Form WRD: Application for a new abstraction licence or a technical variation to an abstraction licence

Application type

Reference number (The number you generated in form WRA). Example: WRNATURALRESOURCESWALES1101
WRNATURALRESOURCESWALES0611

Are there any applications currently being assessed by us that are linked to this application?
No

Is the proposed abstraction going to be aggregated with another existing abstraction?
No

Are any applications, at the same site; being assessed by the Environment Agency?
No

Tell us when you want your abstraction licence to end: [DD/MM/YY]
No end date

If you require a shorter or longer duration licence, please provide details and your justification
This is for a bypass channel to improve fish passage at Horseshoe Falls. Horseshoe Falls is a UNESCO World Heritage site, and as such will not be removed or altered in the future, therefore this transfer will be required for the lifetime of the bypass channel

Abstraction details

Abstraction location name/reference
Horseshoe Falls Bypass Channel

Abstraction point type
Single point

National Grid Reference
SJ 19390 43381

Do you have any further points of abstraction?
No

Means of abstraction

Provide full details of the equipment you propose to use to abstract water, such as maximum pump capacity and any relevant dimensions, e.g. pipe diameter. For groundwater abstractions, include details about the borehole (depth and diameter) and details of screening and lining.
The water will be abstracted passively via the intake structure (shown in the plans attached). There will be no pumps or sluice operation. Water can be stopped from entering the culvert by installing stop logs. The culvert is 1800mm x 1500mm with ~300mm boulders set into the base of the culvert. The full design report detailing the abstraction is attached.

If necessary, continue on a separate sheet and upload below.
• File: Horseshoe Falls Fish Pass Design Report P01 (2).pdf - Download

Please upload your drawings and calculations here. (Spreadsheet file formats need to be: .xls, .xlsx, or .ods)
• File: 60672359-ACM-XX-XX-DR-CE-200010 Culvert Inlet Plan C01.pdf - Download • File: 60672359-ACM-XX-XX-DR-CE-200015 Culvert Long Section C01.pdf - Download • File: 60672359-ACM-XX-XX-DR-CE-200016 Culvert Cross Section C01 (1).pdf - Download

Abstraction quantities

Abstraction location name/reference
Horseshoe Fall bypass channel

What purpose will the water be used for?
Fish passage

Period of abstraction Will it be all year?
Yes

Maximum quantities (cubic metres)
Annual TBC
Daily TBC
Hourly TBC

Peak abstraction rate (in litres per second)
TBC

Number of hours of abstraction per day
24

Add quantities for another location?
No

Calculations and supporting information

Use this section to show us how you have calculated the amount of water you require. This should include details of your operational regime (for example, number of hours and days you intend to abstract, number of units produced or area to be irrigated). We use this information to determine if the volumes you propose to abstract are appropriate for the purpose. Depending which industry you are in, you may need to provide additional information below. If your proposal involves the provision of a residual flow via a notch or orifice, provide information on how this is being calculated. This should include details of the equation being used.
AECOM are working up the maximum discharge rate that can pass through the culvert and this information will be provided once it is available.

Industry-specific requirements

State the length of depleted reach (in metres)
Approx 250m

Provide the flow data (in cubic metres per second) & ratios specified below:

Q95	6.3
Q10	52
Qmean	-
What is the ratio of Q95:Qmean?	-
What is the ratio of Q10:Qmean?	-

What low flow protection (Low flow protection is the flow rate above which abstraction can begin and is separate to the abstraction % take) do you propose to maintain in the depleted reach when the hydropower scheme is operating (in m3/s)?
N/A

Means of measurement

State how you intend to measure the quantity of water you abstract. You do not need to do this for a temporary or transfer licence.
Other (please specify): Not applicable as this is a transfer licence

Water efficiency

Provide details of what measures you provide or intend to implement, to ensure efficient use of water. This could include water storage, re-use or recirculation, monitoring and checking for leaks, undertaking water audits or other industry specific good practice.
The design has taken into account detailed Ground Investigations to inform the design of the structure. This will ensure that leakage from the channel will be minimal. As the channel is close to the river, any leakage will re-enter the river.

Fish and eel considerations (surface water abstractions only)

Does your proposal include measures to safeguard fish and eels? Only provide details of outfall screening if abstracted water is to be discharged back into a watercourse. For further guidance on appropriate screening Intake screening for fish

	Intake	Outfall
Type of fish screen	N/A	N/A
Screen aperture size (mm)	N/A	N/A

Confirm the fish species present at your site. If you're not proposing any measures to protect fish and eels, you must justify this. For example, we may have confirmed in our pre-application response that the intake is inaccessible to fish or you undertook a fish survey to confirm.

The abstraction is designed to improve fish passage, therefore fish screens would not be required.

Discharge details

If you intend to return any of the abstracted water to the environment, provide details below. Details of discharge location(s) should correspond with any maps submitted. Do not include discharges to a public sewage system.

Discharge location name / reference	National Grid Reference of discharge point (12 digit)	Total volume to be discharged (cubic metres)	Environmental Permit for Water Discharge Activity number (if applicable)
Horseshoe Falls bypass channel	SJ 19499 43333	As abstracted as it is a transfer licence application	N/A
-	-	-	-
-	-	-	-
-	-	-	-

Provide a description of the structure and equipment involved in discharge.

The outfall is at the lower end of the semi-natural open channel. The design of this can be found in the design included in the sharefile included in the WRA form. It is an open channel, width 1500mm, with 1 in 4 side slopes. The flow will pass over the bed substrate and enter the watercourse just downstream of Horseshoe Falls.

All designs have been included in the sharefile mentioned in form WRA. Access has been granted to Sarah Senior, please let either Joel Rees-Jones or Cerys Jones know if anyone else needs access.

Other abstractors / water users

Provide details of nearby abstractors or users of water who could be affected by your proposal. This should include deregulated users (exempt activities or abstractions < 20 cubic metres per day), anglers and canoeists.
Your local authority's environmental health will hold details of exempt domestic abstractors.

Horseshoe Falls canal abstraction (United UItilities) - 24/67/5/0057 to transfer water for abstraction at Hurleston for public water supply.
CRT's new authorisation is WA-067-0005-0030 and is currently going through the appeal process, likely to be heard in the spring.
Just downstream on the river Dee is Mile End Mill WA/067/0005/010 and the abstraction for the railway in the middle of Llangollen 24/67/5/0060 and 24/67/5/0069
Downstream on the canal there is an abstraction in CRT's name for abstraction to Kronospan 24/67/5/0081.

Planning application

Have you sought advice on your planning application?
No

Declaration

By signing below, you are declaring that, to the best of your knowledge; the information given in this form, on any map and in any supporting or additional information; is true.

Signed	Joel Rees-Jones
Print name	Joel Rees-Jones
position	Team Leader, LIFEDeeRiver

Date
*   15/01/2024

Would you like a copy of your submission?
Yes

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