

Review of an Environmental Permit for an Installation subject to Chapter II of the Industrial Emissions Directive under the Environmental Permitting (England & Wales) Regulations 2016 (as amended)

Decision document recording our decision-making process following review of a permit

The Permit number is: EPR/BN0473IM
The Operator is: Arla Foods Limited
The Installation is: Settle Creamery
This Variation Notice number is: EPR/BN0473IM/V007

What this document is about

Article 21(3) of the Industrial Emissions Directive (IED) requires the Environment Agency to review conditions in permits that it has issued and to ensure that the permit delivers compliance with relevant standards, within four years of the publication by the European Commission of updated decisions on best available techniques (BAT) Conclusions.

We have reviewed the permit for this installation against the BAT Conclusions for the Food, Drink and Milk Industries published on 4th December 2019 in the Official Journal of the European Union. In this decision document, we set out the reasoning for the consolidated variation notice that we have issued.

It explains how we have reviewed and considered the techniques used by the Operator in the operation and control of the plant and activities of the installation. It is our record of our decision-making process and shows how we have taken into account all relevant factors in reaching our position.

As well as considering the review of the operating techniques used by the Operator for the operation of the plant and activities of the installation, the consolidated variation notice takes into account and brings together in a single document all previous variations that relate to the original permit issue. Where this has not already been done, it also modernises the entire permit to reflect the conditions contained in our current generic permit template.

The introduction of new template conditions makes the Permit consistent with our current general approach and with other permits issued to Installations in this sector. Although the wording of some conditions has changed, while others have been deleted because of the new regulatory approach, it does not reduce the level of environmental protection achieved by the Permit in any way. In this document, we therefore address only our determination of substantive issues relating to the new BAT Conclusions.

We try to explain our decision as accurately, comprehensively and plainly as possible. Achieving all three objectives is not always easy, and we would welcome any feedback as to how we might improve our decision documents in future.

How this document is structured

1. Our decision
2. How we reached our decision
3. The legal framework
4. Annex 1 – Review of operating techniques within the Installation against BAT Conclusions.
5. Annex 2 – Review and assessment of changes that are not part of the BAT Conclusions derived permit review
6. Annex 3 – Improvement Conditions

1 Our decision

We have decided to issue the Variation Notice to the Operator. This will allow the Operator to continue to operate the Installation, subject to the conditions in the Consolidated Variation Notice that updates the whole permit.

We consider that, in reaching our decision, we have taken into account all relevant considerations and legal requirements and that the varied permit will ensure that a high level of protection is provided for the environment and human health.

The Consolidated Variation Notice contains many conditions taken from our standard Environmental Permit template including the relevant annexes. We developed these conditions in consultation with industry, having regard to the legal requirements of the Environmental Permitting Regulations and other relevant legislation. This document does not therefore include an explanation for these standard conditions. Where they are included in the Notice, we have considered the techniques identified by the operator for the operation of their installation, and have accepted that the details are sufficient and satisfactory to make those standard conditions appropriate. This document does, however, provide an explanation of our use of “tailor-made” or installation-specific conditions, or where our Permit template provides two or more options.

2 How we reached our decision

2.1 Requesting information to demonstrate compliance with BAT Conclusion techniques

We issued a Notice under Regulation 61(1) of the Environmental Permitting (England and Wales) Regulations 2016 (a Regulation 61 Notice) on 24/03/2022 requiring the Operator to provide information to demonstrate where the operation of their installation currently meets, or how it will subsequently meet, the revised standards described in the relevant BAT Conclusions document.

The Notice required that where the revised standards are not currently met, the operator should provide information that:

- describes the techniques that will be implemented before 4 December 2023, which will then ensure that operations meet the revised standards, or
- justifies why standards will not be met by 4 December 2023, and confirmation of the date when the operation of those processes will cease within the Installation or an explanation of why the revised BAT standards are not applicable to those processes, or
- justifies why an alternative technique will achieve the same level of environmental protection equivalent to the revised BAT standards described in the BAT Conclusions.

Where the Operator proposed that they were not intending to meet a BAT standard that also included a BAT Associated Emission Level (BAT-AEL) described in the BAT Conclusions Document, the Regulation 61 Notice required that the Operator make a formal request for derogation from compliance with that BAT-AEL (as provisioned by Article 15(4) of IED). In this circumstance, the Notice identified that any such request for derogation must be supported and justified by sufficient technical and commercial information that would enable us to determine acceptability of the derogation request.

The Regulation 61 Notice response from the Operator was received on 22/07/2022.

We considered it was in the correct form and contained sufficient information for us to begin our determination of the permit review but not that it necessarily contained all the information we would need to complete that determination.

The Operator made no claim for commercial confidentiality. We have not received any information in relation to the Regulation 61 Notice response that appears to be confidential in relation to any party.

2.2 Review of our own information in respect to the capability of the Installation to meet revised standards included in the BAT Conclusions document

Based on our records and previous experience in the regulation of the installation we have no reason to consider that the Operator will not be able to comply with the techniques and standards described in the BAT Conclusions.

2.3 Requests for further information during determination

Although we were able to consider the Regulation 61 Notice response generally satisfactory at receipt, we did in fact need more information in order to complete our permit review assessment, and issued further information requests on 06/07/2023 regarding evidencing an up-to-date ISO 14001 certification, confirmation of sufficient buffer capacity and systems to prevent an accidental discharge to reach the environment, a commission date for Boiler A2, confirmation of where boiler blowdown goes and confirmation that emission values of hazardous pollutants comply with the limits set within the Water Framework Directive. A copy of each further information request was placed on our public register. In addition to the response to our further information request, we received additional information during the determination from the Operator on 08/08/23 regarding a simplified process flow, provision of a list of assets and refrigerants with high GWP, clarification of Boiler A3 thermal input and confirmation of where solid waste from the effluent treatment plant is sent to. We made a copy of this information available to the public in the same way as the response to our information request.

3 The legal framework

The Consolidated Variation Notice will be issued under Regulations 18 and 20 of the 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 IED;
- subject to aspects of other relevant legislation which also have to be addressed.

We consider that, in issuing the Consolidated Variation Notice, it will ensure that the operation of the Installation complies with all relevant legal requirements and that a high level of protection will be delivered for the environment and human health.

We explain how we have addressed specific statutory requirements more fully in the rest of this document.

BAT Conclusions for the Food, Drink and Milk Industries, were published by the European Commission on 4 December 2019.

There are 37 BAT Conclusions.

BAT 1 – 15 are General BAT Conclusions (Narrative BAT) applicable to all relevant Food, Drink and Milk Installations in scope.

BAT 16 – 37 are sector-specific BAT Conclusions, including Best Available Techniques Associated Emissions Levels (BAT-AELs) and Associated Environmental Performance Levels (BAT-AEPLs):

BAT 16 & 17	BAT Conclusions for Animal Feed
BAT 18 – 20	BAT Conclusions for Brewing
BAT 21 – 23	BAT Conclusions for Dairies
BAT 24	BAT Conclusions for Ethanol Production
BAT 25 & 26	BAT Conclusions for Fish and Shellfish Processing
BAT 27	BAT Conclusions for Fruit and Vegetable Processing
BAT 28	BAT Conclusions for Grain Milling
BAT 29	BAT Conclusions for Meat Processing

BAT 30 – 32	BAT Conclusions for Oilseed Processing and Vegetable Oil Refining
BAT 33	BAT Conclusions for Soft Drinks and Nectar/Fruit Juice Processed from Fruit and Vegetables
BAT 34	BAT Conclusions for Starch Production
BAT 35 – 37	BAT Conclusions for Sugar Manufacturing

This annex provides a record of decisions made in relation to each relevant BAT Conclusion applicable to the installation. This annex should be read in conjunction with the Consolidated Variation Notice.

The overall status of compliance with the BAT conclusion is indicated in the table as:

NA – Not Applicable

CC – Currently Compliant

FC – Compliant in the future (within 4 years of publication of BAT Conclusions)

NC – Not Compliant

BATC No.	Summary of BAT Conclusion requirement for Food, Drink and Milk Industries	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
GENERAL BAT CONCLUSIONS (BAT 1-15)			
1	<p>Environmental Management System - Improve overall environmental performance.</p> <p>Implement an EMS that incorporates all the features as described within BATc 1.</p>	CC	<p>The operator has provided information to support compliance with BATc 1. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 1.</p> <p>The operator has an EMS externally accredited to the ISO14001 standard.</p>
2	<p>EMS Inventory of inputs & outputs. Increase resource efficiency and reduce emissions.</p> <p>Establish, maintain and regularly review (including when a significant change occurs) an inventory of water, energy and raw materials consumption as well as of waste water and waste gas streams, as part of the environmental management system (see BAT 1), that incorporates all of the features as detailed within the BATCs.</p>	CC	<p>The operator has provided information to support compliance with BATc 2. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 2.</p> <p>The Operator declared that it is using:</p> <ul style="list-style-type: none"> • Simplified process flow and a description of process integrated techniques • Water usage mass-balance • Information about wastewater streams and characteristics • Monitoring of waste gas streams and characteristics • Energy consumption monitoring • Identification of waste generation, resource use and monitoring of waste reduction opportunities
3	<p>Monitoring key process parameters at key locations for emissions to water.</p> <p>For relevant emissions to water as identified by the inventory of waste water streams (see BAT 2), BAT is to monitor key process parameters (e.g. continuous monitoring of waste water flow, pH and temperature) at key locations (e.g. at the inlet and/or outlet of the pre-treatment, at the inlet to the final treatment, at the point where the emission leaves the installation).</p>	CC	<p>The operator has provided information to support compliance with BATc 3. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 3.</p> <p>The Operator is:</p> <ul style="list-style-type: none"> - Monitoring pH, flow at the influent and final outfall and conductivity. The site measures

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			COD in the daily composite with turbidity continuously monitored. Average daily concentrations of key consent parameters are already obtained and trended through the effluent plant operating arrangements.
4	<p>Monitoring emissions to water to the required frequencies and standards.</p> <p>BAT is to monitor emissions to water with at least the frequency given [refer to BAT 4 table in BATc] and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.</p>	NA	<p>We are satisfied that BATc 4 is not applicable to this installation.</p> <p>BATc 4 is only applicable to sites that have process effluent discharged to water and this installation does not discharge to surface waters. All discharges of trade effluent are to the foul sewer under consent from Untied Utilities Limited.</p>
5	<p>Monitoring channelled emissions to air to the required frequencies and standards.</p> <p>BAT is to monitor channelled emissions to air with at least the frequency given and in accordance with EN standards.</p>	NA	<p>We are satisfied that BATc 5 is not applicable to this Installation.</p> <p>BATc 5 is only applicable to sites that have dust emissions from the process. The site does not operate relevant processing equipment (driers) which would give rise to these emissions.</p>
6	<p>Energy Efficiency</p> <p>In order to increase energy efficiency, BAT is to use an energy efficiency plan (BAT 6a) and an appropriate combination of the common techniques listed in technique 6b within the table in the BATc.</p>	CC	<p>The operator has provided information to support compliance with BATc 6. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 6.</p> <p>The operator is using:</p> <ul style="list-style-type: none"> - Burner regulation and control - Upgrade of motors to VSD where applicable - Heat recovery - Energy efficient lighting - Blowdown minimisation through TDS controls

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			<ul style="list-style-type: none"> - Optimisation of steam distribution planned - Boiler economisers - Process control systems (through OneCI) - Compressed air system monitored by a third party contractor - Rockwool/ insulated panels are used; planned further insulation upgrades - Variable speed drives
7	<p>Water and wastewater minimisation</p> <p>In order to reduce water consumption and the volume of waste water discharged, BAT is to use BAT 7a and one or a combination of the techniques b to k given below.</p> <ul style="list-style-type: none"> (a) water recycling and/or reuse (b) Optimisation of water flow (c) Optimisation of water nozzles and hoses (d) Segregation of water streams <p>Techniques related to cleaning operations:</p> <ul style="list-style-type: none"> (e) Dry cleaning (f) Pigging system for pipes (g) High-pressure cleaning (h) Optimisation of chemical dosing and water use in cleaning-in-place (CIP) (i) Low-pressure foam and/or gel cleaning (j) Optimised design and construction of equipment and process areas (k) Cleaning of equipment as soon as possible 	CC	<p>The operator has provided information to support compliance with BATc 7. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 7.</p> <p>The Operator is:</p> <ul style="list-style-type: none"> a) Recycling water through reverse osmosis that is later used for cleaning purposes b) Real-time flow optimisation (controlled by PLC) c) Real-time optimisation of nozzles and hoses pressure d) Segregation of process and uncontaminated run-off waters e) Use of dry-cleaning where appropriate f) Optimisation of chemical dosing in CIP and monitored by third party supplier. g) Low pressure foam and /or gel cleaning. h) 'Clean as you go' policy.

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8	<p>Prevent or reduce the use of harmful substances</p> <p>In order to prevent or reduce the use of harmful substances, e.g. in cleaning and disinfection, BAT is to use one or a combination of the techniques given below.</p> <p>(a) Proper selection of cleaning chemicals and/or disinfectants (b) Reuse of cleaning chemicals in cleaning-in-place (CIP) (c) Dry cleaning (d) Optimised design and construction of equipment and process areas</p>	CC	<p>The operator has provided information to support compliance with BATc 8. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 8.</p> <p>The Operator is using:</p> <ul style="list-style-type: none"> a) Proper selection of chemicals used at the advice of the products provider (via additional COSHH training) b) Reuse of chemical in CIP where appropriate. a) Optimised design and construction of equipment.
9	<p>Refrigerants</p> <p>In order to prevent emissions of ozone-depleting substances and of substances with a high global warming potential from cooling and freezing, BAT is to use refrigerants without ozone depletion potential and with a low global warming potential.</p>	CC	<p>The operator has provided information to support compliance with BATc 9. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 9.</p> <p>Maintenance of refrigerant plant through competent third party contractor. Via a request for further information the operator declared (10/08/23) that the only F gasses on site are associated with canteen fridges. All process related to chilling on site is now ammonia based.</p>
10	<p>Resource efficiency</p> <p>In order to increase resource efficiency, BAT is to use one or a combination of the techniques given below:</p> <p>(a) Anaerobic digestion (b) Use of residues (c) Separation of residues (d) Recovery and reuse of residues from the pasteuriser (e) Phosphorus recovery as struvite (f) Use of waste water for land spreading</p>	CC	<p>The operator has provided information to support compliance with BATc 10. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 10.</p> <p>The Operator declared:</p> <ul style="list-style-type: none"> • Sludge sent to off-site third party AD treatment. • Use of residue on-site and off-site by third party. • Separation of residue.

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			<ul style="list-style-type: none"> • Concentrates are recovered and re-introduced into process. • Use of waste water for land spreading by third party.
11	<p>Waste water buffer storage In order to prevent uncontrolled emissions to water, BAT is to provide an appropriate buffer storage capacity for waste water.</p>	CC	<p>The operator has provided information to support compliance with BATc 11. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 11.</p> <p>The operator confirms that the latest variation (V006) permits the installation to construct a new bund to house effluent sludge and calamity tanks. The balance tank is provided with an individual bund. This new containment system is subject to IC 7 (completion date May 2024).</p> <ul style="list-style-type: none"> • The operator confirmed they have sufficient buffer capacity to prevent accidental spillages to reach the environment. • The site operates an automated alarm system for loss of containment. • Provided a newly lined underground balance tank with working volume of 613m³ • The operator has a slam shut valves on-site. • Potential spillages are collected in the site drainage system leading to the balance tank.
12	<p>Emissions to water – treatment In order to reduce emissions to water, BAT is to use an appropriate combination of the techniques given below. Preliminary, primary and general treatment (a) Equalisation</p>	CC	<p>The operator has provided information to support compliance with BATc 12. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 12.</p>

BATC No.	Summary of BAT Conclusion requirement for Food, Drink and Milk Industries	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement										
	(b) Neutralisation (c) Physical separate (eg screens, sieves, primary settlement tanks etc) Aerobic and/or anaerobic treatment (secondary treatment) (d) Aerobic and/or anaerobic treatment (eg activated sludge, aerobic lagoon etc) (e) Nitrification and/or denitrification (f) Partial nitrification - anaerobic ammonium oxidation Phosphorus recovery and/or removal (g) Phosphorus recovery as struvite (h) Precipitation (i) Enhanced biological phosphorus removal Final solids removal (j) Coagulation and flocculation (k) Sedimentation (l) Filtration (eg sand filtration, microfiltration, ultrafiltration) (m) Flotation		The Operator is using: <ul style="list-style-type: none"> • Equalisation • Neutralisation • Physical separation – mesh rotary screen • DAF • Aerobic and anaerobic treatment • Phosphorous removal through sludge disposal • Sludge storage facilities return excess water to head of treatment process • Coagulation and flocculation • Filtration through RO leading to CIP • Sedimentation • Flotation 										
12	Emissions to water – treatment BAT-associated emission levels (BAT-AELs) for direct emissions to a receiving water body <table border="1" data-bbox="280 1037 1211 1236" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Parameter</th> <th style="text-align: center;">BAT-AEL (°) (°) (daily average)</th> </tr> </thead> <tbody> <tr> <td>Chemical oxygen demand (COD) (°) (°)</td> <td style="text-align: center;">25-100 mg/l (°)</td> </tr> <tr> <td>Total suspended solids (TSS)</td> <td style="text-align: center;">4-50 mg/l (°)</td> </tr> <tr> <td>Total nitrogen (TN)</td> <td style="text-align: center;">2-20 mg/l (°) (°)</td> </tr> <tr> <td>Total phosphorus (TP)</td> <td style="text-align: center;">0,2-2 mg/l (°)</td> </tr> </tbody> </table> <p>Note: 125mg/l COD for dairy sites Note: 4mg/l TP for dairy sites</p>	Parameter	BAT-AEL (°) (°) (daily average)	Chemical oxygen demand (COD) (°) (°)	25-100 mg/l (°)	Total suspended solids (TSS)	4-50 mg/l (°)	Total nitrogen (TN)	2-20 mg/l (°) (°)	Total phosphorus (TP)	0,2-2 mg/l (°)	NA	We are satisfied that BATc AELs are not applicable to this Installation. There are no discharges to surface water. The site discharges treated effluent to the foul sewer; as such the relevant BAT-AELs for the dairy sector do not apply.
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13	Noise management plan	NA	We are satisfied that BATc 13 is not applicable to this Installation.										

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	<p>In order to prevent or, where that is not practicable, to reduce noise emissions, BAT is to set up, implement and regularly review a noise management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:</p> <ul style="list-style-type: none"> - a protocol containing actions and timelines; - a protocol for conducting noise emissions monitoring; - a protocol for response to identified noise events, eg complaints; - a noise reduction programme designed to identify the source(s), to measure/estimate noise and vibration exposure, to characterise the contributions of the sources and to implement prevention and/or reduction measures. 		<p>A noise management plan is only required where noise nuisance at sensitive receptors is expected or has been substantiated. There have been no substantiated noise nuisance from the site therefore an NMP is not a requirement for this site.</p>
14	<p>Noise management</p> <p>In order to prevent or, where that is not practicable, to reduce noise emissions, BAT is to use one or a combination of the techniques given below.</p> <ul style="list-style-type: none"> (a) Appropriate location of equipment and buildings (b) Operational measures (c) Low-noise equipment (d) Noise control equipment (e) Noise abatement 	CC	<p>The operator has provided information to support compliance with BATc 14. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 14.</p> <p>The Operator has:</p> <ul style="list-style-type: none"> • Placed all noise generating machinery indoors or within enclosed areas • Regular inspections, closed door policy, planned maintenance to detect abnormal operation, sealed platform • Sound proofing on roof units; silencers fitted, sound suppression
15	<p>Odour Management</p> <p>In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to set up, implement and regularly review an odour management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:</p> <ul style="list-style-type: none"> - a protocol containing actions and timelines; - a protocol for conducting odour monitoring. - a protocol for response to identified odour incidents eg complaints; - an odour prevention and reduction programme designed to identify the source(s); to measure/estimate odour exposure: to characterise the contributions of the sources; and to implement prevention and/or reduction measures. 	NA	<p>We are satisfied that BATc 15 is not applicable to this Installation.</p> <p>An odour management plan is only required where odour nuisance at sensitive receptors is expected or has been substantiated. There have been no substantiated odour nuisance from the site therefore an OMP is not a requirement for this site.</p> <p>However, the operator has developed voluntarily an odour management plan that has not been assessed by the Agency. This</p>

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			OMP will form part of the EMS and Operational Techniques for the site.																								
	DAIRY SECTOR BAT CONCLUSIONS (BAT 21-23)																										
21	<p>Energy efficiency – Dairy Sector</p> <p>In order to increase energy efficiency, BAT is to use an appropriate combination of the techniques specified in BAT 6 and of the techniques given below.</p> <table border="1" data-bbox="315 520 1137 1050"> <thead> <tr> <th data-bbox="315 520 365 555">Technique</th> <th data-bbox="365 520 551 555"></th> <th data-bbox="551 520 1137 555">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="315 555 365 616">(a)</td> <td data-bbox="365 555 551 616">Partial milk homogenisation</td> <td data-bbox="551 555 1137 616">The cream is homogenised together with a small proportion of skimmed milk. The size of the homogeniser can be significantly reduced, leading to energy savings.</td> </tr> <tr> <td data-bbox="315 616 365 676">(b)</td> <td data-bbox="365 616 551 676">Energy-efficient homogeniser</td> <td data-bbox="551 616 1137 676">The homogeniser's working pressure is reduced through optimised design and thus the associated electrical energy needed to drive the system is also reduced.</td> </tr> <tr> <td data-bbox="315 676 365 737">(c)</td> <td data-bbox="365 676 551 737">Use of continuous pasteurisers</td> <td data-bbox="551 676 1137 737">Flow-through heat exchangers are used (e.g. tubular, plate and frame). The pasteurisation time is much shorter than that of batch systems.</td> </tr> <tr> <td data-bbox="315 737 365 798">(d)</td> <td data-bbox="365 737 551 798">Regenerative heat exchange in pasteurisation</td> <td data-bbox="551 737 1137 798">The incoming milk is preheated by the hot milk leaving the pasteurisation section.</td> </tr> <tr> <td data-bbox="315 798 365 858">(e)</td> <td data-bbox="365 798 551 858">Ultra-high-temperature (UHT) processing of milk without intermediate pasteurisation</td> <td data-bbox="551 798 1137 858">UHT milk is produced in one step from raw milk, thus avoiding the energy needed for pasteurisation.</td> </tr> <tr> <td data-bbox="315 858 365 919">(f)</td> <td data-bbox="365 858 551 919">Multi-stage drying in powder production</td> <td data-bbox="551 858 1137 919">A spray-drying process is used in combination with a downstream dryer, e.g. fluidised bed dryer.</td> </tr> <tr> <td data-bbox="315 919 365 979">(g)</td> <td data-bbox="365 919 551 979">Precooling of ice-water</td> <td data-bbox="551 919 1137 979">When ice-water is used, the returning ice-water is pre-cooled (e.g. with a plate heat exchanger), prior to final cooling in an accumulating ice-water tank with a coil evaporator.</td> </tr> </tbody> </table>	Technique		Description	(a)	Partial milk homogenisation	The cream is homogenised together with a small proportion of skimmed milk. The size of the homogeniser can be significantly reduced, leading to energy savings.	(b)	Energy-efficient homogeniser	The homogeniser's working pressure is reduced through optimised design and thus the associated electrical energy needed to drive the system is also reduced.	(c)	Use of continuous pasteurisers	Flow-through heat exchangers are used (e.g. tubular, plate and frame). The pasteurisation time is much shorter than that of batch systems.	(d)	Regenerative heat exchange in pasteurisation	The incoming milk is preheated by the hot milk leaving the pasteurisation section.	(e)	Ultra-high-temperature (UHT) processing of milk without intermediate pasteurisation	UHT milk is produced in one step from raw milk, thus avoiding the energy needed for pasteurisation.	(f)	Multi-stage drying in powder production	A spray-drying process is used in combination with a downstream dryer, e.g. fluidised bed dryer.	(g)	Precooling of ice-water	When ice-water is used, the returning ice-water is pre-cooled (e.g. with a plate heat exchanger), prior to final cooling in an accumulating ice-water tank with a coil evaporator.	CC	<p>The operator has provided information to support compliance with BATc 21. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 21.</p> <p>The techniques used are:</p> <ul style="list-style-type: none"> • Complete homogenisation • Energy-efficient homogeniser • Continuous pasteurisers (plate and tubular heat exchangers; PLC controls) • Regenerative heat exchangers • UHT without pasteurisation, but 2-step to include cream separation for efficiency • Precooling of ice-water (plate pack heat exchanger)
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(a)	Partial milk homogenisation	The cream is homogenised together with a small proportion of skimmed milk. The size of the homogeniser can be significantly reduced, leading to energy savings.																									
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Technique	Description	Applicability																					
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BATC No	Summary of BAT Conclusion requirement for Food, Drink and Milk Industries	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement															
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Annex 2: Review and assessment of changes that are not part of the BAT Conclusions derived permit review

Updating permit during permit review consolidation

- Introductory note (updated)
- Site plan
- Table S1.1 overhaul
 - Activity Reference (AR) renumbering
 - Updated listed activities
 - Addition of production capacity
 - Directly associated activities (DAAs) standardisation

We have updated permit conditions to those in the current generic permit template as a part of permit consolidation. The conditions will provide the same level of protection as those in the previous permit.

Production/Capacity Threshold

The Environment Agency is looking to draw a “line in the sand” for permitted production capacity; a common understanding between the Operator and regulator for the emissions associated with a (maximum) level of production, whereby the maximum emissions have been demonstrated as causing no significant environmental impact.

We have included a permitted production level (capacity) within table S1.1 of the permit for the section 6.8 listed activity and we need to be confident that the level of emissions associated with this production level have been demonstrated to be acceptable.

Whilst the volume of raw milk permitted at the site has increased since the previous variation (V006), we are satisfied that the associated risks have not changed, due to the effluent treatment plant capacity being assessed when last varied.

Emissions to Air

We asked the operator to list all emission points to air from the installation in the Regulation 61 notice. And to provide a site plan indicating the locations of all air emission points.

The operator has provided an up to date air emission plan.

Implementing the requirements of the Medium Combustion Plant Directive

Existing Medium Combustion Plant (1MW-50MW)

We asked the Operator to provide information on all combustion plant on site in the Regulation 61 Notice as follows:

- Number of combustion plant (CHP engines, back-up generators, boilers);
- Size of combustion plant – rated thermal input (MWth)
- Date each combustion plant came into operation

Boilers

1. Rated thermal input (MW) of the medium combustion plant.	20.78MWth
2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant).	Boiler 1: 4.4MWth Boiler 2: 7.4MWth Boiler 3: 9.8MWth
3. Type and share of fuels used according to the fuel categories laid down in Annex II.	Boiler 1: Natural gas 100% Boiler 2: Natural gas 100% Boiler 3: LPG 100%
4. Date of the start of the operation of the medium combustion plant or, where the exact date of the start of the operation is unknown, proof of the fact that the operation started before 20 December 2018.	Boiler 1: January 1982 Boiler 2: March/April 2003 Boiler 3: May 2020

We have reviewed the information provided and we consider that the declared combustion plant, Boiler 1, qualify as “existing” medium combustion plant.

We have retained the previous emission limits values and monitoring requirements for boilers/MCP: 1, 2 and 3 as per variation (V006).

Emissions to Water and implementing the requirements of the Water Framework Directive

We asked the Operator to provide information on all emissions to water at the installation in the Regulation 61 Notice as follows;

- Identify any effluents which discharge directly to surface or groundwater;
- Provide an assessment of volume and quality, including results of any monitoring data available;
- and for any discharges to water / soakaway whether a recent assessment of the feasibility of connection to sewer has been carried out.

The operator has previously provided assessments for all emissions to water at the installation. The operator declares there has been no change to activities and subsequent effluents generated at the installation since this risk assessment was taken. Consequently, we agree that the original risk assessments remain valid at this time.

The operator has provided a revised risk assessment using the Environment Agency’s H1 software tool for the following emissions: liquid products used at the site which may have the potential to enter the effluent or be considered chemical constituents of the effluent itself.

The assessment shows that, applying the conservative criteria in our guidance on environmental risk assessment, all emissions may be screened out as environmentally insignificant.

Soil & groundwater risk assessment (baseline report)

The IED requires that the operator of any IED installation using, producing or releasing “relevant hazardous substances” (RHS) shall, having regarded the possibility that they might cause pollution of soil and groundwater, submit a “baseline report” with its permit application. The baseline report is an important reference document in the assessment of contamination that might arise during the operational lifetime of the regulated facility and at cessation of activities. It must enable a quantified comparison to be made between the baseline and the state of the site at surrender.

At the definitive cessation of activities, the Operator has to satisfy us that the necessary measures have been taken so that the site ceases to pose a risk to soil or groundwater, taking into account both the baseline conditions and the site’s current or approved future use. To do this, the Operator has to submit a surrender application to us, which we will not grant unless and until we are satisfied that these requirements have been met.

The Operator submitted an initial site condition report “Application Site Report for PPC Application” in December 2004 and then a subsequent ‘Settle Creamery IPPC ref (BN0473IM) Site Protection and Monitoring Program, issued on 07/07/2006, during the original application process. The site condition report included a report on the baseline conditions as required by Article 22. We reviewed that report and considered that it adequately described the condition of the soil and groundwater at that time.

Hazardous Substances

Hazardous substances are those defined in Article 3 of Regulation (EC) No. 1272/2008 on classification, labelling and packaging of substances and mixtures

The operator has provided a short risk assessment on the hazardous substances stored and used at the installation. The risk assessment was a stage 1-3 assessment as detailed within EC Commission Guidance 2014/C 136/03.

The stage 1 assessment identified the hazardous substances used / stored on site. The stage 2 assessment identified if hazardous substances are capable of causing pollution. If they are capable of causing pollution they are then termed Relevant Hazardous Substances (RHS). The Stage 3 assessment identified if pollution prevention measures are fit for purpose in areas where hazardous substances are used / stored. This includes drains as well.

The outcomes of the three stage assessment identified that pollution of soil and/or ground water to be unlikely.

Climate Change Adaptation

The operator has considered if the site is at risk of impacts from adverse weather (flooding, unavailability of land for land spreading, prolonged dry weather / drought).

The operator has identified the installation as likely to be or has been affected by flooding which we consider to be a severe weather event.

We do not consider the operator to have submitted a suitable climate change adaptation plan for the installation. We have included an improvement condition into the permit (IC8) to request a climate change adaptation plan is submitted by the operator for approval from the Environment Agency.

Containment

We asked the Operator via the Regulation 61 Notice to provide details of the each above ground tanks which contain potentially polluting liquids at the site, including tanks associated with the effluent treatment process where applicable.

The Operator provided details of all tanks:

- Tank reference/name
- Contents
- Capacity (litres)
- Location
- Construction material(s) of each tank
- The bunding specification including
 - Whether the tank is bunded
 - If the bund is shared with other tanks
 - The capacity of the bund
 - The bund capacity as % of tank capacity
 - Construction material of the bund
 - Whether the bund has a drain point
 - Whether any pipes penetrate the bund wall
- Details of overfill prevention
- Drainage arrangements outside of bunded areas
- Tank filling/emptying mitigation measures (drips/splashes)
- Leak detection measures
- Details of when last bund integrity test was carried out
- Maintenance measures in place for tank and bund (inspections)
- How the bund is emptied
- Details of tertiary containment

and whether the onsite tanks currently meet the relevant standard in the Ciria “Containment systems for the prevention of pollution (C736)” report.

We reviewed the information provided by the operator and their findings. We are not satisfied that the existing tanks and containment measures on site meet the standards set out in CIRIA C736. Specifically, there are tanks containing caustic and acid solutions that are not bunded nor share a bund with other tanks.

In addition, there is an outstanding improvement condition (IC7) in the extant permit variation (V006) which asks the Operator to undertake an assessment of the secondary and tertiary containment measures. We will not include a new improvement condition to address the deficiencies shown above but we will retain IC7 and associated deadline in the consolidated permit.

Annex 3: Improvement Conditions

Based on the information in the Operator’s Regulation 61 Notice response and our own records of the capability and performance of the installation at this site, we consider that we need to set improvement conditions so that the outcome of the techniques detailed in the BAT Conclusions are achieved by the installation. These improvement conditions are set out below - justifications for them is provided at the relevant section of the decision document (Annex 1 or Annex 2).

Previous improvement conditions deemed as complete, so removed from permit.

Superseded Improvement Conditions – Removed from permit since marked as “complete”	
Reference	Improvement Condition
IP1	The operator shall review containment measures for bulk storage of liquids, above ground tanks, drums and IBCs such that any spillage is contained and maybe fully recovered, having regard for Sector Guidance Note S6.10. The Operator shall provide the Agency with a report detailing options. Any option regarded as BAT for the future, the Operator shall provide the Agency with proposals for improvement including timescales.
IP2	The Operator shall undertake a review of the potential incidents to the environment on site using a methodology similar to HAZOP as identified in section 2.8 of TGN S6.13. General Guidance for the Dairy and Milk Processing Sector. The report shall cover the areas of potential for loss and environmental pollution and will raise a list of areas for action. The report shall generate a timetable for completion of the actions.
IP3	The operator shall undertake an environmental impact assessment of releases to air from the boilers. An electronic copy of the H1 assessment (or other equivalent assessment tool used with the written agreement of the Environment Agency) shall be submitted to the Agency.
IP4	In the light of the results of the environmental impact assessment undertaken in reference 3 above, The Operator shall undertake a review of the fuel type for the steam raising boilers and generate a proposal for submission to the Agency.
IP5	The Agency requires the Operator to review and update the waste minimisation audit previously carried out by the Operator
IP6	The operator shall undertake and submit to the Environment Agency for technical assessment and approval, an indirect surface water risk assessment for discharges of treated process waters to sewer using our H1 Tool or other similar method for ‘hazardous chemicals and elements’ This should include any priority substances, priority hazardous substances or other pollutants, including specific pollutants listed in the 2015 Directions, and substances which have operational (non-statutory) Environmental Quality Standards that are likely to be contained within the discharged effluent.

	The notification requirements of condition 2.4.2 will be deemed to have been complied with on submission of the assessment.
IP7	Retained and renumbered IC7

The following improvement conditions have been added to the permit as a result of the variation.

Improvement programme requirements		
Reference	Reason for inclusion	Justification of deadline
IP7	<p>The operator shall undertake a comprehensive assessment of the secondary and tertiary containment provisions onsite by a suitable qualified person against CIRIA C736.</p> <p>The operator shall submit a written report to the Environment Agency for approval which outlines the results of the assessment and provides details of:</p> <ul style="list-style-type: none"> • Current secondary/tertiary containment measures • Any deficiencies identified in comparison to the relevant standards • Improvements proposed • Timescale for implementation of Improvements <p>The operator shall implement the proposed improvements in line with the timescales agreed by the Environment Agency and incorporate an ongoing routine inspection and maintenance programme as part of the EMS.</p>	10/05/24
IP8	<p>The operator shall produce a climate change adaptation plan, which will form part of the EMS. The plan shall include, but not be limited to:</p> <ul style="list-style-type: none"> • Details of how the installation has or could be affected by severe weather; • The scale of the impact of severe weather on the operations within the installation; • An action plan and timetable for any improvements to be made to minimise the impact of severe weather at the installation. <p>The Operator shall implement any necessary improvements to a timetable agreed in writing with the Environment Agency.</p>	12 months from permit issue or other date as agreed in writing with the Environment Agency