

**Pollution Prevention and Control  
(Northern Ireland) Regulations 2003**

**Application for a Permit**

**Example of Supporting  
Documentation**

**Prepared for:**

**SNIFFER Poultry Case Study  
Air -(98)18**

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**SAC  
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## **A4.2 Non Technical Summary**

### *The Farm*

XYZ Poultry Farm is a privately owned site of approximately 2 hectares. The site contains 3 poultry sheds designed for rearing chickens for meat production, with a maximum stocking capacity of 80,000 birds. The farm, which is located grid reference *a nnn nnn* is surrounded by pasture land.

### *Poultry housing*

Broilers chickens are kept in 3 sheds, each ten years old and of wooden construction with box profile brown painted steel roofs and concrete bases. The working area where vehicles operate and the area surrounding the sheds is laid with concrete, and the site is screened with trees. Underground tanks have been installed to collect waste water. An electronic control system regulates heating and ventilation within the sheds. Ventilation is by means of roof-mounted fans that draw air into the sheds via openings in the side walls and blow the exhaust air out above the roof ridge. An interval timer operates the fans to control the amount of fresh air entering the buildings in combination with adjustable inlets that allow further control of airflow. Maximum and minimum temperatures are monitored and recorded daily and adjustments made as necessary to ensure that birds are in the optimum environment for their age and weight. Target levels for relative humidity are 50% - 70%. Nipple drinkers are used to reduce wastage of water and to maintain dry litter, which is expected to have a dry matter content of 65% - 70%. Water consumption is monitored and recorded daily.

### *Production cycle*

At the start of the cycle wood shavings are spread on the floor to a depth of 2 cm and the sheds are pre-warmed to 31°C using LPG fuelled space heaters. Up to 26,500 day old birds are placed in each shed at a stocking density of 18 birds per square metre. As birds grow, temperature is gradually reduced and ventilation is increased. Feed from a UKASTA accredited mill is delivered in 28 tonne capacity covered lorries and stored on-site in galvanised steel bins. Three diets are fed over the growing cycle with the protein content being reduced as the birds get older. The growing period is 42 days. Once all the birds have been cleared litter is removed in covered trailers to premises for use as mushroom compost. The buildings are then washed down and disinfected ready for the next crop. On average there are 6 crops per annum with a turn around of one to two weeks between crops. Mortalities are removed from the sheds daily and the numbers recorded. Carcasses are kept on-site in covered vermin proof bins until they are incinerated in an incinerator having a secondary combustion chamber but operating at less than 50 kg per hour.

These measures are intended to reduce the production and emission of ammonia, odours and dust from the sheds, and prevent liquid washings escaping to the environment. This in turn should reduce the environmental impact of the farming activities.

*Responsibility*

Primary responsibility for running the site rests with the owner occupier. Additional technical support is available from a processing company as required.

### **B1.3 Site Report and Site Map**

#### *Site Description*

Located in the County of *name*, the site lies adjacent to the A12 road between the villages of *Village 1* and *Village 2*. It comprises a rectangular shaped area of land of approximately 2 ha, 150 m above sea level. The majority of the site area is occupied by the sheds and surrounding concrete hard standing. An outer vegetated strip of land has been planted with trees and shrubs to screen the sheds. At the north east side of the sheds, a vegetated bank provides further screening. At the foot of this bank is a drainage ditch that collects run-off from the concrete hard standing surfaces. This ditch is heavily vegetated and forms a swale that drains to field drains and eventually into the *Local River* catchment. The area surrounding the site is pasture land located in a typical undulating landform with gentle slopes. A map of the site is provided with the main application.

#### *Land use class*

Soil Survey Code SWG1ST shows that the land surrounding the farm has a land classification value of 3A.

#### *Soil type*

Soil survey sheet nn shows that the dominant soil series in the area is a Surface Water Gley Class 1 on Shale Till.

#### *Water courses and groundwater vulnerability*

Approximately 200 m to the east of the site a small water course flows north and joins the *Local River*. Two other streams in the same catchment are located approximately 0.5 km to the east and 0.5 km to the west of the site. These also flow north into the *Local River*. Water from a vegetated ditch, or swale, located along the east perimeter edge of the site, flows through underground drains to the watercourse 200m east of the site. A consent to discharge exists for the swale outlet. Groundwater vulnerability maps show land at the site and in the area surrounding the site as weakly permeable.

#### *Site History*

Prior to the building of the poultry sheds in 1989, the site was pasture land. Construction of the poultry farm involved the removal of topsoil, and levelling using virgin aggregates.

#### *Operation of the site*

The site is operated solely for the production of poultry meat. Day old chicks are introduced into poultry sheds bedded with wood shavings and grown until a maximum of 42 days old. The birds are then removed for processing and the shed is emptied of litter, washed and disinfected ready for the next crop. Mortalities are removed to sealed bins and thereafter burned in a small (less than 50 kg per hour) incinerator. Ash from the incinerator is collected and disposed of to landfill. Most litter is removed immediately from the site in covered trailers to be utilised as mushroom compost. Wash water is collected in underground storage tanks and emptied on land in accordance with the DARD code of good practice for prevention of pollution of water. Feed is stored on-site in sealed steel bins.

#### *Substances and emissions*

Potentially polluting substances stored on site include 200 litres of diesel stored in a bunded fuel tank, and quantities of disinfectant concentrate stored in sealed containers. The main emissions from the site are ammonia, odours and dust. Dust deposited on hard standing within the site is regularly swept up and disposed of in accordance with the DARD code of good practice for prevention of pollution of water.

#### *History of incidents*

No pollution incidents are known to have occurred at the site since construction of the poultry sheds in 1989.

#### *Potential pollution pathways*

The site is relatively compact and consists mostly of the sheds and associated hard standing areas, consequently the whole area has been considered as a single zone. Potential pollution pathways have been identified as:

- Waste water leakage from hard standing areas during cleaning, or storage tank overflow resulting in potential for contamination of land, watercourses and groundwater with nutrients, pesticides and disinfectants.
- Contaminated run-off from apron areas, particularly if dust has been allowed to build up, resulting in potential for contamination of land and groundwater with nutrients, disinfectants.
- Leakage from septic tanks that have not been well maintained.
- Spillage of diesel to soil around the filling area of diesel tanks.
- Ammonia and dust emitted to the atmosphere being deposited on the site and having the potential to damage or cause changes to some vegetation.
- Potential soil contamination resulting from a build up of ash around the incinerator.

### *Site Reconnaissance*

An examination of the site was undertaken to establish whether pollution has occurred through any of the pathways above.

- Leakage from hard standing areas was assessed by visually examining vegetation and soil around the hard standing and searching for run-off channels or other evidence of leakage. Vegetation and bare ground did not show any obvious signs of pollution.
- A similar procedure was used to assess run-off from the apron area. There was some evidence of wet land as a result of rainwater run-off but no evidence of any contamination from, for example, dust or feed.
- The area around the septic tank showed no signs of leakage and evidence of previous leaks such as a build up of algae were not obvious.
- There was no evidence of diesel spillage around an area where vehicles had been fuelled in the past.
- Vegetation around the sheds was green and lush, probably as a result of ammonia deposition, but there was no evidence of damage or scorching to leaves on trees and shrubs.
- The area around the incinerator was inspected visually for potential contamination such as a build up of ash. There were areas of bare earth around the base of the unit due to activity from people and vehicles, but no evidence of ash or carcass remains.

### *Statement of site condition*

The area of the site comprising the poultry sheds is considered to be in a condition commensurate with agricultural land that has been developed for intensive poultry production. Given that this land was previously a green field area used for agricultural production, it is considered unlikely that contamination is present. The land surrounding the poultry sheds is still used for agricultural production and although a small amount of manure spreading is undertaken on this land, the presence of contaminants is considered unlikely.

[Note: If there is a possibility of contamination on any area of the site, for example areas around old fuel tanks and incinerators, applicants are advised to adopt a risk based approach to establish the level of contamination in defined zones of the site. In circumstances where pollution was suspected, soil sampling may be required. [Please refer to the guidance on preparing site reports.]

### B2.1.1 Inspection and Maintenance Schedule

Scheduled inspections are undertaken by the farm owner (name) on a monthly basis. The findings are recorded using the form below and any defects noted and corrective action stated. In addition to the monthly schedule a number of daily checks are made as part of monitoring the production process.

Farm Name:.....

Month.....20.....

If any item is marked unsatisfactory, please detail corrective action required below.

Item	Points to check:	Satisfactory	Unsatisfactory (detail below)
Chemical/vet medicine stores	security, bunding, stock sheets correct, only essential items stored	✓	
Drinking water	meter readings, leaks, valves, condition of pipework, frost protection, records properly made	✓	
Litter storage in housing	wet litter areas, condition of effluent tanks, date last emptied	✓	
Generator	fuel and oil leaks, exhaust leaks, condition of fuel lines and tanks, service records, records of weekly tests		✓
Feed bins	no spilled feed, impact damage, protective barriers, integrity of structures	✓	
Disinfectant baths	leakage, spent disinfectant, integrity of containers	✓	
Waste skips and bins	adequate facilities on site, secure covers in place, appropriate for nature of waste materials, leakage, containers clearly marked with type of waste	✓	
Hard standing areas	clean and free from dust, surface deterioration, appropriate surface slopes for run-off, no ponding	✓	
Storm drain manholes	evidence of discoloured water, flooding, integrity of covers, colour coding of covers		✓
Septic tanks	overflow, leakage, date last emptied	✓	
Perimeter ditches	free from slime or discoloration, adequate flow, not stagnant, date next analytical test due?	✓	
Pest control	signs of rodent activity, records up to date, bait properly laid and protected, carcasses removed	✓	
Trees and crops	signs of leaf damage, excessive dust deposits	✓	
Buildings	loose or damaged panels, integrity of fan shrouds, dust deposits on roofs, rainwater collection - gutters & down pipes, security, water ingress etc., alarms tested and working	✓	
Incinerators	Evidence of overloading, inadequate combustion, ash properly cleaned up, site clean and tidy, no carcass remains, monitoring equipment and data ok	✓	

Remedial action required:

1. Minor fuel leak from diesel pipe on generator engine. Tighten joint - replace at next engine service.
2. Broken manhole cover at NE corner of site. Replace cover.

.....  
 .....

Inspection conducted by:



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SNIFFER Poultry Case Study - ref Air (98)18  
Northern Ireland example application – supporting documentation.

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Date:

### **B2.1.2 Details of Staff Training**

The following staff have attended a recognised training course on prevention and control of pollution on pig and poultry farms, covering the requirements of Standard Farming Installation Rule number 1.

#### Training Records

Name	Job Title	Details of course and course supplier	Date training completed
A N Other	Proprietor	Livestock SVQ III with prevention and control of pollution on pig and poultry farms - National Training Provider	August 2002
A N Other	Assistant	Prevention and control of pollution on pig and poultry farms - ABC Agricultural College	August 2002
A N Other	Stockworker	Prevention and control of pollution on Company broiler farms - in-house training programme	October 2002
A N Other	Stockworker	Prevention and control of pollution on Company broiler farms - in-house training programme	October 2002
A N Other	Stockworker	Prevention and control of pollution on Company broiler farms - in-house training programme	October 2002

Note: Evidence of training must be provided, please enclose a copy of the course certificate awarded to successful trainees. If trainees have attended an in-house course, please provide an outline of the course context.

### **B2.2.1 Selection and Use of Raw Materials**

All chemical and disinfectants used on site are listed in approved lists (MAFF/HSE Reference Book 500, National Office for Animal Health (NOAH) compendium, and DARD approved list of disinfectants). Details of the inventory are given in the Table in Section B.2.2.2 of the main application form.

### **B2.2.2 Selection and Use of Feedstuffs**

All feed is supplied from the company owned and operated UKASTA accredited mill. Feed is carefully formulated to provide the necessary balance of nutrients but minimise the amount of nitrogen and phosphorus excreted by optimising crude protein input and feed utilisation. Currently 3 diets are fed:

- starter crumb (Crude Protein = ; Phosphorus = )
- grower pellet (Crude Protein = ; Phosphorus = )
- finisher/finisher withdrawal pellet (Crude Protein = ; Phosphorus = ).

[Note: give details of the crude protein and phosphorus levels in diets.]

All diets contain the digestive enzymes xylanase and beta-glucanase to improve the digestibility of feeds. It is anticipated that phytase will be used in the future to permit a reduced phosphorus level in feed. Improved digestibility can prevent excess water consumption, thus helping to maintain dryer litter.

All feeds except finisher withdrawal pellets contain an anti-coccidial to control coccidiosis. Anti-biotic growth promoters are not used.

### **B2.2.3 Water**

Water is from a mains supply on the site. Average consumption is 8.7m<sup>3</sup> per 1000 birds per crop. The following practices ensure that water use is optimised and waste is avoided:

- Nipple drinkers are used to minimise losses and help maintain dry litter.
- Water consumption is monitored and recorded daily from individual meters within each shed. Any variation from normal levels is investigated immediately.
- Daily checks are made by staff to ensure that drinkers are at the correct height for the birds. Having drinkers at the correct height and adjusting pressure and flow to allow birds to utilise water efficiently minimises wastage and improves

litter quality. These checks also allow staff to attend to problems at an early stage, e.g. leaks in drinking lines.

- Sheds are fully insulated and provided with an efficient ventilation system to maintain an optimum environment for birds at all times including extremes of weather. Water consumption should not therefore increase significantly in hot weather.

A water audit will be undertaken within 18 months of the date of issue of the permit. [A pro-forma agricultural water audit is available from The Environment and Heritage Service]

#### **B2.2.4 Waste**

The following waste types have been identified:

- paper from chick box liners upon delivery of day old chicks;
- plastic waste from wrapping used on wood shaving bales and from empty chemical and detergent containers;
- glass from vaccine bottles;
- mortalities.

With the exception of mortalities, wastes are stored in covered bins and removed to landfill. A segregated waste collection is currently not available from the local authority. The quantity of wastes is minimised by good management practices, for example maintaining good litter quality reduces or eliminates the need for top-up bales of shavings thus reducing the amount of plastic wrapping. Large empty plastic biocide containers can be ‘re-cycled’ as foot dip containers or rubbish bins for store rooms. Mortalities are collected daily and stored in sealed bins for burning in a small (less than 50 kg per hour) incinerator three or four times per week as required. Good husbandry practice minimises mortalities. Temperature in the combustion chamber of the incinerator is monitored to demonstrate that 850°C is achieved thus ensuring complete combustion. Manufacturers operating instructions are followed to avoid overloading and to ensure correct start-up and shut-down procedures.

A waste audit will be undertaken using the MAFF publication ‘Opportunities for Saving Money by Reducing Waste on Your Farm’ within 18 months of the date of issue of the permit.

#### **B2.3.1 Feed Delivery, Milling and Preparation**

Most diets are pelleted and this minimises dust during delivery. Feed is delivered to the site by lorry in covered 28 tonne loads and blown directly into sealed storage bins that are set back from high traffic areas to minimise risks from collision. Delivery times are restricted to between the hours of 0700 and 2300 to minimise disturbance from noise. Lorries are modern and well maintained, and are all fitted with efficient silencers. All drivers are equipped with empty bags shovels and brooms to clear up any spillage should this occur when attaching blower pipes etc. Spilled feed is attended to immediately to discourage pests and prevent risks from polluted run-off. On rare occasions when feed has to be moved on site, this is done in one of two ways; large quantities are moved by using a sucker/blower lorry, while smaller quantities are placed in sealed bags and moved by tractor trailer or barrow.

### **B2.3.2 Storage of Fuel Oil and Other Materials**

The following facilities are used for storage of fuels and chemicals:

<b>Product stored</b>	<b>Method of storage</b>	<b>Storage Capacity</b>	<b>Location (see also site map)</b>
Liquid petroleum gas	5 LPG tanks in purpose built secure compound	n litres each	SW corner of site
Diesel	Bunded tank (in generator skid units)	200 litres	Inside generator house
Biocides and pesticides	Proprietary chemical safe	200 litre	Farm store No 1
Petrol	Proprietary fuel container	max 10 litres	Farm store No 2
Veterinary medicines	Refrigerator	35 litres	Farm store No.1

LPG is stored in well maintained tanks in a secure fenced off area of the site and diesel for auxiliary generators is stored in a bunded tank that meets the requirements of The Control of Pollution, (Silage, Slurry and Agricultural Fuel Oil) (Northern Ireland) Regulations 2003. Biocides and small quantities of pesticides (e.g. rodenticides) are kept in a proprietary leak proof, fire resistant chemical safe in a dry frost free location. No more than two gallons of petrol are kept in a fuel container located in the farm store during the summer months for use in a lawnmower and strimmer. Small quantities of veterinary medicines are kept in a locked refrigerator. Records of raw materials held on site are kept in the farm office.

### **B2.3.3 Measures to Minimise Emissions**

The following measures are adopted to prevent or minimise emissions to air, water and land.

#### *Housing:*

- Walls and roofs in sheds are insulated with 100 mm glass wool and lined with smooth boarding to allow easy washing with a minimum amount of water.
- Floors are all polished concrete for easy cleaning and run towards discharge pipes taking wash water to underground waste water tanks.
- Roof fans and side inlets operate via an electronically monitored system to ensure the internal environment is kept warm and dry to ensure dry litter. Fans are also run intermittently to save energy.
- Two gas heaters per shed provide heating in the early stages of the production cycle.
- Nipple drinkers are used to reduce wastage of water and maintain dry litter, thus reducing emissions of ammonia and odours.
- Pan feeders supply ad-lib feed. Less feed is wasted and birds are less likely to push food out of feeders into litter.

- Low energy fluorescent lighting is used.

*Site drainage:*

- Rain water is kept separate from potentially contaminated wash-down water.
- The site is concreted to allow a high standard of cleanliness and controlled drainage of clean water (including roof water).
- Clean run-off from the entire site is channelled to a vegetated ditch or ‘swale’ running along the north side of the site. This then discharges to field drains.
- Contaminated wash down water is contained within sheds and directed to underground wash water tanks.
- Valves are provided so that in the event of the hard-standing areas becoming contaminated, for example during cleaning out periods or when cleaning up dust, run-off from these areas can also be diverted to waste water tanks rather than the swale.
- Waste water tanks are emptied and disposed of in accordance with the requirements of the DARD code of good practice for prevention of pollution of water.

*Litter utilisation:*

- Most litter is utilised as material for mushroom compost.
- Litter spread on land is applied in accordance with a manure management plan.

*Management practices*

The principal emissions from the site are ammonia, odours, dust, and at certain times noise. Good litter quality is a significant factor in minimising ammonia and odour emissions, and measures described above under housing all help reduce these emissions. Good management practice is also important. Causes of wet litter include sick animals, leaking equipment, poor ventilation, inadequate heating and high humidity within the shed. The following management checks are made:

- daily checks of animal welfare;
- daily checks and records of water consumption and equipment;
- daily checks of temperature and ventilation;
- regular maintenance and cleaning of fans and other equipment e.g. feeding and drinking systems;
- site kept clean and tidy and free from sources of odour e.g. spilled feed, uncovered bins for mortalities.

The main causes of dust are birds, feed and litter. Dry litter is essential to reduce ammonia and odours, and a consequence of this is the potential for slightly higher dust levels. Excitable birds disturb litter and generate dust. Good husbandry practice



lessens the likelihood of birds becoming stressed and thus help to reduce dusts. Feed is delivered in pellet form and this too helps to reduce dust levels in the shed. Landscaping with trees and shrubs also helps to minimise the impact of dust emissions.

Sources of noise on poultry farms include vehicle movements, feed deliveries (blowing into bins) and fan noise. Feed deliveries are only permitted between the hours of 0700 and 2300 and fans are fitted within cowls to reduce noise.

### **B2.3.4 Litter and Manure Storage**

Approximately 630 tonnes of litter at 65% - 70% dry matter per annum is produced as a by-product. (Note: accurate data regarding quantities of manure from your own farm must be provided.) All litter is contained within the sheds until the clean out period, when it is loaded directly into trailers close to the door of each shed. Almost all litter is removed for utilisation as mushroom compost (copies of consignment notes are held in the farm office). A small amount of litter may be spread on land in the vicinity of the poultry farm. In these circumstances litter may be stored for short periods (1 - 2 weeks) in A shaped heaps in the fields where it is to be spread.

### **B2.3.5 (ii) Manure Management**

Approximately 630 tonnes of litter at 65% - 70% dry matter is produced each year. Almost all this litter is utilised as mushroom compost. A small amount of litter is spread on land farmed by the owner. Approximately 75 ha of land has been identified in the manure management plan as being suitable for land spreading. Occasionally short term field storage of manure is required (one or two weeks) to allow spreading during optimal weather conditions. Sites for field storage are selected in accordance with the standard farming installation rules. Litter had the following analysis:

Nutrient analysis of broiler litter at 65% dry matter

	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O
Total nutrients, kg tonne <sup>-1</sup>	29	25	18

Run-off from shed floors and all hard-standing areas is diverted to underground waste water tanks during litter removal. Full details of areas used for land spreading are provided in the manure management plan. Some litter is spread on third party land.

**Note: A copy of your manure management plan must be appended to this application.**

### **B2.3.6 Measures for Controlling Odour**

Buildings, land spreading of litter, feed storage and preparation, incineration of carcasses, disinfectants, and dust can all be sources of odours. There are a small number of local receptors (private dwellings) that could be affected by odours. These include private dwellings located at points 'A' 'B' and 'C' on the site map, most are around 1 km from the site. Measures for controlling odours from buildings are essentially the same as those for controlling ammonia and other emissions and are detailed in section B2.3.3 above. The following is a summary of measures adopted:

- Good litter quality is maintained, (i.e. dry friable litter) by ensuring optimum temperature and humidity conditions in the shed and no leaks from drinking systems
- A high standard of cleanliness is maintained around the site with dust deposits being regularly cleaned up.
- All feed storage bins are sealed and pelleted feed is used when possible.
- Disinfectant baths do not leak.
- Mortalities are regularly incinerated.
- During cleaning out litter is loaded close to shed doors, all loads are covered, and hard standing areas are swept clean after loading.
- Weather conditions and the location of sensitive receptors are considered when land spreading litter. The requirements of the DARD code of good practice for prevention of pollution of air and soil are adhered to.

Note: If you have sensitive receptors (private houses, schools etc.) within 400 m or there is a history of odour complaints an Odour Management Plan must be included.

#### **B2.4.1 Groundwater Regulations/Water Discharge Consents**

There is no disposal or discharge of dangerous (List I or List II) substances to land or water. During routine disinfection of poultry sheds, all wash water and dilute disinfectant is collected in underground waste water tanks and disposed of by applying to land with slurry or manure in accordance with the manure management plan.

[B2.5 and B2.6      Currently not applicable to intensive livestock units]

#### **B2.7 Energy Use**

The farm has partial exemption from the Climate Change Levy Agreement and has subscribed to the British Poultry Meat Federation Climate Change Levy Discount Scheme since 1 April 2001. The document reference number for the agreement is BPMFnn nnnnnnnn. [Enclose a copy of your agreement.]

### *Energy efficiency measures*

The following design features are incorporated in the design of sheds to reduce energy consumption:

- A high level of insulation in walls and roofs.
- Efficient automatically controlled ventilation systems to maintain optimum internal temperature.
- Good airflow within sheds to minimise the amount of ventilation air and heating required.
- Intermittent or ‘stepped’ operation of fans to conserve energy.
- Precise electronic control of the system maintains constant temperature conditions thus avoiding large variations and consequent increased demands on heating and ventilation systems.
- Low wattage fluorescent lighting used throughout.
- Well maintained ventilation and feeding systems to help reduce energy consumption (power consumption can increase as a result of increased friction in feeding systems, or dust laden fan blades reducing efficiency).

An energy audit will be completed using the same MAFF document as the waste audit ‘Opportunities for saving money by reducing waste on your farm’ within 18 months of the date of issue of the permit.

### **B2.8 Accident and Emergency Plan**

Note: A copy of the accident and emergency plan for the installation should be attached, an example is provided in Appendix I.

### **B2.9 Noise and Vibration**

Noise at the site may be emitted by vehicles, machinery, fans, auxiliary generators, and birds during emptying of sheds. There are no sensitive receptors within a radius of 0.75 km of the site, and there is no history of complaints about noise.

The highest noise levels during the production cycle usually occur during feed deliveries when lorries blow feed into bins (typical sound pressure levels from this operation have been measured at 89 dB(A) at 3 m from the vehicle). To prevent nuisance at quiet times feed deliveries are restricted to between 0700 and 2300 hours, and all vehicles are well maintained and fitted with effective silencers.

Sheds are of wooden construction and are well insulated. This provides an adequate barrier for poultry and machine noise from within the shed. Staff monitor noise and vibration from fans, augers and other machinery on a daily basis to ensure correct operation. Broken or badly maintained machinery can generate excess noise resulting in greater stress for birds as well as increased noise emissions.

Bird noise can increase during catching for crop depletion. To reduce this catchers try to minimise disturbance and crates into which birds are placed for transport are fitted with side shields to quieten them during travel. Lorries are scheduled for consecutive loading to ensure that the operation is conducted as quickly as possible.

During litter removal trailers removing litter are filled near to doors to reduce machinery noise and are filled to capacity to reduce the volume of traffic leaving the site.

Note: If you have sensitive receptors (private houses, schools etc.) within 400 m or there is a history of noise complaints a Noise Management Plan must be included.

## **B2.10 Measures for Monitoring Emissions**

### *Emissions to air*

Emissions of ammonia and dust to air are monitored using standard factors provided in Section B3.1 of the IPPC application form. In addition to the factors in Section B3.1, a small (less than 50 kg per hour) incinerator is used for burning carcasses. Temperature in the combustion chamber of the incinerator is monitored to demonstrate that 850°C is achieved thus ensuring complete combustion. A monthly check is made of the incineration site (as per the inspection and maintenance schedule) to ensure that there is no build up of ash or other residues, and no potential for contaminated run-off from the area.

### *Emissions to water*

Emissions of contaminated run-off directly to water are prevented by diverting drainage from hard standing areas to under ground waste water tanks during cleaning out. Waste water tanks are emptied and disposed of in accordance with the requirements of the DARD code of good practice for prevention of pollution of water. Records are kept of when tanks are checked (maintenance schedule) and when they are emptied.

### *Emissions to land*

Emissions to land include deposition of ammonia and dust from air, and litter spread on land. Measures for monitoring ammonia and dust are described above under 'Emissions to air'. Land spreading of litter is undertaken according to the manure management plan and records of quantities and location of spreading are kept.

## **B2.11 Decommissioning Plan**

### *Buildings and equipment*

After the last crop has been removed the buildings will be cleaned out and disinfected. Yard areas will also be thoroughly cleaned and disinfected. All salvageable equipment such as feeding, drinking, heating and ventilation systems will be removed from the sheds. Fan and ventilation apertures will be closed, covered and sealed to keep out pests.

### *Raw materials*

All raw materials will be removed from the site. Feed will be transferred from bins to an operational farm, and the bins will be cleaned, disinfected and sealed. Fuel would be removed from tanks by the supplier and the tank then locked closed, or moved to another operational site. All other raw materials such as disinfectants and veterinary

medicines would be removed from store rooms to other operational farms or returned to the suppliers.

#### *Site facilities*

All bins and receptacles (e.g. bins for mortalities, rubbish etc) would be cleaned and removed from site, either to be reused at other sites or disposed of by a licensed waste contractor. Any substance or article considered to have potential for environmental pollution will be removed from site. Dirty water tanks will be emptied and closed after all potential contaminants have been removed and the site cleaned. Water and electricity supplies will be shut off and all houses and store rooms locked to prevent unauthorised access.

#### *Site inspection*

A final site inspection would be conducted to ensure that all pollution risks had been removed and that there was no potential for pollution, flooding or other mishap due to vandalism, inclement weather or other unforeseen event. Keys for access and all records relating to the site will be stored for safe keeping.

### **B4.1 Environmental Impacts**

#### *Activities likely to affect the environment*

The main impacts from rearing of chickens are the effects of emissions of ammonia, odours and dust from housing and from land spreading of litter. Inappropriate litter utilisation and poor management of the site may also result in contaminated run-off entering watercourses and soil. Lesser impacts include stack emissions from incinerators, impacts of traffic, noise nuisance and visual impact of buildings and equipment. Details of key activities and associated negative effects are given in the Table below.

<b>Activity</b>	<b>Negative environmental affect</b>
Rearing in poultry housing	Emission of ammonia, odours and dust to atmosphere and subsequent deposition on land.
Cleaning hard standing around housing	Contaminated run-off entering watercourses.
Incineration of carcasses	Stack emissions to the atmosphere (SO <sub>2</sub> , NO <sub>x</sub> odours), ash build up in soil around incinerator.
Litter utilisation	Emissions of ammonia and odours to atmosphere; surface run-off to watercourses; nutrient enrichment of soil; nitrate leaching from soil, increase in soil mineral and metal content.
Transport operations	Increased traffic, noise and disturbance.
Noisy operations	Noise nuisance.
Buildings and equipment	Visual impacts.
Storage of fuel	Potential for soil and water contamination.

### *Potential effects of emissions*

The effects of emissions can be varied and are often dependent of site specific features such as the proximity of sensitive receptors. The table below outlines the potential effects of emissions from the installation

<b>Emissions from installation and associated activities</b>	<b>Potential effect on air, water, soil, people, ecosystems etc.</b>
Ammonia	<ul style="list-style-type: none"> <li>• Possible direct toxic affect on trees close to sheds.</li> <li>• Nutrient enrichment or 'fertilising' effect on crops, plants and water surrounding installation.</li> <li>• Increased acidification of soil close to sheds.</li> <li>• Changes to sensitive ecosystems such as natural woodland, heathland or peatland.</li> <li>• Reduced biodiversity.</li> <li>• Contributes to greenhouse gases.</li> <li>• Contributes to climate change.</li> <li>• Contributes to odours</li> </ul>
Odours	<ul style="list-style-type: none"> <li>• Nuisance to residents and other users of the locality when at concentrations uncharacteristic of the area.</li> </ul>
Dust	<ul style="list-style-type: none"> <li>• Potential for damage to plants and trees close to sheds.</li> <li>• Contributes to odours</li> <li>• Potential nutrient enrichment of water.</li> </ul>
Stack emissions from incinerators	<ul style="list-style-type: none"> <li>• Odour nuisance.</li> <li>• Emission of acid gases contributing to acid deposition.</li> </ul>
Run-off contaminated with organic matter i.e. from litter or contaminated areas around housing.	<ul style="list-style-type: none"> <li>• Increased biochemical oxygen demand (BOD) of watercourses.</li> <li>• N &amp; P levels in excess of crop requirements in soil</li> <li>• Nutrient leaching to watercourses and groundwater.</li> <li>• Eutrophication (nutrient enrichment) of watercourses and ground water.</li> <li>• Potential for increased mineral and metal content of soils</li> </ul>
Noise	<ul style="list-style-type: none"> <li>• Noise creating nuisance for local residents and altering the character of rural environments.</li> </ul>
Visual impacts	<ul style="list-style-type: none"> <li>• Loss of amenity in sensitive landscapes</li> </ul>
Fuel/chemical spillage	<ul style="list-style-type: none"> <li>• Contamination of watercourses or soil killing fish and invertebrates.</li> </ul>

### *Impacts on human health*

As the concentrations of substances (ammonia, dust, odours) emitted to the environment are many orders of magnitude smaller than safe occupational health levels and quickly reach background levels, adverse impacts on human health are considered to be unlikely. Members of the public are not permitted access to the site for bio-security reasons and therefore should not come into contact with potentially hazardous substances. As members of the public are unlikely to handle litter, health risks from land spreading are considered to be negligible.

### *Significance of environmental impacts*

The significance of environmental impacts are to a degree dependent on the sensitivity of the receiving ecosystems, particularly regarding atmospheric emissions of ammonia and odours. To establish the significance of impacts the following table provides information on sensitive receptors around the installation (the site map also provides useful information).

Sensitive receptors	Proximity zones to installation			
	within 500 m	500 - 1000 m	1000 - 1500 m	1500 - 2000 m
Dwelling houses	Y	N	Y	Y
Business premises	N	Y	Y	N
Schools, hospitals etc	N	N	N	N
Coniferous Forest	N	N	Y	N
Deciduous Forest	N	N	Y	Y
Dry Heathland	N	N	N	N
Wet Heathland	N	N	N	Y
Semi - natural grassland	N	N	N	Y
Loughs/ponds	N	Y	N	N
Streams/rivers	N	Y	Y	Y
Fenland	N	N	N	N
Bogs	N	N	N	N

### *Assessing environmental impacts*

A preliminary assessment has been made by using a look-up table (to be provided in guidance) that considers the proximity of ammonia sensitive receptors to farms of different sizes. If an ammonia sensitive receptor is in a 'red zone' environmental impacts are likely to be significant. For sensitive receptors in an 'amber zone', impacts may possibly be significant. Impacts on receptors in the 'green zone' are considered to be not significant.

Note: The methodology is currently under development and is designed to allow farmers to make a basic assessment of the environmental impacts of their installation on ammonia sensitive habitats around the farm. The purpose is to screen out what is expected to be a majority of farms where more detailed atmospheric dispersion modelling techniques are not required.

There are no ammonia sensitive receptors within 500 metres of the installation, but there are dwelling houses located around 400 m. The land is used for pasture and the impacts of ammonia are considered to be negligible compared to normal agricultural inputs. Odours from the installation will be noticeable within this zone, particularly toward the end of production cycles or during cleaning out. Dust is deposited on trees and shrubs around the farm, but these plants have been planted to screen the buildings and help trap dust. No complaints about odours have been received.



Between 500 and 1000 metres from the farm potentially sensitive receptors include business premises, a small lough and watercourses. The lough and watercourses fall within the ‘amber zone’ on the look-up table used to assess impacts. Environmental impacts are therefore possibly significant. A visual assessment of the watercourses has been made and they are not soft water bodies. They are therefore less likely to be affected by ammonia and do not appear to be polluted and do not suffer from algal blooms. The manure management plan precludes litter spreading on land adjacent to these watercourses. Odours are considered to be the most significant impact in this zone due to the location of the business premises. To date no complaints have been received about odours.

Between 1 and 1.5 km from the installation there are a number of private dwellings, business premises, woodland, and watercourses. However, all fall within the ‘green zone’ of the look-up table and consequently environmental impacts are considered not to be significant. The effects of ammonia and odours emitted from the farm are likely to be negligible as it is expected that dilution will have reduced concentrations to background levels. Land spreading of litter may take place within this area. The manure management plan identifies areas suitable for land spreading at appropriate times of year. Odours are a potential problem and the odour management plan details measures to prevent odour nuisance to dwellings and businesses (correct weather conditions, rapid incorporation etc.).

Between 1.5 and 2 km from the installation there are some potentially sensitive ecosystems (deciduous forest, wet heathland and semi-natural grassland) but all fall within the ‘green zone’ of the look-up table. At this distance impacts from atmospheric emission are considered not to be significant, but care will be required if land spreading litter near sensitive areas. Adequate manure management planning will keep impacts to a minimum.

APPENDIX I

**EMERGENCY PLAN**

Address: XYZ Poultry Farm

Date of Plan: February 2003

Date for Review: February 2004

Approved by: .....

Distributed to: .....  
.....  
.....  
.....  
.....

A copy of this document must be located in a prominent place near the telephone in the farm office.

## EMERGENCY CONTACT DETAILS

<b>Emergency Contacts</b>	<b>Office hours</b>	<b>Out of hours</b>
Emergency services:		999
Local Police:		
Doctor:		
Environment and Heritage Service:		
Pollution hotline:		0800 80 70 60
District Councils:		
Water service:		
Gas supplier:		
Electricity supplier:		
Fuel oil supplier:		
Spreading contractor:		
Slurry tanker operator:		
Forklift operator:		
Maintenance contractor:		
Plumber:		
Electrician:		
Vet:		
Proprietor:		
Farm Manager:		
Shed staff:		
Processing company:		
Processing company manager:		
Transport manager:		

## SITE DRAINAGE PLAN

Include a diagram of your installation here showing the following detail:

- general layout of buildings;
- access routes for emergency services;
- location of fire hydrants;
- hard-standing areas;
- surface water and foul drains (colour foul drains red and surface water drains blue, and show the direction of flow);
- location of waste water tanks, septic tanks and manholes;
- valves for diverting surface water to storage tanks;
- ditches, field drains and watercourses;
- surface water outfalls;
- LPG tanks, diesel tanks, chemical stores, bunded areas;
- location of incinerator.

## EMERGENCY PROCEDURES

The emergency procedures detailed in this document are designed to prevent or mitigate harmful environmental impacts arising from the following:

<b>Event</b>	<b>Aspects to consider</b>
Fire:	buildings and feed storage fuel and chemical stores litter storage fire water run-off
Spillage:	fuel and oil tanks chemical and disinfectant containers and stores wet litter (i.e. flooded shed) feed
Unable to utilise litter:	restriction on land access i.e. bad weather, disease restriction (e.g. AI, FMD)
Mechanical/electrical failure:	ventilation and feeding systems, incinerator
Interruption to water supply:	buildings, drinking systems
Storm damage:	buildings feed storage systems drainage system flooding
Extraordinary mortalities:	carcass disposal quarantine

### **Training and information**

All staff and contractors working on site shall be made aware of the emergency plan, and must be familiar with the actions stated in it. The Operator shall be responsible for ensuring that staff are aware of their duties and the procedures to follow to prevent pollution in the event of unforeseen circumstances.

- The emergency plan is located in the farm office, next to the telephone.

- The inventory of chemicals, fuel and oil and raw materials is located in the farm office, next to the telephone.

## **Responding to emergencies**

### *Fire*

In the case of an emergency staff must immediately contact the fire service giving the location and nature of the fire. Where relevant, details of hazardous substances must be given to the fire service, and locations of fire hydrants pointed out.

Staff must be familiar with the location and operation of fire extinguishers. Staff should only attempt to fight fires where the risk to their own safety is low. The location of fire extinguishers is shown on the fire safety plan located in the office.

Staff will notify nearby residents/workers and ensure affected buildings are evacuated. Provided personal safety is not compromised, staff shall try to ensure that run-off such as fire fighting water and any other polluting substance is prevented from entering drains or watercourse, by channelling to dirty water tanks; absorbing with straw, wood shavings, soil or other absorbent material. A tanker is available at .....(name and address & tel.) and must be requested to empty tanks and prevent overflow.

Injured birds must be humanely slaughtered on-site according to the instructions of the attending veterinary officer. If numbers affected exceed the capacity of normal mortality disposal systems, skips must be requested for interim storage. Skips are available from .....(name & tel.). Unaffected birds if below marketable age must be re-housed on another site, or if at marketable age, sent for immediate processing.

### *Spillage*

Minor liquid spillage, e.g. of disinfectant or fuel oil, may occur when tanks or containers are being filled. Staff must immediately clean up such spills using absorbent material such as granules, sawdust, wood shavings, straw or soil.

Absorbent materials and equipment for cleaning up spillage are stored at the following locations:

<b>Material</b>	<b>Location</b>
Absorbent granules:	Generator shed and chemical safe
Wood-shavings/sawdust:	General store
Straw/soil:	Main farm steading
Pollution spill kits:	South end of sheds No1 and No 3
Brushes/shovels	South end of all sheds
Fork lift	name, address, telephone
Slurry tanker	name, address, telephone

If small containers are found to be leaking the contents must be transferred to a sound empty container, preferably one of the same type. Spillage must be cleaned up as per minor spills above.

If a major liquid spillage occurs, such as may happen when a fuel tank is damaged, staff shall contact the Environment and Heritage Service pollution hotline (0800 80 70 60). They must then try to prevent spillage entering drains or watercourses by using sawdust, wood shavings, straw, soil, pollution spill kits or other suitable material. The storm drainage system must be diverted to waste water tanks to try and contain spillage and drain blockers used where appropriate. Staff shall assist agency and emergency service personnel by making sure they are aware of the locations of drains and by identifying the potential routes pollutants may take. Care shall be taken when cleaning up and disposing of absorbent material that further pollution does not occur.

Spillage of feed, bedding material or litter shall be promptly swept up and removed.

#### *Unable to utilise litter*

If circumstances prevail where it is not possible to spread litter on land, or export it to a mushroom composte e.g. prolonged bad weather, access restrictions due to disease, or similar, the following contingency plan will be implemented. Arrangements have been made to store litter in a covered barn at xyz location. This is located away from field drains and watercourses. A further outdoor site has been identified for emergency storage of litter. This is an area of flat ground well away from watercourses and field drains. If needed, these two locations can store 6 - 8 months litter production.

If land spreading of dirty water is not possible arrangements must be made to have waste tanks emptied by .....(name & tel.) licensed waste disposal contractor.

[Note; Emergency storage sites for litter must be agreed with EHS prior to use.]

#### *Mechanical/electrical failures*

If the power fails ensure that the emergency generators have started and that all systems are operating. Monitor fuel level, temperature and oil pressure of the generator. Avoid spillage when filling generator fuel tanks. Contact the electricity supply company to notify them of the fault.

If mechanical failures occur, establish what equipment or system has failed and call the maintenance engineers. Consider the risks of bird welfare and pollution that may arise



from loss of the equipment. Arrange for appropriate repairs or alternative equipment to be provided.

Ensure system alarms are operating correctly and are set at appropriate levels (alarms must not disturb neighbours).

If the incinerator fails, and the repair is likely to take longer than the storage capacity of bins used to temporarily store mortalities, skips must be obtained and disposal arranged with (.....name & tel.) licensed waste disposal contractor.

### *Interruption to water supply*

Staff shall check immediately to ascertain the cause of interruption to the supply and undertake a thorough inspection of the system. They must pay particular attention to the possibility of frozen or burst pipes, and the consequences of flood damage and the pollution this may cause.

If flood damage does occur clean up activities shall be as described in the section on major spillage. Staff must be aware of the location of the main stopcock (shown on the site plan) in case the supply needs to be isolated.

Call the plumber if the fault is on site. If the fault is due to a failure of the mains supply contact the water services company, informing them that livestock are dependant on the water supply.

### *Storm damage*

Ensure that staff are safe and if necessary evacuated from the buildings, and that bird welfare is maintained as far as is practicable. If welfare is compromised the company vet must be summoned.

Conduct an initial internal and external assessment of damage, paying attention to the overall integrity of the building, and services such as water, gas, electricity, and fuel oil.

Assess the risk of pollution from any disruption to these services, and where appropriate take action as described in the section on minor and major spillage. If the building has been damaged, or flooding has occurred, assess the likelihood of contaminated run-off from wet litter getting into watercourses.

Ensure that the drainage system is diverted to waste effluent tanks and that spillage is mitigated as described in the section on spillage. As far as practicable try to keep buildings watertight.

If necessary arrange for birds to be re-housed or sent for processing.

### *Extraordinary mortalities*

In the event of an outbreak of a notifiable disease requiring the slaughter of birds, carcasses must be disposed of in compliance with the requirements of the State veterinary service. Notwithstanding this, staff shall be aware of the pollution potential of having large numbers of carcasses on the premises.

Drainage systems must be protected and all run-off diverted to the waste tanks. Arrangements must be made for these to be emptied regularly with disposal of the effluent undertaken in accordance with veterinary advice. Skips must be used to contain carcasses if there is any delay in disposal.

### **Distribution and revision**

All staff shall be provided with copies of the Emergency plan and be trained in the procedures contained in it. A copy shall also be held in the farm office next to the telephone.

The emergency plan shall be reviewed annually, or sooner if a change in circumstances or work practices identify a need for an earlier review.