

INSPECTORS REPORT

WASTE LICENCE REGISTER NUMBER: 20-1

APPLICANT: Monaghan County Council

FACILITY: Scotch Corner Landfill

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

(1) Introduction

Scotch Corner landfill has been operated by Monaghan County Council since 1991. Approximately 215,000 tonnes of waste has been deposited to date at the facility, and the remaining capacity of the facility has been estimated to be in the order of 363,000 tonnes. The applicant has applied to accept up to 39,500 tonnes per annum and this would give the facility a lifetime of approximately 9-10 years. A lined area was constructed at the facility in 1999/2000, and it is proposed to construct a further four lined cells and a lined leachate lagoon.

The facility is located 4km south-southeast of Clontibret town (see location map in Annex 1) and is 16 hectares in size, of which approximately 4 hectares has been filled with waste. The facility is surrounded primarily by agricultural land (i.e. pasture) with some forestry also adjoining the eastern side. There are a number of houses located within 250m of the facility, with the nearest house located approximately 100m from the facility. A number of private wells are also associated with these dwellings. The western half of the facility is presently undeveloped and largely consists of marsh and scrub which is located on peat. This area was originally the location for a small lake, Little Lough, but the lake has been drained for a number of years now. A small stream passes through this marshy area and then flows along the northern boundary of the facility, and all surface water emanating from the facility discharges into this water body.

Monaghan County Council previously operated a landfill on the southern side of the public road which borders the facility, and this old landfill has been restored to agricultural land. While this old landfill has not been addressed in the application, the applicant is required to monitor the impact which it contributes to the present facility under the Conditions of the proposed decision. Under Section 41(4) of the Waste Management Act (1996), a waste licence may include Conditions relating to emissions from such an area. The old landfill was in operation between 1987 and 1994 and approximately 175,000 tonnes of waste was deposited there.

Monaghan County Council have applied for the continuation of waste disposal into a lined area (Classes 1 and 2 of the Third Schedule) prior to the construction of four new lined cells (Class 5, Third Schedule). Other waste activities applied for include the provision of a lined leachate lagoon (Class 4, Third Schedule) and the collection and recovery of various waste streams at a Materials Recovery Facility (Classes 11, 12 and 13 of the Third Schedule; Classes 1, 2, 3, 4, 8, 11 and 13 of the Fourth Schedule). Although the facility has previously caused environmental pollution of surface water and groundwater, the proposed decision allows for waste disposal activities to be carried out in lined areas only and this will not cause environmental pollution. The Conditions of the proposed decision will also minimise the pollution arising from previously deposited waste at the facility.

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| Quantity of waste (tpa) to be accepted | 39,500 |
| Environmental Impact Statement Required and complies with EIA Regulations | Yes |
| Number of Submissions Received | 3 |

FACILITY VISITS:

| DATE | PURPOSE | PERSONNEL |
|-------------|----------------------------------|------------------------------------|
| 25/5/98 | Site Notice Check and Inspection | Duncan Laurence |
| 18/1/99 | Site Notice Check | Eamonn Merriman |
| 15/9/00 | Site Inspection | Caoimhín Nolan and Kealan Reynolds |

(2) Facility Development

Up until recently, waste disposed of at the landfill was deposited directly onto peat or bedrock. However, a lined area was constructed at the facility in 1999/2000, and this is currently being used. The area is only fully lined on three sides and the base, as the northern section of the area backs onto existing deposited waste. The liner here does however extend approximately 1.5m above the base of the area, and therefore offers leachate containment. Leachate contained in the lined area drains to a sump. Condition 5.12.2 of the proposed decision requires that leachate levels in this area shall not exceed 1.0m over the base of the liner to ensure that leachate is contained within the area.

The applicant proposes to develop four new lined cells, all but one of which are located to the west of the present lined area. The area of the next cell to be constructed is approximately 19,000m². A lined leachate lagoon is also proposed to be constructed under the same contract and the provision of this lined lagoon is due to commence shortly. The new lined leachate lagoon will replace the unlined one which is used at present. Leachate from some unlined parts of the facility accumulates in this unlined area, and from here it is tankered off-site to Ballybay waste water treatment works. The applicant proposes to continue tankering leachate to Ballybay for treatment following the development of the new lined cells and lagoon. The applicant has demonstrated that the treatment facility has adequate capacity to handle the leachate.

In addition to the recent proposals for developing lined cells and a leachate lagoon, the applicant has undertaken other upgrading works to improve the operation of the facility. An administration block and Materials Recovery Facility have been constructed, landscaping and re-routing of services (e.g. electricity cables) have been carried out, hardstanding areas and security fencing and CCTV have been installed, a puraflo treatment system is in place for dealing with domestic foul water, and the installation of a wheelwash is also proposed. A weighbridge is already in existence at the facility. The MRF building is essentially a roofed area approximately 1,162m² in area, and the processing of recyclable wastes from commercial and domestic sources will be carried out here. The applicant has indicated that the MRF will be operated under sub-contract by V&W Recycling, who also operate a similar facility at Dundalk Landfill.

The facility presently has no infrastructure in place for monitoring landfill gas and only a limited number of boreholes are available for monitoring groundwater. Condition 3.21 of the proposed decision requires that such infrastructure be installed within six months of the date of grant of the licence. Other requirements of the proposed decision include the decommissioning of the present underground fuel storage tank (Condition 3.22), the provision of waste inspection and quarantine areas (Condition 3.7), and the installation of further security fencing (Condition 3.4). The latter is particularly needed along the northern boundary as livestock have direct access to the facility at present.

(3) Waste Types and Quantities

The proposed decision limits the annual quantity of waste to be disposed of at the facility to 39,500 tonnes. The types of wastes to be accepted at the facility include; Household, Commercial, Sewage Sludge, Treated (non-hazardous) Industrial Sludges, Construction and Demolition, and Industrial (non-hazardous). The operation of the Materials Recovery Facility (MRF) is expected to divert up to 25% of the total waste intake away from disposal at the landfill after two years. Condition 5.11 of the proposed decision requires that the MRF has adequate waste handling plant capacity to process this waste. The specific waste types acceptable at the MRF are detailed in Condition 5.10 of the proposed decision.

The proposed decision permits the disposal of untreated sludges into lined areas up until 31st December 2003. From 1st January 2004, only treated sludges may be accepted at the facility, and Condition 5 prohibits the disposal of treated sewage and industrial sludge at the facility after 1st January 2006.

No hazardous or liquid wastes are to be accepted at the facility other than those from households which are to be recovered at the Materials Recovery Facility. The applicant indicated an intention to carry out composting at the facility in the future and this is allowed for under the proposed decision. Composting operations will be controlled under Conditions 3.20 and 5.8, and the annual quantity of biodegradable waste allowed to be composted at the facility is limited to 2,000 tonnes.

The licence application did not specifically provide information on the hours of operation or the hours of waste acceptance at the facility, although the current landfill hours of operation were given in the noise assessment report contained in Appendix B of the Article 16 reply received by the Agency on 1st February 2001. These hours of operation are provided for under Condition 1.6.1 of the proposed decision, and Condition 1.6.2 provides for the operation of the Materials Recovery Facility during its current hours of operation.

(4) Emissions to Air

Landfill Gas:

No monitoring of the composition of landfill gas or checking for off-site migration of landfill gas has been carried out at the facility to date. Condition 3.21 of the proposed decision requires that gas monitoring boreholes be installed around the perimeter of the facility to allow for the monitoring of gas migration off-site. This monitoring programme will also require assessing the contribution of landfill gas emissions from the old landfill to the south of the present facility.

An active gas management system including an enclosed flare shall be provided within 12 months of the date of grant of the licence (Condition 3.15). The gas management system shall collect gas from the existing waste body (i.e. within the facility boundary) and from the new cells when filled. An assessment as to whether the utilisation of landfill gas as an energy resource is feasible is required within 24 months of the date of grant of the licence. Condition 8.1 and Schedule D of the proposed decision also requires the applicant to monitor emissions from the landfill gas flare. The proposed decision sets emission limits from the flare stack (Condition 6.1 and Schedule C.5).

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.

Dust:

Dust monitoring was carried out at three locations within the facility as part of the licence application. The highest dust deposition rate recorded over the two sampling periods was 183 mg/m²/day. Condition 7.4 of the proposed decision requires that water is applied to facility roads and other areas during dry weather to minimise dust generation. Condition 6.1 and Schedule C.3 set out dust deposition limits. Dust monitoring shall be carried out at four locations along the boundary of the facility (to be agreed with the Agency).

Noise:

Noise monitoring was carried out in January 2001 at the two nearest noise sensitive locations and also at boundary locations during operational hours. The recorded levels were generally below daytime levels of 55 L_{eq} dB (A). The proposed decision requires the applicant to comply with noise emission limits as set out in Schedule C.1, while noise monitoring shall be carried out at four locations, two of which are the nearest noise sensitive locations.

(5) Emissions to Groundwater/Hydrogeology

The facility is underlain by the Silurian Lough Avaghon Formation which is Llandovery in age and is generally made up of grey, fine to coarse grained, massive greywacke sandstones, microconglomerates and amalgamated beds. Groundwater flow (both overburden and bedrock) in the area is generally from south to north. Due to the nature of the bedrock, fissure flow (secondary permeability) is considered to be the dominant water flow type, and the Silurian sandstones would be expected to yield in the order of between 5m³/day and 27m³/day. The bedrock is therefore considered to be classified as a poor aquifer, productive only in zones.

On-site investigations showed that the overburden is generally thin (e.g. 0m - 4.4m in depth) and is comprised of peat, clay and silt in varying amounts. Outcrops of bedrock are visible in some parts of the facility. The peat and clay deposits would be expected to have a low permeability, and a component of the groundwater flow in the overburden is believed to discharge to the boggy area in the western part of the facility and the stream located along the northern boundary. As the overburden is quite thin, the vulnerability rating for the facility is extreme. The facility therefore lies within those zones of the Groundwater Protection Scheme Response Matrix for

Landfills which are acceptable for landfill development subject to the conditions of a waste licence (zone R2²).

Monitoring results of the groundwater in the area (both overburden and bedrock) showed that groundwater quality has been polluted by leachate generated from the landfill. Analysis results for overburden groundwater sampled at the facility downgradient of the existing/current waste disposal areas showed elevated Ammonia (up to 814.4 mg/l), Sodium (up to 255.99 mg/l) and Chloride (up to 611 mg/l) levels. Bedrock groundwater is similarly polluted by leachate. The results of analysis of groundwater from bedrock at the facility but downgradient of the current/existing waste disposal areas showed elevated levels of Ammonia (up to 921.4 mg/l), Sodium (up to 286 mg/l), Chloride (up to 605 mg/l), Cyanide (up to 0.582 mg/l) and Potassium (up to 216.8 mg/l).

Seven private wells have been identified by the applicant within 250m of the facility. These are all used for domestic purposes and some of them also serve animal drinking water units. Analysis of water from three of these wells located adjacent to the facility showed no evidence of contamination, although high levels of Iron and Manganese were recorded.

Discharges to groundwater are likely to occur from the old landfill located to the south of the present facility, although no investigations were carried out as part of the licence application to establish their impact. In terms of groundwater, the old landfill is situated upgradient of the present facility, and the impact of it would be difficult to isolate from the present facility, so the proposed decision takes account of the relative locations of the closed and existing facility. Due to the present lack of groundwater monitoring infrastructure at the facility, Condition 3.21 requires that groundwater monitoring boreholes be installed at four locations upgradient and downgradient of the facility.

No analysis for List I/II Volatile Organic Compounds (VOCs) was carried out on the groundwater as part of the application, however under the Conditions of the proposed decision, the use of lined areas for waste disposal and a lined leachate lagoon will not allow the discharge of these substances. Condition 8 of the proposed decision allows for comprehensive monitoring to be carried out on leachate and groundwater at the facility, and also includes for monitoring of the seven private wells which are located within 250m of the facility.

(6) Emissions to Surface Water

The main outlet stream from the area surrounding the landfill runs eastwards, initially close to the northern boundary and then along the northern boundary of the facility. The stream itself flows into a tributary of the River Fane, which eventually discharges into Lough Muckno at Castleblayney. The Eastern Regional Fisheries Board classify the River Fane catchment area as very valuable cyprinid waters. Results from biological and chemical monitoring of the river indicate that the landfill has caused environmental pollution. A detrimental effect on water quality has been observed for at least 6km downstream, although the effect does not extend as far as Lough Muckno. The pollution of this surface water body from the facility is likely to be caused by a combination of surface water and groundwater discharges. Some drainage ditches located within the facility run northwards and lead into the stream

along the northern boundary, and these showed elevated levels of Ammonia (up to 938.13 mg/l), Chloride (up to 348 mg/l) and Sodium (up to 260.65 mg/l).

Surface water (which is polluted with leachate) from the old landfill to the south of the present facility discharges into the facility via a culvert under the public road. Analysis of this discharge downstream of the culvert showed elevated levels of Ammonia (96.12 mg/l) and a number of other List II substances. The polluted surface water which arises from the old landfill and passes through the facility will be collected for treatment under Condition 3 of the proposed decision.

The proposed decision allows for the discharge of clean surface water from the facility that arises from the Materials Recovery Facility and any groundwater abstracted from beneath newly lined areas (i.e. prior to waste deposition). Condition 3.18 requires that a silt trap and oil interceptor be used to treat surface water arising from hardstanding areas associated with the Materials Recovery Facility prior to being discharged to the stream to the north. Trigger levels for surface water discharges are set in Condition 6.4, and emission limit values are also given in Schedule C.

Condition 3.14 of the proposed decision requires the applicant to construct a leachate interceptor drain around the existing waste body, and this will minimise the volume of leachate discharging to the stream to the north. Condition 3.16 requires that effective surface water management be maintained at the facility. Bunding of fuel and waste oil tanks is required, and run-off from the compactor used for domestic waste will be directed to the lined leachate lagoon. Monitoring of surface water in the vicinity of the facility and also the quality of surface water discharges from the facility is required under Conditions 8.1 and 8.12.

(7) Other Significant Environmental Impacts

Landscape:

The topography of the area is such that the landfill is situated in a hollow and is surrounded by small drumlins. The final contours and appearance of the facility are specified in the proposed decision to ensure that when finally restored, its appearance will be compatible with the surrounding landscape. Conditions 3.13 and 3.19 require the use of a buffer zone and screening berm respectively to reduce the visual impact of the facility in accordance with Drawing No. 152-503-006 Rev B1 and Mon/EIS/ Site Plan. Under Condition 3.13 of the proposed decision, the size of the buffer zone differs on each side of the facility in accordance with the adjacent landuse, proximity of sensitive receptors and local topography. The area to the north of the facility consists of good agricultural land and is on the side of a drumlin. The greatest visual impact would be caused here and the proposed decision therefore provides the widest section of buffer zone along the northern boundary (Condition 3.13.2). In addition, Condition 5.6 requires that certain landscaping be carried out and that existing hedgerows be maintained.

Ecology:

The future development of the western portion of the facility around Little Lough will result in the loss of some habitats of ecological value including floating fen. These habitats, and the species of fauna associated with them, are not however of significant ecological interest and are represented elsewhere in the locality. The Badger set referred to in the application occurs on the perimeter of the facility and will not be

damaged as a result of future development. Condition 7.1 of the proposed decision requires that any method used by the applicant to control nuisances shall not endanger protected species of fauna.

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

The Draft Waste Management Plan for the North East Region 1999-2004 has been prepared in accordance with the Waste Management Act (1996), and has been adopted by Monaghan County Council but not by all of the other Local Authorities involved. The plan refers to the landfill facility at Scotch Corner. The Local Authority proposes to upgrade/extend the facility to provide for the medium to long term landfill capacity for Co. Monaghan. The Materials Recovery facility at Scotch Corner is one of two sites in the north east region proposed for sorting of kerbside and bring-bank materials, commercial/industrial recyclable waste, baling and transfer of these.

(9) Submissions/Complaints

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

(10) Reasons for the Recommendation

- Based on the information that was submitted in support of the application, and on the basis that the Conditions of the proposed decision will be complied with by the applicant, I am satisfied that the activities allowed for in the proposed decision will not cause environmental pollution, or result in other significant environmental impacts.
- The waste activities as set out in the proposed decision will comply with the requirements of BATNEEC.
- 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) because waste disposal activities will be restricted to lined areas only. The quantity of biodegradable waste to be composted at the facility will be limited to 2,000 tonnes per annum. Although the facility may impact on the quality of surface water and groundwater in the area, the activities allowed for in the proposed decision, operated in accordance with the Conditions of the proposed decision, will not cause environmental pollution or result in the contravention of any relevant standard.

Signed _____
Caoimhín Nolan, Inspector,
Environmental Management & Planning.

Dated:

ANNEX 1
LOCATION MAP & LAYOUT PLAN

ANNEX 2
SUBMISSIONS RECEIVED

Annex 2: Submissions received

A total of three submissions were received in relation to this licence application. The dates they were received by the Agency and the details of the individual, department, group or organisation making the submission are provided.

1. Michaela Kirrane, Fisheries Environmental Officer, Eastern Regional Fisheries Board, Balnagowan, Mobhi Boreen, Glasnevin, Dublin 9. Submission received 25th September, 1998.

1) Ms. Kirrane wanted to know the closing date for receipt of submissions on the application.

Response:

1) The Agency issued written notification to Ms. Kirrane informing her of the closing date for submissions.

2. Mr. Brian McKeever, Principal Environmental Health Officer, North Eastern Health Board, Environmental Health Service Community Care, Lisdaran, Cavan. Submission received 24th February, 1999.

1) The disposal of waste at present is not being done in accordance with the tenets for controlled tipping.

2) A considerable amount of uncovered waste was visible over a wide area.

3) There is evidence of escape of leachate from the facility.

4) Surface waters in the area are polluted.

5) Complaints from local residents included offensive smell, surface water and groundwater contamination.

6) An extract from the LANCET shows there is a raised risk of congenital abnormality in babies whose mothers live close to landfill sites and there is a practical difficulty in controlling the entry of hazardous waste to landfill sites.

7) Concern over nature and location of the facility, and the proposal for future development in the swampy low lying area.

Response:

1-5) The Conditions of the proposed decision will ensure that all wastes will be managed and disposed of/recovered in a proper manner. The applicant is required to put in place leachate management and surface water control measures and this will minimise the impact which this facility will have on local surface water/groundwater in the area. Potential nuisances are controlled by Condition 7 of the proposed decision.

6) The LANCET article on congenital abnormalities associated with landfills is not relevant to this facility, as that study was related to hazardous waste landfills. Condition 1.5 states that no hazardous waste shall be disposed of at the Scotch Corner facility. The adoption of waste acceptance procedures under Condition 5.2 and the checking of all wastes at the working face (Condition 5.3) will ensure that hazardous wastes will not be accepted for disposal at the facility.

7) The position of the facility in the Response Matrix for Landfills (refer to the DoELG/EPA/GSI publication: Groundwater Protection Schemes) shows that

the development of a landfill at the Scotch Corner location is acceptable subject to engineering methods being utilised to prevent groundwater contamination. The proposal for future development in the swampy area is allowed for in the proposed decision because leachate will be contained/abstracted from lined cells and groundwater control measures will be put in place.

3. Mr. Alan McGurdy, Chief Officer, Eastern Regional Fisheries Board, Balnagowan, Mobhi Boreen, Glasnevin, Dublin 9. Submission received 12th April, 1999.

- 1) *The Board welcomes the proposal to line the leachate lagoon and would urge that this work be carried out in the near future to prevent groundwater and surface water contamination.*
- 2) *The Board welcomes the proposal to divert surface water away from the facility.*
- 3) *The Board notes the improvement in water quality in the vicinity of the facility.*
- 4) *The mitigation measures and monitoring schedules outlined on page 43 of the EIS (Vol. 2) are welcomed by the Board. The mitigation measures referred to are; lining of the leachate lagoon and tankering leachate off-site, capping of filled areas and lining all future cells.*
- 5) *The River Fane is a valuable fishery resource in terms of cyprinid and salmonid fish.*

Response:

- 1-4) The contents of this submission are noted. The issue of leachate management and surface water control are addressed under the terms of the proposed decision. Capping of completed cells is required under Condition 5.7.5 and Conditions 8.1 and 8.12 require regular monitoring of surface waters in the vicinity of the facility to be carried out.
- 5) The importance of the River Fane as a fishery resource is noted and the Conditions of the proposed decision for surface water will ensure that the facility does not impact on this important resource, and should result in some improvement.