Northamptonshire County Council

Northamptonshire Archaeology

Archaeological trial excavation on land west of
Earls Barton Quarry, Northamptonshire
August 2007

Paul Mason

September 2007

Report 07/ 136

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QUALITY CONTROL

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OASIS REPORT FORM

PROJECT DETAILS		
Project name	Archaeological trial excavation on land west of Earls Barton Quarry, Northamptonshire	
Short description (250 words maximum)	Northamptonshire Archaeology conducted a trial excavation on c29 ha of arable land to the west of Earls Barton Quarry, Northamptonshire on behalf of Phoenix Consulting Archaeology Ltd and their client Hanson Aggregates. The site lies in the floodplain of the River Nene within a landscape known to contain important Bronze Age remains. As a result of the fieldwork a small number of archaeological features, including a single human cremation, were discovered. Although not firmly dated, the features are thought to be roughly contemporary with an upstanding Bronze Age barrow (SAM17135) which occupies a position in the centre of the application area. Further work on environmental samples may help date the cremation deposit and facilitate comment on the floodplain's palaeoenvironment.	
Project type (eg DBA, evaluation etc)	Evaluation	
Site status (none, NT, SAM etc)	SAM17135	
Previous work (SMR numbers etc)	n/a	
Current Land use	Arable	
Future work (yes, no, unknown)	unknown	
Monument type/ period	Bronze Age	
Significant finds (artefact type and period)	Human cremation	
PROJECT LOCATION		
County	Northamptonshire	
Site address (including postcode)	Land W of Earls Barton Quarry, Northamptonshire	
Study area (sq.m or ha)	*c* 29ha	
OS Easting & Northing (use grid sq. letter code)	SP 847 613	
Height OD	*c* 48m	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology	
Project brief originator	Minerals Planning Authority	
Project Design originator	Phoenix Consulting Archaeology Ltd	
Director/Supervisor	Paul Mason	
Project Manager	Ian Meadows	
Sponsor or funding body	Hanson Aggregates	
PROJECT DATE		
Start date	6-8-07	
End date		
ARCHIVES	Location (Accession no.)	Content (eg pottery, animal bone etc)
Physical		
Paper		
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BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report (NA report)	
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ARCHAEOLOGICAL TRIAL EXCAVATION ON LAND WEST OF

EARLS BARTON QUARRY, NORTHAMPTONSHIRE

AUGUST 2007

ABSTRACT
Northamptonshire Archaeology conducted a trial excavation on c29 ha of arable land to the west of Earls Barton Quarry, Northamptonshire on behalf of Phoenix Consulting Archaeology Ltd and their client Hanson Aggregates. The site lies in the floodplain of the River Nene within a landscape known to contain important Bronze Age remains. As a result of the fieldwork a small number of archaeological features, including a single human cremation, were discovered. Although not firmly dated, the features are thought to be roughly contemporary with an upstanding Bronze Age barrow which occupies a position in the centre of the application area (SAM17135). Further work on environmental samples may help date the cremation deposit and facilitate comment on the floodplain's palaeoenvironment.

1 INTRODUCTION

In August 2007 Northamptonshire Archaeology undertook an archaeological evaluation on behalf of Phoenix Consulting Archaeology Ltd and their client Hanson Aggregates on arable land at Cogenhoe, Northamptonshire (centre: NGR SP 847 613, Fig 1). The work was undertaken at the request of the archaeological advisor to the Minerals Planning Authority to inform a planning application for the extraction of sand and gravel to the west of the existing quarry.

The application area covers 225ha of which *c* 111ha will be subject to gravel extraction. The trial excavation was targeted on *c* 29ha of this area, centred on the site of an upstanding Bronze Age barrow which is a Scheduled Ancient Monument (SAM 17135). Three minor groupings of tenuous cropmarks are present in the same field (Fig 2). Cropmarks to the south-west of the area of proposed mineral extraction indicate the presence of a linear barrow group (SMR 5285).

The current evaluation comprised trial excavation which will later be augmented by a geo-archaeological survey of land to the east of the current study area.

2 BACKGROUND

2.1 Archaeological background

No previous intrusive archaeological field work has been undertaken on the area of proposed extraction. A desk-based assessment submitted with the planning application detailed the potential of the site in its wider context (Vinnels 2006) which was summarised in the specification prepared by Phoenix Consulting (Richmond and Bates 2007) from which the

following is taken unless referenced elsewhere.

Lithic artefacts indicative of Palaeolithic activity have been found in close vicinity to the site and include an Acheulian hand axe (SMR 3564). Flint tools dating to the Mesolithic have also been found in the locality of Earls Barton. Evidence for Neolithic exploitation of the landscape, including settlement along the river valley, has been found at nearby Ecton Parish (SMR 2046) and from another site lying *c* 200m to the north of the current study area. Archaeological excavations at Wollaston, undertaken in advance of mineral extraction some 2km to the north-east of the current application area, recovered evidence for Neolithic activity in the form of scattered pit groups (Ian Meadows pers comm). A large assemblage of Neolithic and Bronze Age flints has been collected closer to the application area as a result of field walking surveys. The main concentration of these artefacts, comprising both tools and production debris, was found to the south of the site, across Whiston Road, in fields belonging to Roe Farm (Hollowell 2001). They are thought to be indicative of nearby occupation.

The Nene Valley is well known for its Bronze Age archaeology; the barrow and crop marks within the application area are thought to date to this period. A bell barrow, lying some 3km north-east of the application area was excavated in 1969 prior to quarrying at Earls Barton. Cremated bones and a bronze dagger were found and associated burned deposits produced uncalibrated radiocarbon dates centred on 1219 and 1264 bc (Jackson 1984). Close by, at Grendon Quarry, funerary monuments dating to the Neolithic and Bronze Age were discovered during excavations in 1974-75 and 1998-2001 (Last 2005). They included a Bronze Age barrow group positioned on a gravel peninsular in the floodplain of the River Nene (Gibson and McCormick 1985). To the immediate west of this site, at Earls Barton Quarry, a ring ditch enclosure and undated cremation were more recently discovered on a gravel island between two palaeochannels (Jones and Chapman 2005). They are thought to be associated with the Grendon funerary complex.

Iron Age activity is represented by numerous crop marks visible to the north of the site and by a possible enclosure, again visible as a crop mark, next to the barrow complex to the south-west of the proposed extraction area (Fig 2). Elsewhere an Iron Age enclosure and three pottery kilns were discovered during the excavations at Grendon (Jackson 1995). The excavations at Wollaston revealed evidence for an extensive Iron Age and Romano-British landscape characterised by farmsteads and associated field systems (Ian Meadows, pers comm). No evidence for Romano-British activity has so far been discovered in the vicinity of the current application area.

Saxon archaeology in the vicinity of the site is represented by spot finds of pottery to the north, however, the excavations at the quarry sites to the north-east have produced greater evidence for

activity of this period. This includes sunken-featured structures at Grendon (Jackson 1995) and the famous Saxon helmet retrieved from the burial at Wollaston (Meadows 1997).

Documentary and cartographic evidence suggests that the proposed extraction area has been used for agriculture since the medieval period. Earthworks located on the western perimeter of the site are thought to be remnants of medieval fishponds (SMR 2133) (Fig 2). The line of the former LNWR railway crossed the site until it was dismantled in the 1960s; its route lies preserved between the field boundaries to the south of the barrow.

2.2 Topography and geology

The area of proposed mineral extraction lies to the west of Earls Barton Quarry on the southern flood plain of the River Nene. The modern ground level lies at 47.20-49.50mOD. The site is bounded to the north by the river, to the south by Whiston Road, to the west by a farm track and to the east by agricultural fields. The land is currently used for crop cultivation.

The geology comprises alluvium overlying river terrace deposits (www.bgs.ac.uk) (Fig 3).

3 OBJECTIVES AND METHODOLOGY

3.1 Objectives

The aims and objectives of the evaluation are defined in the specification prepared by Phoenix Consulting (Richmond and Bates 2007) and are summarised as follows:

- To provide sufficient information on the site's surviving archaeology to allow a proper assessment to be made of the implications of the current development proposals.
- To provide consistent information on the presence/absence, extent, degree of survival and depth of burial of archaeological deposits and features across the proposal site.
- To ensure the long-term preservation of the project data through reporting and archiving.

Specific objectives were as follows:

- To establish whether additional buried remains, of a Bronze Age barrow cemetery survive at the western end of the site and the extent and condition of survival of such remains.
- To determine whether extensive areas of significant archaeological remains are present in this or other parts of the current application site.

- To establish the degree of preservation and current conditions of burial for surviving buried archaeological remains in order to inform preparation of an effective mitigation strategy.

3.2 Methodology

Thirty-two fifty-metre long trenches were laid out in pre-determined positions over the four fields that comprise the proposed development area using a Leica 1200 GPS system (Fig 2). The trenches were excavated using a Volvo 360º racked digger fitted with a 2.16m-wide ditching bucket. Topsoil, subsoil where present, and alluvial horizons were removed to expose the upper strata of geology and stored separately. One trench (Trench 1) had to be moved from its original position due to the proximity of an electric cable, and three trenches (Trenches 15, 17 and 18) had to be split either side of a public right of way.

Once opened, hand excavation and recording of trenches progressed in accordance with the approved specification (Richmond and Bates 2007). Following the completion of the archaeological work a number of broken land drains were repaired and the trenches were backfilled.

4 EXCAVATED EVIDENCE

4.1 Overview

The trenches were excavated through topsoil and alluvium to expose the underlying River Terrace Gravels which lay at levels of 0.60-3.5m below the ground surface (45.80 - 48.08m OD). The gravel lay closest to the surface in the vicinity of the upstanding barrow, typically 0.60-1.00m below the ground surface, whereas more deeply buried deposits appeared to the south and formed a band sweeping across the site on a south-west to north-east alignment (Fig 3).

As established by previous bore-hole surveys (Land and Mineral Resource Consultants 1990, Geoffrey Walton Practice 2002, Hanson Aggregates 2004), depths of alluvium also varied considerably (Plates 1-4). The greater depths, up to 3.1m deep, occurred in the south-west part of the site and required the trenches in this area to be stepped; here the gravel was exposed in test pits dug at the end of each trench. The alluvium generally comprised homogenous heavy yellow/orange brown silty clay, although the lower horizons in the south-west corner of the site exhibited a patchy bluish hue (Trenches 6-10). In approximately half of the trenches it was noted that uppermost alluvial horizons appeared to be degrading to form a 'subsoil' of slightly more friable material. This distribution appeared random. Topsoil throughout was typically a dark grey

brown silty clay loam measuring 0.20-0.40m thick. Soil descriptions for each trench are detailed in Appendix 1 and the levels at which gravel was encountered are shown on Fig 3.

Only four of the trenches contained archaeological features (Trenches 4, 7, 11 and 24). Five of the trenches contained palaeoenvironmental features comprising probable palaeochannels (Trenches 1, 3, 4 and possibly 9) and tree throws exhibiting evidence of burning were seen in Trenches 22 and 27.

The tenuous crop marks present in the field containing the barrow (the northernmost field) appear to have been caused by variations in geology visible in the trenches targeted over them (Trenches 18, 20, 22, 28 and 29; see Appendix 1).

4.2 Palaeochannels and natural features

Cutting the gravels in the northern end of Trench 4 in the southern field was a shallow palaeochannel [409] and a number of associated smaller channels that all conformed to an approximate east-west alignment (Figs 2 & 4, Plate 1 and frontispiece). The main channel was over 4m wide (only part was visible within the trench) and 0.40m deep. It was filled with dark grey brown silts (406). Interspersed between the channels and present along the rest of the trench's length were a number of dark, irregular patches in the gravel, probably caused by manganese staining, although some could have been tree boles and root throws. The borehole surveys also record black and silty deposits in this part of site. Further evidence for associated east-west aligned palaeochannels was observed to the east in the northern end of Trench 1 and the centre of Trench 3. In each case these palaeoenvironmental features were overlain by 0.40-0.70m of yellow brown silty clay alluvium (403). Rapidly rising groundwater was encountered in each of these trenches. Another, more speculative, palaeochannel was noted in Trench 9, aligned north-south and filled with bluish-grey alluvium.

These features appear to lie on the periphery of a band of lower lying gravels aligned south-west to north-east to the south of the barrow, and were perhaps a now relict subsidiary channel of the Nene.

East of the barrow, in Trench 22, an irregular patch of scorched silty clay and charcoal [2205] was observed beneath *c* 0.50m of alluvium at the northern end of the trench (Plate 4). A similar feature [2705] was present in the eastern end of Trench 27, sealed beneath a 0.70m thick deposit of alluvium (Plate 5). Both are thought to be the remnants of burned vegetation, perhaps tree boles.

4.3 Archaeological features

Trench 4

Towards the northern end of Trench 4, in the southern field, a small, circular pit [407] was cut into the *c* 0.70m-thick alluvial deposit (Figs 2 & 4, Section 1). It lay just above the gravel, at 47.23m OD, to the south of palaeochannel [405]. It had a diameter of 0.40m and a depth of 0.20m and was filled with a charcoal flecked grey brown silty loam (408). An undiagnostic flint flake was present but nothing was found to date the pit.

Trench 7

Towards the centre of Trench 7 an oval pit [704] was cut into a yellow brown silty clay alluvial horizon (702) at 47.92mOD, an estimated 0.80m above the gravel. It was sealed by a further 1.10m of alluvium, which was 1.90m thick in total. The alluvium in this trench was typically 1.90m thick; the pit had been dug 1.10m from the interface between alluvium and topsoil and an estimated 0.80m above the gravel (Fig 4, Section 2; Plate 5). It measured 1.20m x 1m x 0.12m deep and was filled with a heavy, dark grey clay loam (703) containing a large quantity of charcoal flecks and tiny fragments of burned bone. The whole of this deposit was sampled and later identified as the cremation of a child. A tiny fragment of a copper alloy object accompanied the remains but nothing was found to firmly date the feature.

Trench 11

Towards the northern end of Trench 11 and cut into alluvium at, 48.17mOD, was a 1.70m-wide, 1m-deep 'U'-shaped ditch [1106]. Its approximate east-west alignment corresponded with a breach in the bank surrounding the fishpond to the west (Fig 4, Section 3). Its primary fill was a greyish brown silty clay (1105) containing a single fragment of unidentifiable animal bone and a small assemblage of freshwater mollusc shells. This fill was overlain by a mid-brown silty clay (1104) which was buried beneath 0.60m of alluvium and 0.40m of topsoil. The positioning of the ditch and presence of molluscs within the basal fill would suggest that it was associated with the fishpond's water management system.

Trench 24

Two small pits [2405] and [2407] were cut into the alluvium and underlying gravel towards the centre of Trench 24 which lay to the immediate north-east of the upstanding barrow (Fig 4, Section 4 and 5). Pi [2405] had a diameter of *c* 0.75m and a depth of 0.20m. It was filled with charcoal-flecked greyish brown sand (2406) containing a few tiny fragments of unidentifiable animal bone. Pottery of probable middle Bronze Age to early/middle Iron Age date was also present. Pit [2407] was partially visible against the southern edge of the trench, cut into the alluvium (2403) and overlain by 0.20m thick deposits of subsoil/degraded alluvium (2402) and

topsoil (2401). It was 1m wide and 0.50m deep with a fill comprising charcoal-flecked greyish brown silty loam (2408). Part of a cattle tibia and fragmentary animal bone, in similar condition to that found in fill (2406), was present. Pottery sherds in the same fabric as those found in pit [2405] were also contained within the fill.

5 THE FINDS AND ENVIRONMENTAL EVIDENCE

5.1 **The worked flint** by Y. B. Wolframm-Murray

A flint flake was recovered from pit [407]. It is a dark brownish grey vitreous flint and half of the dorsal surface is heavily patinated. The flake is not diagnostic and no date can be given.

5.2 **The pottery** by Andy Chapman

A total of six small sherds of hand-built pottery, weighing 18g, was recovered from two contexts in Trench 24. There are two sherds, weighing 6g, from context (2406) and four sherds, weighing 12g, from context (2408). The sherds are all consistent in fabric in containing sparse finely crushed shell, and they are all plain body sherds from thin-walled vessels, 5-6mm thick. They all have dark grey cores and while two have grey surfaces, the others have brown to light brown external surfaces and brown or grey internal surfaces.

It is difficult to provide a date for this small assemblage, but such plain, thin-walled vessels might be most appropriate through the broad period of the middle Bronze Age to early/middle Iron Age.

5.3 **The cremation deposit** by Andy Chapman

Burnt bone and charcoal was recovered through sieving of the bulk soil sample of the entire fill (703) of a pit [704].

The bone

A total of 130g of burnt bone was recovered. The majority of the bone is white in colour, with only a small proportion grey or blue-grey, indicating that the pyre reached a high temperature in which the body was efficiently cremated.

The bone is well fragmented, with the majority of the fragments 10-30mm long and the remainder smaller than 10mm. This makes specific identification of individual bones very difficult. In broad terms most body parts are represented, including long bones, ribs, vertebral bodies, digits and skull fragments, including a number of tooth roots. The skull fragments are 2-

3mm thick some with some edges along suture lines. The thinness of the skull fragments and the small size of the other body parts indicate that the bones have come from an infant at least several months old at death. Despite the young age of the cremated individual, a deposit of 130g would only represent a part of the full bone assemblage indicating the deposit was either partial or had been truncated by later activity.

The charcoal

A total of 15g of charcoal was recovered. The majority of the material comprises small fragments, 1-5mm long, but there are some larger pieces, 5-20mm long.

There is sufficient material to obtain both wood species identifications and a radiocarbon date.

Copper alloy object

Within the mass of cremated bone there was a small irregular fragment of paper-thin copper alloy sheet, 9mm long and up to 3mm wide, which is presumably the remnant of some larger object probably placed on the pyre with the body as a grave good.

Date

From the available evidence the cremation deposit could be of Bronze Age, Roman or early Saxon date, as cremations in all of these periods could be accompanied by copper alloy objects. Radiocarbon dating could place the cremation in its true context.

5.4 **The animal bone** by Karen Deighton

Method

Seventy-one grams of animal bone were collected during the course of trial trenching. This material was examined in order to establish the level of preservation and the species present.

Results

Preservation

Preservation was fairly poor with heavy fragmentation and a high level of bone surface abrasion. No evidence of butchery or canid gnawing was observed which was possibly due to the poor preservation.

The species present

Trench 6 context 602 (alluvium) – Bos (cattle) proximal humerus

Trench 8 context 802 (alluvium) - Large ungulate rib fragments

Trench 24 context 2408 (pit fill) - Bos (cattle) distal tibia

6 DISCUSSION

The evaluation indicates that the site contains archaeological remains of prehistoric date. The dating of these features, comprising three small pits and a cremation deposit, remains ambiguous and may not necessarily be contemporary with the Bronze Age barrow located at the centre of the site. The cremation is of greatest interest and potential for its dating could be provided by associated fragments of charcoal which it is proposed should be submitted for radiocarbon dating. This would also provide a *terminus ante quem* for the underlying alluvium and a *terminus post quem* for that above.

In addition to the prehistoric remains, the ditch found in the south-western part of the site (Trench 11) is almost certainly part of the water management system associated with the medieval/post-medieval fishponds. Nothing was found to date this feature.

Although, based on the results of the trial excavation, there does not appear to be a dense concentration of archaeological features across the site, comparison with previously excavated sites in the near vicinity would suggest that there is great potential for further buried archaeological remains. Gravel islands and promontories where depths of alluvium are negligible such as those observed within the application area in the vicinity of the upstanding barrow (Fig 3), have been established as 'hot-spots' for Neolithic and Bronze Age activity. In some instances this may comprise dense concentrations of monuments such as the funerary complex at Grendon. Elsewhere, features such as single cremations and even minor monuments, such as the previously unknown ring ditch discovered at Stanwick (Chapman 2004) may be more widely dispersed. The potential significance of such scattered remains has been demonstrated at nearby Wollaston where small, widely spaced clusters of Neolithic and Bronze Age pits have been interpreted as the pre-cursor for the more densely occupied landscape of the later Iron Age and Roman periods (Ian Meadows, pers comm). It has been commented that in many cases pits, being more resilient to subsequent degradations, comprise the only surviving evidence of Neolithic occupation (Garrow 2006).

The comparative levels at which the gravel has been observed across the present application area suggest that the barrow and pits are located towards the tip of a gravel promontory forming a continuation of the ridge to the south-west, the summit of which is occupied the village of Cogenhoe. The barrow group to the east of the site also falls within this projection. The deeply-buried gravels observed to the south of the barrow appear to form a band aligned south-west to north-east, perhaps forming a now relict subsidiary channel of the Nene. Dark silt deposits

observed in the Trenches 1, 3 and 4 and identified by borehole surveys may be associated with this. The small stream present to the west of Roe Farm may have flowed in this direction before being diverted into a deep ditch which respects the modern field boundaries. The fishponds too are located over this band of lower lying gravels, perhaps to intercept this natural stream course. On the basis of these observations, the barrow and pits may have been deliberately positioned at the confluence of the main channel of the Nene and a secondary, now relict, channel. This is a pattern that has been noted at number of places in the Nene Valley (Chapman 2007).

The deep alluvial horizons observed in the southern part of the application area may have been deposited by a combination of alluvial processes. Where the deeper levels of bluish alluvium were observed (in trenches clustered towards the south-west corner of the site) they could be in-filling the hypothetical palaeochannel(s). The overlying yellowish brown homogenous material, also observed across much of the site, was more likely deposited by periodic episodes of overbank flooding that has accumulated over many centuries; in the Nene Valley a process at its most dynamic in the late Saxon/medieval period (Meadows 2007). This may explain why the ditch associated with the medieval fishponds in Trench 11 was buried beneath a substantial deposit of alluvium.

Further palaeoenvironmental evidence is offered by the two burned tree boles/root throws observed beneath the alluvium to the east of the barrow in Trenches 22 and 27. Analysis of the charcoal sampled from these features may help identify the tree species and provide further dating evidence for the formation of the alluvial deposits.

It is proposed that the results of any agreed additional environmental work resulting from this project should be submitted as a supplementary paper.

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APPENDIX 1: CONTEXT DESCRIPTIONS

Table 1: Context descriptions

Trench	Context	Context type	Description	Notes
1	101	Topsoil	Mid grey brown silty clay loam 0.35m	
	102	Degraded alluvium	Light grey brown silty clay 0.14m	
	103	Alluvium	Light grey/red brown silty clay 0.50m	
	103	Geology	Sand and gravel with patch clay	Dark grey silty banding at south end of trench – palaeochannel?
2	201	Topsoil	Mid grey brown silty clay loam 0.35m	
	202	Alluvium	Light grey/ red brown silty clay 0.40m	
	203	Alluvium	Light orange brown silty clay 0.35m	
	204	Geology	Sand and gravel	Dark grey manganese staining throughout
3	301	Topsoil	Mid grey brown silty clay loam 0.35m	
	302	Alluvium	Light grey/red brown silty clay 0.30m	
	303	Alluvium	Light orange brown silty clay 0.10m	
	304	Geology	Sand and gravel	Dark grey silty banding at centre of trench – palaeochannel?
4	401	Topsoil	Dark grey brown silty clay loam 0.30m	
	402	Degraded alluvium	Yellow brown silty clay with dark brown mottle 0.20m	
	403	Alluvium	Yellow brown silty clay 0.50m	
	404	Geology	Gravel	Dark grey silty bandings at north end of trench – palaeochannels? Dark grey manganese staining/vegetation disturbance throughout
	405	Palaeochannel deposit	Dark grey brown sand and gravel	
	406	Palaeochannel deposit	Dark grey brown silt and gravel	
	407	Pit	Diamter 0.20m, depth 0.40m	Sealed in alluvial layer (403)
	408	Fill of pit [407]	Charcoal flecked mid grey brown silty loam	
	409	Palaeochannel	4m+ wide, 0.40m deep	Filled by (406)
	410	Palaeochannel	0.5m wide – not fully excavated	
	411	Fill of [410]	Dark grey silt and gravel	
5	501	Topsoil	Dark grey brown silty clay loam 0.40m	
	502	Degraded alluvium	Light brown clay 0.40m	
	503	Alluvium	Yellow brown silty clay 0.60m	

	504	Alluvium	Orange brown to light blue grey clay 1m	
	505	Geology	Gravel	Observed in test pit 2.40m below surface
6	601	Topsoil	Dark grey brown silty clay loam 0.20m	
	602	Degraded alluvium	Light brown silty clay 0.20m	
	603	Alluvium	Yellow brown silty clay 1m	
	604	Alluvium	Orange brown to light blue grey clay 2.1m	
	605	Discoloured alluvium	Diffuse, dark grey brown patch	Manganese staining
	606	Geology	Gravel	Observed in test pit 3.50m below surface
7	701	Topsoil	Dark grey brown silty clay loam 0.40m	
	702	Alluvium	Yellow brown silty clay 1.90m	
	703	Fill of pit [704]	Dark grey clay loam	Contains cremated bone fragments
	704	Pit	1m x 1.2m x 0.15m	Sealed in alluvial layer (702)
	705	Fill of [706]	Dark silt	
	706	Root bole	Diameter 0.30m	
	707	Alluvium	Orange brown to light blue grey clay 0.70m	
	708	Geology	Gravel	Observed in test pit 3m below surface
8	801	Topsoil	Dark grey brown silty clay loam 0.30m	
	802	Alluvium	Yellow brown silty clay 1.40m	
	803	Alluvium	Light blue grey clay with orange sandy patches 0.80m	
	804	Geology	Gravel	Observed in test pit 2.5m below surface
	805	Lens	Reddish brown silt	Sealed in alluvial layer (802)
9	901	Topsoil	Dark grey brown silty clay loam 0.25m	
	902	Degraded alluvium	Light brown silty clay 0.30m	
	903	Alluvium	Yellow brown silty clay 0.90m	
	904	Geology	Orange brown sands and patchy mid grey brown clay	
10	1001	Topsoil	Dark grey brown silty clay loam 0.35m	
	1002	Degraded alluvium	Olive brown silty clay 0.23m	
	1003	Allluvium	Yellow brown silty clay 1.30m	
	1004	Alluvium	Orange brown to light blue grey clay 1.40m	
	1005	Geology	Gravel	Observed in test pit 3.5m below surface
11	1101	Topsoil	Dark grey brown silty clay loam 0.40m	

	1102	Alluvium	Yellow brown silty clay 1.20m	
	1103	Geology	Sand and gravel	
	1104	Secondary fill of [1106]	Mid brown silty clay	
	1105	Primary fill of [1106]	Grey brown silty clay	
	1106	Ditch	1.70m wide 1m deep	Associated with medieval fishponds to west
12	1201	Topsoil	Dark grey brown silty clay loam 0.20m	
	1202	Alluvium	Reddish brown silty clay 0.75m	
	1203	Geology	Sand and gravel	
13	1301	Topsoil	Dark grey brown silty clay loam 0.30m	
	1302	Alluvium	Reddish brown silty clay 0.40m	
	1303	Geology	Sand and gravel	Occasional dark grey manganese staining
14	1401	Topsoil	Dark grey brown silty clay loam 0.25m	
	1402	Alluvium	Reddish brown silty clay 0.50m	
	1403	Geology	Sand and gravel	
15	1501	Topsoil	Dark grey brown silty clay loam 0.25m	
	1502	Degraded alluvium	Grey brown silty clay 0.30m	
	1503	Alluvium	Yellow brown silty clay 0.70m	
	1504	Alluvium	Blue grey clay	Observed at W end of trench
	1505	Geology	Sand	Observed at E end of trench
16	1601	Topsoil	Dark grey brown silty clay loam 0.20m	
	1602	Degraded alluvium	Grey brown silty clay 0.40m	
	1603	Alluvium	Yellow brown silty clay 0. 40m	
	1604	Alluvium	Blue grey clay 1m	
		Geology	Gravel	Observed in test pit 2m below surface
17	1701	Topsoil	Dark grey brown silty clay loam 0.25m	
	1702	Alluvium	Yellow brown silty clay 0.90m	
	1703	Geology	Sand and gravel	Observed at NW end of trench. Occasional dark grey manganese staining
	1704	Alluvium	Blue grey clay	Observed at SE end of trench
18	1801	Topsoil	Dark grey brown silty clay loam 0.25m	
	1802	Alluvium	Mid brown silty clay 0.50m	
	1803	Geology	Sand and gravel	Two bands of natural sand are thought to have caused crop marks in this trench. Occasional dark grey manganese staining
19	1901	Topsoil	Dark grey brown silty clay loam 0.30m	

	1902	Alluvium	Yellow brown silty clay 0.70m	
	1903	Geology	Sand and gravel	Occasional dark grey manganese staining
20	2001	Topsoil	Dark grey brown silty clay loam 0.25m	
	2002	Alluvium	Orange brown silty clay 0.60m	
	2003	Geology	Gravel	
21	2101	Topsoil	Dark grey brown silty clay loam 0.15m	
	2102	Degraded alluvium	Blue brown silty clay 0.40m	
	2103	Alluvium	Yellow brown silty clay 0.12m	
	2103	Geology	Sand and gravel	
22	2201	Topsoil	Dark grey brown silty clay loam 0.20m	
	2202	Degraded alluvium	Blue brown silty clay 0.30m	
	2203	Alluvium	Yellow brown silty clay 0.20m	
	2204	Geology	Sand and gravel	
	2205	Tree throw	Irregular depression in gravel	Evidence of burning
23	2301	Topsoil	Dark grey brown silty clay loam 0.20m	
	2302	Degraded alluvium	Light brown silty clay 0.20m	
	2303	Alluvium	Yellow brown silty clay 0.20m	
	2304	Geology	Sand and gravel	Occasional dark grey manganese staining
24	2401	Topsoil	Dark grey brown silty clay loam 0.20m	
	2402	Degraded alluvium	Light brown silty clay 0.20m	
	2403	Alluvium	Yellow brown silty clay 0. 35m	
	2404	Geology	Sand and gravel	
	2405	Pit	0.80m diameter, depth 0.20m	Sealed below alluvium (2403)
	2406	Fill of pit [2405]	Grey brown sand and gravel	Contains charcoal and prehistoric pottery
	2407	Pit	Oval, 1m in length	Sealed below alluvium (2403)
	2408	Fill of pit [2407]	Grey brown silty loam	Contains charcoal, animal bone and prehistoric pottery
25	2501	Topsoil	Dark grey brown silty clay loam 0.30m	
	2502	Degraded alluvium	Light brown silty clay 0.55m	
	2503	Alluvium	Yellow brown silty clay 0.10m	
	2504	Geology	Sand and gravel	
26	2601	Topsoil	Dark grey brown silty clay loam 0.30m	
	2602	Alluvium	Yellow brown silty clay 0.80m	
	2603	Geology	Sand and gravel	Occasional dark grey manganese

				staining
27	2701	Topsoil	Dark grey brown silty clay loam 0.25m	
	2702	Degraded alluvium	Light brown silty clay 0.50m	
	2703	Alluvium	Yellow brown silty clay 0.25m	
	2704	Geology	Gravel	
	2705	Tree bole	1.5m diameter, 0.20m deep	Sealed below alluvium (2703)
	2706	Fill of [2705]	Sandy clay	Evidence of burning
28	2801	Topsoil	Dark grey brown silty clay loam 0.25m	
	2802	Alluvium	Yellow brown silty clay 0.32m	
	2803	Geology	Sand and gravel	
29	2901	Topsoil	Dark grey brown silty clay loam 0.25m	
	2902	Alluvium	Yellow brown silty clay 0.50m	
	2903	Geology	Sand and gravel	
	2904	Layer	Dark brown silt	Overlies gravel to W end of trench. May be connected to crop mark.
30	3001	Topsoil	Dark grey brown silty clay loam 0.30m	
	3002	Alluvium	Orange brown silty clay 0.50m	
	3003	Geology	Sand and gravel	Occasional dark grey manganese staining
31	3101	Topsoil	Dark grey brown silty clay loam 0.30m	
	3102	Alluvium	Orange brown silty clay 0.60m	
	3103	Geology	Sand and gravel	
32	3201	Topsoil	Dark grey brown silty clay loam 0.25m	
	3202	Alluvium	Orange brown silty clay 0.55m	
	3203	Geology	Sand and gravel	Occasional dark grey manganese staining

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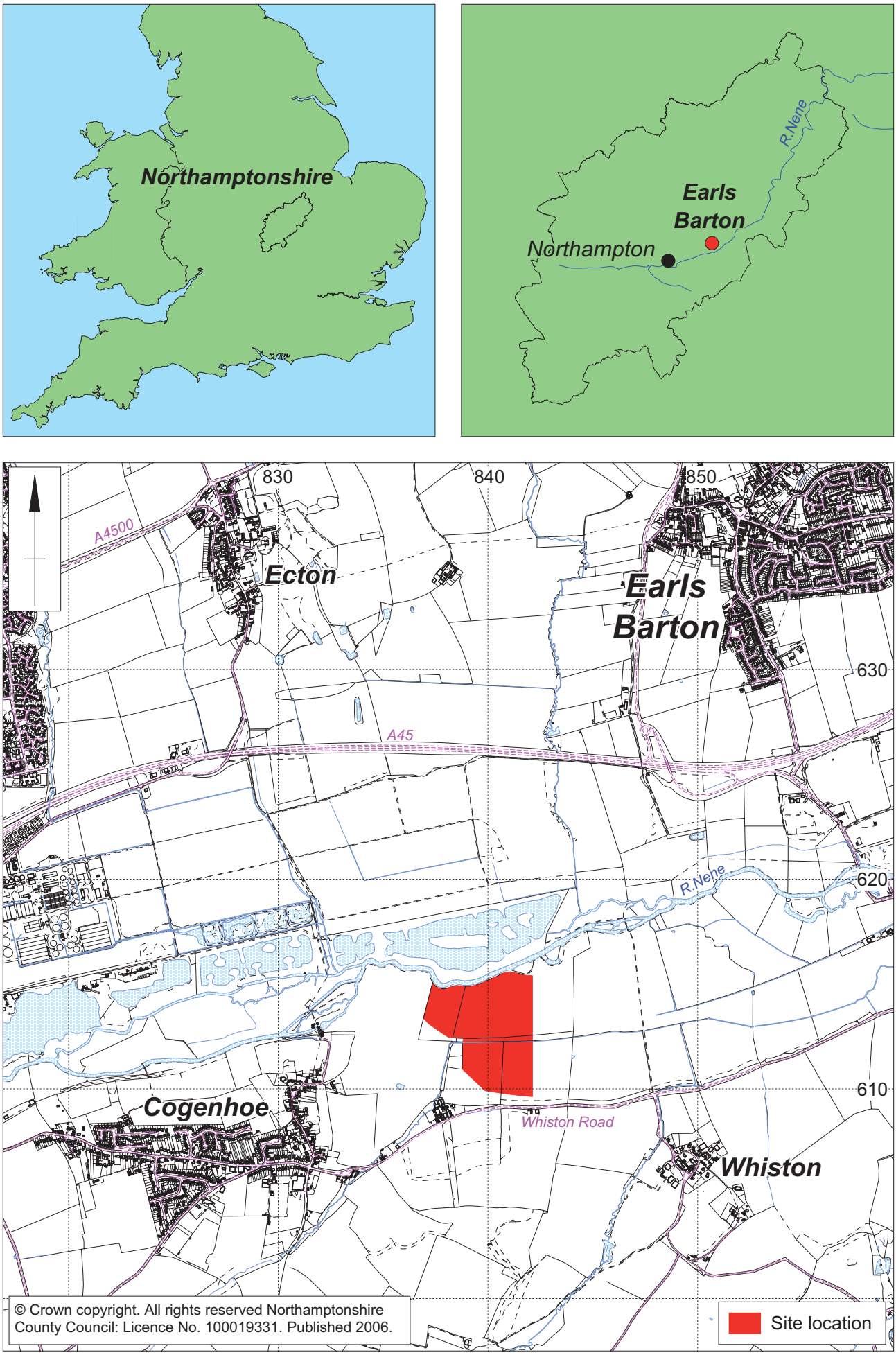

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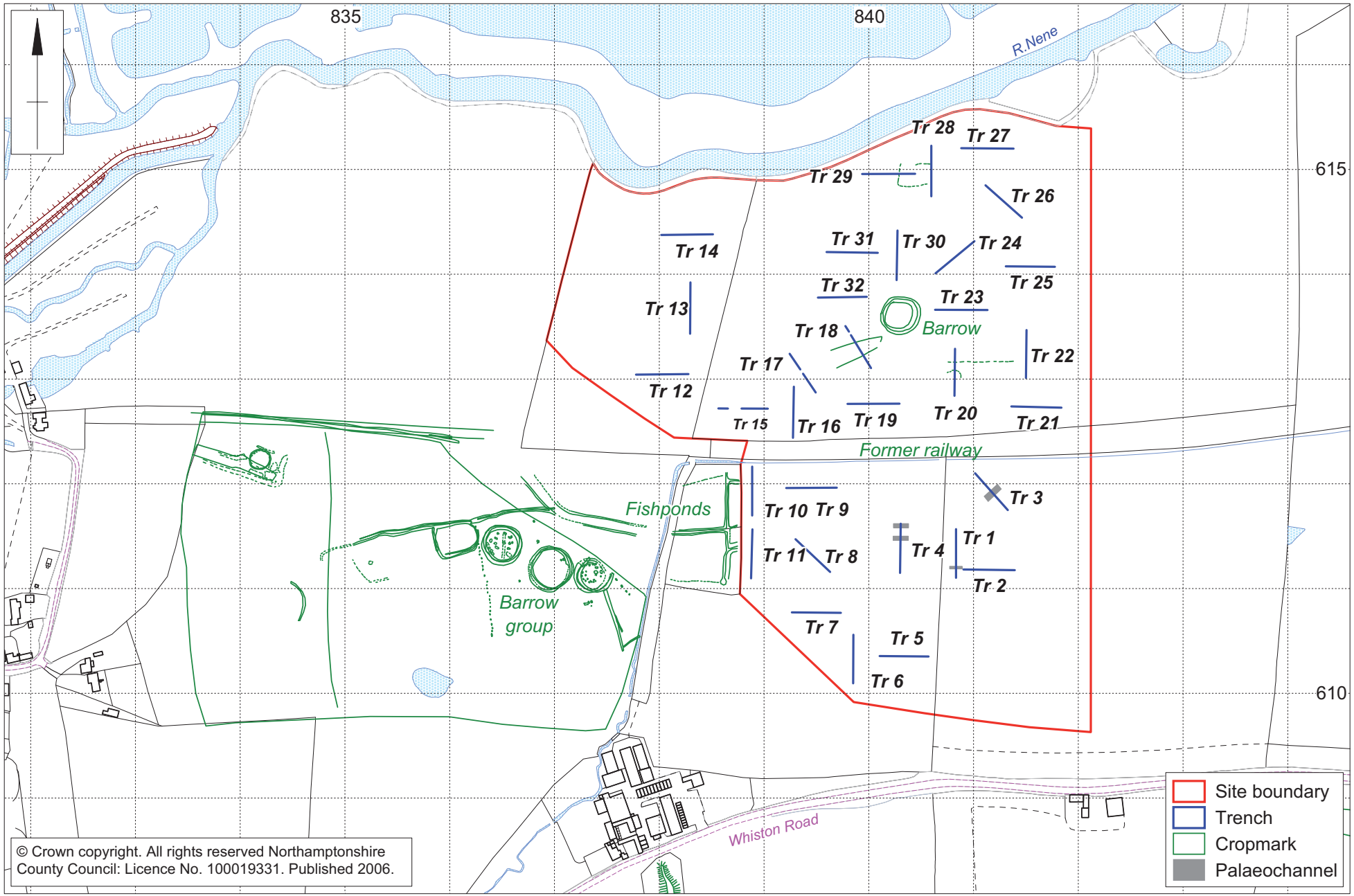
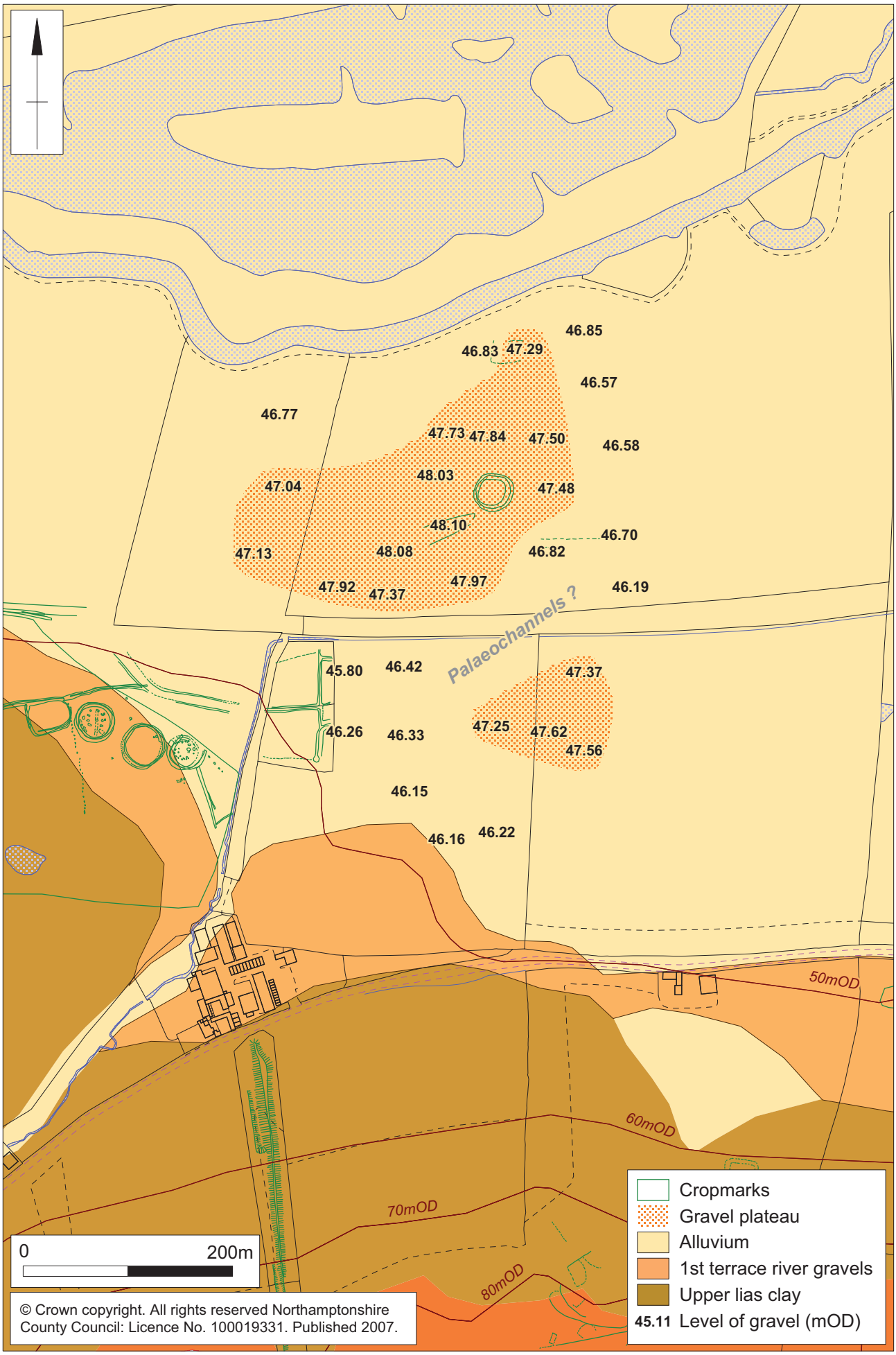
Site location Fig 1



Trench locations and cropmarks Fig 2



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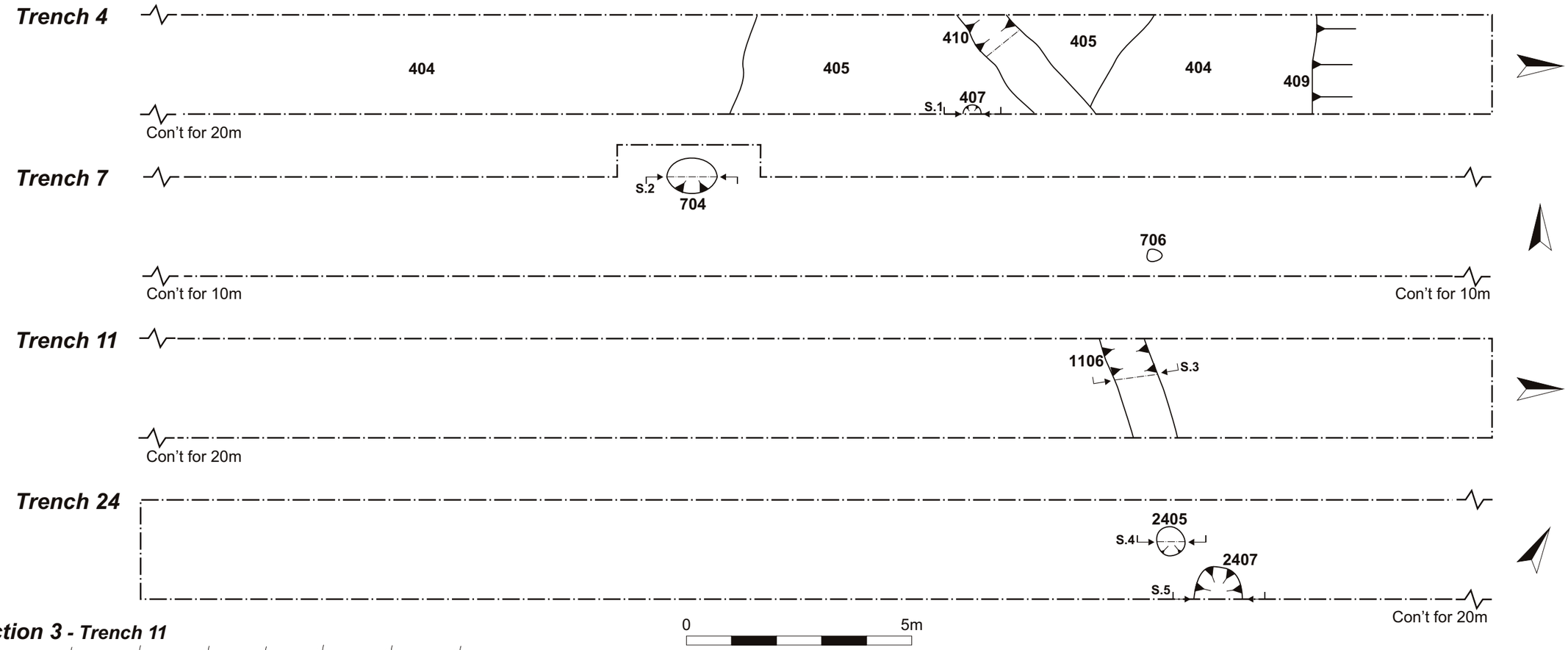
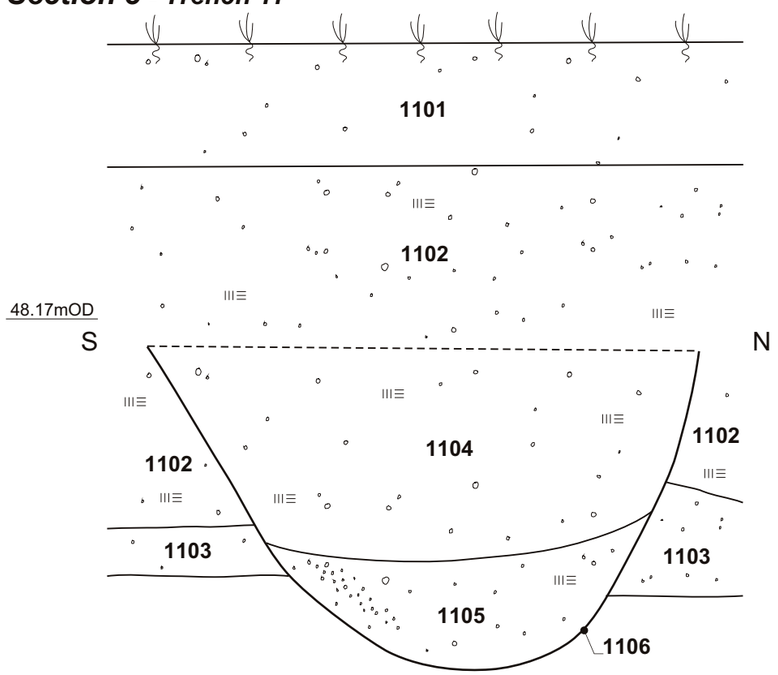
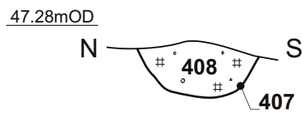
Geological data Fig 3



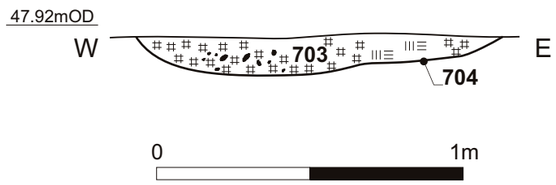
Section 3 - Trench 11



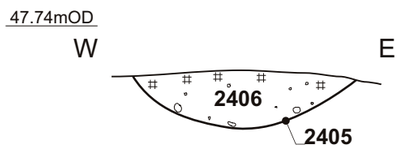
Section 1 - Trench 4



Section 2 - Trench 7



Section 4 - Trench 24



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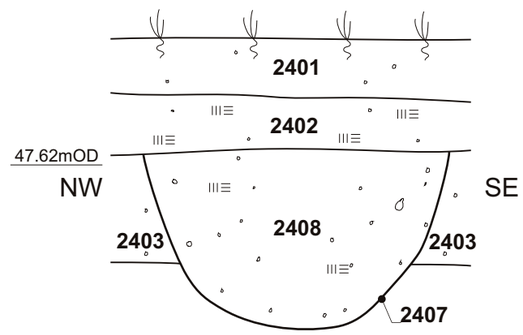


Clay
Charcoal
Charcoal flecks

Plans and sections from Trenches 4, 7, 11 and 24 Fig 4

Plate 1: Palaeochannel and overlying alluvium in southern field– Trench 4

Plate 2: Soil horizons, showing depth of alluvium to north-west - Trench 13

Plate 3: Soil horizons, showing depth of alluvium to north-east - Trench 27

Plate 4: Alluvium and underlying feature [2205] to the east – Trench 22

Plate 5: Burned tree bole – Trench 27 [2705]

Plate 6: Cremation – Trench 7 [704]

ARCHAEOLOGICAL EVALUATION AT EARLS BARTON QUARRY (WESTERN EXTENSION), NORTHAMPTONSHIRE, AUGUST 2007

Supplementary environmental and AMS dating evidence

Introduction

In August 2007 Northamptonshire Archaeology undertook an archaeological evaluation on behalf of Phoenix Consulting Archaeology Ltd and their client Hanson Aggregates on arable land at Cogenhoe, Northamptonshire. The results of the evaluation, which included remains of suspected prehistoric date, were subsequently presented in a client report submitted to Phoenix Consulting (Mason 2007). In that report it was proposed that a small amount of environmental and scientific dating work should be undertaken and that the results of this work should later be presented as a supplementary paper. This document fulfils that commitment.

Charcoal identification by Rowena Gale

Introduction

This report presents the species identification of a small assemblage of charcoal recovered from deposits on the Nene Flood plain provisionally dated to the Bronze Age.

Methods

The three samples consisted of small, rather poorly preserved fragments of charcoal. These were prepared using standard methods (Gale and Cutler 2000). Anatomical structures were examined using incident light on a Nikon Labophot-2 compound microscope at magnifications up to x400 and matched to prepared reference slides of modern wood. When possible, the maturity of the wood was assessed (i.e., heartwood/ sapwood).

Results

The taxa identified are shown on Table 1.

Table 1 Earls Barton Quarry, EB 07: charcoal identification

Sample	Context	Description	*Acer*	*Corylus*	*Fraxinus*	*Prunus*	*Quercus*
1	703	Fill of pit [704], contains human cremation	-	1 (<1g)	-	2 (<1g)	4s
10	2706	Burned deposit beneath alluvium	-	-	1 (<1g)	-	10h, 16?r
11	2205		1 (<1g)	-	-	-	31h

Key. h = heartwood; r = rootwood; s = sapwood (diameter unknown). The number of fragments identified is indicated with the weights in grams in brackets

Sample 1, context 703, from the fill of pit [704], contained the remains of a human cremation. Although very sparse, the charcoal deposit, which weighed 0.8g, may represent pyre fuel. The taxa identified included hazel (Corylus avellana), blackthorn (Prunus spinosa) and oak (Quercus sp.), the latter degraded but possibly juvenile wood.

Samples 10 and 11, contexts 2706 and 2205, were obtained from a burned deposit sealed beneath alluvium. The context was provisionally interpreted as including tree roots burned in situ. Associated charcoal, weighing 0.7g, was poorly preserved with some partially vitrified fragments, mainly oak (Quercus sp.) heartwood, but possibly including vitrified rootwood in sample 10. Sample 10 also included a single piece of ash (Fraxinus excelsior). Field maple (Acer campestre) was present in sample 11.

Radiocarbon dating

Fragments of charcoal from the cremation deposit (703) and tree bole/root throw (2205) were submitted for radiocarbon dating. The results of this analysis are shown in Table 2.

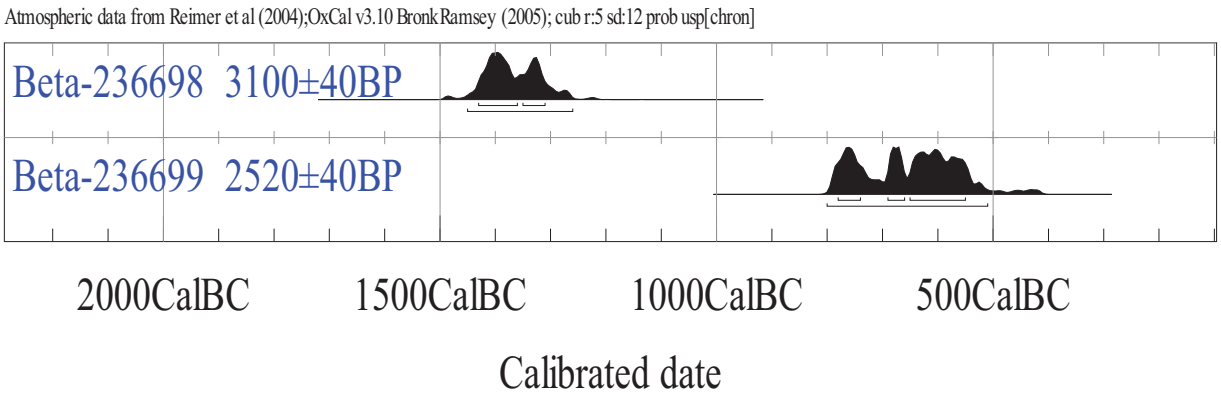
Discussion of results

The cremation deposit contained the partial remains of an infant at least several months old at death who, in light of the evidence presented above, appears to have been burned on a pyre of hazel, blackthorn and oak sometime between 1440–1280 cal BC (95% confidence). This time span equates to the middle Bronze Age making the cremation slightly later than the presumed early Bronze Age date for the upstanding barrow lying *c* 300m to the north and the ploughed out group lying a similar distance to the west.

Table 2: The radiocarbon determinations

Laboratoy & Sample No.	Context	Sample details	dC13	Conventional Age BP	Cal BC intercept 68% confidence 95% confidence
Beta-236698 EB07/703	Pit [704] containing cremation deposit	Wood charcoal: Hazel (Corylus avellana), blackthoen (Prunus Spinosa) and Oak (*Quercus* sp.), possibly juvenile	-25.2	3100 +/-40	1400 1420-1320 1440-1280
Beta-236699 EB07/2205	Tree bole/ root throw	Wood charcoal, *Quercus* sp. (oak) including heartwood	-26.0	2520 +/-40	760 780-550 790-520

Laboratory: Beta Analytic Inc., Miami, Florida, USA
Technique: AMS (Accelerator Mass Spectrometry)
Calibration: IntCal 04



The analysis also enables comment to be made upon the formation of the alluvial deposits into which the cremation was placed. On the basis of the stratigraphy observed at the time of excavation, some 0.80m of alluvium appears to have already accumulated over the natural gravel by the time the remains were interred (at 47.92m OD). A 1.10m deep thickness of alluvial strata subsequently accumulated over the buried remains between the middle Bronze Age and the modern period. This cannot, however, be used to project a more generalised model for the formation of alluvium across the site, nor predict the level at which Bronze Age archaeology is likely to be encountered elsewhere, as different depositional processes, influenced by localised

topographical features and hydrology, would have operated across the valley floor

The charcoal from the burned tree deposits was identified as principally oak, but with smaller quantities of ash and field maple. The sample taken from tree bole (2205) was dated to 790-520 Cal BC (95% confidence), which corresponds with the early Iron Age period. This date range is of significance as it is broadly comparable to those of previously-studied episodes of wide scale deforestation taking place in the Nene Valley, for example at nearby Grendon, centred on 650 Cal BC (Allen *et al* 2007, 111). It was during the early Iron Age period that settlements along the Nene proliferated and the deforestation of its valley, which had begun in the late Neolithic period, entered its final phase.

References

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Gale, R and Cutler, D, 2000 *Plants in Archaeology*, Otley/ London, Westbury Publishing and Royal Botanic Gardens, Kew

Mason, P, 2007 *Archaeological trial excavation on land west of Earls Barton Quarry, Northamptonshire*, Northamptonshire Archaeology Report 07/13