

INSPECTORS REPORT ON A LICENCE REVIEW APPLICATION

To:	Directors	
From:	Aoife Loughnane	- LICENSING UNIT
Date:	18 th May 2007	
RE:	Application for review of an IPPC Licence from Kepak Clonee, Clonee, Co. Dublin. Licence Register No. P0167-02	

Application Details	
Class of activity:	<i>Class 7.4.1: The operation of slaughterhouses with a carcass production capacity greater than 50 tonnes per day.</i>
Licence Review application received:	08/01/2007
Notices under Article 17 issued:	27/02/2007
Information under Article 17 received:	30/03/2007
Section 99E Notice issued:	30/01/2007
Section 99E Response received:	15/02/2007 & 17/05/07
Submissions received:	None
Site visit:	20/02/2007

SUMMARY

Kepak Clonee were granted licence Register No. P0167-01 on 28th January 1998 for the operation of a cattle slaughtering and processing plant at Clonee, Co. Dublin. On 27th June 2006 the Agency informed the company in writing that they required a licence review in order to comply with the requirements of the IPPC Directive by 30th September 2007. This report outlines details of the licence review application which was received on 8th January 2007.

COMPANY

Kepak is one of the biggest meat processing companies in Ireland and the UK. Kepak established the Clonee slaughtering and processing plant in 1982. The site is located in an industrial zoned area immediately adjacent to the Dublin/Meath county boundary line, to the north of the N3 dual carriageway. The slaughter line capacity is 1,700 animals per week, with a carcass production capacity of c.112 tonnes per day. There are 300 full time staff employed on-site. Since the installation was licensed in 1998, Fingal County Council have granted planning permissions for various developments on-site including the upgrade of the wastewater treatment plant and changes to the internal site layout.

REASON FOR LICENCE REVIEW

This licence review was deemed necessary in order to bring the installation into compliance with the requirements of the IPPC Directive by 30th September 2007, and to incorporate the amendments to the licensing provisions of the Environmental Protection Agency Acts, 1992 and 2003, as appropriate.

CLASS OF ACTIVITY

Kepak's activity previously fell within the scope of Class 7.4 of the First Schedule of the Environmental Protection Agency Act 1992: "*The slaughter of animals in installations where the daily capacity exceeds 1,500 units and where units have the following equivalents – 1 sheep = 1 unit and 1 head of cattle = 5 units*". Following amendments in the licensing provisions under the Protection of the Environment Act 2003, the slaughtering activity now falls within the scope of Class 7.4.1 of the First Schedule – "*The operation of slaughterhouses with a carcass production capacity greater than 50 tonnes per day*".

PROCESS DESCRIPTION

Processing operations on-site consist of cattle slaughtering, bleeding, removal of hide, head & hooves, evisceration, splitting, chilling, cutting, boning, packing & dispatch. Fat from the carcass is processed on-site by heating it to melting point and separating the solid and liquid fractions using a centrifugal system. The clarified heated oil (tallow) is then passed for storage and transported off-site. The fat plant processing capacity is 30 tonnes per day, therefore Class 7.1¹ of the First Schedule of the EPA Acts 1992 and 2003 does not apply.

Animal by-products are handled as follows:

- 'Clean blood' is pumped to a blood treatment plant, where it is cooled and removed under contract on a daily basis to APC Technologies, Co. Armagh, for reuse. 'Waste blood' is pumped to a holding tank, where it is removed on a weekly basis to an approved rendering facility.
- Hides are removed from the animals and treated with either ice or salt (depending on the final destination), prior to stacking and dispatch off-site.
- Hearts, lungs, intestines and stomachs of the animals are removed and separated. Edible offal, e.g. heart and liver, are passed for packing and chilling. Other parts, such as lungs, are passed for plate freezing and dispatch off-site. The stomach and intestines are passed for processing in the green offal area, where the stomach is emptied. Bellygass is passed to the grass press for the removal of excess liquor, and transferred to a trailer for transportation off-site and placement in storage prior to landspreading. The bellygrass has a dry matter content of between 20% and 26%. The extracted liquor is pumped to the wastewater treatment plant. Stomach lining (tripe) is washed at 80°C in centrifugal tripe washers. Unprocessed offal is passed to the offal trailer, which is removed on a daily basis to an approved rendering facility.

All wastewater from the kill line passes to the on-site wastewater treatment plant (WWTP) for screening, settlement and treatment in a dissolved air flotation (DAF) unit prior to discharge to the Fingal County Council sewerage system. WWTP sludge is treated on-site in a belt press dewatering system which increases dry matter content to between 17% and 25%, and is then passed to the dewatered sludge holding area. This is a roofed, contained area fitted with roller shutter doors. Air from all WWTP buildings is extracted to a biofilter treatment system for odour abatement. Stored organic waste is landspread on suitable lands in accordance with a Nutrient Management Plan, which is agreed with the Agency on an annual basis.

The Agency has approved various adjustments at the installation since licence Reg. P0167-01 was issued, including upgrading works to existing WWTP, installation of scrubbing unit on the fat processing exhaust stack and cessation of surface water discharge from SW3.

¹ EPA Acts 1992 and 2003, Class 7.1: *The manufacture of vegetable and animal oils and fats where the capacity for processing raw materials exceeds 40 tonnes per day, not included in paragraph 7.8.*

EMISSIONS

AIR

Boiler Emissions

There are two heavy fuel oil (1% sulphur content) boilers on site, which operate in a duty/standby arrangement and discharge through a single stack at 22m above ground level. The licensee installed a new 5.01 MW boiler (8000 kg/hr steam output) in February 2007 to replace Boiler 2. Boiler 1 has a 3.7 MW thermal input rating and steam output of 6000 kg/hr. The current licence contains emission limit values (ELVs) for boilers which are outside the BAT guidance range. In the licence review application, no modelling was carried out to determine predicted ambient air ground level concentrations at or beyond the site boundary. However it is considered, given the size of the boilers and the fuel quality, that boiler emissions would not have any significant adverse impact on local air quality. Schedule B.1 of the RD specifies lower ELVs for boiler plant, based on data provided by the applicant. Condition 3.14 requires the use of either low sulphur fuel oil (<1%), natural gas or tallow oil (subject to adherence with the specified criteria) in the boilers. The licensee is required to conduct biannual boiler combustion efficiency testing and monitoring of SO_x, NO_x, CO and particulate emissions. Condition 6.13 specifies that only one boiler shall be operated at any one time, other than for testing or maintenance purposes.

Odour

At the time of licensing in 1998, it was found that the dominant odours emitted from processing operations arose from malodours in the exhaust stack of the fat processing plant. The significant odorous constituents are ammonia and organics bound up in small fat particles that are carried with the steam vapour. In March 2002 the Agency approved the installation of a scrubbing unit on the fat processing exhaust stack, as required under Condition 5.4 of the current licence, Reg. P0167-01. A consultant's report (submitted in March 2002) provides details of the scrubbing system. The volume of emission is relatively low at 10 m³ per minute. The water based scrubber uses a high pressure water sprinkler/splash plate system, such that water forms a spray with a high surface area to absorb the ammonia and fat particles. There is a 20 second retention time of the gas in the 3.5 m³ scrubbing unit. Water is recycled through the system and collects in a sump which is emptied once per week and sent to the WWTP. Schedule C.1.1 of the RD incorporates control requirements on the scrubber. Condition 6.14 requires the scrubber recycle water to be emptied on a weekly basis and discharged to the WWTP.

The other main source of potential odour at the installation is the WWTP, however the plant upgrading works carried out in 1998 were designed with odour reduction in mind. The balance tank, settlement tank and ancillary sludge storage tanks are covered, and the DAF unit and sludge press are located in an enclosed building. Extracted air from the enclosed tanks & the building are ducted to a biofilter for the abatement of odours. The biofilter contains approx., 12 m³ of mussel shell media on which micro-organisms grow and utilise the odorous air as a food source. Odorous air is passed through the media at a rate of 1,730 m³/hr where it is treated and vents to atmosphere as non-odorous air. The RD incorporates emission limit values, control and monitoring requirements for the biofilter.

Comparison with BAT

In order to minimise emissions to air, BAT is to replace fuel oil with natural gas, where possible, or biomass fuels, or otherwise to use low sulphur fuel oil. Kepak state that they have looked into tallow and natural gas as alternative fuel sources to heavy fuel oil. A natural gas connection to the site is not currently feasible. A proposal is underway to burn tallow in the boilers, subject to the approval of the Department of Agriculture and Food. The use of tallow oil as a fuel at the installation was agreed by the Agency's Office of Environmental Enforcement (OEE) on 13/02/06 subject to a number of requirements. Kepak state that the boilers are capable of achieving a temperature of 1,150 to 1,200°C and a residence time of 0.6 seconds, thereby satisfying the criteria required under *Commission Regulation (EC) No.*

2067/2005 amending Regulation (EC) No. 92/2005 as regards alternative means of disposal and use of animal by-products. Conditions 3.14 and 11.11 authorise the use of tallow as a fuel, subject to adherence with the specified criteria. The installation satisfies BAT in relation to the minimisation of odours at slaughterhouses, e.g., by containing potentially odorous materials in enclosed containers, maintaining short storage times, cleaning materials storage areas frequently, using negative pressure extraction at the WWTP building and covering WWTP tanks.

EMISSIONS TO SEWER:

Process effluent and potentially contaminated surface water run-off are diverted to the WWTP to undergo balancing, screening, settlement and treatment in the DAF unit prior to discharge to the Fingal County Council sewerage system. Upgrading works carried out in 1998 involved the installation of a rotating drum screen, settlement tank, DAF unit, sludge dewatering press, waste sludge container holding area, biofilter, composite flow monitoring equipment, and inlet and outlet continuous flow monitoring. In 2003 the existing balance tank was decommissioned and a new 2,000m³ balance tank was installed on-site.

Kepak recently purchased an existing slaughtering plant in Kilbeggan, Co. Westmeath and were concerned that the existing wetland system at that site was unable to handle the effluent from that plant. Kepak propose to construct a biological WWTP on-site in Kilbeggan and, in the interim 4-5 month period, to tanker effluent to Clonee for treatment in the WWTP. Kepak state that emissions to sewer will comply with the current limits set in Licence Reg. No. P0167-01. The Sanitary Authority (Fingal County Council) and the Agency's OEE agreed to this proposal on 29/03/07 and 02/04/07, subject to a number of requirements including eight additional conditions specified by the Sanitary Authority.

Comparison with BAT

The WWTP satisfies BAT for slaughterhouses as the following techniques are carried out on-site; pre-screening of large solids, rotating drum screening, use of an equalisation/balancing tank, settlement tank, use of flotation plant (DAF unit) to remove solids, prevention of odour emissions by covering tanks, and sludge dewatering.

A section 99E discharge consent was issued by Fingal County Council for this licence review application. The sanitary authority requires a 25% reduction in the daily mean concentration values for BOD, COD, suspended solids and sulphates from 1st May 2010. The RD includes the sanitary authority requirements as specified, with the following exceptions:

- BAT for the relevant activity shall be used to prevent, minimise, manage and treat pollutants in the wastewater stream discharging to foul sewer under this consent.
- The licensee shall maintain, or have maintained the on-site effluent treatment systems.

The Agency considers that the installation satisfies BAT, as discussed above and as confirmed under the "*Best Available Techniques (BAT)*" section of this report. Maintenance of the WWTP is sufficiently provided for under Condition 6.6 of the RD. Therefore the RD does not recommend the inclusion of these specific conditions. In addition, the sanitary authority requests the elimination of all grab sample limits from *Schedule B.3 Emissions to Sewer* of the licence, as a 24 hour composite sample is required under the conditions of their consent to discharge. The RD accommodates this request and *Schedule C.3.2 Monitoring of Emissions to Sewer* requires that all samples shall be collected on a 24-hour flow proportional composite sampling basis.

EMISSIONS TO WATERS:

There are no direct emissions of effluent to water.

SURFACE WATER:

Surface water run-off from the site discharges at SW1, SW2 and SW3 to the River Tolka along the eastern site boundary, and at SW4 to a ditch at the western site boundary. Discharge point SW3 was blocked-off in July 2005 following an incident involving a leak of ammonia from the refrigeration plant into the surface water drainage network. An inspection by the Eastern Regional Fisheries Board on 11/07/05 found that the discharge was of poor quality and was having a deleterious effect on the River Tolka. The company were subsequently prosecuted under the Fisheries Consolidation Acts, 1959-1995 (see *Fit & Proper Person* section of this report). There has been no discharge from SW3 since July 2005. The licensee now requests Agency approval to re-open SW3 and has outlined the preventative actions undertaken and provided monitoring results for the surface water sump that feeds SW3 (see Table 1).

Table 1: Monitoring results for run-off at surface water collection sump

Date	Ammonia (mg/l)	COD (mg/l)	Nitrate (mg/l)	Nitrogen (mg/l)	Suspended Solids (mg/l)	Nitrite (mg/l)
12/01/07	0.63	19	0.9	1.05	16	--
25/01/07	0.41	127	0.09	5	10	0.006
Limit Values for Salmonid Waters ^{Note 1}	< 0.02	--	--	--	< 25	< 0.05
Limit Values for A3 waters ^{Note 2}	4	40	50	3	--	--

Note 1: European Communities (Quality of Salmonid Waters) Regulations, 1988 (S.I. No. 293 of 1988).

Note 2: European Communities (Quality of Surface Water Intended for the Abstraction of Drinking Water) Regulations, 1989 (S. I. No. 294 of 1989).

Prior to the contamination incident, SW3 drained surface water run-off from the roof, front yard and part of the back yard. The back yard drain was identified as the pathway for the ammonia leak and has now been diverted to the WWTP. While the licensee states that only roof water and front yard water (i.e. clean yard areas) currently drain to SW3, the monitoring results in Table 1 show elevated ammonia, COD and Nitrogen levels, thereby indicating contamination of the run-off. For this reason, the request to re-open SW3 is not approved at this time. Condition 6.11 of the RD requires further investigations to be carried out on the surface water drainage network on-site within three months of the date of grant of licence. The licensee is also required to submit an updated map of the surface water drainage network on-site.

The RD specifies the standard requirements regarding the carrying out of a firewater retention risk assessment at the installation. This was not a feature of licence P0167-01. The standard licence requirements apply in relation to bunding of tanks/containers/drums, waste and material storage and protection against spillages during loading & unloading of materials.

EMISSIONS TO GROUND

There are no existing or proposed emissions to ground from the operations on-site. Off-site emissions to ground relate to landspreading of sludge and bellygrass, which is undertaken in accordance with an Agency approved Nutrient Management Plan (NMP). In 2006 the total amount of sludge and bellygrass produced was 1,298m³ and 2,265m³ respectively. The licensee has been using a large tillage farm at Girley, Co. Meath for the application of organic waste to land for the past seven years. The farm consists of a total area of 186.55 ha of which 166.73 ha is deemed suitable for the application of organic waste. The Agency's Office of Environmental Enforcement approved the licensee's 2007 NMP on 5th April 2007 subject to specified excluded plots and to the agreements reached during 2004 for the reduction of complaints arising from landspreading activities (see *Complaints* section of this report). The RD maintains conditions which require the licensee to demonstrate adequate recovery capacity for the organic waste generated at the installation by means of an annual NMP.

Condition 8 specifies conditions to control landspreading activities. Condition 3.15 requires the licensee to provide a minimum of 18 weeks over-winter storage capacity for organic waste. 18 weeks is the required storage period for livestock manure in Co. Meath, as per Schedule 3 of the European Communities (Good Agricultural Practice for Protection of Waters) Regulations 2006 (S.I. No. 378 of 2006 - the Nitrates Regulations). Landspreading shall be carried out in accordance with the Nitrates Regulations and specifically Articles 17 (buffer zones to water bodies), 18 (application of fertilisers, soiled water etc.) & 19 (periods when application of fertiliser is prohibited) of the Nitrates Regulations.

WASTE

There will be no changes regarding waste generation at the installation arising from the licence review. Waste recovery/disposal is controlled by licence conditions, which require that waste be transferred to authorised recovery/disposal facilities. Animal by-products are removed off-site to an approved rendering facility. The use and disposal routes for animal by-products are governed by *Regulation (EC) No. 1774/2002 laying down health rules concerning animal by-products not intended for human consumption*. Dewatered sludge and belly grass is removed off-site for storage at an agreed location prior to landspreading. Condition 8 of the RD specifies controls on the handling of materials and wastes at the installation.

NOISE

The installation is located close to an industrial estate and adjacent to the N3 dual carriageway. A noise survey was carried out in September 1996 as part of the original licence application. The results of that survey indicated the activity should not give rise to noise nuisance at sensitive locations. The RD specifies the standard daytime and night-time limits of 55/45 dB(A) at noise sensitive locations. Condition 6 requires the licensee to carry out a noise survey of site operations as required by the Agency.

USE OF RESOURCES

Annual resource usage in 2006 was as follows:

Fuel: 1,285 litres heavy fuel oil.

Electricity: 10,318 MW.

Water: 216,809 m³. Kepak have identified water usage per unit kill as a key performance indicator. A water management system has been implemented on-site incorporating metering, leak minimisation and a new pressure cleaning system. Water usage on-site has been reduced by 55% between 1999 and 2006.

Materials: A significant quantity of detergents (standard food grade solutions) are used to wash down and sterilise process areas. Some detergents also contain biocides which disinfect in addition to cleaning. Ammonia gas is used in refrigeration units on-site. Boiler chemicals are used to prepare boiler water. Salt with 2% boric acid addition is occasionally used for salting hides (not currently being used). Ferric sulphate is dosed in the WWTP for settlement and phosphorus removal.

COMPLIANCE WITH EU DIRECTIVES

IPPC Directive (91/61/EC)

This installation falls within the scope of category 6.4(a) (*Slaughterhouses with a carcass production capacity greater than 50 tonnes per day*) of Annex I of Council Directive 96/61/EC concerning integrated pollution prevention and control. The RD as drafted, takes account of the requirements of the Directive.

EU Animal By-Products Regulations (EC No. 1774/2002)

The handling, storage, transport and processing of animal by-products must be carried out in accordance with *Regulation (EC) No. 1774/2002 laying down health rules concerning animal by-products not intended for human consumption*. The Department of Agriculture and Food are the competent authority for implementing this Regulation.

EU Nitrates Directive (91/676/EEC)

The European Communities (Good Agricultural Practice for Protection of Waters) Regulations 2006, S.I. No. 378 of 2006, gives effect to the Nitrates Directive. These Regulations include measures such as set periods when land application of fertilisers is prohibited, limits on the land application of fertilisers, storage requirements for livestock manures and monitoring of the effectiveness of the measures in terms of agricultural practice and impact on water quality. Sludge and belly grass generated at the installation is removed off-site and landspread on third party lands. The RD takes account of the requirements of the Nitrates Regulations. Condition 8 specifies controls on landspreading from this activity.

DECOMMISSIONING & ENVIRONMENTAL LIABILITIES

Licence Reg. P0167-01 does not contain provisions for decommissioning of the site. Condition 10 of the RD requires the licensee to prepare a Residuals Management Plan (RMP) and Condition 12 requires the completion of an Environmental Liabilities Risk Assessment (ELRA) which addresses liabilities from past and present activities.

BEST AVAILABLE TECHNIQUES (BAT)

BAT is taken to be represented by the guidance given in the *IPPC Reference Document on Best Available Techniques in the Slaughterhouses and Animal By-Products Industries (May 2005)* and the final draft *Guidance Note on Best Available Techniques for the Slaughtering Sector (October 2006)*. I have examined and assessed the application documentation and I am satisfied that the site, technologies and techniques specified in the application and as confirmed, modified or specified in the attached Recommended Determination comply with the requirements and principles of BAT. I consider the technologies and techniques as described in the application, in this report, and in the RD, to be the most effective in achieving a high general level of protection of the environment having regard to the way the installation is located, designed, built, managed, maintained, operated and decommissioned.

ENVIRONMENTAL IMPACT STATEMENT

An EIS was not required for the purposes of this licence review application.

FIT & PROPER PERSON ASSESSMENT

The Fit & Proper Person test requires three elements of examination (i) technical ability, (ii) legal standing and (iii) financial standing. Kepak Group are one of the largest privately owned food processing companies in Ireland. Kepak have operated the Clonee slaughtering facility for over 25 years, which was originally licensed under Reg. P0167-01 in January 1998. Arising from the pollution incident of the River Tolka in July 2005, the licensee was prosecuted at Dunshaughlin District Court in January 2006. The company pleaded guilty to the Eastern Regional Fisheries Board's charge under section 171(1)(b) of the Fisheries Consolidation Acts, 1959-1995. The company was fined and undertook to pay the costs to reinstate salmonid populations in the river.

Notwithstanding the above, and having regard to the provisions of Section 84(5) of the EPA Acts, it is my view that the applicant can be deemed a Fit & Proper Person for the purpose of this licence review.

COMPLIANCE RECORD:

The installation has been audited three times since licence P0167-01 was issued and was found to be non-compliant with the licence requirements on each occasion. The Agency's audits and site inspections have found that the main areas of non-compliance relate to reporting requirements, bunding requirements and notifications to the Agency. In February 2007, Fingal County Council wrote to the Agency to highlight a number of non-compliances in relation to emissions to sewer. The non-compliances identified by the Council were based on their review of sampling results for 2005 & 2006, which found that a 24 hour composite sample was unattainable from the Kepak premises for an 18-month period. The Council took grab samples until the problem was resolved in July 2006. The monitoring results show non-compliances with BOD, COD & SS emission limit values occurring in grab samples on 4 dates out of 21 sampling occasions during 2005 & 2006.

A new management team is in place at the installation since July 2006. A higher level of management commitment to compliance with the RD is required.

COMPLAINTS

Since licensing, the Agency has received a number of odour-related complaints regarding landspreading of organic waste from this installation, particularly in the Fordstown area of Co. Meath during 2004. In April 2004 the Agency met representatives from Kepak Clonee and Kepak Athleague (licence Reg. No. P0168-01, who also store and landspread organic waste in the area) and their landspreading contractors to discuss the management of landspreading of materials from both Kepak installations. A number of agreements were reached with the aim of reducing the number of complaints, i.e., licensee to communicate directly with the complainants; to cease spreading in the evenings, at weekends and bank holidays, and to cease all spreading during the months of June, July and August 2004. These measures appear to have significantly addressed the issue of odour nuisance as only two odour complaints were received in 2005. These agreements have been incorporated into the RD under Condition 8.13 regarding control of landspreading and Condition 11.5 regarding the implementation of a procedure for addressing complaints received in relation to landspreading activities. Two complaints were received by the Agency during 2006; one regarding odour from the installation and one from the Sanitary Authority regarding emissions to sewer.

SUBMISSIONS

No submissions were received in relation to this licence review application.

RECOMMENDED DETERMINATION (RD)

The RD gives effect to the requirements of the Protection of the Environment Act 2003.

CHARGES

The invoiced financial charge for 2007 was €1,593. An annual charge of €12,835 is proposed in the RD, which reflects the enforcement effort anticipated for the installation.

RECOMMENDATION

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

Signed

Aoife Loughnane

Inspector, Office of Licensing & Guidance

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 after the expiration of the appropriate period.