OFFICE OF LICENSING & GUIDANCE

INSPECTOR'S REPORT ON A LICENCE REVIEW

To:	Board Directors
From:	Ciara Maxwell **- Licensing Unit**
Date:	15th December 2005
RE:	Application for review of licence for Rennard Pig Farms Limited, Deeps/Cornwall, Crossabeg, Co. Wexford, Reg. No. 742. Currently licensed under Reg. No. 453.

Application Details	
Class of activity:	6.2 The rearing of pigs in an installation, whether within the same complex or within 100 metres of the same complex, where the capacity exceeds 2,000 places for production pigs. 11.1 The recovery or disposal of waste in a facility, within the meaning of the Act of 1996, which facility is connected or associated with another activity specified in this Schedule in respect of which a licence or revised licence under Part IV is in force or in respect of which a licence under the said Part is or will be required.
Section 87(1)b notice sent:	21/02/2005
Section 87(1)b info received:	01/04/2005
Notice under Article 17(2) issued:	26/05/2005
Information under Article 17(2) received:	14/09/2005, 9/11/2005
EIS received:	14/09/2005
Supplementary material submitted by licensee:	22/08/2005, 9/11/2005
Submissions received:	25
Site visit:	06/10/2005

1.1 Company

The licensee operates an existing pig unit under licence Reg. No. 453, which is split into two yards, approx. one kilometre apart. The unit comprises a 500 sow to weaner (weaners reared to c.27-32kg) yard at 'Cornwall Yard' and a 7,500 fattener (fatteners reared to c.95-100kg) yard at 'Deeps Yard'. (Note: the latter yard is also referred to as "Killurin" in the application

documentation, although the correct townland is Deeps.) The former owners of the unit, Kerry Agribusiness Trading Ltd., were issued a licence (Reg. No. 453) on 19/11/1999. The unit has changed ownership since grant of the licence and is currently owned by Rennard Pig Farms Ltd., Castleblake, Rosegreen, Cashel, Co. Tipperary. Following the sale of the piggery, the site boundary now encompasses a reduced area, i.e. just that land dedicated to the piggery in both Deeps and Cornwall (*cf.*, Attachment No. 2 of the Application Form). Rennard Pig Farms Ltd. also owns another pig unit in Wexford, Licence Reg. No. 429, which is referred to herein as 'South Sloblands Yard'.

1.2 Proposed Development

The licensee proposes to construct new pig housing and increase fattener numbers at the Deeps Yard from 7,500 to 8,500. A biogas plant is also proposed at the Deeps Yard, in which the biological degradation of products of animal origin will be undertaken under anaerobic conditions for the production and collection of biogas. The licensee proposes that the anaerobic digester (AD) will digest a mixture of pig slurry and a supplementary feedstock, including green energy crops. The licensee proposes to cover the existing overground slurry storage tanks on the Deeps Yard (4 no.), Cornwall Yard (1 no.) and South Sloblands Yard[Note 1] (3 no.) and to use these tanks to store the liquid digestate. One of the four overground tanks on the Deeps Yard will be converted into a secondary digester with an integrated gas storage dome. An existing haybarn will be converted to store the solid/fibrous digestate.

Planning permission for the development of a primary digester with gas purification system and associated gas and slurry storage tanks was refused by Wexford County Council on 4th March 2005 (Planning Reg. No. 20050055) on four grounds. A revised planning application for the erection of a new fattener house and the construction of the AD plant was lodged with the planning authority on 7/8/2005, (Application No. 20053035). This application was supported by an EIS and is currently being processed by the planning authority.

1.3 Process Description

Appendix A of this report shows the proposed site layout. Slurry generated on the Deeps Yard will flow by gravity from the pig houses' underground storage tanks to Reception Pit 11 via air-operated sluice gates. The reception pit will feed to a covered, concrete mixing tank (c.500m^3 capacity), fitted with a mechanical agitation system. Imported slurry, from Cornwall Yard and South Sloblands Yard, and organic material with high dry matter content, will be delivered to the mixing tank. Liquid imported wastes will be pumped into one of the three proposed 50m^3 overground stainless steel tanks, which can feed either to the mixing tank or directly to the digester. Pig slurry will be mixed with the supplementary feedstock to achieve a pig slurry to imported waste ratio of approx. 9:1. The licensee also proposes to treat waste (floor sweepings, etc.) from the on-site feed mill in the AD.

The licensee proposes that the following wastes be imported as supplementary feedstock for the AD:

a) green energy crops (i.e. maize, grass, oil seed & corn);
b) by-products from the processing of energy crops (e.g. glycerine);
c) belly grass (i.e. digestive tract contents separated from the digestive tract at meat factories);
d) cake sludge from dairy processing plants, and
e) fish waste.

Note 1 South Sloblands Yard is a pig breeding unit located in the South Slobs, Wexford, licence Reg. No. 429. It is also under the ownership of Rennard Pig Farms Ltd., and supplies weaners for fattening at the Deeps Yard. The licensee proposes to treat slurry from the South Sloblands Yard by anaerobic digestion at the Deeps Yard and to return liquid digestate to covered overground storage tanks located at the South Slobs. This exchange is catered for in the RD.

Influx to the mixing tank will be controlled by high and low level probes. In the event of level probe malfunction or failure of the sluice gates to close, an overflow pipe will discharge to a sump. Material can then be pumped to the secondary digester. The homogenised mix will be transferred from the mixing tank to the digester, where it will be stored at 55^{o}C, (i.e. thermophilic digestion), for fifteen to twenty days. The temperature will be maintained by heating coils fixed outside the digester walls. A mechanical agitator will operate in response to gas release.

Gas extracted from the digester will be passed through a gas purification unit, to remove sulphur. The gas is then diverted to the gas storage dome on top of the secondary digester. The feedstock from the digester will be transferred to the secondary digester for up to 15 days. The secondary digester is not directly heated. Gas collected from the secondary digester will pass through the purification unit prior to collection in the gas storage dome. The purification unit will contain a condensate well to collect excess moisture. This will discharge to the mixing tank.

After the secondary digester, the digestate will be transferred, via a sealed pipe system, to a centrifuge. Fibrous material from the centrifuge will be removed and transferred to a 10 tonne trailer for transport to Haybarn 10 for storage. Any leachate arising from the fibrous material while stored in the "haybarn" will be collected in underfloor drainage channels and will be diverted back to the mixing tank via Reception Pit 11. Approx. 5,000 tonnes of fibrous digestate will be produced annually, with a moisture content ranging from 18% to 25%. The liquid digestate from the centrifuge will be transferred to the adjacent overground storage tanks, via a sealed pipe system. Digestate will either be stored in the overground storage tanks on-site, transferred to the storage tanks at Cornwall Yard or South Sloblands Yard or sent off site for landspreading on agreed lands.

The biogas will be piped from the gas storage dome to the engine-boiler room. The CHP plant will heat water which will pass through a heat exchanger to provide heat for the digester process. Excess heat from the combined heat and power (CHP) generator will be used to heat the pig unit. A dual fuel boiler will also be installed to provide heat for start-up and to maintain the temperature in the digester when the gas engine is out of service.

1.4 Use of Resources

- **Fuel**

Approximately 65,000 litres of heating oil are currently used annually on the Deeps and Cornwall Yards. It is proposed that heat for the Deeps and Cornwall Yards' pig houses will be supplied by the biogas plant. It is proposed that heat for the Cornwall Yard will be transferred across the River Slaney on the Deeps Bridge via hot water pipes.

- **Electricity**

Annual consumption of electricity for the Deeps and Cornwall Yards is approx. 400,000 kilowatt-hours. This requirement accounts for the equivalent of 30% of the predicted output from the CHP plant. Sale of the balance of electricity produced will be subject to connection with the National Grid.

- **Water**

Annual water usage is estimated at 9000m^{3}.

- **Feed**

Approx. 8,000 tonne of feed is used annually. There is a mill on the Deeps Yard which supplies feed to the Deeps/Cornwall Yards and the South Sloblands (Reg. No. 453) Yard. All milling operations are currently carried out at night to avail of cheaper night-time electricity rates.

1.5 IPPC Directive

The installation falls within the scope of Category 6.6(b), (Installations for the intensive rearing of pigs with more than 2,000 places for production pigs (over 30 kg)), of Annex I of Council Directive 96/61/EC concerning integrated pollution prevention and control.

The Recommended Determination (RD) as drafted takes account of the requirements of the Directive. In particular, Condition 7 Resource Use and Energy Efficiency provides conditions dealing with water, energy and raw materials use, reduction and efficiency on site. BAT is taken to be represented by guidance given in the IPPC reference document on BAT for Intensive Rearing of Poultry and Pigs, July 2003.

1.6 Regulation (EC) No. 1774/2002, concerning animal by-products

The Department of Agriculture and Food (DAF) is the competent authority for authorising biogas plants where such plants accept and treat animal by-products. The licensee's proposal does not include the acceptance of animal by-products. Therefore, DAF approval is not presently required. This has been confirmed by the DAF. The RD requires that prior to the commencement of importation of anaerobic digester feed materials that the licensee shall provide written confirmation to the Agency that DAF approval is not required or, if required, has been granted.

In the case of biogas plants where fish by-products are the only animal by-product being treated, applications for approval should be forwarded to the Department of Communications, Marine and Natural Resources (DCMNR). Therefore, prior to the importation of fish waste in that circumstance, the licensee shall provide written confirmation to the Agency that DCMNR approval has been granted *(cf., Schedule A.1).*

2. Proposed Determination

2.1 Air

2.1.1 Odour

There are two aspects to the development in relation to air quality and odour: on-site activities and off-site landspreading. The Cornwall Yard will not be subject to any significant changes as a result of the proposed development. The regular movement of raw slurry off-site and the covering of the overground storage tank at the Cornwall Yard will reduce odour emissions. The continued use of low-protein diets will also help to minimise odours.

The licensee has removed a major source of odour at the Deeps Yard site, by restoration of the open, earth-lined slurry storage lagoons since grant of the existing licence. The licensee lists a number of further measures, which will result in a net decrease in odour emissions, despite the proposed increase in pig numbers. They are as follows:

- delivery of fresh slurry from under house storage tanks to the digester (within 2 - 4 weeks), to optimise biogas production;
- cessation of agitation of raw slurry in open storage tanks by covering three of the overground storage tanks and converting the fourth tank to a secondary digester with an integrated gas storage dome cover, and
- continued use of low protein diets.

The mixing tank has the potential to be a significant source of odour. The RD specifies a number of measures proposed by the licensee to prevent the release of odorous gases:

1. Air displaced during charging of the mixing tank from road tankers shall vent to a biofilter.

2. A siphon trap shall be used to form a liquid seal where the flexible pipe enters the mixing tank to prevent odour release through the manure intake hopper.
3. Liquid organic waste, slurry and digestate shall be transported in sealed tankers.
4. The lid of the mixing tank shall form an airtight seal and the lid shall be kept closed at all times except during unloading.
5. The reception area for the mixing tank shall be washed down frequently and all washwater diverted to the mixing tank.
6. All organic material skips shall be cleaned and disinfected subsequent to off-loading prior to exiting the site and all washwater diverted to appropriate storage.
7. Liquid digestate shall be transferred via a sealed pipe network.
8. A windbreaker shall be installed on each open bay of the solid/fibrous digestate store, Haybarn 10.

According to the licensee, odour during landspreading will be reduced by at least 80% when spreading liquid digestate rather than slurry, due to the removal of odorous gases during the digestion process.

2.1.2 Air Emissions

Prior to storage and use of biogas, all gas collected is passed through a gas purification unit. This protects the engine and lowers the SO_2 and H_2S in the exhaust gas. The purification unit consists of a scrubber unit. This oxidises sulphide to elemental sulphur and sulphate in the presence of 2-5% oxygen.

The CHP plant for combustion of biogas is rated at 0.6 MW. It is protected from gaseous contaminants by an activated carbon adsorber system, which prevents the formation of silica in the engine. The standby boiler has a capacity of 250 kW. Both combustion systems are classed as minor emissions. The RD requires the licensee to undertake an efficiency test of the CHP and the standby boiler at least annually and also to include the CHP plant and standby boiler in any site energy audits.

A flare will be provided for the combustion of methane gas when the boilers are unavailable or unable to burn the quantity of methane generated. Use of the flare is expected to be minimal as:

(a) the boiler capacity exceeds predicted gas production rates;
(b) heat exchangers are incorporated into the design;
(c) gas storage is provided, and
(d) a scheduled maintenance programme will be operated.

2.2 Emissions to Sewer

There are no emissions to sewer from the activities.

2.3 Emissions to Waters

There are no process emissions to waters.

2.4 Storm Water

There are currently four storm water discharge monitoring points - two each at the Deeps and Cornwall Yards. All clean water from the sites will continue to discharge via SWA, SWB, SWC & SWD which outfall to the River Slaney. Stormwater from clean areas of the biogas plant will discharge via SWC; any contaminated run-off will be diverted to the mixing tank.

2.5 Emissions to ground

The only emission to ground is from the on-site septic tanks. There are septic tanks on both Deeps and Cornwall Yards. The RD specifies that these be operated and maintained in accordance with the EPA guidance on single house treatment systems.

There are no discharges to ground from the proposed development. The RD requires that a tank and pipeline assessment is carried out on all new tanks prior to utilisation and that existing tanks and pipelines are tested every five years. Water supply to the Deeps and Cornwall Yards is sourced from a well located on neighbouring land, north of the Cornwall Yard. A reserve supply is provided by a deep well located in the north-western corner of the Deeps Yard. The RD requires that the licensee install a new groundwater monitoring point down-gradient of the biogas plant within twelve months of the date of grant of licence and that the two groundwater supply wells and the new groundwater monitoring point be monitored biannually.

2.6 Waste

- **Storage arrangements**

Table 1 below outlines the available storage at Deeps/Cornwall Yards and at the South Sloblands Yard, from where it is also proposed to import slurry for treatment in the biogas plant. It is proposed to accept an additional 6,000 tonnes, equivalent to 6,000m³, annually of other organic wastes to increase the efficiency of the biogas plant.

Table 1. Details of slurry/manure/digestate storage capacity.

Piggery (Reg. No.)	***Annual Slurry/Manure/ Digestate Production (m^3)***	***Slurry/Manure/Digestate Storage Capacity (m^3)***	***No. of weeks storage capacity***
Deeps (742)	24977	8932	23
Cornwall (742)		2221	
South Sloblands (429)	8372	6699	42
Total slurry/manure	**33350**	**17852**	**28**
Imported organic waste	6000		
Total organic waste for treatment	**39350**		
Gas extraction reduction (8%)	- 3148		
Separation of solid/fibrous material reduction (6%)	- 2361		
Total liquid digestate	**33841**	**17852**	**28**

The proposed increase of 1,000 fatteners will generate an estimated additional 2,350m^3 of slurry per annum, bringing the total slurry generation to 24,977 m^3 for the Deeps/Cornwall Yards. The proposed importation of slurry and waste accounts for an additional 8,372 m^3 of slurry and 6,000 m^3 of organic wastes. Therefore, the licensee proposes to treat a total of 39,350m^3 of organic waste in the biogas plant annually. The extraction of gas will reduce the volume by c.8% and the separation of fibrous material will further reduce the liquid volume by c.6%. Therefore, the resultant liquid digestate produced will amount to approx. 34,000m^3 per annum. The licensee has demonstrated storage capacity of 17,852m^3 or 28 weeks between the three pig yards. Condition 3.13.1 requires that a minimum of six months slurry/manure/digestate and soiled water storage capacity be provided at the site or at licence Reg. No. 429.

- **Landspreading & recovery**

The combination of slurry from the three yards (Cornwall, Deeps and South Sloblands) and the importation of 6000 tonnes of material equates to c.39.4 tonnes of phosphorus (P) per annum. The existing approved landbank for Reg. No. 453 & Reg. No. 429 has a recovery capacity of 61.5 tonnes P and can accommodate the increase, whilst maintaining a reserve of 22.1 tonnes (56 %). The licensee estimates that 70-80% of the P content of the digestate will be in the solid/fibrous material when separated from the liquid digestate. This figure seems very high and will have to be proven by the licensee by means of measurements (*Schedule C*). If other markets, such as garden nurseries, become available for this material, significantly less land would then be required due to (a) the reduction in volume caused by the removal of the solid/fibrous material and (b) the fact that the nitrogen content of the liquid digestate would then be the parameter limiting spreading rates.

Licence Reg. No. 429 requires that a Nutrient Management Plan (NMP) be provided annually which demonstrates recovery capacity for the slurry/manure generated on that site. The RD requires that an NMP, which demonstrates recovery capacity for Deeps/Cornwall slurry/manure/digestate, be agreed annually with the proviso in Condition 11.10 (vii) that the licensee reduces animal numbers and/or organic material importation within six months, if adequate recovery capacity cannot be demonstrated at any time in the future. Demonstration of adequate slurry/manure/digestate recovery capacity may become more difficult in the future depending on the final details of National legislation to implement Ireland's Nitrates Action Programme as required by Directive 91/676/EEC of 12th December 1991.

2.7 Noise

The CHP plant is a potential source of noise. This will be located in soundproofed housing so minimal impact is anticipated. There have been no complaints registered with the Agency in relation to noise from the existing facility. However, one of the submissions received in relation to this application includes a petition signed by 95 householders who claim that "*noise emanating from the existing equipment…. can be heard at in the surrounding area*". The most likely source of noise on-site currently is the operation of the mill on night-rate electricity. The RD requires that noise monitoring be undertaken within six months of the date of grant of licence, and thereafter as required by the Agency. Noise limits, as specified in *Schedule B.4*, shall apply at the boundaries of the installation and remedial measures shall be required where there are exceedences of the limits identified.

2.8 Habitats

The Slaney River Valley is a candidate SAC (Site Code: 000781). It comprises habitats listed in Annex I of the E.U. Habitats Directive and supports populations of several species listed on Annex II of the Directive, such as lamprey, twaite shad and freshwater pearl mussel and supports important numbers of wintering wildfowl including some species listed on the Annex I of the EU Birds Directive. The occurrence of a number of Red Data Book plant and animal species adds further importance to the Slaney River site. The River Slaney is also designated under the European Communities (Quality of Salmonid Waters) Regulations 1978 and is an important salmon and trout fishery. The spreading of slurry/manure/digestate and organic fertiliser poses a potential threat to the water quality and to the populations of Annex II animal species within it.

Some lands on the client list for the current licence (Reg. No. 453) lie within the North Sloblands (part of the Wexford Slobs and Harbour NHA, Site Code: 712) and along the edge of the Slaney River Valley cSAC. Condition 11.10 includes measures to protect these designated sites and to reduce the risk of odour nuisance in these high amenity areas. The RD prescribes bandspreading and soil injection as methods of slurry/manure/digestate application in or adjacent to designated areas and furthermore requires the incorporation of slurry/manure/digestate that is bandspread on tillage land in the North Slobs within twelve hours after landspreading.

The proposed separation of solid/fibrous material from the liquid digestate will help to remove a proportion of the phosphorus from the liquid digestate and therefore could potentially remove a proportion of the P content from the local agricultural system, if diverted to horticultural and landscaping use. The licensee has not been able to provide details of the demand for such material.

2.9 Environmental Impact Statement (EIS)

An EIS was submitted in support of the licence review application. I have examined and assessed the EIS under the EIA Regulations 1989-2000 and the EPA (Licensing) Regulations 1994-2004 and found it to be in compliance with these regulations insofar as it relates to the risk of environmental pollution.

2.10 Fit & Proper Person Assessment

The licensee's experience, technical abilities, financial and legal standing would qualify them as Fit & Proper Persons. It is proposed that the suppliers of the biogas plant equipment will provide full training to staff and local maintenance contractors during the construction and commissioning phases of development.

2.11 Compliance Record

The Office of Environmental Enforcement was consulted in relation to the installation's compliance history. Seven site inspections and two audits of this facility have been carried out since the licence was issued in 1999. Four notifications of non-compliance have been issued to the licensee in that time. One non-compliance was noted during the most recent audit (14/09/2005). The documentation and management system in place appears to be working well.

2.12 Complaints

The Agency has received two complaints in relation to the facility this year. One relates to flies and odour in the Killurin area and one concerns landspreading practice.

2.13 Submissions

A total of twenty-five valid submissions were received in relation to this licence review application, as tabulated in Appendix B. Each submission was given full consideration insofar as it relates to the IPPC licence application. The main issues raised and concerns identified within these submissions are discussed below.

Increased pig numbers

- *Risk to Slaney River Valley candidate SAC.*
- *Increased odours, noise levels (especially at feeding time), traffic, pollution of River Slaney, landspreading causing offence.*
- *Lack of adequate spreadlands.*

Comment:
The proposed increase in animal numbers represents a 13% increase in fatteners on the Deeps Yard. The licensee estimates that odour emissions will in fact be reduced following the installation of a biogas plant due largely to the short storage period for raw slurry (2-4 weeks) in under house storage tanks, the covering of overground storage tanks and the continued use of low protein diets. The RD requires that an odour management programme be put in place. The licensee has demonstrated that the existing approved landbank for the Deeps/Cornwall Yards and the South Sloblands (Reg. No. 429) Yard can accommodate the increased volume of slurry/manure/digestate produced whilst maintaining a reserve capacity of 56%. There shall be no discharge of polluting matter to surface water. The RD specifies measures for the control and monitoring of, *inter alia*, storm water emissions, waste, noise, groundwater and land used for landspreading. The method of landspreading in areas adjacent to the Slaney

River Valley is restricted to either bandspreading or soil injection whilst maintaining a buffer zone of at least 20 metres from the river channel to avoid impacting on the water and habitat quality of this candidate SAC.

Anaerobic digester & digestate

- *Planning permission was refused by Wexford County Council.*
- *Risks associated with landspreading of digestate:*
  - *unsuitable for spreading on grassland grazed by dairy cows & risk of disease,*
  - *nitrogen levels are inconsistent,*
  - *risk of leaching of nutrients,*
  - *increased odour during storage & transportation.*
- *Air emissions associated with anaerobic digestion are harmful to human health & the environment.*
- *The liquid digestate has high levels of ammonia post-digestion and the semi-solid residue has a very high phosphorus concentration. Both represent a water pollution risk as regards storage and disposal.*

Comment:
The IPPC licensing system and the planning system are separate systems. The risk associated with the landspreading of digestate (pig slurry and imported organic material) is low. The imported organic materials (with the exception of fish waste) are currently directly landspread by many IPPC licensed installations under the terms of their licences. The DAF does not consider that an approval is required under the Animal By-Products Regulations (1774/2002). This confirms that the imported materials, when processed in an anaerobic digester, do not pose a risk to grazing livestock. In the event that the licensee proposes to import fish waste for the process prior approval will have to be granted by the Department of Communications, Marine and Natural Resources. Anaerobic digestion can lead to the production of low levels of hydrogen sulphide (H_2S) during digestion and increased volatilisation of ammonia during landspreading. However, compared with raw animal slurries, digestate is significantly less odorous and has a lower organic pollution potential which reduces the risk of water pollution. The RD stipulates measures designed to control and minimise odours during storage, transfer and landspreading of slurry/manure/digestate as well as measures to minimise odour generation during the AD process.

Odour

- *Because the Slaney River Valley is at sea level, climatic conditions can arise whereby in still air conditions very strong odours can persist for long periods.*
- *Impact on the National Heritage Park in Ferrycarrig, downstream of piggery.*
- *It is not proposed to put the reception tank indoors.*
- *No odour impact assessment was carried out.*
- *Sensitive receptors are located within 100 metres of the proposed development.*
- *Is proposed H_2S abatement method adequate to deal with other gases generated e.g. mercaptons?*
- *Neighbours have had to put up with landfill and piggery smells for the past 25 years.*

Note: One submission also included a petition signed by 24 local residents opposing the development with reference to odours.

Comment:
The existing pig unit has operated on the site (Deeps/Cornwall) since 1999. The proposed increase in animal numbers equates to an increase of 13% of fatteners on the Deeps Yard. Due to the proximity of a number of domestic residences to the Deeps Yard and the nearby amenity provided by the River Slaney, the potential for odour nuisance from this development is significant. However, the introduction of anaerobic digestion is predicted to reduce the overall odour emissions associated with the pig unit. Condition 5 of the RD requires that operations be carried out such that odours do not result in significant impairment or

interference with amenities or the environment at odour sensitive locations. Various measures are stipulated therein to prevent odorous emissions during AD operations. These include:

(a) transportation of liquid matter in sealed tankers;
(b) that the mixing tank (reception tank) is maintained airtight at all times except during unloading of tankers/skips;
(c) that air displaced during charging of the mixing tank is vented to a biofilter, and
(d) that organic material skips are cleaned and disinfected subsequent to off-loading prior to exiting the site.

The licensee proposes to install a gas purification unit to clean biogas prior to combustion. As well as protecting the engine, the scrubber will minimise odorous hydrogen sulphide emissions. Emissions from the combustion of the methane gas generated on-site following scrubbing will not result in odorous emissions.

Groundwater

- *Porous subsoils characterise the area putting groundwater at risk.*
- *High water table in this area.*
- *Risk of contaminating other boreholes and drinking water supplies in the area.*
- *Groundwater monitoring programme is required for (a) storage tanks and (b) groundwater up-gradient and down-gradient of the facility.*
- *Current landspreading practices reduce the quality of one resident's borehole supply in winter months.*
- *Risk of accidental spillages & consequences for ground and surface water quality.*

Comment:
The proposed increase in animal numbers and the operation of a biogas plant does not pose a significantly greater risk to groundwaters than the existing operations. There are no discharges to ground, other than domestic effluent which passes to a percolation area after the on-site septic tank, from the existing or proposed development. The RD specifies that all new underground tanks be fitted with leak detection systems (Condition 3). An integrity assessment of all new storage facilities must be undertaken prior to utilisation and all underground and overground storage tanks, pipelines and liquid feed storage tanks must be assessed at least every five years (Condition 6). Condition 6 also specifies biannual groundwater monitoring of the well on the Deeps Yard, a well north of the Cornwall Yard and a new groundwater monitoring point down-gradient of the biogas plant. In relation to landspreading, *Schedule C.7.1* stipulates that a buffer zone of at least 50 metres is observed around domestic wells. *Schedule C.7.2* states that no spreading is allowed during the period November to February inclusive, except with Agency approval. Condition 2 of the RD requires that personnel and contractors are appropriately trained and/or experienced. Condition 3 requires that the licensee develop procedures for the operation of sluice gates to manage slurry/manure/digestate storage, transfer and removal prior to commencement of anaerobic digestion operations. Condition 3 requires that the licensee store an adequate supply of suitable absorbent material to contain and absorb any spillages.

Surface water

- *Threat to Slaney River Valley candidate SAC, a designated salmonid river, an area of high amenity & associated recreational uses (angling, fishing, etc.) due to surface water run-off and groundwater contamination.*
- *Risk of storing such significant quantities of agricultural waste so close to the river.*
- *Danger of discharge of suspended solids and other deleterious matter to watercourses during the construction phase and during any landscaping works.*
- *Lack of consultation with adjoining landowner in relation to surface* [storm] *water run-off.*
- *Lack of separate system for collection and storage of soiled water.*

- *All surface water should be passed through a petrol/oil interceptor and be subject to attenuation prior to discharge.*
- *Adequate grease traps should be installed.*

Comment:
The issue of the risk of surface water contamination is dealt with under *'Increased pig numbers'* and *'Anaerobic digester and digestate'* above. There is no proposed discharge of process water to surface waters. Condition 6 specifies that there shall be no unauthorised discharge of polluting matter to water. Clean water run-off will continue to discharge to four points on the Deeps and Cornwall Yards. Stormwater from clean areas of the biogas plant will discharge via the existing drain at SWC. *Schedule C* specifies weekly inspection at all four monitoring locations and quarterly BOD/COD testing. Condition 3 requires that all soiled water be diverted to slurry/manure/digestate storage facilities. Condition 3 requires that all pump sumps, storage tanks and other treatment plant chambers are fitted with high level alarms prior to utilisation. The focal point for traffic coming on-site will be the mixing tank. Condition 3 requires that a spillage collection system be installed around this tank prior to utilisation. Due to the low risk of petrol, oil or grease entering the surface water drainage system, it is deemed unnecessary to install grease traps or petrol/oil interceptors.

Management of the Installation

- *Mismanagement of another licensed activity (Reg. No. 565) by the operator in the past.*
- *Operator's lack of experience in operating an anaerobic digester.*
- *The limited manual staffing proposed will be inadequate for monitoring this 24 hour a day, 7 day a week operation. Remote monitoring is insufficient, especially in response to emergencies.*
- *Lack of emergency response and accident prevention measures.*
- *A HACCP (Hazard analysis critical control points) management plan should be employed to ensure that routine inspection of structures, effluent loading/flow monitoring and sampling, etc. is carried out.*

Comment:
The licensee has proposed that the suppliers of the biogas plant equipment will provide full training to staff and maintenance contractors. The licensee qualifies as a Fit and Proper Person under the relevant criteria: experience and technical ability, financial and legal standing. The compliance record for the existing piggery has been generally satisfactory. The installation will not be manned constantly, despite the continuous operation of the biogas plant; remote access to continuous monitoring equipment, with electronic alarm systems is proposed. Condition 9 requires that an Accident Prevention Policy and Emergency Response Procedure be put in place within six months of the date of grant of licence. The licensee proposes to employ a HACCP management plan. Condition 6 requires that a test programme be carried out within three months of the commencement of operation of the anaerobic digester and associated equipment. This must establish all criteria for the control and management of the anaerobic digester and associated equipment

Importation of organic materials

- *Offensive odours from belly grass (paunch).*
- *Operating temperature of 55^{o}C may not destroy pathogens and weed seeds.*
- *Potential for major spillages caused by transportation by trucks.*
- *Potential for release of odours during transport and when tipping material into the reception area.*
- *Transport and storage of animal waste will attract pests.*
- *Danger of shock loading the digester and bacterial fauna.*
- *A consistent supply of organic material from approved sources is necessary.*

- *Future risk that additional waste types will be used and digestate spread on local farms.*
- *That even if the piggery closes down, the AD can continue to treat waste, such as offal.*

Comment:
The issue of odour has been addressed in the section entitled *'Odour'* above. The licensee states that the proposed thermophilic digestion (at 55^{o}C) will kill all weed seeds and 98% of all pathogens and parasites. This treatment is considered adequate for proposed feed materials. Condition 8 stipulates that transportation of slurry/manure/digestate shall be in a manner which will not adversely effect the environment and will be in accordance with National and European legislation and protocols. The RD limits waste acceptance to those feed materials listed in *Schedule A.1*. No animal by-products, other than fish waste (subject to DCMNR approval), shall be treated at this installation. The proposed mixing of pig slurry to imported waste at a ratio of 9:1 will ensure that consistence is achieved in the AD process and will prevent shock loading of the system.

Noise

- *No assessments of existing or proposed noise impacts were carried out.*
- *The noise of the mill auger operating at night is currently impacting on local residents.*
- *The level of noise from the gas-fuelled generator engine has not been assessed.*

Note: One submission also included a petition signed by 95 householders opposing the development with reference to noise impact.

Comment:
The licensee currently carries out all milling operations at night to avail of cheaper night-time electricity rates. There have been no complaints about noise lodged with the Agency in relation to this piggery heretofore. In order to assess the noise impact of operations, Condition 6 of the RD requires that noise monitoring be carried out at two specific locations on the boundary of the Deeps Yard, within six months of the date of grant of licence. Where the results of the noise survey indicate exceedences of the ELV's, the licensee shall address the exceedences and propose measures to reduce the noise emissions. The licensee does not predict that noise emissions from the AD process will generate noise in exceedence of the ELV's. However the RD requires that a noise survey be undertaken within three months of commencement of AD operations to assess the impact of associated equipment, including the gas engine. Notwithstanding, it is noted that the gas engine will be located in soundproofed housing. The RD specifies limits in *Schedule B.4* which will apply at the Deeps and Cornwall Yard boundaries.

Environmental Impact Statement (EIS)

- *The EIS is not robust or comprehensive enough.*
- *Site selection is considered wholly inadequate.*
- *The EIS is deficient in relation to hydrogeological, noise & odour impact assessments.*

Comment:
I have examined and assessed the EIS under the EIA Regulations 1989-2000 and the EPA (Licensing) Regulations 1994-2004 and found it to be in compliance with these regulations insofar as it relates to the risk of environmental pollution.

Health Service Executive (HSE) Interdisciplinary Consultation
Dr. Beth Ann Roch, consultant in Public Health Medicine with the HSE makes a submission which includes a report compiled by Ms Kay O'Connor, Environmental Health Officer with the Environmental Health Service of the HSE. In her report Ms O'Connor gives a number of

recommendations relating to landspreading, ground and surface water protection, odour control and importation of organic material. Each of these recommendations has been taken into consideration in the preparation of the RD. The report concludes with a report of a HSE Interdisciplinary Consultation involving discussions with two Senior Area Medical Officers. A summary of the outcome of these discussions is presented below.

- *There have been no complaints made to the HSE in relation to the piggery.*
- *There have been no unusual incidences of disease associated with the area of the existing development.*
- *The HSE is not aware of any high incidence or clusters of particular diseases in this area.*

Addendum:

The following issues were also raised in the submissions, however, these are considered to be outside the remit of the Agency.

a) Impact of traffic on the load bearing capacity of Deeps Bridge & approach roads and danger and nuisance of traffic for local residents.
b) Impact on archaeological sites & artefacts nearby.
c) Visual impact & lack of screening.
d) Importation of gas from the nearby landfill.
e) Refusal by An Bord Pleanála for a Biological Waste Treatment Plant, including composting and anaerobic digestion, proposed in Co. Roscommon.
f) Risk to an area of outstanding beauty.
g) Variance with County Development Plan 1993 (subsequently updated).

Comment:

The local authority is the competent body for assessment of the following: the impact of traffic associated with the proposed development in relation to local infrastructure and the road network, archaeological protection, the adequacy of the landscaping proposal (Attachment No. 23 of EIS), and compliance with the County Development Plan. The option of importing gas from the nearby landfill is not included in this licence review application. The Agency assesses each licence application on its own merits and site specific conditions are an important consideration in the determination of BAT (Best Available Techniques).

2.14 Charges

The RD requires that the licensee pay an annual charge of €6,760 to the Agency to cover the anticipated increased enforcement effort for the site. This represents an increase compared with the invoiced total of €4,941 (and OEE Inspector's recommendation of €5,200), for licence Reg. No. 453 in 2005.

Recommendation

I recommend that the Proposed Determination be issued subject to the conditions and for the reasons as drafted.

Signed

Ciara Maxwell

Inspector

Procedural Note

In the event that no objections are received to the Proposed Determination of the application, a licence will be granted in accordance with Section 87(4) of the Environmental Protection Agency Acts 1992 and 2003 as soon as may be.

References

1. Environmental Protection Agency, 2002. Feasibility Study for Centralised Anaerobic Digestion for Treatment of Wastes and Wastewaters in Sensitive Catchment Areas. R&D Series No. 16.

Appendix A

Proposed site layout of the Deeps Yard showing the proposed anaerobic digester with gas and digestate storage facilities located to the west of the existing piggery.