



**Archaeological observation, investigation
and recording for remediation
works at the former gasworks site
Towcester Road, Northampton
July-September 2014**

Report No. 14/208

Author: Anne Foard-Colby

Illustrator: James Ladocha



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OASIS REPORT FORM

PROJECT DETAILS		Oasis No. molanort1-195624	
Project title	Archaeological observation, investigation and recording for remediation works at the former gasworks site, Towcester Road, Northampton, July-September 2014		
<p>A watching brief was undertaken for remediation works at the former gasworks site on Towcester Road, Northampton. The circular brick foundation walls of two gasholders, an associated brick building and various large cast iron pipes of the 19th and 20th-century gasworks were observed during excavations to decontaminate the ground. No evidence of earlier archaeological features or finds was present. Small areas of natural uncontaminated ground were present at the north end of the site. Much of the site was subject to extensive contamination by tar below the gasholders and the associated buildings.</p>			
Project type	archaeological watching brief		
Site Status	none		
Previous work	archaeological desk-based assessment (Thomson 2013)		
Current land use	former gasworks site with large areas of concrete slab		
Future work	unknown		
Monument type and period	19th and 20th-century gasworks		
Significant finds	n/a		
PROJECT LOCATION			
County	Northamptonshire		
Site address	Towcester Road, Northampton		
Post code	n/a		
OS co-ordinates	NGR SP 7508 5998		
Area (sq m/ha)	2.04ha		
Height aOD	c59-60m aOD		
PROJECT CREATORS			
Organisation	MOLA Northampton		
Project brief originator	Lesley-Anne Mather, Northamptonshire County Council Planning		
Project Design originator	Jim Brown, MOLA		
Director/Supervisor	Simon Markus, MOLA		
Project Managers	Jim Brown, MOLA		
Sponsor or funding body	Celtic Ltd		
PROJECT DATE			
Start date	3 July 2014		
End date	25 September 2014		
ARCHIVES	Location (Accession no.)	Contents	
Physical	MOLA Northampton store ENN107716	None	
Paper		Site records	
Digital		Report, photographs, survey data	
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report (MOLA report)		
Title	Archaeological observation, investigation and recording for remediation works at the former gasworks site Towcester Road, Northampton, July-September 2014		
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Author(s)	Anne Foard-Colby		
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**Archaeological observation, investigation and recording for
remediation works at the former gasworks site
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Abstract

A watching brief was undertaken for remediation works at the former gasworks site on Towcester Road, Northampton. The circular brick foundation walls of two gasholders, an associated brick building and various large cast iron pipes of the 19th and 20th-century gasworks were observed during excavations to decontaminate the ground. No evidence of earlier archaeological features or finds was present. Small areas of natural uncontaminated ground were present at the north end of the site. Much of the site was subject to extensive contamination by tar below the gasholders and the associated buildings.

1 INTRODUCTION

MOLA was commissioned by Celtic Ltd to carry out observation, investigation and recording at the former gasworks site, Towcester Road, Northampton, Northamptonshire (NGR SP 7508 5998; Fig 1). The work was undertaken following consultation with the archaeological advisors to Northampton Borough Council. Discussions with the County Archaeological Planning Advisor formed the basis for a Written Scheme of Investigation, which was approved in advance of the remediation (Brown 2014).

All works were undertaken in accordance with current best archaeological practice as defined in the Institute for Archaeologists' *Standard and guidance for archaeological watching brief* (IfA 2008; 2014), the procedural documents *Management of Archaeological Projects (MAP2)* and *Management of Research Projects in the Historic Environment (MoRPHE)* (EH 1991; 2006; 2008).

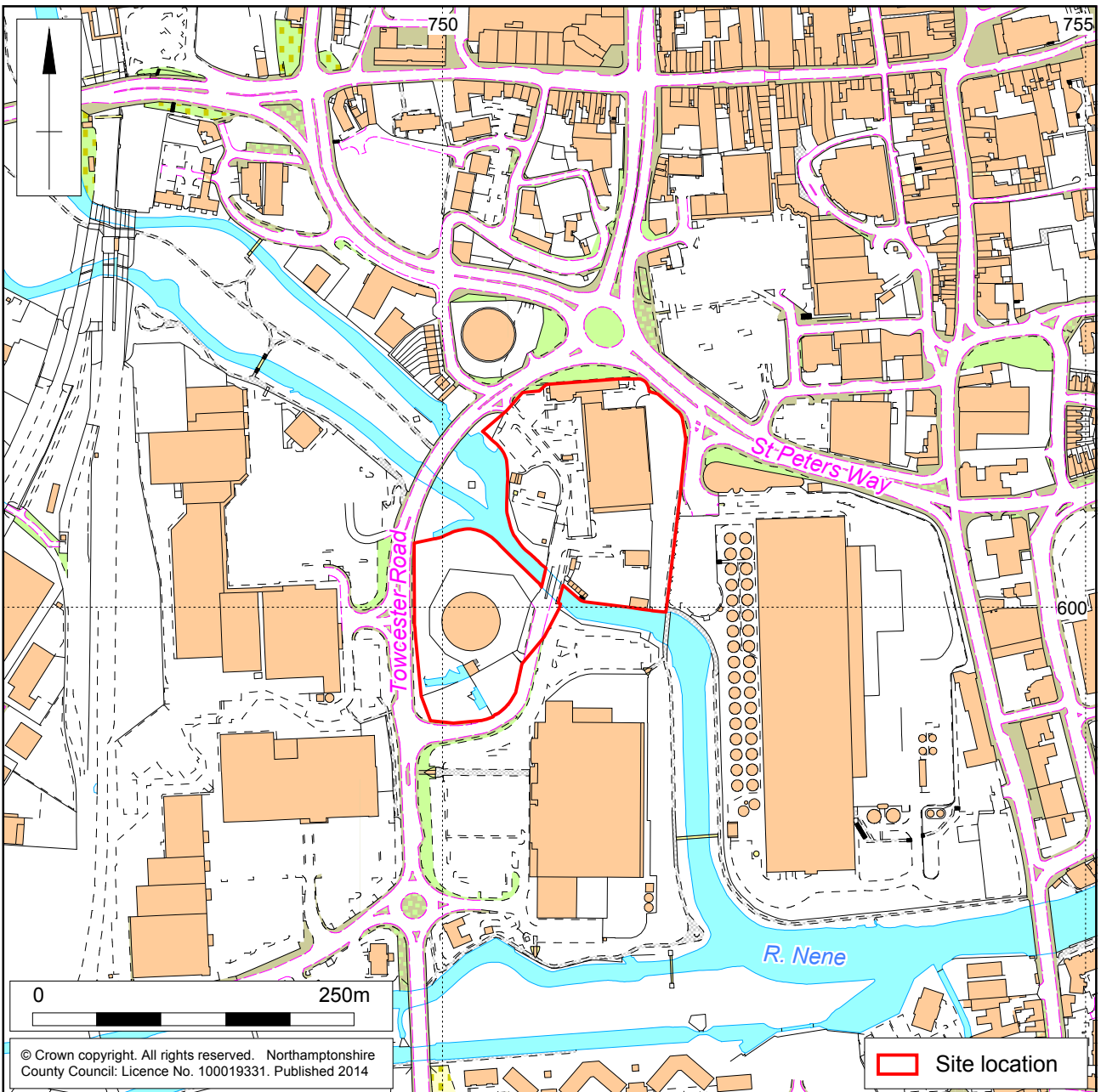
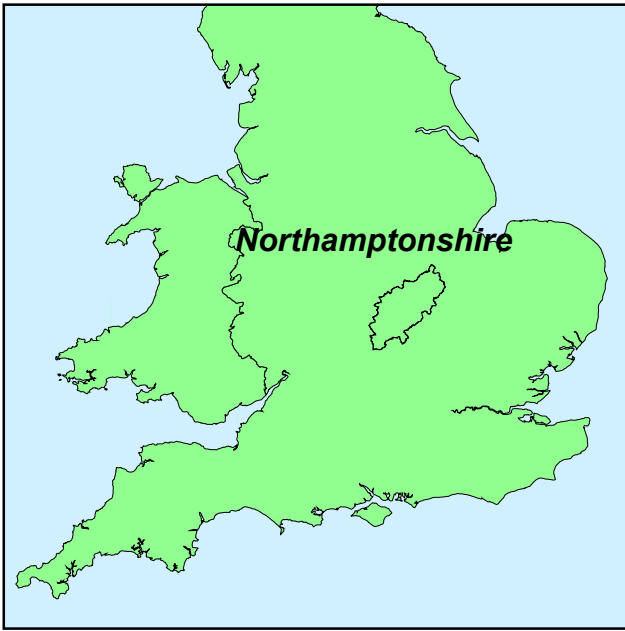
2 BACKGROUND

2.1 Archaeological background

No previous archaeological work has been undertaken within the development site. The site lies adjacent to a development zone, which was the subject of archaeological desk-based assessment by Northamptonshire Archaeology, now part of MOLA (Walker 2011).

There is a considerable body of work regarding the historical development of this part of town. A summary of registered historic assets was assessed during the preliminary desk-based work for the current site (Thomson 2013):

- Few prehistoric remains have been found in the vicinity of the site, a Neolithic polished stone axe was found from within the site boundary.



Scale 1:5,000

Site location Fig 1

- A possible Romano-British road forded the river to the north-west. Another possible crossing may have been within the present site. Romano-British occupation and funerary remains were identified on the slopes to the north of the river.
- Saxon tenements lay to the north of the site, near the roundabout along St Peters Way. Occupation may have extended towards the river forming a suburb on the slopes to the south of St Gregory's Church (former medieval church, no longer in existence).
- A Scheduled Monument (SM201) lies to the north, which comprises the Saxon palace complex and Saxon and medieval urban deposits in the vicinity of St Peters Church.
- The site of Northampton Castle lay upstream to the west on the north bank of the river (Chapman 1984). The town defences, which include a substantial ditch and embanked earthwork, were identified at Green Street leading south-east towards the former gasworks (Chapman 1998-9).
- Metalled road surfaces and tenements of the later medieval and post-medieval periods were identified along St Peters Way, to the north of the site, and within the defensive perimeter of the medieval town. These remains included both domestic and industrial activity.
- Later post-medieval industrial activity and associated residential developments lay on the north bank of the River Nene and are mapped from 1610 onwards, including the site of a watermill, immediately outside the west boundary of the site. Extensively modified watercourses are also mapped together with the development of the gasworks from 1847 onwards.

A number of archaeological investigations have taken place in the local vicinity of the site, which has indicated the high potential of the locality. There has been variable preservation owing to the impact of previous development on different plots of land.

Table 1: Previous archaeological work in the vicinity

Year	Title
1982	Excavations on a Saxon and Medieval Site at Black Lion Hill, Northampton (Shaw 1985)
1995-6	Excavation of the Town Defences at Green Street, Northampton (Chapman 1998-9)
1973-6	St Peter's Street, Northampton, <i>excavation</i> (Williams 1979)
1983	The excavation of a late 15th-17th century tanning complex at The Green, Northampton (Shaw 1996)
1995	An archaeological assessment of land at Green Street, Northampton (NA 1995)
1998	Wollaston Motors, St Peter's Way, Northampton: Archaeological desk-based survey (NA 1998)
1987	Evaluation at St Peter's Way (Shaw 1988)
2005	The Old Maltings and former St Mark's Church, Green Street, Northampton, <i>desk-based assessment</i> (Lowe 2005)
2005	The Old Maltings and former St Mark's Church, Green Street, Northampton, <i>evaluation</i> (Pine 2005)
2001-2	Northamptonshire Watermills Survey
2012	Archaeological evaluation of the concourse at Northampton Castle Station (Chapman 2012)
2013	Excavations at Northampton Castle Station (Chapman, forthcoming)

A crossing of the river may have passed through the site, which could date from as early as prehistoric times. Saxon or medieval deposits are possible relating to the use of the land beside the River Nene, which may have been open ground adjacent to the medieval defences. The defences themselves are believed to pass through the north of the site. Post-medieval modifications along the waterway are highly likely, particularly those relating to the 17th-century watermill immediately adjacent to the site. The gasworks represent a significant development in the 19th-century history of the town, making the gas tanks and holders a subject of recording in their own right.

2.2 Historic Environment Record Data

The desk-based assessment (Thomson 2013) identified a number of Historic Environment Record (HER) references within the development area. The results of the HER data search:

Table 2: Historic Environment Record data

Period	HER ref.	Description
Prehistoric	7212/0/0	Prehistoric polished stone axe
Roman	5198	Possible RB road route
Roman	5198/1	Possible RB road route
Roman	5198/01/01	Possible RB road route
Saxon	1160/2	Northampton's Saxon defences
Medieval	1160/3	Medieval and post-medieval defences
Medieval	1160/3/39	Possible alignment of medieval town wall
Medieval	1160/229	South of The Green and north of Mill Lane tenement group
Medieval	1160/263	East side of Palmers Street tenement group
Post-medieval	6538/0/0	Un-stratified 16th-century find

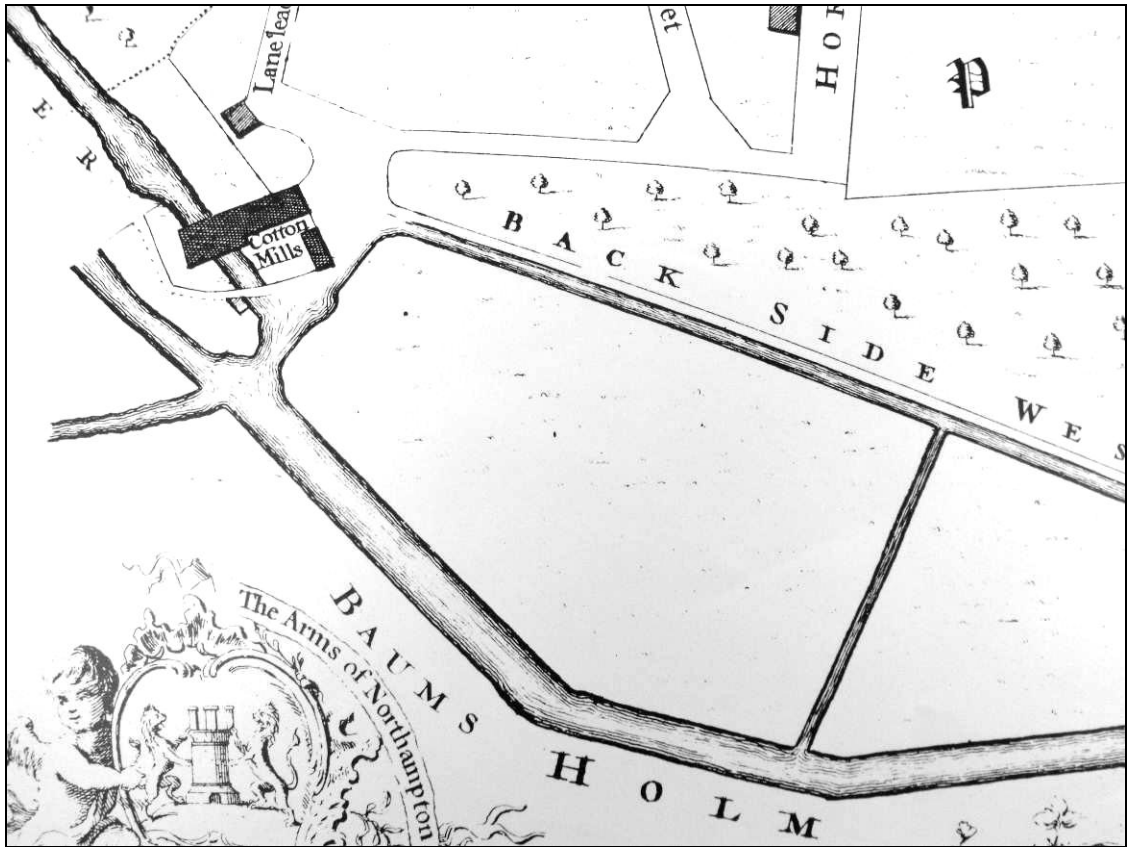
2.3 Historic map evidence

A more detailed map regression exercise has been conducted during the desk-based assessment (Thomson 2013). A selection of the more significant mapped changes on the site are presented here as an aid to understanding the significance of the site within its locality.

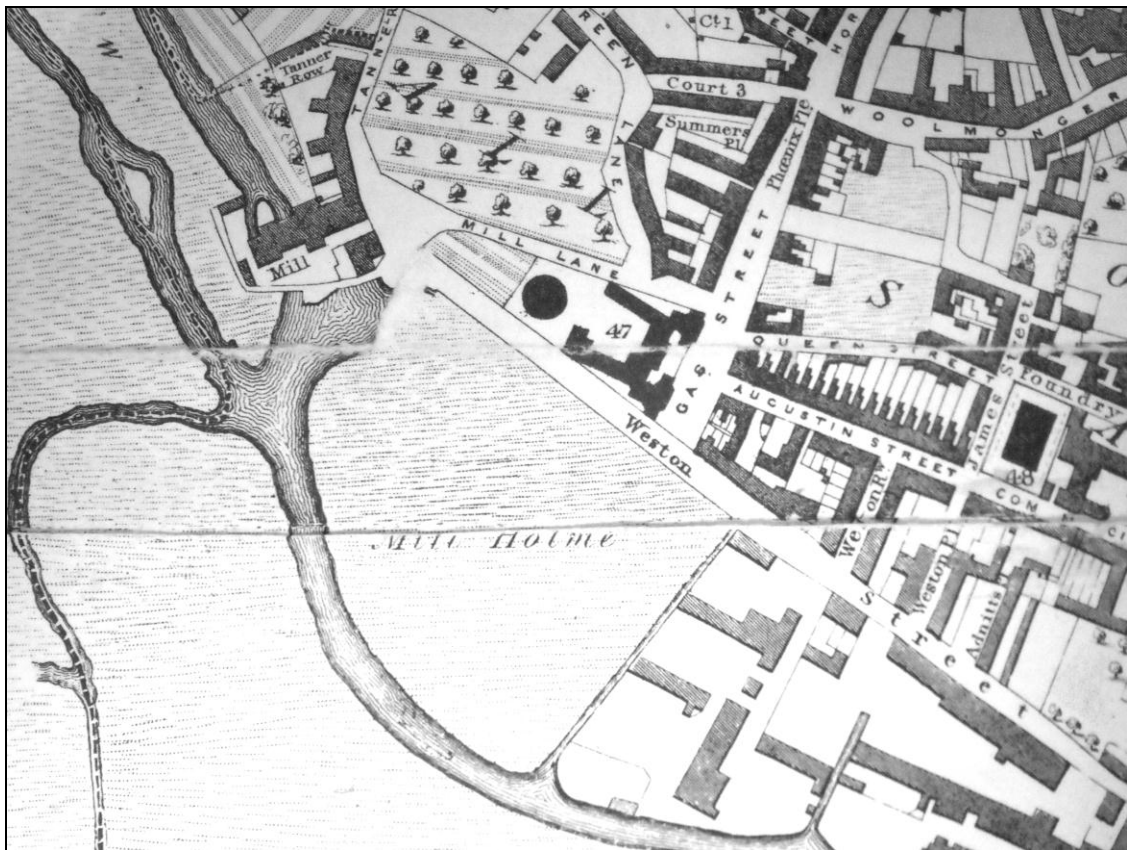
The site was first depicted by John Speed in 1610 as open ground with the river, a mill and side channels forming a small island. This is more clearly depicted by Noble & Butlin in 1747, which also shows the northern part of the site occupied by an orchard to the north of one of the side channels, called Back Side West (Fig 2). The area to the south of the river was called Baums Holme. The site is unchanged on the Roper & Cole map of 1807.

The area of the orchard is first developed by 1847; the Northampton Gas Light Company occupied the northern portion of the site, with the first gasholder (Fig 3). Mill Lane occupied what is now the northern boundary of the site. The remainder of the area to the north of the river was called Mill Holme; which, together with the southern part of the site was still open meadow.

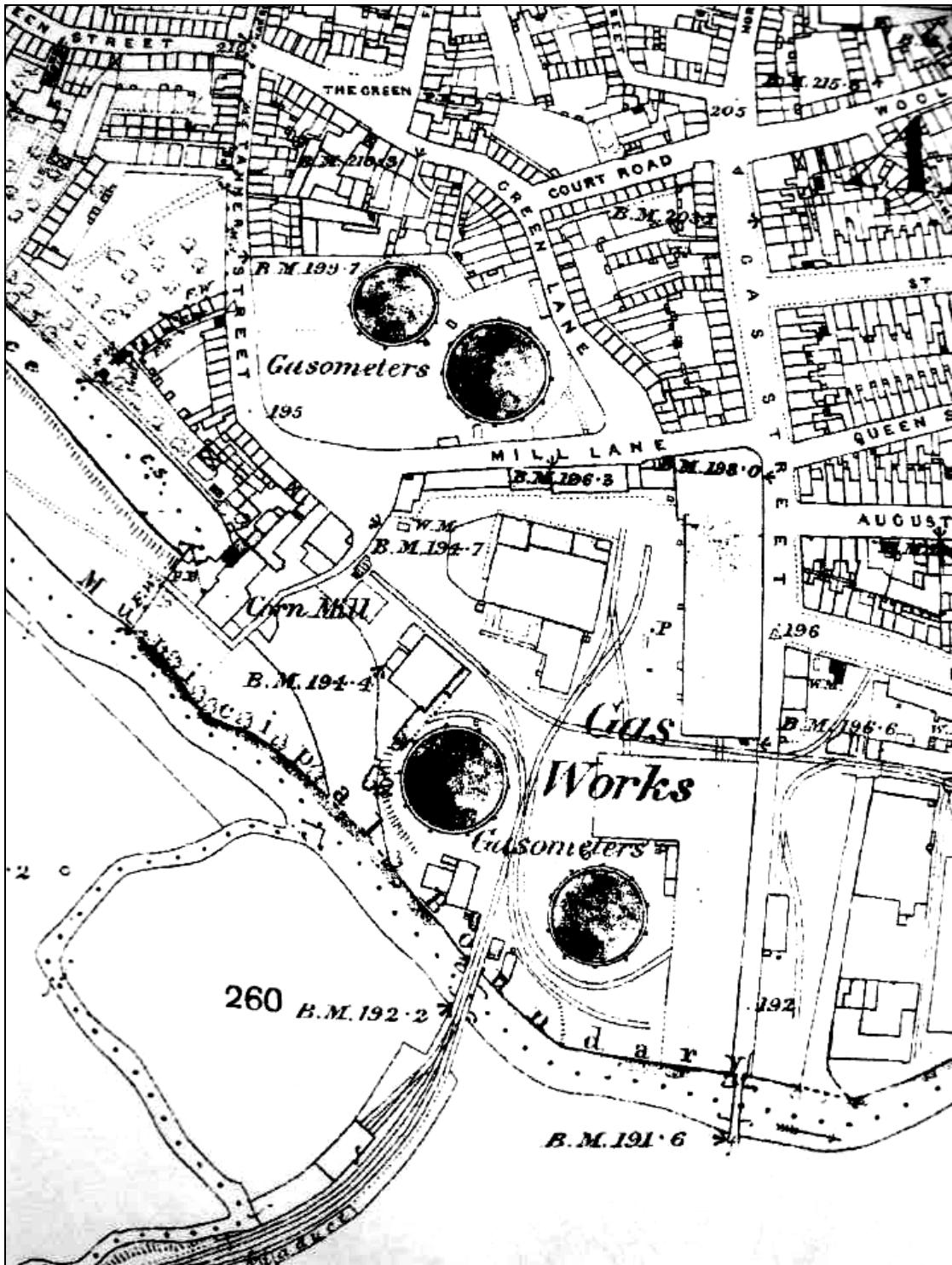
NORTHAMPTON GASWORKS



Noble & Butlin map, 1747 Fig 2

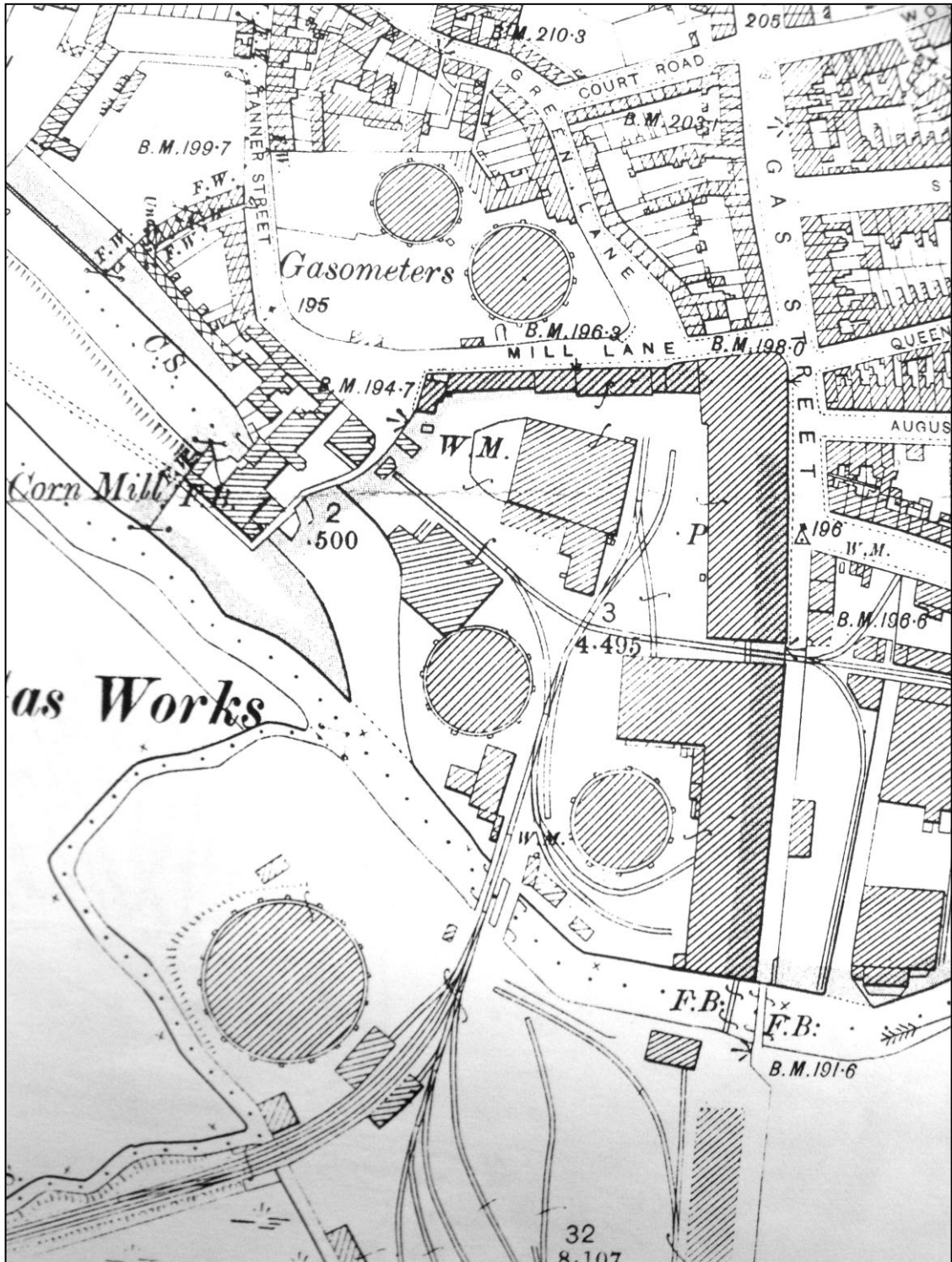


Wood & Law map, 1847 Fig 3



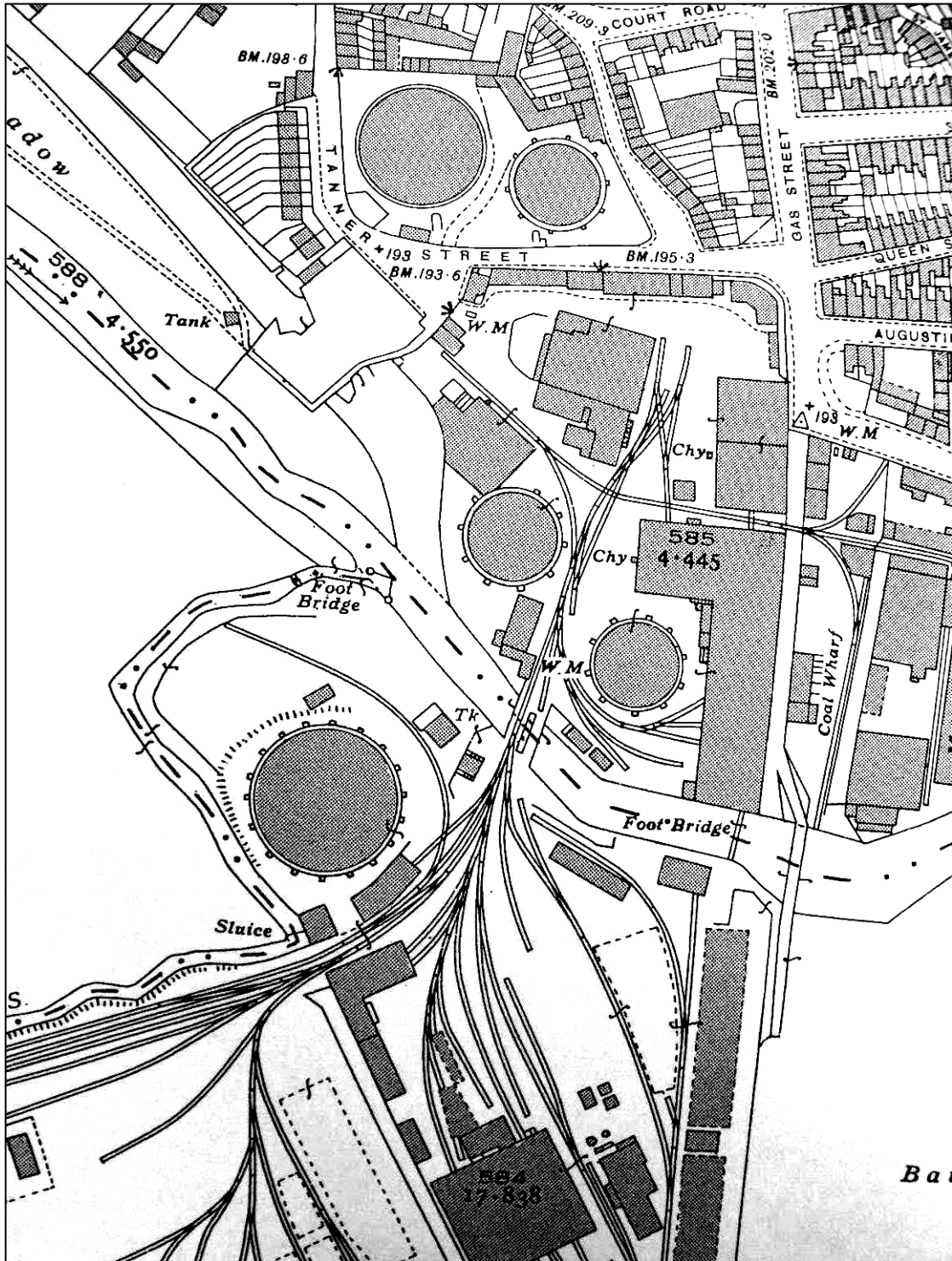
Ordnance Survey map, 1884 Fig 4

By 1884 the site had begun to take a much more recognisable form (Fig 4). The earlier works and gasholder had been replaced, with two gasholders erected on land to the north-east of the present site. A range of narrow buildings fronted Mill Lane and the main works along the eastern side of the site accessible from Gas Street. Two large gasholders and an internal rail network were built with an engine shed on the south side of the river. Elements of a coal wharf area to supply the works by barge occupied the eastern boundary.



Ordnance Survey map, 1901 Fig 5

By 1901 minor additions had been made to the works (Fig 5). Some buildings were expanded and modified, and a further gasholder and workshop were constructed south of the river, together with extension of the rail network to include an area of sidings, which was rapidly developed during the war years (Fig 6).



Ordnance Survey map, 1938 Fig 6

More recent developments in the 50s and 60s illustrated the partial demolition of a large range to the north-east of the site and the total clearance of other buildings (Thomson 2013, 13). The 1953 plan and a later plan of 1959 outlined the functions of some of the buildings, including; Carburetted Water Gas plant, Brick Shed and Carpenter's Shop, Garage, Booster House, Rectifier House and storage tanks.

A plan from 1985 illustrated the planned route of Towcester Road, and showed that the majority of works had been decommissioned by this date.

2.4 Topography and geology

The remediation site is 2.04ha of former gas works. It is located within Northampton, to the south of the town centre, the River Nene bisects the site. The northern area of land is bounded to the north by St Peters Way, to the east by Carlsberg Brewery, and to the west by Towcester Road. The southern parcel of land is bounded to the north-east by the river, to the east and south by an access road and the B&Q store, and to the west by Towcester Road (Fig 7).

The geology of the area is mapped as alluvium and Upper Lias Clay, although first terrace river gravels were encountered during excavation further upstream at Green Street (BGS 2001; Chapman 1998-9). A recent topographic survey places the height of the flood plain at c59-60m above Ordnance Datum.

3 AIMS AND OBJECTIVES

The aim of the archaeological investigation was to recover information that may assist in understanding the nature, function and character of past occupation within the parish in its cultural and environmental setting, specifically:

- To record evidence for the date, nature and extent of any activity or occupation encountered during the development works;
- recover artefacts to assist in development of the type series within the region;
- and to recover palaeo-environmental remains where they were encountered;
- to provide any further information that may inform the needs for archaeological requirements for the future planning application for development of the site.

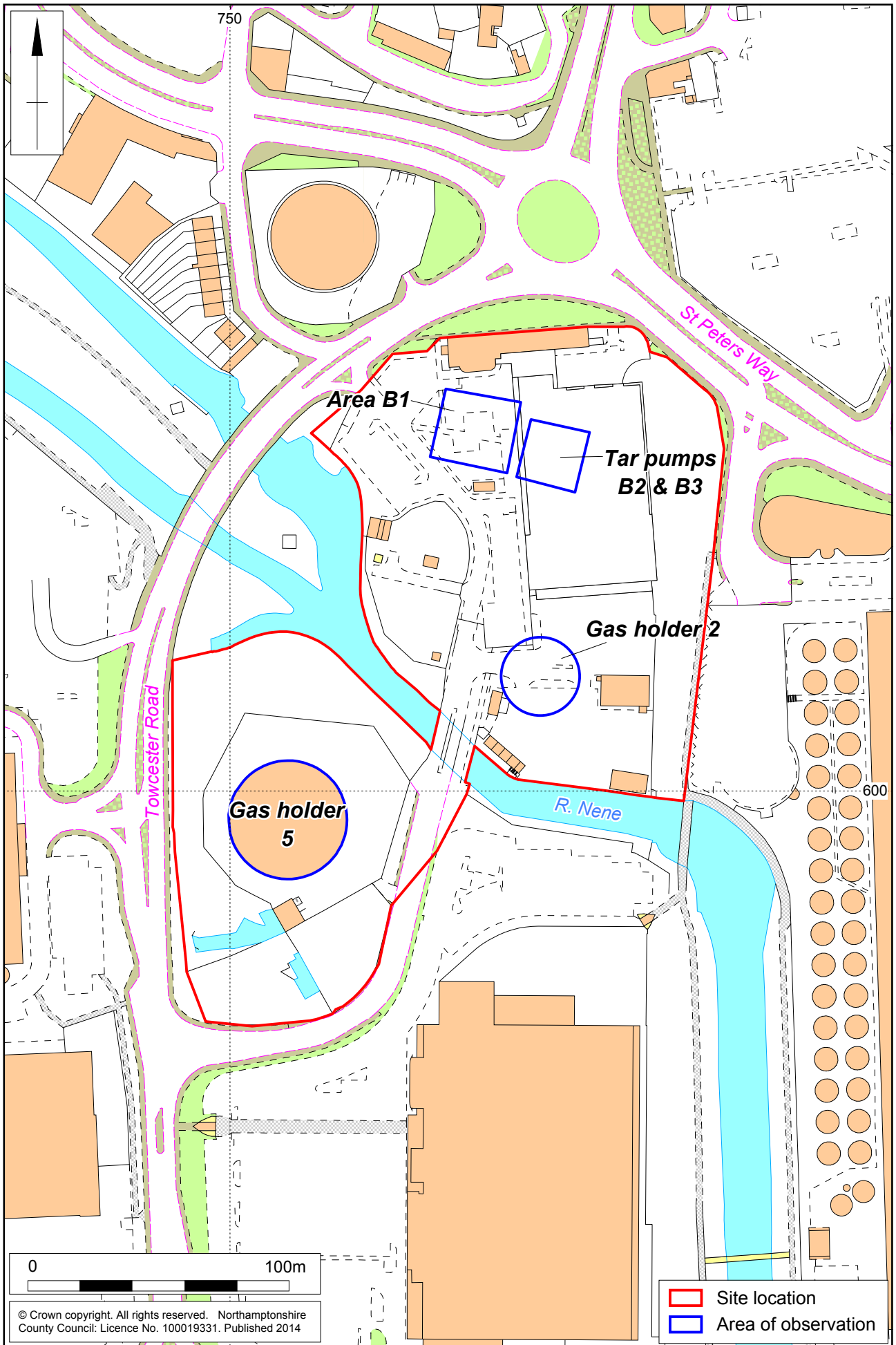
The investigations were carried out according to the objectives suggested by the published research priorities set out for the East Midlands (Wainwright *et al* 1991; EH 1997; Cooper 2006; Knight *et al* 2012).

4 METHODOLOGY

Although more extensive works were planned (Brown 2014), the actual scale of remediation was much less than expected. The areas of observation, investigation and recording are depicted on Figure 7.

The fieldwork was undertaken to monitor the deposits encountered in targeted areas during the mechanical removal and decontamination of soils for the remediation works at the former gas works. A large area to the centre north of the site was cleared of reinforced concrete slab and beams, which were the foundation layers of the former service buildings from the 1980s onwards (Fig 8).

Due to the contaminated nature of the site, all works were undertaken according to the Health & Safety requirements of the remediating contractor. Archaeological works were undertaken within these constraints. Continuous archaeological attendance was maintained during the course of all earthmoving within the targeted areas. The archaeological watching brief was carried out following a Written Scheme of Investigation (WSI) prepared by MOLA (Brown 2014).



Scale 1: 2000

Areas of observation and recording Fig 7

Records were created using MOLA pro-forma sheets (MOLA 2014). Context sheets were cross-referenced to plans, section drawings and photographs. Photographs were taken during the course of monitoring of all relevant deposits and structures on 35mm monochrome print film and as high resolution digital images. Work was carried out in accordance with the Institute for Archaeologists' *Standard and guidance for an archaeological watching brief* (IfA 2008).



Concrete slab, extant gas building and willow tree, looking north-west Fig 8

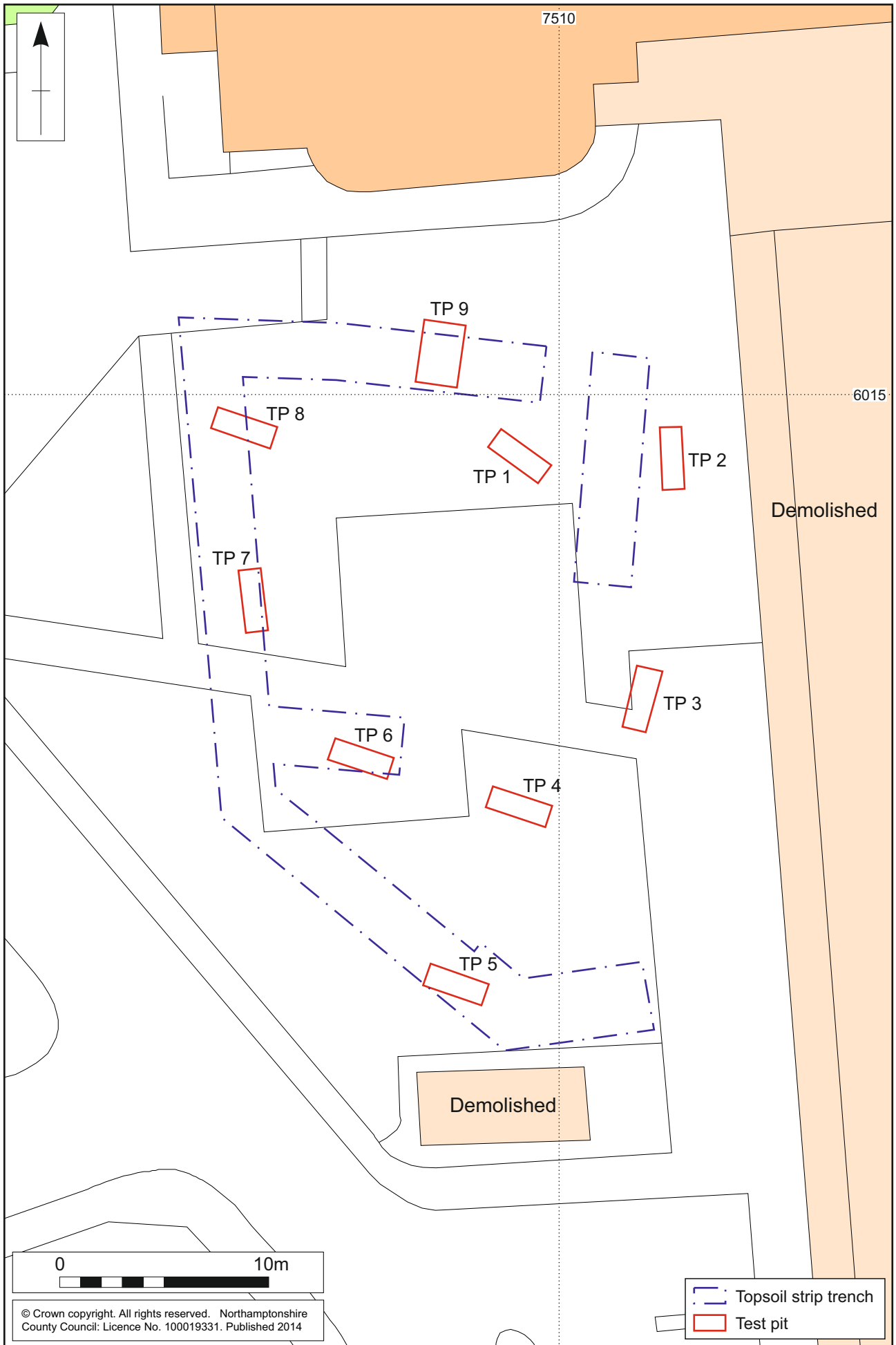
All records and materials have been compiled in a structured archive in accordance with the guidelines of Appendix 3 in the English Heritage procedural document, *Management of Archaeological Projects 2* (EH 1991).

5 THE SITE EVIDENCE

5.1 General stratigraphy

An area under vegetation at the north end of the site, just south of the 19th-century gas building was initially topsoil stripped to investigate the extent of contamination and establish the parameters for further work (Area B1, Fig 7). The trench was curved due to the constraints of a low pressure gas pipe to the west and a standing willow tree in the centre of the plot (Figs 9-10). The trench was 2.5m wide by 0.35-0.60m deep, excavated to the top of earlier brickwork or concrete structures.

A total of nine test pits (TPs 1-9) were excavated in specific locations within Area B1 to test the contamination at a deeper level after the removal of the concrete slab and beams (Figs 10-11). Typically, the test pits were 4.0-5.0m long by 1.5-2.0m wide and 3.0-3.5m deep.



Scale 1:250

Area B1 trench and test pits 1-9 Fig 9



Curved exploration trench, looking north-west Fig 10



TP5, a brick corner foundation, looking west Fig 11



TP9, brick wall aligned north-south, looking north Fig 12

At the base of most pits was silty clay with gravel, usually stained black in colour from the tar, which had permeated into the soil from the earlier gas working. Where the natural substrate was uncontaminated in TP1 there was mid-orange-brown sandy clay with gravel, at 2.7m below the surface. In TP7, mid to dark orange-brown sandy clay with gravel was present at 2.0m below the surface and also an undisturbed but undated soil horizon. Remains of brick walls were present in TPs 2, 5, 8 and 9 that related to 19th and 20th-century buildings associated with the gasworks (Figs 11-12). In some cases the top of the walls survived to within 0.30-0.50m of the present ground surface.

The natural substrate and brick or concrete walls were overlain by subsequent layers of rubble and topsoil. The rubble consisted of bricks and broken concrete, likely to be the remains of the earlier gasworks buildings used to infill the voids of the demolished gasholders and associated buildings, when the site was levelled and rebuilt upon in the 1980s.

5.2 Gasholder 2

To the north of the River Nene was the site of Gasholder 2, the earliest plan of which is the 1884 Ordnance Survey (Fig 4). The interior of the brick gasholder were identified and recorded during remediation work. The red brick wall circumference was c30.0m in diameter and went deeper than the 5.0m that was exposed (Fig 13). The width of the wall was c0.57m or two bricks lengthways across the wall.



Gasholder 2, interior brickwork, looking north Fig 13

The wall was constructed of flat red brick with 18 round holes, using a variation on an English Cross Bond with cement. Faint lines on the interior of the brickwork suggest the positions of vertical metal pipes at regular intervals, which brought the gas into the gasholder during use.

The base of the gasholder was not exposed; however, black tar deposits were present c3.0m below the ground surface. Various modern services and the concrete slab had truncated the foundation wall.

5.3 The 19th-century gasworks buildings

The original buildings which occupied Area B1 were constructed 1847-1884, the demolished 1938-1953, according to map evidence (Thomson 2013). Their early use seems to have been as part of the processing of coal, given that they were served by the rail network. The buildings were replaced by Booster Houses and a store, which were relatively small structures, so it is likely that most of the substantial brickwork foundations in this area relate to the late 19th-century buildings rather than their 20th-century replacements.

5.4 Cast iron pipe network

During the groundwork there were regular intervals during which it was necessary to deal with the myriad of intersecting gas pipes that run under the site. Most of these pipelines are substantial; generally the early pipes are cast iron, whilst more recent pipes are made from steel. They range in diameter from 45-90mm and would have connected between the various structures within the site. It is not possible to map the layout of these former services, many have been removed as part of demolition, other

removed during the current remediation and still more that lie undetected. Although there are buried service plans for the site compiled in recent years, the accuracy of these is not high and they exclude many of the early service lines. The overall impact of the gas pipe network is that the vertical truncation of the site, whilst generally within the upper 1.0m of deposits, is extensive and none of the areas were unaffected. The service plan supplied by Celtic Ltd is included at the end of this document as an appendix (Drawing D1583/4445/A6); it is the most up-to-date plan of the buried service network and its relationship to former structures upon the site.

5.5 Gasholder 5

The main gasholder on the site was demolished immediately prior to the remediation work. The gasholder stood as a notable landmark in the centre of Northampton, immediately adjacent to Towcester Road. At the time of recording the whole of the superstructure had been removed and the tank below ground level had been fenced (Fig 14). The gasholder was 45.0m in diameter and a little over 6.0m deep. The base of the tank had been lined with clay to provide an impermeable seal. The sides of the tank were constructed of red brick using a variation on the English Cross Bond, held together with coarse grey cement mortar. The marks left behind by the steel frame of the superstructure could still be seen. The tank has now been backfilled.



Gasholder 5 interior, looking north-west Fig 14

6 CONCLUSION

The watching brief at the former gasworks site established that at the north end of the site there were small areas of undisturbed natural silty gravel and clays, noted in the base of geotechnical test pits (TPs1 and 7). The natural deposits are typical river terrace gravels and the clay is of the Upper Lias formation.

Deposits encountered towards the base of geotechnical test pits (TPs 5, 7 and 8), contained sherds of 19th and 20th-century pottery. The spoil heaps of the test pits were scanned for earlier pottery sherds and artefacts, however, the dark contaminated soils provided no evidence of either. No artefacts were retained because of the contaminated residues and their relatively recent date.

Substantial brick foundations survive for two gasholders and the associated brick buildings which were mapped as present from 1884 to 1964. A number of large cast iron pipes were encountered underneath the concrete apron. The concrete slabs formed the floor levels of the 1980s service buildings.

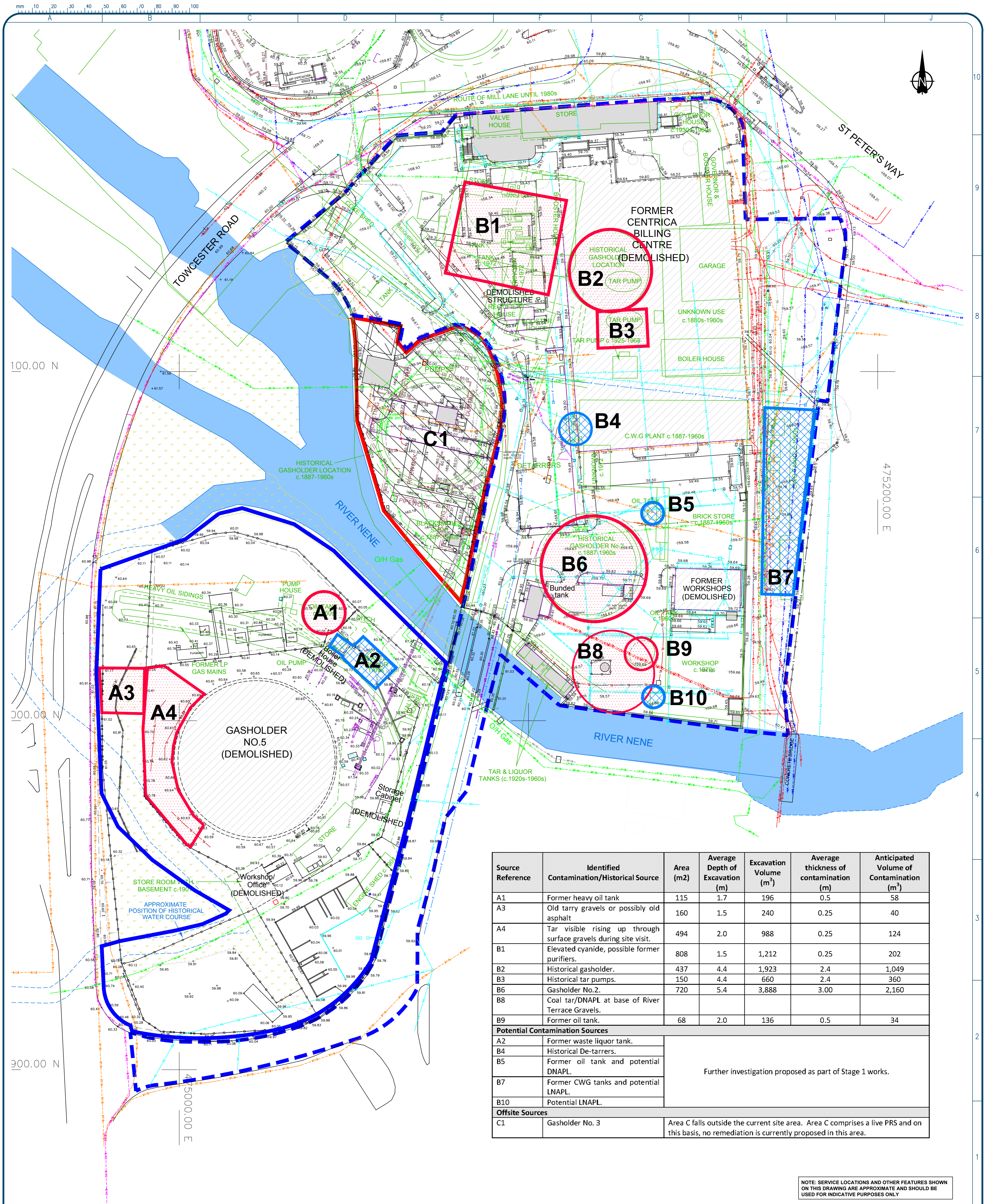
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November 2014

APPENDIX: DRAWING D1583/4445/A6

Insert drawing here



Source Reference	Identified Contamination/Historical Source	Area (m ²)	Average Depth of Excavation (m)	Excavation Volume (m ³)	Average thickness of contamination (m)	Anticipated Volume of Contamination (m ³)
A1	Former heavy oil tank	115	1.7	196	0.5	58
A3	Old tarry gravels or possibly old asphalt	160	1.5	240	0.25	40
A4	Tar visible rising up through surface gravels during site visit.	494	2.0	988	0.25	124
B1	Elevated cyanide, possible former purifiers.	808	1.5	1,212	0.25	202
B2	Historical gasholder.	437	4.4	1,923	2.4	1,049
B3	Historical tar pumps.	150	4.4	660	2.4	360
B6	Gasholder No. 2.	720	5.4	3,888	3.00	2,160
B8	Coal tar/DNAPL at base of River Terrace Gravels.					
B9	Former oil tank.	68	2.0	136	0.5	34
Potential Contamination Sources						
A2	Former waste liquor tank.					
B4	Historical De-tarriers.					
B5	Former oil tank and potential DNAPL.					
B7	Former CWG tanks and potential LNAPL.					
B10	Potential LNAPL.					
Offsite Sources						
C1	Gasholder No. 3					
		Area C falls outside the current site area. Area C comprises a live PRS and on this basis, no remediation is currently proposed in this area.				

NOTE: SERVICE LOCATIONS AND OTHER FEATURES SHOWN ON THIS DRAWING ARE APPROXIMATE AND SHOULD BE USED FOR INDICATIVE PURPOSES ONLY

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QUALITY
MANAGEMENT

REV	COMMENT	DATE

Legend

- Area A (National Grid Property Holdings)
- Area B (National Grid Property Holdings)
- Area C (National Grid Gas)
- Area not part of remediation works
- Current Structures
- Fenceline
- Demolished Structures
- Historical Structure

Base plan taken from Drawing 04, Constraints Plan dated July 2013, provided by Worley Parsons.

Identified Contamination Areas

Unproven Potential Contamination Areas

Services - overlaid from serviceplans (2012-2013)

- Electricity pilot cables
- Electricity (LV)
- Electricity (HV)
- Gas (LP)
- Gas (MP)
- Gas (Overhead)
- Gas services shown on 2008 plans, not present on 2013 plans
- Telecoms - underground
- Fibre-optic cable
- Water (2008 Geodesys plan)

Services - surveyed on site (2013)

- Electricity
- BT
- Gas

Services - surveyed on site (2012)*

- Electricity
- Service ducts

Services - surveyed on site (2008)**

- Gas
- Service ducts
- Telecom/CATV
- Pipework (unknown)
- Storm drainage gullies

Services - overlaid from site survey (2004)***

- Foul
- Surface drainage

Services - surveyed on site (2003)****

- Foul
- Surface drainage
- Holder discharge

Client
nationalgrid

Project
TOWCESTER ROAD,
NORTHAMPTON

Title
CONTAMINATION SOURCES
& ANTICIPATED VOLUMES

Drawn by NJH	Checked Date MH 10/13	Authorised Date
Original Scale 1/500	Date 10/13	Rev -
Drawing Number D1583/4445/A6		Paper A1



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