



EPR Compliance Assessment Report

Report ID: GP3830BG/0189439

This form will report compliance with your permit as determined by an NRW officer

Site	Chirk Landfill Site	Permit Ref	GP3830BG
Operator/ Permit holder	FCC Waste Services (UK) Limited		
Date	11/09/2013	Time in	10:10 Out 13:30
What parts of the permit were assessed	Landfill Gas Control		
Assessment	Site Inspection	EPR Activity	Installation X Waste Op Water Discharge
Recipient's name/position	Colin Shaw Site Manager		
Officer's name	Stuart Ross, Tony Roberts	Date issued	20/09/2013

Section 1 - Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations. A detailed explanation and any action you may need to take are given in the "Detailed Assessment of Compliance" (section 3). This summary details where we believe any non-compliance with the permit has occurred, the relevant condition and how the non-compliance has been categorised using our Compliance Classification Scheme (CCS). CCS scores can be consolidated or suspended, where appropriate, to reflect the impact of some non-compliances more accurately. For more details of our CCS scheme, contact your local office.

Permit Conditions and Compliance Summary

Condition(s) breached

a) Permitted activities	1. Specified by permit	N	
b) Infrastructure	1. Engineering for prevention & control of pollution	C3	3.3.1
	2. Closure & decommissioning	N	
	3. Site drainage engineering (clean & foul)	N	
	4. Containment of stored materials	N	
	5. Plant and equipment	N	
c) General management	1. Staff competency/ training	N	
	2. Management system & operating procedures	N	
	3. Materials acceptance	N	
	4. Storage handling, labelling, segregation	N	
d) Incident management	1. Site security	N	
	2. Accident, emergency & incident planning	N	
e) Emissions	1. Air	N	
	2. Land & Groundwater	N	
	3. Surface water	N	
	4. Sewer	N	
	5. Waste	N	
f) Amenity	1. Odour	N	
	2. Noise	N	
	3. Dust/fibres/particulates	A	
	4. Pests, birds & scavengers	A	
	5. Deposits on road	A	
g) Monitoring and records, maintenance and reporting	1. Monitoring of emissions & environment	N	
	2. Records of activity, site diary, journal & events	N	
	3. Maintenance records	N	
	4. Reporting & notification	N	
h) Resource efficiency	1. Efficient use of raw materials	N	
	2. Energy	N	

KEY: C1, C2, C3, C4 = CCS breach category (* suspended scores are marked with an asterisk),
A = Assessed (no evidence of non-compliance), N = Not assessed, NA = Not Applicable

Number of breaches recorded

1

Total compliance score

(see section 5 for scoring scheme)

4

If the Total No Breaches is greater than zero, then please see Section 3 for details of our proposed enforcement response

Section 2 – Compliance Assessment Report Detail

This section contains a report of our findings and will usually include information on:

- the part(s) of the permit that were assessed (e.g. maintenance, training, combustion plant, etc)
- where the type of assessment was 'Data Review' details of the report/results triggering the assessment
- any non-compliances identified
- any non-compliances with directly applicable legislation
- details of any multiple non-compliances
- information on the compliance score accrued inc. details of suspended or consolidated scores.
- details of advice given
- any other areas of concern
- all actions requested
- any examples of good practice.
- a reference to photos taken

This report should be clear, comprehensive, unambiguous and completed within 14 days of an assessment.

The purpose of this inspection was to track progress since the previous landfill gas audit on 26/06/13.

The findings of the inspection have been recorded in report reference GP3830BG/0189439/R which has been issued to supplement this Compliance Assessment Report. Please refer to the report for the full details of our findings and required actions / recommendations.

During the inspection a number of defects were noted with gas collection infrastructure in conjunction with elevated fugitive emissions from particular aspects of infrastructure or from the landfill surface. Details are recorded in the report.

Based on the findings of the inspection it is considered that not all appropriate measures have been taken to prevent and minimise fugitive landfill gas emissions and accordingly permit condition 3.3.1 has been breached. The potential environmental impact is considered minor and the breach attracts a CCS score of 3.

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Section 3- Enforcement Response

Only one of the boxes below should be ticked

You must take immediate action to rectify any non-compliance and prevent repetition.

Non-compliance with your permit conditions constitutes an offence and can result in criminal prosecutions and/or suspension or revocation of a permit. Please read the detailed assessment in Section 2 and the steps you need to take in Section 4 below.

Other than the provision of advice and guidance, at present we do not intend to take further enforcement action in respect of the non-compliance identified above. This does not preclude us from taking enforcement action if further relevant information comes to light or advice isn't followed.

In respect of the above non-compliance you have been issued with a warning. At present we do not intend to take further enforcement action. This does not preclude us from taking additional enforcement action if further relevant information comes to light or offences continue.

X

We will now consider what enforcement action is appropriate and notify you, referencing this form.

Section 4- Action(s)

Where non-compliance has been detected and an enforcement response has been selected above, this section summarises the steps you need to take to return to compliance and also provides timescales for this to be done.

Criteria Ref.	CCS Category	Action Required/Advised	Due Date
See Section 1 above			
B1	C3	Refer to report GP3830BG/0189439/R	11/10/13

Section 5 - Compliance notes for the Operator

To ensure you correct actual or potential non-compliance we may

- advise on corrective actions verbally or in writing
- require you to take specific actions in writing
- issue a notice
- require you to review your procedures or management system
- change some of the conditions of your permit
- decide to undertake a full review of your permit

Any breach of a permit condition is an offence and we may take legal action against you.

● We will normally provide advice and guidance to assist you to come back into compliance either after an offence is committed or where we consider that an offence is likely to be committed. This is without prejudice to any other enforcement response that we consider may be required.

● Enforcement action can include the issue of a formal caution, prosecution, the service of a notice and or suspension or revocation of the permit.

See our Enforcement and Civil Sanctions guidance for further information

This report does not relieve the site operator of the responsibility to

- ensure you comply with the conditions of the permit at all times and prevent pollution of the environment
- ensure you comply with other legislative provisions which may apply.

Non-compliance scores and categories

CCS category	Description	Score
C1	A non-compliance which could have a major environmental effect	60
C2	A non-compliance which could have a significant environmental effect	31
C3	A non-compliance which could have a minor environmental effect	4
C4	A non-compliance which has no potential environmental effect	0.1

Operational Risk Appraisal (Opra) - Compliance assessment findings may affect your Opra score and/or your charges. This score influences the resource we use to assess permit compliance.

Section 6 – General Information

Data protection notice

The information on this form will be processed by the Natural Resources Wales (NRW) to fulfill its regulatory and monitoring functions and to maintain the relevant public register(s). The NRW may also use and/or disclose it in connection with:

- offering/providing you with its literature/services relating to environmental matters
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, local authorities) on environmental issues
- carrying out statistical analysis, research and development on environmental issues
- providing public register information to enquirers
- investigating possible breaches of environmental law and taking any resulting action
- preventing breaches of environmental law
- assessing customer service satisfaction and improving its service
- Freedom of Information Act/Environmental Information Regulations request.

The NRW may pass it on to its agents/representatives to do these things on its behalf. You should ensure that any persons named on this form are informed of the contents of this data protection notice.

Disclosure of information

The NRW will provide a copy of this report to the public register(s). However, if you consider that any information contained in this report should not be released to the public register(s) on the grounds of commercial confidentiality, you must write to your local area office within twenty working days of receipt of this form indicating which information it concerns and why it should not be released, giving your reasons in full.

Customer charter

What can I do if I disagree with this compliance assessment report?

If you are unable to resolve the issue with your site officer, you should firstly discuss the matter with the officer's line managers. If you wish to raise your dispute further through our official Complaints and Commendations procedure, phone our general enquiry number 0300 065 3000 (Mon to Fri 08.00–18.00) and ask for the Customer Contact team or send an email to enquiries@naturalresourceswales.gov.uk. If you are still dissatisfied you can make a complaint to the Public Services Ombudsman for Wales. For advice on how to complain to the Ombudsman phone their helpline on 0845 607 0987.



**Cyfoeth Natural
Naturiol Resources**
Cymru Wales

Natural Resources Wales - Technical Review Of Landfill Gas Management Systems

Pen y Bont Landfill
Pentre
Chirk
Wrexham
LL14 5AR

**EPR Permit No: GP3830BG PEN Y BONT LANDFILL
Landfill Gas Review Follow Up
Report reference:**

Thank you for the actions taken in response to the previous landfill gas review on the 26th June 2013 which included the drilling of new gas wells and installation of pin wells including on the previously undrilled flanks of the site. An additional follow up review was conducted on the 11th September 2013. Please find a summary of the main points and actions:-

Gas treatment compound

1. One engine was off line and the flare was running. The flow reading at the SCADA shows a discrepancy in flow of approximately 130m³/hr (extra flow) when the flare is burning and an engine is off compared to when both engines are running. This occurs without a significant discrepancy in methane quality. This may mean that there is extra gas to extract in the field which is being drawn into the system when the flare ignites due to engine failure. Any excess gas over that required to run both engines on full load should be extracted and burned.
2. If excess gas is identified below the turndown ratio of the flare, consideration should be given to the installation of another thermocouple closer to the burner to check that a suitable burn temperature is being achieved by burning gas below the lowest turndown volume. If this is not possible due to the size of the flare then due consideration should be given to utilising a smaller flare to burn any excess gas.
3. If there is another empirical explanation for this discrepancy then please supply the detail in your response.
4. Is the pilot light permanently lit on the flare as this would burn up to 30m³/hr gas and provide a more rapid ignition sequence?

SCADA READINGS GAS COMBUSTION COMPOUND 11TH SEPTEMBER 2013

	Flow M3/Hr	CH4%	O2%	DP (mb)	Comments
Gas Treatment Compound	1337	54	0.31	-78	One engine off flare running

Gas extraction field

An ATEX certified, Gazomat Inspectra Laser Methane Analyser was used to perform random emissions testing across parts the site. Surface capping, seams and structures were tested in order to establish potential sources of methane egress. Where gas quality was measured this was performed by the Infinis Technician.

Please note that as a general rule, to avoid problems with condensate blockages, gas pipe-work should be laid to adequate falls to ensure condensate drains to an appropriate removal point (e.g. knock-out-pot) at a low point in the system. Typically the fall should be no less than:

1 in 100	where the pipe is laid on stable ground and the fall and gas flow are in the same direction
1 in 50	where the pipe is laid on stable ground and the fall and gas flow are in opposite direction.
1 in 50	where the pipe is laid on landfilled waste and the fall and gas flow are in the same direction.
1 in 25	where the pipe is laid on landfilled waste and the fall and gas flow are in opposite directions.

1. The Gazomat analyser was switched on and odour was noted on the haul road leading to the Gas Combustion Compound (GCC) Readings of between 8.9ppm 11.3ppm were detected along the length of the haul road.
2. 1.5m above ground level where the haul road enters the GCC the odour level increased and the reading was 31ppm holding steady.
3. The GCC had levels in air of between 18 and 21ppm.
4. The ambient readings showed that there is a significant methane emission coming from the site as the level in air was maintained over a 100m transect which means that fugitive gasses are being emitted at various points across the site.
5. Sump 2 showed 32ppm coming from the side through the seal. Re-sealing and some de-watering may be required.

6. Following a plume of CH₄ from sump 2 to GW 79. Gas was emanating from the well seal at 60%. The well urgently requires sealing.
7. Down slope of GW79 there is effectively a basin between the landfill cap and quarry side wall. This should be noted as a possible health and safety risk during very still and inversion like weather conditions if wells are leaking. On this occasion GW79 was releasing gas with H₂S levels >150ppm.
8. LM5A had an intermittent pulsing flow indicating a potential water blockage, which requires investigation. 9.5% methane emission was found through the bentonite seal which requires re-sealing.
9. Gas levels in air were very high between LM5A and LM5B. At the approximate mid-way point between the two wells 1300ppm was recorded and around the wells 2000-3000ppm was recorded. These levels are very high and are a large contributory factor to the readings downwind of the site.
10. LM5B had 30% CH₄ leaking from the side. Extraction was off at this well and it requires further investigation in terms of sealing, water levels, and air leakage etc.
11. 60-170ppm CH₄ (ambient) was detected in a 20m radius from LM5A and LM5B. This area has some gas collection wells that have been built up over time from the base of the site and requires new relief wells to be drilled with slotting covering the upper 25m of waste in this part of the site as this is a high level of emission which must be reduced.
12. CHIW71 had 13% CH₄ leaking from the well sealing and requires a jubilee clip to prevent air ingress/gas egress.

Readings found using the Gazomat analyser are summarised in the table below with actions detailed in red:

GAZOMAT METHANE ANALYSER SITE SUMMARY TABLE INCLUDING ACTIONS

Well ID	CH ₄	Comments/Actions
Sump 2	32ppm	Pipe attached to leachate drainage sump below cap. Please dip this sump and if required de-water.
GW79	60%	Gas coming up from the side of the well. This requires urgent re-sealing as this is a high concentration continuous point source emission. Check the well for water levels and de-water if necessary.
GW70	24ppm	Close to well. Check seal

LM5A	6.1% /9.5%	Emission through bentonite seal. Intermittent pulsing flow suspect high water level. Please re-seal and de-water if required.
LM5B	30%	Gas leaking from seal and up sides of well. The pump had stopped working due to leachate tanks being full. The well requires re-sealing. New nested wells may be required in this area, please see comments above
CHIW0071	13%	Well suction is very low and the jubilee clip is leaking. Gas reading from the base of the well. Requires sealing
GW72	5.5%	Gas leaking from boot detail. Please re-seal.
LMB7	1.8%	Gas leaking through bentonite seal. Please re-seal
CHIW0099	17ppmm	Very small emission, re-drill close to flank producing gas of high quality and flow.
CHIW	10-50ppm	Gas in the air downwind of this point above site surface indicating fugitive emissions. Improvements in infrastructure re-sealing and de-watering should solve this problem.

Many improvements have to infrastructure have recently been made at the site which are very welcome developments. To ensure these improvements are re-enforced the actions cited above should be expedited as soon as possible. The following details should be submitted to enable further characterisation of these issues:

1. Submit the latest gas well dip data to include dip to base, dip to leachate and depth to slots. This exercise was undertaken by at Llanddulas and demonstrated to the NRW with good effect and enabled a much more thorough characterisation of the wells.
2. Consider the installation of relief wells as specified above as there seems to be a head of waste above historically deep wells which may be contributing to the emissions.

Please respond to me in writing detailing your proposed actions to address the actions / issues highlighted in this report detailing your proposed actions. Please do so by 11th October 2013.