



Submission

Submitter:	Mr Finan Gallagher
Submission Title:	HSE Report EHIS 2971 EPA W0024-05
Submission Reference No.:	S010931
Submission Received:	10 February 2023

Application

Applicant:	Donegal County Council
Reg. No.:	W0024-05

See below for Submission details.

Attachments are displayed on the following page(s).



**Príomhoifigeach Sláinte Comhshaoil
Seirbhís Sláinte Comhshaoil**

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Environmental Health Service Consultation Report

(as a Statutory Consultee under the Planning and Development Acts 2000 (as amended) & Regulations made thereunder)

Report to: Environmental Licensing Programme
Office of Environmental Sustainability
Environmental Protection Agency
Johnstown Castle Estate
Co. Wexford

Date: 10/02/2023

Type of consultation: Waste License

Planning Authority: Donegal Co. Council

EPA Reference Number: W0024-05

EHIS Reference number: 2971

Applicant: Donegal County Council, County House, Lifford, Donegal.

Location of development: Ballynacarrick, Ballintra, Donegal, F94 AY99

General Comments:

Details of the application were circulated to HSE stakeholders on the 12-01-2023.

- Emergency Planning – Kay Kennington
- Estates – Helen Maher/Stephen Murphy
- Director of National Health Protection – Eamonn O' Moore
- CHO1 Chief Officer– Dermot Monaghan

This report only comments on Environmental Health impacts of the licence application. All commitments to future actions, including mitigation and further testing have been taken as read, and all data has been accepted as accurate. No additional investigations/measurements were undertaken in the review of the application.



In respect of this application, the areas reviewed were those of concern to Environmental Health and which are:

- Any potential contamination of surface water and ground water
- Emissions to air including noise and process emissions

Proposed Development:

An Integrated Constructed Wetland (ICW) will be installed at the landfill facility to provide an effective, sustainable and self-sufficient leachate management and treatment system which minimises, and where possible eliminates, the requirement to export leachate from the site to Letterkenny Waste Water Treatment Works for final treatment.

Leachate from the on-site leachate treatment plant will be pumped up into a stilling chamber in advance of Pond 1, which will be utilised to direct a steady flow of leachate into ICW Pond 1 for treatment. All further flows of effluent into subsequent remaining ICW ponds will be under gravity. Due to the separation distance between Ponds 3 and 4 however, and nature of the majority of the intervening lands as landfill with variable settlement potential, a secondary backup pumping system is proposed to be provided to permit temporary pumping of effluent from Pond 3 to Pond 4 in the event that the gravity pipeline connection becomes restricted. Retention times will be subject to the degree of control of effluent depths within the ponds by the operator and degree of incident rainfall but is expected to be approximately 45-60 days. The volume to be emitted from the ICW will be a maximum of 120m³/day. The application includes an Environmental Screening Report (Stage 1) and Natura Impact Statement (Stage 2).

Mr Adam Gargan, Environmental Health Officer visited the location of the proposed development on 1st of February 2023 to assist with the preparation of this report.

This report only comments on Environmental Health impacts of the proposed development from the viewpoint of the Environmental Health Service (EHS).

The Environmental Health Service has made observations and submissions on the following specific Environmental Health areas:

Assessment of principle and description of the project

An area of an approximately 3.5ha will be required for the bunded ponds to create the Integrated Constructed Wetland, plus additional surrounding areas for access tracks. A leachate treatment plant will also be installed within the landfill site along the northern boundary to the west, pipework will link the plant to the ponds.

Previous History

Ballynacarrick Landfill Site operated from c.1980 until closure in July 2012 due to the capacity of the facility being exhausted. The site was initially operated as an unlined landfill with peat removed in the eastern part of the site to the top of the glacial deposits, and waste was tipped directly onto the surface of the glacial till. An engineered cell was constructed 2002, with an extension to the west of the site being developed in 2004/05. The extension consisted of two engineered cells (Phase 1 and Phase 2).



The site has been progressively restored on a phased basis in accordance with the Waste Licence (Ref: W0024-04) since 2004 with the final restoration being completed in 2013. Additional works have been completed since 2013 in relation to the leachate management from the unlined areas as agreed with agreed with the Office of Environmental Enforcement of the EPA.

Since the granting of the Waste Licence a significant investment in the restoration of the site, including the installation of leachate management infrastructure, has been made by Donegal County Council. Leachate management infrastructure has been installed progressively as the site has been developed and restored in accordance with the current waste licence issued by the Environmental Protection Agency (Licence Ref: W0024-04).

The 2021 Annual Environmental Report (AER) detailed that 0 environmental complaints had been recorded.

Assessment of Principle & Description of the Project:

Principle: The principle of the project is considered satisfactory.

Description: The description of the project is considered to be satisfactory.

Assessment of Public Consultation & Non-Technical Summary:

The Non-Technical Summary which accompanies the Planning Application provides a concise summary of the EIA process, the construction and operation of the proposed development and its potential impacts on human health.

There is no reference that public consultation has taken place in relation to this application.

Assessment of Consideration of Alternatives:

There is detailed consideration given to Best Available Techniques (BAT) by Donegal County Council who will employ BAT to limit, abate or reduce an emission from the activity concerned where applicable. An alternative would be to maintain the current operation and transport preliminary treated leachate to an offsite Waste Water Treatment Works facility in Letterkenny by tankers. This would not be a sustainable option.

It was concluded An Integrated Constructed Wetland (ICW) will be installed at the landfill facility to provide an effective, sustainable and self-sufficient leachate management and treatment system which minimises, and where possible eliminates, the requirement to export leachate from the site to Letterkenny WwTW for final treatment.

Assessment of Description of Physical Environment:

A good description of the physical environment is provided in the application documentation.



Geology / Soils

Ballynacarrick Landfill Site is located in a rural setting and surrounding land use is mainly farmland/grazing. The soil type consists of mainly blanket peat as detailed on the Geological Survey Ireland Spatial Resources

Map. Bedrock geology varies significantly across the site and within adjacent lands. The landfill site is located on the eastern margins of the Donegal Bay syncline, where it crosses a structural unconformity between the Ballyshannon Limestone and the Psammities of the Slishwood Division of the Lough Derg Formation.

A number of trial pits were excavated in the proposed northern extension. In some of the exploratory holes, weathered bedrock was encountered and recovered as angular sand and gravel. Depth to weathered bedrock from the trial pits ranges from 0.5 -3.2mbgl. Weathered bedrock was not encountered in a number of trial pits which were completed at 3.5m, indicating a depth to bedrock of at least 3mbgl. Based on the trial pit information depth to bedrock appears to decrease from south to north which is supported by the depth to bedrock in the rotary boreholes which ranges from 0.3m in GW17 at the northern boundary of the extension to 4.5m in GW16, close to the boundary with the existing site.

Air

Dust - As the facility is now non-operational, the dust-monitoring programme is in suspended until site activities warrants its re-establishment. The most likely impact on air quality is from dust arising during the construction of the proposed development and emissions associated with construction vehicles.

Odour – could potentially impact on air quality from potential foul odour arising from the treatment process.

Long term emissions from development with potential to adversely impact on air quality on their own and cumulatively include dust and vehicle exhaust gases. The plastic wastes are not odorous and the process, will not be a source of odours. The only source of dust emissions are waste processing inside the building and vehicle movements on the yards during dry weather. The transport vehicles should not travel across any unpaved areas and the wheels do not have any debris that can be a source of dust in dry weather.

The primary generators of traffic in the construction stage will be contractor staff and the delivery of construction materials.

The CEMP must address air within this application provides measures for good practice during the construction phase and should be adhered to in full.

Examples of good practice during this phase are :

- Water spraying of exposed earthworks and site haul road during dry weather using mobile bowser units
- Provision of a power washing at the site access road to remove dirt from vehicles prior to exiting the site



- Control of vehicle speeds, and
- Material drop heights from plant to plant or from plant to stockpile will be minimised.

In the operational phase this facility should monitor emissions in accordance with the waste facility permit and license.

Water /Hydrology/hydrogeology;

Ballynacarrick Landfill Site is situated within the Ballymagrorty_Scotch_010 waterbody (waterbody ID: IE_NW_37B090770). The waterbody has been assigned a Moderate ecological status by EPA and forms part of the Laghy Stream-Bridgetown Priority Area for Action (PAA), as defined by the River Basin Management Plan 2018-2021. As highlighted in the screening report the proposed construction of the ICW will lead to significant improvements in water quality within this water body as the leachate will be treated prior to discharge. It has been determined that the discharge will not impact on the environmental quality standards for the various parameters assessed and therefore conditions are considered to be consistent with the achievement of at least 'good' status for the biological elements in the Ballymagrorty_Scotch_010. The discharge will therefore not result in a deterioration or prevent the required Water Framework Directive environmental objectives of 'good' ecological status for this water body.

As discussed in the screening report, the assimilative capacity was calculated to measure the receiving water body's ability to assimilate the pollutants based on the proposed emission limit values. Although the discharge will be directed towards Durnesh Lough SAC, the mass balance assessment shows that no impact will be experienced provided ELVs are met. During low flow conditions when there is potential for impacts, no discharge from the ICW will occur and there will be significant capacity to attenuate leachate until normal flow levels return in the watercourse.

Groundwater, surface water and leachate is currently being undertaken quarterly for parameters as listed in Waste Licence W0062-04. One additional monitoring points (D1) has been included to monitor discharges from the ICW system. The outlet from the ICW will be monitored by a flowmeters and recorded on the SCADA system. Grab samples will also be taken from D1 for analysis.

Surface water which is monitored quarterly at four locations; SW2 upstream and SW1, SW3 and SW4 located downstream. Elevated concentrations above SI No 272 of 2009 European Communities Environmental Objectives (Surface Water) Regulations 2009 Environmental Quality Standards (EQS) have been recorded downstream of the site with more limited exceedances also recorded at SW2 upstream (Ammoniacal Nitrogen, BOD , COD, and Suspended Solids). Results for 2020/21 for those parameters monitored in accordance with the waste licence are provided in Table 1.2 of Emissions compliance report. Investigations undertaken in 2021 identified elevated leachate head within the unlined area of the site as the potential cause of these exceedances and remedial measures implemented at Pumping Station 5 as outlined in 1.2.1 within the emissions compliance report. Surface water discharges to an unnamed stream located along the western boundary of the site which flows in a north, north-western direction before disappearing underground and eventually discharges to Durnesh Lough SAC 5km downstream of the site. An Appropriate Assessment Screening and Natura Impact Assessment has been completed as part of the Waste Licence Review Application.



Elevated ammoniacal nitrogen levels in surface water around the perimeter of the site have been observed intermittently for a number of years, particularly at SW1. Investigations were undertaken between August and September 2021 onsite to determine the potential source of ingress to these drains. There did not appear to be any immediately obvious sources of contamination or leachate breakouts along the southern boundary of the site which would impact on the quality of the surface water drainage network. Leachate head within the adjacent lined cell (Cell 4) appeared to be well managed and was deemed unlikely to be the source of leachate ingress. However, following review of leachate level data in adjacent unlined cells (at Pumping Station 5) it appeared that the leachate levels in Pumping Station 5 serving the unlined areas of the site were consistently above 1m and operational staff found it difficult to maintain pump operations at sufficient capacity to reduce leachate head due to the observed precipitation of iron compounds from the leachate within the pumping station, borehole pump and to a lesser extent the rising main. In addition the location of the pump and restricted access to the chamber made regular maintenance and servicing of the pump and rising main difficult.

Remedial works were undertaken to resolve access and pump capacity issues including:

- Provision of a duty/standby pumping system using higher capacity progressive cavity (Seepex) pumps which are used elsewhere on the site. These progressive cavity pumps are more suited to the management of liquids with high solids contents, and operate at a higher flow rate on a more consistent basis, maintaining a higher (almost self-cleansing) velocity in the discharge pipework between the pumping station and the treatment tank to minimise accumulation of ferrihydrite compounds.
- Improving Access to Pumping Station 5 Chamber through exposure of the existing side slope riser and installation of a small precast concrete bund (approx. 2m x 3m in plan and 1.5m in depth) provided to accommodate the new pumping arrangement and facilitate access to manage the silt/precipitate more easily on an ongoing basis. These actions appear to have permitted DCC to manage leachate head more easily, with leachate levels remaining below 1m within the pumping station. Results from SW1 are being reviewed on an ongoing basis to assess the effectiveness of these remedial works on surface water quality and to determine if any further improvement works are required. Given the unlined nature of part of the site resulting in the migration of leachate is expected that it will take some time for contamination levels to reduce in surface water at SW1.

Contaminated groundwater from the groundwater drainage blanket underlying Phases 1 and 2 cells is currently diverted to the onsite leachate treatment plant. All collected contaminated liquid and leachate is treated with activated sludge at the onsite treatment plant prior to tankering off-site to Letterkenny WWTW. In 2015, in accordance with the revised requirements of the Waste Licence, a Hydrogeological Risk Assessment (HRA) was produced for the site and submitted to the EPA. One of the recommendation of this report was the installation of additional boreholes which were more remote from the waste body in order to properly assess the impact on the receiving environment, and additional monitoring to assess the impact of the restoration of the site over time. These boreholes have been installed and additional monitoring will be completed in 2022-2023 with revised HRA to be finalised in 2024.

Noise and Vibration

Construction of the proposed integrated wetlands, will involve the use of plant and machinery, installation of compounds, leachate plant and associated access roads. It has been determined in the screening report that the noise generated by machinery and plant activities are by analysis, ordinary occurrences in



proximity to working agricultural land, landfill site and nearby quarries. Any construction noise generated during construction will attenuate to background levels long before reaching the nearest SPA site. On this basis it is considered that the proposed project does not have the potential to give rise to likely significant airborne noise related disturbance effects upon the SPAs.

The Environmental Health Service notes that this is currently closed therefore the operational stage and also the CEMP plan and therefore recommends that these measures should be included as conditions of planning permission, if granted.

Noise conditions as per Waste facility permits and EPA licences will need to be met. The EPA guidance note for noise: 'Licence applications, surveys and assessments in relation to scheduled activities' must be adhered. This document recommend noise limits of **55dB(A) Lar,T for daytime and 45Db(A) LAeq,T** for night time at sensitive locations which include private residence's.

In relation to noise the measures will include, but are not limited to:

- Monitoring is also undertaken outside of 'daytime' hours.
- Noise monitoring will continue to be undertaken around the application site. Noise monitoring locations will be reviewed and revised where and as/when necessary.
- Corrective action should be included in the Environmental Management Plan if exceedances of permitted limits are recorded
- Selection of quiet plant/location of plant; plant which will have the least impact in term of noise will be selected and will be positioned as far away as practical from noise sensitive receptors i.e. private residences.
- Plant will only be left running during works and will be switched off at all other times. Plant will not be left idling. No maintenance or repair to plant or machinery will be permitted outside of the permitted construction works hours.
- Hours of work - all construction related works, other than emergency works and security will be carried out during normal construction working hours

Construction

At construction stage, operations will be carried out in order to install the series of proposed wetlands and leachate treatment plant. The surface water will flow towards to a stream located at the north western corner of the proposed project site. During construction stage, there is a possibility that suspended sediments and/or contaminants may escape from the site of the proposed project. Durnesh Lough SAC, Durnesh Lough SPA and Donegal Bay SPA are hydrologically linked to the application site via the stream with an impact pathway ranging from 5km to 7.4km in length.

There is potential for construction related sediments via surface runoff discharging into the stream. It has been evaluated that if a small quantity of pollutant substances were to be washed into the stream over a



short period of time, due to the dilution factor of the stream the substances would quickly be diluted to background levels by the time they reach the nearest designated site (Durnesh Lough SAC and Durnesh Lough SPA).

Construction of the proposed development will involve the use of plant machinery and storage of materials such as oils, fuels and chemicals. There is potential for accidental spillage or release of fuel, oil and other dangerous substances which could be washed into receiving waterbodies of the stream located at the northwest corner of the site.

In addition to the CEMP plan the following measures should be carried out:

- Excavation and the stripping soil/made ground should not be undertaken until absolutely necessary to prevent sediment run off and leaching of nutrients from soils into drains.
- If groundwater is encountered during excavations then mechanical pumps will be required to remove the groundwater from sumps. Sumps should be carefully located and constructed to ensure that groundwater is efficiently removed from excavations and trenches

Operational Stage:

There should be no direct or indirect discharge of sanitary and process wastewater to the surface water drainage system. All materials reception, processing and storage will be carried out inside the processing building. All storage and process tanks in the washing plant should be above ground. Fuel oil (diesel) will not be stored or used at the facility and lubricating and hydraulic oils used in plant maintenance will be stored in bunded pallets inside the building.

Waste

Where waste is generated at the installation or facility, describe how it will be, in order of priority in accordance with section 21A of the Waste Management Act 1996, as amended, prepared for re-use, recycling, recovery or where that is not technically or economically possible, disposed of in a manner which will prevent or minimise any impact on the environment. Section 29(2A) of the Waste Management Act 1996, as amended states that it shall be the duty of waste producers and holders to ensure that waste undergoes recovery operations in accordance with sections 21A and 32(1) of the Acts. For waste whose generation cannot be prevented, describe what measures will be in place to ensure that waste is collected separately (if technically, environmentally and economically practicable) and will not be mixed with other waste or other material with different properties.

Pest Control

The applicant has implemented mitigation measures to control vermin and pests on the site.



Conclusions

The Waste Facility Permit/Waste Licence will specify the monitoring requirements in the operational stage, which may include:

- **Surface water quality**
 - **Groundwater quality**
 - **Emissions to air,**
 - **Noise**
- Detailed construction noise mitigation measures should be implemented in full to minimise any risk to public health from noise during the construction phase of the proposed development. As no noise monitoring currently takes place it may be of consideration to reinstall monitoring during the construction phase.

In relation to noise the measures will include, but are not limited to:

- Monitoring is also undertaken outside of 'daytime' hours.
- Noise monitoring will continue to be undertaken around the application site. Noise monitoring locations will be reviewed and revised where and as/when necessary.
- Corrective action should be included in the Environmental Management Plan if exceedances of permitted limits are recorded
- Selection of quiet plant/location of plant; plant which will have the least impact in term of noise will be selected and will be positioned as far away as practical from noise sensitive receptors i.e. private residences.
- Plant will only be left running during works and will be switched off at all other times. Plant will not be left idling. No maintenance or repair to plant or machinery will be permitted outside of the permitted construction works hours
- The Environmental Health Service recommends that Operators must comply with best practice, legislation and guidelines current at that time so that effects are not significant for local residents.
- The EHS recommends that all noise mitigation measures, including monitoring and corrective actions are included as conditions if granted. This measure is for the protection of public health
- The condition of the access roads to the site is monitored and that any defects identified e.g. potholes or surface cracking are repaired within 24 hours. This is in order to minimise the generation of dust and noise from vehicles and is a health protection measure.
- All mitigation measures identified to protect surface and ground water should be implemented in full.
- In order to ensure dilution and dispersal of treated effluent the receiving river water should have a consistently adequate assimilative capacity. A condition should be included in the license to require the implementation of an emergency plan should water levels drop to an extent which may impact on dispersal and dilution of treated effluent discharge. Regular monitoring of water levels and flow



- within the upstream of the plant should be undertaken to ensure the assimilative capacity of the receiving water body is maintained.
- That a complaints procedure is implemented and that a member of staff is designated as a point of contact to deal with any complaints or queries received from members of the public in relation to the proposed activity.
- That an Odour Management Plan is implemented and that regular unannounced odour audits of the plant are undertaken.
- It is recommended that the routine monitoring, maintenance and repair of all plant, equipment and pipework is included as a condition of the licence.
- Desludging will be required, however this is not expected for at least 5-10 years. Sediment build up in the wetland will include metals accumulated. Sediment will be removed from the ponds as required when the pool volume has become reduced significantly or the ponds have become eutrophic. A desludging procedure will need to be implemented for the settlement ponds.
- It is essential that the mitigation in the form of the leachate management system operation and maintenance and the monitoring of the effluent quality and receiving environment are continued to ensure that the system continues to achieve the necessary ELVs as let in the license in order to protect public health.
- A system should be put in place for dealing with enquiries and/or complaints from members of the public during the operational phase of the facility.
- Water monitoring results should be reviewed and where there is indication of contamination or significant dewatering of drinking water supplies additional mitigation should be agreed with the Planning Authority. The effectiveness of the additional mitigation should be verified through a sampling programme. Any wells identified as a drinking water supply and located within 150m of the facility are sampled prior to the commencement of extension works. Sampling parameters should be agreed with the Local Authority. These wells should also be sampled at least biannually during the operational period.
- Mitigation measures proposed for the protection of surface and groundwater are implemented in full and are monitored on an on-going basis (as part of an Environmental Management Plan) in order to mitigate any potentially significant effects .
- Dust mitigation measures outlined above are included as conditions of planning permission (if granted); are implemented in full and are monitored to ensure the effectiveness of the mitigation.



Eve Smith
Environmental Health Officer



Adam Gargan
Environmental Health Officer

*** All correspondence or any queries with regard to this report including acknowledgement of this report should be forwarded to Finan Gallagher, Principal Environmental Health Officer, HSE West, County Clinic, St.Conal's Campus, Letterkenny Co. Donegal F92 FW6Y.**



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Date: 10th February 2023.

Name: Environmental Protection Agency, PO Box 3000, Johnstown Castle Estate, Co. Wexford

Re: W0024-05

Applicant: Donegal County Council

Addresses of proposed development:

Ballynacarrick Landfill Site, Ballintra, Donegal, F94 AY99.

Dear Sir/Madam

Please find enclosed the HSE Environmental Health Service consultation report in respect of the above licence review application by Donegal County Council. The report is based on an assessment of documentation submitted to this office and was compiled following a site visit undertaken earlier this month.

If you have any queries regarding this report, the initial point of contact is Mr Finán Gallagher, Principal Environmental Health Officer who will refer your query to the appropriate person.

Yours faithfully

Finán Ó Gallchoibhair

Príomhoifigeach Sláinte Comhshaoil | Principal Environmental Health Officer

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