



**Northamptonshire  
County Council**

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# Northamptonshire Archaeology

## **Archaeological Evaluation Paston Reserve Development Area Peterborough**



Anne Foard-Colby

August 2006

Report 06/83

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**Northamptonshire Archaeology**

2 Bolton House  
Wootton Hall Park  
Northampton NN4 8BE

w. [www.northantsarchaeology.co.uk](http://www.northantsarchaeology.co.uk)

t. 01604 700493/4

f. 01604 702822

e. [sparry@northamptonshire.gov.uk](mailto:sparry@northamptonshire.gov.uk)



***STAFF***

Project Manager	Andy Mudd BA, Cert Arch Oxon, MIFA
Fieldwork	Anne Foard-Colby Cert Ed Adrian Burrow MA Paul Kajewski BA PGDip
Text	Anne Foard-Colby
Pottery	Tora Hylton
Stonework	Iain Soden BA MIFA
Faunal & Environmental Evidence	Karen Deighton MSc
Charcoal	Rowena Gale
Sedimentology	Dr James Rackham BSc MSc FSA
Illustrations	Hale Moharramzadeh BA MA (Bergen)

***QUALITY CONTROL***

	Print name	Signed	Date
Checked by			
Verified by	A Mudd		
Approved by	A Chapman		

**OASIS REPORT FORM**

<b>PROJECT DETAILS</b>		
Project title	Paston Reserve Development Area, Peterborough	
Short description (250 words maximum)	Northamptonshire Archaeology carried out an archaeological evaluation on 37.2ha. of land proposed for housing at Paston Reserve Development Area, Peterborough, Cambridgeshire. Two ditches were revealed in two trenches together with at least two posthole alignments. One sherd of Roman Colour-Coated fabric and a Roman tile fragment were recovered from the ditches. Two fragments of 16 <sup>th</sup> /17 <sup>th</sup> century stone moulding were recovered from a posthole and may be associated with a nearby, destroyed manor house. A possible buried soil which may be connected to Car Dyke was revealed. No archaeology was present in the remaining trenches.	
Project type (e.g. desk-based, field evaluation etc)	Field Evaluation (Site Code: PRP06)	
Previous work (reference to organisation or SMR numbers etc)	DBA, aerial photographic assessment, sample detailed magnetic gradiometer survey and minimum trial trenching of potential areas	
Future work (yes, no, unknown)	Unknown	
Monument type And period	Car Dyke (Scheduled Monument PE 219)	
Significant finds (artefact type and period)	Possible upcast from digging of Car Dyke	
<b>PROJECT LOCATION</b>		
County	Cambridgeshire	
Site address (including postcode)	Paston Reserve	
Easting (use numerical 100km grid square no.)	5196	
Northing	3030	
Height OD	Between 15.68mOD at the north-west and 6.3mOD at the east	
<b>PROJECT CREATORS</b>		
Organisation	Northamptonshire Archaeology	
Project brief originator	Atkins	
Project Design originator	Northamptonshire Archaeology	
Director/Supervisor	Anne Foard-Colby	
Project Manager	Andy Mudd	
Sponsor or funding body		
<b>PROJECT DATE</b>		
Start date	May 2006	
End date	May 2006	
<b>ARCHIVES</b>	<b>Location (Accession no.)</b>	<b>Content (e.g. pottery, animal bone etc)</b>
Physical		
Paper		
Digital		
<b>BIBLIOGRAPHY</b>		
Title		
Serial title & volume		
Author(s)		
Page numbers		
Date		

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## ARCHAEOLOGICAL EVALUATION

### PASTON RESERVE DEVELOPMENT AREA, PETERBOROUGH

MAY 2006

#### ABSTRACT

*Northamptonshire Archaeology carried out an archaeological evaluation on land proposed for housing at Paston Reserve Development Area, Peterborough. Seven trenches were opened, and two contained single ditches. One sherd of Roman Colour-Coated ware, together with a small amount of animal bone, was recovered from one ditch, while a residual probable Roman tile fragment came from the other. Two fragments of 16<sup>th</sup>/17<sup>th</sup> century stone moulding were recovered from a posthole and may be associated with a former manor house nearby. Trenches close to Car Dyke revealed a possible buried soil which may have been sealed by upcast from the dyke, although no good dating evidence was present.*

#### 1 INTRODUCTION

Northamptonshire Archaeology carried out an archaeological evaluation during May 2006 on land proposed for mixed development east of Paston Parkway, Peterborough, NGR TF 1974 0300 (Fig 1).

The work was undertaken for Atkins Heritage on behalf of Paston Reserve Landowners Consortium in order to inform the planning application. The evaluation was undertaken in accordance with a Written Scheme of Investigation prepared by Northamptonshire Archaeology, which met the requirements of a brief issued by Atkins Heritage (NA 2006; Atkins 2006).

The work formed the latest in a series of archaeological investigations on the site in connection with the development proposals (NA 2006; Atkins 2006). It therefore had the aim of further establishing the extent of archaeological features previously identified.

#### 2 TOPOGRAPHY AND GEOLOGY

The site occupies an area of approximately 37.2 ha on the fen edge, bounded to the north by Car Dyke (Scheduled Monument PE 219), to the west by Paston Parkway and to the east by Newborough Road (Fig 1). The ground slopes down from north to east. It lies at an elevation of between 15.68 m OD at the north-west and 6.3 m OD at the east.

The land under evaluation consisted of two fields with an area of about 23 ha; the one to the east under wheat crop at the time of fieldwork and the western field pasture grazed by horses and foals.

The geology of the immediate area is river terrace drift, which the evaluation showed to be variable, comprising chalky Boulder Clay in the eastern field and more gravelly outcrops in the west. The overlying soils are described as slowly permeable seasonally waterlogged fine loams over clayey soils (Soil Survey of England and Wales, 1983).

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### 3 ARCHAEOLOGICAL BACKGROUND

The site lies immediately south of Car Dyke, a Roman drainage feature which has been linked to a Hadrianic imperial estate in the Fens. The Dyke in its present form is an earthwork with a waterfilled ditch (see front cover), but this is almost certainly a later creation, probably on the line of the original Roman monument.

Earlier archaeological work on the site included desk-based assessment, aerial photographic interpretation and magnetic gradiometer surveys, followed by limited trial trenching. This resulted in the discovery and excavation of an area of Roman occupation, comprising a series of sub-rectangular ditched enclosures, in the field east of Trench 4 just outside of the current owners' land, although the limits of this occupation were not securely established.

The current work had the specific aims of defining:

- the extent and character of the Romano-British settlement and enclosures
- the relationship between the enclosures and Car Dyke
- the character of the close environs of Car Dyke, specifically the presence or otherwise of a southern bank
- the character of the periphery of the putative manorial site, now partly occupied by the travellers' park

### 4 METHODOLOGY

Seven trenches were excavated, four in Field 1 (Trenches 1 – 4) and three in Field 2 (Trenches 5 – 7) (Fig 2). Trenches 2, 4 and 7 were 100m in length, while Trenches 1, 3, 5 and 6 were 50m in length. They were excavated using a mechanical digger fitted with a 2m wide toothless ditching bucket under continuous archaeological supervision. Mechanical excavation proceeded as far as the first significant archaeological layer or in its absence as far as the surface of the natural clays and gravels.

All potential archaeological features were examined by hand excavation, by cutting a section through them. Standard Northamptonshire Archaeology recording procedures were employed.

All works were carried out in accordance with IFA *Standard and Guidance for Archaeological Evaluation* (IFA 1999) and *Standard for Field Archaeology in the East of England* (Gurney 2003). Procedures complied with Northamptonshire County Council's Health and Safety policy and Northamptonshire Archaeology's Health and Safety at Work Guidelines (NA 2003).

### 5 RESULTS OF FIELDWORK

Trenches 6 and 7 contained archaeological remains and are described below. Trenches 1 and 3 were deepened to record stratigraphic information on a possible southern bank associated with Car Dyke. A summary is presented below, while detailed descriptions and interpretations of the sediments are contained in Appendix 2. Trenches 2, 4 and 5 contained nothing of interest and are not described. A full context inventory is presented in Appendix 1.

#### **Trench 6**

Measuring approximately 50m long by 2m wide, Trench 6 was aligned east-west (Fig 2). Natural light yellow and grey clay with some patches of gravel and calcareous inclusions (612) was encountered at a depth of 0.3m. A re-cut ditch was present; a sherd of Roman

colour coated pottery was recovered from fill (606). At least two alignments of postholes were recorded. Most of the postholes contained remains of wooden stakes and modern inclusions (not recorded); however two contained post packing and were therefore recorded. Overlying these was topsoil (601), up to 0.30m thick.

#### *Ditch 607/613*

Ditch [607] was aligned north-south, cut into natural clay (612) and measured 3.43m wide by 0.72m deep with a 'U' shaped profile and flat base (Figs 3 & 4, Section 1). The primary fill (606) was light orange/brown silty clay with occasional gravel. A rim sherd of Roman Colour-Coated pottery was recovered. The primary fill was overlain by mid red/brown mottled silty clay with some gravel (605) which contained a small quantity of animal bone. The recut, Ditch [613] (Figs 3 & 4, Section 1), was aligned north-south and measured 1.52m wide by 0.49m deep with a 'U' shaped profile. The single fill (603) was medium grey/brown silty clay with occasional small gravel. A ceramic land drain had been laid in the top of this fill.

#### *Postholes*

Postholes [609] and [611] were both circular, approximately 0.4m in diameter and 0.4m deep (Fig 3). They contained similar fills of dark brown-grey silty clay loam with gravel inclusions, with a couple of post-medieval brick fragments in the top of the fill and many limestone packing stones. However, posthole [609] contained two joining fragments of 16<sup>th</sup> / 17<sup>th</sup> century architectural ovolo moulding (Plate 3). They had also been used as packing stones. The brick fragments are unfroged and may be of 18<sup>th</sup> or 19<sup>th</sup> century date.

#### **Trench 7**

Aligned east-west, Trench 7 measured approximately 100m long and 2m wide (Figs 3 & 4, Section 2). Natural mid yellow/brown sandy clay with calcareous inclusions (705) was encountered at a depth of approximately 0.5m. Overlying this was light/mid brown clayey silt subsoil (702), 0.2m – 0.35m thick overlain by topsoil (701), 0.25m thick.

#### *Ditch 704*

A drainage ditch [704], was aligned north-south cutting subsoil (702) (Figs 3 & 4, Section 2). Measuring approximately 3m wide and 1.4m deep with a shallow 'V' shaped profile and concave base; it was filled with dark grey/brown clayey silt with small gravel and organic inclusions (703). A fragment of unidentifiable tile (possibly Roman on the basis of its fabric – Hylton, pers comm) and a number of plastic wrappers were recovered from the lower fill of the ditch.

#### **Trench 1**

Trench 1 was aligned north-south with its northern end approximately 20m from the edge of Car Dyke. The section at the northern end of the trench showed a series of clayey deposits reaching a total depth of 1.4 m (Fig 4, Section 3, Plate 1). These have been recorded and interpreted in detail (Appendix 2), and may represent an alluvial layer of uncertain (probably Holocene) date, or redeposited clays from the excavation/re-excavation of Car Dyke.

#### **Trench 3**

Trench 3 was aligned north-south with its northern end approximately 10m from the edge of Car Dyke. Like Trench 1, the section at the northern end of the trench showed a sequence of sediments reaching a depth of 1.2 m (Fig 4, Section 4, Plate 2). A possible buried soil (304) was recorded toward the base of the sequence (Appendix 2). This contained some small charcoal pieces, (although no uncharred wood), which have been retained from a sieved sample (Deighton, this report). It is possible that the buried soil and overlying sediments relate to a phase of construction of a southern bank associated with the



dyke, although it is not possible, on the evidence available, to say whether this is a Roman or later feature.

## 6 FINDS

### **Pottery**

*by Tora Hylton*

One rim sherd of Roman pottery was recovered from fill (606) of Ditch [607] in Trench 6. The fabric is white, with a dark brown colour coat, probably late third to mid fourth century, imitation Samian ware (Howe, Perrin & Mackreth 1980).

### **Architectural Stone Moulding**

*by Iain Soden*

Two fragments of limestone recovered from Posthole [609] in Trench 6 were used as post packing within the fill (608). The two fragments of stone (Fig 3, Small Finds 1 and 2; Plate 3) together make a larger piece of window mullion or transom of ovolo cross section on both faces. This style of moulding suggests a date between 1580 and 1650 and may have come from demolished remains of a manor house thought to have been located in the field immediately south of Trench 6.

## 7 FAUNAL AND ENVIRONMENTAL EVIDENCE

### **Animal bone**

*by Karen Deighton*

300g of animal bone were collected from a single context (605), Ditch [607]. This material was examined and where possible identified with the aid of a bone atlas and the author's reference collection.

Fragmentation was fairly heavy and surface condition was reasonable with a low level of abrasion. No evidence of burning, canid gnawing or butchery was noted.

Results were as follows:

- 1 *Equus* metacarpal complete and fused
- 1 *Sus* tooth
- 1 *Bos* ulna fragment
- 1 Ovicaprid pelvic fragment (acetabulum)
- 5 indeterminate fragments

The assemblage has little potential for further analysis because of the paucity of material and absence of secure dating.

### **Soil Sample**

*by Karen Deighton*

A 5-litre soil sample was collected from context (304) – a possible buried soil horizon in Trench 3. The sample was sieved wet and a small quantity of charcoal was recovered.



**Charcoal sample***by Rowena Gale*

A single sample of charcoal was identified to species prior to AMS radiocarbon dating.

The sample included small fragments of degraded charcoal, many of which were infiltrated with soil sediments and reddish deposits. The sample was 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).

PRP 06 (304) <1> - 1 x hazel (*Corylus avellana*), <1gm  
 6 x ash (*Fraxinus excelsior*), narrow roundwood, <1gm  
 1 x maple (*Acer* sp.), <1gm

The charcoal fragments identified originated from juvenile wood and provide ideal material for dating.

**Radiocarbon dating***by Andy Mudd*

Several pieces of charcoal, identified as *Fraxinus* (ash) were sent to Beta Analytic Radiocarbon Dating Laboratory and one was selected for AMS dating.

The determination came out at 2550 +/- 40 BP, which calibrates to 800-750 BC and 700-540 BC at the 95% confidence level (Appendix A3). There is no reason to suspect that the determination itself is not reliable, but a date this early raises questions about the context from which the sample came.

**8 CONCLUSIONS**

Of most archaeological importance was the possible evidence of upcast from the cutting or re-cutting of Car Dyke recorded at the northern ends of Trenches 1 and / or 3. There were no archaeological finds in either of these trenches and the interpretation of the deposits here remains uncertain.

The radiocarbon date from ash roundwood charcoal from beneath the bank (context 304) is dated to the early Iron Age. This is most unlikely to provide a date for the deposition of the overlying sediments forming the bank, and the sample is best seen as old charcoal (relating the land clearance?) present in the subsoil before the bank was formed. It does not really help date the bank but does not rule out a Roman origin for it.

In trenches 6 and 7 were two ditches, one with a re-cut. Ditch [704] was clearly modern, although it may have been cut on the course of an earlier ditch. From Ditch [607] came a piece of Roman pottery, together with a small group of animal bone from higher up. It is not clear whether the ditch is Roman or not, but it may relate to the Romano-British settlement features which were recorded in the field to the north in the previous evaluation on the site. The ditches in both trenches are likely to represent drainage ditches discharging into Car Dyke and may have been maintained over a period of time, as indicated by the re-cut and cleaning out.

At least two post-medieval posthole alignments were revealed in Trench 6 and may represent a series of fence lines. The cartographic evidence for post-medieval ditches and

fenced boundaries has not been re-visited for this report and the context of these features is uncertain.

The evaluation has demonstrated that the previously recorded Romano-British settlement and enclosure system is not extensive. No unequivocally Roman features were found and the ditch system can be assumed not to have extended onto the lower ground in the eastern part of the site. The single sherd of Roman pottery from Ditch [607] may be residual in a later feature, as the tile in Ditch [704] would be if it were Roman.

Two postholes in Trench 6 were shown to be relatively modern. One contained a piece of architectural stone of 16<sup>th</sup>-17<sup>th</sup> century date. This plausibly related to 'Grenfell House', the manor farm which once stood on the southern edge of the site.

The evaluation was unable to clarify the relationship between the previously excavated Roman settlement and Car Dyke. It is possible, however, that deep sediments recorded in Trenches 1 and 3 derive from upcast material associated with the dyke – either its original Roman construction or (perhaps more likely) its later cleaning out. A low ridge is currently evident along the bottom of the field. Several fragments of charcoal were recovered from soil (Layer 304) underlying the possible bank. Samples of this charcoal were used for radiocarbon dating. Unfortunately, the dates provided suggest an early Iron Age deposition as opposed to a late Iron Age/Roman date as would be expected, leaving no conclusive interpretation for the bank feature. There were also no other materials from the buried soil to help characterise the environment of Car Dyke.

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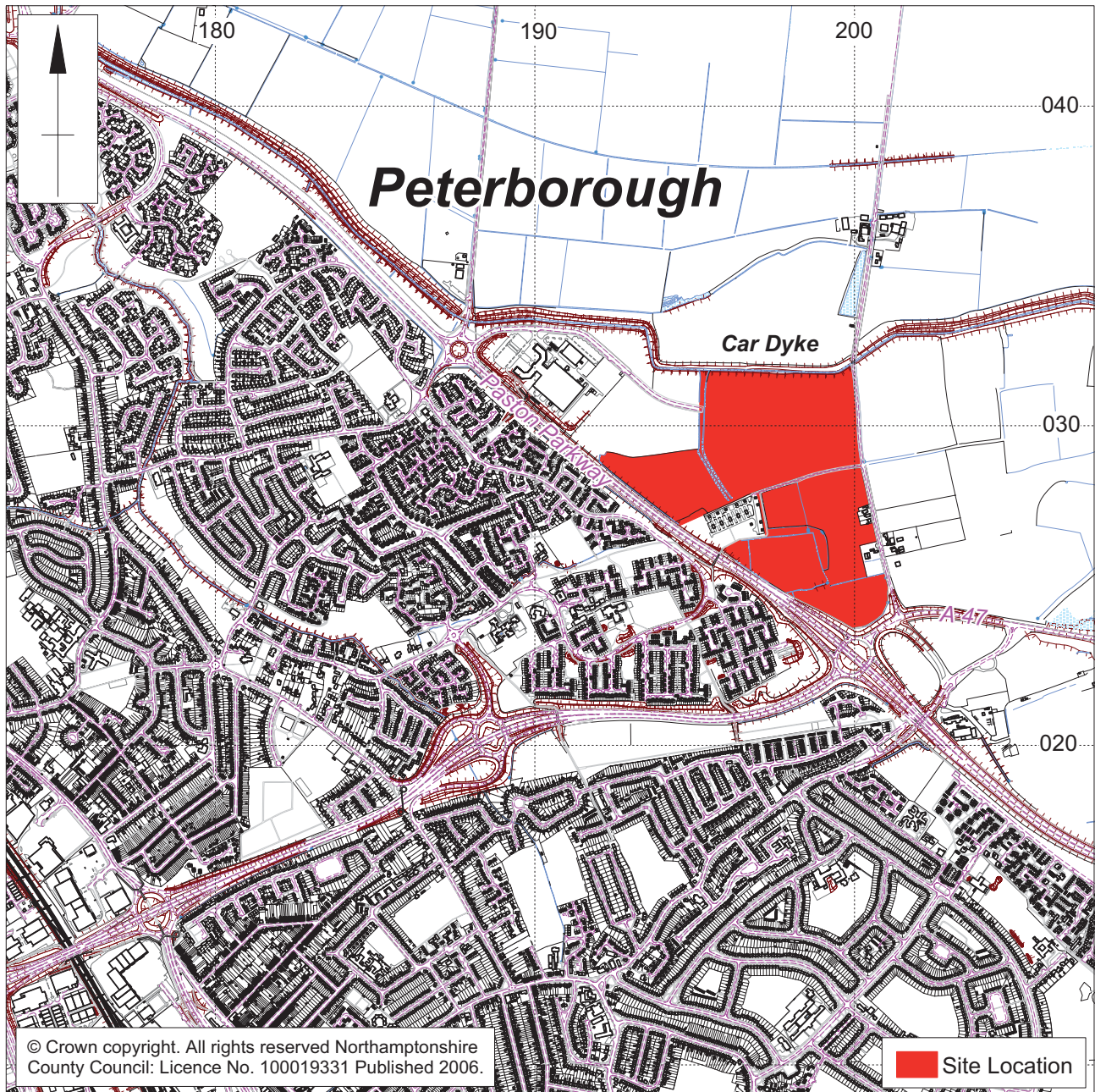
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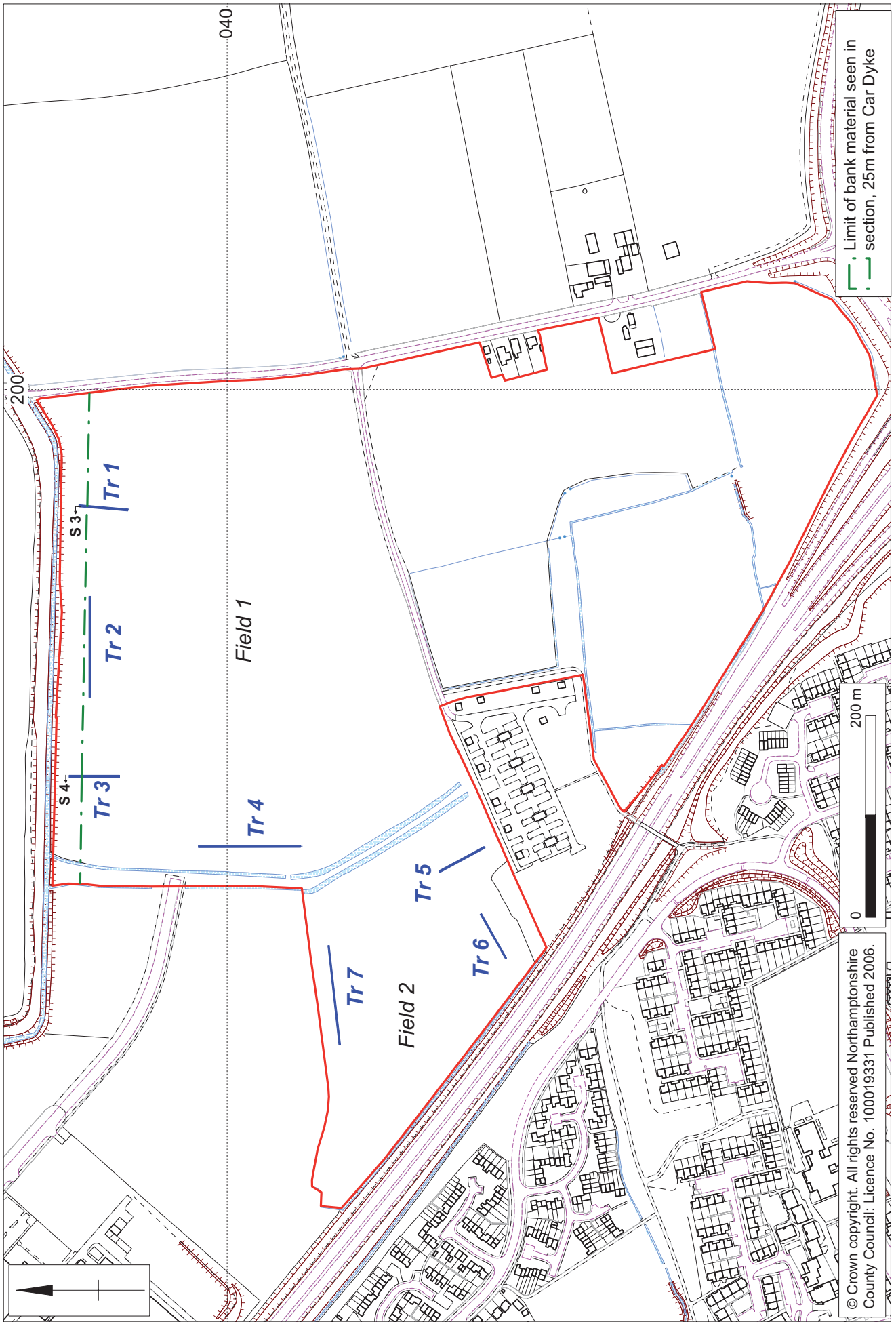




Scale 1:20,000

Site Location Fig 1





Scale 1:5000

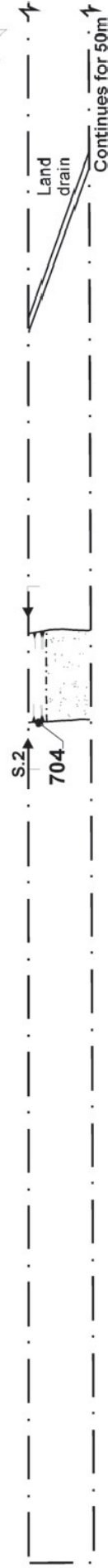
Trench Locations Fig 2

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### Trench 6



### Trench 7

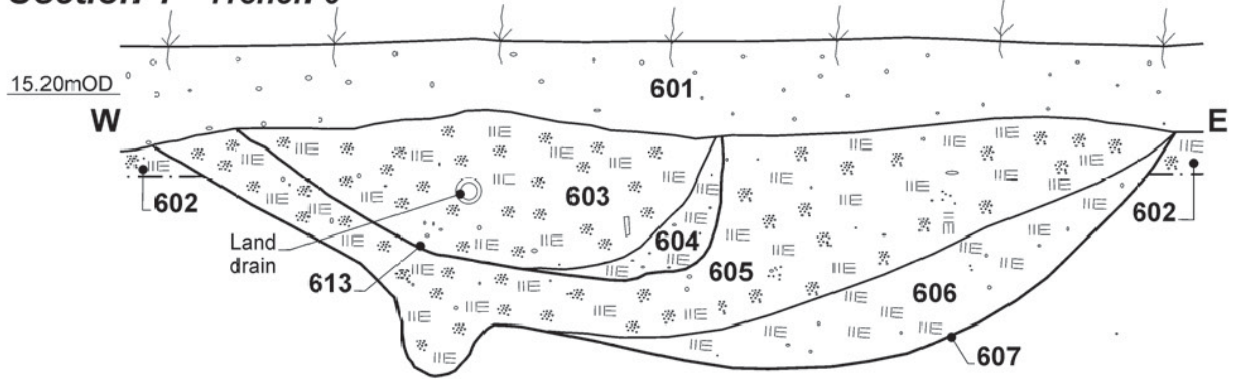


- △ Small finds
- Postholes containing wood
- ⊕ Postholes containing packing-stones

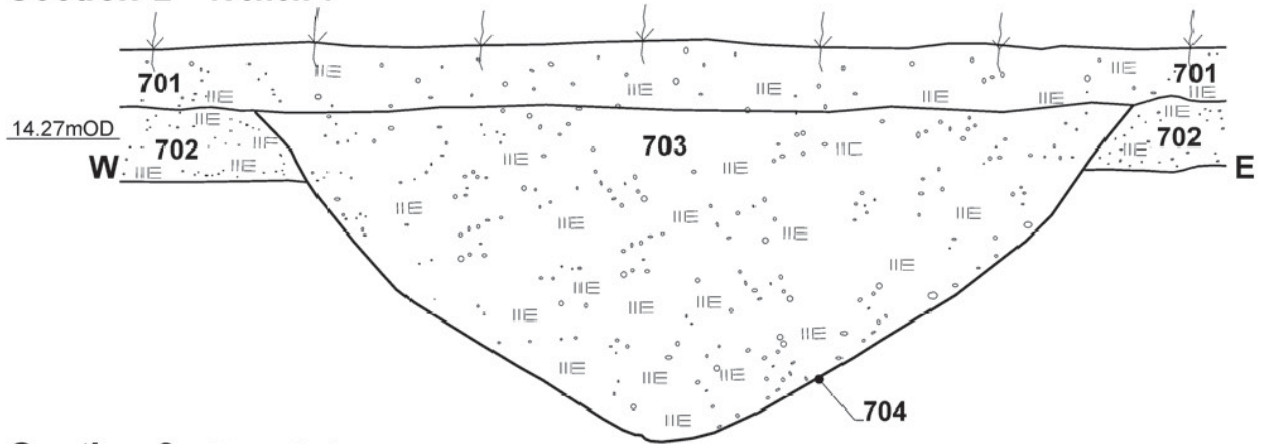


Trench Plans 6 and 7 Fig 3

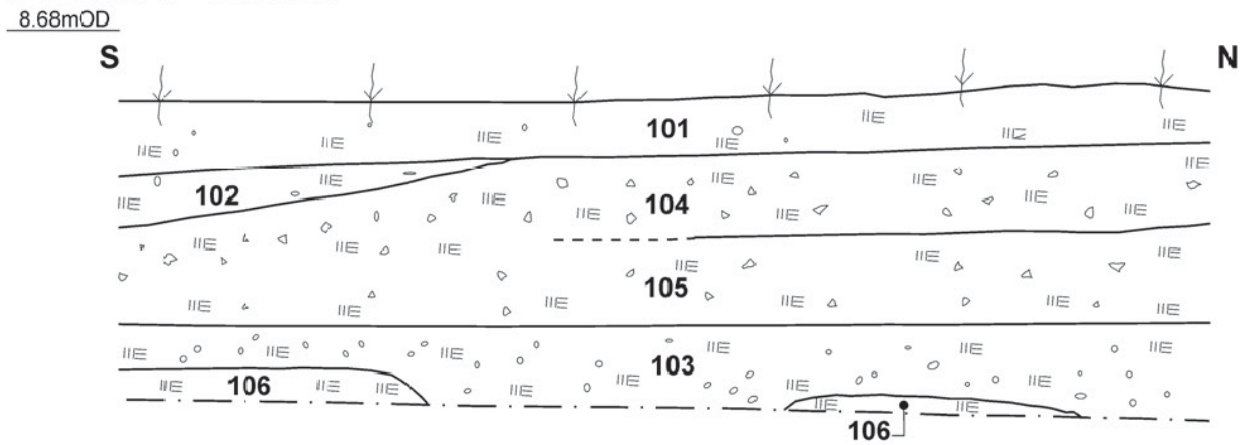
**Section 1 - Trench 6**



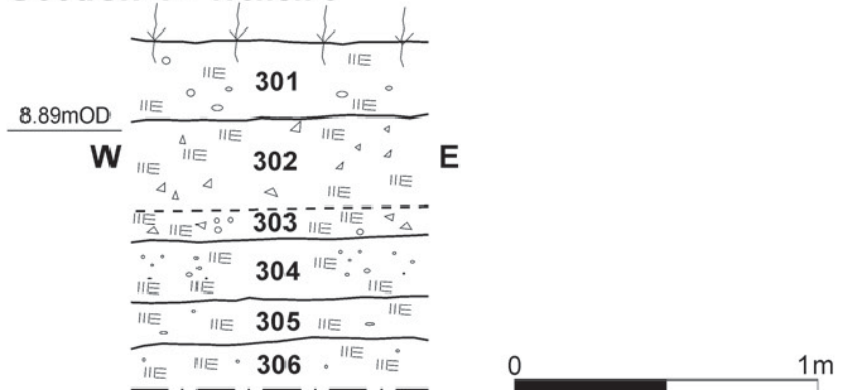
**Section 2 - Trench 7**



**Section 3 - Trench 1**



**Section 4 - Trench 3**



Clay  
 Silty Clay

Sections 1-4 Fig 4





Plate 1: Trench 1, Section 3, facing west.



Plate 2: Trench 3, Section 4, facing north.





Plate 3: Stone moulding. (Scale 1:2)

**A1: SITE DATA**

Trench No	Context	Deposit Type	Description	Artefact types
<b>1</b>	101	Layer	Topsoil 0 – 0.27m thick	
	102	Layer	Subsoil compact yellow silty clay with moderate irregular small stone inclusions max. 0.34m thick	
	103	Layer	Natural compact orange brown sandy clay with sand and gravel inclusions 0.4m thick to base of trench	
	104	Layer	Natural compact, weathered light grey silty clay with calcareous inclusions 0.33m thick	
	105	Layer	Natural compact, less weathered light grey silty clay with less frequent calcareous inclusions 0.42m thick	
	106	Layer	Natural compact light grey silty clay with calcareous inclusions 0.12m thick to base of trench	
<b>2</b>	201	Layer	Topsoil 0 – 0.25m thick	
	202	Layer	Compact mottled mid yellow/grey silty clay with flecks of manganese, occasional charcoal & iron panning 0.45m – 0.55m thick	Flint flake
	203	Layer	Natural compact mottled grey/orange silty clay with calcareous inclusions in patches in base of trench	
<b>3</b>	301	Layer	Topsoil 0 – 0.15m thick	
	302	Layer	Firm weathered mid yellow/brown clay silt, mottled light grey/yellow in patches with frequent manganese/iron panning inclusions, occasional small gravel 0.33m thick	
	303	Layer	Firm less weathered mid yellow/brown clay silt, mottled light grey/yellow in patches with frequent manganese/iron panning inclusion, occasional small gravel 0.36m thick	
	304	Layer	Possible buried soil, firm light grey silt clay with frequent organic inclusions 0.12m thick	
	305	Layer	Natural compact orange brown sandy clay with sand and gravel inclusions 0.22m thick	
	306	Layer	Natural compact light grey silty clay with calcareous inclusions 0.16m thick to base of trench	
<b>4</b>	401	Layer	Topsoil 0 – 0.25m thick	
	402	Layer	Natural mix of dark orange/yellow silty sand & gravel and dark brown/orange clay silt 0.05m thick to base of trench	
<b>5</b>	501	Layer	Topsoil 0 - 0.25m thick	

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Trench No	Context	Deposit Type	Description	Artefact types
	502	Layer	Weathered natural firm mid orange clay silt with gravel and manganese fleck inclusions 0.15m – 0.25m thick	
	503	Layer	Natural firm orange brown and grey clay with patches of sand gravel 0.05m to base of trench	
6	601	Layer	Topsoil 0 – 0.3m thick	
	602	Layer	Weathered, light-mid yellow/brown sandy clay with patches of gravel 0.2m – 0.35m thick	
	603	Fill	Fill of [613] Light – mid grey brown silty clay with some small gravel 1.52m wide 0.49m deep	
	604	Fill	Fill of [613] med mottled orange/grey clay with calcareous inclusions 0.62m wide 0.23m deep	
	605	Fill	Fill of [607] med mottled red/brown silty clay with some gravel 3.1m wide 0.53m deep	Animal bones
	606	Fill	Fill of [607] light orange/brown silty clay with some gravel 3.43m wide 0.72m deep	Rim sherd of Roman Colour Coated pottery
	607	Cut	Cut of ditch aligned north-south ‘U’ shaped profile with rounded base	
	608	Fill	Fill of [609] dark brown/grey silty clay loam with some gravel, charcoal flecks, small brick fragment and limestone packing stones 0.4m diameter 0.3m deep	Two frags of 16 <sup>th</sup> – 17 <sup>th</sup> century stone moulding
	609	Cut	Cut of posthole, circular with vertical sides, probable flat base	
	610	Fill	Fill of [611] mixed dark grey brown sandy silt with some gravel, brick fragments and limestone packing stones 0.4m diameter 0.4m deep	post-med brick fragment
	611	Cut	Cut of posthole, circular with vertical sides and concave base	
	612	Layer	Natural light yellow & grey clay with some patches of gravel and calcareous inclusions	
	613	Cut	Cut of ditch, aligned north-south with ‘U’ shaped profile and flat base	
7	701	Layer	Topsoil 0 – 0.25m thick	
	702	Layer	Subsoil firm light/mid brown clay silt 0.2m – 0.35m thick	
	703	Fill	Fill of [704] dark grey/brown clay silt with frequent small gravel, organic inclusions & plastic wrappings. Also land drain ceramic fragments	?Roman tile fragment

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Trench No	Context	Deposit Type	Description	Artefact types
	704	Cut	Cut of drainage ditch, aligned north-south with wide 'V' shaped profile 3.2m wide 0.14m deep, cuts (702) & (705)	
	705	Layer	Natural mid yellow/brown sandy clay with calcareous inclusions	

## A2: SEDIMENTARY SEQUENCES IN TRENCHES 1 AND 3

by James Rackham, *The Environmental Archaeology Consultancy*  
(edited version of Report EAC 18/06)

Trenches 1 and 3, respectively some 20 and 10m upslope from the southern edge of the Car Dyke, contained sequences that may have had some relationship to the Dyke, its construction or cleaning (Figs 1). Clarification was sought regarding unusually deep deposits in the ends of each of these trenches. The site was visited on Thursday 11th May.

Upon advice Trench 1 was extended northwards towards the dyke and deepened, while the northern end of Trench 3 was deepened to reveal a more complete profile of the deposits. The site was visited a second time on Friday 12th May after the additional machining and parts of the machined section were cleaned and observed in Trenches 1 and 3, and a representative profile from both trenches was described. The sections were drawn by Northamptonshire Archaeology.

### Trench 1

A profile at the north end of the east facing section of Trench 1 was recorded (Fig 4, Section 3, Plate 1). The section was 140cm deep and approximately 21m from the southern edge of the Car Dyke. The elevation at the north end of the trench was 8.68m OD.

Measurements are taken from the base of the section and the context numbers assigned in the field are indicated.

Context no.	Description	Thickness
(101)	Ploughsoil - greyish brown (Munsell 10YR 5/2) silty clay loam with occasional stones and brick or ceramic drain fragments	115-140cm
(104)	Light yellowish brown (10YR 6/4) stiff silty clay - oxidised alluvial clay?	83-115cm
(105)	Light brownish grey (10YR 6/2) stiff silty clay with occasional brownish yellow (10YR 6/6) mottles - partially oxidised alluvial clay?	48-83cm
(103)/(105)	Pale brown (10YR 6/3) silty clay with flints	32-48cm
(103)	Light yellowish brown (10YR 6/4) silty clayey fine sand with iron and manganese deposition and brownish yellow (10YR 6/6) mottles. - glacio-fluvial drift - 0-25cm strong brown (7.5YR 5/6) clayey sand with paler light brown (7.5YR 6/4) mottling	25-37cm
(106)	Grey (2.5Y 5/1) yellowish brown mottled (10YR 5/6) silty clay with calcareous deposits and partings - Jurassic clays?	0cm

### Trench 3

The profile described in Trench 3 (Fig 4, Section 4, Plate 2) was the south facing section at the north end of the trench approximately 10m south of the southern edge of the Car Dyke. The described section was 120cm deep with a surface elevation of 8.89m OD.

Measurements are taken from the base of the section and the context numbers assigned in the field are indicated.

Context no.	Description	Thickness
(301)	Ploughsoil - brown (10YR 5/3) clayey silt loam	88-120cm
(302)	Grey (2.5Y 6/1) silty clay/clayey silt with extensive brownish yellow (10YR 6/6) mottling - leached/oxidised? redeposited	75-88cm



Context no.	Description	Thickness
	Jurassic clay?	
(303)	Grey (2.5Y 5/1) stiff silty clay/clayey silt with <i>Gryphaea</i> (fossilised shells) and some calcareous partings - redeposited Jurassic clay?	50-75cm
(304)	Grey (10YR 5/1) slightly sticky silt with brownish yellow (10YR 6/6) mottles - alluvium/palaeosol?	41-50cm
(304)	Light brownish grey (2.5Y 6/2) slightly sticky silt with numerous degraded wood/root fragments - alluvium/palaeosol?	34-41cm
(305)	Brown (10YR 5/3) very fine sandy slightly sticky silt with occasional flints and brownish yellow (10YR 6/6) mottles - fluvio-glacial till	29-34cm
(306)	Grey (2.5Y 6/1) clay silt with brownish yellow (10YR 6/6) mottling, occasional well rounded pebbles, flints and calcareous partings towards base (0-15cm) - Jurassic clays?	0-29cm

A five-litre sample of the wood/root rich horizon in the profile was taken for assessment and possible radiocarbon dating and passed to Northamptonshire Archaeology for assessment.

### Interpretation

In Trench 1 the underlying geology is dropping slightly to the north, following the contour of the small valley that the Car Dyke has been excavated through, and rising to the south. This geology appears to be Jurassic clays with an overlying deposit of fluvio-glacial drift composed of slightly clayey gravely sands. This is overlain by a consistent clay with no inclusions that is oxidised in its upper levels and incorporated into the ploughsoil. This appears to be an alluvial layer that thins southwards dipping beneath stoney silt, the latter possibly the result of downslope movement from the south. There was no visible evidence of a palaeo-landsurface beneath this 'alluvial' layer and considering that the bottom of this deposit at 7.76m OD is well above the typical flood levels in the fens its origin is unlikely to be Holocene flooding. It may have formed as a result of local pooling during the late glacial, but see the conclusions below.

In Trench 3 a not dissimilar sequence is present, but in this trench, 10m closer to the Car Dyke the upper clay deposit contains fossil shells and covers a horizon with organics, particularly wood or root material. The underlying geology is similar to Trench 1 with silty clays with calcareous partings and included fossils shells indicating Jurassic clays. These are overlain by a fluvio-glacial drift of mixed slightly clayey sands and occasional small gravel. These are capped by brownish grey slightly clayey silt with frequent small wood or root fragments. This appears to be an alluvial layer and if the small wood proves to be twigs, rather than roots, and other macro- or microfossil indicators confirm this interpretation then the horizon suggests a waterlogged alluvial layer or buried palaeosurface. This horizon is overlain by similar clayey silt but lacking any organic survival which in combination with the wood rich deposit may form a wet palaeo-landsurface. These deposits are overlain by what appear to be redeposited Jurassic clays, with included fossil shells and calcareous partings, which are oxidised towards the surface and incorporated into the ploughsoil in their upper levels.

### Conclusion

The deposit sequence in Trench 3 is most simply interpreted as reflecting the burial of a wet alluvial deposit or a palaeosol by material excavated from the Car Dyke. Whether it was buried during the initial construction of the dyke or during later cleaning or re-digging can only be established by radiocarbon dating the surviving wood in layer (304) having first established that it is small roundwood and not root material. An alternative but less likely interpretation is that the wood remains are roots that have sought this horizon because of the



local ground water table at some time in the past and survived through waterlogging.

This sequence raises some concern regarding the sequence in Trench 1. Although no visible palaeosurface could be identified in the profile and, unlike Trench 3, the clays included no fossils or calcareous partings that might suggest that it was redeposited, the clay deposits indicated in the section drawing do have the shape of a bank, i.e. they drop southwards beneath probable colluvial material, although they are over 20m from the southern edge of the present Car Dyke. The junction between the 'alluvial' clays and the deposits below lies at approximately 7.76m OD which is 0.43m below the palaeosurface identified in Trench 3. It cannot be ruled out that this clay rather than being an alluvial deposit is also redeposited Jurassic clays. Any palaeo-landsurface beneath it may only be visible lower down the slope towards the dyke.

In order to resolve the sequences identified in Trenches 1 and 3 wood from the sample taken from layer (304) in Trench 3 should be radiocarbon dated having first submitted it to a specialist wood anatomist for confirmation that it is roundwood and not root wood. A small sub-sample of the sample should be retained for possible pollen analysis while the remainder could be washed to see if other macrofossil remains have survived. Results from these analyses will permit a re-evaluation of the evidence. Absolute confirmation of the sequence in Trench 1 is probably only possible by the extension of the trench another 10m or more towards the dyke, but since there is a 30m protection zone along the south side of the Car Dyke where development is not permitted further investigation may be inappropriate.

The initial conclusions from the fieldwork observations are that a 'bank' of redeposited clays may survive on the south side of the Car Dyke at this location. Its actual width could only be established through further trenching or auguring and final confirmation of this interpretation is dependent upon the results of the wood identification and any radiocarbon dating.

#### Acknowledgements

I should like to thank Anne Foard-Colby for copies of the section drawings from Trenches 1 and 3.

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23rd May 2006

**A3: RADIOCARBON DATING**

Mr. Steve Parry

Report Date: 8/9/2006

Northamptonshire County Council

Material Received: 7/18/2006

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Sample Data	Measured Radiocarbon Age	$^{13}\text{C}/^{12}\text{C}$ Ratio	Conventional Radiocarbon Age(*)
Beta - 218845 SAMPLE : PRP06304 ANALYSIS : AMS-ADVANCE delivery MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal BC 800 to 750 (Cal BP 2760 to 2700) AND Cal BC 700 to 540 (Cal BP 2650 to 2490)	2550 +/- 40 BP	-25.3 o/oo	2550 +/- 40 BP

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# CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-25.3:lab. mult=1)

Laboratory number: **Beta-218845**

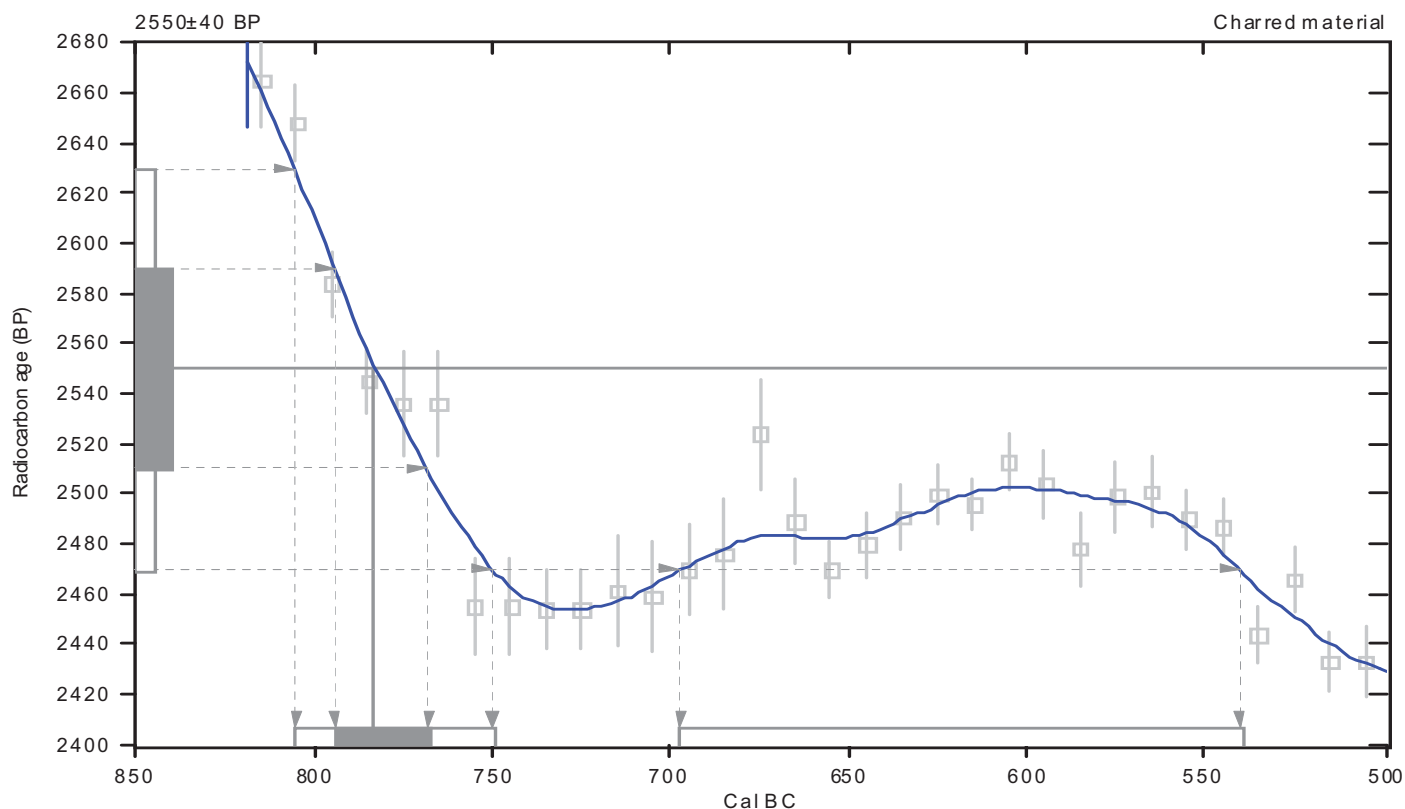
Conventional radiocarbon age: **2550±40 BP**

2 Sigma calibrated results: **Cal BC 800 to 750 (Cal BP 2760 to 2700) and  
(95% probability) Cal BC 700 to 540 (Cal BP 2650 to 2490)**

Intercept data

Intercept of radiocarbon age  
with calibration curve: **Cal BC 780 (Cal BP 2730)**

1 Sigma calibrated result: **Cal BC 790 to 770 (Cal BP 2740 to 2720)**  
(68% probability)



## References:

### Database used

INTCAL98

### Calibration Database

### Editorial Comment

Stuiver, M., van der Plicht, H., 1998, *Radiocarbon* 40(3), p xii-xiii

### INTCAL98 Radiocarbon Age Calibration

Stuiver, M., et al., 1998, *Radiocarbon* 40(3), p1041-1083

### Mathematics

### A Simplified Approach to Calibrating C14 Dates

Talma, A. S., Vogel, J. C., 1993, *Radiocarbon* 35(2), p317-322

## Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • E-Mail: beta@radiocarbon.com