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/KP3931MS

The Operator is: The First Milk Cheese Company Limited

The Installation is: Lake District Creamery
This Variation Notice number is: EPR/KP3931MS/V004

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.

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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

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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 25/03/2022 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.

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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 6 and 9. The operator does not currently comply with the requirements of BATc 1(ii). In relation to these BAT Conclusion, the operator has committed compliance by 4 December 2023. We have therefore included Improvement Conditions 17 and 18 in the Consolidated Variation Notice to ensure that the requirements of the BAT Conclusions are delivered before 4 December 2023.

The Operator had also declared future compliance in relation to BAT-AELs emissions to water. However, since the submission of the Reg.61 Response Tool, the permit underwent a partial transfer where the operation of the effluent treatment plant and responsibility of compliance with this BAT have now been transferred to Biogest UK Ltd.

Biogest UK Ltd, as part of the same permit partial transfer, has also become the legal operator of the anaerobic digestor and medium combustion plants (MCPs) named 'Biogas Boiler 1' and 'Biogas CHP'; all activities relating to the operation of the these assets now fall under the responsibility of Biogest UK Ltd.

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 a further information request on 09/03/2023 regarding BATcs 4, 6(a), 11, 14, RHS, CCA, cooling towers, product lines, updated site plan. A copy of the further information request 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.

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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

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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
GEN	ERAL 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.	FC	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 shown agency and holistic
			approach in regard to some of the aspects contained in an ordinary EMS:
			 Commitment through a clear breakdown of roles and responsibilities Establishing of objectives and KPIs Continuous improvement planning Staff training Communication Aspects and impacts register
			However, the Operator is not currently compliant with BATc 1(ii) and declared future compliance by 04/12/2023.
			The EMS used is not accredited at ISO14001 standard.
			We consider that the operator will be future compliant with BATc 1(ii). Improvement condition 17 has been included in the permit to achieve compliance (see Annex 3).
2	EMS Inventory of inputs & outputs. Increase resource efficiency and reduce emissions.	СС	The operator has provided information to support compliance with BATc 2. We have assessed the information provided and we are
	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		satisfied that the operator has demonstrated compliance with BATc 2.
	management system (see BAT 1), that incorporates all of the features as detailed within the BATCs.		The Operator has provided information in support of:
			 Process flow showing emissions origin Process integrated techniques to reduce or eliminate waste

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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
			 Water balance Characteristics of waste water prior to discharge to River Ellen, as per exiting permit conditions Characteristics of waste gas streams Information regarding energy usage, raw materials inventory, and waste generation Ongoing improvement of monitoring systems to increase resource efficiency
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).	СС	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. The Operator has declared monitoring of discharge water parameters at outflow at MCERTS standards, inclusive of COD, flow, temperature 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 not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.	NA	We are satisfied BATc 4 is not applicable to this installation The Operator, The First Milk Cheese Company, has transferred the responsibility of observing this BATc requirements to Biogest UK Ltd, EPR/HP3748QN, who is now the legal Operator of the ETP and all BATc requirements relating to process water discharge are now in its care.
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.	СС	The operator has provided information to support compliance with BATc 5. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 5. The Operator has demonstrated compliance for air emission points A4 and A5 by:

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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
			Using the monitoring standard BS EN 13284-1 Use of both in-house and third party MCERTS accredited contractor for monitoring and apparatus calibration purposes Testing conducted annually. Emission point A4 has continuous monitoring, which has been retained in the permit and applicable until 03/12/2023.
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 that the operator has demonstrated compliance with BATc 6. The Operator declared that is using: Burner regulation and control Cogeneration through the use of CHP engine Heat recovery from pasteuriser to milk heating, CHP exhaust used heat boiler, hot water generation through heat extraction from CHP cooling water Minimising blowdown from the boiler Process control systems Reducing compressed air system leaks Use of variable speed drives (VSDs) However, the Operator does not currently have an Energy Efficiency Plan in place as per this BATc requirement. a Energy Efficiency plan as part of the EMS is required for clear monitoring of evolving targets, stages and timelines for implementation of necessary changes.

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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
			We consider that the operator will be future compliant with BATc 6(a). Improvement condition 17 has been included in the permit to achieve compliance (see Annex 3).
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 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	CC	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. The Operator is using the following techniques: • Water recovery representing 20% of water used on site • Optimisation of water flow • Optimised nozzles • Optimised chemical dosing through automated CIP systems • Use of low pressure foam • Cleaning equipment as soon as possible
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 the information provided and we are satisfied that the operator has demonstrated compliance with BATc 8. • Proper selection of chemicals used on site considering the substance, its effects on the environment, hygiene and food safety requirements. 11% of products are certified eco-friendly. • Reuse of water and chemicals in and CIP • Dry cleaning is used on site as needed

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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
			 Optimised equipment designed to increase efficiency through water and chemical recovery.
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 refrigerants without ozone depletion potential and with a low global warming potential.	FC	The operator has provided information to support compliance with BATc 9. We have assessed the information provided and we are not satisfied that the operator has demonstrated compliance with BATc 9. The Operator has declared the use of: • R717 (ammonia) – Chilled water plant 1 and 2, and rapid chill store. • R449A – Cheese store 3 The installation also uses the following gases with high global warming potential (GWP): • R404A – Cheese store 1, systems 1 and 2, and Cheese store 2, systems 1 and 2. We consider that the operator will be future compliant with BATc 9. Improvement condition 18 has been included in the permit to achieve compliance (see Annex 3).
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 the information provided and we are satisfied that the operator has demonstrated compliance with BATc 10. The following resource efficiency techniques are used at this site: On-site anaerobic digestion Use of residue as feed for the anaerobic digestor Use of sludge (water containing) for land spread.

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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
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.	СС	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.
			The Operator declared:
			 Combined buffer storage capacity of 1700 m³ for mean discharge daily volume of 1150 m³. Accidental discharge is controlled via automated penstock valves.
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 (l) Filtration (eg sand filtration, microfiltration, ultrafiltration) (m) Flotation	NA	We are satisfied BATc 12 is not applicable to this installation. The Operator, The First Milk Cheese Company, has transferred the ETP and the responsibility of observing this BATc requirements belongs to Biogest UK Ltd, EPR/HP3748QN, who is now the legal Operator of the ETP and all BATc requirements relating to process water discharge are now in its care.

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BATC No.	Summary of BAT Conclusion requirem Industries	ent for Food, Drink and Milk	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
12	Emissions to water – treatment BAT-associated emission levels (BAT- receiving water body	AELs) for direct emissions to a	NA	We are satisfied BAT-AELs to water are not applicable to this installation. The Operator, The First Milk Cheese Company, has transferred the ETP and the responsibility of observing this BATc
	Parameter	BAT-AEL (*) (*) (daily average)		requirements belongs to Biogest UK Ltd,
	Chemical oxygen demand (COD) (*) (*)	25-100 mg/l (°)		EPR/HP3748QN, who is now the legal Operator of the ETP and all BATc
	Total suspended solids (TSS)	4-50 mg/l (*)		requirements relating to process water
	Total nitrogen (TN)	2-20 mg/l (') (')		discharge are now in its care.
	Total phosphorus (TP)	0,2-2 mg/t (")		
13	Note: 125mg/l COD for dairy sites Note: 4mg/l TP for dairy sites Noise management plan		СС	The operator has provided information to
13	Note: 4mg/l TP for dairy sites		СС	The operator has provided information to support compliance with BATc 13. We have
	In order to prevent or, where that is not prevent is to set up, implement and regularly part of the environmental management system following elements:	review a noise management plan, as		assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 13.
	- a protocol containing actions and timelin	es;		The site has an approved NMP which forms part of the permits Operating Techniques
	- a protocol for conducting noise emission	•		Table S1.2 and operates within the confines
	- a protocol for response to identified nois			of the site plan.
	 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. 			This was requested through IC 2 and is included as a component of the subsistence charge.
14	Noise management		СС	The operator has provided information to
	In order to prevent or, where that is not pr BAT is to use one or a combination of the			support compliance with BATc 14. We have assessed the information provided and we are
	(a) Appropriate location of equipment and	buildings		satisfied that the operator has demonstrated compliance with BATc 14.
	(b) Operational measures			The Operator has declared:
	(c) Low-noise equipment			Appropriate location of equipment and
	(d) Noise control equipment			buildings
	(e) Noise abatement			

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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
			 Vehicle movement at night is kept to a minimum Noise abatement in the form of a "false wall" in enclosed chilled water plant.
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.	CC	The operator has provided information to support compliance with BATc 15. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 15. The site has an approved OMP which forms part of the permit Operating Techniques Table S1.2 and operates within the confines of the site plan. This is included as a component of the subsistence charge.
	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 declared: Use of continuous pasteurisation Multi-stage drying in powder production

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Indu	stries	energy efficiency, BAT is to use an appropriate combination	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
		cified in BAT 6 and of the techniques given below.		
Techni	ique	Description		
(a)	Partial milk homoge- nisation	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 ex- change in pasteurisa- tion	The incoming milk is preheated by the hot milk leaving the pasteurisation section.		
(e)	Ultra-high-tempera- ture (UHT) processing of milk without inter- mediate 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.		

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ВАТС	Indus	stries	·	ement for Food, Drink and Milk	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
22	In order to reduce the quantity of waste sent for disposal, BAT is to use one or a combination of the techniques given below.				СС	The operator has provided information to support compliance with BATc 22. We have assessed the information provided and we are satisfied that the operator has demonstrated
		Technique		Description		satisfied that the operator has demonstrated compliance with BATc 22.
	Techniq	pues related to the use				The Operator declared that it is using
	(a)	Optimised operat of centrifuges	Operation of centrifug of product.	es according to their specifications to minimise the rejection		'Recovery and use of whey'.
	Techniq	ues related to butter	production			
	(b)	Rinsing of the cre heater with skims milk or water		neater with skimmed milk or water which is then recovered cleaning operations.		
	Techniq	pues related to ice crea	um production	-		
	(c)	(c) Continuous freezing of ice cream using optimised start-up procedures and control loops that reduce the frequency of stoppages.				
	Techniq	Techniques related to cheese production				
	(d)	(d) Minimisation of the generation of acid whey Whey from the manufact mozzarella) is processed acid.		acture of acid-type cheeses (e.g. cottage cheese, quark and ed as quickly as possible to reduce the formation of lactic		
	(e)	(e) Recovery and use of whey 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.				
23	In order to reduce channelled dust emissions to air from drying, BAT is to use one or a combination of the techniques given below.			• •	cc	The operator has provided information to support compliance with BATc 23. We have
	Tecl	hnique	Description	Applicability		assessed the information provided and we are satisfied that the operator has demonstrated
	(a)	Bag filter	See Section 14.2	May not be applicable to the abatement of sticky dust.		compliance with BATc 23. The Operator is using 'bag filters' to minimise dust emissions from A4 Dryer.
	(b)	Cyclone	Page 34 of the Bref	Generally applicable.		
	(c)	Wet scrubber				
	The a	associated m	onitoring is given in	BAT 5.		

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BATC No.	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
23	BAT-associated from drying	emission leve	el (BAT-AEL) for char	nnelled dust emissions to air	СС	The operator has provided information to support compliance with BAT-AEL. We have
	Parameter	Description	n BAT-AEL (sampling p	average over the eriod)		assessed the information provided and we are satisfied that the operator has demonstrated compliance with BAT-AEL.
	Dust	Mg/Nm ³	<2-10 (1)			The operator declared an average emission of particulate matter of 0.29 mg/m³ for each air
	(1) The upper end of the range is 20 mg/Nm³ for drying of demineralised whey powder, casein and lactose.			nineralised whey powder,		emission point, A4 and A5. Current permit ELV is set at 50 mg/m³ for A4. We take this opportunity to bring the consolidate permit in line with this BAT-AEL and set the new upper limit of 10 mg/m³ for emission point, A4, applicable 04/12/2023. We consider that the operator will be future compliant with BAT_AEL. Improvement
						condition 22 has been included in the permit to achieve compliance (see Annex 3).
Dair	Sector Environ	mental Perfo	ormance Levels			
	Environmental Performance Level – Energy consumption for the dairy sector			nsumption for the dairy	СС	The operator has provided information to support compliance with BAT-EPL for energy consumption. We have assessed the
	Main product (at % of the product		nit	Specific energy consumption (yearly average)		information provided and we are satisfied that the operator has demonstrated compliance with BAT-EPL for energy consumption.
EPL	Market milk		0.1-0.6			33
'	Cheese	M	MWh/tonne of raw materials	0.10-0.22 (1)		The Operator declared a value of 0.18 MWh
	Powder	m		0.2-0.5		per tonne of raw materials which is within the applicable range of 0.10 – 0.22.
	Fermented milk			0.2-1.6		applicable range of 0.10 - 0.22.
	(1) The specific energy of	consumption level may	not apply when raw materials other	than milk are used.		

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BATC No.	Summary of BAT Conclu Industries	usion requirement for Foo	d, Drink and Milk	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
	Environmental Performance Level – Specific waste water discharge for the dairy sector			CC	The operator has provided information to support compliance with BAT-EPL for
	Main product (at least 80 % of the production)	Unit	Specific waste water discharge (yearly average)		wastewater discharge. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BAT-EPL for wastewater discharge. The Operator declared a value of 1.2 m³ per tonne of raw materials which is within the applicable range of 0.75 – 2.5.
무	Market milk	m ³ /tonne of raw materials	0.3 - 3.0		
	Cheese		0.75 - 2.5		
	Powder		1.2 – 2.7		

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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
- Site plan
- Table S1.1 overhaul
 - o Activity Reference (AR) renumbering
 - Updated listed activities
 - Addition of production capacity
 - o 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.

For the dairy sector the threshold for the activity is based on the quantity of milk received at the site. We have included a daily limit of the volume of milk permitted at the site 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.

Waste Treatment

Following the transfer application EPR/HP3748QN/T001, the Operator First Milk Cheese Company has transferred the effluent treatment plant to Biogest UK Ltd. The later is now operating these assets under the above cited permit number.

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.

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<u>Implementing the requirements of the Medium Combustion Plant Directive</u>

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 tables below:

Combined heat and power (CHP) engines

Rated thermal input (MW) of the medium combustion plant.	CHP 1: 1.5 MWth
2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant).	СНР
3. Type and share of fuels used according to the fuel categories laid down in Annex II.	CHP 1: Natural Gas 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.	CHP 1: March 2015

<u>Boilers</u>

	D " A O (A B B A C)
Rated thermal input (MW) of the medium	Boiler A: 8.4 MWth
combustion plant.	Boiler B: 8.4 MWth
·	Boiler C: 7.7 MWth
2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant).	Boilers
3. Type and share of fuels used according to	Boiler A: Natural Gas 100%
the fuel categories laid down in Annex II.	Boiler B: Natural Gas 100%
and the same general action in the same action in t	Boiler C: Natural Gas 100%
	Boiler of Hatarar Gao 10070
4. Date of the start of the operation of the	Boiler A: April 2013
medium combustion plant or, where the	Boiler B: April 2013
exact date of the start of the operation is	Boiler C: April 2013
unknown, proof of the fact that the operation	r
started before 20 December 2018.	
Started before 20 December 2010.	

We have reviewed the information provided and we consider that the declared combustion plants qualify as "existing" medium combustion plants.

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 for Boilers A, B, and C.

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For existing MCP with a rated thermal input of less than or equal to 5 MW, the emission limit values set out in tables 1 and 3 of Part 1 of Annex II MCPD shall apply from 1 January 2030 for, CHP1.

We have included the appropriate emission limit values for existing medium combustion plants 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.

Note: Following the transfer application EPR/HP3748QN/T001, the Operator First Milk Cheese Company has transferred the operation of MCPs named 'CHP2' and 'Biogas Boiler' to Biogest UK Ltd. The latter is now operating these assets under the above cited permit number.

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 points A4 and A5 against BAT 23 for dust emissions from the bag filter.

We have added an improvement condition (IC20) 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 e.g. 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 e.g. grain milling, we may accept limited representative monitoring rather than expecting them to monitor every single emission point.

<u>Emissions to Water and implementing the requirements of the Water</u> <u>Framework Directive</u>

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 provided a revised risk assessment using the Environment Agency's H1 software tool for treated wastewater discharge through emission point W1. The assessment shows that, applying the conservative criteria in our guidance

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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 a site condition report [doc. ref. R1860C-5391-003-787 submitted in February 2005] during the original application received on 24/03/2005. 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 has not identified any hazardous substances used / stored at the installation.

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 / groundwater to be possible and monitoring is required for these hazardous substances.

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The operator is required to submit a relevant hazardous substances monitoring plan for review to the Environment Agency via improvement condition (IC20).

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. A Climate Change Adaptation plan has been commissioned by the Operator but this has not been submitted as part of the Reg.61 Response Tool.

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 (IC21) 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
 - o 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
 - o 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

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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. We are satisfied that the existing tanks and containment measures on site meet the standards set out in CIRIA C736.

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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 undertake monitoring and a noise mapping exercise to identify areas of the site and items of plant that can be targeted for improvement with noise abatement or reduction measures. The monitoring shall attempt to quantify the impact of each item / area on the noise levels at the installation boundary to enable prioritisation of improvement measures. Following this, the operator shall submit a written plan to the Environment Agency for agreement. The plan must contain details of any improvements necessary to progressively reduce sources of noise and dates for the implementation of individual measures. The notification requirements of condition 2.4.2 will be deemed to	
	have been complied with on submission of the plan. The operator must implement the plan as agreed, and from the date stipulated by the Environment Agency.	
IC2	Following completion of IC1, the operator shall conduct a noise monitoring survey (having first agreed the methodology with the Environment Agency) to quantify the noise reduction and, if necessary, identify additional measure to ensure noise levels do not cause pollution outside the site boundary. The operator shall provide a report detailing noise survey results and compliance with condition 3.4.1, and include a timetable for the implementation of any recommendations made as a result of the noise survey. The notification requirements of condition 2.4.2 will be deemed to have been complied with on submission of the report.	
IC3	Following commissioning of the CHP plant and new boilers, the operator shall undertake monitoring (having first agreed the methodology with the Environment Agency) to demonstrate optimisation of the combustion process and to establish normal and maximum likely concentrations of oxides of nitrogen and carbon monoxide from emission points A5, A6, A7 and A8. The operator shall submit a written report containing the monitoring results to the Environment Agency. This is to validate the emission values used in the environmental risk assessment. The notification requirements of condition 2.4.2 will be deemed to have been complied with on submission of the report.	
IC4	The operator shall submit a written report to the Environment Agency. The report must contain the results of a review to quantify the effluent load and volume for each of the process areas at the installation. The review shall attempt to identify the ongoing demand on the effluent	

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	treatment plant and any opportunities for resource efficiency including water reuse and water reduction. This is to ensure the optimum operation of the effluent treatment plant and should include reference to the best available techniques (BAT) in sections 1.3 and 1.4 of EPR6.13 guidance for the dairy and milk processing sector. The results of this review will be submitted to the Environment Agency, including dates for the implementation of any individual measures identified for improvement. The notification requirements of condition 2.4.2 will be deemed to have been complied with on submission of the report.
IC5	The operator shall install an MCERTs flow-proportional composite sampler on the W1 discharge. The sampling point location should be agreed with the Environment Agency, documented and clearly and permanently labelled.
IC6	The operator shall submit a written plan to the Environment Agency for approval. The plan must contain measures to reduce phosphorus emissions in line with the requirements of the Water Framework Directive (200/60/EC) and include details of the necessary improvement works and timescales for their completion. This should also include any findings from IC4. The notification requirements of condition 2.4.2 will be deemed to have been complied with on submission of the plan.
IC7	The operator shall survey, review and verify the accuracy of the drainage plans, updating where necessary. A copy of the updated plans shall be provided to the Environment Agency. The notification requirements of condition 2.4.2 will be deemed to have been complied with on submission of the plans.
IC8	A written plan shall be submitted to the Environment Agency for approval, following a review of all site drainage at the installation. The plan should take into account the appropriate measures for the management of subsurface structures (page 28) and the requirements for surfaces on your site (page 59) in 'How to comply with your environmental permit' and include a timetable for any improvements or maintenance to the drainage system. The notification requirements of condition 2.4.2 shall be deemed to have been complied with on submission of the plan. The operator must implement the plan as approved, and from the date stipulated by the Environment Agency.
IC9	The Operator shall submit the written protocol referenced in condition 3.1.3 for the monitoring of soil and groundwater for approval by the Environment Agency. The protocol shall demonstrate how the Operator will meet the requirements of Articles 14(1)(b), 14(1)(e) and 16(2) of the Industrial Emissions Directive. The procedure shall be implemented in accordance with the written approval from the Environment Agency.
IC10	The Operator shall develop and implement an odour management plan (OMP), having regard to the Environment Agency's H4 Odour Management Guidance The plan shall include: • Formal documented procedures for the preventative inspection and subsequent maintenance of all process items/sources that pose a potential odour nuisance risk to the identified receptors. • The identified receptors shall include the nearest residential properties.

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	 Complaint investigation. Contingency actions, with timescales, to be implemented if odour pollution is detected beyond the installation boundary. The plan is to be reviewed annually or following any changes likely to have an impact on odour. Following each review a copy of the revised plan shall be submitted to the Environment Agency. The OMP shall be agreed in writing by the Environment Agency.
IC11	Following commissioning and optimisation of the AD plant the Operator shall monitor and review the performance of the plant and compare against the design specification.
IC12	The Operator shall review and update the site EMS to reflect the changes to the installation. This should include the inspection and maintenance of the new equipment. It shall also include emergency response procedures and ensure that staff receive the necessary training in accordance with conditions contained in Section 1.1 of this permit.
IC13	The Operator shall undertake a detailed topographical survey of the site and a detailed survey of the existing site drainage systems to develop the detailed design for containment at the facility in accordance with the Effluent Treatment Plant, Containment Strategy Outline Design report dated March 2016. The Operator shall submit a proposal for approval for the detailed design containment measures which shall include timescales for implementation. The Operator shall submit reports on progress with implementation of the approved containment measures on a quarterly basis specified by this condition.
IC14	This outstanding IC that requested an updated SCR has now be transferred to Biogest UK Ltd as part of the partial permit transfer that included the concerned site where the ETP and AD are located.
IC15	Following commissioning of the CHP 2 plant, the Operator shall undertake monitoring (having first agreed the methodology with the Environment Agency) to demonstrate optimisation of the combustion process and to establish normal and maximum likely concentrations of oxides of nitrogen and carbon monoxide from emission point A9. The operator shall submit a written report containing the monitoring results to the Environment Agency. The purpose of this is to validate the emission values used in the environmental risk assessment. The notification requirements of condition 2.4.2 will be deemed to have been complied with on submission of the report.
IC16	The Operator shall provide written confirmation of the intention for the existing whey permeate evaporator to be agreed with the Environment Agency.

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

Improveme	Improvement programme requirements			
Reference	Reason for inclusion	Justification of deadline		
IC17	The operator shall submit, for approval by Environment Agency, a report setting out progress to achieving the 'Narrative' BAT where BATc 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	04/12/2023		
	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 1 and 6.			
	Refer to BAT Conclusions for a full description of the BAT requirement.			
IC18	The operator shall use refrigerants without ozone depletion potential and with a low global warming potential (GWP) in accordance with BAT 9 from the Food, Drink and Milk Industries BATCs. To demonstrate compliance against BAT 9, the operator shall develop a replacement plan for the refrigerant system(s) at the installation. This shall be incorporated within the existing environmental management system by the specified date. The plan should include, but not be limited to, the following: • Where practicable, retro filling systems containing high GWP refrigerants e.g. R-404A with lower GWP alternatives as soon as possible. • An action log with timescales, for replacement of end-of-life equipment using refrigerants with the lowest practicable GWP.	04/12/2023		
IC19	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 points A4 and A5 (driers), identifying the fractions within the PM ₁₀ and PM _{2.5} ranges. The monitoring shall be carried out under representative operating conditions and shall be in accordance with EN ISO 23210 unless otherwise agreed with the Environment Agency.	12 months from permit issue		
IC20	The operator shall produce a monitoring plan detailing how the management of relevant hazardous substances which did not screen out as low risk, based on the RHS baseline assessment, will be maintained and monitored to mitigate the risks of pollution. The plan shall be submitted for approval.	12 months from permit issue		

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	The plan shall be implemented in accordance with the Environment Agency's written approval.	
IC21	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
IC22	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. The report shall include, but not be limited to, the following: 1) Current performance against the BAT-AELs. 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 emissions to air from drying).	04/12/2023

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