Ms Anna Griffith
Senior Specialist Advisor – Installations and RSR Permitting
Natural Resources Wales

Emailed Only: anna.griffiths@cyfoethnaturiolcymru.gov.uk
Application Ref: EPR/WP3231NB/V006 – PAN 025906

26 February 2026

Request for further information to support application

Dear Anna,

Thank you for your letter and the Schedule 5 notice, which sets out NRW's request for more information that will support Dairy Partners (Cymru Wales) Limited's ("DP") application for an environmental permit variation. Please find our responses below as set out in the notice.

1. Thermal Plume Dispersal Modelling

The following response has been provided by Nicola Sugg, consultant hydrogeologist and hydrologist. Section A13 of NRW's Regulatory Guidance Note ("RGN") 8 guidance confirms:
Releases of heat should be considered in the same way as other pollutants, considering the effect of temperature on the environment.

Therefore, the potential impacts of the increase in permitted effluent temperature on the receiving Afon Teifi are assessed below, using a standard surface water pollution risk assessment approach. The relevant characteristics of the effluent and receiving watercourse are initially presented, together with the Water Framework Directive (WFD) requirements for 'High' status salmonid waters. These parameters inform the subsequent impact assessment.

Effluent Temperature & Flow Rate

The characteristics of the effluent are:

- Maximum currently permitted temperature: 21°C
- Maximum proposed temperature: 25°C
- Maximum effluent flow rate (as currently permitted): 900m^3/day (equivalent to 0.01042m^3/s)

Dairy Partners has provided the following historic records of the effluent flow rate and temperature for 2025/26 (see Figure 1); these confirm a maximum flow rate of 846m^3/day and maximum temperature of 21°C (which is equivalent to the current permit limit).

The peak effluent temperatures are associated with higher ambient seasonal temperatures and the proposed increase in the permitted effluent temperature from 21°C to 25°C will provide greater operational resilience during prolonged periods of elevated summer temperatures (see Figure 2). It is noted that the average daily effluent flow rate (January 2025 – February 2026) was 671m^3/day, significantly below the permit limit of 900m^3/day.

Figure 1: Max Volume v Daily Average Flow

Year	Month	Daily Average	Max Volume Date	Maximum Volume
2026	February	700.5	09/02/2026	830.7
2026	January	754.4	01/01/2026	846.3
2025	December	737.4	06/12/2025	819.2
2025	November	678.0	28/11/2025	783.8
2025	October	640.9	21/10/2025	844.7
2025	September	620.6	26/09/2025	765.6
2025	August	614.2	13/08/2025	699.1
2025	July	639.4	07/07/2025	837.6
2025	June	687.0	29/06/2025	720.2
2025	May	669.7	09/05/2025	761.0
2025	April	685.3	19/04/2025	797.0
2025	March	674.3	27/03/2025	816.0
2025	February	606.4	12/02/2025	788.0
2025	January	692.3	01/01/2025	754.0

Figure 2: Max Temperature v Date

Year	Month	Max Temperature	Max Temp Date
2026	January	19°C	17/01/2026
2025	December	16°C	23/01/2025
2025	November	19°C	16/02/2025
2025	October	20°C	19/03/2025
2025	September	18°C	22/04/2025
2025	August	20°C	17/05/2025
2025	July	19°C	11/06/2025
2025	June	21°C	19/07/2025
2025	May	20°C	20/08/2025
2025	April	19°C	06/09/2025
2025	March	17°C	08/10/2025
2025	February	18°C	11/11/2025
2025	January	16°C	17/12/2025

Receiving Watercourse: Afon Teifi (Afon Clettwr to Afon Ceri)

The receiving watercourse is categorised as a salmonid river and Table 6 of The Water Framework Directive (Standards and Classification) (Directions) (England and Wales) 2015 confirms the following temperature standards (see Figure 3).

Figure 3: Table 6 of the WFD 2015 (Standards and Classification)

Table 6

Temperature standards for rivers (rivers categorised by type in accordance with paragraph 1(2) of Schedule 2)								
	High		*Good*		*Moderate*		*Poor*	
River temp type	*Salmonid*	*Cyprinid*	*Salmonid*	*Cyprinid*	*Salmonid*	*Cyprinid*	*Salmonid*	*Cyprinid*
River temp (°C) as an annual 98-percen-tile standard	20	25	23	28	28	30	30	32
Increase or decrease in temp (°C) in relation to the ambient river temp, as an annual 98 percentile standard[(i)]	2	2	3	3	-	-	-	-

[(i)] The high and good standards specified for the increase or decrease in temp must not be used for the purpose of classifying the status of bodies of surface water except where the water receives consented thermal discharges.

A 'High' status salmonid river is therefore defined by a maximum temperature (annual 98 percentile) of 20°C and a maximum increase or decrease of 2°C from the ambient river temperature (annual 98 percentile) for consented thermal discharges.

The Water Watch Wales online mapping presents the WFD water body status classifications and confirms the following Cycle 3 Interim 2024 temperature classifications:

- The receiving watercourse - Afon Teifi (Afon Clettwr to Afon Ceri): Good (uncertain)
- The upstream Afon Teifi (Afon Dulas – Afon Clettwr): Good (uncertain)

The Interim 2024 data confirm no deterioration in the temperature classification of the receiving stretch of the Afon Teifi from the upstream stretch of the watercourse, with both classified as 'Good'. The data also confirm uncertainty regarding the temperature classification. Water temperatures are reporting a gradual long-term increase as a result of climate change, with an Environment Agency study[1] confirming a *generally upward trend in river water temperatures in all seasons*.

[1] Environment Agency, July 2007, Science Report SC060017/SR, Climate Change Impacts and Water Temperature.

Baseline temperature data for the Afon Teifi have been obtained from the Teifi Physical Analysis Report[2]. The following data are reported for the receiving stretch of the watercourse (Afon Teifi: Afon Clettwr to Afon Ceri):

- No. of readings: 123
- Date range: 21st July 2024 – 12th December 2025
- Minimum temperature: 2.3°C
- Maximum temperature: 19.7°C
- Median temperature: 10.9°C
- Mean temperature: 11.1°C
- Standard deviation: 4.0°C

The maximum recorded temperature of 19.7°C is close to the upper limit (98 percentile) for WFD 'High' status of 20°C. It is noted that the WFD aim for all water bodies is 'Good' status, which is equivalent to a maximum (98 percentile) temperature for the Afon Teifi of 23°C.

Dairy Partner's permitted emission point to the Afon Teifi is at National Grid Reference SN 31356 40462. A Flow Estimation Report has been obtained from Wallingford Hydro Solutions Ltd. for the Afon Teifi at the location of the emission point; a copy of the report is enclosed.

The Flow Estimation Report (see Appendix I) confirms an annual mean flow rate for the Afon Teifi at the emission point of 21.9m^3/s and a Q_{95}, low flow estimate of 2.413m^3/s. Initial comparison of the data, confirms the maximum permitted emission discharge rate (0.01042m^3/s) represents just 0.048% of the mean river flow rate and 0.43% of the Q_{95} river flow estimate.

Assessment of the Proposed Effluent Temperature Increase on the Receiving Afon Teifi

Section A13 of NRW's RGN8 guidance confirms: *Releases of heat should be considered in the same way as other pollutants, considering the effect of temperature on the environment.* Therefore, the following assessment follows a standard risk screening approach.

The proposed maximum effluent temperature (25°C) exceeds the maximum temperature (annual 98 percentile) for WFD 'High' status of 20°C and exceeds the 98 percentile for WFD 'Good' status of 23°C. Therefore, it is appropriate to consider the impact of the effluent discharge on the resultant river temperature via a mass balance equation. This is considered an appropriate methodology, as the effluent flow rate represents <0.5% of the Q_{95} river flow rate.

The mass balance equation is:

$$T_{final} = \frac{(Q_E \times T_E) + (Q_R \times T_R)}{(Q_E + Q_R)}$$

Where:
T_{final} = the resultant river temperature (after mixing)
Q_E = effluent flow rate
Q_R = river flow rate
T_E = effluent temperature
T_R = river temperature

[2] Temperature Analysis Report - River Teifi https://www.ceredigion.gov.uk/public/csr/teifi_temperature.html?lang=en#:~:text=This%20report%20provides%20analysis%20of,Resources%20Wales%20Sub%2Dcatchment%20(Water%20Body)

The highest resultant river temperature would occur during the worst-case scenario of peak effluent temperature, peak effluent flow rate, low river flow conditions (Q_{95}) and peak ambient summer river temperature.

During this scenario, the following input parameters would apply:

Q_E = 0.01042m^3/s (equivalent to the permit limit, 900m^3/day)
Q_R = 2.413m^3/s (Q_{95} estimate)
T_E = 25°C (proposed permit limit)
T_R = 19.7°C (maximum ambient temperature, after available data)

The resultant river temperature is calculated as **19.72°C**; this remains below the WFD 'High' status of 20°C. For the current permitted maximum effluent temperature (T_E) of 21°C, the resultant river temperature is calculated as 19.71°C. These are worst-case conditions; therefore, it is inferred, the proposed permit variation will have no discernible impact on the resultant river temperature, with no deterioration from 'High' status.

The maximum increase in river temperature due to the effluent, would occur when ambient river temperatures are lowest, with peak effluent temperature, peak effluent flow rate and low river flow conditions (Q_{95}). A minimum ambient river temperature (T_R) of 2.3°C is assumed, based on available data.

The resultant river temperature for this scenario is calculated as **2.40°C**, representing a temperature increase of 0.10°C. This remains significantly below the WFD 'High' status of 2°C. For the current permitted maximum effluent temperature (T_E) of 21°C, the resultant river temperature is calculated as 2.38°C, representing an increase of 0.08°C from ambient conditions.

Therefore, in this worst-case scenario, the proposed permit variation would result in a 0.02°C increase in the resultant river temperature from existing permitted conditions; this is not considered a discernible change.

The above calculations and resultant temperatures are summarised in Table 1.

Table 1: Resultant River Temperature for Existing and Proposed Permit Conditions

Scenario	Effluent Flow Rate Q_E (m^3/s)	River Flow Rate Q_R (m^3/s)	Effluent Temperature T_E	River Temperature T_R	Resultant River Temperature T_{Final}	Increase in River Temperature ΔT
1. Q_{95} River Flow & Peak River Temperature, Existing Permit Conditions	0.01042	2.413	21°C	19.7°C	19.71°C	0.01°C
2. Q_{95} River Flow & Peak River Temperature, Proposed Permit Conditions	0.01042	2.413	25°C	19.7°C	19.72°C	0.02°C
4. Q_{95} River Flow & Minimum River Temperature, Existing Permit Conditions	0.01042	2.413	21°C	2.3°C	2.38°C	0.08°C
5. Q_{95} River Flow & Minimum River Temperature, Proposed Permit Conditions	0.01042	2.413	25°C	2.3°C	2.40°C	0.10°C

2. Assessment of Substantial Change Criteria

Section A13 of RGN8 states:

Any thermal effect that would constitute 20% or more of the allowed temperature difference, result in the temperature difference exceeding the appropriate limit or take the temperature above the permitted maximum, would be considered a substantial change.

Table 1 (above) presents the worst-case results for the predicted increase in river temperature and the predicted resultant maximum river temperature caused by the proposed effluent discharge at 25°C. The results confirm:

- A maximum predicted resultant river temperature of 19.72°C (0.02°C above the ambient river temperature). This remains below the WFD 'High' permitted maximum of 20°C for salmonid waters.
- A maximum predicted increase in river temperature of 0.10°C; this represents 5% of the WFD 'High' permitted increase of 2.0°C.

Therefore, even under the worst-case conditions assumed for the calculations, the proposed effluent discharge at 25°C would not result in the river temperature exceeding the permitted maximum or result in a temperature difference of ≥20% of the permitted increase for WFD 'High' status salmonid waters; which attests that the proposed increase in the temperature of the effluent from 21°C to 25°C is not considered a substantial change.

3 and 4. Proposed Acid Wet Scrubber and Releases to Air from proposed new emission point A2

The wet scrubber and associated A2 stack were originally specified during an earlier design phase based on a proposal to utilise nitric acid at concentrations greater than 60%.

Operation of the scrubber would have involved mechanical extraction and discharge via emission point A2.

The implemented Clean In Place ("CIP") system operates as a closed-loop process. Bulk nitric acid (50%) is diluted to a maximum working concentration of approximately 0.6% within the CIP circuit.

It's important to state that the system operates at ambient temperature and does not involve heating, atomisation, or mechanical extraction of vapours.

Also noteworthy, the CIP tanks are fitted with standard atmospheric vents only. There is no forced ventilation, fan-assisted discharge, or dedicated emission stack associated with the CIP system.

Under these operating conditions, the potential for acid mist or significant vapour generation is minimal and does not require atmospheric abatement.

The permit variation application was to consider the wet scrubber and associated A2 stack, as a future proof option during the change in CIP system.

However, as the design if the CIP has evolved since the permit variation application was submitted, the scrubber system was not required under the final operational configuration. A business decision (post permit variation application submission) was carried out not to commission the scrubber, and it remains isolated and redundant. Stack A2 has never operated and no extraction airflow or emission deposition have ever occurred via this route.

No vapour is produced by the current system. The liquid effluent from the CIP has already been assessed and is discharged via the new Effluent Treatment Plan. Consequently, no further environmental assessment is required, and emission point A2 is no longer required as an emission point.

5. Storage of CIP Chemicals

The Ciria C736 Risk Assessment has been updated, and the revisions have been incorporated into the Environmental Accident Management Plan ("AMP"). As you note, this review was undertaken after submission of the permit variation application, in accordance with ongoing improvement condition IC24, which required completion of this work.

All Clean In Place ("CIP") tanks comply with Ciria containment requirements. In addition, the AMP has been updated to set out the procedures for inspection, management, and removal of clean, uncontaminated surface water collected within the CIP Chemical Bulk Storage area during operations. Dairy Partners considers that these measures address your requirements, see both the Ciria 736 Risk Assessment and amended AMP to reflect in Appendix II and III respectively.

6. 2 x Beel Industrial Boilers (Medium Combustion Plant)

The boilers use Industrial Heating Oil, the Material Safety Data Sheet for the oil used is provided as Appendix IV.

7. Installation design capacity

Dairy Partners wishes to clarify that the discrepancy arose from NRWs reporting form requesting throughput data across two separate date ranges.

The confirmed maximum design capacity of the installation is **720 tonnes of milk per day**, expressed over a 24-hour period.

As outlined in the letter dated 9 December, the apparent inconsistency relates to the duration of a production run, which extends beyond a 24-hour period. The referenced production run lasted **31 hours and 15 minutes**, and the figure of **780 tonnes** relates to throughput per production run, not per 24-hour day. Accordingly, this should have been expressed as **780 tonnes per run**, rather than tonnes per day.

Dairy Partners trusts this clarification demonstrates its continued commitment to addressing information requests in a timely, proactive, and transparent manner. The company remains focused on ensuring that all regulatory requirements arising since submission of the variation application (almost 24 months ago) are met in a technically robust manner, aligned with the objectives of NRW and the conditions of the permit.

DP remains open to further discussion with NRW to agree a way forward that provides regulatory confidence and delivers meaningful environmental protection.

If you require any further detail, consider the above, please do not hesitate to get in contact via b.williams@ecl.world or on 07443 270773.

We respectfully request your consideration on this matter and look forward to hearing from you.

Yours sincerely,

Berwyn Williams
Principal Consultant
Environmental Compliance Limited

Appendices:
Appendix I – Afon Teifi Flow Estimation Report
Appendix II – CIRIA 736 Risk Assessment
Appendix III – Environmental Accident Management Plan v4
Appendix IV – Nationwide – Industrial Heating Oil Safety Data Sheet