

INSPECTORS REPORT

WASTE LICENCE REGISTER NUMBER **126-1**

APPLICANT: Donegal County Council

FACILITY: Muckish Landfill

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

(1) Introduction:

Muckish landfill has been operated by Donegal County Council since 1978. Approximately 52,000 tonnes of waste have been deposited to date. This application is to continue landfilling 4,500 tonnes per annum up to a total capacity of 70,000T (approx. 4-5 more years).

The site is approximately 6km due south of Falcarragh village, and is in a remote rural valley, surrounded by peatland and mountains. This site is located between Muckish Mountain and Cloghernagh Bog & Glenveagh National Park pNHA/pCSAC. (proposed Natural Heritage Area and proposed Candidate Special Area of Conservation). The approach road to the site is designated in the Donegal County Development Plan 2000, as being a "scenic road", and also a "tourist road".

This landfill site was previously closed by the Council and then re-opened on 27th April 1999. The Agency wrote to Donegal County Council and advised them that a waste licence application was required. Donegal County Council subsequently applied for a waste licence for Muckish Landfill on the 5th October 1999. The re-opening of Muckish Landfill has been the subject of a complaint to the European Commission. This application was received after the prescribed date as set out in the Waste Management (Licensing) Regulations 1997, and therefore the continued operation of the landfill in the absence of a waste licence is an offence under the Waste Management Act, 1996.

The Council has applied to continue landfilling operations on a dilute and disperse basis (Class 1-3rd Schedule). Other classes applied for (Class 4, Class 6 and Class 13-3rd Schedule) are in relation to leachate treatment and storage of materials at the site, and Class 4 of the Fourth Schedule regarding recovery of inert material.

The applicant has not proposed to install a weighbridge, a wheelwash, any waste inspection or quarantine area, landfill lining or associated works (*eg* leak detection *etc*). There is no source of electrical power at this site and given its remoteness and its scenic character, it is unlikely that overhead power lines would ever be brought to this site. The provision of power to a landfill facility with standard infrastructure by means of generators would probably be impractical.

The 1997 EPA Biological Survey of River Quality noted a "dramatic drop in quality" in the Ray River downstream of this landfill. Indeed, Donegal County Council specifically attributes the reduction in quality of the Ray River to leachate emissions from this facility. The applicant has proposed to install a leachate treatment facility on-site and discharge to an adjacent watercourse, the Ray (Duvowen) River. Current leachate production rates (landfill operational) are estimated at approx. 150m³/day max. Closure and capping of the landfill will result in an estimated 700% reduction in

leachate volumes generated. Tankering of such quantities of leachate over an extended period over poor roads up to a possible distance of ~35 miles (Ballybofoey STW) is considered impractical. Therefore, given the available dilutions in the Ray River, discharge of treated leachate will only be a realistic possibility if volumes of leachate arising are drastically reduced by immediately closing and subsequently capping the landfill, as required under the terms of the Proposed Decision.

Section 5 (1) of the WMA 1996 describes environmental pollution as follows: “environmental pollution means, in relation to waste, the holding, transport, recovery or disposal of waste in a manner which would, to a significant extent, endanger human health or harm the environment, and in particular

- (a) Create a risk to waters, the atmosphere, land soil, plants or animals,
- (b) Create a nuisance through noise, odours or litter, or
- (c) **Adversely affect the countryside or places of special interest.**

Section 40(4)(b) provides, *inter alia*, that a waste licence shall not be granted unless the activity concerned, carried out in accordance with such conditions as may be attached to the licence, will not cause environmental pollution.

In the application, it is stated in section H 7.04 that “presently the use of the site as a landfill facility gives rise to significant visual impact on short and middle distance views”. Impacts on views from the adjacent National Park and Muckish mountain are also described. The continued operation of an active landfill site, which is in view for the majority of the designated “scenic road” and “tourist road”, is in clear conflict with the objective stated in the County Development Plan and would constitute environmental pollution as it causes an “adverse affect on the countryside or places of special interest” (Muckish Mountain and the Cloghernagh Bog & Glenveagh National Park) as defined in the Waste Management Act, 1996.

The Proposed Decision prohibits the disposal of waste at the landfill. In recommending the cessation of disposal, I consider that continued landfilling of municipal waste at the facility would not comply with the requirements of Section 40(4) of the Waste Management Act, 1996. In coming to this recommendation I have had regard to the following matters;

1. that the disposal activity (*Class 1 - 3rd Schedule*) applied for would cause environmental pollution as it will adversely affect the countryside or places of special interest;
2. evidence of existing surface water pollution and the likelihood of further pollution;
3. the absence of proposals to upgrade the facility and infrastructure to meet BATNEEC standards.

The waste activities as set out in the proposed decision will comply with the requirements of Section 40(4) of the Waste Management Act 1996 but the historical landfilling of waste at the facility may continue to cause environmental pollution. This will be minimised by the requirement to cap the site. The proposed decision provides for the cessation of activities that would result in increased pollution from the facility and for restoration of the facility under *Class 4* of the Fourth Schedule. Licensing under *Class 6* and *Class 13* (Third Schedule) will cover leachate treatment, and therefore *Classes 2 and 4* (Third Schedule, as applied for) are refused.

Quantity of waste (tpa) to be accepted	Maximum 40,000T. Inert waste for recovery in restoration & aftercare
Environmental Impact Statement Required	No
Number of Submissions Received	4

FACILITY VISITS:

DATE	PURPOSE	PERSONNEL
31/8/99	Site visit	Peter Carey
2/11/99	Site notice check	Peter Carey
19/5/00	Site visit/handover	Peter Carey, Cormac Mac Gearailt, Michael Henry.
23/8/00	Site visit	Cormac Mac Gearailt

(3) Waste Types and Quantities

Only inert waste will be allowed for use in the restoration of the facility. The quantities of inert waste allowed for restoration of the facility is limited to 40,000 tonnes, as applied for by the applicant. The applicant will be required to put in place waste acceptance procedures for acceptance of this inert waste. The final maximum height of the facility after restoration is limited to 101mOD (Malin Head)

(4) Emissions to Air

In view of the remoteness of the site (nearest residence is 2.4km from the site), it is not considered necessary to install gas migration monitoring wells or require monitoring for dust or noise. Given the small quantities of waste already landfilled at this site, and the low gas production rates, flaring of landfill gas is not considered justified. Landfill gas will be controlled by the installation of passive vents, and will be monitored on a quarterly basis.

(5) Emissions to Groundwater/Hydrogeology

• Geology/Hydrogeology

The site is located in a peaty area and the underlying bedrock is quartzite. The overburden (~8m in thickness) consists of sandy gravel (glacial till), overlain by thin peat (1-3m) deposits to the surface. Groundwater resources under the site are poor, and the bedrock has little fracturing or porosity to allow for storage or transmission of groundwater.

Groundwater investigations at the facility indicate that the landfill has had a limited impact on the local groundwater. Slightly elevated conductivity and faecal coliform counts were noted in downgradient wells.

• Landfill Leachate Management

The applicant will be required to carry out leachate collection and treatment on-site. The only leachate containment works carried out up to now has been the construction of a shallow trench around part of the landfill site. This trench is ineffective as leachate and contaminated surface water accumulating in this trench has no outlet and will inevitably discharge to the Ray River in times of heavy rainfall. The conditions of the PD require completion of the following works;

- Installation of a gravel 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 treatment system.
- Separation of clean and contaminated surface water, and discharge of contaminated surface water to the leachate treatment system.

The ongoing leachate collection, management and treatment 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

The leachate treatment system referred to above will discharge treated leachate to the Ray (Duvowen) River. This river enters the Atlantic approximately 8km downstream. Table 1 below, indicates the impact the landfill has had on the quality of the Ray River in the past.

Parameter	Level observed (mg/l)	Compared to upstream
NH ₃	0.67-0.92	15-90 fold increase
BOD	1.4-5	3-5 fold increase
Total Coliforms	2800 and TNTC*/100mls	Increase from 0 and 14/100mls
Faecal Coliforms	900 and TNTC*/100mls	Increase from 0 and 1/100mls

* Too Numerous To Count

Table 1 – Observed impact of landfill on the adjacent Ray (Duvowen) River

EPA biological monitoring on the Ray River, approx. 1.5km d/s of the landfill site indicates a very significant decline in biological quality of the river. Q-value for 1990 was 5, falling to Q4 in 1994, and Q3 in 1997. This is described in the 1997 EPA Biological Survey of River Quality as being a “dramatic drop in quality”. The Donegal County Council Phosphate Measures Report specifically attributes reduction in quality in the Ray River to leachate emissions from this facility.

Information provided on the flow in the River at the discharge point indicates that there is sufficient assimilative capacity available for the emission as provided for in the Proposed Decision. Modelling provided by the applicant estimates a 7-fold reduction in leachate volume generation after closure and capping of the site. The emission limit values specified in the Proposed Decision are based on this reduction in leachate generation. A limit of 3TU (toxicity units) is prescribed in line with the recommended requirement for 20 dilutions per TU.

Regular chemical monitoring is required on the Ray River upstream and downstream of the discharge. It is not considered necessary to require the applicant to undertake biological monitoring of the receiving surface water course (biological monitoring is carried out by the Agency 1.5km downstream of the discharge).

(7) Other Environmental Impacts of the Development

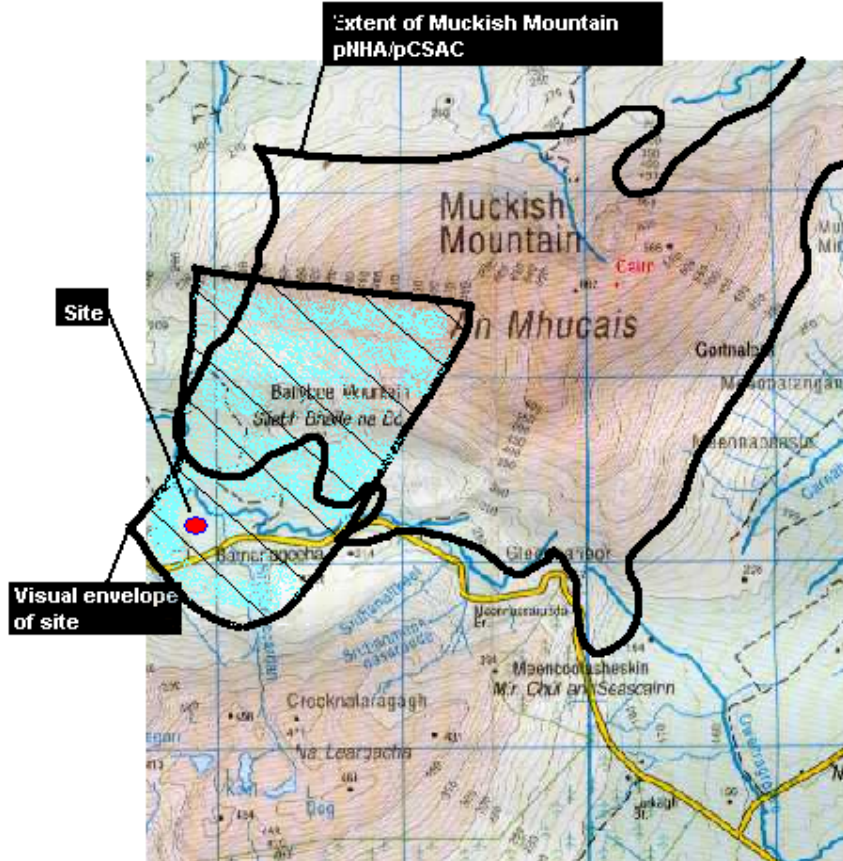
• Visual

This site is located equidistant (~1km) between Muckish Mountain and Cloghernagh Bog & Glenveagh National Park pNHA/pCSAC.

The approach road (3rd class road) to the site is designated in the Donegal County Development Plan 2000, as being a “scenic road”, and a “tourist road”. The stated objective of the County Development plan is to “conserve the overall character of these roads and the views to be had from them”.

Figure 1 shows the visual envelope of this facility. Its extent encompasses the majority of the portion of the road designated “scenic road”, and it also extends across 25% of the entire Muckish Mountain pNHA/pCSAC (total area approx. 10km²) and into the edge of the Cloghernagh Bog & Glenveagh National Park pNHA/pCSAC. It is clear that continued operation of an active landfill site, which is in clear view for the majority of the designated “scenic road”, is in clear conflict with this objective as stated in County Development plan.

I consider that the continuance of disposal activities at this landfill would adversely affect, to a significant extent, a place of special interest in that it is highly visible from adjacent pNHA's and pCSAC's and that it is also in clear view from a road



designated as a “scenic road” and a “tourist road”.

Figure 1: Visual envelope of site in relation to Muckish pNHA/pCSAC.

(8) Waste Management Plans

The Donegal Waste Management Plan 1993 recommended closure of the Muckish site and installation of a waste transfer station on the site.

The Donegal Waste Management Plan 2000 (which has been adopted) considers three possible scenarios for the remaining landfills in County Donegal. The first is that all licences (including Muckish) are granted, the second is that no further licences are granted (apart from Ballinacarrick – already licensed) and 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 disposal licences apart from Ballinacarrick) may not be achieved.

(9) Submissions/Complaints

Four submissions were received.

(1) Cloughaneely Angling Association c/o John Connaghan. (received 4/8/00)

Mr Connaghan raises a number of concerns in this submission as follows:

1. *Topography of the site and the fact that it's generally an unsuitable site for a landfill.*

RESPONSE

1. This licence does not permit landfilling of wastes at this facility. The only waste activities licensed are storage, collection and treatment of leachate (waste disposal) and recovery of inert materials as part of the restoration and aftercare plan.

2. *Impact of landfilling on the local fauna.*

3. *Impact of landfilling on the Ray River.*

RESPONSE

2&3. Leachate management on this site has been very poor in the past. The terms of this Proposed Decision require that leachate management works be installed as described under Section 5 (Landfill Leachate Management) of this report. These works will ensure that the existing facility will have a significantly reduced and diminishing impact on local groundwater and surface water resources. Capping and restoration of the site will also ensure that leachate volumes arising are significantly reduced.

Leachate discharged from this treatment system will be required to meet emission limit values as outlined in Schedule F.

4. *The scenic nature of the area.*

RESPONSE

4. The requirement to cease disposal operations at this site and carry out restoration and aftercare works will serve to mitigate the impact of this facility on the local environment in terms of impact on fauna, on the River Ray and the visual impact currently occurring.

5. *Access roads to the site are very poor and showing signs of significant wear due to use by heavy lorries.*

RESPONSE

5. The physical state of site access roads, while poor, are outside the remit of this Proposed Decision.

6. *Mr Connaghan also comments on the draft Waste Management Plan for Donegal (it was draft at the time of the submission).*

RESPONSE

6. Mr Connaghan comments on the contents of the draft Waste Management Plan for Donegal. This Plan has since been adopted, the contents of which are solely a matter for Donegal County Council. Insofar as required under the terms of the Waste Management Act 1996, the Waste Management Plan for Donegal has been considered under Section 8 of this report (above).

7. *Mr Connaghan concludes by requesting that the Agency refuse to grant a licence to Donegal County Council for landfilling at this site and that the Agency's original directive to close the site be complied with.*

RESPONSE

7. This licence prohibits further disposal of waste at this site. Mr Connaghan is incorrect in his assertion that the Agency issued any Directive to close the site in the past. Prior to issuing any Waste Licence, the opening or closing of this site was a matter for Donegal County Council.

(2) Northern Regional Fisheries Board (received 17/8/00)

This submission refers to the fact that leachate emissions from the facility have had a significant impact on the Ray River and that given this impact, the remaining activities applied for should be refused. The Northern Regional Fisheries Board feel that leachate treatment should be provided and the site should be capped and closed.

RESPONSE

This site has had a significant impact on the Ray River (see Section 6 above). This licence does not permit landfilling of wastes at this facility. The only waste activities licensed are storage, collection and treatment of leachate (waste disposal) and

recovery of inert materials as part of the restoration and aftercare plan. The applicant will be required to install leachate treatment facilities within 6 months of date of grant of licence, and to cap the site within 18 months of date of grant of licence.

(3) Kees Wielemaker, Letterkenny, Co. Donegal (received 14/12/00)

Mr Wilemaker is very concerned at the impact the landfill has had on the Ray river in the past. He describes large quantities of plastic bags littering the banks of the river for miles. He states that this occurs on a regular basis. He is also very concerned about leachate emanating from the landfill and flowing in an uncontrolled and untreated manner into the river. He attributes a decline in salmon and trout stocks in the river to the presence of the landfill. Mr Wielemaker recommends that the Council be refused a licence and the landfill be closed. Mr Wielemaker also encloses a map describing his land adjacent to a number of stretches on the river bank.

RESPONSE

Leachate management and treatment on the site will be required, as described above in Submission 1. The requirement to cease disposal operations at this site and carry out restoration and aftercare works will serve to mitigate the impact of this facility on the local environment, including the River Ray. This licence prohibits further disposal of waste at this site.

(4) Brian Geraghty, Duchas, The Heritage Service, (received 30/11/00)

This submission states only that Duchas have no objection to the proposed development

RESPONSE

The submission is noted.

Signed _____

Dated:

Cormac Mac Gearailt,
Inspector,
Environmental Management & Planning.

APPENDIX 1

LOCATION MAP & LAYOUT PLAN

(Site location Map A03 – Section 13 of Waste Licence Application)