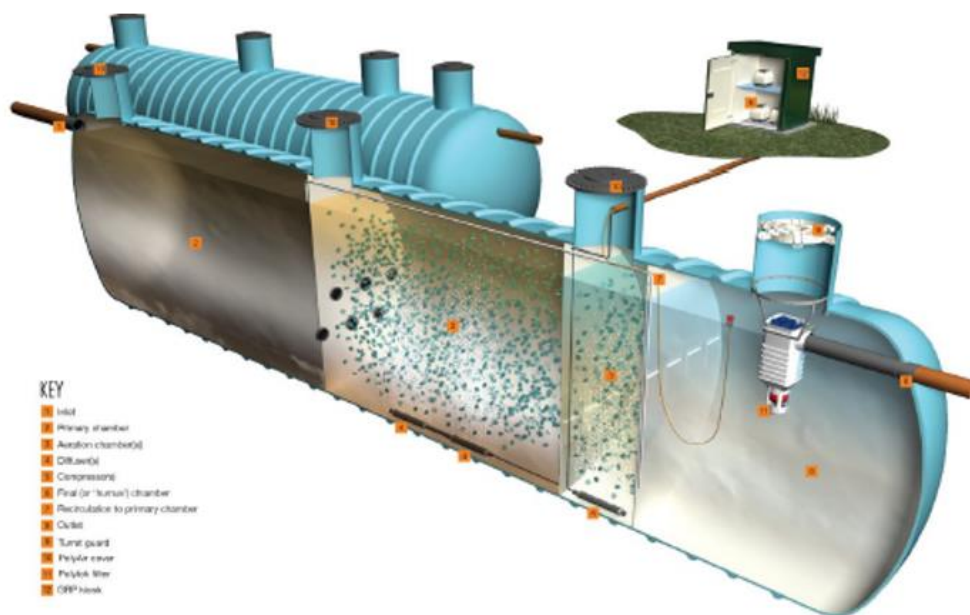


# Rhd-y-Creiau: Discharge permit variation application





# Rhd-y-Creuau: Discharge permit variation application

Prepared for  
Field Studies Council  
Preston Montford  
Shrewsbury  
SY4 1HW

Report reference:

67096R1 Rev1, August 2019

Report status:

Final

CONFIDENTIAL

New Zealand House, 160-162 Abbey Foregate,  
Shrewsbury, Shropshire  
SY2 6FD

Telephone: +44 (0)1743 276 100  
Facsimile: +44 (0)1743 248 600



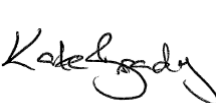


Registered Office:  
Stantec UK Ltd  
Buckingham Court  
Kingsmead Business Park  
Frederick Place, London Road  
High Wycombe HP11 1JU  
Registered in England No. 1188070

# Rhd-y-Creuau: Discharge permit variation application

This report has been prepared by Stantec UK Ltd (Stantec) in its professional capacity as environmental specialists, with reasonable skill, care and diligence within the agreed scope and terms of contract and taking account of the manpower and resources devoted to it by agreement with its client and is provided by Stantec solely for the internal use of its client.

The advice and opinions in this report should be read and relied on only in the context of the report as a whole, taking account of the terms of reference agreed with the client. The findings are based on the information made available to Stantec at the date of the report (and will have been assumed to be correct) and on current UK standards, codes, technology and practices as at that time. They do not purport to include any manner of legal advice or opinion. New information or changes in conditions and regulatory requirements may occur in future, which will change the conclusions presented here.

This report is confidential to the client. The client may submit the report to regulatory bodies, where appropriate. Should the client wish to release this report to any other third party for that party's reliance, Stantec may, by prior written agreement, agree to such release, provided that it is acknowledged that Stantec accepts no responsibility of any nature to any third party to whom this report or any part thereof is made known. Stantec accepts no responsibility for any loss or damage incurred as a result, and the third party does not acquire any rights whatsoever, contractual or otherwise, against Stantec except as expressly agreed with Stantec in writing.

Name		Signature
Author	Kate Brady / Joseph Gomme	 
Checked by	Kate Brady / Andrew Singleton	 
Reviewed by	Andrew Singleton	

## Revision record:

Issue	Date	Status	Comment	Author	Checker	Reviewer
D1	19 July 2019	Draft	for external review	KLB / JJG	KLB	AJS
R1	05/08/2019	Final			KLB / AJS	AJS
R1rev01	15/08/2019	Final	Minor updates to calculations	JWG	KLB	

# Contents

1	INTRODUCTION	1
1.1	Background	1
1.2	Application	1
1.3	Pre-application discussions	1
1.4	Application fee	2
1.5	Sewer connection	2
2	NON-TECHNICAL SUMMARY	4
3	ENVIRONMENTAL MANAGEMENT SYSTEM	5
3.1	Essential maintenance	5
3.1.1	Routine inspections	5
3.2	Accidents / unplanned events	5
3.3	Recording and notifications	6
3.4	Personnel	6
4	ENVIRONMENTAL RISK ASSESSMENT	7
4.1	Introduction	7
4.2	Approach	7
4.3	Initial contaminant screening	7
4.4	Quantitative risk assessment	8
4.4.1	Assessment tool	8
4.4.2	Input values	8
4.4.3	Results	9
4.5	Emissions of substances not controlled by emission limits	9

## TABLES

Table 4.1	Source concentrations (average) and compliance values (EQS)	8
Table 4.2	Average source concentrations and compliance values (mg/l)	9

## **APPENDICES**

Appendix A    Application forms

Appendix B    Pre-application discussions

Appendix C    Environmental Management System

Appendix D    H1 database assessment tool (electronic)

Appendix E    Treatment plant specification and loading calculations

# 1 Introduction

## 1.1 Background

The Field Studies Council (FSC) operates a residential outdoor learning centre at Rhyd-y-Creiau, The Drapers Field Centre, Llanrwst Road, Betws-y-Coed, LL24 0HB (the 'Site'). The Site is currently authorised to discharge up to 14 m<sup>3</sup>/day of secondary treated sewage effluent from the activity centre under Environmental Permit (EP) reference EPR/XB3590HS.

Stantec UK Ltd (Stantec) has been commissioned by FSC (the Client) to prepare and submit to Natural Resource Wales (NRW), a variation to the EP, to allow for the discharge of a marginally greater volume of treated sewage effluent (to 19 m<sup>3</sup>/day), taking into account a revision to the 'flows and loads' calculations (which provide an estimate of the volumes to be discharged from the treatment plant). It should be noted that there is to be no actual increase in the expected discharge volumes (i.e., no changes are proposed to the Site operations and associated rates of sewage production).

FSC previously employed the use of a package treatment plant, manufactured by William E Farrer Limited in Birmingham. The first stage settling tank had a capacity of approximately 12 m<sup>3</sup>. The humus tank had a capacity of 3 m<sup>3</sup>. This tank has been replaced in August 2018, by a more modern package treatment plant; a Marsh Ultra Polylok Plant (UP135). The manufacturer of the new treatment plant identified the increase in calculated flows, which initiated the EP variation application. The new treatment plant will treat effluent to a quality of 20 mg/l ammoniacal nitrogen.

## 1.2 Application

This report provides the overarching document containing all necessary information and referencing the necessary supporting documents for the application. It is accompanied by the appropriate application forms as follows, which are included in Appendix A;

- Part A - About you (NRW Version 1, July 2016);
- Part C2 - General – Varying a bespoke permit (NRW Version 2, October 2018);
- Part C6 – New bespoke water discharge activity and groundwater (point source) activity (NRW Version 2, January 2017); and
- Part F2 – Charging for discharges, charges and declarations (NRW Version 3, October 2018).

## 1.3 Pre-application discussions

Pre-application discussions took place between the Client (Ben Young) and NRW (Katrin Raynor-Evans). A copy of the email correspondence is included as Appendix B. Upon starting the project, Stantec (Kate Brady) contacted NRW (Katrin Raynor-Evans) by phone to discuss the need to demonstrate distance to the nearest mains sewerage for a pre-existing discharge. It was agreed that where existing discharges were in operation, it was not necessary to demonstrate the distance to the nearest sewerage, provided the risk remained appropriate for the discharge's receiving environment. We note that in the original pre-app discussions, the maximum plant output was stated to be 25.5 m<sup>3</sup>/day. This has since been reduced to 19 m<sup>3</sup>/day through the use of a slightly different treatment plant model. Stantec confirmed with NRW by phone, that although the discharge would now comply for a standard rules permit, as a bespoke permit is existing (likely due to nearby habitat

sites), a standard variation should be applied for. The permit variation application fee was also confirmed to be £885.

#### 1.4 Application fee

Payment of the application fee (£885) was provided by BACS electronic funds transfer on 07 August 2019 (ref: PSC-Rhyd-Y-Creiau01).

The application fee is derived from Table 41 of (NRW, 2017), Standard application and variation charge.

#### 1.5 Sewer connection

Application form Part C6, question 3b requires the consideration of the nearest sewer connection to the proposed discharge location.

The guidance states that:

*You must explain why you cannot discharge your effluent into a sewer.*

*Your justification must:*

- *show the extra cost of connecting to a sewer compared to the treatment you propose.*
- *provide details of any physical obstacles; for example, roads, railways, rivers or canals.*

*Where you are proposing a discharge from a private sewage treatment system in an area where it appears reasonable to discharge your effluent into a sewer, you must, as a minimum:*

- *send us evidence that you have approached the sewerage undertaker, and*
- *send us their formal response regarding connection.*

The Operator (FSC) has replaced the previous treatment plant (designed by William E. Farrier, Birmingham) with a replacement (Marsh Industries, Marsh Ultra Polylok 135 PE) in August 2018. The manufacturer of the replacement treatment plant revised the predicted maximum effluent volumes in accordance with British Water (2013). Upon revision, it became apparent that the treatment system has the potential to exceed the consented discharge volumes, despite there being no change to the treatment system inputs.

Part C2 guidance states that:

*If you are applying for an existing discharge you may give this as a reason for not connecting to a nearby sewer, but you must provide the date the treatment facility was installed as accurately as you can.*

As investment in the replacement system has already been undertaken, and the discovery of the potential for exceedance (rather than an actual exceedance) was discovered after the fact, it is considered that the need to connect to a sewer would be disproportionately onerous in this case and is not proposed. The latest treatment system was installed in August 2018. It was agreed with NRW during pre-application discussion (see Section 1.3) that connection to sewer would not be required

providing the risk to the environment remained appropriate. Section 4 demonstrates that the risk to the receiving Afon Conwy remains low.

## 2 Non-Technical Summary

The Operator (FSC) operates a residential outdoor learning centre at Rhyd-y-Creuau, The Drapers Field Centre, Llanrwst Rd, Betws-y-Coed, LL24 0HB (the 'Site'). The Site is currently authorised to discharge up to 14 m<sup>3</sup>/day of secondary treated sewage effluent from the activity centre.

Following the need to install a replacement package treatment plant (PTP), the PTP manufacturer revised the expected maximum discharge rates based on relevant industry guidance. Following this, it was discovered that the consented 14 m<sup>3</sup>/day could possibly be exceeded in the event that the plant was operating at the new maximum capacity (19 m<sup>3</sup>/day).

This is the basis of the current permit variation application to allow discharge of the increased maximum volumes. The variation is accompanied by a H1 assessment, as required by current EA guidance.

The treatment system will be operated in accordance with an Environmental Management System (see Section 3 and Appendix C).

## 3 Environmental Management System

In accordance with EA guidance (Environment Agency, 2018b), the Site will continue to operate the plant in accordance with the Site's existing Environmental Management System (EMS), which has been updated to reflect the new treatment plant.

A copy of this EMS will be kept in an appropriate place, with persons responsible for operation of the proposed sewage treatment and disposal system, made aware of the contents. For the purposes of this EMS, FSC is the Operator. The Manager will be the Site Manager or Environmental Manager as appointed by the Operator.

The EMS will be updated as required and reviewed regularly to check it remains appropriate.

Upon installation of the plant, the plant manufacturer/installer will provide the Operator with a manual and any essential instructions such as;

- How to check if the plant is on/ operating correctly;
- Maintenance certificate/ service contract with recommended service times detailed;
- How to re-start the plant in the event of a power outage or other unplanned event;
- Contact numbers in the event of an emergency or maintenance callout.

Essential information will also be present in a prominent place on or near the plant operating panel for ease of access.

A copy of the EMS is presented as Appendix C.

### 3.1 Essential maintenance

The plant will be installed by an appropriately qualified contractor, in accordance with the manufacturer's recommendations.

The plant will be serviced regularly in accordance with the manufacturer's recommendations, under a third-party service contract. The Operator will be responsible for maintaining this contract.

Any required de-sludging will be undertaken in accordance with the manufacturer's recommendations and the service contract.

#### 3.1.1 Routine inspections

The plant will be inspected by the Manager or nominated person on a weekly basis to confirm that it is functioning correctly and that there are no leaks/ odours being emitted.

### 3.2 Accidents / unplanned events

In the event of a power failure, if the plant is not designed to automatically re-start, the plant will be manually re-started by the site Manager or their nominee.

Upon discovery or suspicion of a blockage/ leak, the site Manager or their nominee will call the emergency contact number.

### 3.3 Recording and notifications

All scheduled servicing and maintenance of the plant will be recorded in the plant's maintenance log.

All unplanned maintenance or unauthorised emissions will be recorded in the plant's maintenance log or separate dedicated log book.

If an unplanned emission has occurred, the Environment Agency will be notified using the method specified in the issued Environmental Permit.

A record will be kept of any complaints made in relation to the plant/ associated discharges. Following the receipt of a complaint, the issue will be fully investigated, the complainant kept fully informed and provided with a timescale for update or remedy of the situation, if required.

### 3.4 Personnel

Persons responsible for inspecting, servicing or maintaining the plant will be appropriately trained to do so. It is the responsibility of the Operator to ensure this is undertaken.

All relevant persons with responsibility for inspecting the plant will be aware of accidents or emergencies (e.g. loss of electrical supply) which may adversely affect the performance of the treatment plant.

## 4 Environmental risk assessment

### 4.1 Introduction

Question 9 of Form C6 states that a H1 risk assessment is not required if the discharge to surface water is <20 m<sup>3</sup>/day. This section was completed at a time when the discharge was understood to be 25.5 m<sup>3</sup>/day. Maximum discharge from the Site is now confirmed to be 19 m<sup>3</sup>/day and the results of the H1 assessment are presented in any case.

### 4.2 Approach

For the assessment of environmental risk, DEFRA requires that a conceptual model be developed, identifying potential sources of harm, the receptors that may be harmed, and the pathways by which hazards may be transmitted from source to receptor.

In this case the conceptual site model (CSM) is a simple one, with the following elements:

- Source: the contaminant source is the treated sewage effluent;
- Pathway: the pathway is the discharge pipeline, along which no attenuation of contaminants will occur;
- Receptor: the receptor is the Afon Conwy, into which the pipeline discharges.

The initial approach to the assessment has been to identify typical substances of concern that might be expected to be discharged in effluent from the proposed sewage system and then compare their anticipated concentrations in the treated effluent to appropriate environmental standards (see Section 4.3). Concentrations of substances that exceed the standards will then be subject to more detailed assessment (see Section 4.3).

The Environment Agency (2014) provides guidance for assessing risks from sewage discharges. We have followed this guidance in assessing the Site risk, including the use of the H1 database tool (Environment Agency, 2016).

### 4.3 Initial contaminant screening

Environment Agency (2019a) provides guidance on identifying representative contaminants within sewage effluent discharges to include within risk assessments. The guidance identifies the main substances of concern as ammoniacal nitrogen, microbiological contaminants, phosphorous and phosphates, alongside other contaminants including various metals.

Table 4.1 presents selected chemical contaminants that it is anticipated will be present in the treated effluent discharged from the recently installed system. The treatment plant is designed for a maximum effluent concentration of 20 mg/l ammoniacal nitrogen. We assume that the average will be 75% of this value, since it will vary with the incoming load and the efficiency of treatment.

No data are available for other substances of concern, for which concentrations have therefore been taken from DEFRA (2017). Anticipated concentrations within the treated effluent are included within Table 4.1 alongside relevant environmental quality standards (EQS) which are deemed to be protective of the identified surface water receptor. Note: EQS values have been taken from the H1 database tool (see Section 4.3).

The information in Table 4.1 shows that of the selected contaminants, only iron may occur at concentrations below the relevant EQS within the treated effluent (potential exceedances are marked in bold). Conversely, the anticipated concentrations of other substances within the effluent discharge, are likely to be higher than the adopted EQS values. As such, these substances require further consideration.

**Table 4.1 Source concentrations (average) and compliance values (EQS)**

Parameter	Units	Source concentration (maximum)	Source concentration (average)	EQS
Ammonium as NH <sub>4</sub>	mg/l	<b>20</b>	<b>15</b>	0.3
Iron	µg/l	50	40 <sup>1</sup>	1000
Lead	µg/l	<b>6.25</b>	<b>5<sup>1</sup></b>	1.2
Cadmium	µg/l	<b>2.4</b>	<b>2<sup>1</sup></b>	0.15
Copper	µg/l	<b>8.75</b>	<b>7<sup>1</sup></b>	1
Zinc	µg/l	<b>12.5</b>	10 <sup>1</sup>	10.9
Phosphorous	mg/l	<b>13.1</b>	<b>10.5<sup>1</sup></b>	0.02

<sup>1</sup> Typical effluent quality taken from DEFRA, 2017

**[bold]** potential exceedance of EQS

## 4.4 Quantitative risk assessment

### 4.4.1 Assessment tool

The H1 database tool has been used to carry out further assessment of the contaminants of concern identified in Table 4.1. The tool assesses the process contribution (i.e. the contribution of contaminants within the treated discharge) as a proportion of the EQS, following dilution in the receiving water. A contaminant is deemed to have insignificant impact if the process contribution is smaller than 4% of the EQS. If the process contribution is larger than 4% of EQS, a third tier of assessment involves examination of the process contribution in relation to background pollutant concentrations.

A copy of the database tool used to perform the calculations is included in Appendix D.

### 4.4.2 Input values

The database requires a figure for Q<sub>95</sub> river flow (the flow that is exceeded 95% of the time). The gauging station at Cwm Lanerch, 1 km downstream of the Site, has a Q<sub>95</sub> flow of 1.42 m<sup>3</sup>/s (CEH, 2019).

The effluent flow for the plant design is 19.8 m<sup>3</sup>/day (0.23 l/s) (see workings in Appendix E). The average flow is likely to be smaller than this, since this is based on the design norms (British Water, 2013) for the maximum number of Site users. The maximum flow (0.69 l/s) has been specified based on the peak flow from the plant design.

For Tests 3 and 4 presented in the H1 assessment tool, background concentrations in the receiving water course are required. We have applied the mean values of river quality data for the Afon Conwy from 2004 to 2013, taken from Welsh Government and Natural Resources Wales (2019), for the monitoring point at Cwm Lanerch (just downstream of the Site).

#### 4.4.3 Results

The results provided by the database tool are shown in Table 4.2. The results demonstrate that the ongoing effluent discharge will not negatively impact the water quality in the Afon Conwy.

**Table 4.2 Average source concentrations and compliance values (mg/l)**

Parameter	Units	Source	EQS	H1 test		
				Test 1	Test 2	Tests 3 and 4
Ammonium as NH <sub>4</sub>	mg/l	15	0.3	Fail	Pass	--
Iron	µg/l	40	1000	Pass	--	--
Lead	µg/l	5	1.2	Fail	Pass	--
Cadmium	µg/l	2	0.15	Fail	Pass	--
Copper	µg/l	7	1	Fail	Pass	--
Zinc	µg/l	10	10.9	Fail	Pass	--
Phosphorous	mg/l	10.5	0.02	Fail	Fail	Pass

#### 4.5 Emissions of substances not controlled by emission limits

Question 9a of Part C6 asks if the H1 Environmental Risk Assessment shows that emissions of substances not likely to be controlled by emission limits in your permit are an important issue. This question does not need to be addressed for discharges to surface water of <20 m<sup>3</sup>/day.

As the proposed maximum discharge from the Site is 19.8 m<sup>3</sup>/day, the emission of additional substances does not require separate consideration. Notwithstanding this, issues relating to noise, odour, pests and dust are not considered to pose a risk from the Site. Risk of odour will be controlled via the existing EMS, including good management and maintenance of the plant plus regular inspections.

## REFERENCES

**British Water, 2013.** Flows and Loads – 4, Sizing Criteria, Treatment Capacity for Sewage Treatment Systems, British water, ISBN 978-1-903481-10-3, BW COP: 18.11/13.

**CEH, 2019.** National river flow archive, accessed at <https://nrfa.ceh.ac.uk/data/search>, June 2019.

**DEFRA, 2017.** Septic tank and package treatment plants: liquid effluent pollutants and typical concentrations, accessed at <https://www.gov.uk/government/publications/values-for-groundwater-risk-assessments/septic-tank-and-package-treatment-plants-liquid-effluent-pollutants-and-typical-concentrations>, June 2019.

**DEFRA, 2019.** Surface water pollution risk assessment for your environmental permit, accessed at <https://www.gov.uk/guidance/surface-water-pollution-risk-assessment-for-your-environmental-permit>, June 2019.

**Environment Agency, 2014.** H1 Annex D2: Assessment of sanitary and other pollutants within surface water discharges; v1, September 2014.

**Environment Agency, 2016.** Environment Agency H1 database v2.7.6, dated February 2016.

**NRW, 2017.** Natural Resources Wales, Environmental Permitting Charging Scheme 2017/18. Effective from 1 April 2017.

**Welsh Government and Natural Resources Wales (2019).**  
<http://lle.gov.wales/catalogue/item/UKWaterQualitySamplingHarmonisedMonitoringSchemeDetailedData/?lang=en>.

# APPENDICES

# Appendix A

## Application forms

# Application for an environmental permit:

## Part A – About you

**Fill in this part A if you are applying for a new permit, applying to change or surrender an existing permit, or want to transfer an existing permit to yourself.**

Please check that this is the latest version of the form available from our website.

Please read through this form and the guidance notes that come with it. All relevant guidance documents can be found on our website.

Where you see the term 'document reference' on the form,

give the document references and send the documents with the application form when you've completed it.

### Contents

- 1 About you
- 2 Applications from individuals
- 3 Applications from organisations of individuals
- 4 Applications from public bodies
- 5 Applications from a registered company or other corporate body
- 6 Your address
- 7 Contact details

## 1 About you

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

- |                                                             |                                     |                        |
|-------------------------------------------------------------|-------------------------------------|------------------------|
| An individual                                               | <input type="checkbox"/>            | <i>Go to section 2</i> |
| An organisation of individuals (for example, a partnership) | <input type="checkbox"/>            | <i>Go to section 3</i> |
| A public body (such as a local council)                     | <input type="checkbox"/>            | <i>Go to section 4</i> |
| A registered company or other corporate body                | <input checked="" type="checkbox"/> | <i>Go to section 5</i> |

## 2 Applications from individuals

### 2a Please give us the following details

- |            |                      |                        |
|------------|----------------------|------------------------|
| Title      | <input type="text"/> |                        |
| First name | <input type="text"/> |                        |
| Last name  | <input type="text"/> | <i>Go to section 6</i> |

## 3 Applications from organisations of individuals

### 3a Organisation details

- |                            |                      |
|----------------------------|----------------------|
| Organisation name          | <input type="text"/> |
| Type of organisation       | <input type="text"/> |
| If 'Other', please specify | <input type="text"/> |

### 3b Main representative's details

- |            |                      |
|------------|----------------------|
| Title      | <input type="text"/> |
| First name | <input type="text"/> |

Last name

**3c Second representative's details:**

Title

First name

Last name

**3d Other representative's details**

If relevant, please provide details of all other representatives on a separate sheet and tick here to show that you have done so. ☐

*Go to section 6*

**4 Applications from public bodies**

**4a Public body details**

Public body name

Type of public body

If 'Other', please specify

**4b Executive officer's details**

The executive is an officer of the public body authorised to sign on your behalf.

Title

First name

Last name

Position

*Go to section 6*

**5 Applications from a registered company or other corporate body**

**5a Company details**

Company name

Company registration number

Date of registration

If you are applying as a corporate organisation that is now a limited company, please provide evidence of your status and tell us the reference number you have given this document with this evidence.

Document reference

*Go to section 6*

**6 Your address**

**6a Your main (registered office) address**

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

Address

	Shrewsbury
Postcode	SY4 1HW
Telephone - mobile	
Telephone - office	01743 852100
Email address	b.young@field-studies-council.org

If you are applying as an organisation of individuals, every partner needs to give us their details, including their title. If necessary, continue on a separate sheet and tell us the reference you have given the sheet.

Document reference	
--------------------	--

**6b UK business address *only* if different from above**

Address	
Postcode	
Telephone - mobile	
Telephone - office	
Email address	

*Go to section 7*

**7 Contact details**

**7a Who can we talk to about your application?**

This can be someone acting as a consultant or 'agent' for you.

Title	Ms
First name	Kate
Last name	Brady
Address	Stantec UK Ltd
	New Zealand House
	160 Abbey Foregate

	Shrewsbury
Postcode	SY2 6FD
Telephone - mobile	
Telephone - office	01743 276117
Email address	

**7b Who can we talk to about your operation?**

Same as the application contact in 7a	<input type="checkbox"/>
Title	Mr
First name	Ben
Last name	Young
Address	FSC Head Office
	Preston Montford
	Shrewsbury
	Shropshire
Postcode	SY4 1HW
Telephone - mobile	07491 992647
Telephone - office	01743 852100
Email address	b.young@field-studies-council.org

**7c Who can we talk to about your billing or invoice?**

Same as the application contact in 7a	<input type="checkbox"/>
Same as the operation contact in 7b	<input type="checkbox"/>
Title	Mr
First name	Chris
Last name	Price
Address	FSC Head Office Finance Dept.
	Preston Montford

	Shrewsbury
	Shropshire
Postcode	SY4 1HW
Telephone - mobile	
Telephone - office	01743 852100
Email address	finance.ho@field-studies-council.org

# Application for an environmental permit:

## Part C2 – General: Varying a bespoke permit

**Fill in this part of the form, together with part A, the relevant parts of C3 to C7 and part F1 or F2.**

Please check that this is the latest version of the form available from our website.

**Note: If you are applying to convert your existing permit to a standard permit or add a standard facility you need to fill out form C1.**

**If you want to make an administrative change, you should complete form C0.5.**

You only need to give us details in this application for the parts of the permit that will be affected (for example, if you are adding a new facility or changing existing ones).

You do not need to resend any information from your original permit application.

Please read through this form and the guidance notes that came with it. All relevant guidance documents can be found on our website.

### Contents

- 1 About the permit
- 2 About your proposed changes
- 3 Your ability as an operator
- 4 Consultation
- 5 Supporting information
- 6 Environmental risk assessment
- Appendix 1 – Low impact installation checklist

## 1 About the permit

### 1a Discussions before your application

If you have had discussions with us before your application, give us the case reference number or details on a separate sheet.

Case or document reference

See App. B of report 67096R1

### 1b Permit number

Permit number this application relates to?

EPR/XB3590HS

### 1c Site details

What is the name, address and postcode of the site?

Site name

Rhyd-y-Creuau

Address

The Drapers Field Centre

Llanrwst Road

Betws-y-Coed

North Wales

Postcode

LL24 0HB

## 2 About your proposed changes

### 2a Type of variation

What type of variation are you applying for? (Please tick)

Standalone water discharge activity or point source groundwater activity

☐

Minor technical

☐

Normal variation



Substantial



## 2b Provide a non-technical summary of your application

Please give us brief details of all the proposed changes to current activities, and any new activities you want to add to your permit.

You can use the box below, in Table 1 below. Or, you can use a separate sheet and send it to us with your application form. Tell us below the reference you have given this document.

Document reference

Report 67096R1

**Table 1 – Details of the proposed changes**

The variation seeks to cover the volumes of the maximum flows possible following revised flows and loads calculations. There is no physical change to the discharge rates which occur and it is considered that the maximum rates of discharge are not routinely achieved.

## 2c Consolidating existing permits into the modern style

Consolidating your permit can mean:

- combining the original permit and all subsequent changes into a single document (modern permit), or
- combining two or more environmental permits for the same operator and site into a single permit.

Note: In both cases we may require additional information from you about, for example your management system. Therefore we would always advise you to talk to us before you submit any application to modernise or consolidate permits.

**2c1** Do you want to have a modern style (consolidated) permit?

No ☐ Go to section 2d

Yes ☒ Please note: An additional charge may apply for modernising your permit(s).

**2c2** Identify all the permits you want to consolidate by listing the permit numbers/ versions in Table 2 below.

**Table 2 – Permit numbers**

Existing EPR/XB3590HS and this variation

## 2d Low impact installations (installations only)

Are any of the regulated facilities low impact installations?

No ☒ Go to section 2e

Yes ☐

Please give us a description of your proposed activity telling us how you meet the conditions for a low impact installation and send it to us with your application form.

Document reference

Tick the box to confirm you have filled in the low impact installation checklist in Appendix 1 for each regulated facility.

☐

## 2e Treating batteries

Are you planning to treat batteries? (See the guidance notes on part C2.)

No

☒

Yes

☐

Tell us how you will do this, send us a copy of your explanation and tell us the reference you have given this explanation.

Document reference

## 2f Medium Combustion Plant

Are you applying to *add* additional new Medium Combustion Plant(s) to your existing permit

No

☒

Yes

☐

Please complete Table 3 below

Table 3 – Adding Additional Medium Combustion Plant		
	Number Currently permitted for	Number you wish to add
Medium Combustion Plant		

Please complete Appendix 8 of Form C3 for each new Medium Combustion Plant you wish to add.

## 2g Combined Medium Combustion Plant and Specified Generators

**2g1** Are you applying to add a Specified Generator to your existing permit?

No

☐

Go to section 3

Yes

☐

Go to section 2g2 and complete Appendix 9 of Form C3 for each generator that comprises the Specified Generator.

**2g2** Is the Specified Generator also a new Medium Combustion Plant?

No

☐

Yes

☐

Please complete Appendix 8 and Appendix 9 of Form C3 for each new Medium Combustion Plant you wish to add that is also a Specified Generator.

## 3 Your ability as an operator

If you are only applying to change or add a water discharge activity, you only have to fill in question 3d.

If you are applying to add waste installations or waste operations to a permit that has not previously had them, you need to fill in all of section 3.

If you are applying to consolidate two or more permits or have an updated permit you must fill in question 3d.

### 3a Relevant offences – installations, waste operations, medium combustion plant and specified generators (See guidance notes on part C2)

Have you, or any other relevant person, been convicted of any relevant offence?

No

☐

Go to section 3b

Yes

☐

Please give details below

Title	
First name	
Last name	
Date of birth (DD/MM/YYYY)	
Position held at the time of the offence	
Name of the court where the case was dealt with	
Date of conviction (DD/MM/YYYY)	
Offence and penalty set	
Date any appeal against the conviction will be heard (DD/MM/YYYY)	

If necessary, use a separate sheet to give us details of other relevant offences, and tell us below the reference number you have given the extra sheet.

Document reference	
--------------------	--

**3b Technical ability - relevant waste operations only** (see the guidance notes on part C2)

**3b1** Which approved scheme are you using to show you have the suitable technical skills and knowledge to manage your facility?

CIWM / WAMITAB ☐

ESA / EU ☐

**3b2** Do you already hold the relevant, formal qualifications to manage your facility?

Yes ☐ Tick to confirm you've included all original *and* continuing competence evidence. ☐

No ☐ Tick to confirm you've included evidence you've registered with a Scheme. ☐

**3c Finances (installations, waste operations, mining waste operations, medium combustion plant and specified generators)**

**Do you or any relevant person have current or past bankruptcy or insolvency proceedings against you?**

No ☐ *Go to section 3d.*

Yes ☐ Please give details of the required set-up (including infrastructure), maintenance and clean up costs for the proposed facility, against which a credit check may be assessed.

--

Please note: We may want to contact a credit reference agency for a report about your business's finances.

## Landfill, Category A mining waste facilities and mining waste facilities for hazardous waste only

How do you plan to make financial provision (to operate a landfill or a mining waste facility you need to show us that you are financially capable of meeting the obligations of closure and aftercare)?

- Bonds ☐
- Escrow account ☐
- Trust fund ☐
- Lump sum ☐
- Other ☐

Provide a plan of your estimated expenditure on each phase of the landfill or mining waste facility.

Document reference

### 3d Management systems (all)

You can find guidance on management systems in both 'How to Comply' and 'Horizontal Guidance Note 6 – Environmental Management Systems'. We have also developed environmental management toolkits for some business sectors which you can use to produce your own management system. You can get these by calling 0300 065 3000 or by downloading them from our guidance webpages.

#### 3d1 Does your management system meet the conditions set out in our guidance?

- Yes ☒
- No ☐

#### 3d2 What management system will you provide for your regulated facility?

- EC Eco-Management and Audit Scheme (EMAS) ☐
- ISO 14001 ☐
- BS 8555 (Phases 1–5) ☐
- Green Dragon ☐
- Own management system ☒

#### 3d3 Make sure you include a summary of your management system which sets out any changes or additional measures you will put in place to the address risks from the proposed changes. Tick the box to confirm you've done this and tell us the reference below.



Document reference

App. C of report 67096R1

**Water discharge activities:** Go to section 5.

## 4 Consultation (fill in 4a to 4c for installations and waste operations and 4d for installations only)

Could the waste operation or installation involve releasing any substance into any of the following?

### 4a A sewer managed by a sewerage undertaker

- No ☒
- Yes ☐ Please name the sewerage undertaker

### 4b A harbour managed by a harbour authority

- No ☒
- Yes ☐ Please name the harbour authority

**4c Direct into relevant territorial waters or coastal waters within the sea fisheries district of a local fisheries**

No

☒

Yes ☐ Please name the fisheries committee

**4d Is the installation on a site for which:**

**4d1 a nuclear site licence is needed under section 1 of the Nuclear Installations Act 1965?**

No

☐

Yes

☐

**4d2 a policy document for preventing major accidents is needed under regulation 5 of the Control of Major Accident Hazards**

No

☐

Yes

☐

**5 Supporting information**

**5a Provide a plan or plans for the site (see guidance notes on part C2 for what needs to be marked on the plan)**

Document reference

no change, not required

**5b Do any of the variations you plan to make need extra land to be included in the permit?**

No

☒

Yes ☐ Please provide a site report for the extra land.

Document reference

**5c Adding an installation**

If you are applying to add an installation, tick the box to confirm that you have sent in a baseline report and provide a reference.

☐

Document reference

**6 Environmental risk assessment - if you need one (see the guidance notes on part C2)**

Provide an assessment of the risks each of your proposed activities cause to the environment. The risk assessment must use H1 or an equal method.

Document reference

See Section 4 of report 67096R1

**Appendix 1 – Low impact installation checklist** (see guidance notes on part C2)

Installation reference					
Condition	Response			Do you meet this?	
A – Management techniques	Provide references to show how your application meets A.			Yes	<input type="checkbox"/>
	References			No	<input type="checkbox"/>
B – Aqueous waste	Effluent created	m3/day		Yes	<input type="checkbox"/>
				No	<input type="checkbox"/>
C – Abatement systems	Provide references to show how your application meets C.			Yes	<input type="checkbox"/>
	References			No	<input type="checkbox"/>
D - Groundwater	Do you plan to release any hazardous substances or non-hazardous pollutants into the ground?		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes	<input type="checkbox"/>
				No	<input type="checkbox"/>
E – Producing waste	Hazardous waste	Tonnes per year		Yes	<input type="checkbox"/>
	Non-hazardous waste	Tonnes per year		No	<input type="checkbox"/>
F – Using energy	Peak energy consumption	MW		Yes	<input type="checkbox"/>
				No	<input type="checkbox"/>
G – Preventing accidents	Do you have appropriate measures to prevent spills and major releases of liquids? (See 'How to comply'.)		Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes	<input type="checkbox"/>
	Provide references to show how your application meets G.				
	Reference				
H - Noise	Provide references to show how your application meets H.			Yes	<input type="checkbox"/>
	Reference			No	<input type="checkbox"/>
I - Emissions of polluting substances	Provide references to show how your application meets I.			Yes	<input type="checkbox"/>
	Reference			No	<input type="checkbox"/>
J – Odours	Provide references to show how your application meets J.			Yes	<input type="checkbox"/>
	Reference			No	<input type="checkbox"/>
K – History of keeping to the regulations	Say here whether you have been involved in any enforcement action as described in Compliance History Appendix 1 explanatory notes.		Yes <input type="checkbox"/> No <input type="checkbox"/>		

# Application for an environmental permit:

## Part C6 – Variation to a bespoke water discharge activity and groundwater (point source) activity

**Fill in this part of the form, together with parts A, C2 and F2, if you are applying to vary (change) the conditions of a bespoke permit for a water discharge activity or a point source discharge groundwater activity.**

You only need to give us details in this application for the parts of the permit that will be affected (for example, if you are adding a new facility or making changes to existing ones).

You do not need to resend any information from your original permit application if it is not affected by your proposed changes.

Please check that this is the latest version of the form available from our website.

Please read through this form and the guidance notes that came with it. All relevant guidance documents can be found on our website.

### Contents

- 1 About the effluent
- 2 How long will you need to discharge?
- 3 Discharging to a sewer
- 4 How much do you want to discharge?
- 5 Intermittent sewage discharges
- 6 How will the effluent be treated?
- 7 What will be in the effluent?
- 8 Monitoring arrangements
- 9 Emissions of substances not controlled by emission limits management plan
- 10 Design criteria
- 11 Where will the effluent discharge to?
- 12 More information from you
- Appendix 1 – Discharges to a borehole or well
- Appendix 2 – Discharges into land
- Appendix 3 – Discharges onto land
- Appendix 4 – Discharges to tidal river, tidal stream, estuary or coastal waters
- Appendix 5 – Discharges to non-tidal river, stream or canal
- Appendix 6 – Discharges to a lake or pond

## 1 About the effluent

### 1a Give a brief description of the changes you want to make to your permit.

Increase in discharge volumes due to update in flows and loads rather than a genuine increase.

### 1b Give this effluent a unique name

You must use this name to identify this effluent throughout this application and all associated documents.

Effluent name

Rhyd-y-Creuwau treated effluent

### 1c Is this a release from a dam, weir or sluice ('reservoir release') under Schedule 21 of the EPR meaning of water discharge activity?

Yes

☐

No

☒

### 1d Give the UK Standard Industrial Classification of Economic Activities 2007 (SIC 2007) code which best describes the main activity

For private domestic dwellings use Z for section and A for class.

Fill in a separate copy of this **form** and the appropriate appendix or appendices for each type of effluent you plan to discharge.

Section

P

Class or sub class

85510

Table 1 – About the effluent												
Type of effluent	Please tick box	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
Domestic sewage – up to 20 m3 a day discharged to surface water or – up to 15m3 a day discharged to groundwater	<input checked="" type="checkbox"/>	All	a, b, c, d	a, b	b, f	-	All	-	b, f*, g	-	-	All
Domestic sewage – 20m3 a day or more discharged to surface water or – 15m3 a day or more discharged to groundwater	<input type="checkbox"/>	All	a, b, c, d	a, b	b, f	-	All	b, d, e	b, d*, e*, f*, g*	All	b, c, d, e	All
Intermittent settled storm sewage	<input type="checkbox"/>	All	a, b	-	-	a, b, e, f, g, h, l, m	All	a, d, e	b, g	All	a, b, c, d, e	All
Intermittent combined sewer overflow	<input type="checkbox"/>	All	a, b	-	-	c, d, e, f, g, h, i, m	All	a, d, e	b, g	All	a, b, c, d, e	All
Intermittent emergency overflow	<input type="checkbox"/>	All	a, b	-	-	j, k, l	All	a, d, e	b, g	All	a, b, c, d, e	All
Sewage – water company WwTW final effluent	<input type="checkbox"/>	All	a, b	-	a, f (b is optional)	-	All	a, b, c, d, e	a, b, c, d*, e*, f*, g (see note below)	All	a, b, c, d, e	All
Trade – known volume	<input type="checkbox"/>	All	a, b, c, d	a, b	b, c, f	-	All	b, c, d, e, f	b, d*, e*, f*, g (see note below)	All	b, c, d, e	All
Trade – rainfall dependent	<input type="checkbox"/>	All	a, b	-	b, c, f	-	All	b, c, d, e	b, d*, e*, f*, g (see note below)	All	b, c, d, e	All
Trade – returned abstracted water (including ground source heating and cooling schemes)	<input type="checkbox"/>	All	a, b, c, d	-	b, c, f	-	All	b, c, d, e, f, g	b, d*, e*, f*, g (see note below)	All	b, c, d, e	All
Mixed effluent – all effluent volumes	<input type="checkbox"/>	All	a, b, c, d	a, b	b, c, f	-	All	b*, d*, e* (see note below)	b, d*, e*, f*, g (see note below)	All	b, c, d, e	All
Mixed effluent – containing any rainfall dependent effluent	<input type="checkbox"/>	All	a, b, c, d	a, b	b, c, d, e, f	-	All	b, c, d, e, f	b, d*, e*, f*, g (see note below)	All	b, c, d, e	All
*Check the relevant question and our guidance notes on part C6 to see if you need to give an answer.												

## 2 About the effluent - how long will you need to discharge effluent for?

2a What date do you want the permit for this effluent to start?

09/07/2015

Please note that this is the date that your annual subsistence charges will start, even if you have not started to discharge, unless you contact us to change (delay) the start date.

2b Is the discharge time limited?

No



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.

2c Will the discharge take place all year?

Yes



No



Please give details below, of the months when you will make the discharge

2d Will the discharge take place on more than six days in any year?

Yes



No



## 3 Discharges to sewer

3a How far away is the nearest sewer (in metres)?

420

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 sewer.

3b Tell us why you think you cannot discharge your effluent into a sewer.

You must explain why you cannot discharge your effluent into a sewer.

Your justification must:

- show the extra cost of connecting to a sewer compared to the treatment you propose
- provide details of any physical obstacles; for example, roads, railways, rivers or canals.

Where you are proposing a discharge from a private sewage treatment system in an area where it appears reasonable to discharge your effluent into a sewer, you must, *as a minimum*:

- send us evidence that you have approached the sewerage undertaker, and
- send us their formal response regarding connection.

The guidance notes on part C6 will help you understand what information you need to provide in answer to this question.

**If you fail to send this information with your application, it may be returned to you without processing.**

Tell us the reference you've given the document detailing your justification.

Document reference

See Section 1.5 of Report 67096R1

#### 4 How much do you want to discharge?

4a What is the daily dry weather flow (in cubic metres)?

4b What is the maximum volume of effluent you will discharge in a day (in cubic metres)?

4c What is the maximum rate of discharge (in litres a second)?

4d What is the maximum volume of non-rainfall dependent effluent you will discharge in a day (in cubic metres)?

4e What is the maximum rate of rainfall dependent discharge (in litres per second)?

4f For each answer in question 4, show how you worked out the figure on a separate sheet

Document reference

See App. E of 67096R1

#### 5 Intermittent sewage discharges

5a For each answer to b to j below, show how you worked out the figure on a separate sheet.

Document reference

n/a

5b What is the total volume of the storm tank storage (in cubic metres)?

5c What is the pass forward flow at the settled storm overflow setting (in litres per second)?

5d What is the pass forward flow at the storm overflow setting (in litres per second)?

5e What is the total volume of storage (in cubic metres)?

5f Is the discharge screened?

No

☒

Go to section 5k

Yes

☐

5g What is the mesh screen spacing (in millimetres)?

5h What is the minimum flow through the mesh screen (in litres per second)?

5i What is the bar screen spacing (in millimetres)?

5j What is the minimum flow through the bar screen (in litres per second)?

5k Explain how this asset is built to good engineering design – tell us the document reference for this supporting evidence.

5l What is the emergency storage capacity of the sewer and wet well (in cubic metres)?

5m What is the storage time within the sewer and the wet well above the top water level at dry weather flow (in hours and minutes)?

5n What is the pass forward flow at the pumping station (in litres per second)?

## 6 How will the effluent be treated?

### 6a Do you treat your effluent?

Yes ☒ Go to section 6b

No ☐ You must explain why the effluent will not be treated. Tell us the reference you have given the document setting out your justification.

Document reference

### 6b Tell us about the treatments.

Fill in Table 2 for each stage of the treatments carried out on your effluent in the order in which they are carried out.

Fill in a separate copy of this **form** for each type of effluent you plan to discharge.

Table 2		
Effluent name	Rhyd-y-Creuwau treated effluent	
Order of treatment	Code number	Description
First	BS	Package treatment plant (BS 12566)
Second		
Third		
Fourth		

Continue on a separate sheet if you need more rows. If you prefer, you can also send us an overall design for the whole treatment process. Tell us the reference you've given the separate sheet or design.

Document reference

### 6c Final effluent discharge quality.

You must provide details on a separate sheet of the final effluent discharge quality that the overall treatment system is designed to achieve. Tell us the reference for this document.

Document reference

See App E of Report 67096R1

## 7 What will be in the effluent?

Note: You **do not** need to fill in this section if you are applying for a discharge of treated domestic sewage effluent of up to fifteen cubic metres (15m<sup>3</sup>) a day to ground, or up to twenty cubic metres (20m<sup>3</sup>) a day to surface water.

For all applications, whether to surface water, or onto or into ground you should still check to see if your discharge is likely to contain any of the substances listed in Horizontal Guidance H1 Environmental Risk Assessment Annex D, Appendix A and answer the relevant questions for your discharge below.

### 7a Are any of the substances listed in Horizontal Guidance H1 Environmental Risk Assessment Annex D, Appendix A likely to enter the sewerage system upstream of the discharge through any authorised or known inputs?

Yes ☒

No ☐

**7b Are any of the substances listed in Horizontal Guidance H1 Environmental Risk Assessment Annex D, Appendix A added to or present in the effluent as a result of the activities on the site?**

Yes ☒

No ☐

**7c Have any of the substances listed in Horizontal Guidance H1 Environmental Risk Assessment Annex D, Appendix A been detected in samples of the effluent or in the sewerage catchment upstream of the discharge?**

Yes ☐

No ☐

**7d Are there any other harmful or hazardous substances in your effluent not mentioned in Horizontal Guidance H1 Environmental Risk Assessment Annex D, Appendix A?**

Yes ☐

No ☒

**7e Have you answered yes to any of the above?**

No ☐ Go to section 7f

Yes ☒ You must give relevant details in Table 3 below.

Table 3						
Substance	Unit	Maximum concentration	Minimum concentration	Average concentration	Number of samples	Total or dissolved

You must also send us any information on samples that you may have. Tell us the reference for the sample information, below.

Document reference

See Table 4.1 of report 67096R1

**7f Give the maximum temperature of your discharge in degrees Celsius**

Ambient

**7g The maximum expected temperature change compared to the incoming water supply**

Increase in degrees Celsius

0

Decrease in degrees Celsius

0

## 8 Monitoring arrangements

**8a What is the national grid reference of the inlet sampling point?**

n/a

**8b What is the national grid reference of the effluent sample point?**

No change

**8c Do you have an Urban Waste Water Treatment Directive final effluent sampling point?**

Yes ☐ Please provide the national grid reference (for example, SJ 12345 67890)

No ☒

Note: If your effluent has a maximum volume of no more than 50 cubic metres a day you do not need to complete question 8d or 8e and you can move direct to 8f.

**8d What is the national grid reference of the flow monitoring point?**

**8e Does the flow monitor have an MCERTS certificate?**

Yes ☐ Please give the certificate number

No ☐

**8f Do you have a UV disinfection efficacy monitoring point?**

Yes ☐ Please provide the national grid reference (for example, SJ 12345 67890)

No ☒

**8g You should clearly mark on the plan the locations of any of the above that apply to this effluent**

Document reference

no change

## **9 Emissions of substances not controlled by emission limits management plan**

Note: You **do not** need to fill in this section if you are applying for a discharge of treated domestic sewage effluent of up to fifteen cubic metres (15m<sup>3</sup>) a day to ground, or up to twenty cubic metres (20m<sup>3</sup>) a day to surface water.

**9a Does your H1 - Environmental Risk Assessment show that emissions of substances not likely to be controlled by emission limits in your permit are an important issue?**

No ☒ Go to section 10

Yes ☐

**9b Have you got an emissions management plan which meets the requirements set out in guidance document 'How to comply'?**

No ☐

Yes ☒ Please send us your emissions management plan

Document reference

Section 4.4 of report 67096R1 & App.C

## **10 Design criteria**

Note: You do not need to fill in this section if you are applying for a discharge of treated domestic sewage effluent of up to fifteen cubic metres (15m<sup>3</sup>) a day to ground, or up to twenty cubic metres (20m<sup>3</sup>) a day to surface water.

**10a Sewer modelling report (for discharges of final effluent from a water company WwTW or intermittent sewage discharges)**

You must carry out sewer modelling following the guidance in 'Horizontal Guidance Note H1 Annex E – Surface Water Discharges (complex)'. Send us details of how the modelling was carried out and the outcome.

Document reference

n/a

**10b Discharges to lakes, estuaries, coastal waters or bathing waters**

You must carry out modelling following the guidance in 'H1 Risk Assessment Horizontal Guidance Note H1 Annex E – Surface Water Discharges (complex)'. Send us details of how the modelling was carried out and the outcome.

Document reference

n/a

**10c Discharges to non-tidal rivers**

You may need to carry out modelling following the guidance in 'H1 Risk Assessment Horizontal Guidance Note H1 Annex E – Surface Water Discharges (complex)'. Have you carried out any river quality modelling?

No

☐

Yes

☒

Send us details of how the modelling was carried out and the outcome.

Document reference

See Appendix D of Report 67096R1

### 10d Discharges to groundwater

You must carry out a groundwater quantitative risk assessment following the guidance in 'H1 Risk Assessment Horizontal Guidance Note H1 – Groundwater sections'. Send us details of how the modelling was carried out and the outcome.

For groundwater remediation schemes you must send us a site-specific remediation strategy which has been agreed with our (Natural Resources Wales) Geoscience Team.

Document reference

### 10e Environmental impact assessment

Yes

☐

Send us details of how the assessment was carried out and the outcome.

Document reference

No

☐

## 11 Where will the effluent discharge to?

### 11a tell us where the effluent discharges to.

Mark in Table 4 where this effluent discharges to and fill in the relevant questions and appendix or appendices.

You must use the name you gave to this effluent in answer to question 1b of this form when filling in your relevant appendix or appendices.

Table 4 – Where the effluent discharges to		
Receiving environment		Complete appendix
Non-tidal river, stream or canal	<input checked="" type="checkbox"/>	1
Tidal river, tidal stream, estuary or coastal waters	<input type="checkbox"/>	2
Lake or pond	<input type="checkbox"/>	3
Into land (for example, through a drainage system)	<input type="checkbox"/>	4
Onto land	<input type="checkbox"/>	5
Borehole or well	<input type="checkbox"/>	6

### 11b Is this effluent discharged through more than one outlet?

No

☒

Yes

☐

**You must give details of the circumstances under which each outlet would be used by this effluent, on a separate sheet, and tell us the reference below.**

Document reference

n/a

**You must clearly show each of the discharge points used by this effluent on your discharge point appendix/appendices and site plan.**

You must give us all the details we need for each of the discharge points used by this effluent.

Document reference

no change

## 12 More information from you

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

No ☒

Yes ☐ Please provide details and give us the reference for the document, below.

Document reference

## Appendix 1 – Discharges to non-tidal river, stream or canal

Answer all the questions below and enter the answers to questions 1, 2 and 3 in the table provided. Use a separate line for each effluent if more than one effluent discharges using this discharge point.

Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

**1 Give the discharge point a unique name For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)**

Outlet 1

**2 Give the national grid reference of the discharge point**

no change

**3 Give the name of the watercourse, canal or the main watercourse it is a tributary of if you know it**

Afon Conwy (no change)

**4 Is the discharge into a (tick an option)**

Non-tidal river ☒

Stream ☐

Canal ☐

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

Yes ☐ Give the national grid reference where the discharge enters the surface water sewer

No ☒

**6 Does the watercourse dry up for part of the year?**

Yes ☐

No ☒

Answers table			
Discharge point name (question 1)	National grid reference (question 2)	Name (question 3)	Name of effluent discharged through this discharge point (question 1b effluent form)
no change			

## **Appendix 2 – Discharges to tidal river, tidal stream, estuary or coastal waters**

Answer all the questions below and enter the answers to questions 1, 2 and 3 in the table provided. Use a separate line for each effluent if more than one effluent discharges using this discharge point.

Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

**1 Give the discharge point a unique name For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)**

**2 Give the national grid reference of the discharge point**

**3 Give the name of the tidal river, tidal stream, estuary or area of coastal water if you know it**

**4 Is the discharge into a (tick an option)**

Tidal river ☐

Tidal stream ☐

An estuary ☐

Coastal water ☐

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

Yes ☐ Give the national grid reference where the discharge enters the surface water sewer

No ☐

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

Yes ☐ Please explain, on a separate sheet, why the discharge cannot be made below this point  
Document reference

No ☐

**7 How is the effluent dispersed? For example, open pipe or diffuser system.**

If diffuser system you must answer question 8.

**8 Give details, on a separate sheet, of the design of the diffuser system**

Answers table			
Discharge point name (question 1)	National grid reference (question 2)	Name (question 3)	Name of effluent discharged through this discharge point (question 1b effluent form)

## Appendix 3 – Discharges to a lake or pond

if more than one effluent discharges using this discharge point.

Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

**1 Give the discharge point a unique name For example 'Outlet 1' (you must use this name to identify the discharge point on the plan)**

**2 Give the national grid reference of the discharge point**

**3 Give the name of the lake or pond if you know it**

**4 Select from the following table the type of lake or pond you will be discharging to and answer the relevant questions**

Type of lake or pond		Relevant questions
Lake or pond which does not discharge into a river or watercourse or another pond which discharges into a river or watercourse	<input type="checkbox"/>	Permit not required*
Lake or pond which does not discharge into a river or watercourse or another pond which discharges into a river or watercourse where you have had a notice served under paragraph 5 of Schedule 21 of the Environmental Permitting (England and Wales) Regulations 2016	<input type="checkbox"/>	5, 6, 7
Lake or pond which discharges into a river or watercourse	<input type="checkbox"/>	5, 6, 7
*Unless a Notice has been served under paragraph 5 of Schedule 21 of the Environmental Permitting (England and Wales) Regulations 2016		

**5 What is the surface area of the lake or pond (in square metres)?**

**6 What is the maximum depth of the lake or pond (in metres)?**

**7 What is the average depth of the lake or pond (in metres)?**

Answers table			
Discharge point name (question 1)	National grid reference (question 2)	Name (question 3)	Name of effluent discharged through this discharge point (question 1b effluent form)

## Appendix 4 – Discharges into land

Answer the questions below and enter the answers to questions 1 and 2 in the table provided. Use a separate line for each effluent if more than one effluent discharges using this discharge point.

Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

**1 Give the discharge point a unique name, For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)**

**2 Give the national grid reference of the discharge point**

**3 Is your infiltration system new or existing? (Existing means in place prior to 6/04/2010)**

New ☐ *Go to section 5*

Existing ☐ Answer question 4 and then answer questions 5 to 8 if you are able to.

**4a When was it built?**

**You must answer questions 5–8 if you are able to, if not leave them blank and go to question 9.**

**5 Is your infiltration system designed and built to British Standard 6297:2007 + A1:2008?**

Yes ☐

No ☐ Please provide details, on a separate sheet, of the design criteria used for your infiltration system

Document reference

**6 On what date did you carry out a percolation test and dig a trial hole in line with British Standard 6297:2007 + A1:2008?**

**7 What is your percolation value (Vp) result (seconds per millimetre)?**

You must show in the table below how you worked out the percolation value.

	Trial 1	Trial 2	Trial 3	Average
Hole 1				
Hole 2				
Hole 3				
Hole 4				

**8 What is the surface area of your infiltration system (in square metres)?**

**9 Mark the extent of the infiltration system on the plan you have provided .**

**10 Is any part of your infiltration system within 50 metres of a well, spring or borehole?**

No ☐

Yes ☐ Identify the location of the well spring or borehole on the plan you have provided.

**11 Is the well spring or borehole you have identified used to supply water?**

No ☐

Yes ☐ You must describe in the box below what the water supplied is used for.

12 Is any part of your infiltration system within 10 metres of a watercourse?

No ☐

Yes ☐

Identify the location of the watercourse on the plan you have provided for section 4 of part B6.

Answers table		
Discharge point name (question 1)	National grid reference (question 2)	Name of effluent discharged through this discharge point (question 1b effluent form)

## Appendix 5 – Discharges onto land

---

Answer all the questions below and enter the answers to questions 1 and 2 in the table provided. Use a separate line for each effluent if more than one effluent discharges using this discharge point.

Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

**1 Give the discharge point a unique name For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)**

--

**2 Give the national grid reference of the discharge point**

--

**3 In what type of area will the effluent is disposed of? (Tick an option)**

Unlined reed bed ☐

Unlined grass plot ☐

Unlined wetland ☐

Other ☐ Please specify in the box below.

--

**4 What is the surface area of the land used for your disposal (in square metres)?**

--

**5 Is any part of your infiltration system within 50 metres of a well, spring or borehole?**

No ☐

Yes ☐ Identify the location of the well spring or borehole on the plan you have provided.

**6 Is the well spring or borehole you have identified used to supply water?**

No ☐

Yes ☐ You must describe in the box below what the water supplied is used for.

--

**7 Is any part of your infiltration system within 10 metres of a watercourse?**

No ☐

Yes ☐ Identify the location of the watercourse on the plan you have provided.

<b>Answers table</b>		
Discharge point name (question 1)	National grid reference (question 2)	Name of effluent discharged through this discharge point (question 1b effluent form)

## **Appendix 6 – Discharges to a borehole or well (or other deep structure such as a mineshaft)**

Answer all the questions below. Use a separate line for each effluent if more than one effluent discharges using this discharge point.

Remember, when linking your effluent to a discharge point you must use the name you gave to your effluent in answer to question 1b in the effluent form.

### **1 The discharge point name**

Give the discharge point a unique name. For example, 'Outlet 1' (you must use this name to identify the discharge point on the plan)

### **2 The national grid reference of the discharge point**

### **3 Is the discharge to ground via a (tick an option)**

Well ☐

Borehole ☐

Other deep structure ☐

Please give details in the box below.

### **4 Total depth of the borehole or well**

What is/or will be the total depth of the borehole or well (in metres) below ground or other reference level (please specify the reference level you are using)?

### **5 Is the borehole or well or structure already constructed?**

Yes ☐

No ☐

### **6 To what depth is the borehole or well or structure sealed with unperforated linings or casing (in metres) below your reference level?**

### **7 Is any part of your discharge within 50 metres of another well, spring or borehole?**

No ☐ *Go to section 9*

Yes ☐ You must identify the location of the well, spring or borehole on the plan you have provided.

### **8 Is the other well, spring or borehole you have identified used to supply water?**

No ☐

Yes ☐ You must describe what the water supplied is used for.

### **9 Does the borehole or well or structure into which you are intending to make your discharge intermittently or permanently contain standing water?**

No ☐ *Go to section 11*

Yes ☐

**10 If your discharge falls into any of the following groups of activities please tick the appropriate box. If not just leave blank.**

- Injection of water containing substances resulting from the operations for exploration and extraction of hydrocarbons or mining activities ☐
- Reinjection of pumped groundwater from mines and quarries or associated with the construction or maintenance of civil engineering works (includes the treatment and reinjection of contaminated groundwater for the purposes of remediation) ☐
- Injection of natural gas or liquefied petroleum gas for storage purposes ☐
- Construction, civil engineering and building works and similar activities on or in the ground (for example discharge arising from the grouting of old mineshafts) ☐
- Discharges of small quantities of substances for scientific purposes for characterisation, protection (including use of substances as tracers) or remediation of groundwater, where such activities are not eligible for a registered exemption ☐
- The artificial recharge or augmentation of a body of groundwater for the purposes of groundwater management ☐
- Reinjection of pumped groundwater used for geothermal purposes (including ground source heat systems) ☐

**11 What is the highest level the standing water reaches in the borehole or well or structure (in metres) below your reference level?**

# Application for an environmental permit:

## Part F2 – Charging for discharges (C for D) charges and declarations

### Fill in this part for applications for water discharge and point source groundwater discharge activities only.

Please check that this is the latest version of the form available from our website.

**For applications for water discharge and point source groundwater discharge activities you need to fill in part F2 instead.**

Please read through this form and the guidance notes that came with it. All relevant guidance documents can be found

on our website.

#### Contents

- 1 Working out charges
- 2 Water discharge activity and groundwater point source discharges
- 3 Payment
- 4 The Data Protection Act 1998
- 5 Confidentiality and national security
- 6 Application checklist
- 7 Declaration

## 1 Working out charges (you must fill in this section)

You have to submit an application fee with your application.

You can find out the charge by looking at our current environmental permitting charging scheme. This can be found on our 'How we regulate you' webpages.

Please remember that the charges are revised on 1 April each year and that there is an annual subsistence charge to cover the costs we incur in the ongoing regulation of the permit.

**Table 1 – Working out charges**

Type of application	Water discharge activity			
Summary of charges				
Type of water discharge activity or groundwater activity	Standard or reduced charge	Number of activities at this charge rate	Charge for each facility (£)	Charges due (£)
Treated domestic sewage	Std	1	£885	£885
Other charges				
Ground source hearing and colling system scheme (water resources charge)				
Total charges due				£885

## 2 Water discharge activity and groundwater activity point source discharges

The application charge is a fixed charge, although two rates exist: standard and reduced. The reduced application charge is applicable where the effluent is:

- sewage effluent where the proposed volume is five cubic metres or less per day;
- sewage effluent which contains trade effluent or other matter where the proposed volume is five cubic metres or less per day;
- trade effluent from cooling or heat exchange where the proposed volume is ten cubic metres or less per day;

- surface water not containing trade effluent;
- site drainage;
- effluent or substance discharged or disposed onto or into land where the proposed volume is five cubic metres or less per day and discharge is on not more than six days per year or any such equivalent disposal.

The standard application charge applies in all other situations.

The charge applies to each discharge you will be making. Therefore two discharges of sewage effluent of five cubic metres a day will attract two reduced rate charges.

Please contact us, for details of current reduced and standard application charges.

### 3 Payment

#### 3a How do you want to pay?

Tick an option below to show how you will pay.

- |                                         |                                     |                  |
|-----------------------------------------|-------------------------------------|------------------|
| Electronic transfer (for example, BACS) | <input checked="" type="checkbox"/> | Go to section 3b |
| Credit or debit card                    | <input type="checkbox"/>            | Go to section 3c |
| Cheque                                  | <input type="checkbox"/>            | Go to section 3d |
| Postal order                            | <input type="checkbox"/>            | Go to section 3d |

#### 3b Paying by electronic transfer

If you choose to pay by electronic transfer use the following information to make your payment.

Company name: Natural Resources Wales

Company address: Income Dept., PO BOX 663, Cardiff, CF24 0TP

Bank: RBS

Address: National Westminster Bank Plc, 2 ½ Devonshire Square, London, EC2M 4BA

Sort code: 60-70-80

Account number: 10014438

#### Reference number

You can use any reference number but we prefer the number to be 'EPR' followed by the first five letters of your organisation name followed by a four-digit number.

For example, for a company named Joe Bloggs Ltd, the reference number might be EPRJOEBLOGGS0001. (Remember you can use any four-digit number at the end.)

The reference number you will provide will appear on our bank statements so we can check your payment. We may need to contact your bank to make sure the reference number is quoted correctly.

You should also email your payment details and payment reference number to [banking.team@naturalresourceswales.gov.uk](mailto:banking.team@naturalresourceswales.gov.uk) / [banking.team@cyfoethnaturiolcymru.gov.uk](mailto:banking.team@cyfoethnaturiolcymru.gov.uk) or fax it to 0300 065 3001 and enter it in the space provided below.

BACS reference

EPR-Rhyd-y-Creiau01

Amount paid

£885

#### Making payments from outside the UK

These details have changed. If you are making your payment from outside the United Kingdom (which must be received in sterling), our IBAN number is GB70 NWBK6070 8010 0144 38 and our SWIFT/BIC number is NWBKGB2L.

If you do not quote your payment reference number, there may be a delay in processing your payment and application.

### 3c Paying by credit or debit card

If you are paying by credit or debit card, please fill in the separate form CC1.

You can download this from our website or you can ask for one of our customer service providers to send one by post. We will destroy your card details once we have processed your payment. We can accept payments by Visa, MasterCard or Maestro UK card only.

### 3d Paying by cheque or postal order

You should make cheques or postal orders payable to Natural Resources Wales and they should be marked 'A/c Payee'.

We will not accept post-dated cheques (cheques with a future date written on them).

Cheque/ postal order number

Amount paid

## 4 The Data Protection Act 1998 and General Data Protection Regulations

We, the Natural Resources Body for Wales (hereafter "Natural Resources Wales"), will process the information you provide so that we can:

- deal with your application;
- make sure you keep to the conditions of the licence, permit or registration;
- process renewals; and
- keep the public registers up to date.

We may also process or release the information to:

- offer you documents or services relating to environmental matters;
- consult the public, public organisations and other organisations (for example, the Health and Safety Executive, local authorities, the emergency services, the Department for Environment, Food and Rural Affairs) on environmental issues;
- carry out research and development work on environmental issues;
- provide information from the public register to anyone who asks;
- prevent anyone from breaking environmental law, investigate cases where environmental law may have been broken, and take any action that is needed;
- assess whether customers are satisfied with our service, and to improve our service; and
- respond to requests for information under the Freedom of Information Act 2000 and the Environmental Information Regulations 2004 (if the Data Protection Act allows). We may pass the information on to our agents or representatives to do these things for us.

## 5 Confidentiality and national security

We will normally put all the information in your application on a public register of environmental information. However, we may not include certain information in the public register if this is in the interests of national security, or because the information is confidential

### Confidentiality

You can ask for information to be made confidential by enclosing a letter with your application giving your reasons. If we agree with your request, we will tell you and not include the information in the public register. If we do not agree with your request, we will let you know how to appeal against our decision, or you can withdraw your application.

**Only tick the box below if you wish to claim confidentiality for your application.**

Please treat the information in my application as confidential

☐

Tick the box to confirm you have provided evidence to support your confidentiality claim and give us the document reference, below.

☐

Document reference

### National security

You can tell the Welsh Ministers that you believe including information on a public register would not be in the interests of national security.

You must enclose a letter with your application telling us that you have told the Welsh Ministers and you must still include the information in your application. We will not include the information in the public register unless the Welsh Ministers decides that it should be included.

You can find guidance on national security in 'Core Environmental Permitting Guidance' published by Defra and available via the Environment Agency website <http://www.environment-agency.gov.uk>.

**You cannot apply for national security via this application.**

## 6 Application checklist (you must fill in this section)

Tell us about the supporting evidence and information you have sent with this application.

### Application fee

You must submit the correct application fee in line with our current charging scheme. Tick the box to say you have included the correct fee.



List all the documents you have included in Table 2. Please see the guidance notes for examples on how to complete the checklist.

**If the relevant information for a question forms part of a larger document, please specify the relevant section(s) of the document.** This will speed up the process of checking your application and making decisions.

If necessary, continue on a separate sheet and tell us the reference you have given the document below.

Document reference

See accompanying Part F2 checklist

Table 2 – application checklist		
Question reference	Document title/ reference	Document section

## 7 Declaration

**You must read this section before making the declaration and sending your form to us.**

**For transfer applications - Both you and the person receiving the permit must make the declaration.**

Section 7d must be completed by the current holder *and* Section 7e must be completed by the proposed new holder.

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 send in 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.

#### **7a Are you signing the form on behalf of a relevant person?**

If you are *not* a relevant person, but want to sign the application on their behalf, you must include confirmation that you can do this.

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

☐

#### **7b Does your application include a standard facility?**

If your application includes a standard facility, you also need to confirm that you are able to meet all relevant criteria of the standard rule set/sets for which you are applying.

I confirm that my standard facility will fully meet the rules that I have applied for.

☐

#### **7c Does your application include ecological survey information?**

If your application includes ecological survey information, please see the guidance notes on part F1 and tick the box below to confirm that you have no issue with us using information from any ecological survey you have supplied with your application.

I confirm I am happy for the ecological survey information I have supplied to be used as set out in the guidance.

☐

#### **7d Declaration**

**If you're transferring the permit, the current holder or holders should sign this section of the declaration, and the proposed new holder or holders of the permit, should sign the declaration in section 7e.**

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

Sam

Last name

Karuhanga

On behalf of (if relevant)

Field Studies Council

Today's date

06/08/2019

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	<input type="text"/>	<input type="text"/>
First name	<input type="text"/>	
Last name	<input type="text"/>	
On behalf of (if relevant)	<input type="text"/>	
Today's date	<input type="text"/>	

#### **7e Declaration for the person or persons *receiving* the permit (transfers only)**

The persons 'receiving the permit' is the proposed new permit holder.

Note: If you cannot trace a person or persons holding the permit you may be able to transfer the permit without their declaration (in section 7d above). Please contact us to discuss this and supply evidence in your application to confirm you are unable to trace one or all of the permit holders.

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	<input type="text"/>	<input type="text"/>
First name	<input type="text"/>	
Last name	<input type="text"/>	
On behalf of (if relevant)	<input type="text"/>	
Today's date	<input type="text"/>	

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	<input type="text"/>	<input type="text"/>
First name	<input type="text"/>	
Last name	<input type="text"/>	
On behalf of (if relevant)	<input type="text"/>	
Today's date	<input type="text"/>	

<b>Form reference</b>	<b>Document reference</b>	<b>Location</b>
Part C2, Q1a	Pre-application discussions	Section 1.3 of Report 67096R1 and Appendix B of same
Part C2, Q2b	Non-technical summary	Section 2 of Report 67096R1
Part C2, Q3d	Environmental Management System	See Appendix C of Report 67096R1
Part C2, Q6	Environmental risk assessment	Section 4 of Report 67096R1
Part C6, Q3b	Why no discharge to sewer	Section 1.5 of Report 67096R1
Part C6, Q4f	Discharge volumes	Appendix E of Report 67096R1
Part C6, Q4f	Effluent discharge quality	Appendix E of Report 67096R1
Part C6, Q7, Table 3	Effluent discharge quality	Table 4.1 of Report 67096R1
Part C6, Q9b	Emissions management	Section 4.4 of Report 67096R1 & Appendix C
Part C6, Q10b	H1 Risk assessment	Appendix D of Report 67096R1
Part F2, Q6	Application checklist	(this sheet)

# Appendix B

## Pre-application discussions

**From:** Raynor-Evans, Katrin <[Katrin.Raynor-Evans@cyfoethnaturiolcymru.gov.uk](mailto:Katrin.Raynor-Evans@cyfoethnaturiolcymru.gov.uk)>  
**Sent:** 12 October 2018 15:28  
**To:** Ben Young <[b.young@field-studies-council.org](mailto:b.young@field-studies-council.org)>  
**Subject:** RE: Permit EPR/XB3590HS

Hi Ben

Sorry for the delay in replying. I've been on leave...

If you wish to vary the permit you will need to fill in Part A, C2, C6 and F2. There will also be a fee of £885.

We have used British Flows and Loads for many years to determine the flows so I am not sure either why the specialists wish to double your discharge volume. If you proceed with the variation it will also push the annual charge into a higher charge bracket.

I am happy to discuss this further if you wish.

Thank you

Katrin

---

**Katrin Raynor-Evans BSc (Hons) MSc FRAS FRGS**

Swyddog Trwyddedu/Permitting Officer  
Adnoddau Dŵr/Water Quality Permitting  
Cyfoeth Naturiol Cymru: Natural Resources Wales

Ty Cambria, 29 Newport Road, Cardiff CF24 0TP

03000 654 427

[www.cyfoethnaturiol.cymru](http://www.cyfoethnaturiol.cymru) / [www.naturalresources.wales](http://www.naturalresources.wales)

**Yn falch o arwain y ffordd at ddyfodol gwell i Gymru trwy reoli'r amgylchedd ac adnoddau naturiol yn gynaliadwy.**

**Proud to be leading the way to a better future for Wales by managing the environment and natural resources sustainably.**

Croesewir gohebiaeth yn Gymraeg a byddwn yn ymateb yn Gymraeg, heb i hynny arwain at oedi

Correspondence in Welsh is welcomed, and we will respond in Welsh without it leading to a delay



**From:** Ben Young <[b.young@field-studies-council.org](mailto:b.young@field-studies-council.org)>  
**Sent:** 10 October 2018 13:12  
**To:** Raynor-Evans, Katrin <[Katrin.Raynor-Evans@cyfoethnaturiolcymru.gov.uk](mailto:Katrin.Raynor-Evans@cyfoethnaturiolcymru.gov.uk)>  
**Subject:** RE: Permit EPR/XB3590HS

Hi Kat,

I hope you're well?

We've had a chat with our environmental compliance specialists recently and they feel that we ought to be licensed for a discharge of 25.5m3 as per the specification of the new sewage plant and British Water flows and loads sizing.

Again, nothing has changed on site since 2015 - same number of beds / occupants, no new buildings and no change in use - although if nothing has changed, I'm wondering why we need a plant that's capable of processing a lot more than the old one! Perhaps the old system / license wasn't based on British Water flow rates?

It's hard to tell, because it was probably a 20 to 30+ year old system so the terms of the license may have rolled over from an old method of calculation? But regardless, for optimum responsibility we'd like to ensure the new plant and license are matched, so the intention is to make a bespoke application for a maximum discharge at the higher amount.

Would it be Part C2 we'd need to complete and send across to you? We're on a standard license at the moment, but intending to vary things to a bespoke. This seems like the most appropriate form to use?

If you could us me know that'd be very much appreciated, and in the meantime, if there's anything you'd like us to do to manage things until NRW have seen the information and approved / commented on the new load, please don't hesitate to let us know.

Best wishes, and thanks a lot,



**Ben Young**  
**Property Project Manager** Field Studies Council (FSC)

t: 01743 852100 (switchboard) | 07491 992647 (direct)  
a: FSC Head Office, Preston Montford, Shrewsbury, Shropshire. SY4 1HW  
w: [www.field-studies-council.org](http://www.field-studies-council.org)



Field Studies Council is a charity registered in England and Wales (No. 313364) and in Scotland (No. SC039870).  
A non-profit making company limited by guarantee. Registered in England No. 412621. Registered Office: Head Office, Preston Montford, Shrewsbury, Shropshire. SY4 1HW.

**From:** Raynor-Evans, Katrin <[Katrin.Raynor-Evans@cyfoethnaturiolcymru.gov.uk](mailto:Katrin.Raynor-Evans@cyfoethnaturiolcymru.gov.uk)>

**Sent:** 02 May 2018 14:43

**To:** Ben Young <[b.young@field-studies-council.org](mailto:b.young@field-studies-council.org)>

**Subject:** RE: Permit EPR/XB3590HS

Hi Ben

Thanks for the email. If your volume isn't actually changing then there is no need to apply for a variation to the permit. You can apply for the admin variation to get the treatment method updated. The link is below:

<http://naturalresources.wales/permits-and-permissions/water-discharges/discharges-to-surface-water-and-groundwater/change-vary-an-existing-permit/?lang=en>

I have just looked at the modelling for the discharge which was carried out in 2015 when the original permit was issued. The standards used for the modelling were 20mg/l for Ammonia and 40mg/l for BOD. You could use these figures should you wish to monitor those standards. We usually set suspended solids as 20mg/l.

I hope this helps!

Kat

**Enw/Name :** Katrin Raynor-Evans BSc (Hons) MSc FRAS FRGS

**Teitl/Title:** Swyddog Trwyddedu/Permitting Officer

**Adnoddau Dŵr:** Water Quality Permitting

**Cyfarwyddiaeth Tystiolaeth, Polisi a Thrwyddedu /** Evidence, Policy and Permitting Directorate

**Cyfoeth Naturiol Cymru /** Natural Resources Wales

**Ffôn/ Tel:** 03000 654 427

**E-bost/Email:** [Katrin.raynor-evans@cyfoethnaturiolcymru.gov.uk](mailto:Katrin.raynor-evans@cyfoethnaturiolcymru.gov.uk)

**Yn falch o arwain y ffordd at ddyfodol gwell i Gymru trwy reoli'r amgylchedd ac adnoddau naturiol yn gynaliadwy.**

**Proud to be leading the way to a better future for Wales by managing the environment and natural resources sustainably.**



**Croesewir gohebiaeth yn y Gymraeg a'r Saesneg** Correspondence welcomed in both Welsh and English.

# Appendix C

## Environmental Management System

# **Rhyd-y-Creuau**

## **Sewage Treatment Plant Environmental Management System**

**Field Studies Council  
FSC Head Office  
Preston Montford  
Shrewsbury  
Shropshire  
SY4 1HW**

**Issue 1 – Rev 0  
Date: August 2018**

# Contents

1. **Type of treatment plant**
2. **Monitoring and maintenance checklist**
3. **Monitoring and maintenance record**
4. **Training requirement checklist and record sheets**
5. **Accident and incident records.**
6. **Complaints form** for recording complaints about your site from members of the public.
7. **Accident management plan**, including;
  - A – Key site and emergency contacts
  - B – Preventing accidents and what to do if they happen
8. **Further help**

## **1. Type of treatment plant**

<b>Type of treatment plant</b>	<p>The sewage treatment system comprises a below ground packaged water treatment plant located approx. 50m west of the main field centre within a fenced enclosure. The plant accepts and processes foul water drainage from the field centre and Bron Rhedyn cottages on the opposite side of the A470 main road, all of which is FSC owned and occupied.</p> <p>Processed water discharges to the River Conwy via an underground pipe that runs direct to the centre of the river complete with 2 No. inspection / sampling chambers; one in the main field, and one on the outlet of the plant.</p>
<b>Make</b>	Marsh Industries (Kettering, Northamptonshire)
<b>Model</b>	Marsh Ultra Polylok 135 PE
<b>Installation Date</b>	July / August 2018
<b>Who installed it?</b>	Carwyn Evans Construction Conwy
<b>Capacity</b>	<p>42.54 m3 total volume, comprising:</p> <ul style="list-style-type: none"><li>- 2.13 m3 primary hemisphere</li><li>- 17.98 m3 primary settlement tank</li><li>- 11.71 m3 first biological zone</li><li>- 4.68 m3 second biological zone</li><li>- 3.91 m3 secondary settlement tank</li><li>- 2.91 m3 final hemisphere</li></ul>

## **2. Monitoring and Maintenance Checklist**

You should understand whether the system is operating normally and what routine checks to make, for example is the power on, is the motor running?

You should know how to restart the system if there is a power or other failure.

Further checks should be made on the quality of the final effluent from the system; is the effluent clear, is there debris visible at the outlet?

The supplier of the system and maintenance contractor can advise on checks specific to the plant in question, and these checks should be made and recorded on a weekly basis as a minimum.

You should record the findings of these checks even if nothing is wrong.

You should have a service and maintenance contract in place with a contractor that is trained and competent to maintain and service the treatment plant. If you have a contract in place a copy of the contract shall be kept with this document.

Service frequency should be in accordance with the manufacturer's instructions. Sewage treatment plants require periodic desludging and you should have a contract in place to undertake this when required.

Guidelines around maintenance are provided overleaf.

Item	How often (tick the appropriate box)					
	Day	Week	Month	3 Months	6 Months	Year
<b>Manufacturer's maintenance plan:</b>						
Ensure that a maintenance plan as required by the manufacturer's instructions is followed and that any required works are carried out by an appropriately qualified person, inclusive the following:						
Air blower air filter cleaning:				✓		
Air blower operational checks:		✓				
Desludging of settlement tanks at least every six months, or as specified by the manufacturer, as follows:  Year 1: de-sludge every 3 months, and record extracted volumes to assess the need to extend or reduce extraction frequency.  Year 2 onwards: de-sludge to suit occupancy, at least every 6 months.				✓		
Routine water sample at the outlet of the treatment plant to assess for correct function.						✓
<b>Internal maintenance staff maintenance plan:</b>						
Check the discharge point for any adverse visible effect* on the receiving water, the bed of the watercourse, or any plants or animals within the watercourse. If you observe any adverse visible effect you must contact an appropriately qualified contractor to investigate and correct the fault.			✓			
Check to see if the treatment plant appears to be operating effectively, for example no unusual noises, odours and so on. If it is not operating correctly you must contact an appropriately qualified contractor to investigate and remediate the cause. Weekly checks outlined overleaf.		✓				
Ensure that the sample point is accessible at all times. If it's not accessible ensure access is reinstated.			✓			
Arrange any upcoming specialist servicing of the plant to the aforementioned frequencies, and maintain records of all checks, observations, desludging and service visits.		✓				

\* Adverse visible effect means dead or distressed fish, other animals or plants in the vicinity of the discharge point, noticeable deposit of solid material; growth of sewage fungus (a grey growth covering rocks or other objects in the receiving water body); or noticeable discolouration of the water flow by the discharge.

### **3. Monitoring and Maintenance Record**

Maintain a record of the checks and actions that are laid out within this document along with any additional checks or observations made in relation to sewage movement and discharge associated with the site. All actions should be recorded in the provided record sheets. Make sure you have adequate on-site cover to complete any checks and servicing in the absence of key staff.

Required maintenance actions for maintenance personnel:

#### **Weekly:**

- Remove and dispose of sanitary products and other non-biodegradable waste from the plant.
- Hose off any growth/fungus from the internal sides of the tank chambers.
- Check the operation and correct function of the air blowers and aeration system.
- Carry out checks on the overall function of the treatment system.
- Check local area around the tank for any adverse visible effect on soil, vegetation and wildlife.
- Check for normal operation of drain-ways via the local manholes and ensure no blockages etc.
- Arrange any specialist servicing that may be due.
- Update the EMS schedules to record any checks, actions and observations that are made.

#### **Monthly:**

- Remove all vegetation from the area around the water treatment plant.
- Cut grass around tanks and access areas, keep the sample point and surrounding areas accessible.
- Check the discharge at the outlet of the system for any adverse effects on water and wildlife.

#### **Every 3 Months:**

- Arrange desludging of the plant and record extracted volumes for ongoing assessment of frequencies to suit changing operations or occupancies.
- Clean the aerator filters as per the manufacturer's maintenance instructions.

#### **Annually:**

- Take a water sample at the sample point and assess for correct treatment in accordance with NRW permit via laboratory analysis.
- Arrange a specialist contractor service visit to assess correct function of the system and overhaul the associated plant.

## 4.1 Training requirements checklist

Staff involved with the sewage treatment system need to understand what it is designed to do, what its limitations are and the restrictions on its use (for example chemicals which may prevent it from working properly). Anyone that inspects, maintains or repairs the system must be adequately trained and competent to do so.

Because there is a permit to discharge to a watercourse, you should designate one person from each section to have the knowledge outlined in the table and write their name in the training record, along with the name and contact details of the service company and other contractors that maintain the treatment plant. Persons appointed to carry out maintenance or checks will need to demonstrate they are trained to an adequate level and hold the necessary skills. It is often best to employ a specialist contractor to undertake maintenance tasks.

Personnel	TRAINING REQUIRED (This shows who needs which training. Fill in training record when training is completed.)													
	Environmental awareness					Maintenance/operations					Accidents and emergency			
	Aware of local sensitive sites for example nature conservation area	Read and understand what is required to comply with the discharge permit	Understands how the environment may be harmed by the system			Understand purpose / operation of treatment plant and normal / abnormal operation	Compatibility of chemicals for example cleaning products with the treatment plant	Frequency of required maintenance operations	Frequency of desludging		Fire procedure	Spill response procedure	Flood procedure (where applicable)	Failure of services (for example power cut), how to restart the plant
Maintenance / Grounds Officers	√	√	√			√*	√	√*	√*		√	√	N/A	√
Management Representative	√	√	√			√*	√	√*	√*		√	√	N/A	√
Education Representative	√	√	√				√				√			
Hospitality and Catering Representative	√	√	√				√				√			
Visiting Residents	√		√				√				√			
Permanent Residents	√		√				√				√			

\* The specialist contractor would also be able to support these aspects.

## **4.2 Training / Awareness Record**

Record any training that you, your staff or visitors receive in relation to the operation of your sewage treatment plant.

<b>Name: Tony Godbert</b>		<b>Role: Maintenance Officer</b>	
Action	Date due	Date done	Comments
Read and understood responsibilities required by the permit	August 2019		Revised permit awaited from NRW
Aware of purpose of sewage treatment plant and restrictions on its use	August 2019		Read and understood British Water guide to users of sewage treatment systems
Awareness of local sensitive sites	August 2019		The River Conwy has a number of SSSI designations – all are upstream of the outflow. However the Conwy Estuary is SSSI and in parts a Special Area of Conservation
Aware of types of chemicals which may cause the treatment plant to malfunction, and how the system may harm the environment	August 2019		Bleach, oil based paint, turps etc. not to be put down drains. Effective maintenance and monitoring required
Read and understand the manufacturers literature in relation to service, operation and maintenance	August 2019		Frequency of tasks, safe and effective maintenance of components, start-up and shutdown procedures
Understand fire and spill response procedures; what to do in the event of an emergency or detection of a malfunction leading to ineffective operation of the plant or potential leakage	August 2019		Familiarity with FSC OCoPs in relation to EMS, sewage plant management, emergency and environmental procedures

Name: Andy Taylor		Role: Centre Manager	
Action	Date due	Date done	Comments
Read and understood responsibilities required by the permit	August 2019		Revised permit awaited from NRW
Aware of purpose of sewage treatment plant and restrictions on its use	August 2019		Read and understood British Water guide to users of sewage treatment systems
Awareness of local sensitive sites	August 2019		The River Conwy has a number of SSSI designations – all are upstream of the outflow. However the Conwy Estuary is SSSI and in parts a Special Area of Conservation
Aware of types of chemicals which may cause the treatment plant to malfunction, and how the system may harm the environment	August 2019		Bleach, oil based paint, turps etc. not to be put down drains. Effective maintenance and monitoring required
Read and understand the manufacturers literature in relation to service, operation and maintenance	August 2019		Frequency of tasks, safe and effective maintenance of components, start-up and shutdown procedures
Understand fire and spill response procedures; what to do in the event of an emergency or detection of a malfunction leading to ineffective operation of the plant or potential leakage	August 2019		Familiarity with FSC OCoPs in relation to EMS, sewage plant management, emergency and environmental procedures

Name: Elwyn Edwards		Role: Regional Hospitality and Catering Manager	
Action	Date due	Date done	Comments
Read and understood responsibilities required by the permit	August 2019		Revised permit awaited from NRW
Aware of purpose of sewage treatment plant and restrictions on its use	August 2019		Read and understood British Water guide to users of sewage treatment systems
Awareness of local sensitive sites	August 2019		The River Conwy has a number of SSSI designations – all are upstream of the outflow. However the Conwy Estuary is SSSI and in parts a Special Area of Conservation
Aware of types of chemicals which may cause the treatment plant to malfunction, and how the system may harm the environment	August 2019		Bleach, oil based paint, turps etc. not to be put down drains. Effective maintenance and monitoring required
Read and understand the manufacturers literature in relation to service, operation and maintenance	August 2019		Frequency of tasks, safe and effective maintenance of components, start-up and shutdown procedures
Understand fire and spill response procedures; what to do in the event of an emergency or detection of a malfunction leading to ineffective operation of the plant or potential leakage	August 2019		Familiarity with FSC OCoPs in relation to EMS, sewage plant management, emergency and environmental procedures

Name: Jemma Middlehurst		Role: Regional Education Team Leader	
Action	Date due	Date done	Comments
Read and understood responsibilities required by the permit	August 2019		Revised permit awaited from NRW
Aware of purpose of sewage treatment plant and restrictions on its use	August 2019		Read and understood British Water guide to users of sewage treatment systems
Awareness of local sensitive sites	August 2019		The River Conwy has a number of SSSI designations – all are upstream of the outflow. However the Conwy Estuary is SSSI and in parts a Special Area of Conservation
Aware of types of chemicals which may cause the treatment plant to malfunction, and how the system may harm the environment	August 2019		Bleach, oil based paint, turps etc. not to be put down drains. Effective maintenance and monitoring required

Name: All residents		Role: Staff and visitors	
Action	Date due	Date done	Comments
Aware of purpose of sewage treatment plant and restrictions on its use	Staff inductions and visitor bookings / arrivals	Weekly and as required	Relay restrictions on the usage of the on-site sewage system and products that will inhibit its function
Awareness of local sensitive sites	Staff inductions and visitor bookings / arrivals	Weekly and as required	The River Conwy has a number of SSSI designations – all are upstream of the outflow. However the Conwy Estuary is SSSI and in parts a Special Area of Conservation – raise awareness of environmental implications amongst all staff and visitors
Aware of types of chemicals which may cause the treatment plant to malfunction, and how the system may harm the environment	Staff inductions and visitor bookings / arrivals	Weekly and as required	Bleach, oil based paint, turps etc. not to be put down drains. Harmful products not to be brought to or used on site

## **5. Accident and Incident Record**

You should record any accidents, other incidents or near misses relating to the operation of the treatment plant, for example untreated sewage being released into a river or stream, or faults with the system that inhibit sewage treatment. The form overleaf should also be used to record health and safety incidents.

An example of an accident could be a contractor severing an electricity cable and cutting off the power supply or a spillage of bleach or other chemical that may stop the treatment plant from working properly.

“Other incidents” covers impacts on the environment that are not accidents, such as failing to maintain the treatment plant adequately, leading to breakdown and untreated sewage being discharged into a river or stream, or vandals causing damage to the treatment plant.

If you are concerned that the final effluent is having an adverse impact on the environment or in the event of any leak or spillage, you should call your local Natural Resources Wales (NRW) office:

**Natural Resources Wales**

**Tel: 0300 065 3000 (24 hours per day)**

**(Option 1: Welsh, Option 2: English)**

Incident Report Form:

Date and time of the incident	
What happened, what was it about?	
Was anyone else aware of this – other witnesses? If so who?	
What / who caused it?	
What action did you take to fix the problem?	
What have you done to make sure that it does not happen again?	
Was there any significant pollution – for example: untreated sewage being discharged into a drain, river or stream, or local ground? Yes / No If yes, what pollution occurred?	
If there was significant pollution then you must notify NRW as soon as possible. Have you done so?	Yes/No/not applicable At what time did you phone? NRW Incident reference no.
You must also write or send an email to confirm this to the local office (see your accident management plan for the address). Have you done so?	Yes/No/not applicable
Print your name, sign and date.	

## **6. Complaints Record**

You may receive complaints about the treatment plant. They may or may not be justified but you should keep a record of any complaints received. This can be used as evidence that you've taken appropriate action to rectify any issues if complaints are made about your site.

Who made the complaint?	Name:	
	Address	
	Phone No	
Date and time they made the complaint		
What happened, what was it about?		
Was anyone else aware of this – other neighbours or your staff? If so who?		
Assuming the complaint relates to your site, what was the problem, what went wrong? If you can't find the source of the problem you should contact a suitably qualified person to do so and record who this was, and what the problem was.		
What action did you take to fix the problem?		
What have you done to make sure that it does not happen again?		
Was there any significant pollution – for example: untreated sewage being discharged into a drain, river or stream? Yes / No If yes, what pollution occurred?		
If there was significant pollution then you must notify NRW as soon as possible. Have you done so?	Yes/No/not applicable At what time did you phone? EA Incident reference no.	
You must also write or send an email to confirm this to the local office (see your accident management plan for the address). Have you done so?	Yes/No/not applicable	
Print your name, sign and date:		

## **7. Accident Management Plan**

### **A - Key Site and Emergency Contacts**

This table contains information and contacts you may need in an emergency.

<b>SITE DETAILS</b>		
Address: FSC Rhyd-y-creuau, The Drapers Field Centre, Betws-y-coed, Conwy		
Postcode: LL24 0HB		
Site access grid reference: SH 80311 57076		
<b>SITE CONTACTS</b>	Office Hours (specify)	Out of hours
Owner: Field Studies Council	Mon-Fri 9:00-5:00 01768 779601	Duty phone : 01690 713029
Centre Manager: Andy Taylor	Mon-Fri 9:00-5:00 01690 710494	
Maintenance supervisor: Tony Godbert	Mon-Sun 8:30-4:30 01690 713029	
<b>EMERGENCY SERVICES</b>	Office Hours	Out of hours
Emergency:	999 or 112 (on mobiles)	999 or 112 (on mobiles)
Medical:	A&E: 01244 365000	01244 365000
Police:	0300 330 0101 or 101	0300 330 0101 or 101
Fire:	01690 710520	01690 710520
<b>REGULATORS</b>	Office Hours	Out of hours
Health and Safety Executive (HSE):	<b>0845 345 0055</b>	<b>0151 922 9235</b>
Local Authority: Conwy Council	01492 574000	01492 575337
Natural Resources Wales – Pollution line	0300 065 3000	0300 065 3000
<b>UTILITY AND KEY SERVICES</b>	Office Hours	Out of hours
Treatment plant maintenance contractor:	TBC	TBC
Sludge removal contractor: David Hughes	01492 593793	N/A
Electricity supplier: Scottish Power	0800 0015400	0330 101 0400
Electrician: Falconer Electrical	01766 771890	01766 771890
Plumber: Penrhynside Heating Services	01492 545054	07831 169638
<b>OTHER KEY CONTACTS</b>	Office Hours	Out of hours
FSC head office:	01743 852100	
Adjacent landowners: Foelas Estate	No numbers available	No numbers available
Neighbours: Foelas Estate	No numbers available	No numbers available
Specialist advisors: Marsh Industries	01933 654582	

## **B - Preventing accidents and what to do if they happen**

The table overleaf contains examples of things that could go wrong and harm the environment. The list covers many of the things that could go wrong but system managers should constantly check if they can identify anything else that could cause a problem and add it to the list.

The table describes what should be done to reduce the chances of each possible accident happening. It also describes what should be done if the worst actually happens.

Ensure you are committed to the table's contents as it forms part of the Environmental Management System which is a condition of the discharge permit and must be complied with. If it refers to using equipment such as spill-kits, make sure these are available.

Finally, make sure that relevant personnel know about the plan, where to find it, and what it contains. It's important that they know how to prevent accidents and what to do if there is one.

Keep the spill and fire response procedures with this plan. The links to the pollution prevention guidelines, which can be found in further information, give advice on how to produce spill response procedures.

You will need to review the plan and record this at least every 4 years, or as soon as practicable after an accident, and constantly identify whether changes to the plan should be made.

Possible accident	What would the harm to the environment be?	How do we reduce the chances of it happening?	What to do if it happens
Spillages			
Overloading of treatment plant. Due to inadequate sized plant being installed.	Contamination of land, drains, groundwater and watercourses.	If any changes are to take place to the property then ensure the treatment works is still large enough, before the works commence.	Follow the spill response procedure.
Spillages during desludging of the treatment plant		Ensure pipe integrity has been tested prior to use and contractor/operator observes correct desludging process	It describes what to do in the event of a spill and where the kit is kept.
Slow seepage of liquids from the treatment plant.  Slow seepage can be less noticeable than 'spills'.		Integrity of the treatment plant will be tested. Treatment plant will be maintained in line with manufacturer's instructions	If necessary call out a contractor to undertake repairs.
Failure of Plant or Equipment			
Possible accident	What would the harm to the environment be?	How do we reduce the chances of it happening?	What to do if it happens?
Harmful substances/objects entering the treatment plant, for example cleaning chemicals, garden pesticides, oils/fat/grease, nappies, sanitary products	Damage to the treatment plant and/or death of micro-organisms with possible subsequent contamination of groundwater and watercourses.	Read and understand the manufacturer's guidance on what can be put down drains, sinks and toilets. Inform all residents and guests of the restrictions.  Have a list of chemicals which are safe to use with the plant in a designated spot and ensure everyone who uses or purchases chemicals has access to and is aware of the list.	Follow spill response procedure.  Arrange for a drainage contractor to come and fix the works.  Stop using the works, if possible or arrange for the sewage to be tankered away to an appropriately licensed site.
Failure of Services			
Due to failure of supply; electricity, supply and of sewerage system.  Due to utility supply being struck and broken / cut.	Death of micro-organisms with possible subsequent contamination of groundwater and watercourses.	Provision of alarm on the treatment works to warn operators of power failure.  Provision of back-up generator should the works require constant electricity to ensure adequate treatment.	Use emergency generator (if available). Call out utility company for urgent call out.
Failure of Containment			
Failure of containment facilities due to land movement, impact, corrosion and so on.	Contamination of land, drains, groundwater and watercourses.	Provision of secondary containment for hazardous liquids.  Inspection of primary and secondary containment facilities.	Spill response procedure as described above.

Possible accident	What would the harm to the environment be?	How do we reduce the chances of it happening?	What to do if it happens
<b>Vandalism</b>			
Unauthorised entry and tampering or malicious damage to property, plant and equipment.	Possible contamination of land, drains, groundwater and watercourses.	Ensure treatment plant is secure	Immediately secure the plant, arrange any necessary repairs, follow the spill response procedure if a spill has occurred.

## **8. Further help**

Further information on preventing pollution can be found in our Pollution Prevention Guidelines available on our web site at [www.environment-agency.gov.uk/ppg](http://www.environment-agency.gov.uk/ppg)

PPG 4. Treatment and disposal of sewage where no foul sewer is available.

PPG 21, incident response planning. It could be useful in preparing a spill response plan.

The below link is to the British Water website. British Water is the trade association for the water industry supply chain. Here you can find accredited service engineers to maintain and repair your treatment plant and in the publications section there is guidance on how to use and operate a small sewage treatment plant.

<http://www.britishwater.co.uk/>

MAGIC is a web based interactive map service to bring together environmental information from across government. It will be useful in finding local sensitive sites.

<http://www.magic.gov.uk/>

# Appendix D

## H1 database assessment tool (electronic)

# Appendix E

## Treatment plant specification and loading calculations

Table 1 - Daily loadings for the site over a 24-hour period							
Waste Source		Flow [l/day]		BOD [g/day]		Ammonia [g/day]	
Description	No.	Per Head	Total	Per Head	Total	Per Head	Total
Residential Guests	120	150	18000	60	7200	8	960
Staff	20	90	1800	38	760	5	100
Total for this Schedule			19800		7960		1060

Table 2 - Flows and influent concentrations	
Biochemical oxygen demand [mg/l]	402
Ammonia concentration [mg/l]	53.5
Average hydraulic flow [l/hour]	825
Peak flow [l/hour]	2475

Table 3 - Effluent standard and desludge period	
Biochemical oxygen demand [mg/l]	20
Total suspended solids [mg/l]	30
Ammonia concentration [mg/l]	20
Desludge frequency [days]	90

Table 4 - Three bespoke tank options to suit loadings						
Marsh Ultra Polylok 135PE Tank Sizes						
Tank Chambers	Chamber Length [m]			Volume [m <sup>3</sup> ]		
	1.9m	2.5m	3m	1.9m	2.5m	3m
Primary Hemisphere	0.45	0.65	0.85	0.85	2.13	4.01
Primary Settlement Tank	6.79	3.66	2.28	19.26	17.98	16.10
First Biological Zone	4.13	2.39	1.66	11.71	11.71	11.71
Second Biological Zone	1.65	0.95	0.66	4.68	4.68	4.68
Final Settlement Tank	1.38	0.80	0.60	3.91	3.91	4.24
Final Hemisphere	0.45	0.65	0.85	0.85	2.13	4.01
Total	14.85	9.10	6.90	41.26	42.54	44.75

↑  
Recommended

↑  
Recommended

Table 5 -Media and Air Requirements		
Biological Zones	Media Required [m <sup>2</sup> ]	Total Air Requirements [m <sup>3</sup> /day]
First Biological Zone	712.30	1069.06
Second Biological Zone	307.25	858.49

Table 6 - Price and payment terms for Marsh Ultra Polylok 135PE	
Ultra Polylok 135PE Gravity Outlet	