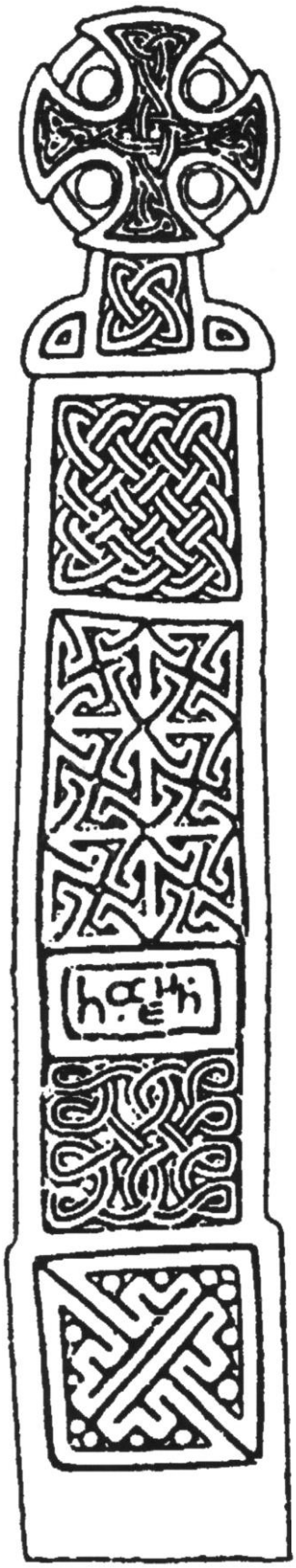

Post-Excavation Analysis & Archive Review

Rowe Ditch
Shobdon Mains Refurbishment Scheme
Herefordshire

Archaeological Excavation of Engineering Pits

SO 37400 59640 – SO 38890 59190

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BORDER ARCHAEOLOGY

Contents

1. Introduction

1.1 SUMMARY OF PROGRAMME OF ARCHAEOLOGICAL WORKS

1.2 Border Archaeology undertook a programme of archaeological works on the Shobdon Mains Refurbishment Scheme (ref. E360) on behalf of Dŵr Cymru Welsh Water / Laing O'Rourke (DCWW/LOR). This section of pipeline route traverses fields to the S of Leen Farm, Pembridge, Herefordshire, extending approximately 1.6km from NGR SO 37400 59640 to SO 38890 59190

1.3 This document quantifies the collected data, assesses its potential for further analysis and formalises that assessment together with procedures for the post-analysis retention or disposal of material. This review will be submitted to LOR, DCWW and to Julian Cotton, Archaeological Advisor to Herefordshire Council.

1.4 All information relating to the site archive conforms to standards and guidelines in *Management of Archaeological Projects 2 (1991).*

1.5 SITE SPECIFIC INFORMATION

1.6 The programme of archaeological works comprised one phase of excavations:

1.7 Archaeological excavation of engineering pits APSRD1 – AP17

1.8 This involved the archaeological excavation of 17 pits along the route of the pipeline, namely APSRD1[1] – AP17[2]. The location of these pits was based entirely upon engineering requirements. Pit locations were laid out prior to excavation after consultation and agreement with LOR contractors (MAS).

1.9 Trench dimensions were as follows: APSRD1 and APSRD2 measured 8m × 8m × 3m. AP3 – AP17 measured 3m × 2m × 1m. Dimensions were subject to change where archaeological deposits were encountered. Slight extensions were necessary in APSRD1, APSRD2 and AP8 where deposits were encountered extending beyond the extent of the original trench. These extensions were necessary in order to fully define the nature and extent of the features encountered. Trench dimensions also varied in AP6 where a greater depth was required to fully reveal the existing water main (as specified for engineering purposes).

1.10 The two access pits located immediately outside the Scheduled Area (APSRD1 and APSRD2) were significantly larger to facilitate the greater depth required to ensure that the pipeline passed beneath Rowe Ditch causing no impact upon the monument. In order to achieve the 3m maximum depth, a pit measuring 3m × 2m × 1.50m was excavated in the centre of the trench after an initial 1.50m was removed across the entire 8m × 8m area.

[1] APSRD - Access Pit Side of Rowe Ditch
[2] AP - Access Pit

1.11 SCHEME OF WORKS

1.12 The significance of archaeological materials encountered was assessed with reference to the research priorities and site-specific research framework outlined in Border Archaeology's Written Scheme of Investigation (Project Design).

1.13 Written, graphic and photographic records were made using pro-forma record forms and sheets, in accordance with Institute for Archaeologists (IfA) *Standard and Guidance* documents, and a Harris matrix was produced to demonstrate stratigraphic relationships. Non-significant deposits, features and structures were recorded in plan and section at a scale of 1:50 or in elevation at a scale of 1:20, depending on size and extent. Significant deposits, features and structures were recorded in plan at a scale of 1:20 and in section/elevation at a scale of 1:10.

1.14 All datable finds, including pottery, were collected and catalogued.

1.15 All stratified animal bone was recovered.

1.16 Samples were taken from sealed archaeological deposits considered not to be contaminated or of mixed/secondary origin. Sample numbers were assigned and these were entered into a sample register and cross-referenced with context sheets.

1.17 A photographic record of all stratigraphic units comprising record views of contexts, samples or artefacts has been compiled, together with a representative photographic record of the progress of the excavation. Where applicable, X-ray photographs of archaeological metalwork will be produced by the nominated suitably qualified conservator. All photographic records have been indexed and cross-referenced to written site records.

1.18 The resultant archive has been compiled in accordance with *Management of Archaeological Projects 2 (1991), Guidelines for the preparation of excavation archives for long-term storage* (United Kingdom Institute for Conservation, 1990) and *Standards in the museum care of archaeological collections* (Museums & Galleries Commission, 1994).

2. Quantified Data

2.1 This section contains a summary characterising the quantity and perceived quality of the data contained in the site archive, the term 'data' referring to site records and materials recovered from the site.

2.2 A total of 132 contexts were identified during the excavation of the 17 engineering pits (**Table 1**).

Trench No.	No of deposits	No of cuts	No of fills
APSRD1	4	13	18
APSRD2	4	5	8
AP3	5	7	7

AP4	3	0	0
AP5	4	0	0
AP6	5	1	1
AP7	4	0	0
AP8	5	0	0
AP9	4	0	0
AP10	5	0	0
AP11	4	0	0
AP12	5	0	0
AP13	5	0	0
AP14	4	0	0
AP15	5	0	0
AP16	4	0	0
AP17	4	0	0
TOTALS	**74**	**26**	**34**

Table 1: Context information

2.3 A total of 61 site drawings were made during the excavations including 24 plans, 7 profiles and 30 sections, which are detailed in the following table (**Table 2**).

2.4 Drawing register for engineering pits

AP1						
Drawing Number	**Drawing Type**	**Context Numbers**	**Direction (facing)**	**Description**	**Scale**	**Sheet Number**
1	Plan	Multiple	N/A	Pre-ex plan of 103, 117, 106	1.50	1
2	Plan	Multiple	N/A	Post-ex plan of 106, 103, 112, 117	1.20	2,3,4,5
3	Plan	Multiple	N/A	Post-ex plan of stake-holes in AP1	1.20	6
4	Section	101, 102	E	E-facing section of AP1	1.20	7
5	VOID					
6	Profile	106	S	S-facing profile of 106	1.10	8
7	Profile	117	W	W-facing profile of 117	1.10	8
8	Profile	115	S	S-facing profile of stakehole 115	1.10	6
9	Profile	103	SW	SW-facing profile of 103	1.20	9
10	Plan	103	N/A	Post-ex plan of 103	1.50	10
11	Profile	122	E	E-facing profile of 122	1.10	11
12	Plan	126	N/A	Post-ex plan of 126	1.50	12
13	Profile	126	W	W-facing profile of 126	1.10	11
14	Section	124, 126	SW	SW-facing section showing 124 & 126	1.10	11
15	Plan	Multiple	N/A	Post-ex plan of AP1 & extension	1.20	13,14,15&16
16	Section	Multiple	W	W-facing section of AP1	1.20	17
17	Section	Multiple	N	N-facing section of AP1	1.20	18
18	Section	103	S	S-facing section of AP1 extension	1.20	20
19	Section	Multiple	S	S-facing section of AP1	1.20	19
AP2						

Drawing Number	Drawing Type	Context Numbers	Direction (facing)	Description	Scale	Sheet Number
1	Section	Multiple	W	W-facing section of AP2	1.20	1
2	Section	Multiple	N	N-facing section of AP2	1.20	2
3	Plan	Multiple	N/A	Post-ex plan of centre hole in AP2	1.50	3
4	Section	Multiple	S	S-facing section of AP2	1.20	4 & 12
5	Section	Multiple	E	E-facing section of AP2	1.20	5
6	Plan	Multiple	N/A	Post-ex plan of AP2	1.20	6,7,8,9,10&11

AP3

Drawing Number	Drawing Type	Context Numbers	Direction (facing)	Description	Scale	Sheet Number
1	Plan	Multiple	N/A	Post-ex plan of stake-holes in AP3	1.20	1
2	Profile	305	S	S-facing profile of 305	1.10	1
3	Section	Multiple	W	W-facing section of AP3 showing 317	1.20	1
4	Section	Multiple	N	N-facing section of AP3 showing 317	1.20	1
5	Plan	Multiple	N/A	Post-ex plan of AP3 showing 317	1.20	2

AP4

Drawing Number	Drawing Type	Context Numbers	Direction (facing)	Description	Scale	Sheet Number
1	Plan	403	N/A	Post ex-plan of AP4	1.20	1
2	Section	Multiple	SW	SW-facing section of AP4	1.20	1

AP5

Drawing Number	Drawing Type	Context Numbers	Direction (facing)	Description	Scale	Sheet Number
1	Section	Multiple	N	N-facing section of AP5	1.20	1
2	Section	Multiple	E	E-facing section of AP5	1.20	1
3	Plan	Multiple	N/A	Post-ex plan of AP5	1.20	2

AP6

Drawing Number	Drawing Type	Context Numbers	Direction (facing)	Description	Scale	Sheet Number
1	Section	Multiple	NE	NE-facing section of AP6	1.20	1
2	Section	Multiple	SE	SE-facing section of AP6	1.20	1
3	Plan	Multiple	N/A	Post-ex plan of AP6 & extension	1.20	2

AP7

Drawing Number	Drawing Type	Context Numbers	Direction (facing)	Description	Scale	Sheet Number
1	Section	Multiple	NE	NE-facing section of AP7	1.20	1
2	Section	Multiple	SE	SE-facing section of AP7	1.20	1
3	Plan	704	N/A	Post-ex plan of AP7	1.20	2

AP8

Drawing Number	Drawing Type	Context Numbers	Direction (facing)	Description	Scale	Sheet Number
1	Section	Multiple	NE	NE-facing section of AP8 showing 805	1.20	1
2	Section	Multiple	NW	NW-facing section of AP8	1.20	1
3	Plan	Multiple	N/A	Post-ex plan of AP8 & extension	1.20	2
AP9						
Drawing Number	**Drawing Type**	**Context Numbers**	**Direction (facing)**	**Description**	**Scale**	**Sheet Number**
1	Section	Multiple	S	S-facing section of AP9	1.20	1
2	Plan	904	N/A	Post-ex plan of AP9	1.20	1
AP10						
Drawing Number	**Drawing Type**	**Context Numbers**	**Direction (facing)**	**Description**	**Scale**	**Sheet Number**
1	Section	Multiple	S	S-facing section of AP10	1.20	1
2	Plan	1004	N/A	Post-ex plan of AP10	1.20	1
AP11						
Drawing Number	**Drawing Type**	**Context Numbers**	**Direction (facing)**	**Description**	**Scale**	**Sheet Number**
1	Plan	1104	N/A	Post-ex plan of AP11	1.20	1
2	Section	Multiple	S	S-facing section of AP11	1.20	1
AP12						
Drawing Number	**Drawing Type**	**Context Numbers**	**Direction (facing)**	**Description**	**Scale**	**Sheet Number**
1	Section	Multiple	N	N-facing section of AP12	1.20	1
2	Plan	Multiple	N/A	Post-ex plan of AP12	1.20	1
AP13						
Drawing Number	**Drawing Type**	**Context Numbers**	**Direction (facing)**	**Description**	**Scale**	**Sheet Number**
1	Section	Multiple	E	E-facing section of AP13	1.20	1
2	Plan	1304	N/A	Post-ex plan of AP13	1.20	1
AP14						
Drawing Number	**Drawing Type**	**Context Numbers**	**Direction (facing)**	**Description**	**Scale**	**Sheet Number**
1	Section	Multiple	N	N-facing section of AP14	1.20	1
2	Plan	1404	N/A	Post-ex plan of AP14	1.20	1
AP15						
Drawing Number	**Drawing Type**	**Context Numbers**	**Direction (facing)**	**Description**	**Scale**	**Sheet Number**
1	Plan	1504	N/A	Post-ex plan of AP15	1.20	1
2	Section	Multiple	SE	SE-facing section of AP15	1.20	1

AP16						
Drawing Number	**Drawing Type**	**Context Numbers**	**Direction (facing)**	**Description**	**Scale**	**Sheet Number**
1	Plan	1604	N/A	Post-ex plan of AP16	1.20	1
2	Section	Multiple	S	S-facing section of AP16	1.20	1
AP17						
Drawing Number	**Drawing Type**	**Context Numbers**	**Direction (facing)**	**Description**	**Scale**	**Sheet Number**
1	Plan	1704	N/A	Post-ex plan of AP17	1.20	1
2	Section	Multiple	SE	SE-facing section of AP17	1.20	1

Table 2 - Drawing register

2.5 A total of 386 artefacts were recovered during the excavations, which included 276 sherds of pottery, 23 fragments of CBM, 35 fragments of animal bone, 22Fe objects, 6 flint fragments and 3 other. This information is summarised below (**Table 3**).

Trench number	Context number	Ceramic sherds	CBM	Bone	Fe objects	Flint objects	Other
APSRD1	(102)	47	0	6	1	1	0
APSRD1	(104)	96	18	1	2	0	1 daub
APSRD1	(105)	7	0	0	0	0	2 daub
APSRD1	(107)	1	0	0	1	0	0
APSRD1	(108)	4	0	1	1	0	0
APSRD1	(118)	4	0	0	2	0	0
APSRD1	(120)	8	0	0	0	0	0
APSRD1	(123)	5	0	48	0	0	0
APSRD1	(125)	89	0	0	0	0	0
APSRD2	(202)	1	4	0	0	0	0
APSRD2	(206)	0	0	0	0	1	0
APSRD2	(211)	0	0	0	0	1	0
AP3	(302)	0	0	0	0	1	0
AP8	(802)	0	0	0	1	2	0
AP13	(1302)	6	1	0	1	0	0
UNSTRAT	n/a	8	0	0	13	0	0
TOTALS	**n/a**	**276**	**23**	**56**	**22**	**6**	**3**

Table 3- Artefact Register

2.6 A total of 21 environmental samples were taken as detailed below (**Table 4**).

Sample Number	Context Number	Description	Number of 10L samples
001	105	Dark greyish-brown clayey silt	1
002	104	Yellowish-brown clayey silt	2
003	107	Mid brown gravelly silt	1
004	118	Orangey-brown clayey silt	1
005	119	Orangey-brown clayey silt	1
006	102	Yellowish-brown clayey silt	1
007	211	Yellowish-brown gravels	1
008	204	Mid brown gravels within a silty clay matrix	2
009	127	Yellowish-brown clayey silt	2
010	123	Reddish-brown clayey silt	2
011	129	Yellowish-brown sandy silt	1
012	136	Mid brown sandy silt	1
013	125	Yellowish-brown clayey silt	1
014	318	Greyish-brown sandy silt	1
015	215	Yellowish-brown clayey silt	2
016	202	Yellowish-brown clayey silt	2
017	207	Greyish-brown silty clay	2
018	208	Orangey-brown clayey silt	2
019	210	Pinkish-brown gravels	2
020	211	Yellowish-brown gravels	1
021	206	Yellowish-brown gravels in a clay silt matrix	2
TOTALS	n/a	n/a	**31**

Table 4 - Sample Register

2.7 The photographic record of Phase 1 works comprised a total of 333 photographs taken with a high resolution 10.3 MPX digital camera (**Table 5**).

Trench Number	Digital
APSRD1	120
APSRD2	87
AP3	27
AP4	11
AP5	13
AP6	7
AP7	6
AP8	10
AP9	6
AP10	6
AP11	5
AP12	5
AP13	6
AP14	6
AP15	6
AP16	6
AP17	6

Table 5 - Photographic register

3. Statement of Potential for Analysis

3.1 An initial assessment of the archaeological potential of the site archive has been undertaken with reference to the research priorities and site-specific research framework identified by Border Archaeology with reference to research agendas and outlined in the Written Scheme of Investigation. These priorities include:

- **Evidence for prehistoric and Romano-British activity:** This area has been identified as one of high archaeological potential and archaeological investigations carried out as part of the Arrow Valley Archaeology, Landscape Change and Conservation Project by Herefordshire Archaeology have revealed evidence of Neolithic, Bronze Age, Iron Age and Romano-British occupation, particularly in the vicinity of The Leen Farm (White, 2003).

- **Limited potential evidence of outworks relating to the Rowe Ditch:** One specific area of high archaeological sensitivity is the point where the pipeline route traverses fields in the vicinity of The Leen Farm and crosses the line of the Rowe Ditch. However, based upon the engineering methodology used, the access pit did not impact upon the monument itself.

- **Developing geoarchaeological understanding of the Arrow Valley floodplain:** Evidence relating to the developing environment of the West Midlands is relatively sparse and this objective thus links with the emerging West Midlands Regional Research Framework for Archaeology. The geomorphology of the Arrow Valley floodplain has been subject to a recent, detailed programme of investigation by Herefordshire Archaeology, in conjunction with Dr Mark Macklin of the University of Wales, Aberystwyth (White, 2003, 52-62)

  The fieldwork consisted of sediment core sampling and GPS (Ground Penetrating Radar) surveys in four specific study areas, one of which comprised The Leen Farm and its immediate surrounding area. This programme of study revealed evidence of seven phases of Holocene alluviation within the Arrow Valley dating back to the Mesolithic period.

  A series of palaeochannels were identified within the vicinity of The Leen (White, 2003, 55), one of which was shown by ^{14}C dating of a core sample to have been active during the early medieval period (c.770-1160 AD)

  A programme of geoarchaeological works carried out on Border Archaeology's behalf contributes substantially to the understanding of the alluvial archaeology of the Arrow Valley floodplain, complementing the works previously carried out by Herefordshire Archaeology & the University of Wales and may form a substantial element of site analyses.

3.2 Objective 1: Evidence for Prehistoric and Romano-British activity

3.3 Substantial evidence for prehistoric activity was identified in APSRD2. This evidence took the form of a curvilinear ditch [205] from which several fragments of flint were recovered. This ditch appears to relate to a circular cropmark identified previously through aerial photography. This feature has been interpreted as a circular enclosure possibly being consistent in form to a henge monument dating from the late Neolithic/early Bronze age period.

3.4 Evidence for prehistoric activity away from APSRD2 is more fragmentary. A number of small sub-circular pits identified within APSRD1 may belong to the prehistoric period. However, a lack of stratified dating material associated with the pit fills makes any assumption as to their absolute dates uncertain. Similarly within AP8 a sub-ovoid pit [805] was identified with prehistoric flint flakes being recovered from overlying deposits.

3.5 Evidence for Romano-British occupation was again centred around the Rowe Ditch with all deposits being encountered within APSRD1 and APSRD2. A series of intercutting ditches dating from the Romano-British period were identified within APSRD1, along with a series of small pits. These indicate settlement activity dating from this period within this area. Within APSRD2 a re-cut within ditch [205] appears to belong to the Romano-British period indicating settlement activity extending to the west of the Rowe Ditch.

3.6 Objective 2: Limited potential evidence of outworks relating to the Rowe Ditch.

3.7 No evidence of outworks relating to the Rowe Ditch was identified in APSRD1 or APSRD2.

3.8 Objective 3: Developing geoarchaeological understanding of the Arrow Valley floodplain.

3.9 Dr Mike Allen undertook a geoarchaeological survey on 4th July 2008 examining all excavated access pits. The aims of this survey were threefold; recording of the geoarchaeology of relevant features; recording the deposits and commenting on the geoarchaeology of the Arrow Valley; placing the above results into a wider context in the light of other research conducted in the area.

A summary of the geoarchaeological sequence is provided below with the full report included as an appendix within the main excavation report.

All of the access pits examined were located on the Pleistocene terrace above the River Arrow. The main sequence of events for the formation of this terrace and its overlying deposits can be viewed in five distinct stages (Allen, 2008).

1a) Glacial outwash fluvial gravel
1b) Minor braided channels in the gravel surface
2) Periglacial disturbance
3) Holocene overbank alluvium.
4) Soil formation (ploughing and pasture)

Fluvio-glacial outwash material consists of sorted and unsorted banded gravels. These gravels were largely non matrix supported although a clayey silt matrix was in evidence in a small number of pits. This deposit extends across the whole of the Arrow Valley forming the extensive Pleistocene terrace (cf. Macklin *et al* 2003, fig.33-37).

The surface of the gravels has been subjected to limited channelling, typically infilled with a uniform stone free reddish brown clay and silty clay alluvium. Both the channel infills and gravel surface have been extensively subjected to periglacial deformation. Overlying Pleistocene outwash gravel was a yellowish brown overbank floodplain alluvium. This consisted of a well-sorted silt and silt clay. The thickness of this alluvium varies considerably reflecting the fluctuations in altitude of the underlying gravel surface.

3.10 Initial Assessment

3.11 All material initially identified as appropriate was assessed and recommendations for further work identified. The following specialists have submitted assessment reports:

- Roman Pottery – Dr Jane Timby
- Environmental samples – Dr Charlotte O'Brien, Archaeological Services University of Durham
- Flint – Dr R Donahue, Bradford University
- Animal bone – Dr Deborah Jaques, Palaoecology Services, Durham
- Small finds (fe) – Nina Crummy

3.12 Recommendations:

Mike Allen
Jane Timby

4. Storage and Curation

4.1 Immediate and long-term conservation and storage requirements for the data held in the site archive

4.2 Each object identified as requiring conservation treatment will have a manual conservation record describing condition and treatment. It should be noted that no damp or wet finds, large structural items (wooden building elements, wall plaster or mosaics) or vulnerable finds in danger of deterioration were identified.

4.3 The archive will be stored and packed to ensure general preservation, with particular attention being paid to the storage of iron.

4.4 Recommendations about discarding material

4.5 Recommendations regarding the discarding of material will be obtained from specialists and their guidance will be adhered to.

5. Preparation of Archive

5.1 Preparation of Documentary Archive

5.2 The documentary archive includes the following items:

- Context register
- Context sheets
- Drawing register
- Site drawings
- Photographic register
- Site photographs
- Small finds register
- Bulk finds catalogue
- Sample register
- Harris matrices

5.3 Preparation of Material Archive (finds)

5.4 The material archive includes the following items:

- Pottery
- CBM
- Fe objects
- Animal bone
- Flint

5.5 Bulk finds have been quantified, catalogued and marked with a reference number. This number is unique to each item and has been cross-referenced with the finds catalogue. Registered finds have been cleaned (as appropriate) and registered as individual items.

6. Publication of Final Report

6.1 Copies of the final report will be sent to the following individuals / organisations:

- Dŵr Cymru Welsh Water
- Laing O'Rourke
- Julian Cotton Archaeological Advisor, Herefordshire Council (x3)
- Herefordshire Archaeology Sites and Monuments Record

6.2 An article detailing the findings of the fieldwork will be submitted for publication in the *Transactions of the Woolhope Naturalists' Field Club*.

7. Deposition of Archive

7.1 The archive will be deposited with Hereford City Museum on completion of post-excavation analysis and report preparation.