



# **SWARTHMOOR WwTW, ULVERSTON, Cumbria**

## **Archaeological Watching Brief - Supplementary Report**



**Oxford Archaeology North**

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## SUMMARY

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Oxford Archaeology North (OA North) was commissioned by United Utilities to carry out an archaeological watching brief during groundworks associated with the construction of a new wastewater treatment works and water transfer pipeline at Swarthmoor, Ulverston, Cumbria (SD 2788 7787).

The site of the proposed treatment works lies between the A590 Barrow road and Pennington Lane to the west of Ulverston, Cumbria. The proposed pipeline runs north and north-east from the treatment works site immediately adjacent to the A590, terminating to the west of Stone Cross School.

A programme of desk-based assessment and walkover survey (OA North 2004; OA North 2009 respectively) was initially undertaken across the whole of the pipeline corridor to identify areas of archaeological potential within the proposed development area.

Following the results of this earlier programme of archaeological works, the Specialist Advisor (Archaeology) at Cumbria County Council Historic Environment Services (CCCHES) recommended that a watching brief be undertaken during ground disturbance associated with the proposed development, including topsoil stripping activities. This was duly undertaken in February and August 2009.

No archaeological features of any significance were observed during the watching brief, and no further work is recommended.

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## ACKNOWLEDGEMENTS

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Oxford Archaeology North (OA North) would like to thank United Utilities for commissioning the project. Thanks are also due to staff of KMI Ltd, especially John Levelle, for their assistance during the watching brief.

Andy Bates and Pascal Eloy undertook the watching brief and Vicky Bullock wrote the report. Mark Tidmarsh produced the drawings. Alison Plummer, who managed the project, also edited the report.

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## 1. INTRODUCTION

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### 1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 United Utilities proposed to construct a water transfer pipeline and wastewater treatment works at Swarthmoor, Ulverston, Cumbria (SD 2788 7787). Following the results of a desk-based assessment (OA North 2004) and walkover survey (OA North 2009), the Specialist Advisor (Archaeology) at Cumbria County Council Historic Environment Services (CCCHES) recommended that a watching brief should be undertaken during all ground disturbance associated with the development.
- 1.1.2 This supplementary report sets out the results of the watching brief undertaken during February and August 2009, and should be read in conjunction with the desk-based assessment (OA North 2004) and the walkover survey report (OA North 2009).

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## 2. METHODOLOGY

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### 2.1 PROJECT DESIGN

- 2.1.1 OA North submitted a project design (*Appendix 1*) in response to a verbal brief issued by CCCHES. The project design was adhered to in full, and the work was consistent with the relevant standards and procedures of the Institute of Field Archaeologists, and generally accepted best practice.

### 2.2 WATCHING BRIEF

- 2.2.1 This programme of field observation recorded accurately the location, extent, and character of any surviving archaeological features and/or deposits exposed during the course of ground disturbance, including the topsoil strip, associated with the development. The work comprised the systematic examination of any subsoil horizons exposed during the course of the groundworks, and the accurate recording of all archaeological features and horizons, and any artefacts, identified during observation.
- 2.2.2 All groundworks on the site were conducted under constant archaeological supervision and comprised stripping of topsoil and subsoil to a maximum depth of 0.3m. These works were enacted by a 360° mechanical excavator using a 2m flat ditching bucket. All exposed soil horizons were examined and described and spoil heaps were carefully checked for any unstratified finds.
- 2.2.3 A daily record of the nature, extent and depths of groundworks was maintained throughout the duration of the project. All archaeological features were recorded on OA North's *pro-forma* sheets, using a system based on that of the English Heritage Centre for Archaeology. A monochrome and colour slide photographic record was maintained throughout and, where appropriate, scaled plans and sections were produced to locate the presence of archaeological features as accurately as possible.

### 2.3 ARCHIVE

- 2.3.1 A full professional archive has been compiled in accordance with current English Heritage guidelines (1991). Arrangements for the deposition of the paper and digital archive along with a copy of this report have been made with the Cumbria Record Office, Kendal. The Arts and Humanities Data Service (AHDS) online database project *Online Access to index of Archaeological Investigations* (OASIS) will be completed as part of the archiving phase of the project.

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### 3. BACKGROUND

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#### 3.1 LOCATION, TOPOGRAPHY AND GEOLOGY

- 3.1.1 The south of Cumbria is largely dominated by undulating fells, from which a pastoral landscape with substantial woodlands has developed. The southern limit of south Cumbria is defined by the broad expanse of Morecambe Bay and the surrounding limestone lowlands, which are penetrated by the valleys and estuaries of the Rivers Duddon, Leven, and Kent, all of which support wetland environments in their lower reaches (Hodgkinson *et al* 2000).
- 3.1.2 The village of Swarthmoor is located on the south side of the town of Ulverston, which is situated on the Furness Peninsula, to the north-east of Barrow-in-Furness, north of Morecambe Bay (Fig 1). The pipeline route starts between Swarthmoor and Ulverston, and heads north-east towards Ulverston town centre.
- 3.1.3 The underlying solid geology of the area consists of Silurian Ludlow greywakes (Coniston Grits) and banded mudstones and siltstones. The southern part of Ulverston lies on Carboniferous Dinantian limestones (Countryside Commission 1998).

#### 3.2 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 3.2.1 **Introduction:** the archaeological and historical background of the proposed development area has been presented in previous reports (OA North 2004; OA North 2009) to which reference is made throughout, and what follows is a very brief synopsis of the archaeological context of the site.
- 3.2.2 **Prehistoric period:** the earliest known human activity on the Furness Peninsula dates to the Mesolithic period; archaeological evidence has shown coastal exploitation, particularly centred on large parts of Walney Island, to the south-west of the subject site (Hodgkinson *et al* 2000, 35). Recent work in Furness, including fieldwalking (Hodgkinson *et al* 2000; Young 2002, 20), has demonstrated a less intensive lithic distribution pattern than that found on Walney Island. These consist almost entirely of surface finds (Cherry and Cherry 2002), and as a result they add only a relatively small amount to understanding of the period.
- 3.2.3 Fairly widespread Neolithic activity has been recognised in the peninsula. This appears to represent an intensification of Mesolithic inhabitation. Polished stone axes, adzes and axe-hammers of Neolithic and Bronze Age date have been found scattered throughout the area. The majority have been shown by petrological analysis to have come from the volcanic tuff, extracted on a seasonal basis, from the axe factories of Great Langdale (Hodgson and Brennand 2006, 45-47). An early Neolithic occupation site has recently been discovered to the south of Swarthmoor, at Roose Quarry. A Neolithic site, comprising a small number of pits and tree-throws, was excavated by OA North in 2002 at Holbeck Park in Barrow. The site produced a large amount of



Neolithic pottery sherds, along with charred grain and hazelnut remains (OA North 2002).

- 3.2.4 There is fairly scarce evidence for Bronze Age settlement within Ulverston and Swarthmoor themselves, yet discoveries of a bronze axe head and spear head, within the vicinity of the study area suggest a Bronze Age presence; unfortunately, the exact location of the findspots is unknown. A large number of burials to the south-west of the study area, around Urswick and north of Dalton, date to this period, as does the stone circle at Birkrigg and the bulk of the late Bronze Age artefact assemblage from south Cumbria comes from the Furness Peninsula (Hodgkinson *et al* 2000, 44).
- 3.2.5 Evidence of settlement in the Iron Age, especially in the uplands of south Cumbria, is fairly scarce, although Pollen diagrams from the Lyth and Duddon valleys record the establishment of pre-Roman cultivation in the area (Hodgkinson *et al* 2000). The material culture of this period may not have been recovered simply because it is difficult to recognise.
- 3.2.6 **Historic period:** evidence for the Romano-British period around Ulverston and Swarthmoor consists mostly of findspots, with no structural remains having as yet been found. Pre-Flavian coins in the Ulverston area dating from the first century AD, may suggest some Roman military activity but there is no firm evidence to suggest that this area was permanently garrisoned by the Romans (OA North 2003).
- 3.2.7 As is the case throughout Cumbria, evidence for early medieval activity is extremely limited. What little evidence exists suggests that by the seventh century AD Low Furness had become part of the Anglian kingdom of Northumbria, attested by the place-names of Old English origins, such as Ulverston, Dalton, and Aldingham (Armstrong *et al* 1950). The Vikings are thought to have established coastal bridgeheads, such as Barrow, before settling in the higher regions of Furness (OA North 2009). By the ninth and tenth centuries place-name evidence (the name Barrow almost certainly originally derived from the word *Barrai*) also suggests communities of ethnic Scandinavians.
- 3.2.8 The medieval history of the parish of Ulverston, in which Swarthmoor also lies, is rudimentary, with the majority of references to the town being found in the histories of Furness Abbey and Conishead Priory. The town is first mentioned in the Domesday Book (English Heritage 2003). The name of Ulverston derives from the Anglo-scandinavian 'tun of Ulfr'. After 1066, the separate manors were united under the overlordship of the Lords of Lancaster, with Dalton rather than Ulverston being chosen as the manorial seat. Dalton was the centre of Earl Tostig's huge land holding in this area and later became the market town for Furness Abbey.
- 3.2.9 The post-medieval period of history in Furness is dominated by the rise of industry in the area. It is also a period which shows a marked shift in fortunes from the town of Dalton, at the Dissolution of Furness Abbey, to the emerging industrial town of Ulverston. By 1801, Ulverston had a population of nearly 3,000, and became the largest and most important town in the region. Roads

converged on it, and its market took produce from the whole of the Furness area (OA North 2009). Swarthmoor Hall reflects the increased prosperity of these times. The opening of the canal in 1796 was a substantial boost to the economy of Ulverston. The town centre remained much the same, but the area around Canal Head became increasingly built up, as canal offices and a pier were built (*op cit*).

- 3.2.10 Iron smelting had always been carried out locally, but the industry received a substantial boost with the opening of furnaces at Backbarrow in 1712, and later at Duddon Bridge, and Newland. The superior quality of the Furness ore meant that the merchants experienced little difficulty in finding markets, and the demand increased accordingly, aided by the transport possibilities of the Ulverston Canal. Eventually ironworks were established at Barrow in 1859, at Askham in 1865, and Ulverston in 1874 (Bowden 2000). The railway arrived in Ulverston in 1846, but with it came a change in fortunes for the town of Ulverston. The harbour at Barrow was capable of holding far larger ships than the Ulverston Canal could cope with, and trade began to move to the newly constructed harbour. The ironworks built in 1874 provided further industry to the area, but the industrial heyday of Ulverston was essentially over (Birkett 1949).

## 4. WATCHING BRIEF

### 4.1 RESULTS

4.1.1 The results of the watching brief programme are presented in Table 1, below. The field numbers (1-5) were devised as part of the recording methodology for ease of reference (Fig 2).

Field No	Location	Description
Field 1	To the south of A590 at Pennington Lane End	The easement measured 90m in length x 14m in width. Approximately 0.30m in depth of very dark grey, silty-clay topsoil was removed. This overlay dark brown-grey, sandy-silt clay subsoil, with approximately 60% comprising very small sub-rounded pebbles. The natural geology was visible in less than 1% of the topsoil strip and, where seen, comprised a mid brown-orange, medium sand clay with a 60-70% inclusion of medium-sized sub-rounded pebbles. No archaeological features were located.
Field 2	Located at the junction of the A590 and Pennington Lane, to the east of Tamworth Lodge	A north/south aligned pipe trench was excavated in order to lay the watermain at a depth of 0.8m. The area excavated covered a distance measuring approximately 50m in length x 1m in width, and was located within a single field. 0.3m in depth of topsoil, comprising mid brown friable silty-clay containing small-large pebbles, was removed. A modern field drain was exposed, although not fully, at a depth of 0.25m. A further 5m of pipe trench was excavated on an east/west alignment towards the field entrance. No archaeological features were located. A single sherd of post-medieval pottery was found.
Field 3		An easement of approximately 94m was excavated running east/west and turning north/south in Field 3. The topsoil comprised mid brown friable silty-clay containing small-large pebbles was removed but no archaeological features were observed.

Field 4		A broadly U-shaped easement of approximately 39m was excavated in Field 3. The topsoil comprised mid brown friable silty-clay containing small-large pebbles was removed but no archaeological features were observed.
Field 5 (sections a to d)	To the north-east of Hill Foot, north of the A590	The easement was aligned approximately north-east/south-west across the field. The topsoil stripping was undertaken in four sections (a to d; Fig 2). The topsoil varied in depth from 0.15m to 0.30m, and was as described in Field 1, above. It overlay a pebble-rich sub-soil comprising sandy-silty clay. No archaeological features were observed within the easement.

Table 1: Results of the watching brief

4.1.2 ***Finds:*** In all, 106 fragments of artefact and ecofact were collected, comprising 13 fragments of window and vessel glass, 85 fragments of pottery, seven of clay tobacco pipe, and one of bone. Of these, 17 were from Field 2, 66 from Field 5B, 17 from Field 5C, and the remainder unstratified. Only four fragments of potentially early pottery were noted, all were heavily abraded. A small fragment (OR 1010) from Field 2 was in a fine oxidised fabric reminiscent of Romano-British pottery, although it must be stressed that this could not be dated with any more precision. All other finds from Field 2 could be dated to the nineteenth or early twentieth century. Three small fragments (two of them joining) came from Field 5B (OR 1009). Again, both were largely undiagnostic, but the joining fragments were in a soft sandy incompletely oxidised fabric, probably of thirteenth-fourteenth century date, the third fragment was a hard-fired purplish fabric splashed with a green glaze (OR 1018), and is likely to be slightly later. The remainder of the pottery from Field 5B was of late seventeenth-early nineteenth-century date, and included fragments of Chinese porcelain, German stoneware, Creamware, and Pearlware, the latter typical of the late eighteenth-early nineteenth century. Window and vessel glass from Field 5B confirmed this date range. None of the pottery could be dated with confidence to the late eighteenth century or more recent. Material from Field 5C can be dated to the mid-late nineteenth century.

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## 5. DISCUSSION

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### 5.1 SYNTHESIS

- 5.1.1 No archaeological features were observed during the course of the watching brief. The dearth of archaeological features strongly suggests that human activity in the area has been largely agricultural and pastoral in nature. Due to the limited nature of the development there are no recommendations for further archaeological mitigation.

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## 7. ILLUSTRATIONS

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### 7.1 LIST OF FIGURES

Figure 1: Site Location

Figure 2: Watching brief field location plan

### 7.2 LIST OF PLATES

Plate 1: General shot of the easement during topsoil stripping activities

Plate 2: General shot of pipe trench in Field 2, Pennington Lane End



based upon the Ordnance Survey 1:250,000  
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Figure 1: Location Map



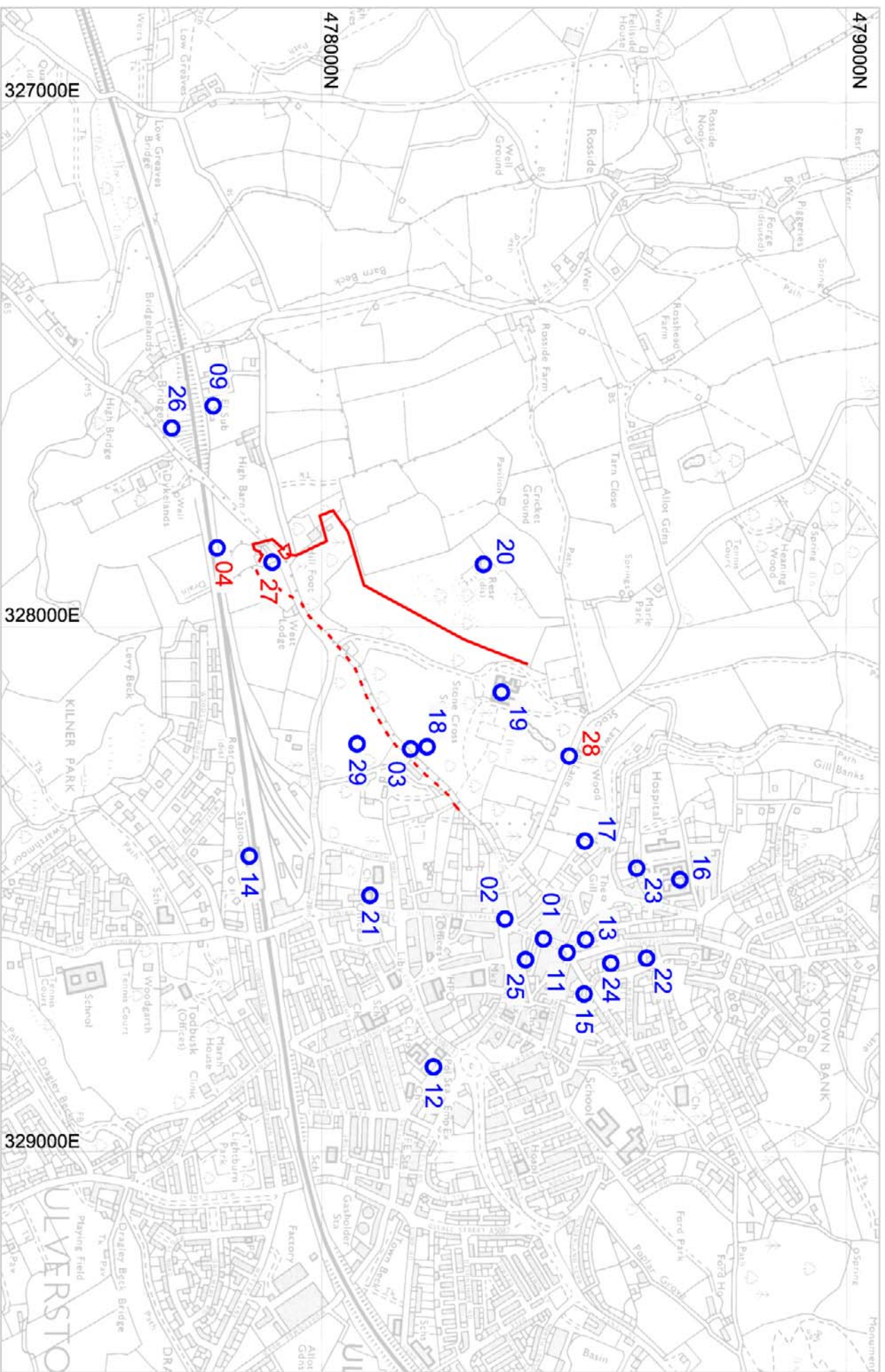


Figure 2 : Gazetteer sites plan





Plate 1: General shot of the easement during topsoil stripping activities



Plate 2: General shot of pipe trench in Field 2, Pennington Lane

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## APPENDIX 1: PROJECT DESIGN

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**February 2009**

**Oxford**

**Archaeology**

**North**

### **SWARTHMOOR WwTW, ULVERSTON, CUMBRIA**

#### **ARCHAEOLOGICAL WATCHING BRIEF**

#### **PROJECT DESIGN**

#### ***Proposals***

*The following project design is offered in response to a request by United Utilities for an archaeological watching brief in advance of a proposed Wastewater Treatment Works and pipeline at Swarthmoor, near Ulverston, Cumbria.*

## 1. INTRODUCTION

- 1.1 United Utilities (hereafter the client) are proposing the construction of a new pumping station and transfer pipeline at Swarthmoor, Ulverston, Cumbria (SD 2788 7787). As the scheme will affect an area rich in prehistoric remains the Cumbria County Council's Archaeology Service has issued a brief for a programme of archaeological works to be undertaken. This included a desk-based assessment (OA North 2004), walkover survey (OA North 2009), and a watching brief (OA North 2009). Following a revision to the proposed location of the pumping station and due to the high density of live services within the area of the new location, the requirement for an evaluation was reduced to that of a watching brief. This document presents the proposed methodology for the watching brief.
- 1.2 The area of the proposed pipeline is known to have been a focus for prehistoric activity and settlement. Recorded sites in close proximity to the proposed route include the fragments of a Bronze Age urn containing a cremation (SMR No2362). Other sites include a large number of lithic finds (SMR No 2210), recorded to the south of the proposed works.
- 1.3 OA North has considerable experience of the assessment, evaluation and excavation of sites of all periods, having undertaken a great number of small and large-scale projects during the past 20 years. Watching briefs, evaluations and excavations have taken place within the planning process, to fulfil the requirements of clients and planning authorities, to very rigorous timetables.
- 1.4 OA North has the professional expertise and resources to undertake the project detailed below to a high level of quality and efficiency. OA North is an Institute of Field Archaeologists (IFA) registered organisation, registration number 17, and all its members of staff operate subject to the IFA Code of Conduct.

## 2 OBJECTIVES

- 2.1 The following programme has been designed to provide for accurate recording of any archaeological deposits that are disturbed by the soil strip and trench cutting associated with the pipeline.
- 2.2 A written report will assess the significance of the data generated by the watching brief within a local and regional context.

## 3 METHOD STATEMENT

### 3.1 WATCHING BRIEF

- 3.1.1 **Methodology:** a programme of field observation will record accurately the location, extent, and character of any surviving archaeological features and/or deposits within the topsoil stripping for off-highway sections of the

easement and the proposed site of the new WwTW. This work will comprise observation during the excavation for these works, the systematic examination of any subsoil horizons exposed during the course of the groundworks, and the accurate recording of all archaeological features and horizons, and any artefacts, identified during observation.

- 3.1.2 During this phase of work, recording will comprise a full description and preliminary classification of features or materials revealed, and their accurate location (either on plan and/or section, and as grid co-ordinates where appropriate). Features will be planned accurately at appropriate scales and annotated on to a large-scale plan provided by the Client. A photographic record will be undertaken simultaneously.
- 3.1.3 A plan will be produced of the areas of groundworks showing the location and extent of the ground disturbance and one or more dimensioned sections will be produced.
- 3.1.4 Putative archaeological features and/or deposits identified by the machining process, together with the immediate vicinity of any such features, will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and where appropriate sections will be studied and drawn. Any such features will be sample excavated (ie. selected pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal).
- 3.1.5 It is assumed that OA North will have the authority to stop the works for a sufficient time period to enable the recording of important deposits. It may also be necessary to call in additional archaeological support if a find of particular importance is identified or a high density of archaeology is discovered, but this would only be called into effect in agreement with the Client and the County Archaeology Service and will require a variation to costing.
- 3.1.6 ***Finds Policy:*** OA North employs artefact and palaeo-ecology specialists with considerable expertise in the investigation, excavation and finds management of sites of all periods and types, who are readily available for consultation. In addition, OA North maintains close relationship with Ancient Monuments Laboratory staff at the University of Durham, and access to conservation advice and facilities can be made available if necessary. Finds recovery will be in accordance with best practice (following current Institute of Field Archaeologists guidelines) and subject to expert advice in order to minimise deterioration. Finds storage during fieldwork and any site archive preparation will follow professional guidelines (UKIC). The deposition and disposal of any artefacts recovered in the evaluation will be agreed with the legal owner and an appropriate recipient museum prior to the work taking place.
- 3.1.7 ***Environmental Sampling:*** environmental samples (bulk samples of 30 litres volume, to be sub-sampled at a later stage) will be collected from stratified undisturbed deposits and will particularly target negative features (gullies,

pits and ditches). In general terms, the sampling strategy will be aimed at recovering palaeo-botanical, palaeo-zoological and pedological evidence, although the precise scope of the programme will be agreed with the Client prior to commencement of the fieldwork. All samples will be processed at OA North's offices in Lancaster, and will be subject to a rapid preliminary analysis by the in-house palaeo-environmentalist in order to allow an assessment of their potential.

- 3.1.8 **Human Remains:** human remains are not expected to be present, but if they are found they will, if possible, be left *in-situ* covered and protected. If removal is necessary, then the relevant Home Office permission will be sought, and the removal of such remains will be carried out with due care and sensitivity as required by the *Burials Act 1857*.
- 3.1.9 Any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996.
- 3.1.10 **Health and Safety:** OA North provides a Health and Safety Statement for all projects and maintains a Unit Safety policy. A written risk assessment will be undertaken in advance of project commencement and copies will be made available on request to all interested parties.
- 3.1.11 OA North has professional indemnity to a value of £2,000,000, employer's liability cover to a value of £10,000,000 and public liability to a value of £15,000,000. Written details of insurance cover can be provided if required.

## 3.2 ARCHIVE/REPORT

- 3.2.1 **Archive:** the results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (English Heritage, 2006 *Management of Research Projects in the Historic Environment* (MoRPHE)). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. OA North conforms to best practice in the preparation of project archives for long-term storage. This archive will be provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the relevant HERs (the index to the archive and a copy of the report). OA North practice is to deposit the original record archive of projects (paper, magnetic and plastic media) with the appropriate County Record Office and a full copy of the record archive (microform or microfiche) together with the material archive (artefacts, ecofacts, and samples) with an appropriate museum. Wherever possible, OA North recommends the deposition of such material in a local museum approved by the Museums and Galleries Commission, and would make appropriate arrangements with the designated museum at the outset of the project for the proper labelling, packaging, and accessioning of all material recovered.
- 3.2.2 The Arts and Humanities Data Service (AHDS) online database project *Online Access to index of Archaeological Investigations* (OASIS) will be completed as part of the archiving phase of the project.



- 3.2.3 **Report:** bound and digital copies (CD, pdf files) of the report will be submitted to the client and the Cumbria HER within twelve weeks of completion of the fieldwork. The report will include a copy of this project design, and indications of any agreed departure from that design. It will present, summarise, and interpret the results of the programme detailed above and will include a full index of archaeological features identified in the course of the project, with an assessment of the overall stratigraphy, together with appropriate illustrations, including detailed plans and sections indicating the locations of archaeological features. Any finds recovered will be assessed with reference to other local material and any particular or unusual features of the assemblage will be highlighted and the potential of the site for palaeoenvironmental analysis will be considered. The report will also include a complete bibliography of sources from which data has been derived.
- 3.2.4 This report will identify areas of defined archaeology. An assessment and statement of the actual and potential archaeological significance of the identified archaeology within the broader context of regional and national archaeological priorities will be made. Illustrative material will include a location map, section drawings, and plans.
- 3.2.5 **Confidentiality:** all internal reports to the client are designed as documents for the specific use of the Client, for the particular purpose as defined in the project brief and project design, and should be treated as such. They are not suitable for publication as academic documents or otherwise without amendment or revision.

## 4 PROJECT MONITORING

- 4.1 Monitoring of this project will be undertaken through the auspices of the CCC Planning Archaeologist, who will be informed of the start and end dates of the work.

## 5 WORK TIMETABLE

- 5.1 The duration of the watching brief will be dependent upon the progress of the pipeline contractor.
- 5.2 The client report will be completed within twelve weeks following completion of the fieldwork.

## 6 STAFFING

- 6.1 The project will be under the direct management of **Alison Plummer BSc (Hons)** (OA North Senior Project Manager) to whom all correspondence should be addressed.
- 6.2 Present timetabling constraints preclude detailing at this stage exactly who will be undertaking the watching brief. Projects of this type are likely to be supervised by an OA North project supervisor. All OA North supervisors are experienced field archaeologists capable of carrying out projects of all sizes.

## **7 INSURANCE**

- 7.1 OA North has a professional indemnity cover to a value of £2,000,000; proof of which can be supplied as required.