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BPA BUNCEFIELD TERMINAL, GREEN LANE, HEMEL HEMPSTEAD, HERTFORDSHIRE

AN ARCHAEOLOGICAL EVALUATION

Authors: Zbigniew Pozorski	
NGR: TL 0870 0864	Report No: 4022
District: St Albans	Site Code: AS 1471
Approved: Claire Halpin MIfA	Project No: 4035
Signed:	Date: February 2012

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Project name	*BPA Buncefield Terminal, Green Lane, Hemel Hempstead, Hertfordshire*		
In February 2012 Archaeological Solutions (AS) carried an archaeological evaluation at the BPA Buncefield Terminal, Green Lane, Hemel Hempstead, Hertfordshire (NGR TL 0870 0864). The evaluation was commissioned by the British Pipeline Agency (BPA) and was undertaken in compliance with a planning condition attached to planning permission for the demolition of existing structures and the redevelopment of the facilities at the fuel storage depot. *Previous desk-based assessment indicated that the site had a potential for archaeological remains, in particular for late prehistoric and Romano-British remains. The potential archaeology could be associated with occupation from the late Bronze Age to early Iron Age transitional period known at Buncefield depot, and the Romano-British religious complex at Wood Lane End, both of which lie to the south.* *In the event the evaluation revealed no archaeological features or finds.*			
Project dates (fieldwork)	*15 – 23/02/2012*		
Previous work (Y/N/?)	*Y*	Future work (Y/N/?)	*N*
P. number	*4035*	Site code	*AS 1471*
Type of project	*An Archaeological Evaluation*		
Site status	-		
Current land use	*Site of burnt and dismantled fuel tanks and greenfield*		
Planned development	*Demolition of existing structures and redevelopment of facilities at fuel storage depot*		
Main features (+dates)	-		
Significant finds (+dates)	-		
Project location			
County/ District/ Parish	*Hertfordshire*	*St Albans*	*Hemel Hempstead*
HER/ SMR for area	*Hertfordshire HER*		
Post code (if known)	*HP2 7HZ*		
Area of site	*c. 15 000m^2*		
NGR	*TL 0870 0864*		
Height AOD (min/max)	*129/134*		
Project creators			
Brief issued by	*SADC DAO*		
Project supervisor/s (PO)	*Zbigniew Pozorski*		
Funded by	*British Pipeline Agency*		
Full title	*BPA Buncefield Terminal, Green Lane, Hemel Hempstead, Hertfordshire. An Archaeological Evaluation*		
Authors	*Pozorski, Z.*		
Report no.	*4022*		
Date (of report)	*February 2012*		

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AN ARCHAEOLOGICAL EVALUATION

SUMMARY

In February 2012 Archaeological Solutions (AS) carried an archaeological evaluation at the BPA Buncefield Terminal, Green Lane, Hemel Hempstead, Hertfordshire (NGR TL 0870 0864). The evaluation was commissioned by the British Pipeline Agency (BPA) and was undertaken in compliance with a planning condition attached to planning permission for the demolition of existing structures and redevelopment of the facilities at the fuel storage depot.

The desk-based assessment indicated that the site had a potential for archaeological remains, in particular for late prehistoric and Romano-British remains. The potential archaeology could be associated with occupation from the late Bronze Age to early Iron Age transitional period known at Buncefield depot, and the Romano-British religious complex at Wood Lane End, both of which lie to the south.

In the event the evaluation revealed no archaeological features or finds, and the site revealed evidence of significant previous ground disturbance.

1 INTRODUCTION

1.1 In January 2012 Archaeological Solutions (AS) carried an archaeological evaluation at the BPA Buncefield Terminal, Green Lane, Hemel Hempstead, Hertfordshire (NGR TL 0870 0864; Figs. 1 & 2). The evaluation was commissioned by the British Pipeline Agency (BPA) and was undertaken in compliance with a planning condition attached to planning permission for the demolition of existing structures and the redevelopment of the facilities at the fuel storage depot (St Albans District Council Planning Ref. 5/2009/0906).

1.2 The evaluation was undertaken in accordance with a brief issued by The District Archaeological Officer of St Albans District Council (SADC DAO; dated 06/08/2010) and a written scheme of investigation (specification) prepared by AS (dated 23/08/2010) and approved by the SADC DAO. The project conformed to the Institute for Archaeologists (IfA) *Code of Conduct* and *Standard and Guidance for Archaeological Field Evaluation* (revised 2008), as well as the document *Standards for Field Archaeology in the East of England* (Gurney 2003).

1.3 The evaluation aimed to determine the location, extent, date, character, condition, significance and quality of any surviving archaeological remains liable to be threatened by the proposed development.

Planning policy context

1.4 Planning Policy Statement 5 (PPS5; 2010) states that those parts of the historic environment that have significance because of their historic, archaeological, architectural or artistic interest are heritage assets. The Planning Policy Statement aims to deliver sustainable development by ensuring that policies and decisions that concern the historic environment recognise that heritage assets are a non-renewable resource, take account of the wider social, cultural, economic and environmental benefits of heritage conservation, and recognise that intelligently managed change may sometimes be necessary if heritage assets are to be maintained for the long term. It aims to conserve England's heritage assets in a manner appropriate to their significance. It states that opportunities to capture evidence from the historic environment and to contribute to our knowledge and understanding of our past, and to make this publicly available, should be taken, particularly where a heritage asset is to be lost.

2 DESCRIPTION OF THE SITE

2.1 The site of the BPA Buncefield terminal is located within the county of Hertfordshire and within the district of St Albans (Fig. 1). The site forms part of the existing Buncefield oil storage depot situated in Hemel Hempstead, and it lies on the boundary between two parishes: Redbourn and Hemel Hempstead. The historic core of Hemel Hempstead, known as Old Town, lies 4km to west-south-west of the site and the modern town development extends to the site at its easternmost extent. The modern core of Redbourn lies 4km to the north-east of the site. Its historic Church End is situated 3km from the site. The M1 motorway runs between the settlements of Hemel Hempstead and Redbourn.

2.2 The northern part of the site lies to the immediate north of the existing Buncefield oil storage depot, which is used for the receipt, storage and onward distribution of Jet A1 fuel via the UKOP pipeline. It is separated by from the extant depot by the Cherry Tree Lane, which also demarcated the boundary between the parishes of Hemel Hempstead and Redbourn. For ease of reference, the site is known as the Cherry Tree Farm site in reference to the farm that formerly stood to its immediate west. Although the existing Buncefield oil storage depot forms part of Hemel Hempstead Industrial Estate, the site is currently undeveloped greenfield with an exception of fire hydrant installations and a pond.

2.3 The southern part of the site lies within existing terminal site. The rectangular plot of land is bounded by a concrete wall. It is the location of one of the fuel tanks which was burnt during the fire/explosion in 2005. The tank has been dismantled since and that part of the site is currently undeveloped.

3 TOPOGRAPHY, GEOLOGY AND SOILS

3.1 The site lies within the extensive plateau situated between the River Gade, which flows southwards through Hemel Hempstead 3.5km to the west of the site, and the River Ver, which lies 4km to the east along its south-eastwards course between Redbourn and St Albans. The site forms part of a small shallow valley extending west to eastwards and roughly parallel to the route of Cherry Tree Lane and its eastern extension Hogg End Lane, which leads towards the River Ver. The surrounding relief is gently undulating and greatly varied, but slopes away down towards the south-east and the area of St Albans formerly occupied by the Roman town of *Verulamium*. The site lies at a height of 129-134m AOD on the land sloping gently to the east.

3.2 The solid geology of the Hemel Hempstead and Redbourn area comprises plateau drift and chalk with overlying peri-glacial gravels and sub-alluvium in the valley floor, with cappings of clay with flints at the crests of slopes to the north-east (British Geological Survey 1978). This was confirmed by the natural subsoil of heavy, glacially-derived clay with flints, overlying chalk at variable depths encountered during an archaeological evaluation undertaken at Wood Lane End and *c.*850m to the south of the site (West 1995). The local soils are of the Batcombe Association, which are described as fine silty over clayey and fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging (Soil Survey of England and Wales 1983). Such Batcombe Association are commonly used in agriculture for cereals, permanent grassland and deciduous woodland.

4 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

4.1 The site has been a subject to an archaeological desk-based assessment (Higgs & Pozorski 2010). In summary:

The site is located within an area that has revealed significant archaeological remains dating from the Palaeolithic period onwards. The archaeological investigations undertaken during the widening of the M1 motorway between Junctions 8 and 9 have produced extensive evidence for a prehistoric landscape with artefact distributions. Substantial Neolithic evidence has been recovered from sites along the course of the A41 Kings Langley and Berkhamsted bypasses. Geophysical survey and an evaluation at Buncefield and north of a Romano-British religious complex at Wood Lane and works at c.850m to the south-east during the M1 widening revealed late Bronze Age to early Iron Age occupation evidence.

During the Romano-British period the area was dominated by the presence of Verulamium, a Roman city located within present St Albans. Numerous roads crossed this part of Hertfordshire including Watling Street. A significant Romano-British religious complex has been excavated Wood Lane End and 950m to the south-south-west of the site. The archaeological investigations have revealed the site to contain seven buildings comprising a substantial Romano-Celtic temple mausoleum with sunken chamber, a possibly schola

and a bath-house containing a caldarium, tempidarium and frigidarium, which are thought to date from the 2nd century onwards.

Very little Anglo-Saxon activity can be assigned to the area. During the medieval period, the area surrounding the site remained largely rural, with continuing clearance (assarting) of the wooded areas, which characterised this region. Cropmarks of medieval ridge and furrow have been noted to the north of Wood Lane End Works along the route of the M1 widening to the north-west of Junction 8 also recorded evidence of medieval occupation. Local history sources reveal that in 1380 the bounds between the manors of Redbourn and Hemel Hempstead were strictly defined. The earliest cartographic sources confirm the boundary at Cherry Tree Lane from as early as 1766. The same mid 18th century map also reveals that the site lay to the immediate west of a farm situated along the northern frontage of Cherry Tree Lane. The Grade II listed Cherrytree Farm lies 600m to the north.

4.2 In 2010 AS conducted an archaeological trial trench evaluation to the immediate north of Cherry Tree Lane and south-east of currently excavated Trenches 5 and 6 (Higgs & Pozorski 2010). The evaluation revealed no archaeological features. Two post-medieval (17th-19th century) pottery sherds were recovered.

5 METHODOLOGY

5.1 Five trenches were excavated using a mechanical 360˚ excavator fitted with a toothless ditching bucket (Fig. 2). Proposed Trench 4 located within the southern part of the site was not excavated due to contamination of the area and severe waterlogging. The omission was approved by SADC DAO. The sides of Trenches 5 and 6 had to be stepped for safety reasons due to their significant depths.

5.2 Topsoil and undifferentiated overburden were mechanically excavated under close archaeological supervision. Exposed surfaces were cleaned by hand and examined for archaeological features. Deposits were recorded using *pro forma* recording sheets, drawn to scale, and photographed as appropriate. Excavated spoil was searched for finds and the trenches were scanned by a metal detector.

6 DESCRIPTION OF RESULTS

Individual trench descriptions are presented below:

Trench 1 (Fig. 2, DP 1-2)

Sample section 1A (DP 3): north end, east facing *0.00 = 130.42m AOD*		
0.00 – 0.10m	L2000	Made ground. Dark yellow, loose, sand with gravel.
0.10 – 0.18m	L2001	Dark grey, friable, clayey silt with gravel.
0.18 – 0.38m	L2002	Modern CBM rubble, loose.
0.38 – 0.65m	L2003	Light to mid grey, compact, sandy gravel with moderate CBM fragments and flint
0.65m +	L2004	Natural light to mid yellow, compact, clay with frequent sub-angular flint.

Sample section 1B (DP 4): south end, east facing *0.00 = 130.35m AOD*		
0.00 – 0.20m	L2005	Made ground. Mid brownish grey, loose, sandy silt with gravel.
0.20 – 0.34m	L2000	Made ground. As above.
0.34 – 0.55m	L2002	CBM rubble. As above.
0.55m +	L2004	Natural clay. As above.

Description: No archaeological remains or finds were present.

Trench 2 (Fig. 2; DP 5-6)

Sample section 2A (DP 7): north end, east facing *0.00 = 130.46m AOD*		
0.00 – 1.12m	L2006	Made ground. Mid yellowish and brownish grey, loose, silt and gravel with moderate CBM fragments.
1.12m +	L2004	Natural clay. As above, Tr. 1.

Sample section 2B (DP 8): south end, east facing *0.00 = 130.30m AOD*		
0.00 – 0.42m	L2000	Made ground. As above, Tr. 1.
0.42 – 0.58m	L2001	Made ground. As above, Tr. 1.
0.58 – 0.98m	L2006	CBM rubble. As above.
0.98m +	L2004	Natural clay. As above, Tr. 1.

Description: No archaeological remains or finds were present.

Trench 3 (Fig. 2; DP 9-10)

Sample section 3A (DP 11): west end, south facing *0.00 = 130.20m AOD*		
0.00 – 1.07m	L2006	Made ground. As above, Tr. 2.
1.07 – 1.18m	L2007	Black, compact, clayey silt with frequent gravel.
1.18m +	L2004	Natural clay. As above, Tr. 1.

Sample section 3B (DP 12): east end, south facing *0.00 = 130.22m AOD*		
0.00 – 0.12m	L2000	Made ground. As above, Tr. 1.
0.12 – 0.32m	M2008	Concrete slab/base.
0.32 – 1.18m	L2009	Mid brown, compact, clayey silt with frequent CBM fragments, concrete and gravel.
1.18 – 1.33m	L2007	As above.
1.33m +	L2004	Natural clay. As above, Tr. 1.

Description: No archaeological remains or finds were present.

Trench 4

Not excavated

Trench 5 (Fig. 2; DP 13-14)

Sample section 5A (DP 15): west end, south facing *0.00 = 130.31m AOD*		
0.00 – 0.17m	L2016	Topsoil. Mid to dark grey, compact, clayey silt.
0.17 – 0.39m	L2017	Made ground. Mid to dark grey, compact, clayey silt with moderate CBM fragments.
0.39m +	L2004	Natural clay. As above, Tr. 1.

Sample section 5B (DP 16): east end, south facing *0.00 = 131.18m AOD*		
0.00 – 0.18m	L2016	Topsoil. As above.
0.18 – 1.05m	L2011	Made ground. Mid yellow, friable, silty clay with frequent sub-angular flint and moderate CBM fragments.
1.05 – 1.38m	L2018	Buried topsoil. Dark grey, friable, sandy silt.
1.38 – 1.76m	L2019	Subsoil. Mid to dark yellow, compact, silty clay with occasional CBM fragments and sub-angular flint.
1.76m +	L2004	Natural clay. As above, Tr. 1.

Description: No archaeological remains or finds were present.

Trench 6 (Fig. 2; DP 17-18)

Sample section 6A (DP 19): north end, east facing *0.00 = 133.62m AOD*		
0.00 – 1.35m	L2010	Made ground. Light to mid grey, friable, silty sand with frequent CBM fragments, stones and modern rubbish.
1.35 – 2.69m	L2011	Made ground. As above, Tr. 5.
2.69 – 2.85m	L2012	Dark grey, compact, silty clay.
2.85m +	L2004	Natural clay. As above, Tr. 1.

Sample section 6B (DP 20): south end, west facing *0.00 = 133.09m AOD*		
0.00 – 1.20m	L2010	Made ground. As above.
1.20 – 1.43m	L2013	Dark bluish grey, compact, clayey silt with occasional sub-angular flint and CBM fragments.
1.43 – 2.15m	L2014	Made ground. Mid yellow, compact, silty clay with occasional sub-angular flint and CBM fragments.
2.15 – 2.60m	L2015	Dark bluish grey, compact, clayey silt with occasional sub-angular flint and CBM fragments.
2.60m +	L2004	Natural clay. As above, Tr. 1.

Description: No archaeological remains or finds were present.

7 CONFIDENCE RATING

7.1 It is not felt that any factors inhibited the recognition of archaeological features or finds. Trenches 1 and 2 were adequately investigated and recorded before they became waterlogged.

8 DEPOSIT MODEL

8.1 The northern part of the site (Cherry Tree Lane site) was commonly overlain by thick deposits of modern made ground, in particular in the northernmost Trench 6 where the made ground exceeded 2.50m of thickness. Deposits other than modern made ground were present in the eastern part of Trench 5 and those were buried topsoil (L2018; 0.30 – 0.35m thick) and subsoil (L2019; 0.35 – 0.40m).

8.2 The southern part of the site contained only several modern deposits of made ground and backfill. Those were 0.55 – 1.40m thick. The concrete slab/base was also present within Trench 3.

8.3 The natural clay, L2004, was present 0.39 – 2.85m below existing ground level and comprised a light to mid yellow, compact, clay with frequent sub-angular flint.

9 DISCUSSION

9.1 The site had a potential for archaeological remains, in particular for late prehistoric and Romano-British archaeology. Such remains have been found in the vicinity of the site and are associated with occupation from the late Bronze Age to early Iron Age transitional period known at Buncefield Depot, and the Romano-British religious complex at Wood Lane End.

9.2 In the event no archaeological features or finds were revealed. No residual finds were recovered. The majority of the Cherry Tree Lane site had previously been subject to works which resulted in deposition of large amounts of made ground containing demolition debris, likely removed from

the terminal area. The southern part of the site was entirely filled with made ground and rubble which was likely created after the 2005 fire. The concrete slab was a base for one of the terminal's destroyed installations. This area was also contaminated with oil/fuel.

10 DEPOSITION OF THE ARCHIVE

10.1 Archive records, with an inventory, will be deposited with any donated finds from the site at St Albans Museum. The archive will be quantified, ordered, indexed, cross-referenced and checked for internal consistency.

ACKNOWLEDGEMENTS

Archaeological Solutions would like to thank Mr Neil Bayliss of British Pipeline Agency (BPA) for commissioning the project and for his assistance, and Mr Halton Davies of BPA.

Thanks are also due to the staff at the Hertfordshire Archives & Local Studies (HALS), based at County Hall, Hertford. AS is also grateful to Mrs. Isobel Thompson of the Hertfordshire Historic Environment Record (HER).

AS would also like to acknowledge the input and advice of Mr Simon West, The District Archaeological Officer of St Albans District Council.

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APPENDIX 1 HISTORIC ENVIRONMENT RECORD DATA (HER)

The following sites are those that lie within a 1km radius of the assessment site. The table has been compiled from data held by the Hertfordshire Historic Environment Record (HHER).

HER	NGR TL	Description
Prehistoric		
9203	0837 0797	Geophysical survey and evaluation of the area immediately north of the Romano-British religious complex at Wood Lane End [94] uncovered evidence of transitional late Bronze Age to early Iron Age occupation including pits and post-holes, a pit containing hearth dump materials and over 150 pottery sherds, and a ditch terminal containing c.70 sherds of both coarse and fine ware vessels
16356	09255 08025	A watching brief on a works compound for the M1 widening to the north-west of Junction 8 uncovered evidence of transitional late Bronze Age to early Iron Age occupation comprising four pits and a stretch of a ditch, containing flint-gritted pottery
Romano-British		
9043	0920 0816	Cropmarks of multiple parallel linear features which run in a straight line for approx. 400m in St Michael's parish may possibly be the line of Roman road, but they may represent pipelines feeding the adjacent oil refinery
9204	0821 0799	Roman ditch found to the north of Wood Lane End
16358	09323 08231	A length of a track or hollow way, orientated west-north-west to east-south-east, was recorded during monitoring of the M1 widening north of Junction 8, consisting of a surface of flint cobbles and an overlying layer of silty clay which produced a single sherd of Roman pottery
Medieval		
9044	09057 09412	Geophysical survey and to the north of the Romano-British religious complex at Wood Lane End found cropmarks of ridge and furrow ploughing
9205	0843 0800	Medieval ridge and furrow noted to the north of Wood Lane End
16357	09325 08180	Monitoring along the route of the M1 widening to the north-west of Junction 8 recorded a group of ten pits or postholes indicative of medieval occupation
Post-medieval		
13601	08041 09107	Pratt's Dell near Three Cherry Trees Lane is named and marked 'Old Clay Pit' on old maps and was already in woodland
15619	08700 09330	Grade II listed Cherrytree Farm on Cherrytree Lane is, now called The Croft, is two storeys and has an early 17th century timber frame and red brick chimney stacks, the one at the north gable end with early and

		late 17th century square shafts, with a 17th or 18th century timber-framed barn extension on the
16161	09554 08359	Megdell Farm is shown as a small farmstead 120m south of Hogg End Lane comprising various small buildings and a larger barn stood around a rectangular yard
Undated		
9045	09255 08932	Cropmarks of a circular enclosure, possibly representing the ploughed-down remains of a Neolithic or Bronze Age round barrow
9647	0949 0886	An area of metalworking debris, cindery in character, was found during fieldwork against the east side of the M1; 52 fragments in one scatter and 34 in another

APPENDIX 2 CONTENTS OF THE ARCHIVE

Records	Number
Brief	Y
Specification	Y
Registers	5 (Context, Drawing, Drawing Sheet, Photo, Digital Photo)
Context Sheets	20
Site drawings A1	0
Site drawings A3	2
Site drawings A4	0
Site photographs b/w	15
Site photographs colour slides	15
Digital Photographs	20

PHOTOGRAPHIC INDEX

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DP 2. Trench 1. Looking north.

DP 3. Trench 1, north end. Sample section 1A. Looking west.

DP 4. Trench 1, south end. Sample section 1B. Looking west.

DP 5. Trench 2. Looking north-west.

DP 6. Trench 2. Looking north.

DP 7. Trench 2, north end. Sample section 2A. Looking west.

DP 8. Trench 2, south end. Sample section 2B. Looking west.

DP 9. Trench 3. Looking east-north-east.

DP 10. Trench 3. Looking west.

DP 11. Trench 3, west end. Sample section 3A. Looking north.

DP 12. Trench 3, east end. Sample section 3B. Looking north.

DP 13. Trench 5. Looking north-west.

DP 14. Trench 5. Looking west.

DP 15. Trench 5, west end. Sample section 5A. Looking north.

DP 16. Trench 5, east end. Sample section 5B. Looking south.

DP 17. Trench 6. Looking north-north-west.

DP 18. Trench 6. Looking north.

DP 19. Trench 6, north end. Sample section 6A. Looking west.

DP 20. Trench 6, south end. Sample section 6B. Looking east.

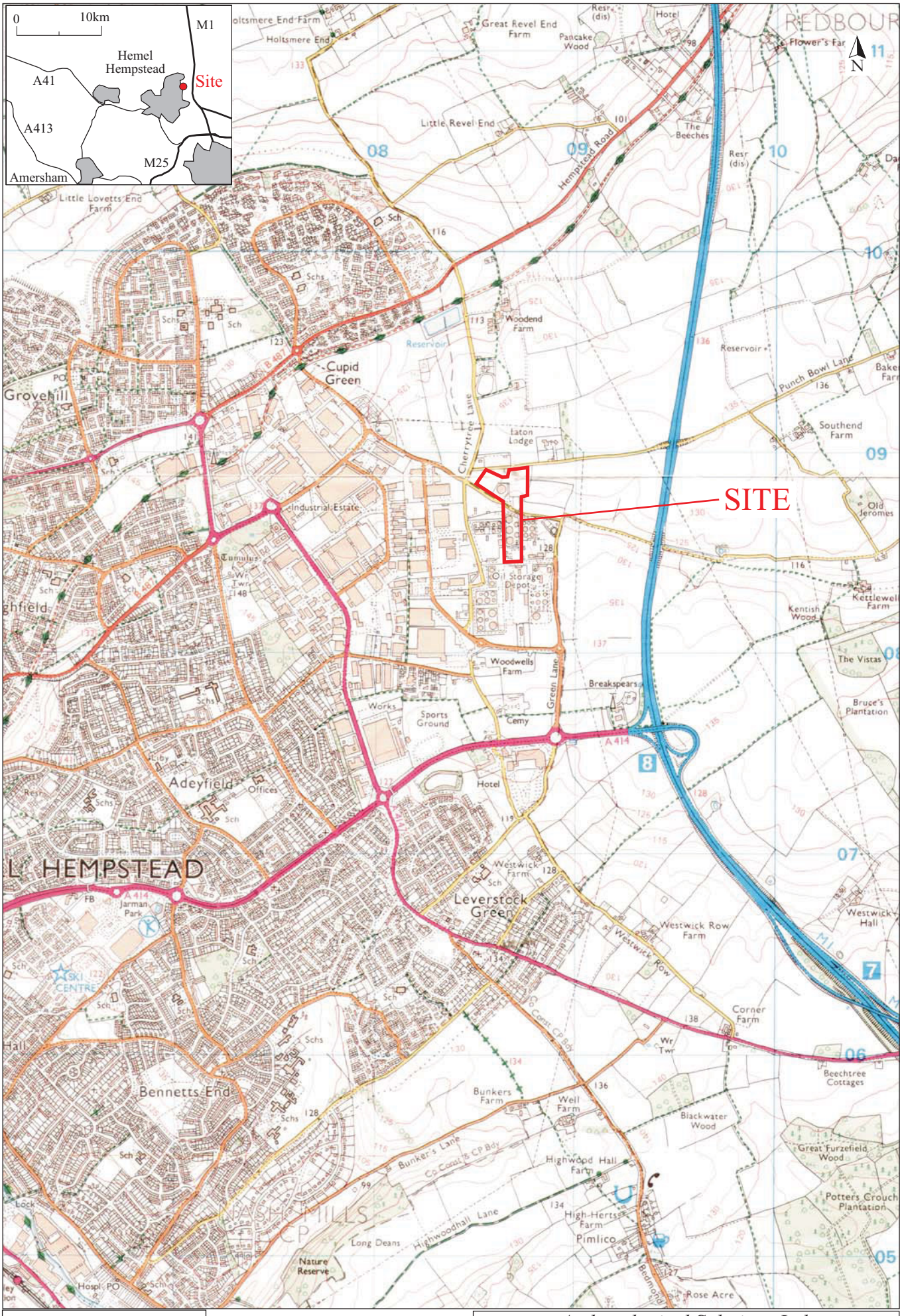

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Fig. 1 Site location plan

Scale 1:25,000 at A4

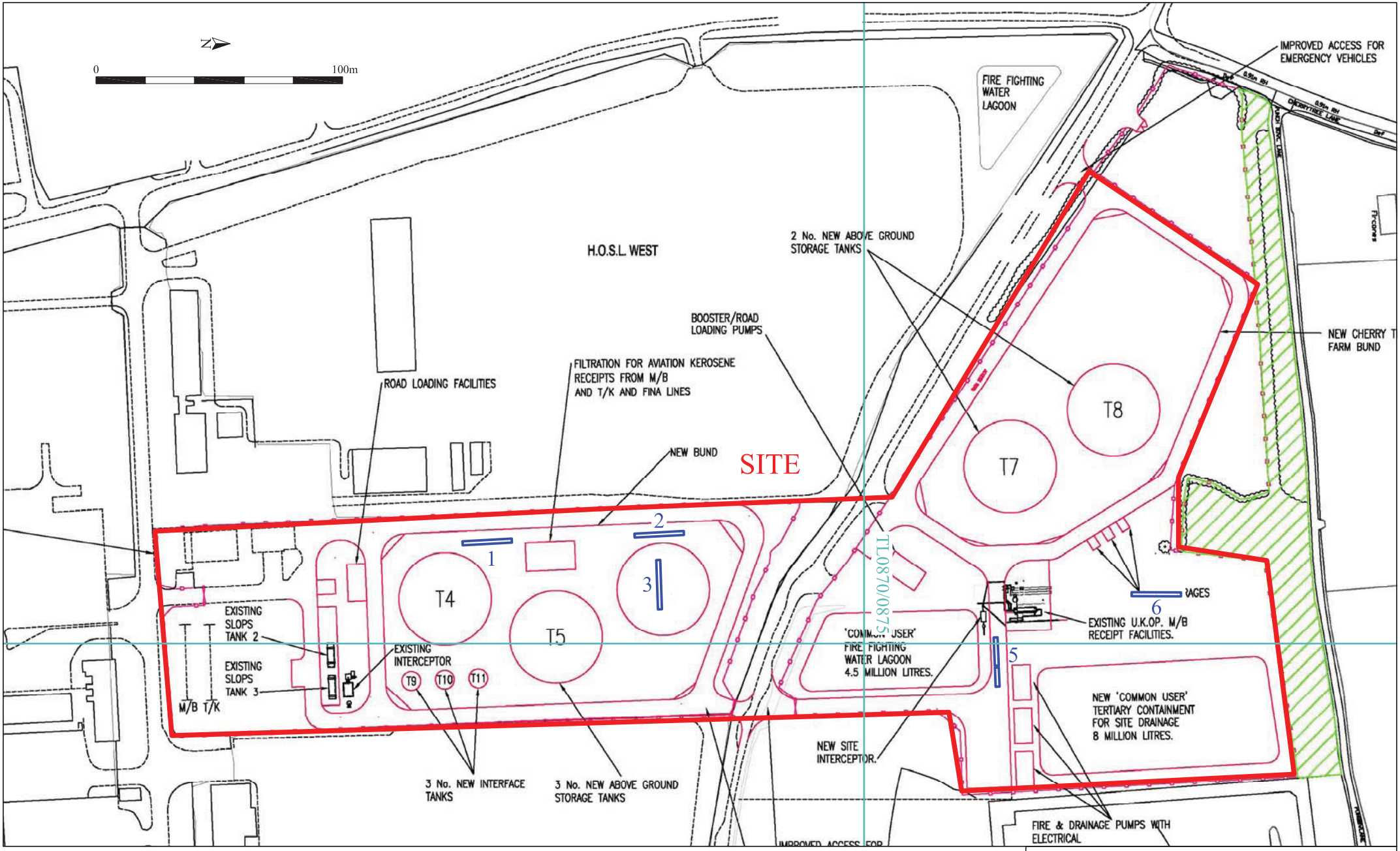

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Fig. 2 Trench location plan

Scale 1:1000 at A4