APPLICATION

By

Donegal County Council

to

Environmental Protection Agency

for

Waste Licence Review

W0024-02

Ballynacarrick Landfill Site,
Ballintra County Donegal

ATTACHMENTS TO SECTION A

Non-Technical Summary

ATTACHMENTS TO SECTION A NON-TECHNICAL SUMMARY

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Attachment A.1 Non Technical Summary

This non-technical summary has been prepared in accordance with Article 12(1)(u) of the Waste Management (Licensing) Regulations, 2000 (S.I. N4. 395 of 2004) Paragraphs (a) to (t) of Sub-article 1 of Article 12 are addressed below.

The waste licence review has been undertaken to increase the annual tonnage from 24,000 tonnes per year to 35,000 tonnes per year. In the Waste Management Plan (2000) Donegal County Council undertook to develop 2-4 landfill facilities in the County. A waste licence for the Meenaboll site has been granted by the EPA, however a decision to refuse approval of the application for Meenaboll was issued by An Bord Pleanála in January 2006 and therefore currently only one landfill site is in operation in County Donegal at Ballynacarrick. The site is currently licenced to accept 24,000 tonnes per year. This site is currently dealing with all wastes for disposal arising within the County. The tonnage of waste received at Ballynacarrick has increased significantly on the year 2003 due in part to the closure of the Balbane facility (in January 2004) and in part to the increased vigilance and effectiveness of our Waste Regulation team. They have substantially eliminated the illegal transfer of waste across the border. The site does not accept waste from any other jurisdiction. In order to deal with the waste arising within the County an increase in the annual input of waste to the site is required in order to comply with waste licence conditions. The Council also propose to increase the final contours of the site to increase the capacity of the site.

A.1.1 Name of Applicant

Donegal County Council
County House
Lifford
County Donegal
Telephone: 074 9172222
Fax: 074 9141205

Address for correspondence regarding application:

RPS Consulting Engineers
Enterprise Fund and Business Centre
Ballyraine
Letterkenny
Co Donegal

A.1.2 Planning Authority

The local planning authority is Donegal County Council, however correspondence was sent to An Bord Pleanála in accordance with EPA correspondence seeking direction from the Board in relation to the preparation of an environmental impact statement for this review. The Council are awaiting the decision from An Bord Pleanála.

A.1.3 Sanitary Authority

The local sanitary authority is Donegal County Council.

A 1.4 Location of Facility

The site is located in the townland of Ballynacarrick, near Ballintra, Co. Donegal. The Grid Reference of the facility is E193843 N367613. The landfill was opened in 1980 and has approximately three years of capacity remaining.

A.1.5 Nature of the Facility

This facility is classed as a non-hazardous waste landfill to accept household, commercial and industrial wastes from within the County. The landfill was opened in 1980 and covered an area of 5.5 hectares that was initially developed on a 'dilute and disperse' basis, in accordance with accepted practices at the time.

Following the licensing of the facility the remaining cell of the original site was developed on a 'containment' basis, which is in accordance with the standards set out in the Landfill Directive, and the requirements of the Waste Management Licence issued by the EPA.

An extension to the facility of 3.5 hectares in area was granted in 2004. This has been developed on a containment basis (i.e. the site is lined with an impermeable lining system designed to prevent the uncontrolled migration off-site of landfill gas and leachate). The site will accept a maximum of 35,000 tonnes of waste per annum.

A.1.6 Waste Disposal Activities Undertaken

Licensed Waste Disposal Activities, in accordance with the Third Schedule of the Waste Management Acts 1996 to 2003

Class 5 Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.

Class 6 Biological treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1. to 10. of this Schedule.

Class 13 Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.

Licensed Waste Recovery Activities, in accordance with the Fourth Schedule of the Waste Management Acts 1996 to 2003

Class 2 Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).
Class 3 Recycling or reclamation of metals and metal compounds.
Class 4 Recycling or reclamation of other inorganic materials.
Class 13 Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

A.1.7 European Waste Catalogue Codes

The following Table A1.7 provides the annual amount of waste to be accepted at the Ballynacarrick Landfill Site.

Table A1.7.1 Annual Amount of Waste to be Accepted

Year	Non-Hazardous Waste (tonnes per annum)	Hazardous Waste (tonnes per annum)	Total Annual Quantity of Waste (tonnes per annum)
2008	35,000	Not applicable	35,000
2009	35,000	Not applicable	35,000
2010	35,000	Not applicable	35,000

The European Waste Catalogue Codes for wastes to be received at the facility for disposal or recovery are as per Table A1.7.2. Other non hazardous waste wastes streams may be accepted at the facility, however the main waste stream will be mixed municipal waste.

The facility also provides some facilities for recycling at the site entrance. Donegal County Council intends to transfer these Civic Waste Facilities from Ballynacarrick Landfill Site to Laghey Civic Amenity Site when it opens.

Table A.1.7.2 Waste for Disposal at Landfill

Type of Waste	EWC
Mixed Municipal Waste	20 03 01
Street Cleaning	20 03 03
Mixed Packaging Waste	15 01 06
Ceramics, Bricks, Tiles ,After Thermal	10 12 08
Biodegradable Kitchen and Canteen Waste	20 01 08
Construction and Demolition	17 01 07

A.1.8 Raw and Ancillary Materials

Raw materials utilised in the operation of Ballynacarrick Landfill Site are set out in Table A1.4.1 below.

Table A1.4.1 Fuel and Energy Usage

Fuel and energy utilised	Annual usage*	Quantities stored on site
Water**	1,000m^3	Not applicable
Electricity	178,750kWh	Not applicable
Diesel	62,701 litres	1,300 litres bunded fuel bowser.
Hydraulic Oil**	25 litres	Not applicable

*Figures for 2006

**Estimated

A.1.9 Plant, Processes, Site Operating Procedures

It is envisaged that the site will receive a maximum of 35,000 tonnes of non hazardous waste per annum. The waste will be delivered to the site by road in refuse freighters operated by private waste collection companies. All operations will be carried out in accordance with the Waste Disposal Licence. It is envisaged that the landfill operations, i.e. the deposition of waste at the facility, will cease by the end of 2010.

Groundwater and Surface water drainage

A groundwater drainage blanket intercepts any seepage below the landfill and deliver it under gravity to the existing watercourse situated to the north west of the site.

Surface water at the facility has been diverted into a pipeline along the northern, southern and western boundaries of the site and is discharge into the existing watercourse.

Containment System

The containment system is achieved by engineering the base and sides of the site using low permeability materials such as naturally occurring clays and/or synthetic geomembranes.

The containment system comprises a 2mm thick High Density Polyethylene (HDPE) geomembrane, welded to form a continuous membrane across the proposed extension. This is underlain by a 500mm thick layer of low permeability Bentonite Enhanced Soil (BES) installed on top of a groundwater drainage blanket. The HDPE will then be covered by a protective geotextile layer and a leachate drainage blanket constructed of crushed aggregate. This blanket will provide an efficient system for the removal of any excess quantities of leachate which may be generated. The installation of the lining system at the facility has been completed and the relevant CQA Reports approved by the office of Environmental Enforcement (Phase I & II).

Leachate Collection System

Leachate is produced as a result of the coupled action of the breakdown of waste material and rainfall percolating through the waste. The Leachate Collection System includes the provision of a control system, designed to manage the quantities of leachate generated. The leachate collection system comprises a 500mm deep drainage blanket with 225mm diameter High Density Polyethylene (HDPE) collection pipes. The HDPE collection pipes discharge leachate into a collection sump from where it will be pumped to a treatment tank, prior to disposal at Letterkenny Waste Water Treatment Works.

Landfill Gas Collection System

Landfill gas is generated from the degradation of putrescible fractions within the waste. The major components of landfill gas are Methane (66%) and Carbon dioxide (33%) with a number of minor components in low concentrations.

Methane is flammable and a landfill gas collection system will be installed to prevent the build up of gas. Uncontrolled gas migration off site will be prevented by the engineered containment system.

Landfill gas is collected at the facility through a series of vertical and horizontal landfill gas wells. The wells are connected to a permanent gas flaring unit via a HDPE collection pipework.

Site Infrastructure

Modern landfills require a substantial amount of associated infrastructure in order to operate to current guidelines and licence requirements. All of the facilities required have already been installed as part of the existing landfill operations. These include a site office, weighbridge, wheelwash facilities, security fencing, site services and car parking, a landfill gas flare, a leachate treatment facility, a recycling area, relocation of the waste inspection/quarantine area, a fuel storage area and a metrological station. Lighting has been provided to areas which operate after darkness.

Site Management

The site will continue to be managed as per the current licence. The site will be operational from 8.30 am to 5.00 pm Monday to Friday and 9.00 am to 1.00 pm on Saturday and will be manned by a minimum of 4 personnel. Further personnel will be employed on an as required basis to deal with general maintenance of the site.

The site management system procedures for the landfill site are set out in the Environmental Management System, a document which defines responsibilities and site procedures required as a condition of the waste management licence. The management system covers all operational activities of the waste acceptance and waste disposal on site, taking into account weighing of inputs, compaction and covering of wastes, control of vermin, litter, insects and birds, traffic control and the cleaning of roads.

Health and safety will be a priority on site at all times. Site personnel have been appropriately trained in health and safety matters generally and particularly on those areas that pertain to operation of a landfill facility.

Phasing

Waste is currently being filled in Phase 2. The revision of the final contours will result in additional waste being filled at the facility. This will be undertaken in lined cells only.

This will be undertaken once the licence has been issued to allow for restoration of Phase 1 to be undertaken. There will be some overlap between phases to ensure the stability of adjacent areas of fill. The site will be filled in each phase to the proposed final profile making appropriate allowances for settlement of the waste mass to ensure that the predetermined profiles can be achieved. Permanent restoration will occur at the end of each phase and landscaped.

Leachate Management

The lining system of Ballynacarrick site allows for containment of all leachate generated at the site. This will require appropriate management throughout the life and aftercare period of the site to maintain leachate control and treatment. Management of leachate will relate to generation, composition, control, treatment, disposal and monitoring.

Landfill Gas Management

Management procedures at Ballynacarrick will ensure appropriate management of landfill gas during the life and aftercare of the site. This will accommodate the changes in quantity and composition of landfill gas which occur with time. The management procedures will ensure that uncontrolled off-site migration will not occur. Monitoring will form an important part of this process and will follow the requirements of the Waste Management Licence.

A.1.10 Determination of Section 40 (4) of the Act

To comply with the requirements of the Waste Management Act 1996 as amended, the activity concerned (waste disposal by landfill) must comply with Sections 40(4)(a) to 40(4)(t).

Section 40(4)(a) of the Waste Management Acts, 1996 to 2003 requires that prescribed emission standards and limit values are complied with by the facility.

- ***Liquid Emissions****:* With respect to emissions to groundwater the appropriate standard is the EU Groundwater Directive (80/68/EEC), as implemented through legislation. The Directive requires that the direct discharge of List I substances to groundwater be prevented, and that the discharge of List II substances should be minimised. The site will be developed on a containment basis in accordance with the requirements of the Landfill Directive. Capping of the existing site will significantly reduce the volumes of leachate being created.

  The proposals should prevent the discharge of List I substances to groundwater and minimise the discharge of List II substances.

  Monitoring of surface and groundwater at the site will allow current and future impacts to be addressed in the context of the site development. Operation of the facility will therefore be in accordance with the Groundwater Directive.

- ***Emissions to air****:* A 30 day average dust deposition rate of 350 mg/m^2/day (as recommended in T A Luft) at the boundary of the site is currently a condition of the existing Waste Licence. Results from regular dust monitoring will be compared against these standards.

- ***Noise****:* The standards applicable to noise emissions at the site are as follows: BS5228 (1984 and 1987) 'Noise Control on Construction and Open Sites' Part 1.

  A noise standard of 55 dB(A)L_{Aeq} (daytime) and 45 dB(A)L_{Aeq} (night time)at locations on the boundary will be used. Monitoring results will be compared against these standards.

Section 40(4)(b) of the Waste Management Acts 1996 to 2003 requires that the activity shall not cause environmental pollution, which as defined as:

"*The holding, transport, recovery and disposal of waste in the manner which would to a significant extent endanger human health or harm the environment, and in particular:*

a) Create a risk to waters, the atmosphere, land, soil, plants or animals

b) Create a nuisance through noise, odours or litter

c) Adversely affect the Countryside or places of special interest".

Monitoring of groundwater, surface water, noise, visual impact and dust emissions in addition to ecological, archaeological and human receptor surveys were considered within the scope of the waste licence application for an extension to the landfill site undertaken in 2003. No significant environmental impacts were identified, therefore the requirements of Section 40(4)(b) of the Waste Management Act 1996 are deemed to be satisfied.

Section 40(4)(bb) of the Waste Management Acts 1996 to 2003 requires the activity to comply with Council Directive 1999/31/EC on the landfill of waste.

The site will be developed and operated in accordance with the requirements of the Landfill Directive.

Section 40(4)(c) of the Waste Management Act, 1996 requires that BAT(Best Available Technique) principles are implemented to minimise as far as practicable potential emissions from the site.

- ***Liquid Emissions****:* Leachate in the extension to the site will be collected in engineered cells, designed in accordance with the Landfill Directive. Further, with the phased profiling and capping of the existing site, leachate generation will decrease significantly. Assessment has shown no significant impact on major watercourses away from the site and the environmental impact will be reduced progressively as the existing site is restored. The BAT principle for modern landfill sites is generally accepted as being designed, operated and closed in accordance with the Landfill Directive.

- ***Emissions to Air****:* Landfill gases generated within the landfilled cells will be controlled by venting through passive vents. With the phased capping of the site, it is proposed to introduce a landfill gas flare.

Operational procedures such as the spreading, compaction and covering of wastes are also to be implemented to minimise odour and dust emissions from the site in addition to controlling wind blown litter and pests such as flies and vermin.

Section 40(4)(cc) of the Waste Management Acts 1996 to 2003 requires the activity to be consistent with the objective of relevant waste management plan, and will not prejudice measures taken or be taken by the relevant local authority or authorities for the purpose of the implementation of any such plan.

The proposed site is consistent with the Donegal Waste Management Plan 2006-2010 which was adopted by the Council in 2006.

Section 40(4)(e) of the Waste Management Act, 1996 requires that financial provision are provided for the facility.

Donegal County Council will provide the funding to operate the Landfill Facility in accordance with legislation.

The necessary Personnel will be employed and trained in the appropriate techniques to manage the Landfill in compliance with legislation.

Section 40(4)(f) of the Waste Management Acts 1996 to 2003 requires that energy will be used efficiently in the carrying on of the activity concerned.

An energy audit has been undertaken at the facility.

Section 40(4)(g) of the Waste Management Acts 1996 to 2003 requires that any noise from the activity will comply with, or will not result in the contravention of any regulation under section 106 of the Act of 1992.

The standards applicable to noise emissions at the site are as follows: BS5228 (1984 and 1987) 'Noise Control on Construction and Open Sites' Part 1.

A noise standard of 55 dB(A)L_{Aeq} (daytime) and 45 dB(A)L_{Aeq} (night time)at locations on the boundary will be used. Monitoring results will be compared against these standards.

Section 40(4)(h) of the Waste Management Acts 1996 to 2003 requires that necessary measures will be taken to prevent accidents in the carrying on the activity concerned and, where an accident occurs, to limit its consequences for the environment.

An Environmental Management System has been set up at the facility to include environmental management and operational procedures and emergency response procedures. Fire drills will be undertaken. Site personnel are trained in first aid and appropriate equipment provided on site. Oil spill kits are provided on site.

Section 40(4)(i) of the Waste Management Acts 1996 to 2003 requires that necessary measures will be taken upon the permanent cessation of the activity concerned of the activity concerned (including such a resulting from the abandonment of the activity) to avoid any risk of the environmental pollution and return the site of the activity to a satisfactory state.

The site will be restored in accordance with the requirements of the Landfill Directive. The capping system will include a landfill gas collection layer with a geosynthetic clay liner, a surface water drainage layer and various sub-soil and topsoil finishing layers. The restored site will be subject to an aftercare period involving environmental monitoring, which will continue whilst the waste management licence is maintained.

A.1 11 Environmental Emissions

The environmental emission from the site will remain unchanged due to this licence review. Environmental emissions from the Ballynacarrick Landfill Site are set out below together with any control measures which are undertaken as part of the sites operational procedures.

Leachate - is produced by incident rainfall over the area of the landfill which percolates into the waste pile. A leachate collection system has been installed at the landfill. Leachate will then be pumped to a treatment tank where it will be subject to pre-treatment prior to disposal to a Sewage Treatment Works or recirculated through the waste to promote more rapid degradation. The leachate from the Ballynacarrick site will be transported to the Letterkenny Waste Water Treatment Works.

Landfill gas - the principle constituents of Landfill Gas which are Methane and Carbon Dioxide, is generated as the putrescible fractions within the landfill degrade. Carbon Dioxide levels predominate during the early aerobic stage of degradation. The anaerobic stage, in a mature landfill, produces a ratio of Methane to Carbon Dioxide of 2:1. The potential risks associated with these relate primarily to the flammability of Methane and the asphyxiant properties of Carbon Dioxide. A landfill gas collection system has been incorporated into the development to provide the necessary control.

The engineered composite lining system installed in the landfill base and sides, together with the capping system when infilling is completed should provide an adequate barrier to the uncontrolled migration of landfill gas to the atmosphere or surrounding strata. The provision of an active gas extraction system ensures that gas generated within the landfill mass can be disposed off in a controlled manner.

Dust - is principally generated within landfill sites by vehicles trafficking the access track during dry or windy weather. Historically, there have been no complaints from local residents relating to dust arising from the site.

Noise - The potential for noise from the site can be split into a number of sections. These sections are landfill operation, vehicle noise and construction noise. There is no anticipated change in noise levels arising from operational changes set out in this waste licence review.

Odours - Historically, malodorous emissions have not been a problem at Ballynacarrick. Donegal County Council have identified that odours can be reduced by good site management and as such ensure that waste is adequately and quickly covered and effectively compacted. Excavation of previously deposited waste is avoided if possible. An active landfill gas extraction system has been installed at the facility. Donegal County Council will ensure that any complaints are addressed as a matter of priority.

Regular site inspections and monitoring will be carried out in accordance with the EPA licence, and will note any problems arising from the landfill operations. The conditions of the licence will include measures to minimise or prevent nuisance to the public occurring as a result of the operation of the facility. A complaint register will detail any compliant received from the general public in respect of the operation of the facility will be maintained.

A.1.12 Assessments of Environmental Impacts

The EIS undertaken in 2003 waste licence review has been included as a reference document for information purposes only. This review will have no affect on current emissions from the site.

A.1.13 Monitoring and Sampling Arrangements

Monitoring and sampling will continue for the parameters and at the locations as per current licence and at any additional monitoring points installed since the licence was issued. All monitoring data is assessed by a nominated competent person within Donegal County Council, who sanctions appropriate measures to mitigate any problems identified.

A.1.14 Prevention, Minimisation and Recovery of Waste

Chapter 14 and Chapter 15 of the Donegal Waste Management Plan 2006 -2010 details the Waste Projections and the specific polices for Municipal waste for the County. This includes targets of the Landfill Directive and the National Bio-Waste Strategy. The Waste Management Plan estimated that based on the 2004 Waste Quantities, 52% of households in the County did not avail of a waste collection service. The actual tonnage of waste going to landfill has been greater than that estimated in the Waste Management Plan and changes in the uncollected waste could be contributing towards this. Hence a waste collection take up study is currently being undertaken by Donegal County Council to access number of household not availing of a waste collection service. This will allow an improved analysis of projected waste tonnages arising within the county moving forward.

A.1.15 Off Site Treatment or Disposal of Solid or Liquid Wastes

A leachate collection system has been installed on the landfill and leachate is pumped from the abstraction points to leachate holding tanks from where it will be transported to a Waste Water Treatment Works. Leachate currently generated on site is disposed at Lettterkenny Waste Water Treatment Works.

A.1.16 Emergency Procedures

Emergency situations will be handled initially by the contractor's staff on site who will inform the necessary emergency services or departments within Donegal County Council. The following measures are undertaken:

- Site safety procedures will be adopted on site.
- Trained First Aider available in site.
- First Aid Kit available on site.
- Emergency procedures and emergency numbers displayed in site buildings.

All emergency situations will be reported immediately to the Senior Executive Engineer, Environment Section. Procedures will be reviewed following any accident.

Should staffing levels at the site fall below two and an operative is required to work alone, an hourly "call in" system will be employed in which the employee will be required to contact the manager each hour and confirm the operative's attendance on site.

A.1.17 Closure Restoration and Aftercare

A key component of landfill design is the restoration and aftercare of the landfill after it has ceased receiving wastes. The purpose of the process is to cap the site to reduce leachate generation, to facilitate environmental management and to return the landscape to beneficial use.

Following completion of infilling and allowing time for settlement, areas will be capped and progressively restored. Once any one phase has been capped, it will be restored in the first available soil moving season. The final contours will be designed to enable the implementation of the intended after use and to blend into the surrounding landscape.

The capping system will include a landfill gas collection layer with a geosynthetic clay liner, a surface water drainage layer and various sub-soil and topsoil finishing layers. Additional depths of soil will be provided in the areas where tree planting is proposed over the landfill cap.

In terms of landscaping, it is not proposed to carry out major areas of landscaping on the landfill site itself. This is consistent with good landfill practice, as root systems from trees and shrubs may adversely affect the capping system. However, it is recognised that the restoration of a site would benefit from the planting of hedgerows and trees both in terms of creating a visually acceptable landscape in the long term and to help where possible to screen operations. In order to do this, perimeter planting has been initiated prior to the commencement of landfilling operations in Phase1 and 2. The screening and restoration proposal will be implemented as part of the phased infilling of the site.

It is envisaged that an aftercare programme will be drawn up prior to the completion of each phase of the landfill. Each restored cell will be subject to an initial aftercare period. During this period, an annual inspection will take place and this will be over and above the environmental monitoring, which will continue whilst the waste management licence is maintained.

A.1.18 Financial Arrangements

Donegal County Council is a local authority and is committed to the provision for the management, development and restoration of Ballynacarrick landfill site.

A.1.19 Seveso II

S1 No 476 of 2000 does not apply to the Ballynacarrick Landfill Site.

A.1.20 Council Directive 80/68/EEC

The landfill will comply with the Directive.