



JOHN MOORE HERITAGE SERVICES

REPORT

ON

ARCHAEOLOGICAL WORK

AT

15/00786/FUL - LAND PARCEL ADJACENT TO

THE TAVERN PUBLIC HOUSE, STATION ROAD,

KEMBLE, GLOUCESTERSHIRE GL7 6AX

Project No. 3429
Site code KEKB 15

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Summary

John Moore Heritage Services carried out a programme of archaeological excavation at the land parcel adjacent to The Tavern Public House, Station Road, Kemble, Gloucestershire (NGR ST 98499742). Groundworks consisted of ground reduction of the footprint for a proposed carpark providing 333 spaces with an associated new access road from the A429 and a new pedestrian access route to Kemble station. Two ditches were present on site. The largest of these was Roman of the 2nd – 3rd century dated by Samian ware, a coin and small buckle piece, and displayed evidence of re-use in the Saxon period. Post-dating this were three small pits located along the same ditch line. The smaller ditch included a parallel hedgerow which represented former segmentation of the present field in the Mid to Late Medieval period likely prior to enclosure acts. Lazy bed features were present across a large portion of the site and there was widespread evidence for late 19th to early 20th century activity in the form of a quarry, bottle dump and prolific waste material in the topsoil.

1 INTRODUCTION

Site Location (Figure 1)

The development site is located immediately west of Station Road, Kemble, (NGR ST 98499742 centred). The site lies between 112m and 120m OD. The underlying geology is Forest Marble Limestone and Clay, and the land gently slopes down to the north and was formerly in agricultural use.

1.2 Planning Background

Cotswold District Council granted planning permission for change of use from agricultural use to a car park, providing 333 spaces with associated landscaping, lighting and boundary treatments, a new access road from the A429 and a new pedestrian access route to the station at Land Parcel adjacent to the Tavern Public House, Station Road, Kemble, Gloucestershire GL7 6AX (15/00786/FUL).

The archaeological advisor to the local planning authority deemed it appropriate that a programme of archaeological works was undertaken as part of the pre-application process. John Moore Heritage Services (JMHS) were commissioned to undertake this work.

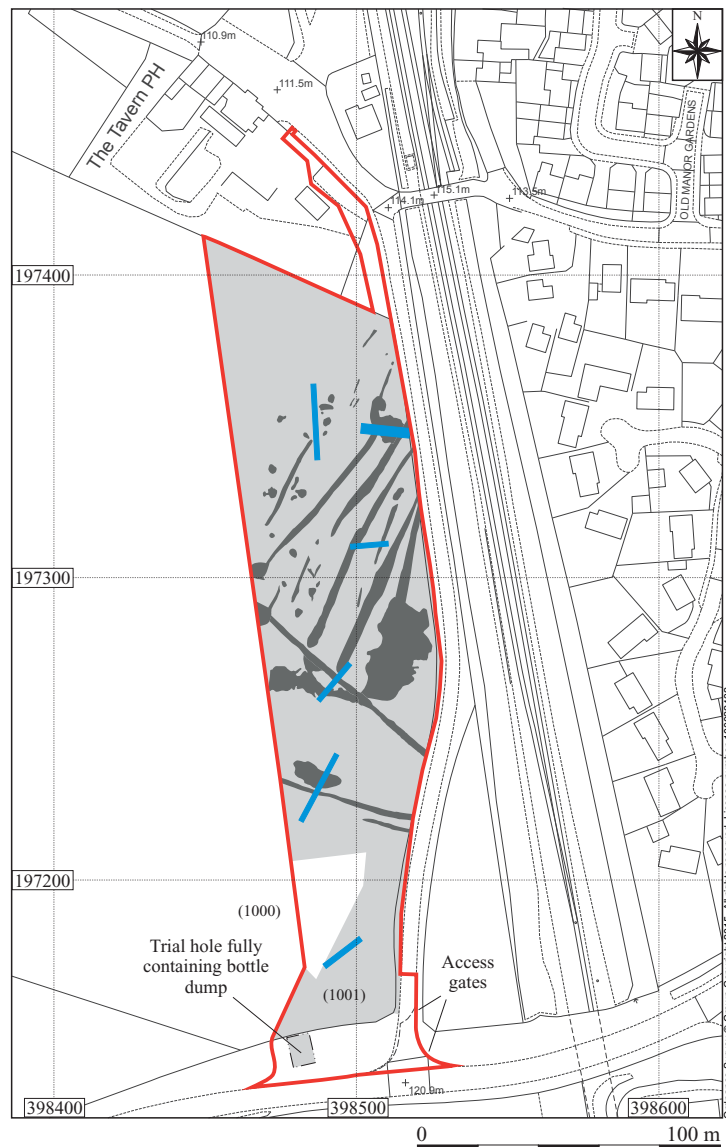
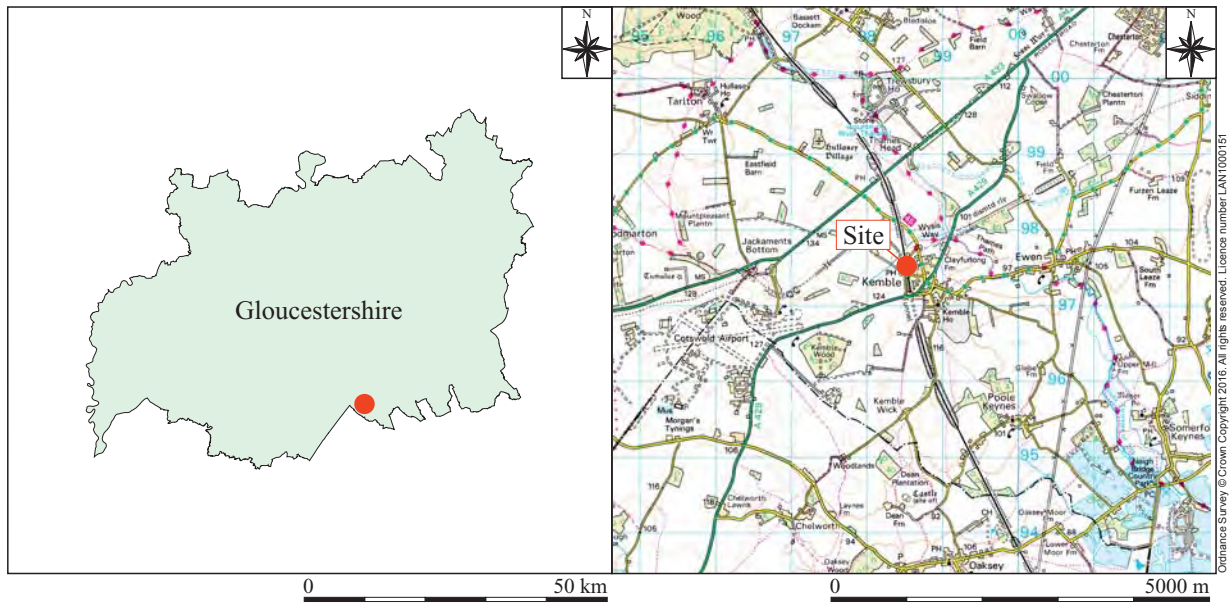
The first stage was a geophysical survey (Stratascan 2014). The next stage was an archaeological evaluation (JMHS 2015) followed by this excavation project.

1.3 Archaeological Background

The site is NW of the old village centre of Kemble. The site was considered to have a high potential to contain archaeological remains due to the high density of such remains to the east.

During an evaluation, prehistoric flints were found *c.* 500m ENE of the site (County Historic Environment Record 12319, NGR 39875 19755). Two Bronze Age pits were found during another evaluation 150m NE of the site (HER 21088, NGR 398599 197490), while a Beaker pit and possible contemporary ditch have been found *c.* 100m NE (HER 28724, NGR 39861 19746).

Several Romano-British burials have been found to the east of the site. These include a possible Roman stone coffin some 350m E of the site (HER 5767, NGR 39876 19731), and burials of a possible Romano-British or Saxon date rumoured to have been observed during construction of A429 between West Hay Yard and the main road (HER 13870, NGR 39860 19730). A total of 24 burials and disarticulated remains of five individuals of late Romano-British, Iron Age and Anglo-Saxon date have been excavated 250m E of the site (HER 15690, NGR 39878 197190). Part of a child burial was located during an evaluation and interpreted as being Romano-British due to its orientation and closeness to others of this date ((HER 21088, NGR 398599 197490). An L-shaped ditch containing Romano-British pottery was revealed in an evaluation (HER 28724, NGR 39861 19746). Roman pottery was found *c.* 500m ENE during an evaluation (HER 12316, NGR 39875 19755).



Key

- Site boundary
- Excavated area
- Excavated features
- Evaluation trenches (2015)

Figure 1: Site location

An Early Anglo Saxon cemetery has been found *c.* 650m NE of the site (HER 3117, NGR 3989 1978) while an Anglo-Saxon burial was located *c.* 450m to the ENE. No burials were found during a nearby evaluation (HER 12316, NGR 39875 19755).

Two pits and a ditch of medieval date were found during an evaluation 150m NE of the site (HER 21088, NGR 398599 197490), while medieval pottery has been found *c.* 500m E (HER 12318, NGR 39875 19755).

Undated remains include a ditch (HER 21088, NGR 398599 197490), a stone-lined pit and a sheep burial 150m NE (both HER 21088, NGR 39861 19746), a stakehole, curvilinear ditch or pit and a pit containing burnt bone some 250m SE (HER 39954, NGR 398678 196973).

A geophysical survey of the site undertaken by Stratascan has found several anomalies including pit rows, a double ditched feature, linear anomalies including, in some cases, associated banks and other features of possible archaeological origin.

Following the geophysical survey, a field evaluation by mechanical trenching was carried out. Six trenches were excavated. Towards the northeast corner of the site were a collection of small pits and postholes considered to indicate the position of a railway construction navvies' camp. Two ditches were considered to relate to field boundaries of the Roman or a later period and one ditch remained undated. A modern quarry was also found (JMHS 2015).

2 Aims of the Investigation

The aims of the investigation as laid out in the Written Scheme of Investigation were:

- To make a record of any significant remains during the course of any operations that may reveal archaeological remains.

In particular:

- To record surviving evidence of the navvies' camp.
- To fully investigate and record the ditches in order to securely date them and establish the reason for their origin and use. Discrete features in the area will also be examined to determine whether they are contemporary and, if so, how they relate to the use of the boundary ditches.

3 STRATEGY

In accordance with the WSI (JMHS 2016) approved by the Gloucestershire Planning Archaeologist, JMHS carried out the archaeological investigation of the development area. Site procedures for the investigation and recording of potential archaeological deposits and features were defined in the WSI.

3.1 Methodology

The archaeological investigation at Station Road in Kemble was carried out within the framework of a two-stage programme of works (Fig. 2). The first stage of work covered a predetermination archaeological field evaluation completed in 2015 (see 1.3). The main excavation of fully-stripped area covered the second stage of fieldwork.

The ground reduction of the footprint of the development area and temporary compound was carried out with a 20 tonne excavator equipped with a toothless 1.8m wide bucket, under archaeological supervision. Around 95% of the development area was reduced to the formation depth of the proposed car park which was also at the archaeological horizon and natural geological layer. The remaining five percent of the development area was located in the southern part of site close to the compound and left unstripped for the plantation of trees.



Plate 1: General view of the pre-stripped area facing south



Plate 2: General working shot of the stripping facing south

The resultant surface was cleaned by hand and planned. All archaeological deposits and features revealed were then manually cleaned and excavated, and recorded in accordance with the guidelines set out in the WSI. Archaeological features had written, drawn and photographic records made of them, and all deposits and features were assigned individual context numbers. The recording was carried out in accordance with the standards specified by the Chartered Institute of Archaeologists (2014) and the principles of MoRPHE (English Heritage 2006).

20% of ditches were excavated manually and all pits were subject to 50% sampling. Tree holes were demonstrated by one half section intervention. Lazy bed features were determined through machine interventions and recorded in profile by a manually excavated 2m slot.

All finds and artefacts were collected, cleaned, marked, bagged and boxed in accordance with the guidelines set out in the WSI, analysed by specialists and retained.

All variations to procedures specified in the WSI were subject to consultation and agreed by Charles Parry, Planning Archaeologist of Gloucestershire County Council, who visited after the stripping was complete.

Archaeological excavation and recording of features was carried out by a team of archaeologists comprised of one project officer, one project supervisor and three site assistants under the overall direction of company director John Moore.

4 RESULTS

4.1 Field Results

All features were assigned an individual context number. Context numbers with no brackets indicate feature cuts with numbers in the round brackets () indicating feature fills or deposits of material.

During the archaeological investigations, 53 single context numbers were assigned to 10 features, a main site plan was created and 18 sections were recorded. Seven features were dated and covered the periods from Roman to the Post-Medieval period.

Considerable flooding took place at the south end of the site during the investigation.

General deposits

The lowest deposits encountered during the archaeological investigation were layers of natural limestone across the southern portion of the site situated at the higher ground and layers of natural alluvial clay across the northern portion of the site sloping downwards from the south (1001). Throughout the entire investigation area, natural deposit (1001) was overlain by a 0.20-0.30m thick present-day plough soil (1000), described as dark brown clayey silt. The topsoil produced extensive post-medieval waste material throughout the site. This consisted predominantly of bottles with some pottery and agricultural iron tool fragments.

4.2 Roman period

The Roman period was the earliest phase of activity within the investigation area. This was represented by a 75m long ditch aligned northwest to southeast stretching across the central part of the excavation area (see Fig. 2). This ditch was originally identified during the geophysical survey and field evaluation (JMHS 2015) stages of archaeological investigation. A total of seven hand excavated sections each measuring 2m long were excavated through the ditch. Each of these revealed a similar profile and contained near very similar fills throughout. Group number 1002 has therefore been applied to this ditch to simplify its discussion.

The profile of ditch 1002 was wide-opened and straight sided (*c.* 45°) with a flat base. It measured between 1.35m wide at the north western end to 2.65m wide at the south eastern end and reached a maximum depth of 0.90m (Fig 2). It contained a lower fill of limestone rubble intermixed with mid – reddish brown silty clay which tipped from the north east throughout most of the ditch. Ditch 1002 also contained an upper fill of mid - yellowish brown clay rich silt which contained frequent small angular stones. A Samian ware full base sherd was recovered from its lower fill (1023) at the north western end. A Roman coin of 2nd – 3rd century and a small belt buckle of 3rd to 4th century date was recovered from the upper extent of lower fill (1030) in the central area of the ditch. Its upper fill was cut by pits 1016, 1018 and 1034 at the north western end. Two sherds of Post-medieval pottery were recorded from the lower fill (1026), however these are presumed to be intrusive and not representative of the age of the ditch.

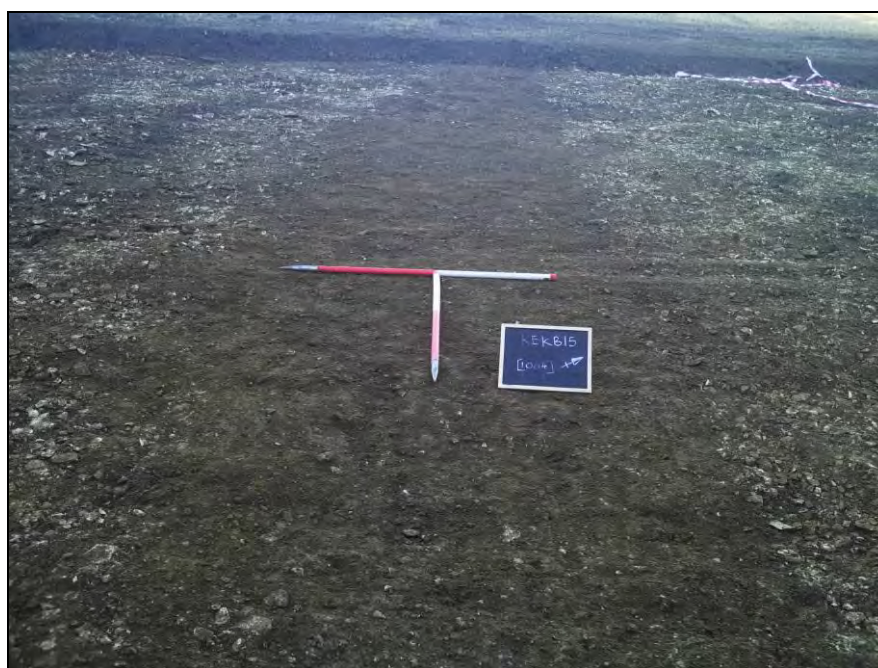


Plate 3 General overview of ditch 1002 during stripping. North West facing

Ditch 1002 was cut into part of a natural undulation filled with preserved subsoil deposit (1051) (See Fig. 3. Sec. 12). This had a very irregular shape and extended almost across the entire width of the excavation area, marking the general boundary between geological layers of limestone in the north and clay in the south (See figure 2). Fill (1051) was of a very sterile and homogenous mid-brown/red clay rich silt.

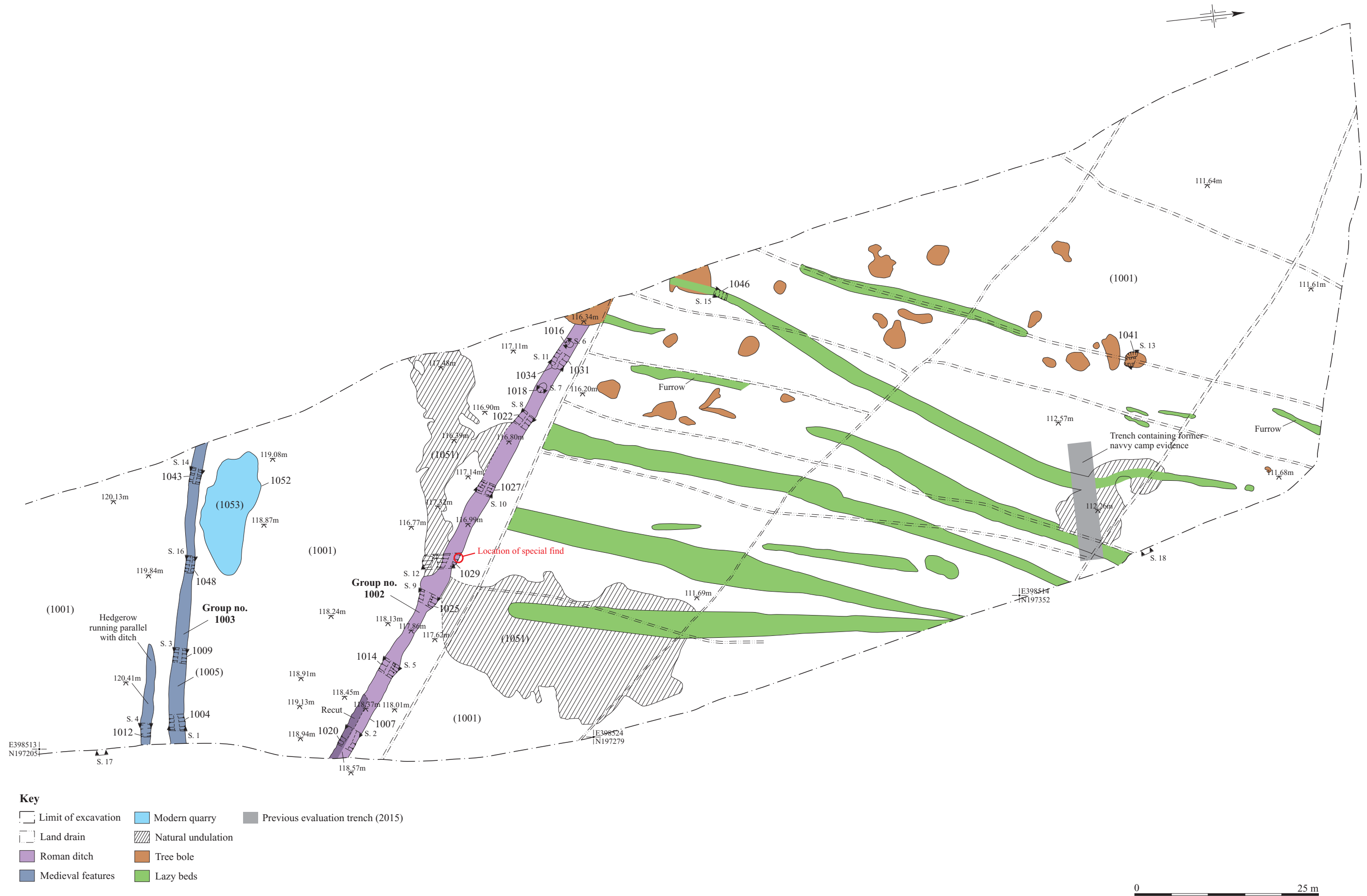
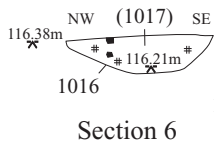
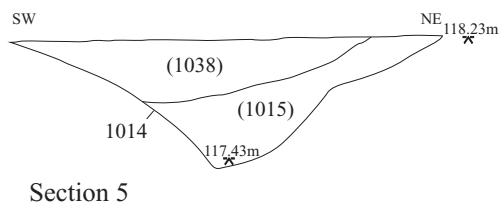
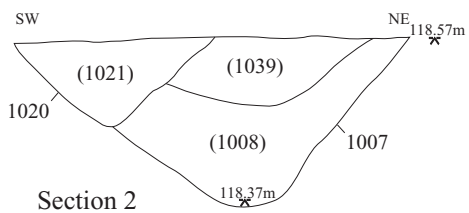
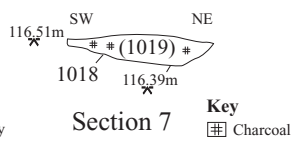


Figure 2: Site area

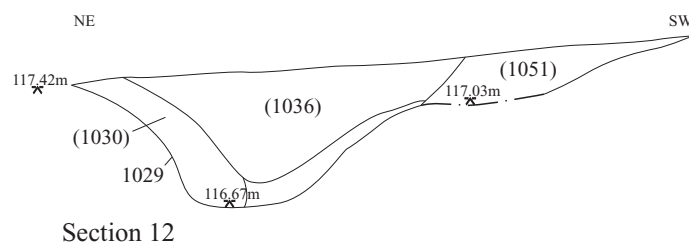
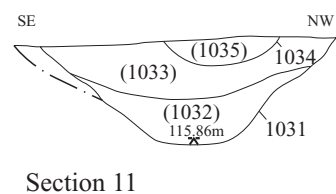
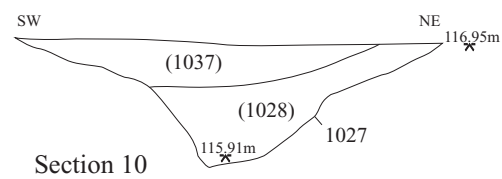
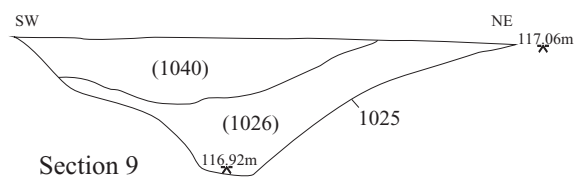
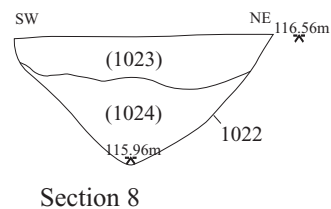
Sections of group 1002



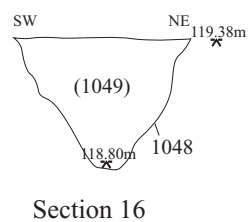
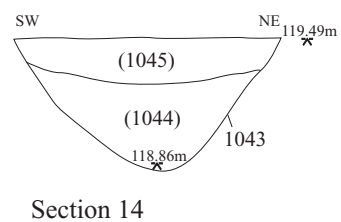
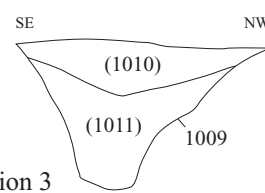
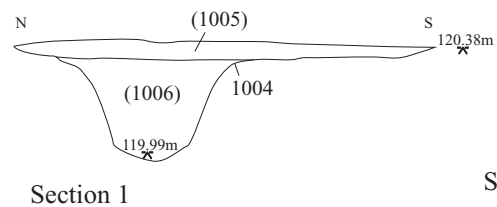
Key
 ■ Pottery
 ⊞ Charcoal



Key
 ⊞ Charcoal



Sections of group 1003



Other sections

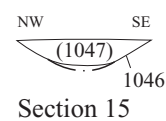
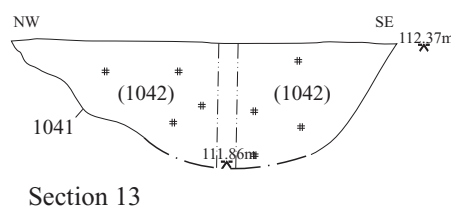
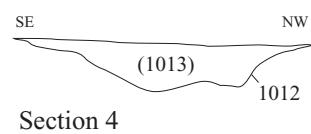


Figure 3: Sections

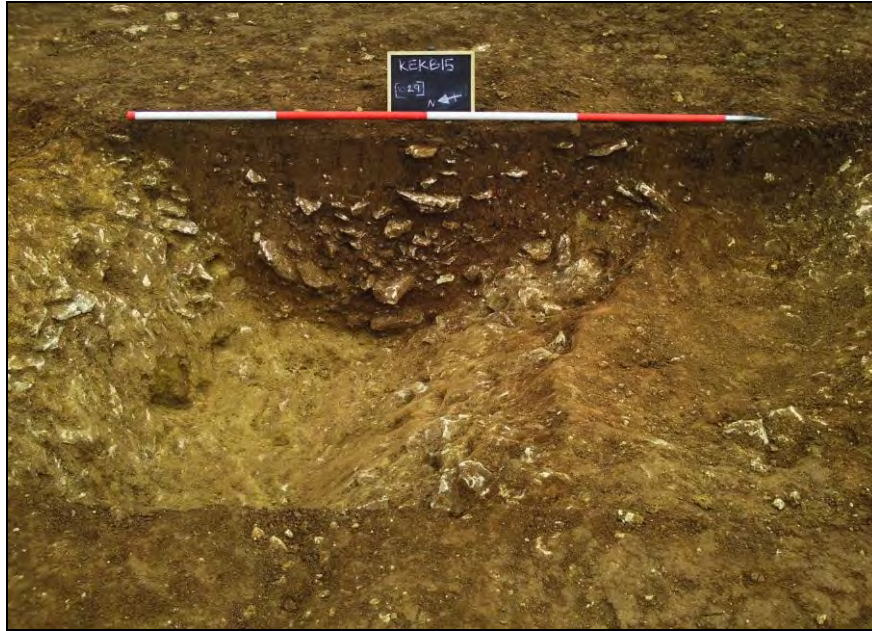


Plate 4: North West facing section of ditch 1002 overlying (1051)

4.3 Saxon period

The south west edge of ditch 1002 was truncated at the most eastern extent by recut 1020 Fig. 3, Sec. 2). This ran parallel along the edge of ditch 1002. It was a V-shaped cut with straight edges at 45° and measured 1.05m wide and 0.46m deep. It contained a single fill (1021) described as a mid-greyish brown silty clay. One sherd of Saxon pottery of 6th – 8th century date was recovered within this. Another sherd of Saxon pottery was recovered from the upper extent of upper fill (1038) 10m north west from recut 1021 in ditch 1002.

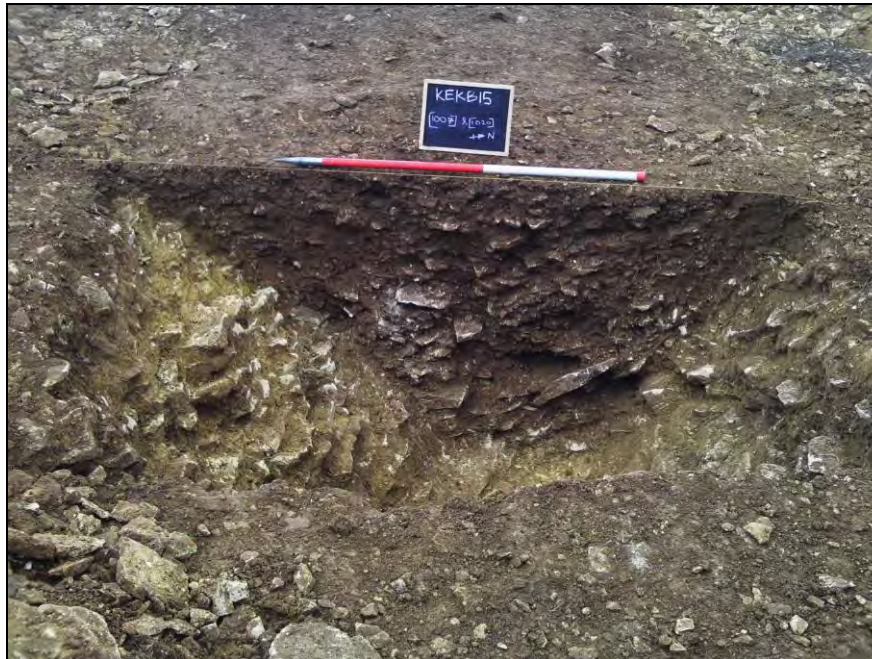


Plate 5: South Eastern facing section of ditch 1002 and recut 1020

4.4 Post Medieval

Another linear ditch was located approximately 50m south of ditch 1002 on an east - west orientation (Fig. 2). This ditch, at least 40m in length, has been allocated group number 1003 for this discussion. A total of four sections each measuring 2m were excavated throughout the ditch (Fig. 3, Secs. 1, 3, 14 & 16). The ditch profile was steep sided with sharp edges and a flat base. It measured between 1m to 2.2m wide and reached a maximum depth of 0.8m. It contained a lower fill of limestone and mid - reddish brown silty clay and an upper fill of mid - yellowish brown clay rich silt which contains frequent small sub-rounded stones. These fills were consistent throughout. Both the upper fill (1005, 1010) and lower fill (1006, 1007) contained domestic and wild animal bone and Post Medieval pottery fragments. In its lower fill (1011) a clay pipe stem was recovered. Residual Medieval pottery was recovered from lower fill (1006). Other residual material included Roman black burnished ware fragments from lower fill (1011).

Hedgerow feature 1012 ran parallel along the southern side of the eastern portion of Ditch 1003. No finds were recorded in this feature. Its profile was very irregular and undulating throughout as a result of bioturbation. It contained single fill 1013 of mid-yellowish brown silty clay which was very firm, homogenous and sterile.



Plate 6: East facing section of ditch 1003

No features or *in situ* Post-medieval evidence was present around the area of the formally recorded Navy's camp (JMHS 2015).

4.5 Industrial – Modern

A bottle dump was revealed during excavation works for the south west access route to site. It measured roughly 15m in diameter and 2m deep. Its fill comprised mainly of a dark brown loose silt with frequent densely packed bottles and occasional ceramic pots of a late 19th – early 20th century date.

Quarry 1052 was orientated east – west measuring 6m wide and 17m long (Fig. 2). Its fill (1053) was of a dark brown loose silt very similar to the topsoil (1000). Previous investigations of this pit (JMHS 2015) deemed it necessary to only record its extent in plan.

Considerable modern plough scars were noted in the natural geological layer, particularly around the northern extent of site. These were not seen to such an extent in the evaluation stage of work (JMHS 2015).

4.6 Undated feature

Lazy bed features were present running in a general parallel arrangement from the south west edge of the clay geological region to the north east edge of site. A total of seven were recorded covering an area of approximately 50m in width. They measured from 0.5m to 2m wide with a maximum depth of 0.14m and were spaced up to 4 metres apart in places. Their pattern was very irregular with one example of a crossover between them. Some lazy beds appeared to discontinue and were broken into segments in places. They contained a single fill of a mid-brown silty clay. A frequent scatter of animal bone was present within their fill.

No evidence of a formerly recorded (JMHS 2015) north-south oriented shallow ditch around the central eastern portion of site remained present.

Circular pits 1016, 1018 and 1034 (Fig. 3, Sec. 11) were situated along the centre of ditch 1002, overlying its upper fill at the north western end. Each of them were 50% sampled through half section interventions. Environmental bulk samples were also obtained from them. These pits were all similar in size and profile, measuring from 0.60m to 0.75m in diameter and between 0.20m to 0.14m deep. The profile of each pit was wide-opened and concave throughout. Their single fills (1017, 1019, 1035) consisted of a loose dark brown reddish silt containing frequent charcoal. From fill (1017) of pit 1016, animal bone of no definite date and a piece of scrap metal was recovered.

There were approximately 13 tree hole features located throughout the western part of the stripped area. They varied in size from around one to two metres in diameter. Most were very sterile with around 30% containing charcoal. Tree hole 1041 was relatively dense in charcoal and therefore hand excavated by half section to a depth of 0.68m to recover any potential finds and confirm the presence and general nature of tree holes on site. Its profile was very irregular and undermining in many places typical of rooting. Its single fill (1042) was of a very firm homogenous mid-brown grey silty clay and occurred naturally through time. The presence of charcoal was frequent throughout indicative of significant burning. It also contained two pieces of worked flint.

4.7 Reliability of Results

The reliability of the results is considered to be very good. The archaeological investigations took place in generally clement conditions with good light and visibility. On the whole, there was good cooperation from the ground workers, site manager, Lee Jones, and construction manager, Adrian Glibly, during all stages of archaeological field work. The archaeological investigation was monitored by Charles Parry on behalf of Gloucestershire County Council.

5 FINDS AND ENVIRONMENTAL REMAINS

5.1 Roman Pottery, Saxon and Medieval pottery by Jane Timby

Introduction

A small group of 25 sherds of pottery weighing 191.5 g dating to the Roman, Saxon, medieval and post-medieval periods was recovered. This was accompanied by two small lumps of ceramic building material (12g) and three fragments of clinker. Pottery was recovered from eight ditch contexts largely as single pieces with 15 sherds from the topsoil (1000). Overall the assemblage is very poorly preserved with overall average sherd weight of 7.6 g. For the purposes of the assessment the assemblage was scanned to assess the likely chronology and quantified by sherd count and weight for each recorded context. The resulting data can be found in Table 1.

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

Cxt	Type	Fabric	Name	Form	Wt	No	Comment	Date
1000	topsoil	Medmin	Minety ware	jar	107	13		late 12-15th
1000	topsoil	OXFRS	Oxon red-slipped ware	mortar	11	1		mid C3-C4
1000	topsoil	BW	black sandy ware	body	1	1		no date
1005	ditch	clinker			0	0		
1006	ditch	Medmin	Minety ware	jar	10	1	glazed	late 12-15th
1008		SXOR	organic-tempered	body	10	1		Saxon
1008		CBM	ceramic building material	frags	12	2		?Roman
1010	ditch	clinker			0	0	x2	
1010	ditch	PMGRE	glazed red earthenware		0.5	2		Post-med
1011	ditch	?DORBB1	Black burnished ware	body	3	2		C2-C4
1015	ditch	SXOR	organic-tempered	body	10	1	2=1 fresh break	Saxon
1024	ditch	LEZSA	Cental Gaulish samian (Lezoux)	cup base	21	1	stamped REBVRRIOF (= Reburus)	150-170
1026	ditch	Medmin	Minety ware	jar	18	2	4=2 breaks	late 12-15th
TOTAL					203.5	27		

Roman

Four sherds date to the Roman period. These include one piece of Oxfordshire colour-coated mortarium (Tomber and Dore 1998, fabric OXF RS) from the topsoil; two very small sherds of Dorset black burnished ware (ibid. DOR BB1) from cxt ditch fill 1011 (Ditch Group 1003) and one sherd of samian from ditch 1024 (Ditch Group 1002). The Samian sherd from ditch 1024 is a base sherd with a complete potter's stamp reading REBVRRIOF – from the workshop of Reburus. This pottery was working at Lezoux, Central Gaul (LEZ SA) in the period AD150-170. The Oxfordshire sherd dates to the late Roman period (AD 240-400) whilst the BB1 sherds can only be dated from 2nd-4th centuries.

Saxon

Two handmade organic-tempered sherds dating to the Saxon period were recovered from ditch recut fill 1021 (recut 1020) and ditch fill 1038 (upper fill of Ditch Group 1002). These sherds could date from the 6th through to the 8th century.

Medieval and post-medieval pottery

Medieval pottery from the Minety industry, north Wiltshire, was recovered from the topsoil (1000) and ditches 1006 (Ditch Group 1003) and 1026 (Ditch Group 1002).

Post-medieval pottery in the form of two very small chips of glazed red earthenware came from ditch fill 1010 (upper fill of Ditch Group 1003).

Ceramic building material (CBM)

Two small abraded lumps of CBM weighing 12 g were recovered from recut 1020 in associated with the Saxon sherd. They may be of Roman date.

Potential and further work

This is a very small and diverse group of poorly preserved material which has very little further potential. The presence of the Saxon pieces is perhaps noteworthy but there is a Saxon cemetery documented at Kemble so Saxon activity is known in the area. It is possible that some of the sherds are residual or intrusive. No further work is recommended.

5.2 Medieval Pottery by Paul Blinkhorn

The pottery assemblage comprised 12 sherds with a total weight of 263g. It was all post-medieval, and was recorded using the coding system of the Gloucester City type-series (eg. Vince 1984; Vince unpub.). The following fabric types were noted:

TF52: Oxidized glazed Malvernian Ware, 14th – early 17th century. 5 sherds, 104g.

TF61: Staffordshire Black-Glazed Earthenwares, late 17th – 18th century. 1 sherd, 38g.

TF80: Ashton Keynes-type Ware, 17th – 18th century. 6 sherds, 121g.

The pottery occurrence by number and weight of sherds per context by fabric type is shown in Table 2. Each date should be regarded as a *terminus post quem*.

The range of fabric types is typical of post-medieval sites in the region, as is the range of vessel forms, which comprised mostly internally-glazed bowls. The sherds are fairly large and in reasonably good condition, and appear reliably stratified, albeit as the product of secondary deposition.

Table 2: Pottery occurrence by number and weight (in g) of sherds per context by fabric type

	TF52		TF80		TF61		
Cntxt	No	Wt	No	Wt	No	Wt	Date
1000	2	90	4	49	1	38	L17thC
1005			1	27			17thC
1011	3	14	1	45			17thC
Total	5	104	6	121	1	38	

5.3 Lithics by Edwin Pearson

The small amount of debitage from lower fill (1026) of ditch 1002 is comprised of flakes of blueish-grey coloured flint with chalk cortex (present on one piece). The flakes are fully intact with irregular edges. The dorsal flake scars and platform surface indicate that they derive from the deliberate reduction of a core possibly in the early stages of biface production. Their large platforms are a technological characteristic associated with hammer stone technology. They cannot be refined to a date due to their basic technological aspects.

Debitage from the fill (1042) of tree hole 1041 consisted of two flakes also of blueish-grey coloured flint with chalk cortex. The first flake is heavily patinated with symmetrical edges and a broken tip. Its broken surface is also patinated but to a lesser extent. The second flake is patinated throughout to the same extent as the broken surface on the first flake. The dorsal flake scars and platform surface size indicate that they derive from the deliberate reduction of a blade core. Their relatively large and lipped platforms are a technological characteristic associated with hammer stone technology.

Condition

The flakes and blades from (1026) show significant post-depositional damage. Each flake is considerably patinated and has worn edges indicating long term exposure and damage occurring after deposition.

Flakes from (1042) are fresh and show no post-depositional damage. This indicates that they originate from the same time period as their context.

Discussion

Although the assemblage is small in number, its presence suggests human activity at the site during prehistory. Unfortunately, without chronologically diagnostic tool types, this date cannot be refined. The technological characteristics seen suggest that the flint derives from a knapping industry that included hard hammer percussion, and as such the material is consistent with prehistoric flints found *c.* 500m ENE of the site (County Historic Environment Record 12319, NGR 39875 19755).

5.4 Animal Remains by Simona Denis

Animal Bone

A collection of 149 animal bone fragments, with a combined weight of 380.1g, was recovered from ditches 1002 and 1003. The items are in a relatively fair state of preservation, although severely fragmented. Only five examples were found complete; with the exception of a single sheep molar found in ditch fill (1028), these were exclusively very small bones, belonging to an unidentified bird and a mouse. The limited size and the lack of diagnostic features prevented from any identification attempt for 76 of the fragments, representing 39.6% of the assemblage. Fresh breaks were observed throughout the assemblage; it was possible to reconstruct near-complete items in 5 different cases, indicating the true original number of items recovered as 116.

Species identification

Only 8 items, representing 6.8% of the assemblage, preserved diagnostic features and were positively attributed to a specific taxon; six examples (5.1% of the group) were positively identified as avian, although the exact bird species could not be positively identified. A single, incomplete incisor was tentatively identified as pig, representing 0.8% of the collection. Small and undiagnostic mammal fragments were, when possible, divided by size range and attributed to small (*ovis*) or large (*bos*) mammals.

Four different *taxa* were identified; the most represented being sheep/goat, with a total of 25 examples (21.5% of the assemblage); seven items (6%) were attributed to cow. Mouse and pig were represented by a single example each, representing 0.8% of the collection. Due to the variable sizes and robustness of animal bones taphonomic factors may favour preservation of certain species, resulting in the under-representation of others (Kasumally 2002).

Table 3: Animal Bone Occurrence by context and type

Feature No.	Context	Species	Type	No. of Fragments	Weight (g)	Comments
1002	1015	?Sheep/Goat	?Costal groove	1	0.3	Burnt
			?Cranium	1	5.1	
		Unidentified mammal	Cortex	9	1.9	
	1026	?Sheep/Goat	?Tibia diaphysis	12, conjoining	40.1	Fresh breaks
			Cortex	8	10.7	?Part of ?Tibia
	1028	Sheep/Goat	Molar ?M1	1	0.9	
			Premolar ?P4	1	0.5	
		Sheep	Molar M3	1	4.1	Complete
		?Sheep/Goat	Molar enamel	3	2.3	
		Cow	Radius	9, conjoining	162.9	Fresh breaks

		?Cow	?Ulna diaphysis	5, conjoining	14	Fresh breaks. ?2 blade/point insertion
		Unidentified	Cortex	5	8.1	
		Unidentified mammal	Cortex	63	11.7	
	1036	Sheep/Goat	Femur diaphysis	8, conjoining	95.2	Fresh breaks
			Femur proximal epiphysis	1	4.8	?Part of ?Femur diaphysis
		?Sheep/Goat	Cortex	5	5.2	?Part of ?Femur diaphysis
1003	1005	?Sheep/Goat	?Metacarpal diaphysis	4, conjoining	7.2	Fresh breaks
		Unidentified bird	Humerus	1	0.2	Complete
		Unidentified	?Costal groove	1	0.2	
	1010	?Pig	?Incisor	1	0.8	
		Unidentified mammal	Cortex	1	1	
	1011	Mouse	Femur	1	0.4	Complete. Unfused
		Unidentified bird	Femur	1	0.1	Complete. Unfused
				1	0.2	Unfused
			Tibia	1	0.2	Complete. Unfused
			Unidentified long bone diaphysis	1	0.1	
			?Cranium	1	0.2	
1016	1017	Unidentified mammal	Cancellous bone	1	0.4	

Cut Marks

Clear cut marks were observed on two items. The possible cow ulna diaphysis found in ditch fill (1028) showed 2 parallel point or blade insertions, perpendicular to the bone shaft. At least two cut marks were observed on the burnt cortex item recovered from ditch fill (1015). The marks, parallel to the bone shaft, might have been produced during bone working rather than as a result of butchering.

Distribution

The vast majority of the animal bone fragments (104 items, or 90.5% of the assemblage) were recovered from ditch 1002, dated to the Roman period. 73 of the fragments belonging to this group remain unidentified due to their small size and lack of diagnostic feature. Of the two identified species, sheep/goat is the most

represented, with 24 examples (22% of the group), while the seven remaining were identified as cow, representing 6.6% of the assemblage found in ditch 1002.

The post-medieval ditch 1003, representing only 9.4% of the animal bone recovered during the excavation, contained all of the bird bones recorded (6 examples), making *avian* the most represented *taxa* in this group. Sheep/goat, pig and mouse are represented by a single item each, while only 2 fragments remain unidentified.

A single fragment of belonging to an undetermined mammal was recovered from undated pit 1016, representing 0.8% of the recovered assemblage.

5.5 Copper Alloy Object by *Stephen Yeates*

SF2 (1030) Copper alloy buckle or strap fastening measuring 17mm x 16mm x 1mm thick. The object is sub-circular D-shape with one side flattened forming a bar or pivot. The internal aperture is sub-rectangular in shape measuring 11mm x 11mm. The pivot is formed by a bar, which would previously have been attached to a strap of some kind. The three remaining sides are flatter and broader and there is a gap at the one end of the bar and between the adjoining sides; which is possibly broken.

Such objects are presumably produced locally to different designs. A buckle of a simple design, but not identical was recovered from structure XIX at the Uley Shrines (Woodward and Leach 1993: 176-177 Fig. 135: 12). Here the object is described as a D-shaped buckle. The design is different but the overall creation has the same component parts. Structure XIX was a phase 7 building associated with a 5th to 6th century date. A closer example can be found at Frocester Roman Villa where it is classed under the harnesses and miscellaneous fittings (Price 2000: 57-58 Fig 2.14: 354). This example is dated to the late 4th century. The main difference here is that the circular part of the D-shape has a rib or ridge thus creating a diamond profile. Two buckles from Kingscote are far closer matches, though again not identical (Timby 1998: 163-164 Fig. 79 1.423 1.425). The first of these brooches is D-shape with a rounded pivot and a flattened semi-circular component. In this example the prong survives, which is wrapped around the pivot. The second example has a more compatible shape than any other buckle so far identified; however, the pivot is a broader flatter design, not rounded. The Kemble find appears to be a composite of these two examples. Both of these examples appear to be unstratified or unphased. A further similar example was recovered from Cirencester and treated as a military belt buckle; however, the scale of this buckle was nearly twice as large (Paddock 1998: 321-322 fig. 195 64) but the shape of the object was near identical. This particular buckle has been identified as a Hawkes and Dunning type IIIA, which was considered to be dated to AD 270 or after, thus implying a late 3rd to 4th century date for the Kemble buckle.

5.6 Coin Report by *Pierre-Damien Manisse*

A single coin (SF1) has been found during this archaeological investigation. It is a very worn Roman coin, found in the upper part of a ditch fill (1030). Legends are no longer visible and details barely recognizable though it can be attributed to the second half of the 3rd C. Such imitation of imperial production might have circulated a long time before being lost.

Catalogue

1. Imitation of antoninianus, SF1, Copper Alloy

Obverse: ... – Radiate head of emperor to the right.

Reverse: ... – Standing figure.

Ref.: -

Diameter = 16.6mm Weight = 1.10g Axis = 4h

5.7 Palaeoenvironmental remains

Introduction

This report summarises the findings arising out of the finds assessment undertaken by Quaternary Scientific (University of Reading) and Archaeology South East (University College London) in connection with the archaeological investigation of Station Road, Kemble, Gloucestershire. Quaternary Scientific were commissioned by John Moore Heritage Services to undertake the assessment.

Three semi-processed samples originating from Early and Post Medieval pits were submitted for assessment. The aims of the assessment were: (1) to quantify the concentration and preservation of artefact and eco-fact remains; (2) to provide a preliminary reconstruction of past vegetation, diet and economy of the site, and (3) to establish the significance and potential of the samples for further work.

Method

The residues were received in bags and measured 0.75 L. Lumps of sediment were visible, therefore they were re-processed to allow flotation of the biological remains. Residues were re-floated using a 500µm mesh for the heavy residue and a 250µm mesh for the retention of the flot before being air dried. The resulting heavy residues were passed through 8, 4 and 2mm sieves and each fraction sorted for environmental and artefactual remains (Table 3). Artefacts recovered from the samples were distributed to specialists and discussions are included in this report. The flots were scanned under a stereozoom microscope at 7-45x magnifications and their contents recorded (Table 3). Where necessary, flots were subsampled and 100ml of the volume scanned. Provisional identification of the charred remains was based on observations of gross morphology and surface structure and quantification was based on approximate number of individuals. Nomenclature follows Stace (1997) for wild plants and Zohary and Hopf (1994) for cereals.

Charcoal fragments were fractured by hand along three planes (transverse, radial and tangential) according to standardised procedures (Gale & Cutler, 2000; Hather, 2000). Specimens were viewed under a stereozoom microscope for initial grouping, and an incident light microscope at magnifications up to 500x to facilitate identification of the woody taxa present. Taxonomic identifications were assigned by comparing suites of anatomical characteristics visible with those documented in reference atlases (Schoch *et al*, 2004; Hather, 2000; Schweingruber, 1990). Quantification and taxonomic identifications of charcoal are recorded in Table 4 and nomenclature follows Stace (1997).

Animal bone

The assemblage has been recorded onto an Excel spreadsheet in accordance with the zoning system outlined by Serjeantson (1996). Wherever possible the fragments have been identified to species and the skeletal element represented (Schmid 1972, Von den Driesch 1976). Elements that could not be confidently identified to species, such as long-bone and vertebrae fragments, have been recorded according to their size and categorised as large, medium or small mammal. The assemblage does not contain any measurable bones or ageable mandibles. Age at death data has been collected for each specimen where observable; the state of epiphyseal bone fusion has been recorded as fused, unfused and fusing. Specimens have then been studied for signs of butchery, burning, gnawing, non-metric traits and pathology. The results are displayed in Table 3.

Burnt bone

Bone fragments were collected and subjected to careful recording and separated in sieve fractions of 2-4mm, 4-8mm and >8mm. The total weight of the burnt bone assemblage was established and the assemblage then examined to record the bone colour. The potential of the assemblage to yield further information was then considered. The results are displayed in Table 3.

Results and Interpretation of Macrofossil and Charcoal Assessment

All three flots contained elements of disturbance consisting of uncharred rootlets. Sample <2> from fill 1017 was however dominated by charcoal and only contained 30% uncharred roots.

Charred plant macrofossils were numerous in fill (1017) and scarce in (1019). Caryopses of wheat (*Triticum* sp.), some displaying the typical morphology of the free-threshing type, were recorded, alongside hulled barley (*Hordeum* sp.), wheat/barley, and possible oat (*Avena* sp.). It is not possible to identify oat grains as belonging to a wild or cultivated species without the diagnostic chaff. The state of preservation was moderate, although a number of caryopses displayed abrasion and pitting. Wild plants, possibly crop weeds, included large grasses (Poaceae) and goosefoot (*Chenopodium* sp.).

Most of the charcoal had floated, possibly because of the absence of sediment encrustations which would have prevented the fragments from floating. Hence, very little charcoal was retained in the heavy residues and the ten fragments to undergo assessment were mostly extracted from the flots. Fill (1019) produced mainly ash (*Fraxinus excelsior*), mostly vitrified, followed by hazel (*Corylus avellana*) and hazel/alder (*Corylus avellana/Alnus* sp.). Fill (1017) yielded highly vitrified charcoal fragments. The following taxa were recorded in this context: field maple (*Acer campestre*), hazel, oak (*Quercus* sp.) and the Maloideae subfamily. The latter includes taxa that are generally not distinguishable on grounds of wood anatomy, such as apple (*Malus* sp.), pear (*Pyrus* sp.), hawthorn (*Crataegus* sp.) and rowan/service (*Sorbus* sp.).

Finds from the heavy residues included undiagnostic fragments of burnt clay, which weighed 42 g and three fragments of pottery from fill 1017 which were of post-Roman date. The magnetic material is likely to be of natural origin.

Results and Interpretation of the Bone

Sample <2> of fill (1017) produced a small assemblage of faunal remains containing 84 fragments weighing <2g, of which only 25 were identifiable to taxa. The bones are in a moderate state of preservation with some signs of surface erosion evident, no complete bones are present. A small amount of burnt bone was recovered from contexts (1017) and (1019).

Animal Bone

A limited range of taxa have been identified (Table 3), the majority of which have been identified as wild taxa, including fish, bird and small mammal bones.

Herring vertebrae dominate the assemblage, a small number of which appear to have been crushed, suggesting that the bones may have been consumed and possibly digested. No cranial elements were recovered. This may be due to preservation levels and the fragility of the cranial elements or it could suggest evidence of fish processing for trade purposes (Barrett *et al* 2016, Locker 2000) Although the town of Kemble is not a coastal settlement, it is not far from the Bristol Channel, the herring bones recovered could have originated from either a preserved or fresh specimen. A small number of fragmented fish vertebrae and a fish spine were also recovered.

A number of medium mammal bones were present including tooth, rib and sesamoid fragments as well as a long bone fragment. Small mammal vertebrae were recovered, along with an adult bird vertebrae and a fragment of adult bird humerus.

No evidence of butchery, burning, pathology or non-metric traits have been observed.

Burnt Bone

Bone fragmentation and weight of burnt materials

The total amount of bone recovered from the contexts analysed was 0.97 grams (Table 4). Only the small and medium-sized fragments were present in the assemblage. None of the burnt bone recovered from the assemblage was identifiable as either possible human or animal bone. As a consequence of this, no demographic data was yielded. Finally, no evident pathology was observed in the whole assemblage of burnt bone.

Bone colour

With regards to the degree of oxidation of the organic component of bone, it was noted that 50% of the assemblage was fully oxidised white (>c. 600° C) which suggests a highly efficient burning process and the remaining bone showed a combination of grey and blue hues, thus suggesting an incomplete oxidised process (up to c. 600° C).

Significance and Potential

Plant macrofossils and charcoal

The charred plant macrofossils and charcoal from Station Road could have a local or regional significance, depending on the dating of the contexts. The small amount of oak wood is interesting, because this tree is known to produce an excellent fuel. This taxon is however also prized for timber and joinery (Taylor 1981). If the small

amount of this taxon was confirmed by analysis and recorded in other contemporary assemblages from the same area, this might indicate a low availability of this tree in the local landscape. Charred plant macrofossils were infrequent and they have a low significance.

The small group of cereal grains from pit fill (1017) are a background noise from cereal processing or cooking activity carried out nearby. The absence of chaff hindered the secure identification of the cereals down to species level. The recorded oats could either have been a crop in their own right, or a tolerated weed. Some wheat caryopses displayed the typical shape of the free-threshing types, which tend to replace spelt after the Roman period. This is likely due to them being easier to process and able to provide higher yields compared to the glume wheats. The large seeded grasses and goosefoot are common arable weeds. Given the scarce amount of cereal caryopses and weed seeds, as well as the absence of diagnostic chaff, this assemblage holds no potential for analysis.

The charcoal assemblage presents an interesting mixture of taxa whose woods burn rather well, such as ash, and others that tend to be used less for fuel, such as maple (Taylor 1981). Fuel selection might have been based on what was widely available in the local landscape, rather than on burning properties of individual taxa. The assemblage has the potential to inform us on fuel selection strategies and possibly on environmental changes that were happening in the area, through a comparison with other charcoal datasets from the region.

Burnt Bone

The information obtained from the small assemblage of burnt bone recovered from excavation was of little significance due to its size, degree of fragmentation and lack of demographic information derived from the material.

As no human or animal fragments were positively identified in the sample, the results obtained hold no potential for further study.

Recommendations

No further work is recommended on the charred plant macrofossils.

The animal bone assemblage size is too small to warrant any further analysis and no further work is recommended. No further work is recommended on the burnt bone assemblage.

Table 3: Residue Quantification and Charcoal Identifications and weights in grams

Sample Number	Context	Charcoal >4mm	Weight (g)	Charcoal 2-4mm	Weight (g)	Charcoal Identifications	Charred Botanicals (other than charcoal)	Weight (g)	Bone and Teeth	Weight (g)	Burnt bone 4-8mm	Weight (g)	Burnt Bone 2-4mm	Weight (g)	Fishbone and Microfauna	Weight (g)	Marine Molluscs	Weight (g)	Land Snail Shells	Weight (g)	Other (eg. pot, cbm, etc.) (quantity/ weight)
1	1019	*	<1	**	<1	<i>Fraxinus excelsior</i> 8 (vitrified), <i>Corylus avellana</i> 1, <i>Corylus avellana/Alnus</i> sp. 1	*	<1			*	<1	*	<1			**	2	*	<1	Mag.Mat. >2mm (*/<1g) Mag.Mat. <2mm (*/<1g)
2	1017	**	3	***	2	Maloideae 4, <i>Acer campestre</i> 2, <i>Corylus avellana</i> 1, <i>Quercus</i> sp. 1, cf <i>Quercus</i> sp. 1, Indet.1. very vitrified	**	1	**	3	*	<1	*	<1	**	<1	*	1			Pot (*8g) Burnt Clay (**/39g) Mag.Mat. >2mm (**/3g) Mag.Mat. <2mm (**/1g)
3	1035			**	<1		*	<1									*	<1			Mag.Mat. >2mm (*1g) Mag.Mat. <2mm (**/<1g)

Key: * = 1-10, ** = 11-50, *** = 51-250, **** = >250

Table 4: Flot quantification and weights in grams

Sample Number	Context	Weight (g)	Flot volume (ml)	Volume Scanned	Uncharred (%)	Sediment (%)	Charcoal >4mm	Charcoal 2-4mm	Charcoal <2mm	Crop Seeds Charred	Identifications	Preservation	Weed Seeds Charred	Identifications	Preservation
1	1019	6	60	60	50	10	**	***	****						
2	1017	41	170	100	30	10	**	***	****	**	<i>Hordeum</i> sp., hulled, <i>Avena</i> sp., cf <i>Triticum</i> sp., <i>Triticum</i> sp., free-threshing	++	*	Poaceae. <i>Chenopodium</i> sp	++
3	1035	2	10	10	70	10	*	**	****						

Key: * = 1-10, ** = 11-50, *** = 51-250, **** = >250

6 DISCUSSION

The presence of Samian ware, a Roman coin and buckle in the basal fills of ditch 1002 indicate a date of 2nd – 3rd century. The density and condition of finds in ditch 1002 and the nature of its size and extent suggest it as a boundary for dispersed activity covering a substantial area. The lower fill of this ditch, consistently tipping from the NE, implies a former bank along its NE edge. The location in which the lazy bed features abruptly terminate along this proposed bank support the presence of a bank. The position of ditch 1002 and its former bank in relation to known archaeology in the wider area suggests it could have marked a boundary for activity including Roman funerary and possible domestic features to the east.

Although there were no finds present in ditch 1002 derived from the 4th or 5th century, the location of the buckle and coin, dated to the later 3rd century, in the upper extent of its basal fill (1030) together with Saxon pottery located in the upper extent of its upper fill (1038) indicates the possibility of continuity. This implies that ditch 1002 would have gradually silted up through its use over around 200 years prior to the deposition of Saxon material within it. The relatively low density of finds throughout the ditch would provide reason for the absence of 4th and 5th century material in this case.

Recut 1020 supports revisiting and/or further continued use of this boundary after the 5th century into the Saxon period and possibly relates ditch 1002 to further Saxon burials to the ENE. This sheds light on the potential significance of ditch 1002 in respect to its function and position in the wider landscape over a considerable timeframe.

Due to the location of natural deposit (1051) it is now clear that it represents what was interpreted as a Roman ditch in the evaluation stage (JMHS 2015). Therefore the difference in depth and orientation between ditch 1002 and natural deposit (1051) confirms that ditch 1002 is the separate NW – SE oriented feature recorded in the geophysics survey.

The sterility of the tree hole deposits imply they are of a much older date than the Roman period onwards, prior to when increased activity in the surrounding area resulted in a general scatter of finds depositing in depressions. The evidence for burning and presence of small worked flints within tree hole 1041 provides capability to suggest prehistoric land clearance, possibly through ‘slash and burn’.

Bioturbation such as hedgerow 1012 and tree holes, and natural depressions in the geology all contained very similar red silty sterile deposits indicative of preserved subsoil. Deposits within most anthropogenic features such as lazy beds and ditches comprised a portion of this. This indicates subsoil being present on the site until at least the mid – late medieval period and in turn indicates more intensive ploughing as a relatively recent phase of activity. Recent increase in plough scares also support this and indicate a very recent (post-evaluation stage) complete obliteration of the very shallow *in situ* Navy camp remains through ploughing.

Clay pipe stem in the basal fill of Ditch 1003 secures a Post Medieval date. Its parallel hedgerow 1012 is presumed to be contemporary forming a typical Post Medieval hedge and ditch boundary in parallel with present north and south field boundaries. This shows former segmentation of the present field and the deliberate backfill within

ditch 1003 suggests it was eliminated as part of increased enclosure acts throughout the Post-medieval period. Following this is likely when extensive ploughing and consequent elimination of subsoil from the general deposits progressively occurred.

The irregularity of the lazy beds suggests that they followed natural undulations in the landscape. The altering depth across the length of ditch 1002 together with the presence of deposit 2015 and irregularity of the lazy beds indicate a relatively uneven land topography prior to modern ploughing. The measurements, profile, orientation and fill of undated ditch 3/07 recorded in the evaluation stage (JMHS 2015) are similar to those of the lazy beds and can now be categorised as part of the same formation. The general lie of the land and location of present flooding indicate the orientation of the lazy beds as the most productively efficient when factoring both the need for drainage and adequate amount of lazy beds. Modern land drains seem to have partially adopted this same layout. Animal bone in the lazy bed features likely represents the remnants of a form of crude fertiliser spread across the area. Although no dating evidence was recovered from the lazy beds, the fact that they respect the former Roman bank line and contain some preserved subsoil within them suggests their date to be either contemporary with ditch 1002 or post-dating it when was still visible to some degree and prior to when extensive ploughing took place in the Post Medieval period. The nature of their fills being of a darker and siltier nature than those of ditch 1002 would imply a later date than the Roman period.

The date range of the lazy beds in turn provides a time frame to date pits 1016, 1018 and 1034 to between the Early Medieval and Post Medieval period, as they cut the later occurring upper fills of ditch 1002 and respect its alignment. They also contained free-threshing grains, which tend to replace spelt after the Roman period. Furthermore to secure a general date for these pits, the nature of their fills (1017, 1019, 1035) is relatively similar those of the lazy beds and Modern quarry in terms of colour and composition.

Poor drainage and a formerly uneven land surface provide reason for the absence of any long term settlement activity remains on site.

7 BIBLIOGRAPHY

Barrett, J.H., and Orton, D.C., (2016) *Cod & Herring: The Archaeology & History of Medieval Sea Fishing*. Oxbow Books. Oxford.

Gale, R. & Cutler, D. (2000). *Plants in Archaeology*. Otley/London: Westbury/Royal Botanic Gardens, Kew.

Hather, J. G. (2000) *The Identification of the Northern European Woods: A Guide for archaeologists and conservators*. London: Archetype Publications Ltd.

John Moore Heritage Services 2015, *An Archaeological Evaluation at the Kemble Bathurst Site, Kemble, Gloucestershire*. Unpublished client report

John Moore Heritage Services 2016, 15/00786/FUL - Land Parcel adjacent to The Tavern Public House, Station Road, Kemble, Gloucestershire G17 6AX. Programme of Archaeological Excavation, Post-excavation Analysis and Report Production. Written Scheme of Investigation. Unpublished

Leney, L., & Casteel, R.W. (1975) Simplified procedure for examining charcoal specimens for identification. *Journal of archaeological science*, 2, pp. 153-159.

Locker, A. (2000) The role of stored fish in England 900-1750AD; the evidence from historical and archaeological data. University of Southampton. Department of Archaeology. PhD Thesis.

Paddock, J M 1998 Military Equipment, in N Holbrook (ed.) Cirencester: The Roman Town Defences, Public Buildings and Shops, 321, Cirencester: Cotswold Archaeological Trust

Price, E 2000 Frocester: A Romano-British Settlement, its Antecedents and Successors – Volume 2: The Finds, Gloucester: Gloucester and District Archaeological Research Group

Schmid, E. (1972) 'Atlas of Animal Bones- for pre-historians, archaeologists and quaternary geologists.' Amsterdam: Elsevier Publishing Company.

Schoch, W., Heller, I., Schweingruber, F. H., & Kienast, F. (2004) *Wood anatomy of central European Species*. Online version: www.woodanatomy.ch.

Schweingruber, F.H. (1990) *Mikroskopische Holzanatomie / Anatomie microscopique du bois / Microscopic Wood Anatomy*. Birmensdorf: Swiss Federal Institute for Forest, Snow and Landscape Research.

Serjeantson, D. (1996) 'The Animal Bones, in Needham, S and Spence, T 'Runnymede Bridge Research Excavations, Volume 2: Refuse and Disposal at Area 16 East, Runnymede'. London: British Museum, 194-223.

Stace, C. (1997) *New Flora of the British Isles*. Cambridge: University Press.

Taylor, M. (1981) *Wood in Archaeology*. Shire Publications

Timby, J 1998 Excavations at Kingscote and Wycombe, Gloucestershire, Cirencester: Cotswold Archaeological Trust

Vince, AG, unpub. *The Medieval Ceramic Industry of the Severn Valley* Unpublished PhD Thesis, University of Southampton, 1984

Vince, AG, 1984 Late Saxon and medieval pottery in Gloucestershire in A Saville (ed.) *Archaeology in Gloucestershire. From the Earliest Hunters to the Industrial Age*, 248-75

Von den Driesch, A. (1976) 'A Guide to the Measurement of Animal Bones from Archaeological Sites', Peabody Museum Bulletin Harvard University.

Woodward, A and Leach, P 1993 The Uley Shrines: Excavation of a ritual complex on West Hill, Uley, Gloucestershire: 1977-9, London: British Museum Press / English Heritage Archaeological Report no 17

Zohary, D. and Hopf, M. (1994) *Domestication of Plants in the Old World* (2nd ed).
Oxford: Oxford University Press