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## **Pentwyn Mwyn W/12/2658**

**Tir Gofal Farm Visit Historic Environment Report  
Project Record Number 44211**



Report No. 2003/51

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CAMBRIA ARCHAEOLOGY

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By

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## **INTRODUCTION**

Following a visit by a Tir Gofal Project Officer to Pentwyn Mwyn, a follow-up visit was requested from Cambria Archaeology to assess the condition and importance of a pond, prior to restoration works being carried out on it in Autumn 2003.

## **GENERAL DESCRIPTION OF FARM**

Pentwyn Mwyn is a small holding located near to the lead mines at Casara and Gilfach. Lead mining has played a large part in shaping this landscape, with whole fields covered in mining spoil, and open shafts and adits along the valley of the Nant Yr Hiddl. The imposing engine house at Casara (Scheduled Ancient Monument Cm283) dominates the surrounding area.

The name Pentwyn Mwyn probably came from the mining industry, meaning something like “top of the hillock by the mine”. The house itself is seen on the parish tithe map of 1842, and although Casara mine was not fully operational by this time, Gilfach mine, just to the east, was already established.

The pond in the southwest of the holding is destined to be deepened in the Autumn of 2003, and the stream which feeds it (Nant Gwrach) is to be partially diverted in order to prevent the rapid accumulation of silt. The pond is about 35m in diameter and has a large earth dam on the north side. At its highest the dam is probably 5m tall, and a structure more significant than would normally be expected for a farm pond or similar. Casara mine lies less than 200m downstream and it is probable that the pond was in fact part of the water management for the mine.

## **MAIN MANAGEMENT RECOMMENDATIONS**

The pond has a historical significance through its association with the Casara mine. It should be ensured that restoration works do not damage the banks of the pond, especially on the north side where the earth dam stands. No material should be taken from the banks during the clearance, and vehicles should not be brought around this side of the pond.

An archaeologist should be present during restoration works since there is the potential that a sluice gate or similar feature could be preserved beneath the layers of modern silt. The opportunity should be taken during these restoration works to record as much information as possible about the construction and use of this pond, in order to further clarify its relationship with Casara mine.



## DESCRIPTION OF THE POND AT PENTWYN MWYN

In the southwest of the holding lies a roughly circular pond, about 35m in diameter. The pond is fed from the south by a stream (Nant Gwrach), and feeds out into the same stream via an exit in the northeast bank.

The south side of the pond (about a third of the total area) is blocked with bulrushes and silt, and this has formed an almost solid layer which is to be removed during the proposed restoration works. Immediately south of this silt is a slight earthwork which represents what is probably an older pond bank.

The pond has been formed by damming the stream in a small valley, and the north bank of the pond (see picture below) is an earthen dam which stands around 4.5m tall at its highest point. About a quarter of the circumference of the pond is bounded by the dam at this height, in the steepest part of the valley. Either side, as the slope of the valley sides becomes less steep, the dam becomes smaller until, in the south (the foreground of the photograph below) the pond bank is only a slightly raised earthwork. The top of the dam is between 1 and 2m wide along its length.



Plate 1. *The area in the middle ground, seen as a patch of rushes and grass, is part of the modern silting which is to be removed. At the right hand side of the picture, next to an old tree stump, is the point at which water rejoins the stream, via a narrow channel. In the foreground, in front of the rushes, a slight earthwork shows the line of the old pond bank. The far bank of the pond is an earthen dam which stands to between 4m and 5m high.*

## THE CASARA (CAE SARA) LEAD MINE *file 10002*

The substantial earth dam suggests that this feature is something other than a farm pond. Less than 200m downstream are some of the workings of the Casara (Cae Sara) lead mine.

The mine had a troubled history. It was opened in 1851 as the "Great Welsh Silver-Lead Mine" and a rich ore seam was found at a shallow depth. This gave rise to great optimism, and shares in the company were sold at high prices. However, the seam did not yield anywhere near the ore expected, and Henry Gibson, head of the company, was sued for mis-representation between 1852 and 1854. Undeterred, the mine was re-opened in September 1854 and a Cornish pumping engine installed. The engine house is now a Scheduled Ancient Monument (SAM Cm283) and its circular, brick-built chimney is a significant landscape feature. However, problems dogged the mine, and it was declared insolvent and put up for sale in around 1857. It was rapidly bought, and the new owners in 1860 formed a company named "Casara Lead Mine Ltd" to develop the property. This company significantly developed the mine workings, sinking new adits and shafts and bringing in new water-wheels and crushing rollers, as well as machinery for washing the ore. Despite this, it was not long before Casara was, yet again, insolvent, and public accusations of corruption were made against the company. The "Cwm Brane" mining company then took over Casara in February 1862 but by 1864 the mine was still a losing concern. There is no record of mining at Casara since 1865 (condensed from Hall, G.W:1993: p.32-35).

Detailed information about the workings at Casara is only available for a very small area of the mine. A field visit by Cambria Archaeology (April 2003, PRN 44109) revealed several small platforms on the banks of Nant Gwrach (downstream from Pentwyn Mwyn), and a structure was located nearby which may have been the housing for a water wheel. The platforms probably supported water-driven machinery – maybe for washing or dressing ore – and thus would have required a constant flow of water. It seems likely that the pond at Pentwyn Mwyn was designed to regulate the flow of water in Nant Gwrach, in order to operate mine machinery.

Information given by the landowner supports this theory. He commented that although Nant Gwrach never dries up, it is liable to floods after heavy rains. When this happens, very large amounts of debris and silt are washed downstream (see plate 1, which shows how much has accumulated in the pond) and the banks of the stream can be scoured. Such scouring and movement of debris would be a very real problem for a mine dependant on water driven machinery.

Holding ponds like this would have had some kind of mechanism to control the flow of water. It is to be expected that some kind of sluice gate was put into the earth bank to allow water to be held or released in a controlled fashion. There are two possible locations for this. One is in the centre of the earth dam on the north side of the pond. Although there is currently no sign of a sluice or other mechanism, it may be buried under modern silting.

The other possible location is at the point of the present exit from the pond, in the northeast. The stream at this point is quite narrow, and easy to block. Currently, a series of large stones are visible at approximately the position where a sluice would be expected (see plate 2).





Plate 2. *The possible point at which a sluice or other mechanism controlled the flow of water from the pond.*

## **PROPOSED RESTORATION WORKS**

It is proposed that pond restoration works should take place at Pentwyn Mwyn in the Autumn of 2003. The landowner intends to remove the modern silt and rushes from the pond, and to clear and deepen it at an angle of about 15 degrees from all the banks. In order to avoid the rapid build up of silt in the future, proposals have been made to partially divert Nant Gwarch, which feeds the pond. This is to be done by using a pipe to take some of the water from the stream, pipe it around the pond, and allow it to re-enter further downstream, below the pond. Immediately north of the dam is a small pool of exceedingly iron rich water (see plate 3) which the landowner is concerned will contaminate the stream. He proposes to dump the spoil from the pond clearance on this pool, to prevent it entering the main stream flow. This would involve the spoil being heaped against the north wall of the dam.



Plate 3. *A small area of exceedingly iron rich water, just north of the dam. Mineral rich water is typical of mining areas, though it normally affects whole watercourses rather than isolated areas like this.*

## MANAGEMENT RECOMMENDATIONS

If these works are to be undertaken, then it must be ensured that the original banks of the pond and the earth dam are not damaged. Machinery should not be brought onto the dam itself, and should only enter the pond site from the south, following the course of the stream. This will help to protect the original pond banks.

The removal of modern silt and rushes should only continue as far as the original bank in the south. When working back from the banks it should be ensured that no material is removed from the banks themselves. Extreme care should be taken in the vicinity of the present exit from the pond since there is the potential that remains of a sluice or other mechanism are still present.

In order to maintain the historic character and significance of this pond, spoil should not be dumped against the earth dam but should be removed from the site.

It is recommended that an archaeologist is present during these works, in order to investigate the possibility that any remains of water-management features are still preserved under the silt. This pond was probably a significant part of the workings at Casara, and it is important that as much information as possible is recorded about its construction (including any lining to the pond) and possible use.

Please contact Cambria Archaeology to discuss this further, prior to work being carried out.



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Tithe map 1842 Llangadog Parish

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