

Compliance Assessment Report

Report ID:
CAR_NRW0023813

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

Site	Pwllfawatin Landfill Site EPR/BU8819IV	Permit Ref	BU8819IV			
Operator/Permit holder	FCC Waste Services (UK) Limited					
Regime	Installations					
Date of assessment	22/07/2016	Time in	10:00	Out	13:00	
Assessment type	Audit					
Parts of the permit assessed	Gas Management					
Lead officer's name	Thomas, Ffion					
Accompanied by						
Recipient's name/position	Richard Thomas/ Site Manager	Date issued	12/01/2017			

Section 1 – Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations. A detailed explanation is captured in "Compliance Assessment Report Detail" (Section 2) and any actions you may need to take are given in the "Action(s)" (section 4). 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	CCS Category	Condition(s) breached
A1 - Specified by permit	A	
B1 - Infrastructure - Engineering for prevention and control of emissions	A	
C2 - General Management - Management system and operating procedures	A	
G2 - Monitoring and Records, Maintenance and Reporting - Records of activity, site diary/journal/events	A	

KEY: See Section 5 for breach categories, suspended scores will be indicated as such.

A = Assessed or assessed in part (no evidence of non-compliance), **X** = Action only,

O = Ongoing non-compliance, not scored.

Number of breaches recorded	0	Total compliance score (see section 5 for scoring scheme)	0
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If the Number of breaches recorded is greater than zero, please see Section 3 for 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 (eg. 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 advice given
- Any other areas of concern
- Any actions requested
- Any examples of good practice
- A reference to photos taken

Pwllfawatkin Landfill gas audit

Gas management plan received July 2014.

Check how gas management plan effects pre-operational measures related to road sweepings.

This Compliance Assessment Report (CAR) form has been completed following the pre-planned site visit undertaken on 22 July 2016 as part of the ongoing regulatory compliance of the FCC Pwllfawatkin Landfill site BU8819IV.

Agenda

- Review of updated GMP submission in response to NRW comments 13th March 2014 related to the sign off of Improvement Condition 1b.
- Check FCC internal review process, how GMP is reviewed and revised annually.
- Review containment – update on current containment following capping works,
- Review collection – current extraction rates, collection efficiency, maintenance of system and condensate management, updates following the above capping works.
- Review utilisation – current engine efficiency, down time and flares.
- Review emergency plans- how migration, fire and plant failure would be managed on site.
- AOB.

Present

Ffion Thomas (FT) – NRW PPC officer
Richard Thomas – FCC site Manager
George Augood - Senior technician Infinis
Noel Evans – Technician Infinis

Audit introduction:

NRW allocates priority areas for review under every installation sector including the landfill sector. One of the priority areas for landfill relates to gas management. The sector priorities state that we will "Continue a programme of landfill gas technical reviews at landfill sites across Wales as part of the Reducing Methane Emissions from Landfills initiative. Sites have been chosen using a risk based approach considering criteria such as odour complaints, waste volumes, and off-site migration with nearby receptors." Pwllfawatkin does not meet the risk based approach criteria and therefore will not be subject to a technical review. However landfill gas management remains one of the highest environmental risks posed by landfills to human health and the environment and therefore periodic auditing of operators risk assessments and management plans will be undertaken as part of on-going compliance assessment.

The Gas Management Plan (GMP) for a site is developed from the sites Gas Risk Assessment (GRA) which will have been developed out of the site conceptual model. On undertaking assessment work on Pwllfawatkin's permit against the GMP Ffion identified that there remain some outstanding actions associated with permit Improvement Conditions. This lead to the first agenda item and lead to an audit of gas management at the site.

Agenda item 1.

- Review of updated GMP submission in response to NRW comments 13th March 2014 related to the sign off of Improvement Condition 1b.

On review of the EPR permit BU8819IV and archives by Ffion Thomas identified outstanding actions associated with the Improvement Condition items 1b, in that NRW needed to complete a review of the sites Gas Management Plan that had been received back in July 2014.

Ffion Thomas apologised for the over sight and delay but completed the review and identified 2 points for further clarification. These were raised via email with Russell Bromage (FCC) and covered 2 points to be clarified.

In NRW's response letter of the 13 March 2014 item number 18 of that letter raised the need to outline condensate management including maintenance of knock out pots and cold weather protocols.

The procedure for condensate management are within the GMP under section 4.7 but it does not cover procedures for knock out pot maintenance nor cold weather protocols. This is to be amended.

Under section 5.2.3 of the GMP it states "FCC are currently addressing the comments received from NRW regarding the submitted GRA with amended report expected to be re-submitted shortly" A revised GRA was not found within NRW files or archive.

On further email discussion with Russell Bromage regarding the details behind the GRA review Ffion Thomas identified them as

having come out of NRW's assessment of FCC's GRA submission against the permit Improvement Condition item 1A and comments made in NRW's letter dated 9 October 2013. FCC are therefore to confirm if an updated GRA is available and submit. As these points were discussed via email and briefly at a teleconference, the agenda item was not further discussed in detail during the site audit but the action below has been allocated.

ACTION FCC: Update of the GMP to address point 1 above (condensate management) and submit amended GRA report taking into account NRW's IC1A comments. Timeframe 30 September 2016 or otherwise agreed with NRW. (Also see comments on Gas collection below – where GRA/GMP need to be updated to reflect current operational set up (number of engines) and predicted gas generation.

Agenda item 2.

- Check FCC internal review process, how GMP is reviewed and revised annually.

During the site audit discussions Ffion Thomas enquired as to FCC internal review auditing method for the GMP. Ffion believed that the mechanism for review would be through the annual report submitted to the NRW but wanted to check that there were no other internal FCC mechanisms that she was unaware of for the periodic review of the GMP, GRA and Conceptual model as required by e.g. operational changes on site.

ACTION FCC – confirm the internal review process for auditing of the GMP and how GRA and Conceptual site model is reviewed and updated as required. Timeframe 30 September 2016.

Agenda item 3.

- Review containment – update on current containment following capping works,

Section 3.1 of the GMP details the containment system:

3.1 Containment system

Details of the landfill containment system are presented within the following Reports:

- M J Carter Associates (2003) – Conceptual Model of the Environmental Setting and Design of the Landfill and Landfill Extension at Pwllfawtkin, Pontardawe; and
- M J Carter Associates (2003) – An Assessment of the Risks from Landfill Gas for the Landfill and Landfill Extension at Pwllfawtkin, Pontardawe, Report Reference SH/PW/HN/2403/01/LFGRA.

In summary, these documents report a basal and side wall barrier comprising reworked clay or colliery shale to a thickness of at least 1.0m, with a hydraulic conductivity of no greater than 1×10^{-9} m/s, together with a 2mm thick welded HDPE geomembrane in both the phase of the landfill. The above documents also report the installation of a low permeability cap comprising 1.0m of clay or colliery shale or a 1mm thick HDPE geomembrane and protective geotextile progressively across the Site

The containment system will be reviewed following the re-submission of the GRA, but in principal the landfill directive requirements are being fully met via basal and side containment and FCC's commitment to prompt progressive permanent capping at the site is highly commended.

The use of temporary capping has also greatly assisted in the management of odours and leachate ingress at the site that can impact on gas management. Over all gas containment at the site is of a high standard.

Agenda item 4.

- Review collection – current extraction rates, collection efficiency, maintenance of system and condensate management, updates following the above capping works.

An active gas collection system is in place at Pwllfawtkin. The collection efficiency at Pwllfawtkin has decreased over time, possibly attributed to the changes in waste acceptance composition. The results have seen the removal of engines with only 1 operational engine being run on site. (the GMP and GRA should be updated to reflect these operational changes – see action assigned under agenda item 1)

The photograph below illustrates the site checklist undertaken by Infinis contractors. It includes data highlighted of the gas flow rates and output.

PWLLFAWATKIN - INSTALLATION CHECKLIST			
Date	21/7/16	14/7/16	21/7/16
Maximo Work order number	9009/11	911/524	912/193
ID	A3	A1	A2
Site Output (kW)	840	841	842
Positive Press (Mb)	14.3	13.2	14.4
Suction Press (Mb)	1.5	1.5	1.5
Site Flow (m3/h)	765	740	841
CH4 %	49.4	49.2	49.0
O2 %	0.2	1.06	0.2
CO2 %	32.3	32.6	32.3
Check analyser, cabinet filter, pump & flow	✓	✓	✓
Flare #1			
Run/STBY/fault	STBY	STBY	STBY
Operating temp	0°C	0°C	0°C
Operating Hrs	5206	5203	5211
Louvre position	OPEN	OPEN	OPEN
Measure Drop on all Flame traps & record	-	-	-
Delivery Pressure (Mb)	80.4	200	205
Flow (m3/h)	736	901	841
Pump #1			
Run/STBY/fault	STBY	STBY	STBY
Pump Amper	444	444	1011.6
Pump Filter Drop	-	-	-
Pump Outlet press	20.4	20.3	20.2
Check bearing temps by hand	✓	✓	✓
Audible check for damage / slipping belts / Vibration	✓	✓	✓
Pump #2			
Run/STBY/fault	STBY	STBY	STBY
Pump Amper	3702	3702	3702
Pump Filter Drop	-	-	-
Pump Outlet press	-	-	-
Check bearing temps by hand	-	-	-
Audible check for damage / slipping belts / Vibration	-	-	-
Site Compressors			
Main Comp Oil level	6.3	6.3	6.3
Main Comp Run Hrs	359.6	359.29	359.99
Visual inspection of drive belts	N/A	N/A	N/A
Standby Comp Oil Level	✓	✓	✓
Standby Comp Drain receiver	✓	✓	✓
Oil Tank / Waste Levels			
Clean oil tank level	4000	3900	3900
Waste oil tank level	1200	1200	1200
Bulk Antifreeze tank level	60%	60%	60%
Check Levels in Other Waste bins	✓	✓	✓
COMMENTS:			
Cell 3	84061	84226	84592
RA6.5	25	25	25
Filter	10	10	20
Stair	✓	✓	✓
6x100	6x100	6x100	6x100
11x50/10	11x50/10	11x50/10	11x50/10
11x50	✓	✓	✓
Blower	✓	✓	✓

Within the GMP section 2.0 it is stated that:

"MJ Carter report highlights a peak in predicted landfill gas generation rates of 3570 m3/hr in 2016 and considers that the engines and flare (installed during 2005) will be sufficient to manage the gas generated"

As the gas generated has decreased the operational set up has been reviewed (extraction balanced and engines removed as required) but the GMP does not cover this change. As part of the update required under item 1 of this audit FCC are advised to amend the GRA and GMP to reflect the current and future predicted gas generation, collection and utilisation. With 6 more permanent gas wells to be retro drilled this summer and with FCC reviewing the operational life of the site it may be worth looking to amend and review the GMP and GRA by 30th September 2016, or otherwise agreed dependant on FCC operational intentions. Future wells are to be installed, with 6 wells planned to be retro drilled at the end of August. These wells will be drilled 35meters apart (fitting within the recommended distance and GMP distance) Basal confirmation is required before the CQA plan can be completed and submitted.

Following acceptance of the CQA plan and installation of these wells an updated drawing of the gas field will be included in the CQA validation report.

Sacrificial pin wells at the edge of cell 4 remain linked into the collection system, they are closely managed due to the need to control leachate ingress. This sacrificial collection commitment is again highly commended as it continues to help with odour management at the site, and maximise gas management.

3 months' worth of gas data was forwarded by Infinis, this data is shared with FCC and used to provide the permit monitoring returns. No compliance breaches have been identified thus far in 2016.

Weekly checks are undertaken as part of the maintenance programme, the details of the checks can be seen in the attached photograph above. The lower hand written section of the maintenance sheet refers to product stores and waste generated from the utilisation plant.

Agenda item 5.

- Review utilisation – current engine efficiency, down time and flares.

Ffion Thomas would like to thank Noel Evans for providing a comprehensive site tour of the utilisation plant.

Brief summary: The gas field runs into a 450 ring main, it then steps down to a 355 before coming into the utilisation plant. Both phase 1 (closed) and phase 2 landfills gas enters the same utilisation plant, with a knock out pot at the T junction split to phase 1. On entering the utilisation plant the gas is burnt in the 4 stroke V20 engine. 1 engine currently runs at the site with a second available as back up for safety and maintenance provision. There are also 2 filters, one operational and 2 blowers, 1 operational, the remaining plant are kept as back up for maintenance and safety provision. Further plant is available via Infinis stock stores. All

plant have a motivax service record. The service record showed the last engine service having been undertaken on the 16th May 2016, with the next due in November 2016.

The system works off automatic load balancing soft wear that has a manual override. The system is set up that if 3% oxygen is detected within the gas then the sensors automatically trip the engines and switch combustion to flare. If an increase over 6% oxygen is then detected then the flare is tripped as a safety mechanism to avoid combustion risking explosion.

Agenda item 6.

- Review emergency plans- how migration, fire and plant failure would be managed on site.

On the morning of the 22nd July a Schedule 6 notification was received due to damage caused to a section of permanent gas pipeline by the activities of capping contractors Jones Bros. Compliance of the incident will be recorded under assessment of the schedule 6 and not undertaken as part of this audit, however the actions taken to mitigate pollution show that emergency plans as detailed in section 6.3 F of the GMP were followed and instigated.

Agenda item 7.

- AOB

Whilst at the gas utilisation site a brief review of the hazardous waste consignment was undertaken. The site is registered as a Hazardous waste producer under registration CAG980. Desk top checks were carried out on return to the office by Ffion Thomas which verify this information. Engine, gear and lubrication oils (EWC 13 02 08), Waste oil filters (EWC 16 01 07) and rags (15 02 02) are the hazardous waste produced and they are stored within a bunded area in sealed skips prior to collection by Oakwood fuels Ltd (carriers CB/SE5701MG) to Oakwood environmental services.

Consignment notes are held on site and show to be completed correctly via a brief review of the paperwork.

Advice was given to ensure that nil returns are submitted for quarters when no collections or transfer of waste has been required.

END

EPR Compliance Assessment Report

**Report ID:
CAR_NRW0023813**

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

Site	Pwllfawatkin Landfill Site EPR/BU8819IV	Permit Ref	BU8819IV
Operator/Permit holder	FCC Waste Services (UK) Limited	Date	22/07/2016

Section 3 – Enforcement Response

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.

Section 4 – Action(s)

This section summarises the actions identified during the assessment along with the timescales for when they will need to be completed.

Criteria Ref.	CCS Category	Action required/advised	Due Date
See Section 1 above			

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 verbally or 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 that 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 fulfil 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 (eg. 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
- Assessing customer service satisfaction and improving its service
- Freedom of Information Act/Environmental 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 reports 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 officer's line managers using the informal appeals procedure. 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.

Welsh Language

If you would like this form in Welsh please contact your Regulatory Officer.