Welton Cliff Poultry Farm

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Welton
Lincoln
Lincolnshire
LN2 3PU

Environmental Permit No.	**EPR/MP3621LD/P001**
Grid Reference	**SK 98318 79877**

Introduction

This bespoke Odour Management Plan (OMP) has been prepared to support the overall Environmental Management System in place at Welton Cliff Poultry Farm. The overriding principle of this OMP is to ensure the day-to-day activities are carried out in accordance with this document to help minimise the overall environmental impact.

An Odour Management Plan (OMP) has been developed for the site. It is also possible that under certain conditions odour could impact on receptors beyond the usual range unless good management practices outlined in this OMP are being applied.

Installation Background

The farm currently consists of 3 poultry houses and administration and storage buildings; the farm has wooden post and beam type poultry houses dating from construction in the 1980s in its original state with an additional .

There is capacity for a total of 36k broiler breeder rearing currently with a proposal to obtain an IPPC permit to house a further 24k birds bringing the site capacity to 60k broiler breeder rearer, with 12k broiler breeder rearer places in each of these 5 houses.
Total bird growing area per house will be approx. 1080m^2 per house (Total for site currently 3240m^2 with 3 houses, and a proposed 5400m^2 with construction of the additional 2 houses planned).

This farm is a Broiler Breeder 'Rearer' Farm.

The broiler breeder rearing husbandry system on this site will involve deep litter on a solid concrete floor with the litter removed and full C&D taking place on each depletion with the crop cycle usually 18-19 weeks and each unit has approximately 2.5 crops per annum.

Ammonia produced by livestock growing is minimised by keeping the litter as dry as possible using forced ventilation with indoor air and regular replenishment to ensure a high dry matter content of the manure.
A layer of approximately 40mm of soft wood shavings spread over the useable floor area provides bedding in the houses prior to bird placement.
Additional shavings are then added as necessary to maintain litter in a clean and dry state throughout the crop cycle.
Following depopulation at the end of the crop cycle, all litter is removed off site, and the houses and equipment are washed, sanitised and disinfected prior to the next cycle. Dirty wash water is channelled to the collection tanks and removed from site.

The site operates on a 24 hour/7 day a week basis and the normal production cycle is for a flock to be placed at day old and then depopulated for transfer to a breeder production (egg laying) farm from 18 weeks of age.

Purpose of Odour Management Plan

- Establish the likely source of odours arising from the farm
- Set out procedures at the farm to mitigate or minimise the risk of odour
- Set out measures used to periodically monitor odour emissions at the farm
- Formalise an effective method of dealing with any odour complaints quickly and efficiently

Potential Odour Sources

- Odour emissions from compound feed selection
- Odour emissions from feed delivery and storage
- Odour emissions from ventilation techniques
- Odour emissions from litter conditions and management
- Odour emissions from carcass storage and disposal
- Odour emissions from fluctuations in bird stocking densities
- Odour emissions from drinking water systems
- Odour emissions from clean out (litter removal)
- Odour emissions from dirty water generation, storage & removal (washout)
- Odour emissions from litter/manure
- Odour emissions from dust build up
- Odour emissions from use of diesel fired generator

Pathways and Receptors

The pathway for all the above sources would be via the atmosphere, with the most sensitive receptors being inhabitants of any nearby residential dwellings. The wind direction will significantly influence how receptors are affected.
There is one dwelling 60m of the farm (Holiday Let) and no other sensitive receptors within 400m, it is not expected given the nature of the type of intensive farming that this would cause a significant issue.

Receptors within 400m of the premises

Address	Grid Reference	Distance from Boundary & Direction
Welton Cliff Cottage	SK 98343 79764	60m to South

ODOUR MANAGEMENT AND CONTROL MEASURES

Odour Related Issue	Assessment of Potential Risks and Problems	Actions Taken to Prevent & Minimise the Risk & Monitoring Carried Out
Manufacture and selection of compound foods	- Milling and mixing of compound feeds - Poor quality and odorous ingredients - Feeds which are "unbalanced" in nutrients, leading to increased excretion, litter moisture and higher emissions of ammonia and other odorous compounds.	- No on-site milling or mixing. - Feed specifications are prepared by the feed compounders nutrition specialist. - The nutritionist ensures that nutrient content is balanced as the rations change throughout the flock cycle. - Feed is only supplied by a UFAS accredited feed mill, so that only approved raw materials are utilised in production. - A feed sample for every load of feed delivered to the site is left and documented for both quality assessment and traceability. Samples of feed are kept on site for a minimum of three months.
Feed Delivery and Storage	- Spillages of feed during delivery and storage. - Creation of dust during delivery.	- Feed delivery systems are sealed to minimise atmospheric dust. - All spillages are cleaned up immediately. For major spillages (over 500kg) the feed mill would be notified and will be required to send a vehicle out to clear the feed up and dispose. This process is carried out as soon as possible. - For any feed spillage less than 500kg it would be cleared up and disposed of on-site using the general waste container. - Annual condition checks of all the feed silos and their surrounds are carried out and documented as detail in the EMS.

Ventilation Techniques	- Inadequate air movements within the buildings can lead to high humidity and subsequently high moisture levels within the litter. - Inadequate control of inlet and fan controls leads to poor dispersal of potential odours	- The ventilation system is regularly adjusted either automatically or manually to aid optimum internal environmental conditions, as explained in the EMS. - The ventilation system is designed to efficiently control and when required to remove humidity from within the buildings. - Maintenance schedules are in place and are carried out in line with manufacturers recommendation and guidance as stated in the EMS. This is to minimise the risk of any breakdowns during the growing periods.
Litter Selection, Conditions and Management	- Incorrect choice of bedding material (Litter) - Insufficient bedding material to absorb normal excreta levels - Odours arising from wet litter and poor management - Spillage of surplus water from drinker systems - Disease outbreaks leading to poorly conditioned birds - Overcrowding of available bird space - Poor ventilation design and techniques leading to poor dispersion of air and odour - Poor building design and quality leading to residual build-up of damp, materials rot, trapped organic materials and decay resulting in odours - Stock inspections can disturb livestock and lead to unnecessary odour and dust generation	- Clean virgin wood shavings are used to provide an appropriate absorbent and low-odour litter, in-line with industry best practice. - The fresh clean bedding material (baled wood shavings) is purchased from approved specialist suppliers of poultry litter. - Re-Bedding is carried out as required throughout the crop cycle to ensure that there is always a sufficient depth of good quality litter in the house. Litter quality is checked at least 3 times per day within regular stock inspections. - Fresh litter is stored wrapped and undercover prior to use (protected from the elements) - Controls on feed supply and ventilation (see above) help maintain litter quality - Nipple drinkers and nipple cups are installed to minimise spillage of drinking water. - Drinker heights are checked daily as part of the daily stock inspection

		procedure. Stock and equipment are checked and recorded at least 3 times per day, and drinker heights are checked and adjusted where necessary. - Water pressure is checked daily by reference to the water pressure gauges. Checks ensure that the birds have good access to water, but that water is not being released onto the surrounding litter. - Use of veterinary health plan, with specialist veterinary inputs used as necessary to control health status of the birds - Stocking densities are controlled to maintain optimum ventilation levels, to prevent overcrowding and to ensure standards are being met (Farm Assurance Schemes, Breed Standards and House Design Criteria) - Partial destocking of buildings will be assessed if any odour complaints are substantiated by the Environment Agency and stocking levels are defined to be the root cause. - Walls and ceiling voids of building have been insulated to prevent condensation and cold bridging. - Stock inspections are carried out 3 times per day. These are only carried out by trained and/or fully supervised staff. House walking is carried out in a calm manner. All stock inspections are recorded, and action is taken immediately if any problems are identified in relation to welfare and environmental standards.

Carcass storage and disposal	- Carcasses not removed to designated storage - Inadequate storage of carcasses on site - Carcasses stored on site for prolonged period - Carcasses exposed for excessive times at collection - Collection vehicles not suitably covered leading to excessive odour release during transport off site	- Carcasses collected from sheds at each inspection (minimum 3 times per day) and immediately transferred to storage bins. - Carcasses are stored in purpose built locked and lidded bins. - Carcasses are collected at least weekly from the site by an Environment Agency approved and licenced ABP carrier using suitably designed, leak proof and covered vehicles. - Bins are treated with an odour neutraliser where required - After each full site depletion, the carcass bins are washed and disinfected to avoid any build up. Washing water will be directed to underground holding tanks and removed along with the house wash waters. - Carcass bins are to be located as far away as possible from any sensitive receptor and where possible stored in a cool shaded area. - Carcass collection is monitored to ensure no spillages occur and that vehicles are suitably covered before leaving the site.

Fluctuations in stocking densities – particularly following any increase from initial standards	- Overcrowding of available bird space - Poor ventilation techniques used for optimum air exchange due to inefficient dispersion - Pressure on saturation point of litter resulting in greater levels of moisture - Increased levels in odour concentration and release than that of a lower stocking density	- Stocking densities are to be controlled in accordance with pre-set standards (Farm Assurance Schemes, Breed Standards & House Design Criteria) to maintain optimum ventilation levels and to prevent overcrowding - Regular monitoring of bird weights ensure standards are being met - In the event of changes (increases) to standards then stocking density assessments, trials and data collection will be carried out to re-evaluate the optimum stocking levels required to minimise the environmental impact of the site on nearby sensitive receptors - Any assessment and monitoring plans to be reviewed and approved by the environment agency and a third-party monitoring company.
Management of drinking water systems	- Spillages of surplus water from drinker systems - Poor quality drinking water - Poor cleanliness of drinking water systems	- Use of nipple drinkers and nipple cups to minimise the risk of spillages and water wastage - Mains water is supplied. - Water lines and drinkers are washed and cleaned at each de-population following the documented wash down procedures and using DEFRA approved chemicals.

De-Stocking (Depletion)	- Higher levels of odour release through increased ventilation - Turning over of any damp litter during the machinery access to the houses generating odours - Prolonged depletion schedules (3-4 days) increase opportunity for odour release - External areas becoming heavily contaminated during depletion	- Ventilation controls to be used to control the release of odours while still maintaining optimum temperature control throughout the depletion process - Machinery movements to be kept to a minimum to help avoid churning up of damp/wet litter - If areas are excessively high in moisture, then these are to be replenished with fresh bedding before depletion takes place - Due to the size of the complex it is in the interests of the area to keep everything moving steadily throughout the depletion process. Transport managers will ensure minimal disruption to the site and surrounding areas. - Any abnormal operations will be documented and discussed with the transport planners
Clean Out (Removal of Litter from Houses & Removal from Site) Wash Down and Disinfection	- Creating of dust during clean down - Heaping up and removal of large quantities of dirty litter with potentially high levels of odorous material - Loading of lorries/trailers with dirty litter - Use of odorous chemicals/products to disinfect buildings following wash down	- All internal areas are blown down whilst doors are closed using high pressure air lances to remove areas of trapped dust which in turn helps reduce the amount of dirty water generated - The clean out process usually commences within 24-48hrs of the birds being depleted to ensure rapid removal of odorous materials and limit time for biological activity - Litter is scraped into large heaps within the buildings, this helps the drying process, minimises loading times and helps to make the process more efficient throughout. As this process carries hazards for operators

		working within the buildings, some ventilation is required to supplement the PPE worn by workers, to keep the environment clear of excessive dust and ammonia build up During this time ventilation is run at the minimum velocity required to ensure safety for the operators whilst preventing any large-scale odour releases. - Once all the litter is removed and the floors mechanically swept the ventilation system is powered down. The full process is usually completed within 3 working days. - Trailers are loaded directly outside sheds and once trailers are loaded, they are sheeted down ready to leave site and be removed as soon as possible. - Dirty litter is not stored on site and contingency plans are in place if the primary disposal route is compromised. - Yard area is swept during and after manure removal, to avoid build up - Quantities, times and destinations of litter removed from site are recorded onto transfer notes - Wash down of sheds takes place immediately after the removal of the litter. This is usually therefore the day following the completion of litter removal. Litter removal and washing are both contracted operations and contractor attendance is planned so that the tasks are immediately consecutive - Only DEFRA approved disinfectant and

		detergents are used on site and are applied by trained personnel - Dilution is carried out in accordance with the manufacturer's instructions - The clean out and wash down process is monitored and recorded
Dirty Water Management	- Standing or open stored dirty water during the production cycle or clean-out leading to odours - Removal of dirty water from storage tanks producing odours	- Areas around the houses are concreted and always kept clean throughout the flock cycle - Dirty water is removed from site using vacuum tankers - Containment tanks are checked quarterly, before and after wash down or following a period of prolonged rainfall - All removals are documented through transfer notes - Contingency plans are in place if the primary disposal route is compromised.
Diesel Generator	- Poor quality fuels - Incorrect choice of fuel leading to odour and particulates. - Incorrect or inefficient operation of generators leading to partial combustion of fuels and generation of odours	- Generator is provided as back-up in the event of power failure (restricted use) - Only use the specified fuel from approved and reputable supply - Generator is operated and maintained in accordance with manufacturer's instructions - Records of all inspections and maintenance work are maintained. All non-routine events are recorded. Testing is carried out on a weekly basis for a minimum of 1 hour and full services are carried out annually

ON FARM MONITORING

In accordance with **BAT Conclusions BAT26** odour emissions to air are periodically monitored in the following manner:-

- Internal relative humidity and temperature are measured and recorded daily. This is captured automatically but is recorded manually.
- Litter quality is assessed for moisture level and recorded monthly.
- Weekly 'Sniff-Tests' shall be carried out and recorded in the farms EMS.
- Daily stockperson checks are made to detect abnormally high housekeeping odours.
- Additional daily checks are made in the event of a disease situation to monitor for the possibility of increased odour as a result.
- Checks of the surrounding areas and perimeters are made by staff who does not work regularly on the farm (typically the area manager). These checks are made at least monthly, increasing to twice a month during the summer months. Checks include sniff tests as well as visual inspection to look for anything that could lead to a potential odour problem.
- Weather conditions are monitored daily.
- Any complaints and any subsequent actions are logged using the complaint report format.
- Staff are to receive annual training regarding Environmental Permitting Regulations – which will include odour management and any new company procedures

- In accordance with **BAT Conclusions BAT26**, in cases where odour nuisance at sensitive receptors is expected and/or been substantiated, then odour monitoring will be introduced as follows:-

- Specific odour monitoring at the site boundaries or other relevant locations in response to the potential nuisance using EN standard methods (e.g. by using olfactometry to EN 13725 to determine odour concentrations).

- The use of a mobile monitoring station to include weather conditions and other environmental parameters would be introduced should any continual problems or complaints arise to provide detailed local climatic information.

- Monitoring would normally involve the commissioning of an independent specialist to undertake any such work. A protocol will be developed as required.

- Specialist odour monitoring can be carried out during the flock cycle if it is deemed necessary to help gauge and further understand odour levels beyond the farm perimeter.

- Ammonia monitoring equipment would be introduced inside houses to further understand ammonia levels and odour in houses and on farm.

ODOUR COMPLAINTS PROCEDURE

Any odour complaints received in direct relation to the installations shall be recorded on an odour complaints form **(Document Ref. WCPF 010a)**

Odour complaints shall be fully investigated, and the reports will be available at future inspections. Complaints received directly from the public will be notified to the Environment Agency within 5 days without delay.

Investigations shall consider:-

- The activities taking place at the time of the complaint
- The timing of the complaint
- The weather conditions at the time of the complaint
- The possibility of any abnormal operations on any site
- Any changes that may have been made to a standard operational procedure
- The receptor and the impact that may have been caused

Following investigation into a complaint, if the issue is caused by an operation at the complex this will be discussed and reviewed with the Environment Agency. Any practical and proactive measures which can be agreed in response to a complaint will be implemented to help minimise the impact. Possible sources and actions that may be taken are set out in the following section of the OMP (Odour Contingency).
The complainant will also be contacted following the investigation into the complaint and kept up to date with progress and any remedial action being taken.

CONTINGENCY MEASURES

Various contingency measures have been drawn up to address possible situations where odour releases cannot be necessarily controlled by normal operations.

ODOUR CONTINGENCY		
Source	**Potential Cause**	**Mitigation**
Feed Quality	Poor quality/condition of feed at delivery (e.g. excessive fines/dust or damp) creating blockages that could result in feed spoiling and creating odour from silos or feeders	Isolate system and notify feed mill to make immediate collection and replacement from silo if appropriate. Temporarily use bagged feed transferred from another silo if this is needed for stock. Dismantle and clear any part of the feed system at risk of block. Bag any feed to be disposed of in sealed bags.
Feed Delivery	Failure of pipe coupling to tanker or feed bin creating leak and spillage	Any spillages are cleaned up immediately. If a spillage is inside a house the spillage is isolated from stock and bagged for use. Bags are retained inside the shed and away from stock. If a spillage is outside the shed the spill is covered with plastic/tarpaulin sheeting if immediate collection is not possible and/or it is raining. This increases the possibility of salvage and ensures no run-off. Major spillages (over 500kg) the feed mill would be notified and be required to send a vehicle to clear the feed up and dispose. Minor spillages (under 500kg) are cleared up immediately and disposed of in the general waste bins on site.
Ventilation Techniques	Flock Health/Growth Status generating higher odour/dust levels. Abnormal climatic conditions impacting on sensitive receptors.	Adjust/increased fan velocities within continuous ventilation system to address specific conditions. Refer to ammonia management plan

Drinker Systems	Failure of water pipe or drinker creating spillage of water and leading to poor quality wet and odorous litter.	Immediately isolate the pipe or drinker to prevent any further leakage of water. Segregate the area of spillage from the stock with barriers. Create a channel in the wet litter to allow any free water to drain to the shed drainage channel that runs the length of the house. Collect up wet litter bags, bins, or small trailer as necessary depending on quantity. Keep bags/containers covered and remove from site as quickly as possible through designated contractor.
Litter Condition – Stock Health	Significant disease situation leading to excess of dead birds and/or very heavily soiled and odorous litter.	If the quantity of deadstock is beyond the available bin storage capacity, then an area of the shed is fenced off from the stock and dead birds are left in the shed awaiting collection by ABP contractor. Birds are left spaced out to reduce heat and slow any decomposition. Ventilation is always running. Collection is into containers or trailers that are covered within the shed and immediately removed from site.
Litter Condition – Stocking Density	Overstocked house due to failed collection for depletion leading to higher levels of litter and odorous content	Excessively soiled litter to be dug out and collected from fenced off areas if soiling is extreme. Collection is into containers or trailers that are covered within the shed and then immediately removed from site. Depletion arranged as soon as possible.
Carcass (Deadstock Collection)	Dead Birds being left in sheds/shed lobbies for excessive periods of time leading to deterioration outside storage bins and odour	Immediately collect dead birds into plastic bags which can be sealed before removing to covered storage bins. Consider moving bins to be held inside an empty house if available. Re-training staff must follow asap.

Carcass (Deadstock Storage)	Delayed collection of carcasses resulting in excessive deterioration and odour	Consider moving bins to an empty house if available and/or to a point that is furthest from any sensitive receptors. Small quantities of disinfectant liquid may also be added to supress maggot activity/putrefaction.
Carcass (Deadstock Storage)	Carcass bins being left open leading to ingress of water and pests and resulting in excessive deterioration and escape of odour	Bins must be immediately closed and urgent collection requested from ABP contractor. Some shavings may be added to absorb liquid and temporarily help supress odour release. Small quantities of disinfectant liquid may also be added to supress maggot activity/putrefaction. Consider moving bins into an empty house if available. Re-Training of staff must follow asap.
Clean Out and Washing Operations	Dirty litter left in houses after depopulation due to failure of contract arrangements or problems with access to site (weather restrictions)	Keep the litter inside the shed. Keep the ventilation system running at minimum to restrict build up but reduce release of excessive odours to the airstream. Do not disturb the litter prior to the collection commencing to minimise release of odour and dust.
Clean Out and Washing Operations	Blocked drain leading to spillage of dirty water from shed onto surrounding yard and odour from evaporation	Cease cleansing activity until the blockage can be removed. Immediately bund any escape using bales of shavings and use shavings to soak up any water and prevent run-off to surrounding water courses. Collect soiled shavings into bags/containers/trailers. Ensure that they are covered and arrange from immediate removal from site by contractor. Dirty water tanker with pump can be utilised if dirty water is backed up and contained within the shed.

Clean Out and Washing Operations	Spillage of dirty water or soiled litter in the yard from transport trailers and tankers creating odour from release and evaporation	As above immediately bund any liquid spillage using bales of shavings and use shavings to soak up any water and prevent run-off to surrounding water courses. Collect soiled shavings or spilt litter into bags/containers/trailers. Ensure that they are covered and arrange for immediate removal from site by contractor
Clean Out and Washing Operations	Blocked or foul drains causing releases of odours	Drains can be covered with bales of shavings as an immediate means of supressing release of odorous gasses and helping to reverse odour into ventilated shed space. Immediate action is taken to prevent any spillage to clean water courses and to resolve the problem if any drainage malfunction is identified. If a drain is blocked in a house, then washing is suspended until the blockage is removed (using by multi-jetting). In extreme circumstances a drainpipe would be excavated to clear and replace. If any water has escaped or is escaping out of the house then this is bunded using bales of shavings, loose shavings may be used to soak up any water and prevent run-off to surrounding water courses. Any soiled shavings are then collected into suitable containers for immediate removal form site. A dirty water tanker with pump would be introduced if water has backed up into the yard. If a tank freeboard is breached, then a dirty water tanker with pump would be introduced to empty the tank and prevent overspill to clean water courses. Temporary bunding would be

		introduced at any point of overspill to watercourses using shavings or plastic sheeting as is appropriate. Washing would be suspended until the tank emptying is completed.
Diesel Generator	Generator fault or malfunction leading to partial combustion of fuel and excessive generation of smoke (odour/dust) Incorrect/poor quality fuel supplied leading to poor combustion and excessive generation of smoke (odour/dust)	Stop using the Generator. Use portable generator if required until repair is completed. Immediately instruct suppliers to collect and replace fuel. Clean out and service generator before restarting.

PART 2 – Possible Site-Specific Actions	
In the event of repeated and substantial complaints from any source than an independent odour assessment shall be carried out in conjunction with the Environment Agency and an approved third-party monitoring company. Monitoring will be undertaken in line with current guidance to identify the root cause of the odour and whether odours from the site correlate with specific times within the flock cycle. If normal operations are deemed to be the root cause, then any of the following site-specific actions relating to stocking densities, feed formulae and litter use may be put in place to help reduce the levels of odour to an acceptable level which is assessed by the EA as being below that deemed to cause pollution outside the permitted boundary. Operations will then be maintained at that level until such time as further measures can be put in place to reduce odour levels to an acceptable level and to allow normal operations to resume. Other options may be identified in addition to those included in the list below.	
Site Specific "Low Tech" Options	• Stagger the production cycle across the sheds to reduce the maximum amount of birds / weight of bids present on site at any point in time to avoid peak odours. • Grow the birds (or some of the birds) to a lower finishing weight to reduce the maximum weight and odour inputs. • Change the feed ration (lower protein level). Review options with the company nutritionist and farm veterinarians. Action with feed supplier. • Use specific feed additives to assist with odour reduction. Review options with company nutritionist and farm veterinarians. Action with feed supplier. • Increased use of litter additives. Consult with farm veterinarians to ensure welfare status and legality of any proposed chemical additive. • Increased use of litter at peak odour points in flock cycles. • Use masking / neutralising agents on the litter. As above consult with farm veterinarians to ensure welfare status and legality of proposed additive.

Additional higher tech options will be considered where lower tech solutions are not sufficient to control odour, specific aspects of the normal operation are identified as the cause and financially viable techniques (BAT) are available and/or as the means to bring stocking densities and site output back to the original full capacity. *Potential options, including those listed below, will be investigated with appropriate specialist suppliers, company technical experts and farm veterinarians.* *Other options may be identified in addition to those included in the list below.*	
Site Specific "Higher Tech" Options	• House water misters to minimise evaporation and reduce dust levels. • Installation of elevated stacks for roof fan ducts to improve dispersion. • Installation of environmental modules (dispersion baffles) into extraction fan systems.

COMMUNITY ENGAGEMENT

Contact will be made with the local parish council to open lines of communication between the parish council and the operator. Updates regarding the site will be provided to the parish council as and when required.

REVIEW

This OMP will be subject to review following any complaint that has been substantiated by the Environment Agency or every four years, whichever is sooner. Any actions that are implemented in relation to the resolution of complaints will be included within an update of the farm OMP.