West Wick
Weston-super-Mare
North Somerset

Post Excavation Assessment

oxfordarchaeology

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Prepared by: Kelly Powell
Position: Project Officer
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Checked by: Alan Hardy
Position: Senior Project Manager
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Approved by: Anne Dodd Signed…….
Position: Director post-excavation
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Illustrated by Julia Moxham

Oxford Archaeology

Janus House
Osney Mead
Oxford OX2 0ES
t: (0044) 01865 263800 e: info@oxfordarch.co.uk
f: (0044) 01865 793496 w: www.oxfordarch.co.uk

Archaeological Excavation at West Wick, Somerset
Post-excavation Assessment and updated Project Design

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SUMMARY

In August and September 2006 Oxford Archaeology (OA) undertook a programme of archaeological work at West Wick, Weston-Super-Mare (NGR ST 371618). The work was commissioned by CgMs Consulting Ltd on behalf of Persimmon Homes South West in advance of development. The excavation area, measuring 35 m x 65 m, was identified as of potential interest in light of earlier trial trenching carried out by OA during March 2005.

The excavation revealed extensive archaeological remains predominantly consisting of a series of ditches probably indicative of a number of phases of field systems and drainage related to a nearby settlement. A number of pits were located to the south of the area, including a possible unlined well, suggesting the focus of the settlement may have been beyond the south-eastern limit of the site. Most of the features contained dating evidence which appeared to fall broadly into two periods - early medieval (10th-12th century) and post-medieval (16th-19th century). The presence of widely dispersed fired clay, similar in form to briquetage, may indicate the existence of salt production or similar small industry in the medieval period or may be residual material from the Roman period.

1 INTRODUCTION

1.1.1 This document forms an assessment and project design for the site archive generated by fieldwork undertaken by Oxford Archaeology (OA - formerly Oxford Archaeological Unit/OAU) on the site at West Wick, Somerset. The works were carried out in August and September 2006, on behalf of CgMs Consulting Ltd for Persimmon Homes (South West), in advance of development. The document sets out the research framework and proposed methods for the analysis and report preparation, as prescribed by English Heritage MAP 2.

2 PROJECT HISTORY AND BACKGROUND

2.1 Location and scope of work

2.1.1 The development site is situated to the east of West Wick village within the North Somerset Levels, centred on NGR ST 371618 (Fig. 1). It is south of the proposed West Wick Business Park and to the south and east of new developments at St Georges and Moor Lane.

2.1.2 The overall development site is approximately 7.1 ha in extent. The excavation focused on a sample area measuring 35 m x 65 m, identified as an area of potential interest by trial trenching carried out by OA in March 2005 (see below).

2.2 Geology and topography

2.2.1 The geology of the site consists of alluvial clays of the Northmarsh. The site is relatively flat at *c* 5.5 m OD. The water table is high across the site and was generally encountered at *c* 1 m below current ground level. The site was divided into a number of pasture fields bounded by hedgerows and water filled rhynes. There was extensive evidence of artificial drainage in the form of ditches and land drains.

2.2.2 Several derelict farm buildings had been demolished prior to the commencement of work, and demolition debris in addition to fly-tipping had substantially built up the ground level of much of the site. In places, therefore, the overburden was up to 1.2 m deep.

2.3 Excavation methodology

2.3.1 The excavation was undertaken using a 'strip, map and sample' strategy. The whole excavation area was stripped using a mechanical excavator under close archaeological supervision, to the top of the first archaeological horizon or the natural geology, whichever was encountered first. Subsequently the exposed archaeological features were cleaned by hand and digitally mapped using a Total Station.

2.3.2 An appropriate sample of the features were excavated by hand. All features and deposits were issued with a unique context number. Context recording followed

procedures laid down in the *Oxford Archaeology Fieldwork Manual* (1992). Individual and intersecting features were planned by hand and sections drawn, both at a scale of 1:20. Features were photographed using colour slide and black and white print film.

2.3.3 As a result of the high water table it was not possible to fully excavate or record some of the more substantial features.

2.3.4 The derelict farm buildings dating to the 18th and 19th centuries were recorded using black and white film and digital photography prior to their demolition. No further work was undertaken on the building complex.

2.4 Archaeological and historical background

2.4.1 The site and surrounding area have been subject to a number of archaeological studies which have indicated that the surface archaeology is largely of medieval or later date.

2.4.2 In the wider environs of the site there is evidence of earlier prehistoric activity, including Neolithic flint tools and Bronze Age burials, though these are likely to be sealed by peat deposits at considerable depth below present ground level.

2.4.3 Previous investigation and survey work undertaken by Terra Nova (2001) and Avon Archaeological Unit (2002a and 2002b) indicated that a horizon of Iron Age and Roman activity exists at a depth of 0.5 m -1 m from present ground level. Features uncovered included ditches, ground surfaces and slots containing occupation material. The Iron Age hillfort of Worlebury was located nearby and extensive Roman occupation including a large salt manufactory has been recorded in the vicinity of St George village *c* 1 mile to the north-east.

2.4.4 The hamlet of West Wick is first mentioned in the 13th century, although its name is typical of the late Saxon reoccupation of the Northmarsh following the area's virtual abandonment at the end of the Roman period. West Wick is situated in the Hundred of Winterstoke, close to the settlements of Weston (later Weston-Super-Mare) and Wick St Lawrence and was probably sustained by farming the low-lying moor. The area was also famous for mining calamine and galena from the 16th to the 19th centuries (www.Weston-super-mare.com/newhistory).

2.4.5 A series of agricultural buildings were demolished to either side of the excavation area and were the remains of part of a settlement known as West Wick Green in the later medieval period, and the site of two farmhouses in 1815. The area between the buildings was deemed likely to have high archaeological potential.

2.5 Summary of evaluation results

2.5.1 OA carried out a field evaluation in March 2005 which took the form of 14 trial trenches primarily located in order to provide an even distribution across the development area (OA 2005).

2.5.2 The majority of the trenches were devoid of archaeology with the exception of Trenches 8 - 11 which were targeted on the area around the farm buildings. Trench 8 illustrated that an extant wall footing was constructed of rough limestone blocks. Trench 9 contained a thin layer of post-medieval garden soil probably relating to a nearby building, which produced pottery dated from the late 12th to the early 14th centuries and from the 16th to the 19th centuries.

2.5.3 Trench 10 revealed post-medieval ditches containing pottery of similar date. Trench 11 contained a series of archaeological features including medieval ditches and gullies, a large medieval rubbish pit and a possible hearth or oven structure, all of which contained pottery dated from the 10th to the 14th centuries. A post-medieval ditch and pits produced 16th- to 19th-century pottery.

2.5.4 Overall, the pottery evidence indicated that two main phases of activity were represented on the site. In addition to the animal bone assemblage and well preserved charred remains, domestic activity was implicit in the vicinity of Trenches 10 and 11. In light of this the North Somerset County Archaeologist requested that the area was subject to further archaeological investigation.

3 QUANTIFICATION OF THE EXCAVATION ARCHIVE

Record type	Quantification
Context Records	**154**
Plans A4	**24**
Sections A4	**23**
Black and White films	**4**
Colour Films	**3**
Digital images	**35**
Environmental Sample sheets	**1**
Small find record sheets	**1**

4 PROJECT AIMS

4.1 The original aims of the excavation were as follows:

- To identify and record evidence for medieval and post-medieval activity in the excavation area
- To identify and characterise the evidence for medieval and post-medieval activity through hand excavation of sub-surface deposits including negative features and artefacts/eco-facts contained within these deposits
- To determine the nature and morphology of the medieval and post-medieval activity identified, with particular reference to the relationship with the buildings present on the site
- To establish phased evidence for the evolution, longevity and character of activity represented on the site
- To recover ceramic evidence to help develop pottery chronology and typology
- To identify local and non-local resources eg pottery, for indications of resource exploitation and trade

- To compare and contrast the evidence recorded from the site with evidence for contemporary activity found both locally and regionally
- To examine any palaeo-environmental evidence recovered and attempt a reconstruction of the environmental history of the area

5 SUMMARY OF THE EXCAVATION RESULTS

5.1 Introduction

5.1.1 Overall the excavation revealed three main phases of activity (Fig. 2), the first undated at this stage of analysis, the latter two approximately dated through pottery analysis to between the 11th and the late 12th century, and the post-medieval period respectively. The majority of the excavated features were ditches, though a group of pits were present in the southern half of the site. The clarity of the archaeological remains was very diffuse across the excavation area. Most contained clay fills similar to the natural, although in general the fill of the post-medieval ditches was darker.

5.1.2 The site can be divided into two areas based on the layout and nature of the archaeological features. In general some stratigraphy is apparent in the northern half of the site and the archaeological sequence can largely be reconstructed. However in the southern part of the site these relationships are not so clear and phasing is often only indicated by spot dates and spatial relationships.

5.2 Phase 1 - undated

5.2.1 The stratigraphically earliest feature on the site appeared to be a large, irregular depression (11144) in the north-east corner of the site. The feature did not appear to be natural and may have been a pond or extraction pit (Fig. 3, Section 11011). Environmental evidence (7.2.2-3) indicates this may have been used to store brine. This feature had entirely silted up prior to the construction of a complex system of intercutting ditches across the northern part of the site, truncating 11144.

5.3 Phase 2 - 11th to 12th centuries

5.3.1 The earliest group of ditches (11033, 11147, 11148 and 11150) appear to represent repeated definition of an enclosure boundary (although whether for drainage or property demarcation is as yet unclear). These features were all relatively shallow and narrow (averaging 0.5 m x 1.5 m wide), with clay fills similar to the natural, although apparently darker to the south-west. The complex produced 11th- and 12th-century pottery.

5.3.2 A further group of ditches (11149, 11032 and 11154) may have formed an enclosure suggesting rearrangement of land division, and the alignment of these features with ditch 11146 to the south-west may also indicate contemporaneity. Pottery dating possibly from the 10th century to the 12th century was recovered from these ditches, some of which appear to have had long sequences of use.

5.3.3 At the end of this phase a substantial ditch was constructed in the northern half of the site (11151). Its length and function are unclear, though it may have been a drainage ditch.

5.3.4 The southern part of the site is characterised by a concentration of pits and small gullies which produced 10th- to 12th-century pottery. The earliest feature appears to be gully 11152. Pit 11121 may have functioned as a waterhole or unlined well. Feature 11125 was recorded in the evaluation as a hearth due to the amount of fired clay retrieved from it, although this interpretation is at present tentative. Together the pits produced a significant assemblage of pottery and animal bone, suggesting a focus of occupation in the vicinity, though at this stage there does not seem to be any direct evidence of structures.

5.3.5 Three approximately SW-NE aligned shallow ditches (11051, 11111, 11153) in this part of the site produced 11th- to 12th-century pottery and may have indicated rearrangement of the landscape as seen in the northern part of the site. These features may also have functioned as drainage ditches.

5.4 Phase 3 - 16th to 19th centuries

5.4.1 A number of linear features were assigned to this phase. A ditch and gully complex (ditches 11077, 11080 and gullies 11084 and 11086) aligned approximately N-S appear to form an earlier sub-phase (3a). The ditches were quite substantial (*c* 2 m wide x 1 m deep) and appear to represent re-alignment of a boundary (Fig.3 Section 11019). The gullies were shallower in nature and cut into the ditches, possibly indicating further reorganisation of the landscape. A single sherd of possible 11th-century pottery was recovered from the complex and considered to be residual.

5.4.2 The remaining five ditches (11053, 11101, 11109, 11113 and 11096 - Phase 3b) were aligned SW-NE, and NW-SE. Ditches 11053 and 11113 were characterised by their very straight alignment. Both ditches were relatively shallow but wide and were almost certainly drainage ditches, containing 16th-century pottery. Ditches 11109 and 11101 were located at the southern end of the site. Ditch 11101 produced late 17th-century pottery, possibly indicating these ditches were slightly later. Ditch 11096, aligned NW-SE, was exposed for over 55 m and appeared to continue beyond the limit of excavation in both directions. Two areas of demolition rubble overlay ditch 11096 and were probably associated with the farm buildings nearby.

6 PROVISIONAL INTERPRETATION

6.1.1 The exact function of the archaeological activity on the site is only partly understood at present. The presence of widely dispersed fired clay resembling briquetage and foraminifera opens up the possibility of salt working in the vicinity. Salt was a vital commodity in the medieval economy, used in the absence of refrigeration for the preservation of meat and fish (Steane 1985, 246). Salt production is widely documented from the Roman period in the Somerset Levels and medieval salt production from elsewhere, such as the Droitwich and Devon (Hagen 2006). It is

possible therefore that some of the features discovered during the excavation are related to this process, in particular the possible hearth, 11125. Collecting channels are also recognised as a feature of salt production sites and it is possible that these are represented by some of the excavated ditches.

6.1.2 The industrial debris is not concentrated in one particular place on the site although it was recovered from most of the pits in the south of the site. In general, it is widely dispersed in small quantities, recovered from a number of fills and noted within soil descriptions. Considering the presence of known Roman salt working in nearby St George it is possible that this debris is residual, conceivably even washed up by a flooding event, such as that represented by deposit 11002.

6.1.3 However, considering the low lying nature of the land it is probable that the ditch complexes represent field drainage associated with a possible nearby settlement. Sub-phase 1b (ditches 11154, 11149 and 11032) and gully 11152 may have been enclosures. The series of possible refuse pits in the southern part of the site appear to indicate the presence of settlement close by, possibly to the south-east of the excavation area. In particular a dump of domestic pottery over 1 kg in weight was recovered from pit 11121.

6.1.4 An interval in settlement continuity appears to exist between the two Phases of activity. The reason for this is unclear at this stage; it is known that the Somerset Levels were virtually abandoned at the end of the Roman period and the early medieval settlement may represent a rare survival of earlier occupation. The later medieval abandonment could be the result of a number of factors such as a deterioration in the environment resulting in an inability to sustain the land, or change in administrative patterns. It is hoped that study of historical sources may shed some light on this event.

6.1.5 The post-medieval phase again would appear to represent a field drainage system, probably related to the settlement of West Wick Green with which the demolished farm buildings were associated. The first edition Ordnance Survey map of 1889 appears to show a large boundary or drain in the correct vicinity and on the same alignment as ditch 11096. However, the relatively meagre quantities of finds from this Phase in comparison to the earlier activity indicates a different regime of rubbish disposal in the area or a different settlement location.

7 THE FINDS

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

7.1 Artefactual

Pottery

7.1.1 The pottery assemblage comprised 316 sherds with a total weight of 6,677 g. The estimated vessel equivalent (EVE) by summation of surviving rimsherd

circumference was 1.29. The ceramic assemblage indicates two phases of activity, the first, early medieval, from around the time of the Norman Conquest until the later 12th century, the second in the post-medieval period, particularly the 16th and 17th centuries.

7.1.2 The dating of the earliest medieval activity is slightly problematic but it is entirely possible that the earliest phase of activity started before the Norman Conquest, and suggests that there are late Saxon or Saxo-Norman remains within the immediate vicinity of these excavations.

Stone

7.1.3 Three pieces of stone were retained and examined with the aid of a x10 magnification hand lens. None of these are worked or of interest. The stone has no potential and no further work is recommended.

Fired Clay

7.1.4 A small quantity of fired clay amounting to 125 fragments weighing 536 g was recovered from a variety of features. The whole assemblage appeared to be made in the same fine silty clay fabric. The majority of pieces appeared to have only one or occasionally two smooth moulded surfaces, but there were no features apparent of a diagnostic character. In view of the position of the site on the Somerset Levels the possibility that the assemblage represents fragments of briquetage from salt production should be considered.

Glass

7.1.5 One sherd of glass weighing 32 g was recovered from context 11102. This appears to be modern bottle glass and requires no further analysis.

Iron

7.1.6 There are five iron objects (= 9 fragments) from this site. Three objects (7 fragments) - two pieces of thin plate, one markedly curved in section, and a whittle-tanged knife (sf 11000), probably Roman or medieval in date - come from context 11034. Both the objects are encrusted with corrosion products. Context 11046 produced a single fragment of bar, or possibly a nail stem (sf 11001). Context 11114 produced a post-medieval whittle tang knife.

Mortar

7.1.7 A single fragment of mortar was found in context 11102, probably relating to the demolished farm buildings.

Shell

7.1.8 A single fragment of mussel shell was recovered from context 11054, weighing 4 g.

7.2 Ecofactual

Animal bone

7.2.1 A total of 361 re-fitted fragments of animal bone were recovered. The majority were from 11th- to later 12th-century contexts. Only 50 bones could be determined to species including cattle, sheep/goat, pig, horse, dog, cat, vole, goose, duck, frog and toad. Several other bird bones were also found. The predominance of cattle and sheep/goat in the assemblage is typical for most archaeological assemblages, but the large number of bird bones is unusual. However, most of the unidentifiable bird bones derive from a single context (11063) and may only comprise a few semiarticulate skeletons. Butchering marks were found on ten bones including cattle, goose and duck.

Plant and insect remains

7.2.2 A total of five bulk samples were assessed for their palaeoenvironmental potential. Very limited plant remains were present in the pond deposit (11042), however this sample did contain fairly abundant foraminifera test shells. Three contexts (11060, 11063 and 11072) contained fairly abundant charred cereals as well frequent charred weed seeds. The latter samples also contained abundant molluscs and ostracods; deposit 11072 contained abundant waterlogged seeds and fairly abundant foraminifera shells and chara/Nitella. The waterlogged seeds were also present in pit fill (11122). The only context with abundant charcoal fragments was (11060), from the gully fill, which also contained limited coal and cinder/clinker fragments. Insect remains were either absent or very limited. The site appears to have been wet/damp during its occupation. Of particular interest is the presence of foraminifera shells, which would only be expected in saline/ brackish conditions, a factor that may corroborate the evidence for possible salt-working at the site.

Molluscs

7.2.3 Five samples were submitted for the assessment of land and freshwater snails. All assemblages were wholly dominated by freshwater species indicating fairly wet conditions, in particular slum species suggesting the presence of standing water within the features. Terrestrial fauna, although present were generally few in number and were dominated by marsh fauna, or those species that can tolerate damp conditions, indicating the growth of tall grasses such as reeds or sedges at the margins. Of note was an anomolous shell fragment of cf. *Ovatella mysotis*, a species that commonly inhabits brackish water environments, in estuaries and saltmarshes. This identification however, requires confirmation. The assemblage from gully fill

(11060), suggests somewhat drier conditions, the terrestrial component was more abundant indicating a more open aspect, perhaps representative of the wider environment. Encrustations, probably of salt, were seen in the fine residue from one sample.

8 STATEMENT OF POTENTIAL

8.1 Stratigraphy

8.1.1 Overall, substantial vertical stratigraphy does not exist across the whole site. In particular, there is minimal stratigraphy linking together the two halves of the site (see 5.1.2). In many cases clear relationships were absent or poorly defined. However, in some areas, particularly in the northern half of the site some clear stratigraphic sequences were present, revealing a complex development of probable drainage or boundary ditches. Where possible spatial arrangements and dating evidence may allow for further interpretation of sub phases; this is particularly true at analysis stage when the dating of the artefactual evidence will be refined.

8.1.2 Additionally, it may be possible to ascertain the level of truncation and later disturbance of the features. This would enable estimation of the type of features which may have been lost such as shallow postholes and beamslots, potentially removing any traces of buildings.

8.2 Artefactual and ecofactual evidence

8.2.1 The finds assemblage is fairly limited in its potential with the exception of the pottery and the fired clay. The pottery assemblage is reasonably large considering the scope of the excavation area and seems to indicate the presence of a medieval settlement nearby. Additionally there is post-medieval activity presumably related to the West Wick Green settlement and the demolished farm buildings. The medieval pottery is generally mundane and utilitarian in nature, indicating quite a low-status settlement, although is still has good potential to assist in refining the chronological framework of the settlement in association with further analysis of the stratigraphy.

8.2.2 The fired clay has very good potential to inform about the character of the site or of the area overall. In particular comparison with material from nearby sites could shed light on whether the site was associated with salt production and if so in what capacity and in which period.

8.2.3 The metalwork assemblage, though limited should be studied in order to find comparanda. This may assist in refining the dating of the objects and therefore the features from which they were retrieved and may provide some idea of function, both of the objects and the site overall.

8.2.4 The stone fragments have no potential and can be discounted.

8.2.5 The glass, mortar and mussel shell fragments should be considered in the analysis but are unlikely to provide much useful information.

8.2.6 The animal bone assemblage is rather small and unlikely to provide much significant information. However, the unusual collection of bird bones from the 11th- to 12th-century deposits may provide insights into the medieval settlement character of the site.

8.2.7 The charred and waterlogged plant remnants and other macroscopic remains, particularly molluscs, have significant potential to inform about the character and environmental context of the site. The ecofactual evidence overall has already indicated the damp or wet nature of the features in the medieval period and could be crucial for determining whether salt working was taking place at that time. Additionally, the charred cereal and weed remains could shed light on agrarian practises carried out on the site during the medieval and post-medieval occupation.

8.3 Documentary history

8.3.1 The general history of the area has not been considered in depth in this assessment but has the potential to shed light on the archaeological results.

8.3.2 The Victoria County History for Somerset was consulted with reference to the settlements of West Wick and West Wick Green. No direct information was found, though the settlements were located within the Winterstoke Hundred which may be crucial to further research. An internet search produced limited evidence.

8.3.3 Various documentary sources from the medieval and post-medieval periods should be consulted in order to establish the nature and development of the settlements of West Wick and West Wick Green. It is anticipated that this will refine the provisional interpretations and in particular indicate whether medieval salt working was taking place on the site and the reason for the gap in settlement from the 12th to the 16th-centuries.

8.4 Research agenda

8.4.1 The excavation at West Wick and subsequent assessment has provided data which contributes to the questions implicit in the original fieldwork aims (see above). In particular, it has identified the medieval and post-medieval activity in the excavation area and has contributed towards characterising and phasing this activity. However, it is apparent that a number of more specific questions can be formulated at this stage that can be addressed in the full post-excavation analysis. These include:

- Is there any evidence for an early medieval structure or structures on the site?
- Did medieval or Roman salt production take place on the site or surrounding area and if so in what form?
- Can the pottery evidence refine the dating of the site?
- Can the ceramic evidence inform about resource exploitation and trade in the early medieval period?
- What is the relationship between the post-medieval features and the demolished buildings?

- How do the results from this excavation enhance the archaeological understanding derived from the 2005 evaluation?
- Can any parallels be drawn between this site and others in the region? And if so how does this site inform the archaeological understanding of the area as a whole?

9 METHOD STATEMENT

9.1.1 The tasks listed below are those required to complete the analysis and publication of the West Wick data. The methods are required to fulfil the research aims outlined in Section 8 above.

9.2 Stratigraphy

9.2.1 Further stratigraphic analysis will be undertaken in the light of dating available from the finds assemblage, in order to try and refine the chronology of both phases of activity evident on the site and firmly establish the ditch sequence. The colour slides, black and white and digital photographs will be examined in an attempt to clarify some of the stratigraphy.

9.2.2 Similarly the site records and photographs will be studied in order to establish the level of truncation of the site and an assessment made of the possible level of loss of archaeological features. This may further increase our understanding of the site and lack of direct settlement evidence.

9.2.3 Some digitising will need to be done in order to refine the site plan.

9.3 Artefactual and ecofactual evidence

9.3.1 The pottery assemblage will be fully analysed and checked against the site matrix to refine its dating and fabric grouping. Comparison with similar pottery assemblages in the area may help to refine the chronology. The pottery will also undergo cross-fit analysis and a number of sherds will be selected for illustration.

9.3.2 The fired clay will undergo full examination by a specialist. It is anticipated that this will clarify whether industrial debris related to salt production is present and if so its function and date. Comparison will also be made with similar groups recovered from the Somerset Levels area.

9.3.3 The iron objects will be fully examined and parallels sought in order to refine their dating and place in the wider context.

9.3.4 Full analysis of the animal bone assemblage is not considered necessary, although it is recommended that the bird bones from the 11th-12th-century deposits are identified to species in order to assess their significance.

9.3.5 In light of the potential significance of the ecofactual evidence further analysis of charred and waterlogged plant remains will be undertaken for four contexts (11060, 1063, 11072, 11122). Additional samples will be processed for ostracods and foraminifera and existing flots and residues will be sorted for further information. Confirmation of mollusc identifications will also be carried out.

9.4 Illustrations of plans, sections and finds

9.4.1 A number of plans and sections will need to be produced in order to provide the necessary level of detail for the report. Plans and sections will be needed for significant features and stratigraphic sequences, and phase plans drawn up of the site as a whole, adapted from existing plans.

9.4.2 Some of the pottery and at least one iron find will need to be illustrated. Time will be needed for producing drawing briefs and for checking the illustrations as they are produced.

9.5 Preparation of published report

9.5.1 The report will be submitted for publication in the Proceedings of the Somerset Archaeological and Natural History Society, and will present a comprehensive account of the medieval and post-medieval activity on the site, addressing the research aims detailed in Section 8. This will include a discussion of the site within its local and regional context. The publication outline is presented in Section 10.

9.6 General project tasks

Project management, monitoring and review

9.6.1 The project will be managed by Alan Hardy with support from Kelly Powell, and internal monitoring by Anne Dodd. Drawing office management will be undertaken by Paul Backhouse. IT support will be provided by Paul Miles. Environmental management will be undertaken by Rebecca Nicholson and CAD management by Matt Bradley. Finds and archive administration will be undertaken by Leigh Allen and Nicola Scott.

Report assembly and editing

9.6.2 The reports will be assembled and checked against the illustrations by Kelly Powell and Alan Hardy. The final report will edited by Anne Dodd.

9.7 Archives

9.7.1 Oxford Archaeology's archiving standards will be adhered to at all times with regards 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 sent for microfiching and then submitted to the National Monuments Record. After completion of the project the OA will endeavour

to find a suitable local depository for the archive, but in the interim the material will be held at OA's storage facility at Milton.

9.7.2 finds depot at Standlake until an adequate storage facility is provided for the county of Somerset.

9.7.3 The digital archive (all relevant databases, CAD plans, GIS, Illustrations, spreadsheets, Word-processing documents) will be prepared by OA staff with appropriate documentation and metadata. This will comprise:

- A file of documentary metadata for all word-processed documents
- A file of documentary metadata for databases
- A file of documentary metadata for CAD & GIS drawings
- A file of documentary metadata for digital images

9.7.4 A completed OASIS form will be submitted to English Heritage upon completion of the project.

9.8 Health and safety statement

9.8.1 All OA post-excavation work will be carried out under relevant Health and Safety legislation, including the Health and Safety at Work Act (1974). A copy of the OA Health and Safety Policy can be supplied. The nature of the work means that the requirements of the following legislation are particularly relevant:

- Workplace (Health, Safety and Welfare) Regulations 1992 - offices and finds processing areas
- Manual Handling Operations Regulations (1992) - transport of bulk finds and samples
- *Health and Safety (Display Screen Equipment) Regulations (1992)* - use of computers for word-processing and database work
- *COSSH (1988)* - finds conservation and environmental processing/analysis

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www.weston-super-mare.com

APPENDICES: THE FINDS

Appendix 1 - Pottery

By Paul Blinkhorn

The pottery assemblage comprised 316 sherds with a total weight of 6,677 g. The estimated vessel equivalent (EVE), by summation of surviving rimsherd circumference was 1.29. The ceramic assemblage indicates two phases of activity, one of which can be dated from the 11th to the later 12th centuries, and the other post-medieval (16th to 19th centuries). It is entirely possible that the earliest phase of activity started before the Norman Conquest, and suggests that there are substantial late Saxon or Saxo-Norman remains within the immediate vicinity of these excavations.

Fabric

Where possible, the pottery was classified using the conventions in AG Vince's unpublished PhD thesis, as follows:

F1: **Bath Fabric B/D** (Vince unpub.). Fossiliferous limestone fragments, c.0.01 mm to 2.0 mm. Less common are inclusions of rounded quartz, c.0.1 mm to 0.7 mm and scattered fragments of oolitic limestone, angular chert, up to c.0.6mm across, fine and coarse-grained sandstones, including ferruginous fragments with white mica and quartz inclusions, flint and rounded pellets of silty clay with a high iron content. Very similar to Mellor's Cotswolds-type ware (ibid. 1994), and with a similar chronology: 10th-century examples are known, but common from the 11th – 13th centuries. 92 sherds, 1,626 g, EVE = 0.25.

F2: **Bristol A/B ware** (*ibid.*). Well rounded and sorted inclusions of quartz and quartzite (some with possible mica inclusions), fine-grained limestone with angular quartz and brown amorphous inclusions, poorly sorted sandstone with some mica and a brown-stained cement and chert? Early 11th – 12th century. 168 sherds, 2084 g, EVE = 0.91

F3: **Proto-Ham Green ware** (*ibid.*) Abundant medium to coarse sand, mainly up to 0.7 mm across but with sandstone fragments up to 1.0 mm across. Subangular and a little rounded quartz, often cloudy with brown veins, some plagioclase felspar, fragments of coarse-grained sandstone with overgrown quartz or quartzite grains (up to 0.7 mm across), brown chert, often varying in colour within one fragment and crossed with quartz veins. Silicious sandstone with brown inclusions, opaque iron ore (smaller than the other inclusions, up to 0.3 mm), and dark brown inclusionless clay pellets. 12th – 13th century. 3 sherds, 91 g, EVE = 0.03.

F4: **Bristol C Ware**. Very hard, grey sandy fabric with lighter surfaces. Glossy, variegated green glaze. Late 11th – 12th century (*ibid.*). 6 sherds, 176 g, EVE = 0.

F5: **Bristol Redcliffe ware**. (*ibid.*) Pale yellow to pale pink fabric with grey core. Mid-late 12th – 15th century. 1 sherd, 2 g, EVE = 0.

F6: **Ham Green Ware**. (*ibid.*) Pale orange sandy fabric, thicker sherds have a grey core. Varying proportions of a well-sorted, predominantly quartz and limestone sand and angular to rounded clay pellets. Few of the sand inclusions are larger than 0.3 mm but the clay pellets

are often several millimetres across. Sub-angular and rounded quartz, angular to rounded clay pellets. Glossy green glaze. Late 12th - ?early 14th century. 2 sherds, 11 g, EVE = 0.

F301: **Minety-type ware** (Mellor 1994). Moderate to dense oolitic shelly limestone up to 1 mm. Few other visible inclusions except for very sparse quartz up to 0.5 mm. Splashes of poor-quality, sage-green glaze. Cotswolds source. Early 12th – 15th century. 4 sherds, 104 g, EVE = 0.10.

F404: **Cistercian Ware**: Late 15th – 17th century (Crossley 1969). Hard, smooth fabric, usually brick-red, but can be paler or browner. Few visible inclusions, except for occasional quartz grains. Range of vessel forms somewhat specialized, and usually very thin-walled (c. 2mm). Rare white slip decoration. 1 sherd, 8 g, EVE = 0.

F425: **Red Earthenwares**. Fine, sandy earthenware, usually with a brown or green glaze, occurring in a range of utilitarian forms. Such 'country pottery' was first made in the 16th-century, and in some areas continued in use until the 19th-century. 35 sherds, 2,493 g.

F426: **North Devon Gravel-tempered ware**. Forms and decoration as F425. Moderate to dense sub-angular quartz up to 2mm. 16th –19th century (McCarthy And Brooks 1988, 467). 1 sherds, 110 g.

F416: **Staffordshire Slipware**. AD1650 - 1750. Fine cream fabric with white slip and pale yellow lead glaze, commonest decoration is feathered dark brown trailed slip. Chiefly press-moulded flat wares, although small bowls and mugs etc are known. 1 sherd, 30 g.

F430: **Staffs Manganese ware**, late 17th – early 19th century. Uniform, buff-fired fabric in a moderately sorted matrix. Occasional sub-angular and rounded black ironstone up to 0.6mm. This ware is characterised by its brown 'tiger striped' manganese glaze. 1 sherd, 2 g.

F1000: **Miscellaneous 19th and 20th-century wares**. 1 sherds, 12 g.

The pottery occurrence by number and weight of sherds per context by fabric type is shown in Table 1. Each date should be regarded as a *terminus post quem*.

The Assemblage

The range of pottery types present indicate that there were two main phases of activity at this site, the first, early medieval, from around the time of the Norman Conquest until the later 12th century, the second in the post-medieval period, particularly the 16th - 17th centuries.

The dating of the earliest phase of medieval activity is slightly problematic. It revolves around the dating of Vince's Bath B/D ware, which is very similar, if not identical to Mellor's Cotswolds-type ware, and also has petrological affinities with late Saxon Gloucester ware, Gloucester fabric TF41A (Vince unpub.). Bath B/D ware has been noted in Bath, at the Citizen House site, in contexts which also produced Cheddar 'E' ware, meaning that a start date of the 10th century is highly likely (*ibid*.). In Oxfordshire, the similar Cotswolds type ware has been noted in 10th century contexts (Mellor 1994), but did not become common until the 11th century.

At this site, a few contexts produced only Bath B/D wares, meaning that they could actually date to the 10th century, particularly a simple rim and a few sherds that show little signs of wheel-finishing. It is entirely possible therefore that there is a phase of late Saxon activity at

this site which pre-dates the Norman Conquest, although further work will be required to confirm this.

The bulk of the medieval pottery dates to the around the 11th century, with a small assemblage of 12th-century material, typified by glazed wares such as Minety-type and Bristol 'C' ware.

The post-medieval pottery largely comprises utilitarian Red Earthenwares, along with a small quantity of mid-late 17th-century tablewares. It seems likely therefore that the post-medieval phase of activity lasted from the 16th – late 17th centuries, although comparison of the sherd count suggests a much less intense level of activity in the post-medieval period.

The pottery was generally fairly small sherds with the exception of a large fragment of a Red Earthenware bowl from context 11092. Other than this, sherds were generally from individual vessels, and there were no reconstructable profiles of cross-fitting sherds.

Further work

- checking of context specific assemblage chronology with the stratigraphic matrix, and adjustment ass necessary - 0.5 day.
- analysis of database and generation of data tables - 0.5 day
- cross-fit analysis and selection and catalogue of sherds for illustration - 0.25 day
- report writing - 0.75 day.

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

	F1		F2		F3		F4		F5		F6		F301		F404		F425		F426		F416		F436		F1000		
	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	
11013	1	5																									10thC?
11017	1	9	7	36																							11thC
11019	2	3																									11thC?
11020	1	2																									10thC?
11022	3	84	1	4																							11thC
11024	1	3	1	6																							11thC?
11030			5	38																							11thC
11031	2	18																									11thC
11034													1	63													E12thC
11036	2	26	7	83	1	4																					11thC
11037	5	131	1	10																							11thC
11050			6	86																							11thC
11052	9	99																									11thC
11054											2	11			1	8	25	597									M16thC
11061	12	103	15	142																							11thC
11063			5	118			1	5																			L11thC
11064	2	15	2	14																							11thC
11065	3	64					1	14																			L11thC
11068	1	8	7	66																							11thC
11070	4	37	21	165	1	8	4	157	1	2																	M12thC
11071	2	84	4	45																							11thC
11072	3	34																									11thC
11073			6	106																							11thC
11074			9	101																							11thC
11075	3	14	6	54																							11thC
11081	1	6																									11thC?
11090	2	55	3	29									1	34			1	24									16thC
11092																	4	1684			1	30			1	12	19thC
11098					1	7																					12thC?
11100			3	55									1	5													E12thC
11102																	3	147					1	2			L17thC
11104	1	133																									11thC
11106			1	34																							11thC

	F1		F2		F3		F4		F5		F6		F301		F404		F425		F426		F416		F436		F1000		
	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	
11108			1	22																							11thC
11110	1	194																									11thC
11112	3	18																									11thC
11114																	2	41	1	110							16thC
11116	3	27											1	2													E12thC
11118			1	10																							11thC?
11120			6	114																							11thC
11122	13	314	45	709																							11thC
11124	1	1																									11thC?
11126			1	12																							11thC
11133	1	2																									10thC?
11138			5	33																							11thC
11138																											11thC
11140	4	17	4	25																							11thC
Total	87	1506	173	2117	3	19	6	176	1	2	2	11	4	104	1	8	35	2493	1	110	1	30	1	2	1	12	

Appendix 2 - Worked stone

By Ruth Shaffrey

Summary and Quantification

Three pieces of stone were retained. None of these are worked or of interest.

Methodology

The stone was examined with the aid of a x10 magnification hand lens.

Description

All three pieces of stone are unworked and of no particular interest.

Statement of Potential

The stone has no potential and no further work is recommended.

Appendix 3 - Fired clay

By Cynthia Poole

A small quantity of fired clay amounting to 125 fragments weighing 536 g was recovered from a variety of features, (ditches, pits and gullies). The material has been swiftly scanned and no detailed record has been made apart from quantification (Table 1).

The whole assemblage appeared to be made in the same fine silty clay fabric fired to a light brown or pale red colour, sometime with a faint pinkish purple tinge. It was slightly porous as a result of voids from organic matter added to the clay in the form of chaff or chopped straw.

The majority of pieces appeared to have only one or occasionally two smooth moulded surfaces, but there were no features apparent of a diagnostic character. The largest piece was in the form of a sub-oval cake with lentoidal cross-section. It is similar in character to a crude kiln spacer.

In view of the position of the site on the Somerset Levels the possibility that the assemblage represents fragments of briquetage from salt production should be considered. A more detailed identification in conjunction with comparative salt production assemblages from the region may allow a more definitive analysis of the material, which in turn may inform functional interpretations of the site.

Table 1: quantification of the fired clay

Context No.	No. frags	Weight (g)
11013	1	1
11017	5	8
11019	1	12
11036	2	10
11060	14	6
11061	1	4
11063	80	179
11070	3	6
11072	7	36
11073	1	22
11075	1	9
11098	3	15
11102	1	210
11122	3	2
11126	1	8
11140	1	8
TOTAL	125	536

Appendix 4 - Iron

By Ian Scott

There are five iron objects (= 9 fragments) from this site. Three objects (7 fragments) - two pieces of thin plate, one markedly curved in section, and a whittle-tanged knife (sf 11000), probably Roman or medieval in date - come from context 11034. Both the objects are encrusted with corrosion products.

Context 11046 produced a single fragment of bar, or possibly a nail stem (sf 11001).

Context 11114 produced a post-medieval whittle tang knife.

Table 1: Ironwork

Context	SF No	Count	Frag Count	Length	Breadth	Function	Identification	Comments
11034		2	5	0	0	Miscellaneous	plate	small plate fragments (x 5), curved, possibly join to form 2 pieces. Heavily encrusted with corrosion products
11034	11000	1	2	124	0	Household	knife	whittle tang knife, with curved back(?) an straight edge. Triangular section blade. Roman or medieval
11046	11001	1	1	65	15	Miscellaneous	bar	bar, or nail stem, fragment
11114		1	1	96		Household	knife	whittle tang knife, with straight blade with parallel back and edge. Tapering round section solid bolster and rounded choil. Most of blade lost. Post-medieval

Appendix 5 - Glass

By Kelly Powell

Summary and Quantification

A single fragment of glass weighing 32 g was recovered from context 11102.

Description

The glass appeared to be modern bottle glass and is of no particular interest

Statement of Potential

The glass has no potential and no further work is recommended.

Appendix 6 - Mortar

By Kelly Powell

Summary and Quantification

A single fragment of mortar was found in context 11102.

Description

The mortar was an undiagnostic fragment and is of no particular interest.

Statement of Potential

The mortar has limited potential and no further work is recommended.

Appendix 7 - Shell

By Kelly Powell

Summary and Quantification

A single fragment of mussel shell was recovered from context 11054, weighing 4 g.

Statement of Potential

The shell has limited potential and no further work is recommended.

Appendix 8 - Animal bone

By Lena Strid

Quantity of material and recording methodology

The animal bone assemblage consisted of 361 re-fitted fragments. The majority of the contexts date from the 11th to later 12th centuries; in addition several contexts were dated to the 16th century and the later post-medieval period. The animal bone was recovered through hand collection during excavation and from wet sieved bulk samples (processed using a 500 µm residue mesh and 250 µm flot mesh). While 25.5% of the assessed bones derive from hand-retrieved contexts and 75.5% derived from sieved samples, the majority of the bones from the sieved contexts were very small (2.8% of the total weight) and mostly consisted of unidentified bird bones. A full record of the assessed assemblage can be found with the site archive.

Methodology

The bones were identified to species using a comparative reference collection, as well as osteological books and articles. Sheep and goat were not identified to species at this stage, but rather classified as 'sheep/goat'. Ribs and vertebrae, with the exception for atlas and axis, were classified by size: 'large mammal' representing cattle, horse and deer, 'medium mammal' representing sheep/goat, pig and large dog, and 'small mammal' representing small dog, cat and hare.

Bone preservation was assessed using a five point scale for bone condition as described by Lyman (1996), grade 0 being very well preserved bone and grade 5 indicating that the bone had suffered such structural and attritional damage as to make it unrecognisable.

For ageing, fused and unfused epiphyses (Habermehl 1975) and mandibles with two or more recordable teeth (Grant 1982) were noted. Measurable bones were recorded according to von den Driesch (1976).

The assemblage

Of the 361 re-fitted fragments, only 50 bones (13.9%) could be determined to species (see Table 1). The animals present included cattle, sheep/goat, pig, horse, dog, cat, vole, goose, duck, frog and toad. Several other bird bones, not yet identified, were also found.

Most bones were in a very good condition, with 97.5% being grade 1 and 2.2% being grade 2 (see Lyman 1994:355). Traces of burning and animal gnawing were found on 73 and 12 bones respectively.

The predominance of cattle and sheep/goat in the assemblage is typical for most archaeological assemblages, but the large number of bird bones is unusual. However, as most of the unidentifiable bird bones derive from a single context (11063) and consist of ribs, vertebrae and long bone fragments, they may only comprise a few semiarticulate skeletons. This context also contained duck and goose bones, two of which displayed cutmarks.

Age estimation could be carried out on 15 bones and one jaw (see Tables 2 - 6). No bones could be sexed.

Butchering marks were found on ten bones. These marks derived from the disarticulation of long bones and ribs, and from filleting ribs. Cuts occurred on cattle, goose and duck as well as on medium and large mammals.

One cattle humerus displayed pathological bone growth, suggesting an active infection.

Recommendation

As the assemblage is rather small, further work is unlikely to provide much significant new information, although it is recommended that the bird bones from the 11th-12th-century deposits are identified to species. In the event of further excavations in the area, the bones would be useful as an addition to these assemblages, and I therefore suggest that the bones be retained.

Time estimation for further work

To identify and record the bird bones from context 11063:
1/2 day plus travel expenses to visit bird bone collection at Southampton University
To produce a publication text: 1/2 day
TOTAL: 1 day + travel

Table 1: Identified bones/species and phase in the WWW06 assemblage

Species	11-12th C.	16th C.	Post-medieval	Undated	TOTAL
Cattle	16	4		1	21
Sheep/goat	4	2		1	7
Pig	2	1			3
Horse	1	1			2
Dog	3				3
Cat	2				2
Goose	3				3
Duck	5				5
Indeterminate bird	245				245
Frog	1				1
Toad	2				2
Amphibian	1				1
Small mammal	1				1
Medium mammal	8	1		1	10
Large mammal	18	1	1		20
Indeterminate	23	7		4	34
Total fragment count	**336**	**17**	**1**	**7**	**361**
Total weight (g)	1385	887	22	40	2334

Table 2: Mandibles and bones in the 11-12th C. WWW06 assemblage providing data for ageing and measuring data.

	Cattle	Sheep/goat	Dog	Duck
Ageable mandibles		1		
Ageable bones	6	1	1	4
Measureable bones	2		1	5

Table 3: Mandibles and bones in the 16th C. WWW06 assemblage providing data for ageing, sexing and measuring data.

	Cattle	Pig	Horse
Ageable bones	1	1	1

Table 4: Epiphyseal fusion of cattle and sheep/goat in the 11-12th C. WWW06 assemblage. UF = unfused, F = fused.

	Cattle		Sheep/goat	
	UF	F	UF	F
Early fusion		4		
Mid fusion	1			
Late fusion	1		1	

Table 5: Epiphyseal fusion of cattle, pig and horse in the 16th C. WWW06 assemblage. UF = unfused, F = fused

	Cattle		Pig		Horse	
	UF	F	UF	F	UF	F
Early fusion		1		1		
Mid fusion						1
Late fusion						

Table 6: Mandibular wear stage of sheep/goat in the 11-12th century WWW06 assemblage

	M1	M2	M3	MWS
Sheep/goat	g	f		25-33

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Appendix 9 - Charred plant remains

By Denise Druce

Introduction

A total of five bulk samples taken during the excavations at West Wick were processed and assessed for their palaeoenvironmental potential. The assessed contexts included two pit fills (11063 and 11122), a gully fill (11060), a ditch fill (11072) and a pond deposit (11042). The latter being processed for both waterlogged and charred plant remains. Any surviving material within the features would provide information on the medieval/post-medieval agrarian practices carried out at the site, as well as the environment of the local area during its occupation.

Method

The flots were scanned under a Leica MZ6 stereo microscope. Any cereal grains, cereal chaff, weed seeds (both charred and waterlogged), charcoal and other macroscopic remains such as molluscs and ostracods were noted and an estimate of abundance made. Botanical nomenclature follows Stace (1997). Plant remains and charcoal fragments were scored on a scale of abundance of 1 - 4, where 1 is rare (less than 5 items) and 5 is abundant (more than 100 items). Charcoal fragments caught on the 2mm sieve was considered identifiable. The components of the matrix were also noted.

Results

The results of the assessment are given in Table 1, which includes a brief statement of palaeoenvironmental potential. Very limited plant remains were present in the pond deposit (11042), however this sample did contain fairly abundant foraminifera test shells. Context 11060, from the gully feature contained fairly abundant charred cereals including bread wheat (*Triticum aestivum*), however many of the grains were too fragmented/distorted to identify with any confidence. Two of the other contexts, (11063) and (11072), contained abundant well preserved charred cereal grains, including bread wheat, barley (*Hordeum vulgare*) and oats (*Avena* sp.), as well frequent charred weed seeds, including fat-hen (*Chenopodium album*), club-rushes (*Isolepis*), and stinking chamomile (*Anthemis cotula*). Both these samples also contained abundant molluscs and ostracods, plus (11072), from the ditch fill, contained abundant waterlogged seeds and fairly abundant foraminifera shells and chara/Nitella. The waterlogged seeds present in (11072), such as crowfoot (*Ranunculus* subg. *Batrachium*) and rushes (*Juncus*) were also present in pit fill (11122). In addition, this latter sample contained waterlogged club-rush and sedge (*Carex*) seeds. The only context with abundant charcoal fragments >2mm was (11060), from the gully fill, which also contained limited coal and cinder/clinker fragments. Insect remains were either absent or very limited.

Discussion and Potential

The abundant charred cereal remains and charred weed seeds in a number of the samples would provide information on the medieval/post-medieval agrarian practices carried out on the site and would therefore be worthy of further analysis. In addition, the waterlogged seeds and other abundant macroscopic remains, such as the ostracods would provide an environmental context for the site, which appears to have been wet/damp during its occupation. Of added interest is the presence of foraminifera shells, which would only be expected in saline/ brackish conditions, a factor that may corroborate the evidence for possible salt-working at the site. However, any interpretation of these types of macrofossil remains would need to be treated with caution. It is possible, for example, for the assemblages to represent residual material that originates from the alluvium in which the features were dug. Also, a very small number of species are adapted to freshwater environments (Lowe and Walker 1987, 215).

Recommendations
Further analysis of the charred plant remains is recommended for contexts 11060, 11063 and 11072. Further analysis of the waterlogged remains is recommended for contexts 11072 and 11122. In addition the flots and residues should be examined for foraminifera and ostracods.

Costings for the CPR/WPR Analysis
Sorting and Analysis of 4 Samples
2 days for an environmental technician to sort material.
2 days for an environmental specialist at day rate of £205
Report Production
2 days at day rate of £205

Environmental management
0.25 day environmental manager

Acknowledgements
Acknowledgements should go to the environmental team in Oxford for processing the samples.

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Table 1: Plant Remain Assessment Results. Scores are based on a scale of abundance where (1) = 1-5 items, (2) = 5-25, (3) = 25-50, (4) = 50-100 and (5) = >100 items

CONTEXT NO.	SAMPLE NO.	FILL OF	FLOT VOL. (ml)	FEATURE	FLOT DESCRIPTION	CPR	WPR	OTHER REMAINS	POTENTIAL
11042 (WPR)	11001	11043	<5	Pond			Plant root/stems (5); *Juncus (*5)	Foraminifera (2)	None
11042 (CPR)	11001	11043	<5	Pond	Sand & gravel (4); hardened clay (3); coal (1); charcoal (2)		Plant root/stems (5);	Mollusc frag. (1); foraminifera (3); unknown (2)	Foraminifera?
11060	11003	11059	30	Gully	Modern roots (5); insects (1); hardened clay (2); mammal bone (1); coal (3); cinder (2); charcoal (5 >2mm)	Cereals (3) incl. bread wheat plus indeterminate; weed seeds (1) incl. *Galium* sp.		Molluscs (3)	Poss CPR
11063	11004	11066	110	Pit	Hardened clay (5); coal (1); charcoal (5, >2mm 2)	Cereals (5) incl. bread wheat, barley, cf oat and indeterminate; weed seeds (2) incl. *Chenopodium album*, *Isolepis*, cf *Pisum*	Plant root/stems (5);	Molluscs (4); ostracods (3)	CPR; Molluscs; Ostracods?
11072	11000	11069	25	Ditch	Hardened clay (3); mammal bone (1); insects (1); charcoal (5, >2mm 2)	Cereals (3) incl. bread wheat, oat and barley; chaff (1); weed seeds (2) incl. Poaceae, *Rumex, Anthemis*, *Chrysanthemum*	Plant root/stems (5); weed seeds (4) incl. *Ranunculus* subg. *Batrachium* and *Juncus*	Molluscs (5); ostracods (5); foraminifera (3); chara/Nitella (2); unknown (5)	CPR; WPR; Molluscs; Ostracods and Foraminifera?
11122	11002	11121	10	Pit	Hardened clay (5); charcoal (5, >2mm 2)	Cereals (1); weed seeds (1)	Plant root/stems (5); weed seeds (4) incl. *Ranunculus* subg. *Batrachium*, *Isolepis*, *Carex, Juncus*	Mollusc frag. (3); unknown (5)	WPR

Appendix 10 - Molluscs

By Elizabeth Stafford and Dan Miller

Introduction

Five samples were submitted for the assessment of land and freshwater snails. The samples derive from medieval (12th- to 14th-century) pits and ditches. The purpose of the assessment was to ascertain if retrieval of molluscan assemblages could provide detailed information on the nature of the local environment. Specifically the assessment aimed to:

- Determine the presence/absence of molluscan remains
- Provide preliminary data on taxonomic content
- Provide recommendations for further work

Methodology

All samples, apart from sample <11005> from context 11013, were initially processed by flotation as 40 litre bulk samples for the retrieval of plant remains. Sample <11005> derived from one litre of sediment, processed specifically for molluscs. Both flots and fine residues were dried and rapidly scanned under a low power binocular microscope at magnifications of x10 and x20.

The results are presented in tabular format (Table 1)**.** Nomenclature follows Kerney (1999) and summary habitat information has been indicated following Evans (1972), Boycott (1936) and Robinson (1988, 1979).

For the freshwater mollusca, habitat preferences consist of

- Slum species and those able to live in water subject to stagnation, drying up and large temperature variations.
- Catholic or intermediate species tolerate a wide range of conditions except the worst slums.
- Ditch species require clean slowly moving water often with abundant aquatic plants.
- Flowing water species require a clean stream with a current.

For the terrestrial fauna, habitat preferences consist of

- Open-country
- Shade-loving
- Catholic or intermediate tolerating a wide range of conditions
- Obligate marsh species
- Terrestrial species that can tolerate wet conditions.

Results

Given the large volumes of sediment processed molluscan preservation may be considered moderate in the four bulk samples assessed. Preservation, however, was much better in sample <11005>, which derived from only one litre of sediment.

All assemblages were wholly dominated by freshwater species indicating fairly wet conditions within, and in the immediate vicinity, of the features. Terrestrial fauna, although present were generally few in number and were dominated by marsh fauna, or those species that can tolerate damp conditions.

The assemblage from sample <11000> from ditch fill (11172) was dominated by the freshwater slum species *Anisus leucostoma* and *Lymnaea truncatula* suggesting the presence of standing water within the feature, perhaps subject to some seasonal variation. The catholic species *Lymnaea peregra* was also very abundant, and occasional shells of

Succinea/Oxyloma sp. may indicate the growth of tall grasses such as reeds or sedges at the margins. Of note was an anomolous shell fragment of cf. *Ovatella mysotis*, a species that commonly inhabits brackish water environments, in estuaries and saltmarshes. This identification however, requires confirmation. Sample <11102> from pit fill (11122) produced a similar assemblage to sample <11000> although shell was less abundant.

The assemblage from sample <11003> from gully fill (11060), contained a moderate amount of shell, although the composition of the assemblage suggests somewhat drier conditions. The only freshwater species identified was *Lymnaea truncatula,* which, although dominated the assemblage, may be considered the most tolerant of seasonal drying and desiccation. The terrestrial component was more abundant indicating a more open aspect, perhaps representative of the wider environment. The *Vallonia*, *Vertigo pygmaea* and *Trichia hispida* are consistent with an environment of short-turved grassland or pasture, though the presence of occasional zontids does not suggest this was heavily grazed.

The assemblage from samples <11004> from pit fill (11063), and <11005> from ditch fill (11013) produced rather mixed assemblages. The freshwater componants were similar to sample <11000>, although the presence of *Bithynia tentuculata* and *Valavata* and a greater diversity of catholic species are indicative of clean moving water. The fauna of the ditch fill <11005> is consistent with a drainage function. The abundance of a flowing water species would not be expected in a 'closed' boundary ditch, although this element of the assemblage, may represent in-channel elements deposited through flooding episodes from an adjacent water course. The terrestrial assemblage is consistent with lightly grazed grassland or pasture perhaps with a little scrub. The robust shelled Clausiliidae, noted within the fine residue of <11005>, and commonly associated with more enclosed environments, were restricted to apical fragments and are likely to be derived elements not specifically indicative of a contemporary or local habitat. Encrustations, probably of salt, were seen in the fine residue from this sample, although it is possible that this could represent reworking from the underlying alluvium.

Recommendations

The assessment has served well in characterising the general composition of the assemblages. It is unlikely that full analysis will add significantly to the environmental reconstruction of the site presented in the assessment. However, it is recommended further work be undertaken on the assemblages to confirm the identifications made during the assessment to produce a definitive species list in support of other material categories such as the waterlogged plant remains. This work will also include scanning in more detail a proportion of the fine residues from the bulk samples where significant amounts of shell, were noted in the assessment.

Resources

Confirm identifications - 1 day
Scan residues - 2 days
Report - 1 day
Environmental management – 0.25 days

References

Boycott, A E, 1936 The habits of freshwater mollusca in Britain. Journal of Animal Ecology, **5,** 129-30, 144

Kerney, M P, 1999 *Atlas of the land and freshwater molluscs of Britain and Ireland* Colchester

Robinson, M, 1979 The plants and invertebrates, in G.Lambrick and M.Robinson, *Iron Age and Roman riverside settlements at Farmoor. Oxfordshire* CBA Res Rep **32**

Robinson, M, 1988 Molluscan evidence for pasture and meadowland on the floodplain of the Upper Thames basin, in Murphy P. and French C. (Eds) *The Exploitation of Wetlands* BAR Brit Ser **186**, 101-112

Table 1: Mollusc Assessment

		Sample	11000	11002	11003	11004	11005
		Context	11172	11122	11060	11063	11013
		Feature	Ditch	Pit	Gully	Pit	Ditch
Taxa	Habitat						
Valvata cristata	F	D				+	+
Valvata sp.	F	Fl					+
Bithynia tentaculata	F	Fl				+	+++
Lymnaea sp.	F	Sl, C	++	+		+	
Lymnaea truncatula	F	Sl	++	+	+++	+	+
Lymnaea palustris	F	C		cf.+		+	
Lymnaea peregra	F	C	++++			+++	
Anisus leucostoma	F	Sl	+++	++		+++	+++
Bathyomphalus contortus	F	*D*					+
Gyraulus crista	F	C	++			++	++
Planobarius corneus	F	C					+
Planorbis planorbis	F	C		+			
Planorbis albus	F	C				+	
Aplexa hypnorum	F	C				+	
Oxyloma/Succinea sp.	T	M	+	+			++
Vallonia sp.	T	O			++	+	
Vallonia costata	T	O				+	
Vallonia pulchella	T	(M) O	+		+		+
Vallonia excentrica	T	O			+	+	
Pupillia muscorum	T	O				+	+
cf. *Vertigo pygmaea*	T	O (M)			+		
Zonitidae	T	S		+	+	++	+
Clausiliidae	T	S					++
Trichia hispida	T	C (M)		+	+		+
Helicidae	T	C O				+	
Cepaea/Arianta sp.	T	C		+			+
cf. Ovatella mysotis			+				

Habitats: F = freshwater species, T= terrestrial species (Fl = flowing water species, D = ditch species, Sl = slum species M = obligate marsh species, (M) = terrestrial species that can live in wet conditions, O = open-country species, S = shade-demanding species, C=Catholic species.
Abundance + = 1-4, ++=5-14, +++= 14-45, ++++= >45

Scale 1:25,000

Figure 1: Site location

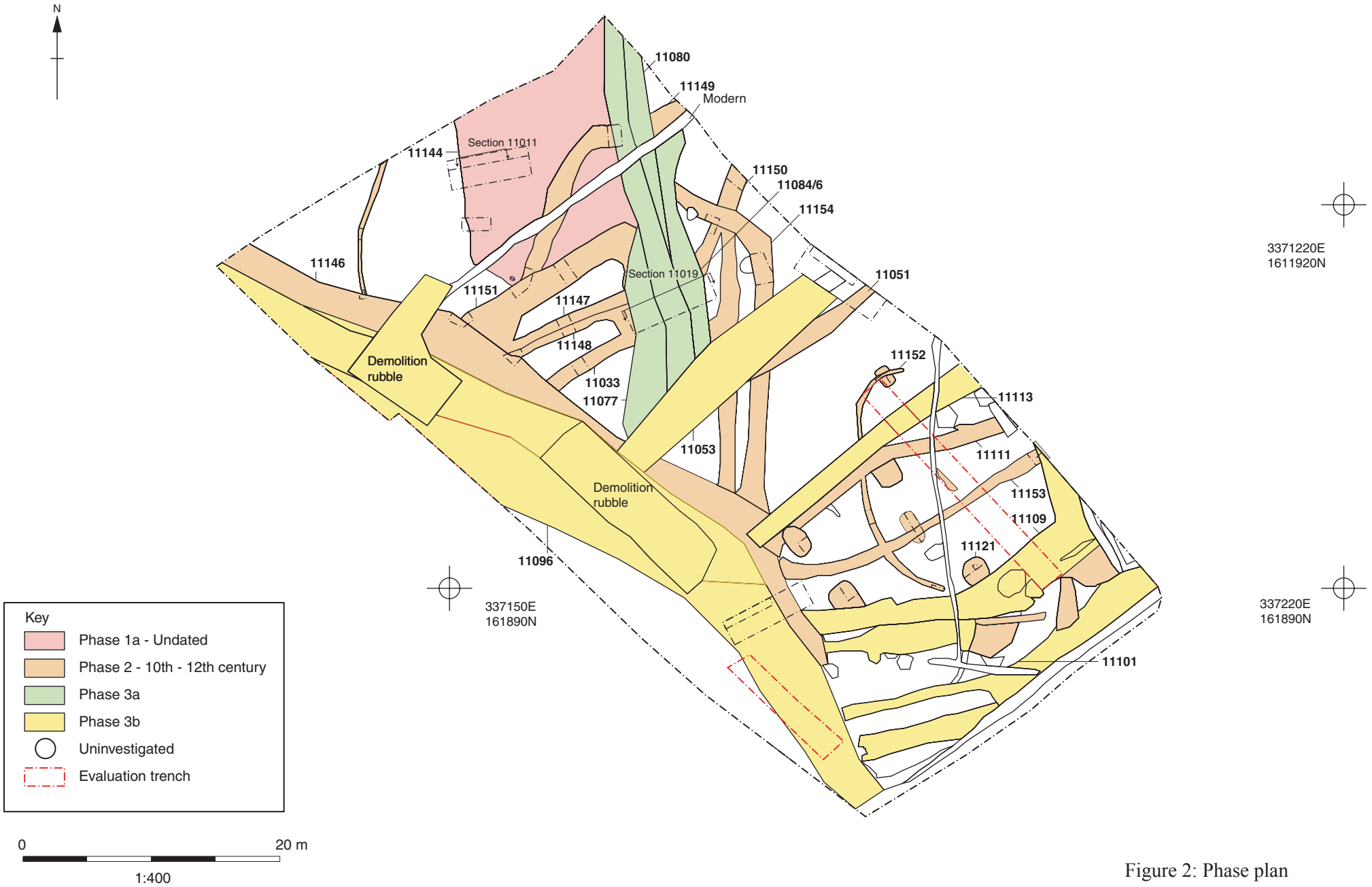
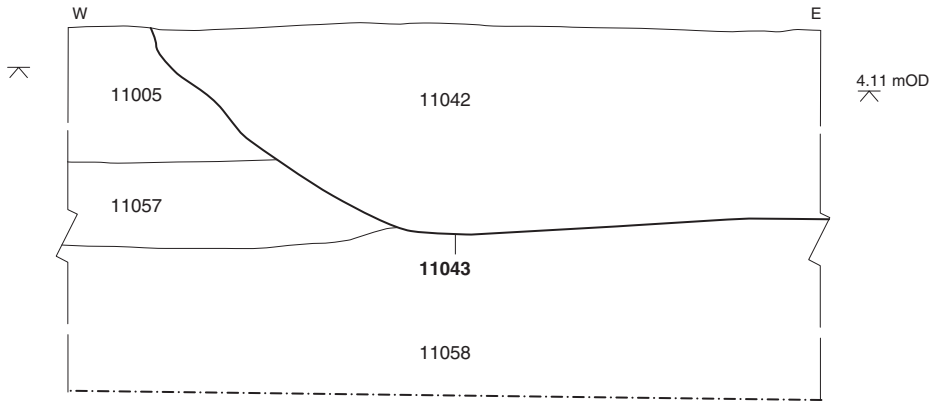


Figure 2: Phase plan

Section 11011



Section 11019

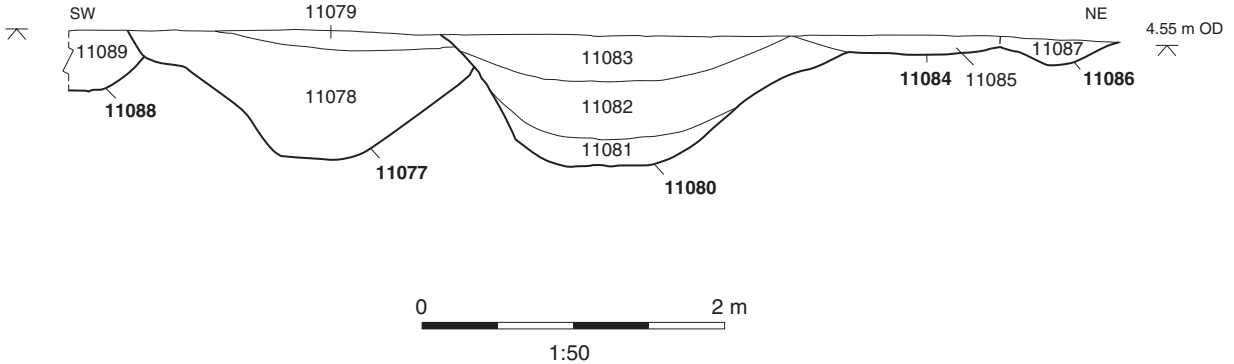


Figure 3: Sections

Plate 1: Post medieval farm buildings

Plate 2: Working shot of the site