

Our Ref: EPR/WP3231NB

Mr Ashton Daniels
Dairy Partners (Cymru Wales) Ltd.
The Creamery
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SA38 9DQ

Date: 15th April 2024

Dear Mr Daniels

EPR- WP3231NB Dairy Partners (The Creamery, Newcastle Emlyn) Improvement Conditions Review

Thank you for submitting Dairy Partners' response to discharge the requirements of Improvement Condition (IC) 21a of the environmental permit EPR-WP3231NB.

- Email received on 15/02/2024 from Ashton Daniel (Dairy Partners) with a response to IC21a – Noise Impact Assessment (NIA).
- Additional documentation provided via email by Ashton Daniels 25/03/2024.

Documents received from Dairy Partners:

- 230808 The Creamery Aber-Arad – Noise impact Assessment.pdf. Dated August 2023.
- 230808 The Creamery Aber-Arad – BAT Noise Audit.pdf – Dated August 2023. (NRW also holds copies of the former BAT noise audit reports submitted previously by Dairy Partners – Dated October 2020, July 2021 and November 2021).

The Operator shall carry out an assessment of the noise impact from the installation by completing an assessment in line with BS4142:2014 "Methods for Rating and Assessing Industrial and Commercial Sound" and UK Environment Agencies' and guidance "Noise and vibration management: environmental permits" by a suitably qualified person.

IC21a ***The noise impact assessment must consider all the sound resulting from the installation and consider the following points below:***

• The Background sound level used in the assessment will be measured during day time and night time (inclusive of weekend) to establish the sound level in the absence of all operations on the Dairy Partners Installation at Newcastle Emlyn.

• If it is not feasible for the operator to disable all sound sources from the Dairy Partners Installation at Newcastle Emlyn, the operator will instead undertake a day time and night time Background sound assessment (inclusive of weekend) at a "surrogate" location

which is not subject to the operational sounds from the installation. The “surrogate” location will have a Residual sound which is comparable to that of the assessment location. Prior to undertaking the Background sound assessment at a “surrogate” location, the operator will submit to NRW their justification for the choice of “surrogate” location. The operator will have regard to the Annex A (Example 10) BS4142:2014 “Methods for Rating and Assessing Industrial and Commercial Sound” which provides guidance when choosing a “surrogate” monitoring location.

On completion of the BS4142 assessment, a report shall be submitted to NRW, for approval, by the deadline specified. The operator will include the raw measurement data in a format which is auditable and can be interrogated.

We have reviewed the response provide in relation to IC21a with assistance from NRW’s Air Quality and Noise Team (AQNT).

In summary, the submitted NIA does not meet the criteria required by IC21a. A revised NIA will be required for the reasons set out below.

NRW recommends that Dairy Partners (and their appointed noise specialists/consultants) arrange a meeting with NRW to discuss the comments in further detail before a revised NIA is undertaken.

Noise Impact Assessment (NIA) Results

Despite the site operating 24/7, the results reported in Table 5.2 of the NIA for daytime impacts only indicate that the site rating level is greater than +10 dB above the surrogate background value at all three Noise Sensitive Receptors (NSRs) (see comments section for further detail). Section 5.3 of the NIA states that these represent a worst case due to the predicted levels being those at the site boundary adjacent to the NSRs rather than at the exact NSR location itself. Given the significant levels above the background, it remains likely that impacts at receptor locations would indicate a significant adverse impact. No other indication of measured/predicted impacts at NSRs is provided beyond a statement in Section 5.2 of the NIA when referring to rating levels at NSRs that “*the minimum of which is only 1 dB higher than at night*”.

Section 5.3 of the NIA points out that the impacts should be considered in the context of the facility operating since 1932. Our assessment of the suitability of this context argument is discussed in the comments section below.

Despite the issues detailed in the comments section below, based on the information provided in the previous BAT Audit reports, **we would agree with the general assessment in Section 5.3 of the NIA that the level of noise produced as a result of operations at the Dairy Partners facility indicate a likely significant adverse impact at the three NSRs identified in the report.**

Comments

- In general, the submitted NIA does not meet the criteria required by IC21a of the site permit EPR/WP3231NB/V005 dated 16th May 2023. While the methodology and rationale for obtaining a representative background sound level (LA90) measurement at a surrogate location for comparison of noise impacts from the site at NSRs is acceptable, there are several issues with the specific noise values used in the NIA which are detailed below. It should also be noted that an

assessment of impacts during daytime only is presented in the submitted NIA report. You must also present an assessment of impacts during night time.

- Using a reference time interval of fifteen minutes for the daytime period in conjunction with the minimum $L_{A90, 15min}$ measured value can be considered quite precautionary in this instance. The surrogate location is considered suitable and representative in this instance.
- Section 5.2 of the submitted NIA report states that sound power/pressure measurements for assessing impacts at receptors were based on measurements undertaken as part of a Best Available Techniques (BAT) review carried out in July 2023 and comprise direct measurements at NSRs or values calculated using CadnaA software. In addition, paragraph three of Section 5.2 of the NIA in conjunction with the reported Specific Sound Levels in Table 5.2 of the NIA appear to indicate that no non-continuous noise sources have been included in the assessment of impacts at NSRs. You must assess the noise impacts of non-continuous noise sources.
- Following a review of the referenced 2023 BAT review and previous BAT reviews from October 2023, July 2021 and December 2021, we have been unable to verify the sources(s) of specific sound levels at NSRs reported in Table 5.2 of the NIA report. You will need to provide clarification regarding the sources of the specific sound levels withing the revised NIA.
- Table 5.2 of the NIA reports a daytime specific sound pressure level ($L_{Aeq, Tr}$) at NSR 1 of 51 dB. Section B.5.1 of the August 2023 BAT Audit report states that while no data is available for the monitoring period at a location adjacent to NSR1 due to a "...file corruption error...", between 10:00 and 14:00 hours on the 20th July the "...surveyor noted levels of between 50 and 51 dB $L_{A90, 15min}$ when checking on the meter." This observation in and of itself is insufficient to justify using a value of 51 dB.
- However, the BAT Audit report dated October 2020 states that "...noise contributions from the plant listed as 'Continuous – 24 hours a day' total to 51 dB at NSR 1...". It should be noted that while we can verify that contributions from sources identified as "continuous" in the October 2020 BAT Audit report at NSR 1 result in a specific sound pressure level of 51 dB, this excludes contributions from non-continuous sources identified as operating for thirty minutes i.e. ETP Tankers (pumping & idling), Milk Tankers (pumping and idling) and the Whey Dispatch Pump sources. Inclusion of time-weighted values for these sources from the October 2020 BAT Audit report results in a specific sound pressure level of 69 dB at NSR1 assuming that the non-continuous sources operate simultaneously. As previously stated, you must assess the noise impacts of non-continuous noise sources.
- Our calculation of the specific sound pressure level at NSR 1 based on the August 2023 BAT Audit report measurements results in a specific sound pressure level of 46 dB for continuously operating sources and 61 dB including time weighted values for sources operating less than the daytime reference period of one hour.

- For the daytime specific sound pressure level of 49 dB in Table 5.2 of the NIA reported for NSR 2, the only corresponding value in the 2023 BAT Audit report at NSR 2 is reported in Table B.2 for daytime $L_{A90, 5min}$ “*Mean Average*” and “*Median Average*”. The meaning of “*Mean Average*” and “*Median Average*” is unclear in this context and the use of an $L_{A90, 5min}$ value to represent a specific sound level is incorrect. Our checks using the same approach as for NSR 1 and measurements included in the August 2023 BAT Audit report result in predicted specific sound pressure levels at NSR 2 of 46 dB (sources identified as continuous only) and 53 dB (including time-weighted values for sources operating less than the daytime reference period of one hour assuming that the non-continuous sources operate simultaneously).
- For the daytime specific sound pressure level of 37 dB in Table 5.2 of the NIA reported for NSR 3, no corresponding value can be identified in the 2023 BAT Audit report or previous BAT Audit reports from 2020 and 2021. However, our checks using the same approach as for NSR 1 and NSR 2 using measurements included in the August 2023 BAT Audit report did result in a predicted specific sound pressure levels at NSR 3 of 37 dB (sources identified as continuous only) and 62 dB (including time-weighted values for sources operating less than the daytime reference period of one hour assuming that the non-continuous sources operate simultaneously).
- Where our checks of specific sound pressure levels at NSRs include time-weighted values for sources operating less than the daytime reference period of one hour, it should be noted that these exclude contributions from measured sources operating for periods described in the submitted BAT Audit reports as “...a few seconds” (LNG Alarm) and “...a few minutes.” (Boiler House Pressure Valve Release) where insufficient information is provided to calculate a time-weighted correction.
- It is understood that previous measurements of contributions from LNG (pressure fill) operations at the site have been undertaken when using a silent delivery system which Dairy Partners state is no longer available for use on the site. Any review of impacts from this specific source at NSRs should be representative of the current or proposed operational noise. Please revise NIA to take into consideration the proposed change to LNG refuelling.
- Section 5.2 of the NIA includes an assessment of additional penalties due to audible tonal characteristics at NSRs. While these penalties for tonal characteristics have been added to the specific sound at NSRs, there is also a contradiction in Section 5.2 of the NIA that states “The noise from fixed plant is not considered impulsive, or noticeably intermittent, so no further penalties are applied to these sources.” while also acknowledging that intermittent plant can reach between 50-54 dB at NSR 1 and NSR 2 and would potentially warrant an additional penalty for intermittency. It is likely that this has not been included due to the failure to consider non-continuous sources in assessment of the specific sound.

- Additional information detailing recent mitigation measures implemented for LNG deliveries has been submitted to NRW on the 2nd of April 2024¹. This document describes procedural changes for LNG deliveries and includes installation of acoustic attenuation barriers to shield the delivery tanker and LNG storage tank. Additional acoustic attenuation barriers have been located at the southern site boundary fence adjacent to the B4333 opposite the location of NSR3. While the Environmental Compliance Limited (ECL) report shows some reductions following installation of the acoustic attenuation barriers, there are no measurements at the closest NSR (NSR 3) or at the roadside near this receptor following installation of the barrier. It should be noted that impacts at NSRs identified in the NIA have not been assessed taking into consideration impacts from LNG delivery following this updated procedure with acoustic attenuation barriers in place, in conjunction with other site sources identified in previous BAT Audit reports. The updated LNG refuelling report has not been reviewed in detail as part of this review – *Note - a change to the LNG fuelling procedure away from a silent delivery system has not been agreed/approved by NRW at this time.*
- Clarification of how the specific sound pressure levels have been derived at each NSR (with calculations where appropriate) should be provided along with the maximum specific levels at each NSR and include confirmation of which non-continuous sources might feasibly be operating simultaneously. Any omission of sources needs to be fully justified in the submitted NIA.
- No detailed context argument has been proposed to mitigate perceptions of the particularly high impacts at NSRs beyond a statement in Section 5.3 of the NIA stating that "...[impacts] should also be considered in context, given that the site is not a new noise source, it is a facility which has been operating since 1932.". While this is technically accurate, there have been some periods where the site was not operating. It is important to also appreciate that levels of production at the site have been increasing since the 1930's and cannot be considered to have been constant over this period.
- Since Dairy Partners purchased the site in 2013, production levels have more than doubled. During this period, it is not clear whether any noise impact assessments have been submitted to NRW in support of any operating permit variations to address the potential increase in noise associated with this increase in production. In the event that no such NIA's have been submitted, it is clear that "noise creep" may have occurred over this period which may need to be considered as increased impacts at receptors and fall outside the context argument. Such unassessed increases in noise associated with industrial facilities cannot be normalised using the argument of long-term historical operation and the context argument in this case needs to address how impacts have changed at receptors since Dairy Partners commenced operations in 2013 and may include introduction of additional potential noise sources not associated with the Dairy Partners operation where applicable.
- No mention is included in the NIA or associated BAT Noise Audit Report of the methodology followed to determine the specific sound power level of plant/processes for establishing the sound rating level at NSRs for comparison

¹ Environmental Compliance Limited (ECL), March 2024, "Liquid Natural Gas Refuelling "Bat Assessment and Justification Report". ECL Ref: DPCW.01.03/NR, Draft.

against the surrogate background measurement. For example, the section titled “**Determination of specific sound by a combination of measurements and calculations**” of the Method implementation document (MID) for BS 4142 states²:

“You must not carry out measurements of the specific sound level in the near field unless you can provide valid assumptions of a measurement surface area. For example, a parallelepiped for sound power determination ($L_p + 10 \times \text{Log}$ (surface area)). If you are doing this you should follow a procedure required by BS EN ISO 3744:2010 to work out sound power level in-situ. Otherwise, if you are using a single sound pressure measurement, you must meet the far-field conditions where hemispherical propagation can be assumed and provide proof of this.”

- The modelling results for the cooling tower source on page thirty-seven of the August 2023 BAT audit report states that there was “No change from levels measured in Nov 21” but subsequently reports a sound pressure level of 61 dB at three metres from the source and also correctly states the previous measurement of 58 dB at three metres from the source (reported in the July and November 2021 BAT review reports). It is assumed that this represents a typographical error only and the reported sound pressure value of 61 dB at three metres from the source measured during July 2023 is correct.
- Table 3.1 of the BAT Audit report dated October 2020 indicates that the duration of the ETP Tankers (pumping & idling) is thirty minutes. Subsequent BAT Audit reports (dated July 2021, December 2021 & August 2023) state that the ETP Tankers (pumping & idling) duration is twenty minutes. However, the noise level plots (Figure B.2) in the December 2021 BAT Audit report appears to show a duration for ETP Tanker Pumping of at least thirty minutes duration measured near NSR 1. You must clarify the duration and explain the discrepancy between the noise level plot B.2 and the stated duration in the body of the report.

You will need to undertake a review of your submission to address the issues raised above and submit the updated response to NRW by 31 May 2024 (unless otherwise agreed in writing with NRW).

Yours sincerely



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² Method implementation document (MID) for BS 4142 - GOV.UK (www.gov.uk)

Croesewir gohebiaeth yn Gymraeg a byddwn yn ymateb yn Gymraeg, heb i hynny arwain at oedi.
Correspondence in Welsh is welcomed, and we will respond in Welsh without it leading to a delay.