

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

WRMORGANSINDALL2808

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]

31/09/2026

If you require a shorter or longer duration licence, please provide details and your justification

The abstraction license is required to facilitate the replacement of a 400kV cable underlying the Dinorwig Heritage Railway line. The abstraction will be temporary and will only be required for the duration of the works expected to take circa 22 months in total.

Abstraction details

Abstraction location name/reference

Heritage Railway Abstraction

Abstraction point type

Reach

National Grid Reference

SH 55883 62572

Downstream National Grid Reference (If abstracting from a reach), or corners of the area.

SH 58629 60366

-
-
-

Do you have any further points of abstraction?

No

Abstraction details - Further points

Abstraction location name/reference

Heritage Railway Abstraction 2

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 pumped from the excavations using a combination of submersible pumps and static pumps (depending on specific flow rates). The excavations will have sumps excavated at regular intervals into which the water will accumulate. The sumps will only be as deep as necessary to keep the base of the excavation dry.

Please upload your drawings and calculations here. (Spreadsheet file formats need to be: .xls, .xlsx, or .ods)

- File: Ditch Flow Rate Data.xlsx - [Download](#)

Abstraction quantities

Abstraction location name/reference

Heritage Railway Abstraction

What purpose will the water be used for?

The water will not be used for any purpose. The water will simply be removed from the excavation and discharged back into the environment

Period of abstraction Will it be all year?

Yes

Maximum quantities (cubic metres)

Annual 182500

Daily 500

Hourly 20.8

Peak abstraction rate (in litres per second)

5.8

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.

It is expected that dewatering works will need to be carried out 24 hours per day for the entire duration that the excavation is open. It is assumed that 250m³/day will be required along the length of the route with an increased flow of 500m³/day around the Afon Fachwen.

Based on 86,400 seconds per day this gives a flow rate of between 2.9 and 5.8 litres per second.

It should be noted that only one or two excavations shall be open at any one time along the length of the cable route. A plan showing the cable route and associated discharge points is attached for reference. Only a single reach between discharge points will be open and undergoing dewatering at any point.

Additional document. (Spreadsheet file formats need to be: .xls, .xlsx, or .ods)

- File: Heritage Railway Route and Proposed Discharge and Abstraction Locations.pdf - [Download](#)

Industry-specific requirements

For agricultural use

	Crop type	Soil type (for multiple soil types, indicate approximate split)	Maximum area of crop to be irrigated annually (hectares)	Maximum annual depth of irrigation to be applied (millimetres)
	n/a	n/a	n/a	n/a
	-	-	-	-
	-	-	-	-

For agricultural use

	Livestock type	Number of animals	Maximum daily quantity of water used (cubic metres)	Comments
	n/a	n/a	n/a	n/a
	-	-	-	-
	-	-	-	-

Provide details of any additional requirements (washing / cleaning)

n/a

For golf course irrigation

	Maximum area to be irrigated daily (hectares)	Maximum depth of water to be applied daily (millimetres)
Tees	n/a	n/a
Greens	n/a	n/a
Fairways	n/a	n/a
Others	n/a	n/a

For industrial use

	Industry sector or process type	Water use per unit produced (state units)	Maximum units produced per year
	n/a	n/a	n/a
	-	-	-
	-	-	-
	-	-	-

	% abstraction and zone applied for	Average gradient of depleted reach (%)	Catchment size above abstraction point (kilometres squared)	Net head between abstraction and discharge points (metres)
	n/a	n/a	n/a	n/a

	Turbine efficiency (%)	System efficiency (%)	Maximum power output (kilowatts)	Annual capacity (kilowatt hours)
	n/a	n/a	n/a	n/a

State the length of depleted reach (in metres)

n/a

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

Q95 n/a
Q10 n/a
Qmean n/a
What is the ratio of Q95:Qmean? n/a
What is the ratio of Q10:Qmean? n/a

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):

Each month a measure of the run time of the pumps will be taken in hours. This is taken by tracking hours of operation each day. This is then multiplied by the flow rate of the pumps in each area. The flow rates are taken at regular intervals to ensure accurate results

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 excavation will be open no longer than necessary. Additionally, only groundwater entering the excavation shall be abstracted, no drawdown of groundwater levels is to be carried out as part of the works

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.

n/a

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)
	DC1	SH 58605 60387	250m3/day	n/a
	DC2	SH 58605 60387	250m3/day	n/a
	DC3	SH 58152 60757	250m3/day	n/a
	DC4	SH 57929 60893	250m3/day	n/a

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

Additional discharge locations:

DC5 SH 57790 61141
 DC6 SH 57707 61277
 DC7 SH 57473 61401
 DC8 SH 57256 61512
 DC9 SH 57055 61601
 DC10 SH 56802 61773
 DC11 SH 56589 61972
 DC12 SH 56341 62132
 DC13 SH 56110 62319
 DC14 SH 55883 62572

The groundwater will be extracted from the excavation using a combination of submersible and static pumps, the water will then be passed through a clarifier prior to being discharged to ground. A separate discharge permit is being applied for in parallel to this abstraction permit.

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.

We are not aware of any other nearby abstractive activities

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 Peter Kirk
Print name Peter Kirk
position Managing Director of Energy

If an agent is to sign on behalf of the Licence Holder, a letter of authorisation from the Licence Holder is required.

- File: NRW Delegation of Authority - Simon Smith.pdf - [Download](#)

Date

* 07/10/2024

Would you like a copy of your submission?

Yes

Your email address

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