

AFON CWM LLAN
NANT GWYNANT, BEDDGELERT,
GWYNEDD

ARCHAEOLOGICAL ASSESSMENT (G1439)

REPORT NO. 227

Gwynedd Archaeological Trust
Ymddiriedolaeth Archaeolegol Gwynedd

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Archaeological Assessment (G1439)

Prepared for Shawater Limited

by

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Gwynedd Archaeological Trust Report No. 227

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ARCHAEOLOGICAL ASSESSMENT

1. INTRODUCTION

A hydro-electric scheme is proposed which will extract water from the Afon Cwm Llan at SH 6224 5170 and return it at SH 6282 5138. Gwynedd Archaeological Trust (Contracts Section) has been asked by Shawater Ltd to carry out an archaeological assessment of the proposed scheme, to form part of an Environmental Assessment, leading to an Environmental Statement which is to accompany the proposal.

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 at Gwynedd Archaeological Trust. Records (including early Ordnance Survey maps, tithe maps, schedules, and reference works - see bibliography) were consulted in the Gwynedd Archives, Caernarfon and Dolgellau and the University of Wales Archives, Bangor.

3.2 Field Search

This was undertaken on the 27th of September 1996, when the whole of the proposed route of the pipeline was walked. Conditions were good for fieldwork but part of the middle section of the route, c. 250m long, was covered by mature bracken making it impossible to survey adequately since any early features would be obscured.

Sites identified were marked on a copy of the 1:2,500 OS map 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 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 Policy Guidance 16 (Wales): Archaeology and Planning.

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, eg 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 mitigation measures.

Detailed recording:

Requiring a photographic record, surveying and the production of a measured drawing prior to 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 reinstated with archaeological advice and supervision.

4. ARCHAEOLOGICAL FINDINGS AND RECOMMENDATIONS

4.1 Preliminary topographic assessment

The route as presently proposed falls into three topographic zones:

- a. In the northernmost area, from the proposed intake for c. 100m, the route follows closely to the river in a narrow, steep sloping, rocky valley.
- b. In the middle section of c. 500m length, the route diverges from the river to run through

medium to medium-steep sloping valley sides with poor grass and bracken covered pasture.

c. In the lower 200m up to the outfall site at the river bank the route crosses somewhat gentler slopes on old enclosed and improved pasture.

In terms of potential for archaeological remains of any human settlement or agricultural activity, area a has low potential while areas b and c must rate as of medium potential. While not of good quality land they lie in a relatively sheltered, south-facing valley with a good water supply.

4.2 Archaeological and historic background

In the medieval period, as part of the Welsh kingdom of Gwynedd, the land here was part of the cantref of Arfon in the commote of Arfon-is-Gwyrfai, in the township of Nanhwynain. Nanhwynain derives from a personal name 'Gwynein' and later became corrupted to 'Gwynant' (Gresham 1939, 151). The township is known in some detail because it was part of lands granted by Llywelyn ap Iorweth to the Cistercian monks of Aberconwy Abbey in 1198 or a little later and recorded in a surviving charter (Gresham 1939). Cwm Llan was recorded in this document as 'cum llen' interpreted as deriving from 'cwm llein' - 'valley of the sword blade' (Gresham 1939, 152). Nanhwynain thus became a grange or outlying land of Aberconwy Abbey but it has been surmised that it was too large and difficult of terrain to be run entirely by the monks and that it was let out as tenancies, one of which was Hafod y Llan (Gresham 1983, 335). At the dissolution of the monasteries, the land, including six 'hafods' passed into the hands of the Wynns of Gwydir and later into the Mostyn Estate (Mostyn 1395). In the 18th century leases were made for mining copper and lead (Mostyn 7047) and ore was still being taken on a considerable scale in the mid-19th century which continued into the 1860's (Bick 1985, 69-72).

4.3 The existing archaeological record

As a tenancy of the monastic grange Hafod y Llan might be expected to show evidence of these medieval origins although the area was probably utilised mainly for sheep pasture with no particular economic assets or favourable route location and thus only sparsely settled. At the Dissolution in 1536 there were nine lessees in Nanhwynain of which one was 'Hawod Thlan' (Davies, 1975, 27). It has been noted that the revenues from Nanhwynain did not change between 1356 and 1536 suggesting that there had not been much additional settlement and that the settlement pattern was in fact little changed at the time of the tithe map of c. 1844 (Davies 1975, 27-8). However, within the Afon Cwm Llan valley there are three possibly medieval or earlier sites recorded. Probably the earliest, but undated, is that of 'Castell' (PRN 3398), a walled hill-top enclosure. The others are both isolated houses of probable medieval date. One (PRN 1446) remains as a boulder walled platform, 200m west of Castell. The other (PRN 3394), further up the Cwm Llan valley, is a possible 'hafod' (seasonally occupied summer pasture house), a rectangular hut with drystone walls and a nearby fold.

The other settlement features in the area are all post-medieval. First, the existing dwelling of Hafod-y-llan itself. Second, Hafod-y-llan Uchaf (PRN 1945), a ruinous two-storey house probably of the early 17th century (RCAHM 1960, 21-2). On the east side of the Afon Cwm Llan and within the survey area are two other ruinous houses: Greenhill Isaf, lower down, is well built with a surrounding complex of outbuildings, yards and irregular terraces which suggests some longevity of occupation while Greenhill Uchaf, higher up, is of rougher build with only a single adjoining angular enclosure which suggests relatively brief occupation without farming. Recent documentary work on the census returns and other documents has thrown light on these two properties (Griffiths, pers. comm.). Greenhill Isaf was built after 1820, was still inhabited in 1871 but was uninhabited in 1881. Greenhill Uchaf was built probably in 1841 but was uninhabited by 1871. Both houses are mentioned in documents relating to works in connection with the Lliwedd mine in the mid-19th century.

The industrial remains comprise the copper and lead mines lying just upslope of the survey area where workings continued from the late 18th century until c. 1858 (Bick 1985, 69-71). Apart from the mine workings themselves, these include a water-driven crushing mill, dressing floors and a tramway. Nearby, but outside the survey area, were other workings at Hafod-y-port, Braich-yr-oen and Lliwedd. In addition, the South Snowdon slate quarries transported material via a tramway and incline on the west side of the river. Of these, only Lliwedd is relevant here since it lay in Cwm Merch, high up to the north-east of Hafod-y-llan and material was transported via a track which ran through the survey area on the north side of the river. One other small building is of interest, close to the confluence of the Afon Cwm Llan and Afon Merch. It existed in 1887, shown on a sale catalogue map (NLW Caerns 328), and in the schedule of another of 1921 (GAS SXC 343) was recorded as 'old powder magazine'. It was therefore the gunpowder store for the Lliwedd mine.

The valley is of particular landscape value since it forms part of the central Snowdon massif and provides one of the best known and earliest recognised routes up the mountain, the 'Watkin Path', on the west side of the river.

4.4 The archaeological survey

Features are numbered from the higher end of the route downwards. The location of all the features is shown on the accompanying map (Drawing no. 1439/4/1).

Recommendations for further assessment are made if the site cannot be sufficiently well understood from existing knowledge to allow mitigation measures to be recommended. The mitigation measure is a product of the category of importance, the impact, and the nature of the site. Where "avoidance" is recommended, this is to include both direct avoidance by the pipeline and avoidance of construction traffic.

1. Path/track

Category C Impact: Likely

A path constructed by large laid stone slabs with block revetting. The route joins with that of the Watkin Path further up the valley, but before the introduction of motor transport provided a well-used route over Bwlch Cwm Llan to Rhyd Ddu and Caernarfon (Griffiths, pers. comm.).

Recommendation for further assessment: none.

Recommendation for mitigatory measures: Reinstate.

2. Field wall

Category D Impact: None

Drystone field wall, dis-used, c. 0.8m high and up to 1.5m high. 18th or 19th century estate wall boundary.

Recommendation for further assessment: None.

Recommendation for mitigatory measures: None.

3. Sheep fold

Category C Impact: None

18th or 19th century drystone walled sheep fold mostly still intact. Probably same as one marked hereabouts on tithe map of c. 1844.

Recommendation for further assessment: None.

Recommendation for mitigatory measures: None.

4. Field wall

Category D Impact: None

Drystone field wall c. 0.8m high and 1.5m high of laid quarried stone with edge-set top stones. The wall is maintained and in use. This is an 18th or 19th century estate boundary wall as

marked on tithe map of c. 1844.

Recommendation for further assessment: None.

Recommendation for mitigatory measures: None.

5. Fence boundary

Category D Impact: Slight

Modern sheep fence boundary which appears to replace the ruined wall to the north west (site 2). It does not replace any earlier boundary, nor is it marked on the 1914 OS 25 inch map. Not of archaeological value.

Recommendation for further assessment: None.

Recommendation for mitigatory measures: None.

6. Trackway

Category B Impact: Likely.

A cart-width trackway constructed by terracing into the slope. Part of track for transport of materials from the Lliwedd copper mine (see above).

Recommendation for further assessment: None.

Recommendation for mitigatory measures: Avoidance with reinstatement at crossing points.

7. Culverted drain

Category B Impact: Likely

Part of Lliwedd mine track 6. Drain for track.

Recommendation for further assessment: None.

Recommendation for mitigatory measures: Avoidance.

8. House

Category C Impact: None

Stone-built, crogloft cottage with attached garden, yard or paddock enclosures. Built into the angle of estate boundary wall 4 and therefore post-dating it. House name Greenhill Uchaf. Census returns show it was built c. 1841 and uninhabited by 1871 (Griffiths pers. comm.).

Recommendation for further assessment: None.

Recommendation for mitigatory measures: Avoidance.

9. Drain

Category B Impact: Likely

Part of Lliwedd mine track 6. Gulley diverting surface water from trackway 6 towards stream lower down slope. Possibly a re-cut packhorse hollow way.

Recommendation for further assessment: None.

Recommendation for mitigatory measures: Avoidance.

10. Slab bridge (EAU 12)

Category B Impact: Likely

Part of Lliwedd mine track 6, taking track over stream.

Recommendation for further assessment: None.

Recommendation for mitigatory measures: Avoidance.

11. Drain

Category D Impact: Slight

Small drainage ditch associated with the house Greenhill Uchaf or with the Lliwedd mine track.

Recommendation for further assessment: None.
Recommendation for mitigatory measures: None.

12. Hollow way path

Category D Impact: Slight

Running diagonally across slope. Probably a short-lived path to house Greenhill Uchaf, no. 8.

Recommendation for further assessment: None.
Recommendation for mitigatory measures: None.

13. Slab bridge

Category B Impact: Likely

Part of Lliwedd mine track 6, taking track over stream.

Recommendation for further assessment: None.
Recommendation for mitigatory measures: Avoidance.

14. Fence line

Category D Impact: None

Modern boundary, post-dating 1914 25 inch OS map.

Recommendation for further assessment: None.
Recommendation for mitigatory measures: None.

15. Drained pasture

Category D Impact: None

Small area of relatively level land with wet peat cover, drained by network of narrow, deep ditches. Modern (information from R. Williams, landowner).

Recommendation for further assessment: None.
Recommendation for mitigatory measures: None.

16. Causeway

Category D Impact: Likely

Stone-built ramp across earlier hollow way of track 6. Modern tractor track.

Recommendation for further assessment: None.
Recommendation for mitigatory measures: None.

17. House

Category C Impact: None

Ruinous stone built cottage with associated outbuildings and yards. Its walls are mostly still standing to their full height. House name Greenhill Isaf. Census returns show it was built after 1820, was inhabited in 1871 but uninhabited in 1881 (Griffiths pers. comm.).

Recommendation for further assessment: None.
Recommendation for mitigatory measures: Avoidance.

18. Walled field system

Category C Impact: Likely

Walls of small laid clearance stone demarcating small enclosures of terraces paddocks and former arable land belonging to the house Greenhill Isaf. An unusual survival of a complete and unaltered 19th century smallholding field system.

Recommendation for further assessment: None.
Recommendation for mitigatory measures: Reinstate.

19. Platforms

Category C Impact: None

Two drystone revetted and partly walled rectangular, levelled platforms making use of a

natural outcrop and shelf. Part of Greenhill Isaf farm complex, function uncertain but probably stack stands.

Recommendation for further assessment: None.

Recommendation for mitigatory measures: Avoidance.

20. Trackway walling and revetting

Category B Impact: Likely

Part of Lliwedd mine track 6. Neatly walled and revetted section of track probably related more to Greenhill Isaf than to the track itself.

Recommendation for further assessment: None.

Recommendation for mitigatory measures: Avoidance.

21. Building

Category B Impact: None

A small, rectangular single-roomed building with massively built stone walls. Documents show this was the gunpowder store for the Lliwedd Mine (Griffiths, pers. comm.). The Lliwedd mine was mainly worked in the first half of the 19th century up to about 1867 but was briefly worked again in the first years of the 20th century (Bick, 1985, 76-8). The gunpowder store was later converted into a holiday cottage but it is now abandoned although still well preserved. It has an iron sheet roof although there are traces of a former slate roof.

Recommendation for further assessment: None.

Recommendation for mitigatory measures: Avoidance.

22. Footbridge abutments

Category C Impact: None

Foundations of former plank footbridge.

Recommendation for further assessment: None.

Recommendation for mitigatory measures: Avoidance.

23. Bridge Abutments

Category C Impact: None.

Drystone built bridge abutments on both river banks of Afon Cwm Llan. Best preserved on north bank. Built of rough cobbles neither well faced nor of very substantial character. A large natural? rock in midstream probably served as a foundation for a central pier and suggests a fairly simple timber lintel bridge. The width of the abutments suggests it was wide enough for a cart to pass. Date unknown but predates 1914 25 inch OS map.

Recommendation for further assessment: None.

Recommendation for mitigatory measures: Avoidance.

24. Raised trackway

Category C Impact: slight.

A linear area of raised ground aligned on the bridge abutments (23) indicates the line of a grassed over former track which clearly joined with or was the original line of the Lliwedd mine track.

Recommendation for further assessment: None.

Recommendation for mitigatory measures: Avoidance.

25. River bank revetments

Category C Impact: None.

Drystone built revetment on south side of river only, of rather more massive stones than those used in 23. Provides a terraced track route along the river bank to the former bridge, (23).

Recommendation for further assessment: None.

Recommendation for mitigatory measures: Avoidance.

5. SUMMARY OF RECOMMENDATIONS FOR MITIGATORY MEASURES

This lists the sites according to their perceived archaeological value.

Category A - National importance

Nil.

Category B - Regional importance

6. Lliwedd mine track. Subordinate part of Lliwedd mine (Category A, Scheduled Ancient Monument C193). Avoid accidental damage or disturbance and reinstate at crossing points.
7. Culverted drain, part of 6. Avoid accidental damage or disturbance and reinstate at crossing points.
9. Drainage gully, part of 6. Avoid accidental damage or disturbance and reinstate at crossing points.
10. Slab bridge, part of 6. Avoid accidental damage or disturbance and reinstate at crossing points.
13. Slab bridge, part of 6. Avoid accidental damage or disturbance and reinstate at crossing points.
20. Trackway walling and revetting, part of 6. Avoid accidental damage or disturbance and reinstate at crossing points
21. Gunpowder store. Avoid accidental damage or disturbance.

Category C - Local importance

- | | |
|----------------------------|---|
| 1. Path/track. | Reinstate. |
| 3. Sheepfold. | No action required. |
| 8. House. | Avoid accidental damage or disturbance. |
| 17. House. | Avoid accidental damage or disturbance. |
| 18. Walled field system. | Avoid accidental damage or disturbance. |
| 19. Platforms. | Avoid accidental damage or disturbance. |
| 22. Footbridge abutments. | Avoid accidental damage or disturbance. |
| 23. Bridge abutments. | Avoid accidental damage or disturbance. |
| 24. Raised trackway. | Avoid accidental damage or disturbance. |
| 25. River bank revetments. | Avoid accidental damage or disturbance. |

Category D - Minor or damaged sites

- | | |
|------------------------------|---------------------|
| 5, 14, 15, 16, 2, 4, 11, 12. | No action required. |
|------------------------------|---------------------|

Category E - Sites of potential value

Nil.

6. GENERAL RECOMMENDATIONS

6.1. The construction requirements

The pipeline construction will need a minimum working easement of c. 5m which could be as little as 4m in places. This narrow easement would only be used where required since it would involve transporting material to occasional topsoil and subsoil dumps, causing additional wear. Where there is no restriction on the easement the excavated material would simply be laid to one side of the trench.

6.2. Archaeological recommendations

There are a significant number of features within the vicinity of the proposed pipeline route but most are of a minor character or are marginal to the route and can either be avoided or reinstated.

The inlet weir site has no archaeological sensitivity or potential. However, the turbine site is close to a number of features and its construction needs careful monitoring.

The feature most likely to be affected is that of the trackway (no.6) which the present route follows closely. The track is a construction, not simply an eroded feature and has some historic interest as a subordinate part of the Lliwedd mine complex. The mine is of national importance and a protected site (SAM C193) because of its good preservation and completeness with surviving machinery and associated buildings and features. The trackway provided access to and from the mine, has value by association and would be relevant to any future public interpretation and display. It should therefore be preserved if possible by routing the pipe to one side and by avoiding machine use of or dumping on the track. The areas where the pipeline route crosses the track happen to be where the track is less well constructed so these parts can be reinstated without harm to the visual appearance of the track. The lower part of the track route (no. 20) is of more elaborate construction however, and should therefore be avoided as reinstatement would not be suitable.

In addition the following recommendations are made:

6.2.1 Before construction

A. There should be an archaeologist present during the marking out and fencing of the easement to advise on the exact route.

B. Archaeological advice should be sought before and during the creation of any temporary topsoil dumping areas. Dumping should take place onto a protective membrane, if the area is archaeologically sensitive.

6.2.2 During construction

A. There should be a watching brief accompanied by recording, if necessary, of exposed sections of any features or buried horizons of archaeological value which may be encountered but which could not be reasonably foreseen.

B. The general watching brief should allow monitoring in order to avoid damage.

6.2.3 After construction

A. Reinstatement of ground levels, topsoil and features should be carried out with archaeological advice and monitoring.

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

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7.2 Maps

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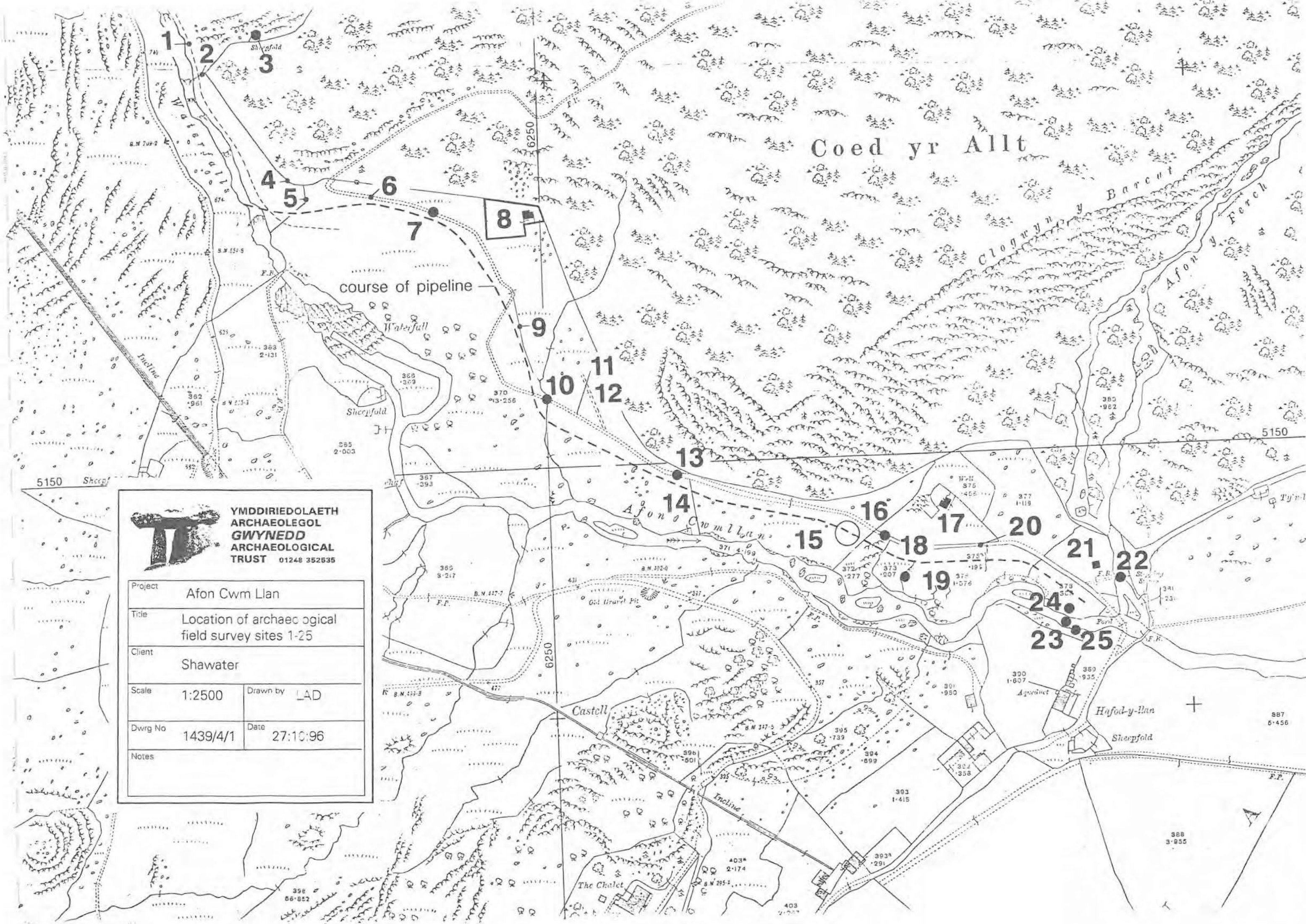
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8. NON-TECHNICAL SUMMARY

An archaeological assessment was carried out of the route of the proposed pipeline comprising a length of approximately 800m. The work involved a desktop study of existing records followed by a field walkover. The desktop study included examination of records held in the Gwynedd Sites and Monuments Record and searches of other records and maps in archives at Caernarfon, Dolgellau and the University of Wales, Bangor, as well as maps and printed literature. The field work involved walking all of the route within approximately a 100m corridor with brief recording and assessment of all features except those which were clearly of modern origin.

Part of the route was obscured by dense bracken but this part was also on a considerable slope so would have low potential for any archaeological features. A total of 25 features were noted over the whole route. All are of post-medieval date and most are related to the 18th-19th century industrial activity of the Lliwedd mine in Cwm Merch. This is an unusually complete and well preserved area of mine working which is protected as a Scheduled Ancient Monument (C193). All the related features within the present survey area have some value by association with the mine. These comprise the mine trackway with its component features such as slab bridges and gulleys, a gunpowder store and two houses, one with a complete and well preserved field system. Another feature of value, which may also be associated with the mine is the remains of a bridge across the Afon Cwm Llan, close to the proposed site of the turbine house.

It is considered that most of these features are either of minor character and can be reinstated or are marginal to the route and can be avoided. It is therefore recommended that careful design of the easement can either avoid these features or minimise damage and can be followed by reinstatement. Watching briefs are recommended to monitor the layout of the easement and the dumping areas. Further watching briefs are recommended to observe and record the trench excavation and subsequent reinstatement.



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ARCHAEOLOGICAL
TRUST 01248 352535**

Project	Afon Cwm Llan		
Title	Location of archaeological field survey sites 1-25		
Client	Shawwater		
Scale	1:2500	Drawn by	LAD
Dwrg No	1439/4/1	Date	27.10.96
Notes			

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