

INSPECTORS REPORT

WASTE LICENCE REGISTER NUMBER 65-1

Leitrim County Council application to operate Mohill Landfill at Tullybardan, Mohill, Co. Leitrim.

Inspector's Recommendation: To grant a Waste licence subject to conditions.

(1) Introduction:

Mohill landfill, which has been operating since the 1960's on a dilute and disperse basis, occupies an area of 2.2 hectares on the northeastern edge of Mohill town. The landfill is situated at the base of a valley and is accessed by a small public road from the town. It is bordered to the west by an abandoned railway line and the Mohill Stream, beyond which is located a community enterprise centre and residential estates, whilst the northern and eastern boundaries are adjacent to agriculture pasture land. Some residential properties are also located on the approach road from Mohill. A County Council road works storage depot is located on the southwestern corner of the facility adjacent to the entrance gates while a bring centre is located outside the facility boundary near the facility entrance. There are no sanitary or electricity power services at the facility, and the facility has no infrastructure other than recently installed monitoring boreholes and an unlined leachate collection pond.

Leitrim County Council have applied for the continued disposal of waste into this unlined facility (Class 1 of Third Schedule). Other activities applied for relate to the collection and storage of sludge/leachate (Class 4 of Third Schedule), the temporary storage of inert capping wastes and the temporary storage of unacceptable wastes received at the facility pending their dispatch to appropriate facilities (Class 13 of Third Schedule), and the recovery of waste (Class 13 of Fourth Schedule),.

The applicant is currently depositing waste into an unlined facility. The proposed decision prohibits the disposal of wastes at the facility for the reasons set out in Section 9 below other than inert wastes for restoration and capping works. The Proposed Decision allows for the retention of the Road Works Depot as requested by the applicant. Alternatively this area may, subject to agreement by the Agency, either be converted to a Civic Waste Facility (Class 13 of Fourth Schedule) or restored. The facility is to be capped and restored within 30 months of the date of grant of the licence.

Quantity of waste applied for (tpa)	7,500
Quantity of waste to be accepted	70,000 tonnes of inert waste for restoration
Environmental Impact Statement Required	No
Number of Submissions Received	18

Facility Visits

DATE	PURPOSE	PERSONNEL	OBSERVATIONS
27/10/98	Site Notice check and site inspection	E. Merriman	Site Notice compliant with Regulations.
4/4/00	Inspection following complaints	D. Shannon, K. Reynolds	Facility was poorly run with leachate seeping off site, patchy cover, poor security, insufficient manning and a large quantity of excavated waste.
23/6/00	Inspection following complaints	E. Merriman, K. Reynolds	A lot of bird activity. Odour detected downwind. Leachate collection lagoon was infilled. Three monitoring boreholes had been destroyed.
1/2/01	To check developments prior to Proposed Decision and meet with the applicant.	E. Merriman, M. Henry	New leachate lagoon in place towards southern end of site. Litter at boundary and in adjacent fields.
1/5/01	To check developments prior to Proposed Decision	E. Merriman	Height of waste footprint increasing, litter at boundary, C&D waste landfilled.

(2) Facility Development

The applicant has not proposed to install a weighbridge, a wheelwash, any waste inspection or quarantine area, landfill lining or associated works. Due to the limited lifespan of the facility, the proposed decision does not require the applicant to install the above infrastructure. The applicant will be required to restore the facility and this will involve regrading of the deposited waste to achieve a more natural and stable landform, the provision of a final capping layer, a leachate extraction/temporary storage system and landscaping of the facility. The capping of the facility will incorporate the provision of a landfill gas collection system and a series of passive vents. Two additional landfill gas migration monitoring boreholes are also required between the landfill and newly constructed housing (Condition 3).

The hardstanding south-western corner of the facility which currently serves as a Road Works Depot for Leitrim County Council shall be retained as such and shall be fenced off from the remainder of the facility (Condition 4). The proposed decision provides, subject to a proposal being agreed by the Agency, for the use of this area as a Civic Waste Facility for the recovery and disposal of waste (Condition 3).

(3) Waste Types and Quantities

A total of 70,000 tonnes of inert waste may be accepted as part of the restoration of the facility and this will be sufficient to allow the facility to be capped and landscaped to a height not exceeding 60.0 metres above Ordnance Datum (Malin), the restoration level proposed by the applicant. Waste acceptance procedures are required under the conditions of the proposed decision (Condition 5).

(4) Emissions to Air

Landfill Gas: The results of landfill gas monitoring undertaken at the facility boundary indicates that landfill gas levels are exceeding trigger levels on occasions. Because of the risk of landfill gas migration the proposed decision requires the installation of two additional monitoring boreholes in a section not adequately covered. Condition 3

requires the installation of a passive gas venting system as flaring is not considered practicable for such a small landfill.

Odours: There have been several complaints relating to odour emissions from this facility. Condition 5 requires that the entire landfill area be covered with temporary cover while potential nuisances (including odours) are controlled by Condition 7 of the proposed decision. Also, as inert waste only will be accepted as part of the restoration, odour emissions will be minimised.

Noise: A noise survey undertaken as part of the application indicated that the noise levels were lower than the emission limit values set in Schedule C *Emission Limits* of the proposed decision. Given the close proximity of the landfill to Mohill town and residential areas, some of which have been developed since the original survey, three noise sensitive receptors will be monitored annually (Table D.1.1).

Dust: Table D.1.1 requires boundary dust deposition monitoring annually, while Schedule C *Emission Limits* specifies a dust deposition limit value for these locations.

Aerosols: As there is no leachate treatment at the facility (other than collection of the leachate), aerosol generation is not considered a significant issue.

(5) Emissions to Groundwater

The overburden beneath the facility consists of soil or peat underlain by a till material which typically consists of a clay matrix with variable sand and gravel content. Groundwater is generally found at 1.5 to 2.5 metres below ground level and is apparently plentiful in places. Bedrock occurs at depths ranging from 1.5 to 6.0 metres below ground level and consists of a shale limestone.

Groundwater, both overburden and bedrock, flows generally towards the north-east. On-site investigations indicated that leachate is in hydraulic conductivity with the groundwater and this represents a direct discharge of leachate to groundwater. The bedrock aquifer is described as LI/H (bedrock which is moderately productive only in local zones but which has high vulnerability to pollution).

The results of a survey undertaken on behalf of Leitrim Co. Co. indicate elevated levels of boron (2,891 to 5,091 ug/l) (List II substance) and of manganese (46 to 103 ug/l) in the bedrock groundwater. Downgradient bedrock concentrations of these parameters exceed the MAC limits (European Communities, Quality of Water Intended for Human Consumption Regulations, S.I. 81 of 1988). It is likely that the elevated levels of boron and manganese arise from the disposal of industrial treatment plant sludge (though landfilling of this waste has recently been stopped) and industrial waste ash at the facility. Elevated levels of boron and manganese have also been found in leachate from the facility.

The landfill is probably contributing to MAC exceedances for ammonia in bedrock groundwater (0.6 downgradient as opposed to 0.4 mg/l upgradient). The landfill is also causing contamination of groundwater for various other parameters (conductivity, sulphates, chloride, fluoride, total dissolved solids, calcium and potassium).

It is estimated that approximately 16,000 to 20,000m³ of leachate is produced annually at the facility and the leachate composition is typical of leachate from landfills accepting municipal/industrial waste. It is proposed to utilise capping (Condition 4) and the installation of leachate extraction wells (Condition 3) to reduce the impact of the leachate on groundwater.

Leachate, which is currently collected in an unlined gravity feed leachate collection pond, is removed by tanker for treatment at Mohill waste water treatment works. However, as this system only serves a small part of the waste footprint, a leachate

extraction and associated impermeable storage system is required by Condition 3. Leachate extraction (as outlined in Condition 5) is specified as the landfilled waste straddles the facility boundary extensively. Therefore, there is no scope for a perimeter leachate collection drain without very substantial reworking and elevation of the waste profile. Condition 5 specifies that the leachate levels in the extraction boreholes are monitored weekly, unless otherwise agreed, as a provisional control mechanism.

There is one domestic well located approximately 300 metres north east of the landfill. Condition 8 requires its monitoring and the proposed decision provides for contingency arrangements in the event of significant impact by the landfill (Condition 9).

(6) Emissions to Surface Waters

The Mohill River lies adjacent to the western boundary of the facility and this river flows into Lough Rinn (a pNHA), which in turns drains via the Rinn River into Lough Forbes on the River Shannon. An open drain which is located directly adjacent to the northern boundary of the landfill and which flows into the Mohill River is polluted by leachate (ammonium up to 25 mg/l; conductivity up to 2440 uS/cm; chloride up to 165 mg/l; nitrate up to 8.5 mg/l). Also, a small watercourse which is piped beneath the landfill into the river is being impacted by leachate (eg. ammonium concentration increases from <0.2 upstream to 6.3 mg/l downstream) and iron deposition is apparent on the river bed at its outflow from the landfill. Overall, ammonia levels were found to increase from less than 0.2 mg/l upstream of the facility to 0.4 mg/l downstream in the Mohill River. It is likely that, given the high pH of the receiving waters (Mohill River >pH 8), the salmonid standard of 0.02mg/l for unionised ammonia [European Communities (Quality of Salmonid Waters) Regulations, 1988; SI 293 of 1988] may be breached at high water temperatures.

The proposed decision requires capping of the landfill (Condition 4) and the installation of leachate extraction wells. In addition, the diversion of the small watercourse referred to above (Condition 3) will greatly reduce the impact of the landfill on river water quality.

(7) Other Significant Environmental Impacts of the Development

There are several proposed aquatic National Heritage Areas (pNHA's) located downstream of the facility with the nearest (Lough Rinn) located 3km south of Mohill town. Compliance with the conditions of the proposed decision will ensure no impact on this area takes place.

(8) Waste Management, Air Quality and Water Quality Management Plans

1. Draft Waste Management Plan for Connaught Region 1999–2004 (September 1999). The draft plan has been adopted by Leitrim Co. Co. The plan's policy was that available landfills in County Leitrim would remain open as long as allowable under Agency waste licensing. However, for the reasons outlined below, it is considered that the disposal of wastes should no longer be permitted at the facility.
2. The Water Quality Management plan for the Upper Shannon Catchment (March 1990) specifies salmonid water quality for this catchment. Compliance with the conditions of the proposed decision will ensure protection of this water course.
3. There is no air quality management plan for Co. Leitrim.

(9) Reasons for the Recommendation

- I recommend that a waste licence is issued for the following waste activities subject to conditions:
 - Class 1 of the Third Schedule (to allow for the deposition of capping/restoration inert wastes);
 - Class 4 of the Third Schedule (to allow for the temporary storage of collected leachate pending dispatch from the facility for treatment);
 - Class 13 of the Third Schedule (to allow for the restoration of the facility); and,
 - Class 13 of the Fourth Schedule (to provide for the collection and recovery of wastes at the Civic Waste Facility).
- In coming to this recommendation, I consider that continued landfilling of municipal and industrial waste at the facility would not comply with the requirements of Section 40(4) of the Waste Management Act 1996. In particular, I have had regard to the following:
 - The landfill is visibly intrusive and elevated (it will approach 60 mAOD, which is 10.5m above its access road). As the facility is located on the edge of Mohill town immediately adjacent to housing estates /community enterprise centre and is also at the base of a river valley, I consider that the facility is having a significant visual impact on its locality. In order to improve the visual reintegration of the landfill into its surrounding urban/rural environment, the overall elevation should be kept to a minimum.
 - Leachate from the facility is discharging directly to groundwater and polluting it as is evident from the elevated levels of boron, ammonia, fluoride, sulphate and magnesium in the downgradient bedrock aquifer.
 - The impact which the facility is having on the surface water quality of the Mohill River is evident from the elevated levels of ammonia downstream of the facility.
 - The risk of environmental pollution to groundwater and surface water from the continued disposal of waste at the facility.
 - The absence of proposals to upgrade the facility and infrastructure to meet BATNEEC standards.
 - The unsuitability of the facility for the continued landfilling of waste.
- The proposed decision provides for the collection of leachate generated at the facility and for the passive venting of landfill gas.
- The facility will be capped and restored over a thirty month period and the facility will be landscaped so as integrate with the surrounding landscape.
- Compliance with the conditions of the proposed decision will minimise the impact of the facility on the surrounding environment.
- If the facility were left open, it would have to be upgraded to meet the requirements of the Landfill Directive. I consider that it is not possible to upgrade this facility to the BAT requirements of the Landfill Directive.

(10) Submissions/Complaints

An overview of the submissions received in relation to the waste licence application is provided in Appendix 2. This includes a summary of all issues raised in the submissions.

18 submissions were received in relation to this application.

Signed _____
Name: Eamonn Merriman

Dated:

APPENDIX 1 FACILITY LOCATION AND LAYOUT PLANS

1. Drawing B2.3, *Services Plan*. Note that this drawing was made in 1998. The Leachate Lagoon which is shown on this plan as being in the north western corner of the facility is currently located where the Ramp is shown.
2. Aerial Photograph of the facility and surrounds. Note that this photograph has been modified to reflect developments to the immediate west of the facility; namely new council housing and a community enterprise centre.

APPENDIX 2 SUBMISSIONS

The grounds stated (*italics*) and my response to each ground are set out under the following headings.

1. Toxic Sludges.

This ground claims that sewage sludge, originating from Leitrim County Council sewage treatment plants, is landfilled at the facility and contains toxic matter and heavy metals.

There is no evidence to suggest that sewage sludge originating from municipal sewage treatments plants in County Leitrim is toxic. Nonetheless, as outlined above the proposed decision prohibits the disposal of sludge at the facility.

2. Public Health Nuisance

This grounds claims that the facility is a health nuisance to humans and animals on the grounds that the landfill is excessively high, groundwater and surface waters must be polluted as a result of the continued use of the landfill, odour, large numbers of scavenging birds, excessive height of landfill in relation to its surroundings, deposited waste is either not covered or badly covered and industrial waste of unknown composition is being deposited.

Condition 1 restricts waste intake to the landfill to inert waste for restoration purposes only. Condition 4 requires the landfill to be restored within thirty months and sets a maximum elevation for the restored landfill. Condition 5 requires adequate covering of deposited waste during the restoration phase.

3. Inadequate Infrastructure.

This ground states that there is inadequate infrastructure at the facility. The facility is unlined and the perimeter fencing is inadequate

In view of the expected short remaining lifetime of the facility and that only inert wastes are acceptable for capping/restoration purposes at the landfill, infrastructure such as a weighbridge and a wheelcleaner are not required. However leachate control, landfill gas control, and monitoring infrastructure are required under the conditions of the proposed decision. Condition 3 also requires perimeter fencing and a facility notice board.

4. Leachate

This ground states that there is no control of leachate at the facility.

The proposed decision requires leachate collection and its removal off-site for treatment at Mohill Waste Water Treatment Works. Condition 8 also requires ongoing leachate level and quality monitoring.

5. Landfill Gas

This ground states that there is no landfill gas control at the facility.

There are insufficient gas quantities to warrant a gas flare and therefore a gas venting system will be incorporated into the capping layer. The proposed decision provides for ongoing landfill gas monitoring to detect whether landfill gas is migrating off-site

(including the installation of two additional landfill gas monitoring boreholes to augment those already in place) and such conditions will provide for the proper monitoring and control of landfill gas.

6. Odour

This ground states that odour is a constant problem at this facility.

Potential nuisances such as odour are controlled by Condition 7 of the proposed decision.

7. Groundwater

- *The application did not contain a proper analysis of the hydrogeological situation.*

Additional information was sought and received by the Agency in relation to hydrogeological conditions in the vicinity of the facility.

- *the groundwater must be polluted as there is no effective leachate control at the facility.*

Refer to Section 5, *Emissions to Groundwater*, of this report.

8. Surface Water Pollution

Leachate discharges are polluting a perimeter drain and there was a continuous spillage of toxic waste fluid into the Mohill River. The farmer in the adjoining field believes it is unsafe to allow animals to drink water from this watercourse which he claims is situated on his property. The landfill must be polluting the adjacent Mohill River, and the downstream Lough Rinn which is an important fishing lake.

The drain referred to here appears to be inside a perimeter hedgerow which forms the northern facility boundary, but there may be limited access to this drain on the north-eastern boundary by cattle. Condition 3 requires that animal access to this drain be prevented subject to consultation with the property owner(s). The amount of leachate escaping to this drain will be greatly reduced over time because Condition 3 requires the installation of a low permeability cap and a leachate extraction system for the landfill. Based on the analytical data available, emissions from the facility are contaminating the Mohill River. Compliance with the conditions of the proposed decision should ensure adequate protection of the Mohill River. See also Section (6) *Emissions to Surface Waters* of this report.

9. Litter

This ground states that there is a litter problem at the facility and its surrounding properties, particularly grazing fields for cattle.

Potential nuisance arising from litter is controlled by Condition 7 of the proposed decision. Also, as the proposed decision prohibits the disposal of non-inert waste at the facility, litter generated should be kept to a minimum.

10. Vermin

This ground states that there is inadequate vermin control at the facility.

Condition 7.1 of the proposed decision requires the applicant to ensure that vermin do not give rise to a nuisance at the facility or in the immediate area of the facility.

11. Poor Operational Practices

This ground states that various aspects of the management of this facility have been poorly attended to.

- *Inadequate daily cover results in waste often remaining uncovered for lengthy periods*
- *The landfill is not divided into cells for disposal purposes, and consequently waste is spread over large areas*
- *No waste inspection procedure*
- *The existing site environmental monitoring, emergency procedures, security arrangements, pest control, litter control and general pollutant abatement procedures currently operated on the site are deficient*
- *Unregulated opening hours*

It is considered that the conditions of the proposed decision adequately address all of the issues referred to above.

12. Obtrusive Height of the Landfill

This ground states that the restored landfill will be well above the surrounding landscape.

The proposed decision prohibits the disposal of waste at the facility other than for the purpose of capping the landfill. Condition 4 sets a maximum elevation for the restored landfill at 60 mAOD and requires regrading of the current steep sides to a more gentle slope. This will achieve a degree of visual reintegration of the landfill into its landscape whilst restricting elevation as far as is practicable.

13. No Planning Permission

This ground contends that the facility requires planning permission.

This facility is operated by a local authority within its own functional area. Condition 1.3 of the proposed decision does not negate the applicant's statutory requirements under different legislation.

14. Industrial Waste

This ground states that

- *industrial waste of unknown composition is being disposed of at the landfill.*
- *that waste accepted at the facility from the nearby IPC licensed Masonite (Ireland) Ltd. factory is hazardous.*

Four separate waste streams are accepted from Masonite (Treatment Plant Sludge, Paint sludge and spent paint filter cartridges, Furnace Ash and Canteen Waste). The source and nature of the industrial waste was established by the applicant. The paints used at Masonite are water based and are not listed as hazardous in the European Waste Catalogue and neither of the other waste types are considered hazardous. As stated above, the proposed decision prohibits the disposal of non-inert waste at the facility.

15. Proximity of Housing to the Landfill

There are many council houses within 50 metres of the landfill. Further council houses are currently being built west of the facility. There is also a community enterprise centre adjacent to the landfill.

The properties referred to above may be at risk from landfill gas migration and the risk may increase when the facility is capped. Therefore Condition 3 requires the installation of two additional landfill gas monitoring boreholes to augment those already present. Most of these monitoring points are located outside the waste mass, especially the western side where the closest housing and the community enterprise centre are located.

16. Traffic.

This ground states that the property on the approach road to the facility has been damaged by vehicles on route to it. There is a constant stream of lorries to the facility for 5 to 6 days a week.

The issue of traffic is outside the scope of the proposed decision and is a matter for the Roads Authority.

17. Use and Enjoyment of Adjacent Lands is Impaired.

The proposed decision provides for the orderly restoration and landscaping of the facility. This should minimise the impact which the facility has on the surrounding environment.

18. Trespass by County Council Staff on Adjoining Private Lands.

This is a matter between the parties involved.

19. Waste Arisings from other locations besides Mohill accepted at the Facility.

The source of wastes, within the constraints of the Proposed Decision, is a matter for the applicant. Schedule A of the Proposed Decision states the nature and quantity of waste acceptable at this facility.

20. The Agency has been using stalling tactics in relation to this licence determination.

A submitter claimed that the Agency was not responding to submissions he made in relation to the “disgraceful” state of the landfill.

The Agency has considered and acknowledged all submissions received in relation to the waste licence application for this facility. I have taken into account the issues raised in the submissions in reaching my decision on the application.