

# The Archaeology of Brigg's Farm, Prior's Fen Thorney Peterborough



## Excavation Report



March 2011

**Client: PJ Thory**

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# **The Archaeology of Brigg's Farm, Prior's Fen, Thorney, Peterborough**

*Archaeological Excavation*

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## Summary

*An open area excavation of c.11ha was carried out at Brigg's Farm, Thorney between August and December 2008 by Oxford Archaeology East. The site was located in an archaeologically significant area, particularly for the Bronze Age, with the excavations at Fengate, Bradley Fen, Must Farm, Eye Quarry, Tower's Fen and Pode Hole all within a few kilometres. The site lay on the northern side of a fenland embayment between Thorney and Northey islands; the land within the excavations rises from 0.3m OD at the south-west to 2.3m OD at the north.*

*The excavation produced features and assemblages dating from the Neolithic through to the Middle Iron Age. An intensive system of Post-Medieval claying or marl ditches covered the entire site.*

*Neolithic occupation evidence was present in the form of flint scatters, small pits and finds within tree throws. A small number of Beaker pits were also present. Early Bronze Age remains were more extensive and included Collared Urn pits and a small barrow which contained a sequence of burials - an inhumation and three cremations (five individuals in total) - dating to between 2000 and 1750 cal BC. Three further isolated cremations burials included one placed within a large Collared Urn.*

*An extensive Middle Bronze Age ditched and banked field system dating to c. 1550-1450 BC and typical of this area, was set out with reference to topographical influences as well as to earlier monuments. There is some evidence for pre-settlement activity within the field system, dated to c. 1500-1400 cal BC. A later (c. 1400-1300 cal BC), large and deep-ditched rectangular enclosure was constructed within the field system in the north-eastern corner of the site. A number of cattle skulls were placed in the end of one of the enclosure's ditches near to its entrance*

*Twelve field wells were excavated, seven of which were radiocarbon and which spanned the entire Middle Bronze Age period from c. 1600 to 1200 cal BC. Their basal fills contained waterlogged environmental remains and pollen and were extensively sampled; two contained log ladders, of hazel and maple, the former, with six steps, is the largest yet found of this date in an English context. A large, mortised timber was recovered from another well.*

*A Middle Bronze Age settlement area occupied the higher ground at the northern limits of the site and has been dated to c. 1400-1250 cal BC. The settlement was set within purpose-built ditched enclosures and comprised at least six post-built structures and a small number of pits. A large assemblage of animal bone (principally cattle), Deverel-Rimbury pottery, clay weights and briquetage associated with salt making were recovered from three main locations across the site. The briquetage assemblage may be the earliest in the country.*

*There was some slight evidence of a Later Bronze Age presence within the area and two large undated roundhouses with mid-late Iron Age characteristics were located within the Middle Bronze Age settlement area.*



## 1 INTRODUCTION

### 1.1 Location and scope of work

- 1.1.1 An archaeological excavation was conducted at Brigg's Farm, Thorney, Peterborough in advance of the excavation of an agricultural reservoir involving the extraction of gravel from the development area (Fig.1).
- 1.1.2 This archaeological excavation was undertaken in accordance with a Brief issued by Ben Robinson of Peterborough City Council Archaeology Service (PCCAS) and supplemented by a Specification prepared by OA East.
- 1.1.3 The work was designed to assist in defining the character and extent of any archaeological remains within the proposed redevelopment area, in accordance with the guidelines set out in *Planning and Policy Guidance 16 - Archaeology and Planning* (Department of the Environment 1990). The results will enable decisions to be made by PCCAS, on behalf of the Local Planning Authority, with regard to the treatment of any archaeological remains found.
- 1.1.4 The site archive is currently held by OA East and will be deposited with Peterborough Museum in due course.

### 1.2 Geology and topography

- 1.2.1 The British Geological Survey depicts the site lying on a boundary between river terrace deposits and Nordelph peat (BGS 1978, Sheet 158). The site lies to the north of the Flag Fen basin as the ground rises to the north and east.
- 1.2.2 The northernmost boundary to the site lies at approximately 2.3m OD sloping down to the south and west to approximately 0.3m OD. Within the development area two spurs of higher land project towards the west above the fen.

### 1.3 Archaeological and historical background

- 1.3.1 The terrace gravels immediately to the east of Peterborough have been, and still are, heavily exploited for construction purposes. Since the advent of PPG16 these quarries have been subject to increasingly intensive archaeological survey and excavation. The industrialisation of the Peterborough Fen Edge and the expanding brickworks on the northern tip of Whittlesey Island have led to further large scale archaeological excavation, making this one of the most intensively studied landscapes in the region. The principal sites relevant to the Brigg's Farm excavations are outlined below and located on Fig. 2.

#### ***Eye Quarry, Eye***

- 1.3.2 To the north-west of the site ongoing investigations at Eye Quarry have revealed an extensive Middle Bronze Age field system, a cremation cemetery and late Bronze Age settlement evidence in the form of Post-Deverel Rimbury pits, wells, houses and associated structures (Gibson and White 1998).
- 1.3.3 Romano-British enclosures, possible small scale industrial activity and field systems in association with a suspected farmstead were also recorded (Patten 2004).

### ***Pode Hole Quarry, Thorney***

- 1.3.4 A series of excavations at Pode Hole Quarry, to the north-east of Brigg's Farm and south of the A47, revealed a predominantly Early to Middle Bronze Age landscape characterised by barrows and field systems.
- 1.3.5 A total of five barrows were excavated at Pode Hole between 1996 and 2005 (Cutler and Ellis 2001, Daniel 2009). They were initially identified by an aerial photographic survey which showed them extending along the edge of the fen in a north-east to south-west direction. They varied in their size and character but most notably there was no evidence of *in-situ* cremations or inhumations, a feature attributed to truncation caused by modern ploughing methods. However, two of the barrows had inhumations or small cremations near by and a small amount of human bone was recovered from a pit truncating one of the ring ditches.
- 1.3.6 Three of the barrows were surrounded by continuous ditches which varied between a shallow 'scoop' at 0.12m and a more significant 1m in depth. The barrow furthest south appeared not to have a true ditch but the central mound had survived to a height of 0.25m. The outer material surrounding the mound was interpreted as spread material rather than *in-situ* deposits. Finally, differing in size and form from the other barrows, a much smaller feature was identified. It was still circular in form but measured only 9.5m in diameter and was surrounded by a narrow segmented ditch. With no dating evidence available, given its location within the line of more convincing barrows this feature was assigned to the barrow group.
- 1.3.7 All phases of the Pode Hole excavations identified Middle Bronze Age field systems and frequent wells with good waterlogged preservation. Evidence for salt working was also identified by the presence of Briquetage container fragments and large sub-rectangular pedestals found in association with Middle Bronze Age pottery. No settlement evidence was found for this period (Daniel 2009).

### ***Tower's Fen, Thorney***

- 1.3.8 Tower's Fen is located opposite Pode Hole Quarry on the northern side of the A47. The archaeology is very similar with a clear extension of the Middle Bronze Age field systems spreading across both sites. Tower's Fen lacks the Early Bronze Age monuments of Pode Hole but there is still evidence for earlier activity from a well radiocarbon dated to the Early Bronze Age.
- 1.3.9 The field systems form a largely rectangular pattern and are often open-ended or incomplete. The boundary ditches were frequently not linked to one another but stopped short leaving a narrow gap. The ditches are likely to have been associated with hedge banks and evidence for coppicing was found in preserved wood found at the base of large watering holes and ponds.
- 1.3.10 No settlement could be directly linked to the field systems though finds of pottery, fired clay and charcoal suggest that a settlement area was relatively close by (Mudd and Pears 2008).

### ***Fengate and Flag Fen, Peterborough***

- 1.3.11 Extensive, and relatively frequent excavations have been undertaken on the western fen-edge of Peterborough from the 1970s to the present. Most significantly the numerous phases of work on Fengate and the Flag Fen platform.

### *Northey*

- 1.3.12 Northey is separated by the canalised course of the River Nene from the western end of Whittlesey Island. Small scale excavation combined with aerial photographic survey in the 1980s and 1990s revealed a barrow, Middle Bronze Age droveway with upcast banks and evidence of salt-working.

### *Flag Fen*

- 1.3.13 The Flag Fen post alignment and platform was discovered in 1982 and is one of the best known archaeological sites in the area. It consists of an extensive timber structure stretching between two areas of higher ground (Fengate to Northey) with a large platform along its length dating to the later Bronze Age. A large number of metal artefacts were recovered from the platform.

### *Southern Fengate*

- 1.3.14 Sites here include Storey's Bar Road, Third Drove and Tower Works. The most significant discoveries from these sites are the Bronze Age settlement located within the Bronze Age field system. Later Bronze Age settlement including a substantial rectilinear building and Bronze Age gravel quarries.

### *Central and North Fengate*

- 1.3.15 Sites include Global Doors, Paving Factory, Cat's Water and excavations at Third Drove. The first two sites confirm the extent of the Bronze Age field systems to the north. The Cat's Water site contained Later Neolithic and Bronze Age remains including a neolithic mortuary enclosure and Bronze Age field systems extending towards the fen edge. Extensive Iron Age remains were also found. Excavations at Third Drove helped to provide a greater understanding of the fen edge where a buried 'inlet' was discovered (Pryor 2001).

### ***Bradley Fen , Whittlesey***

- 1.3.16 The Bradley Fen excavations are located to the south-west of Brigg's Farm on the western margins of Whittlesey island between c. 0.5 and c. 6m OD.
- 1.3.17 Neolithic and Early Bronze Age activity was recovered from a series of tree throws as well as pits containing Beaker and Collared Urn pottery. A small cremation contained the fragmentary remains of a Collared Urn.
- 1.3.18 Along the 0.7m contour four burnt mounds accompanied by large watering holes were identified with two log ladders and a wattle lining recovered from the watering holes.
- 1.3.19 An extensive field system consisting of 20 different fields which varied in form and dimension were identified between 0.5 and 1.5m OD. The field system was characterised by a fen-edge boundary with projections at 90 degrees towards to fen and at 45 degrees up slope with short cross boundaries creating the sub-divisions. The fenward projections would have formed small fen-edge fields and in turn encompassed the burnt mounds and metalwork. The fen-edge boundary was not dug as a continuous ditch and was often incorporated into the diversions to the fen and up slope. There was also evidence that the ditches had up-cast banks.
- 1.3.20 A large amount of metalwork was found at Bradley Fen including a hoard of 20 fragments of bronze weapons and six individual bronze spears. The hoard was located to the south of the fen-edge boundary on a small oval-shaped mound covered in peat. Peat deposits below the hoard suggested that it had been deposited in saturated ground (Gibson and Knight 2006).

### **Must Farm, Whittlesey**

- 1.3.21 A large later Bronze Age timber platform preserved by waterlogging and fire was discovered at Must Farm, located 2km from the Flag Fen platform in deep fen deposits. The platform was built from large oak timbers over a small freshwater stream. Silting up over time caused a large section of the platform to fall into the stream. The platform was later repaired with ash posts and a surrounding palisade which trapped construction and occupation debris. A fire destroyed the platform preserving floor boards and roof beams. Amongst the remains were whole pots, metalwork, wooden bowls, glass beads, saddle querns, pieces of textiles and clumps of thatch, all of which had been affected by fire. After the destruction of the platform it was sealed by layers of alluvial deposits (Mark Knight pers. comm.)

### **Stonald Field, King's Dyke**

- 1.3.22 To the south of Brigg's Farm, on the opposite side of the Flag Fen embayment, were the remains of Neolithic/Early Bronze Age monuments including a pit circle/henge and two round barrows lying at 4m OD. The most complex barrow measured 25.65m in diameter, with a V-shaped ditch (2.35 to 3.15m wide and 1.3m deep) and 8.25m diameter post-trench. It contained a central crouched inhumation and subsequent cremations inserted into the mound material. The second barrow was smaller, measuring 15.4m in diameter and contained a central crouched inhumation. A separate cremation cemetery was situated between the two barrows.
- 1.3.23 There was evidence of Early Bronze Age settlement with the presence of 12/18 Collared Urn pits, a structure, 12 associated pits and 36 post holes. There was no evidence of Middle Bronze Age field systems or settlement activity.
- 1.3.24 Later Bronze Age settlement was characterised by the presence of five round houses and associated pits (Gibson and Knight 2002).

### **Langtoft – Glebe**

- 1.3.25 Approximately 18km to the north-west of Thorney, also on the fen-edge, an Early to Middle Bronze Age landscape was identified. A small, 7.5m diameter, barrow containing a crouched adult burial was excavated as well as near by features containing Collared Urn and Beaker pottery.
- 1.3.26 A Middle Bronze Age co-axial field system with typical characteristics, including segmented ditches and evidence of banks was also discovered. Of particular interest is a sub-rectangular enclosure re-cut along the field system ditches. The enclosure measured approximately 40m x 60m and contained 3 post hole structures suggestive of a settlement enclosure.
- 1.3.27 Eleven apparently Middle Bronze Age wells with no obvious relationship with the field system were investigated; one contained a briquetage pedestal associated with salt making and another a reused oak structural timber (Hutton 2008b)

### **Langtoft - Freeman**

- 1.3.28 Evidence for the continuation of the Early to Middle Bronze Age landscape was identified at an adjacent site located to the south-east. Three further barrow ring ditches were identified and a group of 12 cremations were situated to the north in two distinct

clusters. The Middle Bronze Age field system continued on its original alignment. A well contained a single reused structural timber (Hutton 2008c).

## **1.4 Acknowledgements**

- 1.4.1 The author would like to thank Andrew Dennis and Sam Cowan who commissioned the archaeological work on behalf of P.J.Thory Ltd, and the latter for funding the work and for support throughout the excavations. The project was managed by Richard Mortimer. The excavation was directed by Alex Pickstone and the site supervisor, surveyor and illustrator was Louise Bush. Additional survey support was provided by Gareth Rees. Machine watching and excavation was provided by Spencer Cooper. The site was excavated by Peter Boardman, David Brown, Hazel Butler, Graeme Clarke, Caoimhin O Coileain, Ben Davenport, Nick Gilmour, Steve Graham, Michael Green, Jonny Lay, Matt Lees, Ross Lilley, Dawn Mooney, Tom Philips, Meirion Prysor and Stuart Randall. Jo Raggett, Gareth Evans and Charlotte Beattie from Peterborough University Centre volunteered on site. Crane Begg provided the topographical survey. Ben Robinson of Peterborough Museum monitored the excavation.

## 2 AIMS AND METHODOLOGY

### 2.1 Aims

- 2.1.1 The objective of this excavation was to determine as far as reasonably possible the presence/absence, location, nature, extent, date, quality, condition and significance of any surviving archaeological deposits within the development area and to preserve them by excavation and record.

### 2.2 Methodology

- 2.2.1 An area of approximately 10ha was stripped under constant archaeological supervision with a tracked excavator using a toothless ditching bucket.
- 2.2.2 As stripping continued, exposed surfaces and features were scanned with a metal detector by Steve Critchley and all surface finds (principally struck flint) were individually bagged. All metal-detected and hand-collected surface finds were retained and their location was plotted with a GPS.
- 2.2.3 The percentage of features excavated was dependant on type as well as the potential for datable and/or significant assemblages of artefacts or animal bone. All small pits were 100% excavated as most were Neolithic or Early Bronze Age in character. Un-urned cremation burials were 100% excavated in plan. Where well-preserved remains were present individual bones were planned and numbered then lifted and bagged separately to aid in identifying whether the individual had been cremated *in situ*. The urned cremation was partially excavated *in situ* before it was apparent that the lower part of the pot was well preserved. The whole pot and contents were then bandaged, lifted and processed at OA East offices.
- 2.2.4 The barrow 'ditch' was excavated in eight 1m slots dug by hand. A single slot was placed across the barrow mound to get a profile of the remaining mound material, ditch and buried soil. After the slots and the burials were recorded, and the ditch and mound were seen to be archaeologically barren, a 360° excavator was deployed to remove the remains of the ditch and the mound to ensure no further burials were present.
- 2.2.5 Between 5% and 10% of field system and enclosure ditches were excavated in 1m slots with areas where a change in direction or size and shape being targeted. At the end of the excavation some of the field system ditches were re-machined by a 360° excavator with a further 0.30m removed from the surface. This more clearly revealed their pit-dug or section-dug nature and they were re-planned at this level.
- 2.2.6 A higher percentage of those ditches associated with the settlement area were excavated to aid phasing and to ensure recovery of the maximum quantity of artefacts and ecofacts. Where significant assemblages were recovered more slots were excavated to provide the fullest assemblage possible.
- 2.2.7 From 25% to 50% of wells were excavated by hand where safe to do so. All the wells were seen to contain waterlogged deposits of varying quality and potential, with some containing wooden artefacts. A 360° excavator was then used to take the second half of the well fills down to the level of the waterlogging and the waterlogged remains were then excavated by hand.
- 2.2.8 One hundred per cent of structures including post holes and ring gullies were excavated to enable all datable artefacts to be recovered and a fuller understanding to be gained of the features.

- 2.2.9 All archaeological features and deposits were recorded using OA East's *proforma* sheets. Plans were drawn by hand at 1:50 from a grid 10m located on OS coordinates. Detailed plans of cremations, wood or placed assemblages drawn at 1:5 or 1:10. Sections were recorded at either 1:10 or 1:20.
- 2.2.10 Digital, slide and monochrome photographs were taken of all relevant features and deposits. Overhead photographs were taken by Adam Stanford using Aerial-Cam.
- 2.2.11 A full topographic survey (contour survey) using a Leica GPS system 1200 was undertaken every 10m across the site whilst plotting the post-medieval claying ditches. Points were taken every 1m over the barrow area (Fig.3).
- 2.2.12 Environmental samples were taken across site from a variety of features including pits, cremations, the barrow, field system ditches, wells, enclosure ditches, post hole structures and ring gullies. The environmental samples were taken to inform the interpretation of land use and the environment as well as agricultural practices and industries present on the site. Samples from cremations were taken to collect all cremated bone. Samples were also taken to retrieve material suitable for radiocarbon dating especially where datable pottery was rare. Where possible a minimum of 20 litres was taken from relevant contexts and 40 litres was taken from waterlogged contexts. A full methodology is set out in Appendix B.3 and B.4. Pollen cores were taken from all of the basal fills of all of the waterlogged wells, from some ditches and from the fill of the barrow ditch.
- 2.2.13 The site conditions were generally good. The site was on agricultural land under stubble with an overburden of a peaty topsoil measuring approximately 0.4m. There was no subsoil. Archaeological features showed up well in the silt/gravel natural when the area was first stripped, however the surface weathered very badly in both wet and dry windy conditions making features difficult to re-locate. The wind was prevalent often covering the site in a fine layer of sand and silt.

### 3 RESULTS

#### 3.1 Introduction

The results of the excavations are set out below in chronological order under seven main phase headings. These are partly thematic rather than strictly date-based and are divided into four periods; the Neolithic, the Early Bronze Age, the Middle Bronze Age and the Later Bronze Age to post-Medieval.

Mesolithic - Neolithic	<ul style="list-style-type: none"> <li>● Occupation</li> </ul>
Early Bronze Age	<ul style="list-style-type: none"> <li>● Occupation and Burial</li> </ul>
Middle Bronze Age	<ul style="list-style-type: none"> <li>● Field System and Initial Occupation</li> <li>● Early or Pre-Settlement Enclosures</li> <li>● Settlement</li> </ul>
Later Bronze Age to Post-Medieval	<ul style="list-style-type: none"> <li>● Peat Development</li> <li>● Iron Age Reoccupation</li> <li>● Post-medieval agricultural features</li> </ul>

#### 3.2 The Neolithic (Fig. 4)

3.2.1 A broad scatter of struck flint and a number of Neolithic pits and tree throws were recorded across the area, with a notable concentration of features along the high ridge at the north of the site along the 2m contour. These are discussed below under *earlier* and *later* Neolithic headings.

##### ***Earlier Neolithic***

##### **Flint Scatter**

3.2.2 A total of 87 pieces of struck flint were recovered as surface finds, much of which dated to the earlier parts of the Neolithic with a few pieces showing Mesolithic characteristics. There was a marked concentration in the southernmost part of site between the 1 and 1.5m contours, although nowhere was any great density of material recovered.

##### **Pits and Tree Throws**

3.2.3 Five pits and two tree throws contained Early Neolithic finds assemblages with a further four pits and two tree throws assigned to this period by spatial association or characteristics. All of these features were located along the 2m contour situated in the northern third of the site within an area measuring approximately 100m x 200m. The features were thinly spread across this area with only one potential 'pit group' consisting of six small pits contained within a 15m square area. Three of the pits contained small numbers of Early Neolithic struck flints.



Pit **990** and two tree throws (**1507**, **2166**) contained small quantities of 'Etton-Style' Mildenhall pottery. Pit **990** also contained 15 pieces of struck flint which formed the largest single assemblage of Early Neolithic material from the site. Four further pits and a tree throw (**1385**, **1388**, **1416** and **2170**) contained small quantities of Early Neolithic struck flint.

The pits measured 0.21m to 1.09m in size with the majority ranging from 0.4m to 0.6m in diameter and between 0.1m to 0.45m deep. They contained up to three fills which were generally light to mid grey silty sands with few inclusions.

#### *Pits*

Pit **990** was located in the north eastern corner of site. It was 0.58m wide and 0.31m deep and contained two fills. It produced 20 sherds (25g) of Early Neolithic Pottery and 15 pieces of flint including blades and flakes.

Pit **2170** was located in the south-western corner of the northern third of site; it was oval in shape and was 0.46m long by 0.28m wide. The pit was 0.28m deep and contained a single fill. Five sherds (4g) of pottery including an incised fragment were recovered from the feature.

Pit **2172** adjacent to **2170** was circular in plan measured 0.4m in diameter and was 0.33m deep. This pit contained three fills but no finds.

#### *Pits 1385, 1388, and 1416*

Three small pits were located 50m to the north-east of the tree throws. All contained small numbers of Early Neolithic struck flint. The pits measured between 0.21m and 1.09m wide.

#### *Tree Throws*

Tree throw **1507** was 1m wide and 0.4m deep and contained seven sherds (36g) of Etton-style Mildenhall pottery, some with possible incised line decoration on the rim.

Tree throw **2166** was 2m long and 1m wide and measured 0.32m deep. Ten sherds (27g) of pottery with incised decoration on the rim tops was recovered from this feature.

### **Later Neolithic**

#### ***Pits and Tree Throw***

- 3.2.4 Two pits and a tree throw, all located in the northern third of the site, contained Later Neolithic material. The tree throw and one pit contained small assemblages of Peterborough ware. These features contained mid to dark grey/brown sandy silt fills.

#### ***Pits***

Pit **1428** was 0.63m wide and 0.11m deep and contained 10 sherds (27g) of Peterborough Ware and 7 struck flints.

Pit **1430** was 0.68m wide and 0.08m deep and contained a single flint flake.

#### ***Tree Throw***

Tree throw **1367** to the east contained 23 sherds of Peterborough Ware (37g) and struck flint (43 pieces) representing the largest assemblage of later Neolithic material from the site.

### 3.3 The Early Bronze Age

#### **Settlement/Occupation (Fig. 5)**

##### **Beaker Pits**

- 3.3.1 Two pits (**1391** and **1473**) contained Beaker pottery. The pits were located approximately 30m apart on the south western side of the northern third of site. The pits contained mid to dark brownish grey sandy silt fill.

Pit **1391** measured 0.63m in diameter and 0.11m deep. It contained a single fill with 16 sherds (31g) of beaker pottery and a small assemblage (27g) of flint.

Pit **1473** measured 0.5m in diameter and 0.3m deep. It contained a single fill with twenty four sherds (95g) of beaker pottery consisting of at least three different vessel forms including fine and rusticated forms.

##### **Collared Urn Pits**

- 3.3.2 A group of seven Collared Urn pits (**816**) were located on the 2m OD contour at the northern end of the site. The pits were arranged in two clusters approximately 2.5m apart, a northern group consisting of three pits of which two contained Collared Urn pottery (27 sherds in total) and a southern group consisting of four pits of which two contained Collared Urn pottery (27 sherds, with a further 10 recovered from a field system ditch that truncated the pits). Within the southern group there was clear evidence of the pits inter-cutting, demonstrating that they were not all in use at the same time (Fig. 15, Section 50 and 51).
- 3.3.3 The bulk of the Collared Urn assemblage from the site came from these pits and the ditch which truncated them. The majority of the pits contained a combination of naturally infilled pale yellowish grey silty gravels and charcoal and ash rich fills. Pit **895** contained only naturally accumulated silts and pit **830** contained rare charcoal.
- 3.3.4 Three pits **1248**, **1279** and **1344** contained significant quantities of flax seeds (*Linum usitatissimum*) along with abundant weed seeds of rough/waste and arable cultivated ground. Charred seeds from pit **1248** were submitted for radiocarbon dating, returning a date of 2040-1870 cal BC (GU-19442, at 88% confidence). Comparative assemblages can be found immediately to the west at Tanholt Farm (McFadyen 2000) and immediately south at King's Dyke West, Whittlesey (Gibson and Knight 2002).

##### **Pit Group 816**

Pit **830** was 2.1m in length, 0.5m wide and 0.39m deep. It contained a single fill and 5 sherds (23g) of pottery. This pit was truncated by a later field system ditch.

Pit **833** was 1.1m in diameter and 0.26m deep. It contained four fills with 12 sherds (63g) of pottery recovered from the tertiary fill. Eight flint pieces were recovered from throughout the fills. This feature was truncated by pit **830**.

Pit **895** was 0.26m in diameter and 0.24m deep. It contained one fill and was truncated by pit **833**. No finds were recovered from this pit.

Pit **899** was 0.65m in diameter and 0.24m deep. It contained three fills and was also truncated by pit **833**. No finds were recovered from this pit.

Pit **1248** was 0.82m in length, 0.7m wide and 0.11m deep. It contained three fills, 14 sherds (202g) of pottery was recovered from the upper fill and 6 sherds (61g) was recovered from the secondary fill. Three pieces of flint and a very small quantity of animal bone were recovered from the ditch.

Pit **1279** was 0.82m in length, 0.73m wide and 0.3m deep. It contained two fills with 5 sherds (131g) of pottery from the upper fill and two sherds (57g) from the primary fill. Two flint pieces were recovered from the pit.

Pit **1344** was 1.05m in length, 0.88m wide and 0.12m deep. It contained three fills. A small quantity of fired clay and 11 pieces of flint.

### ***Tree Throws***

- 3.3.5 Three tree throws located in the northern third of the site contained Bronze Age flints. They were filled by mixed pale to mid yellowish grey silty sands with few inclusions.

Tree throw **1431** was located centrally within the northern area of site, it measured 1.5m in length, 0.5m wide and 0.4m deep. Three Bronze Age flints were recovered from this feature.

Tree throw **998** was located in the far northern corner of site and measured approximately 2m wide and 0.05m. Tree throw **998** contained a single Bronze Age flint.

Tree throw **1000** was located adjacent to **998**. It was approximately 2m wide and 0.05m deep and contained a single undiagnostic piece of flint.

### **Burial**

#### ***Barrow and Associated Cremations*** (Fig. 5)

- 3.3.6 The barrow was initially identified at the desk-based assessment stage by aerial photographic survey. Prior to stripping the site the barrow was visible as an upstanding earthwork in the recently harvested field and once stripped it appeared as a slight 'mound' in the landscape surrounded by a large 'ditch' containing an upper fill of peat, most noticeable around the western and northern parts of the circuit. The barrow mound sealed an early inhumation burial, cremation burial and natural features. Two later cremations were inserted into different levels of the mound material; a small number of residual struck flints were found within the buried and upcast soils.

#### ***Pre-mound Features***

- 3.3.7 An inhumation and cremation burial were cut into the thin buried soil (2075) sealed beneath the later barrow mound.

*Inhumation 2068* (Fig. 6)

- 3.3.8 The poorly preserved skull and teeth of an adult were found to one side of, and slightly truncated by, a subsequent cremation. No grave cut was visible and no further remains were recovered.

*Cremation 2067* (Fig.7 and 9)

- 3.3.9 Cremation pit **2067** was 0.78m wide and 0.46m deep and contained four fills. Fills 2069, 2070 and 2069 contained the cremated human remains of an adult female and a child. The outer fill (2072) and the edges of the feature were heat-affected turning them a deep orangey red in colour and suggesting that the individuals had been cremated *in situ*. Layer 2055 covering the cremation pit, consisted predominantly of large pieces of charred wood suggestive of pyre material. Human bone from this cremation was submitted for radiocarbon dating returning a date of 1980 – 1750 cal BC (GU-19446, at 95.4% confidence). The barrow mound material sealed this initial cremation.

*The Barrow 2010* (Figs. 6, 8 and 9)

- 3.3.10 The barrow - mound and ditch - was approximately 33m in diameter with the slight mound measuring 12.75m (north to south) and 14.6m (east to west). The surrounding ditch had a maximum width of 9m and was a maximum of 0.2m deep where not affected by earlier tree throw features. The ditch contained two fills; the upper fill was peat which was 'patchy', chiefly seen around the south and west of the feature and varied in depth; the primary fill was a thin, light grey sandy silt. The cut of the ditch appeared only to have been constructed with any precision on the inside, closest to the mound, forming a well-defined slope. The ditch became gradually shallower away from the barrow until it was no longer visible and the fill spread out unevenly on the outer edge. The up-cast material from the shallow ditch was placed on the inside of the ring ditch creating a slight mound which covered the original land surface (and first cremation) and created a buried soil. The up-cast material (2055) was a mid brown orange sandy silt and the buried soil (2075) was a mid grey orangey slightly clayey silt. Cut through the mound material were two further cremation burials.
- 3.3.11 Cremation pit **2710** measured 0.75m in diameter and 0.48m deep and contained the remains of an adult male (Fig.8). It was inserted into the mound and was very similar in character to cremation **2067**; the cremated remains were in the initial fills (2720, 2717, 2718, 2709) and there was a heat affected outer fill (2721) and a capping layer of charred wood (2708). Human bone was submitted for radiocarbon dating returning a date of 1950-1740 cal BC at 95.4% confidence (GU-19449).
- 3.3.12 To the west, cremation **2040** truncated the upper fills of the earlier **2067** (Fig. 9). It contained the remains of a sub-adult. This cremation was slightly shallower at 0.38m deep and showed no evidence of being cremated *in situ*.

*Isolated Cremations* (Fig. 5 and 10)

- 3.3.13 Cremation **1500** was located in the north-western part of the site at the edge of the cluster of early features. It measured 0.25m in diameter and was 0.15m deep.
- 3.3.14 Cremation **2137** was located approximately 70m to the north-east, within the early feature cluster. The feature contained cremated bone but was heavily truncated by both ploughing and burrowing to the extent that it had lost any identifiable cut.
- 3.3.15 Cremation **3301** was located in the south-west corner of site at 1.35m OD. The cremation was placed entirely within a large Collared Urn (Fig.10). Human bone was

submitted for radiocarbon dating returning a date of 1890-1660 cal BC (GU-19453, at 95.4% confidence). It is possible that this cremation was associated with a small barrow similar to **2010** with a very shallow surrounding ditch which could have been lost through ploughing. The barrow would have had a significant position in the landscape overlooking the fen to both the south and the west (Fig.3).

### 3.4 The Middle Bronze Age

3.4.1 The Middle Bronze Age archaeology of Brigg's Farm has been assigned to three principal chronological and typological phases of activity: the main field system ditches, the early or pre-settlement enclosures and the direct settlement that followed. There were also a series of field wells that are contemporary with the use of one or more of these phases. It is acknowledged that the ditches and fields that make up the field system were not a single-phase entity, and in parts they were on two separate alignments.

#### *Field System (Figs. 11-15)*

3.4.2 The Middle Bronze Age field system extended across the entire site, the ditch closest to the Fen edge, the lowest followed the contour at 1m OD with the highest crossing the 2m contour. The layout of the field system appears to have two principal influencing factors: the topography significantly influenced the ditches towards the southern part of the site with large fields radiating out towards the fen edge and extending towards a fen edge boundary ditch arcing around the 1m OD contour. Further up slope, towards the centre of the site, the ditch alignment changes to follow a north-west to south-east alignment. Central to this alignment were two parallel ditches (unlikely to have been contemporary) with a bank and hedge on the eastern side (Fig. 13). Enclosures and fields extended on both sides of this boundary, on both an east-northeast to west-southwest alignment, as well as an east to west axis. This double-ditched boundary had a clearly tangential relationship with the principal monument on the site, barrow 2010 (Fig. 11).

3.4.3 The field system consisted of both segmented and continuous ditches that divided the landscape into a series of fields. The ditches would have been associated with banks and probably planted with hedges; it is the bank that is likely to have endured as the ditches would have silted up relatively rapidly - none showed any evidence for having been cleaned out or re-cut. When looking at the layout of these fields and enclosures it is important to consider the possible presence of archaeologically invisible features, such as un-ditched boundaries formed by banks and hedges which can now only be identified by contemporary or subsequent features such as wells and pits which respect the bank or hedge-line. It is also possible that earlier Bronze Age features could be seen to be respecting the lines of both visible and non-visible boundaries.

3.4.4 The excavated area has been divided into approximately fifteen 'fields' of varying size. All the larger fields extend beyond the limits of the excavation and therefore accurate measurements of the areas enclosed are not possible. The shape of the fields appear to vary from rectangular to triangular due to the nature of the topography.

3.4.5 The fills of the field system ditches, although variable in depth and complexity, had various characteristics in common. The upper fill of all ditches except **2122**, **2214** and **3099**, i.e. all those ditches below c. 1.4m OD, was formed of peat (Fig.31). The earlier fills were in-washed natural sandy silts which varied in colour from pale yellowish greys to mid brownish greys. In general, the underlying natural subsoils of the central third of

the site contained more clay, with silts and sands being more prevalent elsewhere. The ditch fills contained only very small quantities of charcoal and none showed any industrial or settlement associated deposits. In some case the infilling sequence indicated on which site the associated bank had been constructed; this is discussed further below.

- 3.4.6 As is common with field systems it was not possible to phase or date the ditches by radiocarbon dating due to the lack of suitable material. Two features with direct relationships to field system ditches were radiocarbon dated: Pit Group **816** which was truncated by the field system ditch and a later well (Well 7) was cut through the central double-ditched boundary. A series of dates was also obtained from the subsequent settlement features; the date of the field system along with issues of longevity are discussed further below.
- 3.4.7 The field system is discussed here by reference to field number with details of their enclosing ditches. Fifteen 'fields' have been identified, some much more tentatively than others. The field wells they contained - at some point in their history - are also noted here but are catalogued and discussed together further on (3.4.22: Wells).

*Field 1 (Fig.12)*

- 3.4.8 Field 1 was the most northerly recorded; it was formed by five ditches creating a rectangular field measuring approximately 75m east to west and 40m north to south. There appear to have been at least two entrances, or gaps in the ditched boundaries, to this field, one to the north measuring approximately 25m across and one to the east measuring 5m.

Ditch **508**, the northern boundary, was aligned west-east, was between 1m and 1.25m wide and 0.49m deep. It contained nine sandy silt fills. No finds were recovered from the excavated sections.

Ditch **681/702** was aligned east to west and appeared to head towards a more north-easterly alignment as it became shallower towards the eastern edge of excavation. The ditch measured between 1.4m and 2.31m wide and between 0.45m and 1.02m deep along the western segment (**681**) prior to being truncated by Well 3. Beyond the well to the east the ditch (**702**) measured between 0.55m and 1.76m wide and between 0.2m and 0.63m deep. Ditch **681** had been recut along its length at a later date to create the southern boundary of Enclosure 1 (see below: Early or Pre-Settlement Enclosures) which, along with variations in depth, accounts for the differences in the quantity of fills from two to nine. Small quantities of animal bone were recovered from the western length of the ditch (Fig. 15, Section 26).

Ditches **940** and **1230** formed the eastern boundary of the field and were aligned north-northeast to south-southwest, the only ditches in this area on such an alignment. The ditches formed two opposing terminals leaving a gap of approximately 5m. They were 0.94m to 1.18m wide and 0.19m to 0.58m deep. Ditch **940** contained four fills and a small quantity of Bronze Age pottery was recovered from the secondary fill.

*Field 2 (Fig.12)*

- 3.4.9 Field 2 was located at the north of the site on a north-west to south-east alignment. It measured 45m N/S, 35m W/E and 1580 sq. m in area. It was bounded at the west and part of the south by an L-shaped ditch (**632**) with a bank on its eastern, interior side; the ditch terminated short of the full width of the enclosure. A wide and very shallow feature (**875**) continued from the ditch terminus forming the rest of the southern

boundary of this enclosure and of the adjacent Field 3. This feature had a similar appearance to the shallow barrow ditch but was even shallower and was only visible in certain conditions. It is thought that this represents a shallow deturfed area, the turf creating a low bank to the north. The eastern boundary of this enclosure was formed by a short double-ditched boundary **931/888**, possibly with a small internal bank; the ditches only occupied the central third of the boundary line.

Ditch **632** was excavated in eight sections. It was between 1.3m and 2.1m wide and 0.42m to 0.68m deep and contained one to three fills (Fig. 15, Section 53). The greatest number of fills were found in the southern section of the ditch. No pottery was recovered from any of the sections, however 462g of animal bone which included SF 19, a sharpened sheep/goat metacarpal with a drilled hole. The largest quantity of animal bone (409g) came from cut **1377** towards the northern end of the ditch; small quantities of fired clay were recovered from the same slot.

Ditch **931** was excavated in three slots. The ditch was 21m long and measured between 1.3m and 2.1m wide and between 0.08m to 0.41m deep. It contained a single fill and no finds were recovered.

Ditch **888** was located 2.1m to the east of ditch **931**. It was excavated in three slots and was 9.2m long. The ditch was between 0.5m and 0.85m wide and 0.15m to 0.38m deep and contained a single fill with no finds.

Feature **875** extended for at least 55m across the site before fading out. When excavated, the feature had no real depth and appeared more as a thin lens of pale grey staining of the soil perhaps caused either by deturfing or by root disturbance from a wide hedge.

Post Hole **735** was located on the south-western corner of the enclosure within the cut of ditch 632. The fill of the ditch and the post hole appeared continuous and it was not possible to identify which was the earlier feature. It is possible that the post hole could have acted as a marker for the corner of the enclosure prior to the excavation of the ditch.

### *Field 3*

- 3.4.10 This enclosure was adjacent to Field 2, to the east and shared its southern (**875**) and western (**888, 931**) boundaries. It measured 37m N/S, 38m W/E and was 1400 sq.m in area. The two alignments within the field system are at their most obvious here, with Fields 2 and 3 potentially of a completely separate construction and date to Field 1 to the north. Well 3, which truncated the southernmost ditch of Field 1 could have occupied the north-eastern corner of this enclosure.

### *Fields 4 and 5 (Figs. 11 and 12)*

- 3.4.11 Fields 4 and 5 lay as potentially open space between the more formal, ditched enclosures of Fields 2 and 3 to the north and Fields 6 and 7 to the south. They possessed no ditches or banks that were solely their own, sharing all with the surrounding fields. They may represent the space between the enclosed fields, much as 'Fields' 10 and 11 could do further south. There was no visible division between these putative fields though the identical alignments of the double-ditched 2271 to the south and 632 to the north suggest a possible link between them and it is possible the near-invisible boundary of ditch 875 had continued to the west and south. Two wells (4 and 5) lay along the southern boundary of Field 5, dug up against the bank, indicating that whether 'fields' or open spaces, the area was in agricultural use. To the east of Field 5 two parallel ditches ran south-southeast from the southern boundary of Field 1

(**923** and **687**, Fig. 12). One or both may have formed the eastern boundary to this area, or the western boundary to a set of enclosures to the east.

Ditch **923** was aligned north-northwest to south-southeast and joined into Ditch **702** from the south. The ditch measured 1.2m to 1.4m wide and 0.55m to 0.78m deep and contained between three and four fills. Two small sherds of pottery identified as Bronze Age and two Neolithic flints were recovered from the ditch. The Bronze Age pottery was found in the upper fill of the ditch.

Ditch **687** ran parallel to ditch **923** some 12m to the east. The ditch terminated approximately 2.5m south of ditch **702** and measured 1.6m wide and 0.6m deep. The ditch contained four to five fills and a intact naturally shed red deer antler was recovered from the secondary fill; the antler was sent for radiocarbon dating but the sample failed.

#### *Field 6* (Fig. 13)

- 3.4.12 The northern boundary of Field 6 was formed by shallow ditch **2214** aligned due west-east, the eastern boundary by the double-ditched **2271** and the southern by the northern sides of Fields 8 and 9. It is possible that Field 6 originally enclosed the areas of these smaller fields, and that they were created within it slightly later. The western boundary lay beyond the edge of excavation. A well (8) was cut across the western ditch of the eastern field boundary.

Ditch **2214** was excavated in seven slots along its length. It measured between 0.3m to 0.95m wide and 0.2m to 0.5m deep and contained up to three fills. A very small quantity of animal bone and three Bronze Age flints were recovered from its length. It was clearly segment-dug along its entire length.

Ditch **2271** was formed by two parallel ditches between 2m and 5m apart oriented on a north-west to south-east alignment. A bank and possible hedge may have been located to the eastern side of the ditches (Fig.15, Sections 280, 244). There is some suggestion that the eastern ditch was the earlier as the western ditch appears to avoid the already established bank of ditch **2297** (see below, Fields 8 and 9, Fig. 13) and the westernmost of the pair might be seen as a major recutting of the boundary. The ditches originated from the eastern terminal of ditch **2214** at the north and ran into ditch **2104** at the south (see below, Fields 8 and 9, Fig. 13). A total of seventeen slots were excavated through these ditches and no direct evidence was found for them having been excavated in segments, however they varied in width considerably along their lengths and frequently changed direction. The only recut was identified in slot **2435**. The ditches measured between 0.4m to 1.22m wide and 0.28m to 0.64m deep and contained between one and seven fills. Very few finds were recovered, with just one sherd of Deverel-Rimbury type pottery recovered from the basal fill of segment **2335** and two sherds grog-tempered sherds from the penultimate fill of **2478**.

#### *Field 7* (Fig. 13)

- 3.4.13 Field 7 was formed by ditch **2122** at the north, **2104** at the south and **2271** to the west. It may have had further subdivisions as three short ditch or hedge features (**2463** and **2671**), all on a north-northwest to south-southeast alignment, were located within it. The **2463** ditches could represent modifications to the bank of the eastern ditch of **2271**. The northern boundary (**2122**) although appearing to be an extension of that of Field 6 was very different in character; it was highly segmented in parts but dug as a single event to the east. Both the continuous ditch length and the individual segments were significantly deeper than those of ditch 2214, with very steep sides and round based V-shaped profiles (Fig.15, Section 238). Two wells (6 and 7) were cut into the



ditch line of the northern boundary with a third (well 10) cut against the southern boundary.

The individual segments of ditch **2122** varied between 2.5m and 8m long. They were 0.53m to 1.5m wide and 0.34 to 0.9m deep and contained one to three fills none of which contained any finds. To the east the ditch was apparently dug as a single entity. It was 0.8m to 1.25m wide and 0.34 to 0.74m deep and contained between two and five fills. Slots **2200** and **2133** contained significant quantities of animal bone, compared to the surrounding field systems, though at 256g and 210g respectively these still represent very small amounts.

Ditch/hedge **2463** was formed by three shallow features adjacent to each other measuring between 5.4m and 6.7m long and 0.3m to 0.6m wide. They were between 0.03m and 0.1m wide, contained single fills and no finds were recovered.

Ditch **2671** near the centre of the field measured 12m in length and was 0.75m to 1.55m wide and 0.47m to 0.5m deep. It contained three fills and no finds were recovered.

#### *Fields 8 and 9 (Fig. 13)*

- 3.4.14 Field 8 lay in the south-western corner of Field 6 with Field 9 to the south-east. Field 8 measured 44m north to south, 28.5m west to east and was a total of 1254 sq m in area. The southern side was formed by the long boundary ditch **2104** which extended across the whole site on a slightly skewed east-west alignment. The other three sides of the enclosure appeared to have initially been dug as a continuous ditch (**2100**), however, a small section on the eastern edge had been relatively quickly backfilled (**2164**) with gravel and butt-ends were re-excavated to create a narrow entranceway into Field 6 (**2161**). Any associated bank would probably have been on the outside of the enclosure and a well (9) has been dug against the field's eastern side. Field 9 was bounded to the east by ditch **2271**, to the south by **2104**, to the west by **2100** and to the north by **2297**. It measured 73.5m west to east, 27.6m north to south, and was 2030 sq m in area. Ditch **2297** butted up against both Field 8 and the double ditch, terminating approximately 1m away from the ditches forming a narrow gap.

Ditch **2104** was excavated in eight slots and was 1.2m to 1.75m wide and 0.38m to 0.78m deep. It contained between three and seven fills of which the upper fill was peat. The ditch became shallower and narrower as it extended up slope past the 1.3m OD contour. The ditch was U-shaped in profile along its length. A single piece of fired clay (10g) was recovered from slot 2114.

Ditch **2100** was between 1.2m and 2.3m wide and 0.48m to 0.6m deep and contained between three and six fills. It was U-shaped in profile.

Ditch **2161** represented the recuts in the eastern section of the ditch through the dumped gravels of 2164, creating two opposing terminals. These were deeper (0.59m and 0.8m) and more V-shaped in profile and had four/five fills.

Ditch **2297** was excavated in five slots. It measured between 1.2m and 1.84m wide and maintained a relatively uniform depth along its length (0.64m to 0.76m). It contained six to nine fills and a single flint and 187g of bone.

#### *Fields 10 and 11 (Fig. 11)*

- 3.4.15 As with Fields 4 and 5 to the north, these fields possessed no boundaries that were clearly and exclusively their own, and may represent unenclosed areas between the more formal fields 7, 8 and 9 to the north and 15 to the south (see below). At the east

the truncated boundary ditch of Field 12 (see below) may have continued along the 1.5m contour to the north-east, marking the eastern limit of the area. The barrow (**2010**) lay on the boundary of the two 'fields' and to the south of this the field system was influenced more by the topography and the proximity of the fen edge with the fields to the south changed shape and character to reflect this.

*Fields 12, 13 and 14 (Fig. 14)*

- 3.4.16 These fields were located on the eastern edge of the site adjacent to Fields 11 and 15. The western boundary of Fields 12 and 13 was formed by truncated ditch **2696** which may have continued to the north-east along the contour and to the south to meet ditch **3025**, the western boundary of Field 14 and the eastern edge of a possible hedge bank or boundary **2271**. Fields 12 and 13 and were separated by a truncated, east-west ditch segment (**3328**) that marked the continuation of ditch **3001** to the west (see below, Field 15) and Fields 13 and 14 by the more substantial ditch **3070**. Field 14 may represent further unenclosed or open access land heading down into the lower-lying area towards the Fen edge.

Ditch **2696** was excavated in segments and measured between 0.7m to 1.5m wide and 0.2m to 0.6m deep. They contained two or three fills. The only find was a large piece of fired clay (297g) recovered from the most northerly segment of the ditch.

Ditch **3070** was between 1.2m and 1.8m wide and 0.55m to 0.67m deep. It contained a single fill and no finds were recovered.

Ditch **3328** was unexcavated. It was 1m wide and extended for 4m before becoming truncated.

*Field 15 (Fig. 14)*

- 3.4.17 Field 15 was roughly triangular in shape with its south-western boundary formed by shallow, narrow ditch **3159**. The ditch ran along the 1m OD contour and separated the higher ground to the north-east from the lower, wetter ground; a bank would have been present along its north-eastern edge (Fig. 15, Sections 321, 322). It was shallow and heavily segmented. At its eastern end it turned 90° to run north-west and north where it became significantly deeper (**3025**) up to the boundary with Field 13; here it became narrower and shallower and marked the southern end of the truncated and/or segmented ditch **2696**. The northern boundary of the field was formed by ditch **3001**, again very heavily and clearly segmented.

In the south-eastern corner of the field there were five post holes (**3103**) in a line running north-east to south-west and a shallow ditch and probable bank extending north-west to south-east and south. The ditch (**3099**) was truncated by ditch **3025** therefore indicating that it was part of a slightly earlier system. The boundary may still have been in use had the hedge-bank endured beyond the ditch silting up. These features together appeared to form a small fenced enclosure within this corner of the field measuring a maximum of 20m by 17m. Two wells lay close to the southern boundary of the field, Well 11 close to the presumed bank with an earlier well (12) a little further north into the field.

Ditch **3159** was dug in joined segments measuring between 2 and 20m in length. It was 0.75m to 1.25m wide and 0.16m to 0.56m deep. It contained up to three fills and no finds were recovered.

Ditch **3025** was 0.7m to 2m wide and 0.45m to 0.9m deep, becoming shallower as it extended up slope. It contained between two and eight fills and a single Bronze Age flint flake was recovered.

Ditch **3001** was dug in joined segments measuring between 5m and 10m in length and varying in width between 1.05m and 2.44m. It was deeper than most of the field system ditches but varied considerably along its length between 0.34m and 1.02m deep.

Post hole group **3103** consisted of five post holes measuring between 0.2m and 0.5m in diameter and 0.1m to 0.27m deep. They were filled with a pale brownish grey sandy silt and contained no finds.

Ditch **3099** was 19m in length up to 0.9m wide and 0.15m deep and contained a single pale fill.

### **Wells ( Figs. 16-18)**

- 3.4.18 A total of 12 wells was recorded across the site with the greatest number concentrated within and immediately outside Fields 6 – 9,; a further three were clustered together in the northernmost area and two were located at the southern limit of the site within Field 15. Although all of the wells were of a Middle Bronze Age date, a combination of radiocarbon dates, environmental evidence and stratigraphy have enabled a broad chronology to be determined for most of the wells. They are described below in numerical order with an attempt made to assign them to a 'Phase' in the discussion.
- 3.4.19 The wells were between 2.94m and 7.7m wide and between 0.82m and 2m deep. The bases of the wells lay between -0.51m OD and 0.13m OD with an average depth of 0.18m OD. They contained between eight and twenty-eight fills and at least one (the basal) fill within each well was waterlogged. Eleven of the wells contained an upper fill of peat which was between 0.14m and 0.9m thick. Well 5 was the only one to have an upper fill of silt. The waterlogged fills varied from dark greyish brown clayey silts with high organic content to pale bluish grey silty clays. A basal fill of pale blue grey clay was present in Wells 1, 2, 7 and 8 where they were followed by a very dark brownish black organic fill. The other wells only contained the dark organic fill. The central fills were generally a combination of greyish brown silty sands with gravel inclusions and gravel/sand slumping layers. Gravel fills with iron panning were found at or near the bases of Wells 1, 7 and 9.
- 3.4.20 All the wells, with one exception (Well 2), were steep sided and on average over 1m deep making them unsuitable for livestock to gain entry suggesting that people would have used ladders and buckets to collect the water to give to the livestock. Log ladders were recovered from wells 5 and 8 and there was evidence for ladders having at some point been used in at least two more. A large structural timber was also discovered in the base of Well 2; it had large, well-spaced mortise holes and may have found secondary use as a ladder.
- 3.4.21 Remarkably few finds were found within the wells, with the exception of the wooden objects. A maximum of 842g of animal bone was recovered (from Well 3) and just three sherds of pottery, two of which were discovered in the upper peat fills (Wells 3 and 8) with one unidentifiable fragment in the basal fill of Well 12. Two environmental samples from the lower fills of Wells 2 and 12 contained small fired clay fragments that weighed less than 4g. A small collection of Mesolithic to Early Bronze Age flint flakes, blades and cores were recovered as residual material throughout the fills of Wells 2, 3, 5, 8 and 11.

No.	Cut	Max Width (m)	Depth (m)	OD at base (m)	Thickness of peat fills (m)	Thickness of waterlogged fills (m)
1	538	7.7	1.58	-0.21	0.46	0.3
2	588	5.85	1.8	0.01	0.9	0.18
3	660	4.8	2	-0.12	0.8	0.49
4	6	6.2	1.4	0.13	0.14	0.5
5	2248	4.5	1.5	-0.24	-	0.35
6	2247	3.5	1+	0.01	?	0.52
7	2350	7	1.75	-0.35	0.31	0.57
8	2488	3.71	1.75	-0.31	0.51	0.74
9	2384	3.2	1.14	-0.11	0.34	0.12
10	2525	2.94	0.82	-0.25	0.4	0.14
11	3061	3.56	1.32	-0.17	0.15	0.15
12	3189	3.47	1.69	-0.51	0.25	0.25

Table 1: Well dimensions, depths and fills

Well No.	Cut	Pottery (g)	Struck Flint (no.)	Fired Clay (g)	Animal Bone (g)	Other	WPR Analysis	Pollen Analysis	C14 date @ 95.4%
1	538				123		Yes	Yes	1450-1260 cal BC
2	588		2	2	598 inc. SF 16		Yes		1500-1300 cal BC
3	660	16	2		842	structural timber			
4	6								
5	2248		2		258	log ladder			
6	2247								
7	2350						Yes	Yes	1390-1120 cal BC
8	2488	3	5		624	log ladder			1390-1110 cal BC
9	2384								
10	2525								
11	3061		3		128		Yes		1500-1260 cal BC
12	3189	<1		3				Yes	1680-1490 cal BC (91.9%)

Table 2: Well finds and radiocarbon dates

Well 1 (**538**) was located in the northern area of site on the eastern baulk within Field 1 and the subsequent occupation area. It contained thirteen recognisable fills, three of which were waterlogged. A small quantity of animal bone was recovered from the upper peat fill (537) and middle fill 543. This feature truncated Ditch 702 (Fig. 17, Section 5).

Well 2 (**588**) was located 7.5m west of Well 1. It contained eighteen fills, two which were waterlogged (Fig 17, Section 24). This well was the only one to show evidence of subsequent recuts which had been dug to a depth of 1.3m. Small quantities of animal bone were recovered from five lower fills (586, 666, 667, 668, 669) and one upper fill (694) within recut **581**. A flint

blade was found in the recut (694) and a single flake in the middle fill (667) of the original well. A very small quantity of fired clay was recovered from fill 667.

Well 3 (**660**) was located 6.5m south-west of Well 2. It contained sixteen fills, three of which were waterlogged. A structural timber with three mortice holes was recovered from the base of this well which may have been reused as a ladder to access water at the base of the feature (Figs. 18, 38). A small sherd of unidentified, residual prehistoric pottery was found within the upper peat fill. Animal bone was recovered from four contexts throughout the feature (737, 744, 750, 753). Two Mesolithic to early Neolithic flints were found in the central fills (736, 747). The well truncated Ditch **681**, however Ditch **577** which formed the southern boundary of Enclosure 1, terminated 1.2m to the west of this feature suggesting it may postdate the well.

Well 4 (**6**) excavated during the evaluation of the site, was located to the north of Ditch **2122**. It contained five fills and one which was waterlogged; no finds were recovered from the feature. This well formed a part of a group of four (Wells 4 – 7) which lay on either side of the boundary formed by Ditch **2122** and its associated hedge-bank. Wells 4 and 5 lay in Field 5 and Wells 6 and 7 lay in Field 7.

Well 5 (**2248**) was located 23m east of Well 4. It contained twelve fills, one of which was waterlogged and significantly there was no peat in the top of this feature. Two Neolithic to Bronze Age flints were found within the upper fill (2263). A large log ladder measuring 2m was recovered from the basal fill (2252) along with a small quantity of animal bone (Fig. 38).

Well 6 (**2122**) was located 13.2m to the south-east of Well 4.

Well 7 (**2350**) was located 50m to the east of Well 6 and 13m to the south-east of Well 5. It contained eleven fills, three of which were waterlogged. The basal fill was a redeposited gravel (2613) with a waterlogged layer forming the secondary fill (2612). This well was unusual in that a further concreted gravel layer sealed fill 2612 with two more waterlogged fills above this level. This feature contained no finds.

Well 8 (**2488**) was located on the eastern edge of Field 6 and truncated the western side of ditch **2271**. It contained 28 fills of which six were waterlogged (Fig. 17, Section 367). The waterlogged fills contained a significant quantity of wood debris, roundwood and a log ladder with a single step. The upper peat fill (2532) contained a small sherd of Collared Urn rim. Animal bone (2536, 2535, 2544, 2540, 2540) and five pieces of flint (2532, 2536, 2540) were found in the upper half of the feature.

Well 9 (**2384**) was located within Field 9. It contained eight fills one of which was waterlogged. No finds were recovered from this feature.

Well 10 (**2525**) was located near the southern boundary of Field 7. It contained fourteen fills, one of which was waterlogged. No finds were recovered from this feature.

Well 11 (**3061**) was located near the southern boundary of Field 15. It contained sixteen fills, one of which was waterlogged. Upper fill 3055 contained a small quantity of animal bone and a single flint core. Two blades were recovered from secondary fill 3269.

Well 12 (**3189**) was also located near the southern boundary of Field 15, 27m to the east of Well 11. It contained fifteen fills, one of which was waterlogged. A small sherd of pottery weighing less than a gram was found in fill 3209 and a small piece of fired clay was recovered from a sample of the basal fill.

### **Early or Pre-Settlement Enclosures**

#### *Enclosure 1 (Figs.19 and 20)*

- 3.4.22 A large and deep-ditched, rectangular enclosure was constructed partly utilising the northern and southern boundaries of Field 1. It measured approximately 60m west-east by 28m north-south with double ditches and banks to the north and south and a broad, deep ditch to the east with an entrance sited in the south-east corner. The western

side of the enclosure lay beneath the baulk and a geophysical survey was undertaken in an attempt to locate it. A weakly magnetic linear anomaly (a ditch) aligns well with the northern side of the rectangular enclosure and may mark the enclosure's western limit (Fig. 20 and Appendix D).

- 3.4.23 The broad ditch (**597**) forming the northern and eastern sides of the enclosure was between 2.8m and 3.95m wide and 1.05m to 1.3m deep. It contained up to thirteen fills, the majority of which were redeposited natural silty gravels that contained few artefacts and very little evidence of charcoal or other occupation deposits. A little charcoal was recovered from the excavation of the ditch terminal, along with a small quantity (9 sherds) of Deverel-Rimbury pottery, found in the very upper fill and likely to be resultant from the later settlement activity (see below). The bank appears to have been placed on the outside of the main enclosure ditch, perhaps on the north being added to the small bank to the south of earlier ditch 508.
- 3.4.24 The southern side of the enclosure was also formed by two ditches, 4.7m apart with an internal bank. As with the pair on the northern side, the northernmost ditch (**754**) was the narrower; it terminated some way to the west of the terminal of **597** creating a narrow entrance no more than 4m wide. The larger southern ditch (**577**) was a recutting of an earlier field system ditch (ditch 681, Field 1) and terminated to the west of well 3 (**660**), suggesting the well was in existence when the ditch was dug. Three cattle skulls were recovered from the basal fill of the terminal of the recut along with 16 sherds of Deverel-Rimbury pottery weighing 200g (Fig. 19). A sample of the bone was submitted for radiocarbon dating returning a date of 1420-1200 cal BC at 95.4% confidence, 1390-1260 at 68.2% (SUERC 25578). The enclosure contained very few finds beyond those already mentioned, suggesting that the ditch had silted up before any intense settlement activity had begun.
- 3.4.25 The wide, deep ditch and external bank might suggest that the enclosure had been designed to hold animals, presumably cattle; the narrow entrance had a well to each side, that to the east (Well 2) potentially contemporary with it. Layer **1139** was located over the terminal of ditch **597** and extended across the entrance to Enclosure 1. It appeared primarily to be dirty and disturbed natural silts, and may represent an area of more intense trampling or disturbance at the entrance to the enclosure.

Ditch **577** was between 1.2m and 1.9m wide and 0.65m to 0.96m deep. It contained two to six fills with 16 sherds (0.232kg) of pottery, 4.205kg of animal bone and 7 pieces of struck flint.

Ditch **754**, the southern boundary, was also aligned west-east, was between 0.61m and 1.25m wide and between 0.51m and 0.68m deep; it formed the northern ditch of a larger, double-ditched, banked boundary with ditch **577**. It contained three to seven fills with a total of 13 sherds (53g) of residual Collared Urn pottery, 1.418kg of animal bone, 11 pieces of struck flint and 1.143kg of stone recovered from the excavated sections (Fig. 15, Section 51 and 52).

Ditch **597** was between 2.8m to 3.95m wide and 1.05m to 1.3m deep. It contained up to thirteen fills, the majority of which were redeposited natural silty gravels. A total of 9 sherds (37g) of Deverel-Rimbury pottery, 28 pieces of struck flint (approx. half of which was residual), 96g of fired clay and 1.352kg of animal bone was recovered from this ditch.

#### *Enclosure 2 (Fig. 21)*

- 3.4.26 Enclosure 2 was located in the north-eastern corner of Enclosure 1 and measured 14.1m from east to west and 9.7m from north to south. The northern and eastern sides of the enclosure would have been provided by the partially silted up ditch **597** and its

bank. The western and southern sides were formed by a narrow ditch (**617**) with an entrance on the southern side measuring 2.5m across. This ditch terminated to the north at the edge of Enclosure 1 and could be seen cutting into the top of the silted ditch to the east. A mixed assemblage of sixteen sherds of Deverel-Rimbury pottery and four of Collared Urn were recovered from the basal fills of the feature weighing just 56g, an average sherd weight of only 2.8g; there was no particular concentration in any of the excavated slots.

- 3.4.27 A radiocarbon date of 1530-1380 cal BC at 95% probability, 1500-1425 at 68.2% (SUERC-25583) from carbonised barley grain was gained from the easternmost ditch terminal.

Ditch **617** was excavated in five sections and measured 0.67m to 0.75m wide and 0.5m to 0.62m deep. It contained between one and seven fills from which fired clay (235g), Collared Urn and Deverel-Rimbury pottery (56g) were recovered. This enclosure contained more charcoal rich fills than the surrounding Enclosure 1.

#### *Enclosure 3 (Fig. 21)*

- 3.4.28 Enclosure 3 was located on the western boundary of Field 2. It was formed by a segmented curvilinear ditch (**1446**) forming a D-shaped enclosure using the bank of Field 2 as its straight western edge. The internal dimensions of the enclosure were 11.8m by 12.3m, enclosing approximately the same sized area as Enclosure 2. There was an entrance to the south-east c. 3.5m wide. Four sherds of Deverel-Rimbury pottery weighing 28g and a retouched Early Bronze Age scraper were recovered from terminal **1448**.

- 3.4.29 Ditch **1446** was excavated in four sections which measured 0.5m to 0.81m wide and 0.2m to 0.53m deep, however it was heavily truncated in parts. A single fill was present in the most northerly section (1524, 1522) whilst two fills were found in the other two sections (1451, 1448). As well as the pottery and scraper a small quantity of animal bone (55g) was recovered from terminal **1451**.

#### **Settlement (Fig. 22)**

- 3.4.30 An area of Middle Bronze Age settlement activity was located in the north-eastern corner of the site at approximately 1.70 to 2.00m OD. The main alignment of ditches here ran due east-west and north-south.
- 3.4.31 The part of the settlement area within the limits of the excavation comprised two principal, small enclosures, Enclosures 4 and 5, constructed within the earlier field systems and enclosures. The ditches of both enclosures contained significant quantities of fired clay pedestals associated with salt working, Deverel-Rimbury ceramics and occasional loom weights and other fired clay objects. They also contained significant faunal assemblages. A large pit at the western edge of the settlement zone may have been used to source the clay used for making the fired clay objects. Six post hole structures have been identified, one was a clear six-post structure while the others appeared as scattered but distinct areas of post holes.

*Enclosure 4 (Fig. 22)*

- 3.4.32 Enclosure 4 was formed by L-shaped Ditch **510** which terminated at the presumed external bank of earlier Enclosure 1. The size of the enclosure is unknown as the ditch extended north beyond the edge of excavation.
- 3.4.33 The single largest finds assemblage from the site came from this feature and chiefly comprised pottery and fired clay artefacts. Five clay weights, a complete small fired clay ring, numerous briquetage container fragments and five pedestals (of four different types) were recovered along with 1.085kg of Deverel-Rimbury type pottery, 3.773kg of animal bone and 0.309kg of flint.
- 3.4.34 The majority of the finds were recovered from a charcoal-rich fill at the middle of the infilling sequence (marked ## in Table 3). The charcoal fill (517) appeared to have entered the ditch from inside the enclosure and was only present in the east-west arm of the ditch at the south of the enclosure where it gradually faded eastwards, the number of finds also decreasing significantly in accordance with this (Fig. 24, Sections 2, 14).
- 3.4.35 The burnt residue from a shelly fabric Deverel-Rimbury pottery sherd in context 517 was radiocarbon dated to 1530-1400 cal BC (SUERC-25573; 95.4 % probability) and a pig jaw from context 530 dated to 1410-1120 cal BC (SUERC-25577; 95% probability).
- 3.4.36 Within the enclosure were two post hole structures (Structures 1 and 2) and Pit **821** which contained a further fired clay object (Fig. 29).



## Assemblage Quantification

3.4.37 Table 3 details the assemblage by excavated segment with the first numbers in the sequence representing the upper fills. It should also be noted that the area between cuts **510** and **561** was fully excavated with finds allocated to the closest slot.

<b>Context</b>	<b>Animal Bone (kg)</b>	<b>Pottery (kg)</b>	<b>Fired Clay (kg)</b>	<b>Flint (kg)</b>
528	0.009	-	0.03	0.050
529	0.476	0.225	0.153	-
#530#	0.390	0.556	0.383	-
532	0.001	-	0.175	-
534	-	-	-	-
<b>Cut 533 (Total)</b>	<b>0.816</b>	<b>0.781</b>	<b>0.741</b>	<b>0.050</b>
519	-	-	-	-
518	0.239	0.016	-	0.003
#517#	0.785	0.207	1.005	0.005
515	0.392	0.040	-	-
514	-	0.121	-	-
513	-	-	-	-
511	-	-	-	-
<b>Cut 510 (Total)</b>	<b>1.416</b>	<b>0.384</b>	<b>1.005</b>	<b>0.008</b>
631	-	0.006	-	0.008
630	-	-	-	-
#629#	0.649	0.053	0.745	0.075
627	-	-	-	-
626	-	-	-	-
<b>Cut 625 (Total)</b>	<b>0.649</b>	<b>0.059</b>	<b>0.745</b>	<b>0.083</b>
566	-	-	-	-
565	0.038	-	-	0.066
#564#	0.361	-	-	0.057
562	-	-	-	-
<b>Cut 561 (Total)</b>	<b>0.399</b>	<b>0</b>	<b>0</b>	<b>0.123</b>
571	0.002	0.013	-	0.099
622	-	-	-	-
579	-	-	-	-
624	-	-	-	-
568	-	-	-	-
623	-	-	-	-
<b>Cut 567 (Total)</b>	<b>0.002</b>	<b>0</b>	<b>0</b>	<b>0.099</b>

Table 3: The finds assemblage from ditch 510, Enclosure 4

### *Enclosure 5 and Associated Features (Fig. 22)*

- 3.4.38 Enclosure 5 lay at the eastern limit of site and was formed by narrow curvilinear ditch **520**. Only the western side of the enclosure lay within the excavation. Four shallow post holes were identified within the enclosure aligned roughly north to south along the western limit of the enclosure. This enclosure ditch contained the second largest assemblage from the site including a salt working pedestal and loom weight, Deverel-Rimbury pottery (433g), animal bone (678g) and flint (96g). A cattle bone was radiocarbon dated to 1500-1310 cal BC (SUERC-25580 at 95.4% probability).

Ditch **520** was fully excavated and measured 0.54m to 0.75m wide and 0.21m to 0.25m deep and contained between one and three charcoal-rich fills. The finds came from throughout the ditch and fills.

Post hole group **1212** consisted of four post holes measuring between 0.32m to 0.4m wide and 0.1m to 0.18m deep. They contained a single fill and no finds.

### **Structures (Figs. 22- 29)**

#### *Structure 1*

- 3.4.39 A six post structure was identified within Enclosure 4. It was aligned north-northwest to south-southeast and measured 3.5m by 2.3m. The post holes were between 0.25m and 0.45m in diameter and 0.2m to 0.31m deep (Figs. 24, 29, 31). Charred barley grain from one of the post holes produced a radiocarbon date of 1450-1260 cal BC, at 95.4% probability).

#### *Structure 2*

- 3.4.40 A larger and more complex post hole structure was identified to the east of Structure 1. Comprising of a group of c.19 post holes measuring approximately 10m west-east by 8m north-south. The post holes varied in size from 0.35m to 0.45m and in depth up to 0.6m. Charred cereal grain from one of the post holes produced a radiocarbon date of 1560-1410 cal BC at 88.8% probability (SUERC-25579).

#### *Structure 3*

- 3.4.41 Eighteen post holes were recorded in the area of Structure 3 and it is possible that they represent more than one structure being constructed at this location over time. The post holes covered an area of approximately 7.3m west-east by 6.2m north-south, with the main central group forming a rough pentagon shape little more than 4m in diameter. The post holes varied in size from 0.3m to 0.5m and in depth up to 0.4m, with one post hole (1442) containing the complete base of a relatively large Deverel-Rimbury urn.

#### *Structure 4*

- 3.4.42 Structure 4 lay to the east of Enclosure 4 and was formed by approximately sixteen post holes, in an area approximately 6.5m in diameter (Fig. 30). The largest and deepest post holes occupied the northern and eastern parts of the structure and measured between 0.2 to 0.5m wide and 0.17m and 0.5m deep; at the south and west was an arc of smaller, shallower post holes. Charred cereal grain from one of the post holes produced a radiocarbon date of 1410-1190 cal BC at 91.5% probability (SUERC-25582).

### *Structure 5*

- 3.4.43 A group of ten post holes formed the south-western arc of a circle some 7.5m across in the main central area of the settlement immediately to the north of Structure 6. The post holes varied in size from 0.25m to 0.4m and in depth up to 0.25m.

### *Structure 6*

- 3.4.44 Approximately nineteen post holes lay immediately to the south in the area of a subsequent, large roundhouse gully - some of these post holes may relate to that later building. They formed an area roughly 6.3m north-south by 4m west-east and varied in size from 0.18m to 0.56m and in depth up to 0.35m.

### *Pits*

- 3.4.45 Pit **821** located to the west of Structure 1, measured 4.2m in diameter and was 1.55m deep. It had very steep sides and a slightly concave base and contained nine fills, most of which were mixed redeposited sandy silts. Towards the base of the feature there was a dark grey charcoal rich fill that contained the feature's single artefact, an unusual briquetage pedestal (Figs.29 and 36). This lower fill was similar to fill 517 in ditch **510** (Fig. 24, Section 131).
- 3.4.46 Pit **1475** was located inside Enclosure 1. It was 0.6m wide and 0.15m deep and contained a single fill which contained one sherd of Deverel-Rimbury type pottery.
- 3.4.47 Two pits lay immediately to the east of Structure 3 (1541 and 1542); they were sub-circular, 1.5m in diameter and 0.20m deep, with steep sides with flat bases. Their single fills, of clean fine, pale sandy silt, contained no finds.

### *Pit Group 2310*

- 3.4.48 Pit Group **2310** was located some 200m to the south-west of the main settlement area, in Field 3, and comprised two rectangular pits and three associated post holes. Although no dating evidence was recovered from the features the easternmost pit truncated the field system ditch. These pits appear to have had an 'industrial' function as they were full of charcoal, relatively frequent burnt stone and heated clay deposits. It is possible that they represent part of the salt making process or were used in crop processing. The truncated base of a small burnt stone mound, presumably waste from the process, was recorded within the top of the infilled ditch just to the south. Environmental samples indicated a small quantity of cereal and chaff within pit **2314**.

Pit **2314** was 2.35m long and 0.8m wide with its long axis on a north-west to south-east axis. It was 0.22m deep and contained eight fills. The fills varied between upper fills of silty sands with frequent burnt stone and charcoal to clay layers which appeared to represent a broken up clay lining. The nature of the clay deposits may suggest that the pit may have been cleaned out or disturbed.

Pit **2391** was 1.9m long and 0.85m wide with its long axis on a north-east to south-west axis. It was 0.17m deep and contained four fills which were very similar in character to pit **2314** including upper burnt deposits and mixed clay layers.

Post hole **2420** located to the east of **2314** was 0.18m in diameter, 0.1m deep and contained a single fill with charcoal and burnt stone.

Post hole **2437** located to the west of **2314** was 0.3m in diameter, 0.12m deep and contained a single fill similar to above.

Post hole **2439** located to the north of **2314** was 0.25m in diameter, 0.1m deep and contained a single fill similar to above.

#### *Pit Group 2609* (Fig. 22)

3.4.49 Pit Group **2609** was located to the south of **2310** also on the west side of the double-ditched boundary in Field 3. The group consisted of four pits and a post hole most of which contained significant quantities of charcoal. The pits were similar in size and measured between 0.58m and 0.75m in diameter and between 0.23 and 0.35m deep. Pit **2610** contained an assemblage of 67 sherds (490g) of Deverel-Rimbury pottery, the second largest assemblage on site, and a single fired clay object.

3.4.50 Environmental remains from the pits contained significant numbers of cereal grains including oats (*Avena* sp), spelt wheat (*Triticum spelta*) and emmer wheat (*Triticum cf dicoccum*). The lack of chaff suggests that the material represented fully processed grain.

Pit **2610** was 0.75m in diameter and 0.28m deep. It contained three fills of which the secondary fill, a dark grey silty clay contained the large finds assemblage. The basal fill contained a small quantity of animal bone and fired clay.

Pit **2638** was 0.58m in diameter and 0.35m deep. It contained two charcoal rich fills with heated clay inclusions. Both fills contained one sherd of Deverel-Rimbury pottery and up to 44g of fired clay.

Pit **2644** was 0.55m in diameter and 0.25m deep. It contained three fills of which the secondary and tertiary fill were charcoal rich. No finds were recovered from this feature.

Pit **2653** was 0.73m in diameter and 0.23m deep. It contained four fills of which all were charcoal rich. The primary fill contained a very high proportion of charcoal with moderate burnt clay inclusions which may suggest burning *in situ*. No finds were recovered from this feature.

Post hole **2640** was 0.18m in diameter and 0.19m deep. It contained a single charcoal rich fill but no finds.

#### *Layer 857*

3.4.51 Layer **857** was located towards the south-eastern corner of the settlement area. It formed a rectangular shape measuring approximately 20m in length by 7m wide and overlay ditch **923**. The layer was approximately 0.16m thick and was a dark brownish grey silty sand with occasional gravel, charcoal and burnt stone. Most significantly this layer contained 137 sherds (1kg) of Deverel-Rimbury type pottery and 5 sherds (40g) of other Bronze Age pottery.

3.4.52 Ditch **1149** was a short section of ditch located to the west of ditch 923 and to the south of Well **660**, immediately to the west of Layer **857**. It measured c. 3m in length and 0.8m wide. It was V-shaped in profile, measured 0.7m deep and contained three to four fills. One sherd of Bronze Age pottery was recovered from the central fill and a second sherd of potentially Late Bronze Age pottery was found within the basal fill, though the sherd weighed only 3g and its attribution is not certain. Two flints and a small quantity of animal bone were also recovered.

### 3.5 Later Bronze Age to Post-Medieval

#### *Peat Development (Fig. 31)*

- 3.5.1 Peat growth along the fen edge would have been ongoing throughout prehistory, right up until the early post-medieval period, depending only on where the 'fen-edge' was located at any time. The Middle Bronze Age ditches at Brigg's Farm appeared to respect an edge at c. 1m OD, at least an edge to the enclosed farmland, though this also coincides with the edge of excavation.
- 3.5.2 The upper fills of the Middle Bronze Age ditches located below approximately 1.4m OD, and those of the wells across the entire site were formed of peat; there were, however, a few notable exceptions.
- 3.5.3 Well 5 was located at approximately 1.4m OD but contained no peat deposits, being silt-filled to the surface, whilst Wells 4, 6 and 7, all in the same area contained upper fills of peat measuring up to 0.45m thick.
- 3.5.4 All other wells including those up to 1.75m OD contained thick deposits of peat and these, the three wells in the settlement area, were the only features to contain peat deposits in the northern part of the site. There were two finds of post-medieval clay pipes and pottery in the upper levels of these wells showing the intrusive nature of modern material where the peat cover was denuded and frequently ploughed.
- 3.5.5 Neither of the large, presumably Mid/Late Iron Age, ring gullies at c. 1.75m OD either cut through or contained peaty soils.
- 3.5.6 All of the post-medieval agricultural features (see below) held a single fill of peat, presumably directly redeposited to replace the silts and gravels excavated from within them.

#### *Iron Age Reoccupation (Fig. 30)*

- 3.5.7 Two large roundhouses with deep drip gullies would appear to be middle or later Iron Age in form but can be given no definitive date. Roundhouse 1 lay within Enclosure 1 (truncating Enclosure 2) with Roundhouse 2 at the centre of the area to the east. Both features were 100% excavated but neither contained a datable finds assemblage and the charred organics from sampling was sparse and appeared to be residual in nature meaning that it was not radiocarbon dated.

#### *Roundhouse 1*

- 3.5.8 Roundhouse 1 (**1331**) was formed by a circular drip gully with an entrance to the south-east which measured 1.58m across. The gully was between 0.55m and 0.8m wide and between 0.2 and 0.46m deep. The internal diameter was 8.5m. The drip gully contained between one and three fills with the greatest number of fills located close to the entrance, with a single fill at the back of the roundhouse. A relatively charcoal-rich middle fill was found in the first 2m of the gully to both sides of the entrance which held an assemblage of charred plant remains identical to that of the earlier gully of Enclosure 2 truncated by the ring gully. The charcoal fill was also identified on the eastern side of the gully where it was observed as the upper fill in this location, although this may have been due to truncation of a tertiary fill. A small number of finds were recovered from the ring gully, concentrated close to the entrance but spread between the three fills. The only pottery recovered from the feature was one sherd (4g) of potentially Late Bronze Age pottery from upper fill 1302 in the southern terminal, but

a small quantity of fired clay, including a pedestal base and sherds of evaporation pans representing briquetage identical to that recovered from the Middle Bronze Age features. This material was recovered from the primary and secondary fills of this terminal along with the primary fill of **1309** and the secondary fill of **1326**. One Early Bronze Age flint and a single Bronze Age core were also found in the southern terminal (**1305**). No animal bone was recovered from this feature.

- 3.5.9 Seven post holes and a pit were located within the ring gully and two further pits were located on the outside to the east. These features could not be dated as being clearly contemporary with the ring gully, however, evidence based on the stratigraphy and location on plan suggest they may be.
- 3.5.10 The post holes (contexts 1289 – 1301), were all of a similar size and circular in shape measuring between 0.21m to 0.39m in diameter and 0.09m to 0.11m deep. They were all filled with slight variations of brown/grey sandy silt with occasional charcoal flecks. No finds were recovered from these features.

Pit **1265** was 4.3m long, 2m wide and 0.55m deep. It contained five silty sand fills that varied between light grey and orangey grey. This pit clearly truncated Enclosure 2.

Pit **1348** was located on the eastern side of the ring gully. It was 0.9m long, 0.56m wide and 0.29m deep and contained a single fill from which no finds were recovered.

Pt **1363** was located to the north of **1348**. It was 0.86m in diameter and 0.36m deep. It contained three fills and no finds.

#### *Roundhouse 2 and associated features (Fig. 30)*

- 3.5.11 Roundhouse 2 (**1010**) was formed by a circular drip gully with at least six associated post holes forming an internal structure.
- 3.5.12 The entrance, formed by opposing terminals, was east facing and measured 1.8m across. The gully was between 0.43m to 1.46m wide and 0.16m to 0.46m deep and was at its widest at the back of the roundhouse. The internal diameter was similar to Roundhouse 1 and measured 8.9m. The gully contained between one and two fills which occurred (unlike Roundhouse 1) in an irregular pattern around the gully; both terminals contained a single fill. Similarly to Roundhouse 1 a more charcoal-rich fill was present in the terminals and close to the entrance and this was also where the very small concentration of finds were found. A small quantity of Deverel-Rimbury pottery was found in the upper fill of **1016** along with 1g of fired clay. Fired clay was also recovered from **1012** and **1014**.
- 3.5.13 At least six post holes formed the internal structure of the roundhouse. Four large post holes (**1081**, **1091**, **1093**, **1104**) and two slightly smaller ones (**1102** and **1106**) forming a rectangular 'porch' were located in the ring gully at the entrance, the porch measured 1.9m from east to west and 1.6m from north to south. The large post holes were between 0.42m to 0.65m in diameter and 0.16m to 0.32m deep. They contained a single fill of light to mid brownish grey sandy silt with rare or no charcoal. The two smaller post holes were 0.32m to 0.34m wide and 0.13m to 0.23m deep. No finds were recovered from any of the post holes.
- 3.5.14 Sixteen further post holes varying in size and depth were also located within the gully, clustered slightly towards the north. These post holes clearly represented more than one phase and/or structure as the group continued beyond the limit of the ring gully. It is thought that many of these post holes belong to the Middle Bronze Age phase as

Structure 6, it is possible however that some may form part of the internal structure of Roundhouse 2.

### ***Post-Medieval Agricultural Features (Fig. 32)***

- 3.5.15 A large number of post-medieval agricultural features, locally known as claying ditches or marl ditches, were found across the site. The ditches were approximately 0.4m to 0.7m wide and 0.4m deep (where excavated) with vertical sides and a flat base and ran in parallel lines approximately 10m apart. There were three separate alignments (north-east to south-west, north to south and east to west) separating the site into three large fields from north to south.
- 3.5.16 The ditches had been excavated using different methods and in clearly different phases, particularly noticeable in the central field. The irregular segmented ditches had been excavated by hand whilst the regular, continuous ditches may have been dug using a steam plough.
- 3.5.17 The ditches had been dug to improve the drainage and mineral content of the peaty soil and help reduce soil loss caused by the drying and constant ploughing of the pure peat soils above.

## **3.6 Finds Summary**

### ***Lithics (Appendix A.1)***

- 3.6.1 A total of 363 pieces of struck flint and 74g of unworked burnt flint fragments were recovered from the site (Fig.33). One hundred and twenty five struck pieces were present in pits and funerary contexts dating to between the Early Neolithic and Early Bronze Age. A further 121 were recovered from the settlement features, enclosures and field systems relating to the Middle Bronze Age activity, with the remainder coming from unstratified surface deposits and undated features.
- 3.6.2 Flintwork of Early Neolithic date was recovered in small quantities from a number of pits and is also well represented amongst the surface collected material. The material from the pits appears to represent the deposition of selected pieces, mostly decortication flakes and retouched implements but with an absence of cores, gathered from larger accumulations, possibly midden-like structures. The flintwork from is manufactured from both locally occurring pebbles and imported nodular flint, with the latter possibly being brought to the site in the form of ready-made blades, flakes and tools.
- 3.6.3 Both local and imported flint continues to be used by the Peterborough Ware users at the site and they also maintain similar patterns of deposition.
- 3.6.4 The patterns of flint use and discard change significantly during the Middle Bronze Age. This flintwork can only be described as crudely produced. It was recovered in low quantities scattered amongst the contemporary settlements and field-systems and appears to reflect an opportunistic use of flint, undertaken as and when a task required, used for the specific purpose and deposited soon after completion with little formality.

### ***Pottery (Appendix A.2)***

- 3.6.5 The excavation produced 669 sherds of prehistoric pottery weighing 5285g (MSW 7.9g) as well as the refitting remains of a 'complete' *in situ* urn (Fig.34). Fragments of Middle Bronze Age Deverel-Rimbury vessels made up the bulk of the assemblage and these came mostly from either enclosure- or pit-related (settlement) contexts. The second

largest component of the assemblage was Collared Urn and almost all of this type of pottery came from pits. The next largest elements were Beaker and Mildenhall Wares.

- 3.6.6 The Deverel-Rimbury pottery represents the most important component of the Brigg's Farm prehistoric assemblage. The scale and domestic character of the material alone make it stand out but equally significant is the context of the assemblage. The 2nd millennium BC field system sites of south Cambridgeshire and the Flag Fen basin have to date produced comparatively little Deverel-Rimbury pottery outside of cemetery contexts compared to the ever increasing Deverel-Rimbury assemblages being recorded to the immediate north at sites such as Langtoft and West Deeping.

#### ***Briquetage (Appendix A.3)***

- 3.6.7 A small but nationally significant assemblage of briquetage (211 pieces, 4182g) was recovered from the Middle Bronze Age settlement features at Brigg's Farm. Two special aspects of this assemblage are the range of fabrics used to make the briquetage and the variety of pedestal support forms identified. A total of 107 container sherds (895g), 29 pieces of complete or broken pedestal supports (2248g), 15 fragments of hearth flooring (549g) and 60 undiagnostic or miscellaneous pieces were recorded (Figs. 35-36).
- 3.6.8 One of the most unusual aspects of the Brigg's Farm assemblage is that the pedestals are not all typical Bronze Age Fenland types. In addition, the use of organic or vegetable matter to temper the coarse sandy clays is also not a Bronze Age Fenland method of manufacturing briquetage containers and pedestals. These two things in particular may be explained simply as individual, creative inventions of a practical nature by the saltmakers to solve the problems of container manufacture and supportive objects to conduct the activity at hand, evaporation of brine. The range of pedestal forms strongly suggests that experimentation was taking place. Other Bronze Age assemblages have repeated examples of two or three types of pedestal but at Brigg's Farm, it seems that many different hands were involved in the salt-making process.

#### ***Fired Clay Objects and Other Material (Appendix A.4)***

##### *Clay weights*

- 3.6.9 Fragments from at least ten and possibly 12 clay weights (42 pieces; 1565g) were identified amongst the fired clay material from 11 contexts in eight features. The majority of weights could have been interpreted as briquetage pedestal fragments but for their axial perforations. They are made from the same fabrics and many display salt bleaching on the exterior surface (Fig.37).

##### *Clay ring*

- 3.6.10 A complete, small fired clay ring measuring between 44-56mm across in diameter and 20-26mm thick was recovered from ditch 510. It is highly likely that this object had been a clay-firing test piece to determine whether the clay selected was suitable for use in making briquetage and clay weights.

##### *Other fired clay material*

- 3.6.11 A total of 98 pieces (407 grammes) of fired clay material which could not be assigned to either briquetage or clay objects.



### 3.7 Environmental Summary

#### **Wood (Appendix A.5)**

- 3.7.1 Two log ladders and a multiple jointed timber were recovered from three separate Middle Bronze Age wells (Fig.38). The log ladder (W1) from Well 5 is hazel (*Corylus sp.*) and measures 1953mm long. The upper end of the ladder has decayed away, suggesting that it was originally somewhat longer. There are six, fairly evenly spaced steps cut into the front side of the ladder and two side-branches presumably left in place to act as hand-holds. This ladder represents the greatest number of steps recorded to date from an English, prehistoric log ladder. The log ladder (W7) from Well 8 has been identified as Maple (*Acer sp.*). The ladder is 1215mm long and has only a single surviving step as rest of the ladder had decayed away.
- 3.7.2 The heavily jointed timber (W14) from Well 3 measures 1770mm and has one joint, two complete rectangular mortise holes and a broken mortise suggesting that the timber was originally longer. The timber and the joints are of a size and complexity that suggest this timber originally formed part of a stout, substantial structure. However, it is unknown what type of structure it may originally have formed an element of. Based on current reconstructions, it is not a recognisable part of a roundhouse. Indeed, the alignment of the joints are designed to tie the timber to other structural elements perpendicular to the orientation of the beam, suggesting a square cornered structure.

#### **The Human Bone (Appendix B.1)**

- 3.7.3 Five Early Bronze Age cremation burials were identified across the site and a further two contexts contained unburnt bone, one the remains of an inhumation burial. Three of the features, all unurned burials, were located beneath (2067), or cutting into (2040, 2710) a small barrow mound 2010 at the end of a slight ridge extending toward the Fen edge. The cut edges of two of these burials (2067, 2710) were a bright orange-pink colour suggestive of *in situ* burning, probably a *bustum* style burial where a pyre is built above a pit which itself becomes the repository for the cremated remains.

Cremation	Location	Age/sex
1500	Isolated	adult
2040	Barrow	Older sub adult/ young adult and juvenile
2067	Barrow	Adult female and juvenile (8-9±24 mos)
2710	Barrow	Adult male
3320	Isolated	Adult ? male

Table 4: Age/Sex of individuals from the cremations

- 3.7.4 The other burials were seemingly isolated with a truncated, unurned burial on higher ground to the north (1500), and an urned cremation within a large Collared Urn to the south-west at the end of a second ridge (3320).

#### **Faunal Remains (Appendix B.2)**

- 3.7.5 Twenty-four kilograms of faunal material was recovered from the Middle Bronze Age settlement. Cattle are most prevalent taxon along with smaller numbers of sheep/goat remains. Small numbers of pig remains were recovered along with horse and red deer. The distribution of the domestic mammal assemblage is similar to contemporary sites.
- 3.7.6 This is a relatively small assemblage which is nonetheless interesting due to the large number of cattle remains present. The body part distribution and ageing data suggests

cattle were largely kept for beef, with few animals surviving into the “mature adult” stage. There is little evidence for on site breeding and it appears live animals or at least complete carcasses were processed on site rather than being imported from elsewhere. In contrast virtually no meat bearing elements were recovered from the sheep/goat and pig assemblages, these instead consisting largely of mandibles and lower limb elements. This suggests processing waste, with butchery taking place elsewhere on the site. There is some evidence for on site breeding of sheep, or at the very least the presence of lambs.

### ***The Plant Remains (Appendix B.3 and B.4)***

- 3.7.7 The samples came from Collared Urn pits, a cremation, wells and Middle Bronze Age settlement features.
- 3.7.8 The abundant flax seeds in the Collared Urn pits (**816**), along with abundant tall growing weeds such as henbane, hemlock, garlic-mustard and cleavers, may represent the by-product of the cultivation of flax for fibre. The material, however is likely to represent the remains from more than one activity or burning event, and, given the number of edible and/or medicinal uses of many of the plants represented, may not simply represent casual waste.
- 3.7.9 The well furthest away from the settlement contained a flora dominated by weeds of arable/cultivated ground, with only slight evidence for scrub/hedgerows. The wells closer to the settlement area, however, are dominated by edible foodstuff such as blackberries and elder berries, which were likely to have been gathered from nearby hedgerows/scrub.
- 3.7.10 Evidence for cereal usage and cultivation is very much underpinned by the charred evidence from the site, which provides evidence for the cultivation of a range of crops including emmer, spelt and possible bread wheat, limited oat, and six-row barley including the native variety. The cereal remains are consistent with other Bronze Age sites in Britain.

### ***The Pollen (Appendix B.5)***

- 3.7.11 The three monoliths were analysed from Middle Bronze Age Wells **1**, **7** and **12** (Figs.39 and 40). All three show that the area was open, with very few trees and with evidence of land-use with mixed arable and animal husbandry.
- 3.7.12 The earliest well (Well 12) indicates that this site on the southern boundary of the excavated area, was either in or very close to wet marsh/fen and that, although the well was surrounded by wet grassland probably used for pasture, there was already some cereal growth with its associated weed flora nearby, perhaps on slightly higher drier ground to the north. Evidence of hedgerows is minimal.
- 3.7.13 Well 1 was situated in the settlement area excavated in the north-east corner of the excavation. Pollen assemblages suggest that the local area was surrounded by grassland/pasture with ruderal communities (waste ground and pathways). There is some evidence to suggest that this pit did not have a natural infill, but material was ‘dumped’ into the well which probably was used as a human latrine. Cereals and their associated weeds were growing near by, together with hedgerows.
- 3.7.14 Well 7 demonstrates that the site was surrounded by grassland/pasture, but with higher tree and shrub values than in the other two monoliths. This may reflect the growth of woodland on higher ground to the east of the excavated area. However, there is evidence for cereal growth and arable field weeds locally. There is some suggestion of

loss of woodland, possibly from clearance, towards the top of the sequence, with a concomitant increase in herb taxa. High values of taxa associated with hedgerows suggest their increasing growth, and are especially prevalent due to the position of this well on a boundary where a hedgerow was likely to have developed.

## 4 DISCUSSION AND CONCLUSIONS

### 4.1 Neolithic Occupation

#### ***Neolithic Occupation (c. 4000-2500 BC)***

- 4.1.1 Evidence for Neolithic occupation within the area was limited to a small number of pits, a general, though slight and inconsistent, flint scatter, and a number of tree throws; a few of the tree throws contained finds assemblages sufficient to suggest that they were contemporary with the felling of the trees. All the pits, and all the datable contemporary tree throws, were on the ridge at the north of the site at c. 2m OD; a surface scatter of struck flint was also recorded here, with a second on the promontory in the southern third of the site at c. 1.50m. The utilised tree throws may suggest clearance continuing on the higher slopes throughout the Neolithic.

#### ***Early Bronze Age Occupation (c. 2500-1550 BC)***

- 4.1.2 Similarly concentrated on the higher ground at c. 2m OD, the small groups of Beaker and Collared Urn pits provide stronger evidence for early 'settlement' and farming activity within the landscape. Of note is the presence of large quantities of flax seeds within the Collared Urn pit group, along with abundant weed seeds of rough/waste and arable cultivated ground, suggesting the area was already under a mixed farming regime by the beginning of the 3rd millennium BC (dated to 2040-1870 cal BC; GU-19442, at 88% confidence). The lack of chaff in these assemblages indicates that they do not represent crop processing waste, while the number of species present with edible uses (e.g. fat-hen, sheep's sorrel, common chickweed, parsley piert, garlic-mustard) may suggest they represent locally gathered and cultivated foodstuffs. It has also been noted that the assemblage includes many plants with a long history of medicinal use such as sheep's sorrel, parsley piert, cleavers, garlic mustard, henbane and black nightshade (Appendix B.4).
- 4.1.3 Flax seed was also recovered from Early Bronze Age domestic contexts and a cremation pit at Podge Hole to the north-east of Brigg's Farm, though it is suggested that the flax from the cremation may have originally come from a domestic context as it also contained an assemblage of pottery, bone and possible hearth material (Martin *et al* 2009, 96).
- 4.1.4 To the west, at Edgerley Drain Road (Fengate), environmental remains were recovered from features spanning the Early Neolithic to Late Bronze Age; however, similarly to Brigg's Farm, only the Collared Urn pits contained flax seed. It was noted that the length of the flax seed was consistent with the cultivated variety of flax and that due to their intact nature it is thought that they were used for fibre rather than oil extraction. Also, the presence of other plants within the assemblage indicated that the flax was harvested for its stems (Simmons and De Vareilles 2010, 171).
- 4.1.5 It is possible that the Collared Urn pits at Brigg's Farm also marked an early boundary, perhaps simply the gap between two fields; the subsequent Middle Bronze Age field system truncated the pit group, perhaps suggesting that there was an enduring marker at this location during the early to Middle Bronze Age. This is an idea first proposed by Pryor at Fengate and which has been observed elsewhere, such as at Eye Quarry (Yates 2007, 90).

### **Funerary Practice/Monuments**

- 4.1.6 The small barrow at Brigg's Farm is the most westerly is a line of four which have been identified from aerial photographs (Fig.1). Following the contour, they extend west to east at approximately 1.5m OD and lie 300m north of the mid/late Bronze Age Fen edge (0 to 0.5m OD). The barrow lay at the western end of a promontory overlooking a small inlet where the Fen-edge curves around to the north-east continuing towards the modern village of Eye. It lay at a pivotal point in the landscape and there is a suggestion from aerial photographs that more barrows follow the curve of the land to the north-west; located 750m to the north-west, three further barrows lie between 100 to 150m away from the Fen-edge. The small, isolated unurned cremation (**1500**) located towards the north-western corner of site also falls into this line.
- 4.1.7 The large urned cremation (**3301**) to the south-west of the barrow also sits in a strategic position. Sited on the southern-most lip of the small inlet it could originally have had a small mound placed over it, which has subsequently been plough-truncated.
- 4.1.8 The relationship between the higher ground and the Bronze Age Fen-edge was clearly important in the placement of these monuments; though it should be noted that at the time of their construction the Fen edge would have been significantly further to the south and west. Four barrows which were excavated at Pode Hole quarry all conform to this pattern and extend in a line above their respective Fen-edge contour, in this case in a north-east to south-westerly direction (Daniel 2009, fig 3.3, pp13). At King's Dyke, on the opposite side of the Flag Fen embayment to Brigg's Farm, two round barrows were constructed on the high ground along the east-west peninsular, their placement also influenced by the importance of the location during the Neolithic period, where a pit circle and henge had been constructed, suggesting that these places had been of importance for hundreds of years prior to the Early Bronze Age, long before the Fen edge had reached these areas (Gibson and Knight 2002).
- 4.1.9 Samples were submitted for radiocarbon dating from the early inhumation and all three of the barrow cremations, however only two of these samples were successful. The inhumation and the final cremation failed, unfortunately, as these would have provided the entire date range in which the burial site was in use. The first cremation (immediately pre-barrow mound) was dated to 1980 – 1750 cal BC (GU-19446, at 95.4% confidence) and the second (post the construction of the barrow mound), was dated to 1950-1740 cal BC (GU-19449, at 95.4% confidence). It is likely that these two burials took place within a relatively short space of time; they were very similar, with both displaying the characteristics of *bustum*-type, *in-situ* burials (Dodwell, Appendix B.1). Both pits had highly-fired, burnt orange-red upper edges and the human remains, individually recorded bone by bone, were broadly arranged within the fills in anatomical position. The primary cremation, of an adult female, had been placed on the pyre on her right side, tightly crouched and oriented south-west to north-east, the bones of the child buried with her were too small to have been recognised and recorded *in situ*; the second cremation, an adult male, had again been placed on the pyre tightly crouched on his right side, but oriented south-east to north-west. The similarities in burial rite, along with over-lapping radiocarbon date ranges, may imply that these people were buried over a relatively short period of time, perhaps a matter of a few years, and may suggest that this was a family group. The third cremation contained the bones of a young adult and a second juvenile; these had been cremated beyond the barrow, their bones gathered and placed within the burial pit; the initial inhumation burial, the 'founder' of the small cemetery, was of an older adult but could not be sexed or dated.

- 4.1.10 There are many variations on the style and appearance of local barrows which may be based on regional preferences and on the 'fashions' prevalent in the period over which the monuments were constructed and used. Modern truncation from ploughing has significantly affected the archaeological record but similarities can still be observed from examples at Pode Hole and King's Dyke. Three of the Pode Hole barrows were very similar in their construction and appearance to the Brigg's Farm example, in particular the very shallow single surrounding ditch and the poor preservation/absence of true mound material. The King's Dyke barrows show far more complex construction but have similarities in the order in which the inhumation and cremations were placed beneath and within them. Both barrows contained a central inhumation at the beginning of the sequence with the most complex barrow containing cremations which had been inserted into the top of the mound.

## 4.2 Middle Bronze Age Field System (c. 1550 – 1450 BC)

- 4.2.1 The field system at Brigg's Farm is characteristic of Middle Bronze Age activity identified most famously in the Peterborough Fenland basin. However, it is a pattern which has become more widely recognised across the region and beyond in the past decade with recent large-scale excavations such as those along the Ouse valley (Evans and Knight 2000), in the Thames valley (Lewis *et. al.* 2010) on the Norfolk Broads (Gilmour and Mortimer, 2011) and in South Cambridgeshire (Phillips and Mortimer forthcoming) and with the publication of Yates' (2007) work on the Field Systems of Southern England. Despite the increasing number of sites recorded, and published, the continued lack of material culture or environmental remains recovered from the earliest phases of these ditches has meant that the field systems frequently elude precise dating. As more of these sites are identified and the radiocarbon dating of features which cut, and are cut by, the field system ditches becomes more commonplace, the date range for the construction of the field systems will become tighter. Ongoing work on waterlogged field systems at Clay Farm in Cambridge (Phillips and Mortimer forthcoming) is showing the potential of chance inclusions such as elder pips at the bases of the ditches to accurately date their construction, though these sites are rare.
- 4.2.2 At Brigg's Farm, as at many other sites, direct stratigraphic relationships between datable features and early field system ditches were rare. The southern boundary ditch of Field 1 truncated a group of 'domestic' Collared Urn pits which returned a date of 2040 to 1870 cal BC (SUERC-25587, at 88% confidence) and elsewhere was directly cut by three dated wells (Wells 1, 3 and 8) dating from between 1450 to 1110 cal BC (SUERC-25588, GU-19436, SUERC-25592). These dates leave a considerable gap, a minimum of 480 years. In order to ascertain both the date at which the field systems were constructed and answer questions of longevity a broader range of evidence will need to be examined. A potentially pre-field system well, the pre-settlement enclosures and the presence of significant Middle Bronze Age settlement activity provides ample opportunity to establish a more accurate date range.
- 4.2.3 Of the twelve wells at Brigg's Farm, seven were radiocarbon dated and these were all of broadly the same date with the notable exception of Well 12 at the south of the site which was radiocarbon dated to 1680-1490 cal BC (SUERC-25597, 91.9% confidence; 1615-1515 cal BC at 68.2%), significantly earlier than the others. This well could either date to pre-enclosure activity or to the time of the establishment of the field system; it is the only well that does not have a direct, truncating or abutting, relationship with either

a field system ditch or the area to the side of the ditch where the bank is presumed to have been. This well is situated 20m back from the nearest ditch, whereas it appears that all other wells were cut in relation to the field system boundaries. Well 12 was isolated, and the assumption here is that it was in existence prior to the field system construction. If this were the case it would bring forward the earliest date for the establishment of the field systems to between c. 1615-1515 (at 68.2%).

- 4.2.4 Pollen analysis from the early well (Well 12) provides further evidence for its place prior to or within the early establishment of the field system. Unsurprisingly, bearing in mind the lowland position of this well, there were significant numbers of wet marsh and Fenland species and there was evidence for cereals and their associated weed species growing nearby, as well as for grassland pasture. However, of note is the lack of hedgerow taxa in the pollen record, normally associated with the vegetation growing on top of the banks and which is present in the majority of the other wells, suggesting that this feature may have become infilled prior to the establishment of a banked and hedged field system.
- 4.2.5 The primary function of the field system appears to have been to create a series of boundaries to either enclose livestock or to denote areas where crops could be planted and therefore to keep livestock out. However this does not explain the circumstances that necessitated the desire to carve up what had been since clearance an open landscape, into tightly controlled fields and enclosures, and not only at Brigg's Farm but across large parts of southern Britain. This period marks the beginnings of the settled, permanent, farming way of life that becomes clearer in the archaeological record through the later Bronze Age and into the Iron Age. There is very little evidence for long term settlement prior to the middle of the 2nd millennium and the change from a more nomadic and seasonally-shifting existence to one of direct and permanent occupation of a single area must have taken many centuries, despite the apparent speed with which the field systems were constructed across such a vast area. It seems likely that this is part of the problem that archaeologists have had in locating settlement sites that are clearly contemporary with the construction of the field systems - it is very much a question of which came first - the field system or the permanent settlement? The question as to why the field systems were constructed is more complex still; population changes and environmental stresses are known to cause dramatic changes to communities. In low-lying areas such as the Cambridgeshire Fens it is clear that water levels had been rising before this period, and that this may have accelerated towards the middle of the 2nd millennium. If large areas of valuable low-lying grazing land were becoming inundated, this may have been the catalyst for communities to divide the higher dryer land amongst them, perhaps within family groups, marking these clearly to avoid tensions and disagreements over 'ownership'.
- 4.2.6 The establishment of the field systems appears to pre-date the creation of clearly identifiable settlement areas, at Brigg's Farm and at other recently excavated sites. It appears to represent the staking of a claim upon the land prior to its eventual direct occupation - it is generally true that the earlier elements within the field system are slighter, and more segment-dug, with the later ones becoming larger, deeper and more ditch-like, perhaps as the labour to dig them became more readily available on site. The larger elements within the field systems, particularly the deep, secondary Enclosure 1, may also have been regarded as a form of status symbol, demonstrating the ability to mobilise significant numbers of people to carry out the task.
- 4.2.7 There was practically no evidence for any of the ditches having been recut or cleaned out, implying that it would have been the creation of the upcast bank from the original

ditch excavation which was the main purpose of the ditch. Most of the ditches show evidence of having been dug in segments, with in many cases the two termini barely touching, indicating that drainage was not the primary consideration. The segments varied in length but much of that variation was simply due to the invisibility of all the segments - it is only those that are most obvious that got recorded - and the average length of well-recorded segments is around 8m. The digging of segments may have had some additional significance to the excavators, but it seems likely that the segment may simply represent the length of the bank that the digger could build, or was expected to build, in one go - presumably a day's work. Clearly, how many days a week were to be spent on ditch-digging would determine the speed at which the field systems could be created. The total length of the visible ditches recorded at Brigg's Farm was 1600m, suggesting that, at an average of 8m a day, one farmer would have taken 200 days to construct them; it is unlikely that more than a day a week could have been spared at busy times of the year, perhaps more in the winter. At one day's digging per week, a single farmer might have created these boundaries over four years, however, with help from family it would have taken far less time.

4.2.8 Although the original field system ditches appear not to have been maintained there is strong evidence that the field system was altered or modified as two separate and distinct layouts were clearly visible. This readjustment of the field system was most apparent in the northern part of the site where the axis of Field 1 lay directly east-west, whereas Fields 2 and 3 immediately to the south lie on a north-west to south-east axis. It seems unlikely that these two alignments, so close together, were part of the same coherent and original design; to the south of these the boundaries of Fields 6 and 7 used both these alignments, and towards the south of the site they began to take direct account of the topography as they neared the Fen edge. The reasons for the readjustment to the field system are unclear, however, in the north it may have been a precursor to the appearance of the large rectangular Enclosure 1. It is possible that the ditches most influenced by the topography were laid out first, those to the south of the site which arced around the 1m OD contour and the ditches radiating towards the Fen to the west which lay on an east-northeast and south-southwest axis.

4.2.9 The environmental evidence (pollen and waterlogged plant remains) from the wells along the ditched boundaries suggests that the banks had hedges planted along them, presumably initially to create a more impenetrable boundary. However, many of the trees and shrubs that were planted, and which would have colonised the banks by natural means, would also have been sources of food, drink and perhaps medicines. There is evidence within the wells, from both pollen and waterlogged remains, for bramble, elder, hazel, blackthorn, wild rose and bird cherry. In a substantially cleared landscape the hedges would have rapidly become important, convenient and extensive sources of foodstuffs for the community; they would also have attracted other 'resources' such as birds and mammals and the hedgerow margins would have become sources of edible and medicinal herbs.

### 4.3 Pre-Settlement Activity within the Field System (1500-1400 BC)

The communities or family groups who constructed the field systems, whilst clearly occupying and working on the land, remain near-invisible in the archaeological record. The dearth of artefacts and lack of environmental remains within the field system ditches at Brigg's Farm is a common phenomenon; the settlement sites, if they existed at the early stages of the field system's construction, have yet to be found. Dated Middle Bronze Age settlement sites are few in number and tend to post-date both the initial field systems and the subsequent enclosures where they exist; substantial



assemblages of Deverel-Rimbury ceramics and associated settlement debris, though rare, have so far mainly been found in the very upper fills of the ditches (Hutton 2008b; Phillips and Mortimer forthcoming).

- 4.3.1 However, two radiocarbon dates were produced from charred grain in the settlement area at Brigg's Farm that seem too early to represent material from the subsequent settlement phase (Fig. 23). The samples came from one of the post hole buildings within the settlement zone (Structure 2) and from the fill of a small ring enclosure (Enclosure 2) in the corner of Enclosure 1. They produced dates of 1560-1410 cal BC at 88.8% confidence (1515-1435 at 68.2%)(SUERC-25579) and 1530-1380 cal BC at 95.4% confidence (1500-1425 at 68.2%)(SUERC-25583). The latest this material could be is c. 1400 BC, and more realistically between 1500 and 1400 BC; apart from the early well (Well 12), these are the earliest Middle Bronze Age dates from the site. Both dates came from charred seeds, material which could easily have survived within fires, or dumps or spreads of material on the field surface to become incorporated within the later features as they infilled. The fill of Enclosure 2 contained a fair amount of charred material, but practically no contemporary artefacts; this material may provide evidence for activities taking place, perhaps crop processing, immediately after the construction of the field system, but prior to the construction of the enclosures.

#### **4.4 Early or Pre-Settlement Enclosures (c.1400-1300 BC)**

- 4.4.1 Following on from the later modifications to the field system the change in alignment to an east-west axis was cemented by the excavation of a large rectangular enclosure. The enclosure re-cut an earlier ditch (the only location on site where a re-cut of an earlier ditch was present) to form its southern boundary. This stratigraphic relationship was backed up by a radiocarbon date from one of a number of cattle skulls placed along the base of the re-cut close to the ditch terminal.
- 4.4.2 The construction of this enclosure differs in a number of ways from the field system ditches. It appears to have been dug as a single event rather than in segments (though the segments may simply be more difficult to observe), the northern and eastern sides of the enclosure were bounded by a large ditch, much larger than anything created during the establishment of the field system even taking into account potential differing levels of truncation. The ditch that formed the northern and eastern sides of the enclosure had its bank placed on the outside of the ditch. The southern side of the enclosure utilised an extant field system bank with its ditch recut at the south and a new ditch cut along its northern side. The relatively large dimensions of the enclosure, its narrow entrance and deep internal ditches could suggest that it was designed to corral livestock – presumably cattle, by far the dominant species for both Brigg's Farm but also more widely during this period. The presence of cattle heads placed along the eastern ditch terminus may also attest to the importance of cattle in particular in this location.
- 4.4.3 Pollen and environmental analysis alongside radiocarbon dating results suggest that both Wells 1 and 2 may have been associated with the activity in this enclosure, perhaps sequentially - Well 2 may be slightly earlier than Well 1. Both their radiocarbon dates lie within the approximate date range of the enclosure of 1400–1300 cal BC with Well 2 potentially nearer the beginning, Well 1 nearer the end. The pollen and environmental evidence from Well 1 points to open grassland or pasture and waste ground/pathways. Nitrogen loving species were present within the waterlogged plant remains suggesting increased manuring or the gathering of livestock around a waterhole; the entrance to the cattle enclosure would have been approximately 15m to

the west of Well 1. Both the pollen and environmental evidence suggest that the well did not fill up naturally but that material, possibly including cess, was dumped into the feature. This artificial infilling may also suggest that this well was going out of use by the time the later settlement area was becoming established.

- 4.4.4 If the cattle skulls from the basal fill of the terminal of the southern boundary ditch of Enclosure 1 represent the early period of the enclosure's use, and Well 2 to the east of the entranceway (which appears to respect the likely position of the enclosure's bank) is seen as broadly contemporary, an estimate for the date of the enclosure's early use might be obtained. The organic remains at the base of Well 2 produced a date of 1500-1300 BC at 95.4% or 1450-1320 at 68.2%, the cattle skulls a date of 1420-1200 at 95.4% or 1390-1260 at 68.2%. The date at the base of the well is earlier than that of the enclosure ditch, but the two deposits should be pretty much contemporary. Therefore, the construction and initial use of the enclosure would have taken place within the period between 1400 and 1300 BC. Well 1 to the east produced a date of 1450-1260 cal BC at 95.4% probability, or 1430-1360 at 68.2% (SUERC-25588).
- 4.4.5 The secondary nature of these large rectangular enclosures within Middle Bronze Age field systems is a phenomenon becoming more widely recognised across the region, with examples observed at locally at Tower's Fen (Mudd and pears 2008) and Langtoft Glebe (Hutton 2008b). Further afield examples have recently been identified at Ormesby, Norfolk (Gilmour and Mortimer 2011) and Clay Farm, Cambridgeshire (Phillips and Mortimer forthcoming).
- 4.4.6 In all these sites the Enclosures appear to post-date the initial field systems but to pre-date the main phase of settlement, though they differ in morphology across the sites. They appear to represent a major change in the way the field systems - or at least these parts of the field systems - are being used, and they presage the beginnings of more permanent occupation within or adjacent to them. They may be one aspect of the response to the encroachment of the wet fen; all these sites with the exception of Clay Farm, are around the 1 to 2 m OD contour. These areas may have been turning from arable to pasture land as the waters rose, with an increasing reliance on cattle at these levels while arable fields moved further up the slopes. It is also possible that these changes in land use and availability caused pressure on land and resources, and that it became necessary to keep cattle corralled and guarded overnight.
- 4.4.7 The two smaller enclosures (Enclosures 2 and 3) have currently been assigned to an early or pre-settlement phase; Enclosure 3 occupied an area well away from the main subsequent settlement zone, and Enclosure 2 was the only 'settlement' feature recorded within the large Enclosure 1 and it did not contain the same numbers or range of finds as the settlement area. There clearly has to be *occupation* before what is here being termed *settlement* and these enclosures may fit into this category. Both utilised earlier field system banks to create one or more sides of the enclosure. They were similar in their characteristics, the most obvious being their placement against earlier boundaries but also the curvilinear nature of the ditches, their comparative size and potential function. Both contained small and potentially residual finds and environmental assemblages. The radiocarbon date from charred barley in the Enclosure 2 ditch (1530-1380 cal BC at 95.4%) is too early to date activities contemporary with its use; the ditch clearly cut into the silted fills of the Enclosure 1 ditch, the dating of which has been estimated at c. 1400-1300 BC. The finds assemblage within the feature is also highly fragmented, like the charred material it too appears likely to have been residual, from an earlier occupation area surviving as surface material.

4.4.8 Although located on opposing sides of their respective fields (Enclosure 2 in the north-east corner and Enclosure 3 in the south-west) both would have been sheltered from the prevailing wind as Enclosure 2 would have been protected by the large southern bank of Enclosure 1. They are likely to have had external banks to fully maximise the available internal space and the entrances appear narrow and quite restricted. Livestock management might be one function for them, their location within large fields or enclosures could see them used for corralling small numbers of animals for breeding or separating for slaughter. While house enclosures or structural features do not always contain significant quantities of artefactual and ecofactual material (the Brigg's Farm iron Age roundhouses being a case in point) it is often an indicator of 'domestic' settlement activity. These enclosures contain very little material of this nature, and what they do contain could well be residual material (see above). Their internal areas are perhaps also a little small to hold a house or structure and neither held any evidence of post holes or beam slots.

#### **4.5 Middle Bronze Age settlement (1400-1250 BC)**

4.5.1 Middle Bronze Age settlement on the scale of that recorded at Brigg's Farm is rare both in the region and nationally. Regionally, only the settlement sites at Langtoft Glebe (Hutton 2008b), Clay Farm, Cambridge (Philips and Mortimer forthcoming) and Stansted Airport show similar levels of direct settlement, with enclosures, structures, wells and significant artefactual assemblages. Further afield the excavation at Heathrow Terminal 5 (Lewis *et al* 2010) has perhaps the most analogous suite of buildings (Fig. 25).

4.5.2 It is not known what proportion of the settlement area at Brigg's Farm was uncovered in the excavation, with just the western and perhaps the northern and southern limits recorded; the most easterly of the enclosures contained significant quantities of settlement material and clearly extended beyond the baulk, probably enclosing further structures. However, none of the settlement areas recorded thus far are large, probably representing small farm- or family-sized units, and, the area recorded here probably comprises the majority of the settlement. Analysis of the aerial photographs did not identify either the known activity within this area nor any cropmarks beyond, and cannot therefore be used to estimate the size of the area.

4.5.3 In the same way as setting the earlier field systems within a defined framework - did they take 5 or 150 years to construct? - it is unclear whether the settlement should be seen as an occupation zone that spans generations, with each successive generation building their own structures, or whether it was the work of a single generation with the next moving to a different site. The precise date and duration of the settlement is remains uncertain, limited as it is to a few radiocarbon dates which give it a fairly broad 'Middle Bronze Age' date. It will, however, be contained within the period 1400 to 1250 BC, perhaps running on slightly later if seen as a smaller but more enduring settlement.

4.5.4 Nine of the radiocarbon dates taken on the site come from within the settlement area, though four of these are not used here to date the settlement activity itself. Two are considered to be too early, giving dates in the 1500-1425 range (at 68.2% confidence) and which may be dating residual crop processing waste from earlier field system-related occupation (see above), while two others from the bases of Wells 1 and 2 produced dates around 1450-1350 (at 68.2%) but contained absolutely no contemporary artefactual material despite their proximity to settlement features.

4.5.5 Five dates were produced by the settlement activity: two from ditch 510, Enclosure 4 (pottery residue and pig bone), one from ditch 520, Enclosure 5 (cattle bone), one from

Structure 1 and one from Structure 4 (both charred plant remains). That produced by residues on an apparently non-residual sherd from the assemblage in ditch 510, again appears too early to date the settlement itself (1500-1435 BC at 68.2%), coming as it does from the assemblage within the upper fill of the enclosure ditch. In recent years samples from pottery residues have been producing dates anomalous dates, clearly 'wrong', either for their place of deposition or for the pottery itself (Peter Marshall pers. comm.); English Heritage are currently funding a research programme into the problem at Bristol University. It is also possible that the sherd from Brigg's Farm had become contaminated by the same material that produced the two potentially early occupation dates - the sherd being recovered from a location precisely between these two.

- 4.5.6 The four remaining samples produced dates across a considerable period, from 1460 to 1210 BC, with those from Enclosure 5 and Structure 1 earlier than those from Structure 4 and the Enclosure 4 ditch. However, if all these features are seen as contemporary they can be dated to the period 1400-1310 BC at 95.4% probability; if seen as immediately successive they can be dated to the period 1400 to 1250 BC. The quantity of material culture deposited within the settlement area, though large in comparison with most dated Middle Bronze Age sites, is in reality still very small, it would seem unlikely to represent a settlement span of any great length.
- 4.5.7 There are two types of structure within the settlement, a rectangular building (Structure 1), traditionally thought to represent a grain store, and the more amorphous collections of post holes that make up Structures 2 to 6. The amorphous post hole groups appear to be characteristic of Middle Bronze Age structures with comparable examples identified within the region at Langtoft-Glebe (Hutton 2008b), Fordham Bypass (Mortimer and Connor forthcoming), Ormesby St Michael (Gilmour and Mortimer 2011), and Clay Farm, Cambridge (Phillips and Mortimer forthcoming); further afield those excavated at Heathrow Terminal 5 (Lewis *et al* 2010) have produced perhaps the best comparative group.
- 4.5.8 The structures, or post hole groups, at Brigg's Farm are roughly similar in size, most commonly covering an area of around 10m in diameter, and they all have a broadly north-west to south-east axis. It is unclear whether all of the post holes would have been contemporary, forming permanent structures, or whether they are a result of more temporary structures perhaps erected in the same location on a seasonal basis. Many of the post holes however are relatively large and deep, holding posts of up to 0.30m in diameter, suggesting more permanent or semi-permanent buildings.
- 4.5.9 There is very little direct evidence for the function of the structures but it would seem reasonable that they represent a mixture of dwellings and agricultural/industrial buildings, based upon the material assemblage from site. A structural timber recovered from the base of Well 3 indicates that there was at least a semi-permanent building within the settlement area as the timber appeared to have evidence of light rot suggestive of a prolonged period of use prior to its deposition in the well (Appendix A.5). The timber was re-used, perhaps as a ladder to access the well, and it could be assumed that the structure it came from had gone out of use at the time of deposition; the timber survived to a length of nearly 1.8m but had clearly once been longer. Based on known reconstructions, the timber is not a recognisable part of a roundhouse; the alignment of the joints are designed to tie the timber to other structural elements perpendicular to the orientation of the beam, suggesting a square cornered structure (Appendix A5). Structure 1 was a rectangular structure of approximately 3.5 x 2.3m in size, the radiocarbon date produced from the fill of one of its post holes (SUERC-25581) is very similar to that produced by the context holding the abandoned timber

(GU-19436), indicating a crossover date of 1410-1310 cal BC at 68.2% confidence for the two contexts.

- 4.5.10 Significant quantities of materials linked to salt making were recovered from the settlement area and from a small group of pits further south. Briquetage of many periods is a relatively common find from Fen-edge excavations in this part of the region, however, what makes this assemblage of particular interest is its clearly Middle Bronze Age date, its direct settlement association and the variety and form of the pedestals present. The contexts associated with the briquetage are those of the settlement itself and have been dated, broadly, to c. 1400-1250 cal BC. Finds of briquetage have often been associated with a later Bronze Age through to Middle Iron Age date in this area, with more complex saltern ovens discovered on sites dating to the later Iron Age and Roman periods. The Brigg's Farm assemblage is one of the earliest dated assemblages thus far recorded.
- 4.5.11 The assemblage demonstrates links with the nearby site at Pode Hole, with the fabric from the briquetage containers appearing very similar, if not identical to those from Brigg's Farm, perhaps even suggesting that they were made by the same potter (Appendix A.3). The date range of the Pode Hole assemblage is similar to that at Brigg's farm, with the earliest dated briquetage coming from a pit along with Deverel-Rimbury pottery radiocarbon dated by residues to 1410-1200 cal BC and 1410-1210 cal BC (SUERC-12097,-12096). In the top of the pit was a small quantity of Post Deverel-Rimbury pottery demonstrating the continuation of the tradition into the later Bronze Age, a characteristic not found at Brigg's Farm. The majority of the assemblage was also deposited in 'waterholes' (Daniel 2009); of the twelve wells at Brigg's Farm none contained any fired clay or briquetage.
- 4.5.12 The experimental nature of pedestal shapes, along with the dating, could indicate an emerging technology in this area centred around the two sites, which was to develop further in to the wider Fenland region. The quantity of briquetage from two ditches within the settlement area would suggest that the pedestals and containers were being made on site, however there is little evidence, or indeed logic, to making salt in this location. The briquetage was found in the settlement area, 300-500m away from the Fen-edge and further still to access salt water; from the settlement area it may have been as much as a kilometre to reach tidal creeks within the low-lying land to the south and west of the site - the southern and western sides of this embayment (linked to the 'sea' to the east) would have been the upland at Northey and at Fengate respectively (see Fig. 2). The likely distance to the salt water, alongside the lack of features which could be attributed to the production of salt, would suggest that salt production was taking place off site. The quantity of contemporary pottery, crop and animal waste, along with evidence of other domestic activities such as weaving, would suggest that the settlement was not a 'salt production site', as sites where this was the sole or chief activity produce little or no pottery (Appendix, A.3). The evidence from Pode Hole is also suggestive of salt production taking place off site. Daniel (2009) also concludes transporting brine such long distances seemed unlikely and suggests that the equipment from saltern sites was brought back to the home settlement with the intention of reuse.

## **Wells**

- 4.5.13 The wells at Brigg's Farm were predominantly deep and steep sided, some with ladders or with evidence of ladders within them; only one (Well 2) was shaped in such a way as to suggest it could have served as a waterhole, with direct access for cattle, and even in this case the access ramp would have been particularly short and steep. The majority of the wells were not found in relation to settlement features but within fields, against the banks at the fields' margins; even those within the settlement area (Wells 1, 2 and 3) were not found to contain settlement debris and could pre- or post-date the settlement activity.
- 4.5.14 Seven of the features were radiocarbon dated and the dates suggest three broad phases of well digging: pre-field system wells (Well 12), wells contemporary with the field systems and enclosures (Wells 1, 2, 3 and 11), and wells contemporary with or potentially later than the subsequent settlement (Wells 7 and 8). The earliest phase produced a date of 1615-1515 cal BC at 68.2% confidence (SUERC-25597) and was the only well not constructed against a field boundary. The second phase wells produced dates of 1430-1360 / 1450-1320 / 1410-1290 / 1440-1310 cal BC respectively (at 68.2%), and the third phase 1320-1190 and 1310-1190 cal BC (at 60.1% and 57.7% respectively).
- 4.5.15 The majority of the wells must have been used for providing water, by hand, to livestock, and presumably in the summer months when the land was at its driest. The number of wells present in each phase may help in understanding land use across the period, with most in use during the period following the construction of the banked field systems, suggesting that this may have been the period of the most intense cattle farming at this level (1.00m to 2.00m OD).

## **4.6 Post MBA Activity**

- 4.6.1 There are hints of a presence on the site into the Late Bronze Age with small sherds of possible Post Deverel-Rimbury ceramic occurring in two or three locations up around the 1.75 - 2.00m contour. It is likely that the land below c. 1.40m OD was already becoming too damp for direct occupation by the 12th/11th centuries BC and that occupation at this date had migrated further up the slope to the north. However, while the upper fills of the ditches below 1.40m became peat-filled, the two later ring gully houses at c. 1.75m OD show no evidence of either having cut through peat, or of having become peat-filled themselves; there is a clear difference between land becoming too damp for occupation and actually developing peat-growth.
- 4.6.2 Peat growth along the fen edge would have been ongoing throughout prehistory, and right through to the early post-medieval period when the Fens were drained. The location of the peat would have depended simply on where the 'fen-edge' was located at that period. The Middle Bronze Age ditches at Brigg's Farm appear to respect an edge at c. 1.00m OD and it is assumed that this contour may represent the limit of the high, dry arable land at the construction of the field systems around 1500 BC. The Fen edge proper at that date, where the peat growth was occurring, would have been considerably further down the contour.
- 4.6.3 The next direct and clearly recordable phase of activity on the site following the end of the Bronze Age settlement is represented by the two large ring gully structures with the earlier settlement zone. The dating of these is ambiguous as they held residual finds assemblages and it was therefore assumed that their charred plant assemblages were also likely to be residual and have not been radiocarbon dated. They have been

assigned a Middle to Later Iron Age date by morphology, and by their limited stratigraphic relationships.

- 4.6.4 That they had large, deep drainage ditches but did not contain peaty soils indicates that they were constructed when the land here was damp but had not yet become peat fen. It is not known how far up the contour the Fen would have been at this point, but presumably it cannot have been far away, perhaps around the 1.00m contour and infilling the earlier Bronze Age features.
- 4.6.5 The occupation does not appear to have been domestic as no contemporary finds assemblages were recovered, and the buildings, though contained within sizeable gullies would not themselves have been that large, perhaps no more than 8m in diameter. They may represent seasonal occupation, perhaps by those with flocks or herds at summer pasture, or by those engaged in other activities in the Fen, salt making, fowling, or cropping sedge or reeds. Whatever linked activities were taking place either left no trace or were taking place elsewhere.
- 4.6.6 The reoccupation of Middle Bronze Age landscapes in the Middle to Late Iron Age, following their apparent abandonment in the later Bronze and earlier Iron Ages, is a phenomenon that has been recorded at other recent excavations (Gilmour and Mortimer 2011; Phillips and Mortimer forthcoming). The occupation coming with roundhouses, set within ring gullies, but with little or no artefactual material. The iron Age reoccupation of this area at Brigg's Farm was the last before the fens were drained in the post-medieval period; it is possible that it occurred within a drier period, with direct occupation enabled, perhaps briefly, slightly further out toward the fens.

## APPENDIX A. FINDS REPORTS

### A.1 Flint

*By Barry Bishop*

#### ***Introduction***

- A.1.1 The excavations resulted in the recovery of 363 pieces of struck flint and 74g of unworked burnt flint fragments. This report documents a full examination and contextual consideration of the material, supplementing and superseding an earlier preliminary quantification and assessment (Bishop 2009a).
- A.1.2 A total of 125 struck pieces were present in pits and funerary contexts dating to between the Early Neolithic and Early Bronze Age. A further 130 pieces were recovered from later prehistoric settlement and agricultural features, with the remainder coming from unstratified surface deposits and undated features.

#### ***Mesolithic - Early Neolithic Flint Scatter***

##### *Surface Collected Material*

- A.1.3 Eighty-seven pieces of struck flint were recovered from surface deposits. This had clearly been manufactured over a considerable period and largely reflects the chronological patterning of flint use as evident from the stratified deposits. Blades and blade-like flakes are well represented, contributing nearly a fifth of the assemblage, and there are significant numbers of competently made, thin flakes, all often utilizing nodular flint. They indicate that much of the surface material can be dated to the earlier parts of Neolithic and diagnostic pieces from this period include 'front' type single platform blade cores, unfinished bifacially worked arrowheads or laurel leaves (Fig. 33, 16) and a number of serrated blades. Perhaps somewhat surprisingly, given the relatively dense surface spreads noted at other sites in the region (e.g. Webley and Hiller 2009), only a relatively small proportion of the surface material is likely to be related to the Later Neolithic activity at the site, as represented by the Peterborough Ware pits.
- A.1.4 A few pieces, however, stand out from the stratified flintwork and indicate periods of earlier activity at the site, which is not reflected in the structural record. Amongst the surface collected material and occasionally found in a few of the features are a handful of systematically blades that have recorticated. These include a truncated blade, possibly a microlith, recovered from the ditch of Enclosure 1 (see below) and to this can be added a broken backed blade, also possibly a microlith fragment, which are characteristically Mesolithic implements. Although recortication should not be indiscriminately used as chronological indicator (e.g. Smaltz 1960), all of the struck flints with Mesolithic affinities are recorticated and these include several prismatic blades, whilst the characteristically Early Neolithic flintwork is consistently unrecorticated. A similar pattern has been recorded for other assemblages from the southern Fens, including at March, Fordham and Stow cum Quy (Middleton 1992; Bishop 2009b; forthcoming a; b), and have provided a seemingly reliable means to differentiate otherwise technologically comparable Mesolithic and Early Neolithic flintwork.
- A.1.5 Also of particular note is a large crested blade with a faceted striking platform that has fine burin spalls removed longitudinally from its distal end, along with some lateral edge



blunting that was possibly undertaken to aid handling (Fig 33, 15). Its size, at 90mm long, sets it apart from the other flintwork from the site and there is also no other evidence for the creasing technique being used to facilitate blade manufacture. Large crested blades such as this are most commonly encountered in late Glacial and early Post-glacial lithic assemblages and burins are common implement types within these industries. Against such an interpretation, however, is the absence of recortication, this being noted on the Mesolithic implements. Late Glacial and early Post-glacial flintwork from the western Fens is extremely rare but Reynolds and Conneller (2006, 34-36; 2,11) describe a blade core from Foulmire Fen that may be of that date and which is of a type from which this crested blade may have been removed. They also discussed the problems of dating possible late Glacial and early Post-glacial when context is lacking and concede, as we must here, that no definite pronouncements can be made.

### **Early Neolithic (Mildenhall Ware) Pits**

A.1.6 Five pits and a tree-throw hollow containing struck flint have been dated to the Early Neolithic period (Table 5).

Context	Cut	Decortication Flake	Core Rejuvenation Flake	Flake	Chips	Flake Fragments	Blade	Blade-like Flake	Edge trimmed Blade	Edge trimmed Flake	Serrate	Scraper	Knife	Core	Conchoidal Chunk	Feature Total
989	990	4		1	1		1	1	2	3	1	1				15
1387	1385				1			1			1					3
1389	1388		1						1							2
1415	1416	1		1		2	1									5
2171	2170	1														1
2167	2166		1										1			2
<b>Total</b>		<b>6</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>0</b>		<b>28</b>

Table 5: Lithic Assemblages from Early Neolithic Pits

A.1.7 Most of the Early Neolithic features contained only small quantities of struck flint with the largest assemblage, consisting of 15 pieces, recovered from pit **990**. The raw materials used for the flintwork in the pit consist of two types, a mid brown translucent flint with an abraded alluvial pebble cortex and a dense black translucent flint with a thin but weathered nodular cortex. Similarities in the raw materials utilised suggest that all of the struck flints from this pit derived from the reduction of only two cores, one of nodular flint and the other of pebble flint. It is in a generally good condition although this varies from being sharp and fresh to being slightly edge chipped. A single piece had been burnt. The assemblage includes a number of decortication 'waste' flakes, all of brown

pebble flint, indicating the preparation of pebble cores, although none are present. Most notable, perhaps, is the very high proportion of retouched or heavily utilised implements, these contributing nearly half of the assemblage from this pit. Formally retouched items are limited to a serrated blade that had been burnt and a side and end scraper with a steep and sturdy retouched distal end. Five further flakes and blades have light retouch along parts of their edges and, in many cases, they exhibit damage from use as cutting or sawing implements, some possibly being worn-down serrates. Two of these edge-retouched flakes, both of nodular flint, refit, the fracture principally following a thermal flaw that developed during reduction, with the retouch executed subsequent to their detachment. The material clearly comes from a limited number of knapping episodes involving primary core working, tool manufacture, use and discard, although it is also clear that only a small proportion of the residues from these activities is present. The assemblage does not reflect the full knapping sequence, however, with decortication flakes and tools dominating, suggesting an element of selection, presumably from a larger accumulation of worked flint, when choosing what was to be deposited.

- A.1.8 The remaining Early Neolithic features produced much smaller assemblages. Pit **1416** produced five pieces, two of which consist of burnt flake fragments, the remainder a decortication flake and a blade. Pit **1385** contained three pieces including a broken serrated blade, whilst pit **1388** produced two pieces, a core 'tablet' rejuvenation flake and a worn, lightly edge trimmed blade. Pit **2170** produced a single small decortication flake of indeterminate date, whilst nearby tree-throw hollow **2166** contained two struck flints, a core rejuvenation flake struck transversely across the core's face and a retouched blade with a faceted striking-platform. This latter piece is somewhat unusual, it has fairly steep but semi-inverse retouch along both of its lateral margins and is perhaps most reminiscent of plano-convex knives. It has witnessed fairly arduous use, having wear and chipping along both lateral edges and around its distal 'point', suggesting a use for both cutting and piercing. These types of knife are typically found in Later Neolithic or Early Bronze Age assemblages, although similar forms are occasionally found in Early Neolithic contexts. It is, however, particularly comparable to the example recovered from a pit interpreted as being of Early Bronze Age date at Parnwell (Cramp 2007, 94; fig 13.6), which may call into question the dating of one or other of these features.
- A.1.9 The raw materials used for the assemblages from all of these features are similar to that found in pit **990** and comprise the use of both pebble flint, which would be easily obtainable at the site, alongside smaller but still significant quantities of a better quality nodular flint with a weathered but rough cortex surviving to up to 6mm thick. This type of flint may be present in local glacial deposits but it is perhaps more likely to have been imported from sources closer to the parent chalk, as present to the south and east around the Fen edge.
- A.1.10 The quantities of struck flint from any of the features are small and it is therefore difficult to confidently determine any specific patterning. Nevertheless, at face value there does seem to be an element of selection in what was considered suitable for deposition. No cores are present in any of the features although relatively high quantities of decortication flakes, indicating the initial preparation of cores, represent over a fifth of the combined assemblages. These all come from the working of pebbles and small cobbles from the local alluvial terraces. The imported nodular flint is mainly present as tools and potentially usable flakes and these may have been brought to the site ready prepared. Tools and utilized flakes are well represented, these forming over a third of the combined assemblages. They are dominated by simple edge trimmed flakes and

blades, most likely used for cutting tasks. Complementing such a use are the two serrates, these usually being considered as plant cutting and processing tools.

### **Peterborough Ware Features**

- A.1.11 Two adjacent pits and a tree-throw hollow containing Later Neolithic Peterborough Ware pottery also contained struck flint (Table 6).

Context	Cut	Decortication Flake	Core Rejuvenation Flake	Flake	Chips	Flake Fragments	Blade	Blade-like Flake	Scraper	Core	Conchoidal Chunk	Context Total	Burnt Flint (No.)	Burnt Flint (wt:g)
1366	1367	1							1	1		3		
1378	1367	3		5			1			1	2	12		
1379	1367	2	1	10	1	6	3	2		2		27	1	9
1427	1428	1		1	2		3	3				10		
1429	1430			1								1		
<b>Total</b>		<b>7</b>	<b>1</b>	<b>17</b>	<b>3</b>	<b>6</b>	<b>7</b>	<b>5</b>	<b>1</b>	<b>4</b>	<b>2</b>	<b>53</b>	<b>1</b>	<b>9</b>

Table 6: Lithic assemblages from Peterborough Ware Features

- A.1.12 The struck flints from the Peterborough Ware features were manufactured from similar types of flint to those used for the Early Neolithic assemblages and include both pebble flint and smaller quantities of nodular flint. Again, the cores and decortication flakes all consist of the former type and it appears likely that the latter type continued to be brought to the site in a ready-prepared form.
- A.1.13 The tree-throw hollow produced a relatively large assemblage of 42 pieces from three fills. The material from the fills is comparable and principally consists of knapping waste originating from the reduction of a limited number of cores. The only retouched piece consists of a slightly invasively retouched end-scraper from fill 1366. Four complete cores and two conchoidally fractured chunks, probably shattered core fragments, are present, these all made from small sub-angular alluvial pebbles of grey or brown flint. The complete cores ranged in weight from 15g to 33g and most have small narrow flakes or blades removed, although this was done rather expediently with only a few flakes detached, often keel style, from various suitable parts of the pebble. Pit **1428** produced ten struck pieces which include a few small blades, but all can be considered as knapping waste with the exception of a small blade-like flake that may have utilization damage. Its adjacent pit, **1430**, produced only a single undiagnostic flake.
- A.1.14 The assemblages from these features are again in a generally good condition but some pieces do display slight edge chipping and rounding, there is a high degree of breakage and five pieces are burnt. They predominantly consist of knapping waste that includes

cores and a number of probably rejected small blades and flakes. They appear to represent the reduction of a limited number of cores but no refittable sequences are evident and only a small proportion of the waste from any single knapping episode is present. The assemblages somewhat variable condition suggests they may have originated from larger accumulations located elsewhere, with proportions of this deposited into the pits. In this respect, they reflect similar patterns of depositional activity to that noted for the Early Neolithic features, where selected proportions of general occupation debris were gathered and deposited in to pits. They also utilise comparable types of raw materials, which include both locally obtainable alluvial pebbles and small cobbles and a better quality translucent black nodular flint that is likely to derive from much closer to the parent chalk. A notable divergence from the Early Neolithic depositional patterns, however, can be seen in the differing proportions of pieces from the various stages in the knapping sequence present. In the Early Neolithic features, there are very high proportions of retouched pieces, along with small quantities of primary knapping waste, but no cores. Virtually the opposite is true for the assemblage from the Peterborough Ware features, which comprises almost entirely knapping waste, including cores. Only one retouched piece, representing less than 2% of the combined assemblages, is present, and it appears that tools were excluded from the features or was deposited elsewhere.

### ***Beaker Pit***

- A.1.15 A single pit **1391** containing Beaker pottery produced struck flint. The assemblage comprises seven pieces, all of which may have been struck from the same thermally flawed gravel pebble. It includes five small flakes along with a small minimally worked scraper, comparable in size to thumbnail types but lacking the characteristic invasive retouch. It also produced a larger flake with sporadic inverse working along one lateral margin and heavy wear traces, probably from cutting hard materials, along the other. Pit **1475** also contained a sherd of Beaker pottery but its flintwork is limited to a single undiagnostic flake.

### ***Early Bronze Age Barrow and Cremation Burials***

- A.1.16 Eleven struck flints were recovered from barrow and cremation contexts. These consist of flakes, blades and blade-like flakes of a variety of raw materials and in variable but often edge-chipped condition (Table 7).

Context	Feature	Cut	Flake	Chips	Blade	Blade-like Flake	Serrated	Scraper	Conchoidal Chunk	Context Total
2022	Barrow	2023	1	1						2
2062	Barrow	2064				1				1
2025	Barrow Natural	2024			2	1		1		4
2055	Barrow up-cast from bank	N/A			1		1			2
2066	Barrow: Buried Soil	N/A		1						1
3324	Cremation Burial	3320						1		1
	Total		1	2	3	2	1	1	1	11

Table 7: Struck Flint from the Barrow and from Cremation Burial Contexts

A.1.17 No decortication flakes or cores are present. Retouched pieces comprise a minimally retouched convex scraper made on a nodule protuberance removal flake and a burnt fragment from a serrated implement. Half of the assemblage from the barrow consists of blades and blade-like flakes and the assemblages' overall technological traits, combined with their general rather chipped condition, would suggest that most of the pieces, if not all, pre-dated the Early Bronze Age and had been residually incorporated. The only struck flint directly associated with a cremation burial consisted of a burnt conchoidally fractured chunk from context 2066 of little diagnostic value but which was perhaps unlikely to have been a deliberate inclusion.

### Collared Urn Pits (Group 816)

A.1.18 Four of the pits containing Collared Urn pottery produced struck flint (Table 8).

Context	Cut	Decoration Flake	Flake	Flake Fragments	Blade	Bifacially worked flake	Scraper	Core	Conchoidal Chunk	Context Total	Burnt Flint (No.)	Burnt Flint (wt:g)
819	833		1		1		1		1	4	1	10
820	833	1						1		2		
831	833		1		1					2		
1245	1248		1	1	1					3	2	27
1247	1248							1		1		
1277	1279		1				1		1	3		
1341	1344		1	1		1				3		
1342	1344	1	4	2						7		
1343	1344			1						1		
		<b>2</b>	<b>9</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>26</b>	<b>3</b>	<b>37</b>

Table 8: Struck Flint from Pits Containing Collared Urn

- A.1.19 Nearly all of struck flints from the Collared Urn pits were all made from alluvial pebble and small cobbles as would be available from the terrace deposits present at the site, the two exceptions being a burnt scraper from pit **833**, which appears to consist of nodular flint, and a flake struck from a polished implement from pit **1248** that was made from a matt white chert. The assemblages are dominated by small broad flakes. Three blades are also present although none of these are prismatic and they may have been fortuitously produced during routine flake manufacture. The burnt blade core fragment from pit **1248** is perhaps most characteristic of earlier industries and may have been residually deposited, whilst the remaining core, from pit **833**, is more typical of Early Bronze Age examples and consists of a small centripetally worked split pebble that had produced small broad flakes.
- A.1.20 Pit **1344** provided the largest assemblage of 11 pieces, present within three of its fills. Fill 1342 contributed seven of these, all of which had been burnt. The only retouched piece came from fill 1341 and this consists of a broken thin flake of black flint with bifacial semi-invasive retouch around its distal end. One of the burnt flake fragments from fill 1342 may have been part of a scraper although, due to its fragmentary condition, this remains inconclusive. Pit **833** provided eight pieces including the centripetally worked core and the scraper, which has shallow, semi-invasive retouch. This had fractured due to being burnt although all of the fragments are present. Three of the eight pieces in this pit are burnt and there is also a small quantity of unworked burnt flint. Pit **1248** produced four struck flints, two of which are burnt, and a further

small quantity of unworked burnt flint. Perhaps the most notable piece is the large flake of matt white chert that appears to have been struck from a polished implement, although only a very small patch of polished surface remains. It also contained the burnt and fragmented core and a flake fragment that had also been burnt. Pit **1279** produced a flake and a scraper, both of which were burnt. The scraper is a classic Early Bronze Age diminutive thumbnail type with steep and invasive retouch around its entire perimeter. It also produced a fragmented burnt pebble that appears to have been previously used as a core.

- A.1.21 The Collared Urn pits contained small assemblages that mostly comprise knapping waste but also a high proportion of tools, most of which are scrapers. Perhaps the most notable aspect of the assemblages from these pits is the high proportion of burnt struck pieces, these contributing over half of all the struck flint. Two of the pits also contained unworked burnt flint, although this is present only in small quantities.

### ***Field System***

- A.1.22 The field system ditches produced only low quantities of flintwork, much of which is likely to be residual. A total of 25 pieces of struck flint was recovered from all the excavated field system ditches. The presence of some pieces with later prehistoric characteristics, such as a crude keeled core from ditch 923 (Fig 33, 8), or the small irregular core from Field 15, along with a few squat flakes, suggests that flint implements continued to be occasionally made whilst working out in the fields, although again, this is likely to have opportunistic, using readily to hand raw materials for immediate needs.

### ***Early or Pre-settlement Enclosures***

- A.1.23 The ditches forming Enclosure 1 produced 28 pieces in total, 22 of which came from its southern boundary and the remainder from its eastern ditch. Around half of these are likely to have belonged to earlier industries and had been residually deposited, these including a recorticated truncated blade, possibly a broken microlith and probably of Mesolithic derivation, a serrated blade and a long end scraper, both likely to be Early Neolithic in date, and a neatly retouched circular scraper that would be most typical of Later Neolithic or Early Bronze Age examples. Notable pieces with later prehistoric affinities and potentially contemporary with the enclosure include a small (20g) pebble core from fill 813 that had produced a short series of small broad flakes, along with a flake that although did not refit had probably been removed from it (Fig 33, 6). The remaining three scrapers from the ditches are all crudely produced and include a side scraper made on a cortical flake from fill 1220 (Fig. 33, 10) and scrapers from fills 952 (Fig. 33, 9) and fill 571 (Fig. 33, 2).
- A.1.24 A total of 3 pieces of struck flint were recovered from enclosures 2 and 3. The flintwork is either undiagnostic, such as the conchoidally fractured chunk from Enclosure 2, or likely to be residual, such as the fragmented side scraper from Enclosure 3.

### ***Middle Bronze Age Settlement***

#### ***Enclosures***

- A.1.25 A total of 35 pieces of struck flint were recovered from settlement enclosures. There were no concentrations of struck flint or debris indicative of *in situ* or close-by knapping

episodes identified from the settlement area. Amongst this material there is clearly a high degree of residuality which is also reflected in the condition of the flintwork from the features. This is variable but with many pieces displaying edge chipping and abrasion. In many cases, however, the more damaged pieces are those likely to belong to earlier industries and which may have been 'kicking around' in surface deposits for some time prior to entering the features. The pieces most likely to be contemporary with the Middle Bronze Age features are generally in a less abraded condition and many are fresh and sharp, suggesting deposition occurred not long after manufacture.

- A.1.26 Enclosure 4 produced 23 struck pieces, all from cut **510**. A few of these pieces are likely to be residual, which include a broken circular scraper, a utilized blade and core rejuvenation flakes, one of which had been converted into a serrated flake. The bulk of this assemblage, however, consists of small broad flakes, shattered pieces and cores, resulting from the reduction of a limited number of small pebbles. The cores have all been expediently reduced, usually with only a few flakes removed from each, although one continued to be flaked after it had shattered. One of the cores, from fill 528, had been reused as a pounder and exhibits considerable battering (Fig. 33, 1, 3 4). Most of the retouched pieces, which comprise serrated flakes and scrapers, were probably residual but contemporary implements include a roughly made scraper made on a shattered core fragment along with an irregular flake with inverse retouch, both from fill 629 (Fig. 33, 5, 6).
- A.1.27 The struck flint assemblage from Enclosure 5 mostly appears residual and includes a serrated blade fragment, an Early Bronze Age thumbnail scraper, a Later Neolithic centripetal core and a 'front' type Early Neolithic blade core. Potentially contemporary flintwork is limited to a few short flakes.
- A.1.28 Taken together, the contemporary flintwork from the enclosure ditches suggests low level but persistent production of flakes with implements being limited to expediently made scrapers and possible core-tools. Reduction sequences are short with only sufficient flakes produced to satisfy immediate needs. It is quite possible that much of this material was made and used in and around the structures located in the vicinity of the ditches and subsequently discarded into the adjacent open ditches, when the tasks were completed.

#### Structures

- A.1.29 A total of 8 pieces of struck flints were recovered from Structures 2, 3 and 4. With the possible exception of two flakes and an undiagnostic core fragment, these consisted of blades and blade-like flakes that were likely to significantly pre-date the structures.

#### Wells

- A.1.30 Five of the wells produced a total of 14 pieces of struck flint (Wells 2, 3, 5, 8 and 11). One or two of the flakes, the decortication flakes and a burnt core fragment could potentially be contemporary with the features but the bulk of the assemblages are almost certainly residual. This includes the core from Well 8 which consists of a curious tiny blade core made on a piece of 'horned' flint.

#### **Iron Age Roundhouses**

- A.1.31 The gullies of Roundhouses 1 and 2 produced a total of 7 pieces of struck flint. Few of the pieces are diagnostic and some of this is almost certainly residual, such as the keeled blade core from Roundhouse 2 (fill 1077). However, Roundhouse 1 produced a crude multiplatformed core from fill 1308 and Roundhouse 2 fill 1043 an irregularly



worked core. Both of these are typical of later second and first millennium BC industries and therefore could potentially be contemporary with the Iron Age date posited for the roundhouses. However, there are no criteria established for distinguishing Iron Age from Middle and Late Bronze Age worked flint and, given the intensity of occupation in the vicinity during the Bronze Age, it is entirely plausible, and perhaps more probable, that they are residually derived.

### **Summary and Discussion**

- A.1.32 The flintwork from Brigg's Farm confirms that occupation at the site extended over a considerable period and also indicates a phase, albeit low-key, of Mesolithic activity not otherwise represented in the structural record. There is also a tantalising hint that at least one piece of flintwork may date to the late Glacial or early Post-glacial period although this remains tentative.
- A.1.33 Flintwork of Early Neolithic date was recovered in small quantities from a number of pits and is also well represented amongst the surface collected material. The material from the pits appears to represent the deposition of selected pieces, mostly decortication flakes and retouched implements but with an absence of cores, gathered from larger accumulations, possibly midden-like structures. In this respect it conforms to many other Mildenhall Ware sites in East Anglia (Garrow 2006) including those on the western Fens, such as at Parnwell or Barleycroft Farm (Evans and Knight 2000; Webley 2007). At Parnwell located c.3km to the north-west, for example, a cluster of pits associated with Mildenhall Ware were found to contain small assemblages of struck flint dominated by retouched implements, predominantly serrates and edge retouched flakes and blades, but with a near absence of cores, and the pits' contents appeared to have been redeposited from midden-like deposits (Cramp 2007). A similar pattern was noted at Barleycroft Farm and, for these sites, it was suggested that the pits represent the surviving remains from short-lived settlements, the deposition of the material perhaps serving to commemorate the settlement or to mark its presence within the landscape (Evans and Knight 94; Webley 2007, 107).
- A.1.34 The Early Neolithic flintwork from Brigg's Farm is manufactured from both locally occurring pebbles and imported nodular flint, with the latter possibly being brought to the site in the form of ready-made blades, flakes and tools. This does diverge somewhat from that reported at Parnwell and Barleycroft Farm, as well as at other Early Neolithic sites in the region, such as the Etton causewayed enclosure (Middleton 1989), where only locally obtainable raw materials were used. It is unclear what significance this may hold. It is possible that it relates to different stages or variations in the directions taken by the occupants as part of their routine patterns of mobility, or even differences in their exchange contacts (e.g. Edmonds 1997; Conneller 2008). That lithic materials could be moved across considerable distance is amply demonstrated by the quantities of exotic stone axes and flakes removed from such that have been found at many sites, including Etton and Parnwell, in the area.
- A.1.35 Both local and imported flint continues to be used by the Peterborough Ware users at the site and they also maintain similar patterns of deposition, involving the burying of small quantities of occupation detritus predominantly in purposefully dug pits. Although flint continues as an element of this, a change occurs in the types of flintwork that is chosen with a significant reduction in the proportions of retouched implements included and an increase in knapping waste, which now includes a number of cores. Similar patterns of deposition continue into the Early Bronze Age although by this time it is notable that all of the raw materials comprise local obtainable pebble flint. The flintwork

from the pit containing Beaker pottery is too small in quantity to discern any patterning but that from those containing Collared Urn is distinguished by including consistently high proportions of burnt waste pieces.

- A.1.36 In all of these cases, the basic practices and principles of deposition appear to remain similar but the nature of what was included varies. Thomas (1999, 65-74), in discussing pit deposits, demonstrates that a wide range of materials may be present, and that these could be arranged in an almost infinite number of ways. Sometimes the pits appear to contain 'opposed' contents, such as pits containing only knapping waste juxtaposed with those containing only finished tools, or pits containing large quantities of material grouped with those containing little or none. It is clear that the repertoire of potential inclusions is vast and these could and were combined and arranged in innumerable ways, but often what is included in any particular instance appears to have been very narrowly defined. In these cases, the contents appear to have been precisely chosen as if their meaning was intended to be specific and unambiguous, at least, to those who were party to the 'code'. In other words, the digging of pits and their infilling appear as if intended to convey some specific meaning, information or story. As Thomas suggests, the materials employed as pit deposits and the details of their arrangement and interment may have acted as a material language, albeit one that was highly localized in its meaning (1999, 69). Bearing this in mind, it is worth remembering that the purpose, meaning and the form in which pit deposition was undertaken would have undoubtedly changed during the 2000 years or so represented by those here (cf Garrow 2006; Lamdin-Whymark 2008). Thomas (1999, 70-73) suggests that pit digging during the Early Neolithic may have been a means of commemorating particular events or periods of occupation, and this developed throughout the Neolithic, leading to the pit deposits making evermore sophisticated 'statements', and with people going to particular, perhaps significant, places in the landscape with the primary objective of making these statements. Rather than memorialising events that occurred at a particular place, pit depositions became an event designed to commemorate the place. To a certain extent, such views may be supported by the surface collected material, which indicates widespread occupation during the Early Neolithic but provides little evidence for activity other than the filling of pits during the Later Neolithic or Early Bronze Age.
- A.1.37 Whatever the precise meaning that the flintwork deposited into the pits was meant to convey, the patterns of flint use and discard change significantly during the Middle Bronze Age. This flintwork can only be described as crudely produced. It reflects an expedient and ill-considered approach to obtain serviceable edges and much of it appeared to arise from little more than randomly hitting pieces of raw material until either sufficient quantities of flakes had been detached or, as frequently seemed to happen, they disintegrated. The products include thick flakes and simple tools limited to scraping-type implements and chopping or denticulated core-tools. It was recovered in low quantities scattered amongst the contemporary settlements and field-systems and appears to reflect an opportunistic use of flint, undertaken as and when a task required, used for the specific purpose and deposited soon after completion with little formality. It is entirely consistent with general models of later prehistoric flint use and there is little to suggest that during this period efforts were made to produce prestigious, distinctive or aesthetically pleasing artefacts. It is often argued that after the widespread adoption of Bronze during the second millennium BC, the role of flint production and consumption in defining personal and social identity declines (e.g. Ford *et al.* 1984; Edmonds 1995; Herne 1991; Young and Humphrey 1999). Flint tools continue to be manufactured for their practical roles and they need only to provide suitable working edges. With the

exceptions of a few specific circumstances and occasions (e.g. Mortimer 2006; Mortimer and Connor forthcoming), there is equally a corresponding decline in the formal deposition of implements, as flint tools slowly lose their ability to act as markers of status, wealth or proficiency; *“By the mid second millennium there is little evidence to suggest that stone tools were customarily selected for inclusion in acts of formal deposition, or that complex conventions surrounded their routine use and disposal”* (Edmonds 1995, 177).

## A.2 Pottery

*By Mark Knight*

### **Introduction**

- A.2.1 The excavation produced 669 sherds of prehistoric pottery weighing 5285g (MSW 7.9g) as well as the refitting remains of a 'complete' *in situ* urn. The potsherd assemblage comprised both large pieces in good condition as well as mineralised or laminating fragments and assorted crumbs. Nine different fabric types were identified with the predominant 'inclusion' being shell. Feature sherds included 74 rims, 38 base and 54 decorated fragments. Pieces with collars and pronounced shoulders were also present. The dominant form was large plain body sherds belonging to small and medium-sized barrel or bucket shaped urns.
- A.2.2 Fragments of Middle Bronze Age Deverel-Rimbury vessels made up the bulk of the assemblage (80.1% by weight or 70.4% by number) and these came mostly from either enclosure (46.9% by weight) or pit (29.2%) related contexts. Layer 857 produced 139 sherds (999g or 23.6% by weight) from a single medium sized vessel that has been included with the Deverel-Rimbury category but might actually belong to the Post Deverel-Rimbury series. The remaining 0.3% of the Deverel-Rimbury assemblage was recovered from post holes and a gully feature. The second largest component of the assemblage was Collared Urn (12.9%) and interestingly, and by way of comparison almost all of this type of pottery came from pits (93.1% by weight). The next largest elements were Beaker (2.3%) and Mildenhall Wares (1.7%).

Type	Number	Weight	MSW	Fabric
Neolithic	1	4	4.0	9
Mildenhall'	42	90	2.1	7
Peterborough Ware	25	57	2.3	7
Beaker	40	124	3.1	5
Collared Urn	67	685	10.2	6
Deverel-Rimbury	471	4234	9.0	1, 2, 3, 4
Bronze Age	17	78	4.6	4, 5, 6, 8
LBA	6	13	2.2	4, 8
<b>Totals:</b>	<b>669</b>	<b>5285g</b>	<b>7.9g</b>	<b>9</b>

*Table 9: Prehistoric Pottery Assemblage*

- A.2.3 Comparative sherd size between types illustrated a marked difference between the earlier and later assemblages. The Mildenhall, Peterborough Ware and Beaker fragments for example were generally very small and often weathered or abraded (MSW between 2.1 and 3.1g). Conversely the Collared Urn and Deverel-Rimbury

assemblages were made up of lots of ‘big’ and frequently fresh sherds (between 9 and 10.2g). The earlier material could be seen as essentially a background assemblage typical of so many of the Peterborough/Cambridgeshire fen-edge/gravel terrace sites (see Patten 2009 for example). The later material, and in particular the Deverel-Rimbury, would appear to represent the pertinent assemblages especially in relation to the dominant feature sets of field boundaries and enclosure ditches.

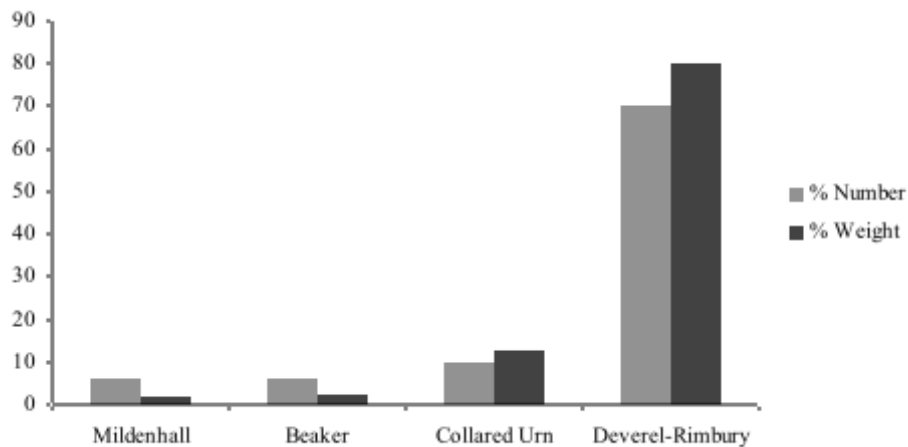


Chart 1: Percentage breakdown of main assemblage components

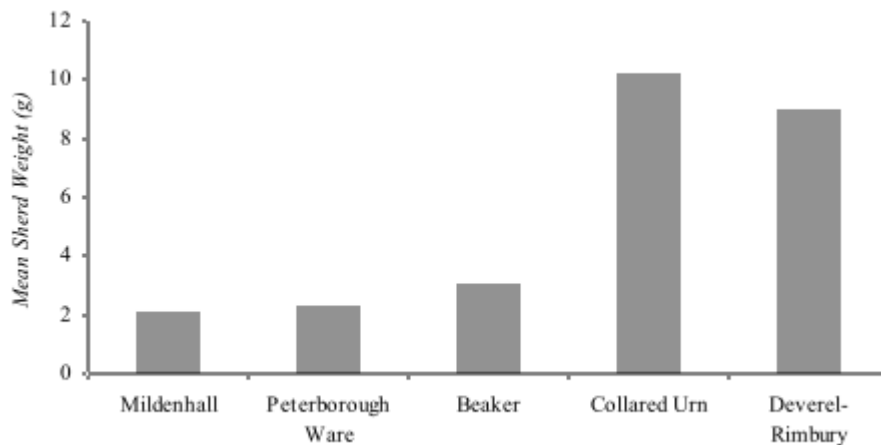


Chart 2: Mean sherd weights between the principle types

### Pottery Types and Forms

Mildenhall - 501, 990, 1507 and 2166

A.2.4 The Mildenhall assemblage was small but included classic ‘Etton-style’ characteristics (Pryor *et al* 1998), including T-shaped and externally thickened rims with hints of incised lines along the rim top but crucially above plain neck zones. The fabric was equally ‘Etton-style’ (abundant shell or abundant voids as opposed to burnt flint or other grits), as was the sherd colour (dark reddish black). Similar diminutive ‘Etton-style’ Mildenhall assemblages have been recorded at the adjacent sites of Tanholt Farm, Eye (Patten 2009), Parnwell, Peterborough (Webley 2007) and Bradley Fen, Whittlesey (Gibson and Knight 2006). Described as a Mildenhall regional sub-style in the Etton report (Pryor *et al* 1998) there are many reasons for thinking that if the Etton pottery has any affinity at all, it is with Abingdon Ware (Case and Whittle 1982) which also can be characterised by abundant crushed shell filler, and a tendency to leave the neck zone plain (see Beadsmoore *et al* 2010). In the context of the Etton causewayed enclosure almost all of the pottery came from the ditch circuit with only a small percentage from pit features.

#### Peterborough Ware – 1367 and 1428

A.2.5 The Peterborough Ware fragments shared a similar fabric to the Mildenhall pieces but included exaggerated forms (deep necks and pronounced shoulders) indicative of the later form. Context 1428 also produced fragments of Beaker.

#### Beaker – 1391 and 1473

A.2.6 Thin walled sherds, grog-rich fabric as well as comb-impressed and fingernail rustication represent familiar Beaker attributes. The material from pit **1400** consisted of small pieces of at least three different vessels including fine and rusticated forms as such can be compared with similar domestic assemblages found at other sites around the Peterborough fen edge but in particular at Fengate (see Gibson 1982; Evans 2009; but also Gibson and Knight 2006; Patten 2009).

#### Collared Urn

A.2.7 The bulk of the Collared Urn assemblage came from a small cluster of pits (**816**) and residually from a field system ditch (**754**) that truncated that cluster. Refits, or at least sherds from the same vessel, were identified between some of the pits within the cluster suggesting a coherent domestic assemblage. A rim sherd from **830** shared the same twisted cord-impressed lattice design as a piece from ditch **754**, and pit **833** produced a sherd with twisted cord-impressed hurdle design that was also present within pit **833**. The pits produced rim, collar, neck and shoulder fragments decorated with cord-impressed or incised patterns (hurdle, herring-bone and lattice) and shared the same slightly ‘soapy’ grog fabric (Fabric 6).

A.2.8 With few exceptions large scale domestic Collared Urn assemblages appear to be pretty much unique to the East Anglian fen-edge (see Garner 2007). Comparative assemblages to Briggs Farm can be found immediately to the west at Tanholt Farm (McFadyen 2000) or immediately south at King’s Dyke West, Whittlesey (Gibson and Knight 2002). Similarly the Fengate ‘shoreline’ has continually produced fragmented as opposed to whole forms (Pryor 1978 and 1980; Evans 2009).

A.2.9 A very large and almost complete Collared Urn containing cremated human bone was located within feature **3301**. The vessel had been buried upright and consequently had lost most of its collar to plough truncation. What remained of the vessel was a large plain biconical form with a tapered base. Its fabric was the same as the ‘domestic’ urns

(Fabric 6). The urn was found as an isolated cremation burial away from any obvious features and as such matches similar features located to the immediate south at Bradley Fen, Bradley Fen Farm and King's Dyke West (Gibson and Knight 2002 and 2006).

- A.2.10 The Collared Urn assemblage from Briggs Farm can be shown to pre-date the field system. Its context matches that of pit features found at the adjacent Tanholt Farm site that also on a one occasion showed the same stratigraphical relationship (Patten 2009).

#### Deverel-Rimbury

- A.2.11 Substantial Deverel-Rimbury assemblages (>100g) came from ditch contexts 514, 517, 530, 629, 690 and 959 and pit contexts 1514 and 2611.
- A.2.12 Deverel-Rimbury sherds included rim, body and base fragments belonging to relatively thin-walled (4-11mm) and small to medium diameter (12-24cm), barrel (slightly closed) or bucket-shaped vessels. Rim forms were dominated by simple flattened profiles, although simple rounded, internally bevelled and slightly expanded types were also identified. The vast majority of the fragments were plain (only 2.7% were decorated) but some sherds retained a single horizontal row or 'cordon' of fingernail or fingertip impressions. Decoration occurred consistently just below the rim or around the girth. Another dominant characteristic was the abundant finely crushed shell visible in the surface of most of the sherds. Burnt sherds were present alongside unburnt sherds.

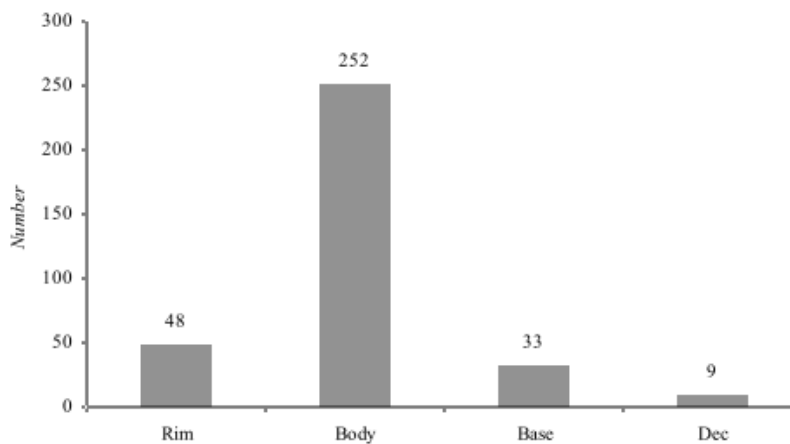


Chart 3: Composition of Deverel-Rimbury assemblage (excluding 139 sherds of possible PDR vessel from context 857)

- A.2.13 Overall the assemblage had a uniform, coherent appearance that was in part accentuated by an absence, rather than presence, of perhaps more familiar Deverel-Rimbury attributes such as applied or raised cordons, incised cable decoration or raised knobs. Again the lack of applied or plastic adornment could possibly be a product of the absence of large diameter forms. Small-medium plain forms are well represented in the Grimes Graves publication (Longworth *et al* 1988) together with the larger more familiar embellished varieties (28-31cm diameter). The smaller vessels, including cups, are recorded as having diameters of 10-18cm and a medium-sized range of 24cm was also identified. Unfortunately the contextual detail for the Grimes Graves pottery is poor and

it is not known if the Deverel-Rimbury collection of about 3000 sherds represents a single assemblage or parts of several different assemblages (*ibid*).

?Late Bronze Age/Early Iron Age.

- A.2.14 Two contexts (1171 and 1302) produced small fragments of pottery made of a compact or dense fabric that looked different from the rest of the assemblage and had a distinctly 'late' appearance. Although too small to be unambiguously diagnostic these sherds may represent the sites only post 2nd millennium BC ceramics.

### **Discussion - Domestic Deverel-Rimbury landscapes?**

- A.2.15 The Deverel-Rimbury pottery represents the most important component of the Briggs Farm prehistoric assemblage. The scale and domestic character of the material alone make it stand out but equally significant is the context of the assemblage. The 2nd millennium BC field system sites of south Cambridgeshire and the Flag Fen basin have to date produced comparatively little Deverel-Rimbury pottery outside of cemetery contexts. Up until recently domestic Middle Bronze Age ceramics have been conspicuous by their absence, especially when contrasted with the increasingly impressive domestic assemblages of Beaker and Collared Urn being generated by the same landscapes (Gibson and Knight 2006; Evans 2009). The absence or dearth of Deverel-Rimbury pottery outside of cemeteries has led some to suggest that the period was all but aceramic, and that the scarcity of domestic pottery was in part caused by the loss of whole pots to cemetery contexts and/or the recycling of old vessels as grog for new vessels (Evans 2009). Given that both Beaker and Collared Urn pottery also traversed the domestic/funerary context (contra Burgess 1986) and invariably used grog as the principle opening material such an argument would appear to be flawed.
- A.2.16 The comparative dearth of Deverel-Rimbury pottery to the south can be contrasted by the ever increasing Deverel-Rimbury assemblages being recorded to the immediate north. Recent excavations in southernmost Lincolnshire at places such as Langtoft and West Deeping have started to produce assemblages that stand comparison to the Grimes Graves collection. For instance, the combined Langtoft sites of Whitfield, Glebe and Freemans (Hutton 2008a, 2008b and 2008c) have produced over 3100 sherds of Deverel-Rimbury pottery whilst the, so far limited, excavations at West Deeping have indicated a similar potential. The pottery from the south Lincolnshire sites was derived from either watering hole or field system related contexts but in particular discrete 'enclosures' that appeared to hang-off of the greater field system layout. What is certain, is that the deposition of Deverel-Rimbury pottery was always secondary to the inception or primary elements of the field systems themselves. As yet none of the South Lincolnshire sites have produced convincing evidence of contemporary post-built structures and it seems once again that Middle Bronze Age domestic architecture was of a kind that leaves little or no archaeological trace. Of the Langtoft assemblages, the most impressive came from the Whitfield site (1401 sherds; 13869g; Hutton 2008a) and this included large (<30cm diameter) through to small forms (6cm). Here 11.1% of the total sherds were decorated and as with the Grimes Graves assemblage it was the large diameter vessels that carried applied cordons (Longworth *et al.* 1988). Two fabric types were identified, both of which involved abundant fossil shell (either whole or crushed).



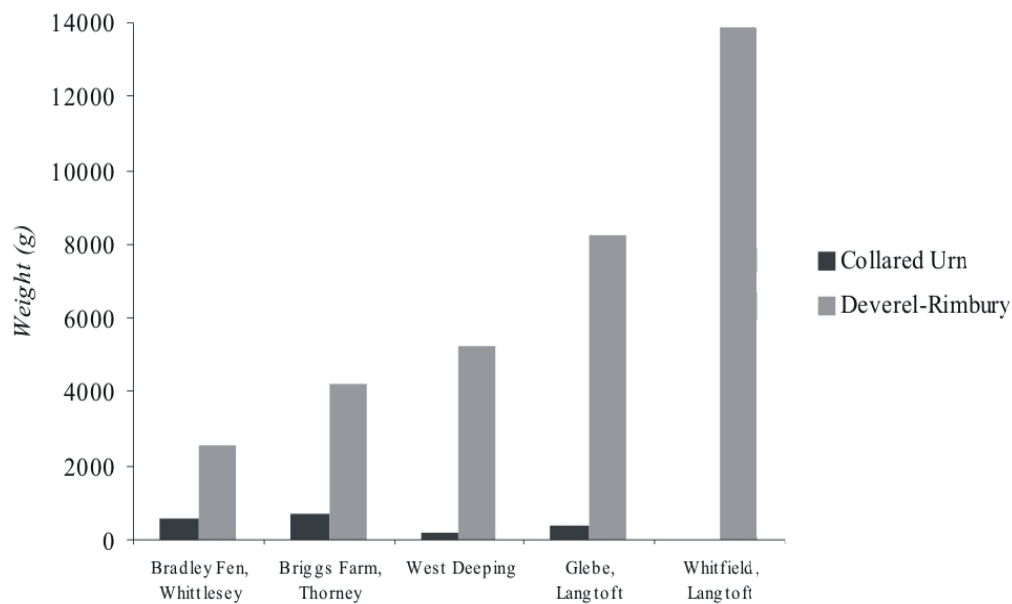


Chart 4: 'South to North' ascendancy of domestic Deverel-Rimbury assemblages in Cambridgeshire, Peterborough and Lincolnshire.

A.2.17 Closer to hand, and situated immediately to the south of Briggs Farm, the Bradley Fen excavations produced a sizeable assemblage of Middle Bronze Age pottery (169 sherds weighing 2570g). The assemblage came almost entirely from pit-well or watering hole features and comprised a 'mixed' collection of shell-rich, grog, and heavily flint-gritted wares that once again appeared to have been deposited subsequent to the laying out of the ditch-bounded field system. The pottery came from contexts that also included large amounts of butchered animal bone adding to the domestic character of the assemblage. Carbonised 'food' residue from the rim of a large diameter Deverel-Rimbury urn produced an AMS date of 1270-1010 cal BC (95% probability; Beta 269125; Knight *et al* forthcoming).

A.2.18 As stated above, the south Lincolnshire field system sites consistently produce large sherd-based assemblages of Deverel-Rimbury pottery (see chart 4). The hard fossil shell used in the fabric of these sites makes them comparatively robust and it is possible that the bias towards the Lincolnshire sites is actually taphonomic rather than contextual. Conversely, much of the Cambridgeshire material was made using a fabric that incorporated 'fresh' shell as its principle opening material and as a result these sherds are often very soft and friable and consequently much less robust. Alternatively, it is possible that the apparent imbalance between north and south represents a contextual boundary delineating different landscape patterns, and that Briggs Farm was situated at the very southern edge of a distinct Deverel-Rimbury 'enclosure zone' that superimposed established field systems. What is very apparent is that the distribution of Deverel-Rimbury pottery at this site was discrete to the northern 'enclosure' end of the excavation and absent from the rest of the field system.

### **Recommendations**

- A.2.19 For full publication it will be necessary to construct a minimum number of vessel count for each of the principle assemblages with particular vessels being selected for illustration. A gazetteer of vessels we be created to accompany the finished report. In addition a Fenland-wide 'domestic' Deverel-Rimbury distribution map could be produced in relation to field system 'types'.

#### **Fabric Series**

Fabric 1 - Medium to medium hard with super abundant well crushed SHELL (sometimes rounded; compact fabric)

Fabric 2 - Medium with frequent small linear VOIDS (lost shell) and possible common GROG and rare small stones/burnt flint.

Fabric 3 - Hard with common small rounded SAND and possible common GROG (abrasive)

Fabric 4 - Medium hard with common small GROG and occasional to common SHELL/VOIDS

Fabric 5 - Medium hard with common small to medium GROG (thin walled)

Fabric 6 - Hard with frequent medium GROG (soapy) rare voids

Fabric 7 – Medium with frequent small platelet VOIDS (lost Shell; red and black coloured fabric)

Fabric 8 - Medium hard with frequent very small GROG (mixed colours) and occasional SAND

Fabric 9 - Hard with common medium-large burnt FLINT



Context	Cut	Master No.	Category	Feature Type	Weight (kg)	Number	Weight (g)	Rim	Base	Dec	Type	Fabric	Notes
501	2166	501	surface finds		0.03	10	25	3	0	3	EN	7	Etton-style Mildenhall with incised dec. on rim tops. Almost T-shaped rim
515	512	510	fill	ditch	0.04	1	36	1	0	0	DR	1	Also has BN
530	527	510	fill	ditch	0.2	11	192	3	0	0	DR	1	Medium to medium hard with super abundant well crushed shell (sometimes rounded) (compact fabric) Wall thickness 5-11mm.
530	527	510	fill	ditch	0.05	4	44	2	0	0	DR	1	
514	512	510	fill	ditch	0.12	6	119	3	0	1	DR	1, 2	Thumbnail cordon.
530	527	510	fill	ditch	0.31	14	250	4	2	1	DR	1	rough finish - also base sherd with residue for radiocarbon dating
517	516	510	fill	ditch	0.19	13	191	5	0	2	DR	1, 2, 3	Fabric 3 hard with common small rounded sand and possible common grog (abrasive). Has residue sherd for radiocarbon dating
517	516	510	fill	ditch	0.01	3	7	0	0	0	DR	1	
529	527	510	fill	ditch	0.1	7	97	0	0	0	DR	1	
518	516	510	fill	ditch	0.02	5	15	1	0	0	DR	2	simple rim
629	628	510	fill	ditch	0	5	44	1	1	0	DR	1	
631	628	510	fill	ditch	0.01	2	5	0	0	0	DR	1	
629	628	510	fill	ditch	0.05	8	50	1	1	0	DR	1, 3	Box also has 68g of BC and a piece of BN
959	960	520	fill	ditch	0.26	33	252	4	1	0	DR	2	Medium with frequent small linear voids (lost shell) and possible common Grog and rare small stones/burnt flint. Includes burnt sherds.



Context	Cut	Master No.	Category	Feature Type	Weight (kg)	Number	Weight (g)	Rim	Base	Dec	Type	Fabric	Notes
													WT: 4-10mm
959	960	520	fill	ditch	0.01	11	9	0	0	0	DR	2	
970	971	520	fill	ditch	0.01	9	12	0	0	0	DR	2	(BA)
980	981	520	fill	ditch	0.04	7	39	2	1	2	DR	1	Includes 2 body sherds with 'wheat-ear' impression
621	618	520	fill	ditch	0.05	7	52	0	0	0	DR	1	includes lost shell
619	618	520	fill	ditch	0.04	6	40	0	0	0	DR	1	
949	950	520	fill	ditch	0.01	2	9	2	0	0	DR	2	Slight external thickened
634	646	597	fill	ditch	0.03	9	30	1	0	0	DR	1	Includes 'big' shell (Red fabric) and dense groggy rim
1225	1228	617	fill	ditch	0.02	7	21	1	0	0	DR	2	Pinched T-shaped rim flattened top
611	617	617	fill	ditch	0.02	7	16	0	0	0	DR	1	
1209	1210	617	fill	ditch	0.01	2	14	1	0	0	DR	1	
1208	1210	617	fill	ditch	0.01	4	5	0	0	0	BA	4	Plain body sherd (could be CU also)
689	691	681	fill	ditch	0.05	1	53	0	0	0	DR	1	
690	691	681	fill	ditch	0.12	15	142	3	0	0	DR	1	Mineralised sherds
814	818	754	fill	ditch	0.03	7	27	0	0	0	CU	6	Includes neck angle
813	818	754	fill	ditch	0.01	3	12	1	0	1	CU	6	Cord-impressed lattice design (plus residual tiny Beaker sherd?)
1133	1138	754	fill	ditch	0.01	1	8	0	0	0	BA	4	Possible collar frag



Context	Cut	Master No.	Category	Feature Type	Weight (kg)	Number	Weight (g)	Rim	Base	Dec	Type	Fabric	Notes
982	985	754	fill	ditch	0	1	2	0	0	0	CU	6	
1278	1279	816	fill	pit	0.06	2	57	0	0	0	CU	6	?base and burnt
1245	1248	816	fill	pit	0.2	13	198	2	0	1	CU	?6	incised herring-bone on collar and incised slashes on rim top. Also 2 collar frags
1245	1248	816	fill	pit	0	1	2	1	0	1	CU	6	small diameter
1277	1279	816	fill	pit	0.13	5	130	0	0	0	CU	6	includes neck angle/shoulder
819	833	816	fill	pit	0.03	1	26	1	0	1	CU	6	?same as [820]
820	833	816	fill	pit	0.06	12	63	2	0	6	CU	6	Hard with frequent medium grog (soapy) Twisted cord impressed (Hurdle?)
819	833	816	fill	pit	0.08	9	79	0	0	0	CU	6	
1246	1248	816	fill	pit	0.06	6	61	0	1	1	CU	6	Burnt, includes collar frag with incised/impressed herring bone design made with a shell edge?
816	830	816	fill	pit	0.02	5	22	1	0	1	CU	6	Cord-impressed lattice design same as 813
857	0	857	layer	layer	1.01	139	999	3	3	2	DR	4	Has fingernail slashes along rim edge medium hard with common small grog and occasional to common shell/voids
1148	1148	857	layer	layer	0.04	5	39	0	0	0	BA	4	
1156	1158	923	fill	ditch	0.01	1	8	0	0	0	BA	8	Medium hard with frequent very small GROG (mixed colours) and occasional SAND
1114	1115	923	fill	ditch	0	1	4	0	0	1	NE	9	Hard with common medium-large burnt flint (fingertip decoration PDR?)
937	940	940	fill	ditch	0.01	2	5	0	0	0	BA	5	



Context	Cut	Master No.	Category	Feature Type	Weight (kg)	Number	Weight (g)	Rim	Base	Dec	Type	Fabric	Notes
938	940	940	fill	ditch	0	1	1	0	0	0	BA	5	
989	990	990	fill	pit	0.01	8	10	1	0	0	EN	7	One externally thickened rim (could still be DR possibly)
989	990	990	fill	pit	0.02	12	15	0	0	0	EN	7	
1004	1007	1007	fill	pit	0.01	1	6	1	0	1	BA	4	Squared rim has trace of incised line/twisted cord-impressed line across the top of the rim (could be CU could be DR)
1486	1487	1009	fill	post hole	0.01	7	6	0	1	0	DR	2	crumbs
1514	1442	1009	fill	pit	0.69	20	633	0	20	0	DR	1	All base refits as one (plus crumbs)
1441	1442	1009	fill	pit	0.06	6	62	0	0	0	DR	1	
1015	1016	1010	fill	gully	0	1	2	0	0	0	DR	2	possible fingernail/tip dec.
1171	1173	1149	fill	ditch	0	1	3	0	0	1	LBA	8	Thin-walled compact with incised line decoration (?LBA)
1152	1154	1149	fill	ditch	0	1	1	0	0	1	BA	6	cord-impressed?
1183	1182	1201	fill	post hole	0	1	3	0	0	0	DR	1	
1196	1195	1201	fill	post hole	0	1	2	0	0	0	DR	2	
1302	1305	1331	fill	gully	0	3	4	1	0	0	LBA	4	medium with grog and voids thin walled PDR?
1378	1367	1367	fill	natural	0.04	23	37	0	0	0	PW	7	One deep neck/pronounced shoulder frag
1427	1428	1391	fill	pit	0.02	2	20	0	0	0	PW	7	red plain sherds
1390	1391	1391	fill	pit	0.03	16	31	0	0	5	BK	5	twisted cord, finger nail (rows and pairs) small and abraded



Context	Cut	Master No.	Category	Feature Type	Weight (kg)	Number	Weight (g)	Rim	Base	Dec	Type	Fabric	Notes
1506	1507	1400	fill	natural	0.04	7	36	4	0	0	EN	7	Medium with frequent small platelet voids (lost Shell; red and black coloured fabric); Looks like Etton mildenhall very faint hint of incised line decoration on rim?
1472	1473	1400	fill	post hole	0.09	24	93	3	1	18	BK	5	Medium hard with common small to medium grog (Thin walled 5mm, and compact)
1474	1475	1400	fill	post hole	0	1	1	0	0	0	DR	2	
1447	1448	1446	fill	ditch	0.03	4	28	0	0	0	DR	1	
2171	2170	2166	fill	test pit	0	5	4	0	0	1	EN	7	One incised frag.
2176	2177	2177	fill	pit	0.03	8	34	1	1	1	DR	1	Includes compact grog tempered pieces of rim and nail impressed piece
2334	2335	2271	fill	ditch	0.01	1	10	0	0	0	DR	1	
2470	2478	2271	fill	ditch	0.01	2	6	1	0	0	LBA	8	PDR? or DR (Grog)
2310	2314	2310	fill	pit	0.01	3	8	2	0	0	DR	2	Thin upright slightly inturned simple rim from a small urn, also out-turned rolled rim of same fabric
2532	2488	2488	fill	well	0	1	3	1	0	0	CU	6	Plain black rim (similar to Langtoft CU)
2636	2638	2609	fill	pit	0.01	1	5	0	0	0	BA	4	Burnt
2637	2638	2609	fill	pit	0.01	1	7	0	0	0	DR	1	
2611	2610	2609	fill	pit	0.69	67	491	4	0	2	DR	1	Faint fingernail/tip cordon on two sherds
3068	3069	3044	fill	gully?	0	1	3	0	0	0	CU	6	
3143	0	3136	surface		0	2	1	0	0	0	DR	2	crumbs



Context	Cut	Master No.	Category	Feature Type	Weight (kg)	Number	Weight (g)	Rim	Base	Dec	Type	Fabric	Notes
			finds										
629						14	208	6	5	0	DR	1	Abrasive. Burnt and unburnt

*Table 10: Pottery catalogue*



### A.3 Briquetage

*By Elaine Morris*

#### **Introduction**

- A.3.1 A small, but nationally significant, assemblage of briquetage (211 pieces; 4,182 grammes) was identified amongst the fragments of fired clay material. Briquetage is a range of ceramics, including containers, supports for the containers, heating structure debris, and miscellaneous pieces, associated with the evaporation of brine to produce salt crystals. Two special aspects of this assemblage are the range of fabrics used to make the types of briquetage recovered and the variety of pedestal support forms identified. The direct association of this briquetage with pottery of Middle Bronze Age type, radiocarbon dated to 1530-1410 cal BC at 95% probability from a sample of charred residue on the pottery, would indicate that this was the earliest assemblage of salt production ceramics found in Britain. However, this particular sample is in some doubt and a better date for the assemblage might be between 1400-1310 BC at 95.4% probability (see Discussion).
- A.3.2 A total of 107 container sherds (895g), 29 pieces of complete or broken pedestal supports (2248g), 15 fragments of hearth flooring (549g) and 60 undiagnostic or miscellaneous pieces (490g) of ceramic material associated with salt production were identified from both hand-excavated and sieved environmental samples (Table 11). The assemblage is in good condition with large fragments of container base sherds and both complete and largely complete pedestals present. However, a considerable number of pieces are covered or affected by the deposition of iron oxides through the fabric and as surface accretions, including some pieces which have grains of quartz from the soil adhering to both the original surfaces and the fractured edges of the briquetage fragments, which seriously affects the appearance of the fabric in each case. This condition is common amongst assemblages recovered from the Fenland region (cf. Morris 2009a).
- A.3.3 The assemblage has been analysed and recorded using the systems established for the analysis of ceramic material associated with prehistoric and Roman salt production in the Fenland (Lane and Morris 2001) and later prehistoric pottery (PCRG 1997). The form type series and codes used in this report directly follow those previously established and also add to them. The definitions of the fabrics, however, are to be understood as unique to the Briggs Farm briquetage assemblage, despite the similarity of the codes utilised to those from other assemblages. Each piece of briquetage was examined at x10 power microscopy to characterise the fabric. Samples of fabrics selected for thin sectioning and petrological analysis to clarify fabric type details were chosen from four fabrics and these are indicated with an asterisk (\*) in the fabric descriptions below.

#### **Fabrics**

- A.3.4 Four fabric groups were identified in this briquetage assemblage (Table 11). A fabric group is defined by the major or distinctive inclusion present in one or more fabric types and this is indicated by the letter code of a fabric. Fabric Group Q consists of three different fabric types, but two are quite similar to each other. Fabric Q1, a distinctively coarse-grained quartz sand fabric with variable amounts of naturally-occurring detritus, had been used to make pedestal supports and hearth floors, while Q3 is also a coarse-grained, quartz sand fabric but the detritus present is significantly larger than that of Q1

and can be called pebble-sized detritus based on sediment classification (Adams, *et al.* 1984, table 1; PCRG 1997, appendix 7). Fabric Q3 was also used to make pedestals and hearths, and may be considered simply as a variant of fabric Q1. In contrast, there are a few pieces of miscellaneous or undiagnostic material which had been made from an extremely fine, micaceous, silty fabric, Q2. Fabric Q1 was also used to make clay weights from Brigg's Farm (see that report).

- Fabric Group S, the shell-tempered group, consists of only one fabric type (S1), which was used to make containers only. It will be important to determine if this fabric type is similar to any of the shell-gritted fabrics identified in the Bronze Age pottery assemblage. The probability that contemporary briquetage containers and pottery vessels were made by the same persons (i.e. both groups of ceramics being made by potters) is quite likely if the fabrics are similar (Morris 2009, 80).
- Fabric Group V (V1-V3), which appears to have been developed by selecting fabric type Q1 clay and adding variable amounts of chopped organic matter, was used to make both containers and pedestals. It is highly likely that all three fabric types in this group are simply variations of the same fabric but the distinctions have been retained for this report in order to assist in determining if there is more than one container or pedestal within a context or feature and whether any specific manufacturing details or association with specific form types can be established.
- Fabric Group C consists of a single fabric type (C1) which had been used to make only undiagnostic briquetage material. However, this fabric was also used to make one of the clay weights from Brigg's Farm.

A.3.5 Container sherds were made from either the shell-gritted fabric S1 (14.0% of all container sherds by number; 10.7% by weight) or from the organic-tempered, sandy fabrics V1-V3 (86.0%; 89.3%). These appear to be quite different fabric groups, the former originally having been calcareous in nature and the latter sandy in texture with added plant matter. Both, however, would have been quite porous once fired, with gaps between fired clay and angular shell inclusions in the former and distinctive, small linear voids created after vaporisation of the organic matter in the latter providing considerable porosity. Porosity would have been important during the rapid, open firing system at the saltern to absorb the thermal shock of the direct heating from the hearth fire. During the later Iron Age period onwards, salt production in eastern England employed the use of oven-like structures with an indirect heating method of flues and perforated flooring to control the temperature and speed of brine evaporation (Morris 2001). The shell-gritted fabric is referred to as 'gritted' deliberately to emphasize that there is every likelihood that the shell present could have been naturally-occurring in the clay resource selected for its preparation because of the presence of shell-bearing clays in deposits of the Jurassic system located within 2km of the site between Briggs Farm and the Fen-edge where the actual salterns may have been located. The coarse sandy clays with varying quantities of rounded, naturally-occurring, weathered flint displaying cortex and patination or ferruginous detritus were most likely to have derived from an alluvium deposit located along the banks of a nearby river where sandy clays with occasional seams of gravel are known (Chatwin 1961, 77). Investigation into the types of organic matter which had been chopped and added as temper to the V-group of fabrics was not conducted as part of this report

A.3.6 The majority of pedestal supports had been made from organic-tempered, sandy fabrics (58.6% of all support fragments by number; 68.5% by weight) with the rest made from

Q-group fabrics without added tempering (41.3%; 31.5%) but the few, identifiable hearth flooring or structural fragments had been made only from the Q-group of fabrics.

- A.3.7 The use of organic-tempered fabrics to make briquetage containers and pedestal supports to raise those containers above an open fire was a recognised later prehistoric technique in Britain (Lane and Morris 2001, table 98), as at Brean Down in Somerset during the Middle Bronze Age (Foster 1990), Crouch Site 2 (Woodham Ferrers) in Essex during the later Bronze Age (Barford 1995), and at Tetney in Lincolnshire (Palmer-Brown 1993) and Mucking North Ring (Barford 1988a, 1988b) in Essex during the Late Bronze Age. Similarly, the use of shell-gritted fabrics to make both coarseware pottery and briquetage was also known, as at Northey probably during the Early or Middle Bronze Age (Gurney 1980), Fengate during the later Bronze Age (Pryor 1980) and Pode Hole Quarry during the second half of the second millennium cal BC (Daniel 2009; Morris 2009a).
- A.3.8 Miscellaneous pieces of fired clay material found in association with briquetage and affected by brine during the heating process were identified in four different fabrics, C1 which has a calcareous clay matrix, Q1 discussed above, Q2 a fine, silty clay, and V1 also discussed above. Fabric C1 is distinctive due to its soft, soapy feeling when touched while fabric Q2 is also fine but glitters with minute pieces of either mica or silt-grade quartz grains.

#### ***Calcareous group***

C1 calcareous clay matrix fabric (\*)

A poorly-wedged, highly variable fabric with a calcareous clay matrix containing two zones representing apparently unmixed clay comprising sparse (5-7%), moderately-sorted, subangular to sub-rounded quartz,  $\leq 1.3\text{mm}$  with the majority  $\leq 0.6\text{mm}$ , rare (1%), rounded opaques,  $\leq 0.2\text{mm}$ , sparse (3-5%), sub-rounded to rounded pieces of limestone,  $\leq 1.2\text{mm}$ , and sparse (3-5%) linear vesicles and/or carbonised matter,  $\leq 5\text{mm}$  long and moderate to common (15-20%), sub-angular to sub-rounded, moderately sorted quartz,  $\leq 0.8\text{mm}$  with the majority  $\leq 0.6\text{mm}$ , and rare to sparse (2-3%), rounded to sub-rounded opaques,  $\leq 0.4\text{mm}$

#### ***Quartz sand group***

Q1 coarse, quartz sand fabric with detritus (\*)

Very common to abundant (30-50%), moderately to poorly sorted, subangular to sub-rounded/rounded quartz,  $\leq 1.0\text{mm}$  with the majority  $\leq 0.6\text{mm}$  including numerous grains less than  $0.1\text{mm}$  across with occasional, small rounded opaques  $\leq 0.3\text{mm}$ , and a variety of infrequent (<1% up to 5%), rounded to angular pieces of patinated flint with and without cortex and ferruginous matter which can be iron oxides or ferruginous sandstone,  $\leq 3\text{mm}$  (from coarse sand-grade up to granule-grade)

Q2 silty fabric

Very fine, dense fabric which glitters with either numerous flecks of mica or extremely fine quartz grains which are not measurable at x10 power microscopy

Q3 very coarse quartz sand fabric with pebble-grade detritus

Common to abundant (30-40%), poorly sorted, subangular to sub-rounded/rounded quartz,  $\leq$  1mm with the majority  $\leq$  0.8mm, with flint and opaques from 2mm to 10mm across (granule and pebble sedimentary grades) readily visible

### **Shell-gritted group**

S1 fine, shell-gritted but vesicular fabric (\*)

Common to very common (25-30%), moderately well-sorted, angular, irregular and platey shell-shaped vesicles,  $\leq$  3.5mm with the majority  $\leq$  2mm across, evenly distributed throughout the fine, nearly quartz-free clay matrix containing very rare (<1%), sub-rounded quartz  $\leq$  0.05mm and very rare, rounded opaques,  $\leq$  0.08mm

### **Organic-tempered, quartz sand group**

V1 organic-tempered but vesicular, coarse sandy fabric (\*)

Moderate to common (10-20%), linear vesicles of former organic matter such as chaff or grasses,  $\leq$  4mm long, in a coarse sandy clay matrix with variable detritus similar to fabric Q1

V2 slightly organic-tempered but vesicular, coarse sandy fabric (\*)

Sparse (3-7%), linear vesicles of former organic matter such as chaff or grasses,  $\leq$  4mm long, in a coarse sandy clay matrix with variable detritus similar to Q1

V3 significantly organic-tempered but vesicular, coarse sandy fabric

Common to very common (25-30%), linear vesicles of former organic matter such as chaff or grasses,  $\leq$  6mm long, in a very coarse sandy clay matrix similar to Q3 with pebble-grade detritus

### **Forms**

All four classes of briquetage recognised in the Fenland region (Morris 2001) were identified in the assemblage: containers, supports, heating structure debris and undiagnostic miscellaneous fired clay pieces associated with salt production.

### **Containers**

- A.3.9 The majority of sherds derived from containers or evaporation pans (86% by number; 89% by weight) were made from all three fabric types within the organic-tempered, coarse sandy group. The remainder had been made from the shell-gritted fabric (14%; 11%). The manufacture of containers from such different fabric groups has not been found in Bronze Age briquetage assemblages elsewhere in Britain. The only period when such a contrast in container manufacture has been identified previously is during the later Iron Age when shell-gritted, cut-rim troughs were replaced by organic-tempered pans as demonstrated first at Cowbit (Morris 2001) and subsequently in the re-analysis of briquetage assemblages from the Fenland Management Project surveys in Lincolnshire (Morris and Percival 2001).

- A.3.10 Only one type of evaporation pan or container rim was identified, R3, which has an upright to slightly convex profile and rounded rim (Fig.35,1-2). This simple shape is a very common form and has been recovered at several Iron Age salt production sites in the region, including Billingborough (Bacon 2001; Chowne 2001, Langtoft, Market Deeping and Cowbit (Morris 2001), but is not exclusive to that period as examples have also been identified recently at Pode Hole Quarry in later Bronze Age deposits (Morris 2009a, fig. 4.5, 2). The two R3 sherds in the Brigg's Farm assemblage were made from organic-tempered sandy fabrics. In plan, the larger sherd appears to come from a non-cylindrical, flat open pan as there is no curve to the wall. This observation is supported by the larger pieces of container base sherds in similar fabrics which are also non-cylindrical, or straight-sided, in plan (Fig.35, 2-3). There are two profile differences amongst the eight base sherds recovered and these are flat bases with either sharp base angle (B1; Fig. Briq, 2) or rounded base angle (B8; Fig.35, 3). The majority of bases, however, derive from the central flat zone of the broad, flat evaporation pans and display no base angle (B99); i.e. base plates. Body sherds (BS1/2; Fig.35, 4) are more numerous and the one illustrated displays a slight curvature where it was likely to have been attached to the corresponding base sherd (Fig.35, 3). The size of these pans and the detailed nature of their manufacture is not possible to reconstruct beyond indicating that they were handmade due to the presence of numerous finger grooves visible along several larger sherds.
- A.3.11 There is no evidence in eastern England which suggests that flat-based open, briquetage containers of later prehistoric type had been used to transport salt away from the locations of production to other sites further inland, which did take place elsewhere in Britain (Morris 2001). Although the container sherds in this assemblage now appear softly fired, there is every indication that the original vessels, used to dry wet salt crystals, had been scraped on their interiors. Several sherds from the same container display undulating interior surfaces typical of the scraping of a softly fired ceramic material.
- A.3.12 In addition to this evidence of use, is the observation of salt bleaching on nearly all of the container sherds. Salt bleaching takes place when the chlorine from salt combines with the natural iron in orange/red firing clays and removes the iron from the clay during the heating and evaporation process. If the length of contact with brine is for a short period of time, then little or no bleaching is observed but if a container is used for long periods of time or repeatedly, then the amount of bleaching visible increases from simply a thin white 'skin' or layer effect on the exterior surface to a complete transformation to off-white or buff coloured clay through the entire wall of the sherd. The majority of container sherds in the Brigg's Farm assemblage have some evidence of bleaching (87 sherds), with bleached exterior surfaces (42 sherds) the most frequent location, but a few are bleached throughout (10) or on both the exterior and interior surfaces (12). One of the base plates is bleached both on the interior surface and through this surface onto the underside surface.

### ***Supports - Pedestals***

- A.3.13 One of the most distinguishing aspects of this briquetage assemblage is the variety of distinctively handmade, pedestal supports present amongst the 29 pieces. The pedestals are quite substantial and this suggests that the pans were likely to have been of some considerable size to require such supports in order to secure them safely over the open-fired hearths. In the absence of experimental examples using reconstructed pans and supportive pedestals above hearth fires, it is not possible to know whether the

brine was actually boiled or the water simply evaporated with the general heat leaving the salt crystals in the pans. The six types are:

- *PD17* square-sectioned solid brick-shaped pedestal with uncertain top (Fig. 35, 6)
- *PD19* stemmed pedestal with thick, oval footplate (Fig. 35, 7)
- *PD20* lozenge-sectioned, broad, flat-topped pedestal with splayed base (Fig. 35, 8)
- *PD21* oval-stemmed pedestal with substantial, thick round base (Fig.36, 9-10)
- *PD22* T-shaped top and long, thin, round-stemmed pedestal with round footplate (Fig. 36, 11)
- *PD23* short, stocky curved top pedestal with curled base (Fig. 36, 12)
- *PD24* incomplete pedestal with simple flat-top stem and uncertain length or base shape (Fig.36, 13)

A.3.14 Types *PD17* and *PD19* were first identified in the later Bronze Age Pode Hole Quarry assemblage where they had been made from a coarse sand fabric (Morris 2009a, fig. 4.5, 11-14 and 18-21). The single Brigg's Farm examples were made from the slightly organic-tempered, coarse sand fabrics V1 and V2. Pedestal type *PD20* was found in the same context as the *PD17* and *PD19* examples but is very different in shape. It looks like a thin or narrow, truncated pyramid and therefore is somewhat similar to several flat-topped, thin and narrow, pyramid-like pedestals found at the Early Iron Age saltern at Billingsborough and categorised as tapering or wedge-shaped block, of trapezoidal shape (Bacon 2001, 59, figs. 30, 6, 32, 48 and 34, 81). No examples of horned or curved top, solid, pyramidal pedestal fragments were identified in the Brigg's Farm assemblage, which makes this array of pedestals different from those recovered at Pode Hole Quarry and Billingsborough, for example. As with these Billingsborough examples, it seems that the *PD20* Brigg's Farm pedestal may have been placed onto the hearth floor and received the evaporation pan while it was still in a leather-hard state because the pedestal is leaning, uncentred, and lopsided on its wide base. Pedestal type *PD21* is represented by either the lower or upper halves of two different examples. The general concept of *PD21* is similar to *PD19* with its thick foot plate but *PD21* is much more solid than *PD19* as the middle area is a slightly concaved zone rather than a pole-like stem. A larger example of this type was found at Billingsborough (Bacon 2001, fig. 33, 71), while at least one piece from the salt production site at Northey, located just south of Brigg's Farm (at TL 2365 9881), appears to be the same type (Gurney 1980, fig. 6, 16).

A.3.15 In complete contrast, type *PD22* has a T-shaped bar top on a circular stem and rather slight base plate compared to the span of the top arms. The complete example in the assemblage is the tallest pedestal recovered at 145mm. It is the only example in the assemblage which shows that it had been placed within the ashes of the hearth because the lower third of the pedestal including the foot is dark grey in colour on what is otherwise an orange-red object (Fig.29). This is a very different pedestal, carefully made and smoothed on the exterior to minimize any irregularity caused by finger-squeezing of the damp clay during manufacture. Organic-tempered, short bar versions of this type have been recovered at Mucking North Ring (Barford 1988a, fig. 27, 16-18; 1988b, fig. 37, 1-2) and at Northey (Gurney 1980, fig. fig. 6, 17/18), but no long bar parallels have been found in eastern England. Instead, it is necessary to explore further

afield and recognise a similarity to the T-shaped, three-tined small pedestals from Middle Bronze Age levels at Brean Down in Somerset (Foster 1990, 165-9, figs. 116-117), which were also made from sandy clays with vegetable temper of various quantities.

- A.3.16 A curious type of pedestal that is short, solid and curled at both top and base was found in a Middle Bronze Age pit. Type PD23 fits comfortably within the palm of a left hand or may have been rolled onto an irregular hearth surface when leather-hard. This object is dark along half of its entire length from top to foot and is salt bleached on the opposite, orange-red half (Fig.29), suggesting that the pedestal had been sticking out from underneath an evaporation pan during use. No examples of this type have been found elsewhere in Britain on later prehistoric salt production sites.
- A.3.17 Type PD24 is represented by only the upper part of one example and shows that it is a round-stemmed, flat-topped, handmade pedestal. There are no comparable pieces in the Northey, Pode Hole Quarry, or Billingsborough assemblages.
- A.3.18 All of the pedestals had been roughly made by hand with folds of clay easily visible in the broken fragments, and several have actual fingering impressions from manufacture still visible (Fig. 36, 12 and 14). Some had been completely oxidised through to the core area but others were unoxidised in the centres. Amongst the 15 identifiable pedestals within the assemblage of 29 fragments, eight show salt bleaching on the exterior surface and some have pink salt colours on the interior if they had been completely oxidised. Surface salt bleaching and unoxidised cores indicate pedestals which had been used for short periods of time. On the other hand, four examples display salt bleaching and oxidation throughout. This indicates that the pedestal supports had been used in the hearths for long sessions or repeatedly for salt production and become quite saturated with brine during their use.
- A.3.19 The pedestals were made from two fabric groups: the coarse sandy group and the organic-tempered, coarse sandy group. A coarse sand fabric with detritus had been used to make all of the pedestals found nearby at Pode Hole Quarry (Morris 2009a, 75). No examples of shell-gritted pedestals were identified in the Brigg's Farm assemblage, which is in contrast to the pedestals found at Northey (Gurney 1980, 15). Grass tempering was specifically noted in a limited number of the pedestal fragments published from Early Iron Age Billingsborough (Bacon 2001, 60-65).

### ***Structural Material***

- A.3.20 Several pieces display characteristics which suggest that they derive from at least two hearths, if not more. The material was made from two fabrics, Q1 and Q3, within the coarse sandy fabric group. No examples of organic-tempered or shell-gritted structural material were identified. The most distinctive fragments which suggest hearth structures have one deliberately smoothed surface but are otherwise rough underneath (HFL1) with salt bleaching or pink salt colour to the oxidised fabric that indicate their association with salt production. In addition, there are other, less diagnostic fragments without the smoothed surface (HFL99) but often with salt bleaching which have been classified as possible structural material.

### ***Miscellaneous***

- A.3.21 A total of 60 pieces of undiagnostic fired clay fragments (Table 11) were recovered which may have been associated with salt production based on their salt bleached condition and/or their fabric types. Three fragments from one context in Ditch 520 (540)

seem to have been re-burnt due to their overfired, bloated and partially blackened appearance which renders them undiagnostic of form.





Class	Form	Fabric																	
		C1		Q1		Q2		Q3		S1		V1		V2		V3		Total	Total
		CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
<b>Containers</b>	B1	-	-	-	-	-	-	-	-	1	5	1	54	1	84	2	45	<b>5</b>	<b>188</b>
	B8	-	-	-	-	-	-	-	-	1	3	-	-	1	13	1	32	<b>3</b>	<b>48</b>
	B99	-	-	-	-	-	-	-	-	-	-	10	91	16	191	1	25	<b>27</b>	<b>307</b>
	BS1/2	-	-	-	-	-	-	-	-	13	88	13	88	43	149	1	7	<b>70</b>	<b>332</b>
	R3	-	-	-	-	-	-	-	-	-	-	1	4	1	16	-	-	<b>2</b>	<b>20</b>
<b>Class Sub-total</b>		-	-	-	-	-	-	-	-	<b>15</b>	<b>96</b>	<b>25</b>	<b>237</b>	<b>62</b>	<b>453</b>	<b>5</b>	<b>109</b>	<b>107</b>	<b>895</b>
<b>Supports</b>	PD17	-	-	-	-	-	-	-	-	-	-	-	-	3	200	-	-	<b>3</b>	<b>200</b>
	PD19	-	-	-	-	-	-	-	-	-	-	1	99	-	-	-	-	<b>1</b>	<b>99</b>
	PD20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	376	<b>2</b>	<b>376</b>
	PD21	-	-	-	-	-	-	-	-	-	-	2	125	1	213	-	-	<b>3</b>	<b>338</b>
	PD22	-	-	-	-	-	-	-	-	-	-	4	433	-	-	-	-	<b>4</b>	<b>433</b>
	PD23	-	-	1	500	-	-	-	-	-	-	-	-	-	-	-	-	<b>1</b>	<b>500</b>
	PD24	-	-	-	-	-	-	1	84	-	-	-	-	-	-	-	-	<b>1</b>	<b>84</b>
	PD98	-	-	1	21	-	-	1	6	-	-	4	95	-	-	-	-	<b>6</b>	<b>122</b>
	PD99	-	-	-	-	-	-	8	96	-	-	-	-	-	-	-	-	<b>8</b>	<b>96</b>
<b>Class Sub-total</b>		-	-	<b>2</b>	<b>521</b>	-	-	<b>10</b>	<b>186</b>	-	-	<b>11</b>	<b>752</b>	<b>4</b>	<b>413</b>	<b>2</b>	<b>376</b>	<b>29</b>	<b>2248</b>
Structural	HFL1	-	-	5	71	-	-	6	296	-	-	-	-	-	-	-	-	<b>11</b>	<b>367</b>
Material	HFL99	-	-	4	182	-	-	-	-	-	-	-	-	-	-	-	-	<b>4</b>	<b>182</b>
<b>Class</b>		-	-	<b>9</b>	<b>253</b>	-	-	<b>6</b>	<b>296</b>	-	-	-	-	-	-	-	-	<b>15</b>	<b>549</b>



Sub-total																			
Miscellaneous	FC99	1	17	10	72	41	341	-	-	-	-	5	33	3	27	-	-	<b>60</b>	<b>490</b>
	<b>TOTAL</b>	<b>1</b>	<b>17</b>	<b>21</b>	<b>847</b>	<b>41</b>	<b>341</b>	<b>16</b>	<b>482</b>	<b>15</b>	<b>96</b>	<b>41</b>	<b>1022</b>	<b>69</b>	<b>893</b>	<b>7</b>	<b>485</b>	<b>211</b>	<b>4182</b>

Table 11: Briquetage by Class and Fabric

### ***Deposition and Dating***

- A.3.22 Briquetage was recovered from ten features (Tables 12 and 13). In addition, fragments of container and numerous miscellaneous pieces were covered from what has been interpreted as a buried soil or natural layer (1378).
- A.3.23 Ditch 510 contained three different pedestals (Fig. 35, 6-8) and several hearth fragments from one context alone (517), which comprised the largest collection of briquetage by weight (context 517; 874g). The burnt residue from a shell fabric Deverel Rimbury pot sherd in this context was radiocarbon dated to 1530-1400 cal BC (GU-25573; 95% probability) and may provide the earliest absolute dating evidence by association for briquetage, and therefore salt production, in Britain. The second largest briquetage deposit by weight (context 629; 706g) produced 18 container sherds in fabrics V2, V3 and S1 (Fig. 35, 3-5) and two type PD22 pedestals including one complete example (Fig. 36, 11; Fig. 35, 1) and a second fragment, with a small amount of hearth material, while the third (529) contained a similar range including one of the assemblage rim sherds (Fig. 35, 1). Two contexts (528, 530) produced only container body sherds all in the same organic-tempered fabric V1, while one other context held a single body sherd in fabric S1 (570). Animal bone (pig jaw) from context 530 was radiocarbon dated to 1410-1120 cal BC (GU-25577; 95% probability). The largest pieces of container sherds, with a mean weight of 15 grammes, came from (532). Altogether, ditch 510 was the final repository for the largest amount of Middle Bronze Age briquetage excavated at Brigg's Farm (73 pieces; 1947 grammes). The range of types and fabrics identified provides a useful summary of site assemblage as a whole. All major fabric types and fabric groups are represented, as are four of the six types of pedestal supports.
- A.3.24 In contrast, various sections through ditch 520 contained less than half as much briquetage as ditch 510. Only two fabric groups and three fabric types are represented. The range of forms is also considerably reduced with only two pedestal types (PD21 and PD22; Fig. 35, 9 and 12), but this does include the only other rim sherd from a container (Fig. 35, 2). Animal bone (cow) from context 870 in ditch 520, which contained no examples of briquetage, produced a radiocarbon date of 1500-1310 cal BC (GU-19438; 95% probability) which is indistinguishable from the result derived from the carbonised residue sample from 517 in ditch 510.
- A.3.25 Two pits with Middle Bronze Age Deverel-Rimbury pottery contained just one pedestal each (Fig. 36, 10 and 13), and pit 2638 held only two sherds probably from the same S1 fabric container. Later ditches, 597 and 2696, contained fragments of saltern hearths made from the very coarse sandy fabric with large detritus, Q3, one of which had been thoroughly salt bleached, and gully 1331 contained fragments of a Q3 pedestal and shell-gritted container sherds. It is assumed that this is redeposited Middle Bronze Age briquetage, but that is far from certain.

### ***Manufacture of Briquetage and Salt Production at Brigg's Farm***

- A.3.26 Although not great in quantity, the presence of briquetage hearth material in ditches at Brigg's Farm, along with fragments of at least 15 pedestals and several different evaporation containers, is the best evidence to suggest that salt production was taking place near this settlement, if not actually within it. Comparison of the quantity of briquetage (4.1kg) to the quantity of contemporary Middle Bronze Age pottery (4.2kg) reveals that salt production was not the sole activity conducted in the area. Sites where

salt production is the main activity often produce little or no pottery, particularly during the later prehistoric and early Roman periods in the Fenland (Lane and Morris 2001). This was clearly not the case at Brigg's Farm.

- A.3.27 One of the most unusual aspects of the Brigg's Farm assemblage is that the pedestals are not all typical Bronze Age Fenland types. PD22, the long-armed, T-shaped slender pedestal is undoubtedly 'alien' in nature. Pyramidal varieties and brick-shaped types are the expected forms. In addition, the use of organic or vegetable matter to temper the coarse sandy clays is also not a Bronze Age Fenland method of manufacturing briquetage containers and pedestals. These two things in particular may be explained simply as individual, creative inventions of a practical nature by the saltmakers to solve the problems of container manufacture and supportive objects to conduct the activity at hand, evaporation of brine. However, the manufacture of ceramic vessels is not undertaken without some prior experience to make the effort successful. Therefore, it is worth considering whether the use of organic temper and the commencement of salt production at this particular time, which is the earliest known example in Britain, may have been a result of technological knowledge being introduced from outside the region. Seaborne visitors to the area from the Continent or from as far west as Somerset, for example, could have provided the impetus to experiment at Brigg's Farm. The range of pedestal forms strongly suggests that experimentation was taking place. Other Bronze Age assemblages have repeated examples of two or three types of pedestal but at Brigg's Farm, it seems that many different hands were involved in the salt-making process.
- A.3.28 The use of both a finer, shell-gritted fabric and several organic-tempered, sandy fabrics at this site also may be indicating different participants in the salt production procedures. It appears that these fabrics had been in use and deposited at the same time in Middle Bronze Age ditch 510 (contexts 570 and 629) and therefore were likely to have been contemporary. However, the amount of shell-gritted sherds is nearly ten times less frequent than the organic-tempered fabric sherds in these contexts and nearly 22 times less frequent than in the ditch as a whole (Table 13). Across the site, shell-gritted sherds represent only 14% of the container material. However, at nearby Pode Hole Quarry, all of the container sherds are shell-gritted. It has been suggested that the potters at Pode Hole Quarry had used their traditional coarser and finer shell fabrics to make briquetage containers (Morris 2009a, 80), and it is interesting to see that the finer shell fabric at Brigg's Farm is very similar if not identical to that from Pode Hole Quarry. Therefore, it would not be inappropriate to suggest that one or more potters from Pode Hole Quarry may have provided at least one evaporation pan for use at Brigg's Farm or that a potter at Brigg's Farm had participated in the salt production activity being introduced during the Middle Bronze Age at the site. It appears that potters became the principal makers of containers and pedestals for the following millennium, from the later Bronze Age through the Middle Iron Age, in the Fenland area. Assuming that the potters were women (cf. Peacock 1982), it is important to recognise that the hearths, and eventually the more elaborate saltern ovens of the later Iron Age and Roman periods, may have been made by other family members in the complicated process of salt production.



Feature	Context	Fabric																	
		C1		Q1		Q2		Q3		S1		V1		V2		V3		Total	Total
		CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
Ditch 510	517	1	17	4	182	-	-	-	-	-	-	1	99	3	200	2	376	11	874
	528	-	-	-	-	-	-	-	-	-	-	7	27	-	-	-	-	7	27
	529	-	-	12	107	-	-	-	-	-	-	5	32	-	-	-	-	17	138
	530	-	-	-	-	-	-	-	-	-	-	2	26	-	-	-	-	2	26
	532	-	-	1	21	-	-	-	-	-	-	10	150	-	-	-	-	11	171
	570	-	-	-	-	-	-	-	-	1	5	-	-	-	-	-	-	1	5
	629	-	-	2	30	-	-	1	6	1	3	3	371	12	187	5	109	24	706
	<b>Total</b>	<b>1</b>	<b>17</b>	<b>19</b>	<b>340</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>6</b>	<b>2</b>	<b>8</b>	<b>28</b>	<b>705</b>	<b>15</b>	<b>387</b>	<b>7</b>	<b>485</b>	<b>73</b>	<b>1947</b>
Ditch 520	540	-	-	-	-	-	-	-	-	-	-	-	-	51	503	-	-	51	503
	621	-	-	-	-	-	-	-	-	-	-	-	-	3	3	-	-	3	3
	959	-	-	-	-	-	-	-	-	-	-	2	24	-	-	-	-	2	24
	980	-	-	-	-	-	-	-	-	1	5	3	133	-	-	-	-	4	138
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>5</b>	<b>157</b>	<b>54</b>	<b>506</b>	<b>0</b>	<b>0</b>	<b>60</b>	<b>668</b>
Ditch 597	1145	-	-	-	-	-	-	1	84	-	-	-	-	-	-	-	-	1	84
Ditch 617	1227	-	-	-	-	1	3	-	-	-	-	1	2	-	-	-	-	2	5
Gully 1010	1011	-	-	1	7	-	-	-	-	-	-	-	-	-	-	-	-	1	7
	1013	-	-	-	-	-	-	-	-	-	-	4	31	-	-	-	-	4	31
	1095	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	-	1	2
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>33</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>40</b>
Gully 1331	1304	-	-	-	-	-	-	8	96	-	-	-	-	-	-	-	-	8	96
	1324	-	-	-	-	-	-	-	-	1	4	-	-	-	-	-	-	1	4
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>96</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>100</b>

Ditch 2696	2705	-	-	-	-	-	-	-	6	296	-	-	-	-	-	-	-	-	6	296
Pit 821	826	-	-	1	500	-	-	-	-	-	-	-	-	-	-	-	-	-	1	500
Pit 2610	2611	-	-	-	-	-	-	-	-	-	-	-	2	125	-	-	-	-	2	125
Pit 2638	2636	-	-	-	-	-	-	-	-	-	1	5	-	-	-	-	-	-	1	5
	2637	-	-	-	-	-	-	-	-	-	1	9	-	-	-	-	-	-	1	9
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>14</b>
Natural	1378	-	-	-	-	40	338	-	-	9	65	-	-	-	-	-	-	-	49	403
	<b>TOTAL</b>	<b>1</b>	<b>17</b>	<b>21</b>	<b>847</b>	<b>41</b>	<b>341</b>	<b>16</b>	<b>482</b>	<b>15</b>	<b>96</b>	<b>41</b>	<b>1022</b>	<b>69</b>	<b>893</b>	<b>7</b>	<b>485</b>	<b>211</b>	<b>4182</b>	

Table 12: Briquetage Fabric by Feature (counts and weights)

Feature	Context	Form																															
		Containers										Supports - Pedestals												Structural		Misc.							
		B1		B8		B99		BS1/2		R3		PD17		PD19		PD20		PD21		PD22		PD23		PD24		PD98/9		HFL1/99		FC99		Total	Total
		CT	WT	C	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
Ditch 510	517	-	-	-	-	-	-	-	-	-	-	3	200	1	99	2	376	-	-	-	-	-	-	-	-	-	-	4	182	1	17	11	874
	528	-	-	-	-	-	-	7	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	27
	529	-	-	-	-	1	10	3	18	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	41	9	65	17	138		
	530	-	-	-	-	1	21	1	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	26	
	532	1	54	-	-	8	60	1	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	21	-	-	-	11	171	







# CATALOGUE

Master	Feature	Context	Class	CT	WT	Form	Fabric	SUPPORTS					CONTAINERS		Usewear	COMMENTS		
								Type	Diam	Diam	Thick	Thick	Ht.	Ht			Thick	/position
									Min	Max	Min	Max					Code	
510	ditch 516	517	S	1	99	PD19	V1	45	65	28	>50	>41	-	-	WH2	SF2; fabric sample BRIQ1000; pink; OX1		
510	ditch 516	517	S	3	200	PD17	V2	-	-	>46	>55	>86	-	-	WH1	fabric sample BRIQ1001 (A)		
510	ditch 516	517	ST	4	182	HFL99	Q1	-	-	-	-	-	-	-	(WH)	thickness >40mm; dense layered lump		
510	ditch 516	517	S	2	376	PD20	V3	-	-	25	90	113	-	-	WH2	SF1; total profile; pink		
510	ditch 527	528	C	2	14	BS1/2	V1	-	-	-	-	-	-	4	WH2	-		
510	ditch 527	528	C	2	8	BS1/2	V1	-	-	-	-	-	-	2; 3	-	-		
510	ditch 527	528	C	3	5	BS1/2	V1	-	-	-	-	-	-	2	WH2	-		
510	ditch 527	529	ST	2	37	HFL1	Q1	-	-	-	-	-	-	-	(WH)	fabric sample BRIQ1004; one flat surface		
510	ditch 527	529	C	2	13	BS1/2	V1	-	-	-	-	-	-	2	WH2	all same container		
510	ditch 527	529	C	1	10	B99	V1	-	-	-	-	-	-	4	WH2	best as B99, possibly BS1/2		
510	ditch 527	529	C	1	4	R3	V1	-	-	-	-	-	>21	3	-	-		
510	ditch 527	529	C	1	5	BS1/2	V1	-	-	-	-	-	-	2	-	-		
510	ditch 527	529	ST	1	4	HFL1	Q1	-	-	-	-	-	-	-	-	hearth flooring; = BRN4007		
510	ditch 527	529	M	9	65	FC99	Q1	-	-	-	-	-	-	-	-	lumps; oxidised		
510	ditch 527	530	C	1	21	B99	V1	-	-	-	-	-	-	5	-	again, base centre zone		
510	ditch 527	530	C	1	5	BS1/2	V1	-	-	-	-	-	-	3	-	odd - basically V1 with a layer of Q2!!!		
510	ditch 531	532	S	1	21	PD98	Q1	X	X	X	>14	-	-	-	WH2	good bleaching		
510	ditch 531	532	C	1	54	B1	V1	-	-	-	-	-	>12	3; 4	(WH)	odd bleaching in the interior area		
510	ditch 531	532	C	3	34	B99	V1	-	-	-	-	-	-	3; 4	(WH)	odd bleaching in the interior area		

510	ditch 531	532	C	5	26	B99	V1	-	-	-	-	-	-	2; 3	WH2	-
510	ditch 531	532	C	1	36	BS1/2	V1	-	-	-	-	-	-	3	WH2, 3	beautiful convex profile to the large sherd
520	ditch 539	540	S	1	213	PD21	V2	73	74	56	>46	>59	-	-	WH2	SF5; new fabric and new form; ILLUSTRATE
520	ditch 539	540	C	1	16	R3	V2	-	-	-	-	-	>44	3; 4	-	good profile; ILLUSTRATE
520	ditch 539	540	C	16	191	B99	V2	-	-	-	-	-	X	3; 6	WH3, 12	good fingering - PHOTOGRAPH
520	ditch 539	540	C	30	56	BS1/2	V2	-	-	-	-	-	-	3	WH2	one has fingering?
520	ditch 539	540	M	3	27	FC99	V2	-	-	-	-	-	-	-	(WH)	singed, overfired, bloated, blackened floor
520	ditch 618	621	C	3	3	BS1/2	V2	-	-	-	-	-	-	X	X	SF24; extremely abraded
510	ditch 561	570	C	1	5	B1	S1	-	-	-	-	-	-	3	WH2, 3	extremely light, porous, highly vesicular
510	ditch 625	629	S	2	333	PD22	V1	36	37	36	116	145	-	-	WH1	SF 15 and 30 which join; complete; ILLUS.
510	ditch 625	629	S	1	38	PD22	V1	30	>32	-	-	>63	-	-	WH1	pink and white; stem fragment; not drawn
510	ditch 625	629	C	1	32	B8	V3	-	-	-	-	-	>42	2; 3	WH2	one-good fingering; PHOTO; unwedged
510	ditch 625	629	C	2	45	B1	V3	-	-	-	-	-	>47	3	WH1	= BRN 4030 probably
510	ditch 625	629	C	1	13	B8	V2	-	-	-	-	-	>22	3	WH2	much less organic matter; rounded angle
510	ditch 625	629	C	1	84	B1	V2	-	-	-	-	-	>29	3	-	SF28; 90mm long sherd; ILLUSTRATE
510	ditch 625	629	C	1	25	B99	V3	-	-	-	-	-	-	4	(WH)	-
510	ditch 625	629	C	8	69	BS1/2	V2	-	-	-	-	-	-	2; 4	WH1	from same container; low organics
510	ditch 625	629	C	1	7	BS1/2	V3	-	-	-	-	-	-	3; 4	-	OX2, 3 and IR4 firing condition

510	ditch <b>625</b>	629	C	1	12	BS1/2	V2	-	-	-	-	-	-	4	-	**V2 fabric sherd with V3 fabric patches**
510	ditch <b>625</b>	629	C	1	3	B8	S1	-	-	-	-	-	>48	3	WH2	very vesicular; oxidised throughout
510	ditch <b>625</b>	629	S	1	6	PD98	Q3	X	X	X	X	X	-	-	WH2	coarse quartz fabric and no organics
510	ditch <b>625</b>	629	ST	2	30	HFL1	Q1	-	-	-	-	-	-	-	WH2	flat but concave surface for 2; layers
-	pit <b>821</b>	826	S	1	500	PD23	Q1	42	52	49	96	102	-	-	WH2	SF10
520	ditch <b>981</b>	980	C	1	5	BS1/2	S1	-	-	-	-	-	-	2	WH2	lots of round, irregular vesicles; soft fabric
520	ditch <b>981</b>	980	S	1	62	PD22	V1	25	31	X	X	>71	-	-	WH2	SF18; not detritus sandy with organics
520	ditch <b>981</b>	980	S	2	71	PD98	V1	X	X	X	X	>70	-	-	WH2	joining pieces; uncertain pedestal type
1010	gully <b>1012</b>	1011	M	1	7	FC99	Q1	-	-	-	-	-	-	-	(WH)	pink and bleached
1010	gully <b>1014</b>	1013	M	4	31	FC99	V1	-	-	-	-	-	-	-	-	possible pedestal?; oxidised; pinkish red
597	ditch <b>1147</b>	1145	S	1	84	PD24	Q3	>29	>42	X	X	>63	-	-	-	SF21; brown-grey ext.; pink-orange int.
617	ditch <b>1228</b>	1227	M	1	3	FC99	Q2	-	-	-	-	-	-	-	(WH)	Sample 55
617	ditch <b>1228</b>	1227	C	1	2	BS1/2	V1	-	-	-	-	-	-	X	(WH)	Sample 55; flake
1331	gully <b>1305</b>	1304	S	8	96	PD99	Q3	X	X	X	X	X	-	-	WH2	thick, block-type of pedestal
1331	gully <b>1326</b>	1324	C	1	4	BS1/2	S1	-	-	-	-	-	-	3	-	pink tinge - OX2, 3 and UN4; ??pottery??
natural	<b>1367</b>	1378	C	9	65	BS1/2	S1	-	-	-	-	-	-	3; 4	WH2, 3	convex sherds
natural	<b>1367</b>	1378	M	40	338	FC99	Q2	-	-	-	-	-	-	-	-	strange irregular material; pink tinge
-	pit <b>2610</b>	2611	S	2	125	PD21	V1	>36	>59	-	-	>79	-	-	WH1	SF32
-	pit <b>2638</b>	2636	C	1	5	BS1/2	S1	-	-	-	-	-	-	3	WH2, 3	fresh break
-	pit <b>2638</b>	2637	C	1	9	BS1/2	S1	-	-	-	-	-	-	3	(WH)	fabric sample BRIQ1002
2696	ditch <b>2702</b>	2705	ST	6	296	HFL1	Q3	-	-	-	-	-	-	-	WH1	SF36; thickness

																	>32mm; smooth surface
520	ditch <b>960</b>	959	S	2	24	PD98	V1	X	X	>15	X	X	-	-	-		pink, salt colours; clay layering visible
1010	gully <b>1036</b>	1095	M	1	2	FC99	V1	-	-	-	-	-	-	-	(WH)		Sample 57; hint of bleaching
510	ditch <b>516</b>	517	M	1	17	FC99	C1	-	-	-	-	-	-	-	(WH)		reacts to dilute acid; thin section BRIQ 1001
510	ditch <b>625</b>	629	C	1	9	BS1/2	V2	-	-	-	-	-	-	4	WH2, 4		thin section BRIQ 1003; low organics

Table 14: Briquetage catalogue

## Catalogue of illustrated briquetage (Figs. 35 and 36)

(BRN, Briquetage Record Number in database)

### **Containers**

1. Rim, R3; fabric V1; thickness code 3; context 529, ditch 510; BRN 4010.
2. Rim, R3; fabric V2; thickness code 3-4; context 540, ditch 520; BRN 4022.
3. Base with body sherd, B1 and BS1/2; fabric V1; parallel finger channels from joining base plate to body creating base angle; salt bleaching on exterior surface; context 532, ditch 510; BRNs 4017 and 4020.
4. Base, B1; fabric V2; fully salt bleached throughout walls; context 629, ditch 510; BRN 4033.
5. Base, B8; fabric V3; parallel finger channels diagonally along wall of base up from base angle; context 629, ditch 510; BRN 4030.

### **Supports – Pedestals**

6. Pedestal, type PD17; fabric V2; fully salt bleached throughout object; context 517, ditch 510; BRN 4001.
7. Pedestal, type PD19; fabric V1; salt bleached on exterior surface; special find 2, context 517, ditch 510; BRN 4000.
8. Pedestal, type PD20; fabric V3; salt bleached on exterior surface and pink salt colouration in core of object; context 517, ditch 510; BRN 4003.
9. Pedestal, type PD21; fabric V2; salt bleached on exterior surface; special find 5, context 540, ditch 520; BRN 4021.
10. Pedestal, type PD21; fabric V1; salt bleached throughout object; special find 32, context 2611, pit 2610; BRN 4054.
11. Pedestal, type PD22; fabric V1; salt bleached throughout object and zone of unoxidised effect on lower stem and base from immersion in hearth ash; special finds 15/30 which join; context 629, ditch 510; BRN 4028.
12. Pedestal, lower stem, type PD22; fabric V1; fingering visible where stem likely to join to base; salt bleached on exterior; special find 18, context 980, ditch 520; BRN 4043.
13. Pedestal, type PD23; fabric Q1; one half of object salt bleached on exterior surface; special find 10, context 826, pit 821; BRN 4041.
14. Pedestal top and stem, type PD24; fabric Q3; context 1145, ditch 1010; BRN 4047.

### **Catalogue of photographed briquetage (Figure Briq Photos)**

(BRN, Briquetage Record Number in database)

1. Pedestal, PD22; fabric V1; dark lower zone and foot; salt bleaching throughout; special finds 15/30, context 629, ditch 510; BRN 4028.
2. Pedestal, PD23; fabric Q1; side view showing unoxidised and oxidised zones with salt bleaching on oxidised area; special find 10, context 826, pit 821; BRN 4041.

3. Pedestal, PD21; fabric V2; oxidised exterior and unoxidised core; salt bleaching on exterior; special find 5, context 540, ditch 520; BRN 4021.
4. Pedestal, PD21; V1; oxidised throughout; salt bleaching throughout; special find 32, context 2611, pit 2610; BRN 4054.

## A.4 Fired Clay Objects and Other Material

*By Elaine Morris*

### **Clay weights**

- A.4.1 Fragments from at least ten and possibly 12 clay weights (42 pieces; 1565 grammes) were identified amongst the fired clay material from 11 contexts in eight features (Table 15). Four different fabrics from two fabric groups had been used to make the weights; Q1-Q3 and C1 (see briquetage report for fabric descriptions). All of the identifiable weights are cylindrical in shape. Cylindrical weights have convex-profiles, flat ends, and axial perforations inserted during manufacture at the leather-hard stage.
- A.4.2 Five of the weights have measurable base or end diameters which range from 80-86mm, with one which is quite small at 60mm. Perforation diameter measurements include 13mm, 15mm, and 23mm across where circular, but one had been roughly made and is very irregular in shape (Figure 37, Fired Clay Objects, 1). Only one weight had a complete height/length of 90mm. Most of the weights are roughly finished with highly irregular body surfaces, including one example which displays the impression of the maker's thumb.
- A.4.3 The majority of weights could have been interpreted as briquetage pedestal fragments but for their axial perforations. They are made from the same fabrics and many display salt bleaching on the exterior surface. This bleaching may have been caused by the use of salt-water during their manufacture or taken place if the weights had been used/re-used as pedestals in salt production. The former is the more appealing interpretation because nearly all of the weights have not been oxidised through their solid structure which suggests that they have only ever been heated to a brief length of time as the oxidisation had not penetrated completely into the walls of the cylinders despite the perforation providing access.
- A.4.4 Cylindrical weights were also recovered from nearby excavations at Bronze Age Fengate, including five from Padholme Road and six from Newark Road (Pryor 1980, figs. 13, 4-5, 60, 33-34 and 75, 1-4), and four from Pode Hole Quarry (Morris 2009b, fig. 4.3, 1-3 and 6). The fabric descriptions of the Fengate and Pode Hole weights are similar to Brigg's Farm fabric Q1. In addition, the range of measurable clay weight diameters from Fengate, from 75-100mm and perforation diameters from 18-25, are relatively similar to the majority from Brigg's Farm, while those from Pode Hole Quarry are consistently smaller and more like the small example from Brigg's Farm. At Billingham, fragments from 11 cylindrical clay weights were recovered from Middle Bronze Age and later contexts, with only two from the same context (Bacon 2001b, fig. 35). In Essex, cylindrical weights were identified in a Middle Bronze Age ditch overlain by Late Bronze Age occupation at Mucking North Ring (Bond 1988, fig. 26, 6).
- A.4.5 Several of the Briggs Farm cylindrical weights were found in features associated with Middle Bronze Age pottery, four of which also had organic materials which were radiocarbon dated: ditch 510, 1500-1435 cal BC (GU-19432) and 1380-1210 cal BC

(GU-19433); ditch 520, 1500-1310 cal BC (GU-19438); ditch 617, 1530-1380 cal BC (GU-19441); and post hole 1201, 1410-1190 cal BC (GU-19440) respectively. The absence of pyramidal clay weights from the collection is not surprising as these are usually associated with Late Bronze Age activity, none of which occurred within the excavated area.

### Clay ring

- A.4.6 A complete, small fired clay ring (53 grammes; Figure 37, Fired Clay Objects, 2) was recovered from ditch 510 in association with sherds of Middle Bronze Age pottery, fragments of briquetage including containers, pedestals and hearth material, and a clay weight (Figure Fired Clay Objects, 1). It is an irregularly oval ring of fabric Q1 clay measuring between 44-56mm across in diameter and 20-26mm thick and had been made when quite damp as it is very smooth in patches despite the irregularity of its outline. The perforation is equally irregular in plan and vaguely hourglass in profile. It was fired in an unoxidising atmosphere which suggests that it may have lain in the ashes of a fire rather than the open air when heated.

Feature	Context	CT	WT	Fabric
ditch <b>510</b>	517	4	109	Q1
	530	2	299	C1
	570	1	16	Q2
	629	2	122	Q2
	629	1	63	Q1
ditch <b>520</b>	959	10	315	Q3
post hole <b>1201</b>	1179	8	90	Q2
ditch <b>617</b>	1209	4	131	Q1
gully <b>1331</b>	1308	2	104	Q3
post hole <b>1009</b>	1479	4	276	Q3
ditch <b>2271</b>	2300	1	20	Q1
pit <b>2609</b>	2637	3	20	Q1
	<b>TOTAL</b>	<b>42</b>	<b>1565</b>	

Table 15: Clay Weights

- A.4.7 It is highly likely that this object had been a clay-firing test piece to determine whether the clay selected to make fabric Q1 was suitable for use in making briquetage and clay weights. This is suggested by the oval bend in the ring's shape which has been cracked in places as though the maker had been putting the clay deliberately under stress. If this is the correct interpretation, then the clay used to create fabric Q1 derived from a very local resource which is not unexpected because it was often used to make briquetage, specifically hearths and pedestals, as well as clay weights. Such bulky items are normally made from local clays in the prehistoric period.



### **Other fired clay material**

- A.4.8 A total of 98 pieces (407 grammes) of fired clay material which could not be assigned to either briquetage or clay objects (see those reports) was recovered from 12 features and from a natural layer (Table 16). Nearly two-thirds derived from environmental samples which had been carefully sieved. All of the pieces were assigned to a fabric previously identified amongst the briquetage and clay objects (see those reports).
- A.4.9 One piece from post hole 1241 was diagnostic to form and function; a fragment of daub with two wattle marks measuring between 9-11mm across. One piece from post hole 1009 was overfired and may have derived from a hearth or the burning of a structure. Two minute fragments from gully 1010 were gently rewashed and identified as having been made from fabric V2. Therefore, these probably derive from a briquetage pedestal but this cannot be proven due to the size of the fragments. In addition, four small pieces found in ditch 2104 had been made from fabric S1 with shells visible in fresh fracture. The fragments are undiagnostic to form but the presence of this fabric type as fired clay at the site suggests that the source for the clay may be near Brigg's Farm and any pottery or briquetage in this fabric might have been made on or near the site.

Feature	Context	Fabric									
		Q1		Q2		Q3		S1		V1	
		CT	WT	CT	WT	CT	WT	CT	WT	CT	WT
ditch <b>617</b>	1225	12	34								
	1226	34	52								
ditch <b>632</b>	1375	19	150								
pit/post hole <b>1009</b>	1479	1	30								
	1539	1	10								
gully <b>1010</b>	1011									2	1
	1015	2	1								
postpipe <b>1097</b>	1099			1	7						
	1409					1	3				
post hole <b>1241</b>	901	4	14								
gully <b>1331</b>	1303	1	11								
pit <b>1385</b>	1387	1	8								
natural <b>1400</b>	1506	2	17								
ditch <b>1446</b>	1449			1	7						
ditch <b>2104</b>	2111							4	9		
pit <b>2177</b>	2175	1	6								
pit <b>2609</b>	2636	8	38								
	2651	3	9								
	<b>Total</b>	<b>89</b>	<b>380</b>	<b>2</b>	<b>14</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>9</b>	<b>2</b>	<b>1</b>

Table 16: Other Fired Clay

Catalogue of illustrated clay objects (Figure Fired Clay Objects)  
(CWRN, clay weight record number)

1. Clay weight, cylindrical; fabric C1; special find 27, context 530, ditch 510; CWRN 5001.
2. Clay ring, complete; fabric Q1; special find 3, context 530, ditch 510.

## A.5 Wood

*By Michael Bamforth*

### **Introduction**

- A.5.1 This document aims to analyse the waterlogged wood assemblage in accordance with the recommendations set out in the assessment report (Bamforth 2009), which can be summarised as follows:
- Detailed reporting of the two log ladders (W1, Well 5 and W7, Well 8) and multiple jointed timber W14, Well 3).
  - Characterisation of woodworking debris from Well 3.
  - Characterisation of roundwood from Well 9.
- A.5.2 The waterlogged wood was recovered from the fills of a series watering holes, lying within a field system and settlement and all has been assigned a Middle Bronze Age date, chiefly by radiocarbon dating.
- A.5.3 Well 3, 660, contained Timber W14 and a woodworking debris assemblage, both of which are considered below. Located near a Middle Bronze Age settlement area, this feature had a maximum width of 4.8m and a maximum depth of 2m, the base of the feature lying at -0.12m OD.
- A.5.4 Well 5, 2248, contained Log Ladder W1. Located within the field system, this feature had a maximum width of 4.5m and a maximum depth of 1.5m, the base of the feature lying at -0.24m OD.
- A.5.5 Well 8, 2488, contained Log Ladder W7. Located within the field system, this feature has a maximum width of 3.71m and a maximum depth of 1.75m, the base of the feature lying at -0.31m OD.
- A.5.6 Well 9, 2384, contained a quantity of roundwood associated with a possible wattle revetment or lining. Located within the field system, this feature had a maximum width of 3.2m and a maximum depth of 1.14m, the base of the feature lying at -0.11m OD.

### **Methodology**

- A.5.7 This document has been produced in accordance with English Heritage guidelines for the treatment of waterlogged wood (Brunning 1996).
- A.5.8 Bulk collections or samples of roundwood were recorded as a context unit. All records were then entered into a database. All records were then entered into a database.

- A.5.9 Every effort was made to refit broken or fragmented items. However, due to the nature of the material, the possibility remains that some discrete yet broken items may have been processed as their constituent parts as opposed to as a whole.
- A.5.10 The metric data were taken with hand tools including rulers and tapes, the toolmarks were measured using a profile gauge.
- A.5.11 The system of categorisation and interrogation developed by Taylor (1998 and 2001) has been adopted within this report.
- A.5.12 Joints and fixings are described in accordance with the Museum of London archaeological site manual (Spence 1994).
- A.5.13 Items identifiable to species by morphological traits visible with a hand lens (oak – *Quercus* sp.) were noted. Other items were sub-sampled to allow identification to genus via microscopic identification as necessary.
- A.5.14 Species identification was carried out by Paul Flintoft of Network Archaeology. “Three thin sections were taken from each of the samples... and examined under a Zeiss D-7082 Oberkochen microscope. Thin sections across the transversal, radial and tangential planes of the wood were analysed for distinctive cellular growth patterns. Nomenclature follows Schweingruber and Flora Europaea” (Flintoft 2009).

#### ***Condition of Material***

- A.5.15 If preservation varies within a discreet item, the section that is best preserved is considered when assigning the item a condition score. Items that were set vertically in the ground often display relatively better preservation lower down and a relatively poorer preservation higher up.
- A.5.16 The condition scale developed by the Humber Wetlands Project (Van de Noort, Ellis, Taylor and Weir 1995 table 15.1), will be used throughout this report.
- A.5.17 The condition scale is based primarily on the clarity of surface data. Material is allocated a score dependent on the types of analysis that can be carried out, given the state of preservation. The condition score reflects the possibility of a given type of analysis but does not take in to account the suitability of the item for a given process (Table 17).
- A.5.18 Where appropriate, condition scores are given in the body of the report, appearing in bold type.

Condition Score	Museum Conservation	Technology analysis	Woodland management	Dendrochronology	Species Identification
5 Excellent	+	+	+	+	+
4 Good	-	+	+	+	+
3 Moderate	-	+/-	+	+	+
2 Poor	-	+/-	+/-	+/-	+
1 Very Poor	-	-	-	-	+/-
0 Non-viable	-	-	-	-	-

Table 17: Preserved wood condition score

## Results and Discussion

### Timber

#### *Log Ladder W1, Well 5*

- A.5.19 This log ladder has been identified as hazel (*Corylus* sp.). This artefact is constructed from an unconverted round, with some bark still adhering to the sapwood. The central pith and distribution of the two side-branches suggest this is the trunk of a small tree. The ladder was designed to be used in the same vertical orientation as the living tree. Where the growth rings are visible, they are evenly spaced around 3-4mm apart, describing a moderate rate of growth.
- A.5.20 The ladder is 1953mm long. At the base, the maximum diameter is 133x120mm, at the top of the ladder the diameter is 95x74mm. There is a slight left / right wave to the grain of the ladder. The base of the item is in good condition, scoring a 4 (Table 17). The item is fragmented, and is in seven pieces. The upper end of the ladder has decayed away, suggesting the ladder was originally somewhat longer. The base has been trimmed from one direction (the back side of the ladder) to a point. There are six, fairly evenly spaced steps cut into the front side of the ladder (Table 18). There are two side-branches, each of which has been trimmed to length from one direction. It is presumed that the side-branches have been left in place to act as hand-holds. They occur to the left of the ladder in-between the second and third step (L: 43mm, D: 30mm) and to the right of the ladder in-between the third and fourth step (L: 295mm, D: 36mm). Six toolmarks were recorded from this item. The toolmarks all physically overlay one another, strongly suggesting they were created by the same tool. The most complete mark measures 51mm across and 7mm deep.

Step (Bottom to Top)	Height of step from base (mm)	Depth of step (mm)
1	415	58
2	680	65
3	1000	53
4	1280	34
5	1535	63
6	1745	45

Table 18: Step heights of log ladder W1

#### Log Ladder W7, Well 8

- A.5.21 This log ladder has been identified as Maple (*Acer* sp.). This artefact is constructed from an unconverted round, with over half the bark still adhering to the sapwood. The central pith suggest this is the trunk of a small tree. Where the growth rings are visible, they are evenly spaced around 4mm apart, describing a moderate rate of growth.
- A.5.22 The ladder is 1215mm long. At the base, the maximum diameter is 155mm, at the top of the ladder the diameter is 130mm. The base of the item is in good condition, scoring a 4 (Table 17). The upper end of the ladder has decayed away, suggesting the ladder was originally somewhat longer. The base has been trimmed from two directions to a point. There is one surviving step, 855mm from the base of the ladder, which is 72mm deep. There is one side-branch (D: 45mm), between the base and the first step, it has a modern break. A single toolmark was recorded from this item and measures 44mm across and 6mm deep.

#### Log Ladder Discussion

- A.5.23 Over recent years, a relatively large corpus of prehistoric log ladders have been recorded. The context of many of the recorded ladders is similar to those discussed herein, the majority having been recovered from gravel sites within or bordering the Cambridgeshire fens. Log ladders are also known from the Thames Valley. Although the majority of log ladders excavated to date are thought to date to the Bronze Age, there are several other examples assigned to the Iron Age (Bamforth 2007; M. Taylor, pers. comm.). To date only a single log ladder has been published: an example excavated in Fengate in the 1970's (Pryor 1978: Fig. 27).
- A.5.24 Although Log Ladders have been excavated in a near vertical setting, suggesting they were discovered *in-situ*, both of the ladders discussed herein were laying flat on the base of the watering holes they were discovered in. In general, log ladders seem to be used to provide access to deep pits, often interpreted as watering holes (Bamforth 2007; Bamforth 2008; Taylor 2005, Pryor 1978).
- A.5.25 The form, style and woodworking technology of the log ladders recovered from this site are typical of the broader corpus. However, the species utilised (hazel and maple) are somewhat unusual. It is more common for log ladders to be fashioned from oak (a more robust, easier to work species)(Gale and Cutler 2000), or alder (a species that survives

better in wet conditions)(Gale and Cutler 2000). Log Ladders appear both in the round and made from half split timbers. The lack of finishing is also typical of the broader corpus, with woodworking generally limited to that required to produce a functioning artefact.

- A.5.26 Log Ladder W1 is of particular note as with six surviving steps, it represents the greatest number of steps recorded to date from an English, Prehistoric log ladder. It is highly recommended that both the log ladders discussed herein are published in a suitable journal.

*Timber W14, Well 3*

- A.5.27 Identified as oak, this heavily jointed timber is fashioned from a radial 1/8 split. It has been tangentially modified inside and out to produce a trapezoidally cross sectioned timber of heartwood only. The timber is of moderate quality, with a number of knots recorded in the otherwise straight grain. Where visible, the growth rings were 3-4mm apart, describing a moderate, even growth rate. The item scored a 4 for condition (Table 17). Of note is the light crazing of the surface of the timber, probably describing some light rot in antiquity (Eaton and Hale 1993), suggesting a prolonged period of use prior to burial. The item broke into three pieces during excavation.
- A.5.28 The timber measures 1770mm in length, the maximum width and thickness (at the cross cut end) is 215x150mm, the minimum width and thickness (at the end with the broken mortise) is 150 x 95mm. One end of the timber is cross cut, almost flat, from one direction. Moving along the timber, there is a somewhat open mouthed halving lap joint (1), two rectangular, roughly-cut through-mortise holes and a similar broken mortise hole (4) at the other end of the timber, clearly showing that the timber originally extended to a greater length. The joints all pass through the timber in the same orientation, with the holes passing through the timber in the radial plane. A brief description of the joints follows:
- (1) This slightly open mouthed halving lap has a step towards the cross cut end. The base of the joint measures 170mm across, and the joint has a maximum depth of 110mm.
  - (2) This rectangular mortise hole has its long axis aligned with the timber, measuring 140x110mm.
  - (3) This rectangular mortise hole has its long axis aligned with the timber, measuring 150x104mm.
  - (4) This broken mortise has a width of 80mm, almost no length survives, the timber having broken across the mortise.
- A.5.29 Both halving laps and mortise holes are well represented within Bronze Age woodworking assemblages, as are multiple jointed timbers (Taylor 2001). The timber and the joints are of a size and complexity that suggest this timber originally formed part of a stout, substantial structure. However, it is unknown what type of structure it may originally have formed an element of. Based on current reconstructions, it is not a recognisable part of a roundhouse (authors personal experience). Indeed, the alignment of the joints are designed to tie the timber to other structural elements perpendicular to the orientation of the beam, suggesting a square cornered structure.

*Debris from Well 3, 660 (752)*

A.5.30 In addition to the 13 items of debris (Table 19), A single piece of roundwood, two pieces of bark and a structural timber (W14) were also recovered. The debris is briefly discussed here, with the intention of characterising the type of woodworking it may represent.

Type	Damage	Bark/sapwood Heartwood	Condition	Wood working	Max Length (mm)	Max Breadth (mm)	Max Thickness (mm)
DEB	Surface looks and worn rolled	H	3	Cube, rad/tan	60	42	28
DEB	Surface looks and worn rolled	H	3	Cube, rad/tan	60	40	23
DEB	Surface looks and worn rolled	SH	3	Off RW	240	48	25
DEB	Surface looks and worn rolled	SH	3	Off RW	245	38	15
DEB	Surface looks and worn rolled	SH	3	Off RW	225	38	20
TIM DEB	Surface looks and worn rolled	H	3	Rad	248	65	32
WC	Surface looks and worn rolled	H	3	Rad	95	38	19
WC	Surface looks and worn rolled	H	3	Rad	85	38	12
WC	Surface looks and worn rolled	H	3	Tan	90	29	10
WC	Surface looks and worn rolled	H	3	Tan	95	30	12
WC	Surface looks and worn rolled	H	3	Tan	40	22	9
WC		SH	4	Off RW	55	25	12
WC		SH	4	OffRW	65	29	9

*Table 19: Debris from Well 3, 660*

- A.5.31 Woodchips W26 and W27 stand apart from the remainder of the assemblage, having been detached from roundwood, being in somewhat better condition, and not showing any taphonomic damage. The lack of damage suggests these chips are primary waste, the product of woodworking in the immediate vicinity, most probably of coppiced rods. Coppice rods are often used in the manufacture of wattle revetments in watering holes such as this (Bamforth forthcoming).
- A.5.32 The remainder of the debris assemblage, shows signs of taphonomic surface damage that suggests the material has been exposed for some time before becoming enclosed in the archaeological context. This is relatively unusual within prehistoric woodworking assemblages and raises the possibility that this material is secondary waste, perhaps originating in the nearby settlement area.
- A.5.33 Three pieces of debris are pieces of converted roundwood (W28, W29 and W30) as such are related to the reduction of this material.
- A.5.34 Radially aligned timber debris W17 and radially aligned woodchips W15 and W16 must have been detached from a radially aligned surface. This suggests the reduction and subsequent finishing of one or more radially cleft timbers. Radially split timbers are often utilised for structural purposes.
- A.5.35 The remaining three tangentially aligned oak woodchips could have been produced either by the finishing of a tangentially cleft surface, or possibly from working a timber to a point.
- A.5.36 Debris W19 and W20 could well be small broken pieces of splitting debris – the long, square cross sectioned 'streamers' that run between two split surfaces during cleaving.
- A.5.37 The high prevalence of oak and the form of the woodchips suggest that much of the assemblage was produced by the splitting and finishing of substantial oak timbers.
- A.5.38 Oak is easy to cleave both radially and tangentially. The ease of working and strength of this timber had seen it used for a wide variety of tasks throughout prehistory. It is often utilised as structural material (Gale and Cutler 2000). This deciduous woodland tree is likely to have grown locally to the site area on the well drained gravels of Thorney Island.

*Roundwood from Well 9, 2488 (2645)*

- A.5.39 A total of 46 sub-samples were recovered from an area of possible wattle work in Well 9, possibly related to a collapsed wattle lining or revetment. The sub-samples were recorded as a bulk collection, according to size and appearance. A total of 14 items were submitted for species identification and ring counts with the aim of investigating the possibility of some or all of the material being a product of coppicing.
- W31: Four roundwood sub-samples. Sapwood and heartwood, Length: <160mm, Diameter: 10-15mm. Coppicing evidence in the form of straight, even stems.
  - W32: 13 roundwood sub-samples. Bark, sapwood and heartwood, Length: <190mm, Diameter: 8-10mm. 'Twiggy' appearance with frequent side-branches.
  - W33: 24 roundwood sub-samples. Bark, sapwood and heartwood, Length: <170mm, Diameter: 10-12mm. Frequent side-branches.
  - W34: Five roundwood sub-samples. Bark, sapwood and heartwood, Length: <350mm, Diameter: 35-45mm. Coppicing evidence in the form of straight, even stems.



- A.5.40 The sub-samples recorded as W32 and W33 are unlikely to be coppice due to the high frequency of side branches observed (coppice rods generally have no or infrequent side-branches) (Rackham 1977). In addition, the stems have a smaller diameter than would be expected if they had formed part of a wattle lining or revetment.
- A.5.41 Although the material recorded as W31 has the straight, even stems that would be expected from coppiced material (Rackham 1977), the diameters are again somewhat smaller than would be expected if the material had originally formed part of a revetment.
- A.5.42 The roundwood sub-samples recorded as W34 again have the straight, even stems that would be expected of coppiced material, and also have a diameter more suited to constructing wattle work.

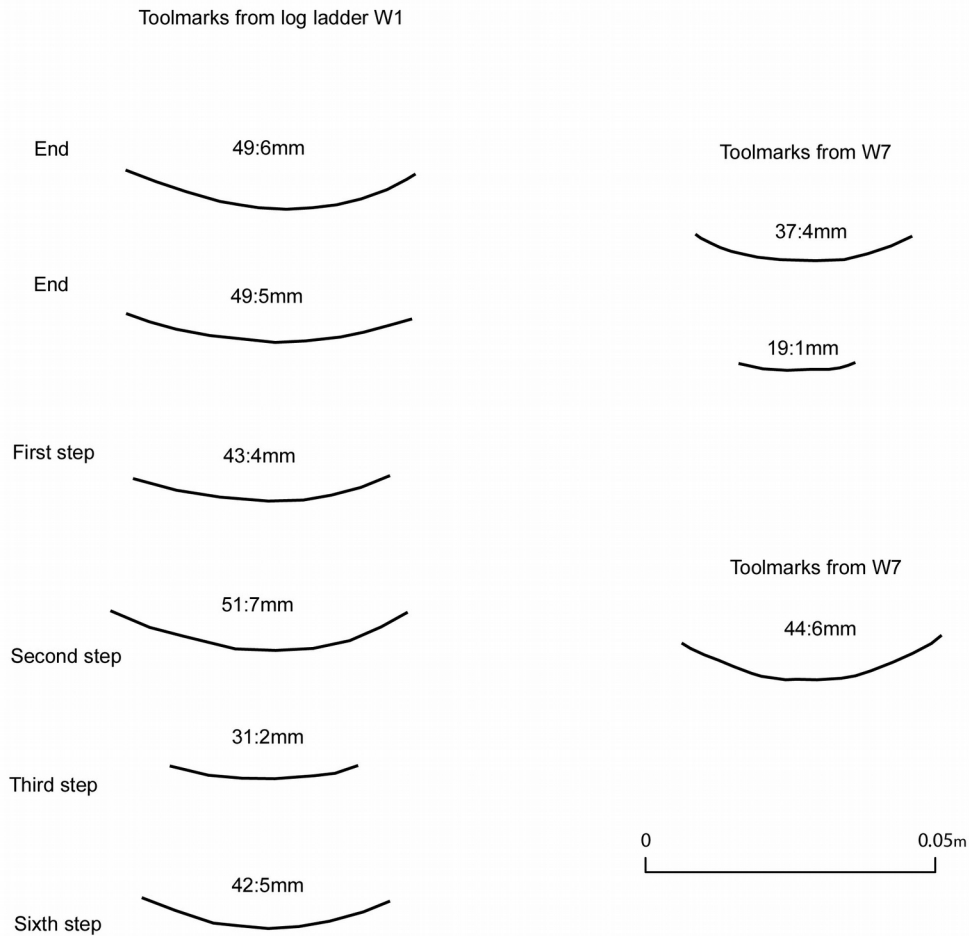
Wood Number	Species	Ring Count	Season of Felling
W31/1	<i>Salix</i> sp.	4	?
W31/2	<i>Fraxinus excelsior</i>	9	Summer
W32/1	<i>Salix</i> sp.	7	Spring?
W32/2	<i>Sambucus</i>	4?	Unknown
W32/3	<i>Alnus</i> sp.	4	Winter
W32/4	<i>Alnus</i> sp.	3/4?	Winter
W33/1	<i>Populus/Salix</i>	6	V. Distorted
W33/2	<i>Salix</i> sp.	4	Winter
W33/3	<i>Corylus</i>	7	Spring/summer
W33/4	<i>Corylus</i>	5	Autumn/winter
W33/5	<i>Salix</i> sp.	6	Spring/Summer
W33/6	<i>Alnus</i> sp.	4	Winter
W34/1	<i>Alnus</i> sp.	-	-
W34/2	<i>Alnus</i> sp.	-	-

Table 20: Roundwood from Well 9

- A.5.43 The broad diversity of diameters, species and morphological appearance makes it unlikely that this material originally formed a single wattle revetment or lining (Table 20). It seems likely that the smaller diameter material, and that with frequent side-branches (W31, W32 and W33) represents an accumulation of natural material.
- A.5.44 The material recorded as W34 may be coppiced, and is a suitable species and size to have originally formed part of a wattle revetment or lining (Taylor 2003). Alder is suitable for coppicing and is resistant to decay in wet environments (Gale and Cutler 2000).

### Conclusion

- A.5.45 The Log Ladders (W1 and W7) are typical of the wider corpus of Prehistoric log ladders in terms of form and woodworking technology. However, the species used are somewhat unusual. With six steps, Ladder W1 is the most complete artefact of this type recovered to date and it is strongly suggested that this item is published.
- A.5.46 Timber W14 seems to have formed part of an unknown, substantial, square cornered structure.
- A.5.47 There are three groups of debris present in Well 3. Two pieces of debris from roundwood that seem likely to represent primary debris. The remainder of the material has taphonomic surface damage suggesting it is secondary waste, possibly being produced some distance from the watering hole. Two of these items are roundwood debris, the remainder seems to be related to the splitting and subsequent reduction of oak timbers, probably of a substantial size.
- A.5.48 Although the majority of the roundwood recovered from Well 9 seems to be an accumulation of natural debris, there are several possibly coppiced stems that may originally have formed part of a wattle revetment or lining.



## APPENDIX B. ENVIRONMENTAL

### B.1 The Human Bone

By Natasha Dodwell

#### *Introduction*

- B.1.1 Five cremation burials were identified across the site and a further two contexts contained unburnt bone, one the remains of an inhumation burial. Three of the features, all unurned burials (**2067**, **2710** and **2040**), were located beneath, or cutting into, a small barrow mound (Feature **2010**) at the end of a slight ridge extending toward the Fen edge. The cut edges of two of these burials were a bright orange-pink colour suggestive of *in situ* burning, probably a *bustum* style burial where a pyre is built above a pit which itself becomes the repository for the cremated remains. The other burials were seemingly isolated with a truncated, unurned burial on higher ground to the north (**1500**), and an urned cremation within a large Collared Urn to the south-west at the end

of a second ridge (**3320**). A further three contexts contained small quantities of cremated bone from cleaning and areas of animal disturbance. In addition to the cremated bone, a very poorly preserved human skull was identified below the barrow mound (2718) and a disarticulated fragment of femur shaft was recovered from a fill of part of a large rectangular enclosure within the Middle Bronze Age settlement area (ditch **575**, Enclosure 1).

### **Methods of Excavation and Analysis**

- B.1.2 In all of the unurned cremation burials the fills were excavated in spits and in quadrants so that any possible patterning in the distribution of skeletal elements might be recognised in post excavation analysis. In two of the cremation burials, cuts **2710** and **2067**, single bones or small groups of elements were also plotted and bagged individually as an additional aid to analysing the distribution of elements and to avoid further fragmentation of the bone. For the urned burial, cut **3320**, the vessel was lifted and its fill excavated in the same manner but in laboratory conditions. All of the soil from the features containing cremated bone, including the fill of the pot, were wet sieved and the cremated bone separated from all extraneous material in the fraction >5mm. All of the dry residue was then passed through a series of stacked sieves with mesh sizes of 10, 5 and 2mm. In most contexts there was very little bone in the 2-5mm residue and this was easy to extract. Where there was a large quantity of bone and gravel/charcoal fragments they were not sorted but scanned, and identifiable elements (notably teeth and immature bone) extracted. The burnt bone was examined and recorded in line with current guidelines (McKinley 2004). In undisturbed features or those where it was felt that all of the cremated bone originally deposited was available for analysis, each of the three fractions were sorted into identifiable bone types which were defined by areas of the skeleton; skull (including teeth and mandible), axial skeleton (clavicle, scapula, ribs and vertebrae) upper limbs and lower limbs. Extremities were recorded with the appropriate upper or lower limb.
- B.1.3 Age was estimated from the stage of dental development, (Brown 1985), the degree epiphyseal fusion, (Schaefer *et al* 2009) and the appearance of the pubic symphysis (Lovejoy *et al* 1985). Morphological characteristics of the pelvis and skull were assessed to estimate the sex of adults (Buikstra and Ubelaker 1994) as well as metrical data (Bass 1987). Often only 1 or 2 traits could be assessed and so any estimate of sex should be treated with caution.

The age categories used are:

infant	0-4 years
juvenile	5-12 years
subadult	13-18 years
young adult	19-25 years
middle adult	26-44 years
mature adult	45 years +

### The Results

#### Unburnt Bone

- B.1.4 An extremely poorly preserved and heavily iron panned portion of maxilla, mandible and skull (2718) was recovered from beneath (to one side of) the primary *in situ* cremation burial **2067**. The dentine is exposed on all of the surviving teeth and from the degree of attrition has been aged between 35-45years (Brothwell 1981).
- B.1.5 A disarticulated adult femur shaft was recovered from the fill of ditch **575** in Enclosure 5

#### Burnt Bone

- B.1.6 The level of disturbance is important when considering aspects of pyre technology and the funerary ritual. It can affect the integrity of the burial, the quantity of bone within the feature and the bone fragment size. Of the five cremation burials at Thorney only one of the unurned burials, **1500**, was described on site as being clearly truncated. The rest are between 0.31 and 0.48m in depth and from the context descriptions it would seem that little if any bone has been lost.
- B.1.7 Each of the burials contained the cremated remains of an adult, with two, including the primary barrow cremation also including a 2nd younger individual. Details of the ages and sexes of individuals where they could be determined, together with other contextual information, are presented in the table below.

Cut	Depth	Fills	Location	Deposit type	Total weight <5mm	Age/sex	Comments
<b>1500</b>	0.15m	1503-5*	Isolated	unurned cremation burial	554g	adult	
<b>2040</b>	0.31m	2038-9, 2058-9 *	Barrow	unurned cremation burial	1080g	Older subadult/ young adult and juvenile	Fills correspond to spits
<b>2067</b>	0.46m	2069 – 72	Barrow	unurned cremation burial	2647g	Adult female and juvenile (8-9±24 mos)	<i>In-situ</i> burning. Primary cremation burial
<b>2710</b>	0.48m	2708-9, 2717-8, 2720-1	Barrow	unurned cremation burial	1712g	Adult male	<i>In-situ</i> burning. Cuts into the mound
<b>3320</b>	0.40m	3311, 3315-17, 3321-25*	Isolated	urned cremation burial	2925g	Adult ? male	Within large Collared Urn

Table 21: Cremated HSR - Summary Table of Results

\* several of these fill numbers correspond to spits rather than to distinct fills.

### Bone Colour

- B.1.8 The majority of the cremated bone recorded from each of the burials was a buff white colour indicative of complete oxidisation of the organic component in the bone and temperatures >600° C. Several phalanges from cut **2040** are dark blue black in colour (less well oxidized) and the lunate (wrist bone) and forearms of the juvenile in cut **2067** are charred black perhaps indicating proximity to the edge of the pyre. The variation in colour is the result of factors such as soft-tissue thickness, location on the pyre, the construction and collapse of the pyre and the temperatures that are reached. The adult

ischium in cut **3320**, and part of the an adult femur shaft and proximal tibia, pelvis and skull in cut **2067** are a blue-black colour.

### ***Bone Weight***

- B.1.9 The two undisturbed burials containing a single adult , **2710** and **3320**, contained bone weighing 1712g and 2925g respectively, well within the expected weight; the weight of cremated adults has been recorded as falling between c. 850g and 5400g (Bass and Jantz 2004; Murad 1998; Warren and Maples 1997, McKinley 1993) with most authors giving a mean of around 2.5kg.

### ***Fragmentation***

- B.1.10 Cremated bone will fragment at various stages; on the pyre, as it is being collected for burial, in the burial environment itself, during excavation and processing (McKinley 1994). The largest fragment recovered from each burial ranged from 58mm – 165mm. The weight of bone present in the 10mm and 5mm fraction was calculated as a percentage of the total weight of the cremation (>5mm) to allow an objective assessment of fragmentation (Table 22). In all of the burials the majority of bone by weight was recovered from the 10mm fraction. Perhaps unsurprisingly the *bustum* style burials, **2067** and **2710**, where there would have been no need to collect, sort, transport or handle the bone in any way, have the largest fragments of bone. The fragments in the urned burial **3301** are similarly large suggesting that the vessel offered some protection from the burial environment over time and also perhaps the proximity of the pyre site. The proportion of skull, limb, axial skeleton is similar to that which one might expect implying that no selection/exclusion of elements had taken place.

### ***Pathology***

- B.1.11 Degenerative changes, notably in the spine, were recorded in three adults. Marginal osteophytes were recorded on the bodies of the lumbar vertebrae of the male in cut **2710**, the ?male in cut **3320** and the female in cut **2067** who displayed similar lesions on some of her thoracic vertebrae. A shallow groove and area of eburnation on a condyle of the distal femur of the adult male in cut **2710** is suggestive of osteoarthritis in the knee joint.

Cut	Fill	Burial Type	Largest fragment	Weight >10mm (g)	%	Weight 5-10mm (g)	%	Total weight > 5mm (context)	Total weight in Feature >5mm	Weight 2-5mm (g)	Total weight in Feature >2mm
1500	1503	unurned	58mm	242	54.8	200	45.2	442	554g	172	781g
	1504		55mm	57	62	35	38	92		44	
	1505		32mm	11	55	9	45	20		11	
2040	2038	unurned	90mm	348	58	252	42	600	1080g	21	1118g
	2039		56mm	231	62.1	141	37.9	372		11	
	2058		81mm	54	61.4	34	38.6	88		6	
	2059		44mm	20	100	0	0	20		0	
2067	2055	<i>in-situ</i>	48mm	91	53.5	79	46.5	170	2647g	5	2501g+
	2069		51mm	100	65	54	35	154		0	
	2070 (1-13)		129m	1046	99	11	1	1057		19	
	2070		62mm	328	64.1	184	35.9	512		unsorted	
	2071		74mm	397	64.9	215	35.1	612		unsorted	
	2072		59mm	85	59.9	57	40.1	142		0	
2710	2708	<i>in-situ</i>	45mm	12	100	0	0	12	1712g	unsorted	1772g+
	2709		18mm	1	33.3	2	66.7	3		0	
	2717		57mm	211	58	153	42	364		unsorted	
	2718 quads		81mm	98	95.2	5	4.8	103		0	
	2718 (1-24)		165mm	537	96.1	22	3.9	559		0	
	2720		95mm	439	72.7	165	27.3	604		30	
	2721		41mm	43	64.2	24	35.8	67		30	
3301	SF25	urned	61mm	17	100	0	0	17	2925g	0	2961g
	3311		46mm	41	74.5	14	25.5	55		2	
	3315		22mm	2	66.7	1	33.3	3		0	
	3316		48mm	53	75.7	17	24.3	70		0	
	3317		45mm	19	63.3	11	36.7	30		0	
	3321		121mm	335	79.6	86	20.4	421		0	
	3322		116mm	903	85.2	157	14.8	1060		10	
	3323		106mm	686	80.6	165	19.4	851		16	
	3324		96mm	389	93.1	29	6.9	418		8	

Table 22: Degree of Fragmentation; weight of bone in each context by fraction

### **Bronze Age Busta?**

B.1.12 It is worth describing in more detail the two burials which showed evidence of *in situ* burning as they are good examples of a Middle Bronze Age practice which is being encountered/recognised more frequently in and around the Cambridgeshire Fens. The edges of two of the burial cuts, **2067** and **2710** were a bright pink/orange colour. The appearance and dimensions of both pits (0.5m x 0.4m x 0.46m deep and 0.88m diameter x 0.48m deep respectively) are similar to earlier Bronze Age cremation burials associated with Barrows excavated in the last decade at sites close to the Fen edge at Barleycroft, Bradley Fen and Over. (Dodwell 1998, 2006, forthcoming). A series of experimental pyres/bonfires constructed within and over similar sized pits at Over in May 2010 demonstrated that the pyre architecture most likely to result in heavily scorched edges was where a pyre had been built directly over the pit, in a style similar to a Roman

*bustum* (Dodwell in prep) The criss-cross pyre structure of native wood species over a small (0.75 x 0.45 x 0.35m) pit resulted in temperatures up to 942 °C and bright orange/pink sides where the natural silts had oxidised. The base of the pit, as in the archaeological cremation pits, was visually unaffected.

- B.1.13 In both of the *in situ* pit pyres the position of the skeletal elements in relation to each other suggests a degree of articulation after the pyre had burnt out. If a pyre is not disturbed or tended over-enthusiastically then it is likely that there will be little movement of bone. Experimental pyres at Guiting Power, constructed on a flat ground surface, and where sheep corpses were cremated, showed that once the pyre had burnt out the cremated bone and charred soft tissues were in the correct anatomical position on a bed of wood ash (Mckinley 1997, 134). In the primary cremation burial, **2067**, the majority of large fragments of calcined bone derived from fill 2070. These elements were plotted on site and in general terms the adult skull fragments were in the south-west of the pit, the pelvis and lower vertebrae in the north-west quad, the lower limbs in the north-east quad and the bones from the shoulder girdle and upper spine were recovered from the south-eastern part of the pit. More specifically the pelvis, distal fibula and tarsals were grouped together. All of this would suggest that the female had been placed in a tightly crouched position on her right side orientated SW-NE. The bones of the child (aged 8-9years plus/minus 24mos) were not identified amongst the larger planned elements and so his/her position on the pyre and in relation to the adult female cannot be determined. However immature elements were recovered from each context (as were adult elements) suggesting that they were burnt on the pyre simultaneously
- B.1.14 In 2710 most of the bone (73.3%) was recovered in the lower 0.3m of the pit. Forearms and elements from the hands were concentrated in the north-east quad and the majority of skull fragments were recovered in the south-east quarter of the cut together with 5 articulating vertebra (lower cervical and upper thoracic) and elements of the shoulder girdle. The lower limbs were mainly located in the western half of the pit with a group of 4 metatarsals and phalanges recovered from the south-western quad. The position of the skeletal elements in relation to each other would suggest that the adult male would have been placed on the pyre on his right side in a tightly crouched position with his head in the south-east
- B.1.15 Although small fragments of charcoal and ash are found throughout the *in situ* cremation burials the upper fill of both contain quite large charred planks of wood. This is a phenomenon observed in the *in situ* burials at Over and could represent the charred timbers from the periphery of the pyre on the ground surface, which may not have burnt completely to ash, being pushed/swept into the pit once the pyre had died out.

#### ***Cremated Bone from Other Contexts***

- B.1.16 In addition to the five burials small quantities of cremated bone were recovered during cleaning (2060/1: 9g) and from a shallow root/animal disturbed feature (2137: 20g) which may represent a disturbed and truncated burial.

## **B.2 Faunal Remains**

*By Chris Faine*

### ***Introduction***

- B.2.1 Twenty-four kilograms of faunal material were recovered from the excavations, yielding 137 "countable" bones (see below). A further 9 fragments were not identifiable to species but classed as coming from large/medium mammals. Faunal remains were recovered from variety of contexts including pits and ditches and dating to the Middle Bronze Age. Residuality appears not be an issue and there is no evidence of later contamination of any context.



### ***Methodology***

- B.2.2 All data was initially recorded using a specially written MS Access database. Bones were recorded using a version of the criteria described in Davis (1992) and Albarella and Davis (1994). Initially all elements were assessed in terms of siding (where appropriate), completeness, tooth wear stages (also where applicable) and epiphyseal fusion. Completeness was assessed in terms of percentage and zones present (after Dobney and Reilly 1988). Initially the whole identifiable assemblage was quantified in terms of number of individual fragments (NISP) and minimum numbers of individuals MNI. The ageing of the population was largely achieved by examining the wear stages of cheek teeth of cattle, sheep/goat and pig (after Grant 1982). Wear stages were recorded for lower molars of cattle, sheep/goat and pig, both isolated and in mandibles. The states of epiphyseal fusion for all relevant bones were recorded to give a broad age range for the major domesticates (after Getty 1975). Measurements were largely carried out according to the conventions of von den Driesch (1976). Measurements were either carried out using a 150mm sliding calliper or an osteometric board in the case of larger bones.

### ***The Assemblage***

- B.2.3 Table 23 shows the species distribution for the entire assemblage both in terms of fragments (NISP) and numbers of individuals (MNI). Cattle are the most prevalent taxon along with smaller numbers of sheep/goat remains. Small numbers of pig remains were recovered along with horse and red deer. The distribution of the domestic mammal assemblage is similar to contemporary sites such as Eye Quarry (Rajkovača 2009). Cattle are also the dominant taxon (56.4%) in the Middle Bronze Age assemblages from Tower Fen (Deighton 2008), and Podge Hole Quarry (Rackham 2009), although these sites showed higher instances of pig.
- B.2.4 Cattle make up 72% of the assemblage at Brigg's Farm in terms of both NISP and MNI. A variety of body parts are represented in the assemblage, with loose teeth and fore limb elements being the most common (see Chart 5). In addition three heavily fragmented cattle crania were recovered from contexts associated with Enclosure 1. Morphological analysis of the horn-cores of the cranium from context 576 suggests a sub adult "short horned" animal (Armitage and Clutton-Brock 1972). Charts 6 and 7 show the age of the cattle assemblage by epiphyseal fusion and tooth wear data. Epiphyseal fusion suggests a largely physically mature population, with the majority of late-fusing elements showing fusion. Chart 7 shows steady kill off pattern; with the first animals being killed at around 1 ½ to 2 ½ years of age with no animal surviving beyond 3 years old. Fifty-six percent of the cattle assemblage showed signs of butchery.
- B.2.5 Few sheep/goat remains were recovered, consisting largely of loose teeth, mandibles and lower limb elements. Three ageable mandibles were recovered from animals aged 6-12 months, 1-2 years and 3-4 years of age. A single portion of neonatal humerus was also recovered from the assemblage.
- B.2.6 As with the sheep/goat assemblage pig remains also consist of mandibles and lower limb elements, with all four ageable mandibles recovered coming from animals aged 1-2 years of age.
- B.2.7 Few instances of other species were recorded in the assemblage. A single horse mandible from an animal aged 7-9 years of age (Levine 1982) from context 2198. Portions of naturally shed red deer antler were recovered from contexts 685, 1111 and 2000.

### ***Conclusions***

- B.2.8 This is a relatively small assemblage which is nonetheless interesting due to the high percentage of cattle remains present. The body part distribution and ageing data suggests cattle were largely kept for beef, with few animals surviving into the "mature

adult” stage. There is little evidence for on site breeding and it appears live animals or at least complete carcasses were processed on site rather than being imported from elsewhere. In contrast virtually no meat bearing elements were recovered from the sheep/goat and pig assemblages, these instead consisting largely of mandibles and lower limb elements This suggests processing waste, with butchery taking place elsewhere on the site. There is some evidence for on site breeding of sheep, or at the very least the presence of lambs.

	NISP	NISP%	MNI	MNI%
Cattle ( <i>Bos</i> )	99	72.2	53	71.6
Sheep/Goat ( <i>Ovis/Capra</i> )	17	12.5	12	16.3
Pig ( <i>Sus scrofa</i> )	7	5.1	5	6.7
Horse ( <i>Equus caballus</i> )	2	1.4	2	2.7
Red deer ( <i>Cervus elaphus</i> )	3	2.1	2	2.7
Large mammal	9	6.7	N/A	N/A
<b>Total</b>	<b>137</b>	<b>100</b>	<b>74</b>	<b>100</b>

Table 23: Species distribution for the faunal assemblage

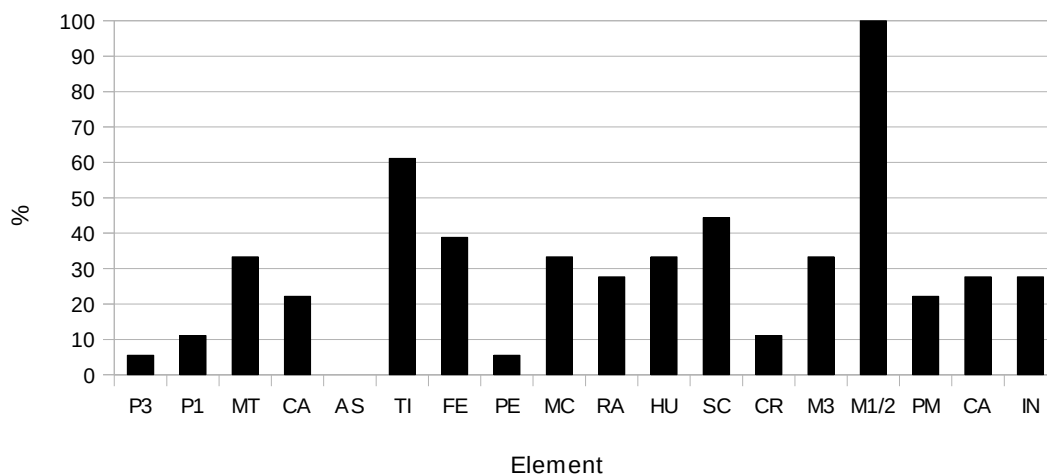


Chart 5: Cattle body part distribution

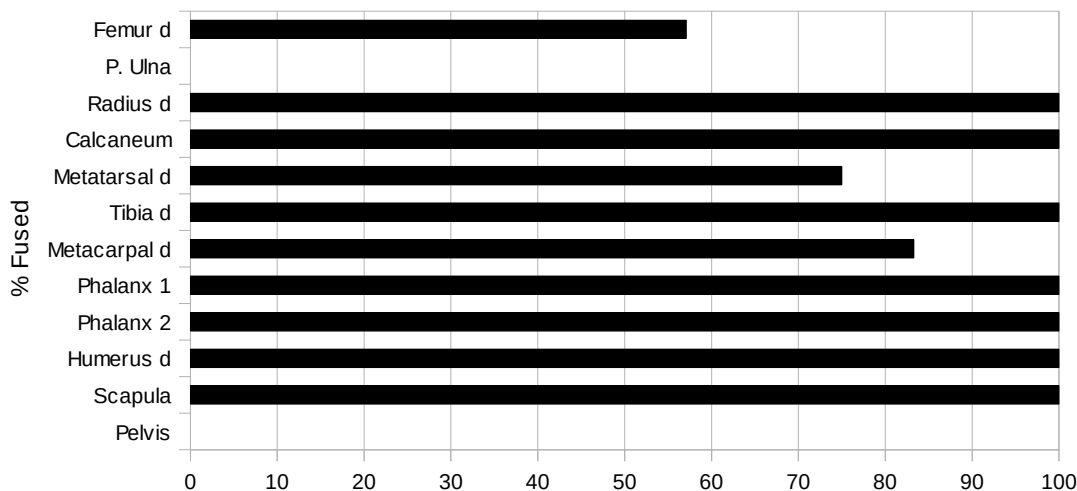


Chart 6: Epiphyseal fusion data for the cattle assemblage

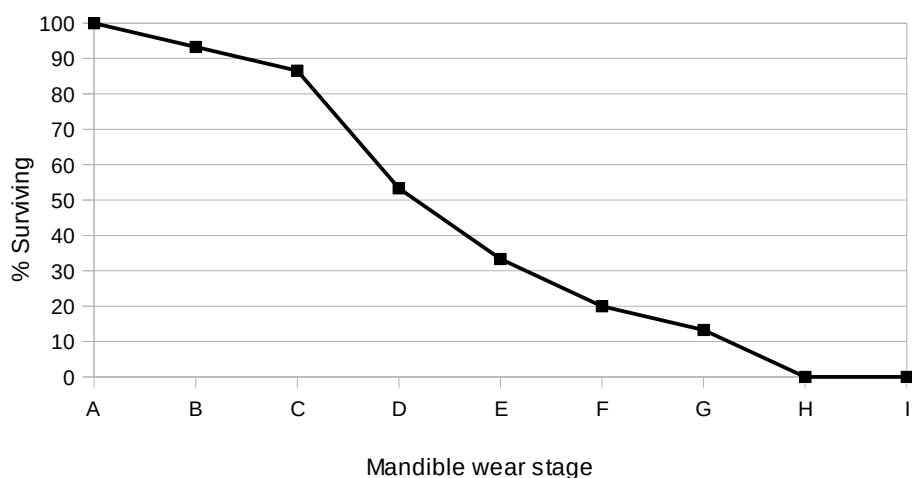


Chart 7: Mortality profile for the cattle assemblage

### B.3 The Plant Remains – Initial Assessment

*By Rachel Fosberry*

#### **Summary**

B.3.1 Extensive sampling from this excavation phase has produced excellent results. Nearly two hundred samples were taken from a variety of features including several waterlogged features and five cremations. The samples showed excellent potential for further study and included an early discovery of flax seeds from Early Bronze Age features.

#### **Introduction**

B.3.2 A total of 198 samples were taken from features within the excavated areas of the site in order to investigate the quality of preservation of plant remains, bones and artefacts and their potential to provide useful data as part of these archaeological investigations.

<b>Total number of bulk samples</b>	<b>Samples from cremations</b>	<b>Monoliths/pollen samples</b>	<b>Waterlogged samples</b>
198	19	11	28

Table 24: Number of environmental bulk samples

B.3.3 Features sampled include secure archaeological contexts within pits, ditches, wells and nine cremations.

B.3.4 Monoliths were taken from several of the deeper features.

<b>Sample No.</b>	<b>Feature</b>	<b>Cut No.</b>	<b>Feature Type</b>	<b>Comments</b>
135	Water Hole 1	538	Water Hole	pollen sample
139	Water Hole 2	588	Water Hole	monolith from base of large Bronze Age pit
141	Water Hole 3	660	Water Hole	monolith from base of pit
201	Water Hole 12	3189	Water Hole	pollen sample taken from section
207	Water Hole 11	3061	Water Hole	column sample for pollen analysis
269	Water Hole 9	2388	Water Hole	2 pollen tins taken from base and middle of watering hole. Wood present in feature
273	Water Hole 5	2248	Water Hole	column sample with basal fill (2264) and above organic fill (2252) in pit [2248]
279	Water Hole 10	2525	Water Hole	as <277> pollen sample just in case
285	Water Hole 7	2350	Water Hole	monolith from base of watering hole
314	Barrow		ditch	from barrow ditch
286	Water Hole 8	2488	Water Hole	monolith from watering hole. Beneath preserved wood

Table 25: Number of monolith samples

### **Methodology**

- B.3.5 The volume of bulk soil samples collected was between 10 – 60L
- B.3.6 Ten litres of each bulk sample were processed by water flotation for the recovery of charred plant remains, dating evidence and any other artefactual evidence that might be present. The entire volume of each cremation sample was fully processed. The flots were collected in a 0.3mm nylon mesh and the residues were washed through a 0.5mm mesh. Both flot and residue were allowed to air dry. The dried residues were passed through 5mm and 2mm sieves and a magnet was dragged through each resulting fraction prior to sorting for ecofacts (e.g. animal bone, fish bone, charcoal, shell, etc..) and artefacts. Any artefacts present were noted and reintegrated with the hand-excavated finds. The flot was examined under a binocular microscope at x16 magnification. Identifications were made by the author without comparison to the OA East reference collection and should be seen as provisional. Nomenclature for the plant classification follows Stace (1997).

### **Quantification**

- B.3.7 For the purpose of this initial assessment, items such as seeds, cereal grains and small animal bones have been scanned and recorded qualitatively according to the following categories
- # = 1-10, ## = 11-50, ### = 51+ specimens
- B.3.8 Items that cannot be easily quantified such as charcoal, magnetic residues and fragmented bone have been scored for abundance
- + = rare, ++ = moderate, +++ = abundant
- B.3.9 Summary tables have been included within this report

### **Results**

#### **Preservation**

- B.3.10 Many of the plant remains, predominantly cereal grains, were preserved by carbonisation.
- B.3.11 28 samples were preserved by waterlogging (survival due to anoxic conditions).

## Plant Remains

### Cereals

B.3.12 Charred cereal grains are present in approximately 25% of the bulk samples. Preservation is variable with many of the grains being identified as cereals by their distinctive honeycomb internal structure. Several of the grains have been tentatively identified as Spelt wheat (*Triticum spelta*) or Emmer wheat (*T. dicoccum*) based on their morphology. Quantities vary with most samples containing less than ten grains. None of the samples contain more than a hundred grains (a quantifiable assemblage), however further processing should enable sufficient recovery.

B.3.13 Chaff elements occur as glume bases in only two samples.

Sample No.	Master No.	Context No.	Cut No.	Type	Sample Size	Comments
136	588		588	Well 2	20	Waterlogged fill of large Bronze Age pit
270	2310	2310	2314	pit	20	Stones, possible clay lining. May be industrial

Table 26: Samples containing glume bases

B.3.14 Charred seeds are generally rare and include vetches (*Vicia sp.*) and goosefoot (*Chenopodium sp.*). An exception is the presence of flax seeds (*Linum usitatissimum*) in seven samples all from Early Bronze Age pits

Sample No	Master No	Context No	Cut No	Feature Type	Sample size	Comments	Flot Volume (ml)	Preservation	Cereals	Weed seeds	Small bones	Charcoal <2mm	Charcoal >2mm	Flot Comments
58	816	1245	1248	Pit	20	Fill of probable EBA pit	80	charred	0	##	0	+++	++	Flax ## <i>Chenopodium sp.</i>
59	816	1246	1248	Pit	30	fill of probable EBA pit	100	charred	0	##	0	+++	++	Flax ##
75	816	1277	1279	Pit	60	Upper charcoal rich fill of EBA pit	1	charred	0	##	0	++	++	Flax ## <i>Chenopodium ##</i>
76	816	1278	1279	Pit	20	Fill of EBA? Pit with large pieces of charcoal	1	charred	0	##	0	++	++	Flax # <i>Chenopodium ##</i>
82	816	1341	1344	Pit	30	Upper fill of pit	10	charred	0	##	0	+++	++	Flax ## <i>Chenopodium ##</i>
83	816	1342	1344	Pit	60	Fill of pit containing a lot of charcoal	2	charred	0	##	#	+++	++	Flax # <i>Chenopodium #</i>
84	816	1343	1344	Pit	40	Basal fill of pit	2	charred	0	##	0	++	++	Flax # <i>Chenopodium sp.</i>

Table 27: Samples containing flax

B.3.15 Charred tubers of *Arrhenatherum elatius* (False oat-grass) occur in four samples, three of which are cremations.

<b>Sample No</b>	<b>Master No</b>	<b>Context No</b>	<b>Cut No</b>	<b>Feature type</b>	<b>Charcoal &lt;2mm</b>	<b>Charcoal &gt;2mm</b>
101	1500	1503	1500	Cremation	+++	+++
213	3301		3301	Cremation	+++	+++
23	632	632	633	Ditch	++	+++
266	3301	3325	3301	Cremation	+++	+++

*Table 28: Samples containing charred tubers*

B.3.16 Waterlogged seeds are more abundant. Elder seeds (*Sambucus* sp) and bramble (*Rubus* sp.) are particularly common.

Sample No	Master No	Context No	Cut No	Feature Type	Sample Size (L)	Flot Volume (ml)	Cereals	Chaff	Weed Seeds	Charcoal <2mm	Charcoal >2mm	Flot Comments	Residue Volume (ml)	Small animal Bones	Fired Clay	Residue comments
21		545	538	Well 1	2	2			##			Uncharred <i>sambucus</i> and <i>rubus</i> seeds	2800			No finds
26		586	588	Well 2	20	2			##			Abundant <i>sambucus</i> , also <i>chenopodium</i> and <i>urtica</i>	2300			No finds
29		750	660	Well 3	120	60			###			<i>Sambucus</i> , <i>rubus</i> sparse insects	2000			Lots of wood including 1 very large fragment. No finds
30		752	660	Well 3	80	120			##			<i>Sambucus</i> , berries, shrubby bits	4300			Lots of wood no finds
37		3032		pit	60	80			#			Shrubby bits	2000			Lots of wood
38		3024		pit	50	60			#			Orange, fine organic, <i>sambucus</i>	1100			Lots of wood
131		1545	538	Well 1	35	50			###			<i>Rubus</i> , <i>sambucus</i>	600			charcoal no magnetic
132		1546	538	Well 1	80	80			###			Few insects, <i>rubus</i> , <i>sambucus</i>	200			Lots of wood no magnetic
133		1547	538	Well 1	500	500			###			Few insects, <i>rubus</i> , <i>sambucus</i>	1800			Lots of wood no finds
134		1548	538	Well 1	40	40			###			Good weed seeds inc. <i>Urtica</i> , <i>Carex</i> , <i>Chenopodium</i> , <i>Stellaria</i>	1800			Lots of wood no finds
136			588	Well 2	50	50		#	###	#		Good weed seeds inc. <i>Racnunculus</i> , <i>Urtica</i> , <i>Carex</i> , <i>Chenopodium</i> , <i>Stellaria</i> .. Good insects	1000			no finds
137		1549	588	Well 2	25	25			###			Same as 136 but no quite so rich	5000			no finds
138		1550	588	Well 2	70	70			###			Same as 136 pick one or two for assessment	600			Lots of wood no finds
140		1565	588	Well 2	120	120			###			Fine sediment <i>rubus</i> sp, <i>sambucus</i> sp and good insects	1600			Lots of wood no finds
202		3215	3189	Well 12	30	30			###			<i>Rubus</i> sp, <i>ranunculus</i> sp, <i>chenopodium</i> sp, nothing different	1800	+		Wood present not removed some charcoal
203		3204	3189	Well 12	35	35				#		No seeds	600			no finds
204		3209	3189	Well 12	30	30			###			Similar seeds- few insects	700	+		
206		3269	3061	Well 11	40	40			###	#	#	Single glume base – charred in a waterlogged sample	2500			no finds
211		3270	3061	Well 11	20	20			###			A few different seeds	4300			wood
274		2252	2248	Well 5	80	80				#	#	Lots of roots	800			no finds

Sample No	Master No	Context No	Cut No	Feature Type	Sample Size (L)	Flot Volume (ml)	Cereals	Chaff	Weed Seeds	Charcoal <2mm	Charcoal >2mm	Flot Comments	Residue Volume (ml)	Small animal Bones	Fired Clay	Residue comments
275		2574	2525	Well 10	130	130			###			Few insects, <i>rubus</i> sp., <i>sambucus</i> sp. Woody bits	800			Lots of wood no finds
277		2519	2525	Well 10	60	60			##			Good insects, <i>rubus</i> sp.	3200			Wood fragments
278		2352	2350	Well 7	200	200			###			<i>Rubus</i> sp,berries, bit different	2800			Lots of wood no finds
280		2612	2350	Well 7									0			
281		2597	2488	Well 7	250	250			###			Very shrubby, thorns. <i>Rubus</i> sp.	1900			Pretty much entirely wood, lots of seeds, nuts not removed no finds
292		2661	2488	Well 8	80	80			##			Few <i>rumex</i> sp	2100			A few wood fragments

Table 29: Waterlogged samples



### **Discussion**

- B.3.17 The charred plant remains recovered from these samples are limited and they are dominated by the cereal grains. Although present in small quantities, they do indicate that cereals were being locally utilised.
- B.3.18 The poor representation of crop processing waste in the form of chaff suggests that the earlier stages of processing had taken place elsewhere, either in an unexcavated area of the site or the crops may have been brought in already cleaned.
- B.3.19 The waterlogged deposits were more productive. Waterlogged seeds are common although they are quite restricted in diversity. The assemblage appears to represent mainly a natural accumulation of plant remains from local vegetation. Bramble and elder are both plants that produce extremely durable seeds due to their tough outer coat (testa).

## **B.4 The Plant Remains – Analysis**

*By Denise Druce, Sandra Bonsall and Elizabeth Huckerby*

### **Introduction**

- B.4.1 Following the rapid assessment of nearly 200 bulk samples taken during the excavations of the site (Fosberry this volume), recommendations were made for the further assessment of 19 samples for charred plant remains (CPR), and the analysis of six for CPR and five for waterlogged plant remains (WPR). All of the samples came from the Bronze Age phase of settlement activity at the site. The five samples selected for WPR analysis came from four wells (**538**, **588**, **2350** and **3061**), and the 25 samples selected for CPR assessment/analysis came from a variety of features, including a well, a cremation, post holes, and a number of ditches and pits. The WPR samples came from features dated to the Middle Bronze Age. Although two of the CPR samples also came from MBA contexts (1449 and 2636), four of them came from pit group 816, which was dated to the Early Bronze Age.
- B.4.2 The results of the WPR should provide information on the vegetation growing in and around the wells during their infilling, and may also indicate the environmental conditions within the features. There is also the possibility of some material being dumped into the wells as settlement waste, however it is envisaged that such dumped deposits may be identified through other characteristics such as the nature of the fill, i.e. whether it is rich in charcoal. The CPR assemblages, on the other hand, are more likely to represent the direct remains of settlement waste and may provide an insight into what was being cultivated or utilised at the site. It was hoped that the CPR assessment data would augment or corroborate the results of the analysis.

### **Methodology**

#### **The Waterlogged Plant Remains**

- B.4.3 One litre of sediment from each of the samples selected for WPR analysis was wet sieved (300 microns), retained wet and all seeds and items such as thorns and buds were extracted and counted. The components of the matrix were noted and scored on a scale of 1-5 where: 1=present (up to 5 items) and 5=abundant (more than 100 items). Plant nomenclature follows Stace (1997) throughout the report.

- B.4.4 Each individual plant species has been described as a member of a single plant community although many taxa are often to be found growing in more than one type. These categories are similar to those defined by Huntley and Hillam (2000, 356-7). The ecological groupings are as follows:
1. Arable and cultivated weeds: these are annual plants found in arable fields and cultivated ground.
  2. Ruderal communities: these are plant communities found growing on waste or fallow ground. The plants are usually perennials or biennials and inhibit the growth of annuals.
  3. Grassland plants are to be found growing in open grassland or meadows
  4. Woodland/scrub plants comprise trees and shrubs, and the ground flora common in woodland clearances and hedgerows.
  5. Wet ground and aquatic plants are to be found growing on wet marshy ground, water meadows, on river, ditch and pond banks and in water meadows
  6. Food and economic taxa, which include native taxa that may be used as food sources, for example blackberries and wild strawberry.
  7. Plants belonging to broad ecological groupings, which are not characteristic of any one community but are found in several.

#### The Charred Plant Remains

- B.4.5 Bulk samples of between 5 and 40 litres (depending on the size of the context) were processed using a flotation machine. The flots were collected onto a 300µm mesh and air-dried. The 19 samples selected for assessment were scanned under a binocular microscope during which any charcoal, charred cereal grains, cereal chaff, and weed seeds were quantified. Any other charred material, such as tubers or rhizomes were also quantified as was other material such as coal and heat affected vesicular material (havm). The presence of modern contaminants such as roots, insect eggs, and modern seeds was also noted. The remains are quantified on a scale of 1- 4 where 1=present (up to 5 items) and 4=abundant (more than 100 items).
- B.4.6 The six samples selected for full CPR analysis were processed as above and all charred cereal grains, cereal chaff, cultivated/weed seeds and other identifiable remains were extracted and counted. Identification was aided with the use of the Digital Seed Atlas of the Netherlands (Cappers *et al* 2006) and modern reference material. Other material, such as charcoal, coal, bone and ceramic building material (cbm) was quantified as above. The cereal remains are listed separately and the other cultivated/weed taxa are grouped according to habitat types, which broadly correspond with the ecological groups adopted for the WPR. The only difference being the amalgamation of the ruderal plant communities with the arable and cultivated weeds.

## **Results**

#### The Waterlogged Plant Remains

- B.4.7 The percentages of each ecological grouping per sample are shown in Charts 8-12 alongside the percentages of leaf fragments and/or buds where present. The relative abundance of each ecological grouping and percentage of leaf fragments and buds are

quite different in each of the samples, and this difference is likely to be linked to the position of the wells in relation to the surrounding field systems and settlement features. The date of four of the analysed contexts were broadly consistent at around 1440-1330 BC. Sample 278, context 2352 (Well 7), however, was distinctly later, and was dated to 1320-1190 cal BC.

- B.4.8 Sample 278 came from Well 7, field 4, which was situated fairly near the habitation area, and contained abundant *Rubus fruticosus* (bramble) and *Sambucus nigra* (elder) seeds, which, although regarded as food/economic taxa, may also have been growing as scrub/hedgerow. The other edible taxa in this sample, such as *Corylus avellana* (hazel) nut fragments, and *Prunus* sp. (cherries/blackthorn), and *Rosa* sp (rose sp) may also have been growing as scrub/hedgerow. It is possible that the remains represent settlement debris and/or cess, however the abundant leaf fragments, *Rubus/Rosa* thorns (woodland/scrub plants) and buds, suggests the material is more likely to have originated from the surrounding vegetation of scrub/hedgerow, rather than being dumped. This interpretation is consistent with the field evidence, which suggests field 4 may have had further subdivisions by hedges (or ditches), and with the pollen (see Appendix B.5). Alternatively, the evidence may indicate the colonization of scrub around the well/settlement after abandonment.
- B.4.9 Sample 211 (Chart 9) came from Well 11, field 6, and was situated the furthest away from the settlement area. Unlike <278> above, this sample contained no food/economic taxa, buds, or leaf fragments, but instead was dominated by weed seeds of arable and cultivated ground such as *Stellaria media* (common chickweed), *Persicaria lapathifolia* (pale persicaria), and *Polygonum aviculare* (knotgrass), and the ruderal *Sonchus asper* (prickly sow-thistle). Sample 211 also contained a number of grassland plants, such as *Leontodon* cf *saxatilis* (cf lesser hawkbit), Poaceae (grass family), *Rumex acetosa* (common sorrel), and *Stellaria graminea* (lesser stitchwort) seeds. The presence of a few sedge and rush seeds, along with evidence for *Alnus glutinosa* (alder) suggests that some of the area around the settlement was damp/wet. The presence of *Torilis japonica* (upright-hedge parsley) in the sample, which grows in grassy places, hedgerows and woodland borders/clearings is in support of the evidence for hedgerows evident in <278>. Of added interest in <211> is the presence of abundant *Daphnia* egg cases (Cladoceran ephyppia), which may signify fairly eutrophic conditions in the well (Carruthers, 2008). In addition, *Daphnia* ephippium are only produced during harsh environmental conditions as a form of extra protection. This may signify that the deposit accumulated during a period of drying out in the well, or during a period of freezing (Buchsbaum 1948).
- B.4.10 A further sample, <206>, from the same well was assessed for CPR (Table 32), and contained a similar WPR assemblage. It also contained a charred *Triticum dicoccum* (emmer wheat) spikelet fork, which is consistent with evidence from other Bronze Age sites in Britain (Greig 1991).
- B.4.11 Sample 134 (Chart 10), from within the settlement area (Well 1) was, like <278>, dominated by *Sambucus nigra* and *Rubus fruticosus* but was devoid of leaf fragments and buds. This sample also contained fairly abundant weed seeds of arable/cultivated ground and a few ruderals such as *Lapsana communis* (nipplewort), *Prunella vulgaris* (selfheal) and *Urtica dioica* (common nettle). *Urtica* is often found on rich ground often found in or near settlements. Being nitrogen loving, it may also indicate increased manuring or the gathering of livestock around the well. It is possible that the high number of blackberry pips and elder seeds originate from nearby scrub/hedgerows, however the lack of accompanying leaf and bud fragments, as is evident in <278>.

means that a 'natural' taphonomic route from nearby vegetation is less convincing. It is possible that the material represents cess, however there is no other evidence to corroborate this, such as fly puparia. The exact route by which the seeds entered the well is unclear, however, what is clear is that hedgerow/scrub taxa offering edible foodstuff were growing nearby, which may have been harvested, and perhaps tended, to augment the staple diet.

- B.4.12 Samples 136 and 138 (Charts 10 and 11) both came from Well 2 from within the confines of the settlement area. The two samples are from almost exactly the same level in the feature, with context 1549 (sample 136) lying directly above 1550 (sample 138), but the dominant ecological groupings are quite different in each. Sample 138 was quite similar to <134> and contained very abundant *Sambucus* and *Rubus*, and weed seeds of common arable/cultivated ground such as *Stellaria media* and *Chenopodium album* (fat-hen). It also contained *Rubus/Rosa* thorns and leaf fragments, which suggests that some woody vegetation was growing nearby. Sample 136, on the other hand, was dominated by the *Urtica dioica* seeds, which, again, may indicate increased manuring (see above). Like <138> and <134>, sample 136 also contained abundant weed seeds of arable/cultivated ground, and a number of *Sambucus* seeds. Grassland taxa, such as *Leontodon cf saxatilis*, *Linum catharticum* (fairy flax) and Poaceae were also present in this sample, which may have been growing immediately around the well along with the nettles.



Sample No		278	134	211	136	138
Master No		2350	538	3061	588	588
Context No		2352	1548	3270		
Cut No		2350	538	3061	588	588
Feature Type		well	well	well	well	well
Date		1320-1190	1430-1360	1440-1310	1450-1320	1450-1320
<b>Arable and cultivated weeds</b>						
<i>Capsella bursa-pastoris</i>	Shepherd's- purse			1		
<i>Chenopodium album</i>	Fat-hen	5		6	6	23
<i>Fumaria</i> sp	Fumitory sp			3 half seeds		
<i>Papaver rhoeas</i>	Common poppy			1	1	
<i>Persicaria lapathifolia</i>	Pale persicaria	1	1	24	1	
<i>Persicaria maculosa</i>	Redshank	8	5	3		1
<i>Polygonum aviculare</i>	Knotgrass		3	21	1	9
<i>Stellaria media</i>	Common chickweed	1	14	45	25	30
<i>Urtica urens</i>	Small nettle		4			1
<b>Ruderal communities</b>						
<i>Brassica</i> sp	Mustard/cabbage sp			14		
<i>Lapsana communis</i>	Nipplewort	2	3	5		2
<i>Prunella vulgaris</i>	Selfheal		1		1	
<i>Rumex obtusifolius</i>	Broad leaved dock			1		
<i>Sonchus asper</i>	Prickly sow-thistle			70		
<i>Urtica dioica</i>	Common nettle	4	4	3	46	1
<b>Grassland plants</b>						
Leontodon cf saxatilis	cf Lesser hawkbit	1		5	3	
<i>Linum catharticum</i>	Fairy flax				2	
Poaceae with seeds >4mm	Grasses with large seeds	1		4		
Poaceae seeds 2-4mm	Grasses with medium seeds					2
<i>Rumex acetosa</i>	Common sorrel	2	1	3		
<i>Stellaria graminea</i>	Lesser stitchwort	1	1	3	1	



Woodland/scrub plants						
<i>Alnus glutinosa</i> seeds	Alder			4		
cf <i>Cornus sanguinea</i>	Dogwood	1				
<i>Rubus/Rosa</i> thorn	Bramble/rose	60	2		1	7
Wet ground and aquatic plants						
<i>Carex trig</i>	Sedges with trigonous seeds			1		
<i>Carex lent</i>	Sedges with biconvex seeds	4		2	1	
Cyperaceae undiff	Sedge family			1		
<i>Eleocharis palustris</i>	Common spike-rush		1		2	
<i>Hydrocotyl vulgaris</i>	Marsh pennywort	1				
<i>Juncus</i> spp	Rushes			1	1	
<i>Ranunculus</i> subgenus Batrachium	Crowfoots		1			
Food and economic taxa						
<i>Corylus avellana</i> fragments	Hazel nut fragments	1				
Culm node charred *		1				
<i>Prunus padus</i>	Bird cherry		1			
<i>Prunus</i> sp fragments	Cherries/blackthorn	1				
<i>Rubus fruticosus</i>	Bramble	172	45		4	77
<i>Rosa</i> sp	Rose sp	1				
<i>Sambucus nigra</i>	Elder	29	125		17	229
<i>Triticum</i> undif charred *	Charred wheat grain		1			
Plants belonging to broad ecological groupings						
<i>Anthriscus sylvestris</i>	Cow parsley		1			
Apiaceae undifferentiated	Carrot family				1	
<i>Atriplex/Chenopodium</i>	Goosefoots/oraches		17			
Brassicaceae	Mustard/cabbage family			2		
<i>Chaerophyllum</i> sp	Chervil	1	2			4
<i>Cirsium</i> sp	Thistle sp	1	4			2
<i>Galeopsis tetrahit</i>	Common hemp-nettle	1	1			1



Lamiaceae undifferentiated <i>Lamium</i> sp	Dead-nettle sp		13	3	1	
Lamiaceae undifferentiated	Dead-nettle family					1
<i>Potentilla erecta</i> -type	Tormentil-type	1				
<i>Ranunculus repens</i> -type	Creeping buttercup-type	10	5	3	3	3
<i>Ranunculus sardous</i>	Hairy buttercup		1			
Lamiaceae unidentified <i>Stachys</i> spp./ <i>Galeopsis</i> spp. type (ca. 2mm)	Woundworts/hemp-nettles	1				
<i>Solanum dulcamara</i>	Bittersweet	1		6		
<i>Torilis japonica</i>	Upright hedge-parsley	2	2	12		1
<i>Viola</i>	Violet/pansy	1				
Unknowns				1		
<b>Matrix Scale of abundance</b>						
Wood fragments		3	3	3	2	2
Charcoal fragments			3	3	2	2
Bryophyte fragments	Moss fragments	2	2	2	1	4
Insect fragments		3	3	3	2	2
Buds		50 items	2 items			
Leaf fragments		141 items			2 items	10 items
Earthworm egg cases		1 items	1 items			
<i>Daphnia ephippia</i>		1		4		

Table 30: Analysis of waterlogged plant remains from four Bronze Age wells.

Sample size is 1 litre. All seeds, buds, thorns leaf fragments have been counted and all other remains have been scored on a scale of 1-5, where 1= less than 5 items and 5= more than 100 items.

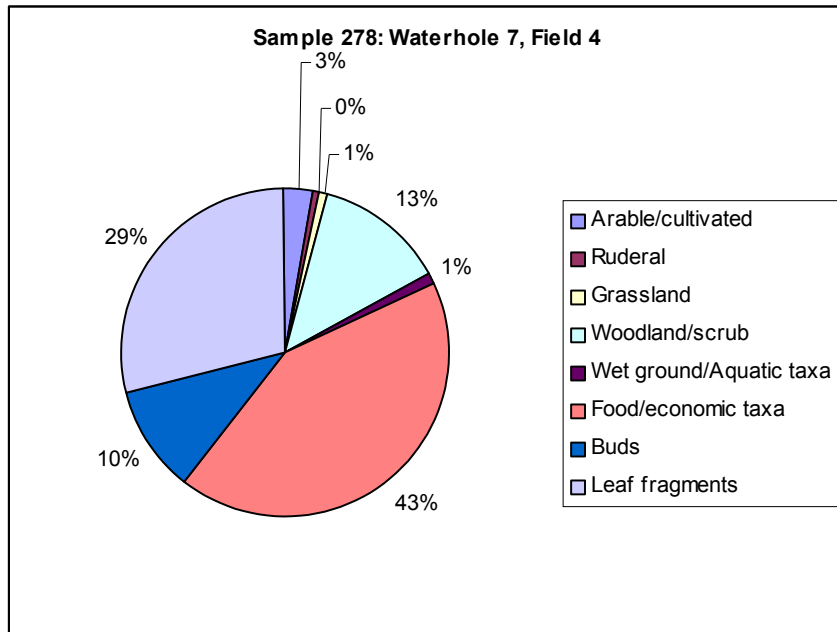


Chart 8: Showing relative abundance of ecological types and vegetative remains in sample 272. Food and economic plants include native plants that can be used as food sources.

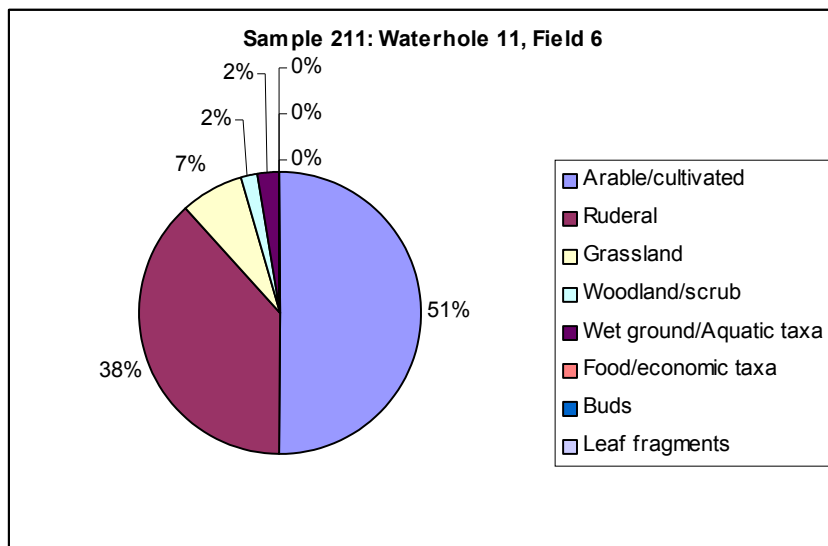


Chart 9: Showing relative abundance of ecological types and vegetative remains in sample 211. Food and economic plants include native plants that can be used as food sources.



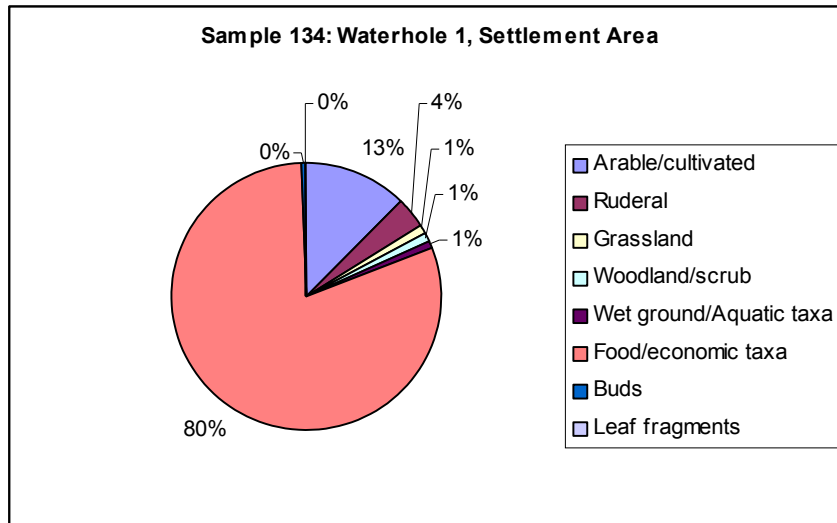


Chart 10: Showing relative abundance of ecological types and vegetative remains in sample 134. Food and economic plants include native plants that can be used as food sources.

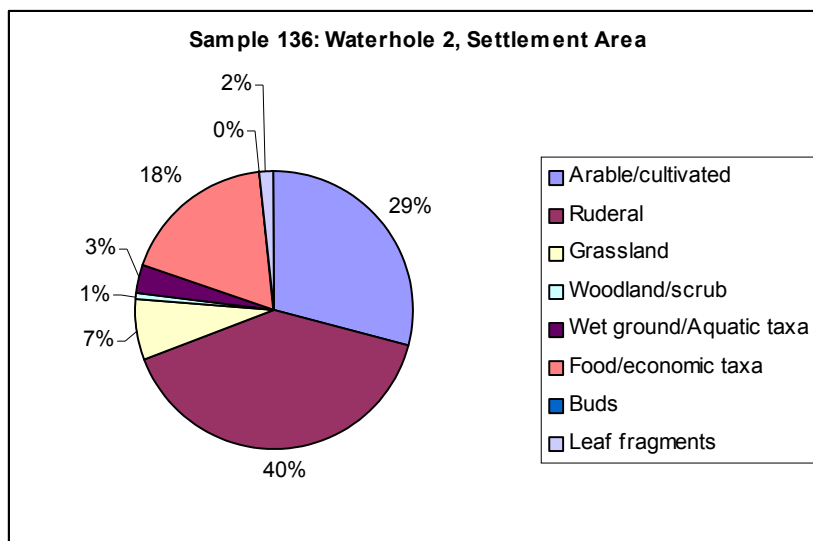


Chart 11: Showing abundance of ecological types and vegetative remains in sample 136. Food and Economic plants include native plants that can be used as food sources.

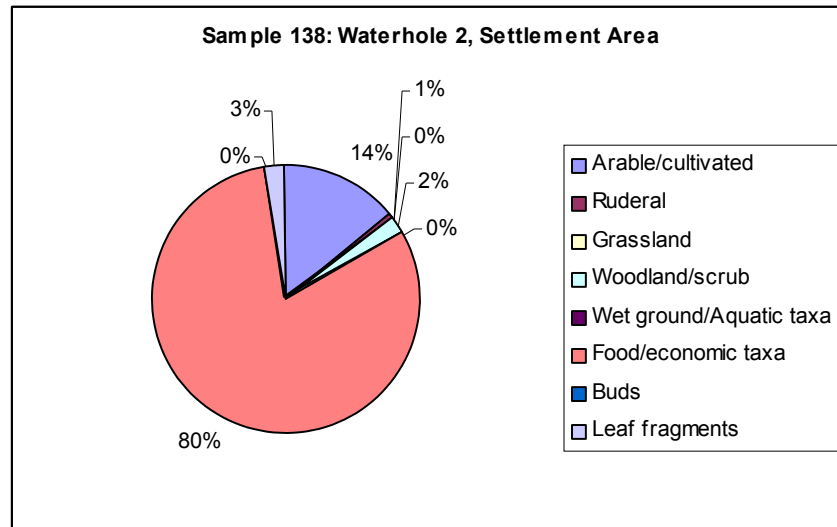


Chart 12: Showing relative abundance of ecological types and vegetative remains in sample 138. Food and economic plants include native plants that can be used as food sources.

#### The Charred Plant Remains

- B.4.13 The results of the CPR assessment and analysis are shown in Tables 31 and 32. Four of the analysed samples come from two pits which make up part of pit cluster **816**, from which the bulk of the Collared Urn assemblages from site came. All four of the samples contained similar charred assemblages, however, context 1277 was by far the richest. The samples were dominated by weed seeds of rough/waste and arable/cultivated ground, and also contained abundant charred *Linum usitatissimum* (flax) seeds, which was likely to have been cultivated and utilised for fibre, oil or linseed. Although the sample contained some cereal grains including *Triticum* sp (wheat) and *Hordeum vulgare* (barley including naked barley *H. Vulgare* var. *nudum*), the lack of cereal chaff suggests that the charred weed seed assemblage is likely not to represent crop processing waste.
- B.4.14 Given the edible uses associated with many of the taxa listed, such as *Chenopodium album* (fat-hen), *Rumex acetosella* (sheep's sorrel), *Galium aparine* (cleavers), *Stellaria media* (common chickweed), *Aphanes arvensis* (parsley piert) and cf *Alliaria petiolata* (garlic-mustard) (Culpeper c 1640, Grieve 1971, Allen and Hatfield 2004). It is tempting to suggest that, along with the flax seeds the assemblage partly represents the remains of locally gathered and cultivated food items. In addition, many of these plants have a long history of medicinal uses. *Rumex* and *Aphanes* can be used as diuretics and for kidney complaints (Culpeper c 1640, Grieve 1971). *Galium* can be rubbed on various skin ailments (Grieve 1971) and *Alliaria* for wounds, sore gums, and cramp (Allen and Hatfield 2004). Both *Hyoscyamus niger* (henbane) and *Solanum Ssp nigrum* (black nightshade) have medicinal uses including pain relief (Culpeper c 1640, Grieve 1971), however both plants are highly poisonous and need to be administered with extreme caution.
- B.4.15 It has to be stressed, however, that all of the aforementioned plants are common and prolific weeds therefore their natural occurrence cannot be ruled out. *Solaum Ssp*

*nigrum*, for example, appears to have been a common Neolithic crop weed suited to small non-intensive cultivation plots. (de Vareilles, 2006), therefore its presence may be incidental. Another possible explanation may be that the charred weed seed assemblage in 1277 represents the remains of plants harvested along with the flax. It is interesting, for example, that many of the seeds come from tall growing or scrambling taxa such as *Hyoscyamas*, *Alliaria*, and *Galium*, which, along with the flax, reach heights of up to or more than 0.80m. A similar find of flax from a number of Collared Urn pits at Edgerley Drain Road, Fengate was interpreted as representing the remains of harvested flax for linen rather than oil given the intact nature of the flax seeds. The presence of henbane, a tall growing plant that was likely to have been harvested along with the flax, was interpreted as representing a harvested height below 0.80m (the height of the henbane plant). Thus providing further evidence for the utilisation of the flax stems for fibre, the seeds representing the waste product.

- B.4.16 The presence of other, low growing, taxa such as *Viola* (violets) and *Ranunculus repens*-type (buttercup) may indicate that the charred remains may originate from more than one activity/burning event. In addition to the range of taxa present in the other three samples from pit cluster **816**, context 1342, from cut **1344**, contained abundant woodrush and rush (*Luzula* sp and *Juncus* sp), and Poaceae seeds. Again, the taphonomic possibilities of such taxa are numerous and may originate from functional material such as thatching or bedding.
- B.4.17 A number of samples from pit cluster **816** were also assessed (see Table 27), and these too contained charred flax seeds together with varying amounts of similar weed seeds. In addition, *Conium maculatum* (hemlock) was recorded in context 819, which, growing up to 2.5m tall, represents the presence of yet another medicinal and highly poisonous plant (Culpeper c 1640, Grieve 1971). The similarity, and uniqueness, of all the charred assemblages from pit cluster **816**, compared to the other samples assessed/analysed is quite striking, and this consistency is in keeping with the fact that many sherds of the same Collared Urn were identified between some of the pits. This was suggested as signifying '...a coherent domestic assemblage.' in the post-excavation report, however, it is possible that the remains represent more than just the casual dumping of domestic waste.
- B.4.18 The other two analysed samples, contexts 1449 (**1446**) and 2636 (**2609**) were quite different in content to the assemblages from pit cluster **816**, and were dominated by cereal grains of *Avena* sp (oat), hulled *Hordeum vulgare* (including six-row) and *Triticum* sp (including cf *T. aestivum*). Although each sample contained two *Triticum* spp spikelet fork bases, the lack of chaff suggests that the material represents fully processed grain, charred, perhaps, as part of a cooking accident. The samples contained relatively small weed seed assemblages, which are likely to represent general domestic floor debris. Three other samples were assessed from pit cluster **2609** and these also contained cereal grains, including *Hordeum* and *Triticum*, plus a positively identified *Triticum spelta* (spelt wheat) and a *Triticum* cf *dicocum* (cf emmer wheat) glume base.
- B.4.19 Five of the assessed samples, ditch fills 632, 835, 1209, pit fill 989, and post hole fill 1181 contained very few charred remains except for charcoal fragments. However, four of the ditch fills (contexts 1142,1245,1303, and 1328) contained some charred cereal grains of *Hordeum* and *Triticum*, the former being better represented. The overall lack of chaff in the samples is noticeable and suggests that the settlement was very much a consumer site. Cereal cultivation and/or processing taking place elsewhere.
- B.4.20 The final two assessed samples include ditch fill 3175, which contained very abundant non-charred *Eupatorium cannabinum* (hemp-agrimony) seeds, which, given the dry

nature of the feature, and the shallowness of the soil cover, are likely to represent modern contaminants. Plus cremation fill 3325, which contained few charred seeds and a number of charred tubers and Poaceae stem fragments, which may originate from burnt turves. Apart from post hole fill 901 (which itself may be significant), the cremation assemblage was the only sample dominated by *Quercus* (oak) charcoal, which may indicate its deliberate selection for the pyre structure.

				1277	1278	1341	1342	1449
	Context No							
	Sample No			75	76	82	83	97
	Master No			816	816	816	816	1446
	Feature Type			Pit	Pit	Pit	Pit	Gully
	Date			1980-1880 cal BC				MBA
	Sample Size L							
<b>Charred Remains*</b>								
<b>Cereal Grains</b>								
<i>Avena</i> sp	Oat			2			8	11
<i>Hordeum vulgare</i> hulled	Hulled barley							6 (4 straight/2 twisted)
<i>Hordeum vulgare</i> -cf naked	Naked barley			1				
<i>Hordeum vulgare</i> -undiff				5-with embryos	2		2	15 (11 straight)
<i>Triticum</i> spp	Wheat			11 (incl 6 with coleoptiles)	1		2	4
<i>Triticum</i> cf aestivum	cf Bread wheat							2
<b>Indeterminate charred cereals</b>				24 (1 with coleoptile)			18	50
<b>Total cereal grains</b>				<b>43</b>	<b>3</b>	<b>0</b>	<b>30</b>	<b>88</b>
<b>Indeterminate charred cereal fragments</b>				55	3	6	10	29
<b>Cereal Chaff</b>								
<i>Triticum</i> spp spikelet fork bases	Glume wheat							2
<b>Total cereal chaff</b>								
<b>Detached embryos</b>				3			7	
<b>Culm nodes</b>				4	2	8	2	
<b>Weed seeds-crop plant?</b>		<b>Other habitats</b>	<b>Possible uses</b>					
<i>Linum usitatissimum</i>	Flax	+grassland	Linen + edible leaves/seeds + oil (linseed)	256	33	73	181	
<b>Weed seeds-Ruderals and arable/cultivated land</b>								
<i>Anagallis arvensis</i> Ssp <i>arvensis</i>	Scarlet pimpernel							
<i>Aphanes arvensis</i>	Parsley-piert		Edible/medicinal	35			32	
<i>Brassica</i> sp	Mustard/cabbages			14				
<i>Hyoscyamus niger</i>	Henbane		Medicinal/ poisonous	9	1	4	22	

<b><i>Chenopodium</i> incl <i>C. album</i></b>	Goosefoots incl fat-hen		Edible leaves/seeds	611	84	52	208	2
<b><i>Galeopsis tetrahit</i></b>	Common hemp-nettle			3				
<b><i>Galium aparine</i></b>	Cleavers		Edible/ medicinal	10	1			
<b><i>Persicaria lapathifolia</i></b>	Pale persicaria	esp damp		6	1		6	
<b><i>Rumex acetosella</i></b>	Sheep's sorrel	+ heathy, grassland, acid	Edible leaves/medicinal	20	7	32	68	
<b><i>Rumex obtusifolius</i>-type</b>	Broad-leaved dock	+grassland			1	4	22	
<b><i>Solanum Ssp nigrum</i></b>	Black nightshade		Medicinal/ poisonous	19	1	9	22	
<b>cf <i>Solanum Ssp nigrum</i></b>	Black nightshade		Medicinal/ poisonous	16				
<b><i>Spergula arvensis</i></b>	Corn spurrey	Calcifuge/sandy		33		16	82	
<b><i>Stellaria media</i></b>	Common chickweed		Edible leaves	3				2
<b>Weed seeds- Hedgerows/wood clearings</b>								
<b>cf <i>Alliaria petiolata</i></b>	Garlic-mustard	+rough	Edible/ medicinal	19	12	36	124	
<b><i>Luzula sp</i></b>	Wood-rushes	+grassland		7	4	5	54	
<b>Grassland</b>								
<b><i>Plantago lanceolata</i></b>	Ribwort plantain	+waste				4	2	
<b>Poaceae with seeds larger than 4mm</b>	Grass							3
<b>Poaceae with seeds 2-4mm in size</b>	Grass			36			18	
<b>Damp/wet places</b>								
<b>cf <i>Alisma plantago-aquatica</i></b>	Water-plantain			7				
<b><i>Carex lenticular</i></b>	Sedges two-sided						4	
<b><i>Carex trigonus</i></b>	Sedges three-sided					1		
<b><i>Eleocharis sp</i></b>	Spike-rushes							4
<b><i>Juncus sp</i></b>	Rushes						48	
<b>Broad</b>								
<b><i>Bromus sp</i></b>	Bromes			3				
<b>Fabaceae (less than 4mm)</b>	Pea family			35	4	4	8	2
<b><i>Lamium sp</i></b>	Dead-nettles							
<b>Poaceae &lt;2mm</b>	grass family			21	8	12	66	
<b><i>Ranunculus repens</i>-type</b>	Buttercup						10	
<b><i>Rumex sp</i></b>	Docks			7				

<i>Viola</i> sp	Violets			7	1	4	2	
Indeterminate charred weed seeds				77	8	22	53	2
Total weed seeds				>1000	166	278	>1000	15
Other Charred Plant Remains								
Poaceae stem fragments	Grass			12		1	2	
Prunus sp stone	Cherries/blackthorn						2	
Other Remains								
Bone (calcined)				+			+	+
Charcoal (incl alder/hazel)				++++	++++	++++	++++	++++
Charred bark				+++		+++	+++	
Coal				+	++	++		
Heat affected vesicular material				++++	++		+++	
Insect egg cases				++	+	++	++	
Uncharred seeds				++	++	++	++	++
Ceramic building material				++		+	+	

Table 31: Results of the analysis of the charred plant remains.

The charred remains (\*) are given as actual counts, whereas the waterlogged and other remains are based on a scale from +-++++ where +=<5 items, ++=6-25, +++=26-100, and ++++=>100 items. Counts are of seeds unless stated otherwise.

Sample no	Context no	Feature type	Master no	Flot size ml	Charred cereals	Charred chaff	Other charred plant remains	Waterlogged/modern plant remains	Charcoal	Other remains
23	632	Ditch	510	5	(1) indet				(3)	c.b.m. (1), bone (1)
31	819	Pit	816* cut 833	20			(3) <i>Rumex acetosella</i> , Polygonaceae, <i>Conium maculatum</i> , <i>Linum usitatissimum</i> , <i>Plantago</i> sp, <i>Chenopodium</i> , Poaceae, unknown		(4) <i>Prunus</i> sp, <i>Quercus</i>	Calcined bone (1), c.b.m. (1)
33	835	Ditch	577	25	(1) indet				(4) <i>Quercus</i> , <i>Alnus/Corylus</i>	Calcined bone (1)
46	989	Pit	990	40			(1) <i>Corylus frags</i>		(4) <i>Quercus</i> , <i>Fraxinus</i>	Flint (1)
48	1142	Ditch	597	60	(3) <i>Hordeum vulgare</i> (hulled), <i>Triticum</i> sp incl 1 cf <i>T. aestivum</i>		(1) <4mm Fabaceae, <i>Prunus</i> stone		(4) <i>Prunus</i> cf <i>spinosa</i> roundwood	
52	1209	Ditch	617	60			(1) indet		(4) <i>Quercus</i> , <i>Alnus/Corylus</i>	Coal (1), calcined bone (1), c.b.m. (1)
58	1245	Pit	816* cut 1248	80			(4) <i>Linum usitatissimum</i> (some still joined in pairs), <i>Brassica</i> , Caryophyllaceae		(4) Mixed: <i>Quercus</i> , <i>Prunus</i> sp, <i>Alnus/Corylus</i>	Calcined bone (1)
59	1246	Pit	816* cut 1248	80			(1) <i>Linum usitatissimum</i>		(4) <i>Alnus/Corylus</i> , few <i>Quercus</i> frags	
63	901	post hole	1241	50	(2) <i>Hordeum vulgare</i>				(4) <i>Quercus</i>	
79	1181	post hole	1201	10			(1) cf <i>Ranunculus</i> , indet		(2)	Bone/ calcined bone (1)
84	1343	Pit	816* cut 1344	25	(1) <i>Hordeum vulgare</i>		(2/3) <i>Linum usitatissimum</i> , <i>Chenopodium</i> , unknown		(4) Including bark fragments	Bone/ calcined bone (1)
86	1303	Ditch	1331	40	(2) <i>Triticum</i> sp, (few germinated)		(3) <4mm Fabaceae, <i>Carex</i> , <i>Polygonum</i> sp		(4) <i>Quercus</i> , <i>Alnus/Corylus</i>	Coal (1)
92	1328	Ditch	1331	100	(2) <i>Hordeum vulgare</i> (hulled), <i>Triticum</i> sp, indet (some grains germinated)		(3) <4mm Fabaceae		(4) <i>Quercus</i> , <i>Alnus/Corylus</i>	Calcined bone (1)
200	3175	Ditch	3159	30				(4) <i>Eupatorium cannabinum</i> , <i>Sambucus nigra</i> , <i>Chenopodium</i>	(2)	Wood frags (4), insects (1)
206	3269	Well	3061* cut 3061	50		(1) <i>Triticum dicoccum</i>		(4) <i>Rumex</i> , <i>Torilis japonica</i> , Chenopodiaceae,	(2)	Wood frags (3), insects (1)



Sample no	Context no	Feature type	Master no	Flot size ml	Charred cereals	Charred chaff	Other charred plant remains	Waterlogged/modern plant remains	Charcoal	Other remains
						spikelet fork		<i>Urtica, Galeopsis, Polygonum, Stellaria, Potentilla, Brassica, Fumaria, Lamium</i>		
266	<b>3325</b>	Cremation	3301	100			(2) <i>Rumex acetosella</i> , <4mm Fabaceae, Tubers, Poaceae stem frag		(4) <i>Quercus</i> , some roundwood	Bone/ calcined bone (2)
282	<b>2607</b>	Pit	2609* cut 2610	110	(1) <i>Triticum</i> sp (1 cf <i>T. dicoccum</i> ), <i>Hordeum vulgare</i>	(1) <i>Triticum spelta</i> glume base	(1) <i>Galium</i> sp		(4) <i>Alnus/Corylus, Quercus</i>	Bone/ calcined bone (1)
283	<b>2611</b>	Pit	2609* cut 2610	200	(2) <i>Hordeum vulgare</i> , <i>Triticum</i> sp, indet	(1) cf <i>Triticum dicoccum</i> glume base	(1) <4mm Fabaceae, <i>Chenopodium</i>		(4) <i>Quercus, Alnus/Corylus</i>	Calcined bone (1)
296	<b>2651</b>	Pit	2609* cut 2653	220	(2) indet, <i>Hordeum vulgare</i>				(4) <i>Alnus/Corylus/ little Quercus</i>	

Table 32: CPR Assessment Results

The remains are scored on a scale of 1-4 where 1 is rare (<5 items) and 4 is abundant (>100 items). Samples showing Master numbers with a \* are from features/feature groups that have also had WPR/CPR analysed. c.b.m=ceramic building material

### **Discussion**

- B.4.21 The relative abundance of each of the ecological groupings represented in the wells alongside other vegetative material reflects the spatial and chronological nature of the features and their infilling. The well furthest away from the settlement contained a flora dominated by weeds of arable/cultivated ground, with only slight evidence for scrub/hedgerows. The wells closer to the settlement area, however, are dominated by edible foodstuff such as blackberries and elder berries, which were likely to have been gathered from nearby hedgerows/scrub. Similar scrubby environments were evident at Bradley Fen, Whittlesey, which would have also provided an important resource of wild fruits and nuts (de Vareilles, 2006). The exact relationship of the two analysed contexts from Well 2 is unclear and <136>, which is dominated by nettle seeds and grassland plants, may have accumulated when the well was used for livestock. The nettle thriving in the nitrogen rich conditions provided by animal dung.
- B.4.22 Evidence for cereal usage and cultivation is very much underpinned by the charred evidence from the site, which provides evidence for the cultivation of a range of crops including emmer, spelt and possible bread wheat, limited oat, and six-row barley including the native variety. The cereal remains are consistent with other Bronze Age sites in Britain (Greig 1991) and other sites in the region. A Bronze Age site at King's Dyke West, Whittlesey, like Thorney, contained plenty of barley grain but very little barley chaff. In this instance the assemblage was interpreted as representing the final stages of crop processing waste (Ballantyne 2002). A similar interpretation can certainly be put forward for a number of the assemblages analysed from Thorney, which would indicate a 'consumer' site where earlier stages of crop processing was being carried out elsewhere. However, the assemblages from the early Bronze Age pit cluster 816 appear to represent the remains from activities other than cereal crop processing waste and, as such, demand a separate interpretation.
- B.4.23 The abundant flax seeds in the samples, along with abundant tall growing weeds such as henbane, hemlock, garlic-mustard and cleavers, may represent the by-product of the cultivation of flax for fibre. A similar assemblage was discovered at Edgerley Drain Road, Fengate North, was also interpreted as representing the remains of harvested flax and its obligate weed flora. The early cultivation of flax has been identified from a number of Neolithic and Bronze Age sites in Britain (Greig 1991). Like at Thorney, the remains are also found alongside a range of cereal types, including six-row naked barley, and emmer, spelt and bread wheat. The waterlogged remains of flax seeds and flax-like fibres were found in a pit at a fen-edge site at West Row, Mildenhall, Suffolk, which was interpreted as the remains from flax-retting (Martin and Murphy, 1988, cited by Greig 1991).
- B.4.24 It is hard to believe that the range of taxa in the pit cluster **816** samples is purely a product of flax processing. Instead, the material is likely to represent the remains from more than one activity or burning event, and, given the number of edible and/or medicinal uses of many of the plants represented, may not represent just casual waste.

### **Conclusion**

- B.4.25 The waterlogged and charred plant remains from Thorney have provided an important dataset, which underpins previous research in the region and Britain. The waterlogged remains were instrumental in providing both spatial and chronological changes in the immediate environment surrounding the settlement and the wild resources that were

likely to have been not only utilised, but also managed in the form of hedgerows. The charred remains compliment the evidence and indicate the cultivation of a range of cereal crops and flax for possible fibre. It is also possible that parts of the assemblages from pit cluster 816 represent the remains of edible and/or medicinal plants.

### **Acknowledgements**

- B.4.26 Many thanks to Wendy Smith of OA South who provided assistance with some of the identifications, and Wendy Carruthers who provided advice and reference material.

## **B.5 The Pollen**

*By Silvia Peglar*

### **Introduction**

- B.5.1 Eleven monoliths for pollen analysis were taken from the bases of eleven wells of Bronze Age date. After radiocarbon dating, the wells were divided into four age groups covering the Bronze Age period: group A, Early Bronze Age (EBA) (1680 – 1490 cal BC), group B, early Middle Bronze Age (MBA) (1500 – 1260 cal BC), group C, middle MBA (1450 – 1190 cal BC) and group D, late MBA (1390 – 1110 cal BC).
- B.5.2 The monoliths were assessed for their potential for pollen analysis by Elizabeth Huckerby at Oxford Archaeology North (OAN), noting the pollen preservation, concentration and content. It was hoped that the analyses would provide some idea of the surrounding vegetation, environment and land-use during the early periods of infill of the pits. Three suitable monoliths were chosen for full pollen analysis to cover the different Bronze Age ages and also the geographical area excavated: one from each of groups A, C and D and from the southern and eastern areas of excavation and from the settlement area in the north-east.

### **Methods**

- B.5.3 The three chosen monoliths were sub-sampled, usually at 4cm intervals but also close to changes in lithology, and prepared for pollen analysis at OAN.
- B.5.4 Standard volumes of the sediment samples were prepared for pollen analysis by a standard chemical procedure, using HCl, NaOH, sieving, HF, and Erdtman's acetolysis to remove carbonates, humic acids, particles >170 microns, silicates, and cellulose, respectively. The samples were then stained with safranin, dehydrated in tertiary butyl alcohol, and the residues mounted in 2000 cs silicone oil. (method B of Berglund and Ralska-Jasiewiczowa (1986). Tablets containing a known number of *Lycopodium* spores were added to the known volume of sediment at the beginning of the preparation so that pollen and spore concentrations could be calculated (Stockmarr, 1972). Slides were examined at a magnification of 400x (1000x for critical examination) by equally-spaced traverses across slides to reduce the possible effects of differential dispersal on the slides (Brooks and Thomas, 1967). The aim was to achieve a count of at least 400 grains of land pollen and spores. Pollen identification, where necessary, was aided using the keys of Moore *et al.* (1991), and a small modern pollen reference collection. Andersen (1979) was followed for identification of cereal-type pollen. Indeterminable and unknown grains were recorded as an indication of the state of the pollen

preservation. Other identifiable palynomorphs encountered on the slides were also recorded – vegetative remains, *Sphagnum* spores, fungal spores, charcoal particles <180 microns, nematode eggs, pre-Quaternary spores, algal remains, etc., the inclusion of which can add to the interpretation of the pollen analytical results. Pollen nomenclature follows Moore *et al.* (1991) and plant nomenclature follows Stace (1997).

### **Results and interpretation**

- B.5.5 The results are presented as pollen and spore diagrams with taxa expressed as percentages of the total land pollen and spore sum (sumP/calculation sum). Obligate aquatic taxa and other palynomorphs are presented as percentages of sumP + the sum of the category to which they belong. A summary diagram of the totals of trees and shrubs, crops, herbs and ferns and fern allies, included in the pollen sum, are shown on the lefthand side of all diagrams. All depths are from the top of the monoliths. Calculations and diagrams were made using the programs TILIA and TILIA.GRAPH in TGView (Grimm, 1990). The diagrams are not zoned as there were no significant changes in pollen assemblages. However, the diagrams are divided into the different contexts identified in the monoliths and these are shown on the righthand sides of the diagrams.
- B.5.6 All sub-samples contained large quantities of small (<170 microns) charcoal particles and were not quantified. These small particles can be derived from great distances, not necessarily from local fires. Larger pieces of charcoal found during macrofossil analyses are more accurately indicative of local burning.

#### Well 12, feature 3189, sample <201>, Fig 17

- B.5.7 The monolith <201> was taken from near the base of Well 12. This well is the earliest of the three chosen for analysis. It belongs to Group A wells dated from 1680 – 1490 cal BC. It is situated in the southern part of the excavated area, towards the bottom of Field 15.
- B.5.8 The preservation and concentration of the pollen and spores was variable. The basal sample was not very well preserved although it was possible to get a statistically significant pollen sum. However, two samples towards the top of the monolith (11.5 and 7.5 cm, from context 3211) did not contain identifiable pollen and may possibly represent a time of lowered water level when anaerobic conditions and hence preservation did not occur.
- B.5.9 Although four contexts (3215, 3212, 3211 and 3209) were identified in the monolith, the summary pollen diagram (Fig. 40) shows that the pollen assemblages are very similar throughout the sequence and are dominated by herb pollen (>80% sumP) with very little tree, shrub and fern pollen and spores. Grains of trees and shrubs, mainly alder (*Alnus*) but with some oak (*Quercus*), maple (*Acer*), birch (*Betula*), hazel (*Corylus avellana*), ash (*Fraxinus excelsior*), lime (*Tilia*), elm (*Ulmus*), rose family (Rosaceae including hawthorn-type (*Crataegus*-type) and bramble-type (*Rubus fruticosus*-type)) account for <10% sumP. These suggest that, at some distance from the site, some alder and willow were growing on wetter ground and some mixed deciduous woodland on drier ground. Ca. 7% fern spores including those of polypody (*Polypodium vulgare* agg.) and bracken (*Pteridium aquilinum*) were also found and may have grown in the regional mixed woodland. A few grains of cereals were identified, including spelt and/or emmer (*Triticum*) and possibly other wheats or oats (*Avena/Triticum*-type) and barley-type (*Hordeum*-type), although this latter taxon may include some wild grasses such as floating sweet-grass (*Glyceria fluitans*) which grows on mud or in shallow water as

found in fens and marshes. Cereals produce very little pollen and the grains are large and heavy and do not travel long distances, so the occurrence of several grains in the sequence suggests that cereals were being grown or processed nearby. Other taxa found are possible weeds of arable agriculture (e.g. cabbage family (Brassicaceae), goosegrass family (*Chenopodiaceae*), knotgrass-type (*Polygonum aviculare*-type), redshank (*Polygonum persicaria* or *Persicaria maculosa*) and pink family (Caryophyllaceae) including chickweeds (*Cerastium*-type). However, these taxa may also be indicative of ruderal communities: pathways or waste ground. The dominant pollen taxon, however, is grasses (Poaceae). This may include common reed (*Phragmites australis*) as found in fens and other wet habitats, but other grasses which grow on drier areas are also present. The grains of the telmatic taxa lesser bulrush-type (*Typha angustifolia*-type), sedges (*Cyperaceae*) and spores of hornwort (*Anthoceros*) which grows on mud, are also indicative of the local occurrence of fen and wet ground. The presence of other grasses together with taxa characteristic of grassland (especially dandelion-type (*Taraxacum*-type), and ribwort plantain (*Plantago lanceolata*)) indicate grassland possibly used as pasture. There is no evidence of obligate aquatic taxa growing in the well, and no nematode eggs indicative of the incorporation of cess. Although this is negative evidence, it is therefore probable that this was a clean well used for human consumption.

- B.5.10 The pollen assemblages from this well are therefore probably indicative of its use as a source of clean water. There is some evidence of cereal growth, if not immediately local then close by, and probably pasturing. The local landscape was of fen and damp grassland with very few trees or shrubs, possibly with scattered trees of alder and willow, and/or fen carr at some distance from the site, with patches of mixed deciduous woodland regionally on drier higher land. There is no indication of change in the landscape or landuse over the period of time represented by the monolith.

Well 1, feature 538, sample <135>, Fig 17

- B.5.11 Sample <135> was taken through the basal two contexts (1548 and 1547) of Well 1 (**538**). The well is in group C of the wells and dates from 1450 – 1190 cal BC, the early Middle Bronze Age (MBA). It is situated in the north-east corner of the excavated site in the area of settlement.
- B.5.12 The pollen preservation was not very good and at low concentrations in the lower part of the sequence, and it was not possible to make counts of at least 400 grains (see Calculation sum on Fig 39) from the basal three sub-samples. However, the pollen and spores were quite well preserved and at higher concentrations in the upper five sub-samples.
- B.5.13 The summary pollen diagram (Fig 39) shows that most of the sub-samples analysed are very similar with very little change recorded. Herbs dominate the assemblages (ca. 85%) with ca. 10% tree and shrub pollen, and ca. 5% ferns. The pollen assemblages are dominated by grass pollen together with dandelion-type, ribwort plantain and sorrel (*Rumex acetosa*-type). This suggests that the site was surrounded by grassland probably used as pasture. The few grains of tree and shrub pollen are indicative of some trees growing at some distance from the site. However, two levels (9.5 and 13.5 cm) have considerably higher quantities of tree pollen especially that of alder. Between these two sub-samples, a further sub-sample at 10.5 cm has low values of tree pollen. Due to the time-scale being unknown, it is difficult to interpret these changes, but it suggests that this is not natural infilling of the pit and, although only two contexts have been identified in the monolith, these changes may be due to material being dumped

into the pit, which originates from where alder was growing. It would only require a piece of alder anther, a taxon which produces large quantities of pollen, to be included in the dumped material to produce such pollen assemblages. Alternatively, scattered trees of alder may have grown closer to the site at the time the sediment from which these sub-samples were taken was laid down.

- B.5.14 Throughout the sequence there are scattered cereal grains of emmer and/or spelt, other wheats and barley-type. Their values increase upwards together with those of weeds associated with arable fields (e.g. cabbage family, dandelion-type, goosegrass family, knotgrass and nettle (*Urtica*) although these taxa can also be indicative of ruderal situations – pathways and waste ground. Evidence for plants associated with grassland/pasture tend to decrease upwards. Taxa characteristic of hedgerows such as rosaceous shrubs including blackthorn/cherry (*Prunus*-type) and bramble, are also present. This may suggest that arable fields became more common, possibly with hedgerows, at the expense of pastures during the time period of sedimentation.
- B.5.15 Eggs from the nematode *Trichuris*, a parasite found in the intestines of animals including humans, are present and suggest that this well included cess, and was either a latrine pit for humans or a watering hole for animals. The presence of grains of nettle, a taxon found growing on nitrogenous soils such as those incorporating faeces, may be further proof of the pit's use as a latrine.
- B.5.16 The pollen assemblages from Well 1 therefore suggest that the landscape was very open with grassland/pasture and ruderal communities (pathways and waste ground) widespread, and with some cereal growth locally. The sequence indicates increased landuse with the development of hedged fields and increased cereal production. The presence of nematode eggs suggests that Well 1 was not a 'clean' pit but was used either as a latrine or for watering animals. The size of the *Trichuris* eggs at ca. 35 - 45 microns length, suggests that the pit fill included human faeces rather than that of ruminant animals in which the species of *Trichuris* eggs are larger. There is possibly evidence that material was 'dumped' into the pit.

Well 7, feature 2350, sample <285>. Fig 17

- B.5.17 The three basal contexts of Well 7 were sampled in monolith <285>. This well is the youngest of the pits studied, dating to 1390 – 1120 cal BC, the late MBA. The well is on the boundary between fields 5 and 7 on the eastern side of the excavated site.
- B.5.18 Pollen preservation and concentration was good throughout the monolith. Pollen assemblages are similar throughout although herb pollen values increase upwards from 65% sumP to 80% with a concomitant decrease in tree and shrub pollen (alder, hazel, oak and willow) and fern spores. This suggests that deciduous woodland, growing on the higher, drier ground regionally, was decreasing, possibly being cleared, particularly towards the top of the sequence. Grasses and ribwort plantain are the dominating taxa, together with, among others, carrot family (Apiaceae), dandelion-type, cinquefoil (*Potentilla*-type), buttercups (*Ranunculus acris*-type) and sorrel, all characteristic of pastures. Cereals are found throughout together with the associated weeds of arable fields. Also present throughout and not decreasing, are taxa indicative of hedgerows including maple, elderberry (*Sambucus nigra*-type), ivy (*Hedra helix*), dogwood (*Cornus sanguinea*), rose family, hawthorn and bramble. Tall telmatic taxa such as lesser bulrush (*Typha angustifolia*-typt), sedges (including great fen-sedge (*Cladium mariscus*)) and water plantain (*Alisma*-type) suggest that the well was close to a wet area/fen

- B.5.19 The presence of *Trichuris* eggs, together with nettle pollen, suggests that this well was not a 'clean' pit but was used for watering animals or as a human latrine.
- B.5.20 The pollen analyses from Well 7 therefore suggest an open landscape with much grassland/pasture and some cereal growth locally, with hedged fields. However, there is evidence for mixed deciduous woodland growing on the drier higher ground regionally, perhaps being gradually cleared.

### **Discussion**

- B.5.21 The three monoliths analysed from the MBA wells have provided records of the vegetational variations in time and space across the excavated area. All three show that the area was open, with very few trees and with evidence of land-use with mixed arable and animal husbandry.
- B.5.22 Analysis of monolith <201> from Well 12, feature **3189**, the earliest well, from the EBA, indicates that this site on the southern boundary of the excavated area, was either in or very close to wet marsh/fen and that, although the well was surrounded by wet grassland probably used for pasture, there was already some cereal growth with its associated weed flora nearby, perhaps on slightly higher drier ground to the north. Evidence of hedgerows is minimal. Such a scenario is not unexpected as the site is low lying, just north of Flag Fen, and fen and marsh would have been prevalent at the time of infill. The analysis suggests that the well was 'clean' and used for human consumption.
- B.5.23 The second site, Well 1, feature **538**, monolith <135>, is slightly younger (the early MBA) and is situated in the settlement area excavated in the north-east corner of the excavation. Pollen assemblages suggest that the local area was surrounded by grassland/pasture with ruderal communities (waste ground and pathways). This is expected in an area of settlement. However, there is some evidence to suggest that this pit did not have a natural infill, but material was 'dumped' into the well which probably was used as a human latrine. Cereals and their associated weeds were growing near by, increasing upwards, together with hedgerows. Values of grasses and telmatic species are less than in Well 12, evidence of further distance from marsh/fen with increasing dryness.
- B.5.24 Pollen assemblages from <285> a monolith from Well 7, feature **2350**, are the youngest sediments studied (late MBA). The site is on the eastern side of the excavated area on the boundary between fields 2 and 4. The site was surrounded by grassland/pasture, but with higher tree and shrub values than in the other two monoliths. This may reflect the growth of woodland on higher ground to the east of the excavated area. However, there is evidence for cereal growth and arable field weeds locally. There is some suggestion of loss of woodland, possibly from clearance, towards the top of the sequence, with a concomitant increase in herb taxa. High values of taxa associated with hedgerows suggest their increasing growth, and are especially prevalent due to the position of this well on a boundary where a hedgerow was likely to have developed.
- B.5.25 The overall picture is thus one of heavy land-use during the MBA at Brigg's Farm, with mixed agriculture and the demarcation of fields with ditches, banks and hedgerows. These hedgerows could have been assarted from woodland but there is no evidence for deciduous woodland in this wet area of the Fenland, and it is probable that the hedges were either planted or the boundaries were ditched and banked up and the hedges developed naturally. Such landscapes during the Bronze Age have been identified from many sites e.g. Flag Fen and Fengate (Pryor 2001), Heathrow (Wiltshire 2006, Peglar *et al.* 2009), Stansted (Huckerby *et al.* 2006) and other sites in the Thames Valley.

Wiltshire in Framework Archaeology (2006) has suggested that at Heathrow the diverse nature of the hedgerows with many plant taxa would have taken 400 to 500 years to develop as suggested by Rackham (1986), and were therefore established many years before the wells were dug. This could also be the case at Brigg's Farm.

- B.5.26 The only crops identified from Brigg's Farm were cereals – emmer and/or spelt, other species of wheat, barley and possibly oats. Many seeds of flax (*Linum usitatissimum*) were identified by Denise Druce in the charred remains from a well at Brigg's Farm. No remains of this species were found in either the waterlogged plant remains identified by Elizabeth Huckerby or in the pollen. However, *Linum* produces very few pollen grains and is rarely encountered in pollen assemblages, but the total absence of its seeds and pollen may suggest that flax was not being grown locally but was being brought into the excavated area and processed.
- B.5.27 There appears to be increasing biodiversity throughout the time covered by the three pit infills with more weeds associated with arable fields being identified as time passes. It has been suggested that specific weed floras associated with cereal crops gradually developed over time (Groenman van Waateringe 1979).

### **Acknowledgements**

- B.5.28 Thanks are extended to Elizabeth Huckerby (OAN) for assessing the samples from Brigg's farm for their potential for full pollen analysis, and to Sandra Bonsall (OAN) for preparing the samples. The Geography Department at Lancaster University kindly allowed the use of their laboratories for the preparations.



APPENDIX C. RADIOCARBON DATING

**RADIOCARBON DATING CERTIFICATE**

6 October 2009

1.1      **Laboratory Code**                      SUERC-25573 (GU-19432)

**Submitter**                                      Rachel Fosberry  
Oxford Archaeology East  
15 Trafalgar Way  
Bar Hill  
Cambridge CB23 8SQ

**Site Reference**                                Brigg's Farm, Thorney  
**Sample Reference**                            THOBRF08 / 517

**Material**                                        Charred residue on pottery

**$\delta^{13}\text{C}$  relative to VPDB**                      -27.5 ‰

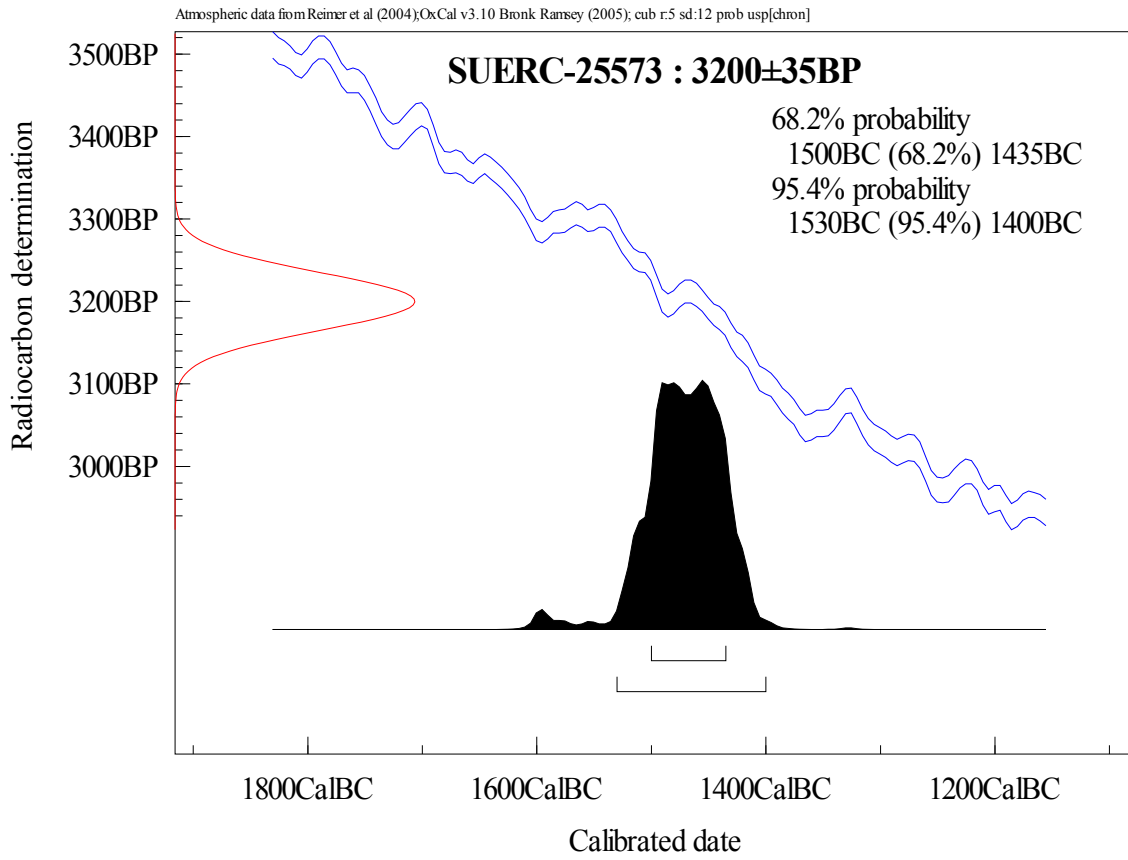
1.2      **Radiocarbon Age BP**                      3200  $\pm$  35

- N.B**
1. The above  $^{14}\text{C}$  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.
  2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
  3. Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk) or Telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :-                                      Date :-

Checked and signed off by :-    Date :-

Calibration Plot



## RADIOCARBON DATING CERTIFICATE

6 October 2009

**1.3 Laboratory Code** SUERC-25577 (GU-19433)

**Submitter** Rachel Fosberry  
Oxford Archaeology East  
15 Trafalgar Way  
Bar Hill  
Cambridge CB23 8SQ

**Site Reference** Brigg's Farm, Thorney  
**Sample Reference** THOBRF08 / 530

**Material** Animal Bone : Pig Jaw

**$\delta^{13}\text{C}$  relative to VPDB** -22.3 ‰

**1.4 Radiocarbon Age BP** 3025  $\pm$  40

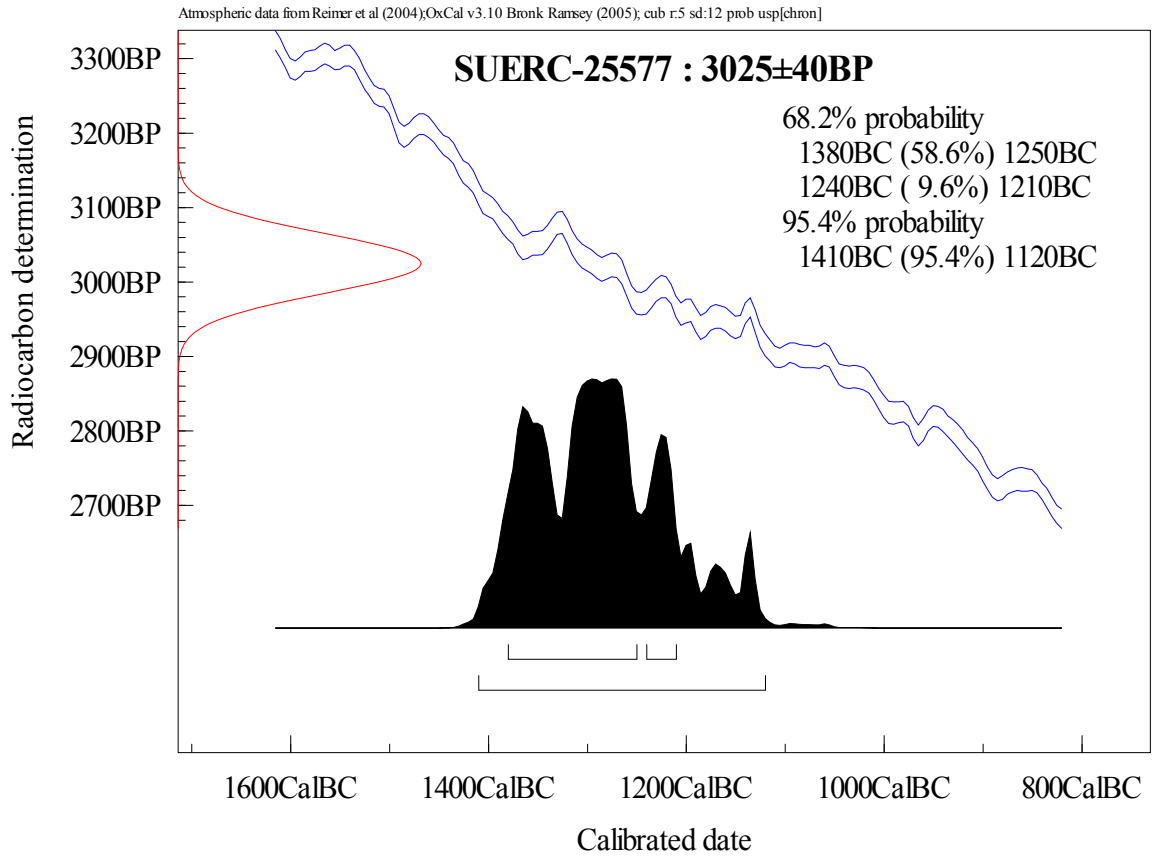
- N.B**
- 1 The above  $^{14}\text{C}$  age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.
  - 2 The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
  - 3 Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk) or Telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :-

Date :-

Checked and signed off by :-

Date :-



Calibration Plot

## RADIOCARBON DATING CERTIFICATE

6 October 2009

1.5      **Laboratory Code**                      SUERC-25578 (GU-19434)

**Submitter**                                      Rachel Fosberry  
Oxford Archaeology East  
15 Trafalgar Way  
Bar Hill  
Cambridge CB23 8SQ

**Site Reference**                                Brigg's Farm, Thorney  
**Sample Reference**                          THOBRF08 / 576

**Material**                                        Animal Bone : Cow Skull

**$\delta^{13}\text{C}$  relative to VPDB**                -22.3 ‰

1.6      **Radiocarbon Age BP**                      3050  $\pm$  40

- N.B**
- 1      The above  $^{14}\text{C}$  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.
  - 2      The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
  - 3      Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk) or Telephone 01355 270136 direct line.

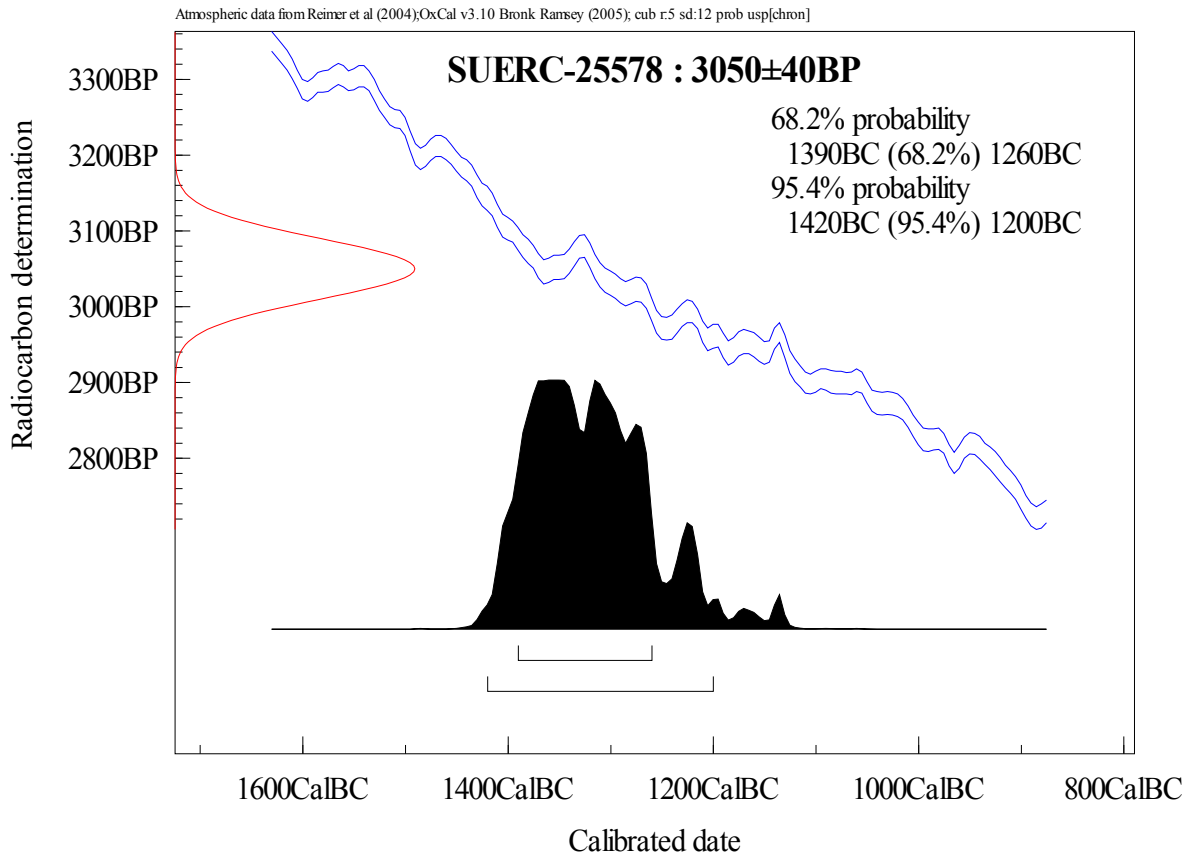
Conventional age and calibration age ranges calculated by :-

Date :-

Checked and signed off by :-

Date :-

Calibration Plot



## RADIOCARBON DATING CERTIFICATE

6 October 2009

---

**1.7 Laboratory Code** GU-19436

**Submitter** Rachel Fosberry  
Oxford Archaeology East  
15 Trafalgar Way  
Bar Hill  
Cambridge CB23 8SQ

**Site Reference** Brigg's Farm, Thorney  
**Sample Reference** THOBRF08 / 752

**Material** Seeds : Sambucus sp. / rubus sp. (Date 1 species)

### $\delta^{13}\text{C}$ relative to VPDB

**1.8 Radiocarbon Age BP** To follow

- N.B**
- 1 The above  $^{14}\text{C}$  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.
  - 2 The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
  - 3 Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk) or Telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :-

Date :-

Checked and signed off by :-

Date :-

## RADIOCARBON DATING CERTIFICATE

6 October 2009

1.9      **Laboratory Code**                      SUERC-25579 (GU-19437)

**Submitter**                                      Rachel Fosberry  
Oxford Archaeology East  
15 Trafalgar Way  
Bar Hill  
Cambridge CB23 8SQ

**Site Reference**                                Brigg's Farm, Thorney  
**Sample Reference**                            THOBRF08 / 799

**Material**                                        Seeds : Cereal indet.

**$\delta^{13}\text{C}$  relative to VPDB**                -23.0 ‰

1.10      **Radiocarbon Age BP**                      3215  $\pm$  40

- N.B**
- 1      The above  $^{14}\text{C}$  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.
  - 2      The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
  - 3      Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk) or Telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :-

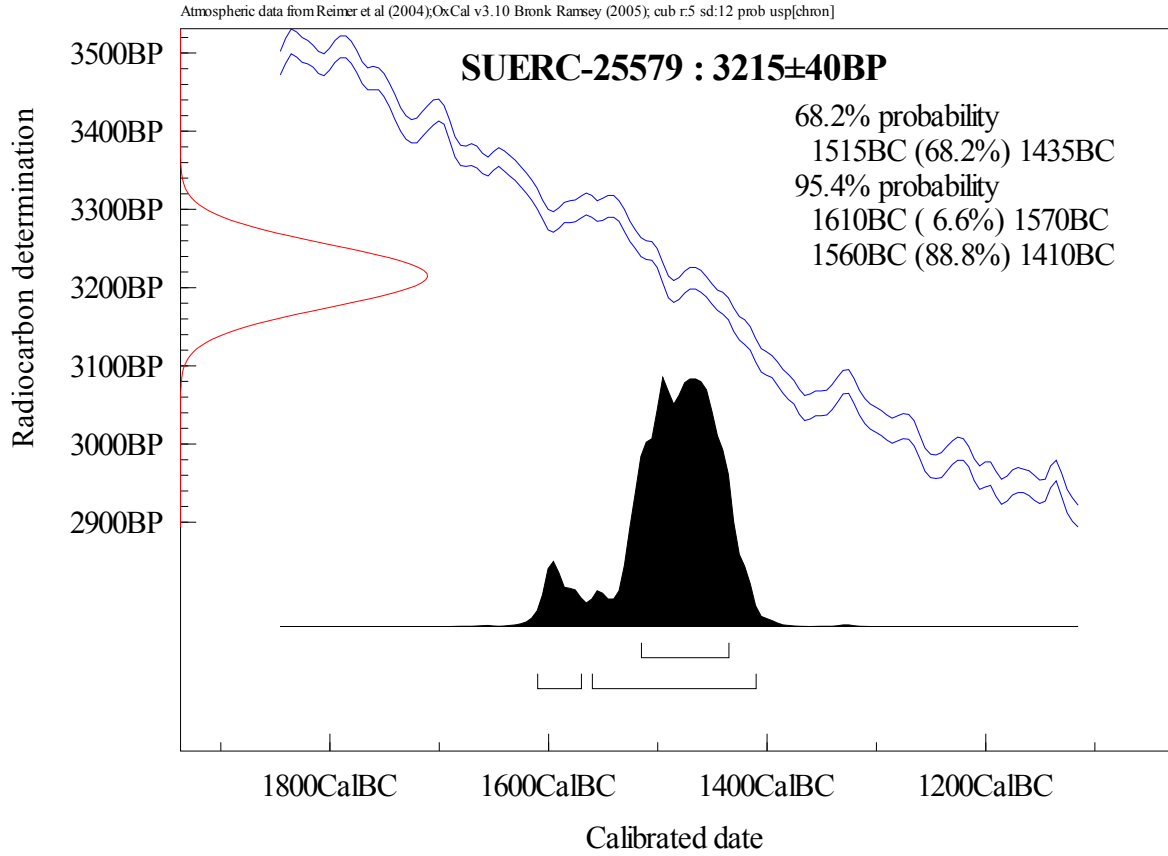
Date :-



Checked and signed off by :-

Date :-

Calibration Plot



## RADIOCARBON DATING CERTIFICATE

6 October 2009

**1.11 Laboratory Code** SUERC-25580 (GU-19438)

**Submitter** Rachel Fosberry  
Oxford Archaeology East  
15 Trafalgar Way  
Bar Hill  
Cambridge CB23 8SQ

**Site Reference** Brigg's Farm, Thorney  
**Sample Reference** THOBRF08 / 870

**Material** Animal Bone : Cow

**$\delta^{13}\text{C}$  relative to VPDB** -20.6 ‰

**1.12 Radiocarbon Age BP** 3140  $\pm$  40

- N.B**
- 1 The above  $^{14}\text{C}$  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.
  - 2 The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
  - 3 Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk) or Telephone 01355 270136 direct line.

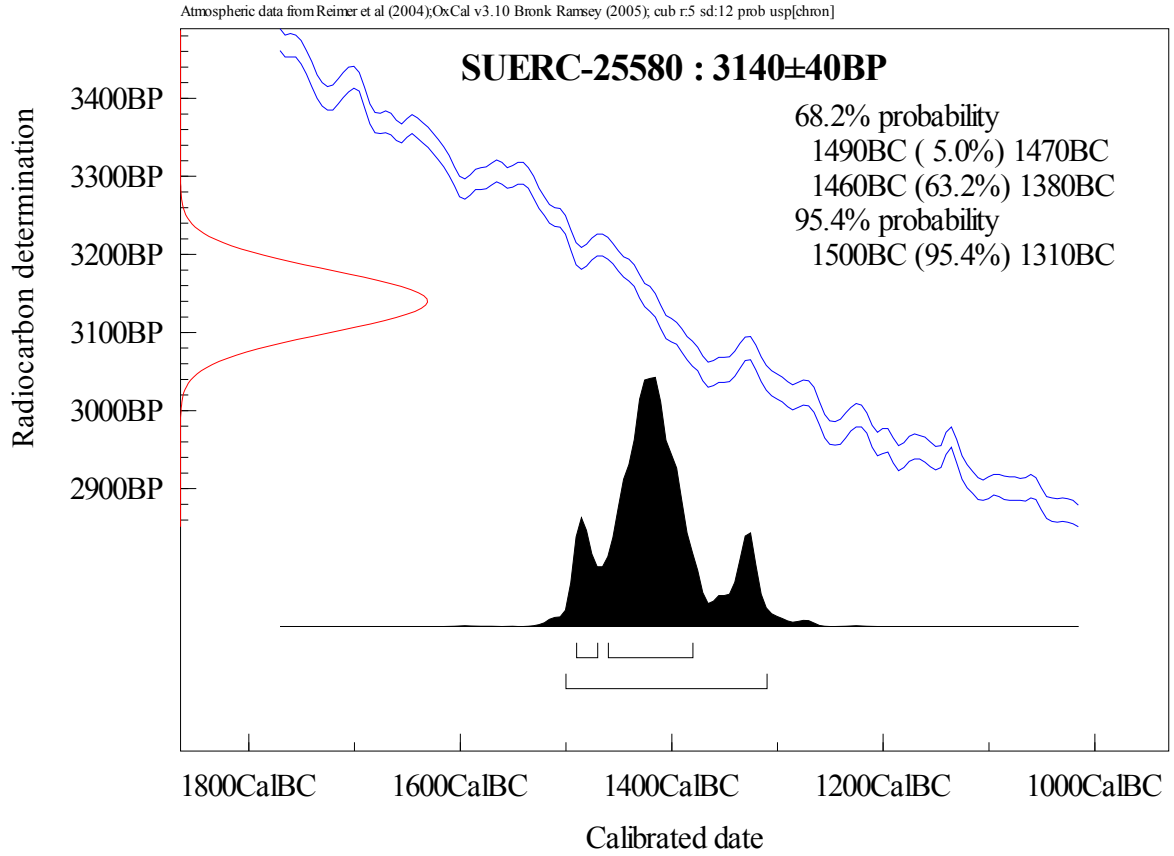
Conventional age and calibration age ranges calculated by :-

Date :-

Checked and signed off by :-

Date :-

Calibration Plot



## RADIOCARBON DATING CERTIFICATE

6 October 2009

**1.13 Laboratory Code** SUERC-25581 (GU-19439)

**Submitter** Rachel Fosberry  
Oxford Archaeology East  
15 Trafalgar Way  
Bar Hill  
Cambridge CB23 8SQ

**Site Reference** Brigg's Farm, Thorney  
**Sample Reference** THOBRF08 / 901

**Material** Seeds : Hordeum

**$\delta^{13}\text{C}$  relative to VPDB** -24.8 ‰

**1.14 Radiocarbon Age BP** 3100  $\pm$  40

- N.B**
- 1 The above  $^{14}\text{C}$  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.
  - 2 The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
  - 3 Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk) or Telephone 01355 270136 direct line.

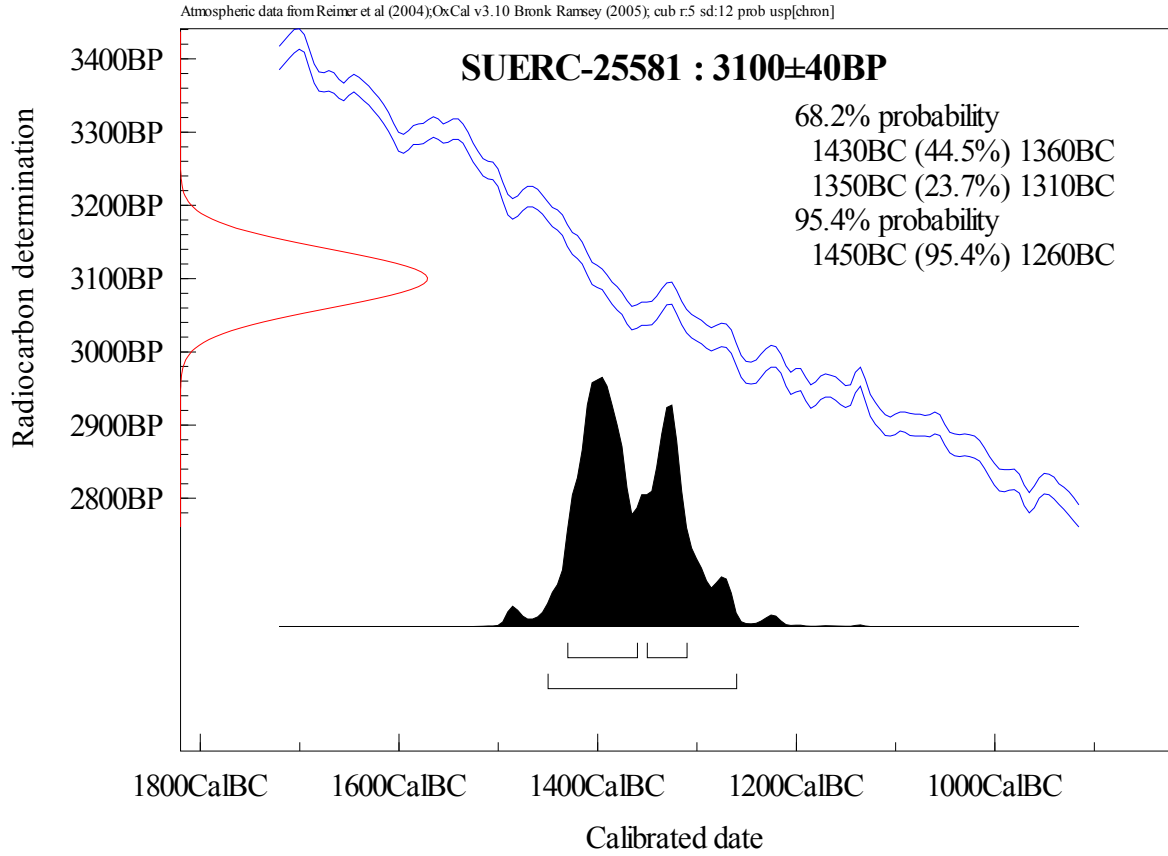
Conventional age and calibration age ranges calculated by :-

Date :-

Checked and signed off by :-

Date :-

Calibration Plot



## RADIOCARBON DATING CERTIFICATE

6 October 2009

**1.15 Laboratory Code** SUERC-25582 (GU-19440)

**Submitter** Rachel Fosberry  
Oxford Archaeology East  
15 Trafalgar Way  
Bar Hill  
Cambridge CB23 8SQ

**Site Reference** Brigg's Farm, Thorney  
**Sample Reference** THOBRF08 / 1181

**Material** Seeds : Cereal indet.

**$\delta^{13}\text{C}$  relative to VPDB** -24.9 ‰

**1.16 Radiocarbon Age BP** 3030  $\pm$  40

- N.B**
- 1 The above  $^{14}\text{C}$  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.
  - 2 The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
  - 3 Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk) or Telephone 01355 270136 direct line.

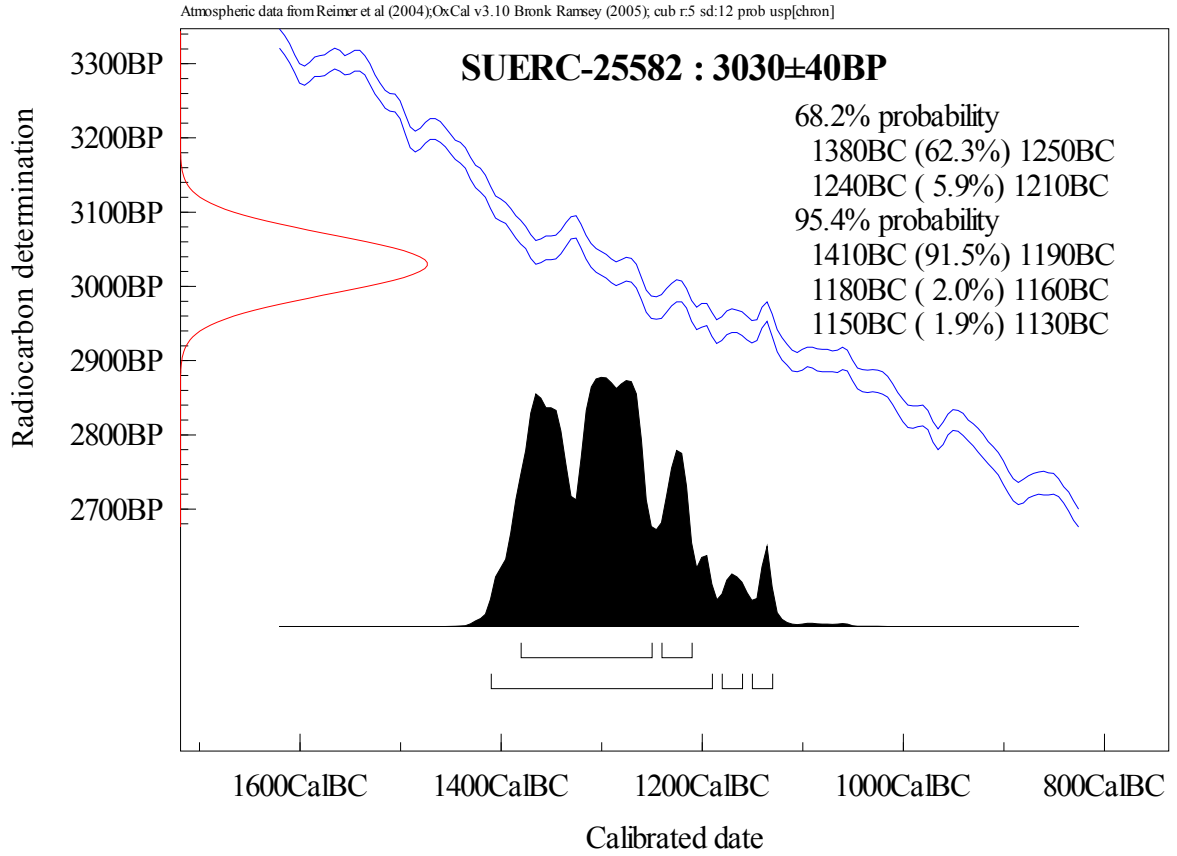
Conventional age and calibration age ranges calculated by :-

Date :-

Checked and signed off by :-

Date :-

Calibration Plot





## RADIOCARBON DATING CERTIFICATE

6 October 2009

---

**1.17 Laboratory Code** SUERC-25583 (GU-19441)

**Submitter** Rachel Fosberry  
Oxford Archaeology East  
15 Trafalgar Way  
Bar Hill  
Cambridge CB23 8SQ

**Site Reference** Brigg's Farm, Thorney  
**Sample Reference** THOBRF08 / 1209

**Material** Seeds : Cereal indet., 1 cf. Hordeum (single grain dated)

**$\delta^{13}\text{C}$  relative to VPDB** -23.9 ‰

**1.18 Radiocarbon Age BP** 3185 ± 40

- N.B**
- 1 The above  $^{14}\text{C}$  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.
  - 2 The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
  - 3 Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk) or Telephone 01355 270136 direct line.

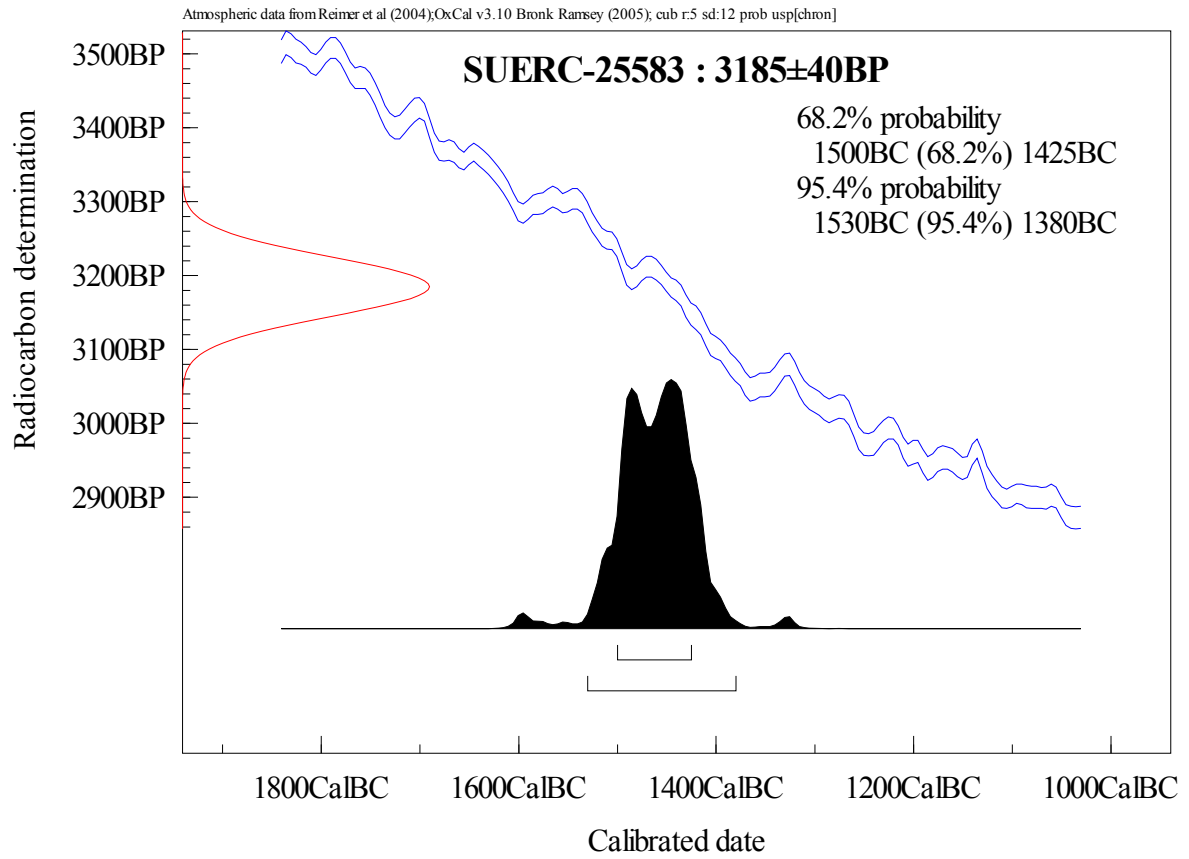
Conventional age and calibration age ranges calculated by :-

Date :-

Checked and signed off by :-

Date :-

Calibration Plot



## RADIOCARBON DATING CERTIFICATE

6 October 2009

**1.19 Laboratory Code** SUERC-25587 (GU-19442)

**Submitter** Rachel Fosberry  
Oxford Archaeology East  
15 Trafalgar Way  
Bar Hill  
Cambridge CB23 8SQ

**Site Reference** Brigg's Farm, Thorney  
**Sample Reference** THOBRF08 / 1246

**Material** Seeds : Charred Linium

**$\delta^{13}\text{C}$  relative to VPDB** -26.9 ‰

**1.20 Radiocarbon Age BP** 3585  $\pm$  40

- N.B**
- 1 The above  $^{14}\text{C}$  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.
  - 2 The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
  - 3 Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk) or Telephone 01355 270136 direct line.

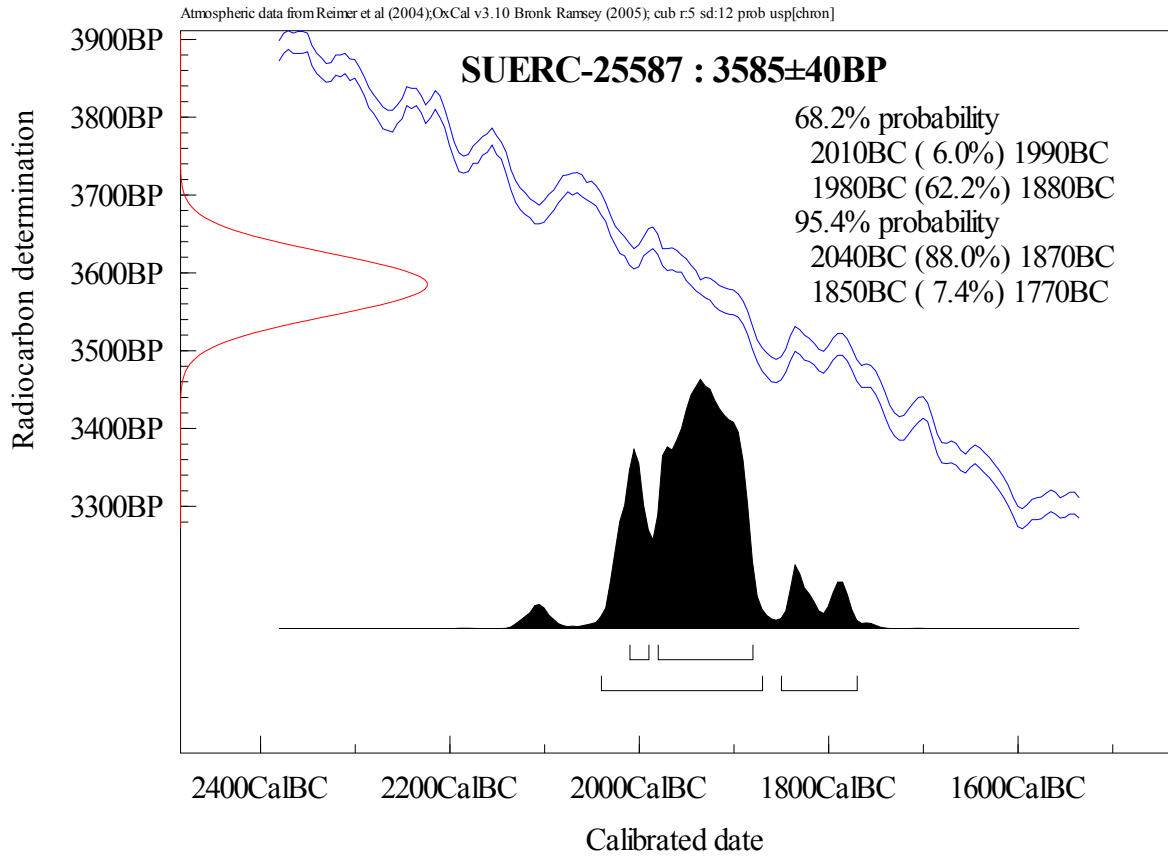
Conventional age and calibration age ranges calculated by :-

Date :-

Checked and signed off by :-

Date :-

Calibration Plot



## RADIOCARBON DATING CERTIFICATE

6 October 2009

1.21      **Laboratory Code**                      SUERC-25588 (GU-19443)

**Submitter**                                      Rachel Fosberry  
Oxford Archaeology East  
15 Trafalgar Way  
Bar Hill  
Cambridge CB23 8SQ

**Site Reference**                                Brigg's Farm, Thorney  
**Sample Reference**                            THOBRF08 / 1548

**Material**                                        Seeds : Sambucus

**$\delta^{13}\text{C}$  relative to VPDB**                -24.4 ‰

1.22      **Radiocarbon Age BP**                      3100  $\pm$  40

- N.B**
- 1      The above  $^{14}\text{C}$  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.
  - 2      The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
  - 3      Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk) or Telephone 01355 270136 direct line.

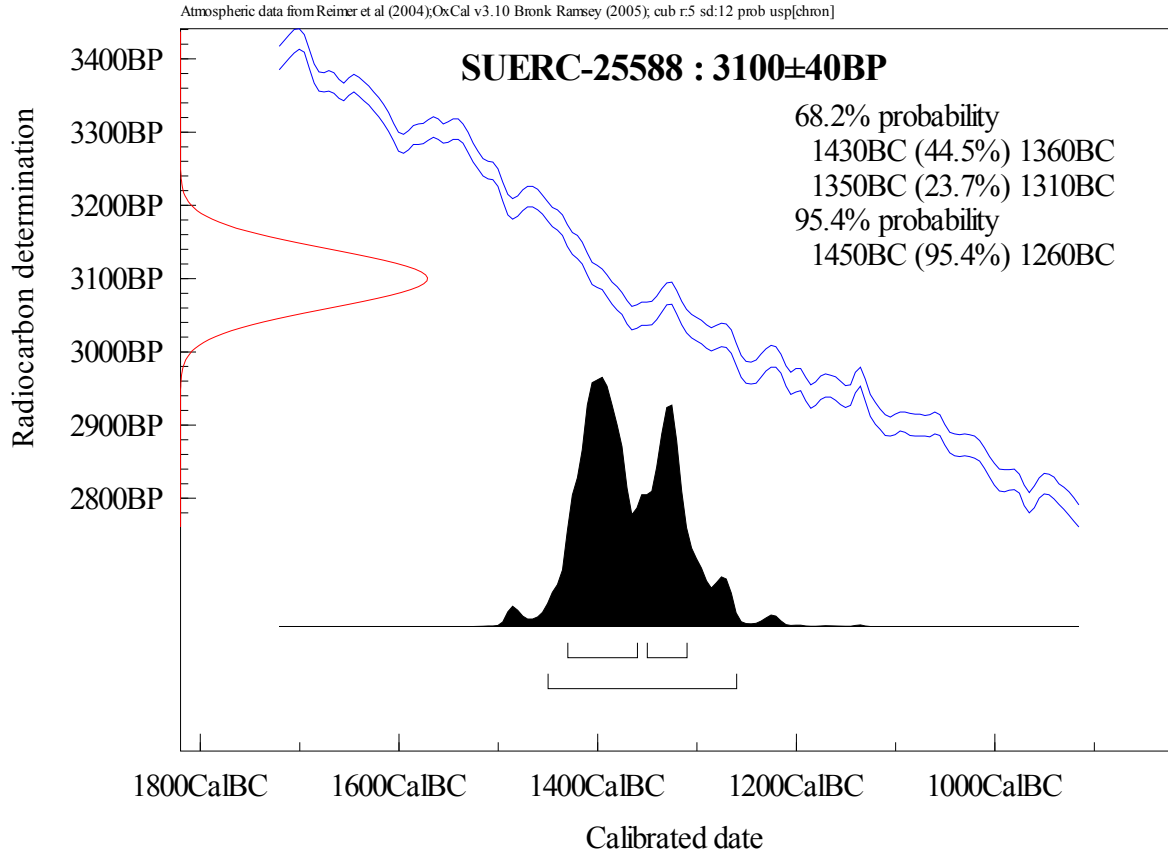
Conventional age and calibration age ranges calculated by :-

Date :-

Checked and signed off by :-

Date :-

Calibration Plot



## RADIOCARBON DATING CERTIFICATE

6 October 2009

1.23      **Laboratory Code**                      SUERC-25589 (GU-19444)

**Submitter**                                      Rachel Fosberry  
Oxford Archaeology East  
15 Trafalgar Way  
Bar Hill  
Cambridge CB23 8SQ

**Site Reference**                                Brigg's Farm, Thorney  
**Sample Reference**                          THOBRF08 / 1551

**Material**                                        Seeds : Sambucus

**$\delta^{13}\text{C}$  relative to VPDB**                -23.8 ‰

1.24      **Radiocarbon Age BP**                      3125  $\pm$  40

- N.B**
- 1      The above  $^{14}\text{C}$  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.
  - 2      The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
  - 3      Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk) or Telephone 01355 270136 direct line.

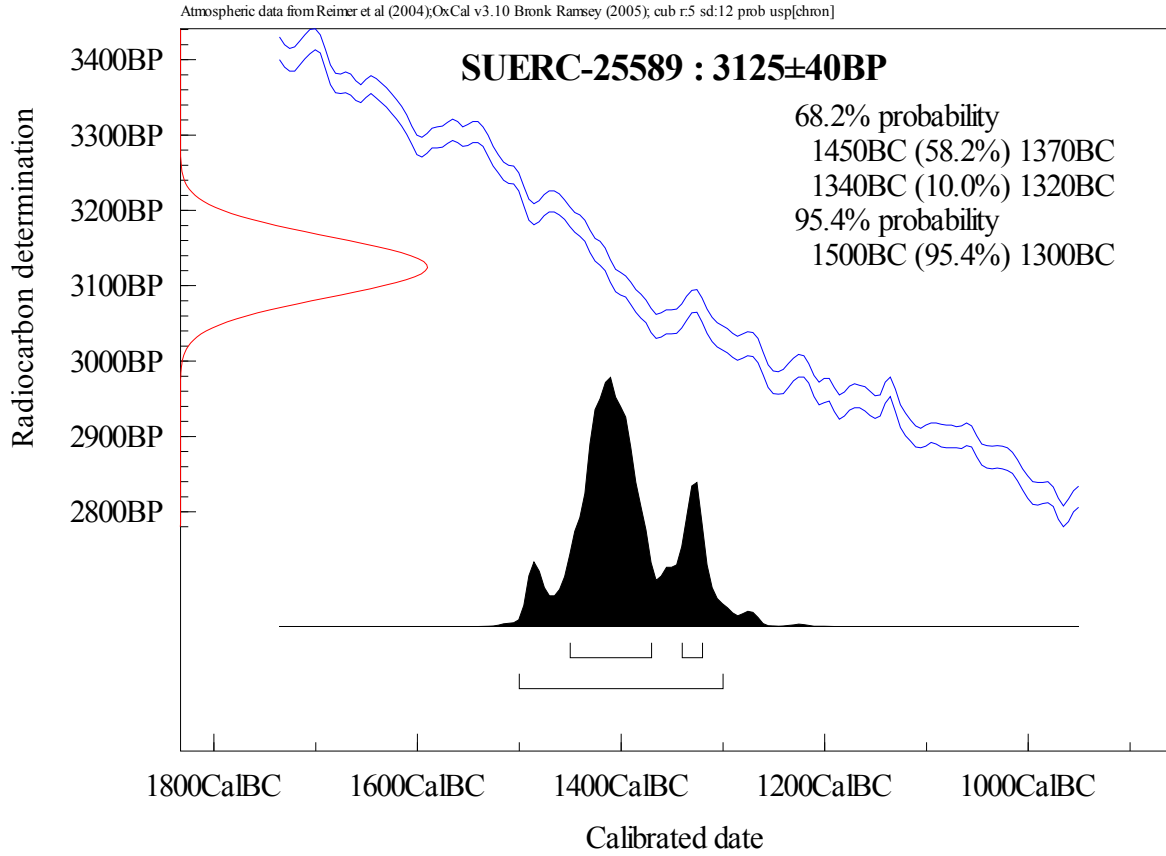
Conventional age and calibration age ranges calculated by :-

Date :-

Checked and signed off by :-

Date :-

Calibration Plot





## RADIOCARBON DATING CERTIFICATE

6 October 2009

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**1.25 Laboratory Code** SUERC-25590 (GU-19446)

**Submitter** Rachel Fosberry  
Oxford Archaeology East  
15 Trafalgar Way  
Bar Hill  
Cambridge CB23 8SQ

**Site Reference** Brigg's Farm, Thorney  
**Sample Reference** THOBRF08 / 2070

**Material** Cremated Bone : Human femur shaft

**$\delta^{13}\text{C}$  relative to VPDB** -20.6 ‰

**1.26 Radiocarbon Age BP** 3540  $\pm$  40

**N.B**

- 1 The above  $^{14}\text{C}$  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.
- 2 The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
- 3 Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk) or Telephone 01355 270136 direct line.

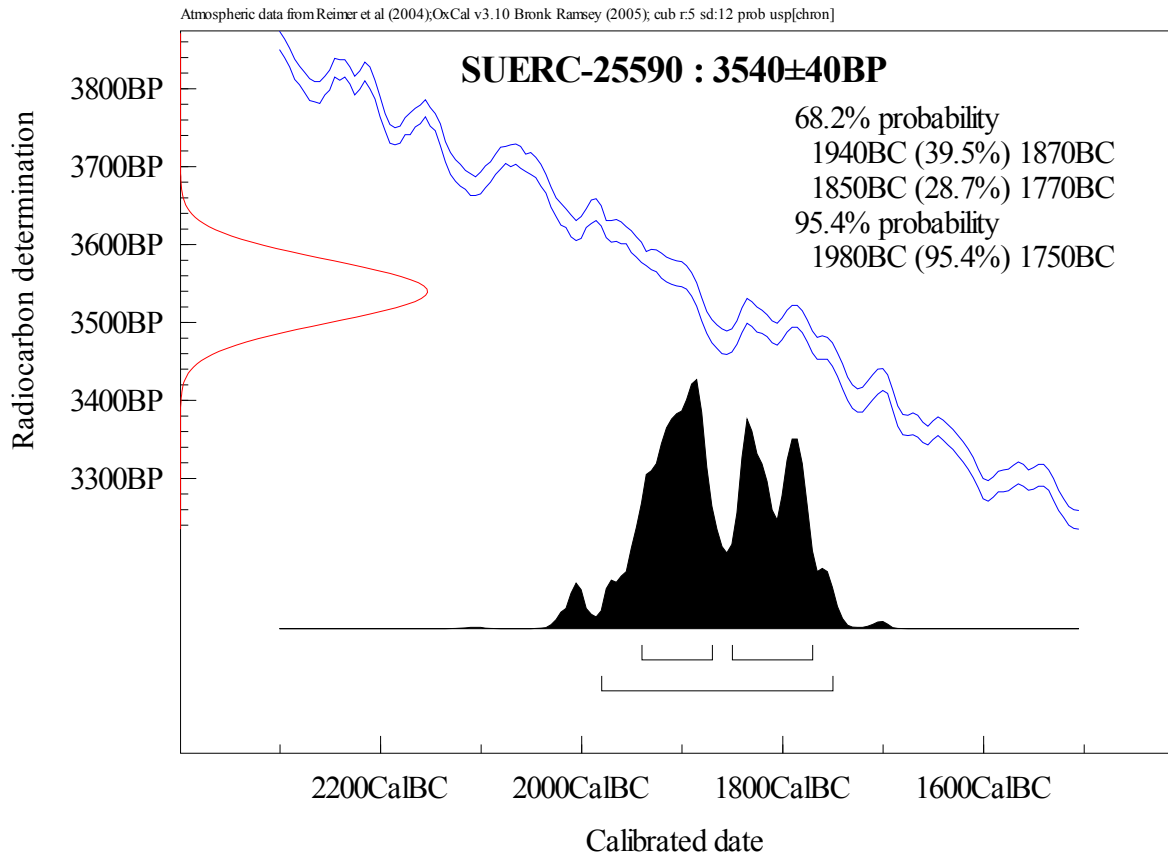
Conventional age and calibration age ranges calculated by :-

Date :-

Checked and signed off by :-

Date :-

Calibration Plot



## RADIOCARBON DATING CERTIFICATE

6 October 2009

1.27      **Laboratory Code**                      SUERC-25591 (GU-19447)

**Submitter**                                      Rachel Fosberry  
Oxford Archaeology East  
15 Trafalgar Way  
Bar Hill  
Cambridge CB23 8SQ

**Site Reference**                                Brigg's Farm, Thorney  
**Sample Reference**                            THOBRF08 / 2352

**Material**                                        Seeds : Prunus sp. dated

**$\delta^{13}\text{C}$  relative to VPDB**                      -27.3 ‰

1.28      **Radiocarbon Age BP**                      3000  $\pm$  40

- N.B**
- 1      The above  $^{14}\text{C}$  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.
  - 2      The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
  - 3      Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk) or Telephone 01355 270136 direct line.

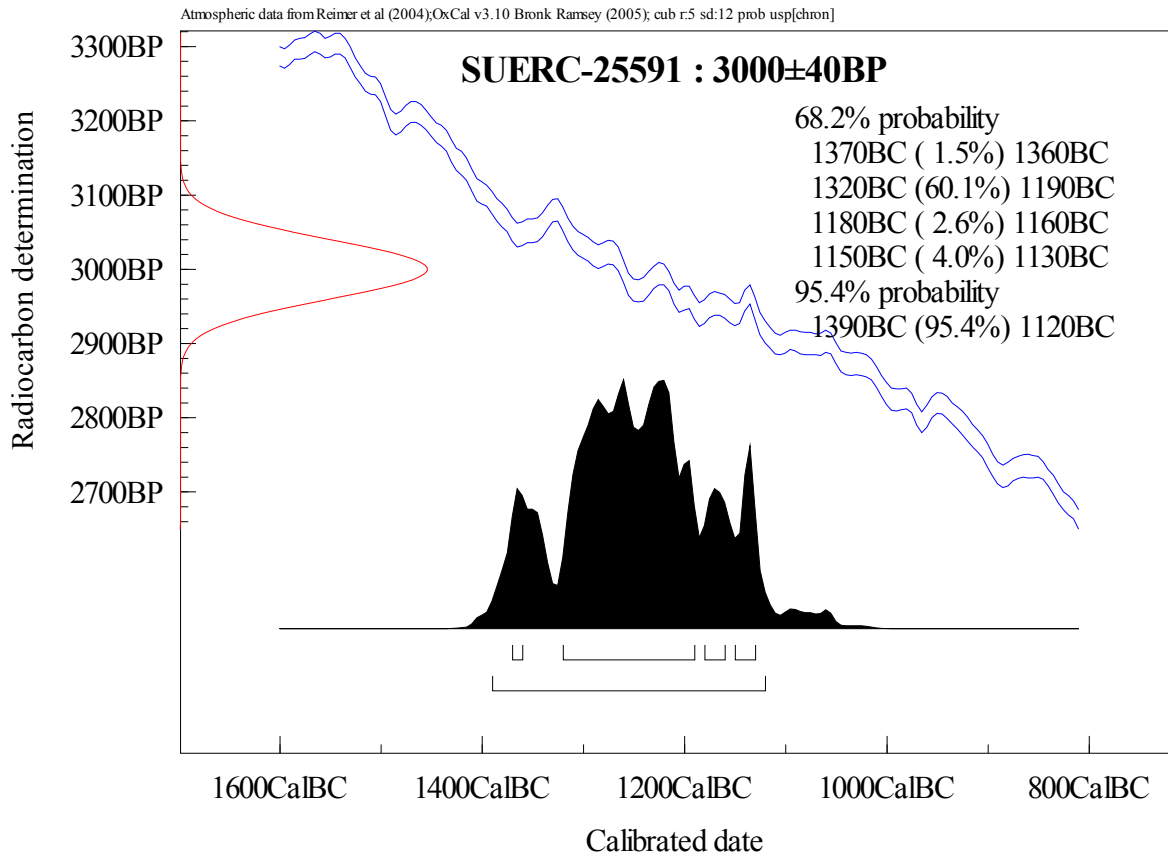
Conventional age and calibration age ranges calculated by :-

Date :-

Checked and signed off by :-

Date :-

Calibration Plot



## RADIOCARBON DATING CERTIFICATE

6 October 2009

---

**1.29 Laboratory Code** SUERC-25592 (GU-19448)

**Submitter** Rachel Fosberry  
Oxford Archaeology East  
15 Trafalgar Way  
Bar Hill  
Cambridge CB23 8SQ

**Site Reference** Brigg's Farm, Thorney  
**Sample Reference** THOBRF08 / 2658

**Material** Wood : No species identification

**$\delta^{13}\text{C}$  relative to VPDB** -28.0 ‰

**1.30 Radiocarbon Age BP** 2995  $\pm$  40

- N.B**
- 1 The above  $^{14}\text{C}$  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.
  - 2 The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
  - 3 Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk) or Telephone 01355 270136 direct line.

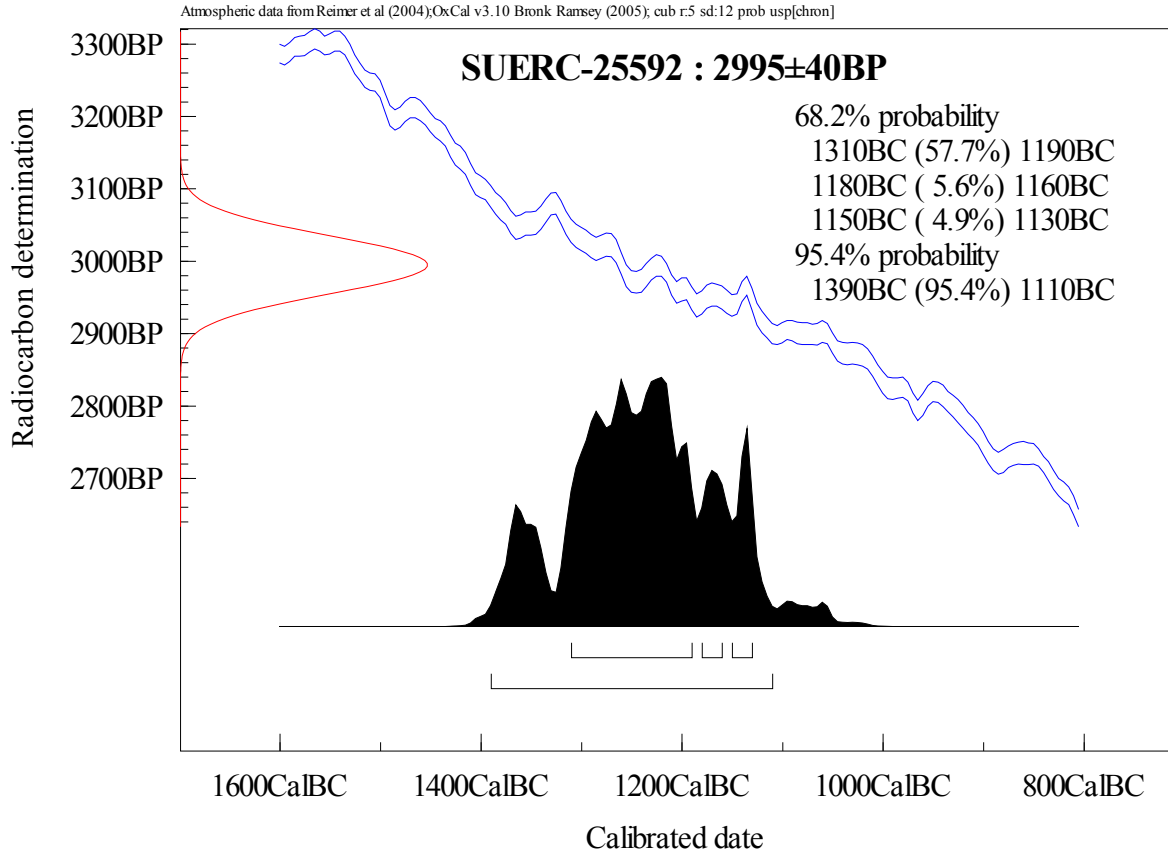
Conventional age and calibration age ranges calculated by :-

Date :-

Checked and signed off by :-

Date :-

Calibration Plot



## RADIOCARBON DATING CERTIFICATE

6 October 2009

**1.31 Laboratory Code** SUERC-25593 (GU-19449)

**Submitter** Rachel Fosberry  
Oxford Archaeology East  
15 Trafalgar Way  
Bar Hill  
Cambridge CB23 8SQ

**Site Reference** Brigg's Farm, Thorney  
**Sample Reference** THOBRF08 / 2720

**Material** Cremated Bone : Human ulna shaft

**$\delta^{13}\text{C}$  relative to VPDB** -20.8 ‰

**1.32 Radiocarbon Age BP** 3515  $\pm$  40

- N.B**
- 1 The above  $^{14}\text{C}$  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.
  - 2 The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
  - 3 Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk) or Telephone 01355 270136 direct line.

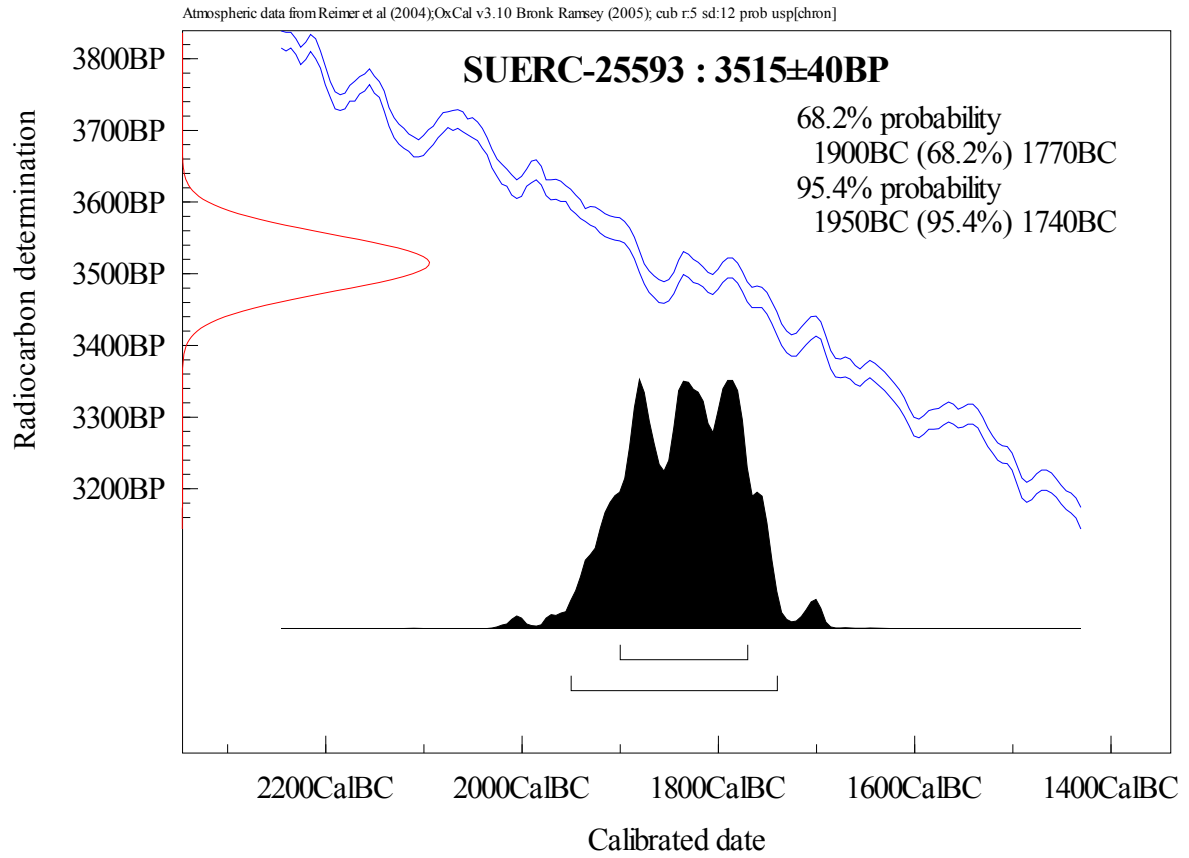
Conventional age and calibration age ranges calculated by :-

Date :-

Checked and signed off by :-

Date :-

Calibration Plot





## RADIOCARBON DATING CERTIFICATE

6 October 2009

**1.33 Laboratory Code** SUERC-25597 (GU-19451)

**Submitter** Rachel Fosberry  
Oxford Archaeology East  
15 Trafalgar Way  
Bar Hill  
Cambridge CB23 8SQ

**Site Reference** Brigg's Farm, Thorney  
**Sample Reference** THOBRF08 / 3209

**Material** Seeds : Ranunculus sp.

**$\delta^{13}\text{C}$  relative to VPDB** -24.6 ‰

**1.34 Radiocarbon Age BP** 3285  $\pm$  40

- N.B**
- 1 The above  $^{14}\text{C}$  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.
  - 2 The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
  - 3 Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk) or Telephone 01355 270136 direct line.

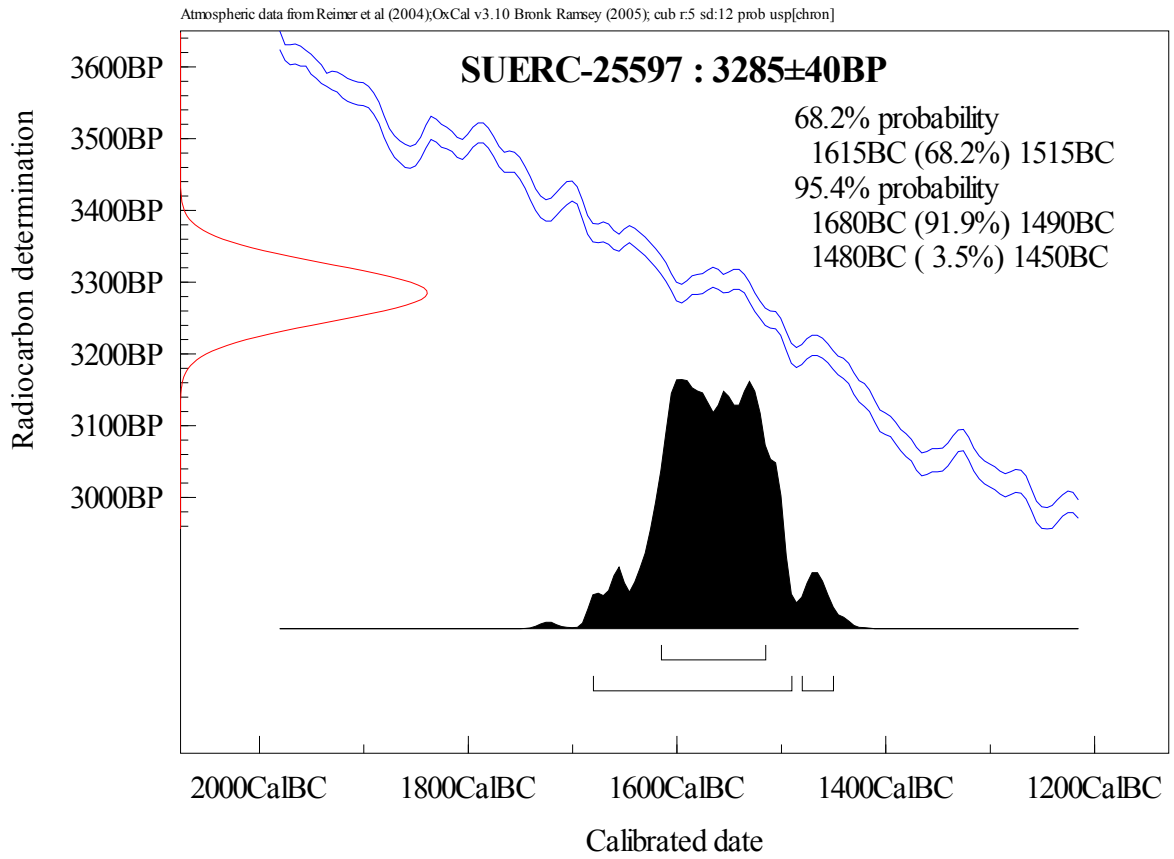
Conventional age and calibration age ranges calculated by :-

Date :-

Checked and signed off by :-

Date :-

Calibration Plot



## RADIOCARBON DATING CERTIFICATE

6 October 2009

---

**1.35 Laboratory Code** GU-19452

**Submitter** Rachel Fosberry  
Oxford Archaeology East  
15 Trafalgar Way  
Bar Hill  
Cambridge CB23 8SQ

**Site Reference** Brigg's Farm, Thorney  
**Sample Reference** THOBRF08 / 3269

**Material** Seeds : Alnus seeds(3 other choices see submission form)

### $\delta^{13}\text{C}$ relative to VPDB

**1.36 Radiocarbon Age BP** To follow

- N.B**
- 1 The above  $^{14}\text{C}$  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.
  - 2 The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
  - 3 Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk) or Telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :-

Date :-

Checked and signed off by :-

Date :-

## RADIOCARBON DATING CERTIFICATE

6 October 2009

---

**1.37 Laboratory Code** SUERC-25598 (GU-19453)

**Submitter** Rachel Fosberry  
Oxford Archaeology East  
15 Trafalgar Way  
Bar Hill  
Cambridge CB23 8SQ

**Site Reference** Brigg's Farm, Thorney  
**Sample Reference** THOBRF08 / 3311

**Material** Cremated Bone : Human humerus shaft

**$\delta^{13}\text{C}$  relative to VPDB** -20.5 ‰

**1.38 Radiocarbon Age BP** 3445 ± 40

- N.B**
- 1 The above  $^{14}\text{C}$  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.
  - 2 The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).
  - 3 Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk) or Telephone 01355 270136 direct line.

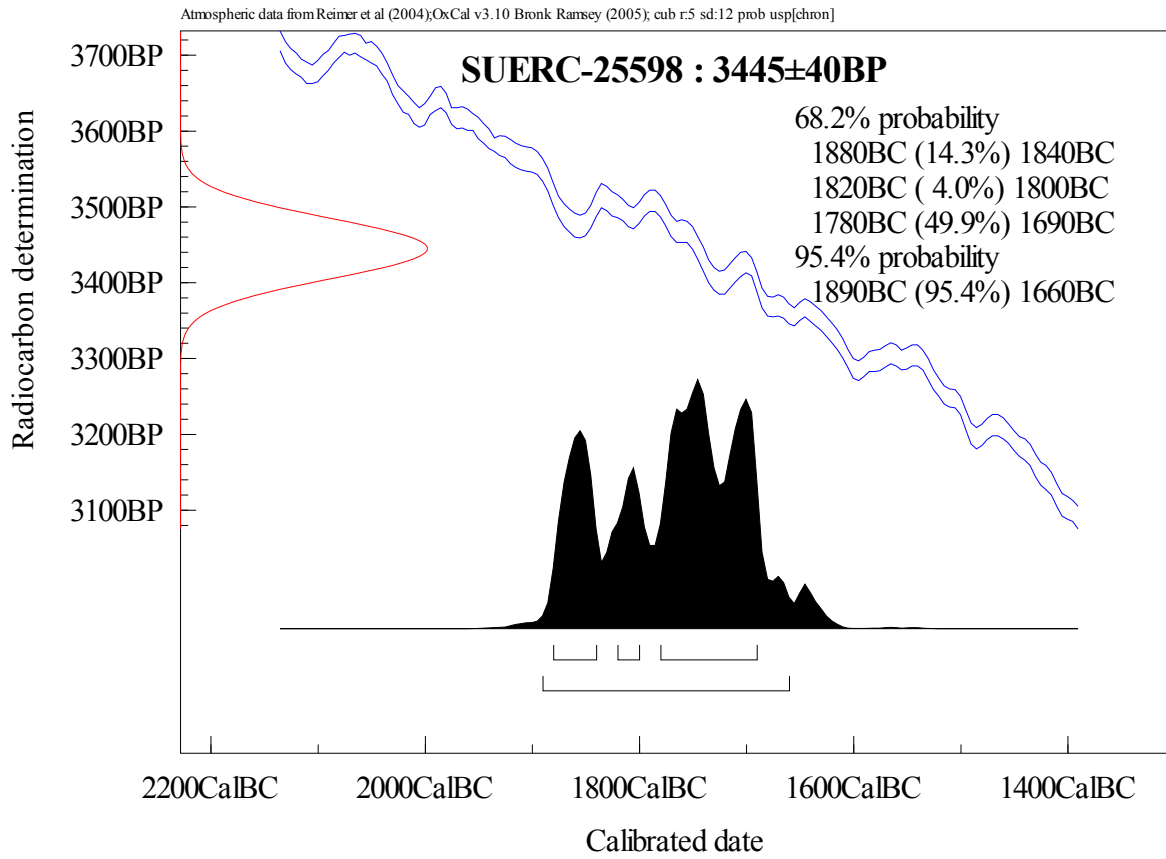
Conventional age and calibration age ranges calculated by :-

Date :-

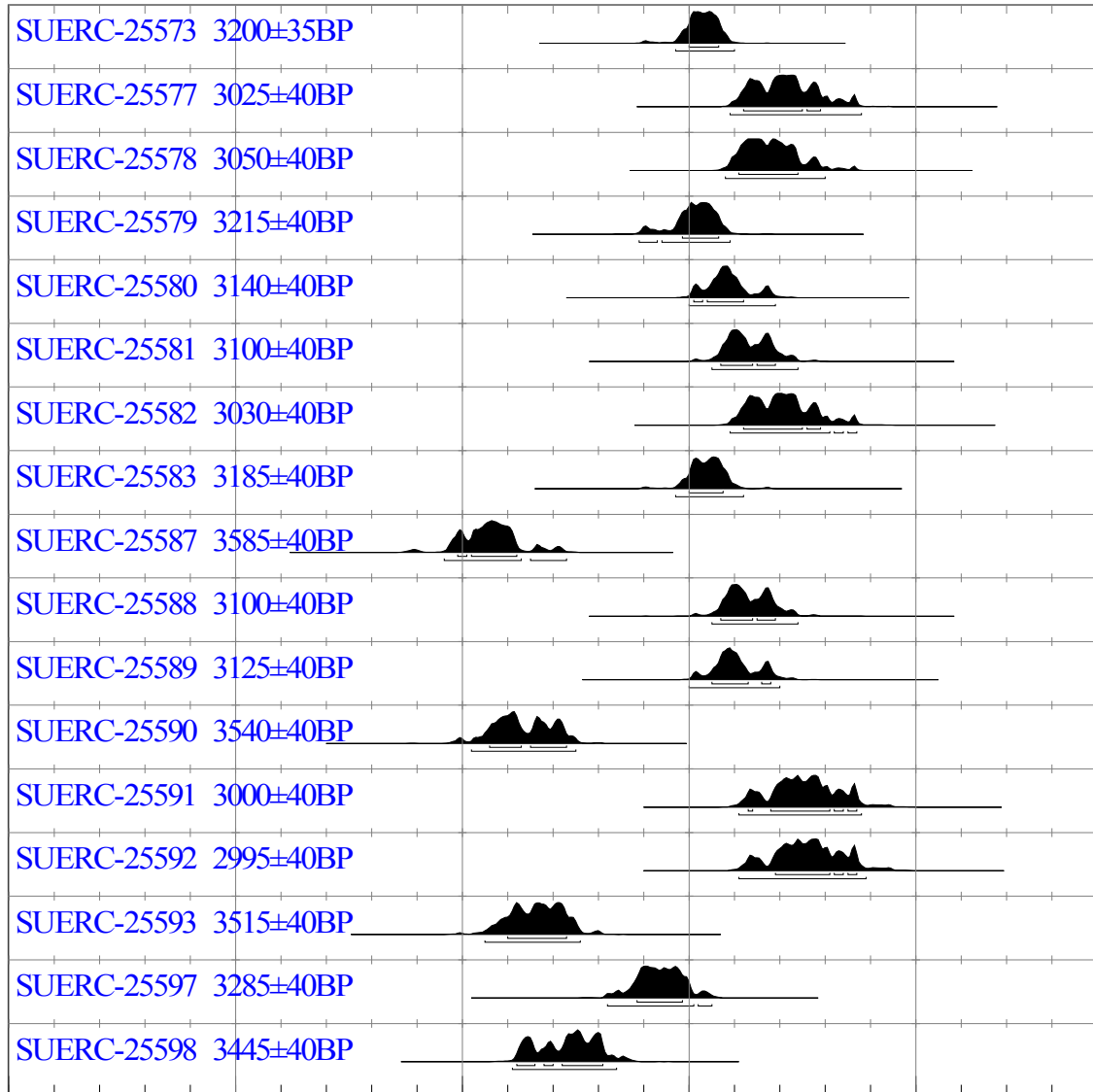
Checked and signed off by :-

Date :-

Calibration Plot



Atmospheric data from Reimer et al (2004); OxCal v3.10 Bronk Ramsey (2005); cub r:5 sd:12 prob us[chron]



3000CalBC      2500CalBC      2000CalBC      1500CalBC      1000CalBC  
 Calibrated date



The University of Glasgow, charity number SC004401



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## APPENDIX D. GEOPHYSICAL SURVEY

*By Peter Masters*

### **Abstract**

- D.1.1 A gradiometer survey was undertaken at Brigg's Farm, Thorney, Cambridgeshire on behalf of OA East in November 2008 in order to record the extent of a partially excavated rectangular Enclosure 1.
- D.1.2 An area covering c.1ha was surveyed in the area of the likely extent of the enclosure.
- D.1.3 The geophysical survey results produced few significant archaeological anomalies. The western extent of the rectangular enclosure was only partially detected due to the truncation or masking of the underlying features by the claying ditches.
- D.1.4 Two arc shaped anomalies were recorded possibly denoting the presence of possible round houses, one of which appears to lie within the north-west corner of the rectangular enclosure.
- D.1.5 An amorphous shaped anomaly was detected on the eastern side of the survey area indicating an area of possible burning, which may reflect the presence of a kiln/hearth like feature.
- D.1.6 A series of parallel linear anomalies were detected denoting the presence of claying or marl ditches, typical of this area.

### **Introduction**

- D.1.7 OA East commissioned the Centre for Archaeological and Forensic Analysis, Cranfield University to undertake fluxgate gradiometer on land at Brigg's Farm, Thorney, Cambridgeshire. This work was undertaken on the 10th November 2008.
- D.1.8 The purpose of the survey was to assist in defining the character and extent of partially excavated Enclosure 1.
- D.1.9 The survey methodology described in this report was based upon guidelines set out in the English Heritage document 'Geophysical Survey in Archaeological Field Evaluation' (EH 2008).

### **Methodology**

#### Gradiometry

- D.1.10 Gradiometry is a non-intrusive scientific prospecting technique used to determine the presence/absence of some classes of sub-surface archaeological features (e.g. pits, ditches, kilns, and occasionally stone walls). By scanning the soil surface, geophysicists identify areas of varying magnetic susceptibility and can interpret such variation by presenting data in various graphical formats and identifying images that share morphological affinities with diagnostic archaeological as well as other detectable remains (Clark 1990).

- D.1.11 The use of gradiometry is used to establish the presence/absence of buried magnetic anomalies, which may reflect sub-surface archaeological features. The area survey was conducted using a Bartington Grad 601 dual fluxgate gradiometer with DL601 data logger set to take 4 readings per metre (a sample interval of 0.25m). The zigzag traverse method of survey was used, with 1m wide traverses across 20m x 20m grids. The sensitivity of the machine was set to detect magnetic variation in the order of 0.1 nanoTesla.
- D.1.12 The data was processed using Archeosurveyor v.1.3.2.8.
- D.1.13 The enhanced data was processed by using zero-mean functions to correct the unevenness of the image in order to produce a smoother graphical appearance. It was also processed using an algorithm to remove magnetic spikes, thereby reducing extreme readings caused by stray iron fragments and spurious effects due to the inherent magnetism of soils. The data was also clipped to reduce the distorting effect of extremely high or low readings caused by discrete pieces of ferrous metal.

### ***Interpretation and analysis of Results***

- D.1.14 About 1ha was surveyed using gradiometry technique in order to locate the full extent of a partially excavated ditched enclosure.
- D.1.15 The gradiometer survey has detected a number of anomalies majority of which appear to be of non-archaeological value.
- D.1.16 A zone of high magnetic variation has been recorded adjacent to north-eastern field boundary (pink). This is probably due to modern magnetic disturbances caused by being in close proximity to a fence within the hedgeline.
- D.1.17 A series of parallel linear anomalies (Fig. 20, yellow) were detected aligned north-east to south-west and denote the presence of claying or marl ditches. These align clearly with the excavation evidence to the south.
- D.1.18 A weakly magnetic linear anomaly (Fig. 20, 1) appears to align with the northern side of the rectangular enclosure.
- D.1.19 A curvilinear anomaly (Fig. 20, 2) was detected to the west side of the drains and appears to align with the east-west aligned curvilinear ditch excavated immediately to the south of the rectangular enclosure. A second curvilinear anomaly was detected to the south of anomaly 2 and probably reflects the remains of a ditch-like feature although its relationship to the other features is uncertain.
- D.1.20 A rectilinear anomaly (Fig. 20, 3) was detected on the east side of the survey area, which appears to resemble the remains of a ditch-like feature. Its relationship to the excavated enclosure is uncertain.
- D.1.21 Two arc shaped anomalies (Fig. 20, 4) were recorded in the resultant plot and may denote the remains of the ring ditches of further roundhouses. The easternmost one appears to lie within the north-west corner of the rectangular enclosure.
- D.1.22 An amorphous shaped anomaly (Fig. 20, 5) was recorded on the eastern side of the survey area. Its response appears to reflect an area of possible burning and may indicate the presence of burnt material or could represent the remains of a kiln/hearth like structure.
- D.1.23 Other ephemeral anomalies (Fig. 20, orange lines) merely reflect plough score lines.
- D.1.24 No further anomalies were recorded of an archaeological nature.



### **Conclusions**

- D.1.25 The survey has identified relatively few significant anomalies and the majority appear to be of an ephemeral nature.
- D.1.26 The full extent of the excavated rectangular Enclosure 1 was only partially detected by gradiometer and this may be due to the claying or marl ditches truncating and masking the western end of the enclosure.
- D.1.27 Fragmented or partial remains of possible ring ditches were recorded in the resultant survey may reflect the presence of round houses.
- D.1.28 Beyond the claying ditches, a curvilinear ditch was detected and appears to align with the curvilinear ditch excavated immediately to the south of the enclosure.
- D.1.29 A possible area of burning was recorded at the eastern end of the survey area, which could represent the remains of a kiln/hearth like feature or is more likely to indicate the presence of modern debris.
- D.1.30 Other ephemeral features appear to reflect plough score marks.

## APPENDIX E. BIBLIOGRAPHY

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## APPENDIX F. OASIS REPORT FORM

All fields are required unless they are not applicable.

### Project Details

OASIS Number	<input type="text"/>		
Project Name	<input type="text"/>		
Project Dates (fieldwork) Start	<input type="text"/>	Finish	<input type="text"/>
Previous Work (by OA East)	<input type="text"/>	Future Work	<input type="text"/>

### Project Reference Codes

Site Code	<input type="text"/>	Planning App. No.	<input type="text"/>
HER No.	<input type="text"/>	Related HER/OASIS No.	<input type="text"/>

### Type of Project/Techniques Used

Prompt

### Please select all techniques used:

<input type="checkbox"/> Field Observation (periodic visits)	<input type="checkbox"/> Part Excavation	<input type="checkbox"/> Salvage Record
<input type="checkbox"/> Full Excavation (100%)	<input type="checkbox"/> Part Survey	<input type="checkbox"/> Systematic Field Walking
<input type="checkbox"/> Full Survey	<input type="checkbox"/> Recorded Observation	<input type="checkbox"/> Systematic Metal Detector Survey
<input type="checkbox"/> Geophysical Survey	<input type="checkbox"/> Remote Operated Vehicle Survey	<input type="checkbox"/> Test Pit Survey
<input type="checkbox"/> Open-Area Excavation	<input type="checkbox"/> Salvage Excavation	<input type="checkbox"/> Watching Brief

### Monument Types/Significant Finds & Their Periods

List feature types using the [NMR Monument Type Thesaurus](#) and significant finds using the [MDA Object type Thesaurus](#) together with their respective periods. If no features/finds were found, please state "none".

Monument	Period	Object	Period
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

### Project Location

County	<input type="text"/>	Site Address (including postcode if possible)
District	<input type="text"/>	<input type="text"/>
Parish	<input type="text"/>	
HER	<input type="text"/>	
Study Area	<input type="text"/>	National Grid Reference <input type="text"/>

### Project Originators

Organisation	<input type="text"/>
Project Brief Originator	<input type="text"/>
Project Design Originator	<input type="text"/>
Project Manager	<input type="text"/>
Supervisor	<input type="text"/>

### Project Archives

Physical Archive	Digital Archive	Paper Archive
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>

### Archive Contents/Media

	Physical Contents	Digital Contents	Paper Contents
Animal Bones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ceramics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Human Bones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Industrial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Metal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stratigraphic		<input type="checkbox"/>	<input type="checkbox"/>
Survey		<input type="checkbox"/>	<input type="checkbox"/>
Textiles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worked Bone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worked Stone/Lithic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Digital Media	Paper Media
<input type="checkbox"/> Database	<input type="checkbox"/> Aerial Photos
<input type="checkbox"/> GIS	<input type="checkbox"/> Context Sheet
<input type="checkbox"/> Geophysics	<input type="checkbox"/> Correspondence
<input type="checkbox"/> Images	<input type="checkbox"/> Diary
<input type="checkbox"/> Illustrations	<input type="checkbox"/> Drawing
<input type="checkbox"/> Moving Image	<input type="checkbox"/> Manuscript
<input type="checkbox"/> Spreadsheets	<input type="checkbox"/> Map
<input type="checkbox"/> Survey	<input type="checkbox"/> Matrices
<input type="checkbox"/> Text	<input type="checkbox"/> Microfilm
<input type="checkbox"/> Virtual Reality	<input type="checkbox"/> Misc.
	<input type="checkbox"/> Research/Notes
	<input type="checkbox"/> Photos
	<input type="checkbox"/> Plans
	<input type="checkbox"/> Report
	<input type="checkbox"/> Sections
	<input type="checkbox"/> Survey

**Notes:**



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