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## M E M O R A N D U M

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**DATE:** 16 November 1998  
**TO:** Board of Directors  
**FROM:** Liam Ó Súilleabháin  
**RE:** Application for an IPC licence from Maurice O'Brien, for a Pig rearing Unit at Derrynanool, Mitchelstown, Co. Cork.  
**Reg. No.** 396.

Application Details	
Licence application received:	9 March 1997
Notices under Article 11(2)(b)(ii) issued	7 May 1998, 6 July 1998, 22 September 1998
Information under Article 11(2)(b)(ii) received:	22 May 1998, 5 June 1998, 18 June 1998, 21 August 1998, 3 September 1998, 16 October 1998, 29 October 1998
Notice under Article 14 issued:	6 July 1998, 22 September 1998
Information under Article 14 received:	13 August 1998, 29 October 1998
Site Visits:	27 March 1998, 2 July 1998

### 1.0 Class of Activity

Intensive Agriculture:

6.2 The rearing of pigs in installations, whether within the same complex or within 100 metres of that complex, where the capacity exceeds 1,000 units on gley soils or 3,000 units on other soils and where units have the following equivalents-

1 pig = 1 unit

1 sow = 10 units.

### 2.0 Profile

The licence application is for a 2,400 sow integrated unit. The operation is focused towards the production of fattening pigs at bacon weights (c 95 kg).

An application for planning permission (retention and extension) was granted by Cork County Council on 8 October 1998.

An EIS, submitted with the application, was deemed to be in compliance with Article 25 of the EIA Regulations

No single media license was previously issued for the facility by Cork Co. Co. (as none was required).

### **3.0 Waste**

Operation of the pig unit will result in the production of approx. 40,500m<sup>3</sup> of slurry annually (including wash water). Total storage available for slurry and wash water on site will be approx.38,000 m<sup>3</sup> (excluding freeboard for gas accumulation). The storage capacity is sufficient for 11 months. This storage capacity includes an overground tank of 550m<sup>3</sup>. Minimum storage requirements, have been conditioned in the proposed determination (PD) (Condition 7.3.1).

The annual quantity of P in slurry produced at the unit is estimated in the application as 48.7 tonnes per annum based on 1.2kg P/m<sup>3</sup> of slurry. The Agency use the figure 22kg P per sow and progeny per annum, making the P content of the slurry to be 1.3Kg/m<sup>3</sup>. Compared with the Agency figures, the method used by the applicant underestimates the P content of the slurry. However, the standard method used by the Agency will be used in future Nutrient Management Plans as required under Condition 5.5.9 of the PD. Even using this higher figure, there is sufficient land available to accommodate the landspreading operation as some 48% of the available landbank is kept in reserve.

A total of 4826 ha has been pledged to the unit (agreed in writing). It is proposed that 59 farms comprising 2470 ha will receive waste from the unit. Another forty three farms comprising 2215ha have been excluded by the applicant for various reasons. Six farms comprising 141ha are kept on stand-by.

The spreadlands were inspected and a portion was inspected in detail during the site visits and I am satisfied that the landbank is of sufficient area and appropriate for the landspreading of slurry.

The applicant has based the application rate for slurry on the REPS (pre May 1996) recommendations. Some 69.8 tonnes of P (48.7 tonnes produced at the unit in addition to on-farm cattle slurry), are allocated to landspreading on 2470 ha based on current soil fertility levels, and the REPS (pre May 1996) crop recommendations.

Landspreading will be undertaken by the applicant and farmers on whose land slurry is to be spread. Prior Agency approval is required for any contractors or farmers being utilized for landspreading (Condition 5.5.5).

Cork County Council have produced draft bye laws under Section 21 of the Local Government (Water Pollution) (Amendment) Act, 1990 in relation to farming practices in the catchments of the River Lee, the River Gradogue and the River Funshion. The bye laws provide for local regulation of fertiliser sale, soil testing, storage and movement of slurry/manure and the timing and rate of nutrient application. The piggery unit and some of the proposed landbank are located within the specified catchments.

Condition 5.5.9 requires the licensee to have regard to any bye-laws made and/or any requirement for the preparation of a NMP by the local authorities (under Section 21 and Section 21A of the Local Government (Water Pollution) (Amendment) Act, 1990 respectively) when preparing the NMP for approval by the Agency. Given that 2356ha of soil sampled land is available in reserve, the licensee should be in a position to comply with any such regulations.

A requirement to investigate alternative technologies for the treatment of slurry has been included as part of the Annual Environmental Report.

Other major wastes produced at the site include pig carcasses (estimated at 48 tonnes annually, stored in covered steel containers and sent weekly for rendering), and waste veterinary products and containers (returned to supplier). Both these wastes are classified as hazardous. Management of these waste is controlled under Condition 5.1 and 5.2.

#### **4.0 Air**

There are two aspects to the development relating to air quality: on-site issues and off-site landspreading.

The nearest sensitive receptor is 1 No. private dwelling located approximately 650m from the site. No submissions or complaints in relation to odour have been received from these residents. Condition 4.2 of the PD regulates odour emissions and their potential impact beyond the site boundary.

In view of the fact that landspreading will be carried out in an area of intensive pig production, the PD limits the methods of slurry application to soil injection or band spreading in order to minimise odour emissions. Any other method must receive prior agreement from the Agency. (Condition 5.5.11).

#### **5.0 Water**

The only surface water emission from the activity relates to rain water. With the exception of two minor uncontaminated emissions, clean water outfalls (2 No.) collect all surface water discharges. These outfalls discharge separately to a drain at the north western boundary of the unit. This drain joins a small stream down gradient of the unit which, in turn, discharges into the River Funshion. Condition 7.1.1 of the PD requires that all surface water emissions be diverted to the identified outfall points within six months of the date of grant of the licence. Monitoring of these surface water outfalls is included in Schedule 4(i) Surface Water Discharge Monitoring. Visual inspection is required on a weekly basis with chemical analysis quarterly.

Corrosion and cracking of concrete structures of the cattle unit was noted during inspection of the site. The applicant has informed the Agency of his intention to upgrade this part of the operation. Condition 7.1.3 requires the licensee to submit proposals to the Agency on upgrading of the storage tanks of this unit within six months of the date of grant of licence. The agreed proposals shall be implemented within a timescale specified by the Agency.

Landspreading is proposed over a wide area in the North Cork, West Tipperary and South Limerick region. Farms are located in catchments of the following river and their tributaries

- River Funshion,
- Awbeg River,
- Sheep River
- Maigue River ,
- Blackwater and
- River Aherlow

Monitoring of ambient surface waters and groundwaters has been required under Condition 8.1.

## **6.0 Noise**

It is not anticipated that noise will be a significant problem at the site. Condition 6 sets limits with regard to noise from activities on-site.

## **7.0 Submissions**

Two submissions on the application have been received by the Agency:

- Southern Regional Fisheries Board (SRFB)
- Limerick County Council

### **7.1 Consideration of Submission from Southern Regional Fisheries Board (SRFB)**

#### **7.1.1 Disposal of Slurry/Manure**

*The SRFB are of the opinion that the storage and landspreading facilities of the listed farmers should be assessed because undersized storage facilities can lead to pollution indirectly by reducing flexibility in terms of availing of opportunities to spread. The SRFB also state that the slurry spreading facilities of the farmers should be described.*

The EPA BATNEEC document states that the producer of the slurry is solely responsible for its proper management. Thus even when the slurry is transferred to another farm for land application the producer is required to ensure proper management of such waste, this places the onus on the waste producer to ensure proper management of this waste. The Agency has the power to exclude farms where proper management of waste is not being implemented. Such exclusions can be implemented under the annual process of approval of the NMP.

The PD limits the methods of landspreading to, band spreading or soil injection. Any other method must receive the prior written agreement of the Agency.

#### **7.1.2 Lands for spreading of Slurry**

*The SRFB expressed a concern with regard to the absence of legally binding landspreading agreements and consequently the long term safe disposal of wastes. It argues that the landspreading agreement should set out a minimum duration of availability. Further, the SRFB point to fact that the land identified in the application process could be completely substituted and argues that any subsequent developments (between the EPA and the applicant) regarding this matter should remain in the public domain.*

The agreements submitted indicate the willingness of farmers to accept wastes for landspreading. A surplus of available land has been identified in the IPC application. In addition to the farms included in the NMP (2611 ha), some 2356 ha of soil sampled land is available in reserve. If a particular farmer withdraws land at any time then some of the reserve land bank may be included in the NMP subject to the agreement of the Agency. The Agency has the opportunity to assess the available landbank on an annual basis as part of the approval of the NMP. Thus the licensee must satisfy the Agency that there is sufficient suitable landbank available on an annual basis for the duration of the project. Any alteration to the landbank as identified in the NMP must be agreed with the Agency and hence details of future amendments may be accessed by the public.

### 7.1.3 Soil Phosphorous Levels and Nutrient Management

*The SRFB has concern with regard to the phosphate application rates included as part of the NMP and argues for the use of the most recent Teagasc phosphorus recommendations, regular analysis of the slurry nutrient content and soil testing. It expressed the view that the IPC Application/EIS should include details of the actual fertiliser (inorganic/organic) on farms receiving waste. The Board is primarily interested in soil phosphorous levels and the likelihood of movement of this nutrient from the soil to waterways.*

The applicant bases the application rate of slurry on REPS (pre May 1996) figures. Revised recommendations reducing REPS and agronomic P application rates were implemented by Teagasc in May 1996 and June 1997 respectively. The quantity of on-farm waste to be applied to the landbank will be incorporated into a NMP prepared to the satisfaction of the Agency. In the PD the applicant is required to submit an NMP each year for approval. Thus there is opportunity for the Agency to reduce application rates if the soil monitoring results indicate that there is P accumulation in the soil. Monitoring of soil fertility status is requested every two years for soils  $\leq 10 \text{ mg P l}^{-1}$  and annually for soils  $>10$  but  $\leq 15 \text{ mg P l}^{-1}$ . This testing rate exceeds that recommended by Teagasc for agronomic recommendations. Also, the PD provides for extensive buffer zones in the vicinity of water courses which further mitigate the risk of excessive P movement from the soil to waterways. The overall thrust of the licence conditions is to ensure that the input of P to the soil is balanced by the output of P via the cropping regime. The PD requires annual testing of the nutrient content of the slurry.

*The Board refers to Section 52.2 of the EPA Act 1992. Firstly, reference is made to sub-section 52.2 (a) which states that the Agency shall-*

- (a) *Keep itself informed of the policies and objectives of public authorities whose functions have, or may have a bearing on matters with which the Agency is concerned.*

*The Board point to the following facts*

- *The trend of Teagasc nutrient guidelines recommendations is to lower the quantities of P required for crop production*
- *recent research in Johnstown Castle indicates that ungrazed grassland with P levels of  $15 \text{ mg l}^{-1}$  gives rise to significant P run-off.*

*Having regard for sub-section 52.2(a) of the EPA Act, it is argued that the Agency should reduce the maximum P limit of  $15 \text{ mg l}^{-1}$  and implement agronomic guidelines.*

*Secondly, reference is made to Section 52.2(c) which states that the Agency shall “have regard to the need for precaution in relation to the potentially harmful effect of emissions, where there are, in the opinion of the Agency reasonable grounds for believing that such emissions could cause significant environmental pollution.*

As referred to previously, the PD requires the applicant to submit a NMP each year for approval. The Agency may reduce application rates if the soil monitoring results indicate that there is excess P in the soil. What is deemed excessive P levels may be reviewed by the Agency in light of new information and research findings.

Adherence to the Buffer Zones and Code of Practice for landspreading as stipulated in Schedules 3(iv) and 3(v) of the PD should ensure that excessive run-off of P run-off will not occur. As referred to previously, the provision of extensive buffer zones adjacent to water bodies should prevent excessive P movement to waterways by surface run-off from land

receiving waste. The Code of Practice includes an embargo on winter spreading and where rain is forecast and also stipulates a maximum hydraulic loading. Condition 5.5.4 provides for exclusion of land where environmental concern exists. The overall thrust of the license conditions is to ensure that the input of P to the soil is balanced by the output of P via the cropping regime. Refer to Section 7.1.3 above. This approach is in line with the provisions of Section 52.2 (a) and (c) of the EPA Act 1992.

#### **7.1.4 Flora and Fauna (and Biological Monitoring)**

*The Board expressed concern with regard to flora and fauna in the aquatic environment. It is stated in the submission that the biological quality in terms of invertebrate and fish life of watercourses in the vicinity of proposed spreadlands should be assessed. The submission refers to the adverse impact of excessive plant growth (due to nutrient run-off) on fish habitat and movement and angling areas. The Board argue that biological monitoring is the most effective method of detecting intermittent pollution and monitoring chronic changes in water quality. The Board state that the EIS/IPC application should include proposals for biological monitoring in the vicinity of the unit and proposed spreadlands.*

The approach adapted in the PD is to avoid excessive nutrient run-off from the proposed spreadlands by proper management of the landspreading operation viz a viz nutrient management planning and also observation of Cordon Sanitaire and Code of Practice. Biological sampling in the vicinity of the site and proposed spreadlands was carried out as part of licensing process. Extensive chemical monitoring in the vicinity of the piggery unit and proposed spreadlands is required under Condition 8.1 of the PD. Condition 8.2 allows for alteration of the scope of monitoring following evaluation of test results.

#### **7.1.5 Exclusion Zones in Slurry Spreading Areas**

*The Board expressed the view that all exclusion zones around watercourses, drainage channels etc., should be clearly indicated on landspreading maps (preferably scale 1:10,560)*

All such exclusion zones are clearly shown on the landspreading maps (1:10,560).

#### **7.1.6 Concluding Comments**

*The Board made the following general comments:-*

- *Eutrophication is the most serious threat to surface water quality in Ireland.*
- *Surface water which is capable of supporting salmonid fish is suitable for most beneficial uses*
- *Eutrophication threatens important material assets including fisheries, angling, tourism, amenities of local and national importance as well as the international identity of Ireland as a clean country.*

*The Board states that the impacts of a proposed developments cannot be properly assessed unless the above information is addressed in the EIS/ IPC application.*

The impact of the proposed development on surface water quality is addressed in the Section 6.2.2 of the EIS and Section 11 of the IPC application. Implementation of the identified preventative and mitigation measures should ensure that landspreading or discharges from the piggery unit will not lead to enrichment of water bodies. Consideration of the impacts on material assets is a matter for the planning authority.

## **7.2 Consideration of Submission from Limerick County Council dated 23 July 1998.**

### **7.2.1 Groundwater Vulnerability:**

*The council point to the following:-*

- *26 of the farms within the landbank are located in Co. Limerick.*
- *A high proportion of these spreadlands are located in the south east region of the county which is sensitive to groundwater contamination.*
- *According to the GSI classification system most of this region has a vulnerability rating of high or extreme and is, therefore generally unsuitable for landspreading.*

*The council submitted the results of an assessment of the proposed spreadlands based on the G.S.I groundwater resource protection maps and data supplied by the applicant. This assessment identified the aquifer type and vulnerability rating of each plot of spreadland in the county. On the basis of this assessment, approximately 45% of the spreadlands located in Limerick were deemed unsuitable for slurry spreading.*

In response, Schedule 3(iv) of the PD excludes all plots (194 ha) located in areas of extreme vulnerability rating, as identified by the aforementioned assessment, from receiving organic waste from the unit. Further field trial pitting work would clarify whether such exclusion is appropriate. It appears that limited field assessment has been made in terms of assessment of vulnerability and thus a precautionary approach has been adopted. The exclusion should be readily accommodated in the NMP, given that 2356 ha of soil sampled land is available in reserve.

### **7.2.2 Nutrient Requirements of the Landbank**

*The Council state that the guidelines used to determine the P requirements of the landbank is dated and currently under review by Teagasc.*

*In light of recent national water quality standards and significant enrichment problems, Limerick Co. Co. expressed concern about the disposal of slurry in the Maigue River catchment. The Council state that disposal of slurry in this catchment (especially the Mooringstar and Loobagh Rivers, which are in the Maigue Catchment) should only be permitted in accordance with the most recent Teagasc guidelines for Phosphorous use.*

Refer to Section 7.1.3 above

### **7.2.3 Water Supply Protection:**

*The council point to the fact that the following spreadlands are in close proximity to public water supplies :-*

*Farm 115 within 120m of Baggotstown Group Water Supply*

*Farm 116 within 96 m of Baggotstown Group Water Supply*

*Farm 131 within 95 m of Ballyduff Group Water Supply*

The applicant has submitted detailed maps (1:10560) of the spreadlands with buffer zones clearly marked. However the location of nearby public water supplies is not shown. Condition 7.2.1 of the licence requires the licensee to submit to the Agency maps of appropriate scale showing the location of all private wells within 200m and all public supplies within 300m of the landspreading areas and within 1km of the site. This information is to be provided within six months of the date of grant of the licence.

#### **7.2.4 Recommendations re. landspreading in Co. Limerick**

Following from the above comments Limerick Co Co recommended that the following be conditioned into the licence

- ‘Strict adherence to the guidelines on phosphate use in the River Maigue Catchment.’
- ‘No landspreading within 300m of any well. Farm 131 (Plot 4) and Farm 116 (plots 3 & 4) to be removed under this condition’.
- ‘Use of soil injection or low trajectory band spreading to avoid odour’.

The application of P from the unit in the Maigue Catchment will be in accordance with an NMP prepared to the satisfaction of the Agency. Condition 5.5 requires the licensee to have regard for any bye-laws made and/ or requirement to prepare a NMP by a local authority. The soil monitoring frequency exceeds that recommended by Teagasc for agronomic recommendations. Refer to Section 7.1.3 above.

The spreading of slurry in the vicinity of wells is controlled by Schedule 3(i) *Buffer Zones for Landspreading of Organic Wastes*. The standard buffer zones stipulated in this Schedule is considered adequate for protection of groundwater. Schedule 3(iv) of the PD excludes Farm Code 131, Field ID 4), Farm 115 and Farm 116 from receiving organic waste from the facility. It is relevant to note that Farm 115 and 116 are not included in the proposed NMP i.e. these farms have already been excluded by the applicant, therefore the alteration does not have significant implications for nutrient management planning.

As referred to previously, the PD limits the methods of slurry application to band spreading or soil injection. Any other method must receive the prior approval of the Agency.

#### **7.3 Recommendation:**

It is recommended that the Board approve the PD as submitted.

Signed

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Liam Ó Súilleabháin