

INSPECTORS REPORT

WASTE LICENCE REGISTER NUMBER 13-1

Carrowbrowne Landfill Site, Carrowbrowne, Headford Road, Co. Galway.

Recommendation: The recommended proposed decision as submitted to the Board be approved.

(1) Introduction:

Carrowbrowne Landfill Site is located approximately 6km north of Galway city just off the N84, Galway to Headford road. The facility is owned by Galway City Council (formerly Galway Corporation) but is located within the functional area of Galway Co. Co. The facility (unlined) occupies a total area of approximately 15.4 hectares and, of this, waste has been landfilled on approximately 13.5 hectares. The area surrounding the site is low-lying and is bounded by a mixture of peat bog/moor land to the east, north and south with a large expanse of poor quality pasture land located to the west between the site and Lough Corrib. Immediately adjacent to the facility are a number of mixed commercial and industrial properties and these include a car dismantling activity, waste transfer station, furniture outlet, truck centre and garden/fruit centre. A traveller halting site is located immediately adjacent to the south western boundary of the facility while a number of residential houses are located within 2km of the facility. **A plan showing the location of the facility to which the application relates is provided in Appendix 1.**

The facility, which had been used as a landfill since 1972, has been the subject of a number of applications to the High Court by local residents in relation to planning issues. The implications of one of the High Court Orders (December 1998) resulted in the cessation of landfilling of waste (municipal, commercial, industrial) at the facility in January 1999 for failure to comply with certain planning conditions. Restoration activities have been ongoing since then and the existing landfill is covered to some extent and grassed in some areas. However, in March 2001, the High Court found that Galway Corporation was in breach of the order of the court of December 1998 in a number of respects. This included a breach of the order relating to the deposition of waste at the facility.

In this application Galway City Council have applied to the Agency to recommence operation of landfilling activities in a new engineered cell at the north western corner of the existing site in an area where waste has previously been deposited. The proposal includes the installation of a basal liner together with associated leachate collection, landfill gas management and the restoration and aftercare of the facility. The applicant submits that approximately 200,000 tonnes of waste will be deposited in a lined cell which has an area of 2.79 hectares. The recommended proposed decision refuses the deposition of waste in this lined cell and this recommendation has been made having regard to the reasons outlined in Section 9 of this report. The applicant will be required to restore, remediate and landscape the existing facility. The recommended proposed decision also permits the provision of a civic waste facility and composting of source segregated waste at the facility.

Quantity of waste to be accepted (tpa)	Quantity of inert waste for recovery and restoration purposes to be agreed
Environmental Impact Statement Required and Valid	Yes
Number of Valid Submissions Received	17

SITE VISITS BY INSPECTOR:

DATE	PURPOSE	PERSONNEL	OBSERVATIONS
12/04/01	Site inspection	M. Henry & K. Reynolds	Inspect facility and surrounds
14/02/02	Site inspection	M. Henry & C. MacGearailt	Inspect facility and surrounds

(2) Facility Development

The applicant has proposed to develop a lined cell on top of the waste body in the north western corner of the facility ('piggyback' system). The liner proposed by the applicant is a composite liner encompassing a landfill gas collection layer, cover material, sand, HDPE liner, HDPE geotextile and a leachate collection layer. I consider that the use of a HDPE liner does not represent BAT in this situation particularly with regard to the risks associated with settlement of the underlying waste, stability problems and the potential failure of the liner.

The majority of the existing landfill site is currently covered by interim capping and the applicant will be required to ensure that the facility is capped and restored in accordance with Condition 4 of the recommended proposed decision. The restoration of the facility is required to be completed within twenty four months of the date of grant of the licence.

In January 1999, a peripheral leachate containment and collection system was installed at the facility. This consisted of a perimeter sub-surface drain and a HDPE vertical curtain to minimise the lateral migration of leachate from the facility. Leachate is pumped via a series of collection sumps to leachate storage lagoons (with intermittent aeration) prior to being discharged to sewer. This sewer connects up with the collection network for Galway City for which a sewage treatment plant is currently being built. The recommended proposed decision requires the applicant to undertake an assessment of the current leachate treatment system at the facility and undertake any necessary upgrades to the system.

Landfill gas is currently abstracted from the waste body by a series of gas extraction wells and is flared in an open gas flare. The applicant will be required to upgrade this flare to an enclosed flare within six months of the date of grant of the licence. In addition, the recommended proposed decision requires the applicant to assess the feasibility of utilising the landfill gas as a source of electricity.

In the event that the applicant decides to provide a Civic Waste facility and composting operation at the facility, the recommended proposed decision requires the provision of appropriate infrastructure for such purposes.

(3) Waste Types/Quantities/Hours of Waste acceptance

Only inert waste will be permitted to be used in the restoration of the facility and the total quantity and type of waste to be used for such purposes will have to be agreed with the Agency. The issue of whether the materials used in the restoration are in compliance with the High Court orders is a matter for the parties concerned. The applicant will be required to develop waste acceptance procedures for this inert waste and acceptance procedures will also be required for wastes accepted at the civic waste facility and the composting operation.

The hours specified in the recommended proposed decision for the acceptance of inert waste during weekday evenings have been extended above those applied for by the applicant (from 4.30 pm to 6.00 pm) and this will further enable the applicant to proceed with restoration of the facility. Although the applicant did not specify the waste acceptance hours for the civic waste facility or the composting operation, the recommended proposed decision provides for the acceptance of waste at both these facilities between the hours of 8.00 am to 6.00 pm Monday to Saturday inclusive.

The applicant indicated that a total of 9,500 tonnes of organic waste is generated in Galway city and the recommended proposed decision specifies this tonnage.

(4) Emissions to Air

Landfill Gas: Odours from landfill gas will be controlled by flaring and the recommended proposed decision requires the applicant to monitor landfill gas emissions in accordance with Schedule D.

Dust: The recommended proposed decision requires the applicant to comply with a dust deposition limit of 350mg/m²/d. Monitoring for PM₁₀ and bioaerosols may also be required depending on the type of composting which will take place at the facility.

Noise: Noise monitoring is required to be undertaken at the boundary of the facility, at the nearby halting site and at the nearest noise sensitive location together with a requirement to comply with noise limits of 45dBA (night time)/55dBA (day time) at noise sensitive locations.

(5) Emissions to Groundwater

The facility is underlain by Carboniferous Burren limestone bedrock which is karstified and is classified as a Regionally Important aquifer. Above the bedrock lies a variable distribution and thickness of glacial/post glacial clays, gravels, silts, marls and peat. In some parts of the existing waste body the upper peat layer had been partially or completely removed before waste was deposited and it is likely to be significantly compressed where present. The limestone aquifer appears to drain either directly into Lough Corrib or provides a baseflow to streams and a river that flows into the lake. The proposed location for the engineered cell in the north western section of the site is underlain by waste. The bedrock at this location is overlain in parts by shallow sub soil having a depth of approximately 1m. Therefore, it can be concluded that the bedrock aquifer is classified as extremely vulnerable.

The results of historical groundwater monitoring has shown that the facility has impacted significantly on groundwater resources at and in the vicinity of the facility. Elevated levels of various parameters have been recorded in groundwater in the peat/marl formations, silty clays/gravels and in the limestone bedrock. However, it is considered that the situation is generally improving and the continual removal of leachate from the waste body together the capping and restoration of the facility will further minimise the impact of leachate on groundwater.

(6) Emissions to Surface Waters

The facility is located within the flood plain of the River Clare and is specifically within the catchment of two large drains. The 'North' main drain runs adjacent to the northern facility boundary and it joins with the 'South' main drain approximately 1km west of the facility. The combined flow in these two drains discharge into the mouth of the River Clare immediately prior to entering Lough Corrib. The results of surface water monitoring of water courses at and in the vicinity of the facility has shown that the landfill has had a significant impact on surface water quality. However, it is evident that the quality of surface water has improved in the last two years and this is most likely a result of a number of measures including the installation of a leachate containment/collection system, the extraction of leachate and the partial capping of the facility. The recommended proposed decision requires the applicant to continue to monitor surface water quality and it is considered that the impact of the facility will be further reduced following the completion of restoration.

(7) Other Significant Environmental Impacts of the Development

Visual impact: The current ground levels at the north western section of the site (area of proposed new cell) are in the range of 8-12mOD and the development of a lined cell in this area would result in a final maximum height of 22mOD. Therefore, in certain parts of the area in question, there will be a height increase of approximately 14mOD. The development of a lined cell in the north western section of the site will result in a significant lateral increase in the visual intrusiveness of the facility (approximately 100% in parts). The most significant visual impacts will be from the N84 and in particular from the south west and north west views of the facility. Considering that the areas surrounding the landfill are low lying and that there are clear views of the facility from the adjoining N84, I consider that the proposed extension would have significant visual impacts on the surrounding landscape.

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

The Waste Management Plan for Connaught (which was adopted in 2001) makes reference to the Carrowbrowne landfill being remediated and upgraded to accept waste for a 3 year period.

(9) Reasons for the Recommendation

The recommended proposed decision prohibits the disposal of waste by landfilling at the facility and provides for the restoration and aftercare of the facility. I consider that the disposal of waste into a lined cell (as proposed by the applicant) at the facility would not comply with the requirements of Section 40(4) of the Waste Management Act, 1996. In reaching this decision I have had regard to the following:

- the karstic nature of the underlying limestone and vulnerability of the underlying bedrock aquifer to pollution. The bedrock aquifer is classified as a Regionally Important aquifer and in the area of the proposed extension has an extreme vulnerability. In accordance with the GSI Groundwater Protection Responses for Landfills, the development of an engineered landfill for waste disposal at this location is not acceptable.
- the proposed extension will result in significant visual impacts on the surrounding landscape and in particular from the N84 to the south west and north west of the facility.
- the vulnerability of the River Clare and Lough Corrib (designated salmonid water) to pollution and the general unsuitability of the site for the continued landfilling of waste.

(10) Submissions

17 valid submissions were received in relation to the waste licence application. An overview of the main issues referred to in the valid submissions received is provided below.

Submission No. 1 Western Regional Fisheries Board (received 28/10/97)

The issues raised include the following:

- a) Impact of facility on water quality in the Carrowbrowne River, Clare River and Lough Corrib.
- b) Impact of the facility on groundwater
- c) Modern landfills should be complete with liners which fully protect water quality
- d) Any licence issued should dovetail the An Bord Pleanala judgement
- e) Breaches in ELV's and water quality standards should be notified to Western Regional Fisheries Board

Submission No. 2 Bord Failte, Irish Tourist Board (received 31/10/97)

The main items of concern are listed below:

- a) Implications of continued landfilling at this site and the impact on Lough Corrib
- b) Serious problems related to flooding, leachate disposal, proximity to River Clare, Lough Corrib and wildlife.
- c) Bord Failte supports the submission by the Western Regional Fisheries Board above.

Submission No's 3, 4, 5, 6 Castlegar Concerned Community (received 10/10/97, 20/10/97, 4/11/97, 14/01/98)

The following issues were raised:

- a) Process of lodging a submission and what guidelines are followed.
- b) Cost of getting a copy of the application/EIS is raised together with the availability of files for public viewing.
- c) Concerns are raised in relation to flooding and the devastation which the facility is causing.

Submission No. 7 Brotherhood of the Corrib (received 29/01/98)

The issues raised include the following:

- a) Location of facility in flood plain
- b) Impact of the facility on fish life and water quality of adjacent water courses, River Corrib and Lough Corrib particularly with regard to EC (Quality of Salmonid Waters) Regulations SI No. 293 of 1988.

- c) The requirements of Council Directive (78/659/EEC) 'on the quality of freshwaters needing protection or improvement in order to support fish life' have not been met.
- d) Implications of An Bord Pleanála judgements.
- e) Findings of Mr. David Ball (consultant to An Bord Pleanála) in his report to the Planning Appeal entitled 'Proposal for Continuing of Landfill Operations including Rehabilitation Measures at Carrowbrowne Landfill Site, Co. Galway'.
- f) Lack of compliance with SI 390 of 1979 (The European Communities (Waste) Regulations, 1979).
- g) Contaminated discharges from the facility have the potential to endanger human health with regard to water supplies (SI 271 of 1992).
- h) Impact of facility on River Corrib and the failure of the local authorities to take action as highlighted in the report 'Lough Corrib, A Cause for Concern' by Roderick O'Sullivan.

Submission No. 8 Galway & Corrib Anglers Association (received 29/01/98)

The following issues were raised:

- a) Impact of the facility on the Corrib ecosystem
- b) Water quality will not comply with the applicable standards
- c) Odours from facility
- b) All environmental issues from this facility should be addressed.

Submission No. 9 The Commercial Boat Club (received 29/01/98)

The main items of concern were:

- a) Impact of the facility on Lough Corrib
- b) Odours from facility
- c) Visual impact of landfill
- d) Location of site

Submission No. 10 Des Rooney c/o Castlegar Concerned Community (received 10/06/98)

The following issues were raised:

- a) Breach of planning conditions
- b) Road cleaning and dirt on Headford Road
- c) Odours from facility
- d) Vermin and flies and impact on health
- e) Applicants intention to continue landfilling at the site

Submission No. 11 Des Rooney c/o Castlegar Concerned Community (received 28/01/98)

The issues raised include the following:

- a) Galway Corporations failure to comply with Planning conditions and High Court orders
- b) Lack of management and bad practices at facility
- c) Impact of facility on environment
- d) Lack of sewage treatment plant in Galway for treating leachate
- e) Need for an Oral hearing
- f) A number of reports/documents were provided in this submission including:
 - Transcript of High Court (November 1995)
 - An Bord Pleanála inspectors report of Oral Hearing conducted in January 1997
 - Copy of report by Mr. David Ball to An Bord Pleanála
 - Site Investigation report (September 1993) by P.J. Tobin & Co. Ltd.
 - Photographs of site

Submission No. 12 Western Regional Fisheries Board (received 09/12/99)

This submission included the following:

- a) Letter of appeal to An Bord Pleanala (14/06/99) in relation to the following issues:
 - Unsuitability of site for continued landfilling as reported by the consultant hydrogeologist to An Bord Pleanala (Mr. David Ball)
 - EIS shortcomings
 - Leachate volumes and losses
 - Waste Management Strategy for Galway City and County
 - High Court ruling
- b) Letter to EPA of 23/10/997 (included in Submission No. 1 above)

Submission No. 13 Western Regional Fisheries Board (received 16/08/00)

This submission highlighted the following issues:

- a) EPA licence should acknowledge the unsuitability of the site as documented in the EIS and also the hydrogeologists report to An Bord Pleanala
- b) Waste licence should issue for a limited period only
- c) Proposed compost facility should be considered in overall context of site closure and should be roofed
- d) Breaches in emission limit values and water quality standards should be notified to Fisheries Board.

Submission No. 14 Des Rooney c/o Castlegar Concerned Community (received 18/08/00)

The main items of concern were:

- a) File on application is incomplete.
- b) No application has been made to the EPA for the proposed composting facility.

Submission No. 15 Peter Sweetman and Associates (received 20/08/00)

The main items of concern were:

- a) File on application is incomplete.
- b) No application has been made to the EPA for the proposed composting facility.

Submission No. 16 Des Rooney c/o Castlegar Concerned Community (received 20/08/00)

The issues raised include the following:

- a) Unsuitability of site for landfilling.
- b) Breach of planning conditions.
- c) Inadequacy of leachate collection system, leachate treatment and the implications of pumping untreated leachate to the sewer.
- d) Impact of the facility on the environment including surface waters, groundwater and Lough Corrib.
- e) Failure to complete landscaping of the facility.
- f) Lack of waste recycling and waste separation in Galway.
- g) Galway Corporation have proven themselves to be unfit and incapable of managing the facility.
- h) Included in this submission were the following:
 - Extracts from Site Investigation Report conducted on behalf of Galway Corporation/County Council
 - Photographs of leachate containment/collection system (October 1998)
 - Affidavit of Dr. Paul Johnston (Geological Engineer) to High Court
 - Transcript of High Court Order of 11th December 1998

Submission No. 17 Fionnuala Cawhill & Associates on behalf of Castlegar Concerned Community (received 23/08/00)

The main items of concern were:

- a) Application file was incomplete and all of the documents were not available to the Castlegar Concerned Community. Additional documents submitted by the applicant should be made available to the Community so that they can comment on them.

Comment on the above submissions

- The recommended proposed decision prohibits the landfilling of waste at the facility and provides for the restoration, remediation and aftercare of the facility. This restoration is required to be completed within twenty four months of the date of grant of the licence. It is considered that the restoration of the facility will minimise the impact which the facility will have on the surrounding environment. A refusal of the application for the continued landfilling/disposal of waste together with the restoration of the facility will resolve many of the issues raised.
- The recommended proposed decision also provides for other specific issues raised in the submissions. For example, the applicant is required to notify the Western Regional Fisheries Board in the event of incidents relating to discharges to surface water while the flood protection berm is also required to be maintained around the existing landfill.
- All significant environmental issues relating to this facility are provided for in the recommended proposed decision. There will be a requirement on the applicant to provide (among other things) leachate and landfill gas management at the facility together with the obligation to monitor surface water, groundwater and leachate on a regular basis. The recommended proposed decision requires the applicant to undertake an assessment of the current leachate treatment system in operation at the facility and submit proposals for upgrading this system. Leachate from the facility currently discharges to sewer and will ultimately receive treatment in the Galway city wastewater treatment plant. It is understood that this facility is nearing completion.
- The issues referred to above in relation to compliance with planning and High Court Orders are a matter for the planning authority and the parties involved.
- The recommended proposed decision provides for the development of a Civic Waste facility and composting operation (for which details were provided as part of the application). It is noted that both of these are Specified Engineering Works and details of such works must be submitted to the Agency for its agreement prior to their commencement.
- A source segregation and separate collection system is currently in operation in Galway city and it is envisaged that this will bring about a significant reduction in the quantities of waste sent for disposal.
- The EIS complies with the EIA Regulations.
- The Agency liaised with interested parties on the Waste Licensing process and the procedures for lodging submissions. The information submitted in relation to the application/EIS was made available for public inspection as provided for in the Regulations.

Signed _____

Dated:

Dr. Michael Henry
Inspector, Environmental Management & Planning

APPENDIX 1
LOCATION MAP & LAYOUT PLAN