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CAM ARC Report Number 874

Iron Age and Roman Settlement at Farcet Road; Prehistoric, Roman and Saxon Occupation at Horsey Hill, Peterborough

Post-Excavation Assessment and Updated Project Design

Scott Kenney

September 2007

Cambridgeshire County Council
Environment & Community Services

Commissioned by Anglian Water

CAM ARC Report Number 874

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Scott Kenney

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Site Code: PET WRM 05
Date of works: December 2005-March 2006
Grid Ref: TL 1913/9588 to TL 2351/9585

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PROJECT DETAILS				
Project name	Excavations at Farcet Road and Horsey Hill, Peterborough			
Short description	During 2005 and early 2006 a multi-stage programme of archaeological investigation was undertaken by CAM ARC (formerly AFU) on land to the south of Peterborough, Stanground, and to the southwest of Whittlesey in advance of the construction of a new Anglian Water Reinforcement Main. Evaluation had identified one area for excavation at Horsey Hill and another was discovered during monitoring of the pipeline easement in an area close to Farcet Road, Farcet. The site at Farcet Road consisted of Iron Age settlement, Roman field boundaries and trackway ditches. These remains included two Iron Age roundhouses, numerous postholes, several pits and a hearth. To the south of Horsey Hill Fort , a predominately Roman and Anglo-Saxon site had been identified during evaluation trenching along the route. The major features were dated to the Roman or Saxon periods, including several ditches forming a rectangular enclosure with an entrance to the northeast.			
Project dates	Start	06/12/05	End	31/03/06
Previous work	CAM ARC reports 791, 822, 835		Future work	unknown
Associated project reference codes	PET WRM 05			
Type of project	Recording project – open area excavation – direction from local planning authority-PPG16			
Site status	None			
Current land use (list all that apply)	Cultivated land			
Planned development	Transport & Utilities			
Monument types / period (list all that apply)	Roundhouse – Iron Age			
Significant finds: Artefact type / period (list all that apply)	Strap ends – Anglo-Saxon (9th century; 5 Cu alloy, 1 Ag)			
PROJECT LOCATION				
County	Peterborough	Parish	Peterborough	
HER for region	Peterborough			
Site address (including postcode)	Farcet Road: East of Farcet Road Horsey Hill: South of Horsey Hill Farm			
Study area (sq.m or ha)	Farcet Road 0.16ha; Horsey Hill 0.45ha			
National grid reference	TL 1913/9588 to TL 2351/9585			
Height OD	Min OD	2	Max OD	5
PROJECT ORIGINATORS				
Organisation	CAM ARC			
Project brief originator	Ben Robinson			
Project design originator	Stephen Macaulay			
Director/supervisor	Scott Kenney			
Project manager	Stephen Macaulay			
Sponsor or funding body	Anglian Water			
ARCHIVES	**Location and accession number**		**Content (e.g. pottery, animal bone, database, context sheets etc)**	
Physical	CAM ARC		Metalwork, slag, worked flint, querns, pottery, fired clay, tile, animal bone, sample residues	
Paper	CAM ARC		Site indices and context records Permatrace plans Brief and specification Background information including client plans and maps Correspondence	
Digital	CAM ARC/CCC servers		**All reports in Word 97-2003 format** Report drafts and final version Specialist reports: metalwork, slag, worked flint, querns, pottery, fired clay, tile, animal bone, environmental, geological Site database (Access 2000) Site surveys (AutoCAD 2000) Report figures (Adobe Illustrator 10)	

		Report PDF (Acrobat 6)
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Summary

During 2005 and early 2006 a multi-stage programme of archaeological investigation, involving a desk-based assessment, monitoring, field evaluation, survey and area excavation was undertaken by CAM ARC (formerly AFU) on land to the south of Peterborough, Stanground, and to the southwest of Whittlesey in advance of the construction of a new Anglian Water Reinforcement Main. The route traverses agriculturally rich land on the Fen Edge and crosses the old course of the River Nene. Evaluation had identified one area for excavation at Horsey Hill and another was discovered during monitoring of the pipeline easement in an area close to Farcet Road, Farcet.

The site at Farcet Road consisted of Iron Age settlement, Roman field boundaries and trackway ditches. These remains included two Iron Age roundhouses, numerous postholes, several pits and a hearth. A ditch running parallel to the Fen Edge was created and this was subsequently restated in the Roman period after a substantial inundation.

The Roman phase consisted of field and trackway ditches and some pits, although the finds assemblage suggests that the associated settlement cannot have been too far away. The site appears to have reverted to open pasture in the immediate post-Roman period.

To the south of Horsey Hill Fort (English Civil War artillery battery), a predominately Roman and Anglo-Saxon site had been identified during evaluation trenching along the route. A small group of Iron Age features were uncovered at the eastern end of the excavation area, and several more were located further west on the southern edge.

The major features were dated to the Roman or Saxon periods, including several ditches forming a rectangular enclosure with an entrance to the northeast. The Roman ditches that formed an entrance on the northeast side of the potential enclosure were recut in the Middle Saxon period. A number of postholes and a gully also date to this period.

Unlike many sites in the region, both Farcet Road and Horsey Hill exhibit chronological discontinuity of occupation and there appears to be distinct gaps in the archaeological record between the Iron Age and Roman periods and likewise between the Roman and Saxon periods. Whether this is in part due to environmental conditions is not yet clear, however this is likely to be only one of a number of factors that influenced the occupation over time of these sites.

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1 Introduction

As part of the ongoing archaeological work on the Anglian Water Whittlesey Reinforcement Main Scheme, CAM ARC undertook two excavations along the route of the pipeline. The nature and scope of the investigations were specified by Ben Robinson of Peterborough City Council's Archaeology Section (PCCAS). These excavations followed several previous stages of work:

1) Desk-based assessment
2) Monitoring of hand dug test pits for boreholes
3) Archaeological evaluation
4) Strip and map between Farcet Road and the Fen Edge to the east

All of the above have been reported on separately apart from 4), the results of which will be incorporated into the excavation report.

The development work was located in an area of known prehistoric and Roman archaeology in a broadly Fen Edge environment crossing several underlying geologies.

The archaeological excavation near Farcet Road consisted of three areas (1, 2 and 3). It took place during December 2005 and January 2006. The second excavation took place in February and March 2006 south of Horsey Hill, which lies between Stanground and Whittlesey on the A605. This excavation also consisted of three areas (4,5 and 6).

2 Geology and Topography

According to the British Geological Survey the pipeline route crosses areas of Alluvium, Glaciolacustrine Deposits and Boulder Clay. Towards the eastern end the route crosses Nordelph Peat, which overlies First Terrace Gravels (BGS 1995, 2004).

The Farcet Road site straddles Till (glacial chalky boulder clay), Glaciofluvial Deposits (clay silt and sand) and the Nordelph Peat. The Horsey Hill site crosses First Terrace Gravels, Oxford Clay and then descends into Nordelph Peat again (BGS 1995).

The Farcet Road site Area 1 sloped down from *c*.4m to *c*.2m OD, and Areas 2 and 3 were at the lower level. At the Horsey Hill site, Areas 4-6 straddled the highest point of a rise just topping 5m OD to the south of the Civil War fort. Much of the surrounding area is liable to flooding and is below 2m OD.

3 Archaeological and Historical Background

The background is taken from the desk-based assessment undertaken before any groundworks were initiated on the pipeline route.

3.1 Past Landscape and Environmental Change (Hall 1987, Hall & Coles 1994)

The changing nature of the Fen over the past 7000 years has influenced the placement of settlement and restricted the areas available for agriculture. Much of the occupation and activity sites found are around the Fen Edge, and are situated on marginal land, within easy reach of fen resources.

Prior to the Mesolithic, the entire fen basin was dry, but by the early Neolithic, the first peat fen had formed, and the marine deposits of the Barroway Drove Beds encroached upon this peat during the late Neolithic. By the early Bronze Age, this marine flooding had ceased and peat again formed on the surface. This was followed by further marine incursions of the Upper Barroway Drove Beds and yet another peat formation. The probable Neolithic course of the Nene crosses to the northeast of the study area.

During the Iron Age, the Terrington Beds were deposited, but these only occupy the northeastern part of Cambridgeshire, and most of the fen was under peat. In the Roman period, the water table fell and it can clearly be seen from the distribution of finds that the local inhabitants were using land within the fen itself for industrial and agricultural purposes. The Iron Age peat would have suffered wastage and hence the drainage pattern has disappeared.

In the Saxon period the drainage system seems to have been in chaos and the record is confused, but generally, the water table was rising, and by medieval times, the fen islands had shrunken slightly, and the fen itself would have been much wetter.

The shape of the Fen Edge did not change dramatically until the medieval period, but the course of the Nene has altered quite profoundly, and the presence of its Neolithic palaeochannel to the northeast of the study area may have implications for any programme of archaeological investigations.

3.2 Palaeolithic and Mesolithic (700000-4500 BC)

Little material and few sites have been found in the western Fenland bordering Peterborough that date from the early prehistoric periods. A Palaeolithic handaxe found ‘at Fletton’ is in Peterborough Museum (PHER 01632), and animal bone was found in a pit of the same date near the old watercourse in the Fletton Brick Co's No 1 Yard (PHER 01633a).

No definitively Mesolithic finds have been recovered from the study area.

3.3 Neolithic and Bronze Age (4500-800 BC)

Two dugout canoes found in 1828 at Horsey Bridge probably date from the Neolithic or Bronze Age (PHER 02955). A scatter of flint that dates to the Neolithic and Bronze Age was identified during fieldwalking in the vicinity (PHER 51320).

The Bronze Age is well represented in this area. Although not within the pipeline corridor, the Bronze Age site at Flag Fen is one of the most important in the eastern counties, and is of international significance. Locally, within the Fenland, it is without peer, and is extensively discussed elsewhere (see bibliography). The site consists of the waterlogged remains of a Bronze Age village and associated ritual activities. It lies about 2.5km due north of Horsey Hill.

Within the corridor, several Bronze Age sites and find spots have been recorded. Ring ditches were found at the junction of Narrow Drove and King's Delph Drove (PHER 08156) and just south of Milby Farm (PHER 06804). Burials were recorded from gravel pits near the present Fletton Lake (PHER 01633). A socketed axe came from south of Farcet (PHER 02936), and a leaf shaped Late Bronze Age sword from just NW of the depot at Horsey Toll Farm (PHER 02937). A Bronze Age palstave axe was found close to Horsey Hill fort (PHER 02950).

3.4 Iron Age and Roman (800BC-410AD)

An Iron Age site was found by Major AN Leeds in 1905 in the London Brick Company's Yard No 1 at Fletton, while further remains were revealed nearby in 1908 (PHER 01348). Apart from this, the only other site of this period is represented by sherds of pottery found west of Bunting's Farm (PHER 01719). The undated cropmarks close to the middle of the route may also date to the Iron Age or Roman periods (PHER 50653, 51236).

Roman finds are relatively numerous from the study area. Sites and find spots of varying character and quality have been discovered from the entire length of the proposed route, the majority of them in the eastern half. Of particular interest are the kilns, inhumation, pottery, tile and coins found west and northwest of Bunting’s farm (CHER 00994, 00995, 00999, 07734, 07735), and building material found just to the north of the route (PHER 51232).

Also very close to the route was an inhumation (PHER 04018), the location of which may be an isolated burial or might form part of a larger cemetery. The Fen Causeway Roman road/waterway, an important crossing between fen islands, lies to the northeast of the subject area, and lies within 700m of the route.

3.5 Saxon and medieval (410-1485AD)

After the Roman activity noted above, there is a dearth of archaeological remains from the later Saxon and medieval periods. A Saxon settlement was uncovered in 1910 (PHER 01381). A medieval ring was found to the north of the route at Field's End Bridge Pit (PHER 3154b).

The two significant drainage improvement schemes along the route both date from these periods. The King's Dike is a possibly late Saxon canalisation of the ancient course of the Nene, hence its somewhat weaving appearance. In contrast, Morton's Leam, commissioned by Bishop Morton and constructed from 1478-90, is a straight cut, one of the earliest of its type.

The name Stanground is recorded in Domesday as *Stangrun*, meaning ‘stony ground’, while Horsey Hill (*Horesheya* in 1219) probably means ‘horse island’ (Mawer and Stenton 1969). It is debatable whether the Saxon-derived name refers to the promontory upon which the Civil War fort now stands, since no Saxon finds have been made there. In the light of the current work, it seems more probable that the island slightly to the south on which definitively Saxon archaeology has now been located was the original bearer of the name.

3.6 Post-medieval and Modern (1485-1950)

Aerial photographs analysed for earlier studies and covering the area of the proposed pipeline revealed the presence of ridge and furrow around the built-up area of Stanground, but nowhere else in the study area.

A wind pump is located north of the route (PHER 02908), but the most significant post-medieval site is that of Horsey Hill Civil War Fort (SM 27189). The Fort, a bastion or artillery battery of classic 17th century design, was constructed to control a bridge across the Nene, and was first referred to in 1644. A contemporary plan exists and is in the British Library. Present day survival of the Fort is good, with only the northwest rampart being slightly truncated by the later road. Within the ramparts, there is also a modern house, the access road to which has cut through two of the banks.

A World War II Airfield was also revealed during the analysis of aerial photographs, located to the north of Horsey Toll (PHER 50570, 50571, 50572, 50573, 50574, 50575).

3.7 Cartographic Evidence

Cartographic sources going back to the 18th century were examined, but did not show any significant differences compared to modern maps

of the area. One interesting difference on the 1886 OS 25" is that a trackway is shown as running northwest to southeast across Horsey Hill Areas 5 and 6, apparently between the fort and a farm. This corresponds almost exactly with the Roman ditches on the same alignment that were still a significant marker in the Saxon period.

3.8 Aerial Photographic Evidence

Aerial photographic assessments were previously carried out by Rog Palmer, Air Photo Services, to meet the requirements of earlier design briefs for nearby development proposals at Stanground (Palmer 1997, 1998). These assessments demonstrated that medieval ridge and furrow cultivation occurred across the western part of the route. Other features identified were thought to be part of an enclosure of Iron Age or Roman date.

3.9 Geophysical Survey

Geophysical survey was undertaken to the north of the proposed route, and this revealed enclosures and other features of possible Iron Age or Roman date (GSB 2002).

3.10 Previous Archaeological Work

The results of previous archaeological interventions along this route have been incorporated into the conclusions below. Fieldwalking and trial trenching were also undertaken immediately to the north of the pipeline route, revealing Roman finds scatters and ditches probably dating to the same period, or possibly earlier (Taylor & Maull 2003).

4 Aims and Objectives of the Excavation

General research aims were defined in the specification (Macaulay 2005), and these are listed below. Partly because of the difficulty in refining the date of much of the pottery from Horsey Hill it was thought that a less specific approach might offer greater benefits. More detailed updated aims and objectives are presented in section 7. The following paragraphs are taken from the specification.

'4.1 This mitigation scheme will seek to establish the character, date, state of preservation and extent of any archaeological remains within the proposed development area that may be affected by the construction and installation activities associated with pipe laying.

4.2 One area of archaeological importance has been selected for full excavation: the 'high' knoll to the south of Horsey Grange Farm/Horsey Hill while other areas are to be subjected to a strip map and record exercise.'

5 Methodology and Summary of Results

5.1 Methodology

Following the evaluation along the route of the proposed pipeline a strip and map exercise was undertaken along the easement in the area east of Farcet Road and immediately to the south of Northamptonshire Archaeology's recent evaluation. This revealed a hitherto unknown area of Iron Age and Roman occupation, and excavation was therefore required by PCCAS.

Six areas were opened by a 360° excavator under the direction of an archaeologist. They were as follows:

Farcet Road
Area 1 measured 90m x 10m
Area 2 measured 118 x 4m (Area 2 was first stripped to 2m wide and was then extended by another 2m in order to reveal further the observed archaeology)
Area 3 measured c130 x 2m

Horsey Hill
Area 4 measured 105m x 11m
Area 5 measured 220m x 10m
Area 6 measured 29m x 3m plus 96m x 11m

After machine stripping, the site was hand-cleaned where appropriate. Archaeological features were planned by hand at a scale of 1:50. A metal detector survey was conducted across the site in order to pinpoint metal finds within features, and certain objects were excavated at this stage to ensure their safe recovery. Grid pegs were located in each area at 10m intervals east to west; these were used to plan excavated features by hand at a scale of 1:50, 1:20 or 1:10. Sections and profiles across excavated features were drawn at a scale of 1:10 or 1:20. All excavated deposits and cuts were described on CAM ARC single context recording sheets. Monochrome and colour photographs were taken to supplement the drawn and written record. Digital photography was also employed.

5.2 Excavation Areas

5.2.1 Farcet Road (Areas 1-3)

Area 1 contained the majority of the archaeology uncovered during the Farcet Road excavation, including two Iron Age roundhouses, Roman ditch systems, pits and postholes. At least one buried soil was present, relating to inundation from the fen, and there was evidence of water

management in both the Iron Age and Roman periods. Numerous environmental samples were taken from a range of feature types.

In Area 2 the features included a few small ditches with termini, which probably date to the Iron Age or Roman periods. Along with the features investigated, a number of sections were recorded and environmental samples taken by the AFU and Steve Boreham (Cambridge University Dept of Geography).

Area 3 contained no archaeological features but was subject to geological and environmental sampling.

5.2.5 Horsey Hill (Areas 4- 6)

Area 4 revealed a single broad ditch on a roughly north/south alignment and a small pit. No finds were recovered from the pit, but it was thought to belong to a prehistoric phase of the site on the basis of morphological similarity to other early features seen in Area 5.

Both of these areas should be considered together, since they were at least partially contiguous. The archaeology present in these areas also makes the most sense when viewed as a whole.

The numerous ditches on northeast to southwest and northwest to southeast alignments can be seen to apparently form part of a rectangular enclosure, probably of a double-ditched type, and with an entrance to the northeast. This enclosure measured at least 60 x 60m internally, and may well have contained a substantial building at one time, probably in the southwestern corner.

Casual fieldwalking in this location has shown that Roman tile and worked masonry have been incorporated into the modern ploughsoil. This enclosure and its restatement or modifications appear to be entirely Roman in date, although there is remarkably little domestic pottery of this period from the site. The majority of the datable Roman finds assemblage consists of CBM in all forms (wall, floor, roof and hypocaust), some coins, a key and sundry lead weights. Other finds include worked masonry and animal bone of large domesticates.

Some of the Roman ditches contain considerable quantities of mixed building materials, both ceramic and lithic, including thick heavy daub with impressions of large wooden staves. If this is domestic structural daub, then the wattle it was attached to would have been substantially coarser and more robust than the usual hurdling. In addition, a small amount of what appears to be chalk-based white daub was found, with impressions on a similar scale. The two types of daub were not found together.

Non-Roman pottery is present on the site in reasonable quantities, however it has thus far proven difficult to pin down to a specific period.

The relatively small quantities of definitively non-Roman pottery examined for the evaluation report showed similarities to both Iron Age and early Saxon ceramics. There exists the distinct possibility that both pre- and post-Roman assemblages are present, perhaps made locally and indistinguishable to the non-specialist. Further work is currently ongoing to resolve this issue.

5.2.6 Monitoring of Pipelaying

Monitoring of pipelaying took place both during the excavation phase and following its completion. No additional archaeological features were identified, however recording was carried out for geological purposes (as well as archaeological ones).

5.3 Period Summary

The provisional site periods and phases are as follows:

Period 1: **Prehistoric** (*c.* 700000BC – AD43)

• Phase 1: Neolithic (*c.* 4500 – 2300BC)
• Phase 2: Late Iron Age (*c.* 100BC – AD43)

Period 2: **Romano-British** (*c.* AD43 – 450)

• Phase 3: Roman (*c.* AD120 – 250)
• Phase 4: Later Roman (*c.* AD250 – 450)

Period 3: Anglo-Saxon (*c.* AD450 – 1066)

• Phase 5: Middle Saxon (*c.* AD650 – 800)

Period 4: **Post-Medieval to Modern** (*c.* AD1485 – present)

• Phase 6: Post-medieval (*c.* AD1485 – 1950)

	Farcet Road	Horsey Hill
Period 1:	79%	9%
Period 2:	20%	67%
Period 3:	-	20%
Period 4:	1%	4%

5.3.1 Period 1: Neolithic (Phase 1)

There is clear background evidence for earlier prehistoric activity in the development area, represented by the residual flints found in many later contexts across both sites. A single small pit (**2122**) containing only Mesolithic or Neolithic worked flint was found in Area 5.

Feature Types (Number)		***Main finds groups***
		Worked Flint (number)
Pits	1	9
Totals	***1***	***9***

Table 1: Quantification of data – Horsey Hill Period 1: Neolithic

5.3.2 Period 1: Iron Age (Phase 2)

At the west end of the Farcet Road site a complete ring-ditch of an Iron Age or Romano British roundhouse was revealed (referred to as roundhouse 1 from here onwards). No finds of any significance were found within the fills of the ditch, which appeared to have been recut, particularly close to the termini. Some minor internal features were suggested by charcoal staining, but these were so severely truncated that little could be learned from them.

Roundhouse 1 appears to have been slightly remote from the main activity area to the east, which includes the other roundhouse 2 and numerous boundary ditches that seemed to be mostly Roman in date.

Progressing eastwards from roundhouse 1, there is a gap void of features for over 15m. A group of severely truncated small features revealed no evidence for date or function. One pit with a very pale fill may belong to an earlier period than the rest of the site, but again, the lack of finds did not allow for any further interpretation.

An area of stake holes were excavated, arranged in small groups with occasional elongated examples, all with a purpose unknown. These could represent some form of agricultural structure or a working floor used consistently over a long period of time or where something akin to a loom may have been erected and replaced several times.

To the immediate east of these ditches lay the other roundhouse 2. Roundhouse 2 is remarkable in that its last phase appears to have been dug in segments, the gaps between the termini being too narrow to be entrances. The associated structural features are mostly postholes. Approximately 40 were present with some lying just outside the perimeter of the ring ditch. An interesting group of postholes to the immediate north of the roundhouse appear to be contemporary with each other and hint at a phase of the structure without a ring ditch, offset slightly to the north. A hearth positioned off-centre to the ring-ditch is likely to be contemporary with it. It is assumed that these features would have been central to a building, but this need not necessarily be the case. Another hearth that also had burnt stones within its fill cut this example.

Feature Types (Number)		*Main finds groups*		
		Pottery (kg)	**Worked Flint** (number)	**Animal bone** (kg)
Pits	23	0.792	1	0.499
Postholes	56	0.195	-	0.066
Stakeholes	56	-	-	-
Ditches	3	0.064	4	0.197
Ringditches	2	0.141	2	0.163
Buried soil	3	0.101	3	0.027
Totals	***120***	***1.293kg***	***10***	***0.952kg***

Table 2a: Quantification of data – Farcet Road Period 1: Iron Age

A far smaller number of Iron Age features were encountered at Horsey Hill, where the typical features of the period were scattered small pits and postholes. A number of pits and postholes were uncovered on the southern edge of Area 6 while at the eastern end of Area 5 lay another group of features and a few scattered postholes.

These features are not directly indicative of settlement and it appears that activity on the top of this hill was limited to non-domestic forms in the Iron Age.

Feature Types (Number)		*Main finds groups*		
		Pottery (kg)	**Worked Flint** (number)	**Animal bone** (kg)
Pits	6	0.023	5	-
Layers	6	0.948	-	0.268
Postholes	4	0.032	1	-
Ditches	6	0.340	-	0.555
Totals	***22***	***1.343kg***	***6***	***0.823kg***

Table 2b: Quantification of data – Horsey Hill Period 1: Iron Age

5.3.3 Period 2: Romano-British (Phases 3–4)

At Farcet Road a fairly substantial ditch running roughly north to south crossed the western part of the site. Pottery finds from one section suggest a date of the mid-Roman period. An east to west aligned ditch to the east of this may have formed part of an enclosure with the north to south ditch although their fills are markedly different. The east to west ditch terminates to the east and cuts a smaller gully on a north to south alignment. Further small gullies on the same alignment may form an earlier enclosure. A series of pits lay just to the south, some of which were inter-cutting, and from the finds could be contemporary with one or more of the ditches.

Roundhouse 2 is cut by a ditch running east/west and this is assumed to represent the last phase of activity on the site (possibly in the 3rd/4th centuries AD). The final series of ditches, located at the

extreme eastern end of Area 1, are on a north-south alignment, and as well as acting as drainage at this low point they are probably marking the boundary of the settlement proper. A number of intercutting features were noted along this series of ditches, suggesting that it was an area of intense activity during the late Roman period. This area, to the extreme east end of the site, was subject to continual deposition as is shown, first by the colluvial build-up, and then by the alluvial deposits that flooded the area before it was finally abandoned, late in the 4th century.

Feature Types (Number)		***Main finds groups***		
		Pottery (kg)	**Worked Flint** (number)	**Animal bone** (kg)
Pits	7	0.560	1	0.094
Postholes	2	-	-	-
Ditches	11	2.352	2	0.428
Buried soil	3	1.369	2	0.240
Totals	***20***	***4.281kg***	***5***	***0.762kg***

Table 3a: Quantification of data – Farcet Road Period 2: Romano-British

Many of the Roman features at Horsey Hill were considerably more substantial than those at Farcet Road, while some were rather ephemeral and difficult to categorise.

At the western end of Areas 5/6 numerous irregular shallow features flanked a series of ditches of different sizes and alignments. These and other ditches perpendicular to them further along the area to the east appeared to form part of the outline of a double-ditched enclosure with an entrance to the northeast.

The finds assemblage from this phase is unusual, containing a large quantity of building material, however the pottery or other evidence of domestic activity does not match the amounts expected. This may suggest that the structure associated with the building material may not have been a villa or other farmstead, but rather it might have had a more specialised function.

Clearly, a Roman building in this location would have existed in relative isolation, and perhaps this separation served a useful function for those working there.

Feature Types (Number)		*Main finds groups*				
		Pottery (kg)	**Tile (kg)**	**Daub (kg)**	**Worked flint** (no)	**Animal bone** (kg)
Pits	19	0.117	0.009	0.087	2	2.081
Postholes	24	0.083	-	-	-	0.052
Layers	53	0.281	3.921	0.081	5	5.911
Ditches	26	0.402	19.900	1.221	2	4.649
Totals	***122***	***0.901***	***23.989***	*1.389*	***9***	***12.397***

Table 3b: Quantification of data – Horsey Hill Period 2: Romano-British

5.3.4 Period 3: Anglo-Saxon (Phase 5)

The major northwest to southeast aligned ditches forming an entrance were recut during the Saxon period. Although the majority of ditches on site have a northeast/southwest or northwest/southeast orientation, there are a small number of differently aligned features that may belong to a post-Roman phase. These include two gullies that may be the truncated remains of beamslots and a line of five postholes 2.5 to 3.5m apart.

A single damaged but well made loom weight (SF243) was recovered in Area 6. The biconical form of this loom weight would suggest that it is probably Late Saxon in date, based upon the classification used at Lundenwic (Blackmore 1988) and the Royal Opera House (Malcolm and Bowsher 2003), itself based upon Hurst (1959).

Although the pottery assemblage is relatively small, it accords with the presence of later Saxons in the form of decorative strap ends of probable 9th or 10th century date, of which several have been recovered by metal detecting.

No definitively post-conquest material was recovered from the site and it appears to have been abandoned by the 10th century. Post-medieval finds in the topsoil derive mostly from local farms.

Feature Types (Number)		*Main finds groups*			
		Pottery (kg)	**Daub** (kg)	**Worked Flint** (number)	**Animal bone** (kg)
Pits	2	0.100	-	1	0.056
Beamslots	1	0.004	-	4	0.154
Postholes	24	0.026		-	-
Layers	10	0.509	10.269	3	9.821
Ditches	6	0.314	0.453	4	4.716
Totals	***43***	***0.943***	***10.722***	***12***	***14.747***

Table 4: Quantification of data – Horsey Hill Period 3: Anglo-Saxon

5.3.5 Period 4: Post-Medieval (Phase 6)

There is no indication of post-Roman activity on the Farcet Road site, possibly because conditions had rendered these fen margins uninhabitable.

The ditch in Horsey Hill Area 4 proved to be both repeatedly recut and relatively modern, producing post-medieval machine made brick from the lowest fill of the earliest phase. A narrow ditch at the extreme western end of Areas 5/6 was also thought to be of this date.

Feature Types (Number)		***Main finds groups***		
		Brick (kg)	**Worked Flint** (number)	**Animal bone** (kg)
Ditches	2	0.509	1	0.069
Totals	***2***	***0.509***	***1***	***0.069***

Table 5: Quantification of data – Horsey Hill Period 4: Post-medieval

6 Assessment of Archaeological Potential

This section comprises quantification of stratigraphic, artefactual and environmental remains followed by summary results and statements outlining the research potential of the archaeological data recovered during the course of the excavations. In addition, basic quantification of the evaluation data that will require integration at the full analysis stage is also presented. The main artefactual and environmental assessment reports are included in the appendices.

6.1 Stratigraphic and Structural Data

6.1.1 The Excavation Record

The number of records relating to the PET WRM 05 excavations at Farcet Road and Horsey Hill is as follows:

	Farcet Road	Horsey Hill
Context numbers	552	570
Plans	13	34
Sections	124	112
Samples	77	90
Record types	218 cut descriptions 272 fill descriptions 58 layer descriptions 4 not used	225 cut descriptions 301 fill descriptions 44 layer descriptions
Context records	541	565
Digital context records	552	570

Table 6: Quantification of context records

	Farcet Road	Horsey Hill
Plans at 1:10	2	2
Plans at 1:50	10	32
Plans at 1:100	1	-
Total station survey	✓	✓
Sections at 1:10	118	60
Sections at 1:20	6	52
Black and White prints	188	177
Colour slides	178	190
Digital photographs	208	192

Table 7: Quantification of drawn, survey and photographic records

6.1.2 Finds Quantification

Any discrepancies between the totals in this table and the tables in the previous subsections are due to the slightly different selection criteria in the Access database queries designed for these analyses. The table below is more inclusive than the previous tables.

Period	Contexts	Pottery (kg)	Bone (kg)	Flint (number)
1: Prehistoric	434	1.293	0.952	10
2: Romano-British	112	4.281	0.762	5
3: Anglo-Saxon	-	-	-	-
4: Post-medieval and Modern	2	-	-	-
Not used	4	-	-	-
Total	**552**	**5.574**	**1.714**	**15**

Table 8a: The principal finds assemblages by period at Farcet Road

Period	Contexts	Pottery (kg)	Bone (kg)	CBM and fired clay (kg)	Flint (number)
1: Prehistoric	54	1.343	0.823	-	15
2: Romano-British	383	0.901	12.397	23.378	9
3: Anglo-Saxon	111	0.943	14.747	10.722	12
4: Post-medieval and Modern	22	-	0.069	0.509	1
Total	**570**	**3.187**	**28.036**	**34.609**	**37**

Table 8b: The principal finds assemblages by period at Horsey Hill

6.1.2 Range and Variety

Feature types were almost entirely confined to cut features containing one or more deposits, although several layers were encountered on both sites.

The archaeological deposits were horizontally truncated across the site, and there was no evidence for surviving surfaces associated with the buildings. Topsoil and other overburden was between 0.2 and 0.4m in depth. Intrusions from post-medieval or modern features were extremely rare.

Features were a mixture of intercutting and discrete, and these stratigraphic relationships permit phasing of the site, alongside the pottery spot dating, morphology and other evidence.

The majority of datable deposits can be attributed to the Late Iron Age or Romano-British periods based on pottery spot dates, stratigraphic and spatial associations and alignment of features. A minority of datable deposits can be assigned to the earlier prehistoric or the Mid to Late Saxon periods. A number of excavated deposits contained no datable finds and their dating therefore relies on other evidence.

The site at Farcet Road was characterised by ditches of Iron Age and Roman date. A small number of pits were excavated which can be attributed to the Iron Age and several more belong to the Roman period. Numerous postholes date from the Late Iron Age period, mainly associated with the eastern roundhouse.

At Horsey Hill ditches were the main feature type, ranging in size from large enclosure ditches to shallow linear features with irregular edges.

Deposits comprised feature infills, slumps, and layers. Roughly equal numbers of pits contained a single fill or multiple fills.

	Number of contexts	
Feature type	**Farcet Road**	**Horsey Hill**
Pit	89	141
Ditch	97	193
Ringditch	70	-
Posthole	231	126
Hearth	7	-
Layer	60	110

Table 9: Quantification of feature types

6.1.3 Primary Excavation Sources and Documents

The records for excavated deposits are complete and have been checked for internal consistency. Written records have been completed on archival quality paper using light-fast, waterproof ink, and are fully indexed. Drawn records are in pencil on film, and are clear, annotated, and fully indexed. Area matrices have been drawn up and checked with the pottery spot dates for those areas of the site that had greater stratigraphic complexity than simply below topsoil and above natural.

All plans have been digitised and provisionally phased; a selection of informative sections will also be digitised. The context record has been entered into a site Access database, which also incorporates all basic finds data and quantifications.

The primary paper records have been checked in conjunction with the site matrices and the assessments of artefactual and ecofactual materials to amass the information for this assessment. General finds information for individual contexts has been collated using the database. Preliminary grouping of contexts into discrete features has been undertaken. Raw stratigraphic phasing has been used as a tool to aid in grouping the intercutting features. Phase interpretations have also drawn on artefact dates, spatial associations and alignments.

Primary records for both the evaluation and the excavation are all retained at CAM ARC offices, Bar Hill, Cambridge.

6.1.4 Statement of Potential

The contextual data will provide a solid foundation on which to build the site narrative. A wide range of the available context types were fully excavated and recorded. In addition, the archaeological features present within the development area were all recorded in plan. The presence of structures and boundary features will provide a good base for the analysis and interpretation of spatial and typological distributions.

Establishing a dating sequence will be essential in determining phasing sequences and will contribute to a tighter chronology for similar sites elsewhere in the region.

By setting the site within its local and regional context, it is possible to assign a scale of significance to the remains from different periods. Most significant would be the Iron Age, Roman and Saxon, with the small number of earlier prehistoric and post-Saxon contexts the least significant. It is therefore suggested that those contexts that are thought to be Iron Age, Roman and Saxon in date are subjected to the most rigorous analysis.

All contexts dating to the main period of occupation should be grouped and phased based on information from pottery, scientific dating techniques, and based on feature types and their spatial distribution. This information should then be distributed to specialists so that they are able to analyse the different material categories on the basis of the contextual data.

The site report will be based on a combination of the contextual data and the reports compiled by individual specialists, it is therefore envisaged that the final report will not be produced until all specialist analysis is completed. Reference to, and comparison with other sites of a similar period and type will be made wherever possible. Useful comparisons may be made with other recent archaeological investigations in the surrounding area.

6.2 Surveys

The site and excavation grid were located with respect to the Ordnance Survey with the aid of a Leica TR705 Total Station Theodolite. All data is currently stored in digital format with the site archive.

A geological and landscape survey of the entire proposed route was carried out by Steve Critchley and can be found in Appendix 12.

6.3 Artefact Summaries

NB: The overall quantities for some assemblages does not match that entered in the database; these discrepancies will be addressed at the final analysis stage.

6.3.1 Metalwork (see Appendix 1)

A total of 99 objects was examined, a large proportion of which came from unstratified contexts. A very few items are Roman and some are post-medieval or modern, but many date to the Middle Saxon, Late Saxon, or Saxo-Norman periods. The assemblage contains a large number of lead objects of general medieval character, and these are also probably contemporary with the Saxon part of the assemblage. A single decorated silver strap-end of 9th century date and possibly Viking origin is subject to the Treasure Act (1996) and may be stored separately from the rest of the archive.

Further work on the metalwork will involve conservation and x-radiography, with particular emphasis on the Saxon artefacts.

6.3.2 Slag (see Appendix 2)

During the excavations 1.712kg of iron slag deriving from metallurgical processes was recovered. The slag itself is undiagnostic and cannot be assigned to either smithing or iron smelting. It is a small assemblage and does not indicate the presence of a smithy in the local vicinity.

No further work is required.

6.3.3 Worked Flint and Other Lithics (see Appendices 3 and 4)

An assemblage of 61 pieces of struck flint was recovered from both sites, covering a date range from the Mesolithic to the Bronze Age. Only one feature has been assigned to the earlier prehistoric periods and this small pit produced 9 struck flints including several serrated pieces. A full analysis will be included in the final report.

The other lithics from the site consist mainly of possible building material, which have not currently been assessed and will be examined in full for the final report.

6.3.4 Pottery (see Appendices 5, 6 and 7)

A total of nearly 700 sherds of pottery weighing 8.761kg was recovered from the excavations. The excavated pottery assemblage along with the stratigraphic sequence will be important to understanding the temporal development of this area. Pottery is the main source of dating on this site. The assemblage covers a date range from the Bronze Age to Middle Saxon, with Roman being the most common by weight and sherd count.

The pottery will allow an understanding of the general morphology of the site and any temporal variations. In addition the pottery could aid in the understanding of the site's place in communication, marketing and trade systems of the Peterborough/Stanground/Whittlesey area.

Further work will be undertaken on the Roman part of the pottery assemblage.

6.3.5 Ceramic Building Material (see Appendix 8)

Farcet Road produced only one fragment of Roman brick and 820g of fired clay, however the quantities recovered at Horsey Hill were significant: 30kg of Roman brick and tile, and 14kg of fired clay of Roman and Saxon date.

The ceramic building material will be fully described and quantified for the final report.

6.5 Environmental Remains

6.5.1 Faunal Remains (see Appendix 9)

A total of 642 bone fragments weighing 29.75kg were recovered by hand from the excavations, with almost half being identifiable to species. Faunal remains were recovered from a variety of contexts, including pits, ditches and layers/spreads. By far the largest proportion of faunal remains was recovered from the Horsey Hill site (93.6% of the identifiable sample).

Nine species were identified, with both assemblages being dominated by domestic mammals (cattle, sheep/goat, pig, horse, dog, fowl and goose). Much smaller proportions of wild mammals were found in the form of red and roe deer.

A full analysis of the assemblage will be included in the final report.

6.5.2 Macrobotanical Remains and Pollen (see Appendices 10 and 11)

Samples for the retrieval of the plant macrofossil assemblages were taken from both sites, and 160 samples were submitted for an initial rapid scan evaluation. Of these, only six merited further analysis and the conclusions are given in Appendix 10.

A total of 74 pollen samples were taken for analysis during the evaluation and excavations, and these will be useful in assisting in the creation of a model of the palaeoenvironment.

7 Updated Research Aims and Objectives

The assessment of the stratigraphic, structural, artefactual and environmental data from the excavation indicates that there is good potential to address most of the original research aims and objectives identified in the Specification. This section revises these in light of the assessment process.

The following objectives are organised on a national, regional, local and more site-specific level, which are designed to provide a framework for any additional phases of excavation and subsequent assessment and analysis.

English Heritage's updated survey of archaeological endeavour and agenda for future work (English Heritage, 1997) set out the need for regional frameworks for archaeology. The Regional Research Agenda and Strategy (Brown & Glazebrook 2000) focuses on aspects of this document and proposes specific aims targeted towards research in the eastern counties.

The material assemblages recovered, particularly pottery, animal bone, environmental and metal objects/small finds, are of significance as they derive from a wide variety of well-excavated stratified deposits from across the excavation area. Further, targeted, analysis of these assemblages in conjunction with detailed stratigraphic phasing has great potential to contribute to the identified research objectives at all levels. This data will be of sufficient quality and quantity to allow useful comparisons with similar groups from sites within the Peterborough area as well as more regionally, and in some cases nationally.

7.1 National (English Heritage 1997)

The following research areas identified by English Heritage as important on a national level have been selected as those that might be deemed appropriate to these sites:

7.1.1 The Meaning of Change (Transitions)

- PC5 Empire to Kingdom – both sites show evidence that there was still Roman activity here in the 4th century, although there is no clear evidence of either an earlier Roman presence or an Early Saxon one. Many sites in the region are demonstrating continuity across these chronological divides, however that does not appear to be the case here.
- PC6 The late Saxon to medieval period – at Horsey Hill there is evidence of a later Saxon presence possibly extending into the post-conquest period. There seems to be another interregnum after this period.

7.1.2 Chronological Periods

- P7 Late Bronze and Iron Age landscapes – there is clear settlement evidence from the Iron Age phase at Farcet Road and the structures indicate the importance of this particular area.

7.2 Regional (Brown & Glazebrook 2000)

7.2.1 Gaps in Knowledge

- Chronology – the absence of a clear chronological framework for the Iron Age of the region.
- The location and distribution of settlements – although clay soils are given as an example, it is clear that previously unknown sites such as these are still to be found in the Fens.

7.3 Local

At the local level no published general framework exists, however additional points regarding local research priorities were outlined in the excavation project designs (Macaulay 2005) and key foci for further study are suggested below.

- Local economy and landuse over time through faunal and environmental analysis.
- Landscape patterning, development and resource utilisation from Late Iron Age to Late Saxon.

7.4 Updated Research Aims and Objectives

In the light of the potential established by the assessment, revised aims and objectives have been defined to meet the potential of the data.

7.4.1 Aim 1. What was the physical character and morphology of the sites and how did they develop?

A refined and well-dated stratigraphic sequence across the whole site will be critical to understanding the detailed evolution of the settlement, its origins, development and decline.

- Objective 1.1. What was the function of the sites? Does the Horsey Hill site have a settlement aspect?
- Objective 1.2. Can specific activity zones be identified?

7.4.2 Aim 2. What was the environment and economy of the settlements?

Artefactual, environmental and stratigraphic research will be required to understand the environmental and economic basis of settlement and how this changed during the development of the phases represented.

- Objective 2.1. What is the character of the farming economy? Was it largely pastoral?
- Objective 2.2. What environmental factors could have meant that the sites were only occupied discontinuously?

7.4.3 Aim 3. What was the place of the settlement in local and regional economic and settlement systems?

Study of archaeological reports relating to the local area and region, alongside site data regarding the importance of outside resources and producers, will enable a picture of the site within its local context to be formulated. Regional syntheses and site data from other regions will provide comparison from a wider context.

- Objective 3.1. Why were the sites where they were? What economic factors might have influenced intermittent occupation rather than the more continuous settlement seen elsewhere?
- Objective 3.2. What links with local production centres can be recognised?
- Objective 3.3. How do the economy and morphology of the sites compare with other excavated contemporary sites?

7.4.4 Aim 4. To what extent did landscape continuity influence the transitions from Iron Age to Roman to Saxon?

In this respect, how similar is this site to others in the region and further afield? Does this site exhibit typical or unusual characteristics?

- Objective 4.1. How might landscape continuity (or the lack thereof) have influenced the repeated selection of theses sites?

The table below summarises the potential of each of the suggested analysis areas to meet the research aims and objectives.

Research Aims:	1	2	3	4
Main analysis area				
Stratigraphic/date	X	X	X	X
Ceramics	X	X	X	X
Lithics	X	X	X	
Faunal remains	X	X	X	X
Metalwork	X	X	X	
Plant macrofossils	X		X	X

Table 11 Research aims and objectives

It is important to note that each of the areas of analysis will be of little value if studied without regard to its context both at site, local, and regional level. Assessment has indicated that there may be potential for looking at the spatial distribution of a variety of data types. It is, for example, immediately apparent that certain areas of the site were richer in all types of finds than others, and that certain individual features contained disproportionately large assemblages. Further analysis should show whether these differences are spatial or temporal, and thus whether there was zonation in settlement activity or change in settlement character over time.

8 Methods Statements

The assessment and the updated research objectives have identified the key areas for analysis, reporting and wider dissemination through publication. This further work will aim to present a synthesis of the project results, concentrating on the Iron Age and Roman elements of the site in particular. In order to meet the full potential of this data, targeted stratigraphic analysis and site phasing incorporating ceramic and other dating tools is crucial. Analysis and integration of the finds data is also paramount, and will focus on the stratified pottery assemblage, the significant group of animal bone, the worked flint, selected environmental remains and, to a lesser extent, the metalwork and other objects, ceramic building materials and worked stone.

It is critical to maintain an holistic approach to the analysis and presentation of the evidence from these excavations, which will be greatly enhanced if combined with the results of other recent excavations around the Peterborough and Whittlesey area. Although the two sites were separate excavations, they are best viewed as an

area within a much larger site – the environs south of Peterborough and Stanground. An integrated approach to the publication will benefit the wider interpretation of the landscape and its development, which in turn will contribute to more regional and national research initiatives.

The following section summarises which elements have been identified for further analysis, and the methods required to meet the research aims of the project. The initials in the following sections are those of team members detailed in table 12 below.

8.1 Stratigraphic Analysis

It is essential to finalise and fully cross-reference the archive, create final groups and integrate all relevant artefact studies and disseminate this information to the project team. The following tasks will form the solid foundation for further analysis that will enable the research objectives to be met as fully as possible.

8.1.1 Agreement on final phasing and terminology to ensure consistency with pottery phases across both sites (SK).

8.1.2 Completion, verification and cross-referencing of matrices. Creation of groups. The archive from the evaluations will also need to be assimilated and cross-referenced with that from the excavation (SK).

8.1.3 Integration of the stratigraphic analysis with the artefact studies, in particular the ceramic dating to provide final phasing for all the features. This will enable decisions about residuality/intrusion to be made so that this information can be distributed to all specialists to aid their analysis and interpretation (SK, PS, CF).

8.1.4 Updating of the database and editing of the AutoCAD digital plans to reflect the finalised phasing so that this information can be distributed to all specialists to aid their analysis, interpretation and contribution to the research objectives (SK).

8.1.5 Assimilation and discussion with relevant specialists of all available data to enable final interpretation of feature types and functions, to assist grouping of features and deposits into identifiable units (SK, CF, NC, PS). Distribute to all specialists.

8.2 Stratigraphic and structural text

8.2.1 Compilation of text sections for all features, structures and deposits by group and phase (SK).

8.2.2 Compilation of overall stratigraphic/group text and site narratives to form the basis of the full report (SK).

8.2.3 Review and collate results of all final specialist reports and integrate with stratigraphic text and project results (SK).

8.3 Illustration

8.3.1 Prepare updated phase plans in AutoCAD; edits.

8.3.2 Digitise selection of sections.

8.3.3 Preparation of draft phase plans, sections and other figures in Illustrator.

8.3.4 Selection of photographs for inclusion in the report.

8.4 Documentary Research

Documentary research on the historical background is thought unlikely to yield results relevant to the excavation sites. Research on the palaeoenvironmental and geological background has already been undertaken by Steve Boreham and Steve Critchley (Appendices 11 and 12).

8.5 Artefact Studies

All of the artefact categories have been assessed and recommendations made as to the level of further analysis and report writing necessary in order to fulfil the full potential to meet the research aims and objectives. Many of the artefacts and environmental remains have potential to help establish a dated chronological sequence and contribute to a wide range of themes based around economy, trade, function and status over the many centuries of occupation on the sites.

8.5.1 Metalwork and other objects

Some further analytical work is required to fully identify the coins, which although unstratified, may contribute to the understanding of the local economy in Roman times.

- Updating catalogue where necessary (NC)

Reporting

- Detailed catalogue and discussion of the non-modern objects to form part of the published report (NC)
- References to comparable items from within the region or elsewhere in Britain (NC)
- Illustration of a maximum of 10 objects (ILL)

8.5.2 Lithics

A small amount of further analytical work is required, as this material has potential to contribute to understanding the nature of prehistoric activity on the Fen Edge (BB).

- Full analysis (including flints from the evaluation) (BB)
- Integration of any flint recovered from the samples (BB/SK)
- Production of publication report, including research into comparative assemblages/sites around Peterborough and more regionally (BB)
- Illustration of a selection of the flints (ILL)

8.5.3 Prehistoric Pottery

The assessment report (Appendix 5) included full analysis of this small portion of the overall assemblage. No further analytical work is required.

8.5.4 Roman Pottery

The Roman pottery assemblage has potential to contribute to a number of the research objectives. The following tasks have been identified:

- To integrate the final spot dates of the handmade material into the Roman catalogue to refine dating (AL)
- To assign the pottery to vessel type and compare this pottery to material previously excavated in the area (AL)
- To place this pottery in the context of the two sites (AL)
- Prepare a short illustration catalogue (AL)
- Prepare a publication text. (AL)
- Illustration of a selection of sherds (ILL)

8.5.5 Anglo-Saxon Pottery

The Anglo-Saxon element of the assemblage is reported on in full in Appendix 7. No further analysis is required.

8.5.7 Ceramic Building Material

This assemblage is significant and has potential contribute to a number of the research aims associated with function, date, trade and economy. Of particular interest are the Saxon fragments.

- Catalogue including dimensions, fabric description, possible source and date (PS)
- Textual description based on the above (PS)
- Preparation of an archive report from which a publication summary can be extracted (PS)
- Identification of pieces for discard, updating of database (PS/HF)
- Illustration of seven items (ILL)

8.6 Environmental Remains

8.6.1 Animal bone

The animal bone assemblage is of sufficient size to contribute usefully to a number of the research objectives. The following tasks have been identified, although these should only be undertaken once final site phasing is complete.

- Full recording and analysis of the assemblage (CF)
- Extraction of any small mammal and fish bone (recovered from the samples) to allow recording and analysis by a specialist (CF/SH-D)
- Preparation of a report, including research into comparative assemblages in Peterborough and the wider region if appropriate (CF)

8.6.2 Environmental Remains and Pollen

No further analysis is required as full reports have been submitted.

9 Report Writing, Archiving and Publication

9.1 Report Writing

Tasks associated with report writing are identified in Table 19 (Tasks 63 – 83).

The stratigraphic text, group and phase sections need to be completed to provide a stratigraphic archive report. The work entailed in each of these tasks is itemised separately in Section 7.2 above.

All specialist contributions will result in the production of an archive report, elements of which will be integrated into the publication. The degree to which specialist reports are published will depend on the value of the conclusions in relation to the wider interpretation of the site and the ability to contribute to the research aims.

Scott Kenney (SK) will undertake the main archive and reporting tasks; Stephen Macaulay (SM) and Elizabeth Popescu (EP) will undertake the editing.

9.2 Archiving

Excavated material and records will be deposited with, and curated by, Cambridgeshire County Council in appropriate county stores under the Site Code PET WRM 05. A digital archive will be deposited with ADS. During analysis and report preparation, CAM ARC will hold all material and reserves the right to send material for specialist analysis.

The archive will be prepared in accordance with current CAM ARC guidelines, which are based on national guidelines.

9.3 Publication

At present, it is proposed that the results of the Farcet Road and Horsey Hill sites should be published in the synthetic Roman Cambridgeshire volume as part of the East Anglian Archaeology series, title to be confirmed. It is expected that this contribution will be approximately 10 pages.

9.3.1 Report Structure

The final format and scope of the publication report is currently under discussion, and as such it is not possible to propose a report structure at this stage.

10 Resources and Programming

10.1 Staffing and Equipment

10.1.1 Project Team

Name	Initials	Project Role	Establishment
Scott Kenney	SK	Project Officer and Main Author	CAM ARC
Stephen Macaulay	SM	Project Manager	CAM ARC
Elizabeth Popescu	EP	Editor/publications management	CAM ARC
Crane Begg	CB	Senior illustration	CAM ARC
Illustrator	ILL	Small finds, flint and pottery	CAM ARC
Alice Lyons	AL	Roman pottery	
Paul Sealey	PS	CBM	Freelance
Barry Bishop	BB	Flint	Freelance
Chris Faine	CF	Animal bone	Freelance
Nina Crummy	NC	Metalwork	Freelance
Helen Fowler	HF	Finds management	CAM ARC

Table 12: Project Team

10.2 Task Identification

Task No.	Task	Staff	No of Days
Project Management			
1	Project management and meetings	SM/EP	2/2
2	Meetings and project management implication	SK	2
3	Liase with staff and Specialists, send and receive all finds and environmental materials, check packaging, discard as appropriate.	HF/SK	1/1
Stratigraphic analysis			
4	Discussion and agreement of final phasing system	SK/PS	0.5/0.5
5	Finalise site phasing/matrix of key groups, integrate evaluation data	SK	3
6	Integrate ceramic/artefact dating with site matrix	SK/PS	0.5/0.5
7	Update database and digital plans/sections to reflect any changes	ILL	1
8	Distribution (and discussion) of finalised phasing to all relevant specialists	SK	1
Stratigraphic and structural text			
9	Compilation of text sections for all features, structures and deposits by phase and group	SK	10
10	Compilation of overall stratigraphic text and site narrative to form the basis of the full/archive report	SK	5
11	Review, collate and standardise results of all final specialist reports and integrate with stratigraphic text and project results	SK	1
Illustration			
12	Prepare updated phase plans in AutoCAD	SK	1
13	Digitise selection of sections	ILL	2
14	Preparation of draft phase plans, sections and other report figures in Illustrator	ILL	2
15	Selection of photographs for inclusion in the report	SK	0.5
Artefact studies			
	Metalwork and other objects		
16	Detailed catalogue	NC	2
17	Reference to comparable items; preparation of report	NC	2
18	Illustration of maximum of 48 items	ILL	5
	Lithics		
19	Full analysis	BB	1
20	Illustration of up to 10 flints	ILL	2
	Roman pottery		
21	Integrate spot dates of the handmade material into the Roman catalogue to refine dating	AL	0.5

Task No.	Task	Staff	No of Days
22	Assign the pottery to vessel type and compare to material previously excavated in the area	AL	1
23	To place this pottery in the context of the two sites	AL	0.5
24	Prepare a short illustration catalogue	AL	0.5
25	Illustration of a maximum of 10 vessels	ILL	3
26	Prepare a publication text	AL	1
27	Send Samian makers stamp to a specialist for identification	AL	0.5
	Ceramic Building Material		
28	Catalogue including dimensions, fabric description, possible source and date on well-dated or large groups	PS	2
29	Preparation of an archive report from which a publication summary can be extracted	PS	2
30	Identification of pieces for discard, updating of database	PS/HF	0.5/0.5
31	Illustration of seven objects	ILL	2
Environmental Remains			
	Animal bone		
32	Full bone recording	CF	4
33	Final pollen analysis and report	SB	10
Report Writing			
34	Integrate documentary research with stratigraphic report	SK	0.5
35	Write historical and archaeological background text	SK	1
36	Write phase and group text	SK	5
37	Integrate results of specialist reports	SK	1
38	Compile list of illustrations/liaison with illustrators	SK/ILL	1/1
39	Write discussion and conclusions	SK	2
40	Preparation of report figures plans/sections/location/maps/photos	ILL	2
41	Collate/edit captions, bibliography, appendices etc	SK	2
42	Produce draft report	SK/ILL	1/1
43	Internal edit	EP/SM	2
44	Incorporate internal edits	SK	1
45	Final edit	EP/SM	1/0.5
46	Produce HER summary	SK	0.5
Archiving			
47	Compile paper archive	SK	1
48	Archive/delete digital photographs	SK	1
49	Compile/check material archive, liaise with Landbeach	CF	1
Report production			
50	Format final report and illustrations (Illustrator)	ILL	1
51	Distribute report	SK	1
Publication			
52	Publication editing	EP/SPM	1/1
53	Adapting text for publication	SK	3
54	Publication figures	ILL	2

Table 13: Task List

10.3 Project Timetable

It is anticipated that further excavation work may take place as part of the Stanground Southern Expansion. Any such excavation should be considered in conjunction with the 2005 excavation at Farcet Road. The project Gantt chart shows an outline proposed timetable based on an estimated start date of February 2008, a copy of which may be obtained on request.

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Appendix 1: Metalwork

By Nina Crummy

1 Summary

A total of 99 objects was examined, a large proportion of which came from unstratified contexts. A very few items are Roman and some are post-medieval or modern, but many date to the Middle Saxon, Late Saxon, or Saxo-Norman periods. The assemblage contains a large number of lead objects of general medieval character, and these are also probably contemporary with the Saxon part of the assemblage.

2 Condition

Some of the copper-alloy objects are in good condition and quite lightly corroded, while some are heavily encrusted with corrosion and others are dark brown/black in colour as if made of iron, although they do not respond to a magnet. Some of the latter group may prove, on cleaning, to be silver. All the objects appear to be stable.

The lead objects are in general only lightly corroded but most retain mud deposits. Most of the ironwork is also only fairly lightly corroded and comparatively few pieces need to be X-rayed in order to clarify identification, manufacturing details, dating, or illustration.

The objects are packed to a high standard of storage in either polythene bags or small crystal boxes supported by pads of foam or acid-free tissue. The bags and boxes are stored in larger crystal boxes or airtight Stewart boxes with silica gel.

3 Assemblage

The assemblage can be divided by material thus:

silver	1
copper alloy	27
lead (alloy)	43
iron	25
stone	3
Total	**99**

The proportion of lead objects to copper-alloy or iron ones is high and is a major characteristic of the assemblage. The balance between stratified and unstratified items is close to 1:3 for copper-alloy objects, 1:2 for lead objects and only 1:4 for iron objects, and the high proportion of stratified lead items stresses the importance of this group of objects in terms of site interpretation.

The objects are briefly listed in Appendix 1. Each has been assigned to one of the functional categories defined in Crummy 1983 and 1988 and the results are shown in the table below. Categories represented in this assemblage are: 1...dress accessories; 3...textile manufacture, 4...household equipment; 6...weighing; 8...transport; 10...tools; 11...general fittings; 12...agriculture or animal husbandry; 13...military equipment; 15...metalworking; and 18...miscellaneous. Coins are treated as a separate, unnumbered, group. Where identification is at present tentative, the object has been placed in the most likely category. Categories not represented here are toilet and medical instruments, recreation, literacy, buildings and services, religion, or the manufacture of bone or ceramic objects.

Material	Coins	Categories										
		1	3	4	6	8	10	11	12	13	15	18
silver	-	1	-	-	-	-	-	-	-	-	-	-
copper-alloy	6	9	-	3	-	-	-	1	-	-	4	3
lead(-alloy)	-	1	1	1	9	-	1	-	12	2	11	5
iron	-	-	-	-	-	3	4	13	-	1	-	4
stone	-	-	-	-	-	-	3	-	-	-	-	-
Totals	**6**	**11**	**1**	**4**	**9**	**3**	**8**	**14**	**12**	**3**	**15**	**12**

The coins are all copper-alloy Roman issues, although one may be a plated contemporary forgery with an iron core, and among the dress accessories (Category 1) is a Roman Rearhook brooch, a type in use from c 40-60 AD and well-represented in the territory of the Iceni, who appear to have developed the rearward-facing hook as a method of securing the spring to the head. The remaining copper-alloy dress accessories consist of a Middle Saxon pin, a hooked tag, and several strap-ends or strap-tags varying in date from Middle Saxon to Saxo-Norman. They represent a clear occupation horizon on the site while the absence of High Medieval dress accessories such as double buckles and strap-mounts argues strongly for a low, or specialised, occupation of the site after c 1150/1200. The only lead dress accessory is a button, probably of post-medieval date.

The only item associated with textile manufacture (Category 3) is a lead spindlewhorl, although, given the presence of several lead weights in the assemblage, this object might be better interpreted as another such. Household items (Category 4) consist of a Roman spoon handle, a Middle to Late Saxon box fitting with zoomorphic terminal, a drape ring of probable High Medieval date, and a post-medieval lead bottle seal. Category 6 is represented by six small weights, one plumbob with embedded iron suspension loop and either a second plumbob or a seventh weight. The weights were probably used for commercial transactions and occur in a range of shapes similar to a large collection of Late Saxon or Saxo-Norman weights found on the Vintry site in London (Museum of London Archaeological Archive, VRY89, VHA89).

Transport (Category 8) is represented by three iron horseshoes, all High Medieval at the earliest. Tools (Category 10) include a whetstone,

two rubbing-stones, a lead handle, an iron knife and a pick-head, and also an ambiguous iron object, which may be either a tanged punch or the head of a Roman javelin. X-radiography should resolve this question and also the date of the pick head, which could be modern. The general fittings (Category 11) are all iron nails apart from a copper-alloy fitting that may come from either a book or box of Saxo-Norman or High Medieval date.

Category 12 defines the nature of a large part of the lead assemblage as it consists of a considerable number of lead fishing weights, made by rolling a small piece of lead sheet into a tube. Similar groups of weights have come from a number of sites adjacent to rivers or fenland, including 538 weights and fragments from Holme Fen, close to the present site (Ancient Monuments Laboratory Report 70/97). A number of partly rolled pieces of lead sheet and waste debris from lead-working (Category 15) suggest that fishing weights were made on the site, although all this material comes from either topsoil or subsoil or is unstratified. Similar weights from Ramsey and from York were stratified in High Medieval contexts, and only further investigation will determine if the Whittlesey lead-working and fishing weights are contemporary with the Saxon phase on the site or are later.

Two pieces of lead shot represent military equipment (Category 13), although both pieces might equally well have been used for hunting. A post-medieval iron spur might also be military equipment, although it might date to the 17th century when spurs were seen as essential dress accessories for gentlemen's boots. A comparatively small number of objects are classified as miscellaneous (Category 18), which largely reflects the early date and/or specialised nature of this assemblage.

In general, therefore, the small finds point to occupation of the site from the Middle Saxon to the Saxo-Norman periods, but the contexts from which the fishing-weights and the lead-working debris were recovered could suggest that they represent a second, specialised, use of the site in the High Medieval period.

4 Recommendations

1. All the coins, the silver object and a selection of the copper-alloy and lead objects should be conserved (25 objects) and much of the ironwork should be X-radiographed (14 objects). This should facilitate close dating and aid illustration. It is recommended that this work be carried out at Colchester Museum (contact: annemaria.bojko@colchester.gov.uk).
2. A report on the coins and other metal objects should form part of the published site report, providing references to comparable items and assemblages where appropriate. Such a report should only briefly catalogue the Roman objects but should concentrate on the Saxon and Saxo-Norman material, the fishing weights and the lead-working debris, with post-medieval and modern objects separately listed for the site archive. The report should set the dress accessories and small commercial weights in particular into the wider framework of similar objects from

major settlements such as Thetford, Norwich, York, Hamwic and London. It should also highlight the importance of fishing on the local economy and attempt to establish a date for both the lead-working debris and the fishing-weights, and explore the relationship between the two groups of material. A quotation for this work forms Appendix 2 of this assessment.

3. Specific pieces of the lead-working debris (in particular a large lump that may be a roughly cast ingot) should also be examined by a metalworking specialist.

4. A limited number of the items should be drawn and these are indicated in Appendix 1 of this assessment. Given the corroded nature of some of the objects the precise number cannot be accurately given at this stage but the maximum should be no greater than 1 silver, 16 copper-alloy, 23 lead, and 7 iron objects (48 in all), and is likely to be less.

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Addendum: Catalogue

Coins and jeton

SF	Context	Context type	Material	Identification	Clean	Date
2	2002	ditch [2004] fill	cu-al	-	y	C3rd-4th
203	2002	ditch [2004] fill	cu-al	House of Constantine/Valentinian	y	C4th
223	99999	unstratified MD	cu-al	-	y	4th century
225	99999	unstratified	cu-al	-	y	?Roman
233	99999	unstratified	cu-al/(?fe)	?radiate	y	C2nd-3rd?
252	99999	unstratified	cu-al	radiate	y	C3rd

Silver

SF	Context	Context type	Identification	Clean	Illustrate	Category	Date
1	2001	subsoil	split-end strap-end fragment, with zoomorphic (?frog) relief decoration	y	y	1	Middle-Late Saxon (C9th)

Copper-alloy/composite

SF	Context	Context type	Identification	Clean	Illustrate	Category	Date
3	17	topsoil	?casting debris, or object (?strap-end fragment) distorted by heat	y	y	15	-
14	33	ditch [13] fill	Rearhook or Colchester BB derivative brooch	y	y	1	c 40-80
283	2000	topsoil	pin with faceted cuboid head, Hamwic Type B	y	y	1	Middle Saxon
206	2002	ditch [2004] fill	fitting, possibly from a book or box	y	y	11	medieval
207	2002	ditch [2004] fill	folded strap tag	y	y	1	Middle Saxon to Saxo-Norman
208	2002	ditch [2004] fill	cylindrical or tubular fragment	y	y	18	-
209	2002	ditch [2004] fill	metal-working debris	-	-	15	-
231	2392	spread	split-end strap-end	y	y	1	Middle-Late Saxon
6	99999	unstratified	bent strip mount with long-snouted zoomorphic terminal, from box?	y	y	4	Middle-Late Saxon
204	99999	unstratified	object/metal-working debris	y	y	15/18	-
222	99999	unstratified MD	spoon handle fragment	-	-	4	Roman
226	99999	unstratified	drape/curtain ring	-	-	4	High Medieval +

234	99999	unstratified	shank with spatulate terminal, partly ridged (?cu-alloy)	y	y	18	-
235	99999	unstratified	strap-end	y	y	1	Middle-Late Saxon
237	99999	unstratified	strap-fitting (?silver), two rivet holes	y	y	1	Middle Saxon to Saxo-Norman +
246	99999	unstratified	split-end strap-end	y	y	1	Middle-Late Saxon
253	99999	unstratified	iron shank with baluster-shaped copper-alloy head	y	y	11	-
254	99999	unstratified	split-end strap-end, one leaf of end missing, the other bent	y	y	1	Middle-Late Saxon
255	99999	unstratified	hooked tag	y	y	1	Middle Saxon to Saxo-Norman
256	99999	unstratified	metal-working debris	-	-	15	-
279	99999	unstratified	rimmed sheet fragment	-	-	18	-

Lead/lead-alloy

SF	Context	Context type	Identification	Clean	Illustrate	Category	Date
271	1	topsoil	?bottle seal	-	-	4	post-medieval
272	1	topsoil	sheet, each side folded in	-	-	18	-
1	17	topsoil	shot	-	-	13	late medieval – post-medieval
2	17	topsoil	lead-working debris	-	-	15	-
20	17	topsoil	sheet offcut	-	-	15	-
17	33	ditch [13] fill	sheet + affixed sheet triangle	-	y	18	-
18	33	ditch [13] fill	lead-working debris	-	-	15	-
22	35	ditch [13] fill	2 pieces lead-working debris	-	-	15	-
276	2000	topsoil	button	-	y	1	post-medieval
277	2000	topsoil	weight, truncated pyramid, perforated	-	y	6	medieval
278	2000	topsoil	2 fishing weights (1 short)	-	y	12	medieval
280	2001	subsoil	2 fragments sheet, each partly rolled (for making fishing weights?)	-	y	15	-
281	2001	subsoil	plumbob, with embedded iron suspension loop	y	y	6	
282	2001	subsoil	many fragments lead-working debris and sheet, 1 rolled into short funnel	-	-	15	-
210	2002	ditch [2004] fill	weight, truncated cone, perforated	-	y	6	medieval
219	2284	pit [2429[fill	?plumbob, ?iron loop	y	y	6	-
232	2392	spread	weight, plano-convex, perforated	-	y	6	medieval
241	2409	ditch fill	spindlewhorl or weight, plano-convex, perforated	-	y	3/5	medieval
242	2409	ditch fill	strip, doubled over	-	y	18	-
247	2575	ditch fill?	weight, thick annular	-	y	6	medieval
4	99999	unstratified	weight, truncated cone, perforated	-	y	12	medieval
5	99999	unstratified	weight, truncated cone/pyramid, perforated, rough	-	y	12	medieval
7	99999	unstratified	many fragments lead-working debris and sheet, some partly rolled	-	-	15	-
7	99999	unstratified	large piece lead-working debris	-	y	15	-
8	99999	unstratified	fishing weight	-	-	12	medieval

9	99999	unstratified	fishing weight	-	-	12	medieval
10	99999	unstratified	sheet, partly rolled	-	-	18	-
11	99999	unstratified	dribble (or crushed very narrow tube/fishing weight)	-	-	15	-
13	99999	unstratified	fishing weight	-	-	12	medieval
221	99999	unstratified	fishing weight, short	-	y	12	medieval
224	99999	unstratified	fishing weight, long	-	y	12	medieval
227	99999	unstratified	fishing weight, long	-	y	12	medieval
236	99999	unstratified	handle with perforated terminal	-	y	10	-
238	99999	unstratified	weight, truncated cone, perforated	-	y	6	medieval
239	99999	unstratified	sheet	-	-	18	-
248	99999	unstratified	?weight, annular	-	y	6?	-
249	99999	unstratified	fishing weight	-	-	12	medieval
250	99999	unstratified	fishing weight	-	-	12	medieval
251	99999	unstratified	2 fragments sheet, each partly rolled (for making fishing weights?)	-	y	15	-
257	99999	unstratified	weight, thick tubular	-	y	6	-
273	99999	unstratified	fishing weight, crushed	-	-	12	medieval
274	99999	unstratified	shot	-	-	13	late medieval – post-medieval
275	99999	unstratified	4 pieces lead-working debris	-	-	15	-

Iron

SF	Context	Context type	Identification	X-ray	Draw	Category	Date
21	27	ditch [12] fill	?sheet fragment	y	-	18	-
12	33	ditch [13] fill	sheet fragment	y	-	18	-
15	33	ditch [13] fill	nail	-	-	11	-
260	2001	subsoil	nail	y	-	11	-
261	2004	ditch [2005] fill	nail	-	-	11	-
211	2139	spread [2140]	socketed ?tool, blade recently broken, part missing	y	y	10	-
214	2198	layer [2235]	knife blade (?pivoting knife)	y	y	10	-
213	2200	ditch [2201] fill	horseshoe, calkined	y	-	8	late medieval – modern
220	2200	ditch [2201] fill	rowel spur	y	y	13	late medieval – post-medieval
266	2200	ditch [2201] fill	nail	-	-	11	-
215	2224	spread	strip fragment	y	y	18	-
216	2228	ditch [2226] fill	key, in 2 pieces	y	y	11	medieval
263	2247	cleaning layer	nail	-	-	11	-
259	2291	pit [2292] fill	2 sheet fragments	-	-	18	-
264	2393	ditch [2394] fill	nail	-	-	11	-
270	2398	ditch [2396] fill	nail	-	-	11	-
258	2399	posthole [2400] fill	nail shank fragment	-	-	11	-

269	2410	spread [2414]	?nail	y	-	11?	-
265	2415	spread [2417]	nail shank fragment	-	-	11	-
262	2462	gully segment [2463] fill	nail shank fragment	-	-	11	-
245	2571	ditch 2573 fill	horseshoe fragment	y	-	8	late medieval – modern
217	99999	unstratified	pick head	y	y	10	-
218	99999	unstratified	tanged punch (or possibly pilum head)	y	y	10 (13)	- (Roman)
267	99999	unstratified	hinge bolt	-	-	11	post-medieval – modern
268	99999	unstratified	horseshoe fragment	y	-	8	late medieval – modern

Stone

SF	7 Context	Context type	Identification	Clean	Illustrate	Category	Date
16	21	ditch [13] fill	whetstone of fine-grained micaceous sandstone with two deep point-sharpening grooves on one face	-	y	10	Saxon +
24	33	ditch [13] fill	smooth oval limestone slab split from a waterworn pebble; flat slick face, 2 (?3) finger-grooves on broken edge, and wear on split face and broken edge show it was used as a rubbing-stone	-	y	10	Saxon +
240	2392	spread	thin flat tapering slab of sandstone, no signs of use-wear on faces or edges but fits well to the hand and could have been used as coarse rubbing-stone	-	y	10?	-

Appendix 2: Iron Slag

By Tom Eley

1 Introduction

During the excavations at Horsey Hill, Peterborough a quantity of iron slag deriving from metallurgical processes was recovered. The objective of this assessment was to identify the slag types and evaluate the potential for further work.

2 Methodology

A visual assessment of the morphological characteristics was undertaken to assign the slag to a metallurgical process, either iron smelting or smithing. The mass and magnet response was also recorded. Testing with a magnet was used to identify slag with a high iron or magnetite content. Magnetite is a product of reducing conditions in a smelting furnace whilst the presence of iron could distinguish the type of iron being utilised; but it is not possible to differentiate between iron and magnetite without further analysis.

Slag with a metallic smooth, ropey, flowed surface is considered to derive from the bloomery smelting process whereby iron ore is converted direct into wrought iron, but contained within a 'spongy' mass of slag called a bloom. This type of slag is called Tap slag because it would have been 'tapped' out of the furnace as a molten liquid. To obtain a usable iron the bloom needs to be worked to remove the slag termed 'primary smithing'. Archaeologists rarely find blooms, because they contained iron and would have been valuable, whereas the slag was a waste product and therefore discarded. Blooms are a valuable resource for the archaeologist because they tell us what type of iron was being produced in the furnace.

The secondary smithing process converts bar iron into tools, equipment and utensils and repairs damaged items. Slags with no characteristic shape and a rough, coarse exterior are thought to derive from this process, but they can sometimes be formed in the smelting furnace. Smithing hearth bottoms are an exception; they have a distinctive plano-convex shape, created by the shape of smithing hearth's base from a heated agglomeration of iron, slag, hearth lining, flux and charcoal. Iron smithing slag is rarely found in primary smithing contexts because the hearths were regularly cleaned out and more importantly were built above ground at about waist height, so are susceptible to being destroyed by later activity. Hammer-scale is small flakes and droplets of slag and iron emitted as showers of sparks during smithing. Sampling for hammerscale from post-holes and pits could locate the smithy building. Hammerscale is small and can be left

near to the place where it was created, i.e. smithing hearth, unlike larger slag fragments that can be dumped further away.

3 Results

Context	Type	Weight (kg)	Magnetic?	Comment
2001	Bloom?	1.138	Yes	Fe fused to a conglomerate of slag and ore, 13x12x5cm
2002	burnt oil shale	0.002	No	
2002	Cinder	0.001	No	Less than 1g
2002	Coal	0.002	No	2 fragments
2002	Undiagnostic	0.008	Yes	
2004	Cinder	0.002	No	3 fragments
2004	Undiagnostic	0.001	Yes	
2081	S.H.B.	0.071	Yes	fragment, not complete
2082	Fuel Ash Slag	0.172	No	some lining adhering
2228	Fuel Ash Slag	0.001	No	Less than 1g
2239	smithing slag	0.201	No	20+ fragments
2284	smithing slag	0.036	Yes	
2389	Undiagnostic	0.005	No	
2525	Undiagnostic	0.001	no	not slag
99999	slag and lining	0.071	No	2 fragments
Total		**1.712**		

Table A2.1. Context, debris type and mass.

4 Discussion

A small quantity of metallurgical debris was recovered from PET WRM 05 not sufficient to indicate that either iron smithing or smelting was practised at Horsey Hill. The undiagnostic slag could not be classified into smelting or smithing categories due to the small size. One smithing hearth bottom was found in ditch fill (2081) but a greater sized assemblage is required for any meaningful conclusions to be drawn. Fuel ash slag can form in a variety of pyrological processes, including hearths, is not necessarily related to iron working. The potential bloom fragment came from (2001), unfortunately this is was the subsoil so cannot be assigned to a specific time period which diminishes its potential for further work.

5 Further Work

No further work is recommended on this assemblage due to the small quantity of material recovered that would not enable any meaningful conclusions to be drawn.

Appendix 3: Worked Flint

By Barry Bishop

1 Introduction

Excavations at the above site recovered 61 struck flints. This report quantifies the assemblage by context according to a basic technological/typological scheme (see Table 1), assesses its ability to contribute to further understanding of the nature and chronology of the activities identified during the project, and recommends any further work required. The material was recovered from two distinct areas, Horsey Hill and Farcet Road, located approximately 1.5km apart. All metrical descriptions follow the methodology of Saville (1980).

2 Quantification

In total 61 struck flints were recovered, 45 from Horsey Hill and 16 from the Farcet Road site.

Context	Decort/Prep Flake	Core Rejuve Flake	Chip	Flake	Flake Fragment	Blade	Core	Conchoidal Chunk	Denticulate	Edge-trimmed	Knife	Piercer	Scraper	Serrate	Suggested dating of the Struck Flint	*Comments*
+ area 1						1									M/EN	
+ area 5											1				N	
+ area 6	2														M/EN	Both of blade dimensions
+ SF4							1								M/EN	
+, S of 2286				1											M-N	
021				1											UD	Possibly utilized
501				1											UD	Very battered
511	1			1				1								
516						1									M/EN	
548							1								N-BA	
573	1														UD	
591				1											UD	
625													1		M-N	
642				1											M-N	
777												1			M/EN	
796						1									M/EN	Either natural damage or heavily utilized
799		1													M/EN	Core Tablet
800	1														UD	
802						1									M/EN	
2004	1														UD	
2070			2												M-N	
2071				1											M-N	
2121	2	1		1		1				1				3	M/N	Core tablet
2150				1											UD	
2198	1														UD	
2199						1									M/EN	
2199									1						M-BA	

Context	Decort/Prep Flake	Core Rejuve Flake	Chip	Flake	Flake Fragment	Blade	Core	Conchoidal Chunk	Denticulate	Edge-trimmed	Knife	Piercer	Scraper	Serrate	Suggested dating of the Struck Flint	*Comments*
2209		1													M/EN	From large keeled blade core
2218		1													M/N	Core tablet, heavily crushed platform, slightly burnt
2225													1		UD	
2230															-	All natural
2233				1											UD	
2237	1														UD	
2248				1											UD	
2257				1											M/N	
2363	1														UD	Possibly utilized
2378	1		2			2									M/EN	Blade is plunged, from oppo blade core
2395					1										UD	Burnt
2398													1		UD	
2419	1														UD	
2460				2									1		UD	
2462			1												UD	
2542	1		1												M-N	

Table A3.1: Quantification of struck flint by context (NB M = Mesolithic; EN = Early Neolithic; BA = Bronze Age; UD = undated)

3 Raw Materials

The raw materials utilized at both sites consisted of thermally affected cobbles of light brown to dark grey translucent to semi-translucent flint with a hard, thick, but relatively unweathered cortex. The cobbles appeared small; most flakes were less than 50mm in maximum dimension and the largest only attained 73mm. They appeared nodular in shape but retained many ancient thermal scars. They were most likely to have been obtained from derived, fluvio-glacial deposits as present in the vicinity of the site, although the cobbles that were used had not experienced extensive alluvially rolling.

4 Condition

The assemblage was mostly in a good condition although some pieces did show minor chipping and abrasion, especially to the thinner edges, and several pieces were broken. This would suggest some redeposition and residuality, although none of the pieces appeared to have been subjected to extensive post-deposition movement.

5 Technology, Typology and Dating

The assemblages from both sites consisted predominantly of knapping waste although relatively high proportions of retouched implements were also present, indicating that, in addition to flint reduction, a variety of other activities were indicated.
Few typologically diagnostic pieces were present and, individually, most pieces could only be broadly dated to the Mesolithic – Bronze Age periods. Nevertheless, the assemblage as a whole appeared reasonably technologically homogeneous, being the product of a systematic, blade-based, reduction strategy.
Two cores were recovered, that from context [548] was rather opportunistically reduced but the other, recovered from unstratified contexts during the Stage 3 Evaluation, was a good example of a competently reduced single platformed blade core (Table 2).

Context	Clarke *et al.* 1960 type	Type	Wt: g	Description
+ SF4	A2	Blade	48	Thermal fragment, thermal plain used as striking platform, many incipient Hertzian cone, blunting along right lateral margin
548	C	Flake	16	Small rounded pebble with a series of small short flakes randomly removed, sometimes from cortical platforms. Many incipient Hertzian cones

Table A3.2: Description of cores

Blades were not numerous amongst the Horsey Hill material where they accounted for only around 9% of the total, although at Farcet Road they contributed 25% of the assemblage. At Horsey Hill, some of the retouched pieces were made on blades and many of flakes retained parallel dorsal scars and had complex edge-trimmed striking platforms, demonstrating a concern with blade manufacture, and it is possible that blades were being produced there but removed for use elsewhere.

The retouched component at both sites was high; at Horsey Hill they represented 16% of the assemblage, although nearly half of these were from a single features, whilst at Farcet Road they contributed 13% (Table 3), but at both sites the sample population was very small. None could be considered as truly chronologically diagnostic pieces, although taken as a whole the range present is perhaps most typical of Early Neolithic industries.

Context	Type	Dimensions (mm)	Description
2225	Scraper	49X50X11	Flake with blunted edges and short stretch of much steeper retouch, rather opportunistic
2460	Scraper	25X25X14	Small thick cortical flake with crude steep retouch on distal, rather opportunistic
2121	Serrate	>28X31X7	Blade-like flake with serrations on straight left lateral margin, possibly notched for hafting? Slightly worn but no gloss. Partially cortical distal
2121	Serrate	36X18X3	Blade with serrations on both slightly concave margins. Slightly worn but no gloss. Partially cortical distal
2121	Serrate	>24X18X5	?blade-like flake with serrations on slightly convex right lateral margin, slightly worn but no gloss, distal missing

Context	Type	Dimensions (mm)	Description
2121	Edge trimmed	>27X18X2	Primary flake fragment with very fine blunting on left ventral
2199	Denticulate	42X37X13	Flake with coarse denticulation around all margins. The retouch appears to have been undertaken after the flake had become slightly recorticated
2398	Scraper sharpening flake?	18X22X4	Small flake with heavily facetted and slight rounded platform, appears to have been struck from the base of a scraper
625	Scraper	24X32X7	Short flake with parallel dorsal scars and steep retouch along right dorsal margin
777	Piercer	39X14X5	Blade with elaborately retouched distal forming a sturdy point
+ area 5	Knife	>27X>15X5	Fragment of a blade or narrow flake with shallow retouch and use-rounding along right dorsal margin

Table A3.3: Description of retouched implements

Although it is possible that the overall assemblage may have been produced over a considerable period of time, its predominantly blade-based technological characteristics, including the presence of blades, a blade-core and rejuvenation flakes, as well as the range of retouched implements present, confirms that the bulk of the assemblage was most likely to have been manufactured during the Mesolithic or Early Neolithic periods.

6 Context

The assemblages from both sites were small in size and generally scattered across a variety of contexts, with most individual contexts only producing one or two pieces and, overall, the material appeared mostly residually deposited or incidentally incorporated into the features. Possible exceptions to this included pit fill [2378] which produced five pieces including two blades, and pit fill [2121] which produced an assemblage of nine struck pieces, including three serrated pieces and an edge trimmed flake. The preponderance of serrated pieces in this pit is interesting; Early Neolithic assemblages of carefully selected or limited types of lithic implements are often noted (eg Thomas 1999) and may indicate the deposition of implements from task-specific activities or that the deposits represented some form of ceremonial or ritual practices. The precise functions that serrated pieces were used for remain obscure although experimental work involving micro-wear analysis suggests that serrated blades could have been used in cutting or sawing soft plant material, such as bracken or green wood (Levi-Sala 1992) and other micro-wear experiments have tended to confirm an association with plant processing (Avery 1982, 38; Grace 1992; Bradley 1993; Donahue 2002). Interestingly, many of the sites where serrates dominate are located in or adjacent to low lying areas, such as at Stow-cum-Quy on the southeastern Fen edge (Bishop 2007) and at Eynesbury in the Great Ouse Valley (Harding 2004)

7 Discussion

The assemblages from both sites, despite being separated by some distance, were broadly comparable in their use of raw materials and their predominant Mesolithic/Early Neolithic characteristics. They both demonstrate that on-site reduction was occurring although the quantity and range of retouched pieces indicate that a number of other activities were also being conducted. The assemblages were small in quantity and scattered across the sites, indicating widespread but low-density occupation. The area around the fen margins in Peterborough is noted for its wealth of Mesolithic and Neolithic sites, although few finds are known from the immediate vicinity of these sites. Thin scatters of Neolithic material were recovered from fieldwalking immediately to the north of Farcet Road and west of Horsey Hill, and Neolithic struck flint has been found at Horsey Bridge as well as c.1.5km west of Farcet Road (National Monument Records). During the Mesolithic and Neolithic periods, evidence for occupation is thought to concentrate most densely around the Fen edge and the margins of its feeder rivers and, consequently, much of this is likely to be hidden beneath the often thick deposits of alluvium that have accumulated in those areas.

8 Significance and Recommendations

The assemblages from these investigations are small but do contribute to a more comprehensive understanding of settlement and landscape exploitation of this area during the Mesolithic/Early Neolithic periods and can complement the findings from the prolific work that has been undertaken in the locality. It is therefore recommended that a description of the assemblage, including illustrations of relevant pieces, should be included in any published account of the fieldwork. The publication should include consideration of local geology, raw material sources and previous finds and research in the local area.

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Appendix 4: Building Stone

By Scott Kenney

1 Introduction

A total of 8 pieces of worked building stone weighing almost 45kg were recovered from the site. The majority of the pieces were limestone of one form or another.

The assemblage has not been formally assessed for this PXA and will be reported on in full for the final report, once a specialist has been assigned.

Appendix 5: Prehistoric Pottery

By Sarah Percival

1 Introduction

The handmade pottery was separated from the wheelmade Romano-British sherds during initial analysis (undertaken by Alice Lyons this volume). The assemblage is primarily shell tempered and therefore extremely difficult to date as clays rich in fossil shell were used for pot making in the Peterborough area from the earlier Neolithic through to the post Roman period. The assemblage is highly abraded and mostly comprises small featureless sherds.

The majority of the handmade sherds can not be closely identified, however rim sherds found in several contexts (2389, 2393, 2547) are from straight sided jars with distinctive flat topped or cut rims similar to examples from Gosberton, some 45km from Peterborough, and made of shell tempered Maxey-type ware which dates to the early 8th century AD (Blinkhorn 2005, fig.40, 1).

It is likely, given the presence of the distinctive 7th to 8th century loom weight of Hurst's (1959, fig.6, 2) intermediate type (context 2410) and the coincidence of handmade shell tempered sherds with later Romano-British pottery, that the majority of the handmade sherds are of middle Saxon date. A small number of possible middle Saxon Ipswich Ware sherds are also present.

Forty-nine sherds weighing 800g were identified as being of prehistoric date. Two sherds are of middle Bronze Age date; the remainder are Iron Age but are not closely datable within this period.

Site	*Spot date*	*Quantity*	*Weight (g)*
Farcet Road	Bronze Age	1	10
	Iron Age	32	491
	Undatable Prehistoric	1	4
Farcet Road Total		34	505
Horsey Hill	Bronze Age	1	18
	Iron Age	14	277
Horsey Hill Total		15	295
Total		*49*	*800*

Table A5.1: Quantity and weight of pottery by site and pottery spot date

2 Bronze Age

Two sherds of Bronze Age pottery weighing 28g were recovered from two contexts.

2.1 Farcet Road

An undecorated body sherd in coarse heavily grog tempered fabric with distinctive wiped surfaces, was recovered from the Farcet Road site (context 560). This sherd is not closely identifiable but may come from a small urn or similar vessel.

2.2 Horsey Hill

A second sherd, also of coarse grog tempered fabric, was found at the Horsey Hill site (2261). The sherd has an overhanging shoulder similar to examples of undecorated Collared Urn found as accessory vessels at Bixley, Norfolk (Ashwin and Bates 2000, fig.35, P3). Collared Urn has been found in domestic contexts at several Fen Edge sites, including Chatteris, Cambridgeshire and West Row Fen, Mildenhall (Tomalin 1995 102) and dates to the earlier second millennium perhaps *c*.2150-1450BC (Needham 1996)

2.3 Statement of potential

The assemblage is small and somewhat undiagnostic, containing only one sherd of possible Collared Urn. The assemblage appears to be residual, although this would need to be checked during the site analysis phase.

2.4 Further Work

A brief note is required for publication. The Collared Urn sherd could be illustrated and a catalogue description prepared.

Estimated Time Required: One hour.

3 Iron Age

The Iron Age assemblage comprises 46 sherds weighing 768g. All the sherds are made of fabrics containing various quantities of fossil shell, a fabric type widely used during the Iron Age in southwestern Cambridgeshire and into the east Midlands (Hill and Braddock forthcoming).

3.1 Horsey Hill

Rim sherds from two vessels with flat-topped rims were found at Horsey Hill (context 2283). The sherds are similar to examples from Cowbit, Lincolnshire (Knight 2001, fig.26, 2) and are also widely found in Cambridgeshire (Hill 2003, fig.77, 7).

3.2 Farcet Road

Sherds with distinctive incised decoration characteristic of Scored Ware were recovered from unstratified contexts at the Farcet Road site (99999). This suggests a minor occupation at the site in the 5th to 1st centuries BC, however the longevity of this pottery type precludes accurate dating and it is possible that the handmade forms continued in use well after the introduction of wheel made vessels (D Knight *pers. comm*.).

3.3 Statement of potential

The handmade assemblage is in extremely poor condition and contains few diagnostic sherds. It is probable that more Iron Age sherds are present within the handmade assemblage but they are not easily identified. Further work may be required once the handmade sherds have been examined by a specialist in Saxon pottery, however the values of the assemblage is limited given the poor condition of the pottery and the likely proportion of residual sherds.

3.4 Further Work

A brief note is required for publication.

Estimated Time Required: Further work may be required once the pottery has been examined by a specialist in Saxon pottery.

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Appendix 6: Romano-British Pottery

By Alice Lyons

1 Introduction

A total of 296 sherds, weighing 4.131kg, of Romano-British pottery were recovered during this excavation. The sherds have an average sherd weight of *c*. 14g; the pottery is significantly abraded, although some evidence for wear and use (sooty residues) survives.

The pottery was recovered from two sites (Farcet Road and Horsey Hill) along a water main that ran south of the Peterborough suburb of Stanground and to the northeast of the village of Farcet within the parish of Whittlesey. The largest amount of pottery, however, was recovered from the Farcet Road site (Table 1).

Site	Quantity	Weight (kg)	EVE	Weight (%)
Farcet Road site	263	3.554	2.05	86.03
Horsey Hill evaluation	4	0.106	0.00	2.57
Horsey Hill excavation	24	0.371	0.30	8.98
Unstratified	5	0.100	0.00	2.42
Total	**296**	**4.131**	**2.35**	**100.00**

Table A6.1. The pottery by site

This assemblage is of very great interest, however, as the Romano-British pottery was found in association with handmade wares that may have been produced in the Early Saxon period.

It seems likely that the pottery retrieved from the Farcet Road site (although much of it is not closely datable) may be later Roman in date. As this pottery was well-mixed with the handmade wares; together they could provide an indicator of continuity between the late Roman and Early Saxon periods.

Moreover, although the Romano-British wares recovered from the Horsey Hill evaluation and excavation are fewer in number; they were generally found in separate deposits (different features) to the handmade wares. This assemblage may well provide evidence for a landscape in transition, used differently by the Romano-British and Early Saxon communities.

The majority of the assemblage from both sites was recovered from deposits within features, with only a few sherds originating from unstratified deposits (Table 2). Pottery was found within ditches, layers and pits on both sites, although pottery was only recovered from post-holes on the Horsey Hill site.

Site	Ditch	Layer	Pit	Post-hole	Unstratified	Unallocated	Weight (kg) by site
Farcet Road site	1.661	1.224	0.669				3.554
Horsey Hill						0.106	0.106

evaluation							
Horsey Hill excavation	0.161	0.147	0.004	0.059			0.371
Unstratified					0.100		0.100
Total weight by feature type	**1.822**	**1.371**	**0.673**	**0.059**	**0.100**	**0.106**	**4.131**

Table A6.2. The pottery as found by site and feature type

2 Methodology

The assemblage was assessed in accordance with the guidelines laid down by the Study Group for Roman Pottery (Webster 1976; Darling 2004; Willis 2004). The total assemblage was studied and a preliminary catalogue was prepared.

The sherds were examined using a magnifying lamp (x10 magnification) and were divided into fabric groups defined on the basis of inclusion types present. The fabric codes are descriptive and abbreviated by the main letters of the title (Sandy grey ware = SGW). Vessel form was recorded. The sherds were counted and weighed to the nearest whole gram. Decoration and abrasion were also noted.

Non Romano-British handmade wares have been separated from this material and sent to the relevant specialist (Sarah Percival; NAU Archaeology) for assessment.

3 The Romano-British pottery

A total of twelve Romano-British fabrics were recovered during this project. This is a conservative assemblage spanning most of the Romano-British period, with most wares originating from the local Lower Nene Valley kilns.

Fabric	Code	Form	Quantity	Weight (kg)	EVE	Weight (%)
Nene Valley grey ware	NVGW	Beaker and dish	70	1.559	0.87	37.74
Sandy grey ware	SGW	Dish, jar, medium mouthed jar and wide mouthed jar	79	1.027	0.74	24.86
Nene Valley colour coat	NVCC	Beaker, dish, flanged dish, hunt cup, jar and medium mouthed jar.	52	0.575	0.31	13.92
Shell tempered ware	STW		26	0.382	0.00	9.25
Samian	SAM		11	0.156	0.00	3.78
Sandy oxidised ware	SOW		24	0.131	0.00	3.17
Fine grey ware	GW(FINE)		20	0.125	0.00	3.02
Sandy blue-grey ware	SBW	Mortarium and wide-mouthed jar	8	0.116	0.16	2.81
Nene Valley shell tempered ware	NVSTW	Storage jar	1	0.026	0.00	0.63
Nene Valley	NVWW	Flagon	3	0.012	0.21	0.29

white ware						
South Midland shell tempered ware	SMSTW	Medium mouthed jar	1	0.012	0.06	0.29
Grey with organic inclusions	GW(ORG)		1	0.010	0.00	0.24
TOTAL			296	4.131	2.35	100.00

Table A6.3: The Romano-British pottery fabrics, listed in descending order of weight percentage

It is notable that no amphora is present and only a small amount of central Gaulish samian. Such limited source of supply has been noted previously in the area by Evans (2003, 105) when describing the near by site at Haddon; however the scarcity of such early Roman specialist wares in the assemblage may be due to the later nature of the majority of the material.

The earliest fabrics found (although only in small quantities) were the fine grey ware London-type sherds and the 2nd century central Gaulish samian. The London-type grey ware sherds (Tomber and Dore 1998, 185) were known to have been produced in the Nene Valley, at Wattisfield in north Suffolk and West Stow in Suffolk also, as well as in London. These wares copied early samian forms using compass inscribed decoration and were produced between the mid 1st and mid 2nd AD (Tyers 1996, 170-171). The samian consisted of body and base sherds only, but one decorated piece depicting a male figure, perhaps from a Dr37 bowl (ibid. fig 92), was found. It is possible such a fine example of decoration had been retained after the vessel itself had broken. A complete makers stamp was also identified.

The most common fabric by weight and by estimated vessel equivalent (EVE) was the Nene Valley grey ware sherds. It was almost exclusively found in the form of straight-sided dishes with triangular rims, with one beaker/jar fragment also found. This material was known to have been produced (kilns have been discovered at Sibson and Stibbington) from the second quarter of the 2nd century until the late 3rd/early 4th century (Perrin 1999, 78).

The second most common fabric is an unsourced but locally produced sandy grey ware fabric. This material did not generally contain the calcite inclusions of the grey wares known to have been produced at Stanground (Cooper 1989, 60), so suggests another local clay source in the area was also exploited. This fabric was also commonly found in the form of straight-sided dishes with and without the triangular rim. Small numbers of jar types were also found. Several of these sherds retained sooty residues or fumes marks indicating they had been used as cooking vessels (perhaps lids).

Nene Valley colour coated wares formed the third most common fabric within this assemblage. These wares were known to have been produced at Stanground (Cooper 1989, 60) and also at the other major Lower Nene Valley production sites (such as Water Newton,

Chesterton, Sibson and Stibbington) from the late 2nd to early 5th centuries. The material found here was a mixture of the late 2nd to 3rd century beakers (such as those bearing hunting scenes) and the later Roman (4th century to early 5th century) thick walled straight-sided dishes. One sherd showed evidence of re-use.

Unsourced shell tempered wares, also probably from the Nene Valley, were the only other large group of wares found. However these were found as body sherds only and could not be assigned to a vessel type. The final fabric identified as originating in the Nene Valley was a white ware, found in the form of a 3rd century cupped rim flagon (although this may once have been colour coated and the slip worn away).

Small but significant amounts of locally produced Sandy oxidised wares and a sandy blue/grey coarse ware (found in the form of a mortarium) were also identified. Single sherds of a organic tempered grey ware and the Late Roman shelly ware (Tomber and Dore 1998, 115) were also found.

It is worthy of note that no late Roman redwares from Oxfordshire (Tyers 1996, 175-178) or Hadham (ibid 168-9) were found in this assemblage.

4 Discussion

The pottery was recovered from within the parish of Whittlesey from two sites along a water main that ran south of the Peterborough suburb of Stanground and to the north-east of the village of Farcet. This is an area that was at the eastern end of the Lower Nene Valley Romano-British industrial development (Cooper 1989, fig 3). This complex specialised in the production of colour-coated ceramic wares, although coarser vessels were also made for the local market. Indeed kilns located at Park Farm in Stanground were known to be making Nene Valley colour coated beakers and calcite tempered grey coarse wares (ibid, 64) during the early 3rd century. This assemblage, however, appears to be the detritus from low order domestic settlements with long ceramic histories which contain little direct evidence for pottery production (apart from a single waster sherd).

This assemblage is of very great interest, however, as the Romano-British pottery was found in association with handmade wares. As the majority of the Romano-British pottery can be dated to the later Roman (3rd to 4th century AD) period; this suggests an Early Saxon date for the handmade ware is likely. It is worthy of note that several of the Romano-British sherds have been modified and re-used which hints that some of the Romano-British pottery was kept in use by the Early Saxon community. Moreover, as pottery production within the Nene Valley continued into the early 5th century (Perrin 1996, 118), therefore some of these wares may indeed be contemporary.

The regional research framework for this period states:

"While sites with 'long' stratigraphies spanning the 4th and 5th centuries are not unknown in this latter region (e.g. at Latimer (northern Bucks), and advocated at Rivenhall, Essex), we need to become more adept at recognising them here, and also in areas where Germanic data is more plentiful if we are to advance our understanding of the settlement history of the region. One of the ways 'long' stratigraphies might be identifiable, paradoxically, is from the treatment of certain classes of Roman artefacts. On some sites (e.g. West Stow, Mucking, Hinxton, and probably Heybridge, Essex) these seem to have been deliberately collected and curated. This suggests that they post-date the disappearance of ceramics use and must be later than c.AD445/50. Quantification of Roman material in what are sometimes dismissed as very late Roman levels might restore post-Roman strata to some sort of archaeological visibility " (Going 1997, 41).

5 Recommendation for further work

- To integrate the final spot dates of the handmade material into the Roman catalogue to refine dating (0.25 day).
- To assign the pottery to vessel type and compare this pottery to material previously excavated in the area (1 day).
- To place this pottery in the context of the two sites (0.5 day).
- Prepare a short illustration catalogue (0.5 day)
- Prepare a publication text (1 day).
- Moreover the samian makers stamp should be sent to a specialist for identification (0.25 day).

A total of 3.5 days.

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Addendum: The Romano-British pottery catalogue

Context Number	Feature	Cut	FABRIC	DSC	FORM	QTY	WT	EVE	AB	COMMENT	SPOT DATE
33			NVCC	RUB	Beaker	4	106		YY	REUSED IN SAXON TIMES?	C3-C4
507	Ditch	508	GW(FINE)	UB		2	2		YY		C3-C4
507	Ditch	508	NVGW	U		1	4		YY		C3-C4
507	Ditch	508	SOW	B		1	21		YYY		C3-C4
520	Ditch	521	SAM	B		1	27		YY		MC1-EC3
520	Ditch	521	SGW	U		4	26		Y		LC1-C4
520	Ditch	521	SGW	R	Wide mouthed jar	1	20	9	YY		M/LC1-E/MC2
539	Pit	542	SOW	B		1	8		Y		C1-C3
548	Pit	552	GW(ORG)	U		1	10		YY		C1-C4
548	Pit	552	NVGW	U		4	21		YY		C3-C4
548	Pit	552	NVSTW	U	Storage jar	1	26		YY		C1-C3
548	Pit	552	NVWW	R	Flagon	1	6	21	YY		C3
548	Pit	552	SAM	U		1	7		N		C2
550	Pit	552	NVGW	U		1	2		YY		C3-C4
571	Pit	572	NVGW	RU	Dish	7	300	12	N		C2-C3
573	Layer		GW(FINE)	U		2	9		YYY		C3-C4
573	Layer		NVCC	B	Beaker	1	35		YYY		LC2-C4
573	Layer		NVGW	U		1	9		YY		C3-C4
573	Layer		SAM	UDB		3	61		YYY		MC1-EC3
573	Layer		SBW	RUD	Wide mouthed jar	6	62	16	YY		C3-C4
573	Layer		SGW	U		8	37		YY	?WASTER	LC1-C4
573	Layer		SGW	UB		23	188		YY		LC1-C4
573	Layer		SGW	R	Dish	1	27	6	YY		MC2-MC3
573	Layer		SGW	R	Medium mouthed jar	1	8	14	YY		C2-C3
578	Layer		GW(FINE)	U		2	2		YY		C3-C4
578	Layer		NVCC	U		1	4		YY		LC2-C4
578	Layer		NVGW	UB		22	567		YY		C3-C4
578	Layer		SGW	R	Dish	1	27	9	YY		?C2
578	Layer		SOW	UB		7	23		YY		C2-C4
578	Layer		STW	U		5	21		Y		LC3-C4
603	Layer		NVGW	RU	Dish	4	74	12	Y		C2-C3
603	Layer		SAM	U		2	2		Y		MC1-EC3
604	Layer		NVGW	R	Dish	2	68	8	N		C2-C3
623	Ditch	624	NVCC	D	Hunt cup	1	8		YY		EC3
623	Ditch	624	SGW	U		3	53		YY		LC1-C4
625	Ditch	626	GW(FINE)	U		3	35		YY		C3-C4
625	Ditch	626	NVCC	UD		9	14		Y		LC2-C3
625	Ditch	626	NVGW	U		9	88		Y		C3-C4
625	Ditch	626	SAM	D		1	36		N		M/LC1-

Context Number	Feature	Cut	FABRIC	DSC	FORM	QTY	WT	EVE	AB	COMMENT	SPOT DATE
											EC2
625	Ditch	626	SGW	U		1	4		YY		C4-?EC5
625	Ditch	626	STW	U		1	10		YY		LC3-C4
627	Ditch	628	GW(FINE)	D		2	10		YYY		MC1-MC2
627	Ditch	628	NVGW	RU	Dish	3	56	10	YY		C2-C3
627	Ditch	628	NVGW	R	Beaker	1	10	11	YY		C3-C4
627	Ditch	628	NVWW	U		2	6		YY		C3-C4
627	Ditch	628	SGW	R	Dish	3	43	6	YY		C2-C4
627	Ditch	628	STW	U		3	89		YY		LC3-C4
640	Ditch	641	NVCC	RUB	Dish	6	49	7	YY		LC2-C3
640	Ditch	641	SGW	B		1	43		YY	REUSED IN SAXON TIMES?	LC1-C4
659	Ditch	660	NVGW	R	Dish	5	140	26	Y		C3-C4
659	Ditch	660	SGW	U		3	4		YY		LC1-C4
697	Pit	698	SGW	U		1	1		Y		C4-EC5
697	Pit	698	STW	U		2	7		YY		LC3-C4
706	Pit	707	SGW	UB		2	23		YY		LC1-C4
717	Ditch	718	GW(FINE)	D		1	9		YYYY		MC1-MC2
717	Ditch	718	NVCC	UB		16	180		YY		C4
717	Ditch	718	NVCC	U		1	25		YY		C3-C4
717	Ditch	718	SGW	B		1	27		YY		LC1-C4
724	Ditch	725	NVGW	RUB	Dish	6	142	8	Y		C3-C4
724	Ditch	725	SGW	U		2	6		YY		LC3-C4
724	Ditch	725	STW	U		2	58		Y		LC3-C4
748	Ditch	750	SGW	U		2	36		YY		LC1-C4
755	Ditch	757	SOW	U		3	8		YY		C1-C3
758	Ditch	760	GW(FINE)	UDB		4	7		YY		MC1-MC2
758	Ditch	760	SGW	UB		4	55		Y		LC1-C4
758	Ditch	760	SGW	R	Dish	1	26	5	YY		MC2-MC3
758	Ditch	760	SOW	U		6	34		Y		C2-C3
758	Ditch	760	STW	U		4	22		Y		?LC3-C4
765	Ditch	766	SGW	RUD	Dish	4	19	5	Y		C2-C4
777	Ditch	778	NVCC	D		1	1		Y		LC2-C3
777	Ditch	778	SGW	UD		2	1		YY		LC1-C4
779	Ditch	1209	SAM	B		2	22		Y		MC1-EC3
779	Ditch	1209	SBW	U		1	6		YYY		LC1-C3
779	Ditch	1209	SGW	U		1	37		YYY		LC1-C4
785	Pit		GW(FINE)	U		2	1		YY		C3-C4
785	Pit		SOW	UD		2	26		Y		C1-C3
785	Pit		STW	UD		9	175		Y		LC3-C4
786	Pit	787	NVGW	U		1	8		Y		C2-C4
786	Pit	787	SBW	UB	Mortarium	1	48		Y		C2-C3
1104	Ditch	1106	GW(FINE)	D		1	39		YY		C3-C4
1104	Ditch	1106	SGW	U		1	39		YY		LC1-C4
1107	Ditch	1108	SGW	R	Dish	1	64	20	YY		MC2-

Context Number	Feature	Cut	FABRIC	DSC	FORM	QTY	WT	EVE	AB	COMMENT	SPOT DATE
											MC3
2081	Ditch	2084	SGW	B		1	76		YY	REUSED IN SAXON TIMES	C4
2198	Layer	2235	NVCC	U		1	29		YY		C4-EC5
2249	Ditch	2220	SOW	U		1	7		YYY		C2-C4
2255	Layer	2256	SOW	U		1	2		YYY		C1-C3
2283	Layer		NVCC	D		1	9		N		C3-C4
2283	Layer		NVCC	R	Jar	1	12		YY		C4
2283	Layer		SGW	U		2	82		YY	VERY THICK SHERD, POSSIBLE MID SAXON	
2392	Layer		GW(FINE)	B		1	11		YY		C3-C4
2392	Layer		SOW	U		2	2		YY		C1-C3
2393	Ditch	2394	NVGW	U		1	25		YY		C3-C4
2395	Ditch	2396	NVCC	RUD	Flanged dish	3	42	9	YY		C4
2395	Ditch	2396	SGW	U		1	6		YY		LC1-C4
2399	Post-hole	2400	NVCC	B	Beaker	1	34		N		LC2-C4
2401	Post-hole	2402	NVCC	R	Medium mouthed jar	1	7	15	YY		C3-C4
2401	Post-hole	2402	SMSTW	R	Medium mouthed jar	1	12	6	YY		LC3-C4
2403	Post-hole	2404	NVCC	U		1	1		Y		LC2-C4
2403	Post-hole	2404	NVGW	U		1	4		Y		C3-C4
2403	Post-hole	2404	SAM	U		1	1		Y		MC1-EC3
2407	Ditch	2408	SGW	R	Jar	1	5		YY		C4
2480	Pit	2481	SGW	U		1	4		YY		LC1-C4
99999	U/S		NVCC	D		3	19		Y		C4
99999	U/S		NVGW	B	Beaker	1	41		YY	REUSED IN SAXON TIMES?	C3-C4
99999	U/S		SGW	B		1	40		YY		C3-C4

Key: C=century, E=Early, M= Mid, L=Late. R= rim, U= undecorated body sherd, D= decorated body sherd, B= base. The key to the fabric codes is shown in Table 2

Appendix 7: Saxon Pottery

By Paul Blinkhorn

1 Introduction

The pottery assemblage comprised 297 sherds with a total weight of 2,869g. The estimated vessel equivalent (EVE), by summation of surviving rimsherd circumference was 1.28. The range of pottery types present indicates that there were two distinct phases of activity at the site, one Iron Age and the other early to middle Anglo-Saxon.

2 Iron Age Pottery

(240 sherds, 2212g, EVE = 0.99)The following fabrics were noted:

Iron Age

F1: Coarse shell up to 10mm. Rare to sparse sub-angular quartz up to 0.2mm. 214 sherds, 2,033g, EVE = 0.94.

F2: Coarse shell up to 10mm, sparse sub-angular red ironstone up to 5mm. Rare to sparse sub-angular quartz up to 0.2mm. 1 sherd, 6g, EVE = 0

F3: Moderate sub-angular quartz up to 1mm, most < 0.5mm. Rare to sparse shell fragments up to 2mm. 16 sherds, 137g, EVE = 0.02.

F4: Sparse to moderate sub-angular grog up to 1mm, rare shell up to 2mm. 13 sherds, 93g, EVE = 0.03.

F5: Very fine fabric, sparse to moderate pounded shell up to 1mm, some visible mica flecks. 2 sherds, 18g, EVE = 0.

The pottery occurrence by number and weight of sherds per context by fabric type is shown in Table 1.

The Iron Age assemblage was very fragmented (mean sherd weight = 9.2g), with most assemblages comprising small groups of plain bodysherds with no diagnostic features. All the fabrics were variations on shell, sand and/or grog, with flint tempered fabrics, usually indicative of a late Bronze Age or Early Iron Age date, entirely absent. This suggests that the assemblage is all of middle and/or late Iron Age date. There also does not appear to be any wheel-thrown Iron Age pottery present, although much of the assemblage has suffered attrition to a greater or lesser degree, meaning that the surfaces of some sherds are too abraded to allow confident identification of the method of manufacture.

A small number of sherds with scoring were noted. Scored ware (Elsdon 1992), which is commonly found on middle – late Iron age

sites in the south-east midlands, particularly Northamptonshire, is thought to be of middle Iron Age date, ie. 5th/4th – 1st centuries BC, although it does appear alongside wheel-thrown wares in later Iron Age pottery assemblages in the lower Nene Valley (Knight 2002, 134-6).

Very little pottery could be reconstructed to allow any sort of meaningful analysis of the vessel forms. A few diagnostic sherds were present (Figs. PE1 - 5), but these were nearly all from small bowls or barrel-shaped vessels with simple upright, often knife-cut rims. Such forms made up nearly half of the rimsherds from the site. Knight (ibid. 134) has suggested that such forms are typical of the later Iron Age, perhaps the 2nd – 1st century BC, which seems a reasonable general date for this assemblage.

Illustrations

Fig. PE1. Context 2389, fabric F1. Rim from ?ovoid bowl. Dark grey fabric with dark brown surfaces. Outer surface and upper part of inner heavy smoke-blackened.

Fig. PE2. Context 2389, fabric F1. Rim from ?ovoid bowl. Dark grey fabric with light brown surfaces. Outer surface and upper part of inner heavy smoke-blackened.

Fig. PE3. Context 2389, fabric F1. Rim from ?ovoid bowl. Dark grey fabric with brown surfaces.

Fig. PE4. Context 516, fabric F4. Sherd with traces of multiple piercing. Cheese press? Black fabric with light grey outer surface.

Fig. PE5. Context 604, fabric F1. Rimsherd from small jar. Uniform black fabric, scoring on outer surface.

Early – Middle Saxon Pottery (57 sherds, 657g, EVE = 0.31)

The following fabrics were noted:

Early/Middle Saxon

F10: Granite. Sparse to moderate angular fragments of granite up to 3mm, free mica platelets, quartz grains etc. 20 sherds, 143g, EVE = 0.08.

F11: Moderate to dense sub-angular quartz up to 1mm. 28 sherds, 167g, EVE = 0.09.

F12: Quartz and chaff. Moderate to dense fine sub-angular quartz up to 1mm, most less than 0.5mm. Moderate organic voids up to 5mm. 2 sherds, 73g, EVE = 0.09.

Middle Saxon

F95: *Ipswich Ware*, AD725-850 (Blinkhorn in prep.) Middle Saxon, slow-wheel made ware, manufactured exclusively in the eponymous Suffolk wic. The material probably had a currency of AD 725x740 - mid 9th century at sites outside East Anglia. There are two main fabric

types, although individual vessels which do not conform to these groups also occur. All the sherds were in the Group 1 fabric, and probably from the same vessel. Hard and slightly sandy to the touch, with visible small quartz grains and some shreds of mica. Frequent fairly well-sorted angular to sub-angular grains of quartz, generally measuring below 0.3 mm in size but with some larger grains, including a number which are polycrystalline in appearance. 4 sherds, 113g, EVE = 0.

F97: *Maxey-type Ware*. Exact chronology uncertain, but generally dated c. AD650-850 (eg. Hurst 1976). Wet-hand finished, reddish-orange to black surfaces. Soft to fairly hard, with abundant fossil shell platelets up to 10mm. Vessels usually straight sided bowls with upright, triangular, rim-mounted pierced lugs. 3 sherds, 61g, EVE = 0.03.

The pottery occurrence by number and weight of sherds per context by fabric type is shown in Table 1.

The presence of Ipswich and Maxey ware shows that there was activity here in the middle Saxon period, probably the 8th – 9th centuries. The hand-built wares are slightly more problematic. The dating of Anglo-Saxon hand-built pottery is entirely reliant on the presence of decorated sherds, but none were noted here. It seems that the Anglo-Saxons generally stopped decorating hand-built pottery around the beginning of the 7thcentury (Myres 1977, 1), but it cannot be said with certainty that an assemblage which consists of only plain sherds is of 7th century date. Usually, decorated pottery only comprises around 3 – 4% of domestic early Saxon assemblages, as was the case at sites such as West Stow, Suffolk (West 1985) and Mucking, Essex (Hamerow 1993), so a small assemblage, such as this one, which lacks decorated pottery could is difficult to date with any certainty other than to within the early/middle Saxon period.

In fabric terms, the fact that a large proportion of the assemblage comprises granitic pottery is worthy of discussion, as it is not the first time such pottery has been noted in the Peterborough area, despite the fact that granite is not present in any quantity in the local geology. Excavations at Orton Hall Farm near Peterborough (Mackreth, 1978) also produced pottery tempered with granite, and as with this site, it made up a large part of the assemblage. It was suggested that the Orton Hall pottery was quite early, perhaps dating to the 5th century, but similar material was also noted at West Cotton in Northamptonshire, where the decorated pottery suggested that occupation did not begin until the 6th century (Blinkhorn in print). It is perhaps significant that, here, just two sherds of hand-built Anglo-Saxon pottery occurred in contexts which produced datable middle Saxon material, ie Ipswich and Maxey Wares. This would suggest very strongly that such pottery was not in use by the 8th century. It is certainly a pattern that has been noted elsewhere in Cambridgeshire. For example, excavations at the Ashwell site at West Fen Road, Ely produced 220 sherds of Ipswich ware, but just nine of hand-built pottery (Blinkhorn 2005). The picture is

also similar in Norfolk and Suffolk; despite hand-built pottery being relatively common in the 5th – 7th century, once Ipswich ware began to be made in quantity, it fell from use, with the products of the Ipswich kilns being used in settlements of all kinds all over the kingdom, including much of Cambridgeshire. It is probable therefore that the hand-built pottery at this site represents activity at some time during the 5th and 7th centuries, but it is impossible to refine the dating beyond that.

The hand-built assemblage is rather fragmented, and no cross-fits between different contexts were made. It was possible to partially reconstruct a large rimsherd from a vessel with a pierced neck (Fig. PE6), and a flat base from a vessel of unknown type (Fig. PE7).

The presence of Ipswich and Maxey ware is not unusual at sites in the region. As noted, large quantities are known from Ely, and other sites have also produced them, such as Maxey itself (Addyman 1964), although the Ipswich ware was not noted at the time. The possible middle Saxon ecclesiastical site at Castor produced a fairly large group (Green at al 1987), and a single sherd of Ipswich ware was noted at Orton Grange Farm near Peterborough (Blinkhorn in archive). All the Ipswich ware from this site is plain bodysherds, probably from the same vessel; it is quite large and of a globular form, with walls which are relatively thin, and more typical of the products of the middle Saxon Buttermarket kiln in the town (Blinkhorn 1989). The Maxey ware sherds appear to be from typical baggy vessels with upright rims.

Illustrations

Fig. PE6: Unstratified, fabric F12. Sherd from upper part of jar with pierced neck. Uniform black fabric with reddish-brown patch on outer surface.

Fig. PE7: Context 2525, fabric F11. Base sherd. Uniform black fabric with reddish-brown patch on outer surface.

	F1		F2		F3		F4		F5		F10		F11		F12		F95		F97		
Context	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	Date
509	1	10																			IA
513	1	3																			IA?
514	1	2																			IA?
516	4	12					1	6													IA?
519	4	17					1	4													IA?
520	7	28							1	3											IA
560	1	11																			IA
571	4	13																			IA?
573	12	55																			IA
578	4	22																			IA
580	1	34																			IA
585	7	86																			IA
586	4	157																			IA
590	9	90			1	18															IA
600	12	33																			IA
603	1	3																			IA
604	1	15																			MIA
610	4	24																			IA
615	1	8																			IA?
621	1	4																			IA?
623							1	3													IA?
642	1	1																			IA?
654	1	3																			IA?
663	6	14			1	4															IA?
687	9	41																			IA
704	1	2																			IA?
706	7	48			2	9															IA
708	1	1																			IA
719	1	17																			IA
724	1	19							1	15											IA
758	2	18																			IA
762	8	34																			IA
765	2	12																			IA?
793	2	2																			IA?
799	4	10																			IA?
801	1	1																			IA?
803					4	17															IA?
804	2	5																			IA?
806	1	17																			IA
816	1	8																			IA?

	F1		F2		F3		F4		F5		F10		F11		F12		F95		F97		
Context	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	Date
823	1	7																			IA
826	1	8																			IA
829	1	6																			IA
1000	2	22																			IA
1002	12	50					3	14													IA
1004	2	6																			IA
1012	1	1																			IA?
1022							1	1													IA?
1026	1	2																			IA
1028	2	5																			IA?
1032	1	2																			IA?
1046	1	7																			MIA?
1056					1	5															IA
1060	1	77																			MIA
1072	1	32																			IA
1074	3	10					1	4													IA?
1090	2	6																			IA?
1092	2	8																			IA
1094	1	12																			IA?
1104	2	21																			MIA?
2071	1	2																			IA
2198											1	12							2	42	MS
2199											1	5							1	19	MS
2200	1	10																			IA
2209											1	4									E/MS
2218											1	8									E/MS
2231											1	3	3	23							E/MS
2257							1	12													IA
2261							1	18													IA
2281	1	19																			IA
2283	12	218	1	6													2	82			MS
2284	2	30			1	9															IA
2356													2	17							E/MS
2361											2	22									E/MS
2363	1	10									2	27	1	23							E/MS
2379							2	23													IA
2392	2	21											3	27							E/MS
2393	2	34															1	22			MS
2395	2	30																			MIA
2397	1	9																			IA

	F1		F2		F3		F4		F5		F10		F11		F12		F95		F97		
Context	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	Date
2398	2	23					1	8													IA
2403	2	13																			IA
2419	2	7																			IA
2426													1	12							E/MS
2427	3	18									1	3									E/MS?
2443	3	21															1	9			MS
2455											4	26									E/MS
2460											1	1									E/MS
2462											1	3									E/MS
2525													6	75							E/MS
2547	2	76																			IA
2562													8	45							E/MS
2577											1	7									E/MS
99999	8	337									3	22	4	45							U/S A1
99999															2	73					U/S A6
Total	215	2040	1	6	16	137	13	93	2	18	20	143	28	267	2	73	4	113	3	61	

Table A7.1: Pottery occurrence by number and weight (in g) of sherds per context by fabric type

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Appendix 8: Ceramic Building Material

By Paul R. Sealey

1 Summary and Conclusions

The PET WRM05 excavations cover two separate sites 1.5km apart, Farcet Road and Horsey Hill. Farcet Road produced only one fragment of Roman brick and 820g of fired-clay. But the quantities recovered at Horsey Hill were significant: 30kg of Roman brick and tile, and 14kg of fired-clay of Roman or medieval date. The Roman brick and tile there includes brick, roofing tiles (*tegulae* and *imbrices*) and box flue tiles. One brick is wedge-shaped (a *cuneatus*) and shows it came from a structure with arched features. Box flue tiles were components of central heating systems and show that the building in question was one of some status and pretensions. Some of the box flue tile is roller-stamped and would have been made between *c*.AD 75 and 200. Stylistically the roller-stamped flue tile is reminiscent of those from Piddington (Northamptonshire) and Gadebridge Villa (Hertfordshire). The typology of one roofing tile suggests the building(s) at Horsey Hill was extended or repaired in late antiquity. The fired-clay from Horsey Hill is a large and interesting assemblage. Most is wattle-and-daub from buildings destroyed by fire. Many of the fragments are large and provide useful information on the style of wattle-and-daub made there.

2 Quantification and Condition

2.1 Farcet Road

material	*fragment count*	*fragment weight*	*average weight*
Roman brick	1	179g	179g
Fired-clay	68	820g	12g

Table A8.1. Stratified Roman Brick and Fired Clay from Farcet Road

There were 19 contexts with fired clay. The largest single contexts have only 202, 188 and 165g (Contexts 507, 585 and 578 respectively). Bearing in mind that Area 1 had two round houses, the dearth of fired-clay suggests that these buildings were not destroyed by fire. The condition of the material is poor; nearly all of it consists of tiny abraded scraps with little or no indication of the original structure. Only one fragment has a wattle impression showing that at least some was architectural in origin. The Roman brick had two original surfaces and is 36mm thick showing that it is indeed brick, as opposed to tile (see below).

2.2 Horsey Hill

material	fragment count	fragment weight	average weight
Roman brick	199	28.752kg	144.5g
Fired clay	436	14.518kg	33.3g

Table A8.2. Stratified Fired-clay and Roman Brick and Tile from Horsey Hill

There were 21 contexts with Roman brick and tile at Horsey Hill. Most of it came from only 3 contexts: 2081 with 12.378kg, 2082 with 9.008kg and 2282 with 3.191. A further 19 brick and tile fragments weighing 1.541kg were unstratified. Although there were no complete bricks or tiles, much of the material consists of large unweathered fragments. None had any mortar in place.

The fired clay came from 31 contexts. The largest single groups were 2392 with 6.27kg, and 2283 with 1.933kg. It is consistently hard-fired suggesting it had been created by a sustained and major conflagration. Some of the fragments are very large for fired-clay and preserve structural details that do not usually survive.

2.2.1 The Horsey Hill Fired Clay

Many of the fragments of fired clay preserve the impressions of slender and straight lengths of wood with circular sections. They were created when the wattles of wattle-and-daub walls had been burnt. These are typically 10-20mm thick suggesting young branches or saplings, quite possible from coppiced trees. A very few wattle impressions are those of small rectangular posts. Many fragments of this fired wattle-and-daub have part of the original surface of the wall. It proved possible to estimate the thickness of these walls: none were more than 100mm thick, and most fell within the range 75-100mm. No fired-clay fragments have features suggesting ovens, and the likelihood is that it derived entirely from buildings. Architectural wattle-and-daub this well preserved is unusual and the Horsey Hill assemblage deserves thorough examination. Two fabrics are present. One is red and sandy; the other (and much rarer) fabric is white and chalky.

2.2.2 Typology of the Horsey Hill Brick and Tile

The following categories of brick and tile were present:

- *tegulae* (flat roofing tiles with flanges);
- *imbrices* (arched narrow tiles used to bridge the junctions between *tegulae*);
- bricks;
- solid wedge-shaped (tapered) voussoir bricks for arches; and

- box flue tiles (hollow rectangular bricks for conducing hot air through central heating systems in walls and floors).

Fragments without diagnostic typological features were identified on the basis suggested by Major and Tyrrell (2003,163). In their view fragments more than 27mm thick would be brick, with *tegulae* falling within the range 18-27mm thick. Some *tegulae* had parts of their flanges; most are simple uprights with flat upper surfaces. One *tegula* has a lower cutaway (a moulding of the lower corner to help it fit snugly over the *tegula* below on the finished roof); this particular cutaway is Warry Type D (Warry 2006,249-51,257-8,263), dated by him *c.*AD 240-380. Box flue tile at Horsey Hill is decorated by simple combing or by roller-stamped patterns. Several different roller-stamped patterns are present. One of them is a diamond-with-lattice pattern reminiscent of flue tiles found at Piddington (Northamptonshire) and Gadebridge Villa (Hertfordshire) (Betts *et al*. 1997,115-17). Other patterns at Horsey Hill have no parallels in the Betts corpus. Seventeen fragments of brick and tile have shallow grooves, often executed in curved arcs by the finger. Such 'signatures' (as they are known) are not uncommon. It is odd that none of these bricks or tiles have impressions of animals (or children) that strayed onto them while they were drying before firing; presumably the tilers took precautions to protect their products from such accidents.

2.2.3 Fabric of the Horsey Hill Brick and Tile

Virtually all the brick is in a sandy red fabric; although there is some variation in the size and incidence of the sand, the material gives every impression of homogeneity. Division into fabric groups is unnecessary. The only exception is a combed box flue tile in a more friable shell-tempered fabric. If it were not local, the source might have been the tileries at Harrold (Bedfordshire) where it known that shell-tempered box flue tile was manufactured (Betts *et al*. 1997,51). No Roman tile kilns are known in Cambridgeshire and it is not otherwise possible to assign the Horsey Hill brick and tile to a source.

3 Roman Brick and Tile as Evidence for Site History and Status at Horsey Hill

The large dumps of broken Roman brick and tile at Horsey Hill are major source material for the building(s) in which they were incorporated. As box flue tile was used to conduct hot air through walls and floors in a central heating system, the source building(s) was evidently of some status and pretension. Roller-stamping of flue tiles was only practised in early Roman Britain, *c.*AD 75-200 (Betts *et al*. 1997,51); and this allows one to gauge when the structure was build. The Warry Type D cutaway on one of the *tegulae* typically dates *c.*AD 240-380. Although a very few earlier examples are known, its presence here holds out the possibility that the roof was repaired or extended

later in the Roman period. One of the more interesting bricks from Horsey Hill is the solid voussoir, a brick known as a *cuneatus* (Brodribb 1987,43-7). Such bricks are tapered and were used for making arches, so the Horsey Hill structure(s) clearly had arched windows or doorways.

4 Building Materials for Illustration

Seven fragments merit illustration; all are from Horsey Hill. Three are fired-clay daub with wattle impressions, from Context 2283 (round wattles) and 2392 (two round, and one rectangular wattle impressions). Three pieces of roller-stamped box flue tile need illustration, from contexts 2022, 2169 and 9999.

5 Research Design

A report on the PET WRM05 material is underway that will take four days, the fee for which includes the cost of this evaluation.

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Appendix 9: Faunal remains

By Chris Faine

1 Introduction

A total of 642 bone fragments were recovered by hand from the excavations, with 310 being identifiable to species (48.2% of the total sample). Faunal remains were recovered from a variety of contexts, including pits, ditches and layers/spreads. It is worth noting that this assemblage effectively represents material from two separate sites (Horsey Hill and Farcet Road) situated some 1.5km apart. By far the largest proportion of faunal remains was recovered from the Horsey Hill site (93.6% of the identifiable sample). It is the intention of this report to initially examine each assemblage separately.

2 Methodology

All data was initially recorded using a specially written MS Access database. All elements identifiable to species and over 25% complete were included in the database. Loose teeth, caudal vertebra and ribs without proximal epiphyses were noted but not included in any quantification. Elements not identifiable to species were classed as "large/medium/small mammal" but again not included in any quantification. 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 & Reilly 1988). Initially the whole identifiable assemblage was quantified in terms of number of individual fragments (NISP) and minimum numbers of individuals MNI (see Table A9.1). Any further analysis relevant to individual taxa and/or features will be covered in the relevant sections. The ageing of the sheep/goat population (where possible), was largely achieved by examining the wear stages of mandibular cheek teeth (after Grant 1982).

As mentioned above, the states of epiphyseal fusion for all relevant bones were recorded to provide a broad age range for the major domesticates (after Getty 1975). A variety of metrical analyses was carried out on the assemblage. All measurements were carried out according to the conventions of von den Driesch (1976). Measurements were either achieved using a 150mm sliding calliper or an osteometric board in the case of larger bones.

Any instances of butchery were noted and recorded using a separate table from the main database. The type of lesion, its position, severity and direction were all noted. The presence of any further taphonomy,

i.e. burning, gnawing etc was also noted. A separate table for any pathology, giving the position and type of lesion was also used.

3 Species identified

Table A9.1 shows the species distribution for both assemblages. Nine species were identified, with both assemblages being dominated by domestic mammals (cattle, sheep/goat, pig, horse, dog, fowl and goose). Much smaller proportions of wild mammals were found in both contexts in the form of red and roe deer.

4 Bones by site

4.1 Horsey Hill

The vast majority of identifiable bones were recovered from the Horsey Hill site, with the broad species distribution being shown in table A9.1. Animal remains were recovered from twenty-five contexts, ranging in date from the Iron Age to Saxon periods. As is the case with the assemblage as a whole, the Horsey Hill sample is dominated by the domestic mammals, with cattle being the most prevalent (52.3% of the identifiable sample).

The largest number of fragments was recovered from layer **2932** (62 fragments). This contained a variety of butchered domestic mammal bones along with domestic fowl, goose and a number of butchered red deer vertebrae. Three intact cattle horn cores were also recovered. Metrical analysis of these horn cores suggests animals of comparable size and morphology to those from other contemporary sites. Metrical analysis of single intact cattle metacarpal from this context suggests a female individual. Animal remains were also recovered from six other layers (**2209**, **2198**, **2283**, **2419, 2576** and **2577**). These largely consisted of butchered domestic mammal remains, along with a single butchered domestic fowl femur from **2283**.

Fragments were also recovered from several ditch fills. Context **2219** contained vertebrae and long bones from at least two adult horses. Metrical analysis of an intact metacarpal suggests and individual with a withers height of around 1.35m (about 13 ½ hands). Horse remains were also recovered from context **2228**. Context **2393** contained a number of adult cattle mandibles (i.e. 2 to 4 years of age). The remaining ditch fills (**2225**, **2392**, **2395**, **2407** and **2571**) contained a variety of butchered cattle, sheep/goat and pig remains.

The remaining animal bone from the Horsey Hill site was recovered from pits. Context **2480** contained a number of cervical vertebrae and lower limb elements from a single adult horse. Context **2239** contained

a fragmented humerus and sacral vertebra provisionally identified as dog. The humerus shows evidence of either a developmental or congenital defect of the diaphysis. This could suggest that the animal was kept as a pet as such a defect would have made walking (and hence use as a working dog), difficult. The remaining pits (**2284**, **2291** and **2478**) again contained a variety of butchered domestic mammal remains.

4.2 Farcet Road

Far fewer identifiable fragments were recovered from the Farcet road site. Animal remains were recovered from ten contexts, dating from the Iron Age period. In terms of species distribution the assemblage is again dominated by domestic mammals. However, in contrast to the Horsey Hill sample sheep/goat make up the largest section of the assemblage (64.5% of the identifiable sample). As the sample is so small few conclusions can be drawn from this however, and the presence of so many sheep remains in context 1038 could artificially skew any quantification. As mentioned above, the largest number of fragments was recovered from a pit fill (1038). This consisted of a number of sheep/goat lower limb bones, scapulae and a mandible from at least two juvenile (6 months to 1 year of age), individuals. Out of thirteen fragments found in this context nine showed evidence of butchery.

The remaining contexts from this assemblage contained only small amounts of bone. Material from the two remaining pit fills (586 and 710) consisted of fragments of sheep/goat metatarsal and cattle radius and astragalus respectively. Material from ditches (511, 516, 627 and 748) again consisted largely of butchered adult cattle and sheep/goat remains, with a single roe deer metatarsal being recovered from context 511 (the only example of wild fauna from the Farcet road assemblage). The fill of a possible ring- ditch (799) consisted of a badly preserved cattle tibia shaft. Material from layers consisted of a single butchered cattle axis from context 603, and a sheep/goat 1st phalange and radius, and a single fragment of horse radius from context 513.

5 Discussion

In terms of the assemblage as a whole analysis of the fauna remains suggest domestic rather than any proto-industrial waste. With regard to the Horsey Hill assemblage, with the exception of a few contexts (**2932** and **2219** for example), the faunal remains are too scattered to make any assumptions on a context-by-context basis. This is also the case for the Farcet road sample (with the exception of context **1038**). Epiphyseal fusion data for the entire assemblage suggests livestock were raised to maturity then killed; a feature of a meat based animal

husbandry strategy, although the assemblage is too small to determine meaningful kill-off ratios.

The disproportionate distribution of faunal remains between the two assemblages remains difficult to explain. If not due to sampling differences, it could be to differing preservation between the two sites (the majority of contexts containing no identifiable fragments came from the Farcet road assemblage). The main factors that may have had an influence upon preservation are geology and subsequent land use; in this case, these are very similar for both sites. Since the site dating is also similar and excavation methods identical, it is difficult to account for the great discrepancy in the two assemblages. An explanation for this may be forthcoming once full analysis of all aspects of the sites has been performed.

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		Horsey Hill		
Species	**NISP**	**NISP%**	**MNI**	**MNI%**
Domestic Mammals				
Cattle (*Bos*)	162	52.3	58	45.2
Sheep/Goat (*Ovis/Capra*)	51	16.5	28	22
Horse (*Equus caballus*)	41	13.3	17	12
Pig (*Sus scrofa*)	37	11.9	19	13.2
Dog (*Canis familiaris*)	4	1.3	3	1
Wild Mammals				
Red deer (*Cervus elaphus*)	5	1.6	2	2
Roe deer (*Capreolus capreolus*)	1	0.4	1	0.8
Birds				
Domestic fowl (*Gallus gallus*)	8	2.3	4	3
Domestic goose (*Anser anser*)	1	0.4	1	0.8
TOTAL:	**310**	**100**	**133**	**100**
		Farcet Road		
Domestic Mammals				
Cattle (*Bos*)	8	25.8	8	47
Sheep/Goat (*Ovis/Capra*)	20	64.5	6	35.3
Horse (*Equus caballus*)	2	6.5	2	11.8
Wild Mammals				
Roe Deer (*Capreolus capreolus)*	1	3.2	1	5.9
TOTAL:	**31**	**100**	**17**	**100**

Table A9.1 Species distribution for the Farcet Road and Horsey Hill assemblages

Appendix 10: Macrobotanical Remains

By Val Fryer

1 Introduction and method statement

Excavations in advance of the construction of the Whittlesey reinforcement main near Peterborough, undertaken by CAM ARC (formerly Cambridgeshire Archaeology Field Unit), revealed features of possible Bronze Age, Iron Age, Roman and Late Saxon date. The work was conducted within the two distinct areas of Horsey Hill and Farcet Road, the former producing evidence for the deposition of refuse and building materials of probable Roman date over earlier features, whilst the latter revealed traces of two Iron Age buildings and later Roman ditches.

Samples for the retrieval of the plant macrofossil assemblages were taken from both areas, and one hundred and sixty samples were submitted for an initial rapid scan evaluation by CAM ARC . The samples were bulk floated by CAM ARC and the flots were collected in a 500 micron mesh sieve. Of the one hundred and sixty assemblages, six contained sufficient material to merit further assessment. These assemblages were scanned by the author under a binocular microscope at magnifications up to x 16, and the plant macrofossils and other remains noted are listed on Tables 1 and 2. Nomenclature within the tables follows Stace (1997). All plant remains were charred. Modern contaminants including fibrous roots, seeds and arthropod remains were present throughout.

2 Results

2.1 Plant macrofossils

Cereal grains/chaff and seeds of common weeds were present at varying densities in all six samples. Preservation was poor; many macrofossils were heavily coated with fine silt particles, which sometimes precluded close identification, whilst a high proportion of the grains were severely puffed and distorted, probably as a result of combustion at very high temperatures.

Oat (*Avena* sp.), barley (*Hordeum* sp.), rye (*Secale cereale*) and wheat (*Triticum* sp.) grains were recorded, with wheat occurring most frequently. Wheat grains of both elongated ‘drop’ form type (typical of spelt (*T. spelta*) and more rounded hexaploid type forms were noted, and spelt glume bases and bread wheat (*T. aestivum/compactum*) type rachis nodes were also recorded. A single very poorly preserved rachis node from sample 528, with what appeared to be rounded glume

inserts, may be of rivet wheat (*T. turgidum*) type, although precise identification was not possible. As rivet wheat has yet to be confirmed from pre- eleventh century A.D. deposits, this specimen, if correctly identified, is almost certainly intrusive within the context.

Although present in all but sample 216, weed seeds were scarce, with most occurring as single specimens within an assemblage. All were of common segetal species including stinking mayweed (*Anthemis cotula*), a plant commonly found on the local clay soils, brome (*Bromus* sp.), indeterminate grasses (Poaceae) and dock (*Rumex* sp.). Individual nutlets of saw-sedge (*Cladium mariscus*), a fen land plant, were recorded from samples 501 and 503.

Charcoal/charred wood fragments and pieces of charred root/stem were present throughout, but other plant remains were extremely rare.

2.2 Other materials

The fragments of black porous and tarry material are probable residues of the combustion of organic remains at extremely high temperatures. Small bone fragments, some of which were burnt, were noted in all but two samples, but other remains occurred very infrequently. The small coal fragments noted within samples 216 and 528 are probably intrusive within the contexts.

3 Discussion

3.1 Horsey Hill (Table A10.1)

Three samples were selected, two from possible Bronze Age/Iron Age features, and one from a layer of possible Late Saxon date. Although sample 215 (pit fill 2239) does contain a moderate density of macrofossils, the volume of material is low (approximately 0.1 litres) and is probably insufficient to be indicative of the primary deposition of refuse. It is, perhaps, more likely that the material is derived from scattered refuse, some or all of which accidentally became incorporated within the pit fill. The assemblage is relatively grain rich, but the poor condition of the cereals does suggest that the material was burnt at a very high temperature, possibly on repeated occasions. As such high temperatures of combustion may easily have destroyed the less robust chaff elements and seeds, it should be noted that what remains may not be truly representative of the original assemblage. However, grain rich assemblages have also been noted from other contemporary sites within the eastern region that are situated on heavy clay soils (cf. Stansted (Murphy 1990)). As these conditions would not have been conducive to profitable agricultural production due to the basic nature of the pre-Roman plough, it is thought that the occupants

of these sites probably followed a largely pastoral regime, importing batches of semi-cleaned or prime grain as required.

The assemblages from the other two samples (216 from tree-bole **2241** and 287 from layer 2392) are very limited, and contain insufficient material for accurate interpretation. However, it should be noted that the assemblage from sample 287 is broadly similar to that from sample 215 and, given the suggested late date for layer 2392, may be derived from residual Bronze Age material cast up by the later digging of features through earlier deposits.

3.2 Farcet Road (Table A10.2)

Three samples were selected, all from features/deposits of Iron Age date. All three assemblages are small (<0.1 litres in volume) and none contain sufficient remains to be indicative of the primary deposition of material. As with the Horsey Hill material, it is perhaps most likely that the assemblages are derived from low densities of scattered refuse or wind blown detritus. However, sample 501 contains a noticeably high density of wheat grains, with rare specimens of chaff and weed seeds. Although this may be a further example of material derived from a batch of imported semi-cleaned grain (see above), the assemblage is too small for conclusive interpretation. The low density of material within sample 503 similarly precludes close interpretation. The assemblage from sample 528 is unusual as it contains a higher density of wheat chaff as well as a large quantity of un-charred/de-watered plant remains including additional specimens of wheat chaff. It is tentatively suggested that, if this sample was not taken from an obviously de-watered context, the plant remains may be intrusive, and possibly relatively recent.

4 Conclusions and recommendations for further work

In summary, the assessment of these assemblages clearly illustrates the difficulty of interpreting small groups of material from excavations where the archaeology is strictly limited. Although the contexts from which the samples were taken are dated, they cannot be clearly linked to any specific on site activity and, therefore, conclusive interpretation of the material is virtually impossible. Despite this, it would appear that cereals, most particularly wheat and barley, were of importance to the occupants of this area during both the Bronze Age and Iron Age periods. Cereal production may have been severely limited by the local heavy clay soils, but the grain requirements of the inhabitants were possibly being met by imported batches of grain.

As quantification of these assemblages would add little to the data already presented within the assessment, no further analysis is recommended. However, a written summary of this report should be included within any publication of data from the site.

References

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Sample No.	**501**	**503**	**528**
Context No.	**505**	**549**	**815**
Context type	**Pit**	**Pit**	**Layer**
Date	**IA**	**IA**	**IA**
Cereals			
Triticum sp. (grains)	xxx	x	x
(glume bases)	x	x	
(spikelet bases)	x		
(rachis node frags.)			xx
(rachis internode frags.)			xx
T. spelta L. (glume bases)	x		
T. aestivum/compactum type (rachis nodes)			xx
Cereal indet. (grains)	x	x	
(detached embryos)			x
Herbs			
Anthemis cotula L.	xx	x	
(capitula frags.)	x		
Chenopodiaceae indet.		x	
Small Poaceae indet.		x	x
Raphanus raphanistrum L. (siliqua frag.)	x		
Rumex sp.	x	x	
Rumex/Carex sp.		x	
Wetland plants			
Cladium mariscus (L.)Pohl	x	x	
Other plant macrofossils			
Charcoal <2mm	xxx	xxx	xx
Charred root/stem	xx	x	
Indet.culm nodes		x	
Indet.seeds	x	x	
Other materials			
Black porous 'cokey' material	xx		x
Bone		xb	
Small coal			x
Vitrified material			x
Sample volume (litres)			
Volume of flot (litres)	**<0.1**	**<0.1**	**<0.1**
% flot sorted	**100%**	**100%**	**100%**

Table A10.1 Charred plant macrofossils and other remains from Farcet Road

Sample No.	**215**	**216**	**287**
Context No.	**2239**	**2241**	**2392**
Context type	**Pit**	**T.bole**	**Layer**
Date	**BA/IA**	**BA**	**?L.Sax**
Cereals			
Avena sp. (grains)	xcf		x
Hordeum sp. (grains)	xx	x	
(rachis nodes)	x		
Hordeum/Secale cereale type (rachis nodes)	x		
Secale cereale L. (grains)	x		
Triticum sp. (grains)	xx	x	x
(rachis internode frags.)	x		
T. aestivum/compactum type (rachis nodes)	x		x
Cereal indet. (grains)	xx	x	x
(detached embryos)	x		
Herbs			
Anthemis cotula L.	x		x
Bromus sp.	x		xcf
Chenopodium album L.			x
Chenopodiaceae indet.	x		
Small Poaceae indet.	x		
Rumex sp.	x		
Vicia/Lathyrus sp.	xcf		x
Other plant macrofossils			
Charcoal <2mm	xx	x	xxx
Charcoal >2mm	x	x	
Charred root/stem	x		
Indet.seeds		x	x
Other materials			
Black porous 'cokey' material	xx		xx
Black tarry material	x		x
Bone	x xb	x	x
Burnt/fired clay	x		x
Fish bone	x		x
Small coal frags.		x	
Small mammal/amphibian bones	x		
Sample volume (litres)			
Volume of flot (litres)	**0.1**	**<0.1**	**0.1**
% flot sorted	**100%**	**100%**	**100%**

Table A10.2 Charred plant macrofossils and other remains from Horsey Hill

Key to Tables

x = 1 – 10 specimens xx = 10 – 50 specimens xxx = 50 – 100 specimens
cf = compare b = burnt BA = Bronze Age IA = Iron Age L.Sax = Late Saxon
T.bole = tree bole

Appendix 11: Pollen

By Steve Boreham

1 Introduction

This study focuses on sediments obtained from archaeological excavations and from a borehole along the proposed route of a pipeline at Farcet & Stanground, Peterborough, Cambridgeshire. The sediment samples were collected from three discrete areas along the route of the pipeline (see Figure A11.1). To the northeast of Farcet village, sediments from the fen edge eastward towards the old course of the River Nene were exposed in excavation areas (A1-5) described and sampled by the author, and in an additional area (herein called WRM05) sampled by AFU staff. Further to the east, south of Stanground and adjacent to the old course of the River Nene, sediments in archaeological trenches (T2-4) were also described and sampled by the author. Finally, to the southeast of Stanground, a series of archaeological trenches (T14-18) were also investigated by the author. In addition, a borehole (BH1) was sunk at 90m at the western end of Trench 15 to investigate a palaeochannel feature.

The arrangement of the trenches, based along the proposed route of the pipeline, allows the investigation of stratigraphy and depositional history in both valley-central and fen edge situations. The results of stratigraphic and pollen analyses of these sediments are presented in the sections that follow. For ease of presentation, geological cross sections in this report have not incorporated changes in ground level, and have different horizontal scales. This must be bourn in mind when comparing Figures 2, 3, 7 & 9. The 58 sediment samples for pollen analysis were prepared using the standard hydrofluoric acid technique, and counted for pollen using a high-power stereo microscope. The percentage pollen data from these samples is presented in Addendum 1.

Pollen was counted at x400 with a high power stereo microscope. For most pollen samples, the concentration and preservation of palynomorphs was rather poor. About half of the samples prepared for pollen were barren or nearly so. Several samples yielded a main sum in excess of 100 land pollen and spores from an assessment count of a single slide. Two slides were counted for sparse samples with well-preserved pollen to increase the main sum. It should be noted that for statistically reliable data, pollen sums of at least 300 are generally recommended. The assessment counts in this report rarely reach these levels, and care must be taken during interpretation.

2 Farcet Areas 1-5 & WRM05

The Farcet section of the pipeline excavations examined by the author stretched some 400m from Area 1 in the west (c.10m OD) to Area 5 in the east (c.3m OD) (see Figures 1, 2 & 3). For practical reasons, section descriptions began at the eastern end of Area 2 (0m), and followed the excavations westwards towards Area 1. The positions of logs in Area 3 were recorded eastwards of this point and have negative values (Figure 2). Areas 4 & 5 were described towards the east, starting at Area 4 0m (Figure 3). Beyond Area 5, archaeological features exposed in excavations at WRM05 were described and sampled by AFU staff (see Figure 4).

2.1 Areas 1-3

2.1.1 Lithology

The geological cross section in Figure 2 shows Jurassic Oxford Clay bedrock overlain by up to 30cm of basal sand and gravel. A sondage at 70m, reported to (but not seen by) the author, apparently recorded a channel form at least 180cm deep, occupied by silt and containing wood. A similar silt-filled palaeochannel was recorded at 119m, and both appear to be incised through the basal sand and gravel into the bedrock beneath. The overlying unit of silty sand sealed the palaeochannel silts and elsewhere lay above the sand and gravel. Above this, a unit of grey silt up to 30cm thick extended across the area. It was absent at –43m where there appeared to be a bedrock rise, but appeared to extend into Area 1, although that stratigraphic relationship was not entirely clear. Peat and silty peat up to 50cm thick were present above the silt in Areas 2 & 3. Grey alluvial silty clay giving rise to a clayey Ploughsoil extended across the site.

2.1.2 Pollen

Four pollen samples were taken from Area 1; a grey silty 'Roman Soil' at 146m, grey silt filling two separate ditch cuts at 142m (40cm) & 141m (30cm), and a similar grey silt unit nearby 138m (30cm). In Area 2, a sequence of three pollen samples (10, 15 & 25cm) was taken at 91m from the silty sand and grey silt units in the area between the two palaeochannels. Further to the east at 0m, six pollen samples (20, 35, 45, 53, 63 & 80cm) were taken from the silty sand, grey silt and peat. In addition, a single pollen sample was taken from grey silt in a ditch fill at 5m (20cm). In Area 3, four pollen samples were taken from the grey silt and peat at –90m.

The pollen samples from the grey silty 'Roman Soil' and ditch fills in Area 1 all proved to be barren. Unfortunately, this was also true for the silty sand and grey silt samples from Area 2 at 91m (see Appendix 1). However in contrast, the ditch fill at 5m (20cm) yielded a pollen assemblage dominated by grass (c.28%) with fern spores, sedge,

herbs and the emergent aquatic bur-reed. Arboreal pollen was represented by pine (c.8%) and lime (c.3%). Figure 5 shows the percentage pollen diagram for the sequence of six samples at the adjacent 0m log. The basal two samples from the silty sand and grey silt were again barren, but three of the samples from the peat and silty peat yielded a pollen assemblage dominated by grass (10-22%) and hazel (6-16%), with herbs and arboreal taxa including alder (1-10%), birch, pine, oak & lime. All the samples contained a large proportion of fern spores. The samples from 45cm & 53cm had a large proportion of bur-reed pollen, but the upper sample (80cm) contained a small amount (c.1%) of Cereal type pollen.

Figure 6 shows the percentage pollen diagram for the sequence of four samples from –90m Area 3. The grey silt at 25cm was dominated by grass (c.29%) and herbs, but the basal part of the overlying peat (35cm) had pollen of alder (c.31%), hazel and grass, with herbs and arboreal taxa including, birch, pine, oak, lime and ash. The two upper silty peat samples contained abundant hazel (c.12-25%) and grass (c.22%) pollen, with herbs and arboreal taxa including birch, pine, oak and alder. All the samples again contained relatively large proportions of fern spores. Cereal type pollen was present throughout the sequence and was particularly abundant (c.8%) in the basal sample (25cm). Bur-reed pollen reached a peak in the sample at 48cm.

2.1.3 Synthesis

The large proportion of fern spores in the usable counts suggests a post-depositional modification of the pollen signal, a preponderance of damp-loving ferns growing in the area at the time of deposition, or perhaps both. In many ways, the pollen sequences from Area 2 0m and Area 3 –90m represent records from comparable stratigraphy (Figure 2). Although the pollen assemblages are broadly similar, the sequence from –90m shows marked changes in depositional environment and vegetation, from reedswamp at the base, through wet alder woodland to deeper water fen with bur-reed and sedges. These changes are not seen clearly in the sequence from 0m. The relatively low abundance of pollen from mixed oak woodland trees (oak, lime, elm) suggests a Bronze Age or later date for the overgrowth of peat in this area. The presence of Cereal type pollen throughout the sequence is not incompatible with this interpretation, although it should be noted that the pollen of the aquatic grass *Glyceria fluitans* is indistinguishable from cereal pollen. The pollen assemblage ditch fill from Area 2 5m is hard to interpret, but it could perhaps represent reedswamp deposited in the Neolithic or Bronze Age.

The deposition of basal gravel and sand by a braided stream in during the Last Glacial period, was followed by incision and filling of palaeochannels in the Late Glacial and early-mid Holocene. Later, river silts probably deposited within a reedswamp covered the area, followed by the local growth of wet alder woodland and fen vegetation, perhaps during the Bronze Age. Overbank alluvium, was deposited

across the area from the mid-Iron Age onwards. The desiccation of the marginal sediment sequences (Area 1 & Area 2 91m) appears to have resulted in the oxidation of organic sediments and the destruction of palynomorphs.

2.2 Areas 4-5

2.2.1 Lithology

The geological cross section in Figure 3 shows Jurassic Oxford Clay bedrock overlain in part by a unit of basal sand and gravel. A unit of silty sand lies above the sand and gravel and the bedrock. Above this, a unit of grey silt was seen at 0m and 78m, but not in the higher area in the centre of the excavation. A thin gravel lag was recorded above this at the western end of Area 4. Peat and silty peat up to 30cm thick were present to the east and west, but again not in the higher centre of the site. Grey alluvial silty clay giving rise to a clayey Ploughsoil extended across the site.

2.2.2 Pollen

In Area 4, a sequence of four pollen samples (5, 15, 25 & 35cm) was taken at 0m from the silty sand, grey silt and peat units. Further to the east at 78m, four pollen samples (20, 35, 45, 53, 63 & 80cm) were taken from similar stratigraphy.

The two pollen samples (5 & 15cm) from the silty sand and grey silt at Area 4 0m were barren. However, the basal peat sample (25cm) from above the lag gravel was dominated by pollen of alder (c.20%), grass and hazel, with herbs and arboreal taxa including birch, pine, oak and lime (see Appendix 1). In contrast, the sample from 35cm was dominated by grass and hazel, but had a similar assemblage of trees and herbs. Both samples contained a large proportion of fern spores. Cereal type pollen was present at low levels in both the samples, but the upper sample had a large proportion of bur-reed pollen.

Three samples from the sequence at Area 5 78m were barren. Only the sample from the basal peat (25cm) contained countable pollen. The assemblage from this sample was dominated by alder (c.22%), hazel and grass, with herbs and arboreal taxa such as birch, pine, oak and lime. The assemblage is very similar to that obtained from the sample at 25cm 0m (see above) from the same stratigraphic unit.

2.2.3 Synthesis

The preservation of pollen in the sequences from Areas 4 & 5 was disappointing. It may be that the local bedrock high has caused the desiccation of sediments and the oxidation of palynomorphs. The presence of alder pollen at the base of the peat may be a useful stratigraphic marker, since this environment was clearly widespread

(cf. Area 3 –90m). A Mid Bronze Age increase in valley floor water tables is known to have resulted in the expansion of alder carr across southern England. The lag gravel beneath the peat may represent Early Bronze Age unstable river channels reworking valley floor sediments as trees were progressively cleared in the catchment. The similarity between the pollen and stratigraphy of sediments in Areas 4 & 5 and those in Area 3 are quite clear. It seems that the bedrock rise in the centre of the excavation would have formed an 'island' in Bronze Age times. This and other similar features could have been very important within the Bronze Age landscape.

WRM05

Sixteen pollen samples were analysed from a variety of features sampled by AFU staff (Figure 4). In general, the pollen recovered from these samples was sparse and badly preserved. Four samples (230, 232, 243 & 246) were barren, and six samples returned main sums of <10, and so are effectively barren. Of these most of the palynomorphs encountered were types resistant to oxidation such as fern spores. The remaining six samples had main sums <50. Sample 244 had an assemblage dominated by grass (c.30%), with hazel, herbs and arboreal taxa such as pine, oak and alder, Sample 240 was dominated by grass (c.20%), with herbs, hazel and alder, and Sample 242 was dominated by grass (c.43%), with ivy and herbs. However, the extremely low counts and the large proportion fern spores in all these counts make interpretation rather difficult.

Synthesis

The pollen samples from WRM05 all suffer from poor preservation and the over-representation of resistant palynomorphs such as fern spores. The pollen signal present in these difficult samples is hard to extract through all the 'static' of post-depositional modification. However, the pollen assemblage from the least badly affected samples (240 & 244) seems to be superficially similar to that encountered in the silt and peat in Areas 2-5. It is clear that the strong alder carr signal is not present here. A very tentative age estimate would be Bronze Age or later, based on the paucity of mixed oak woodland types.

Stanground Trenches 2-4 & 14-18

The Stanground sections of the pipeline excavations examined by the author ran c.300m from Trench 2 in the west to Trench 4 in the east (c.3m OD) (see Figures 1 & 7), and c.450m from Trench 14 in the west (c.4.5m OD) to Trench 18 in the east (c.3m OD) (see Figures 1 & 8). Trenches 2-4 were described towards the east, starting at Trench 2 0m (Figure 7). Trenches 14-18 were also described towards the east starting at Trench 14 0m (Figure 9).

Stanground Trenches 2-4

Lithology

The geological cross section in Figure 7 shows Jurassic Oxford Clay bedrock overlain in part by a thin unit of basal sand and gravel in Trenches 3 & 4. Trench 2 revealed the steep edge of a palaeochannel falling away to the west, within which the lowest visible stratigraphic unit was a silty sand up to 50cm thick. A similar lithology was observed at 280m in Trench 4. The overlying peat/silt palaeochannel sequence at 0m Trench 2 was particularly thick (c.170cm) but could not be sampled for safety reasons. Instead the neighbouring sequence at 22m was sampled for pollen. In contrast to the stratigraphy from Farcet, a unit of grey silty clay up to c.30cm thick often occurred between two peat layers, forming a tripartite sequence. Between Trench 2 50m and Trench 3 140-170m only a single peat unit was recorded in an area of high bedrock. Above this, grey alluvial silty clay and clayey Ploughsoil extended across the site.

Pollen

Pollen samples were analysed from 25-30, 35-40, 50-55, 70-75 & 100-105cm above the base of the section at Trench 2 22m (Figure 8). The basal sample (25-35cm) from the silty sand was barren. However, the samples from the lower peat and silty clay (35-40, 50-55 & 70-75cm) contained a pollen assemblage dominated by grass (c.19-26%), with alder (c.3-20%), sedges, herbs and arboreal taxa including hazel, birch, pine, oak and willow. All the samples contained a large proportion of fern spores. Cereal type pollen was present in the sample from the basal part of the peat (35-40cm), and the pollen of bur-reed was particularly abundant in the silty clay (70-75cm). The sample from the upper peat (100-105cm) was also barren.

Synthesis

The pollen samples from the lower peat and silty clay unit in Trench 2 22m appear to represent as succession from reedswamp with sedge (35-40cm) to wet alder woodland (50-55 & 70-75cm). The low proportion of mixed oak woodland trees (oak, lime, elm) suggests a Bronze Age or later date for the formation of the lower peat. It appears that desiccation of the upper peat has oxidised the palynomorphs.

The thin basal gravel and sand unit may be of Last Glacial age. It appears that incision of a palaeochannel occurred in the Late Glacial or early-mid Holocene. Peaty river silts probably deposited within a reedswamp covered the area around the bedrock ‘island’, followed by the local growth of wet alder woodland and fen vegetation, perhaps during the Bronze Age. An interval of silt deposition interrupted the formation of peat, and an overgrowth of peat then covered the area followed by deposition of overbank alluvium, from the mid-Iron Age onwards.

Stanground Trenches 14-18

Lithology

The geological cross section in Figure 9 shows a basal sand and gravel unit throughout Trenches 14-18. Borehole 1 (BH1) in Trench15 revealed a deep palaeochannel reaching c.400cm below the ground surface filled with grey organic silt becoming peaty at the base. A second possible palaeochannel was detected at Trench 17 285-310m. The organic grey silt unit overlies the basal gravel across the site. Overlying this, the tripartite sequence of lower peat, silty clay and upper peat described from Trenches 2-4 was also seen in Trenches 15-18. The thin silty clay between the peat units was marly and contained large freshwater bivalve shells in Trench 18. In Trench 14 the two peat units appeared to unite forming a single peat unit, which thinned to the west. Grey alluvial silty clay and clayey Ploughsoil extended across the entire site.

Pollen

Pollen samples were analysed from 75-76, 96-97, 130-140, 190-200, 250-260, 310-320, 360-370 & 410-420cm below the top of the section at Trench 2 22m (Figure 10). The five samples from the palaeochannel silt yielded a pollen succession from birch-pine to hazel, which can be directly correlated with the early Holocene (Mesolithic) period. The overlying sample from the sandy silt (130-140cm) was barren, but those from the lower peat and thin silty clay (96-97 & 75-76cm) produced a pollen assemblage dominated by grass (c.18-27%) with alder, hazel and herbs. Cereal type pollen was encountered only in the upper sample. Pollen samples were also analysed from 20, 55 & 115cm at Trench 18 430cm. The sample from the sandy silt (20cm) was barren. However, the samples from the lower peat and marly silty clay (55 & 115cm) contained a pollen assemblage dominated by grass (c.29-51%), with alder (c.11-12%), sedges, herbs and arboreal taxa including hazel, birch, and willow. Cereal type pollen was present in the sample from thin marly silty clay (55cm).

Synthesis

The pollen samples from the palaeochannel silt in Trench 15 BH1 appear to represent channel deposition throughout the early Holocene (Mesolithic) from perhaps 10,500 to 8,000 years BP (Cal). No pollen signal recognisable as Neolithic (mixed oak woodland with lime and elm) has been observed from these sediments. However, the development of alder woodland and the post-clearance signal from the lower peat and thin marly silt suggests a Bronze Age or later date

The basal gravel and sand was probably deposited by a braided river system during the Last Glacial period. Incision of the palaeochannel probably occurred in the Late Glacial, and became infilled during the early part of the Holocene (Mesolithic). Wet alder carr and fen

vegetation spread across the site forming the lower peat, possibly in the Bronze Age. An interval of silt deposition including marly freshwater sediments, interrupted the formation of peat, and this was followed by a further growth of peat, which covered the area. Overbank alluvium covered the area from the mid-Iron Age onwards.

Discussion & Conclusions

Beneath the Holocene fluvial and fen sediments, there is a channelled gravelly braidplain surface dating from the Last Glacial period. At least one of the Late Glacial channels appears to be filled by Mesolithic sediments, which record the spread of hazel woodland and the replacement of boreal birch-pine scrub. Once the deeper channels had filled with sediment, sheets of overbank flood deposits spilled out across the valley floor during the Late Mesolithic and Early-Mid Neolithic, forming an area of reedswamp. This area may have occasionally dried out, since pollen samples from these sediments were almost always barren, suggesting the oxidation of palynomorphs. There may have been a Late Neolithic-Early Bronze Age incisional event (which in places has formed a lag gravel) followed by the overgrowth of alder and fen peat in the Early Bronze Age. Peat formation was arrested through inundation by higher water levels, which deposited silt across the area.

The presence of marine and brackish water Barroway Drove Beds (Fen Clay) in the area is well documented by Waller 1994 & 2004 & French 1992. The landward extent of the Barroway Drove Beds beneath the upper (Nordelph) peat mapped by the British Geological Survey (Sheets 188 Peterborough & 172 Ramsey) clearly reaches as far as the Stanground trenches, but not as far as Farcet. However, the presence of freshwater shells in marly silty clay between the peat layers in Trench 18, suggests that at least part of 'Fen Clay' here resulted from the ponding back of freshwater against the landward side of a beach ridge, rather than inundation of the area by saltwater. Certainly, the pollen signal from the silty clay band gave no indication of brackish influences, and no marine indicators were observed in the field. The development of fen and raised bog peat across the area from the Mid Bronze Age is well documented. The date of the top of the lower peat in this area is at around 4,000 years BP (cal) in the Early Bronze Age, whilst the date at the base of the upper peat is at around 3,500 years BP (cal) in the Mid Bronze Age (Waller 1994). The widespread deposition of overbank alluvial silty clays (Romano-British Silt) in response to clearances in the catchment usually dates from the Mid Iron Age, and fills many valleys in southern England.

The deposits from Farcet and Stanground appear to record sedimentation in a variety of fluvial and fen environments from the Late Glacial through to the Iron Age. Table A11.1 summarises the progression of vegetation types through this time period.

Sediment type	Log	Period	Vegetation
Alluvium	All	Iron Age onwards	Grassland, tall herbs & cereals (not seen)
Peat & peaty silt	Most	?Mid Bronze Age	Fen and bog
Silty clay 'Fen Clay'	Stanground	?Early-Mid Bronze Age	Marine incursion or ponding freshwater
Peat & peaty silt	Most	?Early Bronze Age	Alder woodland
Basal gravel lag	Area 4	?Early Bronze Age	
Silt & sandy silt	Most	?Neolithic	Mixed oak woodland (not seen)
Palaeochannel silt	T15 BH1	Mesolithic	Hazel woodland, pine & birch
Terrace deposits	Many	Late Glacial	Tundra

Table A11.1 – Chronology and vegetation of the Farcet & Stanground deposits

The elevation and position of the silt-filled palaeochannels described from Area 2 seem to be somewhat at odds with the Mesolithic palaeochannel from Trench 15. However, it is not inconceivable that they represent different incisional phases of the same river system. The presence of bedrock highs in Areas 4-5 and Trenches 2-4, which formed Bronze Age 'islands', is an important observation. The position of the Farcet-Stanground excavations between the Whittlesey and Holme Fen sequences to the south, and the Must Farm, Bradley Fen, Fengate and Flag Fen sequences to the north, is such that it forms an important link that aids understanding of the dynamic Bronze Age landscape of Fenland and the fen edge. It is clear that although sea water may not have reached as far as Stanground, freshwater appears to have become ponded back forming a lagoon behind the coastal limit. The mosaic of base-rich fen, acid bog, freshwater lake, alder woodland and coastal mudflats in the vicinity of this area would have provided diverse resources for Bronze Age peoples.

This study has successfully combined the use of stratigraphy and palynology to create a palaeoenvironmental model for the development of the Farcet-Stanground area. The desiccation and oxidation of the uppermost sediments and those on raised areas has been of great concern, since recovery of pollen has been impossible from many of them. Waller (2004) states that the wastage of peat in this area is generally now so severe that the analysis of pollen and plant macrofossil remains carried out for the Fenland Project would now not be possible. It is therefore fortuitous that the opportunity to work on these sediments arose.

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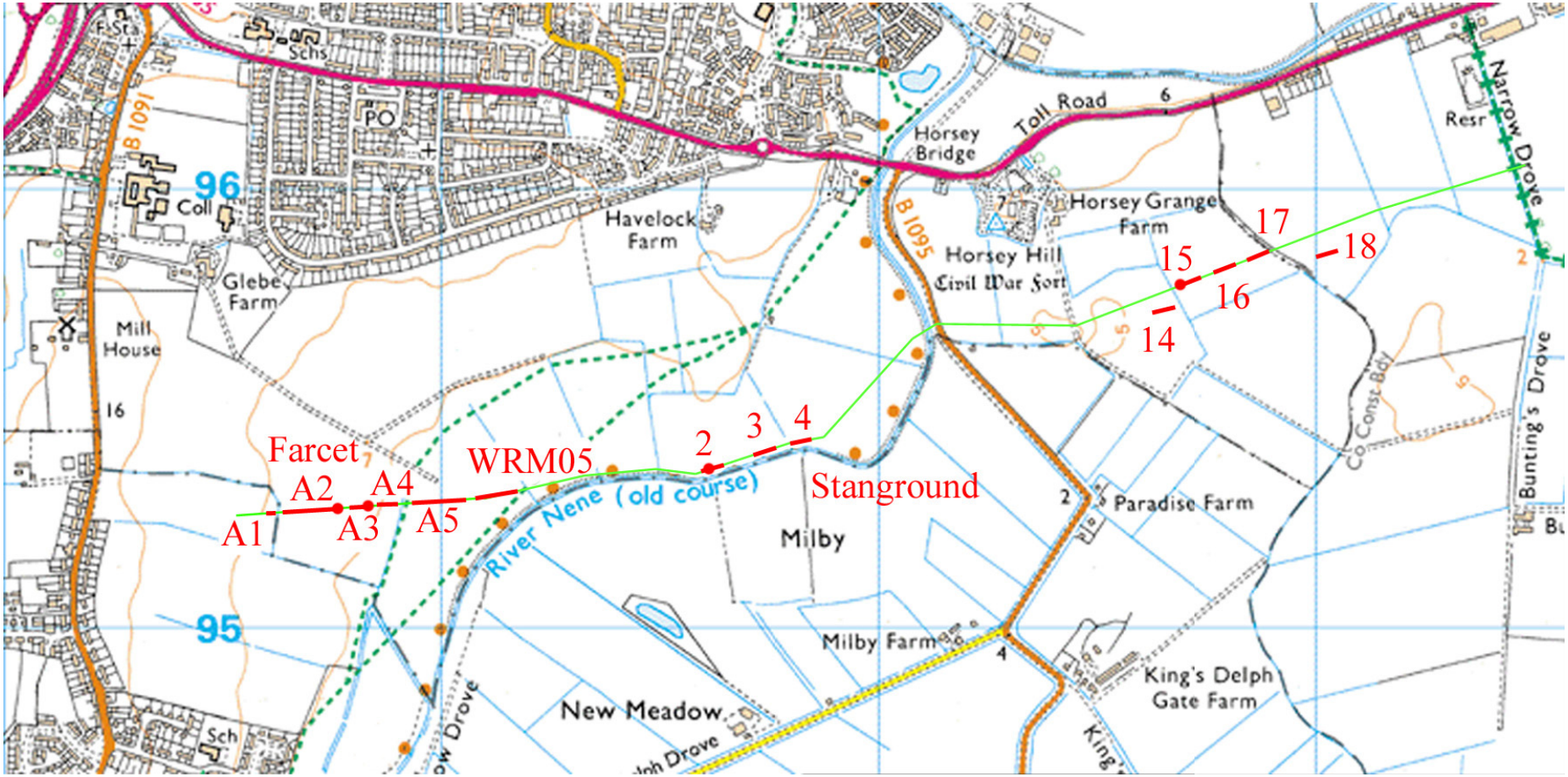

Figure A11.1 – Location of the Farcet & Stanground pipeline excavations described in this report. Dots represent the positions of pollen sequences

Appendix 12: Geology

By Steve Critchley

1 Introduction

From the published sources and field observations there are few outcrops of the solid geology within the area. Those that have been mapped, (British Geological Survey Sheet 172 Ramsey), are of the Middle Jurassic Lower Oxford Clays that are restricted to a number of low hills such as Horsey Toll, the current excavation area close to this monument and a narrow strip to the east of Farcet.

The Lower Oxford Clays are inferred to underlie the whole pipeline route, but are overlain by an extensive sequence of lithological units deposited during the Quaternary Period, particularly the mid to late Pleistocene and Holocene Series. Dominated by glacial lake (deltaic and lacustrine) sediments, glacial tills and fluvial terrace gravels they are in turn overlain in part by a series of late Holocene freshwater peats and fluvial silts some of which are of historic date.

The whole sequence of glacial and terrace deposits were modified by extensive fluvio periglacial pedimentation during the late Pleistocene. This included a number interglacial and glacial erosive events, terrace aggradation by post Anglian river systems such as the proto Welland and the Nene along with extensive cold phase periglacial processes. During the onset of the Holocene Flandrian Stage interglacial sedimentation became increasingly controlled by fluctuating sea levels in response to climatic warming and subsequent ice melt coupled with a regional isostatic rebound.

2 Field Observations

Large sections of the route were not examined for a number of access and operational reasons, but the geology for these can be inferred with some accuracy from the published sources and personal knowledge. Descriptions are based on the examination of surface exposure complemented by a limited number of excavations for engineering works. Local interpretations of the geology may well differ from that indicated by borehole evidence obtained in advance of development. At the time of writing these records were not available for examination.

For convenience the easement has been divided into sections for explanation.

2.1 .West and east of the Stanground to Farcet road (B1091)

This section cuts through an elongated northeast - southwest ridge underlain by glacial tills deposited during the mid Pleistocene Anglian Glaciation. Often referred to as the “chalky boulder clay” these deposits, which are part of the Lowestoft Formation Tills (Perrins et al 1979, Lewis 1999), were formed at the base of an extensive ice sheet advancing from the north and east.

The exposures available for study within this part of the easement represent the eroded remnant of a formerly more extensive deposit. Field examination of fresh exposures showed the tills to consist of stiff dark grey to light grey clays with highly variable clast content and incorporated patches of locally derived Jurassic mudstones as well as fluvial sands and gravels. Surface exposures tend to have weathered to brownish clay exhibiting varying degrees of decalcification, whilst the variable lithological content reflects their multiple source areas from eroded outcrop material to reworked older glacial and fluvial deposits.

There is a dominance of locally derived chalk, carstone, limestone and flint, Jurassic fossils along with subordinate non-local sandstones, quartzite and igneous and metamorphic rocks. Detailed studies of the clast lithologies within the Lowestoft Till has indicated origins as far afield as the Scottish Highlands, Wales and the north and west of England (Sabine 1949). However, more recent work in the Peterborough area has indicated a locally more complex origin for the clast types (Langford 2004, Fish and Whiteman 2001).

Individual clast morphology is generally rounded to irregular reflecting both the effects of the erosive mechanisms and the hardness and competency of some rock types. Softer chalk tends to be well rounded, exhibiting many micro striations, whist the flint clasts are often angular reflecting their hardness and brittle fracture.

The less common igneous and metamorphic and some of the quartzite clasts were frequently well-rounded concurrent with their hardness, more distant origins and multiple periods of erosion. Overall the clasts sizes ranged from a few centimetres to around a fifty-centimetre maximum though there were exceptions. The incorporation as frozen ground of large rafts, often a meter or two in length, of mudstones, chalky clays and other lithologies such as fluvial sands and gravels were often encountered.

Fresh exposures of the till contain a number of features indicating that it has been extensively modified by periglacial processes occurring during the late Pleistocene Devensian Stage, a period of glacial re-advance with active ice sheets present some twenty miles to the north east. During the accompanying intense cold climatic conditions periglacial processes were active with the development of abundant thermokarst features within the glacial tills such as polygons, linear

thermal cracks and cryoturbation. Many of these features were subsequently infilled with aeolian sands and to some extent fine sandy fluvial gravels, allowing them to be readily visible in fresh exposures of the tills during excavation.

2.2. Mid slope to the east of the B1091

At approximately mid slope the glacial tills are underlain by a series of slightly older and in part contemporaneous glacial lake sediments. It is difficult to be precise as to where the junction exists because of the presence of colluvium deposits obscuring the outcrops. During the cutting of the archaeological evaluation trench down slope on the south side of the easement, reasonable exposures of these sediments were observed. However, the interface with the overlying glacial tills was not observed.

Formed within a glacial lake these sediments form part of an elongated outcrop running some five miles between Norman Cross to the southwest and Stanground village to the north. They have been interpreted as an infilled preglacial drainage channel, part of a river system, which drained the Jurassic highlands to the west and discharged into the North European river systems then active in what is now the North Sea. As drainage became increasingly impeded by the development of the Anglian ice sheets in the mid Pleistocene, a series of glacial lakes formed along its margins. Such lakes continued to receive a variable sediment input during summer flood events over a considerable period of time, forming extensive lacustrine and deltaic deposits.

The Stanground lake deposits have been mapped as a series of laminated clays, silts, sandy silts, fine sands and some coarser gravel with a limited lateral and vertical variation. The upper layers have been observed at some locations to merge into the overlying glacial tills (Horton et al., 1974)

During field examination of the available fresh exposures it was observed that most sediments were those typically deposited in a low energy environment, predominantly sandy silts, silts and clays with occasional coarser gravelly horizons laid down some distance from the lake margin. The variability of the sediments may well reflect fluctuations in the lake's extent and depth as well as a periodicity within the local and regional climatic and associated fluvial regimes.

One large coarse sand and gravel unit was observed, perhaps associated with a particular flood event, and was significant in comparison with exposures previously examined elsewhere by the author within the local outcrop of the lake sediments. The random occurrence of isolated large clasts to several centimetres in diameter was noted within the laminated silts and clays - totally alien to the expected particle size for a low energy depositional environment. Most

examples were of well rounded quartzites and occasionally flat bedded limestones along with a scatter of randomly distributed pebbles averaging a centimetre or two in diameter. In a glacial lake environment such material was derived from the melting of sediment laden ice rafts originating from the lake margins, fluvial feeders or calving from the active ice front.

Periglacial processes had also affected some of the silts, silty sands and clays with ice cracks observed along with cryoturbation involutions where the substrates were susceptible. Weathering had also modified the outcrops with the development of calcareous nodules through precipitation from base rich groundwater within some horizons and in places late stage solifluction/colluvium deposits had obscured some outcrops.

At the base of the eastward facing slope the lake sediments were seen to dip beneath recent mottled grey brown alluvial silts derived from flooding events associated with the former channel of the River Nene. The latter overlay the Nordelph peat at this point. The peats were exposed for much of the remainder of the easement until the B1095 was reached. Previously examined in evaluation trenches along the line of the easement the Nordelph Peat, a freshwater deposit with much iron staining was seen to be composed of waterlogged woody plant remains with occasional logs and tree stumps in their life positions.

Underlying the peat were a series of soft light grey brown clays with roots remains, iron staining and decalcified Painter's Mussel valves, Uno pictoium, at or near the junction indicating a freshwater environment. Further east the Nordelph Peats has been mapped as being underlain by clays and silts of the Barroway Drove Beds, a series of tidal flat deposits. Often termed the " Fen Clay", these deposits elsewhere indicate a marine or brackish water environment of deposition and have a diachronous depositional history between the seaward and fen margin zones. Dated to between 4000 and 3000 yrs BP the extent and composition of the clays are complicated by a number of local factors such as local tidal barriers, input variations of clastic sediments and freshwater volumes from rivers draining into the Fenland. An examination of the microfossil content of these clays would give a greater insight into the local depositional history.

A former channel of the river Nene system is crossed to the west of the B1095 and from borehole evidence a significant buried channel remains running to the N E towards Horsey Bridge. Now infilled with recent silts and an extensive accumulation the Nordelph Peat, the former prehistoric channel below these deposits is incised into the Oxford Clays and filled with a series of fluvial sands and gravels. The Nene traversed this part of the Fenland through a series of topographically restricted anastomising channels, which were periodically modified by sea level fluctuations and accompanying

episodes of channel aggradation and incision. Additional inputs from hydroclimatological events as well as catchment land use histories should also be considered as significant influences.

2.3.East of the B1095

This portion of the easement is dominated by a small Fen Island composed of a core of Oxford Clay with a remnant of Devensian First Terrace sands and gravels to the south side (Horton 1989) and a skirt of Nordelph Peat. Away from the island's margins the Nordelph Peat is overlain by a thin veneer of later flood alluvium to the end of the easement.

On approaching the Fen Island from the west the peats deposits were observed to be overlain by mottled grey brown alluvial silts deposited from late Holocene flood events of the Nene system. As the topography increased onto the Fen Island, the exposed peat beds were underlain by orange brown silty gravels, which in turn gave way to orange brown to grey brown weathered Oxford Clays. These were much disturbed with patches of coarse sands and gravels, interpreted as the eroded remnants of the First Terrace gravels cryoturbated with the underlying clays.

The summit portion of the Island consisted of archaeologically disturbed Oxford Clays with a decalcified and weathered upper layer. Generally brownish grey to orange brown the surface contained many remnant gravel patches, some of which may have been the result of periglacial cryoturbation. When viewed during the digging of a valve pit, the clays were seen to be composed of light grey fossiliferous compact clays overlain by light brown weathered clay.

To the east of the Fen Island the Oxford Clays were observed to dip beneath the Nordelph Peat, which at this point infilled a channel or embayment eroded into the Oxford Clay to some depth. Beyond a modern drainage dyke the Nordelph Peat was observed in the pipe trench upcast to be underlain by a thin deposit of calcareous light grey silty clay. The Nordelph Peat continued to the end of the easement overlain by a thin veneer of the mottled grey brown Nene flood silts.

A valve pit dug into these deposits midway along the easement revealed that the peat beds were themselves of limited thickness and underlain by calcareous light grey clay, which was succeeded by orange brown coarse sands and gravels. This would indicate a former channel of the Nene system, which following abandonment became infilled by low energy environment silty clay and peats. The overlying calcareous clay contained near to its junction with the peat numerous decalcified valves of *Unio pictorum.* Such species would indicate a freshwater environment of deposition for these clays (at least the upper layers), rather than the expected tidal flat deposits of the Barroway Drove Beds.

The Nordelph Peat is particularly well developed in this part of Fenland, despite centuries of drainage pressures and erosion. It formed through the development of acidiphilic vegetation in landward Fen basins isolated from eutrophic groundwater and inundation by base rich floodwaters as well as marine incursions (Godwin 1975). The greatest accumulations occur a few miles to the south in the Holme Fen – Whittlesey Mere areas where vegetational acidification was initiated during a period of negative sea level (post 4800 yrs BP) and maintained by the particular isolation of the area from base rich river water and marine incursions (Waller 1994a).

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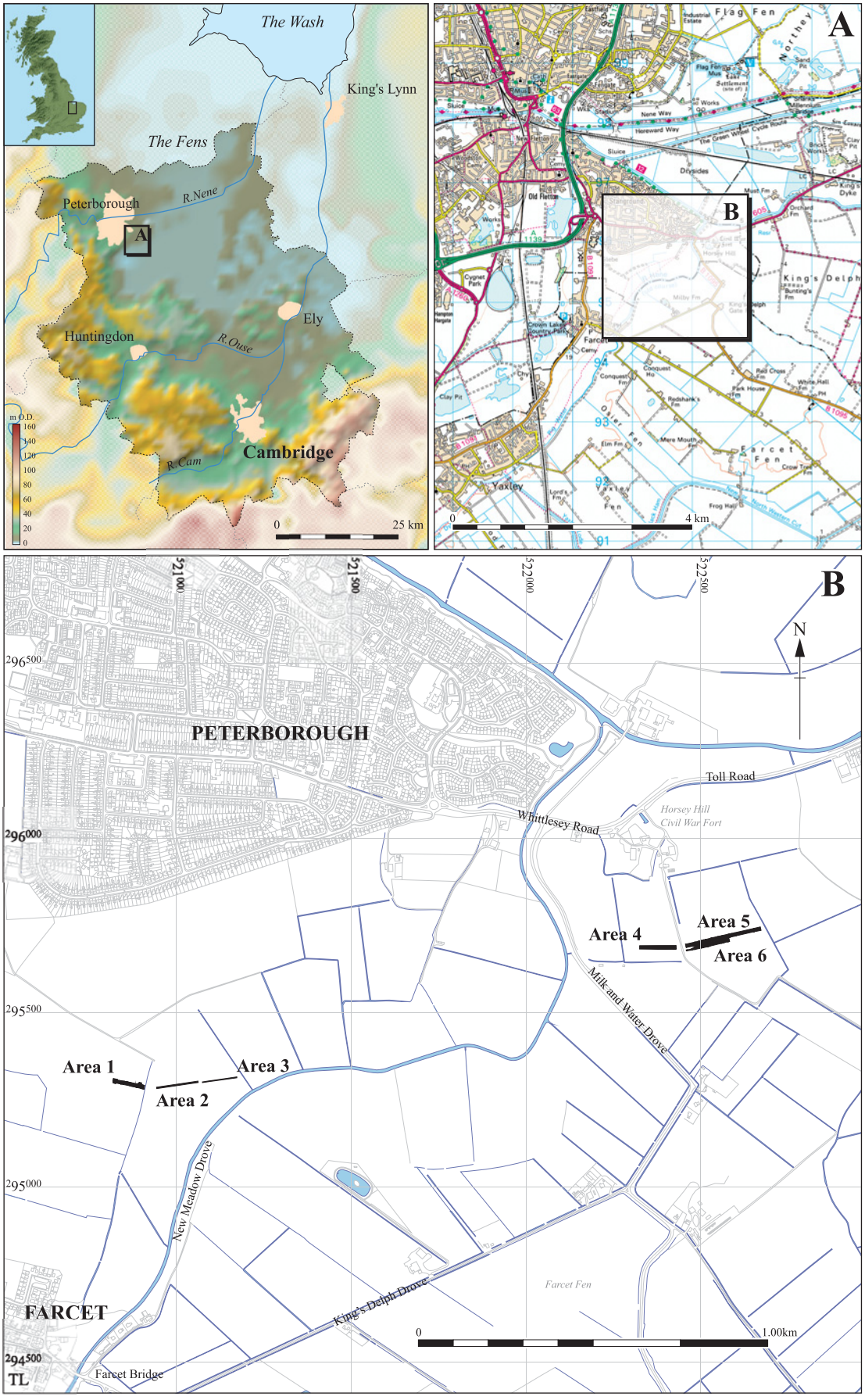


Figure 1: Location of excavation areas (black)

Figure 2: Phase plan of area 1

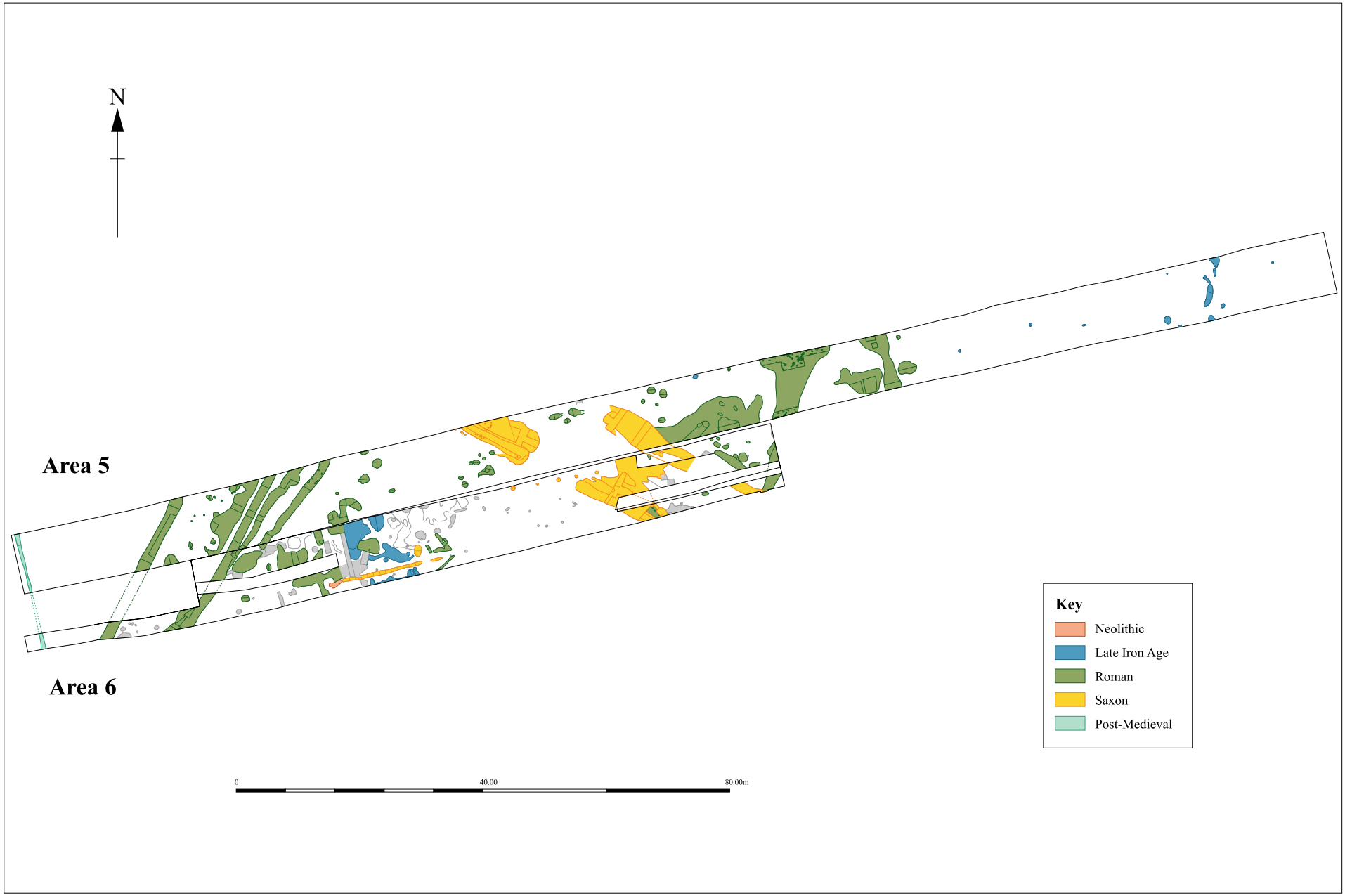
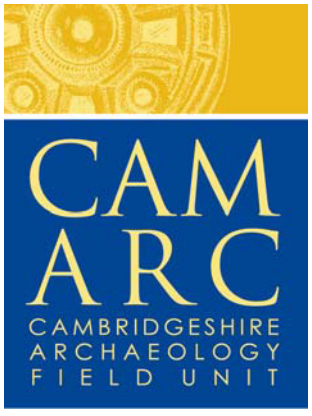


Figure 3: Phase plan of areas 5 and 6



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