

## Permitting Decisions- Variation

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We have decided to grant the variation for Becton Soft Drinks Factory operated by Britvic Soft Drinks Limited.

The variation number is EPR/BN2832IK/V005.

The variation is for

- Recommissioning of production lines 1 and 2 and commissioning and operation of a new production line (Line 6) and associated ancillary equipment.
- Operation of two existing gas fired boilers in duty mode during peak demand.
- Addition of a further HCL tank to aid balancing of process effluent pH.
- Volumatic increase in process effluent discharge to sewer from 903m<sup>3</sup>/day to 1800m<sup>3</sup>/day

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

### Purpose of this document

This decision document provides a record of the decision-making process. It

- highlights [key issues](#) in the determination
- Summarises the decision making process in the [decision considerations](#) section to show how the main relevant factors have been taken into account
- shows how we have considered the [consultation responses](#)

Unless the decision document specifies otherwise, we have accepted the applicant's proposals.

Read the permitting decisions in conjunction with the environmental permit and the variation notice.

# Key issues of the decision

## Indirect point source emissions to water:

There are no point source emissions of process waters directly to controlled waters.

The operator has applied for an updated trade effluent consent agreement for increased discharges to sewer (Thames Water Utilities Limited) subject to this variation. The Operator has confirmed that the conditions of the trade effluent discharge consent including volumetric increase in effluent will remain within the limits of their trade effluent consent.

The proposed variation increases the volumetric flow of waste waters through the effluent treatment plant (ETP) by ~900m<sup>3</sup> (Maximum) per day and therefore the loadings or concentrations of hazardous chemicals and elements (where identified) may also increase.

As part of a request for further information on the 23 August 2022 the applicant was requested to confirm that the parameters used within the H1 risk assessment tool, supplied as part of the application were complete and representative of the pollutants liable to be present in the process effluent, having regard for any substances in the raw materials inventory provided (Beckton Bulk Raw Materials Inventory), in particular any cleaning chemicals which may enter the effluent.

The applicant responded via way of e-mail on the 22<sup>nd</sup> of September 2022 and confirmed that the determinants listed on the Waste Water Inventory of the H1 risk assessment were characteristic and representative of all materials used at the Beckton production plant and that all waste water samples have been correctly screened for appropriate determinants and there are no omitted parameters that would be significant.

The sites effluent treatment plant discharges to Thames Water Utilities Limited foul sewer for further treatment by Crossness Sewage Treatment Works before final fate discharge into the tidal river Thames. We have reviewed the H1 risk assessment and all determinants for indirect emissions to surface waters provided by the applicant.

The operator's risk assessment was unsatisfactory and required additional Environment Agency assessment to make up the shortfall as the operator had failed to use appropriate sewage treatment reduction factors STRF and had chosen the wrong category for receiving waters.

The assessment shows that, applying the conservative criteria in our guidance on Environmental Risk Assessment, the relatively low effluent volume being discharged, dilution provided by the STW and the high river flow volumes (Tidal) at final fate discharge point, discharges of treated process waters from the facility are unlikely to negatively impact the receiving water body.

The site has a varied trade discharge consent issued by Thames Water Utilities Ltd on 15<sup>th</sup> January 2023 (Ref: TBEC0YU5) that comprehensively covers the proposed increase in volumetric flows.

### **Point source emissions to Air:**

The Applicant has assessed the Installation's potential emissions to air against the relevant air quality standards, and the potential impact upon local conservation and habitat sites and human health. These assessments predict the potential effects on local air quality from the Installation's stack emissions using the ADMS Version 5.2 dispersion model, which is a commonly used computer model for regulatory dispersion modelling. The applicant used ADMS 5.2 (Version 5.2.2.0), and meteorological data observed at London City Airport meteorological station for the years 2017 to 2021, which is located approximately 2 km Southwest of the site. We expect data observed at this station is likely to be representative of local meteorological conditions.

Current permitted limits for both boilers are 113mg/m<sup>3</sup>, MCPD limits for existing plant is 200mg/m<sup>3</sup> (to be compliant by 1st Jan 2024) The applicant was instructed to ensure ADMS modelling was undertaken at or below those currently permitted in accordance with BAT. Monitoring has shown that these limits are readily achievable, and we would not wish to see an increase in these levels.

The Applicant has assessed emissions of nitrogen oxides (NO<sub>x</sub>) from these sources against their relevant short term and long term Environmental Standards (ES) for human health receptors, as well as emissions of NO<sub>x</sub>, Nitrogen deposition and acid deposition against their relevant critical loads and levels for ecological receptors.

For the existing natural gas fuelled boilers the applicant used a lower NO<sub>x</sub> ELV (113mg/Nm<sup>3</sup>) than that specified in the Medium Combustion Plant Directive (MCPD) of 200mg/Nm<sup>3</sup> (at 3 % O<sub>2</sub> dry) for existing medium combustion plants other than engines and gas turbines >5MW. In addition it is noted that the most recent monitoring measurements show that these boilers are operating at less than half of the emission limit. The modelling provided has assumed that the boilers operate continuously although the site is normally not operating from Saturday afternoon until Monday.

Human Health:

The Applicant's modelling predictions for Human Health impacts are summarised in Table 1.

The Applicant's modelling predicted peak ground level exposure to pollutants in ambient air and at discreet receptors. Table 1 shows the applicants maximum predicted ground level concentrations at the most impacted receptor.

Whilst we have used the Applicant's modelling predictions in the table below, we have made our own verification calculation of the percentage process contribution and predicted environmental concentration. These are the numbers shown in the tables below and so may be very slightly different to those shown in the Application. Any such minor discrepancies do not materially impact on our conclusions.

Table 1

Pollutant	EQS / EAL		Back-ground	Process Contribution (PC)		Predicted Environmental Concentration (PEC)	
	$\mu\text{g}/\text{m}^3$			$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	% of EAL	$\mu\text{g}/\text{m}^3$
NO <sub>2</sub>	40	1	22.3	0.6	1.5	22.9	57.2
	200	2	44.6	5.6	2.8	50.2	25.1

1 Annual Mean

2 99.79th %ile of 1-hour means

(i) Screening out emissions which are insignificant

Table 1 shows that NO<sub>2</sub> emissions cannot be screened out as insignificant in that the long term process contribution is >1% of the long term ES.

(ii) Emissions unlikely to give rise to significant pollution

NO<sub>2</sub> emissions (which were not screened out as insignificant) have been assessed as being unlikely to give rise to significant pollution in that the predicted environmental concentration is less than 100% (taking expected modelling uncertainties into account) of both the long term and short term ES.

### Consideration of Key pollutants

(i) Nitrogen dioxide (NO<sub>2</sub>)

The impact on air quality from NO<sub>2</sub> emissions has been assessed against the EQS of 40ug/m<sup>3</sup> as a long term annual average and a short term hourly average of 200ug/m<sup>3</sup>. The model assumes a 70% NO<sub>x</sub> to NO<sub>2</sub> conversion for the long term and 35% for the short term assessment in line with Environment Agency guidance on the use of air dispersion modelling.

Table 1 shows that the peak long term PC is greater than 1% at 1.5% of the EQS and therefore cannot be screened out as insignificant. Even so, from the table above, the emission is not expected to result in the EQS being exceeded. The peak short term PC is less than 10% at 2.8% of the EQS and so can be screened out as insignificant and is not expected to result in the EQS being exceeded.

### Habitats:

The Applicant has presented their predictions at ecological receptors in section Table 5.2.1 and section 5.22 of the air quality assessment for annual mean NO<sub>x</sub>, 24-hour mean NO<sub>x</sub>, nutrient nitrogen deposition and acid deposition. They present their predictions at the Epping Forest SAC and East Ham Nature Reserve. They predict the following:

- Insignificant PCs compared to the annual NO<sub>x</sub> critical level; 1% of the critical level at both sites (0.28% at East Ham Nature Reserve).
- Insignificant PCs compared to the 24-hour NO<sub>x</sub> of 75µg/m<sup>3</sup> ; PCs from the site of up to 1.1% of the hourly standard.
- Insignificant nitrogen deposition rates compared to the critical load (0.24% at East Ham Nature Reserve).
- Insignificant acid deposition rate at Epping Forest SAC compared to the critical load (0.02%)

The consultant did not make predictions at other local conservation sites. We identified a further 14 local wildlife sites within 2km of the site. We have checked the environmental risk of these omissions by conservatively predicting the grid maximum for both annual and daily predicted NO<sub>x</sub> PCs. At ecological sites we find that:

- At Epping Forest SAC, we agree PCs are likely to be insignificant at less than 1% of relevant NO<sub>x</sub> critical levels, nutrient nitrogen and acid critical loads. Note background concentrations and deposition are likely to be already exceeded.

- As a maximum prediction anywhere on the modelling grid (including East Ham Nature Reserve), PCs are likely to be well below the assessment criterion of 100% any critical level or critical load. As this is an extremely precautionary prediction anywhere in the vicinity of the plant, we did not request the applicant to make predictions at other local sites they did not initially assess.

For the above emissions to air, for those emissions that do not screen out as insignificant, we have carefully scrutinised the Applicant's proposals to ensure that they are applying the BAT to prevent and minimise emissions of these substances. We consider the Applicant's proposals for preventing and minimising emissions to be BAT for the Installation.

The way in which the Applicant used dispersion models, its selection of input data, use of background data and the assumptions it made have been reviewed and audited by the Environment Agency's Air Quality Modelling and Assessment Unit (AQMAU) to establish the robustness of the Applicant's air impact assessment. The output from the model has then been used to inform further assessment of health impacts and impact on habitats and conservation sites.

The Applicant has stated that impacts will not be significant. As part of our detailed audit of the Applicant's modelling assessment, we agree with the Applicant's conclusions in this respect taking modelling uncertainties into account.

The Environment Agency considers that the facility is unlikely to contribute significantly to any exceedances of either the long-term or short-term background environmental standards for human health (NO<sub>2</sub>) and that the proposed plant operation is unlikely to contribute significantly to any exceedances of the NO<sub>x</sub> critical levels (Cle) or nutrient nitrogen and acid critical loads for habitats and conservation sites.

## **Decision considerations**

### **Confidential information**

A claim for commercial or industrial confidentiality has not been made.

The decision was taken in accordance with our guidance on confidentiality.

### **Identifying confidential information**

We have not identified information provided as part of the application that we consider to be confidential.

The decision was taken in accordance with our guidance on confidentiality.

## Consultation

The consultation requirements were identified in accordance with the Environmental Permitting (England and Wales) Regulations (2016) and our public participation statement.

The comments and our responses are summarised in the [consultation responses](#) section.

The application was publicised on the GOV.UK website.

We consulted the following organisations:

- DPH (Director of Public Health)
- UKHSA (UK Health Security Agency)
- FSA (Food Standards Agency)
- Director of Public Health (London Borough of Newham)
- HSE (health and Safety Executive)
- SA (Sewage Authority Thames Water)

The comments and our responses are summarised in the [consultation responses](#) section.

## The regulated facility

The operator has provided the grid reference for the emission points from the medium combustion plants.

The extent of the facility is defined in the site plan and in the permit. The activities are defined in table S1.1 of the permit.

## The site

The operator has provided a plan which we consider to be satisfactory.

These show the extent of the site of the facility including the discharge points.

The plans show the location of the part of the installation to which this permit applies on that site.

The plan is included in the permit.

## Site condition report

The operator has provided a description of the condition of the site for the additional area of land (Land Reclaimed for future use, Ref: HYG1141 R 230246)

which we consider is satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under the Industrial Emissions Directive.

## **Nature conservation, landscape, heritage and protected species and habitat designations**

We have checked the location of the application to assess if it is within the screening distances we consider relevant for impacts on nature conservation, landscape, heritage and protected species and habitat designations. The application is within our screening distances for these designations.

Name: Epping Forest (SAC) 7366m Radial

Name: Epping Forest (SAC) 8294m Radial

Name: Royal Victoria Gardens (Local Wildlife Site) 1933m Radial

Name: Royal Docks (Local Wildlife Site) 1277m Radial

Name: River Thames and tidal tributaries (Local Wildlife Site) 1082m Radial

Name: Barking Abbey Ruins and St Margaret's Churchyard (Local Wildlife Site) 1781m Radial

Name: Gascoigne Road Pumping Station Rough (Local Wildlife Site) 1308m Radial

Name: Mayes Brook and associated watercourses (Local Wildlife Site) 1413m Radial

Name: River Roding in Barking (Local Wildlife Site) 1762m Radial

Name: Land between Langdon School and the A406 (Local Wildlife Site) 1217m Radial

Name: Cuckold's Haven Nature Reserve (Local Wildlife Site) 1156m Radial

Name: Beckton District Park and Newham City Farm (Local Wildlife Site) 892m Radial

Name: Beckton Alps (Local Wildlife Site) 638m Radial

Name: Central Park (Local Wildlife Site) 1562m Radial

Name: East Ham Nature Reserve (Local Wildlife Site) 799m Radial

Name: Beckton Meadows South (Local Wildlife Site) 170m Radial



Name: Beckton Sewage Treatment Works (Local Wildlife Site) 793m Radial (northern settling lagoon)

Name: The Greenway and Old Ford (Local Wildlife Site) 90m Radial Nature Reserve

Name: The Old Orchard Site (Local Wildlife Site) 1916m Radial

We have assessed the application and its potential to affect sites of nature conservation, landscape, heritage and protected species and habitat designations identified in the nature conservation screening report as part of the permitting process.

We consider that the application will not affect any site of nature conservation, landscape and heritage, and/or protected species or habitats identified.

We have not consulted Natural England.

The decision was taken in accordance with our guidance.

## **Environmental risk**

We have reviewed the operator's assessment of the environmental risk from the facility.

The operator's risk assessment is satisfactory.

### Indirect point source emissions to water:

Please see [key issues](#) section.

### Point source emissions to Air:

The ADMS modelling parameters within the application have been verified by AQMAU. This is in order to be satisfied that there is no significant negative impacts from the emissions to air from variation proposal. Therefore we are satisfied that there is unlikely to be a breach of an air quality objective attributed to the emissions from the operation of the two existing gas fired boilers operating simultaneously.

The Environment Agency considers that the facility is unlikely to contribute to exceedances of the EQSs for human health and habitats.

Please see [key issues](#) section.

### Accident risks:

An Accident Management Plan is present on site and will form a key part of both the EMS and the Site Emergency Plan which includes but not limited to emergency procedures for all environmental scenarios including minor and major spillages,

fire, flood, gaseous releases, failure of effluent treatment plant and contingency planning in case of loss of utilities.

The operator's risk assessment is satisfactory.

### Noise and Odour

The Application contained a noise impact assessment (ENE-5068) which identified local noise-sensitive receptors, potential sources of noise at the proposed Installation and noise attenuation measures. Measurements were taken of the prevailing ambient noise levels to produce a baseline noise survey and an assessment was carried out in accordance with BS 4142:2014 to compare noise levels with the established background levels.

The assessment concluded that during night time periods, the operation of the proposed Installation at the predicted noise levels would be unlikely to cause complaints at any of the assessment locations as the change in noise impact at the sensitive receptors was assessed as being below marginal significance in line with BS4142.

Current production activities do not give rise to noise or vibration impacts or complaint. The variation proposals that are being made are similar to existing sources and therefore will be similar in character to the existing soundscape at localised receptors. There is a low potential for environmental impact due to the changes. Noise pollution has not been reported or substantiated at the location and therefore there has been no requirement for a NMP to be produced.

Based upon the information in the Application, we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise noise and vibration and to prevent pollution from noise and vibration outside the site.

The proposed changes will not introduce new sources of odorous emissions or affect current production operations, which do not give rise to odour effects at off-site receptors. There is a low potential for environmental impact due to the changes.

## **Operating techniques**

We have reviewed the techniques proposed by the operator and compared these with the relevant technical guidance and we consider them to represent appropriate techniques for the facility.

The Applicant has provided a full and comprehensive review of operating techniques in accordance with the latest Food, Drink and Milk Industries BAT reference document and associated BAT conclusions document (12.2019) under Directive 2010/75/EU.

The new processing equipment, including pasteurisers and steam generators have all been designed to reduce energy and water consumption and operate as efficiently as possible, incorporating best practise features. Process control systems are used throughout the plant to ensure efficiency is monitored. Monitored consumption data is used to form energy targets for the following year, with an 'Energy Ratio' target assigned to each period based on projected production volumes.

The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.

## **Operating techniques for emissions that do not screen out as insignificant**

Emissions of Nitrogen dioxide (NO<sub>2</sub>) cannot be screened out as insignificant, this has been discussed in the key issues and Environmental risks sections of this document. We have assessed whether the proposed techniques are BAT.

The proposed emission levels for emissions that do not screen out as insignificant are in line with the techniques and benchmark levels contained in the technical guidance and we consider them to represent appropriate techniques for the facility.

- Existing boilers A1 and A1.1 already have lower NO<sub>x</sub> emission limits than those specified in the Medium Combustion Plant Directive (MCPD).

## **National Air Pollution Control Programme**

We have considered the National Air Pollution Control Programme as required by the National Emissions Ceilings Regulations 2018. By setting emission limit values in line with technical guidance we are minimising emissions to air. This will aid the delivery of national air quality targets. We do not consider that we need to include any additional conditions in this permit.

## **Emission limits**

Emission Limit Values (ELVs) and technical measures based on Best Available Techniques (BAT) have been added for the following substances:

Emissions to air of NO<sub>x</sub> from Combustion plant: Table 2.2.2

For the two existing natural gas fuelled boilers A1 and A1.1 we have included a stricter ELV's than that required by the Medium Combustion Plant Directive in respect of emissions of NO<sub>x</sub>, see [key issues](#) for more details.

## **Monitoring**

We have decided that monitoring should be amended for the following parameters, using the methods detailed and to the frequencies specified:

Emissions to air of NO<sub>x</sub> from combustion plant Table 1.1.1

These monitoring requirements have been imposed in order to comply with the requirements of the Medium Combustion Plant Directive (MCPD).

We made these decisions in accordance with MCP technical guidance.

Based on the information in the application we are satisfied that the operator's techniques, personnel and equipment have either MCERTS certification or MCERTS accreditation as appropriate.

## **Reporting**

We have amended/added reporting in the permit for the following parameters:

Emissions to air:

As the monitoring of point source emissions to air is only required annually reporting is also required annually. Reporting forms have been prepared to facilitate reporting of data in a consistent format. These reporting requirements are deemed sufficient and proportional for the installation.

We made these decisions in accordance with the requirements of the Medium Combustion Plant Directive (MCPD).

## **Management system**

We are not aware of any reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.

The facility has ISO 14001:2015 EMS certification externally audited on a regular basis.

The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.

## **Growth duty**

We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit variation.

Paragraph 1.3 of the guidance says:

“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”

We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.

We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.

## Consultation Responses

The following summarises the responses to consultation with other organisations, our notice on GOV.UK for the public and the way in which we have considered these in the determination process.

### Responses from organisations listed in the consultation section

Response received from **UK Health Security Agency**.

Brief summary of issues raised:

- UKHSA are unable to open the H1 tool and therefore unable to comment whether the operator has assessed the potential emissions (stack emissions) to air against the relevant air quality standards, and the potential impact upon human health.
- It is not clear whether there are to be any changes in the raw materials used (type and tonnage).
- There are discrepancies in the maps submitted.
- The environmental risk assessment from accidents and other abnormal occurrences has not been updated to reflect the proposed changes.
- No adequate justification has been provided to ensure that the treatment capacity is sufficient to accommodate the increase in total daily volume of effluent to be discharged into the sewer.

- It is not clear if there are to be any increases in loads/concentrations of potentially hazardous pollutants and elements being discharged to the effluent treatment plant.

Summary of actions taken:

- The operator has undertaken full advanced dispersion modelling for emissions to air against quality relevant standards and has assessed impacts on human health and protected habitats. The way in which the Applicant used dispersion models, its selection of input data, use of background data and the assumptions it made have been reviewed and audited by the Environment Agency's Air Quality Modelling and Assessment Unit (AQMAU) to establish the robustness of the Applicant's air impact assessment. The output from the model has then been used to inform further assessment of health impacts and impact on habitats and conservation sites.
- Discrepancy's in provided maps have been resolved, the latest plan drawing has been assessed as correct and incorporated in Schedule 5 of the operators permit.
- The applicant has provided a full raw material inventory and confirmed that there are no material changes to raw materials.
- The applicant has confirmed that the H1 risk assessment tool, supplied as part of the application is complete and representative of the pollutants liable to be present in the process effluent, having regard for any substances in the raw materials inventory provided (Beckton Bulk Raw Materials Inventory), in particular any cleaning chemicals which may enter the effluent.
- The applicant has confirmed and demonstrated that the design capacity of the ETP is 1800m<sup>3</sup> day and that treatment capacity is sufficient to accommodate the proposed increase in total daily volume of effluent to be discharged into the sewer. This has been demonstrated by reference to the original Operation & Maintenance Manual written by Envirogen who designed, installed & commissioned the plant.
- The applicant has provided a revised environmental risk assessment from accidents and other abnormal occurrences which has been updated to reflect the proposed changes.