Form WRE: Application for a new impoundment licence, technical variation to an impoundment licence or the removal of an existing impoundment

Water Resources Act 1991, Environment Act 1995, The Water Resources (Abstraction and Impoundment) Regulations 2006, The Natural Resources Body for Wales (Functions) Order 2012

1. Application type

New impoundment licence	☒	
Removal of an existing impoundment	☐	Complete sections 2 and 4
To licence an existing impoundment	☐	
Technical variation to an impoundment licence	☐	

Give existing licence or pre- application reference number(s): PPN-00237

2. Impoundment details

All information should correspond with any maps and drawings submitted with this application

2.1 Provide details of all impoundment points. For structures spanning a watercourse, provide a National Grid Reference for each bank. If necessary, continue on a separate sheet and tick here to show that you have done this. ☐

Impoundment location name / reference	National Grid Reference for each bank, looking downstream (12 digit)	
	Left bank	Right bank
Intake 1	SH 68934 02953	SH 68935 02948

2.2 Please provide a full description of the impoundment, outlining its purpose and how it will operate. If this information is detailed in a supporting document, provide the document title or reference in the space below.
If necessary, continue on a separate sheet and tick here to show that you have done this. ☐

The intake weir supplies a 34kW hydropower scheme. The weir will be the full width of the watercourse. Built into this weir will be a rectangular, broad crested notch in an oak beam positioned lower than the main weir crest. This will control the 'Hands Off Flow' of Q95, and until this has been satisfied no water will flow over the main weir crest. When water does flow over the main weir crest it will fall though a stainless steel coanda screen with 2mm wire spacings, into a concrete chamber and then into the HDPE pipe which feeds a forebay tank (where it will be combined with water from a second intake weir) which in turn feeds the hydro turbine. Only 70% of the water in excess of the 'Hands Off Flow' will flow to the hydro turbine as only 70% of the weir's width will be made up of the permeable screen. The remaining 30% will continue down stream. There will be a plunge pool downstream of the intake, at least 300mm deep, to aid downstream migration of fish. See the intake drawings attached to this application for more details. Cross contamination of water between the two intakes will be prevented via the use of a float valve in the forebay tank (see the attached drawing 181012LB01 for an explanation of the method).

3. Description of impoundment

3.1 Name of watercourse

Unnamed tributary to the Afon Alice

3.2 Will your proposed impoundment result in a change to the wetted perimeter (downstream) or new submerged areas behind (upstream of) the impounding works?
No ☐ Yes ☒ If yes, ensure this is shown on any map or drawings submitted

3.3 Will the ponded area created by the impoundment be lined? No ☒ Yes ☐
If yes, give details.

3.4 Give the height of the impoundment structure, from the downstream toe to crest or top of spillway (in metres above Ordnance Datum). If the proposal involves an existing impoundment, state the change in height (in millimetres).

Downstream toe 191.669mAOD, crest 192.814mAOD (ie 1.145mm height)

3.5 What is the overflow or crest level of the impoundment (in metres above Ordnance Datum)?

192.814mAOD

3.6 What is the proposed capacity of the impoundment when full to spillway level (in cubic metres)?

3

3.7 Will the proposal create a raised reservoir? No ☒ Yes ☐

3.8 Does the proposal involve the controlled release of water to safeguard downstream flows? No ☒ Yes ☐ If yes, provide details

3.9 Is the impounded water to be used for a subsequent purpose? No ☒ Yes ☐
If yes, provide details (for abstractions, state the daily and annual quantities in cubic metres).

3.10 How will the impounded area be filled initially, and subsequently refilled if applicable?

The construction of the weir will take place with the use of a bypass pipe which will keep the construction area dry. When it comes to commissioning and filling the impoundment with water, this bypass pipe will be partially closed, ensuring that at least Q95 continues to flow downstream of the impoundment, and the water in excess of Q95 will be used to fill the impoundment.

4. Fish and eel passage

4.1 Confirm the fish species present at your site.

Unknown

4.2 Complete the table below with full details of the measures you intend to take to safeguard these fish species.

	Intake	Outfall
Type of fish screen	Coanda	Vertical flat bar
Screen aperture size (mm)	2mm	40mm
Screen height and width (mm)	445mm	850mm
Type of upstream fish passage	Eel tiles	
Proposed flow for fish pass (m/s)	N/A	
Type of downstream fish passage	300mm deep plunge pool	

5. Construction, maintenance and operation

5.1 Provide details of maintenance or activities relating to the operation of the impoundment. If necessary, continue on a separate sheet and tick here to show that you have done this. ☐

If gravel builds up behind the 'Hands Off Flow' notch it will be removed by hand or with a shovel to ensure the flow is not affected. Debris will be removed regularly from the eel pass. The coanda screen may need brushing regularly with a nylon brush to remove peat residue or algae.

5.2 Provide details of diversion works or removal of existing works.

A temporary dam will be built approximately 5 metres upstream of the intake weir site. This will consist of boulders, sand bags and plastic sheeting. The sandbags will be wrapped in fencing mesh to prevent them being washed away in high water. A 450mm diameter plastic pipe will run from this temporary dam diverting the water approximately 5 metres down stream of the intake weir site. This will ensure that the intake construction work is carried out in a dry area, removing the issue of water being contaminated with silt or concrete during construction. This temporary diversion will be required for at least four weeks to allow for construction and curing of the new intake. Prior to installing the bypass, a fish rescue will be requested from Natural Resources Wales to remove any fish from the bypassed section of the watercourse.

6. Planning application

Have you sought advice on your planning application?

No ☐ Yes ☒

If yes, submit a copy of the Planning Authority's response.

7. Declaration

Please see Guidance Note WRX for details of who can sign this section and note the information in that document relating to the Data Protection Act 1998.

By signing below, you are declaring that as far as you know and believe the information given in this form, on any map and in any supporting or additional information, is true.

Signed	
Print name	Mark Sealy
Position	Managing Director
Date	16th October 2018

Application Checklist

Please tick the following checklist items to indicate that you have included the required information. If any sections of the form are left blank and no supporting information submitted, where we have insufficient information to make a decision on your application, we will return your application to you.

Essential:

Form WRA completed, if there have been any changes since pre-application an updated Form WRA is required ☒

Map with all impoundment points and new wetted perimeters/submerged areas clearly marked ☒

Drawings and Design Statement ☒

State number of continuation sheets (enter 0 if none included) 0

Where relevant:

Form WRD completed, if your proposal also requires an abstraction licence ☒

Stage 1 photo survey (contact us for more details on this requirement) ☐

Letter of authorisation from the applicant, allowing an agent to act as signatory ☐

Further information requested in our pre-application response letter to you ☐

Planning Authority response, where available ☒

Additional supporting information - please list below:

- 181012LB01-V1 Method for preventing cross contamination between watercourses