Summary, technical standards & control measures for Application Bespoke EPR/EP3228LA Badcocks Farm Poultry Unit, Badcocks Farm, Saling Road, Stebbing, Dunmow, CM6 3XF

November 2025

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5 Supporting information

Non-technical summary of application

1. Badcocks Farm Poultry Unit is located approx. 1.90km east of the centre of the village of Stebbing in Essex on National Grid Reference TL 6799 2490. Comprises two existing poultry houses for rearing turkeys Nos 1-2. Proposing to demolish the smaller No.2 to erect a larger house in same place and a new house No.3 on north side with a combined capacity for 105,600 broiler chickens. A mobile macerator is a directly associated activity.

2. Established precedent for mobile macerator as a directly associated activity in another permit (EPR/BP3430KL/V004 Lopham Poultry Unit issued 17/05/2024). Limited the specified activity from receipt of eggs, bird carcases and fuels to removal of associated wastes from site. Operational limit of 4.7 tonnes per day based on maximum operation of 1 hour per day. Same scope, operating capacity and time will be sufficient for use here.

3. Existing and proposed houses for rearing chickens will comply with SGN EPR 6.09 and Best Available Techniques (BAT) Conclusions Document - fan ventilation, fully littered floors, and non-leaking drinkers. Existing larger house to be refurbished inside – new equipment for heating, feeding and drinking, and no change to construction or size required. New houses to be constructed with concrete floors poured over a continuous damp proof membrane, fully insulated walls and roofs to reduce heat loss and condensation.

4. All the houses will have forced ventilation via high velocity extraction fan outlets (Vents greater than 5.5m high, fan efflux velocity 11m/s) evenly distributed along the ridges and fresh air inlets in the side walls. Fan outlets will be uncapped. Heat houses with package, direct, LPG-fired heaters to keep chickens warm. Ventilation will be computer controlled and will remove moisture under all weather and seasonal conditions. Regularly adjust ventilation to match age, weight, and health requirements of chickens, and keep litter dry to minimise ammonia, odour, and dust. Use a package water fogging system to cool temperature inside houses in warm weather. Diesel-fired back-up emergency generator to guarantee sufficient air renewal for chicken welfare in case of grid electricity outage.

5. Separate surface and dirty water drainage to prevent cross-contamination and pollution in any watercourse, underlying geology or groundwater. Use a sustainable urban drainage system. Uncontaminated roof-water into French drains filled with stones under eaves of all the houses act as soakaways for infiltration into the ground. Any overflow conveyed in solid underground pipes, sealed against pollutants entering into the system, into an offsite ditch, tributary of the River Chelmer, via a lined attenuation basin to regulate flow. Uncontaminated runoff the concrete apron will be conveyed into catchpits and solid underground pipes into the ditch via a diverter - for dirty water during periods of destocking, litter removal and washout into a below ground dirty water storage tank. Dirty water will be exported offsite for spreading on land by a registered carrier.

6. Use proprietary blend of dust extracted chopped straw/wood shavings or chopped straw to provide absorbent bedding, spread evenly over entire floor area prior to delivery of

incubated eggs or day-old chicks. Nipple drinkers with cups will provide drinking water without spillages to keep litter dry and minimise ammonia and odour and consumption will be monitored. Litter will be kept loose and friable and quality continually inspected to ensure it does not become excessively wet or dry to minimise ammonia, odour or dust. Nipple drinking system with cups provide chickens drinking water without spillages and keep litter dry.

7. Chickens reared in batches, all-in-all-out for biosecurity. Birds will arrive as incubated eggs for hatching in the houses where they will be reared or day-old chicks from a hatchery. Reared to around 31 days of age, then start destocking - a quarter will be removed from each house 'thinned' and transported to the abattoir. Remainder reared to around 38 days of age then transported to the abattoir. Normally 10 days washing out and empty in between batches so approx. 7.6 batches per annum.

8. Feed broiler chickens ad-lib with a minimum of three pelleted compound diets appropriate to nutritional requirements at each stage of growth. A lower percentage crude protein and phosphorous in each diet and supplemented with synthetic essential amino acids, inorganic phosphates, and authorised additives to minimise excess nitrogen and phosphorous excretion on the litter. Store feedstuffs in fully enclosed package silos and feeders to minimise waste, dust, and odour, located in between the houses to protect them from collision damage.

9. Dead-in-shell and non-viable eggs will be quickly collected up after the hatching and disposed of via a macerator causing instantaneous death, any unviable chicks euthanised. Use a package hatchery macerator enclosed on a trailer parked on a designated area next to the carcase store. Delivered and moved on same day and must be washed and disinfected before leaving. Dirty water will be collected into secure containers with the macerated eggs, never in any surface water drain or the dirty water tank and must not be spread on land. Carcasses will be removed from houses daily and recorded. Macerated eggs and carcases stored in secure containers in the storage area to minimise odour and flies. Frequently removed under the National Fallen Stock Scheme.

10. Used litter removed immediately after houses destocked and empty. Exported offsite in covered trailers to minimise dust and odour for spreading on land to confer agricultural benefit or supplied as fuel to a local power station by a registered carrier. Houses and equipment are pressure washed, disinfected, and dried, before restocking. Dirty water exported offsite for spreading on land by a registered carrier.

11. Designated sites for nature conservation within 2km – Mouslin Wood Ancient Woodland/Local Wildlife Site (AW/LWS), Whitehouse Spring AW and Boxted Wood AW. No International, European or Sites of Special Scientific Interest within 5km. Residential dwelling houses and public rights of way within 400m are sensitive receptors for dust, noise and odour.

12. Mouslin Wood Ancient Woodland/Local Wildlife Site (AW/LWS) is adjacent the farm. Assumed to be adversely impacted by toxic effects of ammonia in air and eutrophication of soil since 1970s when the first house was brought into operation and a second in 2009. Obtain a permit to change to rearing chickens would provide opportunity to invest in the

farm to make better economic use of the buildings and reduce adverse impacts on Mouslin Wood AW/LWS.

13. Existing two houses have capacity for 29,852 turkeys, based on average stocking in most recent five years 2021 to 2025. Stocked the houses with either hens or stags in separate rearing periods. Propose to retain the larger house and erect two new houses to provide a combined capacity for 105,600 broilers. Change will reduce the quantity of ammonia emitted annually by 83.4% based on mass balance calculation with emission factors: -

    29,852 x 0.510 kgNH3/ap/yr (bespoke emission factor) = 15,225 kgNH3/yr
    105,600 x 0.024 kgNH3/ap/yr = 2,534 kgNH3/yr
    100 – (2,534/15,225 x 100) = 83.4%.

14. Used dispersion modelling to predict at Mouslin Wood AW/LWS, the process contributions from existing turkeys to ammonia concentration and nitrogen deposition rates currently exceed the Environment Agency's upper and lower threshold percentage of the relevant critical level and critical load. For proposed broilers the process contribution to ammonia concentration and nitrogen deposition would be reduced from current levels and would be well below the Environment Agency lower threshold percentages of the relevant critical level and load.

3 Management systems

Table 1: Summary of environment management system for Badcocks Farm Poultry Unit

Technical guidance	An environment management system will be in place in accordance with Environment Agency (2010) SGN EPR 6.09 V2.

Normal operations	• Daily records will be kept on all aspects of the farm's operation including:
	  ○ Water consumption
	  ○ Feed consumption and deliveries
	  ○ Bird mortalities
	  ○ Poultry house temperature and humidity
	  ○ Waste collections.
	• Daily inspection by staff around the site to ensure equipment is operating correctly.

Maintenance schedule and records	• A programme of planned preventive maintenance will be carried out on all plant and equipment including the ventilation fans, feeding and water systems. • Inspection and maintenance schedules based on manufacturer's recommendations. • Buildings and equipment on site will be regularly inspected and checked for visual signs of leakage, corrosion, structural damage, security, and correct operation. • A record of all faults, maintenance work and inspections will be kept in the site office.
Incidents and abnormal operations	• Measures will be in place to identify incidents and abnormal operations. Workers will be trained to be able to detect abnormal operation and investigate its causes and get back to normal operation and ensure the problem does not reoccur.
Complaint system	• Complaints will be logged and referred to the Site Manager for investigation and follow-up action. A record will be kept of any remedial action to prevent or minimise the causes and we will respond to concerns raised by the local community as appropriate.
Accidents	• Site will have an accident management plan which will be implemented if an accident occurs. Events or failures that could damage the environment have been identified using the H1 environmental risk assessment for accidents. The format of the site Accident Management Plan is in accordance with the Environment Agency's accident prevention and management plan on the government website at https://www.gov.uk/guidance/develop-a-management-system-environmental-permits#accident-prevention-and-management-plan.

Training and qualifications	• All staff will be suitably qualified to work at the installation. Qualified with NVQ level 2, and managers and area managers with NVQ level 3, and all members of the Poultry Passport scheme. • All staff will receive formal training from both the Site Manager and an external training provider. • All staff will receive formal training on health and safety, the accident management plan and will be trained about the requirements of the environmental permit and pollution prevention. • New staff will be mentored as part of their on-the-job training. • Staff and contractors will have defined roles. • Training and instruction of staff and contractors will be recorded in the training plan.
Site security	• Site will have a secure perimeter fence. • Poultry houses are securely locked at night. • Site gates locked at night to prevent pedestrian and vehicle access out of hours. • The fuel oil and LPG tanks will be secure and locked. • Public right of way (Byway open to all traffic – pedestrians, horse riders, cyclist and car and other motor vehicle drivers) through part of the site.
Site closure plan	• A site closure plan will be created and reviewed in pursuance of any conditions in the Permit or inspection scheme. Such a plan will include removal of any potentially polluting substances and decommissioning and removing equipment, plant, buildings, hard standing and underground structures.
Certification	• Installation will be operated in accordance with a poultry assurance certification scheme including the EMS.

Table 2: Summary of climate change adaptation for Badcocks Farm Poultry Unit

Climate change adaption	a) Summer daily maximum temperature This may be around 7°C higher compared to average summer temperatures now, with the potential to reach extreme temperatures as high as over 40°C with increasing frequency based on today values. Impact 1 - The ventilation system may not be able to maintain temperatures within poultry houses. Mitigation for this will include: • a regular review to make sure ventilation is optimally maintained along with other measures such as: • installing additional cooling e.g. a misting system • installing gable end fans.

	b) Winter daily temperatures This could be 4ºC more than the current average with the potential for more extreme temperatures, both warmer and colder than present. Impact 1 - There will be potential benefits such as: • Less energy used to heat animal housing • Less risk of water freezing and damaging pipes. Impact 2 - Increased risk of snow and ice. This could cause travel disruption with delays to deliveries, site access difficulties for staff and heavy snow damaging structures. The mitigation for this will be to: • Have adequate feed storage capacity and stocks onsite in winter to mitigate delays in feed deliveries • Make sure roofs and structures are well maintained to withstand heavy snow • Have equipment and materials available to clear snow and ice form the access to the site for delivery and staff vehicles. c) Daily extreme rainfall Daily rainfall intensity could increase by up to 20% on today's values. Impact 1 - Gutters may not be able to cope or could overflow. The mitigation for this will include: • Clearing gutters of debris • Clearing roofs of moss • Changing guttering for larger gutters. Impact 2 - Soakaways and swales could be overwhelmed. The mitigation for this will be to install additional drainage to alternative areas. d) Storms Storms could see a change in frequency and intensity. The unique combination of increased windspeeds, increased rainfall, and lightning during these events provides the potential for more extreme storm impacts.

	Storms and high winds could damage building structures with increased potential for odour and dust emissions and loss of power. The mitigation for this will include: • Reviewing the design of vulnerable structures and buildings • Reviewing wind loading calculations, providing reinforcement if necessary • Maintaining building integrity • Having well maintained emergency back-up power • Keeping the site tidy and secure any equipment or objects that could blow around. Possible impacts and mitigation measures considered are all in accordance with the government website at https://www.gov.uk/government/publications/adapting-to-climate-change-industry-sector-examples-for-your-risk-assessment/intensive-farming-examples-for-your-adapting-to-climate-change-risk-assessment

7 Emissions to air, water, and land

Table 3 Emissions (releases) at Badcocks Farm Poultry Unit

Emission point description and location	Source
Point source emissions to air	
A1 High velocity roof fan outlets (vents greater than 5.5m high, fan efflux velocity 11m/s) as shown on the Powell & Co 03205 W Grove Smith – Badcocks – EA License Rev A plan included with application for EPR/EP3228LA	Poultry house 1-3
A2 Gable end fans as shown on the Powell & Co 03205 W Grove Smith – Badcocks – EA License Rev A plan included with application for EPR/EP3228LA	Poultry house 1-3
A3 Vent outlets as shown on the Powell & Co 03205 W Grove Smith – Badcocks – EA License Rev A plan included with application for EPR/EP3228LA	Liquified petroleum gas storage tanks
A4 Exhaust outlet as shown on the Powell & Co 03205 W Grove Smith – Badcocks – EA License Rev A plan included with application for EPR/EP3228LA	Emergency backup diesel-fired generator
A5 Vent outlet as shown on the Powell & Co 03205 W Grove Smith – Badcocks – EA License Rev A plan included with application for EPR/EP3228LA	Diesel tank for backup generator
Point source emissions to water	
W1 Outfall to offsite ditch tributary of the River Chelmer as shown on the Powell & Co 03205 W Grove Smith – Badcocks – EA License Rev A plan included with application for EPR/EP3228LA	Uncontaminated roof water from poultry houses 1-3 and runoff the concrete apron (excluding during periods of depopulating & washing out)
Point source emissions to land	
SW1 French drains filled with stones acts as soakaways as shown on the Powell & Co 03205 W Grove Smith – Badcocks – EA License Rev A plan included with application for EPR/EP3228LA	Uncontaminated roof water from poultry houses 1-3
Point source emissions to sewer, effluent treatment plants or other transfers offsite	
None	

Table 4 Technical Standards for Badcocks Farm Poultry Unit

Schedule 1 activity	Section 6.9; Part A(1)(a)(i) Rearing poultry intensively at installation with more than 40,000 places for poultry
Technical guidance	• Environment Agency (2010) EPR 6.09 Sector Guidance Note: How to comply – Intensive Farming Version 2. • Best Available Techniques (BAT) Reference Document for the Intensive Rearing of Poultry or Pigs 2017.

Table 5 Measures to control emissions at Badcocks Farm Poultry Unit

Selection & use of feed. Technical standard: you must take appropriate measures to provide a diet which minimises the excretion of nitrogen and phosphorous.	• Operator will use a nutritional strategy to reduce levels of nitrogen excreted and consequently ammonia, and phosphorous excretion while meeting the nutritional needs of the chickens. • Package feed delivery equipment - storage silos, augers, pipes, and feeders, etc will be designed to accommodate the required feeding regime for rearing broiler chickens.
Housing design & management. Technical standard: you must take appropriate measures in the design and management of housing to minimize the emissions from those systems	<u>Housing</u> Poultry houses will be designed and constructed to modern specifications – clear span portal construction on concrete floors poured over a continuous damp proof membrane, concrete panel walls and insulated walls and roofs with steel cladding. Walls and roofs fully insulated with a U-Value of approximately 0.4 $W/m^2/^oC$ to reduce heat loss and condensation. <u>Litter</u> Litter will be kept loose and friable and regularly inspected to ensure it does not become excessively wet or dry, and steps taken to rectify any changes to the quality of the litter. <u>Temperature</u> Temperature in the houses will meet the health and welfare needs for the age and number of chickens. Use LPG-direct fired space heaters and will be regularly spaced in the houses to prevent cold spots and extremes of temperature. Extraction fans will be fitted with back draught shutters to prevent draughts and unnecessary heat loss. Houses will be accessed via a control room/vestibule area, which prevents draughts. <u>Ventilation</u> Package computer-controlled ventilation system will be installed to control ventilation rates, so they will be appropriate to the age, weight, and health and welfare needs of the chickens: • High velocity roof fan outlets (vents greater than 5.5m high and fan efflux velocity 11m/s).

	• Uncapped outlets to avoid dust deposition on roof and contamination of rainwater runoff. • Operated to achieve optimum humidity levels for the stage of production in all weather and seasonal conditions. • Control of minimum ventilation rates planned to avoid build-up of moisture. • Houses managed to maintain litter as dry and friable as possible. • Dust controlled through the management of litter and air quality. • Uncontaminated runoff water from roofs and concrete apron (excluding during periods of depopulating & washing out) conveyed via French drains filled with stones act as soakaways and underground pipes into the offsite ditch, tributary of the River Chelmer, via a lined attenuation basin to regulate flow at Badcocks Farm Poultry Unit. <u>General management</u> In accordance with the management system at the farm, the buildings and equipment will be regularly inspected and well maintained. The floors and walls of the houses will be kept clean.
Livestock numbers and movements	• A system will be in place to record the number of bird places and bird movements on and offsite. These records will be available for inspection.
Slurry spreading and manure management planning – offsite activity	• Records will be kept of the quantities and date of transfers for example to power station or biogas plant for recovery or third party for spreading on land for benefit to agriculture. • The names and addresses and land hectares available where manure is exported for spreading to land.
Slurry spreading and manure management planning – onsite activity	• Litter will not be spread by the operator or employees onsite (land belonging to the operator); or by a contractor.
Spreading of manure and slurry to minimise emissions to air Technical standard: you must take appropriate measures when spreading manure or slurry to land to prevent, or where this is not possible to minimise the emissions to air in implementing your manure management plan	• Where a 'manure agent' or other third party accepts liability for removing manure they will provide acceptable confirmation that: as a minimum, the third party will ensure that the manure is spread to land in accordance with the Code of Good Agricultural Practice, or that the spreading will be in accordance with a manure management plan for the receiving land.

Waste sent off-site	Waste will be removed offsite by a registered carrier with a transfer document for non-hazardous waste - mostly packaging waste, etc., or a consignment note for any hazardous waste in accordance with legal requirements.
Fugitive emissions	Appropriate measures for preventing and minimising fugitive emissions will be in place with provisions for: - • Buildings & equipment will be well maintained & kept in good repair. • Areas around buildings will be kept free from build-up of litter & spilt feed. • Drainage from poultry houses and water from washout will be collected in package underground storage tanks shown on the drainage plan. • Diverter valves shown on the drainage plan will be used during wash down periods to prevent contamination of surface water systems and to divert dirty wash water into the dirty water tank. Clean drainage systems will not be contaminated. • Drainage from yard contaminated by litter or wash water will be collected in a below ground dirty water tank. • The dirty water collection system and package below ground storage tanks will be designed to deal with the volumes of wash water generated and manufactured to conform to the specification in SGN EPR6.09. • Footbaths will be managed so that they do not overflow, and spent disinfectants will be emptied into the dirty water tanks. • Wheel washings will be prevented from entering into surface water or groundwater.
Dust	Environmental Risk Assessment submitted with the application shows dust has been identified as having potentially minor and moderate significance: - • Sensitive receptors for dust within 100m of installation boundary. • Submitted a dust & bio-aerosol management plan with the application. • Routine and contingency actions to minimise dust and bio-aerosol risks will be in accordance with EPR6.09 and the BREF. • Poultry feed will be stored in package feed silos, protected from vehicle collision damage by careful siting relative to traffic flows with kerbs or barriers as required. • Feed will be delivered direct from suppliers and blown directly into silos. • Feed will be delivered into the houses by package augers and pipes. • No milling or mixing of feed will take place at the farm. • Used litter will not be stored onsite.
Carcase management including mobile macerator	Appropriate measures to prevent/ minimise fugitive emissions will be in place: • Mobile macerator contained inside small, covered trailers, towed on a van. • Workers and macerator arrive onsite day after hatching, and all remaining unviable and unhatched eggs, including pipping and dead-in-shell, will be gathered off the litter into buckets. They will be quickly, humanely killed in a macerator to produce immediate death, and unviable chicks killed by dislocation of the neck in accordance with legal requirements. • Store macerated eggs, dead chicks, dirty water from cleaning the macerator and carcases of dead chickens in secure, non-leaking

	containers with lids and kept covered. Classified as category 2 animal by-products for processing offsite e.g. rendering. • No unviable, unhatched eggs stored anywhere else before macerating. • No point source emissions to air, water or land. No extraction fans on trailers. Dirty water from cleaning and disinfecting macerator and buckets, etc collected into the carcass containers for processing offsite e.g. rendering. Never add dirty water from cleaning macerator into the dirty water storage tank destined for land spreading. • Teams of workers & macerators cover all sites, so work not delayed by any normal working onsite and eggs picked up and macerated quickly. • Macerator not considered to have any specific odour or noise issues owing to being used for very short duration. • Rent containers, frequent collections planned by an approved transporter, under National Fallen Stock Scheme.
Flies	Appropriate actions will be implemented to prevent, and control flies should problems occur.
Measures for bunding and containment	(a) Agricultural fuel oil and other chemical storage: • Package, emergency back-up diesel-fired generator with separate bunded fuel tank will meet requirements under the Water Resources (Control of Pollution) (Silage, Slurry and Agricultural Fuel Oil) Regulations 2010 (SSAFO Regulations). • Generator will be operated and maintained in accordance with the manufacturer's instructions and recommendations. • Pesticides and veterinary medicines will be kept in stores that are resistant to fire, dry, frost-free, and secure against unauthorised access and capable of retaining any spillage. (b) Feedstuffs • Poultry feed will be stored in package feed silos. • Protected from vehicle collision damage by careful siting relative to traffic flows with kerbs or barriers, as required.
Odour	Environmental Risk Assessment submitted with the application shows odour has been identified as having potentially minor significance: • Sensitive receptors for odour within 400m of the installation boundary. • Submitted an odour management plan with the application. • Routine and contingency actions to minimise odour will be in accordance with EPR6.09 and the BREF.
Noise & vibrations	The Environmental Risk Assessment submitted with application variation V004 shows noise has been identified as having potentially minor significance: • Sensitive receptors for noise within 400m of installation boundary. • Submitted a noise management plan with the application. • Routine and contingency actions to minimise noise will be in accordance with EPR6.09 and the BREF.

Emergency backup generator	• Emergency backup diesel-fired generator in place at Badcocks Farm Poultry Unit to guarantee sufficient air renewal for chicken welfare. Thermal input 0.129 MW (150 KVA) less than 1 MW so not a specified generator under the Environmental Permitting Regulations and not in scope of Medium Combustion Plant Directive. Operated for the purpose of testing for not more than 50 hours per year or operated for not more than 500 hours per year averaged over three years, including testing. • Calculated thermal input from information provided by the supplier. • Grid outages rarely happen.

Q8a Technical standards contd. EC (2017) Best Available techniques (BAT) Reference Document for the Intensive Rearing of Poultry or pigs at Badcocks Farm Poultry Unit

Included Agency's permitting decisions (*italic*) under how the site will demonstrate compliance in Table 5 below.

Table 6 Measures in accordance with EC (2017) Best Available techniques (BAT) Reference Document

BAT	Description	How is the site demonstrating compliance
BAT 1	**EMS** *In order to improve the overall performance of farms, BAT is to implement and adhere to an environmental management system (EMS) that incorporates all of the following features [in the BAT conclusions document].*	*Operator already holding a written management system comprising a suite of documents to help identify and minimise the risk of pollution. These include an accident management plan, maintenance plan, staff training and where necessary odour and noise management plans. This is a requirement of the existing general management condition in the permit.* *By 21 February 2021, the operator will be required to update their management system to include an environmental policy statement and demonstrate their commitment of their management to the EMS. This will be checked during routine compliance inspections.* Operator will adhere to an environmental management system that incorporates all of the features, including an environmental policy statement.

BAT 2	**Good housekeeping**
	
	In order to prevent or reduce the environmental impact and overall performance, BAT is to use all the techniques given [in the BAT conclusions document].
		The operator is already required to manage their operation as set out in the existing general management and operating techniques conditions in the permit. In complying with these conditions, we expect the operator to use most of the techniques identified in BAT2.
		
		Operator will use all of the techniques given: -
		
		• Proper location of the plant/farm and spatial arrangements of the activities in order to:
		  ○ prevent the contamination of water.
		• Educate and train staff, in particular for:
		  ○ relevant regulations, livestock farming, animal health and welfare, manure management, worker safety
		  ○ manure transport and land-spreading
		  ○ planning of activities
		  ○ emergency planning and management
		  ○ repair and maintenance of equipment.
		• Prepare an emergency plan for dealing with unexpected emissions & incidents such as pollution of water bodies including:
		  ○ a plan of the farm showing the drainage systems and water and effluent sources.
		  ○ plans of action for responding to certain potential events for example fire, oil spillages.

		○ available equipment for dealing with a pollution incident for example spill kit for oil spillages. • Regularly check, repair, & maintain structures & equipment such as: ○ water and feed supply systems ○ ventilation systems and temperature sensors, ○ silos, and transport equipment, ○ includes cleanliness of the farm, and pest management. • Storie dead animals in such a way as to prevent or reduce emissions.
Nutritional management		
BAT 3	*In order to reduce total nitrogen excreted and consequently ammonia emissions while meeting the nutritional needs of the animals, BAT is to use a diet formulation and nutritional strategy which includes one or a combination of the techniques given [in the BAT conclusions document].*	*Operator already required to have a nutritional strategy to reduce nitrogen and phosphorous. This requirement is incorporated into the existing operating techniques condition in the permit.* *In addition, the variation included a new condition requiring the operator to report annually the levels of nitrogen and phosphorous excretion per animal place to demonstrate compliance with the BAT-associated total nitrogen and phosphorous excreted. The operator will now need to submit monitoring to demonstrate they are compliant. If they are not compliant with the BAT-associated total nitrogen and total phosphorous excreted, they will be in breach of the permit and will need to revisit their nutritional management techniques. Based on our review, and engagement with industry, we expect all operators to meet the BAT-associated excretion levels.* *Where the BAT-associated total nitrogen & total phosphorous excreted level is not met the operator will be required to consider and adopt alternative diets or feed additives which enable them to meet the level.* Operator will use a combination of the techniques given: - • Reduce the crude protein content using a N-balanced diet based on the energy needs and digestible amino acids. Flaked soya bean will be added during milling to increase percentage crude protein and supplement otherwise low natural levels in wheat grains, especially in first diets. Percentage of flaked soya reduced as chickens grow. • Multiphase feeding with a diet formulation adapted to the specific requirements of the production period. Provide chickens a minimum of three separate diets which contain increasingly lower percentage crude protein. • Addition of controlled amounts of essential amino acids. Highly digestible amino acid analogues lysine, methionine, threonine, and valine are added to all the feeds during milling to supplement otherwise low naturally occurring levels in the wheat grains.

BAT 4	*In order to reduce total phosphorous excreted while meeting the nutritional needs of the animals, BAT is to use a diet formulation and nutritional strategy which includes one or a combination of the techniques given [in the BAT conclusions document].*	*As BAT 3.* Operator will use a combination of the techniques given: - • Multiphase feeding with a diet formulation adapted to the specific requirements of the production period. Provide chickens a minimum of three separate diets which contain increasingly lower percentage of phosphorous. • Use of authorised feed additives which reduce the total phosphorous excreted. Specifically, 6-phytase enzyme added during milling. Degrades the phytate phosphorous in grain during digestion, making more naturally occurring phosphorous and other nutrients available to chickens. • Use of highly digestible inorganic phosphates for the partial replacement of conventional sources of phosphorous in the feed. Specifically, calcium hydrogen orthophosphate/ calcium phosphate will be added during milling.
BAT 5	**Efficient use of water** *In order to use water efficiently, BAT is to use a combination of the techniques given [in the BAT conclusions document].*	*Operator is already required to minimise the use of water as set out in the existing efficient use of raw materials in the permit.* Operator will use a combination of techniques given: - • Keep a record of water use • Detect and repair water leakages • Use high pressure cleaners for cleaning animal housing and equipment • Select and use suitable equipment e.g. nipple drinkers with drip cups for chickens while ensuring water availability (ad-libitum).
Emissions from wastewater		
BAT 6	*In order to reduce the generation of wastewater, BAT is using a combination of the techniques given [in the BAT conclusions document].*	*These requirements are fulfilled through existing permit conditions on general management, the efficient use of raw materials and emissions of substances not controlled by emissions limits.* Operator will use all of the techniques given: - • Keep the fouled yard areas as small as possible • Minimise use of water • Segregate uncontaminated rainwater from wastewater streams that require treatment.

BAT 7	*In order to reduce emissions to water from wastewater, BAT is to use one or a combination of the techniques given [in the BAT conclusions document].*	*The operator is already required to minimise emissions of wastewater through existing permit conditions on general management, operating techniques and emissions of substances not controlled by emissions limits.* *Where appropriate the operator is already expected to have dedicated slurry and/or wash water storage which is compliant with BAT standards (equivalent to the standards set out in The Silage Slurry and Agricultural Fuel Oil Regulations (SSAFO). These requirements also apply to reception pits, channels, underground tanks, and pipework and requires that slurry is collected and contained.* Operator will use a combination of the techniques given: - • Drain wastewater to a dedicated container • Land spreading of wastewater.
BAT 8	**Efficient use of energy** *In order to use energy efficiently in a farm. BAT is to use a combination of the techniques given [in the BAT conclusions document].*	*The operator is already required to minimise the use of energy through existing permit conditions on general management and energy efficiency.* Operator will use a combination of techniques given: - • High efficiency heating/cooling and ventilation system • Insulation of the walls and ceilings of animal housing • Use of energy efficient lighting.
Noise emissions		
BAT 9	*In order to prevent, or where that is not practicable, to reduce noise emissions, BAT is to set up and implement a noise management plan, as part of the environmental management system (see BAT 1).* *BAT 9 is only applicable to cases where a noise nuisance at sensitive receptors is expected and/or has been substantiated.*	*A noise management plan (NMP) is in place when there are relevant receptors within 400m of the installation boundary or there have been substantiated complaints. This reflects our current approach, and no change is required.* *This conclusion is only applicable where we expect noise pollution, or it has been substantiated. We anticipate the potential for noise pollution within 400m of sites, and require operators with receptors located within this distance, or at sites where noise complaints have been substantiated at receptors outside this distance, to have an NMP. This is already detailed in the existing permit condition on noise and vibration in the permit. This condition allows for us to require a NMP if not previously in place. In the event of noise complaints or other evidence of risk of noise pollution beyond the installation boundary.* *The NMP needs to be regularly updated and reviewed to prevent noise pollution and ensure compliance.* Operator will use a combination of techniques given: -

		• Submitted a NMP with the application owing to sensitive receptors within 400m of the boundary that includes the following elements: • A protocol containing appropriate actions and timelines • A protocol for conducting noise monitoring • A protocol for response to identified noise events. Operator has no records or recollections of having substantiated any noise concerns or complaints, so a noise reduction programme to implement elimination and/or reduction measures is not considered necessary.
BAT 10	*In order to prevent, or where that is not practicable, to reduce noise emissions, BAT is to use one or a combination of the techniques given [in the BAT conclusions document].*	*Nose minimisation has been considered in equipment location and operation in the permit determination stage.* *The operator is already required to prevent and minimise noise through the existing permit conditions on general management, operating techniques and noise and vibration. The existing operating techniques permit condition already allows us to require the operator to update the NMP to introduce additional BAT measures to minimise the risk of noise pollution beyond the installation in the event of substantiated noise complaints at local receptors.* Operator will use a combination of techniques given: - • Equipment location • Operational measures • Low noise equipment. The techniques are described in the NMP.
BAT 11	**Dust emissions** *In order to reduce dust emissions from each animal house, BAT is to use one or a combination of the techniques given [in the BAT conclusions document].*	*Techniques are already in place to reduce dust generation inside sheds such as ad-libitum feeding.* *The operator is already required to minimise dust emissions through existing permit conditions on general management, operating techniques and emissions of substances not controlled by emission limits.* Operator will use a combination of the techniques given: - • Reduce dust generation inside livestock buildings. For this purpose, a combination of the following techniques will be used: - • Use coarser litter material • Apply fresh litter using a low dust littering technique • Use pelleted feed in dry feed systems • Equip dry feed stores which are filled pneumatically with dust separators

		• Apply ad-libitum feeding.
Odour emissions		
BAT 12	*In order to prevent, or where that is not practicable, to reduce odour emissions from a farm, BAT is to set up, implement and regularly review an odour management plan, as part of the environmental management system (see BAT 1), that includes the following elements [in the BAT conclusions document].*	*An odour management plan (OMP) is in place when there are relevant receptors within 400m of the installation boundary or there have been substantiated complaints. This reflects our current approach, and no change is required.* *This conclusion is only applicable where we expect odour pollution, or it has been substantiated. We anticipate the potential for odour pollution within 400m of sites, and require operators with receptors located within this distance, or at sites where odour complaints have been substantiated at receptors outside this distance, to have an OMP. This is already detailed in the existing permit condition on odour in the permit. The condition allows for us to require an OMP if not previously in place, in the event of odour complaints or other evidence of risk of odour pollution beyond the installation boundary.* *The OMP needs to be regularly updated and reviewed to prevent odour pollution and ensure compliance.* Operator will use a combination of techniques given: - • Submitted an OMP with the application owing to sensitive receptors within 400m of the boundary that includes the following elements: • A protocol containing appropriate actions and timelines • A protocol for conducting odour monitoring • A protocol for response to identified odour nuisance. Operator has no records or recollections of having substantiated any odour concerns or complaints, so an odour reduction programme to implement elimination and/or reduction measures are not considered necessary.
BAT 13	*In order to prevent, or where that is not practicable, to reduce odour emissions and/or odour impact from a farm, BAT is to use a combination of the techniques given [in the BAT conclusions document].*	*Odour minimisation has been considered in equipment location and operation in the permit determination stage.* *The operator is already required to prevent and minimise odour through the existing permit conditions on general management, operating techniques, and odour. The existing operating techniques permit condition already allows us to require the operator to update the OMP to introduce additional BAT measures to minimise the risk of odour pollution beyond the installation in the event of substantiated odour complaints at local receptors.* Operator will be using a combination of the techniques given: -

		• Keeping the chickens and the surfaces dry and clean, and • keeping the litter dry and under aerobic conditions • Optimise the discharge conditions of exhaust air from the poultry houses by using a combination of the techniques given: • Increasing the outlet height – will exhaust air above roof level, stacks, through the ridge instead of through the low part of the walls • Increasing the vertical outlet ventilation velocity. The techniques have been described in the OMP.
Emissions from solid manure storage		
BAT 14	*In order to reduce ammonia emissions to air from the storage of solid manure, BAT is to use one or a combination of the techniques given [in the BAT conclusions document].*	Not applicable, no used poultry litter will be stored onsite.
BAT 15	*In order to prevent, or where that is not practicable, to reduce emissions to soil and water from the storage of solid manure, BAT is to use a combination of the techniques given [in the BAT conclusions document].*	Not applicable, no used poultry litter will be stored onsite. .
Emissions from slurry storage		
BAT 16	*In order to reduce ammonia emissions to air from a slurry store, BAT is to use a combination of the techniques given [in the BAT conclusions document].*	Not applicable, store dirty water in a package, below ground tank.
BAT 17	*In order to reduce ammonia emissions to air from an earth-banked slurry store (lagoon), BAT is to use a combination of the techniques [in the BAT conclusions document].*	Not applicable, no earth-banked slurry store onsite.

BAT 18	*In order to prevent emissions to soil and water from slurry collection, piping and from a store and/or an earth-banked storage (lagoon), BAT is to use a combination of the techniques given [in the BAT conclusions document].*	Not applicable, no earth-banked slurry store onsite.
BAT 19	**On farm processing of manure** *If on farm processing of manure is used, in order to reduce emissions of nitrogen, phosphorous, odour and microbial pathogens to air and water and facilitate manure storage and/or land spreading, BAT is to process the manure by applying one or a combination of the techniques given [in the BAT conclusions document].*	Not applicable, no manure processing onsite.
Manure land spreading		
BAT 20	*In order to prevent or, where that is not practicable, to reduce emissions of nitrogen, phosphorous, odour and microbial pathogens to soil and water from land spreading BAT is to use all the techniques given [in the BAT conclusions document].*	*Spreading of manure and slurry on land outside of the installation boundary is not considered to part of the permitted installation. In the rare circumstances where spreading occurs within the installation boundary the requirements are covered by the existing operating techniques permit condition.* Not applicable, no used poultry litter will be spread onsite.
BAT 21	*In order to reduce ammonia emissions to air from slurry land spreading, BAT is to use a combination of the*	*Spreading of manure and slurry on land outside of the installation boundary is not considered to part of the permitted installation. In the rare circumstances where spreading occurs within the installation boundary the requirements are covered by the existing operating techniques permit condition.*

	techniques given [in the BAT conclusions document].	Not applicable, no used poultry litter will be spread onsite.
BAT 22	*In order to reduce ammonia emissions to air from manure land spreading, BAT is to incorporate the manure into the soil as soon as possible.*	*Spreading of manure and slurry on land outside of the installation boundary is not considered to part of the permitted installation. In the rare circumstances where spreading occurs within the installation boundary the requirements are covered by the existing operating techniques permit condition. The time delay between land spreading and incorporation into the soil is now a maximum of 12 hours.* Not applicable, no used poultry litter will be spread onsite.
BAT 23	*In order to reduce ammonia emissions from the whole production process for the rearing of pigs (including sows) or poultry, BAT is to estimate or calculate the reduction of ammonia emissions from the whole production process using the BAT implemented on the farm.*	*An operator complying with the relevant existing conditions in the permit will meet this BAT conclusion in so far as they will have reduced ammonia emissions compared to those they would have produced had they not implemented BAT. The operator is not required to report they are meeting the BAT-AELs annually.*
Monitoring of emissions and process parameters		
BAT 24	*BAT is to monitor the total nitrogen and total phosphorous excreted in manure using one or more of the following techniques [in the BAT conclusions document] with at least the frequency given [in the BAT conclusions document].*	*The operator will now be required to comply with a new permit condition which sets out a requirement to monitor nitrogen and phosphorous levels in livestock manure.* *This can be carried out using a mass balance of nitrogen based on the feed intake, dietary content of crude protein and animal performance or estimation by using manure analysis for total nitrogen content and the equivalent for phosphorous.* Operator will be using one of the techniques given: - • Calculation by using a mass balance of nitrogen and phosphorous based on the feed intake, crude protein content of the diet, total phosphorous and animal performance.
BAT 25	*BAT is to monitor ammonia emissions to air using one of the following techniques with at least the frequency given [in*	*The operator will now be required to comply with a new permit condition setting out a requirement for annual reporting on ammonia emissions. This should not represent a new requirement as they already submit this in their Pollution Inventory return.*

	the BAT conclusions document].	*We expect all operators will demonstrate compliance using emissions factors (one of the identified techniques) however they may choose to monitor ammonia emissions using a suitable and agreed monitoring protocol.* Operator will be using one of the techniques given: - • Estimation by using emission factors once every year.
BAT 26	*BAT is to periodically monitor odour emissions to air.*	*Routine monitoring (e.g., subjective 'sniff testing') is not expected in most cases, as we would expect the odour management plan to minimise and prevent any odour pollution. It will only be expected as part of ongoing odour management at sites where there have been substantiated odour complaints.* • Submitted an OMP with the application owing to sensitive receptors within 400m of the boundary that includes 'sniff-testing'.
BAT 27	*BAT is to monitor dust emissions from each animal house using one of the following techniques with at least the frequency given [in the BAT conclusions document].*	*The operator will now be required to comply with a new permit condition setting out a requirement for annual reporting of dust emissions. For pigs this is a new requirement. We expect all operators will demonstrate compliance using the emissions factors techniques.* Operator will be using one of the techniques given: - • Estimation by using emission factors once every year.
BAT 28	*BAT is to monitor ammonia, dust and/or odour emissions from each animal house equipped with an air cleaning system by using all of the following techniques with at least the frequency given [in the BAT conclusions document].*	*If an air scrubber or cleaning system is in place, the operator will be required to comply with this BAT conclusion. Air abatement systems are not common as they are costly and only work with closed housing systems so are not appropriate for a retrofit to older housing. Where such abatement is in place (for ammonia or odour abatement) the criteria has been met via process monitoring.* Not applicable, not proposing any air cleaning systems.
BAT 29	*BAT is to monitor the following process parameter at least once every year: -* • *Water consumption* • *Electric energy consumption* • *Fuel consumption*	*The operator is already required to keep records for these parameters in their current permit through existing permit conditions on energy efficiency, efficient use of raw materials and operating techniques. These will be checked during routine compliance inspections.* Operator will monitor all the process parameters at least once per year: • Water consumption • Electric energy consumption

	• *Number of incoming and outgoing animals* • *Feed consumption* • *Manure generation.*	• Fuel consumption • Number of incoming and outgoing animals, including deaths • Feed consumption • Manure generation.
BAT 30	**Ammonia emissions from pig houses** *In order to reduce ammonia emissions to air from each pig house, BAT is to use one or a combination of the techniques given [in the BAT conclusions document].*	Not applicable to rearing broiler chickens.
BAT 31	**Ammonia emissions from houses for laying hens, broiler breeders or pullets** *In order to reduce ammonia emissions to air from each house for* ***laying hens, broiler breeders or pullets****, BAT is to use one or a combination of the techniques given [in the BAT conclusions document].*	Not applicable to rearing broiler chickens.
BAT 32	**Ammonia emissions from houses for broilers** *In order to reduce ammonia emissions to air from each house for* ***broilers****, BAT is to use one or a combination of the techniques given [in the BAT conclusions document].*	*We are confident that broiler farm installations will be able to comply with the objective of BAT 32 via the usage of existing housing and operating techniques.* *This is based on the operator using techniques listed in this conclusion and achieving the BAT-AELs or by demonstrating the method used produces an equivalent level of protection. 'Equivalence' will need to be confirmed through emissions monitoring to show compliance with the BAT-AELs. Our review of housing types in England indicated that all operators should already be compliant with the techniques set out in BAT31. This will be checked during routine compliance inspections.* *The operator is required to comply with the new permit condition to carry out annual monitoring and reporting. The results will need to mee the*

		associated BAT-AELs. We expect the operator will demonstrate compliance using emission factors. *Compliance with AELs is covered under a new condition and associated process monitoring table.* Operator will be using a combination of the techniques given: • Forced ventilation and a non-leaking drinking system (in case of solid floor with deep litter).
BAT 33	**Ammonia emissions from houses for ducks** *In order to reduce ammonia emissions to air from each house for **ducks**, BAT is to use one or a combination of the techniques given [in the BAT conclusions document].*	Not applicable to rearing broiler chickens.
BAT 34	**Ammonia emissions from houses for turkeys** *In order to reduce ammonia emissions to air from each house for turkeys, BAT is to use one or a combination of the techniques given [in the BAT conclusions document].*	Not applicable to rearing broiler chickens.

Table 7 Raw materials inventory for Badcocks Farm Poultry Unit

Raw materials inventory	Quantity stored onsite (litres/kg)	Quantity used per year (litres/kg)	Justification for use of this material
Biocides (includes disinfectants, wood preservatives, slimicides)			
Disinfectants brought onsite by contractors to washout and disinfect houses & equipment	tbc	tbc	Defra Disinfectants Approved for use in England, Scotland, and Wales.
Pesticides (including herbicides, vertebrate control products, biological pesticides)			
Rodenticide baits, often in proprietary bait boxes	tbc	tbc	HSE UK List of Authorised Biocidal Products
Veterinary medicines (excluding dietary additives)			
	tbc	tbc	Chicken welfare/disease/pest control Provided only in accordance with a veterinary prescription as required
Bedding types			
Litter bales (proprietary mix of wood shavings/ chopped straw), delivered in time for setting up & small quantity stored onsite for topping up as required	tbc	tbc	UK industry standard, readily available, efficacy & cost
Fuels and oils			
Liquid petroleum gas for heating poultry houses	tbc	tbc	UK industry standard, efficacy & cost
Gasoline (red diesel) for emergency back-up generator	tbc	tbc	UK industry standard, efficacy & cost

Inventory will be reviewed every 4 years and updated if alternative products are available.

10 Resource efficiency and climate change

Table 8 Energy usage at Badcocks Farm Poultry Unit

Energy source	Use
Grid electricity	Ventilation system including extraction fans, recirculation fans for indoor air, computers, feed delivery equipment including augers to deliver feed into houses and inside into feeding pans, lighting, winches, water pumps, and pressure washers, etc.
Liquid petroleum gas	Space heating in all the poultry houses
Gasoline (red diesel)	Emergency backup diesel-fired generator

Table 9 Basic energy efficiency measures in poultry houses at Badcocks Fm Poultry Unit

Activity	Basic energy efficiency measures
Heating	• Houses fully insulated with a U-value of approximately 0.4 $W/m^2/^oC$ to reduce condensation and heat loss. • Houses constructed with a continuous damp-proof membrane installed under the concrete floor preventing moisture being drawn up from the ground and ensure the litter is dry and friable and reduce the need to heat houses to keep litter dry. • Nipple drinking systems with drip cups reduce water spillages. • Package LPG-fired heaters, equally distributed to prevent cold spots or sensors triggering and activating heaters unnecessarily. • Houses monitored by a computer system, which automatically controls and records humidity and temperature. • Temperature control sensors checked regularly and kept clean, so they are able to detect the temperature at stock level. • Pre-warm houses at start of rearing cycle to keep eggs and chicks at correct temperature. • Keep fabric of houses in good condition, cracks and open seams will be repaired, including in the concrete floor. • Planned preventive maintenance for buildings and equipment by operator's engineers or professional contractors in accordance with manufacturer's instructions and keeping records of the work.
Ventilation system	• Package ventilation system designed and installed by a professional contractor. • Forced ventilation via high velocity roof fan outlets (vents greater than 5.5m high and fan efflux velocity 11m/s). • Appropriate size and power fans to minimise energy consumption, the fans are low energy per m^3 of air. • Extraction fans fitted with back draft shutters to reduce heat loss. • Automatic, computer control system will control the ventilation for maximum efficiency. • Use small number of fans running continually at high-speed rather than more fans switching on and off. One fan operating at full capacity rather than two operating at half their capacity.

	• More extraction fans turned on, and side inlets opened as more fresh air is required to match age, weight and health and welfare requirements of chickens and provide adequate ventilation under all weather and seasonal conditions. Minimise, as far as the indoor requirements allow, heat losses from the houses. • Ventilation system switched off in empty houses, and after a drying period following washing and disinfecting. • Automated or mechanical equipment essential for the health and well-being of the chickens must be inspected at least once a day to check there is not defect in it, defects must be rectified by farmworkers, company engineers or professional contactors. • Planned preventive maintenance for buildings and equipment by operator's engineers or professional contractors in accordance with manufacturer's instructions and keeping records of the work.
Lighting	• Use a combination of natural and artificial lighting. • Use windows in sides of houses and energy efficient LED lighting. • Lighting follows a 24-hour rhythm allowing enough light for normal chicken behaviours, dark periods for rest and inspections.
Gasoline (red diesel)	• Package, emergency back-up diesel-fired generator to provide electricity in event of grid outage. • Fuel level will be checked for use or signs of leakage. • Planned preventive maintenance for buildings and equipment by operator's engineers or professional contractors in accordance with manufacturer's instructions and keeping records of the work.
Monitoring	• Read electricity meters every day and recording kWh used. • Recording litres of LPG and diesel delivered to site.

Q10c How we avoid producing waste in line with Council Directive 2008/98/EC on waste

Table 10 – Treating waste in accordance with the waste hierarchy at Badcocks Farm

Used poultry litter	Export offsite for recovery by land spreading to confer agricultural benefit or used as fuel in a power station.
Dirty water	Export offsite for recovery by land spreading to confer agricultural benefit
Municipal waste (Household waste and similar commercial, industrial and institutional waste).	Export offsite for sorting for recycling and residual waste for energy recovery or disposal.