Natural Resources Wales permitting decisions

Bespoke permit

We have decided to grant the permit for Garwnant Forest Holiday Centre operated by FH England LLP.

The application number is PAN-002419

The permit number is EPR/BB3091CE

The permit regulates a new discharge of secondary treated sewage effluent; a maximum of 50m^3/day, treated by a British Standard package treatment plant and discharges into the Taf Fawr. The system serves 40 holiday chalets, 15 full time day staff and a coffee shop at the site. The discharge will be made via a new outfall pipe. The discharge doesn't include hot tub effluent, a separate permit application will be made for this effluent.

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 environmental 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

- Key issues
- Annex 1 the decision checklist
- Annex 2 the consultation responses

Key issues of the decision

The initial discharge permit application from FH England LLP included both trade effluent and treated sewage effluent arising from the proposed Forest Holiday Centre development. NRW advised that the 8.14 cubic metres per day of trade effluent consisting of hot tub drain down water should be disposed of separately via a different disposal method and route. This was due to the risk of toxic impact on microorganisms in the package treatment plant reducing the effectiveness of the system. The applicant agreed to this and have applied for a separate discharge permit. This removed the risk of Bromide being discharged into the Taf Fawr watercourse leaving only treated sewage to be risk assessed through water quality modelling.

The upstream flow data used in the applicant's H1 assessment used in their water quality modelling for the Taf Fawr watercourse wasn't accurate and was over estimated. The data used in the H1 assessment was derived from a flow duration curve based on Llwyn Onn reservoir's spillway. The flow duration curve was amended to account for the water being abstracted and to calculate the adjusted catchment area as the proposed discharge is upstream of the reservoir. In comparison, NRW used river flow data supplied by the internal Hydrology Department in order to carry out water quality modelling. The upstream flow data was calculated using Low Flows Enterprise software for the tributaries feeding the Taf Fawr up to the point of the proposed discharge location. This data is more accurate and representative and takes into consideration that no compensation flow is released from the Cantref reservoir upstream as it is not a statutory requirement for Dŵr Cymru Cyfyngedig.

Dŵr Cymru Cyfyngedig as a consultee raised concern that additional nutrients into the Drinking Water Protected Area (DrWPA) of Llwyn-Onn reservoir approximately 950m downstream from the discharge point could impact on raw water quality. This has been accounted for by imposing limits on the discharge for Ammonia, Phosphorus, BOD and Suspended Solids. The limits set are based on Monte Carlo water quality modelling and have been imposed to protect the Taf Fawr watercourse in line with the no deterioration requirements of the Water Framework Directive (WFD).

Annex 1: decision checklist

This checklist should be read in conjunction with the Duly Making checklist.

Aspect	Justification / Detail	Criteria met Yes
Consultation		
Scope of consultation	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.	✓
Responses to consultation and web publicising.	The web publicising and consultation responses (Annex 2) were taken into account in the decision. There were no responses to web publicising. The decision was taken in accordance with our guidance..	✓
Operator		
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.	✓
European Directives		
Applicable directives	All applicable European directives have been considered in the determination of the application.	✓
The site		
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 required to carry on the permitted activities within the site boundary.	✓
Biodiversity, Heritage, Landscape and Nature Conservation and a designated site under the CRoW Act.	The application is within the relevant distance criteria of the protected species White-clawed Freshwater Crayfish. We have not formally consulted on the application. The decision was taken in accordance with our guidance.	✓
Habitat Regulation	No FORM 1 completed:	✓

Aspect	Justification / Detail	Criteria met Yes
Assessment for a designated site under the EU Habitats Directive	HRA is not required because there is no conceivable impact pathway to any Natura 2000/Ramsar site by virtue of the location of the project. There were no Natura 2000 or RAMSAR sites located within a 10km screening distance which were hydrologically connected to the discharge.	
Environmental Risk Assessment and operating techniques		
Environmental risk	We have reviewed the operator's assessment of the environmental risk from the facility. The operator's risk assessment is unsatisfactory and required additional National Resources Wales assessment to make up the shortfall. In addition to the water quality modelling carried out as part of the operator's H1 Risk Assessment, Natural Resources Wales carried out its own water quality modelling with more accurate and representative river sample data and upstream river flow data. This was carried out in order to assess the impact of the discharge on the receiving watercourse and to calculate the required limits to set in the permit for Ammonia, BOD and Phosphorus. Additional modelling was required on a reduced maximum daily discharge volume. This was due to the removal of the trade effluent hot tub drain down water from the application following advice from NRW. Removing the hot tub effluent eliminated the risk of Bromide being discharged into the Taf Fawr watercourse.	✓
Operating techniques	We have reviewed the techniques used by the operator and compared these with the relevant guidance notes. The proposed techniques / emission levels for priorities for control are in line with the benchmark levels contained in the TGN and we consider them to represent appropriate techniques for the facility.	✓
The permit conditions		
Incorporating the application	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. These are specified in the Operating Techniques table in the permit.	✓

Aspect	Justification / Detail	Criteria met Yes
Emission limits	We have decided that emission limits should be set for the parameters listed in the permit. 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. • ATU-BOD as O_2 – 20mg/l as a Maximum. • Suspended solids (measured after drying at 105^{o}C) – 30mg/l as a Maximum. • Ammoniacal nitrogen (expressed as N) – 4mg/l as a Maximum. • Total Phosphorus – 1.56mg/l as an Annual Average. The above limits have been set to protect the receiving Taf Fawr water course. The limits have been made in line with the Operational Instruction 50_12 “Water Quality Planning: no deterioration and the Water Framework Directive” policy document. A 20mg/l limit for BOD causes 0% deterioration and remains well within the WFD High Class. A 4mg/l limit for Ammonia causes 9.57% deterioration at the discharge point and remains well within the WFD High Class. A 1.56mg/l annual average limit for Phosphorus causes 10% deterioration at the discharge point and remains well within the WFD High Class. These limits are significantly lower than the suggested limits calculated and provided in the applicant’s H1 Risk Assessment. The upstream flow data used for water quality modelling was calculated using Low Flows Enterprise software for the tributaries feeding the Taf Fawr up to the point of the proposed discharge location. This data takes into consideration no compensation flow being released from the Cantref reservoir upstream as it is not a statutory requirement for DCWW. However, although NRW records indicate that under dry weather conditions water is released from Cantref reservoir, these releases were not taken into consideration for in the modelling of the discharge due to their irregular occurrence. NRW has received 6 applications to release water from Cantref reservoir into the Taf Fawr since June 2015. Significant prolonged releases of water from this reservoir as part of water draw down activities provide an increase to the overall Q95 and Mean flow volumes	✓

Aspect	Justification / Detail	Criteria met Yes
	of the Taf Fawr watercourse thus providing extra dilution for any effluent discharges. There is a discharge of a maximum of 105 cubic metres per day of treated sewage effluent regulated by NRW under permit number AN0410901 from the Nant Ddu Lodge Hotel. This discharge is approximately 1km upstream from the Garwnant Forest Holiday Centre discharge point and has been discharging since 08/10/2007. Sample data collected as part of NRW's planned, routine environmental monitoring programme indicates that Ammonia, Phosphorus and BOD concentrations in the Taf Fawr have remained within their respective WFD High Class boundaries. By carrying out water quality modelling and setting the limits previously stated for the discharge from Garwnant Forest Holiday Centre, Ammonia, Phosphorus and BOD concentrations in the Taf Fawr will remain within their respective WFD High Class boundaries. Dŵr Cymru Cyfyngedig raised concern that additional nutrients into the Drinking Water Protected Area (DrWPA) of Llwyn-Onn reservoir approximately 950m downstream could impact on raw water quality. This has been accounted for by imposing limits on Ammonia, Phosphorus, BOD and Suspended Solids in line with the Operational Instruction 50_12 "Water Quality Planning: no deterioration and the Water Framework Directive" policy document. Limits set are based on Monte Carlo water quality modelling. Dŵr Cymru Cyfyngedig consultation response included their own sample data for background concentrations of Ammonia in the Taf Fawr. The decision was made to not use this data for Monte Carlo water quality modelling purposes as it had an insufficient number of samples and showed poor interval distribution between samples. Therefore, the decision was made to use NRW sample data for Ammonia due the significant number of samples, the interval distribution and the purpose of the samples which were taken as part of NRW's planned, routine environmental monitoring programme.	
Monitoring	We have decided that monitoring should be carried out for the parameters listed in the permit, using the methods and to the frequencies specified. These monitoring requirements have been imposed in order to comply with TGN EPR 7.01 Section 3	✓

Aspect	Justification / Detail	Criteria met Yes
	Requirements. The operator will be required to carry out flow monitoring in accordance with these requirements. We made these decisions in accordance with the Environmental Permitting Regulations 2016 and TGN EPR 7.01 How to comply with your permit. Based on the information in the application we are satisfied that the operator's techniques, personnel and equipment have either MCERTS certification or MCERTS accreditation as appropriate.	
Reporting	We have specified reporting in the permit. Reporting frequencies are in line with requirements set out in EPR 7.01. We made these decisions in accordance with the Environmental Permitting Regulations 2016 and TGN EPR 7.01.	✓
Considerations of foul sewer	We agree with the operators justification for not connecting to foul sewer.	✓
Operator Competence		
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.	✓
Sustainable Management of Natural Resources (SMNR)		
Considerations of SMNR - Compliance with our General Purpose	We are satisfied that this decision is compatible with our general purpose of pursuing the sustainable management of natural resources in relation to Wales and applying the principles of sustainable management of natural resources".	✓

Annex 2: Consultation responses

Summary of responses to consultation and the way in which we have taken these into account in the determination process.

Response received from
Dŵr Cymru Cyfyngedig
Brief summary of issues raised
Dŵr Cymru Cyfyngedig consultation response concluded with the following issues: • The H1 Discharge Assessment does not recognise that the proposed discharge will be made into a DrWPA. The impact of the discharge against the objectives of the Water Framework Directive Article 7 and overall water quality has not been assessed and no reassurance that the proposed package plant and bio mound treatment facility will mitigate any potential impact on water quality has been received. • It is considered that a discharge of this nature into the reservoir would potentially impact the physical, chemical and bacteriological quality of the raw water and increase the risk of pathogenic organisms and parasites such as cryptosporidium abstracted for drinking water supply from Llwyn Onn Reservoir. • This increase in risk would impact on the ability to meet current regulatory requirements and legal obligations currently in force for the supply of drinking water from Llwyn Onn works. • We have previously discussed with the applicant alternative drainage solutions involving a discharge downstream.
Summary of actions taken or show how this has been covered
The operator's risk assessment was unsatisfactory and required additional National Resources Wales assessment to make up the shortfall. In addition to the water quality modelling carried out as part of the operator's H1 Risk Assessment, Natural Resources Wales carried out its own water quality modelling with more accurate and representative river sample data and upstream river flow data. This was carried out in order to assess the impact of the discharge on the receiving watercourse and to calculate the required limits to set in the permit for Ammonia, BOD and Phosphorus. Additional modelling was required on a reduced maximum daily discharge volume. This was due to the removal of the trade effluent hot tub drain down water from the application following advice from NRW. Removing the hot tub effluent eliminated the risk of Bromide being discharged into the Taf Fawr watercourse. Article 7.3 of the WFD aims to, where possible, avoid the necessity for further purification where source of substances compromising treatment can be addressed or limited in the abstraction catchment. It is not meant as a replacement for the need for treatment, nor does it stipulate that there should not or will not be investment in further purification treatment. The water provider is under a statutory obligation to comply with DWI 'tap' standards irrespective of whether or not catchment actions are in place. Article 7.3 catchment action is non-statutory and relies on backing from stakeholders

and is also subject to cost-benefit investigation. Therefore, for this discharge NRW under its statutory powers have imposed river needs limits on the permit for Ammonia, Phosphorus, BOD and Suspended Solids, which have been calculated by carrying out water quality modelling.

Numerical limits have been calculated and imposed to protect the High Class WFD Status of water quality of the Taf Fawr watercourse in line with the no deterioration requirements under the WFD as covered in Operational Instruction 50_12 "Water Quality Planning: no deterioration and the Water Framework Directive" policy document. The decision was made to not use the sample data provided by Dŵr Cymru Cyfyngedig as part of their consultation response for the background concentration of Ammonia for water quality modelling purposes. This is because the data included an insufficient number of samples and showed poor interval distribution between samples. Therefore, the decision was made to use NRW's sample data to carry out the water quality modelling for Ammonia, BOD and Phosphorus due to the significant number of samples, the interval distribution and the purpose of the samples which were taken as part of NRW's planned, routine environmental monitoring.

The control of bacterial loading or cryptosporidium on the discharge is not considered reasonable. We do not impose UV disinfection on new discharges or existing discharges that have experienced growth solely on the merit that they discharge into or near a DrWPA. There are numerous private and water company continuous and intermittent discharges discharging into or near DrWPA which do not have disinfection.

Connection must be made to a public sewer where it is reasonable to do so. In deciding what is reasonable NRW take into account cost, practicality and sustainability. Due to the significant distance of approximately 2.5km to connect to the nearest sewer the distance and the associated cost to connect is considered unreasonable.

Response received from
Brecon Beacons National Park Authority
Brief summary of issues raised
Response received on 21/05/2018 stated, "I can confirm that we have no comments to make in relation to the application."
Summary of actions taken or show how this has been covered
No actions to be taken