Environmental Risk Assessment

This Environmental Risk Assessment was prepared following the methodology in GOV.UK guidance - *Risk assessments for your environmental permit* and Sector Guidance Note EPR 6.09 – How to comply with your environmental permit for intensive farming (Version 2, January 2010).

Assessment of Odour Risk

Odour Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
Odour from delivery and storage	Neighbouring dwelling houses within 400 m of the installation	Air	Measures as described in 'How to comply with your environmental permit for intensive farming (EPR 6.09 Sector Guidance Note) Odour Management Plan in place No milling of feed on site Feed system is sealed to minimise atmospheric dust. Any spillage of feed around delivery point is immediately cleaned up The condition of feed bins and feed system is checked frequently so that any damage or leaks can be identified, including visual inspection before deliveries	Unlikely	Odour annoyance	Not significant
• Odour arising from problems with housing ventilation system • Inadequate air movement in the house leading to	Neighbouring dwelling houses within 400 m of the installation	Air	Measures as described in 'How to comply - intensive farming'	Unlikely	Odour annoyance	Not significant

Odour Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
high humidity and wet litter • Inadequate system design causing poor dispersal of odours			The ventilation system will be regularly adjusted according to the age and requirements of the chickens The ventilation system will be designed to efficiently remove moisture from the house Buildings with higher ventilation rates will discharge exhaust air via side wall vents for improved dispersal Stocking density maintained at or below levels set out in welfare regulations			
Manure and slurry management: • Odours arising from poorly managed muck and slurry collection, removal and distribution • The use of insufficient or poor-quality wood shavings • Spillage of water from drinking systems • Disease outbreaks	Neighbouring dwelling houses within 400 m of the installation	Air	Measures as described in 'How to comply – intensive farming' Controls on feed and ventilation help to maintain air quality Additional controls include: Insulated walls and ceilings to prevent condensation Regular maintenance and correct positioning to avoid overflow from feed and non-leaking drinking systems Concrete floors to prevent water ingress, with damp proof course surfaces arranged to avoid build-up of stagnant water Stocking density at optimal levels to prevent overcrowding	Unlikely	Odour annoyance	Not significant

Odour Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
			Pens and yards kept clean Manure loaded directly to trailers for transport off site, rather than being moved by scrapers across the yard Dirty water collection systems enclosed and regularly emptied to avoid anaerobic conditions Wind direction observed during removal of used litter and dirty water			
Carcase disposal: • Inadequate storage of carcases on site	Neighbouring dwelling houses within 400 m of the installation	Air	Measures as described in 'How to comply – intensive farming' Carcases are placed in freezer immediately after they are removed and are stored for removal under the Fallen Stock Scheme	Unlikely	Odour annoyance	Not significant
Buildings: • Cleaning and disinfection • Emptying dirty water tank • Removal of manure	Neighbouring dwelling houses within 400 m of the installation	Air	Yard area kept clean Manure removal from building takes place infrequently (roughly every 16 weeks) Dirty water collection systems enclosed and emptied promptly after generation of dirty water Wind direction observed during removal of manure and dirty water	Likely	Odour annoyance	Not significant if carefully managed
Odour arising from manure/slurry spreading	Neighbouring dwelling houses within 400 m of the installation	Air	No manure spreading takes place on site. Exported to other farms for use	Unlikely	Odour annoyance	None

Odour Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
Odour arising from used litter and slurry Storage – dirty water tank	Neighbouring dwelling houses within 400 m of the installation	Air	Site operates with an odour management plan Feed selection to minimise excretion of nutrients No open storage of manure and collection containers removed from site promptly when removing litter Dirty water tank covered Areas of open, dirty concrete minimised, washed into dirty water tank	Likely	Odour annoyance	Not significant if carefully managed

Assessment of Noise Risk

Noise Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
Noise problems from large vehicles travelling to and from the farm	Neighbouring dwelling houses within 400 m of the installation	Air	Measures as described in 'How to comply – intensive farming' Vehicles are required to be driven onto and off site with due consideration for neighbours Deliveries of feed and fuel are made only during the daytime to minimise disturbance General animal movements made during daylight hours and of short duration, with minimum stress All vehicles maintained so as to minimise engine noise and are driven slowly to and from the site Roads and tracks maintained to minimise noise produced	Unlikely	Noise nuisance	Not significant if managed carefully
Large vehicles on site for delivering feed, loading live chickens at end of the growing period, removal of litter from houses, removal of dirty water from above ground tank	Neighbouring dwelling houses within 400 m of the installation	Air	Measures as described in 'How to comply – intensive farming' Vehicles need to be well maintained and must be driven slowly around the site Engines to be switched off when not in use	Unlikely	Noise nuisance	Not significant

Noise Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
			Vehicles fitted with an audible 'vehicle reversing' warning system are generally used only in the daytime Idling of machines avoided and engine revs kept low with an effective silencer Dirty water tanker filling and emptying done as an intermittent activity Machinery and equipment sited as far as possible from neighbours			
Small vehicles travelling to and from the farm, e.g. staff and visitors' cars, courier van deliveries, etc.	Neighbouring dwelling houses within 400 m of the installation	Air	Measures as described in 'How to comply – intensive farming' Small vehicles arrive during the normal working day and, therefore, are seen as low risk	Unlikely	Noise nuisance	Not significant
Feed transfer from lorry to storage silos	Neighbouring dwelling houses within 400 m of the installation	Air	Vehicles are well maintained and designed so that noise during feed transfer is minimised Conveyors and augers not operated when empty Tipping-type delivery vehicles and augers used, whenever possible, for bulk dry ingredient delivery	Unlikely	Noise nuisance	Not significant

Noise Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
			Blower and vacuum-type delivery vehicles fitted with low noise units			
Operation of fans	Neighbouring dwelling houses within 400 m of the installation	Air	New efficient extractor fans used and maintained in good condition to avoid excessive noise Fans sited away from neighbours Forced ventilation systems with automated controls to minimise run time and fan speed	Unlikely	Noise nuisance	Not significant
Alarm system and standby generator	Neighbouring dwelling houses within 400 m of the installation, staff and chickens	Air	Weekly system test carried out at times to minimise nuisance to neighbours All electrics and equipment are routinely maintained so that the back-up systems rarely need to be used in practice	Unlikely	Noise nuisance	Not significant
Chickens	Neighbouring dwelling houses within 400 m of the installation	Air	Noise from chickens not a likely cause for complaint during as they are permanently inside buildings During loading, noise from animals is minimised by careful handling and by prompt removal of the lorry from the site when full	Unlikely	Noise nuisance	Not significant
Personnel	Neighbouring dwelling houses	Air	Staff and other contractors are required to carry out their work	Unlikely	Noise nuisance	Not significant

Noise Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
	within 400 m of the installation		without creating excessive noise from shouting and use of radios, etc.			
Repairs	Neighbouring dwelling houses within 400 m of the installation	Air	Noise Management Plan in place If repairs to the site are required, the work is undertaken with due regard for possible noise nuisance and during the normal working day In the event of major repair work being undertaken, which is likely to cause significant noise and disruption, neighbouring residents will be notified in advance	Unlikely	Noise nuisance	Not significant
Manure/slurry spreading	Neighbouring dwelling houses within 400 m of the installation, wildlife	Air	No manure spreading takes place on site	Unlikely	Noise nuisance	None

Assessment of Fugitive Emissions Risk

Fugitive Emissions Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
TO AIR						
Dust and bio aerosols Sources: • Softwood shavings • Feed	Neighbouring dwelling houses within 400 m of the installation: • Nuisance • Contributes to odours • Human health (inhalation) Surrounding vegetation: Covers leaves and inhibits photosynthesis Surrounding land: Nutrient enrichment of soils Contributes to respiratory problems for chickens and staff	Air	Use of suitable dust-free softwood shavings and good storage of such materials Use of pre-milled feed delivered in sealed systems and stored in covered containers Regular clearing of dust to prevent build-up within buildings, on roofs and around vents, as part of the disease control strategy Treatment of lightly contaminated surface water by soakaway	Dust could potentially reach the road and neighbouring houses and surrounding land when a strong wind blows in that direction Management actions should prevent this happening	Nuisance: Dust on surrounding vegetation, cars, clothing Smothering and direct damage to nearby vegetation Chickens/staff may get stressed and become unwell	Not significant if managed carefully

Fugitive Emissions Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
Ammonia from poultry houses, manure and dirty water storage and removal	Neighbouring dwelling houses within 400 m of the installation Chickens and staff: High levels can cause respiratory problems Also perceived as a nuisance as it contributes to odours Surrounding vegetation: Direct toxic effect and changes to sensitive ecosystems Surrounding land: Nutrient enrichment and acidification of soils	Air	Measures as described in 'How to comply – intensive farming' Mitigation measures as for odour Feed formulated to match chicken requirements and to minimise amount of ammonia produced Provision of sufficient wood shavings to absorb manure, where appropriate Ventilation and heating control systems designed to provide optimal environment and regularly monitored and maintained Manure retained within the building during the growing period Regular monitoring of tank and store contents, and maintenance of facilities and equipment No manure spreading on site Fully trained operators	The impact of ammonia on air emissions from the installation has been assessed using ammonia screening. No detailed air dispersion modelling is required The results demonstrate there will be little likelihood of impact to nearby wildlife sites	Aerial deposition and direct toxic effect on trees Nutrient enrichment of soils and changes to sensitive ecosystems Respiratory problems in humans and mammals	Not significant

Fugitive Emissions Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
Zoonoses and notifiable diseases	Human health and livestock health	Air/direct contact	Detailed biosecurity precautions in place, e.g. frequent stock inspection, use of disinfectants and appropriate clean overalls, boots, etc. for staff, visitors and contractors, to prevent spread of disease Secure site visitor policy Livestock monitored for signs of disease and incidents reported quickly Use of a health plan, with specialist veterinary input in place	Unlikely	Human and livestock health implications	Not significant if managed carefully
TO SURFACE WATER						
Nutrients such as N and P plus organic matter Source: Wash water run-off to nearby watercourse	Adjacent Watercourses: Drainage ditches on the north, east and western site boundaries, assumed to be linked to the Old Hammond Beck Nutrient leaching from soil to surface waters and groundwater,	Land	Wash water run-off is diverted to the above ground dirty water storage tank Curbing and drainage channels prevents wash water leaving the hardsurfaced area Used litter/feed spilt on yard/roadways during clean-out is cleaned up promptly No manure spreading on site	Unlikely	Pollution of watercourse leading to eutrophication and poisoning of flora and fauna	Not significant if managed carefully

Fugitive Emissions Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
	causing eutrophication and increased biochemical oxygen demand (BOD) of watercourses					
Spillages from storage and use of pesticides and fuel/chemicals	Vulnerable groundwater beneath site	Land	Management techniques employed aimed at avoiding or minimising use, where possible Use of approved chemicals only Operators fully trained and all equipment regularly maintained to avoid any in-field spillage or discharge All tanks bunded and compliant with legislation	Unlikely	Contamination of surface and groundwaters Killing of flora and fauna	Not significant
TO LAND						
Ammonia from storage of dirty water, slurry, manure and housing	Sensitive nature and conservation sites identified in pre-application screening	Air	As for odour and 'To water' above Feed selected to minimise excretion of nutrients Storage sites sited away from sensitive receptors Dirty water tank covered	Likely	Direct toxic effect on trees, nutrient enrichment and acidification of soils	Not significant if managed carefully

Fugitive Emissions Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
					Changes to sensitive ecosystems	
Waste materials, packaging, etc. Source: Non-organic waste storage and disposal	Neighbouring dwellings and surrounding habitats and countryside	Air	Avoid production, where possible Dedicated storage areas and facilities Collected by licensed contractors for recycling or disposal Regular checks made for rubbish dumped by third parties	Unlikely	Amenity value of countryside spoilt by rubbish Possibility of causing harm to wildlife	Not significant
PESTS						
Flies could move off site and affect nearby residents Also, birds, rats, etc.	Neighbouring dwelling houses	Air	Pest management programme in place Litter is regularly inspected to check for maggots and flies Food sources covered and secure from pests Pest control programme in operation	Unlikely	Flies and rats are a vector of pollution that can harm human health Concerns about this pollution can cause offence and affect amenity	Not significant if managed carefully

Assessment of Accident Risk

Accident Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
Spillages from pesticide and biocide handling and storage areas escaping	Potentially polluting liquids flow over yard to clean drain inlet/ ditch and surrounding land Also groundwater beneath site	Flowing over yard or through cracks in poor impermeable surface and through the ground	Accident Management Plan in place Repair any infrastructure and design appropriate containment measures Maintenance and regular visual inspection procedure designed and implemented Foot dips inside the building on good concrete which does not have drains. Manually poured into dirty water storage system when required No fixed wheel wash system, only required quantities manually sprayed onto vehicle wheels Regular inspection of facilities Dedicated containers for storage inside buildings with impermeable hard standing within bund/drip tray Waste containers removed from site by licensed contractor Damaged or suspect packaging rejected at time of delivery	Very unlikely	Contamination of local groundwater and potential nearby abstractions	Not significant with measures indicated

Accident Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
Fuel oil in storage tank/vehicles escaping the containment	Land, local watercourse	The surface water drainage system	Regular inspection in accordance with the site maintenance and inspection procedure and complies with SSAFO regulations Generator sited in safe location with integrally bunded fuel tank Valves locked when not in use If spills occur, spill equipment is located nearby. Also carried by delivery driver	Very unlikely	Contamination of local watercourse	Not significant
Failure to contain firewater or off-site pollutants	Ditches, local watercourse		Accident Management Plan in place Drain inlets to be covered by sandbags, drain bung inserted, diverter valve closed. Potential for use of dirty water tank to be used to contain firewater if empty Guidance taken from local fire service	Unlikely	Contamination of local watercourse and surrounding land	Not significant
Incorrect disposal of wash water	Clean drain, ditches, local watercourse and soakaways	Drains, ditches, land	Staff trained in correct operation procedures All drains marked	Unlikely	Contamination of ground and surface waters	Not significant
Acts of vandalism which cause damage to structures and fittings	Surrounding land, surface and ground waters	Land, water	Site security	Low	Contamination of soil and/or water	Low

Accident Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
Flooding and other storm damage	Surrounding land, surface and ground waters	Land, drains, watercourses	Good site layout and design. No equipment sites within flood plain Maintenance of site infrastructure and local flood defences by drainage board Observe weather forecasts and warnings	Low	Water and soil pollution	Low
Fire	Livestock, staff, buildings, fuel and oils, chemicals, bedding, feed, local habitats and neighbouring dwellings	Air	Regular inspection and maintenance of equipment	Unlikely	Toxic smoke and other pollutants, surface run-off from firefighting water, surface run-off from failed storage tanks, pipes and stores Exploding fuel containers Increased numbers of dead animals for disposal Dust and fibres from building materials	Low

Accident Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
Above ground dirty water tank and pipe ruptures/overflows (including used disinfectant)	Dirty water flows over yard to drainage ditches at the east and west site boundaries and into local watercourse	The surface water drainage system	Curbing to prevent water entering nearby watercourses Use of Defra/NOAH-approved disinfectants Contact office or duty manager. If necessary, contact Environment Agency	Unlikely	Contamination of local watercourse	Not significant