



Headquarters
P.O. Box 3000
Johnstown Castle Estate
County Wexford
Ireland

Closed Landfill

Recommended Certificate of Authorisation

Certificate of Authorisation Number:	H0474-02
Certification of Authorisation Holder:	Wicklow County Council
Location of Facility:	Fassaroe 3C, Bray, County Wicklow.

Glossary of Terms

All terms in this Certificate of Authorisation should be interpreted in accordance with the definitions in the Waste Management (Certification of Historic Unlicensed Waste Disposal and Recovery Activity) Regulations 2008 (S.I. No. 524 of 2008) unless otherwise defined in the Certificate of Authorisation.

Agency	Environmental Protection Agency.
Agreement	Agreement in writing.
Annually	At approximately twelve-monthly intervals.
Application	The application by the local authority for this Certificate of Authorisation including the risk assessment, any amendments to the risk assessment, additional information received from the local authority and other documents provided by the local authority.
Certificate of Authorisation	Includes this document and the application.
Closed landfill	As defined in the Waste Management (Certification of Historic Unlicensed Waste Disposal and Recovery Activity) Regulations 2008.
Code of Practice	As defined in the Waste Management (Certification of Historic Unlicensed Waste Disposal and Recovery Activity) Regulations 2008.
Biannually	All or part of a period of six consecutive months.
Documentation	Any report, record, results, data, drawing, proposal, interpretation or other document in written or electronic form which is required by this Certificate of Authorisation.
Drawing	Any reference to a drawing or drawing number means a drawing or drawing number contained in the application, unless otherwise specified in this Certificate of Authorisation.
Environmental pollution	As defined in the Waste Management Act 1996 as amended.
Incident	The following shall constitute an incident for the purposes of this Certificate of Authorisation: <ul style="list-style-type: none">(i) an emergency;(ii) any emission which does not comply with the requirements of this Certificate of Authorisation;(iii) any trigger level specified in this Certificate of Authorisation which is attained or exceeded; and(iv) any indication that environmental pollution has, or may have, taken place.

Inert Waste	Waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and/or groundwater.
Maintain	Keep in a fit state, including such regular inspection, servicing, calibration and repair as may be necessary to perform its function adequately.
Necessary Measures	As defined in the Waste Management (Certification of Historic Unlicensed Waste Disposal and Recovery Activity) Regulations 2008.
Quarterly	All or part of a period of three consecutive months.
Risk Assessment	As defined in the Waste Management (Certification of Historic Unlicensed Waste Disposal and Recovery Activity) Regulations 2008.
Sample	Unless the context of this document indicates to the contrary, the term sample or samples shall include measurements taken by electronic instruments.
The Local Authority	Wicklow County Council, County Buildings, Whitegates, Wicklow Town.
Trigger Level	A parameter value the achievement or exceedance of which requires certain actions to be taken by the local authority.

Part I Authorisation of a closed landfill

The Environmental Protection Agency (the Agency) proposes to grant, under Regulation 7(5) of the Waste Management (Certification of Historic Unlicensed Waste Disposal and Recovery Activity) Regulations 2008 (the Regulations), this Certificate of Authorisation to **Wicklow County Council, County Buildings, Whitegates, Wicklow Town**, in respect of the closed landfill at **Fassaroe 3C, Bray, County Wicklow**, subject to conditions set out in Part II and the Reasons for the Decision in Part III.

Part II Conditions

Condition 1. Scope

- 1.1 For the purposes of this Certificate of Authorisation, the closed landfill authorised by this Certificate of Authorisation is the area of land outlined in **red** on drawing number **MDR1206FG0001F02-Figure 5** submitted with the application. Any reference in this Certificate of Authorisation to “closed landfill” shall mean the area thus outlined in **red**. Activities associated with the closed landfill shall be carried on only within the area outlined.
- 1.2 No waste shall be accepted at the closed landfill.
- 1.3 No waste shall be burned at the closed landfill.
- 1.4 The facility shall be controlled, operated and maintained, and emissions shall take place as authorised by this Certificate of Authorisation. No material change that will result in an increase in the actual or potential nature or quantity of any emission shall be carried out or commenced without the agreement of the Agency.
- 1.5 Nothing in this Certificate of Authorisation shall prohibit authorised beneficial uses of the site of the closed landfill that do not interfere with the integrity of the remediation measures adopted.

Reason: <i>To clarify the scope of this Certificate of Authorisation.</i>
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Condition 2. Notifications, Records and Reports

- 2.1 The local authority shall notify the Agency as soon as practicable after the occurrence of any incident. The incident notification shall be provided in a format as may be specified in relevant guidance issued by the Agency.
- 2.2 The local authority shall keep the following documents available for inspection by the Agency at all reasonable times and to members of the public by request:
 - 2.2.1 records of all sampling, analyses, measurements, examinations, calibrations and maintenance;
 - 2.2.2 records of incidents;
 - 2.2.3 records of all complaints of an environmental nature;
 - 2.2.4 the validation report prepared on completion of the remediation; and

- 2.2.5 other documentation required by this Certificate of Authorisation or as may be otherwise directed by the Agency.
- 2.3 Environmental Liabilities
- The local authority shall put in place and maintain a financial provision for costs of likely events or accidents/incidents related to the closed landfill and associated works.
- 2.4 The local authority shall annually pay to the Agency **€1,083**, or such sum as the Agency from time to time determines in accordance with charges policy, for the performance of its functions under the Waste Management (Certification of Historic Unlicensed Waste Disposal and Recovery Activity) Regulations 2008 in relation to the closed landfill regulated by this Certificate of Authorisation.

Reason: *To provide for the collection and reporting of adequate information on the activity. To provide for adequate financing for monitoring and financial provisions for measures to protect the environment.*

Condition 3. Management and Monitoring

- 3.1 The local authority shall implement the following measures within 12 months of the date of grant of this Certificate of Authorisation, or as otherwise agreed by the Agency.
- a. **Prepare and implement a programme of 24-hour pumping trials for seven days, at a minimum of 2 gas yielding monitoring locations (12% v/v or above) to determine the quantity and characteristics of the landfill gas. This programme shall be submitted to the Agency and approval obtained in advance of implementation. The monitoring programme shall be completed within 4 months of the date of this certificate of authorisation.**
 - b. **In the event that methane values consistently exceed 12% v/v, install measures for extracting and treating landfill gas by flaring or another suitable technique that is satisfactory to the Agency.**
 - c. **Install a low permeability landfill cap, minimum 1m, with 1mm thick low permeability geomembrane having a hydraulic conductivity of less than or equal to 1×10^{-9} m/s.**
 - d. **Install gas protection measures including;**
 - i. **the installation of a virtual gas curtain along the boundary of the capped landfill,**
 - ii. **Geo-composite nodes inserted at 1m intervals along the curtain length,**
 - iii. **3m high vent stacks located at every 20 – 25 m intervals,**
 - iv. **collection duct constructed over the nodes which dilutes any gas and vents it to the atmosphere via vent bollards.**

- e. **Unless otherwise approved by the Agency, install gas vents in the landfill body at appropriate locations such that the increased back-pressure caused by the cap does not result in increased lateral movement of gas.**
 - f. **Install appropriate surface water collection measures to ensure that the water is drained towards the perimeter of the waste body through a subsurface drain.**
 - g. **Carry out slope stabilisation measures where slope failures have occurred, and where potentially unstable slopes have been identified, along the northern boundary.**
 - h. **Minimise the disturbance of deposited waste to the extent possible.**
- 3.2 The local authority shall manage the closed landfill to ensure that discharges and emissions from the closed landfill do not cause environmental pollution or deterioration in the status of the receiving surface water body or groundwater body.
- 3.3 The local authority shall compile a validation report in accordance with the requirements of the Code of Practice. Unless otherwise agreed, the validation report shall be submitted to the Agency within 30 months of the date of grant of this Certificate of Authorisation.
- 3.4 The local authority shall assess the results of all monitoring carried out to confirm whether the closed landfill continues to achieve the objectives set for it in the risk assessment or this Certificate of Authorisation.
- 3.5 The local authority shall **biannually** conduct and record:
- a) a visual inspection of the landfill to ensure that the condition of the site has not deteriorated.
 - b) monitoring for leachate (sample, analyse, characterise, and measure the level of leachate) in all leachate monitoring boreholes;
 - c) **quarterly** monitoring to detect the presence and concentration of landfill gas in all monitoring boreholes;
 - d) monitoring (sample, analyse and characterise) of relevant surface waters both upstream and downstream of the closed landfill;
 - e) monitoring (sample, analyse and characterise) of groundwater from at least three available groundwater monitoring boreholes, two of which shall be downgradient of the closed landfill; and
 - f) the assessment of monitoring results against trigger levels and/or standard reference values for relevant pollutants including environmental quality standards in the European Communities Environmental Objectives (Surface Waters) Regulations 2009 and European Communities Environmental Objectives (Groundwater) Regulations 2010, as amended.
- 3.6 The following are the trigger levels for landfill gas emissions from the facility measured in any service duct or manhole on, at or immediately adjacent to the facility and/or at any other point located outside the body of the waste:-
- a) Methane, greater than or equal to 1.0% v/v; or

- b) Carbon dioxide, greater than or equal to 1.5% v/v
- 3.7 In relation to surface emissions measured over the waste body and identified features, the following shall constitute a trigger level: -
- a) VOC greater than or equal to 50ppmv as methane average over capped area; or
 - b) VOC greater than or equal to 100ppmv as methane instantaneous reading on open surfaces within the landfill footprint; or
 - c) VOC greater than or equal to 500ppmv as methane around all identified features.
- 3.8 The location, frequency, methods and scope of monitoring, sampling and analyses, as set out in this Certificate of Authorisation, may be amended with the agreement of the Agency.
- 3.9 Soil and stone imported for use in remedial, corrective or other engineering works at the closed landfill shall be greenfield soil and stone or soil and stone of equivalent nature and character in terms of chemical and physical contamination.
- Documented acceptance, storage/stockpiling and utilisation procedures shall be operational in advance of receipt of such materials. Records shall be maintained showing the site of origin of the soil and stone and its nature.
- 3.10 No emissions, including odours and noise, from works carried on at the site shall result in an impairment of, or an interference with amenities or the environment beyond the facility boundary or any other legitimate uses of the environment beyond the facility boundary.
- 3.11 The local authority shall ensure that the closed landfill does not result in an impairment of, or an interference with, amenities or the environment at the facility or beyond the facility boundary (including those arising from emissions (including odours, noise, dust, litter and mud), vermin and birds).
- 3.12 Wells and boreholes
- 3.12.1 Groundwater monitoring wells shall be constructed having regard to the guidance given in the Agency's landfill manual "Landfill Monitoring".
 - 3.12.2 All wellheads shall be adequately protected to prevent contamination or physical damage.
 - 3.12.3 All wells & boreholes shall be adequately sealed to prevent surface contamination and, as may be appropriate, decommissioned in accordance with the UK Environment Agency guidelines "Decommissioning Redundant Boreholes and Wells", unless otherwise agreed by the Agency.
- 3.13 The local authority shall clearly label and provide safe and permanent access to all on-site sampling and monitoring points and to off-site points as required by the risk assessment or this Certificate of Authorisation. The requirement with regard to off-site points is subject to the prior agreement of the landowners concerned.

3.14 Incidents

In the event of an incident the local authority shall immediately:

- (i) if necessary, contact the emergency services
- (ii) carry out an investigation to identify the nature, source and cause of the incident and any emission arising therefrom;
- (iii) isolate the source of any such emission;
- (iv) evaluate the environmental pollution, if any, caused by the incident;
- (v) identify and execute measures to minimise the emissions/malfunction and the effects thereof;
- (vi) identify the date, time and place of the incident; and
- (vii) notify the Agency (in accordance with Condition 2.1) and all other relevant authorities including, where relevant, the Water Services Authority and Inland Fisheries Ireland.

3.15 Communications

- a. The local authority shall establish, maintain and implement a communications programme to inform the occupiers and owners of land and buildings adjacent to the closed landfill of the risks posed by landfill gas and its migration.
- b. The communications programme shall inform future occupiers and owners of properties what they can and should do to protect their property and health and members of the public.
- c. The local authority shall communicate directly, either in writing or in person, at least once each year with said occupiers and owners of properties.
- d. The local authority shall, as part of the communications programme, publish gas and water monitoring data quarterly in a manner accessible by the public.

Reason: *To make provision for the proper closure of the activity ensuring protection of the environment.*

Part III: Schedules

Schedule 1: Reasons for the Decision

In proposing to grant this certificate of authorisation, the Agency determines that the risk assessment submitted by the local authority as part of the application for a certificate of authorisation is adequate. To ensure appropriate protection for human health and the environment and to ensure conformity with the provisions of Council Directive 2006/12/EC and Council Directive 80/68/EC, the conditions set out in Part II of this certificate of authorisation are specified as further necessary measures in addition to those identified by the risk assessment.

A screening for Appropriate Assessment was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the activity, individually or in combination with other plans or projects is likely to have a significant effect on any European Site. In this context, particular attention was paid to the European Site at the Ballyman Glen SAC [Site Code: 000713].

The activity is not directly connected with or necessary to the management of any European Site and the Agency considered, for the reasons set out below, that it cannot be excluded, on the basis of objective information, that the activity, individually or in combination with other plans or projects, will have a significant effect on any European Site and accordingly determined that an Appropriate Assessment of the activity was required. The reasons for this determination are as follows:

- the northern boundary of the landfill site is adjacent to, and within the Ballyman Glen SAC [Site Code: 000713].
- slope failures and potentially unstable slopes have been recorded along the northern boundary of the landfill site adjacent to, and within the Ballyman Glen SAC [Site Code: 000713]

The Agency has completed the Appropriate Assessment of potential impacts on these sites and has made certain, based on best scientific knowledge in the field and in accordance with the European Communities (Birds and Natural Habitats) Regulations 2011 as amended, pursuant to Article 6(3) of the Habitats Directive, that the activity, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site, in particular the Ballyman Glen SAC [Site Code: 000713], having regard to their conservation objectives and will not affect the preservation of these sites at favourable conservation status if carried out in accordance with the application and risk assessment, this certificate of authorisation and the conditions attached hereto for the following reasons:

- Specifically, the remedial works will be undertaken to avoid the potential for water pollution and will ensure that there will be no significant impact on Ballyman Glen SAC [Site Code: 000713], and with a further objective to result in positive impacts to current water quality conditions.
- the project, alone or in-combination with other projects, will not adversely affect the integrity, and conservation status of any of the qualifying interests of the Ballyman Glen SAC [Site Code: 000713].

- Condition 3.5 requires ongoing environmental assessment and monitoring.

The Agency is satisfied that no reasonable scientific doubt remains as to the absence of adverse effects on the integrity of the European Sites: Ballyman Glen SAC [Site Code: 000713].

Part IV: SIGNATURE / SEAL

Draft Certificate of Authorisation Sign off

Signed on behalf of the said Agency

On the xx day of xxxxx, 200X _____
xxxxxxxxxxxxxx

Authorised Person