Application for an environmental permit: Part B6 - new bespoke water discharge activity and groundwater (point source) activity

About you

Please give details of the individual, or where relevant for groups or organisations of individuals, the main representative.

Title: Mr

First name: David

Last name: Grantham

Please provide details below.

Are you applying as an individual, an organisation or group of individuals' (for example, a partnership), a company (this includes Limited Liability Partnerships) or a public body?

A registered company or other corporate body

Registered company or other corporate body

Please provide details below

Company name	Hochtief (UK) Construction Ltd
Company registration number	02489026
Date of registration (DD/MM/YYYY)	04/04/1990

Contact name for the company

Title	Mr
First name	David
Last name	Grantham
Email address	David.Grantham@Hochtief.co.uk

Your address

For companies this must be the address on record at Companies House.

Address	Hochtief (UK) Construction Ltd, Whitehill House Windmill Hill Business Park, Whitehill Way, Swindon -
Postcode	SN5 6PE
Telephone	07502264034
Email address	David.Grantham@hochtief.co.uk

Agent or others acting on behalf of the applicant.

If you want us to contact an agent or another person not named above, their details must be provided below. This can be someone acting as a consultant or an 'agent' for you.

Title	Mr
First name	Aled
Last name	Williams
Address	Waterco Ltd Lon Parcwr Business Park Ruthin, Denbighshire
Postcode	LL15 1NJ
Telephone	01824 702220
Email address	aled.williams@waterco.co.uk

1 Pre-application discussions

Did you have pre-applications discussions with Natural Resources Wales about this activity?

Yes

Pre-application discussions

Give us the case reference or details of the pre-application advice you received. We will then be able to refer back to the information you've already given us, which will help us to determine your application.

NRW reference: 'Snowdonia VIP discharge pre app PPN-00942: Garth / Minffordd'
Project meetings held with NRW on:
2nd December 2022
12th January 2023
Meeting minutes have been distributed to NRW.
NRW advice received be email on 16th December 2022 as follows:

'the following are the things that you will need to be take into further consideration in terms of the discharge:

• What is the likely maximum volume of discharge per day?
• What will be the likely maximum rate of discharge?
• Will there be any oil used in the tunnelling process? What type? What measures will be in place to control the oil content of the discharge?
• Please explain the type of treatment processes used to treat the discharge.
• The pH value of the discharge will need to be controlled. How will this be done? What will be the likely pH of the discharge?
• What will be the level of suspended solids that can be achieved by the treatment process?
• What is the likely salinity of the discharge? If the discharge is saline it would be preferred if it could be discharged to a point in the Afon Glaslyn which was more brackish.
• Its understood that background water quality / salinity data will be collected at the proposed discharge sites. Can we please see this?
• Does the known geology of the area and any borehole evidence suggest that there metal rich veins, or acid geology may be encountered during the tunnelling process? If so, what metals will the treatment process need to be designed to cope with? And what concentrations can be achieved in the discharge?
• Will chemical dosing be utilised? If so what type? Anionic / cationic / non-ionic?
• Once an application for a permit to discharge is submitted, it will need to be Duly Made. That is, the application is looked at, and a decision made whether we have the sufficient information to move forwards with processing the application, or not.
• Due to the number of permit applications that we receive, there has been a queue of up to 2 months to get applications Duly Made.
• Once Duly Made, the permitting process can take up to 4 months to process, including 1 month where the application is advertised and where members of the public etc can comment on the application.
• There is no guarantee that the submission of a permit application will result in a permit being issued. Some applications do get refused.
• Please explain whether the application is part of a National Infrastructure Project, or not.
• We would expect to see the potential impacts of the discharge considered in a HRA (Habitats Risk Assessment).'

Have you changed your proposal since you had pre-application discussions with us?

No

Where will you be discharging?

Please complete

Site name	Garth Construction Compound
Address	Quarry Lane, Minffordd
	Penrhyndeudraeth, Gwynedd
Postcode	LL48 6HP

Please provide the 12 character national grid reference of the location of your septic tank / sewage treatment plant. This consists of two letters followed by 10 numbers (for example AB 12345 67890)

To find out the 12 character grid reference, you can search on the UK grid reference finder website: http://www.gridreferencefinder.com/

not applicable - discharge is for process effluent

About the effluent

Give a brief description of the effluent discharge you want a permit for, for example, treated domestic sewage effluent.

The wider proposal is part of the Snowdonia Visual Impact Provision (VIP) project. The project aims to reduce the visual impact of National Grid's overhead line across the Dwyryd Estuary from Penrhyndeudraeth to Llandecwyn near Porthmadog. The scheme will entail removing a section of overhead line and replace it with electricity cables buried in a tunnel underground (beneath the Dwyryd Estuary. The scheme benefits from full planning permission.

A tunnel boring machine (TBM) will be launched at the Garth Construction compound (near Penrhyndeudraeth) and will entail construction of a 15.4m deep launch shaft.

The TBM will require up to 500m3 of water per day at peak times to operate. The water used in the process to operate the TBM will be extracted in the form of a slurry mix (water mixed with rock / soil) within a designated slurry circuit. The slurry will be treated on site (dewatering, sediment removal, PH balancing) with the clean water recycled back into the process.

Whilst the tunnel is a sealed system, some groundwater leakages may occur and will be pumped out of the tunnel and into the sites water treatment system.

Where excess water is extracted, on site lagoons will provide storage to enable water re-use. On occasion, where the lagoons are full, discharge to a watercourse will be required. The maximum discharge quantity is up to 500m3 per day, however will typically be between 0m3 and 80m3 per day. The maximum discharge rate is 20m3/hr, however the treatment plant on site will be sized to accommodate 60m3/hr to ensure sufficient treatment capacity should clay rich geology be encountered.

Discharge of treated effluent is proposed in 2 locations:
Where the extracted water does not have saline content, discharge will be made to an ordinary watercourse crossing the site.
Where the extracted water is saline, discharge will be made to the Afon Glaslyn which has a tidal influence and greater flow rate to dilute discharged flow.

A treatment system comprising a slurry treatment plant, settlement lagoons and wastewater treatment plant is proposed to achieve the following treatment criteria:
Total suspended solids: 60mg/l
PH - 6-9
Iron <5mg/l

Give this effluent a unique name
This name will be used throughout the application and may be used in the permit to identify this effluent. If you have more than one effluent you must ensure that each name you use is distinct. For example, package sewage treatment plant effluent, septic tank effluent, cooling water, site drainage and so on.

Garth Process Water

Is this a release from a dam, weir or sluice (‘reservoir release’) under Schedule 21 of the EPR meaning of water discharge activity?

No

Tell us the effluent type:

You must fill in a separate copy of this form for each type of effluent you plan to discharge.

Trade – known volume (including process effluents, wash waters, close circuit cooling waters, boiler blowdown, filter backwash, pumped mine water)

Trade – known volume: How long will you need to discharge?

What date do you want the permit for this effluent to start?

You cannot discharge your effluent prior to this start date on your permit. This is the date that your annual subsistence charges will start, even if you have not started to discharge.

* 01/06/2023

Is the discharge time limited?

Yes

Please give the date you expect the discharge to end but please note that your permit will not end on that date and you will still need to notify us to surrender the permit.
01/12/2029

For seasonal discharges which only occur for part of the year, tells us when the discharge will take place. Where a discharge will continue at a significantly lower rate over a period you should complete this question and also send in details of the seasonal variation. For example, campsites which are closed in winter but have a residual throughput from residential properties on site all year.

Will the discharge take place all year?

Yes

Please give details below, of the months when you will make the discharge
Operation of the TBM will be 24/7 all year round

Will the discharge take place on more than six days in any year?

If you answer ‘no’ you must be able to comply with the requirement to discharge on six days or fewer in any year as this will be a permit condition. It would apply only to batch processes such as the emptying of fish rearing ponds or planned shutdowns of plant or equipment

Yes

Trade – known volume: Could your discharge be made to the foul sewer?

How far away is the nearest foul sewer from the boundary of the premises (in metres)?

You will need to check this with your sewerage undertaker (usually your local water company) and you may also need to check if it is possible to connect to a private foul sewer. Measure the shortest distance between the boundary of premises served by the sewage treatment facility and the nearest foul sewer and/or private sewer.

20

To assess if it is reasonable to discharge your effluent to foul sewer:

Discharges from domestic properties
Multiply the number of properties served by the sewage treatment system by 30 metres.

	Number of domestic properties served by the sewage treatment system	Multiplied by 30 metres
Domestic properties	0	0

Discharges from all other premises, for example a pub, cafe, restaurant or office
Divide the volume of the discharge (in cubic metres) by 0.75 and then multiply this figure by 30 metres

	Volume of discharge (in cubic metres)	Divided by 0.75	Multiplied by 30 metres
All other premises	500	666.7	20,000

If your answer to the above question is greater than the distance to the nearest foul sewer you must explain why you cannot discharge your effluent into the foul sewer.

You must send us evidence that you have approached the sewerage undertaker or owner(s) of the private sewer to reach an agreement for a connection to the foul sewer and send us their formal response regarding connection

Please provide your explanation below:
not applicable - the permit application does not include the discharge of domestic waste water. The proposal is for discharge of treated process water which will be suitable for discharge to a watercourse.

Trade – known volume: How much do you want to discharge?

What is the maximum volume of effluent you will discharge in a day (in cubic metres)?

500

What is the maximum rate of discharge (in litres a second)?

6

Tell us how you have calculate this figure in the box below, or upload a copy of your workings in the next question.

Maximum volume used in the process is 500m3 (0m3 - 80m3 on a typical day). This equates to an average flow rate of 5.79 l/s. The discharge will be controlled by a pump which will regulate the discharge rate. Lagoons will provide water storage on site (to maximise the water recycling potential).

Trade – known volume: How will the effluent be treated?

Do you treat your effluent?

Yes

If no, please explain why the effluent will not be treated:
Effluent will be treated - the supporting document (15055-Garth Treatment Details -01) expands on the treatment stages below.

Please fill in the table below for each stage of the treatments carried out on your effluent in the order in which they are carried out. . If you prefer, you can upload an overall design for the whole treatment process below

	Code number
First treatment	11 Screening
Second treatment	29 Settlement
Third treatment	09 PH correction
Fourth treatment	10 Lagoon

Final effluent discharge quality

You must provide details of the final effluent discharge quality that the overall treatment system is designed to achieve. This should be after all the stages of treatment you have listed in the table above. For discharges of treated domestic sewage effluent this must include biochemical oxygen demand, suspended solids and ammonia. For trade effluent discharges, the substances should reflect the substances that are likely to be present in the final effluent discharge.

Please upload this and any supporting documents here.

- File: 15055-Garth Treatment Details-01.pdf - Download

Trade – known volume: What will be in the effluent?

Are any ‘specific substances’ added to or present in the effluent as a result of the activities on the site?

You may add chemicals to the effluent during the treatment process; for example, iron salts to remove phosphate. Or you may have substances present in your effluent as a result of activities on your site; for example, chromium can be present in effluents from concrete batching plants.

No

Have any ‘specific substances’ been detected in samples of the effluent or in the sewerage catchment upstream of the discharge?

No

Are there any other harmful or hazardous substances in your effluent not mentioned in the environmental risk assessment guidance ?

The list in the environmental risk assessment guidance is not exhaustive and if you accept, add or detect any other harmful substance (including hazardous substances or relevant non-hazardous pollutants as described above) you will need to tell us.

Yes

If you have answered yes to either of the above two questions, please fill in the table below or upload further information on a separate sheet.

	Substance	Unit	Maximum concentration	Minimum concentration	Average concentration	Number of samples	Total or dissolved
	Polyaluminium Chloride Hydroxide Sulfate	-	10%	-	-	-	-
	Anionic Flocculent	-	0.2%	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-
	-	-	-	-	-	-	-

Give the maximum temperature of your discharge in degrees Celsius

25 (subject to atmospheric conditions)

Trade – known volume: Monitoring arrangements

Please provide the 12 character national grid reference of the final effluent sample point.

This is the sample point used to assess compliance with any water quality emission limits on your permit. You must ensure that it allows a representative sample of the discharge to be obtained. You must also ensure that all constituents of the discharge pass through the sampling point at all times. The sample point can be where the effluent meets the receiving environment only in cases where no other effluent is added before this point. You must provide a permanent means of access to monitoring points.

A 12 character national grid reference consists of two letters followed by 10 numbers (for example AB 12345 67890). To find out the 12 character grid reference, you can search on the UK grid reference finder website: gridreferencefinder.com

SH 59252 38598

Do you have a UV disinfection efficacy monitoring point?

This type of monitoring point is only required for discharges that undergo some form of disinfection. For example, ozone or ultraviolet disinfection, membrane filtration etc.

No

What is the 12 character national grid reference of the flow monitoring point?

A 12 character national grid reference consists of two letters followed by 10 numbers (for example AB 12345 67890). To find out the 12 character grid reference, you can search on the UK grid reference finder website gridreferencefinder.com

SH 59252 38598

Does the flow monitor have an MCERTS certificate?

Yes

If yes, please give the certificate number:
TBC

Where will the effluent discharge to?

Where will the effluent discharge to?

Non-tidal river, stream or canal

Tidal river, tidal stream, estuary or coastal waters

Is this effluent discharged through more than one outlet?

Effluents are usually discharged to one location in one receiving environment.
If your effluent will be discharged to more than one location within the same receiving environment, for example, two different discharge points on a non-tidal river, you can provide details of every discharge point on the next page.

If your effluent discharges to more than one location in a different receiving environment, for example, into land and to a non-tidal river you will need to select both receiving environments above and complete the relevant sections on the following pages.

Yes

Are there any other factors we need to take into account as part of your application?

Yes

If yes, please give details:
The different discharge locations are subject to salinity content in the water. Discharge will be made to the tidally influenced Afon Glasyn at National Grid Reference: 258918, 338998 where greater dilution will be given to saline discharge. Where no saline content is present, discharge will be made to the ordinary watercourse on site at National Grid Reference: 259245, 338576.

Some machinery will have hydraulic components that will use hydraulic oils. Furthermore, bio-degradable Tail Skin Grease will be used in and around the tunnel boring machine shield. There is a potential for leakage. Hydraulic oil leakage and grease residue spillages within the tunnel will be captured in either the slurry circuit or the tunnel wastewater flow. Once captured in the water being pumped from the tunnel shaft, the oil will be removed during the various water treatment processes.

Discrete spills of oils or grease within the tunnel will be collected using spill kits and then disposed of as hazardous solid waste.

A water management plan (reference 23-01-18 C0233-HUK-PDR-ZZ-PL-W-0001-P01-Water Management Plan) supports this application.

Discharges to non-tidal river, stream or canal

Give the discharge point a unique name For example, ‘Outlet 1’ (you must use this name to identify the discharge point on the plan), the national grid reference and the name of the watercourse, canal or the main watercourse it is a tributary of if you know it

	Discharge point name	National grid reference	Watercourse name	Name of effluent discharged through this discharge point
1	Outfall 1	259245, 338576	Unnamed	treated process water
2	-	-	-	-
3	-	-	-	-
4	-	-	-	-
5	-	-	-	-

Is the discharge into a

Non-tidal river

Does the discharge reach the watercourse or canal by flowing through a surface water sewer?

No

Does the watercourse dry up for part of the year?

Effluent should discharge to watercourses which flow all year. Discharging to a dry watercourse may cause the effluent to pond and cause other environmental or amenity issues”

Yes

Environmental risk assessment and modelling

Have you carried out any river quality modelling? Read the 'Surface water pollution risk assessment for your environmental permit' guidance available on Gov.UK to determine if you need to provide this modelling.

No

Discharges to tidal river, tidal stream, estuary or coastal waters

Give the discharge point a unique name, for example, ‘Outlet 1’ (you must use this name to identify the discharge point on the plan); the national grid reference; and the name of the tidal river, tidal stream, estuary or area of coastal water if you know it

	Discharge point name	National grid reference	Tidal river/stream/estuary name	Name of effluent discharged through this discharge point
1	Outfall 2	258918, 338998	Afon Glaslyn	Treated process water (saline)
2	-	-	-	-
3	-	-	-	-
4	-	-	-	-
5	-	-	-	-

Is the discharge into

A tidal river

Does the discharge reach the watercourse by flowing through a surface water sewer?

No

Is the discharge point above the mean low water spring tide mark?

The mean low water spring tide mark can usually found on Ordnance Survey maps. Discharges should be made below this point to prevent effluent flowing across beaches, exposed river beds or mud flats etc.

No

If you selected no, please explain why the discharge cannot be made below this point.

The mean low water spring tide mark is the coastward side of the Porthmadog cob (flood defence) with the site and discharge point upstream of the cob. Direct discharge downstream of the cob would require an extensive length of pipework (buried beneath roads) and would be a significant engineering undertaking. It is understood that tidal waters are permitted upstream of the cob should tidal gates be left open.

How is the effluent dispersed?

For example, open pipe or diffuser system.

Open pipe structure

Site plan

You must provide a site plan for your proposed discharge which is A4 in size or larger, and at 1:10,00 scale or larger.

On your plan you must show: which direction North is; the premises discharging effluent; the site in relation to the local area; any watercourses, wells, springs or boreholes on the site (or within 50 metres); the location of the wastewater treatment system all outlets where effluent will be discharged into the receiving environment; where samples of effluent can be taken automatically or manually (if required); where flow or quality will be measured (if required).
You may submit more than one plan if necessary.

Please upload your plan(s) below

- File: Location Plan - Discharge & Sampling.pdf - Download
- File: Layout - C0233-HUK-PCX-AX-DR-W-0001 P04_1 A1 (1).pdf - Download

Application fee

Is your discharge or groundwater activity a standard rate (£912) or reduced rate (£129)?

Standard

Tell us your total charges

£912

How do you want to pay?

Who can we talk to you about your billing or invoice?
Same as application contact

If a new contact, please provide details:	
Title	-
First name	Aled
Last name	Williams
Address	Waterco Ltd, Lon Parcwr Business Park
Postcode	LL15 1NJ
Telephone	01824702220
Email address	aled.williams@waterco.co.uk

How do you want to pay for your application fee?
Credit or debit card

National security

Do you believe that for reasons of national security your details should not be included on the public register?
No

How we collect your personal data

I have read and understood this information
Yes

Freedom of Information

I have read and understood this information
Yes

Declaration

A relevant person should make the declaration. You must be a relevant person or have the authority of a relevant person to sign this application on their behalf. An agent acting on behalf of an applicant is NOT a relevant person.

Each individual (or individual trustee) who is applying for their name to appear on the permit must complete this declaration. You can send a separate document with the relevant information if there are not enough spaces to sign below.

Relevant people means each applicant, and in the case of a company, a director, manager, company secretary or any similar officer or employee listed on current appointments in Companies House. In the case of a Limited Liability Partnership (LLP), it includes any partner. If the permit holder is an organisation of individuals, each individual (or individual trustee) must complete the declaration.

To simplify and speed up the application process, we recommend that the declaration is filled in by an officer of a company or one of the partners in a Limited Liability Partnership (LLP).

If you wish a manager, employee or consultant etc. to sign the declaration on behalf of a relevant person, we will need written confirmation from a relevant person; that is, an officer of the company, a partner in the LLP or the individual, confirming that the person has the authority to fill in the declaration.

If you are joint permit holders, you should each fill in your own declaration. We have provided extra spaces for this below. Please upload a separate sheet with your application if you need more room for signatories.

Where the operator is the subject of any insolvency procedure, the declaration must be filled in by the official receiver/appointed insolvency practitioner.

I have included written confirmation from a relevant person to confirm I can sign on their behalf

Upload written confirmation here

- File: Declaration Consent Letter.pdf - Download

If you knowingly or recklessly make a statement which is false or misleading to help you get an environmental permit (for yourself or another person), you are committing an offence under the Environmental Permitting (England and Wales) Regulations 2016.

I declare that the information in this application is true to the best of my knowledge and belief. I understand that this application may be refused or approval withdrawn if I give false or incomplete information.

I understand that if I knowingly or recklessly make a false or misleading statement:
I may be prosecuted; and if convicted, I may have to pay a fine and/or go to prison.

By signing below, you are confirming that you understand and agree with the declaration above.

Title	Mr
First name	Aled
Last name	Williams
On behalf of (if applicable)	David Grantham
Date (DD/MM/YYYY)	xx/01/2023

Submit your application

Enter the email address you'd like a copy of your application sent to:
aled.williams@waterco.co.uk