

Permitting decisions

Variation

We have decided to grant the variation for Station Road Site operated by Banham Poultry Limited.

The variation number is EPR/QP3935HF/V005.

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 checklist to show how all 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. The introductory note summarises what the variation covers.

Key issues of the decision

Combining Permits

Banham Poultry operates two linked permits, one for Station Road (EPR/QP3935HF) and a separate permit for Bunns Bank (EPR/QP3435HB). Both sites have effluent treatment plants capable of treating the liquid effluent generated in their Station Road factory. These sites are directly linked through three pipelines that carry untreated and partially treated effluent between the two sites. This variation formally links the two permits, however the direct technical connection has been in existence since 2005.

The operator decided to keep the permits separate to allow for the flexibility of varying the Bunns Bank permit in the near future.

Activity Limits

Activity limits for slaughtering are set at 67.4 million birds per annum on a single production line. The single production line limit for the slaughtering activity has been included as if they have more than one slaughtering line then they would need to vary the permit to add a second Section 6.8 Part A(1)(b) activity. The 67.4 million birds per annum limit is included as this is based upon their proposed maximum production capacity in 2022 and this is what they have assessed their emissions to air, water, odour and noise against.

The limit has been placed upon the Section 6.8 Part A(1)(d)(i) activity, as there are three distinctly separate production processes that are undertaken and are regulated under the activity in EPR. These processes are; seasoning of whole birds, deboning of the thigh and production of mechanically recovered meat. The activity limits in EPR are set at 75 tonnes per day, therefore as there is more than one individual process then the operator would need to apply for a second Section 6.8 Part A(1)(d)(i) activity if they go over the 149 tonnes per day production capacity. They are currently producing 31tonnes per day (tpd) of seasoned poultry products, 36 tpd of thigh meat and 15 tpd of mechanically recovered meat, which totals 82 tpd.

Emission Limits for Station Road Water Discharge

The operator applied to increase their total daily treated effluent discharge from 800 m³/d to 1,100 m³/d. This increase had the potential to negatively impact upon the local watercourse and therefore the Environment Agency carried out water quality modelling using *Monte Carlo* modelling software.

The modelling showed that the emission limits for; temperature, total suspended solids and BOD could remain the same, whilst the emission limits for; ammoniacal nitrogen and phosphorous needed to be reduced. The pH limits were brought in line with the guidance: H1 Annex D2 and were set at a lower limit of 6 and an upper limit of 9. It was deemed that no limits were required for; chloride and iron as at the concentrations that these were being discharged their impact upon the environment would be insignificant. The concentration of 5 mg/l for mineral oil and hydrocarbons was removed from W1 and W2 as this was covered under the 'no visible fats, oils and greases' limit. Arsenic and chromium were removed from Table S3.2 as these substances are not used at the installation and screened out as insignificant at the concentrations discharged.

Mercury, cadmium, lead, copper, nickel and zinc needed further data before emission limits could be set, therefore IC 17 and IC 18 have been included in order to gather this data.

Reporting frequencies remain as in previous permits.

Emissions to Air

In this section insignificance in relation to emissions has the meaning of having a long term Process Contribution (PC) of <1% of the Environmental Assessment Level (EAL) and short term PC of <10% of the EAL, when using the Environment Agency's H1 tool.

The operator has provided an air quality modelling report that assesses the impacts from emissions to air. The report assesses the impacts from a 1.09 MW thermal input biomass boiler, a back-up diesel generator, three gas boilers and the boiler in the office. The modelling has been reported by the applicant as predicted emissions of nitrogen oxides (NO_x), sulphur dioxide (SO₂), carbon monoxide (CO) and particulate matter (PM₁₀) from all the boilers and separately from the back-up diesel generator.

The changes as a result of this variation in relation to emissions to air are as follows:

- The biomass boiler stack height is increased to 12m;
- The boilers (with the exception of the office boiler) are now the main boilers for the site and are not back-up boilers; and
- Back-up power is provided by the emergency diesel generator.

The applicant concludes from the modelling that there will be no impact on off-site receptors from emissions of NO_x, SO₂, CO or PM₁₀. In addition, the applicant has modelled the impact of nitrogen and acid deposition on sensitive conservation sites and has concluded that the emissions are insignificant. The applicant modelled the emissions from the diesel generator on the basis that the generator will be operational 100% of the time. As a result, the modelling predicts a number of exceedances of the environmental standard at off-site receptors.

We have carried out check modelling of the applicant's proposals, as follows:

- We have modelled predicted emissions from the biomass boiler only as this is added as a result of the variation application; and
- We have modelled for the existing plant but disregarded the emissions from the office boiler as this is not used for the operation of the permitted activity, is not regulated as part of the permit and the emissions will be so low as to not make a contribution to the overall impact.

Modelling for the biomass boiler emissions predicts that all the emissions are insignificant with the exception of that for long term NO_x where emissions are predicted to be not insignificant. We consider that there is sufficient head room between the emission concentration and the environmental standard to conclude that it is unlikely that the environmental standard will be exceeded.

For existing plant, including the emergency diesel generator, we agree with the applicant's conclusions that some of the predicted concentrations at receptors are high. However, these are primarily as a result of emissions from the emergency diesel generator. We have assessed the probability of exceedance of the short term NO_x environmental standard and concluded that this is unlikely. This is because the modelling has assumed that the generator will operate for 100% of the time (it is likely that it will operator for no more than 50 hours per year), the conversion rate of NO_x to nitrogen dioxide (NO₂) is assumed as 100% which is overly conservative and results in high predicted process concentrations and we have evaluated the probability of exceedances of the environmental standard and conclude that these are unlikely.

On the basis of the modelling provided by the applicant and based on our check modelling we agree with the applicant's conclusion that emissions from the biomass boiler, the gas boilers and the diesel generator will not have an impact on any off-site receptors.

Effluent Treatment Plant

The proposed biological treatment plant, which will replace the current physicochemical treatment plant is based upon Integrated Fixed Film Activated Sludge. The ancillary equipment includes; a balance tank for the incoming process effluent, sludge holding tank, anoxic tank, lamella clarifiers, dissolved air flotation tank, inlet screens and chemical storage tanks. A number of the tanks will be abated through the existing odour treatment system.

The new effluent treatment plant has not yet been constructed and the plans are currently being revised, therefore a pre-operational condition has been included to provide this information. A BAT assessment against other treatment technologies was not supplied, therefore this was also requested through the pre-operational condition.

The plans submitted with the application did not include a bund for the effluent treatment plant, however the operator clarified that there will be a bund of at least 110% of the largest tank, or 25% of all of the tanks, whichever is the larger, which will cover all of the tanks within the effluent treatment plant.

Refrigeration

The operator's refrigeration systems previously used CFCs and when they were banned the operator converted their refrigeration systems to use HCFCs, which was subsequently banned in 2015. As a temporary measure the operator replaced the gas with an HFC, however they are now upgrading the entire refrigeration system to run using ammonia. There will be two systems used; one system uses compression/expansion of ammonia to cool, whilst the second system uses ammonia and glycol, which is powered by the new biomass boiler. These new systems have the performance of the CFC and HCFC gases, however their impact of the environment is far less than those gases.

BAT

A BAT assessment was undertaken against the Environment Agency guidance: How to Comply – Treating and Processing Poultry (EPR 6.11), which showed that all indicative BAT points are being complied with, except indicative BAT point 2 in section 1.3.

Irrigation pipes are used instead of nozzles during the defeathering stage, however as the water is captured in the feather flume and cycled through the process then there is not anticipated to be any higher water usage than if nozzles were used for defeathering.

Odour Management

Blood and offal storage are the two areas that are most likely to generate malodorous aromas in a poultry abattoir. The operator has minimised the risk of odour from the offal storage area by reducing the amount of offal disposed of as waste, instead freezing prior to dispatch as a saleable product. This means that although there is an increase in throughput the actual amount of waste offal produced has been reduced. The odour abatement on the offal storage has not changed, therefore there should not be an increase in odour from this source. The blood tank has a capacity of 48 m³ and the daily maximum production, when processing 1,000,000 birds per week, is 20 m³, therefore the blood tanks have a 2.5 day fill capacity. The blood is treated with sodium meta-sulphite to increase the lifespan of the blood. As there is no increase in the number of blood tanks, the blood is treated to reduce odour and the tank headspace is vented through a sodium hypochlorite scrubber, then it is unlikely that the increase in production will lead to any increase in malodour from the blood.

The operator showed that the odour units was within those previously modelled and therefore this increase in production capacity is unlikely to cause any further impact on receptors.

To further reduce the risk an annual olfactory analysis of the sites abatement systems is conducted. The latest olfactory analysis was conducted in December 2017 and indicated that the abatement systems were working satisfactorily and had capacity to process more malodorous air.

Noise

There is expected to be minimal or no increase in noise at the installation for the following reasons:

- No new air extraction systems will be installed.
- There will be no increase in the use of existing air extraction systems.
- The new biomass boiler is located centrally on the site, with no direct line of sight to the adjacent properties. The building (dispatch) in between the biomass boiler and the residential properties will provide a substantial level of noise screening. Additionally the dispatch building will be extended so no sound will be able to be deflected around the side.
- Although the number of deliveries and product collections will increase noise associated with this will be reduced as the dispatch extension will provide a solid barrier between the residential properties and the delivery/despatch area.

Improvement & Pre-Operational Conditions

IC 14 has been included in order for the operator to demonstrate that their storage of diesel for use in the onsite diesel back-up generator is in line with the Oil Storage Regulations for Business. This is required in order to protect the environment from potential leaks from the fuel tank. During determination the operator indicated that the fuel tank that they may use is double skinned, which is not in line with our guidance. The operator is not currently storing diesel for the back-up generator onsite.

An extension of the chimney height by 1m to get a total height of 12m for the biomass boiler was proposed by the applicant in order to ensure that the air dispersion was sufficient in order to conclude that there would be no offsite breaches of Environmental Assessment Levels. This work has been requested to be undertaken in IC 15.

IC 16 has been included in order for the operator to update their Odour Management Plan (OMP) to include the new effluent treatment plant (ETP), once designs for the ETP have been finalised. The OMP also

requires updating to bring it in line with the Environment Agency guidance: H4 Odour Management as the sections that are missing, or need revising are as follows:

- Appendix 1 – Risk Assessment. Table 6 needs to be updated to bring it in line with the new effluent treatment plant. This must include; types of material stored, duration and maximum quantities.
- A section on sensitive receptors is needed, which should include a table with distances and direction from the installation, a windrose showing the predominant wind direction and a map indicating the location of sensitive receptors.

Monitoring of total and dissolved species of metals, pH and dissolved organic carbon are required to be undertaken by the operator every month for a duration of one year, in order to gather 12 samples in total. These samples have been requested to be undertaken in IC 17. This data is to be used in the modelling of the impacts from the discharge upon Buckenham Stream. This has been requested in IC 18, with the modelling to be undertaken by the Environment Agency and permit limits (if necessary) to be set by the Environment Agency. It is likely that many of the emissions of heavy metals from the facility will screen out as insignificant and therefore the requirements for limits and monitoring could be removed from the permit. Many of the metals were previously included as Bunns Bank (linked permit) applied to convert chicken waste into energy, which would of required monitoring of emissions of metals. This variation never happened and therefore the metals in this permit are likely to be a throwback to that variation.

Pre-operational condition 1 (PO 1) has been included in the permit as the construction of the new ETP has been postponed. The operator must submit an assessment of the bunding against the CIRIA 736 guidelines as no bunding for the ETP was proposed in the original application, however in subsequent Schedule 5 Notice responses, the operator confirmed that there would be a bund, however no details were given. The operator also indicated that the ferric sulphate and sodium hydroxide bunds required recoating with a sealant paint as this protective coating had degraded. Additionally the operator is required to submit a full BAT assessment of the chosen effluent treatment technique compared to other possible effluent treatment techniques in order to demonstrate that their chosen technique is the best available. A full BAT assessment against the Environment Agency guidance; How to Comply: Treating and Processing Poultry (EPR 6.11) was undertaken and therefore is not required in addition to the comparative BAT assessment.

Decision checklist

Aspect considered	Decision
Receipt of application	
Confidential information	A claim for commercial or industrial confidentiality has not been made.
Identifying confidential information	We have not identified information provided as part of the application that we consider to be confidential.
Consultation	
Consultation	<p>The consultation requirements were identified in accordance with the Environmental Permitting Regulations and our public participation statement.</p> <p>The application was publicised on the GOV.UK website.</p> <p>We consulted the following organisations:</p> <ul style="list-style-type: none"> • Public Health England • Health and Safety Executive • Food Standards Agency • Local Authority – Planning • Local Authority – Environmental Health <p>The comments and our responses are summarised in the consultation section.</p>
The facility	
The regulated facility	<p>We considered the extent and nature of the facility/facilities at the site in accordance with RGN2 'Understanding the meaning of regulated facility', Appendix 2 of RGN 2 'Defining the scope of the installation', Appendix 1 of RGN 2 'Interpretation of Schedule 1', guidance on waste recovery plans and permits.</p> <p>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.</p>
The site	
Extent of the site of the facility	The operator has provided plans which we consider are satisfactory, showing the extent of the site of the facility. The plan is included in the permit.
Biodiversity, heritage, landscape and nature conservation	<p>The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat.</p> <p>We have assessed the application and its potential to affect all known sites of nature conservation, landscape and heritage and/or protected species or habitats identified in the nature conservation screening report as part of the permitting process.</p>

Aspect considered	Decision
	<p>We consider that the application will not affect any sites of nature conservation, landscape and heritage, and/or protected species or habitats identified for emissions to air.</p> <p>The following emission limits have been placed on the permit to protect the following SAC – Norfolk Valley Fens.</p> <p>We have not consulted Natural England on the application. The decision was taken in accordance with our guidance.</p>
Environmental risk assessment	
Environmental risk	<p>We have reviewed the operator's assessment of the environmental risk from the facility.</p> <p>The operator's risk assessment is satisfactory.</p>
Operating techniques	
General operating techniques	<p>We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility.</p> <p>The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.</p>
Operating techniques for emissions that screen out as insignificant	<p>Emissions to air of; oxides of nitrogen, carbon monoxide and particulates and emissions to water of; chromium, iron, chloride and arsenic have been screened out as insignificant, and so we agree that the applicant's proposed techniques are BAT for the installation.</p> <p>We consider that the emission limits included in the installation permit reflect the BAT for the sector.</p>
Operating techniques for emissions that do not screen out as insignificant	<p>Emissions of; ammoniacal nitrogen, phosphorous, BOD and total suspended solids cannot be screened out as insignificant. We have assessed whether the proposed techniques are BAT.</p> <p>Emissions of; mercury, cadmium, lead, copper, nickel and zinc are still to be assessed through IC 17 and IC 18.</p> <p>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.</p>
Odour management	<p>We have reviewed the odour management plan in accordance with our guidance on odour management.</p> <p>We consider that some areas of the odour management plan need revision, which are listed in the key issues section above. This requirement to update the odour management plan has been included as an improvement condition.</p>

Aspect considered	Decision
Permit conditions	
Updating permit conditions during consolidation	We have updated permit conditions to those in the current generic permit template as part of permit consolidation. The conditions will provide the same level of protection as those in the previous permits.
Pre-operational conditions	Based on the information in the application, we consider that we need to impose pre-operational conditions. See key issues section for further information.
Improvement programme	Based on the information on the application, we consider that we need to impose an improvement programme. See key issues section for further information.
Emission limits	<p>ELVs have been amended and deleted for the following substances.</p> <p><u>ELVs Deleted</u></p> <p>Arsenic, chromium and mineral oil and hydrocarbons from emission point W1. Mineral oil and hydrocarbons from emission point W2.</p> <p><u>ELVs Amended</u></p> <p>Flow, ammoniacal nitrogen, phosphorous and pH for emission point W1.</p> <p><u>ELVs to be Assessed in IC 17 and IC 18</u></p> <p>Mercury, cadmium, lead, copper, nickel and zinc from emission point W1.</p> <p>It is considered that the descriptive and numeric limits listed in Table S3.2 of the permit will prevent significant deterioration of receiving waters. We have imposed these limits because either a relevant environmental quality or operational standard requires this.</p> <p>Emission limits for ammoniacal nitrogen and phosphorous were reduced to 3 mg/l and 1.1 mg/l respectively. These were reduced in order to ensure that the receiving water (Buckenham Stream) would not deteriorate below the moderate class boundary under the Water Framework Directive. These limits were chosen as they showed that there would be no deterioration using <i>Monte Carlo</i> modelling, undertaken by the Environment Agency.</p>
Monitoring	<p>We have decided that monitoring should be deleted for the following parameters:</p> <p>Arsenic, chromium and mineral oil and hydrocarbons from emission point W1. Mineral oil and hydrocarbons from emission point W2.</p> <p>The remainder of the monitoring requirements stay the same.</p>
Reporting	<p>We have deleted reporting in the permit for the following parameters:</p> <p>Arsenic, chromium and mineral oil and hydrocarbons from emission point W1. Mineral oil and hydrocarbons from emission point W2.</p> <p>The remainder of the reporting requirements stay the same.</p>

Aspect considered	Decision
Operator competence	
Management system	There is no known reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.
Growth Duty	
Section 108 Deregulation Act 2015 – Growth duty	<p>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.</p> <p>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.”</p> <p>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.</p> <p>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.</p>

Consultation

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
Public Health England
Brief summary of issues raised
The two issues raised by PHE were the impact of the following upon local receptors: <ol style="list-style-type: none"> 1. Emissions of odour from the slaughtering process. 2. Emissions of nitrogen oxides and particulates from the combustion plant.
Summary of actions taken or show how this has been covered
<ol style="list-style-type: none"> 1. Emissions of odour are within previously modelled values. Emissions of odour are not expected to increase due to this variation and may decrease due to reducing the volume of offal disposed of as waste. Much of the offal is now sold as a product, which requires it to be frozen soon after it has been harvested. The frozen products are considered to be a low risk of generation of malodour. 2. Emissions of nitrogen oxides and particulates from the combustion plant were shown through modelling to not cause any breaches of the Environmental Assessment Levels offsite and therefore should only have a negligible impact upon the local receptors.

Representations from individual members of the public.

Brief summary of issues raised
The two issues raised by a member of the public were: <ol style="list-style-type: none"> 1. Concerns with increased levels of noise from the installation, due to more emission points, a new boiler room and back-up generator. Stated that the installation has previously impacted upon the private housing surrounding the installation. 2. Low water pressure is being experienced in a nearby private dwelling, with concern that the increase in production and water usage may cause this pressure to further reduce.
Summary of actions taken or show how this has been covered
<ol style="list-style-type: none"> 1. The new biomass boiler has been located so as to shield the local receptors to the North of the site from its noise. The boiler is housed within a purpose built structure that will further reduce the levels of noise. The back-up generator is only expected to be used during planned maintenance/testing and during loss of power, which should be minimal as the site has recently upgraded their utilities to increase their resilience. Overall this variation is expected to have a minimal impact upon local receptors. 2. The increased volumes of water the factory requires will be supplied through mains water by Anglian Water, therefore there may be a localised impact upon water pressures. This potential impact due to this permit variation is not regulated by the Environment Agency and any concerns of this nature should be directed to the water company.