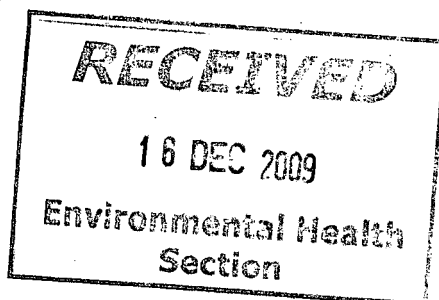




Feidhmeannacht na Seirbhíse Sláinte  
Health Service Executive

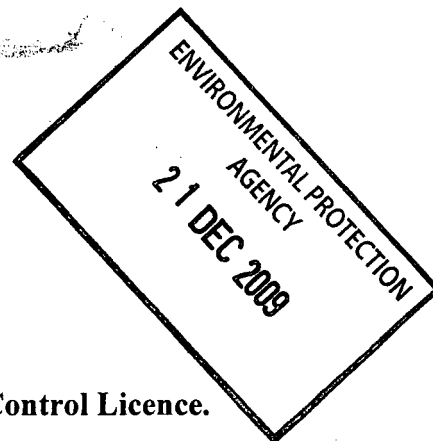


Sub No. 1  
Environmental Health Service,  
Health Service Executive,  
Mid-Western Area,  
Health Centre,  
P.O. Box 644,  
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02/12/09

Ms. Kate Stafford,  
Office of Climate, Licensing & Resource Use,  
Environmental Protection Agency,  
Headquarters, P.O. Box 3000,  
Johnstown Castle Estate,  
Co. Wexford.



Re: Application for Integrated Pollution Prevention and Control Licence.

Class and Nature of Activity: Class 6.1.0

The rearing of poultry in installations whether within the same complex or within 100 metres of the same complex, where the capacity exceeds 40,000 places.

Applicant: Mr. Pat Mulcahy, Drominmacurlough, Newcastle West, Co. Limerick.  
Ref. No: P0902 - 01

Dear Madam,

I refer to the above application prepared by NRGE, Mooresfort, Lattin, Co. Tipperary behalf of applicant Mr. Pat Mulcahy. I would also refer to my on-site visit to the Poultry rearing operation and meeting thereon with Mr. Mulcahy on 30<sup>th</sup> November 2009. This farm operates as a contract grower for Kantoher Poultry Producers Co-operative Society and produces 100,000 birds. It exceeds the licensing threshold of 40,000 as set out under Annex 1 of the IPPC directive and the New First Schedule of the EPA Acts 1992 – 2007. The farm comprises five poultry houses of relatively modern design. Examination of Limerick County Council E-Planning system reveals that planning permission for the development was granted in 1978 and the Units were constructed in the early 1980's.

The farm is owned and operated by Mr. Pat Mulcahy. He is also the responsible person on site and lives adjacent to the farm. The main activities at this facility occur during normal working hours between 8 am and 20.00 p.m. Stock inspection in line with normal farming practices are carried out everyday including weekends and holidays. Automatic systems such as feeding, water supply and in-house ventilation operate continuously on a 24 hour basis. There are inputs from the Co-operative staff in terms of feed and nutrition, veterinary control, animal welfare and health and safety. NRGE monitors environmental performance by way of internal audit. The poultry rearing operation is subject to licensing, control and supervision

by Veterinary Officers of the Department of Agriculture and Food. The farm produces stock under the An Bord Bia producer scheme called Poultry Products Quality Assurance Scheme. Such standard covers three broad areas

- Food Safety
- Animal Welfare
- Environmental protection.

### **On-site operations/process**

The licensable activity involves the rearing of chicks from day old through the breeding cycle (35 – 42 days) to slaughter weight. The on-site activities can be summarised as follows.

- Bedding of houses with straw/wood shavings prior to placing of birds.
- Placing of day old chicks in broiler house.
- Feeding and rearing of birds for 35 – 42 days.
- Bulk delivery of feed to farm.
- Automatic feed and watering system.
- Daily flock management/husbandry.
- Removal of diseased/dead birds.
- Collection and removal of chickens for slaughter off site.
- Removal of manure from houses and transport off site for recovery/disposal.
- Washing and disinfection of broiler houses between batches.

### **On site facilities**

The farm is located in a rural area but there are also a number of residential properties in the vicinity. Agriculture is the predominant industry in the locality. Facilities comprise five purpose built chicken rearing houses, storage shed, a concrete yard, wash water storage tanks x 2, ancillary structures, LPG tank, equipment necessary for the management, husbandry and administration of the enterprise. The facility is served by water supply from the Newcastle West Public Supply. The structures and equipment on site were specifically designed and installed for the purpose of rearing poultry.

The houses operate on a batch system. Following de-population of the previous batch the houses are cleaned of litter, washed and disinfected. The facility is then re-populated with day old chicks. These are fed and watered using an automatic system until they reach factory weight. The houses are then de-populated and the poultry transferred for slaughter. On average there are five-six batches per annum. While production on the site is continuous the on-site presence of the operator/farmer is normally for 2-4 hours between 8 am and 17.00 p.m. Usually, the houses are inspected twice daily, morning and evening. Currently the rearing units are occupied by 60,000 four day old chicks.

### **EPA Guidance Note on Best Available Techniques for the Intensive Agriculture Section (July 2003).**

In assessing and evaluating this application regard is had for the content and provisions of the above document. The Guidance Note is one of a series issued by the Environmental Protection Agency (EPA) which provides guidance on the determination of Best Available Techniques (B.A.T.) in relation to applicants seeking IPPC licenses under Part IV of the EPA Acts 1992 – 2003 and is intended for use as a tool in determining BAT for the activities specified in this licence application.

#### **Process Description**

The existing broiler houses are constructed of concrete block and insulated timber material on a concrete base. They are windowless and have automatic lighting system. A computerised temperature control and ventilation system is in operation. Roof fans are used as part of a mechanical ventilation system and these are augmented with air vents along the eaves of the building.

The ventilation system automatically adjusts the fan speed and opening of the air inlets in response to in-house temperatures and humidity readings which are controlled by a temperature sensor linked to a computer. The process is continuous with the sensor informing the computer every 15 seconds as to the building temperature. Warm air is expelled through the apex of the roof by the extractor fan.

The heat sources within the house are 1.5 kW electric elements placed below the air vent so that incoming air is warmed as it enters the building.

The floors of the houses are constructed as a solid concrete slab and the birds are kept on litter comprising of straw and wood shavings which is spread over the entire house floor area. Wet litter is avoided for animal health reasons (infection control) and also to minimise ammonia emissions. The dry matter content of the litter is maximised by maintaining a well insulated building, strict temperature/humidity control and the use of a button nipple drinking system. The birds are fed cereal and soya protein feeds. The constituents of the animal feed are adjusted to suit the growth stages of the birds during the 35 - 42 days when they are on site. Gas is used to heat the poultry houses. In practice, heating is supplied for the first 2 – 3 weeks, after which the birds generate sufficient heat. From day 35 (approx) depending on weight, a percentage of the birds may be removed off site for transfer to a slaughtering facility. Electricity is used to operate the feed system, ventilation, lighting etc. Strict hygiene and bio-security measures are practiced to ensure the health status of the flock is maintained at a high level. Where bird mortality does occur the carcasses are removed and stored on site in a fully sealed PVC receptacle pending removal off site by a licensed haulier to an animal rendering plant.

When a batch of birds reach maturity and are removed off site for slaughter cleaning of the poultry houses is undertaken. This involves removal of the poultry litter by mechanical loader ("Bobcat"). The floors are then brushed down/cleaned and washed with water prior to disinfection. The houses are left to dry for approximately two weeks at which stage the bird rearing cycle re-commences.

Mr. Mulcahy confirmed that he operates 5-6 breeding cycles per year.

### **Manure/Poultry Litter**

Manure/poultry litter is generated as part of the poultry rearing activity. The applicant in written submission, states that poultry litter is currently transported to Walsh Mushrooms (Wexford) for composting and use as a fertiliser in the mushroom industry. Previously the litter was collected by Licensed Contractor for landspreading on tillage farms. Applicant states that 500 tonnes (approx) per annum is generated. Poultry manure is a rich source of plant nutrients and is deemed to be a valuable fertiliser for farmland. The application of animal manure to farmland is regulated under S.I. 378 of 2006 (Good Agricultural Practice for Protection of Waters) Regulations. This entitles producers to supply chicken manure (litter) to farmers for landspreading subject to certain conditions such as an approved Nutrient Management Programme being in place and documented records of all consignments/dispatches to receiving landowners being maintained.

### **Aqueous discharges**

Wash water from wash down of the houses is collected on site in two underground concrete storage tanks with a liquid effluent capacity of 160 m<sup>3</sup>. All roof and stormwater generated on site is collected and disposed of via sealed pipework to a land/field drain located at the southern end of the site.

The application states that all wash water (soiled water) is recovered as a fertiliser in accordance with S.I. 378 of 2006.

### **Emissions**

The main emissions from the poultry rearing activity are odour and dust emissions from the buildings ventilation system, poultry litter which is currently sent for mushrooms composting and wash water which is stated in the submission is recovered by disposal as a fertiliser to land.

### 1. Air

Emissions to atmosphere from this plant include warm air from the extract ventilation system. The main contaminants present in ventilation emissions are odours, dust and ammonia. From past experience of complaint investigation arising from such facilities Poultry litter removal represents the most significant odour and dust emission potential. However, it should be noted that the removal of litter is restricted to a number of hours every 6 – 8 weeks in accordance with completion of batch rearing cycle. From discussions with site operator there are a number of control measures currently in place to minimise potential odour emissions. These include use of appropriate bedding material, (60% of the bedding material used is now wood shavings and this is having a much more effective odour control agent compared to straw) appropriate stocking densities, quality of ventilation and house design along with minimisation of carcasses by maintaining flock health to a high standard. This office has been in receipt of no odour complaints from this facility. It should be borne in mind that the facility is located in a predominantly agricultural setting at a minimum distance of 350 metres from nearest dwelling occupancy. It is considered that good on-site housekeeping measures will minimise emissions.

### 2. Surface Water

Surface water is generated from roofs of the Poultry rearing units and concrete paved yardway surrounding the broiler houses. Poultry rearing activities are confined to within the two houses. The yard area exterior of the houses may become contaminated with poultry litter during the course of litter removal, every 6 – 8 weeks. All surface water arising from roofs and yard is collected via sealed pipework and discharged to a land drain on the southern site perimeter. It was noted during the course of site inspection that no observation manhole for visual inspection is maintained. Surface water run-off should in theory be uncontaminated and therefore should have minimal impact on surface water quality off site. However, the submission does not fully clarify the final discharge point (i.e. receiving water) for surface water generated on site and this requires further clarification.

### 3. Wash water

Wash water arising from the wash down of the houses is collected in two underground storage tanks. The submission identifies in vague terms that such wash water is used as a fertiliser on agricultural lands. This is an important environmental issue and control measures in accordance with B.A.T. have not been adequately addressed in the proposal as submitted. During the course of site visit Mr. Mulcahy confirmed that the effluent storage tanks are emptied once every two breeding cycles. He has 40 acres on site and 20 acres off site as available land for effluent disposal purposes.



#### 4. Poultry litter/manure

Manure/poultry litter is generated from the rearing activity at a rate of 500 tonnes per annum. The nutritional value of this averages 11 kg total Nitrogen and 6 kg total Phosphorous per tonne of manure as per the Nitrates Regulations (S.I. No. 378 of 2006).

All litter generated is collected and managed off site by Kantoher Co-operative Society. Traditionally the litter has been supplied under a Nutrient Management Programme to farmers for recovery to tillage lands as a fertiliser. The submission as presented identifies Walsh Mushrooms, Wexford as an off site recipient of the litter for mushroom composting purposes where it is used as a fertiliser. I would point out that the E.P.A., B.A.T. document specifies that poultry litter may be used as a fertiliser for the activities described above but only in accordance with the European Communities (Good Agricultural Practice for protection of Waters) Regulations. In this regard the Licensee (litter producing facility) is required to prepare a detailed Nutrient Management plan providing details in relation to the lands on which the litter shall be recovered, records of all poultry litter movements off site, transportation, nutrient requirements of the land and the crop grown thereon. Applicant confirms that wood shavings as distinct from straw is now used as the preferred bedding material.

#### 5. Noise

The site is located in a rural environment at a minimum distance of 350 metres from nearest residential property and where agricultural (farming) is the predominant activity. The licensee does not reside on site. I am satisfied from on site inspection that the activities carried out at this installation are not likely to result in significant noise emissions. B.A.T. specifies the standard noise emission limit values of 55 (daytime) and 45 (night time) dB(A) at any noise sensitive location. The nearest residential properties are located on the Kilmoughteen road approximately 350 metres south of the bird rearing facilities.

#### 6. Other Waste

Other wastes generated on site include animal carcasses, packaging and fluorescent tubes. Animal carcasses arise from mortalities associated with the rearing of poultry. Carcasses are stored on site in a covered wheelie bin (P.V.C.) and disposed of on a weekly basis by licensed haulier to an approved rendering facility. B.A.T. requires carcasses to be removed at least fortnightly for disposal. Written submission states that dead bird carcasses account for 5 tonne (approx) of generated annual waste. Hazardous waste is limited to fluorescent light bulbs which are used for lighting and heating. Between 5 – 10 are used annually and the recovered tubes are removed by Electrical Contractor or taken to the local civic amenity centre in Newcastle West for recovery.

Non hazardous wastes generated on site would constitute general refuse, veterinary containers, packaging, disposable clothing and footwear. This material is stored on site pending weekly collection by private refuse collection service.

## **Observations/Recommendations**

From on-site observations, inspection and discussions with Licensee I am satisfied that the on-site facilities, operation and management conform to a high standard of practice. Notwithstanding same the facility does give rise to listed environmental emissions and has the potential to cause nuisance and give rise to complaint, particularly during that phase of the operation when litter is removed and recovered off site.

It is acknowledged that the licensing process comprehensively addresses in a holistic manner the prevention, control and monitoring of generated emissions through the Recommended Determination (R.D.). This office is concerned primarily with highlighting issues of public health/environmental health concern where it is of the opinion that the Licence application does not adequately address such concerns. In this regard a number of issues are identified as being worthy of further clarification/information so that potential public/environmental health impacts are properly controlled/eliminated. These are set out hereunder.

- The proposal as submitted in respect of wash water disposal is inadequate and does not address comprehensively environmental and public health concerns associated with such practice. There is a requirement under B.A.T. for intensive agricultural sector to demonstrate recovery capacity for nutrients generated. A Nutrient Management Plan (NMP) is required based on European Communities (Good Agricultural Practice for Protection of Waters) Regulations (S.I. 378 of 2006). In this instance the applicant has available lands for disposal of such effluent and has not specified in the submission the location and details of the proposed land holdings identified.
- Regard should be had in the submission of any NMP, for the fact that a significant area of land in the immediate and general environs of the existing poultry rearing facility is of such poor quality as to be deemed unsuitable for waste disposal purposes by virtue of high water table and poor percolation/drainage qualities.  
B.A.T. on landspreading of poultry manure (wet or dry) is;
  - Incorporation within 12 hours. Incorporation can only be applied to enable land that can be easily cultivated.
  - Not applying manure adjacent to any watercourse (leaving an untreated strip of land) and spreading the manure as close as possible before maximum crop growth and nutrient uptake occurs.
  - Not applying manure to steeply sloping fields and taking into account factors such as proximity to waters, soil condition, ground cover and rainfall.
  - S.I. 378 of 2006 specifies periods during winter when farmyard manure shall not be applied to land.

Taking all of the above criteria into consideration would eliminate significant land availability for disposal of poultry washwater.

- I am not satisfied that the issue of surface water disposal has been adequately or comprehensively addressed in the submission. No detail is provided in respect of ultimate disposal to a receiving watercourse for surface water generated on site.

Under B.A.T. the identity and type of receiving water (river, ditch, estuary, stream, lake, etc) must be stated. A National Grid reference must be given for all discharge points.


- B.A.T. also requires weekly visual inspection of surface water monitoring points and B.O.D. C.O.D. monitoring. No monitoring data in respect of same is submitted by applicant. It should also be noted that no on-site inspection chamber/manhole is provided for monitoring/sampling of surface water.
  - A system of compliance monitoring for potential environmental emissions should be incorporated into any proposed licence determination. An onus should be placed on the applicant to undertake periodic monitoring with regard to odour at the boundary of the site. No emissions, including odours from the activities carried on at the site should result in impairment of, or an interference with amenities or the environment beyond the installation boundary.
- Periodic groundwater quality monitoring of relevant parameters should also be incorporated into any proposed determination.


Veterinary Science Division (VSD) of Dept. of Agriculture, Northern Ireland have provided "strong circumstantial evidence" that broiler litter is a significant risk factor for the spread of Clostridium Botulinum bacteria causing Botulism in livestock as a result of the toxin being spread by wildlife or wind blown. The toxin is produced in decaying carcasses and vegetable matter. The presence of the carcasses of birds that have died during production is regarded as the likely source of the toxin. Source: "Control of Botulism in Cattle", Dr. Seamus Kennedy, Agri-Food and Biosciences Institute, Veterinary Science Division (December 2006).

It is recommended from a public health viewpoint that such matter is investigated/examined having regard to the fact that there currently are eight applications pertaining to IPPC licence applications for Intensive Poultry rearing units in the Newcastle West area and each submission makes reference to disposal of chicken litter in accordance with Kantoher Co-operative Society Nutrient Management Plan. Potentially, this has significant implications given the high density of such units within a confined geographical area. Farmers in the Newcastle West/Rathkeale area have recently reported of significant livestock losses in 20 – 30 farms in the locality and a possible link with landspreading of Poultry litter is being alleged. While this has not been substantiated the claims are on public record. In the circumstances further research/study/investigations may be warranted by the EPA to comprehensively address this issue.

Yours faithfully,

Agreed,

  
James Cahill,  
Senior Environmental Health Officer

  
Annette Fitzgerald,  
Principal Environmental Health Officer