

INSPECTORS REPORT

WASTE LICENCE REGISTER NUMBER 67-1

APPLICANT: Mayo County Council

FACILITY: Rathroeen Landfill

INSPECTOR'S RECOMMENDATION: That a Waste Licence be granted subject to conditions.

(1) Introduction:

Rathroeen landfill has been operated by Mayo County Council since 1973. Approximately 363,700 tonnes of waste have been deposited to date at the facility. This application is to continue landfilling 45,000 tonnes per annum of non-hazardous waste for approximately 13 more years. The facility is located approximately 5km north of Ballina town just off the main Ballina to Killala road (R314). The facility was formerly a lake which was drained as part of the River Moy Drainage Scheme in the 1960's. The facility is surrounded primarily by agricultural land with some areas of cut-away bog. There are a number of houses located with 1km of the facility with the nearest house located approximately 175 meters from the facility. An unnamed stream which drains the facility flows along the western and northern boundaries of the facility and subsequently discharges into the Moy estuary which is located approximately 2km to the east of the facility. The entire facility is 18.75 hectares in area with landfilling occurring in 9.2 hectares. Within the facility there is an extensive bog and reed/marshy area through which surface/overburden waters travel prior to discharge from the facility. A drawing illustrating the facility is attached in Annex 1.

Mayo County Council have applied for the limited continuation of waste disposal into unlined areas of the facility (Class 1 of Third Schedule) prior to the construction of three new lined cells on top of the existing waste body (Class 5 of the Third Schedule). Other waste activities applied for are for the provision of a Civic Waste Facility and the collection and recovery of various waste streams (Class 13 of the Third Schedule, Classes 3, 4 and 13 of the Fourth Schedule). The proposed decision provides for the waste activities as applied for by the applicant.

Quantity of waste (tpa) to be accepted	45,000
Environmental Impact Statement Required	Yes
Environmental Impact Statement in Compliance with Environmental Impact Assessment Regulations	Yes
Number of Submissions Received	224

FACILITY VISITS:

DATE	PURPOSE	PERSONNEL
28/10/98	Site Notice Inspection	Eamonn Merriman
18/10/99	Site Notice Inspection	Eamonn Merriman
03/01/01	Site Inspection	Ted Nealon & Michael Henry
05/01/01	Site Familiarisation	Kealan Reynolds & Michael Henry
19/02/01	Site Inspection	Kealan Reynolds & Michael Henry

(2) Facility Development

The proposed decision permits the continuation of waste disposal in to unlined areas of the facility for a limited period (i.e. 12 months from the date of grant of the licence). Thereafter, the applicant will be required to deposit waste into lined cells which have been developed on top of the existing waste body. These cells will be constructed accordingly to account for potential subsidence and settlement of the underlying waste body and will consist of a composite basal liner incorporating an LLDPE liner as a barrier layer (LLDPE can withstand up to 500% elongation). The construction of the new cells will incorporate gas collection from the existing waste body and the provision of a gas flare. The proposed decision requires the provision of a leachate collection network and the collected leachate shall be discharged to the Ballina Waste Water Treatment Plant via a purpose built sewer line. The new lined cells which are to be constructed will have individual capacities of between 137,000m³ to 232,000m³ and the total capacity of the three cells will be approximately 586,000m³.

The proposed decision provides for and requires the development of a Civic Waste Facility, weighbridge, site office and adequate security and litter fencing among other infrastructural works. A major part of the development will involve the remediation and restoration of the existing waste body and this will include the diversion of surface waters and the collection of leachate from the existing waste body (Condition 3). Condition 4 of the proposed decision requires the applicant to cap and landscape areas of the facility which do not form part of the new development. The facility is to be constructed and restored in line with local ridgelines which run to the east and south of the facility.

(3) Waste Types and Quantities

The proposed decision limits the annual intake of non-hazardous waste at the facility to 45,000 tonnes. The waste types to be accepted at the facility include: Household, Commercial, Construction and Demolition and Non-Hazardous Industrial waste while the proposed decision also allows the disposal of Parks/Public Cleansing wastes and sewage sludge.

Because of the potential risk to groundwater and surface water from the disposal of untreated sludges into unlined areas of the landfill, the proposed decision only permits the disposal of untreated sludges into the newly developed lined cells. In addition, only treated sludges may be accepted at the facility from January 1st 2004 and Condition 5 prohibits the disposal of treated sewage sludge at the facility after January 1st 2006.

No hazardous wastes are to be accepted at the facility other than household hazardous wastes at the Civic Waste Facility.

(4) Emissions to Air

Landfill Gas:

The proposed decision requires the provision of an active gas management system including an enclosed flare within 12 months of the date of grant of the licence (Condition 3.14). The gas management system shall collect gas from the existing waste body and from the new cells. Within 24 months of the date of grant of the licence the licensee shall complete an assessment as to whether the utilisation of the

landfill gas as an energy resource is feasible. The application did not indicate any evidence of landfill gas migration from the facility nevertheless Condition 3.18 of the proposed decision requires the applicant install monitoring points to assess the off-site migration of landfill gas.

Condition 8.1 and Schedule D of the proposed decision require the applicant to monitor landfill gas emissions and emissions from the landfill gas flare while Condition 6.1 and Schedule C.4 of the proposed decision sets emission limits from the flare stack.

Dust:

Dust emissions from the facility shall be minimised by controlling and maintaining roads at and in the vicinity of the facility. Condition 7.5 of the proposed decision requires the application of water to minimise dust generation during dry weather. Dust monitoring will be carried out three times a year along the landfill boundary and the applicant will also have to comply with dust deposition limits (350mg/m²/day).

Odours:

The provision of a landfill gas collection network and flaring system together with the development of detailed waste acceptance and handling procedures should serve to minimise odour generation at the facility. Potential nuisances such as odour are also controlled by Condition 7.1 of the proposed decision.

Noise:

Noise monitoring was carried out at two noise sensitive locations and also at boundary locations during operational hours. The recorded daytime levels were generally below 55 L_{eq} dB(A) with some increased levels recorded due to local traffic movement on the Ballina to Killala road. The Proposed Decision requires the applicant to comply with noise emission limits as set out in Schedule C.1.

(5) Emissions to Groundwater/Hydrogeology

The facility is underlain by the Upper Unit of the Ballina Limestone Formation. The bedrock beneath the facility is a fine grained limestone interbedded with shales and no fissuring of the unit was noted during drilling. The depth to bedrock varies over the facility from 1.5m at the northern and southern boundaries to >9m in the centre of the facility beneath the existing waste body. Groundwater movement in the bedrock is from west to east towards the river Moy. The upper unit of the Ballina Limestone Formation is karstified 15km south-west of the facility and is classified as a regionally important aquifer. On-site geological investigations did not show any evidence of karst features or fissures in the bedrock and primary permeability for the bedrock in the area is between 2.2×10^{-5} m/s and 2.2×10^{-7} m/s. Trial boreholes from the area yielded between 30m³/day and 15 m³/day. Given the above it is considered that the Upper Unit of the Ballina Limestone Formation beneath the facility is not a regionally important aquifer and may be classified as a poor aquifer.

The overburden geology of the area is comprised of grey clayey tills overlain by peat deposits. The permeability of the overburden was determined as being typical of a clayey till or peat deposit (1.1×10^{-7} m/s). The movement of water in the overburden is not influenced by the greater regional movement in the bedrock but is locally influenced and flows outward from the waste body to the west and north and draining to a stream at the facility boundary.

Monitoring results of the groundwater (both overburden and bedrock) showed that the groundwater quality upgradient and downgradient of the facility was quite similar while the downgradient monitoring results showed some slightly elevated ammonia (0.83mg/l) and nitrite (0.48mg/l) levels.

It is considered that the majority of leachate moves laterally from the waste body through the reed/marshy area and discharges to the stream to the north and east of the facility in accordance with the recorded movement of the overburden waters.

Condition 3.13 and Condition 3.15 of the proposed decision require the applicant to collect leachate from the existing waste body and prevent the ingress of clean water into the existing waste body respectively. In addition the capping of the existing waste body together with the construction of new lined cells on top of the existing waste should further minimise leachate generation.

(5) Emissions to Surface Water

The eastern and northern boundaries of the facility are bounded by a stream which discharges to the River Moy approximately 2km to the east of the facility which is a designated salmonid river under the European Communities (Quality of Salmonid Waters) Regulations, 1988. The stream drains all of the reed/marsh area to the north and west of the waste body and also drains areas of cut-away bog and improved pasture land in the vicinity of the facility. A number of minor ponds which are fed by groundwater are located in the reed/marshy area of the facility and these drain into the aforementioned stream.

The results of surface water monitoring at the northern boundary of the facility (SW2) show a localised impact of leachate discharging into the stream, with elevated levels of ammonia(14mg/l) and potassium(47.5mg/l) being recorded at this location. Further monitoring points downstream of the landfill show a progressive improvement in water quality as it reaches the Moy Estuary.

Condition 3.13 of the proposed decision requires the applicant to construct a leachate interception drain around the existing waste body. The leachate interception drain will minimise the volume of leachate reaching and discharging to the stream. The proposed decision requires the applicant to undertake a programme of regular monitoring of surface water courses in the vicinity of the landfill.

(7) Other Environmental Impacts of the Development

Landscape:

Local glacial ridgelines run to the east and south of the facility and the final contours of the landfill are restricted to less than 45mO.D. Malin thereby not exceeding local ridgelines (46mO.D. Malin). Condition 5.6 requires the applicant to carry out planting so as to screen the facility and this will minimise the visual impact of the facility from the R314 which runs approximately 250m to the west of the facility.

Ecology:

The reed/marshy area to the north and east of the existing waste body has a very diverse invertebrate fauna which are a food source for birds in the area. A number of bird species (Mallard, Water Rail, Teal and Moorhen) use the wet areas of the facility. Condition 3.12 of the proposed decision prohibits the deposition of wastes with 200m of the northern boundary of the facility and this shall ensure the reed/marshy habitat

remains intact. Condition 7.7.2 requires that any bird control measures used at the landfill area of the facility do not have an adverse impact on the bird populations in the reed/marsh area of the facility.

Archaeology:

Traces of Crannóg's have been found in the reed/marshy area within the facility boundary. Condition 8.11 of the proposed decision requires the applicant to prepare a plan for the protection and preservation of the Crannóg sites. The applicant shall seek the advice of Dúchas in preparing any such plans.

(8) Waste Management and Water Quality Plans

In 2000 Mayo County Council voted in favour of adopting the Draft Waste Management Plan for the Connaught Region. However, the draft plan has not yet been adopted by all the authorities concerned. The draft plan does refer to the landfill site at Rathreen, Ballina and the plan proposes to maintain the facility as an active waste disposal facility for the short to medium term until thermal treatment facilities have been provided for the region. The proposed decision provides for the continued disposal of waste at this facility.

The River Moy Integrated Development Plan 1992 was consulted as part of the application assessment. The River Moy is a salmonid river of great importance and discharges from the facility should not have an adverse impact on this water course. Compliance with the conditions of the proposed decision will ensure that no significant impact on the River Moy will result.

(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 (the limited disposal of waste into the unlined areas of the facility) and Class 5 of the Third Schedule (the construction of lined cells at the facility).
 - Class 13 of the Third Schedule and Classes 3, 4 and 13 of the Fourth Schedule (to provide for the collection and recovery of wastes at the Civic Waste Facility).
- The new cells will be lined with a composite liner as specified in Condition 3.11. The liner will be constructed incorporating an LLDPE membrane so as to withstand any potential basal movements. Prior to installation of the cells the basal area shall be monitored on an ongoing basis so as to determine the rate of settlement. The first cell is to be constructed on the oldest part of the waste which will have undergone the most settlement and should provide a more stable base.
- The proposed decision provides for the development of the facility including the installation and construction of various control measures (e.g. leachate management, gas collection and flaring, etc.) thereby ensuring the facility does not have an adverse impact on the local environment. All such works shall be completed with the prior agreement of the Agency.
- Carrying out of 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. Compliance with the conditions of the proposed decision shall prevent significant

environmental pollution and shall minimise any localised impacts from the activities.

- The proposed decision includes all of the waste activities as applied for by the applicant.
- The applicant will be required to manage and operate the facility to ensure that activities do not cause environmental pollution. Procedures for acceptance and handling of wastes will ensure that no prohibited wastes are accepted at the facility.
- A comprehensive monitoring programme is required by the proposed decision and this shall ensure ongoing compliance with all licence requirements.

(9) Submissions/Complaints

A total of 224 valid submissions were received in relation to the facility. Annex 2 provides a list of the submissions received and the responses to each issue raised. I have had regard to the submissions in making this recommendation to the Board.

Signed _____

Dated:

Kealan Reynolds,
Inspector,
Environmental Management & Planning.

ANNEX 1
LOCATION MAP & LAYOUT PLAN

ANNEX 2
SUBMISSIONS RECEIVED

A total of 224 valid submissions were received in relation to the Ballina facility. 193 of the submissions received were in the form of a petition which did not include any grounds for submission other than a general objection to the facility. Below is a summary of the main concerns raised in the submissions.

1. Litter Pollution :

Wind blown litter in lands adjacent to the facility create a nuisance and health risks on local pasture land. Some local landowners participate in the Rural Environment Protection (REPS) scheme and the litter which is blowing onto the land is threatening their future in the scheme. The submissions outline the reasons for the movement of litter from the facility as poor boundary fencing, poor daily cover, poor security, no litter netting and no control over flytipping.

Potential nuisances (including litter) are controlled by Condition 7 of the Proposed Decision while the applicant is also required to undertake weekly inspections for nuisances. Items such as security, the control of fly tipping and the application of adequate cover are appropriately addressed under the terms of the Proposed Decision.

2. Hazardous Waste Disposal

Wastes being accepted at the facility include asbestos, clinical wastes, liquid sewage, agricultural wastes and used tyres. The acceptance of such wastes will cause pollution of the local environment.

The Proposed Decision prohibits the acceptance of hazardous or liquid wastes at the facility and Condition's 1.4 and 1.5 specify the types of wastes to be accepted. Detailed waste acceptance procedures are required to be put in place and these procedures should ensure that only the waste types specified in the waste licence are accepted at the facility.

3. Methane Gas Release

Currently gas is freely venting to the atmosphere and it is not being collected and flared. No precautionary measures have been installed or implemented to prevent the migration of landfill gas.

The Proposed Decision requires the applicant to implement measures for the collection and flaring of landfill gas. Condition 3.18 requires the applicant to install monitoring points for monitoring the potential off-site migration of landfill gas. There was no evidence of landfill gas migration in the waste licence application.

4. Leachate Treatment

Leachate generated on the facility is not being treated and is discharging to the local environment.

The applicant is required to construct a leachate interception drain around the perimeter of the existing waste body and all leachate collected in this drain will be discharged to Ballina wastewater treatment plant. The generation of leachate will be minimised through permanently capping relevant existing areas and the development of new lined cells. Condition 3.15 requires a surface water interception drain to be constructed so as to minimise the ingress of clean water into the existing waste body and this will also minimise the volume of leachate generated.

5. Landfill fires and smoke:

Fires and related smoke emissions are a source of concern for local residents. Fires which occur at the facility are mainly caused by uncontrolled disposal of wastes. If a fire occurs when the facility is closed it will not be extinguished until the facility re-opens.

The Proposed Decision prohibits the burning of wastes within the boundaries of the facility and any fire on-site should be treated as an emergency and dealt with immediately. Condition 9.2 requires the applicant to prepare an Emergency Response Procedure and this procedure shall determine the fire fighting requirements of the facility.

6. Odours:

Odours from the facility are creating a nuisance in the local area and it is particularly noticeable when agricultural wastes and sewage wastes are openly disposed of at the facility.

Potential nuisances (including odour) are controlled by Condition 7 of the Proposed Decision. The applicant is also required to collect and flare the landfill gas and this should further help to minimise odours. The Proposed Decision prohibits the acceptance of animal by-products while the applicant is required to implement detailed waste handling/acceptance procedures for all wastes including sludges.

7. Bird, Rat and Fly Infestations:

Due to large areas of uncovered waste the facility attracts rats, birds and flies. Birds create a continuous nuisance to the local residents and rats move from the facility to local properties and farmyards during cold weather whereas fly populations dramatically increase in the area during the summer months. The impact of such nuisances makes life extremely difficult in local areas.

Condition 7 of the Proposed Decision controls potential nuisances arising from birds and pests at the facility. Condition's 7.4 and 7.7 require proposals for the eradication of rodents and insects and the installation of adequate bird control measures respectively.

8. Illegal Dumping:

The illegal disposal of wastes along the facility boundary when the facility is closed is a major problem and the litter associated with such activities leads to it being deposited in local hedgerows and fields.

The Proposed Decision requires the applicant to install a Closed Circuit Television (CCTV) system so as to deter any illegal dumping which may be going on at or in the immediate vicinity of the facility (the applicant has not proposed the installation of any such surveillance equipment). Condition 3.4 also requires the applicant to install security fencing at the facility. In the event of wastes being deposited in the vicinity of the facility the Proposed Decision requires the applicant to remove such wastes.

9. Wastes being received from outside the county of Mayo

The facility at Rathroeen, Ballina should for the disposal of wastes generated in the local areas and not as a "Superdump" for the Connaught region. It has been noticed by local residents that a number of counties other than Mayo are disposing of their waste at the facility.

The issue of where and what regions/counties the local authority wishes to accept waste from is solely a matter for Mayo County Council.

10. Mis-Management of the Facility:

The facility has been poorly managed and operated in the past and there have been no environmental controls in place at the facility to prevent rodent infestations, litter and odours being generated at the facility.

Condition 2 of the Proposed Decision provides for the proper management of the facility. Compliance with the conditions of the proposed decision will ensure that potential nuisances will be minimised.

11. Sludges from Wastewater Treatment Plants being accepted:

Sludges from local wastewater plants have been accepted at the facility and are left uncovered at the facility for weeks. Such wastes lead to environmental pollution and odours.

The Proposed Decision requires the applicant to prepare detailed sludge acceptance and handling procedures and this should ensure adequate covering of sludges takes place at all times. In addition, the disposal of untreated sludges into unlined areas is prohibited under the terms of the Proposed Decision and only treated sludges shall be accepted at the facility after January 1st 2003.

12. Seepage from the Dump into the River Moy:

Polluted water from the facility may be seeping through the ground around the facility and discharging to the River Moy.

Information received as part of the waste licence application indicated that leachate from the facility was not having an adverse impact on groundwater but was seen to be impacting on surface waters to the north of the facility. The conditions of the proposed decision will ensure that leachate migration from the facility will be minimised and a significant improvement in the quality of water courses in the vicinity of the facility will result.

13. Historical Value of the Site:

Areas of the site are of archaeological significance and interest. A number of possible Crannóg sites at the facility should not be damaged or covered as they may have significance in local history.

Condition 11 of the Proposed Decision requires the applicant to submit a plan to the Agency for the protection and preservation of any possible Crannóg sites at the facility. The applicant should consult with Dúchas in preparing any such plans.

14. Potential risk to local Agriculture:

There are a number of farms located in the vicinity of the facility and they experienced problems with windblown litter and debris becomes deposited on the surrounding lands by birds. There are livestock grazing on the land and they may be susceptible to picking up diseases from debris which originated at the landfill. A local dairy farm also has hygiene standards to maintain.

Potential nuisances are controlled by Condition 7 of the Proposed Decision. Condition 7 also requires the control of bird and insect populations at the facility and the control of such populations will prevent debris being carried off-site.

15. Risk to the health of local people:

The local residents may be susceptible to diseases and adverse health impacts which may emanate from the facility.

It is considered that compliance with the conditions attached to the proposed decision will ensure that this facility will have no significant impact on human health or the local environment. The submitter of the human health problems submission has been made aware of the agreed protocol between the Agency, Department of Agriculture and the Health Authorities.

16. Protection of the Reed Beds located at the facility:

The reed beds located at the facility should be maintained and be allowed to regenerate.

The Proposed Decision prohibits any development in the reed bed area and thus the reed beds will be left protected and secure.

17. The visual impact of the site for passing tourists:

A large volume of tourists would pass by the facility on a regular basis as they tour the north of County Mayo and, in particular, they would pass the facility en-route to the Céide Fields. The facility will have a negative visual impact.

The applicant is required to complete a planting and landscaping programme as part of the proposed decision and this should minimise the visual impact which the facility may have on the surrounding environment. The final contours of the facility are not to exceed those of the local ridgelines and will therefore merge with the surrounding topography.

18. Local residents being misled:

Local residents were verbally informed by Mayo County Council that the waste licence application was for a landfill for five to seven years. However residents subsequently found out that the application was in fact for a period of up to thirteen years. Local residents feel they were misled and subsequently were not in a position to make a relevant submission on the application.

The waste licence application was received and assessed in accordance with the Waste Management (Licensing) Regulations 1997. Any information received by local residents from the local authority is a matter between both parties. The lifespan of the facility is determined by the void space available which in turn will be controlled by height restrictions on the final contours of the facility.