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/BU7677IZ
The Operator is:	Pura Foods Limited
The Installation is:	Purfleet Vegetable Oil Refinery
This Variation Notice number is:	EPR/BU7677IZ/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 08/06/2022 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 28/10/2022.

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

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

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

Based on our records and previous experience in the regulation of the installation we consider that the Operator will be able to comply with the techniques and standards described in the BAT Conclusions other than for those techniques and requirements described in BAT Conclusion 9. The operator does not currently comply with the requirements of BATc 9. In relation to this/these BAT Conclusion, the operator has committed compliance by 4 December 2023. We have therefore included Improvement Conditions IC13 in the Consolidated Variation Notice to ensure that the requirements of the BAT Conclusion was achieved on or before 04/12/2023.

2.3 Requests for further information during determination

Although we were able to consider the Regulation 61 Notice response generally satisfactory at receipt, we did in fact need more information in order to complete our permit review assessment and issued a further information request on 14/09/2023 regarding BATcs 1, 3, 6, 11, 32, standby boiler operating hours, MCPs stack emissions, nitrogen generation plant, cooling towers, product lines, and non-technical description. A copy of the further information request was placed on our public register. In addition, as part of the same RFI letter, we received additional information during the determination from the Operator on 03/10/2023 regarding bunding, and updated site plan on 13/102023. During the 20/11/2023 online video conference on Teams platform, the Operator verbally confirmed the MCPs capacities and operating techniques shown in this document.

3 The legal framework

The Consolidated Variation Notice will be issued under Regulations 18 and 20 of the EPR. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the regulated facility is:

- an *installation* as described by the IED;
- subject to aspects of other relevant legislation which also have to be addressed.

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

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

Annex 1: decision checklist regarding relevant BAT Conclusions

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

There are 37 BAT Conclusions.

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

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

BAT 16 & 17	BAT Conclusions for Animal Feed
BAT 18 – 20	BAT Conclusions for Brewing
BAT 21 – 23	BAT Conclusions for Dairies
BAT 24	BAT Conclusions for Ethanol Production
BAT 25 & 26	BAT Conclusions for Fish and Shellfish Processing
BAT 27	BAT Conclusions for Fruit and Vegetable Processing
BAT 28	BAT Conclusions for Grain Milling
BAT 29	BAT Conclusions for Meat Processing
BAT 30 – 32	BAT Conclusions for Oilseed Processing and Vegetable Oil Refining
BAT 33	BAT Conclusions for Soft Drinks and Nectar/Fruit Juice Processed from Fruit and Vegetables
BAT 34	BAT Conclusions for Starch Production
BAT 35 – 37	BAT Conclusions for Sugar Manufacturing

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

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

NA – Not Applicable
CC – Currently Compliant
FC – Compliant in the future (within 4 years of publication of BAT Conclusions)
NC – Not Compliant

BATC No.	Summary of BAT Conclusion requirement for Food, Drink and Milk Industries	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
GENERAL BAT CONCLUSIONS (BAT 1-15)			
1	**Environmental Management System - Improve overall environmental performance.** Implement an EMS that incorporates all the features as described within BATc 1.	**CC**	The operator has provided information to support compliance with BATc 1. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 1. The operator has a EMS externally accredited to the ISO14001 standard.
2	**EMS Inventory of inputs & outputs. Increase resource efficiency and reduce emissions.** Establish, maintain and regularly review (including when a significant change occurs) an inventory of water, energy and raw materials consumption as well as of waste water and waste gas streams, as part of the environmental management system (see BAT 1), that incorporates all of the features as detailed within the BATCs.	**CC**	The operator has provided information to support compliance with BATc 2. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 2. The Operator demonstrated that it has: • A simplified process diagram • Description of processes and techniques that identify emissions points • Monitoring of water inputs and outputs • Effluent quality monitored prior to sewer discharge • Identified waste gas streams and chemical composition emitted from the MCPs and scrubber • Information regarding the installation's efficiency, energy consumption, resource used, and waste generation • Monitoring of inputs and outputs based on company's agreed KPIs and environmental targets
3	**Monitoring key process parameters at key locations for emissions to water.** For relevant emissions to water as identified by the inventory of waste water streams (see BAT 2), BAT is to monitor key process parameters (e.g. continuous monitoring of waste water flow, pH and temperature) at key locations (e.g. at the inlet and/or outlet of the pre-treatment, at the inlet to the final treatment, at the point where the emission leaves the installation).	**CC**	The operator has provided information to support compliance with BATc 3. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 3. The Operator declared continuous monitoring and lab testing of influent and effluent discharged to sewer under consent from Anglian Water including pH, flow, COD, temperature, and turbidity. When

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
			necessary, the effluent is returned to the ETP for further treatment.
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 that BATc 4 is not applicable to this Installation. This BAT requirement is largely concerned with the monitoring of parameters from process effluent discharging directly to water, with the exception of chloride. This installation does not have such discharges. Trade effluent is treated on-site and discharge to sewer via emission point S1. The effluent is unlikely to contain significant chloride concentrations. For reference, the only emissions to water are uncontaminated cooling water extracted from River Thames and then returned via emission point W1, surface run-off from surface water pit under deluge conditions via W2, and jetty via 3-stage interceptor discharged to River Thames.
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.	**NA**	We are satisfied that BATc 5 is not applicable to this Installation. This BATc is concerned with air emissions from dust specified generating processes and this site does not emit any such gases. The site does not have extraction facilities, and there is no handling and preparation of seeds, or drying and cooling of meal. For reference, there are bag filters installed at emission points A8, A9, and A10 for the scope of abating the release of particulate matter but the emission points operate for less than 1% of the time therefore, we do not consider these atmospheric release points to be significant for the purpose of BATc 5.
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.	**CC**	The operator has provided information to support compliance with BATc 6. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 6.

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
			The Operator declared that, in addition to having an ISO 50001 accredited energy efficiency plan, they are using the following energy efficiency techniques: • Heat recovery • Energy efficient motors • LED lights • Burner regulation and control • Preheated feed water • Variable speed drives • Automated control processes.
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 not satisfied that the operator has demonstrated compliance with BATc 7. The Operator declared using the following techniques: • Segregation of water streams • Pigging system for pipes • Optimisation of chemical dosing used in CIP • High pressure cleaning • Cleaning of equipment as soon as possible The Operator does not currently use water recycling and/or reuse as part of the site current water and wastewater minimisation strategy because of food safety and/or process design limitations. This aspect is considered and reviewed as part of the overall installation's efficiency planning.
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	**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. The Operator is using the following techniques:

BATC No.	Summary of BAT Conclusion requirement for Food, Drink and Milk Industries	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
	(d) Optimised design and construction of equipment and process areas		• Reuse of cleaning chemicals CIP where possible • Proper selection of chemicals and/or disinfectants • Optimised design and construction of equipment and process areas.
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.	**CC**	The operator has provided information to support compliance with BATc 9. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 9. The Operator declared that it is using a number of 4 rented chillers utilising R134A refrigerant and it has no input in the replacement of this gas. **However, the Operator is considering alternative solutions to avoid the use of refrigerant gases with a high GWP values, but a replacement plan has not been provided to us as part of the Reg.61 Response.** We consider that the operator is partially compliant with BATc 9. Improvement condition (IC13) 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 Operator declared that the site does not send any waste to landfill. All waste generated on site is: • Separated • Recovery and re-use of residue • Use of appropriate material for animal feed • Use of third party operated anaerobic digesters where animal feed is not an option.
11	**Waste water buffer storage**	**CC**	The operator has provided information to support compliance with BATc 11. We have assessed the

BATC No.	Summary of BAT Conclusion requirement for Food, Drink and Milk Industries	Status NA/ CC / FC / NC	Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement
	In order to prevent uncontrolled emissions to water, BAT is to provide an appropriate buffer storage capacity for waste water.		information provided and we are satisfied that the operator has demonstrated compliance with BATc 10. The Operator declared that it has sufficient buffer capacity to prevent accidental discharges in the form of a buffer storage tank of 460 m^3 capacity, and a divert buffer tank. The installation is equipped with alarms, spill kits, and valves. The ETP, where wastewater and surface water are directed in an emergency, is fully automated and manned permanently with the option of manual closing of valves if needed.
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	**CC**	The site has an ETP on-site consisting of settlement, flocculation and coagulation used for water treatment prior to discharge to sewer under consent from Thames Water which uses the following techniques:. • Neutralisation • Physical separation in fat-traps • Chemical dosing • Coagulation and flocculation in DAF • Sedimentation • Flotation,

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
12	**Emissions to water – treatment** **BAT-associated emission levels (BAT-AELs) for direct emissions to a receiving water body** Parameter | BAT-AEL (1) (2) (daily average) Chemical oxygen demand (COD) (3) (4) | 25-100 mg/l (5) Total suspended solids (TSS) | 4-50 mg/l (6) Total nitrogen (TN) | 2-20 mg/l (7) (8) Total phosphorus (TP) | 0,2-2 mg/l (9)	**NA**	We are satisfied that BATc 12 is not applicable to this Installation. This installation does not have direct to water discharges of process effluent but only to foul sewer under licence from Anglian Water. The site discharges to River Thames only uncontaminated cooling water via emission point W1, surface run-off via W2, and jetty via 3-stage interceptor discharged to River Thames. However, the extant permit (V003) contains ELVs associated with water emission point W1; these will be retained in their current form.
13	**Noise management plan** In order to prevent or, where that is not practicable, to reduce noise emissions, BAT is to set up, implement and regularly review a noise management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements: - a protocol containing actions and timelines; - a protocol for conducting noise emissions monitoring; - a protocol for response to identified noise events, eg complaints; - a noise reduction programme designed to identify the source(s), to measure/estimate noise and vibration exposure, to characterise the contributions of the sources and to implement prevention and/or reduction measures.	**NA**	We are satisfied that BATc 13 is not applicable to this Installation. A noise management plan is only required where noise nuisance at sensitive receptors is expected or has been substantiated. There have been no substantiated noise nuisances from the site therefore an NMP is not a requirement for this site.
14	**Noise management** In order to prevent or, where that is not practicable, to reduce noise emissions, BAT is to use one or a combination of the techniques given below. (a) Appropriate location of equipment and buildings (b) Operational measures (c) Low-noise equipment (d) Noise control equipment (e) Noise abatement	**CC**	The operator has provided information to support compliance with BATc 14. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 14. The Operator declared that all site processes which generate noise are appropriately located inside buildings to reduce noise impact on sensitive receptors.
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	**NA**	We are satisfied that BATc 15 is not applicable to this installation.

<table>
<tr><th>BATC No.</th><th>Summary of BAT Conclusion requirement for Food, Drink and Milk Industries</th><th>Status NA/ CC / FC / NC</th><th>Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement</th></tr>
<tr><td></td><td>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.</td><td></td><td>An odour management plan is only required where odour nuisance at sensitive receptors is expected or has been substantiated. There have been no substantiated odour nuisances from the site therefore an OMP is not a requirement for this site.</td></tr>
<tr><td></td><td>OILSEED PROCESSING & VEGETABLE OIL REFINING SECTOR
BAT CONCLUSIONS (BAT 30-32)</td><td></td><td></td></tr>
<tr><td>30</td><td>Energy efficiency – Oilseed processing and refining
In order to increase energy efficiency, BAT is to use an appropriate combination of the techniques specified in BAT 6 and to generate an auxiliary vacuum.</td><td>CC</td><td>The operator has provided information to support compliance with BATc 30. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BATc 30.
The Operator declared that it is using an auxiliary vacuum generated by pumps and steam injectors for the purpose of oil drying, oil degreasing and minimisation of oil oxidation.</td></tr>
<tr><td>31</td><td>In order to reduce channelled dust emissions to air, BAT is to use one or a combination of the techniques given below.
<table>
<tr><th colspan="2">Technique</th><th>Description</th><th>Applicability</th></tr>
<tr><td>(a)</td><td>Bag filter</td><td rowspan="3">See Section 14.2</td><td>May not be applicable to the abatement of sticky dust.</td></tr>
<tr><td>(b)</td><td>Cyclone</td><td>Generally applicable.</td></tr>
<tr><td>(c)</td><td>Wet scrubber</td><td></td></tr>
</table></td><td>NA</td><td>We are satisfied that BATc 31 is not applicable to this installation.
This BATc is concerned with air emissions from dust generating processes and this site does not emit any such gases. The site does not have extraction facilities, and there is no handling and preparation of seeds, or drying and cooling of meal.</td></tr>
</table>

<table>
<tr><th>BATC No.</th><th>Summary of BAT Conclusion requirement for Food, Drink and Milk Industries</th><th>Status NA/ CC / FC / NC</th><th>Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement</th></tr>
<tr><td>AEL</td><td>BAT-associated emission level (BAT-AEL) for channelled dust emissions to air from handling and preparation of seeds as well as drying and cooling of meal.
<table><tr><td>Parameter</td><td>Unit</td><td colspan="2">BAT-AEL (average over the sampling period)</td></tr><tr><td>Dust</td><td>mg/Nm^3</td><td>New plants</td><td>Existing plants</td></tr><tr><td></td><td></td><td><2-5 (1)</td><td><2-10 (1)</td></tr><tr><td colspan="4">(1) The upper end of the range is 20 mg/Nm^3 for drying and cooling of meal.</td></tr></table></td><td>NA</td><td>We are satisfied that BAT-AEL is not applicable to this installation.
The site does not have dust emissions associated with dust generating processes. The installation does not have extracting facilities, and there is no handling and preparation of seeds, or drying and cooling of meal.</td></tr>
<tr><td>32</td><td>In order to reduce the hexane losses from oilseed processing and refining, BAT is to use all of the techniques given below:
<table><tr><th colspan="2">Technique</th><th>Description</th></tr><tr><td>(a)</td><td>Countercurrent flow of meal and steam in the desolventiser-toaster</td><td>Hexane is removed from the hexane-laden meal in a desolventiser-toaster, involving a countercurrent flow of steam and meal.</td></tr><tr><td>(b)</td><td>Evaporation from the oil/hexane mixture</td><td>Hexane is removed from the oil/hexane mixture using evaporators. The vapours from the desolventiser-toaster (steam/hexane mixture) are used to provide thermal energy in the first stage of the evaporation.</td></tr><tr><td>(c)</td><td>Condensation in combination with a mineral oil wet scrubber</td><td>Hexane vapours are cooled to below their dew point so that they condense. Uncondensed hexane is absorbed in a scrubber using mineral oil as a scrubbing liquid for subsequent recovery.</td></tr><tr><td>(d)</td><td>Gravitational phase separation in combination with distillation</td><td>Undissolved hexane is separated from the aqueous phase by means of a gravitational phase separator. Any residual hexane is distilled off by heating the aqueous phase to approximately 80-95 °C.</td></tr></table></td><td>NA</td><td>We are satisfied that BATc 32 is not applicable to this installation.

This installation processes already produced oils and hexane is not used as oilseed crushing is not a technique employed or needed. As such, BATc 32 which is concerned with hexane loss, is not applicable to this installation.</td></tr>
<tr><td>AELs</td><td>BAT-associated emission levels (BAT-AELs) for hexane losses from oilseed processing and refining:
<table><tr><th>Parameter</th><th>Type of seeds or beans processed</th><th>Unit</th><th>BAT-AEL (yearly average)</th></tr><tr><td rowspan="2">Hexane losses</td><td>Soybeans</td><td rowspan="2">kg/tonne of seeds or beans processed</td><td>0,3-0,55</td></tr><tr><td>Rapeseeds and sunflower seeds</td><td>0,2-0,7</td></tr></table></td><td>NA</td><td>We are satisfied that the BAT-AEPL is not applicable to this installation.
This BAT-AEPL is only applicable to installations using hexane for the extraction of edible oils and this site only processes oils that have been already extracted therefore, the BAT- AEPLs are not applicable.</td></tr>
</table>

<table>
<tr><th>BATC No.</th><th>Summary of BAT Conclusion requirement for Food, Drink and Milk Industries</th><th>Status NA/ CC / FC / NC</th><th>Assessment of the installation capability and any alternative techniques proposed by the operator to demonstrate compliance with the BAT Conclusion requirement</th></tr>
<tr><td colspan="2">Oilseed processing & vegetable oil refining sector Environmental Performance Levels</td><td></td><td></td></tr>
<tr><td>EPL</td><td>Environmental Performance Level – Energy consumption<table><tr><th>Specific process</th><th>Unit</th><th>Specific energy consumption (yearly average)</th></tr><tr><td>Integrated crushing and refining of rapeseeds and/or sunflower seeds</td><td rowspan="3">MWh/tonne of oil produced</td><td>0,45-1,05</td></tr><tr><td>Integrated crushing and refining of soybeans</td><td>0,65-1,65</td></tr><tr><td>Stand-alone refining</td><td>0,1-0,45</td></tr></table></td><td>CC</td><td>The operator has provided information to support compliance with BAT EPL for energy consumption. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BAT EPL.
The Operator declared an energy consumption recorded in 2021 of 0.43 MWh/t of oil refined, which is within the rage of 0.1 – 0.45 MWh per tonne range applicable for stand-alone refining installations.</td></tr>
<tr><td>EPL</td><td>Environmental Performance Level – Specific waste water discharge<table><tr><th>Specific process</th><th>Unit</th><th>Specific waste water discharge (yearly average)</th></tr><tr><td>Integrated crushing and refining of rapeseeds and/or sunflower seeds</td><td rowspan="3">m^3/tonne of oil produced</td><td>0,15-0,75</td></tr><tr><td>Integrated crushing and refining of soybeans</td><td>0,8-1,9</td></tr><tr><td>Stand-alone refining</td><td>0,15-0,9</td></tr></table></td><td>CC</td><td>The operator has provided information to support compliance with BAT EPL for wastewater discharge. We have assessed the information provided and we are satisfied that the operator has demonstrated compliance with BAT EPL.
The Operator recorded a wastewater discharge volume in 2021 of 0.5 m^3/t of oil refined, which is within the rage of 0.15 – 1.9 m^3 per tonne range applicable for stand-alone refining installations.</td></tr>
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Annex 2: Review and assessment of changes that are not part of the BAT Conclusions derived permit review

Updating permit during permit review consolidation

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

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

Production Threshold

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

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

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

Emissions to Air

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

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

Implementing the requirements of the Medium Combustion Plant Directive

Existing Medium Combustion Plant (1MW-50MW)

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

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

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

Combined heat and power (CHP)

1. Rated thermal input (MW) of the medium combustion plant.	19.5 MWth
2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant).	Wartsila engine – 19.5 MWth
3. Type and share of fuels used according to the fuel categories laid down in Annex II.	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.	March 2014

Boilers

1. Rated thermal input (MW) of the medium combustion plant.	39.7 MWth
2. Type of the medium combustion plant (diesel engine, gas turbine, dual fuel engine, other engine or other medium combustion plant).	Waste Heat Recovery Boiler – 17.5MWth Standby Boiler – 17.6 MWth Lurgi Boiler 1 – 2.3 MWth Lurgi Boiler 2 – 2.3 MWth
3. Type and share of fuels used according to the fuel categories laid down in Annex II.	All boilers use 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.	Waste heat Boiler – March 2014 Standby Boiler – 2014 Lurgi Boiler 1 – August 1991 Lurgi Boiler 2 – August 1991

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

For existing medium combustion plant with a rated thermal input greater than 5 MW, Wartsila engine, Waste Heat Recovery Boiler, and Standby Boiler, 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 existing MCP with a rated thermal input of less than or equal to 5 MW, Lurgi boilers 1 and 2, the emission limit values set out in tables 1 and 3 of Part 1 of Annex II MCPD shall apply from 1 January 2030.

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

Note: There is a discrepancy between MCPs capacity shown in the permit variation V003, the Reg.61 Response, and this decision document that was explained by the Operator, during the online meeting that has taken place on 20/11/2023, as being errors in reporting the correct capacities. The Operator described the above MCPs and clarified that the 'shell boiler' shown in V003 is, in fact, the Standby Boiler which is operated for more than 500h per year. However, its input was not shown in that variation, and we have rectified the situation during this review. In addition, the Operator confirmed that capacities shown above reflect the correct input which is reflected also in the 'Greenhouse gas emissions permit' issued on 07/06/2023, number UK-E-IN-13008.

This MCPs arrangement and aggregated input does not meet the requirements to classify it as a Large Combustion Plant (LCP) because the Standby boiler is a supplementary firing apparatus not operated in parallel with the CHP and WHRB but operated only in case of emergency or breakdown.

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 provided a revised risk assessment using the Environment Agency's H1 software tool for the following emissions – S1.

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

Soil & groundwater risk assessment (baseline report)

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

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

The Operator submitted a site condition report [original site condition report and supporting in formation was submitted as a single PDF of 115MB; the file was too big to be saved to EDRM at the time of application received 30/03/2005] at the time of permitting [permit determined on 12/01/2006]. The Operator has also submitted a Final Report – Phase 2 Contamination Assessment, dated 14/06/2004, as part of the Re.61 Response Tool. 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 confirmed there has been no change in the hazardous substances used, their capability of causing pollution and/or the pollution prevention measures at the installation. In addition, the Operator has provided a risk assessment as part of the Reg.61 Response, which has not identified any RHS stored or used on site. Consequently, we are satisfied there has been no change to the assessment of risk for hazardous substances.

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 prolonged dry weather/ drought, which we consider to be a severe weather event. The Operator declared, at the time of submitting the Reg.61 Response Tool on 28/10/2022, that a CCA plan was in the early stages of development.

We have included an improvement condition into the permit (IC14) to request a climate change adaptation plan is submitted by the operator for approval from the Environment Agency.

Containment

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

The Operator provided details of all tanks;

- Tank reference/name
- Contents
- Capacity (litres)
- Location
- Construction material(s) of each tank
- The bunding specification including
    - Whether the tank is bunded

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

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.

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 submit, in writing for approval by the environment Agency, a Site closure plan in accordance with guidance set out in Section 2.11 of Sector Guidance Note S6.10.
IC2	The operator shall undertake an assessment of the performance of the abatement system of the deodorisation plant against the indicative BAT method given in the IPPC Draft Reference Document on Best Available Techniques in the Food, Drink and Milk Industries. This being to "deodorise vegetable oil using a double scrubber system in combination with a once through cooling system." The operator shall submit their findings to the Environment Agency in a written report.
IC3	The operator shall submit to the Environment Agency an Environmental Impact Assessment of emissions to air , using the Environment Agency H1 tool or an appropriate alternative, from the following emissions points : A1- A3, A6, A7, A13 and A15-17.
IC4	The operator shall undertake a review of all of the sites drum and IBC storage areas against the indicative BAT standards set out in Section 2.2.5, point 6 of the Environment Agency's Guidance Note IPPC S6.10, August 2003. A written report, including a timetable for any improvements required, shall be submitted for approval by Environment Agency.
IC5	The operator shall undertake a review of all of the sites waste storage and handling areas against the indicative BAT standards set out in Section 2.5, of the Environment Agency's Guidance Note IPPC S6.10, August 2003. A written report, including a timetable for any improvements required, shall be submitted for approval by the Environment Agency.
IC6	The operator shall ensure that only "mercury free Sodium Hydroxide" is used or shall submit, in writing for approval by the Environment Agency, a justification as to why its use does not represent BAT for the installation.
IC7	The operator shall investigate and appraise options for minimising the potential for fugitive emissions to surface and ground water from all subsurface structures. The appraisal shall take into consideration the requirements of Section 2.2.5 of the Environment Agency's Sector Guidance Note IPPC S6.10, August 2003. A written report shall be submitted to the Environment Agency with a timetable for any proposed measures or improvements for approval by the Agency.
IC8	The operator shall submit, in writing, proposals for a programme of monitoring of the release to the Thames at W1 for the following

	determinants: Biochemical Oxygen Demand; oil & grease; and temperature. The monitoring proposals must have regard to the indicative BAT standards set out in Section 2.10.1 of Environment Agency Sector Guidance Note IPPC S6.10 and use appropriate methods (MCERTS where available) as detailed in Environment Agency Technical Guidance Note M18. The submission shall include a timetable for the instigation of the monitoring programme for approval by the Environment Agency.
IC9	The operator shall review their risk assessment with respect to the operation of the Jetty with reference to relevant guidance including 'The bulk transfer of Dangerous Liquids and Gases Between Ship and Shore': ISBN 0 7176 16444. Guidance issued by the Health and safety Executive. The conclusions of this review, together with a timetable for any proposed improvements, shall be submitted in writing for approval by the Environment Agency.
IC10	The operator shall undertake a risk assessment of the surfacing and containment of all operational areas of the site, onto which spillage of potentially polluting liquids is possible. The assessment will take into account the requirements set out for 'surfacing' in section 2.2.5 of the Environment Agency's Guidance Note IPPC S6.10, August 2003. A written report, including a timetable for any improvements required, shall be submitted to the Environment Agency for approval.
IC11	The operator shall submit in writing to the Environment Agency an assessment of the potential for fugitive emissions of dust to air from emission points A3a-d. The report shall include a proposed timetable for any improvements identified as BAT, for approval by the Agency.
IC12	The operator shall review the provision of MCERTS accreditation for monitoring equipment, personnel and organisations employed for the emissions monitoring programme 2.10.1 and propose a timetable for achieving this standard for any elements that are not MCERTS certified.

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**
IC13	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:	One month from permit issue.

	• 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.	
IC14	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: • 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 of other date as agreed in writing with the Environment Agency