

**Archaeological Watching Brief Report
Former Saltpetre Refinery, Blacksmith Lane
Chilworth, Surrey**

NGR 502400 147400



**Guildford Borough Council Planning References
10/P/00201 and 10/P/00202**

**ASE Project No: 4915
Site Code: SRC11**

**ASE Report No: 2012047
OASIS ID: archaeol6-119457**

**By
Simon Stevens BA MIFA**

March 2012

**Archaeological Watching Brief Report
Former Saltpetre Refinery, Blacksmith Lane
Chilworth, Surrey**

NGR 502400 147400

**Guildford Borough Council Planning References
10/P/00201 and 10/P/00202**

**ASE Project No: 4915
Site Code: SRC11**

**ASE Report No: 2012047
OASIS ID: archaeol6-119457**

**By
Simon Stevens BA MIFA**

March 2012

**Archaeology South-East
Units 1 & 2
2 Chapel Place
Portslade
East Sussex
BN41 1DR**

**Tel: 01273 426830
Fax: 01273 420866
Email: fau@ucl.ac.uk**

Abstract

Archaeology South-East was commissioned by Elsmore Construction to undertake an archaeological watching brief during the redevelopment of a former saltpetre refinery at Blacksmith Lane, Chilworth, Surrey. The site once formed part of the Chilworth Gunpowder Mill, a Scheduled Ancient Monument, but lies outside of the scheduled area.

No significant archaeological deposits, features or finds were recorded during the monitoring of test pits, bore holes, pipe trench, soakaway pits and of areas of ground reduction.

CONTENTS

- 1.0 Introduction**
- 2.0 Archaeological Background**
- 3.0 Archaeological Methodology**
- 4.0 Results**
- 5.0 Discussion and Conclusions**

Bibliography
Acknowledgements

HER Summary Sheet
OASIS Form

TABLES

Table 1: Quantification of site archive

FIGURES

- Figure 1: Site location
- Figure 2: Plan of monitored areas
- Figure 3: Photographs
- Figure 4: Photographs

1.0 INTRODUCTION

1.1 Site Background

1.1.1 Archaeology South-East (ASE), a division of the Centre for Applied Archaeology (CAA), Institute of Archaeology (IoA), University College London (UCL) was commissioned by Elsmore Construction to undertake an archaeological watching brief during the redevelopment of a former saltpetre refinery at Blacksmith Lane, Chilworth, Surrey (NGR 502400 147400; Figure 1).

1.2 Topography and Geology

1.2.1 The site is located to the north of the main axis of the village of Chilworth (which straddles the A248 Dorking Road). It lies at a height of c.45m AOD to the west of Blacksmith Lane, on the southern bank of the Tilling Bourne, a tributary of the River Wey. There are industrial units immediately to the south, Blacksmith Lane to the east, and the garden of a substantial house named *Gresham* to the west. The site is approached by a lane fronted by a group of cottages.

1.2.2 According to current data from the British Geological Survey the underlying bedrock is the Atherfield Clay Formation of mudstone. The superficial geology at the site consists of head deposits of clay, silt sand and gravel, with alluvium immediately to the north (BGS 2012).

1.3 Planning Background

1.3.1 Planning permission was granted by Guildford Borough Council for the demolition of the existing buildings (referred to as Units 1 and 2), and for subsequent residential redevelopment at the site in 2010 (planning refs. 10/P/00201 and 10/P/00202). Following consultation between Guildford Borough Council and Tony Howe, Senior Archaeologist, Heritage Conservation Group, Surrey County Council (Guildford Borough Council's adviser on archaeological issues), a condition was attached to the permission requiring that:

'No development shall take place until the applicant has secured the implementation of a programme of archaeological work in accordance with a Written Scheme of Investigation which has been submitted by the applicant and approved in writing by the Local Planning Authority.'

Reason: To ensure that the archaeological importance of the site is properly recorded in accordance with policies HE9 and HE11 of the Guildford Borough Local Plan 2003 (as saved by CLG Direction on 24-09-07).'

1.3.2 The current report provides results of one element of the archaeological work, the implementation of an archaeological watching brief during groundworks at the site. A *Written Scheme of Investigation* (WSI) was produced by ASE (ASE 2011a) outlining the scope of the work and providing details of reporting and archiving of results.

1.4 Aims and Objectives

1.4.1 The aims stated in the *Written Scheme of Investigation (ibid.)* were:

'in general to identify and record any archaeological remains uncovered during the machine excavations.

More specifically the aims of the investigation are:

To identify and record any remains related to earlier uses of the site, including early gunpowder production, which is known to have occurred in the vicinity from the 17th century onwards. It has been suggested (ASE 2003) that ancillary structures associated with gunpowder production may have been located within the proposal area.

From the 18th and 19th centuries it is known from cartographic evidence that substantial buildings relating to gunpowder manufacture did occupy the site. No known remains from this period survive as above-ground features, although it is almost certain that remains of these structures survive as archaeological deposits within the site. This appears to be confirmed by limited archaeological test-pitting of the site.'

1.5 Scope of Report

1.5.1 The current report provides results of the archaeological monitoring of groundworks at the site carried between 2nd August 2011 and 15th February 2012. The on-site work was undertaken by Giles Dawkes, Richard James, Andy Margetts, Simon Stevens and Amy Williamson (Senior Archaeologists). The project was managed by Jon Sygrave (Project Manager) and by Jim Stevenson (Post-Excavation Manager).

2.0 ARCHAEOLOGICAL BACKGROUND

2.1 Introduction

- 2.1.1 Previous investigation of the site includes desk-based assessments (DBAs) (ASE 2003 and Gifford 2005) and monitoring of test-pitting, which revealed no deposits of any archaeological significance (ASE 2009). Subsequently, an archaeological impact assessment was carried out (Nexus Heritage, 2009), followed by detailed recording of buildings (Units 1 and 2) prior to their demolition (ASE 2011b)
- 2.1.2 The following background is taken largely from the desk-based assessment prepared by Archaeology South-East (ASE 2003), as summarised in the WSI (ASE 2011a).

2.2 Prehistoric

- 2.2.1 Settlement in the upland parts of Surrey in the prehistoric period was sparse until the Iron Age, when farmsteads began to be established across the chalk upland. The Surrey County Council Historic Environment Record (SCCHER) records nine entries of prehistoric date within 1km of the site. These include an assemblage of Mesolithic flints found 200m east of the site, and eight other entries from the summit and southern slopes of St. Martha's Hill. An archaeological evaluation of a 17th century mill site further up the valley at Postford Mill, Albury, revealed earlier surviving features suggestive of a prehistoric date.

2.3 Romano-British

- 2.3.1 Five Roman entries are listed on the Surrey HER within 1km of the site. Three of these refer to find-spots of Roman pottery and coins; the remaining two are represented by cremation burials, one on Tangley Hill to the south, and the other on St. Martha's Hill to the north.

2.4 Anglo-Saxon

- 2.4.1 Settlement at this time is likely to have been dispersed, although the place-name is itself of Saxon origin, appearing as *Celeorde* in Domesday. There is one Anglo-Saxon entry listed on the Surrey HER represented by a 5th-6th century pot found on St. Martha's Hill.

2.5 Medieval

- 2.5.1 Settlement remained dispersed throughout the area during the medieval period. Comprising an isolated church on St. Martha's Hill, situated by a ridgeway and surrounded by isolated farmsteads and townships. Other than the church, there are only three other sites listed for the period in the Surrey HER within 1km of the site. These include a moated site thought to be the site of Shalford Manor, the site of an Augustinian Priory cell at Chilworth Manor, and an assemblage of brick and tile rubbish from around the parish church.

2.5.2 The Conservation Area Appraisal (Guildford Borough Council 2008) notes that although the area is best known for its gunpowder milling history, records of milling corn and fulling can be traced to the Domesday Book of 1086: nine mills pre-dating 1500 can be identified in the area and many others sprung up in the vicinity from the 16th century onwards.

2.6 Post-Medieval

2.6.1 The Surrey HER has four post-medieval entries for the area, one of which refers to the gunpowder works which are discussed further below. The other concern plantation rings on St. Martha's Hill, Chilworth Manor and Chilworth Mill, a building used successively for corn milling, gunpowder production, paper-making and finally printing before being destroyed by fire in 1896.

2.7 Chilworth Gunpowder Mills

2.7.1 Gunpowder production at Chilworth was established by the East India Company in 1626. Production began with the conversion of a disused corn mill and fulling mill, probably on the site of Chilworth Mill, at the point where Blacksmith Lane crossed the Tilling Bourne. Further mills were built to the west of the lane as the works expanded, utilising a leat which had formerly supplied an illegal wireworks. In 1635 the mills were sold on to a government contractor, by which time the mills at Chilworth had become the only authorised gunpowder maker in England.

2.7.2 By 1677 the works had expanded to both sides of Blacksmith Lane, with the area to the west (occupied by the site) known as the Lower Works. Seven mills were listed at this time in the Lower Works, of which five lay along the leat. By the early 19th century the main manufacturing centre of the works now focussed on the Middle Works, east of Blacksmith Lane, with the Lower Works used for the processing and storage of ingredients.

2.7.3 Further expansion of the works took place in the 1880s, when modernisation of the works under the auspices of the Chilworth Gunpowder Company. New steam-powered incorporating mills were constructed in the manufacturing area east of Blacksmith Lane. The processing area west of Blacksmith Lane also received new buildings at this time, or shortly before, including a saltpetre refining house (Unit 2). A new works tramway was also built at this date, the earliest metric gauge (800mm) tramway in Britain. The works closed in 1920.

2.7.4 A plan produced for a sale in 1922, but believed to date from before 1888 lists Unit 2 as having comprised: Saltpetre refinery, Engineer's and Carpenters' Shops, Meal Room and Wash House. A building in the location of present Unit 1 (remnants of which may survive incorporated in the north wall) was listed as: Carpenters' and Coopers Shops.

3.0 ARCHAEOLOGICAL METHODOLOGY

(Figure 2)

- 3.1 The mechanical and manual excavation of the test-pits, bore holes, a service trench, soakaway pits and of areas of ground reduction were monitored in accordance with the methodology outlined in the WSI (ASE 2011a). The foundations for the houses were piled, and Tony Howe, Senior Archaeologist, Heritage Conservation Team, Surrey County Council agreed that this process did not require archaeological monitoring; email dated 23rd November 2011.
- 3.2 All sections were examined for the presence of archaeological features, and all spoil was scanned for the presence of archaeological artefacts.
- 3.3 All encountered archaeological deposits, features and finds were recorded to accepted professional standards using standard Archaeology South-East recording forms. Deposit colours were recorded by visual inspection and not by reference to a Munsell Colour chart.
- 3.4 A full photographic record of the work was kept and will forms part of the site archive which is currently held by Archaeology South-East in Portslade, and will be deposited in Guildford Museum in due course under the Accession No. AG.24260. The archive consists of the following material:

Number of Contexts	16
No. of files/paper record	1
Plan and sections sheets	-
Bulk Samples	-
Photographs	19 digital photos 20 b&w prints 15 colour slides
Bulk finds	-
Registered finds	-
Environmental flots/residue	-

Table 1: Quantification of site archive

4.0 RESULTS

(Figures 2, 3 and 4)

4.1 Introduction

4.1.1 The first recorded on-site archaeological monitoring was carried out during the mechanical excavation of five geo-archaeological test pits at the site in October 2009 (numbered 1 to 5 in grey on Figure 2). No significant archaeological remains were recorded (ASE 2009). The buildings at the site (Units 1 and 2) were recorded prior to demolition in June 2011 (ASE 2011a).

4.2 Further Test Pits

Context Number	Type	Description	Max. Deposit Thickness
131	Layer	Tarmac & Make-Up	300mm
132	Layer	Redeposited Natural	>200mm
133	Layer	Concrete & Make-Up	250mm
134	Layer	Made Ground	>300mm

4.2.1 The mechanical excavation of two test pits (6 and 7) was monitored during early August 2010. Both were shallow (500mm and 550mm deep respectively) and revealed simple stratigraphic sequences.

4.2.2 Test Pit 6 contained two recorded deposits; a tarmac surface and associated brick rubble make-up, context [131], which were directly above redeposited 'natural' yellow sandy gravel, context [132].

4.2.3 Test pit 7 contained two recorded contexts; a concrete surface and associated make-up, context [133] which overlay a deposit of dark brown sandy silt made ground/service trench backfill, context [134].

4.3 Ground Reduction

Context Number	Type	Description	Max. Deposit Thickness
128	Layer	Concrete	250mm
129	Layer	Make-Up	-
135	Masonry	Concrete ?Footing	450mm
136	Cut	Concrete ?Footing	-

4.3.1 A triangular area to the immediate south-east of Unit 1 was mechanically reduced with archaeological monitoring in September 2011. Only the concrete slab (encountered in adjacent test pit No. 5 excavated in 2009) was removed (ASE 2009, context 128) to reveal the underlying made ground (*ibid.* context 129). However a concrete foundation was encountered and recorded.

4.3.2 Masonry [135] was 1.5m long, 150mm wide and 450mm in depth and ran from south-west to north-east, parallel to the walls of Unit 1 (and Unit 2). It consisted entirely of concrete apparently poured into a trench excavated into context [129], recorded as cut [136]. Excavation was halted owing to the presence of live services.

4.4 Service Trench

Context Number	Type	Description	Max. Deposit Thickness
201	Layer	Tarmac	110mm
202	Layer	Make-Up	700mm
203	Layer	Made Ground	>100mm
204	Layer	Concrete	150mm
208	Layer	Tarmac	90mm
209	Layer	Make-Up	210mm
210	Layer	Terram Sheet	<10mm

- 4.4.1 The mechanical and manual excavation of a new service trench leading from Unit 1 to Blacksmith Lane along the access lane was monitored on visits to the site between September 2011 and February 2012. The trench was excavated to a width of 300mm and to a maximum depth of 800mm.
- 4.4.2 Close to Unit 1 the stratigraphic sequence revealed in the trench consisted of the tarmac surface, context [201], which overlay a mixed deposit consisting of brick rubble and garden soil, context [202], which in turn overlay a deposit of orangey brown clay containing occasional brick rubble, context [203], presumably redeposited 'natural' clay. Much of the extent of the trench appeared to follow a previously excavated service trench.
- 4.4.3 As the trenching work proceeded eastwards, some parts of the access lane were found to be surfaced in concrete, context [204], but with similar underlying deposits. Only close to Blacksmith Lane, and corresponding with the extent of the car-park on the southern side of the access road was there a marked change, associated with recent resurfacing; surface tarmac of 'fresher' character, context [208], over Type 1 roadstone, context [209], laid on a Terram Sheet, context [210], overlying make-up deposit, context [202].
- 4.4.4 Soakaway pit 2 excavated adjacent to the service trench confirmed this sequence.

4.5 Demolition of Units 1 and 2

Context Number	Type	Description	Max. Deposit Thickness
205	Layer	Concrete	600mm
206	Layer	Made Ground	300mm
207	Masonry	Brick Footing	-

- 4.5.1 A full photographic record of the demolition of Units 1 and 2 in September and October 2011 was kept at the request of Tony Howe, Senior Archaeologist, Heritage Conservation Team, Surrey County Council, and will be included in the site archive.
- 4.5.2 In addition, the removal of a concrete slab forming the foundation of Unit 1 was also monitored. It consisted of a slab which thickened at the edges of the former building to form a footing, context [205]. It overlay a deposit of made ground incorporating charcoal and ash, context [206]. It is possible that this deposit was associated with the refining of saltpetre at the site, but this

cannot be proven.

- 4.5.3 The only other deposit encountered was a stretch of 600mm wide frogged brick masonry bonded with a grey sandy mortar, which ran from north-east to south-west across the monitored area (parallel to the walls of the demolished building), recorded as masonry [207]. The full extent of this was not revealed in the groundworks.

4.6 Soakaway Pits

- 4.6.1 The mechanical excavation of two soakaway pits was monitored in February 2012. Soakaway Pit 1 was excavated in the north-western part of the site and measured 2m by 1m by 800mm in depth. The only deposits encountered were brick rubble, context [202], and redeposited 'natural', context [132].
- 4.6.2 Soakaway Pit 2 was excavated towards the entrance to the site. It was of similar size to Soakaway Pit 1 and contained the same deposits as the adjacent pipe trench, with heavily truncation from services.

4.7 Monitoring of Bore Holes

- 4.7.1 Three bore holes were monitored at the site in October 2011. The upcast from these interventions confirmed the presence of made ground over the investigated areas of the site, usually in excess of 2m in depth.

5.0 DISCUSSION AND CONCLUSIONS

- 5.1 No significant archaeological deposits, features or finds were recorded during the monitoring of the various groundworks at the site. Although the deposit of charcoal and ash encountered below the concrete floor of Unit 1 may be waste from the saltpetre refining process, this cannot be proven.
- 5.2 Similarly, the short stretches of masonry (both frogged brick and concrete) encountered during the watching brief could not be firmly dated, but appeared relatively recent in construction, and therefore probably post-date the use of the site as part of the Chilworth Gunpowder Mill.
- 5.3 Monitoring of the bore holes confirmed the presence of deep deposits of undated made ground across the site, as seen in all of the other monitored groundworks.

BIBLIOGRAPHY

ASE 2003. *An Archaeological Desk-Based Assessment of the Titan Sheds, Blacksmith Lane, Chilworth, Surrey*, Unpub. ASE Report No. 1647

ASE 2009. *A Summary Report on an Archaeological Watching-Brief at Titan Shed, Blacksmith Lane, Chilworth, Surrey* Unpub. ASE Report No. 4077

ASE 2011a. *Former Saltpetre Refinery, Blacksmith Lane, Chilworth, Surrey Historic Building Recording (EH Level 2/3) & Archaeological Watching Brief Written Scheme of Investigation*. Unpub. ASE document

ASE 2011b. *Buildings at Blacksmith Lane, Chilworth, Surrey, GU4 8NQ*. Unpub. ASE Report No. 2011135

BGS 2011. British Geological Survey, Geology of Britain Viewer, accessed 16.02.2012 http://maps.bgs.ac.uk/geologyviewer_google/googleviewer.html

Gifford 2004 *Titan Sheds, Chilworth: An Archaeological Desk-Based Assessment Report 11700.R03/TM*

Guildford Borough Council, 2008. *Chilworth Gunpowder Mills Conservation Area Appraisal Study and Character Appraisal*. Unpub. document

Nexus Heritage 2009 *Chilworth: Archaeological Impact Assessment Report 3027-R01*

ACKNOWLEDGEMENTS

ASE would like to thank Sim Richards of Elsmore Construction for commissioning the work and for his understanding on-site. Thanks are also due to Tony Howe, Senior Archaeologist, Heritage Conservation Team, Surrey County Council for his guidance throughout the project.

HER Summary Form

Site Code	SRC11					
Identification Name and Address	Former Saltpetre Refinery, Blacksmith Lane, Chilworth, Surrey					
County, District &/or Borough	Guildford Borough, Surrey					
OS Grid Refs.	NGR 502400 147400					
Geology	Head Deposits over Atherfield Clay					
ASE Project Number	4915					
Type of Fieldwork	Eval.	Excav.	Watching Brief ✓	Standing Structure	Survey	Other
Type of Site	Green Field	Shallow Urban	Deep Urban	Other <i>Former Saltpetre Refinery</i>		
Dates of Fieldwork	Eval.	Excav.	WB. 2.08.2011 – 15.02.2012	Other		
Sponsor/Client	Elsmore Construction					
Project Manager	Jon Sygrave/Jim Stevenson					
Project Supervisor	Simon Stevens					
Period Summary	Palaeo.	Meso.	Neo.	BA	IA	RB
	AS	MED	PM	Other <i>None</i>		
<p>Archaeology South-East was commissioned by Elsmore Construction to undertake an archaeological watching brief during the redevelopment of a former saltpetre refinery at Blacksmith Lane, Chilworth, Surrey. The site once formed part of the Chilworth Gunpowder Mill, a Scheduled Ancient Monument, but lies outside of the scheduled area.</p> <p>No significant archaeological deposits, features or finds were recorded during the monitoring of test pits, bore holes, pipe trench, soakaway pits and of areas of ground reduction.</p>						

OASIS Form

OASIS ID: archaeol6-119457

Project details

Project name	An Archaeological Watching Brief at the Former Saltpetre Refinery, Blacksmith Lane, Chilworth, Surrey
Short description of the project	Archaeology South-East was commissioned by Elsmore Construction to undertake an archaeological watching brief during the redevelopment of a former saltpetre refinery at Blacksmith Lane, Chilworth, Surrey. The site once formed part of the Chilworth Gunpowder Mill, a Scheduled Ancient Monument, but lies outside of the scheduled area. No significant archaeological deposits, features or finds were recorded during the monitoring of test pits, bore holes, pipe trench, soakaway pits and of areas of ground reduction.
Project dates	Start: 02-08-2011 End: 15-02-2012
Previous/future work	Yes / Not known
Any associated project reference codes	4915 - Contracting Unit No.
Any associated project reference codes	SRC11 - Sitecode
Any associated project reference codes	10/P/00201/2 - Planning Application No.
Type of project	Recording project
Site status	Local Authority Designated Archaeological Area
Site status	Conservation Area
Current Land use	Industry and Commerce 1 - Industrial
Monument type	NONE None
Significant Finds	NONE None
Investigation type	'Watching Brief'
Prompt	Direction from Local Planning Authority - PPS

Project location

Country	England
Site location	SURREY GUILDFORD SHALFORD Former Saltpetre Refinery, Chilworth
Postcode	GU4 8NQ
Study area	1.00 Hectares

Site coordinates TQ 024 474 51.2160850074 -0.533682578182 51 12 57 N
000 32 01 W Point

Height OD / Depth Min: 42.00m Max: 45.00m

Project creators

Name of Organisation Archaeology South-East

Project brief originator Surrey County Council

Project design originator Archaeology South-East

Project director/manager Jon Sygrave/Jim Stevenson

Project supervisor Simon Stevens

Type of sponsor/funding body client

Name of sponsor/funding body Elsmore Construction

Project archives

Physical Archive Exists? No

Physical Archive recipient Guildford Museum

Physical Archive ID AG.24260

Digital Archive recipient Guildford Museum

Digital Archive ID AG.24260

Digital Contents 'other'

Digital Media available 'Images raster / digital photography','Text'

Paper Archive recipient Guildford Museum

Paper Archive ID AG.24260

Paper Contents 'other'

Paper Media available 'Context sheet','Miscellaneous Material','Notebook - Excavation',' Research',' General Notes','Report','Unpublished Text'

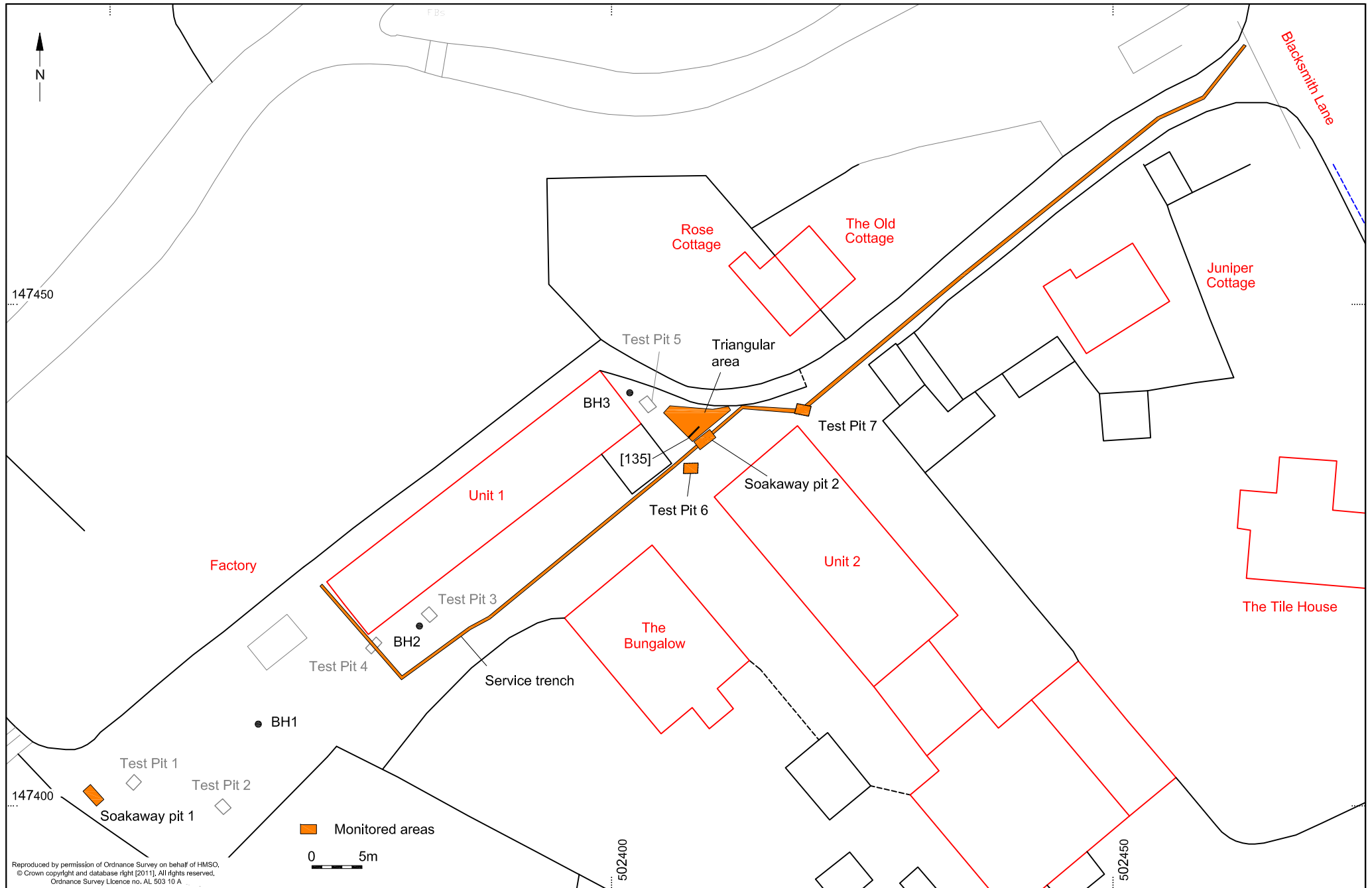
**Project
bibliography 1**

Publication type	Grey literature (unpublished document/manuscript)
Title	An Archaeological Watching Brief at the Former Saltpetre Refinery, Blacksmith Lane, Chilworth, Surrey
Author(s)/Editor(s)	Stevens, S.
Other bibliographic details	ASE Report No. 2012047
Date	2012
Issuer or publisher	Archaeology South-East
Place of issue or publication	Portslade, East Sussex
Description	ASE Client report. A4-sized with cover logos.
Entered by	Dan Swift (d.swift@ucl.ac.uk)
Entered on	6 March 2012



© Archaeology South-East		Former Saltpetre Refinery, Blacksmith Lane, Chilworth	
Project Ref: 4915	Feb 2012	Site location	
Report Ref: 2012047	Drawn by: JLR		

Fig. 1



Reproduced by permission of Ordnance Survey on behalf of HMSO.
 © Crown copyright and database right (2011). All rights reserved.
 Ordnance Survey Licence no. AL 503 10 A

© Archaeology South-East		Former Saltpetre Refinery, Blacksmith Lane, Chilworth		Fig. 2
Project Ref: 4915	Feb 2012	Plan of monitored areas		
Report Ref: 2012047	Drawn by: JLR			



Ground reduction of triangular area with concrete footing [135]



Concrete footing [135]



South east facing section of south eastern end of service trench cut parallel to Unit 1



Service trench with Unit 1 in background left (looking north east)



Test pit 6



Test pit 7



Soakaway 1 facing west



Soakaway 2 facing north



Northern end of service trench (looking north east)



Removal of slab in Unit 1 showing masonry wall [207]

Head Office
Units 1 & 2
2 Chapel Place
Portslade
East Sussex BN41 1DR
Tel: +44(0)1273 426830 Fax: +44(0)1273 420866
email: fau@ucl.ac.uk
Web: www.archaeologyse.co.uk



London Office
Centre for Applied Archaeology
Institute of Archaeology
University College London
31-34 Gordon Square, London, WC1 0PY
Tel: +44(0)20 7679 4778
Fax: +44(0)20 7383 2572
Web: www.ucl.ac.uk/caa

The contracts division of the Centre for Applied Archaeology, University College London 

©Archaeology South-East