

Gwynedd Council

# Ffridd Rasus Landfill Gas Engine

Application to Vary Environmental Permit



November 2016

Amec Foster Wheeler Environment  
& Infrastructure UK Limited



## Report for

Medwyn Williams  
Senior Waste Manager  
Gwynedd Council  
Municipal Services  
Cibyn Industrial Estate  
Caernarfon  
Gwynedd  
LL55 2BD

## Main contributors

Charlotte Pearson

## Issued by

Charlotte Pearson

## Approved by

Julian Bromhead

## Amec Foster Wheeler

Canon Court  
Abbey Lawn  
Abbey Foregate  
Shrewsbury SY2 5DE  
United Kingdom  
Tel +44 (0) 1743 342 000

Doc Ref. 28587rr1011i2

h:\projects\28587 lan llwyn isaf & ffridd rasus consultancy  
support\docs\environmental\ffridd rasus gas engine\ep  
variation application\rr1011i2.docx

## Copyright and non-disclosure notice

The contents and layout of this report are subject to copyright owned by Amec Foster Wheeler (© Amec Foster Wheeler Environment & Infrastructure UK Limited 2016) save to the extent that copyright has been legally assigned by us to another party or is used by Amec Foster Wheeler under licence. To the extent that we own the copyright in this report, it may not be copied or used without our prior written agreement for any purpose other than the purpose indicated in this report. The methodology (if any) contained in this report is provided to you in confidence and must not be disclosed or copied to third parties without the prior written agreement of Amec Foster Wheeler. Disclosure of that information may constitute an actionable breach of confidence or may otherwise prejudice our commercial interests. Any third party who obtains access to this report by any means will, in any event, be subject to the Third Party Disclaimer set out below.

## Third-party disclaimer

Any disclosure of this report to a third party is subject to this disclaimer. The report was prepared by Amec Foster Wheeler at the instruction of, and for use by, our client named on the front of the report. It does not in any way constitute advice to any third party who is able to access it by any means. Amec Foster Wheeler excludes to the fullest extent lawfully permitted all liability whatsoever for any loss or damage howsoever arising from reliance on the contents of this report. We do not however exclude our liability (if any) for personal injury or death resulting from our negligence, for fraud or any other matter in relation to which we cannot legally exclude liability.

## Management systems

This document has been produced by Amec Foster Wheeler Environment & Infrastructure UK Limited in full compliance with the management systems, which have been certified to ISO 9001, ISO 14001 and OHSAS 18001 by LRQA.

## Document revisions

No.	Details	Date
1	Draft report	21 November 2016
2	Final report	24 November 2016

# Contents

---

<b>1.</b>	<b>Introduction</b>	<b>2</b>
1.1	Background	2
1.2	Purpose of this Report	2
1.3	Types of Variation	2
1.4	Pre Application Discussions with the Environment Agency	2
1.5	Planning Permission	3
1.6	Environmental Permit Application Form	3
<b>2.</b>	<b>The Proposed Development</b>	<b>4</b>
2.1	Current situation	4
2.2	Development description	4
2.3	Best Available Techniques	4
2.4	Air Quality	4
2.5	Proposed Changes to the Permit	5

---

Figure 1.1	Site Layout
Figure 2.1	Electricity Supply Arrangement
Figure 2.2	Layout of Proposed Development

---

Appendix A	Pre Application Discussions
Appendix B	Application Forms
Appendix C	Micro Turbine Specification
Appendix D	Air Quality Screening Assessment

---

# 1. Introduction

## 1.1 Background

Gwynedd Council (the 'Council') has appointed Amec Foster Wheeler to prepare and submit an application to Natural Resources Wales (NRW) to vary Environmental Permit (EP) EPR/GP3330BY for Ffridd Rasmus Landfill site to utilise the landfill gas generated in Areas 2 and 3 of the landfill. The Council proposes to replace the current landfill gas flare with a 50kW gas micro turbine at the site. The landfill gas flare will be retained as a backup management technique.

## 1.2 Purpose of this Report

An Environmental Permit is required under the Environmental Permitting (England and Wales) Regulations 2010 (as amended) (EPR) to operate a range of activities including both complex and simple industrial processes and waste management activities. The Environmental Permitting Regulations originally came into force in England and Wales on 6 April 2008. The EPR 2010 have replaced the Environmental Permitting (England and Wales) Regulations 2007. The current amendment to the Environmental Permitting Regulations is EPR 2015.

The Environmental Permitting (England and Wales) Amendment Regulations 2013 transposed the requirements of the Industrial Emissions Directive (IED). The Directive combines and updates a number of older EU Directives including the Integrated Pollution Prevention and Control (IPPC) which applies to the current permitted activities at Ffridd Rasmus Landfill Site.

A variation to the existing Environmental Permit is required as Gwynedd Council propose to install a 50kW micro turbine at the site which will be a directly associated activity to the landfill. Whilst landfill gas from Area 2 will be utilised as well as Area 3, Area 2 is regulated under the conditions of Environmental Permit EPR/PP3294FJ and the micro turbine will be located adjacent to the flare in the compound within the footprint of the EP for Areas 1 and 3 (EPR/GP3330BY) and therefore the variation application is required for this permit only. The location of the micro turbine within the wider site is shown on Figure 1.1.

## 1.3 Types of Variation

Depending on the proposed change to a permit, it is necessary to apply for one of the following variations:

- ▶ an administrative only change (free of charge);
- ▶ a minor technical change;
- ▶ a normal variation, or
- ▶ a substantial variation (applies to installations or mining waste facilities).

Natural Resources Wales (NRW) has agreed that the proposed changes will be classed as a normal variation. The fee is an OPRA based charge, based on the existing OPRA profile (NRWV1) for the EP. A cheque for £4,332.00 is enclosed.

## 1.4 Pre Application Discussions with the Environment Agency

Pre application discussions have been carried out between Amec Foster Wheeler and Stuart Ross, Regulatory Officer, Industry Regulation Team, Natural Resources Wales via email. NRW has confirmed a variation application can be made and should be supported by an Air Quality Assessment. Copies of the correspondence are provided at Appendix A.



## 1.5 Planning Permission

A pre application consultation has been submitted to the North Wales Minerals and Waste Planning Service on the 15 November 2016.

## 1.6 Environmental Permit Application Form

The following application forms have been completed and are provided in Appendix B:

Form EPA (Part A - about you);

Form EPC (Part C2 - General - varying a bespoke permit);

Form EPC (Part C4 - Variation to a bespoke installation permit); and

Form EPF (Part F1 - Opra, charges, declarations and so on)

## 2. The Proposed Development

### 2.1 Current situation

Currently landfill gas generated in Areas 2 and 3 of the landfill site is managed by an active extraction system which draws the gas away from the landfill site through a network of pipes and delivers it to a gas delivery main which in turn connects to a 500 m<sup>3</sup>/hr gas flare unit on the site where it is burnt off. This is a directly associated activity to the landfill as specified in Table S1.1 of Environmental Permit EPR/GP3330BY.

### 2.2 Development description

The proposed development will use the gas normally burnt off in the flare to generate electricity. It will comprise a single functional unit consisting of a micro turbine engine - a combustion turbine that includes a compressor, combustor, turbine, generator and a recuperator with a rated output of around 50kW. Other features of the unit include a digital power electronic operating system, remote monitoring and diagnostics and an integrated exhaust stack. The unit is housed in an acoustically-clad container and the total height including the stack is 2.65m. Further details of the micro turbine are provided at Appendix C.

Electricity produced by the micro turbine would be fed from the alternator via underground cables to the existing transformer at the Ffridd Rasus site. The transformer steps up the electrical voltage to 11kV, the level necessary for supply to the grid. This electricity supply arrangement is illustrated on Figure 2.1.

The proposed development will require a footprint of approximately 200m<sup>2</sup> and will be located concrete hard standing immediately adjacent to the existing landfill gas compound which will be extended to accommodate it. The layout of the proposed development is shown on Figure 2.2.

To ensure efficient operation of the micro turbine engine, it is proposed that it operates 24 hours a day, 7 days a week. The flare will act as a stand-by facility which will be operational intermittently when the micro turbine engine is out of commission for service or repair, or during excess gas production.

### 2.3 Best Available Techniques

The requirements of the Landfill Directive (1999/31/EC) are considered Best Available Techniques (BAT) for landfill and apply to the current permitted activities at Ffridd Rasus Landfill Site. The Directive requires not only that gas is collected from all landfills receiving biodegradable waste but also that the landfill gas must be treated and used. At present, gas produced at the landfill is burnt off within the enclosed flare stack. By installing a micro turbine at the site to utilise the landfill gas to produce electricity, the proposed development is considered BAT for landfill and is an improvement on the current situation.

### 2.4 Air Quality

The replacement of the landfill gas flare with the micro turbine will reduce emissions to air from the installation. The proposed development is designed to produce very clean emissions. The manufacturer's guide states the exhaust is clean and oxygen rich (approximately 18% O<sub>2</sub>), with very low levels of air pollutants.

A 'stage 1' air quality screening risk assessment for the micro turbine and the flare has been completed in support of the variation application and can be found at Appendix D.

The assessment has been produced using the Environment Agency guidance 'Air emissions risk assessment for your environmental permit' (dated 2 August 2016 - <https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit>) and in accordance with the guidance provides calculations of the Process Contribution (PC) for Nitrogen Dioxide (NO<sub>2</sub>) and Carbon Monoxide (CO) for both the gas engine and the flare. It has been assumed that the flare will be in operation for 1% of the time annually. The assessment demonstrates that emissions for both the micro turbine and the flare are well

within the short term and long term Process Contribution limits for Nitrogen Dioxide and Carbon Monoxide and can be screened out as insignificant.

## 2.5 Proposed Changes to the Permit

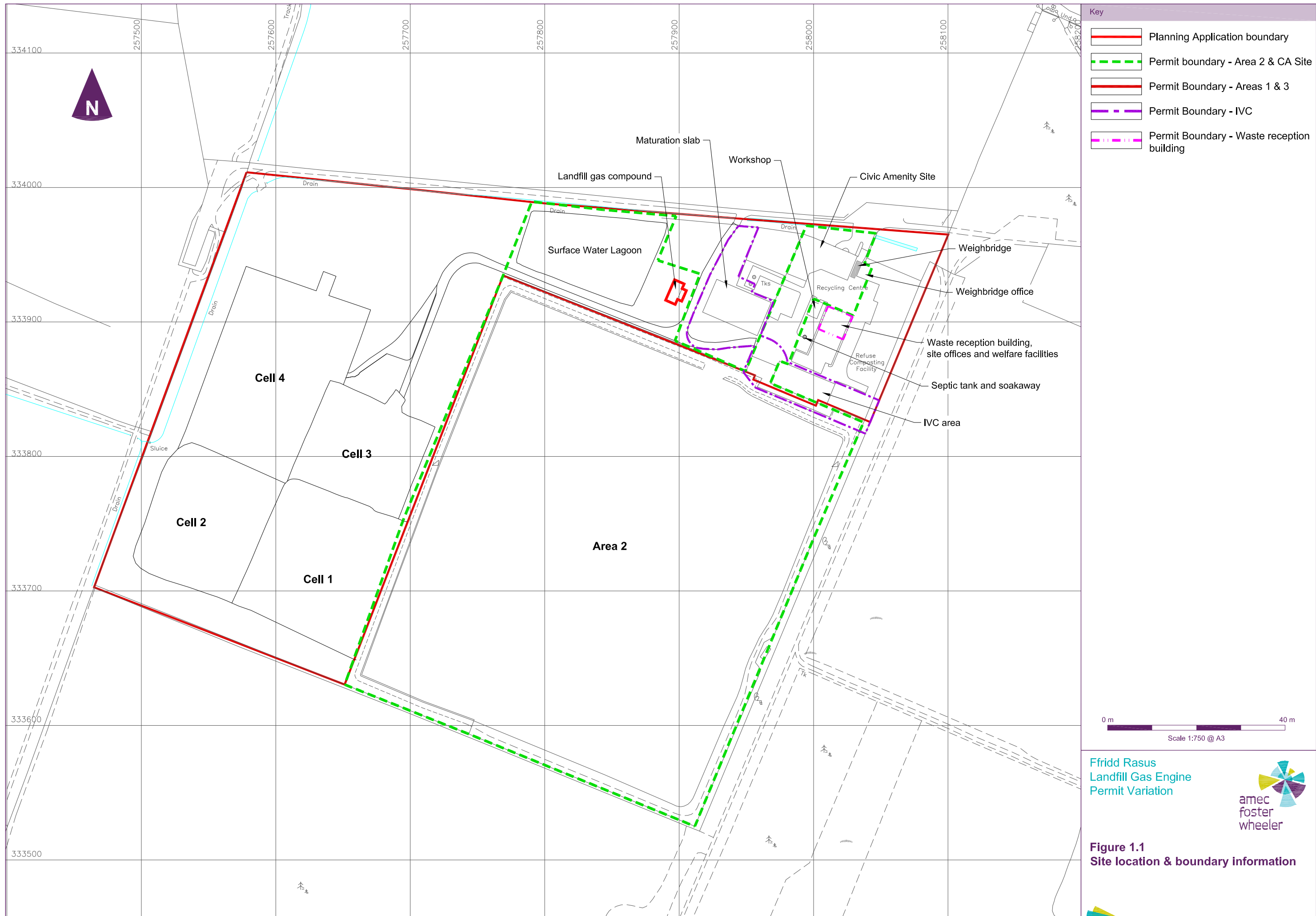
This variation application seeks to update EPR/GP3330BY to include the micro turbine and the utilisation of the landfill gas as a directly associated activity to the landfill. Specifically, the following sections of the permit will need amending:

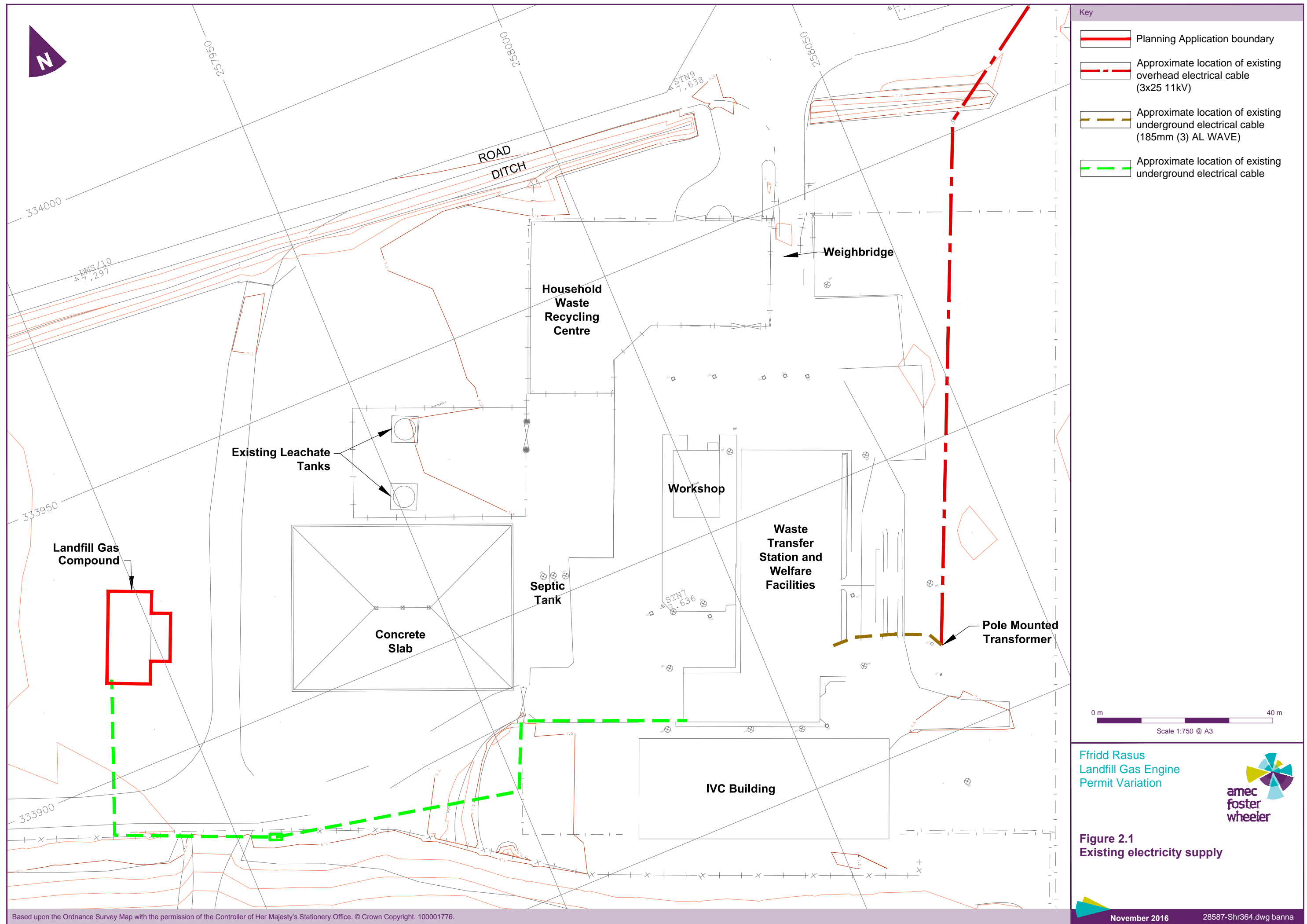
- ▶ Table S1.1 – addition of gas utilisation as a directly associated activity;
- ▶ Table 3.2 – add emission limits and monitoring requirements for the micro turbine in accordance with the requirements Environment Agency guidance LFTGN08 'Guidance for monitoring landfill gas engine emissions'.

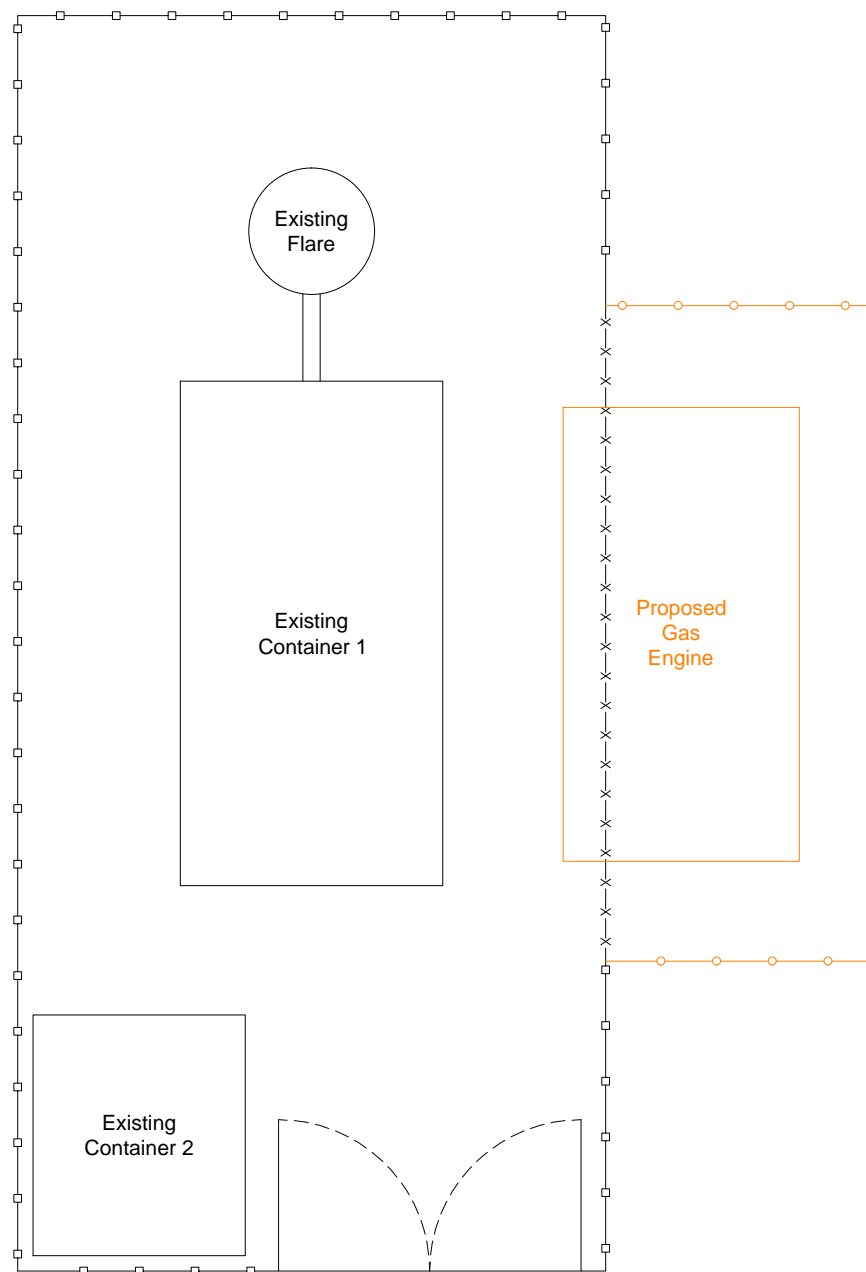


# Figures

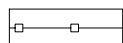




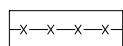




#### Key



Existing palisade fence



Existing palisade fence to be removed



Proposed palisade fence

Not to Scale

Ffridd Rasus  
Landfill Gas Engine  
Permit Variation



**Figure 2.2**  
Indicative plan view of landfill gas compound



# Appendix A

## Pre Application Discussions

**From:** Ross, Stuart <Stuart.Ross@cyfoethnaturiolcymru.gov.uk>  
**Sent:** 05 October 2015 11:49  
**To:** Pearson, Charlotte  
**Cc:** MedwynWilliams@gwynedd.gov.uk; charlotte.pearson  
**Subject:** RE: Ffridd Rasus & Llwyn Isaf Landfill Sites - LFG engines

Thanks Charlotte

Your proposed approach looks sensible to me but I will double check with our permitting team and get back to you.

Regards

Stuart

---

**From:** Pearson, Charlotte [mailto:charlotte.pearson@amecfw.com]  
**Sent:** 05 October 2015 11:43  
**To:** Ross, Stuart <Stuart.Ross@cyfoethnaturiolcymru.gov.uk>  
**Cc:** MedwynWilliams@gwynedd.gov.uk; charlotte.pearson <PEARC@entecuk.co.uk>  
**Subject:** Ffridd Rasus & Llwyn Isaf Landfill Sites - LFG engines

Hello Stuart

Gwynedd Council are looking to replace the existing LFG flares at Llwyn Isaf and Ffridd Rasus with LFG engines. This will require variation to the existing permits for both site. Given that the engines will have a positive environmental impact and there are no receptors close to the engines at either of the sites, Amec Foster Wheeler has advised Gwynedd Council that it is likely that these will be normal variations rather than a substantial variations and that these applications can be supported by a simple Air Quality screening tool to demonstrate the engines will not have a negative impact.

I would be grateful if you could liaise with the Permitting Team to confirm NRW is happy with this approach? If you need any further information, please give me a call. Many thanks.

Regards

**Charlotte Pearson**

Senior Consultant – Waste Management, Amec Foster Wheeler  
Canon Court East, Abbey Lawn, Abbey Foregate, Shrewsbury, SY2 5DE, United Kingdom  
T +44 743 342 000 D +44 743 342 062  
[Charlotte.pearson@amecfw.com](mailto:Charlotte.pearson@amecfw.com) amecfw.com



This message is the property of Amec Foster Wheeler plc and/or its subsidiaries and/or affiliates and is intended only for the named recipient(s). Its contents (including any attachments) may be confidential, legally privileged or otherwise protected from disclosure by law. Unauthorised use, copying, distribution or disclosure of any of it may be unlawful and is strictly prohibited. We assume no responsibility to persons other than the intended named recipient(s) and do not accept liability for any errors or omissions which are a result of email transmission. If you have received this message in error, please notify us immediately by reply email to the sender and confirm that the original message and any attachments and copies have been destroyed and deleted

from your system. This disclaimer applies to any and all messages originating from us and set out above. If you do not wish to receive future unsolicited commercial electronic messages from us, **please forward this email to: [unsubscribe@amecfw.com](mailto:unsubscribe@amecfw.com) and include “Unsubscribe” in the subject line.** If applicable, you will continue to receive invoices, project communications and similar factual, non-commercial electronic communications.

Please click <http://amecfw.com/email-disclaimer> for notices and company information in relation to emails originating in the UK, Italy or France.

**From:** Ross, Stuart <Stuart.Ross@cyfoethnaturiolcymru.gov.uk>  
**Sent:** 03 November 2015 11:40  
**To:** Pearson, Charlotte  
**Subject:** RE: Ffridd Rasus & Llwyn Isaf Landfill Sites - LFG engines

Charlotte

Apologies for the delay in getting back to you.

Adding the gas engine(s) would be a normal variation to add them as a Directly Associated Activity (DAA).

Regards

Stuart

---

**From:** Pearson, Charlotte [mailto:charlotte.pearson@amecfw.com]  
**Sent:** 05 October 2015 11:43  
**To:** Ross, Stuart <Stuart.Ross@cyfoethnaturiolcymru.gov.uk>  
**Cc:** MedwynWilliams@gwynedd.gov.uk; charlotte.pearson <PEARC@entecuk.co.uk>  
**Subject:** Ffridd Rasus & Llwyn Isaf Landfill Sites - LFG engines

Hello Stuart

Gwynedd Council are looking to replace the existing LFG flares at Llwyn Isaf and Ffridd Rasus with LFG engines. This will require variation to the existing permits for both site. Given that the engines will have a positive environmental impact and there are no receptors close to the engines at either of the sites, Amec Foster Wheeler has advised Gwynedd Council that it is likely that these will be normal variations rather than a substantial variations and that these applications can be supported by a simple Air Quality screening tool to demonstrate the engines will not have a negative impact.

I would be grateful if you could liaise with the Permitting Team to confirm NRW is happy with this approach? If you need any further information, please give me a call. Many thanks.

Regards

**Charlotte Pearson**

Senior Consultant – Waste Management, Amec Foster Wheeler  
Canon Court East, Abbey Lawn, Abbey Foregate, Shrewsbury, SY2 5DE, United Kingdom  
T +44 743 342 000 D +44 743 342 062  
[Charlotte.pearson@amecfw.com](mailto:Charlotte.pearson@amecfw.com) amecfw.com



This message is the property of Amec Foster Wheeler plc and/or its subsidiaries and/or affiliates and is intended only for the named recipient(s). Its contents (including any attachments) may be confidential, legally privileged or otherwise protected from disclosure by law. Unauthorised use, copying, distribution or disclosure of any of it may be unlawful and is strictly prohibited. We assume no responsibility to persons other than the intended named recipient(s) and do not accept liability for any errors or omissions which are a result of email transmission. If you have received this message in error, please notify us immediately by

reply email to the sender and confirm that the original message and any attachments and copies have been destroyed and deleted from your system. This disclaimer applies to any and all messages originating from us and set out above. If you do not wish to receive future unsolicited commercial electronic messages from us, **please forward this email to: [unsubscribe@amecfw.com](mailto:unsubscribe@amecfw.com) and include “Unsubscribe” in the subject line.** If applicable, you will continue to receive invoices, project communications and similar factual, non-commercial electronic communications.

Please click <http://amecfw.com/email-disclaimer> for notices and company information in relation to emails originating in the UK, Italy or France.



**From:** Ross, Stuart <Stuart.Ross@cyfoethnaturiolcymru.gov.uk>  
**Sent:** 21 November 2016 10:12  
**To:** Pearson, Charlotte  
**Subject:** FW: Ffridd Rasus & Llwyn Isaf Landfill Sites - LFG engines

Hi Charlotte,

Apologies for the delay in getting back to you.

Please use the updated guidance found at  
<https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit#dispersion-factor-landfill-gas-engines-flares-or-capped-areas>

The gas engine emission limit value should comply with relevant landfill gas engine guidance.

Regards,

Stuart

---

**From:** Pearson, Charlotte [<mailto:Charlotte.Pearson@amecfw.com>]  
**Sent:** 08 November 2016 11:24  
**To:** Ross, Stuart <[Stuart.Ross@cyfoethnaturiolcymru.gov.uk](mailto:Stuart.Ross@cyfoethnaturiolcymru.gov.uk)>  
**Cc:** charlotte.pearson <[PEARC@entecuk.co.uk](mailto:PEARC@entecuk.co.uk)>  
**Subject:** RE: Ffridd Rasus & Llwyn Isaf Landfill Sites - LFG engines

Hello Stuart

Further to the email below, Gwynedd Council has now instructed Amec Foster Wheeler to prepare an application to vary the permit for Ffridd Rasus Landfill to install landfill gas engines at the site. As stated previously we will prepare a simple Air Quality screening tool in accordance with EA guidance (attached) to demonstrate the engines will not have a negative impact. I would be grateful if you could let me know if NRW have any objection to this approach.

Kind regards

**Charlotte Pearson**

Senior Consultant – Waste Management, Amec Foster Wheeler  
Canon Court East, Abbey Lawn, Abbey Foregate, Shrewsbury, SY2 5DE, United Kingdom  
T +44 1743 342 000 D +44 1743 342 062  
[Charlotte.pearson@amecfw.com](mailto:Charlotte.pearson@amecfw.com) amecfw.com

Please note my normal working hours are Monday, Tuesday and Thursday 9:00 -17:30

---

**From:** Ross, Stuart [<mailto:Stuart.Ross@cyfoethnaturiolcymru.gov.uk>]  
**Sent:** 03 November 2015 11:40  
**To:** Pearson, Charlotte <[charlotte.pearson@amec.com](mailto:charlotte.pearson@amec.com)>  
**Subject:** RE: Ffridd Rasus & Llwyn Isaf Landfill Sites - LFG engines

Charlotte

Apologies for the delay in getting back to you.

Adding the gas engine(s) would be a normal variation to add them as a Directly Associated Activity (DAA).

Regards

Stuart

---

**From:** Pearson, Charlotte [<mailto:charlotte.pearson@amecfw.com>]

**Sent:** 05 October 2015 11:43

**To:** Ross, Stuart <[Stuart.Ross@cyfoethnaturiolcymru.gov.uk](mailto:Stuart.Ross@cyfoethnaturiolcymru.gov.uk)>

**Cc:** [MedwynWilliams@gwynedd.gov.uk](mailto:MedwynWilliams@gwynedd.gov.uk); charlotte.pearson <[PEARC@entecuk.co.uk](mailto:PEARC@entecuk.co.uk)>

**Subject:** Ffridd Rasus & Llwyn Isaf Landfill Sites - LFG engines

Hello Stuart

Gwynedd Council are looking to replace the existing LFG flares at Llwyn Isaf and Ffridd Rasus with LFG engines. This will require variation to the existing permits for both site. Given that the engines will have a positive environmental impact and there are no receptors close to the engines at either of the sites, Amec Foster Wheeler has advised Gwynedd Council that it is likely that these will be normal variations rather than a substantial variations and that these applications can be supported by a simple Air Quality screening tool to demonstrate the engines will not have a negative impact.

I would be grateful if you could liaise with the Permitting Team to confirm NRW is happy with this approach? If you need any further information, please give me a call. Many thanks.

Regards

**Charlotte Pearson**

Senior Consultant – Waste Management, Amec Foster Wheeler

Canon Court East, Abbey Lawn, Abbey Foregate, Shrewsbury, SY2 5DE, United Kingdom

T +44 743 342 000 D +44 743 342 062

[Charlotte.pearson@amecfw.com](mailto:Charlotte.pearson@amecfw.com) amecfw.com



This message is the property of Amec Foster Wheeler plc and/or its subsidiaries and/or affiliates and is intended only for the named recipient(s). Its contents (including any attachments) may be confidential, legally privileged or otherwise protected from disclosure by law. Unauthorised use, copying, distribution or disclosure of any of it may be unlawful and is strictly prohibited. We assume no responsibility to persons other than the intended named recipient(s) and do not accept liability for any errors or omissions which are a result of email transmission. If you have received this message in error, please notify us immediately by reply email to the sender and confirm that the original message and any attachments and copies have been destroyed and deleted from your system. This disclaimer applies to any and all messages originating from us and set out above. If you do not wish to receive future unsolicited commercial electronic messages from us, **please forward this email to: [unsubscribe@amecfw.com](mailto:unsubscribe@amecfw.com) and include "Unsubscribe" in the subject line.** If applicable, you will continue to receive invoices, project communications and similar factual, non-commercial electronic communications.

Please click <http://amecfw.com/email-disclaimer> for notices and company information in relation to emails originating in the UK, Italy or France.



## Appendix B

### Application Forms

Application Form Part C-3 Table 2 cont.d/

Table 2 - Emissions (releases)				
Installation Name		Ffridd Rasus Landfill		
Point Source Emissions to Air				
Emission Point Reference and Location	Source	Parameter	Quantity Unit	Unit
Landfill gas micro turbine engine	Gas utilisation plant	Oxides of Nitrogen	500	mg/m3
		CO	1400	mg/m3
		Total VOCs	100	mg/m3

# Application for an environmental permit:

## Part A – About you

<p><b>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.</b></p> <p>Please check that this is the latest version of the form available from our website.</p> <p>Please read through this form and the guidance notes that come with it. All relevant guidance documents can be found on our website.</p> <p>Where you see the term 'document reference' on the form,</p>	<p>give the document references and send the documents with the application form when you've completed it.</p> <p>Contents</p> <p>1 About you</p> <p>2 Applications from individuals</p> <p>3 Applications from organisations of individuals</p> <p>4 Applications from public bodies</p> <p>5 Applications from a registered company or other corporate body</p> <p>6 Your address</p> <p>7 Contact details</p>
---	--

### 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 checked="" type="checkbox"/> | <i>Go to section 4</i> |
| A registered company or other corporate body                | <input 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" value="Unitary authority"/>
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

	Cibyn Industrial Estate
	Caernarfon
Postcode	LL55 2BD
Telephone - mobile	
Telephone - office	
Email address	medwynwilliams@gwynedd.llyw.cymru

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	As above
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	Mrs
First name	Charlotte
Last name	Pearson
Address	Amec Foster Wheeler E&I UK Ltd
	Canon Court, Abbey Lawn
	Abbey Foregate

	Shrewsbury
Postcode	SY2 5DE
Telephone - mobile	
Telephone - office	01743 342 062
Email address	charlotte.pearson@anecfw.com

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

Same as the application contact in 7a	<input checked="" type="checkbox"/>
Title	
First name	
Last name	
Address	
Postcode	
Telephone - mobile	
Telephone - office	
Email address	

**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	Medwyn
Last name	Williams
Address	As 6a above



Postcode

Telephone - mobile

Telephone - office

Email address


# Application for an environmental permit:

## Part C2 – General: Varying a bespoke permit

<p><b>Fill in this part of the form, together with part A, the relevant parts of C3 to C7 and part F1 or F2.</b></p> <p>Please check that this is the latest version of the form available from our website.</p> <p><b>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.</b></p> <p><b>If you want to make an administrative change, you should complete form C0.5.</b></p> <p>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).</p>	<p>You do not need to resend any information from your original permit application.</p> <p>Please read through this form and the guidance notes that came with it. All relevant guidance documents can be found on our website.</p> <p><b>Contents</b></p> <ul style="list-style-type: none"> <li>1 About the permit</li> <li>2 About your proposed changes</li> <li>3 Your ability as an operator</li> <li>4 Consultation</li> <li>5 Supporting information</li> <li>6 Environmental risk assessment</li> <li>Appendix 1 – Low impact installation checklist</li> </ul>
--	--

### 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

Amec Foster Wheeler Report  
28587rr2011i2 Appendix A

#### 1b Permit number

Permit number this application relates to?

EPR/GP3330BY

#### 1c Site details

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

Site name

Ffridd Rasus Landfill Areas 1 & 3

Address

Morfa Road

Harlech

Gwynedd

Postcode

LL46 2UW

### 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

Amec Foster Wheeler Report  
28587rr1011i2 Section 2

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

This variation application seeks to update EPR/GP3330BY to include the micro turbine and the utilisation of the landfill gas as a directly associated activity to the landfill. Specifically, the following sections of the permit will need amending: Table S1.1 – addition of gas utilisation as a directly associated activity; Table 3.2 – add emission limits and monitoring requirements for the micro turbine in accordance with the requirements Environment Agency guidance LFTGN08 ‘Guidance for monitoring landfill gas engine emissions’.

## 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**

## 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

## 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 and waste operations only (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 and mining waste operations only)**

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

N/A Provision in place and unaffected

**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	<input checked="" type="checkbox"/>
BS 8555 (Phases 1–5)	<input type="checkbox"/>
Green Dragon	<input type="checkbox"/>
Own management system	<input type="checkbox"/>

**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 address risks from the proposed changes. ☐  
Tick the box to confirm you've done this and tell us the reference below.

Document reference

**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

N/A

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

No ☐

Yes ☐ Please name the harbour authority

N/A

##### 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

N/A

##### 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

Amec Foster Wheeler Report  
28587rr1011i2 Figures 1.1, 2.1 and 2.2

##### 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

Amec Foster Wheeler Report 28587rr1011i2 Appendix D
--

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

Intallation 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"/>		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.			No <input type="checkbox"/>
	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 C3 – Variation to a bespoke installation permit

<p><b>Fill in this part of the form, together with parts A, C2 and F1, if you are varying a bespoke permit for an installation.</b></p> <p>Please check that this is the latest version of the form available from our website.</p> <p>Please read through this form and the guidance notes that came with it. All relevant guidance documents can be found on our website.</p> <p>Contents</p> <p>1 What activities are you applying to vary?</p> <p>2 Emissions to air, water and land</p>	<p>3 Operating techniques</p> <p>4 Monitoring</p> <p>5 Environmental impact assessment</p> <p>6 Resource efficiency and climate change</p> <p>Appendix 1 – Specific questions for the combustion sector</p> <p>Appendix 2 – Specific questions for the chemical sector</p> <p>Appendix 3 – Specific questions for the intensive farming sector</p> <p>Appendix 4 – Specific questions for the clinical waste sector</p> <p>Appendix 5 – Specific questions for the hazardous and non-hazardous waste recovery and disposal sector</p> <p>Appendix 6 – Specific questions for the waste incineration sector</p> <p>Appendix 7 – Specific questions for the landfill sector</p>
--	---

### 1 About your activities

#### 1a Tell us about the activities you want to do.

Fill in Table 1a below with details of all the activities listed in schedule 1 of the Environmental Permitting Regulations (EPR) and all directly associated activities (DAAs) (in separate rows) that you propose to carry out at the installation.

Fill in a separate table for each installation you are applying for. Use a separate sheet if you have a long list and send it to us with your application form. Tell us the document reference.

Document reference

#### Notes to help you complete Table 1a:

**1** Quote the section number, part A1 or A2 or B, then paragraph and sub paragraph number as shown in part 2 of schedule 1 to the regulations.

**2** Use the description from schedule 1 of the regulations. Include any extra detail that you think would help to accurately describe what you want to do.

**3** By 'capacity', we mean:

- the total incineration capacity (tonnes every hour) for waste incinerators;
- the total landfill capacity (cubic metres) for landfills;
- the total treatment capacity (tonnes each day) for waste treatment;
- the total storage capacity (tonnes) for waste storage operations;
- the processing and production capacity for manufacturing operations; or
- the thermal input capacity for combustion activities.

**4** The R (recovery) and D (disposal) codes are as set out in Annex I and/or Annex II of the European Waste Framework Directive (as amended).

**5** Fill this in as a separate line for each directly associated activity and give an accurate description of any other activities associated with your schedule 1 activities.

**6** By 'total storage capacity', we mean the maximum amount of waste, in tonnes, you are able to store on the site at any one time.

**Table 1a – Types of activities**

**Important:** Put your main activity first, when listing all of the activities you want to do. Note; some questions only apply to activities involving the acceptance of waste.

Schedule 1 listed activities				For installations that take waste only		
Installation name	Schedule 1 references (See note 1)	Description of the Activity (See note 2)	Activity capacity (See note 3)	Annex I and Annex 2 (disposal and recovery) codes (See note 4)	Hazardous waste treatment capacity (if this applies) (See note 3)	Non-hazardous waste treatment capacity (if this applies) (See note 3)
Ffridd Rasus Landfill	S5.2 A1 (a)	The disposal of waste in a landfill	175,900.00	D1		

Directly associated activities (See note 5)	
Name of DAA	Description of the DAA (please identify the schedule 1 activity it serves)
Flaring of landfill gas	Flaring of landfill gas arising from the landfill in an appliance for disposal
Leachate Management	Storage of leachate arising from the landfill prior to disposal
Gas Utilisation	Utilisation of landfill gas for energy recovery
Water discharges to controlled waters	Discharge of site drainage from hardstanding in Area 1 to point of entry to controlled waters
Fuel Storage	Storage of fuel for operation of plant and equipment required to operate activities associated with the landfill

For installations that take waste		
	Total storage capacity of non-hazardous waste (See note 6)	-
	Total storage capacity of hazardous waste (See note 6)	-
	Annual throughput (tonnes each year)	0.00

## 1b Do you intend to accept waste as part of your activities?

No ☒ Go to section 2

Yes ☐ Tell us about the waste types you want to accept. See notes below.

For each line in Table 1a (including DAAs), fill in a separate document to list those types of waste you will accept onto the site for that activity. Give the List of Wastes catalogue code and description.

If you need to exclude wastes from your activity or facility by restricting the description, quantity, physical nature, hazardous properties, composition or characteristic of the waste, include these in the document. Send it to us with your application form.

If you want to accept any waste with a code ending in 99, you must provide more information and a full description in the document. You can use Table 1b as a template.

Document references

--

**Table 1b – Template example: types of waste accepted and restrictions**

Waste code	Description of waste
Example	Example
02 01 08*	Agrochemical waste containing dangerous substances
06 01 02*	Hydrochloric acid

## 2 Emissions to air, water and land

Fill in Table 2 below with details of the emissions that result from the operating techniques at each of your installations.

Fill in one table for each installation. You can use Table 2 as a template. Please provide the reference for each document.

Document references

Part C3 Additional Information

**Table 2 – Emissions (releases)**

Installation name		Ffridd Rasus Landfill		
Point source emissions to air				
Emission point reference and location	Source	Parameter	Quantity Unit	Unit
Landfill Gas Flare	Landfill gas	Oxides of Nitrogen	150	mg/m3
		CO	50	mg/m3
		Total VOCs	10	mg/m3
Point source emissions to water (other than sewers)				
Emission point reference and location	Source	Parameter	Quantity Unit	Unit
SW1	Site Drainage from Area 1 via interceptor	oil and grease	None visible	-
Point source emissions to sewers, effluent treatment plants or other transfers off site				

Emission point reference and location	Source	Parameter	Quantity Unit	Unit
None				
<b>Point source emissions to land</b>				
Emission point reference and location	Source	Parameter	Quantity Unit	Unit
None				

### 3 Operating techniques

#### 3a Technical standards

Fill in Table 3a for each activity at the installation you have referred to in Table 1a above, and list the relevant technical guidance note (TGN) or notes you are planning to use. If you are planning to use the standards set out in the TGN, there is no need to justify using them.

You must justify your decisions in a separate document if:

- there is no technical standard;
- the technical guidance provides a choice of standards; or
- you plan to use another standard.

This justification could include a reference to the Environmental Risk Assessment provided in section 6 of part C2 (General Bespoke Permit) of the application form. The documents in Table 3a should summarise the main measures you use to control the main issues identified in the H1 assessment or technical guidance.

For each of the activities listed in Table 3a, describe the type of operation and the options you have chosen for controlling emissions from your process.

Fill in one table for each installation. You can use Table 3a as a template. Please provide the reference for each document.

Document references

--

<b>Table 3a – Technical standards</b>		
<b>Installation name</b>	Ffridd Rasus Landfill	
Schedule 1 activity or directly associated activity description	Relevant technical guidance note or best available techniques as described in BAT conclusions under IED*. You will need to refer to 'How to comply' for all permits.	Document reference (if appropriate)
	'How to comply'	
Landfill management & monitoring	How to Comply with your Env'tl Permit	EPR5.02
Leachate and surface water management and monitoring	Monitoring of leachate, GW and SW	TGN02
Groundwater management and monitoring	How to carry out a groundwater risk assessment	Issued 01/02/16

Landfill gas management and monitoring	Guidance on the management of landfill gas	TGNs 03, 04, 05, 07 & 08
*Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control).		

If appropriate, use block diagrams to help describe the operation and process. Give the document references you use for each diagram and description.

Document references

### 3b General requirements

Fill in a separate Table 3b for each installation. You can use Table 3b as a template. Please provide the reference for each document.

Document references

Table 3b – General requirements	
<b>Installation name</b>	Ffridd Rasus Landfill
If the TGN or H1 assessment shows that emissions of substances not controlled by emission limits are an important issue, send us your plan for managing them	Document reference or references N/A
If the TGN or H1 assessment shows that odours are an important issue, send us your odour management plan	Document reference or references N/A
If the TGN or H1 assessment shows that noise or vibration are important issues, send us your noise or vibration management plan (or both)	Document reference or references N/A
If our fire prevention guidance or H1 assessment shows that fire risk is an important issues, send us your fire management plan	Document reference or references N/A

### 3c Types and amounts of raw materials

Fill in Table 3c for all schedule 1 activities. Fill in a separate table for each installation. You can use Table 3c as a template. Please provide the reference for each document.

Document references

Table 3c – Types and amounts of raw materials				
<b>Installation name</b>	Ffridd Rasus Landfill			
Capacity (See note 1 below)				
Schedule 1 activity	Description of raw material and composition material	Maximum amount (tonnes) (See note 2 below)	Annual throughput (tonnes per year)	Description of how the raw material is used including any main hazards (include safety information sheets)
N/A				
<b>Notes</b> 1 By 'capacity', we mean the total storage capacity (tonnes) or total treatment capacity (tonnes each day). 2 By 'maximum amount', we mean the maximum amount of raw materials on your site at any one time.				

Use a separate sheet if you have a long list of raw materials, and send it to us with your application form. Please provide the reference for each document.

Document reference

### 3d Information for specific sectors

For some sectors, we need more information to be able to set appropriate conditions in the permit. This is as well as the information you may provide in sections 5, 6 and 7.

For those activities listed below, you must answer the questions in the related document.

Table 3d – Questions for specific sectors	
Sector	Appendix
Combustion	See the questions in appendix 1
Chemicals	See the questions in appendix 2
Intensive farming	See the questions in appendix 3
Clinical waste	See the questions in appendix 4
Hazardous and non-hazardous waste recovery and disposal	See the questions in appendix 5
Incinerating waste	See the questions in appendix 6

## 4 Monitoring

### 4a Describe the measures you use to monitor emissions by referring to each emission point in Table 2 above

You should also describe any environmental monitoring. Tell us:

- how often you use these measures;
- the methods you use; and
- the procedures you follow to assess the measures.

Document reference

Closure Report - Amec Foster Wheeler  
Report reference S28587rr876i2  
previously supplied

### 4b Point source emissions to air only

Provide an assessment of the sampling locations used to measure point source emissions to air. The assessment must use Technical Guidance Note M1 (Monitoring). This is available in the Guidance section on our Website.

Document reference

Stack Emissions Testing Report – Exova  
Catalyst CAT2499, 24/03/2016 previously  
supplied

## 5 Environmental impact assessment

### 5a Have your proposals had an environmental impact assessment under Council Directive 85/337/EEC of 27 June 1985 [Environmental Impact Assessment] (EIA)?

No ☒ Now go to section 6

Yes ☐ Please provide a copy of the environmental statement and, if the procedure has been completed:

- a copy of the planning permission; and
- the committee report and decision on the EIA.

Document reference

## 6 Resource efficiency and climate change

If the site is a landfill, you only need to fill in this section if the application includes landfill gas engines.

### 6a Describe the basic measures for improving how energy efficient your activities are

Document reference

Amec Foster Wheeler Report  
28587rr1011i2

### 6b Provide a breakdown of any changes to the energy your activities use and create

Document reference

### 6c Have you entered into, or will you enter into, a climate change levy agreement?

No ☒ Describe the specific measures you use for improving your energy efficiency.

Document reference

Yes ☐ Please give the date you entered (or the date you expect to enter) into the agreement.

Please also provide documents that prove you are taking part in the agreement.

Document reference

### 6d Tell us about, and justify your reasons for, the raw and other materials, other substances and water you will use

Document reference

N/A

### 6e Describe how you avoid producing waste in line with Council Directive 2008/98/EC on waste

If you produce waste, describe how you recover it.

If it is technically and financially impossible to recover the waste, describe how you dispose of it while avoiding or reducing any effect it has on the environment.

Document reference

N/A

## Appendix 1 – Specific questions for the combustion sector

**1 Identify the type of fuel burned in your combustion units (including when your units are started up, shut down and run as normal). If your units are dual fuelled (that is, use two types of fuel), list both the fuels you use**

Fill in a separate table for each installation.

Installation reference			
Type of fuel	When run as normal	When started up	When shut down
Coal			
Gas oil			
Heavy fuel oil			
Natural gas			
WID waste			
Biomass (see notes 1 and 2 below)			
Biomass (see notes 1 and 2 below)			
Biomass (see notes 1 and 2 below)			
Biomass (see notes 1 and 2 below)			
Biomass (see notes 1 and 2 below)			
Other			

**Notes**

1 Not covered by Industrial Emissions Directive 2010/75/EU.

2 'Biomass' is referred to in The Renewables Obligation Order 2002 (SI 2002 No. 914).

Give extra information if it helps to explain the fuel you use.

Document reference

**2 Give the composition range of any fuels you are currently allowed to burn in your combustion plant**

Fill in a separate table for each installation.

Installation reference					
Parameter	Unit	Fuel 1	Fuel 2	Fuel 3	Fuel 4
Maximum percentage of gross thermal input	%				
Moisture	%				
Ash	% wt/wt dry				
Sulphur	% wt/wt dry				
Chlorine	% wt/wt dry				
Arsenic	% wt/wt dry				
Cadmium	% wt/wt dry				
Carbon	% wt/wt dry				
Chromium	% wt/wt dry				
Copper	% wt/wt dry				



Hydrogen	% wt/wt dry				
Lead	% wt/wt dry				
Mercury	% wt/wt dry				
Nickel	% wt/wt dry				
Nitrogen	% wt/wt dry				
Oxygen	% wt/wt dry				
Vanadium	mg/kg dry				
Zinc	mg/kg dry				
Net calorific value	MJ/kg				

**3 If NO<sub>x</sub> factors are necessary for reporting purposes (that is, if you do not need to monitor emissions), please provide the factors associated with burning the relevant fuels**

Fill in a separate table for each installation.

Installation reference	
Fuel	NO <sub>x</sub> factor (kg/t)
Fuel 1	
Fuel 2	
Fuel 3	
Fuel 4	
Note: kg/t means kilograms of nitrogen oxides released for each tonne of fuel burned	

**4 Will your combustion plant be subject to Chapter III of the Industrial Emissions Directive 2010/75/EU? (see Government guidance)**

No ☐ *This Annex is complete.*

Yes ☐

**5 Is your plant (tick an option)**

an existing plant (a plant licensed before 1 July 1987)? ☐

a new plant (a plant licensed on or after 1 July 1987 but before 27 November 2002, or a plant for which an application was made before 27 November 2002 and which was put into operation before 27 November 2003)? ☐

a new-new plant (a plant for which an application was made on or after 27 November 2002)? ☐

**6 If you run more than one type of plant or a number of the same type of plant on your installation, please list them in the table below**

Fill in a separate table for each installation.

Installation reference	
Type of plant	Number within installation
Existing	
New	
New-new	
Gas turbine (group A)	

Gas turbine (group B)	
-----------------------	--

**7 If you run an existing plant, have you submitted a declaration for the 'limited life derogation' set out in Article 33 of Chapter III of the Industrial Emissions Directive?**

No ☐ *Go to section 9*

Yes ☐

**8 Have you subsequently withdrawn your declaration?**

No ☐

Yes ☐

**9 List the existing large combustion plants (LCPs) which have annual mass allowances under the National Emission Reduction Plan (NERP), and those with emission limit values (ELVs) under the LCPD**

Installation reference	
LCPs under NERP	LCPs with ELVs

**10 Do you meet the monitoring requirements of Chapter III of the Industrial Emissions Directive?**

Yes ☐

Tell us how you meet the monitoring requirements of Chapter III and give us the reference for this document.

Document reference

--

## Appendix 2 – Specific questions for the chemical sector

### 1 Please provide a technical description of your activities

The description should be enough to allow us to understand:

- the process;
- the main plant and equipment used for each process;
- all reactions, including significant side reactions (that is, the chemistry of the process);
- the material mass flows (including by products and side streams) and the temperatures and pressures in major vessels;
- the all emission control systems (both hardware and management systems), for situations which could involve releasing a significant amount of emissions – particularly the main reactions and how they are controlled;
- a comparison of the indicative BATs and benchmark emission levels standards in Technical Guidance Notes (TGNs) EPR 4.01, EPR 4.02 and EPR 4.03, and chemical sector BREFs.

Document reference

### 2 If you are applying for a multi-purpose plant, do you have a multi-product protocol in place to control the changes?

No ☐

Yes ☐ Provide a copy of your protocol to accompany this application

Document reference

### 3 Does Chapter V of the Industrial Emissions Directive (IED) apply to your activities?

No ☐ This Annex is complete.

Yes ☐ Fill in Table 3a – listing each of the activities controlled under the IED.

Table 3a – activities controlled under the IED.	
Installation reference	
Activities	

### 3b Describe how the list of activities in question 3a above meets the requirements of the IED

Document reference

### Appendix 3 – Specific questions for the intensive farming sector

---

**1 For each type of livestock, tell us the number of animal places you are applying for**

Installation reference	
Type of livestock	Number of places

**2 Is manure or slurry exported from the site?**

No ☐

Yes ☐

**3 Is manure or slurry spread on the site?**

No ☐

Yes ☐

## Appendix 4 – Specific questions for the clinical waste sector

If you are applying for an activity covered by the Waste Incineration Directive and wish to accept clinical waste you should fill in questions 1, 2 and 3 of this appendix.

Note: If your procedures are fully in line with the standards set out in EPR5.07 then you should tick the 'yes' box and provide the procedure reference. There is no need for you to supply a copy of the procedure.

### 1 Are pre-acceptance procedures in place that are fully in line with the appropriate measures set out in section 2.2 of EPR 5.07 and which are used to assess a waste enquiry before it is accepted at the installation?

No ☐ Provide justification for departure from EPR 5.07 and submit a copy of the procedures  
Document reference

Yes ☐ Document reference

### 2 Are waste acceptance procedures in place that are fully in line with the appropriate measures set out in section 2.2 of EPR 5.07, and which are used to cover issues such as loads arriving and being inspected, sampling waste, rejecting waste, and keeping records to track waste?

No ☐ Provide justification for departure from EPR 5.07 and submit a copy of the procedures  
Document reference

Yes ☐ Document reference

### 3 Are waste storage, handling and dispatch procedures, and infrastructure in place that are fully in line with the appropriate measures set out in section 3.2 of EPR 5.07?

No ☐ Provide justification for departure from EPR 5.07 and submit a copy of the procedures  
Document reference

Yes ☐ Document reference

### 4 Are monitoring procedures in place that are fully in line with the appropriate measures set out in section 3.3 of EPR 5.07?

No ☐ Provide justification for departure from EPR 5.07 and submit a copy of the procedures  
Document reference

Yes ☐ Document reference

### 5 Are you proposing to either

- accept an additional waste not included in Table 2.1 of section 2.1 of EPR 5.07, or
- apply a permitted activity to a waste other than that identified for that waste in Table 2.1?

No ☐

Yes ☐ Provide justification : Document reference

### 6 Please provide a summary description of the treatment activities undertaken on the installation. This should cover the general principles set out in section 2.1.4 of EPR 5.07

Document reference

### 7 Please provide layout plans detailing the location of each treatment plant and main plant items and process flow

Document reference

## Appendix 5 – Specific questions for the hazardous and non-hazardous waste recovery and disposal sector

---

Note: If your procedures are fully in line with the standards set out in SGN 5.06 then you should tick the 'yes' box and provide the procedure reference. There is no need for you to supply a copy of the procedure.

**1 Are pre-acceptance procedures in place that are fully in line with the appropriate measures set out in section 2.1.1 of SGN 5.06, and which are used to assess a waste enquiry before it is accepted at the installation?**

No ☐ Provide justification for departure from SGN 5.06 and submit a copy of the procedures

Document reference

Yes ☐ Document reference

**2 Are waste acceptance procedures in place that are fully in line with the appropriate measures set out in section 2.1.2 of SGN 5.06, and which are used to cover issues such as loads arriving and being inspected, sampling waste, rejecting waste, and keeping records to track waste?**

No ☐ Provide justification for departure from SGN 5.06 and submit a copy of the procedures

Document reference

Yes ☐ Document reference

**3 Are waste storage procedures and infrastructure in place that are fully in line with the appropriate measures set out in section 2.1.3 of SGN 5.06?**

No ☐ Provide justification for departure from SGN 5.06 and submit a copy of the procedures

Document reference

Yes ☐ Document reference

**4 Provide a layout plan giving details of where the installation is based, the infrastructure in place (including areas and structures for separately storing types of waste which may be dangerous to store together) and capacity of waste storage areas and structures**

Document reference

**5 Provide a summary of the treatment activities carried out on the installation. This should cover the general principles set out in section 2.1.4 of SGN 5.06 and the specific principles set out in sections 2.1.5 to 2.1.15 as appropriate of SGN 5.06**

Document reference

**6 Provide layout plans giving details of where each treatment plant is based, the main items at each plant, and process flow diagrams for the treatment plant**

Document reference

## Appendix 6 – Specific questions for the waste incineration sector

If you are proposing to accept clinical waste please also fill in questions 1, 2 and 3 of appendix 4 above.

### 1a Do you run incineration plants as defined by Chapter IV of the Industrial Emissions Directive (IED)?

No ☐ You do not need to answer any other questions in this appendix.

Yes ☐ WID applies

### 1b Are you subject to IED as an incinerator or co-incinerator?

As an incinerator ☐

As a co-incinerator ☐

### 2 Do any of the installations contain more than one incineration line?

No ☐ Go to section 4

Yes ☐

### 3 How many incineration lines are there within each installation?

Fill in a separate table for each installation

Installation reference	
Number of incineration lines within the installation	
Reference identifiers for each line	

You must provide the information we ask for in questions 4, 5 and 6 below in separate documents. The information must at least include all the details set out in section 2 ('Key Issues') of TGN S5.01 (under the subheading 'European legislation and your application for an EP Permit').

### 4 Describe how the plant is designed, equipped and will be run to make sure it meets the requirements of IED, taking into account the categories of waste which will be incinerated

Document reference

### 5 Describe how the heat created during the incineration and co-incineration process is recovered as far as possible (for example, through combined heat and power, creating process steam or district heating)

Document reference

### 6 Describe how you will limit the amount and harmful effects of residues and describe how they will be recycled where this is appropriate

Document reference

For each line identified in question 3, answer questions 7 to 13 below

Question 3 identifier, if necessary

### 7 Do you want to take advantage of the Article 45 (1)(f) allowance (see below) if the particulates, CO or TOC continuous emission monitors (CEM) fail?

No ☐ Go to section 8

Yes ☐ This article allows 'abnormal operation' of the incineration plant under certain circumstances when the CEM for releases to air have failed. Annex VI, Part 3(2) sets maximum half hourly average release levels for particulates (150mg/m<sup>3</sup>), CO (normal ELV) and TOC (normal ELV) during abnormal operation.

Describe the other system you use to show you keep to the requirements of Article 13(4) (for example, using another CEM, providing a portable CEM to insert if the main CEM fails, and so on).

**8 Do you want to replace continuous HF emission monitoring with periodic hydrogen fluoride (HF) emission monitoring by relying on continuous hydrogen chloride (HCl) monitoring as allowed by IED Annex VI, Part 6 (2.3)?**

Under this you do not have to continuously monitor emissions for hydrogen fluoride if you control hydrogen chloride and keep it to a level below the HCl ELVs.

No ☐ *Go to section 9*

Yes ☐ Please give reasons for doing this.

**9 Do you want to replace continuous water vapour monitoring with pre-analysis drying of exhaust gas samples, as allowed by IED Annex VI, Part 6 (2.4)?**

Under this you do not have to continuously monitor the amount of water vapour in the air released if the sampled exhaust gas is dried before the emissions are analysed.

No ☐

Yes ☐ Please give reasons for doing this.

**10 Do you want to replace continuous hydrogen chloride (HCl) emission monitoring with periodic HCl emission monitoring, as allowed by IED Annex VI, Part 6 (2.5), first paragraph?**

Under this you do not have to continuously monitor emissions for hydrogen chloride if you can prove that the emissions from this pollutant will never be higher than the ELVs allowed.

No ☐

Yes ☐ Please give reasons for doing this.



**11 Do you want to replace continuous HF emission monitoring with periodic HF emission monitoring, as allowed by IED Annex VI, Part 6 (2.5), first paragraph?**

Under this you do not have to continuously monitor emissions for hydrogen fluoride if you can prove that the emissions from this pollutant will never be higher than the ELVs allowed.

No ☐

Yes ☐ Please give reasons for doing this.

**12 Do you want to replace continuous SO<sub>2</sub> emission monitoring with periodic sulphur dioxide (SO<sub>2</sub>) emission monitoring, as allowed by IED Annex VI, Part 6 (2.5), first paragraph?**

Under this you do not have to continuously monitor emissions for sulphur dioxide if you can prove that the emissions from this pollutant will never be higher than the ELVs allowed.

No ☐

Yes ☐ Please give reasons for doing this.

**13 If your plant uses fluidised bed technology, do you want to apply for a derogation of the CO WID ELV to a maximum of 100 mg/m<sub>3</sub> as an hourly average, as allowed by IED Annex VI, Part 3?**

No ☐

Does not apply ☐

Yes ☐ Please give reasons for doing this.

## Appendix 7 – Specific questions for the landfill sector

---

### 1 Provide your Environmental Setting and Installation Design (ESID) report

Document reference

N/A for application

### 2 Provide your hydrogeological risk assessment (HRA) for the site

Document reference

[N/A for application](#)

### 3 Provide your stability risk assessment (SRA) for the site

Document reference

[N/A for application](#)

### 4 Provide your landfill gas risk assessment (LFGRA) for the site

Document reference

[N/A for application](#)

Templates for these four reports can be found using the links on our Guidance Webpages.

### 5 Provide your proposed plan for closing the site and your procedures for looking after the site once it has closed

Document reference

[N/A for application](#)

# Application for an environmental permit:

## Part F1 – Opra, charges and declarations

<p><b>Fill in this part for all applications for installations, waste operations, mining waste operations and groundwater discharges onto land.</b></p> <p>Please check that this is the latest version of the form available from our website.</p> <p><b>For applications for water discharge and point source groundwater discharge activities you need to fill in part F2 instead.</b></p> <p>Please read through this form and the guidance notes that</p>	<p>came with it. All relevant guidance documents can be found on our website.</p> <p>Contents</p> <p>1 Working out charges</p> <p>2 Opra profile (electronic)</p> <p>3 Payment</p> <p>4 The Data Protection Act 1998</p> <p>5 Confidentiality and national security</p> <p>6 Application checklist</p> <p>7 Declaration</p>
--	---

### 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 (for site based permis) to cover the costs we incur in the ongoing regulation of the permit.

**Examples:** We have included examples to help you complete the table.

The Tier 2 charge example is for an application for a 'New standard rule' permit. The Tier 3 charge example is for an installation Opra based charge for a normal variation (multiplier) application.

Note: for Opra charged Tier 3 Facilities you also need to complete an Opra profile (see section 2).

Table 1 – Working out charges				
Type of application	Click here to enter text.			
	Summary of charges			
<b>Tier 2 facilities</b> (including Part A(2) and Part B)	Charge identifier	Number of facilities	Charge for each facility (£)	Charges due (£)
<b>SR2010 No12</b>	<b>S060A (W)</b>	<b>1</b>	<b>1,630.00</b>	<b>1,630.00</b>
Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
<b>Tier 3 facilities</b>				
<b>Total Opra charging score for installations</b>	<b>90</b>	<b>x charge multiplier</b>	<b>57</b>	<b>5,130.00</b>

Total Opra charging score for installations	76	× charge multiplier	57	4,332.00
Total Opra charging score for waste operations	Click here to enter text.	× charge multiplier	Click here to enter text.	Click here to enter text.
Total Opra charging score for mining waste facilities	Click here to enter text.	× charge multiplier	Click here to enter text.	Click here to enter text.
Other charges (such as on-off assessments etc.)	Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
			<b>Total charges due</b>	4,332.00

## 2 Opra profile (does not apply to standard facilities, or other tier 2 permit applications)

If you are submitting a bespoke application, you must include a completed electronic copy in Excel of the *current* Opra spreadsheet. You can find the current Opra spreadsheet in the 'Our charges' section on our 'How we regulate you' webpages.

**For all variations, full and partial surrenders:** you will need to submit a copy of your current Opra profile based on your existing profile, not a new profile following the variation or surrender.

**For transfers:** you will need to submit a revised Opra profile to include your own operator performance. Note: this will not change the set transfer fee.

**Important:** your Opra profile (score) must match our records. If you are unsure about your current Opra profile (score), you should talk to your regulatory officer before submitting your application.

Tick this box to confirm that you have included the electronic OPRA spreadsheet

☐

## 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 type="checkbox"/>            | <i>Go to section 3b</i> |
| Credit or Debit card                    | <input type="checkbox"/>            | <i>Go to section 3c</i> |
| Cheque                                  | <input checked="" type="checkbox"/> | <i>Go to section 3d</i> |
| Postal order                            | <input type="checkbox"/>            | <i>Go to section 3d</i> |

### 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 nine 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**

[Click here to enter text.](#)

#### **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 **830278**

Amount paid **4,332.00**

#### **4 The Data Protection Act 1998**

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 [Click here to enter text.](#)

### 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 .Gov website.

**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 [Click here to enter text.](#)

Table 2 – application checklist		
Question reference	Document title/ reference	Document section
Part C2 Q1a	Amec Foster Wheeler report 28587rr1011i2	Appendix A
Part C2 Q2b	Amec Foster Wheeler report 28587rr1011i2	Section 2
Part C2 Q5a	Amec Foster Wheeler report 28587rr1011i2	Figures 1.1, 2.1 and 2.2
Part C2 Q6	Amec Foster Wheeler report 28587rr1011i2	Appendix D
Part C3 Q6	Amec Foster Wheeler report 28587rr1011i2	<a href="#">Click here to enter text.</a>
Part F Q3d	Payment	Cheque sent direct by Gwynedd Council (No. <a href="#">830278</a> )
<a href="#">Click here to enter text.</a>	<a href="#">Click here to enter text.</a>	<a href="#">Click here to enter text.</a>
<a href="#">Click here to enter text.</a>	<a href="#">Click here to enter text.</a>	<a href="#">Click here to enter text.</a>

Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.

## 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.

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 2010 (as amended).

**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	Choose an item.
First name	Click here to enter text.
Last name	Click here to enter text.
On behalf of (if relevant)	Click here to enter text.
Today's date	Click here to enter a date.

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 2010 (as amended).

**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	Medwyn
Last name	Williams
On behalf of (if relevant)	Gwynedd Council
Today's date	24/11/2016

#### **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 2010 (as amended).

**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	Choose an item.
First name	Click here to enter text.
Last name	Click here to enter text.
On behalf of (if relevant)	Click here to enter text.
Today's date	Click here to enter a date.



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 2010 (as amended).

**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	Choose an item.
First name	Click here to enter text.
Last name	Click here to enter text.
On behalf of (if relevant)	Click here to enter text.
Today's date	Click here to enter a date.



## Appendix C Micro Turbine Specification

## C50 & C50 ICHP MicroTurbine Landfill Gas



Achieve ultra-low emissions and reliable electrical/thermal generation from landfill gas.

- Ultra-low emissions
- One moving part: Minimal maintenance and downtime
- Patented air bearing: No lubricating oil or coolant
- 5 and 9 year Factory Protection Plans available
- Remote monitoring and diagnostic capabilities
- Integrated utility synchronization and protection<sup>(1)</sup>
- Small, modular design allows for easy, low-cost installation
- Reliable: Tens of millions of run hours and counting



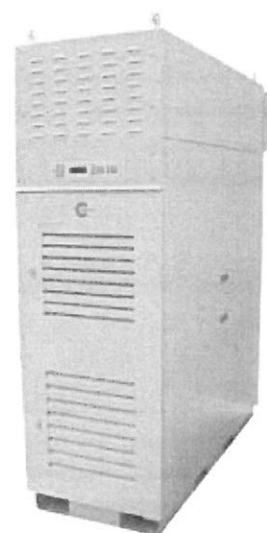
C50 MicroTurbine

### Electrical Performance<sup>(2)</sup>

Electrical Power Output	50kW <sup>(3)</sup>
Voltage	400 to 480 VAC
Electrical Service	3-Phase, 4 wire
Frequency	50/60 Hz, grid connect operation 10-60 Hz, stand alone operation
Maximum Output Current	100A, grid connect operation
Electrical Efficiency LHV	29%

### Fuel/Engine Characteristics<sup>(2)</sup>

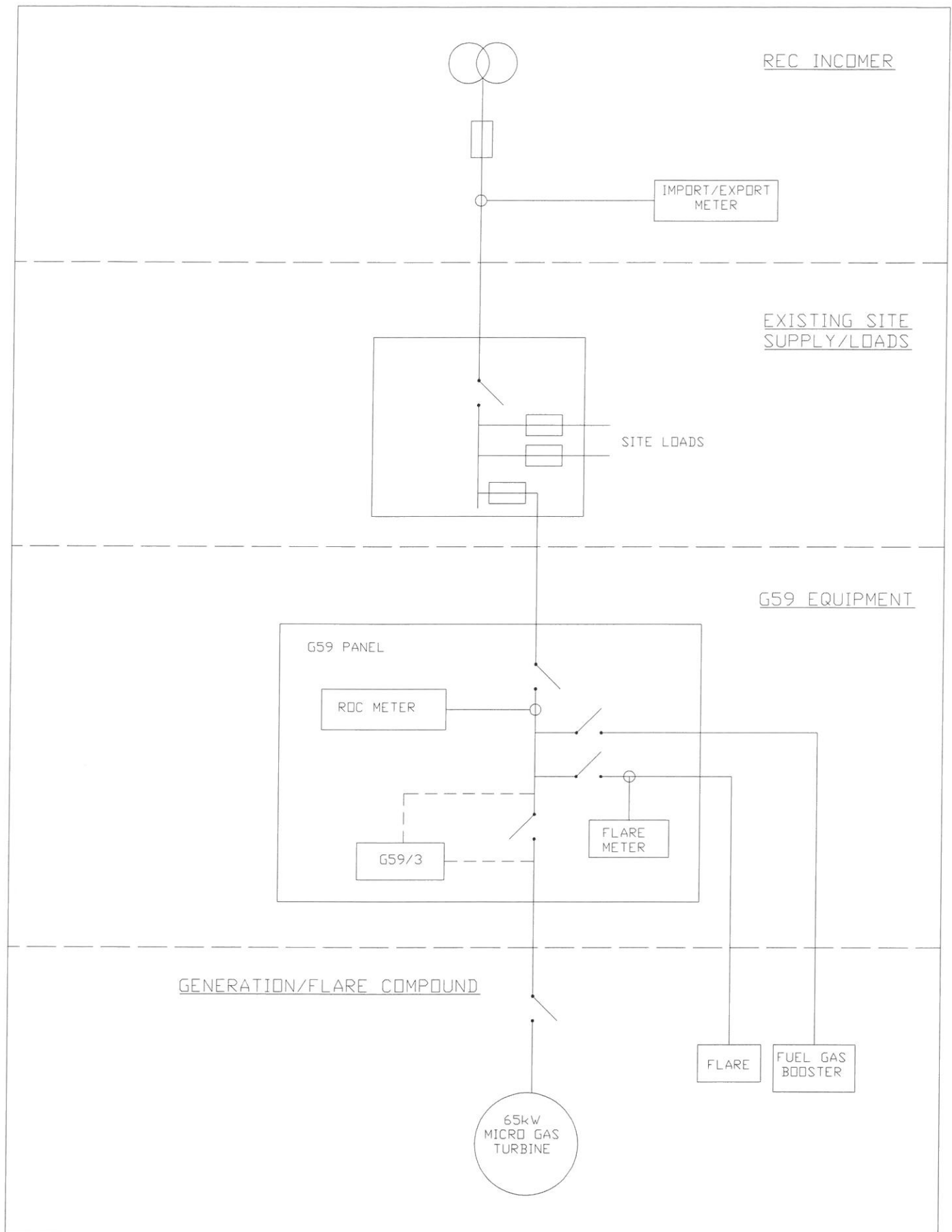
Minimum Gas Methane Content <sup>(5)</sup>	35%
Inlet Pressure <sup>(4)</sup>	517-552 kPa gauge
Fuel Flow HHV	752 MJ/hr (712,000 BTU/hr)
Net Heat Rate LHV	12.4 MJ/kWh (11,800 BTU/kWh)

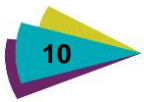


C50-ICHP MicroTurbine

### Exhaust Characteristics<sup>(2)</sup>

NO <sub>x</sub> Emissions at 15% O <sub>2</sub>	9 ppmvd (19 mg/m <sup>3</sup> )
NO <sub>x</sub> / Electrical Output	0.16 g/bhp-hr
Exhaust Gas Flow	0.49 kg/s
Exhaust Gas Temperature	309°C





## Appendix D Air Quality Screening Assessment



# Technical note: Ffridd Rasus Landfill Site - Air Emissions Screening Assessment

---

## 1. Introduction

Ffridd Rasus Landfill ('the site') is located approximately 3 km north of Harlech at National Grid Reference (NGR) SH577338. The site is operated by Gwynedd Council and comprises Areas 1, 2 and 3. Area 1 has not been subject to waste disposal, Area 2 is an unlined landfill in its aftercare phase and Area 3 is an engineered landfill, which has been capped. Area 2 is regulated under the conditions of Environmental Permit (EP) ref: PP3294FJ/V008 (dated 21 May 2013) and Area 3 is regulated under the conditions of EP ref: GP3330BY.

The site ceased accepting waste in January 2014, capping was completed in April 2014 and the site entered definitive closure in April 2016. Landfill gas is currently managed by collection through an extraction system and combusted in a 500 m<sup>3</sup>/hour high temperature enclosed flare. Gwynedd Council now wish to utilise the landfill gas extracted and propose to install a 50kW gas micro turbine at the site. An application to vary the EP is required to include the micro turbine as a directly associated activity. The landfill gas flare will be retained as a backup management technique. In consultation with Natural Resources Wales (NRW), it is considered the application is a 'normal variation' and should be supported by an Air Quality Assessment.

This technical note has been produced in support of the variation application setting out a 'stage 1' air quality screening assessment for the proposed micro turbine and the flare to demonstrate emissions will be 'insignificant'.

## 2. Methodology

The assessment has been produced using the Environment Agency guidance 'Air emissions risk assessment for your environmental permit' (dated 2 August 2016 - <https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit>) and in accordance with the guidance provides calculations of the Process Contribution (PC) for Nitrogen Dioxide (NO<sub>2</sub>) and Carbon Monoxide (CO) for both the gas engine and the flare to determine if the emissions can be screened out as insignificant.

Air emissions are considered to be insignificant if:

- ▶ Maximum Process Contribution (short-term)  $\leq$  10% of the short-term Environmental Assessment Level (or Environmental Quality Standard); and
- ▶ Maximum Process Contribution (long-term)  $\leq$  1% of the long-term Environmental Assessment Level (or Environmental Quality Standard).

The environmental standards for both NO<sub>2</sub> and CO are provided in Table 2.1 and taken from the above EA guidance.

**Table 2.1 Relevant Environmental Standards**

Substance	Emission period	Limit (average)	Standard
Nitrogen dioxide	1 hour	200 micrograms per cubic metre	AAD Limit Value
Nitrogen dioxide	Annual	40 micrograms per cubic metre	AAD Limit Value
Carbon monoxide	8 hour running average across a 24 hour period	10 milligrams per cubic metre	AAD Limit Value

### 3. Process Contribution (PC)

The first step in the air emissions risk assessment is to calculate the environmental concentration of each substance released into the air, known as the process contribution (PC). This has been done for emissions from both the micro turbine and the landfill gas flare and these are considered separately as the flare will not be in operation when the micro turbine is.

#### Landfill Gas Micro Turbine

Both the short term and the long term PC to air are calculated for Nitrogen Dioxide and the short term PC for Carbon Monoxide.

The dispersion rates and the environmental standards for air emissions are taken from the EA guidance. As the height of the micro turbine including the stack is 2.65m, the effective height of release of 0m from the table has been used. The release rates for emissions of Nitrogen Oxides (0.003g/s) and Carbon Monoxide (0.001 g/s) have been provided by the equipment supplier. In accordance with the guidance, it is assumed that 50% of NO<sub>x</sub> is converted to NO<sub>2</sub> for the short term PC.

The results are shown in Table 3.1

**Table 3.1 Process Contribution from the landfill gas micro turbine**

Determinant	Release rate (g/s)	Process Contribution (ug/m3)	Environmental Standard	Process Contribution (%)
NO <sub>2</sub> (long term)	0.003	0.05	40 ug/m3	>1
NO <sub>2</sub> (short term)	0.0015	0.26	200 ug/m3	>10
CO (short term)	0.001	0.13*	10mg/m3	>10

\* Multiplied by 0.7 to give 8 hour average as specified in guidance

From the table it can be seen that the worst case NO<sub>2</sub> and CO emissions from the micro turbine will be less than 10% of the respective short term standard and for NO<sub>2</sub> are less than 1% of the respective long term standard.

#### Landfill Gas Flare

The flare is existing at the site and will serve as a backup only. Based on site monitoring data for the flare for the period 2012 to 2016, the average down time has been 1% so we have assumed that the landfill gas turbine will be operating for 99% of the time and the landfill gas flare for 1% of the time.



Again, both the short term and the long term PC to air are calculated for Nitrogen Dioxide and the short term PC for Carbon Monoxide.

The dispersion rates and the environmental standards for air emissions are taken from the EA guidance. The height of the stack is 7.85m so the effective height of release of 8m from the table has been used. The release rates for emissions of Nitrogen Dioxide (0.35 g/s) and Carbon Monoxide (0.001 g/s) have been calculated from the latest flare monitoring report provided by Exova Catalyst (CAT-2129, 16th March 2015). In accordance with the guidance, it is assumed that 50% of NO<sub>x</sub> is converted to NO<sub>2</sub> for the short term PC.

The results are shown in Table 3.2

Table 3.2 Process Contribution from landfill gas flare

Determinant	Release rate (g/s)	Process Contribution (ug/m3)	Process Contribution (ug/m3) for 1% operational time	Environmental Standard	Process Contribution (%)
NO <sub>2</sub> (long term)	0.35	1.93	0.019	40 ug/m3	>1
NO <sub>2</sub> (short term)	0.175	24.5	0.245	200 ug/m3	>10
CO (short term)	0.001	0.09*	0.001	10mg/m3	>10

\* Multiplied by 0.7 to give 8 hour average as specified in guidance

From the table it can be seen that the worst case NO<sub>2</sub> and CO emissions from the landfill gas flare operating for 1% of the time will be less than 10% of the respective short term standard and less than 1% of the respective long term standard for NO<sub>2</sub>.

## 4. Conclusion

It has been determined that the PC of NO<sub>2</sub> and CO emissions from both the landfill gas turbine and the landfill gas flare (assumed to be operating for 1% of the time) have been screened out as insignificant and no further assessment is required.

Author

Charlotte Pearson

Reviewer

Chris Haigh

## Copyright and non-disclosure notice

The contents and layout of this report are subject to copyright owned by Amec Foster Wheeler (© Amec Foster Wheeler Environment & Infrastructure UK Limited 2016) save to the extent that copyright has been legally assigned by us to another party or is used by Amec Foster Wheeler under licence. To the extent that we own the copyright in this report, it may not be copied or used without our prior written agreement for any purpose other than the purpose indicated in this report. The methodology (if any) contained in this report is provided to you in confidence and must not be disclosed or copied to third parties without the prior written agreement of Amec Foster Wheeler. Disclosure of that information may constitute an actionable breach of confidence or may otherwise prejudice our commercial interests. Any third party who obtains access to this report by any means will, in any event, be subject to the Third Party Disclaimer set out below.





### Third party disclaimer

Any disclosure of this report to a third party is subject to this disclaimer. The report was prepared by Amec Foster Wheeler at the instruction of, and for use by, our client named on the front of the report. It does not in any way constitute advice to any third party who is able to access it by any means. Amec Foster Wheeler excludes to the fullest extent lawfully permitted all liability whatsoever for any loss or damage howsoever arising from reliance on the contents of this report. We do not however exclude our liability (if any) for personal injury or death resulting from our negligence, for fraud or any other matter in relation to which we cannot legally exclude liability.

### Management systems

This document has been produced by Amec Foster Wheeler Environment & Infrastructure UK Limited in full compliance with the management systems, which have been certified to ISO 9001, ISO 14001 and OHSAS 18001 by LRQA.

