

Permitting decisions

Variation

We have decided to grant the variation for Arkstone Court operated by Mr William Watkins.

The variation number is EPR/EP3236ZU/V004

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 summarises the decision making process in the decision checklist to show how all relevant factors have been taken in to account.

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

This variation authorises an increase the broiler numbers from 279,000 to 479,000, extension of the site boundary to accommodate four new poultry houses 7, 8, 9 & 10, new discharge to soakaway and the installation of two additional 995kWth biomass boilers to heat the four new sheds.

Groundwater and soil monitoring

As a result of the requirements of the Industrial Emissions Directive, all permits are now required to contain a condition relating to protection of soil, groundwater and groundwater monitoring. However, the Environment Agency's H5 Guidance states that it is only necessary for the operator to take samples of soil or groundwater and measure levels of contamination where there is evidence that there is, or could be existing contamination and:

- The environmental risk assessment has identified that the same contaminants are a particular hazard; or

- The environmental risk assessment has identified that the same contaminants are a hazard and the risk assessment has identified a possible pathway to land or groundwater.
- H5 Guidance further states that it is not essential for the Operator to take samples of soil or groundwater and measure levels of contamination where:
 - The environmental risk assessment identifies no hazards to land or groundwater; or
 - Where the environmental risk assessment identifies only limited hazards to land and groundwater and there is no reason to believe that there could be historic contamination by those substances that present the hazard; or
 - Where the environmental risk assessment identifies hazards to land and groundwater but there is evidence that there is no historic contamination by those substances that pose the hazard.

The site condition report (SCR) for Arkstone Court (dated 08/08/17) demonstrates that there are no hazards or likely pathway to land or groundwater and no historic contamination on site that may present a hazard from the same contaminants. Therefore, on the basis of the risk assessment presented in the SCR, we accept that they have not provided base line reference data for the soil and groundwater at the site at this stage.

Odour

Intensive farming is by its nature a potentially odorous activity. This is recognised in our 'How to Comply with your Environmental Permit for Intensive Farming' EPR 6.09 guidance (http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/297084/geho0110brsb-e-e.pdf).

Condition 3.3 of the environmental permit reads as follows:

"Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour."

Under section 3.3 of the guidance an Odour Management Plan (OMP) is required to be approved as part of the permitting process, if as is the case here, sensitive receptors (sensitive receptors in this instance excludes properties associated with the farm) are within 400m of the Installation boundary. It is appropriate to require an OMP when such sensitive receptors have been identified within 400m of the installation to prevent, or where that is not practicable, to minimise the risk of pollution from odour emissions.

The risk assessment for the Installation provided with the Application lists key potential risks of odour pollution beyond the Installation boundary.

- Manufacture and selection of compound foods
- Feed Delivery and storage
- Ventilation Techniques
- Litter Conditions and Management
- Carcass storage & disposal
- Management of drinking water systems
- Destocking of houses – thinning and final depletion
- Clean out (Removal of litter from houses & removal from site)
- Wash down and disinfection.
- Dirty Water Management
- Biomass Boilers

Conclusion

We have reviewed the odour management plan in accordance with our guidance on odour management. We have assessed the OMP and conclude that the Applicant has followed the guidance set out in EPR 6.09 Appendix 4 'Odour management at intensive livestock installations'. We are satisfied that all sources and receptors have been identified, and that the proposed mitigation measures will minimise the risk of odour pollution / nuisance.

Noise

Intensive farming by its nature involves activities that have the potential to cause noise pollution. This is recognised in our 'How to Comply with your Environmental Permit for Intensive Farming' EPR 6.09 guidance. Under section 3.4 of this guidance a Noise Management Plan (NMP) must be approved as part of the permitting determination, if there are sensitive receptors within 400m of the Installation boundary.

Condition 3.4 of the Permit reads as follows:

Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan, to prevent or where that is not practicable to minimise the noise and vibration.

There are sensitive receptors within 400 metres of the Installation boundary as stated in section 4.4.2 above. The Operator has provided a noise management plan (NMP) as part of the Application supporting documentation, and further details are provided in section 4.5.2 below.

The risk assessment for the Installation provided with the Application lists key potential risks of noise pollution beyond the Installation boundary. These activities are as follows:

- Vehicle movements into and around the site, specifically HGV's
- Delivery of feed into silos
- Machinery (including compressors) and Forklifts
- Ventilation systems and operations
- De-populating (thinning and final depletion)
- Cleanout (machines and loading of trailers)
- Washing and disinfection operations
- Standby generators and other mobile plant

Conclusion

We have assessed the NMP and conclude that the Applicant has followed the guidance set out in EPR 6.09 Appendix 5 'Noise management at intensive livestock installations'. We are satisfied that all sources and receptors have been identified, and that the proposed mitigation measures will minimise the risk of noise pollution / nuisance.

BAT-AEL for Ammonia

The new Best Available Techniques (BAT) Reference Document (BREF) for the Intensive Rearing of poultry or pigs (IRPP) was published on the 21st February 2017. There is now a separate BAT Conclusions document which will set out the standards that permitted farms will have to meet.

There are some new requirements for permit holders. The conclusions include BAT Associated Emission Levels for ammonia emissions which will apply to the majority of permits.

The BAT AEL for Broilers is 0.08 kg NH₃/animal place/year (for new housing). Therefore all broilers on EPR farms must be housed (new) and reared in manner to ensure that the emission per bird does not exceed 0.08 kg NH₃/animal place/year. The standard broiler emission factor used for screening this application is 0.034 kg NH₃/animal place/year. As all emission factors used are less than the new BAT-AEL of 0.08 kg NH₃/animal place/year we can comfortably agree that all proposed new broiler housing will meet the BAT AEL.

Air Dispersion Modelling Report

The Operator undertook detailed Air Dispersion Modelling to assess the potential significance of ammonia emission to air and nitrogen, acid deposition rates, to demonstrate any potential impact (Atmospheric Dispersion Modelling System (ADMS) ADMS 5). The Environment Agency Air Quality Modelling Assessment Unit (AQMAU) assessed the modelling and agree with the outcomes of the report (Modelling Report 'Arkstone Court, dated 28th April 2017').

Receptor	Critical Level ($\mu\text{g-NH}_3/\text{m}^3$)	Critical Load Nitrogen ($\text{kg-N}/\text{ha}/\text{y}$)	Critical Load Acid ($\text{keq}/\text{ha}/\text{y}$)
AW / LWS	3.0 ¹	10 ²	N/a
SSSI	3.0 ¹	10 ²	N/a
SAC	3.0 ¹	10 ²	N/a

1. NE confirmed a Cle 3 and also for the River Wye (emailed dated 26/09/17) 2. The lower bound of the range of Critical Loads for the Habitat, obtained from APIS.

Preliminary modelling

ADMS was run a total of twelve times; once for each year of the meteorological record and in the following five modes:

- In basic mode without calms or terrain – GFS data.
- With calms and without terrain – GFS data.
- Without calms and with terrain – GFS data.

For each mode, statistics for the maximum annual mean ammonia concentration at each receptor were compiled. Details of the predicted annual mean ammonia concentrations at each receptor are provided in Table 1. In the Table, predicted ammonia concentrations (or concentrations equivalent to deposition rates) that are in excess of the Environment Agency's upper threshold (20% of Critical Level or Load for a SAC, 50% of Critical Level or Load for a SSSI and 100% of Critical Level or Load for a non-statutory wildlife site) are coloured red. Concentrations (or concentrations equivalent to deposition rates) in the range between the Environment Agency's lower and upper thresholds (4% and 20% for a SAC, 20% and 50% for a SSSI and 50% and 100% of Critical Level or Load for a non-statutory wildlife site) are coloured blue.

Ammonia modelling assessment outcome - SAC / SSSI / LWS / AW

Table1. Predicted maximum annual mean ammonia concentration at the discrete receptors

Receptor number	X(m)	Y(m)	Maximum annual mean ammonia concentration ($\mu\text{g}/\text{m}^3$)		
			GFS No calms No terrain	GFS calms No terrain	GFS No calms terrain
1 (AW)	344129	235797	1.281	1.272	1.205
2 (AW)	344247	235908	0.975	0.975	0.881
3 (AW)	344272	235688	0.753	0.748	0.779
4 (LWS)	343679	235343	0.817	0.820	0.791
5 (LWS)	343575	235188	0.497	0.495	0.505
6 (AW)	344336	236047	0.817	0.817	0.779
7 (AW)	344438	235849	0.602	0.597	0.559
8 (LWS)	343023	235788	0.419	0.419	0.509
9 (LWS)	343093	235397	0.436	0.436	0.489
10 (LWS)	343109	235243	0.372	0.370	0.401
11 (LWS)	342707	235108	0.223	0.221	0.256
12 (LWS)	341966	235994	0.120	0.120	0.179
13 (LWS)	341948	236542	0.086	0.086	0.115
14 (LWS)	342309	236921	0.089	0.090	0.099
15 (LWS)	342586	237349	0.080	0.080	0.090
16 (LWS)	343086	237644	0.119	0.0119	0.108
17 (LWS)	343562	237313	0.201	0.201	0.190
18 (LWS)	344100	237515	0.201	0.201	0.247
19 (LWS)	344457	237807	0.158	0.156	0.193
20 (AW)	342910	234331	0.154	0.153	0.137

21 (AW)	343710	233870	0.121	0.122	0.105
22 (SSSI)	344203	237605	0.189	0.187	0.233
23 (SSSI)	343920	237666	0.171	0.170	0.177
24 (SSSI)	345055	238273	0.106	0.105	0.114
25 (SSSI)	345173	238903	0.079	0.078	0.096
26 (SAC)	345307	239465	0.063	0.062	0.082
27 (SAC)	347605	238968	0.057	0.056	0.052
28 (SAC)	344656	240965	0.041	0.041	0.048
29 (SAC)	342227	240775	0.038	0.038	0.036
30 (SAC)	340583	242243	0.022	0.022	0.025
31 (SAC)	337575	242753	0.011	0.011	0.020
32 (SAC)	350304	239423	0.033	0.033	0.034
33 (SAC)	352130	238456	0.025	0.025	0.030

Detailed deposition modelling

The detailed deposition modelling was carried out over a domain covering the poultry units and closer parts of the River Wye SAC, where the preliminary modelling indicated that annual mean ammonia concentrations, or concentrations equivalent to nitrogen deposition rates, would potentially exceed 4% of the Critical Level or Critical Load. Spatially varying deposition cannot be modelled in conjunction with the calms module of ADMS; however, in this case, the preliminary modelling suggests that the effect of calms is insignificant. Therefore, the deposition runs were made without calms and with terrain. The model was run four times, once for each year of the meteorological record. The results of the predicted annual mean ammonia concentrations at the discrete receptors are shown in Table 2. In the Table, predicted ammonia concentrations that are in excess of the Environment Agency's upper threshold (20% of Critical Level/Load for a SAC, 50% of Critical Level/Load for a SSSI and 100% of Critical Level/Load for a non-statutory wildlife site) are coloured red (none). Concentrations in the range between the Environment Agency's upper threshold and lower threshold (4% to 20% for a SAC, 20% for a SSSI site and 50% to 100% for a non-statutory wildlife site) are coloured blue.

Table 2. Annual ammonia concentration and nitrogen deposition rate at the discrete receptors in the restricted modelling domain

Receptor	Receptor location X(m) Y(m)		Dep velocity m/s	Critical Level (µg/m3)	Nutrient Nitrogen Critical Load (keq/ha/yr)	Acid Deposition Critical Load (keq/ha/yr)	Max Process Contribution (µg/m3)	% Cle	Max Process Contribution (Nutrient Nitrogen)	% Clo	Max Process Contribution (acid)	% Clo
1 AW	344129	235797	0.03	3	10	1.737	1.094	36%	8.52	85%	0.61	35%
2 AW	344247	235908	0.03	3	10	1.737	0.796	27%	6.20	62%	0.44	26%
3 AW	344272	235688	0.03	3	10	1.737	0.655	22%	5.10	51%	0.36	21%
6 AW	344336	236047	0.03	3	10	1.737	0.688	23%	5.36	54%	0.38	22%
7 AW	344438	235849	0.03	3	10	1.737	0.471	16%	3.67	37%	0.26	15%
17 LWS	343562	237313	0.03	3	10	1.82	0.198	7%	1.54	15%	0.11	6%
18 LWS	344100	237515	0.03	3	10	1.82	0.189	6%	1.47	15%	0.11	6%
19 LWS	344457	237807	0.03	3	10	1.82	0.138	5%	1.08	11%	0.08	4%
22 SSSI	344203	237605	0.03	3	10	1.659	0.168	6%	1.31	13%	0.09	6%
23 SSSI	343920	237666	0.03	3	10	1.93	0.135	5%	1.05	11%	0.08	4%
24 SSSI	345055	238273	0.03	3	10	1.659	0.081	3%	0.63	6%	0.05	3%
25 SSSI	345173	238903	0.03	3	10	1.659	0.059	2%	0.46	5%	0.03	2%
26 SAC	345307	239465	0.02	3	10	0.487	0.044	1%	0.23	2%	0.02	3%
27 SAC	347605	238968	0.02	3	10	0.487	0.027	1%	0.14	1%	0.01	2%

Modelling conclusions

Modelling undertaken on behalf of Arkstone Court Limited used computer modelling to assess the potential impact of the proposed broiler chicken rearing houses at Arkstone Court, Kingstone, Hereford, Herefordshire. HR2 9TR. Ammonia emission rates from the existing and proposed poultry houses have been assessed and quantified based upon the Environment Agency's standard ammonia emission factors. The ammonia emission rates have then been used as inputs to an atmospheric dispersion and deposition model which calculates ammonia exposure levels and nitrogen deposition rates in the surrounding area. At all the wildlife sites considered, the modelling predicts that the process contribution to the annual ammonia concentration (and the nitrogen and acid deposition rates) would be below the Environment Agency's lower threshold percentage of Critical Level or Critical Load for the site (4% for a SAC, 20% for a SSSI and 100% for a non-statutory site).

Industrial Emissions Directive (IED)

The Environmental Permitting (England and Wales) (Amendment) Regulations 2013 were made on the 20 February and came into force on 27 February 2013. These Regulations transpose the requirements of the IED. Amendments have been made to the conditions of this variation so that it now implements the requirements of the European Union Directive on Industrial Emissions.

Dust and Bio aerosols

The use of Best Available Techniques and good practice will ensure minimisation of emissions. There are measures included within the Permit (the 'Fugitive Emissions' conditions) to provide a level of protection. Condition 3.2.1 'Emissions of substances not controlled by an emission limit' is included in the Permit. This is used in conjunction with condition 3.2.2 which states that in the event of fugitive emissions causing pollution following commissioning of the Installation, the Operator is required to undertake a review of site activities, provide an emissions management plan and to undertake any mitigation recommended as part of that report, once agreed in writing with the Environment Agency.

There is one sensitive receptors within 100m of the Installation boundary (at grid ref 343520,236114) the nearest sensitive receptor (the nearest point of their assumed property boundary) is approximately 90 metres to the west of the installation boundary.

Guidance on our website concludes that applicants need to produce and submit a dust and bio aerosol risk assessment with their applications only if there are relevant receptors within 100 metres of their farm, e.g. the farmhouse or farm worker's houses. Details can be found via the link below:

www.gov.uk/guidance/intensive-farming-risk-assessment-for-your-environmental-permit#air-emissions-dust-and-bioaerosols.

As there are receptors within 100m of the Installation, the Applicant was required to submit a dust and bio aerosol risk assessment in this format.

Biomass boiler assessment

The applicant is also varying their permit to include two additional 0.995MWth biomass boilers, increasing the number of biomass boilers on site from six to eight. The biomass boilers will have an aggregated thermal input not exceeding 3.652MWth.

The Environment Agency has assessed the pollution risks and has concluded that air emissions from small biomass boilers are not likely to pose a significant risk to the environment or human health providing certain conditions are met. Therefore a quantitative assessment of air emissions will not be required for poultry sites where:

- the fuel will be derived from virgin timber, miscanthus or straw, and;
- the biomass boiler appliance and installation meets the technical criteria to be eligible for the Renewable Heat Incentive, and;

- the aggregate boiler net rated thermal input is less than or equal to 4 MWth, and no individual boiler has a net thermal input greater than 1 MWth, and;
- the stack height must be a minimum of 5 metres above the ground (where there are buildings within 25 metres the stack height must be greater than 1 metre above the roof level of buildings within 25 metres) and:
- there are no sensitive receptors within 50 metres of the emission point(s).

This is in line with the Environment Agency's document "Air Quality and Modelling Unit C1127a Biomass firing boilers for intensive poultry rearing", an assessment has been undertaken to consider the proposed addition of the biomass boilers.

The Environment Agency's risk assessment has shown that the biomass boilers meet the requirements of the criteria above, and are therefore considered not likely to pose a significant risk to the environment or human health and no further assessment is required.

In accordance with the Environment Agency's Air Quality Technical Advisory Guidance 14: "for combustion plants under 5MW, no habitats assessment is required due to the size of combustion plant". Therefore this proposal is considered acceptable and no further assessment is required.

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/Engagement	
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> <p>Public Health England</p> <p>FSA</p> <p>Director of Public Health Herefordshire</p> <p>Herefordshire Council Planning Department</p> <p>Herefordshire Council Environmental Protection</p> <p>The comments and our responses are summarised in the consultation section.</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. The plan is included in the permit.
Site condition report	The operator has provided a description of the condition of the site, which we consider is satisfactory. The decision was taken in accordance with our guidance on site condition reports.
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> <p>We consider that the application will not affect any sites of nature conservation, landscape and heritage, and/or protected species or habitats identified.</p> <p>We consulted Natural England on the application with regard to the Cle applicable to the River Wye (SAC). An Appendix 11 was sent for information purposes only.</p>
Environmental risk assessment	
Environmental risk	We have reviewed the operator's assessment of the environmental risk from the facility. The operator's risk assessment is satisfactory.
Operating techniques	
General operating techniques	We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent

Aspect considered	Decision
	appropriate techniques for the facility. The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.
Odour management	We have reviewed the odour management plan in accordance with our guidance on odour management. We consider that the odour management plan is satisfactory.
Noise management	We have reviewed the noise management plan in accordance with our guidance on noise assessment and control. We consider that the noise management plan is satisfactory.
Permit conditions	
Raw materials	We have specified limits and controls on the use of raw materials and fuels. We have specified that only virgin timber (including wood chips and pellets), straw, miscanthus or a combination of these, are acceptable. These materials are never to be mixed with or replaced by, waste. We have decided that emission limits are not required in the permit.
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 permit(s).
Emission limits	We have decided that emission limits are not required in the permit.
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. The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.
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:</p> <p>“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 (PHE)
Brief summary of issues raised
PHE have identified that emissions to air of bio aerosols and dust are the main emissions with the most potential to have public health significance. PHE noted that there are receptors within 100m of the installation. PHE is currently updating their Intensive Farming position paper on the health impacts on exposure to bio aerosols from intensive farming and it is planned to be completed by the end of 2017. Therefore, at this time, PHE have assumed that the proposed variation will pose a low risk to human health as long as the installation complies with the requirements of the permit, all relevant domestic and European legislation, and will use Best Available Techniques (BAT).
Summary of actions taken or show how this has been covered
A Bio aerosols Risk Assessment was submitted by the applicant on 6 th September June 2017 as requested. We have reviewed the Bio aerosols Risk Assessment and Management Plan in accordance with our guidance on Dust/Bio aerosols. We consider that the applicant's proposals represent the appropriate measures to prevent/minimise bio aerosols and dust risk from the permitted activities.

Responses from organisations listed in the consultation section

Response received from
Herefordshire Council (Environmental Health)
Brief summary of issues raised
The application to vary the permit is to increase the number of birds to 200,000 but at a site approximately 230m south of the current poultry units. The nearest receptors to the new poultry will be nearest Arkstone Court. These properties should be considered as a relevant receptor, however it is noted that the new units are greater than 100 meters away from residential receptors. It is recognised that dust from poultry houses may contain small particulate matter (PM10's and PM2.5) and that in certain circumstances this can have an unacceptable effect on local air quality including for dwellings inhabited by persons directly involved with the poultry farming operation.
Summary of actions taken or show how this has been covered
A Bio aerosols Risk Assessment was submitted by the applicant on 6 th September June 2017 as requested. We have reviewed the Bio aerosols Risk Assessment and Management Plan in accordance with our guidance on Dust/Bio aerosols. We consider that the applicant's proposals represent the appropriate measures to prevent/minimise bio aerosols and dust risk from the permitted activities.