

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/CP3531GM
The Operator is: NSI Industrial O&M Solutions Ltd
The Installation is: Royal Brewery Effluent Treatment Plant
This Variation Notice number is: EPR/CP3531GM/V009

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 09/11/2021 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 14/03/2023.

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

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

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

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

2.3 Requests for further information during determination

Although we were able to consider the Regulation 61 Notice response generally satisfactory at receipt, we did in fact need more information in order to complete our permit review assessment, and issued further information request relating to BAT3, BAT4, BAT5, BAT6, BAT7, BAT8, BAT11, BAT12, BAT13, BAT14, BAT16 -WT, BAT21-WT, BAT38-WT, Water Emission, Air Emission, MCP, and RHS Baseline on 28/06/2023. 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.

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	<p>Environmental Management System - Improve overall environmental performance.</p> <p>Implement an EMS that incorporates all the features as described within BATc 1.</p>	FC	<p>The operator has provided information to support compliance with BATc 1. We have assessed the information provided. We are not satisfied that the operator has demonstrated compliance with BATc 1.</p> <p>We consider that the operator will be future compliant with BATc 1. Improvement condition IC8 has been included in the permit to achieve compliance (see Annex 3).</p>
2	<p>EMS Inventory of inputs & outputs. Increase resource efficiency and reduce emissions.</p> <p>Establish, maintain and regularly review (including when a significant change occurs) an inventory of water, energy and raw materials consumption as well as of waste water and waste gas streams, as part of the environmental management system (see BAT 1), that incorporates all of the features as detailed within the BATCs.</p>	FC	<p>The operator has provided information to support compliance with BATc 2. We have assessed the information provided. We are not satisfied that the operator has demonstrated compliance with BATc 2.</p> <p>We consider that the operator will be future compliant with BATc 2. Improvement condition IC8 has been included in the permit to achieve compliance (see Annex 3).</p>
3	<p>Monitoring key process parameters at key locations for emissions to water.</p> <p>For relevant emissions to water as identified by the inventory of waste water streams (see BAT 2), BAT is to monitor key process parameters (e.g. continuous monitoring of waste water flow, pH and temperature) at key locations (e.g. at the inlet and/or outlet of the pre-treatment, at the inlet to the final treatment, at the point where the emission leaves the installation).</p>	CC	<p>The operator has provided information to support compliance with BATc 3. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 3.</p> <p>Flow, pH & Temperature are monitored at the brewery and packaging sumps (EPR/BV7796IW) prior to entering the effluent treatment plant. Appropriate monitoring is carried out prior to the water being discharged</p>

BATC No.	Summary of BAT Conclusion requirement for Food, Drink and Milk Industries	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
			from the installation from the treatment plant to sewer.
4	<p>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.</p>	NA	<p>We are satisfied that BATc 4 is not applicable to this Installation.</p> <p>There is no direct discharge to a receiving water body.</p> <p>As the installation operates an effluent treatment plant that processes wastewater generated by Royal Brewery Manchester (EPR/BN1429IC). Prior to discharge of treated effluent to Combrook Culvert leading to Daveyhulme Treatment works (sewer).</p>
5	<p>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.</p>	NA	<p>We are satisfied that BATc 5 is not applicable to this Installation.</p> <p>This permit is for an effluent treatment plant (ETP) where the process water generated by the Royal Brewery Manchester site therefore, BATc 5 is not applicable to this installation as it has no relevant channelled emissions to air.</p>
6	<p>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.</p>	NA	<p>We are satisfied that BATc 6 is not applicable to this Installation.</p> <p>This site only operates an effluent treatment plant which is responsible for treating process effluent generated by Royal Brewery Manchester. As such an energy efficiency plan and the techniques in BAT6 are applicable to effluent treatment plants.</p>
7	<p>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.</p>	NA	<p>We are satisfied that BATc 7 is not applicable to this Installation.</p>

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	(a) water recycling and/or reuse (b) Optimisation of water flow Optimisation of water nozzles and hoses (d) Segregation of water streams Techniques related to cleaning operation (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		This site only operates an effluent treatment plant which is responsible for treating process effluent generated by Royal Brewery Manchester. As such, none of the techniques in BAT7 are applicable to effluent treatment plants.
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	NA	We are satisfied that BATc 8 is not applicable to this Installation. This site only operates an effluent treatment plant which is responsible for treating process effluent generated by Royal Brewery Manchester. As such, none of the techniques in BAT8 are applicable to effluent treatment plants. The effluent treatment plant does not use disinfectants, detergents, dry cleaning or have any CIP's processes. Water treatment chemicals have the relevant SDS & COSHH assessments.
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.	NA	We are satisfied that BATc 9 is not applicable to this Installation. BATc9 is concerned with refrigerants used in the production process. This installation operates an effluent treatment plant where

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			refrigeration processes are not required or used therefore, this BATc 9 is not applicable.
10	<p>Resource efficiency In order to increase resource efficiency, BAT is to use one or a combination of the techniques given below:</p> <ul style="list-style-type: none"> (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	<p>The operator has provided information to support compliance with BATc 10. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 10.</p> <p>The operator confirmed the following techniques are used:</p> <ul style="list-style-type: none"> • Anaerobic treatment used to treat waste water • Land spreading
11	<p>Waste water buffer storage In order to prevent uncontrolled emissions to water, BAT is to provide an appropriate buffer storage capacity for waste water.</p>	CC	<p>The operator has provided information to support compliance with BATc 11. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 11.</p> <p>The installation has a balance tank and has confirmed buffer storage capacity is sized to provide appropriate protection.</p>
12	<p>Emissions to water – treatment In order to reduce emissions to water, BAT is to use an appropriate combination of the techniques given below. Preliminary, primary and general treatment</p> <ul style="list-style-type: none"> (a) Equalisation (b) Neutralisation (c) Physical separate (e.g. screens, sieves, primary settlement tanks etc) Aerobic and/or anaerobic treatment (secondary treatment) (d) Aerobic and/or anaerobic treatment (e.g. activated sludge, aerobic lagoon etc) (e) Nitrification and/or denitrification 	CC	<p>The operator has provided information to support compliance with BATc 12. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 12.</p> <p>The operator has an effluent treatment plant which undertakes the following treatment of water:</p> <ul style="list-style-type: none"> • equalisation via a balance tank • divert tank to collect any off-spec raw waste water

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	(f) Partial nitrification - anaerobic ammonium oxidation Phosphorus recovery and/or removal (g) Phosphorus recovery as struvite (h) Precipitation (i) Enhanced biological phosphorus removal Final solids removal (j) Coagulation and flocculation (k) Sedimentation (l) Filtration (eg sand filtration, microfiltration, ultrafiltration) (m) Flotation		<ul style="list-style-type: none"> • anaerobic digestion (Internal Circulation, (IC) Reactor) • aerobic treatment (Circox reactor) • DAF treatment • sand filtration to remove final solids <p>Prior to discharge of treated effluent to sewer (S1) via Combroke Culvert leading to Daveyhulme Treatment works.</p>										
12	<p>Emissions to water – treatment BAT-associated emission levels (BAT-AELs) for direct emissions to a receiving water body</p> <table border="1" data-bbox="277 831 1086 1155"> <thead> <tr> <th>Parameter</th> <th>BAT-AEL ⁽¹⁵⁾ ⁽¹⁶⁾ (daily average)</th> </tr> </thead> <tbody> <tr> <td>Chemical oxygen demand (COD) ⁽¹⁷⁾ ⁽¹⁸⁾</td> <td>25-100 mg/l ⁽¹⁹⁾</td> </tr> <tr> <td>Total suspended solids (TSS)</td> <td>4-50 mg/l ⁽²⁰⁾</td> </tr> <tr> <td>Total nitrogen (TN)</td> <td>2-20 mg/l ⁽²¹⁾ ⁽²²⁾</td> </tr> <tr> <td>Total phosphorus (TP)</td> <td>0,2-2 mg/l ⁽²³⁾</td> </tr> </tbody> </table>	Parameter	BAT-AEL ⁽¹⁵⁾ ⁽¹⁶⁾ (daily average)	Chemical oxygen demand (COD) ⁽¹⁷⁾ ⁽¹⁸⁾	25-100 mg/l ⁽¹⁹⁾	Total suspended solids (TSS)	4-50 mg/l ⁽²⁰⁾	Total nitrogen (TN)	2-20 mg/l ⁽²¹⁾ ⁽²²⁾	Total phosphorus (TP)	0,2-2 mg/l ⁽²³⁾	NA	<p>We are satisfied that these BAT-AELs is not applicable to this Installation.</p> <p>There is no direct discharge to a receiving body of water.</p>
Parameter	BAT-AEL ⁽¹⁵⁾ ⁽¹⁶⁾ (daily average)												
Chemical oxygen demand (COD) ⁽¹⁷⁾ ⁽¹⁸⁾	25-100 mg/l ⁽¹⁹⁾												
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Total nitrogen (TN)	2-20 mg/l ⁽²¹⁾ ⁽²²⁾												
Total phosphorus (TP)	0,2-2 mg/l ⁽²³⁾												
13	<p>Noise management plan</p> <p>In order to prevent or, where that is not practicable, to reduce noise emissions, BAT is to set up, implement and regularly review a noise management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:</p> <ul style="list-style-type: none"> - a protocol containing actions and timelines; - a protocol for conducting noise emissions monitoring; 	NA	<p>We are satisfied that BATc 13 is not applicable to this Installation.</p> <p>A Noise Management Plan (NMP) is only required where noise nuisance at sensitive receptors is expected or has been substantiated. There have been no substantiated noise nuisances from the site</p>										

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	<ul style="list-style-type: none"> - a protocol for response to identified noise events, e.g. 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. 		therefore an NMP is not a requirement for this site.
14	<p>Noise management</p> <p>In order to prevent or, where that is not practicable, to reduce noise emissions, BAT is to use one or a combination of the techniques given below.</p> <ul style="list-style-type: none"> (a) Appropriate location of equipment and buildings (b) Operational measures (c) Low-noise equipment (d) Noise control equipment (e) Noise abatement 	CC	<p>The operator has provided information to support compliance with BATc 14. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 14.</p> <p>Operator uses fully enclosed beltpress and aeration blowers to reduce noise emissions to the surrounding areas.</p>
15	<p>Odour Management</p> <p>In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to set up, implement and regularly review an odour management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:</p> <ul style="list-style-type: none"> - a protocol containing actions and timelines; - a protocol for conducting odour monitoring. - a protocol for response to identified odour incidents e.g. complaints; - an odour prevention and reduction programme designed to identify the source(s); to measure/estimate odour exposure: to characterise the contributions of the sources; and to implement prevention and/or reduction measures. 	NA	<p>We are satisfied that BATc 15 is not applicable to this Installation.</p> <p>An Odour Management Plan (OMP) is only required where odour nuisance at sensitive receptors is expected or has been substantiated. There have been no substantiated odour nuisances from the site therefore an OMP is not a requirement for this site.</p> <p>However, there is an existing improvement condition IC7 which we have retained as it is not been completed, which may require an updated OMP depending on the outcome of the report.</p>

BATC No.	Summary of BAT Conclusion requirement for Food, Drink and Milk Industries	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement												
	Summary of BAT Conclusion requirement for Waste Treatment														
15	<p>BAT is to use flaring only for safety reasons or for non-routine operating conditions (e.g. start-ups, shutdowns) by using both of the techniques given below.</p> <table border="1" data-bbox="277 609 1220 932"> <thead> <tr> <th data-bbox="277 609 331 651"></th> <th data-bbox="331 609 584 651">Technique</th> <th data-bbox="584 609 969 651">Description</th> <th data-bbox="969 609 1220 651">Applicability</th> </tr> </thead> <tbody> <tr> <td data-bbox="277 651 331 820">a.</td> <td data-bbox="331 651 584 820">Correct plant design</td> <td data-bbox="584 651 969 820">This includes the provision of a gas recovery system with sufficient capacity and the use of high-integrity relief valves.</td> <td data-bbox="969 651 1220 820">Generally applicable to new plants. A gas recovery system may be retrofitted in existing plants.</td> </tr> <tr> <td data-bbox="277 820 331 932">b.</td> <td data-bbox="331 820 584 932">Plant management</td> <td data-bbox="584 820 969 932">This includes balancing the gas system and using advanced process control.</td> <td data-bbox="969 820 1220 932">Generally applicable.</td> </tr> </tbody> </table>		Technique	Description	Applicability	a.	Correct plant design	This includes the provision of a gas recovery system with sufficient capacity and the use of high-integrity relief valves.	Generally applicable to new plants. A gas recovery system may be retrofitted in existing plants.	b.	Plant management	This includes balancing the gas system and using advanced process control.	Generally applicable.	CC	<p>The operator has provided information to support compliance with BATc 15-WT. We have assessed the information provided and we are not satisfied that the operator has demonstrated compliance with BATc 15 -WT.</p> <p>The operator has confirmed they have correct plant design and manage the plant in accordance with BATc15 -WT.</p> <p>The operator uses the flare when the CHP and/or boilers are at maximum capacity. This is to prevent over pressurisation of the biogas system.</p> <p>From the information we have available we consider this to be compliant with BAT15 -WT. However, we have implemented process monitoring which will provide more data on how often the flare is used.</p>
	Technique	Description	Applicability												
a.	Correct plant design	This includes the provision of a gas recovery system with sufficient capacity and the use of high-integrity relief valves.	Generally applicable to new plants. A gas recovery system may be retrofitted in existing plants.												
b.	Plant management	This includes balancing the gas system and using advanced process control.	Generally applicable.												

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16	<p>In order to reduce emissions to air from flares when flaring is unavoidable, BAT is to use both of the techniques given below.</p> <table border="1" data-bbox="282 331 1211 842"> <thead> <tr> <th data-bbox="282 331 338 371"></th> <th data-bbox="338 331 584 371">Technique</th> <th data-bbox="584 331 965 371">Description</th> <th data-bbox="965 331 1211 371">Applicability</th> </tr> </thead> <tbody> <tr> <td data-bbox="282 371 338 531">a.</td> <td data-bbox="338 371 584 531">Correct design of flaring devices</td> <td data-bbox="584 371 965 531">Optimisation of height and pressure, assistance by steam, air or gas, type of flare tips, etc., to enable smokeless and reliable operation and to ensure the efficient combustion of excess gases.</td> <td data-bbox="965 371 1211 531">Generally applicable to new flares. In existing plants, applicability may be restricted, e.g. due to maintenance time availability.</td> </tr> <tr> <td data-bbox="282 531 338 842">b.</td> <td data-bbox="338 531 584 842">Monitoring and recording as part of flare management</td> <td data-bbox="584 531 965 842">This includes continuous monitoring of the quantity of gas sent to flaring. It may include estimations of other parameters (e.g. composition of gas flow, heat content, ratio of assistance, velocity, purge gas flow rate, pollutant emissions (e.g. NO_x, CO, hydrocarbons), noise). The recording of flaring events usually includes the duration and number of events and allows for the quantification of emissions and the potential prevention of future flaring events.</td> <td data-bbox="965 531 1211 842">Generally applicable.</td> </tr> </tbody> </table>		Technique	Description	Applicability	a.	Correct design of flaring devices	Optimisation of height and pressure, assistance by steam, air or gas, type of flare tips, etc., to enable smokeless and reliable operation and to ensure the efficient combustion of excess gases.	Generally applicable to new flares. In existing plants, applicability may be restricted, e.g. due to maintenance time availability.	b.	Monitoring and recording as part of flare management	This includes continuous monitoring of the quantity of gas sent to flaring. It may include estimations of other parameters (e.g. composition of gas flow, heat content, ratio of assistance, velocity, purge gas flow rate, pollutant emissions (e.g. NO _x , CO, hydrocarbons), noise). The recording of flaring events usually includes the duration and number of events and allows for the quantification of emissions and the potential prevention of future flaring events.	Generally applicable.	CC	<p>The operator has provided information to support compliance with BATc 16 -WT. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 16 -WT.</p> <p>Flare is used in line with design. Number of flare operations recorded.</p> <p>Excess biogas produced by the anaerobic reactor is burnt through the flare when use through the CHP and/or boilers is at maximum capacity. This is to prevent over pressurisation of the biogas system.</p> <p>From the information we have available we consider this to be compliant with BAT16 -WT. However, we have implemented process monitoring which will provide more data on how often the flare is used.</p>
	Technique	Description	Applicability												
a.	Correct design of flaring devices	Optimisation of height and pressure, assistance by steam, air or gas, type of flare tips, etc., to enable smokeless and reliable operation and to ensure the efficient combustion of excess gases.	Generally applicable to new flares. In existing plants, applicability may be restricted, e.g. due to maintenance time availability.												
b.	Monitoring and recording as part of flare management	This includes continuous monitoring of the quantity of gas sent to flaring. It may include estimations of other parameters (e.g. composition of gas flow, heat content, ratio of assistance, velocity, purge gas flow rate, pollutant emissions (e.g. NO _x , CO, hydrocarbons), noise). The recording of flaring events usually includes the duration and number of events and allows for the quantification of emissions and the potential prevention of future flaring events.	Generally applicable.												

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												
21	<p>In order to prevent or limit the environmental consequences of accidents and incidents, BAT is to use all of the techniques given below, as part of the accident management plan (see BAT 1).</p> <table border="1" data-bbox="266 363 1238 922"> <thead> <tr> <th data-bbox="266 363 327 405"></th> <th data-bbox="327 363 607 405">Technique</th> <th data-bbox="607 363 1238 405">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="266 405 327 612">a.</td> <td data-bbox="327 405 607 612">Protection measures</td> <td data-bbox="607 405 1238 612"> These include measures such as: <ul style="list-style-type: none"> — protection of the plant against malevolent acts; — fire and explosion protection system, containing equipment for prevention, detection, and extinction; — accessibility and operability of relevant control equipment in emergency situations. </td> </tr> <tr> <td data-bbox="266 612 327 746">b.</td> <td data-bbox="327 612 607 746">Management of incidental/accidental emissions</td> <td data-bbox="607 612 1238 746">Procedures are established and technical provisions are in place to manage (in terms of possible containment) emissions from accidents and incidents such as emissions from spillages, firefighting water, or safety valves.</td> </tr> <tr> <td data-bbox="266 746 327 922">c.</td> <td data-bbox="327 746 607 922">Incident/accident registration and assessment system</td> <td data-bbox="607 746 1238 922"> This includes techniques such as: <ul style="list-style-type: none"> — a log/diary to record all accidents, incidents, changes to procedures and the findings of inspections; — procedures to identify, respond to and learn from such incidents and accidents. </td> </tr> </tbody> </table>		Technique	Description	a.	Protection measures	These include measures such as: <ul style="list-style-type: none"> — protection of the plant against malevolent acts; — fire and explosion protection system, containing equipment for prevention, detection, and extinction; — accessibility and operability of relevant control equipment in emergency situations. 	b.	Management of incidental/accidental emissions	Procedures are established and technical provisions are in place to manage (in terms of possible containment) emissions from accidents and incidents such as emissions from spillages, firefighting water, or safety valves.	c.	Incident/accident registration and assessment system	This includes techniques such as: <ul style="list-style-type: none"> — a log/diary to record all accidents, incidents, changes to procedures and the findings of inspections; — procedures to identify, respond to and learn from such incidents and accidents. 	CC	<p>The operator has provided information to support compliance with BATc 21 -WT. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 21 -WT.</p> <p>The operator implements the following techniques:</p> <ul style="list-style-type: none"> • the site is secure with full perimeter and security service provided by 3rd party. • biogas system automated to protects system from over pressurisation & explosion risk • CHP plant has a slam shut valves to prevent feeding with biogas in the event of a fire alarm • the site practices fire alarm tests weekly • control systems can be accessed remotely in the event of an emergency <p>They have stated that the technique described in b & c are covered in their EMS.</p>
	Technique	Description													
a.	Protection measures	These include measures such as: <ul style="list-style-type: none"> — protection of the plant against malevolent acts; — fire and explosion protection system, containing equipment for prevention, detection, and extinction; — accessibility and operability of relevant control equipment in emergency situations. 													
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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
38	<p>In order to reduce emissions to air and to improve the overall environmental performance, BAT is to monitor and/or control the key waste and process parameters.</p> <p>Implementation of a manual and/or automatic monitoring system to:</p> <ul style="list-style-type: none"> • ensure a stable digester operation; • minimise operational difficulties, such as foaming, which may lead to odour emissions; • provide sufficient early warning of system failures which may lead to a loss of containment and explosions. <p>This includes monitoring and/or control of key waste and process parameters, e.g.:</p> <ul style="list-style-type: none"> • pH and alkalinity of the digester feed; • digester operating temperature; • hydraulic and organic loading rates of the digester feed; • concentration of volatile fatty acids (VFA) and ammonia within the digester and digestate; • biogas quantity, composition (e.g. H₂S) and pressure; • liquid and foam levels in the digester. 	CC	<p>The operator has provided information to support compliance with BATc 38 -WT. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 38 -WT.</p> <p>The operator has confirmed they are compliant with BATc38-WT and that they monitor the key waste and process parameters through a master spread sheet. We have also included additional processing monitoring in table S3.3 of the permit to ensure compliance with BAT 38-WT.</p>

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

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

Waste treatment

The Operator uses anaerobic digestion (AD) to treat the process effluent from the production of beer prior to discharge to sewer. As a part of the permit review the Environment Agency has taken the opportunity to review the permit conditions for this activity. Where the permit doesn't already include the additional directly associated activities (DAAs) or processing monitoring requirements (Table S3.3) we have amended the permit to include them. The processing monitoring includes monitoring of biogas, leak detection, flare operation and onsite storage and containment of digester tanks and sludge tanks.

In addition, we have assessed the waste treatment activity against the BAT Conclusions for Waste Treatment published 10 August 2018 in the Official Journal of the European Union See Annex 1.

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 not provided an up to date air emission plan however, we have an appropriate emissions plan from a previous variation which depicts the emission points plan appropriately.

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 during the original application received on 14/07/2005. 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.

The Operator has accepted ‘zero contamination’ beneath the site. This means that when the Operator applies to surrender the Permit, any contamination by substances used at, produced or released from the facility would be considered to have resulted from the operation of the installation. This is in accordance with the Environment Agency Guidance H5 – Site Condition Report.

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.

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 unavailability of land for land spreading of waste 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 via the Regulation 61 Notice to provide details of the each above ground tanks which contain potentially polluting liquids at the site, including tanks associated with the effluent treatment process where applicable.

The Operator provided details of all tanks;

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

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

We reviewed the information provided by the operator and their findings. We are not satisfied that the existing tanks and containment measures on site meet the standards set out in CIRIA C736.

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).

We also consider that we need to set improvement conditions relating to changes in the permit not arising from the review of compliance with BAT conclusions. The justifications for these are provided in Annex 5 of this decision document.

Previous improvement conditions marked as complete in the previous permit.

Reference	Improvement Condition
IC1	The operator shall carry out a post-commissioning review of the operation of the effluent treatment plant to identify any deviations from the original PPC Application. The Operator shall submit a written summary of the review which shall include any proposals needed to satisfy the requirements of BAT.
IC2	The operator shall carry out monitoring to assess whether any emission from the installation could give reasonable cause for annoyance from odour at nearby sensitive receptors. This should include but not be limited to odours of hydrogen sulphide. The Operator shall submit a written report to the Agency summarising the findings along with any required improvements and a timescale for implementation if relevant.
IC3	The operator shall carry out a monitoring programme to measure the levels of nitrate (as total nitrogen), nitrite (as total nitrogen), o-phosphate (as total phosphorous), chromium, copper, lead, nickel, zinc and arsenic. The Operator shall carry out an impact assessment, using H1 or equivalent methodology, for emissions from release point W1 based on the monitoring results. A report summarising the monitoring results and the impact assessment shall be submitted to the Agency in writing.
IC5	The operator shall develop a written Site Closure Plan with regard to the requirements set out in the Agency guidance note (S4.03 section 11). Upon completion of the plan a summary of the document shall be submitted to the Agency in writing.
IC4	The operator shall carry out an assessment of the disposal options available for dealing with the aerobic sludge. The Operator shall submit a written report to the Environment Agency which shall summarise the findings and identify the best environmental option for disposal of the aerobic sludge.
IC6	The operator shall develop an odour management plan (OMP) in line with the Environment Agency's Horizontal Guidance H4 Odour Management with particular regard to Appendix 4. The OMP will include further detail and commitments on: the design and engineering of the odour abatement system; operational procedures related to odorous emissions; odour monitoring; and maintenance and contingency plans. The operator shall implement the approved OMP from the date of approval by the Environment Agency.

This improvement condition has been retained as it is not evident it has been complete.

Improvement programme requirements		
Reference	Reason for inclusion	Justification of deadline
IC7	<p>Once the production at the brewery is at the increased capacity and the effluent treatment plant is discharging higher volumes of process effluent, the operator shall carry out monitoring (in line with current Environment Agency guidance) to quantify the odour concentrations (ouE/m3) on site and assess the efficiency of the odour abatement plant. This should include but not be limited to emissions of hydrogen sulphide and VOCs. If necessary, this exercise should identify additional BAT control measures to ensure odorous emissions do not cause pollution outside the site boundary. The operator shall provide a report to the Environment Agency detailing odour monitoring results and include a timetable for the implementation of any recommendations made as a result of the odour assessment.</p> <p>Following this, the operator shall update the Odour Management Plan described in Improvement Requirement 6.</p>	All parts of requirement to be completed within 3 months of normal operation at increased capacity.

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
IC8	The Operator shall confirm in writing to the Environment Agency that the Narrative BAT requirements for the BAT Conclusions for Food, Drink and Milk Industries with respect to BAT 1 and BAT 2 were in place on or before 4 December 2023. Refer to BAT Conclusions for a full description of the BAT requirement.	29/02/2024 1 months from date of permit issue
IC9	<p>The operator shall produce a climate change adaptation plan, which will form part of the EMS. The plan shall include, but not be limited to:</p> <ul style="list-style-type: none"> • Details of how the installation has or could be affected by severe weather; • The scale of the impact of severe weather on the operations within the installation; • An action plan and timetable for any improvements to be made to minimise the impact of severe weather at the installation. <p>The Operator shall implement any necessary improvements to a timetable agreed in writing with the Environment Agency.</p>	30/01/2025 12 months from date of permit issue

IC10	<p>The Operator shall undertake a survey of the primary, secondary and tertiary containment at the site and review measures against relevant standard including:</p> <ul style="list-style-type: none"> • 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 <p>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</p> <ul style="list-style-type: none"> • current containment measures • any deficiencies identified in comparison to relevant standards, • improvements proposed • time scale for implementation of improvements. <p>The operator shall implement the proposed improvements in line with the timescales agreed by the Environment Agency.</p>	<p>30/01/2025 12 months from date of permit issue</p>