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# CILGWYN SLATE QUARRY

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# ARCHAEOLOGICAL ASSESSMENT

Report No. 313

Ymddiriedolaeth Archaeolegol Gwynedd Gwynedd Archaeological Trust

## CILGWYN SLATE QUARRY

# ARCHAEOLOGICAL ASSESSMENT (G1573)

prepared for - Cwmni Gwastraff Môn - Arfon

December 1998

**Gwynedd Archaeological Trust Report No. 313** 

#### CILGWYN SLATE QUARRY

#### ARCHAEOLOGICAL ASSESSMENT

#### 1. INTRODUCTION

Cwmni Gwastraff Môn - Arfon has commissioned Gwynedd Archaeological Trust (Contracts Section) to carry out a preliminary archaeological assessment in connection with a Planning Application, of two areas of the former Cilgwyn Slate Quarries where tipped waste is being removed to provide lining for rubbish-disposal areas.

#### 2. ASSESSMENT BRIEF

An initial report was requested from the Gwynedd Archaeological Trust assessing the importance of all the archaeological remains, ranging from the Prehistoric to the Industrial period.

The basic requirement was for a desk-top study and field-search of the areas where permission has been granted to remove the tips. The importance and condition of known archaeological remains were to be assessed and new sites identified. Measures to mitigate possible damage to the archaeological resource were to be suggested.

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

a) to identify and record the cultural heritage of the area

b) to evaluate the importance of what was identified, both as a cultural landscape and as the individual items which make up that landscape

c) to recommend ways in which damage to the cultural heritage could be minimised.

#### 3. METHODS AND TECHNIQUES

#### 3.1 Desk-top study

A preliminary consultation of written records was carried out in the Caernarfon Record Office of the Gwynedd Archives Service. The Gwynedd Archaeological Trust's Sites and Monuments Record was also consulted, as were appropriate archive sources, Alun Richards *Gazeteer of the Welsh Slate Industry* and James Boyd's *Narrow Gauge Railways in North Caernaryonshire*.

### 3.2 Field Search

A field visit was undertaken by Trust staff on 27 November 1998. Features identified were marked on the current 1/10,000 ordnance survey map and on the 1889 25" County Series.

#### 3.3 Consultation

Trust staff consulted Dr Gwynfor Pierce Jones of Tal y Sarn, whose thesis *The Economic and Technological Development of the Slate Quarrying Industry in the Nantlle Valley, Gwynedd* earned its author the degree of Doctor in Philosophy of the University of Wales (1996). Dr Jones was able to give Trust staff a number of references to documentary sources.

#### 3.4 Statutory protection and description.

No features within the permission area have been afforded statutory protection.

#### 3.5 Report

The features on the site were assessed and allocated to the categories listed below. These are intended to give an idea of the importance of the site, and specific recommendations for further evaluation or mitigatory measures. 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 Welsh Office Circular 60/96 Planning and Environment: Archaeology.

#### 3.6 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 worthy of scheduling or listing *i.e.* those which would meet the criteria 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 fulfill 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 or, 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 evaluation. By the end of the assessment there should be no sites remaining in this category.

#### 3.7 Definition of Mitigatory Recommendations

Where a feature of archaeological significance is affected, mitigation measures will be included in accordance with current policies as recommended in Circular 60/96 for rescue archaeology.

For the purposes of this report the mitigation and rescue archaeology proposals have been divided into various levels of recording, which can be summarised as:

### Level 1: Minimal recording

a. A photographic record of principal external views. The photographs to be dated and indexed. Negatives should be indexed and suitably stored for archive.

b. A brief summary description, related to the photographic record as appropriate.

#### Level 2: Basic recording

a. A photographic record of all principal elevations and selected features of particular interest. Photographs to be taken, as much as is possible, at right angles to the face of the feature and should include a scale. There should also be a few general photographs to set the site in context.

The photographs to be indexed as for Level 1 and related to a basic site plan which might be taken from a published OS map as appropriate.

b. A simple description of the visible remains relating to the photographic record.

#### Level 3: Basic recording with survey

As Level 2 recording, but to include:

c. A measured survey of the ground plan of the site or structure at an appropriate scale (1:200 for buildings or 1:500 for larger areas where individual buildings are of no great significance).

#### Level 4: Full photographic record

a. A photographic record of all external and, if appropriate, internal elevations as well as any features of particular interest. The photographs should be taken, so far as is possible, at right angles to the face of the feature and should include a scale. They should be reproduced at a scale where, for example, individual stones may be identified. Steps should be taken to minimise distortion, (*eg* by use of a shift lens) and achieve a consistent scale. These photographs should be supplemented with general photographs showing the site in its setting and, if composite photographs are necessary to cover a large feature or elevation, then general shots of the feature should be included. The photographs to be indexed as for Level 1, and related to a site plan.

b. A general description and a description of all the principal features.

c. A measured survey of the ground plan of the building or site at an appropriate scale as for Level 3.

#### Level 5 Full record

This would normally include the full photographic record as described for Level 4, but would be supplemented by a measured survey surveyed to no more than a 1% error. The record may be supplemented by elevations and sections, where appropriate, drawn at a scale consistent with the plans. Individual features should also be surveyed and drawn to scale. The full record would include a detailed description, including measurements wherever necessary.

Preservation in situ: it is recommended that features considered to be of national importance be preserved in situ.

N.B. Recommendations within the gazetteer (4.4 below) would only take effect if the site referred to is to be disturbed.

#### 4. ARCHAEOLOGICAL FINDINGS AND RECOMMENDATIONS

#### 4.1 Location

Cilgwyn Slate Quarry is situated on the northern slopes of Dyffryn Nantlle, in the community (formerly civil parish) of Llandwrog at grid ref: SH 500 540 within the county of Gwynedd. It is one of the major sites of the Nantlle slate district, extracting the rock from pits on the hillside slopes. Its workings and tips dominate the northern side of the valley.

#### 4.2 Historical background.

#### 4.2.1 Pre-modern

Dyffryn Nantlle has seen human occupation since, in all probability, the Bronze Age, as there is a strong likelihood of the copper ores which outcropped at Drws y Coed having been exploited in Prehistory. Evidence of later Prehistoric occupation is to be found in the field systems on the western slopes of Mynydd Mawr, near Caeronwy, in hut circles and field systems identified between Pen yr Orsedd and Fron quarries, as well as at the hill-fort at Bryn Engan. It is possible that the exposed slate rocks at Cilgwyn were worked in the Roman period, since sawn slate slabs have been discovered in a Roman context at the fort at Segontium, and the quarry is believed to have been actively worked in the Medieval period; local tradition speaks of the house at Baladeulyn on the valley floor, one of the *llysoedd* of the Princes of Gwynedd, as having a roof of local slate when Edward I stayed there in 1284. It is probably the first slate quarry in Wales to have been extensively exploited.

The valley is mentioned several times in the fourth branch of the *Mabinogion*, not only Baladeulyn itself, where Gronw Pebyr transforms Lleu Llaw Gyffes back into the semblance of a man but also Dol Pebin, Maen Dylan and possibly Bryn Engan, which has been suggested as the site of Math fab Mathonwy's court of Caer Dathyl. However, in this time the valley appears to have been sparsely populated and comparatively remote, and it is thus that it is depicted in Richard Wilson's famous landscape, *Snowdon from Llyn Nantlle*, painted in the 1760s and preserved in the Walker art gallery.

#### 4.2.2 Modern and Industrial period

Wilson's landscape shows no evidence of industrial activity, but it is known that the scale of local economic activity was beginning to intensify in the late eighteenth century, leading to the reopening of the copper mines at Drws y Coed, by this time part of Assheton Smith's Vaynol estate, and to the quickening pace of the local slate industry. There is documentary evidence for quarrying at Cilgwyn from the early eighteenth century onwards, and from 1800 onwards was prosecuted more vigorously by John Evans, a locally-born lawyer, and his partners. Evans' partnership went through many changes before it finally came to an end in 1830. The quarry was revived in the late 1830s by one George Musket, and was worked by a succession of lessees until final closure in 1956.

Like all the major quarries in Dyffryn Nantlle, Cilgwyn was worked as a series of pits, from which blocks and rubble were hauled by railed inclines and by aerial ropeways. The Nantlle valley runs due east to west, and the slate veins here run from south-west to north-east up the northern slopes of the valley. For many years the largest single pit was the working known as Hen Gilgwyn ('Old Cilgwyn'), which had by 1800 swallowed up smaller and earlier pits. Immediately downslope of this, parallel to it but separated by a dyke, were pits known (from south-west to north-east) as Faen Goch, Gloddfa Dwfr and Gloddfa Glytiau. By the twentieth century these were increasingly being worked into each other, but initially they were inter-connected by tunnels through the dykes that separated them. Further tunnels drained the pits to the hillside slopes to the south-east; the first record of a drainage level dates from 1800, but after a number of years the quarry had been worked to such a depth that it was no longer self-draining. In 1806 a wind-operated pump was installed, and in the 1820s John Edwards, the quarry engineer, built an extensive hydraulic system, fed by a leat from Llyn Ffynnonau, in which a substantial composite water-wheel on the quarry floor operated pumps. By the 1889 25" ordnance survey was prepared, two other water-wheels had been constructed, both at the foot of the main tips to the south-east, both operating pumps in the quarry pits by means of rod-systems through the slate rubble. The spent water then flowed to the machinery in the lower quarries, Cloddfa'r Lôn, Pen y Bryn and Dorothea. A third issue made its way through Tal y Sarn Quarry. The 1889 map also shows two processing levels and a series of pits (see map 1)

As well as difficulties of drainage, Cilgwyn suffered problems disposing of the unusable waste rock, which forms at least 90% of all rock extracted in even the best slate quarry, and in the early nineteenth century the quarry was bedeviled by separate lessees tipping rubble into others' space. Tipping was thereafter focused downslope from the pits, but as the piles of rubble filled up to the limit of the quarry permission in the 1870s, more drastic action was required. By 1889 a lengthy railway to the north gave access to new tipping ground by means of horse-shoe curves, and in 1891 another railway was

commenced to reach tipping ground to the west.

The construction of the Nantlle Railway, a 3' 6" gauge horse-worked public railway, to a terminus near the quarry in 1828 substantially reduced transport costs, even more so after an incline was constructed to the quarry itself at an uncertain date. This connected to an internal railway network, already in existence by 1810, and continued in use until 1919, when a new 2' gauge railway connected it to the Bryngwyn branch of what became the Welsh Highland Railway. The quarry ceased to send its slate by rail after 1929.

### 4.3 Archaeology of the quarry area.

Existing surveys by Gwynedd Archaeological Trust, including *Gwynedd Slate Quarrying Landscapes* (1994) have identified Dyffryn Nantlle as an outstanding industrial landscape; Cilgwyn forms part of an area defined as a Landscape of Exceptional Historic Interest in the recent report published by the Countryside Council for Wales, Cadw and Icomos UK (International Council on Monuments and Sites) for its "prehistoric settlements and field systems, slate quarries and settlements, Mabinogi and poetic landscapes, Richard Wilson's Snowdon."

Cilgwyn Quarry was operational until 1956, but has been used as a refuse tip since the 1980s. This has resulted in the loss of much of the industrial archaeology of this site.

#### 4.4 Gazetteer of Archaeological Sites (see map 1)

#### 1. Incline Category C

#### NGR: SH 5007 5364

The trace of a counter-balanced railed incline, which formerly connected the quarry to the Nantlle Railway. This survives as a stone-built embankment near the lower part of the quarry rubble tip, but the upper part of the formation has been disturbed by recent re-working. *Recommendations: level 2 recording.* 

#### 2. Incline Category C

#### NGR: SH 5008 5364

A stone-built formation, immediately adjacent to 1 but pitched at a less steep gradient. This may represent the trace of an earlier counter-balanced railed incline from the quarry. The upper part of the formation has been buried by tipping of slate rubble.

Recommendations: level 2 recording.

#### 3. Drainage adit Category C

NGR: SH 5010 5369

A drainage adit, consisting of a retaining wall built of slate rubble with a corbelled opening, gated and locked, into an adit through which water continues to flow; connected with 4. *Recommendations: level 2 recording.* 

#### 4. Water-wheel pit Category C

NGR: SH 5011 5368

A substantial pit built out of slate rubble for a back-shot water-wheel, formerly fed from 3 and also from ill-defined leats running at the foot of the slate-rubble tip. *Recommendations: level 3 recording.* 

5. Retaining walls Category E

NGR: SH 5015 5372

Retaining walls built of slate blocks holding back the slate-waste tip, partly collapsed in places. Their position appears to correspond to a water-wheel, pit and adit marked on the 1889 25" ordnance survey. *Recommendations: level 2 recording and watching brief.* 

6. Adit Feature Category E NGR: SH 4996 5372 The remains of stone-built structures, possibly tipping cobs, exposed by recent road construction, surrounded by trimming waste *Recommendations: level 1 recording.* 

#### 5.0 RECOMMENDATIONS

Cilgwyn Quarry has been worked over many centuries, and it is clear from desk-top analysis that earlier quarry features have been buried by tipping of slate rubble. In view of the strong probability of buried features being uncovered as a consequence of the removal of slate waste, an archaeological watching brief should be maintained as work progresses over the area of the present permission. Recommendations as to the recording of historic features are made in section 4.4 above. it must be stressed that these would come into effect only if the feature were threatened.

### 6.0 SUMMARY

An archaeological assessment has been carried out of the land within the confines of the permission granted to Cwmni Gwastraff Môn at Cilgwyn Quarry. The assessment consisted of a desktop study of relevant archival and bibliographical sources, and a walkover where all features within the permission were noted and assigned to a category of archaeological significance. Recommendations were made for each feature depending on its nature and category.

#### 7.0 **BIBLIOGRAPHY**

#### 7.1 Archive sources:

7.1.i: Caernarfon Record Office

XM/maps/437/11, map of Richard Garnons's estate, 1813.

7.1.ii: University of Wales, Bangor:

Porth yr Aur mss.

#### 7.1.iii: Private possession

Notices of general meetings and shareholders' reports of the Caernarvon and Bangor Slate Company, 1860s.

#### 7.2 Ordnance survey:

2"-1 mile survey of 1818-1821 1"- 1 mile survey of 1839-1841 25" XXI.5, 9 (1889) 1/10,000: SH 55

#### 7.3 Photographs:

Photographs of the site are indexed at the Caernarfon Record Office.

#### 7.4 Unpublished sources:

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#### 7.5 Published sources:

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#### **8.0 ACKNOWLEDGEMENTS**

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