APPENDIX 1: Approved Archaeology Research Design
ARCHAEOLOGY
RESEARCH DESIGN

PITSFORD QUARRY
NORTHAMPTONSHIRE

August 2002

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MIFA

- 2 SEP 2002
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Summary

This document is a research design intended to provide the basis for the mitigation strategy under the Environment Act 1995 for the archaeological evidence at Pitsford Quarry, Northamptonshire. Opening with information recovered during the archaeological assessment and evaluation of the quarry area, drawing on the conclusions reached during round table discussions in February 2001 and the results of excavations in September 2001, the research design concludes that three levels of response in the field were appropriate to the collection of archaeological data in designated priority areas.

The heart of the research design, however, is the outline of the long term nature of the mitigation strategy and proposes, that whilst the quarry and archaeological contractors operate in a commercial environment, the excavation and recording methodologies employed in different areas of the quarry should be compatible. This report describes long-term aim of the research design to mitigate the effects of quarrying on the archaeological resource by gathering data on a period of intense landscape development from the late Bronze Age to the late Roman period. The report goes on to suggest post fieldwork periods of assessments when publication should be considered. It does not, however, propose when publication should take place suggesting this should be considered properly as assessments of the data are completed in the post fieldwork stages of individual interventions.

The report also makes the point that the final outcome of the mitigation strategy at Pitsford is a viable and sustainable archive deposited in an appropriate store in Northamptonshire and a report, which allows comparison with similar projects in comparable locations in Iron Age and Roman period Britain.
Fig. 1 Pitsford Quarry, Northamptonshire showing the area excavated in Sept 2002
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1 INTRODUCTION

1.1 Assessment and Evaluation

Consent to quarry ironstone at Pitsford was granted in 1953 and reflecting the times had no archaeological provision. Modern Conditions under the Environment Act 1995 were issued in March 1998 by Northamptonshire County Council requiring the implementation of a programme of archaeological works agreed with the County Archaeological officer at Northamptonshire Heritage.

Desk Based Assessment was commissioned by the quarry operators Peter Bennie Ltd and the mineral owners Corus, successor company to British Steel. The Desk Based Assessment was carried out in 1999 by Samuel Rose (Dawson 1999) including the air photo assessment (Deegan 1999). The results of two earlier archaeological assessments, one within the quarry area north east of Grotto Spinney (Audouy 1995) and the other on the route of the proposed Northampton Northwest Bypass (Northamptonshire Archaeology 1992), were noted. The DBA was followed in December 1999 by geophysical survey, field artefact collection and trial trench evaluation (Edmundson 2000) commissioned by Samuel Rose and undertaken by Northamptonshire Archaeology. In February 2000 a meeting between representatives of Northamptonshire Heritage, Samuel Rose and Northamptonshire Archaeology agreed the broad terms of a project or mitigation strategy for the archaeology at Pitsford. Subsequently a first season of watching brief in Bottom Sheep Dale saw the implementation of the mitigation strategy in September 2001. A draft report (Steadman 2001) on this first episode was tabled at a meeting held at Northamptonshire Heritage in December 2001. The presentation of the draft results and subsequent discussions provided the basis for an assessment and re-appraisal of the mitigation strategy. This research design is the outcome of that meeting.

The result of the assessment and evaluation was the identification of a landscape which included elements from the Bronze Age, but which seemed to have been most intensively managed and settled in the Iron Age and Roman periods. The result of the first watching brief has been to reinforce the impression of intensive Iron Age occupation which is reflected in the research design.

1.2 The Format of the Research Design

The form of the research design is based on established practice with the project objectives at the core of the mitigation strategy. Listed below, these form the basis of a long term approach to the whole landscape of the Pitsford quarry area (Fig 1), but implicit in the research design is a strategy of constant review.

This document constitutes the Research Design to mitigate the effects of quarrying on the archaeological evidence in the Pitsford quarry area. It is divided into three sections. In
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Aims and objectives: The principal objective, the recovery of data, is examined and subdivided into a series of subordinate objectives based on currently identified research priorities. These are derived from evidence so far recovered from Pitsford, from the prioritization of research aims in the current Research Frameworks project (Chapman, 1999, Kidd 1999, Taylor 1999) and from National research objectives identified in such publications as (James and Millet 2001, Haselgrove et al. 2001). In the methods statement the stages of the project are outlined and the relationship between objectives and the methods to be used are made explicit.

Fig 3 The cumulative results of aerial photograph and geophysical assessment at Pitsford
2 THE ARCHAEOLOGY OF PITSFORD QUARRY

2.1 Early Prehistory: Neolithic to Bronze Age

The assessment and evaluation of the Pitsford Quarry area recovered little data of early prehistoric date with no cropmark or earthwork evidence of Neolithic activity. Flint material found during field walking in 2001, some 18 worked fragments, suggests only limited activity but also probably reflects the background geology which contains no flint material. Chapman (1999, 5) suggests that, although once considered significant, there is no appreciable preference from the period for settlement to be located on lighter soils. At Pitsford the focus of any activity in the Neolithic, as Edmondson noted (2000, 35), may be outside the quarry area, the evidence from field walking best characterized as that of hunting parties, pastoralism or seasonal migration or other low intensity activity. What Boismier has characterized as short stay or task specific activities (Boismier and Clark 1991).

The assessment and evaluation of fields northwest of Grotto Spinney in 1995 raised the spectre of Bronze Age funerary barrows located on the south facing slope of the valley now occupied by Bottom Sheep Dale, Grotto Spinney, Cottage Stew Ponds and Spring Close. The date of the barrows (ring ditches) was suggested as Bronze Age, on the basis of morphology, although no artefactual evidence was recovered. Subsequent field artefact collection and trial trenching did not recover any further dating evidence. One ring ditch in Bottom Sheep Dale (Edmondson 2000, Trench 4) was found to be natural.

Above Specs Close, on higher ground to the east, a series of concentric rings were identified with a Bronze Age barrow in the aerial photograph assessment. Later trial trenching produced no further dating evidence but established the diameter of the outer ring was some 18m and the inner ditch at only 8m, suggesting a Bronze Age date. These concentric rings were in turn cut by a pit alignment probably of Iron Age date (Edmondson 2001, 21).

2.2 Later Prehistory: Iron Age

The evidence of activity in the Iron Age is extensive at Pitsford with several foci of activity dating from the early - middle Iron Age to the Roman period. The evidence suggests a series of small farms established on the upper slopes of the valley side (Edmondson 2000, Fig 6, 10, 11). In the northwestern area of Bottom Sheep Dale, Grotto Spinney, Spring Close and Stew Ponds a series of enclosures were identified by geophysical survey in the evaluation, which were assigned to the Iron Age on the basis of their sub-rectangular form. Subsequent excavation in September 2001 in Bottom Sheep Dale, dated enclosures and a droveway to the Iron Age based on ceramics recovered from pits, ditches and round house drip gullies.
Further eastwards the lower ground to the south of Bunker Hill Farm, fields Back Drive, Bottom Meadow, Front Drive and Orchard were largely empty of features except for a pit alignment running north west to south east across the top of Orchard field extending probably into Top Specs where it is coincidence with the alignment of a ditched boundary in trench 42 (Edmondson 2000, Fig 12). North of this alignment a series of linear anomalies suggests the location of several enclosures in similar positions to those in Bottom Sheep Dale.

Perhaps the most intensive area of activity was, however, east of Specs Lane. In Specs Close several rectilinear enclosures and circular ditches are probably the remains of settlement of Iron Age date (Edmondson 2000, Fig 13) in a configuration similar to that found during excavation in Bottom Sheep Dale. Despite the fact that at least two of the ring ditches identified on aerial photographs could not be located and one was found to have a Roman period storage vessel in its fill, it is clear from the assessment that settlement could have originated in the early Iron Age whilst a deposit in a ditch terminal (F173) of one of the enclosures suggests a middle Iron Age date for the most intensive period of occupation. Located on the upper slopes of the valley side with pits amongst the ditches and round houses the evidence suggests the potential to explore further the spatial development of this settlement pattern, furthermore a long stretch of pit alignment across
the upper part of Specs Close suggests any development could be placed in the context of wider landscape developments.

Further eastwards the evidence of Iron Age activity is concentrated on the next promontory above the valley in Pebbles Close. The focus of activity was on the eastern side of the Close, in particular a well defined enclosure which contained pits and second enclosure and probably several round houses (Edmondson 2000, Figs 17 & 18).

![Excavation of a large Iron Age pit in 2002](image)

Fig 5 Excavation of a large Iron Age pit in 2002

The identification of Iron Age settlement occupying the upper slopes of the valley and it’s broad characterization as small scale enclosed farmsteads together with the evidence of earlier Bronze Age burial activity suggests the potential to investigate the transitional phase from the Bronze Age to the Iron Age. However, the uncertainty regarding the character of the Bronze Age evidence suggests the focus of early data collection will be on early to middle Iron Age developments. Furthermore the absence of late Iron Age ceramics suggests some form of hiatus between settlement in this valley and early Roman period settlement discussed below.

2.3 The Historic Period: Roman Britain

Roman period settlement activity at Pitsford seems to have been restricted to the area east of Specs Lane. In Specs Close the remains of a small rectangular enclosure was dated to the early Roman period (Edmondson 2000, Trench 27, Fig 14), whilst ditches of a more southerly enclosure in trench 31 dated to the 1st to 2nd centuries AD. Within the latter was a stone structure described as cellared in the evaluation report. On the eastern boundary
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of the Close, trench 29 revealed the remains of boundary ditches dated to the 2nd to 4th centuries AD, close to which were the post holes of earthfast timber buildings.

The activity recorded in Specs Close continues into West Redlands where further rectilinear enclosures possibly of early Roman date had been replaced possibly by open settlement of 2nd to 3rd century date from which a pottery kiln was recovered. The series of enclosures seems to spread as far eastwards as East Redland still concentrated in the lower center of the field. The enclosures do not appear to extend on to the slopes of the slide in Debdale and this dry valley forms a clear topographical boundary. No evidence of Roman activity was found in Pebbles Close.

In addition to the evidence of buildings, probably houses and barns or animal sheds was a pottery kiln dated to 2nd–3rd century on the basis of backfill material indicating the high potential to examine local pottery production.

2.4 The Medieval Period

Despite the extensive area (88ha) covered by the assessment and evaluation very little data relating to the post Roman and medieval periods has been recovered. The potential of this extended period was assessed in the Desk Based Assessment where it was noted that the place name evidence of Pitsford and Moulton suggests early activity may have focused on these two village locations (Dawson 1999, 12).
3 AIM AND OBJECTIVES

3.1 Aims and Objectives: the national and regional picture

In the last four years the research frameworks initiative by English Heritage has led to the preparation of a series of draft papers and published reports suggesting potential areas of research of both national and regional importance. From the assessment and evaluation and the first year of the watching brief it is clear that the thrust of the archaeological recording at Pitsford must be towards investigation of landscape developments in both the Iron Age and Roman period with considerable potential to clarify the sequence of developing settlements. Furthermore, within the settlements the level of preservation of both structural and environmental data means that there is a very real opportunity to investigate aspects of spatial patterning within individual settlements, the economic basis of settlement and, in the light of recent work, some aspects of the underlying ritual of everyday life.

The aims of the overall project can be summarized as follows:

- To understand and clarify the temporal sequence of developments in the landscape during the 1st millennium BC and 1st millennium AD.
- To understand the changing economic basis of settlement throughout the 1st millennium BC and 1st millennium AD.
- To record the spatial disposition of features within settlements and their hinterlands, and to understand the underlying ritual of everyday activity.
- To record the changing profile of material culture during the 1st millennium BC and 1st millennium AD.
- To provide the basis for comparative study with comparable sites and landscapes in the region.
- To understand the impact on the environment of settlement during the 1st millennium BC and 1st millennium AD and conversely the impact of environmental developments upon settlement activities.

To achieve these broad aims the project will need to address several specific objectives in the areas of dating evidence, artefact recovery and stratigraphy to establish the basis of comparative study between settlements within the Pitsford landscape and the potential for

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1 These broad aims are similar in scope to those identified in Haselgrove et al 2001, and Taylor in James and Millett 2001, 49-55.
comparison with other regional studies. Particular emphasis in analysis as much as
fieldwork will be the apparent hiatus between the middle Iron Age occupation and the
early Roman settlement. This objective will place considerable stress on understanding
the processes which may have led to the decline of middle Iron settlement or alternatively
the maintenance of archaic traditions well into the early Roman period.

Developing Chronologies:

The assessment and evaluation has established that there are three areas of potential in
developing the chronological framework of the landscape at Pitsford: stratigraphy,
ceramics and other finds, and environmental samples. These can be broken down into
specific aims as follows:

- To recover stratigraphic data specific to clarifying the temporal relationships
  between features.

- To collect samples containing material appropriate to scientific dating, in
  particular TL dating and C14 dating.\(^2\)

- To recover ceramics and other artefact types from stratigraphically secure
  locations which will form the basis of a comparative chronology.

Of particular importance is the identification of significant contexts which may yield
chronological data from all three sample groups.

Understanding landscapes

If a sound temporal framework of landscape development can be established
understanding how the settlements are constructed within the landscape should emerge
from analysis of structures and sampling of environmental and craft activity. Similarly
some insight may be gained into the reasons for the hiatus in settlement in the late 1\(^{\text{st}}\)
millennium BC. A high priority should be given to agricultural and farming regimes. The
means to achieve such understanding can be expressed as follows:

- Sampling areas of craft activity to understand the technological processes
  undertaken

- Sampling linear boundaries, structural remains, pits and other features to
determine the range of technical and craft activities which took place within or
  close to settlements.

\(^2\) Radiocarbon sampling should focus on the potential of AMS and single entity dating (Ashmore 1999)
whilst in the case of TL dating cognizance of the progress made in using this technique (Barnett 2000) in
eastern England should be noted. Other techniques, such as dendrochronology may be used when
appropriate but it is likely that organic residues attached to other objects (in pots for instance) is likely to be
a more profitable area. At all stages the advice of the EH Regional Science Advisor is expected to be
sought.
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- Recording all contexts which contribute to clarifying stratigraphic sequencing and, therefore, the processes of change.

These objectives cannot be separated out from the broad objective of establishing the underlying ritual of everyday life in Iron Age settlements and contextual recording should be structured to test current theories regarding pit and ditch deposition, the layout and orientation of housing and the function of banks and ditches (Haselgrove et al 2001, 8-9).

Spatial Dispositions

The extent of the quarry area at Pitsford, its situation along a south facing valley side together with the results of earlier assessment indicates the high potential that site has to yield information on the spatial distribution of many activities associated within settlement. The means to understanding more about the layout of such rural settlement lies in a combination of sampling and contextual recording by:

- Sampling to recover details of craft processes.
- Excavation of contexts thought to relate to craft activity. Special emphasis should be placed on sampling to recover chronologically diagnostic material which will allow such features to be situated within the temporal development of a settlement.
- Sampling and excavation to determine the limits of and means of access to areas of craft activity.
- Consideration should be given to soil micromorphological assessment and other mechanisms to recover data related to animal husbandry within settlement areas.

The recovery of data under this heading is intended to generate a model of how the settlement activities were articulated and how they may have changed over time. Of particular interest in this context is the potential of evidence relating to human burial and particularly the possibility of locating areas where human remains were deposited some distance from settlement foci.

Material Culture

The assessment has shown the potential range of artefact types and material culture residues to be comparatively low, probably as a consequence of acidic soil conditions. However, investigation of the site should aim to collect sufficiently large samples of each group to provide the basis for comparative study. To understand the function and place of material culture in Iron Age society consideration should be given to the following objectives:

- The recovery information on the depositional context of artifacts
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- The recovery of sufficient data to understand any production processes undertaken on site
- The recovery of organic materials such as bone, textiles and skins or wood.

It is commonly accepted that there is a current imbalance in the record of artefact recovery towards ceramics and other durable materials such as bone or fired clay. Special emphasis should be placed on the recovery of other materials such as leather, wood or fabrics with higher percentage sampling strategies employed where appropriate.

Regionality

It is beyond the scope of this research design to propose research into regional parallels for the evidence at Pitsford, however, it is essential that the information recovered from investigations at Pitsford receives adequate publication. In this way it will reach a wider audience and will become available for researchers prepared to undertake regional studies. The individual objectives in this area relate to the processes of dissemination and archiving:

- To undertake post fieldwork assessment
- To plan for publication and dissemination at the outset of fieldwork
- To make adequate provision for archiving.
Fig 6 The location of priority areas identified after assessment and evaluation in February 2001. See page 17
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4 METHOD STATEMENT

4.1 Introduction

The investigation of the Pitsford landscape will take place over at least 10 years and started in autumn 2001 with the investigation of Bottom Sheep Dale. The underlying principle of the any methodology established here is that it should be sustainable over the full ten-year period. Only in this way will results of early investigations be easily comparable with the results of those yet to come. Simple mechanisms like a running system of context numbers, small finds numbers and compatible databases must be designed so that they can be adapted to suit new developments but will not, in the foreseeable future, need radical revision. The aims and objectives of this research design will, however, be subject to constant review.

4.2 Management Strategy

The assessment and evaluation process identified three zones of archaeological evidence moving from west to east, which broadly reflect the progress of the quarry over the next decade.

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<tr>
<th>Zone</th>
<th>Fields</th>
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<td>Zone 1</td>
<td>Bottom Sheep Dale, Grotto Spinney, Spring Close, Stew Ponds/Cottage Field</td>
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<tr>
<td>Zone 2</td>
<td>Back Drive, Bottom Meadows, Orchard Field, Top Specs, Bottom Specs/Big Tanner</td>
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<td>Zone 3</td>
<td>Specs Close, West Redland, East Redland and Pebble Close</td>
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The zones provide the framework for the management strategy to deal with the mitigation project at Pitsford which was discussed in February 2000 when three levels of archaeological response were identified to be applied to areas within the zones above. The suggested level of archaeological intervention was based on the potential quantity and quality of archaeology identified by the assessment and evaluation. Three levels were proposed:

A Watching brief

B Lower Intensity Sampling

C Full Excavation

The areas in which the three responses were to be deployed were outlined for the whole quarry area (Fig 5) and is summarized in the table below.
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At the beginning of each season the potential contractor will be required to provide a Project Design to the local authority for approval. The Project Design will not only reflect the area of proposed quarrying and this research design but will also clearly respond to the results of earlier seasons. The latter will be encapsulated in the Post Fieldwork Assessments provided as part of the agreed programme of works.

The objective of such an approach is to retain at the heart of the project the flexibility which has characterized its development since the earliest part of the Desk Based Assessment. Such an approach is also intended to ensure that the contractor understands and has engaged with the results of the site investigation at the start of each session.
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APPENDIX 2: Report on Archaeological Investigations of Phase 1
NORTHAMPTONSHIRE ARCHAEOLOGY

NORTHAMPTONSHIRE COUNTY COUNCIL

DECEMBER 2003

PITSFORD QUARRY

ARCHAEOLOGICAL RECORDING,

BOTTOM SHEEP DALE FIELD:

ASSESSMENT AND UPDATED PROJECT DESIGN
ACKNOWLEDGEMENTS

The Project was managed on behalf of Samuel Rose Ltd and CgMs by Michael Dawson MPhil MIFA. Northamptonshire Archaeology would like to thank Peter Bennie Ltd for their co-operation and assistance during the topsoil stripping and Gill Pawson of GP Planning for her help in the overall success of the Archaeological Investigation.

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Abstract

An archaeological recording action covering c. 3.7 ha was carried out in three stages at Pitsford Quarry on land located to the south of Pitsford village and west of Moulton College, within Bottom Sheep Dale field (NGR TL 4765 2666, Fig 1). The methodology employed comprised watching brief followed by excavation. A series of features provisionally dated to the mid-late Iron Age were excavated and recorded.

The first phase of activity on the site was a pit alignment; comprising 85 pits aligned NNW-SSE, none of which produced any diagnostic artefacts.

The pit alignment was superseded by a ditched curvilinear boundary constructed on a roughly north-south alignment. This feature was maintained over time as evidenced by a series of recuts.

To the northwest of the boundary a series of substantial ditches defined a number of large adjoining rectilinear enclosures, probably representing a field system. Within these large enclosures were a number of smaller rectilinear enclosures, ring gullies, probably representing the remains of round houses, and several pit groups. Excavation again showed that considerable effort had gone into maintenance of these features, with numerous recuts identified.

To the east of the boundary occupation was defined by the construction of discrete intercutting rectilinear enclosures and pit groups. Several of the enclosure ditches had been recut.

The excavations at Bottom Sheep Dale Field revealed a complex sequence of landscape development and occupation in the mid-late Iron Age. It is proposed that a full programme of post-excavation works be undertaken to analyse and disseminate the results.

INTRODUCTION

Archaeological works at Bottom Sheep Dale Field, Pitsford Quarry, Pitsford, Northamptonshire have been carried out by Northamptonshire Archaeology in three phases (Fig 2); Stage 1 to the north (2001, 8300m²), Stage 2 central area (Summer 2002, 7700m²) and Stage 3 (Autumn 2002, 20500m²) to the south and east. Northamptonshire Archaeology was commissioned by Samuel Rose Ltd and subsequently by CgMs on behalf of Peter Bennie Ltd to undertake the works. Iron Age activity comprising a Pit Alignment and settlement site was identified.

Previous work in 1999-2001 by Samuel Rose Ltd (Desk-Based Assessment), Alison Deegan (Aerial Photographic Assessment) and Northamptonshire Archaeology (geophysical survey, field artefact collection, trial trenching and recording action) has shown the presence of a number of archaeological sites, dating from Bronze Age to Roman periods. Northamptonshire Heritage has classed the Pitsford Quarry area as having high archaeological potential.
AIMS AND OBJECTIVES

The research framework for the quarry area was set out in the original brief prepared by CgMs (2002), and reiterated in the Phase 3 mitigation strategy (Dawson 2002a). These set out a range of areas of interest for the Prehistoric and late Iron Age / Roman-British periods, summarised as follows:

Prehistoric
- Boundaries
- Landscape development
- Nature of occupancy
- Character of settlement

Late Iron Age / Romano-British
- Periods of occupation at all sites
- Structure of land division
- Character of settlement form
- Nature of settlement: episodic occupation, short / long term, agricultural building
- Farming regime

The overall aims of the mitigation strategy are set out in the Archaeology Research Design (Dawson 2002b). These can be summarised as follows:
- To understand and clarify the temporal sequence of developments in the landscape during the 1st Millennium BC and 1st Millennium AD.
- To understand the changing economic basis of the settlement throughout the 1st Millennium BC and 1st Millennium AD.
- To record the spacial disposition of features within settlements and their hinterlands, and to understand the underlying ritual of everyday activity.
- To record the changing profile of material culture during the 1st Millennium BC and 1st Millennium AD.
- To provide the basis for comparative study with comparable sites and landscapes in the region.
- To understand the impact on the environment of the settlement during the 1st Millennium BC and 1st Millennium AD and conversely the impact of environmental developments upon settlement activities.

Specific themes are addressed in this document (Dawson 2002b) including developing chronologies, understanding landscapes, spacial dispositions, material culture and regionality; each with its own set of research objectives.

During excavation fieldwork objectives to achieve the project aims were formulated as the extent of the archaeological evidence was revealed. These were:

1. Investigate the nature of the activity within the stripped area, with particular attention being paid to the relationship of the site to other known or potentially contemporary sites in the general locality.
2. Preserve archaeological evidence contained within the site by record and to attempt a reconstruction of the history and use of the site.
3. Contribute to the understanding of the late prehistoric and Iron Age development of Northamptonshire.

4. Relate the archaeology between the three stages of recording action and monitor changes in use and density as the settlement extends to the south.

**SUMMARY OF METHODOLOGY**

Previous evaluation recorded only minimal evidence for archaeological deposits within the northern portion of Bottom Sheep Dale field. Accordingly, archaeological recording was confined to a Watching Brief provision during the soil removal ahead of mineral extraction.

The site was excavated to the level of the natural substrate using a 360° excavator fitted with a 1.5m wide toothless ditching bucket, operating under archaeological supervision. At this point it became clear that archaeological features were present across the stripped area. Accordingly a programme of excavation was agreed with the client and Northamptonshire County Council and undertaken by Northamptonshire Archaeology.

All features were planned and the majority sampled by hand excavation. Sections of all archaeological features were drawn and recorded. Environmental samples were recovered from several pit and ditch fills and the site was located using a total station aligned to the OS national grid.

The works were undertaken in three Stages; Stage 1 (2001), Stage 2 (Summer 2002) and Stage 3 (Autumn 2002).

**Table 1: Summary of site archive**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Contexts</th>
<th>Plans</th>
<th>Sections</th>
<th>Photos</th>
<th>Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>510</td>
<td>8</td>
<td>123</td>
<td>172</td>
<td>11</td>
</tr>
<tr>
<td>2</td>
<td>225</td>
<td>10</td>
<td>58</td>
<td>98</td>
<td>29</td>
</tr>
<tr>
<td>3</td>
<td>251</td>
<td>5</td>
<td>60</td>
<td>68</td>
<td>2</td>
</tr>
<tr>
<td>Totals</td>
<td>986</td>
<td>23</td>
<td>241</td>
<td>338</td>
<td>42</td>
</tr>
</tbody>
</table>

**SUMMARY OF RESULTS**

The stripping revealed that the natural substrate predominantly consisted of well-drained loamy soils with outcrops of limestone and Northampton Sand. Aside from residual pieces of worked flint and a single sherd of pottery, initial assessment has revealed no artefacts predating the Iron Age. No features of Roman, Saxon or medieval date were present within the study area.

**PIT ALIGNMENT**

The earliest phase of activity on site comprised a pit alignment on a NNW-SSE axis. A total of 85 pits were excavated over a distance of 223m. The pits were generally 1.2m- 2m apart, 0.9-1.2m, up to 0.5m deep and typically displayed a slightly irregular U-shaped profile with flat or concave bases. Excavation did not reveal any diagnostic artefacts.

**BOUNDARY FEATURE**

The pit alignment was superseded by a complex pattern of settlement dating to the middle and later Iron Age. A curvilinear ditch was constructed on an approximately north-south alignment, a second ditch paralleled it along its northern section. The ditches had each been recut a number of times. This feature is interpreted as a boundary. Similar long boundaries have been observed at Daventry International Rail Freight Terminal (Chapman...
1994 and BUFAU 1998) and Coton Park, Rugby (Chapman 1999). The double ditching at its northern end may indicate a use as a droveway.

SETTLEMENT WEST OF THE BOUNDARY

Two distinct areas of settlement pattern were apparent. In the north-western part of the site, to the west of the boundary feature, were a series of large adjoining rectilinear enclosures, with entrances in the corners, possibly forming part of a field system. In the south-eastern corner of the north-eastern enclosure a smaller sub-rectangular enclosure had been constructed in at least two phases. The north-western corner of the south-eastern enclosure also contained a sub-rectangular enclosure, within which was a ring gully, this had been recut at least four times and had an entrance in facing northwest, atypical of most similar features of the period. Four further ring gullies, all of which had been recut at least once, were identified. Where visible, all had entrances in their eastern quadrant. Iron Age pottery was retrieved from the fills. These are interpreted as roundhouses. A number of pit groups were present, within and around the various enclosures.

SETTLEMENT EAST OF THE BOUNDARY

To the south and east of the excavated area, occupation was represented by a series enclosures. These were largely discrete, although some intercutting was observed.

In the south-eastern corner of Stage 1 two intercutting enclosures were seen. Both had entrances on the eastern side, with the eastern of the two being the earlier, the western having been superimposed on both the eastern enclosure and the boundary/droveway. The eastern enclosure demonstrated evidence for internal partition, the ditches of the western had been recut at least once.

In the central part of the site a sequence of ditch construction defining a series of sub-rectangular enclosures was identified. A sub-rectangular enclosure defined by a substantial ditch which had a least three recuts, and with an opening to the northeast corner. A large ditch was then added to the north extending from the original enclosure, effectively creating a second smaller enclosure, with an entrance to the southeast. An L-shaped linear to the east may represent a third phase of enclosure construction. The enclosures were superimposed on the droveway gullies, although there western boundaries preserved the alignment of this feature.

Three further sub-rectangular enclosures were identified at the southern end of the excavation, although one extended beyond the stripped area. One had an entrance to the west, two had entrances in their northeast corner. The ditches of two of the enclosures been recut and extended across the entrances. A substantial sub-circular enclosure with an internal diameter of 16m, with recut ditches and an entrance to the east was identified.

PIT GROUPS

Associated with the enclosures were a number of pit groups. The dark fill of these pits and the finds retrieved from them, including animal bone and pottery, probably indicate deposition of domestic waste, although one stone-lined example may have had an industrial function. Possible ritual deposition is evidenced by the presence of an articulated sheep skeleton in one of the pit fills and an intact rotary quern base from the bottom of one of the pits.

DISCUSSION OF RESULTS

The majority of features excavated dated to the middle Iron Age and several phases of occupation seem to have occurred within this period. There was some inter-cutting of features, though many remained discrete. Several features were either utilised for long periods or were recut frequently over a brief time span. Due to the nature of the local soil types, features may well have silted up over a short space of time, making the regular re-
cutting of ditches and gullies necessary. The layout of the features suggests an organised and disciplined enclosed settlement pattern which has been constructed around a major boundary feature, with noticeable differences between the settlement patterns to the east and west of this feature.

**FINDS**

Finds from the site include pottery, animal bone, quern stones and flint.

*Table 2: Summary of finds quantification*

<table>
<thead>
<tr>
<th>Type</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Wt (g)</td>
<td>No</td>
<td>Wt (g)</td>
</tr>
<tr>
<td>Animal bone</td>
<td>3044</td>
<td>7948</td>
<td>15224</td>
<td>24223</td>
</tr>
<tr>
<td>Fe objects</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Fired clay</td>
<td>3</td>
<td>161</td>
<td>355</td>
<td>3</td>
</tr>
<tr>
<td>Flint</td>
<td>15</td>
<td>8</td>
<td>4</td>
<td>27</td>
</tr>
<tr>
<td>Pottery</td>
<td>305</td>
<td>3946</td>
<td>396</td>
<td>7340</td>
</tr>
<tr>
<td>Worked bone</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Worked stone</td>
<td>5</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**THE IRON AGE POTTERY**

**Quantification**

A total of 1374 sherds of pottery weighing 23.6kg was recovered from the three phases of excavation (Table 2). Of the 170 contexts that have produced pottery only some 45 to 50 have either assemblages weighing in excess of 500g or containing diagnostic rim and body sherds. While this reduces the usefulness of the material for defining the site chronology, this can be overcome to some extent in full analysis once the structural grouping of contexts has been defined. The overall quantity and quality of the pottery is probably about average for this type of site in the region. The presence of several pit groups has boosted the quantity recovered, although these were only sectioned, but the minimal excavation of most enclosure and ring ditch terminals will have reduced the quantities that could have been recovered.

The assemblage has been quantified and quickly scanned to define its broad characteristics by fabric and forms, but no attempt has been made to produce a full quantification by fabric and form or to relate the material to the site stratigraphy. Dennis Jackson has viewed most of the assemblage and has commented on its characteristic features.

**Fabrics**

The pottery comprises handmade vessels, typically thick-walled but including some finer smaller vessels. They are typically in soft, poorly fired fabrics with reduced grey-black cores. The surfaces are most often also reduced greys to blacks, but include a proportion of vessels with orange to red-brown oxidised surfaces. The predominant fabric type is a poorly fired matrix containing moderate to dense inclusions of shell, sometimes including pieces measuring several millimetres across. The densest and largest shell inclusions are always in thick-walled sherds from large jars. Even softer fabrics with a corky appearance from the numerous voids, probably derived from leached shell inclusions, are also common. A smaller number are in harder fabrics, containing fine quartz from sand temper, and a small number are grog tempered.
Forms and chronology

There is a single small sherd decorated with successive rows of fingernail impressions, bird bone impressions and whipped cord, which probably derives from a late Neolithic/early Bronze Age vessel in the Peterborough ware tradition.

Otherwise, the assemblage is all of Iron Age date, spanning a lengthy period from the early middle Iron Age (c.400BC or earlier) to the later Iron Age (1st century BC), as discussed below. There is no material that can be assigned to the 1st century AD.

A range of vessel types is represented, from small, finely made bowls to large, thick-walled storage jars. A number of very crudely made shouldered jars or bowls, including one with fingertip impressions on the shoulder, are probably of early to early/middle Iron Age date. A range of small bowl forms, including examples with fingernail and fingertip decorated rims also suggest that activity began in the earlier middle Iron Age, although no examples of carinated bowls were noted in the initial scan.

The middle Iron Age character of the bulk of the assemblage is characterised by the presence of numerous thick walled sherds from large storage jars. These occur in a range of fabrics and include plain jars with wiped surfaces in well-fired sandy fabrics, but also a proportion of the characteristic scored ware jars in coarse shell-gritted fabrics, sometimes soft and corky when the inclusions have leached out. There is also a scored ware globular bowl with a fingertip decorated rim, and a complete but undecorated jar was recovered from the base of a pit. There are two lugs or handles, including a large example from an exceptionally thick-walled storage jar.

The presence of a number of globular bowls in reduced black fabrics and with highly burnished surfaces and beaded rims, including two sherds from a decorated Hunsbury bowl, is indicative of occupation continuing into the 1st century BC. The larger Hunsbury-type sherd is decorated with a rosette of dimples set within a running scroll, the style characteristic of the Northampton area (Foster 1999).

Further work on this assemblage is recommended (see below).

FIRED CLAY

A total of 36 fragments of fired clay weighing 286g were recovered from 7 contexts. The largest single group of 16 fragments only comprised 72g.

They were all made from poorly mixed and poorly fired clays varying in colour from buff through red to grey or blackened. Most had numerous shell inclusions, except for four vesicular fragments from (175), and five with grog or fired clay inclusions from (1444).

The only two diagnostic features noted were a wattle impression with the common 10mm diameter from (1444), and several fragments with a smooth flat surface from the largest group (1360).

There are too few fragments to make any positive statements about these finds. Most of the fragments had been subjected to heat and at least one had been used structurally. No further work is required.
### Table 3: Quantification of fired clay

<table>
<thead>
<tr>
<th>Context</th>
<th>Number</th>
<th>Weight (g)</th>
<th>notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>109</td>
<td>4</td>
<td>79</td>
<td></td>
</tr>
<tr>
<td>175</td>
<td>4</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>339</td>
<td>1</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>1279</td>
<td>3</td>
<td>15</td>
<td>some flat smooth surfaces</td>
</tr>
<tr>
<td>1360</td>
<td>16</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>1375</td>
<td>3</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>1444</td>
<td>5</td>
<td>51</td>
<td>One wattle impression, 0.10m diameter</td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>286</td>
<td></td>
</tr>
</tbody>
</table>

### THE QUERNs AND RUBBING STONES

Six items of worked stone have been recovered. They include parts of two saddle querns and a rubbing stone for use on a saddle quern. Two of these are in local sandstone from the Northampton Sand, and so are likely to have been manufactured on site. In addition, there is a complete lower stone from a rotary quern fashioned on a large spherical block that would need to have been set in the ground to provide a solid base. A fragment from another probable rotary quern, lower stone, and a small fragment of possible utilised stone were also recovered.

The use of saddle querns through the middle Iron Age is well attested from numerous other contemporary sites. The rotary quern appears to have been introduced at some point during the middle Iron Age, so finding examples of both types at such settlements is not uncommon.

#### Catalogue of querns and rubbing stones

1) Approximately half of a saddle quern in a medium-grained yellow sandstone from the local Northampton Sand, 220mm long (incomplete) by 260mm wide by 40mm thick. The grinding surface is concave and worn smooth through use. The under surface has been trimmed roughly level and the surviving part of the original edge has an abrupt break with the grinding surface but is smoothly rounded into the under surface. Context 133

2) Part of a large saddle quern in a very fine-grained sandstone (unidentified), measuring 280mm long (incomplete) by 190mm wide (incomplete) by 85mm thick. The grinding surface is concave and worn smooth through use. Context 138

3) Half of a large oval rubbing stone in a medium-grained sandstone, probably from the Northampton Sand, measuring 140mm long (incomplete) by 195mm wide and 55mm thick. It has a convex grinding surface, worn smooth through use, and has presumably been in use on a large saddle quern. The stone has been neatly shaped and the upper edges rounded. It has been reused as a hearth stone, with the grinding surface blackened and the underside heat reddened. Context 258.

4) A complete lower, or bedstone, for a rotary quern in an unidentified fine-grained sandstone, damaged on one edge. The grinding surface is 320mm in diameter. It is near flat but with a raised rim, 20mm wide, around the 47mm deep central conical socket, which would have held an iron spindle. The remainder of the stone block has been shaped into a spherical block measuring up to 405mm diameter by 225mm thick. Peck marks from working are visible on the upper part of the body of the stone. Given this form, it is evident that the stone must have been set firmly in the ground to provide...
an immovable base for the upper or runner stone (Watts 2002, 36, plates 12 & 13). Context 375 (SF 6).

5) Irregular fragment with a convex grinding surface, probably from the lower or bedstone of a rotary quern, 210mm by 150mm by 65mm thick. Manufactured in a fine to medium-grained micaceous sandstone, pale brown and containing fine linear voids. Context 177

6) Small fragment in a very fine-grained sandstone/siltstone, possible from a rubbing stone, 120mm long (incomplete) by 80m wide (incomplete) by 30mm thick. Context 117

Further work on this assemblage is recommended (see below).

Worked bone

Antler

There are two pieces of red deer antler; both were retrieved from pit fill (1316). Both pieces are identical and comprise a small section of antler beam with the bez tine attached. The cut ends have each been sawn in three/four directions and then snapped away when the cancellous tissue has been partially sawn through. On one piece there are three shallow incisions, two on the tine and one on the beam, the uniform width of these incisions, suggests the blade used for cutting/sawing was c.3mm thick. There are no signs of wear or use on the tines, suggesting that the pieces are most probably manufacturing waste. No further work is required.

Bone

The excavations produced one bone tool found within the fill of a pit (1369). Although incomplete, the upper section is shattered, the lower section has been knife trimmed and displays signs of wear. It is possible that this piece is an awl, it resembles an awl/pin from Danebury (Sellwood 1984, fig 7.36, 3.174). No further work is necessary.

Catalogue

Antler. Small section of beam with bez tine attached. The beam has been sawn above and below the tine. Both sawn surfaces have been sawn in four directions and then the beam snapped away when it was almost sawn through. There is no sign of wear on the tine, although two splinters appear to have been dislodged at the tip. This is most probably occurred when the antler was still attached to the animal. Length: 225mm . SF 1, Context 1316.

Antler. Small section of beam with bez tine attached. Beam cut immediately below and just above the tine. The cut below the tine has been sawn in three directions, the one above has been sawn in four directions to the cancellous tissue and then snapped off. There are three shallow incisions, two on the brow tine and one on the beam. The uniform width of these incisions, suggests that the blade used was c.3mm thick. There appears to be no sign of wear on the tine, indicating that it had not been used and was probably manufacturing waste. Length: 235mm. SF 2, Context 1316.

Awl, bone (?ulna). Incomplete, upper section shattered. Triangular cross-section, tapering to a circular cross-section with point missing (lost in antiquity). One shallow, transverse knife cut is evident, suggesting that the point was trimmed with knife. Length (incomplete): 94mm. SF 3, Context 1369.
ANIMAL BONE

Table 4: Animal bone: summary of taxonomic distribution

<table>
<thead>
<tr>
<th>Identifications</th>
<th>Equus</th>
<th>Bos</th>
<th>Ovicaprid</th>
<th>Sus</th>
<th>Canid</th>
<th>L.ung</th>
<th>S.ung</th>
<th>S.mam</th>
<th>Avis</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ageing</td>
<td>34</td>
<td>185</td>
<td>217</td>
<td>55</td>
<td>1</td>
<td>102</td>
<td>118</td>
<td>2</td>
<td>1</td>
<td>714</td>
</tr>
<tr>
<td>Measurements</td>
<td>20</td>
<td>66</td>
<td>95</td>
<td>27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>198</td>
</tr>
</tbody>
</table>

Key: L.ung Large ungulate S.ung. Small ungulate  S.mam. Small mammal

Quantification

A total of 27,992kg of animal bone derived from 157 contexts. This material was assessed using standard archaeozoological methods, to order to establish the species present and the value of the assemblage’s potential contribution to the overall aims of the project.

Results

Preservation was moderate. Fragmentation was variable across the contexts (moderate to heavy), where this was particularly heavy it appeared to be the result of excavation damage (i.e. breaks appeared fresh) as soil action had rendered the bone fragile. Again surface abrasion varied from moderate to heavy across the contexts, with some exfoliation (stage 3) and root etching (stage 2) observed. The frequencies of canid gnawing, burning and butchery were low throughout. Evidence for both chopping and dismembering was seen. The paucity of evidence for butchery and canid gnawing could be due to the high level of surface abrasion. The lack of evidence for burning suggests this was not the preferred method of disposal.

The assemblage contains a small range of common domesticates comprising cattle (Bos), pig (Sus) horse (Equus) and sheep/goat (Ovicaprid). Only one instance of possible deer was noted (stage1) and a single instance of dog (stage3). Two indeterminate small mammals and a possible bird were also noted (stage 1). The species identified are typical for the period as is the relative frequency in which they are present (Wilson and Robinson 1983). The assemblage appeared to be dominated by ovicaprids followed by cattle with smaller numbers of pig. A complete sheep skeleton was recovered from a pit. Tooth wear suggests an individual of 4 -6 years old. Several concentrations of bone were recovered from pit (1024), ditch (1027), ditch (1031) and ring ditch (1142).

Three areas of possible intrasite variation were noted, these are as follows:

Although an overall dominance of ovicaprid is seen (see table above) concentrations of the major domesticates seem to fluctuate across the site with cattle dominating stages 1 and 2 but sheep/goat dominating stage 3. This could be the result of an alternative animal economy or dietary preference.

No evidence for neonates was recovered from stage 1 and only slight evidence for neonatal cattle and sheep/goat was observed from stage 2. However, larger numbers of neonatal and juvenile animals than in previous stages were noted in stage 3 which suggests either differential preservation due to different soil or depositional conditions or a difference in husbandry practices/dietary preference.

Whereas Stages 2 and 3 produced a wide range of body parts the assemblage from stage 1 was dominated by teeth, mandibular fragments and cranial fragments, which suggests it was the result of primary butchery waste. This could be indicative of functional variation.

Further work on this assemblage is recommended (see below).
IRON OBJECTS

There are three iron finds, a parallel-sided strip, a rod fragment and an unidentifiable object, heavily concreted in corrosion products. The parallel-sided strip has right-angled terminals (now missing), the object displays similar characteristics to strip-bindings from Danebury (Sellwood 1984, fig 7.22, 2.155), whose precise function is uncertain. The remaining objects are difficult to identify with any certainty, the rod fragment has a square cross-section and is slightly tapered, therefore may be a nail shank. One object requires x-raying to aid identification.

Catalogue

Strip, iron. Parallel sided strip, terminals broken at right angles. Resembles strip-bindings from Danebury (Sellwodd 1984, fig 7.22, 2.155). Width: 51mm. Context 475

Rod fragment, iron. Square cross-section, slightly tapered, possible shank from a nail. Length: 55mm. SF, Context 440

Object, iron. Curved object heavily concreted in corrosion products, impossible to identify. Context 250.

Further work on this assemblage is recommended (see below).

WORKED FLINT

A total of 25 pieces of flint were recovered from the excavations. They comprise 19 flakes and 4 shattered pieces. The only diagnostic items are a small blade (broken) and a discoidal scraper, both of which are unstratified.

The raw material is typically brown to dark grey vitreous flint, with a pale brown to red brown (ironstained) cortex. Five flakes and one of the shattered pieces are heavily patinated to an opaque white or blue grey.

This is a very poor group of material. The shattered pieces and some of the flakes may merely be a product of accidental striking, although a few have evidently come from prepared cores and irregular serration’s along the edge of a larger flake suggest that it was utilised as a cutting edge. The presence of a single blade and a discoidal scraper suggest that the material most probably derives from a sparse background of earlier prehistoric activity of Neolithic to Bronze Age date.

No further analysis required.
**ENVIRONMENTAL EVIDENCE**

Twenty one-litre sub-samples were taken from a representative selection of the samples and processed using a Siraf tank fitted with a 500-micron mesh and flot sieve. The resulting flots were sorted and analysed to establish the species present and any potential for further processing and analysis.

**Results**

*Table 5: Occurrence of ecofacts by context*

<table>
<thead>
<tr>
<th>Context</th>
<th>Feature</th>
<th>Charred grain</th>
<th>Cereal</th>
<th>Chaff</th>
<th>Weeds</th>
<th>Charcoal</th>
<th>Other seed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>102</td>
<td>Pit fill</td>
<td>***</td>
<td></td>
<td></td>
<td>***</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>106</td>
<td>Pit fill</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>108</td>
<td>Ditch fill</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>148</td>
<td>Ditch terminal</td>
<td></td>
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<tr>
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<td></td>
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</table>

Key: * occasional (1-5) ** moderate (5-15) *** frequent (15+)
The limited sample from Stage 1 appears characteristic of an Iron Age subsistence economy, consuming and storing grain produced near the site. The cereals present were typical of the Iron Age; spelt (*Triticum spelta*), identified from chaff, possible barley (*Hordeum vulgare*) and oat/rye (*Avena/Secale*). The low ratio of chaff and weed to cereal suggests a late stage in crop processing. The weed species present, Fat hen (*Chenopodium album*), dock family (*Polygonum sp.*), pink family (*Caryophallaceae sp.*) and Bedstraw family (*Galium sp.*), are typical crop weeds. Occasional mollusca were noted from gulley fill 159.

The range of species from Stage 2 is typical for the period as is the relative frequency in which they are present (Wilson and Robinson 1983). Cereal types were Spelt (*Triticum spelta*), hulled and naked barley (*Hordeum vulgare*) and possibly oat (*? Avena sativa*). Although the latter appears as single grains in only two contexts. Three small indeterminate pulses (*Leguminosae*) were noted from sample 7. The chaff present was largely glume bases. It is worth noting that cereal was seen exclusively in samples from pits. Weed species include Fat hen (*Chenopodium album*) cleavers (*Galium aparine*) and possible dock (*Rumex sp.*). Preservation was reasonable although most cereal grains exhibited some fragmentation and abrasion. Spelt and barley are fairly typical middle Iron Age crops (Robinson and Wilson 1983). The low frequency of grain in the samples is also typical of this period. The weeds present are typical crop weeds, the presence of cleavers could suggest the winter sowing of crops as the weed usually germinates in the autumn or winter. The presence of chaff and cereal in roughly equal quantities (Contexts 1022, 1024, 1167 and 1216) suggests a by-product of crop processing.

No further analysis is recommended.

**POTENTIAL FOR FURTHER ANALYSIS**

**ARCHAEOLOGICAL FEATURES**

Excavation at Pitsford has recovered evidence for Iron Age occupation, part of a wider prehistoric landscape. The excavations at Bottom Sheep Dale Field will contribute to the overall project aims and objectives set out by Dawson (2002b).

All of the major features on the site have been sampled and recorded; an all features plan has been produced. Horizontal stratigraphy across the site was reasonably well preserved and relationships between the majority of the major features have been established. However, a matrix for the site has not been constructed and, although several phases of activity were recognised a provisional phase plan has not been produced.

Overall the preservation of features was fairly consistent, well defined and moderately well preserved with only the upper disuse fill of the ditches, gullies and pits being lost. Although the general lack of post-holes and the shallow nature of some features indicate a degree of truncation by later activity, the site seems to have escaped major truncation either through ridge and furrow or later cultivation. The nature of the fills and sharpness of the cuts observed indicated that modern truncation was mainly restricted to the upper soils and penetrated no deeper than 0.4m below existing ground level. Preservation of artefacts and ecofacts indicate some potential to recreate the former environment and economy of the settlement, although the limited nature of the finds assemblages suggest that this will be no more than a general overview.

Structural groups should be defined (boundaries, enclosures, ring ditches and pit groups) and phased. This will lead to the reconstruction of occupation and landscape development at Bottom Sheep Dale Field. Relevant material from the geophysical survey and field evaluation will be incorporated into this account. A programme of scientific dating will be enacted to complement the artefact dating. The spacial patterning of features and artefacts...
within the excavated area will be examined in order to see if specific zones of activity can be determined.

Comparison of the recorded features within the excavated area with the wide body of evidence from elsewhere in the locality would contribute to the realisation of Objective 2. However, combining the results of this investigation with archaeological recording of the next stage of quarrying to the south will potentially provide far greater information for past land use and settlement.

Recorded evidence from this more extensive landscape will eventually allow more meaningful comparison with contemporary sites recently found elsewhere in the county on the A43 road improvement scheme, at Upton, Daventry and Earls Barton.

**Iron Age Pottery**

The Iron Age pottery assemblage requires a full fabric and form analysis. In addition, the analysis of the spatial distribution will assist in defining the chronological development of the site and possible variations in deposition as indicators of site activities. Comparisons can be made with other broadly contemporary assemblages from the immediate locality and beyond. Pottery analysis will help inform site phasing.

Some 20-25 vessels will be worthy of illustration due to either their completeness or possession of diagnostic characteristics.

**Fired Clay**

No further analysis is proposed. A short summary of the existing results will be included in the final report.

**Querns and Rubbing Stones**

The stones have been fully catalogued, but geological identifications are required for three of them. Steve Critchley will provide these. Three querns have already been drawn to publication in the final report. The material needs to be related to the structures and phasing to determine their relationships to structures and/or enclosures and whether there is any chronological distinction between the deposition of the saddle querns and the rotary querns.

**Animal Bone**

The recording of animal bone data from middle Iron Age sites in the region is particularly important as little archaeozoological evidence for the period has so far been collected (Willis 2001). Although the assemblage is of a moderate size (approximately 491 fragments would be identifiable to species level), it is large enough to provide information of the relative abundance of species. If some ageing data could be obtained an estimate of age could be made in this way providing an idea of the site’s function and animal economy. Comparisons with other local sites such as Silverstone (Deighton 2003) and regional sites such as Ashton Mill Farm (Lovett 1990), Wakerley (Jones 1978) and Weekley (Whatrup and Jones 1988) could be attempted. Further work could focus on the significance of the greater preponderance of neo-natal and juvenile individuals from Stage 3 compared to Stages 1 and 2. Recording and quantification will follow Halstead (1985) after Watson (1979). Collection and analysis of fusion data will follow Silver (1969). Tooth eruption and wear analysis will follow Payne (1973) for Ovicaprids, Halstead (1985) after Payne (1973) for cattle and Grant (1982) for pigs. Measurements will be taken after Von den Driesch (1976).

**Iron Objects**

One example will require x-raying to elucidate its function.
FLINT

No further analysis is proposed, short summary of existing results will be included in the final report.

ENVIRONMENTAL EVIDENCE

Although several environmental samples produced charcoal fragments only one was identifiable. None of the samples produced enough identifiable grain to suggest that further processing would be worthwhile. The range of weed species is too limited and too ambiguous to characterise the environment. No further analysis is proposed. A short summary of existing results will be included in the final report.

Carbonised material from undated contexts could be used for dating, particularly in the case of the pit alignment. It is anticipated that specific chronological questions will be thrown up during the analytical programme. The scientific dating programme will be tailored to resolve these. The advice of Jim Williams (English Heritage Regional Scientific Advisor) will be sought in determining the dating strategy.

PROPOSALS FOR PUBLICATION AND ARCHIVING

It is proposed to undertake a programme of post-exavation analysis that will result in a site narrative with supporting specialist data for publication as an article in Northamptonshire Archaeology. This article will concentrate largely on the results of the excavation to date in order to allow dissemination of the data hereto gathered. The article will contain preliminary interpretations of the project objectives set out in the Research Design (Dawson 2002b).

SYNOPSIS OF REPORT

The report will follow the format of the intended journal for publication, Northamptonshire Archaeology, and will comprise a number of sections under the following principal headings:

   Summary
   Introduction
   Acknowledgements
   Topography and geology
   Results of aerial photographic and geophysical surveys
   Results of excavations
   Finds
   Environmental evidence
   Discussion
   Bibliography

Illustrations will be prepared to support the text. These will comprise location plans, plots of survey results, phase plans, detail plans of excavated features and sections where appropriate. Finds will be illustrated as required.

PROGRAMME

The proposed work programme is as follows:
Table 6: Proposed post-exavation work programme

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<td>Production of site narrative</td>
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<td>Illustration</td>
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Although archive preparation will be undertaken, deposition may occur together with subsequent fieldwork archives.

**PERSONNEL**

**Project Management**

Overall Project Management will be undertaken by Michael Dawson M Phil MIFA, CgMs Consulting. Project Management for Northamptonshire Archaeology will be undertaken by Adam Yates BA AIFA.

**Other personnel**

Stratigraphic analysis and production of a site narrative will be undertaken by Adam Yates with the assistance of other Northamptonshire Archaeology personnel. Illustrations will be prepared by Jaqueline Harding BA HND. The writing of Introduction and Discussion sections and final editing will be undertaken by Adam Yates and Michael Dawson.

**Specialist personnel**

Animal bone will be reported on by Karen Deighton MSc Northamptonshire Archaeology. Prehistoric pottery will be examined by Andy Chapman and Dennis Jackson. Stone objects will be reported on by Andy Chapman BSc Northamptonshire Archaeology in consultation with Steve Critchley. A report on the palaeoenvironmental material will be prepared by Karen Deighton Northamptonshire Archaeology. Iron objects will be x-rayed at Buckinghamshire Museum.
### Resources

*Table 7: Resource breakdown*

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Table identifies Northamptonshire Archaeology costs only to submission. M. Dawson costs and publication printing costs will be extra. All costs are exclusive of VAT.
BIBLIOGRAPHY


Dawson, M, 2002b, *Archaeology Research Design Pitsford Quarry, Northamptonshire.* CgMs.

Deighton, K 2003 *The animal bone* in Northants Archaeology archive report.


Northamptonshire Archaeology
a service of Northamptonshire County Council December 2003
APPENDIX 3: Conservation Area Plans
SUBMISSION FOR REVIEW OF MINERAL PLANNING PERMISSION DA/97/1140C

LAND AT BOUGHTON-PITSFORD-MOULTON, NORTHAMPTONSHIRE

PETER BENNIE LIMITED AND TATA STEEL UK LIMITED

Version 1
Status FINAL
Prepared by Gill Pawson 2/6/14
Approved by Lucy Booth 18/6/14
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APPENDICES

APPENDIX X 1: Approved Archaeology Research Design
APPENDIX X 2: Report on Archaeological Investigations of Phase 1
APPENDIX X 3: Conservation Area Plans
1 Introduction

1.1.1 Peter Bennie Ltd operates the sandstone quarry known as Pitsford Quarry, to the north of Northampton and south of Pitsford village. There is a requirement for a review of the modern conditions of working (ROMP), which were issued in 1998, one of which relates to the local cultural heritage.

1.1.2 An Environmental Statement (ES) will be submitted with the submission of the ROMP. The Scoping Opinion issued by Northamptonshire County Council includes a requirement for the assessment of the impact on cultural heritage from continued mineral extraction operations. This report details this assessment. This assessment relates only to the area of Phase 1 and the associated site compound and haul road. All other areas within the old mineral planning permission are to be treated as dormant and will be assessed in connection with any application in the future to bring forward future phases of working. These are shown on Drawing GPP/PB/PR/13/02. ROMP Review Plan.

2 Scope of the Assessment

2.1.1 The assessment considers the effects of continued working of the quarry on the cultural heritage within the locality.

2.1.2 In undertaking the assessment the following have been taken into account:
- review of historic designations,
- review of findings of archaeological investigations,
- assessment of impacts due to dust, lighting, landscape change
- recommendations for mitigation,
- assessment of residual impacts,
- assessment of cumulative impacts

3 Proposed Development

3.1 Existing Operations

3.1.1 The operations at the quarry involve the extraction of moderately soft sandstone to create building stone and aggregate. Extraction, when it recommences will take place in a northerly direction towards Pitsford, within the area of Phase 1. The remaining reserves in this area are predicted to last for 3-5 years.

3.1.2 The sandstone remaining is the lowest strata, which rests on the underlying clay. It is generally at a depth of 3m.

3.1.3 A hydraulic excavator is used to extract the sandstone, which is then broken into a suitable size for the market. A wheeled loading shovel is used to transfer the building stone into the compound for processing or into lorries for transport off site for processing. Sandstone that is unsuitable for the market is loaded into mobile crushing and screening plant on the quarry floor. The crushed aggregate is stored on the quarry floor in heaps of different grades until it is...
transferred to lorries by wheeled loading shovel for transport off site.

3.1.4 The lorries transport sandstone and crushed aggregate from the quarry floor to the site access, which is located along the A508 Northampton to Market Harborough road. The lorries travel along the site haul road, which runs through the now established community woodland. The haul road is surfaced with tarmac and vehicles pass through a passive wheel wash in the site compound before travelling along the access road. The wheel wash comprises a water trough with ramps on either side.

3.1.5 Once quarrying operations recommence, it is likely that the output will be a maximum of 30,000 tonnes per annum, which will generate 20 HGV movements per day on average.

3.1.6 The haul road is swept periodically to prevent the trackout of mud and debris onto the public highway. A road sweeper is used in the event that mud is tracked out onto the public highway during wet conditions.

3.1.7 An aggregate recycling facility within the area of Phase 1 was granted planning permission, together with the filling of Pitsford Pond. In the event that this permission is implemented, it will extend the life of the extraction operations by about 3 years, as 70% of the remaining mineral will have to remain in situ to accommodate the inert recycling area and haul road through Phase 1. This scheme is included in this assessment, as it relates to cumulative impacts.

### 4 Site Setting

#### 4.1 General Description

4.1.1 The active Phase 1 quarry area, with associated haul road and compound, is surrounded by agricultural land to the west, south and east, with the established community woodland to the north and on either side of the haul road. The land within Phase 1 generally slopes downhill to the south, lying on the northern side of the stream valley. The site is shown in its context on Drawing GPP/PB/PR/13/03.

#### 4.2 Archaeology

4.2.1 Following the issuing of the modern conditions in 1998, extensive assessment was carried out of the land within the boundary of the old planning permission lying to the east of the A508, which at that time contained the largest area of unworked minerals. This lead to the identified areas with the potential for evidence of historic human activity, reported in ‘Archaeology Research Design’ dated August 2002 and submitted to Northamptonshire County Council for approval, to discharge the requirements of condition 32. A copy is included in Appendix 1.

4.2.2 When work started in Phase 1, the archaeological remains were uncovered during soil stripping and detailed investigations carried out. The report is included in Appendix 2.

4.2.3 No further work will be undertaken on previously undisturbed ground, therefore no further archaeological work will be required in the reduced area to which the modern conditions will relate in the future.
4.3 Potentially Sensitive Receptors

4.3.1 There are a number of receptors classed as heritage assets; these are listed in the Table 1.

Table 1: Heritage Assets

<table>
<thead>
<tr>
<th>Receptor</th>
<th>Status</th>
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<tr>
<td>Pitsford Village</td>
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<td>Boughton Village</td>
<td>Conservation Area</td>
<td>More than 1km to South</td>
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<td>Bunkers Hill Farm</td>
<td>Listed Building Grade 2 and Ancient Monument</td>
<td>460m to South East</td>
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<td>225m to West</td>
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<td>Grotto Spinney</td>
<td>Listed Building Grade 2</td>
<td>225m to South West</td>
</tr>
<tr>
<td>Boughton Hall</td>
<td>Registered Historic Park and Garden, Grade 2</td>
<td>Adjacent</td>
</tr>
</tbody>
</table>

4.3.2 Each of these receptors is considered in detail in Section 7.

5 Planning Policy

National Planning Policy Framework

5.1.1 In March 2012, the Department of Communities and Local Government (DCLG) published *National Planning Policy Framework (NPPF)*. Within this document guidance was provided for planning authorities, property owners, developers and others on the conservation preservation and investigation of Heritage Assets.

5.1.2 At Paragraph 126 of the NPPF are set out the factors that should be taken into account by local planning authorities:

- *The desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation;*
- *The wider social, cultural, economic and environmental benefits that conservation of the historic environment can bring;*
- *The desirability of new development making a positive contribution to local character and distinctiveness; and*
- *Opportunities to draw on the contribution made by the historic environment to the character of the place.*

5.1.3 A Heritage Asset is defined in Annex 2 of NPPF as a building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions due to its heritage interest.

5.1.4 In summary, government guidance provides a framework that:

- Protects nationally important designated Heritage Assets (which include World Heritage Sites, Scheduled Ancient Monuments, Listed Buildings, Protected Wreck Sites, Registered Parks and Gardens, Registered Battlefields or Conservation Areas)
• Protects Heritage Assets (as defined above)
• Protects the settings of such designations
• In appropriate circumstances seeks adequate information (from field evaluation) to enable informed decisions

5.1.5 In paragraph 128 of NPPF it states that

Local Planning Authorities should require an applicant to describe the significance of the heritage assets affected including any contribution made by their setting. .... the level of detail should be proportionate to the importance of the heritage asset and no more than is sufficient to understand the potential impact of the proposal on the significance of that asset.


5.1.6 Policy CMD9: Historic Environment sets out the County Council’s policy on heritage assets, as follows:

Where heritage assets of significance are identified, proposals should seek to enhance Northamptonshire’s historic environment through:

- careful management of heritage assets and their settings, including the mitigation of potentially adverse impacts, and
- enhancement of specific features of the historic environment, including individual heritage assets or historic landscapes, as part of the restoration scheme.

Proposals for minerals and waste development involving a site which includes heritage assets (including development within the setting of an asset), particularly those with an archaeological interest, will be required to undertake appropriate desk based and / or field evaluations in order to:

- identify and determine the nature, extent, and level of the significance of each heritage asset, the contribution of its setting to that significance, as well as any potential impacts on the asset or its setting, and
- identify the requirement for a programme of post-permission works including any mitigation measures and long-term monitoring.

6 Methodology

6.1.1 None of the features identified as heritage assets will be directly affected by continued quarrying in Phase 1, therefore this assessment considers their setting. English Heritage has published guidance concerning the assessment of effects on the setting of heritage assets (The Setting of Heritage Assets, 2011). This guidance proposes a five stage programme of assessment: (1) identifying the assets affected, (2) assessing the contribution setting makes to significance, (3) assessing the effect of the proposed development, (4) maximising enhancement and minimising harm, (5) making and monitoring the decision and outcomes. The methodology adopted for the purposes of this assessment, which is set out below, is based upon the first three stages of this process.

6.1.2 The methodology adopted for the purposes of this assessment consists of a staged process, as follows:
Step 1: The baseline heritage assets located within the study area whose setting is likely to be affected by the development are identified and their heritage significance described.

Step 2: The setting of each heritage asset forming part of the baseline is identified and described. The contribution which setting makes to the heritage significance of the asset is then determined.

Step 3: The magnitude of the impact on the heritage significance of each heritage asset is identified. This is a measure of the degree to which the heritage significance of the asset will be increased or diminished by the proposed development. Where the only potential impact is on the setting of the heritage asset, only that part of the heritage significance derived from its setting can be affected.

7 Baseline Conditions

7.1 Listed Buildings and Conservation Areas

7.1.1 The village of Pitsford is situated to the north of the site at a distance of over 750m to the centre and the village of Boughton is situated to the south of the site at a distance of over 1km to the centre. Both villages contain an area designated as a Conservation Area.

7.1.2 There are a number of individual residential properties nearby, of which Bunkers Hill Farm and Fox Covert Hall are Listed Buildings. The three listed buildings all lie over 220m away from the area of working; Fox Covert Hall and Grotto Spinney are 225m away and Bunkers Hill Farm is 460m away. There are other Listed Buildings in the locality of the area of the old mineral planning permission, some of which are Follies associated with Boughton Hall, but these are located too far away from the working in Phase 1 for their setting to be affected by the continued quarrying operations. All of the Listed Buildings are shown on the Site Context Plan Drawing GPP/PB/PR/13/03.

7.1.3 There is one Scheduled Ancient Monument nearby, which is Bunkers Hill Farm, also shown on the Site Context Plan Drawing GPP/PB/PR/13/03.

7.1.4 To the south and west of the quarry is Boughton Hill Park and Garden, which is included in the register of Historic Parks and Gardens of Special Historic Interest. The extent of the Park is shown on the Site Context Plan Drawing GPP/PB/PR/13/03. Along its northern boundary it is contiguous with the land owned by Peter Bennie Limited, most of which is now included in the community woodland, but part abuts the active extraction area.

7.1.5 Bunkers Hill Farm is listed as Grade 2 on the Daventry District Council database as follows: Farmhouse. Datestone S/1776 for Earl of Strafford and Wentworth. Coursed lias rubble with slate roof. Double depth plan. South elevation, 2-storey 4-window range, asymmetrical. Second window from left projecting as 2-storey bay with entrance. Casement windows. Pitched roof with 4 gables has crenellated parapet. Right flanking bay C19. Rounded and quatrefoil decoration, datestone above entrance. North elevation has Diocletian windows throughout. Built as folly by Earl of Strafford and Wentworth to commemorate the Battle of Bunkers Hill 1775.

7.1.6 Fox Covert Hall, listed as Grade 2 on the Daventry District Council database as New Park Barn, is described as follows: Barn. c.1770. Squared coursed limestone with slate roof. Central cart entrance with
brick dressings and flanking turrets, formerly castellated having blank arcade at
ground level. Slit ventilators. Built as a folly by Earl of Strafford and Wentworth.

7.1.7 Grotto Spinney is listed as Grade 2 on the Daventry District Council database as follows:
Grotto in landscape park. Circa 1770’s for William Wentworth, second Earl of
Stratford. Coursed limestone rubble under an earth mound. Half a hemisphere with
an open front, built over a natural spring. The interior has exposed stone walls.

7.1.8 The nearest property within the Conservation Area of Pitsford is on Stable Lane, off Moulton
Road, which lies 550m to the north. The main part of the Conservation Area comprises the old
properties within the village centre; it is shown on the plan in Appendix 3.

7.1.9 The nearest property within the Conservation Area of Boughton is at the southern end of
Butchers Lane, which lies over 1km to the south. The main part of the Conservation Area
comprises the old properties within the village centre; it is shown on the plan in Appendix 3.

7.2 Boughton Hall Park and Garden and Follies

7.2.1 The following is an extract from the English Heritage Register of Parks and Gardens of Special
Historic Interest, which lists Boughton Hall as Grade 2:
Early 18th-century gardens and pleasure grounds, set within parkland greatly
reworked in the second half of the 18th-century by William Wentworth, second Earl
of Strafford.
Boughton Park lies on the west side of the village of Boughton, with the A508
forming the western boundary, Vyse Road defining the extent of the park to the
south and south-east, and Butcher’s Lane the eastern side of the north park. The
disused mineral railway has been taken as the current northern limit of the park.
Boughton Hall stands towards the southern end of the site. As described by John
Bridges in his History of Northamptonshire, compiled between 1719 and 1724
(published 1791), ‘it is pleasantly situated upon rising ground which commands a
very extensive prospect’. The area here registered extends to 115 hectares.
The site is noted for its gothic follies.

7.2.2 The follies of relevance to the continued working of minerals in Phase 1 of Pitsford Quarry are
Fox Covert Hall, Grotto Spinney and Bunkers Hill Farm, which are described above.

8 Assessment of Impacts

8.1 General Observations

8.1.1 No further impacts on below ground heritage will take place within the area of Pitsford Quarry
Phase 1.

8.1.2 In assessing the potential impacts on the setting of sites of cultural heritage, the existing
mitigation measures have been taken into account. These include screening bunds that were
erected around the boundary of Phase 1, utilising the recovered soils. They also include the
creation of a Community Woodland with extensive landscaping along the northern and part of
the eastern boundary of Boughton Hall Park and Garden.
8.2 Assessment of Quarrying Impacts

8.2.1 Screening bunds were constructed at the commencement of mineral extraction operations in Phase 1, utilising the soils stripped from the field. These bunds are shown on Drawing GPP/PB/PR/13/07. These bunds have the effect of providing screening for the properties, so that active quarry working is not visible from the heritage assets. These bunds were effective when working was taking place and will be effective in screening continued extraction and processing operations, which will continue at a low level. If recycling operations commence, these will be carried out on the stone layer remaining in the base of the quarry. This low level operation, together with the screening bunds will minimise the visibility of the operations from the heritage assets.

8.2.2 In addition, the establishment of the Community Woodland and Landscaping has changed the setting of the Boughton Hall Park and Garden, by replacing a poorly restored area of mineral working.

**Pitsford and Boughton village Conservation Areas**

8.2.3 Pitsford and Boughton village Conservation Areas are over 500m from the site. The site cannot be seen from within Pitsford Conservation Area, due to the topography and village morphology. The properties within the Conservation Area are enclosed by the more modern properties on the outskirts, which create a buffer to the Community Woodland and the active extraction area to the south of the village. In addition, the village centre is protected from heavy traffic by a weight limit on the highway, thus no traffic from the quarry will travel through the Conservation Area. Therefore, there is no impact on the setting of the Conservation Area.

8.2.4 Views north across the valley from the Boughton Conservation Area are long distance and generally obscured by properties on the northern outskirts of the village that are outside the Conservation Area boundary. In these views the quarrying operations are largely screened by the existing bunds. In addition, the village centre is protected from heavy traffic by a weight limit on the highway, thus no traffic from the quarry will travel through the Conservation Area. Therefore, there is no impact on the setting of the Conservation Area.

**Boughton Park**

8.2.5 Boughton Park is adjacent to the extraction area, but is protected by Condition 33 of Planning Permission No. DA/97/1140C, which prohibits working within the Park. The boundary of the Park is well defined by a stone wall, which runs along its northern and eastern boundaries. The northern part of the designated area of the Park is in agricultural use, with all of the original landscape features having been lost. During the design of the community woodland planting, a new landscape feature was included to compensate in part for this historic loss. This feature comprises a row of lime trees, planted at regular intervals along the whole length of the boundary of the Park with the land owned by Peter Bennie Ltd. These trees are now well established and they and the Community Woodland trees have significantly enhanced the setting of the Park during the last 15 years.

8.2.6 The established planting screens the Park from the activities in the compound and from traffic using the haul road to the highway.
8.2.7 All future working in Phase 1 will be carried out below original ground level and will not take place closer to the Park than in the past. Therefore, there will be no adverse impact on its setting as a result of the continuation of the extraction activities.

**Fox Covert Hall**

8.2.8 Fox Covert Hall is situated below the original level of the field that comprises Phase 1 quarry and is fully screened by the soil bund situated along the western boundary of the extraction area, by a soil bund on the southern boundary of the compound and by the established planting alongside the haul road. The property listing refers to its setting as a folly of Boughton Park. The Park is not directly affected by the quarrying operations, therefore the setting around the folly will be maintained. All future activities in Phase 1 will be carried out below original ground level and no future working will take place closer to this property than in the past, therefore there will be no additional impact on its setting.

**Bunkers Hill Farm**

8.2.9 Bunkers Hill Farm lies over 450m to the southeast. It is orientated to the south and east, therefore the view from the main elevations does not include the quarry. Other elevations are protected by farm buildings to the northwest and by the soil bunds along the south and east of the quarry. The property listing refers to its setting as a folly of Boughton Park. All future working in Phase 1 will be carried out below original ground level and no future working will take place closer to this property than in the past, therefore there will be no additional impact on its setting.

8.2.10 The temporary use of a new haul road for the infilling of Pitsford Pond has been granted planning permission, which acknowledges that this use will not have a significant adverse impact on the setting of Bunkers Hill Farm

**Grotto Spinney**

8.2.11 Grotto Spinney lies 225m to the south west of the boundary of Phase 1. The property listing refers to its setting as a folly within Boughton Park. The Park is not directly affected by the quarrying operations, therefore the setting around the folly will be maintained. All future working in Phase 1 will be carried out below original ground level and no future working will take place closer to this asset than in the past, therefore there will be no additional impact on its setting.

8.3 Assessment of Restoration Impacts

8.3.1 Restoration of the land to agriculture and biodiversity habitat will re-instate the open countryside that prevailed prior to disturbance of the landscape due to mineral extraction. Therefore, the setting of all of the heritage assets will be improved compared with the current situation.

8.4 Summary

8.4.1 In summary, adverse impacts due to continued mineral extraction in Phase 1 on setting are unlikely to be caused at any of the receptors. Similarly, in the event that recycling of inert waste is commenced on the quarry floor, this will also not affect the setting of the heritage assets.
The temporary use of a new haul road for the infilling of Pitsford Pond has been granted planning permission, which acknowledges that this use will not have a significant adverse impact on the setting of Bunkers Hill Farm.

9 Controls

9.1 Planning Controls

9.1.1 The existing operations are subject to Planning Permission No. DA/97/1140C issued by the MPA, Northamptonshire County Council, in 1998. The Permission includes two conditions relating to the protection of the cultural heritage:

32. No further development shall take place within each phase until the applicant has implemented and submitted a report upon a programme of archaeological evaluation conducted to the satisfaction of the County Planning Authority. The stripping of topsoil shall be undertaken in accordance with the requirements of the County Archaeologist.

No mineral extraction shall take place within each phase until the applicant has secured the implementation of a programme of archaeological investigation of any remains of national, or regional or otherwise significant importance in accordance with a written scheme of investigation approved by the County Planning Authority and submitted by the applicant following the assessment of the results of the evaluation by the County Archaeologist.

33. No mineral extraction shall take place within Boughton Park as shown delineated on Plan C attached to this permission.

9.1.2 Both conditions have been complied with in full during the 15 years since the Planning Permission was granted.

9.1.3 The approved specification for investigation is included in Appendix 1 and the report submitted on the site investigations that were carried out on the area of Phase 1 is included in Appendix 2.

10 Future Mitigation

10.1.1 Impacts are minimised due to the fact that the future mineral extraction will take place below ground level and only within the area screened by established soil screening bunds around the margins of the extraction area.

10.1.2 Following the completion of mineral extraction, mineral waste will be used to create the base for the spreading of the soils from the bunds, to achieve the proposed restoration of the site.

11 Residual Impacts

11.1.1 There are no residual impacts relating to the setting.
12 Cumulative Impacts

12.1.1 Other than continuing agricultural activities, there are no other activities being undertaken that would combine to have a cumulative impact on the local heritage assets. In the event that the infilling of Pitsford Pond proceeds, the planning permission for this activity was granted on the basis that the combined impacts of infilling, recycling and quarrying would not have an adverse impact on the heritage assets in the locality.

13 Conclusion

13.1.1 This assessment has considered the impact of continued mineral working at Pitsford Quarry on the setting of the cultural heritage of the locality.

13.1.2 There are no ongoing issues relating to archaeology from the completion of mineral extraction in Phase 1.

13.1.3 This assessment has considered the risk of adverse impacts on the setting of the heritage assets i.e. three Listed Buildings, a Scheduled Ancient Monument, two Conservation Areas and a Registered Historic Park and Garden. All of these features will not be affected provided that no working takes place beyond the boundaries of Phase 1.