

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

Application for a Permit

**Example of Supporting
Documentation – Pig
Installations**

Northern Ireland Environment Agency

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Acknowledgment: Some information contained within this document was sourced from the Interim report of the SNIFFER Project UKPIR07 “Intensive Pig Installations Subject to PPC Regulation Case Study”.

A4.2 Non Technical Summary

The Farm

XYZ Pig Farm is a privately owned site of approximately 3 hectares, where pigs are reared from birth to bacon. The farm has a maximum stocking capacity of 600 sows with places for 3100 production pigs >30kg. The site contains two sheds at the southern end of the site. One consists of a dry sow and service area, and the other farrowing and weaner accommodation. Both houses are 80 m × 25 m. The farrowing and weaner accommodation is designed for rearing pigs from birth to 35 kg live weight. On reaching that size pigs are moved to one of six adjacent fattening houses via a bunded concrete walkway/hard standing area. These houses are 60 x 20 m in size. Also located on the farm are dry bulk feed silos, feed mixing plant, slurry store, fuel tanks, underground dirty water tanks, and skip for carcasses.

Pig housing

The houses range from 3 to 9 years old with the dry sow and farrowing/weaner accommodation being the newest, and the fattening houses the oldest. The newer houses are made of GRP composite panels with PVC coated roofs and are well insulated. Ventilation in these houses is by roof mounted fans. Air enters the house via a filtered flat ceiling, and ventilation rates, temperature and humidity are all computer controlled and monitored. Fattening houses are steel framed block built and rendered. Fattening houses use automatically controlled natural ventilation (ACNV) systems. Sow and weaner houses have fully slatted floors with a shallow slurry pit with frequent slurry removal to a covered storage tank in the yard. Grower and finisher houses also have a fully slatted floor with frequent removal of slurry to the covered storage tank. Bowl drinkers are used in both weaner and fattening houses to reduce spillage. Clean run-off from hard standing areas is channelled to swales on the north side of the site. More contaminated run-off, such as when cleaning pens, is diverted to an underground waste water tank, the contents of which are added to slurry for land spreading.

Feeding and diets

Three home mixed diets are used and fed wet to pigs between 12 and 110 kg. Sows are fed a minimum of two diets over the production cycle, and all diets are formulated to meet the nutritional requirements of the pigs. Diets are also optimised to reduce crude protein content as pigs grow.

Feed ingredients are bought from a UFAS accredited supplier and all feed is mixed on the premises and fed via an automated system. Water is obtained from a borehole located close to the edge of the site.

Slurry and manure management

Slurry is removed regularly from pits in the housing to covered above ground storage tanks in the yard. It is spread on fields adjacent to the farm belonging to the operator using a tanker with trailing hose attachments. A variable amount of third party land is also available for slurry spreading, typically *nn* hectares in addition to *nn* ha of land owned by the operator.

Emissions

Housing is washed and disinfected between batches and due to minimal use of straw and wet feeding, dust and odours are reduced. Protein levels are optimised in diets to improve feed utilisation and reduce N and P in slurry. Slurry is removed every two

or three days to the covered store, this helps to minimise ammonia emissions. A trailing hose spreader is used when spreading slurry. This reduces odour ammonia emissions.

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

Carcass disposal

Mortalities are removed from the sheds daily and numbers recorded. Carcasses are kept on-site in covered vermin proof skips until they are collected under the National Fallen Stock Scheme [or incinerated in a DARD approved incinerator having a secondary combustion chamber but operating at less than 50 kg per hour].

Responsibility

Primary responsibility for running the site rests with the proprietors <name(s)>.

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 roughly square shaped area of land of approximately 3 ha, 150 m above sea level. The majority of the site area is occupied by the pig housing, slurry storage facilities, feed milling and mixing facilities and associated 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 swale that collects clean run-off from the concrete hard standing surfaces. This swale is heavily vegetated and drains to a local ditch 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 plan 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 swale, located along the north 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 (give details if you have a consent to discharge). 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 pig facilities, the site was pasture land. Construction of the pig farm involved the removal of topsoil, and levelling using virgin aggregates. As far as is known there are no deposits of potentially polluting substances on or under the land. A section of the site where a diesel tank is located shows evidence of slight contamination from minor spillage, an area of approximately 4 m² appears to be affected. The external above ground slurry tanks are well maintained and there is no evidence or knowledge of spillage of slurry. There are no known areas on the site where waste has been buried, in the past any building waste or similar has been removed from the site.

Operation of the site

The site is operated solely for the production of pigs from birth to bacon. Farrowing rooms are operated on an all in all out basis and are washed and disinfected prior to the next batch of sows/gilts entering. Sows are weaned at approximately four weeks after which they are returned to the service area. Weaners move into the weaning rooms for approximately eight weeks before being moved to the fattening houses

where they stay until ready for slaughter. All wash water is collected and directed to the covered slurry stores. Slurry from all the sheds is removed from shallow tanks under the slats to the covered stores in the yard. Slurry is spread to land in accordance with the standard farming installation rules and the DARD codes of good agricultural practice. Feed is milled and mixed on the farm and wet feed is pumped to the housing. Mortalities are removed to sealed bins and thereafter removed by a licensed contractor in compliance with the requirements of the Animal By-Products Regulations.

Substances and emissions

Potentially polluting substances stored on site include 600 litres of diesel stored in a bunded fuel tank, quantities of disinfectant concentrate stored in sealed containers and slurry in the under slat tanks and the main slurry tanks. The main emissions from the site are ammonia and odours.

Previous use or activity	Potentially polluting substance(s)	Location
Diesel tank area	600 litres of diesel fuel	Generator house
Disinfectant	25 litres of concentrate	Pesticide store
Slurry tank 1	<i>Insert tank capacity</i>	West of fattening houses
Slurry tank 2	<i>Insert tank capacity</i>	West of fattening houses
Slurry tank 3	<i>Insert tank capacity</i>	Adjacent to sow and weaner housing

History of incidents

Other than the minor spillage of diesel around the fuel tank, no pollution incidents are known to have occurred at the site since construction of the pig facilities, and there are no known incidents preceding construction.

Potential pollution pathways

The site falls easily into two distinct zones, 1) the pig housing and feed mixing facilities and, 2) the above ground slurry tanks, fuel tank, and associated hard standing areas. Potential pollution pathways have been identified as:

Zone 1

- Run-off from hard standing areas around housing if pigs have been moved on these areas. Run-off should be diverted into the waste water tank in these circumstances but in cases of error there is potential in wet weather for contamination with nutrients of land, water courses and groundwater. Run-off will be caught and treated by the swale.
- Contaminated run-off from apron areas, particularly if dust/spilled feed has been allowed to build up, resulting in potential for contamination of land and groundwater with nutrients, and possibly disinfectants. Run-off will be caught by the swale, and any dust/spilled feed is regularly swept up. Wet feeding minimises dust from housing.
- Spillage of feed or feed ingredients resulting in contaminated run-off from spillage area to swale.
- Leakage from waste water/slurry tanks that have not been well maintained.
- Ammonia emitted to the atmosphere being deposited on the site and increasing the nutrient loading on vegetation.

- Potential soil contamination resulting from a build up of ash around the incinerator [if an incinerator is used].

Zone 2

- Spillage of slurry at tanker filling points resulting in contaminated run-off. Run-off should be diverted into the waste water tank in these circumstances but in cases of error or very wet weather there is potential for contamination with nutrients of land, water courses and groundwater. Run-off will be diverted to a waste water tank when loading, and caught and treated by a swale at other times.
- Spillage of diesel to soil around the filling area of diesel tanks resulting in contamination of soil and potential contamination of ground water.
- Contamination of hard standing due to slurry spillage from tankers.

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. There was some evidence of contaminated run-off from hard standing areas where pigs are moved seeping into surrounding ground. Improvements to bunding would solve the problem.
- A similar procedure was used to assess run-off from the slurry store area. There was some evidence of wet land as a result of rainwater run-off but this was en-route to the swale. There was little evidence of any contamination from slurry on surrounding areas.
- The area around the waste water/slurry tank showed no signs of leakage and evidence of previous leaks such as a build up of algae were not obvious.
- There was some evidence of diesel spillage around the area where vehicles are fuelled. Assessing visually, an area of approximately 4 m² of soil appeared to be affected.
- Vegetation around the sheds was green and lush, possibly as a result of ammonia deposition, but there was no evidence of damage or scorching to leaves on trees and shrubs.
- Areas around the feed mixing facilities were clean and there was no indication of spillage.
- [If an incinerator is used.] 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.

Assessing the pollution potential

Site reconnaissance revealed two potential problem areas. Their pollution potential and mitigating measures are detailed in the Table below.

Potential polluting substance and relevant activity	Location	Preventative measure	Assessment of pollution risk
Yard run-off contaminated with manure.	Hard standing around pig housing. (Zone 1)	Improve kerbing and bunding of hard standing areas.	Low - Yards usually clean and swale will intercept yard run-off.
Diesel fuel spillage during filling of vehicles	Diesel tank (Zone 2)	Remove contaminated soil and provide hard standing with kerbing and a small sump to collect spillage.	Low after preventative measures are implemented.

Statement of site condition

The area of the site comprising the pig farm is considered to be in a condition commensurate with agricultural land that has been developed for intensive pig production. Given that this land was previously a green field area used for agricultural production, it is considered unlikely that contamination is present, other than the diesel spillage mentioned above. The land surrounding the pig farm is still used for agricultural production and although some slurry 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 (see Table above). In circumstances where pollution was suspected, monitoring requirements in addition to the inspection requirements set out in rules 2.1.1.1 to 2.1.1.3 of the Standard Farming Installation Rules may be included in the permit. See the Site Report Guidance¹ for more information on preparing a site report for your application.

¹ Preparing Site Reports for Pig and Poultry Farms: Supplementary Guidance for IPPC Applications.

B2.1.1 Inspection and Maintenance Schedule

Demonstrate how you meet the requirements of Standard Farming Installation Rules 2.1.1.1 to 2.1.1.3.

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	✓	
Slurry handling and storage	integrity of under slat tanks & above ground stores, pipework, valves, sluices, pumps, tankers umbilical systems	✓	
Fuel stores	fuel and oil leaks, condition of fuel lines and tanks, service records		✓
Feed mixing and storage	no spilled feed, impact damage, protective barriers, integrity of structures & feed delivery pipes/valves	✓	
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, surrounding areas free from evidence of slurry/run-off	✓	
Storm drain manholes	evidence of discoloured water, flooding, integrity of covers, colour coding of covers		✓
Septic tanks	overflow, leakage, date last emptied	✓	
Perimeter ditches and swales	free from slime or discolouration, 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, integrity of slurry tanks/pumps/channels	✓	
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 valve on fuel tank. Replace valve.
2. Broken manhole cover at NE corner of site. Replace cover.

.....

Inspection conducted by:

Date:

B2.1.2 Details of Staff Training

[Demonstrate how you meet the requirements of Standard Farming Installation Rules 2.1.2.1. to 2.1.2.3.](#)

The following staff have attended a recognised training course on prevention and control of pollution on pig and poultry farms.

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 2006
A N Other	Assistant	Prevention and control of pollution on pig and poultry farms - ABC Agricultural College	August 2006
A N Other	Stockworker	Prevention and control of pollution on farm - in-house training programme	October 2006
A N Other	Stockworker	Prevention and control of pollution on farm - in-house training programme	October 2006
A N Other	Stockworker	Prevention and control of pollution on farm - in-house training programme	October 2006

Note: Evidence of training must be provided, you should 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

[Demonstrate how you meet the requirements of Standard Farming Rules 2.2.1.1 and 2.2.1.2.](#)

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.2.2.1 of the main application form.

B2.2.2 Selection and Use of Feedstuffs

[Demonstrate how you meet the requirements of Standard Farming Rules 2.2.2.1. to 2.2.2.7.](#)

All feed ingredients (straights) are purchased from a UFAS accredited supplier. 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.

Additional enzymes are added in vitamin and mineral supplements allowing reductions in phosphorus to the diets of pigs from 35 kg to slaughter. Enzymes also increase the digestibility of raw materials thus enabling the use of low protein formulations. This reduces N excretion in slurry. Rations do not contain antibiotics. All diets are fed wet and this minimises dust during milling delivery and feeding.

A multi-stage feeding regime is practised with a total of 2 sow diets and 4 diets between weaning and slaughter being fed:

Sows : Gestation Diet (Crude Protein = 12-14%; Phosphorus = 0.5%)

Sows: Lactating Diet (Crude Protein = 16-18% ; Phosphorus = 0.5%)

Piglet: <10kg (Crude Protein = 22%; Phosphorus = 0.6%)

Weaner: 10-25kg (Crude Protein = 21%; Phosphorus = 0.6%)

Finishing Pigs: 25-50kg (Crude Protein = 19%; Phosphorus = 0.5%)

Finishing Pigs: 50-105kg (Crude Protein = 18%; Phosphorus = 0.45%)

An improvement plan for optimising crude protein and phosphorus in diets shall be submitted within 12 months of the date of the permit.

[Note: give details of the diets you use and state the crude protein and phosphorus levels.]

B2.2.3 Optimising water use

[Demonstrate how you meet the requirements of Standard Farming Installation Rules 2.2.3.1. to 2.2.3.3.](#)

Water is from a mains supply and a borehole on the site and is used for drinking and washing. Average consumption is *<insert value>* per day. The following practices ensure that water use is optimised and waste is avoided:

- Bowl or bite drinkers over troughs are used to minimise losses.
- Water consumption is monitored and recorded weekly from water meters. Any variation from normal levels is investigated immediately.
- Daily checks are made by staff to ensure that drinkers are functioning correctly. These checks also allow staff to attend to problems at an early stage, e.g. leaks in drinking lines.
- Housing is fully insulated where appropriate and provided with an efficient ventilation system to maintain an optimum environment for pigs at all times including extremes of weather. Water consumption should not therefore increase significantly in hot weather.
- Details of the water supply system and meter location is shown on the site plan.
- Above ground pipework is fully insulated.
- Low volume high pressure cleaning equipment is used, and all hoses lances etc. are fitted with trigger controls.

A water audit will be undertaken within 3 years of the date of issue of the permit. [An example pro-forma is given in the Northern Ireland Environment Agency Guidance for Operators on Preparing an Agricultural Water Audit for Intensive Livestock IPPC Installations.]

B2.3.1 Feed Delivery, Milling and Preparation

[Demonstrate how you meet the requirements of Standard Farming Installation Rules 2.3.1.1. to 2.3.1.5.](#)

- Feed 'straights' are contained in sealed bins protected from impact damage although some products are delivered in sealed bags on pallets.
- All feed is fed wet and this reduces emission of dust.
- One tank is used to store liquid soya, this tank is bunded to provide containment in the event of spillage.
- The area where feed is milled is located in a shed with an impervious floor that is isolated from surface water drainage systems.

- Feed systems and pipework for conveying feed to the pigs are regularly checked in accordance with the inspection and maintenance schedule.

B2.3.2 Storage of Agricultural Fuel Oil, other Oils and Chemicals

[Demonstrate how you meet the requirements of Standard Farming Installation Rules 2.3.2.1. to 2.3.2.4.](#)

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

Product stored	Method of storage	Storage Capacity	Location (see also site map)
Diesel	Bunded tank	600 litres	In yard
Biocides and pesticides	Proprietary chemical safe	25 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

Diesel 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 Minimising Emissions from Housing

[Demonstrate how you meet the requirements of Standard Farming Installation Rules 2.3.3.1. to 2.3.3.19.](#)

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

Site drainage:

- Drainage from contaminated yard areas is isolated from the clean water system by means of diverter valves and collected and stored in a waste water tank. Contents of this tank are mixed with slurry and spread on land in accordance with the manure management plan.
- The location of diverter valves is shown on the accident management plan, and events when contaminated run-off is diverted to the waste tank are recorded with records being kept in the farm office.
- The site is concreted to allow a high standard of cleanliness and controlled drainage of storm run-off (including roof water).
- Clean run-off from the entire site is channelled to a swale running along the side of the site. This then discharges to a field ditch.
- Contaminated wash down water is diverted to the waste water tank.
- Yard areas are kept as clean as possible with any spilt material or manure being cleaned up immediately e.g. after movement of pigs.

Dry sow housing:

- Rooms have fully slatted floors with a manure pan underneath. Slurry is removed to covered outdoor stores on a frequent basis.
- Careful management of ventilation and environmental conditions ensures lying areas are kept clean.
- An automated system dispenses feed into trough feeders to minimise feed wastage.

Farrowing housing:

- Rooms have fully slatted floors with a manure pan underneath. Slurry is removed to covered outdoor storage on a regular basis.
- Careful management of ventilation and environmental conditions ensure lying areas are kept clean, e.g. hot water heat pads are used to encourage good dunging behaviour. Slats are plastic and are virtually self cleaning.
- An automated system dispenses feed into trough feeders to minimise feed wastage.
- Low energy lighting is used.

Weaner housing

- Rooms are fully slatted with plastic slats above a shallow manure pan. Slurry is removed from the pan on a frequent basis to outside covered slurry tanks.
- Correctly set (height and pressure) nipple drinkers have bowls fitted to reduce water wastage.
- An automated system dispenses feed into trough feeders to minimise feed wastage.
- Low energy lighting is used.

Grower/finisher housing

- Rooms are fully slatted with shallow manure pans and frequent slurry removal to covered outdoor stores.
- Careful management of ventilation and environmental conditions ensures lying areas are kept clean.
- An automated system dispenses feed into trough feeders to minimise feed wastage.
- Low energy lighting is used.

Review of housing

A review of existing pig housing shall be undertaken and submitted within 12 months of the issue of the permit. Based on the review an improvement plan shall be prepared. The review will identify management, infrastructure and other improvements necessary to reduce emissions to air, land and water.

Management Practices

The principal emissions from the site are ammonia, odours, dust and at certain times noise. Emissions from pig housing are affected by factors such as ventilation,

temperature and management of surfaces. Housing and slurry systems are designed and managed to minimise releases, particularly of ammonia and odour. Temperature and ventilation rates are carefully controlled to ensure optimum pig health and welfare and to minimise emissions. The techniques used aim to reduce the emitting surface of the slurry and to reduce the area of flooring which is damp or where dung and urine can mix above slats.

All feed is fed wet and this reduces the emission of dust. Landscaping with trees and scrubs also helps to minimise the impact of dust emissions from some types of housing. Sources of noise on pig farms include vehicle movements, feed deliveries (blowing into bins), loading of pigs and fan noise. Feed deliveries are only permitted between the hours of 0700 and 2200 and fans are fitted with cowls.

B2.3.4 Slurry, Litter and Manure Storage

[Demonstrate how you meet the requirements of Standard Farming Installation Rules 2.3.4.1. to 2.3.4.7.](#)

Slurry storage is in above ground, covered slurry tanks. These comply with BS 5502, Part 50. Pipes are fitted with dual valves that are locked shut. Storage capacity of the tanks is approximately *<insert volume>* m³ and this gives a storage period of 10 months (capacities of individual slurry storage tanks are provided in section B1.3, site report). Currently no slurry treatment takes place (e.g. separation) but the intention is to examine the feasibility of this in the future. Slurry is not stirred frequently.

B2.3.5 Control of Slurry, Litter and Manure Spreading Operations

[Demonstrate how you meet the requirements of Standard Farming Installation Rules 2.3.5.1. to 2.3.5.20.](#)

Approximately 9200 m³ of slurry is produced each year, which is spread to land farmed by the operator and on land owned by third parties.

Slurry utilisation – off farm activity:

- Some slurry is land-spread on fields owned by third parties, the operation being undertaken by a specialist contractor. Records are kept of the arrangements and of movements, location and quantity of slurry spread. The records are held in the farm office.

Slurry utilisation – on farm activity:

- Some slurry is spread on land farmed by the operator. Approximately nnn ha of land has been identified in the slurry/manure management plan as being suitable for land spreading. Slurry can be safely stored and removed only when it is needed and when weather conditions are suitable.
- Records of slurry applications are maintained and kept in the farm office.
- Slurry is applied using a band spreader with a trailing hose in accordance with the requirements of the standard rules and the DARD codes of good agricultural practice.

Efforts are also being made to identify other utilisation routes for the slurry produced. Slurry is expected to have the following analysis:-

Nutrient analysis of pig slurry at 4% dry matter

	N	P2O5	K2O
Total nutrients, kg tonne ⁻¹	4.0	2.0	2.5

Minimising pollution from, and accumulation of, soil nutrients

- The slurry/manure management plan details the amount of total nitrogen in organic manures applied to land, and this complies with the limits set by the Nitrates Action Programme.
- An improvement plan will be submitted within 6 months of the date of the permit. This will set out further measures planned to ensure that the spreading of slurry will be in accordance with crop requirements.

Note: A copy of your slurry/manure management plan must be appended to this application, along with details of your arrangements for spreading slurry on third party land. For existing installations where land spreading currently takes place, the plan should set out the nutrients generated from the installation and the capacity of the land currently used for spreading. If the plan shows a nutrient surplus, initial proposals for addressing these surpluses must also be submitted. An improvement plan must be submitted within 6 months of date of the permit issue setting out measures planned to ensure that spreading of manures will be in accordance with crop requirements. An example of a nutrient budget is given in Appendix II

For further information on preparing a slurry/manure management plan see the NIEA “Guidance for operators on slurry and manure management planning for IPPC installations”.

B2.3.6 Measures for Controlling Odour

[Demonstrate how you meet the requirements of Standard Farming Installation Rule 2.3.6.1.](#)

Buildings, land spreading of slurry, 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. Measures for controlling odours from buildings are similar to those for controlling ammonia and other emissions. The following is a summary of measures adopted:

- Slurry stores are covered and all hard standing areas e.g. where pigs are moved are kept clean. Slurry is removed frequently from under slat manure pans to covered stores. Dirty water is returned to the waste water tank to avoid odour from stagnant water.
- A high standard of cleanliness is maintained around the site with dust deposits and manure being regularly cleaned up.
- Ventilation is optimised using sophisticated monitoring and control systems, and buildings are well insulated.
- Nutrition requirements are closely monitored to ensure optimum requirements for the pigs, thus avoiding increased water consumption.
- Dust emissions are minimised by adoption of a wet feeding system.

- All feed storage bins are sealed.
- Disinfectant baths do not leak.
- Mortalities are regularly collected and stored in covered skips.
- Weather conditions and the location of sensitive receptors are considered when land spreading slurry. The requirements of the DARD code of good practice for prevention of pollution of air and soil are adhered to.
- A complaints procedure is used to monitor odour nuisance and ensure corrective action is taken if necessary.

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 Disposal or Discharge of Dangerous Substances to Land or Water

[Demonstrate how you meet the requirements of Standard Farming Installation Rules 2.4.1 and 2.4.2.](#)

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

B2.5 Avoidance Recovery and Disposal of Waste (including disposal of carcasses)

[Demonstrate how you meet the requirements of Standard Farming Installation Rules 2.5.1. to 2.5.3.](#)

The following waste types have been identified:

- plastic waste from empty chemical and detergent containers;
- glass from vaccine bottles, other veterinary product packaging;
- mortalities;
- packaging waste from bagged/palletised feed ingredients;
- scrap metal – old machinery;

With the exception of mortalities, wastes are stored in covered bins and removed to landfill. Where possible wastes are segregated for reuse or recycling. The quantity of waste is minimised by good management practices. 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 collection under the National Fallen Stock Scheme [or by burning in a small (less than 50 kg per hour) incinerator three or four times per week as required. 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.] Good husbandry practice minimises mortalities.

A record of wastes produced and sent off-site for disposal or recovery is maintained and kept in the farm office. A waste hierarchy is adopted so that where possible wastes are avoided, re-used or recycled with disposal as a last option. Where

appropriate, waste management licences or licence exemptions required under the Waste Management Regulations (NI) 2006 will be obtained from NIEA.

A waste audit will be undertaken using the Defra guide 'Opportunities for Saving Money by Reducing Waste on Your Farm' within 3 years of the date of issue of the permit. Following the audit measures will be implemented to prevent or reduce wastes generally, and specifically in any priority areas identified by the audit. Where possible waste residues will not be stored on site.

B2.6 Energy Use

[Demonstrate how you meet the requirements of Standard Farming Installation Rule 2.6.1.](#)

The farm has subscribed to the <Insert name> Climate Change Levy Discount Scheme since <date>. The document reference number for the agreement is *nnnnnnnn*. [\[Enclose a copy of your agreement.\]](#)

Energy efficiency measures

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

- A high level of insulation in walls and roofs.
- Efficient automatically controlled natural ventilation systems in fattening houses to maintain optimum internal temperature. Sophisticated control systems in sow and weaner housing.
- Precise electronic control of the systems maintains constant temperature conditions thus avoiding large variations and consequent increased demands on heating and ventilation systems.
- Low wattage lighting used in sow and weaner housing.
- 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 poorly maintained fans reducing efficiency).
- Electricity usage is metered and records of fuel deliveries maintained

An energy audit will be completed using the same Defra document as the waste audit 'Opportunities for saving money by reducing waste on your farm' within 3 years of the date of issue of the permit. Measures identified in the audit shall be implemented.

B2.7 Accident Prevention and Management

[Demonstrate how you meet the requirements of Standard Farming Installation Rule 2.7.1.](#)

Note: A copy of the accident management plan for the installation should be attached, an example is provided in Appendix I. The plan must be reviewed every 3 years or sooner if appropriate.

B2.8 Measures for Controlling Noise and Vibration

[Demonstrate how you meet the requirements of Standard Farming Installation Rule 2.8.1.](#)

Noise at the site may be emitted by vehicles, machinery, fans, auxiliary generators, and pigs during feeding or emptying of sheds. There are *[insert number]* sensitive receptors within a 400 metre radius 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. To prevent nuisance at quiet times feed deliveries are restricted to between 0700 and 2200 hours, and all vehicles are well maintained and fitted with effective silencers. Feeding and moving pigs can also result in high noise levels and these are minimised by good stockmanship. Where possible loading finisher pigs for transport to the factory is undertaken between 0700 and 2000.

The modern design of the housing and the fact that many incorporate an ACNV ventilation system mean that noise from mechanical fans will be kept to a minimum.

Sheds walls and roofs are of insulated panel construction. This provides an adequate barrier for pig 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 pigs as well as increased noise emissions.

Noise from pigs can increase during loading of lorries. To reduce this, stockmen try to minimise disturbance and load vehicles efficiently as close to fattening houses as possible to reduce outside noise.

Slurry removal is undertaken between the hours of 0700 and 2200 and large capacity tankers are fully loaded to reduce the amount of traffic entering and 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 with your application.

B2.9 Measures for Monitoring Emissions

[Demonstrate how you meet the requirements of Standard Farming Installation Rules 2.9.1.1 to 2.9.2.2](#)

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. [If an incinerator is used] 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. [Note: if an incinerator is used the temperature must also be monitored.]

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 into slurry 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. Clean yard run-off is diverted to a swale for treatment prior to discharge.

Emissions to land

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

B2.10 Closure and Decommissioning

[Demonstrate how you meet the requirements of Standard Farming Installation Rules 2.10.1 to 2.10.4](#)

Note: A site closure plan is not required at application, however, within 12 months from the date of the issue of the permit, you are required to prepare and maintain a site closure plan which demonstrates how the activities can be decommissioned to avoid any pollution risk and return the site of operation to a satisfactory state. A review of this plan is required to be carried out at least every 3 years.

Buildings and equipment

After the last pigs have 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. Slurry stores will be fully maintained as long as they contain slurry. When empty the integrity of valves and pipework will be regularly checked and the cover maintained to stop the tank filling with rain water.

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.

B3.1 Emissions to air, water and land

Provide details of the nature, quantity and sources of emissions to air, water and land from the installation.

Emissions to air

Details of emissions to air from the installation are provided in the tables in section B3.1 of the application form.

Emissions to water

There are no emissions to water from the installation [if there are emissions to water from the installation, please provide details].

B4.1 Identifying Significant Environmental Impacts

Provide an assessment of the potential significant environmental effects of the foreseeable emissions from your installation.

Sensitive receptors around the farm are shown on the location map submitted with this application. In addition to the owners property there are three private houses within 400 metres of the farm. There are no designated sites such as ASSIs within 2 km of the farm.

[Note: Identify on a map all houses, schools, businesses, etc. within a 400 metre radius of the site boundary. Also where known, identify any ecologically sensitive sites with a statutory designation e.g. an ASSI within a 2km radius of the site.]

The environmental impacts from the farm are assessed in the Table below.

For further information on carrying out an assessment of environmental impact from your pig farm see NIEA Guidance “Assessing environmental impacts of pig and poultry farms – supplementary guidance for IPPC applications”

Source of Impact	Impact e.g. odour, noise, dust, ammonia, run-off, spillage	Receptor Air, water, land Humans, plants	Description of Negative Impact Nature of impact i.e. short term ST, medium MT or long term LT	Significance of negative impacts after mitigating measures applied: major +++ moderate ++ minor + nil 0	Mitigation / Management Measures e.g. site planning, technical measures
Livestock housing	Ammonia	Air Land Plants	Possible direct toxic effect on trees ST Increased acidification of soil close to housing MT Changes to sensitive ecosystems LT	0 + 0	<ul style="list-style-type: none"> Regular slurry removal to covered stores No sensitive woodland or other ecological receptors close to housing Appropriate soil pH maintained by liming
	Odour	Humans	Nuisance ST	++	<ul style="list-style-type: none"> Regular slurry removal to covered stores Low frequency of stirring slurry Slurry introduced to store below surface Hard standing areas kept clean and spillages prevented Efficient ventilation systems
	Dust	Humans Plants Land Water Air	Nuisance ST Contributes to odours ST Health issues - inhalation LT Covers leaves stopping photosynthesis ST Nutrient enrichment of water courses MT Impacts on air quality ST	+ + 0 + + +	<ul style="list-style-type: none"> All feed is wet to reduce dust Regular clearing of dust to prevent build up on surfaces and around vents No sensitive vegetation around sheds Houses far enough away not to be affected Hard standing cleaned to prevent dust being washed into water courses Run-off treated by swale
	Noise	Humans	Nuisance ST	+	<ul style="list-style-type: none"> Feed delivery times restricted, vehicles well silenced Doors in housing sited away from neighbours Careful handling and loading of pigs

	Used disinfectants	Water	Possible toxic effects on wildlife ST Increased biochemical oxygen demand (BOD) of watercourses ST	+ +	<ul style="list-style-type: none"> Spent disinfectant disposed of into dirty water tank Use of Defra/NOAH approved disinfectants
Disposal of carcasses	Odour	Humans	Nuisance ST	0	<ul style="list-style-type: none"> Good husbandry to minimise mortalities Use of covered/sealed skips to store carcasses Carcasses disposed of weekly
	Disease	Humans	Health risks ST	0	<ul style="list-style-type: none"> Use of covered/sealed containers No contact with people
		Livestock	Biosecurity issues ST	+	<ul style="list-style-type: none"> Use of covered containers Carcasses disposed of daily Bait traps used
	Incinerator stack emissions (if used)	Air	Odour nuisance ST Emission of acid gases contributing to acid deposition LT	+ +	<ul style="list-style-type: none"> Incinerator fully complies with requirements of Animal By-Products Regulations Performance is monitored
Cleaning out	Contaminated run-off	Land Water	Increase in nitrogen and phosphorus levels in soil MT	+	<ul style="list-style-type: none"> Any contaminated run-off diverted to waste water tank Hard standing has kerbing & kept clean Waste water disposed of in line with DARD Water Code Dirty water tanks are emptied prior to clean out All clean surface run-off treated by swales when not cleaning out
			Potential for increased mineral or metal content of soils LT	+	
			Increased biochemical oxygen demand (BOD) of watercourses ST	+	
			Nutrient leaching from soil to surface waters and groundwater LT	++	
			Nutrient enrichment (eutrophication) of watercourses and ground water LT	++	

	Noise	Humans	Nuisance ST	++	<ul style="list-style-type: none"> • Machinery operated at reasonable times, wherever possible • Equipment maintained to optimum standards • Need for scraping minimised due to reduced yard area • Machinery and equipment sited as far as possible from neighbours • Idling of machines avoided • Voices not raised unnecessarily • Roads and tracks maintained to minimise noise produced
	Odour	Humans	Nuisance ST	++	<ul style="list-style-type: none"> • Tankers kept clean • Infrequent stirring of slurry • Slurry introduced to store below surface • Large capacity machines used • Tractors well maintained • Yard areas cleaned at the end of each day • Dirty water tank emptied promptly
Slurry spreading	Ammonia and major nutrients (N:P:K)	Air Land Plants	<p>Contributes to climate change LT</p> <p>Contributes to odours LT</p> <p>Nutrient enrichment or 'fertilising' effect on crops, plants and water. LT</p> <p>Changes to sensitive ecosystems such as natural woodland, heathland or peatland. LT</p> <p>Nutrient enrichment of soils, particularly phosphorus LT</p> <p>Potential for increased mineral and metal content of soils</p> <p>Eutrophication caused by run-off MT</p> <p>Reduced biodiversity LT</p>	<p>+</p> <p>++</p> <p>++</p> <p>0</p> <p>+</p> <p>++</p> <p>+</p> <p>+</p>	<ul style="list-style-type: none"> • Slurry applied in accordance with manure management plan • Balanced diets fed to reduce N & P in slurry • Slurry applied with band spreader • Application in accordance with DARD codes of good practice • No ecologically sensitive receptors near the site

	Odours	Humans	Nuisance ST	++	<ul style="list-style-type: none"> • No spreading in adverse weather conditions • No spreading at weekends or on Bank Holidays • No spreading close to neighbours' houses • Slurry incorporated within 24 hours • Manure applied in accordance with manure management plan
Storage of fuel, chemicals etc.	Leakage	Water	Contamination of surface and groundwaters ST Killing of animals, plants and aquatic life ST	+ 0	<ul style="list-style-type: none"> • All tanks are bunded and compliant with legislation • Use of chemicals least hazardous to the environment • Spill kits available

APPENDIX I

Accident Management Plan

Address: XYZ Pig Farm

Date of Plan: May 2006

Date for Review: May 2007

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

Emergency Contacts	Office hours	Out of hours
Emergency services:		999
Local Police:		
Doctor:		
NIEA		
Pollution hotline:		0800 80 70 60
District Councils:		
NI Water :		
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 plan of your installation here showing the following detail:

- general layout of buildings and services;
- feed bins, feed conveyors, feed mixing facilities
- 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);
- swales, ponds or wetlands for treating run-off;
- location of waste water tanks, septic tanks and manholes;
- valves for diverting surface water to waste water tanks tanks;
- ditches, field drains and watercourses;
- surface water outfalls;
- LPG tanks, diesel tanks, chemical stores, bunded areas;
- location of incinerator or carcass disposal skips or incinerator;
- slurry stores/tanks/associated channels/pipework/valves.

ACCIDENT MANAGEMENT PROCEDURES

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

Event	Aspects to consider
Fire:	buildings and feed storage fuel and chemical stores Manure/slurry storage fire water run-off
Spillage:	fuel and oil tanks chemical and disinfectant containers and stores liquid feed leaks Feed ingredients
Unable to utilise manure or slurry:	restriction on land access i.e. bad weather, disease restriction (e.g. 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 slurry systems
Extraordinary mortalities:	carcass disposal quarantine

Training and information

All staff and contractors working on site shall be made aware of the Accident Management 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 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 accidents/emergencies

Fire

In the case of an accident/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, address & tel.) and must be requested to empty tanks and prevent overflow.

Injured livestock 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 pigs 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:

Material	Location
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 2
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 Northern Ireland Environment Agency 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 or manure shall be promptly swept up and removed.

Unable to utilise manure/slurry

If circumstances prevail where it is not possible to spread manure/slurry on land, or export it to another user e.g. prolonged bad weather, access restrictions due to disease, or similar, the following contingency plan will be implemented. Manure/slurry will be contained in the enclosed store on the site. This is located away from field drains and watercourses and manure is kept dry. The store can accommodate ca 10 months of manure/slurry production. This should obviate the need for emergency storage sites, but if further storage is needed a suitable outdoor site can be identified for emergency storage of FYM on an area of flat ground well away from watercourses and field drains.

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 slurry/manure must be agreed with NIEA 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 animal 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 animal welfare is maintained as far as is practicable. If welfare is compromised the 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 manure 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 pigs to be re-housed or sent for processing.

Extraordinary mortalities

In the event of an outbreak of a notifiable disease requiring the slaughter of animals, carcasses must be disposed of in compliance with the requirements of the DARD 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 Accident Management 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 Accident Management Plan shall be reviewed at least every 3 years or as soon as practicable after an accident (whichever is earlier), or sooner if a change in circumstances or work practices identify a need for an earlier review.

APPENDIX II

Example nutrient budget.

Existing installations – off farm activity.

Table 1 Example assumptions – crop nutrient requirements

(Assume a soil P index of 2; Moderate N status)

Crop	N (kg/ha)	P ₂ O ₅ (kg/ha)	K ₂ O (kg/ha)
Grazing (28d cycle)			
- Dairy	60	20	0
- Beef	50	20	0
Silage – 1 st cut	120	40	70
- 2 nd cut	100	25	75
- 3 rd cut	80	15	60
Grass - reseed	60 (spring)	50	50
Winter Wheat	150	70	85
Spring wheat	120	55	70
Winter barley	120	70	85
Spring barley	100	55	70
Potatoes	200	180	290
Forage maize	40	60	170

Table 2 Existing farms – example of requirements

Reference	Area (ha)	Crop	Nitrogen (N) Requirement (kg)	P ₂ O ₅ requirement (kg)	K ₂ O requirement (kg)
Farm 'A'	100	Silage (1 st & 2 nd cuts)	17,000 (100 x 170)	6,500 (100 x 65)	14,500 (100 x 145)
Farm 'B'	10	Potatoes	1,700 (10 x 170)	1,800 (10 x 180)	2,900 (10 x 290)
Farm 'C'	100	Winter wheat	15,000 (100 x 150)	7,000 (100 x 70)	8,500 (100 x 85)
Total	210		33,700	15,300	29,000

Nutrient budget for above – birth to bacon pigs

600 sow unit, birth to bacon

Slurry produced per week =

600 sows @ 0.08 m³

45 Gilts @ 0.05 m³

950 weaners (7-18kg) @ 0.01 m³

1200 growers (18-35kg) @ 0.02 m³

3100 finishers (35-105kg) @0.03 m³

Total slurry = 177 m³ per week = 9,204 m³ per year

Assume 1 tonne of slurry contains: 4kg N; 2kg P₂O₅; 2.5kg K₂O

	9204m3 of Pig Slurry
Nitrogen content	36,816 kg
Phosphorus (P ₂ O ₅) content	18,408 kg
Potassium (K ₂ O) content	23,010 kg

Farm	Crop	Area ha	N reqt Kg	P reqt Kg	K reqt Kg	N constraint m3 Slurry	P Constraint m3 Slurry	m3 Slurry used
A	Silage 2 cuts	100	17000	6500	14500	4250	3250	3250
B	Potatoes	10	1700	1800	2900	425	900	425
C	Winter wheat	100	15000	7000	8500	3750	3500	3500
Total			33700	15300	25900			7175

Total slurry utilised	7175 m3	Extra land required (ha)		
Total slurry generated	9204 m3			
Surplus	2029 m3	Silage–2 cuts	W Wheat	Potatoes
P Surplus	4058 kg	62.4	58.0	22.5
N Surplus	8116 kg	47.7	54.1	47.7

Examples of additional land requirements are shown in red above ie.

- = 62 ha silage(1st & 2nd cuts),or (P Limiting)
- = 58 ha winter wheat, or (P Limiting)
- = 45 ha potatoes. (N Limiting)

Nitrate Action Programme Nitrogen limit of 170 kg N/ha = 210 ha x 170 kg = 35,700 kg N

An additional **47.7 ha** of land will be required to meet 170 kg N/ha limit (i.e. 8116/170) and apply organic nitrogen according to crop requirements. To meet the 170kg N/ha only, an additional 7ha of land would be required (i.e. 9204 x 4 = 36,816 – 35,700 = 1116 / 170 = 7ha).