Leavesden Aerodrome, Abbotts Langley

Watford, Hertfordshire

POST-EXCAVATION ASSESSMENT AND RESEARCH DESIGN

OXFORD ARCHAEOLOGICAL UNIT

April 1999

LEAVESDEN AERODROME, ABBOTTS LANGLEY

WATFORD, HERTFORDSHIRE

POST-EXCAVATION ASSESSMENT AND RESEARCH DESIGN

By Adam Brossler

With contributions by K Atherton, K Brown, B Charles, T Durden and R Pelling

Oxford Archaeological Unit

April 1999

CONTENTS

Bibliography

Appendices

List of tables

List of figures

1 SUMMARY

The Oxford Archaeological Unit (OAU) was commissioned by Three Rivers District Council to undertake a programme of archaeological evaluation, excavation and watching brief at the site of the former aerodrome in advance of the proposed development of the area for residential and commercial use.

In March 1998 the OAU excavated 15 evaluation trenches on the site of the former aerodrome. A total of two ditches and a pit or posthole were identified as being of an Iron Age date. A further two large pits were dated to the medieval period, and a post-medieval field boundary ditch was also identified.

In June and July 1998 the OAU excavated an area of 0.5 ha. A number of features of middle Iron Age to late Roman date were identified and excavated. These features included ditches, pits, postholes, waterholes and a possible corndrier, thought to be Roman in date.

A watching brief, undertaken in February 1999, identified a series of ditches, some of which were intercutting, two postholes and two pits. The relationship between the ditches identified during the excavation and those excavated in the evaluation is unclear.

2 PROJECT BACKGROUND

2.1 Location and geology

The site lies to the east of the M25, between Abbotts Langley and Watford, OS Grid TL 097 003 (Fig. 1). It lies at 100 m OD in an area of glacial gravels with bunter pebbles overlying upper chalk, on the edge of the plateau adjacent to the Glade River valley (Geological Survey Sheet 238). The aerodrome area consists of grassland, which is crossed by a runway, minor roads, redundant buildings and areas of hardstanding. The results of the geotechnical trial pits, undertaken prior to the excavation, indicated that the topsoil overlies clay and flint gravels with patches of made ground up to 0.90 m in depth.

2.2 Archaeological and historical background

No other archaeological evidence that relates directly to the site has been recorded, however, finds have been recorded in the surrounding area. These finds include a Bronze Age arrowhead, Iron Age material, 4th-century Roman coins and medieval pottery. A possible Roman road runs north-northeast – south-southwest along the western extent of the development area. Examination of aerial photographs revealed a number of linear features, however, these were thought to be paths that were active in the 1940s and have since been abandoned. A small sub-rectangular enclosure, of uncertain date and function, was identified on the southern boundary of the development area, however, this could not be interpreted with any confidence. The post-medieval activity in the vicinity of the site takes the form of 19th-century railway tunnel portals. The low density of finds has been attributed to the lack of archaeological investigation and deep soil disturbance, such as deep ploughing.

The historical evidence indicates the growth of Watford parish, to the south of the site, began during the 10th century. The development of Abbotts Langley, to the north of the site, began in the 11th century.

2.3 Background to the excavation

The Oxford Archaeological Unit were commissioned by Three Rivers District Council to undertake a series of evaluation, excavation and watching brief at the former Aerodrome in advance of a proposed residential and commercial development.

2.4 Excavation methodology

During the first phase of action (Fig. 2) two areas were investigated. A total of ten trenches (1-10) were excavated in Area 1, an area of proposed residential development, situated to the west of Flight Shed 2. A further four trenches (12-15) were excavated in Area 2, within the area of the proposed Business Park. In addition, a further trench (11) was excavated to determine the orientation and extent of the Iron Age features identified in Trench 2.

Following the evaluation an area of approximately 0.5 hectares was stripped under archaeological supervision using a toothless bucket and selected areas were hand cleaned. A sampling strategy was employed whereby sufficient lengths of all linear features would be excavated to determine the character of each individual ditch over its entire course, taking into account possible recutting of the ditches. Discrete features were excavated to ascertain relationships, date and function, with the proviso that 100% of pits and post/stakeholes would be half-sectioned. Some pits were to be fully excavated if deposits of special interest were encountered. Features thought to be of natural origin, e.g. tree-throw holes and depressions in the geology, were systematically sampled, but not excavated as extensively as anthropogenic features. The system of recording in operation was the single context system, and each cut, fill and layer was assigned an individual number from a continuous running sequence (Wilkinson 1992). Each feature was planned and photographed. Environmental sampling targeted features that had high potential for charred remains, or macroscopic plant material in waterlogged material.

3 QUANTIFICATION OF THE ARCHIVE

3.1 Stratigraphic

Record type	Quantification
Context records	540
Plans A4	18
Plans A1	16
Sections A4	107
B+W Films	10
Colour Films	14

When the site had been stripped a large number of features were readily distinguishable. The evaluation trenches in the north-west corner of the proposed development area identified two late Iron Age ditches, and a posthole or small pit of the same date. An extension of the ditch in Trench 2 was identified in Trench 11. The character of these ditches suggested that they were a curvilinear enclosure boundary, which continued towards the runway. A further two large pits were identified, were interpreted as quarry pits. A small quantity of late Iron Age/Roman pottery was recovered from the fills of these features, however, given the small quantity of pottery it is assumed that the pits were of a post-medieval date. A ditch was identified in Trench 3, but was thought to be a post-medieval field boundary, predating the aerodrome.

The excavation identified a number of intercutting features, which were examined and a number provided distinguishable relationships. The late Iron Age activity took the form of pits and postholes. Along with which a series of intercutting ditches ranging in date from the late Iron Age to the Roman period were revealed. A number of other features were dated to the Roman period, these comprise a possible corndrier and associated features, a hearth and associated features, and a waterhole. A further two large pits were excavated in the south-western corner of the site, one of which contained seven sherds of medieval pottery, and the other contained both post-medieval pottery and metalwork.

The watching brief identified a number of features comprising seven ditches, two pits and two postholes. The three of the ditches shared intercutting relationships, while one of the pits cut into two of the ditches. The relationship between the ditches identified in the watching brief and those identified during the excavation was not established.

3.2 Artefactual

Summaries of the assessments are presented below. Full results can be found in the Appendices.

3.2.1 Pottery

A total of 7920 sherds of pottery were recovered during the three archaeological phases of action. The majority of the pottery recovered was dated to the period either side of the Roman conquest *c.* 50 BC-AD 100, with a small quantity dating to the middle Iron Age. Small quantities were dated to the 2nd, 3rd and 4th centuries AD, a further seven sherds were dated to the medieval and six to the post-medieval period. The majority of the pottery was recovered from ditches and pits.

3.2.2 Fired clay

Approximately 750 fragments of fired clay were recovered, including triangular loomweights and hearth fragments. A number of the sherds were recovered from securely dated late Iron Age/early Roman features, predominantly ditches.

3.2.3 Flint

A total of 47 pieces of worked flint were recovered, 12 from the evaluation and 35 from the excavation. The assemblage is most probably redeposited, and represents a low level of earlier prehistoric activity in the area.

3.2.4 Copper alloy and iron objects

The assemblage comprised 35 iron objects and 2 copper alloy objects. A total of 22 iron strips and nails were recovered from a post-medieval quarry pit in the south-western corner of the excavation area. The remainder of the material was recovered from a small number of ditches and pits.

3.2.5 Worked stone

A total of 10 pieces of worked stone were recovered. A complete quern and possible whetstone were recovered from waterhole (2113), which is thought to be Roman in date. The bulk of the other material was recovered from the fills of a number of ditches.

3.2.6 Industrial residue

Fifty five pieces of ferrous slag were recovered from a number of features which include 2 waterholes, 2 ditches and 2 pits. The majority of the material was recovered from the ditch group (2163) and waterhole (2113) both of which are late Iron Age/early Roman in date.

3.2.7 Crucible fragments

A total of seven sherds of a possible crucible were recovered from the fill of a ditch (2127), part of the group (2163), which has been dated to the late Iron Age/Roman period.

3.2.8 Burnt stone and flint

A quantity of burnt stone weighing 14.254 kg and burnt flint, weighing 17.078 kg, was recovered from 41 contexts and 55 contexts respectively, these included ditches, pits and waterholes.

3.3 Environmental

3.3.1 Animal bone

A total of 482 fragments of bone were recovered, including cattle, sheep, pig and horse. A large quantity of the material was recovered from ditch groups (2424) and (2163).

3.3.2 Charred plant remains

A total of 20 samples were taken from a corndrier pit, a possible oven, a possible hearth, a pit, waterhole and a number of ditch deposits. Among the flots were low levels of mixed grain, chaff and weed seeds, along with varying frequencies of charcoal.

4 STATEMENT OF POTENTIAL

4.1 Stratigraphic

The stratigraphic potential of the site, in terms of intercutting features, is limited as only a small number of the pits and ditches have stratigraphic relationships, which indicate phasing through the late Iron Age and Roman period. The stratigraphic sequence in the features themselves has good potential, especially given the quantity of pottery recovered from the 203 contexts that contained pottery.

The interpretation of the archaeological remains will rely on examination of the spatial distribution of features, in conjunction with the dateable finds recovered. Intercutting features will be examined in order to provide readily identifiable relationships. The intercutting ditch relationships suggest that there are at least three phases of activity, which are readily identifiable.

Artefactual evidence is unevenly dispersed across the site. The potential of a number of categories is low.

4.2 Artefactual

4.2.1 Pottery

This material is important in that it is a large assemblage, in good condition with a number of large securely stratified groups of pottery. The assemblage consists of material which falls into a narrow time that apparently reflects the changes from local to Romanised ceramics either side of the conquest.

4.2.2 Fired clay

The presence of fired clay is a good indicator of domestic and industrial activity, such as weaving and hearth-related activities. Examination of the wear and discard patterns may indicate its use and function on the area.

4.2.3 Flint

The assemblage contains no diagnostic pieces, although the absence of blade-like material and dominance of broad flakes suggests a broad date range of later Neolithic-Bronze Age. The worked flint appears to be residual and cannot be attributed to any particular type of activity. The majority of the material was recovered from the fills of ditch groups (2163) and (2424), or during the stripping of the area. No further work is recommended.

4.2.4 Copper and iron objects

Given the post-medieval date of the majority of the material the assemblage is of limited value. No further work is recommended.

4.2.5 Worked stone

A small assemblage of worked stone was recovered during the excavation, including a complete quern stone, and a number of quern fragments. The presence of the querns may have the potential to provide evidence relating to trade, based on the source of the material.

4.2.6 Industrial residue

The presence of slag can often indicate that smelting was taking place in the area. It may be possible to establish the kind of metal production or working which may have taken place.

4.2.7 Crucible fragments

The crucible fragments are indicative of metalworking or production. It may be possible to identify the type of metalworking that may have been taking place in the area, especially as it was found in the same ditch as the industrial residue.

4.2.8 Burnt flint and stone

Burnt flint and stone is used as an indicator for establishing domestic activity. It may have been used for cooking purposes, or other related activities.

4.3 Environmental

4.3.1 Animal bone

The assemblage was very small, and in such bad condition that no conclusive evidence for the exploitation of animals and diet could be drawn.

4.3.2 Charred plant remains

Identifiable charred seeds and chaff were present in 14 samples and these can be used to identify what agricultural practices were taking place on the site, and give some idea of the environment during this period. A high number of the samples contained wood charcoal in varying frequencies, with *Quercus* (oak) representing the most frequently identified species. The majority of the samples are suggestive of small scatters of domestic waste, which is derived from the preparation and consumption of cereal remains.

5 RESEARCH AIMS

5.1 Excavation aims

Aim 1 To obtain a plan of the enclosure and any settlement within it.

Aim 2 To identify any structures or activity areas.

Aim 3 To establish the date and duration of activity.

Aim 4 To obtain evidence for the economic basis of the site so that its social and economic position in the late Iron Age settlement pattern can be determined.

Aim 5 To obtain ecofactual evidence (plant remains, animal bone) for the reconstruction of the settlement's environment and economic status.

Aim 6 To make available the results of the investigation.

5.2 Revised aims

The aims defined in the WSI are still valid, however, the range of questions has been expanded in light of the excavated data.

Aim 1 To produce a detailed plan and description of the excavated features.

Aim 2 To ascertain, where possible, the sequence and nature of the development of the site

Aim 3 To clarify, where possible, the relationships between the excavated features identified during the three phases of archaeological action.

Aim 4 To identify any structures or activity areas

Aim 5 To determine the economic and social function of the site, regarding domestic, agricultural and industrial activity.

Aim 6 To provide evidence of the nature of the Iron Age and Romano-British landscape.

Aim 7 To make available the results of the archaeological action.

6 METHODOLOGY

6.1 Stratigraphic

Aims 1-7
An archaeological description will be generated. Drawing briefs for illustrations, which provide the support for the descriptive text, will be produced. It will be necessary to investigate the intercutting relationships between the ditches and pits in order to produce a phased sequence of activity. An attempt will be made to identify possible structures and/or activity areas. **Tasks 4-7**

6.2 Artefactual

6.2.1 Pottery

Aims 1, 2-6
Further characterisation of the assemblage will require examination of fabric, form and decoration which will enable the dating of the pottery to be refined and enable comparison with other assemblages within the region. Examination of the spatial distribution of ceramic types will allow dating of specific features and consequently refine the dating of the site. Some of the pottery will also require illustration. **Tasks 8-9**

6.2.2 Fired clay

Aims 1, 4, 5 and 6
The fired clay will be examined further, catalogued and a brief report for publication prepared. The distribution of the various categories of fired clay will also be examined for patterns of discard or activity areas. **Task 10**

6.2.3 Flint

Aims 1, 2 and 6
As the worked flint is residual and assemblage composition does not suggest any particular focus or type of activity on the site, no further work on the assemblage is recommended.

6.2.4 Copper alloy and iron objects

As the assemblage is predominantly post-medieval there is no potential that will allow further understanding of Iron Age and Roman Hertfordshire.

6.2.5 Worked stone

Aims 1, 2, 4, 5 and 6
The worked stone will be examined and a catalogue will be produced which will identify the stone type and source. **Task 11**

6.2.6 Industrial residue

Aims 1, 2, 4, 5 and 6
The slag will be identified, quantified and recorded. **Task 13**

6.2.7 Crucible fragments

Aims 1, 2, 4, 5 and 6
The crucible fragments will be analysised for the presence of industrial residues. **Task 12**

6.2.8 Burnt flint and stone

Aims 1, 3, 4, 5 and 6
The burnt flint and stone has been quantified. Its distribution will be examined and the results will be incorporated in to the archaeological description.

6.3 Environmental

6.3.1 Animal bone

Aims 1, 4, 5 and 6
No further work is to be undertaken on the analysis of the animal bone assemblage.

6.3.3 Charred plant remains

Aims 1, 2, 4, 5 and 6
A full examination of the material was undertaken during the assessment stage. No further work is to be undertaken on the analysis of the charred plant remains.

7 PUBLICATION

7.1 Publication synopsis

It is intended the final report will be published as a journal article in the county journal, *Hertfordshire Archaeology*.

Excavations at Leavesden Aerodrome 1998 by A Brossler, with contributions by K Atherton, K Brown, B Charles, T Durden and R Pelling

Introduction and background		2000 words
Location and geology		
Archaeological background		
Excavation methodology		
Site description		5000 words
Middle Iron Age ditch		
Late Iron Age ditches		
Late Iron Age features		
Roman ditches		
Roman features		
Spatial distribution of features and finds		
Artefactual	5000 words	
Environmental	3000 words	
Discussion and conclusions	5000 words	
General discussion incorporating more recent studies within the area		
Total		*20,000 words*

Figures

Figure 1	Site location
Figure 2	Plan of excavation
Figure 3	Plan of the three phases of archaeological investigation
Figure 4	Sections through late Iron Age ditches
Figure 5	Sections through late Iron Age pits and postholes
Figure 6	Sections through Roman ditches
Figure 7	Plan of and section through the corndrier
Figure 8	Sections through the Roman pits, postholes and waterhole
Figure 9-11	Pottery illustrations

Figure 12 Worked stone

Plates

Plate 1 General view of the excavation
Plate 2 View of the corndrier

7.2 The archive

The Oxford Archaeological Unit's archiving standards will be adhered to at all times with regard to project documentation and archivally suitable materials used (see Walker 1990). All post-excavation documentation will be filed, ordered and indexed as part of the research archive. This will be submitted to the National Archaeological Record for microfiching. After completion of the project the archive will be deposited with Watford Museum.

8 PROJECT PERSONNEL

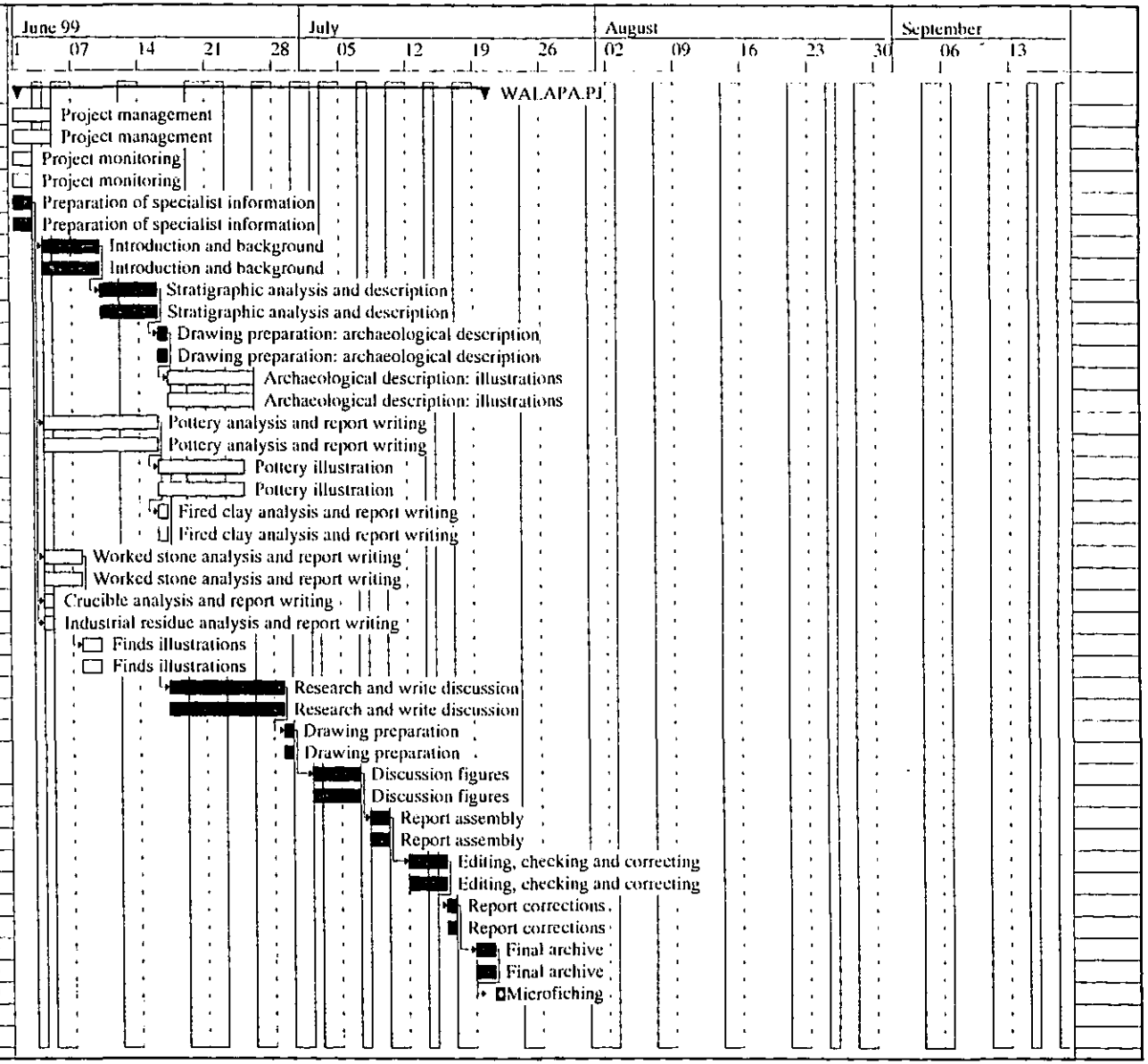
NAME	POSITION	EMPLOYER
Kate Atherton	Small finds specialist	OAU
Angela Boyle	Project manager and monitor	OAU
Adam Brossler	Assistant supervisor	OAU
Kayt Brown	Prehistoric pottery and fired clay specialist	OAU
Bethan Charles	Animal bone specialist	OAU
Theresa Durden	Lithics specialist	OAU
Paul Hughes	Graphics office manager	OAU
Ruth Pelling	Environmental specialist	Oxford University/ OAU
Nicky Scott	Archive Officer	OAU

9 TASK LIST

Task no.	Description	Performed by	Duration
001	Project Management	A Boyle	3 days
002	Project monitoring	A Boyle	2 days
003	Preparation of specialist information	A Brossler	1 days
004	Introduction and background	A Brossler	4 days
005	Stratigraphic analysis and description	A Brossler	4 days
006	Drawing preparation: archaeological description	A Brossler	1 day
007	Archaeological description: illustration	Illustrator	5 days
008	Pottery analysis and report writing	K Brown	8 days
009	Pottery illustration	Illustrator	5 days
010	Fired clay analysis and report writing	K Brown	1 day
011	Worked stone analysis and report writing	F Roe	2 days
012	Crucible analysis and report writing	Specialist	1 day
013	Industrial residue analysis and report writing	K Brown	1 day
014	Finds illustration	Illustrator	2 days
015	Research and write discussion	A Brossler	6 days
016	Drawing preparation	A Brossler	1day
017	Discussion figures	Illustrator	3 days
018	Report assembly	A Brossler	2 days
019	Editing, checking and correcting	A Boyle	3 days
020	Report corrections	A Brossler	1 day
021	Final archive	Archivist	2 days
022	Microfiching		
023	Publication costs		

Leavesden Aerodrome Cascade

Task ID	Task	Resource	Est Dur	Sched Rsrc Total Dys	Scheduled Start	Scheduled Finish
P2	WALAPA.PJ			57.00	01-06-99>	20-07-99
001	Project management		3dy	3.00	01-06-99	04-06-99
001		A Boyle		3.00	01-06-99	04-06-99
002	Project monitoring		2dy	2.00	01-06-99	02-06-99
002		A Boyle		2.00	01-06-99	02-06-99
003	Preparation of specialist information		2dy	2.00	01-06-99	02-06-99
003		A Brossler		2.00	01-06-99	02-06-99
004	Introduction and background		4dy	4.00	04-06-99	09-06-99
004		A Brossler		4.00	04-06-99	09-06-99
005	Stratigraphic analysis and description		4dy	4.00	10-06-99	15-06-99
005		A Brossler		4.00	10-06-99	15-06-99
006	Drawing preparation: archaeological		1dy	1.00	16-06-99	16-06-99
006		A Brossler		1.00	16-06-99	16-06-99
007	Archaeological description: illustratic		5dy	5.00	17-06-99	25-06-99
007		Illustrator		5.00	17-06-99	25-06-99
008	Pottery analysis and report writing		8dy	8.00	04-06-99	15-06-99
008		K Brown		8.00	04-06-99	15-06-99
009	Pottery illustration		5dy	5.00	16-06-99	24-06-99
009		Illustrator		5.00	16-06-99	24-06-99
010	Fired clay analysis and report writing		1dy	1.00	16-06-99	16-06-99
010		K Brown		1.00	16-06-99	16-06-99
011	Worked stone analysis and report wri		2dy	2.00	04-06-99	07-06-99
011		F Roe		2.00	04-06-99	07-06-99
012	Crucible analysis and report writing		1dy	0.00	04-06-99	04-06-99
013	Industrial residue analysis and report		1dy	0.00	04-06-99	04-06-99
014	Finds illustrations		2dy	2.00	08-06-99	09-06-99
014		Illustrator		2.00	08-06-99	09-06-99
015	Research and write discussion		6dy	6.00	17-06-99	28-06-99
015		A Brossler		6.00	17-06-99	28-06-99
016	Drawing preparation		1dy	1.00	29-06-99	29-06-99
016		A Brossler		1.00	29-06-99	29-06-99
017	Discussion figures		3dy	3.00	02-07-99	06-07-99
017		Illustrator		3.00	02-07-99	06-07-99
018	Report assembly		2dy	2.00	08-07-99	09-07-99
018		A Brossler		2.00	08-07-99	09-07-99
019	Editing, checking and correcting		3dy	3.00	12-07-99	15-07-99
019		A Boyle		3.00	12-07-99	15-07-99
020	Report corrections		1dy	1.00	16-07-99	16-07-99
020		A Brossler		1.00	16-07-99	16-07-99
021	Final archive		2dy	2.00	19-07-99	20-07-99
021		N Scott		2.00	19-07-99	20-07-99
022	Microfiching		0dy	0.00	20-07-99	20-07-99



Negative Float
Noncritical
Noncritical Heading
Unassigned
Critical
Critical Heading
Interrupted
Milestone
Baseline
Actual Milestone
Actual
Baseline Milestone

Resource/Task	Schd Dur	Res ID	Sched Rsrc Total Dys	Scheduled Start	Scheduled Finish	
A Boyle		001	8.00			
Project management	3dy	001	3.00	01-06-99	04-06-99	
Project monitoring	2dy	002	2.00	01-06-99	02-06-99	
Editing, checking and correcting	3dy	019	3.00	12-07-99	15-07-99	
A Brossler		002	21.00			
Preparation of specialist informa	2dy	003	2.00	01-06-99	02-06-99	
Introduction and background	4dy	004	4.00	04-06-99	09-06-99	
Stratigraphic analysis and descri	4dy	005	4.00	10-06-99	15-06-99	
Drawing preparation: archaeolog	1dy	006	1.00	16-06-99	16-06-99	
Research and write discussion	6dy	015	6.00	17-06-99	28-06-99	
Drawing preparation	1dy	016	1.00	29-06-99	29-06-99	
Report assembly	2dy	018	2.00	08-07-99	09-07-99	
Report corrections	1dy	020	1.00	16-07-99	16-07-99	
Illustrator		003	15.00			
Finds illustrations	2dy	014	2.00	08-06-99	09-06-99	
Pottery illustration	5dy	009	5.00	16-06-99	24-06-99	
Archaeological description: illus	5dy	007	5.00	17-06-99	25-06-99	
Discussion figures	3dy	017	3.00	02-07-99	06-07-99	
K Brown		004	9.00			
Pottery analysis and report writi	8dy	008	8.00	04-06-99	15-06-99	
Fired clay analysis and report wr	1dy	010	1.00	16-06-99	16-06-99	
F Roe		005	2.00			
Worked stone analysis and repor	2dy	011	2.00	04-06-99	07-06-99	
R Pelling		006	0.00			
N Scott		007	2.00			
Final archive	2dy	021	2.00	19-07-99	20-07-99	

Negative Float
Baseline
Critical
Baseline Milestone
Unassigned
Actual
Milestone
Noncritical Heading
Interrupted
Noncritical
Actual Milestone
Critical Heading

BIBLIOGRAPHY

Campbell, G, nd. Charred plant remains from Springhead, Northfleet, Kent (NFSP94). Oxford Archaeology Unit Occasional paper 1.

Jones, M. 1984 The carbonised plant remains in D. Miles (ed) *Archaeology at Barton Court Farm, Oxon.* Oxford Archaeology Unit, Report 3, CBA Research Report 50.

Pelling, R, forthcoming The Charred Plant Remains from Romano-British Settlement at Birdlip Quarry, Gloucestershire. In *Excavations alongside Roman Ermin street, Gloucestershire/Whiltshire* Mudd, A and Williams, R, J.

Pelling, R, unpublished, The Charred Plant Remains from Monkton - Mount Pleasant, Romano-British Settlement, Canterbury Archaeology Trust unpublished excavation report.

Pitts, M W and Jacobi, R, 1978 Some aspects of change in flaked stone industries of the Mesolithic and Neolithic in southern Britain, *J Archaeol Sci* 7, 131-148

Silver, I.A. (1969) 'The Ageing of Domestic Animals' in Don Brothwell and Eric Higgs.(eds). Science in Archaeology. *Thames and Hudson.*

Thompson I 1982 *'Grog-tempered 'Belgic' Pottery of South-eastern England* Parts i-iii, Brit Archaeol Rep Int. Ser. **108**

Wilkinson, D, (ed) 1992 *Oxford Archaeological Unit Field Manual* (First edition, August 1992).

APPENDIX 1 AN ASSESSMENT OF THE POTTERY

By Kayt Brown

Introduction

The evaluation, excavation and watching brief produced a total of 7290 sherds, weighing *c.* 85 kg. The assemblage is in a good condition with good preservation of surfaces and an average sherd weight of *c.* 12 g, with a number of complete profiles of vessels surviving. The pottery was recovered from a range of ditch and pit fills, a number of which were also sampled for environmental remains. Although a small middle Iron Age component to the assemblage was identified, the majority of the material can be dated to the period either side of the Roman conquest (*c.* 50 BC – AD 100). There is also a small amount of material dating to the 2nd and 3rd centuries AD and at least one 4th century group was identified (2212). Seven medieval and six post-medieval sherds were also recovered.

Methodology

The material was subjected to a basic assessment, comprising a rapid scan of the material, by groups where possible, and quantified by sherd count and weight by context. No detailed record of fabrics was undertaken at this stage, although general characteristics were noted, as were types of decoration. Contexts were given a spot date based on fabrics and forms, although these will need to be refined further. Quantification of the assemblage by number of sherds and weight by context is provided in the table below.

Characterisation of the assemblage

The material is a large assemblage, in good condition with good sherd size and preservation of surfaces. Although the assemblage spans the middle Iron Age through to the late Roman period, the vast majority of the assemblage appears to fall within a very narrow time span, essentially either side of the Roman conquest. At least one feature can be assigned a middle Iron Age date, although more potentially middle Iron Age material was observed in other, Roman contexts, presumably as redeposited material. The late Iron Age/early Roman or 'Belgic' component of the assemblage is characterised by grog-tempered, wheel-thrown vessels, often with rilling, combing or cordon decoration. A number of these jars, bowls, beakers and platters can be paralleled elsewhere (Thompson 1982). A large number of vessels display drilled holes, either in the neck, or on the body or base. This material is highly distinctive when compared to the earlier fabrics and forms and can be compared to similar assemblages within the region. The presence of later, Romanised forms and fabrics alongside this material has been used to indicate a mid 1st-century AD or later date. Where Romanised material is present, it can be assigned dates throughout the Roman period, but with an emphasis on the mid 1st-mid 2nd centuries. The fine wares are represented by fine white butt beakers and Samian forms Dragendorff 15/17, 18/31, 27, 31, 33, 46 and Curle 11. One of the Dr. 33 bases was stamped, although abraded and part missing. Butt beaker fragments were often noted in association with the 'Belgic' material. Other, later, Roman industries represented are Alice Holt, Verulamium, Oxford, Much Hadham and possibly Nene Valley. It is interesting to note that Oxford products seemed more common than products from

the nearby Much Hadham industry. An unusual double handled Verulamium flagon offset at the base of the neck with a flaring rim was recovered from context 2405. A large proportion of the Roman assemblage comprises a range of grey ware jars, bowls and beakers (including at least 2 fragments of poppy beaker) presumably local in origin. Amphorae are represented by sherds of Dressel 20, and sherds of Italian amphorae, possibly originating from Campania. A few of these amphorae sherds occur in groups that otherwise comprised entirely of grog-tempered fabrics, which might suggest that some of this material arrived at the site before the conquest.

Environmental samples from a number of features also produced pottery, these included waterhole (2113) contains fills datable from the mid-late1st to 4th centuries AD, waterhole (2310) to the 2nd-3rd centuries AD, ditch (2127) from the middle Iron Age to 1st century AD and hearth pit fills (2366) and (2367) to the late Iron Age/early Roman period.

Table 1 Breakdown of the pottery by context

Key for spot dates:

MIA middle Iron Age	2C-3C 2nd-3rd century
LIR late Iron Age/early Roman	3C+ 3rd century onwards
M1C mid 1st century	3C-4C 3rd to 4th century
M-L1C mid to late 1st century	4C 4th century
1C-2C 1st-2nd century	RB Roman
L1C-M2C late 1st to early 2nd century	MED medieval
M2C mid 2nd century	PMED post-medieval

Context	number of sherds	weight	Date	Context number	number of sherds	weight	Date
106	1	10	PMED	2033	3	10	LIR
206	128	2300	LIR	2034	4	135	LIR
212	1	0	LIR	2035	41	445	M1C
214	2	25	M1C	2036	40	285	LIR
305	1	35	M1C	2037	1	2	LIR
806	3	25	LIR	2038	13	45	?1C
808	4	25	LIR	2041	1	2	LIR
1005	1	10	M1C	2050	16	220	LIR
2000	39	225	2C-3C	2051	111	3400	LIR
2001	1	2	LIR	2051	19	200	LIR
2002	27	100	LIR	2052	2	15	LIR
2003	7	50	1C-2C	2053	6	42	LIR
2004	3	15	LIR	2055	21	80	?2C
2006	95	1025	M1C	2055	47	130	?1C
2008	102	870	M1C	2056	52	280	LIR
2009	8	250	LIR	2060	37	255	LIR
2010	36	350	M1C	2061	3	10	LIR
2011	33	410	LIR	2063	9	20	LIR
2012	45	625	LIR	2065	194	50	RB
2013	61	1080	LIR	2070	17	150	LIR
2015	20	175	LIR	2071	2	2900	LIR
2017	55	575	M1C	2072	1	5	LIR
2018	1	2	LIR	2076	2	40	LIR
2019	27	175	1C-2C	2079	8	60	LIR
2021	6	70	1C-2C	2082	8	200	M1C
2022	27	490	LIR	2083	2	3	M1C
2023	48	310	M1C	2085	22	125	LIR
2024	25	350	LIR	2093	2	10	M1C
2025	73	620	1C-2C	2098	14	60	LIR
2026	40	295	LIR	2103	1	5	LIR
2027	66	245	LIR	2105	16	90	M1C
2028	21	55	1C-2C	2107	31	220	1C-2C
2029	87	3000	LIR	2108	96	585	1C-2C
2029	194	710	LIR	2108	31	285	M1C
2030	2	10	?1C	2110	6	50	?3rd
2030	2	20	?1C	2111	52	720	mid 3rd+
2031	1	15	LIR	2112	183	1700	M1C
2032	3	25	LIR	2114	73	855	M-L1ST

Context	number of sherds	weight	Date	Context number	number of sherds	weight	Date
2117	3	25	LIR	2223	15	100	2C
2118	36	235		2224	28	165	E2C
2118	1	20	LIR	2226	21	230	1C-2C
2118	8	25	LIR	2233	2	20	M1C
2119	26	90	LIR	2234	22	225	M1C
2120	5	175	LIR	2235	2	5	M1C
2121	30	255	M1C	2237	2	15	M1C
2122	10	55	M1A	2247	56	945	RB
2122	79	630	M1A	2254	75	1266	M1C
2123	20	480	M1A	2257	6	60	LIR
2125	6	40	LIR	2258	230	2047	LIR
2128	11	70	?2ndC	2259	54	442	LIR
2133	833	11050	LIR	2261	6	316	LIR
2134	14	90	LIR	2262	118	890	LIR
2137	15	200	LIR	2264	102	1510	1C-2C
2138	6	175	M1C	2267	11	142	?M1C
2140	3	45	LIR	2269	13	116	M1C
2144	1	5	LIR	2271	30	304	M1C
2146	12	60	LIR	2272	25	152	1C-2C
2147	3	110	LIR	2280	7	280	MED
2150	1	10	LIR	2281	1	20	?MED
2151	24	180	M1C	2283	1	6	2C
2154	22	140	LIR	2285	41	464	2C+
2156	2	10	LIR	2286	5	38	M1C
2158	12	150	LIR	2288	4	90	1C-2C
2161	21	85	M1C	2290	5	76	2C
2162	4	15	M1C	2290	20	114	1C-2C
2164	1	1	LIR	2299	2	10	LIR
2167	9	45	LIR	2301	11	316	LIR
2168	13	180	LIR	2302	7	50	M1C
2169	15	220	LIR	2312	24	128	2C
2176	96	710	LIR	2313	91	1200	E-M2C
2190	10	75	M1C	2314	11	208	LIR
2201	189	1300	M1C	2315	23	282	LIR
2203	42	450	?2ndC	2316	28	616	LIR
2204	245	3895	L1C-E2C	2316	16	154	LIR
2209	87	530	RB	2317	19	182	LIR
2210	23	210	M1C	2319	51	402	?LIR
2212	90	720	L3C-4C	2320	6	80	LIR
2214	1	5	2C-3C	2323	6	64	LIR
2214	41	445	2C-3C	2326	1	10	LIR
2217	7	25	LIR	2327	1	10	LIR
2219	2	2	LIR	2329	109	1012	1C-2C
2220	139	1135	M1C	2329	194	1278	LIR
2221	41	485	L1C-E2C	2337	8	256	M1C
2222	57	400	2C	2339	8	168	RB

Context	number of sherds	weight	Date
2340	94	855	M-L2C
2341	1	5	PMED
2342	2	20	PMED
2343	1	5	LIR
2344	2	15	RB
2345	3	15	PMED
2347	6	20	LIR
2350	1	10	RB
2355	1	2	RB
2355	1	10	RB
2355	66	680	1C-2C
2357	125	2285	LIR
2358	214	4220	LIR
2362	3	25	LIR
2362	27	325	1C-2C
2364	8	340	LIR
2366	3	70	LIR
2366	12	60	LIR
2367	3	15	LIR
2387	4	40	LIR
2390	7	20	1C-2C
2393	1	10	LIR
2396	11	50	LIR
2396	12	260	LIR
2400	8	30	LIR
2401	8	200	L1C-E2C
2405	14	835	L1C-E2C
2406	84	1300	L1C-E2C
2416	31	175	LIR
2443	8	4	1C-2C
2445	40	360	1C-2C
2450	2	15	1C-2C
2455	154	2400	LIR
2464	16	60	2C
TOTAL	**7290**	**84721**	

APPENDIX 2 AN ASSESSMENT OF THE FIRED CLAY

By Kayt Brown

Introduction

The evaluation, excavation and watching brief produced a total of *c.* 750 fragments of fired clay, weighing *c.* 7000 g. This material included loomweight fragments, hearth lining and amorphous fragments. A range of contexts produced fired clay, often in association with pottery which enables the material to be dated to the middle Iron Age, late Iron Age/early Roman and later periods.

Methodology

A rapid scan of the material was undertaken, involving the basic quantification of the material by count and weight by context. No detailed record of the material was made, although diagnostic forms were noted. Quantification of the assemblage is presented in the table below.

Characterisation of the assemblage

The material was recovered from a range of features distributed across the site, including pit and ditch fills and layers. Although a high proportion of the assemblage appears to comprise amorphous fragments, a number of forms diagnostic of function were recovered. In particular a number of triangular loomweight fragments were noted in a variety of contexts, and one piece is worthy of illustration (2002). The loomweights were recovered from a number of ditch fills (2339, 2133, 2254, 2247, 2204, 2137) and a layer (2006), although when examined in more detail other fragments may be detected. Loomweights occur throughout the Iron Age and their presence on site indicates that some degree of textile production was taking place. Context (2366) produced what appears to be a clay lining for the hearth, and clay material displaying evidence of burning was recovered from the oven surface (2093) and the fill of the corndrier (2116). Possible oven lining was also recovered from context (2019). One fragment of vitrified clay was recovered from ditch fill (2180).

Potential and further work

Although the majority of the assemblage comprised unidentifiable fragments, the presence of fired clay is still an indicator of domestic settlement and the presence of loomweights is indicative of some degree of textile production on the site. The fired clay will be examined further detail, catalogued and a brief report for publication prepared. The distribution of the various categories of fired clay will also be examined for patterns of discard or activity areas. Material that requires illustration comprises the small loomweight (2002).

Table 2 Summary of contexts containing fired clay

Context	No.fragments	Wt (g)		Context	No.fragments	Wt (g)
206	2	60		2176	6	25
206	70	210		2190	2	80
214	27	150		2201	3	61
2001	5	10		2204	4	120
2002	14	320		2204	1	9
2010	1	21		2204	17	180
2011	6	19		2210	1	40
2016	10	105		2222	3	25
2017	2	88		2224	5	65
2019	23	111		2226	1	15
2026	18	160		2233	1	2
2029	3	58		2234	4	90
2031	3	14		2247	2	85
2035	1	14		2247	2	100
2038	2	9		2254	10	180
2050	1	3		2257	1	86
2051	5	54		2258	17	20
2082	1	8		2262	3	15
2093	7	56		2302	5	40
2093	14	80		2312	17	30
2098	1	10		2317	57	1500
2105	3	11		2326	1	5
2111	2	125		2339	60	460
2112	2	20		2355	6	15
2118	6	45		2355	1	8
2119	10	250		2366	38	410
2122	2	30		2367	5	60
2122	2	3		2390	9	40
2123	1	14		2406	3	175
2128	1	26		2406	8	22
2133	191	700		2416	2	8
2133	7	100		-		
2142	17	50				
2151	1	23		TOTAL	756	6928

APPENDIX 3 AN ASSESSMENT OF THE FLINT ASSEMBLAGE

By Theresa Durden

Introduction

A total of 47 pieces of worked flint were recovered from the site. These comprised 12 pieces from the evaluation and 35 pieces from the excavation. The flint is grey/brown with occasional light cortication and is clearly gravel derived, with a worn, buff cortex. In addition, 416 pieces of burnt unworked flint and quartz were also collected from the excavation. The flint was collected from a wide range of contexts, many of which have been dated by pottery to the ?late Iron Age/early Roman period.

Method

All struck flint was recorded by type and context on standard OAU flint recording sheets. The burnt flint was also scanned in order to identify burnt worked material. This was removed and recorded along with the other worked flint.

Results

Evaluation

A total of 12 pieces of struck flint was recovered from the evaluation trenches, from contexts 106, 605, 806, 808, 1005 and 1205 (quarry pits and tree-throw holes of late Iron Age/early Roman date). One piece of burnt unworked flint (61 g) was collected from 605. The struck flint consists entirely of broad, unmodified flakes apart from two flakes with a small amount of edge retouch from contexts 806 and 106.

Excavation

Flint from the excavation comprised 35 pieces of struck flint and 416 pieces of burnt unworked flint and quartz. The assemblage is summarised below.

Table 3 Summary of struck flint types

Flint category	Quantity
Flake	28
Blade-like flake	1
Retouched flake	1
End-and-side scraper	1
Awl	1
Irregular waste	2
Tested nodule	1

The assemblage is dominated by broad, unmodified flakes with plain butts. No small flakes or chips were recovered, even though sieving of some contexts was undertaken. The retouched component comprises an edge-retouched flake, a simple awl made on a flake and a relatively crudely-retouched

end-and-side scraper. No cores were found, though a tested nodule and the two pieces of irregular waste were recorded.

The burnt unworked flint ranges in size from large nodules to small fragments. Some was heavily calcined white or grey and very cracked, while many smaller pieces were burnt red. It is notable that a large quantity of burnt quartz was recovered from context 2133, the fill of ditch 2424.

Potential

The assemblage as a whole contains no diagnostic pieces, although the dominance of broad flakes and absence of more blade-like material would suggest a broad date range of later Neolithic-Bronze Age (eg. Pitts and Jacobi 1978). The worked flint represents no more than a low level of earlier prehistoric activity in the area of the site. It is almost certainly residual in the features discovered, as the excavated contexts would appear to be later according to ceramic evidence from the site.

The burnt unworked material is not datable, so it is impossible to say whether it (or a proportion of it) is also residual or contemporary with the excavated features.

As the worked flint is residual and assemblage composition does not suggest any particular focus or type of activity on the site, no further work on the assemblage is recommended.

APPENDIX 4 AN ASSESSMENT OF THE COPPER ALLOY AND IRON OBJECTS

By Kate Atherton

Introduction and methodology

The excavation produced an assemblage of 37 metal items, consisting of 35 iron objects and 2 copper alloy objects. Each item was individually measured and examined and the information was entered onto a metal database. The preservation of each item was assessed, as was its potential for further analysis and suitability for illustration. Each item was identified, where possible, and classified by function to five broad categories. The post-medieval finds from the quarry pit 2346 are discussed together and the remaining items are discussed by function.

Preservation

The preservation and condition of the assemblage is generally poor and the majority of items are heavily encrusted.

Results

Table 4 Quantification of objects by function:

Function	*Quantity*	*Object*	*Context*	*Feature*
Domestic	1	Vessel (2 fragments)	2341	PM quarry pit 2346
Industrial	1	Copper alloy slag	2133	Ditch 2132
Structural	3	Furniture fitting Iron tube/pipe Possible hook	2006 2341 2340	Subsoil PM quarry pit 2346 Ditch 2324
Nails	14+	Minimum of 14 nails and maximum of 23 nails	2117 2134 2179 x 2 2224 2341 x 5 2313 x 3 2355 x 1+	Pit 2116 of kiln 2078 Tree-throw hole 2152 Ditch 2202 Pit 2225 PM Quarry pit 2346 Pit 2311 Primary fill of pit 2354
Miscellaneous	18	1 copper alloy strip 15 iron strips that are probably from an iron vessel Iron strip Iron strip	2133 2341 2006 2017	Ditch 2132) PM quarry pit 2346 Subsoil Finds reference
TOTAL	37			

Post-medieval quarry pit 2346

A total of 22 of the objects were recovered from the quarry pit, and clearly belong to the later post-medieval period although the condition of most of these objects is poor and fragmentary. The vessel fragments form the base of a small iron tin or bucket and it is possible that the strips found in the same context are part of the body, rim and handle of this container. The pit also produced a segment of iron tube or pipe and five nails. With the exception of one nail with a round shank, the nails were complete or nearly complete with rectangular sections and shanks.

These nails clearly post-date the nails from the other contexts discussed below. No further analysis is reccomended.

Other objects

The remaining structural items consist of a possible furniture fitting from the subsoil 2006 and a bent shank from ditch fill 2340. The fitting is a rectangular strap with a triangular end.. This object has a round section that appears to be tapering at its break towards a point. The shank flattens and widens at the bend and is reinforced on both sides by a thin strip of iron. The object then has a rectangular shank that is possibly tapering towards a wedge at the other end. This item is possibly a structural hook.

The fragment of copper alloy slag weighs only 2 g and further analysis by a metallurgical specialist is recommended to relate this waste to other metalworking activity found on the site. A very small loop of copper alloy, with a diameter of *c.* 5 mm, was found in ditch fill 2133. The offcut is twisted with rough edges and is further evidence of copper working.

Eleven nails were found in contexts other than the post-medieval quarry pit. This number consists of ten separate nails and shank fragments suggesting a minimum of eleven nails. The nails are in a poor condition and are heavily encrusted. Where analysis is possible, the shanks appear to be predominantly rectangular with circular heads that are either domed slightly or flat. Only three nails from these contexts are complete and they vary in length from 25 mm to 87 mm.

The remaining two objects are miscellaneous strips that were recovered from the subsoil and from the surface of features. The surface find may be a handle, while the other strip is heavily encrusted and no identification is possible.

APPENDIX 5 AN ASSESSMENT OF THE WORKED STONE

By Adam Brossler

Introduction and quantification

A total of 10 pieces of worked stone were recovered from 9 contexts. The collection comprised a complete lava quern stone, a fragment of a quern base, a fragment of a quern upper, a fragment of lava stone with a possible worked face, and four pieces of coarse gritstone, two of which appeared to have been worked.

Table 5 Summary of the worked stone by context

Context	Small find #	Context type	Description	Material
2006		Sub-soil	? Quern fragment	Coarse grained gritstone
2021		Surface find	Quern fragment. Possible surface evident	Coarse grained gritstone
2051	2000	Ditch (2049)	? Whetstone fragment	Unidentified
2112	2024	Waterhole (2113)	Complete quern stone	Lava stone
2112	2030	Waterhole (2113)	? Whetstone	Unidentified
2134		Tree-throw hole (2152)	? Quern fragment	Coarse grained gritstone
2201		Ditch (2202)	? Quern fragment	?Lodsworth
2204	2017	Ditch (2205)	Quern fragment, 3 worked faces	?Lodsworth
2264		Pit (2287)	? Quern fragment	Coarse grained gritstone
2290		Disturbed natural	? Quern fragment, possible surface evident	Lava stone

The Lodsworth was tentatively identified by Tim Allen.

Recommendations

The fact that a complete quern stone and a number of pieces of other querns, of at least two materials were recovered suggests that further study of the stone should be undertaken. The rotary quern is of particular interest because of the wear pattern noted upon its surface. A study of the querns may also indicate economic activity in the form of trade with other areas.

APPENDIX 6 AN ASSESSMENT OF THE INDUSTRIAL RESIDUE

By Adam Brossler

Introduction and quantification

There were 55 pieces of slag from 9 contexts. The fact that the material was recovered from a number of features, which contained domestic refuse, indicates that the material may have been redeposited. No feature has been positively identified as a hearth or kiln structure at this stage.

Table 6 Summary of the potential slag/ vitrified material

Context	Context type	Number of pieces
2010	Finds reference	1
2110	Waterhole (2113)	22
2122	Ditch (2127)	24
2133	Ditch (2132)	1
2214	Waterhole (2310)	1
2221	Subsoil	1
2264	Pit (2287)	2
2312	Pit (2311)	2
2313	Pit (2311)	1

Recommendations

The material should be analysed to establish if it is a product of metalworking or production, or is representative of vitrified material. An attempt to establish the slag type would indicate whether the smelting of metals was being undertaken on the area, or if the residue was as a result of metalworking.

APPENDIX 7 AN ASSESSMENT OF THE BURNT STONE AND FLINT

By Adam Brossler

Introduction

A quantity of burnt stone weighing 14.254 kg was recovered from 41 contexts, while 17.078 kg of burnt flint was recovered from 55 contexts. The bulk of the burnt stone material consisted of pebbles, which are thought to have been found locally; the geology of the area is glacial gravel with bunter pebbles (Geological Survey Sheet 238).

The material was quantified by context and weight.

Table 7 Summary of the burnt stone

Context	Small find #	Context type	Total Weight (g)	Context	Small find #	Context type	Total Weight (g)
2006		subsoil	60	2204		Ditch (2205)	350
2014		Finds reference	2580	2209		Waterhole 2310	2
2020		Finds reference	1500	2212		Waterhole 2310	13
2033		Finds reference	5	2221	2018	Subsoil	1525
2041		Tree-throw hole (2042)	11	2254		Ditch (2251)	6
2051	2001/2004	Ditch (2049)	443	2258		Ditch (2256)	75
2053		Ditch (2049)	110	2259		Ditch (2256)	350
2070		Ditch (2069)	325	2262		?Pit (2263)	40
2071		Ditch (2069)	3300	2269		Posthole (2270)	3
2085		Pit (2086)	110	2299		Pit (2298)	250
2098		Ditch (2097)	3	2317		Pit 2311	50
2111		Waterhole (2113)	6	2319		Ditch (2318)	11
2112		Waterhole (2113)	3	2327		Tree-throw hole (2325)	75
2120		Ditch (2127)	110	2329		Ditch (2328)	200
2121		Ditch (2127)	225	2355		Pit (2354)	690
2122		Ditch (2127)	465	2357		Ditch (2360)	200
2133		Ditch (2132)	10	2358		Ditch (2360)	79
2146		Posthole (2145)	4	2362		Pit (2361)	13
2158		Finds reference	5	2401		Tree-throw hole (2402)	3
2176		Ditch (2175)	8	2406		Finds reference	11
2201		Ditch (2202)	1025	TOTAL			14254

Table 8 Summary of the burnt flint

Context	Context type	Total weight (g)	Context	Context type	Total weight (g)
2002	Finds reference	550	2201	Ditch (2202)	300
2010	Finds reference	25	2204	Ditch (2205)	150
2025	Finds reference	50	2209	Waterhole (2130)	25
2030	Finds reference	90	2212	Waterhole (2130)	12
2050	Ditch (2049)	125	2217	Ditch (2215)	75
2051	Ditch (2049)	850	2247	Ditch (2240)	510
2053	Ditch (2049)	530	2262	Pit (2263)	700
2055	Ditch (2054)	30	2264	Pit (2287)	320
2056	Ditch (2058)	50	2269	Posthole (2270)	250
2060	Ditch (2062)	175	2299	Pit (2298)	85
2063	Ditch (2064)	25	2313	Pit (2311)	90
2079	Ditch (2081)	160	2315	Pit (2311)	460
2093	?Oven (2094)	110	2316	Pit (2311)	450
2103	Posthole (2099)	50	2323	Pit (2311)	89
2108	Ditch (2106)	6	2329	Ditch (2328)	225
2118	Corn drier (2078)	275	2339	Ditch (2324)	140
Context	Context type	Total weight (g)	Context	Context type	Total weight (g)
2120	Ditch (2127)	225	2340	Ditch (2324)	660
2121	Ditch (2127)	950	2343	Pit (2346)	50
2122	Ditch (2127)	1000	2355	Pit (2354)	510
2123	Ditch (2127)	650	2357	Ditch (2360)	150
2125	Ditch (2127)	10	2358	Ditch (2360)	110
2128	Finds reference	140	2362	Pit (2361)	25
2133	Ditch (32)	2650	2364	Pit (2363)	100
2134	Tree-throw hole (2152)	700	2390	Hedge row cut	15
2144	Stakehole (2143)	305	2396	Ditch (2397)	80
2156	Posthole (2155)	11	2406	Finds reference	625
2176	Ditch (2175)	600	2416	Pit (2417)	350
2190	Ditch (2180)	180	Total		17078

APPENDIX 8 AN ASSESSMENT OF THE ANIMAL BONE

By Bethan Charles

Introduction and method

A total of 482 fragments of bone were retrieved from the site, many of which were reassembled reducing the number to 274. In addition to this 7 fragments of bone were collected by sieving over a mesh of 10 mm.

The condition of the assemblage was poor, probably due to the acidity of the soil. Almost all fragments were fragile with crumbling or exfoliating surfaces. The enamel of many of the teeth was also quite eroded though not as badly as the bone, which is probably why the majority of identifiable fragments were teeth. The burnt bones also appeared to be brittle, although the surfaces were better preserved than almost all of the unburnt ones.

Results

As can be seen from table 9 more than 90% of the bone was unidentifiable due to its poor condition and fragmentation. Cattle bones appear to be the most dominant elements in the assemblage. This is almost certainly due to the fact that the bones are larger and more robust than the sheep and pig bones. From this number 60% of the identified cattle bones were teeth, all of which were too badly damaged to enable recording of wear stages. One badly damaged mandible fragment with two premolars and all the molars in the jaw was also identified, indicated an animal over the age of 24 to 30 months (Silver 1969). The other fragment was the un-fused articulation of a left radius.

Seven fragments of sheep bone were identified, consisting mostly of teeth and ribs. Only two fragments of pig bone were retrieved, these comprised a distal phalanx and a fragment of a mandible surrounding a tusk. The size of the tusk indicated that the mandible belonged to a female. One distal half of a horses metatarsal was also retrieved.

One hundred and eighty two fragments of bone were burnt white. 26 of these came from context 2355, one of which came from the sieved material. Three were identified as being sheep rib fragments. 19 fragments came from context 2133 and the further 137 was from sieved deposits from context 2133, one of which was a sheep's proximal phalanx.

One fragment of cattle astragalus was present in the sieved material.

It is clear from the assemblage that cattle, sheep, pig and horse were present on the site. It is probable that cattle are over-represented in the collection.

Recommendations

Given the poor preservation of the assemblage, no further work is recommended.

Table 9 Number of bone by context and species.

Context	Context type	Cattle	Sheep	Pig	Horse	Unidentifiable
2006	Subsoil	0	0	0	0	2
2015	Finds reference	0	0	0	0	17
2026	Finds reference	0	0	0	0	14
2035	Finds reference	0	0	0	0	1
2071	Ditch group (2424)	0	0	0	0	1
2072	Ditch group (2424)	0	0	0	0	1
2098	Ditch group (2163)	0	1	1	0	6
2112	Waterhole (2113)	0	0	0	0	31
2114	Waterhole (2113)	1	0	0	1	0
2122	Ditch group (2163)	1	0	0	0	5
2123	Ditch group (2163)	0	2	0	0	70+
2133	Ditch group (2424)	0	0	0	0	19
2164	Stakehole (2141)	0	0	0	0	1
2190	Ditch group (2163)	0	0	0	0	1
2203	Ditch group (2427)	0	0	0	0	1
2204	Ditch group (2427)	2	0	0	0	23
2212	Ditch group (2420)	0	0	0	0	35
2247	Ditch group (2163)	1	0	0	0	4
2254	Ditch group (2427)	0	1	0	0	4
2257	Ditch group (2424)	1	0	0	0	0
2258	Ditch group (2424)	1	0	0	0	18
2259	Ditch group (2424)	0	0	1	0	35
2262	Pit (263)	1	0	0	0	0
2269	Posthole (2270)	0	0	0	0	1
2355	Pit (2354)	1	3	0	0	25
2357	Ditch group (2424)	1	0	0	0	0
2358	Ditch group (2424)	0	0	0	0	8
2362	Pit (2361)	0	0	0	0	1
Total		10	7	2	1	254

Table 10. Sieved bone >10mm.

Context	Context type	Cattle	Unid
2111	Waterhole (2113)	0	4
2118	Fill of structure (2078)	0	1
2123	Ditch group (2163)	1	0
2133	Ditch group (2424)	0	5
2355	Pit (2354)	0	1
Total		1	11

Table 11. Sieved bone 10 – 4

Context	Context type	Sheep	Unid
2133	Ditch group (2424)	1	131

APPENDIX 9 AN ASSESSMENT OF THE CHARRED PLANT REMAINS

By Ruth Pelling

Introduction

A total of 20 samples were taken from a corndrier, oven, hearth, pit, waterhole, and from ditch deposits. Samples were processed by bulk water separation and the flots collected onto a 500μm mesh. The volume of soil processed was generally 40 litres with one 10 litre sample. The resultant flots were allowed to air dry before being submitted for assessment.

Assessment method

Each sample was first put through a stack of sieves of mesh sizes 2mm to 500μm in order to separate it into manageable fractions. Each fraction was then scanned under a binocular microscope at magnification of x10 to x20. Flots were scanned with sufficient care to enable a thorough assessment of contents. Charred seeds and chaff seen were provisionally identified and the abundance estimated. Generally this involved a rough count of items seen. Charred remains were abundant in sample 2001 (context 2093) taken from an oven. This sample was therefore sorted in full. The charred seeds and chaff present were provisionally identified.

Results

Identifiable charred seeds and chaff were present in 14 samples. The charred remains identified are summarised in tables 12 and 13. The quantities given are approximate. Remains in three samples, sample 2005 (cxt 2110) and 2009 (cxt 2161) 2020 (cxt 2214) were negligible, limited to very occasional indeterminate cereal grains. These samples are not included in the results tables. Two further samples, 2012 and 2019, contained charcoal only with no seeds or chaff. Most samples contained fragments of charcoal in varying quantities. *Quercus* (oak) charcoal was most frequently identified while occasional Pomoideae type charcoal was noted.

The majority of samples produced broadly similar assemblages with low levels of mixed grain, chaff and weed seeds. One samples (2001) produced a much larger assemblages dominated by glume bases/

Triticum spelta (spelt wheat) was the most frequently identified cereal, represented by both grain and glume bases. Grain and glume based which could not be identified as *Triticum spelta* but which were clearly from a hulled wheat are recorded as *Triticum spelta/dicoccum* (spelt/emmer).

A number of wheat grains which could not be distinguished as *Triticum spelta* or free threshing *Triticum* sp. are recorded separately as short grained *Triticum*, distinct from the category of more poorly preserved *Triticum* sp (wheat) grains. These grains were compact and rounded, generally of an appearance like free-threshing *Triticum* grain. Observations of short grained *Triticum spelta* at sites such as Birdlip Quarry, Gloucestershire (Pelling unpubl.) and Monkton, Kent (Pelling, unpubl) suggest that a short grained *Triticum spelta* is also possible. Diagnostically

more reliable evidence for free-threshing *Triticum* is provided by five rachis nodes in late Iron Age/early Roman sample 2015 and in sample 1.

Also present in the samples were grains of *Hordeum vulgare* (barley), *Avena* sp. (oats) and *Secale cereale* (rye), all present as minor cereal crops. No floret bases were available with which to identify the oats as wild or cultivated. Large cultivated legumes (beans or peas) were noted in sample 2015 (context 2120).

Weeds were present in most samples in small quantities. Species noted during the assessment include *Galium aparine* (goosegrass) and *Odontites verna* (red barstia), which are suggestive of heavy soils, while *Eleocharis palustris* (common spike rush), noted in context 2017, may suggest the cultivation of wet, marshy ground. *Rumex acetosella* (sheep's sorrel), identified in sample 2004, may indicate slightly acid ground. Occasional grasses and weedy legumes (medick/clover) were also noted.

Sample composition

The majority of samples are suggestive of small scatters of domestic waste derived from the preparation and consumption of cereal remains, with chaff, grain and weeds occurring in low numbers in varying ratios. The presence of chaff and weed seeds indicates that at least some of the later stages of cereal processing were taking place. The absence of culm nodes and larger seed heads suggests the early preparation of cereals may have taken place elsewhere, such as the field edge.

Oven sample 2001 (context 2093) is of more individual interest. Charcoal was fairly frequent, dominated by *Quercus* sp. (oak). Charred seeds and chaff were numerous, dominated by some 750 glume bases. The sample consists almost entirely of *Triticum spelta* or *Triticum spelta/dicoccum*, with a single grain of *Hordeum vulgare*. Glume bases out number grain by approximately 4 to 1. Occasional grain shows signs of having germinated while three sprouted embryos were also recovered. The numbers of germinated grain are very low, and are appropriate for occasional sprouted grain within a harvested crop. There is no evidence for the remains of malting or similar activity. This sample seems to contain the waste product of an episode of a late stage of processing of spelt wheat, the fine sievings, which has been used as fuel in the oven. The charcoal is also likely to have derived from fuel.

Discussion

The results show that while spelt wheat was the principal cereal a free-threshing wheat was also present at the site during the late Iron Age/early Roman period. Spelt wheat is the major cereal crop cultivated in central and southern Britain during the Iron Age and Roman periods, although free-threshing bread type wheat has occasionally been recorded, for example at Barton Court Farm (Jones 1984) and more convincingly from rachis fragments at Springhead, Northfleet, Kent (Campbell, nd.). While it is possible that the free-threshing wheat is present as a weed contaminant of the spelt crop, its cultivation does seem likely.

The cultivation of *Secale cereale* (rye) and *Avena* sp. (oats) may have been established by the foundation of the site, although it is possible that the occasional grains are derived from weeds of the spelt crop. It is likely that the *Hordeum vulgare* was being cultivated.

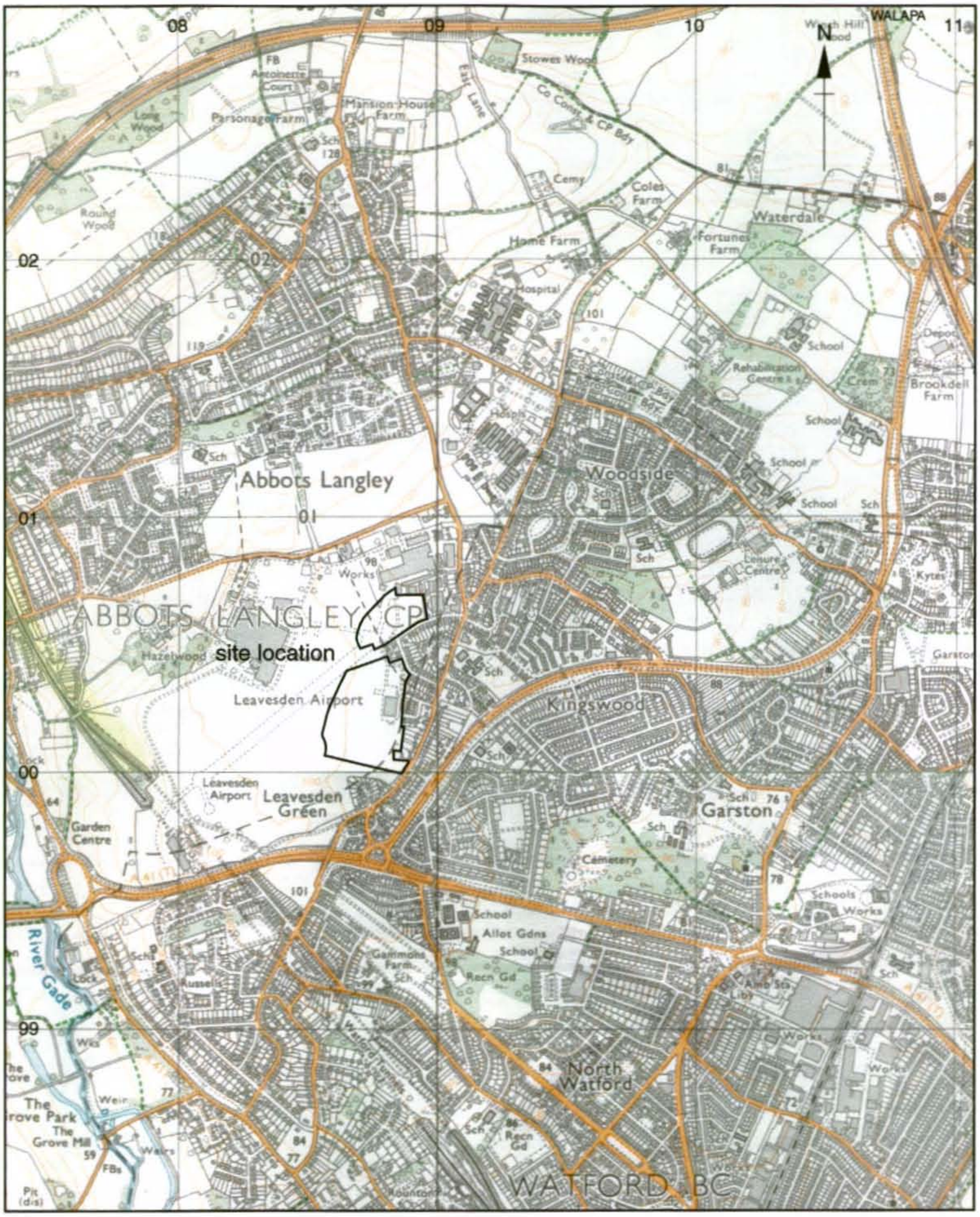
The majority of the samples represent small-scale cereal cleaning and processing waste which is likely to have been scattered generally across the site and do not represent any deliberate deposition. The chaff rich oven sample (2001) does demonstrate that cereal processing was taking place on a reasonable scale, although it is not clear how much of the early stages of crop processing were taken place given the absence of straw nodes.

Table 12 Charred Plant Remains noted during assessment (numbers are estimates)

	Sample	2001	2002	2003	2004	2006	2007	2008
	Context	2093	2118	2133	2269	2111	2112	2114
	Date	1st AD	LIA/ ERM	LIA/ ERM	1stAD	3rd AD	1st AD	1st AD
	Volume	40	40	40	10	40	40	40
Triticum spelta	spelt wheat grain	30	10	2	1	-	5	-
T. spelta	germinated grain	8	-	-	-	-	-	-
T. spelta/dicoccum	spelt/emmer grain	33	-	-	-	1	-	-
Triticum sp.	wheat, short grain	-	-	-	-	-	-	-
Triticum sp.	wheat grain	24	2	1	1	-	5	-
Hordeum vulgare	barley grain	1	-	1	-	-	-	1
Avena sp.	oat grain	-	2	-	-	-	-	-
Secale cereale	rye grain	-	-	-	-	-	5	-
Cerealia indet	grain	90	-	10	-	-	-	-
Triticum spelta	spelt wheat glume base	350	20	-	-	4	10	1
T. spelta/dicoccum	spelt/emmer glume base	400	20	-	4	4	-	10
Triticum sp.	free-threshing wheat rachis	-	-	-	-	-	-	-
Cerealia indet	sprouted caryoptile	3	-	-	-	-	-	-
Cerealia indet	detached embryo	7	-	-	-	-	-	-
Pisum/Vicia sp.	pea/bean/vetch	-	-	-	-	-	-	-
Corylus avellana	hazel nut shell fragments	-	1	-	-	-	-	-
Weed seeds		50	40	6	5	-	5	-

Table 13 Charred Plant Remains noted during assessment (numbers are estimates)

	Sample	2010	2013	2014	2015	2016	2017	1
	Context	2355	2366	2051	2120	2121	2122	2006
	Date	Roman	LIA/ERM	LIA/ERM	LIA/ERM	1st AD	MIA	?
	Volume	10	40	40	40	40	40	?
Triticum spelta	spelt wheat grain	-	-	1	2	2	5	2
T. spelta	germinated grain	-	-	-	-	-	-	-
Triticum spelta/dicoccum	spelt/emmer grain	1	1	-	-	-	-	-
Triticum sp.	wheat, short grain	-	-	-	20	10	5	-
Triticum sp.	wheat grain	-	-	-	-	5	-	2
Hordeum vulgare	barley grain	1	-	2	-	-	-	-
Avena sp.	oat grain	-	-	-	-	-	-	-
Secale cereale	rye grain	-	-	-	-	5	-	-
Cerealia indet	grain	-	-	1	4	-	5	2
Triticum spelta	spelt wheat glume base	2		1	1	-	-	-
Triticum spelta/dicoccum	spelt/emmer glume base	-	5	2	-	2	-	5
Triticum sp.	free-threshing wheat rachis	-	-	-	2	-	-	3
Cerealia indet	sprouted caryoptile	-	-	-	-	-	-	-
Cerealia indet	detached embryo	-	-	-	-	-	-	-
Pisum/Vicia sp.	pea/bean/vetch	-	-	-	2	-	-	-
Corylus avellana	hazel nut shell fragments	-	5	-	-	-	-	5
Weed seeds		10	4	1	6	2	2	-



Based on the Ordnance Survey's 1:25000 map of 1991 with the permission of the controller of Her Majesty's Stationary Office, © Crown Copyright. Licence No. AL 854166

Scale 1:25000

Figure 1

100 0 100 m.

WALA 98

509580/
200650

boundary of proposed
business park

trench 15

trench 14

trench 13

trench 12

posthole/pit

quarry pit

Late Iron Age ditch

Post-medieval
field boundary

N

boundary of proposed
residential development

trench 1

trench 11

trench 13

area of excavation

flight
shed 2

trench 3

trench 4

509900/
200200

trench 5

trench 7

trench 6

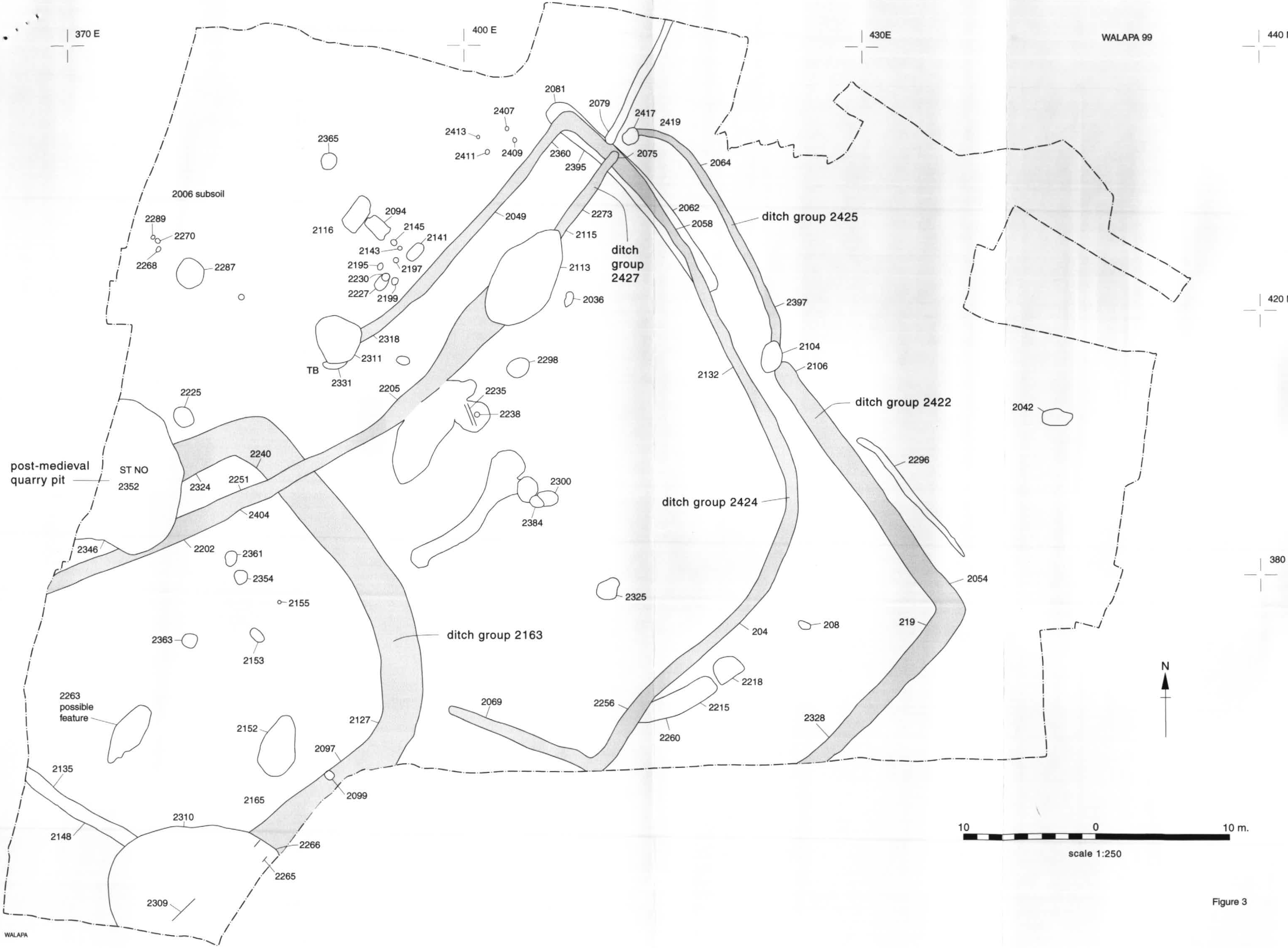
trench 9

trench 10

trench 8

WALAPA

Figure 2



370 E
400 E
430E
WALAPA 99
440 N
420 N
380 N
2006 subsoil
2365
2407
2413
2411
2409
2081
2079
2417
2419
2360
2395
2075
2064
2289
2270
2268
2287
2094
2116
2145
2141
2143
2195
2197
2230
2227
2199
2049
2273
2115
2113
ditch group 2427
2062
2058
ditch group 2425
2036
2397
2318
2311
TB
2331
2298
2104
2106
2132
ditch group 2422
2042
2225
2205
2235
2238
post-medieval quarry pit
ST NO
2352
2240
2324
2251
2404
2300
2384
ditch group 2424
2296
2346
2202
2361
2354
2155
2325
2054
2363
2153
ditch group 2163
204
208
219
2218
2263 possible feature
2069
2256
2215
2260
2328
2152
2127
2097
2099
2165
2135
2148
2310
2266
2265
2309
N
10
0
10 m.
scale 1:250
WALAPA

Figure 3