

## Compliance Assessment Report CAR\_NRW0049743

**Permit being assessed:** BU8819IV.

**For:** Pwllfawatkin Landfill Site EPR/BU8819IV, **held by:** FCC Waste Services (UK) Limited

**At:** Pwllfawatkin Landfill Site , Pontardawe, SWANSEA, West Glamorgan, SA8 4RX.

**Type of assessment:** Site Inspection,

**Reason:** Routine.

**On:** 12/08/2025 between 09:55 and 13:30.

**Parts of permit assessed:** See Section 4.

**NRW Lead Officer:** Benjamin Taylor.

**Report sent to:** Environmental Compliance Advisor, FCC Environment , on 22/10/2025.

### 1. Summary of our findings (full details in section 4)

| Part of permitted activity assessed (compliance criteria)                                                   | Assessment result | Permit condition |
|-------------------------------------------------------------------------------------------------------------|-------------------|------------------|
| IR1A - Installations - Management - General Management                                                      | Assessed (A)      |                  |
| IR2G - Installations - Operations - Landfill engineering (only applicable to landfill)                      | Action only (X)   |                  |
| IR3B - Installations - Emissions and monitoring - Emissions of substances not controlled by emission limits | Assessed (A)      |                  |
| IR3C - Installations - Emissions and monitoring - Odour                                                     | Assessed (A)      |                  |

Result types are explained in more detail in the 'Important Information' section below.

| Total non-compliances recorded | Total non-compliance score |
|--------------------------------|----------------------------|
| 0                              | 0                          |

How we use the non-compliance score to calculate your annual fee is explained in the 'Important Information' section below.

### 2. What action is required?

| Criteria | Action needed                                                                                                                                                                         | Complete by       |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| IR2G     | FCC Environment is to ensure that the plan illustrating the leachate/gas infrastructure is amended so that it accurately reflects the layout and assets of the Landfill Complex. Once | Already completed |

| Criteria | Action needed                                                                          | Complete by |
|----------|----------------------------------------------------------------------------------------|-------------|
|          | this is completed, then the accurate plan is to be submitted to NRW for their records. |             |

Compliance criteria codes are listed in the 'Important information' section below.

### 3. What will happen next?

Any non-compliance we have identified and recorded on this form is an offence. It can result in criminal prosecution and/or suspension or revocation of your permit.

#### **At this time, we do not intend to take any further action.**

This statement does not stop us from taking additional enforcement action if further relevant information comes to light or offences continue.

### 4. Details of our assessment

#### Introduction

This Compliance Assessment Report (CAR) is regarding a Site Visit undertaken on the 12<sup>th</sup> of August 2025 by Natural Resources Wales (NRW) to the Pwllfawatin Landfill Complex, which is managed by FCC Environment (the Operator) under permit number EPR/BU8819IV.

#### Scope

This was a pre-arranged visit, the purpose of which was to gain familiarisation on the Gas Utilisation Compound (GUC) which is associated with the Landfill Complex. Furthermore, it provided an opportunity for NRW to gain insight into future operational expectations (i.e. landfill gas quality/volumes, engine sizing, etc) following the completion of the Capping and Restoration Soils Works on the 15<sup>th</sup> of August 2025.

During the inspection, contractors (Dragon Drilling) were in the process of installing gas extraction wells upon the plateau of Tip 890, the CQA Plan for which was approved by NRW on the 3<sup>rd</sup> of July 2025. During the visit, NRW attended the drilling works area in order to observe the installation process taking place.

#### Site Observations

##### Gas Compound

NRW arrived at 9:55 and were met by representatives of INFINIS Energy Ltd who undertake the management/maintenance of the GUC, its assets and associated landfill gas collection infrastructure on behalf of FCC Environment. It was noted that the GUC comprised of the following:

- Collection Manifold.
- Booster Room.
- Jenbacher 320 Engine.

- HAASE HT 10 Flare.
- Clean/Waste Oil Storage.
- Glycol Storage.
- Waste Storage.
- General Storage.

It is the understanding of NRW that there is a two team system involved in the operation of the GUC; a 'Field Team' that primarily focuses on the gas infrastructure throughout the Landfill Complex and a 'Compound Team' that manages the assets within the compound. INFINIS outlined to NRW that there is significant crossover between these two teams ensuring resilience. The compound is technically unmanned, with attendance usually limited to once or twice per week as standard. INFINIS undertake routine inspections of the compound, recording details within an *Installation Checklist* located within the office, inspection of these records suggested these are undertaken on bi-monthly basis, with the previous check noted as being the 4<sup>th</sup> of August 2025.

### Booster Room



Image 1: View of Booster Room

INFINIS informed NRW that although two boosters are present onsite, only one is operated at any given time due to the available volume of landfill gas. They have maintained the ability for seamless switching between the two boosters, providing a contingency arrangement through the availability of a backup unit.

To ensure balanced operational hours and facilitate routine maintenance, INFINIS alternates the

use of the boosters on a quarterly basis. This approach supports consistent servicing and helps maintain the reliability of both assets.

A static gas analyser is located within the Booster Room, it was noted at the time of the inspection that the reading was 31.4% Methane (CH<sub>4</sub>) and 22.2% Carbon Dioxide (CO<sub>2</sub>). This analyser is also monitored remotely, with the ability to automatically divert from the engine should an issue arise (i.e. high O<sub>2</sub> spike). Hydrogen Sulphide (H<sub>2</sub>S) was not identified as listed on the panel, however INFINIS personnel manually collect readings (which would include H<sub>2</sub>S) from numerous sampling points using their onsite Portable Gas Analyser: GA5000. NRW were informed that observed H<sub>2</sub>S levels entering the GUC have notably decreased following the capping of the Landfill Complex, this subsequently has resulted in removal of the carbon filter which is typically situated prior to the engine.

The Booster Room is fitted safety and warning systems (including a beacon) to alert onsite staff of danger prior to entry into the cabin.

### Jenbacher 320 Engine



Image 2: View of Jenbacher 320 engine

NRW inspected the 1065kw capacity rated Jenbacher 320 engine. At the time of the inspection, the engine was operating at around 625kw. The status of the engine (i.e. component temperature, pressure, etc) is displayed upon a control panel positioned within the Engine Room, this is also remotely monitored via INFINIS's SCADA System. It is the understanding of NRW that the engine is able to be controlled remotely, and can be derated in situations where elevated temperatures are observed in order to minimise the risk of engine damage.

The engine is maintained by INFINIS personnel, NRW observed the engine log sheet within the Engine Room, this is appeared to be completed on a routine basis with the previous entry noted as

the 4<sup>th</sup> of August 2025. Furthermore, INFINIS outlined that in addition to general checks, they also undertake regular servicing (B-Type Service) on the engine (in addition to other components of the GUC), these are split into major and minor services depending on the number of actions being undertaken. NRW viewed the most recent B-Type Service log sheet, which was dated the 15<sup>th</sup> of October 2024. INFINIS provided evidence that the engine was de-coked on the 7<sup>th</sup> of May 2025 which typically would take place instead of a B-Type Service. NRW were informed that the next engine service date was scheduled for the 20<sup>th</sup> of August 2025.

Onsite discussions suggested that there is sufficient gas in terms of quality and volume to run the current engine for a number of years, INFINIS Energy outlined that there are no immediate plans for engine downsizing.

### Flare



Image 3: Two-stage burners located prior to the flare.

Under permit condition 2.10.2, if energy is unable to be generated using collected landfill gas (i.e. during gas engine downtime), then the Operator (FCC Environment) is required to ensure that the landfill gas is flared/treated to prevent its release to atmosphere. To facilitate meeting this obligation, the compound is fitted with a 10MW (manufactural rating) Haase HT 10 two-stage burner flare within the northwestern corner. The flare is ignited via a permanent pilot light fitted with a UV sensor. During the visit, it was noted that the flare's temperature was illustrated as 104°C on the control panel (located within the Booster Room); indicative that the pilot light was operational at the time. As part of ongoing routine checks/maintenance, NRW were informed that the pressure differential between the flame arrestors are checked on a quarterly basis with a full service, which involves the removal of everything undertaken annually.

INFINIS Energy Ltd informed NRW during the inspection that modifications had been made to the onsite flare in order to reduce its overall capacity, and deal with lower volumes of gas entering the

GUC. NRW has not considered the compliance implications of these changes to the onsite flare at this time. These may be considered upon submission of further information by INFINIS, FCC, or the flare manufacturer, and could also lead to future inspections.

### Oil Storage



Image 4: Integrated oil storage vessels onsite - clean (left) and dirty (right).

Clean and waste oil used within/generated from assets onsite are stored within integrally bunded tanks located on the western boundary of the compound. NRW were informed that whilst the tanks each have a capacity of 10,000 litres, as per INFINIS's operating protocols the stored liquid is maintained to less than 50% of the tanks total volume. Levels within the tanks are remotely monitored with alarms fitted as a precautionary measure. Additionally, oil levels determined manually as part of the routine onsite checks that are completed by INFINIS personnel. INFINIS outlined to NRW that oil delivery and removal is controlled automatically via their SCADA System using pre-determined level thresholds. Transfer of oil is undertaken via overhead pipework to minimise risk of collision. Any failures of the pipework should be easily identifiable by onsite staff. A sealed spill response kit was noted within the immediate vicinity of the oil tanks, INFINIS should ensure that staff are sufficiently trained to deal with spillages should one occur.

### Glycol Storage



Image 5: Integrated glycol storage tank

INFINIS informed NRW that glycol is used as both a coolant and an inhibitor for the onsite engine. It is stored within in a 1500 litre integrally bunded tank, and similarly to oil the glycol levels are maintained below 50% to ensure sufficient capacity for transfer from the engine if required.

#### Onsite Monitoring/Telemetry

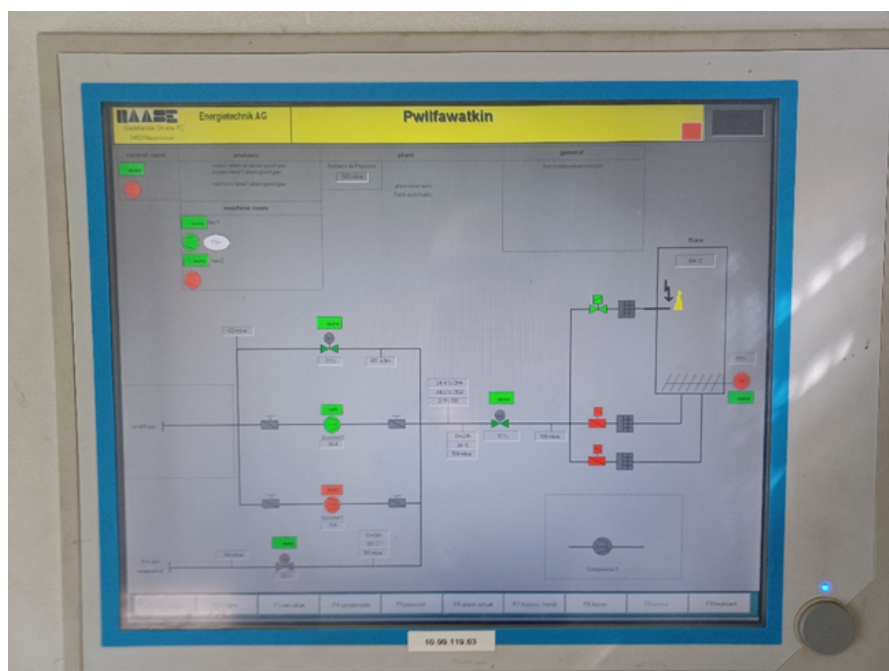


Image 6: Monitoring control panel located within the Booster Room.

NRW also observed the status display located within the Booster Room which illustrated that Booster 2 and the Engine were in operation at the time of the visit. This system is remotely monitored and controlled via INFINIS's SCADA System.

### Gas Well Drilling Works

NRW then attended Tip 890 at 11:30 in order to observe the gas well drilling works which commenced on the 11<sup>th</sup> of August 2025. NRW were informed that the gas infrastructure on the Western flank had been connected up to the system, with intentions to switch on gas flow to GUC later that day. This is undertaken incrementally (in phases) in order to prevent any issues arising with the downstream engine.



*Image 7: Contractors in process of drilling to depth on Peg ID: L3*

On arrival to the drilling works area, NRW were met by representatives of Dragon Drilling whom were being supervised by Sirius Group (as the CQA Engineer). The Officer observed the partial drilling of Peg ID: L3 well. No significant odours were detected at the time, however the NRW Officer was situated upwind from the well.



*Image 8: In-situ mobile de-odouriser as specified within Pwllfawatkin Gas Well Drilling CQA Plan Infnis June 2025*

As a form of odour mitigation, and as specified within Section 4.7 of the *Pwllfawatkin Gas Well Drilling CQA Plan Infnis June 2025*, a mobile de-odouriser was operating downwind of the drilling works area.

### **PWLMW4NB Remediation**



*Image 9: Re-drilled PWLMW4NB to the right.*

As captured within previous CAR forms (i.e. CAR\_NRW0048422), the Operator was unable to monitor leachate levels within PWLMW4NB Leachate Well due to reported pinching at approximately 24m depth. Consequently, an action was set by NRW to re-drill PWLMW4NB so that leachate levels can be monitored in the future, there was a prolonged period of time elapsed to complete this action due to the requirement for restoration soils needing to be deployed in order to facilitate access for the mobile drilling rig.

NRW were informed that the drilling works for PWLMW4NB had been completed, and leachate levels were compliant. Currently, the well is only connected up to the gas infrastructure. FCC Environment have outlined that they will fit a pump to remove leachate retrospectively if required.

**Following completion of the works outlined above, it is considered that the requirement of the action (detailed within CAR\_NRW0048422) has been met, and the action is subsequently completed.**

It was noted by NRW that there have been alterations to the gas/leachate infrastructure that are associated with the Pwllfawatin Landfill Complex, it is important that the Site Infrastructure Plan is amended so that it accurately reflects these changes.

**Note:** During the completion of this CAR, FCC Environment submitted their CQA Validation Report on the 9<sup>th</sup> of September 2025, which included an amended Site Gas Infrastructure Plan (*Drawing Number: 5390\_G/20*).

**Action:**

**FCC Environment is to ensure that the plan illustrating the leachate/gas infrastructure is amended so that it accurately reflects the layout and assets of the Landfill Complex. Once this is completed, then the accurate plan is to be submitted to NRW for their records (already completed).**

If you have any queries about this report, or to discuss completion of any actions, please contact the NRW Officer named above.

## Important information

### Legal status of this report

Your permit is issued to you under the Environmental Permitting Regulations. You have a responsibility to comply with the conditions of your permit and prevent pollution/harm of the environment. You must also ensure that you comply with any other relevant legislation that may apply to your site's operations.

This report explains the findings of our assessment and any action you are required to take. We categorise non-compliance using our guidance for assessing non-compliance at regulated sites.

When we find potential non-compliance/s we will normally give you advice on how to maintain compliance.

To correct non-compliance, we may:

- require you to take specific actions
- issue a notice
- review the conditions of your permit.

Any advice and guidance we give will be without prejudice to any other enforcement response that we consider may be required.

### Assessment results and non-compliance categories (used in section 1):

| Assessment result | Description                                                       |
|-------------------|-------------------------------------------------------------------|
| Assessed (A)      | Assessed or assessed in part, no evidence of non-compliance found |
| Action only (X)   | Action only relating to the activity assessment                   |
| Ongoing (O)       | Ongoing non-compliance, not scored                                |

| Non-compliance category    | Description                                                                                                                 | Score |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------|-------|
| C1 Major                   | Potential to have a major, serious, persistent and/or extensive impact or effect on the environment, people and/or property | 60    |
| C2 Significant             | Potential to have a significant impact or effect on the environment, people and/or property                                 | 31    |
| C3 Minor                   | Potential to have a minor or minimal impact or effect on the environment, people and/or property                            | 4     |
| C4 No environmental impact | Non-compliance at a regulated site that cannot foreseeably have any impact on the environment, people and/or property       | 0.1   |

### How we use assessment scores

The number and severity of non-compliances recorded in a year will affect your annual subsistence fee the following year. A non-compliance factor is added to your site's Operator

Performance Risk Appraisal (OPRA) score when we calculate your fee to reflect the additional resource we use to assess permit compliance.

**If your assessment result in Section 1 is suspended, what does this mean?**

In line with our guidance, we may suspend scores for up to six months to allow time for remedial action to be taken. Suspended scores will be re-instated if the action is not completed.

**Full list of Industry compliance criteria** (used in section 1 and 2):

**1. Management**

- IR1A – General management
- IR1B – Finance (only applicable to Landfill)
- IR1C – Energy efficiency
- IR1D - Efficient use of raw materials
- IR1E - Avoidance, recovery and disposal of wastes produced by the activities
- IR1F - Multiple operator installations

**2. Operations**

- IR2A – Permitted activities
- IR2B – The site
- IR2C – Operating techniques
- IR2D – Technical requirements
- IR2E – Improvement programme
- IR2F – Pre-operational conditions
- IR2G – Landfill engineering (only applicable to Landfill)
- IR2H – Waste acceptance (only applicable to Landfill)
- IR2I – Leachate levels (only applicable to Landfill)
- IR2J – Closure and aftercare (only applicable to Landfill)
- IR2K – Landfill gas management (only applicable to Landfill)

**3. Emission and Monitoring**

- IR3A – Emissions to water, air or land
- IR3B – Emissions of substances not controlled by emission limits
- IR3C – Odour
- IR3D – Noise and vibration
- IR3E – Monitoring
- IR3F – Pests
- IR3G – Air quality management plans
- IR3H – Monitoring for the purposes of the Industrial Emissions Directive (this heading includes Large Combustion Plants)
- IR3I – Fire

**4. Information**

- IR4A – Records
- IR4B – Reporting
- IR4C – Notification

**Enforcement response**

Any non-compliance with a permit condition is an offence and we may take legal action against you. Action we take can include prosecution, serving a notice on you and/or

suspension or revocation of your permit. See our Enforcement and Sanctions Guidance for further information.

### **Data protection notice**

You should make sure that anyone named in this report knows that the information it contains will be processed by Natural Resources Wales to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s).

We may also use and/or disclose the report in connection with:

- offering or providing you with our literature or 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
- assessing customer service satisfaction and improving our service
- Freedom of Information Act or Environmental Information Regulations requests.

We may also pass it on to our agents or representatives to do these things on our behalf.

### **Disclosure of information – this report will be available to view on-line**

If you think this report contains commercially confidential information that should not be placed on our public register, you must contact your local Natural Resources Wales office within **fifteen working days** of receiving this report, using the contact details in the accompanying email or letter. You must give a full explanation of why it should not be added to our public register, including specifying which information is commercially confidential. We will assess your request and respond to you within twenty working days to let you know if we agree to your request.

### **What do I do if I disagree with the report or have a complaint?**

If you disagree with this compliance assessment report, you should contact the lead officer without delay to discuss your concerns.

If you are unable to resolve the issue with the lead officer or their line manager you should contact our Customer Contact team on 0300 065 3000 (Monday to Friday 08:00 to 18:00), or email [enquiries@naturalresourceswales.gov.uk](mailto:enquiries@naturalresourceswales.gov.uk) for details of how to raise your dispute further through our Complaints and Commendations procedure.

If you are dissatisfied with our response, you can contact the Public Services Ombudsman for Wales by phone on 0300 7900203 or by email at [ask@ombudsman.wales](mailto:ask@ombudsman.wales)

### **Welsh Language Standards**

We are committed to establishing Natural Resources Wales as a naturally bilingual organisation. We will provide compliance reports in your preferred language.