Falcons Hall Farm Poultry Unit Dust & Bio-aerosol Management Plan

Poultry dust may vary in composition from pure wood dust to a complex mixture of organic and inorganic particles, faecal material, feathers, dander (skin material) and bio-aerosols – dust particles containing living organisms including mites, bacteria, fungi and fungal spores and endotoxins depending on the type of birds, the work activity, and the point in the growing or production cycle. Poultry dust deposition on vegetation, cars and clothing in the back garden and façade of the sensitive receptors can cause annoyance, especially in summer when people are more likely to have windows open and to be outdoors.

The H1 Environmental Risk Assessment submitted with the application to vary environmental permit to extend the installation boundary to erect 4no additional houses for rearing poultry intensively shows that sources have been identified as contributing to potentially moderate and minor risk of dust and bio-aerosols. The risk assessment was conducted with reference to EPR 6.09 Sector Guidance Note; How to comply – Intensive Farming v2; 2010; Appendix 11, assessing dust control measures on intensive poultry installations.

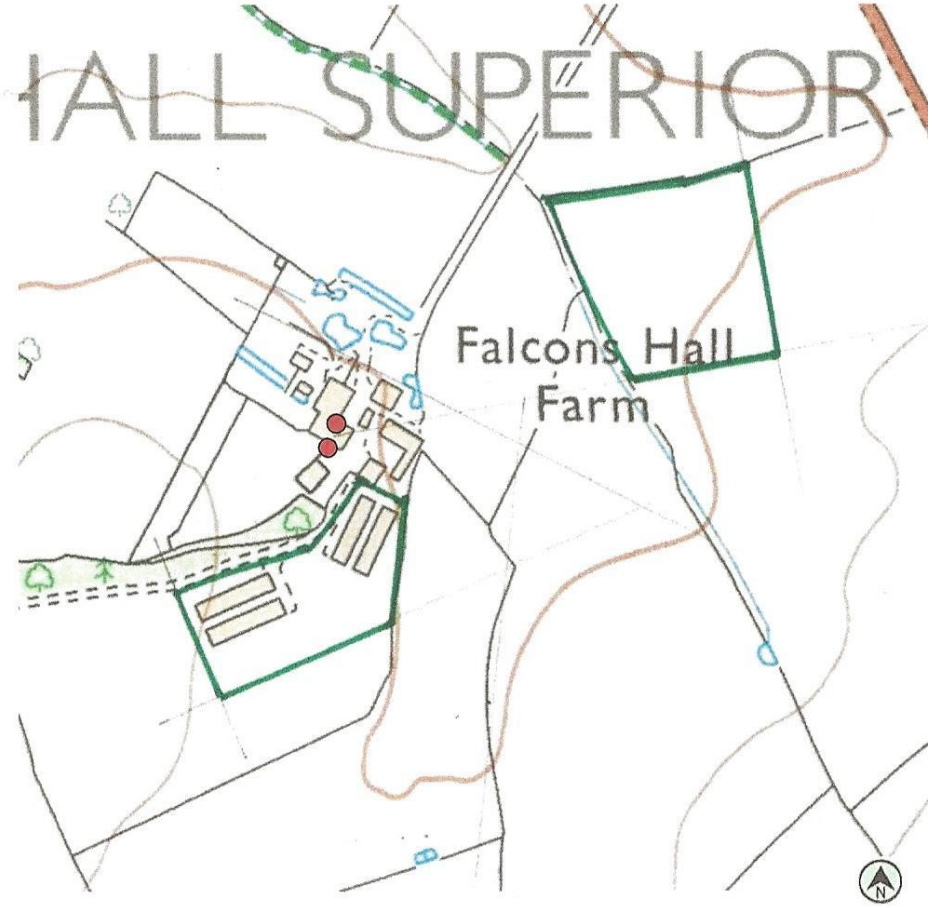
Created a dust and bio-aerosol management plan (DMP) part of the environmental management system owing to 2 sensitive receptors within 100m of the boundary including a residential dwelling, and commercial premises shown in Table 1 and Figure 1.

Table 1. Falcons Hall Farm Poultry Unit sensitive receptors within 100m

Nº.	Receptor	NGR	Direction	Distance from boundary
1	Commercial - Styne Ltd, Falcons Hall, Finningham Road, Rickinghall, Diss, IP22 1LP	TM 04332 73470	N	40m
2	Residential - The Old Stables, Finningham Road, Rickinghall, Diss, IP22 1LP	TM 04331 73508	N	70m

Distances measured on government website at magic.defra.gov.uk

Fig 1. Falcons Hall Farm Poultry Unit sensitive receptors within 100m



Wind direction is defined as the direction from which the wind is blowing. According to the Met Office Eastern England climate report - as Atlantic depressions pass by the UK the wind typically starts to blow from the south or south-west, but later comes from the west or north-west as the depression moves away. Directions between south and north-west account for the majority of occasions and the strongest winds nearly always blow from this range. Averaged across the year the prevailing wind direction is from the southwest.

Sensitive receptors in the prevailing wind direction so likely to be exposed to dust and bioaerosols for the majority of occasions. At the residential dwelling people would reasonably be expected to be present continuously or regularly. At nearest commercial premises people would not be reasonably expected to be present continuously or regularly for extended periods. Operator has no recollection of any dust concerns or complaints and will continue to foster good relationships with neighbours.

The following table sets out:-

- Sources of dust and bio-aerosols from a typical intensive poultry unit
- Actions taken at Falcons Hall Farm Poultry Unit to prevent or minimise dust and bio-aerosols emissions causing annoyance.
- Contingency and emergency planning to limit exposure to elevated dust and bio-aerosol emissions beyond the installation boundary.

Table 2. Actions and contingency actions to minimise dust and bio-aerosol risks at Falcons Hall Farm Poultry Unit

Source of dust & bio-aerosols	Potential risks and problems	Actions to minimise dust and bio-aerosols and risks	Contingency actions to minimise dust and bio-aerosols and risks
Dust from manufacture & feed selection	• Milling & mixing compound feed • Feed ingredients • Fat content	Measures are described in EPR 6.09 SGN; How to comply; Version 2; 2010 and Best Available Techniques (BAT) Reference Document; 2017:- • No feed manufacturing, milling, or mixing on site. • Feed specifications prepared by the compounders nutrition specialist and continually monitored. • Feeds supplied from mills in certification schemes and only use approved ingredients.	
Dust from feed delivery & storage	• Dust from silos • Storage of feed • Feed spillage • Form of feed	Measures are described in EPR 6.09 SGN; How to comply; Version 2; 2010 and Best Available Techniques (BAT) Reference Document; 2017 and HSE; Controlling exposure to poultry dust; Guidance for employers; 2012, and DEFRA; 2018 Code of practice for the welfare of meat chickens and meat breeding chickens:- • Installed package enclosed silos, pipes, augers and feeding equipment minimise spillage, dust, & odour. • Feed silos 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 so blowing in feed over as short a distance as possible. • Feed delivery vehicles always covered minimising release of any dust and odour. • Package cyclone dust separators catch dust during pneumatic feed delivery into silos.	<u>Trigger</u> • Feed spillage anytime. <u>Timeframe for implementation</u> • Immediately/same day. <u>Contingency action</u> • Spillages will be cleared up immediately into bags by drivers or stockman and stored in a secure place to prevent dust, & access by pests, for offsite disposal. • Stockman will have to arrange a waste carrier to deliver/collect a skip for any large spillage considered to be too much for packing into bags for offsite disposal same day or next day to avoid odour or pests becoming an issue. The skip will have to be covered if collection will be delayed any longer.

Source of dust & bio-aerosols	Potential risks and problems	Actions to minimise dust and bio-aerosols and risks	Contingency actions to minimise dust and bio-aerosols and risks
		• Deliveries will be monitored by drivers and stockman, and any spillage cleared up immediately. • Use compound feedstuff in pellet form, crumbled at mill for first 2 weeks for chicks. • Restricted feeding pullets with hard pellets via spin feeders (floor feeding), less dust compared to track feeders. • 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 contractors. • Maintaining an inspection and preventive maintenance programme and keeping records on buildings and equipment by stockman and professional contractors.	• Any feeder defects will be repaired immediately same day or as soon as possible. <u>Duration of action</u> • Achievable same day. <u>Cessation of action</u> • Spillage cleared up and delivered or secured for offsite disposal.
Dust & bio-aerosols from ventilation fans	• Dust may contain large amounts of bird proteins and mite residues with high risk of respiratory sensitisation for workers inside poultry houses. • Increasing ventilation may reduce airborne dust inside the house, but still	Measures are described in EPR 6.09 SGN; How to comply; Version 2; 2010 and Best Available Techniques (BAT) Reference Document; 2017 and HSE; Controlling exposure to poultry dust; Guidance for employers; 2012, and DEFRA; 2018 Code of practice for the welfare of meat chickens and meat breeding chickens:- • Forced ventilation via side inlets and high velocity extraction fans, with outlets on the roof. • Computer controlled and regularly adjusting to match age, weight, and health requirements of the chickens. • Optimising discharge conditions of exhaust air from poultry houses using a combination of techniques to disperse ammonia, odour, and dust missions more	

Source of dust & bio-aerosols	Potential risks and problems	Actions to minimise dust and bio-aerosols and risks	Contingency actions to minimise dust and bio-aerosols and risks
	exhausts dust to outside.	quickly, including maximised outlet heights – exhausting air above roof level through the ridge, maximised vertical outlet velocity - designed with uncapped outlet cones. • 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 contractors. • Clearing build-up of dust with compressed air from around vents, fans, ceilings, and feeding equipment end of every cycle, also helps reduce the quantity of dirty water produced. • Maintaining an inspection and preventive maintenance programme and keeping records on buildings and equipment by stockman and professional contractors.	
Dust issues with litter quality	• Type of bedding • Treatment of bedding • Amount of bedding • Application of bedding • Age of bedding	Measures are described in EPR 6.09 SGN; How to comply; Version 2; 2010 and HSE; Controlling exposure to poultry dust; Guidance for employers; 2012:- • 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, which is industry best practise to limit workers exposure to dust during litter spreading, depopulating, and removing litter. • Proprietary blend of dust extracted chopped straw/wood shavings or chopped straw provides absorbent bedding. Dust extracted straw/wood	

Source of dust & bio-aerosols	Potential risks and problems	Actions to minimise dust and bio-aerosols and risks	Contingency actions to minimise dust and bio-aerosols and risks
		shavings are commercially available, cost effective and readily disposed of after each production cycle. • According to How to comply sawdust and flax straw have been found to produce less dust than wheat or barley straw, but neither are normal UK industry practise for intensive pullet rearing. • Delivered in plastic wrapped bales directly into the houses for unpacking and spreading evenly over entire floor area start of every growing period. • Dust filtration not installed but closing doors, opening vents for naturally diluting air, and switching on extraction fans to create effective airflow during litter placement is industry best practise to limit workers exposure to dust. • Use new litter every time, never reuse litter.	
Dust and bio-aerosols from bird activity	• Increased flock numbers • Birds exhibiting higher activity levels create elevated levels of dust in the air.	Measures are described in EPR 6.09 SGN; How to comply; Version 2; 2010:- • Overall number of bird places onsite to be increased when the additional 4no poultry houses are brought into use so more dust and bio-aerosols (See actions for ventilation above). • Stockman will be inspecting chickens daily while disturbing them and the litter as little as possible. • Restricted feeding pullets with hard pellets via spin feeders (floor feeding) and increasing light levels contributes to higher activity.	

Source of dust & bio-aerosols	Potential risks and problems	Actions to minimise dust and bio-aerosols and risks	Contingency actions to minimise dust and bio-aerosols and risks
Dust and bio-aerosols during destocking	Dust & bio-aerosols released via fans & open doors.	Measures are described in EPR 6.09 SGN; How to comply; Version 2; 2010 and Best Available Techniques (BAT) Reference Document; 2017 and HSE; Controlling exposure to poultry dust; Guidance for employers; 2012, and DEFRA; 2018 Code of practice for the welfare of meat chickens and meat breeding chickens and the DEFRA booklet; Heat Stress in Poultry, Solving the Problem; 2005:- • Destocking chickens end of every growing period 2 times each year, takes only a few days. • Dust filtration not installed but closing doors, opening vents for naturally diluting air, and switching on extraction fans to create effective airflow during litter placement is industry best practise to limit workers exposure to dust. • Catching and collecting techniques designed to minimise bird disturbance and minimise dust and odour including using subdued lighting to keep birds calm and using a modular transport system. • Modules always covered to protect chickens during transport to protect them, and also providing a dust barrier, but likely to be uncovered in warmer weather. • HGVs pass-by sensitive receptors but takes only seconds.	

Source of dust & bio-aerosols	Potential risks and problems	Actions to minimise dust and bio-aerosols and risks	Contingency actions to minimise dust and bio-aerosols and risks
Dust & bio-aerosols from removing litter Generally considered the dustiest activity	Dust & bio-aerosols released via fans & open doors	Measures are described in EPR 6.09 SGN; How to comply; Version 2; 2010 and Best Available Techniques (BAT) Reference Document; 2017 and HSE; Controlling exposure to poultry dust; Guidance for employers; 2012:- • Removing litter after destocking occurs only 2 times every year. • Professional contractors removes litter as soon as possible, normally within a day of destocking, and not normally more than 3 days for example destocking on a Friday and cleaning out on a Monday on normal weekdays to avoid causing annoyance at weekends or on bank holidays and in as short a time as possible. • Reducing workers exposure to dust by keeping doors closed and switching on more fans to create the required airflow, and dispersing dust and bio-aerosols via the high velocity extraction fans. The ventilation will be controlled and reduced immediately after all the litter is removed and works in houses are finished. • Clearing build-up of dust with compressed air from around vents and extraction fans and ceilings, and feeding equipment end of every cycle, and 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 off the floor into a large heap the length of the house to minimise time spent loading into waiting trailers positioned outside the doors to avoid double handling. The doors will be open on to the concrete hard standing areas where the trailers	• Sometimes opportunities to delay removing litter/washing out houses to avoid causing annoyance to sensitive receptors but washing out and disinfection and drying and setting-up must be completed in readiness for chicks being hatched. Setting/incubation/hatching is scheduled weeks in advance and chicks can't often be delivered anywhere else.

Source of dust & bio-aerosols	Potential risks and problems	Actions to minimise dust and bio-aerosols and risks	Contingency actions to minimise dust and bio-aerosols and risks
		will be parked, and not in close proximity to sensitive receptors. • Used litter transported in covered trailers and kept covered at all times except during loading • Stockman keeping poultry houses closed and locked after removing litter to contain any residual dust. • Litter used for power generation or land-spreading under the control of a separate farming business, and a written agreement will be in place. • Keep checking actions taken to minimise dust and bio-aerosols are being adhered to until work finished. • No used litter stored on site.	
Washing Generally considered the least dusty of all the activities being a wet activity carried out by a contractor.	Dust & bio-aerosols released via fans & open doors	Measures are described in EPR 6.09 SGN; How to comply; Version 2; 2010 and Best Available Techniques (BAT) Reference Document; 2017 and HSE; Controlling exposure to poultry dust; Guidance for employers; 2012, and DEFRA; 2018 Code of practice for the welfare of meat chickens and meat breeding chickens and the DEFRA booklet; Heat Stress in Poultry, Solving the Problem; 2005:- • Washing out end of every growing period occurs only 2 times every year. • Professional contractor washing out houses as soon as possible, normally within one day of destocking, and not normally more than 3 days for example destocking on a Friday and cleaning out on Monday. Washing out all the houses in as short a time as possible. • Stockman and contractor keeping roadways, areas around buildings, dirty water grates and drains clear of	

Source of dust & bio-aerosols	Potential risks and problems	Actions to minimise dust and bio-aerosols and risks	Contingency actions to minimise dust and bio-aerosols and risks
		litter, etc to avoid backing-up, pooling, or over spilling into surface water drains or on to unmade land.	

1. Responsibility

The Agricultural Director of Crown Chicken Ltd shall undertake to adhere to the agreed plan at all times. The Environment Agency shall be notified without delay of any incident or accident, which is causing or may cause significant pollution as result of dust and bio-aerosols causing annoyance.

2. Contingency control measures including monitoring and complaints

(a) Monitoring

i. Farm Manager/ Stockmen are responsible for monitoring dust onsite and for emissions beyond the site boundary which may cause annoyance and ensuring the actions and contingency actions to minimise dust are being adhered to and properly, managing any complaints.

ii. Inform relevant sensitive receptors (neighbours) of any extraordinary dust that might be expected, and actions are being taken to minimise the amount and duration.

iii. Record in the farm diary any dust nuisance at sensitive receptors which was expected or substantiated and actions or contingency actions to minimise the dust as quickly as possible.

(b) Complaints

i. Complaints must be recorded and investigated immediately including checking the actions and contingency actions to minimise dust are being adhered to. If the dust is no longer apparent the investigation must still be completed and recorded on the same day.

ii. Tell the complainant and anyone else likely to have been affected what you have done.

iii. Details of the complaint and the actions taken must be recorded on the Dust Complaint Report form (below) and kept in the site office. A copy must be sent to the Agricultural Director immediately.

3. Review

Review the effectiveness of the DMP including the dust related issues, actions, and contingency actions to minimise dust risks at least annually. Sooner if there have been complaints or relevant changes to any operations or infrastructure.

Dust Complaint Report

Date	
Reference number	
Name and address of complainant	
Telephone number of complainant	

Time and date of complaint	
Date, time, and duration of offending dust	
Weather conditions *(e.g., dry, rain.fog, snow)*	
Wind strength and direction *(e.g., light, steady, strong, gusting)*	
Callers' description of dust	
Has the caller any other comments about the offending dust?	
Any other previous known complaints relating to the installation (all aspects, not just dust)	
Any other relevant information	
Potential dust sources that could give rise to the complaint	
Operating conditions at the time offending dust occurred	
Actions taken	
Final outcome	
Complainant visited	
Complainant contacted with explanation Yes/No Date By whom	

Form completed by	Date:	Signed:

Complaints and results of the investigation must be recorded on the Dust Complaint Report form and kept in the Complaints Log in the site office. A copy must be sent to the Agricultural Director immediately.