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/EP3536AH
The Operator is:	Kendal Nutricare Limited
The Installation is:	Kendal Skimmed Milk
This Variation Notice number is:	EPR/EP3536AH/V002

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 02/11/2022.

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 consider that the Operator will be able to comply with the techniques and standards described in the BAT Conclusions other than for those techniques and requirements described in BAT Conclusion 5, 6, 7, 11 and 23. The operator does not currently comply with the requirements of BATc 5, 6, 7, 11 and 23. In relation to these BAT Conclusions, the operator has committed compliance by 4 December 2023. We have therefore included Improvement Conditions 5 and 6 in the Consolidated Variation Notice to ensure that the requirements of the BAT Conclusions are delivered before 4 December 2023.

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 08/03/2023 to clarify production capacity, BATc 2, 3, 5, 6, 7 ,8, 9, 11, 21, 23, water emissions, air emissions, Medium Combustion Plant, Climate Change adaptation, Site Condition Report and containment with follow up emails providing further discussion on the requirements requested on 22/03/2023, 04/04/2023, 05/04/2023, 25/04/2023 and 12/05/2023. A copy of each further information requests was placed on our public register.

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.

Annex 1: decision checklist regarding relevant BAT Conclusions

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	**Environmental Management System - Improve overall environmental performance.** Implement an EMS that incorporates all the features as described within BATc 1.	**CC**	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. The operator has confirmed their EMS incorporates the features listed in BATc 1. Their EMS was externally accredited to ISO14001 standard. This however expired on the 29/06/2020.
2	**EMS Inventory of inputs & outputs. Increase resource efficiency and reduce emissions.** 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.	**CC**	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. The site holds inventories for water, energy, emissions waste control and raw material consumption. The EMS is under regular review
3	**Monitoring key process parameters at key locations for emissions to water.** 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).	**CC**	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. Automatic sampling of effluent is undertaken when effluent is released from the holding tanks. The Operator monitors for both flow and pH.
4	**Monitoring emissions to water to the required frequencies and standards.** 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	**N/A**	Process effluent is treated by the onsite effluent treatment plant prior to discharge to foul sewer under Trade Effluent Consent.

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
	not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.		The only parameter relevant for discharges to sewer is chloride but this is not a parameter of concern for this particular process (baby formula production) so is not applicable. For information, the effluent is monitored on an ad-hoc bases by United Utilities to ensure the limits of the trade effluent consent are achieved. We are therefore satisfied that BATc 4 is not applicable for this site
5	**Monitoring channelled emissions to air to the required frequencies and standards.** BAT is to monitor channelled emissions to air with at least the frequency given and in accordance with EN standards.	**FC**	The operator has provided information to support compliance with BATc 5. We have assessed the information provided and we are not satisfied the operator has demonstrated compliance with BATc 5 for emission point A5. The site produces powdered baby formula. Drying is undertaken using a spray drier. There are 5 cyclones serving 2 emission points A4 (cyclones 1-4) which serve the heating part of the drier and A5 (cyclone 5) which served the cooling part of the drier. There is currently a 20 mg/m3 emission limit placed on Point A4 with continuous internal monitoring undertaken at this point. Annual monitoring is undertaken by an externally accredited MCERTS company. This monitoring has shown the most recent testing to be below 10mg/m3 and is therefore considered compliant. Point A5 has historically been unmonitored with agreement from the Environment Agency. The requirements for annual monitoring at this point have been included in the varied permit to ensure compliance with BATc 5

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
			Improvement Condition IC5 has been added to the permit to ensure a monitoring programme to appropriate standards is devised for all emission points.
6	**Energy Efficiency** 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.	**FC**	The operator has provided information to support compliance with BATc 6. We have assessed the information provided and we are not satisfied the operator has demonstrated compliance with BATc 6. The Operator provided a Carbon Reduction Plan dated 2022 which detailed carbon reduction initiatives such as LED lighting, installation off a Nitrogen Generation Plant, roof insulation and fixed speed compressors. This shows evidence of the use of energy saving techniques however no formal energy management and efficiency plan is in place and limited consideration given to specific energy consumption or performance. The aforementioned document makes reference to future plans for efficiency measures which are not currently in place as required by BATc 6. The document does not provide a timescale for improvements. Improvement Condition IC6 has been added to the permit to ensure compliance with BATc 6
7	**Water and wastewater minimisation** 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. (a) water recycling and/or reuse (b) Optimisation of water flow (c) Optimisation of water nozzles and hoses (d) Segregation of water streams	**FC**	The operator has provided information to support compliance with BATc 7. We have assessed this information and we are not satisfied that the operator has demonstrated compliance with BATc 7. The operator stated they incorporate a number of water minimisation techniques across the site including;

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
	Techniques related to cleaning operations: (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		• Segregation of rainwater and effluent streams • Flush and dry cleaning carried out in the blending and packing department. The operator undertakes drying processes where water is produced. This is discharged as effluent. The operator does not evidence recycling or re-use as specified by BATc 7. Information provided on the CIP processes indicates these to be automated total loss systems with the cleaning water used to dilute effluent. When efforts were made to recirculate water from the CP the concentration from the effluent was too strong. Future improvements are proposed including the installation of a DAF plant to improve effluent quality. Improvement Condition IC6 has been included in the permit to ensure compliance with BATc 7
8	**Prevent or reduce the use of harmful substances** 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. (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	**CC**	The operator has provided information to support compliance with BATc 8. We have assessed this information and we are not satisfied that the operator has demonstrated compliance with BATc 8. The operator has provided details of the chemicals used on site and states they carry out dry cleaning in the blending and packaging areas and CIP cleaning in the drying process. They also provided documentation detailing the change process on site.
9	**Refrigerants** 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	**CC**	The operator has provided information to support compliance with BATc 9. We have assessed this information and we are satisfied

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
	refrigerants without ozone depletion potential and with a low global warming potential.		the operator has demonstrated compliance with BATc 9. The operator holds and Aspects and Impacts register which confirms R22 is used on site. Documentation confirms it will be replaced with an alternative when a unit requires replacement.
10	**Resource efficiency** In order to increase resource efficiency, BAT is to use one or a combination of the techniques given below: (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	**CC**	The operator has provided information to support compliance with BATc 10. We have assessed this information and we are satisfied the operator has demonstrated compliance with BATc 10. The operator has confirmed that residues from the production process are bagged and sold as animal feed.
11	**Waste water buffer storage** In order to prevent uncontrolled emissions to water, BAT is to provide an appropriate buffer storage capacity for waste water.	**FC**	The operator has provided information to support compliance with BATc 11. We have assessed this information and we are not satisfied that the operator has demonstrated compliance with BATc 11. Site effluent is captured in two interceptor pits, both fitted with screens. Once the levels in pit reaches a certain level effluent is transferred into one of two holding tanks. Once filled, the pH is tested and discharged to sewer. In the mean time the other tank will fill. Interceptors are in place on surface water drains. The operator hasn't provided details of buffer storage available or confirmed the procedures in place should a major spill occur. The

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
			operator does however confirm production would be halted and effluent retained within the tanks until a solution is found. There is some ambiguity over the measures on site. The operators effluent procedure confirms it take over an hour for effluent to reach Uniter Utilities downstream treatment works. During this time site staff will inform United Utilities out of specification effluent is on route. Considering this we have added Improvement Condition IC6 into the permit in order to achieve compliance with BATc 11
12	**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 (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) Nitification and/or denitrification (f) Partial nitration - 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	**CC**	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. The operator treats all process effluent on site within the permitted effluent treatment plant prior to discharge to a United Utilities Treatment Plant. The onsite effluent treatment plant pH neutralises the effluent using Sodium Hydroxide and Nitric Acid.

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
	(l) Filtration (eg sand filtration, microfiltration, ultrafiltration) (m) Flotation		
12	**Emissions to water – treatment** **BAT-associated emission levels (BAT-AELs) for direct emissions to a receiving water body** Parameter / BAT-AEL (1) (2) (daily average) Chemical oxygen demand (COD) (3) (4) / 25-100 mg/l (5) Total suspended solids (TSS) / 4-50 mg/l (6) Total nitrogen (TN) / 2-20 mg/l (7) (8) Total phosphorus (TP) / 0,2-2 mg/l (9) **Note: 125mg/l COD for dairy sites** **Note: 4mg/l TP for dairy sites**	**N/A**	The site discharges treated effluent to the foul sewer, there are no direct discharges to the water course as such the relevant BAT-AELs for the diary sector do not apply. We are therefore satisfied that BAT AELs associated with BATc 12 is not applicable for this site.
13	**Noise management plan** 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: - 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.	**N/A**	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. There is no existing permit requirement and the site has no recent history of noise complaints therefore a noise management plan is not required.
14	**Noise management** 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. (a) Appropriate location of equipment and buildings (b) Operational measures (c) Low-noise equipment	**CC**	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.

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
	(d) Noise control equipment (e) Noise abatement		The Operator uses a combination of relevant procedures: - Enclosing noisy machinery and processes in buildings;.
15	**Odour Management** 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: - 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.	**N/A**	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. We are therefore satisfied that BATc 15 is not applicable for this site.
	DAIRY SECTOR BAT CONCLUSIONS (BAT 21-23)		
21	**Energy efficiency – Dairy Sector**	**CC**	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. The operator stated they use every technique listed however the evidence provided did not support this. One document “Pasteuriser Training Module Stage 1” describes the pasteurisation process using plate heat exchangers which are listed as forming part of a continuous pasteurisation process.. We therefore accept the operator has provided evidence of one energy efficiency technique on site. Energy efficiency improvements are required as detailed by BATc 6.

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
	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.		

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 precooled (e.g. with a plate heat exchanger), prior to final cooling in an accumulating ice-water tank with a coil evaporator.

Applicable in addition to BAT6

<table>
<tr><th>BATC No.</th><th>Summary of BAT Conclusion requirement for Food, Drink and Milk Industries</th><th>Status
NA/ CC / FC / NC</th><th>Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement</th></tr>
<tr><td>22</td><td>In order to reduce the quantity of waste sent for disposal, BAT is to use one or a combination of the techniques given below.

<table>
<tr><th colspan="2">Technique</th><th>Description</th></tr>
<tr><td colspan="3">Techniques related to the use of centrifuges</td></tr>
<tr><td>(a)</td><td>Optimised operation of centrifuges</td><td>Operation of centrifuges according to their specifications to minimise the rejection of product.</td></tr>
<tr><td colspan="3">Techniques related to butter production</td></tr>
<tr><td>(b)</td><td>Rinsing of the cream heater with skimmed milk or water</td><td>Rinsing of the cream heater with skimmed milk or water which is then recovered and reused, before the cleaning operations.</td></tr>
<tr><td colspan="3">Techniques related to ice cream production</td></tr>
<tr><td>(c)</td><td>Continuous freezing of ice cream</td><td>Continuous freezing of ice cream using optimised start-up procedures and control loops that reduce the frequency of stoppages.</td></tr>
<tr><td colspan="3">Techniques related to cheese production</td></tr>
<tr><td>(d)</td><td>Minimisation of the generation of acid whey</td><td>Whey from the manufacture of acid-type cheeses (e.g. cottage cheese, quark and mozzarella) is processed as quickly as possible to reduce the formation of lactic acid.</td></tr>
<tr><td>(e)</td><td>Recovery and use of whey</td><td>Whey is recovered (if necessary using techniques such as evaporation or membrane filtration) and used, e.g. to produce whey powder, demineralised whey powder, whey protein concentrates or lactose. Whey and whey concentrates can also be used as animal feed or as a carbon source in a biogas plant.</td></tr>
</table></td><td>N/A</td><td>We are satisfied that BATc 22 is not applicable to this Installation. The Operator has confirmed that none of the techniques described by BATc 22 are used at this installation.</td></tr>
<tr><td>23</td><td>In order to reduce channelled dust emissions to air from drying, BAT is to use one or a combination of the techniques given below.

<table>
<tr><th colspan="2">Technique</th><th>Description</th><th>Applicability</th></tr>
<tr><td>(a)</td><td>Bag filter</td><td rowspan="3">See Section 14.2 Page 34 of the Bref</td><td>May not be applicable to the abatement of sticky dust.</td></tr>
<tr><td>(b)</td><td>Cyclone</td><td>Generally applicable.</td></tr>
<tr><td>(c)</td><td>Wet scrubber</td><td></td></tr>
</table>
The associated monitoring is given in BAT 5.</td><td>CC</td><td>The operator has provided information to support compliance with BATc 23. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 23.

Cyclones are used to filter emissions from the drier at points A4 and A5</td></tr>
</table>

<table>
<tr><th>BATC No.</th><th>Summary of BAT Conclusion requirement for Food, Drink and Milk Industries</th><th>Status
NA/ CC / FC / NC</th><th>Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement</th></tr>
<tr><td>23</td><td>BAT-associated emission level (BAT-AEL) for channelled dust emissions to air from drying
<table><tr><td>Parameter</td><td>Description</td><td>BAT-AEL (average over the sampling period)</td></tr><tr><td>Dust</td><td>Mg/Nm^3</td><td><2-10 (1)</td></tr><tr><td colspan="3">(1) The upper end of the range is 20 mg/Nm^3 for drying of demineralised whey powder, casein and lactose.</td></tr></table></td><td>FC</td><td>The operator has provided information to support compliance with BATc 23. We have assessed the information provided and we are not satisfied that the operator has demonstrated compliance with BATc 23.

There is currently an emission limit of 20 mg/m^3 emission limit placed on Point A4 with continuous internal monitoring undertaken at this point. Annual monitoring is undertaken by an externally accredited MCERTS company. This monitoring has shown the most recent testing to be below 10mg/m3.

Point A5 has historically been unmonitored. The requirements for annual monitoring at this point is included in the varied permit to ensure compliance with BATc 23.

Improvement condition IC5 has been added to the permit requiring the operator set out how they will achieve compliance.</td></tr>
<tr><td colspan="2">Dairy Sector Environmental Performance Levels</td><td></td><td></td></tr>
</table>

<table>
<tr><th>BATC No.</th><th>Summary of BAT Conclusion requirement for Food, Drink and Milk Industries</th><th>Status
NA/ CC / FC / NC</th><th>Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement</th></tr>
<tr><td>EPL</td><td>Environmental Performance Level – Energy consumption for the dairy sector
<table>
<tr><td>Main product (at least 80 % of the production)</td><td>Unit</td><td>Specific energy consumption (yearly average)</td></tr>
<tr><td>Market milk</td><td rowspan="4">MWh/tonne of raw materials</td><td>0.1-0.6</td></tr>
<tr><td>Cheese</td><td>0.10-0.22 (1)</td></tr>
<tr><td>Powder</td><td>0.2-0.5</td></tr>
<tr><td>Fermented milk</td><td>0.2-1.6</td></tr>
<tr><td colspan="3">(1) The specific energy consumption level may not apply when raw materials other than milk are used.</td></tr>
</table></td><td>FC</td><td>The operator has provided information to support compliance with the energy consumption EPL. We have assessed the information provided and we are not satisfied that the operator has demonstrated compliance with energy consumption for the dairy sector.

The operator provided information confirming their total energy use for 2022 was 38,449 MWh. The total raw material used to produce the finished goods was 18,430 tonnes. Total Energy Use / Tonne Total Raw Material = 2.01 MWh/T

This is outside the target range of 0.2 – 0.5 MWh/tonne of raw materials.

Improvement Condition IC7 has been added to ensure compliance with the EPL for energy consumption.</td></tr>
</table>

<table>
<tr><th>BATC No.</th><th>Summary of BAT Conclusion requirement for Food, Drink and Milk Industries</th><th>Status
NA/ CC / FC / NC</th><th>Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement</th></tr>
<tr><td>EPL</td><td>Environmental Performance Level – Specific waste water discharge for the dairy sector
<table>
<tr><td>Main product (at least 80 % of the production)</td><td>Unit</td><td>Specific waste water discharge (yearly average)</td></tr>
<tr><td>Market milk</td><td rowspan="3">m^3/tonne of raw materials</td><td>0.3 - 3.0</td></tr>
<tr><td>Cheese</td><td>0.75 - 2.5</td></tr>
<tr><td>Powder</td><td>1.2 – 2.7</td></tr>
</table></td><td>FC</td><td>The operator has provided information to support compliance with the waste water EPL. We have assessed the information provided and we are not satisfied that the operator has demonstrated compliance with the waste water discharge for the dairy sector.

The powder figure of 1.2 – 2.7 m^3/tonne of specific waste water discharge of raw materials is appropriate for this installation. The Operator has stated that the site achieved a specific waste water discharge of 5.75 m^3/tonne of raw material as an average over the year 2022 well outside the specified range.

We have added improvement Condition IC8 to ensure compliance with the EPL for waste water discharge..</td></tr>
</table>

Annex 2: Review and assessment of changes that are not part of the BAT Conclusions derived permit review

Updating permit during permit review consolidation

- Activity name
- Introductory note
- 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 /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.

The existing volume of raw milk permitted at the site has not increased since the previous variation and therefore the assessment for emissions to water/sewer remain valid for capacity threshold now placed within table S1.1 of the permit.

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

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

The Operator provided the information in the table(s) below:

Boilers

	Boiler 1	Boiler 2
1. Rated thermal input (MW) of the medium combustion plant.	9.69	9.69
2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant).	Boiler	Boiler
3. Type and share of fuels used according to the fuel categories laid down in Annex II.	Natural gas	Natural gas
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.	1985	1985

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

For existing medium combustion plant with a rated thermal input greater than 5 MW, the emission limit values set out in tables 2 and 3 of Part 1 of Annex II MCPD shall apply from 1 January 2025.

We have included the appropriate emission limit values for existing medium combustion plant as part of this permit review. See Table S3.1 in the permit. We have also included a new condition 3.1.4 within the permit which specifies the monitoring requirements for the combustion plant in accordance with the MCPD.

Particulate Emissions

BAT-AELs are derived for those substances identified as key environmental issues during the BREF review process.

If the operator has identified current compliance against BAT-AELs we will implement the relevant emission limit value (ELV) from the date of permit issue. This is relevant for emission point A4 against BAT 23 for dust emissions from the cyclone.

Emission point A5 is currently unmonitored, we consider this emission point to be future compliant and have incorporated improvement condition (IC5) to ensure monitoring is carried out as soon as reasonably practical prior to December 2023 for this emission point.

We have added an improvement condition (IC11) for size fractionation of particulate emissions because a BAT-AEL applies for dust emissions to air. The justification for this IC is that there are a number of activities within the FDM sector which may result in release of particulates to air eg drying, milling and grinding. Overall there is little available information on how much fine particulates are released. This IC is a one-off exercise requiring operators to monitor and report on the fractions of fine particulate (PM_{10} and $PM_{2.5}$) emissions and increase our understanding of potential health effects.

Where BAT-AELS may apply to multiple emission points eg grain milling, we may accept limited representative monitoring rather than expecting them to monitor every single emission point.

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.

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 a site condition report [Heinz Kendal Application Site Report) during the original application received on 17/05/2005. 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 did not complete a risk assessment on the hazardous substances sored at the location. They however did provide details of the substances used and their storage arrangements. The site also has a Site protection and Monitoring Plan (2015)

in place. This monitoring plan has been incorporated within table S1.2 Operating Techniques of the Permit.

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 (IC9) to request a climate change adaptation plan is submitted by the operator for approval from the Environment Agency.

Containment

We asked the Operator vis 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 appliable.

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

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.

We have set improvement conditions in the permit to address the deficiencies in the existing tanks and containment measures on site (IC10). See Improvement condition(s) in Annex 3 of this decision document.

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 marked as complete in the previous permit.

Superseded Improvement Conditions – Removed from permit as marked as "complete"	
Reference	**Improvement Condition**
IC1	The operator shall develop a written Site Closure Plan with regard to the requirements set out in Section 2.1.1 of the Agency Guidance Note IPPC S6.13
IC2	The operator shall undertake an assessment of subsurface structures and their potential to cause fugitive emissions to surface water and ground water. The assessment will take into account the requirements of section 2.2.5 of the Agency Guidance Note IPPC S6.13. A written report summarising the findings shall be submitted to the Agency. A timescale for implementation of any improvements shall be agreed with the Agency.
IC3	The operator shall submit a written report to the Agency on the feasibility of installing primary effluent treatment, which shall include, but not limited to: A feasibility study of the use of membrane technology to improve waste, reduction of COD load in effluent discharged, A review of treatment options available along with their associated benefits.
IC4	The operator shall submit a report detailing proposed methods for minimising milk powder particulates from A5 – cyclone A5 exhaust. Consideration shall be given to the requirements of section 2.2.1 of the Agency Guidance Note IPPC S6.13. A timescale for the implementation of any improvements shall be agreed with the Agency.

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

Improvement programme requirements		
Reference	**Reason for inclusion**	**Justification of deadline**
IC5	The operator shall submit, for approval by the Environment Agency, a report setting out progress to achieving the Best Available Techniques Conclusion Associated Emission Levels (BAT-AELs) where BAT is currently not achieved but will be achieved before 4 December 2023 (emission point A5). The report shall include, but not be limited to, the following: 1) Current performance against the BAT-AELs.	04/12/2023

	2) Methodology for reaching the BAT-AELs. 3) Associated targets /timelines for reaching compliance by 4 December 2023. 4) Any alterations to the initial plan (in progress reports). The report shall address the BAT Conclusions for Food, Drink and Milk industries with respect to the following: • BAT 23 Table 10 (compliance with BAT-AELs for channelled dust emission to air from drying) Refer to BAT Conclusions for a full description of the BAT requirement.	
IC6	The operator shall submit, for approval by Environment Agency, a report setting out progress to achieving the 'Narrative' BAT where BAT is currently not achieved, but will be achieved before 4 December 2023. The report shall include, but not be limited to, the following: 1) Methodology for achieving BAT 2) Associated targets /timelines for reaching compliance by 4 December 2023 3) Any alterations to the initial plan (in progress reports). The report shall address the BAT Conclusions for Food, Drink and Milk Industries with respect to BAT 6, 7 and 11. Refer to BAT Conclusions for a full description of the BAT requirement.	04/12/2023
IC7	The operator shall submit, for approval by the Environment Agency, a report setting out progress to achieving the Environmental Performance Levels (EPLs) for specific energy consumption, where the EPL is not currently achieved. The report shall include, but not be limited to, the following: 1) Methodology for achieving EPL in accordance with general techniques given in section 1.3 of the BAT conclusions 2) Associated targets /timelines for reaching compliance by 4 December 2023 3) Any alterations to the initial plan (in progress reports). The report shall address the BAT Conclusions for Food, Drink and Milk Industries with respect to sections 1.3 and 4.1 of the BAT conclusions. Refer to BAT Conclusions for a full description of the requirements.	04/12/2023
IC8	The operator shall submit, for approval by the Environment Agency, a report setting out progress to achieving the Environmental Performance Levels (EPLs) for specific water consumption, where the EPL is not currently achieved. The report shall include, but not be limited to, the following:	04/12/2023

	1) Methodology for achieving EPL in accordance with general techniques given in section 1.4 of the BAT conclusions 2) Associated targets /timelines for reaching compliance by 4 December 2023 3) Any alterations to the initial plan (in progress reports). The report shall address the BAT Conclusions for Food, Drink and Milk Industries with respect to sections 1.4 and 4.2 of the BAT conclusions. Refer to BAT Conclusions for a full description of the requirements.	
IC9	The operator shall produce a climate change adaptation plan. The approved plan will form part of the EMS. The plan shall include, but not be limited to: • 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. The Operator shall implement any necessary improvements to a timetable agreed in writing with the Environment Agency.	12 Months from permit issue or other date as agreed in writing with the Environment Agency
IC10	The Operator shall undertake a survey of the site effluent treatment plant (ETP) primary, secondary and tertiary containment and review measures against relevant standard including: • CIRIA Containment systems for the prevention of pollution (C736) – Secondary, tertiary and other measures for industrial and commercial premises, • EEMUA 159 - Above ground flat bottomed storage tanks The operator shall submit a written report to the Environment Agency approval which outlines the results of the survey and the review of standard and provide details of • current containment measures • any deficiencies identified in comparison to relevant standards, • improvements proposed • time scale for implementation of improvements. The operator shall implement the proposed improvements in line with the timescales agreed by the Environment Agency.	12 Months from permit issue or other date as agreed in writing with the Environment Agency
IC11	The Operator shall submit a written report to the Environment Agency of monitoring carried out to determine the size distribution of particulate matter in the exhaust gas emissions to air from emission point A4 and A5 identifying the fractions within the PM10 and PM2.5 ranges. The monitoring shall be carried out under representative operating conditions and	12 Months from permit issue or other date as agreed in writing with the

	shall be in accordance with EN ISO 23210 unless otherwise agreed with the Environment Agency.	Environment Agency