

Compliance Assessment Report CAR_NRW0040809

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: Site Inspection, Reason: Incident Response (Incident number 2207447).

On 10/10/2022 between 13:00 and 14:00.

Parts of permit assessed: Emissions to Air

NRW Lead Officer: Geraint Harris, accompanied by Lewis Evans.

Report sent to: Adrian Thomas, Contract and Relationship Manager on 14/12/2022.

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

Part of permitted activity assessed (criteria)	Assessment result	Permit condition
F3 - Amenity - Dust/fibres/particulates and litter	C3 Minor (Suspended)	Permit Condition 3.2.1
C4 - General Management - Storage, handling labelling and Segregation	C3 Minor	Permit Condition 3.7.

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

Total number of non-compliances recorded	Total non-compliance score
2	4

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
F3	Action 1: Provide NRW with an update on the suitability of the water from the adjacent lagoon and or the installation of a water source. Action 2 : Provide NRW with a plan on how moisture levels within the windrows will be maintained within BAT limits going forward.	30/01/2023
C4	Ensure that the conditions of the FPMP are adhered to at all times.	Already completed

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****Dust**

NRW received three dust complaints from members of the public on the 7th of October and then a further dust complaint on Monday the 10th of October. Consequently, my colleague Lewis Evans and I went to investigate at 1300 on Monday the 10th of October. Both Lewis and I walked south from Wentlooge Avenue alongside a reen to the path on top of the coastal wall. As we walked alongside this reen, no dust or odour was observed. We then walked west along the top of the coastal path behind the compost site. Initially there was no odour and no dust present, however there were no operations being undertaken at the site at that time. Once the operations had begun, significant amounts of dust was seen being blown off the site. The operations being undertaken at the time were observed to be screening on the west side of the pad and shredding on the eastern side. The only odour observed while on the sea wall was a mild, sweet compost like odour, characteristic of open windrow composting and in line with the permit requirements. A video of the dust observed at the site was taken. Following this observation, we walked back to my car and I drove onto the site.

On site, I met the new site supervisor and explained I was here due to the recent complaints about dust (between 0700-1200 on the 7th of October and 0930 on the 10th of October). He gave me a tour of the site and explained what operations were being undertaken. On the eastern side (closest to the entrance) green waste was being shredded and on the far side (west side) he explained that oversize material was being screened. Upon viewing the screening, it was evident that this was the process producing all the dust emissions. Following this, both the supervisor and I walked out of the site and onto the seawall. Here dust could be seen leaving the site boundary, a video of the dust observed at the time was taken. Although, this dust could be seen leaving the site boundary, the impacted area was very small and only consisted of the immediate area along the site boundary.

The site recently hired a mist cannon, this was not being used during our visit and was seen stored near the entrance of the site. The material being screened looked to be very dry and so I enquired with the site supervisor if he could undertake a moisture check on the material being screened. He informed me he had already undertaken the monitoring for that day and was able to show me the results on compost manager.

The barcode for the material was 21682 which had a batch number of 220822. The results show the moisture levels to be between 30-40% with an average moisture of 31.2%. There is a permit condition to keep moisture levels, Internal for each windrow and for any sample of waste or compost between 40% and 60%. This permit condition was pointed out to WWOE in an email sent on the 12th of October, in return WWOE responded with the following:

“This year has been a challenge given the weather conditions during the late spring and summer months with the weather this year being drier than we have seen in decades. Within the past few weeks, we have noticed a reduction of the moisture content within the windrows, most of the windrows monitored since August have seen moisture content drop slightly, and average around 41 % for the whole of the composting process, the lowest readings being in the last couple of weeks of the process. Although not ideal, it should not affect the composting process as the optimal parameters as stated for biological waste treatment should be between 30% - 65% during waste treatment.

Our SOP, HACCP and the site licence stipulate moisture content of between 40% - 60% and as a general rule we are well within those limits. To bring windrow moisture levels up by say 10% will require thousands of gallons of water. We have not been able to use the stored water in the lagoon next to the site to add to the windrows after the batch formation stage as we are unsure of its nature, chemicals or toxins contained within”.

WWOE’s permit states that “Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions”. Due to the extended dry conditions experienced over spring and summer, WWOE were asked in late September if they were applying the dust mitigation measures stated within their document Best Available Techniques and Operating Techniques (BATOT). These measures include:

- Meteorological forecasts will be monitored and used to plan the undertaking of activities at the site;
- Where possible, activities likely to lead to the release of dust during unfavourable meteorological conditions. for example, wind direction and high wind speeds, will be limited. These include shredding, turning and screening;
- Compost moisture content will be maintained between 40% (w/w) and 60% (w/w) during compositing;
- Speed limits will be implemented for vehicles using the site;
- Site access and operational areas will be maintained and repaired to minimise emissions of dust due to uneven and poor surfacing;

- All roads and operational areas will be swept where necessary to reduce dust emissions.
- Daily, visual inspections at all areas of site and site boundary will be carried out by site personnel;
- In the event that significant visual dust is observed at the boundaries of the operational areas, action will be taken to suppress the dust. This is likely to comprise of a spray to dampen the surfaces; and
- A record of the inspection findings and remedial action taken will be made in the site diary.”

WWOE responded on the 23rd of September confirming that all of the above measures were being implemented. WWOE state that “By its nature the screening will cause dust but they do not do this operation during high wind as it is the product that they want from site”. During our investigation on October the 10th, the wind was observed to be blowing from a northerly direction with a relatively slow wind speed. Both parameters were confirmed by WWOE’s weather station which stated a North Easterly direction and a speed of approx. 2.5mps. These northerly winds coupled with the relatively slow wind speeds mean that the impact of the dust generated at the site is only likely to impact the areas just beyond the site boundary. This area is a coastal path used only transiently by members of the public. Therefore, the impact is considered low. On the 10th of October, even though dust could be seen leaving the site boundary, no deposits of dust were observed over the surrounding area. WWOE state that “In the event that significant visual dust is observed at the boundaries of the operational areas, action will be taken to suppress the dust. This is likely to comprise of a spray to dampen the surfaces”. As a result of numerous dust complaints received during September and October, WWOE introduced a dust suppression system on trial from a company called Garic hire, this comprised of a 1000 ltr bowser with a diesel gen set and a spray nozzle applicator. WWOE have found this to be effective to control the dust from the wind sifter but ineffective to control the arisings from their screening operations, despite being assured by the supplier that it would be sufficient. During the investigation on the 10th of October the dust suppression system was not being used to allow the sites waste bin to be exchanged by Atlantic Waste. WWOE have since stated that they are awaiting delivery of a bigger dust suppression cannon from Corgin, on a provisional 5+ week hire period. Their intention is to evaluate the effectiveness of this suppression unit, and if found to be successful they intend on extending the hire with a view to purchasing in the longer term.

All other actions mentioned above were being implemented, however, there is a discrepancy with the measured moisture levels vs the site permit moisture level requirements. With regards to moisture, both the permit and BATOT document mention that the moisture should be between 40%-65%. However, the Waste Treatment BREF states the following “The ideal moisture content at the start of the composting process is below 60–65 % (mass/mass), and between 30 % and 65 % (mass/mass)

during the process”. According to How to comply with your environmental permit, Additional technical guidance for: composting and aerobic treatment sector, page 110,([Compost Technical Guidance FINAL fianl VERSION 1 0 Nov 2013 \(2\) \(3\).pdf \(organics-recycling.org.uk\)](#)) “Dust formation from the compost generally occurs in material with a moisture content lower than 30%”. On page 37 of the same guidance, it states “Without sufficient moisture to form a moisture film on the particle there will be very low levels of microbiological activity. A <40% value would be limiting to biological activity, which in itself could give a false impression of stability of the compost. Drier material will also give rise to high levels of bioaerosols, dust and a potential risk of fire from ignition sources or spontaneous combustion”. When reviewing the monitoring data, on compost manager, for the windrow that was being screened the average moisture reading was 31.2%. This is within the BREF recommendations; however, this is an average and some readings were found to be as low as 13.9% on the 30th of August 2022. However, this recovered to 38% a week later on the 7th of September. It is important to remember that the limits for moisture should be applied to readings taken at the time of monitoring and not averages.

When asked about the low moisture levels WWOE explained that to raise the moisture levels within the current windrows would require significant volumes of water. As it stands WWOE do not have a suitably sized water supply to provide these required water volumes. Adjacent to the site is a water lagoon, However, WWOE have some concerns regarding the quality of this water for use in their composting process. During a discussion at Rivers House on the 18th of November, WWOE agreed to undertake some analysis of the lagoon water to investigate its suitability for use in the composting process. Since warmer drier summers are becoming more frequent it is vital that WWOE investigate and make available a suitable water source to ensure both the windrows and waste piles remain suitable moist. In this instance WWOE fell short of the permit condition to maintain moisture above 40% as stated in Table S3.3. However, as mentioned earlier, the permit states “The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions”. **Therefore, even though this constitutes a category 3 noncompliance, NRW are suspending this score for the following reasons:**

- Limited impact
- No previous instances of low moisture levels
- Suitability of local water supply for use in windrows in question
- Applied measures to minimise dust emissions as much as possible including the use of dust Cannons and weather monitoring.

Action 1: Provide NRW with an update on the suitability of the water from the adjacent lagoon and

or the installation of a water source. **Due 30th of January 2023. (please advise if you need longer).**

Action 2 : Provide NRW with a plan on how moisture levels within the windrows will be maintained within BAT limits going forward. **Due 30th of January 2023. (please advise if you need longer).**

This suspended score is contingent on WWOE satisfactorily completing the actions above. Should it be discovered that dust emitted from the site is having an impact on the local environment or residents, NRW will require additional measures to be implemented and may utilise enforcement proceedings if required.

Suspended Category 3 noncompliance is being awarded against permit condition 3.2.1. **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.**

Fire Prevention and Mitigation Plan (FPMP)

An operator's fire prevention and mitigation plan should mirror the requirements set out within the fire prevention and mitigation Plan Guidance for Waste Management ([Guidance No. 16 Fire prevention and mitigation plan - waste management \(naturalresources.wales\)](#)). When visiting the site on the 10th of October this was not the case. Material being screened was being taken from a large pile of material far in excess of the 20-metre limit. As you will know from the FPMP guidance, for composting activities, the maximum pile sizes do not apply when the waste is actively managed and monitored during the composting process. Waste stored before and after active composting must follow the maximum pile sizes stated within Table 2 of the guidance. Please see picture 1 below. The pile I am referring to is between the red arrows. It's important that the required FPMP dimensions are adhered to so that the fire and rescue service can manage any fire that may occur.

This disparity with the FPMP guidance was highlighted to WWOE in an email sent on the 10th of October. In response WWOE state "The installation of these fire breaks has reduced our storage capacity by at least a third of the original storage area, wind sifting operations started at the end of September. Due to the area we need to conduct this operation safely and effectively we have had to wait for a reduction of the waste inbound to site. We hope to complete the wind sifting of the first pile of oversize (A1) by the end of this week (16th October). The next pile of material to be processed (A2) will then be moved down the site to the wind sifting area and the piles behind that moved along the wall (A3) & (A4) Unfortunately, this has temporarily left our screening area full of freshly screened material without a fire break. As stated this is very short term but as an added measure we have wireless probes monitoring that pile and they are currently reading maximum temperatures of 25.2

degrees centigrade. This is not unusual and is commonplace on most composting operations throughout the country, that wind sifting will take place during the winter months when input is low, and the oversize had had a chance to break down. We have had to learn this year to try and cope with the stipulations required within the FPP, we seem to have fallen at the last hurdle. But it gives us a better idea of what to expect in the future. Planning oversize storage will improve for the coming years”.

As a consequence of not following the FPMP guidance, a noncompliance category 3 score is being issued. Operators should refrain from attempting to increase throughput at the detriment of good site design and operation. The facility design must ensure that there is sufficient space for feedstock unloading, feedstock preparation (e.g. shredding and contaminant removal), active composting, maturation, screening, refining, storing and packaging. Operators also need to prepare for the seasonality of green waste. The FPMP guidance states “It is important that alternative waste management options are available should your site reach its safe storage capacity (which should be incorporated as a limit within the site management system)”. Please ensure that your plan mirrors the requirements of the guidance and that it is adhered to at all times.

Category 3 noncompliance is being awarded against permit condition 3.7. **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.**

Odour Management Plan (OMP)

NRW have received WWOE’s latest Odour Management Plan following a discussion on the 18th of November 2022, at NRW’s River’s House. WWOE have amended their OMP to include the following: “Due to residential properties being considered high risk, turning and screening are suspended while there is wind from between a southerly and south easterly direction (135 degrees and 180 degrees inclusive). For clarity the reading will be taken from the onsite weather station at the Lamby Way green waste site”. This update has been accepted.

On page 10 of their OMP, WWOE state “It is proven from data collected using Compost Manager to monitor static windrows at Lamby Way OWC Facility that windrows are compositionally balanced, well mixed, properly structured and sized and will generate a satisfactory chimney effect to passively maintain sufficiently aerobic conditions through thermal convection into the composting mass”. As it stands NRW do not agree with this statement. Until the trials involving smaller windrows and longer probes are complete, it cannot be concluded that there are sufficiently aerobic conditions through

thermal convection into the composting mass.

Action 3 Please remove this statement and resubmit your OMP to NRW by the 30th of January 2023.

Trials

NRW received an email on the 23rd of November explaining that Freeland have successfully trialled the use of the 2.5m probe for compost manager. WWOE now intend to undertake a trial using windrows that are smaller than the current windrow sizes. They explain that this will give them a good guide to the difference in performance as the windrow sizes get smaller. WWOE are looking to start these trials as soon as possible with the incoming green waste.

NRW are happy for these trials involving smaller windrows and longer probes to go ahead. NRW would also like to request that the same trials are repeated in the summer period months since it is well documented that seasonality can have a significant impact on composting. NRW would also like to witness these trials in person and would like to arrange a visit to observe the monitoring and turning of these windrows.

Picture 1:



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 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

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.