date. This suggested farming and settlement activity.

5.5. Specifically, then, the field investigation also sought, where appropriate, to:

- locate and determine the nature of any prehistoric period activity on the site (particularly in respect of enclosure systems, pit groups and possible structural remains);

- understand the sequence and date of human activity on the site

- understand the relationship of the activity on the site to the known wider Neolithic landscape, and in particular the ceremonial features such as the Aston cursus (Gibson and Loveday 1989).

5.6. The field investigation may provide an opportunity to allow us to address a number of research questions as identified in the recent East Midlands Heritage Updated Research Agenda and Strategy (Knight, Vyner and Allen, 2012). Potential research questions might include:

Neolithic and Early to Middle Bronze Age (c.4000 – c.1150 cal BC)

● *3.1 Dating:*

3. Can we further refine artefact chronologies within this region?

● *3.3 Introduction, character and development of agriculture:*

4. When did the first field boundary systems develop, how did this vary regionally and what processes may underlie their development?

● *3.4 Exploitation of different landscape zones:*

3.5. Can we further refine our knowledge of the selective use of particular landscapes for ritual, agriculture and other activities?

● *3.5 Exploitation of different landscape zones:*
3. How might settlement morphology and functions have varied regionally and over time, and in particular when, where and why may the first enclosed settlements have developed?

● *3.6 Ceremonial and burial monuments:*

2. Why were some monuments types, such as causewayed enclosures, long cairns and henges, constructed in some areas but not others?

Late Bronze Age and Iron Age (c.1150 cal BC – AD 43)

● *4.3 LBA-EIA settlements:*

2. What can we deduce about the morphology, spatial extent and functions of settlements, and in particular the processes underlying the development in some areas of enclosed occupation or activity foci?

● 4.6 Field systems and major linear boundaries:

2. What were the economic, social or political roles of the pit alignments and linear ditch systems that characterised many areas of the East Midlands?

● 4.9 Finds, craft, industry and exchange:

1. How can we add to our existing knowledge of industries and crafts in this region?

Surveying and setting out

5.7. Excavation areas were set out, surveyed as excavated and tied in to the Ordnance Survey (OS) National Grid and Ordnance datum, using a GPS, Leica CS15/GS15 RTK Differential GNSS. TPA holds full co-ordinate data which can be supplied as DXF/DWG files if necessary

Mechanical excavation

5.8. Topsoil and subsoil was removed using a 360º mechanical excavator fitted with a toothless ditching bucket. All such mechanical excavation was undertaken under the direct and continuous supervision of Trent & Peak Archaeology staff. Mechanical excavation ceased at the first archaeologically significant horizon or when the absence of any such horizon was adequately demonstrated. Topsoil and subsoil was segregated in separate spoil heaps. Spoil from the excavation of archaeological features was stored on the subsoil heap. After the completion of archaeological excavation the material was replaced in reverse order of removal and the soil was graded to a smooth, even profile, free from local mounds and depressions.

5.9. The location of any artefacts recovered in the topsoil/subsoil was recorded three-dimensionally, and metal detecting of freshly machined areas and topsoil was regularly undertaken.

Hand Excavation

5.10. All fieldwork was carried out in accordance with the code of conduct of The Institute for Archaeologists. The depth and complexity of archaeological features and deposits across the whole site was evaluated by hand excavation. At least one long section of each trench was recorded by scale drawing. Hand excavation was undertaken in compliance with the WSI to a level sufficient to characterise all key features and provide opportunities for the recovery of dateable finds and palaeoenvironmental material

5.11. Excavation firstly aimed to establish and record the extent of the archaeological remains exposed following the soil stripping, with a resulting detailed ground plan produced by GPS/Total Station survey. Features then prioritised for excavation were those best preserved, or those where there may have been potential to recover structural remains, palaeo-environmental or industrial evidence.

5.12. Targeted hand excavation aimed to assess the date, form, function and interrelationships of archaeological features on the site. In particular, assessing the structural development of the archaeological components on site and establishing the function of archaeological activity were important research goals detailed within the approved WSI.

5.13. To date the various features identified, sections through cut features were excavated in order to retrieve datable artefacts and environmental samples. Artefacts were either recorded three dimensionally in order to distinguish between feature fills or by spit/context where substantial quantities were encountered. All pits and other discrete features were 50% excavated (but a 100% sample was taken if significant assemblages were present) whilst a 10% sample of linear features was obtained.

Recording

5.14. All excavated contexts were fully recorded on TPA written context records giving details of location, composition, shape, dimensions, relationships, finds, samples, cross-references to other elements of the record and other relevant contexts, etc.

5.15. All features were recorded on at least one plan (normally at 1:20 scale) and at least one section drawing (normally at 1:10 scale). A complete post-excavation plan and long section of each trench was prepared. All drawings included co-ordinate data and spot-heights related

to the Ordnance Survey Datum and accurate to two decimal places. The level of recording increased relative to the presence of features of archaeological significance.

5.16. All excavated features and deposits shall were recorded photographically using both colour and black and white negative film, in a 35mm or medium format. Additional illustrative photographs were taken using digital photography (four Megapixels). All black and white record photographs were taken using silver based film only, being suitable for long-term storage (Brown. D. H. 2007).

5.17. All finds were recorded by context; and individually significant finds were also individually labelled with a TPA three-letter code (e.g. AAA) and recorded three-dimensionally. All artefacts recovered were retained and removed from site for conservation (if necessary) and specialist examination/analysis (see Section 6). All recording, cleaning, storage and conservation of finds has been carried-out in accordance with the Institute for Archaeologist's *Standard and Guidance for the collection, documentation, conservation and research of archaeological materials* (2001, revised 2008).

Palaeoenvironmental Sampling

5.18. All environmental archaeology was undertaken in accordance with the principles set out in *Environmental Archaeology: a guide to the theory and practice of methods, from sampling and recovery to post-excavation* (English Heritage 2011) and with reference to the Association for Environmental Archaeology's Working Paper No. 2, *Environmental Archaeology and Archaeological Evaluation* (1995).

5.19. Soil samples comprising at least 40 litres per context or 100% of smaller contexts were taken for the recovery of charred plant remains, small bones and finds were taken from appropriate contexts. These comprised basal/primary fills of at least 50% of all cut archaeological features and at least 25% of all other anthropogenic soil deposits, including all deposits containing any visible charcoal or other carbonised material and all deposits considered to be of particular interest on the basis of artefactual content or other characteristics.

5.13. During the excavation a total of 44 palaeoenvironmental bulk soil samples were recovered (and retained). Additional sub-samples for pollen analyses were recovered but were not deemed to bear any preservation qualities conducive to the conservation of pollen grains. These environmental samples were assessed as part of the assessment report but no further analysis was considered to be appropriate on account of the poor preservation.

5.14. Where samples suitable for scientific dating were recovered this is noted in section 7.7 and 7.9 below.

Site Archive

5.15. Archive consolidation was undertaken immediately following the conclusion of fieldwork. The site record was checked, cross-referenced and indexed.

5.16. All retained finds have been marked and packaged as necessary but due to their friable nature have not been heavily washed.

5.17. All retained finds have been analysed and recorded by suitably qualified and experienced staff (prehistoric pottery by Sarah Percival (TPA), petrographic analysis by Patrick Quinn, residue analysis by Ben Stern, faunal remains by Alison Wilson (TPA), stone by Alison Wilson (TPA), radiocarbon dating by SUERC, worked flint by Peter Webb (TPA) and environmental remains by Alison Wilson (TPA),

5.18. The archive has been assembled in accordance with the guidelines set out in Appendix 1, P1 of MoRPHE PPN3 (English Heritage 2008) and Derbyshire Museum Guidelines. In addition to the site records, artefacts, ecofacts and other sample residues, the archive shall contain:

- site matrices where appropriate;
- a summary report synthesising the context records;
- a summary of the artefact record; and
- a summary of any other records or materials recovered.

The integrity of the primary field records shall be preserved and the Contractor shall create security copies in digital, fiche or microfilm format of all primary field records.

5.19. Contact has been made with Derby Museums and Art Galleries, and the following accession number issued for this site: DBYMU:2014.7. An archive index is provided below:

Field Records	***Description***	***Number***
Context Sheet	Record of each intervention	417
Registers	Registers	4
A3 Drafting Film	Scale plans and Sections	Plans: 114, Sections: 165
Photographs	All views	759 x BW and Colour (digi)
Documents	***Description***	***Number***
Written scheme of investigation	Statement of the aims, objectives and methodology for the project.	1
Health & Safety	Safe working statement & risk assessment	1
Report to client	Report of findings.	2 (including eval)
Material	***Description***	***Type***
Pottery Artefacts	197 individual sherds from 21 contexts	Pottery Artefacts
Flint Artefacts	29 artefacts from 26 contexts	Flint Artefacts
Burnt Bone	6 pieces from 2 contexts	Burnt Bone
Clay Pipe	1 piece	Clay Pipe
Brick and Tile	6 pieces from 5 contexts	Post Medieval Brick/Tile
Slag?	1 finds	Industrial Residues (slag)
Heat affected rock/stone	3 finds from 3 contexts	FCP
Quern	2 finds from 1 context	Quern

Table 1: Archive index

5.20. The archive is temporarily stored at the TPA office at Unit 1, Holly Lane, Chilwell, Nottingham, NG9 4AB. The full archive will be deposited at Derby Museum following the completion upon completion of the final report.

6. RESULTS

Introduction

6.1. A narrative of the results of the archaeological excavation is presented below. The overall location of the excavation areas are shown on Figure 2 with more detailed plans of the areas of interest shown on Figures 3 to 9, a full context list is provided as Appendix 1. A plan, Figure 15, which displays a collection of some of the more pertinent regional sites which are discussed is also included.

Natural Geology and Soils

6.2. Desk-based assessment within the development area has suggested that the underlying bedrock comprises Edwalton Member mudstone overlain by superficial deposits of Beeston Member Sands and Gravels.

6.3. As soil stripping progressed in all areas, deposits removed comprised dark greyish brown clayey silt topsoil (0001) (generally c.0.2 – 0.4m in depth) and loose brownish red slightly clayey sandy silt subsoil containing moderate inclusions of sub-angular and sub-rounded stones (0002) (0.1m to 0.55m in depth (deepest in Area D). As the site was relatively flat (localised undulations aside) no particularly deeper areas of overlying deposit were noted, although Area D contained the deepest sub-soil perhaps reflecting historic use of this part of the site as woodland as opposed to cultivated land.

6.4. Removal of topsoil and subsoil by machine exposed the natural substrate (0003) which comprised a gravel deposit with patches of yellow-orange sand. Across the site there was a high degree of variability within the ratio of sand to gravel (Area C, for example, featured a much higher proportion of sand when compared to Area A (gravel)).

6.5. The removal of topsoil and subsoil revealed a moderate density of archaeological features truncating the natural substrate that, in general, can be attributed a prehistoric date. Where dating evidence was present, archaeological features were mainly Middle Iron Age in date with a small number of Mesolithic, Neolithic and Middle Bronze Age features present.

Stratigraphic Narrative

6.6. For ease of analysis the archaeological features in the following report text are now discussed by period and begin with the single Mesolithic feature. The features have been phased by utilising dates provided by radiocarbon dating and diagnostic finds such as pottery. Frequencies of environmental residues have also been used to tentatively phase discrete features. Where features have been grouped for ease of discussion, but where there is no obvious spatial relationship between them, it is stated. Where necessary for clarification of sentences, cardinal points are abbreviated, e.g. North = N, Southwest = SW and so on. Details on specific artefacts, radiocarbon dates and environmental residues have been included into the text where appropriate. Information regarding references can be found in the individual specialist reports.

Archaeological Features

Late Mesolithic

6.7. A single pit, which has cautiously been dated to the Mesolithic period, was identified during the course of the excavation. The pit, [0347], was located in close proximity to the 40m contour towards the southern extent of Area D and did not appear to have been overly truncated. A date for the pit was obtained from an indeterminate fragment of charcoal which was submitted for radiocarbon dating. The identification of a Mesolithic pit is intriguing as such features are relatively uncommon in the region. Confirmed examples include Gonalston, Nottinghamshire, Croft Quarry, Leicestershire as well as Lismore Fields, and Howden Reservoir in Derbyshire (Knight, D & Howard, A. 2004).

6.8. The relatively large pit was far more diffuse than any other feature identified in Area D and required repeated attempts of cleaning and re-cleaning in order to identify the spatial extents of the feature. A 0.5m wide slot was excavated across the centre of the pit to identify the features limits in profile and to glean a greater understanding of the depositional sequence. Further interventions were focused on the feature to examine other morphological and depositional aspects.

6.9. The pit measured 2.5m in width, 0.56m in depth and contained seven fills (0350), (0328), (0361), (0362), (0363, (0364) and (0365) which appeared to demonstrate a mix of been both purposely backfilled and naturally accumulated. The pit was truncated by pit [0262], part of an Iron Age pit alignment and [0366], a pit of unknown date.

6.10. An environmental sample retrieved from the final fill of the pit (0361) yielded fragments of indeterminate charcoal, one of which was submitted for radiocarbon dating. A radiocarbon date of 4799calBC was provided which suggests a Late Mesolithic date for the backfilling or disuse of the pit.

6.11. An anomalous observation regarding this feature is the absence of flint artefacts and debitage from tool and craft production. The durability of flint as a material and its frequent use in the Mesolithic toolkit makes it one of the most common characteristics of Mesolithic contexts. Although there was a deficiency of flint, regional examples of Late Mesolithic/Early Neolithic pits at Howden Reservoir, Derbyshire did however identify charred fills which in some examples provided no evidence of any lithic remains (Bevan, B. 1999). On balance, the contrasting morphology of the feature in conjunction with the associated carbon date and regional comparanda, it seems appropriate to consider this feature as been Mesolithic rather than merely intrusive charcoal.

6.12. The remaining depth of pit [0347] tentatively suggests relatively little localised truncation has occurred. This may have implications for future building developments in the area with regards to identifying further Mesolithic features and understanding more about the palaeolandscape (Knight, D, Vyner, B & Allen, C. 2012).

Earlier Neolithic

6.13. A single Early Neolithic pit was identified in Area D. The pit has been attributed to this period based on the discovery of undecorated Early Neolithic pottery within the upper fill of the feature. The pit conforms to a model of early Neolithic colonisation which was a precursor to the large scale monument building such as the Aston cursus (Loveday, R. 2004).

6.14. The continued focus on the 40m contour in Area D is demonstrated by pit [0018]. This pit measured 0.74m in length and 0.36m in depth. Two fills (0226), the primary fill, and (0019), the secondary fill were contained within the feature.

6.15. The excavation of the primary fill produced 53 sherds of undecorated, weakly carinated pottery as well as a flint blade and a flint core from the secondary fill. For the most part, flint and quartzite sand was identified as the most common temper within the pit with occasional examples of shell-tempered and micaceous inclusions which may represent imports. Local examples of Earlier Neolithic pottery have been recovered from excavations including Willington, Eye Kettleby, Leicestershire, Swarkestone Lowes and features which predate Aston barrow 1 at Aston-on-Trent, (Beamish, M. 2004).

6.16. Although developer funded excavation has however identified an increasing amount of Earlier Neolithic features over the last decade, Earlier Neolithic settlement and agrarian practice within the Trent Valley continues to be poorly understood (Knight & Howard 2004). The occurrence of Early Neolithic features beneath Later Neolithic monuments at sites such as Swarkestone Lowes, the Aston Cursus and Sproxton Barrow offer an insight, albeit slight, into 4th century colonisation and manipulation of the landscape (Krawiec, K. 2012, Beamish, M 2004, Elliott, L & Knight, D 1999). The feature firmly demonstrates that communities have become conversant with the emerging cultural and technological

innovations associated with the Neolithic period and at some level the landscape is presumably open.

Later Neolithic

6.17. Neolithic activity on areas C and D noticeable increased in the 3rd millennium BC. Pit digging and apparent structured deposition becomes more prevalent. This is perhaps to be expected if we consider the developments in the Trent Valley such as the monumentalisation of the surrounding landscape such as the Aston and Willington cursuses and the appearance of funerary monuments (Riley, D. N 1987).

6.18. Attempting to group the undated features in Areas C and D into a Neolithic chronology is an appealing prospect. Given the apparent multi-temporality of these areas it is considered to be unwise to produce abstract groupings from undated pits. As a consequence of this, only features which demonstrate some form of shared depositional character or datable material have been included onto this phase. Any features which do not meet these criteria have been included in the area specific 'prehistoric pits' section.

6.19. The discovery of diagnostic pottery and charred remains which produced radiocarbon dates obtained from pits in Area C, [0068] and [0220], produced Later Neolithic dates. Pit [0068] was located towards the eastern limit of Area C. It was recorded as sub-circular in form and measured 0.97m in length, 0.86m in width and 0.23m in depth. The single fill, (0076), was sampled for environmental residues. Hazelnuts, fragmented mollusc shell, charcoal and indeterminate charred grain was recovered. Fragments of charcoal were recovered from flotation were submitted for radiocarbon dating. A date of 2896calBC was obtained from the charcoal placing it in the Later Neolithic.

6.20. Pit [0220] was located towards the north-western corner of Area C. The excavation of the single pit produced a total of seven Later Neolithic sherds of pottery. The pottery from this fill included five undecorated grogged fabrics which demonstrated abraded surfaces and edges. Two sherds of highly decorated Grooved Ware were also recovered which displayed decoration on the interior and exterior with fine incised lines and oblique strokes. These are believed to belong to the Clacton style which were in use between 2900calBC and 2100calBC. Other regional examples of such finds include Willington and Risby Warren. Environmental samples recovered from the pit produced hazelnuts, charred grain, and fragments of mollusc shell.

6.21. A further pit, [0253], was located to the south of [0068] and contained charred grain (possibly Barley) and hazelnut. No dating material was recovered from the pit but the similarities in depositional characteristics shared with [0220] and [0068] suggest a broadly contemporary use. Two fragments of Later Iron Age quern were recovered from the edge of the feature towards the surface. The stratigraphic security of the fragments of quern cannot be validated and some doubt is cast over the provenance of these finds.

6.22. A pit located in Area D, [0038], was sub oval in shape and measured 0.8m x 0.55m and 0.15m in depth. A single fill, (0124) was recorded as a dark brown sandy silt with frequent in inclusions of charcoal and sub-rounded stones. Indeterminate fragments of charcoal, chaff and fragments of mollusc were recovered from the environmental samples. A fragment of indeterminate charcoal was submitted for radiocarbon dating and returned a date of 4335calBC. This charcoal is believed to be residual and is not contemporary with the rest of the deposition.

6.23. Occurrences of Groove Ware pottery in conjunction with charred plant remains in contemporaneous examples such as Thirlings, Northumberland have been interpreted as representing structured deposition (Waddington, C & Passmore, D. 2009). The deliberate deposition of ceramic artefacts and plant remains from the Neolithic period in to historical contexts is relatively common. This practice is believed to have facilitated a range of social practices including establishing a link between the newly colonised land and the inhabitants (Chapman, J. 2000).

Neolithic

6.24. A single ditch, [0011], which contained flint debitage with no other accompanying dating evidence was identified in the centre of Area A. The incredibly diffuse feature, which measured 6.6m in length, 0.7m in width and 0.13m in depth, demonstrated what appeared to be a particularly truncated single fill which was cut by a NNE to SSW aligned Iron Age ditch.

6.25. Although flint pertaining to the Neolithic period has been identified within features which have securely been dated to the Bronze and Iron Age periods and is not therefore regarded as the most reliable dating agent, the stratigraphic relationship in conjunction with the flint is taken to be a reliable indicator.

6.26. The identification of this possible Neolithic feature is unique in the sense that it is curvilinear in form rather than a discrete feature. The limited remnant of the feature is not regarded as been substantial enough to suggest a potential function.

Neolithic/Bronze Age/Iron Age

6.27. Three discreet features in Area D did not produce any datable material. An assemblage of charred plant remains and mollusc shell do however tentatively suggest a Neolithic/Bronze Age use. The frequency of materials deposited indecate structured deposition similar to the Later Neolithic use but the presence of *Triticum Spelta* (spelt) and *Secale cereale* (rye) casts doubt on a Neolithic use and may relate to Bronze Age activity. As a result of this a Neolithic/Bronze Age date has been attributed to the features discussed.

6.28. Seven fragments of Early Neolithic pottery of a very similar design and fabric to those identified in pit [0018] were also recovered from pit [0224] which was located towards the centre of Area D. Fragments of chaff, mollusc and spelt were also identified within environmental samples obtained from this feature which arguable contradict the Early Neolithic date as suggested by the pottery. The pottery is likely to be residual and present as a result of the pit interacting with earlier feature [0018]. The presence of the charred plant remains and shell is broadly similar to the deposition observed in the Later Neolithic pits in Area C but spelt is not commonly recovered from Neolithic contexts in the East Midlands and is more common to be identified in Bronze Age features (Monckton, A. 2003).

6.29. Pit [0041] also cut Early Neolithic pit [0018]. Flotation of the soil fills produced low frequencies of charred spelt and mollusc shell. Although no datable material was identified within this particular feature a Neolithic/Bronze Age date is preferred based on the presence of spelt.

6.30. Pit [0038] cut an earlier feature, [0125]. This pit did not contain any readily datable material but the environmental samples produced rye, spelt and fragments of mollusc shell. This signature of deposition appears to be reminiscent of Later Neolithic deposition but the spelt and rye indicate a possible Bronze Age use.

6.31. There is a noticeable absence of evidence for Neolithic/Bonze Age domestic structures within any of the excavated areas. This is not uncommon as the dearth of documented examples is a recognised national and regional pattern (Cooper, N. 2006). The presence of the pits does however strongly suggest some form of permanent settlement. Theories on the appearance of pits within the prehistoric landscape view Late Mesolithic to Late Bronze Age pits as evidence for settlement. This phenomenon has been evaluated by Garrow who views prehistoric pits as effectively staking a sense of community and 'place' as part of a new cosmological outlook (Garrow, D. 2010: 215). They are believed to represent settlement of the area and are a result of devoting a greater level of affinity and connection with the land (Garrow, D 11. 2007). The siting of the pits on the 40m contour may have had some significance to the development and occupation of the wider environment as well as the proximity to the River Trent.

Middle Bronze Age

6.32. A limited presence of Bronze Age features were identified within the limits of the three excavation areas. Although only two features were confirmed as being Bronze Age, there is a likely hood that other excavated pits were contemporary but in lieu of any datable materials this cannot be confirmed.

6.33. The two pits, [0070] and [0176], were located towards the western extent of Area C. The westernmost of these, [0176] measured 2.9m in length, 2.28m in width and a maximum depth of 0.6m and contained two fills, (0208) and (0209). The earliest of these, (0209), was recorded as an orangy yellow brown sand believed to be a slumped fill. The secondary fill, (0208), was a dark orange sandy friable loam.

6.34. A total of 12 sherds of Deverel-Rimbury pottery were recovered from pit [0176]. The fabric of the pottery was flat and displayed a single row of fingertip impressions below the rim and a smooth exterior all of which are believed to represent the same vessel. Mixed tempers of grog and quartz were identified throughout the fragments of pottery.

6.35, The second smaller pit, [0070], also contained Deverel-Rimbury pottery. A total of six sherds of pottery were recovered from the single fill, (0077) which was described as a dark greyish brown sandy friable silt loam.

6.36. Other examples of Deverel-Rimbury vessels have been identified within the region include Fisherwick and Coton Lane, Swarkestone Lowes, Derbyshire and Tamworth, Staffordshire. These examples are all regarded as been from domestic contexts although occasional funerary examples such Pasture Lodge Farm, Lincolnshire have been identified. Given the apparent absence of any funerary associations, a domestic or ritualised context is preferred. Radiocarbon dates associated with Deverel-Rimbury pottery from Swarkestone, 1440calBC-1145calBC and Fisherwick 1565calBC-910calBC strongly indicate a mid second millennium BC use.

6.37. No evidence for Bronze Age domestic structures were identified during the excavation. This could be a result of Bronze Age building practices which did not use techniques which penetrated the ground to an extent which would translate into the archaeological record or the settlement was 'off site'. The absence of any structures suggests that the pits are present as a continued tradition of pit digging in order to establish a sense of permanence and place. The presence of Middle Bronze Age features to the west of Area C and the apparent absence in Area D may tentatively indicate a general colonisation of the landscape to the west. This may quite easily be the artefact of a spatial preference of sampling and a wider catchment of radiocarbon dating may disprove this apparent trend.

Iron Age

6.38. Iron Age activity on the site can be characterised by the construction of a field system in Area A and a pit alignment in Area D. The pit alignment appears to represent a formalisation of the earlier Area D pits and is likely to represent a boundary of some description (Pollard, J. 1996: 93). The field system which was located to the west of the pits in Area A is, when compared with other regional examples, typical of Later/Mid Iron Age field demarcation.

Field System

6.39. Within the central part of Area A, extending southwards, an apparently spatially coherent group of heavily truncated linear field boundary or enclosure ditches were identified. A key axis within the enclosure/field boundary arrangement appeared to be a NNE to SSW aligned ditch, c.38m in observed length [0404] a maximum of 1.9m wide and 0.56m deep (Figure 9.2).Typically the ditch contained a single naturally silted fill which, in places, contained an Iron Age pottery style which is believed to have been in use from the 5th century BC to the 1st century AD.

6.40. Two short further lengths of linear ditch shared a stratigraphic relationship with ditch and as a consequence are believed to be Iron Age in date [0404]. Two short parallel lengths of WNW to ESE aligned ditch, [0389]-[0315] and [0388]-[0300] (10m long, up to 1.38m deep, 0.44m

deep with a u-shaped profile) ran in to ditch [0379]- [0339] and were apparently contemporaneous with it. The ditches, which proved to be very difficult to observe in plan, did not produce ceramic finds but flint artefacts were recovered from (0307), the single naturally silted fill from [0389]-[0315]. Both ditches terminated to the west and may be interpreted as sub-divisions of a larger enclosure/field, the eastern side of which is represented by NNE to SSW aligned ditch [0379]-[0339].

6.41. Within the centre-south of Area A, c.4m south of NNE to SSW aligned ditch [0404] was a further short length of NNE to SSW aligned ditch [0331]. This length of ditch measured 5m in length and up to 0.98m width and 0.3m in depth and is likely to represent the continuation of [0404]. The southern terminal end of ditch [0404] and the terminus of [0331] are clearly deliberate and not the artefact of truncation. Ditch [0331] contained two fills, a primary silt (0386) and a naturally accumulated secondary fill, (0349) (Figure 9.5-8) rich in Iron Age pottery which include jars and bowls similar to those found at Grove Farm, Enderby and Fisherwick. The use of ceramic styles is believed to extend from the 5th century and the 1st century AD. Thin section analysis of pottery from the ditch suggests that the pottery was fired at approximately 750, likely in a bonfire. Ditch [0331] truncated a tight cluster of intercutting pits including [0408], [0394], [0395], [0376], [0400] and [0398]. The pits contained one or two fills (Figure 9.7-8, 10.11-12) with evidence of possible deliberate backfill. Pits [0395] and [0376] contained Mid-Late Iron Age pottery, whilst fill (0377) in pit [0376] also contained Iron Age pottery of a similar fabric to that recovered from [0404]. The extended duration of use associated with this particular style of pottery does not contribute to a detailed understanding of chronological separation. The pits may represent a small cluster of settlement related waste/rubbish pits deliberately placed at the edge of a field/enclosure which predates the later manifestation which cuts them (droveway perhaps). A sub-circular pit which was cut by southern limit of [0404] is included in this group of pits. The pit, [0392], measured 1.18m in width and 0.18m in depth. The thin section analysis of the pottery identified Mountsorrel Granodiorite granitic rock inclusions which do not occur locally. The closest example of this variation of geological substrate occurs in the Charnwood Forest area and pottery with these inclusions which include Iron Age phases of Swarkstone Lowes and Gamston.

6.42. Moving to the eastern side of Area A, another key enclosure/field boundary ditch was identified, [0343], running on a N to S alignment over an observed distance of c.55m. To the south, the feature ran beyond the southern extent of Area A whilst to the north it may have been completely truncated by ploughing ([0378), see Figure 9.3). Ditch [0343], typically in-filled by a single naturally silted deposit, was a maximum of 1.6m wide and 0.38m deep and contained Iron Age pottery consistent with other ceramics discovered in Area A.

6.43. At the southern extent of Area A, two broadly parallel ditches, aligned WNW to ESE and roughly at right angles to NNE to SSW aligned ditch [0404], were encountered. The northernmost of these, ditch cut [0303] ran for an observed distance of c.42m (although a c.5m portion within its central length was fully truncated away). Ditch [0303] was up to 0.9m wide, 0.25m deep and contained a single fill, (0304) which contained occasional sherds of Mid-Late Iron Age pottery (Figure 11.18-22). To the south, ditch cut [0100] ran for an observed distance of c.24m and apparently terminated at its western extent. Ditch [0100] was up to 1.12m wide, 0.48m deep and contained a single fill, (0101) which contained occasional sherds of Mid-Late Iron Age pottery. The apparent western terminus of ditch [0100] contained an in situ dump of in Mid-Late Iron Age pottery, providing a confident date for the infilling of the feature. This pair of ditches is comparable with droveways identified at sites such as Normanton le Heath, Leicestershire and Foxhall, Suffolk (Thorpe, R. 1994, Glover, G. 2012).

6.44. The broad compass of dates provided by the pottery, which extend from the 5th BC century to the 1st century AD, are assisted by a radiocarbon date provided by fill (0377) from pit [0376]. The radiocarbon date, 379calBC, suggests a Middle Iron Age use/backfill for the pits and a mid/late 3rd century date for the construction of the field system at the earliest. Other examples of other broadly contemporary field systems include Aslockton, Nottinghamshire Fisherwick, Staffordshire, and Little Hay Grange Farm, Ockbrook (Knight, D. 2007). Discussions regarding Iron Age field systems such as the afore mentioned examples often conclude that the main focus of activity was for livestock enclosure with occasional exception

such as Aslockton which have demonstrated evidence which suggest crop cultivation and processing (Knight, D & Howard, A. 2004).

6.45. Flotation of environmental samples identified charred cereal grains which were accounted for in every ditch within the field system (with the exception of [0343]), albeit in low numbers. Ditch [0303], the northernmost ditch in the droveway also revealed charred chaff as well as grain. The presence of charred plant remains could be present as a result of small-scale localised food preparation or early stage crop processing such as heating for glume removal. Given an absence of any settlement it seems more likely that crop processing was on-going either within the limits of the excavation or perhaps just beyond the limit. There was a total absence of animal bone recovered from within the field system. This is likely to be a result of the acidic nature of the sandy soils in Area A. The faunal evidence cannot therefore directly contribute to the understanding of the use of the field system but given the similarity to other regional examples and their association with stock control it seems appropriate to suggest that there was a mixed economic function for the field system.

Pit alignment

6.46. The most prominent group of cut features within Area D were 12 sub-circular pit features ([0030], [0102], [0031], [0034], [0050], [0033], [0103], [0035], [0261], [0262], [0319] and [0263]) excavated adjacent to one another on a north to south alignment. The pits, very similar in morphology, ranged in size from 2.15m wide and 0.2m deep, [0034], with a single naturally silted fill (0115) (Figure 14.30) to 2.4m wide and 0.8m deep, [0245], with up to four fills (primary silt (0403), collapse/backfill (0112) and naturally silted tertiary fills (0133)/(0111)). Pits [0102], [0034], [0035] and [0262] cut other pits within the alignment but share morphological similarities which suggest a repeated investment in pit digging in this locale.

6.47 Regional examples of Iron Age pit alignments include Barrow-upon Trent, Besthorpe Quarry, Swarkestone Lowes, Gonalston and Aston Hill (Elliott, L & Knight, D 1999, Knight & Howard, A. 2004). Pit alignments are not often associated with datable finds' assemblages, largely on account of their far reaching distance from domestic settlements, but a regional characteristic is one of use in the Later Iron Age. A notable variation from this trend was Aston Hill, which appears to date to the Late Bronze Age/Early Iron Age (Garton, D & Abbott, C. 1998). Mid-Late Iron Age pottery which was recovered from pit [0102] suggests that the pit alignment is in chronological accordance with most other regional examples. A radiocarbon date obtained from pit [0034] provided a date of 227calAD which does appear to be unexpected late. Although it is not inconceivable that a Romano-British date for construction is accurate, it may indicate that pits were left open and filled up over an extended duration.

6.48. The final pit in the alignment towards the northern limit of Area D was pit [0030]. The termination of the pit alignment may be the reflection of the Iron Age topography which is no longer observable as a result of two millennia of landscape alteration. A trial trench (Trench 3) which was excavated as part of the archaeological evaluation, conducted in 2014, revealed a geological substrate which significantly declined to the north and the east. It is therefore suggested that the this part of the landscape was far more dynamic in the Iron Age and pit [0030] represents the beginning of alignment which intersected with palaeolandscape features acting as a natural boundary (Pollard, J. 1996: 110)

6.48. The field system identified in Area A appears to be chronologically and broadly morphologically consistent with other regionally examples. Stock control, cereal cultivation and processing may have been on-going within and around the field system.

6.49. Area D contains the best preserved archaeological features at the Aston Hall site. Pit alignments are a well know Bronze Age and Iron Age landscape boundary feature in the East Midlands. Why they are constructed in this way, with a line of pits rather than a solid ditch, is unknown, but the accepted explanations tend to be either the pragmatic idea that it is easier to dig a lot of pits rather than a whole ditch, or that these represent a deliberately porous boundary – to demarcate territory rather than halt movement through the landscape (Knight & Elliott, 2008).

Prehistoric pits

6.50. The archaeological features discussed below were not phased on account of the wide compass of dates and the subjective manner in which the spatial organisation of the pits could be organised. They have been described by area.

Area A

6.51. Within the northern part of Area A, six discrete pit features ([0274], [0278], [0276], [0284], [0282], [0280] were identified and excavated. The pits, evidently highly truncated, ranged in size from 0.24m wide and 0.04m deep, [0284], (with a single naturally silted fill (0285)) to 1.1m wide and 0.40m deep, [0206], again with a single naturally silted fill (0281). No dating evidence was retrieved from the six pits, but on morphological grounds they appear to form a coherent group. The pits may represent a small cluster of settlement related waste/rubbish pits.

6.52. Two undated pits, [0292] and [0387] were located south of ditch [0388]/[0300]. The largest of these, [0292], was circular in form and measured 0.4m in width and x 0.28m in depth. The second feature, [0387], was an oval shape and measured 0.54m x 0.18m and 0.18m in depth. The function of these pits is not clear but they may relate to settlement activity.

6.53. A single irregular pit, [0293], was located to the east of ditch [0343]. The pit, which measured 1.2m x 1m and 0.17m in depth, did not contain any finds. The use of this pit is unknown.

Area C

6.54. Within the northeast part of Area C, seven discrete sub-circular pit features ([0227], [0229], [0233], [0074], [0075], [0231], [0259]) were identified and excavated. The pits, evidently highly truncated, typically contained a single naturally silted fill and ranged in size from 0.8m wide and 0.1m deep, [0233], to 0.14m wide and 0.08m deep, [0231]. No dating evidence was retrieved from the seven pits. The pits may represent a small cluster of settlement related waste/rubbish pits, most likely of prehistoric date (although their association is unproven).

6.55. At the northern extent of Area C, five discrete pit features, four sub-circular ([0071], [0072], [0073], [0222]) and one a double circle shape ([0235]) were identified and excavated. The pits, evidently highly truncated, ranged in size from 0.3m wide and 0.15m deep, [0072], (with a single naturally silted fill (0073)) to 3m long, 0.64m wide and 0.54m deep, [0235], again with a single naturally silted fill (0236). Undiagnostic prehistoric pottery was retrieved from the two pits ([0073] and [0071]). The pits may represent a small cluster of prehistoric settlement related waste/rubbish pits (although their association is unproven).

6.56. At the northwest extent of Area C, two sub-circular discrete pit features ([0218] and [0207]) and a remnant area of deeper sub-soil (0200) were identified and excavated. The pits, typically highly truncated and containing one naturally silted fill ranged in size from 0.2m wide and 0.1m deep, [0218], to a quite large 3.2m wide and 0.6m deep, [0231].

6.57. At the western extent of Area C, five discrete pit features, three sub-circular ([0168], [0164], [0168]), one an elongated oval [0170] and one a double circle shape ([0169]) as well as a remnant area of deeper sub-soil (0163) were identified and excavated. The pits typically contained a single naturally silted fill and ranged in size from 0.32m wide and 0.15m deep, [0164], to 1.05m long and 0.17m deep, [0170]. No dating evidence was retrieved from the features, but they may represent prehistoric features of uncertain function (although their association is unproven).

6.58. At the southern extent of Area C, three discrete sub-circular pits ([0063], [0188], [0190]) as well as a remnant area of deeper sub-soil (0163) were identified and excavated. The pits typically contained a single naturally silted fill and ranged in size from 0.64m wide and 0.14m deep, [0190], to 1.71m wide and 0.11m deep, [0163]. No dating evidence was retrieved from the features, but they may represent prehistoric features of uncertain function (although their association is unproven).

6.59. Within the centre-south of Area C, seven discrete circular- sub-circular pit features ([0064], [0065], [0286], [0150], [0066], [0067], [0245]) were identified and excavated. The pits, evidently highly truncated, contained a single naturally silted fill and ranged in size from 0.34m wide and 0.12m deep, [0150], to 1.75m wide and 0.35m deep, [0245]. No dating evidence was retrieved from the seven pits, however, their morphological similarity and apparent loose SW-NE alignment might suggest that they represent a pit alignment boundary feature (although their association is unproven) (see Area D narrative for more discussion).

6.60. Immediately north of the possible pit alignment in Area C, six discrete pit/posthole features ([0239], [0243], [0241]) were identified and excavated. The pits/postholes, evidently highly truncated, were around 0.7m wide and 0.1 deep (measurements from [0239] and each contained a single naturally silted fill. No dating evidence was retrieved from the features, but their morphological similarity and spatial arrangement may indicate the heavily truncated remains of a small ancillary structure, most likely of prehistoric date.

6.61. At the eastern extent of Area C, five discrete sub-circular pit features ([0247], [0249], [0255], [0251], [0257]) were identified and excavated. The pits, evidently highly truncated, typically contained a single naturally silted fill and ranged in size from 0.4m wide and 0.16m deep, [0233], to 1.86m wide and 0.55m deep, [0253].

Area D

6.62. West of modern drainage ditch [0032], two clusters of undated (in places intercutting) pits were identified and excavated. Towards the north of Area D were ten sub-circular pit features ([0025], [0026], [0159], [0160], [0027], [0029], [0144], [0138], [0028], [0024]). The pits typically contained a single naturally silted fill and ranged in size from 1.08m wide and 0.34m deep, [0144], to 0.55m wide and 0.17m deep, [0160]. No dating evidence was retrieved from the pits. The pits may represent a small cluster of settlement related waste/rubbish pits, most likely of prehistoric. Stratigraphic relationships observed between pits [0029]/[0159] and [0027]/[0144] perhaps suggest some sustained use of this area in the past for the purpose of pit digging. Towards the south of Area D were seven discrete sub-circular pit features ([0140], [0023], [0382], [0136], [0267], [0419], [0269]). The pits typically contained a single naturally silted fill and ranged in size from 1m wide and 0.2m deep, [0023], to 1.9m wide and 0.46m deep, [0267]. No dating evidence was retrieved from the pits. The pits may represent a further cluster of settlement related waste/rubbish pits, most likely of prehistoric. Stratigraphic relationships observed between pits [0140]/[0023]/[0382] and [0267]/[0269] perhaps suggest some sustained use of this area in the past for the purpose of pit digging.

6.63. East of the pit alignment in Area D, two clusters of undated (in places intercutting) pits were identified and excavated. Towards the northeast of Area D were fifteen sub-circular pit features ([0131], [0132], [0038], [0151], [0052], [0129], [0104], [0128], [0130], [0037], [0199], [0197], [0198], [0108]). The pits typically contained a single naturally silted fill and ranged in size from 0.76m wide and 0.25m deep, [0108], to 0.50m wide and 0.30m deep, [0199]. Undiagnostic prehistoric pottery was recovered from pit [0038]. The pits may represent a cluster of settlement related waste/rubbish pits, most likely of prehistoric date (pits [0131] and [0132] were truncated by the pit alignment pits (Figure 14.31)). Stratigraphic relationships observed between pits [0389]/[0125] and [0108]/[0037] perhaps suggest some sustained use of this area in the past for the purpose of pit digging. However, Romano-British pottery recovered from pit [0037], albeit potentially intrusive, warns against the immediate grouping of all these features purely on spatial grounds. Towards the southeast of Area D were twelve sub-circular pit features ([0040], [0039], [0105], [0224], [0018], [0043], [0137], [0051], [0042], [0194], [0195], [0196]). The pits ranged in size from 1.82m wide and 0.4m deep, [0018], with a backfilled (0226) and a naturally silted fill (0019) (Figure 13.27), to 0.49m wide and 0.09m deep, [0194], with a single naturally accumulated fill. A primary dump of Late Bronze Age and Mid-late Iron Age pottery was recovered from pit [0018]. The pits may represent a cluster of settlement related waste/rubbish pits, most likely of Mid Iron Age date (pit [0105] was truncated by the pit alignment pits (Figure 14.30)). A stratigraphic relationship observed between pits [0224] and [0018] perhaps implies some sustained use of this area in the past for the purpose of pit digging.

6.64. At the southern extent of area D east a group of four small intercutting circular pits ([0345], [0335], [0337], [0346]) truncated a short length of gully (4.05 m long), [0335], which, in turn, truncated two earlier post-holes [0353] and [0374] and an oval pit [0336]. The pits typically contained a single naturally silted fill and were around 0.5m wide and 0.15m deep ([0355]), as did the gully and post holes. Further east, four further pits [0319], [0373], [0366], [0347] were observed. Two of these pits were small ([0366], [0373]) (c.0.8m wide, 0.2m deep) and truncated a very large pit, [0347] (2.5m wide, 0.56m deep) containing seven fills ((0350), (0328), (0361), (0362), (0363, (0364), (0365), both backfilled and naturally accumulated). Immediately west another large pit, [0319] (fills (0322), (0324)) was truncated by pit alignment pit [0262]. No dating evidence was retrieved from these possible waste/rubbish/extraction pits, but their stratigraphic relationships suggest that they are most likely of prehistoric (Mid Iron Age or earlier date). Furthermore, the possibility of structurally related elements (gully and post holes) may indicate that these features related to a prehistoric habitation focus of uncertain date of character.

Other prehistoric features

6.65. Area A curved ditches. The northern extent of ditch [0404] was truncated by a third undated but likely later prehistoric ditch [0417] this time aligned NW to SE (13m long), the apparent termini of the feature may be more apparent than real due to severe plough truncation. For example, a short (3.5m long) curved portion of undated N to S aligned ditch, [0299], c.4m south of ditch [0379]-[0339] might suggest that this boundary in fact corners and turns southwards as N to S ditch [0009] -[0338]-[0323]-[0340]-[0344] (see 6.15 below).

6.66. South of WNW to ESE aligned ditch [0388]/[0300], a further short length of WNW to ESE ditch (6m long), [0011], was truncated by NNE to SSW aligned ditch [0379]-[0339]. Undiagnostic prehistoric pottery was retrieved from the single fill of this shallow feature, (0016), (Figure 9.1) which may represent the sole remains of an earlier field boundary/enclosure system.

7. SPECIALIST REPORTS

This section details the artefacts, palaeo-environmental data and dating or potential dating evidence recovered during the excavations and assesses their potential to address both the questions established in the WSI (Project Design) and new research topics resulting from the data collection.

7.1 Prehistoric Pottery

By Sarah Percival

7.1.1. A total of 200 sherds weighing 3,233g were collected from thirteen excavated features and two soil layers (Table 1). The assemblage is predominantly Iron Age containing a total of 114 sherds of this date weighing 2,590g and representing 80% of the total assemblage by weight. Two pits contained Earlier Neolithic pottery which formed 13% of the assemblage (60 sherds, 391g). Seven sherds, 28g, are Later Neolithic including two incised decorated sherds which are probably Grooved Ware and nineteen sherds, 224g is Middle Bronze Age. The assemblage is in mixed condition, with most features containing low numbers of small abraded sherds. The Iron Age sherds found in ditch 331 and droveway 100 are larger and better preserved including some large body and base sherds.

Spot date	Feature	Feature Type	Area	Quantity	% quantity	Weight (g)	% total weight
Earlier Neolithic	18	Pit	D	53	26.5%	360	100.0%
	224	Pit	D	7	3.5%	31	100.0%
Later Neolithic	220	Pit	C	7	3.5%	28	100.0%
Middle Bronze Age	70	Pit	C	6	3.0%	71	100.0%
	176	Pit	C	12	6.0%	133	100.0%
	200	Soil	C	1	0.5%	20	100.0%
Iron Age	3	Soil	A	1	0.5%	13	100.0%
	9	Ditch	A	1	0.5%	63	100.0%
	10	Ditch	A	1	0.5%	4	100.0%
	100	Droveway	A	24	12.0%	564	100.0%
	102	Pit	D	2	1.0%	9	100.0%
	331	Ditch	A	69	34.5%	1761	100.0%
	376	Pit	A	12	6.0%	160	100.0%
	395	Pit	A	4	2.0%	16	100.0%
Total				200	100.0%	3233	100.0%

Table 2: Quantity and weight of prehistoric pottery by feature

Methodology

7.1.2. The assemblage was analysed in accordance with the Guidelines for analysis and publication laid down by the Prehistoric Ceramic Research Group (PCRG 2010). The total assemblage was studied and a full catalogue was prepared. The sherds were examined using a hand lens (x10 magnification) and were divided into fabric groups defined on the basis of inclusion types. Fabric codes were prefixed by a letter code representing the main inclusion (F representing flint, G grog and Q quartz). A full description of the fabrics is presented in Appendix 1. Vessel form was recorded; R representing rim sherds, B base sherds, D decorated sherds and U undecorated body sherds. The sherds were counted and weighed to the nearest whole gram, and rim diameter calculated where available. Decoration, abrasion, wear and residues were also noted. The pottery and archive are curated by Trent and Peak Archaeology

Earlier Neolithic

Description

7.1.3. A small assemblage of Earlier Neolithic pottery comprising 60 sherds weighing 391g and containing rims from three vessels was recovered from pits 18 and 224. Pit 18 in Area D produced the bulk of the assemblage containing 53 sherds weighing 220g. All are from undecorated, round-based, weakly carinated bowls and include a large rim sherd from an open bowl with deep concave neck and direct pointed rim in corky, shell-tempered fabric (P1). The sherd is extremely abraded causing the exterior surface to be lost revealing numerous voids where shell has leached from the body of the vessel. The interior of the rim is burnished and features faint channels running vertically from below the rim. Two rolled or folded rims in sandy fabric with moderate, angular flint inclusions up to 2mm long were also found (P2 and P3). The exterior surfaces of these sherds are also closed or burnished. Two body sherds have slight changes of angle or weak carinations (P4). The remaining body sherds are all poorly preserved and many have lost their surfaces. All are undecorated. One sherd has burnt residue on the interior.

7.1.4. The Earlier Neolithic assemblage is mostly flint-tempered though sandy fabric with quartzite was also common (Table 2). A single sherd in micaceous fabric with quartzite and quartz sand was also found along with a single shell-tempered sherd. It is possible that these less common fabrics represent imports to the site.

Fabric	Description	Quantity	Weight (g)
QF	Common quartz sand with moderate angular flint up to 2mm	37	186
QQu	Common quartz sand with moderate white sub-rounded quartzite	21	133
QQu mica	Common quartz sand with moderate white sub-rounded quartzite and common mica shreds	1	22
QSh	Common quartz sand and common shell and shell voids	1	50
Total		60	391

Table 3: Quantity and weight of Earlier Neolithic pottery by fabric

Discussion

7.1.5. Characterising the Earlier Neolithic pottery is tricky given the small size and poor condition of the assemblage. Most pottery specialists consider the definition adopted by Cleal most useful for defining Carinated Bowl. This suggests that vessels with 'open or neutral profiles with a change of angle low on the body wall and light simple or rolled over rims and a fine finish' may be considered as being of the Carinated Bowl tradition (Cleal 2004, 177-80). Plain Bowl is defined as comprising undecorated bowls including closed forms as well as open or neutral ones, bag-like, rounded or heavily shouldered profiles, heavier rims and coarser, thicker fabrics than those used for Carinated Bowl (Whittle *et al.* 2011, 759). On this basis the assemblage from pit 224 falls more easily within the definition of Carinated Bowl having nicely finished surfaces and simple (P1) and everted rolled rims (P2 and P3) above weakly carinated shoulders (P4), though this classification should be considered tentative due to the thickness of rims (P2 and P3).

7.1.6. Small quantities of Earlier Neolithic bowl have been found elsewhere along the Trent valley, for example at Willington Aston barrow 1, Aston-on-Trent and Swarkestone barrow 4 (Woodward 2009, 88), though this type of pottery remains fairly rare.

Later Neolithic

Description

7.1.7. A single feature, pit 220, produced seven Later Neolithic sherds weighing 28g. This assemblage includes two highly decorated sherds of Grooved Ware (P5 and P6). The sherds are made of fine silty clay with moderate, small, sub-angular inclusions of pale grog. Each sherd is highly decorated, both on the interior and exterior, with fine incised lines, the interior of one sherd featuring a triangular panel in filled with oblique strokes (P5). The remaining sherds, in similar grogged fabric, are small and undecorated. The sherds are in poor condition and have abraded surfaces and edges. One has limescale or a similar deposit adhering to the exterior surface.

Discussion

7.1.8. The complex, finely incised decoration suggests that the sherds belong to the Clacton style of Grooved Ware (Longworth 1971). The use of dense incised decoration has been noted on sherds from several midland sites such as the Clacton style assemblages from Willington and Risby Warren (Manby 1999, fig. 6.3). Grooved Ware was in use in the later Neolithic, around 2900 to 2100 cal. BC (Garwood 1999, 152).

Middle Bronze Age

Description

7.1.9. Middle Bronze Age Deverel-Rimbury pottery was recovered from two pits and a soil layer in area A. A total of 19 sherds were found weighing 224g. Pit 176 produced twelve sherds weighing 133g including three rim sherds from a single vessel (P7). The tub-shaped vessel has vertical sides and a flat direct rim with a single row of fingertip impression immediately below the rim. The exterior of the vessel is smoothed. The vessel is made of blocky fabrics with moderate angular grey grog inclusions up to 2mm. All of the sherds from pit 176 are made of similar fabric, including a scrap from a simple base angle, which are probably from the same vessel.

7.1.10 Further Deverel-Rimbury sherds were recovered from pit 70 which produced six sherds weighing 71g from two vessels including a body sherd from a straight sided vessel with a shallow fingertip-impressed cordon running around the body of the vessel in grog-tempered fabric (P8). Body sherds were also found in a second vessel in dense blocky fabric with quartz or quartzite inclusions (Table 4).

Fabric	Description	Quantity	Weight (g)
Q	Common quartz sand	3	32
QG	Common quartz sand with moderate sub-angular grog up to 3mm	12	183
QQu	Common quartz sand with moderate white sub-rounded quartzite	4	9
Total		19	224

Table 4: Quantity and weight of Middle Bronze Age pottery by fabric

Discussion

7.1.11. The Deverel-Rimbury vessels found in pits 070 and 176 are most likely derived from a domestic assemblage similar to that excavated during gravel extraction at Fisherwick (Smith 1976) and Coton Lane, Tamworth, Staffordshire (Percival 2013). The deposition of the pottery found at Fisherwick and Coton Lane is similar with the bulk of the sherds being recovered from two small pits or postholes (Smith 1976, 5). The use of both grog and quartz in the fabric compares well with domestic vessel fabrics from Fisherwick as well as numerous cremation vessels from the region and the bucket-shaped and straight-sided forms are also widely paralleled within contemporary assemblages in the Midlands and northern region (Martin and Allen 2001, 10). The fingertip impressed rim is especially typical of Deverel-Rimbury pottery being found within the domestic assemblage from Billingborough (Chowne *et al*. 2001, fig.23, 29) as well as in the cemetery assemblage from Pasture Lodge Farm, Lincolnshire (Allen *et al*. 1987, fig.13, 9). Whilst the fingertip impressed cordon is paralleled at Fisherwick and Billingborough (Smith 1976, fig.7; Chowne *et al*. 2001, fig23, 41).

7.1.12. Radiocarbon dates have been achieved for several Deverel-Rimbury assemblages within the region. Allen notes similar vessels found on domestic settlements at Oversley Farm, near Manchester as dating to 1985-1660 cal. BC and from Swarkestone, Derbyshire to 1440-1145 cal BC (Martin and Allen 2001, 8.). Two radiocarbon dates on wood charcoal from Fisherwick, suggested occupation there took place from *c*.1565 B.C. to 910 B.C. (Smith 1976, 8). Dating of the assemblage is therefore likely to fall within the mid-2nd millennium BC.

Iron Age

Description

7.1.13. A total of 114 Iron Age sherds weighing 2590g were collected from seven features, mostly in Area A. many of these features contained small assemblages of between one and twelve sherds but two features, ditch 331 and droveway 100 contained larger assemblages of 69 and 24 sherds respectively.

7.1.14. The assemblage contains rims from six vessels. These include two substantial scored jars with flat upright rims decorated along the rim top with slashes (P9 and P10). The exterior surfaces of the vessels have been scored by rough wiping with a bunch of twigs or grass (P11). The bases are pinched out (P12). A very clear fracture along a coil join is visible in one large body sherd (P11) indicating that the vessels were handmade using coil construction. The jars compare well with large rounded jars with upright or slightly everted rims and scored surfaces from other Later Iron Age sites such as Grove Farm, Enderby dated to the 4th to 1st centuries BC (Elsdon 1992, fig.24, 2).

7.1.15. The assemblage also contains smaller vessels including finely finished jars or bowls with smoothed surfaces and everted rounded rims (P13 and P14, Elsdon 1992, fig.24, 1) and flat-rimmed jars with upright necks (P15) similar to examples from Fisherwick and Enderby (Elsdon 1993, B4; 1992, fig.26, 15).

7.1.16. Fabrics are predominantly sandy and no shell-tempered sherds were identified. The larger scored jars are made of fine sandy clay with some possible grog though few inclusions are visible in the hand specimen. The sandy fabric occasionally has numerous fine voids, perhaps suggesting a leached or burnt out component which may be limestone. Both grog and limestone is found in small quantities within the primarily sandy assemblage from Enderby (Elsdon 1992, 40). The smaller vessels are also made of sandy fabric with occasional rounded quartz inclusions and some mica (Table 5). The surfaces of these sherds are smoothed.

Fabric	Description	Quantity	Weight (g)
Q	Common fine sand	89	1145
QG	Common quartz sand with moderate sub-angular orange and grey grog up to 3mm	22	1424
Qmica	Common quartz sand with common mica	3	21
Total		114	2590

Table 5: Quantity and weight of Iron Age pottery by fabric

Discussion

7.1.17. The later Iron Age assemblage is predominantly scored, a style which was in use in the region from the fifth/fourth centuries BC to later 1st century BC, continuing in use into the 1st century AD in the Trent basin (Knight 2002, 134). The deposition of the pottery within ditches, rather that pits as seen with the earlier prehistoric assemblages from the site, suggests that a major landscape reorganisation featuring the construction of droveways and ditched field systems took place in the area in the later Iron Age accompanied by a change in depositional practice where pottery was disposed of in ditches.

7.1.18. The pottery is broadly contemporary with the Early La Tène assemblage from Fisherwick, 32km to the southwest of Aston Hall (Smith 1979, 90-3. 98-9; Knight 2010, 265) although it appears to be most similar in form and fabric to the 1st century BC assemblage from Grove Farm Enderby, c.30km to the south in the Soar valley (Elsdon 1992), perhaps suggesting connections exploiting the interconnected riverine network

7.2 Petrographic Analysis

By Patrick Quinn

Background, Sample Materials and Aims of Analysis

7.2.1. Thin section petrographic analysis has been undertaken on one Middle Bronze and three Iron Age ceramic sherds excavated from the Aston Hall, Aston-on-Trent, Derbyshire with the purpose of characterising their raw materials, production technology, provenance and investigating possible links to analysed ceramics from contemporaneous sites in the general region. The details of the three samples are given in Table 1 below.

Methodology

7.2.2 Small pieces of the three ceramic sherds were impregnated with epoxy resin and prepared as standard 30 µm petrographic thin sections at the Institute of Archaeology, University College London. The thin sections were characterized petrographically under the polarizing light microscope and interpreted in terms of their constituent raw materials and manufacturing technology. The likely provenance of the ceramic samples was assessed by comparing their petrographic fabric with the local geology of the area (Hains and Horton, 1969) and the petrographic analysis of contemporaneous pottery from other sites in the region (Elliot and Knight 1999; Knight et al. 2003; Quinn, 2011, 2013). Photomicrographs of all thin sectioned samples are presented in Figure 1.

Petrographic Composition and Technology

7.2.3. Sample Aston Hall 1
This sample is characterised in thin section by the presence of rounded, sand-sized quartz and polycrystalline quartz mineral inclusions and grog temper in a non-calcareous matrix. The mineral inclusions are generally fine to coarse sand sized (max = 0.875 mm) and sub-angular to well-rounded. In addition to quartz and polycrystalline quartz they include microcline, orthoclase and weathered feldspar, plus siltstone rock fragments. Some polycrystalline quartz has a foliated texture. Given the presence of siltstone might suggest that the sand inclusions derive from sandstone, however, no intact fragments of this are visible in the thin section.

7.2.4. These inclusions may have been added as temper, though it is not clear whether this was the case. Similar sized rounded quartzose inclusions occur within some of the fragments of grog, suggesting that some of the isolated mineral inclusions may have been liberated from the crushing of this temper. The sample contains abundant angular grog that reaches up to several millimeters in size. It has a similar appearance and composition as the rest of the fabric and in some cases can only be made out by the presence of ring voids from the contraction of the base clay during drying and firing. The grog has a non-calcareous, quartz-rich silty and sandy fabric. Some of the aforementioned larger sand-sized inclusions within the grog could represent temper added to the parent vessel(s) that were crushed. The clay matrix is hard to pick out in places due to the abundance of inconspicuous grog inclusions. However, it is noncalcareous, iron-rich and has a red to red-brown colour. The sample is highly porous due to the presence of ring voids around the grog and areas of macro- and meso-elongate voids. It also contains some large vughs. The clay matrix is optically active, suggesting that the sherd was not fired above 850°C. The margins of the sample were well-oxidised in places, though the core remained dark.

Sample Aston Hall 2

7.2.5. Sample Aston Hall 2 is composed in thin section of a dark, silty, non-calcareous fabric containing occasional sand-sized quartz and possible grog. The dominant inclusions in the sample are angular, silt-sized quartz, biotite and muscovite mica and rare feldspar. Rare larger, more rounded, sand-sized inclusions of quartz and polycrystalline quartz also occur in the sample. These are likely to be naturally occurring clasts within a sedimentary clay source.

7.2.6. The sample contains several inconspicuous argillaceous features which vary in terms of their boundaries and optical density. While some appear to be naturally-occurring clay pellets that were plastic at the time of the formation of the pot, others might be aplastic grog temper particles from pottery with a similar, silty, non-calcareous fabric. The clay matrix is non-calcareous, iron-rich and generally dark brown in colour. The sample has moderate porosity due to the presence of ring voids associated with the argillaceous features and thin elongate cracks passing through the sherd. Most of the sample was reduced during firing, except for a thin margin on one side that was oxidised. This might suggest firing on a covered bonfire and exposure of the vessel to air near the end of the process. The dark reduced nature of the clay matrix makes it difficult to determine the firing temperature of the sample.

Sample Aston Hall 3

7.2.7. This sample has a fabric characterised by disaggregated sandstone inclusions in a relatively fine non-calcareous red-firing clay matrix. The majority of the abundant inclusions in the sample can be attributed to a well-sorted, medium-grained, iron-rich quartz arenite sandstone source, of which a large fragment (3 mm) is present in the thin section. The disaggregated clasts of this rock occur throughout the fabric in the form of equant and elongate, sub-angular to sub-rounded, quartz and polycrystalline quartz with undulose extinction, as well as small rock fragments composed of two or three grains in their original arrangement. Rare, sandsized feldspar inclusions may also derive from the same rock type, though the sample also contains several possible plutonic igneous rock fragments composed of weathered feldspar that are unrelated to the sandstone. Two other rare rock inclusions include a large piece of calcareous, shaley marl and a quartz and amphibole inclusion of possible metamorphic origin. It is possible that the sandstone material was added as temper in the form of crushed rock. Alternatively the ceramic could have been made with a residual clay source formed on sandstone bedrock. The origin of the rare igneous and possible metamorphic rock inclusions is not clear. The sample contains fine angular silt-sized quartz that was naturally occurring in the clay. The sample is highly porous due to many large vughs and parallel elongate voids, though some of the former may have resulted from thin section preparation. The sherd was fired <850°C and perhaps 750°C due to the green colour of the amphibole. It was not entirely oxidised during firing.

Sample Aston Hall 4

7.2.8. Sample Aston Hall 4 is composed in thin section of rounded sand-sized quartz and polycrystalline quartz, plutonic igneous rock inclusions and grog in a non-calcareous clay matrix. The dominant quartzose inclusions are made up of medium-coarse sand-sized quartz and sometimes foliated polycrystalline quartz, as well as more angular silt-sized quartz. The sample also contains a significant proportion of sub-angular sand-sized quartz and feldspar inclusions that appear to have derived from a granitic igneous rock. One of these which is composed of coarse, equigranular quartz, plagioclase and perthite is suggestive of granodiorite. Other less common inclusions are chert, epidote, siltstone, orthite, weathered feldspar and biotite. The last two of these might be related to the igneous rock fragments in the sample. The sherd contains argillaceous inclusions, some of which are likely to be grog temper. This has a noncalcareous fabric with possible sand temper. Other argillaceous inclusions may be naturally occurring plastic clay pellets. The sample has a non-calcareous clay matrix with fine quartz and rare mica. Elongate voids are present throughout the sample as well as ring voids associated with the argillaceous inclusions. The sherd was fired <850°C and incompletely oxidised.

Provenance and Links to Other Material

7.2.9. Several possible links can be proposed between the four sherds analysed in this study. Grog temper appear to be present in three out of the four samples, though it is much more abundant in Middle Bronze Age sample Aston Hall 1 than samples Aston Hall 2 and 4. Both samples Aston Hall 1 and 4 appear to have been made by the addition of rounded sand as well as grog temper, although the two sherds are not identical. They also both contain rare inclusions of siltstone rock, which further links them. Coarser sedimentary rock occurs in sample Aston Hall 3 in the form of disaggregated sandstone. Both samples Aston Hall 2 and 4 contain plastic clay-rich inclusions of natural origin that might link the base clay in these two samples.

7.2.10. The clastic sedimentary rock that is present in samples Aston Hall 1, 3 and 4 may provide tentative evidence for local manufacture of these sherds. The bedrock of the area surrounding Aston-on-Trent is characterised by Triassic mudstone, siltstone and sandstone strata of the3 Brandscombe Mudstone, Arden Sandstone, Edwalton Member and Gunthorpe Member. Further linking the siltstone and sandstone inclusions to these units or distinguishing between them as sources of the material is not possible without field sampling and analysis of outcrops.

7.2.11. The area is covered by a range of superficial sedimentary deposits including ancient river terraces and overbank deposits, glacial till, glacio-lacustrine sediments and head. The rounded quartz and polycrystalline inclusions that may have been added as temper to samples Aston Hall 1 and 4 could have derived from any of these, but are perhaps more likely to have come from alluvial material, such as the Beeton Sand and Gravel deposit on which the site is located. Similarly, non-calcareous clay with silt-sized quartz and mica that has been postulated as a base clay for the tempered ceramics might have come from any of the mapped superficial deposits or finer layers within them.

7.2.12. The igneous rock fragments and associated mineral inclusions recorded in samples Aston Hall 3 and 4 may be diagnostic in terms of provenance. They appear to have come from medium-grained, plutonic, acid-intermediate ‘granitic’ igneous rock. Ceramics characterised by the presence of angular ‘granitic’ igneous inclusions are common among prehistoric and later pottery in the north of England and the Midlands (e.g. Freestone and Middleton, 1991;Knight, 1992; Knight *et al.* 2003; Quinn 2013, 2011; Wardle, 1992; Vince, 2005; Ixer and Vince, 2009). The widespread occurrence of pottery with such fabrics and variability in the types of granitic rock used suggests that igneous-tempered pottery was produced in various locations and was part of a wide tradition that was common in this period.

7.2.13 No primary outcrops of granitic or other igneous rocks occur in the area surrounding Aston-on-Trent or Derby. This suggests that the granitic material in samples Aston Hall 3 and 4 either originates from a glacial source or the sherds are non-local, having been made a significant distance away. The closest primary source of granitic rock is the Mountsorrel Granodiorite in the Charnwood Forest area, c. 40km from Aston-on-Trent. This has been interpreted as the source of later prehistoric pottery from the East Midlands by Knight *et al.* (2003). Iron Age granodiorite-bearing pottery has been found at Swarkestone Lowes not far from Aston-on-Trent (Elliot and Knight, 1999) as well as at Gamston on the outskirts of Nottingham (Knight, 1992).

7.2.14. Glacial till, sand and gravel occur near Aston-on-Trent and it is possible that this contains granitic clasts that could have been selected for use as temper. Alternatively, small igneous clasts could be present in clay deposit derived from the erosion and redistribution of glacial material. This seems more likely than the intentional selection, crushing and addition of granitic rock clasts, given the low abundance of granitic inclusions in the two samples.

7.2.15. Knight *et al.* (1992) highlight the difficulty of distinguishing between the Mountsorrel Granodiorite and other sources of granitic rock in archaeological ceramics, such as glacial granitic clasts deriving from the northern England and Scottish sources (Ixer and Vince 2009). The rare occurrence and small size of the granitic inclusions in samples Aston Hall 3 and 4 compound this problem.

7.3 Residue Analysis

By Ben Stern

Sample preparation

7.3.1. Two samples were selected for analysis: Sample 1, AHO2, area C (0209) [1076] ABY and Sample 4, AHO2, area A (0101) [0100] 5cm. One sherd was selected from the fragments of sample 1.

7.3.2. For each sherd areas from the interior and exterior of approximately 1X1 cm were separately selected due to the presence of visible staining and surface depressions where organic residues could be more likely preserved. Each was separately scraped with a solvent cleaned metal spatula to produce small quantities of material for extraction. Due to the soft ceramic it was possible to sample to a depth of a few millimetres using the spatula and without drilling.

7.3.3. The resultant surface scrapings were extracted with three sequential aliquots of ~1 ml DCM:MeOH (dichloromethane:methanol 2:1, v/v), with ultrasonication for 5 min. followed by centrifugation (5 min 2000 rpm). Excess BSTFA (*N,O*-bis(trimethylsilyl)trifluoroacetamide) with 1% TMCS (trimethylchlorosilane) was added to derivatise the sample which was left to react overnight. Excess derivatising agent was removed under a stream of nitrogen. The samples were diluted in DCM for analysis by GC-MS. A method blank was prepared and analysed alongside the four samples.

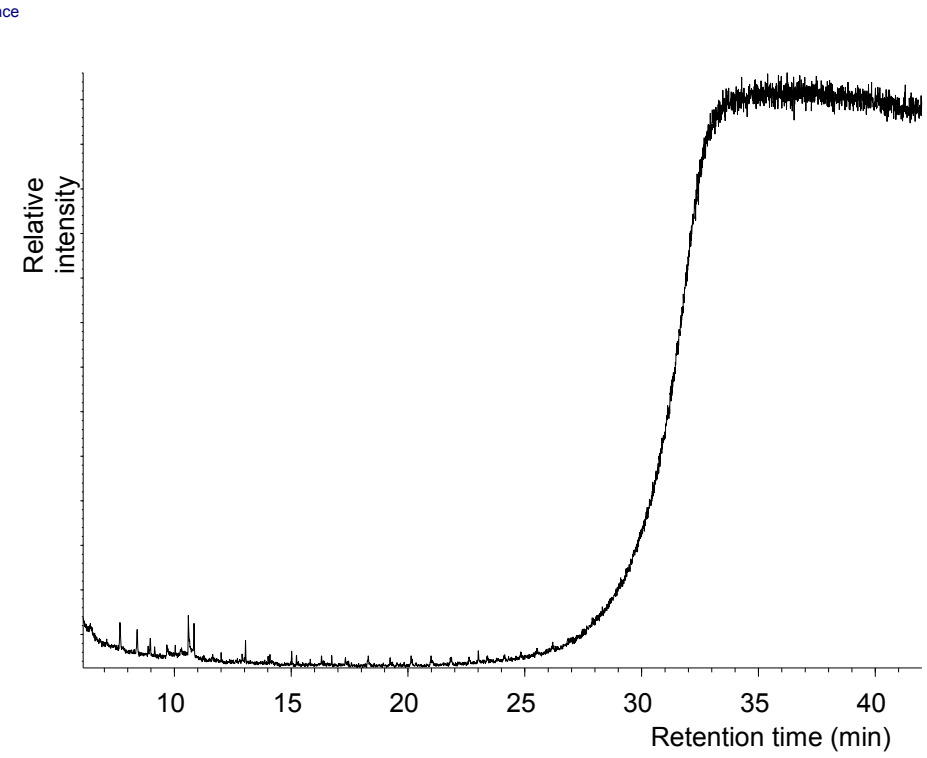
Instrumental (GC-MS)

7.3.4. Analysis was carried out by combined gas chromatography-mass spectrometry (GC-MS) using an Agilent 7890A Series GC connected to an 5975C Inert XL mass selective detector. The splitless injector and interface were maintained at 300°C and 340°C respectively. Helium was the carrier gas at constant flow. The temperature of the oven was programmed from 50°C (2 min) to 350°C (10 min) at 10°C/min. The GC was fitted with a 30m X 0.25mm, 0.25µm film thickness HP-5MS 5% Phenyl Methyl Siloxane phase fused silica column (Agilent J&W). The column was directly inserted into the ion source where electron impact (EI) spectra were obtained at 70 eV with full scan from *m/z* 50 to 800.

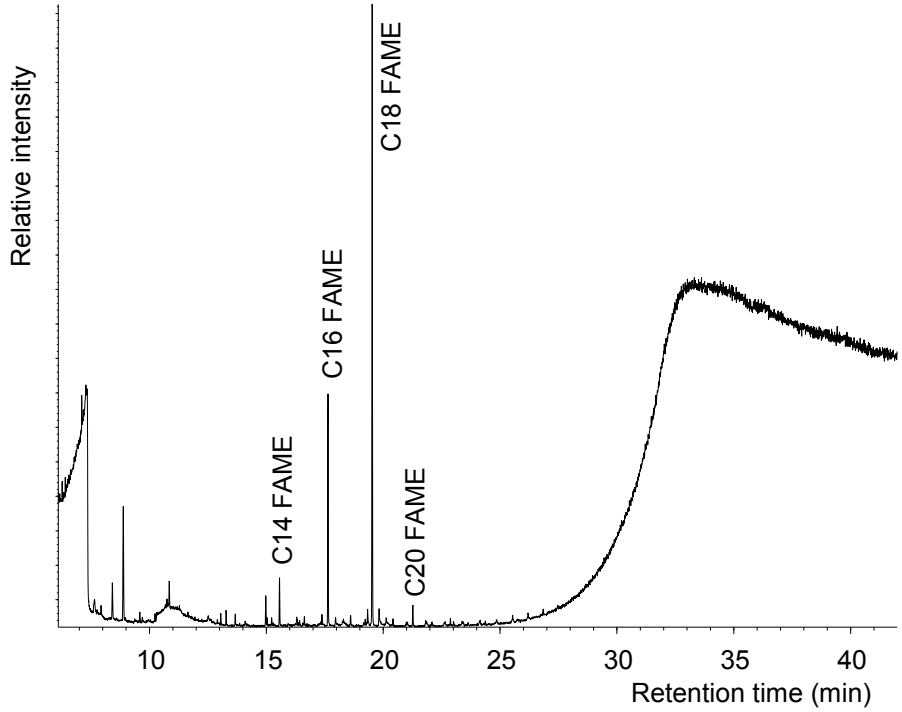
Results and Summary

7.3.5. The results are presented as chromatograms of the BSTFA derivatized solvent extract. These show each separated component of the solvent extract as discrete peaks, the area under each peak being representative of the abundance.

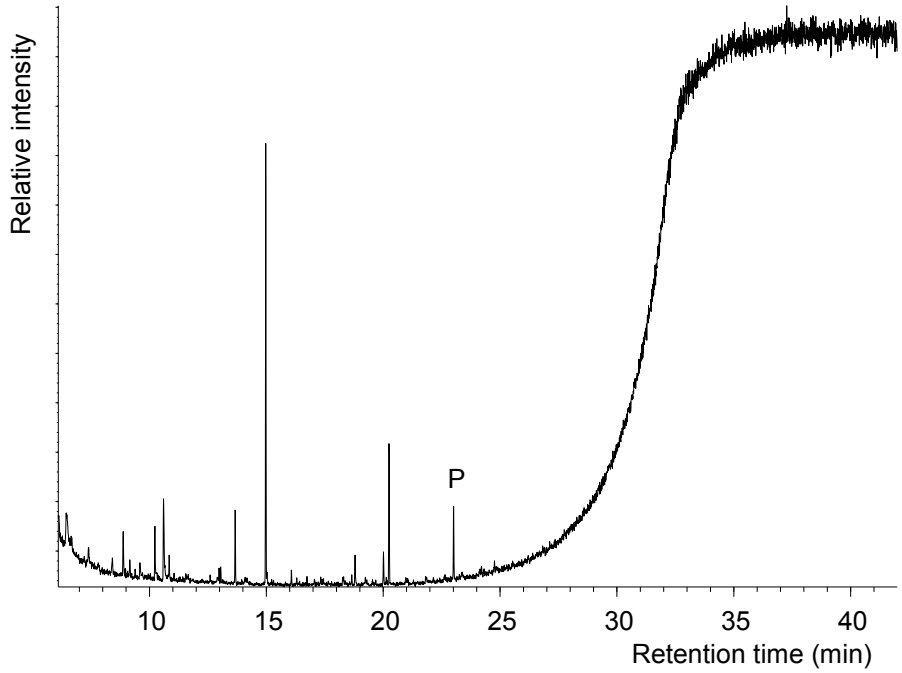
P = phthalate plasticiser
C = Fatty acid showing carbon number and the degree of unsaturation.



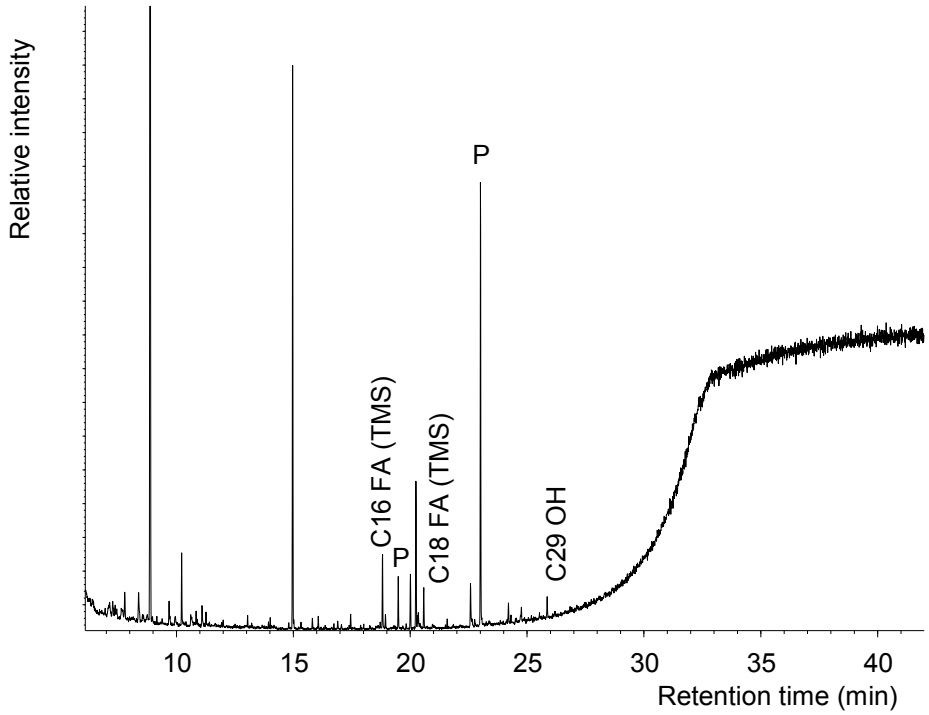
Method blank



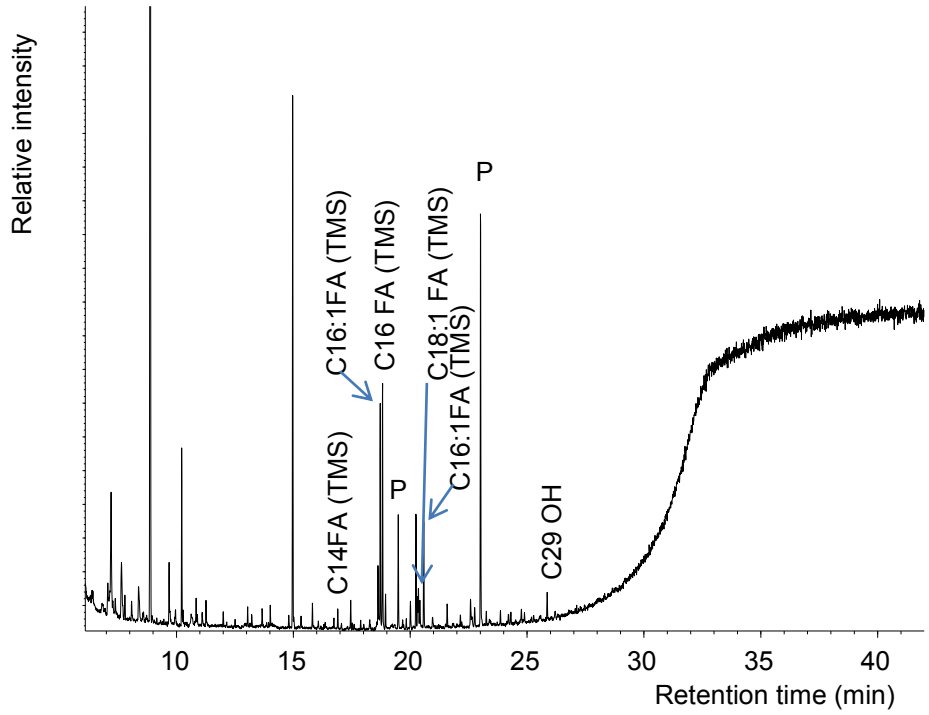
Sample 1, interior surface



Sample 1, exterior surface



Sample 4, interior surface



Sample 4, exterior surface

7.3.6. A method blank was prepared and analysed alongside the four samples. This sample contains no lipids and indicates that there is no sample preparation or analytical source of contamination. The raised baseline from ~30 to 42 minutes is termed 'column bleed', this is a normal occurrence as part of analysis and is only revealed here as the vertical scale has been enlarged for these samples.

7.3.7. The interior surface of sample 1 contained a series of fatty acids, from C14 to C20 in even carbon numbers. Traces of C17 were also observed which could indicate bacterial degradation. These fatty acids were extracted as the fatty acid methyl esters. This is very unusual as normally the fatty acids would be present as the free fatty acids and only methylated as part of a laboratory methylation (which was not carried out here – these samples were reacted with BSTFA to produce the silyl esters). The exterior surface of sample 1 yielded no indigenous lipids, the peaks present are either phthalate plasticisers or analytical artefacts. The plasticisers (labelled, P) are modern synthetic compounds, found associated with plastics, they are likely to originate from the sample storage. The analytical artefacts are likely to originate from the instrument or from the vial caps. However, their presence does not interfere with any of the other extracted components and they can be excluded from any further interpretation.

7.3.8. The occurrence of fatty acid methyl esters has been observed before, but cannot be directly linked to any natural product. Their presence, only on the interior surface, indicates that they are associated with use of the vessel, possibly a degraded oil or fat. It is not possible to identify this as being either a plant or animal origin. However, I would not be fully confident in stating that these fatty acids are indigenous to the vessels and are not the result of contamination.

7.3.9. The interior of sample 4 contained C16 and C18 saturated fatty acids (here TMS derivatised as expected from the applied methodology). There is also a single long-chain alcohol (C29) which is likely to originate from the soil. The exterior surface also contains these fatty acids, but with additional carbon numbers and unsaturated versions of the C16 and C18 fatty acids. Unfortunately, the amounts of these compounds are relatively low, they were found on the exterior surface as well as the interior, and that the presence of these ubiquitous fatty acids is not particularly diagnostic as at low levels indicates that they could originate from ingress from the burial environment and not be associated with vessel use or function.

7.4 Worked flint

By Peter Webb

7.4.1 Excavations carried out by Trent & Peak Archaeology in September 2014 at Aston-on-Trent, Derbyshire, on a site that predominantly included features dated to the mid-late Iron Age, recovered a total of 35 lithic artefacts and 27 pieces of natural flint.

Methodology

7.4.2 Artefacts were studied individually and quantified by number and weight of piece types. In order to assess the nature of the assemblage the lithics were examined under a 20x magnification hand-lens for signs of retouch and indications of use-wear in order to allow them to be subdivided by type category based on tool form, presence of retouch and use-wear. Complete cores were classified based on Clark's 1960 typology with the addition of removal type. Measurements of each artefact were taken to ascertain the original form of blank, based on the length:breadth ratio (squat flakes <1:1; flakes ≥1:1 - <1.5:1; long flakes ≥1.5:1 - <2:1; blades ≥2:1) using digital vernier calipers rounded to 0.01mm accuracy as a guide to the possible period of production. Length measurements were taken at the maximum distance between two points along the bulbar axis at right angles to the bulbar platform. Where this could not be identified, the measurement was taken following the percussion ripples. Width measurements were taken at the maximum distance between two

points perpendicular to the length. Thickness measurements were taken at the maximum distance between points on the ventral and dorsal surfaces. Where artefacts were incomplete, measurement data was deemed not suitable for analysis, though all measurements were recorded. Material that was deemed to be natural was not measured. All artefacts were weighed on digital scales and rounded to 0.1g accuracy. Colour comparisons were made using the Munsell Rock Colour Book (2013) based on the dominant hue of the material, excluding the cortex, patination or burning discolouration to ascertain if there was a preferred colour for particular tool types. The nature of the cortex (whether rolled or not) was used to establish whether the material was from a nodule or river gravel source. The amount and nature of the cortex was also measured to establish the presence of primary, secondary and tertiary flaking waste. The presence of a bulb of percussion and errailure flakes were also noted to help establish the method of production; whether hard or soft hammer. The nature of the fracture termination was also noted to establish the skill of the knapper. The presence of burning was also noted.

Results

7.4.3. **Raw material**

The material recovered from Aston-on-Trent is composed entirely of flint. River gravel sources provide 57% and nodule sources 37% of the assemblage, with a further 6% being of an indeterminate source. Of these, the dominant colour is grey-black, comprising 40% of the assemblage. The remaining pieces form various shades of grey.

7.4.4. The complete flakes contained within this assemblage are all small in size, with none exceeding 65mm in any dimension. However, 12 of the pieces are incomplete, providing the potential for their derivation from much greater pieces, although none show signs of being significantly larger. The majority of the pieces are all relatively thin, with most under 15mm, though two pieces (including ADK) are larger and relates to their typology as objective pieces.

7.4.5. **Production stages**

The various stages of lithic reduction process can be seen in the division of the assemblage into four main categories of lithic material: objective pieces, primary flakes, secondary flakes and tertiary flakes. Of the Aston assemblage, four pieces can be termed as objective pieces; one can be classed as a primary flake, 14 (40%) as secondary flakes, and 19 (54%) as tertiary flakes. These suggest that it was predominantly the later stages of production being carried out at the site, with primary stages predominantly practiced elsewhere.

7.4.6. The primary flake was produced from a nodule source, whilst both the secondary and tertiary pieces were produced from a mix of nodule and gravel sources, though predominantly from the latter. The dimensions of the primary flake suggest that it may not have been a true primary reduction piece, rather that it was removed later in the sequence, probably to tidy a secondary flake. The secondary flakes show similar quantities of all of the size ranges and are likely to represent both early and late removals from tertiary pieces. The tertiary pieces similarly show a range including all sizes, though there is a dominance of mid-range pieces.

7.4.7. **Debitage**

A total of 17 pieces (49%) of the assemblage were classified as debitage. Of these, one is a primary flake, one a blade fragment, two micro-debitage, and the remainder flakes. Despite the combination of both nodule and gravel pieces within the assemblage, the debitage is dominated by material sourced from gravel deposits, with only three pieces (18%) from nodule sources. This may be expected with the greater proportion of gravel flint in the assemblage, but may be a result of the increased curation and care taken over the more rare nodule flint. The two pieces of micro-debitage suggest that a limited amount of the final finishing or repair of tools took place.

7.4.8. **Objective pieces**

A total of four pieces (11%) from the assemblage were classified as objective pieces. Of these, none appear to be formalised cores of Clark typology (Clark et al 1960), with all being flaked pieces with only small numbers of flake removals. This suggests that it was primarily

expedient tools that were being produced on the site, and that it may have been transitory in nature.

7.4.9. **Utilised tools**
Of the non-retouched tools, only one (AFK) shows possible signs of use to the naked eye, along the left lateral edge. This suggests that the tool was expedient in nature, created for the use of the natural sharp edge after flaking, being quickly used and discarded, most likely as a knife, with the sharp fresh edge of a new flake used for cutting until it is blunt. However, the artefact is not complete, and it is possible that another part of the tool was retouched.

7.4.10. **Retouched tools**
The remaining 13 pieces (37%) all show signs of deliberate retouch. Of these, none are diagnostic as definite tool forms of a particular period, with the majority being forms used throughout prehistory. ACN (Figure 1) shows signs of being a finely denticulated blade (or a very coarse edge trimmed blade), with the nature of the retouch suggesting that it was used in a 'sawing' motion.

7.4.11. Two pieces, AAD, and one of the unstratified pieces (Figure 2), show edge trimming along at least one lateral edge. These are likely to have been used as simple cutting tools, with the minimal retouch implying rapid production for expedient use.

7.4.12. Two of the tools show more considered retouch and have been made into scrapers. AAU (Figure 3) is an end-scraper on a blade with retouch along both lateral edges, providing use as a multiple tool with cutting edges. It is the most formal looking tool of the assemblage. AAC (Figure 4) has been retouched at the distal end, with possible signs of retouch towards the distal end of the left lateral, though masked by later damage. The steepness of this retouch suggests that it may have been a curated end-and-side-scraper.

7.4.13. A further tool has been created on one of the unstratified flakes (Figure 5), which has been turned into a notched flake, with retouch having created a notch on the inverse of the distal end.

7.4.14. The remaining pieces, whilst showing signs of retouch, do not appear to fall into definitive tool categories, and are here classed as miscellaneous retouched pieces (Figure 6). Both pieces recorded as AAT show signs of retouch along lateral edges, though one appears to have been produced on a blade, and the other on a flake. It is possible that their incomplete nature is a result of damage through use.

7.4.15. ABA has minimal retouch towards the distal end of one lateral edge. Its position, and the shape of the flake, suggest that the retouch was added to facilitate the handling/hafting of the tool as it leaves a straight, sharp edge for use as a cutting edge. ABB similarly shows a small amount of retouch along one lateral edge in a position suitable for handling/hafting. The position of breaks on both of these tools suggests that they may have indeed been hafted.

7.4.16. ADZ has partial retouch along one lateral edge, with the remainder of the edge showing possible signs of use, suggesting that it was used as a knife blade. The bulk of the piece, however, is very crude and suggests that the tool was created on a rejuvenation flake, which if true would not be the finest of tools, implying the expedient nature of the tool.

7.4.17. AEL is a retouched blade fragment likely to have been used as a backed knife, though subsequently badly damaged.

7.4.18. AEV shows signs of having been crudely retouched towards the proximal end of one lateral edge with damage along the remainder of the edge suggesting its use as a knife.
The material recovered from Ryhall is composed entirely of flint, with tertiary river gravel deposits providing the most likely source.

Discussion

7.4.19. The lithic assemblage recovered from Aston-on-Trent is composed entirely of flint, with pieces collected from a combination of both tertiary river gravel and outlying nodules sources. The river gravel material is likely to have been collected from the River Trent, a short distance to the east, whilst the nodule material is likely to be derived from clay-with-flint deposits from further afield.

7.4.20. The assemblage does not contain any pieces that are diagnostic of a particular period of Prehistory, though the range of sizes and presence of blades and blade-like pieces alongside flakes suggests that it may date to the Early Neolithic. It is possible that the blades on their own could represent small scale Mesolithic activity, especially with the residual nature of the assemblage providing the opportunity for artefacts from different phases of activity being mixed together. However, this view is speculative.

7.4.21. The range of artefacts, with primarily minimally retouched tools and expedient pieces, suggests that the site may represent a short-term locale rather than settlement *per se,* with tools quickly created immediate use and discard rather than being carefully worked at a site where time was spent. This is supported by the presence of flaked pieces rather than formalised cores which would have been a more efficient use of material; the limited amount of debitage; and the poor quality of the tools, all of which imply hurried production and use.

7.4.22. Neolithic lithic artefacts have been recovered from across the East Midlands, with monuments particularly focused within the Peak District. Many of the lithic scatters have not yet been characterised by site types, though they are suggestive of activity and occupation throughout the region, with many sites of both periods focused along river valleys on the margins of upland areas. The location of Aston itself, within the Trent Valley, would have made it ideal for access to the uplands to the north and the lowland areas to the south, providing access to a range of resources.

7.4.23. The identification of a cursus monument and enclosure at Aston-upon-Trent (Knight and Howard 2004:64) shows that there was considerable Neolithic activity in the area, and it may be that the lithics recovered during the 2014 excavations relate to an ancillary activity site possibly related to the monument.

7.4.24. The recovery of the lithics from features that include Iron Age pottery suggests that the material was residual, and it cannot be confirmed whether the site of the 2014 excavation represents an activity site since destroyed by later activity, or whether it is peripheral to an activity site, with material redeposited during later activity.

7.4.25. That domestic activity was taking place on the site is evidenced by the nature of the features and the quantity of pottery that was recovered during the excavations. These are predominantly dated to the Bronze and Iron Age, and as such only limited amounts of flint would be expected to be found, particularly if the latter. The presence of a Conygar type barbed and tanged arrowhead (AAA), along with the broad nature of possible knife ADV and rejuvenation flake AAN support Bronze Age activity on the site whilst the occurrence of a possible stone axe fragment (AEX) and the bladelet nature of ALL provide hints of earlier Neolithic activity in the vicinity of the site.

Conclusion

7.4.26. Only tentative conclusions can be reached as to the activity represented by the assemblage due to the restricted number of artefacts and their residual nature. The limited nature of the assemblage and absence of primary cortical flakes suggests that extensive knapping was not carried out at the site, though clearly some activity can be expected in the vicinity, perhaps relating to a small scale activity locale rather than a domestic settlement.

7.4.27. Whilst no diagnostic material was securely stratified, the assemblage is likely to represent Early Neolithic activity in the vicinity of Aston-on-Trent, probably associated with the cursus monument and enclosures previously recorded in the area.

7.5 Faunal remains

By Alison Wilson

7.5.1. A small assemblage of burnt l bone was recovered from excavations at Aston Hall, consisting of just 6 fragments listed in the table below:

Site Code	Find Code	Material	Object	Period	Context	Area	Cut	Spit	Count	NoBags	Weight(g)
AHO2	AAS	Bone	Burnt fragments	indet.	0076	C	0068	1	4	1	<1
AHO2	AAW	Bone	Burnt fragments	indet.	0076	C	0068	2	2	1	<1

Table 6. Faunal remains

7.5.2. It is likely that the poor condition and low concentration of bone in the finds record of the site, is more a reflection of decay due to poor preservation than an actual absence of bone in antiquity. If bone is heated to approximately 600° or more (when it becomes white or 'calcined') the minerals re-crystallise into a more stable structure, which explains the survival of small fragments of burnt bone.

7.5.3. In summary, given the small quantity of bone and the poor state of preservation, there is little that can be gained from further study.

7.6 Brick and Tile

By Alison Wilson

7.6.1. A total of five fragments of modern ceramic building material were recovered from the excavation. They are detailed below.

Site Code	Find Code	Material	Object	Period	Context	Area	Cut	Spit	Count	NoBags	Weight(g)	Comment
AHO2	ADH	Brick/tile	Fragment	P/M	0290	A	0291		1	1	84	
AHO2	ABL	Brick/tile	Fragment	P/M	0106	D	0037	S/F	1	1	28	
AHO2	ABM	Brick/tile	Fragment	P/M	0106	D	0037	1	1	1	9	
AHO2	AAQ	Brick/ Tile	Fragment	P/M	0062	D	0045		1	1	47	
AHO2	ADA	Brick/tile	Fragments	P/M?	0289				2	1	<1	

Table 7. Brick and tile

7.6.2. All of the fragments are relatively small and are likely to be present due to mechanised farming practices such as deep ploughing which may have moved these modern artefacts into the lower substrate. Given the overall prehistoric context of the Aston Hall Hospital excavations, these modern ceramic building materials are regarded as having very limited value.

7.7 Stone

By Alison Wilson

7.7.1. A small assemblage of stone was collected during the course of the excavation. Collectively, the assemblage was regarded as having limited archaeological value. A short statement on the stone is detailed below.

Site Code	Find Code	Material	Object	Period	Context	Area	Cut	Spit	Count	NoBags	Weight (g)	Comment
AHO2	ABZ	Stone	Burnt	Pre		C	0176					
AHO2	ABS	Stone	FCP's	Pre	0124	D	0038		6	1	59	
AHO2	ADY	Stone	Large Fragment	indet.	0377		0376		1	1	1684	
AHO2	ABT	Stone	Natural	indet.								Discard
AHO2	ACP	Stone	Quern frags, burnt + Stone	Pre?	0254	C			3	1	924	

Table 8. Stone

7.7.2. With the exception of the two fragments of quern stone, the stone assemblage was not considered to be either in a high enough quantity or characteristic enough to provide any interpretive value.

7.7.3. The two fragments of quernstone collectively weigh 924g. The maximum width measures 54mm whilst the minimum width was 43mm. Although the partial remains are fragmented, they are reminiscent of a rotary style rather than a saddle quern. Rotary querns are commonly regarded as representing Romano-British technologies. Examples of rotary querns have however been identified in Iron Age contexts at sites including Ancaster Quarry, Elms Farm and Weelsby Avenue (Cooper, N.J. 2006: 106).

7.8 The Environmental Remains

By Alison Wilson

7.8.1. *Introduction*
This report provides a brief initial assessment of the palaeo-environmental samples retrieved during an archaeological evaluation carried out by Trent & Peak Archaeology, between the 11th of August and the 3rd of October 2014, commissioned by CgMs Consulting on behalf of Richmond Care Villages.

7.8.2. As part of the environmental sampling strategy, a total of 44 bulk samples were taken from various contexts. The sample size was 40 litres when possible, although 10 litre samples were taken when features were too small for full sampling. For the purposes of this interim assessment, one sub-sample of 10 litres was taken from each context in order to ascertain archaeobotanical potential. The samples are listed in table form below, with a brief description of the deposit from which the samples were taken and any environmental material found.

7.8.3. *Method*
The soil samples were processed in the following manner;

7.8.4. Sample weight and volume was measured prior to processing and a sub-sample was removed in case any further analysis should be required. The non-waterlogged samples were then processed using a 'Siraf' flotation tank (Williams 1973), using a sieve with a 250µ mesh and an internal 1mm mesh for the residue.

7.8.5. Both the residues and non-waterlogged flots were dried and any waterlogged flots retained in waterproof containers. A total of 331 litres of soil was processed in this way.

7.8.6. The weight and volume of the residue was recorded, before it was sorted by eye for any environmental and archaeological finds. These were picked out, noted on the assessment sheet and bagged. A magnet was run through the residue in order to recover any magnetised material such as hammerscale. The residue was then discarded.

7.8.7. The flot of each sample was studied using 10x magnification and the presence of environmental finds noted and their abundance and species recorded on the assessment sheet. The flots were then bagged and along with the finds from the residue constitute the material archive of the samples.

Table 1: environmental finds from feature (0068), fill [0076]
Feature description: Pit
Environmental sample no: 01
Sample volume before processing: 9 litres
Sample weight before processing: 8 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance >250 indet. comminuted fragments, most <2mm
Charred seed	An abundance of 1-10 indet.
C14 potential	Good, charred seed and charcoal

Table 2: environmental finds from feature (0220), fill [0221]
Feature description: Pit
Environmental sample no: 02
Sample volume before processing: 8 litres
Sample weight before processing: 7 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 51-150 indet. comminuted fragments <2mm
C14 potential	Average, charcoal

Table 3: environmental finds from feature (0331), fill [0349]
Feature description: N/S aligned linear
Environmental sample no: 43
Sample volume before processing: 9 litres
Sample weight before processing: 8.5 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 11-50 indet. comminuted fragments <2mm
Charred chaff	Abundance 1-10
C14 potential	Good, chaff

Table 4: environmental finds from feature (0331), fill [0391]
Feature description: N/S aligned linear
Environmental sample number: 44
Sample volume before processing: 9 litres
Sample weight before processing: 9 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 11-50 indet. comminuted fragments, most <2mm
C14 potential	Average, charcoal

Table 5: environmental finds from feature (0125), fill [0126]
Feature description: Pit
Environmental sample number: 45
Sample volume before processing: 9 litres
Sample weight before processing: 9 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 0-10 indet. comminuted fragments, most <2mm
C14 potential	None

Table 6: environmental finds from feature (0038), fill [0124]
Feature description: Pit
Environmental sample number: 46
Sample volume before processing: 9 litres
Sample weight before processing: 8 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 1-10 indet. comminuted fragments, <2mm
Charred chaff	Abundance 1-10, small fragments
C14 potential	Good, chaff

Table 7: environmental finds from feature (0108), fill [0109]
Feature description: pit
Environmental sample number: 47
Sample volume before processing: 10 litres
Sample weight before processing: 12 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 1-10 indet. comminuted fragments, <2mm
C14 potential	None

Table 8: environmental finds from feature (0037), fill [0106]
Feature description: pit
Environmental sample number: 48
Sample volume before processing: 10 litres
Sample weight before processing: 9 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 1-10 indet. comminuted fragments, <2mm
C14 potential	None

Table 9: environmental finds from feature (0018), fill [0126]
Feature description: large pit
Environmental sample number: 49
Sample volume before processing: 9 litres

Sample weight before processing: 10 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 151-250 indet. comminuted fragments <2mm
Charred grain	1 degraded, possibly rye
Molluscs	Abundance 1-10
C14 potential	Good, grain and charcoal

Table 10: environmental finds from feature (0018), fill [0019]
Feature description: large pit
Environmental sample number: 50
Sample volume before processing: 9 litres
Sample weight before processing: 9 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 11-50 indet. comminuted fragments, most <2mm
C14 potential	Average, charcoal only

Table 11: environmental finds from feature (0224), fill [0225]
Feature description: Pit
Environmental sample number: 51
Sample volume before processing: 10 litres
Sample weight before processing: 11 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 151-250 indet. comminuted fragments, most <2mm
Charred grain	Abundance 1-10, indet. fragments
Charred chaff	Abundance 1-10
Molluscs	Abundance 1-10
C14 potential	Excellent, grain, chaff and charcoal

Table 12: environmental finds from feature (0102), fill [0111]
Feature description: large pit in alignment
Environmental sample number: 52
Sample volume before processing: 10 litres
Sample weight before processing: 12 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 11-50 indet. comminuted fragments most <2mm
C14 potential	Average, charcoal

Table 13: environmental finds from feature (0034), fill [0115]
Feature description: large pit in alignment
Environmental sample number: 53
Sample volume before processing: 9 litres
Sample weight before processing: 11 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 51-150 indet. comminuted fragments most <2mm

Charred chaff	Abundance 1-10 – indet.
C14 potential	Average, chaff

Table 14: environmental finds from feature (0041), fill [0060]
Feature description: pit
Environmental sample number: 56
Sample volume before processing: 9 litres
Sample weight before processing: 10 kilograms
% of processed sample examined: 100%

Material	**Quantity**
Charcoal	Abundance >250 indet. comminuted fragments <2mm
Charred grain:	Abundance 1-10 – degraded, possibly spelt
Molluscs	Abundance 1-10
C14 potential	Good, grain and charcoal

Table 15: environmental finds from feature (0140), fill [0154]
Feature description: large oval pit
Environmental sample number: 55
Sample volume before processing: 10 litres
Sample weight before processing: 11 kilograms
% of processed sample examined: 100%

Material	**Quantity**
Charcoal	Abundance 1-10 indet. comminuted fragments <2mm
C14 potential	None

Table 16: environmental finds from feature (0347), fill [0361]
Feature description: large pit
Environmental sample number: 57
Sample volume before processing: 9 litres
Sample weight before processing: 10 kilograms
% of processed sample examined: 100%

Material	**Quantity**
Charcoal	Abundance 11-50 indet. comminuted fragments <2mm
C14 potential	Poor, some small charcoal fragments

Table 17: environmental finds from feature (0070), fill [0077]
Feature description: pit
Environmental sample number: 65
Sample volume before processing: 9 litres
Sample weight before processing: 10 kilograms
% of processed sample examined: 100%

Material	**Quantity**
Charcoal	Abundance >250 indet. comminuted fragments, most <2mm
C14 potential	Average, large charcoal fragments

Table 18: environmental finds from feature (0176), fill [0208]
Feature description: elongated pit
Environmental sample number: 67
Sample volume before processing: 10 litres
Sample weight before processing: 10 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 1-10 indet. comminuted fragments <2mm
Molluscs	1 complete snail shell
C14 potential	None

Table 19: environmental finds from feature (0068), fill [0076]
Feature description: pit
Environmental sample number: 69
Sample volume before processing: 8 litres
Sample weight before processing: 8 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance >250 indet. comminuted fragments <2mm
Charred grain:	Abundance 1-10, degraded indet.
C14 potential	Good, grain and charcoal

Table 20: environmental finds from feature (0220), fill [0221]
Feature description: pit
Environmental sample number: 71
Sample volume before processing: 7 litres
Sample weight before processing: 6 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance >250 indet. comminuted fragments <2mm
C14 potential	Average, charcoal

Table 21: environmental finds from feature (0253), fill [0254]
Feature description: large pit
Environmental sample number: 73
Sample volume before processing: 10 litres
Sample weight before processing: 11 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance >250 indet. comminuted fragments <2mm
Charred grain	Abundance 1-10, degraded indet. barley?
Charred seeds	Abundance 11-50, hazel shell
C14 potential	Excellent, hazel, grain and charcoal

Table 22: environmental finds from feature (0170), [0183]
Feature description: elongated pit
Environmental sample number: 75
Sample volume before processing: 10 litres
Sample weight before processing: 10 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 51-150 indet. comminuted fragments <2mm
C14 potential	Average, charcoal

Table 23: environmental finds from feature (0200)

Feature description: preserved soil in natural hollow
Environmental sample number: 77
Sample volume before processing: 7 litres
Sample weight before processing: 7 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 11-50 indet. comminuted fragments <2mm
C14 potential	Average, charcoal

Table 24: environmental finds from feature (0100), fill [0101]
Feature description: linear/droveway
Environmental sample number: 80
Sample volume before processing: 10 litres
Sample weight before processing: 10 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 51-150 indet. comminuted fragments <2mm
Charred grain	Abundance 1-10, indet, degraded
C14 potential	Good, grain and charcoal

Table 25: environmental finds from feature (0100), fill [0101]
Feature description: linear/droveway
Environmental sample number: 78
Sample volume before processing: 5 litres
Sample weight before processing: 5 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 1-10 indet. comminuted fragments <2mm
C14 potential	None

Table 26: environmental finds from feature (0100), fill [0101]
Feature description: linear/droveway
Environmental sample number: 82
Sample volume before processing: 9 litres
Sample weight before processing: 9 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 51-150 indet. comminuted fragments most <2mm
C14 potential	Poor, small charcoal fragments

Table 27: environmental finds from feature (0100), fill [0101]
Feature description: linear/droveway
Environmental sample number: 84
Sample volume before processing: 8 litres
Sample weight before processing: 8 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 11-50 indet. comminuted fragments <2mm

C14 potential	Poor, charcoal

Table 28: environmental finds from feature (0303), fill [0304]
Feature description: linear/droveway
Environmental sample number: 86
Sample volume before processing: 4 litres
Sample weight before processing: 4 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 1-10 indet. comminuted fragments <2mm
C14 potential	Very poor, small charcoal fragments

Table 29: environmental finds from feature (0303), fill [0304]
Feature description: linear/droveway
Environmental sample number: 88
Sample volume before processing: 10 litres
Sample weight before processing: 10 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 151-250 indet. comminuted fragments <2mm
Charred chaff	Abundance 1-10, indet.
C14 potential	Average, chaff and charcoal

Table 30: environmental finds from feature (0303), fill [0304]
Feature description: linear/droveway
Environmental sample number: 90
Sample volume before processing: 10 litres
Sample weight before processing: 10 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 51-150 indet. comminuted fragments <2mm
C14 potential	Average, charcoal

Table 31: environmental finds from feature (0303), fill [0304]
Feature description: linear/droveway
Environmental sample number: 92
Sample volume before processing: 10 litres
Sample weight before processing: 10 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 11-50 indet. comminuted fragments <2mm
C14 potential	Poor, small charcoal fragments

Table 32: environmental finds from feature (0009)
Feature description: NW/SE aligned linear
Environmental sample number: 96
Sample volume before processing: 10 litres
Sample weight before processing: 10 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 11-50 indet. comminuted fragments <2mm
C14 potential	Poor, small charcoal fragments

Table 33: environmental finds from feature (0011), fill [0016]
Feature description: curvilinear ditch segment
Environmental sample number: 98
Sample volume before processing: 10 litres
Sample weight before processing: 10 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 1-10 indet. comminuted fragments <2mm
C14 potential	Poor, small charcoal fragments

Table 34: environmental finds from feature (0008), fill [0411]
Feature description: curvilinear ditch
Environmental sample number: 101
Sample volume before processing: 10 litres
Sample weight before processing: 10 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 51-150 indet. comminuted fragments <2mm
C14 potential	Poor, small charcoal fragments

Table 35: environmental finds from feature (0010), fill [0017]
Feature description: N/S aligned linear ditch
Environmental sample number: 102
Sample volume before processing: 10 litres
Sample weight before processing: 10 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 11-50 indet. comminuted fragments <2mm
Charred grain	Abundance 1-10, indet fragments
C14 potential	Average, grain fragments

Table 36: environmental finds from feature (0376), fill [0377]
Feature description: large pit
Environmental sample number: 104
Sample volume before processing: 10 litres
Sample weight before processing: 10 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 51-150 indet. comminuted fragments <2mm
Charred grain	Abundance 1-10, degraded indet.

C14 potential	Good, grain

Table 37: environmental finds from feature (0300), fill [0413]
Feature description: E/W aligned linear
Environmental sample number: 105
Sample volume before processing: 9 litres
Sample weight before processing: 9 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 1-10 indet. comminuted fragments <2mm
C14 potential	Poor, small charcoal fragments

Table 38: environmental finds from feature (0300), fill [0312]
Feature description: E/W aligned linear
Environmental sample number: 107
Sample volume before processing: 10 litres
Sample weight before processing: 10 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 1-10 indet. comminuted fragments <2mm
C14 potential	Poor, small charcoal fragments

Table 39: environmental finds from feature (0303), fill [0304]
Feature description: E/W aligned linear/droveway
Environmental sample number: 108
Sample volume before processing: 10 litres
Sample weight before processing: 10 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 11-50 indet. comminuted fragments <2mm
Charred grain	Abundance 1-10, degraded, indet.
C14 potential	Good, grain and charcoal

Table 40: environmental finds from feature (0389), fill [0413]
Feature description: E-W aligned linear
Environmental sample number: 109
Sample volume before processing: 9 litres
Sample weight before processing: 9 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 11-50 indet. comminuted fragments <2mm
Charred grain	Abundance 1-10, degraded indet.
C14 potential	Good, grain

Table 41: environmental finds from feature (0331), fill [0386]
Feature description: N/S aligned linear

Environmental sample number: 111
Sample volume before processing: 6 litres
Sample weight before processing: 7 kilograms
% of processed sample examined: 100%

Material	Quantity
Charcoal	Abundance 51-150 indet. comminuted fragments <2mm
Charred seed	Abundance 1-10, indet.
C14 potential	Average, seed and charcoal

Results
Residues: The samples washed down to produce residues of varying proportions of sub-rounded gravel, mostly between 1mm and 1cm in size.

7.8.8. The residues also produced quantities of flint as well as pottery, mostly Mid – Late Iron Age in date. The exception to this was some black glazed post-medieval pottery from pit (0224) which also contained a small fragment of modern glass.

7.8.9. Flots: The flots all contained charcoal in varying quantities, but mostly unidentified, comminuted fragments measuring less than 2mm.

7.8.10. The charred botanical remains include a small number cereal grains and some chaff. These are fairly evenly distributed across the site with a slight concentration in the large pit (0253).

7.8.11. This contains grain tentatively identified as barley, along with a substantial quantity of hazel nut shell and could be interpreted as a storage pit.

7.8.12. Radiocarbon dating is a dating method that uses the naturally occurring radioisotope carbon-14 to estimate the age of carbon-bearing materials up to about 58,000 to 62,000 years. Raw dates can be calibrated to give calendar dates. One of the most frequent uses of radiocarbon dating is to estimate the age of organic remains from archaeological sites. In the case of the Aston Hall excavations, organic remains are restricted to burnt (carbonized) materials such as small pieces of wood. Across the entire excavation site, samples were taken from suitable deposits with a view to undertaking high precision AMS radiocarbon dating if required. As table 1-41 show a number of god candidates for C14 dating are present and it is proposed that 6 dates are obtained with a view to refine chronology on the site.

7.8.13. *Conclusion and Statement of potential*
In summary, the environmental remains suggest the growing and processing of crops of wheat and barley as well as the harvesting of nuts.

7.8.14. The state of preservation is quite poor making definite identification difficult. However, given the importance of the site and the quantity of archaeobotanical remains, a fuller assessment and report will be of considerable value to the overall interpretation of the site (focussing on up to 20 contexts). Given the state of preservation pollen analysis is not recommended and these sub samples should be discarded.

7.8.15. As a number of contexts are undisturbed, the charred grain, chaff and larger pieces of charcoal will be useful in obtaining a radiocarbon dates should they be needed.

7.8.16. These studies would allow the following priority questions to be addressed:

● What is the **date**, form, function and interrelationships of archaeological features on the site?

● What is the function of archaeological activity on the site?

7.9 Radiocarbon Dating

By SUERC

7.9.1 Six samples of non-determined charcoal were analysed by SUERC (Scottish Universities Environmental Research Centre) for ^{14}C analysis.

7.9.2 The samples were recovered from the following contexts:

(0124) – Fill of pit [0038], Area D
(0377) – Fill of pit [0376], Area A
(0101) – Fill of droveway [0100], Area A
(0115) – Fill of pit in alignment [0034], Area D
(0361) – Fill of large pit [0347], Area C
(0076) – Fill of pit [0068], Area C

7.9.3 The summary results are presented below and the full certificates presented in the Appendix:

Laboratory Code SUERC-57554 (GU36172)
Context Reference: 0124
Sample Reference: ES 46
Material Charcoal: Indet.
$\delta^{13}C$ relative to VPDB: -27.9 ‰
Radiocarbon Age BP: 5526 ± 28
Calibrated Date: (68.2%) 4424–4339 CalBC / (95.4%) 4414–4335 CalBC

Laboratory Code SUERC-57562 (GU36177)
Context Reference 0377
Sample Reference ES 104
Material Charcoal : Indet.
$\delta^{13}C$ relative to VPDB -22.8 ‰
Radiocarbon Age BP 2352 ± 29
Calibrated Date: (68.2%) 464–387 CalBC / (95.4%) 379 CalBC

Laboratory Code SUERC-57561 (GU36176)
Context Reference 0101
Sample Reference ES 80
Material Charcoal : Indet.
$\delta^{13}C$ relative to VPDB -24.6 ‰
Radiocarbon Age BP 35997 ± 134
Calibrated Date: (68.2%) 38916 CalBC / (95.4%) 38273 CalBC

Laboratory Code SUERC-57558 (GU36173)
Context Reference 0115
Sample Reference ES 53
Material Charcoal : Indet.
$\delta^{13}C$ relative to VPDB -27.6 ‰
Radiocarbon Age BP 1866± 28
Calibrated Date: (68.2%) 110–211 CalBC / (95.4%) 227 CalAD

Laboratory Code SUERC-57559 (GU36174)
Context Reference 0361
Sample Reference ES 57
Material Charcoal : Indet.
$\delta^{13}C$ relative to VPDB -23.6 ‰
Radiocarbon Age BP 5999 ± 28
Calibrated Date: (68.2%) 4921–4846 CalAD / (95.4%) 4970–4799 CalAD

Laboratory Code SUERC-57560 (GU36175)
Context Reference 0076
Sample Reference ES 69
Material Charcoal : Indet.
$\delta^{13}C$ relative to VPDB -26.4 ‰
Radiocarbon Age BP 4329 ± 27
Calibrated Date: (68.2%) 2983–2898/ CalBC / (95.4%) 2896 CalBC

7.9.4. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

Discussion

7.9.5. A suite of dates ranging from the Upper Palaeolithic to the 3rd century AD were returned from the six samples which were submitted for radiocarbon dating. Sample SUERC-57561 which was recovered from Iron Age ditch [0100] is considered as been anomalous as the sample produced a date of 38273 calBC. This is likely to either represent a laboratory based error or residual charcoal which has been moved by cryoturbation. The range of Mesolithic, Neolithic and Late Bronze Age/Early Iron Age dates are largely consistent with periods of activity on the site, as evidenced with the observations made from the artefactual data.

7.9.6. Sample number SUERC-57559 is the only date which is within the historical period. The sample was retrieved from the Iron Age pit alignment and is likely to demonstrate that the pits were left open for an extended duration rather than rapidly backfilled.

8. Discussion

Introduction

8.1. The excavation at Aston Hall has sucessfully identfied a moderate density of archaeological features that, in general, can be attributed to a prehistoric date. Where dating evidence is present, archaeological features appear to be Middle to Late Iron Age in date, with a small number of Late Bronze Age-Early Iron Age present. Material dating to the Mesolithic and Neolithic is (pottery, worked flint and charcoal) indicative of earlier (now archaeologically invisible) activity on the site was also present.

8.2. Area A is charactersied by enclosure ditches and a possible droveway that, becuase of some artefacually rich deposits, may indicate agricultural land-use on the periphery of an unidentified Mid to Late Iron Age settlement. Area C is dominated by pits within apparent loose clusters, and seems to indicate unenclosed settlement, although truncation and a lack of dating makes firm interpretation difficult. A small group of features containing earlier finds at some earlier activity. Area D contains the best preserved archaeological features on the site and includes pit clusters probably indicative of Mid Iron Age unenclosed settlement activity (with some late Bronze Age and Neolithic finds) which is then superceded by a later N to S aligned pit alignment boundary feature, perhaps hinting at some landscape reorganistation within the Mid-Late Iron Age.

Research Questions

8.3. The excavation at Aston Hall has sucessfully identfied a moderate density of archaeological features that, in general, can be attributed to a prehistoric date. Where dating evidence is present, archaeological features appear to be Middle to Late Iron Age in date, with a small number of Middle Bronze Age- Iron Age present with fewer Neolithic features and a single potentially Mesolithic feature.

8.4. Area A is charactersied by enclosure ditches and a possible droveway that, becuase of some artefacually rich deposits, may indicate agricultural land-use periphery of a Mid to Late Iron Age enclosed settlement. Area C is dominated by pits within apparent loose clusters, and a possible a pit alignment boundary feature, which (as oposed to Area A) seems to indicate unenclosed settlement, although truncation and a lack of dating makes firm interpretation difficult. A small group of features containing earlier finds (one Neolithic and two Late Bronze Age) hint at some earlier activity perhaps indicating an earlier activity site since destroyed by later activity. Area D contains the best preserved archaeological features on the site and includes pit clusters probably indicative of Mid Iron Age unenclosed settlement activity (with some late Bronze Age finds) which is then superceded by a later N to S aligned pit alignment boundary feature, perhaps hinting at some landscape reorganistation within the Mid-Late Iron Age.

8.5. Because of the rarity of dated prehistoric landscapes the site is of local to regional importance.

8.6. *Questions to address*

The original project design (WSI) set out three main aims for the excavation to try and address. To reiterate, these were:

- locate and determine the nature of any prehistoric period activity on the site (particularly in respect of enclosure systems, pit groups and possible structural remains) *i.e. What is the date, form, function and interrelationships of archaeological features on the site?*

- understand the sequence and date of human activity on the site *i.e What is the structural development of the archaeological components on site?*

- understand the relationship of the activity on the site to the known wider Neolithic landscape, and in particular the ceremonial features such as the Aston cursus (Gibson and Loveday 1989) *i.e. What is the function of archaeological activity on the site?*

8.6 Assessment of the artefact and ecofact assemblages have raised new questions that can now be explored:

- What can a consideration of the artefact assemblages (mainly pottery) from the site reveal about the involvement of prehistoric peoples in both subsistence related activities and local, regional and national trade and exchange economies?

- What can a further scientific dating of stratified carbonised remains found in association with ceramics reveal about the chronology of human activity on the site?

8.7 These questions are consistent with East Midlands Assess East Midlands Heritage Updated Research Agenda and Strategy (Knight, Vyner and Allen, 2012) and the stratigraphic data can be used to address a number of regional research priorities. As identified in 4.7 above these include:

Neolithic and Early to Middle Bronze Age (c.4000 – c.1150 cal BC)

● *3.1 Dating:*

3. Can we further refine lithic artefact chronologies within this region?

Late Bronze Age and Iron Age (c.1150 cal BC – AD 43)

● *4.3 LBA-EIA settlements:*

2. What can we deduce about the morphology, spatial extent and functions of settlements, and in particular the processes underlying the development in some areas of enclosed occupation or activity foci?

● 4.6 Field systems and major linear boundaries:

2. What were the economic, social or political roles of the pit alignments and linear ditch systems that characterised many areas of the East Midlands?

● 4.9 Finds, craft, industry and exchange:

1. How can we add to our existing knowledge of industries and crafts in this region?

Discussion

Mesolithic

8.8 The earliest activity identified on site was the single Mesolithic pit which was dated by a single fragment of indeterminate charcoal. Characteristically, the pit fits within a model of other such features in the region but examples of residual charcoal have been identified in other contexts. No artefacts of environmental residues were identified and it offers little interpretive for a greater regional understanding. This has, on-balance, been attributed to the Mesolithic period some doubt does exist with regards to its accurate allocation.

Neolithic

8.9. An Earlier Neolithic pit located on Area D was identified. A relatively abundant amount of pottery, originating from two fabrics, was collected from the primary fill of the pit. The discovery of contemporaneous pits within the region is associated with sites which develop into sites within the wider monumental landscape. Although there does not appear to have been a special use of the site in the Later Neolithic, such as the other regional examples, the

insertion of the vessel suggests a ritualised cementation with the landscape (Barrett, J. 1995. 72-81).

8.10. The inclusion of the pottery may represent either the importing of vessels from the wider region or an initial event of colonisation by a group bringing extrinsic pottery.

8.11. No other features of an Early Neolithic date were positively identified to the west which tentatively suggests a possible preference below the 40m contour and within 1500m of the River Trent. It should of course be considered that the undated features to the west may belong to this phase. Further work which focuses on the land to the east may identify further features which belong to this phase.

8.12. The Later Neolithic period sees an increase in activity. Three pits in Area C have positively been identified as later Neolithic, based on dates suggested associated pottery, carbon dates and a recognised frequency of deposition.

8.13. The Later Neolithic-Bronze Age features were only tentatively dated. Dating was only achieved by assessing depositional characteristics and frequencies of material class.

8.14. As with the Neolithic phase of occupation, no direct evidence of domestic settlement or plot demarcations for formalised fields were identified during these periods either.

8.15. The appearance of rye and spelt demonstrates that the occupants were expanding their selection of domesticated cereals. This adoption of cereals unfortunately remains undated by radiocarbon techniques.

8.16. Two pits which have been dated to the Middle Bronze Age based on securely located ceramics. There are not enough securely dated features which provide direct evidence for continued occupation on the site from the Neolithic to the Middle Bronze Age. However, as most of the discrete features cannot be attributed to a chronological stage, continued occupation should be at least considered.

8.17. The Middle Bronze Age pits are the westernmost features identified up to this point. Once again, the undated features are likely to provide a more in depth but from the cursory assemblage of well dated features it appears that there is a general colonisation of the landscape towards the west away from the 40m contour.

8.18. The apparent absence of structural remains such as building or filed demarcation continues into the Middle Bronze Age. The centre of Area C is noticeable devoid of any features at all. This may have been because structural features such as post holes or hearths were located here but did not translate into the archaeological record on account of their shallow depth. Alternatively palaeolandscape features or woodland may have prevented available space for pit digging.

8.19. To summarise, the presence of the prehistoric pits do not readily appear to be associated with any structural facets or funerary practice. It does seem apparent that the pits are at some level reflective of permanent settlement. The pits may have been a method of staking a sense of community and place. This act of staking a claim may have taken a more territorial outlook in later periods and could have acted as symbolic boundaries. This could explain the close grouping of so many pits close to the 40m contour which, by the Iron Age, had been formalised in a large alignment.

8.20. The Iron Age pit alignment in Area D fits into what appears to be a regional tradition of demarcation. The earlier pits on Area D are all located within 20m corridor and do not extend out into the wider peripheries of the excavation. This could be a result of this part of the landscape bearing a special quality which became a recognised boundary. This was formalised by the large alignment of pits in the Later Iron Age. The suggestion that the earlier pits formed a boundary is tentatively supported by the apparent curve in the distribution of pits on both the east and the west towards the northernmost feature in the large alignment.

8.21. The field system identified towards the west in Area A is particularly interesting. No other features of a recognised date were identified this far west which suggests that un-colonised parts of the landscape were opened up for agronomic practice. This is a nationally recognised phenomenon. Increasing human populations and a more extensive method of farming required more space to produce food.

8.22. Regionally, there is a pattern of ditched enclosure which emerges in the Middle to Later Iron Age. The majority of the field system is organised on a NNE-SSW alignment with a re-organisation represented by curved ditch [0343]. The parallel ditches towards the south of Area A are likely to represent a droveway used for the movement of cattle (Prior. F. 2003). Two ditches which are reminiscent of the droveway in the centre of Area A may also correspond to ditches which were used for similar such practice. Droveways have been interpreted as been practical methods to move cattle to other areas of grazing. In the example provided by the southernmost droveway on Area A, the ditches may continue towards the fertile fringes of the River Trent where calorific value of the riparian plant communities would have been more beneficial. The recovery of charred plant remains from the Area A ditches, which are indicative of early crop processing practices, suggests that crop production may have been on-going within the field system. The field system is therefore likely to have served a mixed economic purpose.

8.23. The use of the field system does not appear to extend into the Romano-British period. Comparative local examples such as Willington which demonstrate clear continuation and development in the earliest part of the 1st millennium AD (Knight and Elliott 2008). The reasons for abandonment are not readily apparent by may be a result of population nucleation which could explain the increase in size of sites such as Willington.

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Appendix 1 Context Register

Context	Area	Category	Description
0001	A	Layer	Area A topsoil
0002	A	Layer	Area A subsoil
0003	A	Nat	Natural Substrate
0004	A	Layer	Residual soil layer
0005	A	N/A	Area A un-stratified
0006	A	Layer	Residual soil layer
0007	A	Cut	VOID
0008	A	Cut	Curvilinear ditch
0009	A	Cut	Cut of NW/SE aligned linear (group 0343)
0010	A	Cut	N-S aligned linear ditch
0011	A	Cut	Curvilinear ditch segment
0012	A	Layer	Area A drift geology
0013	A	Fill	Fill of [0008]
0014	A	Fill	Fill of [0008]
0015	A	Fill	Fill of group [0343]
0016	A	Fill	Fill of [0011]
0017	A	Fill	Fill of [0010]
0018	D	Cut	Cut of large pit
0019	D	Fill	Fill of [0018]
0020	D	Cut	VOID
0021	D	Cut	VOID
0022	D	Cut	VOID
0023	D	Cut	Cut of medium pit to west
0024	D	Cut	Cut of pit NW corner
0025	D	Cut	Cut of pit NW corner
0026	D	Cut	Cut of small pit NW corner
0027	D	Cut	Cut of pit NW corner
0028	D	Cut	Cut of pit NW corner
0029	D	Cut	Cut of pit NW corner
0030	D	Cut	Cut of large pit in alignment
0031	D	Cut	Cut of pit to N
0032	D	Cut	NE-SW aligned drain
0033	D	Cut	Cut of large pit in alignment
0034	D	Cut	Cut of large pit in alignment
0035	D	Cut	Cut of large pit in alignment
0036	D	Cut	VOID
0037	D	Cut	Cut of pit to N
0038	D	Cut	Cut of pit to N
0039	D	Cut	Cut of small pit in centre
0040	D	Cut	Cut of large irregular shaped pit
0041	D	Cut	Cut of pit to SE
0042	D	Cut	Cut of pit to SW
0043	D	Cut	Cut of small pit to SW
0044	D	Cut	VOID
0045	D	Cut	NE-SW aligned ditch (modern)
0046	D	Cut	VOID

0047	D	Cut	VOID
0048	D	Cut	VOID
0049	D	Cut	VOID
0050	D	Cut	Large pit in alignment
0051	D	Cut	Cut of small pit SE corner
0052	D	Cut	Cut of pit to E
0053	D	Fill	Fill of [0039]
0054	D	Fill	Fill of [0043]
0055	D	Fill	VOID
0056	D	Fill	Fill of [0051]
0057	D	Fill	Fill of [0040]
0058	D	Fill	Fill of [0042]
0059	D	Fill	VOID
0060	D	Fill	Fill of [0041]
0061	D	Layer	VOID
0062	D	Fill	Fill of [0045]
0063	C	Cut	Cut of medium pit SW corner
0064	C	Cut	Cut of medium pit S end
0065	C	Cut	Cut of small pit SW corner
0066	C	Cut	Cut of small pit to SE
0067	C	Cut	Cut of small pit to SE
0068	C	Cut	Cut of pit to SE
0069	C	Cut	Small pit/posthole to SE
0070	C	Cut	Cut of pit to NW
0071	C	Cut	Small pit/posthole to NW
0072	C	Cut	Small pit/posthole to NW
0073	C	Cut	Small pit/posthole NW corner
0074	C	Cut	Small pit/posthole to NE
0075	C	Cut	Small pit/posthole to NE
0076	C	Fill	Fill of [0068]
0077	C	Fill	Fill of [0070]
0078	C	Fill	Fill of [0069]
0079	C	Fill	Fill of [0066]
0080	C	Fill	Fill of [0067]
0081	C	Cut	Cut of medium pit in centre
0082	C	Fill	Fill of [0074]
0083	C	Fill	Fill of [0075]
0084	C	Fill	Fill of [0073]
0085	C	Fill	Fill of [0072]
0086	C	Fill	Fill of [0071]
0087	C	Fill	Fill of [0065]
0088	C	Fill	Fill of [0063]
0089	C	Fill	Fill of [0081]
0090	C	Layer	VOID
0091	C	Fill	Fill of [0064]
0092	C	Layer	VOID
0093	C	Fill	Fill of [0063]
0094	C	Layer	Area C topsoil
0095	C	Layer	Area C subsoil
0096	C	Layer	Area C drift geology

0097	D	Layer	Area D topsoil
0098	D	Layer	Area D subsoil
0099	D	Layer	Area D drift geology
0100	A	Cut	E-W linear/droveway
0101	A	Fill	Fill of [0100]
0102	D	Cut	Cut of large pit in alignment
0103	D	Cut	Cut of large pit in alignment
0104	D	Cut	Cut of small pit N end
0105	D	Cut	Pit cut by [0050] + [0033]
0106	D	Fill	Fill of [0037]
0107	D	Fill	Fill of [0037]
0108	D	Cut	Pit cut by [0037]
0109	D	Fill	Fill of [0108]
0110	D	Fill	Fill of [0104]
0111	D	Fill	Upper fill of [0102]
0112	D	Fill	Primary fill [0102]
0113	D	Fill	VOID
0114	D	Fill	Fill of [0052]
0115	D	Fill	Fill of [0034]
0116	D	Fill	Fill of [0050]
0117	D	Fill	Fill of group 0404
0118	D	Fill	Fill of [0050]
0119	D	Fill	Fill of [0050]
0120	D	Fill	Fill of [0105]
0121	D	Fill	Fill of [0033]
0122	D	Fill	VOID
0123	D	Cut	VOID
0124	D	Fill	Fill of [0038]
0125	D	Cut	Small pit cut by [0038]
0126	D	Fill	Fill of [0125]
0127	D	Fill	Fill of [0050]
0128	D	Cut	Cut of pit to N
0129	D	Cut	Cut of small pit to N
0130	D	Cut	Cut of small pit to N
0131	D	Cut	Small pit cut by [0031], [0102] + [0132]
0132	D	Cut	Small pit cutting [0131]
0133	D	Fill	Fill of [0102]
0134	D	Fill	Fill of [0131]
0135	D	Fill	Fill of [0132]
0136	D	Cut	Cut of small pit W end
0137	D	Cut	Cut of pit near centre
0138	D	Cut	Curved pit to NW
0139	D	Fill	Fill of [0129]
0140	D	Cut	Large oval pit to W
0141	D	N/A	Area D un-stratified
0142	D	Fill	Fill of [0025]
0143	D	Cut	Cut of small pit/posthole to SW
0144	D	Cut	Pit cutting [0027]
0145	D	Fill	Fill of [0144]
0146	D	Fill	Fill of [0027]

0147	D	Fill	Fill of [0026]
0148	D	Fill	Fill of [0138]
0149	D	Fill	Fill of [0028]
0150	C	Cut	Cut of post hole S end
0151	D	Cut	Pit cut by [0052]
0152	D	Fill	Fill of [0151]
0153	D	Fill	Fill of [0023]
0154	D	Fill	Fill of [0140]
0155	D	Fill	Fill of [0024]
0156	D	Fill	Fill of [0159]
0157	D	Fill	Fill of [0159]
0158	D	Fill	Fill of [0029]
0159	D	Cut	Pit cut by [0029]
0160	D	Cut	Cut of small pit N end
0161	D	Fill	Fill of [0160]
0162	D	Fill	Fill of [0137]
0163	C	Layer	Geological feature
0164	C	Cut	Cut of small posthole NW end
0165	C	Cut	Cut of medium pit W end
0166	C	Cut	Cut of small pit W end
0167	C	Cut	VOID
0168	C	Cut	Cut of small pit/posthole W end
0169	C	Cut	Cut of medium pit W end
0170	C	Cut	Cut of elongated pit W end
0171	C	Cut	Cut of small oval pit W end
0172	D	Fill	Fill of [0130]
0173	D	Fill	Fill of [0136]
0174	D	Fill	Fill of [0136]
0175	D	Fill	Fill of [0128]
0176	C	Cut	Cut of elongated pit W end
0177	C	Fill	Fill of [0164]
0178	C	Fill	Fill of [0150]
0179	C	Fill	VOID
0180	C	Fill	Fill of [0169]
0181	C	Fill	Fill of [0168]
0182	C	Fill	Fill of [0166]
0183	C	Fill	Fill of [0170]
0184	C	Fill	Fill of [0171]
0185	C	Fill	Fill of [0165]
0186	C	Cut	VOID
0187	C	Fill	Fill of [0165]
0188	C	Cut	Cut of elongated pit S end
0189	C	Fill	Fill of [0188]
0190	C	Cut	Cut of small pit S end
0191	C	Fill	Fill of [0190]
0192	D	Fill	Fill of [0103]
0193	D	Fill	Fill of [0045]
0194	D	Cut	Cut of pit/posthole S end
0195	D	Cut	Cut of pit S end
0196	D	Cut	Cut of pit S end

0197	D	Cut	Cut of small pit to NE
0198	D	Cut	Cut of small pit to NE
0199	D	Cut	Cut of small pit/posthole to E
0200	D	Layer	Preserved soil in natural hollow
0201	D	Fill	Fill of [0196]
0202	D	Fill	Fill of [0032]
0203	D	Fill	Fill [0031]
0204	D	Fill	Fill of [0031]
0205	D	Fill	Fill of [0195]
0206	D	Fill	Fill of [0194]
0207	C	Cut	Cut of small pit to W
0208	C	Fill	Fill of [0176]
0209	C	Fill	Fill of [0176]
0210	D	Fill	Fill of [0198]
0211	D	Fill	Fill of [0197]
0212	D	Fill	Fill of [0199]
0213	D	Fill	Fill of [0199]
0214	D	Fill	Fill of [0143]
0215	D	Fill	Fill of [0030]
0216	D	Fill	Fill of [0035]
0217	C	Fill	Fill of [0207]
0218	C	Cut	Cut of pit
0219	C	Fill	Fill of [0207]
0220	C	Cut	Cut of medium pit N end
0221	C	Fill	Fill of [0220]
0222	C	Cut	Cut of small pit N end
0223	C	Fill	Fill of [0222]
0224	D	Cut	Pit cutting [0018]
0225	D	Fill	Fill of [0224]
0226	D	Fill	Fill of [0018]
0227	C	Cut	Cut of small pit N end
0228	C	Fill	Fill of [0227]
0229	C	Cut	Cut of small pit N end
0230	C	Fill	Fill of [0229]
0231	C	Cut	Cut of posthole E end
0232	C	Fill	Fill of [0231]
0233	C	Cut	Cut of small pit E end
0234	C	Fill	Fill of [0233]
0235	C	Cut	Cut of elongated pit
0236	C	Fill	Fill of [0235]
0237	C	Void	Void
0238	C	Void	Void
0239	C	Cut	Cut of small pit to E
0240	C	Fill	Fill of [0239]
0241	C	Cut	Cut of pit to W
0242	C	Fill	Fill of [0241]
0243	C	Cut	Cut of pit to W
0244	C	Fill	Fill of [0243]
0245	C	Cut	Cut of pit to W
0246	C	Fill	Fill of [0245]

0247	C	Cut	Cut of small pit E end
0248	C	Fill	Fill of [0247]
0249	C	Cut	Cut of small pit E end
0250	C	Fill	Fill of [0249]
0251	C	Cut	Cut of pit/posthole E end
0252	C	Fill	Fill of [0251]
0253	C	Cut	Cut of large pit E end
0254	C	Fill	Fill of [0253]
0255	C	Cut	Cut of posthole E end
0256	C	Fill	Fill of [0255]
0257	C	Cut	Cut of posthole E end
0258	C	Fill	Fill of [0257]
0259	C	Cut	Cut of post hole N end
0260	C	Fill	Fill of [0259]
0261	D	Cut	Pit cut by [0035]
0262	D	Cut	Cut of large pit SW corner
0263	D	Cut	Pit cut by [0262]
0264	D	Cut	Cut of pit in SW corner
0265	D	VOID	VOID
0266	D	VOID	VOID
0267	D	Cut	Cut of large pit in SW corner
0268	D	Fill	Fill of [0267]
0269	D	Cut	Cut of large pit cutting [0267]
0270	D	Fill	Fill of [0269]
0271	D	Fill	Fill of [0269]
0272	D	Cut	Pit cutting [0267] and [0269]
0273	D	Fill	Fill of [0272]
0274	A	Cut	Cut of circular pit N end
0275	A	Fill	Fill of [0274]
0276	A	Cut	Cut of small pit N end
0277	A	Fill	Fill of [0276]
0278	A	Cut	Cut of small pit N end
0279	A	Fill	Fill of [0278]
0280	A	Cut	Cut of tree throw
0281	A	Fill	Fill of [0280]
0282	A	Cut	Cut of posthole N end
0283	A	Fill	Fill of [0282]
0284	A	Cut	Cut of posthole N end
0285	A	Fill	Fill of [0284]
0286	A	Cut	Cut of post hole to S
0287	A	Fill	Fill of [0286]
0288	A	Cut	Cut of pit at centre
0289	A	Fill	Fill of [0288]
0290	A	Cut	Cut of small pit near centre
0291	A	Fill	Fill of [0290]
0292	A	Cut	Cut of posthole SW corner
0293	A	Cut	Cut of irregular pit SE corner
0294	A	Layer	Glacial scar layer
0295	A	Layer	Layer resulting from glacial process
0296	A	Layer	Layer resulting from glacial process

0297	A	Cut	N/S aligned linear ditch down centre
0298	A	Cut	Cut of irregular linear feature
0299	A	Fill	Fill of [0298]
0300	A	Cut	Cut of E/W aligned linear
0301	A	Cut	VOID
0302	A	Fill	VOID
0303	A	Cut	Cut of E/W linear/southern droveway ditch
0304	A	Fill	Fill of [0303]
0305	A	Cut	Cut of N/S aligned ditch
0306	A	Fill	Fill of group 0405 +[0297]
0307	A	Fill	Fill of group 0405 + [0297]
0308	A	Fill	Fill of [0297] + [0300]
0309	A	Layer	Drift geology
0310	A	Layer	Drift geology
0311	A	Layer	Drift geology
0312	A	Fill	Fill of [0300]
0313	A	Fill	Fill of [0300]
0314	A	Fill	Fill of [0293]
0315	A	Cut	Cut of E/W aligned linear
0316	A	Fill	Fill of [0292]
0317	A	Fill	Fill of [0292]
0318	A	Fill	Fill of [0292]
0319	D	Cut	Cut of pit SW corner
0320	D	Fill	Fill of [0263]
0321	D	Fill	Fill of [0263]
0322	D	Fill	Fill of [0319]
0323	D	Cut	Cut of NW/SE aligned linear (group 0343)
0324	D	Fill	Fill of [0319]
0325	D	Fill	Fill of [0262]
0326	D	Fill	Fill of [0262]
0327	D	Fill	Fill of [0262]
0328	D	Fill	Fill of [0265]
0329	D	Fill	Fill of [0264]
0330	V	VOID	VOID
0331	A	Cut	Cut of N/S aligned linear
0332	D	Fill	Fill of [0035]
0333	D	Fill	Fill of [0261]
0334	D	Fill	Fill of [0261]
0335	D	Cut	Cut of N/S aligned linear SW corner
0336	D	Cut	Elongated pit cut by [0335]
0337	D	Cut	Cut of pit SW corner
0338	A	Cut	Cut of NW/SE aligned linear (group 0343)
0339	A	Cut	Terminus of N/S aligned ditch
0340	A	Cut	Cut of NW/SE aligned linear (group 0343)
0341	A	Cut	Cut of N/S aligned linear
0342	A	Cut	VOID
0343	A	Group	Group [0009] [0323] [0338] [0340] [0344] [0378]
0344	A	Cut	Cut of NW/SE aligned linear (group 0343)
0345	D	Cut	Pit cutting [0335]
0346	D	Cut	Pit cutting [0355]

0347	D	Cut	Cut of large pit SW corner
0348	D	Cut	Cut of pit SE corner
0349	D	Fill	Fill of [0331]
0350	D	Fill	Fill of [0347]
0351	D	Fill	Fill of [0335]
0352	D	Cut	Cut of pit SW corner
0353	D	Fill	Fill of [0352]
0354	D	Fill	Fill of [0352]
0355	D	Cut	Pit cutting [0337]
0356	D	Fill	Fill of [0336]
0357	D	Fill	Fill of [0345]
0358	D	Fill	Fill of [0337]
0359	D	Fill	Fill of [0355]
0360	D	Fill	Fill of [0346]
0361	D	Fill	Fill of [0347]
0362	D	Fill	Fill of [0347]
0363	D	Fill	Fill of [0347]
0364	D	Fill	Fill of [0347]
0365	D	Fill	Fill of [0347]
0366	D	Cut	Pit cut by [0347]
0367	D	Fill	Fill of [0366]
0368	D	Fill	Fill of [0369]
0369	D	Cut	Small pit cutting [0361] + [0370]
0370	D	Fill	Fill of [0371]
0371	D	Cut	Small pit cut by [0369]
0372	D	Fill	Fill of [0373]
0373	D	Cut	Cut of small pit SW corner
0374	D	Cut	Pit cut by [0335]
0375	D	Fill	Fill of [0374]
0376	A	Cut	Large pit cut by [0331]
0377	A	Fill	Fill of [0376]
0378	A	Cut	Terminus of NW/SE aligned linear (group 0343)
0379	A	Cut	Northern terminus of N/S aligned linear
0380	A	Fill	Fill of [0348]
0381	D	Fill	Fill of [0382]
0382	D	Cut	Small pit cut by [0140]
0383	A	Cut	Cut of N/S aligned linear
0384	D	Layer	Made up ground
0385	D	Layer	Concrete
0386	A	Fill	Fill of [0331]
0387	A	Cut	Cut of elongated pit SW corner
0388	A	Cut	Terminus of E/W aligned linear
0389	A	Cut	Northernmost E/W aligned linear
0390	A	Fill	Fill of [0387]
0391	A	Fill	Fill of [0331]
0392	A	Cut	Small pit cutting terminus of [0339]
0393	A	Fill	Fill of [0392]
0394	A	Cut	Pit cut by [0376]
0395	A	Cut	Pit cutting [0394]
0396	A	Fill	Fill of [0395]

0397	A	Fill	Fill of [0394]
0398	A	Cut	Pit cutting [0376]
0399	A	Fill	Fill of [0398]
0400	A	Cut	Pit cut by [0398]
0401	A	Fill	Fill of [0400]
0402	A	Fill	Fill of [0379]
0403	D	Fill	Fill of [0102]
0404	A	Group	Group [0297], [0305], [0339], [0341] + [0383] NS aligned linear
0405	A	Group	Group [0315] + [0389] EW aligned linear
0406	A	Group	Group [0300] + [0388] EW aligned linear
0407	A	Fill	Fill of [0376]
0408	A	Cut	Pit cut by [0395]
0409	A	Fill	Fill of [0408]
0410	A	Cut	Natural water course
0411	A	Fill	Fill of [0410]
0412	A	Cut	Terminus of water course
0413	A	Fill	Fill of [0300]/[0297]
0414	A	Fill	Fill of [0300]/[0297]
0415	A	Cut	Curvilinear ditch at centre
0416	A	Fill	Fill of [0415]
0417	A	Group	Group [0008], [0410], [0412]. [0415] curvilinear ditch
0418	A	Fill	Fill of [0419]
0419	A	Cut	Pit cut by [0032]

Appendix 2 Pottery Catalogue

PREHISTORIC POTTERY

Site Code	Find Code	Material	Object	Period	Area	Context	Feature	Cut	Spit
RYS	AAB	Pot	Body	Pre					S/F
RYS	AAK	Pot	Base/body/rim	Pre	Tr14	0022	0022		
RYS	AAO	Pot	Rim/body/base	Pre	2	0068			
RYS	AAP	Pot	Crumbs	Pre	Tr14	0023	0022		01
RYS	AAQ	Pot	Rim	Pre	Tr14	0023	0022		01
RYS	AAR	Pot	Body + crumbs	Pre	Tr14	0023	0022		01
RYS	AAS	Pot	Clay and crumbs	Pre	Tr14	0023	0022		01
RYS	AAT	Pot	Crumbs	Pre	Tr14	0023	0022		01
RYS	AAU	Pot	Body	Pre	Tr14	0023	0022		01
RYS	AAV	Pot	Crumbs	Pre		0108	0100		01
RYS	AAW	Pot	Crumbs	Pre	Tr14	0023	0022		02
RYS	AAX	Pot	Body	Pre	Tr14	0023	0022		02
RYS	AAY	Pot	Crumb	Pre	Tr14	0023	0022		02
RYS	AAZ	Pot	Crumbs	Pre	Tr14	0023	0022		03
RYS	ABA	Pot	Crumbs in clay	Pre	Tr14	0023	0022		03
RYS	ABB	Pot	Crumbs	Pre	Tr14	0023	0022		03
RYS	ABC	Pot	Body	Pre	TR14	0023	0022		03

RYS	ABD	Pot	Body	Pre	Tr14	0023	0022		03
RYS	ABE	Pot	Body	Pre	Tr14	0023	0022		03
RYS	ABF	Pot	Body + crumbs	Pre	Tr14	0022	0022		03
RYS	ABG	Pot	Body + crumbs	Pre	Tr14	0023	0022		03
RYS	ABH	Pot	Body	Pre	Tr14	0023	0022		03
RYS	ABI	Pot	Crumbs	Pre	Tr14	0023	0022		04
RYS	ABJ	Pot	Body + crumbs	Pre	Tr14	0023	0022		04
RYS	ABK	Pot	Body	Pre	Tr14	0023	0022		04
RYS	ABL	Pot	Body	Pre	Tr14	0023	0022		04
RYS	ABM	Pot	Body	Pre	Tr14	0023	0022		04
RYS	ABN	Pot	Crumbs	Pre	Tr14	0023	0022		04
RYS	ABO	Pot	Crumbs	Pre	Tr14	0023	0022		05
RYS	ABP	Pot	Body	Pre	Tr14	0023	0022		05
RYS	ABQ	Pot	Body	Pre	Tr14	0023	0022		05
RYS	ABR	Pot	Body	Pre	Tr14	0023	0022		05
RYS	ABS	Pot	Body	Pre	Tr14	0023	0022		05
RYS	ABT	Pot	Body	Pre	Tr14	0023	0022		05
RYS	ABU	Pot	Body	Pre	Tr14	0023	0022		05
RYS	ABV	Pot	Body	Pre	Tr14	0023	0022		05
RYS	ABW	Pot	Body	Pre	Tr14	0023	0022		05
RYS	ABX	Pot	Body	Pre	Tr26	0108	0100		03
RYS	ABY	Pot	Body	Pre	Tr14	0023	0022		06
RYS	ABZ	Pot	Body	Pre	Tr14	0023	0022		06
RYS	ACA	Pot	Rim	Pre	Tr14	0023	0022		06
RYS	ACB	Pot	Rim/body	Pre	Tr14	0023	0022		06
RYS	ACC	Pot	Body + crumbs	Pre	Tr14	0023	0022		06
RYS	ACD	Pot	Body	Pre	Tr14	0023	0022		06
RYS	ACE	Pot	Body + crumbs	Pre	Tr14	0023	0022		06
RYS	ACF	Pot	Body + Crumbs	Pre	Tr14	0023	0022		06
RYS	ACG	Pot	Body	Pre	Tr14	0023	0022		06
RYS	ACH	Pot	Rim/body	Pre	Tr14	0023	0022		06
RYS	ACI	Pot	Body	Pre	Tr14	0023	0022		06
RYS	ACJ	Pot	Body + crumbs	Pre	Tr14	0023	0022		06
RYS	ACK	Pot	Body	Pre	Tr14	0023	0022		06
RYS	ACL	Pot	Body	Pre	Tr14	0023	0022		06
RYS	ACM	Pot	Body	Pre	Tr14	0023	0022		06
RYS	ACN	Pot	Body	Pre	Tr14	0023	0022		06
RYS	ACO	Pot	Body	Pre	Tr14	0023	0022		06
RYS	ACP	Pot	Body	Pre	Tr14	0023	0022		06
RYS	ACQ	Pot	Body	Pre	Tr14	0023	0022		06
RYS	ACR	Pot	Body	Pre	Tr14	0023	0022		06
RYS	ACS	Pot	Rim/body	Pre	Tr14	0023	0022		06
RYS	ACT	Pot	Body	Pre	Tr14	0023	0022		06
RYS	ACU	Pot	Body/rim + Crumbs	Pre	Tr14	0023	0022		06
RYS	ACV	Pot	Body	Pre	Tr14	0023	0022		06

RYS	ACW	Pot	Rim/body	Pre	Tr14	0023	0022		06
RYS	ACX	Pot	Rim	Pre	Tr14	0023	0023		07
RYS	ACY	Pot	Body	Pre	Tr14	0023	0023		07
RYS	ACZ	Pot	Body/rim	Pre	Tr14	0023	0023		07
RYS	ADA	Pot	Body/rim	Pre	Tr14	0023	0023		07
RYS	ADB	Pot	Body + crumbs	Pre	Tr14	0023	0023		07
RYS	ADC	Pot	Body + crumbs	Pre	Tr14	0023	0023		07
RYS	ADD	Pot	Body + crumbs	Pre	Tr14	0023	0023		07
RYS	ADE	Pot	Body	Pre	Tr14	0023	0023		07
RYS	ADF	Pot	Body	Pre	Tr14	0023	0023		07
RYS	ADG	Pot	Body	Pre	Tr14	0023	0023		07
RYS	ADH	Pot	Body + crumbs	Pre	Tr14	0023	0023		07
RYS	ADK	Pot	Body	Pre	Tr34	0134	0128		
RYS	ADL	Pot	Crumb	Pre	Tr32	0137	0124		
RYS2	ADT	Pot	Rim	Pre	AS1				S/F
RYS2	AEA	Pot	Body	Pre	AS2	0326	0300	033	01
RYS2	AEB	Pot	Body	Pre	AS2	0326	0300	033	01
RYS2	AEC	Pot	Body	Pre	AS2	0326	0300	033	
RYS2	AED	Pot	Base + crumbs	Pre	AS2	0326	0300	033	
RYS2	AEE	Pot	Body	Pre	AS2	0326	0300	033	01
RYS2	AEF	Pot	Body	Pre	AS2	0326	0300	033	01
RYS2	AEN	Pot	Body	Pre	AS2	0326	0300	033	03
RYS2	AES	Pot	Crumbs	Pre	AS2	0326	0300	034	01
RYS2	AET	Pot	Body + crumbs	Pre	AS2	0326	0300	034	01
RYS2	AEU	Pot	Body	Pre	AS2	0326	0300	034	03
RYS2	AEV	Pot	Body + crumbs	Pre	AS2	0326	0300	034	03
RYS2	AEW	Pot	Body	Pre	AS2	0326	0300	032	03
RYS2	AEY	Pot	Rim?	Pre	AS2	0326	0300		7cm
RYS2	AEZ	Pot	Body	Pre	AS2	0326	0300		01
RYS2	AFA	Pot	Body	Pre	AS2	0326	0300		01
RYS2	AFB	Pot	Body	Pre	AS2	0326	0300		01
RYS2	AFC	Pot	Body	Pre	AS2	0326	0300		5cm
RYS2	AFD	Pot	Body	Pre	AS2	0326	0300		01
RYS2	AFE	Pot	Body	Pre	AS2	0326	0300		01
RYS2	AFG	Pot	Body/daub	Pre	AS2	0326	0300		01
RYS2	AFH	Pot	Body	Pre	AS2	0326	0300		01
RYS2	AFI	Pot	Body	Pre	AS2	0326	0300		12cm
RYS2	AFJ	Pot	Body	Pre	AS2	0326	0300		S/F
RYS2	AFK	Pot	Body	Pre	AS2	0326	0300		5cm
RYS2	AFL	Pot	Body/daub?	Pre	AS2	0326	0300		1-5cm
RYS2	AFM	Pot	Body	Pre	AS2	0326	0300		5cm
RYS2	AFN	Pot	Body + crumbs	Pre	AS2	0326	0300		2cm
RYS2	AFO	Pot	Body	Pre	AS2	0326	0300		1-5cm
RYS2	AFP	Pot	Body	Pre	AS2	0326	0300		01

RYS2	AFQ	Pot	Body	Pre	AS2	0326	0300		10cm
RYS2	AFS	Pot	Body	Pre	AS2	0326	0300		01
RYS2	AFT	Pot	Body	Pre	AS2	0326	0300		6cm
RYS2	AFU	Pot	Body	Pre	AS2	0326	0300		8cm
RYS2	AFV	Pot	Body	Pre	AS2	0326	0300		01
RYS2	AFW	Pot	Body	Pre	AS2	0326	0300		18cm
RYS2	AFX	Pot	Body	Pre	AS2	0326	0300		03
RYS2	AFY	Pot	Body	Pre	AS2	0326	0300		03
RYS2	AFZ	Pot	Body + crumbs	Pre	AS2	0326	0300		02
RYS2	AGB	Pot	Body	Pre	AS2	0326	0300		02
RYS2	AGC	Pot	Body	Pre	AS2	0326	0300		02
RYS2	AGD	Pot	Body	Pre	AS2	0326	0300		03
RYS2	AGE	Pot	Body	Pre	AS2	0326	0300		24cm
RYS2	AGF	Pot	Body	Pre	AS2	0326	0300		03
RYS2	AGG	Pot	Body	Pre	AS2	0326	0300		5cm
RYS2	AGI	Pot	Body/daub?	Pre	AS2	0326	0300		02
RYS2	AGJ	Pot	Body	Pre	AS2	0326	0300		5-10cm
RYS2	AGL	Pot	Body	Pre	AS2	0326	0300		3cm
RYS2	AGM	Pot	Body	Pre	AS2	0326	0300		4cm
RYS2	AGN	Pot	Body	Pre	AS2	0326	0300		03
RYS2	AGO	Pot	Body	Pre	AS2	0326	0300		10cm
RYS2	AGP	Pot	Body	Pre	AS2	0326	0300		15cm
RYS2	AGQ	Pot	Body	Pre	AS2	0326	0300		02
RYS2	AGR	Pot	Body + crumbs	Pre	AS2	0326	0300		20cm
RYS2	AGS	Pot	Pot	Pre	AS2	0326	0300		15-20cm
RYS2	AGT	Pot	Base	Pre	AS2	0326	0300		5-10cm
RYS2	AGU	Pot	Body/daub?	Pre	AS2	0326	0300		12cm
RYS2	AGW	Pot	Body	Pre	AS2	0326	0300		24cm

MEDIEVAL & POST MEDIEVAL POTTERY

Site Code	Find Code	Material	Object	Period	Area	Context	Feature	Cut	Spit
RYS2	ADS	Pot	Body	Med	AS1	0244	0199		
RYS	AAJ	Pot	Body	Med					S/F
RYS	AAE	Pot	Body, green glaze	Med	Tr23	0001			
RYS	AAC	Pot	Strap handle	Med					S/F
RYS	AAM	Pot	Body, green glaze	Med	Tr10	0001			
RYS	AAH	Pot	Body	Med	Tr23	0001			
RYS	AAI	Pot	Rim	Med?					S/F
RYS	AAG	Pot	Body	Med?	Tr23	0001			
RYS2	ADP	Pot	Base, black glaze	P/M	AS1	0214	0178		03
RYS2	ADQ	Pot	Body, Cistercian	P/M	AS1	0238	0178		03
RYS	AAD	Pot	Body	P/M	Tr25	0001			

Appendix 3 Excavation Plates

Plate 1. West facing section of pit 0102 in Area D

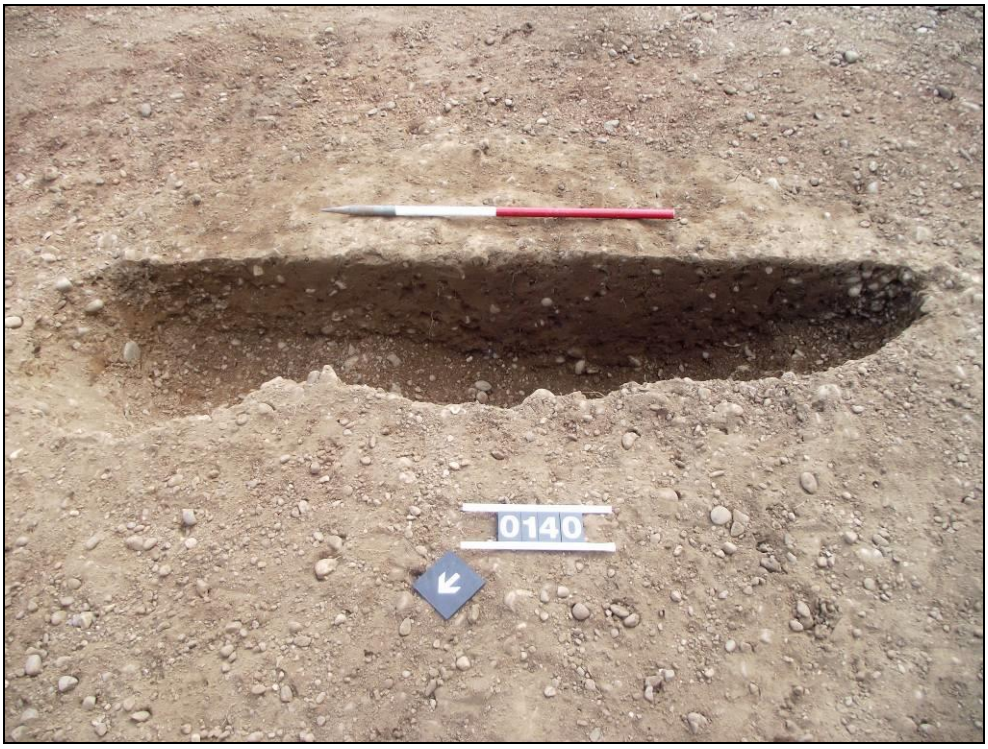

Plate 2. North-west facing sectoin of pit 0140 in Area D

Plate 3. North facing photograph of cluster of pits [0261], [0262] and [0347] in Area D

Plate 4. South facing photograph of cluster of pits [0261], [0262] and [0347] in Area D

Plate 5. East facing section of pits [0262], [0319] and [0263] in Area D

Plate 6. West facing section of pits [0035], [0261] and [0262] in Area D 0262

Plate 7. South facing photograph of pits [0018], [0224] and [0041] in Area D 0018

Plate 8. West facing section of pit [0037] in Area D 0037

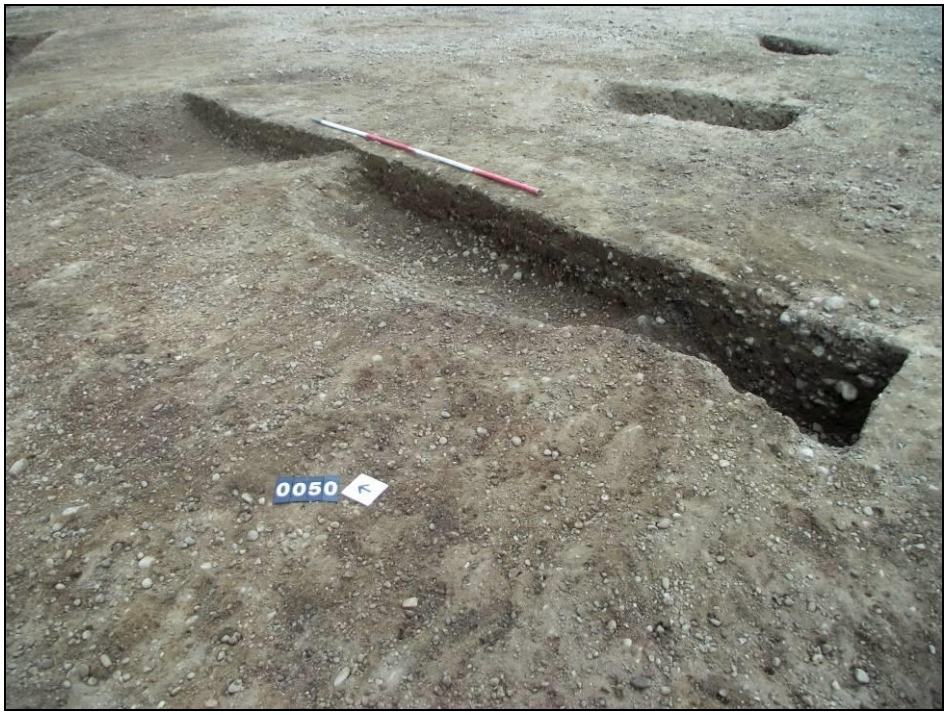

Plate 9. South-west facing photograph of pits [0050], [0105] and [0034] in Area D

Plate 10. East facing section of pit [0165] in Area C

Plate 11. North-east facing section of pit [0235] in Area C

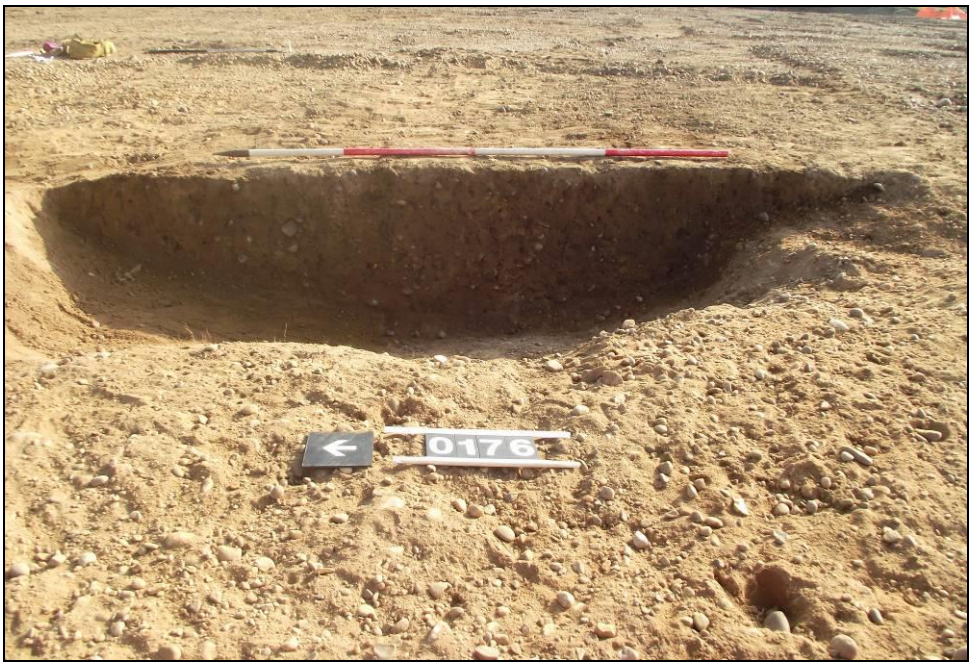

Plate 12. West facing section of pit [0176] in Area C

Plate 13. North facing section of pit [0220] in Area C

Plate 14. North-west facing section of pit [0169] in Area C

Plate 15. East facing section of pit [0068] in Area C

Plate 16. South-east facing section of pit [0067] in Area C

Plate 17. North facing photograph of ditch [0331] and pits [0398], [0400] and [0376] in Area A

Plate 18. South facing photograph of ditch [0331], pit [0394], [0408], [0395] and [0376] in Area A

Plate 19. South facing section of ditch [0331] in Area A

Plate 20. South facing section of [0344] in Area A

Plate 21. South facing section of [0338] in Area A

Plate 22. North-west facing photograph of droveway in Area A

.

Plate 23. Photograph showing interventions through natural features in Area A

Plate 24. West facing section through pit [0293] in Area A

Appendix 4 Figures

Appendix 5 Artefact Illustrations

Appendix 6 Radiocarbon Dating

Appendix 7 Thin Section Photomicrographs

Tables and Figures

Sample No.	Finds code	Context	Macroscopic Fabric	Period	Feature	Feature No.
Aston Hall 1	ACD	209	QG	MBA	Pit	0176
Aston Hall 2	ADS	349	QG	Iron Age	Ditch	0331
Aston Hall 3	ADN	349	QG	Iron Age	Ditch	0331
Aston Hall 4	AEM	396	Qmica	Iron Age	Pit	0395

Details of prehistoric ceramic sherds analysed from Aston Hall, Derbyshire in this report.

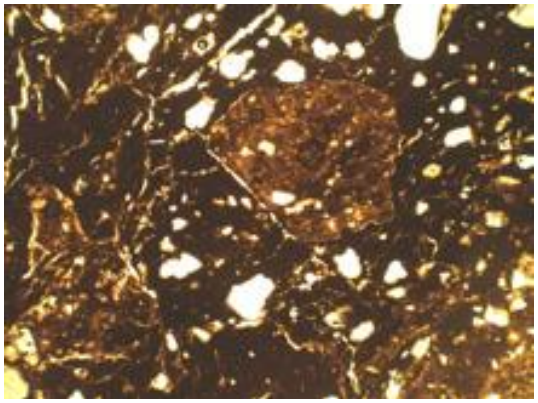

Plate 25- Aston Hall 1 (PPL)

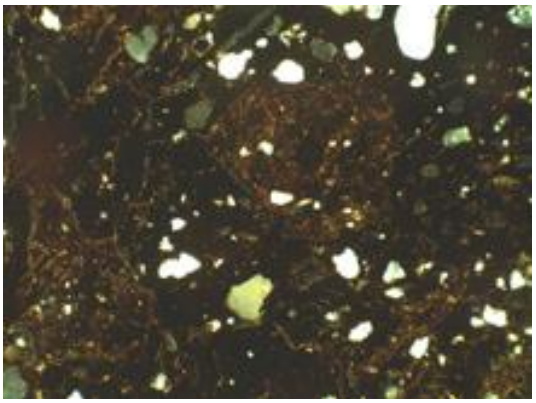

Plate 26 - Aston Hall 1 (PPL)

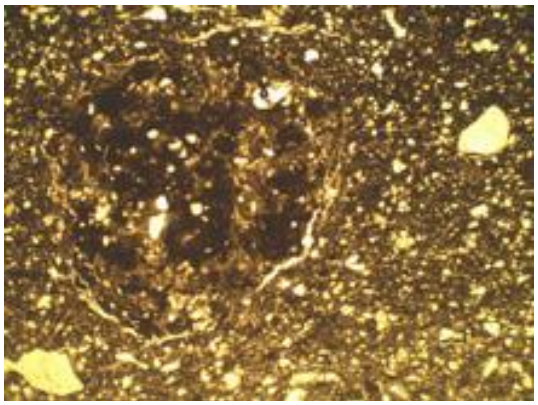

Plate 27 - Aston Hall 2 (PPL)

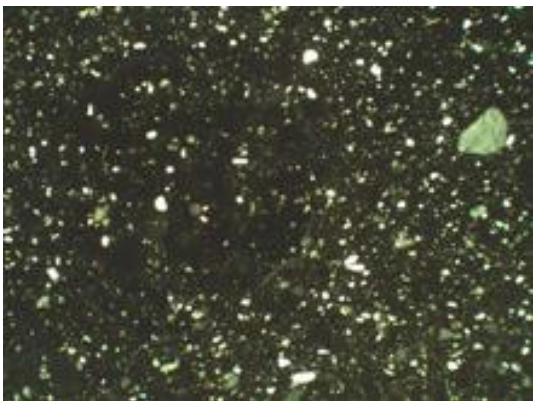

Plate 28 - Aston Hall 2 (XP)

Plates 25- 28: Thin section photomicrographs of prehistoric ceramic sherds analysed from Aston Hall, Derbyshire in this report. Image width = 2.9 mm. PPL = plane polarised light, XP =crossed polars.

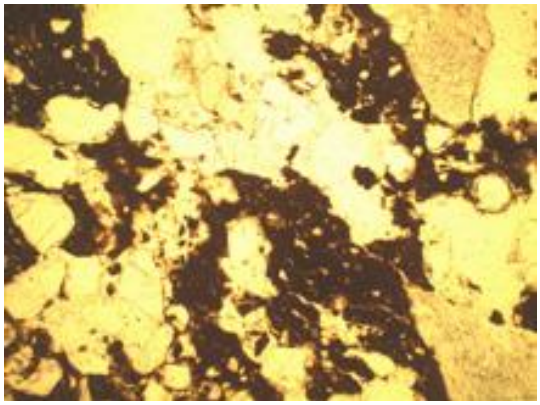

Plate 29 - Aston Hall 3 (PPL)

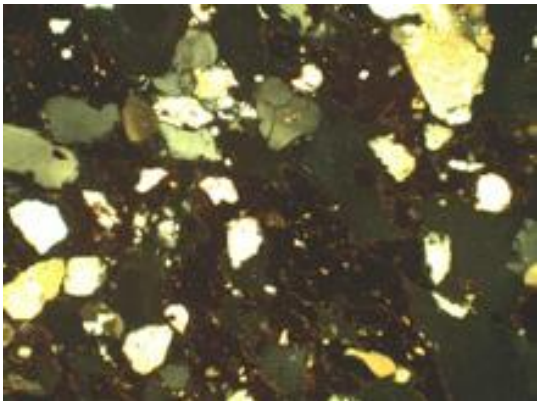

Plate 30 - Aston Hall 3 (PPL)

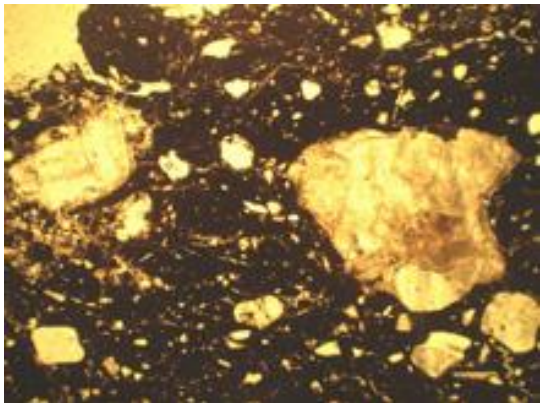

Plate 31 - Aston Hall 4 (PPL)

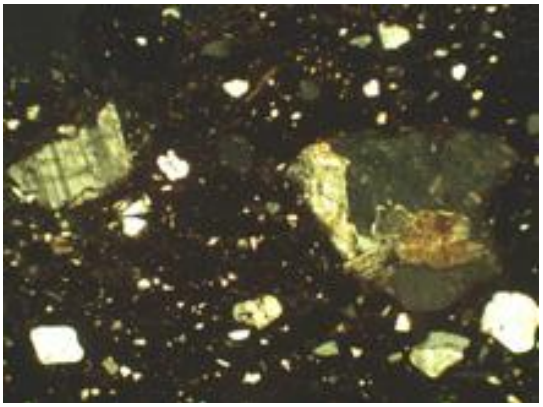

Plate 32 - Aston Hall 4 (XP)

Plates 29-32: Thin section photomicrographs of prehistoric ceramic sherds analysed from Aston Hall, Derbyshire in this report. Image width = 2.9 mm. PPL = plane polarised light, XP = crossed polars. Petrographic Analysis of Prehistoric Ceramics from Aston Hall, Derbyshire 7.