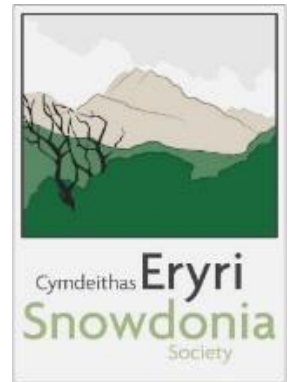


Mr Stuart Cowperthwaite
Examining Authority
Glyn Rhonwy Pumped Storage Case Team
3/18 Eagle Wing
The Planning Inspectorate
Temple Quay House
Temple Quay
Bristol
BS1 6PN
GlynRhonwy@pins.gsi.gov.uk

Yr Hen Ysgol
Brynrefail
Caernarfon
Gwynedd
LL55 3NR

☎ 01286 685498
director@snowdonia-society.org.uk
www.snowdonia-society.org.uk



25th May 2016

Deadline 4 submission- DCO Examination: Glyn Rhonwy Pumped Storage EN010072
Interested Party Ref: 10031956

Water and effluent: assessment, evaluation, management and discharge into designated conservation sites

Dear Mr Cowperthwaite

I write on behalf of Cymdeithas Eryri the Snowdonia Society, the charity which since 1967 has worked to protect, enhance, and celebrate Snowdonia.

Thank you for the opportunity to speak at the Issue Specific Hearing on 17th May 2016.

In relation to items 6.1 to 6.6 discussed at the hearing, we offer further observations on the assessment and management of water and effluent in relation to the protection of the qualifying features of SSSI and SAC sites at Llyn Padarn and Nant y Betwys (a direct tributary of the Afon Gwyrfai SAC). We provide a copy of our submission to Natural Resources Wales' water and effluent discharge consent process at Appendix A.

We have previously acknowledged the considerable amount of work which has gone into developing this application over several years. Our principle concern in this subject area is that the applicant has displayed an inexplicable lack of curiosity when it comes to the precise nature and composition of water, silt and contaminated materials at depth in the pits which they wish to dewater.

The Snowdonia Society does not wish to add to the detailed discussion around chemical and other weapons which is the focus of considerable concern. We wish to be very clear on this – even if the site had never been used to store or dispose of any weapons we would still be deeply concerned about the potential impacts of water/silt and resulting effluent discharge into Llyn Padarn and Nant y Betwys. **Uncontaminated silt is an extremely serious pollutant in fragile oligotrophic to mesotrophic water bodies.** At the beginning of May NRW officers attended a serious silt pollution incident in Llyn Padarn resulting from the construction of a hydro scheme which had all necessary water permits in place from NRW and an ecological clerk of works on site.

Llyn Padarn has suffered over twenty years of damage from sewage pollution and from warm water pulses from the existing pumped storage facility, compounded by a history of inadequate regulation which culminated in NRW being the subject of judicial review brought by Fish Legal. Fish Legal acted to force NRW to fulfil their responsibility to protect the arctic char which is a statutorily protected qualifying feature of Llyn Padarn.

The above notwithstanding, even a cursory inspection of the applicant's own expert report on munitions shows that large quantities of munitions-related materials have been stored and disposed of by various means at this site. As a consequence, it is almost inconceivable that the pit residues do not contain at least some contaminated materials with a potential for toxicity to plants, animals and humans. The nature and scale of that contamination hazard should have been sufficient to trigger exhaustive investigation and evaluation before a risk-based decision was made to progress the project.

The current position as we understand it is that the applicant has not yet successfully sampled at depth from both of the main pits which are to be emptied. The applicant's apparent lack of interest in the contents of Q1 and Q6 at depth becomes even more disturbing given the applicant's intent to discharge the water and effluents into the nationally and internationally important designated SSSI and SAC water bodies to east and west of the development. That some of those water bodies are already far from achieving their legally –required conservation status is not, of course, the applicant's responsibility.

For those charged with determining the various permissions for the project, however, any additional hazards posed by this development must be added to the assessment of risk for those designated sites.

We know that NRW are aware of the failure to sample at depth and that it has at least been a source of concern. We do not know how those concerns have been resolved to NRW's satisfaction. With all due respect we suggest that NRW's approach, as evidenced by their contribution to the Issue-specific hearing, seems to be to seek the line which minimises their involvement. At the hearing there seemed to be little interest in going beyond the question of breeding birds, yet NRW's remit covers a wide spectrum.

The fact that many issues are nominally dealt with under NRW's water permitting functions must be understood in the light of the 'separation of functions' which is causing so many problems across Wales and which has resulted in very serious criticism by the Welsh Assembly's Environment and Sustainability Committee. We refer you to our Deadline 3 submission in which we explain how NRW's nature conservation duties do not apply to its regulatory role; time and again we are seeing examples where nature conservation is slipping through their own net as NRW responses misleadingly state that issues will be dealt with in the licensing process. Licensing is process-driven and because of the 'separation of functions' does not have to do more than consider the *desirability* of nature conservation.

The applicant does not know what is at the bottom of Q1 and Q6 and has not taken the steps needed to secure an answer to that critical question. We have in our submission to NRW (copied below) highlighted further problems with the applicant's work on water

quality, including what is at best poor practice and more probably the use of deliberately misleading statements when it comes to the conclusion they draw from their incomplete work.

We are deeply troubled that if granted permission the applicant could proceed under NRW's 'self-monitoring' regime to empty the contents of Q1 and Q6 into designated conservation sites. Without an exhaustive prior analysis of the contents at depth, how would the scope of the chemical spectrum for 'self-monitoring' during dewatering be adequately defined? In any case neither Gwynedd Council nor NRW would have the resources to police such an operation.

We conclude that the risks to internationally important nature conservation sites from this aspect of the project are likely to be significant and major, that the applicant has not addressed them adequately, and that the regulatory context offers little hope of effective prevention of the many possible worst-case scenarios.

Yours faithfully,

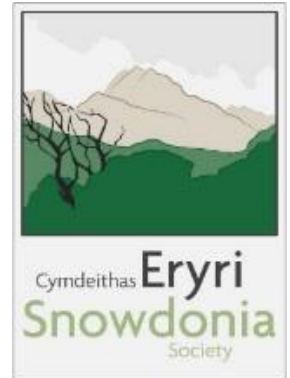
A black rectangular redaction box covering the signature of John Harold.

John Harold

Director, Cymdeithas Eryri the Snowdonia Society

**APPENDIX A: RESPONSE TO WATER
DISCHARGE CONSENT APPLICATIONS**

Yr Hen Ysgol
Brynrefail
Caernarfon
Gwynedd
LL55 3NR



Wales Permitting Service
Natural Resources Wales
Ty Cambria
29 Newport Road
Cardiff
CF24 0TP

☎ 01286 685498
director@snowdonia-society.org.uk
www.snowdonia-society.org.uk

permittingconsultations@naturalresourceswales.gov.uk

5th April 2016

Application numbers: EPR/YB3690HU & EPR/YB3190HR

- Operation of spillway (at Q1 & Q6) & Relief valve (at Q1 & Q6)

- Dewatering of existing quarry lagoons (at Q1 & Q6)

Glyn Rhonwy Slate Quarries, Cefn Du, Llanberis, Gwynedd, LL55 4TY

NGR discharge points & receiving environments:

- SH 55110 59660 to Nant y Betws, Afon Gwyrfai Special Area of Conservation

- SH 57290 61190 to Llyn Padarn Special Area of Conservation

Effluent types: Rainfall, site run off and trade effluent

Note: in our submission we refer to the applicant's Discharge Consent Supporting Statement as 'DCSS'.

Dear Natural Resources Wales Permitting Team,

Cymdeithas Eryri the Snowdonia Society is the charity which works to protect, enhance, and celebrate Snowdonia. Established in 1967 as a member-based organisation, our practical and campaign work is dedicated to safeguarding the special qualities and features of Snowdonia.

Cymdeithas Eryri the Snowdonia Society objects to each of the above applications and requests that you reject them on the basis of risk of damage to SSSI/SAC features and condition in Llyn Padarn and in Afon Gwyrfai. These risks, relating to both dewatering and operation, are outlined below.

Some of our concerns result directly from the fundamentals of the application:

- seeking to discharge water/effluents known to contain excessive levels of phosphorus, copper, iron and silt into the SACs during initial dewatering, without convincing evidence that safeguards will provide entirely reliable and effective

protection to the SAC features, some of which are known to be in unfavourable condition and status

- potential contamination of water/effluents by the unknown contents of unexploded ordnance, with the resulting difficulty of selecting appropriate tests to identify and monitor such contaminants
- seeking permission to discharge water/effluents during operation without convincing evidence that we can predict the quantities, the temperature, the chemical qualities, contaminants or pH of that water and therefore its impacts on the SAC features .

We recognise that some safeguards are proposed, but question whether they can be sufficient given the hammering that the SAC features of Llyn Padarn - including the rare torgoch (arctic charr) - have suffered for many years as a result of industrial discharges and inadequate regulation thereof.

We recognise that a considerable quantity of work of a professional standard has gone into the development of this project. There are, however, serious problems with how some of that work is presented and with the validity of some conclusions drawn from it in the DCSS.

These problems, concerning quality and reliability of application and supporting materials, form the basis for the remainder of our concerns.

1. Concerns resulting from information supplied in the applications.

The applicant supplies evidence that the water/effluent which would be discharged into Llyn Padarn and Afon Gwyrfai during the initial dewatering potentially poses serious threats to the conservation features of those SACs.

Example

The DCSS reports high levels of phosphorus from test samples in Q1 and Q6, with, for example, total phosphate levels on average 65.5ug/l , compared with the 10ug/l 'good ecological status' target for Llyn Padarn. Phosphorus and its oxidation is clearly identified by Environment Agency Wales' report 'Llyn Padarn Investigations 2010' as a key direct cause of elevated biological oxygen demand and therefore of the long history of damage to Llyn Padarn and deterioration in the conservation status of Llyn Padarn's designated features.

2. Missing Information

There are gaps in the information supplied which will have a material effect on your ability to make a sound and safe determination of the applications.

Example

There is no information on the materials and methods for lining of the head and tail ponds. Water chemistry will be of critical importance during discharge, **whether those discharge events are tests, planned, emergency, accidental or malicious**. The choice of lining materials will determine the extent and nature of chemical interaction with the water in the so-called 'closed system'. The quality and characteristics of the water in the system will be altered, in the form of pH changes and potential for concentration of the products of

chemical reactions between the water, any contaminants and the materials in the lining and other surface components in the system.

Example

We can find no evidence of proper consideration of the potential impacts of temperature spikes on the receiving water bodies and designated features, caused by inflow of warmer water during operational discharge. The DCSS should refer to such impacts and should address the range of possible scenarios, including what would happen during periods of extended intense rainfall such as that recently experienced. EAW's 'Llyn Padarn Investigations 2010' report highlights the likely role of releases of warmer water from an existing pumped storage operation in reducing habitat availability and spawning success of Arctic Charr.

3. Inadequate and misrepresented information

Some of the information supplied is inadequate. However, for those who value the delicate and threatened natural resources of Llyn Padarn and Afon Gwyrfai, of greatest concern is the misrepresentation of data in the DCSS through the presentation of conclusions which cannot be justified on the evidence provided and the dismissal of data which are inconvenient. There are several examples of such practices in the DCSS. In such circumstances you will require a high level of confidence that you can guarantee the safety of our SSSIs and SACs and the wildlife which depends on your protection.

Example

Planned discharges of water from the so-called 'closed system' will generally be in response to rainfall as direct input or run-off input to the head- and tail-ponds. The DCSS 3.3.5 states 'average annual rainfall is around 1850mm'. However in order to assess the impacts of planned discharges you will need to assess likely worst-case scenarios. What was the actual rainfall at the site in 2015? For information, the total annual rainfall measurements at nearby [ECN](#) weather stations in 2015 were 4541mm (Snowdon) and 6185mm (Crib Goch).

Example

Dewatering of Q1 to Nant y Betws

'2.3.6 Ongoing monitoring of the water quality in relation to sediment and turbidity will be carried out throughout the operation of pumped discharge to the local watercourse.

Pumping can be ceased at any time if there is thought to be a risk of causing a pollution incident. Further testing of the water quality may be implemented if deemed necessary.'

This level of detail is entirely inadequate for discharging of sediments and possible contaminants into a SAC catchment:

- no methodology for the monitoring
- no indication of which chemicals will be tested for
- no indication of acceptable limits
- no justification for the selection of methodology and limits
- no mechanism linking the monitoring regime directly to operations management and to contractors on site

*'Pumping **can** be ceased if there is thought to be a risk of causing a pollution incident'?*

Surely this should provide detail on the mechanism for identifying and notifying such risks and state 'pumping will cease immediately and will not recommence until all risks have been

eliminated'. The application is seriously flawed in not detailing how the 'self-monitoring' regime will work in practice.

Example

Section 2.5 on Environmental Risk Assessment for Dewatering contains a number of statements which give serious cause for concern. These concerns include both the reliability of the information provided and the composition of the water quality, sediments and contaminants in Q1 and Q6, and therefore the risks they pose.

- DCSS section 2.5.1 states that the water sampling plan for Q6 is provided in Appendix B. It is not present.
- Reference to 'surface waters' in 2.5.3 does not make clear what was found at depth. Without the sampling plan we cannot see that adequate testing was actually carried out.
- Section 2.5.5 reveals levels of copper in Q6 which average 6.5 times the Water Framework Directive standards and levels of iron at 20 times the environmental standard. The suggestion in 2.5.5, without any justification, that the highest figure for iron could be ignored demonstrates a less than rigorous approach to science.
- *'Total phosphate concentrations exhibited a relatively wide range with an average of 31 ug/l, above the target value of 10 µg/l set for oligotrophic waters under the Habitats Directive quality guidance (JNCC 2015).'* What was the highest reading? It would be useful to know how potent a source of phosphate it is proposed to dump into an SAC which suffers, and has historically suffered, the impacts of a heavy phosphorus load.
- Section 2.5.7 on Q1: *'However, total phosphate levels were on average 65.5 ug/l, which is above the 10 ug/l Good Ecological Status target for Llyn Padarn.'*

Given these statements (and numerous others which we could highlight) **it is extraordinary that this section of the report concludes, without justification** or explanation of the obvious logical disconnect:

' 2.5.9 Therefore it is proposed that the discharge of the existing water within Q1 and Q6 will not cause any adverse significant effects to the receiving water bodies.'

4. Environmental Management System

At the information session held at Electric Mountain on 22nd March, NRW officers confirmed that the approach taken by yourselves as regulator will be based on 'self-monitoring' by the developer.

Is there evidence that legal responsibilities for the protection of Llyn Padarn SAC can be effectively carried out under a 'self-monitoring' regime? The history of the site suggests otherwise, given the history of impacts from discharges by industrial operations which include operations of a similar nature to that which is the focus of these applications.

Much of the substance in assessing these effluent/water discharge permits will come down to degrees of confidence in how discharges in the construction operation phases are

planned, managed, operated, monitored and reported by the operator, and in how effectively those measures are regulated by yourselves.

During both dewatering and operational phases, **discharge events may result from tests, planned release, emergency release, accidental release, chronic or acute equipment failure, chronic or acute structural failure, or malicious action. This suggests that an effective environmental management system must be established, approved and tested well in advance of any operations commencing.**

DCSS points 3.4.8, 3.4.9, and 3.4.10 describe arrangements for the EMS, first stating that *'The type of environmental management system (EMS) that will be implemented is to be determined at a later date by the scheme operator'* then stating that *'Snowdonia Pumped Hydro do commit to having an environmental policy and management system in place, but this is subject to confirmation at a later date as to which specific EMS the scheme will implement'* and finally stating that *'the electricity generation company operating the developed scheme will establish an appropriate system'*.

However, in answer to Question 3d in the Part B2 of environmental permit application forms - *'Does your management system meet the conditions set out in our guidance?'*, the applicant has replied 'Yes' and has ticked the box which indicates that they have their own management system in place. The applicant then refers to DCSS paragraph 3.5., which is in fact not an EMS but an 'Environmental risk assessment for operational discharges'.

Did the applicant tick the box saying that they have an Environmental Management System by mistake? For Llyn Padarn and Afon Gwyrfai, one mistake may be one mistake too many.

Please refuse these applications – is there any other way of ensuring you meet your international obligations for the protected flora and fauna of Afon Gwyrfai and Llyn Padarn? Llyn Padarn in particular has suffered enough already from industrial misuse and inadequate regulation.

Yours

A large black rectangular redaction box covering the signature of John Harold.

John Harold

Cyfarwyddwr, Cymdeithas Eryri