

# **Environment Agency permitting decisions**

## **Bespoke permit**

We have decided to grant the permit for Ivy Farm operated by Ivy Farm Limited.

The permit number is EPR/HP3336AT.

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.

## **Description of the main features of the Installation**

Ivy Farm is approximately 600m north-east of the A1031 in Wragholme which is on the northwest outskirts of the village of Grainthorpe. The installation is approximately centred on National Grid Reference TF 38339 98196.

The installation is operated by Ivy Farm Limited and comprises five poultry houses, numbered one to five, the site grows broilers for meat production. The five poultry houses provide a combined capacity for 224,440 broiler places. The normal annual production cycle is for 6-7 flocks spaced evenly across the year. Broilers are placed at day old and are reared to 4-8 weeks of age before slaughter.

The poultry houses have a system of extraction fans with emissions points higher than 5.5 metres above ground level and with an efflux speed greater than 7 metres per second. The fans are mounted in the roof ridge with side inlets providing natural air ventilation to the houses. Auxiliary (gable end) fans located at the rear of the units supplement the natural air-flow if required.

The poultry houses are heated by a biomass boiler system which feeds hot water to radiators . Heating and ventilation is automatically controlled by a computerised management system. There are two kerosene fired boilers as back-up for the biomass boilers and also a back-up generator.

Litter is taken to third party arable land for land spreading or to an electricity generating plant for combustion.

The installation has 3 underground lined collection tanks of approximately 208 m<sup>3</sup> total capacity. The tanks collect and contain wash-down water from the poultry houses via the drainage system. Wash water is then pumped into a mobile bowser and disposed off site. An unlined attenuation pond captures uncontaminated roof and surface water via the drainage system. The pond acts as a soakaway and can also discharge directly to the adjacent land drain on the north east boundary of the installation in the event of excess storm water collection. Clean surface water can also be captured from the yard areas via the drainage system and underground storage tanks and then

manually diverted to the attenuation pond by means of controlled diverter valves with the tanks.

The land around the site is predominantly arable and grass farming. The surrounding topography is relatively flat with the attenuation pond located within the northeast boundary of the installation. Associated feed is stored in sealed silos. Mortalities are collected daily and stored in a secure container on site for removal under the National Fallen Stock Scheme. At the end of the cycle the houses are depopulated, washed and disinfected ready for the next cycle.

## Purpose of this document

This decision document:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account

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

## Structure of this document

- Key issues If applicable see OI/notes below
- Annex 1 the decision checklist
- Annex 2 the consultation and web publicising responses

## Key issues of the decision

### 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. This permit implements the requirements of the European Union Directive on Industrial Emissions.

### 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 Ivy Farm (dated 30/06/2015) states the site has previously been used as a poultry farm and processing facility from 1970 to present day. Prior to this, it was used for arable and poultry farming. There was a pollution incident on 03/10/2008 where biodegradable material from turkey slaughtering was released into a watercourse. Recent inspection provides no evidence of this or any recent incidents. The buildings used for poultry farming and processing have now been demolished and removed using licence contractors and following Health and Safety guidelines. The site condition report 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.

## Ammonia emissions

There are 2 Special Areas of Conservation (SAC),/Special Protection Areas (SPA),/Ramsar sites located within 10 kilometres of the installation, these are Saltfleetby Theddlethorpe Dunes and Gibraltar Point (SAC) and Humber Estuary ( SAC/SPA and Ramsar)

There is 1 Sites of Special Scientific Interest (SSSI) located within 5 km of the installation, this is the Humber Estuary. There are also 4 Local Wildlife Sites within 2 km of the installation.

### Ammonia assessment – SAC/SPA/Ramsar sites

The following trigger thresholds have been designated for the assessment of European sites:

- If the process contribution (PC) is below 4% of the relevant critical level (CLe) or critical load (CLo) then the farm can be permitted with no further assessment.
- Where this threshold is exceeded an assessment alone and in combination is required.
- An in combination assessment will be completed to establish the combined PC for all existing farms identified within 10 km of the application.

The following trigger thresholds have been applied for assessment of SSSIs. If the process contribution (PC) is below 20% of the relevant critical level (CLe) or critical load (CLo) then the farm can be permitted with no further assessment. Where this threshold is exceeded an in combination assessment and/or detailed modelling may be required.

Initial screening using Ammonia Screening Tool v4.4 (version 2 completed on 26/10/2015) has indicated that emissions from Ivy Farm will only have a potential impact on the SAC sites with a precautionary critical level of  $1\mu\text{g}/\text{m}^3$  if they are within 3059 metres of the emission source.<sup>3</sup>

Initial screening indicates that beyond 3059 m the PC is less than  $0.04\mu\text{g}/\text{m}^3$  (i.e. less than 4% of the precautionary  $1\mu\text{g}/\text{m}^3$  critical level) and therefore beyond this distance the PC is insignificant. Saltfleetby Theddlethorpe Dunes and Gibraltar Point is beyond this distance (see table below) and therefore screens out of any further assessment.

Where the precautionary level of  $1\mu\text{g}/\text{m}^3$  is used, and the process contribution is assessed to be less than 4% the site automatically screens out as insignificant and no further assessment of critical load is necessary. In this case the  $1\mu\text{g}/\text{m}^3$  level used has not been confirmed by Natural England, but it

is precautionary. It is therefore possible to conclude no likely significant effect.

**Table 1 – SAC/SPA/Ramsar Assessment**

Name of SAC/SPA/Ramsar	Distance from site (m)
Saltfleetby Theddlethorpe Dunes and Gibraltar Point	9,023

Screening using the ammonia screening tool v4.4 (version 2 completed on 26/10/2015) has determined that the PC on the SAC/SPA/Ramsar for ammonia, acid and nitrogen deposition from the application site are under the 4% significance threshold and can be screened out as having no likely significant effect. See results below.

**Table 2– Ammonia emissions**

Site	Critical level ammonia $\mu\text{g}/\text{m}^3$	Predicted PC $\mu\text{g}/\text{m}^3$	PC % of Critical level
Humber Estuary (SAC/SPA & SSSI)	3	0.049	1.6

**Table 3 – Nitrogen deposition**

Site	Critical load kg N/ha/yr [1]	Predicted PC kg N/ha/yr	PC % of critical load
Humber Estuary (SAC/SPA & SSSI)	10	0.255	2.6

Note [1] Critical load values taken from Air Pollution Information System (APIS) website ([www.apis.ac.uk](http://www.apis.ac.uk)) and advised by Natural England – 17/06/2015

**Table 4 – Acid deposition**

Site	Critical load keq/ha/yr [1]	Predicted PC keq/ha/yr	PC % of critical load
Humber Estuary (SAC/SPA & SSSI)	0.643	0.018	2.8

Note [1] Critical load values taken from Air Pollution Information System (APIS) website ([www.apis.ac.uk](http://www.apis.ac.uk)) and advised by Natural England – 17/06/2015

No further assessment is necessary.

### **Ammonia assessment – SSSIs**

The following trigger thresholds have been applied for assessment of SSSIs. If the process contribution (PC) is below 20% of the relevant critical level (CLe) or critical load (CLo) then the farm can be permitted with no further assessment. Where this threshold is exceeded an in combination assessment and/or detailed modelling may be required.

Initial screening using Ammonia Screening Tool v4.4 (version 2 completed on 26/10/2015) has indicated that emissions from Ivy Farm will only have a potential impact on the SSSI site with a precautionary critical level of  $1\mu\text{g}/\text{m}^3$  if they are within 1034 metres of the emission source.

Initial screening indicates that beyond 1034m the PC is less than 0.2 $\mu\text{g}/\text{m}^3$  (i.e. less than 20% of the precautionary 1 $\mu\text{g}/\text{m}^3$  critical level) and therefore beyond this distance the PC is insignificant. Humber Estuary is beyond this distance (see table below) and therefore screens out of any further assessment.

Where the precautionary level of 1 $\mu\text{g}/\text{m}^3$  is used, and the process contribution is assessed to be less than 20% the site automatically screens out as insignificant and no further assessment of critical load is necessary. In this case the 1 $\mu\text{g}/\text{m}^3$  level used has not been confirmed by Natural England, but it is precautionary. It is therefore possible to conclude no likely damage to these sites.

**Table 5 – SSSI Assessment**

Name of SSSI	Distance from site (m)
Humber Estuary	2668

### Ammonia assessment - LWS

There are 4 Local Wildlife Sites (LWS) within 2 km of Ivy Farm. The following trigger thresholds have been applied for the assessment of these sites.

1. If PC is <100% of relevant critical level or load, then the farm can be permitted (H1 or ammonia screening tool)
2. If further modelling shows PC <100%, then the farm can be permitted.

For the following sites this farm has been screened out at stage 1, as set out above, using results of the ammonia screening tool (version 4.4).

Screening using ammonia screening tool version 4.4 (version 2 completed on 26/10/2015) has indicated that emissions from Ivy Farm will only have a potential impact on sites with a critical level of 1  $\mu\text{g}/\text{m}^3$  if they are within 349 metres of the emission source. Screening indicates that beyond this distance, the PC at conservation sites is less than 1  $\mu\text{g}/\text{m}^3$ . 1  $\mu\text{g}/\text{m}^3$  is 100% of the 1  $\mu\text{g}/\text{m}^3$  CLe and therefore beyond this distance the PC is insignificant. In this case all LWS are beyond this distance.

**Table 6 – distance from source**

Site	Distance (m)
Ings Lane Meadow	1053
Wrightholme Greenlanes, Ing Lane	1064
Wrightholme Greenlanes, Fulstow Gate	1040
Newcroft Lane	985

The PC at these sites has been screened as insignificant. It is possible to conclude no significant pollution will occur at these sites and no further assessment is required.

## **Noise and Odour**

There are three sensitive receptors within 400 metres of the installation; the nearest receptors are two cottages on Coalshore Lane 160 and 170 metres to the west of the installation. There is also another residential property on Coalshore Lane which is 300 metres to south west of the site. The predominant wind direction in this location is from the south west so away from these three sensitive receptors .

## **Noise**

The applicant has provided an adequate revised Noise Management Plan (submitted on the 10/11/2015) to support the application. The overall risk of noise is not significant with careful management.

## **Odour**

Odour modelling report 'A Dispersion Modelling Study of the Impact of Odour from the Proposed Poultry Rearing Unit at Ivy Lane, Grainthorpe in Lincolnshire' was submitted with the application and was considered when determining the risk of potential odour impacts from the farm.

We have audited the consultant's modelling, however the applicants predictions have not been directly used for permit determination. This is because the applicant has made the assessment based on 350,000 birds in 9 poultry houses, however the proposal is for 224,440 birds in 5 poultry houses. This has overestimated the predicted odour concentrations at receptors.

We have, using a factor of 0.64 applied to the applicant's predictions accounted for 36% less birds. The odour concentrations based on the consultant's predictions and the 0.64 factor are likely to be below the benchmark of 30UE/m<sup>3</sup> at all relevant sensitive receptors.

In addition we, the Environment Agency, have reviewed and approved the revised Odour Management Plan (submitted 10/11/2015) and consider it complies with the requirements of our H4 Odour management guidance note. We agree with the scope and suitability of key measures but this should not be taken as confirmation that the details of equipment specification design, operation and maintenance are suitable and sufficient. That remains the responsibility of the operator.

## **Biomass boilers**

The applicant has included 4 biomass boilers with a net rated thermal input of 2.1 MWth with the application.

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. 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;

For poultry:

- 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 points.

The applicant has confirmed that the fuel will be derived from virgin timber and the boilers will meet the technical criteria to be eligible for the Renewable Heat Incentive. Each boiler will have a net rated thermal input of 0.525MWth. The biomass boilers are linked in pairs and there are two stacks of 7.0m height – one per pair. There is building within 25m of the stacks (Harlow Poultry House – Unit 5) and the height of this building is 5.54m. The nearest sensitive receptor is approximately 96 metres from the emission points (the farm manager's accommodation)

As the biomass boilers meet the criteria no further assessment is necessary. 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.

## Annex 1: decision checklist

This document should be read in conjunction with the application, supporting information and permit.

Aspect considered	Justification / Detail	Criteria met
<b>Receipt of submission</b>		Yes
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. The decision was taken in accordance with our guidance on commercial confidentiality.	✓
<b>Consultation</b>		
Scope of consultation	The consultation requirements were identified and implemented. The decision was taken in accordance with RGN 6 High Profile Sites, our Public Participation Statement and our Working Together Agreements.  For this application we consulted the following bodies: <ul style="list-style-type: none"> <li>• Local Authority – Environmental Health</li> <li>• Health and Safety Executive</li> <li>• Public Health England – consulted on the bioaerosol/dust risk assessment as there is sensitive receptor within the installation boundary - Ivy House.</li> <li>• Director of Public Health - consulted on the bioaerosol/dust risk assesment as there is sensitive receptor within the installation boundary - Ivy House.</li> </ul>	✓
Responses to consultation and web publicising.	The web publicising and consultation responses (Annex 2) were taken into account in the decision.  The decision was taken in accordance with our guidance.	✓
<b>Operator</b>		
Control of the facility	We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with EPR RGN 1 Understanding the meaning of operator.	✓
<b>European Directives</b>		
Applicable directives	All applicable European directives have been considered in the determination of the application.	✓
<b>The site</b>		
Extent of the	The operator has provided plans which we consider are	✓

<b>Aspect considered</b>	<b>Justification / Detail</b>	<b>Criteria met Yes</b>
site of the facility	satisfactory, showing the extent of the site of the facility. Plans are included in the permit and the operator is required to carry on the permitted activities within the site boundary.	
Site condition report	The operator has provided a description of the condition of the site.  We consider this description is satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under IED—guidance and templates (H5).	✓
Biodiversity, Heritage, Landscape and Nature Conservation	The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat.  A full assessment of the application and its potential to affect the sites, species and habitat has been carried out as part of the permitting process. We consider that the application will not affect the features of the site, species and habitat.  We have not formally consulted on the application but completed and submitted (26/10/2015) an appendix 11 to Natural England for information only. The decision was taken in accordance with our guidance.	✓
<b>Environmental Risk Assessment and operating techniques</b>		
Environmental risk	We have reviewed the operator's assessment of the environmental risk from the facility.  The operator's risk assessment is satisfactory.  The assessment shows that, applying the conservative criteria in our guidance on Environmental Risk Assessment, all emissions may be categorised as environmentally insignificant.	✓
Operating techniques	We have reviewed the techniques used by the operator and compared these with the relevant guidance notes.  The operating techniques for biomass boilers are as follows: <ul style="list-style-type: none"> <li>• the fuel is derived from virgin timber,</li> <li>the biomass boiler appliance and it's installation</li> <li>• meets the technical criteria to be eligible for the</li> </ul>	✓

Aspect considered	Justification / Detail	Criteria met Yes
	<p>Renewable Heat Incentive; and</p> <ul style="list-style-type: none"> <li>• the stacks are 1m or more higher than the apex of the adjacent buildings.</li> </ul> <p>The proposed techniques for priorities for control are in line with the benchmark levels contained in the Sector Guidance Note EPR6.09 and we consider them to represent appropriate techniques for the facility. The permit conditions ensure compliance with relevant BREFs.</p> <p>A summary of the standards are provided in referenced doc IF 011 dated 16/06/2015 – ‘Ivy Farm, Grainsorpe. Technical Standards’ supporting the application.</p> <ul style="list-style-type: none"> <li>• Operations – In accordance with our EPR 6.09 Intensive Farming Guidance.</li> <li>• Feed - Protein is reduced over the growing cycle by providing different feed rations. Phosphorous levels in feed rations are reduced over the growing cycle.</li> <li>• Housing - The poultry houses are well insulated to a U-Value of 0.4W/m<sup>2</sup>/°C to reduce condensation and heat loss, they are constructed with impervious concrete floors with drainage falls and have a damp proof course. The poultry houses are ventilated by an automatically controlled air-flow system whereby air flows in through side inlets and is drawn out through the extractor fans that are located on the roof ridge. The side inlets are opened and closed automatically by electric motors that are linked to temperature sensors. The ridge extractor fan motors are switched on and off by the automatically control system that is integrated with operation of the side vents. Auxiliary fans are fitted at the end of each house to provide additional in-flow of fresh air if required. Poultry houses are equipped with non-leaking ‘nipple-cup’ type drinker systems serviced from 2000 litre header tanks. Feed is delivered via a tube and auger automatically controlled delivery system to</li> </ul>	

Aspect considered	Justification / Detail	Criteria met Yes
	<p>small pan type feed dispensers.</p> <p>During the growing period the concrete floors are fully littered with wood shavings / wood chips. The litter is kept loose and friable and the litter quality is regularly inspected to ensure that it does not become excessively wet or dry. Buildings are regularly inspected and maintained</p> <ul style="list-style-type: none"> <li>• Litter -Used litter is not stored at the installation. Litter is not spread onto land belonging to the operator.</li> <li>• Litter is exported from the installation either for land spreading as manure or for burning at power generation stations. Records are kept of the quantities, dates and destinations of the transfers including the names and addresses of receiving farms or power plants.</li> <li>• Fugitive emissions - Fugitive emissions will be prevented and minimised. Any spillages will be cleaned up promptly. The building will be maintained. Drainage from houses and water from clean-down will be collected in an underground storage tank and transported off site. Clean drainage systems from the roof or yard areas will be discharged via French drains to an attenuation pond. All feed will be stored in silos.</li> <li>• Dead /fallen stock will be stored in a lockable leak proof container to await collection by Animal Health Approved contractors.</li> </ul>	

#### The permit conditions

Raw materials	<p>We have specified limits and controls on the use of raw materials and fuels.</p> <p>For the biomass boilers we have specified that only virgin timber (including wood chips and pellets), straw, miscanthus or a combination of these. These materials are never to be mixed with or replaced by, waste.</p>	✓
Incorporating the application	<p>We have specified that the applicant must operate the permit in accordance with descriptions in the application, including all additional information received as part of the determination process.</p> <p>These descriptions are specified in the Operating Techniques table in the permit.</p>	✓
Emission limits	We have decided that emission limits should not be set in	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
	the permit.	
<b>Operator Competence</b>		
Environment management system	There is no known reason to consider that the operator will not have the management systems to enable it to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence.	✓
Relevant convictions	The National Enforcement Database has been checked to ensure that all relevant convictions have been declared.  No relevant convictions were found. The operator satisfies the criteria in RGN 5 on Operator Competence.	✓
Financial provision	There is no known reason to consider that the operator will not be financially able to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence.	✓

## **Annex 2: External Consultation and web publicising responses**

<p>Response received from Public Health England (PHE) 23/10/2015</p> <p>Brief summary of issues raised</p> <p>The main emissions of public health significance are emissions to air of bioaerosols, dust including particulate matter and ammonia. The applicant includes details of mitigation methods and procedures to minimise the effect of these potential concerns.</p> <p>Odour modelling has been carried out and included within the application; this notes that the ouE/m<sup>3</sup> (European Odour Units per metre cubed of air – a standardised measurement) is at a level over which complaints are considered possible at a single receptor, but below the level at which complaints are likely. The applicant states that, since the odour modelling was carried out for a significantly larger operation (350, 000 broilers over 9 houses), odour emissions from the installation are likely to be the lower and therefore odour complaints are unlikely to occur.</p> <p>It is expected that the design, construction and management of the installation, particularly taking into account ventilation of the facility, feeding mechanisms and waste management will prevent or minimise emissions of bioaerosols and that this will be controlled through standard permit conditions. PHE expects that the use of BAT will minimise the amount of dust released, but recommends that the Regulator requests that the applicant reports dust complaints. It is anticipated that further evidence on the potential for intensive farming industries to result in PM10 emissions will become available over the next few years. Consequently we suggest to the Regulator that PHE should be given the opportunity to incorporate such evidence into future reviews of Environmental Permits.</p> <p>It is assumed by PHE that the installation will comply in all respects with the requirements of the permit, all relevant domestic and European legislation, and will use Best Available Techniques (BAT). This should ensure that emissions present a low risk to human health.</p>
<p>Summary of actions taken or show how this has been covered</p> <p>The design, construction and management of the installation will be in accordance with BAT and will minimise any fugitive emissions .</p> <p>The applicant will have procedures for recording and dealing with dust complaints within their environmental management systems . This is a requirement of condition 1.1 of the permit. The operator will also need to comply with condition 3.1, this prevents the operator from causing pollution from dust (emissions of substances not controlled by emission limits).</p>

<p>Response received from Environmental Health 14/10/2015</p> <p>Brief summary of issues raised</p> <p>No comments</p> <p>Summary of actions taken or show how this has been covered</p> <p>No actions required</p>
---

Response received from
HSE Nottingham 12/10/2015
Brief summary of issues raised
No comments
Summary of actions taken or show how this has been covered
No actions required