

Ystwyth Hydro-Power Scheme

Archaeological Assessment

Report No. 366

JUNE 2000

Prepared for Shawater Ltd.

By

Ymddiriedolaeth Archaeolegol Gwynedd

Gwynedd Archaeological Trust

Ystwyth Hydro-Power Scheme

Archaeological Assessment (G1570)

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YSTWYTH HYDRO-POWER SCHEME

ARCHAEOLOGICAL ASSESSMENT

1 INTRODUCTION

The proposed hydro-power scheme will extract water from the Afon Ystwyth at SN 8465 7617 and convey the water by a pipeline to a proposed powerhouse and outfall at SN 8272 7548. Gwynedd Archaeological Trust (Contracts Section) has been asked by Shawater Ltd to carry out an archaeological assessment of the proposed scheme route.

2 ASSESSMENT BRIEF

An initial report was requested from Gwynedd Archaeological Trust, assessing the likely archaeological impact of the scheme and suggesting mitigatory measures.

The basic requirement was for a desk-top survey and field search of the proposed area in order to assess the impact of the proposals on the archaeological and heritage features within the area concerned. The importance and condition of known archaeological remains were to be assessed and areas of archaeological potential and new sites to be identified. Measures to mitigate the effects of the proposed scheme on the archaeological resource were to be suggested.

Gwynedd Archaeological Trust's proposals for fulfilling these requirements were, briefly, as follows:

- a) *to identify and record the cultural heritage of the area to be affected by the proposals;*
- b) *to evaluate the importance of what was identified (both as a cultural landscape and as the individual items which make up that landscape); and*
- c) *to recommend ways in which damage to the cultural heritage can be avoided or minimised.*

3 METHODS AND TECHNIQUES

3.1 Desk-top Study

This involved consultation of maps, computer records, written records and reference works, which make up the Sites and Monuments Record (SMR) located at Dyfed Archaeological Trust/Archaeoleg Cambria Archaeology, Llandeilo. Records (including Ordnance Survey maps and reference works - see bibliography) were consulted in the Ceredigion Record Office, Aberystwyth and other records at the University of Wales Archives, Bangor.

3.2 Field Search

This was undertaken on 24 May, 2000, when the whole of the proposed route of the pipeline was walked. Conditions were fair for fieldwork, with weather conditions of light drizzle.

Sites identified were marked on copies of 1:10,000 OS maps as accurately as possible without surveying. Each site was described and assessed. Detailed notes, sketch plans and photographs were made of the more important features.

3.3 Report

All available information was collated, and transferred onto a map at a scale 1:10,000. The sites were then assessed and allocated to the categories listed below. These are intended to give an idea of the importance of the site and the level of response likely to be required; descriptions of the sites and specific recommendations for further assessment or mitigatory measures, as appropriate, are given in the relevant sections of this report.

The criteria used for allocating sites to categories are based on those used by the Secretary of State when considering ancient monuments for scheduling; these are set out in Annex 3 to *Planning Guidance (Wales): Planning Policy, Circular 60/96*.

3.4 Categories

The following categories were used to define the importance of the archaeological resource.

Category A - Sites of national importance.

Scheduled Ancient Monuments, Listed Buildings and sites of schedulable or listable quality, i.e. those which would meet the requirements for scheduling (ancient monuments) or listing (buildings) or both.

Sites which are scheduled or listed have legal protection, and it is recommended that all Category A sites remain preserved and protected *in situ*.

Category B - Sites of regional or county importance.

Sites which would not fulfil the criteria for scheduling or listing, but which are nevertheless of particular importance within the region.

Preservation *in situ* is the preferred option for Category B sites, but if damage or destruction cannot be avoided, appropriate detailed recording might be an acceptable alternative.

Category C - Sites of district or local importance.

Sites which are not of sufficient importance to justify a recommendation for preservation if threatened.

Category C sites nevertheless merit adequate recording in advance of damage or destruction.

Category D - Minor and damaged sites.

Sites which are of minor importance or so badly damaged that too little remains to justify their inclusion in a higher category.

For Category D sites, rapid recording, either in advance of or during destruction, should be sufficient.

Category E - Sites needing further investigation.

Sites whose importance is as yet undetermined and which will require further work before they can be allocated to categories A - D are temporarily placed in this category, with specific recommendations for further assessment. By the end of the assessment there should be no sites remaining in this category.

3.5 Definition of Impact

The impact has been defined as none, slight, likely, considerable or unknown as follows:

None:

There is no construction impact on this particular site. Sites identified as of particular importance are, where possible, avoided by the improvement proposals. Such sites have been identified in the tables.

Slight:

This has generally been used where the impact is marginal and would not by the nature of the site cause irreversible damage to the remainder of the feature, e.g. a track or field boundary.

Likely:

In some instances the site in question would not fall within the direct line of the proposed development but could be affected by construction works and therefore may, subject to its nature be removed or damaged.

Considerable:

The total removal of a feature, or its partial removal which would effectively destroy the remainder of the site.

Unknown:

This is used when the location of the site is unknown, but thought to be in the vicinity of the proposed development.

3.6 Definition of Mitigatory Recommendations

None:

No impact so no requirement for mitigatory measures.

Detailed recording:

Requiring a photographic record, surveying and the production of a measured drawing prior to the commencement of works.

Archaeological excavation may also be required depending on the particular feature and the extent and effect of the impact.

Basic recording:

Requiring a photographic record and full description prior to commencement of works.

Watching brief:

Requiring observation of particular identified features or areas during works in their vicinity. This may be supplemented by detailed or basic recording of exposed layers, structures or sections.

Avoidance:

Features which may be affected directly by the scheme, or during the construction of the scheme, should be avoided. Occasionally a minor change to the proposed route of the pipeline is recommended, but more usually it refers to the need for care to be

taken during construction of the pipeline to avoid accidental damage to a site. This is often best achieved by clearly marking sites prior to the start of work.

Reinstatement:

The feature should be re-instated with archaeological advice and supervision.

4 ARCHAEOLOGICAL FINDINGS AND RECOMMENDATIONS

4.1 Preliminary Topographic Assessment

The route of the pipeline traverses approximately two kilometres of hill slope and terrace above the Afon Ystwyth and Afon Diluw, both sunken river valleys, between the 340m and 280m contour. The underlying rocks are shales and slates of Silurian age, and these are exposed along the course of the river valleys and also outcrop at the edge of the terraces, where there is a sharp break of slope.

The powerhouse and outfall are located on improved pasture on the north side of the Afon Ystwyth at SN 8272 7548. The land rises steeply to both north and east where the enclosed pasture rapidly gives way to common land. This is characterised by unimproved upland pasture and patches of bracken on the uniformly steep and undulating slopes below Yr Allt, which are sub-divided by a number of small stream gullies.

The river valley of the Diluw is considerably narrower than that of the Ystwyth but the eastern flanks of Yr Allt are less steep than those to the south, with a broad, sloping terrace of improved but reverting pasture, with areas of tussocky grasses and juncus. The intake is located at SN 8465 7617, below a small tributary stream and waterfall.

4.2 Archaeological and Historical Background

The proposed route of the pipeline falls within two parishes: Llanfihangel y Creuddyn and Ysbyty Ystwyth. The eastern end of the pipeline follows the route of the Powys-Ceredigion county boundary before turning west into the Upper Ystwyth valley.

The earliest known activity in this area is recorded from Copa Hill, to the south-west of the pipeline route. Here, recent investigations have identified evidence for the extraction of copper ore which dates from the Bronze Age (2nd millennium BC). Pebble hammer stones and wooden implements have been identified beneath recognisable modern workings (Timberlake 1990). Evidence for mining from many possible periods is visible along the valley in the form of tips, workings (PRN 25936) and leats.

There is little definite documentary evidence for pre-1900 copper/lead mining in the area, but it has been suggested that some mining may have taken place during the period when the area fell under the jurisdiction of the Cistercian monks at Strata Florida (Hughes 1981). By 1539, Leland mentions a former lead mine in the valley, but it is not until 1708 that a lease records mines on Copa Hill. In the eighteenth century two references to mining in the valley are recorded (Timberlake 1990), so it is likely that evidence for ore extraction from a number of different periods exists in the valley.

As noted earlier the area of the proposed pipeline lay within a grange belonging to the Cistercian monks of Strata Florida during the medieval period. Strata Florida was founded in 1164-65 and was one of a group of Cistercian monasteries established at this time in Wales (Randall 1946). By the thirteenth century it had become the premier monastic community in Wales, owning a series of granges across the country, including one at Cwmystwyth. The Cistercians were particularly renowned as pioneers of the medieval woollen industry, making full use of their extensive tracts of pasture lands for sheep farming on a relatively large scale.

By the later medieval period the granges had been divided into separate farms and leased out on a commercial basis. Upland areas, such as Cwmystwyth, probably served as areas of

seasonal rough grazing. The practice of transhumance (seasonal migration into the uplands to take advantage of pasture) is indicated in documents of another grange at Mefenydd (Murphy 1999). Indeed, the name of the small holding at Lluest-dolwail (*lluest* = summer dwelling) suggests that the origin of the site may have been as a temporary, seasonal dwelling. The cutting of peat for fuel is also known to have taken place on monastic land, along with the exploitation of mineral resources.

With the dissolution of the monasteries in the 1530's the monastic land was either leased by the Crown or sold to developing estates. The land at Cwmystwyth was bought by the Powis Castle estate and eventually formed part of the Hafod estate (Murphy 1999). Illegal encroachment onto unenclosed lands continued into the post-medieval period and in the late eighteenth century and early nineteenth century Enclosure Acts were sponsored in the area resulting in the enclosure of large tracts of upland lands. An estate map of 1781 shows Ty llwyd and Ty mawr farms set in a landscape of small irregular fields in the valley floor (Murphy 1999) which reflect the general field pattern of today. A small parcel of land to the north of the proposed intake remains common land (PRN 13648).

The Cwmystwyth valley provided a useful trans-mountain route-way to Rhayader and the markets beyond. This route-way was famous as a drovers road and in 1770 was converted to a turnpike, which itself was superseded in 1812 by a new turnpike (the modern A44) to the north (Murphy 1999). Such a natural route-way would probably have been used since early times.

4.3 The Existing Archaeological Record

There are no known archaeological remains directly on the proposed pipeline route. However, near the pipeline route there are recorded two archaeological sites.

PRN 19907 Methodist Chapel, Esgair-wen SN82637555
PRN 21759 Pontblaen Bridge SN82677546

In the area to the north of the intake point a seasonal dwelling or *lluest* is recorded (PRN 6406) as is an area of common land (PRN 13648). The importance of mining to the valley is clearly demonstrated by remains of numerous metal mines, including one (PRN 25936) just north of the proposed pipeline. Also, two aqueducts (PRNs 19905 & 19903), associated with mining, are located to the north of the proposed route.

4.4 The Archaeological Survey

This includes the pipeline route and its immediate borders, within c. 50m on each side. All features of human activity are recorded except those deriving only from current land-use. Features are numbered in sequence from the western end of the route. The location of all the features is shown on the accompanying map (figure 1).

1 Deserted derelict settlement at Troed-y-rhiw. SN 8280 7552 *Category C. Impact: Likely*

The site is located on the north bank of the Afon Ystwyth on level ground. It survives as a complex of small enclosures and low walls less than 1.0m high by 0.7m wide. The clay bonded walls at the heart of the complex demonstrate which of the structures were most likely to have been roofed.

Interpreted as the remains of a post-medieval settlement.

Recommendations for further assessment: None

Recommendations for mitigatory measures: Basic recording / watching brief

2 Rectangular structure east of Troed-y-rhiw. SN 8282 7550

Category B. Impact: Likely

Immediately east and partly overlain by the upstanding remains of Troed-y-rhiw are the remains of a rectangular structure, surviving as partially grassed over stony banks <0.25m high, associated with other, slighter linear features to north and west. The structure, some 10m x 4m overall, appears to be sub-divided internally. It is scarped into what appears to be a lynchet running across the gentle south-facing slope, and forms part of a curving bank around its north-west corner.

Despite its proximity to the other remains at this location the structure is provisionally interpreted as a long hut of the medieval period, situated within an area of relict fields.

Recommendations for further assessment: None

Recommendations for mitigatory measures: Avoid

3 Drystone wall east of Troed-y-rhiw. SN 8286 7550

Category D. Impact: Likely

North-south oriented field boundary wall.

Recommendations for further assessment: None

Recommendations for mitigatory measures: None

4 Field boundary banks east of Troed-y-rhiw. SN 8304 7545

Category D. Impact: Slight

Earthen banks forming the corner of an enclosure. They are less than 1m high, c.1.3m wide at the base and 0.7m wide at the top, being trapezoidal in section, and surmounted by thorny scrub and wire fencing.

Recommendations for further assessment: None

Recommendations for mitigatory measures: Basic recording

5 Leat SN 8308 7546

The location given refers to the proximity of the proposed pipeline at that point.

Category C. Impact: Slight

Within the study area the leat winds across the lower slopes of Yr Allt, above the *Afon Ystwyth*, between the 330m (see feature 9) and contours 300m (this location), approximately. For much of its length the leat is simply scarped into the south-facing slope, with a retaining bank up to 2.5m wide at the base, downslope. On steeper ground the bank is stone faced and built up. The channel survives between 1.6m - 2m wide, and is on average 0.7m deep. The leat once carried water to power the lead mills below *Bryn Copa* at SN 805 747.

Recommendations for further assessment: None

Recommendations for mitigatory measures: Basic recording

6 Abutment SN 8322 7546

Category D. Impact: Slight

Internal dry stone revetment within leat, that may signify an old bridging or crossing point. 2.2m long and 0.65m high, on opposite sides of the leat.

Recommendations for further assessment: None

Recommendations for mitigatory measures: Basic recording

7 Rectangular platform SN 8420 7570

Category B. Impact: Slight

A scarped and terraced rectangular platform, oriented NW-SE, 7.5m x 4m, occupying a sloping natural terrace. It is located on the east edge of a wide but shallow depression in the otherwise steep south facing hill slope behind. It is delineated on three sides by low grassy banks although some stone footings are visible along the west side, where the feature attains a maximum external height of 0.3m. It is interpreted as the remains of a hut platform.

Recommendations for further assessment: None

Recommendations for mitigatory measures: Avoid

8 Sub-rectangular platform SN 8420 7570

Category B. Impact: Slight

The remains of a sub-rectangular platform, oriented NE-SW, 7m x 5.5m, occupying the west upper side of a sloping terrace, some 5m west of feature 7. The SW side is best delineated by a grassy bank, exposed in which is a line of stones that may be footings. The north and west sides of the feature appear to be partly obscured by the erosion and subsequent 'creep' of the hillside. This site has been interpreted as a hut platform, possibly associated with site 7.

Recommendations for further assessment: None

Recommendations for mitigatory measures: Avoid

9 Bridge / Weir SN 8432 7562

Category B. Impact: None

Constructed of mortar bonded stone, this feature is the intake point for the leat (3). The feature spans the width of the Afon Ystwyth, being some 25m across, the river being channelled through a bridge arch at the south-south east end of the bridge/weir. The span of the bridge and the weir wall are on slightly different alignments, being bonded via a buttress situated on a prominent outcrop in the river, and presumably being the reason for the siting of the bridge in the first place. The masonry of the present structure evidences two distinct phases of construction, that of the weir wall and of the bridge arch itself.

The weir wall has three distinct openings in it, each below mid-height, two being square, although of differing sizes, and one consisting of an arrangement of four iron pipes grouped together at the north end of the wall, close to the bank. This latter arrangement originally supplied the leat at this location, the other openings being interpreted as sluices. Both weir and bridge are some 5.5m high and 1m wide, with a walkway along the top.

Recommendations for further assessment: None

Recommendations for mitigatory measures: Avoid

10 Rectangular structure SN 8459 7608

Category B. Impact: Likely

Situated on a wide natural terrace above the west bank of the Afon Diluw are the remains of two large rectangular structures, interpreted as the remains of medieval settlement.

The first (10) comprises a rectangular platform 13m x 8m overall oriented east- west, scarped into gently sloping ground. Low banks, less than 0.3m maximum height and 1.5m wide, define the edges of the feature on all four sides, and there is some evidence of stone footings or facings within the banks. Where the west end is scarped into the slope the resulting bank is

curved, reminiscent of a hood-bank. The north side of the structure is emphasised by the presence of a shallow gully and the continuation of the scarp 'hood' bank.

Recommendations for further assessment: None
Recommendations for mitigatory measures: Avoid

11 Rectangular structure SN 8459 7609

Category B. Impact: Likely

Some 12m north of **10** is another rectangular platform on the same orientation, also defined by low banks of similar dimensions, enclosing an area of some 18m x 6m, with a further 'L' shape section of bank adjoining downslope. Some stone facing is evident, especially at the east end and there is the suggestion of at least one internal division within the enclosure.

There is a slight gully running the length of the south side and a distinct elongated mound on the north that is incorporated with the scarp bank.

A trackway cuts obliquely across the slope behind the settlement with which it appears to be linked

Recommendations for further assessment: None
Recommendations for mitigatory measures: Avoid

5 SUMMARY OF RECOMMENDATIONS FOR MITIGATORY MEASURES

This lists the sits according to their perceived archaeological value.

Category A - National importance

Nil

Category B - Regional Importance

2, 7, 8, 9, 10 & 11

Avoidance

Category C - Local Importance

1

Basic recording/watching brief

5

Basic recording

Category D - Minor or damaged sites

3

None

4 & 6

Basic recording

6 GENERAL RECOMMENDATIONS

6.1 The Construction Requirements

6.1.1 Prior to the commencement of work

The proposed pipeline route runs parallel to a leat (site 5) for much of its length. This feature, the section of abutment (site 6), the field boundary (site 4) and the deserted derelict settlement at Troed-y-rhiw (site 1) will require basic recording prior to the commencement of works. At the eastern end of the pipeline a number of rectangular structures (sites 7, 8, 10 & 11) possibly medieval in date, should not be affected, but if disturbance to these features is envisaged detailed recording and a watching brief would be necessary. Site 2 at the western

end of the pipeline, near the location of the powerhouse, should also be avoided, as should the bridge/weir (site 9), but if disturbance is envisaged then basic recording and a watching brief will be required for both sites.

Sites to be avoided:

Site 2 – Rectangular structure
Site 7 – Rectangular platform
Site 8 – Sub-rectangular platform
Site 9 – Bridge/weir
Site 10 – Rectangular structure
Site 11 – Rectangular structure

Sites requiring basic recording

Site 1 - Deserted derelict settlement at Troed-y-rhiw
Site 4 – Field boundary
Site 5 – Leat
Site 6 – Abutment

General archaeological recommendations:

A There should be an archaeologist present during the marking out and fencing of the easement to advise on the exact route. This would seek to minimise the easement width at the points where it adjoins significant features.

B Archaeological advice should be sought before and during the creation of any temporary topsoil dumping areas.

6.1.2 During construction

There should be a watching brief to allow the close monitoring of works near to features specified in order to avoid damage, but there is no requirement for a general watching brief along the majority of the route.

Site requiring watching brief:

Site 1 – Deserted derelict settlement at Troed-y-rhiw

6.1.3 After construction

A There should be allowance for production of a proper level of archiving and production of a report and drawings with a summary for publication, if the resulting information is suitable.

7 Bibliography

7.1 Unpublished Sources

Dyfed Sites and Monuments Record, Llandeilo
Countryside Council for Wales, Bangor
Ceredigion Archives, Aberystwyth

7.2 Maps

Ordnance Survey maps:

1 Inch, 1st edition (part of)
1:10,000 (part of)
1:50,000
1:10560

7.3 Published Sources

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7.4 Aerial Photographs

Colour verticals, 1992 (1:10,000):

Line 69 - 7692, Prints 244 - 245

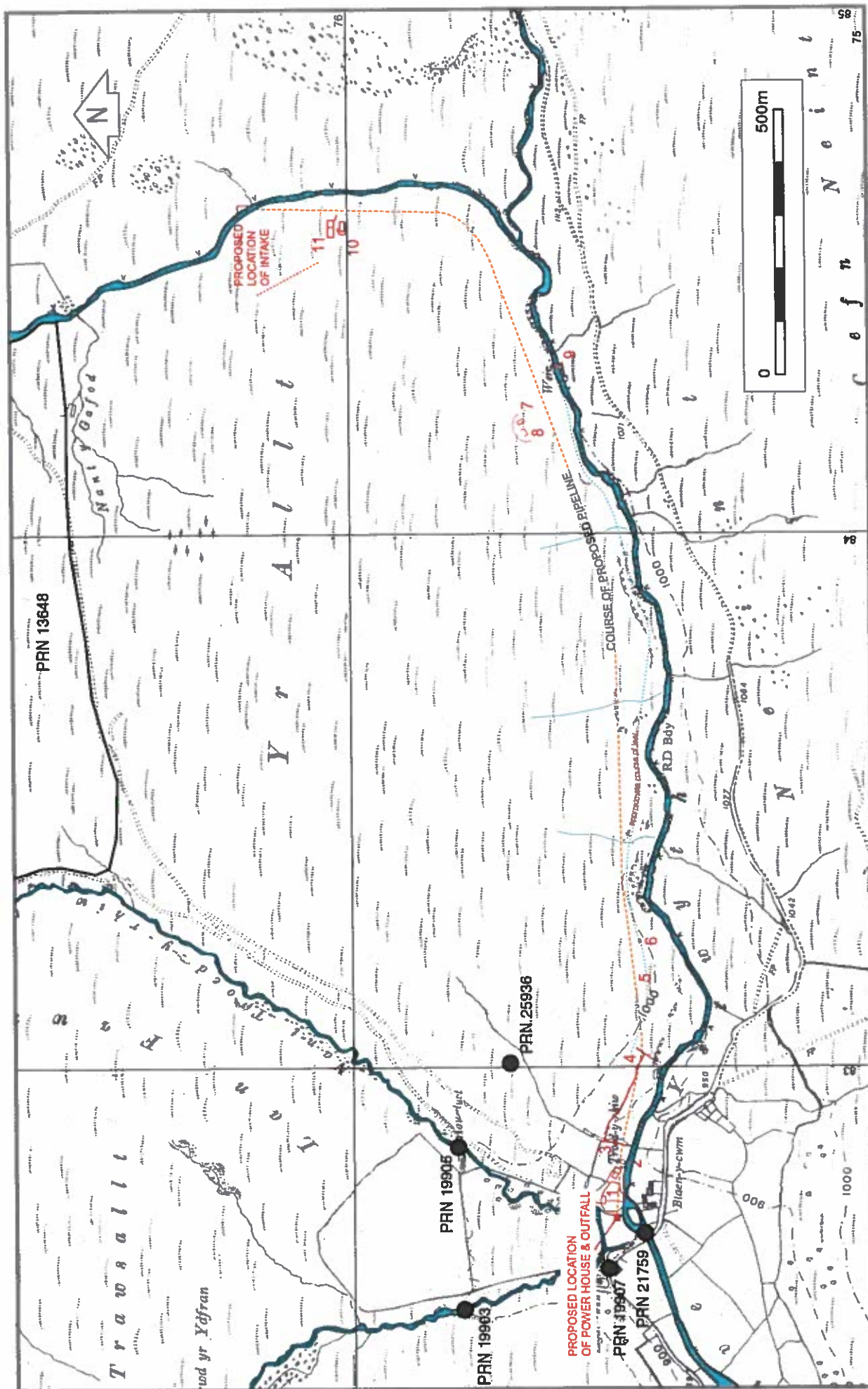
8 NON-TECHNICAL SUMMARY

An archaeological assessment was carried out of the route of the proposed pipeline. This work involved a desktop study of existing records followed by a field walkover. The desktop study included examination of records which make up Dyfed Sites and Monuments Record held at Archaeoleg Cambria Archaeology (Dyfed Archaeological Trust) and searches of other records and maps held in archives at Aberystwyth (Ceredigion Archives) and Bangor (UCNW Archives) as well as OS maps and printed literature. The fieldwork involved walking all of the c. 1.7km of the route with observation of an area c. 50m on either side and brief recording and assessment of every feature except those that were clearly recent.

A total of 11 archaeological features were identified within the corridor of the proposed route or immediately near it. Some of the sites are associated with industrial activity in the form of lead mining which has taken place along the valley in the past. Notably a leat (site 5) runs across the slope from the Afon Ystwyth to the power mills below Bryn Copa.

The assessment also identified evidence for possible medieval and post-medieval deserted settlements along the pipeline route. At Troed-y-rhiw (site 1) a complex of small enclosures represented the remains of a probably post-medieval settlement, perhaps a seasonal settlement or one of the illegal settlements that are known to have encroached on upland pastures. Five rectangular or sub-rectangular building remains were also identified (sites 2, 7, 8, 10 & 11). These may be the sites of medieval or early post-medieval settlements, possible seasonal settlements.

It is recommended that the remains of the possible medieval settlements be avoided (sites 2, 7, 8, 10 & 11), as should the bridge/weir (site 9). A watching brief should be carried out at the post-medieval settlement at Troed-y-rhiw (site 1) and the remainder of the identified sites (apart from site 3) require recording prior to the commencement of any works.



Title: Afon Ystwyth / Afon Diluw Hydro Scheme Proposal : Archaeological Evaluation. SN87NW

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Scales:
1:10,000

Drawing number
C:\G1570Hydro\Ystwyth.ai

14/06/00
Andrew Dutton

1 of 1

Shawater Ltd





Figure 1: Showing site 2 - rectangular structure east of Troed-y-rhiw and the proposed route of the pipeline.



Figure 2: Showing the proposed route of the pipeline east of Troed-y-rhiw.

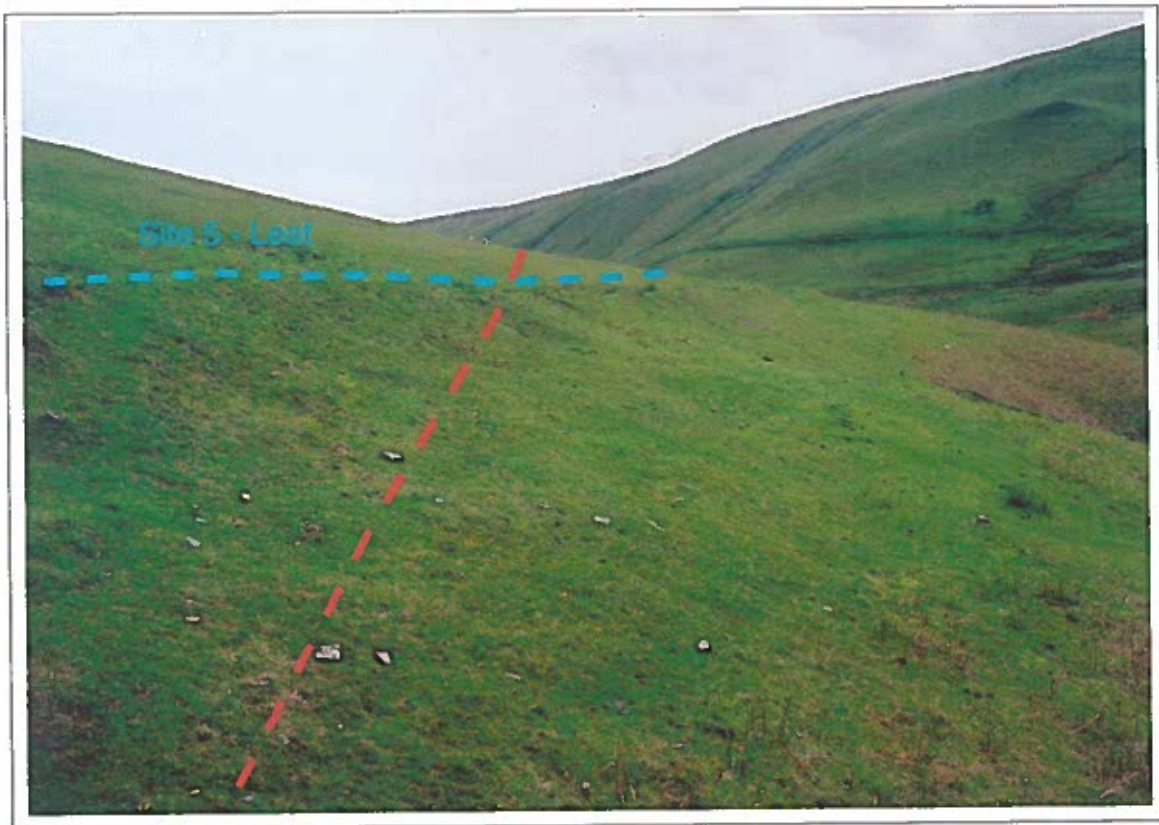


Figure 3: Showing the proposed route of the pipeline and site 5 - leat.



Figure 4: Showing the route of the proposed pipeline along Yr Allt.

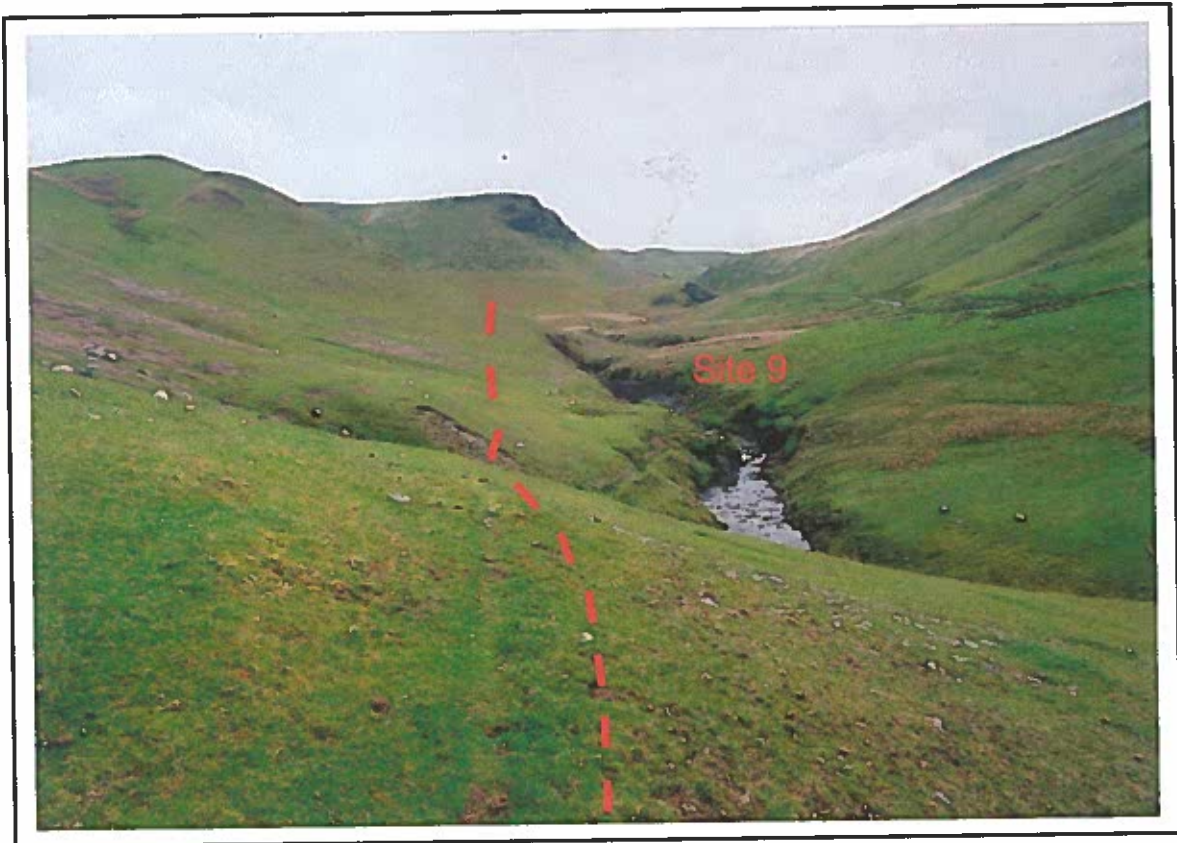


Figure 5: Showing the route of the proposed pipeline and site 9 - bridge and weir.



Figure 6: Showing the route of the proposed pipeline and the location of the proposed intake.

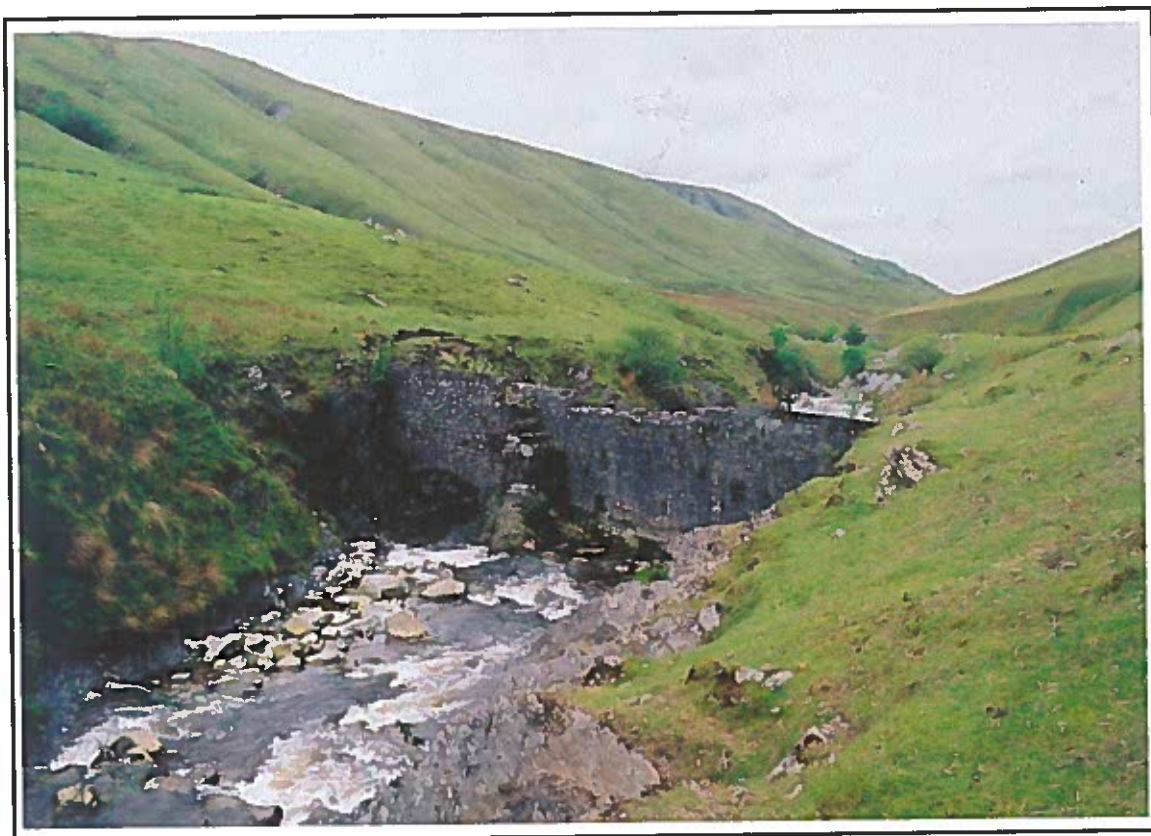


Figure 7: Showing site 9 - bridge and weir over the Afon Ystwyth.



Figure 8: Showing site 2 - rectangular structure, east of Troed-y-rhiw

