border archaeology

archaeology & built heritage
working throughout the UK

Archaeological Field Evaluation

On behalf of:

Markey Construction

With respect to the:

Former Norville Factory Site
Tarrington Road
Tredworth
Gloucester

January 2017

border archaeology

archaeology & built heritage
working throughout the UK

Report Specification:

Compilation:
Katherine Crooks BA

Artwork:
Holly Litherland BA (Hons)

Editing:
George Children MA MCI*f*A

Final Edit & Approval:
Neil Shurety Dip. M G M Inst M

Report Ref:
BA1662NFT

Grid Reference:
NGR: SO 83932 17094

OS Licence No:
100055758

OASIS Ref:
Borderar1 272557

Date:
January 2017

Cover: View northeast showing west end of factory buildings

General Enquiries: E: info@borderarchaeology.com | T: 01568 610101

Border Archaeology Regional Offices

Bristol
Park House, 10 Park Street,
Bristol, BS1 5HX
T: 0117 907 4735

Leeds
No 1 Leeds, 26 Whitehall Road,
Leeds, LS12 1BE
T: 0113 3570390

Leominster (Administration)
Chapel Walk, Burgess Street,
Leominster, HR6 8DE
T: 01568 610101

Milton Keynes
Luminous House, 300 South Row,
Milton Keynes, MK9 2FR
T: 01908 933765

Newport
Merlin House, No1 Langstone Business Park,
Newport, NP18 2HJ
T: 01633 415339

Winchester
Basepoint Business Centre, Winnal Valley Road,
Winchester, SO23 0LD
T: 01962 832777

Bristol | Leeds | Leominster | London | Milton Keynes | Newport | Winchester

Border Archaeology Limited: Registered Office: 45 Etnam Street, Leominster, HR6 8AE
Company Registration No: 07857388

Contents:

1 Executive Summary

Border Archaeology Ltd was instructed by Markey Construction to undertake a programme of Archaeological Field Evaluation on the site of the former Norville Factory Tarrington Road Tredworth Gloucester (fig. 1). The site was originally established in 1885 to accommodate the Hatherley Step Works producing furniture and patented 'lattice' stepladders, which, by the late 19th century, had achieved worldwide distribution. The site was occupied by the Gloster Aircraft Company During the Second World War and latterly by the Norville Optical Company Limited.

Structural remains presumed to have been associated with the original factory premises, including footings and pipework, were recorded. No other deposits or features of archaeological significance were encountered, although pottery and clay tobacco pipe recovered during the course of the work indicated that, until the construction of the Hatherley Step Works in the latter part of the 19th century, the site had been under cultivation. A single flint flake recovered from the subsoil in Trench 3 had suffered heavy post-depositional damage and could not be dated.

A deposit of silt on the southern part of the site suggested that this area may have been affected by flooding from the adjacent Sudbrook. It seems likely that, at around this date, the Sudbrook, where it ran close to the factory, was canalised, draining the marshy area which was then included in the factory complex. The 1884 Ordnance Survey map shows the line of the Sudbrook as meandering and tree-grown. It is also possible that these episodes of flooding account for the substantial deposit of subsoil, some 0.50m thick, in Trenches 3 and 4.

With the exception of the flint (presumed to be residual), the fact that no finds dated prior to the later post-medieval period were present confirms that the area had been in agricultural use until recent times. It is possible that the remaining finds recovered from the site were deposited at the time of factory construction. A sample of peat from the base of a palaeochannel at a depth of 1.80m in Trench 3 proved to be sterile, suggesting this had formed at some distance from occupation.

2 Introduction

Border Archaeology Ltd (BAL) was instructed by Markey Construction to undertake a programme of Archaeological Field Evaluation (AFE) on the site of the former Norville Factory located on the N side of Tarrington Road Tredworth Gloucester (Planning Ref: 16/00815/FUL) (NGR SO 83932 17094) (*fig. 1*).

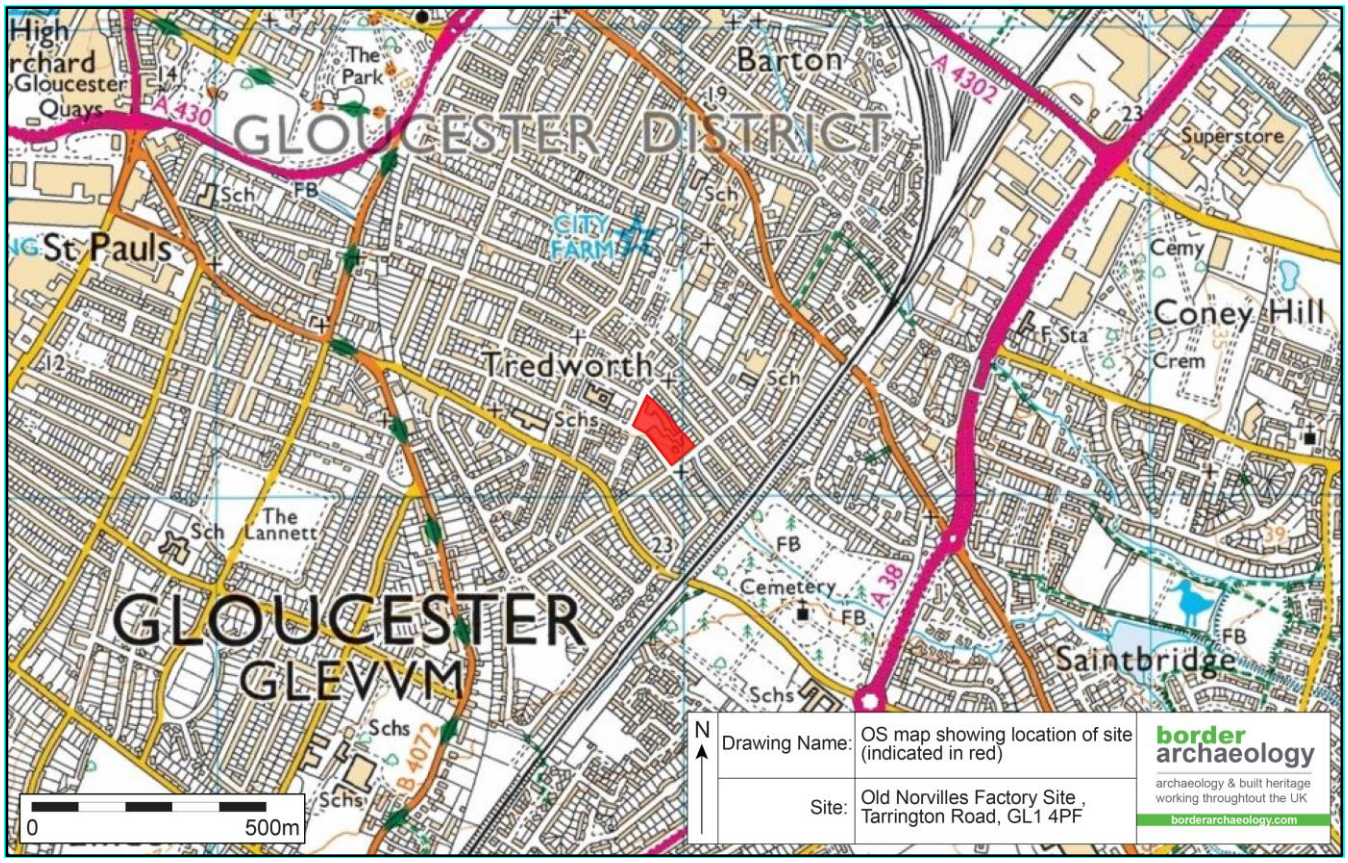

Fig. 1 Site location (marked in red)

This was formerly the site of the Hatherley Step Works, which was established in 1885 and much-altered during the later 19th and early 20th centuries and again during the Second World War, when the site was requisitioned by the Gloster Aircraft Company. Any below-ground remains surviving from this early period of operation were considered likely to have been further impacted by later 20th -century alterations to the site layout and the construction of concrete yardage.

3 Site Description

The site lies at approximately 19.70m AOD within the Barton and Tredworth ward. It was formerly occupied by the Norville Optical Company, undertaking spectacle lens production; manufacturing ceased at the site in 2002. The

surrounding area is mainly residential: rapid development occurred during industrialisation and much Victorian architecture survives in this area.

3.1 Soils & Geology

Due to its urban location, this area has not been surveyed by the Soil Survey of England and Wales (SSEW 1983). However, the British Geological Survey records the underlying geology of the study area as comprising Lower Lias clays of the Jurassic period (Geological Survey of Great Britain Sheet 234) (BGS 2014).

4 Aims

The evaluation aimed to clarify the nature and extent of existing disturbance and intrusion and assess the degree of archaeological survival of buried deposits. It was considered likely that the evaluation trenching would encounter buried remains associated with the Hatherley Step Works and, potentially, Second World War air-raid shelters constructed on the site of the Gloster Aircraft Company. Based on the possibility of encountering remains associated with the 19th -century industrial use of the site, potential was identified to address Research Aim 45 of the *South West Archaeological Research Framework*, namely, to broaden understanding of post-medieval to modern technology and production, prioritising the late 19th and 20th centuries (Grove & Croft 2012, 22). Some potential was also identified for encountering archaeological remains of Roman and medieval date.

Additionally, based on the proximity of the Sudbrook, which runs through the northern part of the site, the City Archaeologist (CA) Gloucester City Council indicated the potential survival of palaeochannels containing archaeological or palaeoenvironmental material. It was noted that, elsewhere within the wider vicinity, similar streams lie adjacent to deposits of peat and alluvium that can contain prehistoric material.

5 Brief Historical and Archaeological Background

Evidence of prehistoric activity has been identified in the wider area, with Robinswood Hill evidently representing a focus of human activity as early as the Neolithic period. Later prehistoric finds have also been made within the vicinity, particularly in the Saintbridge area to the E.

Substantial evidence for Romano-British occupation has also been unearthed to the S of Barton Street (SO 835 184), comprising 12 U-shaped ditch features aligned at right-angles to the street and containing Roman pottery of 2nd -to 4th -century date, together with a single inhumation in a wooden coffin and hobnailed footwear (Garrod 1978, 26). It has been suggested that the Romano-British inhumations may represent isolated groupings associated with nearby farmsteads or villa sites rather than forming part of an extensive extramural cemetery to the SE of the *colonia* (Heard & Pugh 2009, 14).

Around AD 767, it is recorded that the Royal manor of King's Barton supplied food and administrative services to the palace at Kingsholm. In 1066, King's Barton manor possessed 12 plough teams, three of which belonged with

seven *servi* to the demesne. In the time of King Edward, the manor rendered £9 5*s*. and 3,000 loaves for the king's hunting dogs. By 1086, it rendered £20, 20 cows, 20 pigs and 16*s*. for bread.

Settlement developed on outer Barton Street during the 13th century and ironworking, cloth-making and leather-working were established by 1327. By 1370, Barton Street had become established as a hamlet outside the borough boundary.

A pit containing 11th -13th -century pottery recorded in 2013 during an evaluation and watching brief at No. 227 Barton Street (HER Record No. 2170; NGR SO 8407 1776) provides limited archaeological evidence of medieval occupation along the section of Barton Street to the N of the study area.

Later medieval and early post-medieval documentary sources indicate that the study area lay within the field of Upper Tredworth at that time. This comprised a large open field extending along the N side of the Tredworth Road, its N boundary marked by Barton Street.

The largely rural character of the study area during much of the post-medieval period probably accounts for the lack of archaeological features recorded in the Gloucester City Council HER in the immediate locality of the site. Gradual urbanisation began in the mid-19th century with the construction of a number of semidetached villas and Tredworth at that time became a fashionable residential area. By the 1880s, however, development had taken place to the E of the High Street, although the W side remained largely open land known as 'Newtown'. By the late 1870s, suburban housing had encroached southwards from Barton Street as far as the northern and western boundaries of the site, which at that time lay within the northern part of a large enclosed arable field bordered to the N by the Sudbrook and to the S by Tredworth Road.

In terms of the site itself, the Hatherley Step Works was operational by 1885 under the direction of its founder, Charles Allan Moore, a local solicitor and inventor. The factory produced Moore's patented stepladders and, by the late 1890s/early 1900s, the Hatherley Works was exporting 'Lattisteps' throughout the UK and overseas. The factory also specialised into the manufacture of folding tables, cycle stands, trestles and poultry houses.

This period of rapid business growth is attested by the substantial alterations carried out on the works buildings during the late 19th -early 20th century. The Second World War brought further alterations, as part of the site was requisitioned for use as an aircraft factory operated by the Gloster Aircraft Company. It was latterly occupied by the Norville Optical Company Limited.

6 Methodology

The programme of archaeological work was carried out in accordance with practices set out in *Standard and Guidance for archaeological field evaluation* (CIfA 2014) and *Standard and Guidance for the collection, documentation, conservation and research of archaeological materials* (CIfA 2014). BAL adheres to *Management of Research Projects in the Historic Environment: The MORPHE Project Managers' Guide* (Lee 2015).

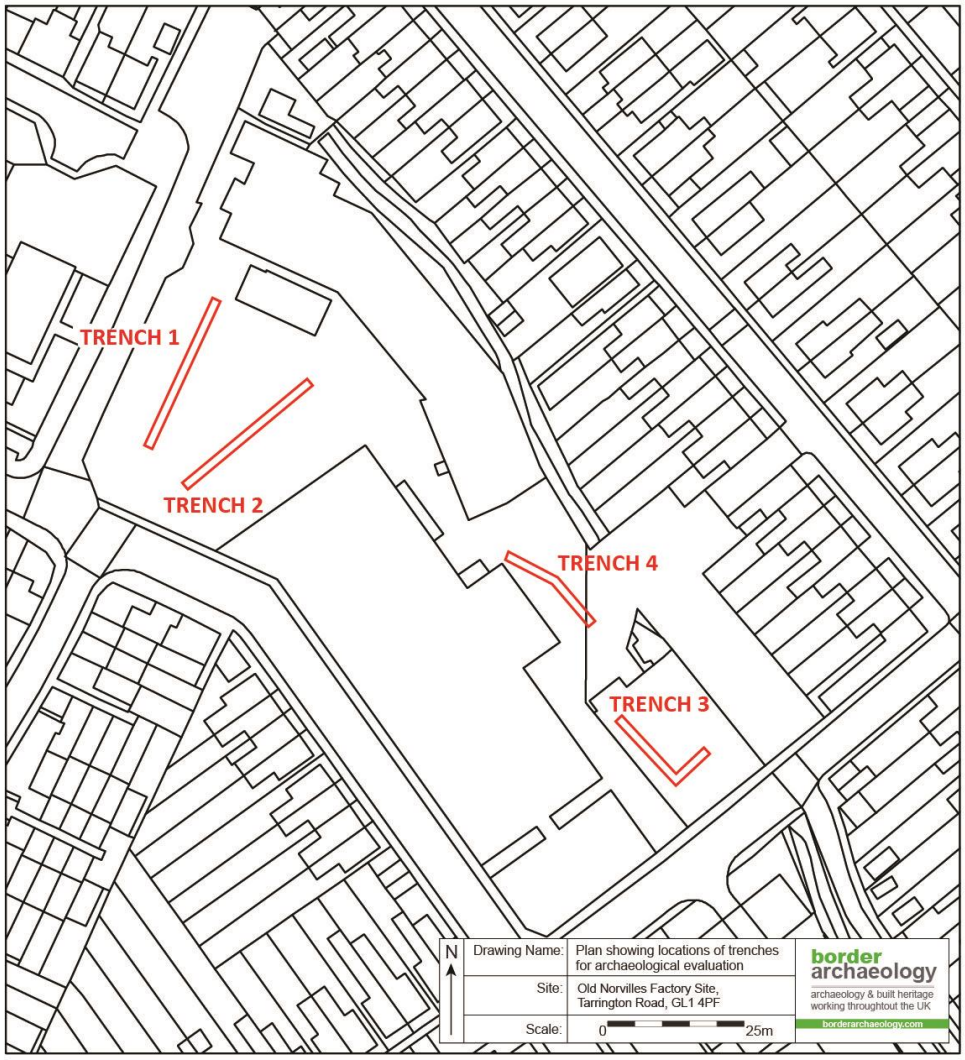

Fig. 2: Plan showing location of trenches

The evaluation comprised four trenches (*fig. 2*), the original layout being modified consistent with existing ground conditions and agreed by the CA. Trenches 1 and 2 measured approximately 28m in length and were located in open ground in the NW extent of the site, consistent with the original scheme, although Trench 2 was moved some 4.5m to the SW, while remaining on the same alignment. Trench 3 was 'L- shaped', with the NW/SE part of the trench measuring 18.5m and the NE/SW -aligned spur, at right-angles to the adjacent Sudbrook, measuring 5.5m. Trench 4, to the NW of Trench 3, measured 18m and was angled slightly to avoid substantial concrete footings. All trenches were 1.8m wide.

Undifferentiated topsoil and overburden of recent origin was removed by machine under archaeological supervision, using a wide untoothed blade ditching bucket. Once the first significant archaeological horizon was reached, excavation proceeded by hand.

6.1 Recording

Full written, graphic and photographic records were made in accordance with BAL's *Field Recording Manual* (2014). In the absence of archaeological deposits, the written record comprised a *pro-forma* trench recording sheet for each excavated trench.

The drawn record (Trenches 3 and 4) was produced on gridded, archive stable polyester film. Plans of each area excavated showed the extent of the area (tied to the Ordnance Survey National Grid and located on a 1:2500 plan), the extent of all stratigraphic units and appropriate detail within stratigraphic units. Plans and sections for these trenches were drawn at a scale of 1:50.

Temporary benchmarks (TBM) were established at appropriate locations and plans, elevations and sections contain grid and level information relative to OS data. All drawings were numbered and listed in a drawing register, these drawing numbers being cross-referenced to written site records.

A photographic record of all stratigraphic units was made using a high-resolution digital camera, comprising photographs of archaeological features and appropriate groups of features and structures. An appropriate scale was included in each photograph and photographic records were indexed and cross-referenced to written site records. Details concerning subject and direction of view were maintained in a photographic register, indexed by frame number. A representative photographic record of the progress of the archaeological work was also made.

Two sherds of machine-made white earthenwares of 19th -century date or later were recovered, together with a single fragment of post-medieval CBM and a single piece of flint. These were bagged and labelled with the site code and context number before being removed off-site and were subsequently assessed according to typological or chronological criteria (*Appendices 1 & 3*).

6.2 Palaeoenvironmental/palaeoeconomic sampling

Samples for palaeoenvironmental/palaeoeconomic purposes were collected according to guidance set out by Historic England in *Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation* (2nd Edition) (Campbell, Moffet & Straker 2011).

However, the recovery of material of 19th -century date from two of the samples, <1> and <2>, resulted in these being subsequently discarded. Single sample <3> recovered from a machine-cut *sondage* into ditch/watercourse [307] was retained for assessment.

Sample processing has been undertaken by BAL at its Milton Keynes Environmental Processing Facility under the direction of Amy Bunce BSc MA Director: Paelaeoenvironmental Sciences and Robin Putland BSc (Hons) MSc (*Appendix 2*).

7 Results

7.1 Trench 1

Trench 1 was aligned NNE/SSW and lay at the NW side of the site, close to Paul Street. The trench measured 28m × 1.8m. No deposits of archaeological significance were observed in Trench 1, with two possible test pits and carpark surfaces present, in addition to natural and agricultural deposits.

Item	Context No.	Type	Interpretation	Description	Finds					Comments
					Small Find	Pot	Bone	Misc.	Sample No.	
1	101	Structure	Existing surface	Indurated concrete; measured 0.12m thick, trench-wide. Overlying (102).	-	-	-	-	-	-
2	102	Structure	Brick surface forming previous carpark/yard surface	Brick; measured 10.10m × >1.8-0m × 0.10m thick. Underlying (101), overlying (103).	-	-	-	-	-	-
3	103	Deposit	Previous surface or bedding for brick (102)	Loose/friable cinder/clinker; measured 0.07m thick. Underlying (102).	-	-	-	-	-	Did not extend beyond (102).
4	104	Deposit	Aggregate layer	Pale yellow aggregate; measured >4.20m × >1.80m × 0.26m. Underlying (101), abutted (102).	-	-	-	-	-	At SSW end of trench only.
5	105	Deposit	Former agricultural topsoil	Firm very dark greyish-brown silty clay, occasional CBM; measured 0.40m thick, trench-wide. Underlying (103), cut by [107] & [108].	-	-	-	-	-	-

Item	Context No.	Type	Interpretation	Description	Finds					Comments
					Small Find	Pot	Bone	Misc.	Sample No.	
6	106	Deposit	Subsoil	Stiff yellowish-brown clay sand; measured 0.26m thick, trench-wide. Underlying (103), overlying (111).	-	-	-	-	-	-
7	107	Cut	Modern feature	Square in plan (rounded corners); measured 0.50m × 0.50m × 0.60m. Cut (105), filled by (109).	-	-	-	-	-	-
8	108	Cut	Modern feature	Square in plan (rounded corners); measured 0.50m × 0.50m × 0.60m. Cut (105), filled by (110).	-	-	-	-	-	-
9	109	Deposit	Fill of [107], agricultural topsoil	Compact very dark greyish-brown silt clay, occasional CBM; measured 0.50m × 0.50m × *c*. 0.60m. Underlying (112), fill of [107] .	-	-	-	-	-	-
10	110	Deposit	Fill of [108], agricultural topsoil	Compact very dark greyish-brown silt clay, occasional CBM; measured 0.50m × 0.50m × *c*. 0.60m. Underlying (103), fill of [108].	-	-	-	-	-	-
11	111	Deposit	Natural	Firm yellowish-brown sandy clay, patches of gravel; measured >0.50m thick, trench-wide. Underlying (106).	-	-	-	-	-	Deposit became sandier with more frequent gravel inclusions as depth increased.
12	112	Structure	Previous concrete surface at NNE end of trench	Indurated concrete; measured 12m × >1.8m × 0.10m. Underlying (101), abuts (103).	-	-	-	-	-	-

7.2 Trench 2

Trench 2 lay to the SE of Trench 1 and was aligned NE/SW. The trench measured 28m × 1.8m. No deposits of archaeological significance were present in Trench 2. As a result of the thick layer of concrete at the NE end of this trench, its position was moved 4.50m to the SW, while maintaining its original alignment.

Item	Context No.	Type	Interpretation	Description	Finds					Comments
					Small Find	Pot	Bone	Misc.	Sample No.	
1	201	Deposit	Existing concrete surface	Indurated concrete; measured 0.30m thick (including bedding layer). Overlying (202).	-	-	-	-	-	-
2	202	Deposit	Former agricultural topsoil	Firm dark greyish-brown silt clay; occasional reddish & black flecking; measured 0.30m thick, trench-wide. Underlying (201), overlying (203).	-	-	-	-	-	-
3	203	Deposit	Subsoil	Firm yellowish-brown sand clay; occasional white gravel; measured 0.22m thick, trench-wide. Underlying (202), overlying (204).	-	-	-	-	-	-
4	204	Deposit	Natural	Firm yellowish-brown sandy clay; frequent manganese flecks; measured >0.70m thick, trench-wide. Underlying (203).	-	-	-	-	-	Deposit became sandier with depth.

7.3 Trench 3

Trench 3 was 'L'-shaped in plan and was opened in the southern part of the site. The NW/SE part of the trench measured 18.5m and the NE/SW -aligned spur, at right-angles to the adjacent Sudbrook, measured 5.5m. A number of large concrete bases/plinths, presumably associated with the former Hatherley Works, were removed from the topsoil during the initial machine strip.

Item	Context No.	Type	Interpretation	Description	Finds					Comments
					Small Find	Pot	Bone	Misc.	Sample No.	
1	301	Deposit	Topsoil	Fairly loose mid/dark brown silt clay; occasional stone & CBM, frequent roots; measured 0.35m thick, trench-wide. Overlying (302).	-	-	-	-	-	-
2	302	Deposit	Subsoil	Compact yellowish-/greyish-brown clay; occasional reddish flecks, charcoal flecking & white stones; measured <0.50m thick, trench-wide. Underlying (301), overlying (304), (306).	-	-	-	-	<2>	Sample subsequently discarded due to presence of late post-medieval/ modern material.
3	303	Deposit	Natural	Firm light yellowish-brown clay; measured >1.0m thick.	-	-	-	-	-	Natural deposits in base of trench.
4	304	Cut	Watercourse	Linear in plan; aligned approximately E/W; sides gradually sloping; measured 3.50m × >1.80m × >0.50m. Cut (303), filled by (305).	-	-	-	-	-	Probably naturally formed linear feature.

Item	Context No.	Type	Interpretation	Description	Finds					Comments
					Small Find	Pot	Bone	Misc.	Sample No.	
5	305	Deposit	Fill	Compact yellowish-/greyish-brown clay; occasional reddish flecks, charcoal flecking & white stone; measured 3.5m × >1.80m × >0.50m thick. Underlying (302), fill of [304].	-	-	-	-	-	Could not be distinguished from (302).
6	306	Deposit	Fill	Compact yellowish-/greyish-brown clay; occasional reddish flecks, charcoal flecking, white stone & pottery; 1 × flint. Underlying (302), fill of [307].	-	✓	-	✓	<3>	Could not be distinguished from (302). Sample taken from base of deposit at a depth of 1.80m.
7	307	Cut	Possible watercourse	Linear in plan; aligned NW/SE; SW side gradually sloping; measured >2.5m × >1.80m × 1.25m. Cut (303), filled by (306).	-	-	-	-	-	-

7.4 Trench 4

Trench 4, to the NW of Trench 3, measured some 18m in length and was aligned NW/SE. The trench was angled slightly to avoid substantial concrete footings The SE end was not excavated to depth in order to avoid disturbing a duct.

Item	Context No.	Type	Interpretation	Description	Finds					Comments
					Small Find	Pot	Bone	Misc.	Sample No.	
1	401	Structure	Existing brick surface	Indurated brick; measured >7.50m × >1.80m × 0.12m thick, trench-wide. Overlying (402).	-	-	-	-	-	Located to NW of (410).
2	402	Deposit	Possible former cinder yard surface	Loose/friable cinder; measured >7.50m × >1.80m × <0.50m thick. Underlying (401), cut by (410).	-	-	-	-	-	-
3	403	Deposit	Subsoil	Moderately compacted mid yellowish-brown clay; occasional burnt clay/CBM and charcoal flecking; measured >17.0m × >1.80m × 0.50m thick. Underlying (402), overlying (406).	-	-	-	-	-	Upper part of deposit stained by contact with (402).
4	404	Deposit	Natural	Pale yellowish-brown clay; measured >17m × >1.80m × >0.75m. Underlying (403), cut by [405].	-	-	-	-	-	Natural deposition in base of trench.
5	405	Cut	Probable naturally formed watercourse	Irregular linear in plan; aligned approximately E/W; sides gradually sloping, base not seen; measured 9m × >1.80m × >0.50m deep. Cut (404), filled by (406).	-	-	-	-	-	-
6	406	Deposit	Fill of [405]	Moderately compacted mid yellowish-brown clay; occasional flecks of burnt clay/CBM & charcoal, C19 clay tobacco pipe (recovered from hand-cut *sondage*);	-	✓	-	✓	<1>	Underlying (402) from which it could

Item	Context No.	Type	Interpretation	Description	Finds					Comments
					Small Find	Pot	Bone	Misc.	Sample No.	
				measured 9m × >1.80m × >0.50m thick. Underlying (402), fill of [405].						not be distinguished. Sample discarded due to presence of late post-medieval/ modern material.
7	407	Structure	Footing relating to former factory structure.	Indurated concrete; linear in plan; aligned NW/SE; measured >7m × >0.20m × 0.80m deep.	-	-	-	-	-	Extended beyond trench. Not seen to S of (410).
8	408	N/A	Iron pipe relating to former factory structure	Iron pipe above surface to S (Trench 3) but beneath ground in Trench 4. Aligned NW/SE. Continuation of alignment to N of (410) was salt glazed stoneware	-	-	-	-	-	-
9	409	Structure	Brick plinth relating to former factory structure	Indurated brick; roughly square in plan; comprising 10 bricks; measured approximately 0.50m × 0.50m (depth unknown).	-	-	-	-	-	Appeared to be part of or incorporated into (410).
10	410	Structure	Footing associated with former factory structure	Indurated concrete; linear in plan; aligned NE/SW; measured >1.80m × 2m × 0.35m deep.	-	-	-	-	-	Brick plinth (409) was incorporated into this structure;

Item	Context No.	Type	Interpretation	Description	Finds					Comments
					Small Find	Pot	Bone	Misc.	Sample No.	
										different construction phases may be indicated.
11	411	Structure	Existing concrete surface to S of (410)	Indurated concrete; measured >8.0m × >1.80m × 0.12m thick.	-	-	-	-	-	-

8 Discussion

No deposits or features of archaeological significance were encountered in Trench 1 or Trench 2. A deposit of topsoil, (105), (202), lying beneath the concrete surface confirmed the former agricultural use of the site (*Plate 1*). No pottery was recovered from this material. The natural deposit, investigated in two machine-cut *sondages*, was a yellowish-brown sandy clay, with increased gleying and patches of gravel in the base of the trench (1.4m beneath the existing ground level).

Plate 1: View SE of sondage at NE end of Trench 1, showing agricultural topsoil (105) beneath concrete carpark surface

Similar deposits were present also investigated in the *sondage* in Trench 2 (*Plate 2*). With the exception of the carpark surface and a storm drain no deposits associated with the former Hatherley Step Works were present on the N side of the site.

Plate 2: View SW of Trench 2 showing modern storm drain and sondage into natural clay

Unlike Trench 1 and Trench 2, Trenches 3 and 4, on the S side of the site, revealed evidence for structural remains associated with the Hatherley Step Works. A surface of brick (401) and concrete (411) was removed before excavation of Trench 4 could take place. Further structures associated with the factory comprised two substantial concrete foundations, (407) and (410), in Trench 4 and a series of concrete plinths, which were removed with the topsoil in Trench 3. A substantial pipe (408) ran along the length of the site at a shallow depth in Trench 4 but above the ground surface along the length of Trench 3. The section of pipe to the SE of concrete foundation (410) was iron but to its NW the material was salt-glazed ceramic.

A substantial (0.50m-thick) layer of subsoil, (302) and (403), was present in both trenches and would appear either to represent flood deposits or the presence of waterlogged conditions along the banks of the Sudbrook. The subsoil in Trenches 1 and 2, at a greater distance from the brook, while similar in composition, was, at most, 0.26m thick, which appeared to confirm potential alluvial deposition. A single fragment of struck flint, probably from this deposit, was thought to be a primary flake. The flint had been affected by post-depositional damage and, whilst indicating the presence of prehistoric activity in the area, could not be dated (*Appendix 3*).

However, pottery recovered from the fills of watercourses [307] and [405] dated to the 19th century. A fragment of somewhat abraded clay tobacco pipe bowl recovered from context (406) during excavation of a hand-cut *sondage* in Trench 4 was probably of early 19th -century date. This would seem to indicate that the deposits were not necessarily of great antiquity, but may have been extant at the time of the construction of the Hatherley Step Works at the end of the 19th century. The flint would therefore be residual in the deposit from which it was recovered. The paucity of pottery of earlier date confirms that until recent times the site lay at some distance from any occupation. The marshy nature of the area around the Sudbrook may have further made occupation unlikely until the 1880s. The 1884 OS mapping shows the site as open ground with the Sudbrook slightly meandering and tree-lined. The 1902 map indicates that by this date the brook at this point had been canalised, presumably in conjunction with the construction of the Hatherley Step Works.

Plate 3: View NW of Trench 4 showing hand-dug sondage into fill (406) and footings (407), (410), with diesel contamination shown in corner of trench

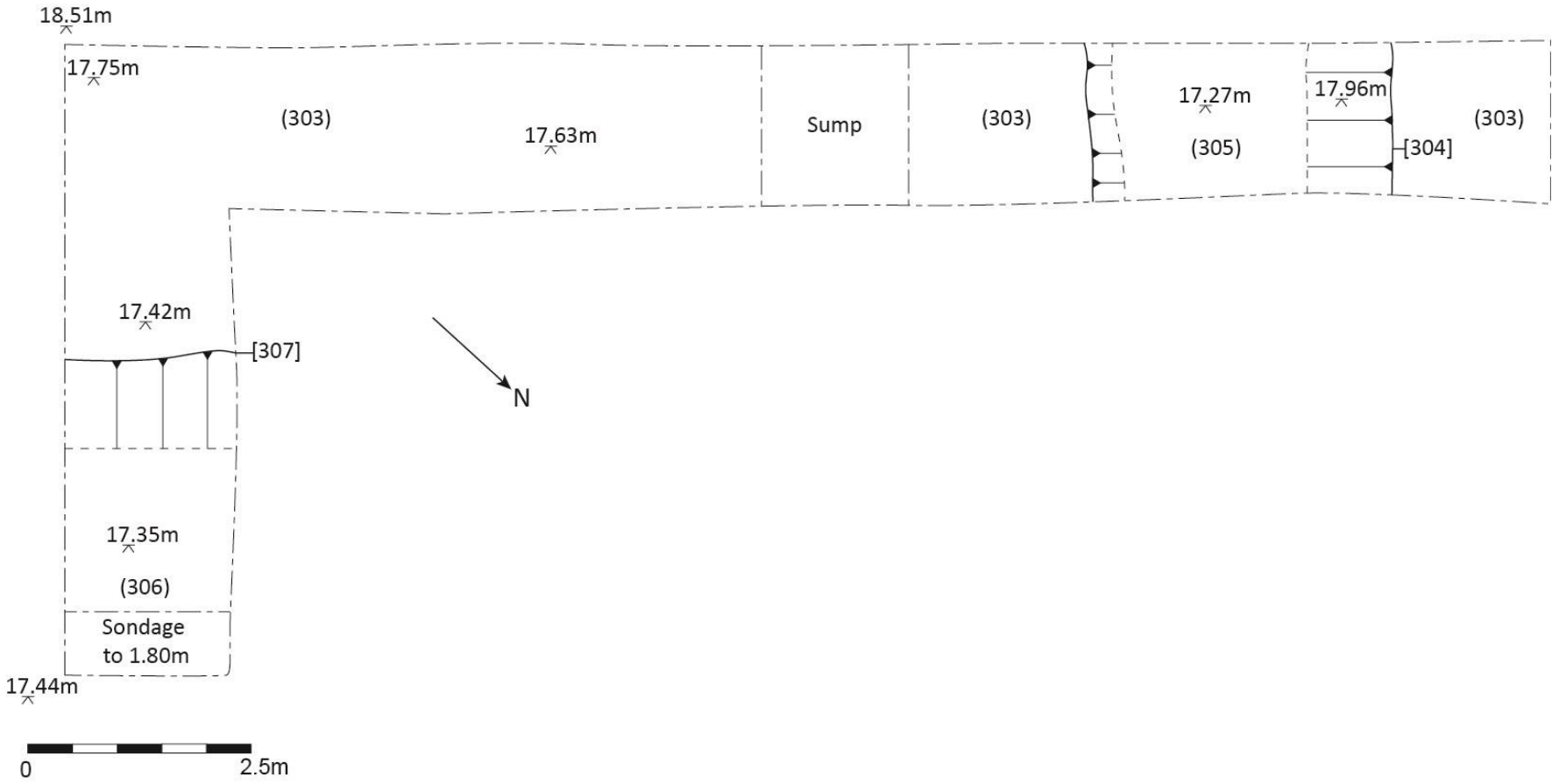

Fig. 3: Plan of Trench 3

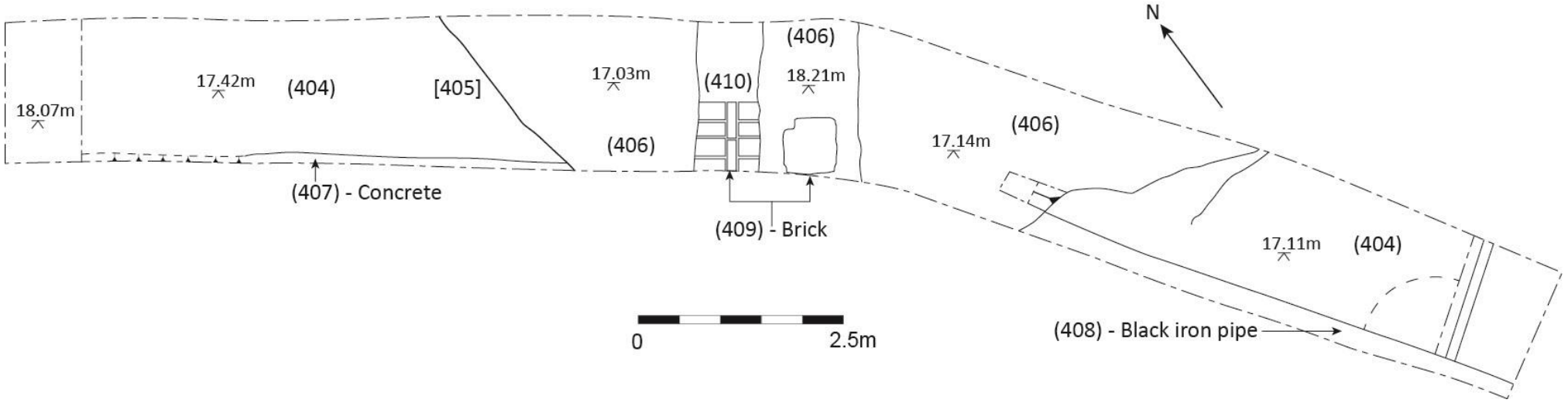

Fig. 4: Plan of Trench 4

9 Copyright

Border Archaeology Ltd shall retain full copyright of any commissioned reports, tender documents or other project documents, under the Copyright, Designs and Patents Act 1988, with all rights reserved, excepting that it hereby provides a licence to the client and the Council for the use of the report by the client and the Council in all matters directly relating to the project as described in the Project Specification to use the documentation for their statutory functions and to provide copies of it to third parties as an incidental to such functions.

10 Bibliography

Gloucester City Council Historic Environment Record: HER report and GIS dataset

Archaeological Landscape Investigation, 2014, *Desk Based Assessment: Former Norville Factory Site Tarrington Road, Tredworth Gloucester*

Ayala, G., Canti, M., Heathcote, J., Sidell, J. & Usai, R., 2007, *Geoarchaeology: Using earth sciences to understand the archaeological record*

Border Archaeology, 2014, *Archaeological Field Recording Manual*

Brown, D., 2011, *Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation* (2nd Edition)

Campbell, G., Moffett, L. & Straker, V., 2011, *Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation* (2nd Edition)

CIfA, 2014, *Standard and guidance for the collection, documentation, conservation and research of archaeological materials*

CIfA, 2014, *Standard and guidance for archaeological field evaluation*

CIfA, 2014, *Standard and Guidance for the creation, compilation, transfer and deposition of archaeological archives*

CIfA, 2014, *Code of conduct*

Garrod, P., 1978, 'Site Reports', *Glevensis* **12**, 26

Gloucester City Council, 2016, *16/00815/FUL – Norvilles Site, Tarrington Road: Brief for an archaeological evaluation (trial trenching)*

Grinsell, L. V., & O'Neil, H., 1960, 'Gloucestershire Barrows', *Transactions of the Bristol and Gloucestershire Archaeological Society*, **79**, ll4

Grove, J. & Croft, B., 2012, *The Archaeology of South West England South West Archaeological Research Framework Research Strategy 2012–2017*, Somerset County Council

Heard, H. & Pugh, G., 2009, *Archaeological Desk Based Assessment: Park End Road, Gloucester*

Heighway, C., 1985, *Gloucester: A History and Guide*

Kelly's Directory of Gloucestershire (19th-20th century)

Herbert, N. M. (Ed.), 1988: *A History of the County of Gloucester: Volume **4** – The City of Gloucester*, London

Lee, E., 2015, *Management of Research Projects in the Historic Environment. The MoRPHE Project Managers' Guide,* Historic England

McWhirr, A., 1981, *Roman Gloucestershire*, Gloucester

Medland, M. H., 'On some further evidence of the Roman occupation of Gloucester', *Proceedings of the Cotswold Naturalists Field Club* **15**, 45-8.

MGC, 1994, *Standards in the museum care of archaeological collections*

Phillimore, W. P. W., 1893-4; Archaeological Discoveries', *Gloucestershire Notes and Queries*. Vol. **6**, 184

Smith, A. H., 1964, 'The place names of Gloucestershire', *English place name society*, **39**

SSEW, 1983, *Soil Map of England and Wales Scale* 1: 250,000, Silsoe

UKIC, 1990, *Guidelines for the preparation of excavation archives for long-term storage*

Walker, K., 1990, *Guidelines for the preparation of excavation archives for long-term storage,* United Kingdom Institute for Conservation (UKIC) Archaeology Section

Watkinson, D. & Neal, V., 2001, *First Aid for Finds*

Webster, C. J., 2007, *The Archaeology of South West England: South West Archaeological Research Framework*, Somerset County Council

11 Appendix 1: Pottery and Ceramic Building Material (CBM) Assessment

K. H. Crooks
Border Archaeology Ltd

Only two sherds of pottery (total weight 5.38g) were recovered during the evaluation excavation at the former Norville Factory site. Both were machine-made white earthenwares of 19th -century or later date. It is therefore possible that they were deposited at around the time the Hatherley Step Works was established on the site.

The single fragment of CBM (42.67g) was evenly fired and also of post-medieval date.

The absence of any earlier material confirms that the area was undeveloped agricultural land until the mid-to-late 19th century and almost certainly lay at some distance from any occupation until that time.

12 Appendix 2: Palaeoenvironmental assessment

Amy Bunce BSc MA
Border Archaeology Ltd

12.1 Executive Summary

This Report has been prepared by the Palaeoenvironmental Department at Border Archaeology Ltd (BAL) to facilitate and elucidate the palaeoeconomic interpretations of a probable palaeochannel fill recorded in Trench 3 of the former Norville Factory site at Tarrington Road Tredworth Gloucester.

The land under investigation had previously been of industrial use and evidence of the rebuilding of the factory structures when the site changed hands was apparent during the evaluation works. Prior to 1885, the site was likely to have been rural in character.

In addition to the sample analysed, two further samples were taken from material later revealed to be of modern date and, following consultation with the CA, these were discarded on site and are not addressed in this report.

In accordance with the Gloucester City Council brief for the works, deposits of palaeoenvironmental potential were sampled. Due to the limitations of evaluation trenching, 10ℓ of the securely identified deposit was taken. Due to the on-site disposal of two samples originating from modern material, this resulted in one sample comprising 10ℓ of material being received by the Palaeoenvironmental Department and processed through flotation with the resultant potential archaeological and archaeobotanical material sorted and identified.

The sample of the probable palaeochannel in trench 3 was located to SE of the site and to the eastern side of the L shaped trench 3 where it was investigated with a sondage to a depth of 1.8m. It is reasonable to suggest that the palaeochannel represents the route of the Sudbrook prior to canalisation during industrial development.

The heavy clay component of the palaeochannel fill added significantly to processing time and with the fluvial sandy nature of the geological element of the palaeochannel fill, very little residue was retrieved from the sample.
No material of archaeobotanical or archaeological origin was recovered and the conclusions drawn are predominantly based on this absence of material and the profile of the sediment.

12.2 Introduction

This report details the results derived from one sample, constituting a total of 10ℓ of soil, retrieved from one palaeochannel [307]. This feature was revealed amongst features of a modern date within four archaeological evaluation trenches excavated in late 2016 at the former factory site of the Norville Optical Company Tarrington Road Tredworth Gloucester.

At the time of evaluation, the site and buildings were unoccupied following the cessation of manufacturing in 2002. Previous buildings were visible and represent changes in ownership and function of the site. Light manufacturing

on the site originated with the Hatherley Step Works in 1885. Prior to this the site was rural in nature with the nearby river ultimately being canalised and its progression across the site and liability to flood controlled. The evaluation trenches were machine dug with a width of 1.8m and were partly located as the conditions on site dictated while still giving coverage to ensure full evaluation of the archaeological potential of the site.

The sample was processed by means of flotation and any potential archaeobotanical remains from both the floating element and the heavier residue was sorted and visually identified. Archaeobotanical recovery was non-existent and no material of archaeological significance was retrieved.

Trench 3, from where the sampled palaeochannel was identified, occupied the SE part of the site and was excavated in an L shape, with the palaeochannel [307] to the eastern extent of the trench. This is highly suggestive of palaeochannel [307] representing a previous iteration of the modern Sudbrook.

The extremely heavy clay component of the fill (306) may give some indication of the surrounding geology which is not surveyed by the Soil Survey of England and Wales (1983) due to the urban setting. In addition to the heavy clay, the fluvial nature of the palaeochannel fill meant that the geological element of the deposit was largely comprised of sands and only the coarsest sands were retained in the retent mesh leading to a retent of only 0.075ℓ from 10ℓ of soil.

12.3 Methodology

12.3.1 Objectives of analysis

The purpose of the palaeoenvironmental sampling strategy implemented during archaeological evaluations is the retrieval of non-specific palaeoenvironmental remains and the further characterisation of features that cannot be fully investigated due to the confines of the evaluation parameters. An additional purpose to palaeoenvironmental reporting in the case of archaeological evaluations is the recommendation of further, potentially specific, palaeoenvironmental sampling in further archaeological mitigation.

12.3.3 Sampling methodology

Sampling methodology followed the BAL Palaeoenvironmental Department Manual for environmental sampling and processing. On site, the samples were collected in sample buckets and identified by context and sample number. Following receipt into the Palaeoenvironmental Department, they were assigned bucket numbers for tracking purposes. The samples were not subject to sub-sampling and their entirety was processed by means of flotation.

Flotation was undertaken in Siraf-style tanks with a 1mm retent mesh and 250µm flot sieve. No refloating was required for these samples. Retents were initially scanned by magnet to retrieve any archaeometallurgical debris and a sieve bank was used to facilitate visual sorting with the smaller fractions sorted by means of magnifying lamp and/or illuminated stereo zoom microscopy (≥x10). The flots were sorted entirely by means of illuminated stereo zoom microscopy (≥x10). The results of this analysis are reported with the flot and retent data recombined.

12.4 Personnel

Flotation and primary analysis was undertaken by Robin Putland BSc MSc, Carolina Sanchez-Ignacio BSc, Janice McLeish MA, Adam Griffiths BA and Mark Sargent BA within BAL's Palaeoenvironmental Department. This work was further assisted by BAL's field staff as part of a programme of Continuing Professional Development (CPD). Further analysis and identification was undertaken by Robin Putland BSc MSc and Amy Bunce BSc MA.

12.5 Description of results

12.5.1 Description and implications of materials recovered

Detailed below are the general implications of the discovery of certain materials within the palaeoenvironmental samples. Section 5.2 details such information by context.

12.5.2 Geological residue and uncarbonized organic material

The geological profile was of 90% sand grains smaller than 1mm. A vast proportion of such sized sand grains would have passed through the retent mesh so this geological profile is likely significantly biased. The remainder of the geological profile comprised stones no larger than 7mm. Sand is highly suggestive of a fluvial deposit. A few occurrences of uncarbonized organic material recovered from the flot represent modern grass leaves that probably became included through contamination on site.

12.6 Description of palaeoenvironmental remains by contexts

Detailed below is the context sampled. Results can be observed in the table below.

12.6.1 (306)

The absence of archaeological and archaeobotanical material is suggestive of formation of the context at some distance from human occupation and, in this instance, through natural processes. The geological profile further supports this fluvial interpretation and can merely confirm the archaeological interpretation of the feature as a palaeochannel that predated human activity on the site.

12.7 Tables of results

The following table details the results of both the archaeobotanical material and the archaeological finds. The flot and retent data has been recombined due to the lack of variation between the material represented.

12.8 Table of archaeobotanical and non-archaeobotanical remains

Abundance key: + = rare; ++ = occasional; +++ = common; ++++ = abundant

		Context no.	306
		Sample no.	3
		Sample part	1/1
		Bucket no.	E7661
		Sample vol. (mℓ)	75
		% sample analysed	100
		Waterlogged?	N
		Refloated?	N
Latin name	Common name	Plant part	
Uncarbonised organic material			
Poaceae	Grass	Leaf	+

12.9 Conclusions and recommendations

An intention of the non-specific palaeoenvironmental sampling at Tarrington Road was to confirm the archaeological interpretation of the palaeochannel and this has been demonstrated in the geological profile of the sample. The absence of any other material suggests that this fluvial deposit was laid down at some distance from human activity and this further confirms the interpretative suggestion that the route of the Sudbrook was previously unconstrained.

Due to the evaluation nature of the archaeological works this assemblage has derived from and the complete absence of material, no further work is recommended.

There are no recommendations for retention of the materials recovered as part of the site archive.

12.10 Bibliography

Border Archaeology, 2015, *Palaeoenvironmental Department Manual*, Border Archaeology Ltd

Cameron, R., 2008, *Land Snails in the British Isles*, FSC Publications occasional publication 79

Campbell, G., Moffett, L. & Straker, V., 2011, *Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation* (2nd Edition), Historic England

Groningen Institute of Archaeology, 2006-present, *Digital Seed Atlas of the Netherlands*, available at: https://dzn.eldoc.ub.rug.nl

Hather, J., 2000, *The Identification of the Northern European Woods: A guide for archaeologists and conservators*, Archetype Publications, London

Jacomet, S., 2006, *Identification of Cereal Remains from Archaeological Sites* (2nd Edition), Institute for Prehistory and Archaeological Science, Basel

Kerney, M.P. & Cameron, R.A.D., 1979, *A Field Guide to the Land Snails of Britain and North-west Europe*, Collins, London

Martin, A. & Barkley, W., 2000, *Seed Identification Manual*, Blackburn Press, New Jersey

Renfrew, J., 1973, *Palaeoethnobotany: the Prehistoric Food Plants of the Near-East and Europe*, Methuen & Co. Ltd., London

Schoch, W., Pawlik, B. & Schweingruber, F., 1988, *Botanical Macro-Remains: an Atlas for the Determination of frequently encountered and ecologically important Plant Seeds,* Haupt, Berne & Stuttgart

Schweingruber, F., 1990, *Microscopic Wood Anatomy* (3rd Edition), Swiss Federal Institute, Birmensdorf

SSEW, 1983, *Soil Map of England and Wales*

Stace, C., 2010, *New Flora of the British Isles* (3rd Edition), Cambridge University Press, Cambridge

13 Appendix 3 The flint

Rebecca Delaney

A single piece of worked flint was recovered from (306) in Trench 3. The piece exhibits a heavy white cortication and has suffered fairly heavy post-depositional damage; however, the bulb of percussion and bulbar scar are still evident, indicating that this flake was deliberately created. The striking platform shows a lack of preparation and the hinge termination suggests poor quality knapping.

The flake is chronologically undiagnostic, but shows evidence of human activity in the area during prehistory.

Report Title		Report Ref	
Archaeological Field Evaluation at the Former Norville Factory Site Tarrington Road Tredworth Gloucester		BA1662NFT	
Report compilation	Katherine Crooks BA		
Editing	George Children MA MCI*f*A		
Issue No.	**Status**	**Date**	**Approved for issue**
1	Final	January 2017	Neil Shurety Dip. M G M Inst M