

Compliance Assessment Report

CAR_NRW0038792

Permit number	XP3830UR	Operator name	The First Milk Cheese Company Ltd
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Site name	Haverfordwest Creamery
Site address	Pembroke Road, Merlins Bridge, Haverfordwest, Pembrokeshire SA61 1JN
Type of assessment	Pollution incident response (ref: 2107754; 17 September 2021)

Date of assessment	17/12/2021	Time in	N/A	Time out	N/A
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Parts of permit assessed	See section 4 of this report
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NRW Lead officer	Douglas Cowie	Accompanied by	N/A
Report sent to – Name and position	Paul Rowe Operations Development Director	Date	28/01/2022

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

Part of permitted activity assessed (use action criteria below)	Assessment result	Permit condition
A1 Specified by permit	Assessed or assessed in part (A)	2.1.1
E3 Emissions – Surface water	C2 Significant	3.1.1
G4 Monitoring and records, maintenance and reporting – Reporting and notification to Natural Resources Wales	Assessed or assessed in part, no evidence of non-compliance found. Action Only (X)	4.2.1 4.3.1

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

Total number of non-compliances recorded	Total non-compliance score
1	31

2. What action is required?

Criteria	Action needed	Complete by
G4	Action 38792/01: The operator should submit a Schedule 5 Part B notification to the regulator following: i) completion of its investigation into the incident; and ii) conclusion of the measures taken to address the permit breach identified in this report.	25/02/2022

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 prosecutions and/or suspension or revocation of your permit.

You are non-compliant with your permit. We are currently considering taking enforcement action against you for the non-compliance recorded above. We will contact you in due course.

4. Details of our assessment

Site description

The First Milk Cheese Company Ltd operates a milk processing and cheese production facility at Haverfordwest Creamery, Merlins Bridge, Haverfordwest. The company is a subsidiary of First Milk Ltd, the UK's largest dairy farmer co-operative. The facility is permitted as an installation under Section 6.8 (The Treatment of Animal and Vegetable Matter and Food Industries) of the Environmental Permitting Regulations (EPR).

Milk from approximately 300 local farms is pasteurised and processed at the installation to produce cheese and dairy products. The permitted installation includes an integrated effluent treatment plant (ETP) which discharges to the Western Cleddau. An agreed nutrient 'off-set' scheme mitigates the creamery's treated effluent discharge through a combination of nutrient management measures at (scheme member) dairy farms.

Purpose of visit/assessment

On 17 September 2021 Natural Resources Wales (NRW) responded to a pollution incident affecting the Merlin's Brook, a tributary of the Afon Cleddau, at Haverfordwest.

NRW's investigating officer identified an effluent discharge into the Merlin's Brook at the same location as a previous pollution incident on 04 August 2021 (CAR_NRW0038790). A recurrence of the previous incident was ruled out during our investigation; however, the nature of the effluent and the circumstances of the incident indicated an underground pollution pathway originating from the permitted installation.

The operator has submitted an associated Schedule 5 Part A notification identifying a fault with the effluent drainage system beneath Haverfordwest Creamery and a release of effluent to the environment.

This report confirms our compliance assessment of this notifiable release in the context of the installation permit requirements. The relevant permit conditions are listed under Sections 2.1, 3.1, 4.2 & 4.3 of First Milk's permit.

Compliance assessment

Pollution incident 2107754

Natural Resources Wales' regulating officer for Haverfordwest Creamery responded to a pollution incident affecting the Merlin's Brook on 17 September 2021¹. A discharge of pale, milky effluent was identified entering the Brook at National Grid Reference (NGR) SM 94965 14588, shown as the red circle in Figure 1 below.

The discharge point is the same location as a previous pollution incident attended by NRW officers between 04 – 05 August 2021, as detailed in our report CAR_NRW0038790. This is located close to permitted installation EPR/XP3830UR (Haverfordwest Creamery), outlined in green within Figure 1 below.



Figure 1: installation boundary (green line) and discharge point (circled in red) at NGR SM 94965 14588

Pale white discolouration of the watercourse and a significant amount of sewage fungus² contamination was identified within the Merlin's Brook downstream of the discharge point.

¹ NRW's attending officer was accompanied by an officer from Pembrokeshire County Council's Pollution Control Team during our initial inspection of the discharge point.

² Sewage fungus is a term used to describe organic growths or 'flocs' present within the substrate of streams and rivers. Such growths are usually off-white to grey-brown; some can have a pinkish colour. The types of organisms that commonly make up sewage fungus are filamentous bacteria and protozoa as well as true fungi.

Sewage fungus growths can be massive and extensive within a water column. Growths are heterotrophic and not capable of photosynthesis. They can be sustained by a variety of organic effluents including sewage, animal slurry, silage effluent and industrial effluents such as those from paper mills and food processing.

As well as being unsightly, growths of sewage fungus can be very detrimental to aquatic life. Massive growths can physically smother the stream bed reducing algal growth and limiting the food sources available to aquatic invertebrates. Respiration of the sewage fungus can lead to de-oxygenation of the water column and the riverbed both during growth phase and when the growths decay due to a reduction in pollution input. This has detrimental effects on many aquatic invertebrates and on fish which use river gravels for spawning.

The discharge itself was not characteristic of sewage pollution and its visual appearance and smell indicated a milk-based (dairy) effluent. The watercourse did not display any visual or olfactory evidence of pollution upstream of the discharge point.

The regulating officer collected evidence during NRW's investigation, including a formal bi-partite sample of the effluent discharge into the Merlin's Brook on 17 September 2021.

As outlined within CAR_NRW0038790, condensate and raw effluent generated by the Creamery is transferred to an on-site Effluent Treatment Plant (ETP) via an open surface flume and an underground pipe system. Following the earlier incident involving a leak from the raw effluent pipe, the operator had taken steps to ensure the integrity of the flume section and the pipes between the Creamery and ETP. A recurrence of pollution from these sources was considered during our response to this incident but has since been ruled out.

During our investigation it became apparent that the operator had already conducted dye tracing (testing) at a series of effluent drains located directly beneath the Creamery. This exercise had apparently revealed a fault between inspection chambers 'T6' and 'T9'. Further investigation was ongoing at the time of NRW's visit on 17 September 2021.

The following table (Figure 2) summarises a selection of analytical results of the samples obtained by the regulating officer on 17 September 2021. This includes NRW's portion of the bipartite discharge sample, and upstream and downstream water samples obtained from the Merlin's Brook.

Parameter	Merlin's Brook upstream of discharge point on 17/09/21	Bipartite sample of effluent discharge at grid ref SM 94965 14588 on 17/09/21	Merlin's Brook approx. 30m downstream of discharge on 17/09/21	Analytical unit
Biological Oxygen Demand (BOD)	<3.00	2270.00	<100.00	mg/litre
Chemical Oxygen Demand (COD)	11.00	3750.00	174.00	mg/litre
Total Suspended Solids (TSS)	<6.00	772.00	35.00	mg/litre
Chloride	24.00	942.00	87.80	mg/litre
Orthophosphate	<0.50	16.00	0.73	mg/litre
Ammonia-N	<0.50	8.63	<0.50	mg/litre
Nitrate-N	1.65	9.73	2.44	mg/litre
Nitrite-N	<0.10	1.37	<0.10	mg/litre
Inorganic-N	<2.25	19.73	<3.04	mg/litre
Oxidised-N	1.75	11.10	2.54	mg/litre
NH ₃ (un-ionised)	0.0013	0.4600	0.0014	mg/litre
Temperature ³	15	25	16	°C
pH ⁴	7	9	7	pH

³ Results obtained using field measurements (pocket thermometer)

⁴ Results obtained using field measurements (pH papers)

These results indicate high levels of pollutants within the effluent discharge into the Merlin's Brook on 17/09/21. Elevated levels of certain pollutants are also present within the sample taken from the watercourse downstream of the discharge point. The results correspond to the presence of sewage fungus growths within the watercourse downstream of the discharge. The bacterial masses or flocs within sewage fungus grow in response to organic pollution inputs, leading to oxygen depletion and degradation of the local aquatic environment (see footnote on page 3 of this report). Furthermore, the results do not indicate pollution within the watercourse upstream of the identified effluent discharge.

In addition to the bipartite effluent sample and the river samples described above, the regulating officer obtained a sewage fungus sample from the downstream sampling location. NRW's analysis of this sample has revealed the following:

- The presence of *Sphaerotilus natans* and *Beggiatoa alba* filamentous bacteria. Both bacteria species are indicative of water pollution.
- *Sphaerotilus natans* is normally associated with a strong organic pollutant.
- The growths observed within the Merlin's Brook on 17/09/21 correspond to the visual appearance of *Sphaerotilus natans* bacterial flocs/masses.

On the day of the incident, the operator – with specialist contractor assistance – commenced excavation of an interception trench close to the discharge point. This trench successfully cut through a buried land drain and allowed the operator to halt the effluent discharge into the Merlin's Brook at approximately 1800hrs on 17/09/21. A sump was then created within the trench and an over pumping system set up to deal with ongoing effluent flows. This arrangement has allowed the operator time and flexibility to investigate and rectify the drainage fault beneath the Creamery during a major plant (maintenance) shutdown in October 2021.

NRW has subsequently received a Schedule 5 Part A notification from the operator confirming:

- 1) a breach of the main effluent system beneath the Creamery portion of the permitted installation;
- 2) the outcome of a trickle dye tracing (testing) exercise undertaken at the Creamery on 16/09/21, which identified a release of dye into the Merlin's Brook at the discharge point;
- 3) actions taken to intercept the underground pollution pathway and to capture flows within the buried land drain leading to the Merlin's Brook.

The operator has been able to use the sump and over pumping system to minimise wider operational disruption from this incident, facilitate drainage repairs and allow cheese production to continue at Haverfordwest.

The reasonably foreseeable environmental impact of this incident is significant and has been attributed to an unauthorised raw effluent discharge from First Milk's permitted installation. The immediate cause has been identified as a drainage fault beneath the Creamery, an underground pollution pathway to the Merlin's Brook and an effluent discharge at NGR SM 94965 14588.

Permit condition 3.1.1 states:

3 Emissions and monitoring

3.1 Emissions to water, air or land

3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1 and S3.2.

The effluent discharge identified at NGR SM 94965 14588 is an unauthorised emission to water from the First Milk installation and is a breach of permit condition 3.1.1. We have assessed the reasonably foreseeable impact of this release as significant in accordance with our Compliance Classification Scheme (CCS). One CCS Category 2 score has been recorded in response to this permit non-compliance.

NRW will now consider if any enforcement action is appropriate following this incident – please see Section 3 above. We recognise that First Milk has already taken swift action to halt the discharge, address the impact and identify the cause of this unauthorised release.

The root cause(s) may require further investigation and may be examined in more detail during a future compliance visit. Additional CCS scores may be applied if associated permit non-compliances are identified.

In terms of notifying the regulator (section 4.3 Notifications), we are satisfied the operator has notified us about this incident in accordance with the permit conditions.

We await submission of the Schedule 5 Part B notification when further relevant information becomes available, including, but not limited to, a description of the works undertaken to correct the problem. It is expected that the Part B notification will consider the specific actions taken to address the drainage fault beneath the Creamery.

Action 38792/01: The operator should submit a Schedule 5 Part B notification to the regulator following: i) completion of its investigation into the incident; and ii) conclusion of the measures taken to address the permit breach identified in this report.

Summary and actions required

This report includes **one CCS Category 2 score** for the installation permit breach identified in this report, namely the unauthorised release of effluent from the permitted installation into the Merlin's Brook identified on 17 September 2021.

NRW will consider if any enforcement action is appropriate in response to this incident and the associated permit non-compliance.

The root cause(s) of this incident may require further investigation and may be examined during a future compliance visit.

We are satisfied the operator has notified the regulator of this incident in accordance with the permit conditions. We await submission of the Schedule 5 Part B notification when further relevant information becomes available (see action above).

Note: Novel Coronavirus (COVID-19)

The novel coronavirus (COVID-19) pandemic continues to impact the site operator's activities and the regulator's duties. NRW observes the statutory measures introduced to control and reduce the spread of Covid-19 and we currently employ a risk-based approach when deciding to deploy our resources.

Natural Resources Wales / Our response to the coronavirus pandemic

During this pandemic there will be an expectation that site operators continue to comply with their environmental permit conditions. Where the operator has identified an issue that is likely to result in permit non-compliance or increased environmental risk, the operator is expected to raise this with the regulator at the earliest opportunity.

END OF ASSESSMENT

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 in the aspects assessed.
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.