

# INSPECTORS REPORT

**WASTE LICENCE REGISTER NUMBER**      **125-1**

**APPLICANT:** Donegal County Council

**FACILITY:** Glenalla Landfill

**INSPECTOR'S RECOMMENDATION:** That a waste licence be granted subject to conditions.

## **(1) Introduction:**

Glenalla landfill has been operated by Donegal County Council since 1978. Approximately 25,000 tonnes of waste have been deposited to date. This application, which was made in October 1999, is to continue landfilling at a rate of 800 tonnes per annum. The site is approximately 6km due east of Milford, on the Fanad Peninsula and is in a remote location (at approximately 130m OD). There are 5 neighbouring residences, all between 400-500m from the facility.

The facility is surrounded by peat and marshland, conifer plantations and rock outcrop. The landfill is relatively obscured from nearby roads apart from the (unclassified) approach road.

This application was received on 5/10/99, after the prescribed date as set out in the Waste Management (Licensing) Regulations 1997. Therefore the continued operation of the landfill in the absence of a waste licence is an offence under the Waste Management Act, 1996. The re-opening and continued operation of Glenalla Landfill has been the subject of a complaint to the European Commission.

The Council has applied to continue landfilling operations on a dilute and disperse basis (*Class 1-3<sup>rd</sup> Schedule*). Other classes applied for (*Class 2, Class 4, Class 6 and Class 13-3<sup>rd</sup> Schedule*) are in relation to leachate treatment and storage of materials at the site.

Donegal Co Co applied for the disposal of 3,200 tonnes of municipal waste at this facility. However, subsequent to making the application a significant increase in waste input to this site occurred and this total quantity of waste had been disposed of by December 2000 (according to Donegal Co Co estimates). In effect the landfill has reached the capacity applied for. Therefore, this Proposed Decision does not permit the disposal of municipal waste at the landfill (for more detail see *Waste Types and Quantities* below). The applicant will however, be permitted to deposit 46,000 tonnes (estimated based on EPA manual requirements) of inert waste for the purposes of restoration and aftercare. With regard to leachate treatment, the applicant is required to manage and collect leachate at the site and therefore is licenced under *Class 4 and Class 13 - 3<sup>rd</sup> Schedule*. The applicant applied for licensing under *Class 2 and Class 6-3<sup>rd</sup> Schedule*. However, these classes are not required in order to carry out the leachate management measures conditioned and are therefore recommended for refusal.

<b>Quantity of waste to be accepted (Total)</b>	46,000 tonnes of inert waste for the purposes of restoration & aftercare
<b>Environmental Impact Statement Required</b>	No
<b>Number of Submissions Received</b>	None

## **FACILITY VISITS:**

DATE	PURPOSE	PERSONNEL
31/8/99	To assess site activity	Peter Carey
30/11/99	Site notice	Peter Carey
23/8/00	Site visit	Cormac Mac Gearailt
18/5/00	Site visit/handover visit	Peter Carey, Cormac Mac Gearailt, Michael Henry.

## (2) Facility development:

The majority of this site is currently covered by interim capping and the working face is kept small. The terms of this Proposed Decision prohibit the disposal of municipal waste. Only deposition of inert waste for the purposes of restoration and aftercare is permitted. This Proposed Decision requires that the facility be fully capped and restored by July 31<sup>st</sup> 2003.

This Proposed Decision allows waste acceptance during the following hours (as applied for):

- 8:30am – 4:30pm Monday to Friday inclusive and;
- 8:30am – 3pm on Saturdays.

Given the short lifetime, and the fact that municipal waste is not to be disposed of at the facility, a Schedule of Objectives & Targets is not required. However, an Environmental Management System (EMS) remains a requirement of this licence, which includes corrective action procedures. This will also encompass procedures such as the Emergency Response Procedures (ERP), waste acceptance and leachate handling procedures. The time period for submission of the EMS is reduced to six months.

## (3) Waste Types and Quantities

At the time of application, the applicant estimated that this site had the capacity for **3,200 tonnes** in total and this tonnage was envisaged to provide approximately 4-5 years further capacity (equivalent to ~ 800 tonnes per annum). However, on foot of complaints from local residents regarding significantly increased waste inputs at the facility, the applicant was written to on 15/11/00 by the Agency and was requested to provide information on the existing quantities of waste being accepted at this facility. The response (12/12/00) stated that quantities being accepted at this facility have increased to an expected maximum annual tonnage of 13,400 tpa (approx. **33,000 tonnes** in total). This represents a greater than ten fold increase in the total quantity of waste to be accepted at the facility. On foot of this information, the applicant was informed that these quantities exceed the upper limits referred to in the application and that the Agency proposes not to consider them when deciding on the application. Serious concern was also expressed at the divergence between what was applied for and the scale of activities indicated in this response.

As stated earlier, the landfill is considered to have reached its capacity for the disposal of municipal waste. This PD permits the applicant to accept 46,000t of inert waste for the purposes of grading, capping and restoration of the facility.

The applicant will be required to put in place waste acceptance procedures for acceptance of this inert waste, within three months of date of grant of licence.

The facility will be restored as improved pastureland, similar in nature to adjacent farming activities.

#### **(4) Emissions to Air**

It is not considered necessary to install gas migration monitoring wells for the following reasons:

- The remoteness and topography of the site,
- The small amount of waste deposited and low levels of modelled landfill gas generation,
- The low risk of landfill gas migration,
- The nature of the bedrock (Pelite-relatively impermeable sedimentary rock) and saturated peat overburden,
- The particular location of the 5 neighbours (between ~450m-550m from the site).

Given the low quantities of waste already landfilled at this site, the age of the waste, the shallowness of the waste (average depth ~2.5m) and the low gas production rates, flaring of landfill gas is not considered feasible. Landfill gas will be controlled by the installation of passive vents, and will be monitored on a quarterly basis.

Dust monitoring and noise monitoring will be carried out annually.

#### **(5) Emissions to Groundwater/Hydrogeology**

- **Geology/Hydrogeology**

The site is located in a peaty area and the underlying bedrock is Pelite, a relatively impermeable sedimentary rock. Overburden consists of peat and glacial subsoil's consisting of gravelly-sandy silt.

The aquifer under the site is classified as a poor and generally unproductive aquifer (Pu), and the bedrock is relatively impermeable.

Groundwater investigations at the facility indicate that the landfill has had a limited impact on the local groundwater, with elevated levels of Ammonia (~2.0mg/L).

- **Landfill Leachate Management**

Leachate currently arising from the facility discharges to the Glenalla river. The applicant proposes the treatment of leachate on-site using a solely peat-based system. However, the lack of assimilative capacity in the adjacent Glenalla River strongly mitigates against the installation of any leachate treatment system with a subsequent discharge to this river. Given the flows in the Glenalla River, the available assimilative capacity of the river is 15g/BOD/day. Assuming the system successfully treats the leachate to the level proposed by the applicant (*i.e.* best case scenario), the assimilative capacity required for this emission would be 640g/BOD/day. This exceeds the available assimilative capacity by a factor of greater than forty two. Discharge of the effluent as proposed by the licensee would, therefore result in environmental pollution of the Glenalla River, with regards to B.O.D, Ammonia, Suspended Solids and other parameters. As such the treatment system proposed does not constitute BAT (Best Available Technique) in this case.

In light of the above, the applicant will be required to install a leachate interception drain and a collection tank on-site, and dispose of the collected leachate to an agreed wastewater treatment plant.

The conditions of this PD require the following;

- Installation of a leachate collection toe drain. The leachate collection toe drain shall be keyed into and covered by the capping layer, once the capping layer is installed.
- Provision of an appropriate leachate collection and storage tank.

- Provision of appropriate access to the leachate storage tank by the leachate tanker vehicle.
- Separation of clean and contaminated surface water and discharge of contaminated surface water to the leachate collection system.
- Stored leachate will be disposed of by tankering off-site in fully enclosed road tankers, to an agreed wastewater treatment plant.

Leachate quantities generated will be minimised as a result of the progressive capping and restoration of the facility. I am satisfied that the ongoing leachate collection and management as required under the terms of this Proposed Decision will ensure that the existing facility will have a significantly reduced and diminishing impact on local groundwater and surface water resources.

#### **(6) Emissions to Surface Water**

Leachate discharges from the eastern and southern edges of the facility and via small drains, ultimately reaches a local watercourse (Glenalla River – not a designated watercourse). This river runs adjacent to the southwest corner of the facility.

Given the local geology and the nature of the site it is clear that the majority of leachate arising on the site discharges to surface water in the area. The impact of these leachate discharges is described in Table 1 (below).

Parameter	Range observed (mg/l)	Compared to upstream
NH <sub>3</sub>	0.5-0.9	~55-90 fold increase
BOD	1.8-2.5	~ 4 fold increase

**Table 1** – Observed impact of landfill on the adjacent Glenalla River

Closure and capping of the landfill will result in an estimated nine fold reduction in the volume of leachate generated, however the assimilative capacity of the Glenalla River would still be insufficient to allow discharge of treated leachate as proposed.

In addition the applicant will be required to install a peripheral drain around the site in order to intercept and collect leachate discharges from the site (as described in *Landfill Leachate Management*, above). Leachate will be extracted from the collection/storage system and tankered off site for treatment at a wastewater treatment plant to be agreed with the Agency. A significant improvement in local surface water quality will ensue.

Quarterly chemical monitoring is required on the local watercourses upstream and downstream of the facility, at three locations.

#### **(7) Other Environmental Impacts of the Development**

- **Visual**

This site is not particularly obtrusive, given the local landscape of conifer plantations and hills.

- **Restoration and Aftercare.**

The applicant will be required to restore the site to improved pastureland in keeping with farm holdings in the local area, as stated in the application. The facility must be fully capped and restored by July 31<sup>st</sup> 2003.

#### **(8) Waste Management Plans**

The Donegal Waste Management Plan October 2000 (which has been adopted) considers three possible scenarios for the remaining landfills in County Donegal. The

first is that all licences (including Glenalla) are granted. The second is that no further licences are granted (apart from Ballinacarrick – already licensed Reg No. 24-1). The third is that any licences granted by the Agency are reviewed in order to secure up to 5 years further landfilling capacity. The plan also examines the prioritisation of existing void space in the county and recognises the fact that this goal (*i.e* granting of any further licences for disposal, apart from Ballinacarrick Reg No. 24-1) may not be achieved.

**(9) Submissions/Complaints**

No submissions were received.

**(10) Reasons for the Recommendation.**

I recommend that a waste licence, subject to conditions, be **granted** for the waste activities and reasons outlined below;

- **Class 1-3<sup>rd</sup> Schedule** [*Deposit on, in or under land (including landfill)*] – Inert waste only

The applicant applied to deposit a total of 3,200 tonnes of municipal waste at this facility. This application was made in February 1999. Based on correspondence from Donegal Co Co (received in November 2000) the total tonnages of waste disposed of at this facility reached this figure during December 2000. In effect the landfill is considered to have reached its capacity, as applied for, for the purposes of municipal waste disposal. Therefore, the disposal of municipal waste at this facility is not permitted.

The deposition of 46,000 tonnes of inert waste is permitted. This is for the purposes of grading, restoration and aftercare of the facility. This is as applied for by the licensee.

- **Class 4 - 3<sup>rd</sup> Schedule** [*Surface impoundment– leachate collection & treatment*]
- **Class 13 - 3<sup>rd</sup> Schedule** [*Storage- leachate collection & storage prior to treatment*]

The applicant applied for licensing under *Class 4* and *Class 13-3<sup>rd</sup> Schedule*, in order to carry out the leachate management measures on-site. These activities are permitted in order to carry out the leachate management works as required under the terms of this Proposed Decision.

I recommend that a waste licence be **refused** for the waste activities and reasons outlined below;

- **Class 2-3<sup>rd</sup> Schedule** [*Land treatment, including biodegradation of liquid*]
- **Class 6-3<sup>rd</sup> Schedule** [*Biological treatment not referred to elsewhere in this schedule*]

The applicant applied for licensing under *Class 2* and *Class 6-3<sup>rd</sup> Schedule*, however these classes are not required in order to carry out the leachate management measures required in this Proposed Decision, and are therefore refused.

I am satisfied that the waste activities permitted above, if carried on in accordance with the conditions in the proposed decision, will comply with the requirements of Section 40(4) of the Waste Management Act 1996.

Signed \_\_\_\_\_

Dated:

Cormac Mac Gearailt,  
Inspector, Environmental Management & Planning.

## **APPENDIX 1**

### **LOCATION MAP & LAYOUT PLAN**

- Site location Map 3026.28/A03 (Section 7)  
and
- Site location Map (for more detail) P149/02(Figure 2 Local Residents Consulted-Section 13)