

Lower Barn Poultry Unit H1 Environmental Risk Assessment

Source of emission	Emission (e.g. ammonia, dust, run-off, spillage, noise, odour)	Receptor (e.g. air, water, land, humans, plants)	Description of impact and duration of impact i.e. short term (ST), medium term (MT) or long term (LT)	Significance of negative impacts Major +++ Moderate ++ Minor + Nil 0	Mitigation / management measures for this emission
1. Poultry production (For the complete production and cleaning cycle)	Ammonia	Air	Aerial deposition and direct toxic effect on trees (ST)	+++	<p>Measures are described in EPR 6.09 Sector Guidance Note; How to comply – Intensive Farming v2; 2010 and BAT Reference document 2017 Conclusions:-</p> <ul style="list-style-type: none"> • Feed specifications will be prepared and continually monitored by nutrition specialists. • Feed composition will be closely matched to the chicken's nutritional requirements - using multiphase, ad-lib feeding with a minimum of 3 nitrogen balanced diets to reduce crude protein in each subsequent stage of growth. • Authorised feed additives will be used to lower crude protein including adding essential amino acid supplements and non-starch polysaccharide enzymes to improve otherwise poorly digestible feed components and reduce nitrogen excretion into the litter. • Forced ventilation will be installed in all the poultry houses with high velocity extraction fans (vents greater than 5.5 metres high and fan efflux velocity greater than 7m/s) and computer controlled to remove moisture under all weather and seasonal conditions while meeting the physiological needs of the birds. Regularly adjusting ventilation to match age, and weight and health requirements of the chickens to help keep droppings and litter dry and friable. • Optimising discharge conditions of exhaust air from all the poultry houses using a combination of techniques to disperse ammonia emissions including:- <ul style="list-style-type: none"> • Maximised outlet heights – exhausting air above roof level through the ridge. • Maximised vertical outlet velocity - designed with uncapped outlet cones. • The impact of atmospheric ammonia, nitrogen and acid deposition on the ground on internationally designated conservation sites with 5km have been considered in the application for an environmental permit, in a Report on the Modelling of the Dispersion and Deposition of Ammonia from the Proposed Broiler Chicken Rearing Houses. • Over approximately 0.05 ha of Breckland Forest Site of Special Scientific Interest (SSSI) and Breckland Special Protection Area (SPA), to the northwest of the proposed poultry houses, the
		Land	Nutrient enrichment of soils (e.g. hyper-eutrophication and acidification) (LT)	++	
		Plants	Changes to sensitive ecosystems (LT)	+++	

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					<p>process contribution to nitrogen deposition rates would exceed 1% of the Critical Load. Ammonia concentrations would be below 1% of the Critical Level.</p> <ul style="list-style-type: none"> At the Waveney & Little Ouse Valley Fens Special Area of Conservation (SAC), Redgrave & South Lopham Fens Site SSSI (Ramsar) to the southeast of the proposed poultry houses, the process contribution to acid deposition would exceed 1% of the Critical Load by a small margin. However, ammonia concentrations and nitrogen deposition rates would be below 1% of the Critical Level and Critical Load.
	Dust	<p>Humans</p> <p>Plants</p> <p>Land</p> <p>Water</p> <p>Air</p>	<p>Nuisance (ST)</p> <p>Contributor to odour (ST)</p> <p>Human health (LT)</p> <p>Covers leaves, inhibits photosynthesis (ST)</p> <p>Nutrient enrichment of soils (LT)</p> <p>Nutrient enrichment of water courses (MT)</p> <p>Adverse effect on air quality (ST)</p>	<p>+</p> <p>+</p> <p>++</p> <p>++</p> <p>++</p> <p>+</p> <p>+</p>	<p>Measures are described in Best Available Techniques (BAT) Reference Document; 2017, and EPR 6.09 Sector Guidance Note; How to comply – Intensive Farming v2; 2010, and HSE; Controlling exposure to poultry dust; Guidance for employers; 2012, and in the DEFRA; 2018 Code of practice for the welfare of meat chickens and meat breeding chickens:-</p> <ul style="list-style-type: none"> No feed manufacturing, milling, or mixing on-site. Use compound feedstuffs in pellet form, crumbled at the mill for chicks for first 2 weeks. Specifications will include fats as an ingredient for energy & binding the dusty ingredients. Feed delivery vehicles will be covered at all times to minimise dust. Deliveries will be monitored by drivers and stockman and any spillage cleared up immediately. Pan feeders installed and feeding ad-libitum, reducing dust compared to using track feeders. Dust extracted straw/wood shavings will be used for bedding litter. Delivered in plastic wrapped bales directly into the houses for unpacking and spreading over the entire floor area start of every growing period, rather than blowing in bulk, which would be dustier. Dust filtration equipment not installed, but will be closing doors, opening vents for natural air dilution, and switching on ventilation fans to create effective airflow is industry best practise to limit workers exposure to dust during litter spreading, depopulating and litter removal.

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					<ul style="list-style-type: none"> • Forced ventilation installed in all the poultry houses with high velocity extraction fans (vents greater than 5.5 metres high and fan efflux velocity greater than 7m/s), and using a combination of techniques to disperse the dust including:- • Maximised outlet heights – exhausting air above roof level through the ridge. • Maximised vertical outlet velocity - designed with uncapped outlet cones. • Clearing build-up of dust with compressed air from around vents, fans, ceilings, and feeding equipment end of every cycle, also helps reduce the amount of dirty water produced. • Removing litter from the floor, using a front end or skid-steer loader to shovel the bulk of the litter carefully and directly from the floor into a large heap the length of the house to minimise time spent loading into waiting trailers positioned outside the doors and avoid double handling. • Trailers will be kept covered at all times except during loading. • Keeping poultry houses closed and locked after removing the litter to contain dust and moderately offensive odour. • No used litter will be stored on site. • Stockman will be inspecting automatic equipment on which chickens depend not less than once per day to check there are no defects and any defects will be repaired immediately or on the same day by the stockman or by professional contractor. • Maintaining an inspection and preventive maintenance programme with record keeping for buildings and equipment with stockman and professional contractors.

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	Dirty water (e.g. due to run-off during or after clean-out)	Land	Nutrient enrichment of soils (LT)	+++	<p>Measures are described in EPR 6.09 Sector Guidance Note; How to comply – Intensive Farming v2; 2010:-</p> <ul style="list-style-type: none"> Concrete apron and kerbs installed to direct dirty water into storage tanks. Underground, concrete encased package dirty water storage tanks will be installed with capacity for storing all the dirty water, with diverter valves to keep dirty and clean water separate. Stockman and cleaning contractors will keep roadways, areas around buildings, dirty water grates and drains clear of litter, etc to avoid backing-up, pooling, or over spilling into surface water drains or on to unmade areas. Professional contractors emptying the dirty water tanks after cleaning is finished in readiness for the next and taken off-site. Collections can be increased anytime. Maintaining an inspection and preventive maintenance programme with record keeping for buildings and equipment with stockman and professional contractors. 	
		Water	Nutrient enrichment of water courses (ST)	++		
	Noise	Humans	Nuisance (ST)	++		Actions taken to minimise noise risks are provided in the Noise Management Plan.
	Odour	Humans	Nuisance (ST)	++		Actions taken to minimise odour risks are provided in the Odour Management Plan.
	Zoonoses and notifiable diseases	Humans & Livestock	Human and livestock health implications (ST)	+	<p>Measures are described in EPR 6.09 Sector Guidance Note; How to comply – Intensive Farming v2; 2010 and BAT Reference document 2017 Conclusions and DEFRA; 2018 Code of practice for the welfare of meat chickens and meat breeding chickens:-</p> <ul style="list-style-type: none"> Stockman who are responsible for the care of chickens at any point in time, including holiday cover, part-time and temporary staff will be appropriately trained and qualified. Using a Health Plan with professional veterinary input as required. Maintaining bio-security precautions. 	

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					<ul style="list-style-type: none"> • Signs warning people against unauthorised entry. • DEFRA approved disinfectants for cleaning houses and boot dips. • Clean protective clothing for staff and visitors. • Daily stock inspections.
	Feed (e.g. due to spillage from bins)	Land Water	Nutrient enrichment of soils (LT) Nutrient enrichment of water courses (MT)	+ +++	<p>Measures are described in EPR 6.09 Sector Guidance Note; How to comply – Intensive Farming v2; 2010 and BAT Reference document 2017 Conclusions and DEFRA; 2018 Code of practice for the welfare of meat chickens and meat breeding chickens:-</p> <ul style="list-style-type: none"> • Package enclosed silos, pipes, augers & feeding equipment will be installed to minimise spills & dust. • Feed silos will be protected from collision damage by careful siting relative to traffic flows- in between the poultry houses keeping them out of the path of HGVs, and easily connected to the truck/trailer blowing in the feed over as short a distance as possible. • Deliveries will be monitored by drivers and stockman and any spillage cleared up immediately. • Automatic equipment on which chickens depend must be inspected by the stockman not less than once per day to check there are no defects, and any defects to be repaired immediately. • Maintaining an inspection and preventive maintenance programme with record keeping for buildings and equipment with stockman and professional contractors.

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	Pests	Humans	Nuisance caused by vermin and flies (ST)	+	<p>Measures are described in and EPA 6.09 Sector Guidance Note; How to comply – Intensive Farming v2; 2010:-</p> <ul style="list-style-type: none"> • Dead chickens will be removed daily from the poultry houses by the stockman. • Carcasses will be stored in secure, non-leaking, containers and kept covered. • Containers will be removed weekly by an approved transporter under the National Fallen Stock scheme. Weekly collections normally considered adequate to avoid attracting vermin and flies and can be increased anytime (e.g. in warmer weather or in event of higher mortality as result of disease). • Transporter will exchange clean and disinfected containers for the filled ones, so no cleaning or disinfection on site. • Scheduled programme of pest control with professional contractors licensed to use pest control products, or staff will be trained.
2. Use of vehicles on site	Feed, used litter or dirty water (e.g. due to spillage from vehicles)	Land Water	Nutrient enrichment of soils (LT) Nutrient enrichment of water courses (MT)	+ +++	<p>Measures are described in EPA 6.09 Sector Guidance Note; How to comply – Intensive Farming v2; 2010 and in the DEFRA; 2018 Code of practice for the welfare of meat chickens and meat breeding chickens:-</p> <ul style="list-style-type: none"> • Feed silos will be protected from collision damage by careful siting relative to traffic flows- in between the poultry houses keeping them out of the path of HGVs, and easily connected to the truck/trailer blowing in the feed over as short a distance as possible. • Deliveries will be monitored by drivers and stockman and any spillage cleared up immediately. • Removing litter from the floor, using a front end or skid-steer loader to shovel the bulk of the litter carefully and directly from the floor into a waiting lorry/trailer positioned outside the doors to avoid double handling outside and tipping from minimal height.

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					<ul style="list-style-type: none"> Vehicles/ trailers will be kept covered unless loading. Concrete apron and kerbs will be installed to direct dirty water into storage tanks. Stockman and cleaning contractors will keep roadways, areas around buildings, dirty water grates and drains clear of litter, etc to avoid backing-up, pooling, or over spilling into surface water drains or on to unmade areas. Maintaining an inspection and preventive maintenance programme with record keeping for buildings and equipment with stockman and professional contractors.
	Noise	Humans	Nuisance (ST)	++	Actions taken to minimise noise risks are provided in the Noise Management Plan.
	Odour	Humans	Nuisance (ST)	+	Actions taken to minimise odour risks are provided in the Odour Management Plan.
3. Storage facilities	Dirty water (e.g. due to overflow or leakage from underground storage tanks)	Land Water	Nutrient enrichment of soils (LT) Contamination of surface and groundwater (MT)	++ +++	<p>Measures are described in EPR 6.09 Sector Guidance Note; How to comply – Intensive Farming v2; 2010:-</p> <ul style="list-style-type: none"> Concrete apron and kerbs will be installed to direct dirty water into storage tanks. Underground, concrete encased package dirty water storage tanks installed with capacity for storing all the dirty water, with diverter valves to keep dirty and clean water separate and manholes will be kept covered. Stockman and cleaning contractors will keep roadways, areas around buildings, dirty water grates and drains clear of litter, etc to avoid backing-up, pooling, or over spilling into surface water drains or on to unmade areas. Professional contractors will be emptying the dirty water tanks after cleaning is finished in readiness for the next time and taken off-site - avoids anaerobic conditions developing in the settled sludge. Emptying can be arranged anytime if any of the tanks are overfilled (e.g. A diverter valve not reset resulting in a tank being filled with rainwater) to stop dirty water backing up and over spilling on to the concrete apron during washing. If any dirty water backs up and

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					<p>overspills the tank will be emptied within 24 hours and the concrete apron and drains will be cleaned & disinfected same day to prevent odour.</p> <ul style="list-style-type: none"> Maintaining an inspection and preventive maintenance programme with record keeping for buildings and equipment with stockman and professional contractors.
	Fuels, disinfectants, and other chemicals (e.g. due to spills or leakage)	<p>Water</p> <p>Land</p>	<p>Contamination of surface & groundwater with consequential effects on animals (ST)</p> <p>Contamination of land (MT)</p>	<p>+++</p> <p>+++</p>	<p>Measures are described in EPR 6.09 Sector Guidance Note; How to comply – Intensive Farming v2; 2010 and in the DEFRA; 2018 Code of practice for the welfare of meat chickens and meat breeding chickens:-</p> <ul style="list-style-type: none"> Concrete apron and kerbs will be installed to direct dirty water/ spillages into storage tanks. Package back-up generator fuel level will be checked for use/ signs of leaks. Automatic equipment on which chickens depend must be inspected by the stockman not less than once per day to check there are no defects and any defects to be repaired immediately. Disinfectants, pesticides, and veterinary medicines will be stored in dry, frost-free, fire-resistant stores, kept secure against unauthorised use and capable of retaining any spillage. Package footbaths will be used to avoid overflowing and spent disinfectant from footbaths & wheel washes will be emptied or drained into the dirty water storage tanks. Implementing the accident management plan if disinfectant poses risk of entering into surface or groundwater including using spill kit equipment. Maintaining an inspection and preventive maintenance programme with record keeping for buildings and equipment with stockman and professional contractors.

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	Health risks due to contact with stored materials, inhalation, etc	Humans	Human health issues (ST)	+	<p>Measures are described in EPR 6.09 Sector Guidance Note; How to comply – Intensive Farming v2; 2010:-</p> <ul style="list-style-type: none"> • Manufacturer's safety data sheets for materials kept on site. • Measures set out in the Environmental Accident Management Plan. • Maintaining an inspection and preventive maintenance programme with record keeping for buildings and equipment with stockman and professional contractors.