

## Compliance Assessment Report CAR\_NRW0040325

**Permit being assessed:** AB3096CP.

For: Lamby Way Open Windrow Composting Facility, held by Welsh Water Organic Energy (Cardiff) Limited

At: Lamby Way, Rumney, Cardiff, CF3 4EQ.

**Type of assessment carried out:** Audit, Reason: Incident Response (Incident number 2205201).

On 18/07/2022 between 13:15 and 14:00.

Parts of permit assessed: Odour management

**NRW Lead Officer:** Geraint Harris, accompanied by Andi Kemp.

**Report sent to:** Adrian Thomas, Contract and Relationship Manager on 25/08/2022.

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

Part of permitted activity assessed (criteria)	Assessment result	Permit condition
F1 - Amenity - Odour	C3 Minor	permit condition 3.3.1
F1 - Amenity - Odour	C3 Minor	permit condition 1.1.1

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

Total number of non-compliances recorded	Total non-compliance score
2	8

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
F1	Improve onsite operations to minimise the occurrence of odour beyond your boundary	01/11/2022
F1	Ensure that your Odour Management Plan is adhered during unfavourable weather conditions.	25/08/2022

Action 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

### Welsh Water Organic Energy (WWOE)

EPR-AP3096CP

#### Odour Non-Compliance

On the 18<sup>th</sup> of July myself and Lead Specialist Andi Kemp investigated the cause of several odour complaints within the Rumney Area. These reports were received by NRW Incident Communication Centre at 1259 and 1339. During the investigation we drove around several areas of the Rumney/Pwll-Mawr and Trowbridge areas. We were able to substantiate compost odours along Wentloog Road and New Road. During this investigation we also drove along Wentloog Avenue (towards Neals soils) and Mardy Road (past GMH Vehicle Recyclers) but were unable to identify any odours in those areas. Following that we then drove westwards to the water treatment works in Tremorfa but were unable to identify any odours enroute to or at the works themselves. In the areas where we did notice odour (Wentloog Road and New Road) the odour was that of a compost/wood like odour similar to what is witnessed at the compost site at Lamby Way. At the time of noticing the odours (1330), the wind was observed coming from a southerly direction. This was confirmed by observing the direction in which the wind turbine was pointing. The online wind direction for the area of Rumney at the time of noticing the odours indicated an east-southeast direction and the weather station data from WWOE indicated a South Easterly wind direction. At the point where the odours were witnessed the compost site is situated in a south easterly direction.

NRW are satisfied that we have substantiated the odour from your site outside the permit boundary based on the following three points:

- Recognisable composted odour
- Wind direction
- No odour detected down wind of other potential sources.

WWOE's odour management plan states that "Due to residential properties being considered high risk turning and screening are suspended while there is wind from a southerly direction." WWOE were emailed asking if they had suspended screening and turning operations have ceased as stated in the OMP when winds are southerly. WWOE replied stating that "they have been monitoring the weather all day and it has been easterly/south easterly all day. I have confirmed this on live data below (from Cardiff airport). They are currently screening and turning on site at the moment". WWOE were asked to cease these operations until the wind veered from a southerly direction.

WWOE undertook operations that were contradictory to what was stated within their OMP. Since this resulted in the reporting and substantiation of compost odours beyond their boundary within the lower residential area of Rumney, WWOE are found to be in breach of permit condition 1.1.1 and 3.3.1 and will be issued the nonconformances stated below. NRW's guidance for ongoing amenity non-compliances (except litter non-compliance) should be recorded as category 2 on CCS when the monthly record is made. This can only be downgraded or escalated to a different category with justification. Although this odour was strong and unpleasant at the time of investigating it did not persist for a significant length of time and the last complaint was received at 1339 that day. Taking this into account it is deemed that a Category 3 non-compliance is appropriate for this incident.

Category 3 noncompliance is being awarded against permit condition 3.3.1. **It is an offence under Regulation 38(2) of the Environmental Permitting Regulations (consolidated 2016) to breach a permit condition or emission limit. Non-compliance score CCS3.**

Category 3 noncompliance is being awarded against permit condition 1.1.1, General Management. **It is an offence under Regulation 38(2) of the Environmental Permitting Regulations (consolidated 2016) to breach a permit condition or emission limit. Non-compliance score CCS3.**

#### **BAT 36**

**In order to reduce emissions to air and to improve the overall environmental performance, BAT is to monitor and/or control the key waste and process parameters.**

WWOE responded with the following “Please reference Standard Operating Procedure – in particular section 4 Composting activities – managing, monitoring and evaluating sanitisation and stabilisation” Based on this response and the audit undertaken in 2021 (CAR\_NRW0039610), NRW believe that the site is compliant with BAT for their waste input characteristics such as Carbon to Nitrogen ratio and moisture levels. For the control of key waste and process parameters relating to aeration of the windrows there is a gap between WWOE’s current operations and the revised Waste Treatment Bref BAT as implemented by improvement condition IC2. In order to fully comply with IC2 please submit proposals specifically addressing the following composting process measurements and control parameters as set out in [ref. WT Bref, p 409, 410]:

#### **Measures to improve structure**

Table 4.35 provides the following measures to improve the windrow structure and prevent oxygen deficiency during composting:

- Mix additional bulking agents if required (shredded bush cuttings).
- Increase bulking agents especially in the bottom of the heap, if required. Create a basic layer with structure-forming shredded wood.
- Use oversize elements when required to ‘open’ the feedstock texture.
- Porosity is a key factor in the generation of odours. The density of the material can be optimised from the beginning by effective blending and mixing of feedstocks. This will enable adequate air flow throughout the pile.

Please can you explain which of these measures are employed within your operations. If the measures you employ are different but of an equivalent standard, please explain? If some of these measures are not used and no alternative is utilised, please explain why?

#### **Windrow structure**

Table 4.35 provides the following measures for windrow structures to prevent oxygen deficiency during composting:

- Set up loose, well-structured windrows for the initial intensive degradation phase.
- The optimum height of a pile/windrow is generally considered to be between 1.5 and 3 metres and depends on:
  - decomposition age (the more mature, the higher the piles can be);
  - structural stability of the whole mixture;
  - installation of a forced aeration system (alternating positive [blowing] and negative [sucking]).

Optimal windrow sizes are specified as being 1.5 to 3 metres, whereas at WWOE's Cardiff site, current operational windrows are significantly larger at 4m high by 8 metres wide. Therefore, WWOE fall short of this BAT/Bref requirement. Large windrows have implications for odour and ammonia releases, due to potential anaerobic and high temperature conditions in the core of the windrows. Page 409 of the Bref states a number of operational measures that can be used to reduce odour emissions from open windrow composting systems, of particular note is limiting the size of the windrows. Please provide your proposal for reducing your sites windrows in compliance with this BAT/Bref requirement?

There is a requirement to have well-structured windrows for the initial intensive degradation phase. Please explain how the current windrows comply with this requirement? How do you maintain a loose and well-structured windrow throughout the whole windrow including the core?

### Temperature

High temperatures for prolonged periods of time after thermal hygienisation may lead to an increase in the formation of odorous substances and ammonia. Temperature monitoring can also be used for controlling aeration. An optimal temperature for the process is between 55 °C and 70 °C.

Bref states (page 410):

More sophisticated compost management software enabling integrated monitoring of oxygen, moisture, temperature, and carbon dioxide is also available for process control purposes and can assist the operator to understand more accurately the conditions actually occurring within the compost mass. More specifically, the technique includes the following:

- a. the temperature is monitored at an appropriate frequency during the intensive composting phase (for thermal hygienisation);
- b. the temperature is recorded at representative points intermittently or continuously, as defined in the operator's quality management system, usually at least once per working day during the entire hygienisation period;
- c. in order to reduce the formation of odorous substances and ammonia, it is recommended to avoid very high temperatures for prolonged periods of time after thermal hygienisation.

BAT is to monitor and/or control key waste and process parameters including temperature and aeration of the windrows. The monitoring probe length is 1.2 metres, but windrow sizes are approximately 4 x 8 metres, thus oxygen and temperature conditions within the core of the windrows are not being monitored. Therefore, it cannot be claimed that temperature and oxygen are being monitored at representative points within the windrows. Please provide a response explaining how you intend to address this monitoring shortfall?

In summary there is uncertainty about what measures in relation to the Bref/BAT guidance WWOE are utilising.

**Action 1:** In order to fully comply with IC2 please submit proposals specifically addressing these composting process measurements and control parameters as set out in the above [ref. WT Bref, p 409, 410]: **Due 1<sup>st</sup> November 2022.**

END.



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.

### **What are suspended scores?**

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 and Waste action criteria (used in section 1 and 2):**

#### **A: Permitted activities**

- A1 Specified by permit

#### **B: Infrastructure**

- B1 Infrastructure – Engineering for prevention and control of emissions
- B2 Infrastructure – Closure and decommissioning
- B3 Infrastructure – Site drainage engineering (clean and foul)
- B4 Infrastructure – Containment of stored materials
- B5 Infrastructure – Plant and equipment

#### **C: General management**

- C1 General management – Staff competency/training
- C2 General management – Management system and operating procedures
- C3 General management – Materials acceptance
- C4 General management – Storage, handling, labelling and segregation

#### **D: Incident management**

- D1 Incident management – Site security
- D2 Incident management – Accidents, emergency and incident planning

#### **E: Emissions**

- E1 Emissions – Air
- E2 Emissions – Land and groundwater
- E3 Emissions – Surface water
- E4 Emissions – Sewer
- E5 Emissions – Waste

#### **F: Amenity**

- F1 Amenity – Odour
- F2 Amenity – Noise
- F3 Amenity – Dust/fibres/particulates and litter
- F4 Amenity – Pests/birds and scavengers
- F5 Amenity – Deposits on road

#### **G: Monitoring and records, maintenance and reporting**

- G1 Monitoring and records, maintenance and reporting – Monitoring of emissions and environment
- G2 Monitoring and records, maintenance and reporting – Records of activity, site diary/journal/events
- G3 Monitoring and records, maintenance and reporting – Maintenance records
- G4 Monitoring and records, maintenance and reporting – Reporting and notification to Natural Resources Wales

#### **H: Resources efficiency**

- H1 Resource efficiency – Efficient use of raw materials
- H2 Resource efficiency – Energy efficiency

### **Enforcement response**

Any permit condition non-compliance 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 20 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 – 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.