

# Environment Agency Permitting decisions

## Bespoke Permit

We have decided to grant the permit for Llanishen Reservoir operated by Western Power Distribution Investments Limited.

The permit number is EPR/AP3228GT

The permit is for the release of raw water via the scour pipe at Llanishen Reservoir. Llanishen Reservoir has a surface area of 238,000m<sup>2</sup> (square metres) and a maximum storage capacity of 1,440,909m<sup>3</sup> (cubic metres). Rainfall is the exclusive source of the reservoir waters as it is fully bunded with no feeder streams. Releases can be made via outlet pipe work to the Nant Fawr. Permit EPR/AP3228GT allows Western Power Distribution Investments Limited (WPD) to release a maximum of 19,008 m<sup>3</sup>/d (cubic metres per day) at a rate of 220 l/s (litres per second).

Originally, WPD proposed to release 38,800m<sup>3</sup>/d at a rate of 450l/s. WPD have since revised that proposal to the reduced daily volume and rate of the discharge to that above. This was WPD's decision (Annex 2 section 2.5).

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environment protection is provided.

## Purpose of this document

This decision document:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account
- justifies the specific conditions in the permit other than those in our generic permit template.

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

## Structure of this document

- Annex 1 the decision check list and Key Issues
- Annex 2 the advertising and consultation responses

## Annex 1: decision checklist

Activity	Justification / Detail	Determination criteria met	
		Yes	N/A
<b>Receipt of submission</b>			
Confidential information	A claim for commercial or industrial confidentiality has been made.		✓
<b>Consultation</b>			
Scope of consultation	<p>The consultation requirements were identified and implemented. The decision was taken in accordance with RGN 6 High Profile Sites, our Public Participation Statement and our Working Together Agreements.</p> <p>Extended consultation beyond 20 working days was carried out. Stakeholder engagement including; emails, letters, telephone conversations and face-to-face meetings have been ongoing since 25<sup>th</sup> February 2010. Stakeholders have included the general public, local action groups, local media and politicians.</p> <p>Wider advertising was carried out. The application was advertised in the South Wales Echo on Tuesday 27<sup>th</sup> April. This was in addition to advertising on the Environment Agency's website. Responses are summarised in Annex 2.</p> <p>A 'minded to' consultation i.e. consulting on a draft permit and decision document was not carried out. Given the extended consultation beyond 20 working days (the Agency have been in ongoing dialogue with the public since February 2010), and wider advertising, the scope of consultation already exceeds the requirements set out in the Public Participation Statement and Working Together Agreement.</p>	✓	
Responses to consultation, web publicising and newspaper advertising	The consultation, web publicising and advertising responses (Annex 2) were taken into account in the decision. The decision was taken in accordance with our guidance.	✓	
<b>Operator</b>			
Control of the facility	We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with EPR RGN 1 Understanding the meaning of operator.	✓	
<b>The facility</b>			

Activity	Justification / Detail	Determination criteria met	
		Yes	N/A
The regulated facility (only where there has been debate on the extent of the facility)	The extent/nature of the facilities taking place at the site required clarification.		✓
<b>European Directives</b>			
Applicable Directives	All applicable European Directives have been considered in the determination of the application.	✓	
<b>The site</b>			
Extent of the site of the facility	The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility including discharge points.  A plan is included in the permit and the operator is authorised to carry on the permitted activities within the site boundary.	✓	
Biodiversity, Heritage, Landscape and Nature Conservation	The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat .  A full assessment of the application and its potential to affect the site has been carried out as part of the permitting process. We consider that the application will not affect the features of the site.  Formal consultation has been carried out with Countryside Council for Wales. The consultation responses (Annex 2) were taken into account in the permitting decision.	✓	
<b>Environmental Risk Assessment and operating techniques</b>			
Environmental risk (where the operator has carried out the risk assessment)	We have reviewed the operator's assessment of the environmental risk from the facility.  The operator's risk assessment is satisfactory.	✓	
Environmental risk (where the risk assessment has	We have carried out a risk assessment on behalf of the operator.		✓

Activity	Justification / Detail	Determination criteria met	
		Yes	N/A
been carried out by the Environment Agency)			
Operating techniques	<p>We have reviewed the techniques used by the operator and compared these with the relevant guidance notes.</p> <p>See key issues of the decision (page 6).</p>	✓	
<b>The permit conditions</b>			
Use of conditions other than those from the template	Based on the information in the application, we consider that we need to impose conditions other than those in our permit template, which was developed in consultation with industry, having regard to the site and its features.		✓
Pre-operational conditions	Based on the information on the application, we consider that we need to impose pre-operational conditions.		✓
Improvement conditions	Based on the information on the application, we consider that we need to impose improvement conditions.		✓
Conditions where the consent of another person is needed.	Based on the information submitted in the application, we consider that it is necessary to impose conditions where the consent of another person is needed.		✓
Incorporating the application	<p>We have specified that the applicant must operate the permit in accordance with descriptions in the application, including all additional information received as part of the determination process.</p> <p>These are specified in the Operating Techniques table in the permit.</p>	✓	
Emission limits	<p>We have decided that emission limits should be set for the parameters listed in the permit.</p> <p>It is considered that the numeric limits described below will prevent significant deterioration of receiving waters. We have imposed numeric limits because either a relevant environmental quality or operational standard requires this.</p> <p><b>A maximum limit of 50mg/l suspended solids.</b></p> <p>Limit set to minimise the risk of Downstream siltation in the Nant Fawr (see section 2 above) as a consequence of the discharge.</p> <p><b>A pH range between 6-9.</b></p> <p>Limit has been set in accordance with the requirements of the EC Freshwater Fish Directive</p>	✓	

Activity	Justification / Detail	Determination criteria met	
		Yes	N/A
	(2006/44/EC).  <b>A minimum dissolved oxygen saturation of 50%, applied to raw water from outlet 1.</b>  Set in accordance with the requirements of 'Regulation and risk assessment of reservoir releases'. Limit ensures that an oxygen poor discharge due to an algal bloom or thermal stratification cannot be made.		
Monitoring - This refers to Operator Self Monitoring (OSM), which at present only applies to water companies.	We have decided that monitoring should be carried out for the parameters listed in the permit, using the methods and to the frequencies specified.		✓
Reporting	We have specified reporting in the permit.		✓
Considerations of foul sewer (stand alone water discharges only)	We agree with the operators justification for not connecting to foul sewer.	✓	
<b>Operator Competence</b>			
Environment Management System	There is no known reason to consider that the operator will not have the management systems to enable it to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence.	✓	
<b>OPRA</b>			
Opra Score (spreading of sheep dip and pesticides only)	The Opra score has changed from that set out in the application.		✓

## **Key Issues of the decision**

The key issues were identifying and assessing the mitigation for the risks of;

- sediment release (Annex 2 section 2.1 – 2.3)
- polluted sediment (Annex 2 section 2.1 – 2.3)
- poor quality water (Annex 2 section 2.4)
- release of fish (Annex 2 section 6) and;
- increase in downstream flow (Annex 2 section 2.5).

These risks are the primary risks associated with making a release from a reservoir and are identified in 'Risk assessment of reservoir releases'<sup>1</sup>. These risks were also identified by the public during consultation (see Annex 2).

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<sup>1</sup> [http://www.environment-agency.gov.uk/static/documents/Business/WQ\\_TGN\\_Part\\_06.pdf](http://www.environment-agency.gov.uk/static/documents/Business/WQ_TGN_Part_06.pdf)

## **Annex 2: Consultation, publication and advertising responses**

87 representations were made in regard to the advertisement of the Llanishen Reservoir permit application. Responses to those representations are set out below.

As part of the application the operator submitted a risk assessment entitled '*Llanishen Reservoir; Reservoirs Act 1975: Measures to be taken in the Interest of Safety under Section 10(6) of the Act, Phase 2 Drawdown.*' From this point on the document is referred to as 'the risk assessment'.

1. **Loss of amenity, loss of a water resource and planning issues**

*Representations in regard to; the loss of sailing, walking, viewing, bird watching, fishing, the loss of a drinking water or fire fighting resource and planning issues such as a potential housing development.*

- 1.1 The Environment Agency (EA) does not have the authority to require that WPD, as Llanishen Reservoir's undertaker, use the water body in any particular way. The EA promotes the recreational use of the environment. However, our remit in this instance has been limited to our pollution control functions as defined in Section 5 of the Environment Act 1995 which would involve assessing the environmental risk of the activity and assessing the mitigation measures put in place to negate that risk. The environmental permit does not infer any other permissions, including planning permission, which is primarily the responsibility of the local authority.

2. **Downstream siltation, water quality and flow**

*Representations that raise concerns that the discharge operations may lead to polluting levels of sedimentation (within the Nant Fawr and or Roath Park Lake) or have other impacts through increased flow.*

- 2.1 Normally feeder streams to a reservoir will carry sediment into the reservoir, where it will settle. The amount of sediment that would be discharged through a scour valve when opened would depend on many factors, principally: the size of the reservoir, the location of the feeder streams, the amount of sediment transported by the feeder streams, the nature of the sediment collected in the catchment; the time since the scour valve was last opened and the extent of the drawdown.
- 2.2 However in the instance of Llanishen Reservoir there are no feeder streams. Rainfall is the exclusive source of its waters as it is fully banded. Due to this absence of feeder streams there is a lack of any mechanism for significant sediment (including polluted sediment) input to the reservoir. The risk of significant sediment or pollution resulting from a release is therefore deemed low. This is consistent with the operators statement that they were unable to obtain sediment samples as there were only 'minimal amounts' (APEM Limited - Llanishen Reservoir water quality report, March 2010).
- 2.3 The mitigation measures (set out in appendices D1 and D2 of the risk assessment) by the operator satisfy the requirements for reservoir releases set out by EA policy. The measures have therefore been approved. These measures include straw bales (to act as a filter), flocculent blocks (if suspended solids reach the emission limit value (ELV) of 50mg/l) and regular monitoring. The operator will be required to maintain full control over the release and be able to stop or reduce the rate as necessary to comply with the ELV.

- 2.4 An ELV for dissolved oxygen (DO) saturation, at a minimum of 50%, has been set. The operator will be required to sample the reservoir bottom waters prior to making a release. This limit ensures that a poor quality, low oxygen release due to thermal stratification or an algal bloom cannot be made.
- 2.5 Another mechanism by which downstream siltation might occur is scouring. Scouring of the banks could occur due to increased downstream flows. Scouring of the banks of the Nant Fawr was reported by members of the public during phase 1 of the drawdown (siphoning of the surface water). The downstream watercourses are not main rivers, they are ordinary watercourses and therefore the responsibility of the local drainage authority - Cardiff City Council (CCC). CCC inspected the Nant Fawr following the report. No scouring was identified (see section 4.1.1 of the risk assessment). As there was no evidence to suggest a discharge rate of 220l/s had any adverse affect during the phase 1 drawdown, it was decided that the phase 2 drawdown would also be limited to a rate of 220l/s. Originally the drawdown was proposed to be made at a rate of 450l/s.
- 2.6 As referred to above, the downstream watercourses, the Nant Fawr and Roath Park Lake, are the responsibility of CCC. As such CCC is fully aware of the plans to drawdown Llanishen Reservoir. CCC has been in dialogue with the operator, particularly at the pre-application stage, and has not made any representations regarding the impact of the drawdown on the Nant Fawr or Roath Park Lake.

### **3. Loss of / impact on habitats**

*Representations that refer to the operations as likely to have an impact on the general habitat or those representations that refer to SINC and SSSI designations (or the features of those designations).*

3.1 On the 9th April 2010 the Environment Agency met with the Countryside Council of Wales (CCW) and Cardiff County Council (CCC) to discuss Llanishen Reservoir and the biodiversity concerns around the proposed drawdown. Neither CCW nor CCC objected to the drawdown.

3.2 CCW who are responsible for the Llanishen and Lisvane Reservoir Embankments SSSI gave their formal assent to the drawdown (see p 19 below). The operator has considered the potential risk to the SSSI under section 5.2, p10, of the risk assessment.

3.3 For those that raised concerns that the drawdown could impact upon the SSSI by way of structural impact to the banks, please see section 5.2.

3.3 CCC are responsible for the Site of Importance for Nature Conservation (SINC) and commented on what they viewed to be the main features of that site.

#### **3.4 Toads**

The drawdown is not scheduled to occur during the breeding season for Toads. CCC informed the Environment Agency that if the drawdown did adversely impact on the toads then this would be a local impact and that there were still suitable habitats within the locality to support a valuable number of toads.

#### **3.5 Grass Snakes**

CCC informed the Environment Agency that the snake population is not solely dependent on the toad population but more adversely

effected by breeding habitat. CCC have a management plan in place to improve breeding areas for grass snakes in this area.

#### 4. **Need for drawdown**

*Representations that question the need for a drawdown.*

- 4.1 All reservoir undertakers are responsible for the management and safe operation of their reservoirs. The Reservoirs Act 1975 (the 1975 Act) requires all reservoir undertakers to oversee the safe operation and maintenance of reservoirs. Undertakers are required to commission an inspecting engineer to carry out an inspection and produce a report at least once every ten years (a section 10 report).

In 2004, during the time the reservoir was under the ownership of Welsh Water, a section 10 report was commissioned by the water company in its capacity as reservoir undertaker. This report did not recommend a drawdown of the reservoir. On the face of it, a further safety report was not therefore required until 2014.

A further section 10 report for Llanishen Reservoir, was commissioned in 2008, due to a possible change of use of the reservoir. The report instructed the undertakers, Western Power Distribution (WPD), to complete actions known as 'recommendations as to measures to be taken in the interests of safety' (safety recommendations). A central recommendation of the report was the inspection of the reservoir's pipework. This report replaced the one that had been earlier commissioned in 2004. Once a section 10 report has been submitted it is not possible to alter it unless the undertaker refers it to a referee within 40 days of the report date.

The Environment Agency does not have the authority to challenge a section 10 report. Once the report, including its recommendations have been submitted, there is a legal obligation on the undertaker to carry out the safety recommendations set out in the report as soon as practicable. In the case of Llanishen Reservoir, the inspection report specified these must be done within 12 months.

The Environment Agency's limited role is to act as the enforcement authority ensuring compliance with the Reservoirs Act 1975. We must ensure all undertakers comply with the Act and deliver any safety measures set out in the section 10 report within the timescales specified. However we cannot, prescriptively specify how compliance with these measures is to be achieved. WPD have elected to drawdown the reservoir to carry out a visual inspection of the pipework. This decision was made on the advice of their appointed Panel Engineer.

5. **Structural impact**

*Representations that raise concerns that the clay lining of the reservoir will become damaged as a result of the drawdown, including those that make reference to the CADW listing.*

- 5.1 Once CADW (the historic environment service of the Welsh Assembly Government) legally list a structure, it is then the responsibility of the local planning authority to take a view on, and or determine, any listed building consents. CCC, as the local planning authority, have outlined their position concerning this and have stated:

‘The requirement for listed building consent concerns demolition, alteration or extension works which would affect the character of a building of special architectural or historic interest. Counsel's view is that this does not cover the removal of water for maintenance purposes. Even if it did, then there is a defence to an enforcement notice if the works are urgently needed in the interests of safety. That is what Dr Hughes's report says.

The Council has no statutory powers to speculate on damage to the core of the dam or to call for an indemnity. The condition of the core will be an issue for WPD to address as owner of the reservoir when monitoring the drain down. Similarly, the Council has no power to enforce refill provisions. The sailing club lease specifically refers to refill by rain fall, which was the term that the Judge imposed.’

- 5.2 In regard to the potential for structural impact (see section 5 above) to the reservoir embankments, WPD's appointed panel engineer has stated;

‘The embankments are of typical construction for their age, with puddle clay cores supported by compacted earthfill shoulders. Reservoirs are normally constructed to balance demands against seasonal inflows, and are often designed to provide adequate storage for a period of

several years with below average rainfall, so may not necessarily be completely full every year, and can be expected to be substantially drawn — even to the extent of being virtually empty — during the course of the year without detriment to the integrity of the embankments. We have no concern about this reservoir standing empty for two or three years, particularly since any refilling would be under controlled conditions and the embankments would be monitored regularly during the operation. In the unlikely event that signs of leakage were noted, refilling would be slowed down or stopped, and appropriate remedial measures implemented if this proved necessary.’

## 6. Fisheries issues

*Representations that raise concerns regarding what or whether or not aquatic surveys have been undertaken, what provisions are in place for reservoir fish, the likelihood of fish kills, the spread of infection i.e. diseases and parasites to downstream watercourses and concerns pertaining to eels.*

- 6.1 An aquatic survey was undertaken, the results are summarised below (from 'Llanishen Reservoir; Reservoirs Act 1975: Measures to be taken in the Interest of Safety under Section 10(6) of the Act, Phase 2 Drawdown.')

*'APEM Ltd conducted a survey of fish populations within the reservoir in February 2010. Netting operations were successful in catching small species such as bullhead, minnow and three-spined stickleback. Horizontal and vertical hydroacoustic surveys were also undertaken which allowed the total population of these fish species to be estimated at around 12,000 to 15,000. The hydroacoustic surveys also identified fish in the 25 cm+ size range with an estimated maximum of 4.9 fish per hectare (this is equivalent to approximately 113 individual fish). Llanishen Reservoir has a legacy of trout angling, going back to beginning of the 20th century and has received annual stockings of rainbow trout until 1998. It is highly probable that these sonar targets were represented by rainbow trout (*Onchorhynchus mykiss*), which is a non-native species and thus would be considered a threat to the ecological integrity of the Nant Fawr.'*

- 6.2 In view of this survey, the operator has set out the provisions for reservoir fish:

*'The Environment Agency has specified that best efforts should be made to prohibit fish from the reservoir entering the Nant Fawr. This is to protect the resident stocks of brown trout and the general ecological integrity of the Nant Fawr.'*

*It is inevitable that fish of all sizes will be washed from the reservoir. Accordingly, it will be essential, as a minimum precaution, to install a mechanical screen within the masonry lined channel to exclude fish from being dispersed beyond this point. In terms of siting the screen, the downstream end of the settlement sump provides an ideal position which will allow screens to be lowered into vertical runners and trapped fish to reside in the deep settlement sump until their capture and removal.*

*Due to the potential for very large numbers of small fishes to be washed from the reservoir, mesh size is an important consideration. A 3.3mm stainless steel mesh is to be provided – sized to prevent many of the 2010 recruits from entering the stream.'*

- 6.3 All fish screened from the discharge will be removed by hand nets. They will then be placed in oxygenated water tanks and removed from site with the exception of eels (see 6.5). Fish that remain within the reservoir near completion of the drawdown will be subject to the same provisions.
- 6.4 The Environment Agency is satisfied that the mitigation measures above (6.2, 6.3) ensure that the risk of spreading infection downstream is minimised. Host fish will be screened from the discharge, and any infection in the water will have already passed through to the Nant Fawr in the past when routine releases were made, such as the phase 1 drawdown or routine scour releases.
- 6.5 The fish survey did not reveal any population of eels in the reservoir. Neither does the Environment Agency have any records, in recent years, of such a population. However if eels are removed by the hand nets, at the site of the screen, they will be released to the Nant Fawr. Eels are not viewed to pose an infection risk.

7. **Refill requirement**

*Representations that demand a refill requirement or ask whether such a requirement is already in place.*

- 7.1 There is no mechanism under the Reservoirs Act 1975, or any other environmental legislation, that empowers the Environment Agency to require WPD to refill Llanishen Reservoir.

However, there is a specific condition upon the lease between WPD and CCC that requires WPD to allow Llanishen Reservoir to refill by rainfall. This condition, as it is currently written, comes into effect upon compliance with the 'measures to be taken in the interests of safety' contained within the section 10 report referred to under section 5 of this document.

Refill by rainfall would take many years. Therefore, WPD may wish to seek means of refilling the reservoir more quickly. The most likely way that this could be achieved is through abstracting water from any water body within the area. In that event, WPD would need to consult with the Environment Agency.

## Annex 2: Consultation, publication and advertising responses

Summary of responses to consultation, web publication and newspaper advertising and the way in which we have taken these into account in the determination process.

Response received from
Countryside Council for Wales
Brief summary of issues raised
Assent to Appendix 4, in regard to Llanishen and Lisvane Reservoir Embankments SSSI, subject to the following conditions; <ul style="list-style-type: none"><li>- CCW will be re-consulted if works are not completed by 31 December 2010.</li><li>- Work to be carried out as specified in the notice dated 9 April 2010.</li><li>- No works including vehicular access or storage of equipment and/or materials to take place within the SSSI boundary</li><li>- There will be ongoing inspection of the clay banks by the applicant's Panel Engineer, from the commencement of the draindown until the refilling of the structure.</li><li>- Access to the scour valve to be on foot.</li></ul>
Summary of actions taken or show how this has been covered
<ul style="list-style-type: none"><li>- The area biodiversity team have agreed to maintain contact with CCW throughout the operation.</li><li>- All other issues are covered by the risk assessment referenced under table S1.2 of the permit.</li></ul>

Response received from
Ann Powell
Brief summary of issues raised
Loss of amenity (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
David Ball
Brief summary of issues raised
Loss of a water resource (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
David Evans
Brief summary of issues raised
Downstream siltation (see section 2 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Mike Simpson
Brief summary of issues raised
Loss of / impact on habitats (see section 3 above)
Loss of a water resource (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Peter Bray
Brief summary of issues raised
Loss of amenity (see section 1 above) / Loss of a water resource (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Sheila Jenkins
Brief summary of issues raised
Downstream siltation (see section 2 above)
Loss of/impact on habitats (see section 3 above)
Loss of amenity (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Audrey and Philip James
Brief summary of issues raised
Downstream siltation (see section 2 above)
Loss of/impact on habitats (see section 3 above)(general, SSSI)
Need for drawdown (see section 4 above)
Loss of amenity (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Janet James
Brief summary of issues raised
Downstream siltation (see section 2 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Jenny Randerson
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(general) Loss of a water resource (see section 1 above) Loss of amenity (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Richard Cowie
Brief summary of issues raised
Need for drawdown (see section 4 above) Loss of/impact on habitats (see section 3 above)(SINC) Fisheries issues (see section 6 above) (spread of infection) Downstream siltation (see section 2 above) Structural impact (see section 5 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Derek and Janine Lowthe
Brief summary of issues raised
Need for drawdown (see section 4 above) Fisheries issues (see section 6 above) (spread of infection) Loss of/impact on habitats (see section 3 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Mark Goodfellow
Brief summary of issues raised
Downstream siltation (see section 2 above) Fisheries issues (see section 6 above) (spread of infection, fish kills) Loss of/impact on habitats (see section 3 above) Structural impact (see section 5 above) Need for drawdown (see section 4 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Diane Davies
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(SINC)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Mike J
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(SINC) Structural impact (see section 5 above) Fisheries issues (see section 6 above) (spread of infection, fish kills) Loss of amenity (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Ruth McNeil
Brief summary of issues raised
Loss of amenity (see section 1 above) Loss of/impact on habitats (see section 3 above)(SINC, SSSI)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Michelle Whyman-Williams
Brief summary of issues raised
Need for drawdown (see section 4 above) Downstream siltation (see section 2 above) Fisheries issues (see section 6 above) (survey, fish kills)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Michael Williams
Brief summary of issues raised
Fisheries issues (see section 6 above) (spread of infection) Loss of/impact on habitats (see section 3 above)(SINC) Structural impact (see section 5 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Frederick Ager
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(SSSI) Need for drawdown (see section 4 above) Fisheries issues (see section 6 above) (spread of infection, survey) Structural impact (see section 5 above) Loss of amenity (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Jayne Powling
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(SINC) Downstream siltation (see section 2 above) Need for drawdown (see section 4 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Elaine Shellard
Brief summary of issues raised
Structural impact (see section 5 above) Downstream siltation (see section 2 above) Fisheries issues (see section 6 above) (fish kills, surveys) Loss of/impact on habitats (see section 3 above)(SSSI)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Ted Thurgood
Brief summary of issues raised
Need for drawdown (see section 4 above) Downstream siltation (see section 2 above) Fisheries issues (see section 6 above) (fish kills, spread of infection, eels) Loss of/impact on habitats (see section 3 above)(SINC) Structural impact (see section 5 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Mike Walker
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above) Structural impact (see section 5 above) (CADW listing) Fisheries issues (see section 6 above) (eels, spread of infection) Loss of/impact on habitats (see section 3 above)(SINC) Downstream siltation (see section 2 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Mr & Mrs Bennett
Brief summary of issues raised
Need for drawdown (see section 4 above) Loss of/impact on habitats (see section 3 above)(increase in flow) Fisheries issues (see section 6 above) (provisions for reservoir fish)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Alun Pryce
Brief summary of issues raised
Need for drawdown (see section 4 above) Fisheries (general) Loss of/impact on habitats (see section 3 above)(SINC) Structural impact (see section 5 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Karen Williams
Brief summary of issues raised
Need for drawdown (see section 4 above) Downstream siltation (see section 2 above) Fisheries issues (see section 6 above) (protected species, spread of infection)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Dr David Phillips
Brief summary of issues raised
Fisheries issues (see section 6 above) (survey) Downstream siltation (see section 2 above) Structural impact (see section 5 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Siân Batchelder
Brief summary of issues raised
Loss of amenity (see section 1 above) Loss of/impact on habitats (see section 3 above)(general) Fisheries (provisions for reservoir fish, spread of infection, eels) Structural impact (see section 5 above) Need for drawdown (see section 4 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Professor Mary McMurrin
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(SINC) Fisheries issues (see section 6 above) (spread of infection) Downstream siltation (see section 2 above) Loss of amenity (see section 1 above) Need for drawdown (see section 4 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Gillian Bartlett
Brief summary of issues raised
Loss of amenity (see section 1 above) Fisheries (provisions for reservoir fish, eels, spread of infection)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Gillian Brightmore
Brief summary of issues raised
Loss of amenity (see section 1 above) Loss of/impact on habitats (see section 3 above) Need for drawdown (see section 4 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Elaine Millward
Brief summary of issues raised
Need for drawdown (see section 4 above) Fisheries issues (see section 6 above) (spread of infection, eels) Downstream siltation (see section 2 above) Loss of/impact on habitats (see section 3 above)(SINC) Structural impact (see section 5 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
R.T and M.E.Plaut.
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(SINC) Need for drawdown (see section 4 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Helen Evans
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(SSSI, SINC, general) Structural impact (see section 5 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Dr Tracey James & Richard Melhuish
Brief summary of issues raised
Fisheries issues (see section 6 above) (fish kills) Loss of/impact on habitats (see section 3 above)(general, reference to migratory birds and otters) Need for drawdown (see section 4 above) Planning (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Karen L Wontner
Brief summary of issues raised
Structural impact (see section 5 above) Loss of/impact on habitats (see section 3 above) Fisheries issues (see section 6 above) (spread of infection, fish survey, eels) Loss of amenity (see section 1 above) Refill requirement (see section 7 above)s
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Nigel Godfrey
Brief summary of issues raised
Downstream siltation (see section 2 above) Need for drawdown (see section 4 above) Fisheries issues (see section 6 above) (survey, spread of infection) Loss of/impact on habitats (see section 3 above)(SINC) Loss of amenity (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Margaret Butler
Brief summary of issues raised
Need for drawdown (see section 4 above) Downstream siltation (see section 2 above) Fisheries issues (see section 6 above) (fish kills, protected species) Loss of/impact on habitats (see section 3 above)(SINC) Structural impact (see section 5 above) Loss of water resource (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Rhys Evans
Brief summary of issues raised
Fisheries issues (see section 6 above) (provisions for reservoir fish) Structural impact (see section 5 above) Loss of/impact on habitats (see section 3 above)SSSI Loss of amenity (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Mr A W Chilcott
Brief summary of issues raised
Need for drawdown (see section 4 above) Fisheries issues (see section 6 above) (provisions for reservoir fish, fish kills, eels) Loss of/impact on habitats (see section 3 above)(SINC) Structural impact (see section 5 above) Refill requirement (see section 7 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Sonia Jones
Brief summary of issues raised
Loss of amenity (see section 1 above) Loss of/impact on habitats (see section 3 above)(general)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Christina and Chris Shurrock
Brief summary of issues raised
Structural impact (see section 5 above) Downstream siltation (see section 2 above) Loss of/impact on habitats (see section 3 above)(general)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Peter Elwood
Brief summary of issues raised
Loss of amenity (see section 1 above) Loss of/impact on habitats (see section 3 above)(general) Structural impact (see section 5 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
N.S Jones
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(general) Loss of a water resource (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Hugh and Alison McKirdy
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(general, SSSI) Loss of amenity (see section 1 above) Loss of a water resource (see section 1 above) Downstream siltation (see section 2 above) Fisheries issues (see section 6 above) (fish kills, spread of infection)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Margaret Zmelda
Brief summary of issues raised
Structural impact (see section 5 above) Need for drawdown (see section 4 above) Unexploded bomb (UXB) at base of reservoir (see below) Downstream siltation (see section 2 above) Loss of/impact on habitats (see section 3 above)(SINC) Fisheries (provisions for reservoir fish, fish kills, eels)
Summary of actions taken or show how this has been covered
Please refer to relevant sections above, except UXB.  The operator was made aware of the comment that there is a UXB at the base of the reservoir. There is no evidence to suggest that this is the case. However, should a UXB be detected during drawdown operations the relevant authorities will be contacted.

Response received from
Phil Judd
Brief summary of issues raised
Need for drawdown (see section 4 above) Structural impact (see section 5 above) Downstream siltation (see section 2 above) Fisheries issues (see section 6 above) (eels, spread of infection) Loss of/impact on habitats (see section 3 above)(SINC)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Martin Rendle
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(general, no drainage allowed during toad / snake breeding season) Downstream siltation (see section 2 above) (WPD should be liable for any dredging costs incurred at Roath Park lake. Structural impact (see section 5 above) Fisheries issues (see section 6 above) (survey, restocking) Refill requirement (see section 7 above) Loss of amenity (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Caroline Sims
Brief summary of issues raised
Need for drawdown (see section 4 above) Loss of/impact on habitats (see section 3 above)(general) Downstream siltation (see section 2 above) Fisheries issues (see section 6 above) (provision for reservoir fish, eels)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Christine Pritchard
Brief summary of issues raised
Loss of amenity (see section 1 above) Refill requirement (see section 7 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Pat and Ian Travis
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(general) Downstream siltation (see section 2 above) (WPD should be liable for any dredging costs incurred at Roath Park lake). Loss of water resource (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Malcolm and Gaynor Staddon
Brief summary of issues raised
Need for drawdown (see section 4 above) Structural impact (see section 5 above) Fisheries issues (see section 6 above) (provisions for fish) Loss of/impact on habitats (see section 3 above)(general, SSSI) Downstream siltation (see section 2 above) Structural impact (see section 5 above) Loss of a water resource (see section 1 above) Loss of amenity (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Mike Coogan
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(general) Fisheries issues (see section 6 above) (eels)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Roger and Margaret Harris
Brief summary of issues raised
Need for drawdown (see section 4 above) Structural impact (see section 5 above) Fisheries issues (see section 6 above) (survey, provisions for reservoir fish, spread of infection) Downstream siltation (see section 2 above) Planning (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Christopher Milford
Brief summary of issues raised
Loss of amenity (see section 1 above) Loss of/impact on habitats (see section 3 above)(SINC) Downstream siltation (see section 2 above) Structural impact (see section 5 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Bryan P.G. Savage
Brief summary of issues raised
Need for drawdown (see section 4 above) Structural impact (see section 5 above) Downstream siltation (see section 2 above) Fisheries issues (see section 6 above) (survey, eels, spread of infection) Loss of/impact on habitats (see section 3 above)(general) Refill requirement (see section 7 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
David Hern
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(general) Need for drawdown (see section 4 above) Refill requirement (see section 7 above) Downstream siltation (see section 2 above) Loss of amenity (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Charles Geddes
Brief summary of issues raised
Loss of amenity (see section 1 above) Loss of/impact on habitats (see section 3 above)(general) Downstream siltation (see section 2 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Cardiff Reservoirs Fly Fishing Club
Brief summary of issues raised
Listed catch records of Rainbow Trout, Brown Trout and eels
Summary of actions taken or show how this has been covered
Representation did not raise any concerns or queries. However fisheries issues are outlined under section 6.

Response received from
Catriona Fraser
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(SINC) Structural impact (see section 5 above) Need for drawdown (see section 4 above) Loss of amenity (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Mary Andrews
Brief summary of issues raised
Loss of amenity (see section 1 above) Planning (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Paul Gilson
Brief summary of issues raised
Need for drawdown (see section 4 above) Loss of/impact on habitats (see section 3 above)(general) Structural impact (see section 5 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Nick Howitt
Brief summary of issues raised
Downstream siltation (see section 2 above) Loss of/impact on habitats (see section 3 above)(general) Loss of amenity (see section 1 above) Planning (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Ewart Parkinson
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(SSSI) Structural impact (see section 5 above) (listed structure) Need for drawdown (see section 4 above) Refill requirement (see section 7 above) Loss of amenity (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Jane Mutter and Brian Daw
Brief summary of issues raised
Need for drawdown (see section 4 above) Loss of/impact on habitats (see section 3 above)(general) Fisheries issues (see section 6 above) (eels, survey) Structural impact (see section 5 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
John Atkinson
Brief summary of issues raised
Planning (see section 1 above) Structural impact (see section 5 above) Loss of amenity (see section 1 above) Loss of/impact on habitats (see section 3 above)(general)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Peter Collier
Brief summary of issues raised
Need for drawdown (see section 4 above) Fisheries issues (see section 6 above) (provisions for reservoir fish) Refill requirement (see section 7 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Elfan W. Jones & Gwennith B. Jones
Brief summary of issues raised
Planning (see section 1 above) Fisheries issues (see section 6 above) (fish kill, spread of infection, eels) Downstream siltation (see section 2 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Susan M Roberts
Brief summary of issues raised
Flytipping (see below) Scouring of banks (see section 2 above) Need for drawdown (see section 4 above) Fisheries issues (see section 6 above) (provisions for reservoir fish, eels)
Summary of actions taken or show how this has been covered
Flytipping - an officer was sent in response to the report. Material had been deposited but was on the operators land. It has since been removed.
For other issues please see relevant section.

Response received from
Caroline A. Holmes
Brief summary of issues raised
Planning (see section 1 above) Loss of amenity (see section 1 above) Loss of/impact on habitats (see section 3 above)(general, SSSI) Downstream siltation (see section 2 above) Fisheries issues (see section 6 above) (provisions for reservoir fish, fish kills, spread of infection) Need for drawdown (see section 4 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Mr Mike Dean
Brief summary of issues raised
Need for drawdown (see section 4 above) Loss of/impact on habitats (see section 3 above)(SINC) Fisheries issues (see section 6 above) (eels, spread of infection) Downstream siltation (see section 2 above) Structural impact (see section 5 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Denise Stewart
Brief summary of issues raised
Need for drawdown (see section 4 above) Structural impact (see section 5 above) Fisheries issues (see section 6 above) (provisions for reservoir fish) Loss of/impact on habitats (see section 3 above)(general) Loss of amenity (see section 1 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
David Salter
Brief summary of issues raised
Structural impact (see section 5 above) Loss of/impact on habitats (see section 3 above)(SINC) Downstream siltation (see section 2 above) Fisheries issues (see section 6 above) (protected species, spread of infection)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Mike and Sue Fry
Brief summary of issues raised
Downstream siltation (see section 2 above) Loss of/impact on habitats (see section 3 above)(general, SINC) Fisheries issues (see section 6 above) (spread of infection) Need for drawdown (see section 4 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Jenny Rathbone
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(general) Loss of amenity (see section 1 above) Downstream siltation (see section 2 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Dr Alfred Venables
Brief summary of issues raised
Need for drawdown (see section 4 above) Loss of/impact on habitats (see section 3 above)(general) Planning (see section 1 above) Structural impact (see section 5 above) Refill requirement (see section 7 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Lisvane Community Council
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(general, SSSI, SINC) Structural impact (see section 5 above) Downstream siltation (see section 2 above) Need for drawdown (see section 4 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Lisvane Historical Society
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(general, SSSI, SINC) Fisheries issues (see section 6 above) (fish kills) Downstream siltation (see section 2 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Gwyn Edwards
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(SSSI) Flooding, scouring of banks (see section 2 above) Downstream siltation (see section 2 above) Structural impact (see section 5 above) Need for drawdown (see section 4 above) Refill requirement (see section 7 above) Stratification (see section 2 above) Absence of pollution in sediments (see section 2 above) Fisheries issues (see section 6 above) (provision for reservoir fish)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Dulcie Wilks
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(general, SSSI) Loss of amenity (see section 1 above) Structural impact (see section 5 above) (CADW)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
David Newland
Brief summary of issues raised
Loss of amenity (see section 1 above) Loss of/impact on habitats (see section 3 above)(general, SINC) Fisheries issues (see section 6 above) (eels, survey, spread of infection) Structural impact (see section 5 above) Refill requirement (see section 7 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Freda R Hawkes
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(general) Need for drawdown (see section 4 above) Downstream flows on Roath Park Lake (see section 2 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Mrs Isabel Good
Brief summary of issues raised
Need for drawdown (see section 4 above) Loss of/impact on habitats (see section 3 above)(general, SINC) Fisheries issues (see section 6 above) (provision for reservoir fish) Downstream siltation (see section 2 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Steve Allan
Brief summary of issues raised
Loss of amenity (see section 1 above) Need for drawdown (see section 4 above) Structural impact (see section 5 above) Loss of/impact on habitats (see section 3 above)(general, SINC) Fisheries issues (see section 6 above) (eels, survey) Downstream siltation (see section 2 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Lourda Allan
Brief summary of issues raised
Loss of amenity (see section 1 above) Need for drawdown (see section 4 above) Loss of/impact on habitats (see section 3 above)(SINC)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Julia Magill
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(SSSI) Structural impact (see section 5 above) Need for drawdown (see section 4 above)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
David Stephens
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(SINC) Structural impact (see section 5 above) Downstream siltation (see section 2 above) Fisheries issues (see section 6 above) (kill protected species)
Summary of actions taken or show how this has been covered
Please refer to relevant section.

Response received from
Edward G Roberts
Brief summary of issues raised
Loss of/impact on habitats (see section 3 above)(SSSI, SINC) Flytipping (see below) Scouring of banks (see section 2.4 above) Need for drawdown (see section 4 above) Fisheries issues (see section 6 above) (eels)
Summary of actions taken or show how this has been covered
Flytipping - an officer was sent in response to the report. Material had been deposited but was on the operators land. It has since been removed.
For other issues please see relevant section.