SUFFOLK ARCHAEOLOGY

• A HISTORY OF EXPERTISE •

Chalk Hill Quarry

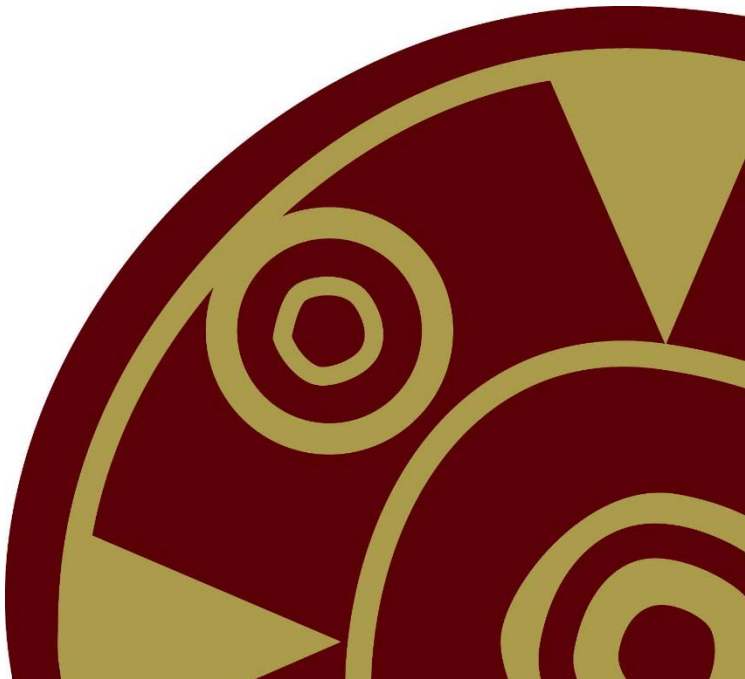
Barton Mills, Suffolk

Client:
Needham Chalks (HAM) Ltd

Date:
February 2015

BTM 060

Archaeological Evaluation and Excavation Report
SACIC Report No. 2015/002
Author: Rob Brooks



Chalk Hill Quarry, Barton Mills

Archaeological Excavation Report

SACIC Report No. 2015/002

Author: Rob Brooks

Contributions By: Cathy Tester, Colin Pendleton, Anna West and Mike Green

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Editor: Richenda Goffin

Report Date: February 2015

HER Information

Site Code:	**BTM 060**
Site Name:	**Chalk Hill Quarry, Barton Mills**
Report Number	**2015/002**
Planning Application No:	**F/2011/0278**
Date of Fieldwork:	**20th-22nd January, 2014 (evaluation)** **19th-21st January, 2015 (excavation)**
Grid Reference:	**TL 7102 7183**
Oasis Reference:	**suffolkc1-198090**
Curatorial Officer:	**Dr Matthew Brudenell**
Project Officer:	**Rob Brooks**
Client/Funding Body:	**Needham Chalks (HAM) Ltd**
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Prepared By:	Rob Brooks
Date:	17/02/2015
Approved By:	John Craven
Position:	Project Officer
Date:	17/02/2015
Signed:	

Contents

List of Figures

List of Tables

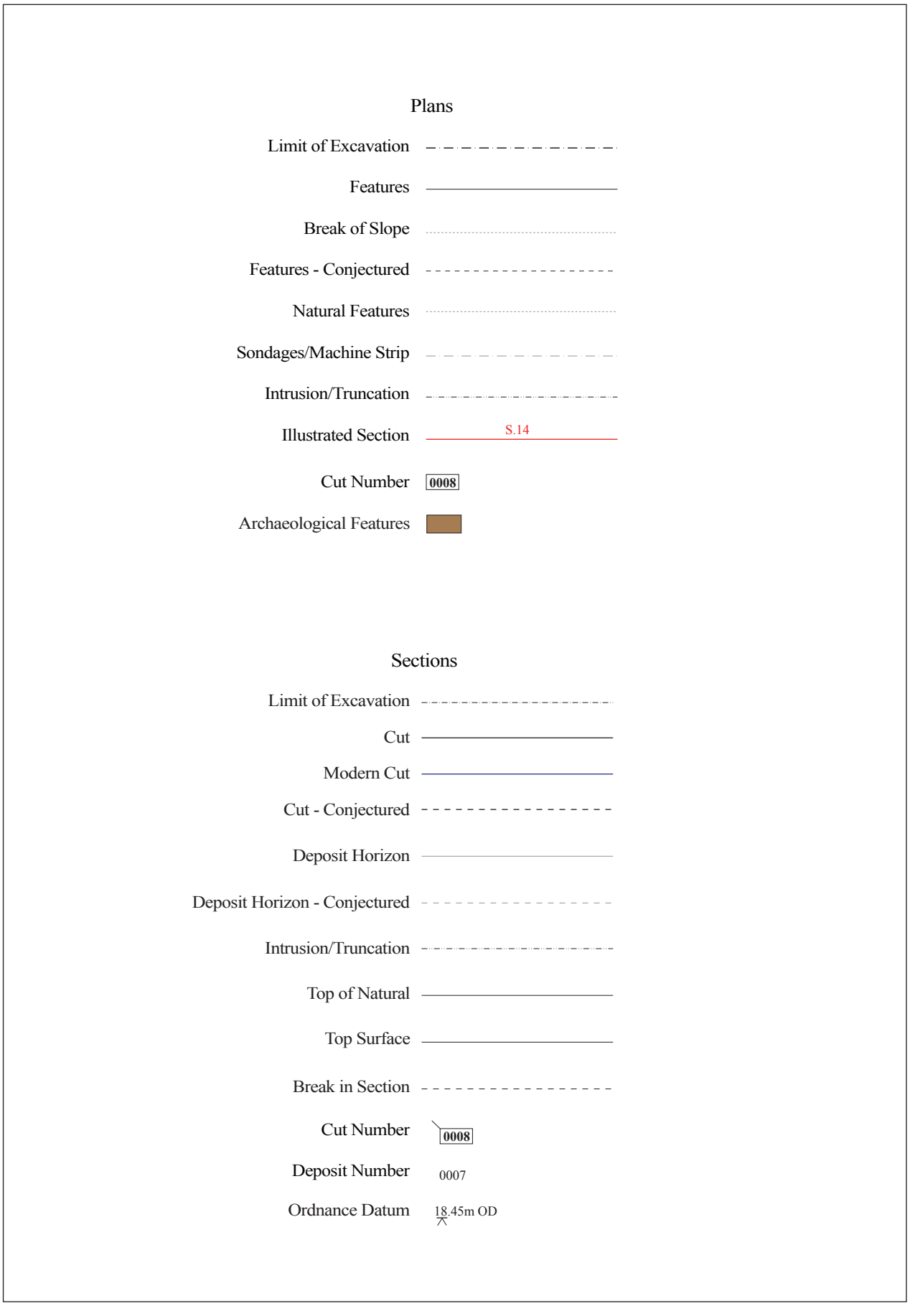
List of Plates

List of Appendices

Summary

Twenty-six evaluation trenches and an area of open excavation were investigated on farmland, prior to a new phase of chalk quarrying at Chalk Hill Quarry, Barton Mills, in Suffolk. One small pit and a series of natural features were excavated near the western edge of the site. The pit produced seventeen fragments of Iron Age and later Iron Age pottery, a single worked flint and heated flint. An assemblage of forty struck flints was also recovered from the site as unstratified finds, as well as from the interface of the plough soil and a chalky subsoil deposit recorded in a geological test hole. The flints included Palaeolithic, Neolithic, Bronze Age and Iron Age pieces. Further heated flints were recovered from a tree root hollow. No other features or finds were recorded. Despite intensive ploughing of the site, the geological levels were generally well preserved. There was no further evidence for the Bronze Age monumental landscape recorded nearby in the Historic Environment Record.

Drawing Conventions



1. Introduction

An archaeological evaluation and excavation were carried out prior to quarrying of an area of arable farmland in the parish of Barton Mills, Suffolk (Fig. 1). The site was investigated due to its position within a prehistoric landscape, characterised by a series of barrows and ring ditches that are probably Bronze Age. The evaluation was carried out to look for the presence of any such remains, but instead uncovered an Iron Age pit, containing pottery and mixed prehistoric lithic implements. This report covers both the results of the evaluation and the excavation and forms the final stage of the reporting process.

The work was carried out to a Written Scheme of Investigation by Rob Brooks (Suffolk Archaeology – Appendix 1) to fulfil a Brief by Dr Matthew Brudenell of Suffolk County Council Archaeological Service Conservation Team (SCCAS/CT) as a condition of planning application F/2011/0278. Needham Chalks (HAM) Ltd funded the work that was carried out on the 20th-22nd January, 2014 and 19th-22nd January, 2015.

The site was located to the rear of the Chalkhill Cottages, at grid reference TL 710 719, *c.*150m south-east of the A11 road (Fig. 1). Worlington lies approximately 2.3km north-west of the site, while Barton Mills itself is 1.9km to the north-east and Red Lodge is 1km to the south-west.

2. The excavation

2.1 Geology and topography

Geology

The geology of the area is recorded as superficial deposits of Lowestoft Formation diamicton, consisting of silts, sands, gravel and occasional clay, overlying bedrock of Holywell Nodular Chalk and New Pit Chalk (BGS, 2015). During the evaluation the geology was generally recorded as brownish-orange sandy-silt (sometimes with low clay content) and yellowish-orange sand gravel with chalk inclusions, overlying chalk bedrock. However, the excavation opened up an area that was almost entirely dominated by chalk bedrock geology, with irregular linear forms of glacial scarring, or solution channels filled with dark brownish-orange silt and sand (Pl. 1). Small to medium

sub-angular flints were also present within the chalk. At the northern end of the site a geological test hole had been excavated, revealing a mixed deposit of degraded chalk, flint and orange silt and sand, recorded as 0024 (Pl. 2).

Topography

The site is located on a promontory of land, overlooking the River Lark valley to the north and the River Kennet valley to the south. The field sloped down from north-north-east to south-south-west. Ground levels recorded during the evaluation varied from 38.88m (above the Ordnance Datum) at the northern end of the site to 33.76m at the western site limit and 34.68m at the southern site limit. During the excavation, levels taken on the geology varied from 33.33m by the south-west limit of excavation to 34.56m at the northern corner.

Landscape characteristics

According to the Suffolk County Council Landscape Character Assessment (SCC, 2015), the site lies in an area of rolling estate chalklands and estate sandlands. These areas have a wide variety of typical characteristics, as listed below.

Rolling estate chalklands:

- A landscape of large geometric fields, plantation woodlands and remnant heathland
- Flat or very gently rolling plateaux of free-draining sandy soils, overlying drift deposits of either glacial or fluvial origin
- Chalky in parts of the Brecks, but uniformly acid and sandy in the south-east
- Absence of watercourses
- Extensive areas of heathland or acid grassland
- Strongly geometric structure of fields enclosed in the 18th & 19th century.
- Large continuous blocks of commercial forestry
- Characteristic ‘pine lines’ especially, but not solely, in the Brecks
- Widespread planting of tree belts and rectilinear plantations
- Generally a landscape without ancient woodland, but there are some isolated and very significant exceptions
- High incidence of relatively late, estate type, brick buildings
- North-west slate roofs with white or yellow bricks. Flint is also widely used as a walling material
- On the coast red brick with pan-tiled roofs, often black-glazed

Estate sandlands:

- A landscape of chalky soils, large regular fields, with paddocks and shelterbelts
- Very gently rolling or flat landscape of chalky free draining loam
- Dominated by large scale arable production
- "Studscape" of small paddocks and shelterbelts
- Large uniform fields enclosed by low hawthorn hedges
- Shelter belt planting, often ornamental species
- A "well kept" and tidy landscape
- Open views
- Clustered villages with flint and thatch vernacular houses
- Many new large "prestige" homes in villages

2.3 Archaeological and historical background

The site lies in an area of high archaeological interest with several sites listed nearby in the County Historic Environment Record (HER). Positioned on high ground to the north and south of the site are two groups of round barrows/ring ditches that are probably Bronze Age. BTM 012 and 013 are positioned to the south, while BTM 004 (Scheduled Monument No. DSF15329) and BTM 027 and 028 are located to the north (Fig. 1). A find spot of human remains is located further to the north-west (WGN 013), whilst the site of a possible Roman settlement/villa is positioned to the north-east (BTM 026), in an area that has already been quarried away. There is no evidence on the early Ordnance Survey maps for the site, which show the quarry as a large open field, labelled ‘Chalk Hill’ with areas of chalk and gravel quarrying to the north-east and east. One of barrows is marked as a tumulus on the early maps too.

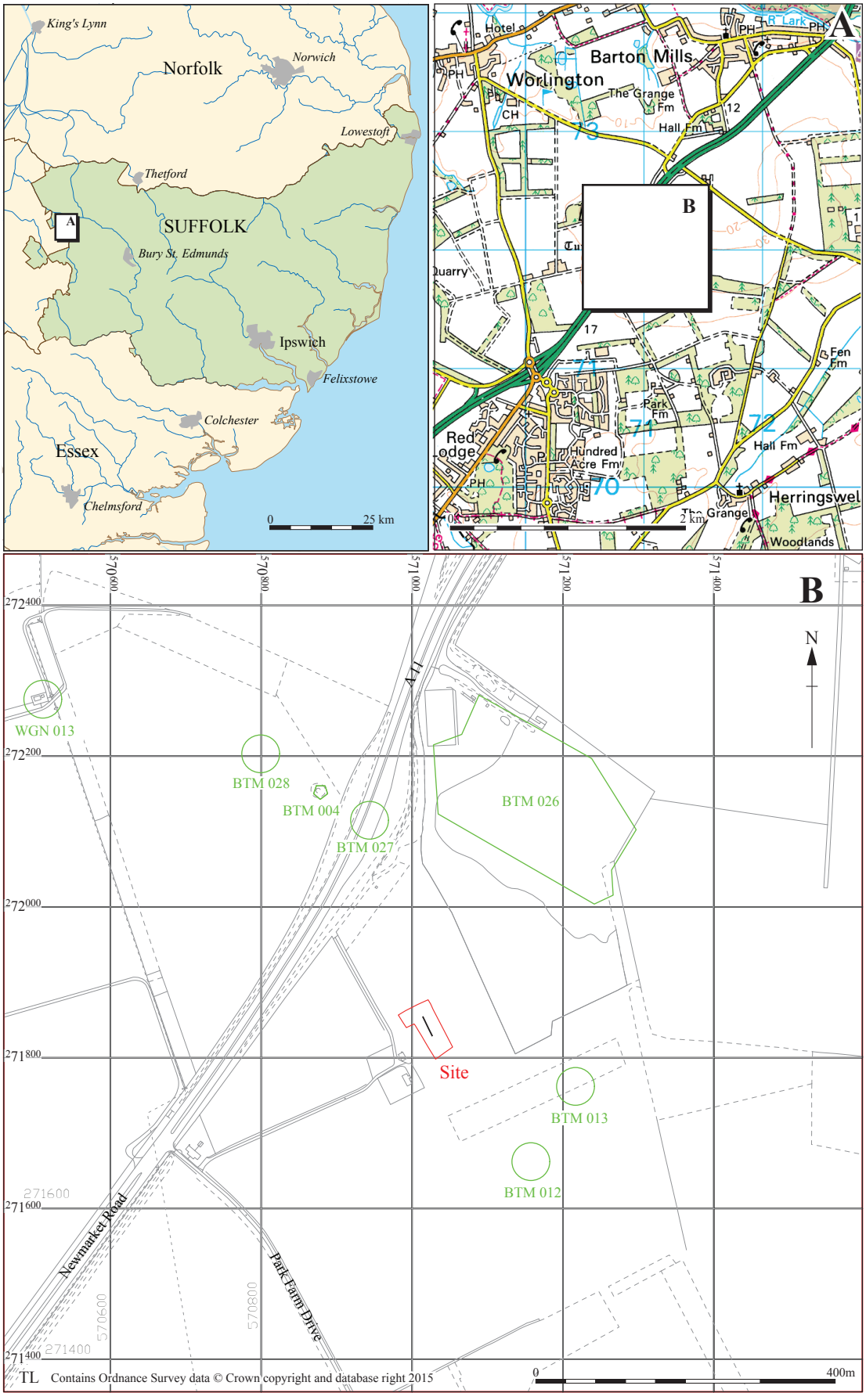


Figure 1. Location plan, showing site and HER entries

Plate 1. Overhead of site (facing south, photo courtesy of Tim Carter)

Plate 2. Geological test hole (2m scale, facing south-east)

3. Methodology

The site was stripped using a machine equipped with a toothless bucket, with the work being constantly monitored and directed by an experienced archaeologist. Topsoil was removed to expose any cut features and the natural geology. All of the upcast spoil was monitored for finds and some was metal-detected (as were parts of the site prior to excavation). The evaluation had sampled 5% of the field by trial trenching, while the excavation area was positioned to cover the entirety of evaluation Trench 14 and beyond, up to the limits of Trenches 13, 15 and 19. This area measured up to 75.6m x 44.3m.

When the site stripping was finished, areas were cleaned in conjunction with the digging and recording of any contexts. Any potentially archaeological deposits were excavated, most of which were 50% then 100% excavated. Two environmental bulk samples were taken (one in the evaluation and the other in the excavation) from possible features, although the latter was interpreted as a natural feature (that produced no finds). In agreement with SCCAS/CT this sample was discarded. Colour digital photographs were taken of the contexts and the site. Aerial photographs were taken using a camera rig mounted to a kite and controlled remotely. All recorded contexts were recorded in plan and section at 1:20 and geo-referenced using an RTK GPS. A single continuous numbering system was used to record all contexts (records 0001-0007 for the evaluation and 0010-0024 for the excavation) and these are presented in Appendix 2. A number of struck flints were recovered from the surface of the field but no consistent strategy such as field walking was employed for this. Further lithic implements were recovered from the interface of the plough soil and a degraded chalk, sand, silt and flint deposit, which was recorded in the northern corner of the field.

Site data has been input onto an MS Access database and recorded using the County HER code BTM 060. An OASIS form has been completed for the project (reference no. suffolkc1-198090 – Appendix 3) and a digital copy of the report submitted for inclusion on the Archaeology Data Service database (http://ads.ahds.ac.uk/catalogue/library/greylit). The archive is kept in the main store of Suffolk County Council Archaeological Service at Bury St Edmunds under HER code BTM 060.

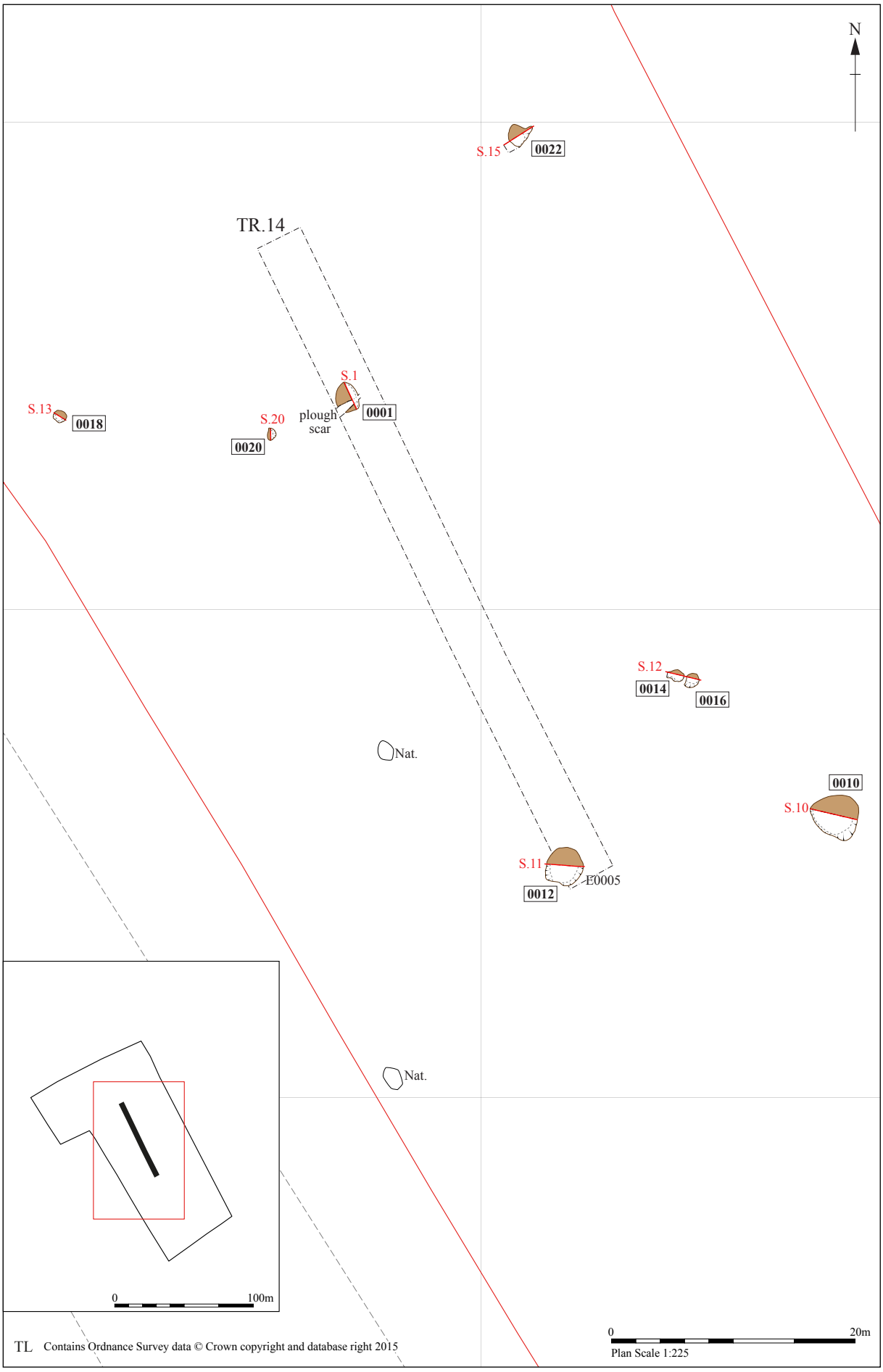


Figure 2. Site plan

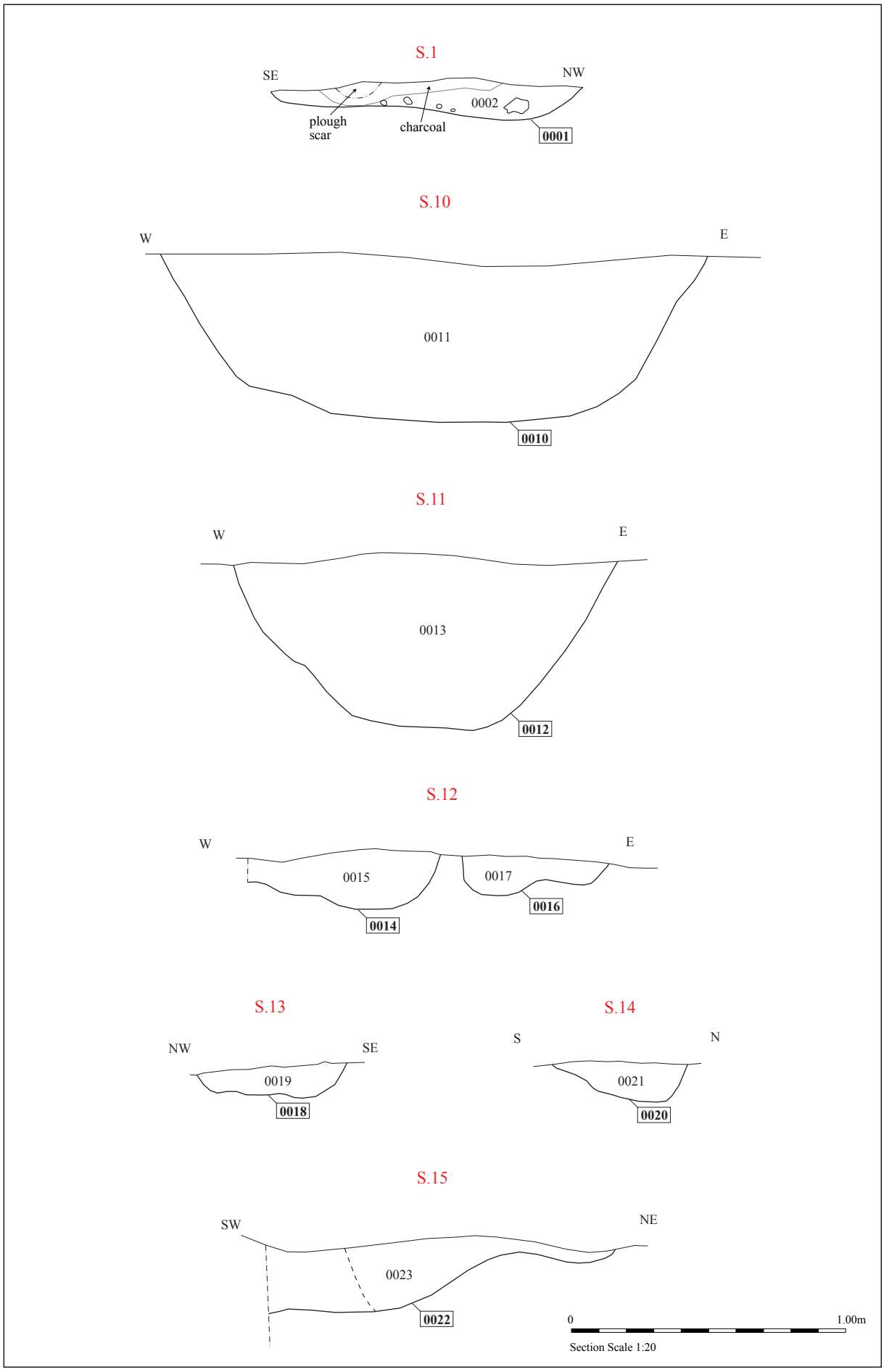


Figure 3. Sections

4. Results

4.1 Introduction

The machine stripping of the site entailed the removal of *c*.0.3-0.5m of plough soil in order to reveal the natural geology. The subsoil deposit recorded in the evaluation (interpreted as buried topsoil) was not present throughout most of the excavation area. Detailed context descriptions are given in Appendix 2. Several natural features were excavated across the proposed quarry site. These included tree root hollows, as well as small solution hollows and channels created by water erosion of channels and subsequent infilling with silt and sand. Glacial scars were also present across the area (Pl. 1). These natural phenomena all had irregular profiles, with diffuse horizons and none produced any finds during the excavation, except for one deposit of heated flints. A single possible pit was recorded in the evaluation, which produced Iron Age pottery. As well as this a number of lithic implements were recovered from the field surface and from a geological deposit in the northern corner of the field (beyond the limit of the main excavation).

4.2 Features

Evaluation contexts

Pit 0001 and context 0005/0012

Near the northern end of Trench 14 was a sub-oval shallow pit with variable sides and a fairly flat base, which measured 1.13m x 0.86m x 0.16m deep (Fig. 3). The western edge of the feature was poorly defined and partially disturbed by ploughing. It had a single fill of mottled mid-dark orange-brown clay-silt and chalky mid grey-brown clay-silt with large flints. Fill 0002 produced seventeen pottery sherds of Iron Age date (30g), along with a single worked flint (2g) and heated flint (twelve fragments – 18g), whilst the sample contained one possible grass or cereal grain that may have been intrusive.

A short curvilinear irregular depression with moderately steep sides, an uneven irregular base and poorly defined limits was recorded in the southern end of Trench 14 as cut 0005 (renumbered as 0012 in the excavation). It was 1.6m x up to 1.4m x up to 0.61m deep and contained a single fill of loose mottled pale to dark grey and firm dark reddish-

orange-brown sandy-silt inclusions and frequent chalk flecks. These contexts, recorded as cut 0005/0012 and fill 0006/0013 did not produce any finds and were interpreted in the evaluation as a depression or a heavily disturbed shallow pit base that had been partially ploughed and affected by groundwater movement. However, during the excavation the feature was fully exposed and excavated and it appeared to be the remains of a tree root hollow.

Excavation contexts

Contexts 0010, 0014, 0016, 0018, 0020 and 0022

All of the contexts recorded as cuts in the excavation are interpreted as either natural depressions or solution hollows within the chalk bedrock, or as tree root hollows. These tended to be somewhat irregular in plan and section, and generally contained a series of similar deposits. Excluding feature 0010/fill 0011, none of the contexts produced any finds.

Towards the south-east corner of the site was cut 0010. This was roughly oval in plan, aligned east to west, with roughly 45° concave to convex irregular sides and a curving break of slope to the concave base. It measured 1m x 0.9m x 0.32m deep and contained a deposit of dark brown-grey soft silty-sand, recorded as 0011. This had inclusions of occasional small flints, chalk flecks and fifteen fragments of heated flint (178g).

Grouped beside one another were two shallow contexts recorded as 0014 and 0016 (Pl. 3). These are again interpreted as the depressions left by tree root hollows, rather than the result of human activity. Cut 0014 was located to the west of 0016 and formed an irregular oval shape in plan, aligned roughly east to west and measuring *c*.0.7m x 0.5m x 0.32m deep. The sides varied from *c*.45° to nearly vertical and were concave or irregular, with a curving break of slope to the irregular base. The west edge of the cut could not be fully defined. Feature 0016 was sub-circular/oval in plan, with an irregular western edge. The angle of the sides varied from *c*.35° to 70-80°, with a rapidly curving break of slope to the irregular base. Both features were filled with identical material that produced no finds (fills 0015 and 0017). These deposits were described as mid to dark greyish-orangish-brown friable very silty-sand, with occasional chalk flecks and angular

flint pieces. Degraded grey chalk was present at the base of the features, creating a diffuse horizon clarity with the natural.

Feature 0018 was distinct from the others on site as it had a relatively well defined shape in plan, although it was interpreted as a small depression or solution hollow in the chalk bedrock, which had filled with a superficial geological deposit. The cut was circular in plan, with 45° slightly concave sides, curving to an irregular base and measured 0.52m x 0.5m x 0.14m deep. Fill 0019 was mottled mid grey and orangish-brown friable to firm silty-sand mixed with degraded chalk and common small chalk nodules. No finds were recovered from the feature.

A small oval-irregular cut in plan, aligned north to south was recorded as cut 0020, which had an irregular western edge (Pl. 4). In profile the southern side sloped in at *c.*35° and was convex, while the northern side was c.70° and concave. The base sloped slightly down to the north and the feature measured 0.48m x 0.35m x 0.13m deep. A single deposit of mottled friable mid grey, dark grey/black and dark orangish-brown silty-sand and degraded chalk was recorded as fill 0021 and produced no finds.

In plan cut 0022 was a very irregular circular cut, with a protruding extension on the north-east edge. It was very shallow on the north-east edge and the south-west edge lacked definition. In profile the sides varied from *c.*45° to 80° and they curved to the slightly concave base. The cut measured *c.*1m x *c.*0.9m x *c.*0.25m deep and contained dark orangish-brown to greyish-black friable silty-sand, with occasional chalk flecks. Given the colouration and texture of the material it appeared to be mixed with degraded charcoal. Occasional angular flint pieces were also present in the fill.

Deposit 0024

At the northern end of the field, *c.*150m north of the limit of excavation (Pl. 2), a geological test hole had been excavated prior to the archaeological works beginning. This measured *c.*7m x *c.*3m x up to 2m deep and the profile of the hole consisted of 0.3m of plough soil, overlying 1.3m of deposit 0024. This consisted of chalk, mixed with brownish-orange sand and frequent small to medium sized flints. Below this deposit was the bedrock geology of solid chalk. The material from the test hole had been left in several piles and these were scanned for artefacts. Nine struck flints were recovered,

which were Palaeolithic, Neolithic and Iron Age. The deposit was interpreted as a chalk deposit that had subsequently been degraded possibly by glacial movement and water solution, as well as to a lesser extent by rooting.

Plate 3. Cuts 0014 and 0016 (facing north-east, 1m scale)

Plate 4. Cut 0020 (facing west, 0.3m scale)

5. Finds and environmental evidence

Cathy Tester

5.1 Introduction

Finds were recovered from two evaluation contexts and two excavation contexts. The evaluation finds were from a pit in Trench 14 and an unstratified surface collection, while the excavation finds were from one tree bowl and a layer. The quantities by context are shown in Table 1.

Context	Pottery		Struck flint		Burnt flint		Date Range
	No.	Wt/g	No.	Wt/g	No.	Wt/g	
0002	17	30	1	2	12	18	Iron Age
0007			30	816			Palaeo, Neo, BA, IA
0011					15	178	Undated
0024			9	1134			Palaeo, Neo, IA
Total	**17**	**30**	**40**	**1952**	**27**	**196**	

Table 1. Finds quantities

5.2 Pottery

Seventeen sherds of handmade prehistoric pottery which include some very small scraps from the environmental sample processing were recovered from the fill of pit 0001 (0002) in Trench 14. A maximum of five vessels are represented and the sherds are described in Table 2.

Fabric	Sherd	No	Wt/g	Notes	Date
HMF	Body sherd	1	5	Coarse flint, orange-brown surfaces, dark core	IA
HMF	Body sherd	1	4	Smoothed interior/exterior. orange-brown	IA
HMS	Body sherd	1	7	Medium sandy fabric. Smoothed surface	Later IA
HMS	Rim sherd	1	4	Plain rounded upright rim. Dark brown surfaces, oxidised core.	Later IA
HMF	Body sherd	13	10	V. fragmentary. Medium-fine flint (SS<1>)	IA
Total		**17**	**30**		

Table 2. Prehistoric pottery catalogue
(Key: HMF = hand-made flint-tempered, HMS = Handmade sand-tempered)

The assemblage includes flint-tempered (HMF) and sand-tempered (HMS) pieces which are all small and (excluding one undiagnostic rim) likely to be Iron Age. The flint-

tempered pieces may be earlier Iron Age, although the addition of flint as a tempering agent continued in East Anglia well into the later Iron Age. The presence of sandy fabrics suggests a later Iron Age date (Sarah Percival, pers. comm.)

5.3 Struck flint

Identified by Colin Pendleton and Mike Green

Introduction and methodology

Thirty-one pieces of struck flint including cores and shatter pieces, flakes and blades were recovered during the evaluation. An additional nine pieces were recovered from the excavation. The evaluation finds were mainly from the unstratified surface collection 0007 and one piece came from pit 0001 in Trench 14. The flints are mid grey to black in colour. Cortex when present is dirty grey or off white. Both patinated and unpatinated pieces are present. The struck flint from the excavation phase was from layer 0024 and included shatter pieces and flakes, which had the same colour and patination as the flint from the evaluation phase. The flint was recorded by type and the degree of patination and cortication were also noted. Other descriptive comments were made as required. The flint types are summarised in Table 3 and the full descriptions are included in Appendix 5.

Type	No
Multiplatform flake core	2
Hammerstone/core	1
Flake core	5
Blade core	1
Flake	8
Blade	1
Notched flake	3
Notched blade	2
Retouched flake	11
Retouched blade	1
Shatter	5

Table 3. Breakdown of flint types

The assemblage

Eight cores or shatter pieces present include two multiplatform flake cores, five simple flake cores and a blade core. A shatter piece with a few irregular flakes removed has been made from an earlier larger hammerstone. Eight unmodified flakes and one blade

are present. Fourteen retouched flakes include three with notches and three retouched blades include two with notches.

Discussion

This is a multi-period assemblage with a date range that includes the Palaeolithic, Neolithic, Bronze Age and Iron Age. The earliest pieces are the four which are heavily patinated. The grouping of flints, which show light patination include a long blade core and a flake core and a few blade-like pieces which suggest earlier material. However, they have unpatinated retouch which suggests use in two different periods, early and later. There is a Neolithic element within the unpatinated assemblage. The numerous large flakes as well as the three blades with parallel blade scars on their dorsal faces suggest more careful working characteristic of the earlier period. There are several flints with both one patinated and one unpatinated surface which could fit into the later group, suggesting that their patination was acquired as much through circumstances of deposition as through time. The majority of the unpatinated assemblage however, could be Bronze Age or Iron Age. These include irregular, squat, hinge-fractured flakes and shatter, irregularities which suggest a later date as does the irregular nature of the unpatinated cores and shatter pieces. The re-use of earlier pieces is also very characteristic of later assemblages.

5.4 Heat-altered flint

A small amount of heat-cracked flint (12 fragments, weighing 18g) was recovered from the evaluation amongst the non-floating sample processing residues and fifteen fragments (weighing 178g) were recovered from the excavation tree bowl fill 0011. The material has most likely been heat-altered naturally or accidentally, rather than deliberately.

5.5 Plant macrofossils

Anna West

Introduction and methods

A single bulk sample was taken from pit 0001/fill 0002 (Trench 14) during the evaluation. The entire 40 litre sample was processed to assess the quality of preservation of plant remains and their potential to provide insight into the utilisation of local plant resources in the agricultural and economic activity of the inhabitants of this area.

The sample was processed using manual water flotation/washover and the flots were collected in a 300 micron mesh sieve. Once dried, the flot was scanned using a binocular microscope at x16 magnification. Identification of plant remains is with reference to Stace (2010). The non-floating residues were collected in a 1mm mesh and sorted when dry. All artefacts/ecofacts were retained.

Results

The preservation of the macrofossils within this sample was through charring and was poor. The sample contained a small quantity of wood charcoal fragments between 0-5mm in size. Fibrous rootlets were also common and are modern contaminants. A single fragment of coal was observed that is probably intrusive within the archaeological deposit.

A single charred caryopsis was observed but was too puffed and abraded to identify either as a small cereal grain or a grass seed (*Poaceae*).

Uncharred weed seeds were present within the flot in the form of Clovers (*Trifolium sp*.), Nettle (*Urtica sp*.) and Goosefoot family (*Chenopodium sp*.) The seeds present were from common weeds but as they are uncharred and relatively unabraded, it is possible that these specimens are intrusive within the archaeological deposits.

Conclusions

In general, the sample was poor in terms of identifiable material, with only a single indeterminate caryopsis being present.

5.6. Discussion of the finds and environmental evidence

A modest group of finds in a limited number of categories was recovered from a pit in evaluation Trench 14, a tree root hollow, a geological deposit, and from site-wide surface collection. The earliest finds are within the struck flint assemblage which includes material of Palaeolithic, Neolithic, Bronze Age or Iron Age. However, the bulk of the flint assemblage is unpatinated or reworked earlier material. A small amount of prehistoric pottery includes possible earlier and later Iron Age pieces. No later finds were recovered.

The environmental sample produced a very poor and sparse macrofossil assemblage much of which could be interpreted as intrusive modern contaminants.

6. Discussion

The evaluation and excavation have shown that a single possible archaeological feature survived in one area of the site, although this may simply have been a natural feature, similar to others recorded both during the evaluation and excavation. There was no evidence for the monumental prehistoric landscape indicated by the records in the HER. The HER also mentions a Roman villa site that may have been present to the east of the investigated area, destroyed by previous phases of quarrying. No metalwork or pottery of this date was recovered during the archaeological works and whilst this does not entirely rule out the presence of a villa, it would tend to suggest that it is unlikely, given the quantity and spread of features and artefacts often associated with such Roman sites.

In general the site does not appear to have been too heavily truncated by modern activity, although the assemblage of unstratified prehistoric flint collected from the ground surface and the geological test hole suggests that an archaeological soil horizon had been disturbed by ploughing and natural processes. The chalk bedrock was only rarely affected by plough damage.

The finds from fill 0002 during the evaluation indicated that it was Iron Age and also that it contained sherds from several vessels. This would suggest that later prehistoric occupation is present in the vicinity, although contrary to this no further Iron Age remains were identified in the excavation works. The only other indication of Iron Age

activity is represented by the later prehistoric elements of the struck flint assemblage, which was almost entirely recovered from the northern corner of the site, away from the area of excavation. Context 0005/0012 was interpreted in the evaluation as a possible pit, but having been fully excavated in the second stage of works it was interpreted as natural. Any other contexts recorded during the excavation were also thought to be natural features, given their lack of definition and finds.

The flint scatter is of interest, given its diverse age range and despite being an assemblage of unstratified and disturbed material. The presence of Palaeolithic, Neolithic and later material is unusual and suggests that the area was favoured for occasional occupation throughout prehistory, although there is no indication for anything other than short term visits, presumably to make use of the local flint resources.

7. Conclusions

Limited evidence for prehistoric occupation has been recovered from the phases of evaluation and excavation fieldwork carried out at Barton Mills Chalk Quarry. Although Iron Age pottery, heated flint and a wide range of prehistoric worked flint were recorded alongside one possible feature, this material seems to have been the remains of short-lived and occasional occupation of the site, rather than prolonged settlement. Given the presence of the Bronze Age barrows located to the north and south of the site this may indicate a landscape that was favoured for its local flint resources and monumental potential as a high point in the landscape, rather than for settlement. The absence of any barrow mounds, ring ditches or indications for extended prehistoric settlement on the site does not rule out the possibility of other such remains in the vicinity.

8. Bibliography

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Stace, C., 2010, *New Flora of the British Isles*, third edition, Cambridge: Cambridge University Press

SCC, 2015, *Suffolk Landscape Character Assessment*, available at: http://www.suffolklandscape.org.uk/landscape_map.aspx from Suffolk County Council

9. Archive deposition

Paper and photographic archive: SCCAS archive

Digital archive: SCCAS R:\Environmental Protection\Conservation\Archaeology\Archive\Barton Mills\BTM 060 Chalk Hill Quarry

Finds and environmental archive: SCCAS archive

10. Acknowledgements

The fieldwork was carried out by Mike Green, Tim Carter and Rob Brooks and directed by Rob Brooks. Tim Carter carried out the metal detecting survey and also took overhead photographs of the site.

Project management was undertaken by John Craven, who also provided advice during the production of the report.

Post-excavation management was provided by Richenda Goffin. Finds processing was undertaken by Jonathan van Jennians and Mike Green, whilst the environmental sample was processed by Anna West. The specialist finds report was produced by Cathy Tester, Colin Pendleton (SCCAS/CT), Anna West and Mike Green. The report illustrations were created by Beata Wieczorek-Oleksy and the report was edited by Richenda Goffin.

Appendix 1. Abridged written scheme of investigation

Barton Mills/Chalk Hill quarry, Barton Mills
BTM 060

Written Scheme of Investigation and Risk Assessment v0.1
Archaeological Excavation

Client: Needham Chalk (HAM) Ltd

Suffolk County Council Archaeological Service Field Team
Author: Rob Brooks
December 2014

Contents

List of Figures

Project details

Planning Application No:	F/2011/0278
Curatorial Officer:	Dr Matthew Brudenell
Grid Reference:	TL 710 719
Area:	0.264ha
HER Event No/Site Code:	**BTM 060**
Oasis Reference:	**Suffolkc1-198090**
Project Start date	19/01/2015
Project Duration:	*c.*10 days
Client/Funding Body:	Needham Chalks (HAM) Ltd
Client agent	Stephen M Daw Ltd
SCCAS Field Team Project Manager	John Craven
SCCAS Field Team Project Officer:	Rob Brooks

1. Introduction

- A program of archaeological excavation is required to record any archaeological deposits on the proposed site of quarrying at the Barton Mills Chalk Hill quarry (Fig. 1). The work is required as a condition on planning application F/2011/0278, in accordance with paragraph 141of the National Planning Policy Framework.
- SCCAS Field Team has been contracted to carry out the project by the client's agent (Stephen M Daw Ltd).
- The work required is detailed in a Brief (dated 19/03/2014) produced by the archaeological adviser to the Local Planning Authority (LPA), Dr Matthew Brudenell of Suffolk County Council Archaeological Service (SCCAS) Conservation Team. The Brief specifies the excavation of an area of *c.*0.32ha, based on the results of a trial trench evaluation, since reduced to 0.264ha to preserve an existing bund (Fig. 2).
- This Written Scheme of Investigation (WSI) details how the requirements of the Brief and general SCCAS Conservation Team guidelines (SCCAS Conservation Team, 2012) will be met, and has been submitted to SCCAS Conservation Team for approval on behalf of the LPA. It provides the basis for measurable standards and will be adhered to in full, unless otherwise agreed with SCCAS Conservation Team.
- It should be noted that, following the excavation fieldwork, the assessment report may establish a need for further analysis and publication in an updated project design (UPD). If approved by SCCAS Conservation Team the work outlined in the UPD will need to be completed to allow final discharge of planning conditions. The client is advised to consult with SCCAS Conservation Team as to their obligations following receipt of the excavation assessment report.

2. The Site

- The proposed excavation area lies within a larger area of land to be quarried as part of ongoing extraction works at the Chalk Hill quarry.
- The site lies at a height of *c.*34m above Ordnance Datum on a promontory of land, overlooking the River Lark valley to the north and the River Kennet valley to the south.
- The geology of the area is recorded as deposits of Lowestoft Formation diamicton of silts, sands, gravel and occasional clay, overlying bedrock of Holywell Nodular Chalk and New Pit Chalk (BGS, 2014). On site the geology presented itself as brownish-orange sandy-silt (sometimes with low clay content) and yellowish-orange sand gravel with chalk inclusions, overlying chalk.

3. Archaeological and historical background

- The site is of interest as it is positioned on high ground, with two groups of round barrows/ring ditches to the north and south, which follow the promontory of land on which the excavation is positioned. These are designated under Historic Environment Record (HER) listings BTM 012, 013, 027, 028 and 004 (Scheduled Monument No. DSF15329). A find spot of human remains is located to the north-west of the site (WGN 013), whilst a Roman settlement/villa is to the north-east (BTM 026).
- As a result of the sites listed above SCCAS Conservation Team requested that the site be assessed for heritage assets through a trial trench evaluation, which uncovered the remains of two pits, with Iron Age pottery, worked flint and heated flint (Brooks, 2014). An assemblage of Palaeolithic, Neolithic, Bronze Age and Iron Age flints was also recovered from field walking the area.
- The evaluation of the site was carried out by SCCAS Field Team in January 2014, with twenty-six trenches being placed across the area to be quarried.

4. Project Objectives

- The aim of the project is to 'preserve by record' all archaeological deposits within the defined excavation area, prior to its development, and to produce a post-excavation assessment report.
- The project will:
- Excavate and record all archaeological deposits present on the site.
- Assess the potential of the site to address research aims defined in the Regional Research Framework for the Eastern Counties (Medlycott, 2011). These aims are likely to relate to general themes for prehistory, such as:
    - Greater retrieval of finds and subsequent finds studies for the Palaeolithic and Neolithic material
    - The relationship between burial mounds and other Bronze Age space
    - The Bronze Age-Iron Age transition
    - Settlement form during the Iron Age
- Provide an updated project design with proposals and a timetable for further analysis, dissemination and archive deposition.
- Provide sufficient information for the client to establish any further cost implications for the development regarding the application areas heritage assets.

REMOVED – Figure 1. Location map (site marked red)

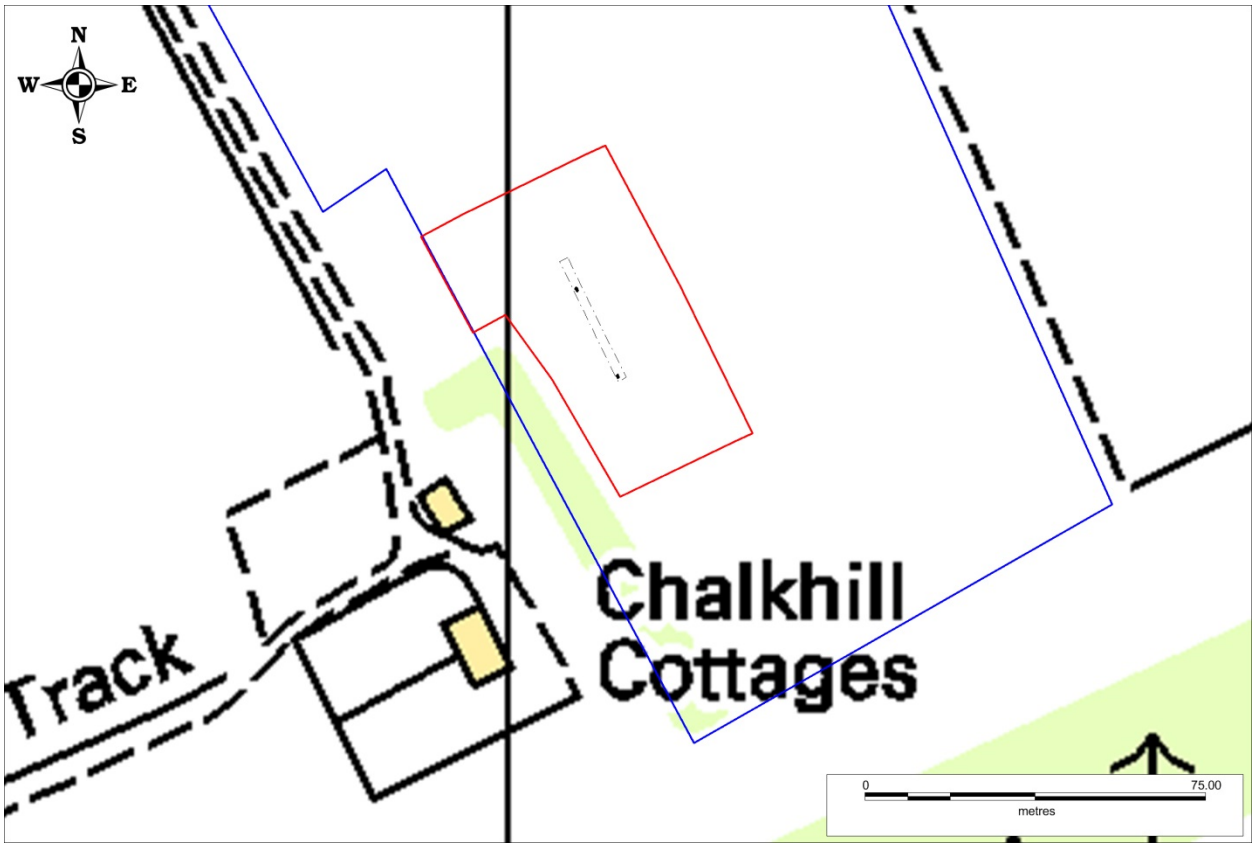

Figure 2. Excavation outline (red), with evaluation outline (blue) and trench with features (black)

5. Archaeological method statement

5.1. Management

- The project will be managed by SCCAS Field Team Project Officer John Craven in accordance with the principles of *Management of Research in the Historic Environment* (MoRPHE, English Heritage 2006).
- SCCAS Conservation Team will be given ten days' notice of the commencement of the fieldwork and arrangements made for SCCAS Conservation Team visits to enable the works to be monitored effectively.
- Full details of project staff, including sub-contractors and specialists are given in section 6 below.

5.2. Project preparation

- An HER number has been obtained from the Suffolk HER Officer (**BTM 060**), which was also used for the evaluation and this will be included on all project documentation.
- An OASIS online record has been initiated (**suffolkc1-198090**) and key fields in details, location and creator forms have been completed.
- A pre-site inspection and Risk Assessment for the project has been completed.

5.3. Fieldwork

Excavation

- Fieldwork standards will be guided by 'Standards for Field Archaeology in the East of England', EAA Occasional Papers 14, and the Institute For Archaeology's (IFA) paper 'Standard and Guidance for archaeological excavation', updated 2013.
- The archaeological fieldwork will be carried out by members of SCCAS Field Team led by a Project Officer (Rob Brooks). The fieldwork team will be drawn from a pool of suitable staff at SCCAS Field Team and will include an experienced metal detectorist/excavator.
- The project Brief requires the excavation of a 0.264ha area, encompassing evaluation trench 14, which contained archaeological features (Fig. 2). If necessary minor modifications to the excavation plan may be made onsite to respect any previously unknown buried services, areas of disturbance/contamination or other obstacles.
- The site location will be marked out using an RTK GPS system.
- The site will be stripped using a machine equipped with a back-acting arm and toothless ditching bucket (measuring at least 1.8m wide), under the supervision of an archaeologist. This will involve the removal of an estimated 0.3m-0.5m of topsoil/plough soil until the first visible archaeological surface or subsoil surface is reached.
- The location of spoil heaps will be determined by the client who is in possession of the site, although it is assumed that leaving spoil adjacent to the excavation will be suitable. Spoil heaps will be examined and metal-detected for archaeological material.
- The excavation of all archaeological deposits will be by hand, including stratified layers, unless it can be demonstrated in agreement with SCCAS Conservation Team that no information will be lost by using a machine. All features will be excavated by hand unless otherwise agreed with SCCAS Conservation Team. Typically 50% of discrete features such as pits and 10% of linear features (in 1m slots) will be sampled by hand excavation, although significant archaeological features such as solid or bonded structural remains, building slots or postholes will be examined in section then 100% excavated. Occupation levels and building fills will be sieved using a 10mm mesh.
- Any fabricated surface (floors, yards etc) will be fully exposed and cleaned.
- Metal detector searches will take place throughout the excavation by an experienced SCCAS Field Team metal-detectorist.
- Environmental sampling of archaeological contexts will, where possible, be carried out to assess the site for palaeoenvironmental remains and will follow appropriate guidance (English Heritage, 2011). In order to obtain palaeoenvironmental evidence, bulk soil samples (of at least 40 litres each or 100% of the context) will be taken using a combination of judgement and systematic sampling from selected archaeological features or natural environmental deposits, particularly those which are both datable and interpretable. All samples will be retained until an appropriate specialist has assessed their potential for palaeoenvironmental remains. Decisions will be made on the need for further analysis following these assessments.

- If necessary, for example if waterlogged peat deposits are encountered, then advice will be sought from the English Heritage Regional Advisor for Archaeological Science (East of England) on the need for specialist environmental techniques such as coring or column sampling.
- The depth and nature of colluvial or other masking deposits across the site will be recorded.

Site recording

- An overall site plan showing feature positions, sections and levels will be made using an RTK GPS or Total Station Theodolite, or be drawn by hand (being tied in with a GPS or TST). Other context plans will be recorded by hand at 1:10, 1:20 or 1:50 as appropriate to complexity. All excavated sections will be recorded at a scale of 1:10 or 1:20, also as appropriate to complexity. All such drawings will be in pencil on A3 pro forma gridded permatrace sheets. All levels will refer to Ordnance Datum.
- The site, and all archaeological features and deposits will be recorded using standard *pro forma* SCCAS Field Team registers and recording sheets and numbering systems. Record keeping will be consistent with the requirements of the Suffolk HER and will be compatible with its archive.
- A photographic record, consisting of high resolution digital images, will be made throughout the excavation. A number board displaying site code and, if appropriate, context number and a metric scale will be clearly visible in all photographs. A photographic register will be maintained.
- All pre-modern finds will be kept and no discard policy will be considered until all the finds have been processed and assessed. Finds on site will be treated following appropriate guidelines (Watkinson & Neal, 2001) and a conservator will be available for on-site consultation as required.
- All finds will be brought back to the SCCAS Field Team finds department at the end of each day for processing, quantifying, packing and, where necessary, preliminary conservation. Finds will be processed and receive an initial assessment during the fieldwork phase and this information will be fed back to site to inform the on-site excavation methodology.
- If human remains are encountered guidelines from the Ministry of Justice will be followed. Human remains will be treated at all stages with care and respect, and will be dealt with in accordance with the law and the provisions of Section 25 of the Burial Act 1857. A Ministry of Justice license for their removal will be obtained in advance of any excavation. Any such remains will be fully excavated, planned (at 1:10) and photographed. In such cases appropriate guidance (McKinley & Roberts, 1993, and Brickley & McKinley, 2004) will be followed and, on completion of full recording and analysis, the remains, where appropriate, will be reburied or kept as part of the project archive.
- In the event of unexpected or significant deposits being encountered on site, the client and SCCAS Conservation Team will be informed. Such circumstances may necessitate changes to the Brief and hence excavation methodology, in which case a new archaeological quotation will have to be agreed with the client, to allow for the recording of said unexpected deposits. If the excavation is aborted, i.e. because unexpected deposits have made the development unviable or led to other mitigation measures such as project redesign, then all exposed archaeological features will be recorded as usual prior to completion of fieldwork and a PXA report produced.
- Fieldwork will not end without the prior approval of SCCAS Conservation Team. On completion the site will be handed over to the client, to either backfill or begin quarrying.

Outreach

Due to the working environment (an active quarry), as well as the small size and likely short duration of the project, outreach activities such as an open day or tours are not viable. If warranted, and the site is not deemed too archaeologically sensitive, a press release will be issued to local media.

5.4. Post-excavation

- The post-excavation finds work will be managed by the SCCAS Field Team Finds Team Manager, Richenda Goffin, with the overall post-excavation managed by John Craven. Specialist finds staff, whether internal SCCAS Field Team personnel or external specialists, are experienced in local and regional types and periods for their field.
- All finds will be processed and marked (with the HER code and context number) following ICON guidelines and the requirements of the Suffolk HER. For the duration of the project all finds will be stored according to their material requirements in the SCCAS Archaeological Stores at Bury St. Edmunds or Ipswich. Metal finds will be stored in accordance with ICON) guidelines, *initially recorded*

and assessed for significance before dispatch to a conservation laboratory within 4 weeks (or as is viable) of the end of the excavation. All pre-modern silver, copper alloy and ferrous metal artefacts and coins will be x-rayed if necessary for identification. Sensitive finds will be conserved if necessary and deposited in bags/boxes suitable for long term storage to ICON standards. All coins will be identified to a standard acceptable to normal numismatic research.

- All on-site derived site data will be entered onto a digital (Microsoft Access) SCCAS Field Team database compatible with the Suffolk HER.
- Bulk finds will be fully quantified and the subsequent data will be added to the digital site database. Finds quantification will fully cover weights and numbers of finds by context and will include a clear statement for specialists on the degree of apparent residuality observed.
- Any pottery will be recorded and archived to a standard consistent with the Draft Guidelines of the Medieval Pottery Research Group and Guidelines for the archiving of Roman Pottery, SGRP (ed. M.G. Darling, 1994) and to The Study of Later Prehistoric Pottery: General Policies and Guidelines for analysis and Publications, Occasional Papers No.1 and No. 2, 3rd Edition (Revised 2010, Prehistoric Ceramic Research Group).
- Environmental samples will be processed and assessed to standards set by the Regional Environmental Archaeologist with a clear statement of potential for further analysis.
- Animal and human bone will be quantified and assessed to a standard acceptable to national and regional English Heritage specialists.
- An industrial waste assessment will cover all relevant material (i.e. fired clay finds as well as slag).
- Assessment reports for all categories of collected bulk finds will be prepared in-house or commissioned as necessary and will meet appropriate regional or national standards. Specialist reports will include sufficient detail and tabulation by context of data to allow assessment of potential for analysis and will include non-technical summaries.
- Representative portions of bulk soil samples from archaeological features will be processed by wet sieving and flotation in-house in order to recover any environmental material which will be assessed by external specialists. The assessment will include a clear statement of potential for further analysis.
- All hand drawn site plans and sections will be scanned to form part of the digital archive.
- All raw data from GPS or TST surveys will be uploaded to the project folder, suitably labelled and kept as part of the project archive.
- Selected plan drawings will then be digitised as appropriate for combination with the results of digital site survey to produce a full site plan, compatible with MapInfo GIS software.
- All hand-drawn sections will be digitised using autocad software.
- Digital photographs will be allocated and renumbered with a code from the Suffolk HER photographic index.

5.5. Report

- A full post-excavation assessment report (PXA) will be produced, consistent with the principles of *Management of Research in the Historic Environment* (MoRPHE, English Heritage 2006). If the fieldwork results do not warrant such an assessment SCCASD/CT will be asked to approve the production of a full archive report.
- The PXA report will contain a description of the project background, location plans, excavation methodology, a period by period description of results, finds assessments and a full inventory of finds and contexts. The report will also include scale plans, sections drawings, illustrations and photographic plates as required.
- The PXA will present a clear and concise assessment of the archaeological value and significance of the results, and identify the site's research potential in the context of the Regional Research Framework for the East of England (Medlycott, 2011). This will include an assessment of potential research aims that could be addressed by the site evidence.
- The PXA will include an Updated Project Design, with a timetable, for analysis, dissemination and archive deposition.
- The report will contain sufficient information to function as an archive report, should further publication not be required.
- The report will include a summary in the established format for inclusion in the annual *'Archaeology in Suffolk'* section of the Proceedings of the Suffolk Institute of Archaeology and History.
- A copy of this Written Scheme of investigation will be included as an appendix in the report.
- The report will include a copy of the completed project OASIS form as an appendix.
- An unbound draft copy of the report will be submitted to SCCAS Conservation Team for approval within 6 months of completion of fieldwork.

5.6. Project archive

- On approval of the report a printed and bound copy will be lodged with the Suffolk HER. A digital .pdf file will also be supplied, together with a digital and fully geo-referenced vector plan showing the application area and excavation location, compatible with MapInfo software.
- The online OASIS form for the project (reference **suffolkc1-198090**) will be completed and a .pdf version of the report uploaded to the OASIS website for online publication by the Archaeological Data Service. A paper copy of the form will be included in the project archive.
- A second bound copy of the report will be included with the project archive (see below).
- A digital .pdf copy of the approved report will be supplied to the client, together with our final invoice for outstanding fees. Printed and bound copies will be supplied to the client on request.
- The project archive, consisting of the complete artefactual assemblage, and all paper and digital records, will be deposited in the SCCAS Archaeological Store at Bury St Edmunds within 6 months of completion of fieldwork. The project archive will be consistent with MoRPHE (English Heritage, 2006) and ICON guidelines. The project archive will also meet the requirements of SCCAS (SCCAS Conservation Team, 2010).
- All physical site records and paperwork will be labelled and filed appropriately. Digital files will be stored in the relevant SCCAS archive parish folder on the SCC network site.
- The project costing includes a sum to meet SCCAS archive charges. A form transferring ownership of the archive to SCCAS will be completed and included in the project archive.
- If the client, on completion of the project, does not agree to deposit the archive with and transfer it to SCCAS, they will be expected to either nominate another suitable depository approved by SCCAS Conservation Team or provide as necessary for additional recording of the finds archive (such as photography and illustration) and analysis. A duplicate copy of the written archive in such circumstances would be deposited with the Suffolk HER.
- Exceptions from the deposition of the archive described above include:
- Objects that qualify as Treasure, as detailed by the Treasure Act 1996. The client will be informed as soon as possible of any such objects are discovered/identified and the find will be reported to SCCAS Conservation Team and the Suffolk Finds Liaison Officer and hence the Coroner within 14 days of discovery or identification. Treasure objects will immediately be moved to secure storage at SCCAS and appropriate security measures will be taken on site if required. Any material which is eventually declared as Treasure by a Coroner's Inquest will, if not acquired by a museum, be returned to the client and/or landowner. Employees of SCCAS, or volunteers etc., present on site, will not eligible for any share of a treasure reward.
- Other items of monetary value in which the landowner or client has expressed an interest. In these circumstances individual arrangements as to the curation and ownership of specific items will be negotiated.
- Human skeletal remains. The client/landowner by law will have no claim to ownership of human remains and any such will be stored by SCCAS, in accordance with a Ministry of Justice licence, until a decision is reached upon their long term future, i.e. reburial or permanent storage.

6. Project Staffing

Management

SCCAS Field Team Manager	Dr Rhodri Gardner
SCCAS Field Team Project Manager	John Craven
SCCAS Field Team Post-Excavation Manager	Richenda Goffin

Fieldwork

The fieldwork team will be derived from the following pool of SCCAS Field Team staff.

Name	Job Title	First Aid	Other skills/qualifications
Rob Brooks	Project Officer	Yes	Surveyor, CSCS qualified
Simon Picard	Supervisor		Surveyor
Preston Boyle	Senior Project Assistant		
Phil Camps	Senior Project Assistant	Yes	Shoring. 360 machine and dumper driver. Mobile tower.
Tim Carter	Senior Project Assistant		Metal detectorist, CSCS card
Ewan Chipping	Senior Project Assistant		
Rebecca Smart	Senior Project Assistant		
Hannah Cutler	Senior Project Assistant		

Post-excavation and report production

The production of the site report and submission of the project archive will be carried out by the fieldwork Project Officer. The post-excavation finds analysis will be managed by Richenda Goffin. The following SCCAS Field Team specialist staff will contribute to the report as required.

Graphics	Beata Wieczorek-Olesky
Illustration	Donna Wreathall
Post Roman pottery and CBM	Richenda Goffin
Roman Pottery	Cathy Tester, Stephen Benfield
Environmental sample processing	Anna West
Finds Processing	Jonathan Van Jennians

SCCAS also uses a range of external consultants for post-excavation analysis who will be sub-contracted as required. The most commonly used of these are listed below.

Sue Anderson	Human skeletal remains	Freelance
Sarah Bates	Lithics	Freelance
Julie Curl	Animal bone	Freelance
Anna Doherty	Prehistoric pottery	Archaeology South-East
Val Fryer	Plant macrofossils	Freelance
SUERC	Radiocarbon dating	Scottish Universities Environmental Research Centre

Bibliography

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Brooks, R., 2014, *Chalk Hill Quarry, Barton Mills, BTM 060, Archaeological Evaluation Report,* SCCAS Report No. 2014/013, Bury St Edmunds: SCCAS

Darling, M. J. (ed.), 1994, Guidelines for the archiving of Roman pottery, Study Group for Roman

Pottery English Heritage, 2006, *Management of Research in the Historic Environment (MoRPHE)*

English Heritage, 2011, *Environmental archaeology, A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation (2nd Ed)*

Gurney, D., 2003*, Standards for Field Archaeology in the East of England,* East Anglian Archaeology Occasional Paper No 14

Institute for Archaeologists, 2013, *Standard and Guidance for archaeological excavation*

McKinley, J., I and Roberts, C., 1993, *Excavation and post-excavation treatment of cremated and inhumed human remain,* IFA Technical Paper No 13

Medlycott, M. (Ed), 2011, *Research and Archaeology Revisited: A revised framework for the East of England.* EAA Occasional Paper 24

PCRG, 2011, *The Study of Later Prehistoric Pottery: General Policies and Guidelines for analysis and Publications, 3rd Edition (Revised 2011),* Occasional Paper No. 1 and No. 2

SCCAS Conservation Team, 2010, *Deposition of Archaeological Archives in Suffolk*

SCCAS Conservation Team, 2012, *Requirements for Archaeological Excavation 2012*

Watkinson, D. and Neal, V., 2001, *First Aid for Find,* Third Edition, revised, Rescue/UKIC Archaeology Section, London

Appendix 2. Context list

Context No	Feature No Grid Sq.	Feature Type	Description	Length	Width	Depth	Small Finds	Cuts	Cut by	Over	Under	Finds	Sample	Group No	Phase	Spotdate
0001	0001	Pit Cut	Cut of sub-oval shallow pt with moderate-steep northern and eastern sides, and shallow/gradual southern side. No other associated features/isolated apart from possible pit at south-west end of trench.	1.13	0.86	0.16					0002	No	No			
			Pit cut. Contained Bronze Age(?) pottery fragments. Possible waste pit/deposit.													
0002	0001	Pit Fill	Single fill of pit. Mottled dark brown/mid orange-brown and chalky mid grey-brown clay-silt mix with sand (dependent on variable underlying natural). Firm with occasional large angular flints and small chalk lumps toawrds base.	1.13	0.86	0.16				0001		Yes	Yes			
			Single fill of pit. Waste deposit - several Bronze Age pottery fragments recovered.													
0003	0004	Solution hollow Fill	Layers of dark brown, firm sandy-silt containing moderate amounts of small and medium sized rouded, sub-rounded and sub-angular stones, interspersed with layers of mid yellow gravelly sand and chalk. Appears to go beneath natural geological sand.							0004		No	No			
			Fills of [washed in] gravel and silt in a solution hollow.													
0004	0004	Solution hollow Cut	Irregular feature in plan, roughly oval, aligned east to west, with the western edge going beneath the limit of excavation of Trench 1. Has an irregular profile; eastern edge is a shallow concave slope, whereas the southern edge is steep and undercutting in places. The base of the feature has a circular solution hollow which goes under natural sand.								0003	No	No			
			Natural solution hollow?													
0005	0005	Depression Cut	Sub-rectangular/irregular depression with moderate sides and an uneven, irregular base and sides (much leaching - fades to degraded chalk). [Runs into trench edge].	>0.54	0.51	0.26					0006	No	No			
			Concave depression with significant leaching surrounding it, with an irregular linear extension to the north (plough damage? Rooting? Leaching?). No finds and mottled fill towards the edges. Possibly natural or a burnt out root ball?													
0006	0005	Depression Fill	Loose mottled dark grey/black sandy-silt and firm dark orange-brown sandy-silt, with moderate chalk flecks and occasional charcoal. Several burnt flints (white, medium size, angular/pitted).	>0.54	0.51	0.26				0005		No	No			
			Single fill of depression [or possible leached pit]. Silting/colluvial/root ball? Burnt in some areas.													
0007		Finds	Unstratified finds recovered from site. These consist entirely of struck flints. Some are possibly not struck, having instead been hit by the plough.									Yes	No			
			Bronze Age/Iron Age flint assemblage?													
0010	0010	Natural Feature Cut	Oval cut in plan, aligned east to west. Bowl-shaped profile, with irregular base.	1	0.9	0.32					0011	No	No			
			Cut of burnt tree hollow.													

Context No	Feature No	Grid Sq.	Feature Type	Description	Length	Width	Depth	Small Finds	Cuts	Cut by	Over	Under	Finds	Sample	Group No	Phase	Spotdate
0011	0010		Natural Feature Fill	Dark brown-grey soft silty-sand, with occasional small flints, chalk flecks and some collected examples of heated flint. Clear horizon clarity with natural. Single feature fill.	1	0.9	0.32				0010		No	No			
				Fill of burnt tree hollow.													
0012	0012		Natural Feature Cut	Shaped like a kidney in plan, with a bowl shaped profile and an irregular base.	1.6	1.4	0.61					0013	No	No			
				Cut of tree hollow.													
0013	0012		Natural Feature Fill	Mid red-brown soft silty-sand, with occasional small flints. Clear horizon clarity with natural. Single feature fill.	1.6	1.4	0.61				0012		No	No			
				Fill of tree hollow.													
0014	0014		Natural Feature Cut	Irregular oval type shape in plan, aligned roughly east to west.. Moderately steep (c.45° to near vertical sides which concave or irregular, with a curving break of slope to the irregular base. West edge could not be fully defined. Located west of 0016.	0.7?	0.5	0.23					0015	No	No			
				Probable shallow small tree hollow, which is probably part of the same root system as cut 0016.													
0015	0014		Natural Feature Fill	Mid to dark greyish-orangish-brown friable very silty-sand, with occasional chalk flecks and angular flint pieces. Diffuse horizon in places. Single feature fill.	0.7?	0.5	0.23				0014		No	No			
				Fill of probable shallow small tree hollow.													
0016	0016		Natural Feature Cut	Sub-circular/oval feature in plan, with an irregular/convex west edge. 70-80° sides in profile, with rapidly curving break of slope to the irregular base. Located east of cut 0014.	0.6	0.54	0.14					0017	No	No			
				Probable shallow small tree hollow, which is probably part of the same root system as cut 0014.													
0017	0016		Natural Feature Fill	Mid to dark greyish-orangish-brown friable very silty-sand, with occasional chalk flecks and angular flint pieces. Single feature fill. Degraded grey chalk at base/somewhat diffuse horizon clarity.	0.6	0.54	0.14				0016		No	No			
				Fill of probable shallow small tree hollow.													
0018	0018		Possible Featur Cut	Roughly circular cut in plan, with 45° slightly concave sides, curving to an irregular base.	0.52	0.5	0.14					0019	No	No			
				Possibly a pit or posthole, but probably a natural feature, judging by the fill and the irregular base, which appears to be just irregularities/a solution hollow in the natural chalk.													
0019	0018		Possible Featur Fill	Mottled mid grey and orangish-brown friable to firm silty-sand mixed with degraded chalk and common small chalk nodules. Single feature fill. Clear horizon with chalk.	0.52	0.5	0.14				0018		No	No			
				Probably natural mixture of degraded chalk and superficial geological deposits within shallow solution hollow.													

Context No	Feature No Grid Sq.	Feature Type	Description	Length	Width	Depth	Small Finds	Cuts	Cut by	Over	Under	Finds	Sample	Group No	Phase	Spotdate
0020	0020	Possible Featur Cut	Oval/irregular cut in plan, aligned north to south, with irregular western edge. Southern side slopes in at c.35° and is convex, while northern side is c.70° and concave, The base slopes slightly down to the north. Possible posthole, but almost certainly a tree hollow, or deposit of slumped materual in a natural hollow - very poorly defined and has identical fill to other similar features on site.	0.48	0.35	0.13					0021	No	No			
0021	0020	Possible Featur Fill	Mid grey, dark grey/black and dark orangish-brown mottled silty-sand and degraded chalk. Friable compaction. Diffuse horizon clarity with natural degraded chalk. Common chalk flecks and small nodules. Fill of 0020. Similar to fills of other probably natural features/tree hollows recorded across the site.	0.48	0.35	0.13				0020		No	No			
0022	0022	Natural Feature Cut	Very irregular shape in plan - irregular circular shape, with protruding extension on north-east edge. Very shallow on north-east edge and could not be truly defined on south-west edge. C.45-80° slope elsewhere. Slightly concave base. Almost certainly a natural tree hollow, similar to others on site, but even more irregular. Fill suggests burnt deposit.	1?	0.9?	0.25?					0023	No	No			
0023	0022	Natural Feature Fill	Dark orangy-brown/greyish-black friable silty-sanf, with occasional chalk flecks, which appears to be mixed with degraded charcoal, given the colouration and texture. Occasional angular flint pieces. Sample 10 taken. Partially burnt fill of natural deposit, although there does not seem to be any obvious sign of heating of the surrounding natural.	1?	0.9?	0.25?				0022		No	No			
0024	0024	Deposit Finds	Selection of flints - unsure how many are struck. Collected from deposit of mixed degraded chalk, sand and small to medium sized flints. This material had been excavated from a geological test pit near the northern corner of the field, which was c.2m deep (at this depth solid chalk bedrock was exposed). Soil profile in geological test hole - c.0.3m of gravelly topsoil, overlying c.1.3m of deposit 0024, overlying chalk bedrock. Superficial deposit of Croxton sand and gravel member geology, mixed with the Holywell Nodular and New Pit chalk formation bedrock.									No	No			

Appendix 3. OASIS form

OASIS DATA COLLECTION FORM: England

OASIS ID: suffolkc1-198090

Project details

Project name	BTM 060 Chalk Hill quarry excavation, Barton Mills
Short description of the project	Twenty-six evaluation trenches and an area of open excavation were investigated on farmland, prior to a new phase of chalk quarrying at Chalk Hill quarry, Barton Mills, in Suffolk. One small pit and a series of natural features were excavated near the western edge of the site. The pit produced seventeen fragments of Iron Age and later Iron Age pottery, a single worked flint and heated flint. An assemblage of forty struck flints was also recovered from the site as unstratified finds, as well as from the interface of the plough soil and a chalky subsoil deposit recorded in a geological test hole. The flints included Palaeolithic, Neolithic, Bronze Age and Iron Age pieces. Further heated flints were recovered from a tree root hollow. No other features or finds were recorded. Despite intensive ploughing of the site, the geological levels were generally well preserved. There was no further evidence for the Bronze Age monumental landscape recorded nearby in the Historic Environment Record.
Project dates	Start: 19-01-2015 End: 21-01-2015
Previous/future work	Yes / No
Any associated project reference codes	BTM 060 - HER event no.
Any associated project reference codes	BTM 060 - Sitecode
Any associated project reference codes	F/2011/0278 - Planning Application No.
Type of project	Recording project
Current Land use	Cultivated Land 2 - Operations to a depth less than 0.25m
Monument type	PIT Iron Age
Significant Finds	CERAMICS Iron Age
Significant Finds	HEATED FLINT Uncertain
Significant Finds	LITHIC IMPLEMENTS Palaeolithic
Significant Finds	LITHIC IMPLEMENTS Neolithic
Significant Finds	LITHIC IMPLEMENTS Bronze Age

Significant Finds	LITHIC IMPLEMENTS Iron Age
Investigation type	"Open-area excavation"
Prompt	Direction from Local Planning Authority - PPS

Project location

Country	England
Site location	SUFFOLK FOREST HEATH BARTON MILLS BTM 060 Chalk Hill quarry excavation
Postcode	IP28 6BN
Study area	0.32 Hectares
Site coordinates	TL 710 719 52.3180904453 0.509143485753 52 19 05 N 000 30 32 E Point
Height OD / Depth	Min: 33.33m Max: 34.56m

Project creators

Name of Organisation	Suffolk County Council Archaeological Service
Project brief originator	Local Authority Archaeologist and/or Planning Authority/advisory body
Project design originator	Dr Matthew Brudenell
Project director/manager	John Craven
Project supervisor	Rob Brooks
Type of sponsor/funding body	Quarry
Name of sponsor/funding body	Needham Chalks (HAM) Ltd

Project archives

Physical Archive recipient	Suffolk County Council Archaeological Service
Physical Archive ID	BTM 060
Physical Contents	"Ceramics","Worked stone/lithics","other"
Digital Archive recipient	Suffolk County Council Archaeological Service
Digital Archive ID	BTM 060
Digital Contents	"Ceramics","Worked stone/lithics","other"
Digital Media available	"Database","Images raster / digital photography","Survey","Text"
Paper Archive recipient	Suffolk County Council Archaeological Service
Paper Archive ID	BTM 060
Paper Contents	"Ceramics","Worked stone/lithics","other"

Paper Media available	"Context sheet","Plan","Report","Section","Survey "

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Chalk Hill Quarry, Barton Mills, Suffolk, Archaeological Evaluation and Excavation Report
Author(s)/Editor(s)	Brooks, R.
Other bibliographic details	SACIC Report No. 2015/002
Date	2015
Issuer or publisher	SACIC
Place of issue or publication	Needham Market
Description	A4, comb bound, white covers, in colour.

Entered by	Rob Brooks (rob.brooks@suffolkarchaeology.co.uk)
Entered on	13 February 2015

OASIS:

Appendix 4. Trench soil profiles

Trench No	Width in m	Length in m	Orientation	Geology	Area	Topsoil depth in m	Depth to natural in m	Description, archaeological summary and soil profile
01	1.8	30	NNW-SSE	Sand, chalk and silt.		0.3	0.4	Plough soil, over a thin uneven layer of dark greyish-brown silty subsoil. Geology - yellow sand with chalk and gravel outcrops, and dark brown silty hollows in places. Subsoil filled hollows (very shallow) and one solution hollow (recorded as 0004).
02	1.8	30	ENE-WSW	Sand, chalk and silt.		0.36	0.52	Plough soil over subsoil (dark greyish-brown silt). Subsoil is thick in depth at the eastern end of the trench and has been largely ploughed into the topsoil at the western end (plough scars in the natural here too). Geology - yellow sand, chalk outcrops, gravel and brown silt. NA.
03	1.8	30	NNW-SSE	Sand, chalk and silt.		0.35	0.38	Plough soil over a thin layer of dark brown silty subsoil. Geology - yellow sand and silt, with degraded chalk outcrops. NA.
04	1.8	30	WSW-ENE	Chalk, sand and silt.		0.35	0.42	Plough soil over a thin layer of dark brown silty subsoil. Much of the subsoil has been ploughed into the topsoil and is very inconsistent in depth and extent. Geology - degraded clayey-chalk with reddish brown/yellow sand and silt areas. NA.
05	1.8	30	WSW-ENE	Chalk and silt.		0.38	0.4	Plough soil over a thin layer of dark brown silty subsoil. Subsoil barely present in much of the trench, especially the eastern half. Geology - mostly chalk/degraded chalk with red-brown/yellow silt. NA.
06	1.8	30	NNW-SSE	Chalk, clay, sand and silt.		0.28	0.32	Plough soil over dark brown silty subsoil. Subsoil has been ploughed into topsoil in most places (plough scars even truncate natural), meaning that the subsoil is only present as a thin, patchy layer. Tree root throw in northern end of trench. Geology - mostly chalk/chalky-clay, with dark red-brown/yellow sand and silt striations. NA.
07	1.8	30	WSW-ENE	Chalk, sand and silt.		0.32	0.46	Plough soil over subsoil as seen elsewhere. Subsoil is deeper in eastern end of trench. Tree root bowls in centre of trench (not recorded). NA.
08	1.8	30	NNW-SSE	Chalk, sand and silt.		0.36	0.4	Plough soil over subsoil as seen elsewhere, although subsoil is more of a patchy dark greyish-brown here. Geology - most chalk/degraded chalk with reddish-brown/yellow sand and silt. NA.

Trench No	Width in m	Length in m	Orientation	Geology	Area	Topsoil depth in m	Depth to natural in m	Description, archaeological summary and soil profile
09	1.8	30	WSW-ENE	Chalk, sand, silt and gravel.		0.32	0.37	Plough soil over subsoil as seen elsewhere. Geology - degraded chalk, red-brown sand/silt and flinty gravels. NA.
10	1.8	30	NNW-SSE	Sand, silt and chalk.		0.35	0.4	Plough soil over subsoil as seen elsewhere. Geology - pale brownish-reddish orange sand/silt with outcrops of degraded chalk. NA.
11	1.8	30	WSW-ENE	Chalk, silt and sand.		0.25	0.32	Plough soil over subsoil as seen elsewhere. Tree root bowl in centre of trench (photographed). Geology - chalk/degraded chalk with red/brown silt and sand. NA.
12	1.8	30	NNW-SSE	Chalk, sand and silt.		0.3	0.38	Plough soil over subsoil as seen elsewhere. NA.
13	1.8	30	WSW-ENE	Chalk, sand and silt.		0.36	0.38	Plough soil over subsoil as seen elsewhere. Geology - mostly chalk, with red brown sand/silt in glacial scars. NA.
14	1.8	30	NNW-SSE	Chalk, silt and sand.		0.32	0.4	Plough soil over subsoil (which varies in thickness) as seen elsewhere. Subsoil has been heavily damaged by natural - plough scars reach natural. Geology - mostly chalk/degraded chalk with reddish-brown silt/sand. Pit 0001 - sub-oval Bronze Age(?) feature at NNW end and depression 0005 at SSE end.
15	1.8	30	WSW-ENE	Chalk, sand and silt.		0.32	0.36	Plough soil over subsoil as seen elsewhere. NA.
16	1.8	30	NNW-SSE	Chalk, sand and silt.		0.3	0.34	Plough soil over sporadic subsoil as seen elsewhere. Plough scars in natural. Geology - chalk with red-yellow sand/silt filling glacial scars. NA.
17	1.8	30	WSW-ENE	Chalk, silt and sand.		0.32	0.42	Plough soil over subsoil as seen elsewhere, which decreases in depth towards the western end of the trench. NA.
18	1.8	30	NNW-SSE	Chalk, sand and silt.		0.39	0.39	Plough soil over traces/lenses of subsoil as seen elsewhere. Subsoil largely destroyed by ploughing (plough scars seen in natural), but still visible in a few places in the trench. NA.

Trench No	Width in m	Length in m	Orientation	Geology	Area	Topsoil depth in m	Depth to natural in m	Description, archaeological summary and soil profile
19	1.8	30	WSW-ENE	Chalk, sand and silt.		0.3	0.32	Plough soil over subsoil as seen elsewhere. Geology - chalk and degraded chalk with red-brown/yellow sand and silt filling glacial scars. NA.
20	1.8	30	NNW-SSE	Chalk, sand and silt.		0.32	0.4	Plough soil over subsoil as seen elsewhere. Geology - chalk with dark reddish-brown/yellow sand/silt pockets. NA.
21	1.8	30	WSW-ENE	Chalk, sand and silt.		0.32	0.4	Plough soil over subsoil as seen elsewhere. Geology - chalk/degraded chalk with red-yellow/brown sand/silt. NA.
22	1.8	30	NNW-SSE	Chalk, sand and silt.		0.3	0.36	Plough soil over subsoil as seen elsewhere. Geology - chalk with reddish-brown/yellow sand and silt. NA.
23	1.8	30	WSW-ENE	Chalk, flint gravels, sand and silt.		0.32	0.38	Plough soil over subsoil as seen elsewhere. Geology - chalk and flint gravels in yellow/red-brown sand and silt. Adjoins Trench 24. NA.
24	1.8	27	NNE-SSW	Silt, sand, chalk and gravel.		0.32	0.4	Trench very shallow and northern end (thin humic layer over natural - obviously truncated), but increasing in depth to south where a thin layer of disturbed silt subsoil sits beneath the plough soil. Geology - yellow/brown silts and sands with flint gravels and some degraded chalk. Adjoins Trench 23. Trench extended from 15m to 25m and moved 5m to SSW to avoid water main and to allow for shortening of Trenches 25 and 26. NA.
25	1.8	16	NNW-SSE	Chalk, gravel, sand and silt.		0.32	0.4	Plough soil over subsoil as seen elsewhere. Geology - degraded chalk, with flinty gravel and yellow/brown silt and sand deposits. Trench shortened to 15m (reduced at NNW end) to avoid water main. NA.
26	1.8	23.5	NNW-SSE	Chalk, sand and silt.		0.34	0.4	Plough soil over subsoil as seen elsewhere. Geology - chalk/degraded chalk with a few red/yellow sand and silt filled glacial scars. Shortened by 5m at NNW end to avoid water main. NA.

Appendix 5. Struck flint catalogue

Context	Type	No.	Patination	Notes
0002	Flake	1	p+	Heavily patinated flake
0007	Flake core	1	p	Multiplatform flake core, 3 separate striking platforms. slightly irregular w c. 30% cortex on faces.+ Later unpat. crude irreg. retouch
	blade core	1	p	Long blade core w additional unpat. retouch/damage. One end cortical
	Flake core	1	u	Core/shatterpiece, irregular, simple. c. 20% cortex present
	Flake core	1	u	Simple flake core, probably a natural flake w a few attempts at flake removal on edge
	Flake core	1	u	Small, irreg. multiplatform flake core. Remnants of poss. stained flake scars on 2 faces suggesting a much earlier piece was used.
	Flake core	1	u	Shatterpiece w a few long flakes removed. Made from poss. Lower Palaeo. 'rolled' and sl. stained flake core. (Lower Paleolithic)
	Flake core	1	sl p	Slightly patinated flake core, irregular, c. 20% cortex
	Shatter	1	u	Shatterpiece w a few irregular flakes removed. Made from an earlier large hammerstone
	Long flake	1	p+	Heavily pat.(white) long flake w parallel flake scars on dorsal face. no sign of retouch. 1 long edge cortical. (Paleolithic)
	Blade	1	p	Snapped blade w parallel blade scars on dorsal face
	Notched blade	1	l.p.	Blade w parallel blade scars on dorsal face +some unpat. edge retouch forming crude notches. Small amt of cortex
	Retouched flake	1	l.p.	Small flake w parallel flake scars on dorsal face+1 small unpat. flake scar on 1 edge. 10% cortex
	Retouched flake	1	p	Squat flake w unpat. flake scars on dorsal face & limited edge retouch. Small amt of cortex
	Flake	1	l.p.	light pat. on bulbar face, highly patinated on dorsal face, c. 70% cortex on dorsal face
	Flake	1	p	Hinge-fractured flake. Highly pat on Dorsal face, unpat on bulbar face. 50% cortex on dorsal face
	Notched blade	1	u	Blade w 2 ret. notches. parallel blade scars on dorsal face. 20% cortex on DF
	Retouched blade	1	u	Blade w lim. crude retouch on both long edges. c. 20% cortical on distal end
	Retouched flake	1	u	Irregular sub-triang. flake w limited edge retouch. off of a shatterpiece
	Retouched flake	1	u	Irregular flake w light crude edge retouch inc 2 broad notches. Distal end of dorsal face = c. 30% cortex
	Retouched flake	1	u	Irregular thick flake w natural striking platform & crude edge retouch. 30% cortex
	Retouched flake	1	u	Thick flake w. natural striking platform & limited edge retouch. 20% cortex
	Retouched flake	1	u	Hinge-fractured flake w limited crude edge retouch & natural striking platform. 40% cortex on dorsal face
	Retouched flake	1	u	Irregular flake w limited edge retouch. 20% cortex on dorsal face
	retouched flake	1	u	Squat flake w sub-rectangular x-section.Crude retouch. Also shows small pat. flake scar from earlier piece.Small amt of cortex
	Retouched flake	1	u	Squat flake w hinge fracture and limited edge retouch. Small amt of cortex
	Flake	1	u	very small flake/spall
	Retouched flake	1	u	Snapped flake w central platform. slight retouched notch on 1 edge & limited edge retouch on opposite edge. Waste from platform gun flint production?
	Retouched flake	1	u	snapped distal end of flake. Limited edge retouch on distal end. Cortex on 1 face. (gunflint production waste?)
	Notched flake	1	u	Natural flint w unpat. retouch forming smalll notch
	Notched flake	1	p	Sub-triangular flake w 2 large unpatinated broad notches
0024	Shatter	1	u	Shatterpiece w a few irregular flakes removed (LBA-IA?)
	Shatter	1	u	Shatterpiece w a few irregular flakes removed (LBA-IA?)

	Shatter	1	u	Shatterpiece w a few irregular flakes removed, Cortex on one surface (LBA-IA?)
	Shatter	1	u	Shatterpiece w a few irregular flakes removed, Cortex on one surface (LBA-IA?)
	Shatter	1	lp	Shatterpiece from possible hammerstone
	Flake	1	lp	Thick flake with recent damage, Cortex on one side
	Flake	1	u	Possible thinning flake from tool production, parallel flake scars on two dorsal sides, neo
	Shatter, natural	1	p	Natural shatter with edge working
	Flake	1	p+	Heavily pat.(white) broken long flake w parallel flake scars on dorsal face. no sign of retouch. No cortex. (Palaeolithic)

Key: u = unpatinated, p = patinated, p+ = heavily patinated, lp = lightly pat., sl p = slightly patinated

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