


This Report has been cleared for submission to the Board by acting Programme Manager Jonathan Derham
 Signed: Derham Date: 23/9/08

 Environmental Protection Agency <small>An Ghníomhaireacht um Chaomhú agus Comhsháil</small>	OFFICE OF CLIMATE, LICENSING & RESOURCE USE	
	INSPECTORS REPORT ON A LICENCE APPLICATION	
TO:	DIRECTORS	
FROM:	Breen Higgins	Environmental Licensing Programme
DATE:	02/09/2008	
RE:	Application for a Waste Licence from Bord Na Móna Plc for a facility named Drehid Waste Management Facility at Killinagh Upper, Carbury, Co. Kildare Register No. W0201-02.	

Application Details	
Type of facility:	Integrated waste facility comprising Non-Hazardous Landfill & Composting
Class(es) of Activity (P = principal activity):	3 rd Schedule: 1, 4, 5 (P), 6, 13 4 th Schedule: 2, 11, 13
Quantity of waste managed per annum:	385,000 tonnes (for years 2009-2014 to revert to 145,000 tonnes post 2014)
Classes of Waste:	Municipal, commercial and industrial derived bio-wastes for composting and residual non-hazardous waste (i.e. pre-treated) from municipal, commercial and industrial sources, for landfilling.
Location of facility:	Parsonstown, Loughnacush, Kilkeaskin, Drummond, Timahoe West, Coolcarrigan, Killinagh Lower and Killinagh Upper, Co Kildare.
Licence application received:	17/06/2008
EIS Required:	Yes
Site Inspection:	30/07/2008

1. Facility

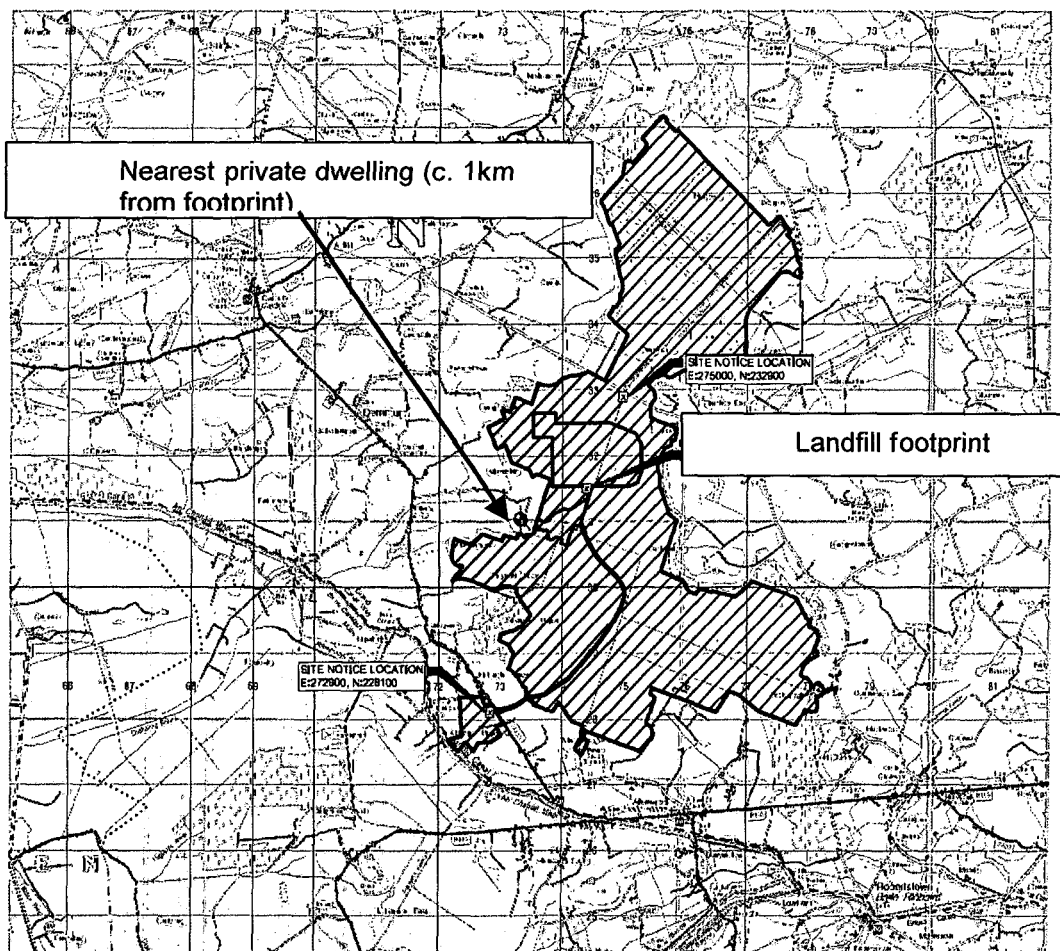
This application is for the extension of an existing waste facility located on the site of previously worked Bord na Móna peatland (Timahoe Bog). The Timahoe bog comprises c. 2,544ha of substantially worked peatland. The area was subject to peat harvesting activities for nearly 50 years and has been extensively drained. Commercial scale harvesting has now ceased.

The existing waste operation comprises an area of 179ha within the Timahoe bog. Construction of the facility commenced in August 2006 and acceptance of waste began in February 2008. The current activity is licensed for a composting operation accepting 25,000tpa bio-wastes for processing, and a 120,000tpa residual waste landfill, incorporating the associated infrastructure.

The residual waste operation sources material from non-hazardous municipal, commercial and industrial waste streams, while the composting activity has yet to commence. The landfill accepts residual waste only, i.e., it has been subjected to pre-treatment in accordance with the requirements of the Landfill Directive.

The nearest residential dwelling is c. 0.98km from the proposed landfill footprint, while planning permission has been granted for a dwelling c. 0.94km to the northeast of the proposed landfill extension. Figure 1.0 shows the location of the closest sensitive receptor.

Figure 1.0 Sensitive Receptors



2. Reasons for the Review

This review of waste licence Reg. No. W0201-01, issued on 03/08/2005, is being sought in order to accommodate the intensification and extension of the activities licensed. The proposal is to increase waste intake for a period of seven years from the current 120,000tpa to 360,000tpa, after which time the intake will revert to the original 120,000tpa. The proposed operational life of the facility will remain at c. 20 years. Composting levels throughout this period are to remain at 25,000tpa.

The landfill footprint will increase from c. 21ha to 39ha and will have a capacity of c.4.1Mt waste (c. 5.0Mm³ void space). The landfill will be constructed in fifteen phases, as shown in Figure 3 of the licence application documentation. In conjunction with the new phases there will be the development of all associated abatement equipment and ultimately profiling of the phases will occur.

3. Operational Description

Waste is currently accepted at the facility from the Kildare and Dublin regions, and is delivered to the facility by fully contained or covered Heavy Goods Vehicles. The facility is not open to the general public and only waste contractors with pre-arranged contracts with the licensee are allowed access to the facility. The current hours for operation of the facility are 8.00 a.m. to 6.30 p.m. Monday to Saturday. Waste acceptance is permitted from 8.00 a.m. to 6.00p.m. Monday to Saturday. These arrangements will not change under the review.

The landfill will be worked in 15 distinct phases each with a life span of 2-3 years, the original footprint contained 8 phases with a further 7 phases proposed under the review, see Drawing No. 3369-2603 of the application documentation. Each phase is further subdivided into four to six separate cells. On average the depth of fill will vary from 15 to 20m.

The required infrastructure for the appropriate operation of a landfill site is substantially in place at the Drehid facility, e.g., perimeter fencing, access road, office, maintenance building, composting building, in-vessel composting units, on-site proprietary sewage treatment system, surface water management/ treatment infrastructure, leachate and landfill gas management infrastructure, electricity generation, weighbridges & wheel-wash facilities, waste quarantine/inspection area and bunded fuel storage. However, some additional infrastructure will be required in order to accommodate the increased tonnage being accepted. This infrastructure includes additional storm water sedimentation ponds, supplementary leachate and gas handling infrastructure and all the ancillary equipment associated.

The review also includes the continued use of the previously utilised borrow-areas adjacent to the landfill. This area will be utilised for the purpose of winning suitable engineering materials for the extension.

Composting activities have not yet commenced on-site, however the proposals for this activity were considered during the original licence application and as no changes are proposed the requirements of Waste Licence Reg. No. W0201-01 remain appropriate.

Lining System: Liner design proposed for the landfill extension are in line with those agreed for the original proposal, i.e., HDPE overlying low permeability BES, and incorporating leachate collection. However, an amendment to the original licence requirements was accommodated by way of written communication between OEE and the licensee (Comms. Ref. W0201-01/ap004dm). This change allowed for a composite liner consisting of a 0.5m layer of Bentonite Enhanced Sand (BES) with a hydraulic conductivity of less than or equal to 5×10^{-10} m/s, overlain by a 2mm thick high density polyethylene (HDPE) layer. This is considered Best Available Techniques (BAT) for the sector.

Leachate Management: Leachate is currently collected and stored in enclosed, propose built tanks and is subsequently tankered off-site to an approved wastewater treatment plant (WWTP). The volume generated will increase as a result of the increased intake of waste, however the storage arrangements on-site are considered to be adequate to accommodate this. The treatment arrangements have been carried forward into this proposal. Infrastructure will be provided across the landfill to allow recirculation of leachate to facilitate degradation of the encapsulated waste.

Landfill Gas Management: In the early stages of filling any gas generated will passively vent to the atmosphere. Gas collection infrastructure comprising horizontal and vertical wells will be installed/commissioned during filling and on completion of the cells. When gas production rates are sufficient and suitable, flaring of the collected gas will occur. As final capping is achieved (2 years after waste deposition stops to allow for settlement), permanent vertical extraction wells will be operated.

Surface Water Management: Presently all surface water run-off will be collected from borrow pit, hardstanding and restored areas and directed via grit trap, oil separator and settlement lagoons prior to discharge to the River Cushaling. It is proposed that a further two ponds will be constructed to accommodate any increase in surface water arising as a result of the extension. Continuous monitoring for a number of parameters is currently carried out at the inlet and outlet from the surface water ponds, i.e., pH, Dissolved Oxygen and Conductivity.

Capping & Restoration: Once waste deposition in a phase is completed, an intermediate cap will be laid to allow for ongoing waste settlement. The final low permeability clay and LLDPE cap will be put in place within two years, as per Condition 10.1 of the RD, and will meet the requirements of BAT.

4. Use of Resources

The activity utilises relatively low quantities of water for the purposes of wheel washing, general site maintenance and sanitary purposes. Fuel and energy are used primarily to power the administrative buildings and the on-site machinery. It is proposed that the facility will contribute energy to the national grid once the landfill gas generators are commissioned.

5 Emissions

5.1 Air

An odour impact assessment was undertaken for the Drehid facility with the purpose of assessing the potential for generation of odours in the vicinity of the extended landfill. This modelling determined that no residents should perceive odours at concentrations greater than $1.5 \text{ Ou}_E \text{ m}^3$ at the 98th percentile of hourly averages. These levels are not considered sufficient to result in nuisance impact on residences in the area given the distance of c. 1.0km to the nearest residence.

The current and proposed operations include a number of mitigating factors in relation to landfill gas odour which include, inter alia, the pre-treatment of the waste (off-site) to remove compostable organics, full basal and capping containment, carbon filters on passive gas vents, landfill gas extraction and flaring/generation, bioscrubbing of compost emissions, distance to nearest dwelling and general waste management control (small working face, daily cover, etc.).

The composting activity is to be housed in an enclosed structure with all vent gases passing through an on-line scrubber and biofilter thereby greatly reducing the potential for release of bioaerosols.

The licence includes conditions controlling the provision, operation, control and monitoring of landfill gas and composting air emissions, as well as requiring the control of the working face.

5.2 Leachate Emissions

The landfill facility will be fully lined to BAT standards. Leachate generation on-site is predicted to peak in year seventeen (2025) of operation at a rate of $57.5 \text{ m}^3/\text{day}$. This leachate is collected and stored in purpose built landfill leachate tanks. Infrastructure provided will allow for the recirculation of leachate through the waste mass to accelerate biological degradation. Excess leachate will be tankered off-site to an agreed waste water treatment plant (Lexlip WWTP). The licensee utilises an automated SCADA system for the monitoring and controlled pumping of leachate within the collection and holding infrastructure.

Once operational leachate generated in the composting area is to be collected in tanks and recycled into the composting process as a wetting agent, floor wash or scrubber liquid. Any excess is to be discharged to the

landfill leachate tanks. Runoff from the waste quarantine and wheel wash areas will also be diverted to the landfill leachate collection system.

Sanitary effluent generated on site from staff toilet and canteen facilities is treated by way of a proprietary treatment plant, installed in accordance with Agency guidelines. The liquid overflow from this unit is discharged to the landfill leachate holding tanks.

5.3 Emissions to Surface Waters

No leachate or trade effluent will be discharged to surface waters. Discharges are associated with storm water run-off from the borrow pit, stripped areas, prepared cells, hardstanding and landscaped areas and completed cells. The current facility utilises four settlement lagoons as well as interceptors and grit traps to abate these emissions (see Drawing No. 3369-2636 of the application). The proposed extension provides for an additional two lagoons to be developed.

Discharge from the site is to the Cushaling River, a tributary of the Figile and ultimately the Barrow. The historical peat harvesting has impacted on the streams in this upper part of the catchment. Existing water quality data for the site area shows the water quality generally to be good, however the reducing environment of the peat results in elevated levels of ammonia and iron concentrations. The Recommended Decision (RD) sets ELV's on the discharges for suspended solids and other indicator parameters such as ammonia. Continuous monitoring is undertaken at the inlet and outlet of the settlement lagoons for pH, Conductivity and Dissolved Oxygen.

5.4 Emissions to ground/groundwater:

There are no authorised emissions to groundwater associated with this activity with all leachate generated being contained within the lined cells and captured for treatment.

The aquifer beneath the site is classed under the national Groundwater Protection Scheme (DEHLG-EPA-GSI) as Locally Important, with a gradient of west-south-west. The underlying subsoils are of very low permeability at 8.2×10^{-10} m/s, and vary in thickness from 9m to 128m. The underlying aquifer has a Low vulnerability rating (Groundwater Protection Scheme), with a Landfill response of R1 (landfill acceptable, subject to construction to BAT).

The private groundwater well in closest proximity to the landfill footprint is located approximately 1km to the south-west. This well is not considered at risk from the landfill considering the vulnerability rating and the abatement measures employed on-site.

The engineered systems proposed and existing for the landfill, leachate tanks and sedimentation lagoons are intended to prevent environmental pollution of the groundwater and are considered BAT for the sector.

5.5 Wastes Generated:

The site will generate typical office waste, engine oil, lubricating oil and other plant maintenance wastes that will, as appropriate, be consigned off-site for disposal. Other wastes such as reject waste loads will be returned to supplier or diverted to an appropriate facility.

5.6 Noise:

Noise emissions from the proposed development are likely to arise mainly from the operation of plant, truck movements and the flaring of landfill gas. Owing to the very remote location of the site, noise levels arising from on-site operations will not result in nuisance at any sensitive receptor in proximity to the facility. At these locations noise levels will be maintained below 25dB(A).

5.7 Nuisance:

The licensee utilises BAT (wheel wash, netting, daily cover, traps, etc.) for landfill associated nuisances such as dust, litter, vermin, etc. Monitoring undertaken has indicated that dust impact on local residences is considered to be negligible. The Recommended Decision (RD) includes various conditions for the control of litter, dust, vermin and pests.

6. Restoration

The landfill will be capped and seeded with grass to finished levels of c.104m OD. A restoration plan is shown on Drawing No. 3369-2439 of the application documentation. Monitoring and aftercare will continue for as long as is necessary and until the facility no longer represents a pollution/emissions risk.

7. Cultural Heritage, Habitats & Protected Species

The EIS for the facility notes that there are no designated ecological conservation areas within the landfill area. The Grand Canal pNHA and Hodgestown Bog NHA located some 3.6km and 4.4km from the landfill footprint respectively are the nearest sites designated for nature conservation.

A number (six) of habit types were noted within the site. Spoil and bare ground areas are of greatest scale and are of low ecological importance. Alder buckthorn, a plant classified as 'rare' in Curtis & McGough, 1988, is found outside the site activity boundary.

It is noted that the Timahoe bog area would be rated as possessing a high local ecological habitat value due principally to the presence of some intact raised bog, some rare plants, presence of fringe woodland and the presence of feeder streams to important rivers. The landfill footprint and associated peat removal activity does not impact on any of these aspects.

There are no recorded archaeological sites impacted by the development. Investigations during the initial phases of development did not record any discoveries, however the potential for future discoveries requires that a Condition shall be retained in the licence to monitor excavation on-site.

Condition 11.7 of the RD requires liaison with National Parks and Wildlife Service officials on this point.

8. Waste Management, Air Quality and Water Quality Management Plans

The proposal is compatible with the objectives of Kildare and Dublin Area Waste Management Plans and serves an important regional need. The proposal will not contravene national Air Quality standards, nor will it adversely impact upon national or local water quality objectives.

9. Environmental Impact Statement

I have examined and assessed the EIS and having regard to the statutory responsibilities of the EPA, I am satisfied that it complies with Article 94 and Schedule 6 of the Planning and Development Regulations 2001 (S.I. No. 600 of 2001) and EPA Licensing Regulations (S.I. No. 85 of 1994, as amended).

10 Best Available Techniques (BAT)

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 Decision 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 - as may be relevant - to the way the facility is located, designed, built, managed, maintained, operated and decommissioned.

11. Compliance with Directives/Regulations

The activities undertaken come under the scope of the IPPC Directive and Landfill Directive. The proposals would be considered BAT and compliant with the requirements and objectives of these Directives.

The composting operation once operational will be required to comply with Department of Agriculture requirements for such operations, Condition 8.4.4 of the RD. The use of the finished compost in landfill engineering operations is permissible under the Animal By-Products Regulations.

The discharges to water as controlled by the RD satisfy the requirements of the Water Framework Directive 2000/60/EC.

The landfilling operations are controlled in a manner considered appropriate to adhere to the requirements of the Groundwater Directive (80/68/EEC). No direct or indirect discharges are permitted from the facility. Monitoring results submitted with the licence application do not indicate that any polluting substances are present in the groundwater as a result of activities being undertaken at the landfill.

12. Compliance Record

The comments of the OEE inspector were sought in relation to this facility; no significant enforcement issues were noted at the time of considering this application.

13. Fit & Proper Person Assessment

Bord na Mona are the holders of a number of EPA authorisations (IPPC and Waste) and have demonstrated themselves to be technically competent and financially capable to operate a licence. They are also free of any relevant convictions. Financial security for the closure of the site is addressed by way of a Company Guarantee to the value of €1.4m rising to c. €2.55m when the void space is at capacity.

14. Charges

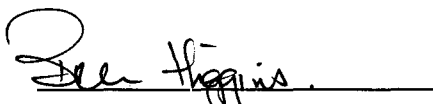
The existing licence set an Agency fee in 2005 of €19,041, while the charges imposed in 2007 were €23,369. The RD, as drafted, proposes a figure of €24,599 and is considered appropriate in the context of the enforcement and monitoring regime required for the effective regulation of the facility.

15. Recommendation

In preparing this report and the Recommended Determination I have consulted with the Agency technical and sectoral advisor Dr. Jonathan Derham.

I have considered all the documentation submitted in relation to this application and recommend that the Agency grant a licence subject to the conditions set out in the attached PD and for the reasons as drafted.

Signed



Breen Higgins

Procedural Note

In the event that no objections are received to the Proposed Decision on the application, a licence will be granted in accordance with Section 43(1) of the Waste Management Acts 1996-2007.

