Cyfoeth Naturiol Cymru
Natural Resources Wales

Natural Resources Wales permitting decisions

The First Milk Cheese Company Limited (Haverfordwest Creamery)

Decision Document

Purpose of this document

This decision document:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account

Structure of this document

- Table of Contents
- Key Issues and reasons for refusal

Overview of proposal

The First Milk Cheese Company Limited applied for a variation to their environmental permit for Haverfordwest Creamery (permit number EPR/XP3830UR). The variation was to allow for an increase in the production capacity of the site from 1066 tonnes per day to 1244 tonnes per day (an increase of 178 tonnes per day). The proposed variation included the following changes to the installation:

- 2 new cheese vats (each with 30,000 litre capacity), taking the total to 10;
- 1 additional milk intake bay;
- 1 additional milk storage silo (360,000 litre capacity);
- Expansion of existing milk pasteurisers & separators;
- Increased pipework size for various product routes;
- Replacement of the older whey clarifier;
- Expansion of the membrane plants and modifications to the whey evaporator to increase capacity for whey processing in line with the increase in milk processing and cheese production;
- Increased storage of whey concentrate by 55,000 litres with a new larger silo (130,000 litres) replacing an older, smaller silo (75,000 litres);
- Increase in cream storage with a new cream silo (80,000 litres); and
- Expansion of a cleaning in place (CIP) set and removal of 2 others.

The key issues for determination were as follows:

- Odour
    - The applicant stated that the proposal would not increase the risk of odour emissions over the existing site. There were no proposed changes to the existing odour abatement. The decision is to refuse the application on the basis of containment (see below) but risk of odour emissions are acknowledged as an outstanding issue. This is detailed in the section on **Odour**.
- Noise
    - It was deemed that the variation has a potential noise impact through the addition of a new intake pump and the applicant had failed to identify nearby receptors. As we have deemed the application refused on the basis of containment (see below) we decided not to pursue this issue further, but it is acknowledged as an outstanding issue. This is detailed in the section on **Noise**.
- Compliance with Best Available Techniques (BAT)
    - The site has recently undergone a BRef review with the operator to demonstrate how the site would be compliant with the relevant BAT conclusions by 4 December 2023. The applicant had stated in this application that they would still be able to achieve the BAT-AELs for water discharge after 4 December 2023. This is detailed in the section on **BAT** and **Water**.
- Containment
    - We have deemed this aspect of the proposal as not satisfactory. Our reasons for this decision are outlined in the section on **Containment Measures**.
- Discharge to water
    - The applicant stated that the installation would still be able to meet the existing permitted limits for total daily flow, instant flow and the BAT-AELs for permitted substances and that the variation would not change the (worst case) impact from the installation as a result of the proposal. The application did not contain any information on additional mitigation

measures as a result of the increase in capacity. This is covered in more detail in the section on **Water** under **Environmental Risk Assessment**.

The proposal did not include any new point source emissions to air or water.

We have decided to refuse the variation application to the permit on the basis that the applicant has not proposed secondary containment for the new silos for milk, cream and whey. The proposed silos increase the risk to the environment due to the increase in volumes of milk, cream and whey stored on site and the location of the milk and cream silos being closer to the site boundary and the Merlin's Brook.

The lack of secondary containment for the new silos, coupled with the absence of *"other appropriate measures"* means that the proposal will not be able to comply with the permit condition (3.2.3 in the existing permit) on containment:

3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

Details on why the proposal will not fully comply with the condition 3.2.3 is discussed in the section on **Containment** and Other appropriate measures to secondary containment.

We are not satisfied that the applicant has demonstrated that reliance on the existing drainage system (tertiary containment) is reasonable in the circumstances and will be enough to minimise or prevent the impacts of discharge to the environment in the event of loss of primary containment. This is discussed in this document in Other appropriate measures to secondary containment.

As such we believe that the proposal will pose an unacceptable risk of pollution to the environment if there is a loss of the primary containment and / or associated pipework.

We have taken this decision in accordance with How to comply with your environmental permit (cyfoethnaturiol.cymru).

Contents

Glossary of acronyms, terms and definitions used in this document

BAT- Best Available Techniques

BRef- BAT Reference document

CIP-Cleaning in place

EPR- Environmental permitting regulations (England and Wales) 2016

ETP-Effluent treatment plant

IED- Industrial Emissions Directive 2010/75/EU

NDT-Non-destructive testing

NRW-Natural Resources Wales

RGN- Regulatory guidance note.

SAC- Special area of conservation

SSSI-Site of special scientific interest

Refusal of a bespoke permit variation

The variation application number is: EPR/XP3830UR/V007 (PAN-019159)

The permit number is: EPR/XP3830UR

We have decided to refuse the application to vary the environmental permit for Haverfordwest Creamery operated by: The First Milk Cheese Company Limited.

The applicant is The First Milk Cheese Company Limited. We refer to The First Milk Cheese Company Limited as both “the Operator” and “the Applicant” in this document.

The facility location is Haverfordwest Creamery, Pembroke Road, Merlin’s Bridge, Haverfordwest, Pembrokeshire, SA61 1JN. We refer to this as “the installation” and “the site” in this document.

We consider in reaching this decision we have taken into account all relevant considerations and legal requirements.

Key issues of the decision

Receipt of application

The application was deemed duly made as of 24 January 2023. This means we considered it was in the correct form and contained sufficient information for us to begin our determination, but not that it necessarily contained all the information we would need to complete that determination.

The application was deemed a normal variation as the increase in throughput of 178 tonnes per day was below the 200 tonnes per day regulatory threshold, for a Section 6.8 Part A(1)(e) activity set out in Part 2 of Schedule 1 EPR 2016. We have taken this decision in accordance with the guidance note, EPR RGN 8 “Substantial changes in operation at installations, mining waste facilities and other facilities involving solvent and combustion” (version 5.0, October 2014).

Confidential information

No claim for commercial or industrial confidentiality has been made.

Identifying confidential information

We have not identified information provided as part of the application that we consider to be confidential in relation to any party. The decision was taken in accordance with our guidance on commercial confidentiality.

Consultation

External consultation is not required for normal variation applications. This decision was taken in accordance with our Public Participation Statement.

A copy of the application and all other documents relevant to our determination are available for the public to view on our online public register. Anyone wishing to see these documents could also arrange for copies to be made.

Additional Information

After the duly made date, it was deemed that additional information was required in order for us to determine the impacts of the proposal. We therefore requested the additional information through Schedule 5 notifications.

The first Schedule 5 request for more information was sent to the applicant on the 17/02/2023. The initial deadline for response was 07/03/2023 but NRW agreed with the operator to extend this to the 14/03/2023. The response to the request for information was received on the 13/03/2023.

Summary of information requested in the first Schedule 5 notification;

- Information on containment measures for the new storage vessels (silos) and tanks.
- Odour risk assessment and the performance of existing odour abatement and if the existing measures will abate any additional odour emissions arising from the new tanks on site.
- Techniques to minimise noise impacts from the new milk intake bay/pump (with reference to BAT 14 Food, Drink and Milk Industries BAT Conclusions published 12 November 2019) and if existing noise abatement techniques take into account the new pump.
- Specifying if the Cleaning in Place sets meet the requirements of BAT (BAT 7 and BAT 8) of the Food, Drink and Milk Industries BAT Conclusions.

We assessed the response to the Schedule 5 notice. We were satisfied that the response to the questions on Cleaning in Place and containment gave enough information to make a determination, the details of which are described elsewhere in this document. For noise we were not entirely satisfied as the applicant had not identified closer receptors. While the applicant did provide a response on odour risk assessment, given the past issues with odour complaints associated with the site, we may have required more information to fully satisfy this aspect. However, as the information provided suggested a potential grounds for refusal based on containment, we decided not to pursue these matters for the application but have acknowledged them as outstanding.

The second Schedule 5 notification was sent on the 19/05/2023 with a deadline for response on the 23/06/2023. The applicant submitted their response on the 23/06/2023.

Summary of information requested in the second Schedule 5 notice:

- Detailed modelling and report on the impact of failure of primary containment and ability of existing drainage to prevent discharge off-site.
- A copy of the H1 risk assessment.

It was deemed that the applicant's response to the request for modelling and a report on the extent of drainage had not fully satisfied the Schedule 5 request as it did not represent a worst-case scenario of failure of the primary containment. However, despite this we deemed that the response was sufficient to enable NRW to determine the application, which demonstrated that there was an unacceptable risk to the environment should the application be granted.

The Schedule 5 notices that were sent to the applicant and the applicant's responses are available on the public register.

The facility

The regulated facility is an installation which comprises the following activities listed in Part 2 of Schedule 1 to the Environmental Permitting Regulations 2016 and the following directly associated activities:
Primary activity: S6.8 A(1)(e) – Treating and processing milk, the quantity of milk received being more than 200 tonnes per day (average value on an annual basis). – Processing of milk to produce cheese and butter products.
S5.4 A(1)(a)(i) - Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day involving one or more of the following activities – (i) biological treatment. – Treatment of process effluent at the effluent treatment plant.
Directly associated activities:

- Steam and electrical power supply – combustion of natural gas in three boilers with an aggregated thermal input of 24 MWth (Medium Combustion plants commissioned before 20/12/2018).
- Storage and handling of wastes.
- Refrigeration of raw materials and finished products.
- Operation of passive carbon filters for odour abatement.
- Medium Combustion plant: 1 x commissioned after 20/12/2018: 2.7 MWth input Combined Heat and Power Engine fuelled on natural gas.

The proposal did not include any additional Schedule 1 installation activities or directly associated activities.

The variation application was to allow the applicant to increase production capacity for their primary activity (processing of milk to produce cheese and butter products). The capacity was to increase from the current production capacity of 1066 tonnes per day to a maximum of 1244 tonnes per day.

Legislation

The variation application is subject to the Environmental Permitting Regulations (England and Wales) 2016 (EPR). The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is:

- an *installation* as described by the Industrial Emissions Directive 2010/75/EU (IED);
- subject to aspects of the Well-Being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016 which also have to be addressed.

We address the legal requirements directly where relevant in the body of this document. NRW is satisfied that this decision is consistent with its general purpose of pursuing the sustainable management of natural resources (SMNR) in relation to Wales and applying the principles of SMNR. In particular, NRW acknowledges that it is a principle of sustainable management to take action to prevent significant damage to ecosystems.

The site

The applicant did not propose any changes to the extent of the site boundary as part of their variation application. The new proposed activities and storage silos are located within the existing site boundary. The locations of the proposed activities and new silos are shown in figure 1 (below) and figure 2.

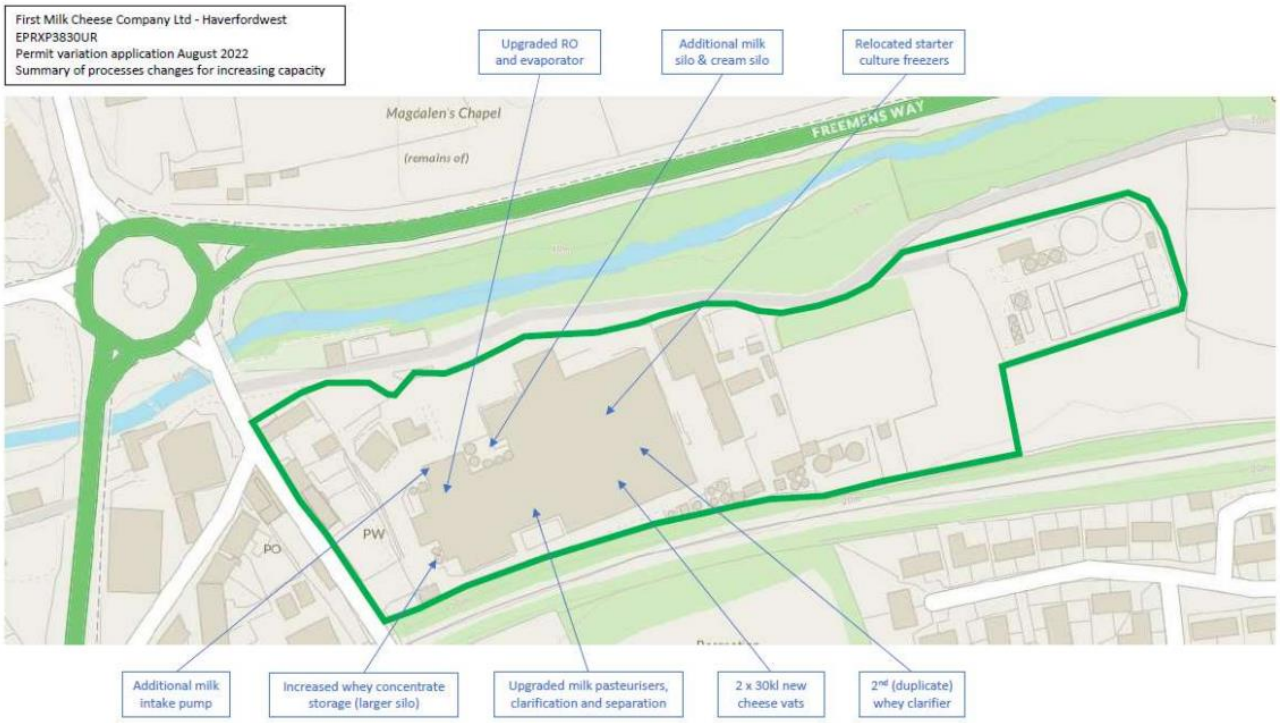

Figure 1: proposed location of changes to the site layout

The proposed new milk and cream silos were to be located north of the existing silos closer to the site boundary (shown in more detail in figure 2).

The cheese vats, whey clarifier and pasteurisers were to be located inside the building on hardstanding ground.

Appendix 1 – drainage place with locations annotated.

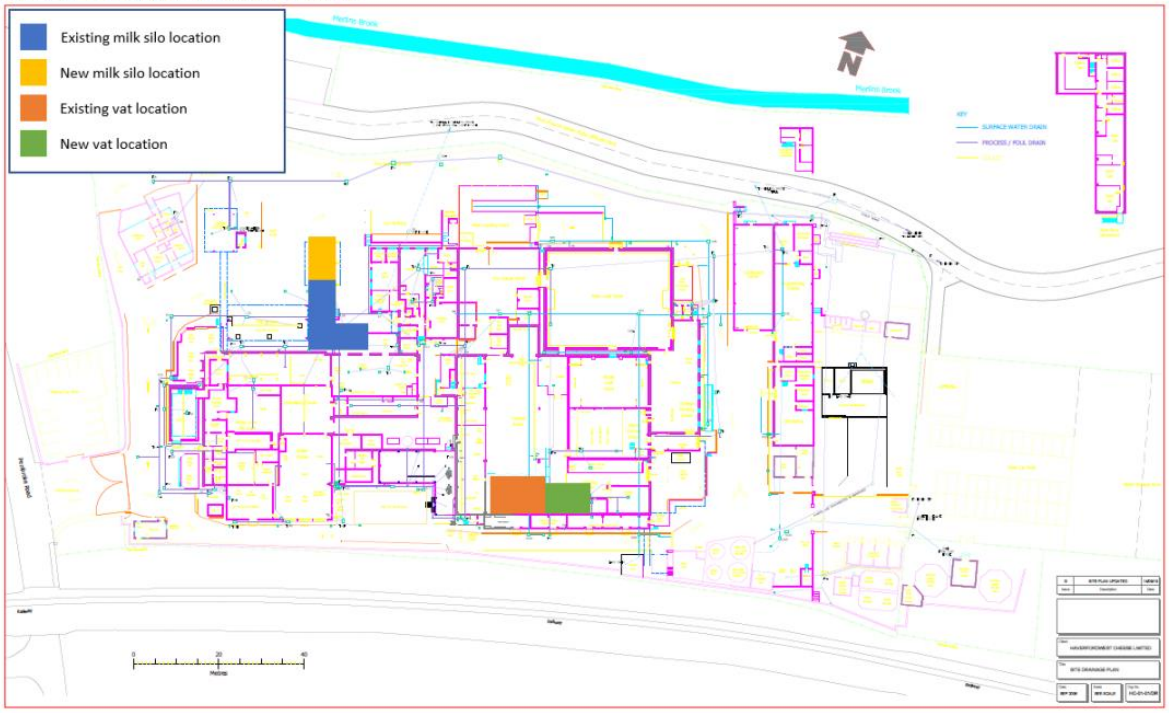

Figure 2: site drainage plan with the location of the new silos and vats

Site condition report

The applicant did not propose any changes to the site boundary in their variation application. As such a site condition report was not required as part of the variation.

Environmental Risk Assessment

Air

There are no proposed changes to emissions to air as a part of the variation application.

Water

Direct discharge through the effluent treatment plant

The installation has an onsite effluent treatment plant that treats and discharges process effluent to the Western Cleddau river. The application did not propose any changes to the effluent treatment plant. The applicant stated that the existing effluent treatment plant was suitably sized for the increase in effluent from the increased Cleaning in Place (CIP) sets.

Based on this information we initially concluded that the variation would not pose any additional risk for the following reasons:

- There are no proposed changes to the permitted limits for both instant flow and total volume for effluent discharge.
- The site has recently had the monitoring techniques and compliance with tighter BAT emission limits (which will be used after 4 December 2023) reviewed as part of the BRef (Best Available Techniques Reference document) review for the Food, Drink and Milk industries.
- The operator has stated that the existing effluent treatment plant has the capacity to achieve the emission limit values outlined in the permit, including the tighter BAT-AEL from the Food, Drink and Milk industries BAT conclusions that apply from 4 December 2023 onwards.

The applicant did not propose any changes to the effluent treatment plant in their application or throughout the determination period. As we had deemed that the variation was to be refused on the basis of lack of secondary containment and unsatisfactory tertiary containment, we did not pursue this issue further. However, we would have needed more information from the applicant in order to fully determine this aspect of the application and its potential impacts on the environment.

Emission limits

The proposal would not have changed any emission limits for substances and discharge volumes.

Containment measures

As part of the proposal to increase production capacity, the applicant has proposed additional storage of raw materials. The new storage will take the form of the following:

- 2 new cheese vats (each with 30,000 litre capacity);
- 1 additional milk storage silo (360,000 litre capacity);
- Increased whey concentrate (130,000 litre larger silo replacing an older, smaller 75,000 litre silo); and
- Cream storage of 80,000 litres (cream silo).

The new cheese vats were proposed to be located indoors next to the existing cheese vats and are on hardstanding ground and with drainage to the effluent treatment plant. The new silos (milk, cream and whey) are located outdoors (on hard standing concrete) next to the existing silos. The new milk and cream silos being located north of the existing silos while the new whey silo is replacing the existing whey silo near the western boundary of the installation (Figure 1).

Although the site currently stores these substances in the same way, we consider that the additional volumes and location of the new milk and cream silos in close proximity to the site's north boundary would increase the risk of substances leaving the site boundary in the event of loss of primary containment. It was also considered that although whey is more viscous and has a lower mobility, there is a potential impact pathway through leaked whey being carried by rainwater if the primary containment fails.

The first Schedule 5 notice we sent the applicant included a request for more details in regard to the total containment on site with particular reference to the CIRIA Guidance C736 *Containment systems for the prevention of pollution secondary, tertiary and other measures for industrial and commercial premise*. The applicant provided the following additional information with regard to containment in their response to our first Schedule 5 notice:

- Secondary containment for the silos will not be installed. Instead, the applicant is providing only primary containment, which is the silo itself and tertiary containment/attenuation which would consist of hardstanding surfacing and site drainage.
- The new silos and vats were to be constructed on hardstanding concrete next to the existing silos and vats.
- The silos are to be constructed as a 304 or 316 stainless steel vessel that is 5 mm thick at the base and 3-4 mm for the remainder of the height. These also have a PVC coated Prisima profile cladding. The applicant has stated that coating would reduce the likelihood of jetting and keep the liquid at the base of the silo.

- The applicant has stated that the volume of drainage tanks and overall drainage capacity at the effluent treatment plant (ETP) would not change as a result of the variation application.
- The applicant had stated that they could tanker off the liquid arriving at the plant through a third-party haulier (at an estimated rate of 28 tonnes per tanker, using 30 tankers per day).

Table 1: Volume of liquids stored on site (outside) and the volumes of the drainage system and tanks at effluent treatment plant

	Addition (litres)	Volume -existing site (litres)	New total volume (litres)
Milk	360,000	1,360,000	1,720,000*
Whey	55,000	75,000	130,000
Cream	80,000	100,000	180,000
Total volume of raw materials (milk/whey/cream)	495,000	1,535,000	2,030,000
Volume of Effluent Tanks and associated drainage system	No addition	1,860,000 (ETP) 4713 (Drainage system)	1,860,000 (ETP) 4713 (Drainage system)
Effluent Tank and drainage system volume as a percentage of total volume of liquid stored on site	N/A	121.2% (121.5% with drainage system included)	91.6% (91.9% with drainage system)

**Applicant's Schedule 5 response stated that new total would be 1,660,000 litres but the same Schedule 5 stated that the new additional volume would increase by 360,000 litres and existing is 1,360,000 litres.*

We are not satisfied that the containment measures would be suitable for the following reasons:

1) The proposed (new) silos would not have any secondary containment (as stated by the applicant) to contain spillage of milk, cream and whey in the event of a leak from either the silos or the associated pipework. In the event of loss of containment from the silos the operator has not demonstrated that the leak would be fully contained and prevented from entering the environment by the "*other appropriate measures", i.e., the hardstanding surfacing and site drainage.*

2) Without secondary containment (in the form of bunding, for example), there is no way of ensuring that the spill would be retained at the base of the silo.

3) In addition to the points raised on secondary containment, the applicant has not proposed any changes to tertiary containment. The site's tertiary containment consists of hardstanding concrete and site drainage up to the northern entrance and to the effluent treatment plant. Effective tertiary containment depends on the site drainage containing and diverting flows to the effluent treatment plant, in the event of loss of the primary containment. However, we do not agree that this alone is sufficient enough justification for not having secondary containment, without additional information on the ability of the site drainage to divert flows to the effluent treatment plant or retaining tanks (which is discussed in more detail later on in the section on Other appropriate measures to secondary containment).

4) The lack of secondary containment does not conform to the first part of our standard permit condition for containment of liquids, which is present in the current permit as condition 3.2.3:

> 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

As outlined in our guidance How to comply with your environmental permit (cyfoethnaturiol.cymru), all above ground storage must be bunded. The only exceptions to this are either when bunding is not practicable or structures are designed to work without bunding such as concrete effluent treatment plant. The concrete effluent treatment plant would only be effective if the drainage could capture all discharge and drain it to the effluent treatment plant. We consider that the applicant has not demonstrated or justified that bunding is not practicable and as the silos are constructed as single skinned steel vessels, we are not satisfied that they are designed to work without secondary containment.

The applicant has previously been made aware of the above guidance and CIRIA C736. At the time of the NRW initiated variation (EPR/XP3830UR/V006) to implement the BAT conclusions for the latest BRef publication for the Food, Drink and Milk sectors, NRW outlined in the issue letter, dated 8th April 2022, the following statement:

CIRIA C736

Your permit has a standard condition that states:
All liquids in containers, whose emissions to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or, where that is not practicable to minimise, leakage and spillage from the primary container.

In our 'How to Comply with your environmental permit' (HTC) we reference two guidance documents that provide information on pollution prevention and appropriate measures associated with secondary containment i.e. CIRIA R163D (Concrete Bunds for Oil Storage Tanks Masonry Bunds for Oil Storage Tanks) and CIRIA R164 (Design of containment systems for the prevention of water pollution from industrial incidents). However, both guidance documents have been superseded by CIRIA C736 (Containment systems for the prevention of pollution). Item Detail (ciria.org).

We will be updating 'How to Comply' in the near future. In the meantime we expect you to follow CIRIA C736 in complying with the condition outlined above, typically condition 3.2.3 of your environmental permit.

As such the operator was already made aware that we expected all materials whose emissions to water or land could cause pollution, to have secondary containment and the standard to be used when designing such containment. In terms of environmental impact, milk can lead to significant environmental harm if discharged into the aquatic environment. For context, it can be as much as 400 times more polluting than untreated domestic sewage[1]. As such, in the event of a spillage of milk, cream or whey there is a large potential for environmental damage and therefore secondary containment measures are needed to minimise or prevent the liquid from entering the environment.

5) We also do not accept the applicant's justification that the site has not had any previous incidents relating to failure of the silos as a justification for not providing secondary containment.

We have decided based on the information in the application and subsequent Schedule 5 Notice responses, that the lack of secondary containment is not satisfactory and is not compliant with the standard permit condition (3.2.3 of the current permit). We consider that the measures proposed by the applicant are not sufficient to

[1] *Pollution Prevention Guidance (DAIRIES AND OTHER MILK HANDLING OPERATIONS: PPG17) ISBN 1 873 16098 4*

stop discharge of liquid to the environment in the event of a catastrophic loss of containment. We have taken this decision in accordance with How to comply with your environmental permit (cyfoethnaturiol.cymru).

Other appropriate measures to secondary containment

Both condition 3.2.3 and the How to Comply guidance have the following statement: *"…unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container."*

As the proposal will not have secondary containment for the new proposed silos for milk, cream and whey, the applicant will need, as a minimum, to demonstrate that other appropriate measures are in place to prevent the release of substances from the site boundary in the event of a spillage.

The applicant is relying on tertiary containment (site drainage which is intended to send flows of released substances to the effluent treatment plant tanks) to prevent the spillage from leaving the installation boundary. In order to determine if this is a suitable arrangement/alternative "appropriate measure" to secondary containment, our second Schedule 5 notice required the applicant to submit modelling (calculations) as evidence of the ability of the site's drainage to prevent the substances from leaving the installation boundary. We did not specify what modelling the applicant should use but we consider that it is reasonable to expect something in line with what is outlined in CIRIA C736 guidance (section 10).

Below is an overview of the applicant's response:

- A summary of maintenance and non-destructive testing of the silos including a statement from the applicant on the likelihood of failure of the primary containment and likely scenario which could occur as a result. This response also included input from their NDT contractor.
- The applicant had undertaken what they referred to as a simulation rather than the modelling we had requested. The simulation comprised of emptying a road tanker (filled with water) at locations near the proposed silos, with one test at

the milk silo (also the location of the cream silo) and the second at the whey silo.

    - The test at the whey silo did not show the water moving toward the main gate.
    - The test at the milk silo showed that water flowed towards the milk intake area but there was a proportion that flowed towards the side gate. This had overtopped the drain gully and left the site. The site is also located on a slope that is above the Merlin's Brook (approximately 40 meters from the site entrance) and therefore there is a potential impact to the watercourse associated with this.

- The simulation was conducted in dry weather and was therefore not precautionary, i.e., not worst-case scenario. The applicant did acknowledge that heavy rainfall would further impact on the drainage system.
- The applicant gave the figures for the flow rates for whey and milk only (but did not supply the flow rate for cream) with the worst-case scenario (leak occurring at the base of the silo and the silo being full) having a flow rate of 105 litres/second for whey and 143 litres per second for milk. When the silos are half full, the flow rates are 74.3 l/s for whey and 105 l/s for milk respectively.
- The response stated that the site has two main systems for surface water and effluent drainage. Under normal operations both surface water and effluent are drained to the effluent treatment plant and not the Merlin's Brook.

The applicant's response did not fully answer what was asked in the Schedule 5 request:

- NRW had requested that the applicant provide modelling. Although not specified, it was expected to be a desk-based calculation and not the "simulation" that the applicant had done. (We prefer desk-based calculations, as a site-based simulation cannot be easily assessed / audited by us and may make incorrect assumptions about pressures and flows etc. It is also subject to the weather conditions occurring when the simulation was carried out and may therefore not represent the worst-case scenario. Examples of modelling that could be used to determine the suitability of the drainage capacity include but

is not limited to, hydraulic modelling including the use of Manning's formula for open channels as referenced in Section 10.7 of CIRIA C736.

- The simulation does not represent a "worst case scenario" as the tankers would not reflect the pressure from a catastrophic leak of the silos and/or associated pipework (notably the tankers are horizontal compared to the vertical silos). The applicant acknowledged that this was done in dry weather and the influence of rain would have some impact.
- There was no information provided on the cream silos or the predicted flow rates for cream from the cream silo.

However, while we do not consider that the simulation is a worst-case scenario, as it was done using tankers in dry weather conditions, there was evidence from the applicant that for the milk (and cream) silos, a proportion of the stored substances could leave the site boundary in the event of a loss of containment. The applicant acknowledged that flow would leave the site and mentioned the possibility of contacting an engineer to investigate the drainage, however as the application stands, there was no formal proposal to increase the drainage and any new proposal would need to be assessed as a new variation.

Therefore, we have decided to proceed with the determination as the response provided enough information for us to conclude that the containment is inadequate and results in an increased risk of potential impact from the proposed new silos.

The applicant had also explained in their Schedule 5 response that the new silos would follow the practice for the existing silos, whereby the silos undergo a maintenance schedule of routine non-destructive testing (NDT). The purpose of this is to detect cracks for hygiene reasons which would develop before structural failure. In addition, the silos are on a raised plinth and road vehicles are limited to 10 miles per hour. However, while the routine NDT would reduce the risk and potentially detect cracks early on, it would not be enough to prevent the discharge of substances to the environment in the event of a sudden failure of the silos between tests. It would also not take into account the more likely scenario of potential leaks associated with pipework, human error and other external influences. In addition, as the proposed silos

are new, the applicant should have taken into account secondary containment for their design, in order to prevent the discharge of substances to the environment.

In the event that substances do leave the site boundary in the event of failure of primary containment, an additional permit condition could be breached: condition 3.2.1

3.2.1 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.

In our how to comply guidance How to comply with your environmental permit (naturalresources.wales) under the section Emissions of substances not controlled by emission limits, it says the following for Emissions to surface water and groundwater:

Emissions to surface water and groundwater
For surfaces on your site:
• make sure that surfaces and containment or drainage facilities are adequate for all operational areas, taking into consideration collection capacities, surface thicknesses, strength/reinforcement, falls, materials of construction, permeability.
• ensure there is adequate resistance to chemical attack.
• have an inspection and maintenance programme for impervious surfaces and containment facilities.
Unless the risk is negligible, have improvement plans in place where operational areas do not already have:
• an impervious surface
• spill containment kerbs
• sealed construction joints
• connection to a sealed drainage system.

With reference to the above, we have deemed that in this case the risk to surface water is not negligible as there is a potential likelihood for leakage from either the silo

or associated pipe work and the substances (milk, cream and whey) have the potential to cause damage to the receiving aquatic environment due to their environmental hazards. Therefore, the operator would need to have an impervious surface, spill containment kerbs, sealed construction joints and connection to a sealed drainage system. The applicant did not provide any proposal to change / improve these.

For sealed drainage, the guidance provides clarification on what is meant by sealed drainage:

> *"A sealed drainage system is a drainage system with impermeable components which does not leak and which will ensure that no liquids will run off a surfaced area other than via the system. Except where they are lawfully discharged, all liquids entering the system should be collected in a sealed sump"*

As the applicant had demonstrated in their response to the second Schedule 5 notice that the substances (milk and cream) would potentially overflow the gully at the site entrance, the current system would not be considered sealed drainage and the definition states *"will ensure no liquids will run off a surfaced area other than via the system*". Therefore, the current drainage system would not constitute a sealed drainage system as defined in our How to Comply, guidance, and if substances leave the site in the event of loss of containment the applicant may also breach condition 3.2.1.

Based upon the information in the application, we are not satisfied that the appropriate measures will be in place to prevent, or where that is not practicable, to minimise the pollution risk resulting from any escape of pollutants from the primary containment.
The lack of secondary containment for the new silos and the inadequate alternative measures (site drainage) to prevent the discharge from leaving the site is not acceptable given the increased risk posed by the increased volume of substances stored on site and their location closer to the installation boundary and Merlin's Brook. To minimise the risk the site would need secondary containment for the silos (such as bunding). If secondary containment is not possible (due to space) then the applicant would need to provide evidence and justification and provide a proposal for a more capable tertiary containment, with clear evidence it would prevent any leakage from

leaving the site boundary under worst case conditions. The application did not give any justification on why secondary containment was not practical for the new silos or propose any changes to the site drainage to prevent such a spill.

Biodiversity, Heritage, Landscape and Nature Conservation

The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat.

Special Areas of Conservation (SACs), Special Protection Areas (SPA) and RAMSAR designated sites

The following Special Areas of Conservation (SACs) are located within 10km of the installation:

- **Pembrokeshire Marine / Sir Benfro Forol**
- **Afonydd Cleddau / Cleddau Rivers** – 300 meters upstream (mobile features of this SAC could potentially be impacted by discharge downstream)
- **Pembrokeshire Bat Sites and Bosherston Lakes / Safleoedd Ystlum Sir Benfro a Llynnoedd Bosherston** – We are satisfied that this particular SAC is not in hydraulic continuity with the Western Cleddau river and so no impact pathway exists. Therefore, no further assessment is required for this protected site.

There were no Special Protection Areas (SPA) or Ramsar sites located within 10 km of the installation.

The application did not propose any changes to the point source emissions to air or water. The applicant stated that the site will be able to meet the emission limits and maximum flow rates for water discharge as outlined in the existing permit including the future date BAT emissions limits from 4 December 2023.

There is a risk of substances leaving the site in the event of a failure of primary containment and because of the close proximity of the site to the Merlin's Brook, we consider that there is a possible impact pathway to the protected sites. As such we have undertaken a habitats regulations assessment (HRA) in accordance with the provisions of Regulation 63 of the Conservation of habitats & Species Regulations 2017.

The HRA identified two SACs that could be impacted from the site in the event of loss of containment.

- **Pembrokeshire Marine / Sir Benfro Forol –** Hydrologically connected to Merlin's Brook downstream where discharged substances could enter the watercourse. The site is designated for both habitats and aquatic species. The designated features, which include particularly fish species (such as sea lamprey, river lamprey, twait shad and allis shad), can be impacted through various mechanisms (including toxic contamination and nutrient enrichment) from the substances (high Biological oxygen demand of milk and cream).

  Afonydd Cleddau / Cleddau Rivers - although 300 metres upstream from the point at which Merlin's Brook enters Cleddau, this SAC contains mobile features (e.g. species of protected fish including sea lamprey, river lamprey and bullhead), that cross from the downstream Pembrokeshire Marine / Sir Benfro Forol SAC because it is part of the same river.

Both SACs above are designated for both habitats and species (including aquatic and land-based species) that could be damaged if substances contained in the silos were to reach the features. For this reason, it was not possible to reach a conclusion of "no likely significant effect" on the protected features of the site, meaning that it was necessary to proceed to appropriate assessment, with a view to determining whether adverse effect on site integrity could be ruled out. Apart from some prescribed limited exceptions, it is not possible to issue an authorisation, such as a permit variation, unless adverse effect on site integrity can be ruled out.

The HRA concluded that in the event of loss of primary containment and the subsequent discharge of substances (milk, cream or whey) there would be an impact pathway from the substances entering the watercourse (Merlin's Brook) to the protected site features, notably protected fish species and that adverse effects to these features would likely occur. The HRA also concluded the mitigation measures (site drainage) would not be sufficient (as demonstrated by the applicant's simulation) to rule out the risk of an adverse effect on site integrity.

As we cannot rule out the likelihood of adverse impacts on site integrity, in accordance with the precautionary principle, we are bound to refuse the application to increase throughput and storage capacity at the site. In the absence of secondary containment or other appropriate measures, the new silos pose an unacceptable increase in risk to the designated features of the habitats sites.

We have consulted with the appropriate nature conservation body in Wales (Natural Resources Management directorate of NRW) on our assessment of the European Sites listed above. The conservation body in Wales are in agreement with our conclusions.

Sites of Special Scientific Interest and non-statutory designated sites.

The following Sites of Special Scientific Interest (SSSI) are located with 2 km of the installation:

- Milford Haven Waterway
- Afon Cleddau Forllewinol/ West Cleddau River
- Gas works lane section (Haverfordwest)

There were no local wildlife sites, local nature reserves or natural nature reserves located within 2 km of the site. There were 23 ancient woodland designated areas within 2 km, 11 of which are located near the Western Cleddau (downstream of the discharge).

We have not carried out an appendix 4 assessment on the SSSI designated sites as the HRA has already concluded that likelihood of adverse impact could not be ruled out and we would therefore refuse the proposal on this basis.

Odour

The installation is located in a suburban area and is in close proximity to nearby receptors, with the closest of these being 40-50 metres west of the main production building. The applicant did not propose any additional odour abatement to the main processes onsite as they had stated that the increase in throughput would not increase the odour risk, but did state that regular maintenance and checks will be in place. The

site currently has odour abatement for the effluent treatment plant (carbon filters fitted to the tanks). The BRef review variation issued in 2022 had an improvement condition for the submission of an odour management plan to NRW. This was supplied to NRW on the 18/05/2023 and is pending assessment. As we had decided to refuse on containment, we decided not to pursue this aspect further, but it is likely that we would require more information on the receptors to resolve this point in any future determination.

Noise

The site is located in a suburban area and is in close proximity to nearby receptors. The operator stated in their response that the nearest receptors are located 200 metres away, but we identified residential buildings 40-50 metres west of the main production building, although these buildings are currently within the installation's permitted boundary.

- The majority of the activities proposed are to occur indoors.
- The addition of silos and vats are unlikely to lead to any additional source of noise.
- The new milk pump and inlet is located within an enclosed area.
- There are no changes in operational hours as a result of the proposal.

The site submitted a noise management plan in relation to an improvement condition (IC 6) on the 22/05/2023. This noise management plan acknowledged the receptor 50 meters to the west, which was not mentioned in the applicant's noise risk assessment for this application and the schedule 5 response. Although the risk of increase in noise may be low, it is likely that we would require more information on the receptors (including the discrepancy between the application and the applicant's response to the improvement condition) to resolve this point in any future determination.

Monitoring

There were no proposed changes to the monitoring parameters as set out in schedule 3a (until 03/12/2023) and schedule 3b (from 04/12/2023 onwards) of the existing permit.

Reporting

The proposed changes would not have resulted in a change in the reporting requirements.

Operating techniques

We have reviewed the techniques used by the operator and compared these with the relevant guidance notes. We have reviewed the proposed techniques against the BAT Conclusions for the Food, milk and Drink industries https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019D2031.

The proposal would also involve the installation of a new Cleaning In Place system which will be in line with BAT 7 and 8 of the BAT Conclusions.

We have not accepted that the operating techniques for prevention of loss of containment from the silos is enough to prevent discharge of liquid from the milk/cream/whey silos from reaching the environment. We have detailed this in the section above on **Containment measures** and made this decision with reference to How to comply with your environmental permit (cyfoethnaturiol.cymru).

The applicant had not proposed any changes or additional operating techniques for the operation of the effluent treatment plant.

Operator Competence

During the determination several incidences associated with discharge through emission point from the effluent treatment plant (emission point W2) to the Western Cleddau occurred which resulted in a Regulation 36 notice being sent out on the 28/07/2023 which was later withdrawn and replaced with a new notice sent 11/08/2023. The Regulation 36 (copy of which is available on our public register) set out the steps required. Below is a brief summary of the steps;

1. *Implement controls to prevent or minimise discharge of polluting matter contaminating the effluent pipe line from release point W2.*

2. *Produce a plan of action to inspect and clean the full length of the effluent treatment pipe line and any ancilliary plant or infrastructure that may be contributing to discharge of polluting matter via release point W2.*
3. *Implement the plan of action set out in step 2 to inspect and clean the full length of the effluent treatment line and any ancillary plant or infrastructure that may be contributing to discharge of polluting matter via release point W2.*
4. *Provide to Natural Resources Wales a written assessment of public health and environmental risk and impact arising from the polluting matter accumulated in and on the Western Cleddau riverbed and banks.*
5. *Produce and implement a plan of action to remediate the impact of polluting matter on the Western Cleddau riverbed and banks.*
6. *Provide NRW a weekly written assessment of the daily efficacy of the outfall screen installed in compliance with step 1 (add in the 11/08/2023 notice, in response to completion of step 1).*

As of November 2023, steps 1, 2 and 5 have been complied with.

Given that these incidents occurred at the site's current operational capacity, increasing the site's production capacity to 1244 tonnes per day could potentially pose a risk that could increase the likelihood of such incidences occurring more frequently. As the application was being refused on containment we decided not to pursue this further, but have acknowledged it as an outstanding query that would need to be addressed. The applicant did not propose any changes to the effluent treatment plant or operating techniques associated with the effluent treatment plant in the initial application or subsequent additional information.

Environment management system

The applicant stated in their initial application and response to the request for more information (dated 23/01/2023) that there would be no changes to their environment management system as a result of the increase in capacity. Throughout the determination, incidences relating to the effluent treatment plant have given us cause for concern that the environment management systems may not be sufficient to address the increase in capacity at the site. As such, we consider that the environment management system would need to be reviewed and possibly revised to demonstrate compliance and this remains an outstanding issue.